

KIC 004365571

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})
004365571-01	OBS	No	354.743213	297.431056	601.0	3.453	13.5	5.4	1.53	5902	3.96	2.67
004365571-02	OBS	No	499.040417	498.611233	929.8	5.195	13.0	6.5	1.53	5902	4.88	1.70
004365571-03	OBS	No	322.755901	372.232309	735.2	3.296	10.0	7.2	1.53	5902	5.28	3.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004365571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004365571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
004365571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_KIC_POS

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

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

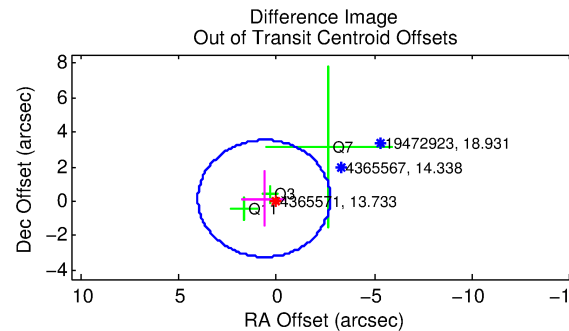
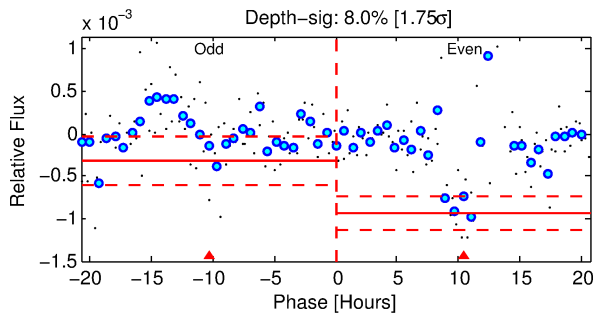
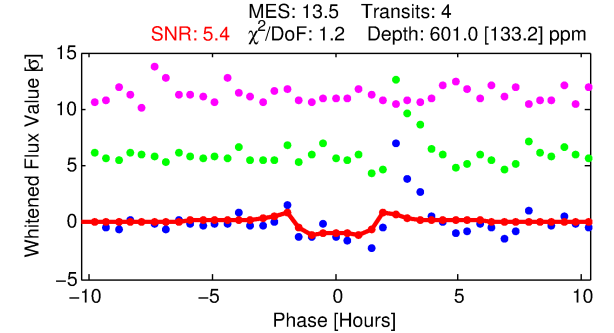
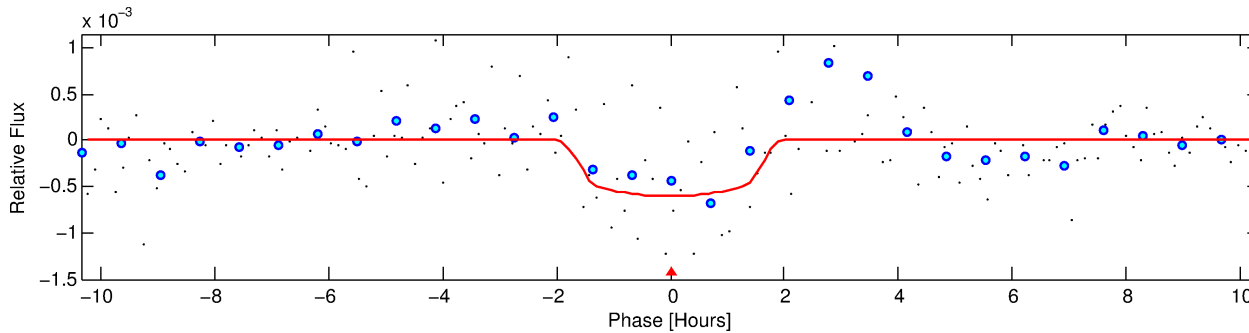
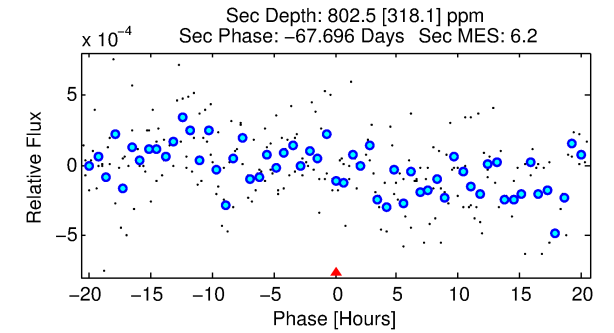
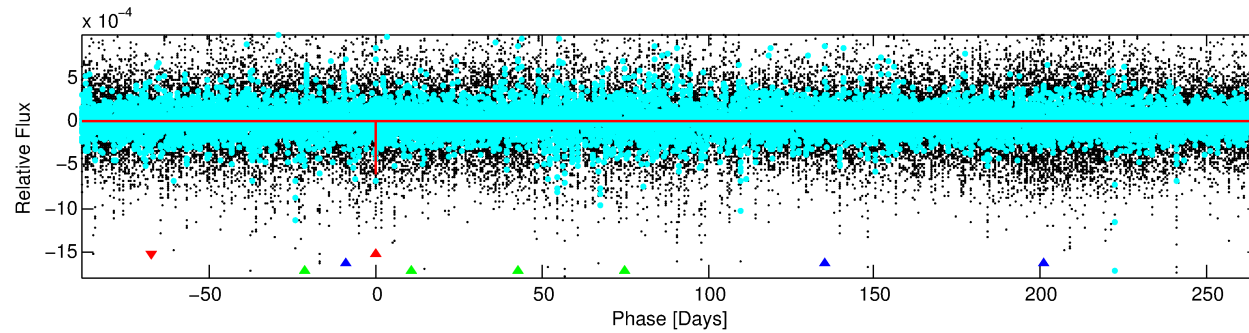
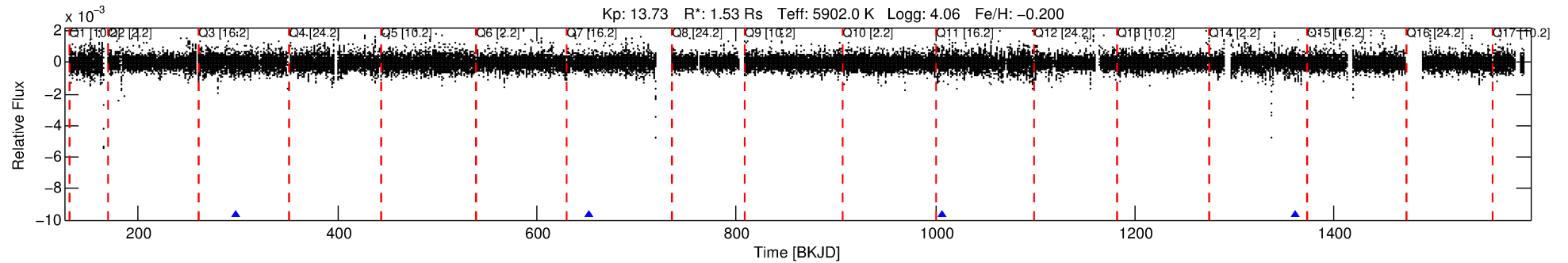
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004365571-01

No Significant Match Found

DV One-Page Summary

KIC: 4365571 Candidate: 1 of 3 Period: 354.743 d



DV Fit Results:

Period = 354.74321 [0.00506] d
Epoch = 297.4311 [0.0092] BKJD
Rp/R* = 0.0237 [0.0298]
a/R* = 621.63 [3638.74]
b = 0.65 [5.28]
Seff = 2.67 [1.67]
Teff = 326 [51] K
Rp = 3.96 [5.20] Re
a = 0.9780 [0.3678] AU
Ag = 26874.52 [70328.75] [0.38 σ]
Teffp = 6453 [4109] K [1.49 σ]

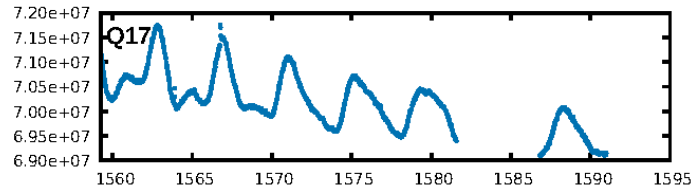
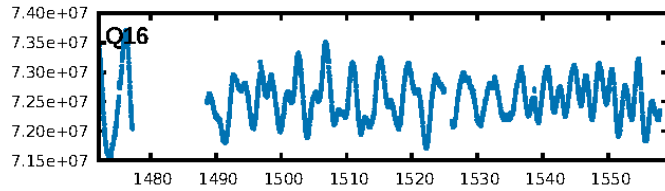
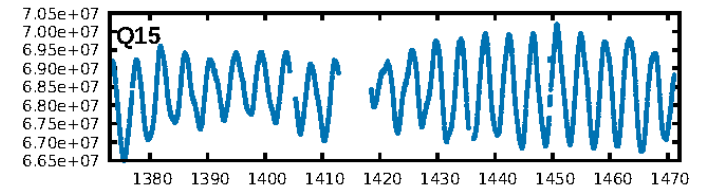
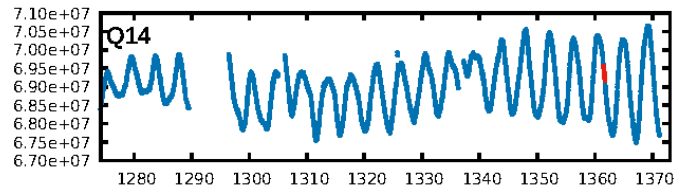
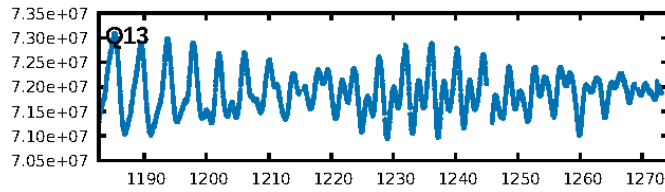
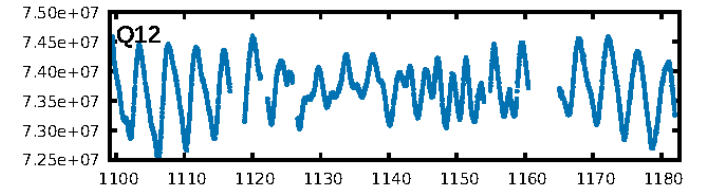
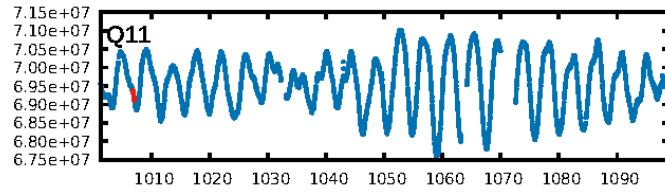
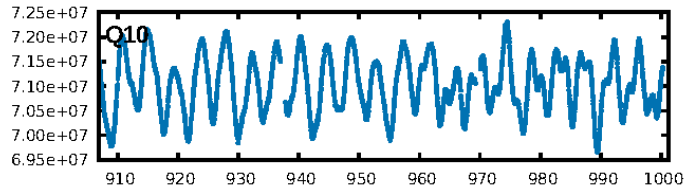
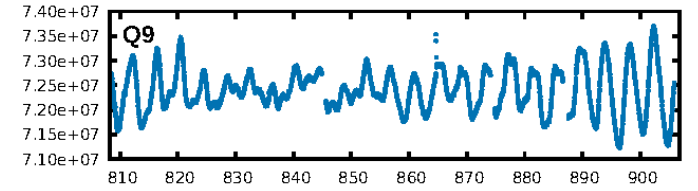
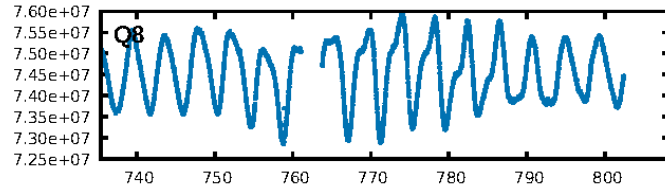
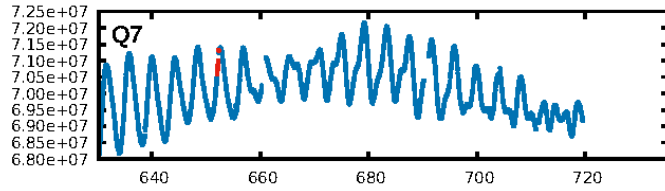
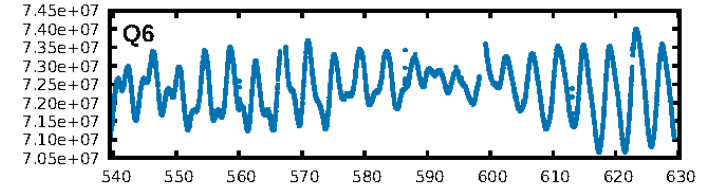
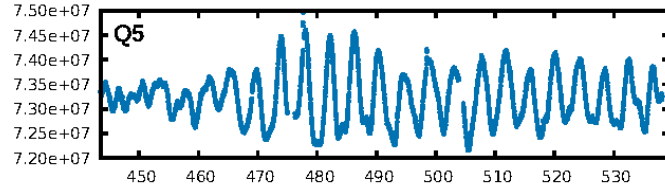
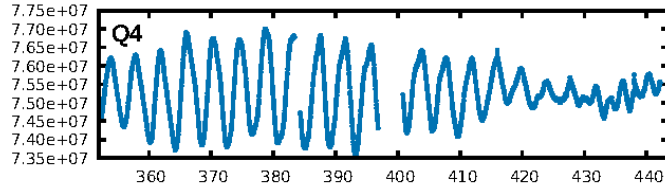
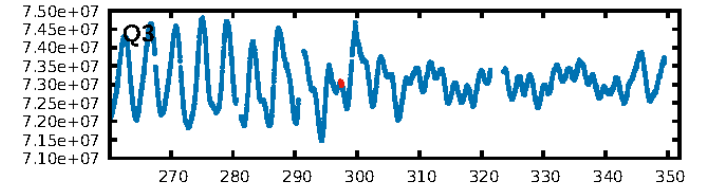
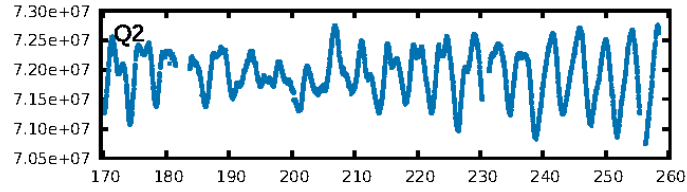
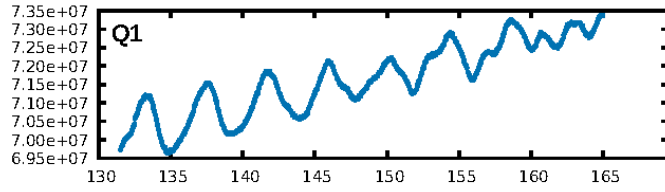
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [160.83 σ]
LongPeriod-sig: 100.0% [555.18 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 38.3%
Bootstrap-pfa: 2.32e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3789
Centroid-sig: 61.2%
Centroid-so: 0.421 arcsec [0.30 σ]
OotOffset-rm: 0.650 arcsec [0.58 σ]
KicOffset-rm: 0.759 arcsec [0.51 σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [4/4]

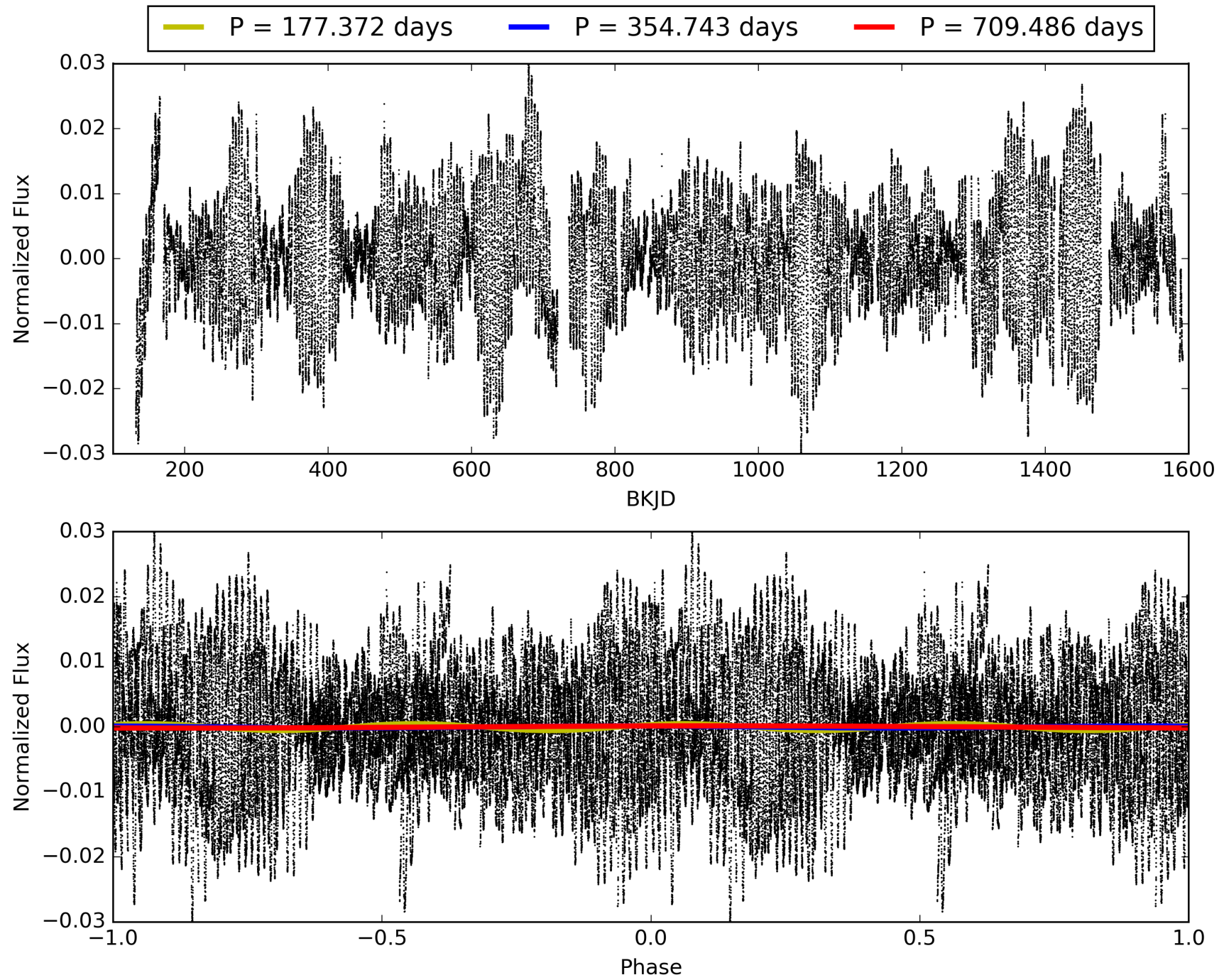
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004365571-01, PDC Light Curves

