

KIC 004919145

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})
004919145-01	OBS	No	292.413877	135.405267	547.5	4.067	15.7	4.9	1.00	5780	2.38	1.34
004919145-02	OBS	No	510.172288	437.593998	852.3	3.134	11.6	9.4	1.00	5780	3.12	0.64
004919145-03	OBS	No	506.309891	498.115265	994.1	5.293	15.6	7.1	1.00	5780	3.21	0.65
004919145-04	OBS	No	597.035814	360.095835	757.3	6.781	12.9	5.8	1.00	5780	2.72	0.52
004919145-05	OBS	No	319.764605	395.386457	700.3	2.487	10.2	8.2	1.00	5780	2.88	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919145-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
004919145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

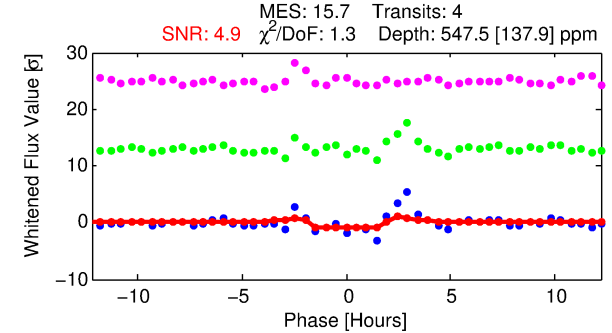
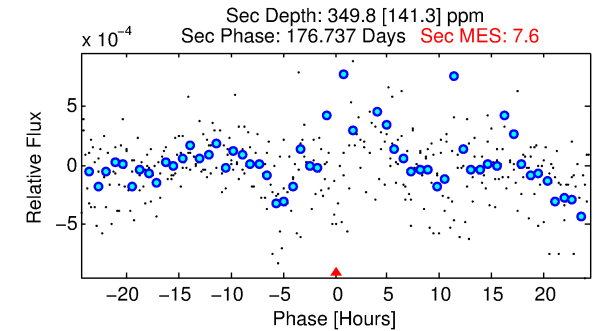
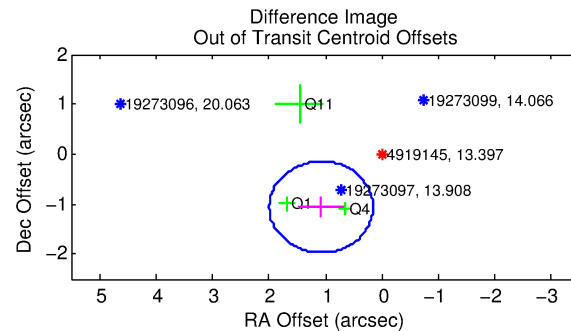
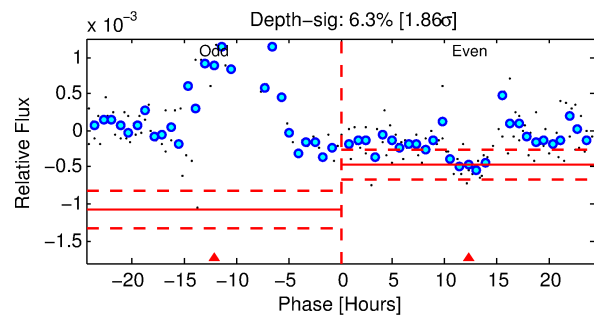
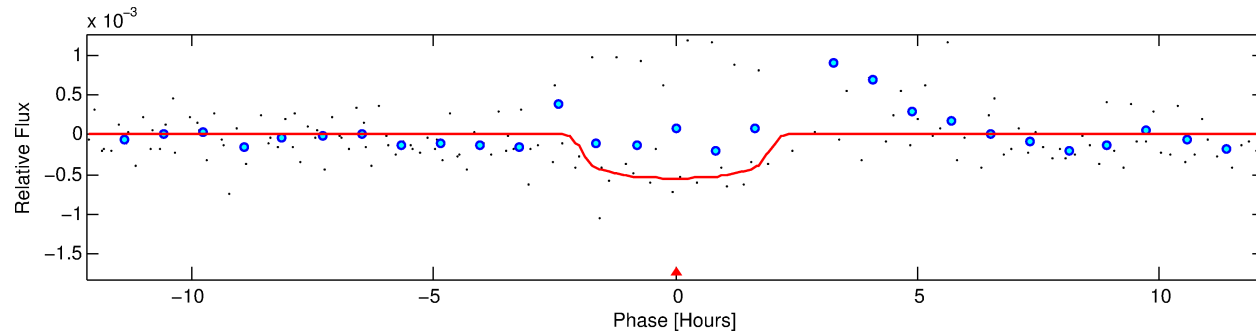
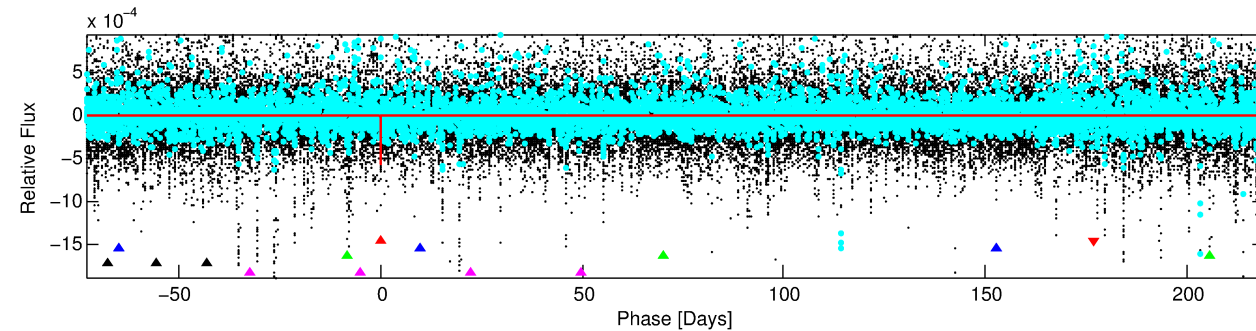
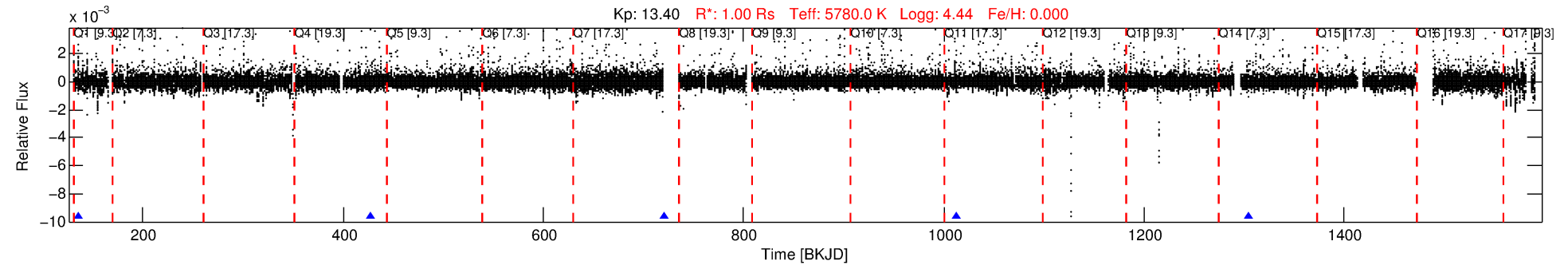
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919145-01

No Significant Match Found

DV One-Page Summary

KIC: 4919145 Candidate: 1 of 5 Period: 292.414 d



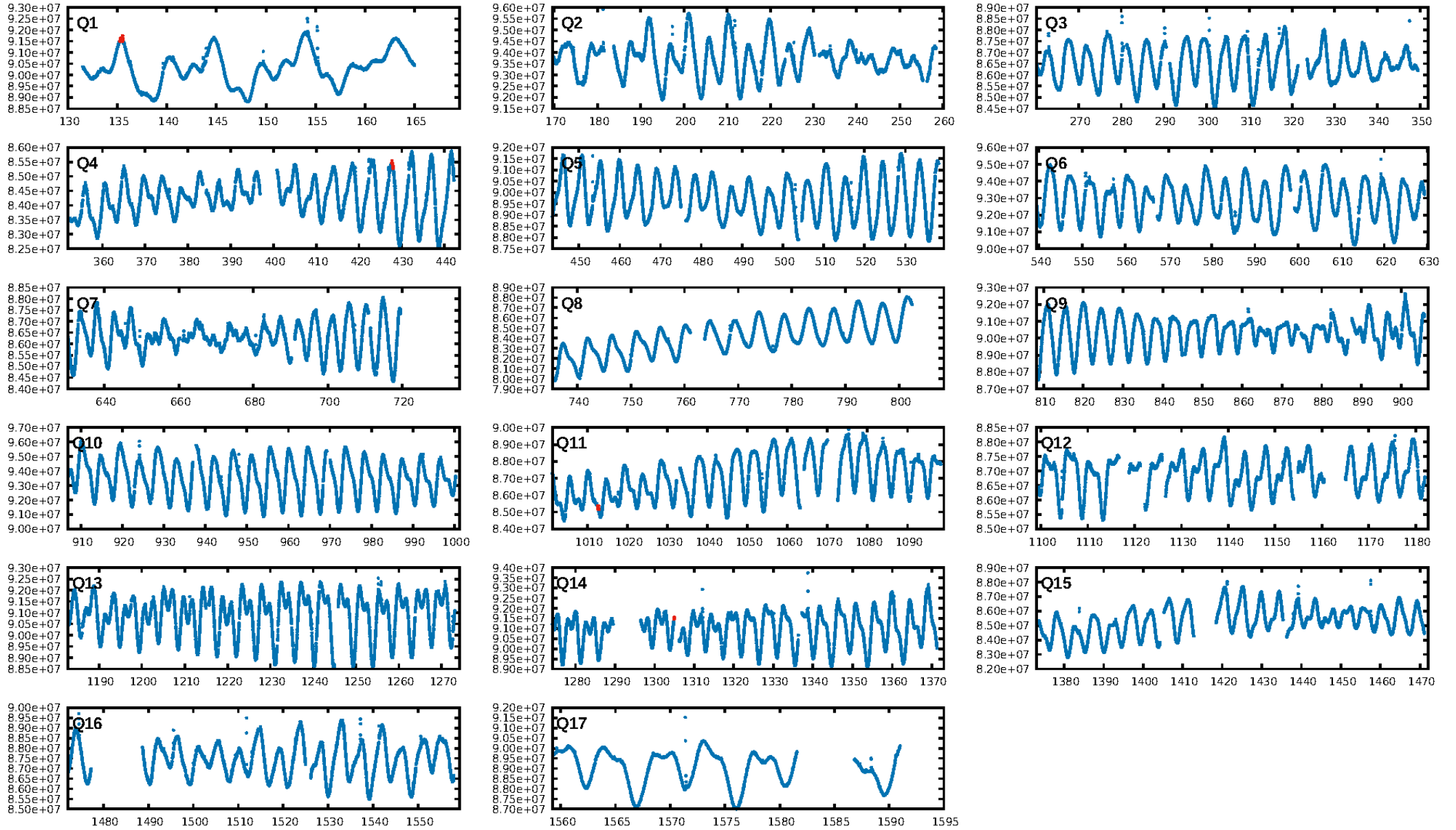
DV Fit Results:

Period = 292.41388 [0.00451] d
Epoch = 135.4053 [0.0098] BKJD
 $R_p/R^* = 0.0219$ [0.0456]
 $a/R^* = 495.62$ [4482.46]
 $b = 0.48$ [14.65]
 $\text{Seff} = 1.34$ [0.00]
 $T_{\text{eq}} = 275$ [0] K
 $R_p = 2.38$ [4.98] R_e
 $a = 0.8624$ [0.0000] AU
 $A_g = 25165.80$ [105582.01] [0.24 σ]
 $T_{\text{eff}} = 5347$ [5608] K [0.90 σ]

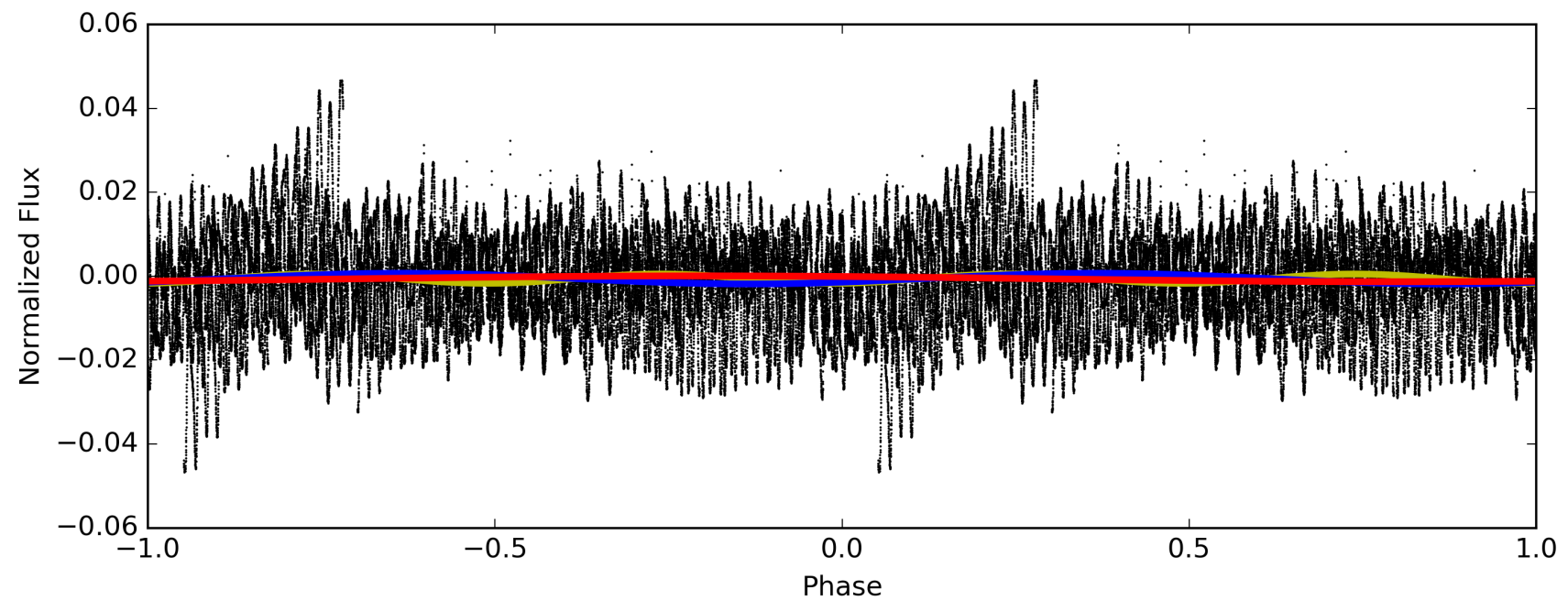
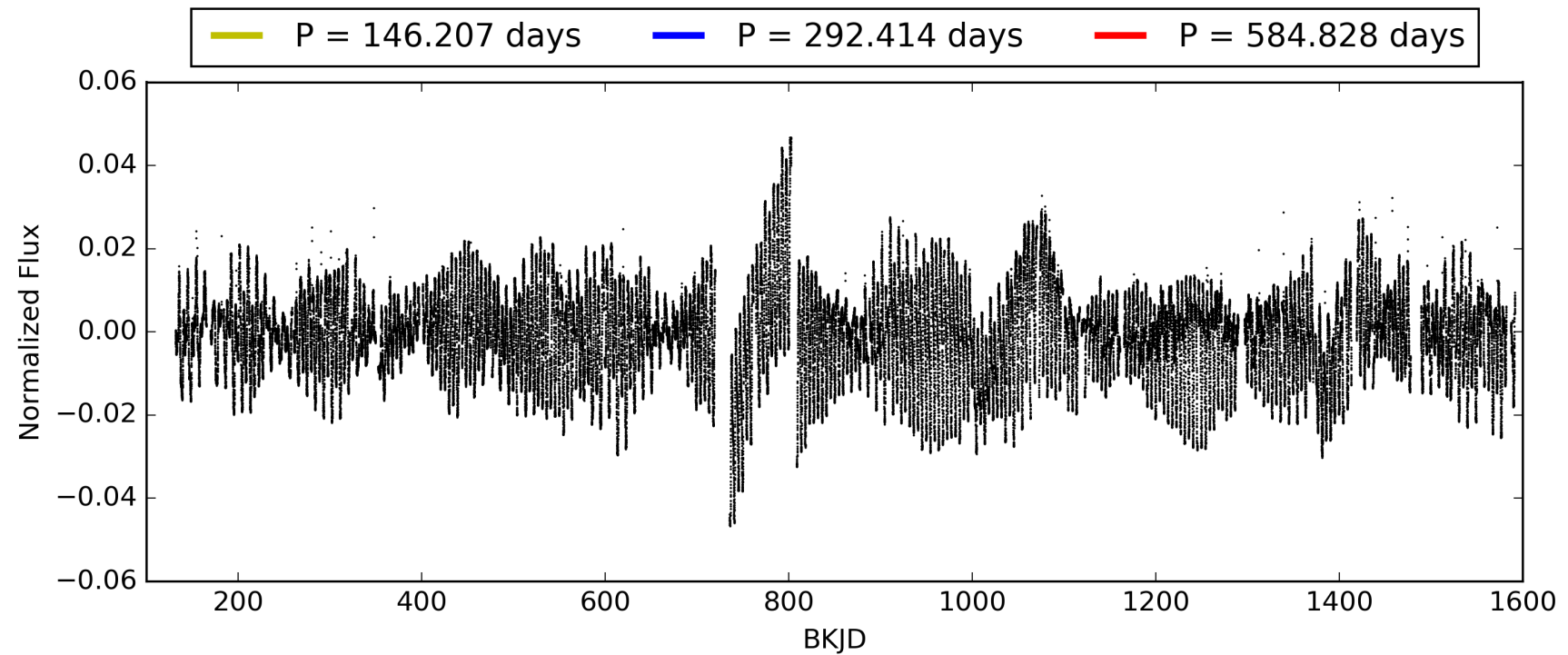
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [137.69 σ]
ModelChiSquare2-sig: 0.7%
ModelChiSquareGof-sig: 82.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.041
Centroid-sig: 30.3%
Centroid-so: 1.455 arcsec [0.93 σ]
OotOffset-rm: 1.511 arcsec [4.95 σ]
KicOffset-rm: 1.404 arcsec [3.70 σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004919145-01, PDC Light Curves

