

KIC 003441906

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})
003441906-01	OBS	No	339.961152	285.356442	1995.2	3.596	16.6	8.0	0.72	5242	6.27	0.50
003441906-02	OBS	No	566.964983	362.687810	1734.2	7.215	15.0	5.9	0.72	5242	3.07	0.25
003441906-03	OBS	No	532.028602	394.133324	655.3	6.000	12.3	-1.0	0.72	5242	1.82	0.28
003441906-04	OBS	No	535.043096	421.188919	1967.7	6.734	11.6	5.5	0.72	5242	6.21	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003441906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003441906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003441906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003441906-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

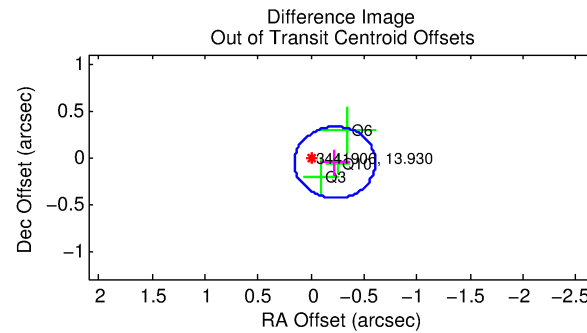
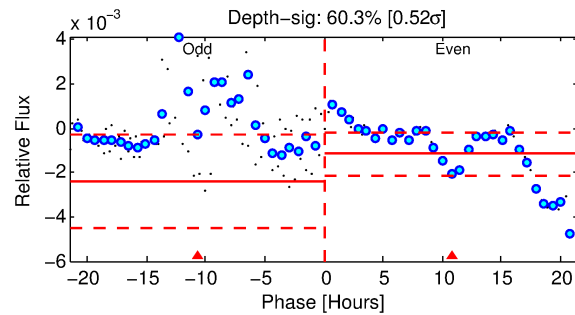
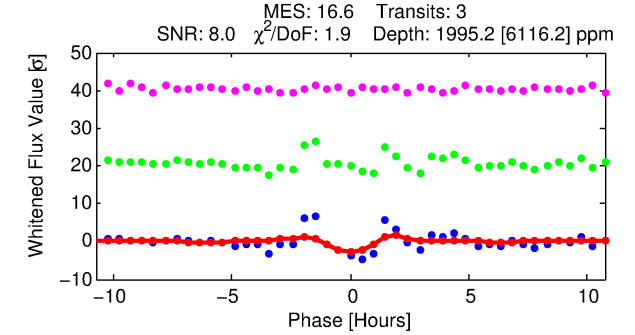
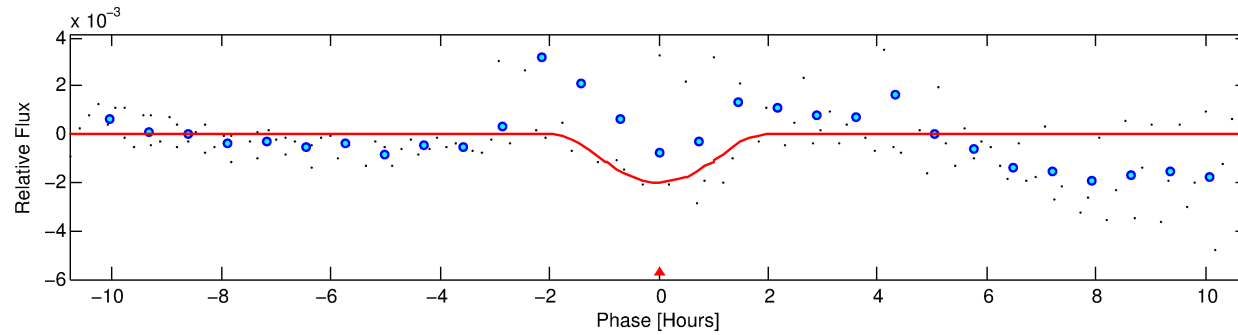
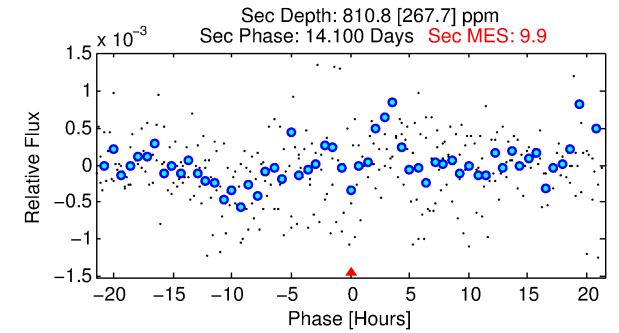
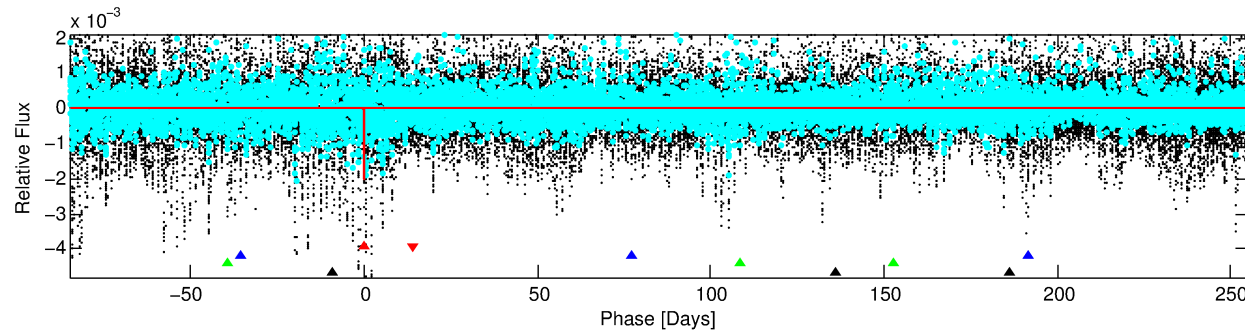
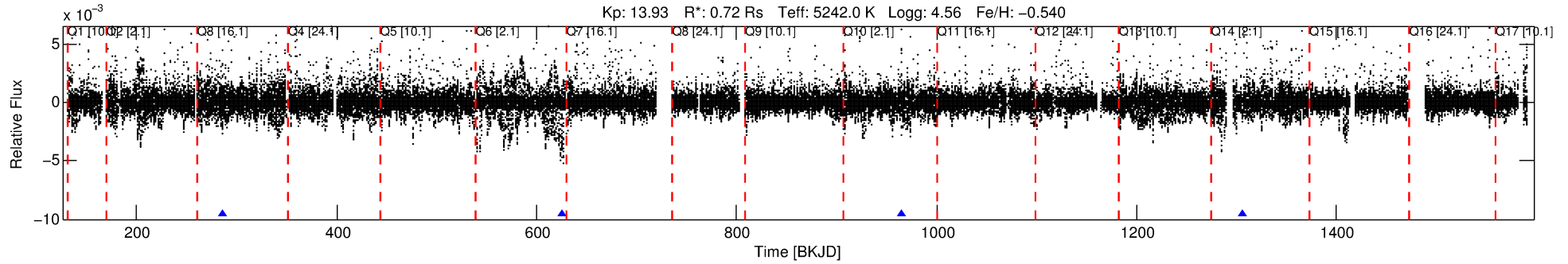
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003441906-01

No Significant Match Found

DV One-Page Summary

KIC: 3441906 Candidate: 1 of 4 Period: 339.961 d



DV Fit Results:

Period = 339.96115 [0.00885] d
Epoch = 285.3564 [0.0122] BKJD
Rp/R* = 0.0795 [0.5168]
a/R* = 293.75 [410.83]
b = 1.00 [0.57]
Seff = 0.50 [0.10]
Teq = 214 [10] K
Rp = 6.27 [40.72] Re
a = 0.8401 [0.0857] AU
Ag = 8017.42 [104232.62] [0.08 σ]
Teffp = 3136 [10194] K [0.29 σ]

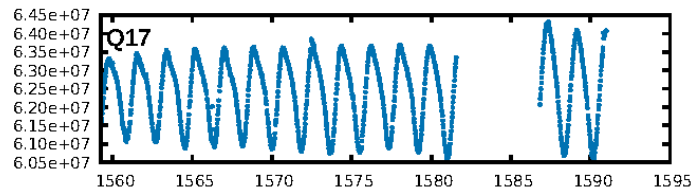
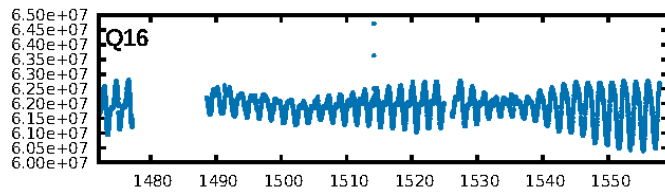
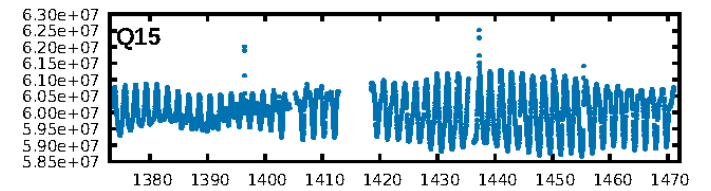
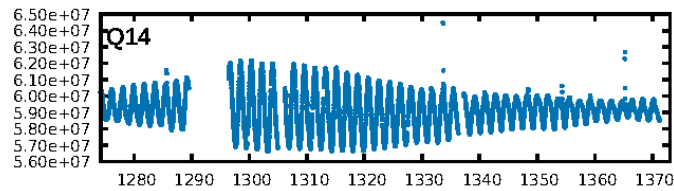
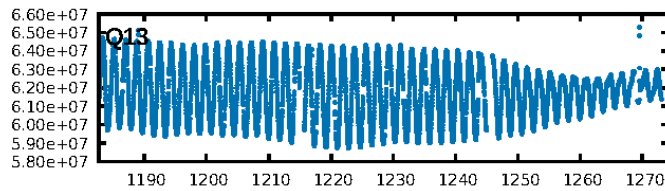
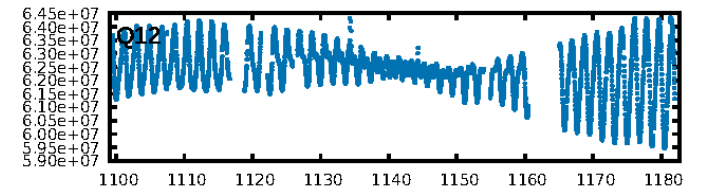
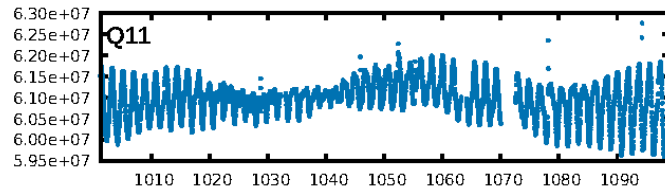
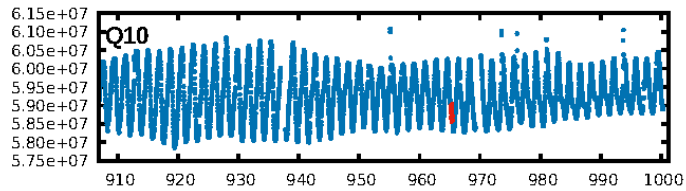
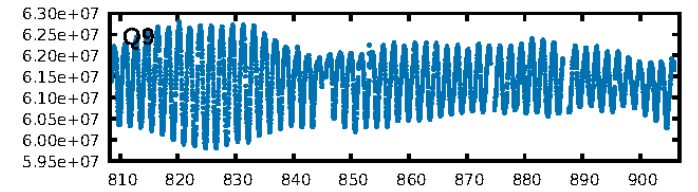
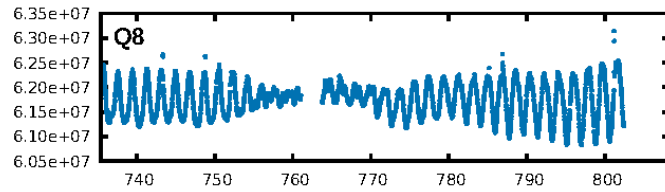
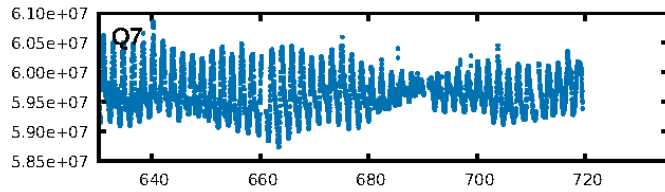
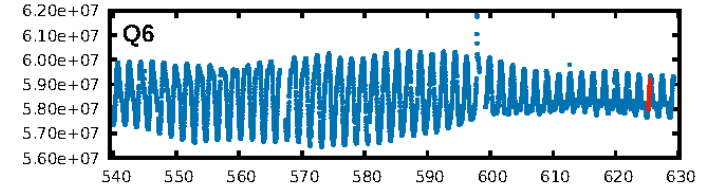
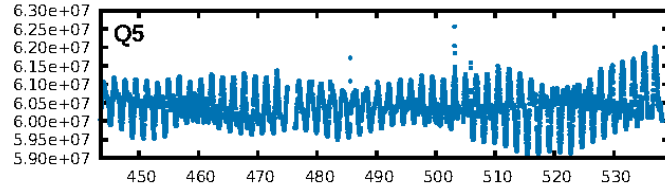
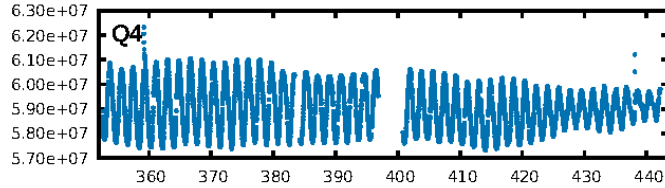
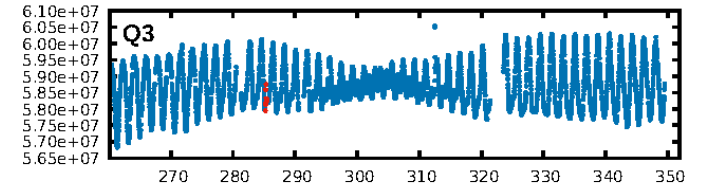
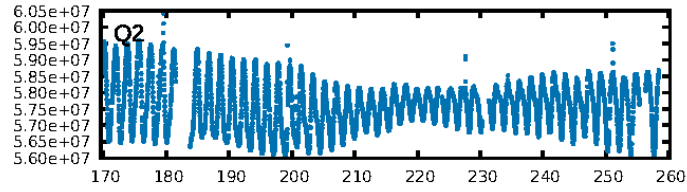
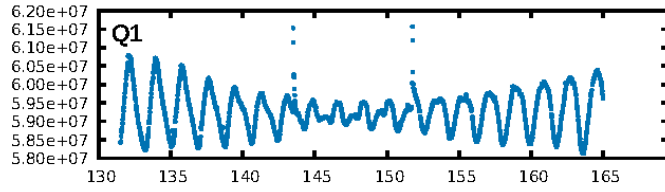
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [659.00 σ]
ModelChiSquare2-sig: 0.4%
ModelChiSquareGof-sig: 29.9%
Bootstrap-pfa: 4.75e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.8483
Centroid-sig: 68.3%
Centroid-so: 0.486 arcsec [0.80 σ]
OotOffset-rm: 0.233 arcsec [1.83 σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-rm: 0.198 arcsec [1.56 σ]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

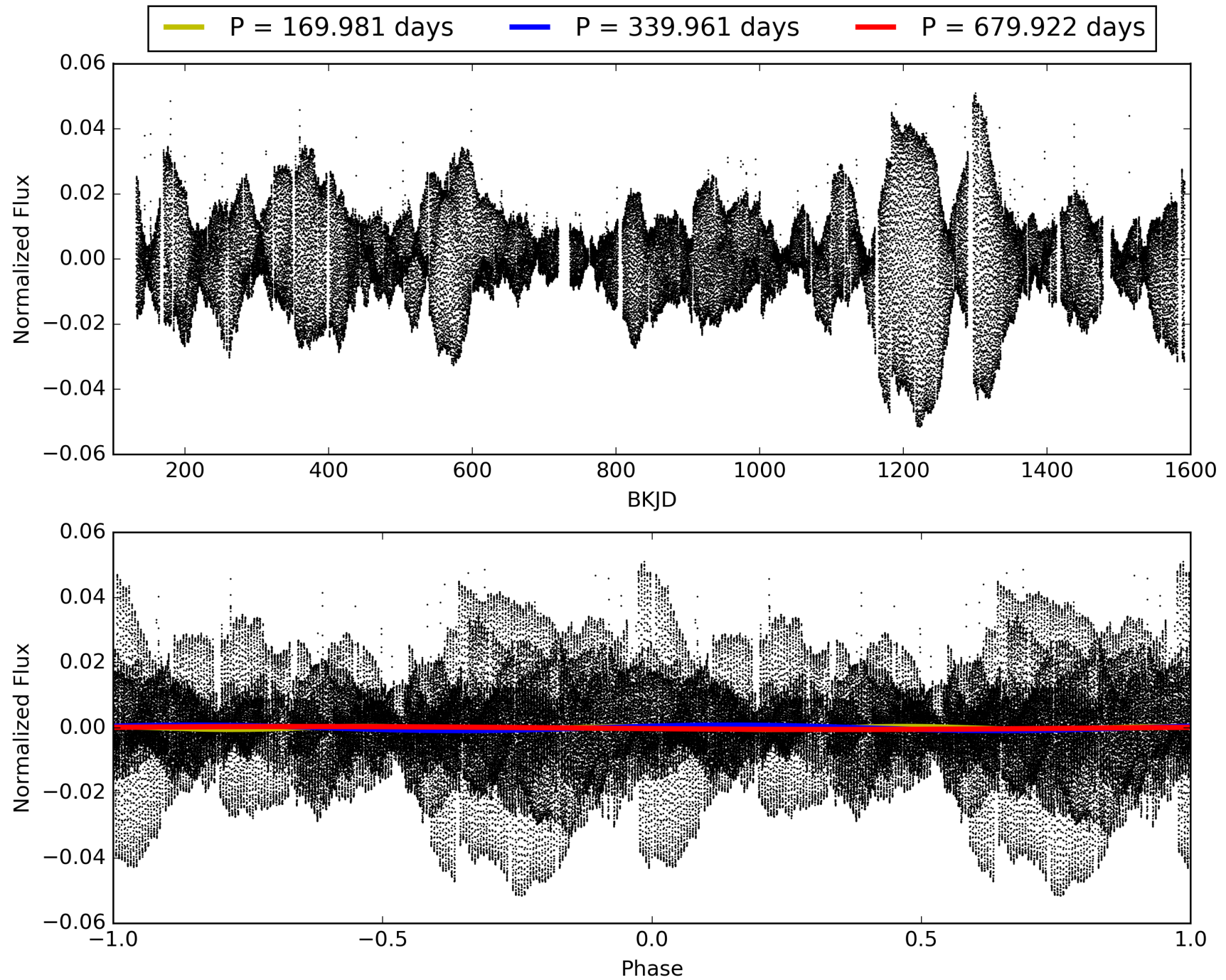
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:00:17 Z

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

TCE 003441906-01, PDC Light Curves

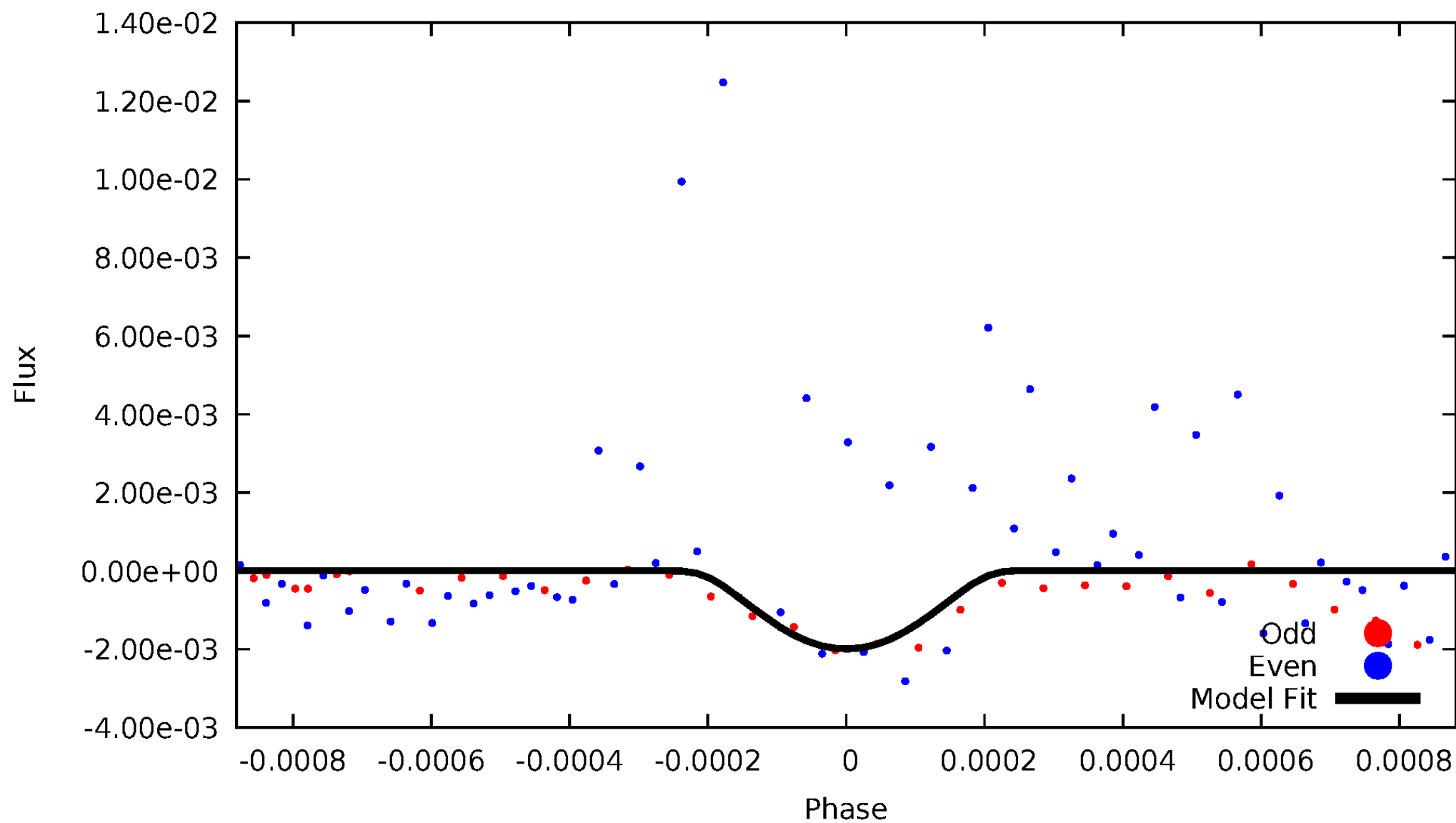


TCE 003441906-01



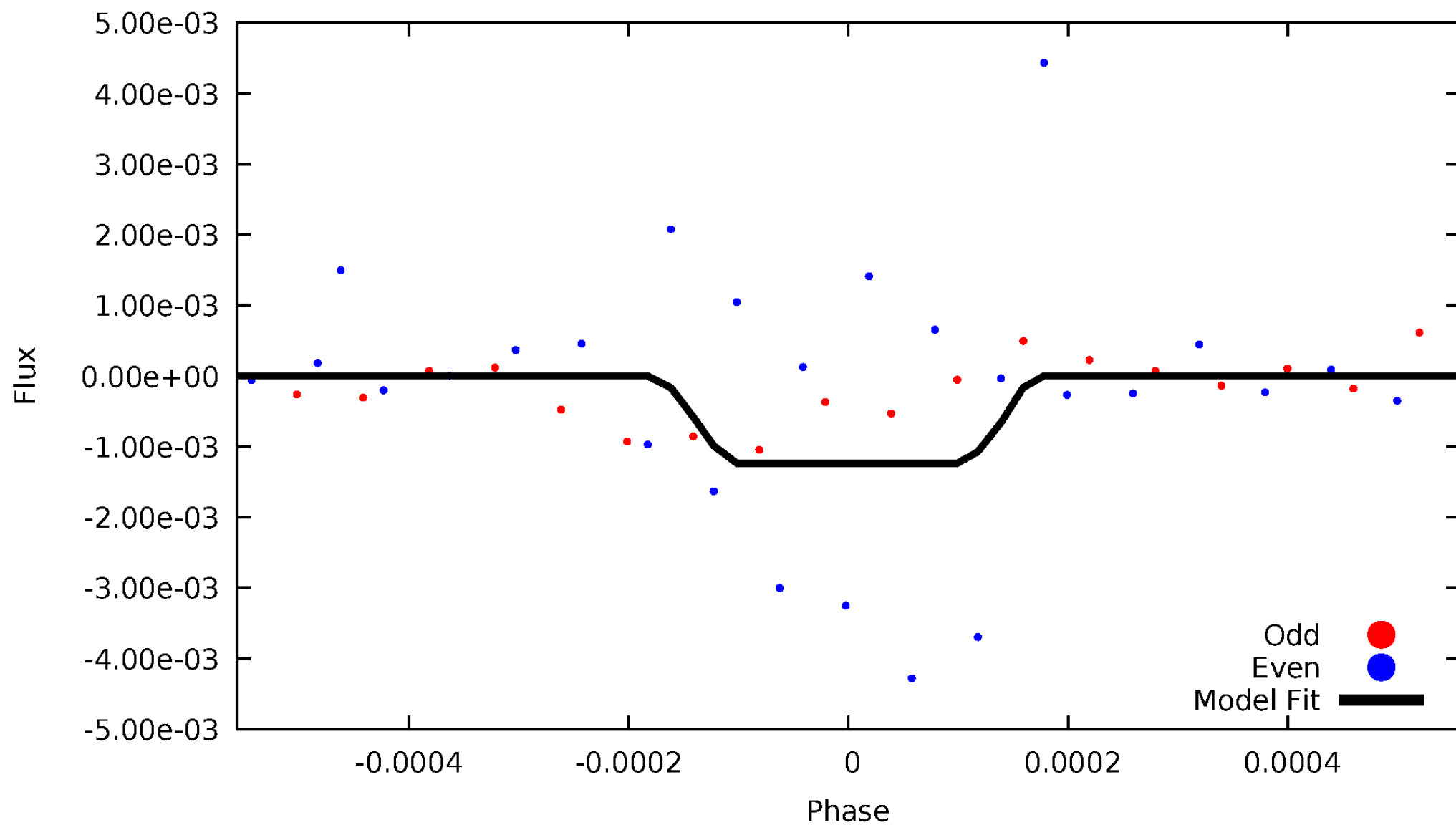
DV Odd/Even

TCE 003441906-01



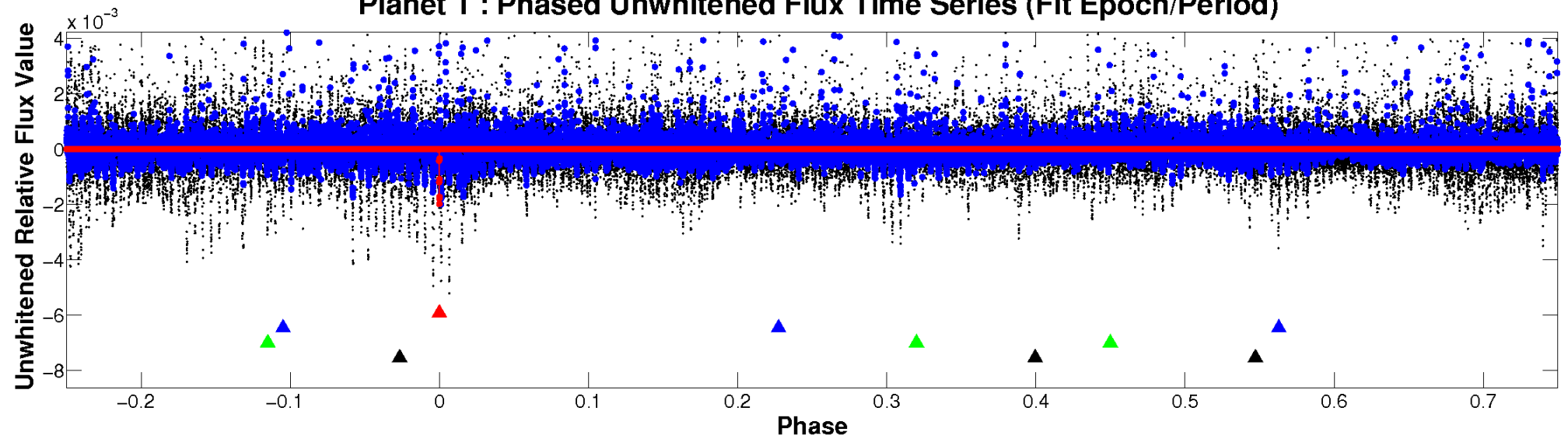
ALT Odd/Even

TCE 003441906-01

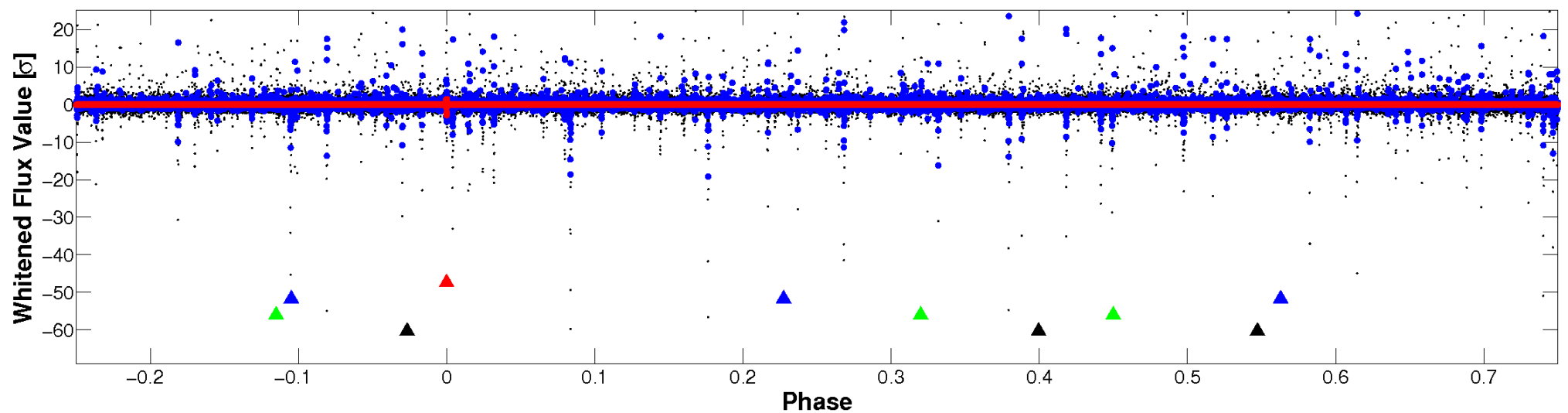


Non-Whitened Vs. Whitened Light Curve

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

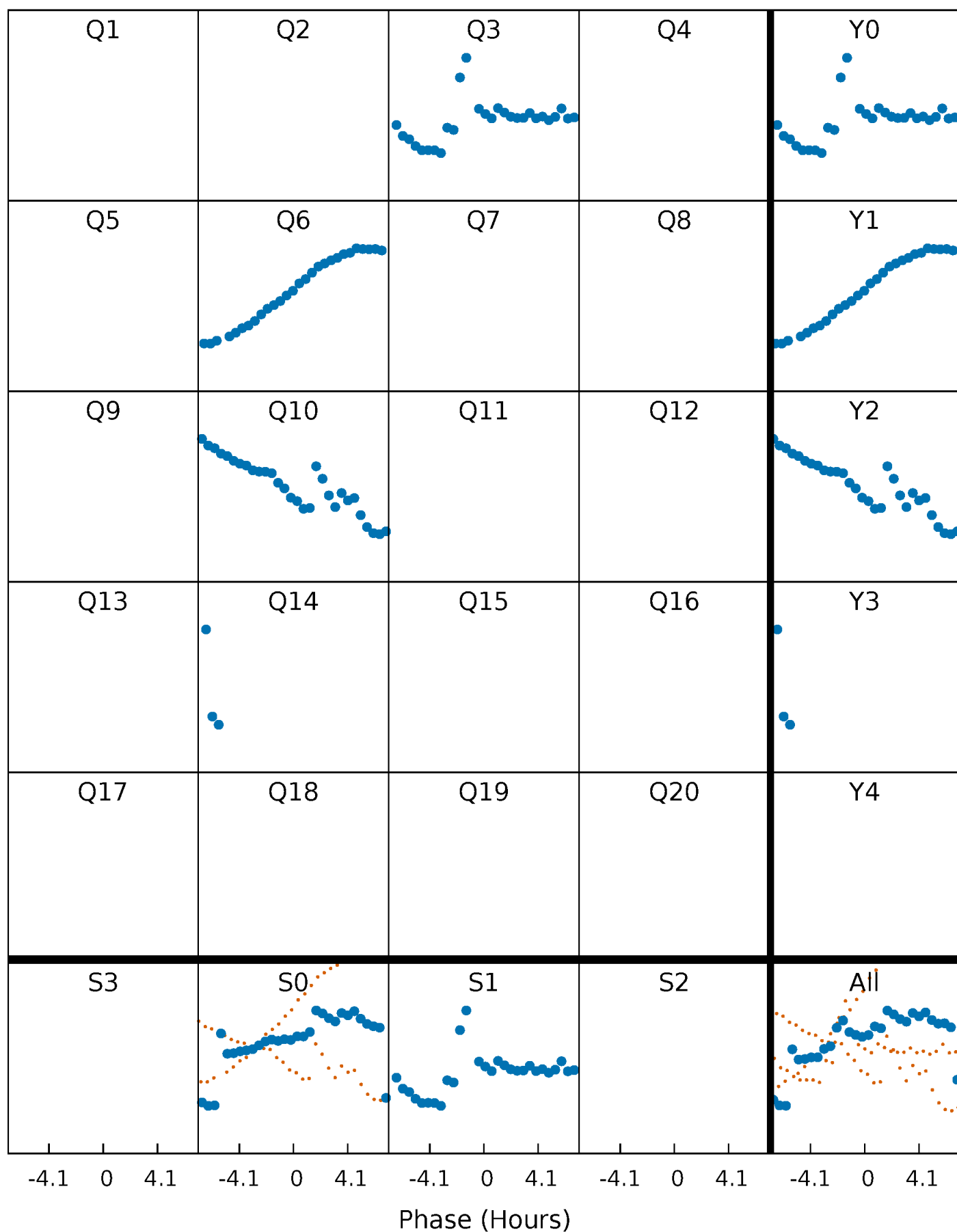


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



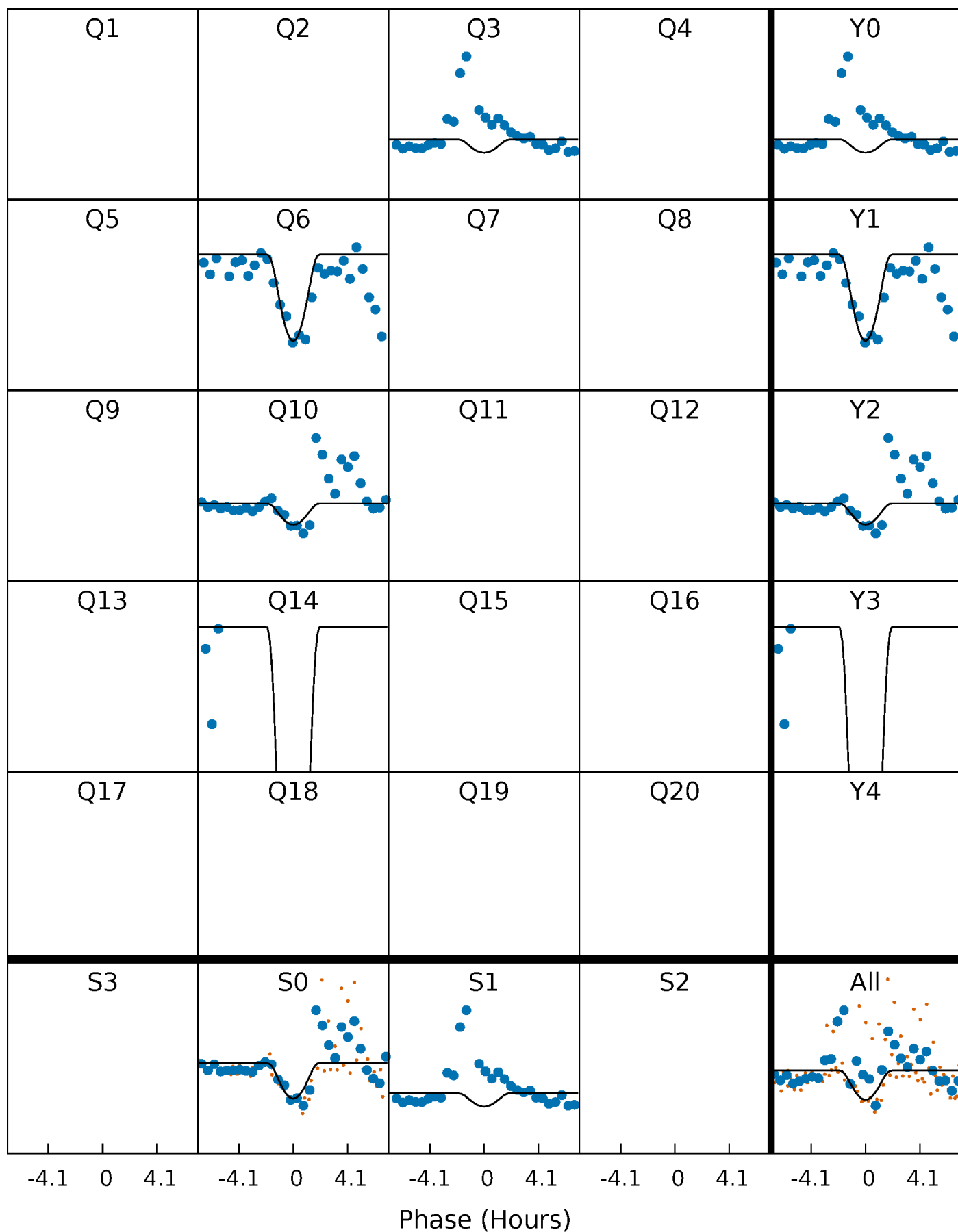
PDC Quarter-Phased Transit Curves

TCE 003441906-01 P=339.961152 Days $T_0=285.356442$ (BKJD)