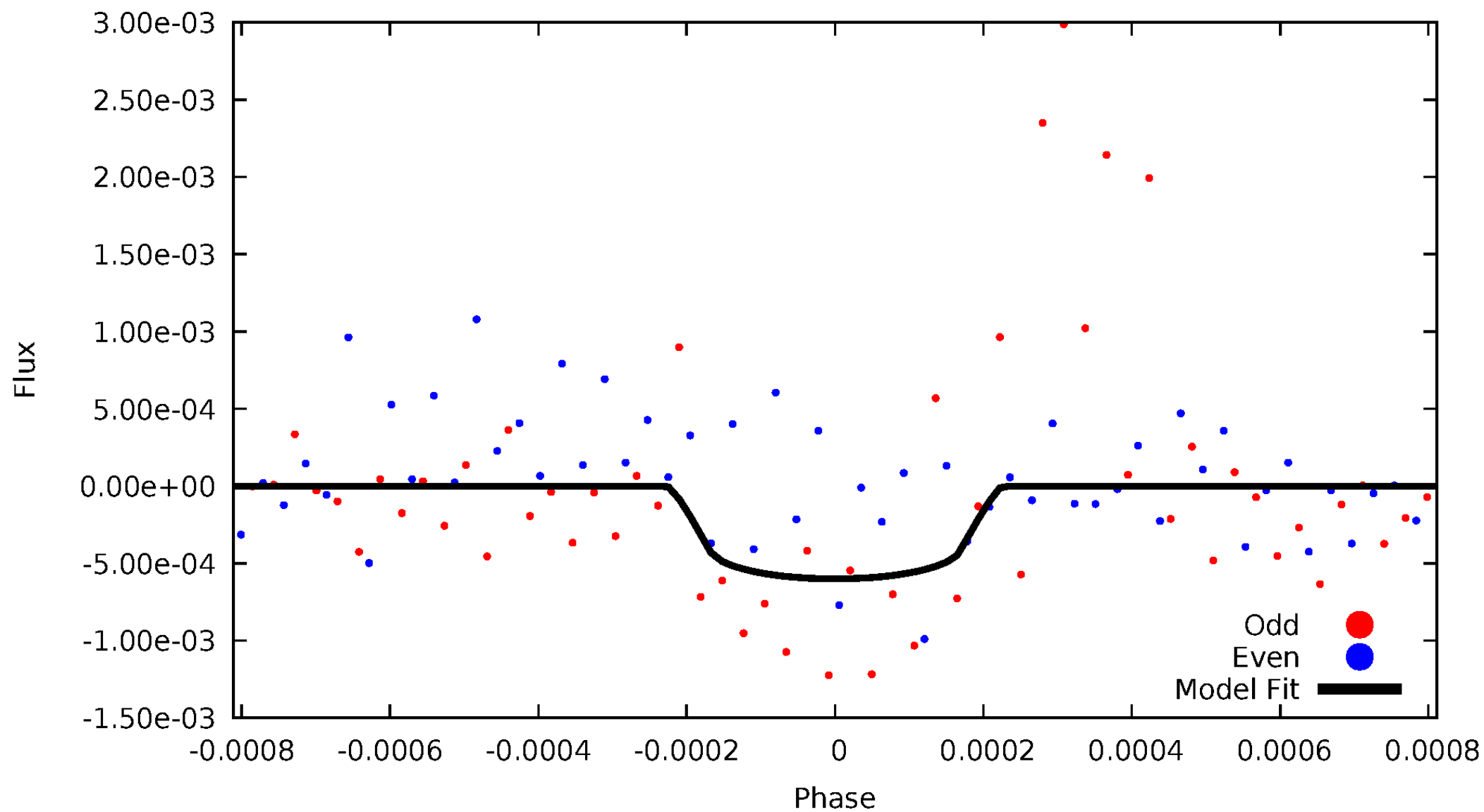


TCE 004365571-01



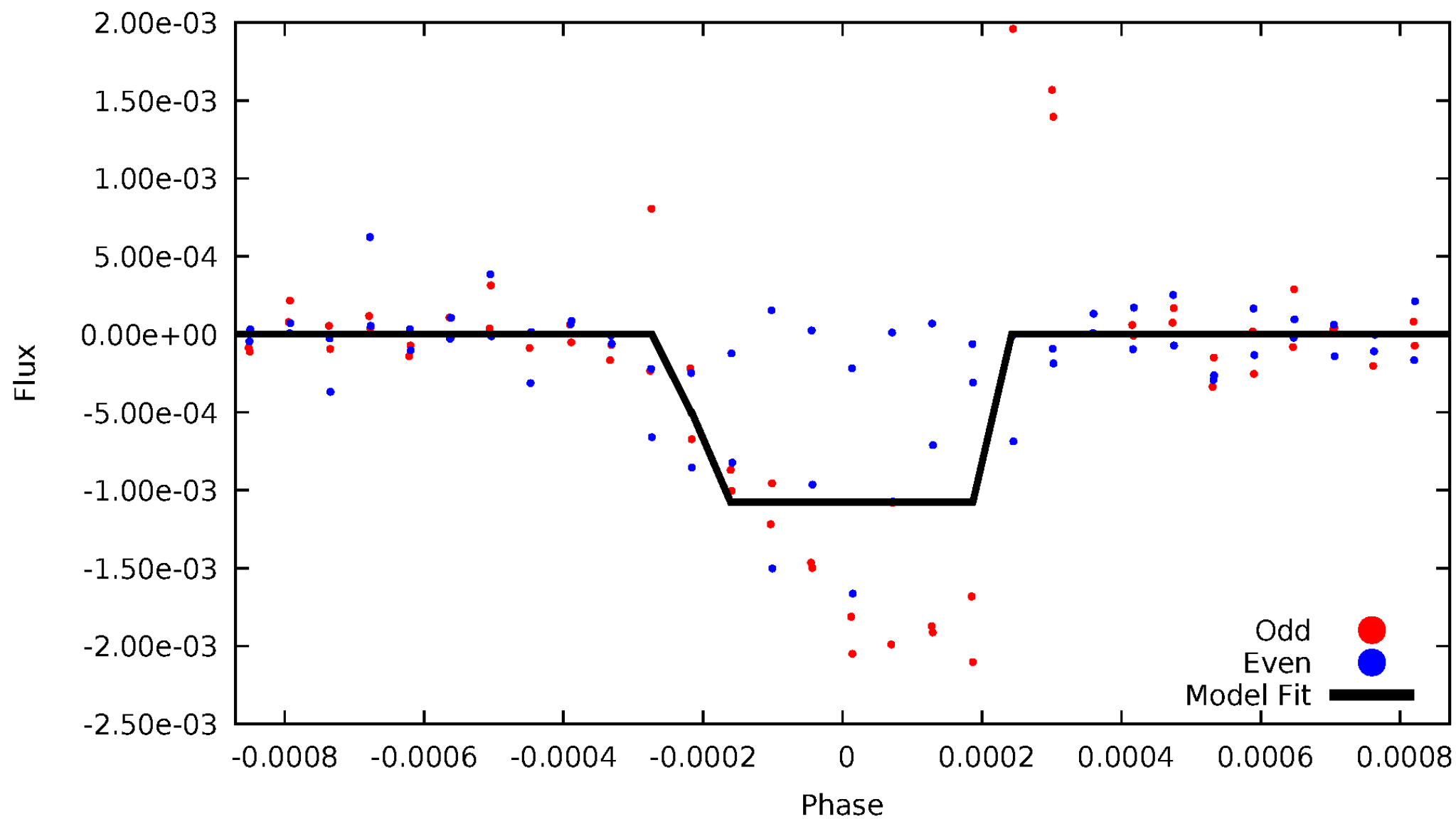
DV Odd/Even

TCE 004365571-01



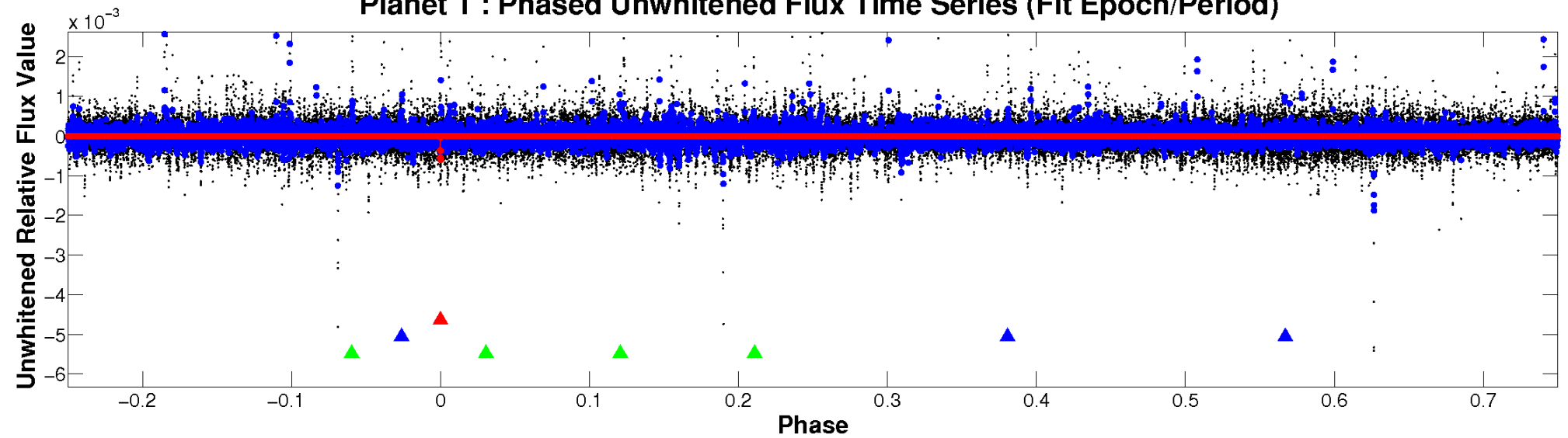
ALT Odd/Even

TCE 004365571-01

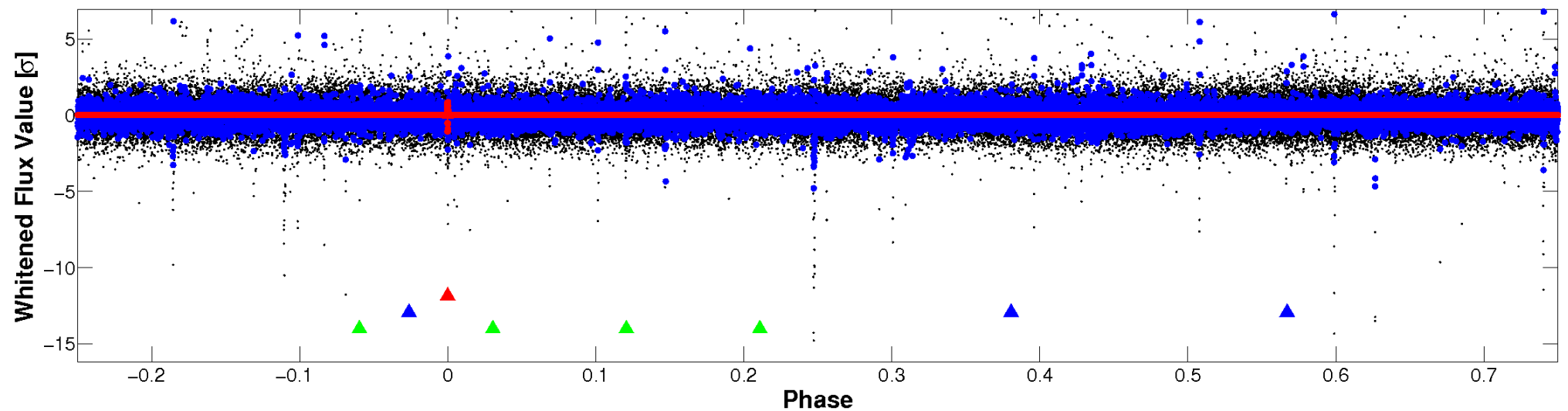


Non-Whitened Vs. Whitened Light Curve

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

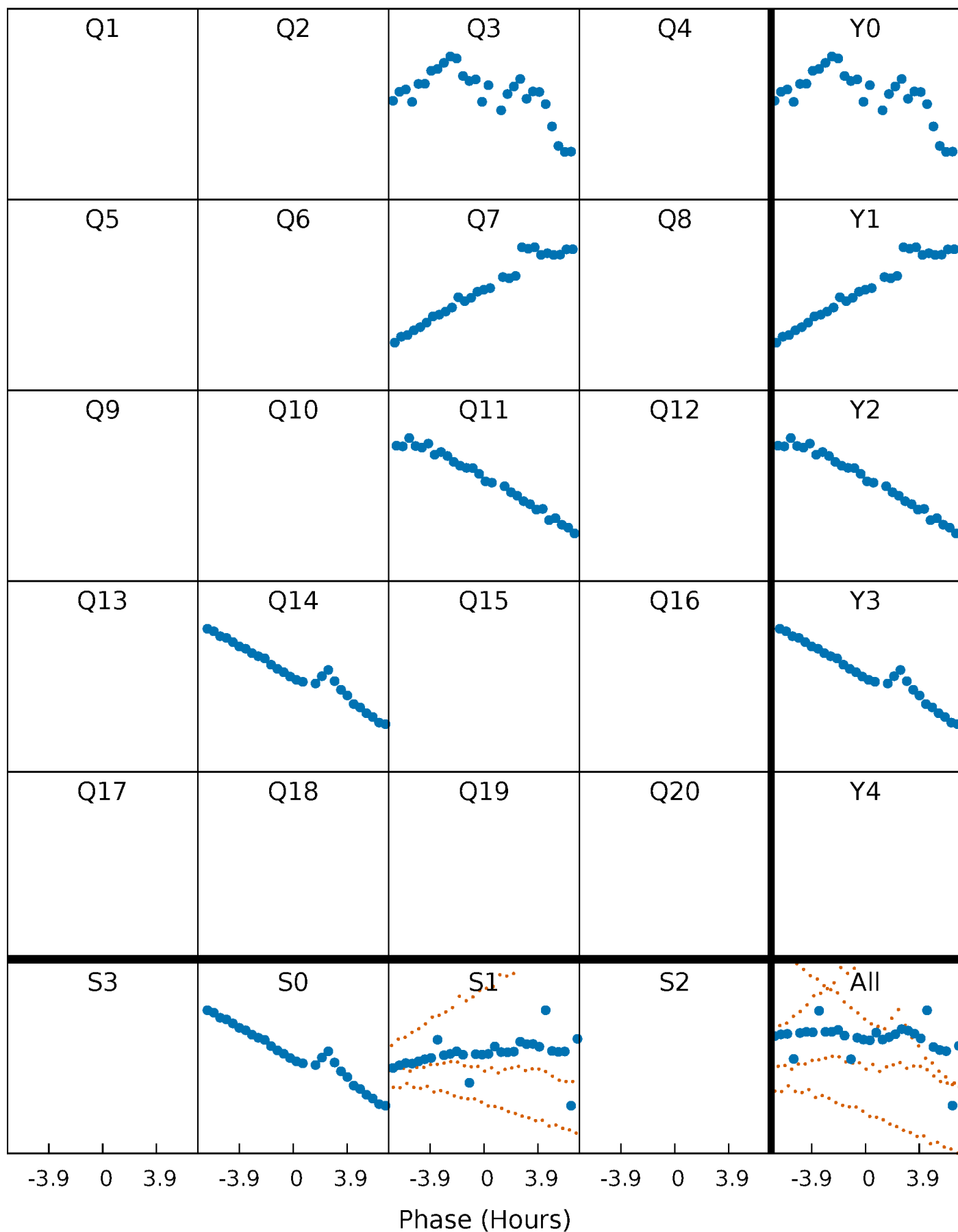


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



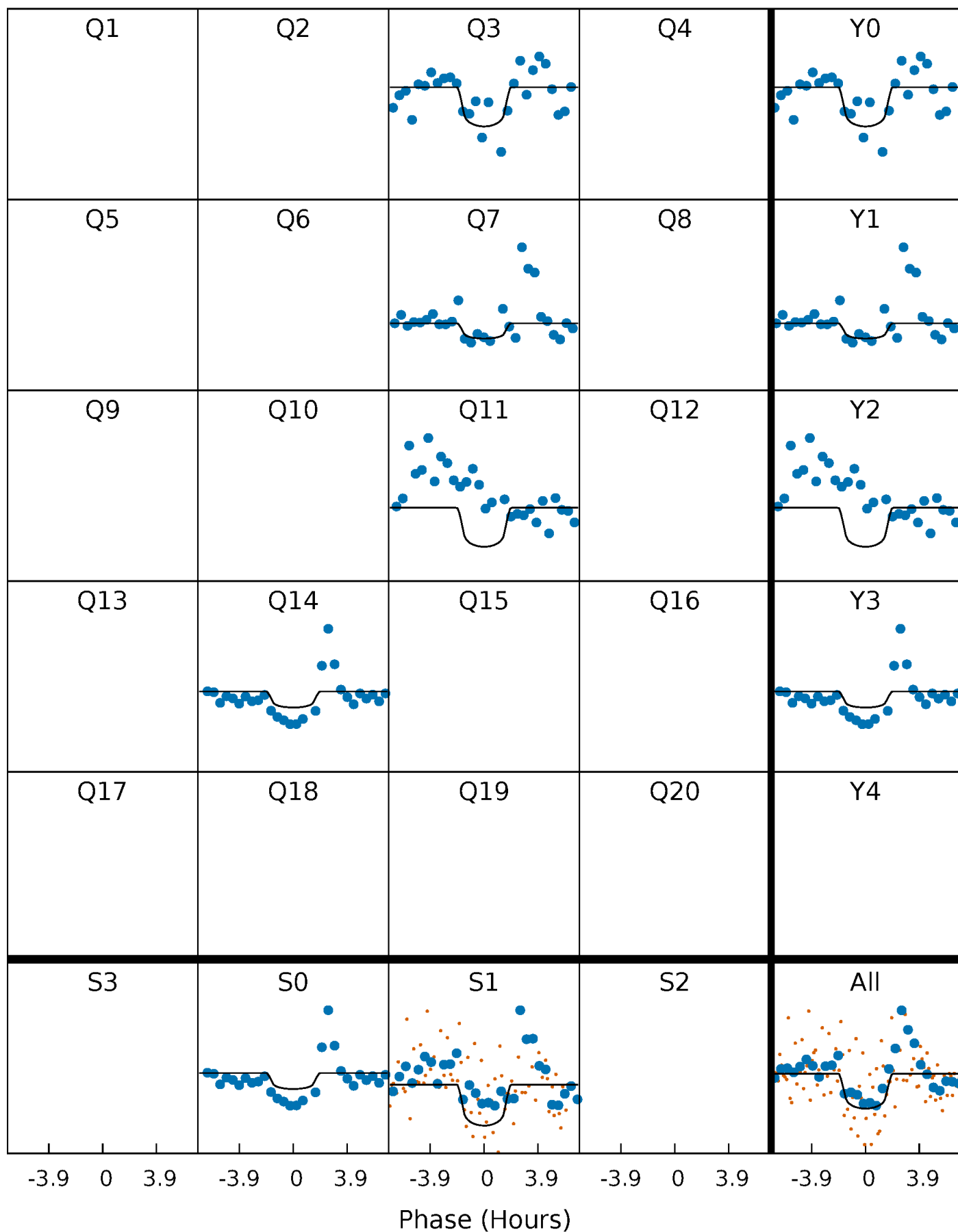
PDC Quarter-Phased Transit Curves

TCE 004365571-01 $P=354.743213$ Days $T_0=297.431056$ (BKJD)



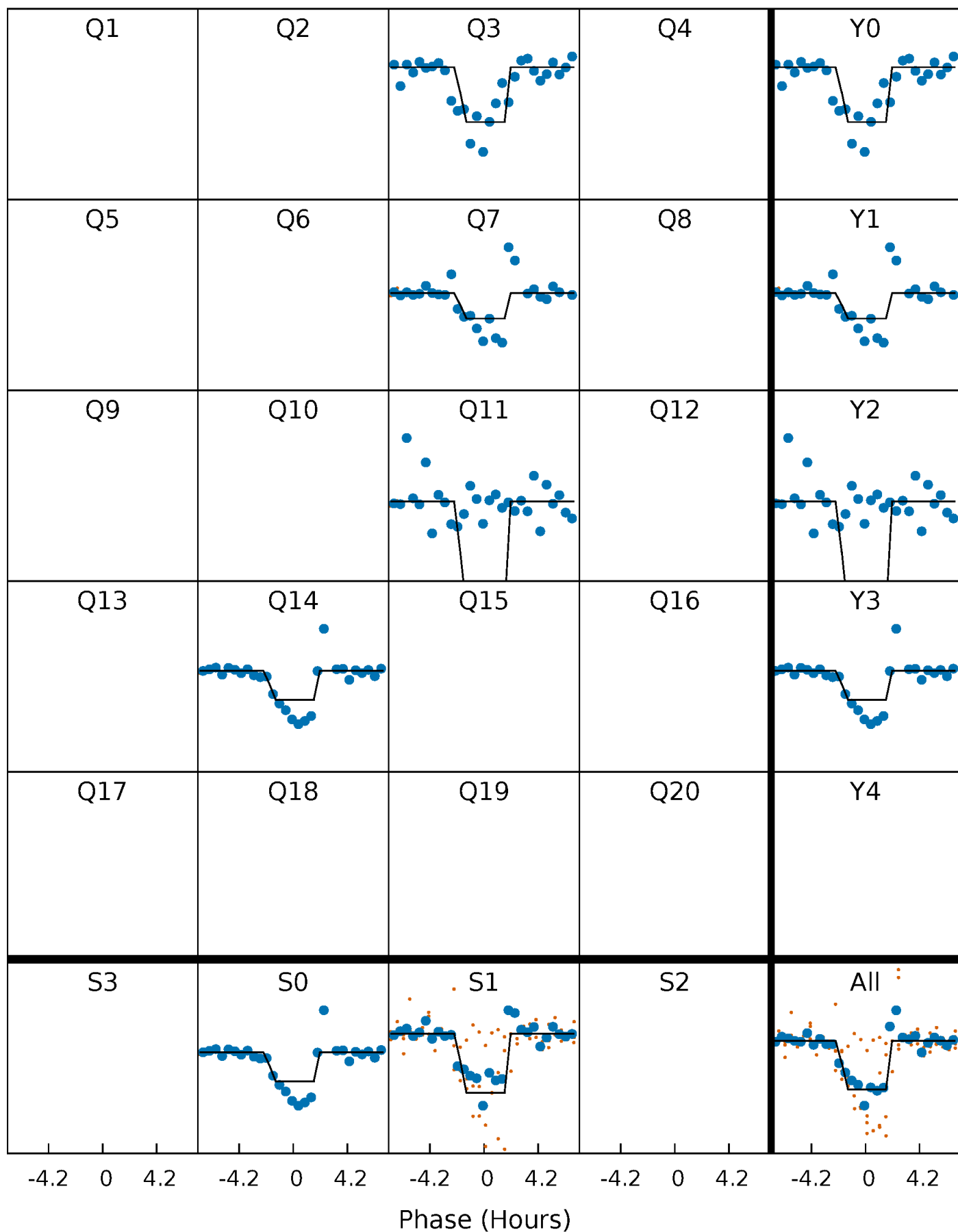
DV Quarter-Phased Transit Curves

TCE 004365571-01 P=354.743213 Days $T_0=297.431056$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

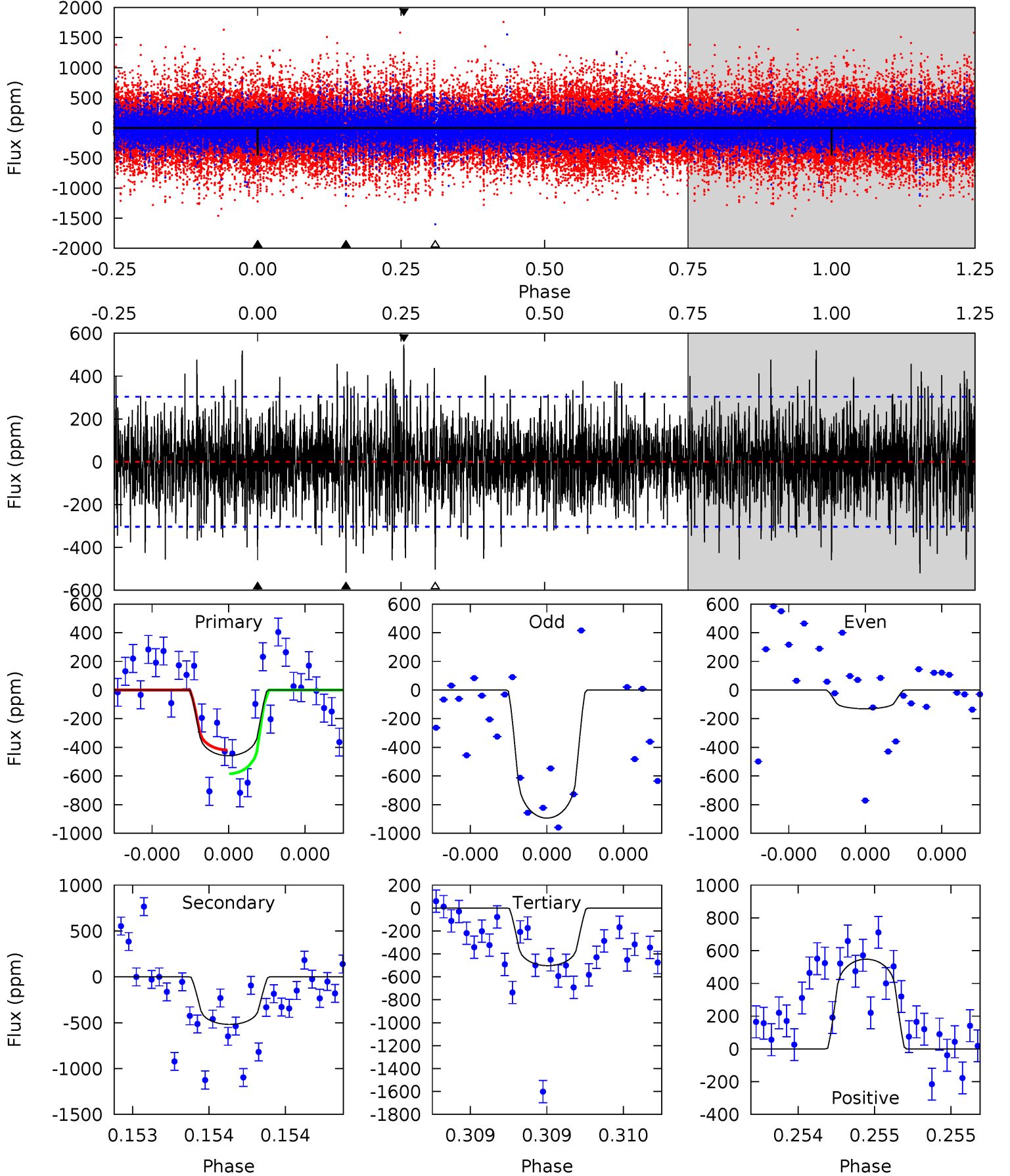
TCE 004365571-01 P=354.728244 Days $T_0=297.468682$ (BKJD)



DV Model-Shift Uniqueness Test

004365571-01, P = 354.743213 Days, E = 297.431056 Days

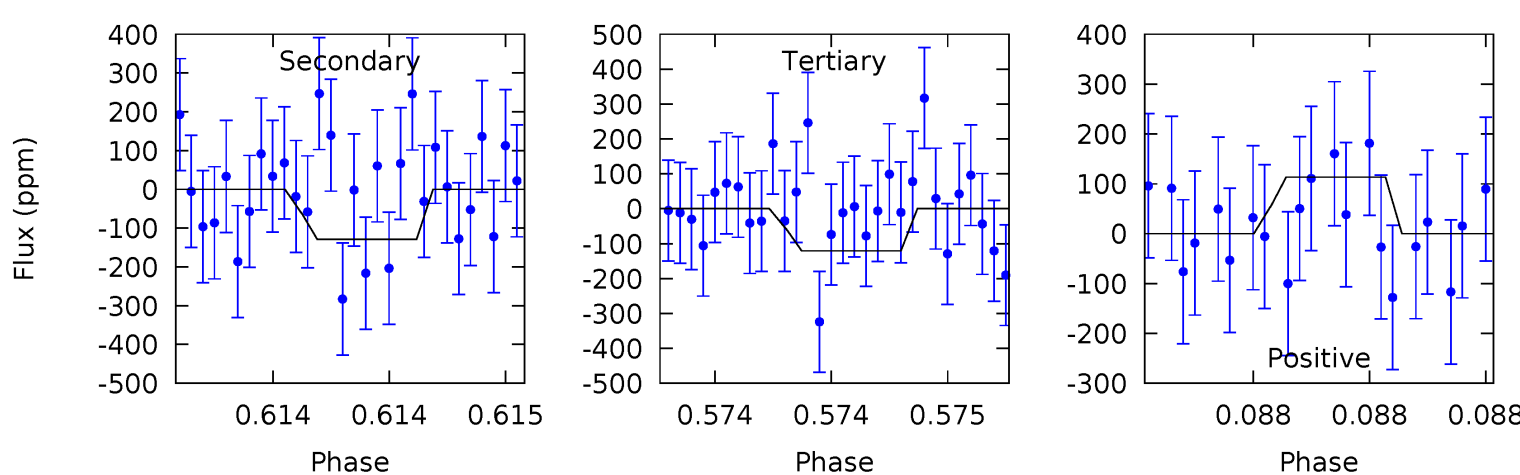
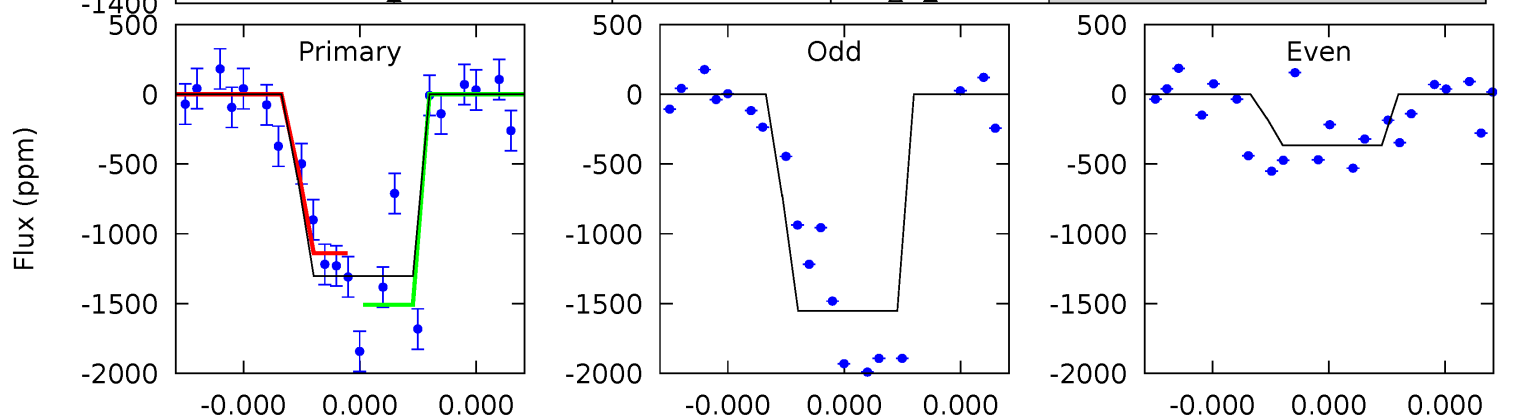
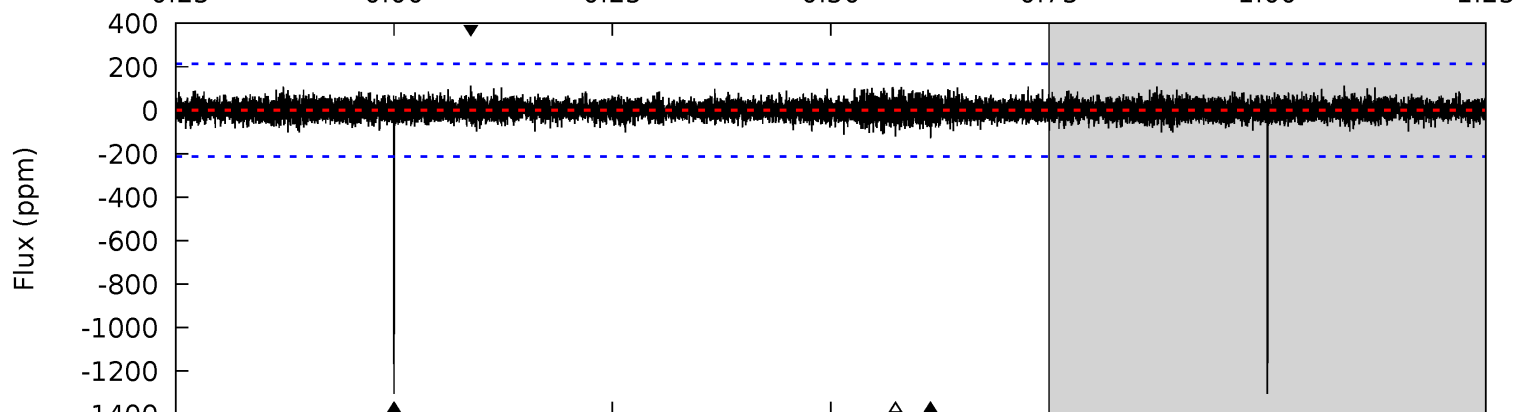
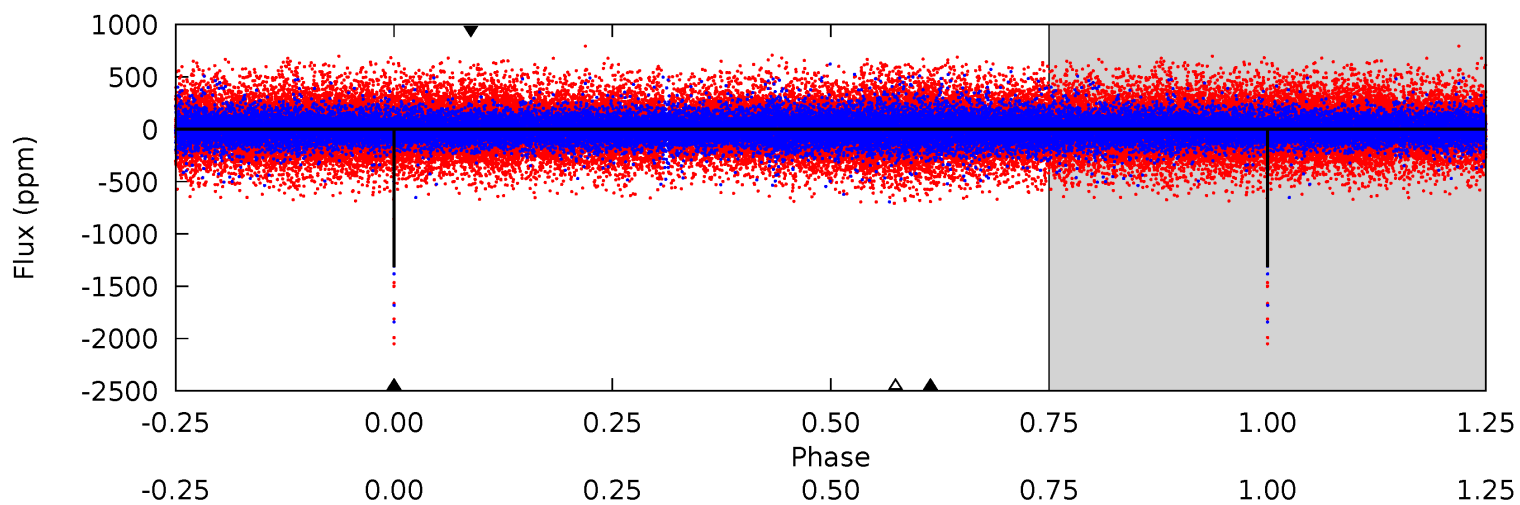
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.44	9.56	9.25	10.1	5.59	3.51	2.25	-0.81	-1.64	0.30	-0.53	6.61	0.94	0.51	1.51



Alt Model-Shift Uniqueness Test

004365571-01, P = 354.728244 Days, E = 297.468682 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.3	3.40	3.17	2.99	5.61	3.54	0.68	31.1	31.3	0.23	0.41	18.2	0.81	0.08	4.83



Stellar Parameters For KIC 004365571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5902^{+177}_{-159}	$4.063^{+0.364}_{-0.156}$	$-0.200^{+0.300}_{-0.300}$	$1.533^{+0.386}_{-0.579}$	$0.992^{+0.142}_{-0.129}$	$0.388^{+1.107}_{-0.174}$
	+3%/-3%	+9%/-4%	+150%/-150%	+25%/-38%	+14%/-13%	+286%/-45%
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 004365571-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-519 ± 54	$4.79^{+4.55}_{-3.05}$	450^{+37}_{-47}	5153^{+3820}_{-1113}	11959^{+80320}_{-8741}
Alt.	-129 ± 38	$5.71^{+4.81}_{-3.34}$	453^{+36}_{-46}	3683^{+1527}_{-608}	1936^{+9499}_{-1370}

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

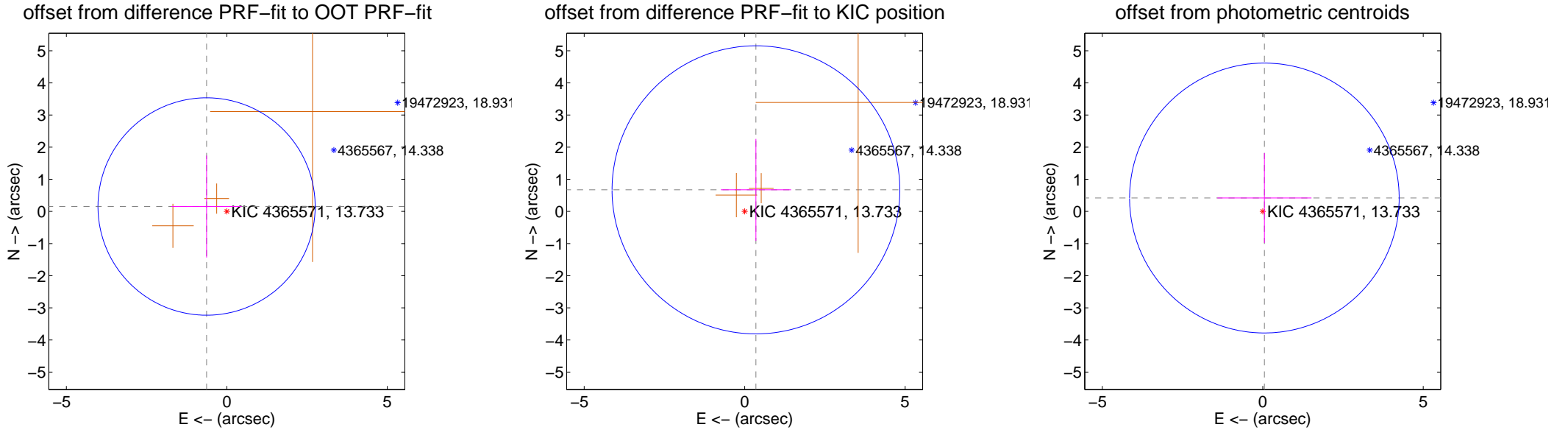
DV Centroid Data

Supplemental centroid analysis for 004365571-01. Kepler magnitude: 13.73. Transit SNR 5.39

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.71 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.650 ± 1.128	0.58	0.632 ± 1.095	0.153 ± 1.586
PRF-fit source offset from KIC position	0.759 ± 1.495	0.51	-0.351 ± 1.095	0.673 ± 1.586
photometric centroid source offset	0.42 ± 1.40	0.30	-0.05 ± 1.47	0.42 ± 1.40



