

KIC 010991155

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})
010991155-01	OBS	No	57.862164	164.814806	3350.5	2.543	12.1	8.2	0.53	3581	3.10	0.73
010991155-02	OBS	No	31.647657	155.078970	1647.1	2.871	12.8	4.6	0.53	3581	2.24	1.64
010991155-03	OBS	No	41.138635	170.732279	2083.6	1.501	10.1	7.2	0.53	3581	2.61	1.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010991155-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010991155-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010991155-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

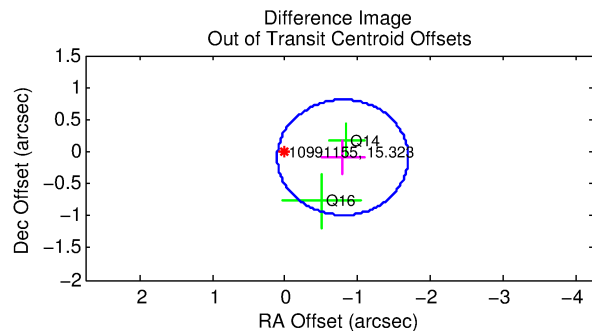
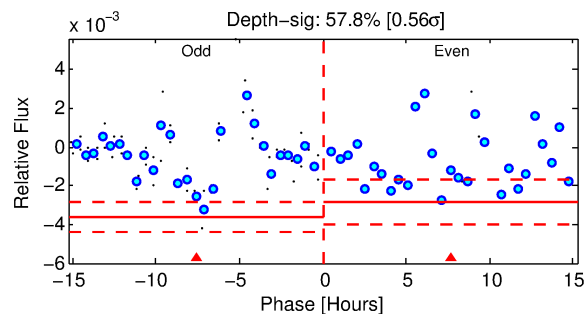
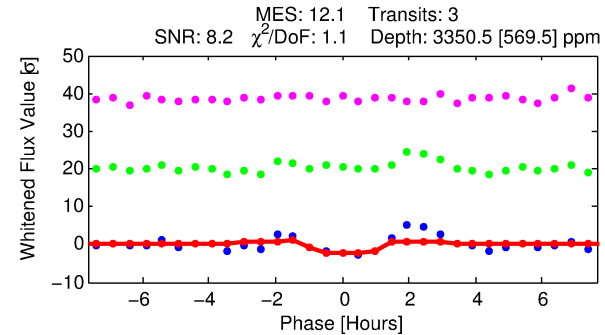
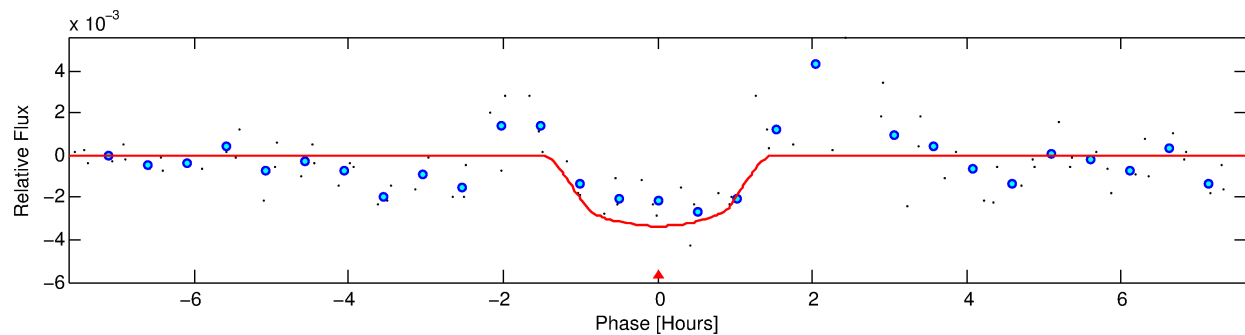
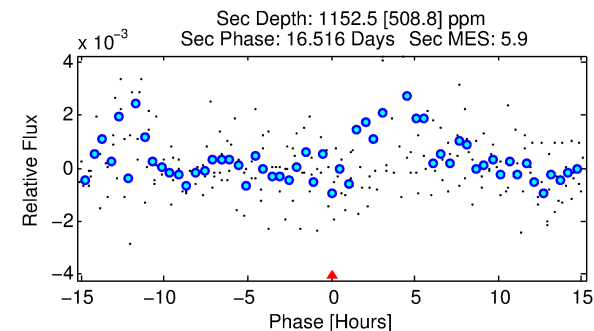
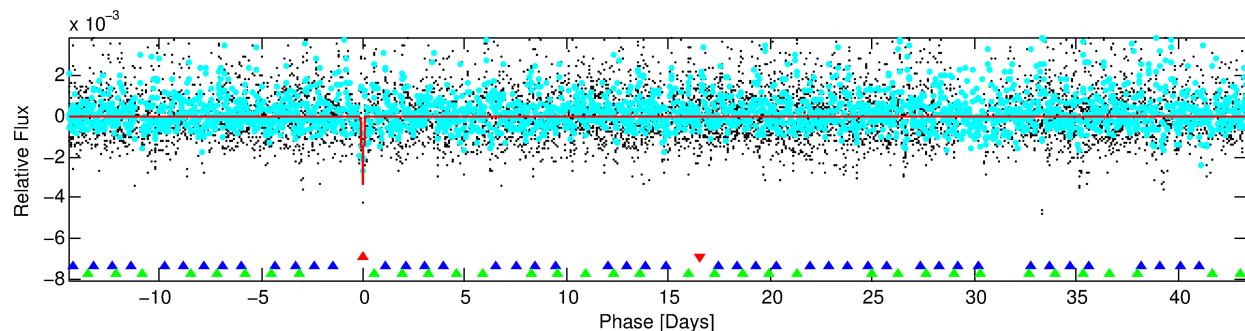
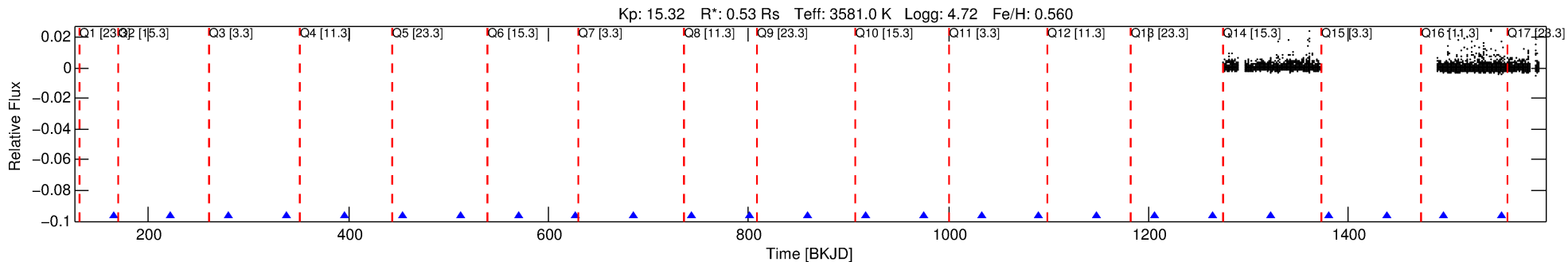
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010991155-01

No Significant Match Found

DV One-Page Summary

KIC: 10991155 Candidate: 1 of 3 Period: 57.862 d



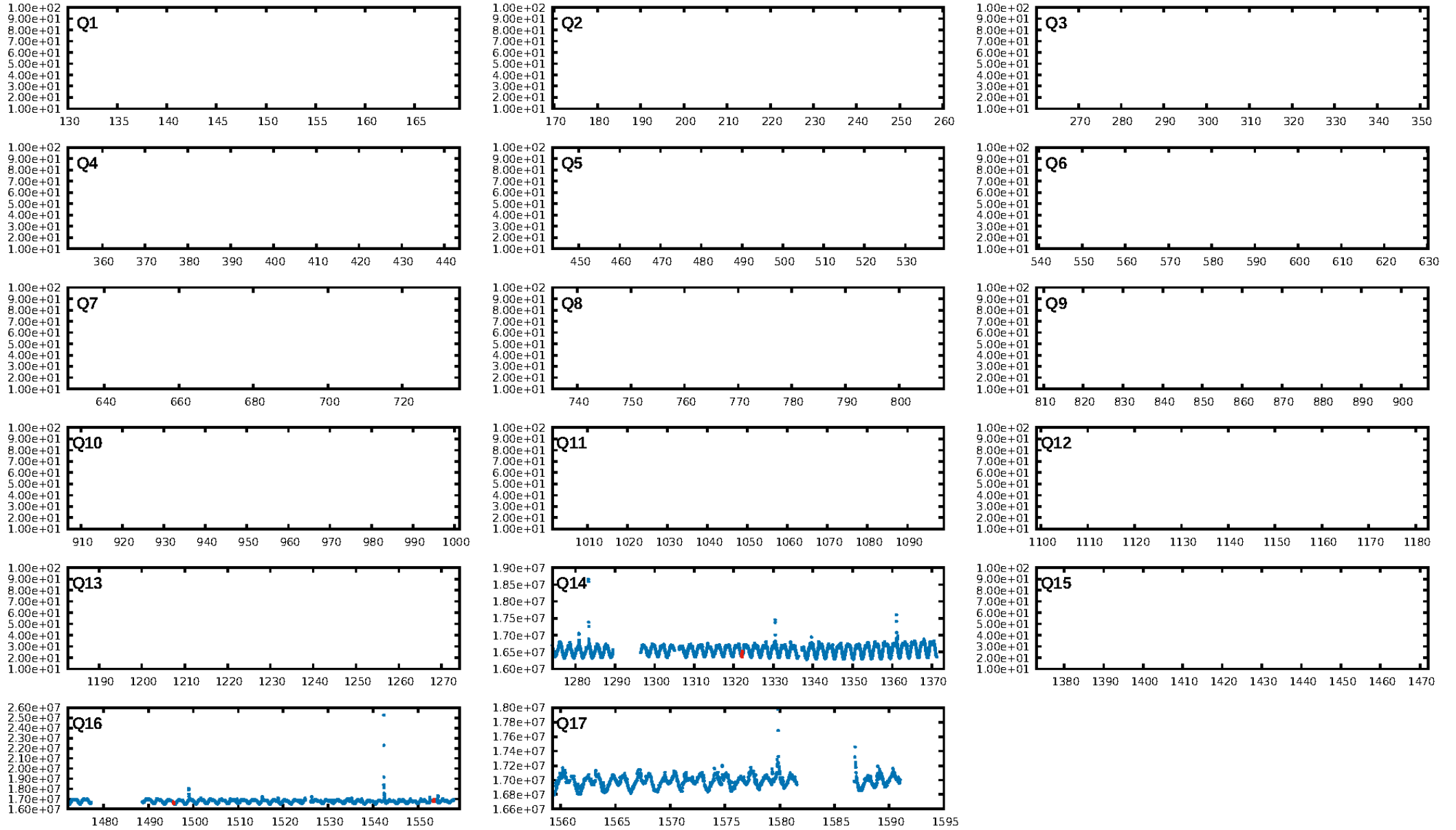
DV Fit Results:

Period = 57.86216 [0.00238] d
Epoch = 164.8148 [0.0524] BKJD
Rp/R* = 0.0537 [0.1448]
a/R* = 159.72 [1403.08]
b = 0.52 [12.82]
Seff = 0.73 [0.13]
Teq = 236 [11] K
Rp = 3.10 [8.36] Re
a = 0.2371 [0.0219] AU
Ag = 3706.57 [20050.03] [0.18σ]
Teffp = 2847 [3850] K [0.68σ]

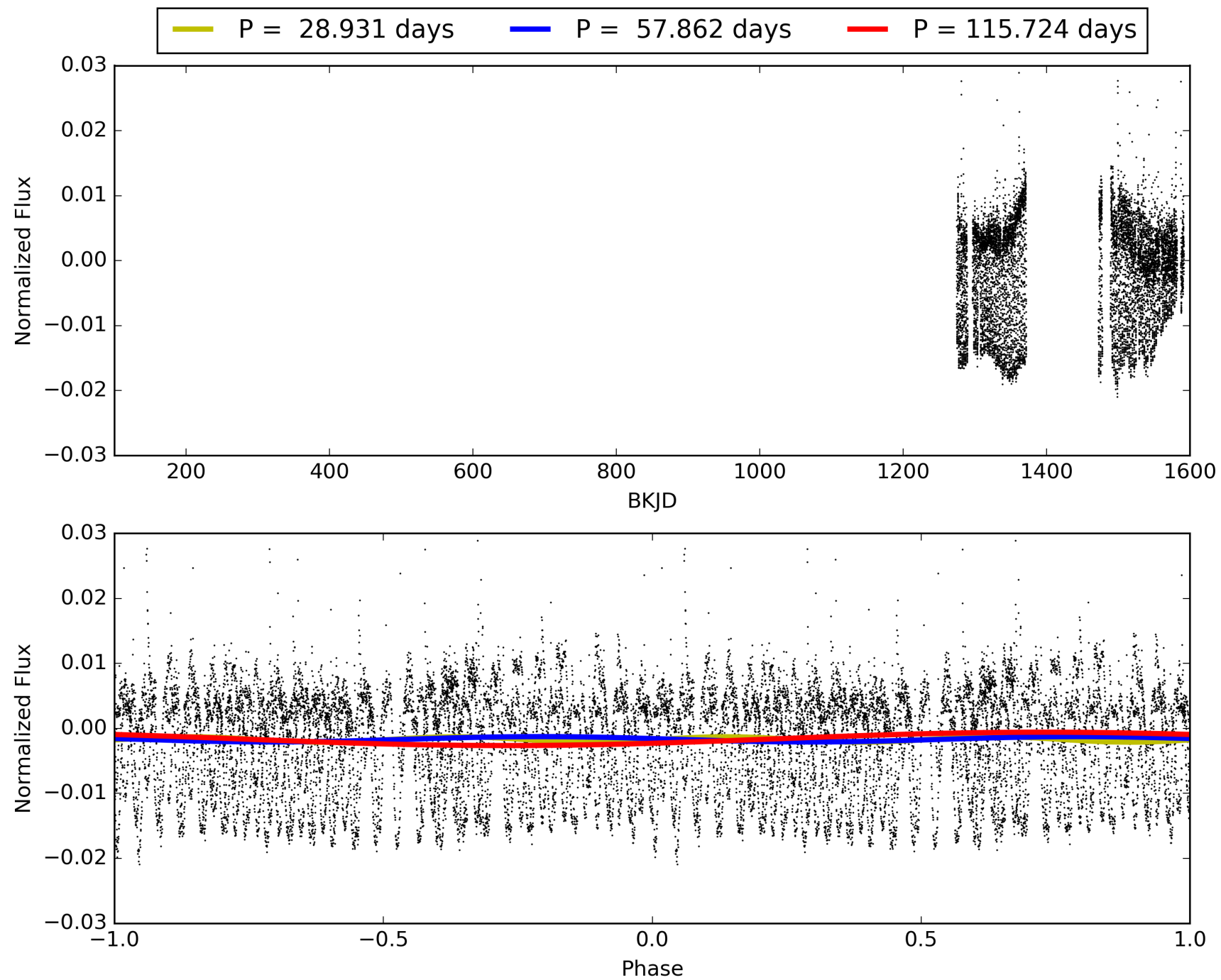
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [135.93σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 89.9%
ModelChiSquareGof-sig: 93.6%
Bootstrap-pfa: 1.57e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.925
Centroid-sig: N/A
Centroid-so: 0.912 arcsec [1.24σ]
OotOffset-rm: 0.798 arcsec [2.66σ]
KicOffset-rm: 0.465 arcsec [1.40σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 010991155-01, PDC Light Curves

