

KIC 003958301

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})
003958301-01	OBS	No	387.564639	305.027438	2030.0	11.072	16.2	17.0	1.02	6289	4.62	1.28
003958301-02	OBS	3381.02	387.565565	269.803123	1521.0	10.893	13.7	13.6	1.02	6289	4.02	1.28
003958301-03	OBS	No	387.563584	234.522554	1400.8	12.567	12.3	11.4	1.02	6289	4.78	1.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003958301-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-03	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

Ephemeris Match Information For 003958301-01

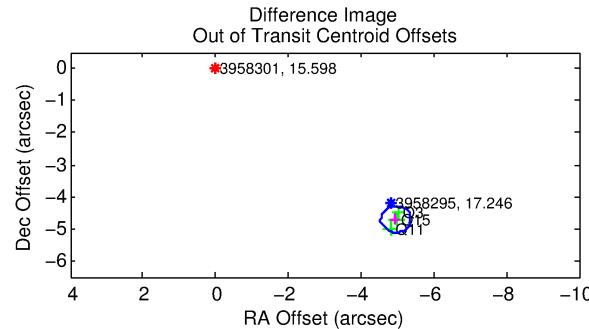
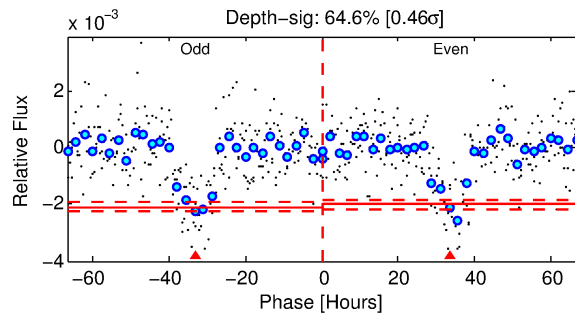
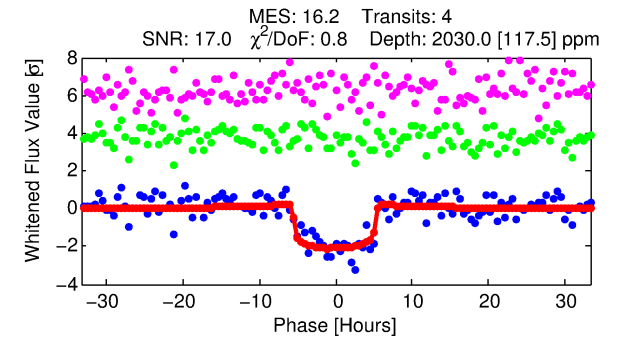
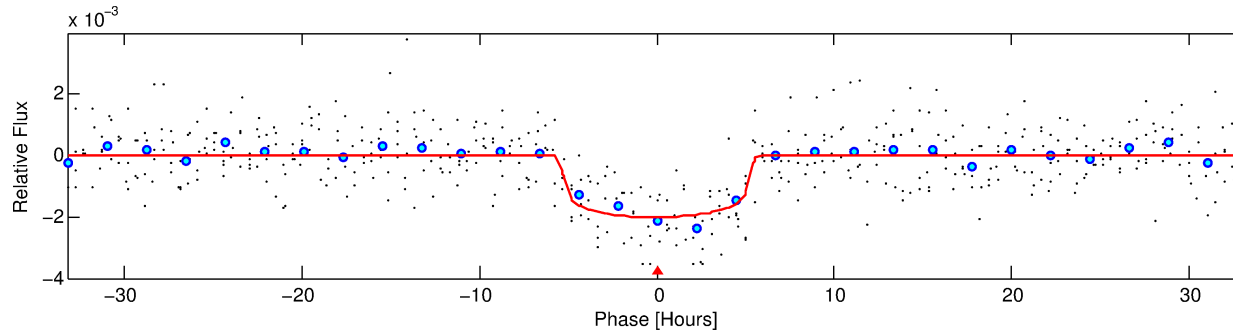
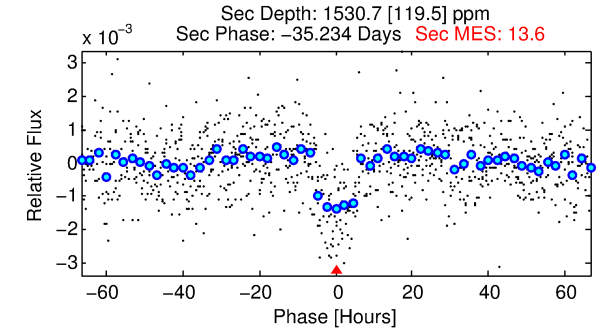
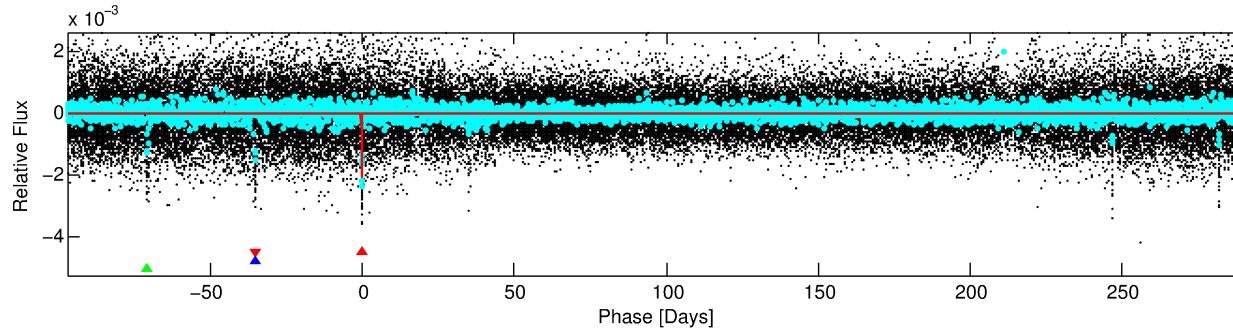
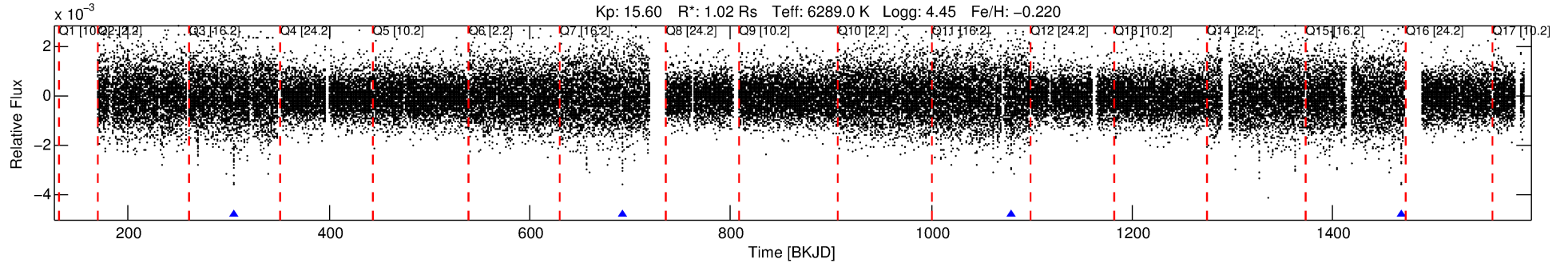
No Significant Match Found

DV One-Page Summary

KIC: 3958301 Candidate: 1 of 3 Period: 387.565 d

KOI: K03381 Corr: No Ephemeris Match

Kp: 15.60 R*: 1.02 Rs Teff: 6289.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 387.56464 [0.00445] d
Epoch = 305.0274 [0.0086] BKJD
Rp/R* = 0.0415 [0.0119]
a/R* = 275.14 [397.50]
b = 0.16 [8.77]
Seff = 1.28 [0.49]
Teq = 271 [26] K
Rp = 4.62 [1.90] Re
a = 1.0674 [0.2627] AU
Ag = 45009.21 [30682.72] [1.47σ]
Teff = 6108 [911] K [6.40σ]

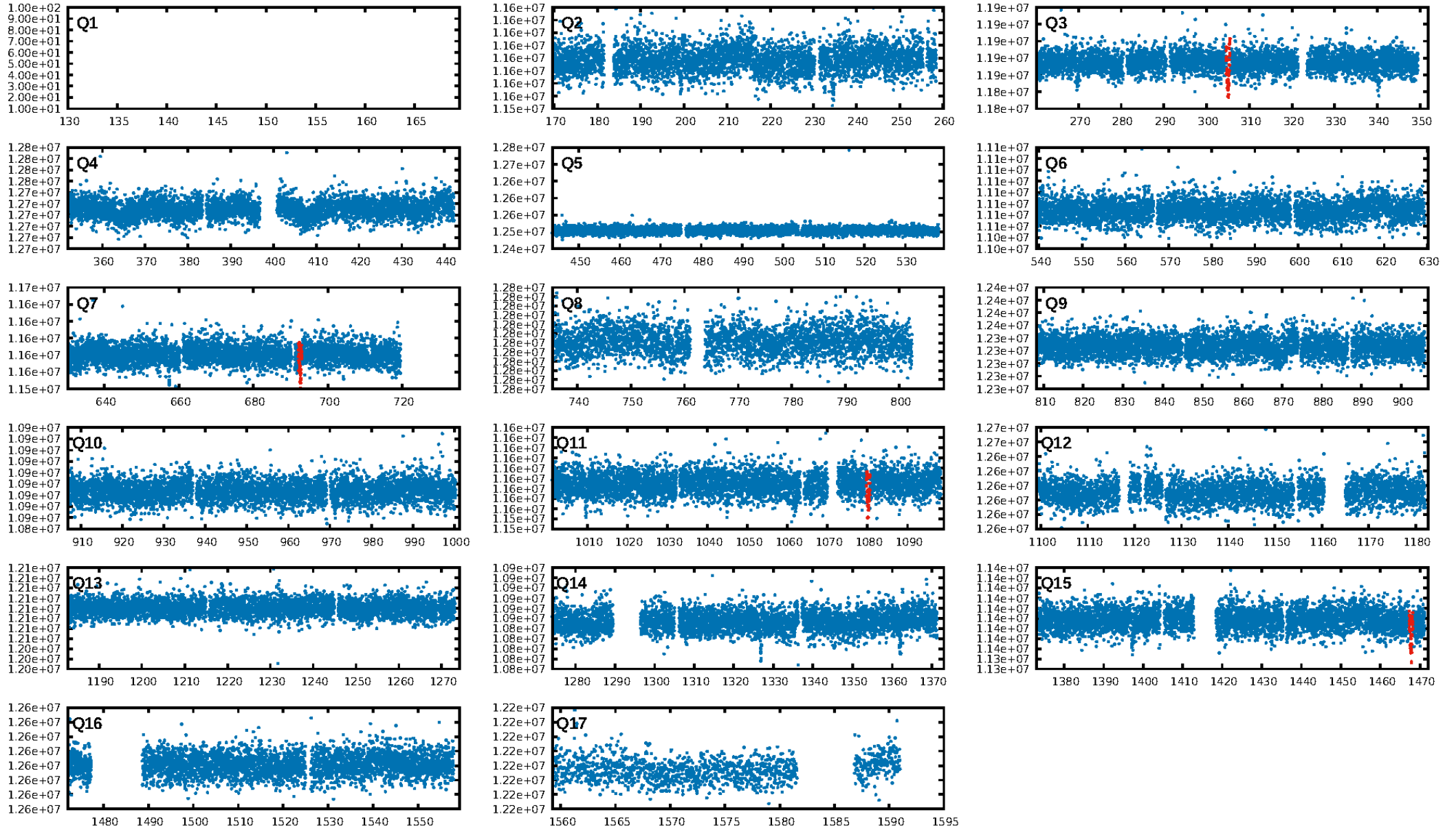
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 15.2%
ModelChiSquareGoF-sig: 99.8%
Bootstrap-pfa: 2.00e-26
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.591
Centroid-sig: 0.0%
Centroid-so: 8.228 arcsec [9.28σ]
OotOffset-rm: 6.828 arcsec [49.54σ]
KicOffset-rm: 7.016 arcsec [49.69σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

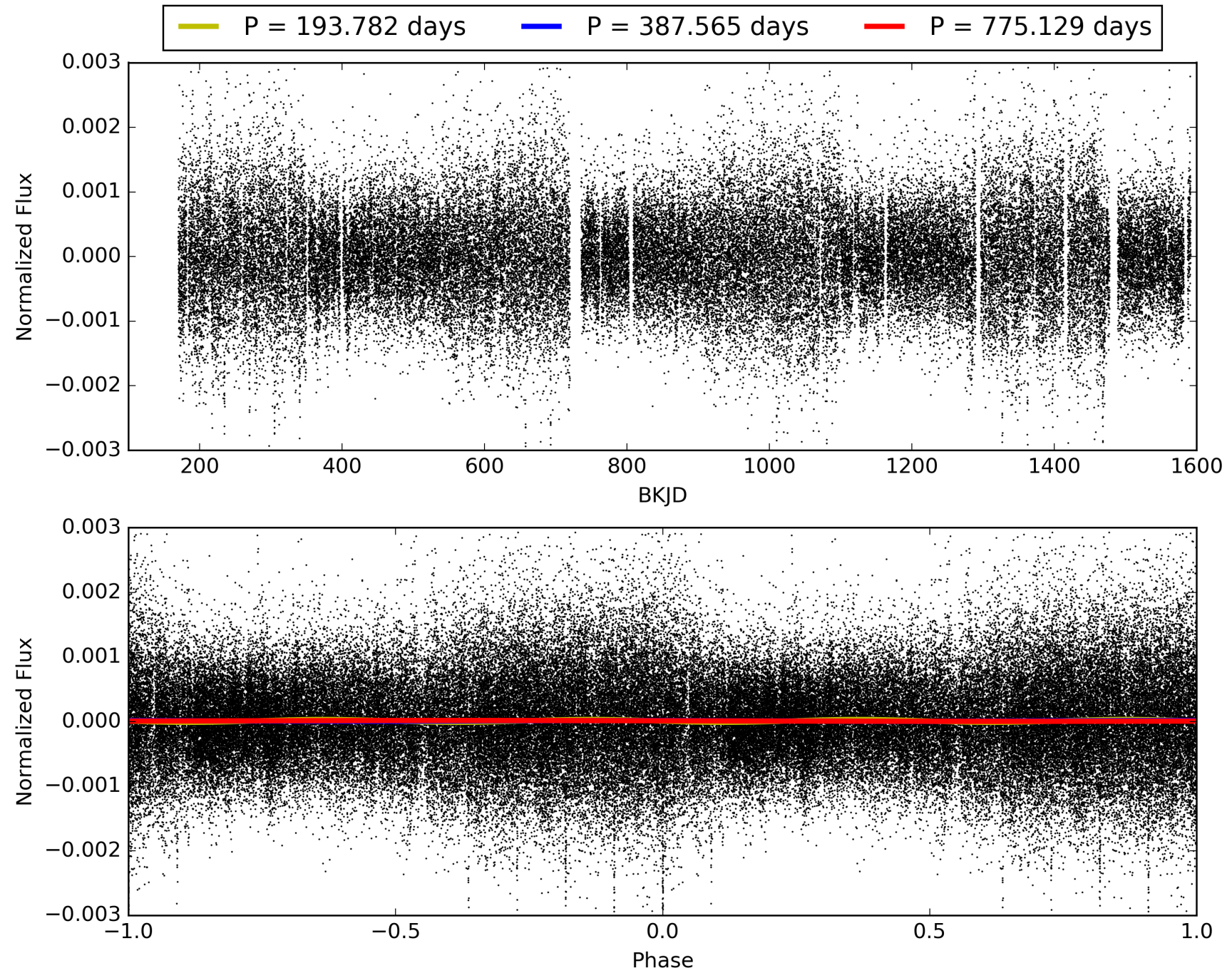
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:19:06 Z