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

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

Q1 no difference image



Q1 no OOT image



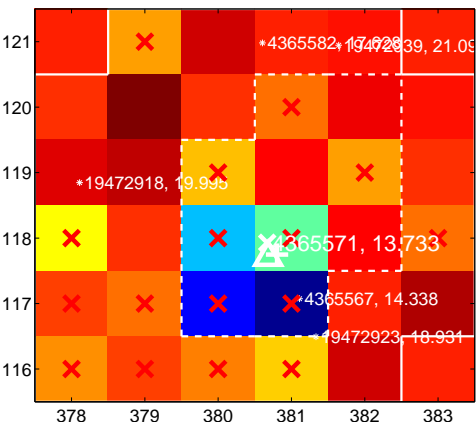
Q2 no difference image



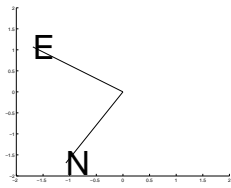
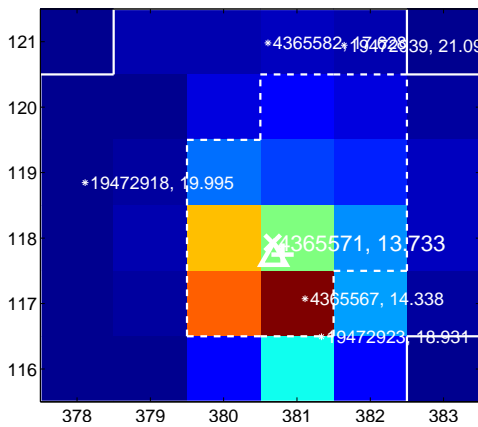
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



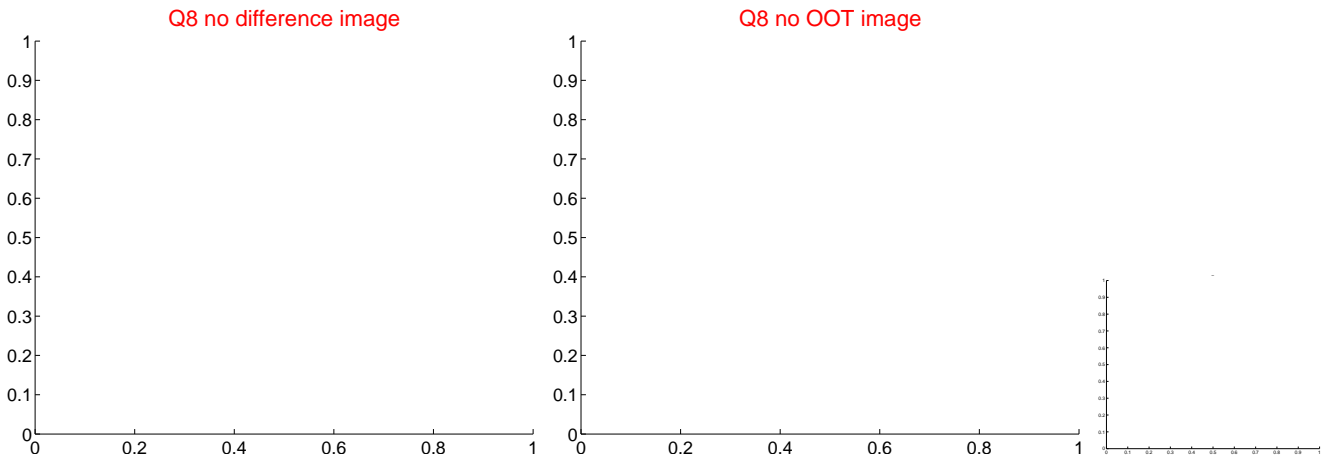
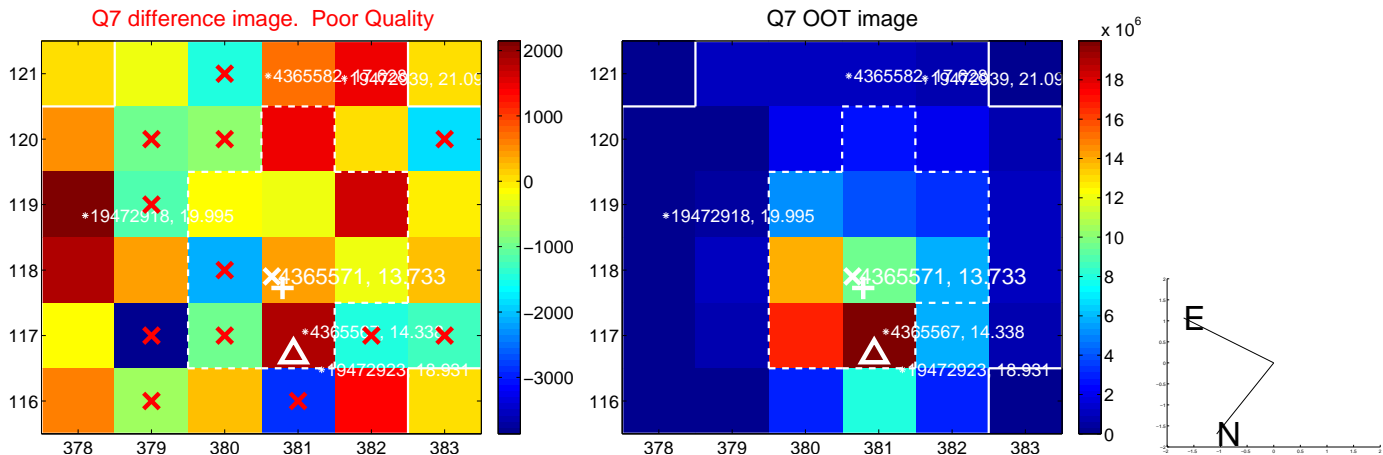
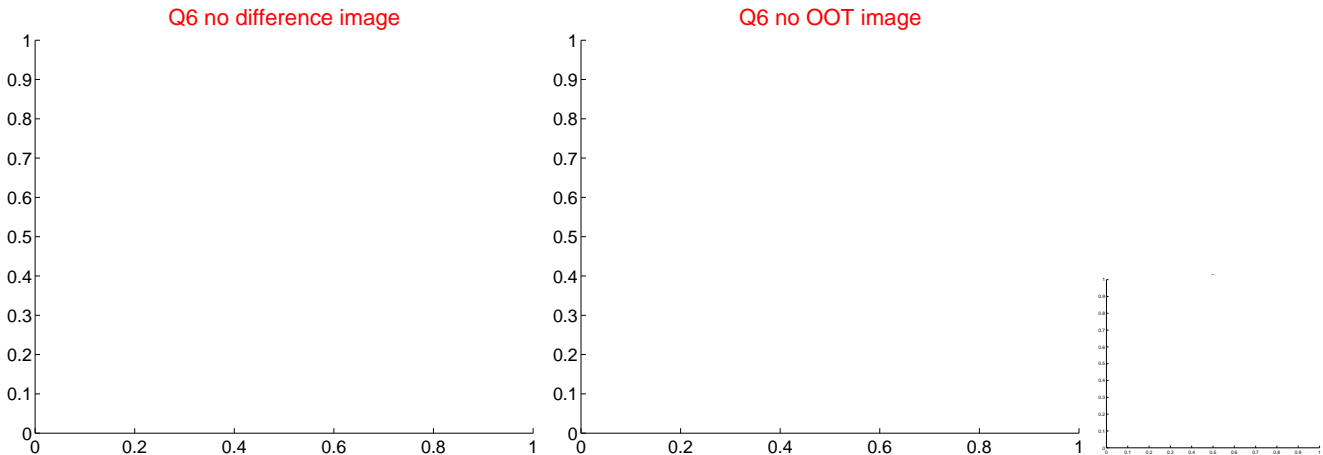
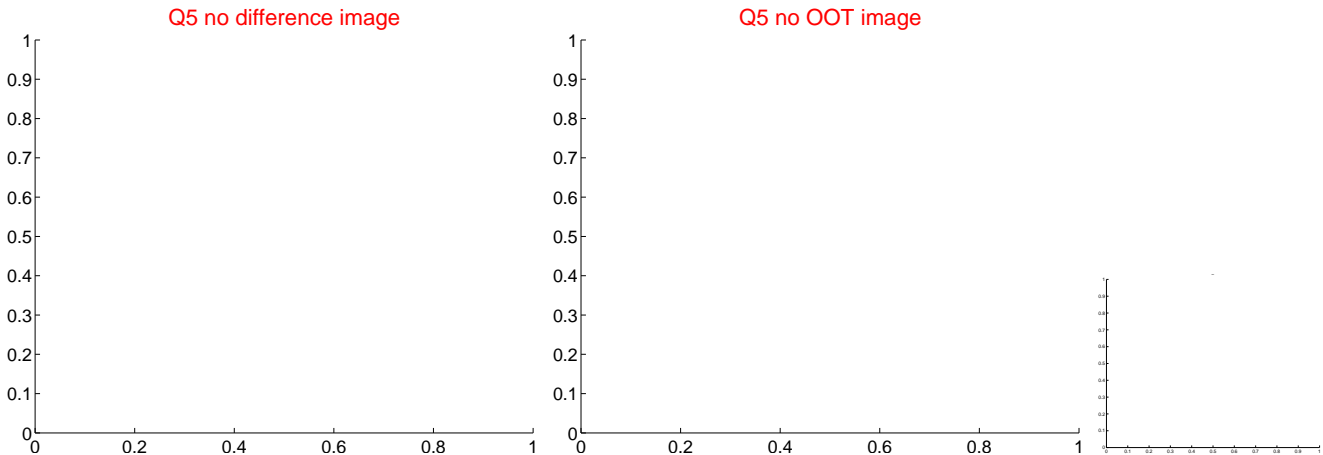
Q4 no difference image



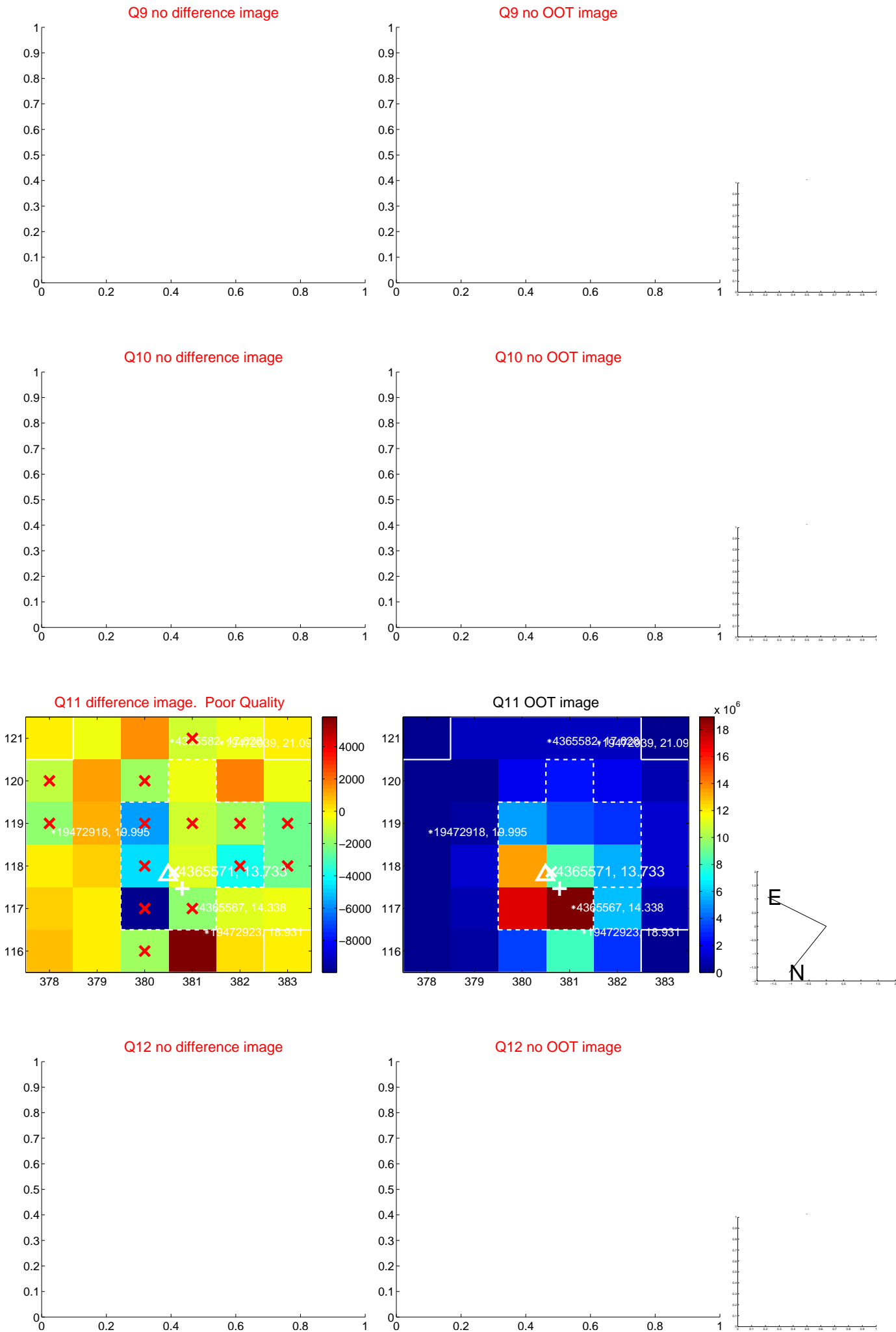
Q4 no OOT image



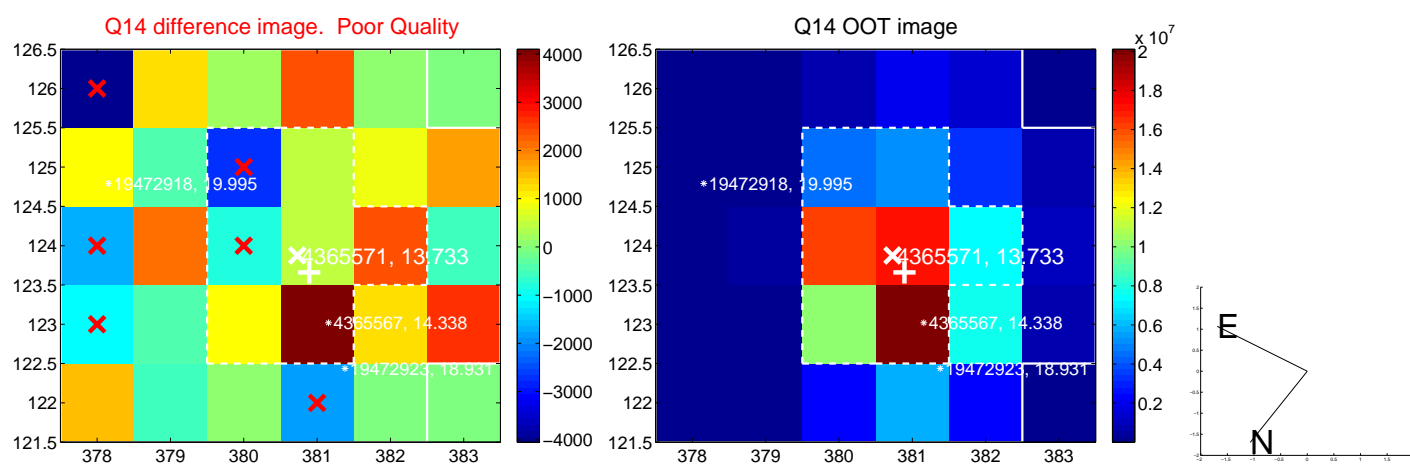
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



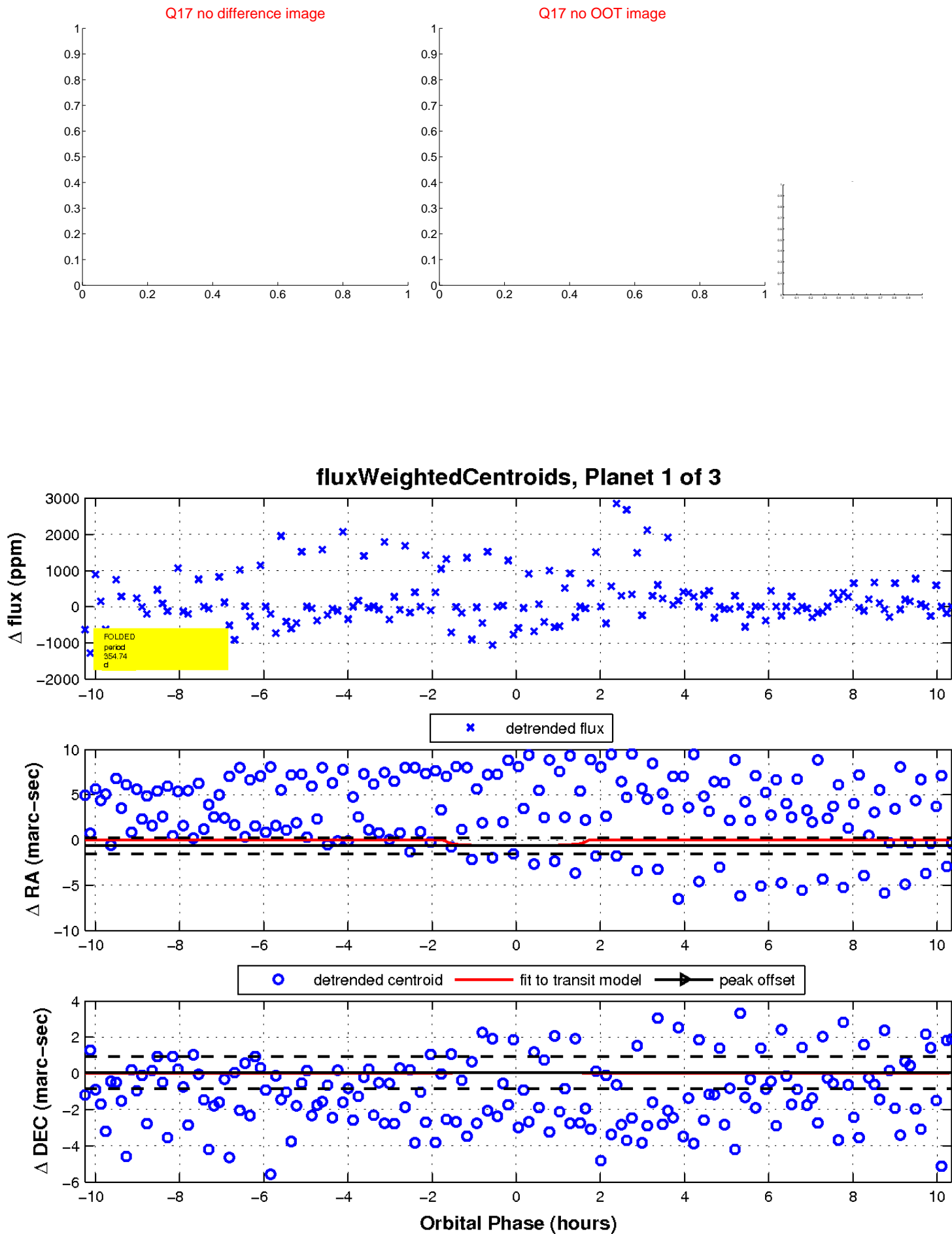
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

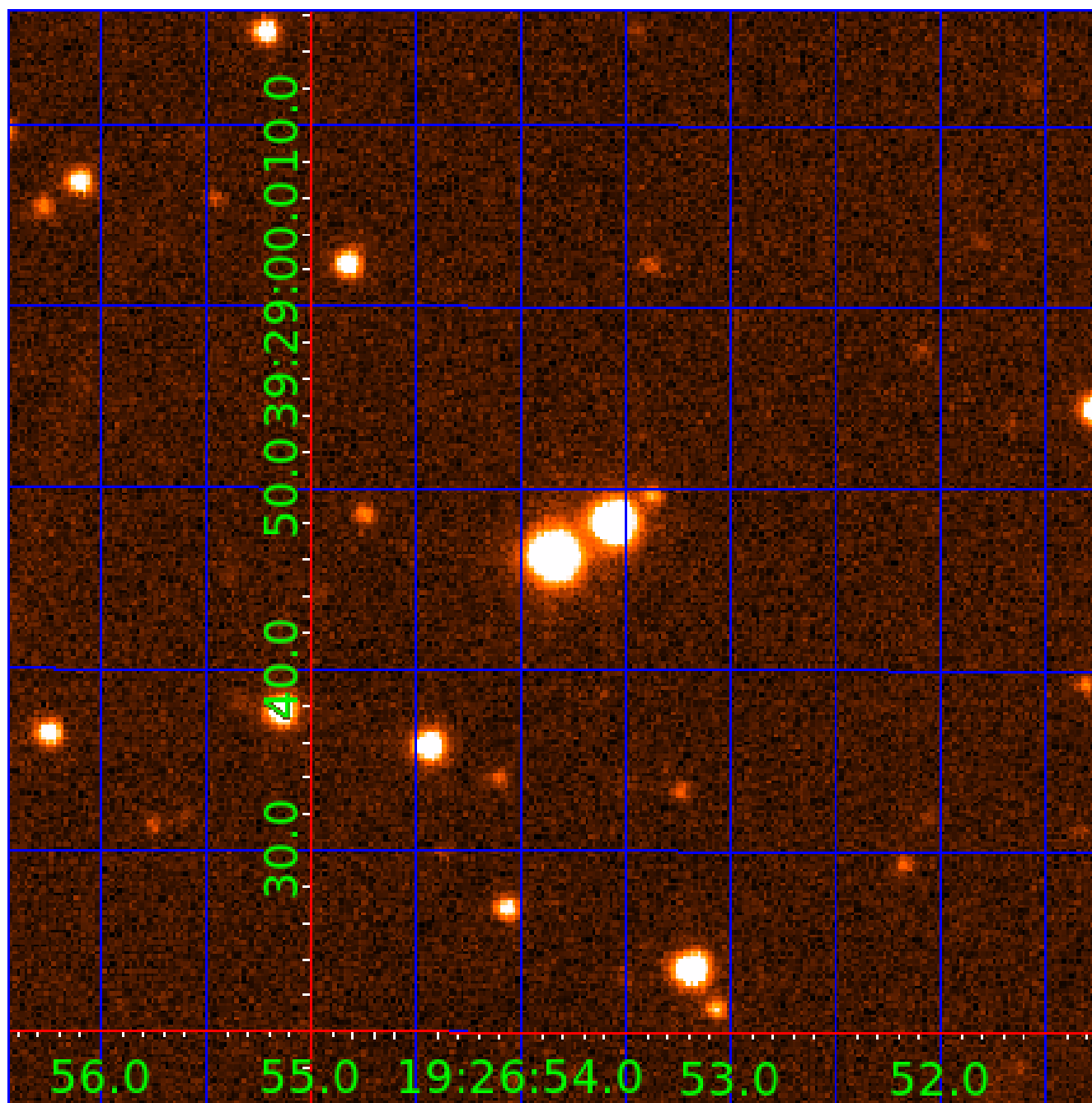


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004365571

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

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004365571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004365571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
004365571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_KIC_POS

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

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

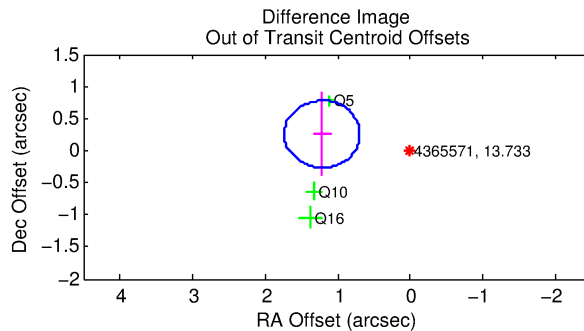
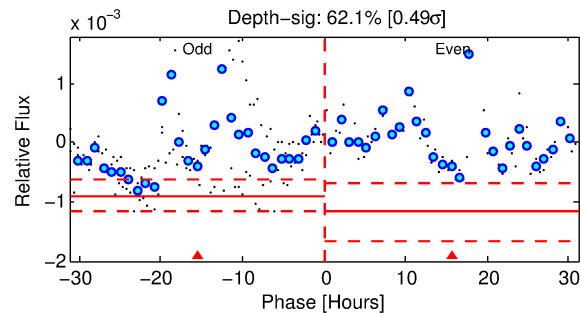
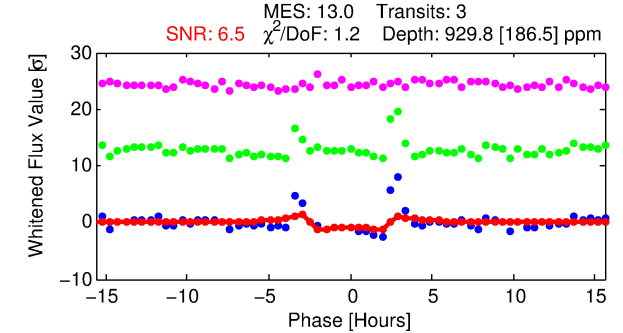
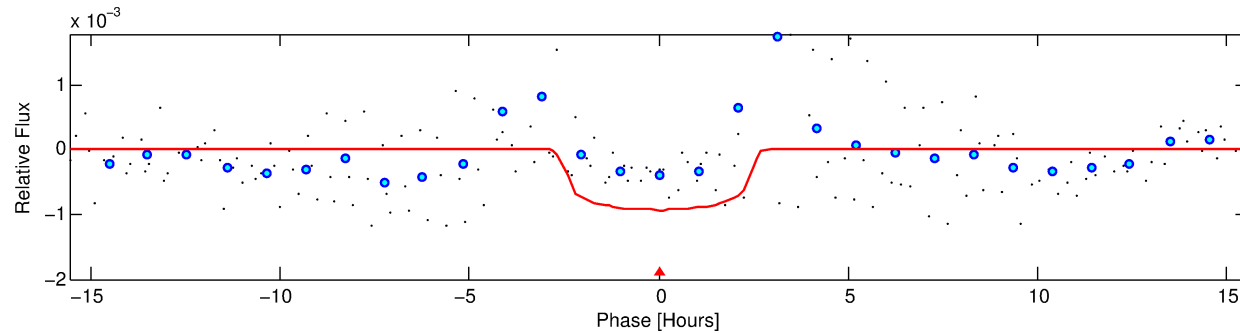
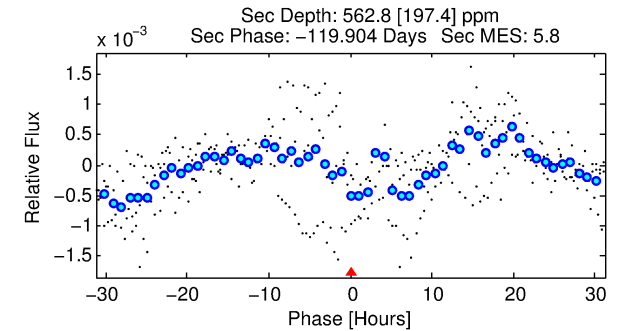
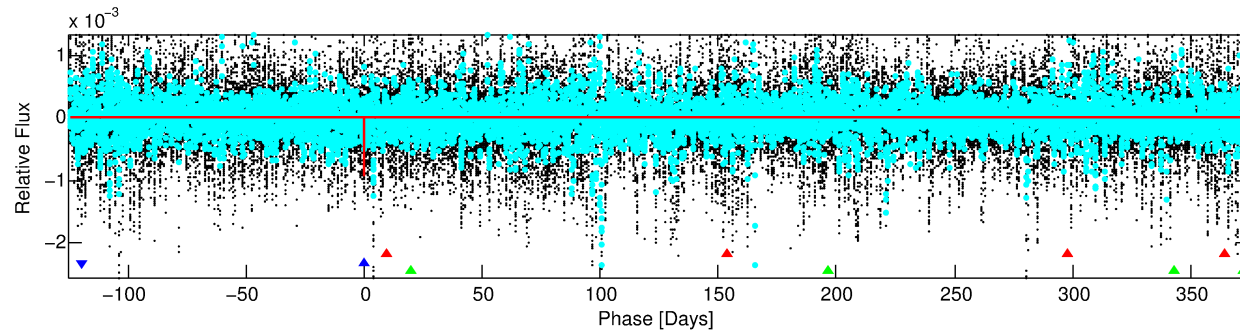
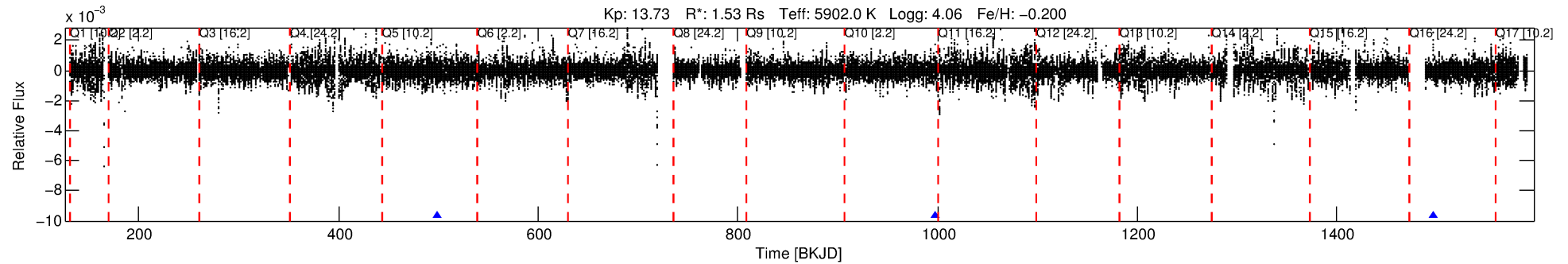
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004365571-02

No Significant Match Found

DV One-Page Summary

KIC: 4365571 Candidate: 2 of 3 Period: 499.040 d



DV Fit Results:

Period = 499.04042 [0.00785] d
Epoch = 498.6112 [0.0114] BKJD
Rp/R* = 0.0291 [0.0261]
a/R* = 614.53 [2506.92]
b = 0.60 [4.42]
Seff = 1.69 [1.06]
Teq = 291 [45] K
Rp = 4.87 [4.74] Re
a = 1.2279 [0.4618] AU
Ag = 19641.74 [37817.62] [0.52σ]
Teffp = 5325 [2435] K [2.07σ]

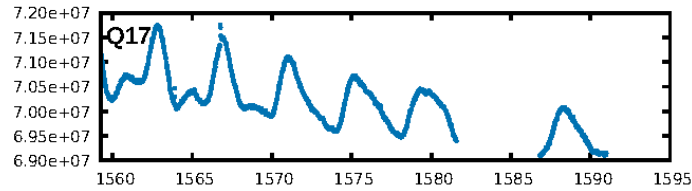
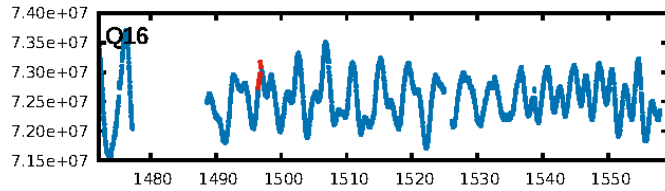
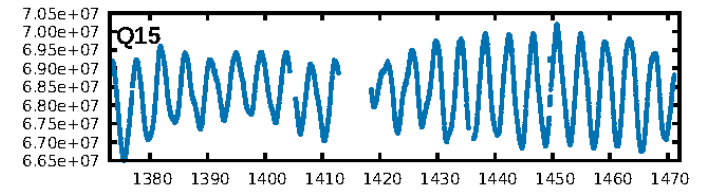
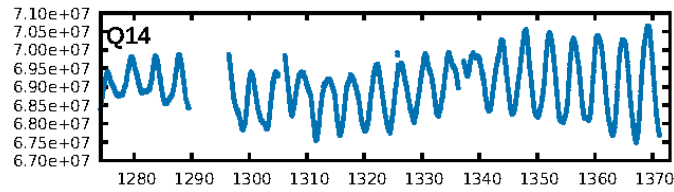
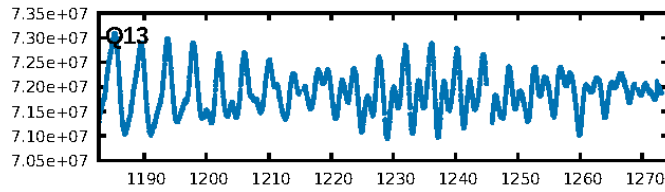
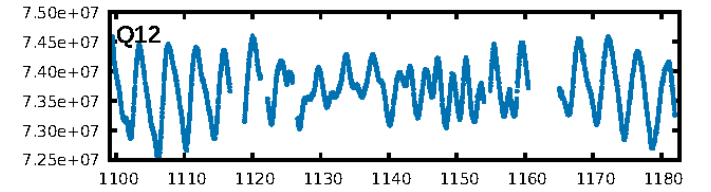
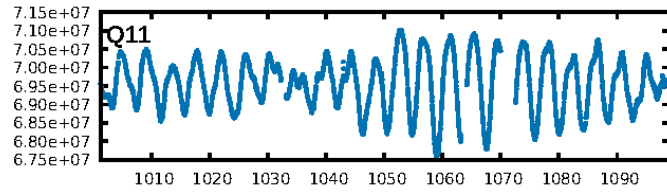
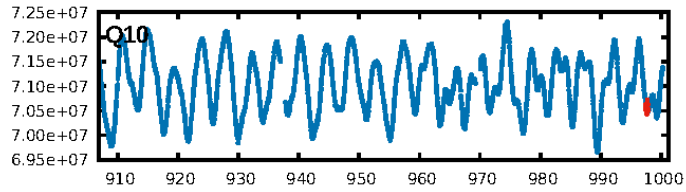
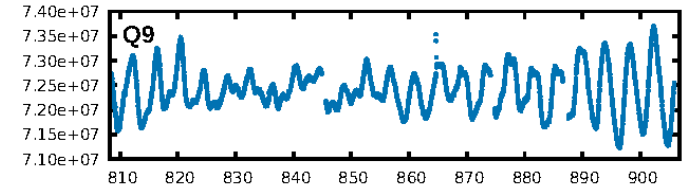
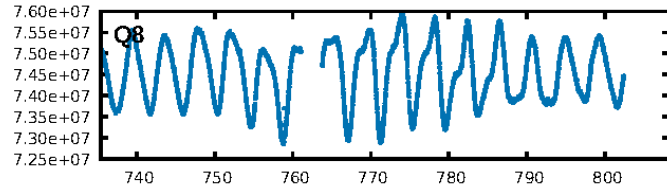
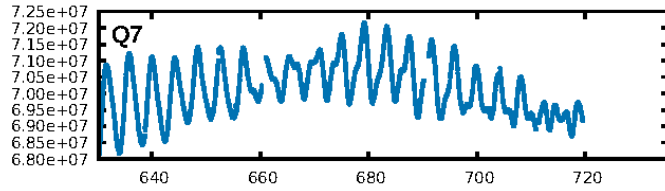
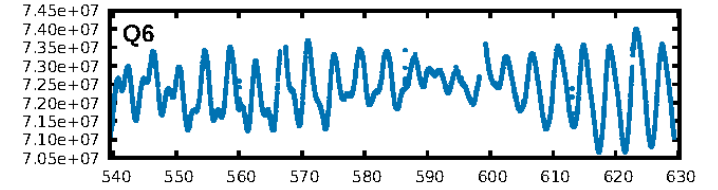
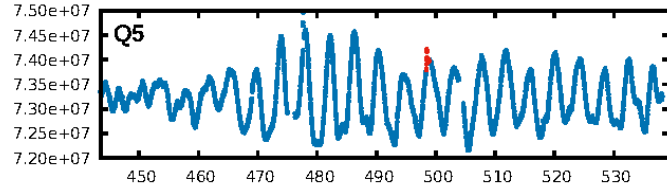
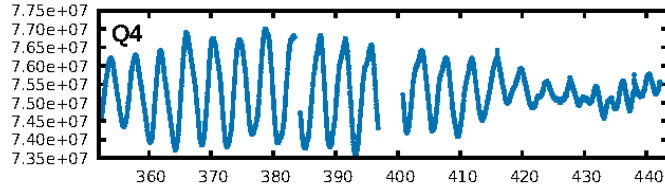
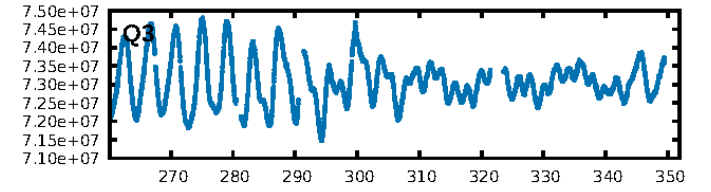
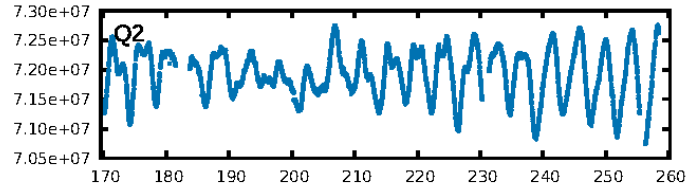
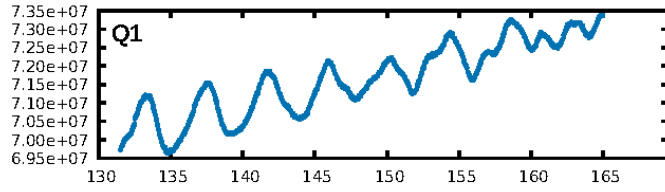
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [555.18σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 85.0%
ModelChiSquareGof-sig: 87.0%
Bootstrap-pfa: 1.54e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.68
Centroid-sig: 0.2%
Centroid-so: 0.935 arcsec [1.01σ]
OotOffset-rm: 1.241 arcsec [7.14σ]
KicOffset-rm: 1.443 arcsec [1.64σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

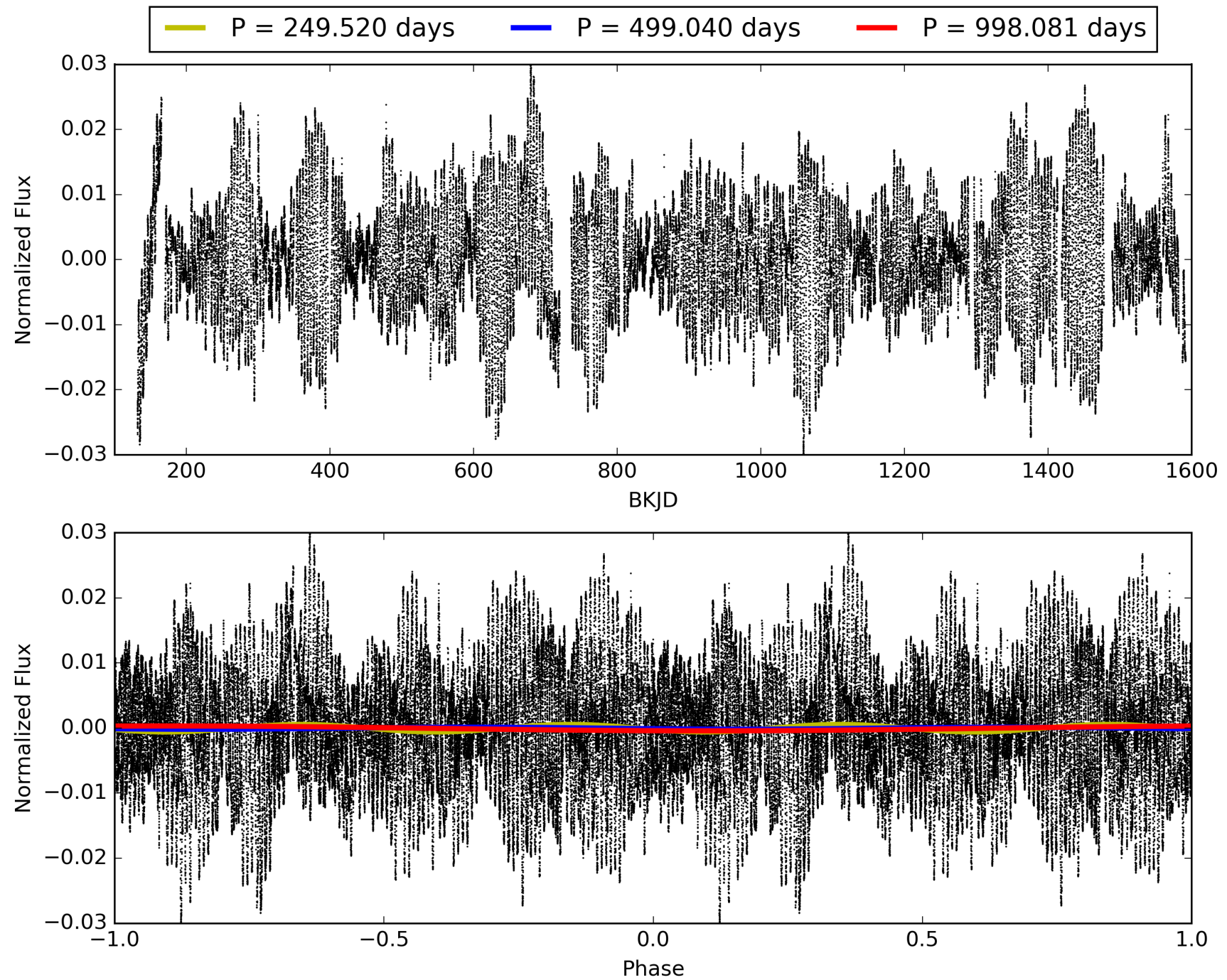
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:25:56 Z

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

TCE 004365571-02, PDC Light Curves

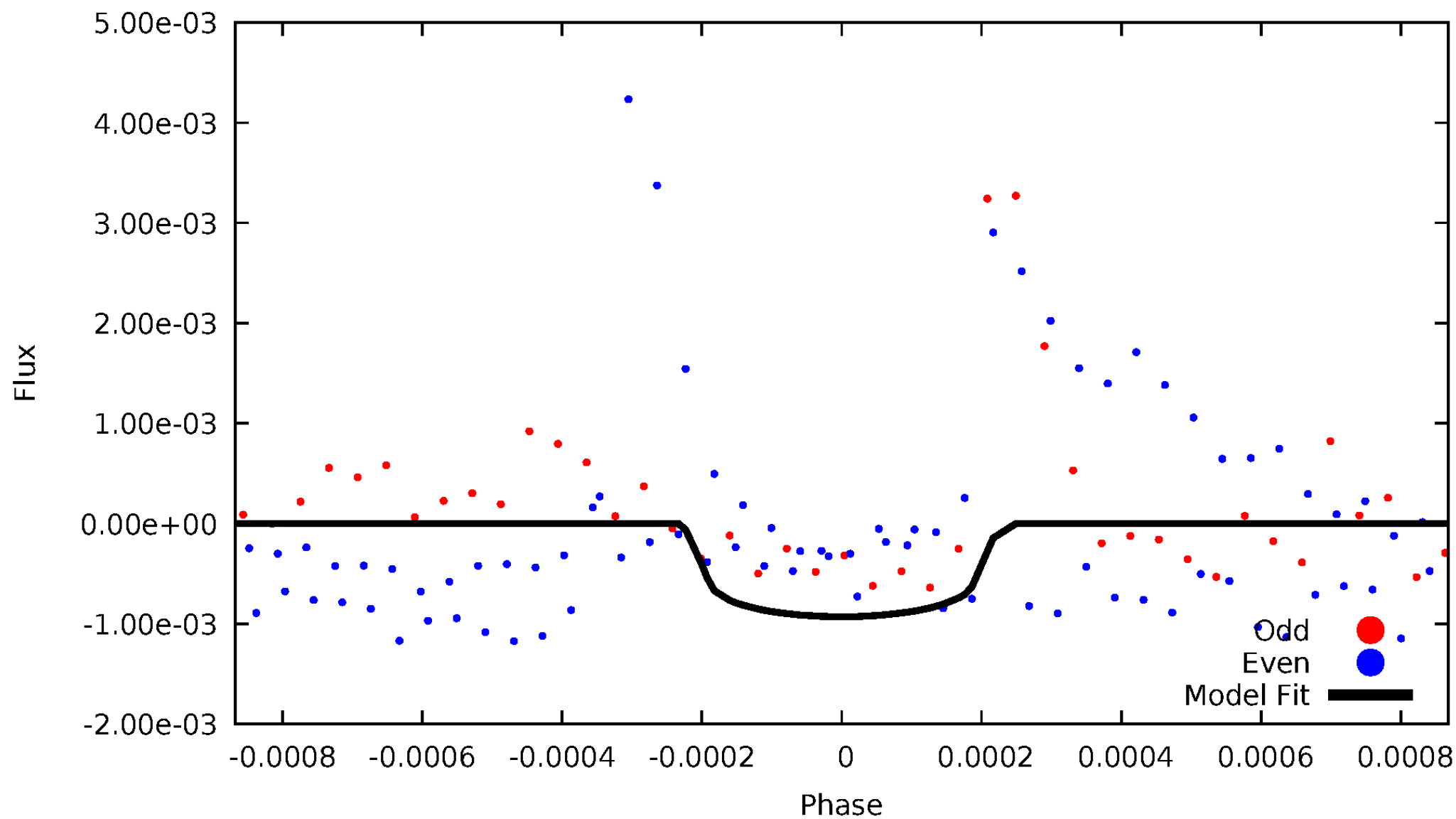


TCE 004365571-02



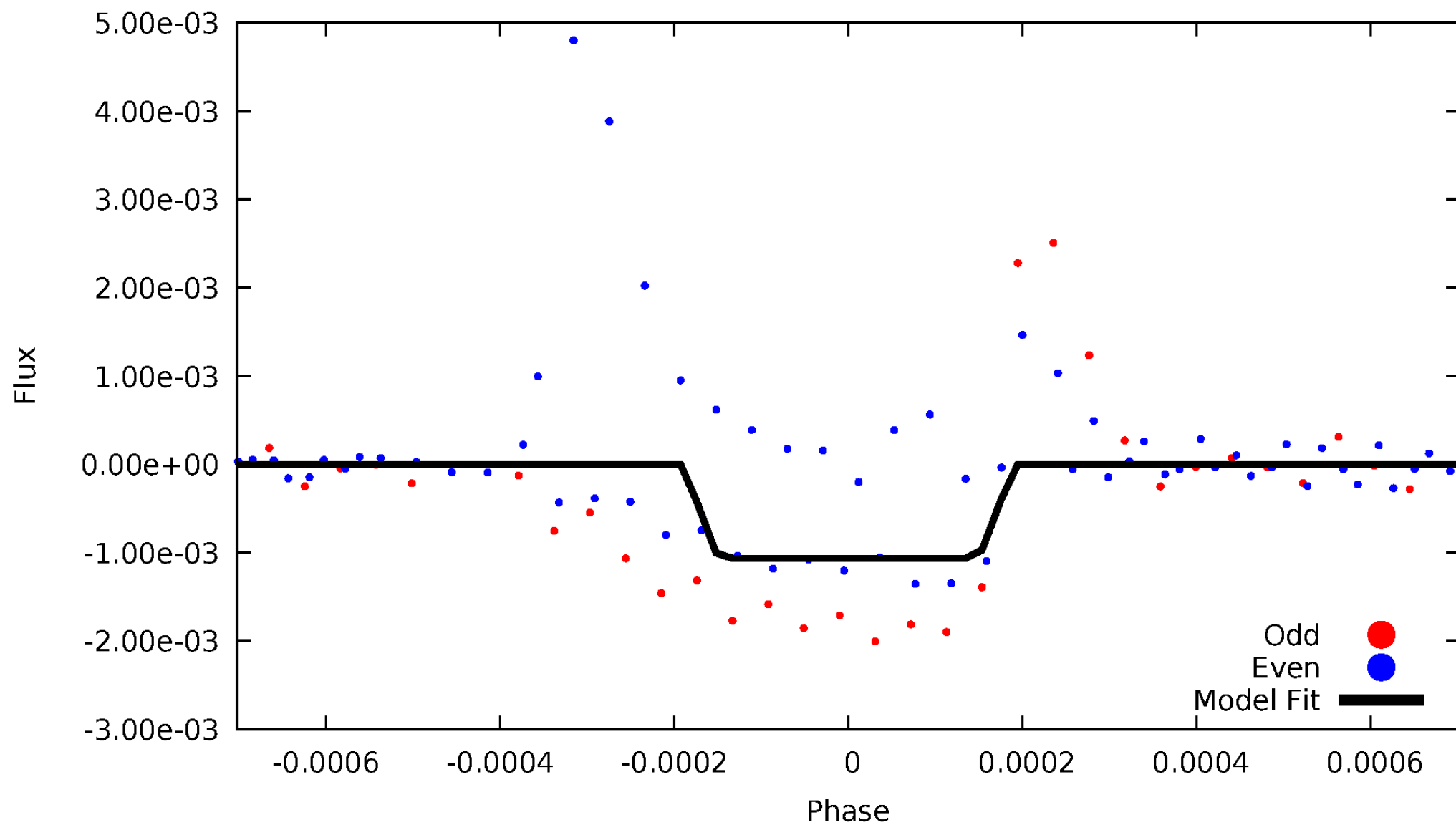
DV Odd/Even

TCE 004365571-02



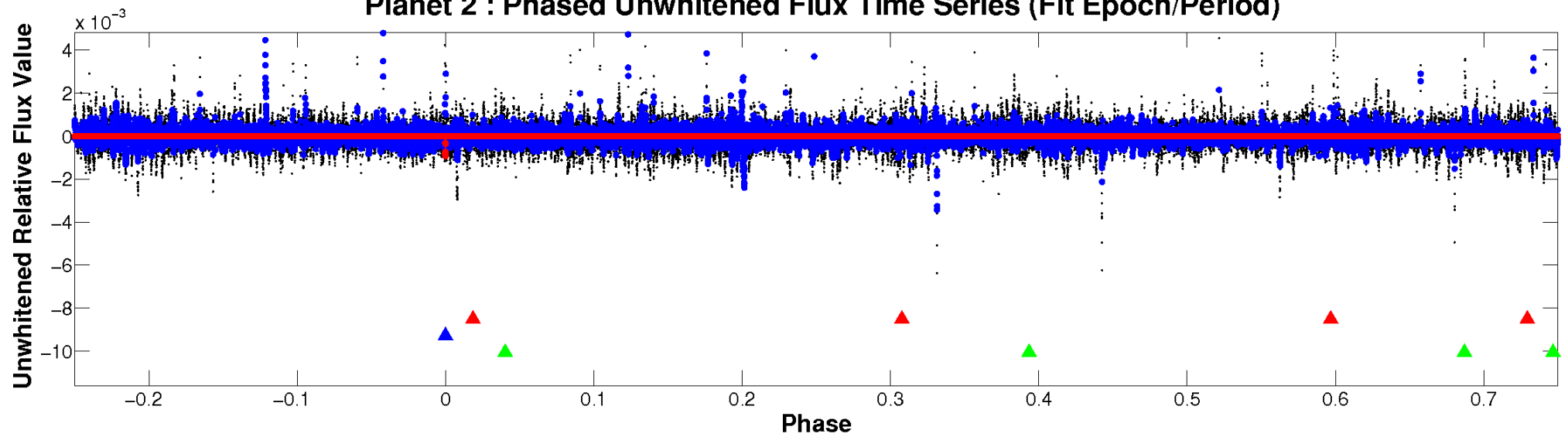
ALT Odd/Even

TCE 004365571-02

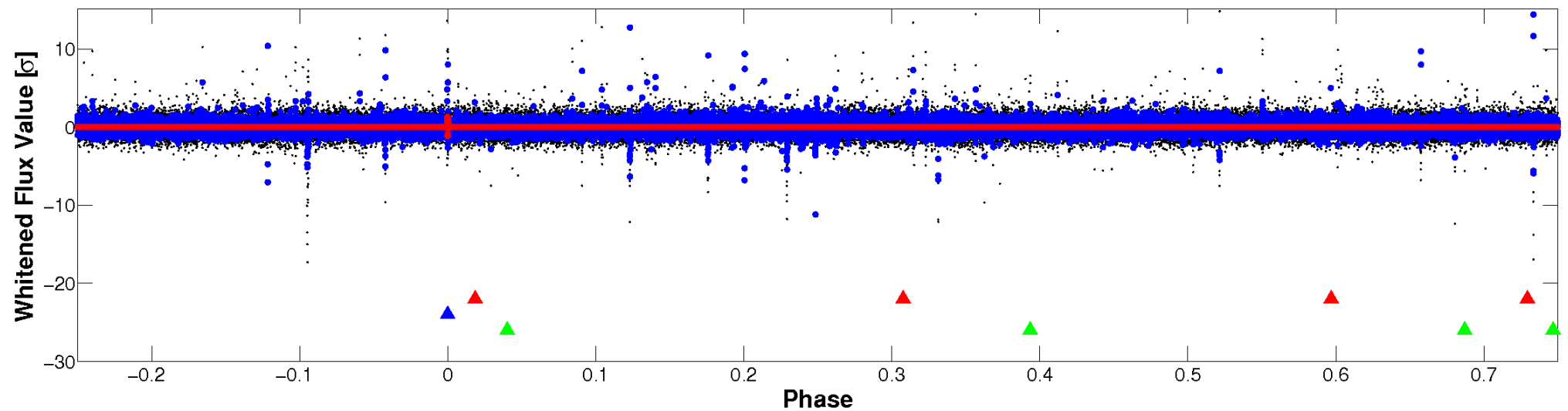


Non-Whitened Vs. Whitened Light Curve

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

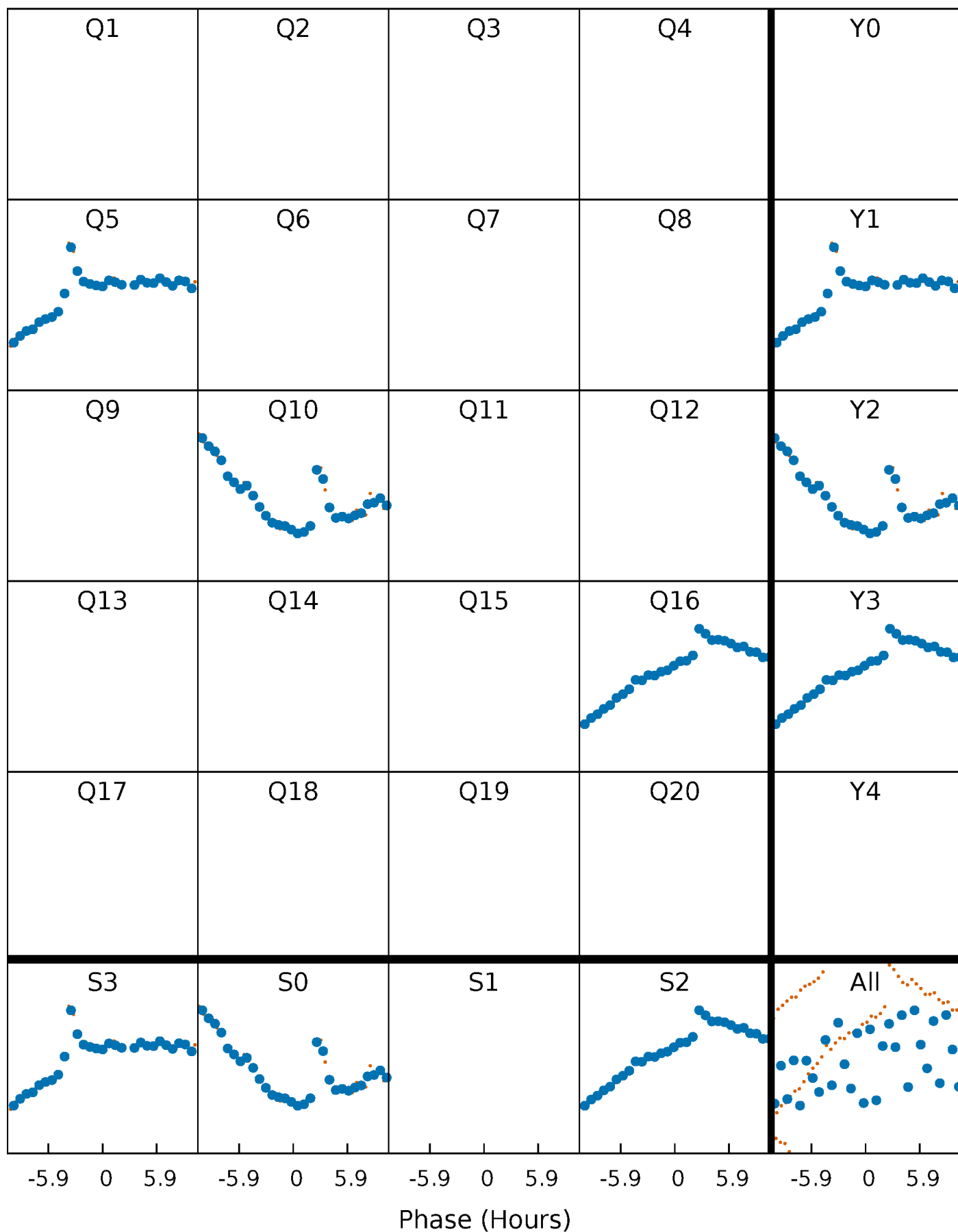


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



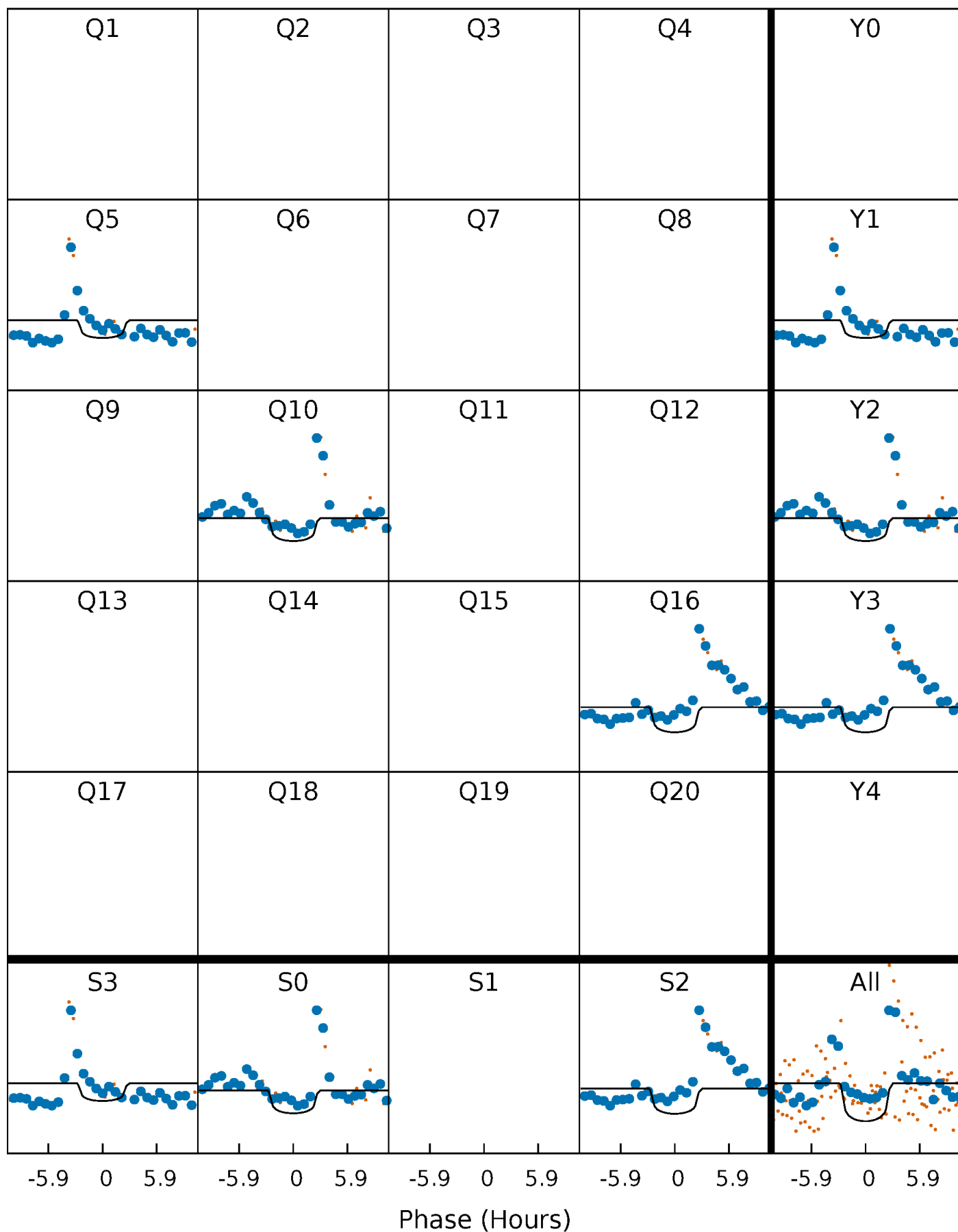
PDC Quarter-Phased Transit Curves

TCE 004365571-02 $P=499.040417$ Days $T_0=498.611233$ (BKJD)