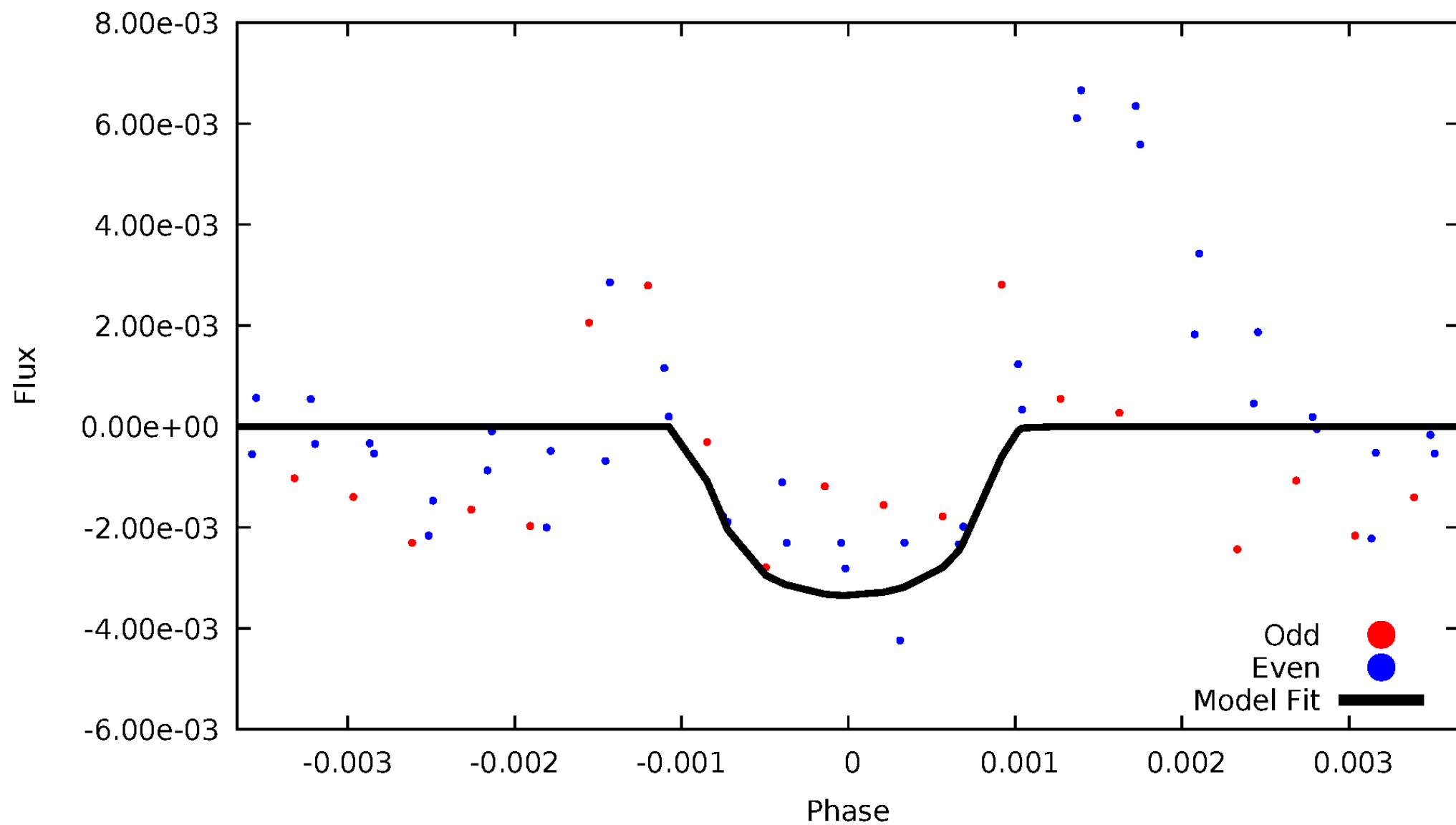


TCE 010991155-01



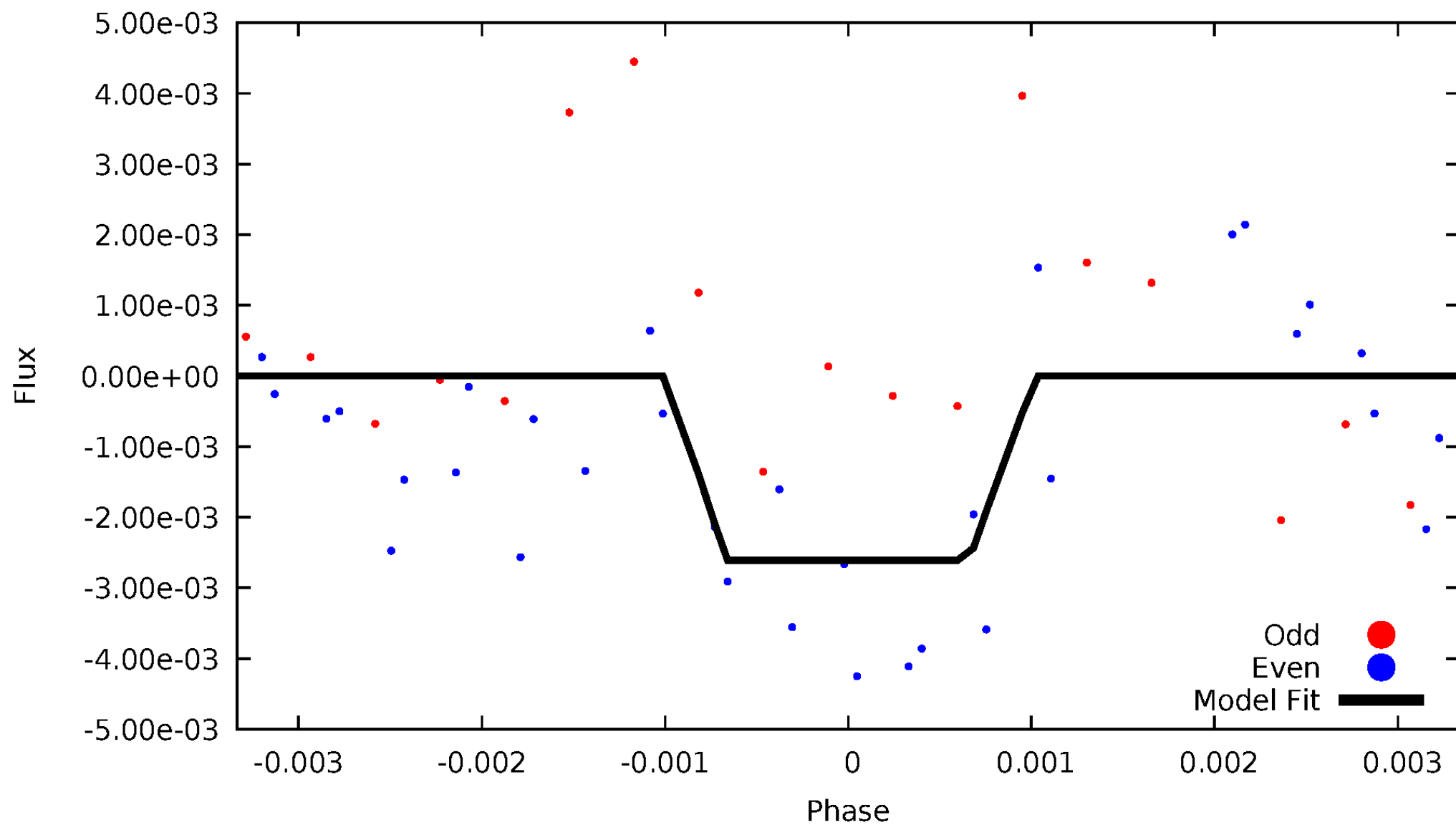
DV Odd/Even

TCE 010991155-01



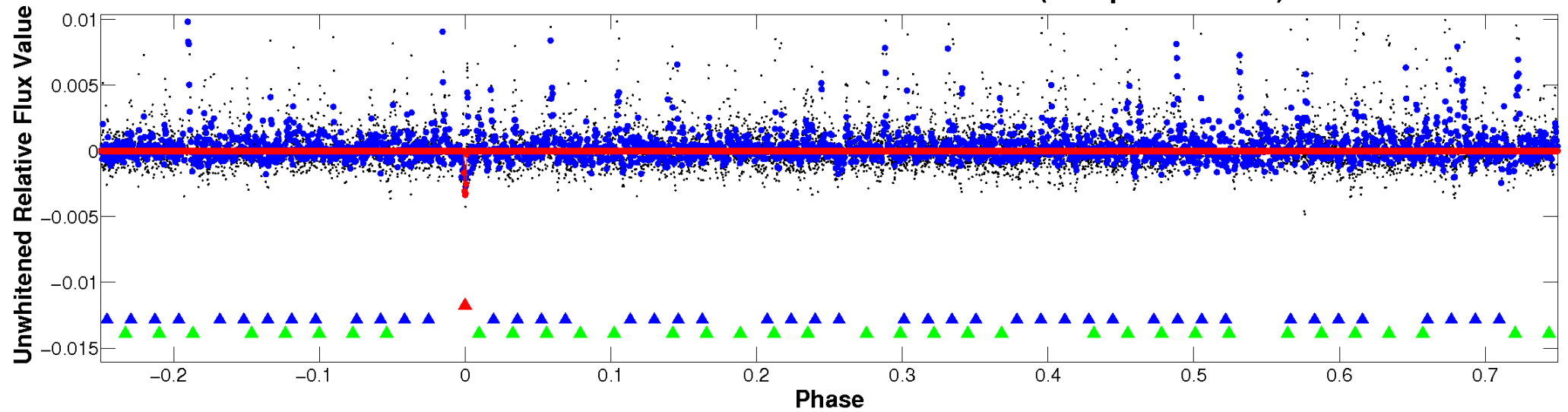
ALT Odd/Even

TCE 010991155-01

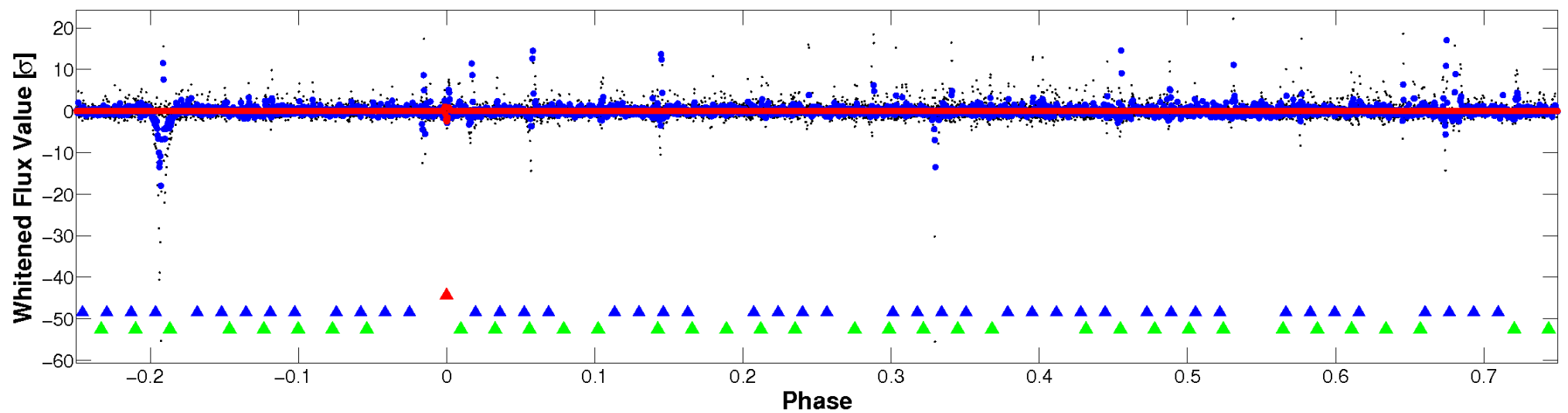


Non-Whitened Vs. Whitened Light Curve

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

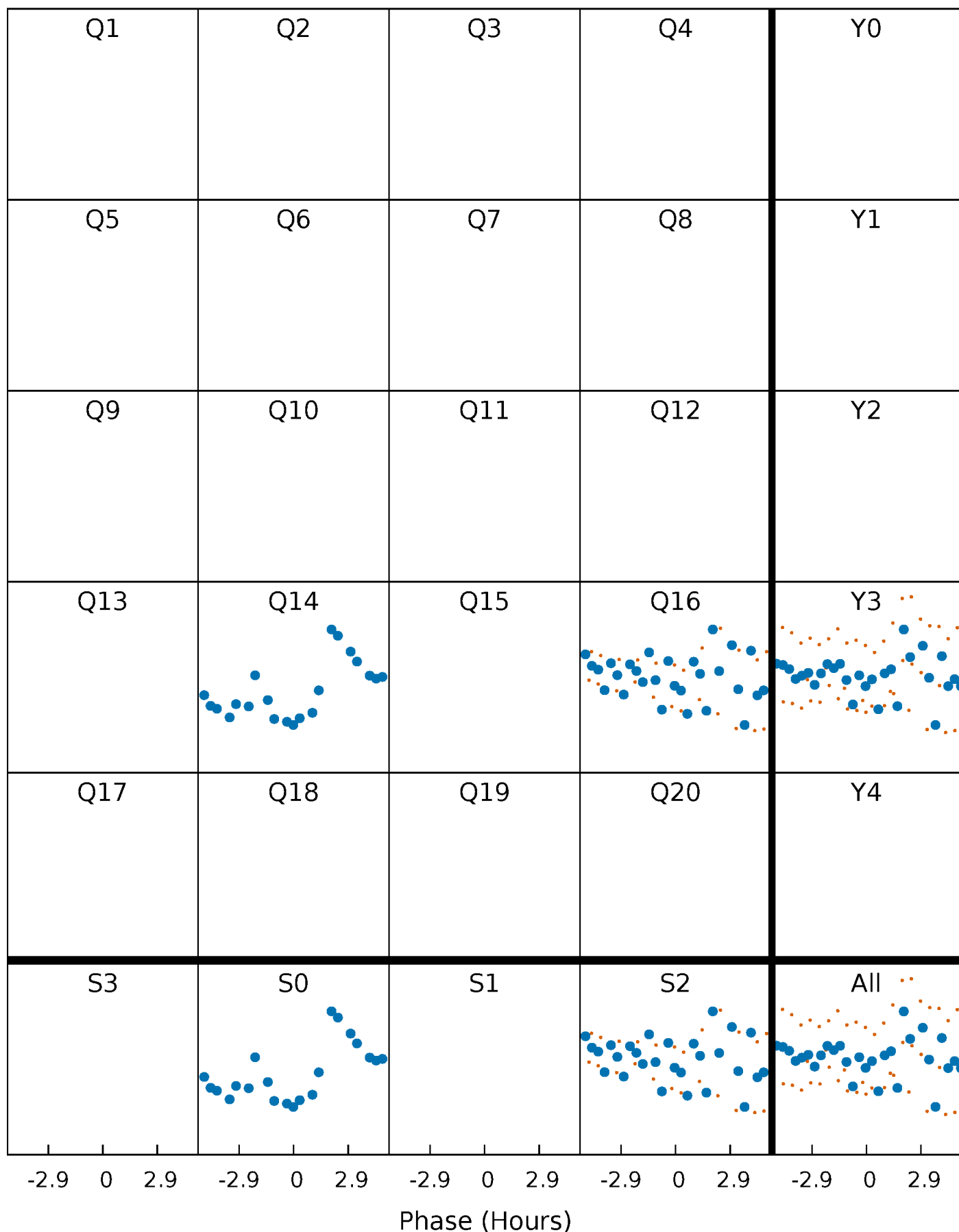


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



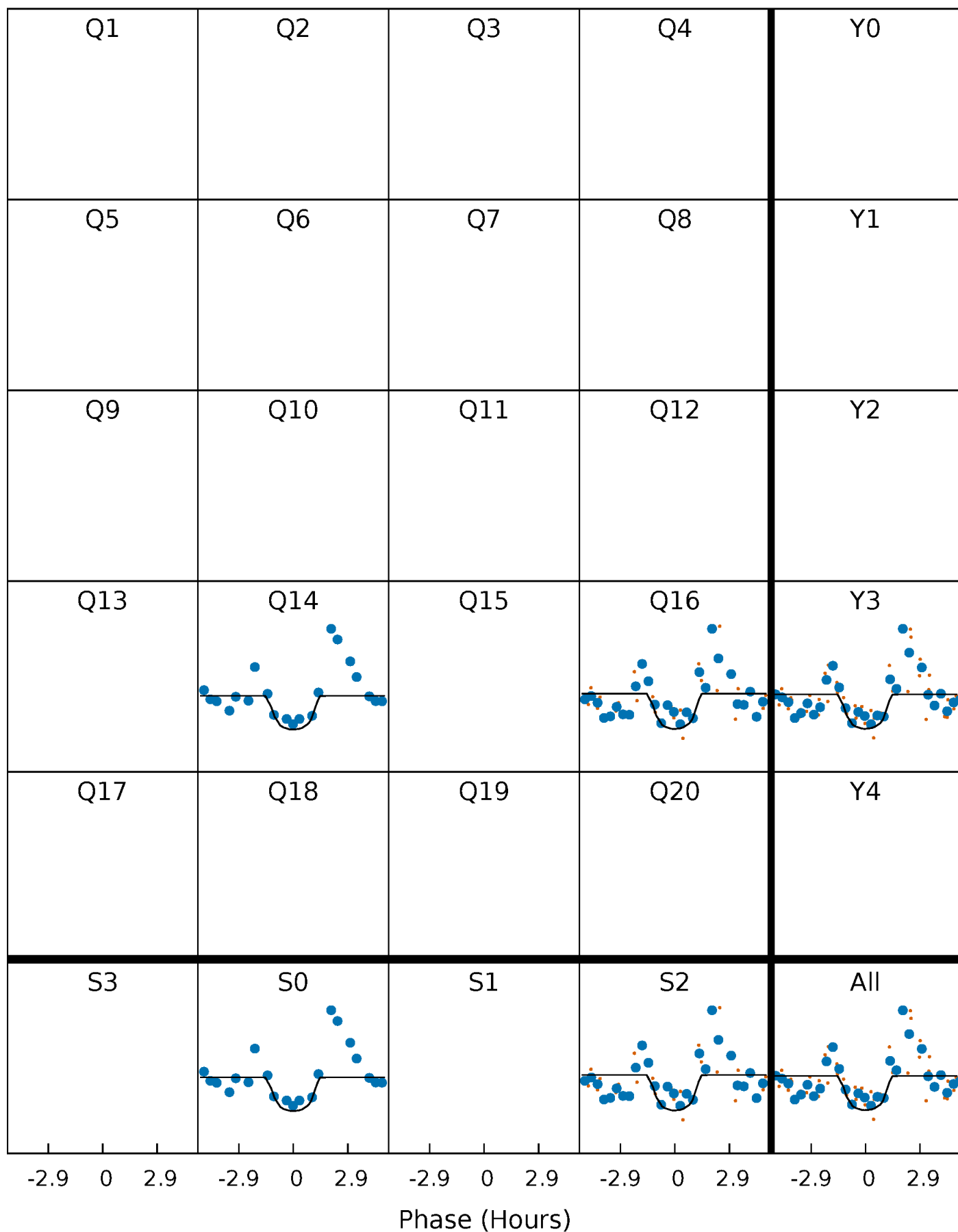
PDC Quarter-Phased Transit Curves

TCE 010991155-01 P= 57.862164 Days $T_0=164.814806$ (BKJD)



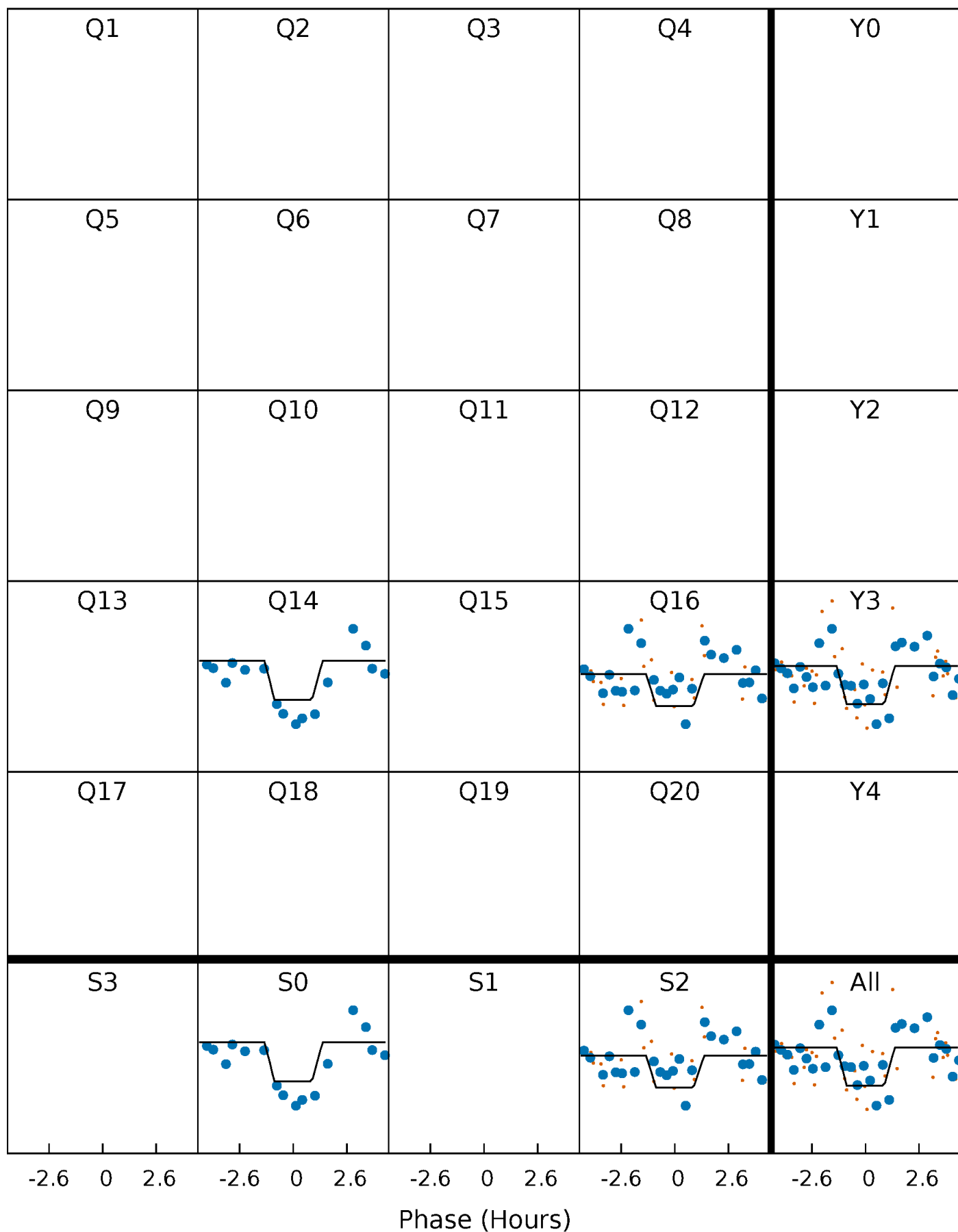
DV Quarter-Phased Transit Curves

TCE 010991155-01 P= 57.862164 Days $T_0=164.814806$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

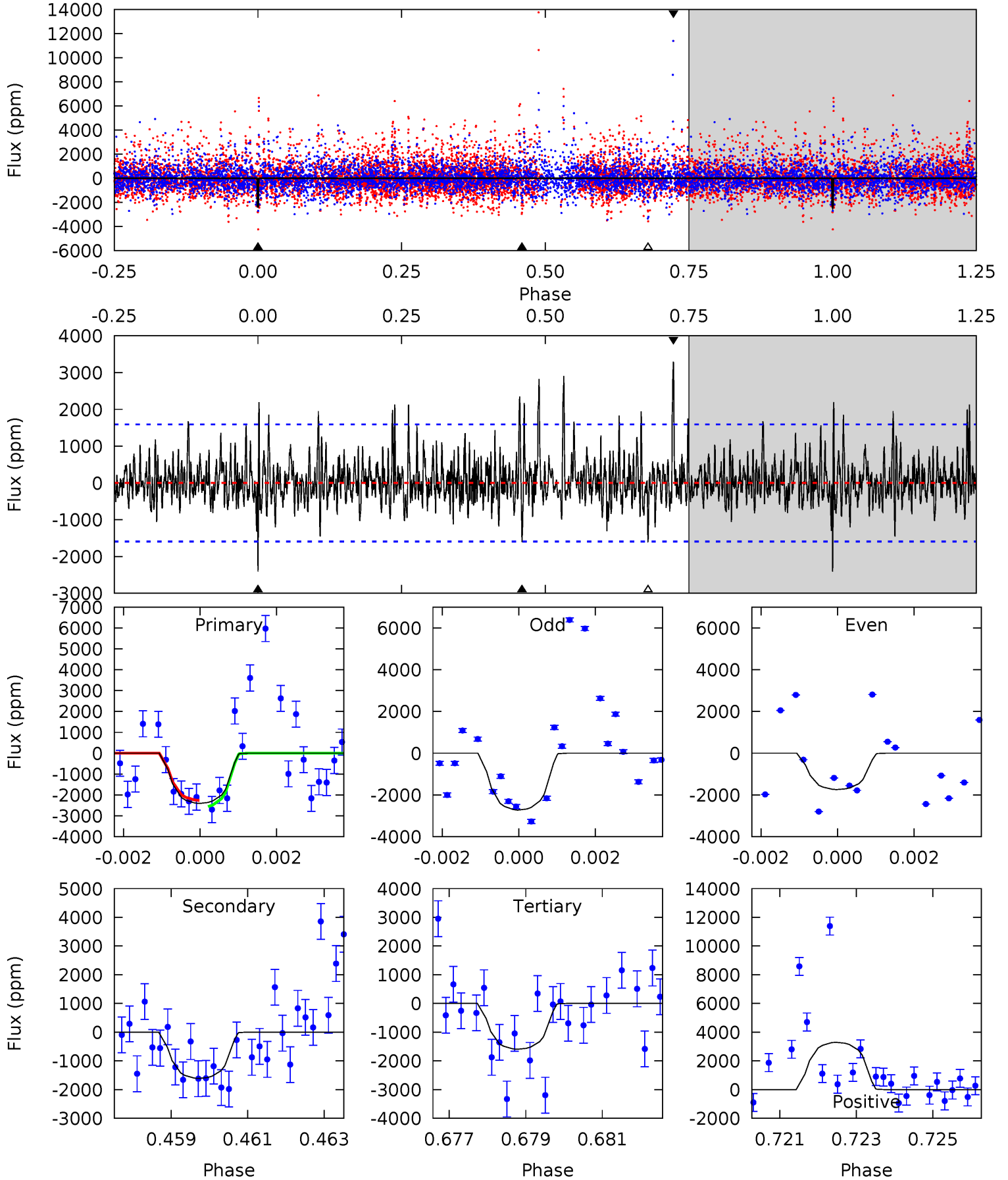
TCE 010991155-01 P= 57.862810 Days $T_0=164.798178$ (BKJD)



DV Model-Shift Uniqueness Test

010991155-01, P = 57.862164 Days, E = 164.814806 Days

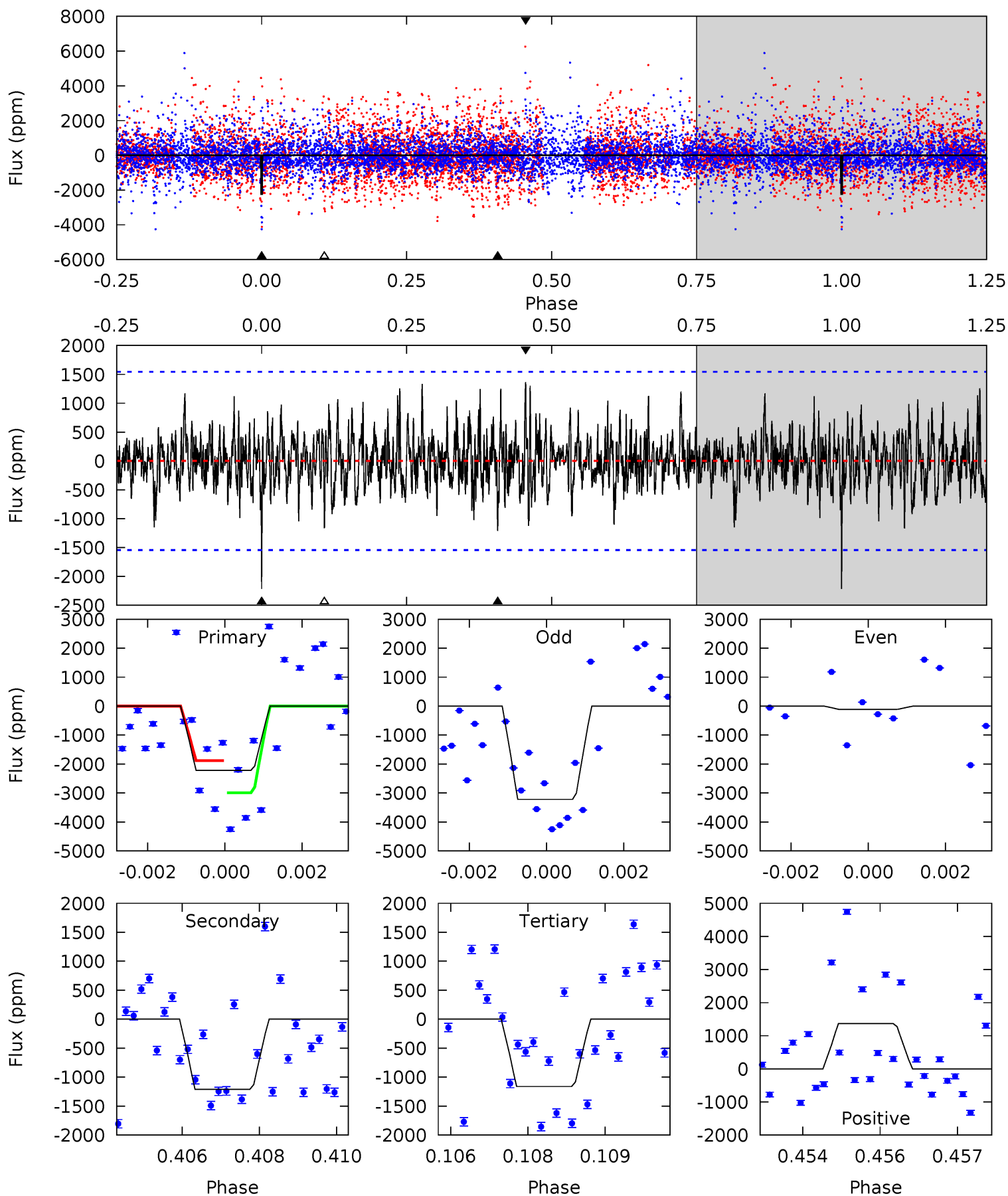
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.04	5.39	5.33	11.0	5.32	3.09	1.76	2.71	-2.97	0.06	-5.63	1.13	0.90	0.58	0.51



Alt Model-Shift Uniqueness Test

010991155-01, P = 57.862810 Days, E = 164.798178 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.68	4.19	4.03	4.73	5.35	3.13	1.29	3.65	2.96	0.16	-0.53	4.56	0.83	0.38	1.87



Stellar Parameters For KIC 010991155

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3581^{+119}_{-97}	$4.716^{+0.064}_{-0.020}$	$0.560^{+0.050}_{-0.250}$	$0.529^{+0.028}_{-0.062}$	$0.530^{+0.035}_{-0.053}$	$5.055^{+1.618}_{-0.532}$
	+3%/-3%	+1%/-0%	+9%/-45%	+5%/-12%	+7%/-10%	+32%/-11%
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 010991155-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1612 ± 299	$6.64^{+6.74}_{-4.58}$	328^{+12}_{-12}	2659^{+1043}_{-435}	1130^{+10190}_{-864}
Alt.	-1210 ± 288	$6.44^{+6.58}_{-4.17}$	326^{+12}_{-10}	2539^{+851}_{-371}	869^{+6026}_{-650}

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

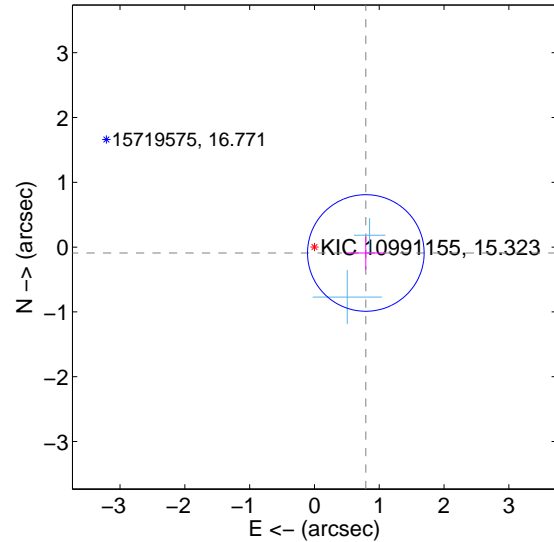
Supplemental centroid analysis for 010991155-01. Kepler magnitude: 15.32. Transit SNR 8.20

There are 2 quarters with good PRF difference image offsets

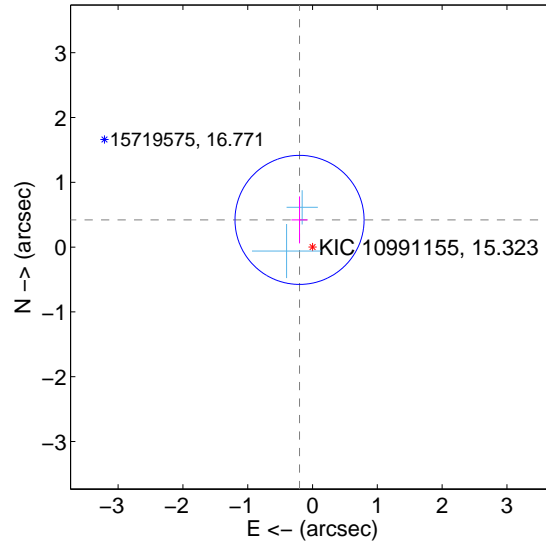
The direct PRF centroid is offset from the target star catalog position by about 1.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.798 ± 0.300	2.66	-0.793 ± 0.300	-0.091 ± 0.256
PRF-fit source offset from KIC position	0.465 ± 0.332	1.40	0.200 ± 0.125	0.420 ± 0.363
photometric centroid source offset	0.91 ± 0.73	1.24	-0.28 ± 1.07	0.87 ± 0.69

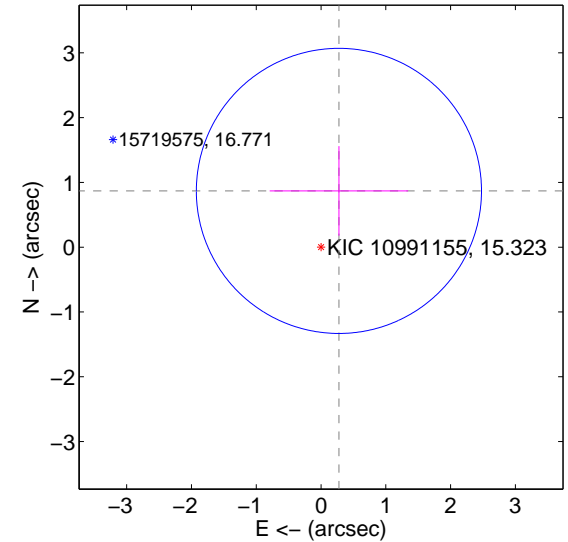
offset from difference PRF-fit to OOT PRF-fit



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.