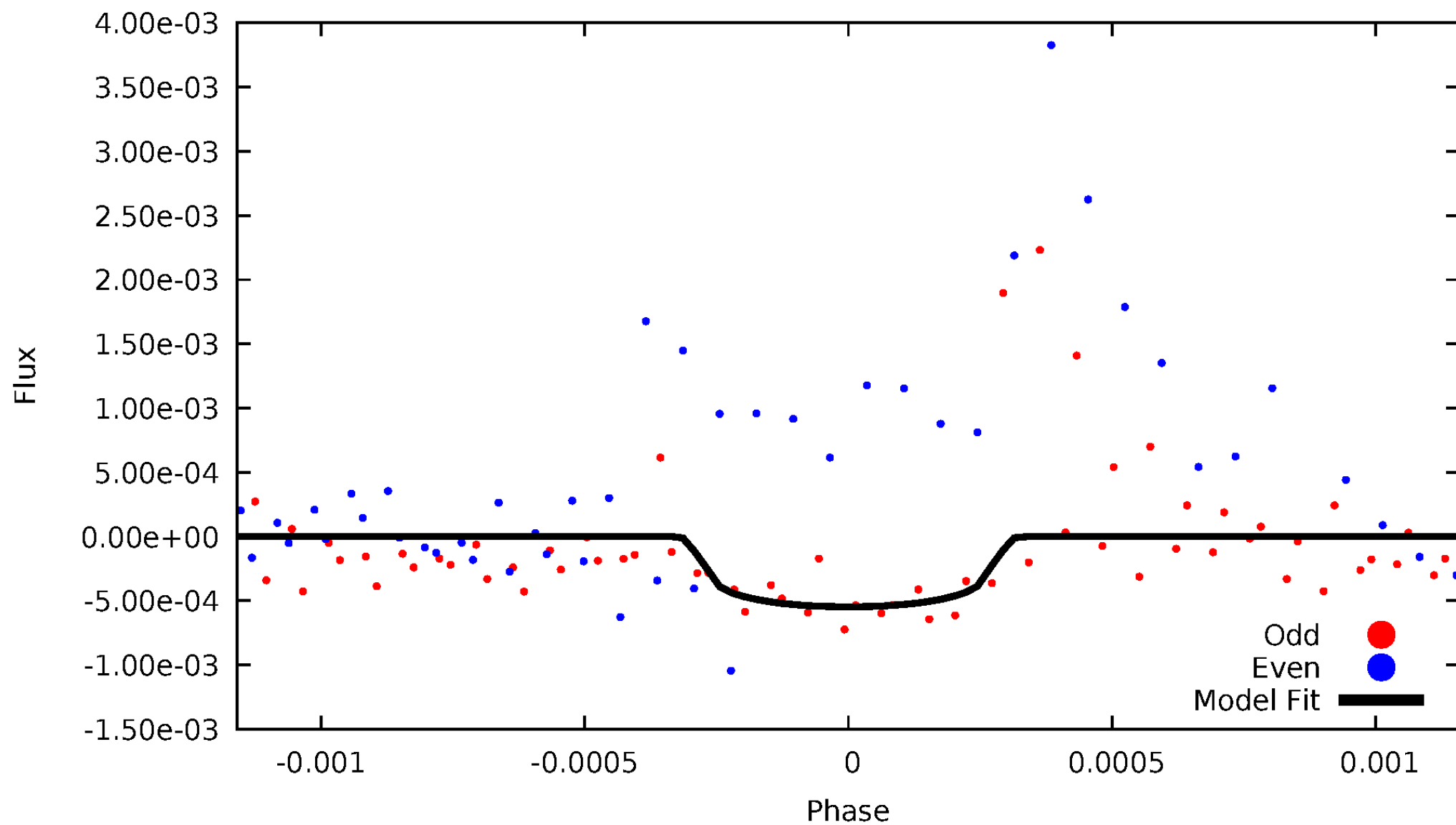


TCE 004919145-01



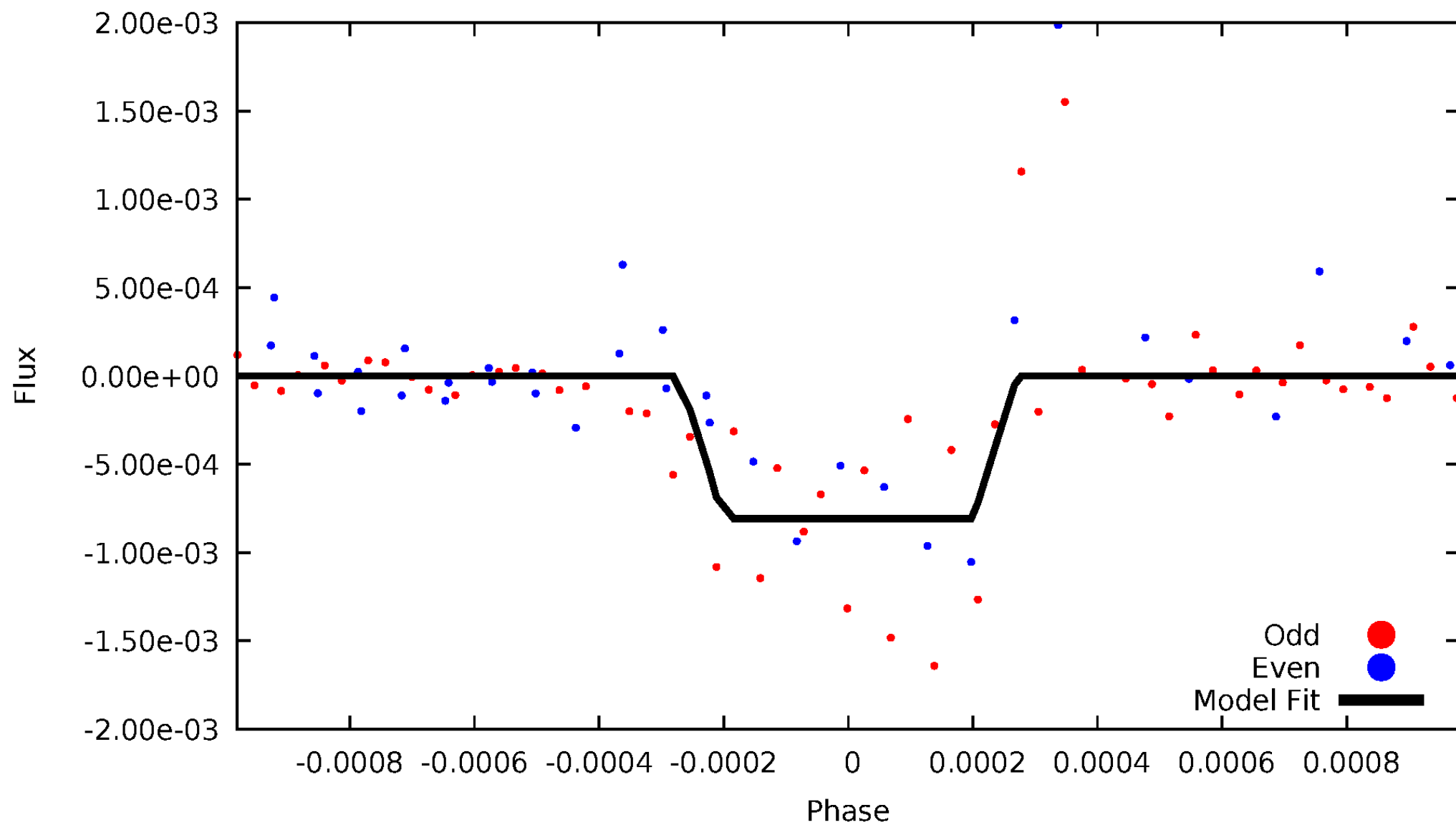
DV Odd/Even

TCE 004919145-01



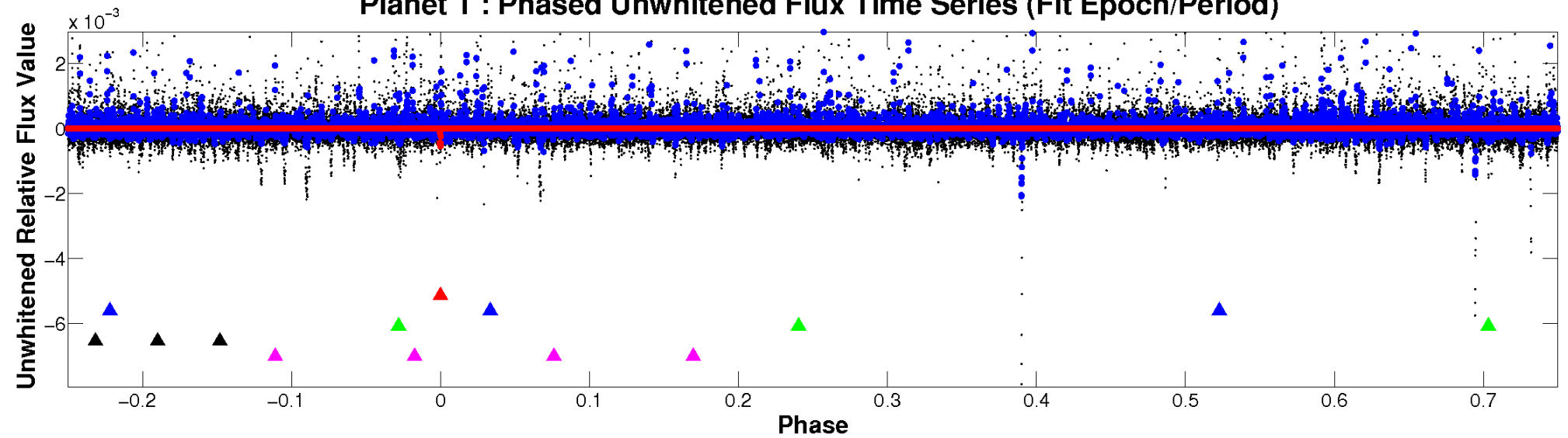
ALT Odd/Even

TCE 004919145-01

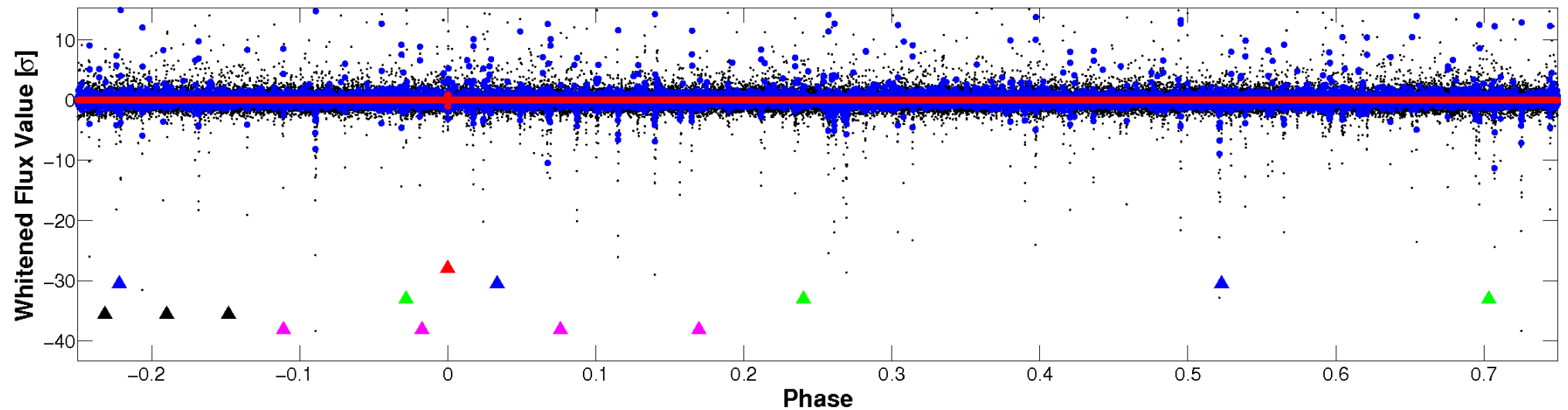


Non-Whitened Vs. Whitened Light Curve

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

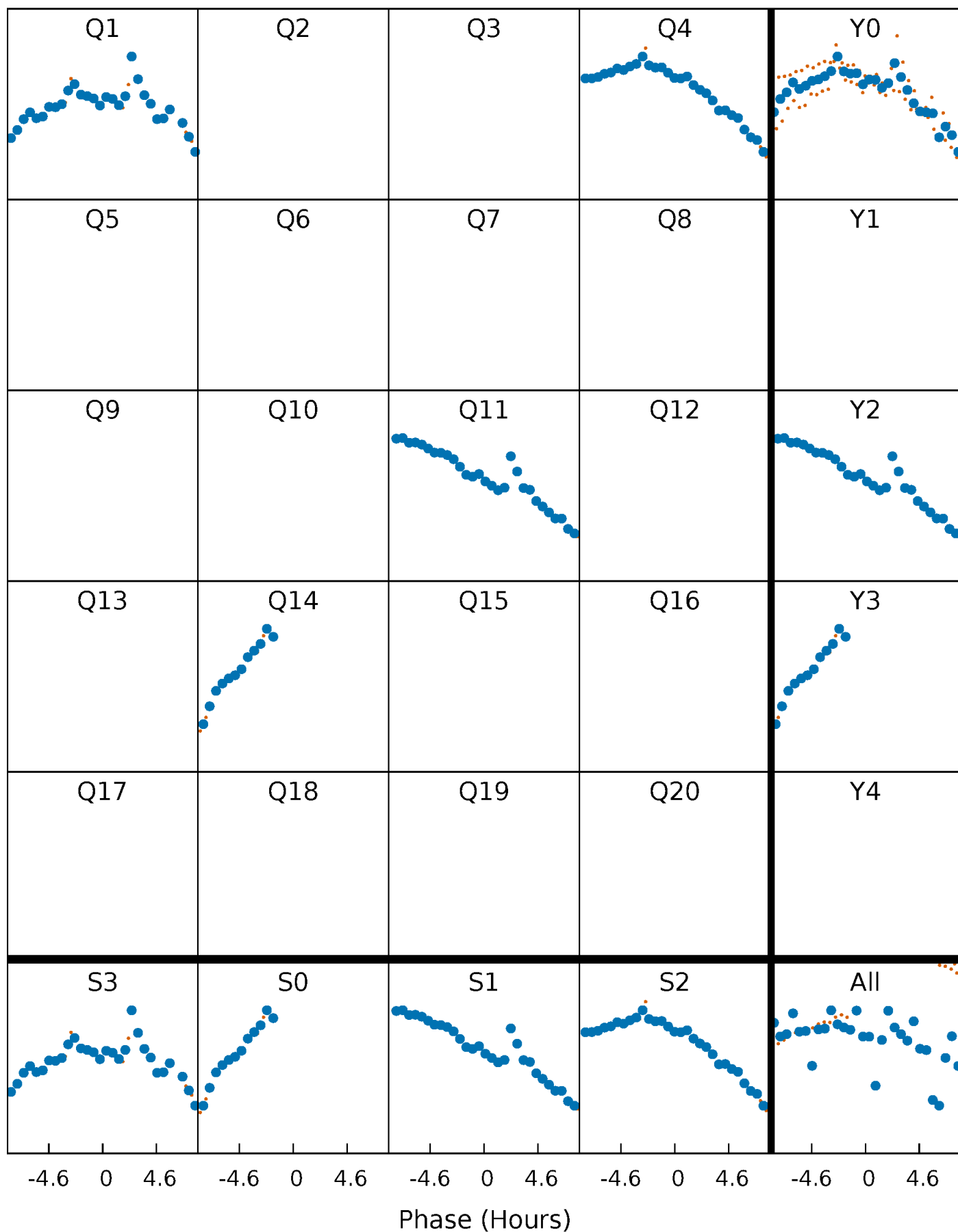


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