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

TCE 003958301-01, PDC Light Curves

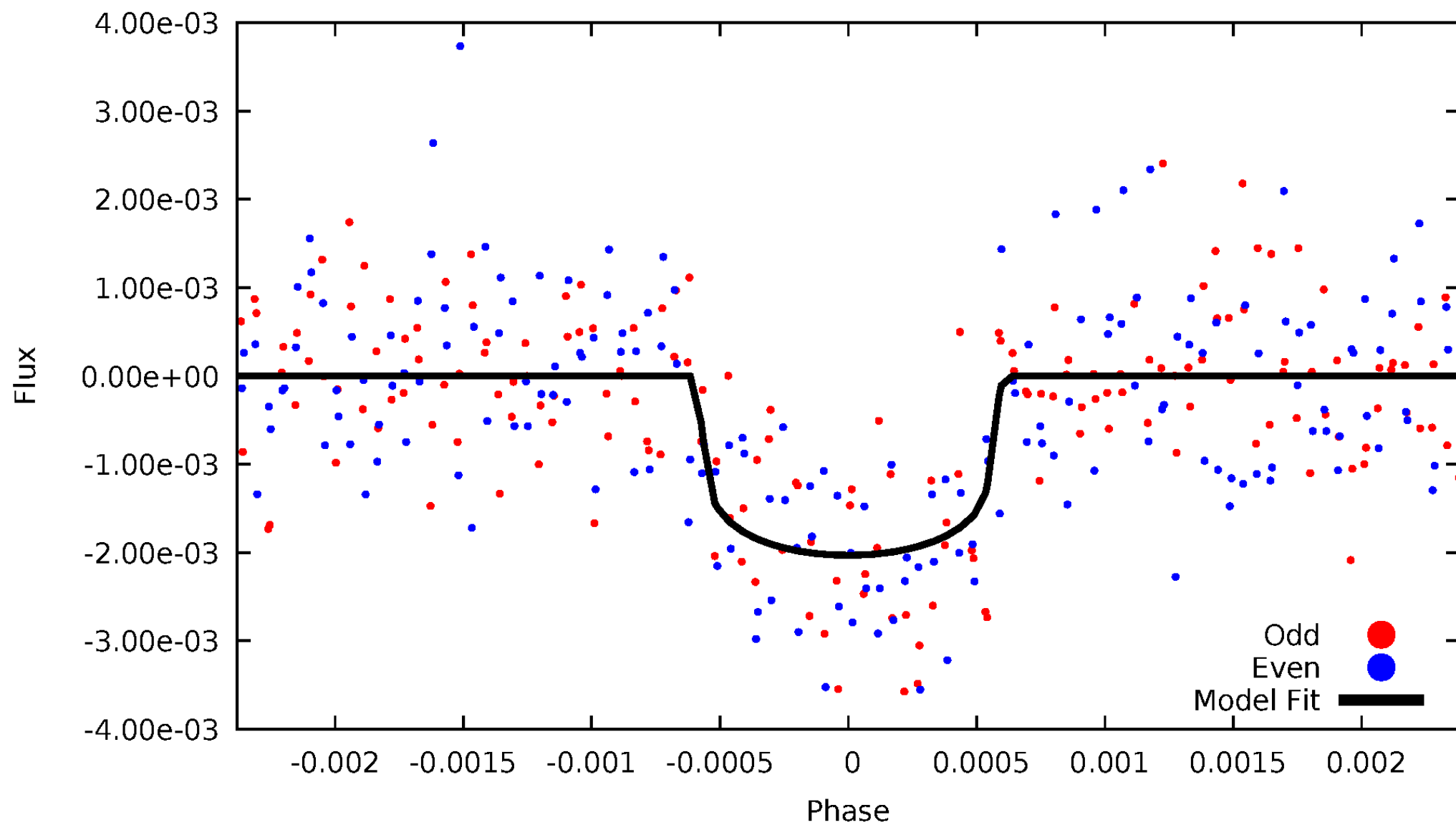


TCE 003958301-01



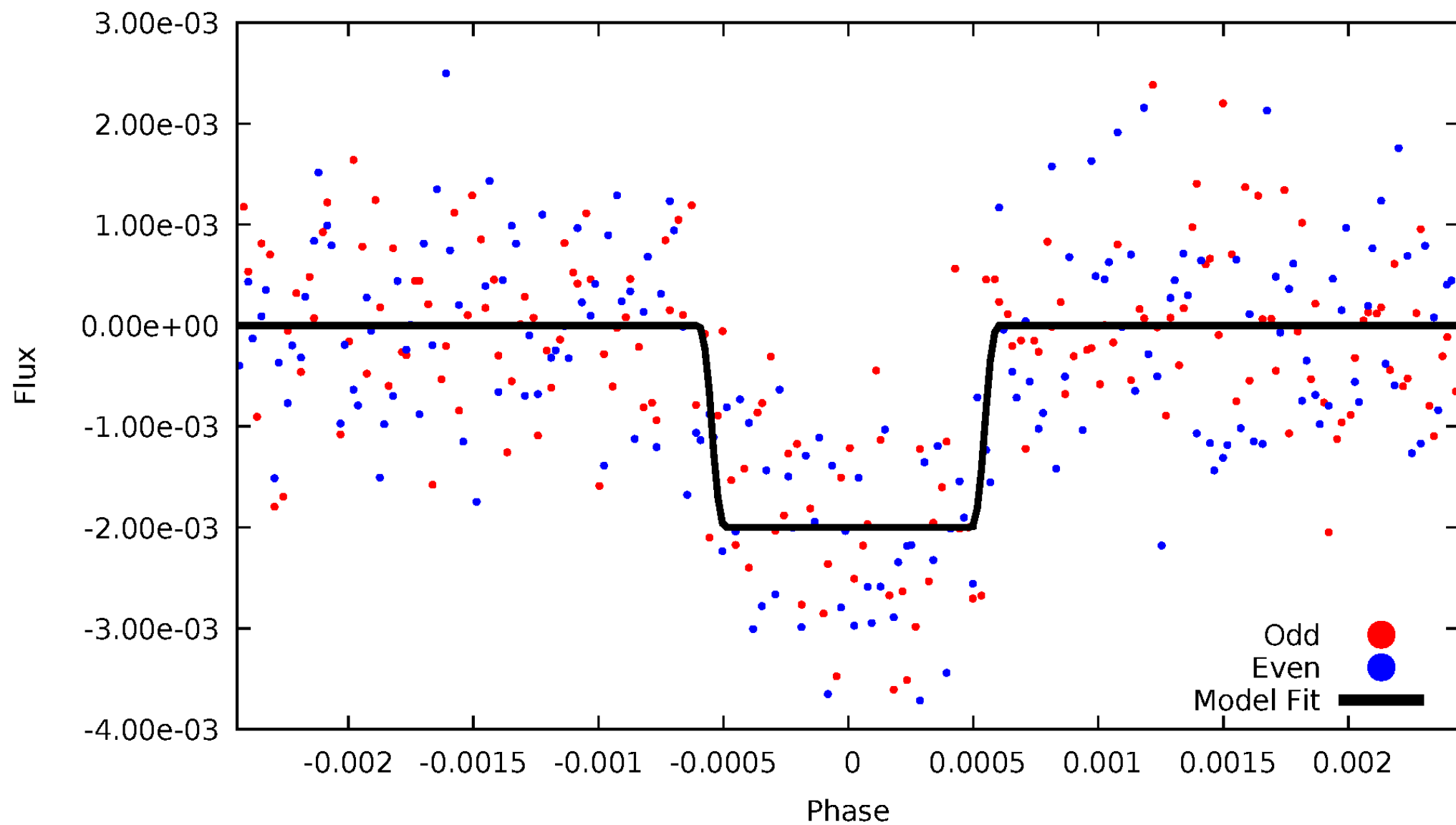
DV Odd/Even

TCE 003958301-01



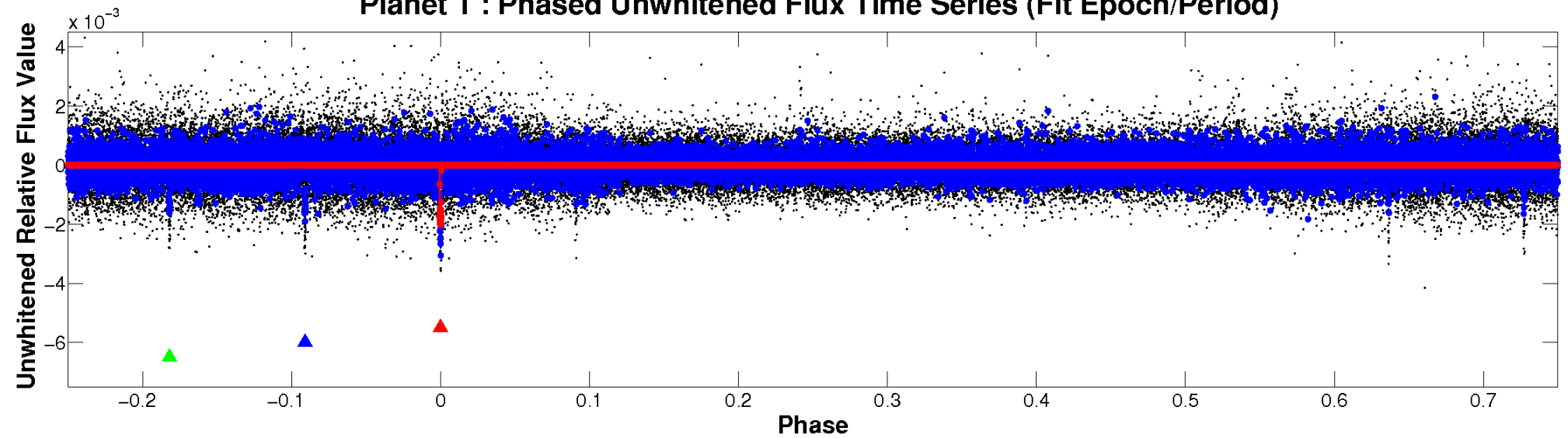
ALT Odd/Even

TCE 003958301-01

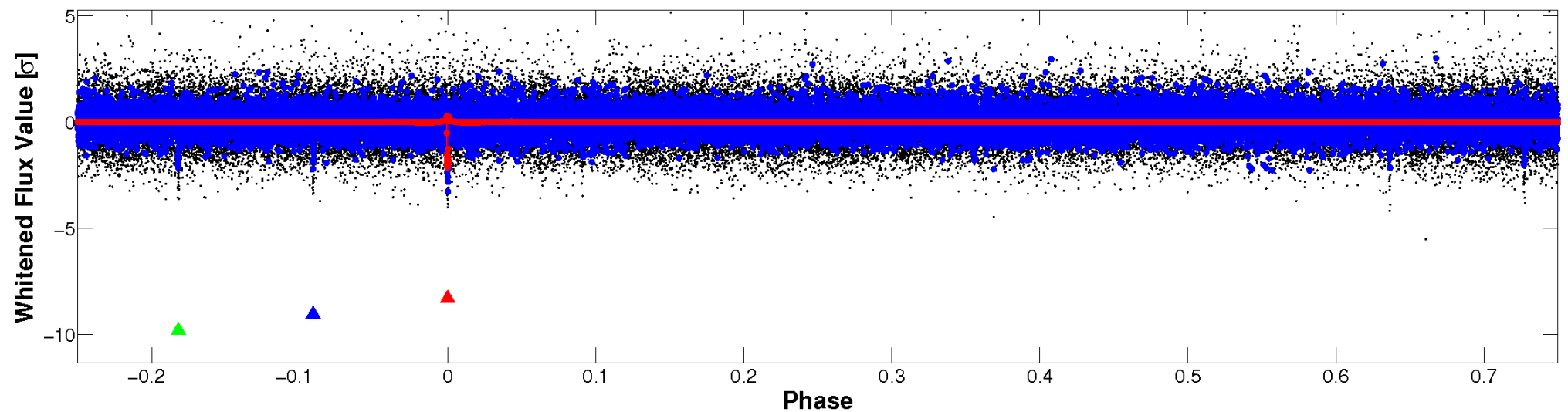


Non-Whitened Vs. Whitened Light Curve

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

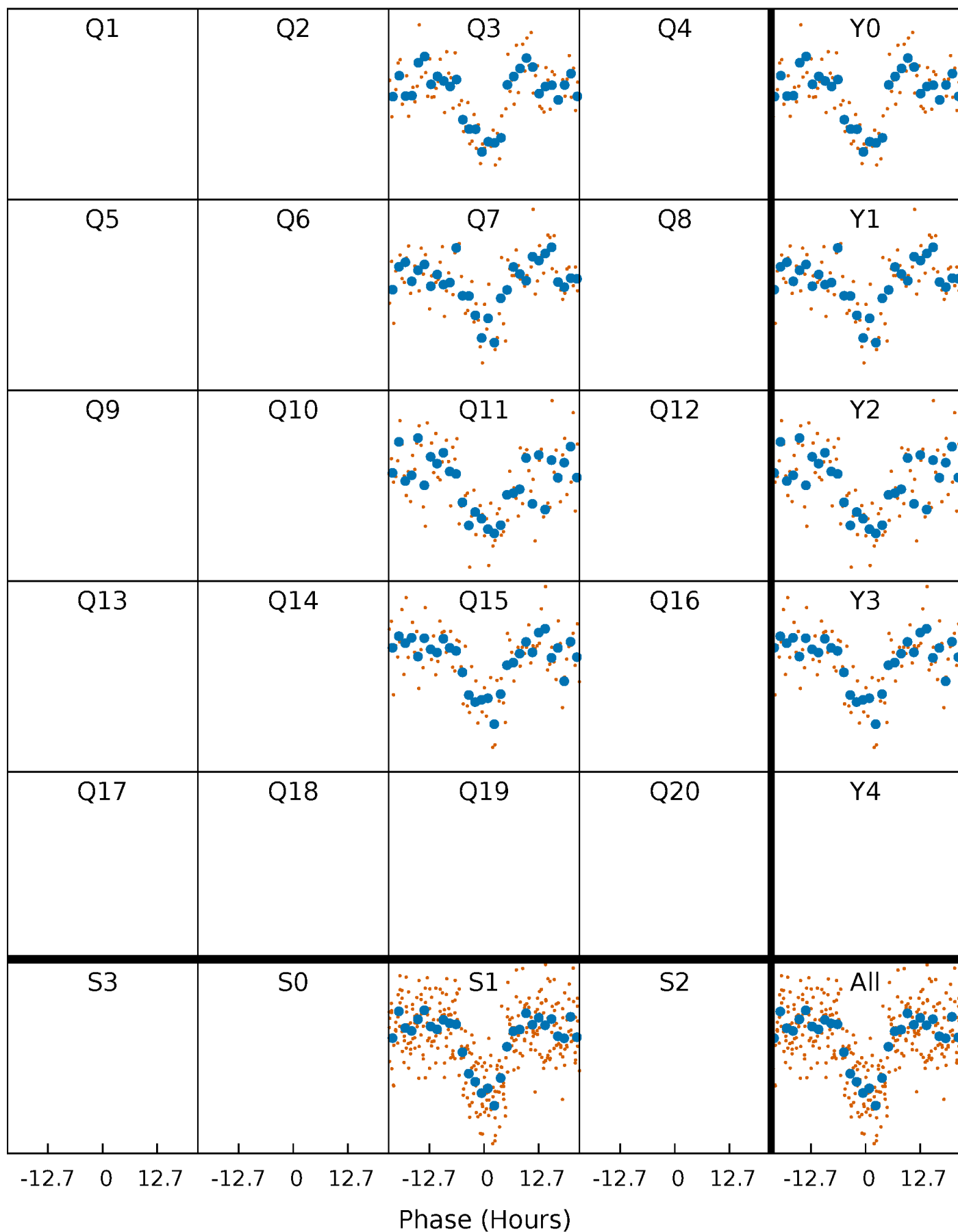


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



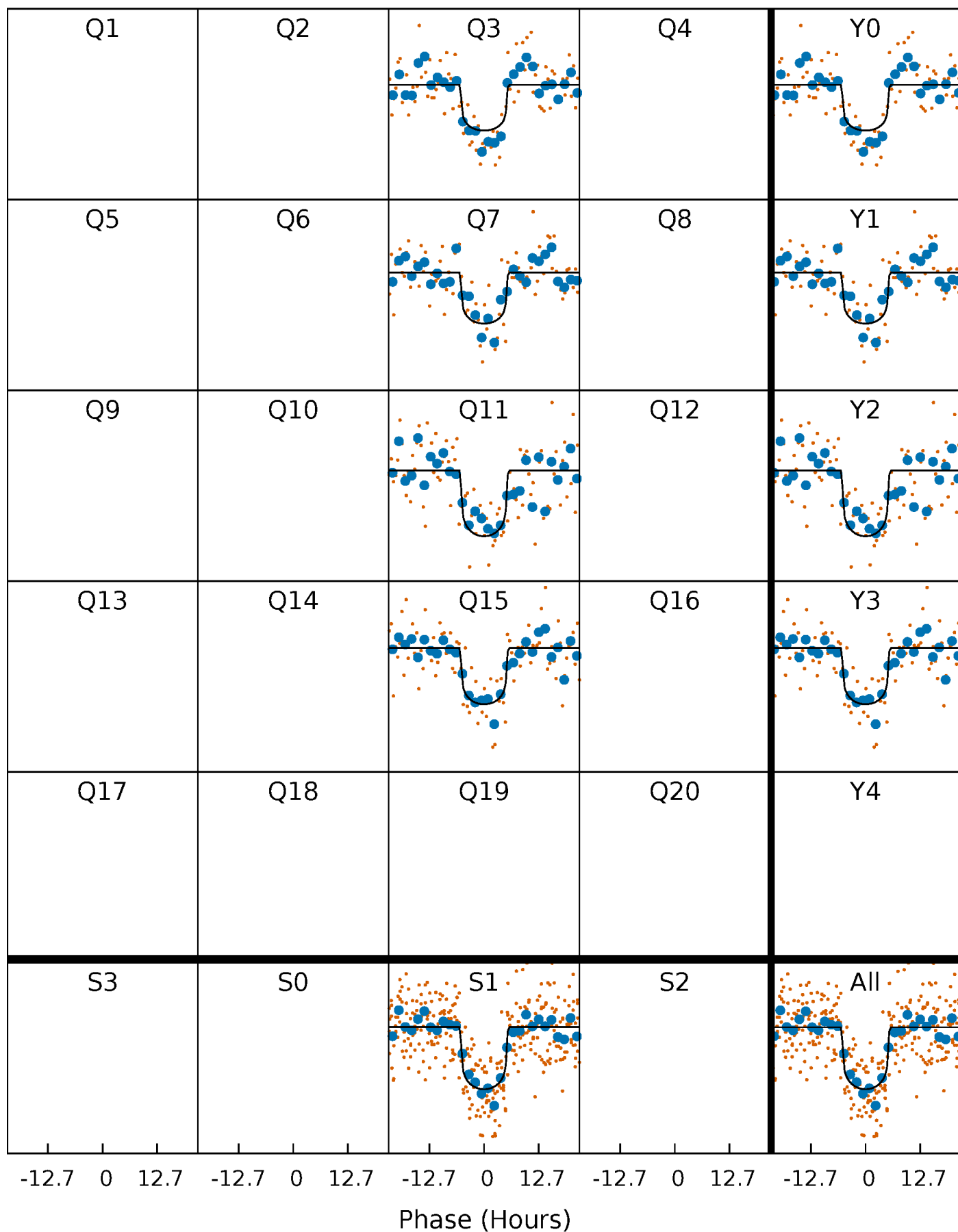
PDC Quarter-Phased Transit Curves

TCE 003958301-01 P=387.564639 Days $T_0=305.027438$ (BKJD)



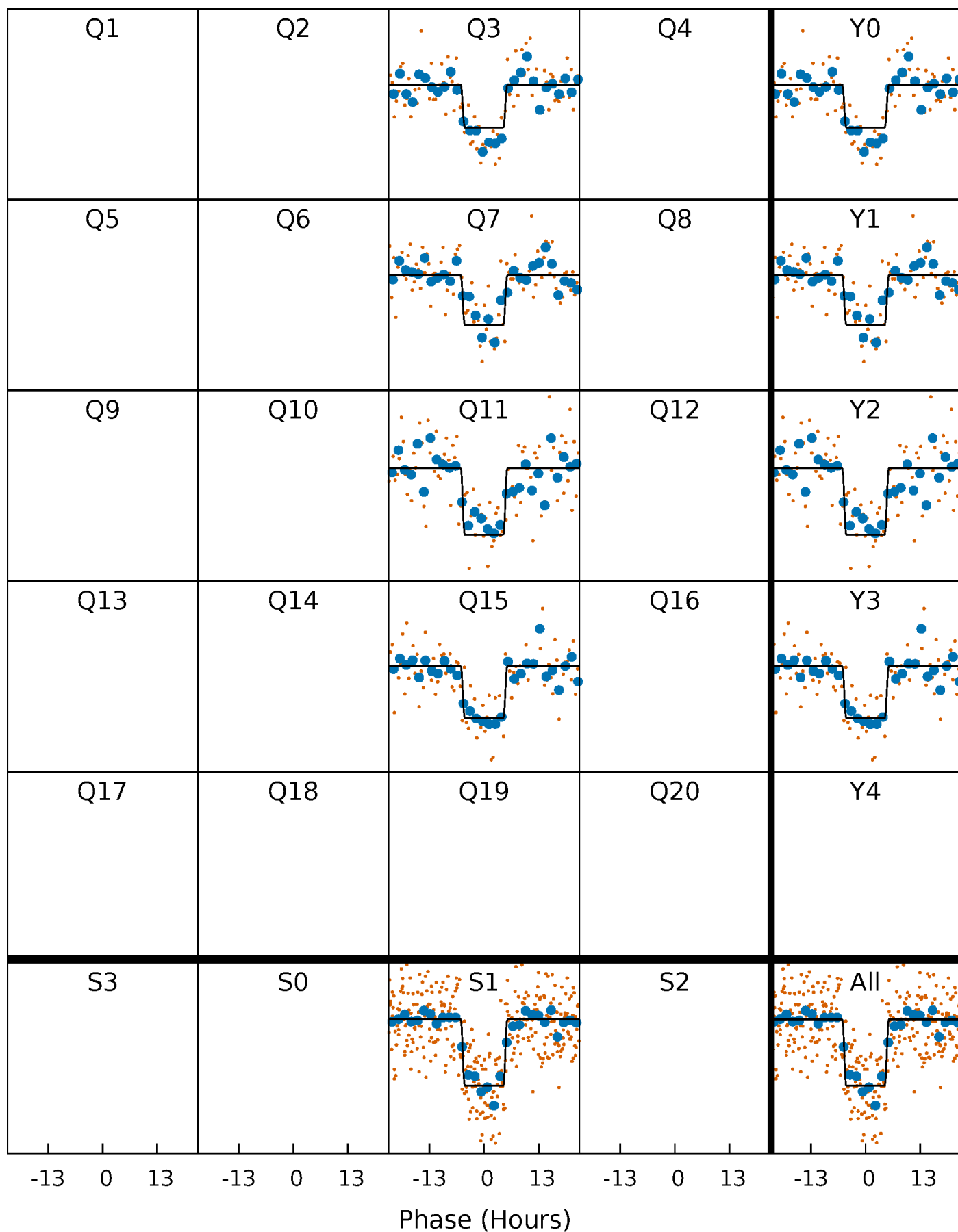
DV Quarter-Phased Transit Curves

TCE 003958301-01 $P=387.564639$ Days $T_0=305.027438$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

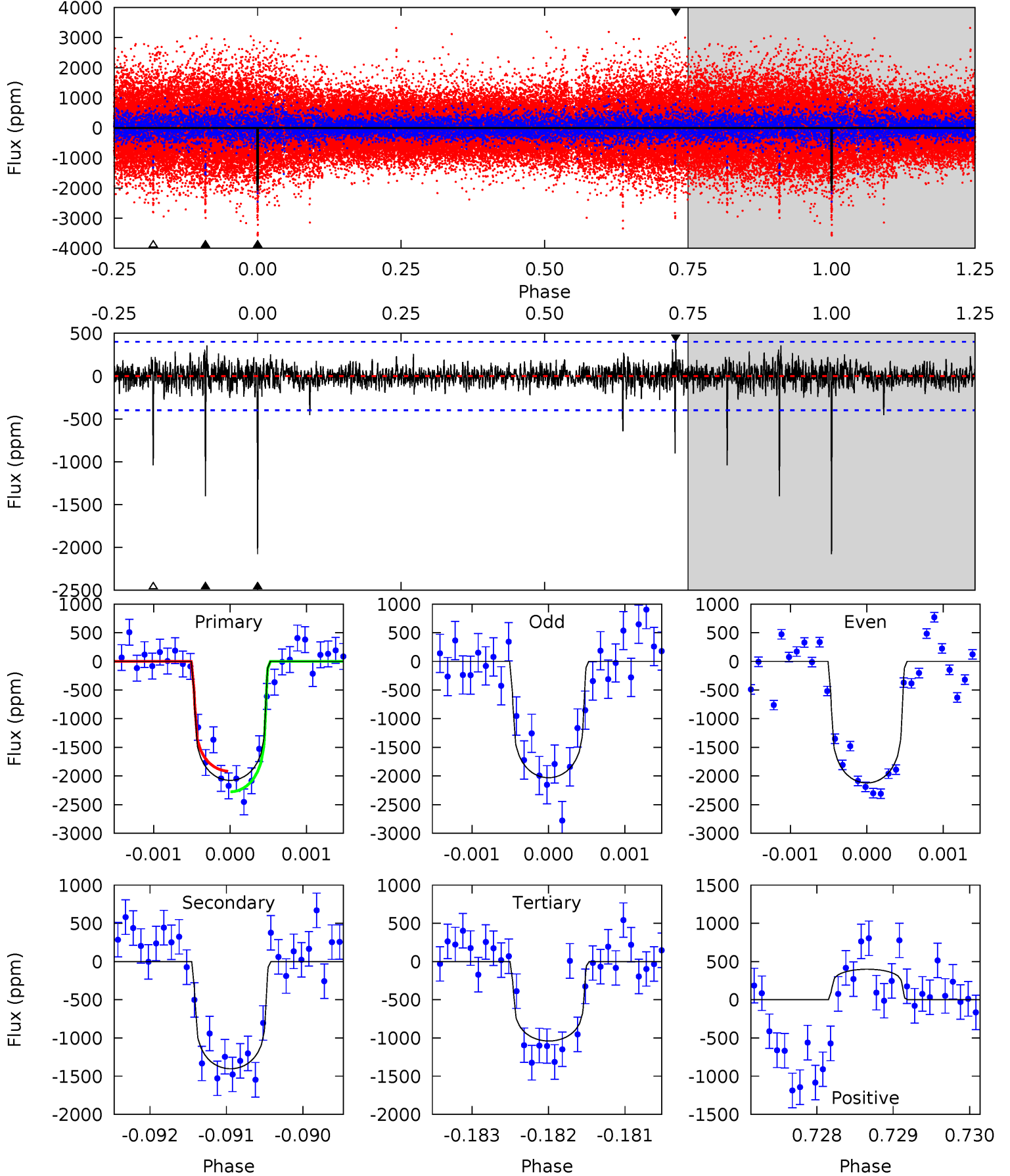
TCE 003958301-01 P=387.570144 Days $T_0=305.024799$ (BKJD)



DV Model-Shift Uniqueness Test

003958301-01, P = 387.564639 Days, E = 305.027438 Days

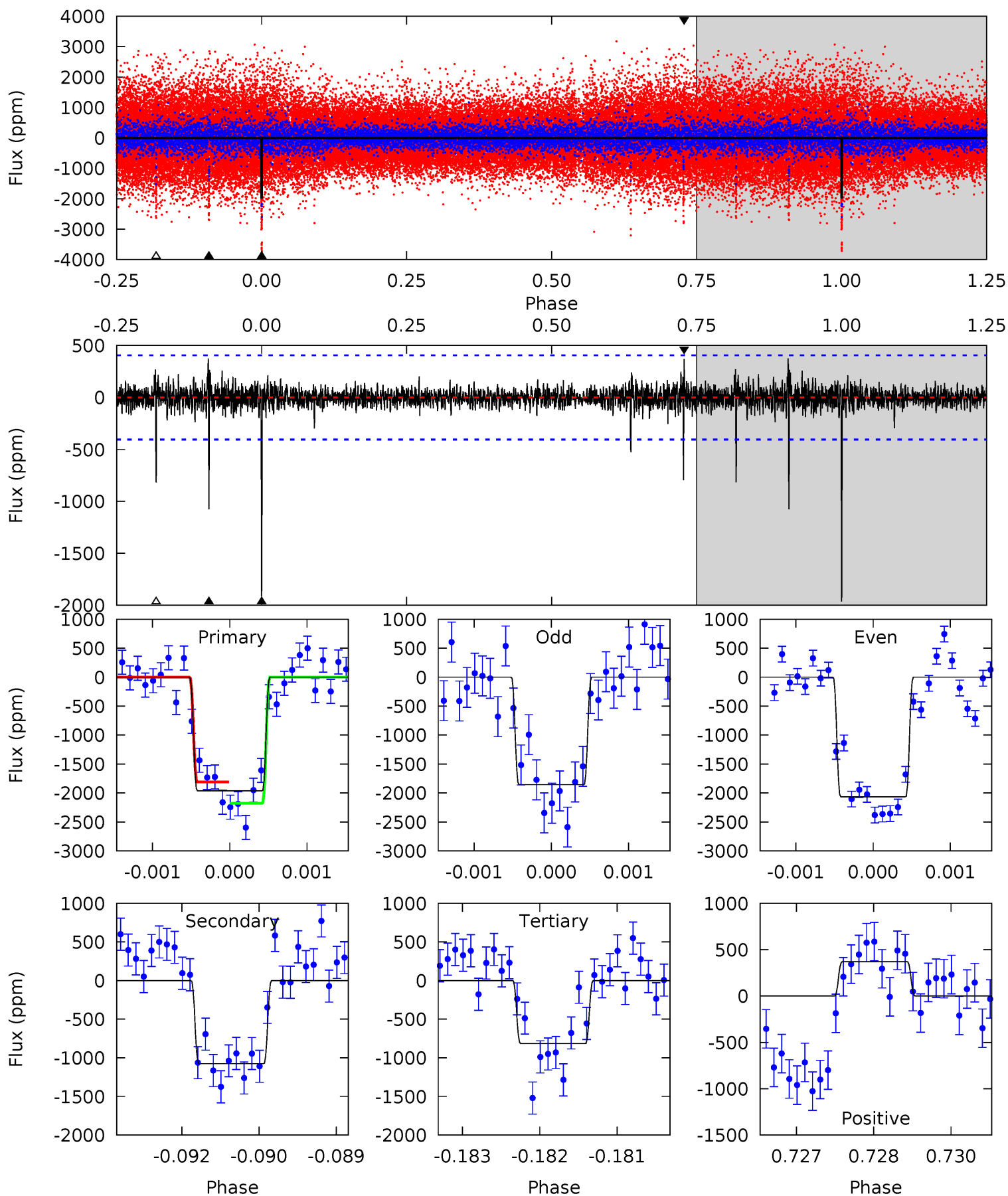
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.2	19.0	14.1	5.42	5.42	3.24	1.26	14.1	22.7	4.93	13.6	0.62	1.02	0.16	2.41



Alt Model-Shift Uniqueness Test

003958301-01, P = 387.570144 Days, E = 305.024799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.3	14.4	10.9	4.95	5.42	3.25	0.98	15.4	21.3	3.48	9.45	1.41	1.06	0.16	2.45



Stellar Parameters For KIC 003958301

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6289^{+175}_{-219}	$4.454^{+0.052}_{-0.195}$	$-0.220^{+0.250}_{-0.350}$	$1.020^{+0.299}_{-0.107}$	$1.075^{+0.144}_{-0.144}$	$1.427^{+0.390}_{-0.735}$
	+3%/-3%	+1%/-4%	+114%/-159%	+29%/-10%	+13%/-13%	+27%/-51%
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 003958301-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1403 ± 74	$4.80^{+1.49}_{-1.36}$	387^{+24}_{-20}	5954^{+1121}_{-660}	37030^{+35263}_{-14847}
Alt.	-1076 ± 75	$5.11^{+1.58}_{-1.49}$	387^{+25}_{-18}	5457^{+997}_{-594}	25504^{+25511}_{-10830}

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 $A_{obs} \gg 1.0$

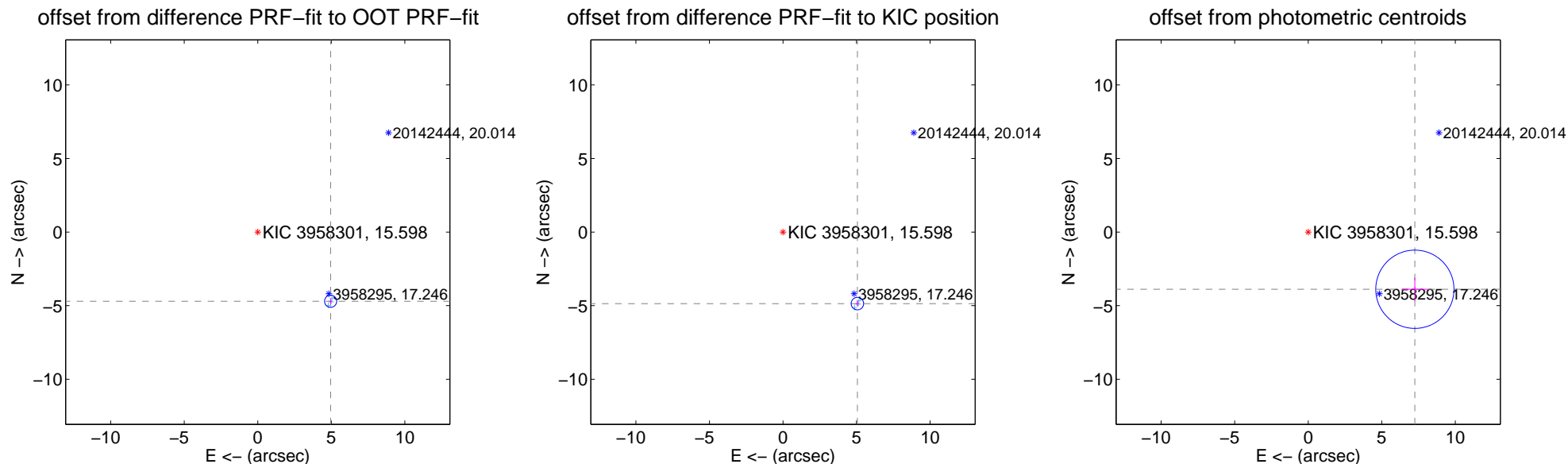
DV Centroid Data

Supplemental centroid analysis for 003958301-01. Kepler magnitude: 15.60. Transit SNR 17.00

There are 3 quarters with good PRF difference image offsets

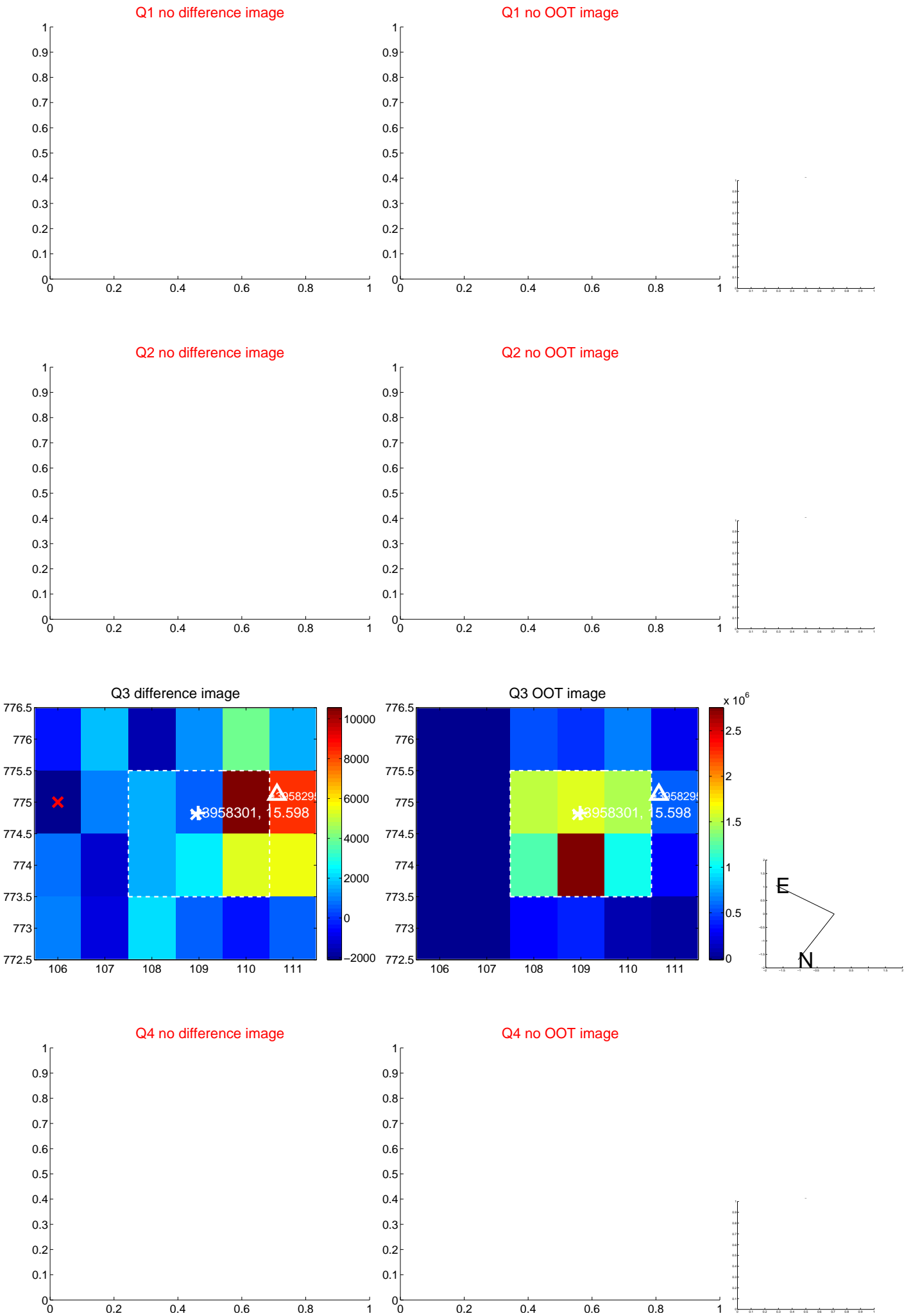
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.828 ± 0.138	49.54	-4.953 ± 0.105	-4.700 ± 0.167
PRF-fit source offset from KIC position	7.016 ± 0.141	49.69	-5.060 ± 0.124	-4.860 ± 0.158
photometric centroid source offset	8.23 ± 0.89	9.28	-7.25 ± 0.91	-3.89 ± 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.