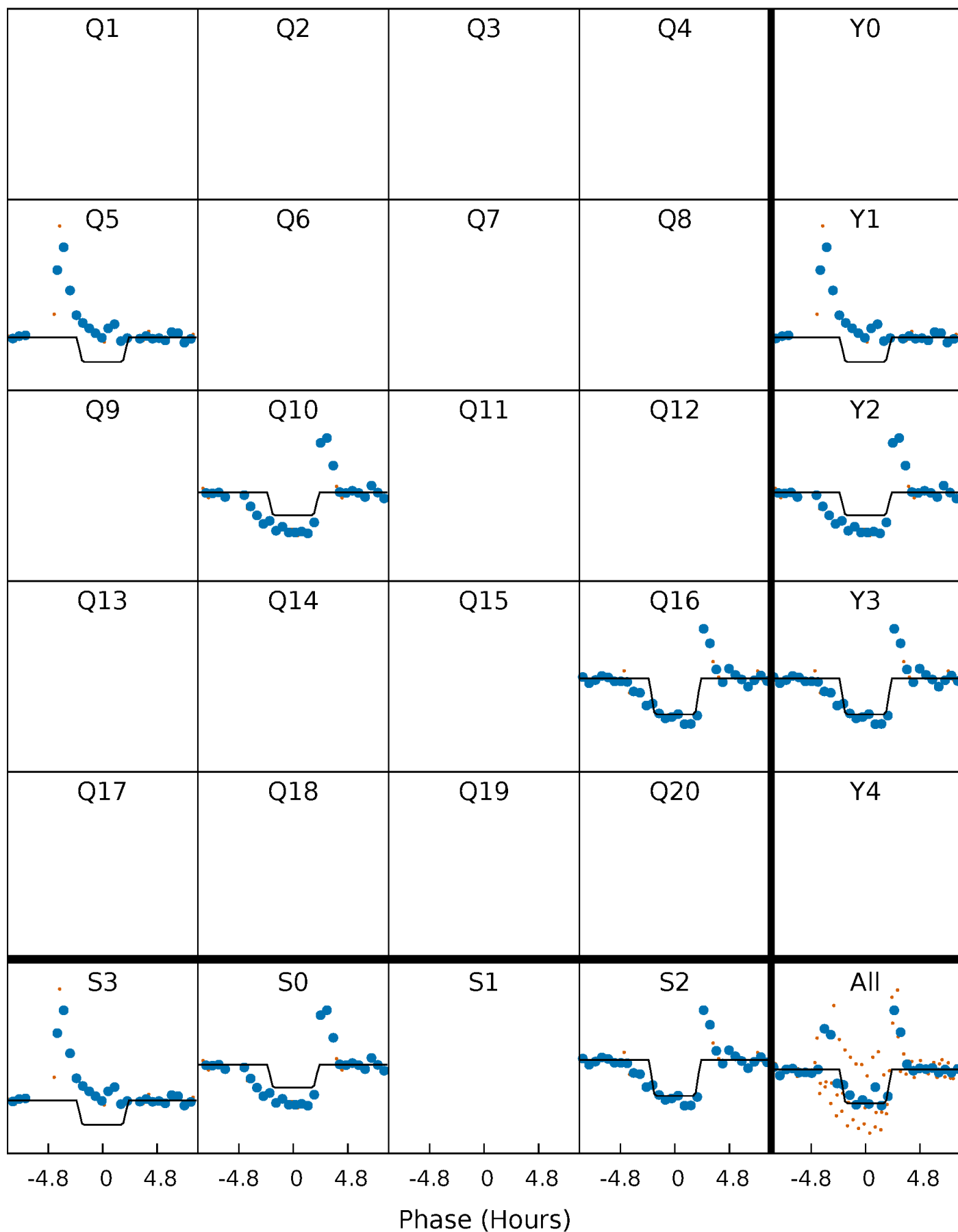
DV Quarter-Phased Transit Curves

TCE 004365571-02 $P=499.040417$ Days $T_0=498.611233$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

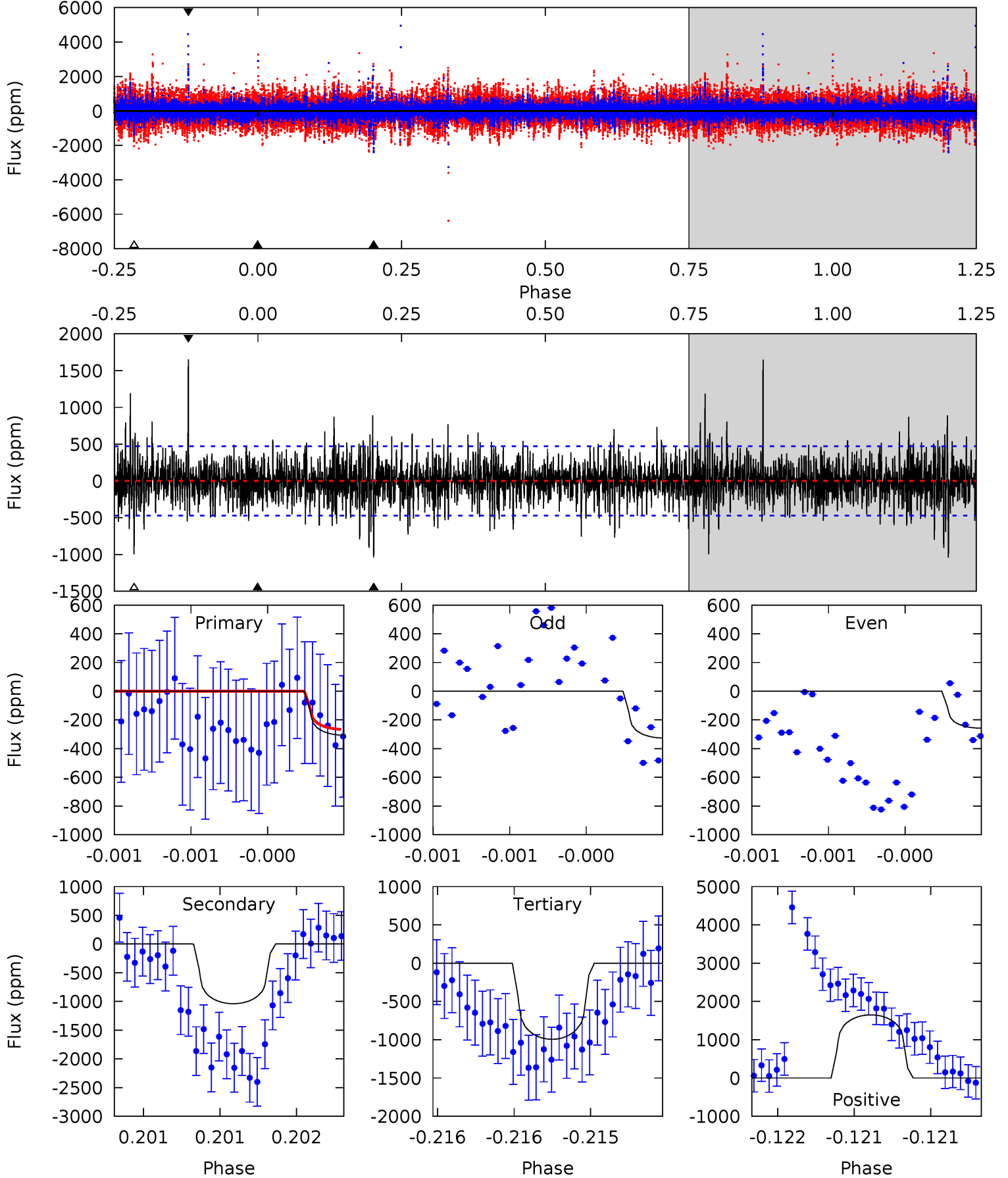
TCE 004365571-02 P=499.042025 Days $T_0=498.616439$ (BKJD)



DV Model-Shift Uniqueness Test

004365571-02, P = 499.040417 Days, E = 498.611233 Days

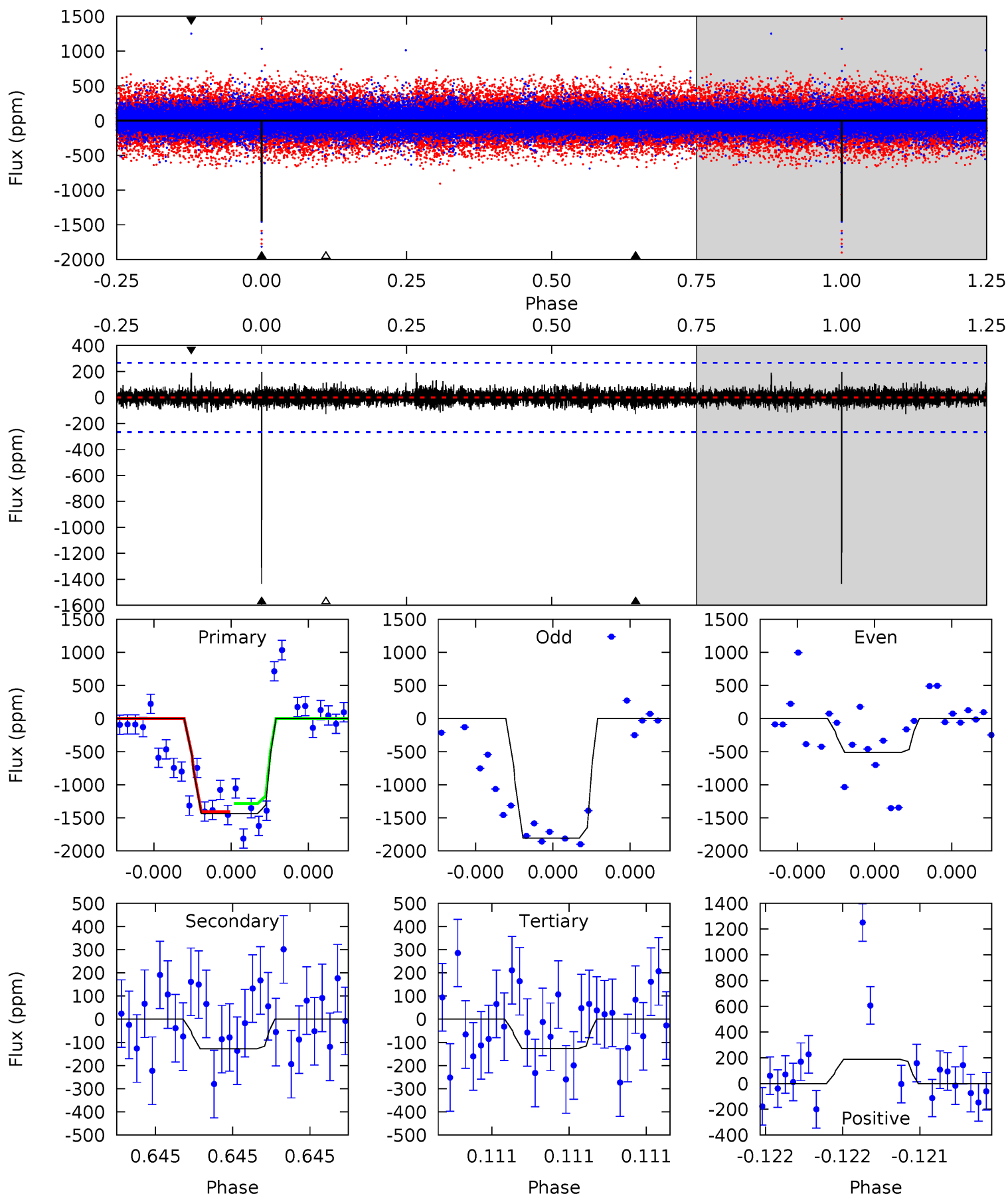
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.64	12.3	11.8	19.6	5.59	3.51	2.42	-8.16	-15.9	0.53	-7.23	0.38	0.97	0.61	0.47



Alt Model-Shift Uniqueness Test

004365571-02, P = 499.042025 Days, E = 498.616439 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.3	2.71	2.68	3.99	5.64	3.58	0.59	27.7	26.3	0.03	-1.28	17.3	0.77	0.12	1.37



Stellar Parameters For KIC 004365571

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5902^{+177}_{-159}	$4.063^{+0.364}_{-0.156}$	$-0.200^{+0.300}_{-0.300}$	$1.533^{+0.386}_{-0.579}$	$0.992^{+0.142}_{-0.129}$	$0.388^{+1.107}_{-0.174}$
	+3%/-3%	+9%/-4%	+150%/-150%	+25%/-38%	+14%/-13%	+286%/-45%
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 004365571-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1039 ± 84	$5.30^{+4.14}_{-3.25}$	402^{+31}_{-38}	5819^{+4185}_{-1228}	$30855^{+173377}_{-21446}$
Alt.	-128 ± 47	$5.73^{+4.42}_{-3.32}$	402^{+31}_{-43}	3666^{+1346}_{-570}	3040^{+14746}_{-2080}

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 $A_{obs} \gg 1.0$

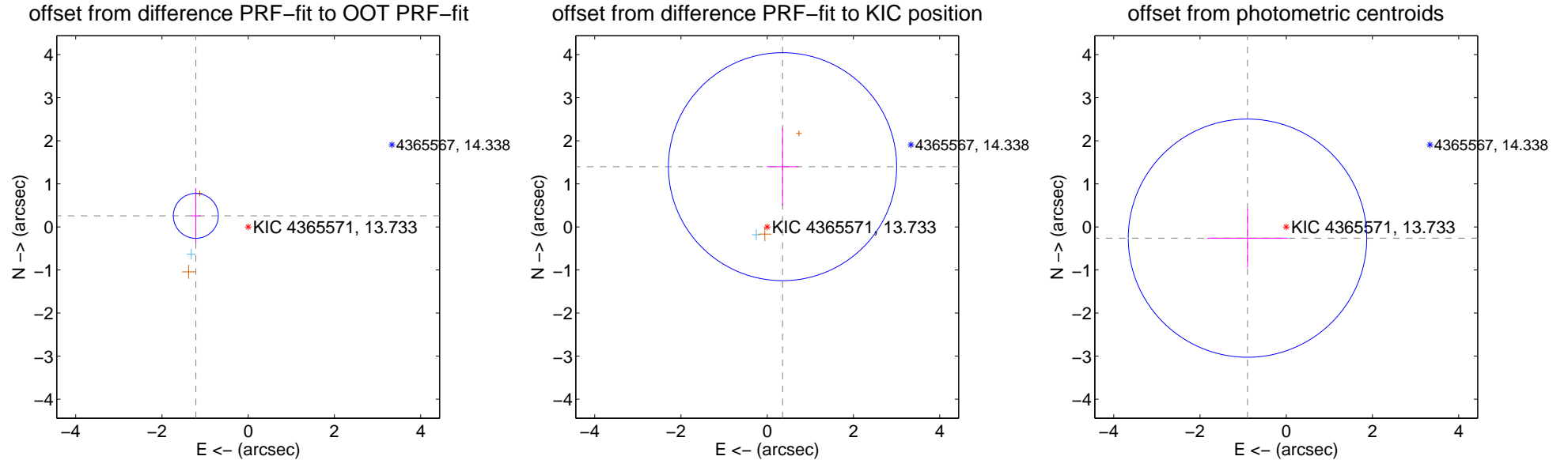
DV Centroid Data

Supplemental centroid analysis for 004365571-02. Kepler magnitude: 13.73. Transit SNR 6.46

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.241 ± 0.174	7.14	1.214 ± 0.114	0.257 ± 0.643
PRF-fit source offset from KIC position	1.443 ± 0.882	1.64	-0.356 ± 0.366	1.399 ± 0.905
photometric centroid source offset	0.94 ± 0.92	1.01	0.90 ± 0.94	-0.26 ± 0.68

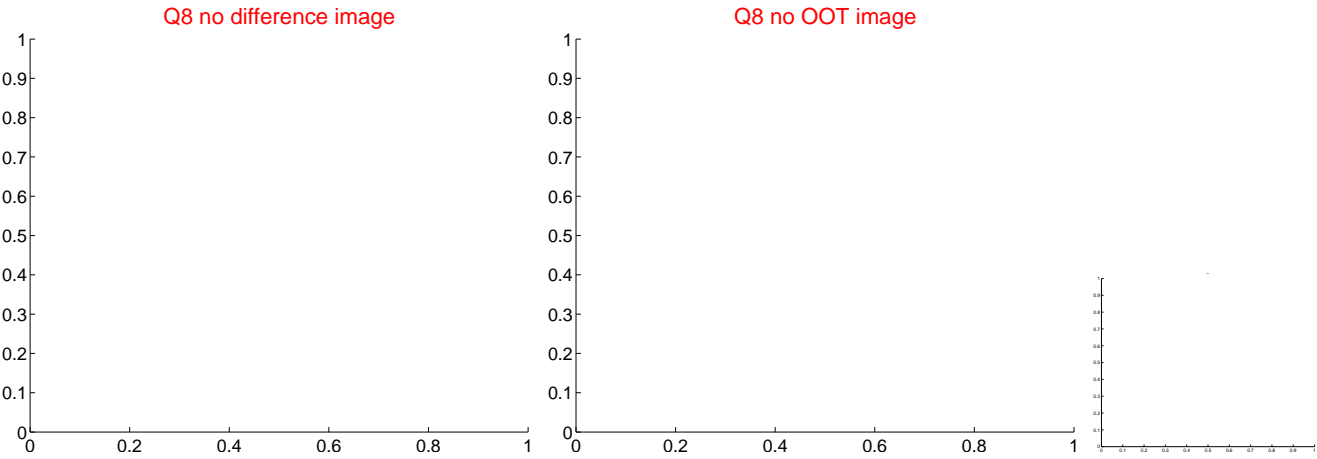
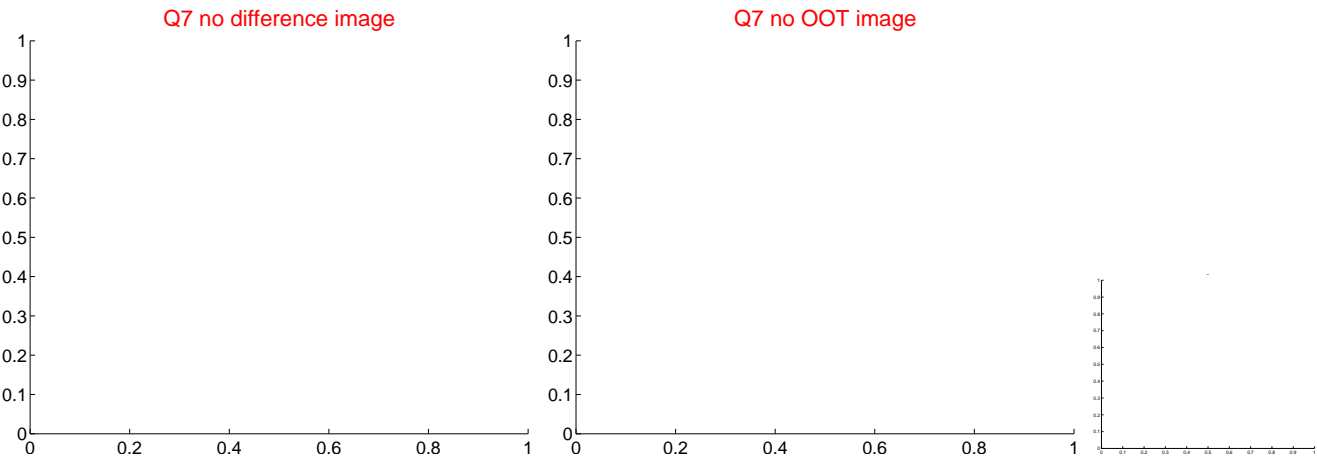
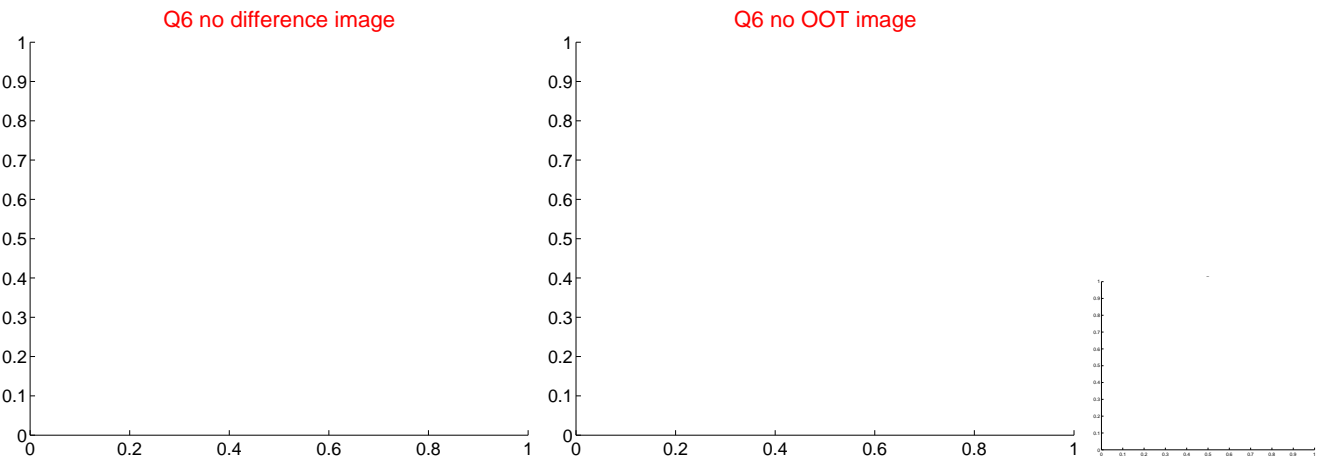
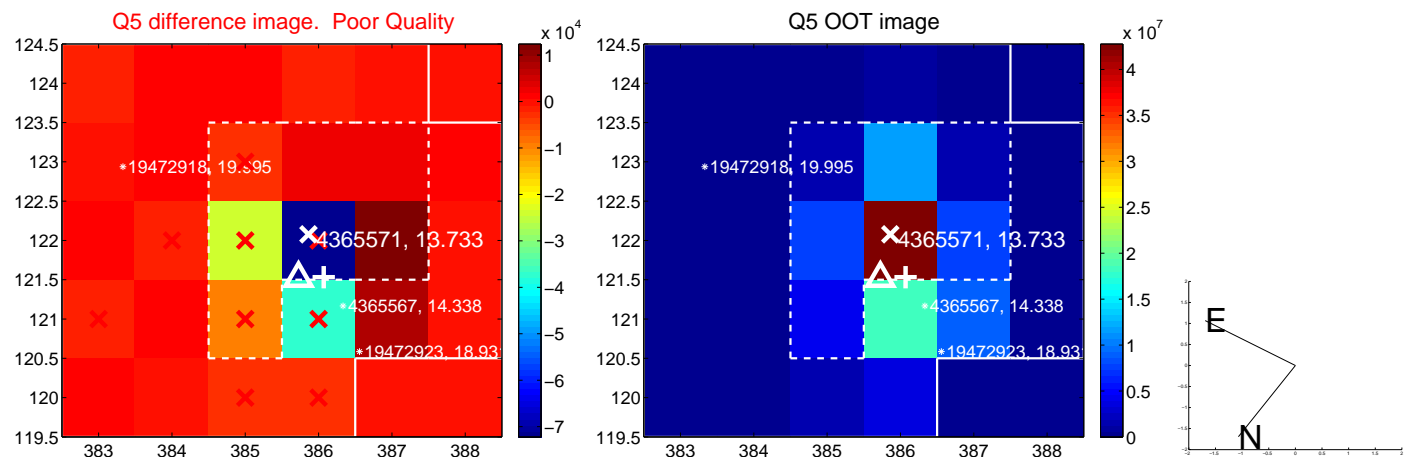