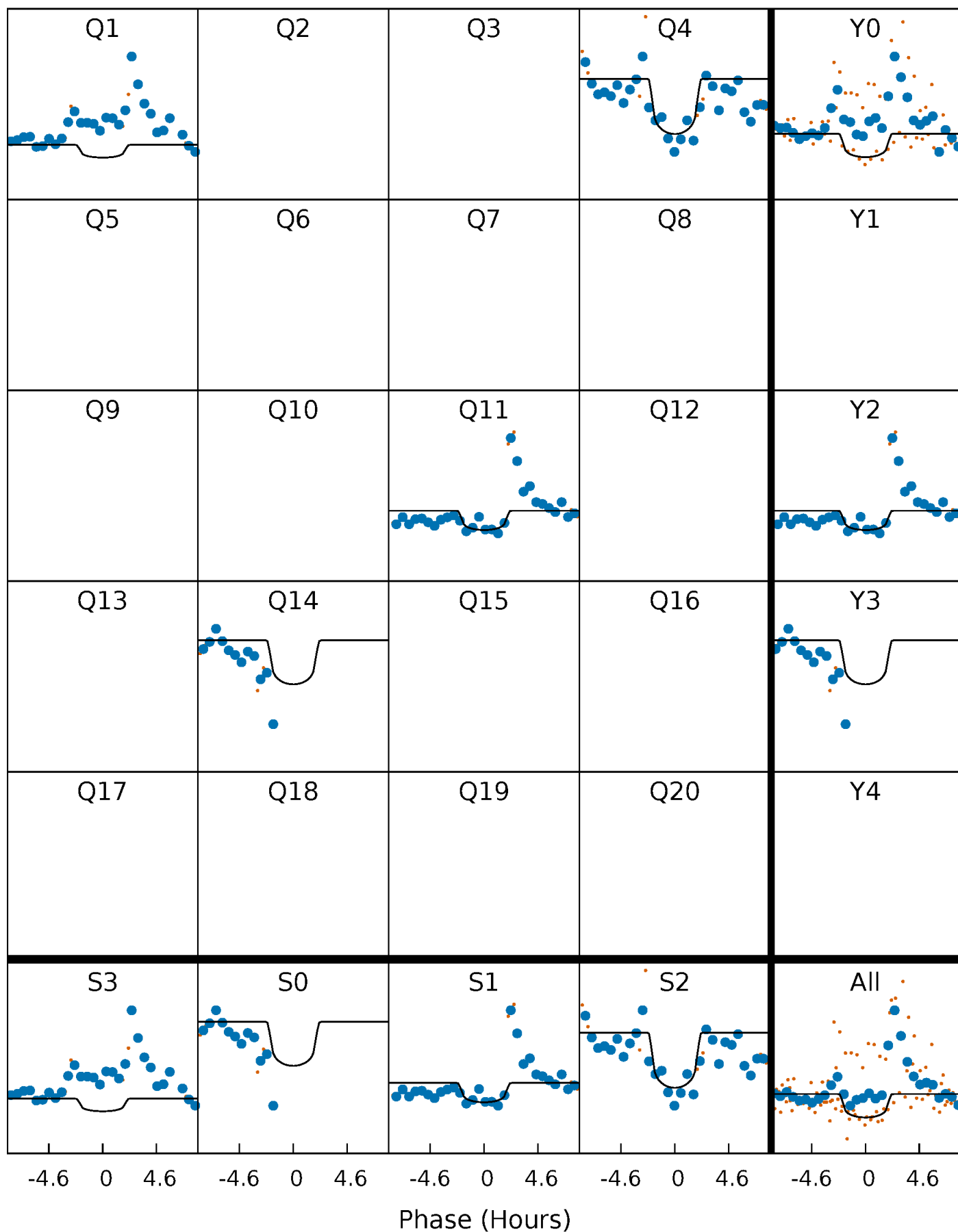
PDC Quarter-Phased Transit Curves

TCE 004919145-01 P=292.413877 Days $T_0=135.405268$ (BKJD)



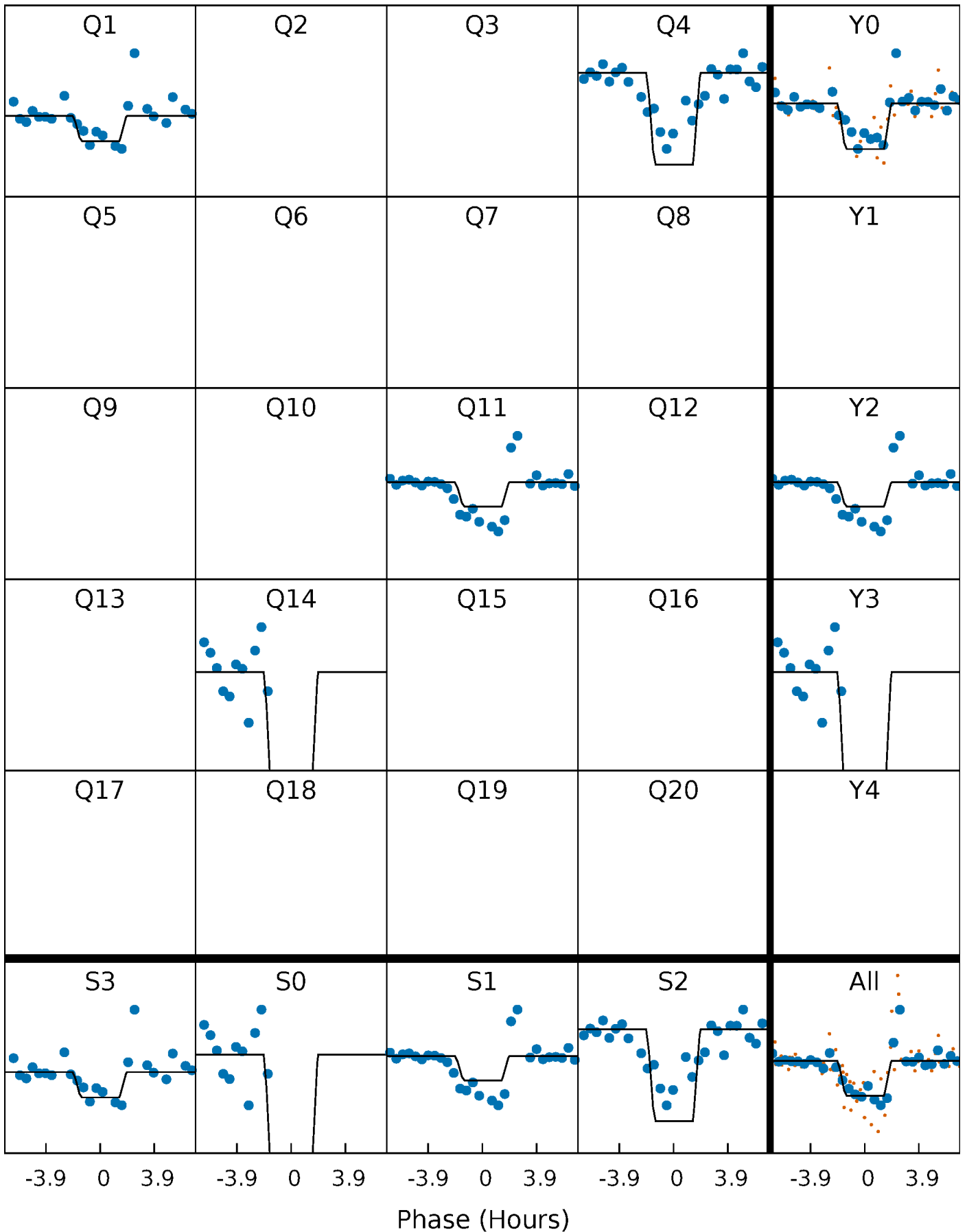
DV Quarter-Phased Transit Curves

TCE 004919145-01 P=292.413877 Days $T_0=135.405268$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

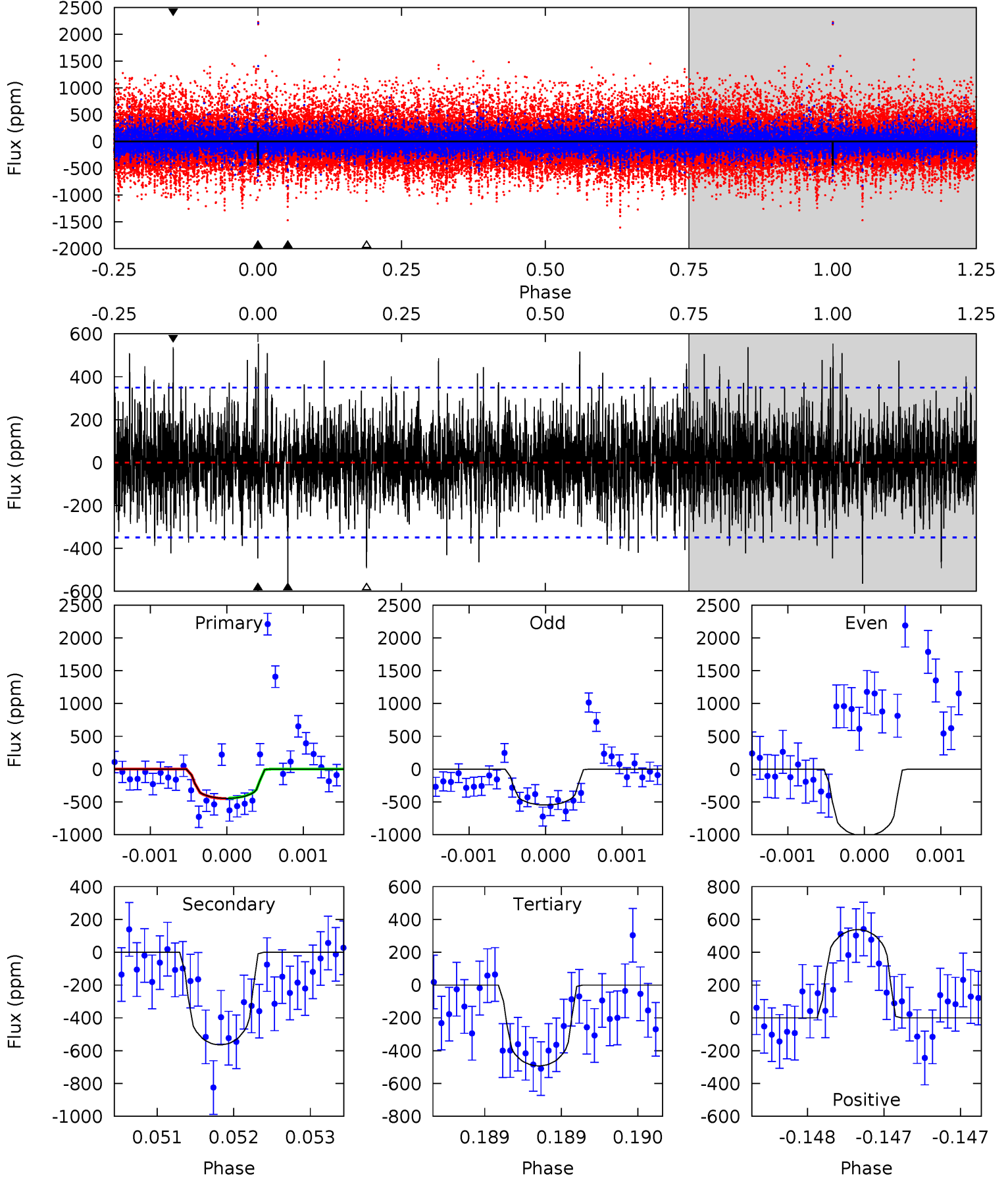
TCE 004919145-01 P=292.410730 Days $T_0=135.419289$ (BKJD)