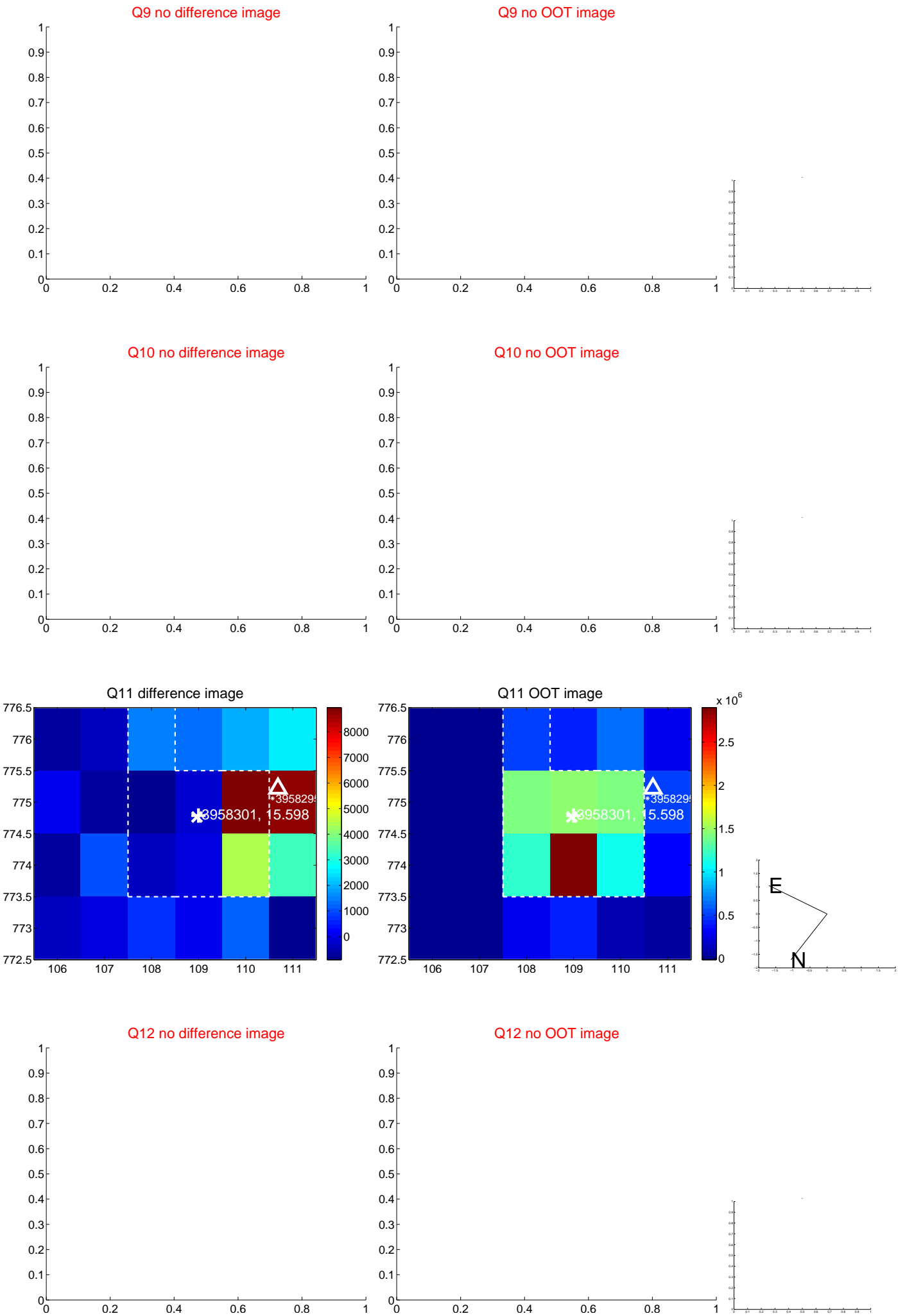
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



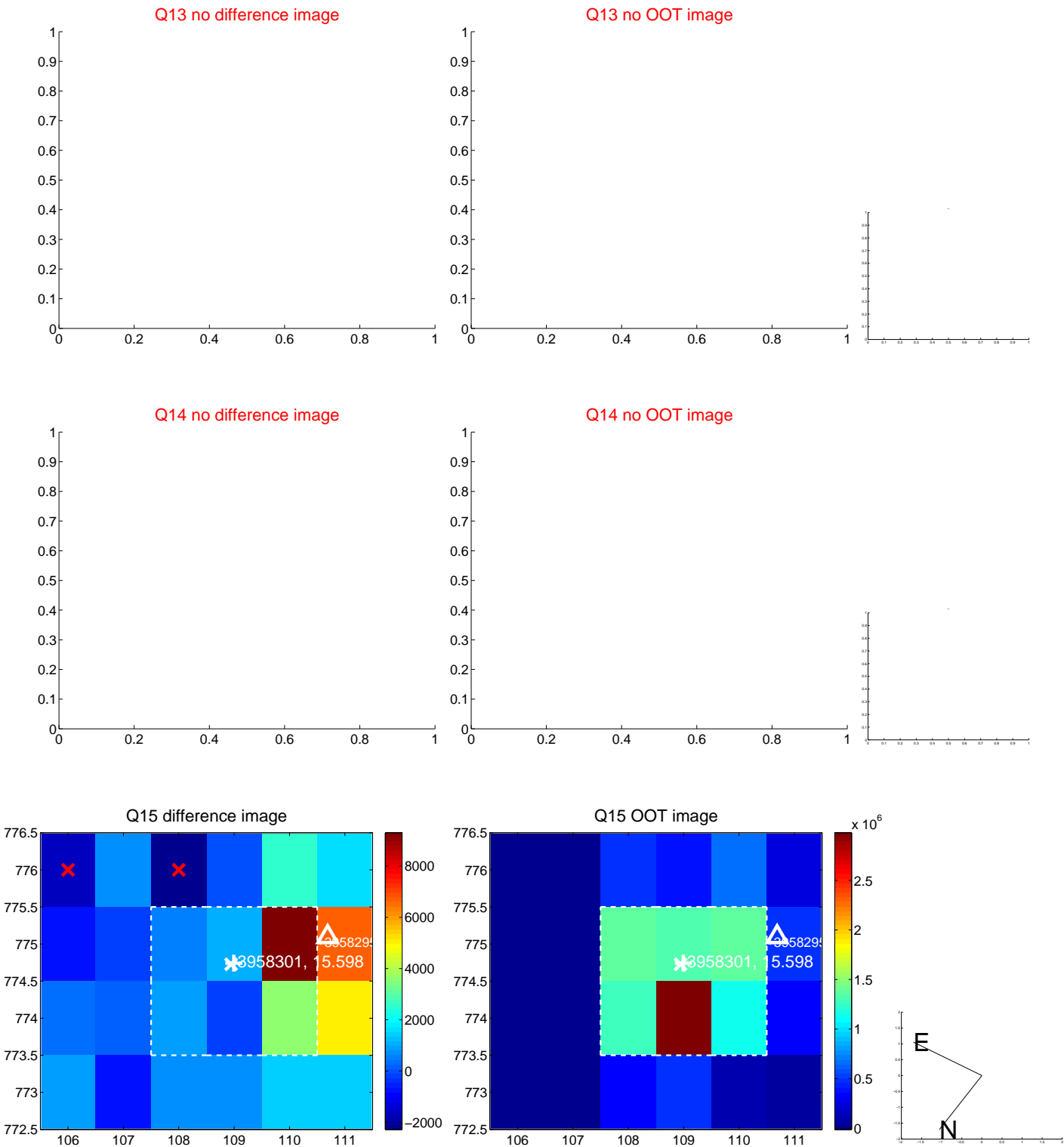
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



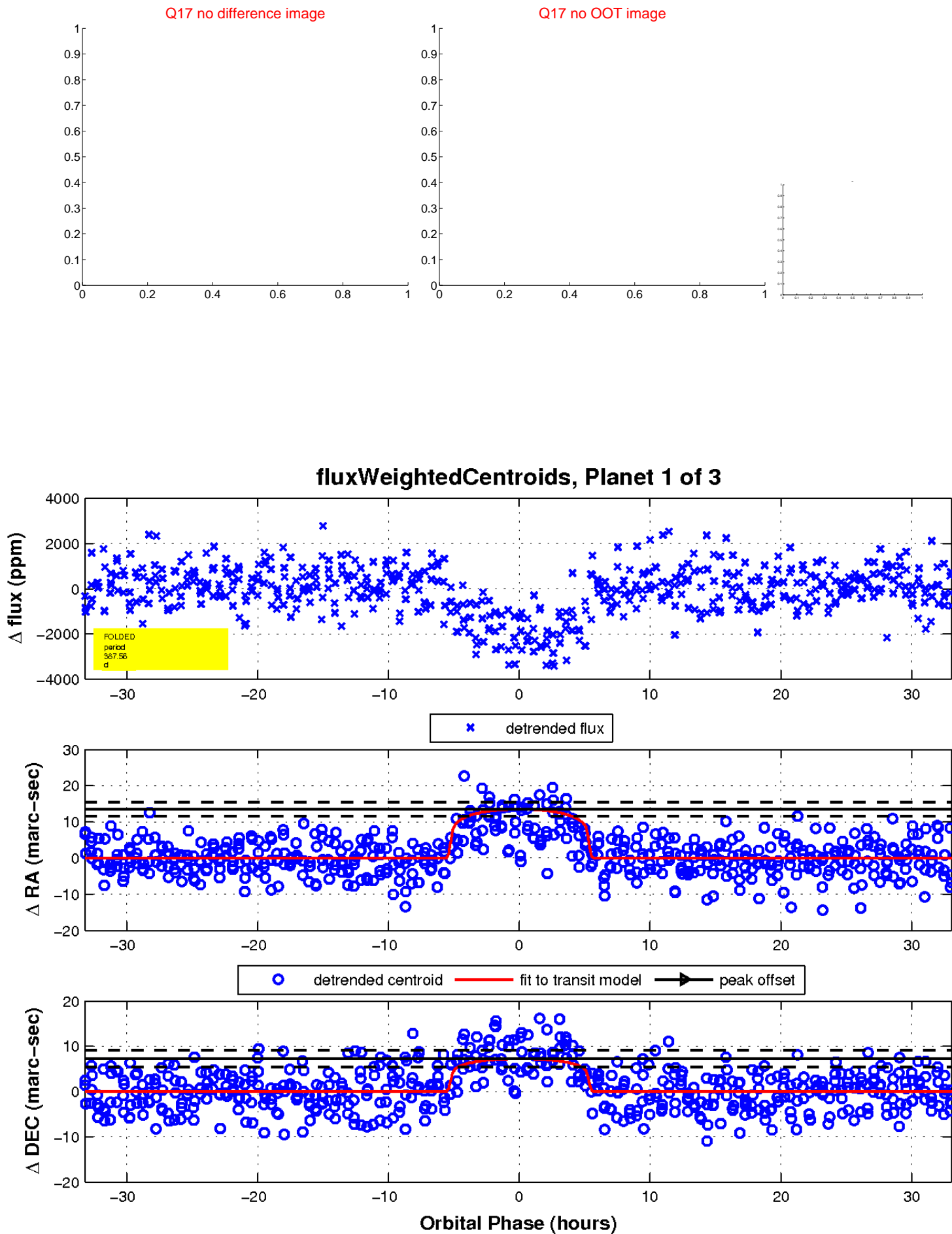
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

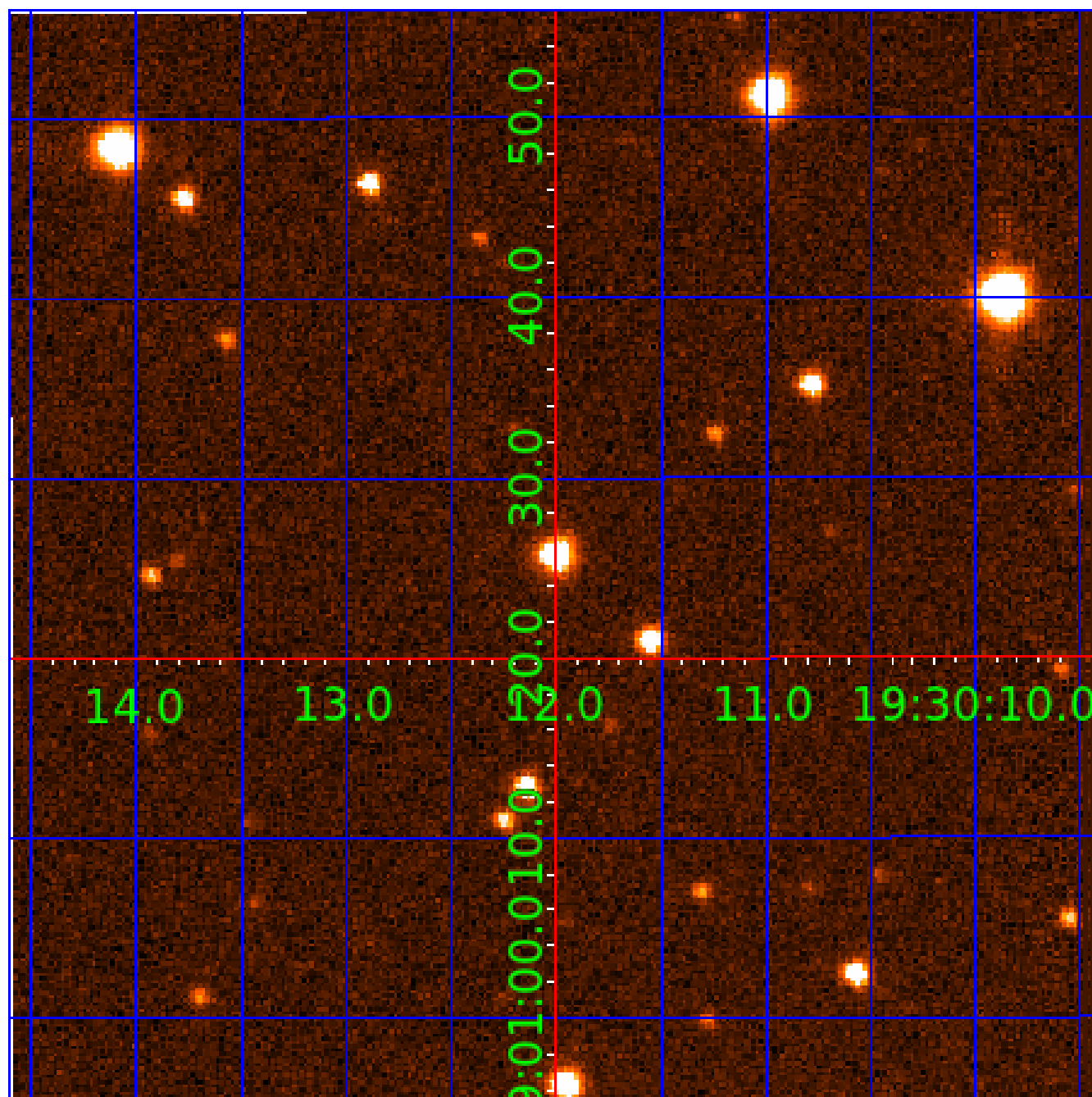


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003958301

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})
003958301-01	OBS	No	387.564639	305.027438	2030.0	11.072	16.2	17.0	1.02	6289	4.62	1.28
003958301-02	OBS	3381.02	387.565565	269.803123	1521.0	10.893	13.7	13.6	1.02	6289	4.02	1.28
003958301-03	OBS	No	387.563584	234.522554	1400.8	12.567	12.3	11.4	1.02	6289	4.78	1.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003958301-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-03	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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

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

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

Ephemeris Match Information For 003958301-02

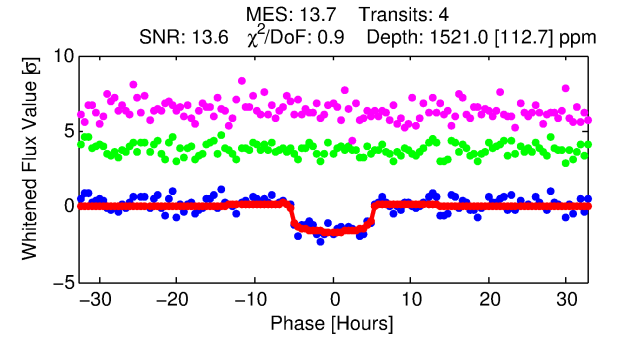
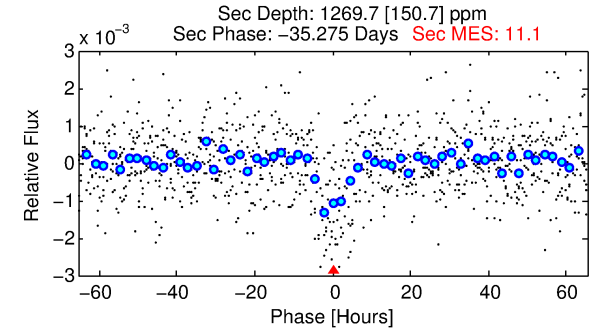
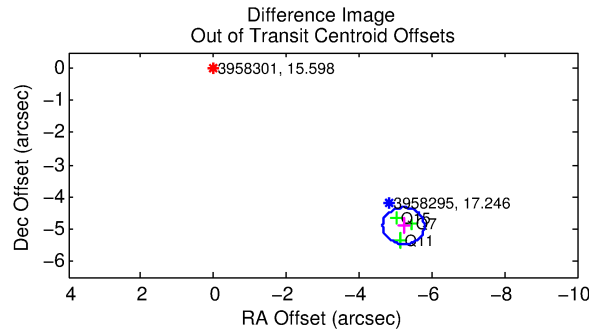
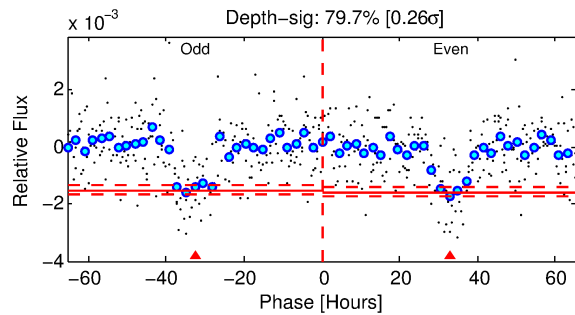
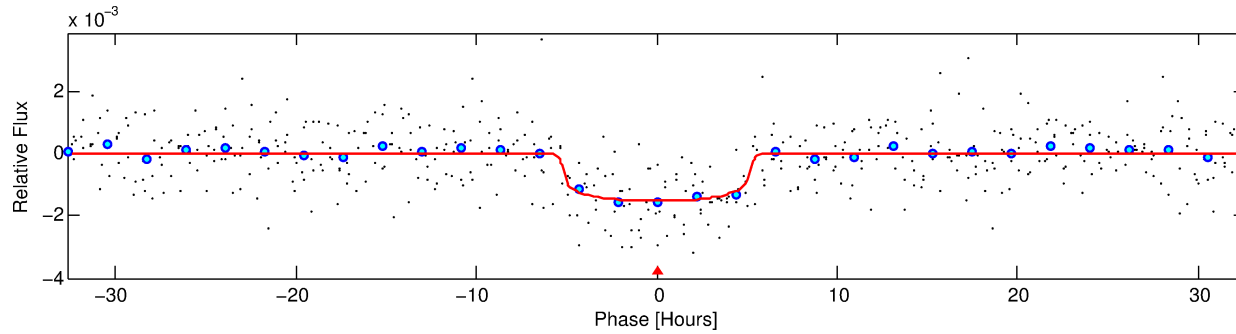
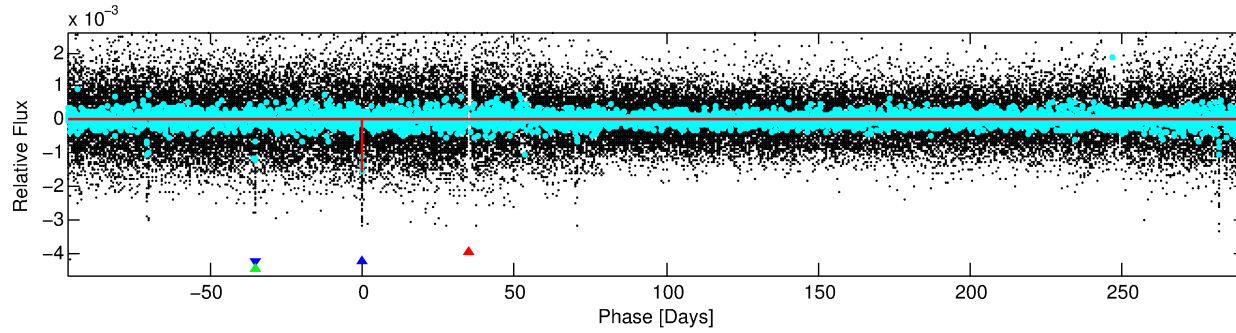
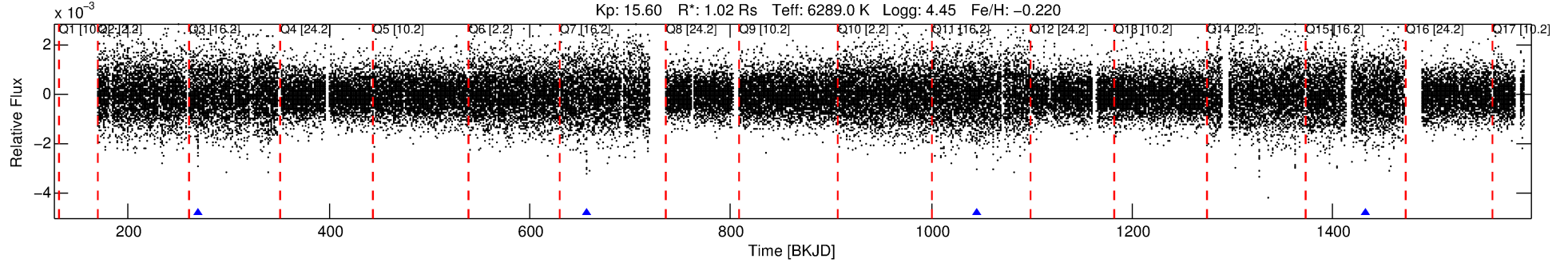
No Significant Match Found

DV One-Page Summary

KIC: 3958301 Candidate: 2 of 3 Period: 387.566 d

KOI: K03381.02 Corr: 0.975

Kp: 15.60 R*: 1.02 Rs Teff: 6289.0 K Logg: 4.45 Fe/H: -0.220



DV Fit Results:

Period = 387.56556 [0.00629] d
Epoch = 269.8031 [0.0118] BKJD
Rp/R* = 0.0361 [0.0140]
a/R* = 270.63 [526.77]
b = 0.29 [6.28]
Seff = 1.28 [0.49]
Teq = 271 [26] K
Rp = 4.02 [1.95] Re
a = 1.0674 [0.2627] AU
Ag = 49257.38 [42435.50] [1.16σ]
Teff = 6247 [1243] K [4.81σ]

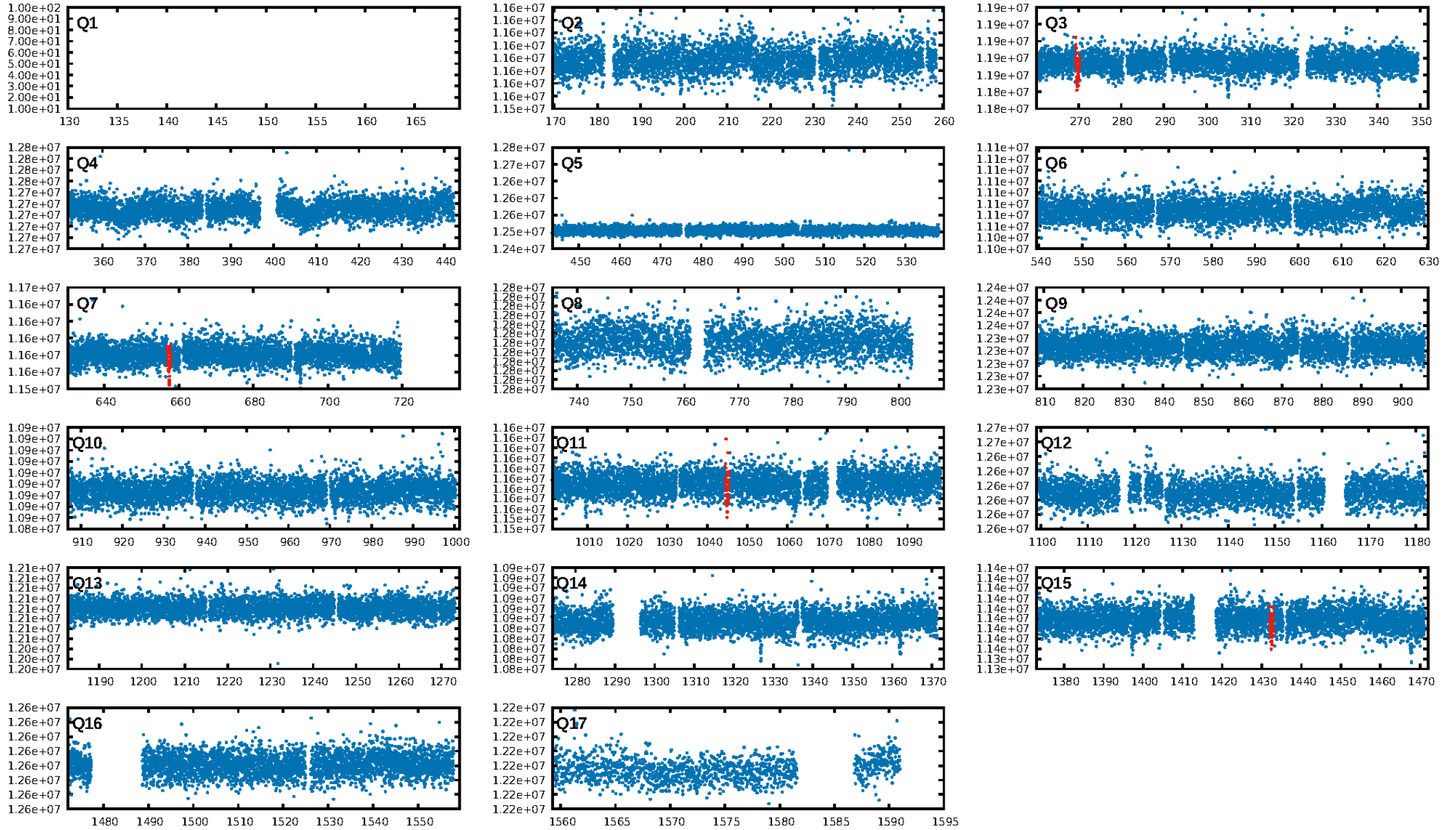
DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 70.3%
ModelChiSquareGoF-sig: 99.8%
Bootstrap-pfa: 1.54e-20
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4471
Centroid-sig: 0.0%
Centroid-so: 9.650 arcsec [8.27σ]
OotOffset-rm: 7.161 arcsec [37.56σ]
KicOffset-rm: 7.302 arcsec [40.74σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [4/4]