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

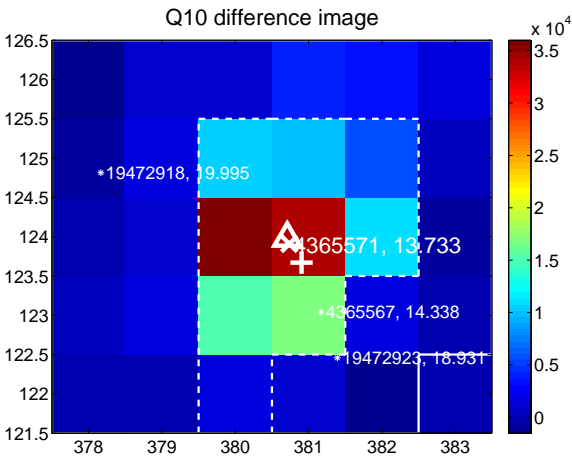
Q9 no difference image



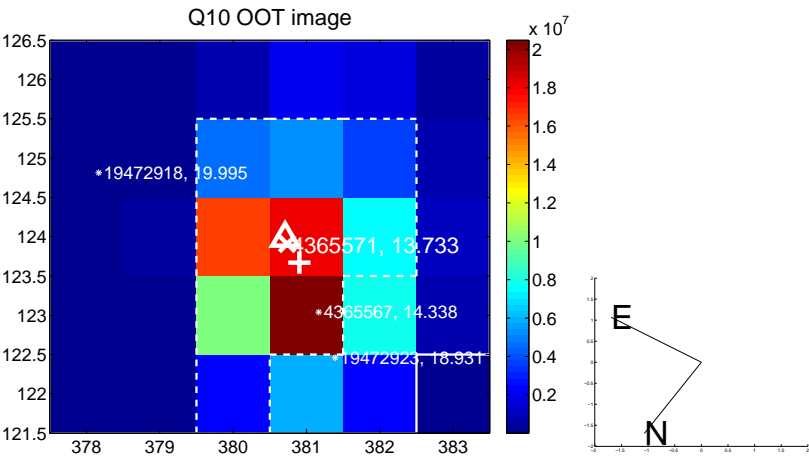
Q9 no OOT image



Q10 difference image



Q10 OOT image



Q11 no difference image



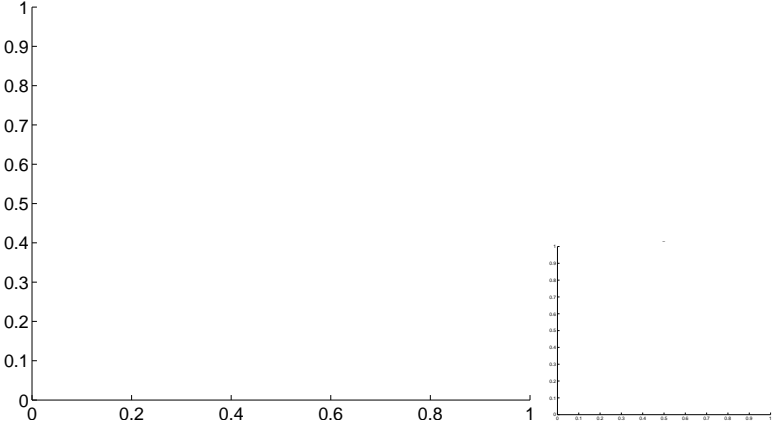
Q11 no OOT image



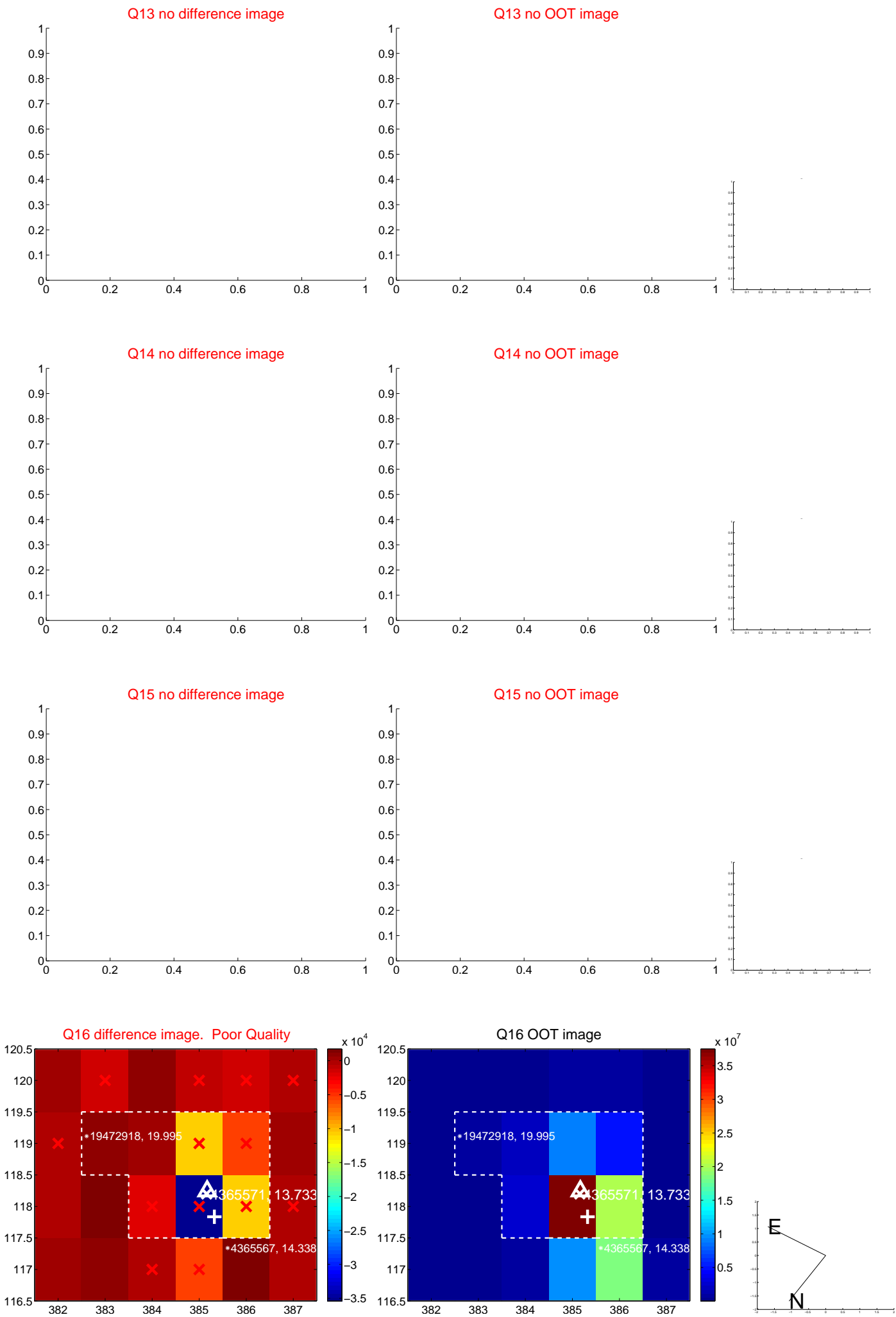
Q12 no difference image



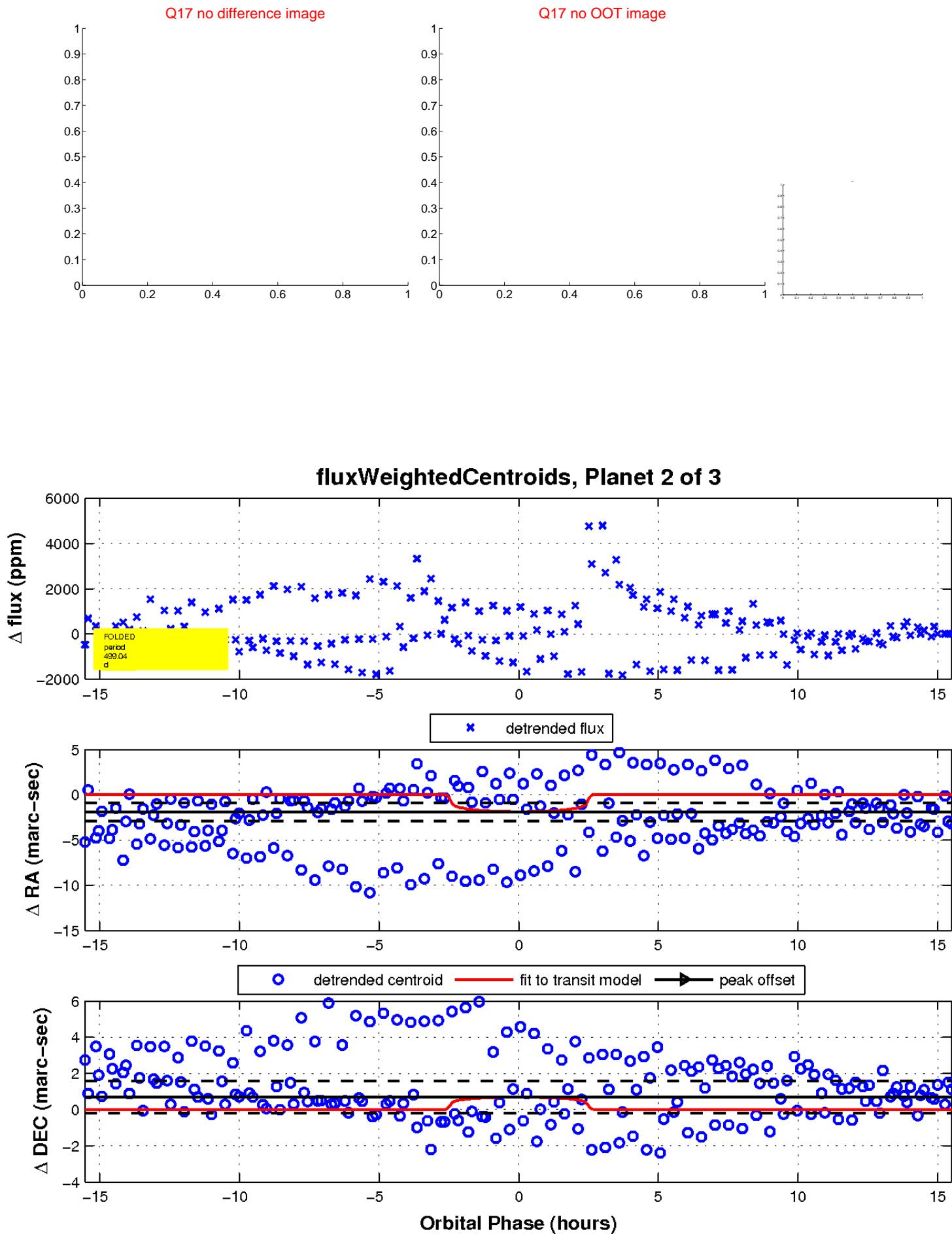
Q12 no OOT image



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

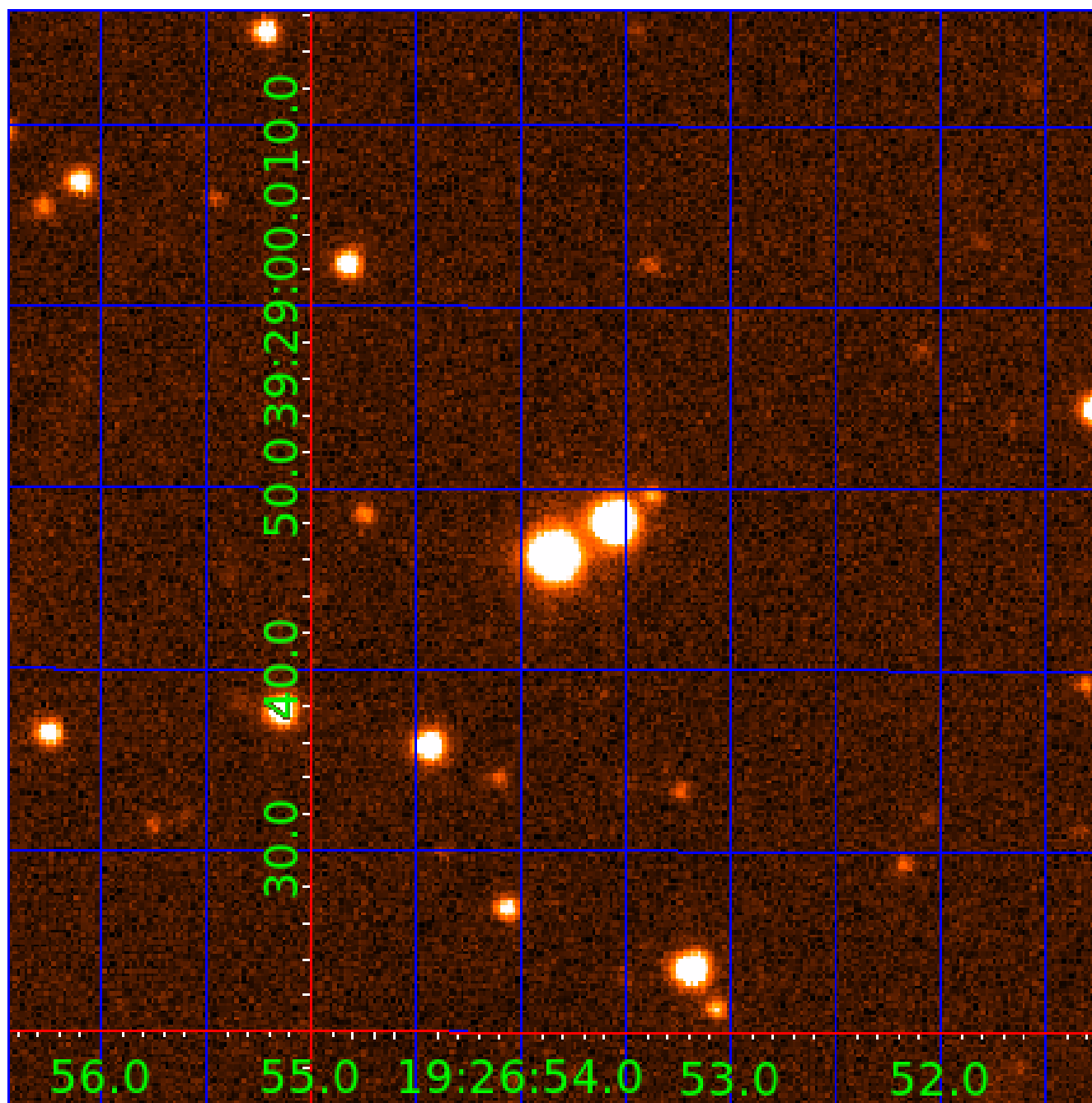


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004365571

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})
004365571-01	OBS	No	354.743213	297.431056	601.0	3.453	13.5	5.4	1.53	5902	3.96	2.67
004365571-02	OBS	No	499.040417	498.611233	929.8	5.195	13.0	6.5	1.53	5902	4.88	1.70
004365571-03	OBS	No	322.755901	372.232309	735.2	3.296	10.0	7.2	1.53	5902	5.28	3.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004365571-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004365571-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_FEW_DIFFS
004365571-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_TRACKER—ALL_TRANS_CHASES—MOD_TER_DV—INCONSISTENT_TRANS—CENT_KIC_POS

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

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

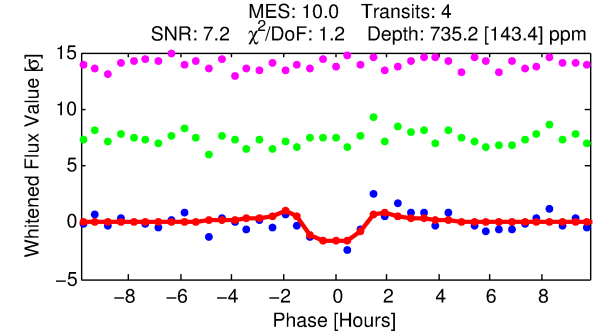
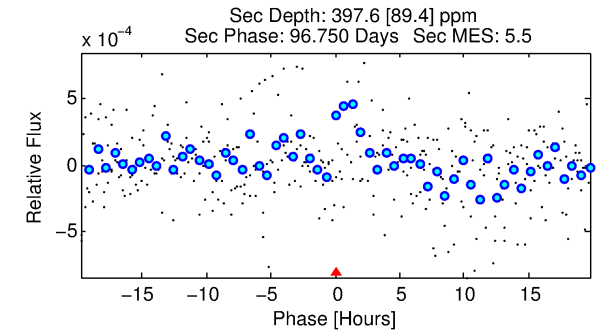
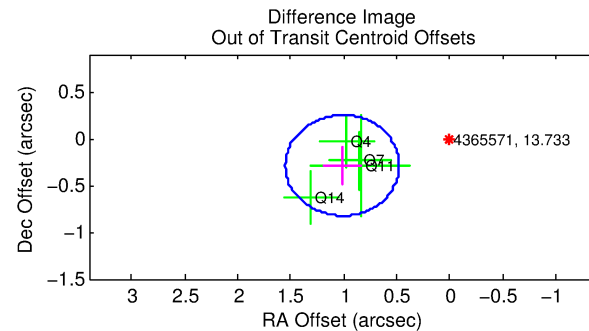
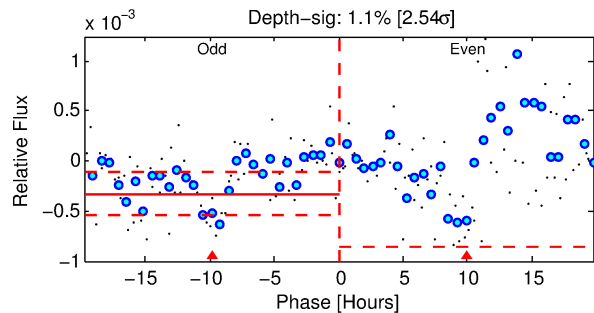
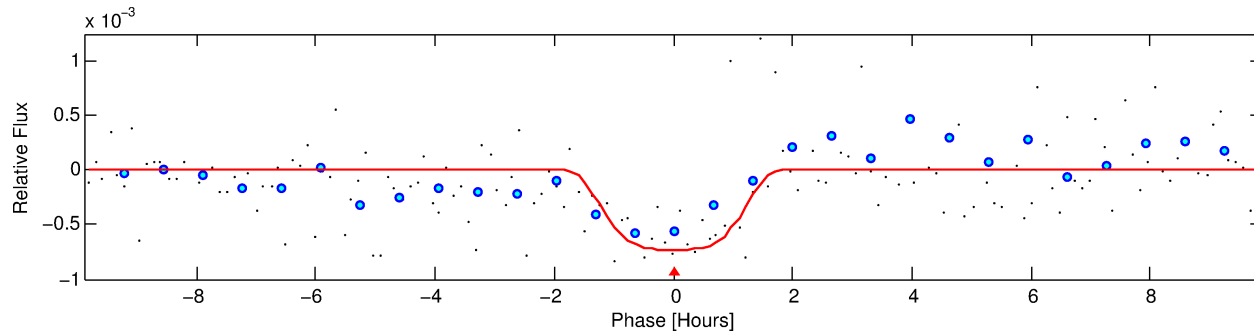
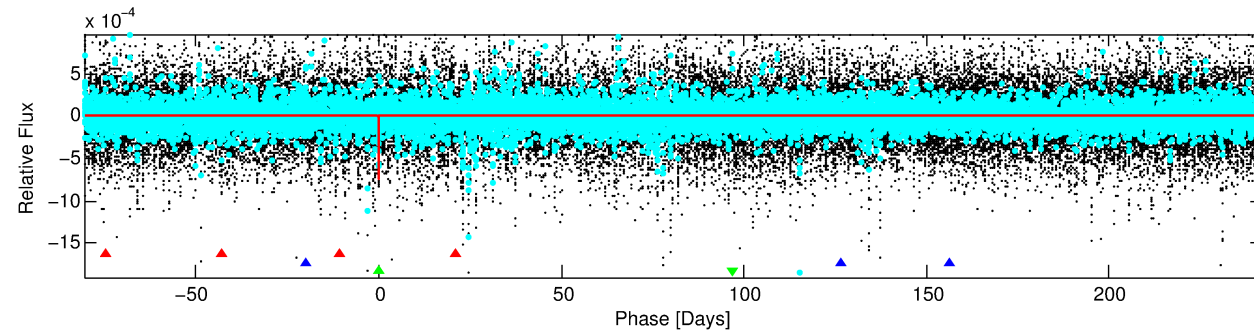
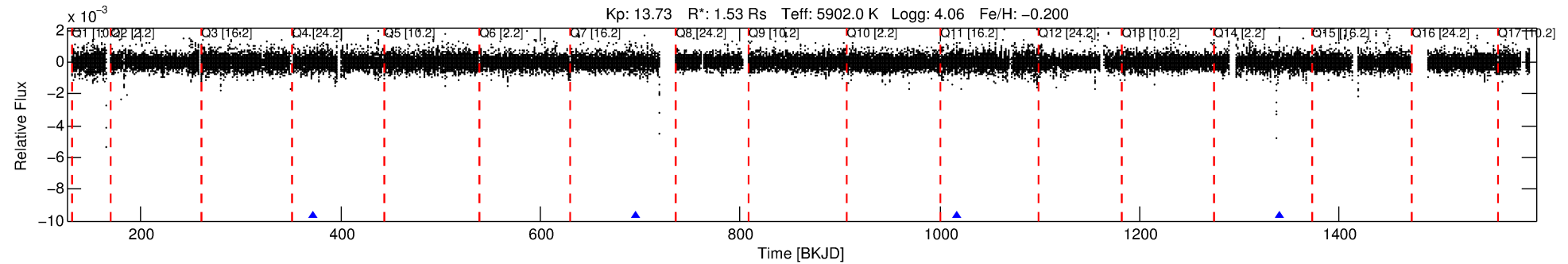
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004365571-03

No Significant Match Found

DV One-Page Summary

KIC: 4365571 Candidate: 3 of 3 Period: 322.756 d



DV Fit Results:

Period = 322.75590 [0.00399] d
Epoch = 372.2323 [0.0072] BKJD
Rp/R* = 0.0316 [0.0041]
a/R* = 294.79 [83.99]
b = 0.95 [0.03]
Seff = 3.03 [1.89]
Teq = 336 [53] K
Rp = 5.28 [2.11] Re
a = 0.9183 [0.3454] AU
Ag = 6617.35 [4643.86] [1.42σ]
Teffp = 4691 [425] K [10.17σ]

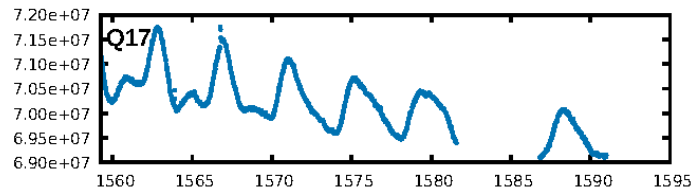
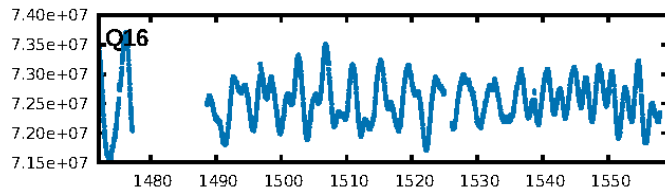
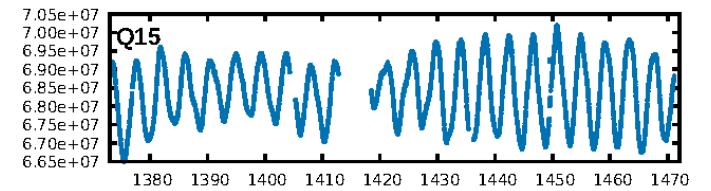
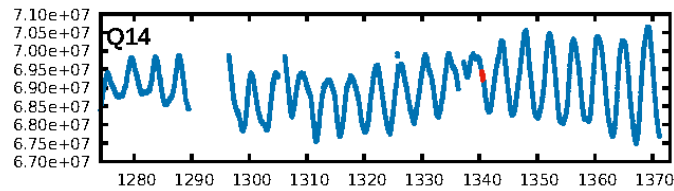
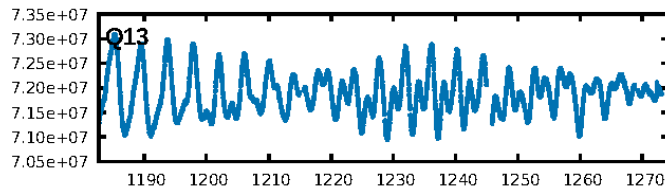
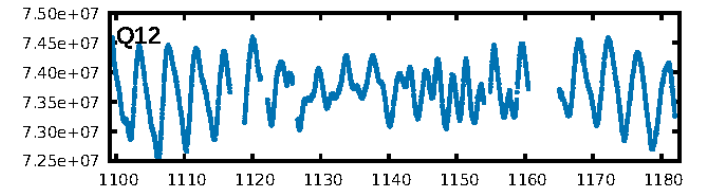
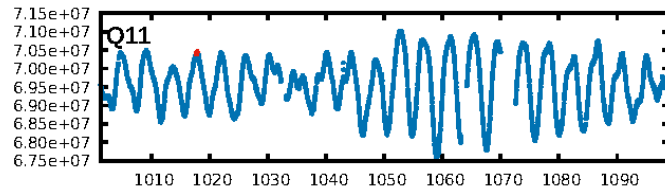
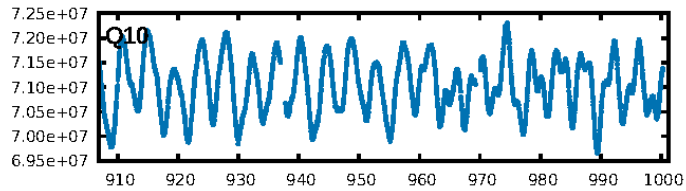
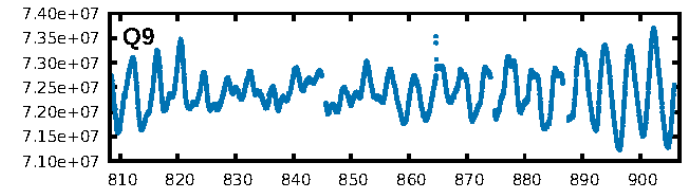
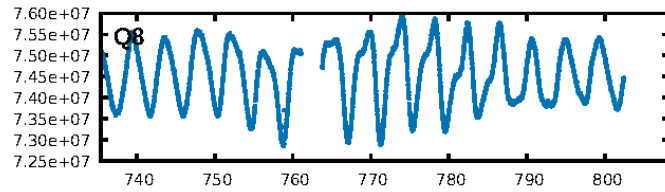
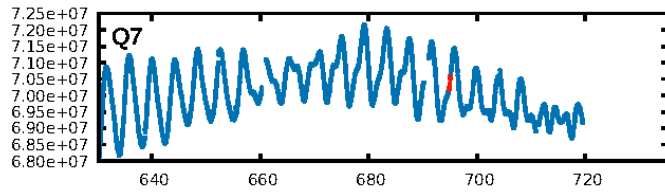
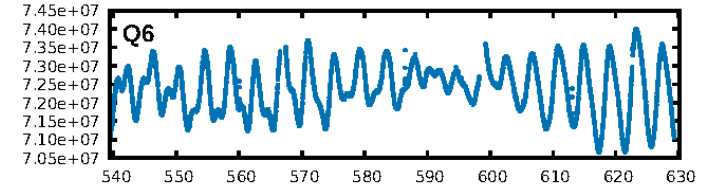
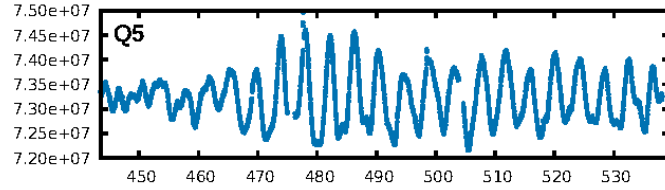
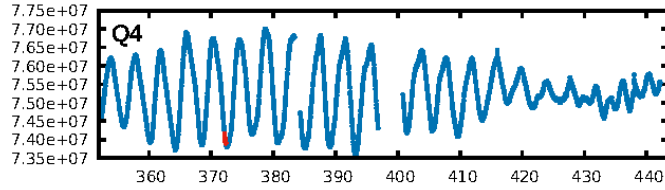
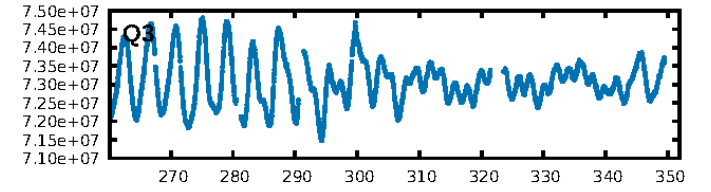
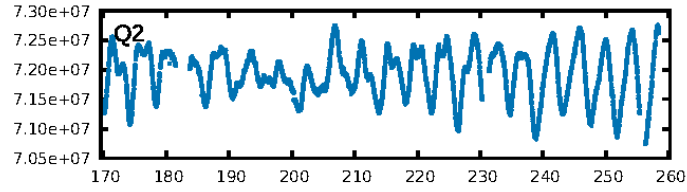
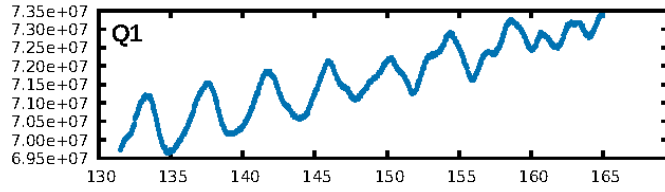
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [160.83σ]
ModelChiSquare2-sig: 9.9%
ModelChiSquareGof-sig: 94.8%
Bootstrap-pfa: 1.44e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.3497
Centroid-sig: 13.7%
Centroid-so: 0.797 arcsec [0.62σ]
OotOffset-rm: 1.051 arcsec [5.87σ]
KicOffset-rm: 0.258 arcsec [0.72σ]
OotOffset-st: 1/2/1/0 [4]
KicOffset-st: 1/2/1/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

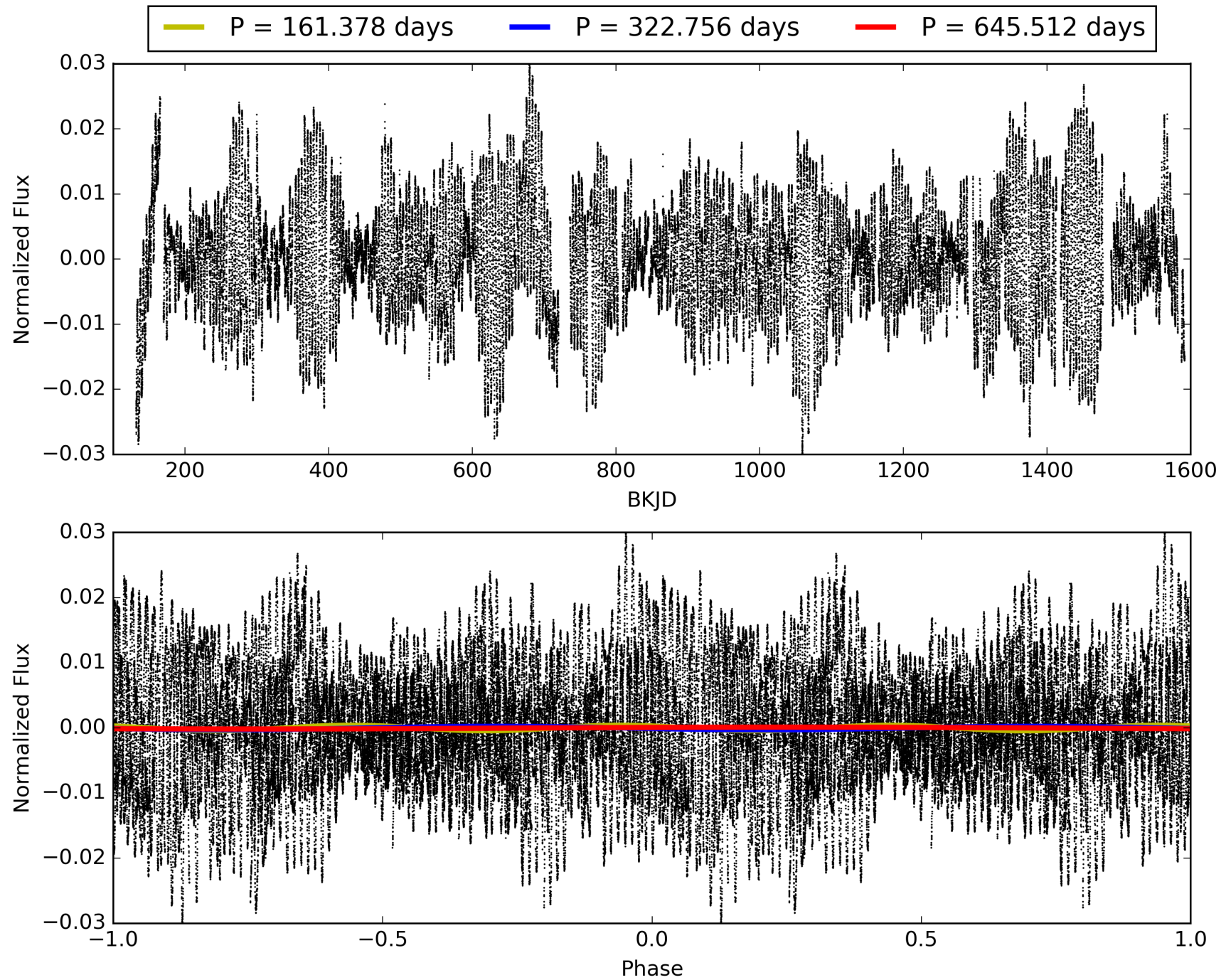
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:26:12 Z