DV Model-Shift Uniqueness Test

004919145-01, $P = 292.413877$ Days, $E = 135.405268$ Days

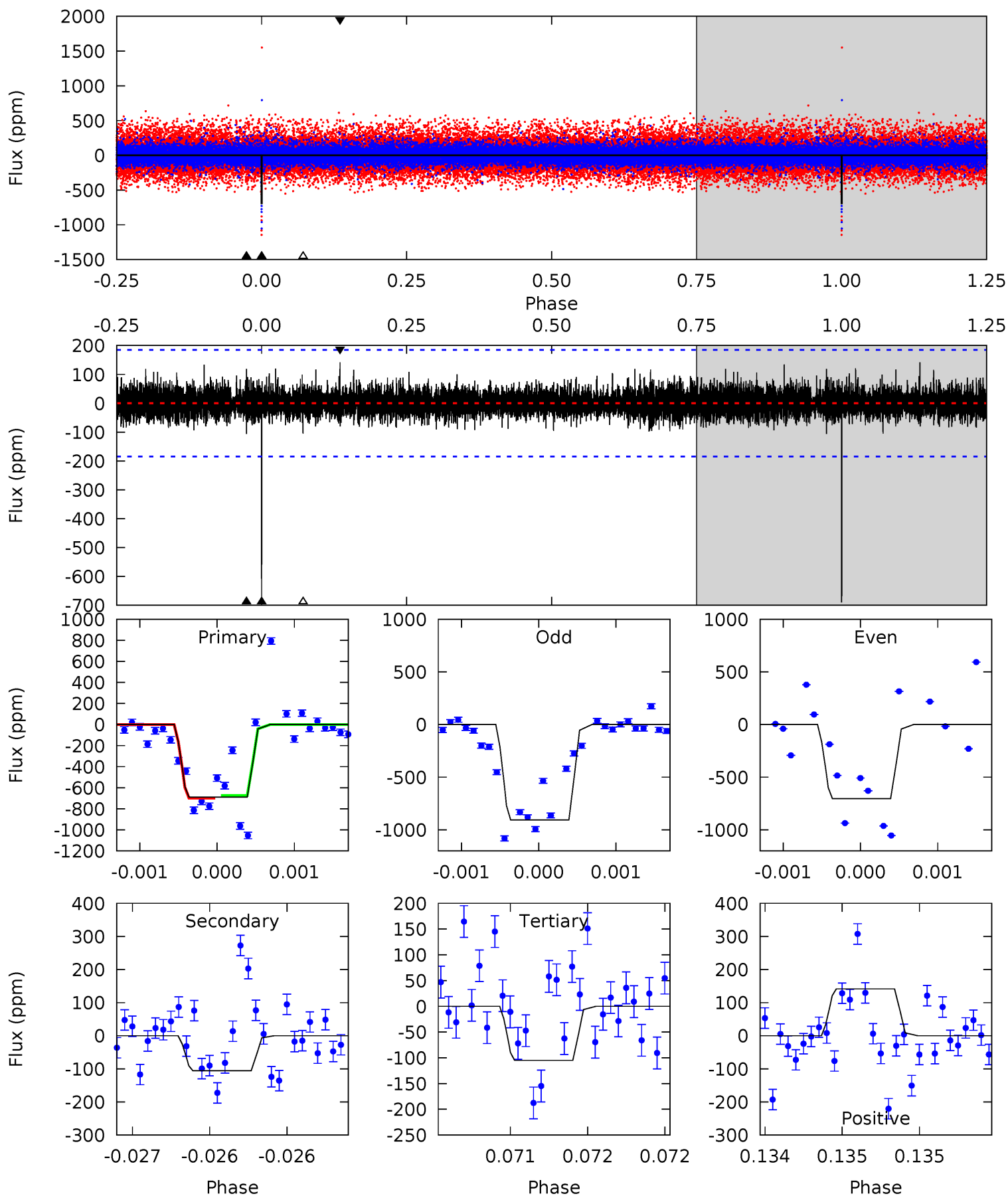
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.07	8.94	7.80	8.52	5.53	3.42	1.92	-0.73	-1.45	1.14	0.42	3.76	0.65	0.50	0.06



Alt Model-Shift Uniqueness Test

004919145-01, P = 292.410730 Days, E = 135.419289 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	3.20	3.17	4.27	5.57	3.48	0.83	17.7	16.5	0.03	-1.07	3.23	1.14	0.17	0



Stellar Parameters For KIC 004919145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 004919145-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-565 ± 63	$4.26^{+4.10}_{-2.82}$	383^{+19}_{-19}	4659^{+3347}_{-1031}	13048^{+95148}_{-9793}
Alt.	-106 ± 33	$4.73^{+4.11}_{-3.12}$	385^{+17}_{-19}	3341^{+1659}_{-596}	1911^{+16565}_{-1417}

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

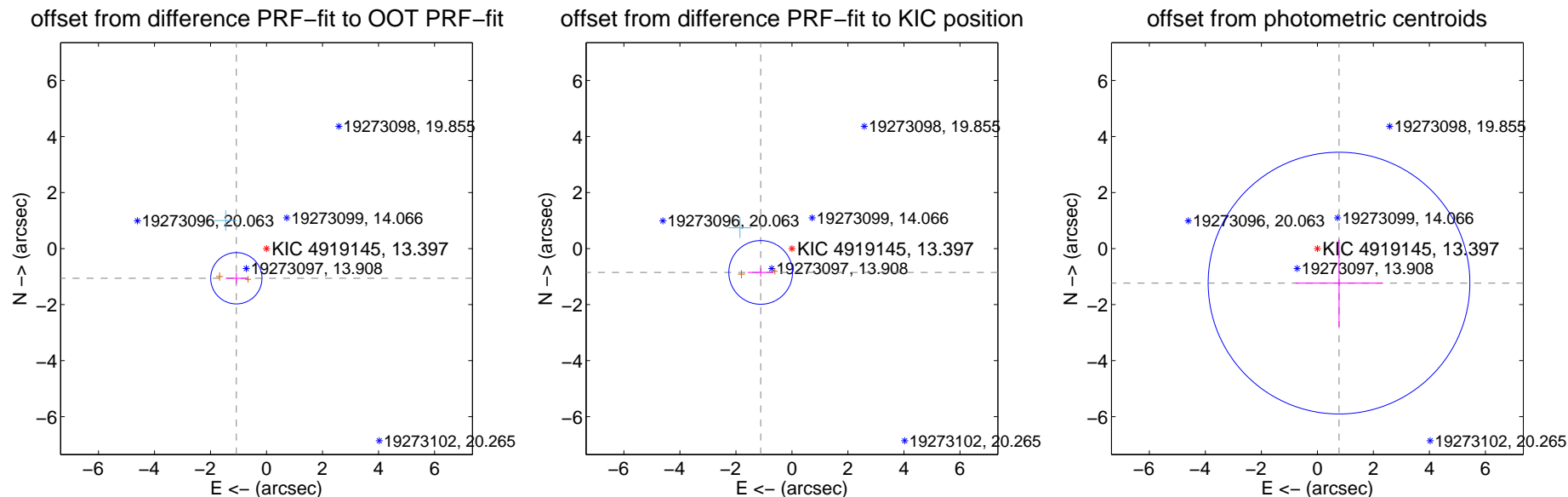
DV Centroid Data

Supplemental centroid analysis for 004919145-01. Kepler magnitude: 13.40. Transit SNR 4.95