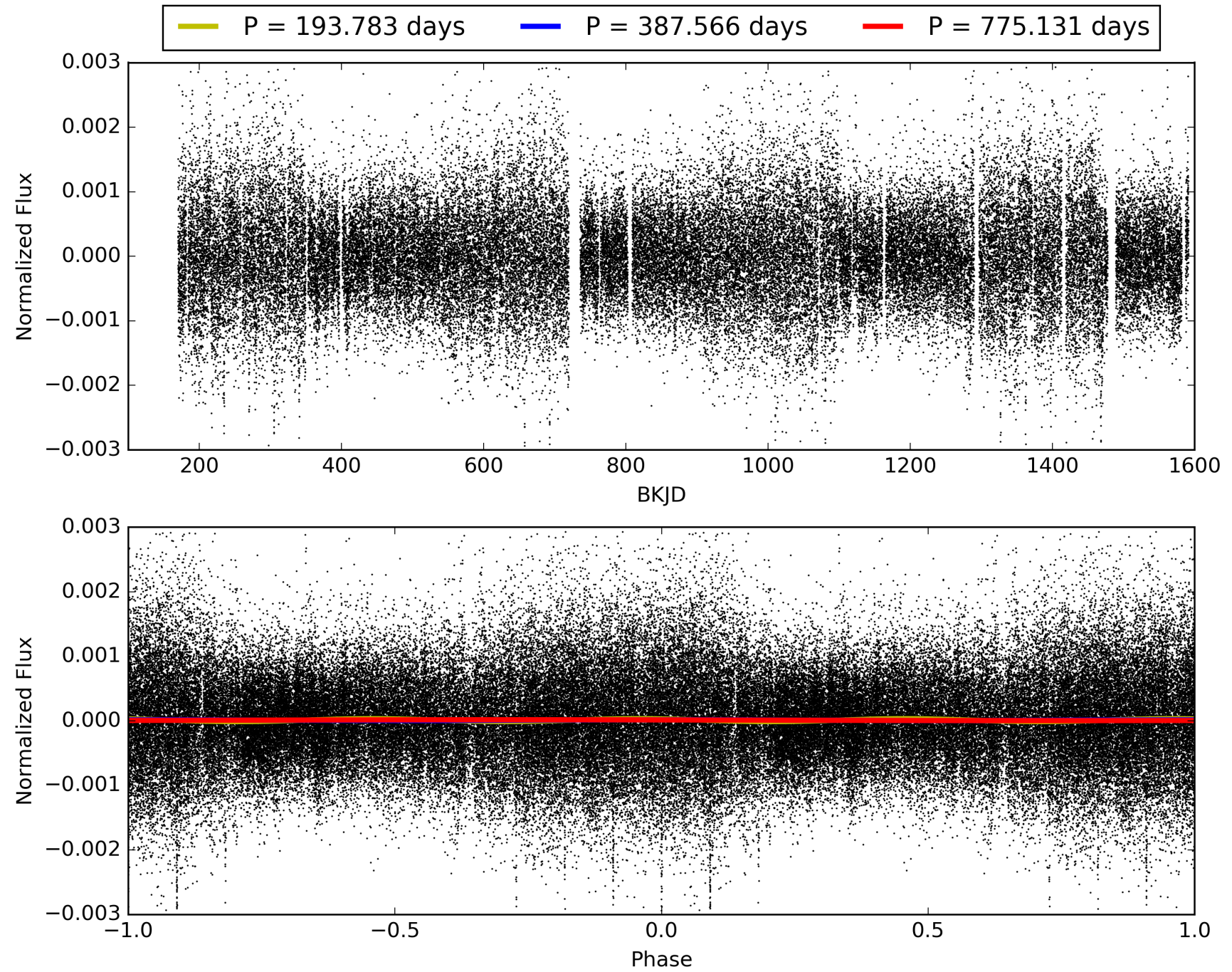
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:19:16 Z

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

TCE 003958301-02, PDC Light Curves

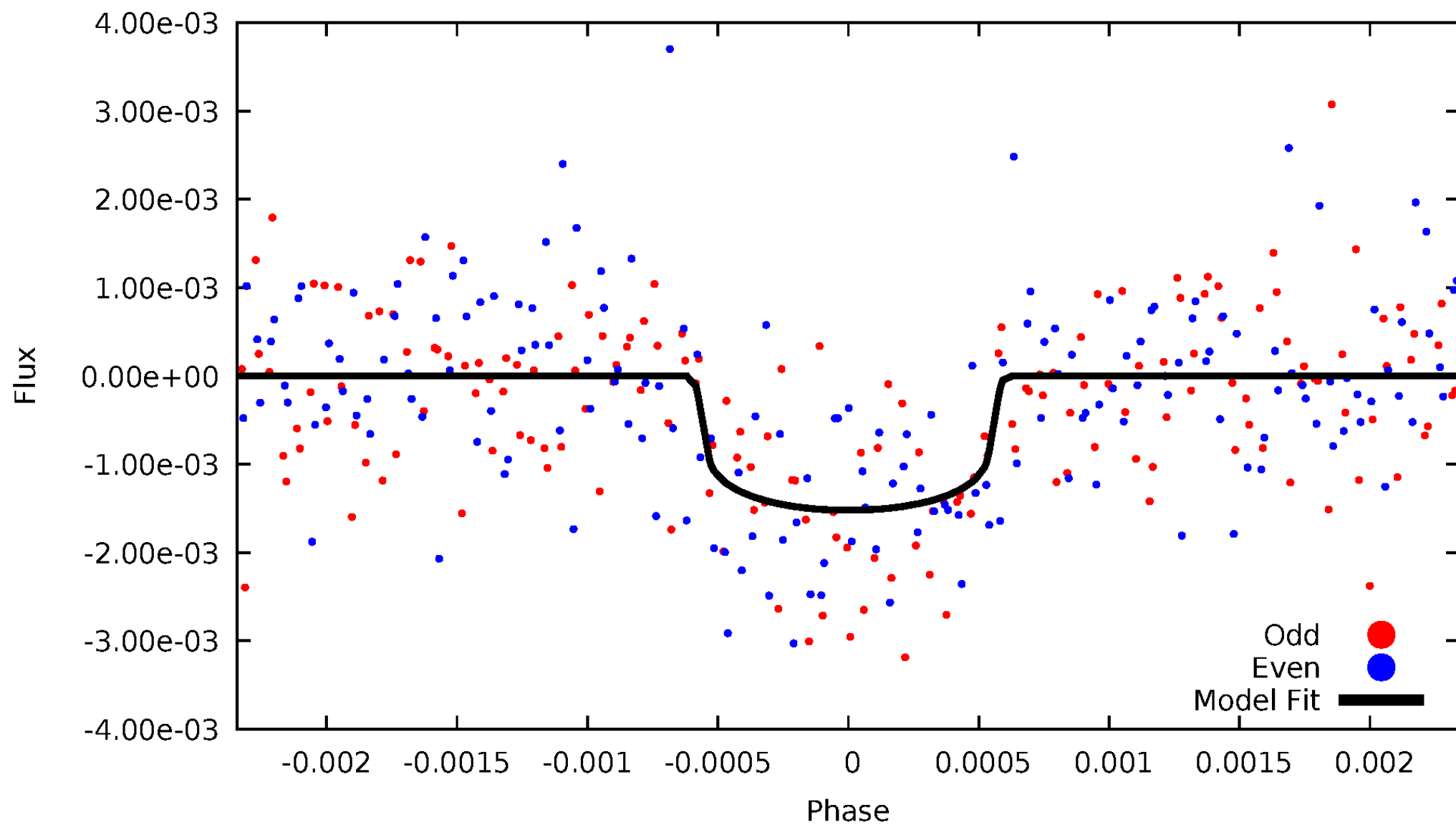


TCE 003958301-02



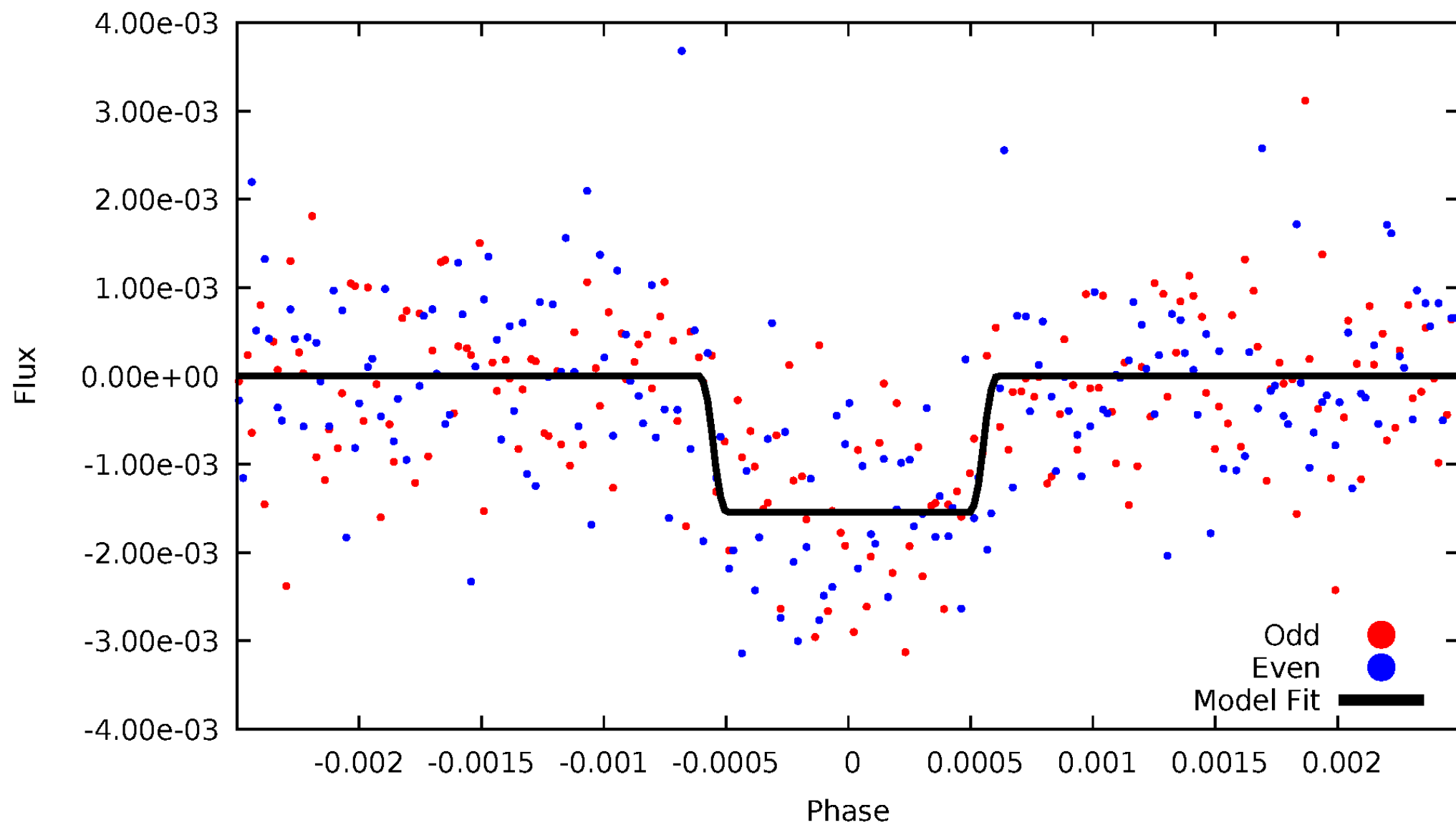
DV Odd/Even

TCE 003958301-02



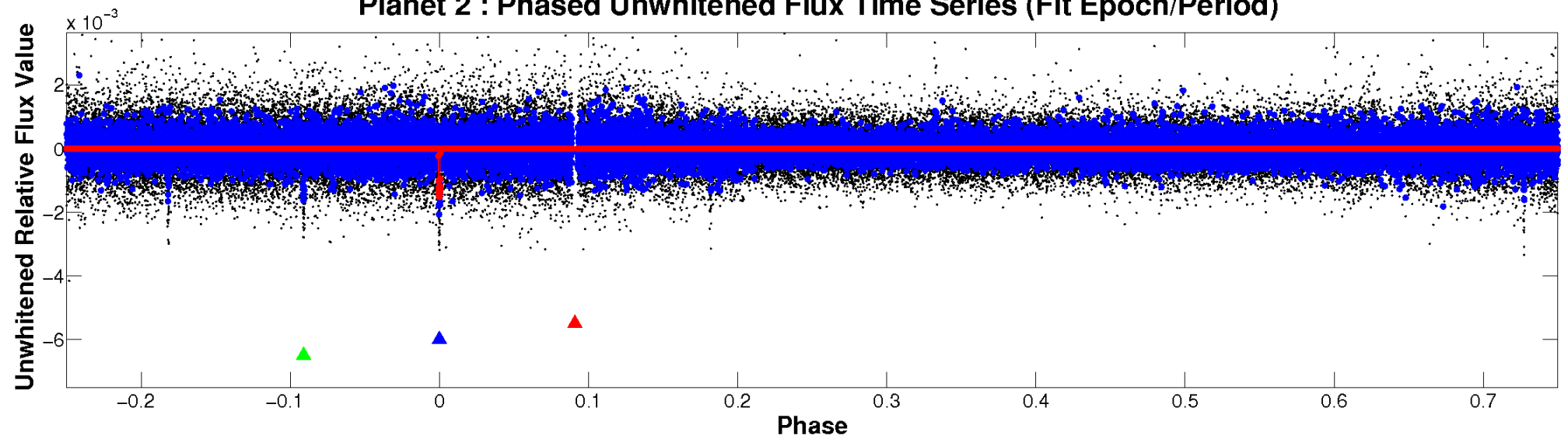
ALT Odd/Even

TCE 003958301-02

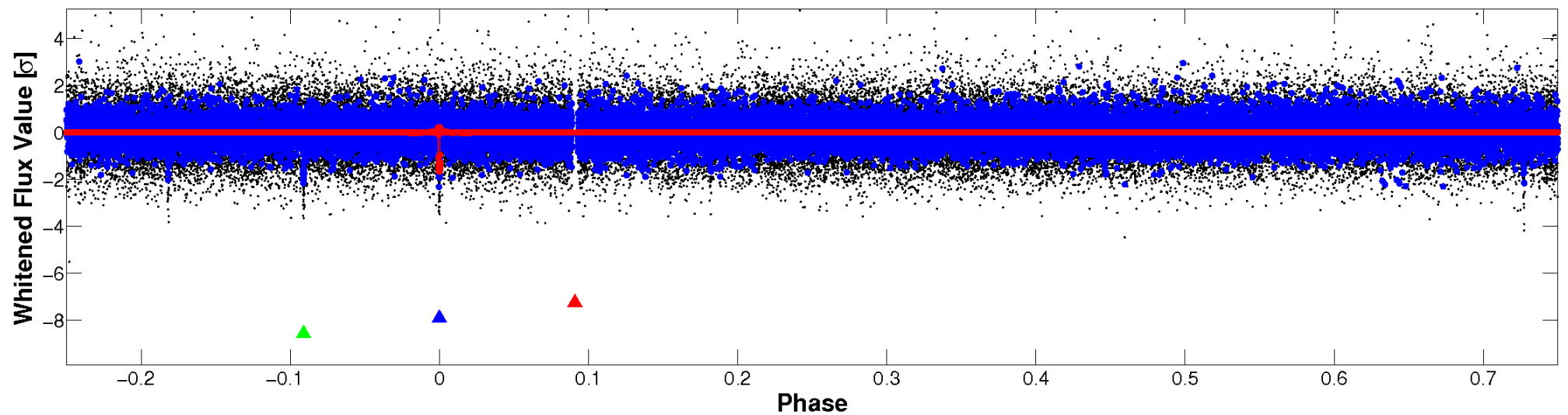


Non-Whitened Vs. Whitened Light Curve

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

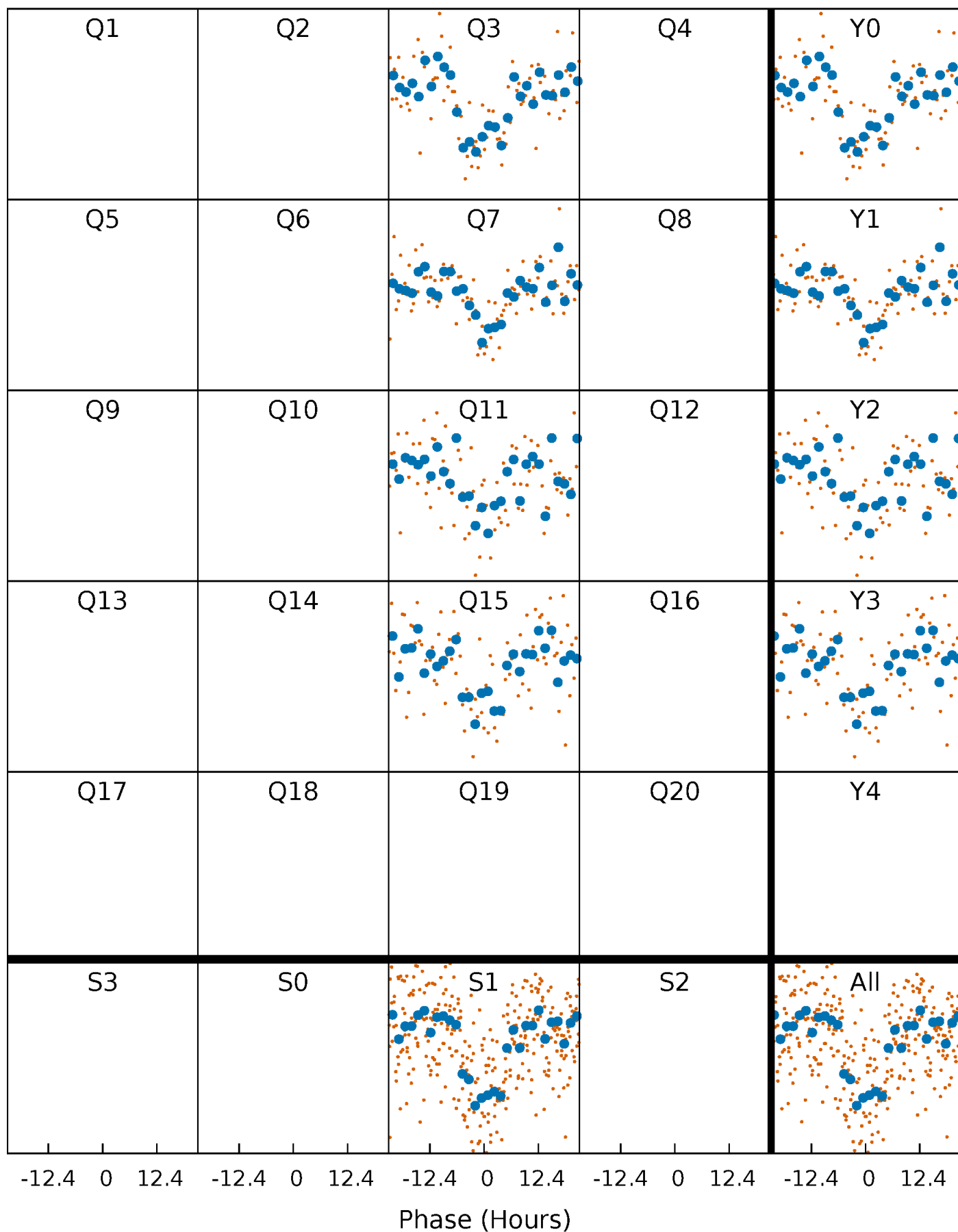


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



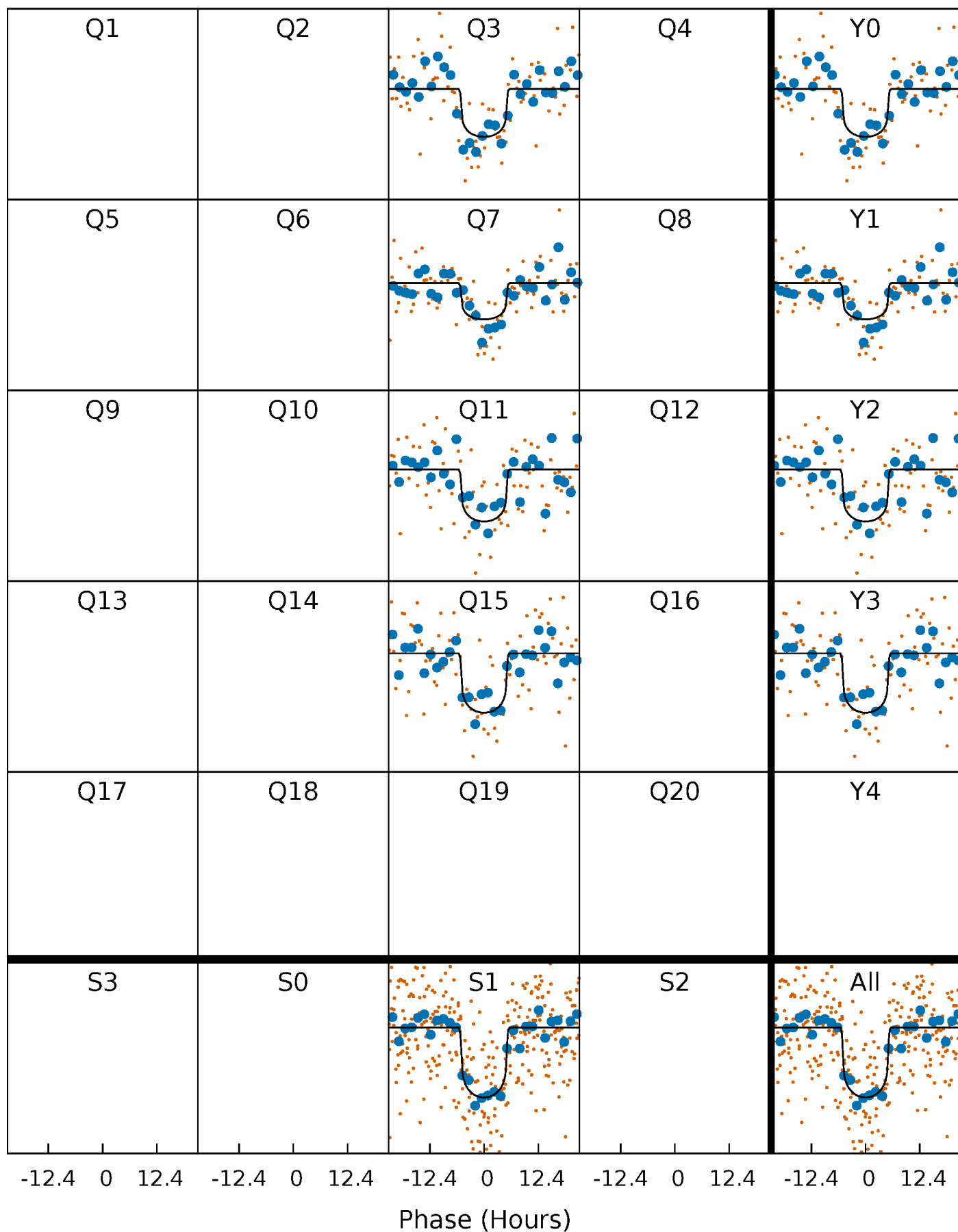
PDC Quarter-Phased Transit Curves

TCE 003958301-02 $P=387.565565$ Days $T_0=269.803123$ (BKJD)