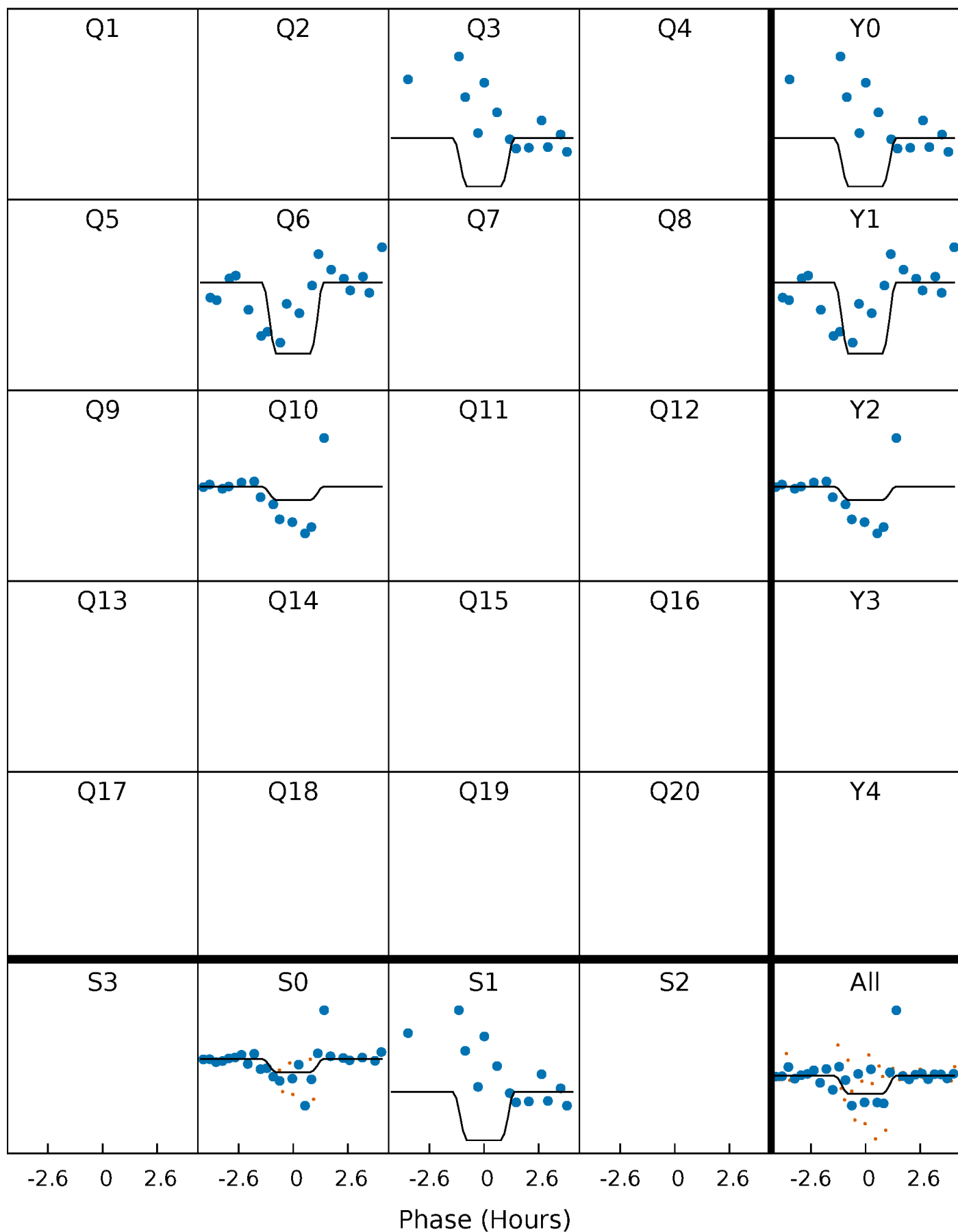
DV Quarter-Phased Transit Curves

TCE 003441906-01 P=339.961152 Days $T_0=285.356442$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

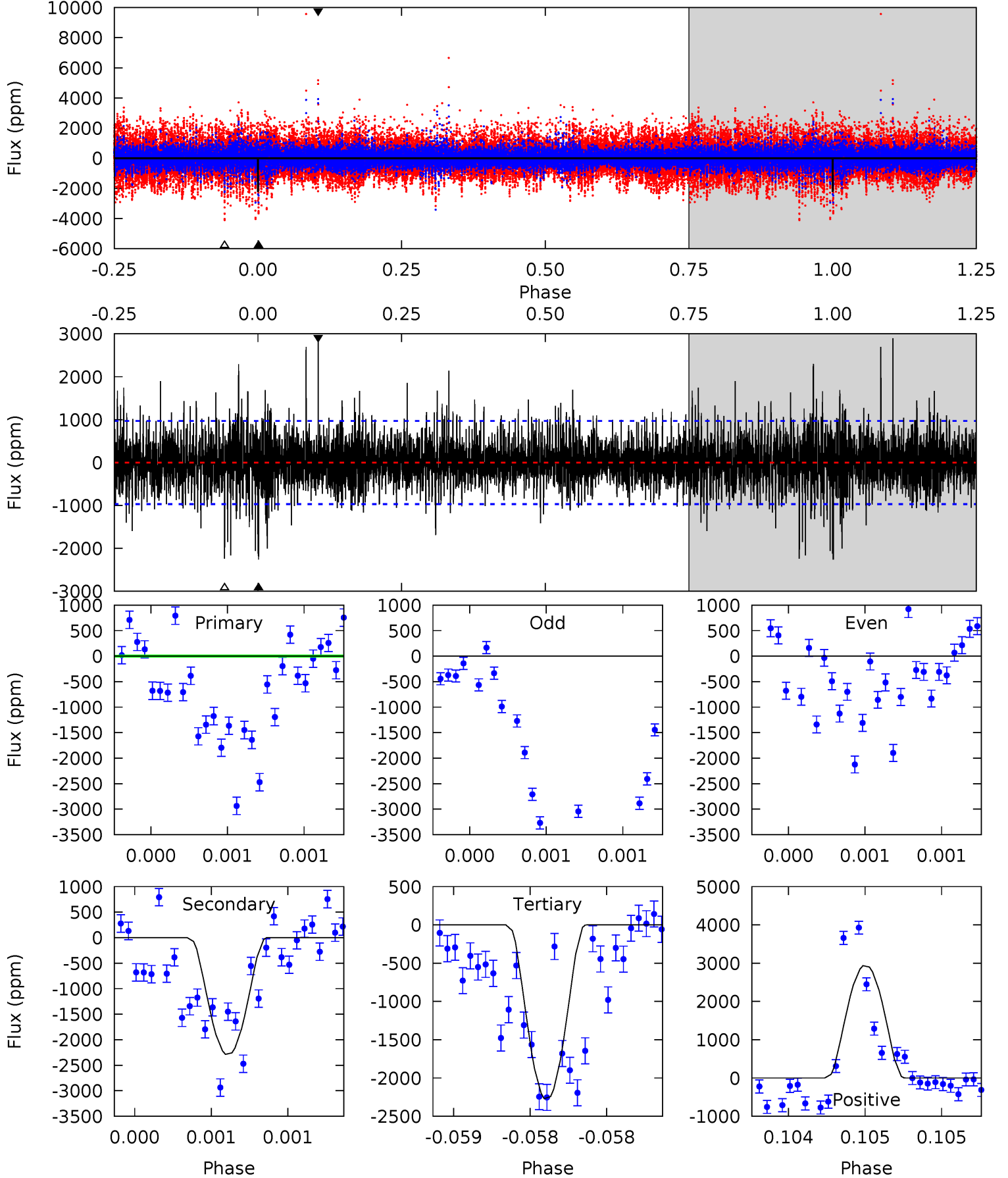
TCE 003441906-01 P=339.948181 Days $T_0=285.391733$ (BKJD)



DV Model-Shift Uniqueness Test

003441906-01, P = 339.961152 Days, E = 285.356442 Days

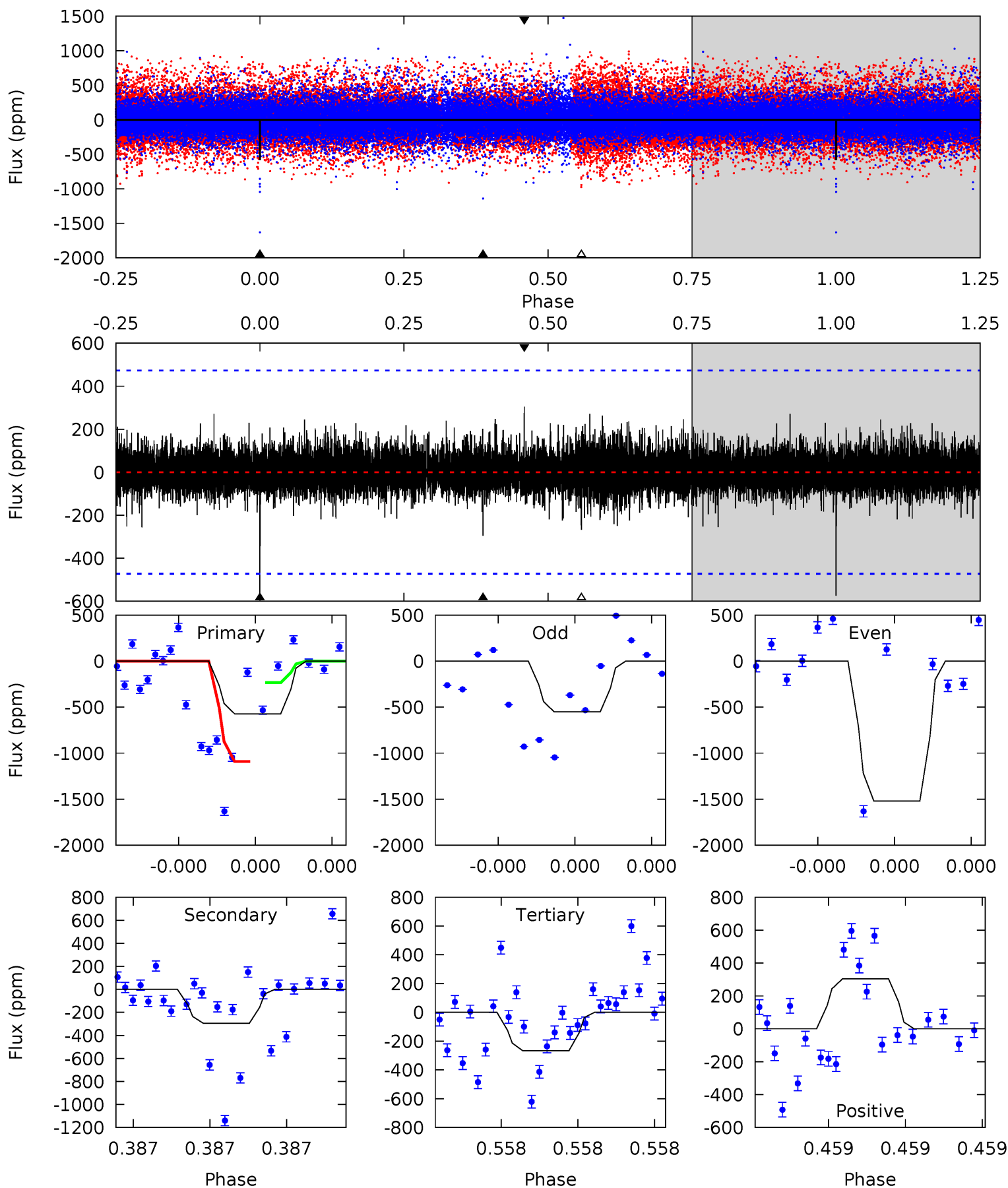
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	13.0	12.9	16.7	5.58	3.49	2.43	-0.24	-4.02	0.09	-3.69	5.84	-0.02	0.56	1.56



Alt Model-Shift Uniqueness Test

003441906-01, P = 339.948181 Days, E = 285.391733 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.86	3.54	3.20	3.64	5.66	3.61	0.68	3.66	3.22	0.34	-0.11	6.01	1.91	0.35	0



Stellar Parameters For KIC 003441906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5242^{+157}_{-157}	$4.556^{+0.082}_{-0.075}$	$-0.540^{+0.350}_{-0.300}$	$0.722^{+0.087}_{-0.079}$	$0.684^{+0.099}_{-0.035}$	$2.561^{+0.945}_{-0.635}$
	+3%/-3%	+2%/-2%	+65%/-56%	+12%/-11%	+14%/-5%	+37%/-25%
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 003441906-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2258 ± 174	$31.00^{+29.02}_{-21.69}$	299^{+13}_{-13}	2636^{+1089}_{-400}	950^{+9523}_{-706}
Alt.	-295 ± 84	$27.15^{+31.84}_{-19.44}$	300^{+12}_{-13}	2129^{+750}_{-325}	156^{+1661}_{-126}

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 $A_{obs} \gg 1.0$

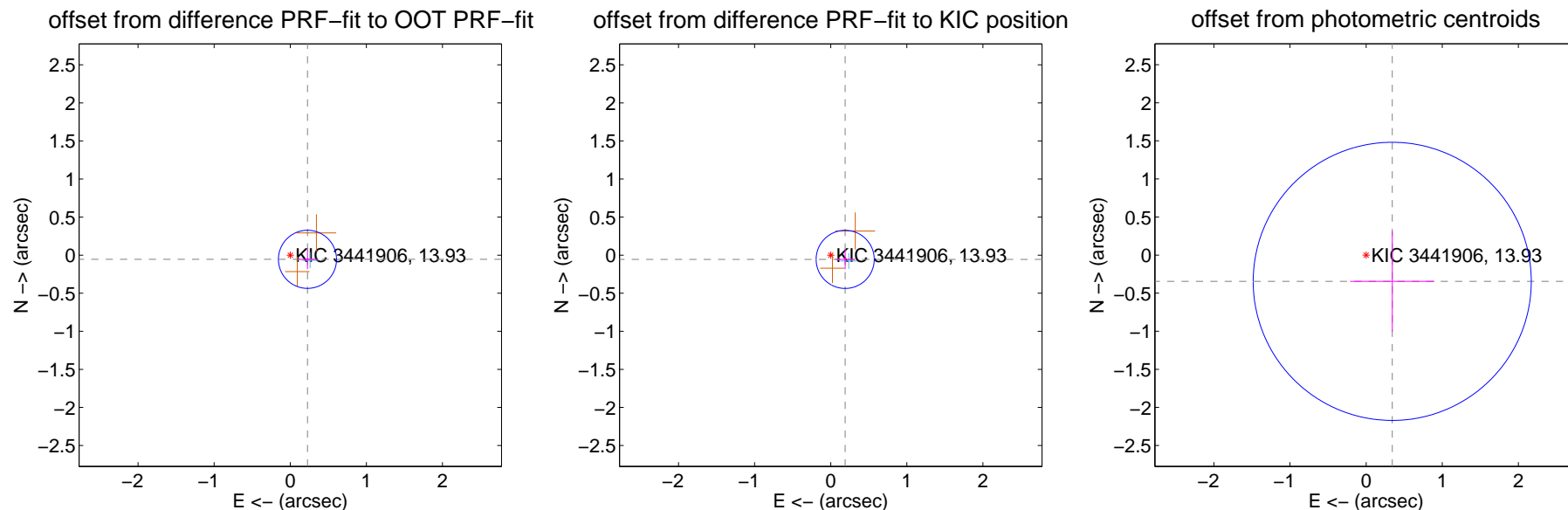
DV Centroid Data

Supplemental centroid analysis for 003441906-01. Kepler magnitude: 13.93. Transit SNR 7.96

There are 1 quarters with good PRF difference image offsets

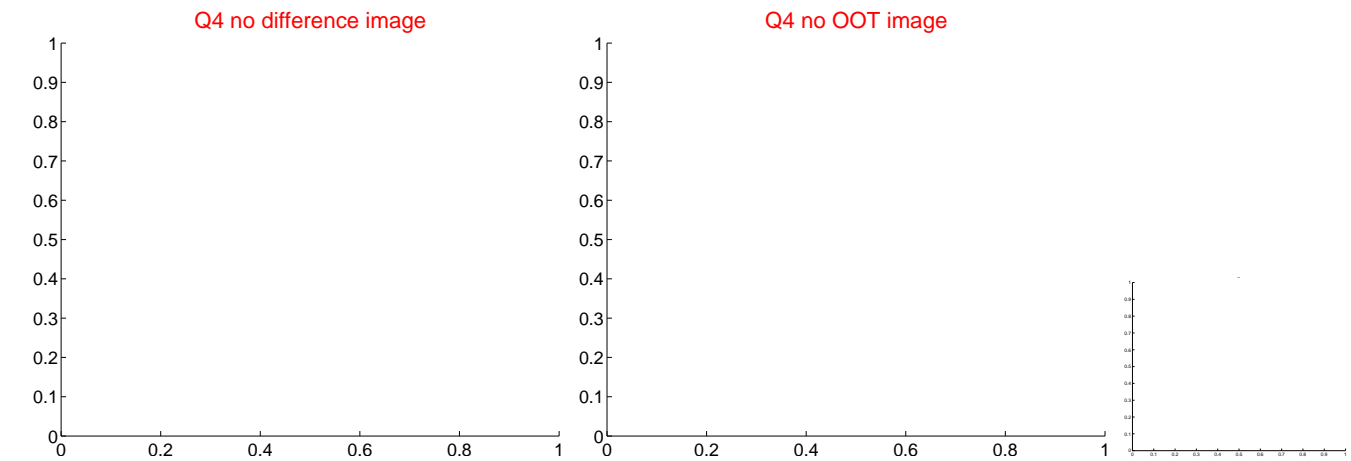
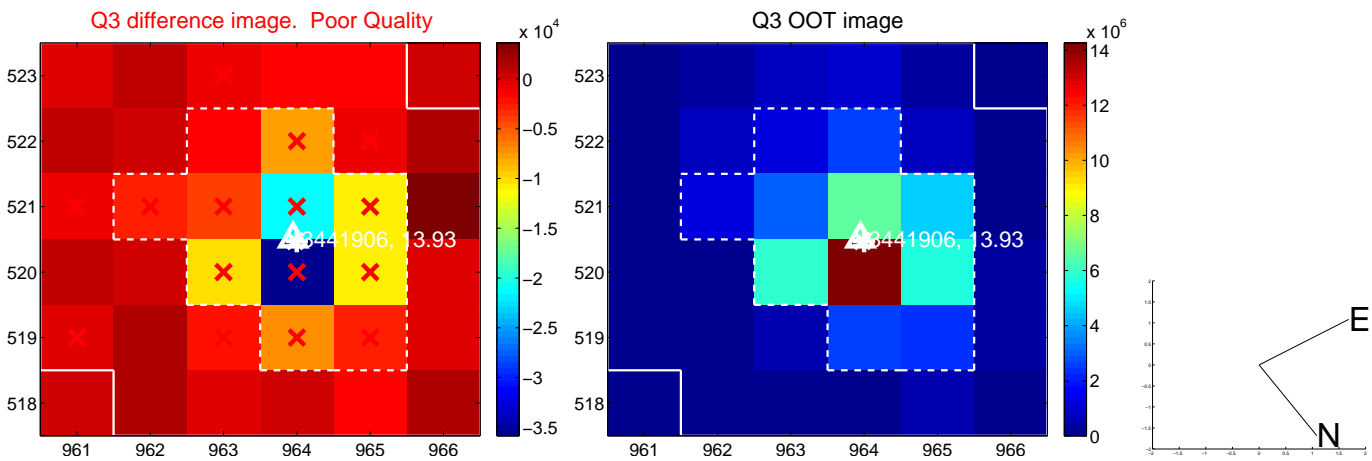
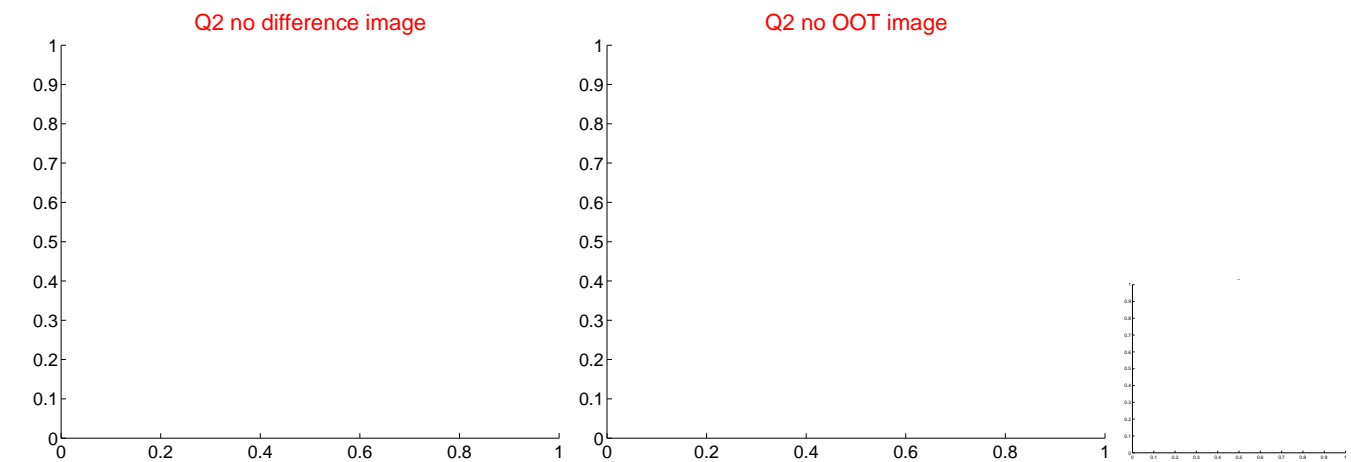
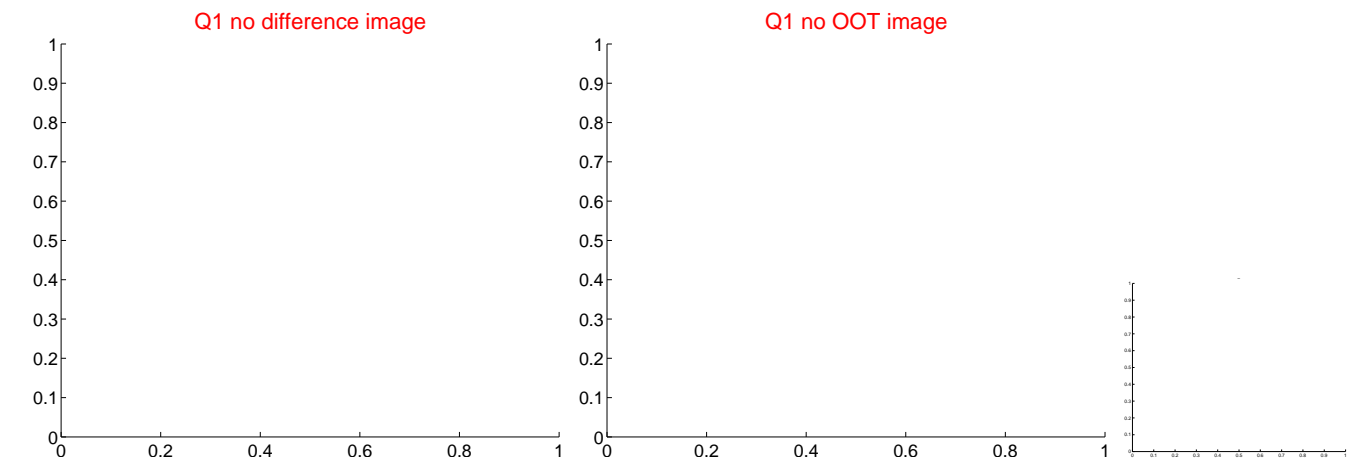
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.233 ± 0.127	1.83	-0.226 ± 0.127	-0.055 ± 0.129
PRF-fit source offset from KIC position	0.198 ± 0.127	1.56	-0.190 ± 0.127	-0.056 ± 0.129
photometric centroid source offset	0.49 ± 0.61	0.80	-0.34 ± 0.55	-0.35 ± 0.66



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.

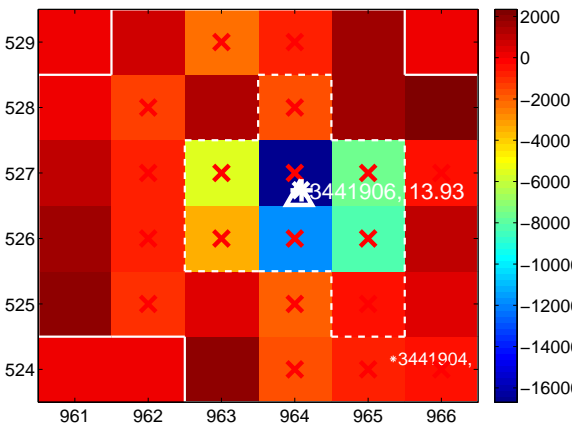
Q5 no difference image



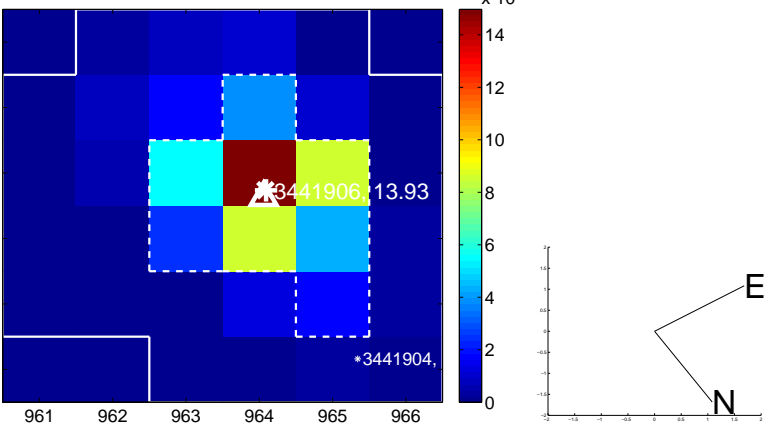
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