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

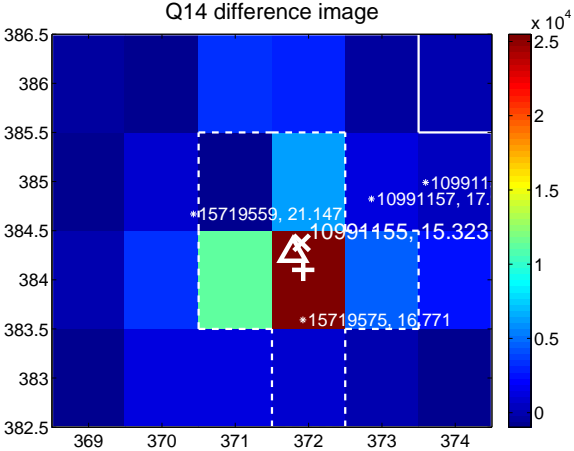
Q13 no difference image



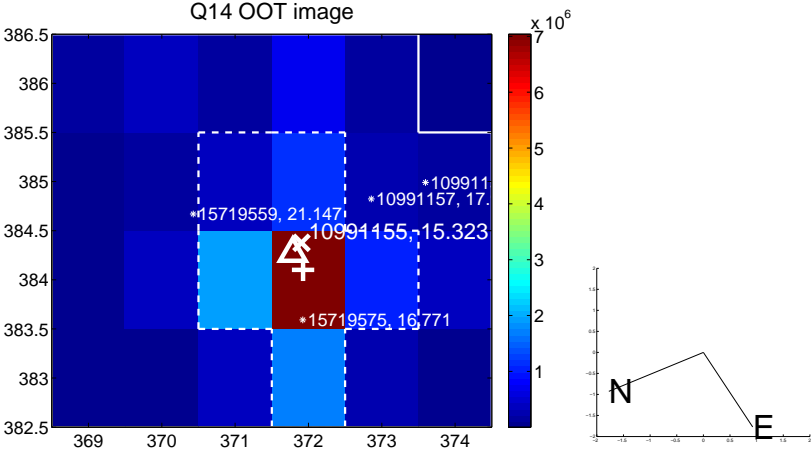
Q13 no OOT image



Q14 difference image



Q14 OOT image



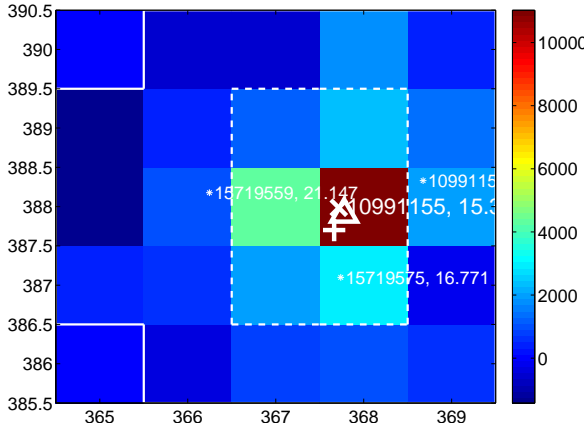
Q15 no difference image



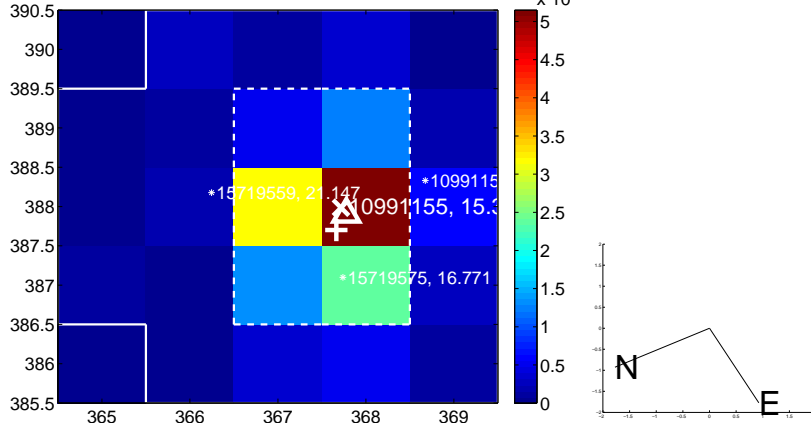
Q15 no OOT image



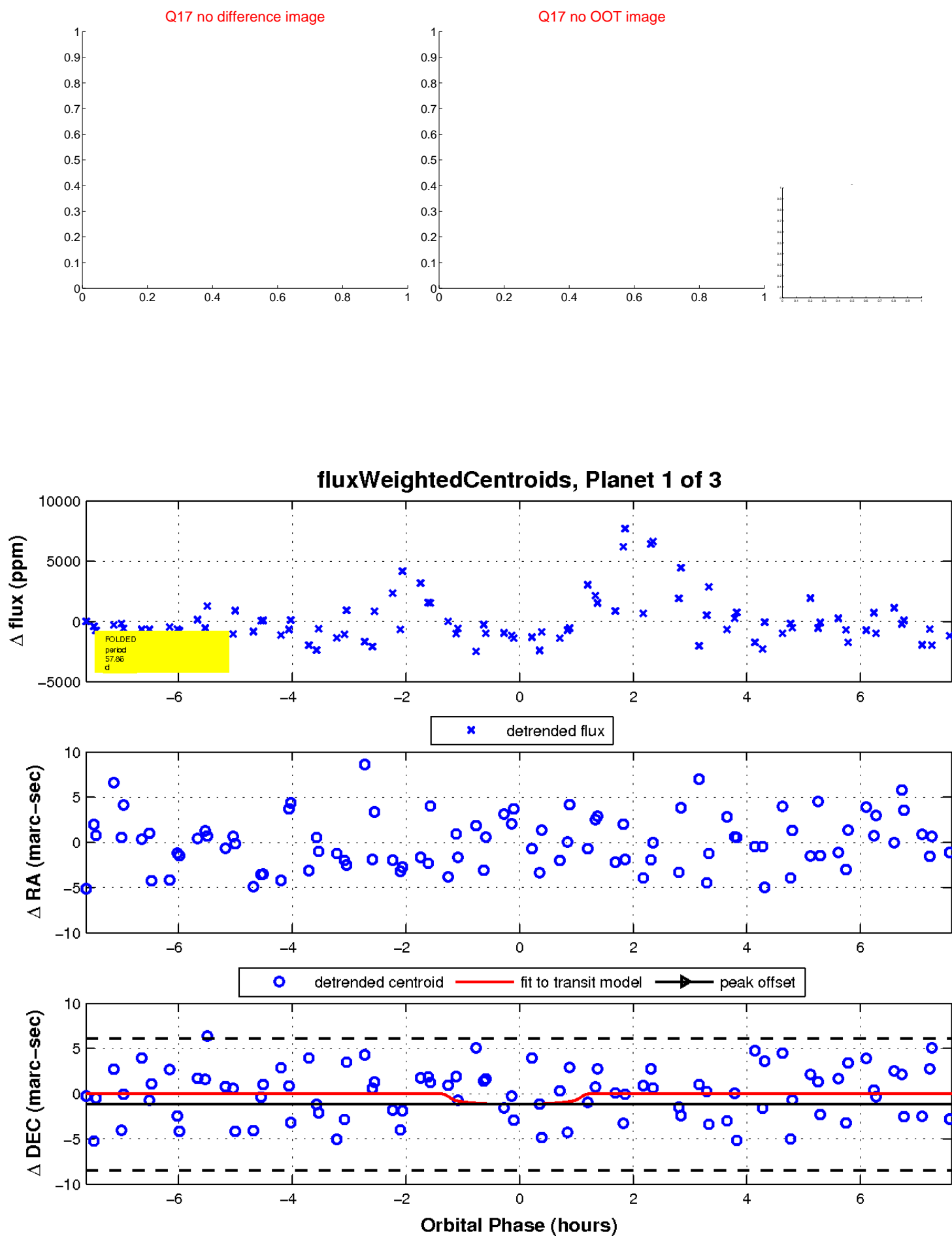
Q16 difference image



Q16 OOT image

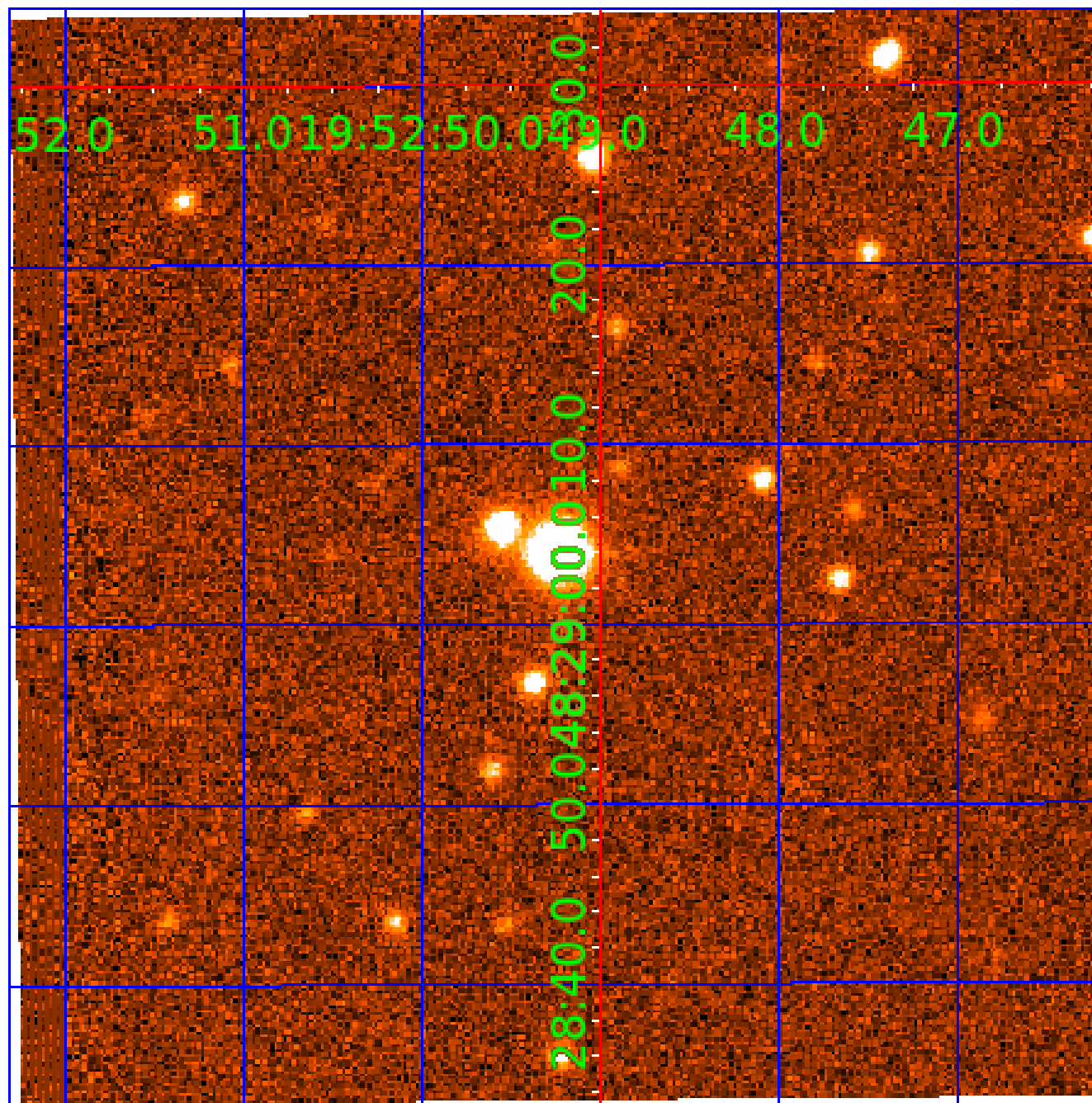


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010991155

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})
010991155-01	OBS	No	57.862164	164.814806	3350.5	2.543	12.1	8.2	0.53	3581	3.10	0.73
010991155-02	OBS	No	31.647657	155.078970	1647.1	2.871	12.8	4.6	0.53	3581	2.24	1.64
010991155-03	OBS	No	41.138635	170.732279	2083.6	1.501	10.1	7.2	0.53	3581	2.61	1.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010991155-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010991155-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010991155-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

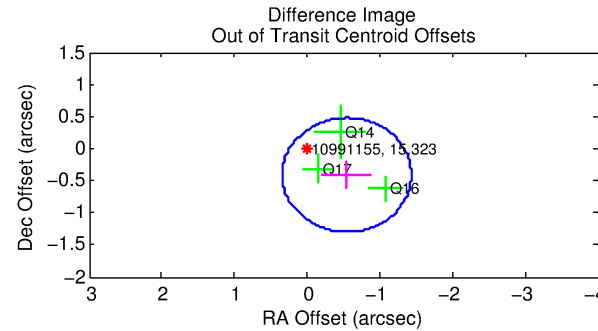
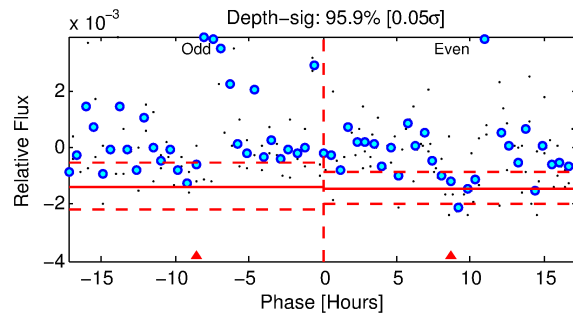
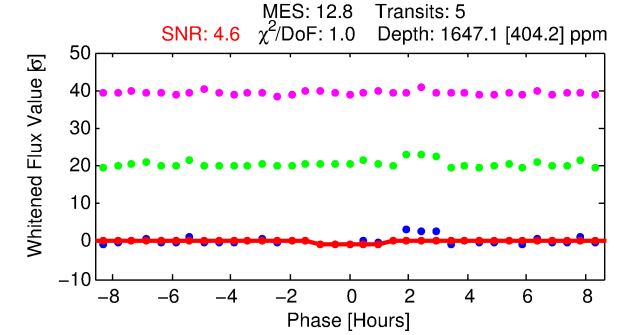
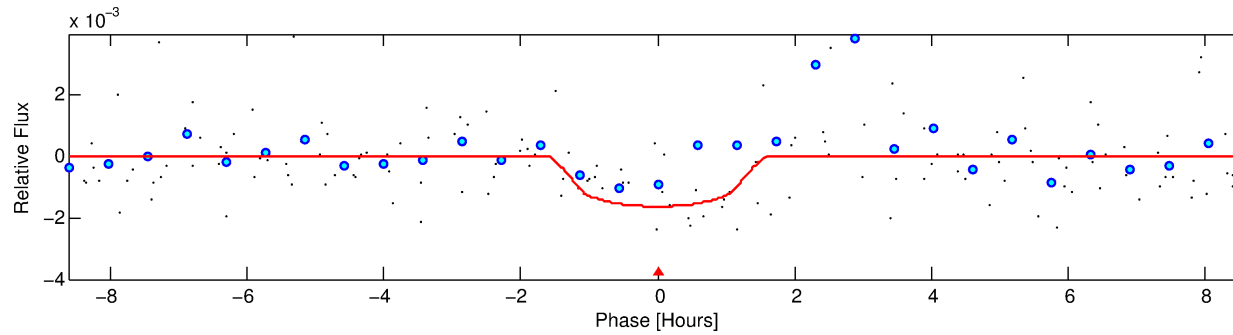
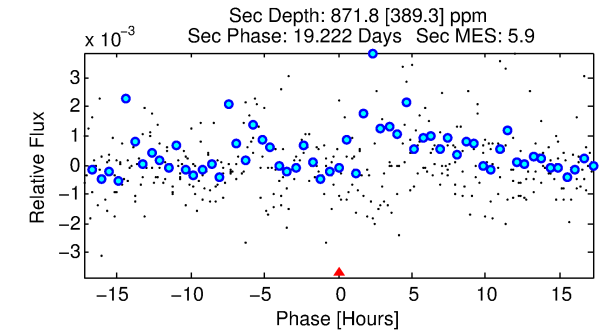
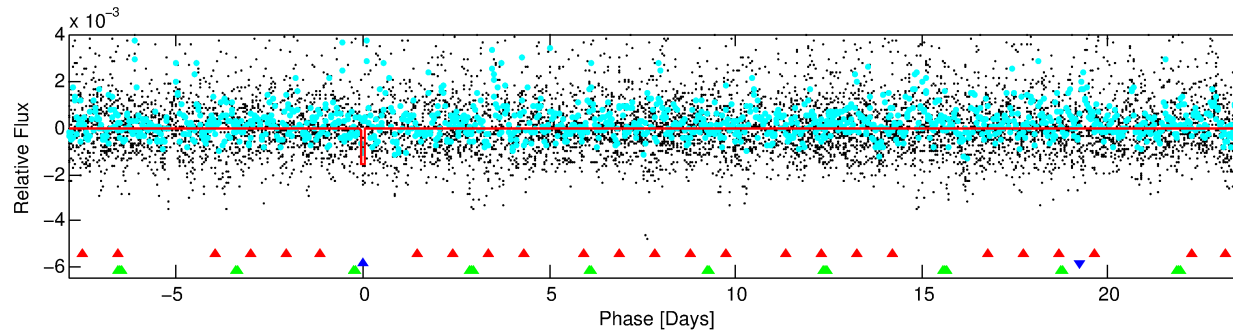
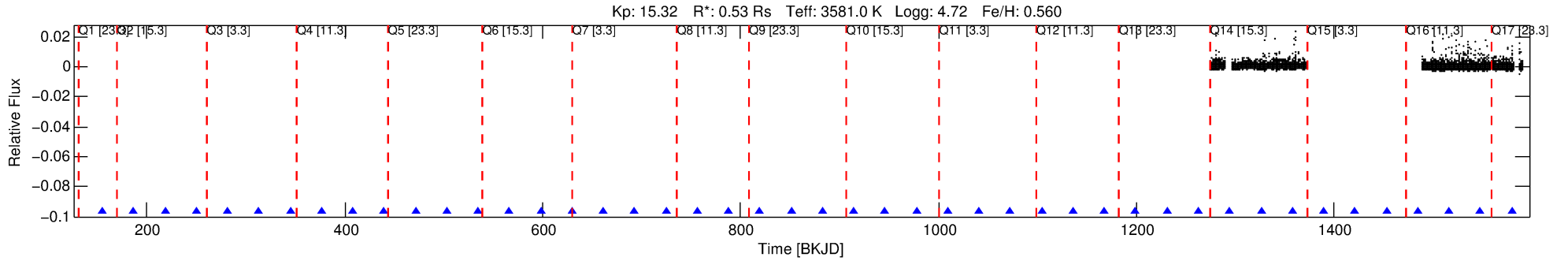
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010991155-02

No Significant Match Found

DV One-Page Summary

KIC: 10991155 Candidate: 2 of 3 Period: 31.648 d



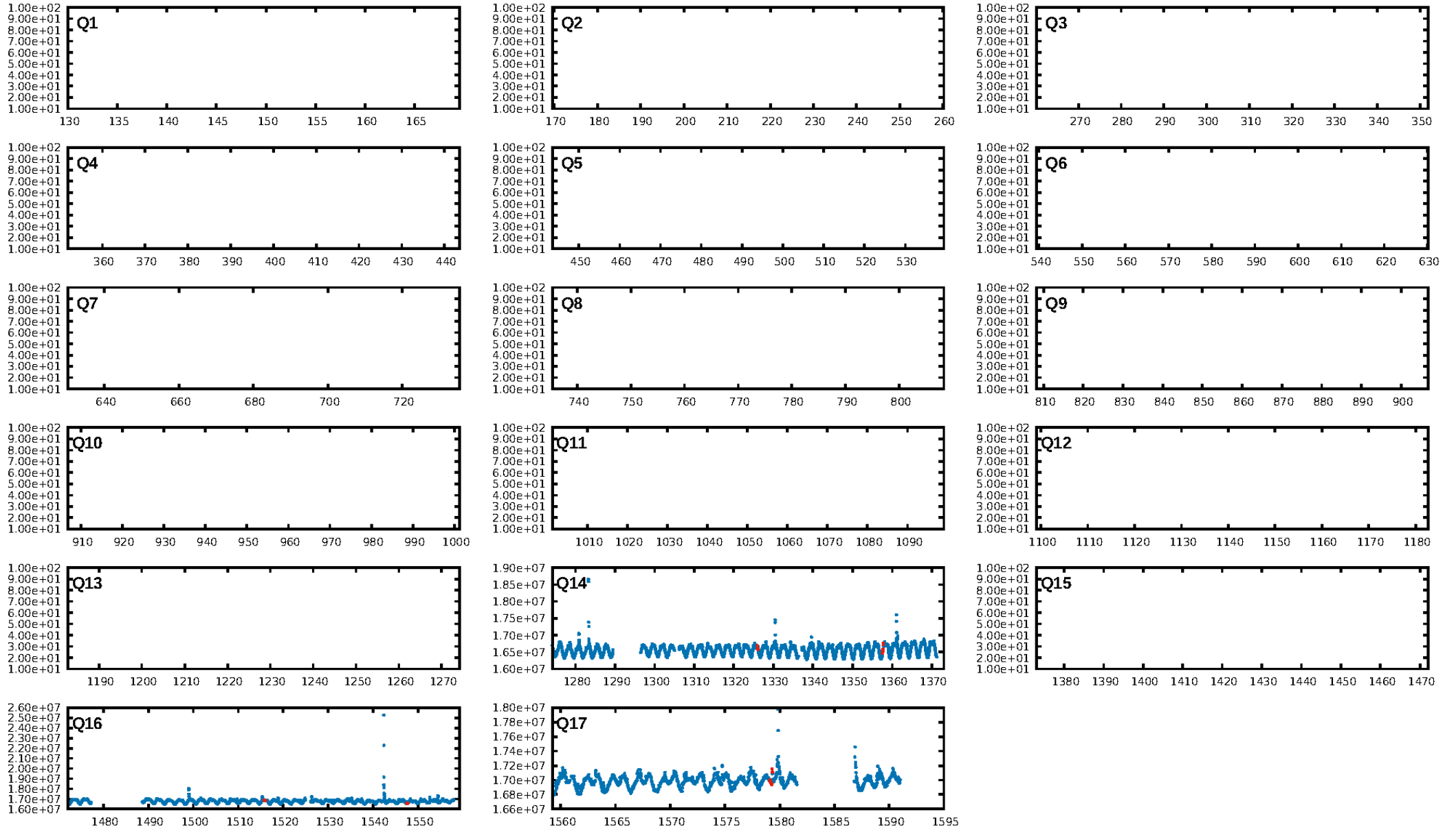
DV Fit Results:

Period = 31.64766 [0.00215] d
Epoch = 155.0790 [0.0903] BKJD
Rp/R* = 0.0388 [0.1088]
a/R* = 69.07 [645.84]
b = 0.64 [8.94]
Seff = 1.64 [0.30]
Teq = 289 [13] K
Rp = 2.24 [6.29] Re
a = 0.1586 [0.0146] AU
Ag = 2398.23 [13477.78] [0.18σ]
Teffp = 3122 [4386] K [0.65σ]

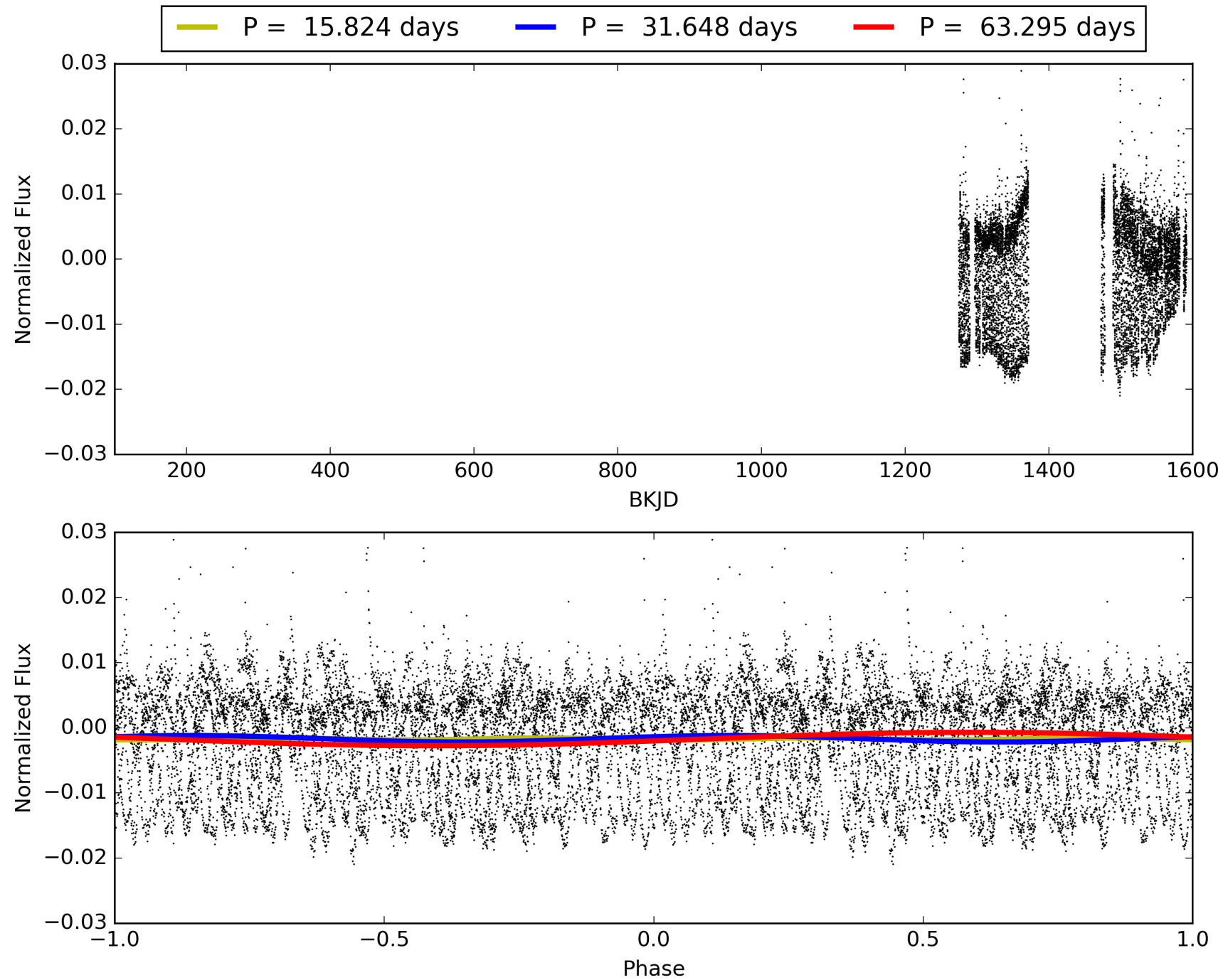
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [70.31σ]
ModelChiSquare2-sig: 33.5%
ModelChiSquareGof-sig: 99.2%
Bootstrap-pfa: 2.26e-21
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.656
Centroid-sig: N/A
Centroid-so: 1.068 arcsec [0.71σ]
OotOffset-rm: 0.680 arcsec [2.29σ]
KicOffset-rm: 0.360 arcsec [1.76σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 010991155-02, PDC Light Curves

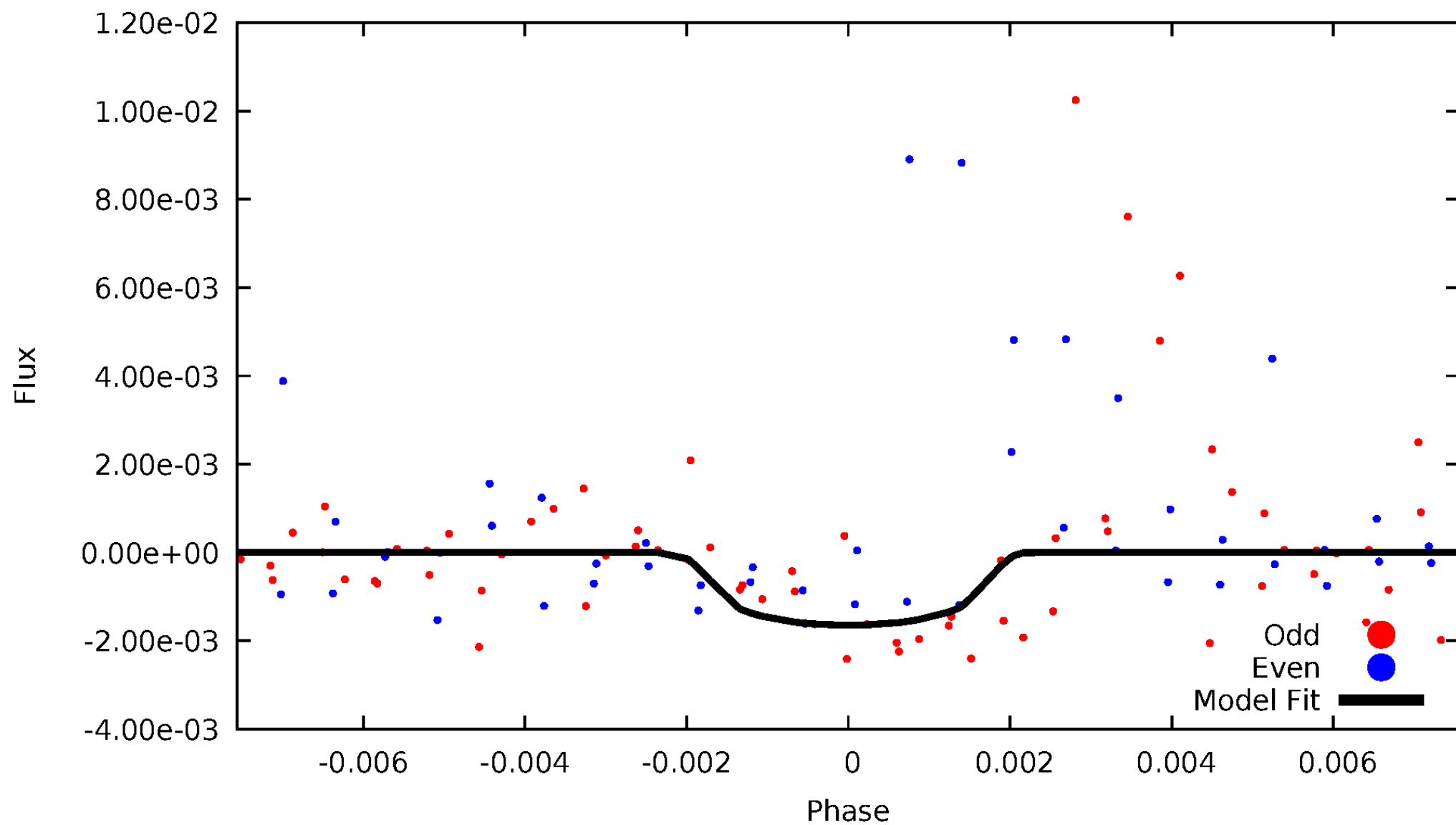


TCE 010991155-02



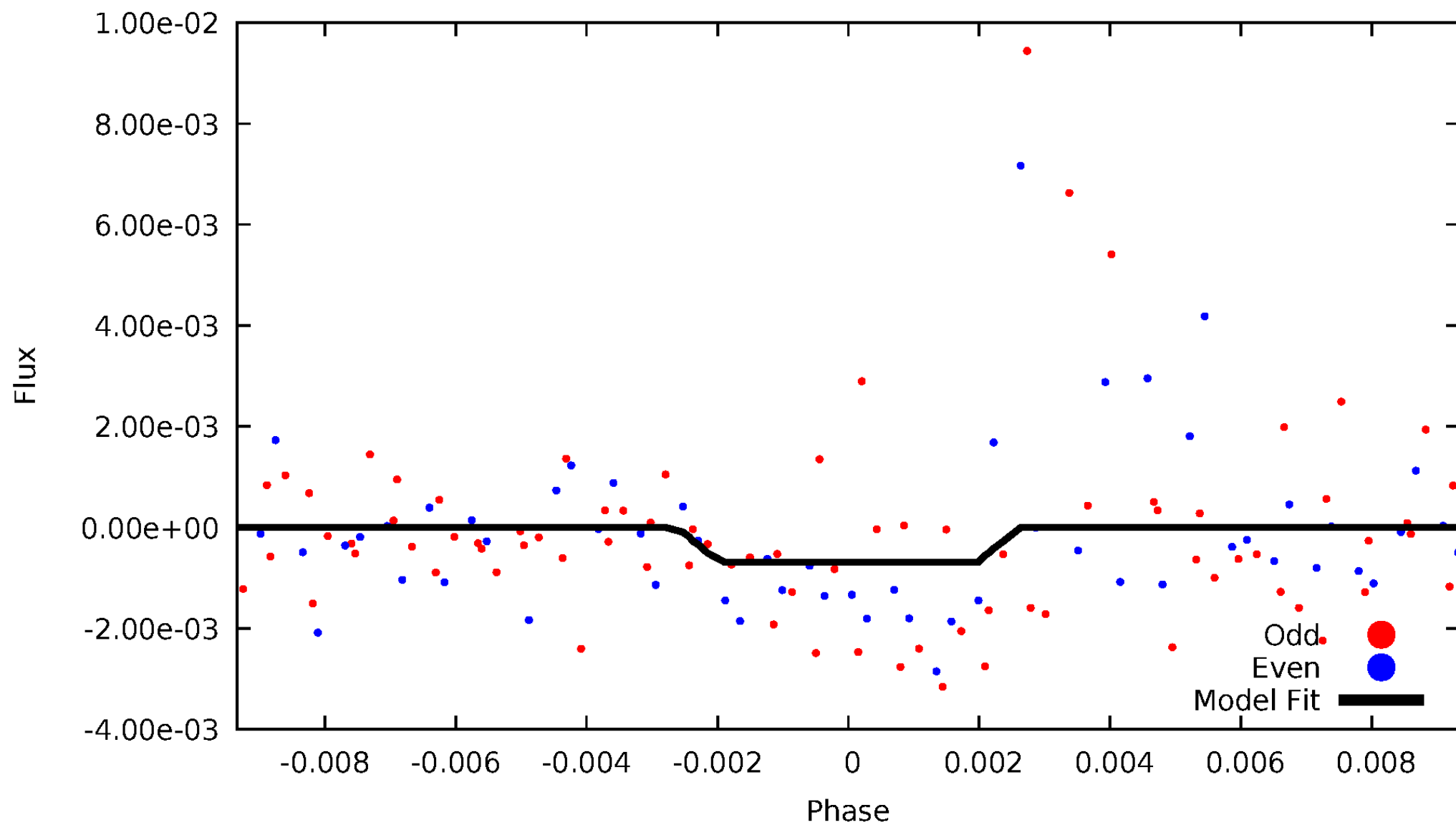
DV Odd/Even

TCE 010991155-02



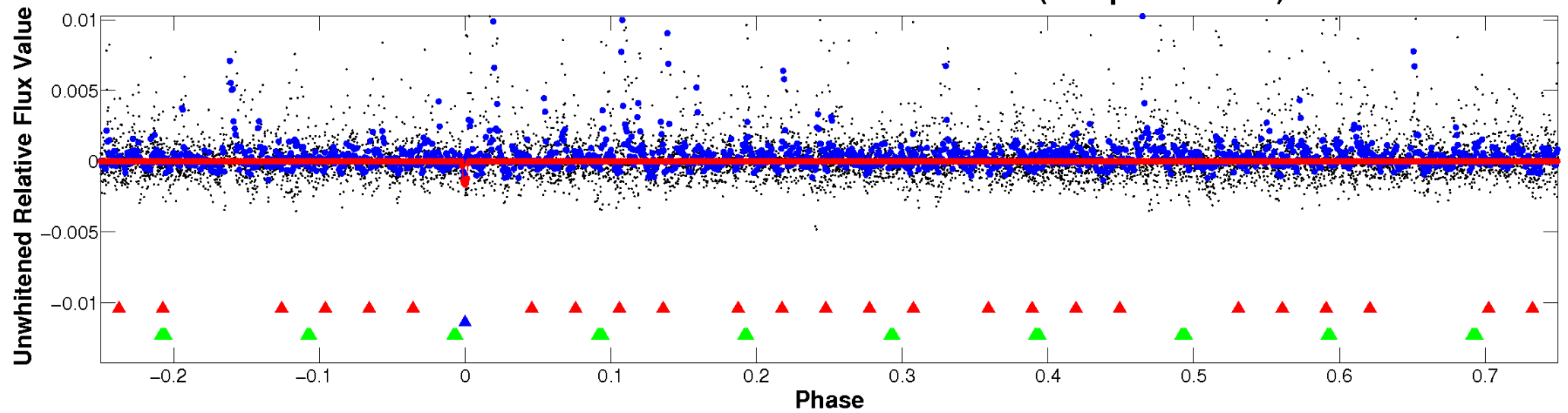
ALT Odd/Even

TCE 010991155-02

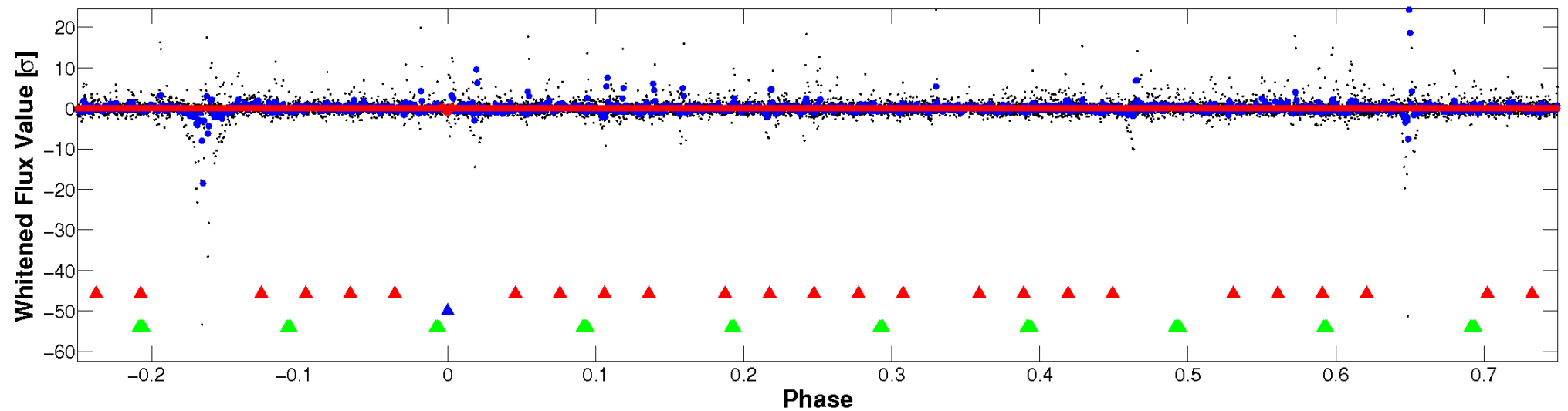


Non-Whitened Vs. Whitened Light Curve

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

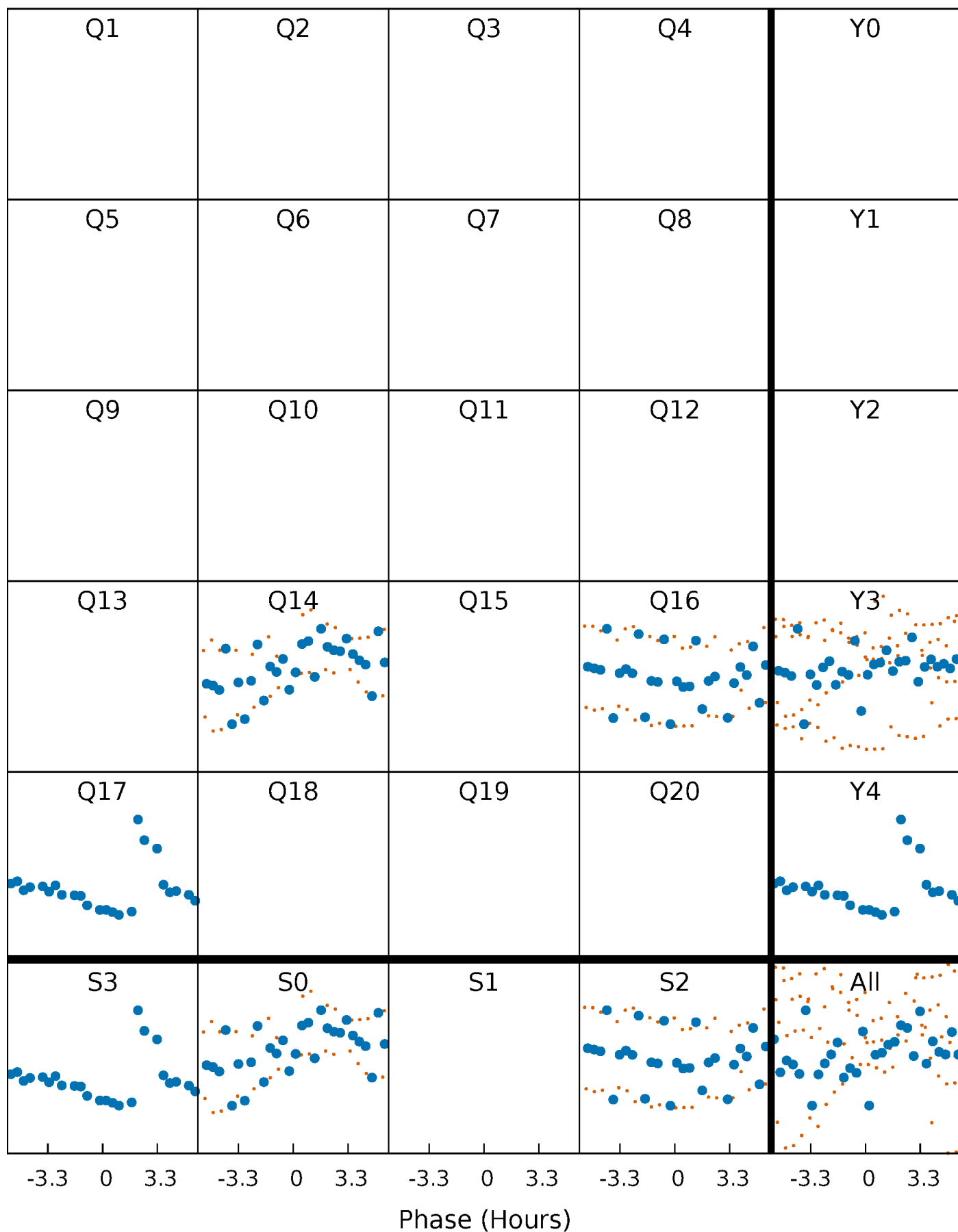


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



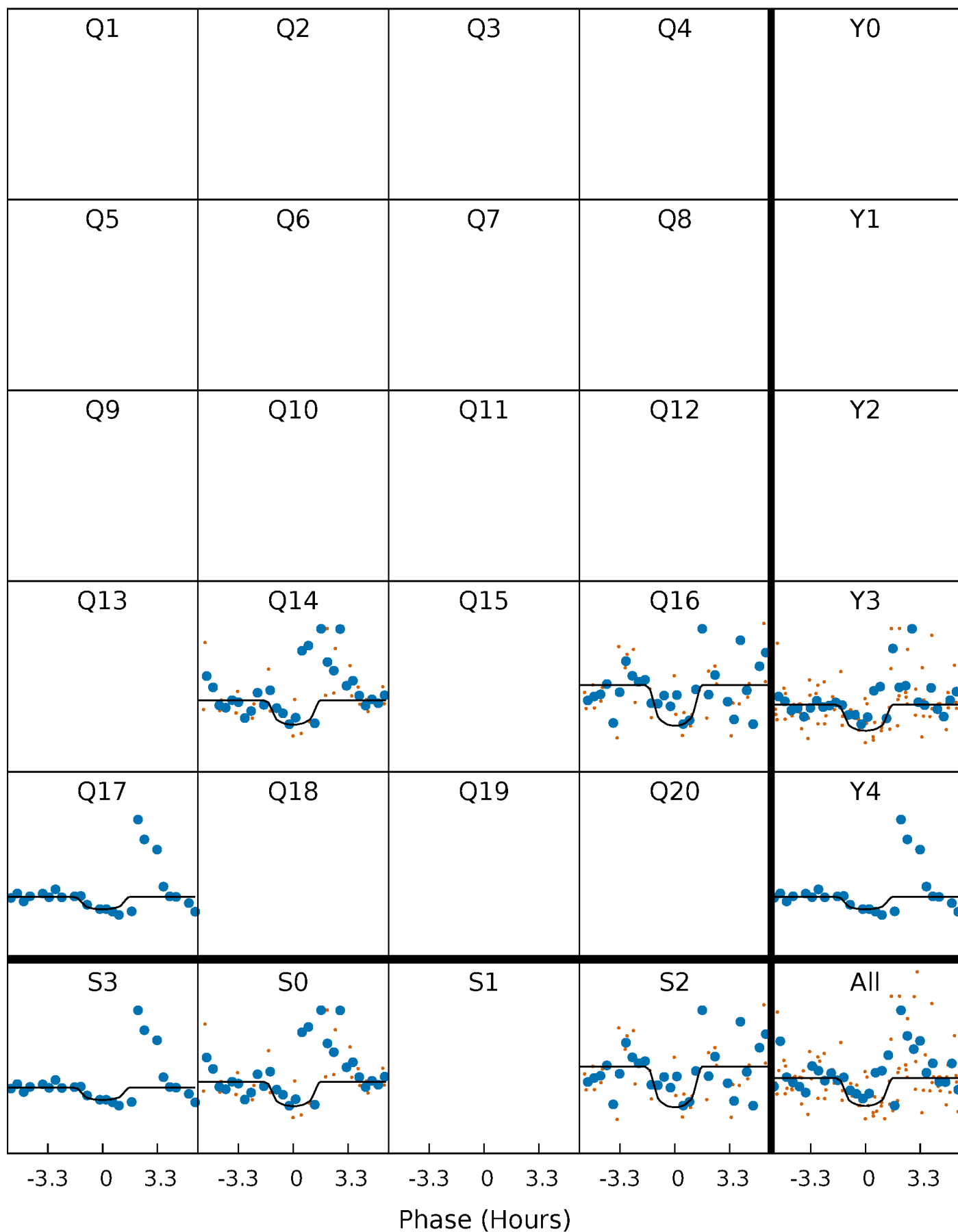
PDC Quarter-Phased Transit Curves

TCE 010991155-02 P= 31.647657 Days $T_0=155.078970$ (BKJD)