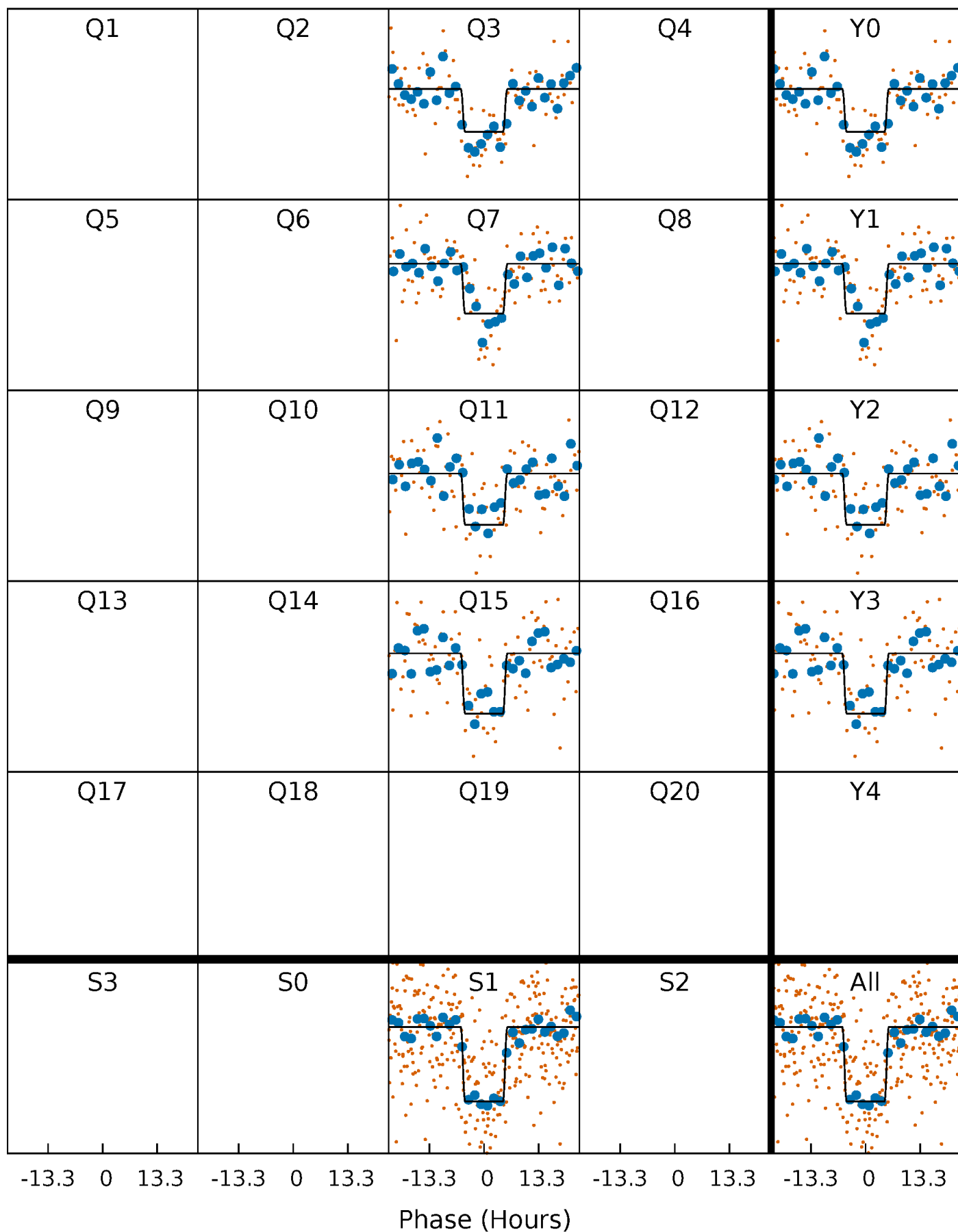
DV Quarter-Phased Transit Curves

TCE 003958301-02 $P=387.565565$ Days $T_0=269.803123$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

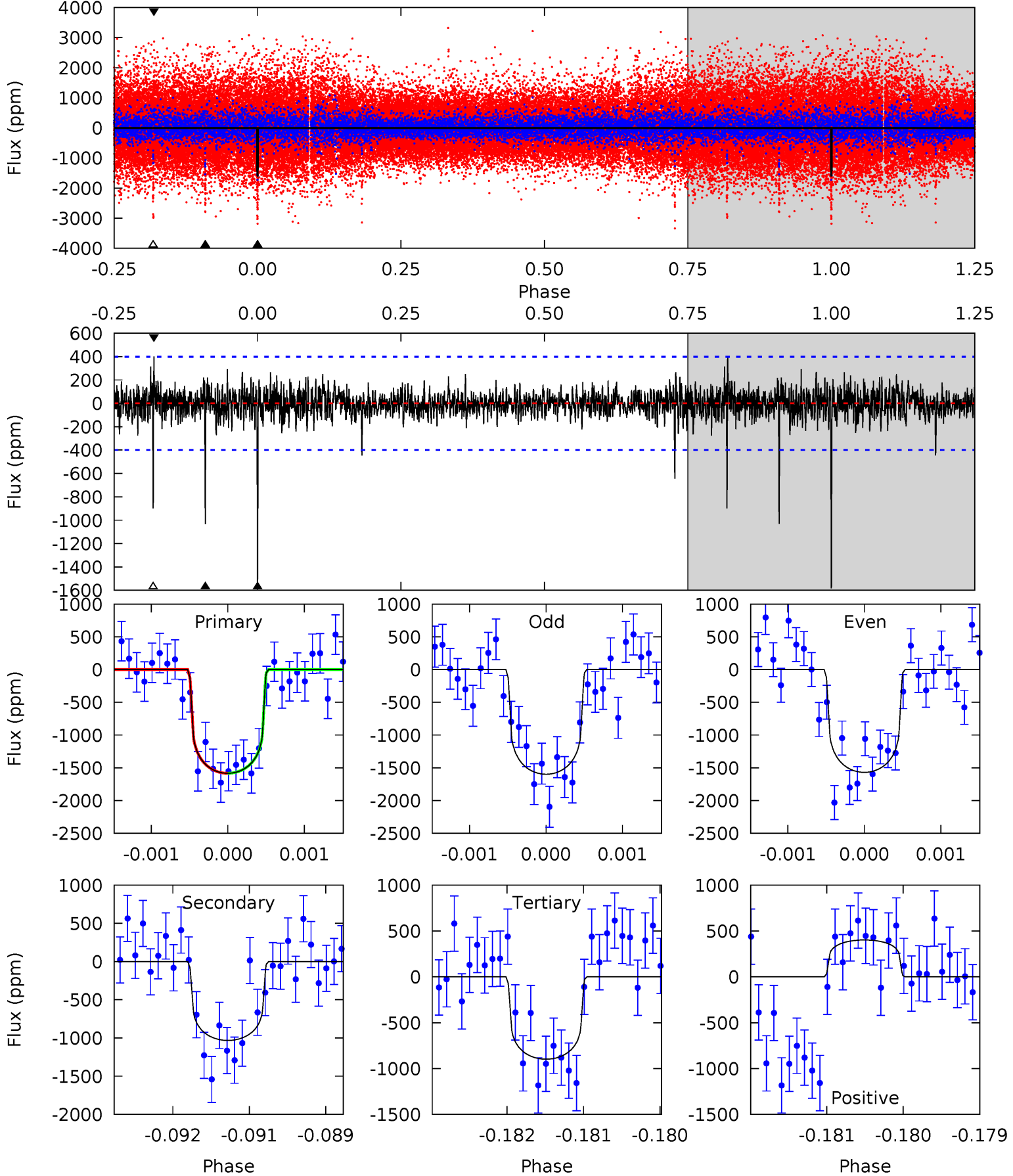
TCE 003958301-02 $P=387.570144$ Days $T_0=269.792694$ (BKJD)



DV Model-Shift Uniqueness Test

003958301-02, $P = 387.565565$ Days, $E = 269.803123$ Days

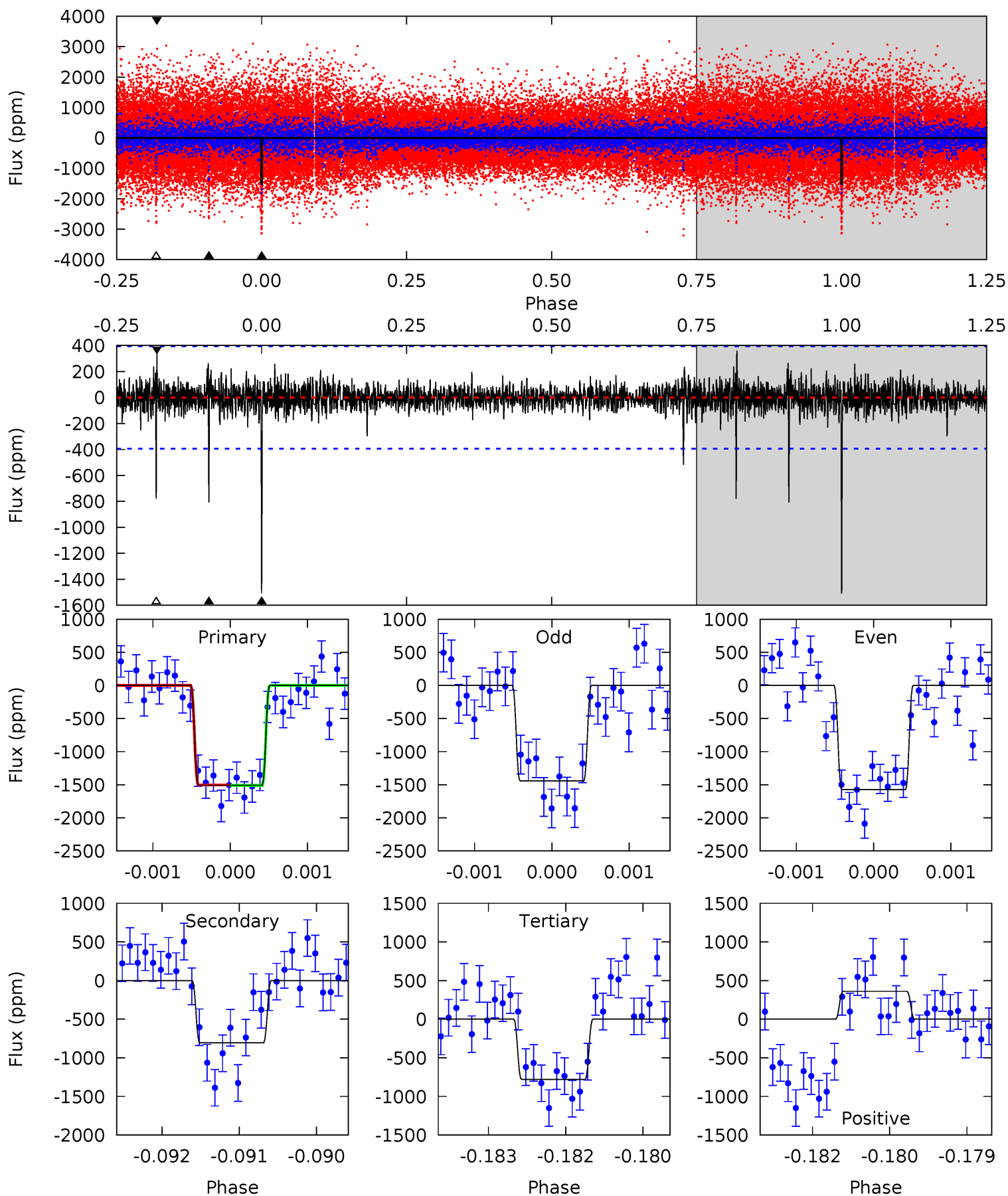
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	14.0	12.2	5.47	5.42	3.24	1.17	9.33	16.1	1.82	8.57	0.20	0.99	0.20	0.00



Alt Model-Shift Uniqueness Test

003958301-02, P = 387.570144 Days, E = 269.792694 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.7	11.1	10.7	4.96	5.42	3.24	0.92	10.0	15.7	0.39	6.12	0.92	1.05	0.19	0.04



Stellar Parameters For KIC 003958301

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6289^{+175}_{-219}	$4.454^{+0.052}_{-0.195}$	$-0.220^{+0.250}_{-0.350}$	$1.020^{+0.299}_{-0.107}$	$1.075^{+0.144}_{-0.144}$	$1.427^{+0.390}_{-0.735}$
	+3%/-3%	+1%/-4%	+114%/-159%	+29%/-10%	+13%/-13%	+27%/-51%
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 003958301-02 / KOI 3381.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1032 ± 74	$4.27^{+1.67}_{-1.55}$	385^{+29}_{-17}	5839^{+1546}_{-786}	34747^{+49914}_{-17202}
Alt.	-807 ± 73	$4.60^{+1.89}_{-1.73}$	384^{+28}_{-18}	5342^{+1251}_{-702}	23076^{+34535}_{-10942}

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 $A_{obs} \gg 1.0$

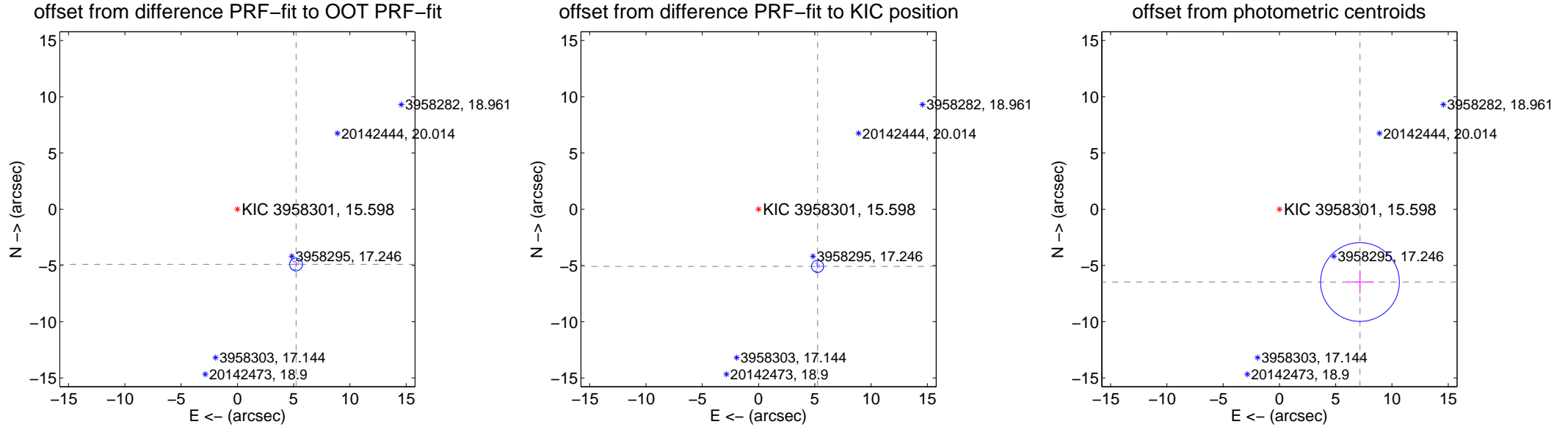
DV Centroid Data

Supplemental centroid analysis for 003958301-02. Kepler magnitude: 15.60. Transit SNR 13.58

There are 3 quarters with good PRF difference image offsets

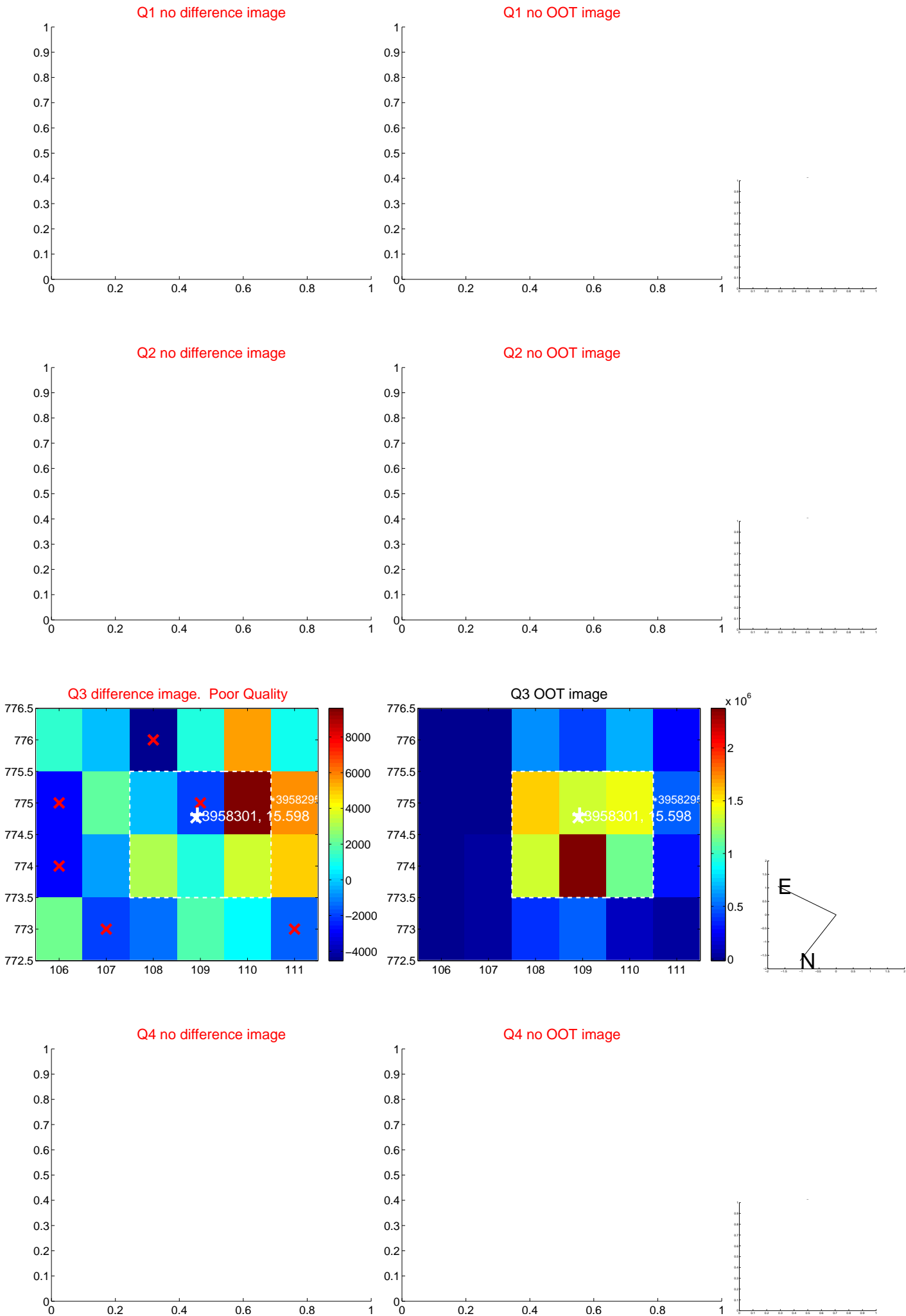
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.161 \pm 0.191	37.56	-5.216 \pm 0.153	-4.907 \pm 0.225
PRF-fit source offset from KIC position	7.302 \pm 0.179	40.74	-5.244 \pm 0.133	-5.082 \pm 0.218
photometric centroid source offset	9.65 \pm 1.17	8.27	-7.16 \pm 1.25	-6.47 \pm 1.06

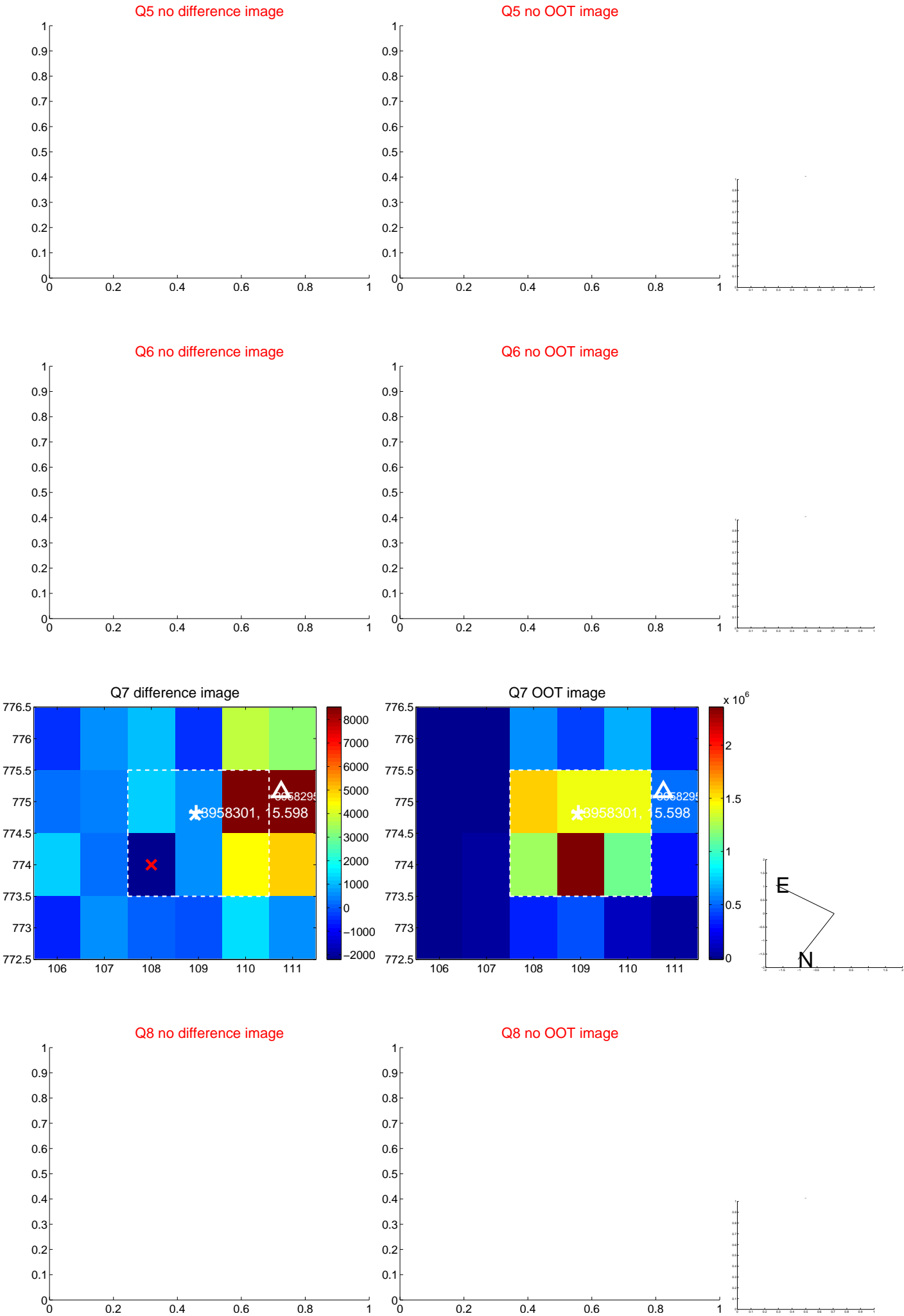


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

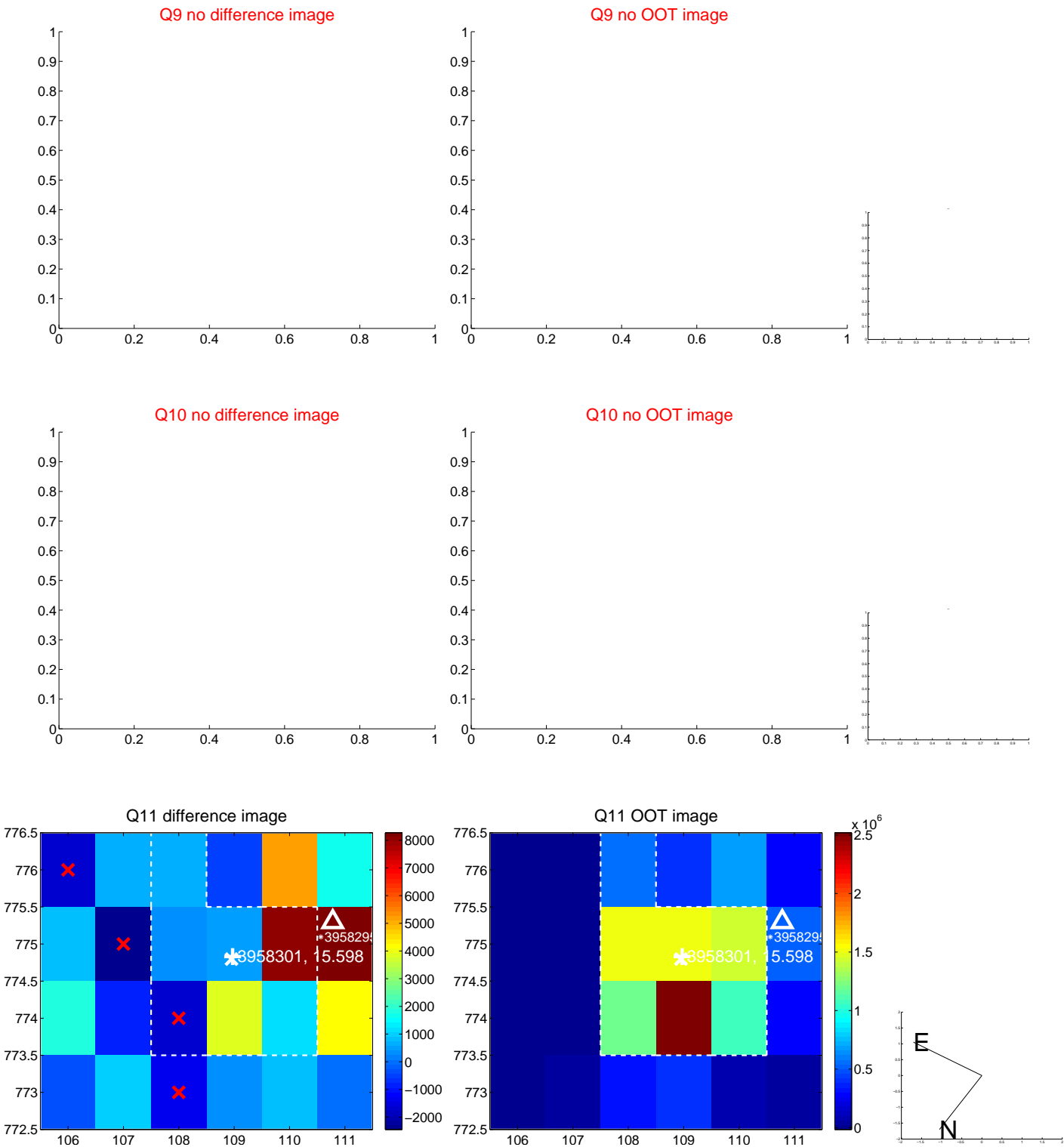
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