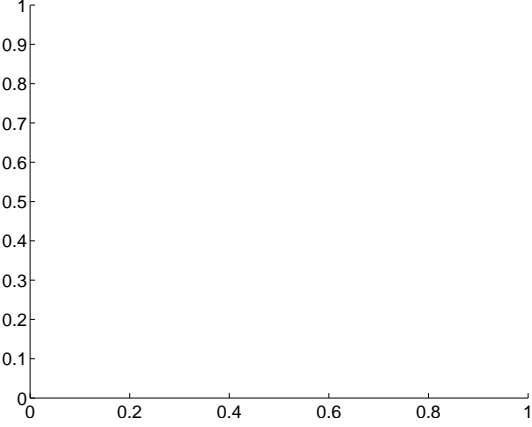
Q7 no difference image



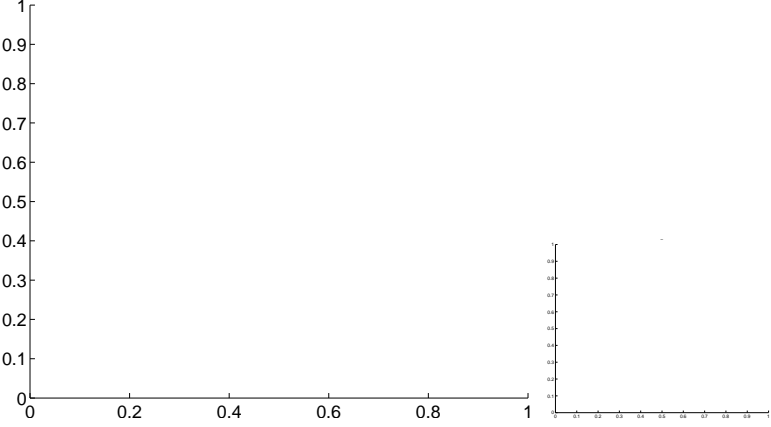
Q7 no OOT image



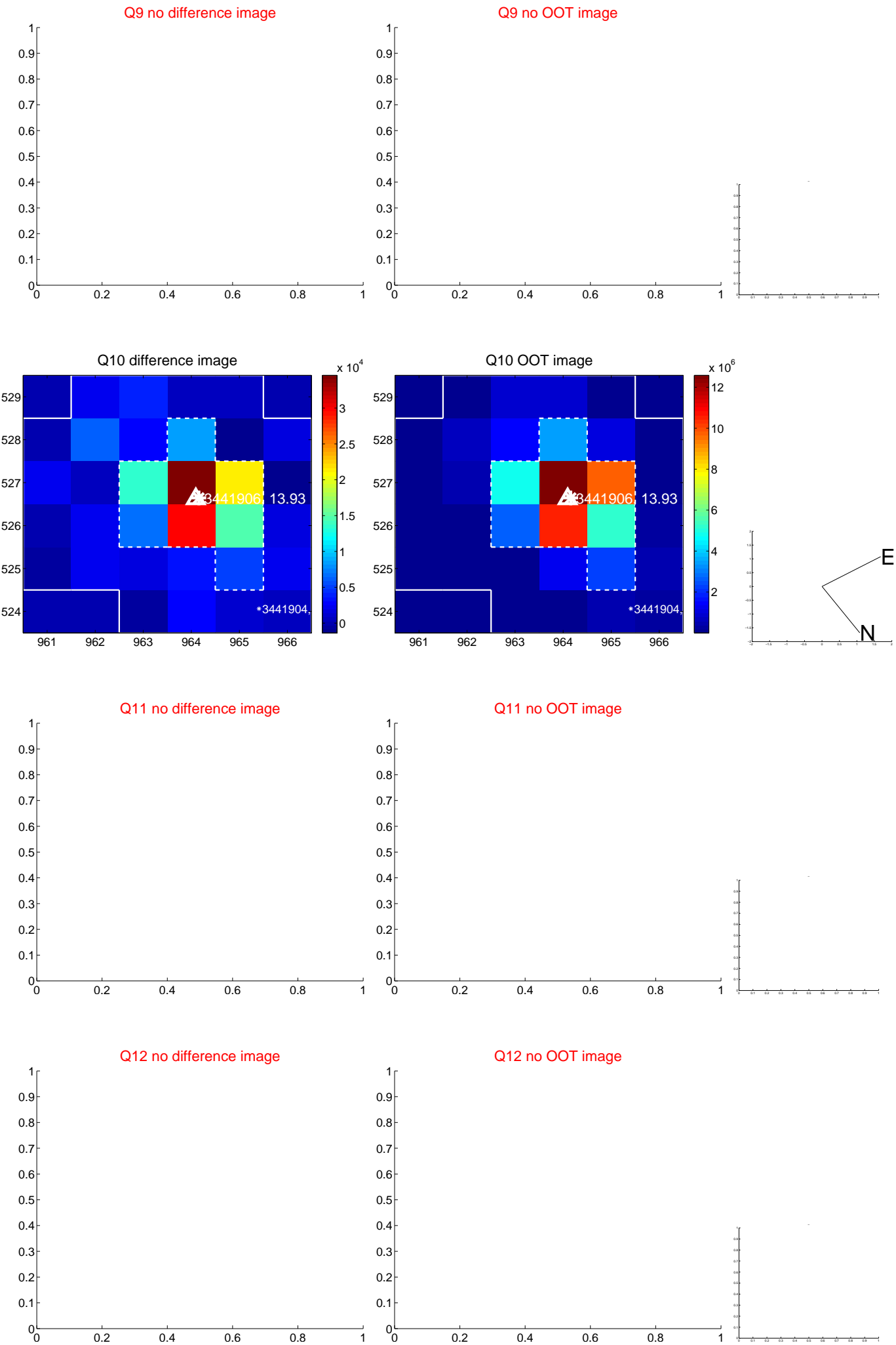
Q8 no difference image



Q8 no OOT image



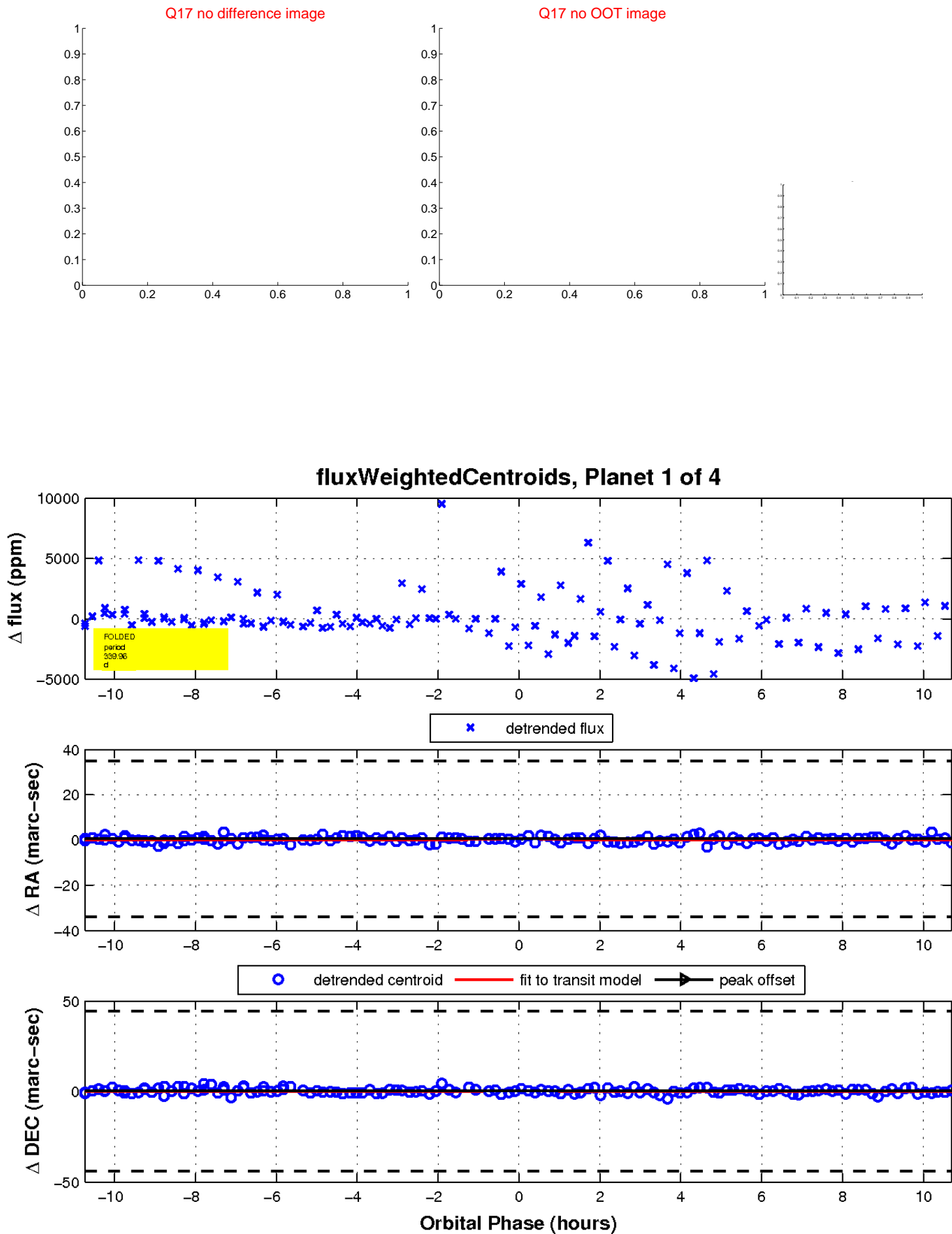
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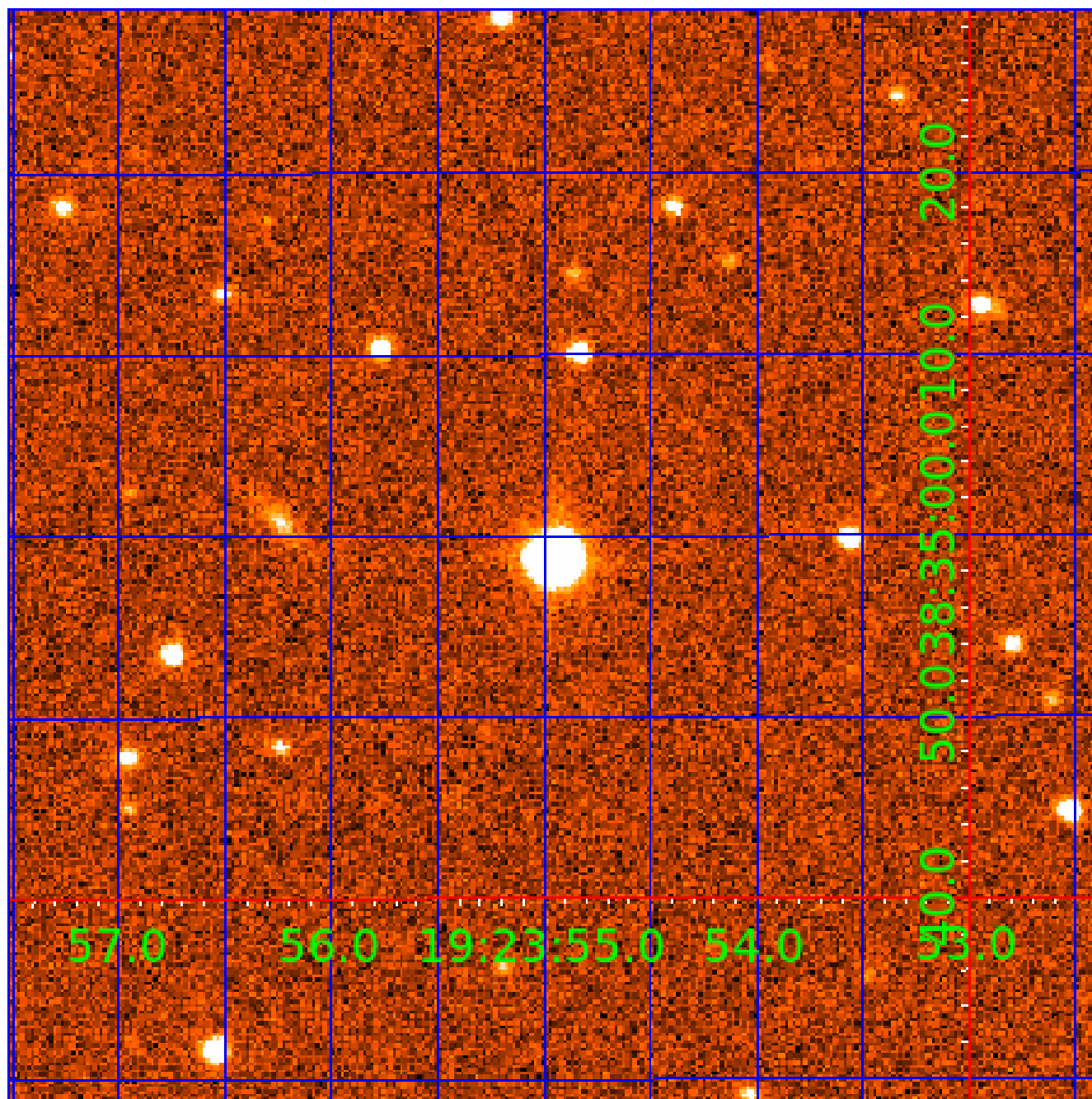


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003441906

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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Robovetter Results

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003441906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003441906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003441906-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

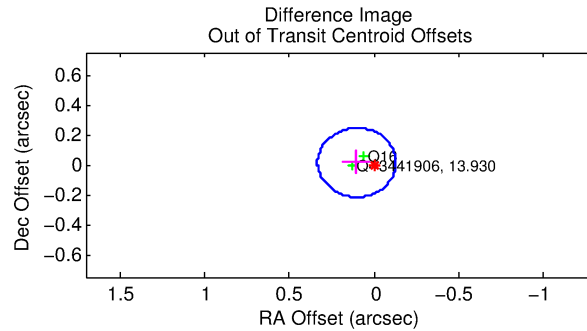
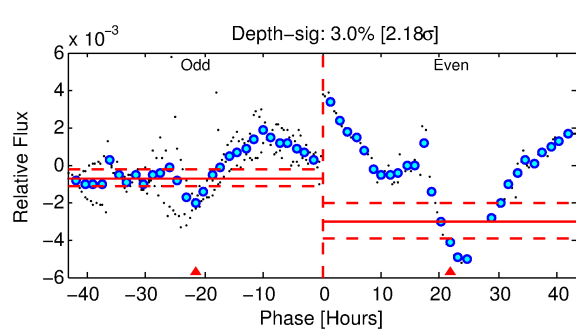
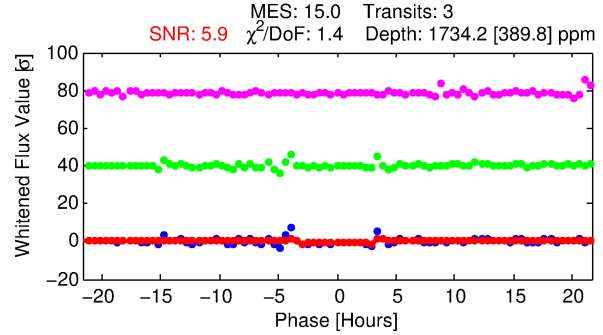
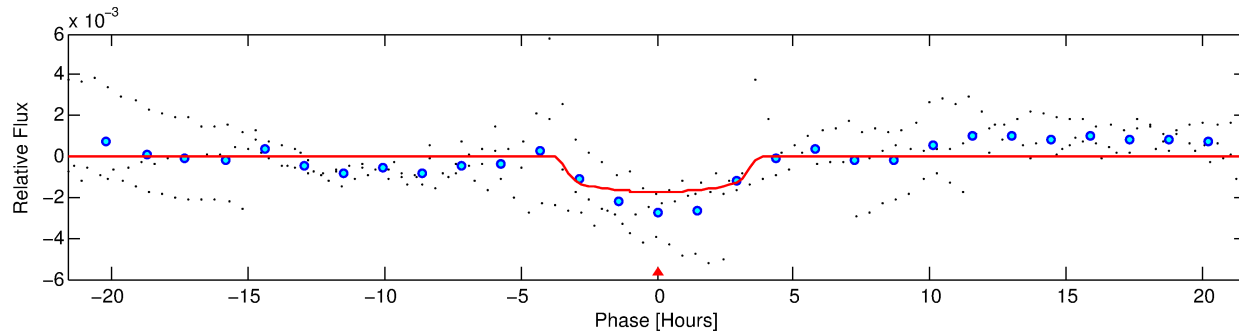
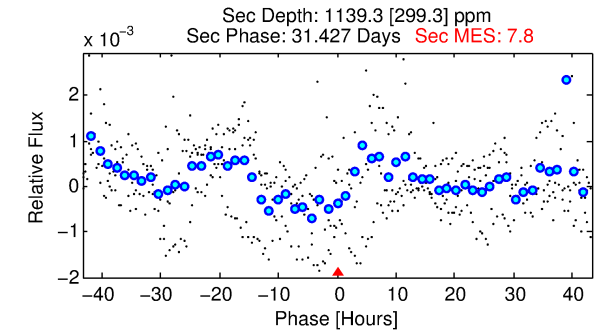
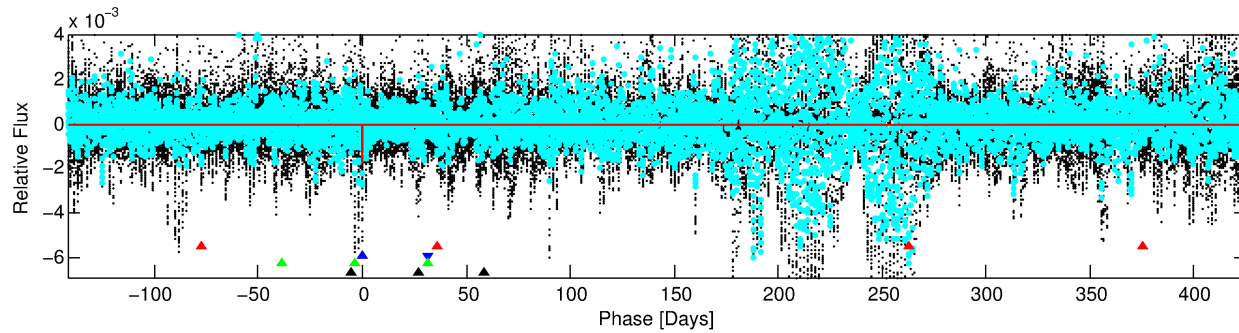
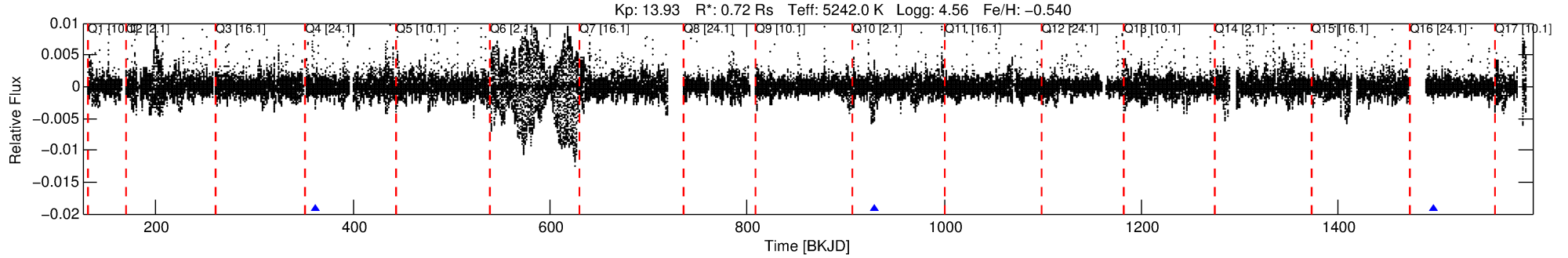
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003441906-02

No Significant Match Found

DV One-Page Summary

KIC: 3441906 Candidate: 2 of 4 Period: 566.965 d



DV Fit Results:

Period = 566.96498 [0.00502] d
Epoch = 362.6878 [0.0085] BKJD
Rp/R* = 0.0390 [0.0216]
a/R* = 538.89 [1138.49]
b = 0.52 [2.97]
Seff = 0.25 [0.05]
Teq = 181 [9] K
Rp = 3.07 [1.74] Re
a = 1.1815 [0.1206] AU
Ag = 92829.44 [106836.06] [0.87 σ]
Teffp = 4879 [1400] K [3.36 σ]

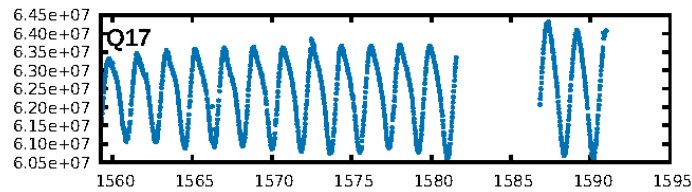
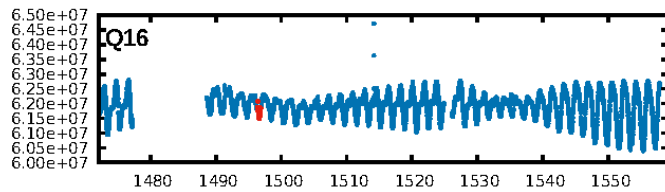
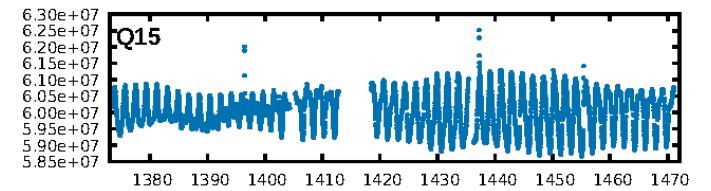
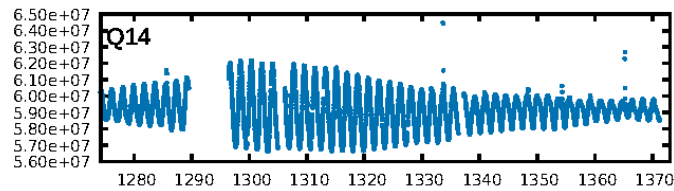
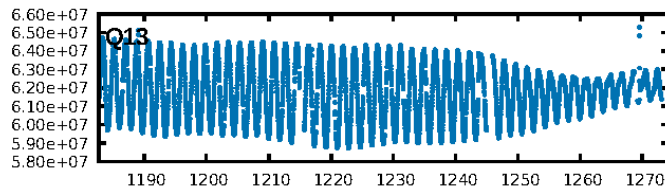
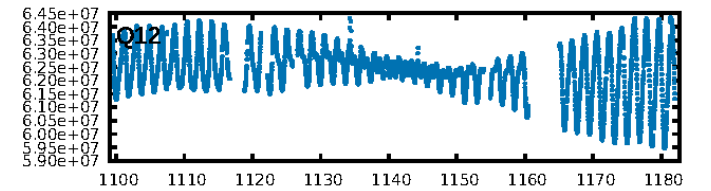
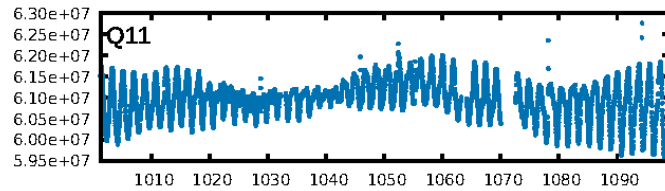
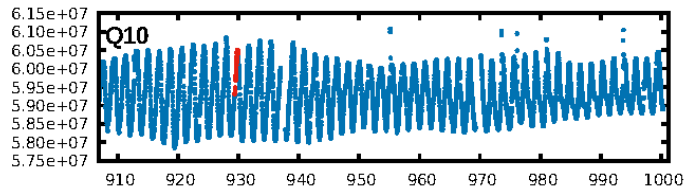
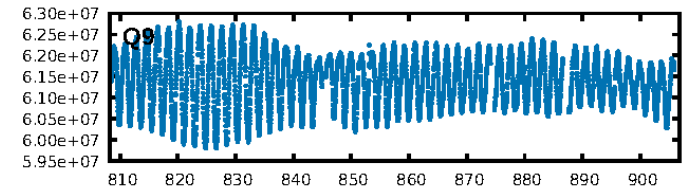
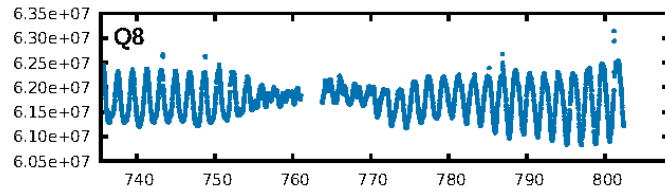
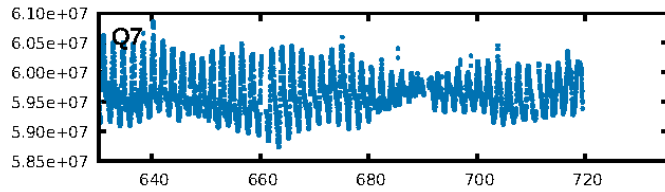
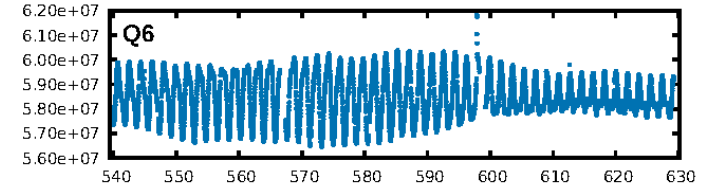
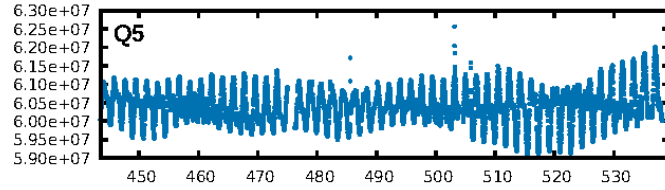
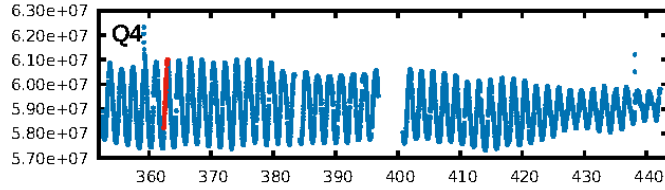
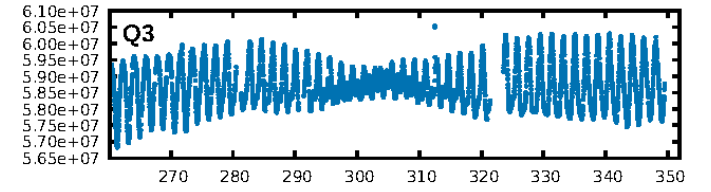
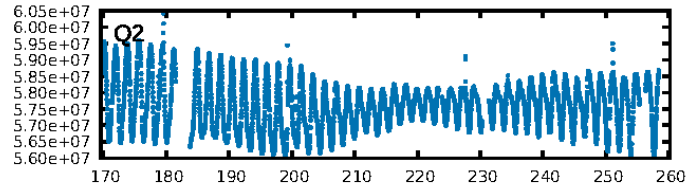
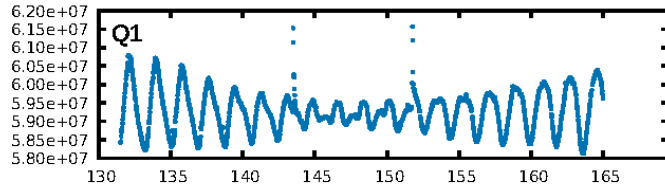
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [77.63 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 36.3%
ModelChiSquareGof-sig: 92.0%
Bootstrap-pfa: 9.04e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.166
Centroid-sig: 3.6%
Centroid-so: 0.623 arcsec [1.88 σ]
OotOffset-rm: 0.104 arcsec [1.35 σ]
KicOffset-rm: 0.072 arcsec [0.74 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

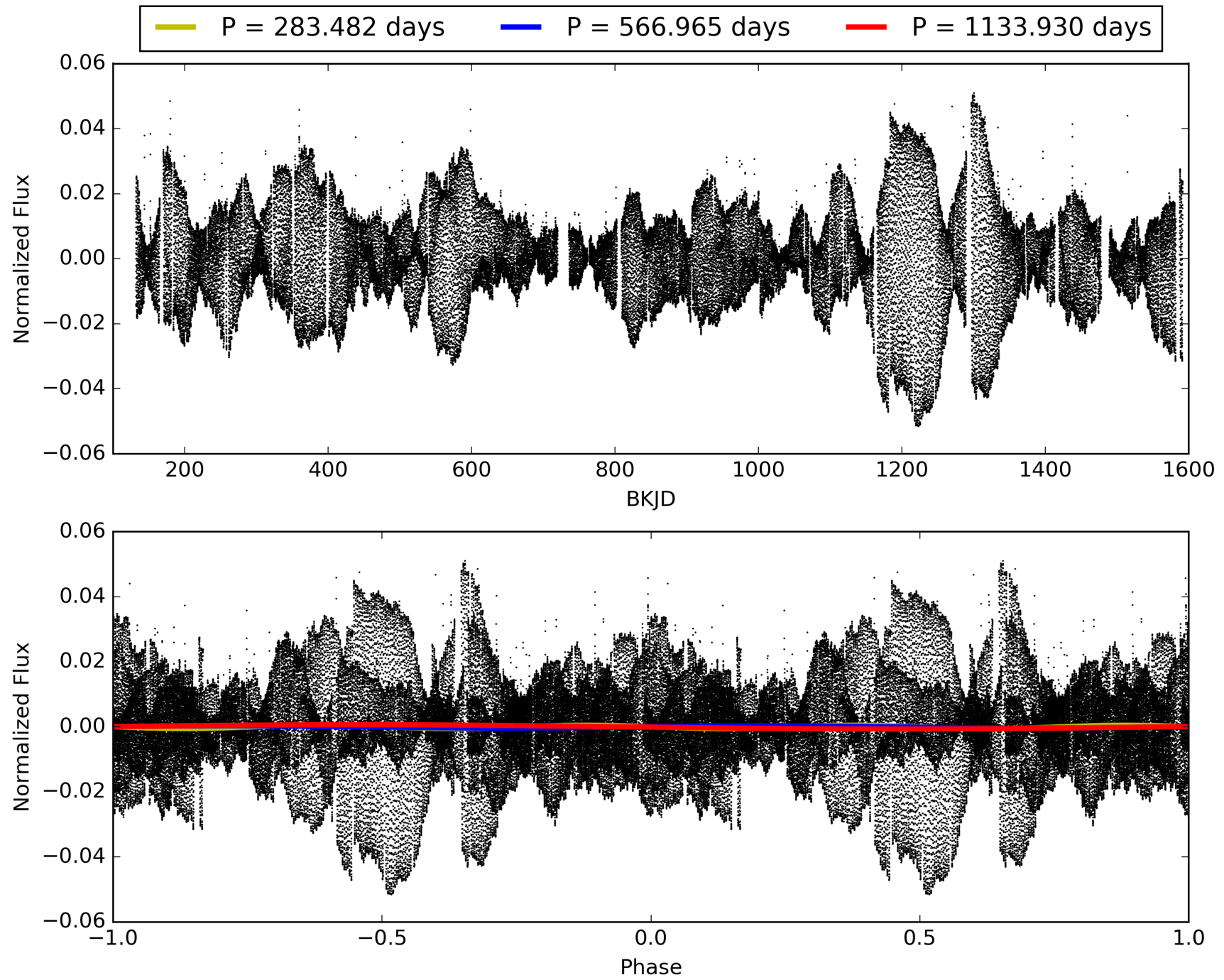
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:00:31 Z