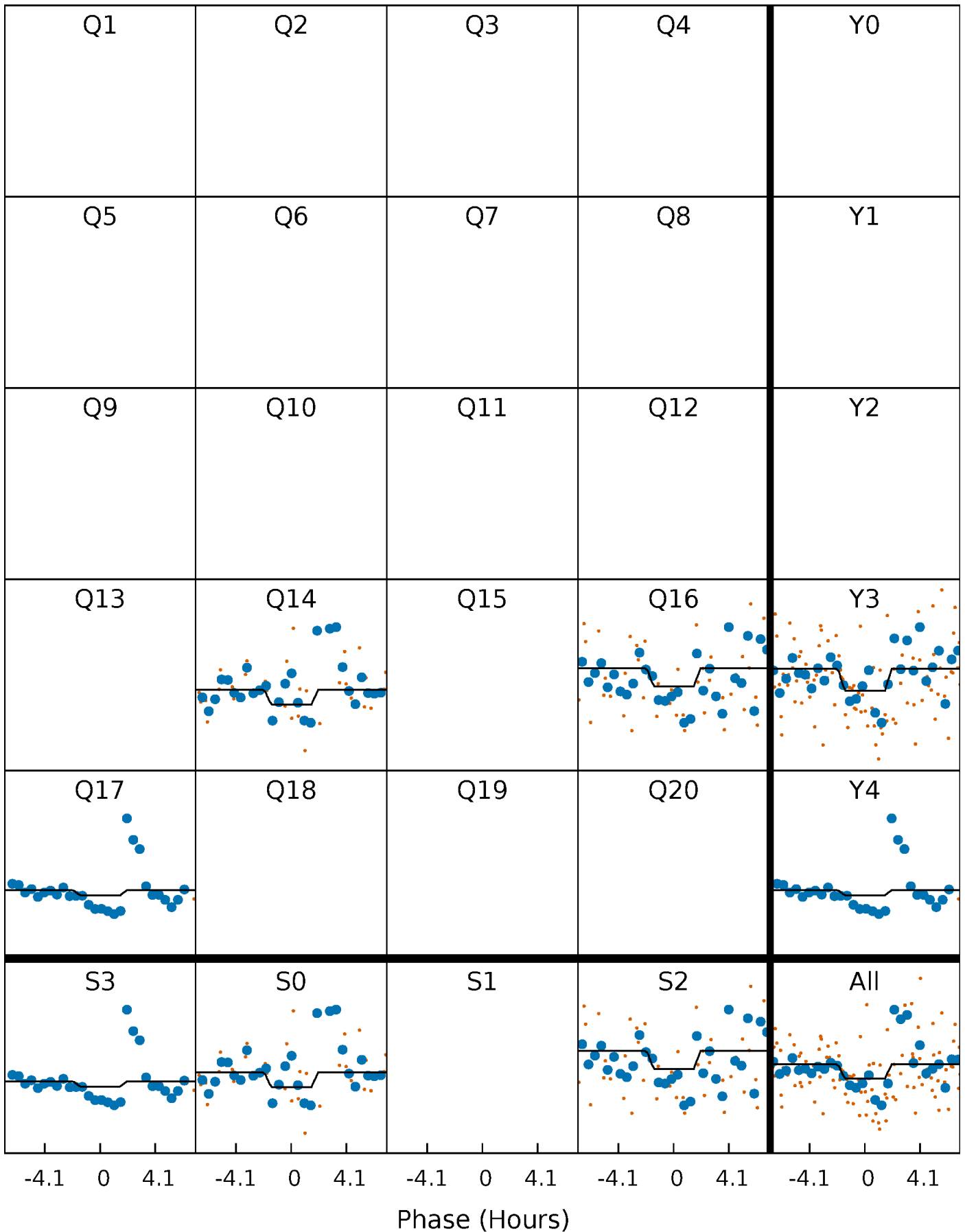
DV Quarter-Phased Transit Curves

TCE 010991155-02 P= 31.647657 Days $T_0=155.078970$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

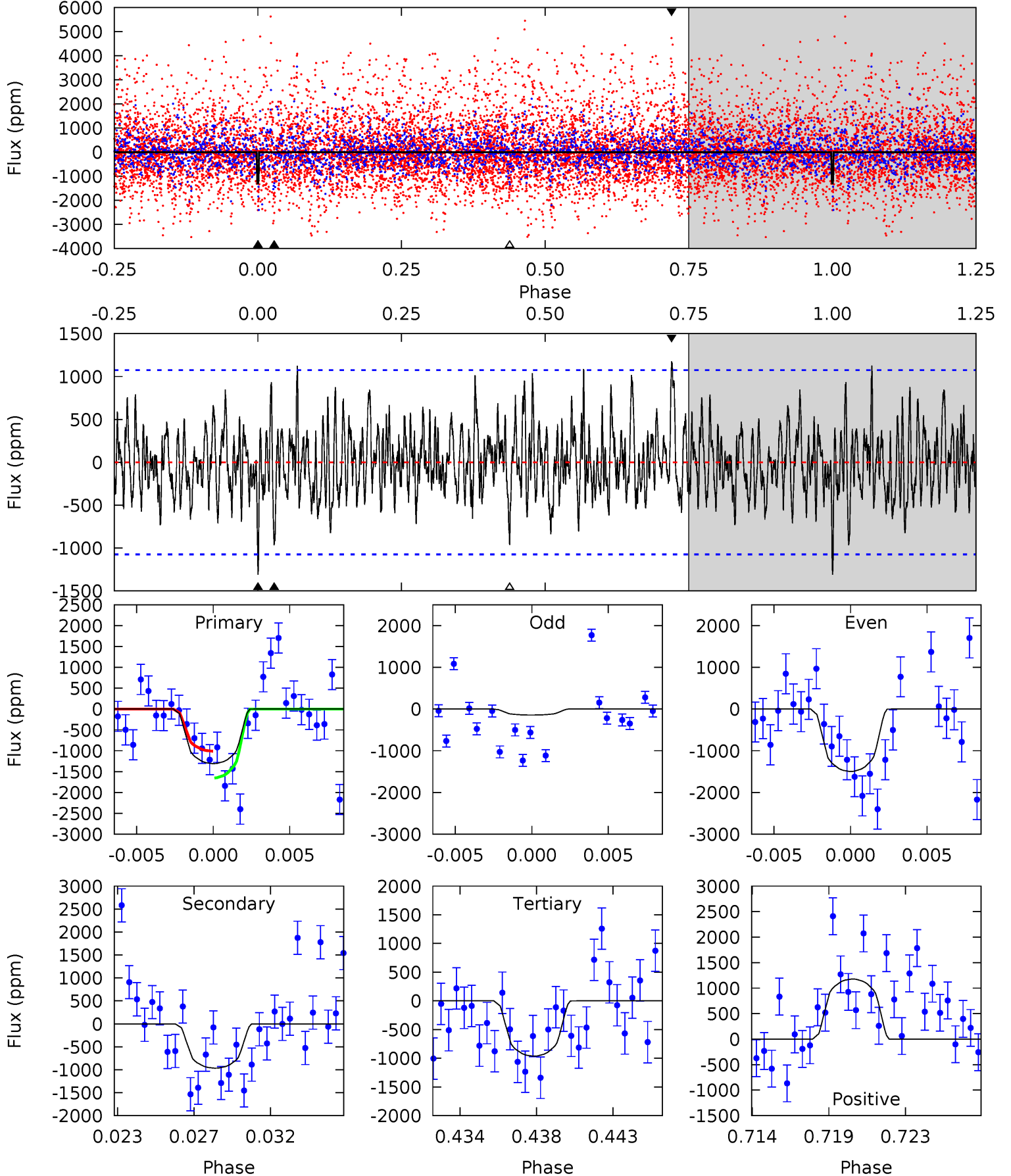
TCE 010991155-02 P= 31.656510 Days $T_0=154.683004$ (BKJD)



DV Model-Shift Uniqueness Test

010991155-02, $P = 31.647657$ Days, $E = 155.078970$ Days

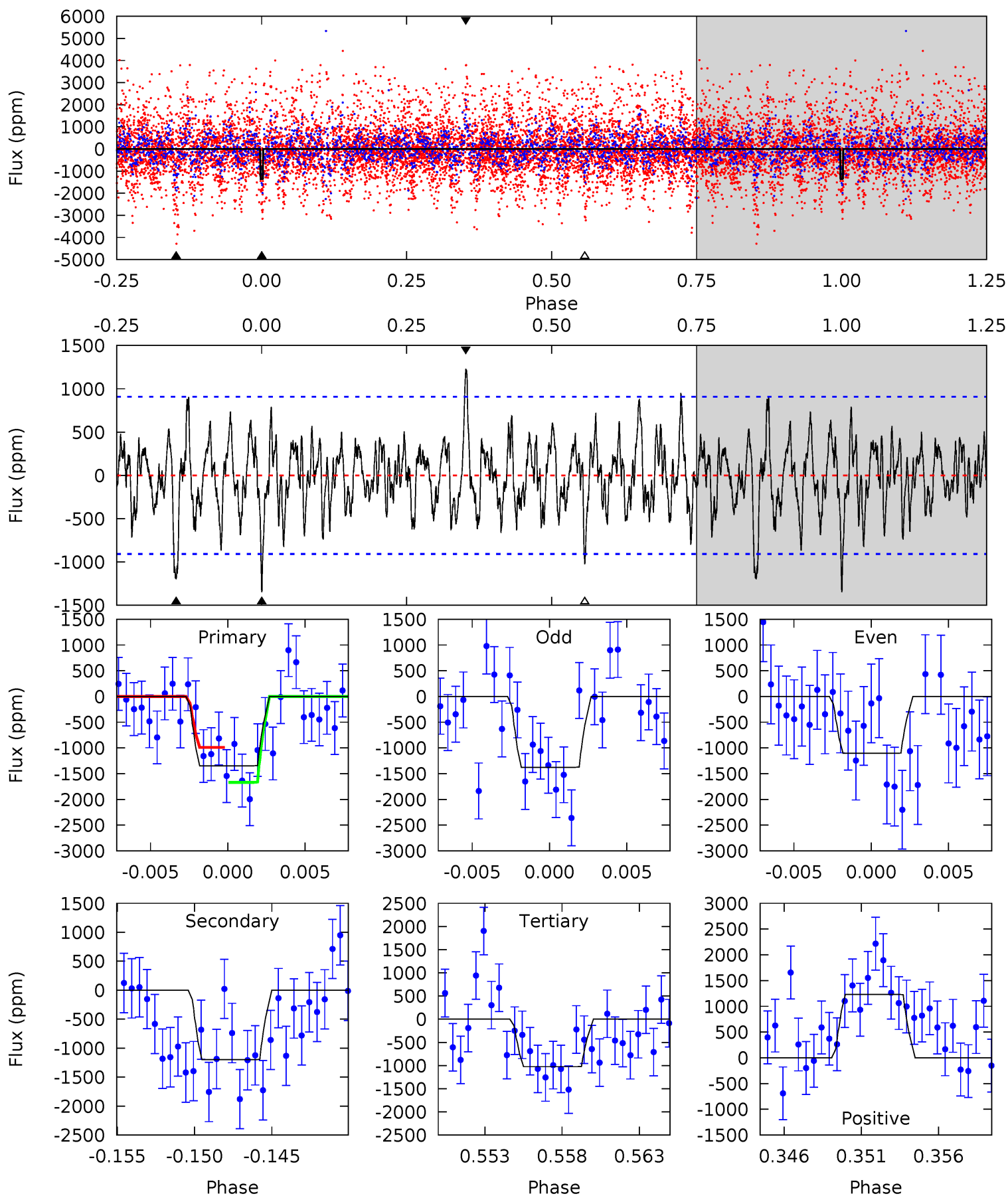
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.30	4.65	4.64	5.68	5.18	2.84	1.67	1.66	0.62	0.01	-1.02	3.11	0.44	0.47	1.57



Alt Model-Shift Uniqueness Test

010991155-02, P = 31.656510 Days, E = 154.683004 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.65	6.80	5.81	6.98	5.15	2.80	1.86	1.83	0.66	0.99	-0.18	0.76	0.85	0.48	1.95



Stellar Parameters For KIC 010991155

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3581^{+119}_{-97}	$4.716^{+0.064}_{-0.020}$	$0.560^{+0.050}_{-0.250}$	$0.529^{+0.028}_{-0.062}$	$0.530^{+0.035}_{-0.053}$	$5.055^{+1.618}_{-0.532}$
	+3%/-3%	+1%/-0%	+9%/-45%	+5%/-12%	+7%/-10%	+32%/-11%
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 010991155-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-966 ± 208	$4.87^{+5.28}_{-3.40}$	400^{+14}_{-13}	2662^{+1133}_{-411}	559^{+5203}_{-434}
Alt.	-1199 ± 176	$4.66^{+4.68}_{-3.15}$	400^{+14}_{-13}	2782^{+1139}_{-443}	759^{+6352}_{-571}

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

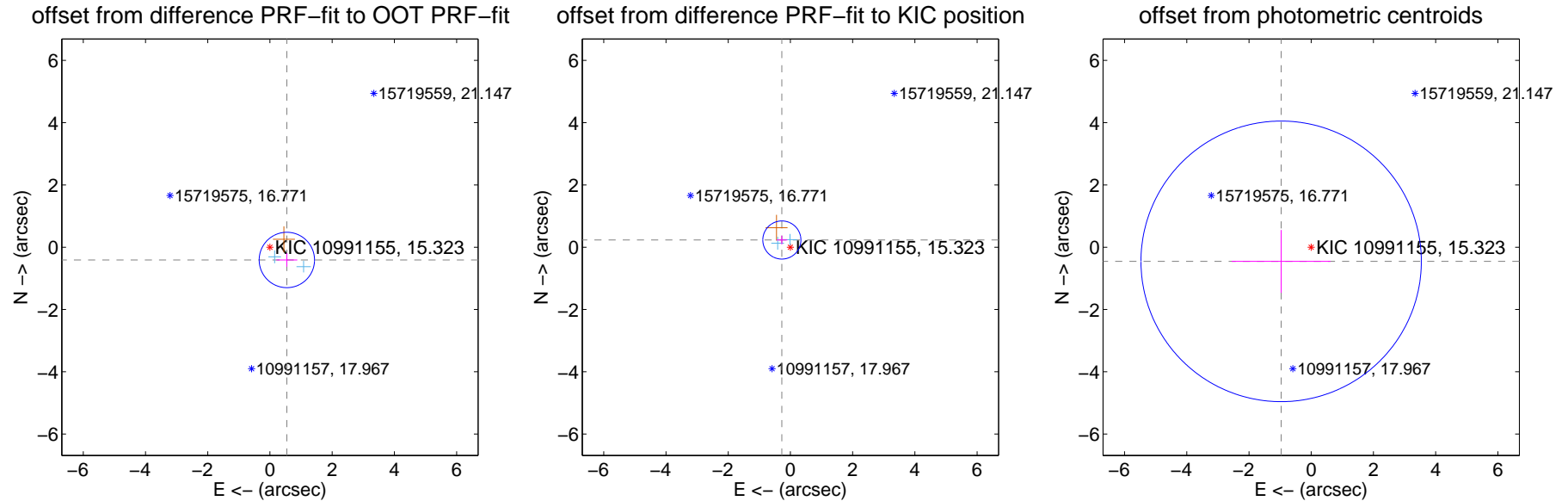
DV Centroid Data

Supplemental centroid analysis for 010991155-02. Kepler magnitude: 15.32. Transit SNR 4.59

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.680 ± 0.296	2.29	-0.543 ± 0.334	-0.410 ± 0.215
PRF-fit source offset from KIC position	0.360 ± 0.204	1.76	0.276 ± 0.172	0.231 ± 0.142
photometric centroid source offset	1.07 ± 1.50	0.71	0.97 ± 1.59	-0.45 ± 1.01



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.



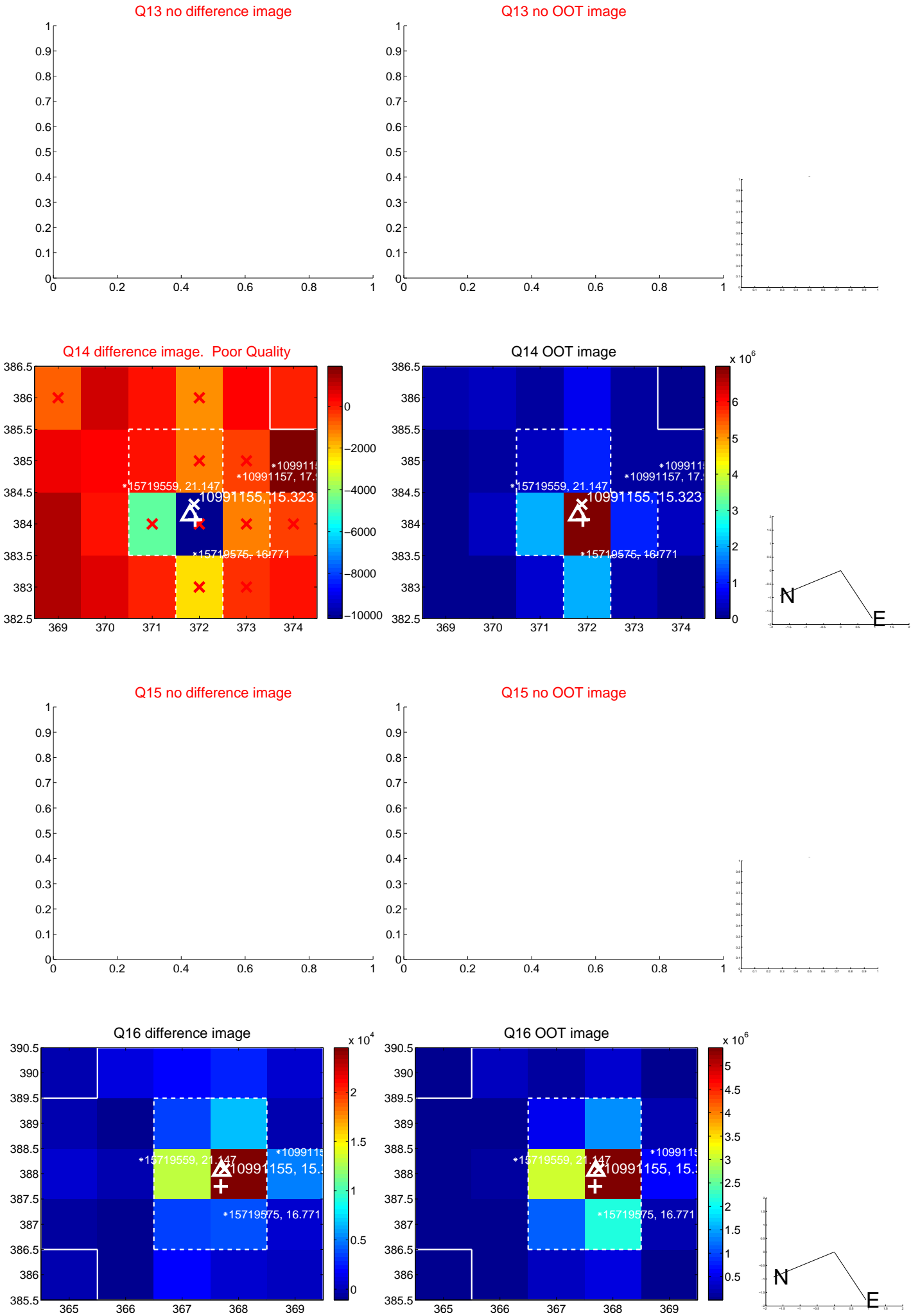
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



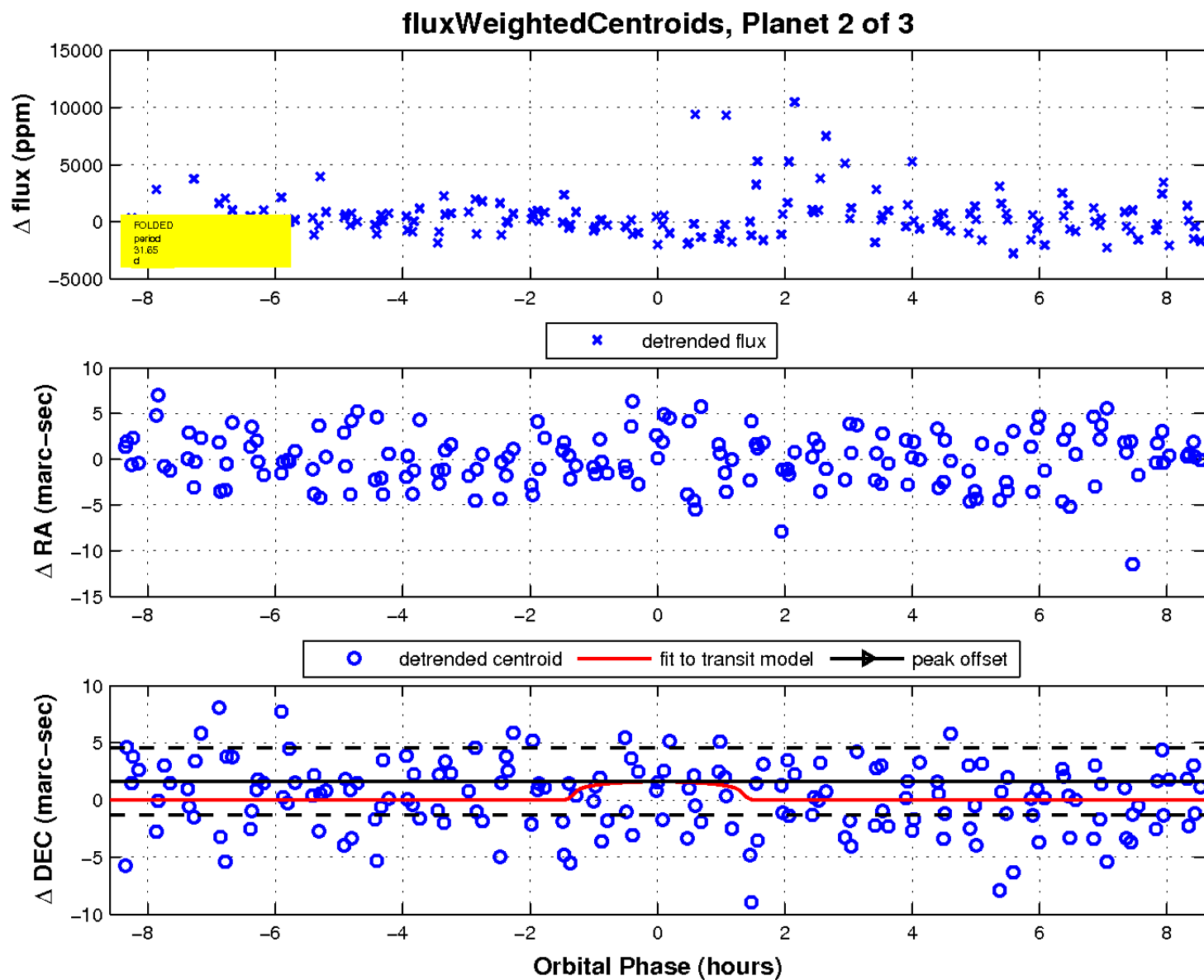
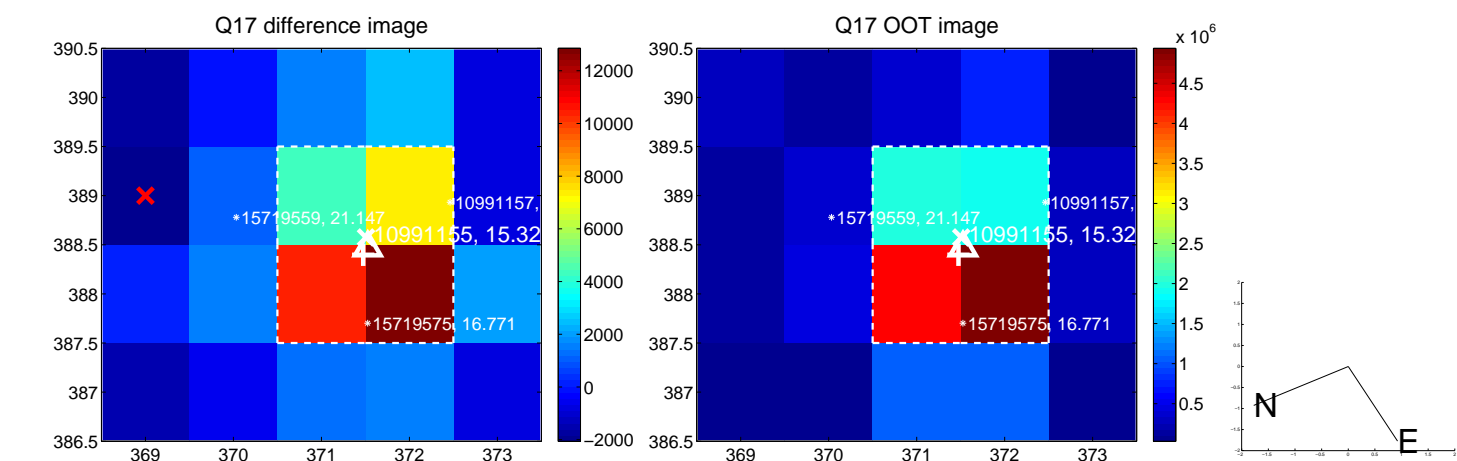
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