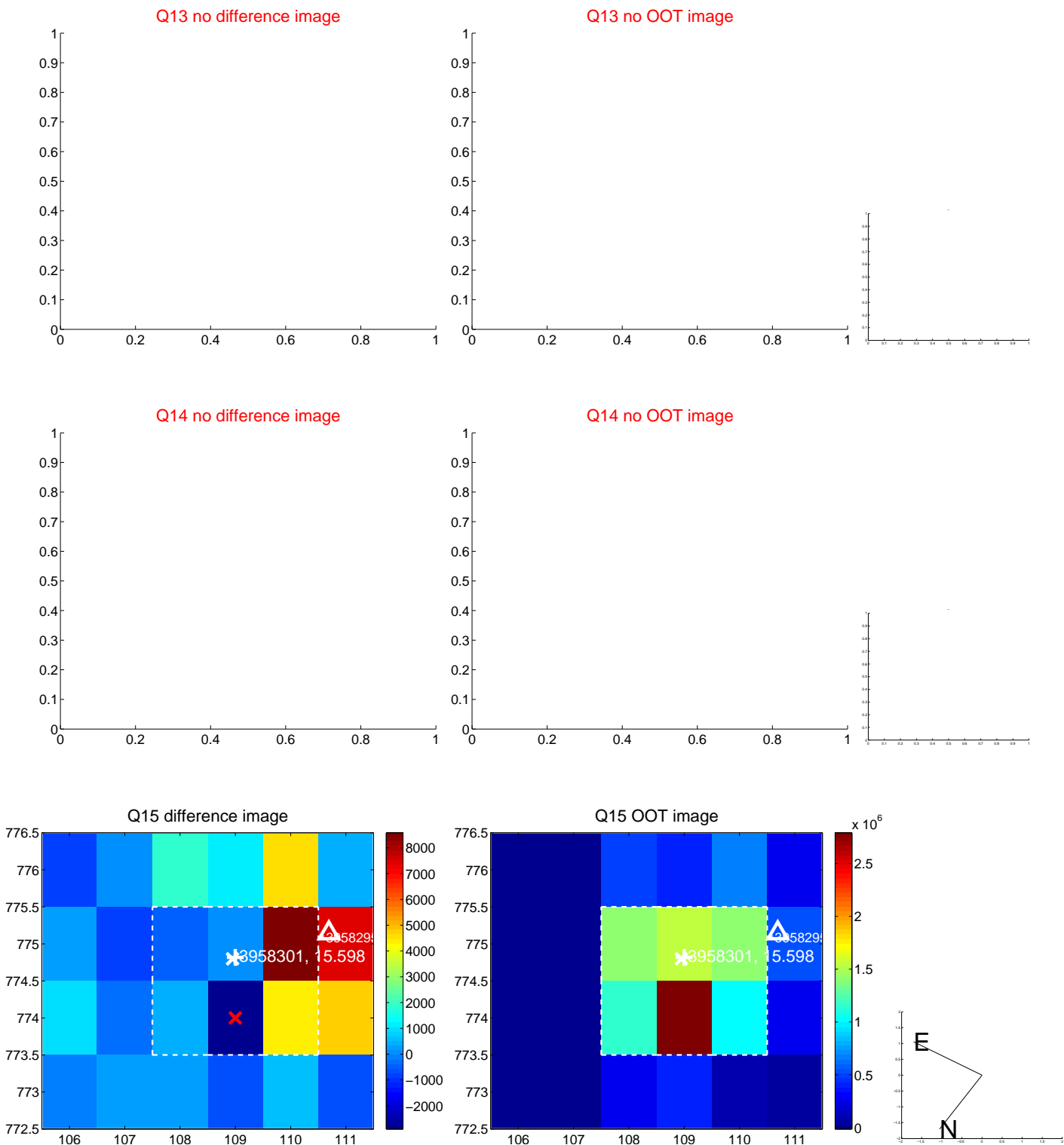
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



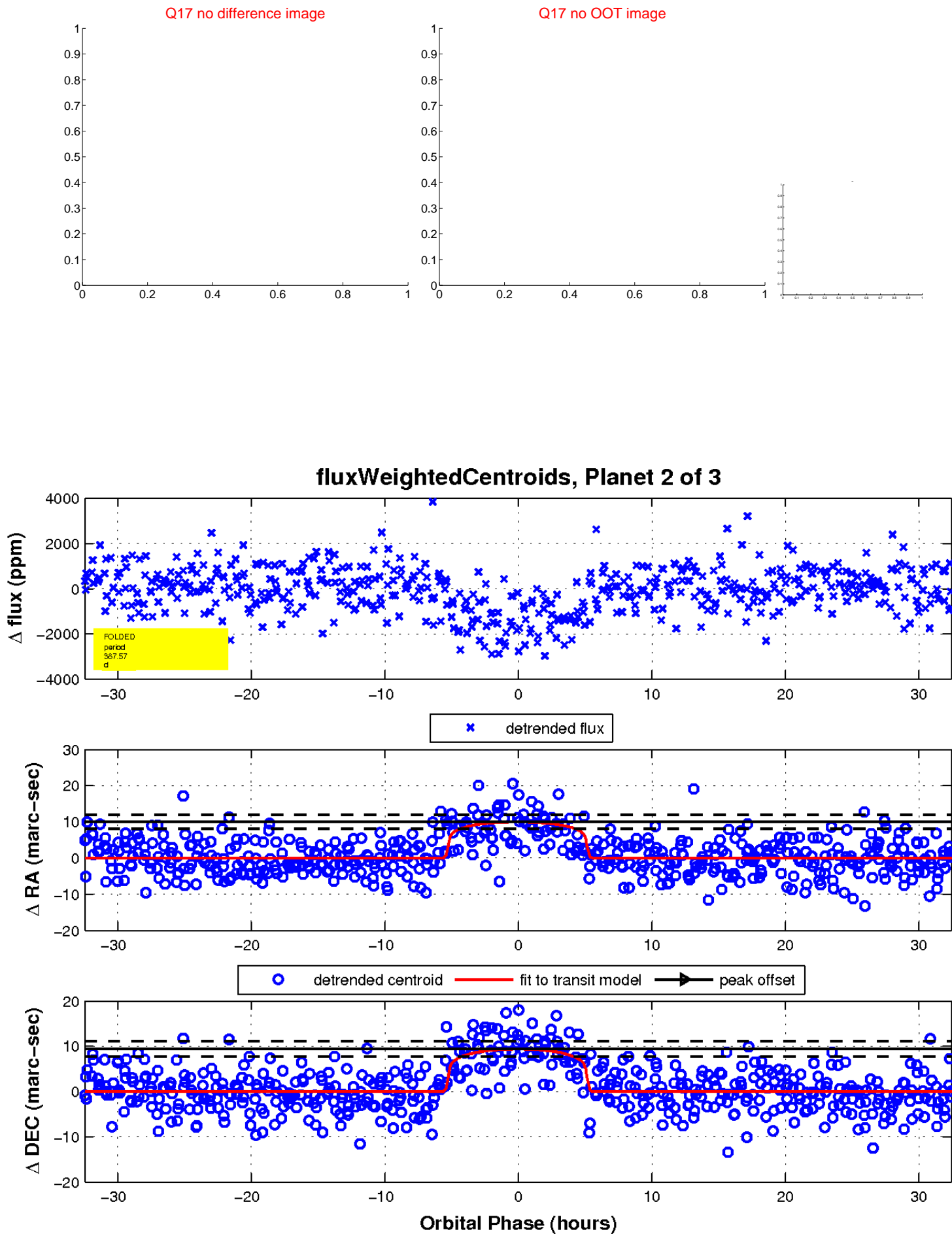
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

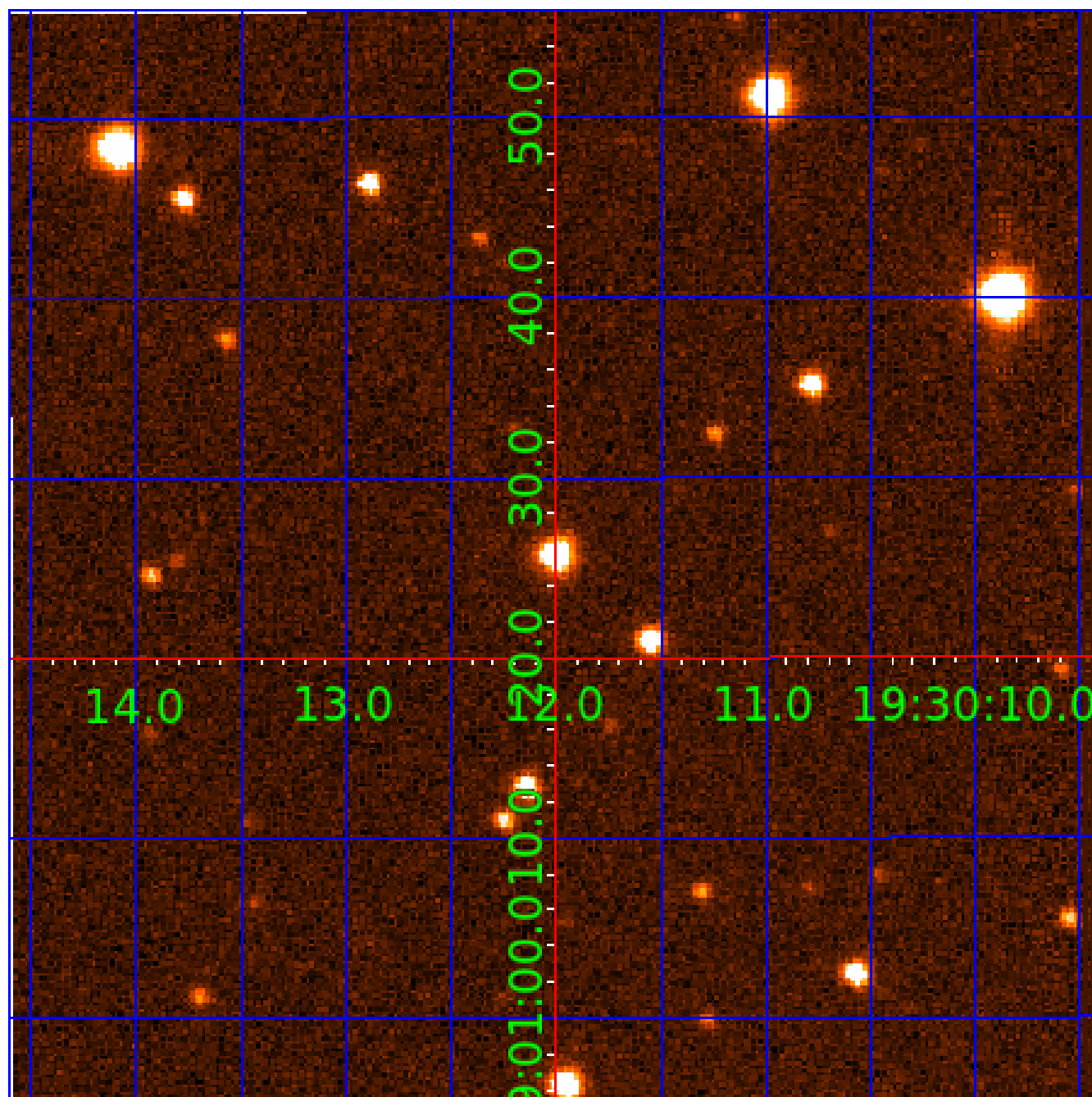


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003958301

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})
003958301-01	OBS	No	387.564639	305.027438	2030.0	11.072	16.2	17.0	1.02	6289	4.62	1.28
003958301-02	OBS	3381.02	387.565565	269.803123	1521.0	10.893	13.7	13.6	1.02	6289	4.02	1.28
003958301-03	OBS	No	387.563584	234.522554	1400.8	12.567	12.3	11.4	1.02	6289	4.78	1.28

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003958301-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET
003958301-03	OBS	FP	0.00	1	0	1	0	SAME_NTL_PERIOD—CENT_FEW_DIFFS—HALO_GHOST

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

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

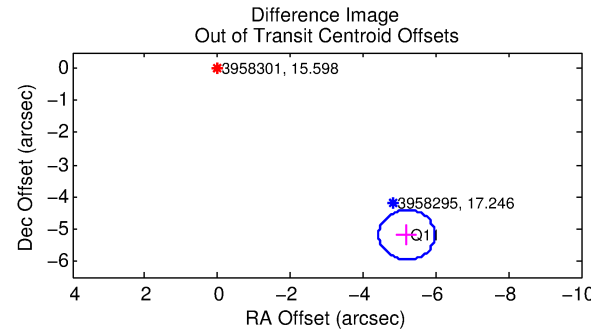
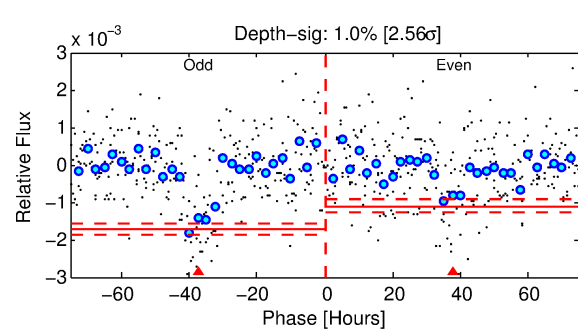
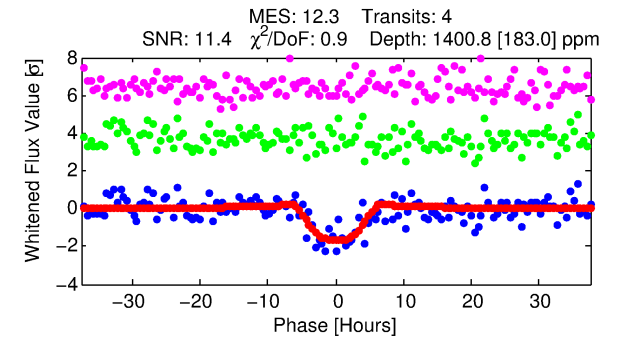
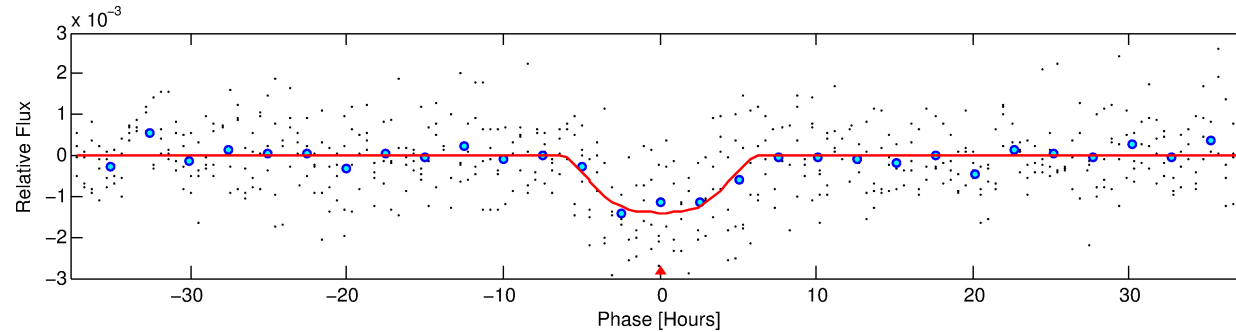
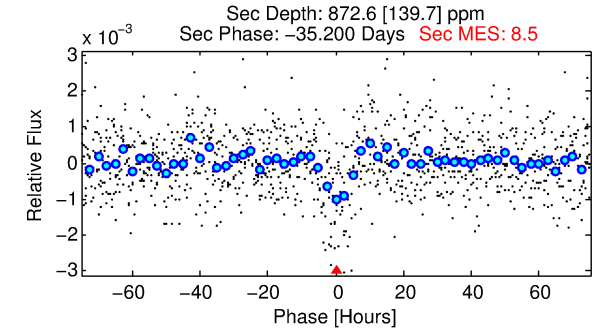
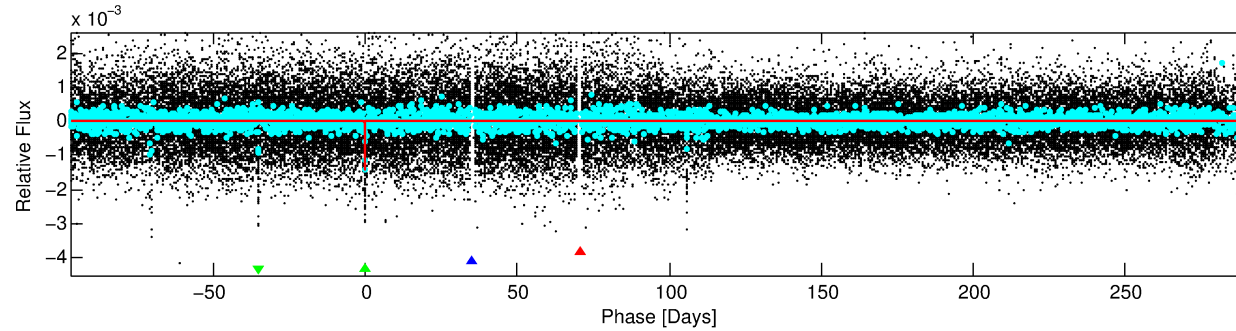
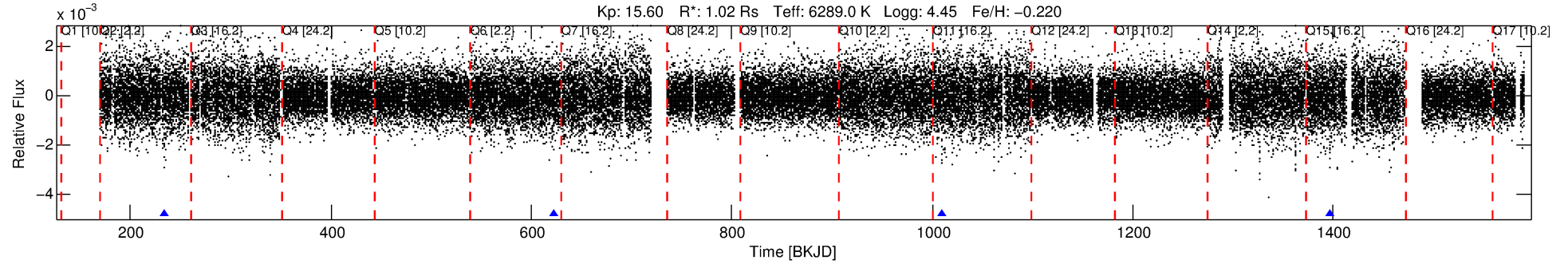
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003958301-03

No Significant Match Found

DV One-Page Summary

KIC: 3958301 Candidate: 3 of 3 Period: 387.564 d
KOI: K03381 Corr: No Ephemeris Match



DV Fit Results:

Period = 387.56358 [0.01154] d
Epoch = 234.5226 [0.0220] BKJD
Rp/R* = 0.0429 [0.0043]
a/R* = 100.85 [20.62]
b = 0.95 [0.02]
Seff = 1.28 [0.49]
Teq = 271 [26] K
Rp = 4.78 [1.48] Re
a = 1.0674 [0.2627] AU
Ag = 23965.91 [10569.52] [2.27σ]
Teff = 5217 [383] K [12.89σ]

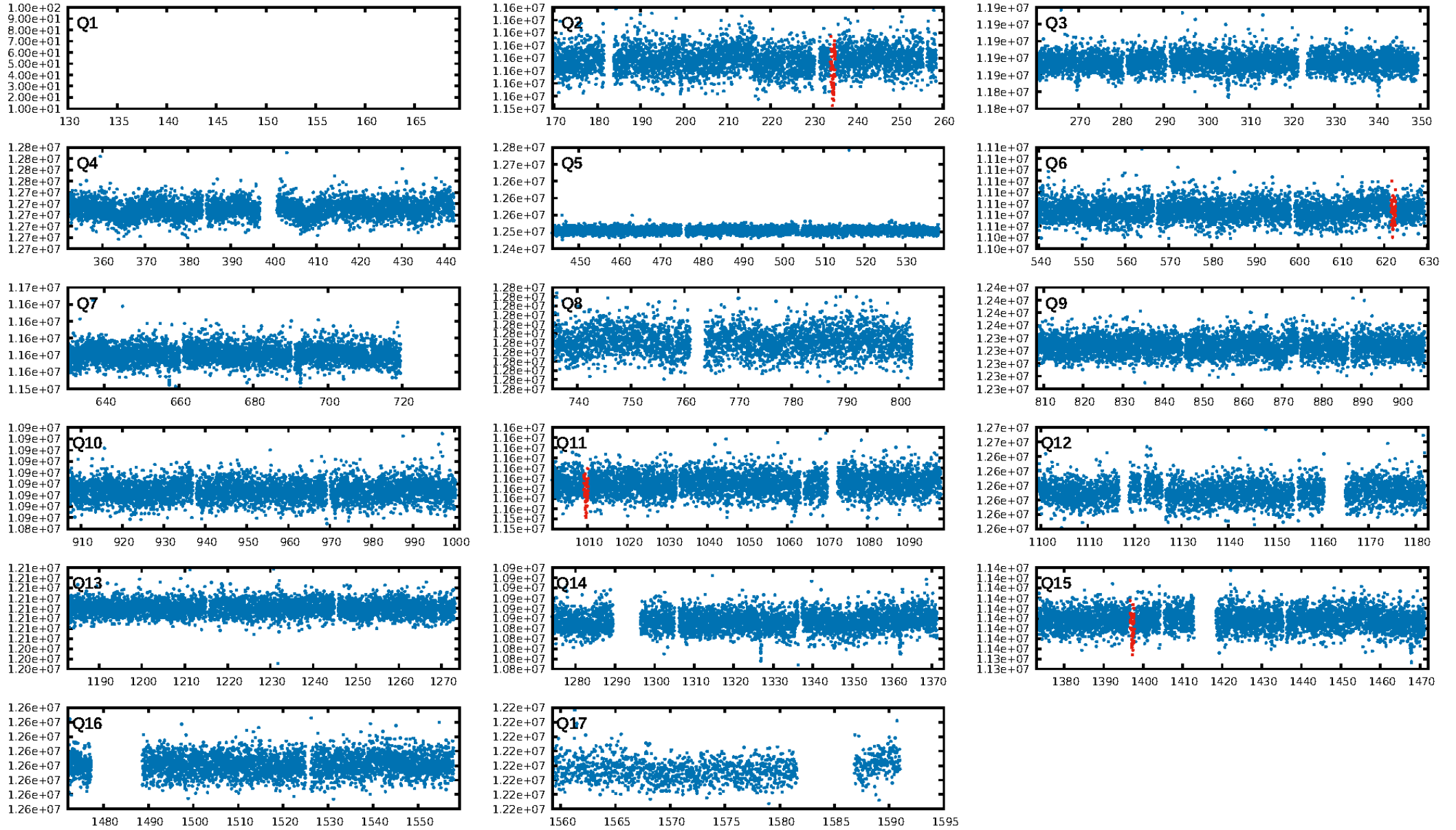
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGoF-sig: 87.8%
Bootstrap-pfa: 1.83e-18
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.005683
Centroid-sig: 0.0%
Centroid-so: 6.443 arcsec [5.17σ]
OotOffset-rm: 7.344 arcsec [28.45σ]
KicOffset-rm: 7.415 arcsec [28.61σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

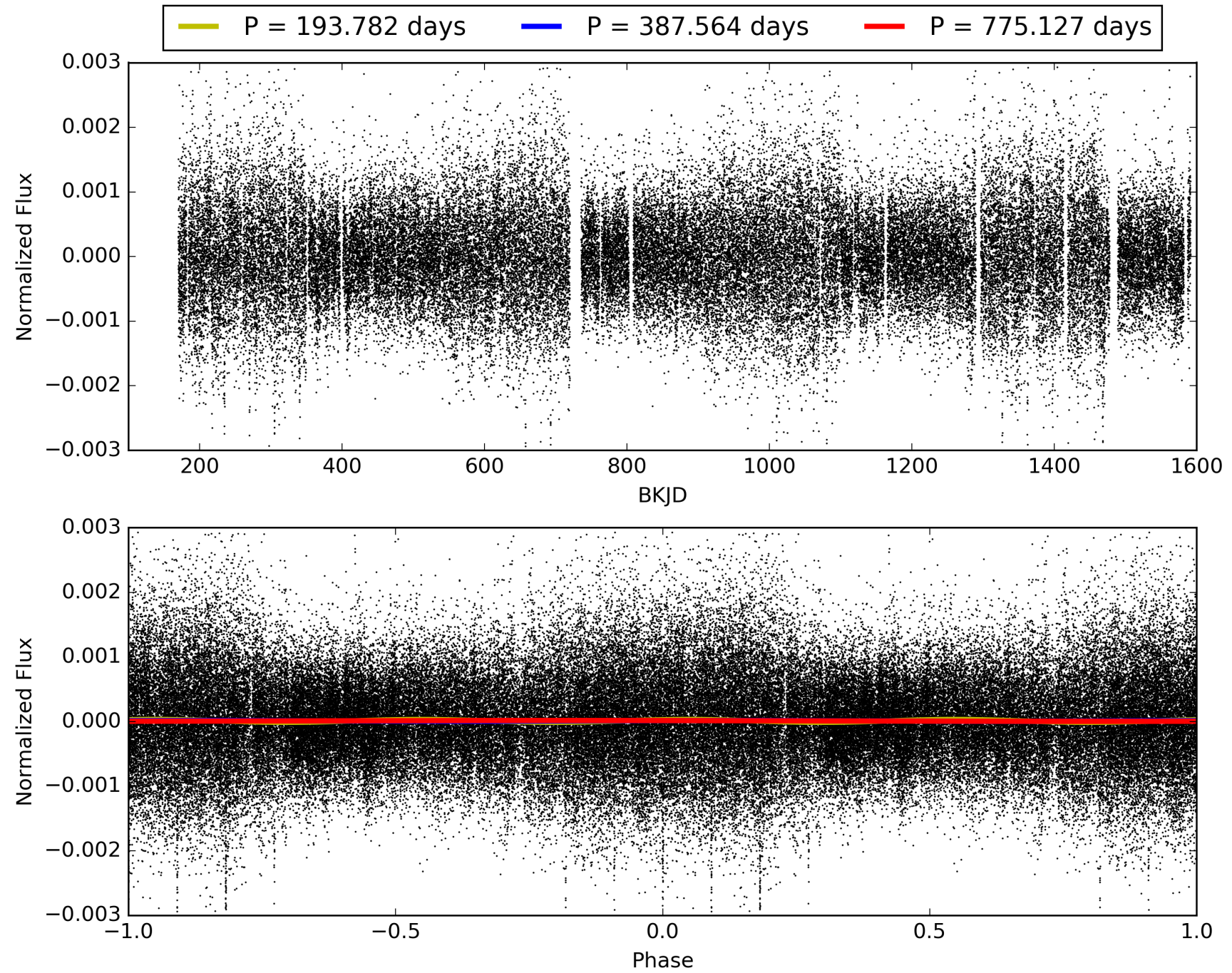
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:19:25 Z