There are 1 quarters with good PRF difference image offsets

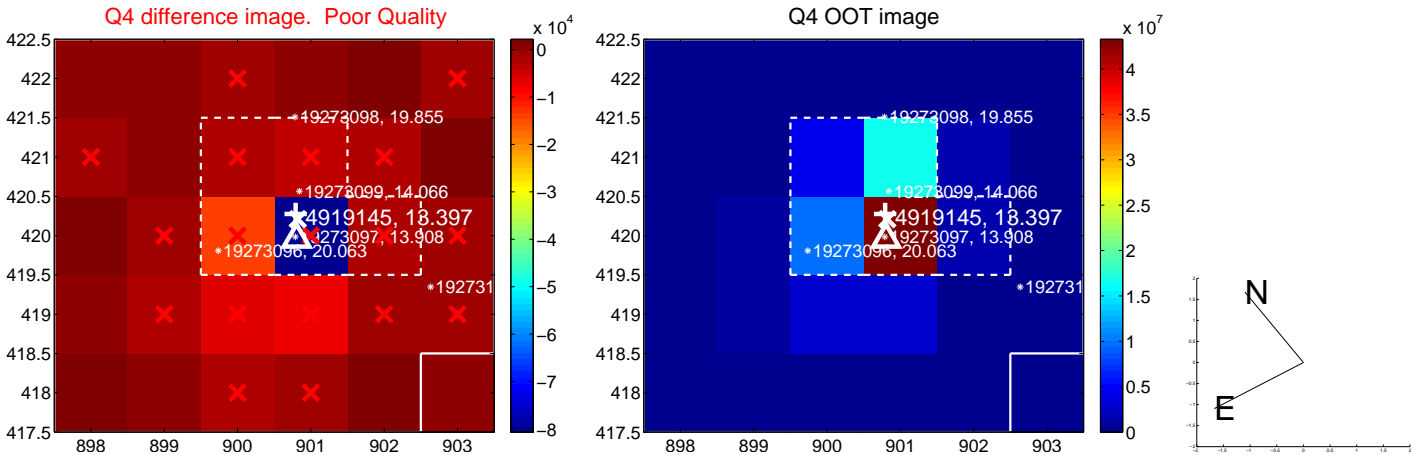
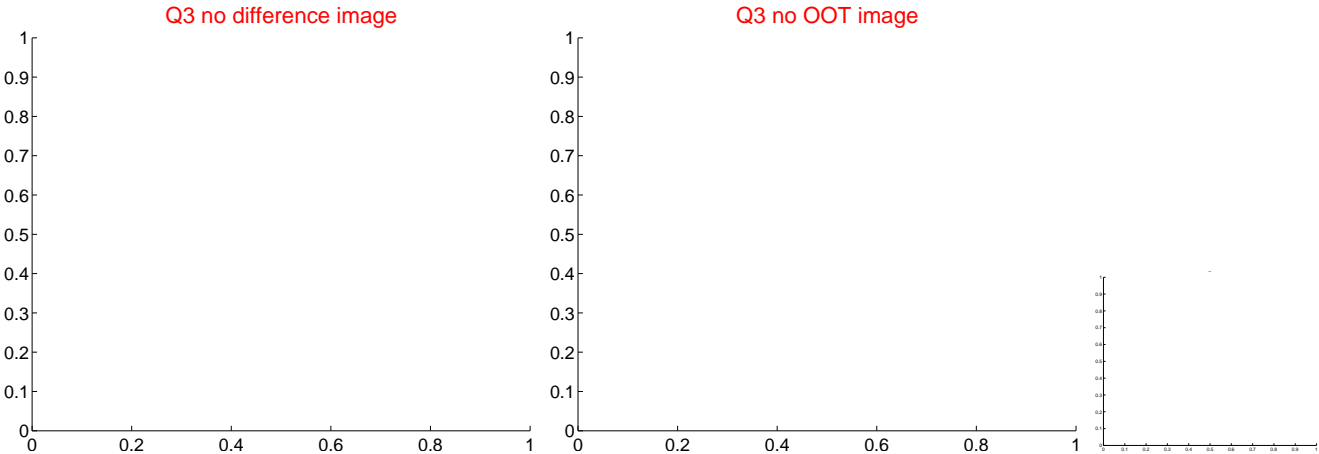
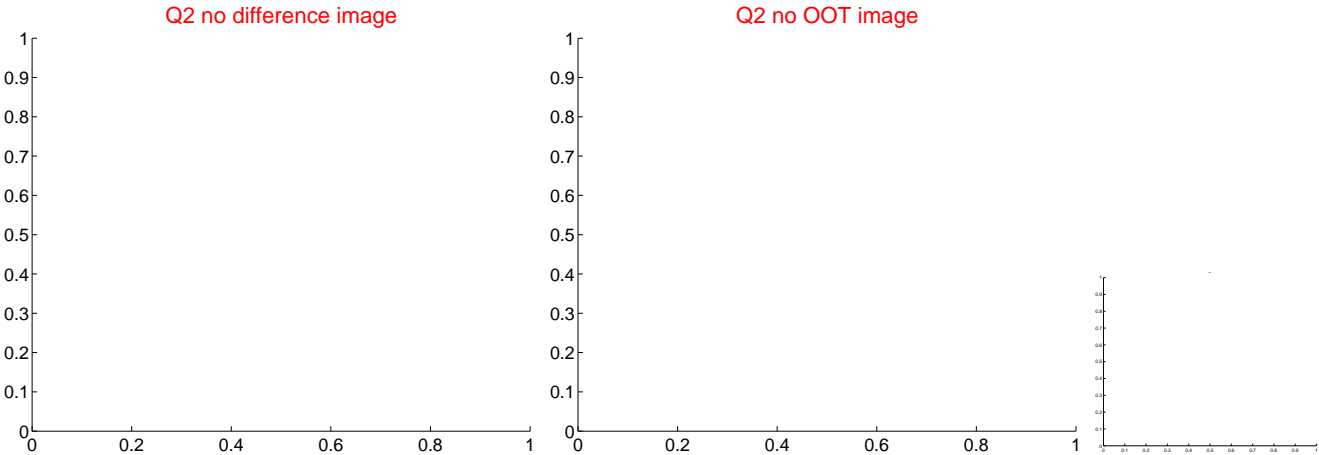
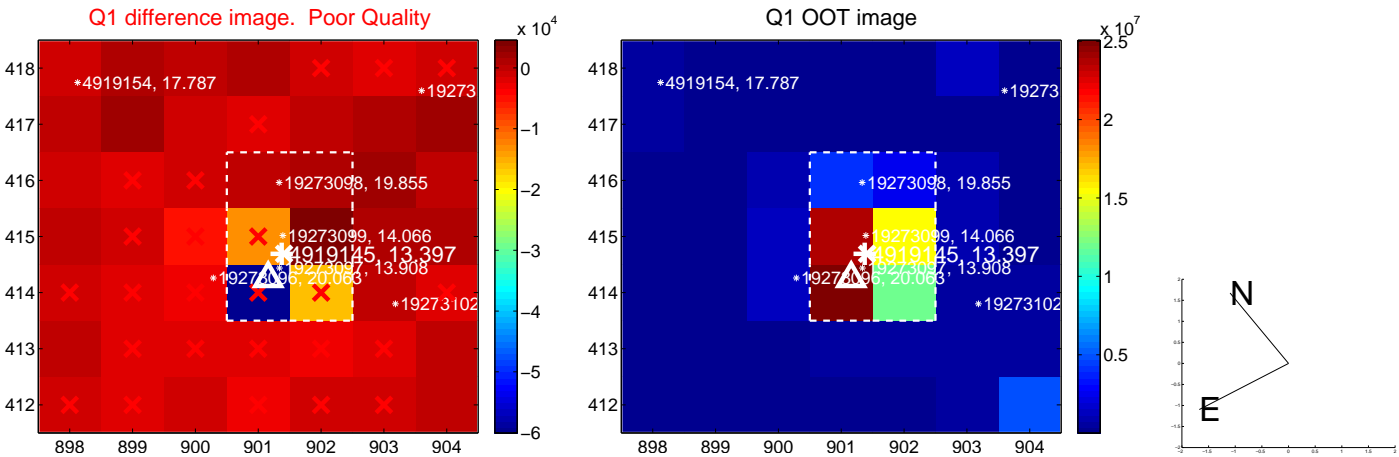
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.511 ± 0.305	4.95	1.078 ± 0.384	-1.059 ± 0.193
PRF-fit source offset from KIC position	1.404 ± 0.379	3.70	1.116 ± 0.461	-0.851 ± 0.160
photometric centroid source offset	1.46 ± 1.56	0.93	-0.77 ± 1.56	-1.23 ± 1.56



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.

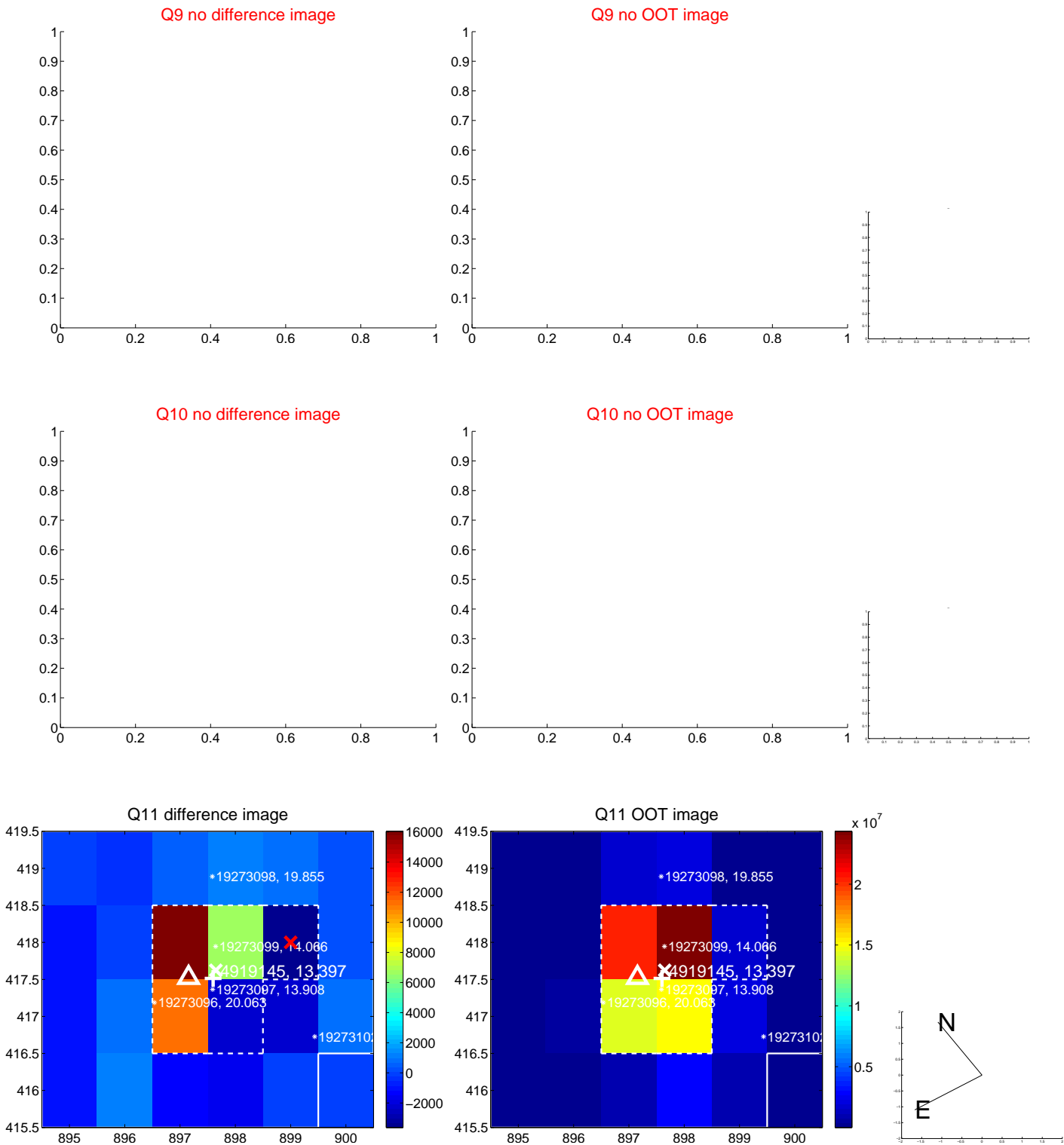
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