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

TCE 004365571-03, PDC Light Curves

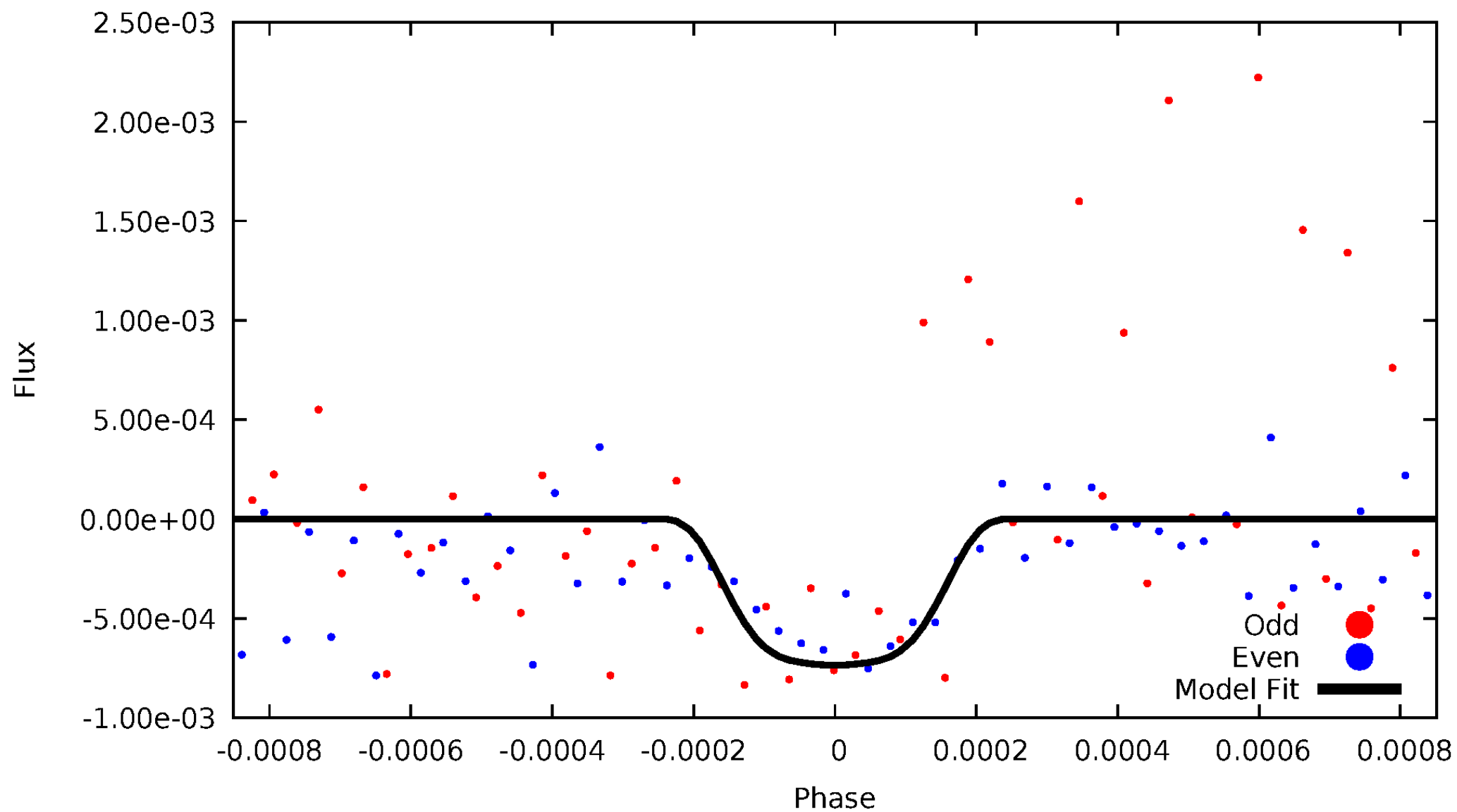


TCE 004365571-03



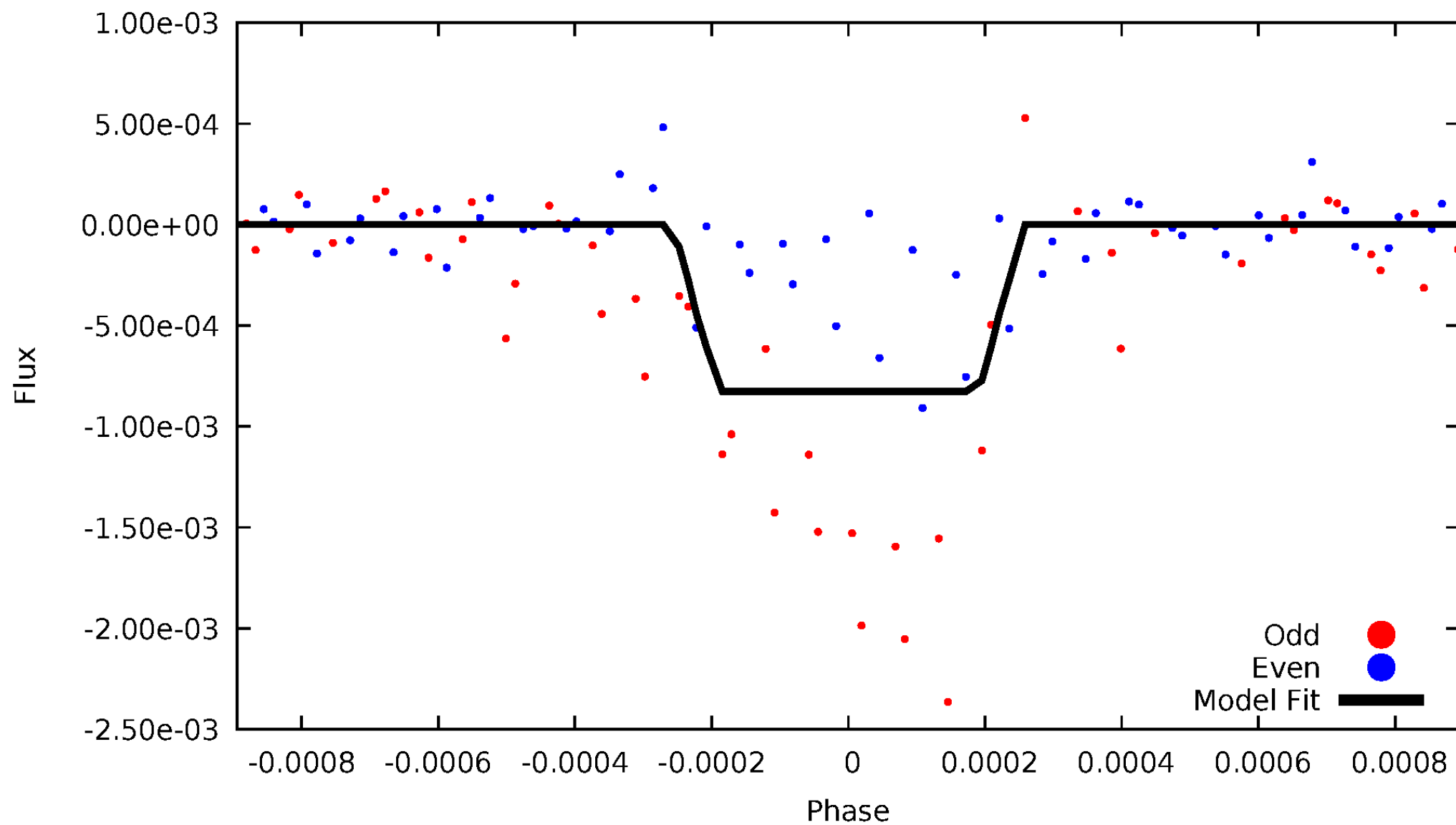
DV Odd/Even

TCE 004365571-03



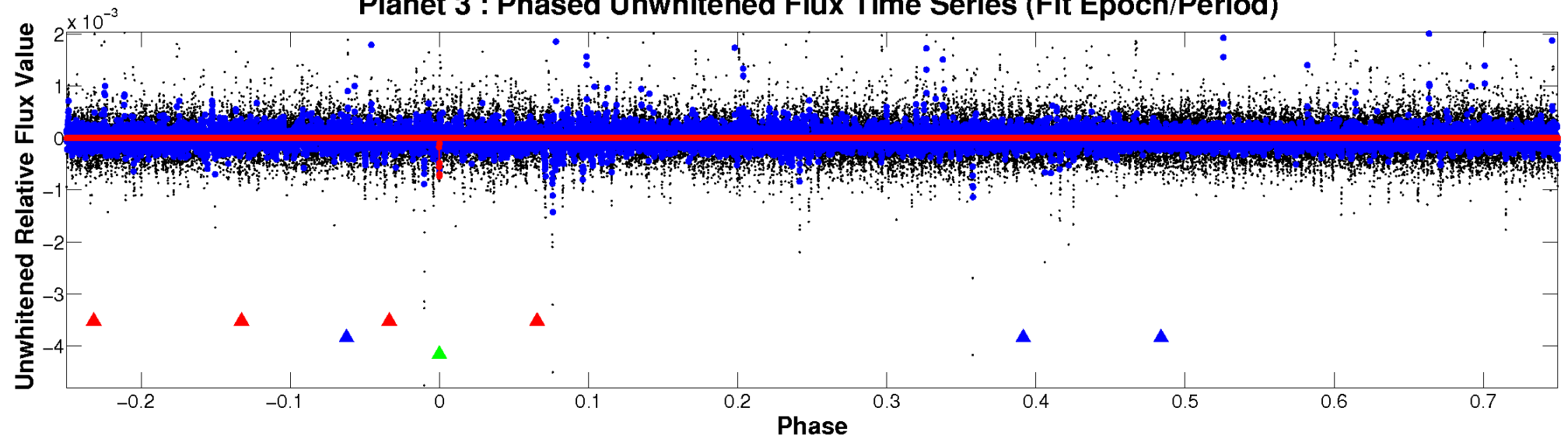
ALT Odd/Even

TCE 004365571-03

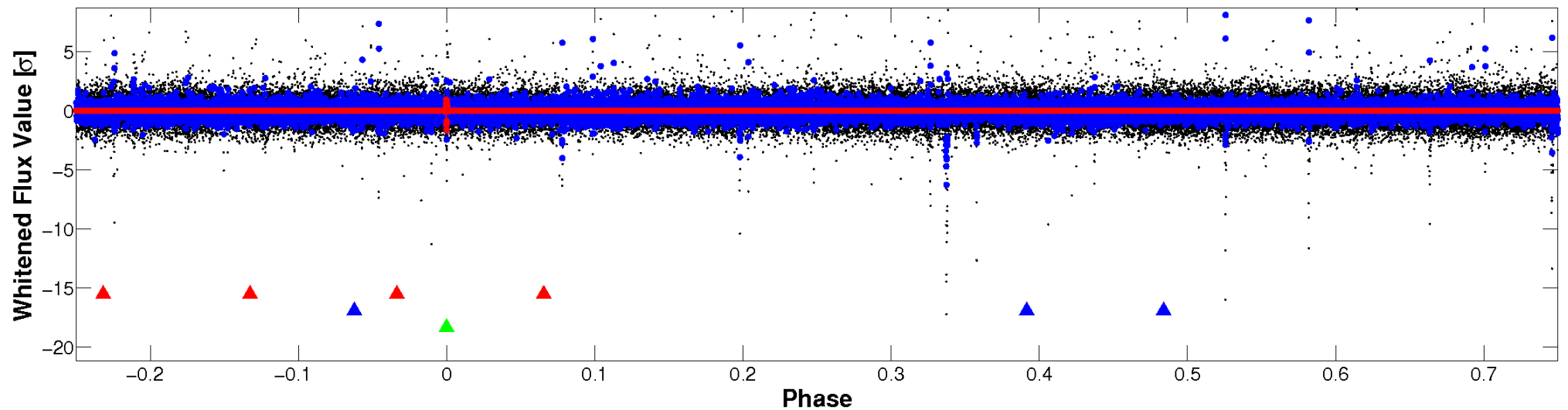


Non-Whitened Vs. Whitened Light Curve

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

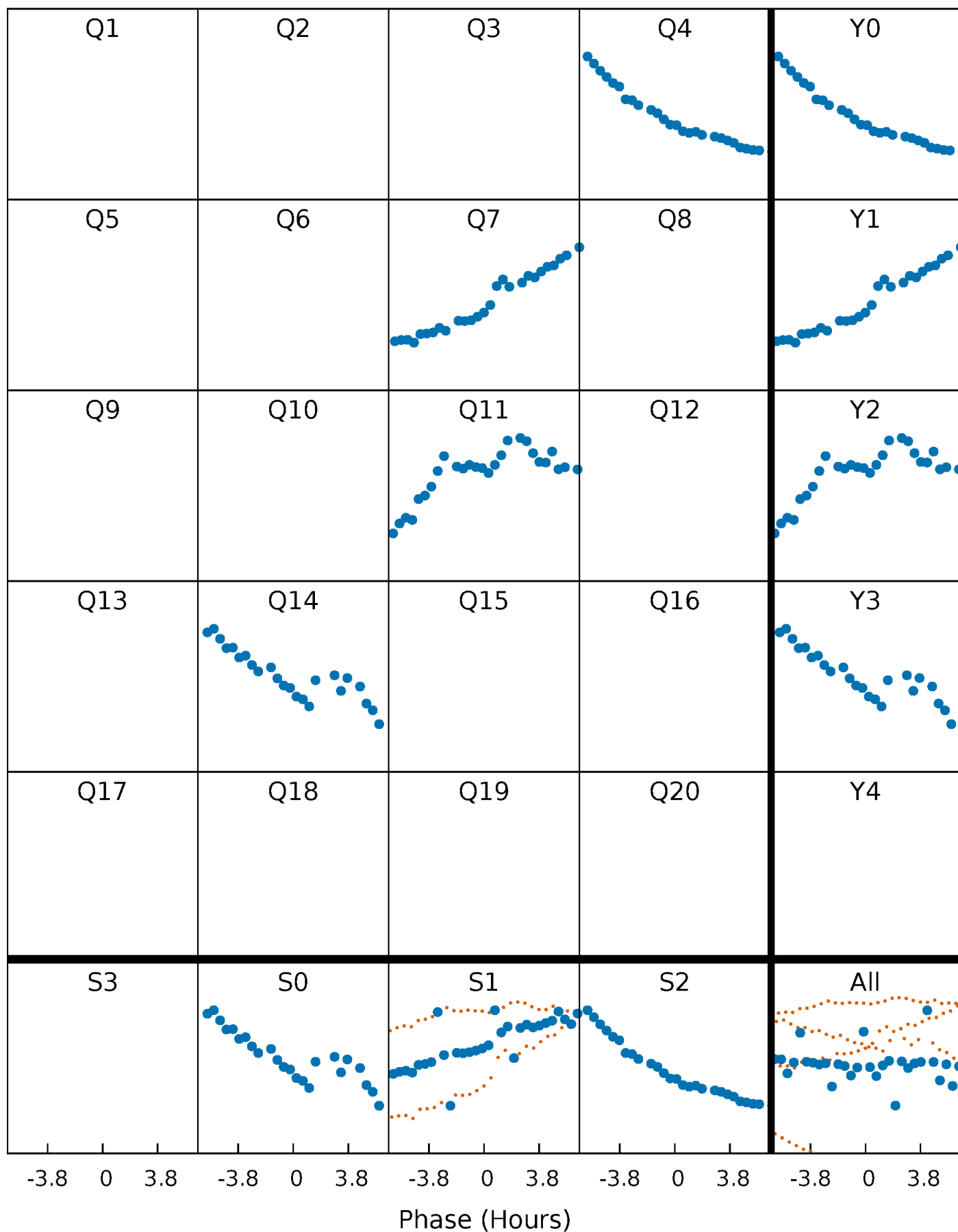


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



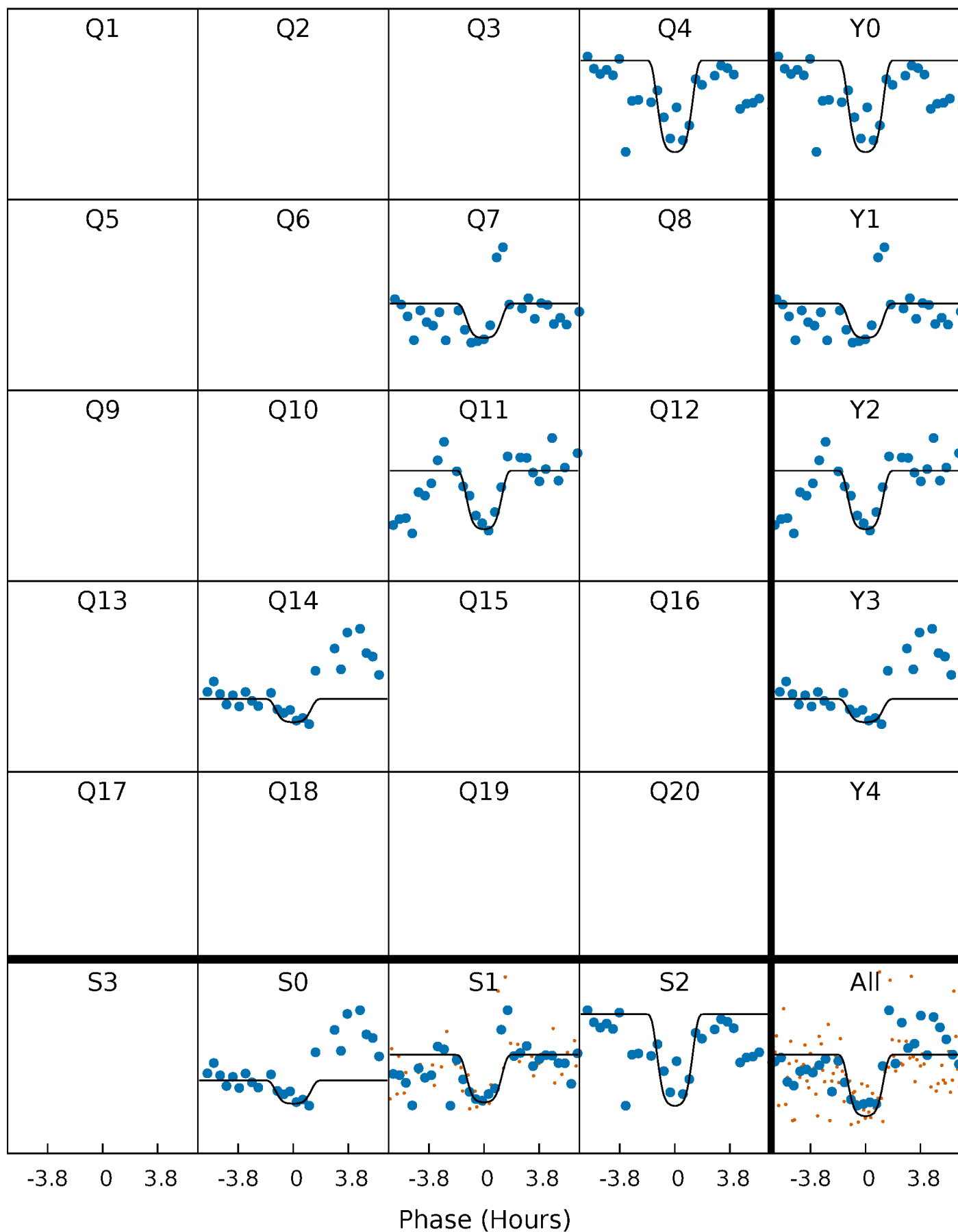
PDC Quarter-Phased Transit Curves

TCE 004365571-03 $P=322.755900$ Days $T_0=372.232309$ (BKJD)



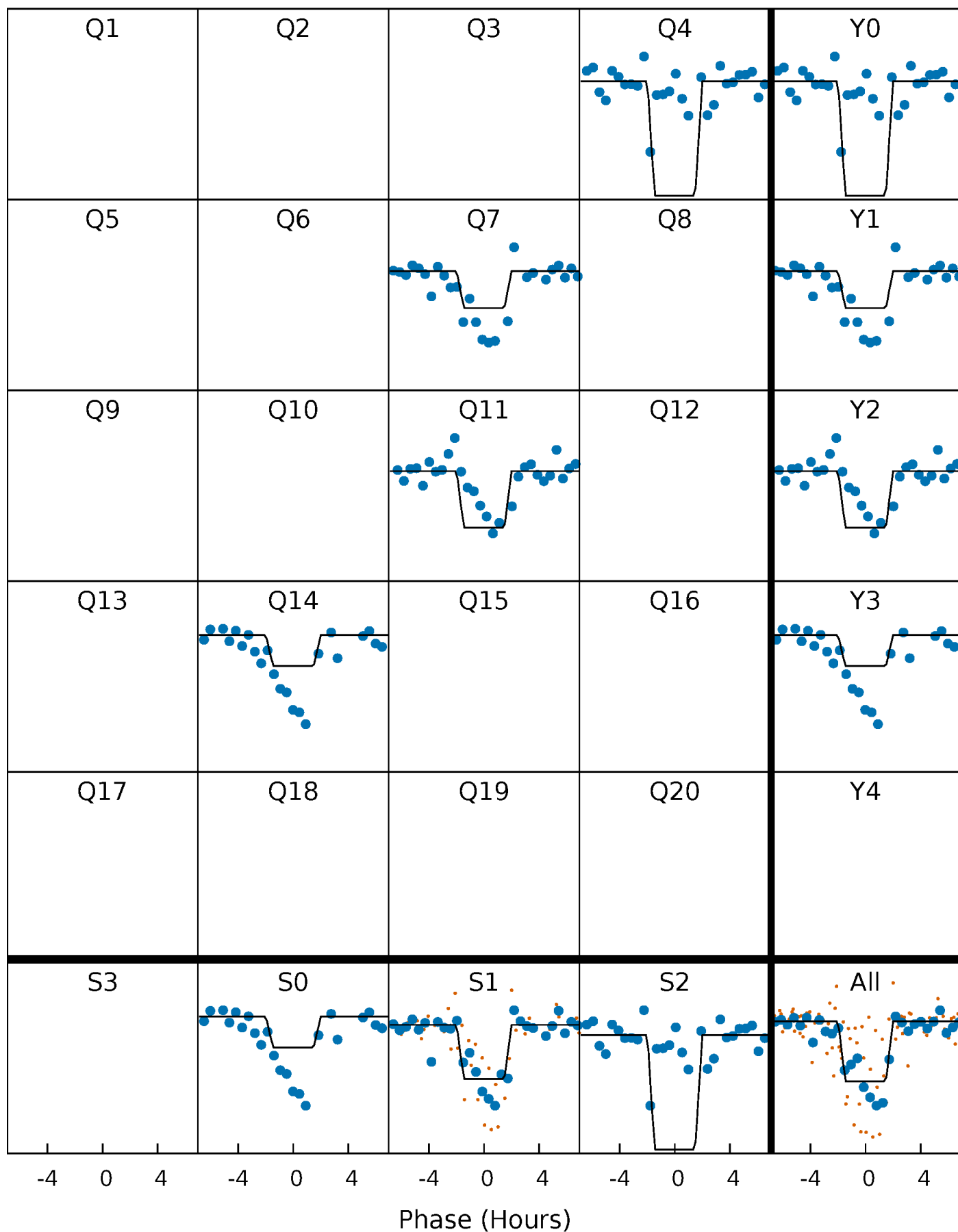
DV Quarter-Phased Transit Curves

TCE 004365571-03 $P=322.755900$ Days $T_0=372.232309$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

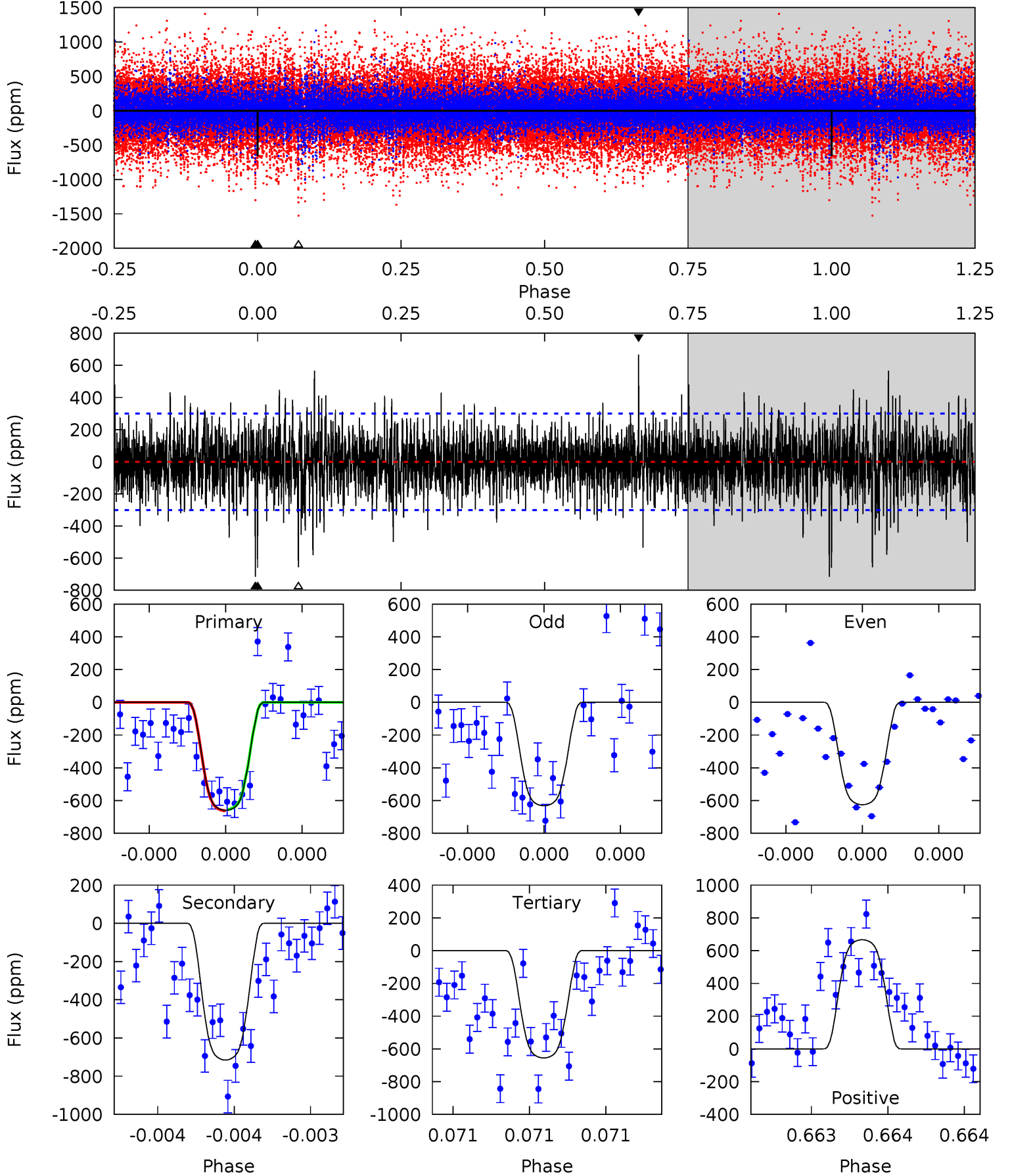
TCE 004365571-03 P=322.779070 Days $T_0=372.166046$ (BKJD)



DV Model-Shift Uniqueness Test

004365571-03, P = 322.755900 Days, E = 49.476409 Days

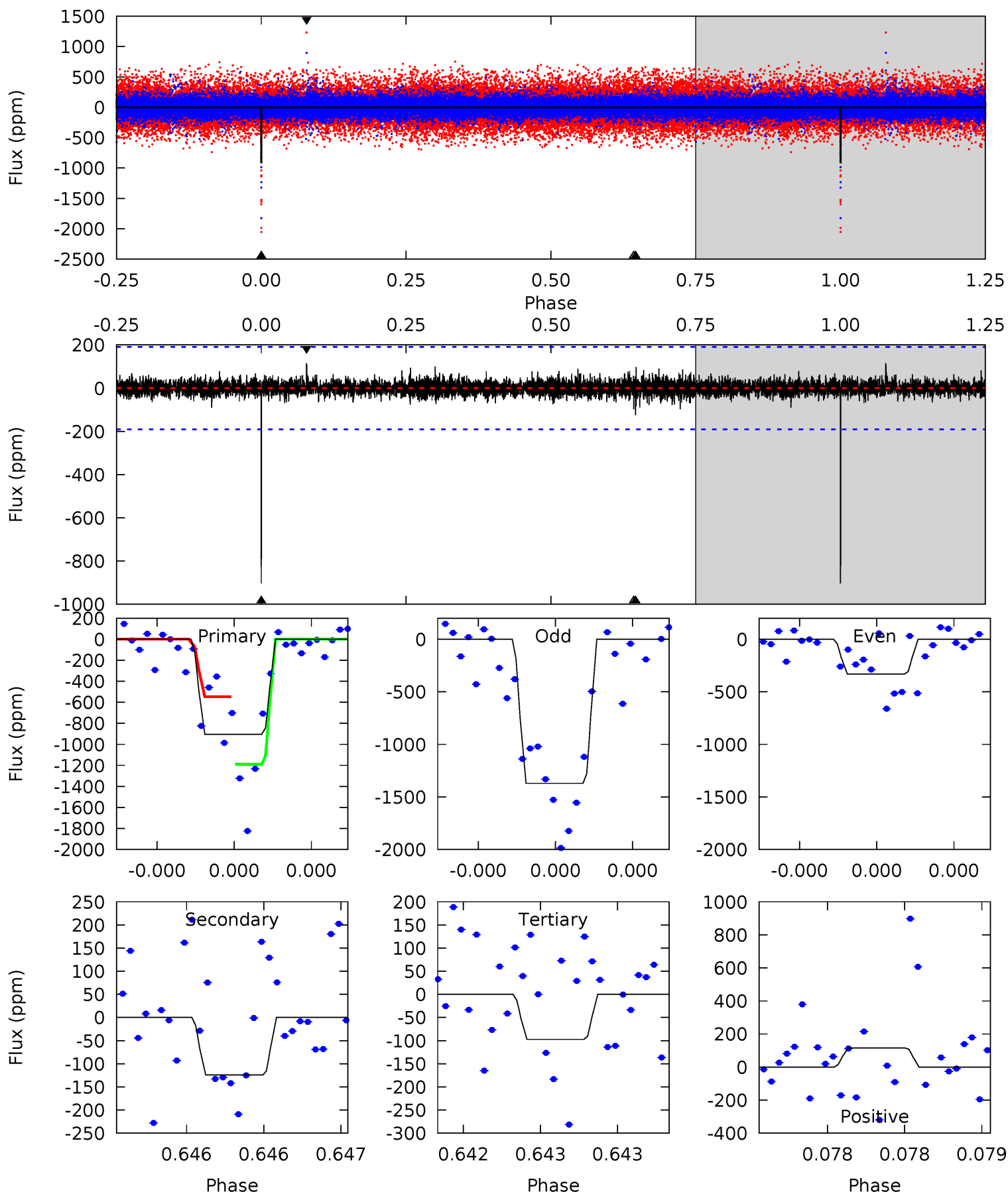
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	13.3	12.2	12.4	5.58	3.49	2.23	0.08	-0.13	1.12	0.91	0.06	0.95	0.48	0.07