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

TCE 003958301-03, PDC Light Curves

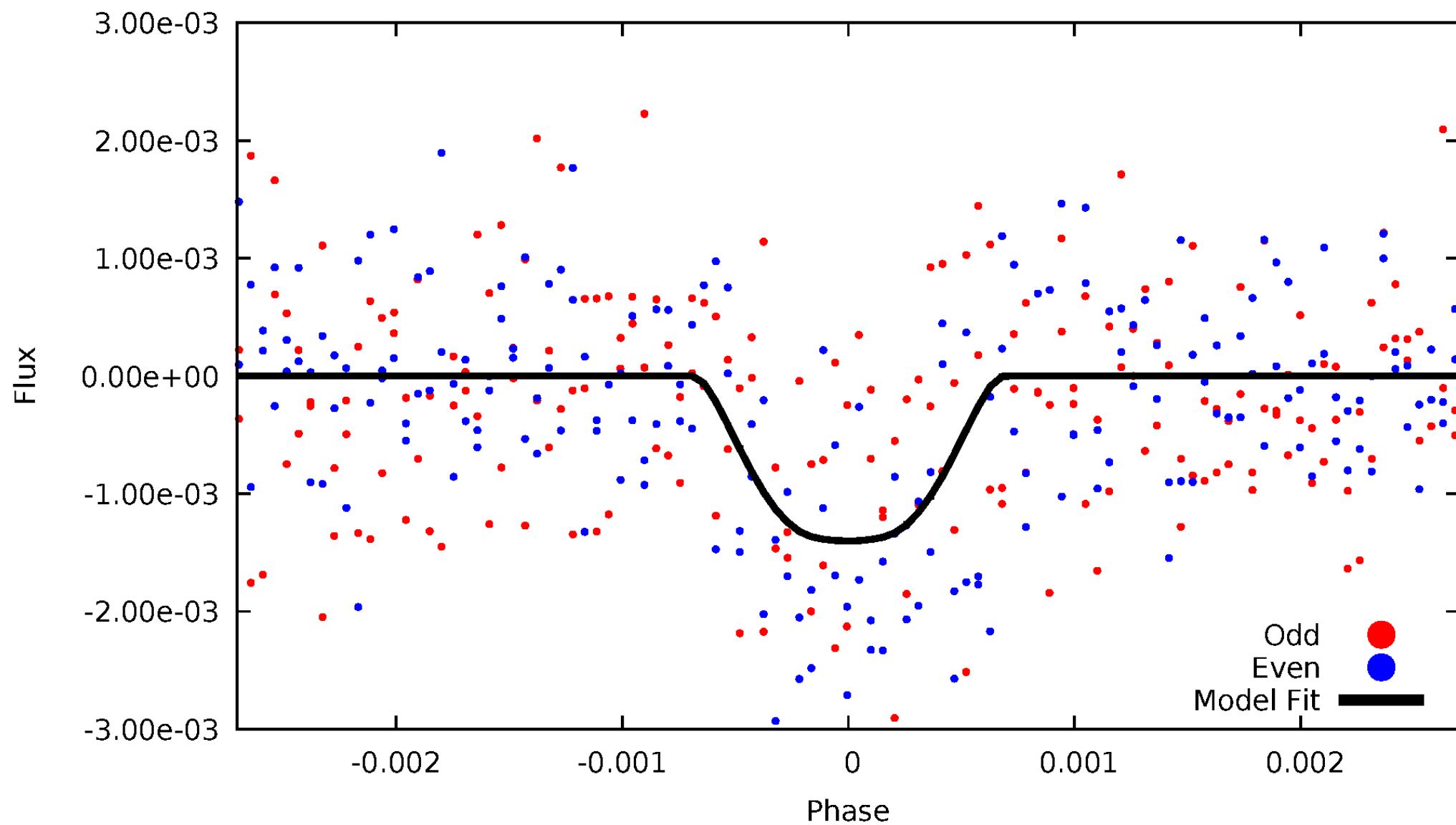


TCE 003958301-03



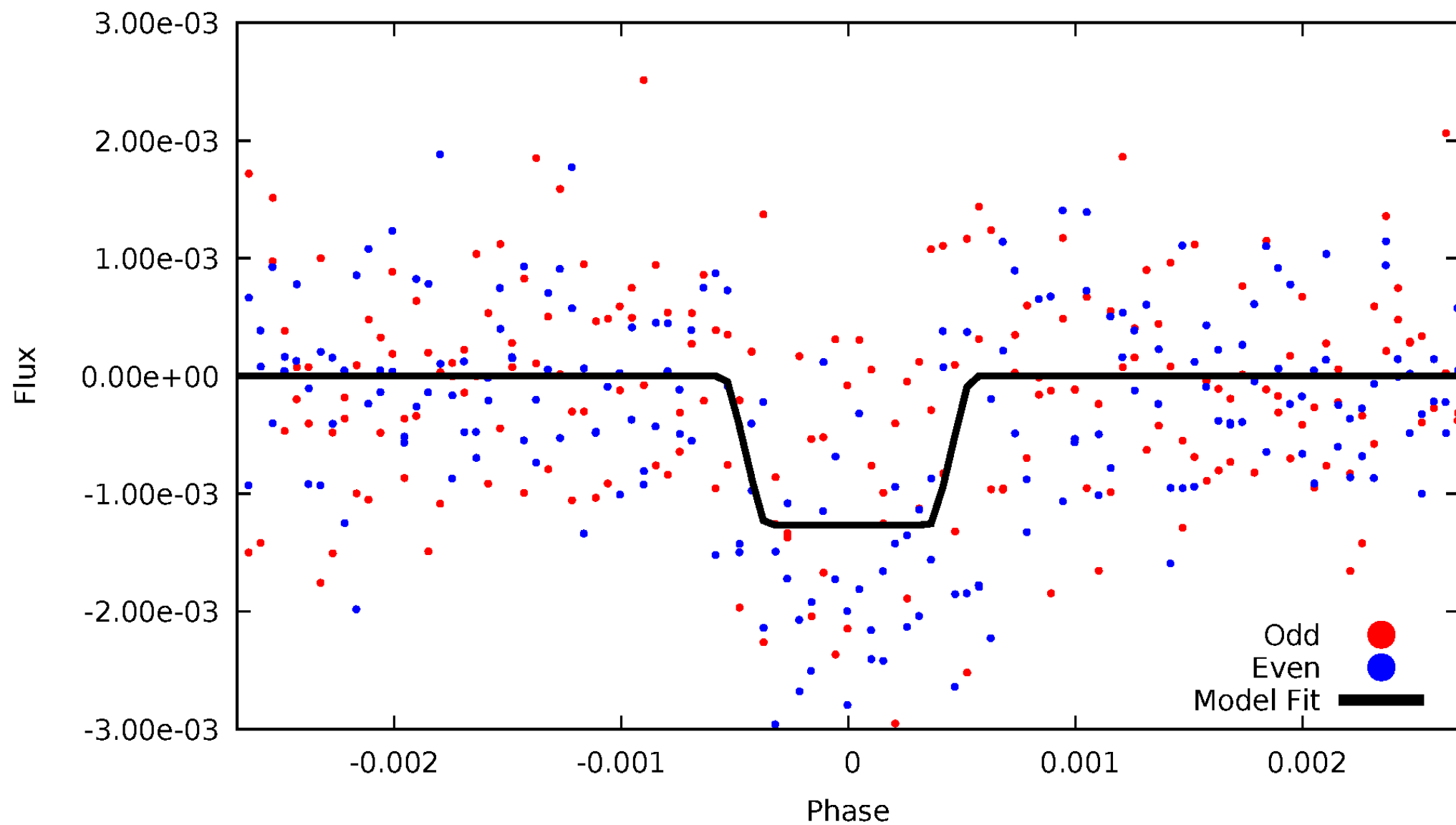
DV Odd/Even

TCE 003958301-03



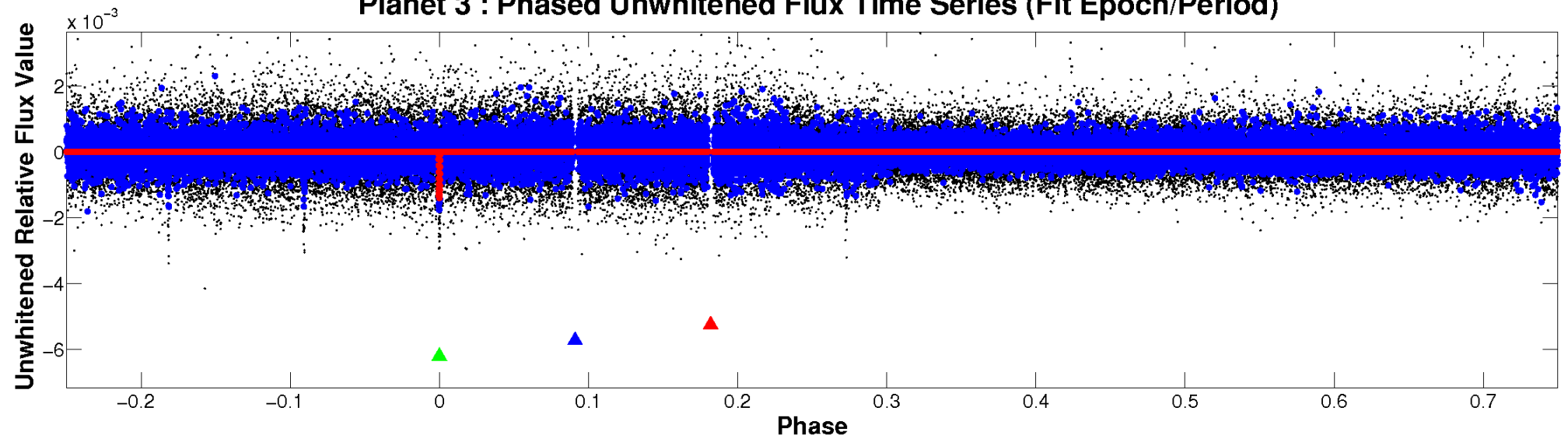
ALT Odd/Even

TCE 003958301-03

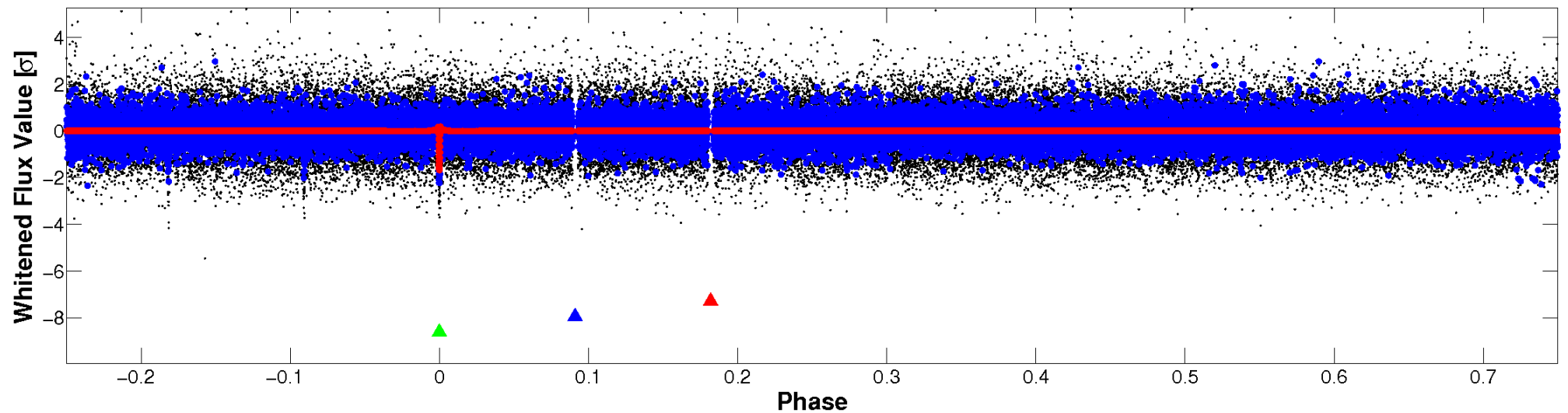


Non-Whitened Vs. Whitened Light Curve

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

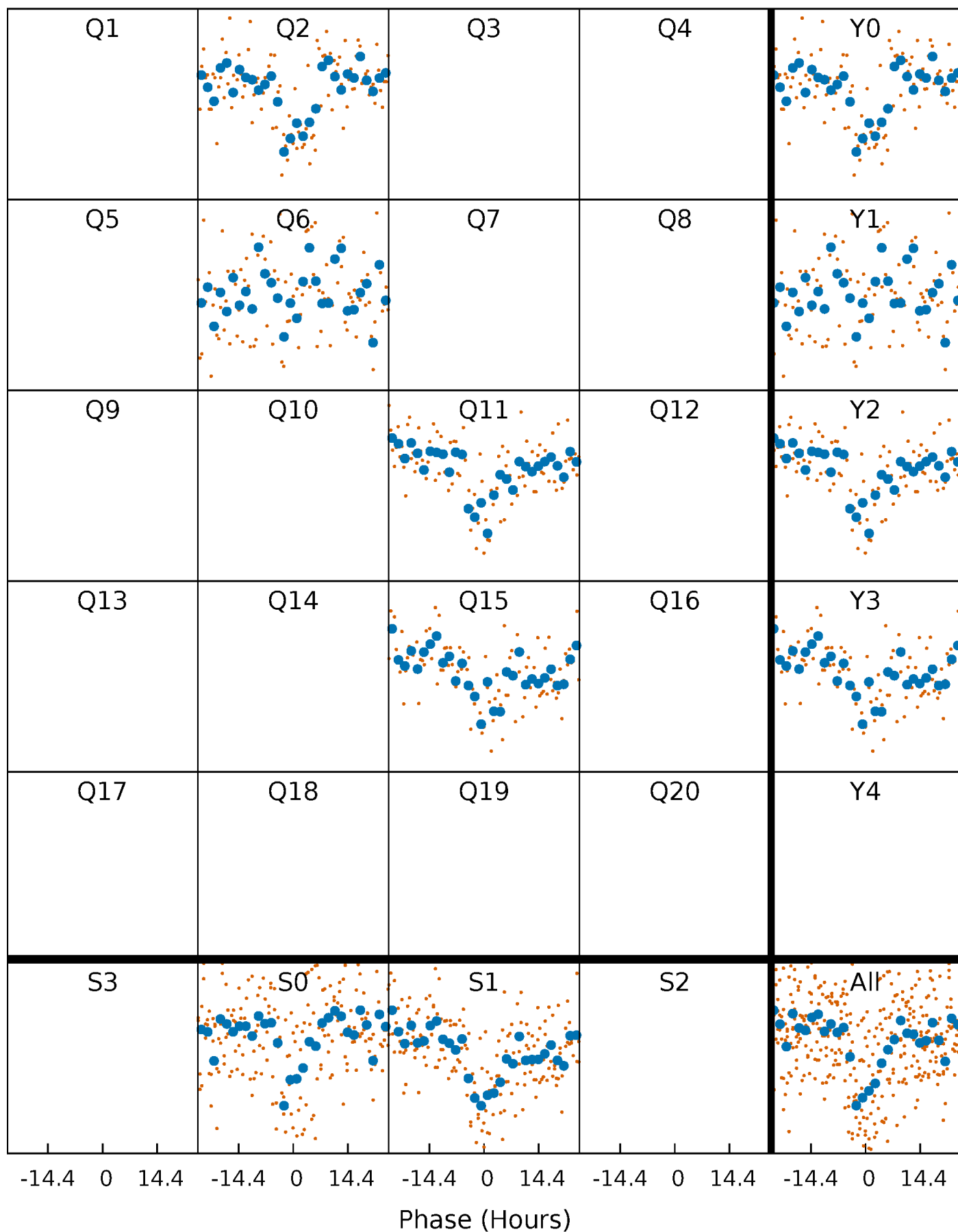


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



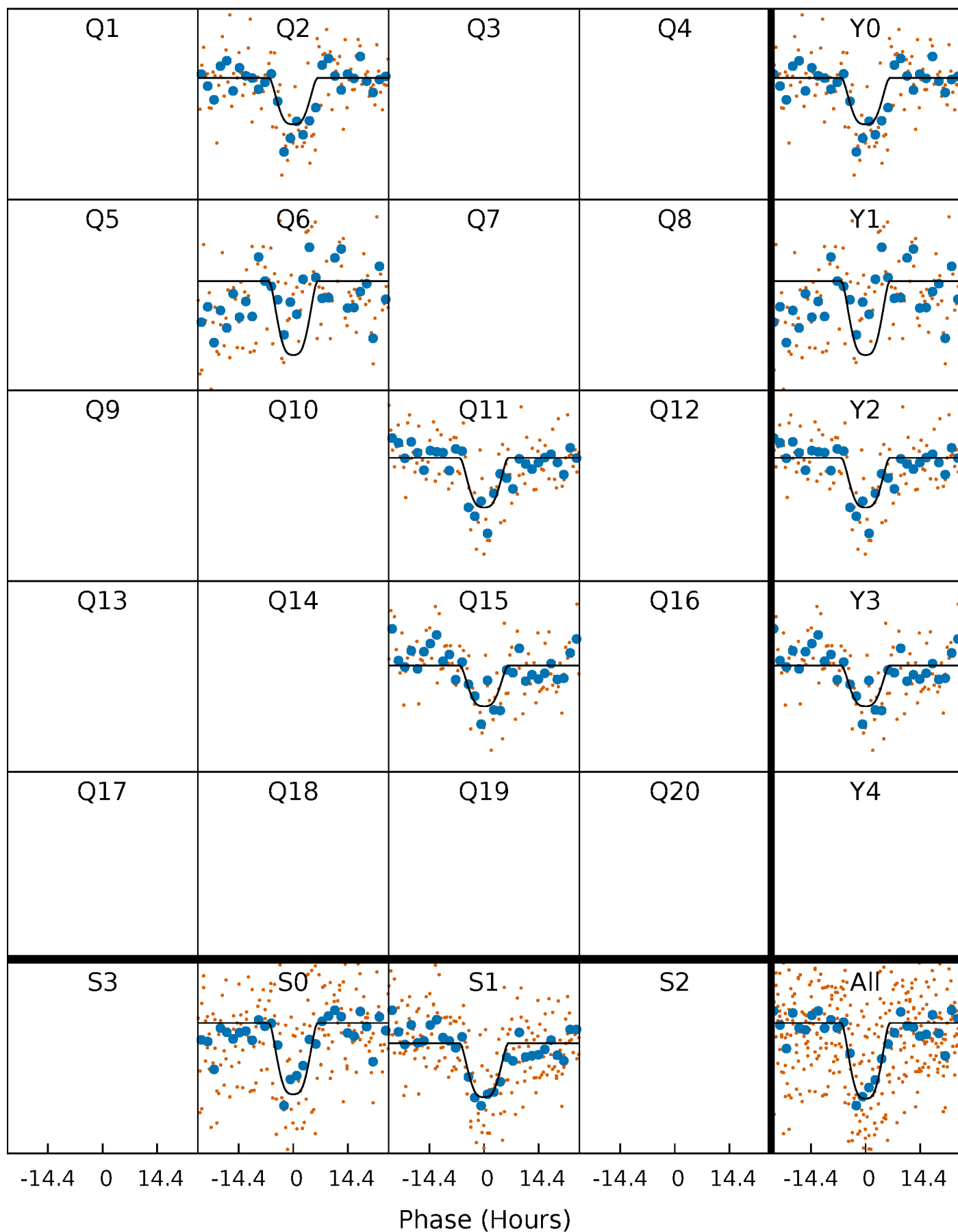
PDC Quarter-Phased Transit Curves

TCE 003958301-03 $P=387.563584$ Days $T_0=234.522554$ (BKJD)



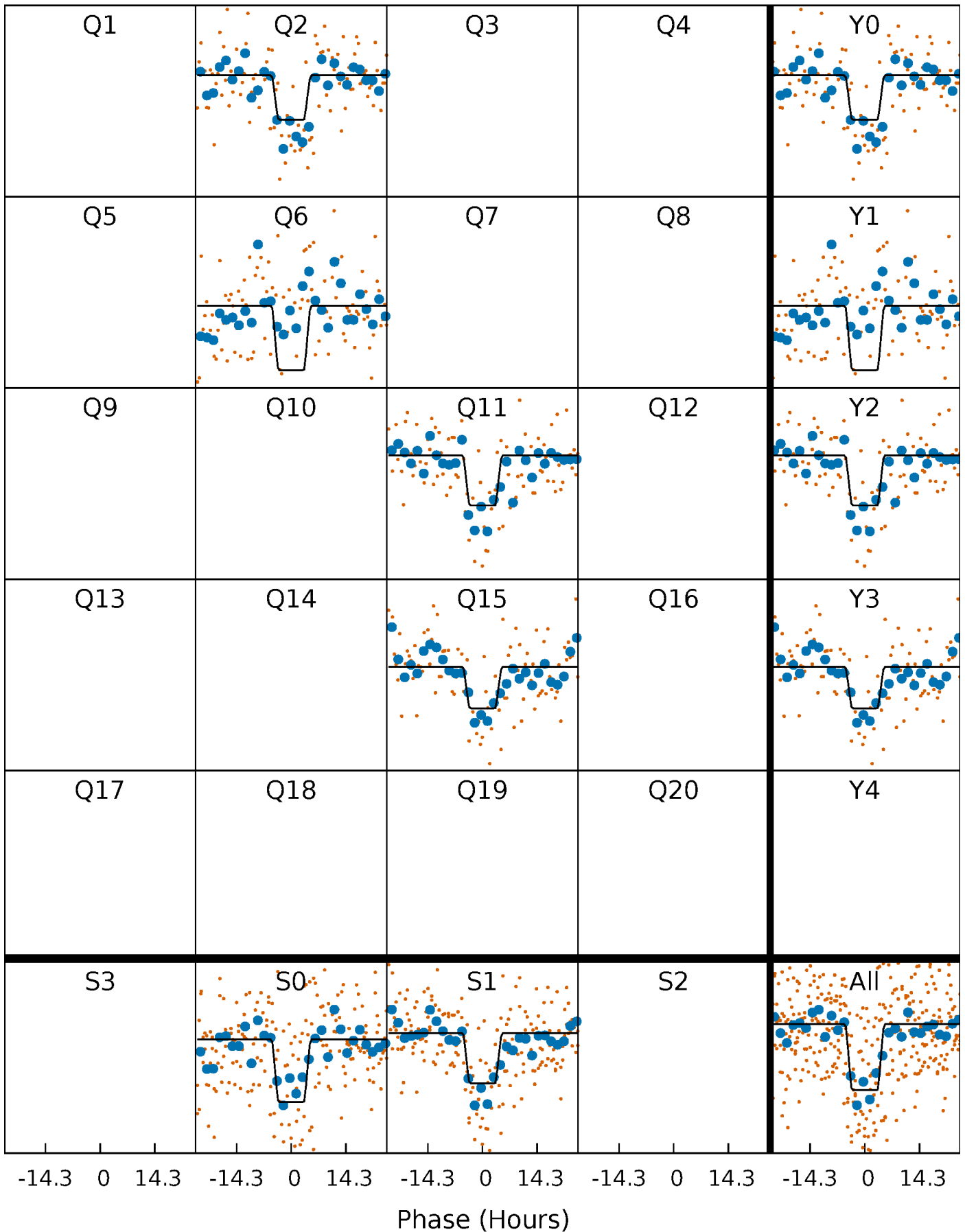
DV Quarter-Phased Transit Curves

TCE 003958301-03 $P=387.563584$ Days $T_0=234.522554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

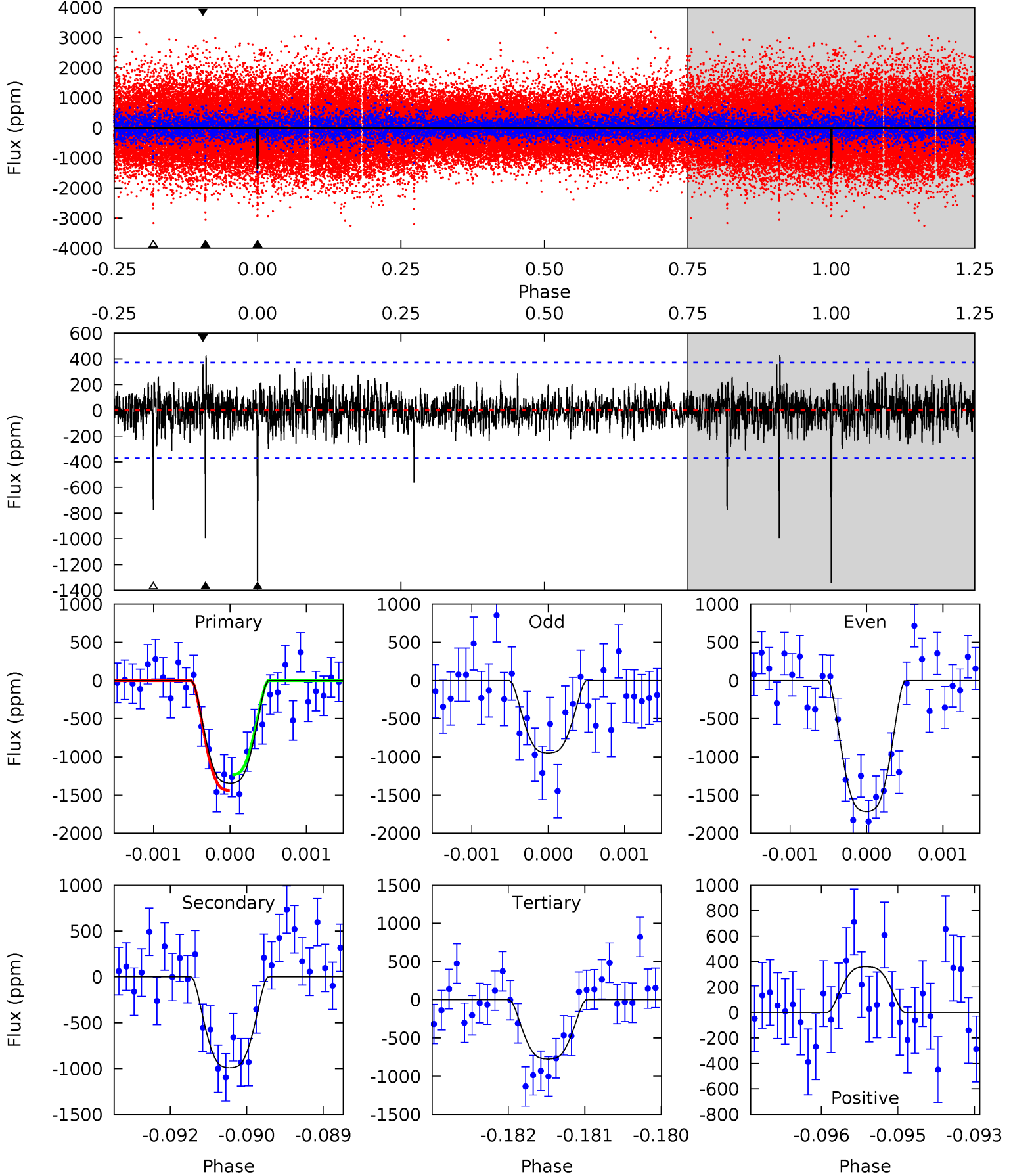
TCE 003958301-03 $P=387.563333$ Days $T_0=234.522487$ (BKJD)