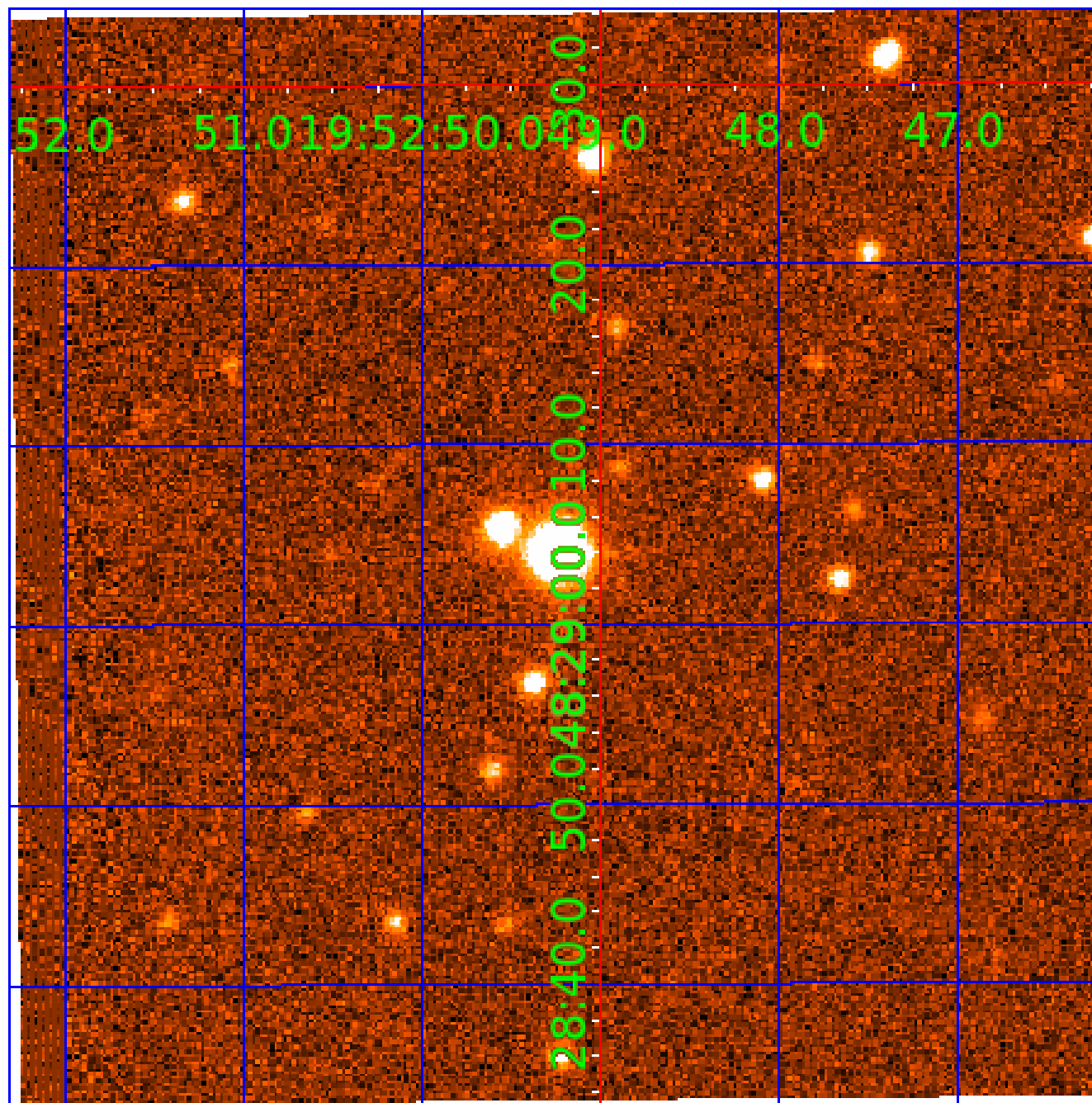


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010991155

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})
010991155-01	OBS	No	57.862164	164.814806	3350.5	2.543	12.1	8.2	0.53	3581	3.10	0.73
010991155-02	OBS	No	31.647657	155.078970	1647.1	2.871	12.8	4.6	0.53	3581	2.24	1.64
010991155-03	OBS	No	41.138635	170.732279	2083.6	1.501	10.1	7.2	0.53	3581	2.61	1.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010991155-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS
010991155-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
010991155-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS

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

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

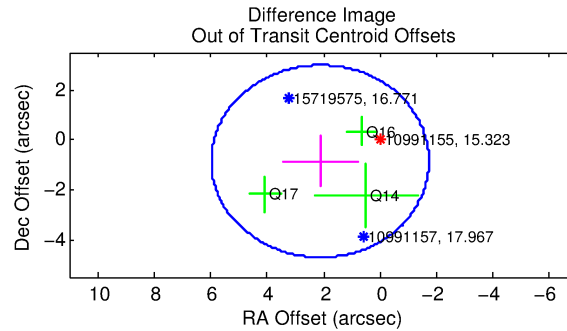
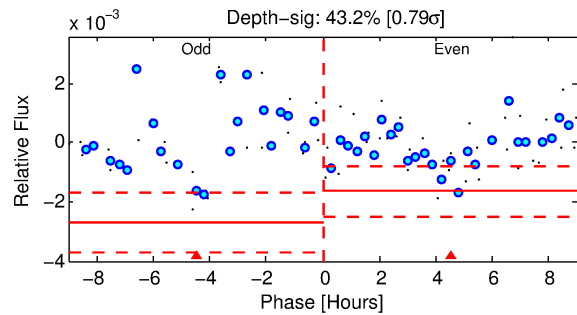
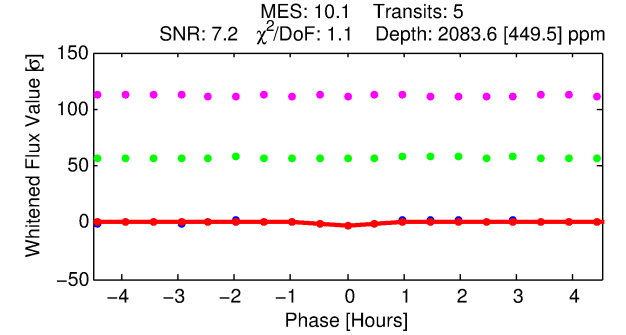
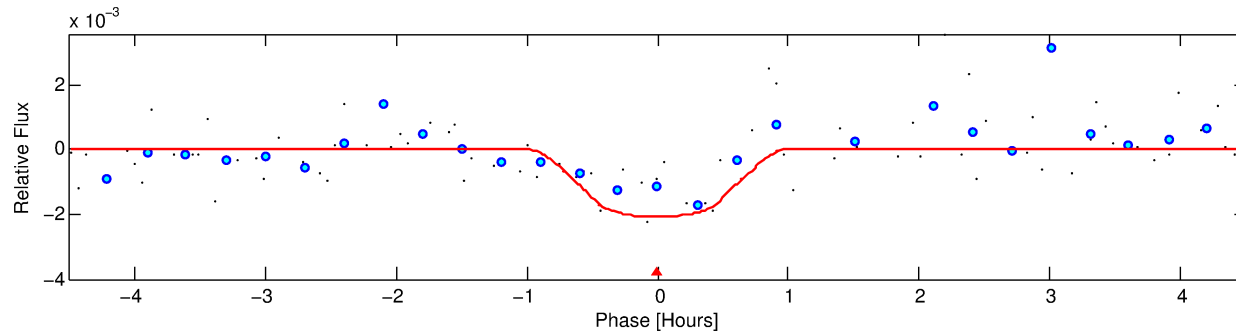
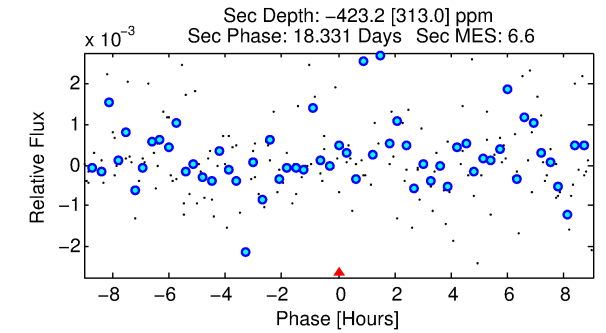
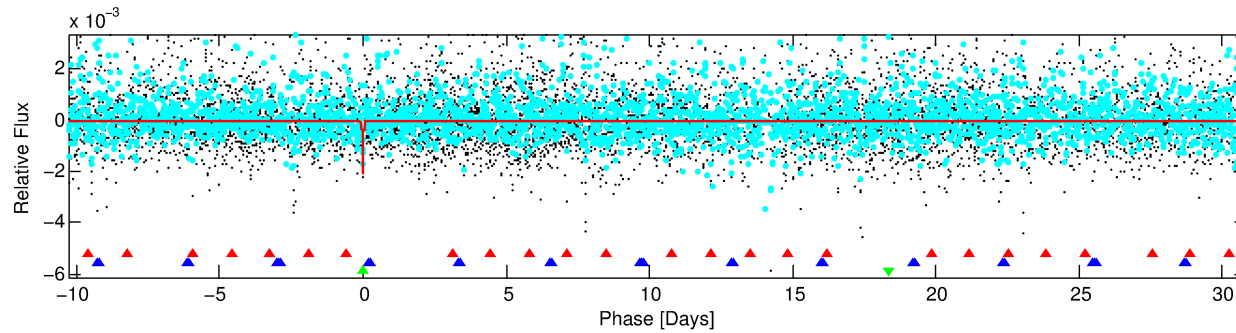
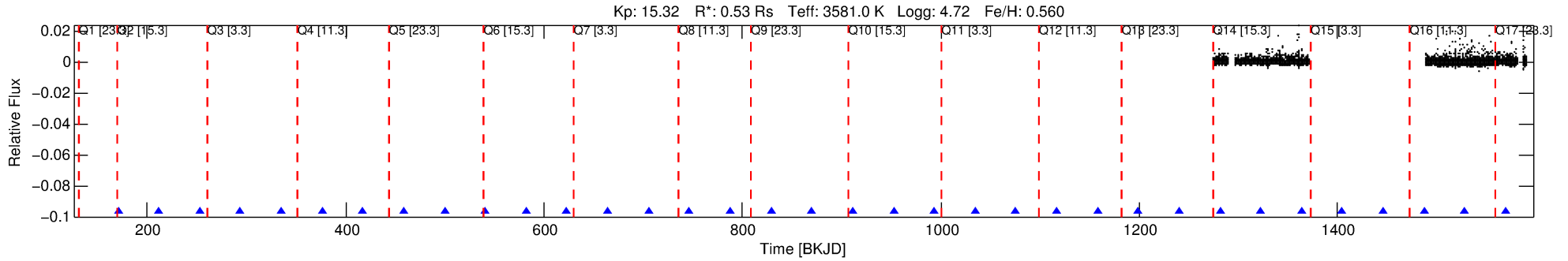
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010991155-03

No Significant Match Found

DV One-Page Summary

KIC: 10991155 Candidate: 3 of 3 Period: 41.139 d



DV Fit Results:

Period = 41.13863 [0.00125] d
 Epoch = 170.7323 [0.0393] BKJD
 Rp/R* = 0.0453 [0.1042]
 a/R* = 158.42 [1222.87]
 b = 0.72 [5.29]
 Seff = 1.16 [0.21]
 Teq = 264 [12] K
 Rp = 2.61 [6.03] Re
 a = 0.1889 [0.0174] AU
 Ag = N/A
 Teffp = N/A

DV Diagnostic Results:

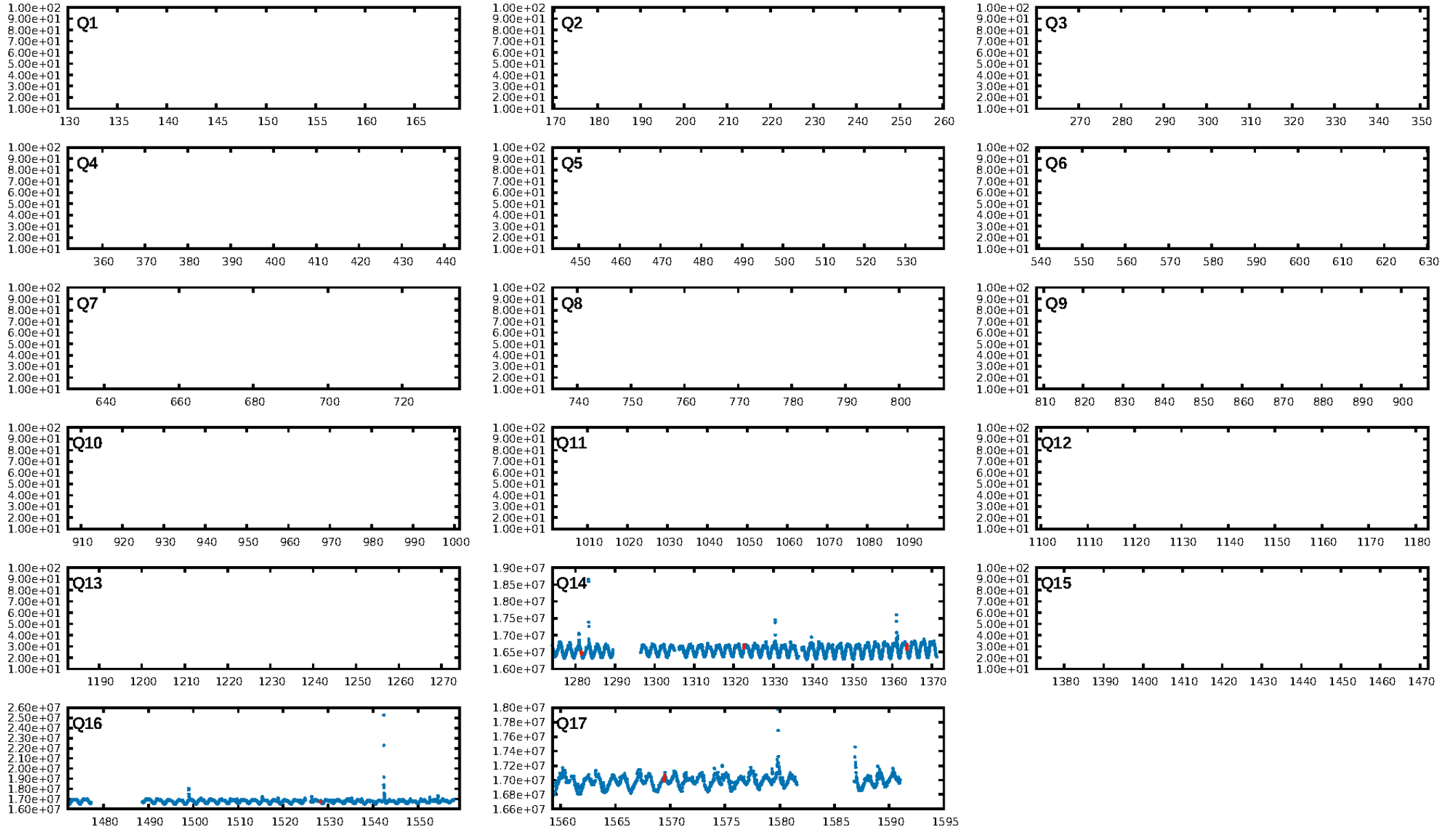
ShortPeriod-sig: 100.0% [70.31σ]
 LongPeriod-sig: 100.0% [135.93σ]
 ModelChiSquare2-sig: 27.3%
 ModelChiSquareGof-sig: 77.7%
 Bootstrap-pfa: 9.54e-14
 RollingBand-fgt: 1.00 [4/4]
 GhostDiagnostic-chr: 1.137

Centroid-sig: N/A
 Centroid-so: 0.535 arcsec [0.37σ]
 OotOffset-rm: 2.289 arcsec [1.78σ]
 KicOffset-rm: 2.933 arcsec [2.51σ]
 OotOffset-st: 1/0/1/1 [3]
 KicOffset-st: 1/0/1/1 [3]
 DiffImageQuality-fgm: 0.33 [1/3]
 DiffImageOverlap-fno: 1.00 [3/3]

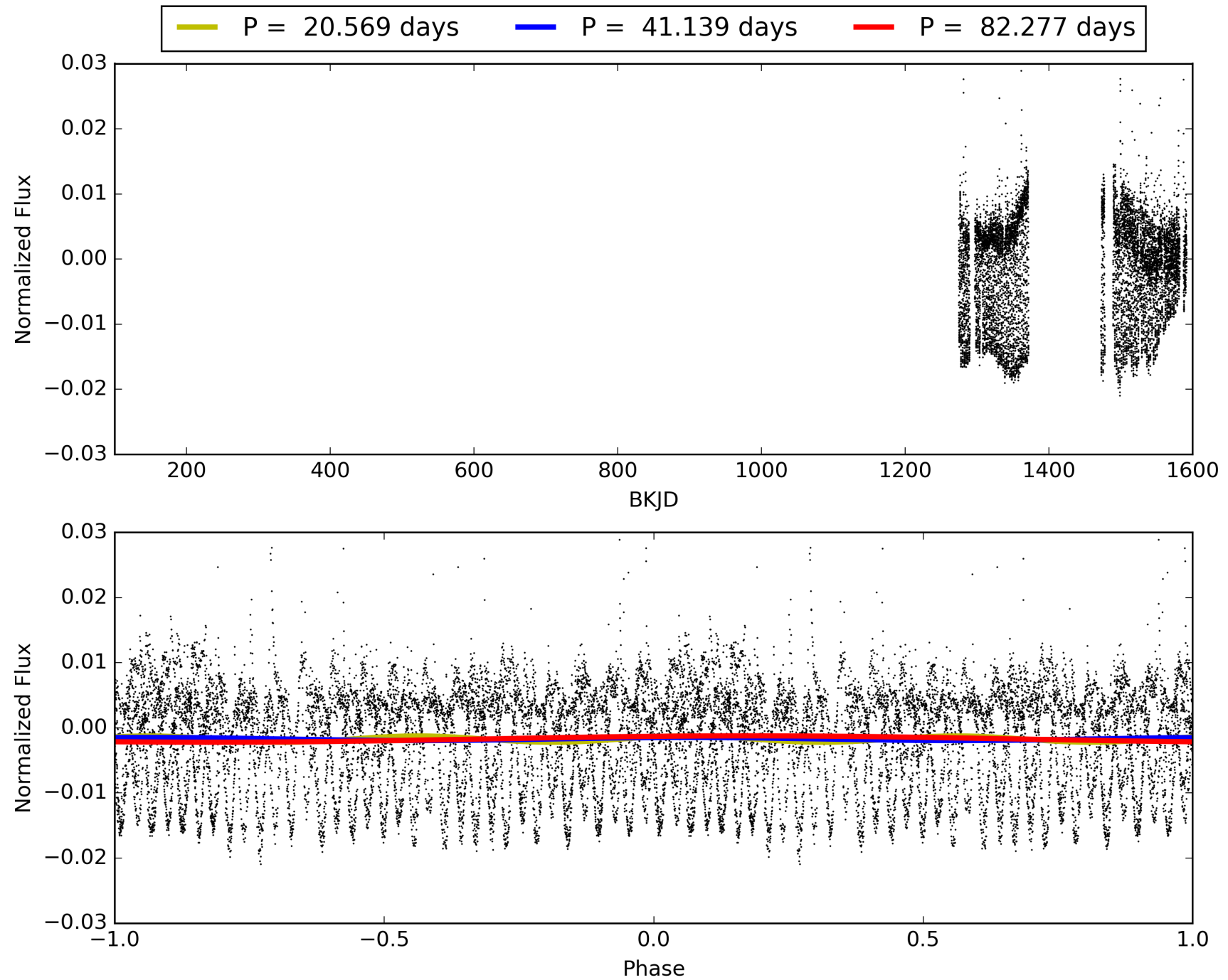
Software Revision: <svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958> -- Date Generated: 31-Jan-2016 11:28:53 Z