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

TCE 003441906-02, PDC Light Curves

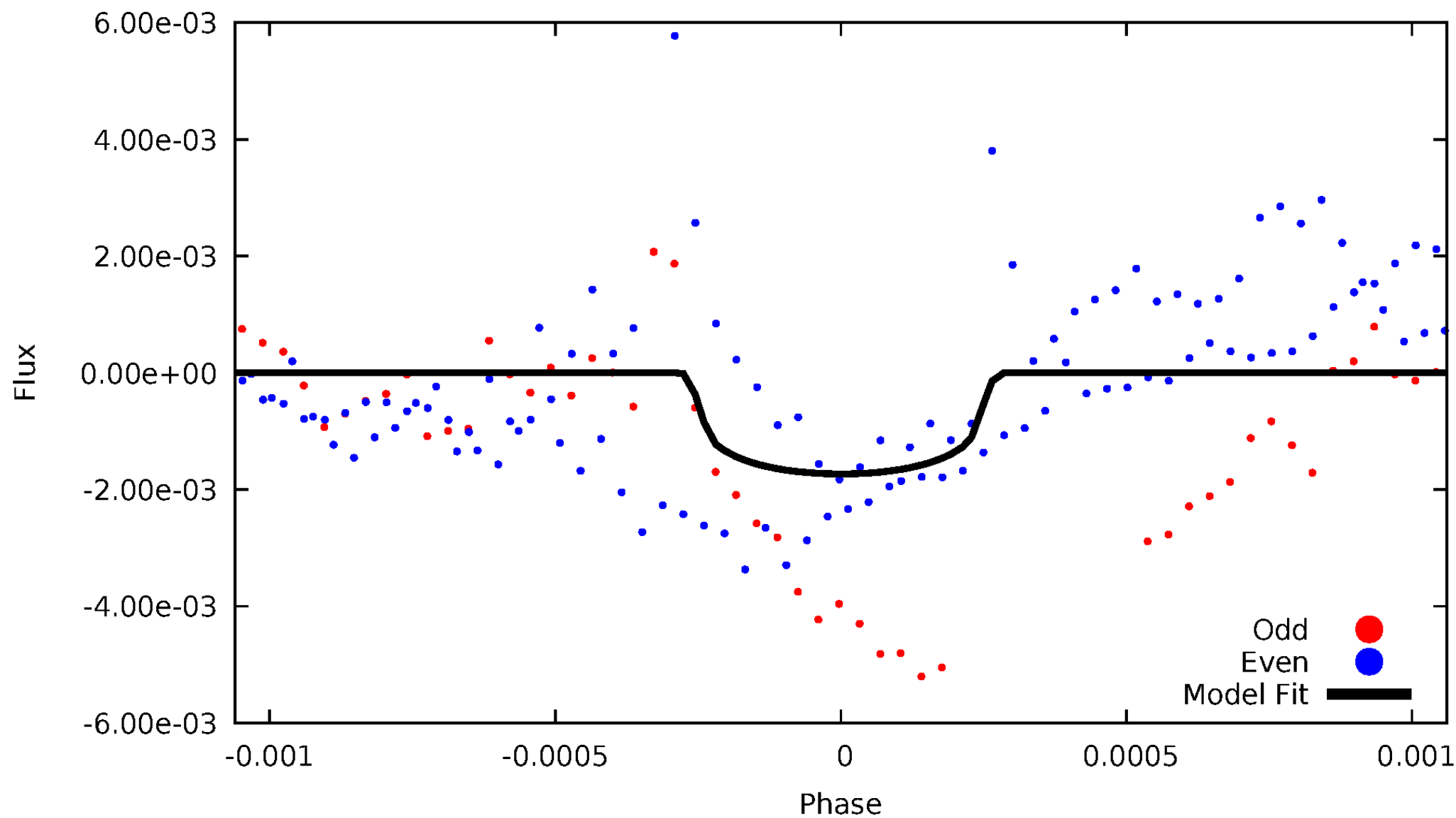


TCE 003441906-02



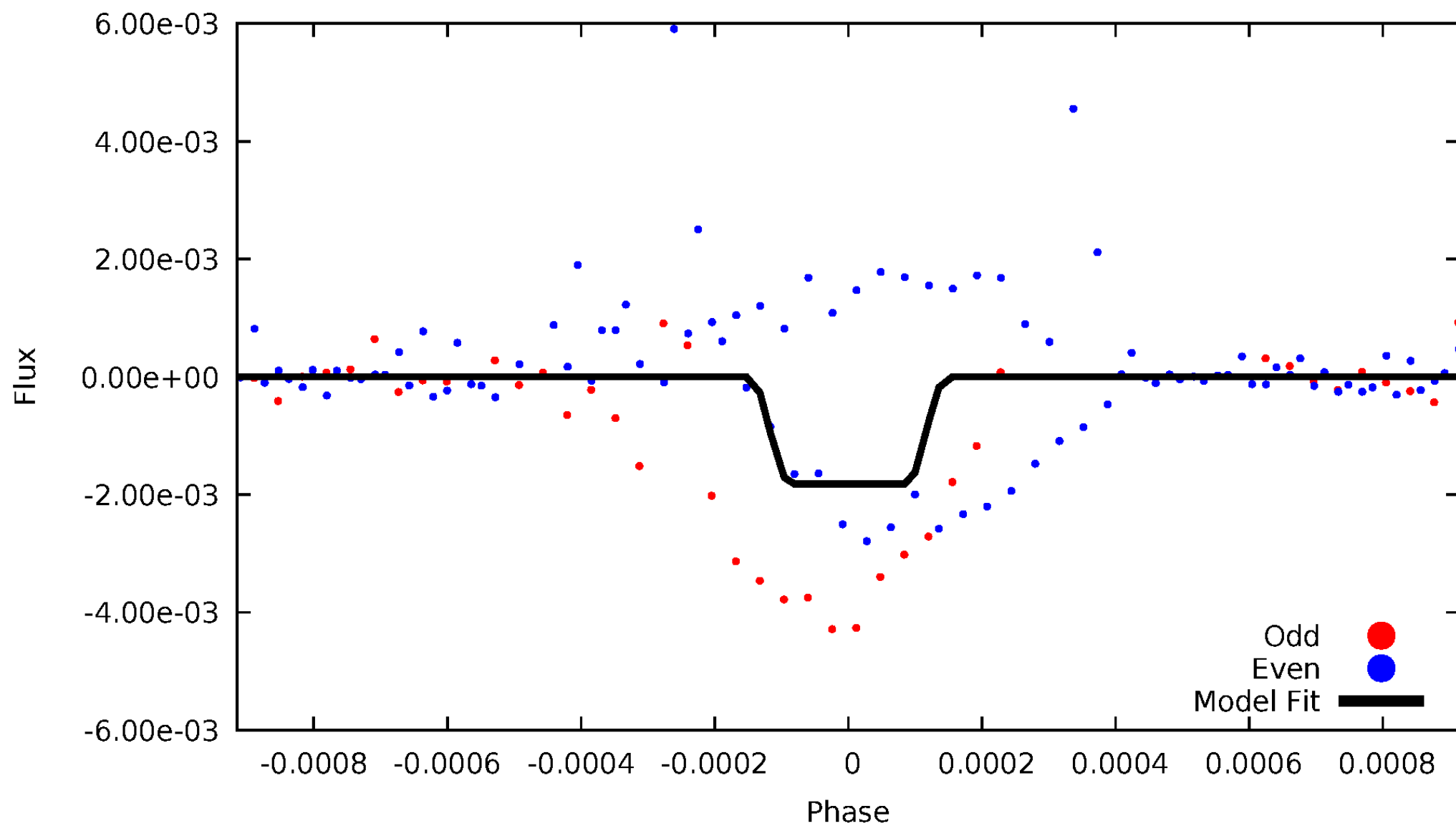
DV Odd/Even

TCE 003441906-02



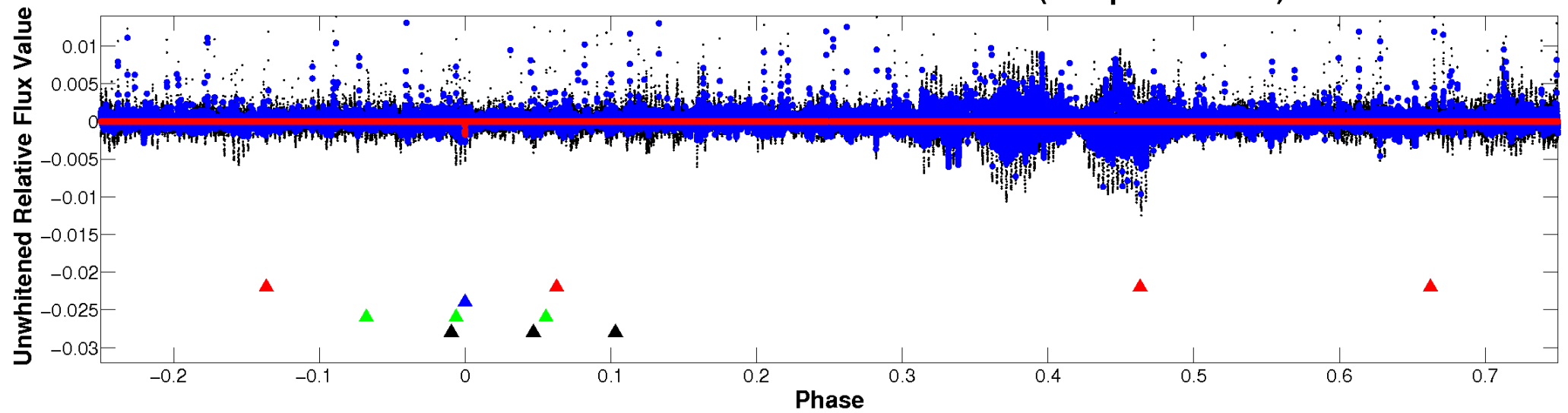
ALT Odd/Even

TCE 003441906-02

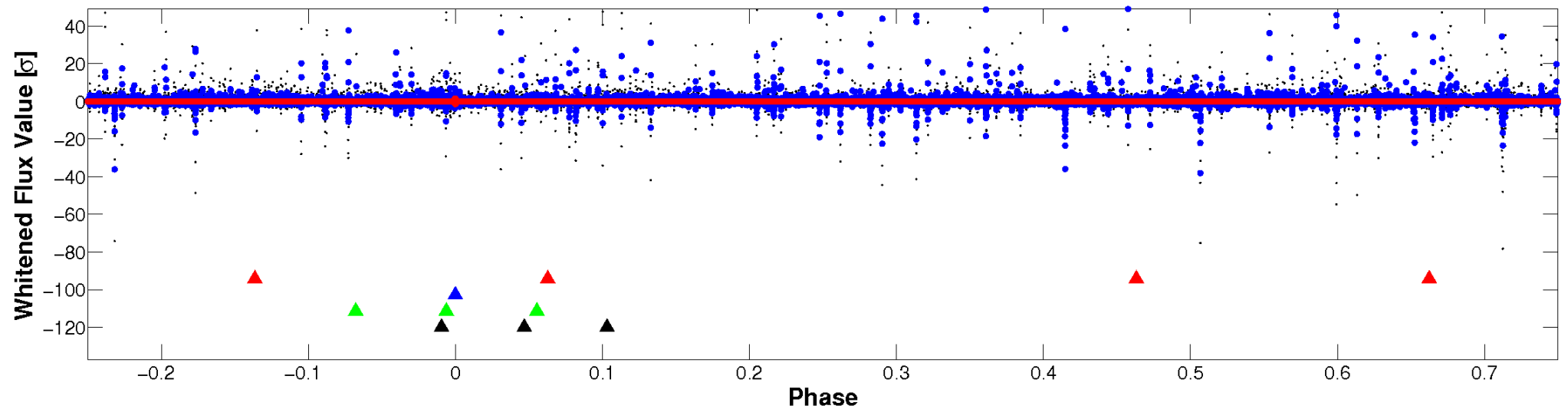


Non-Whitened Vs. Whitened Light Curve

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

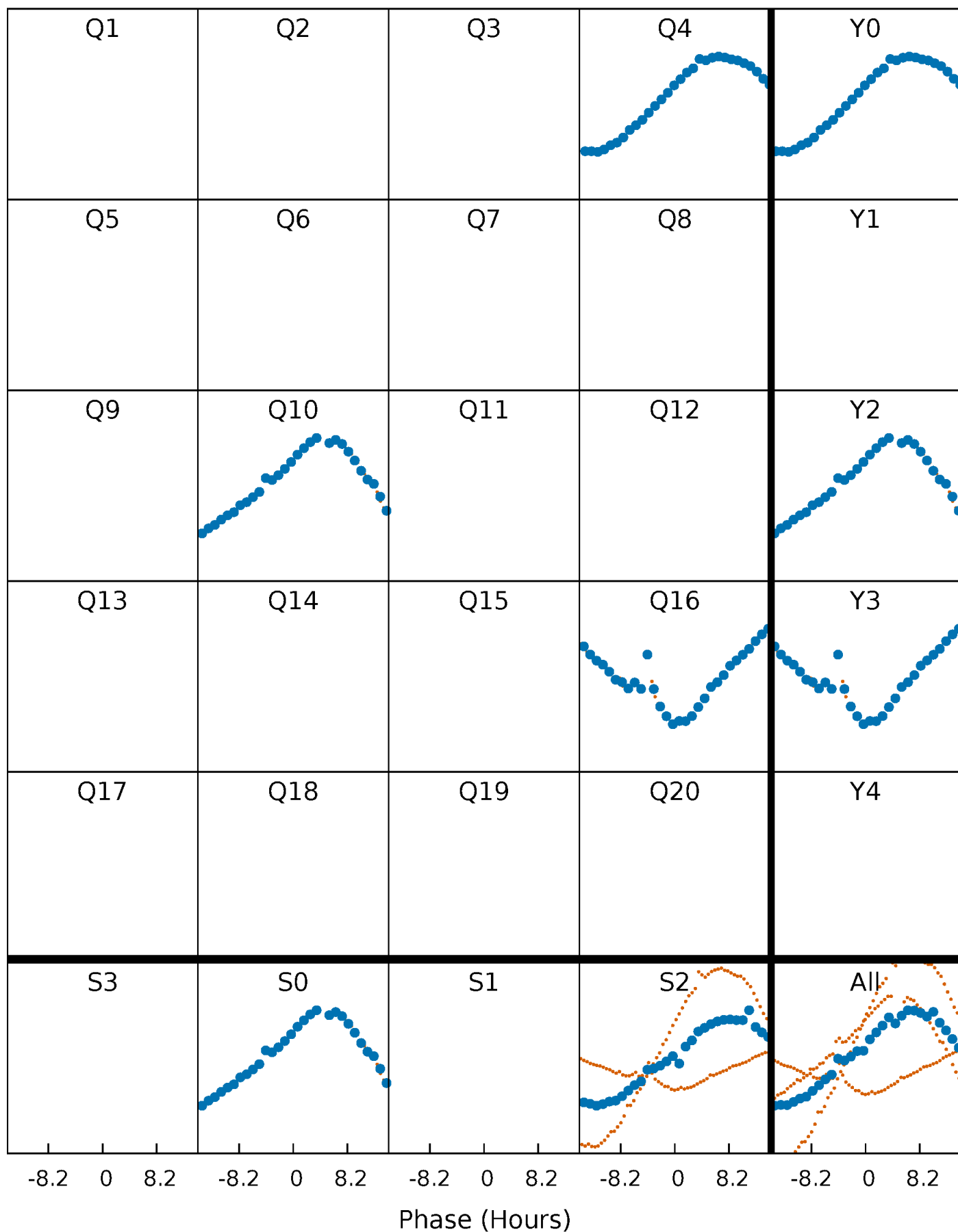


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



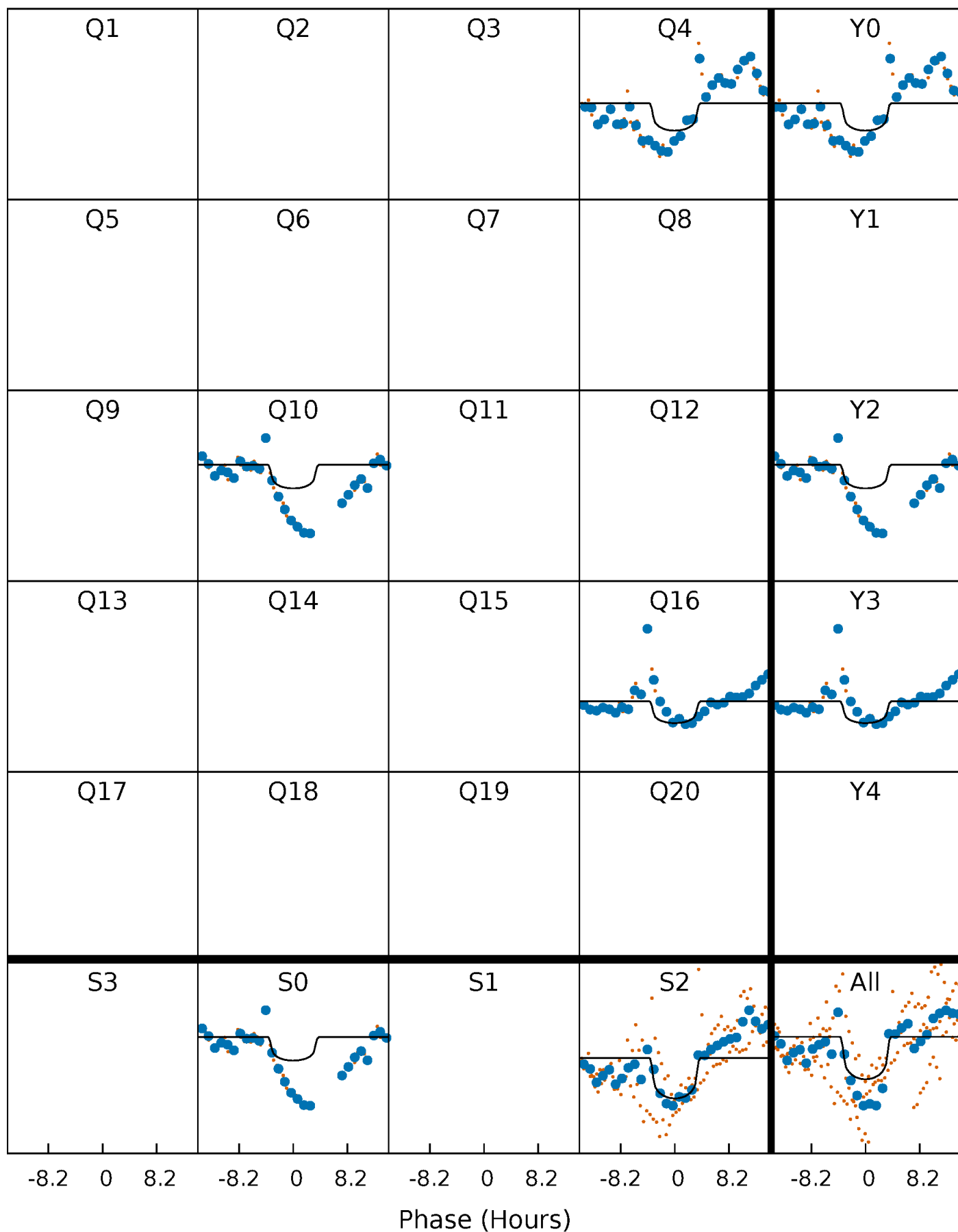
PDC Quarter-Phased Transit Curves

TCE 003441906-02 P=566.964983 Days $T_0=362.687810$ (BKJD)



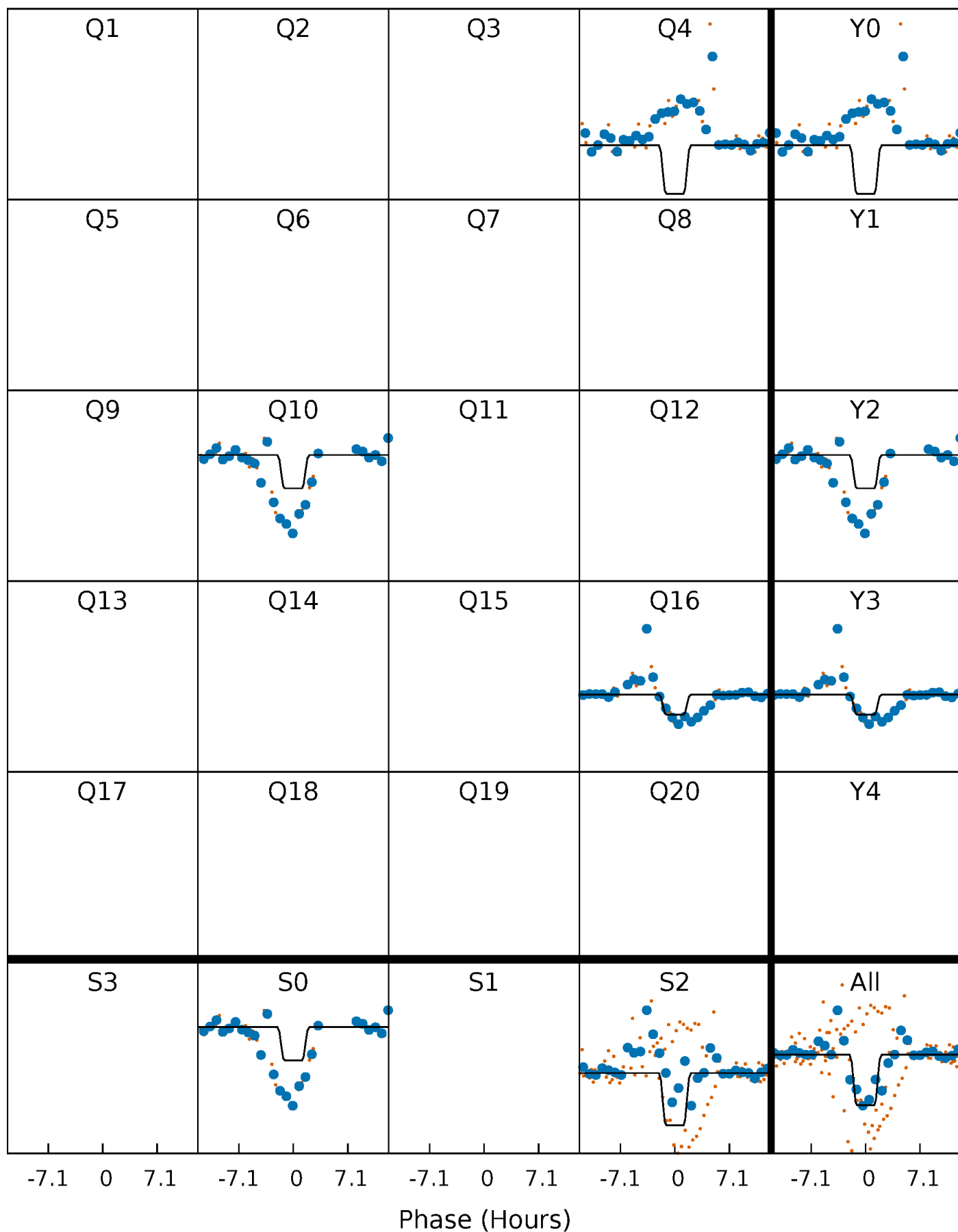
DV Quarter-Phased Transit Curves

TCE 003441906-02 $P=566.964983$ Days $T_0=362.687810$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

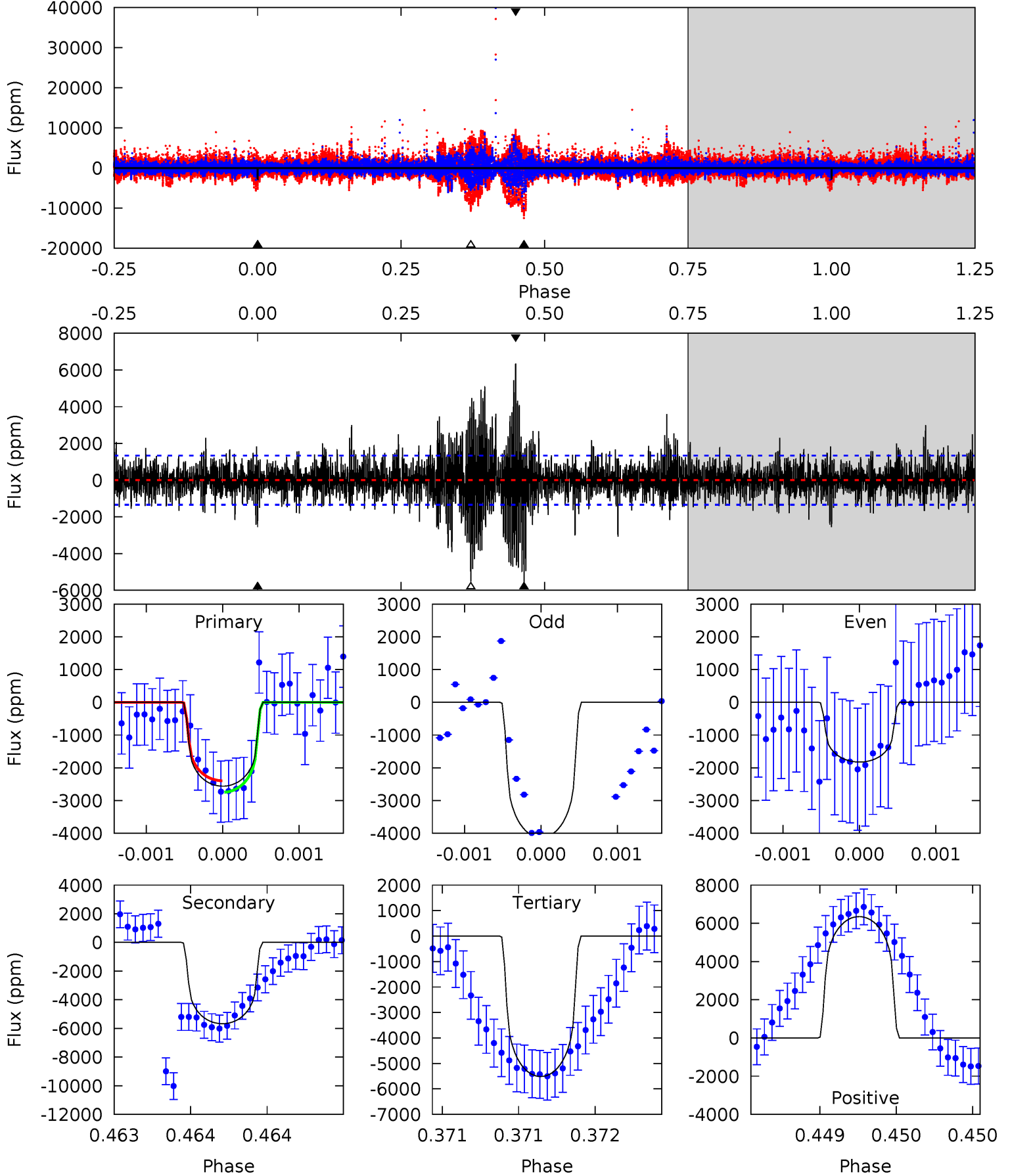
TCE 003441906-02 P=566.976800 Days $T_0=362.647061$ (BKJD)



DV Model-Shift Uniqueness Test

003441906-02, P = 566.964983 Days, E = 362.687810 Days

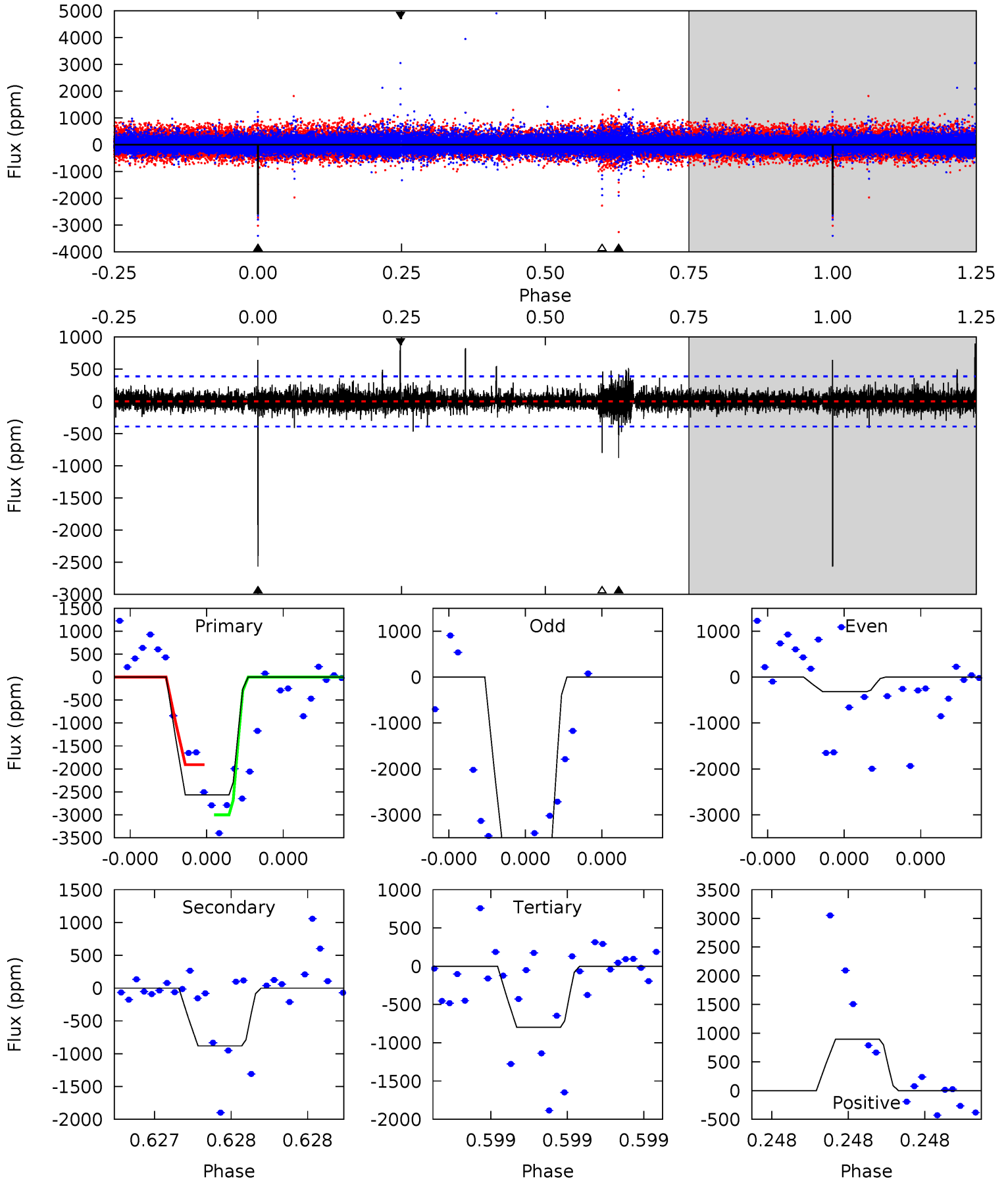
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	23.6	23.0	26.4	5.56	3.46	4.07	-12.3	-15.8	0.66	-2.83	4.53	1.06	0.53	0.71



Alt Model-Shift Uniqueness Test

003441906-02, P = 566.976800 Days, E = 362.647061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.3	12.8	11.6	13.0	5.67	3.63	1.05	25.7	24.3	1.20	-0.21	31.4	0.69	0.26	7.66



Stellar Parameters For KIC 003441906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+157}_{-157}	$4.556^{+0.082}_{-0.075}$	$-0.540^{+0.350}_{-0.300}$	$0.722^{+0.087}_{-0.079}$	$0.684^{+0.099}_{-0.035}$	$2.561^{+0.945}_{-0.635}$
	+3%/-3%	+2%/-2%	+65%/-56%	+12%/-11%	+14%/-5%	+37%/-25%
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 003441906-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-5672 ± 240	$3.17^{+1.69}_{-1.58}$	252^{+10}_{-10}	7194^{+4445}_{-1440}	$447827^{+1317422}_{-259043}$
Alt.	-881 ± 69	$3.42^{+1.82}_{-1.73}$	253^{+10}_{-11}	4506^{+1680}_{-663}	$60117^{+183207}_{-34873}$

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 $A_{obs} \gg 1.0$

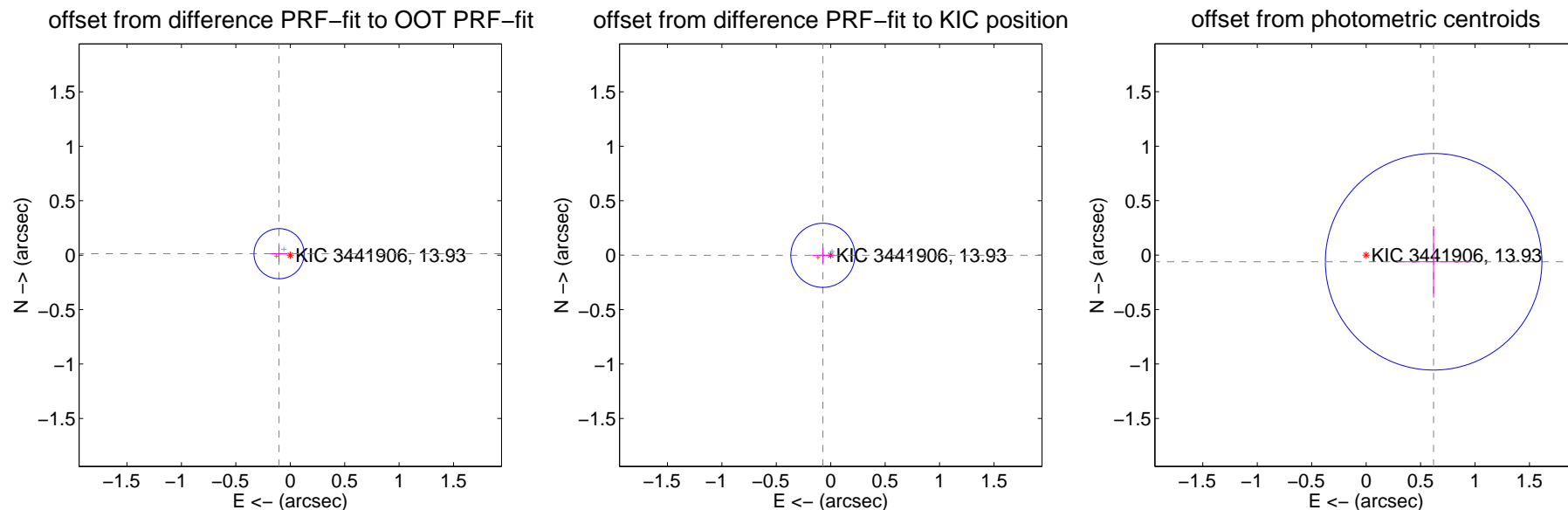
DV Centroid Data

Supplemental centroid analysis for 003441906-02. Kepler magnitude: 13.93. Transit SNR 5.95

There are 1 quarters with good PRF difference image offsets

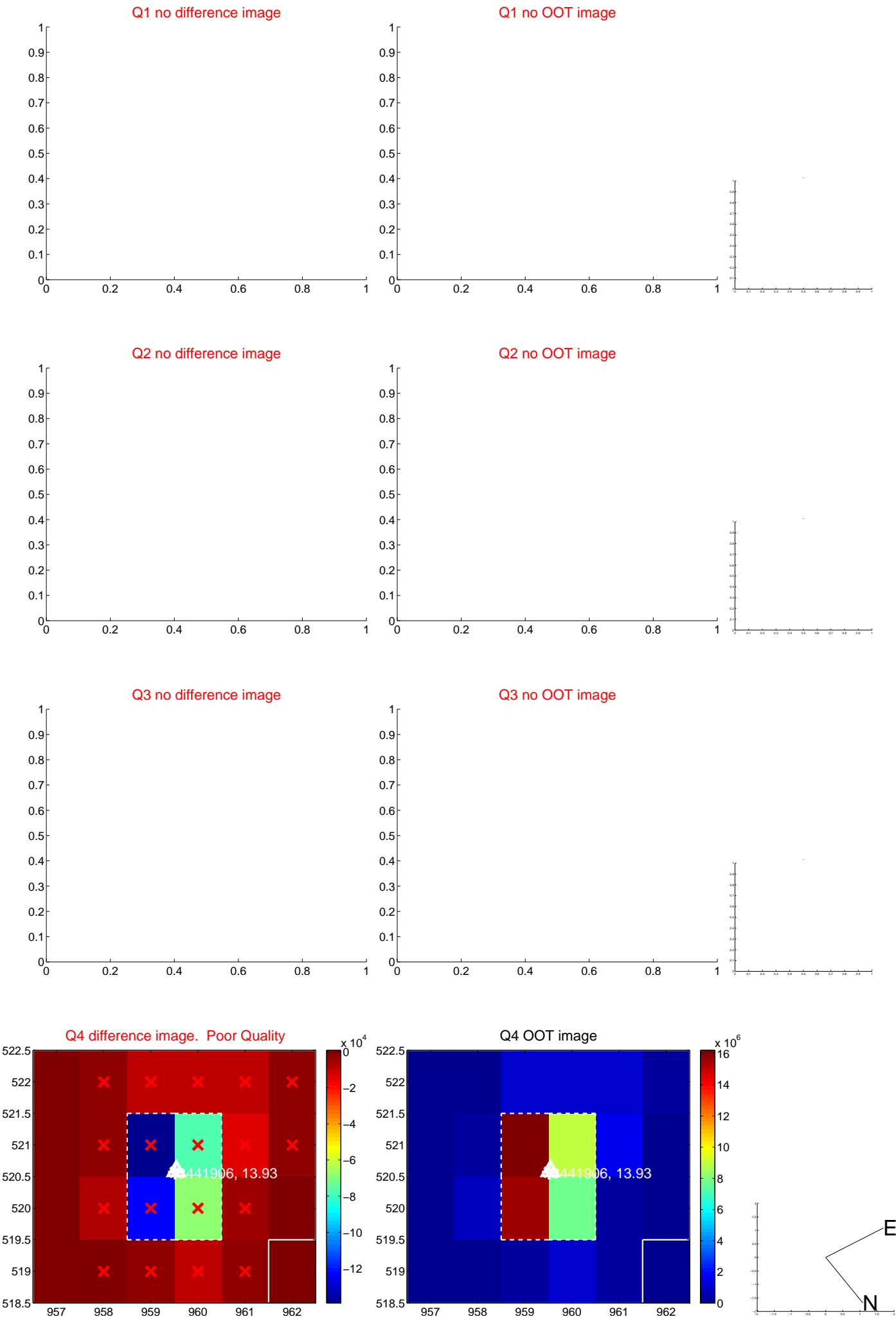
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.104 ± 0.077	1.35	0.103 ± 0.077	0.014 ± 0.076
PRF-fit source offset from KIC position	0.072 ± 0.098	0.74	0.072 ± 0.098	-0.002 ± 0.074
photometric centroid source offset	0.62 ± 0.33	1.88	-0.62 ± 0.33	-0.06 ± 0.33



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.