DV Model-Shift Uniqueness Test

003958301-03, P = 387.563584 Days, E = 234.522554 Days

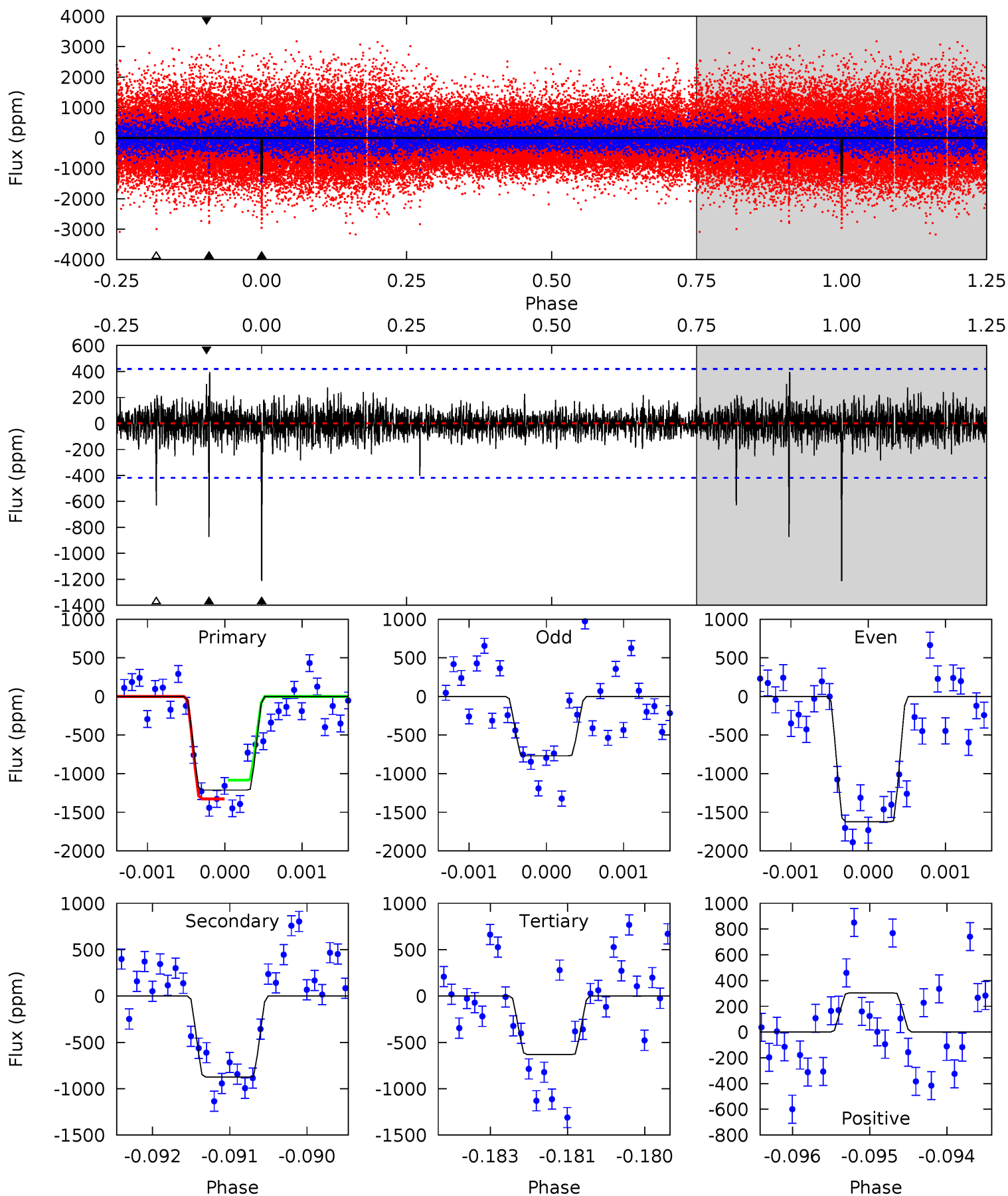
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	14.4	11.2	5.21	5.39	3.20	1.37	8.28	14.3	3.15	9.18	5.56	0.85	0.24	1.48



Alt Model-Shift Uniqueness Test

003958301-03, P = 387.563333 Days, E = 234.522487 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	11.3	8.19	3.94	5.43	3.26	0.95	7.55	11.8	3.15	7.39	5.51	0.80	0.25	1.57



Stellar Parameters For KIC 003958301

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6289^{+175}_{-219}	$4.454^{+0.052}_{-0.195}$	$-0.220^{+0.250}_{-0.350}$	$1.020^{+0.299}_{-0.107}$	$1.075^{+0.144}_{-0.144}$	$1.427^{+0.390}_{-0.735}$
	+3%/-3%	+1%/-4%	+114%/-159%	+29%/-10%	+13%/-13%	+27%/-51%
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 003958301-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-993 ± 69	$4.96^{+0.90}_{-0.65}$	386^{+27}_{-19}	5410^{+319}_{-287}	24840^{+7048}_{-6906}
Alt.	-874 ± 77	$4.15^{+0.73}_{-0.61}$	386^{+26}_{-19}	5711^{+433}_{-348}	31221^{+11840}_{-8207}

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

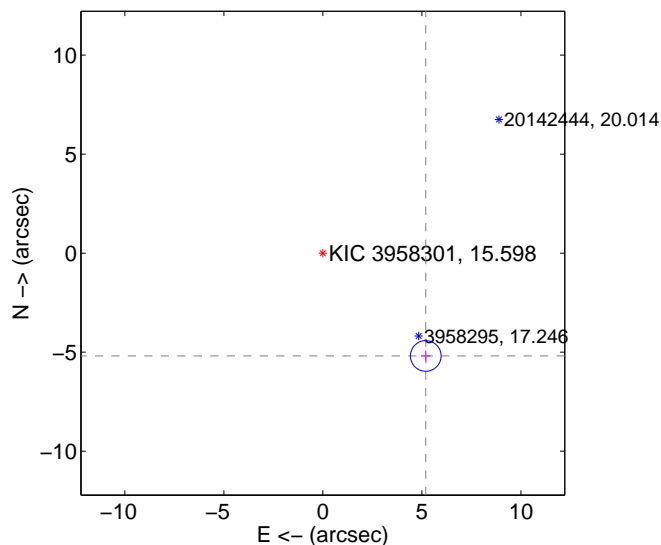
Supplemental centroid analysis for 003958301-03. Kepler magnitude: 15.60. Transit SNR 11.42

There are 1 quarters with good PRF difference image offsets

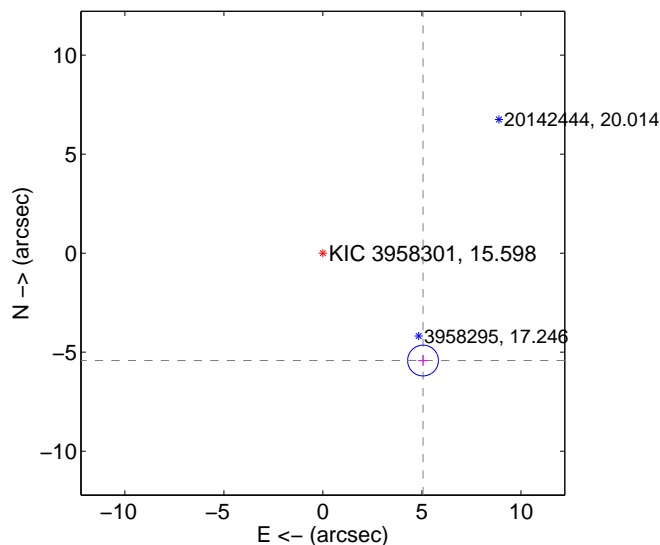
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.344 ± 0.258	28.45	-5.196 ± 0.243	-5.191 ± 0.272
PRF-fit source offset from KIC position	7.415 ± 0.259	28.61	-5.056 ± 0.243	-5.423 ± 0.272
photometric centroid source offset	6.44 ± 1.25	5.17	-4.53 ± 1.26	-4.58 ± 1.24

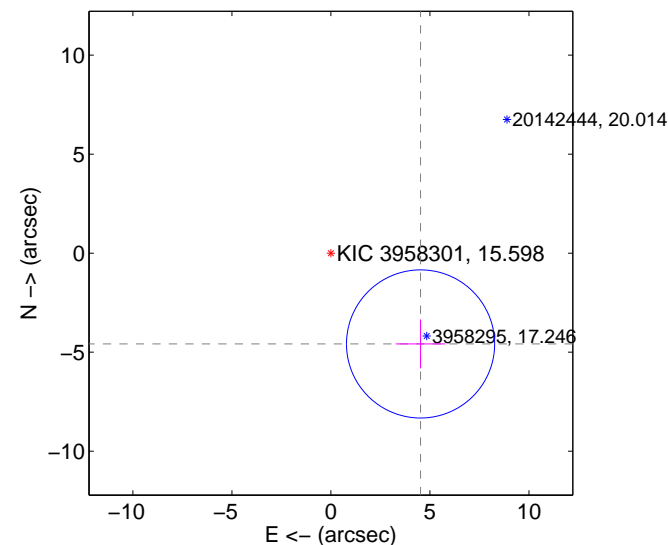
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

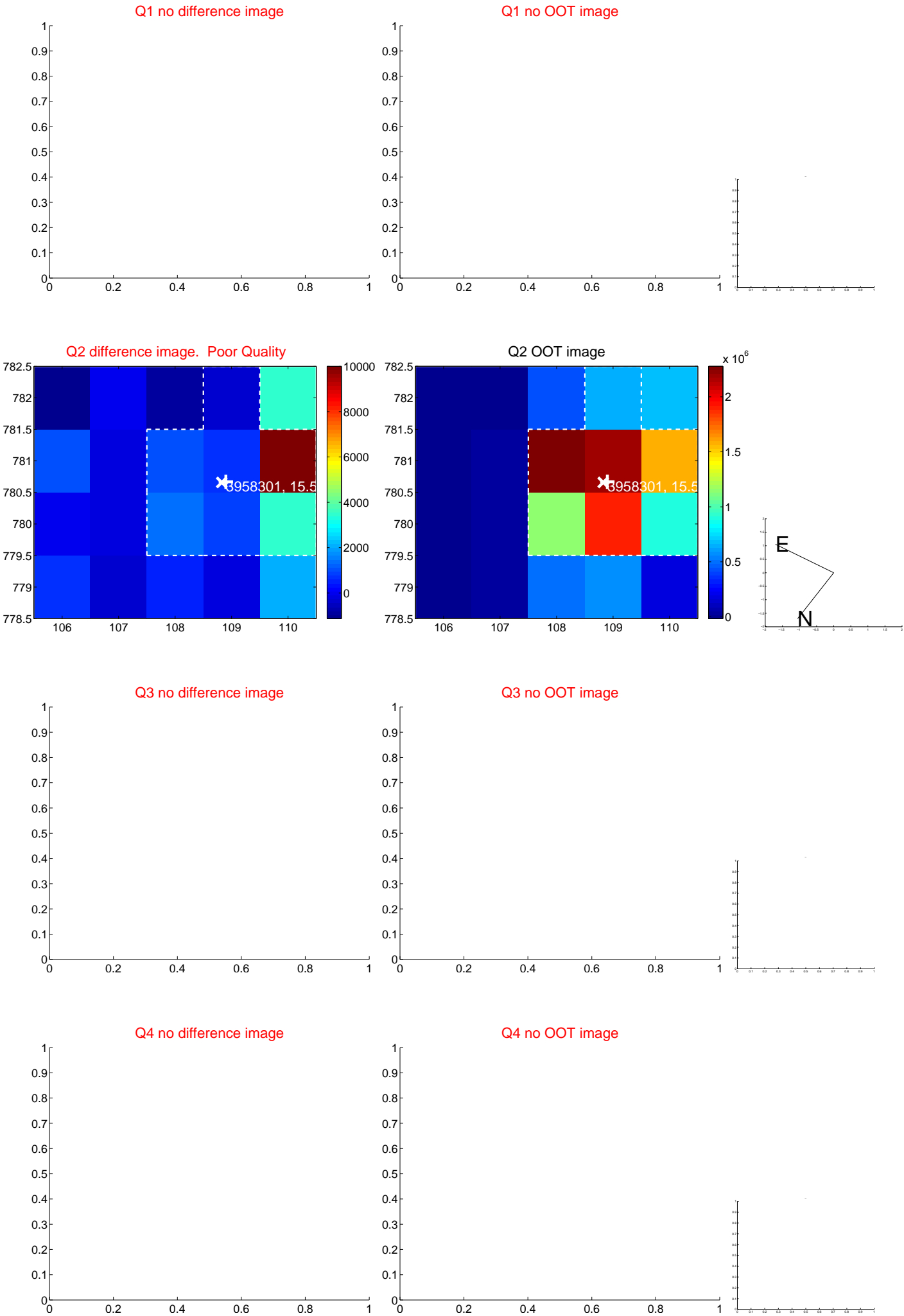


offset from photometric centroids

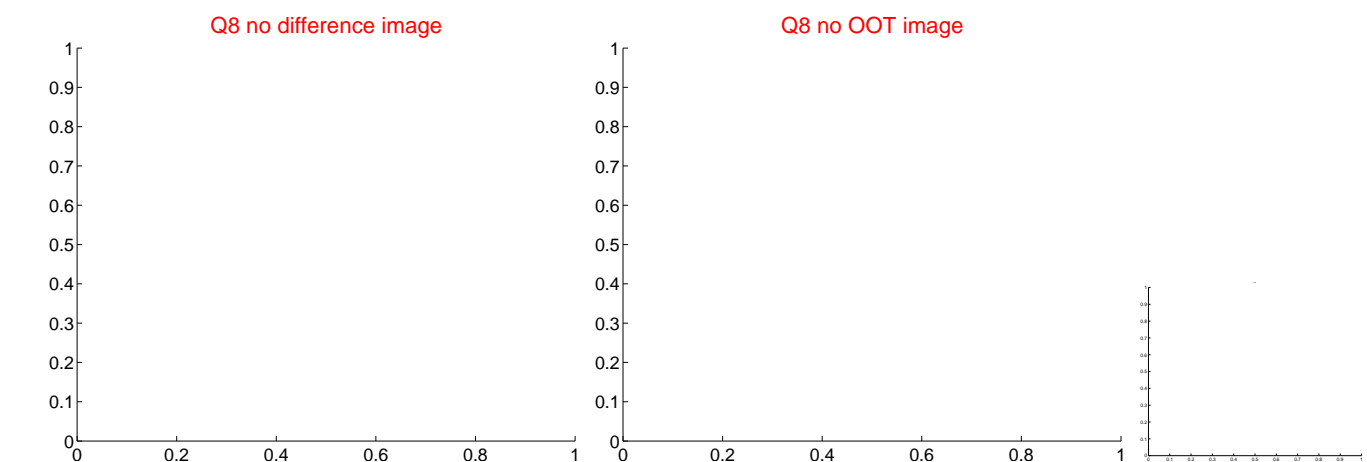
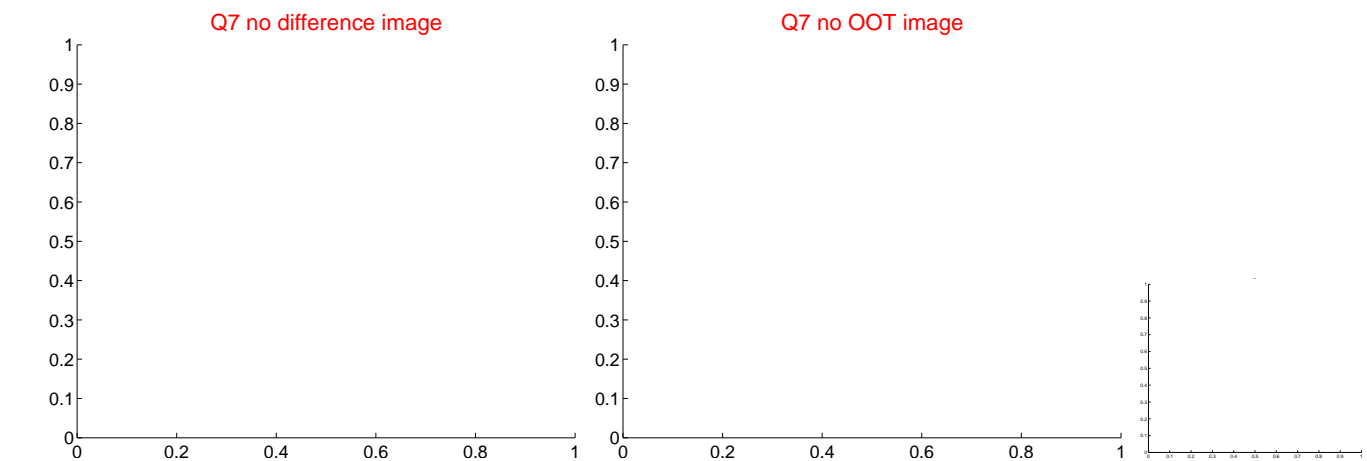
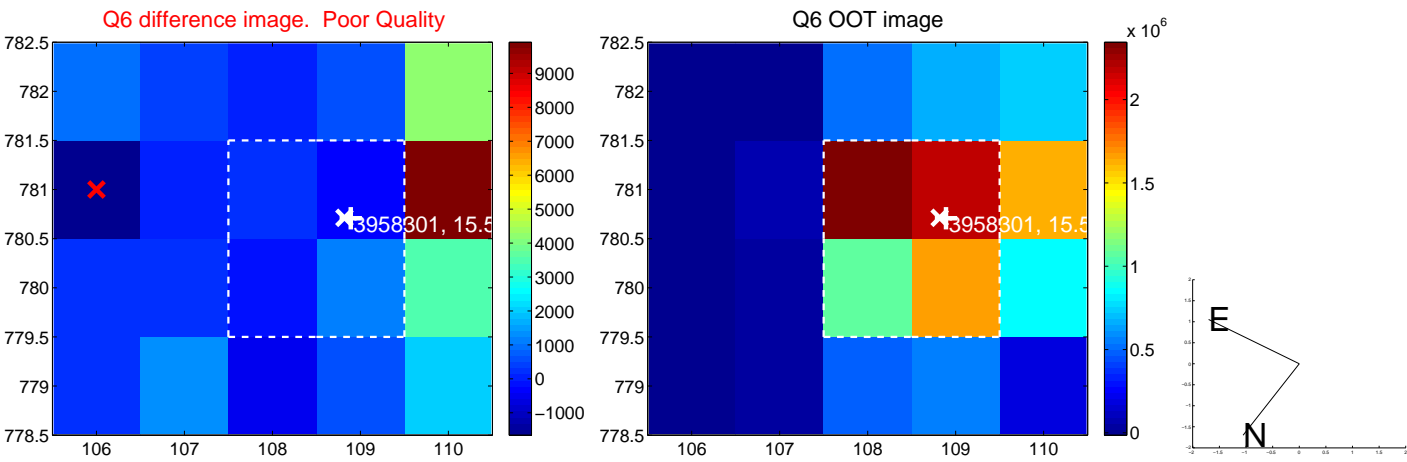
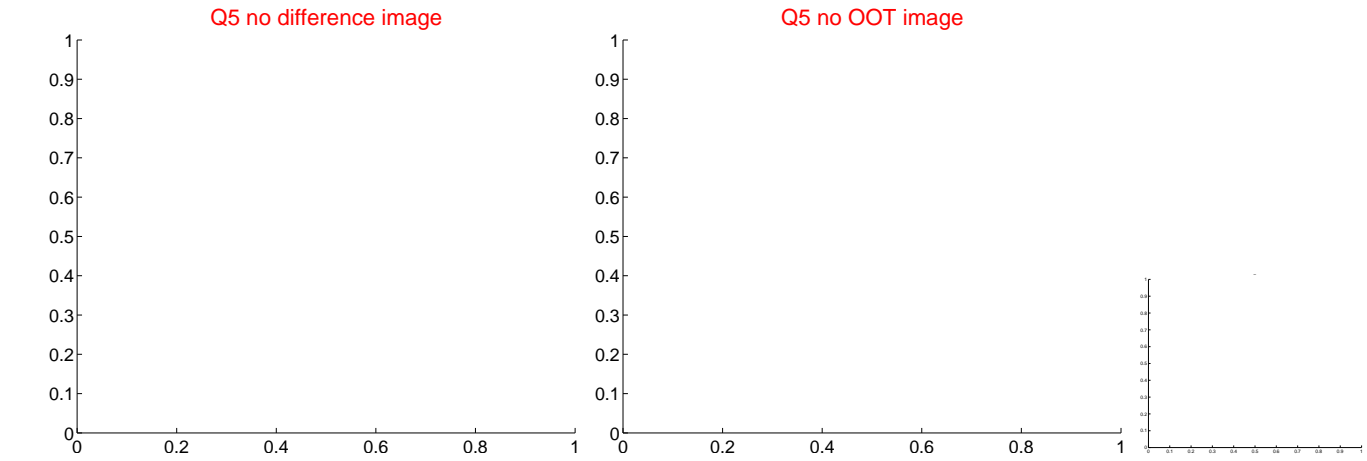


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

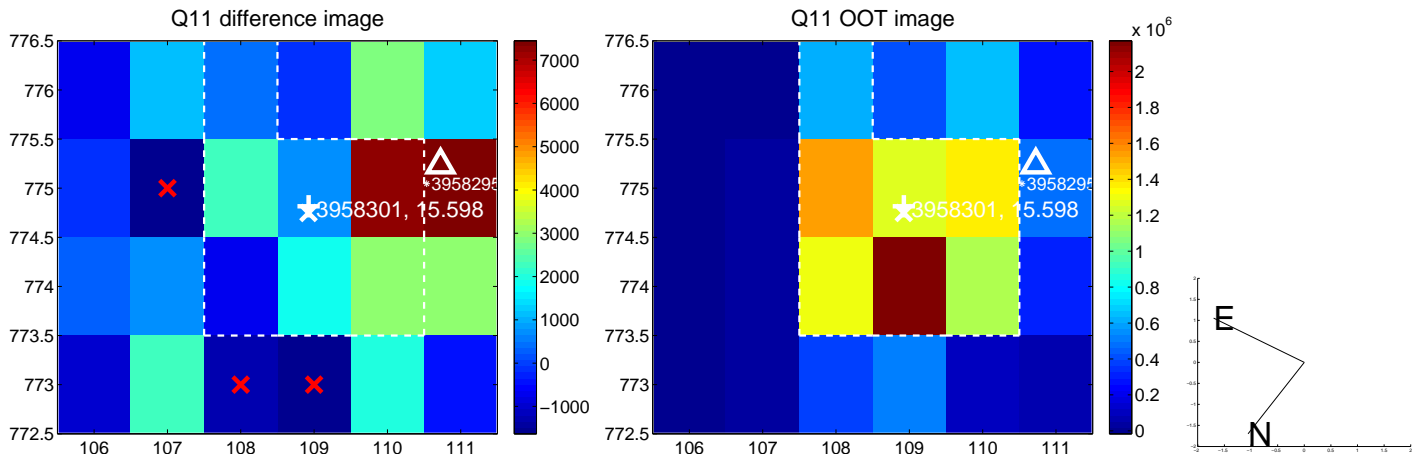
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



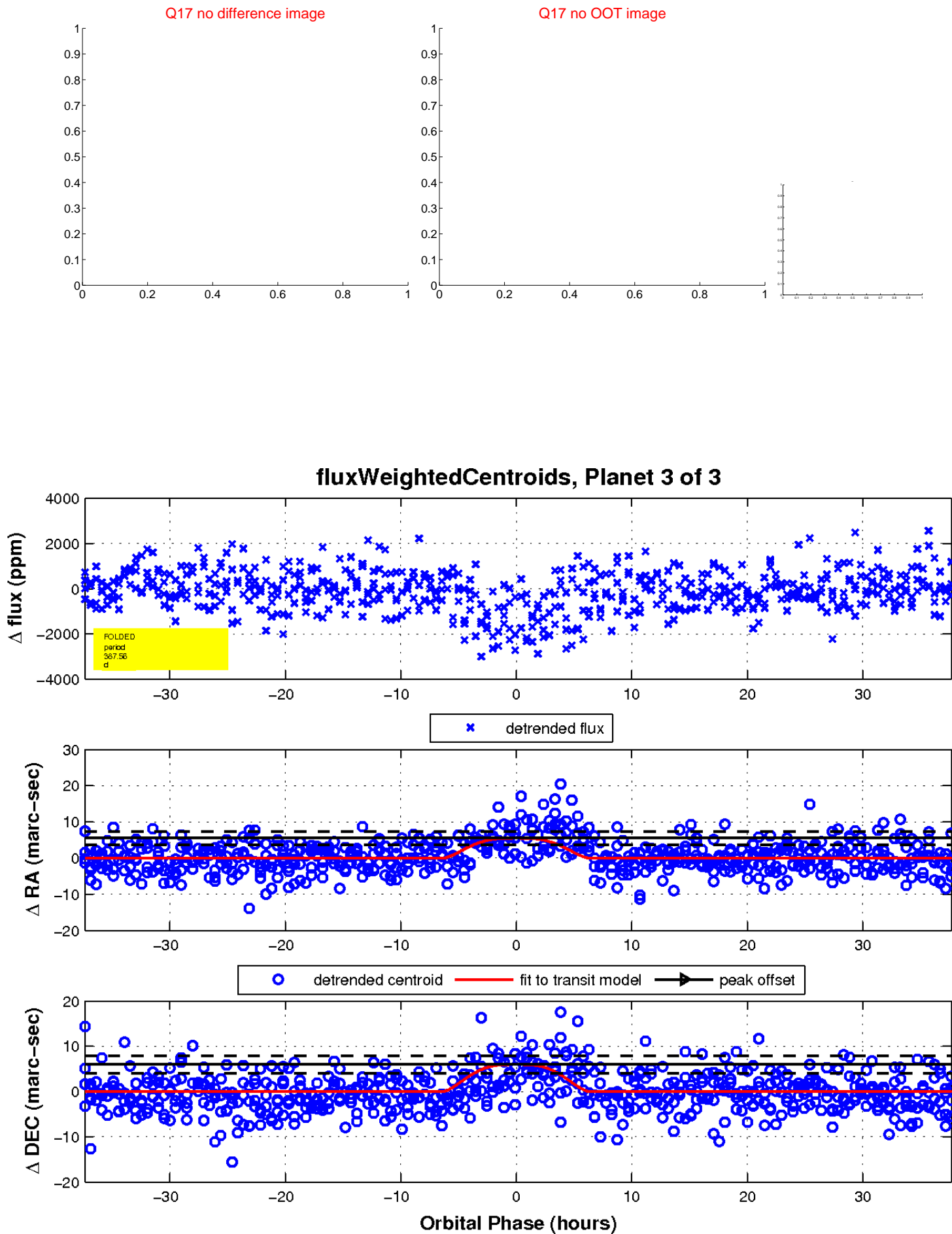
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