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

TCE 010991155-03, PDC Light Curves

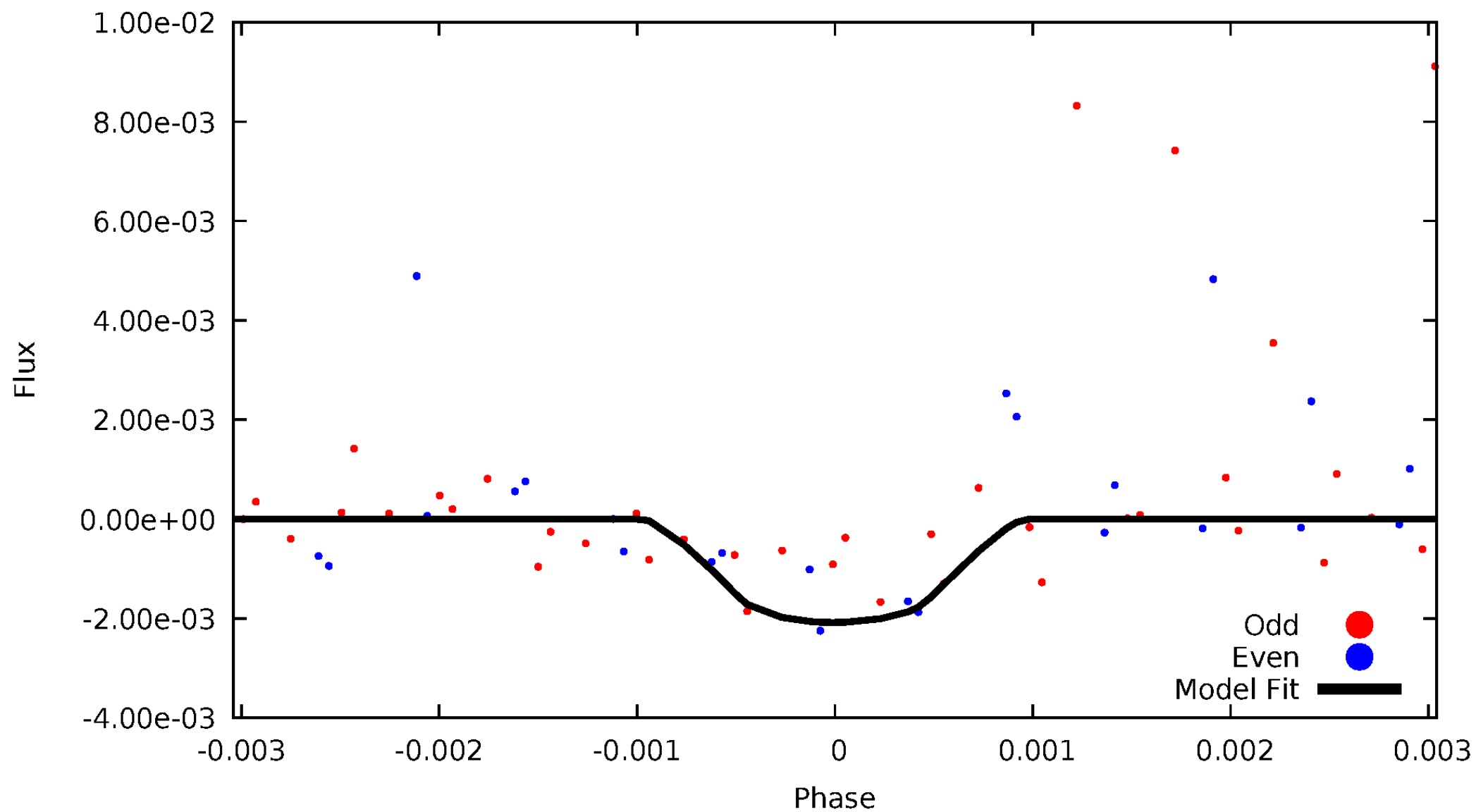


TCE 010991155-03



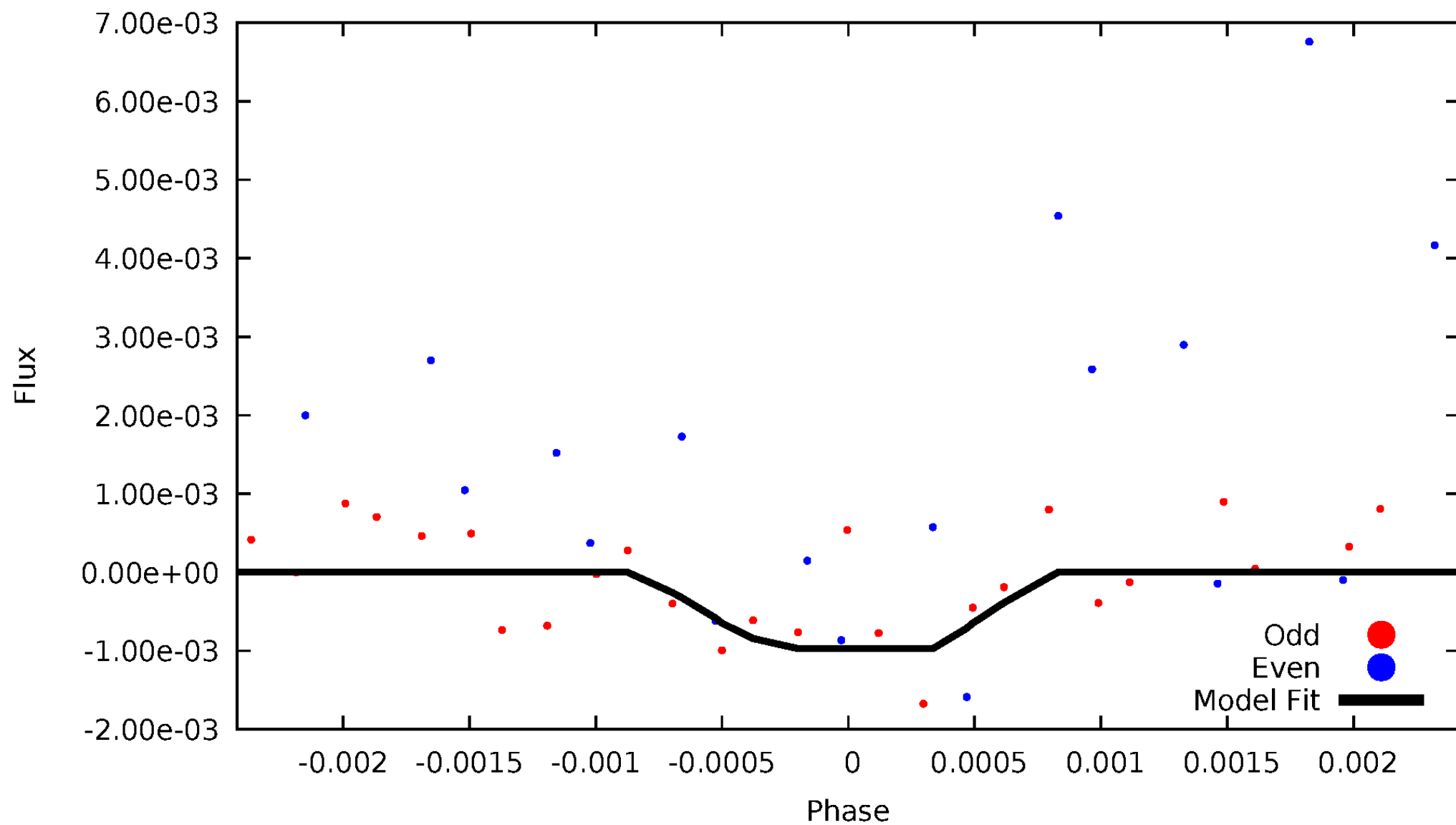
DV Odd/Even

TCE 010991155-03



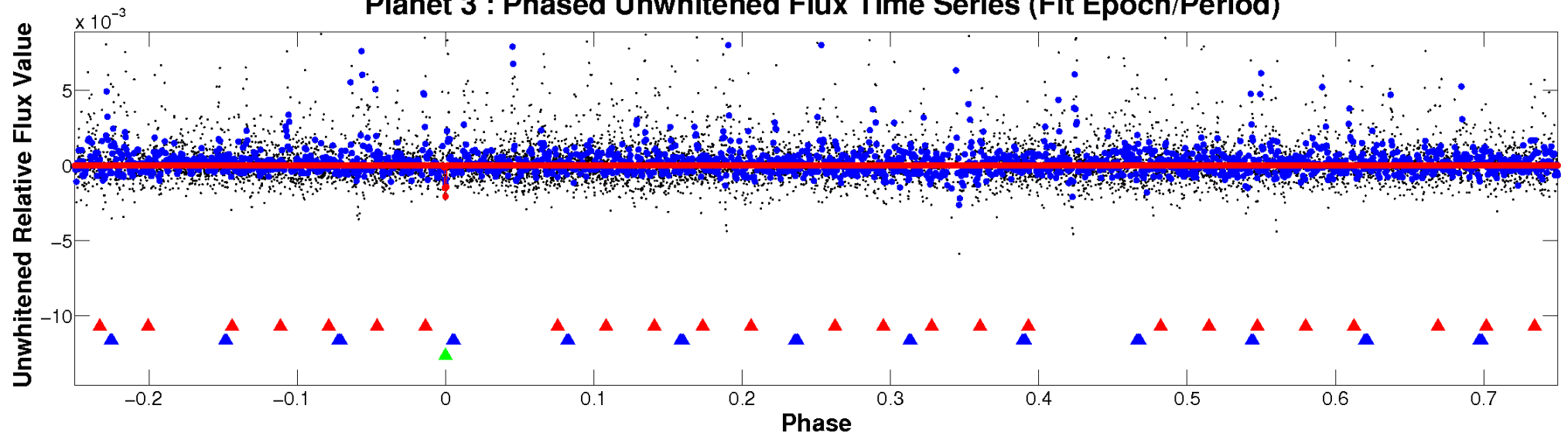
ALT Odd/Even

TCE 010991155-03

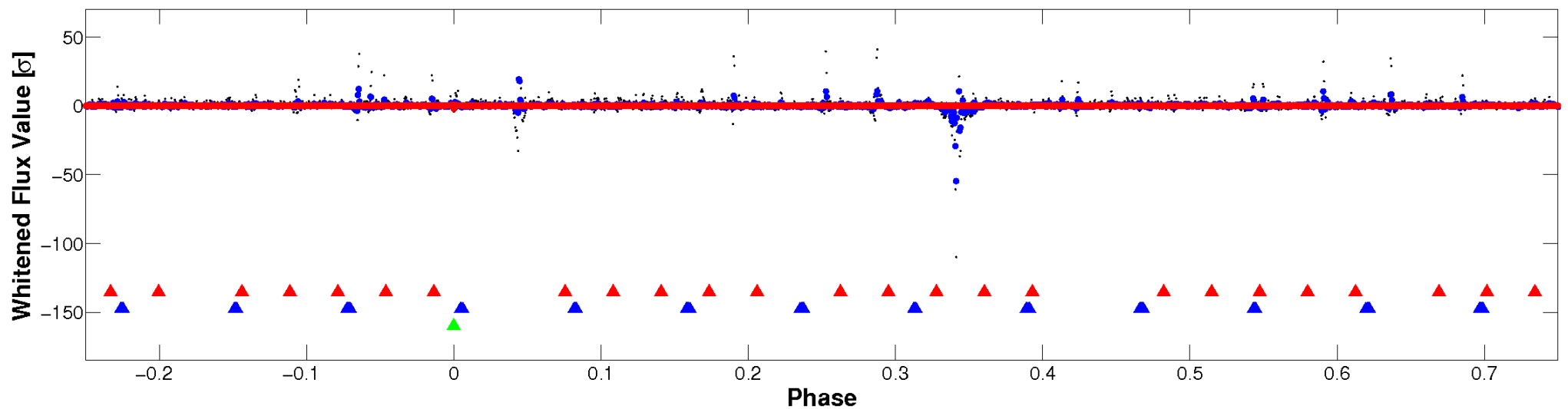


Non-Whitened Vs. Whitened Light Curve

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

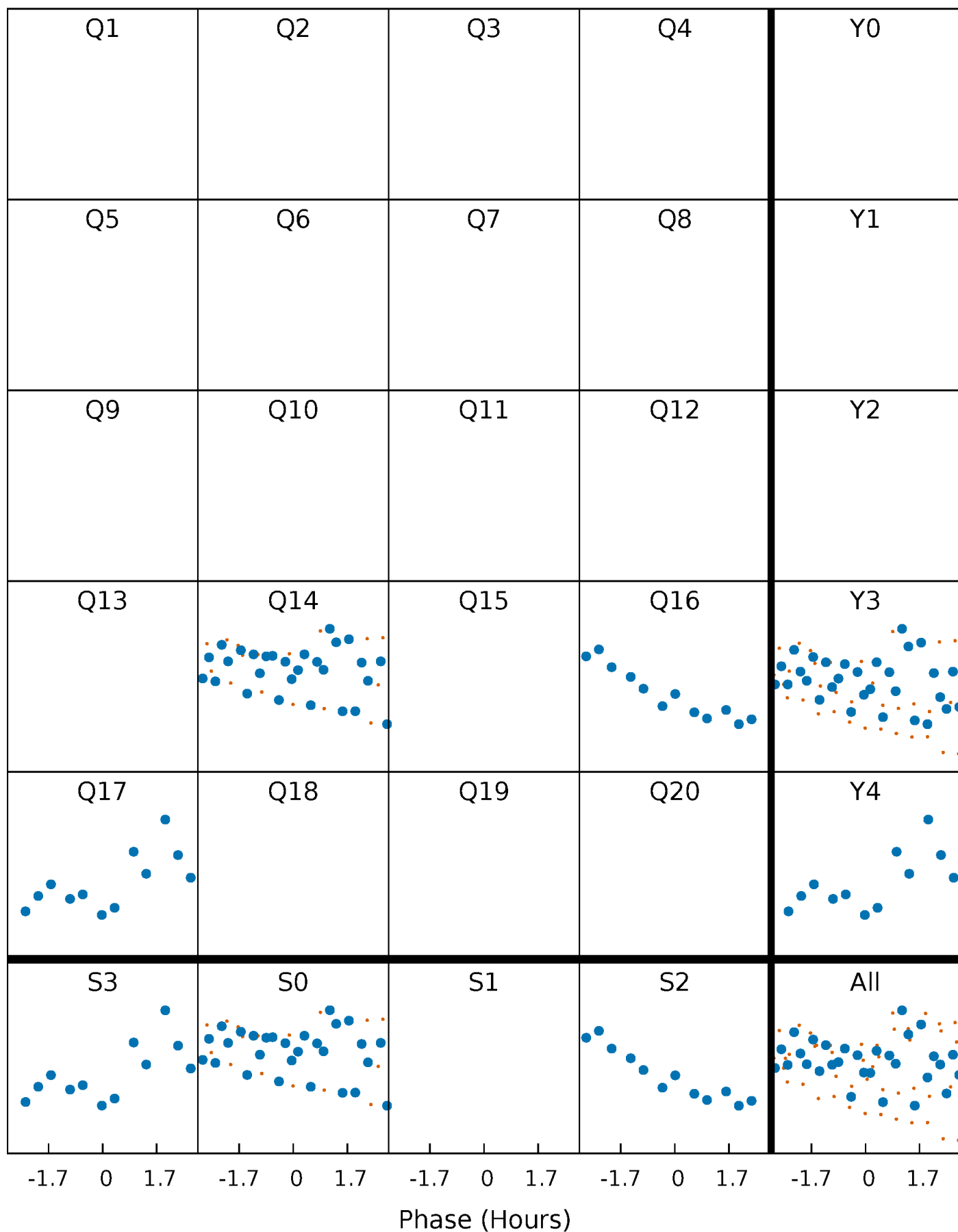


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



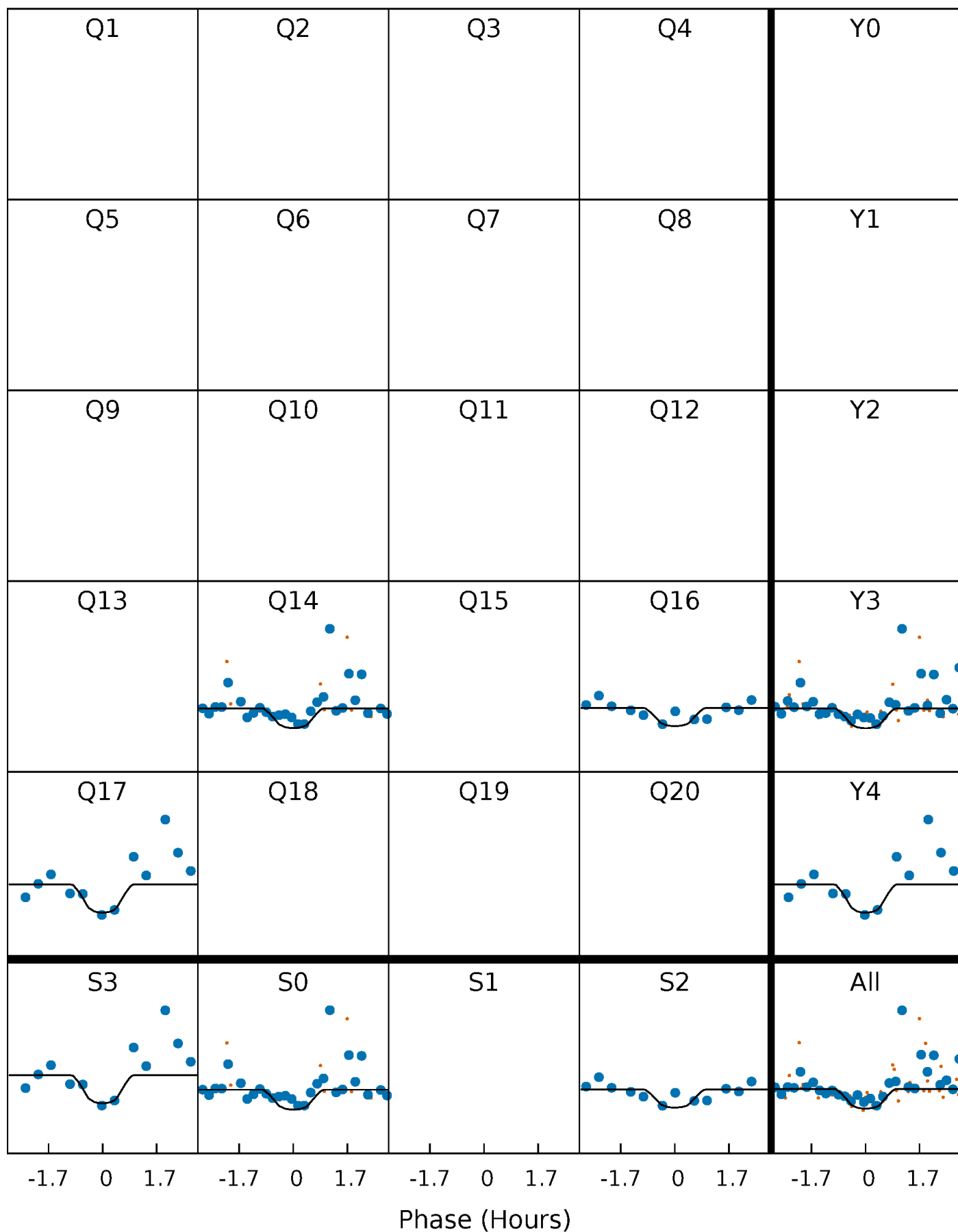
PDC Quarter-Phased Transit Curves

TCE 010991155-03 P= 41.138635 Days $T_0=170.732279$ (BKJD)



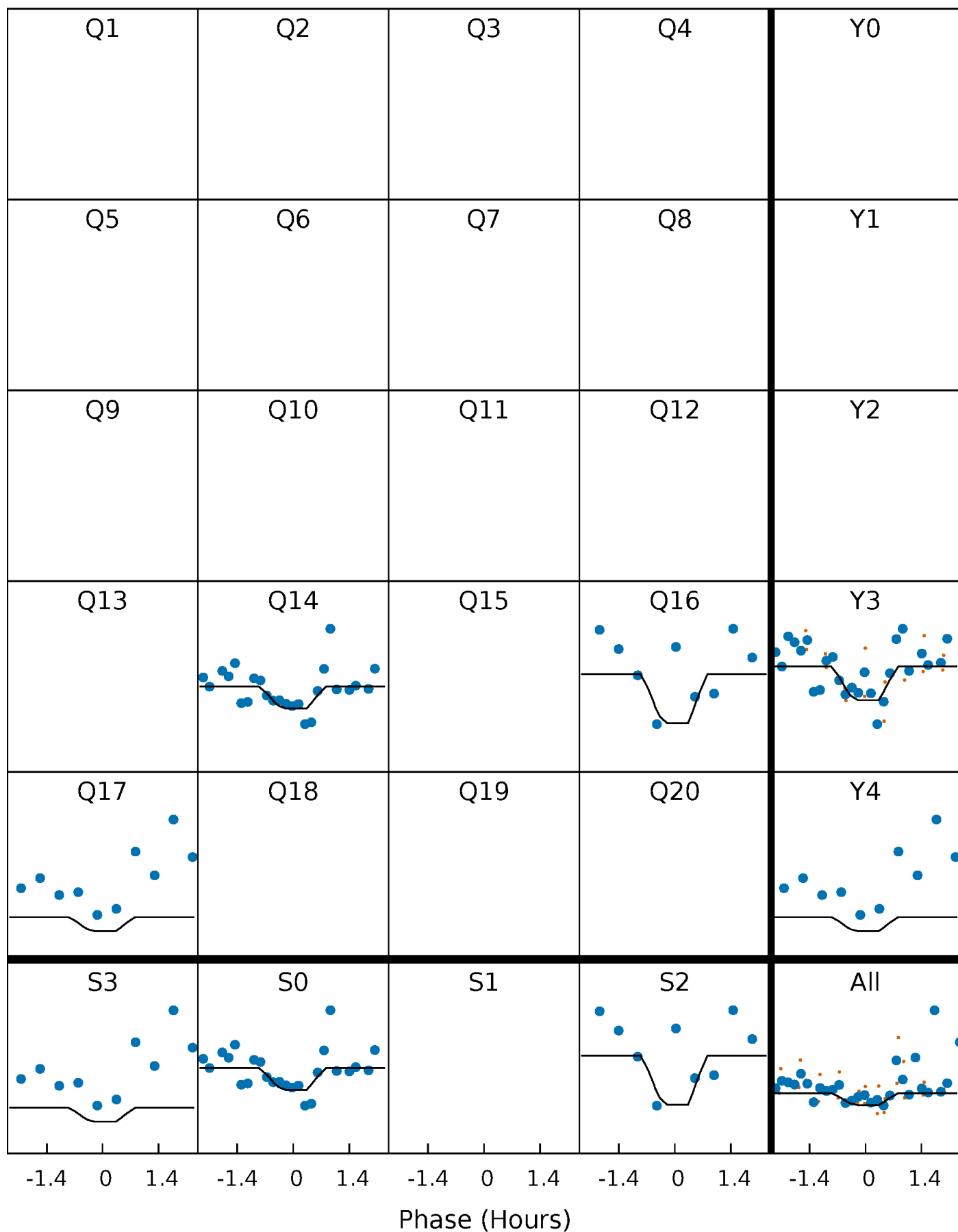
DV Quarter-Phased Transit Curves

TCE 010991155-03 P= 41.138635 Days $T_0=170.732279$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

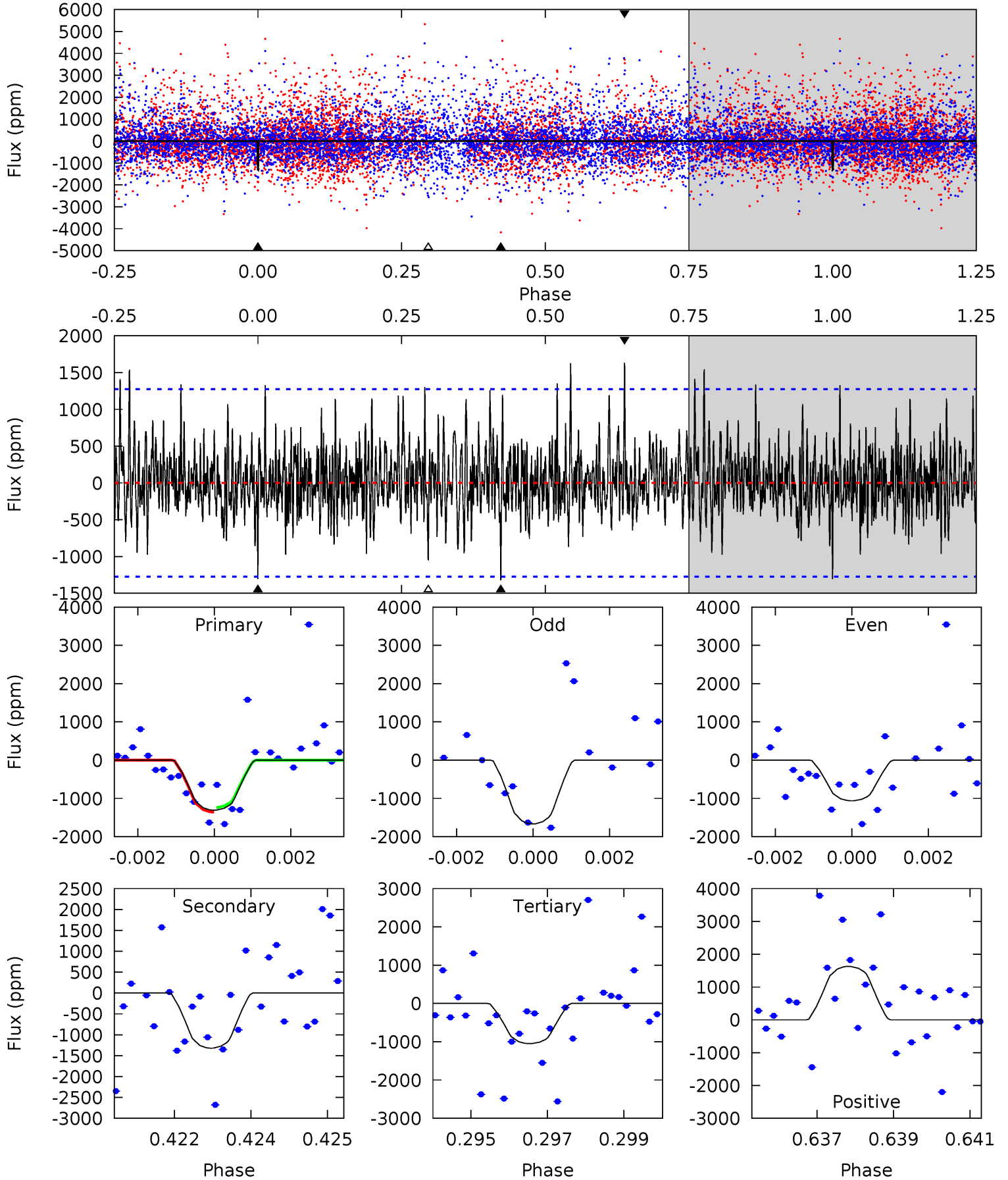
TCE 010991155-03 P= 41.139914 Days $T_0=170.692377$ (BKJD)