Alt Model-Shift Uniqueness Test

004365571-03, P = 322.779070 Days, E = 49.386976 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.4	3.64	2.84	3.37	5.58	3.49	0.59	23.6	23.1	0.79	0.27	16.7	0.99	0.11	9.27



Stellar Parameters For KIC 004365571

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5902^{+177}_{-159}	$4.063^{+0.364}_{-0.156}$	$-0.200^{+0.300}_{-0.300}$	$1.533^{+0.386}_{-0.579}$	$0.992^{+0.142}_{-0.129}$	$0.388^{+1.107}_{-0.174}$
	+3%/-3%	+9%/-4%	+150%/-150%	+25%/-38%	+14%/-13%	+286%/-45%
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 004365571-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-716 ± 54	$5.11^{+1.14}_{-1.13}$	466^{+36}_{-48}	5473^{+390}_{-323}	12627^{+8119}_{-4062}
Alt.	-124 ± 34	$4.67^{+1.25}_{-1.15}$	466^{+36}_{-52}	3988^{+334}_{-281}	2694^{+2113}_{-1160}

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

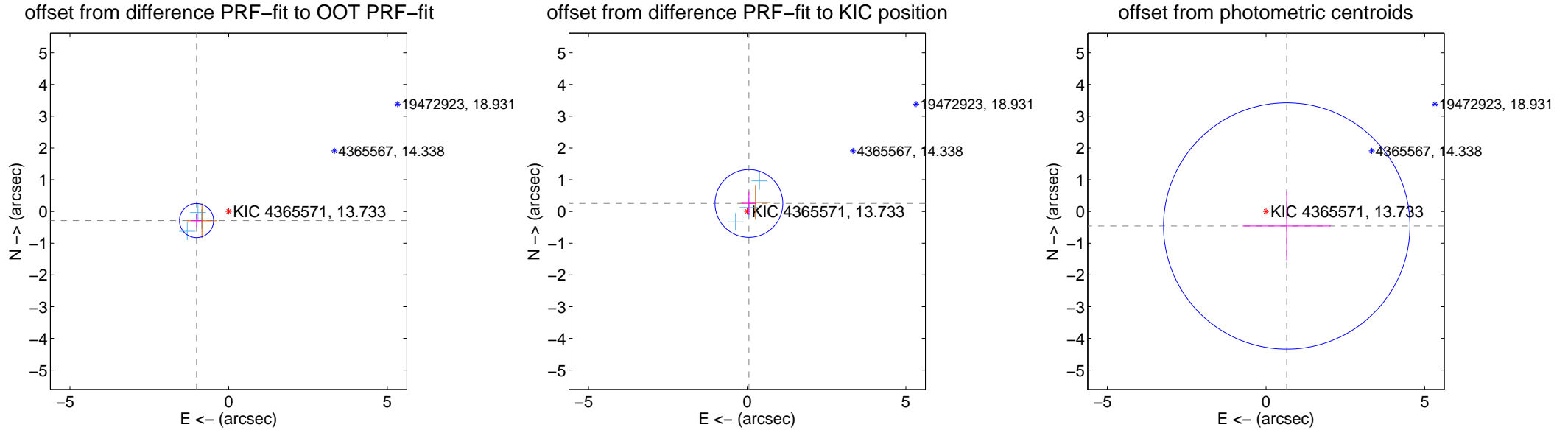
DV Centroid Data

Supplemental centroid analysis for 004365571-03. Kepler magnitude: 13.73. Transit SNR 7.19

There are 3 quarters with good PRF difference image offsets

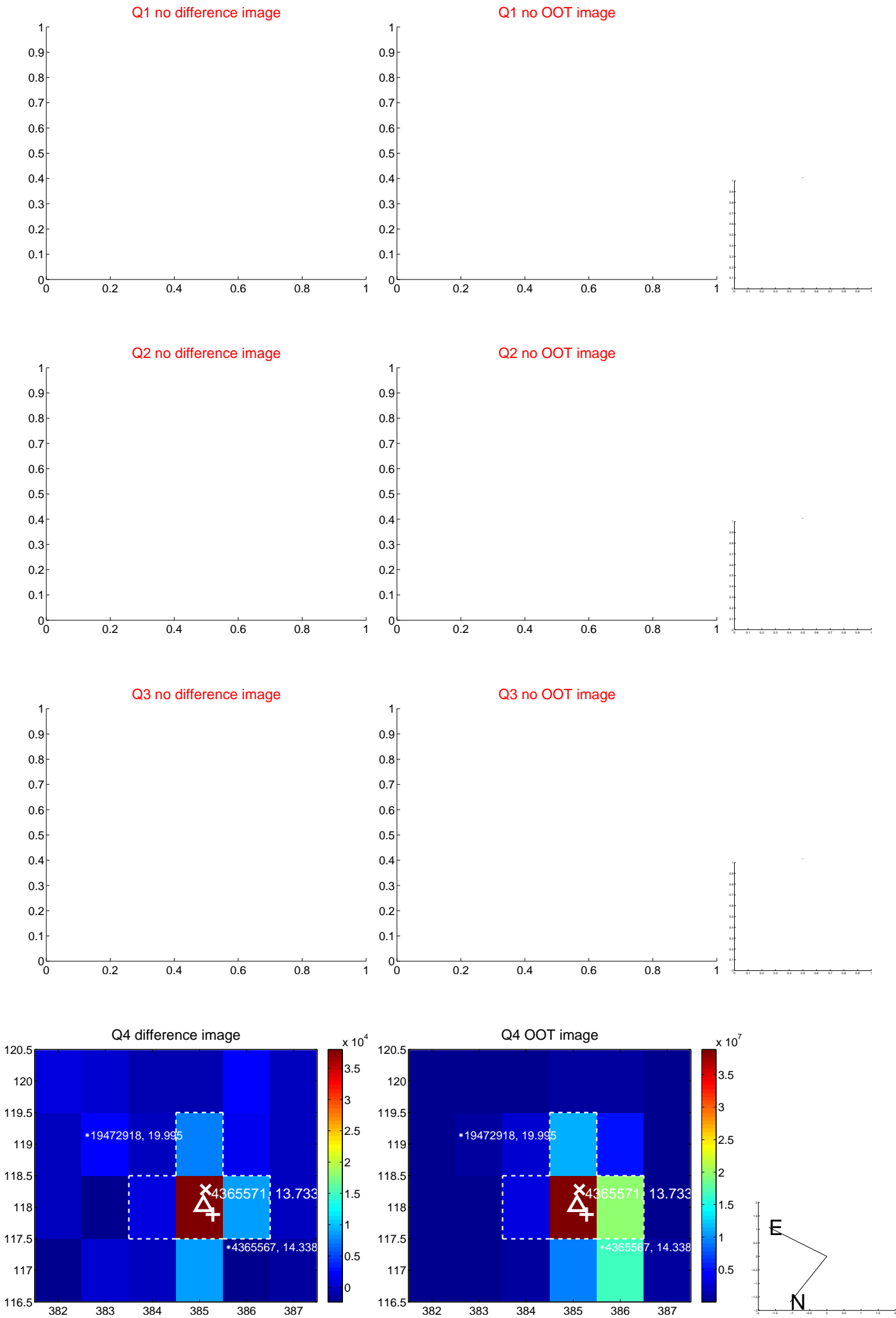
The direct PRF centroid is offset from the target star catalog position by about 0.98 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.051 ± 0.179	5.87	1.011 ± 0.177	-0.287 ± 0.197
PRF-fit source offset from KIC position	0.258 ± 0.356	0.72	-0.054 ± 0.218	0.253 ± 0.361
photometric centroid source offset	0.80 ± 1.29	0.62	-0.65 ± 1.39	-0.46 ± 1.08

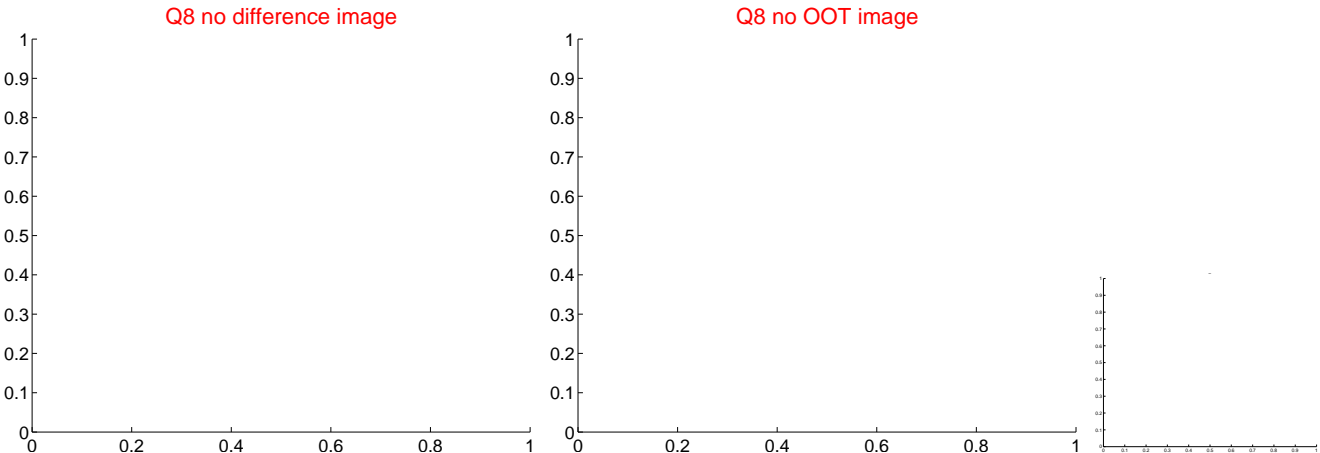
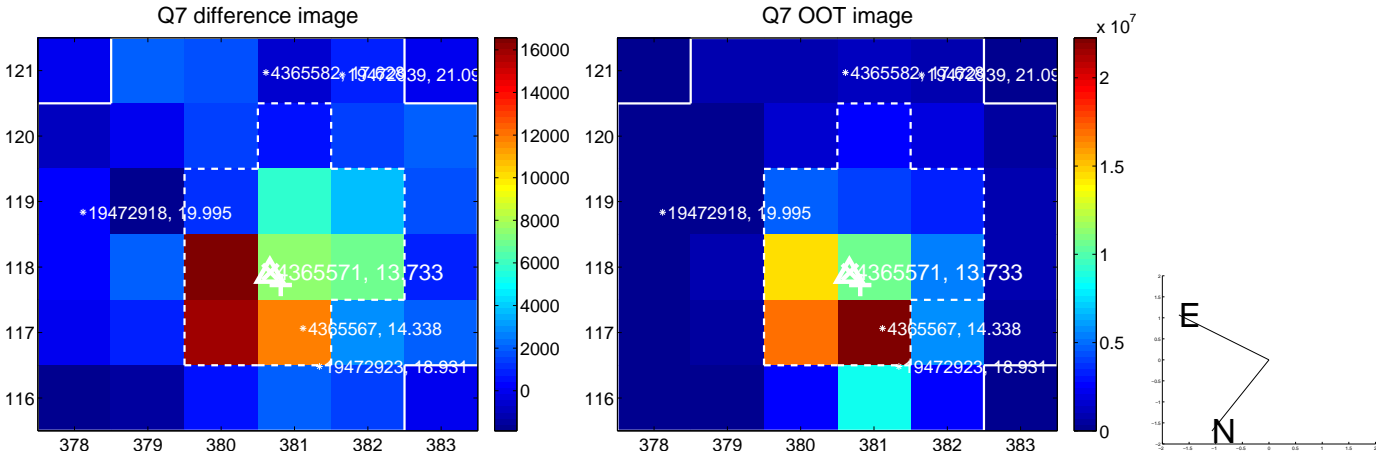
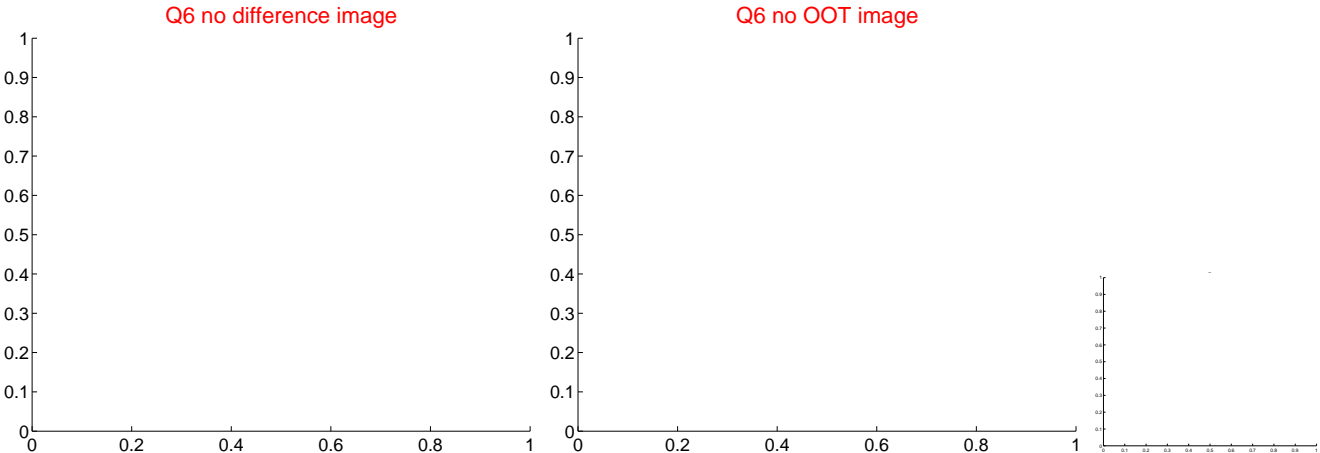
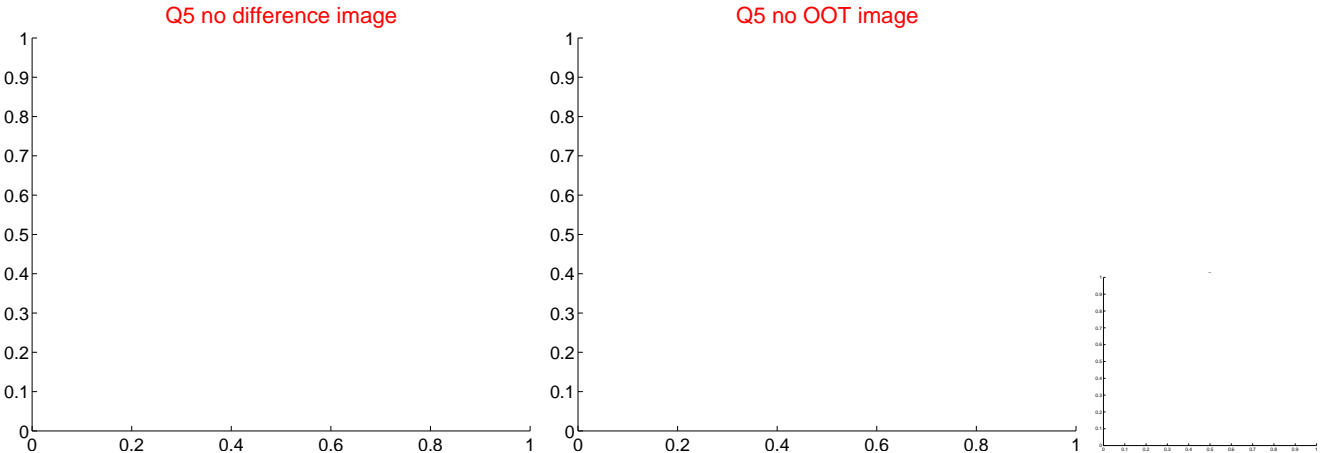


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

Q9 no difference image



Q9 no OOT image



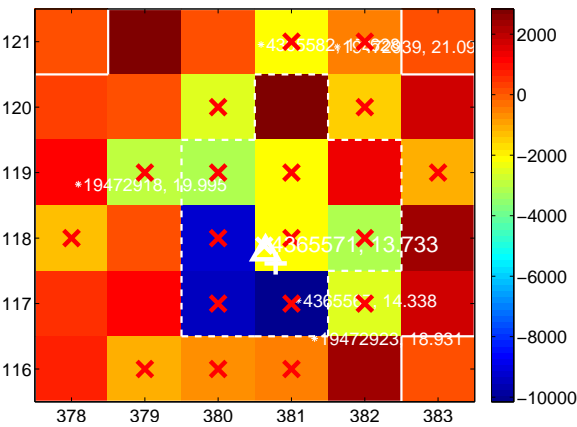
Q10 no difference image



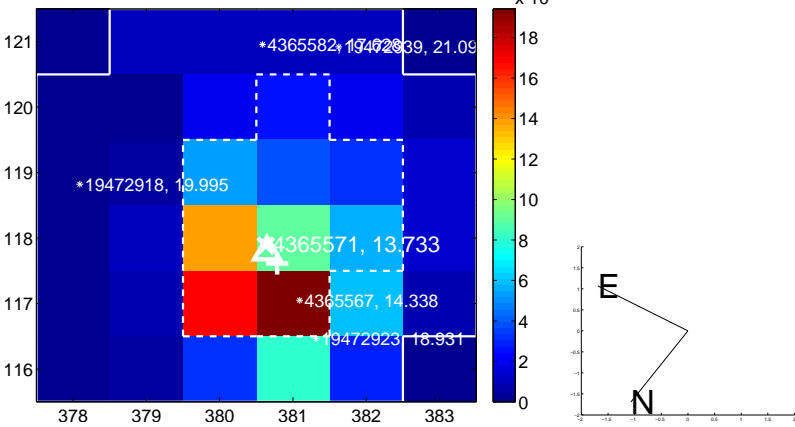
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image

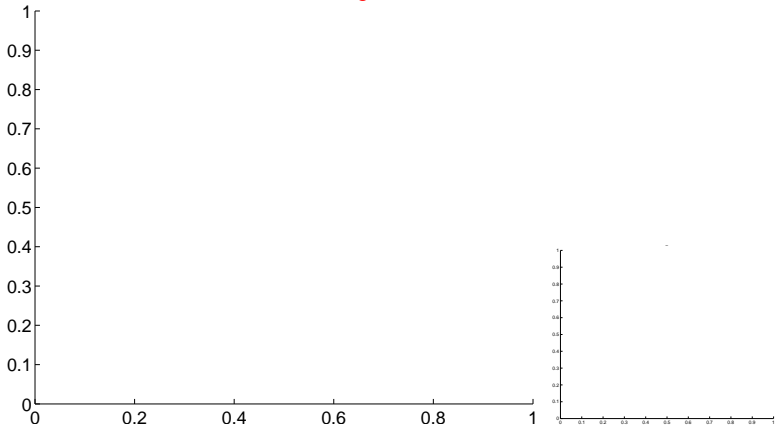


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

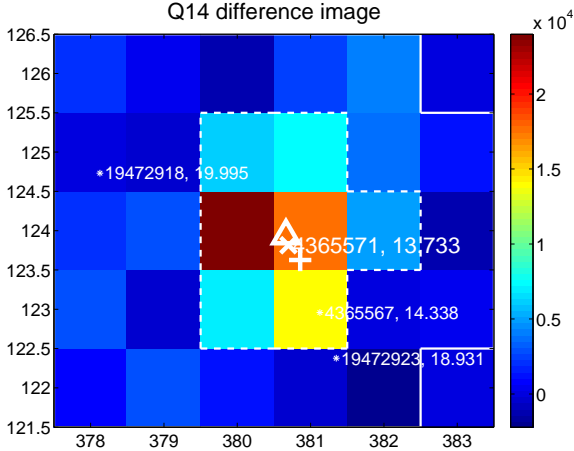
Q13 no difference image



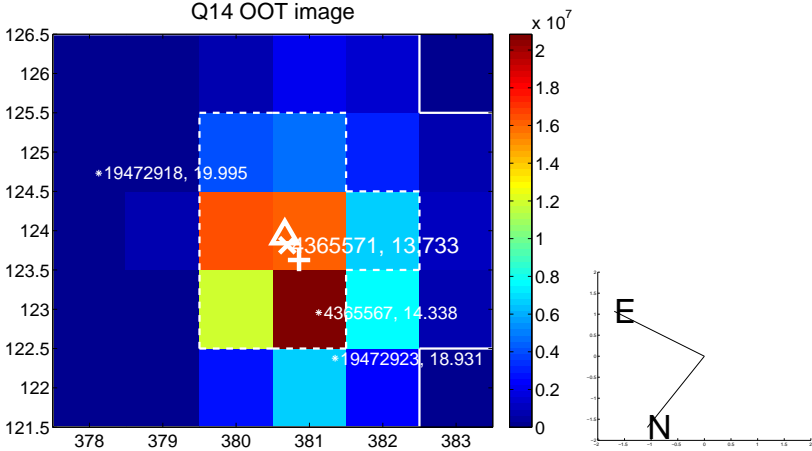
Q13 no OOT image



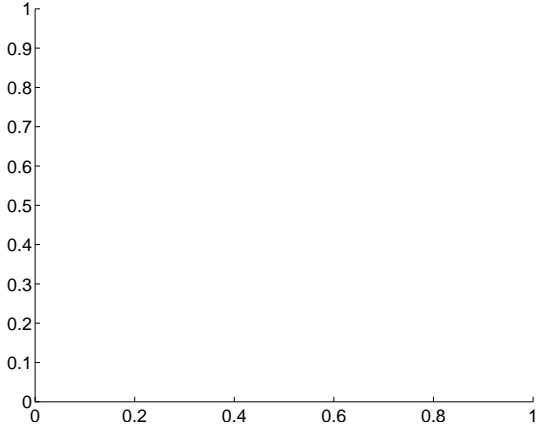
Q14 difference image



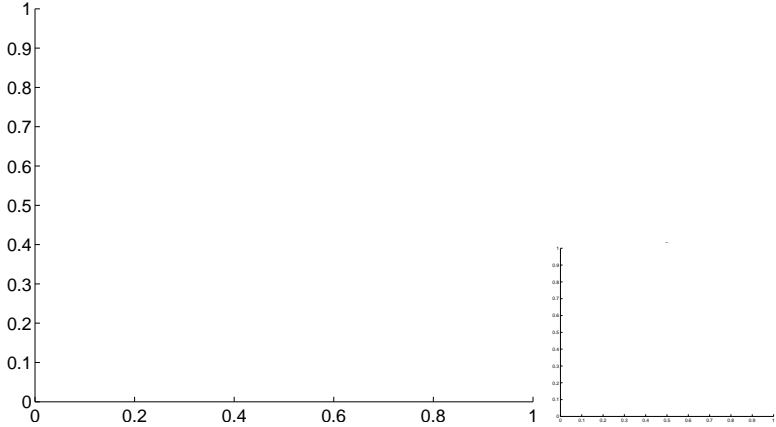
Q14 OOT image



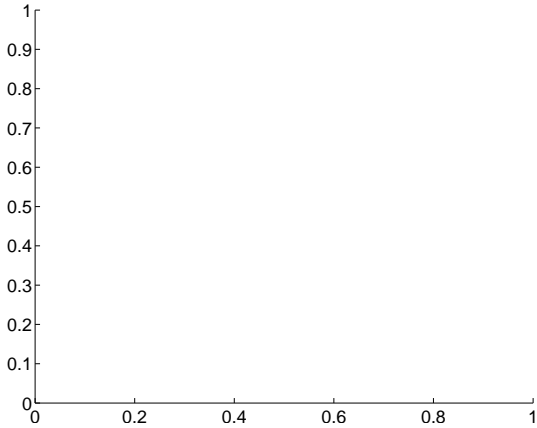
Q15 no difference image



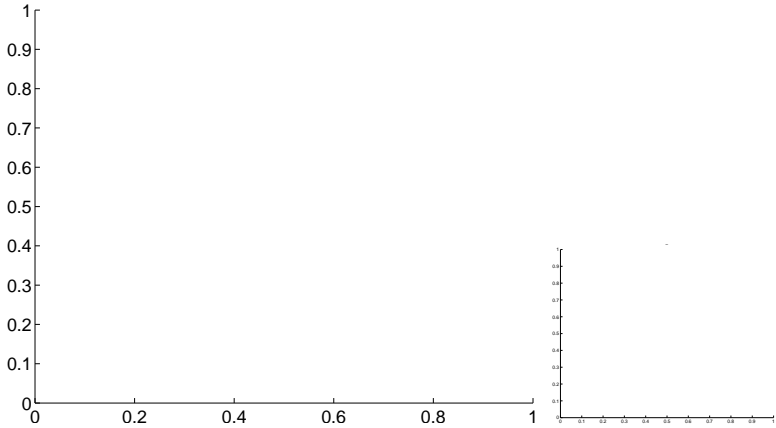
Q15 no OOT image



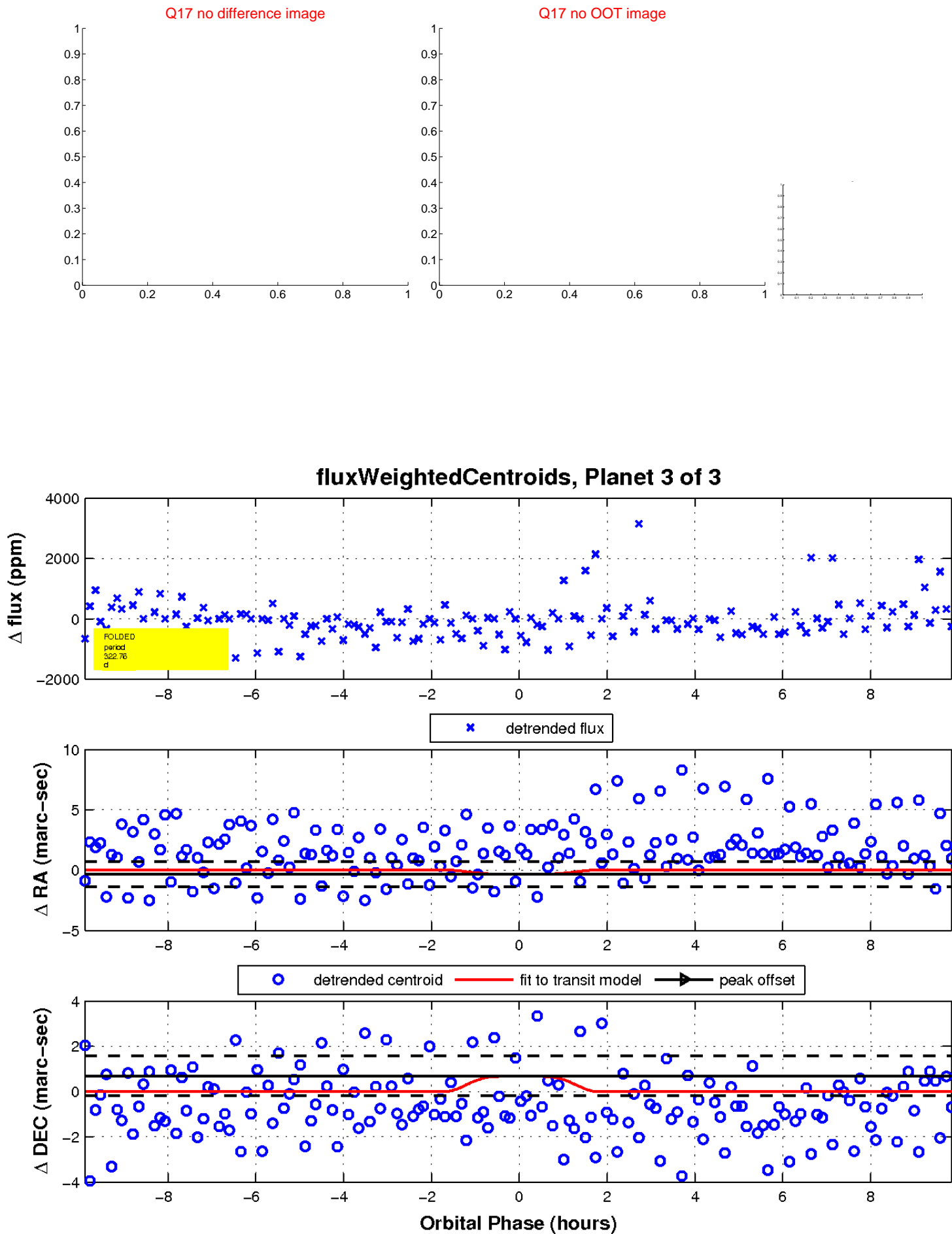
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