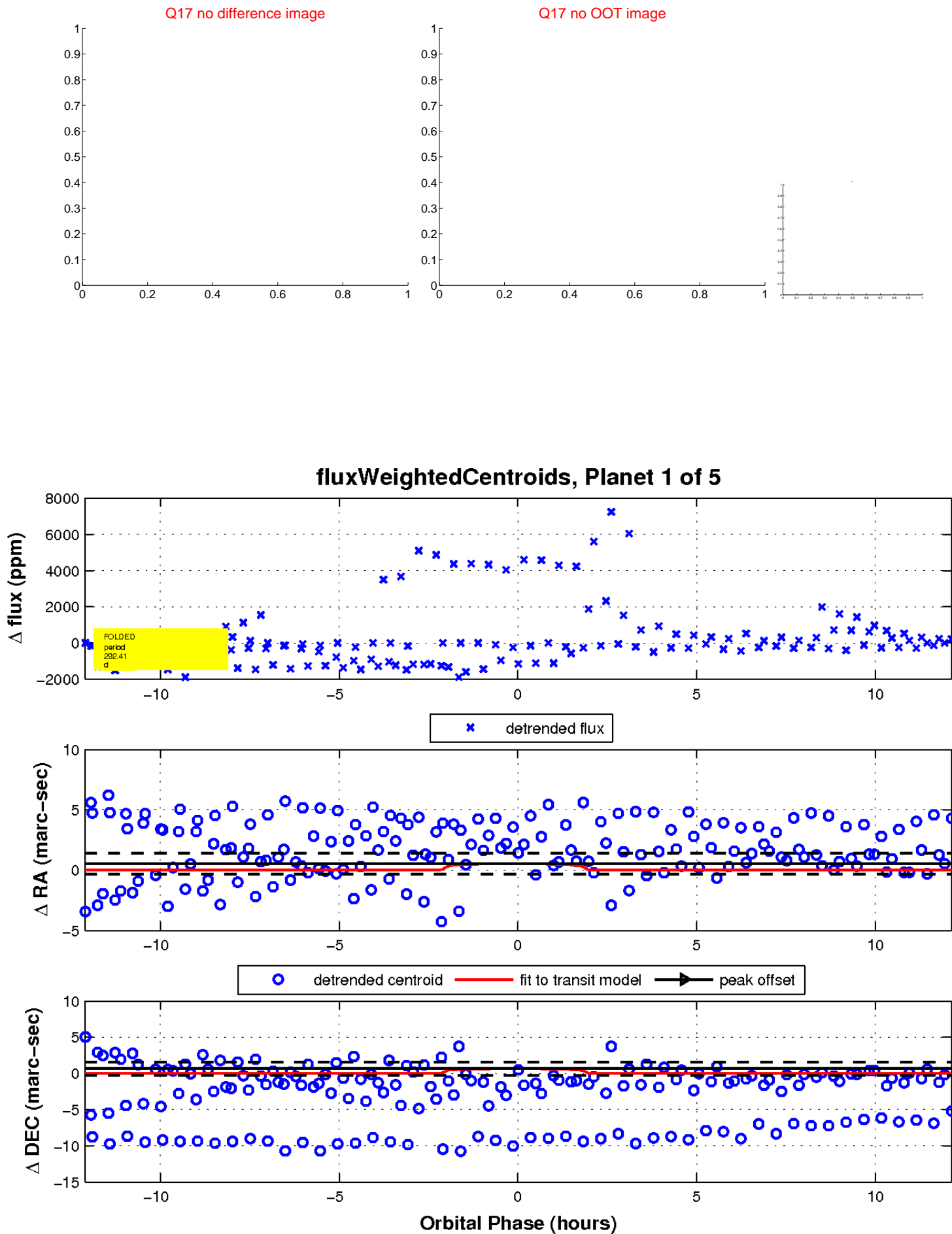
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

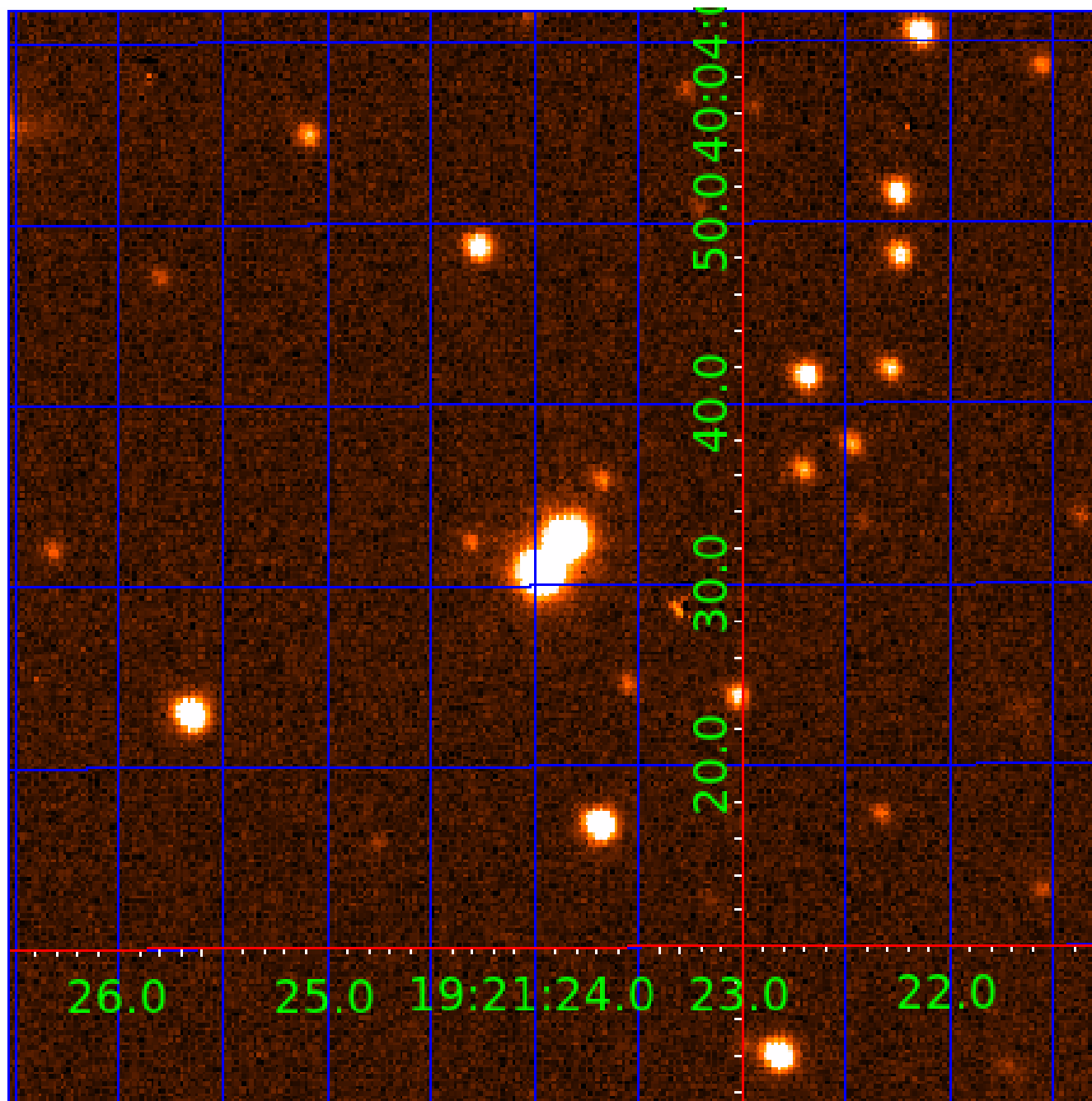


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919145

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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004919145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
004919145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

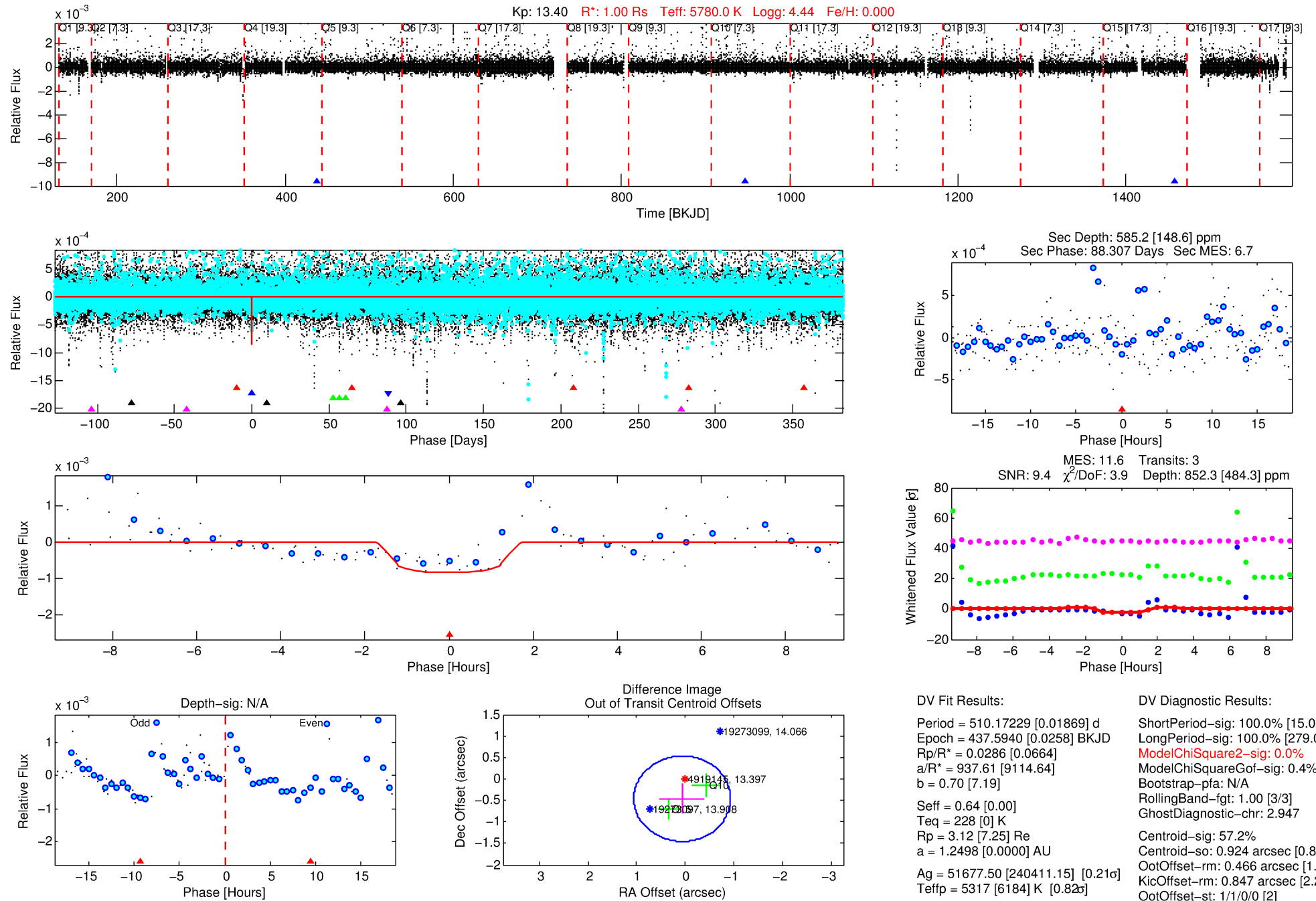
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919145-02

No Significant Match Found

DV One-Page Summary

KIC: 4919145 Candidate: 2 of 5 Period: 510.172 d



DV Fit Results:

Period = 510.17229 [0.01869] d
Epoch = 437.5940 [0.0258] BKJD
Rp/R* = 0.0286 [0.0664]
a/R* = 937.61 [9114.64]
b = 0.70 [7.19]
Seff = 0.64 [0.00]
Teq = 228 [0] K
Rp = 3.12 [7.25] Re
a = 1.2498 [0.0000] AU
Ag = 51677.50 [240411.15] [0.21σ]
Teffp = 5317 [6184] K [0.82σ]