DV Model-Shift Uniqueness Test

010991155-03, P = 41.138635 Days, E = 170.732279 Days

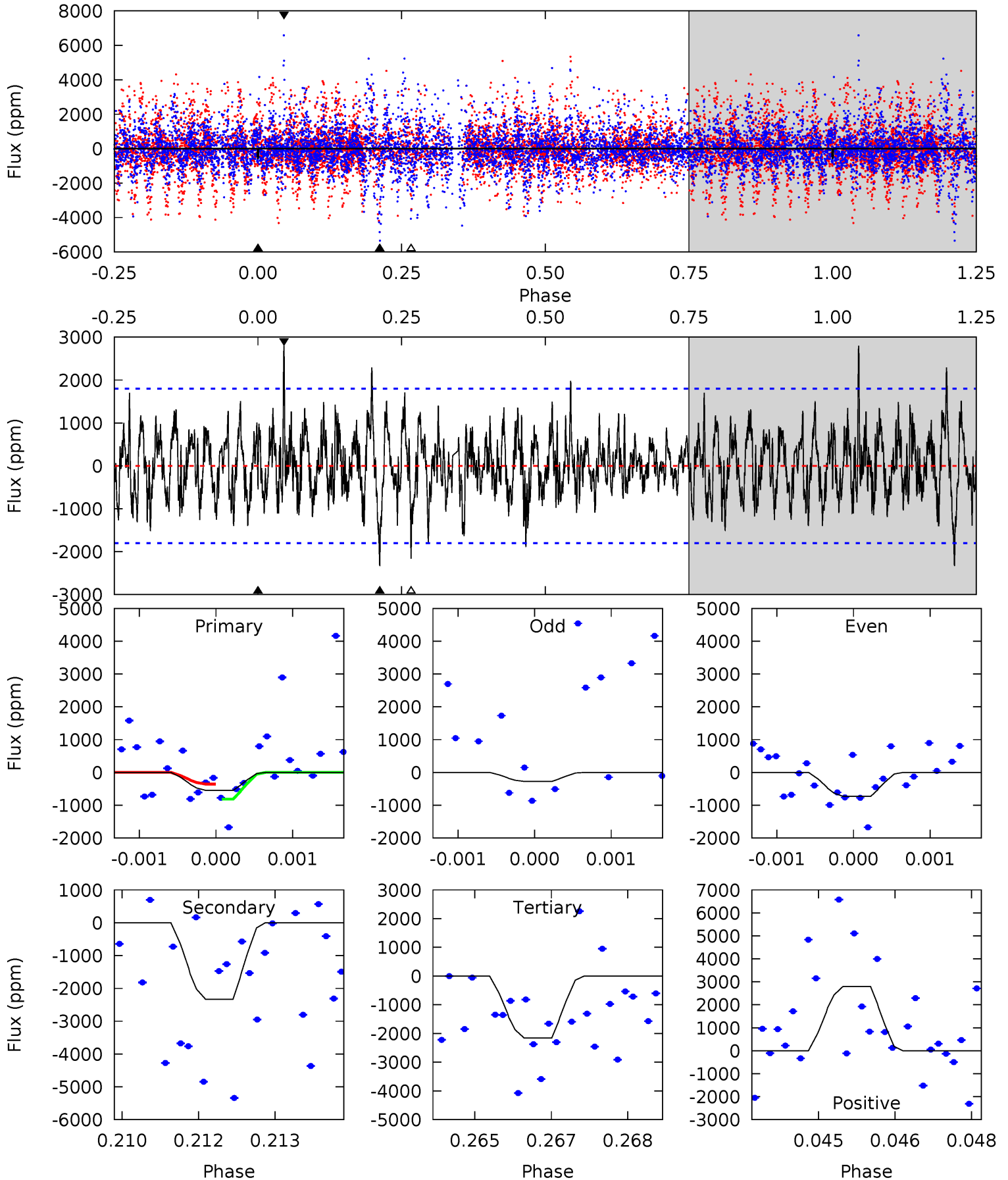
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.48	5.54	4.40	6.83	5.34	3.12	1.54	1.08	-1.36	1.14	-1.29	0.36	0.99	0.55	0.24



Alt Model-Shift Uniqueness Test

010991155-03, P = 41.139914 Days, E = 170.692377 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.64	6.97	6.46	8.37	5.38	3.18	1.86	-4.83	-6.73	0.51	-1.40	0.61	0.77	0.55	0.69



Stellar Parameters For KIC 010991155

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3581^{+119}_{-97}	$4.716^{+0.064}_{-0.020}$	$0.560^{+0.050}_{-0.250}$	$0.529^{+0.028}_{-0.062}$	$0.530^{+0.035}_{-0.053}$	$5.055^{+1.618}_{-0.532}$
	+3%/-3%	+1%/-0%	+9%/-45%	+5%/-12%	+7%/-10%	+32%/-11%
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 010991155-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1322 ± 239	$4.94^{+4.99}_{-3.26}$	366^{+13}_{-13}	2776^{+1111}_{-449}	1081^{+8219}_{-829}
Alt.	-2332 ± 334	$4.62^{+4.97}_{-3.12}$	367^{+13}_{-12}	3065^{+1359}_{-562}	2103^{+18617}_{-1608}

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

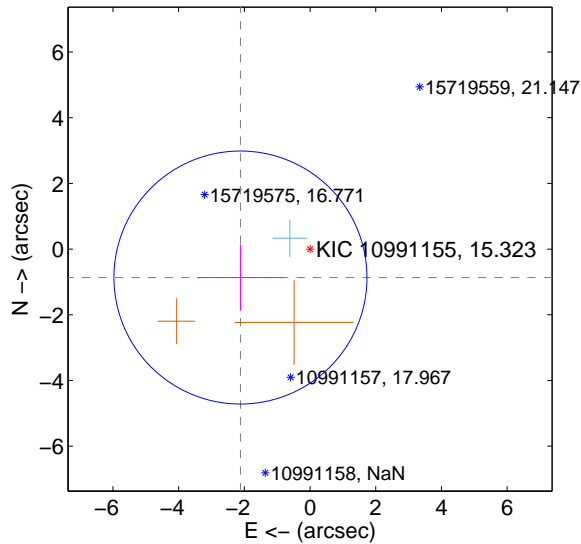
Supplemental centroid analysis for 010991155-03. Kepler magnitude: 15.32. Transit SNR 7.23

There are 1 quarters with good PRF difference image offsets

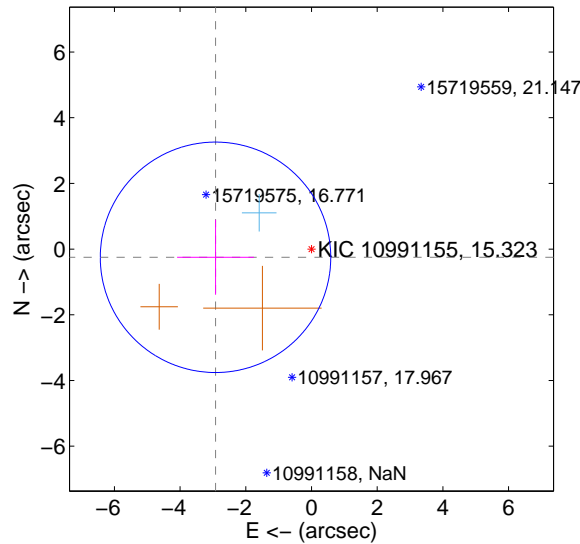
The direct PRF centroid is offset from the target star catalog position by about 0.72 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.289 ± 1.284	1.78	2.119 ± 1.324	-0.865 ± 1.008
PRF-fit source offset from KIC position	2.933 ± 1.169	2.51	2.922 ± 1.170	-0.250 ± 1.140
photometric centroid source offset	0.54 ± 1.45	0.37	0.37 ± 1.72	-0.39 ± 1.14

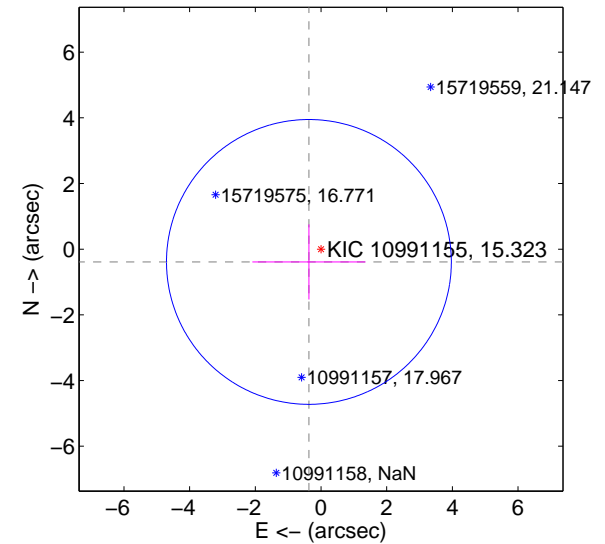
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

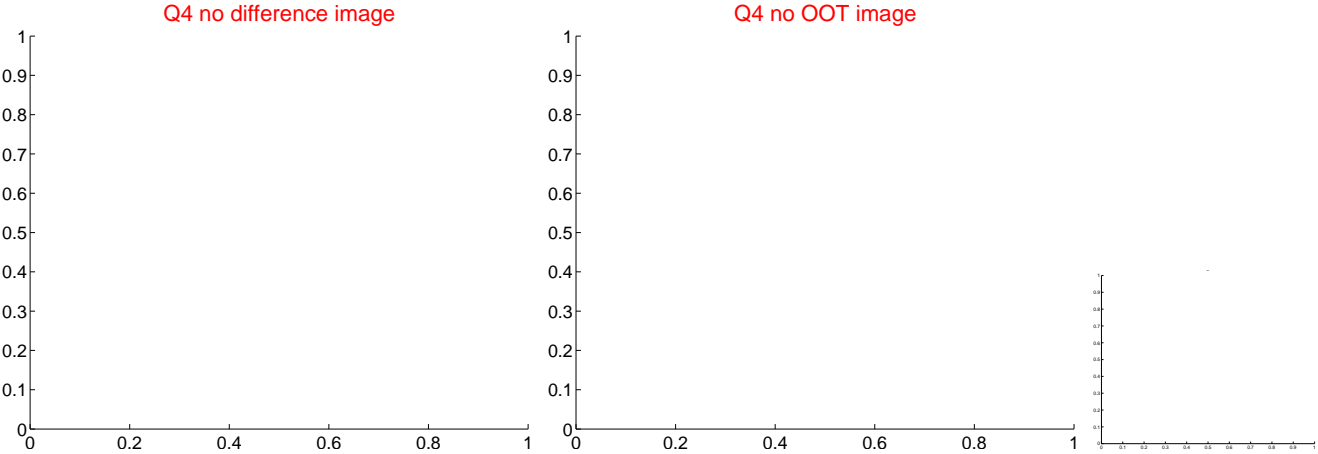
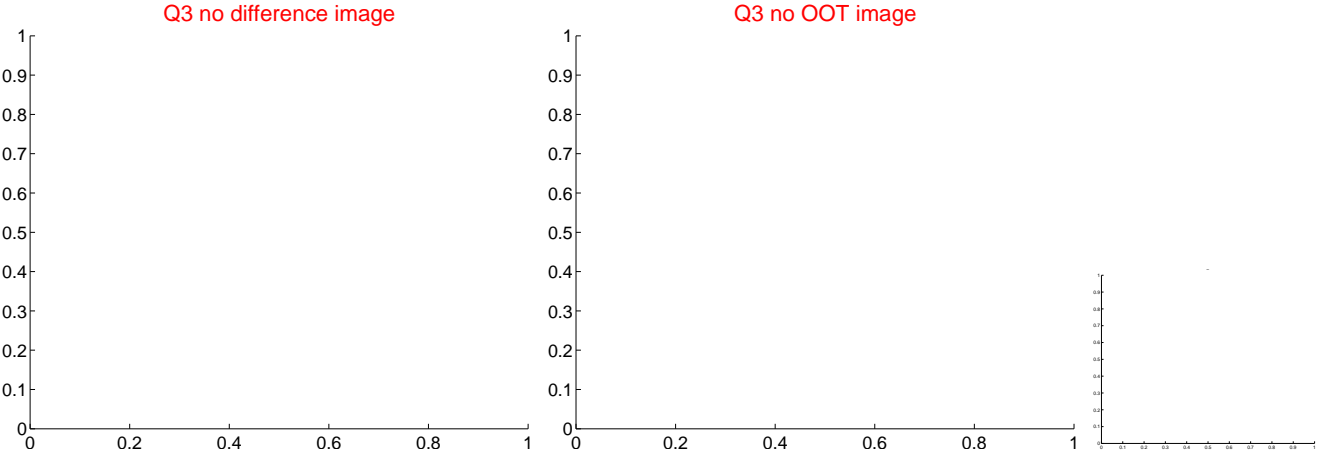
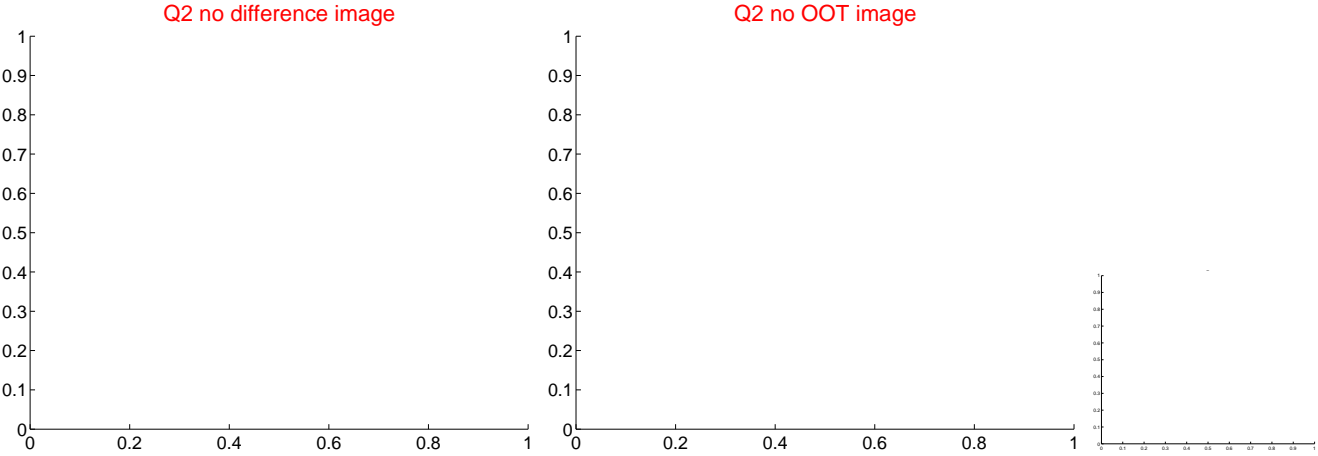
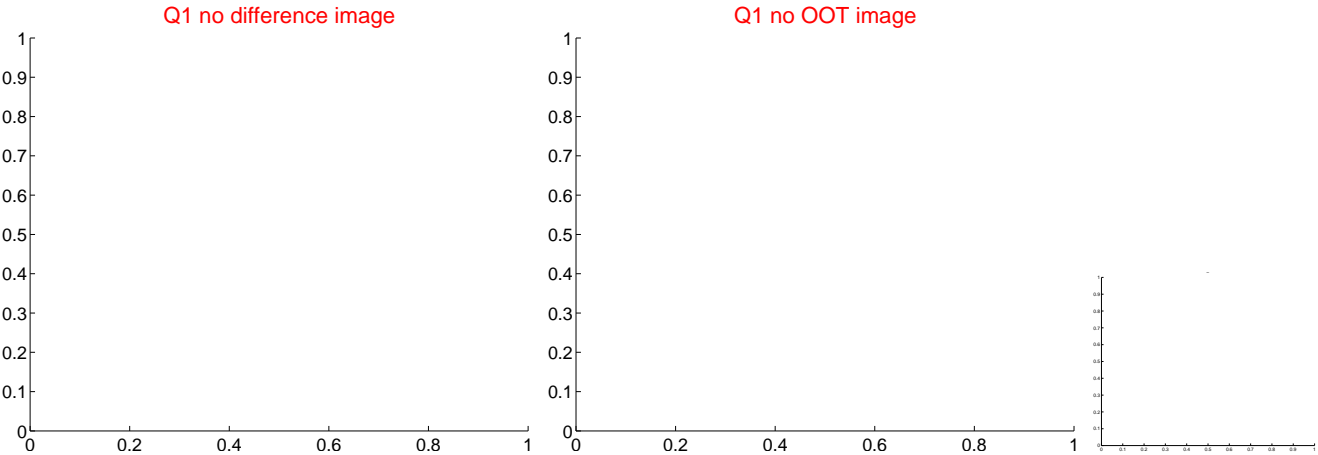


offset from photometric centroids



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.



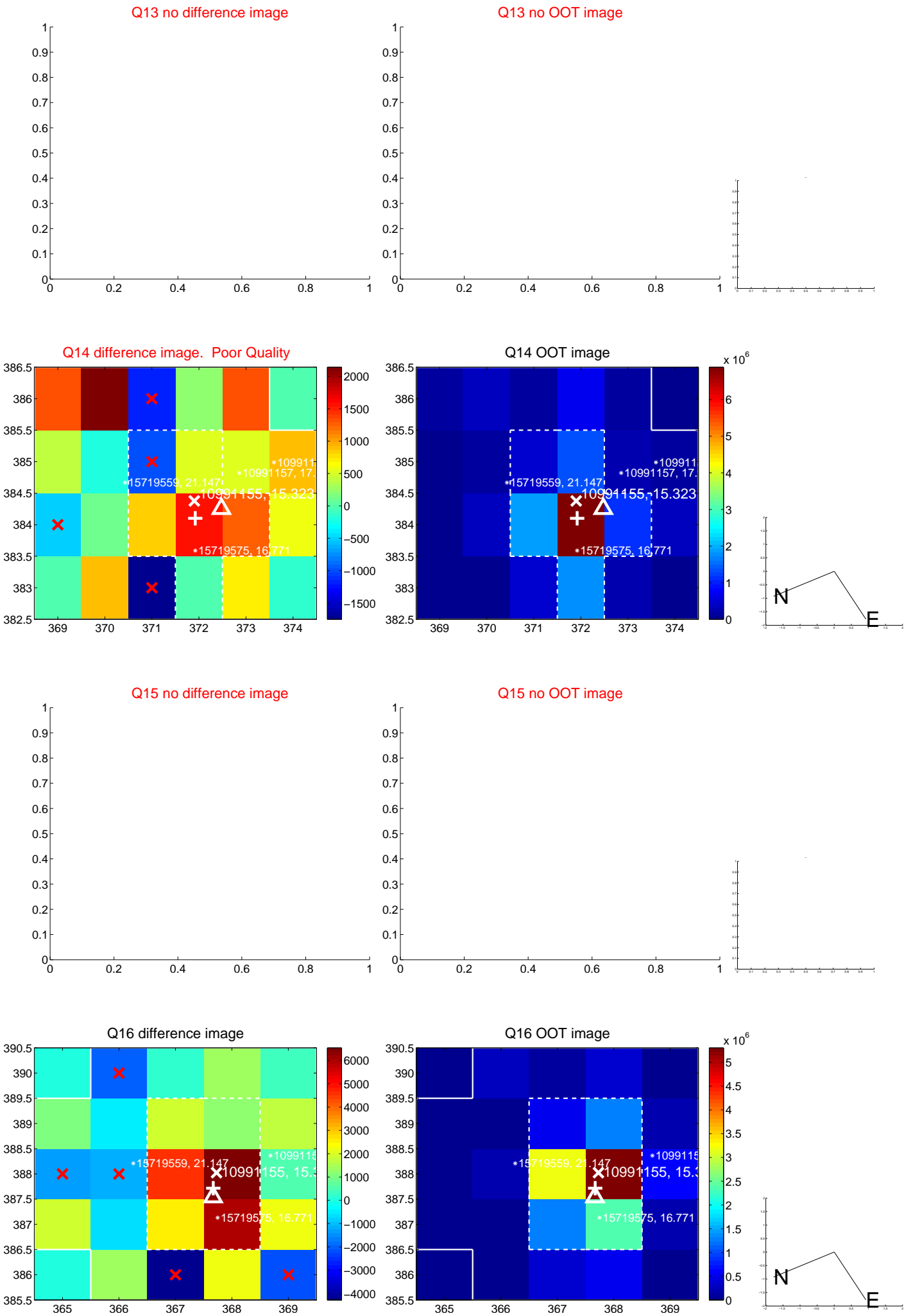
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



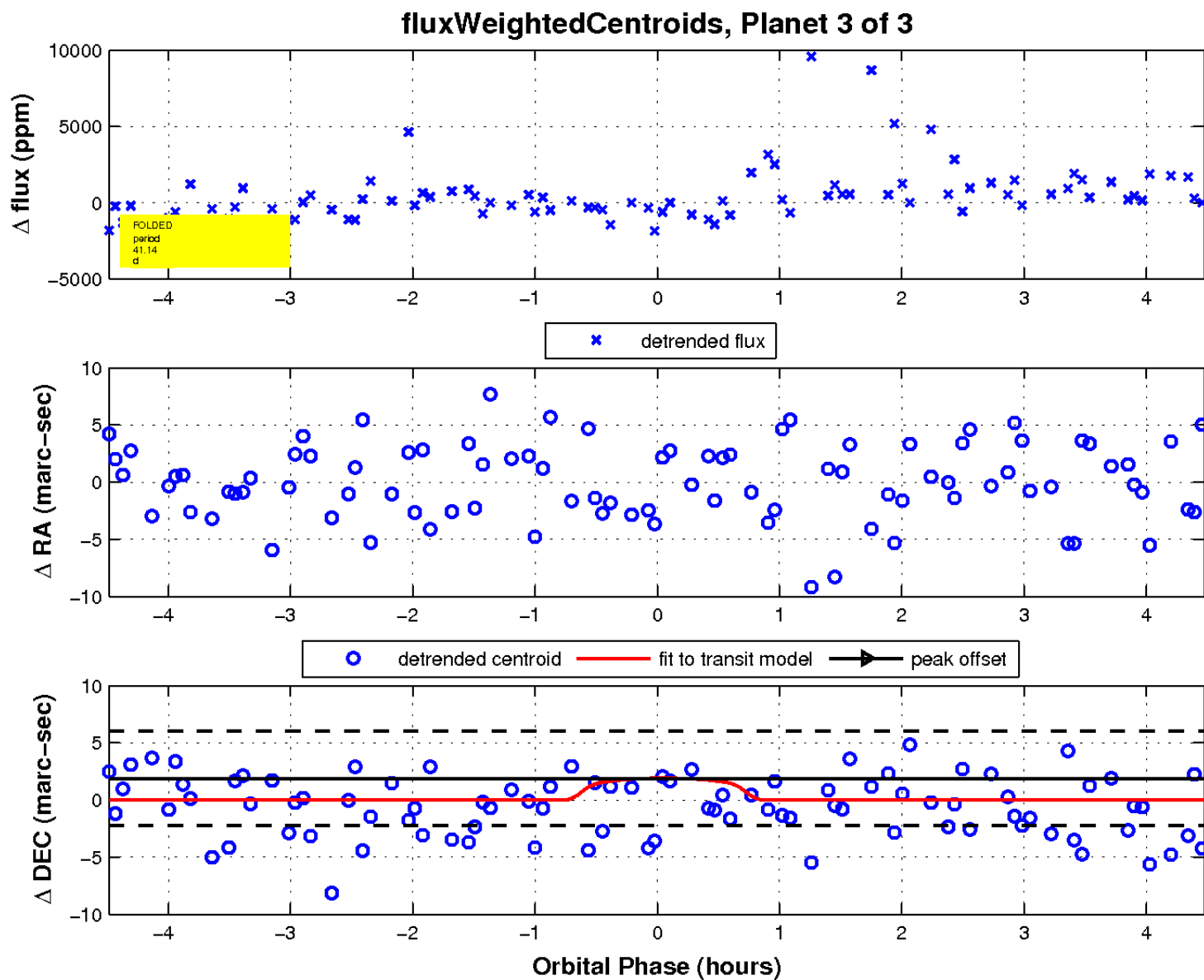
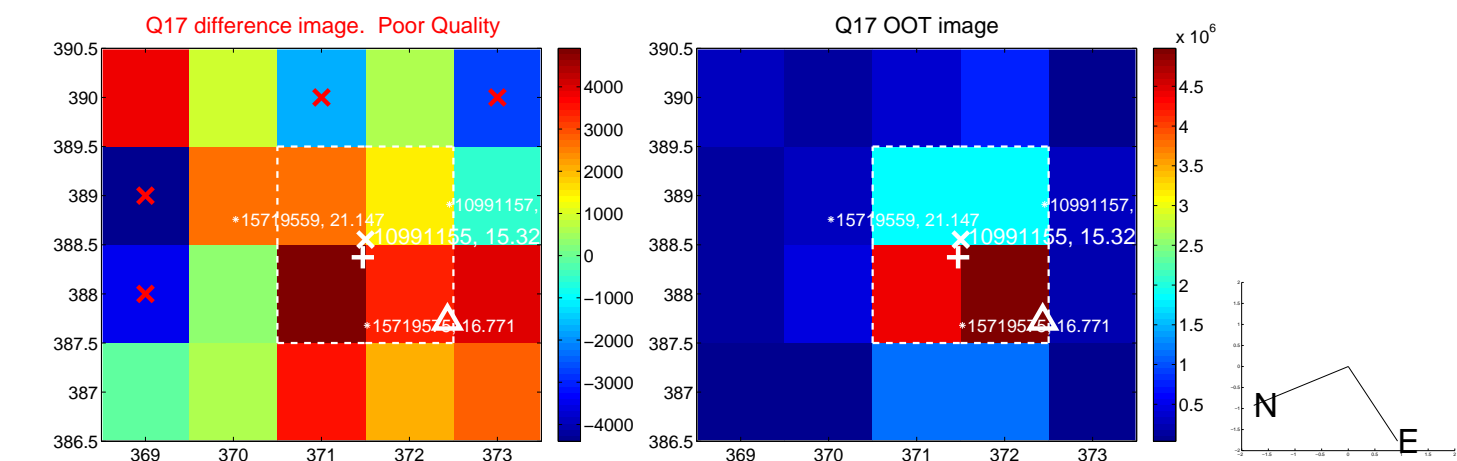
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