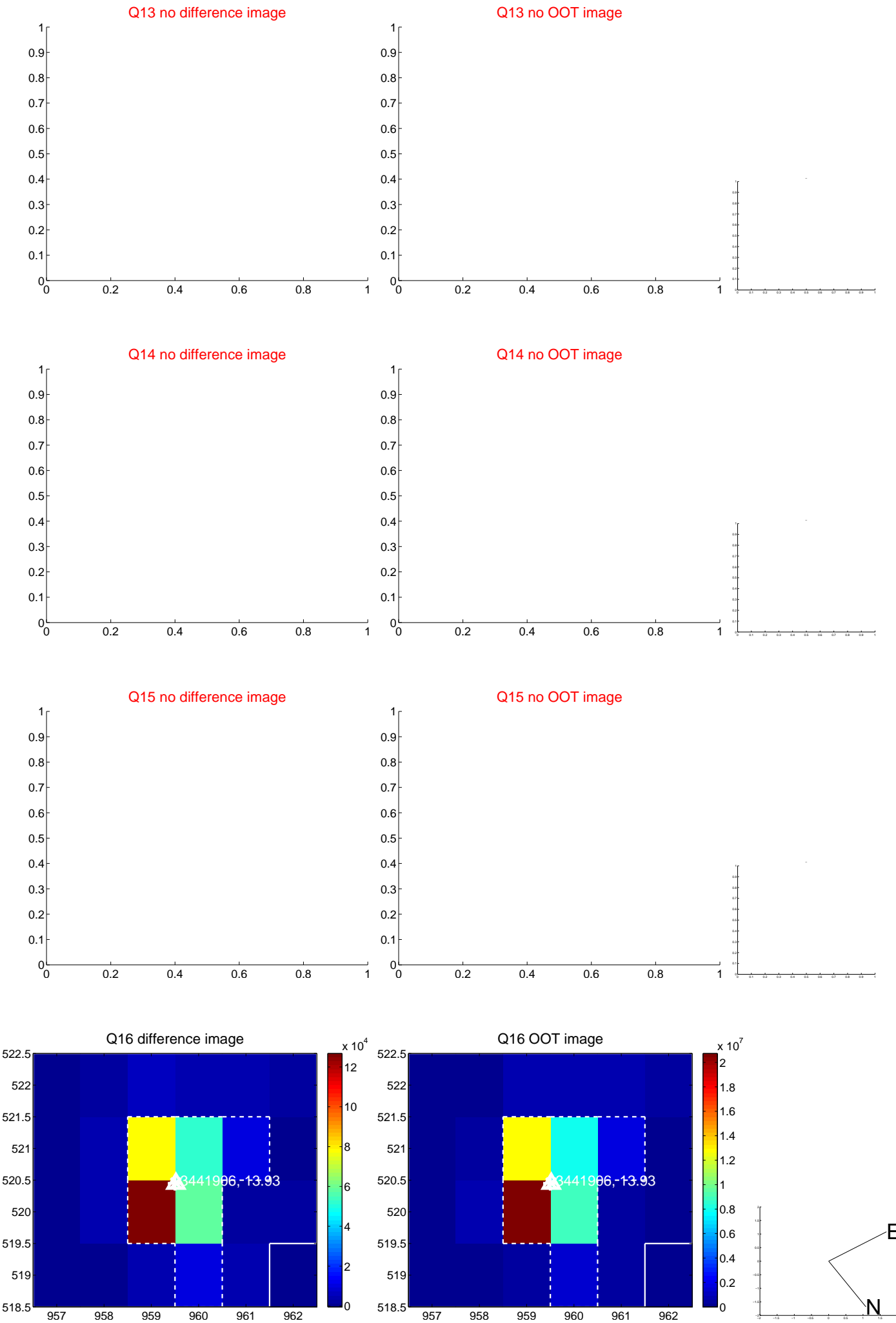
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



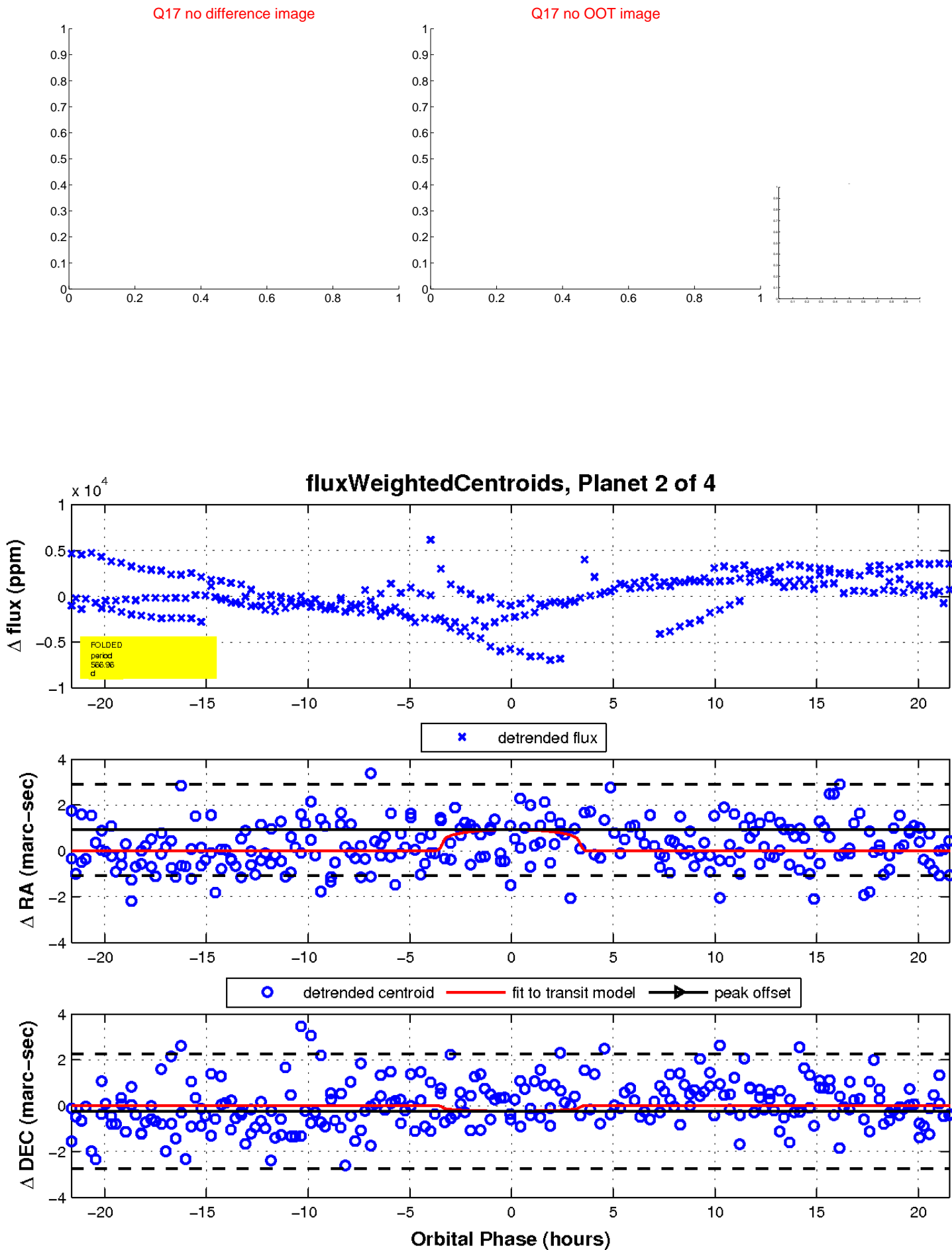
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

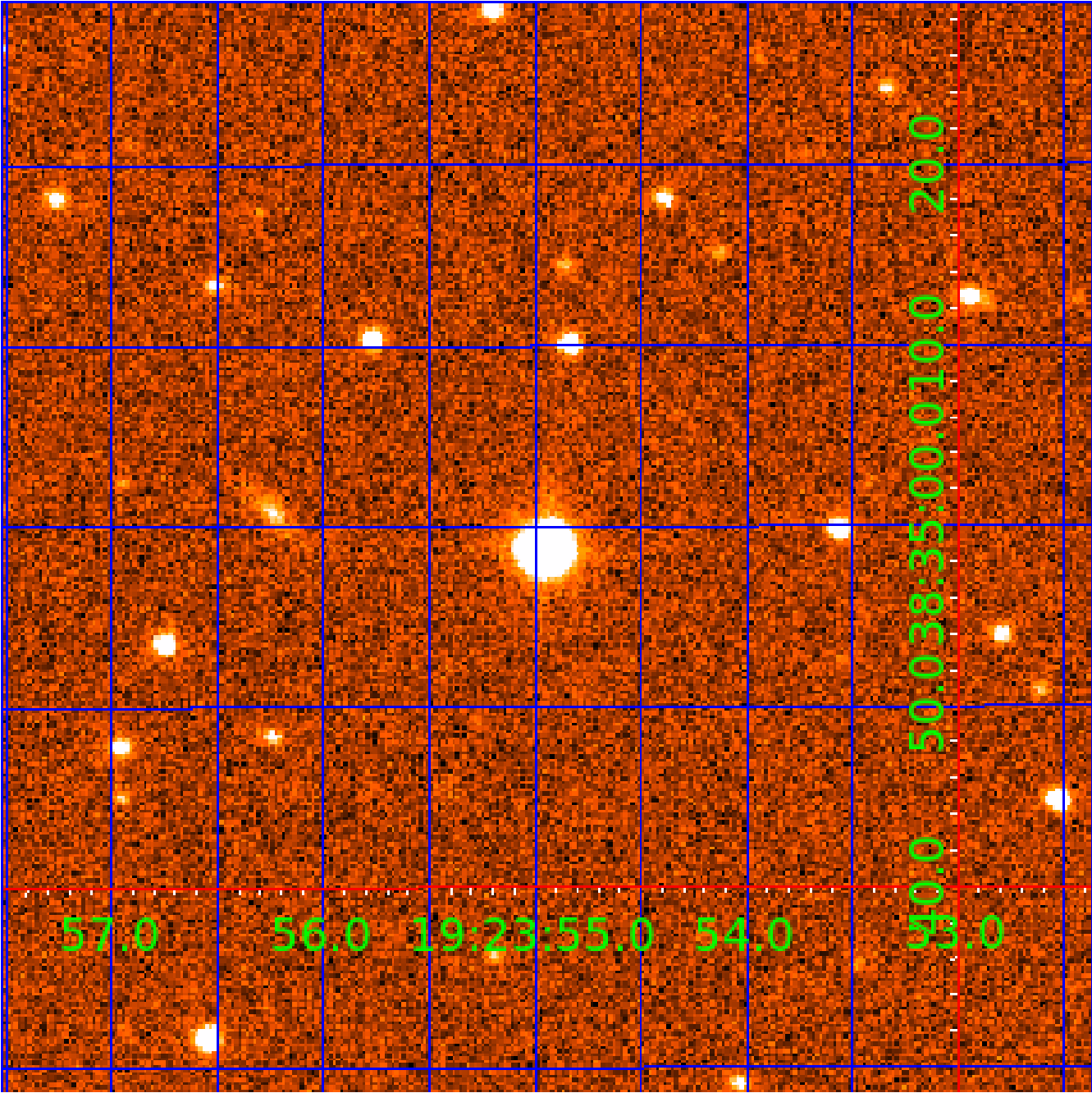


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 003441906

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})
003441906-01	OBS	No	339.961152	285.356442	1995.2	3.596	16.6	8.0	0.72	5242	6.27	0.50
003441906-02	OBS	No	566.964983	362.687810	1734.2	7.215	15.0	5.9	0.72	5242	3.07	0.25
003441906-03	OBS	No	532.028602	394.133324	655.3	6.000	12.3	-1.0	0.72	5242	1.82	0.28
003441906-04	OBS	No	535.043096	421.188919	1967.7	6.734	11.6	5.5	0.72	5242	6.21	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003441906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003441906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003441906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003441906-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

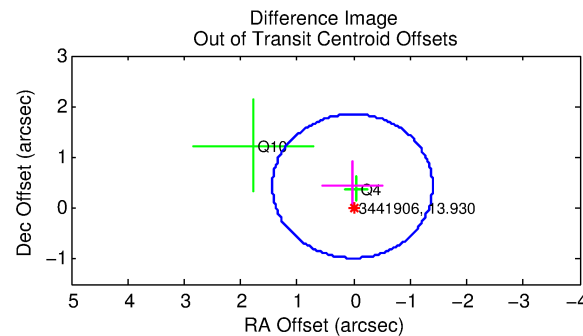
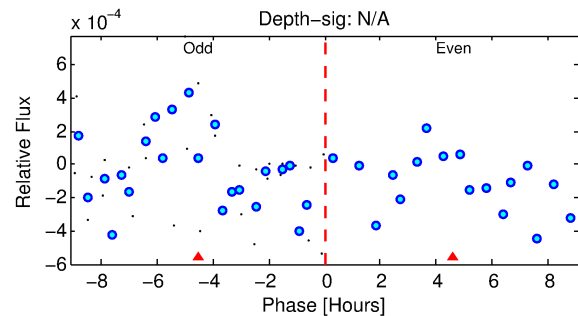
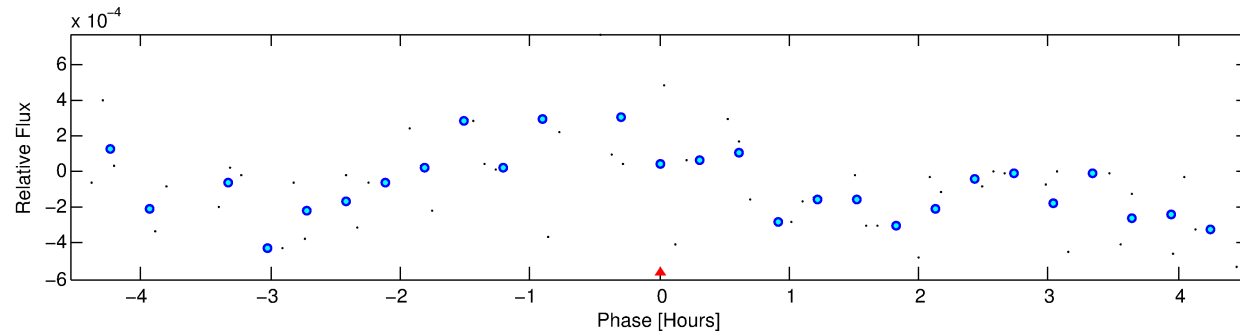
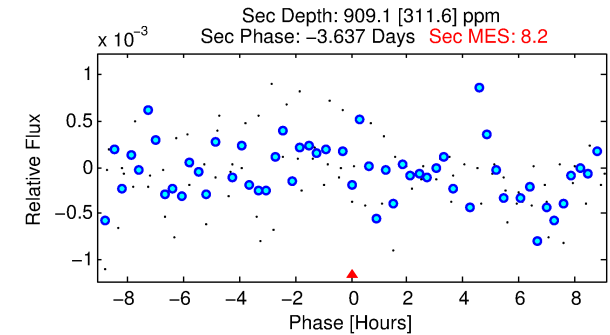
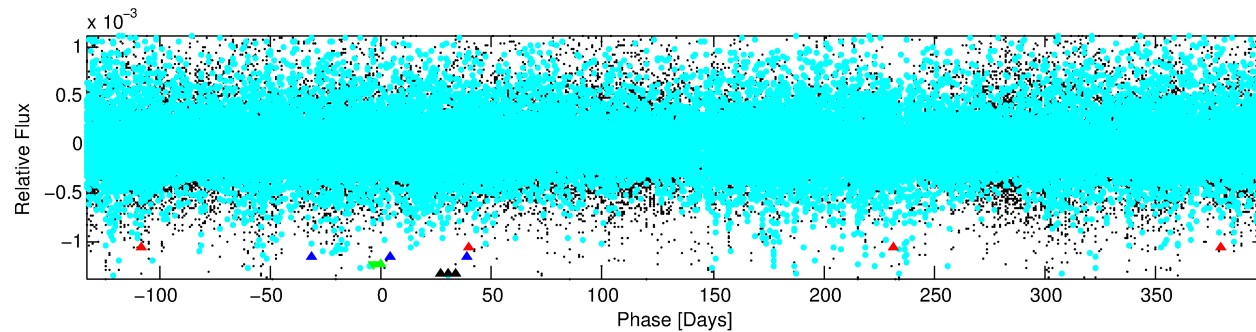
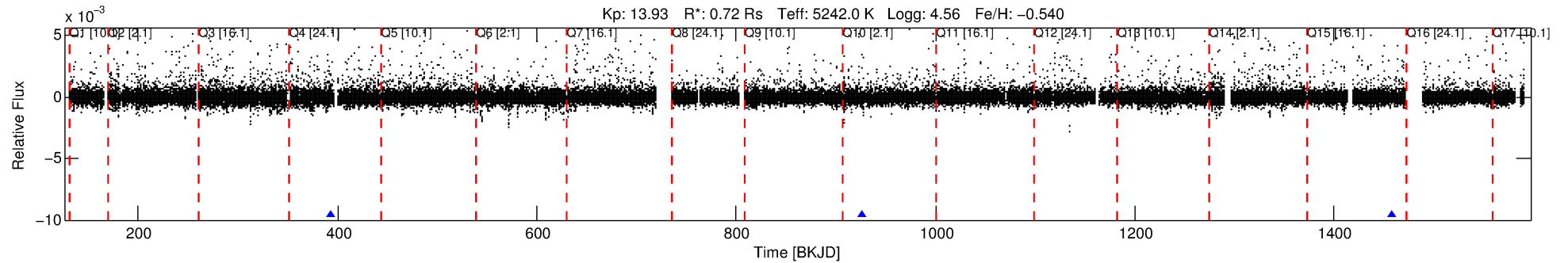
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003441906-03

No Significant Match Found

DV One-Page Summary

KIC: 3441906 Candidate: 3 of 4 Period: 532.029 d



TPS TCE Results:

Period = 532.02860 d
Epoch = 394.1333 BKJD

DV fit results are unavailable

DV Diagnostic Results:

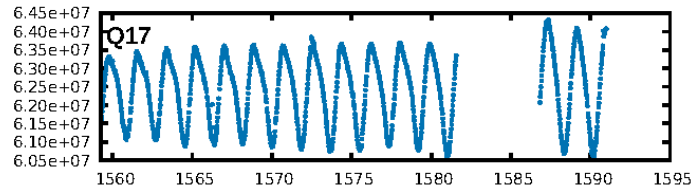
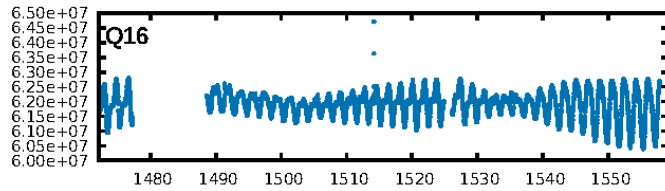
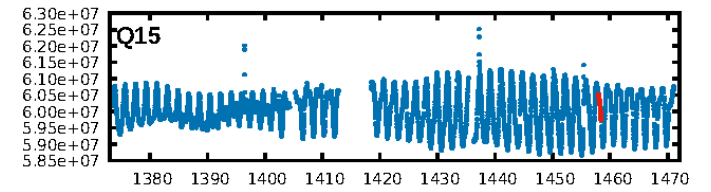
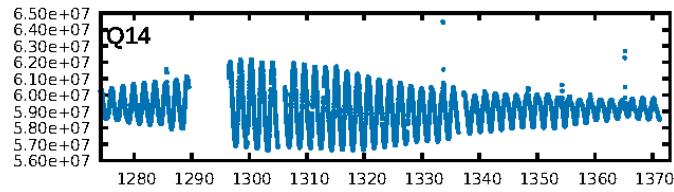
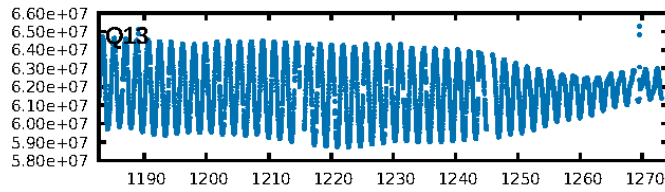
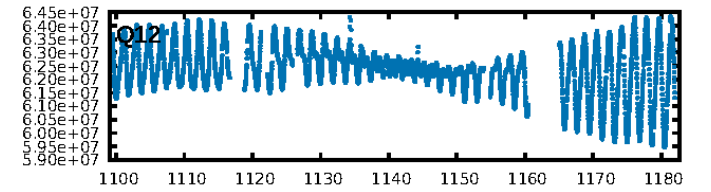
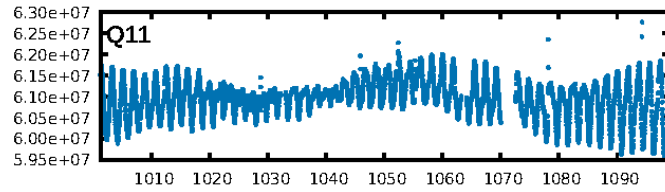
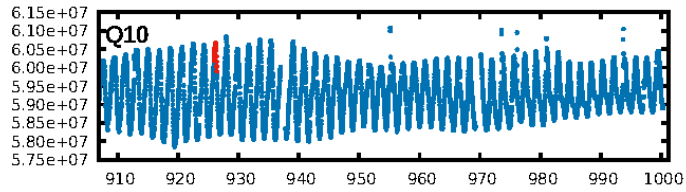
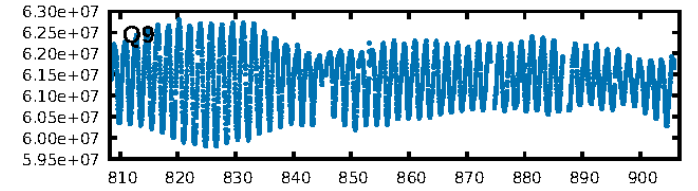
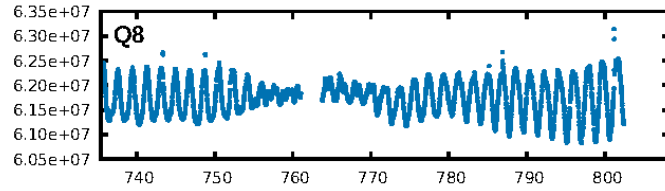
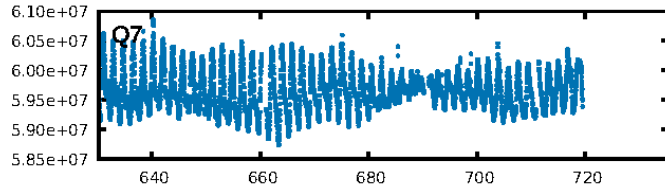
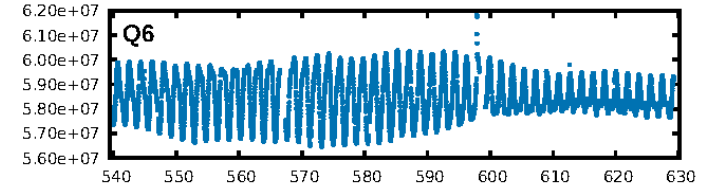
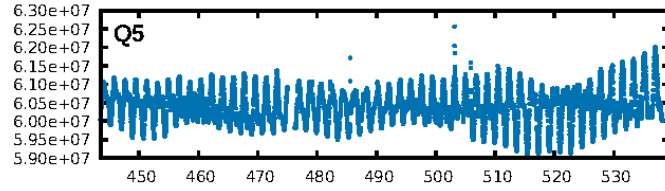
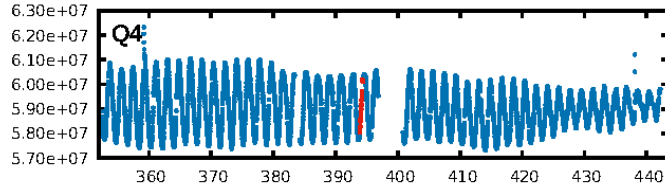
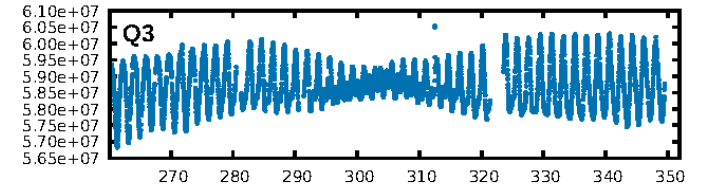
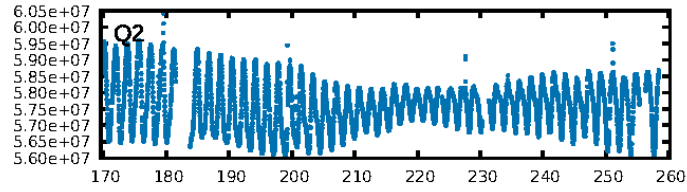
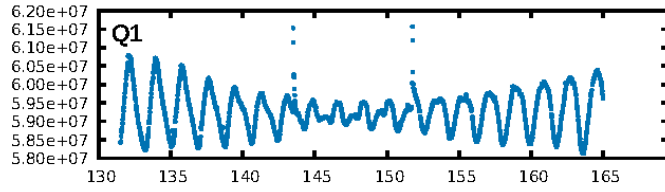
ShortPeriod-sig: 100.0% [659.00σ]
LongPeriod-sig: 100.0% [8.02σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.39e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: N/A

Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.427 arcsec [0.90σ]
KicOffset-rm: 0.447 arcsec [0.95σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

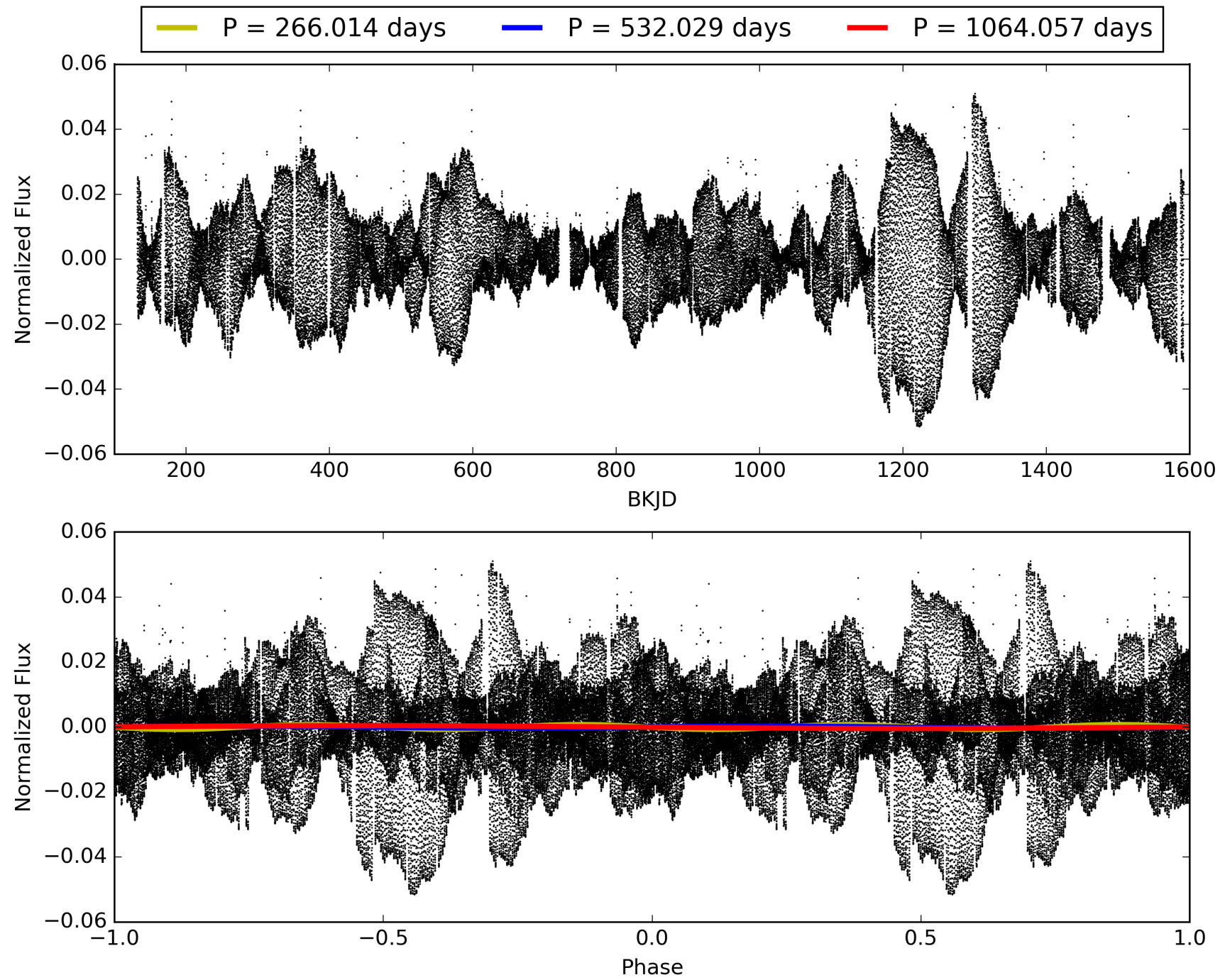
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:01:11 Z

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

TCE 003441906-03, PDC Light Curves

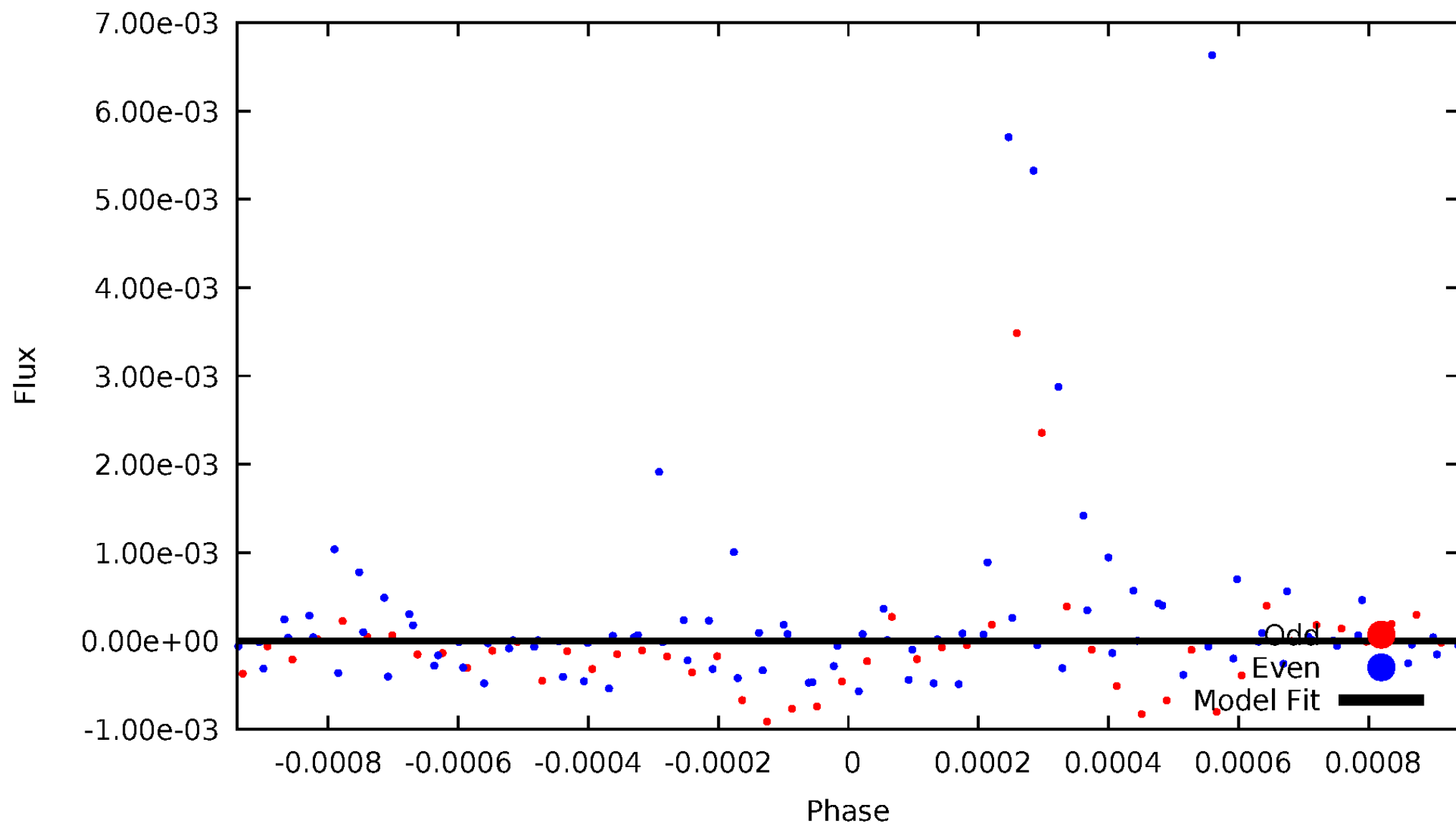


TCE 003441906-03



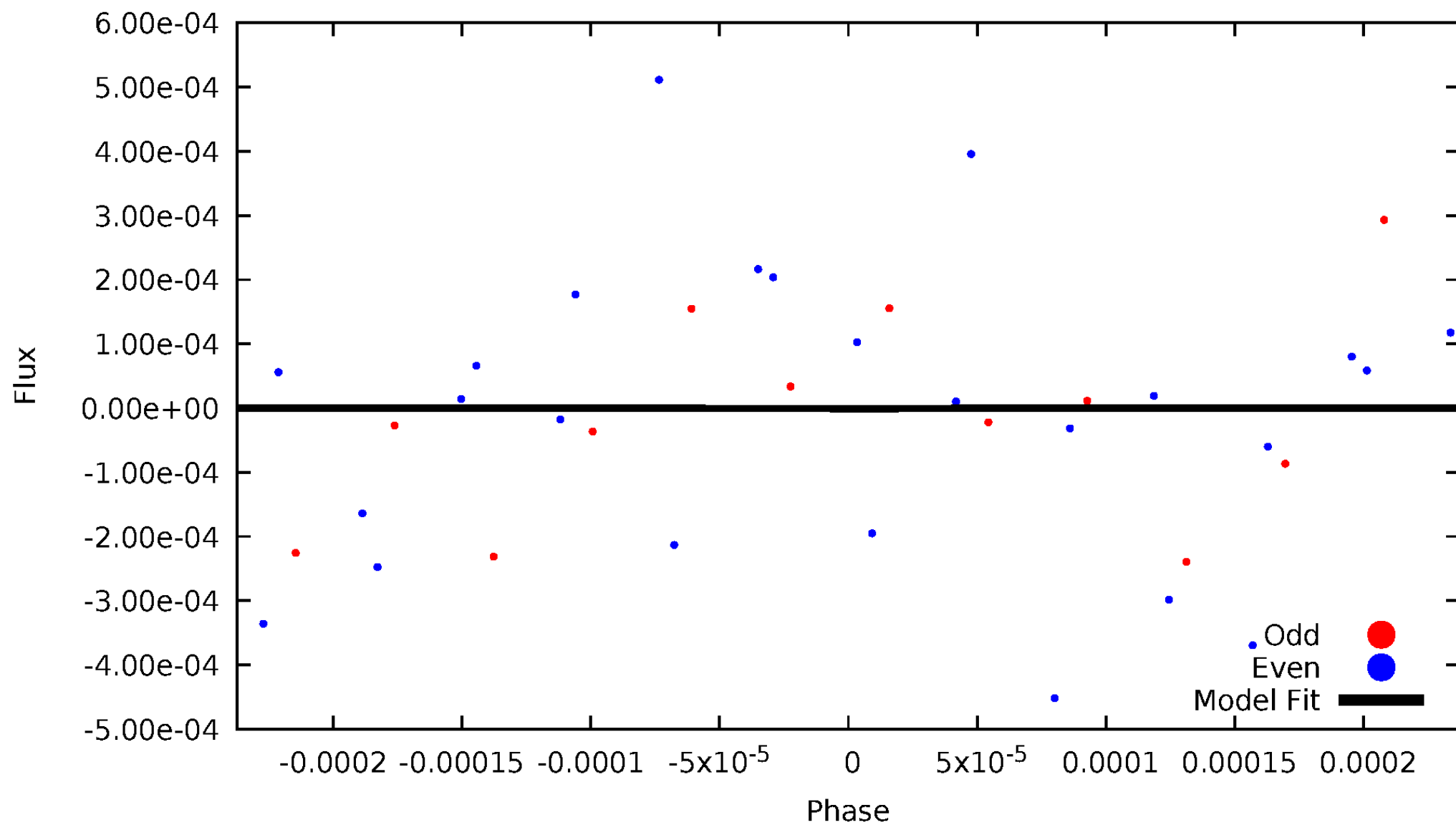
DV Odd/Even

TCE 003441906-03



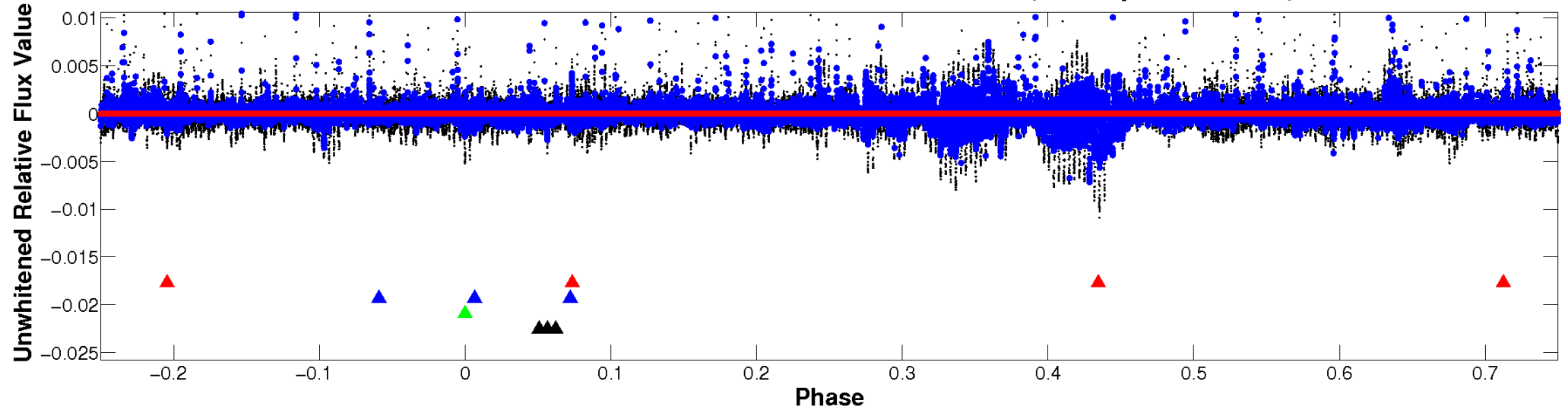
ALT Odd/Even

TCE 003441906-03

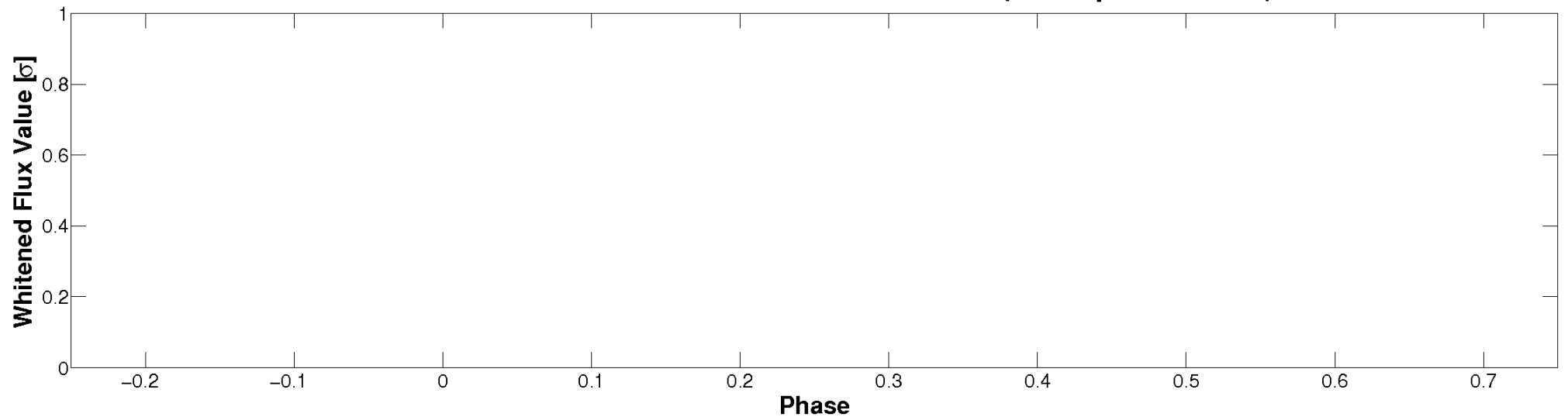


Non-Whitened Vs. Whitened Light Curve

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

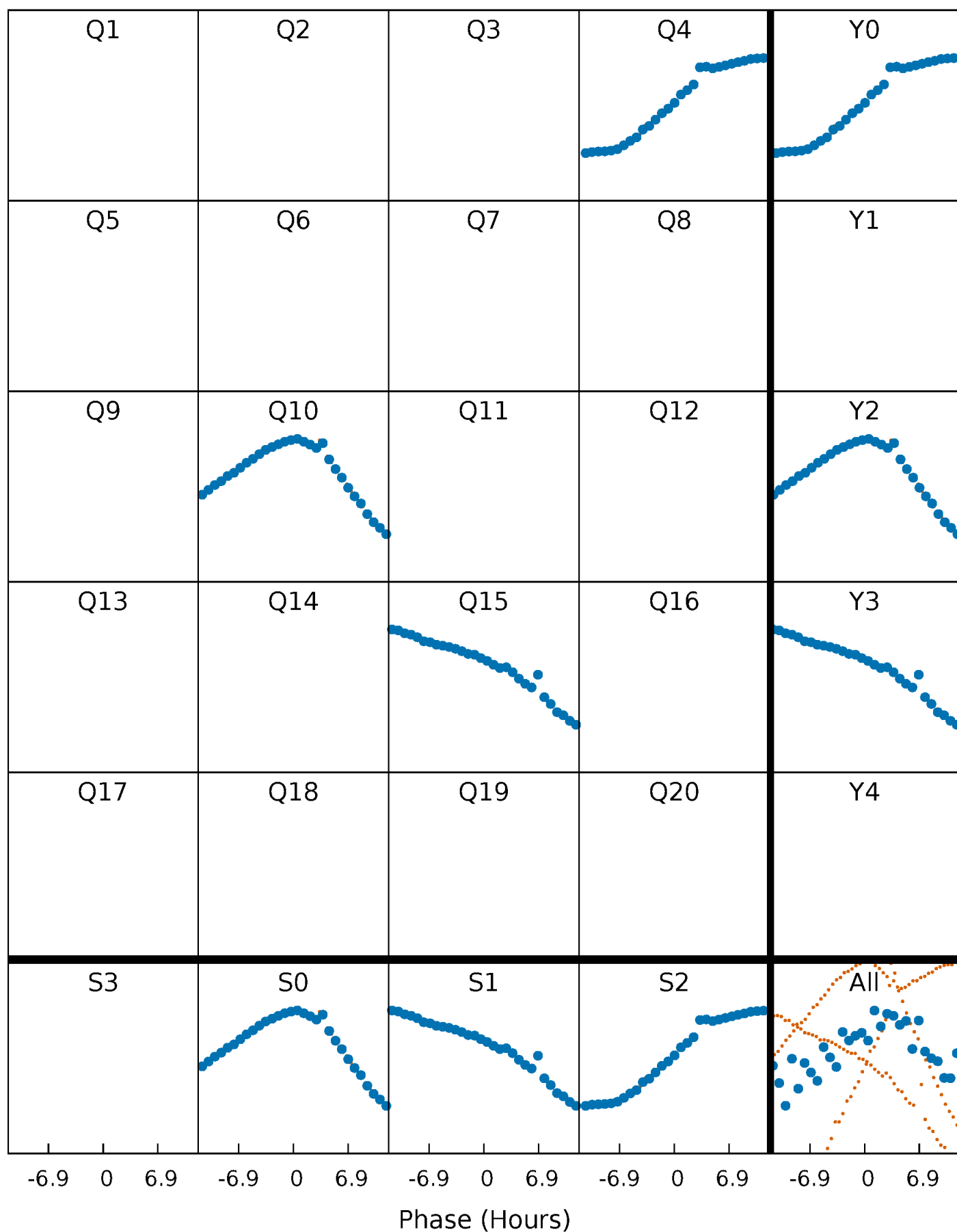


Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)



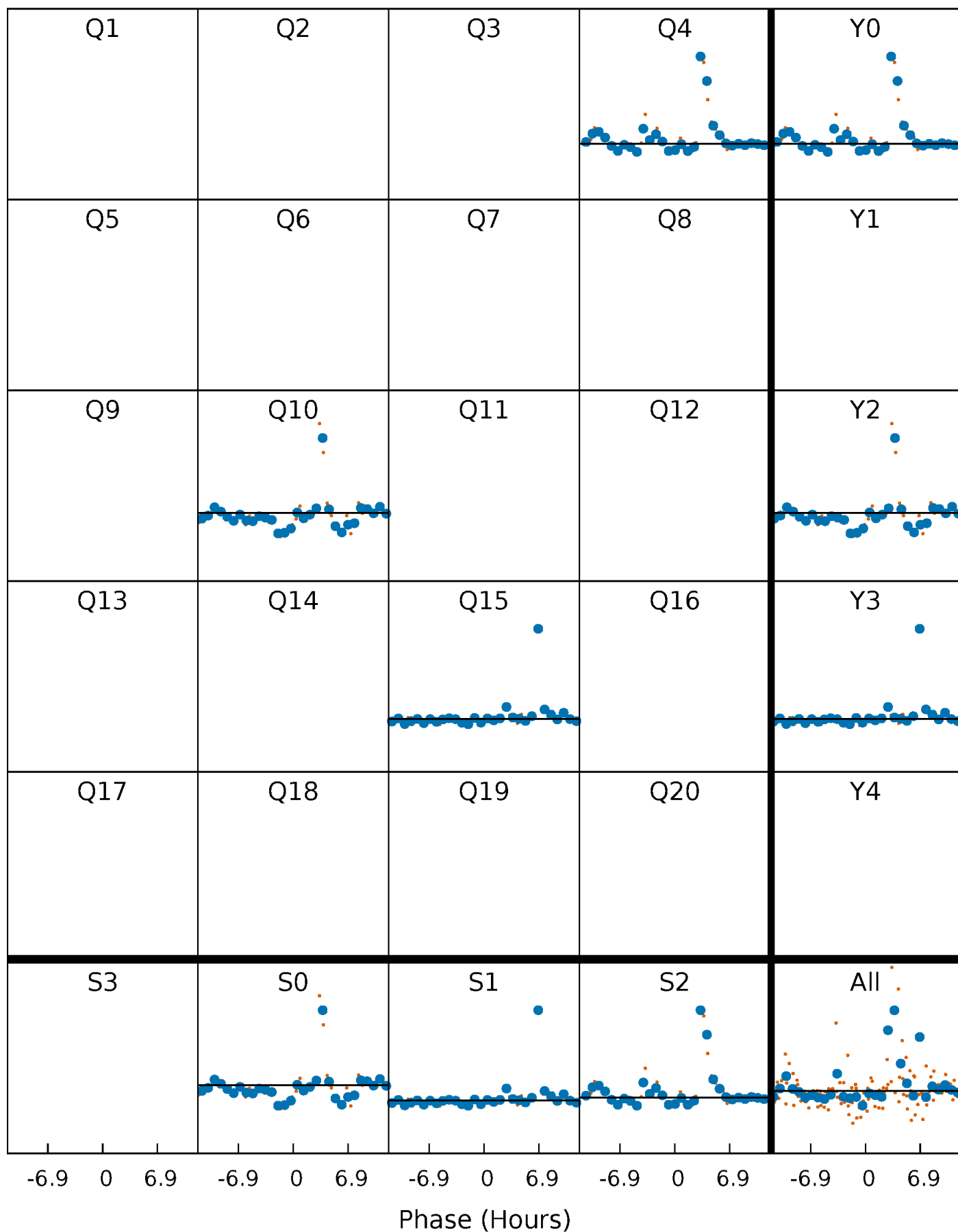
PDC Quarter-Phased Transit Curves

TCE 003441906-03 $P=532.028602$ Days $T_0=394.133324$ (BKJD)



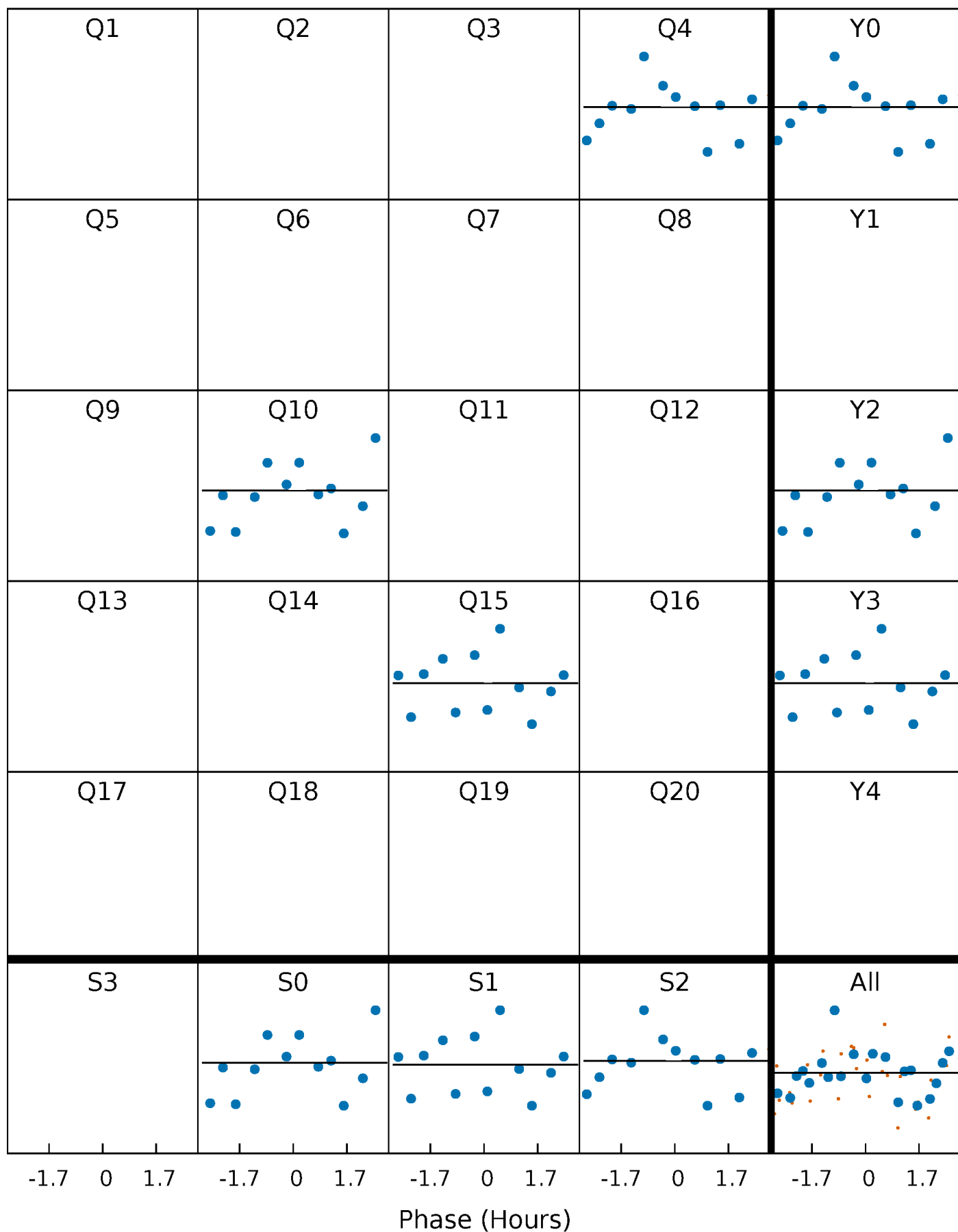
DV Quarter-Phased Transit Curves

TCE 003441906-03 $P=532.028602$ Days $T_0=394.133324$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

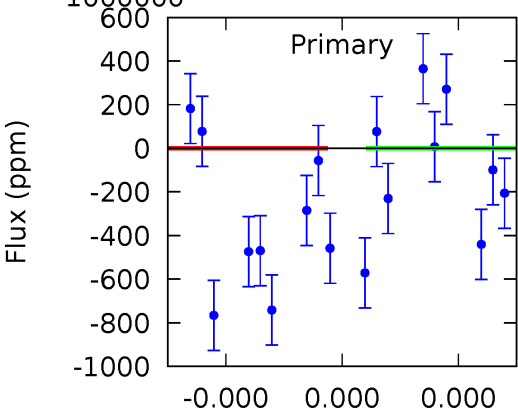
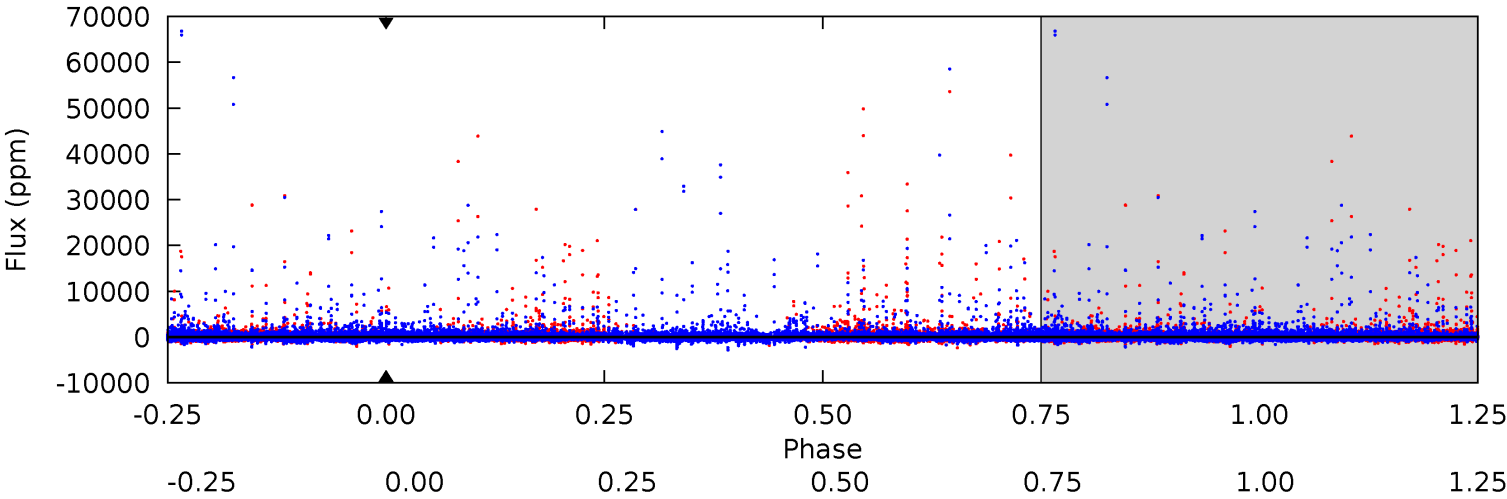
TCE 003441906-03 P=532.028602 Days $T_0=393.751832$ (BKJD)



DV Model-Shift Uniqueness Test

003441906-03, P = 532.028602 Days, E = 394.133324 Days

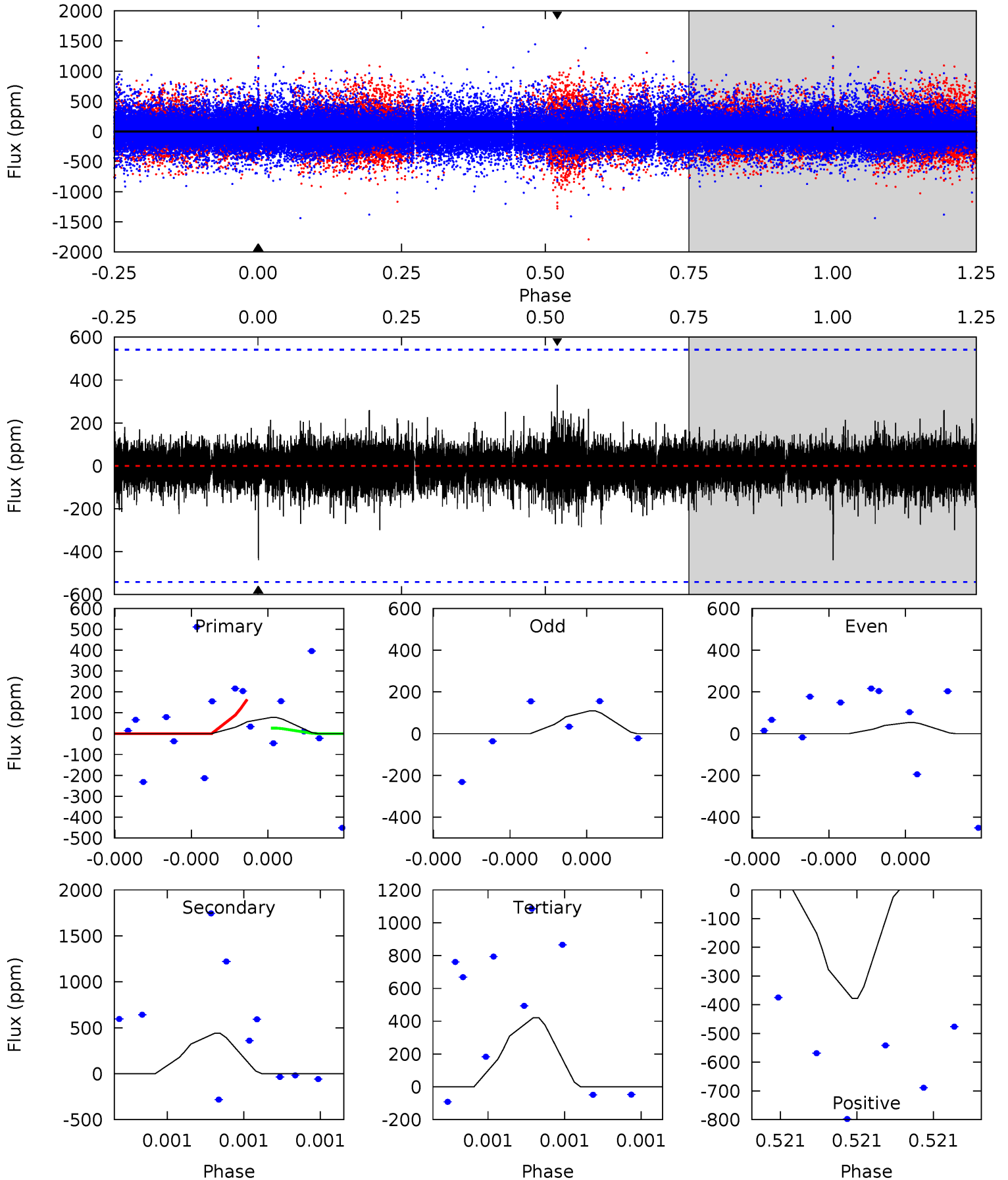
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003441906-03, P = 532.028602 Days, E = 393.751832 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.84	4.77	4.58	4.10	5.88	3.94	0.58	-3.74	-3.26	0.19	0.67	0.28	0.64	0.46	0.71



Stellar Parameters For KIC 003441906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+157}_{-157}	$4.556^{+0.082}_{-0.075}$	$-0.540^{+0.350}_{-0.300}$	$0.722^{+0.087}_{-0.079}$	$0.684^{+0.099}_{-0.035}$	$2.561^{+0.945}_{-0.635}$
	+3%/-3%	+2%/-2%	+65%/-56%	+12%/-11%	+14%/-5%	+37%/-25%
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 003441906-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.21^{+6.41}_{-4.34}$	257^{+11}_{-11}	3269^{+14270}_{-18096}	$10341^{+4109884}_{-2980451}$
Alt.	-439 ± 92	$5.67^{+6.54}_{-3.94}$	258^{+11}_{-11}	3333^{+1799}_{-614}	9472^{+96786}_{-7341}

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 $A_{obs} \gg 1.0$

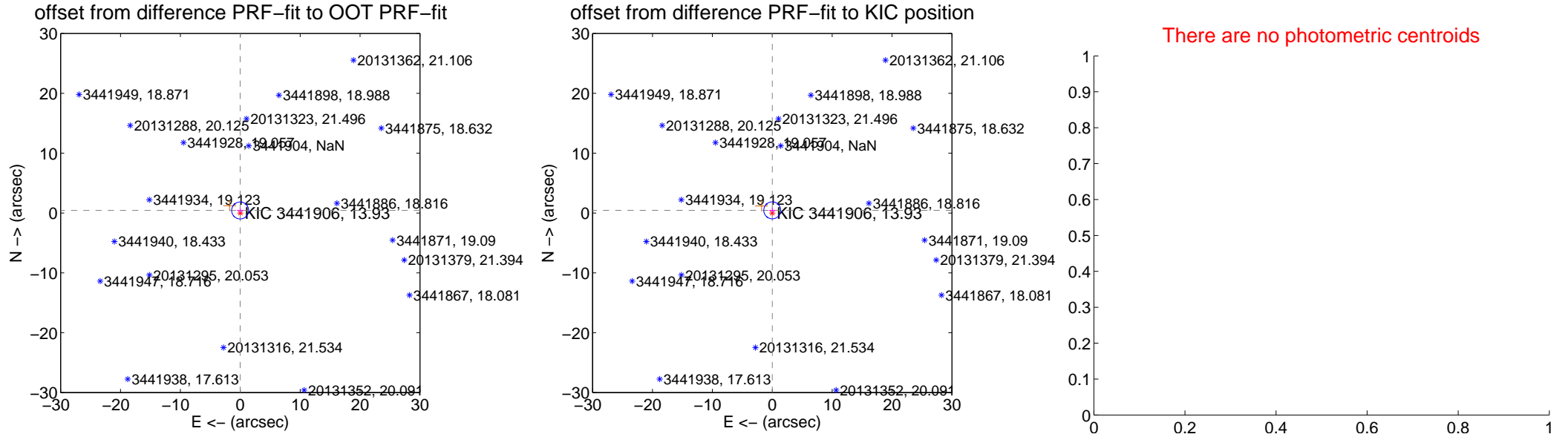
DV Centroid Data

Supplemental centroid analysis for 003441906-03. Kepler magnitude: 13.93. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

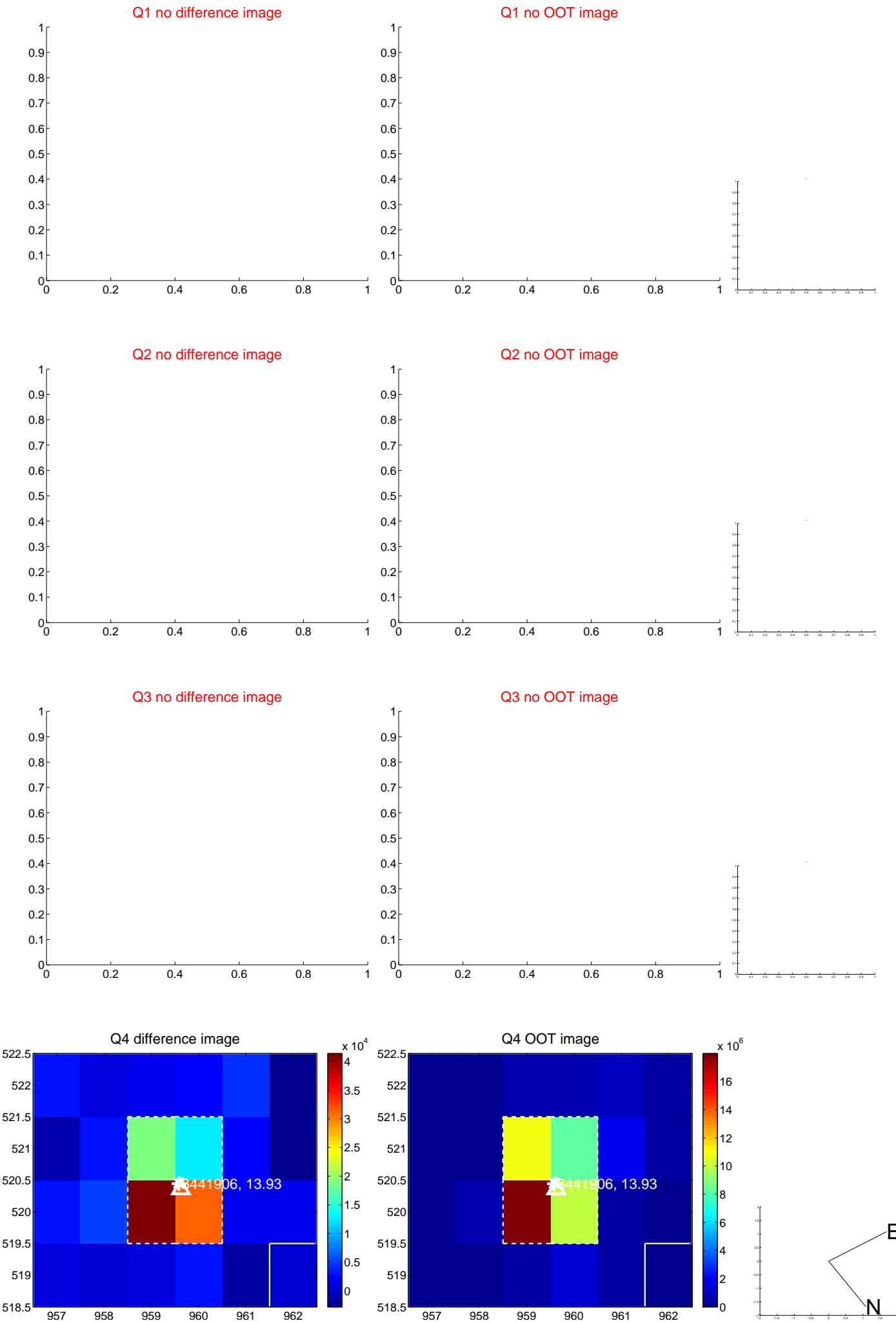
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.427 ± 0.472	0.90	0.021 ± 0.543	0.426 ± 0.472
PRF-fit source offset from KIC position	0.447 ± 0.472	0.95	-0.003 ± 0.543	0.447 ± 0.472
photometric centroid source offset	—	—	—	—



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.

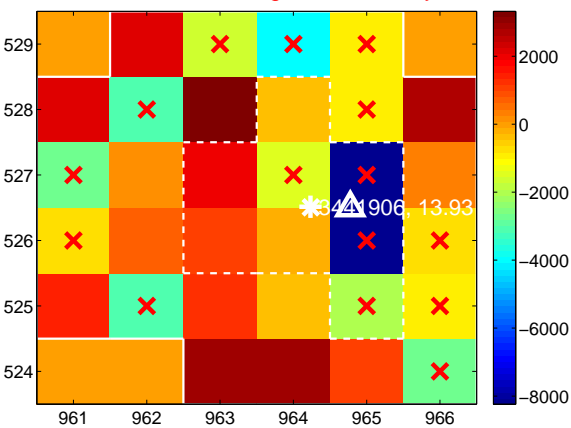
Q9 no difference image



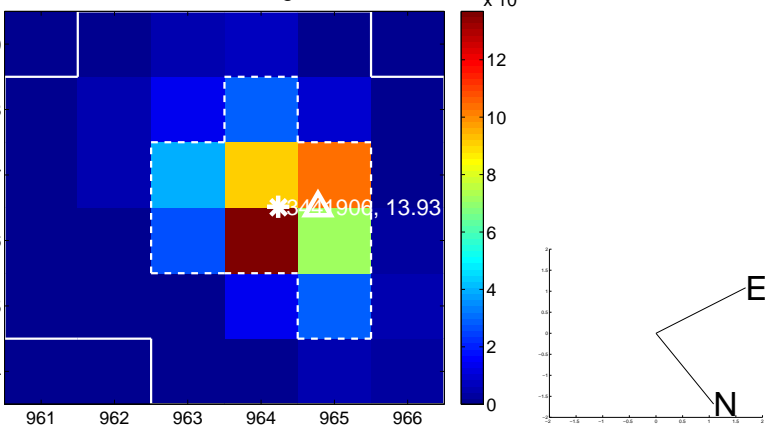
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



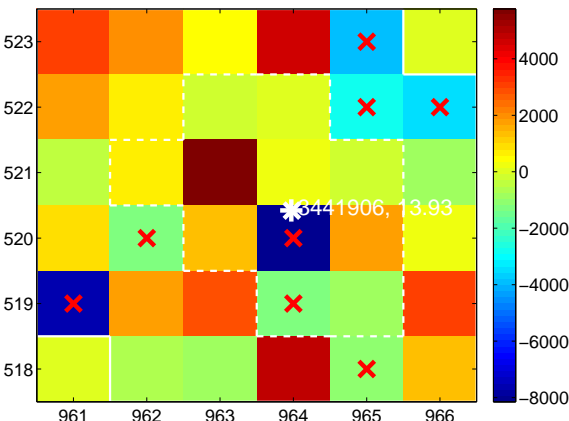
Q14 no difference image



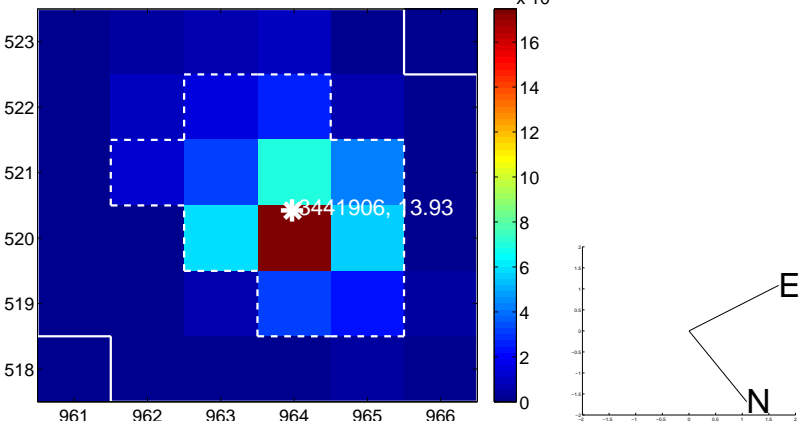
Q14 no OOT image



Q15 difference image. Poor Quality



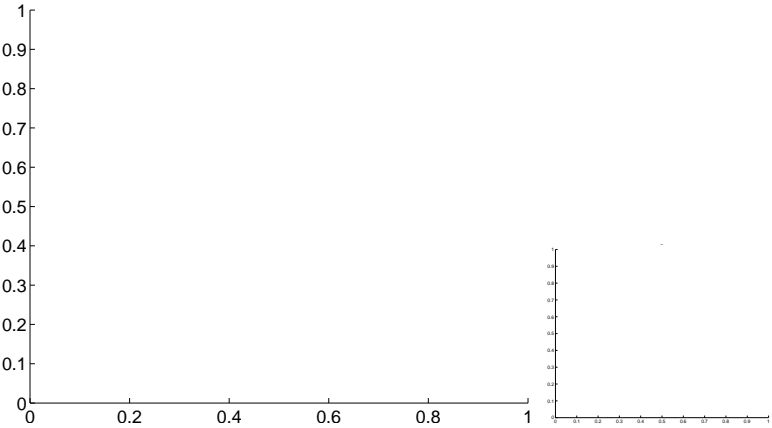
Q15 OOT image



Q16 no difference image



Q16 no OOT image



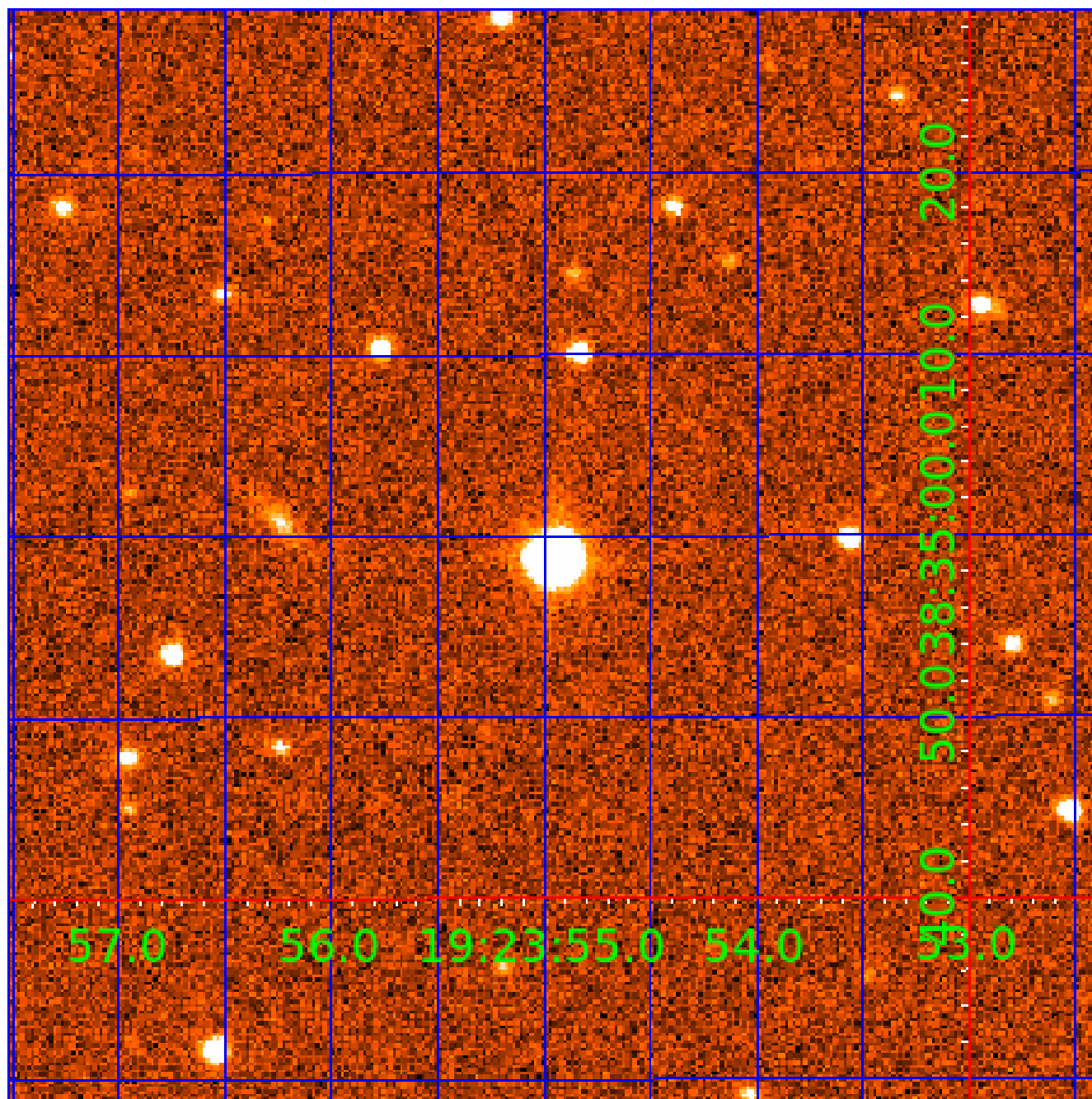
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 003441906

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})
003441906-01	OBS	No	339.961152	285.356442	1995.2	3.596	16.6	8.0	0.72	5242	6.27	0.50
003441906-02	OBS	No	566.964983	362.687810	1734.2	7.215	15.0	5.9	0.72	5242	3.07	0.25
003441906-03	OBS	No	532.028602	394.133324	655.3	6.000	12.3	-1.0	0.72	5242	1.82	0.28
003441906-04	OBS	No	535.043096	421.188919	1967.7	6.734	11.6	5.5	0.72	5242	6.21	0.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003441906-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
003441906-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
003441906-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS
003441906-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

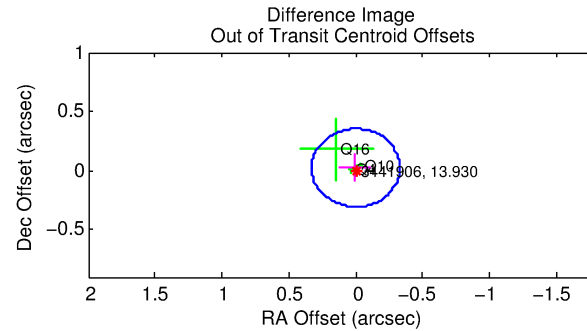
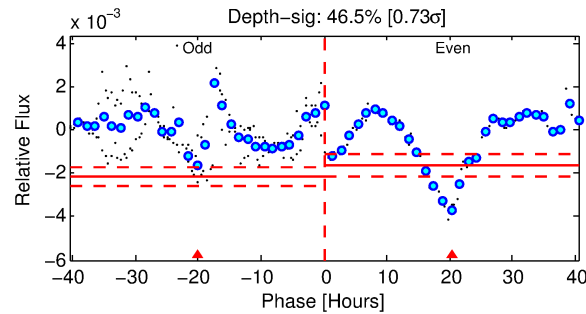
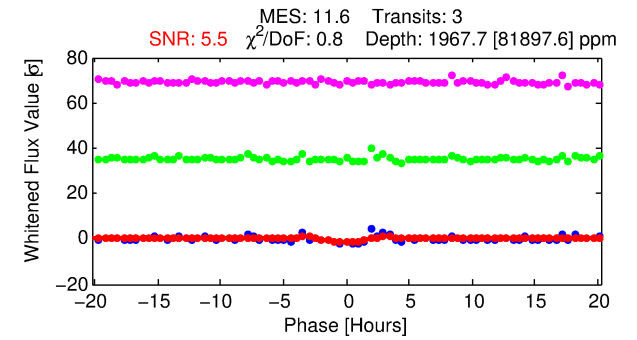
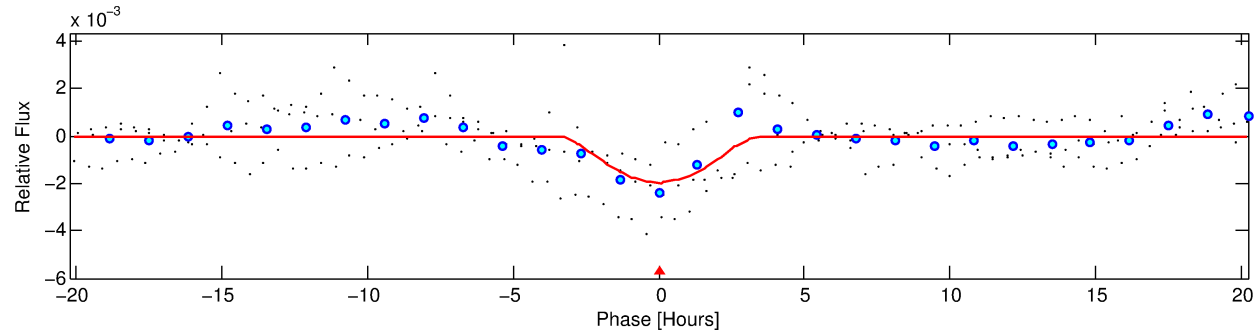
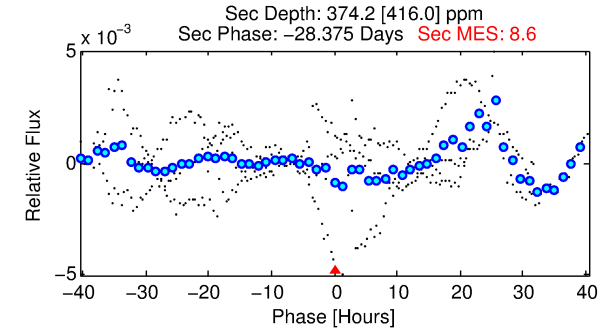
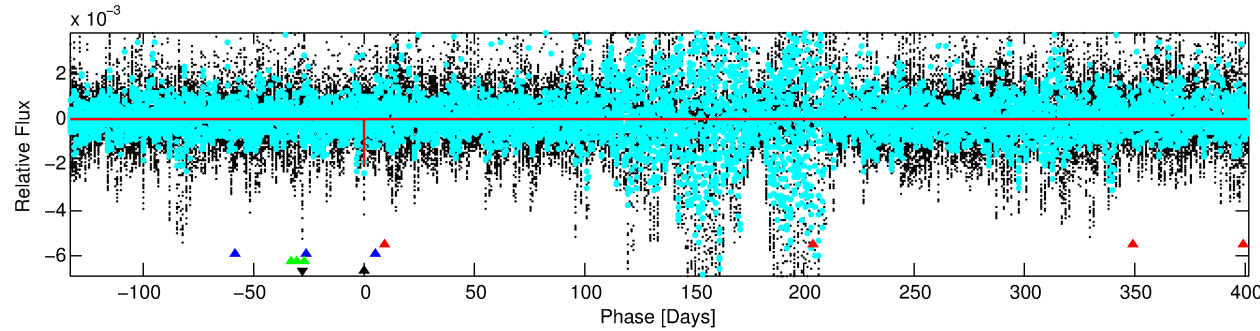
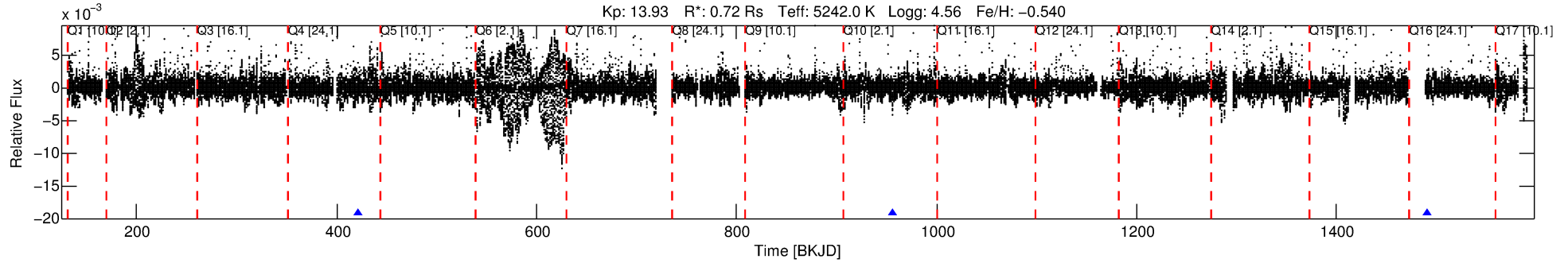
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003441906-04

No Significant Match Found

DV One-Page Summary

KIC: 3441906 Candidate: 4 of 4 Period: 535.043 d



DV Fit Results:

Period = 535.04310 [0.01086] d
Epoch = 421.1889 [0.0149] BKJD
Rp/R* = 0.0788 [0.1817]
a/R* = 245.67 [118.14]
b = 1.00 [1.91]
Seff = 0.27 [0.05]
Teq = 184 [9] K
Rp = 6.21 [14.33] Re
a = 1.1367 [0.1160] AU
Ag = 6901.83 [32751.59] [0.21 σ]
Teffp = 2597 [3081] K [0.78 σ]

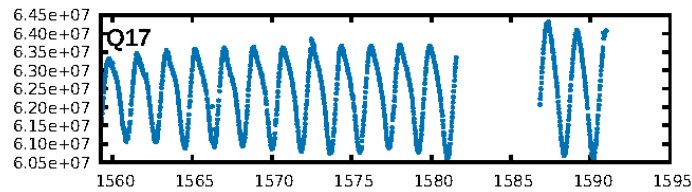
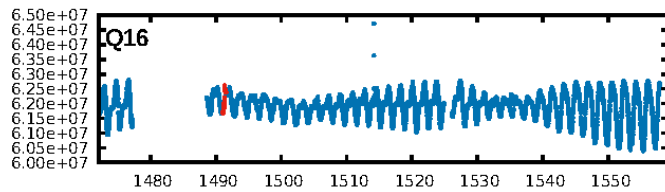
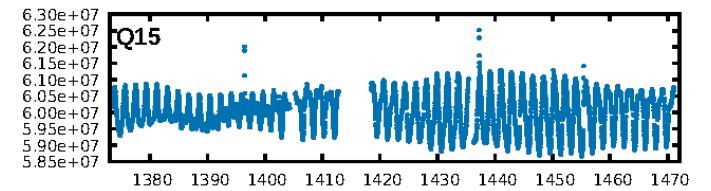
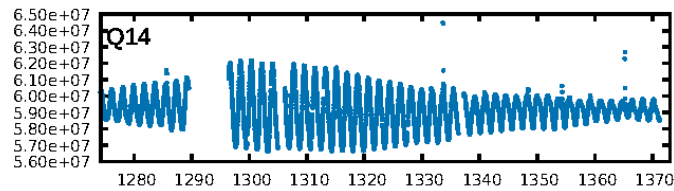
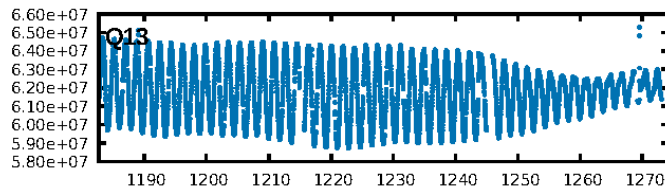
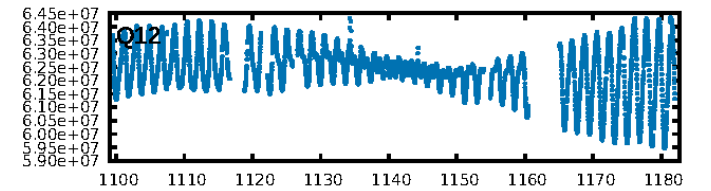
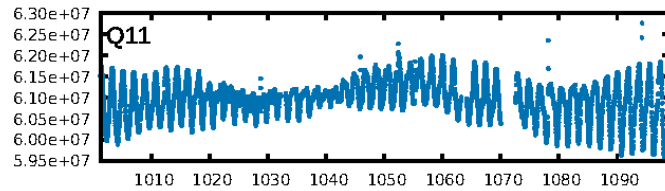
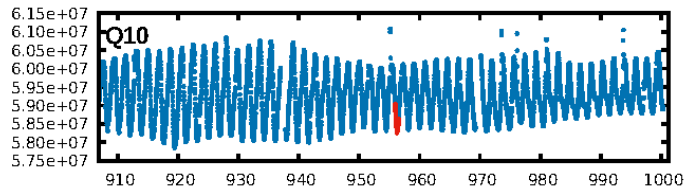
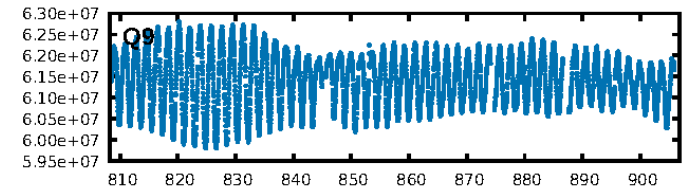
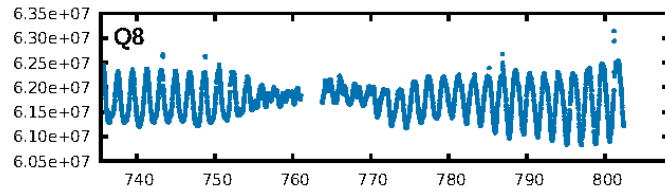
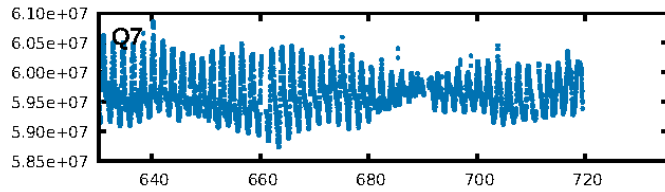
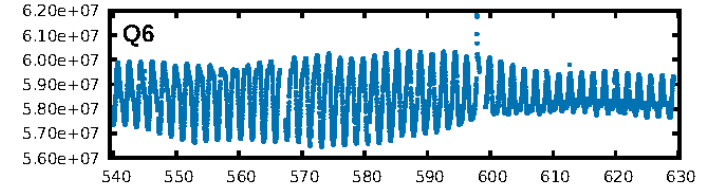
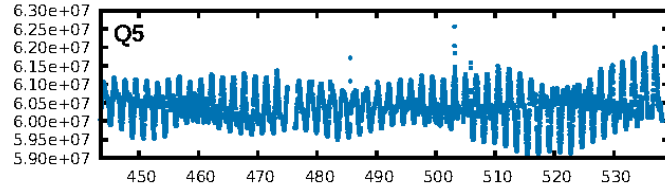
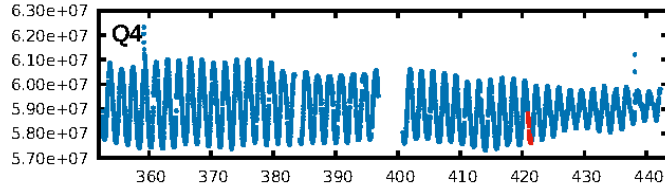
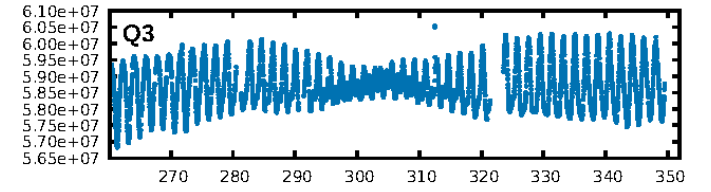
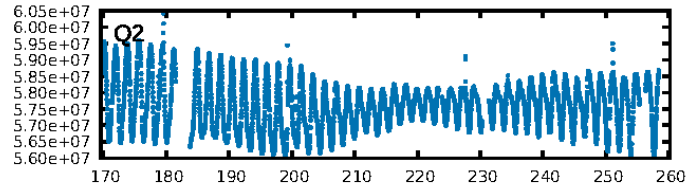
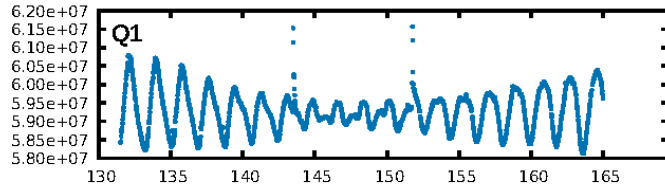
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [8.02 σ]
LongPeriod-sig: 100.0% [77.63 σ]
ModelChiSquare2-sig: 85.7%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 4.68e-07
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.167
Centroid-sig: 80.4%
Centroid-so: 0.138 arcsec [0.39 σ]
OotOffset-rm: 0.024 arcsec [0.22 σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.019 arcsec [0.17 σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

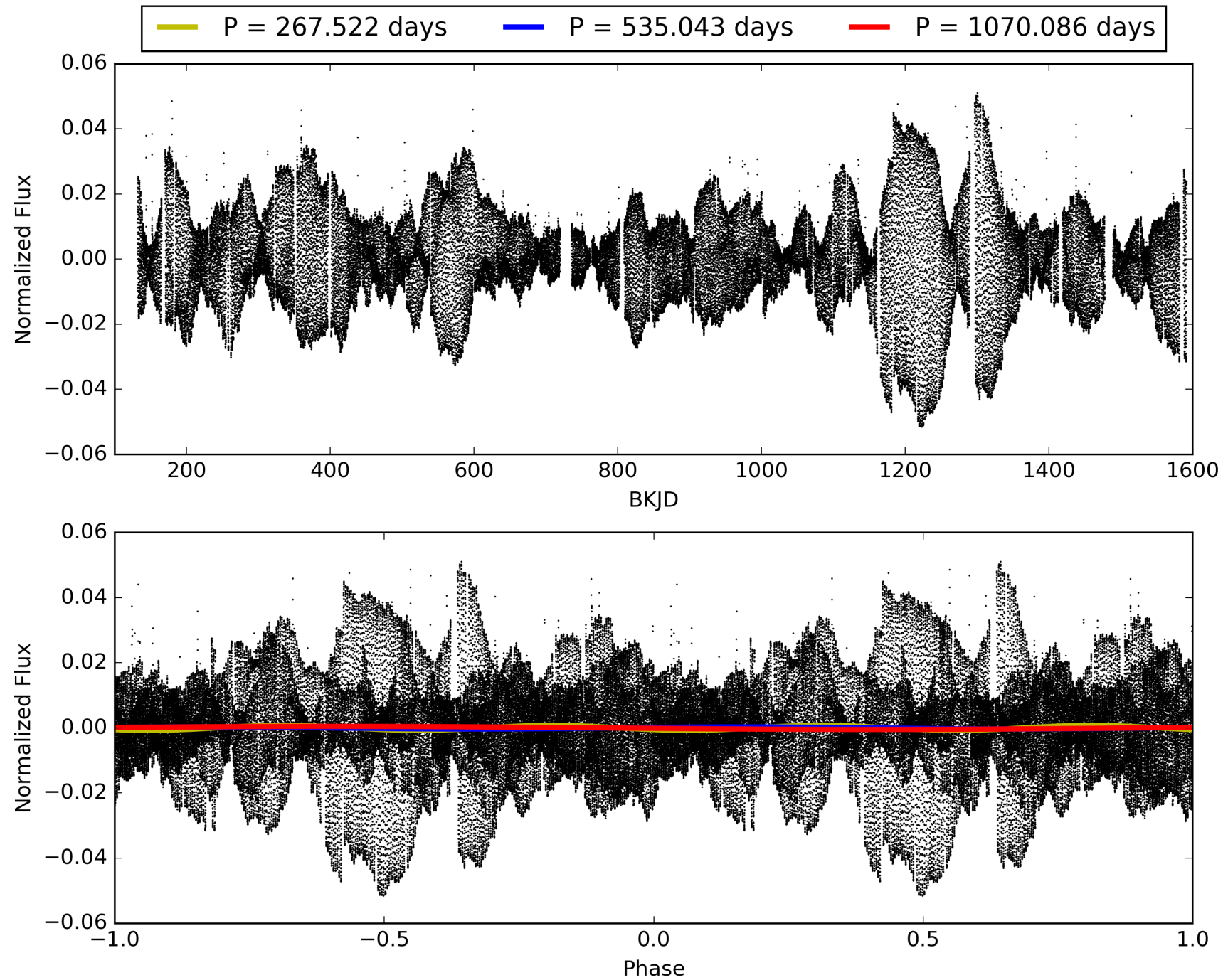
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:01:25 Z

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

TCE 003441906-04, PDC Light Curves

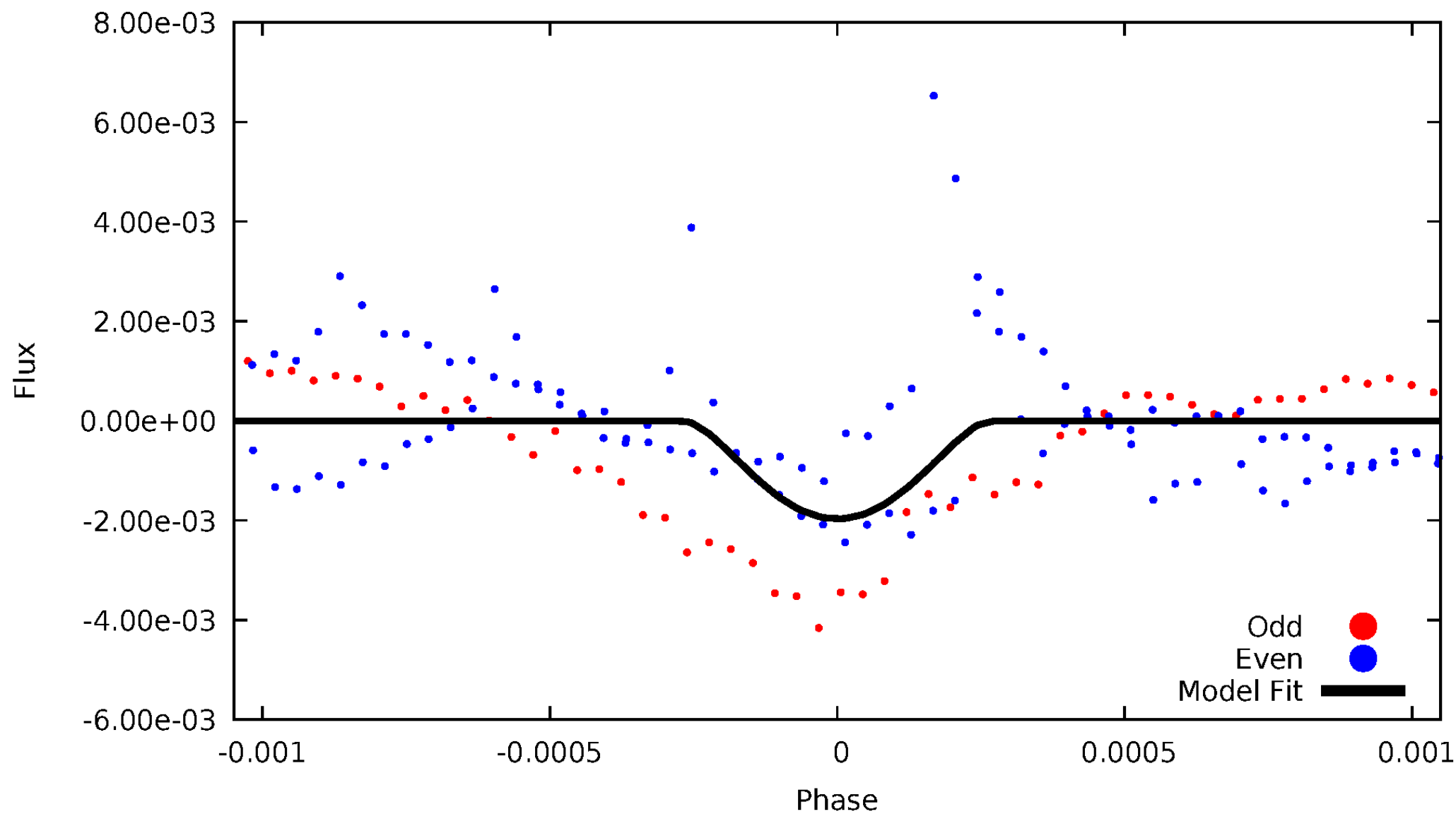


TCE 003441906-04



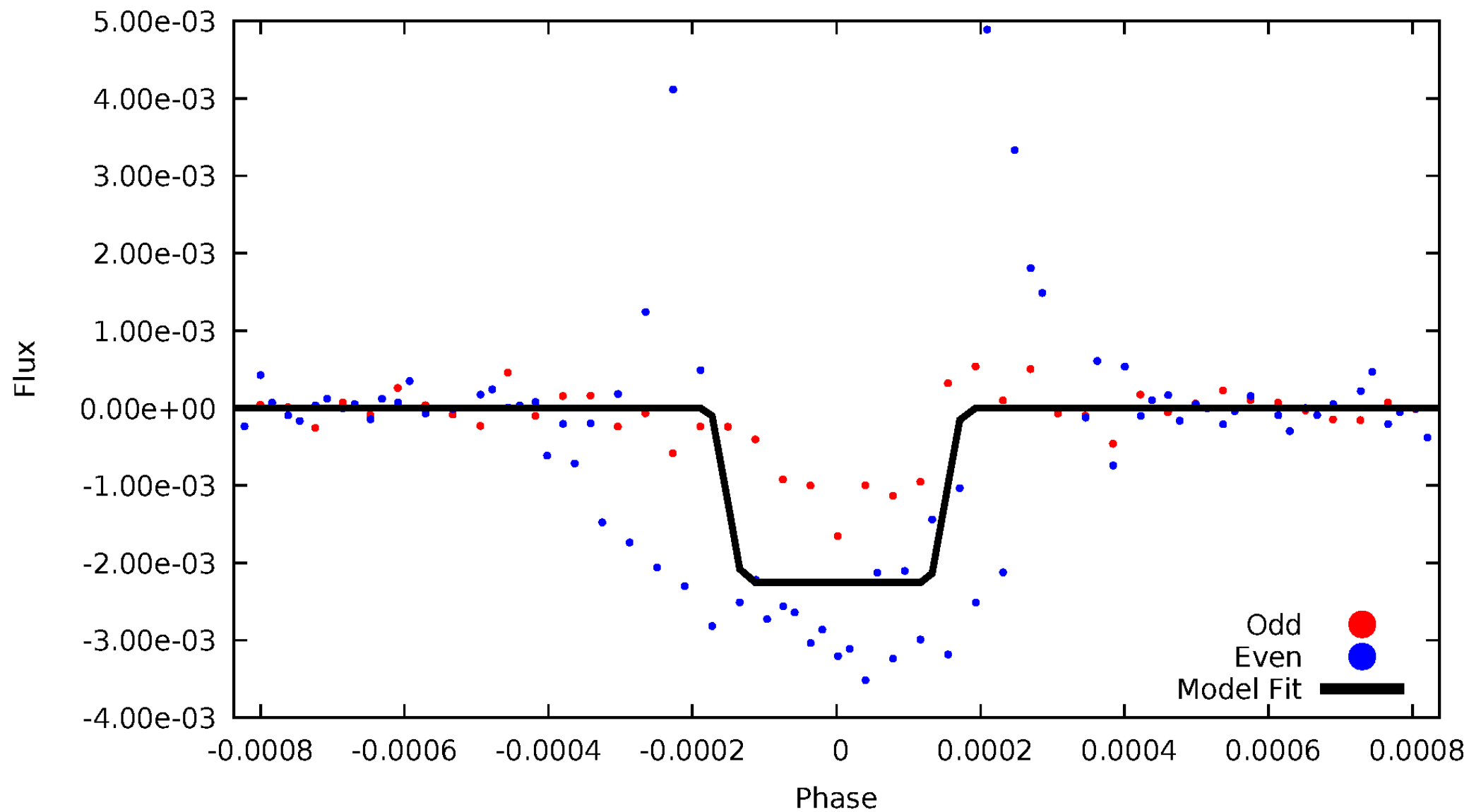
DV Odd/Even

TCE 003441906-04



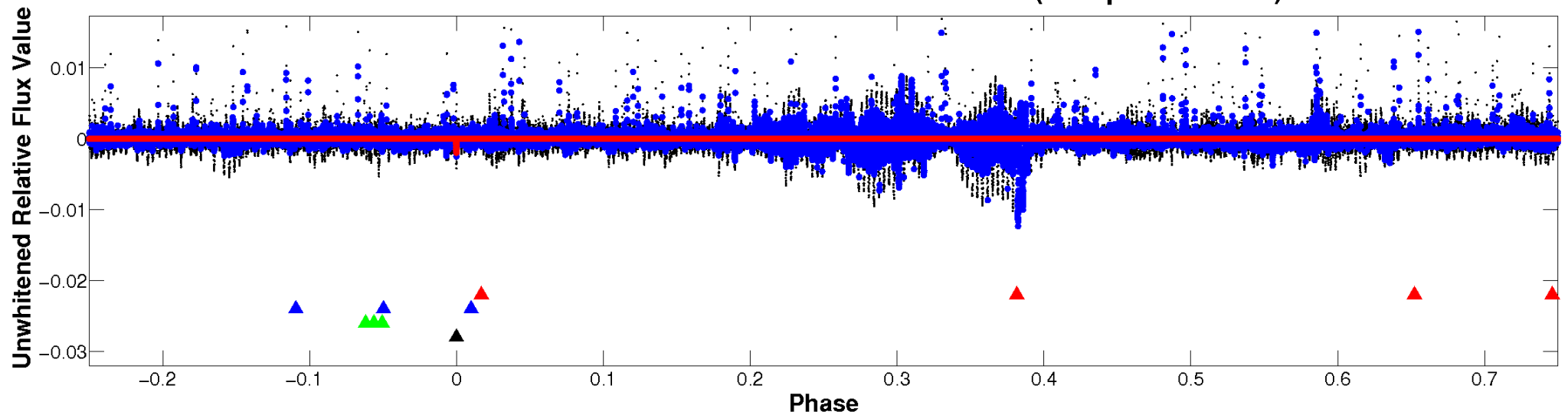
ALT Odd/Even

TCE 003441906-04

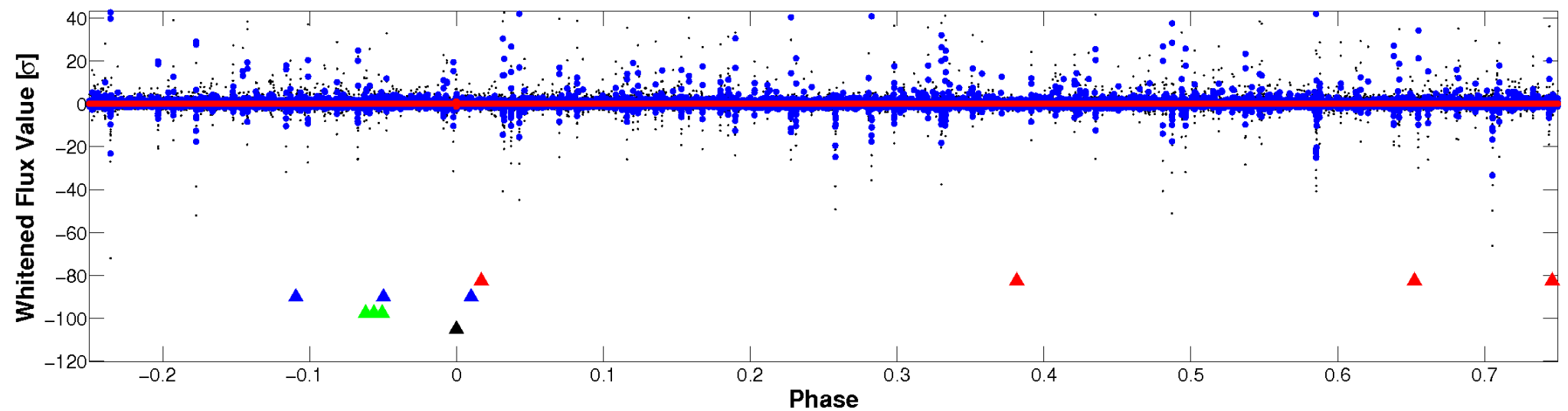


Non-Whitened Vs. Whitened Light Curve

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

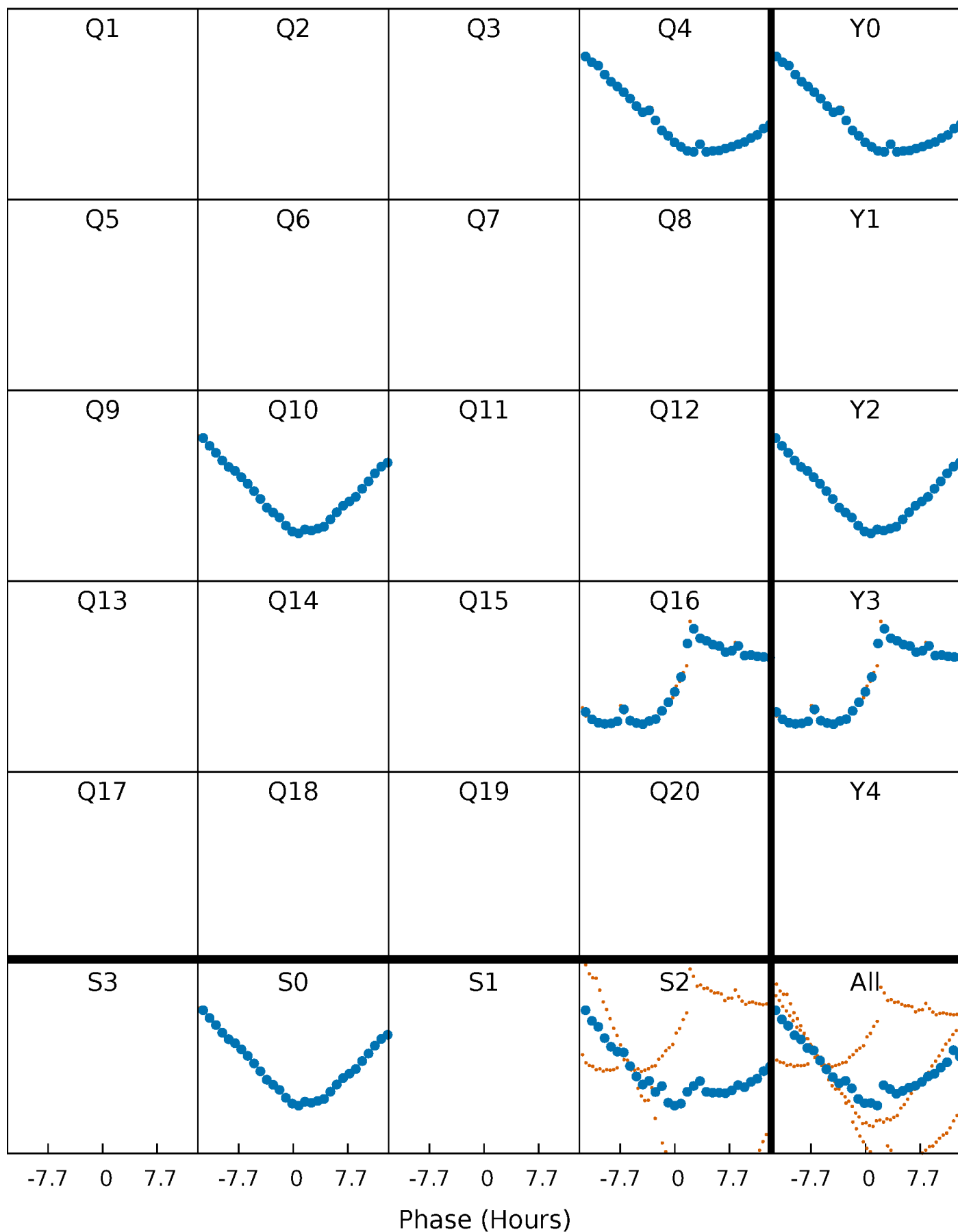


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



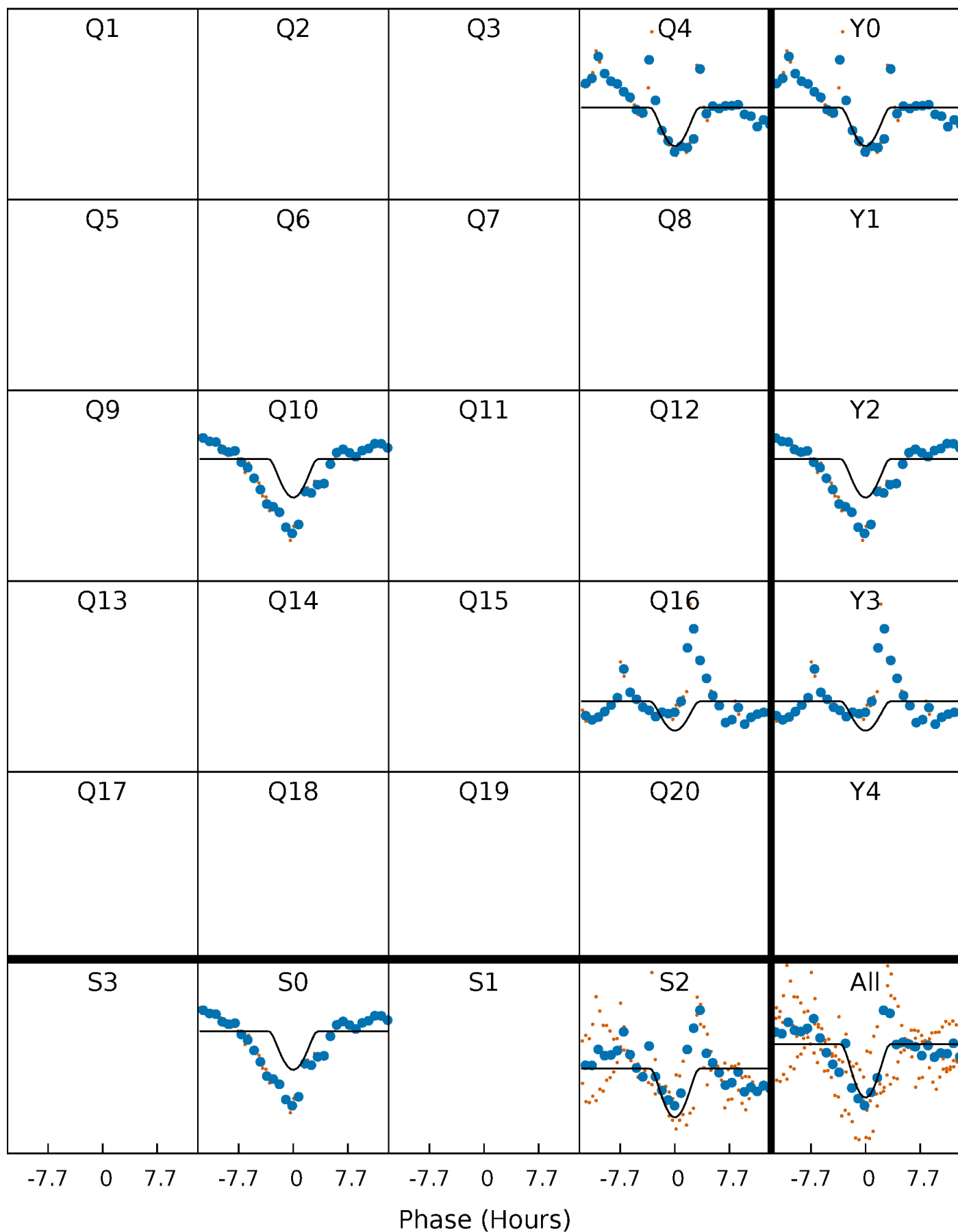
PDC Quarter-Phased Transit Curves

TCE 003441906-04 P=535.043096 Days $T_0=421.188919$ (BKJD)



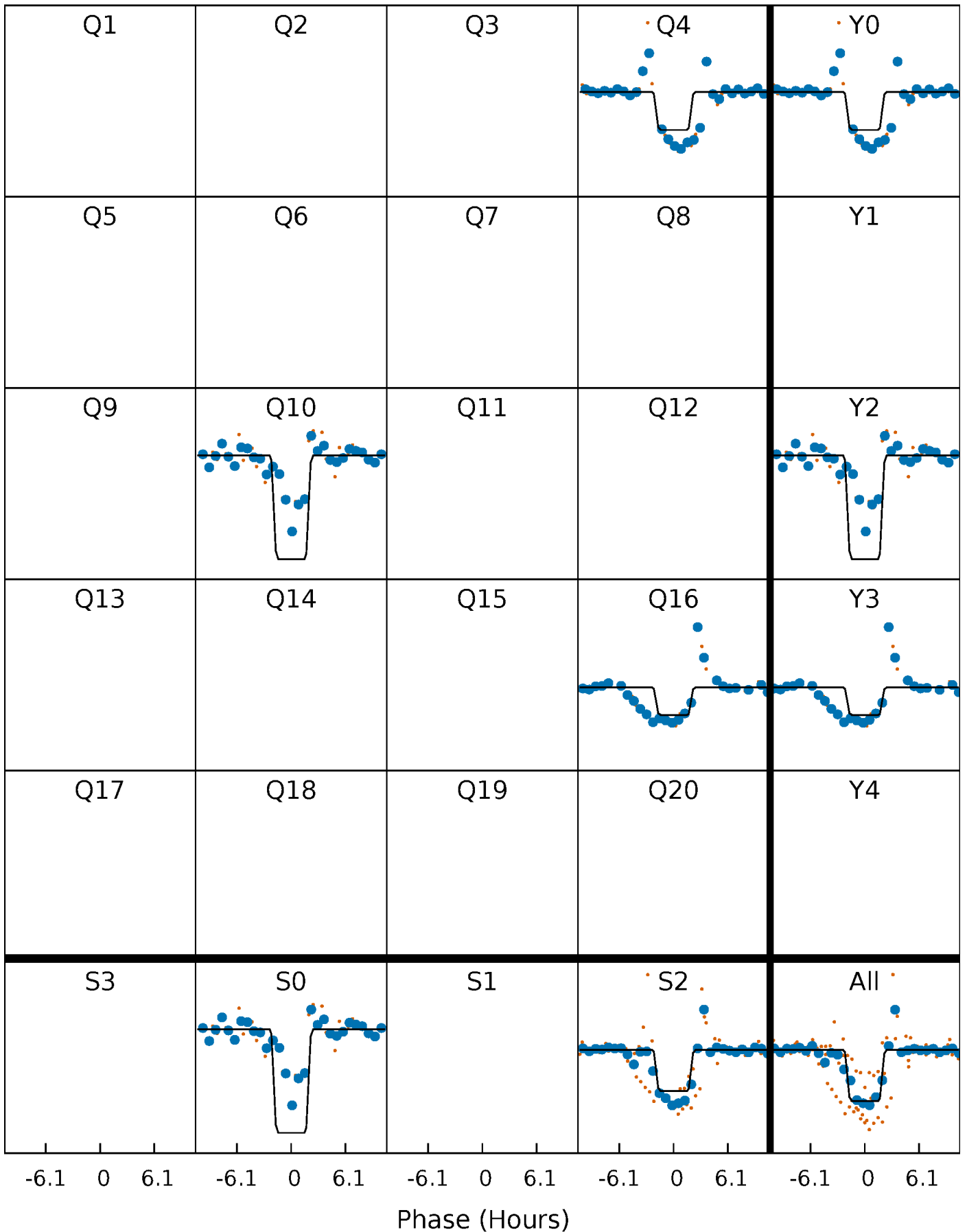
DV Quarter-Phased Transit Curves

TCE 003441906-04 P=535.043096 Days $T_0=421.188919$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

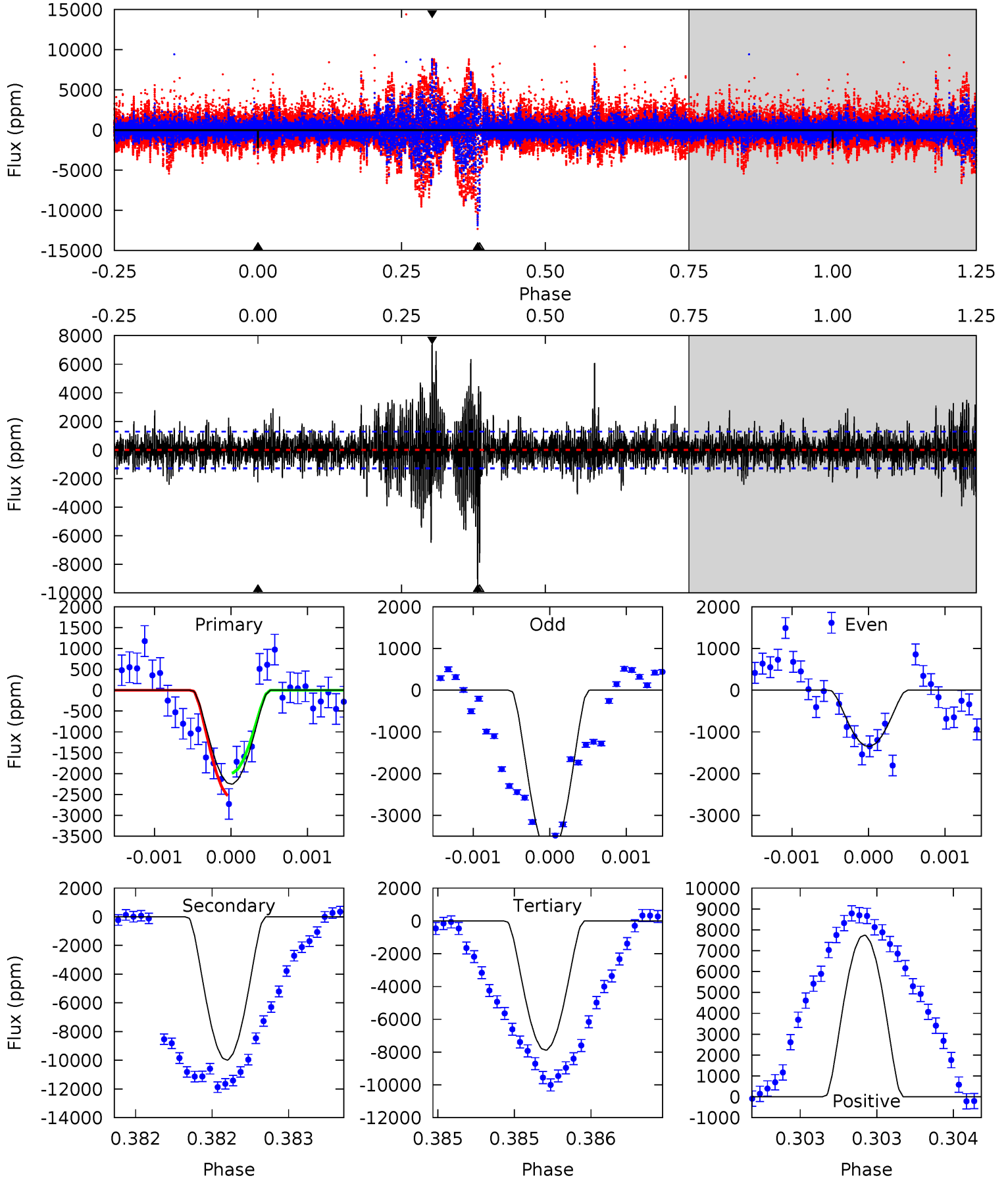
TCE 003441906-04 $P=535.039146$ Days $T_0=421.174714$ (BKJD)



DV Model-Shift Uniqueness Test

003441906-04, P = 535.043096 Days, E = 421.188919 Days

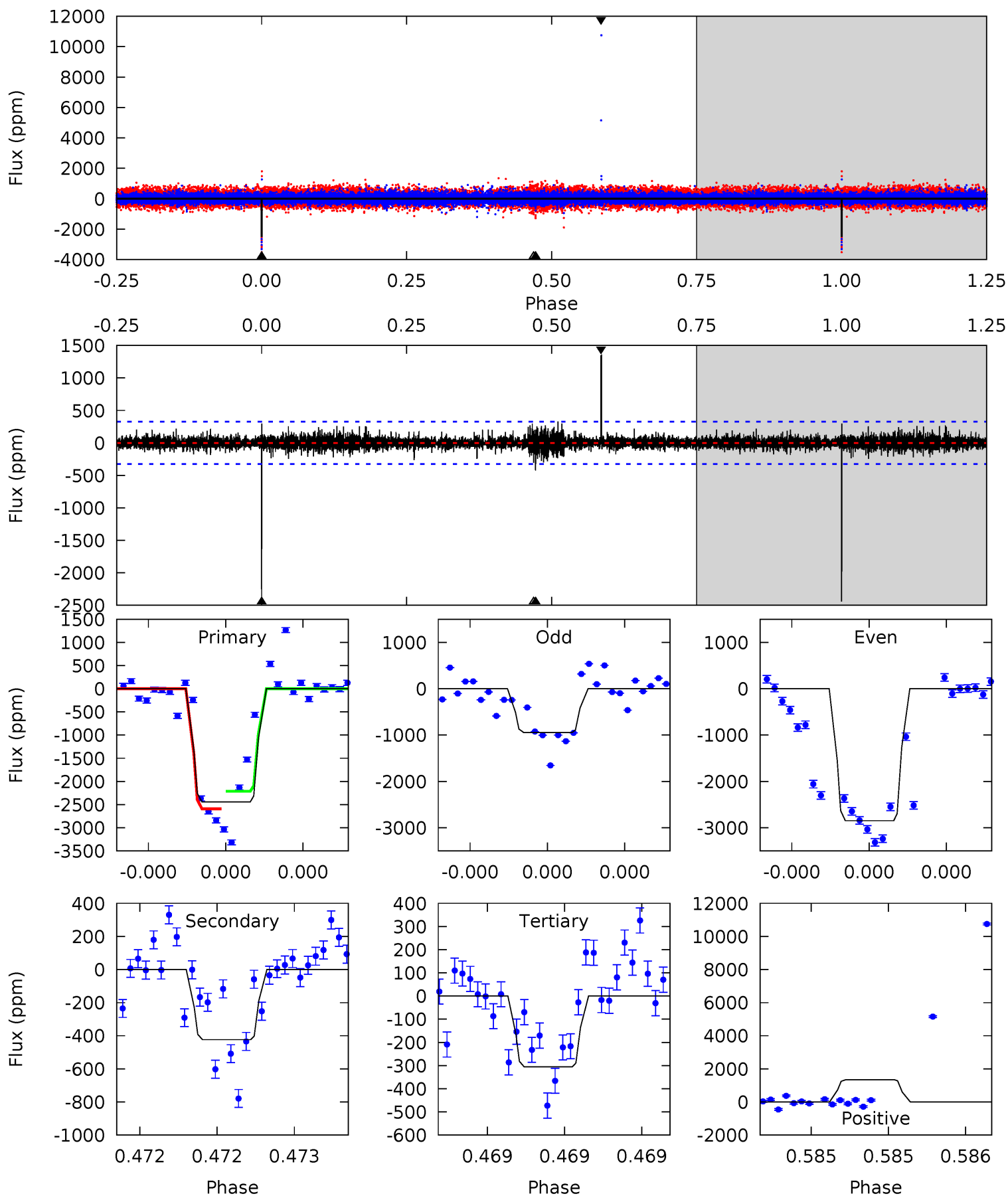
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.71	43.1	34.0	33.4	5.56	3.46	4.46	-24.3	-23.7	9.06	9.66	5.43	0.89	0.44	1.15



Alt Model-Shift Uniqueness Test

003441906-04, P = 535.039146 Days, E = 421.174714 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.2	7.32	5.28	23.3	5.63	3.56	0.98	36.9	18.9	2.05	-16.0	18.0	0.87	0.36	3.39



Stellar Parameters For KIC 003441906

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5242^{+157}_{-157}	$4.556^{+0.082}_{-0.075}$	$-0.540^{+0.350}_{-0.300}$	$0.722^{+0.087}_{-0.079}$	$0.684^{+0.099}_{-0.035}$	$2.561^{+0.945}_{-0.635}$
	+3%/-3%	+2%/-2%	+65%/-56%	+12%/-11%	+14%/-5%	+37%/-25%
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 003441906-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9990 ± 232	$12.45^{+12.19}_{-9.10}$	257^{+11}_{-12}	4362^{+3908}_{-916}	$47116^{+639165}_{-35015}$
Alt.	-423 ± 58	$10.58^{+11.93}_{-7.17}$	257^{+11}_{-11}	2771^{+1165}_{-462}	2710^{+24576}_{-2110}

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

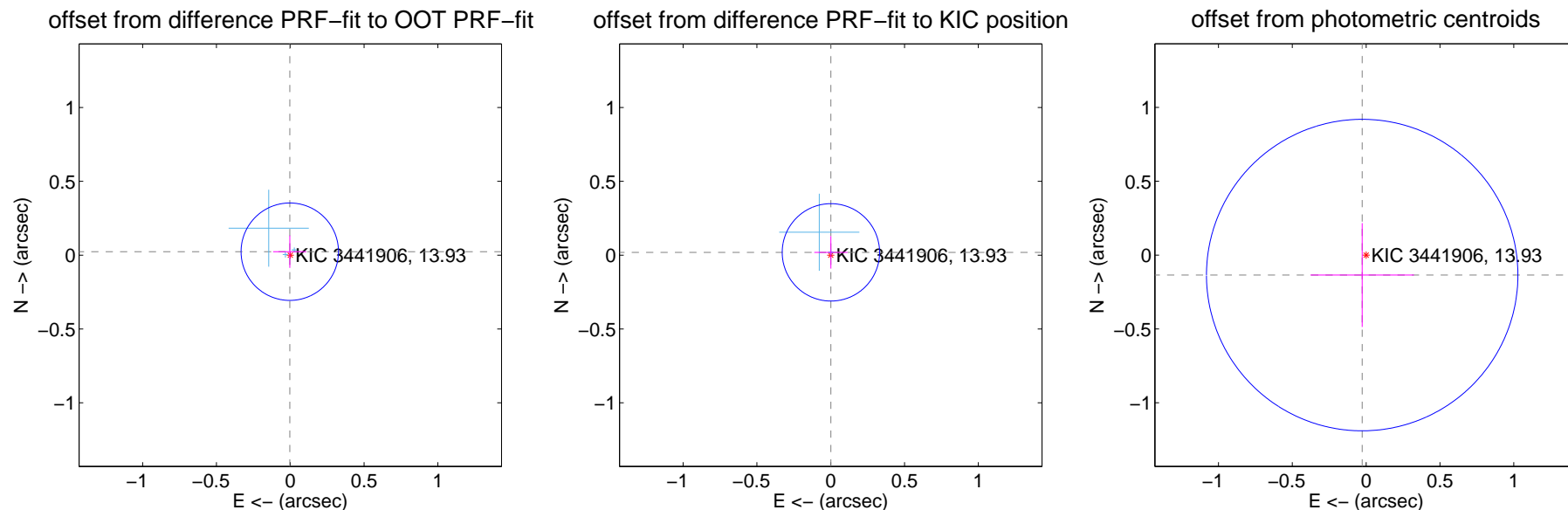
DV Centroid Data

Supplemental centroid analysis for 003441906-04. Kepler magnitude: 13.93. Transit SNR 5.50

There are 3 quarters with good PRF difference image offsets

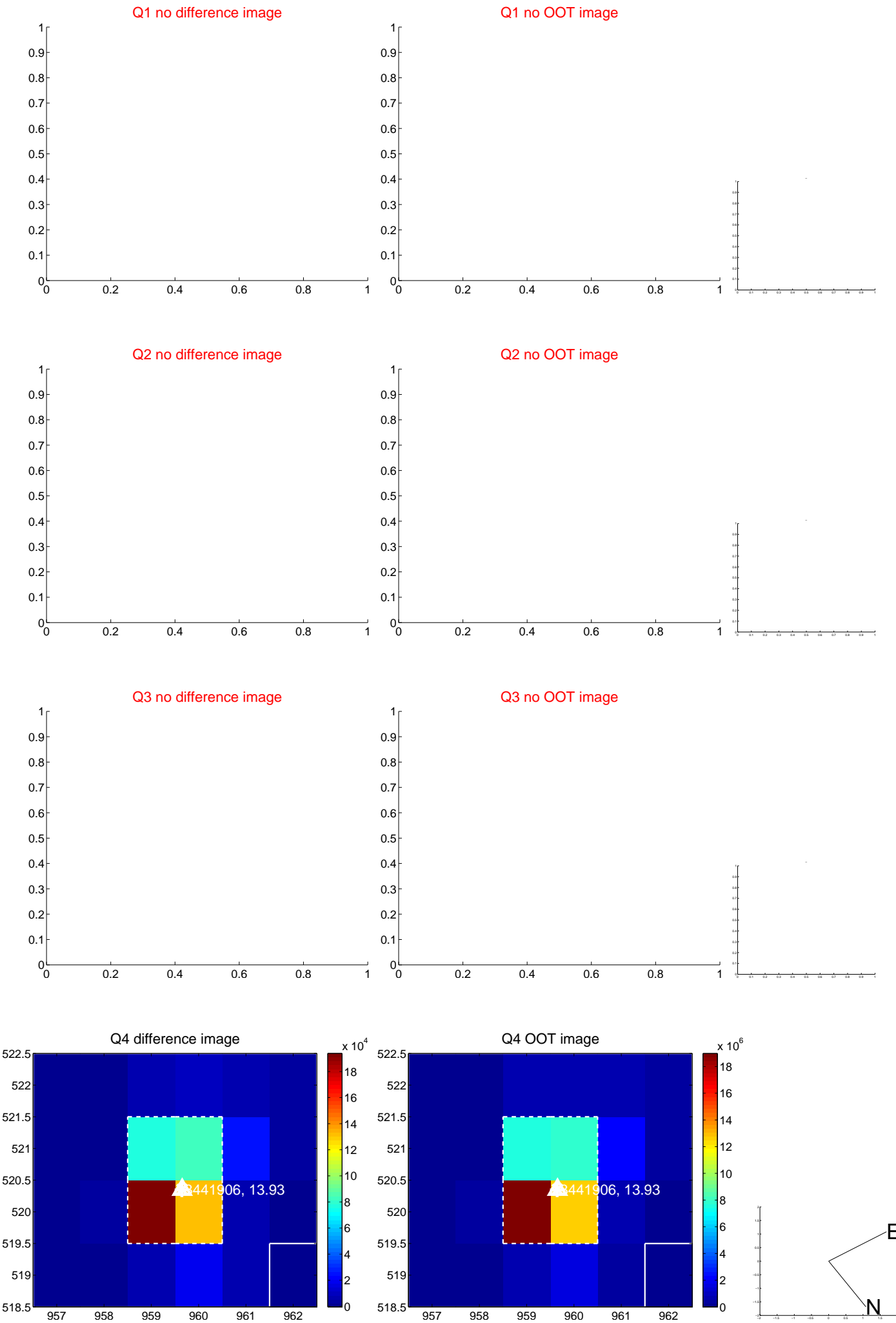
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.024 ± 0.110	0.22	0.003 ± 0.113	0.023 ± 0.110
PRF-fit source offset from KIC position	0.019 ± 0.110	0.17	-0.001 ± 0.113	0.019 ± 0.110
photometric centroid source offset	0.14 ± 0.35	0.39	0.03 ± 0.35	-0.14 ± 0.35



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.

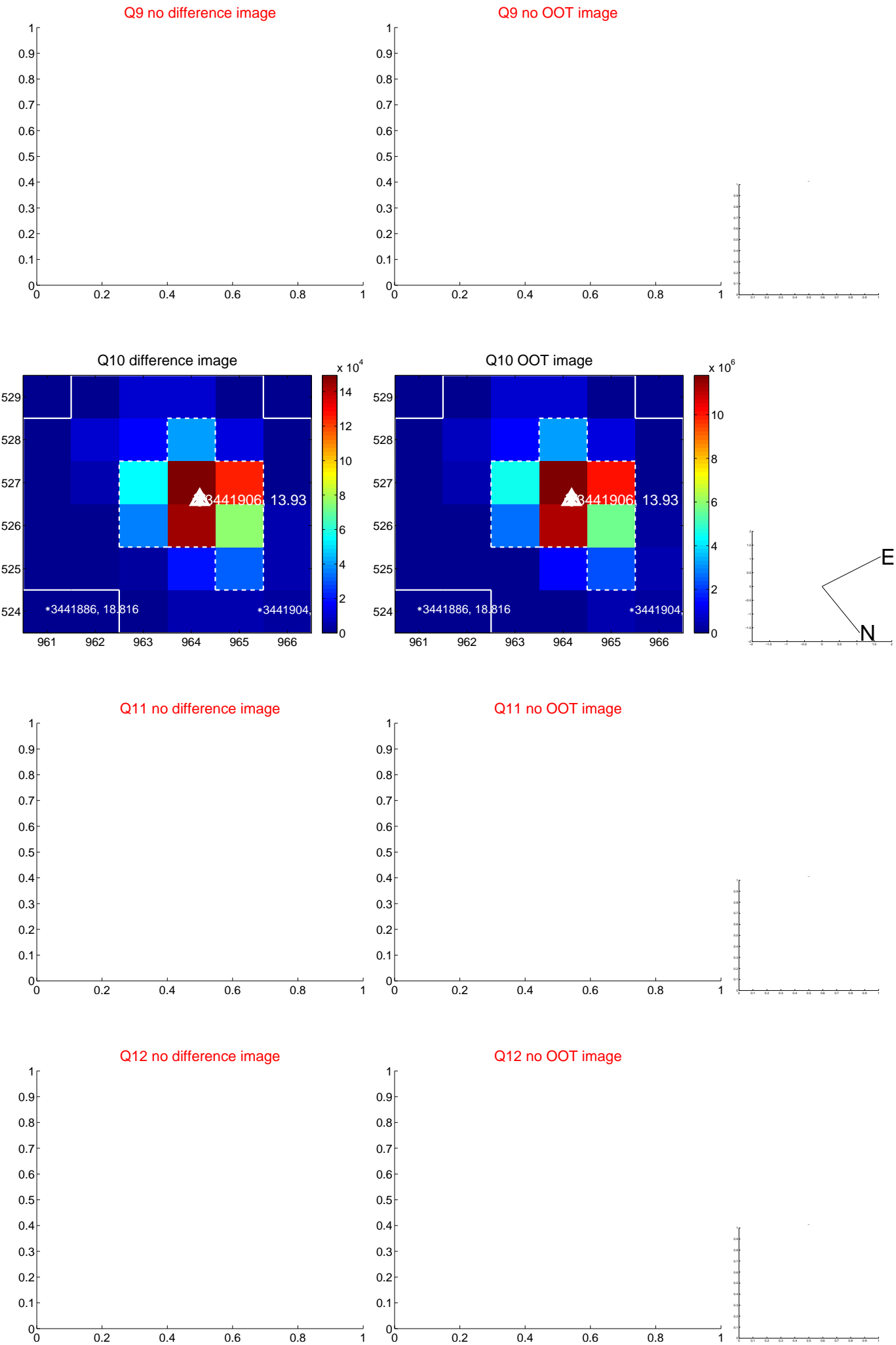
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



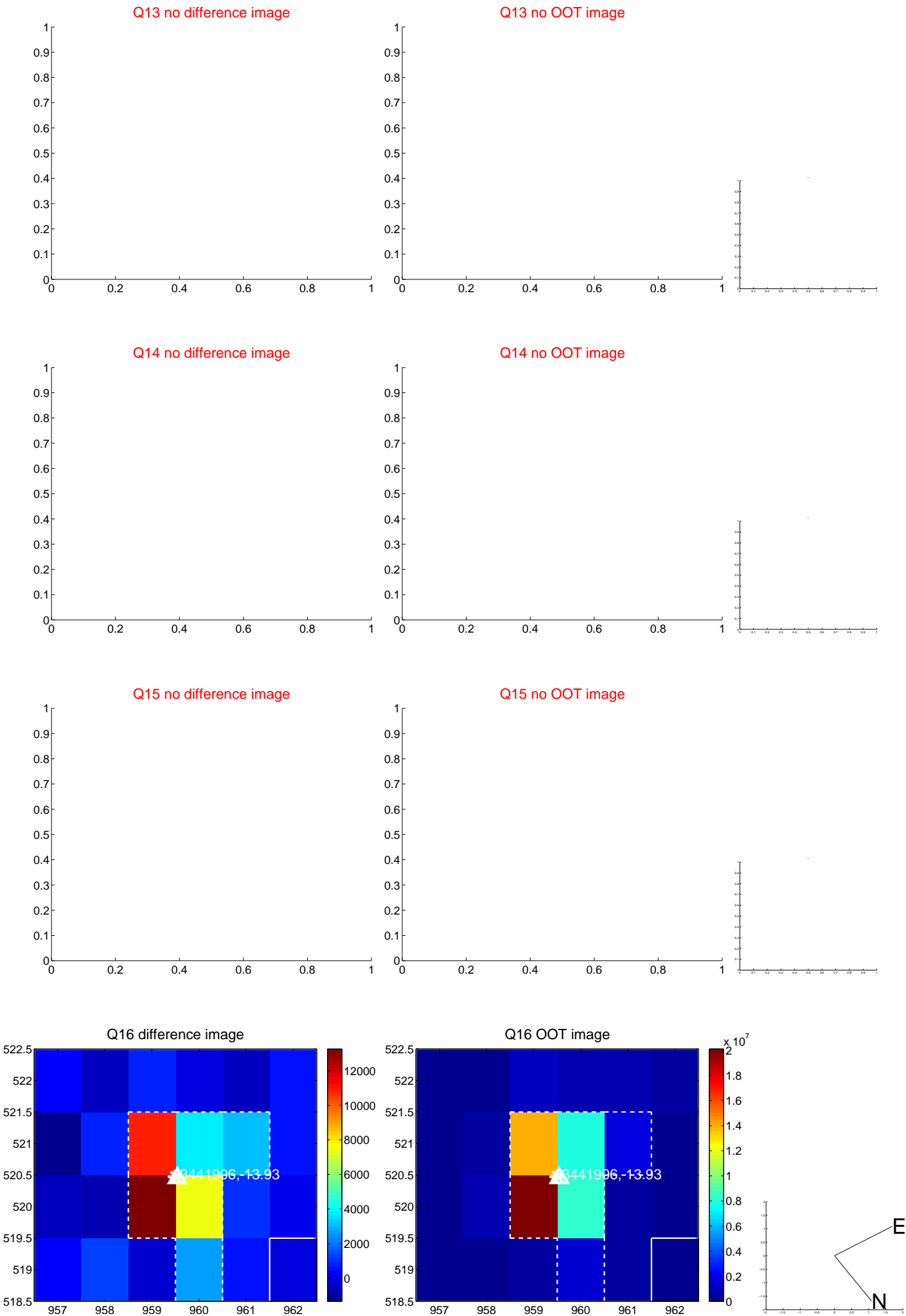
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



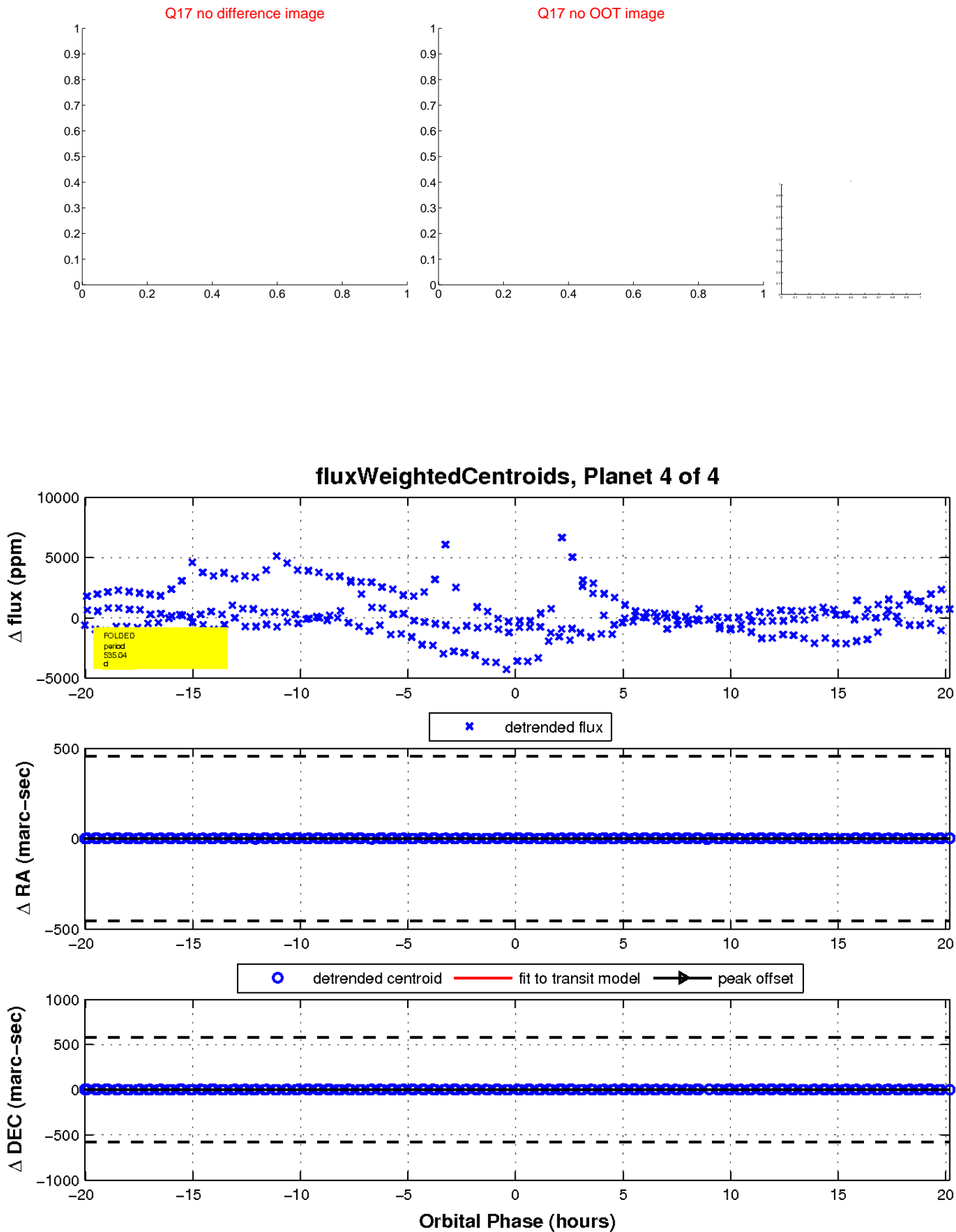
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