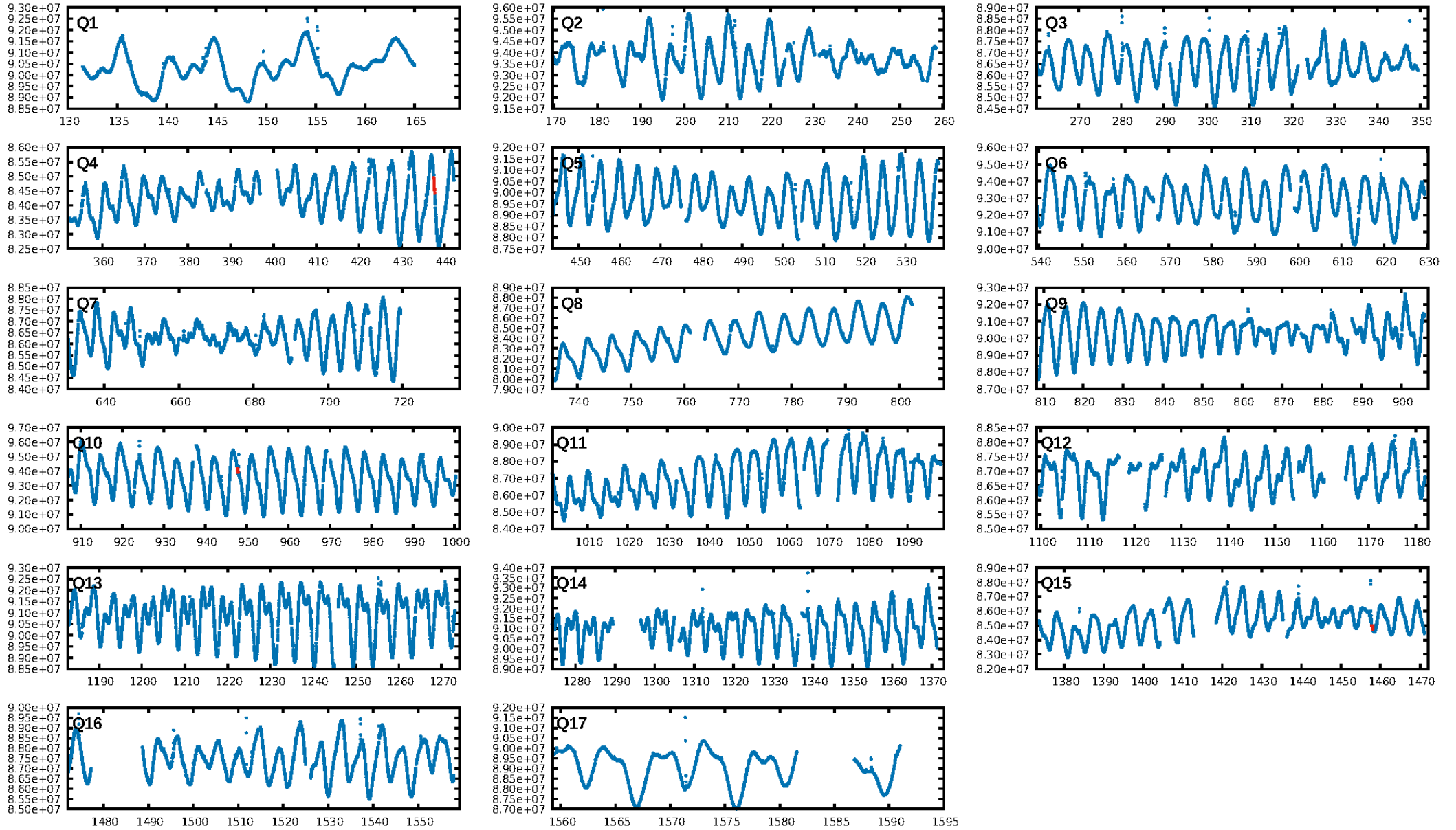
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.07σ]
LongPeriod-sig: 100.0% [279.09σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.947
Centroid-sig: 57.2%
Centroid-so: 0.924 arcsec [0.88σ]
OotOffset-rm: 0.466 arcsec [1.41σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.847 arcsec [2.21σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

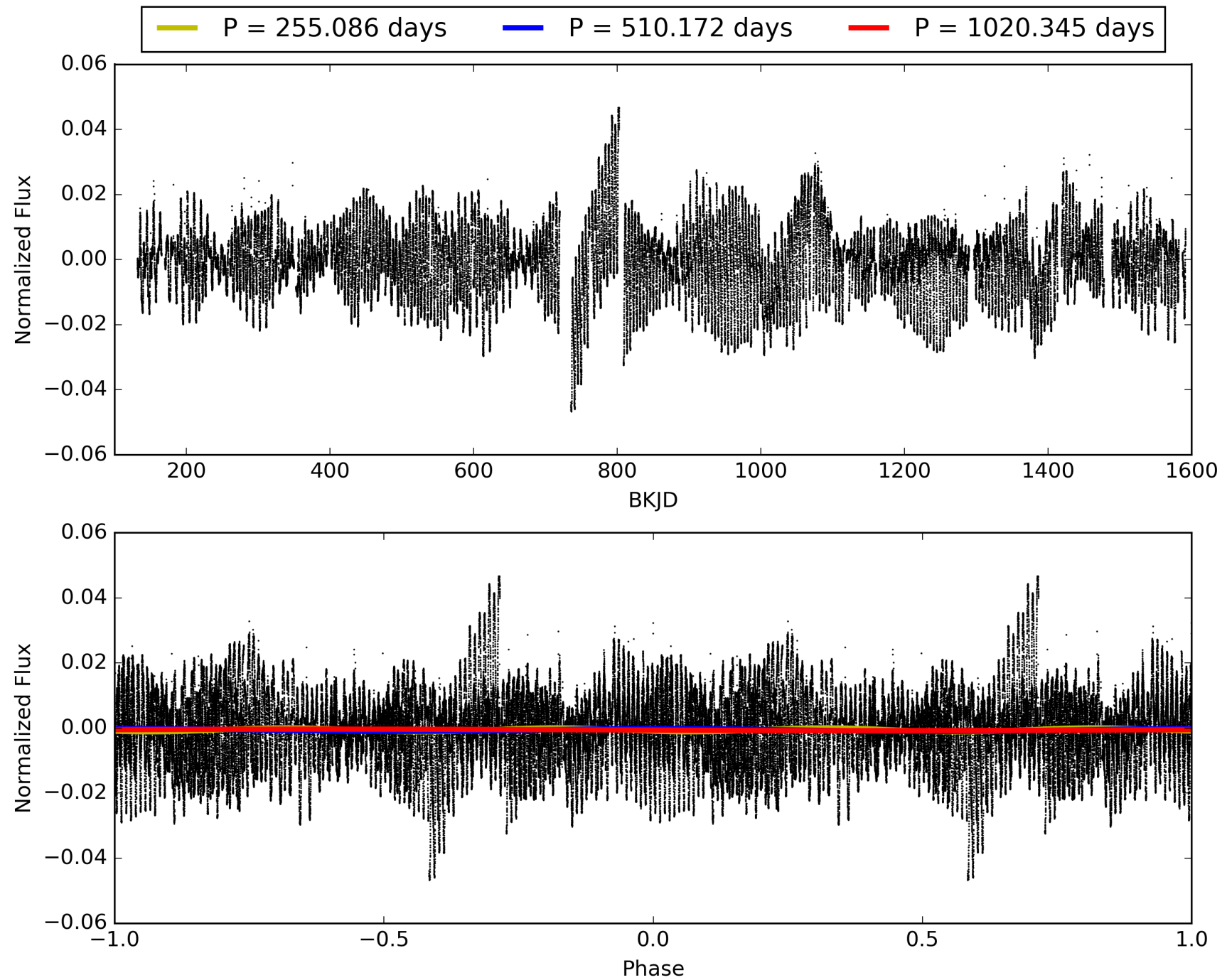
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 004919145-02, PDC Light Curves

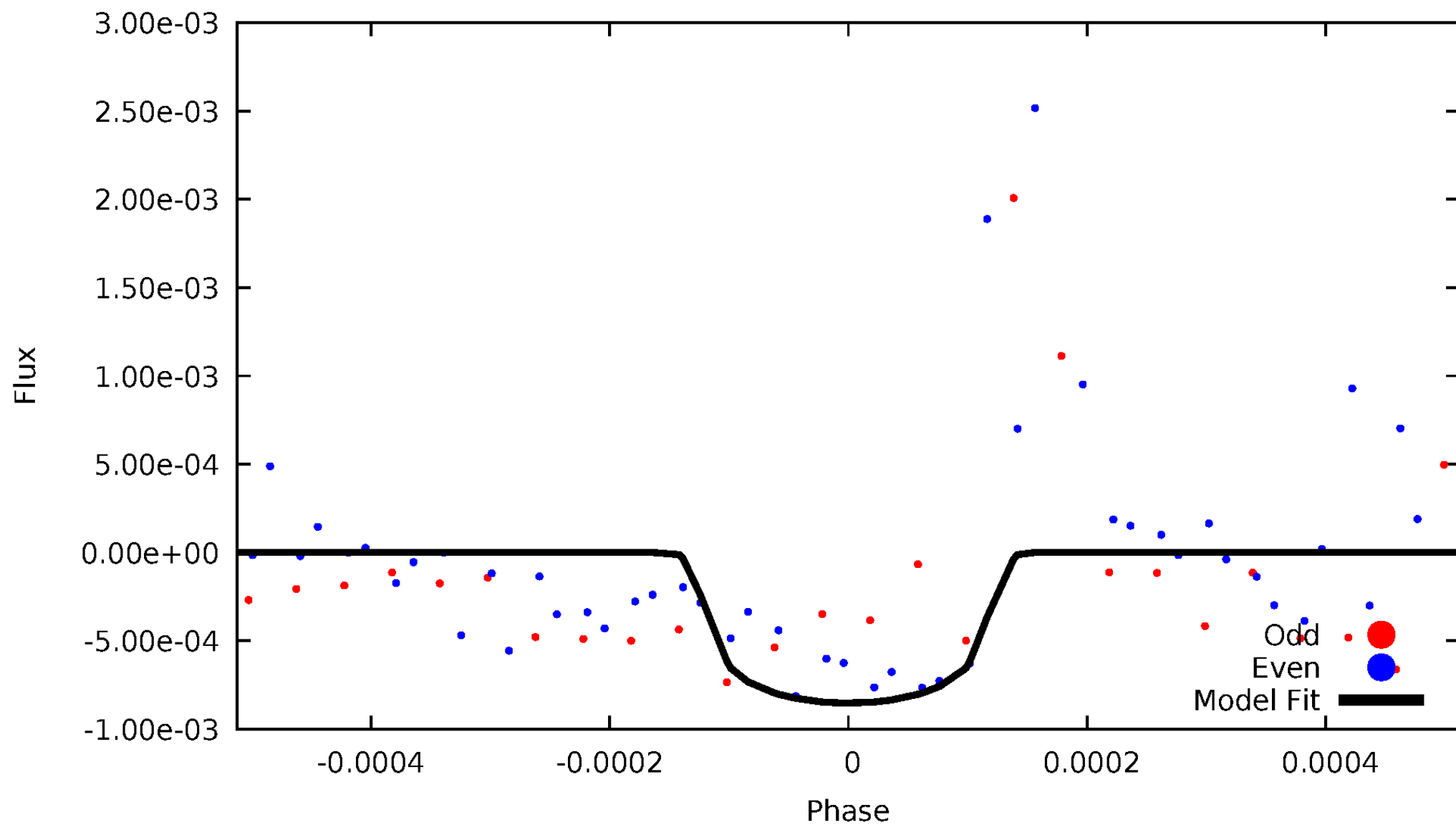


TCE 004919145-02



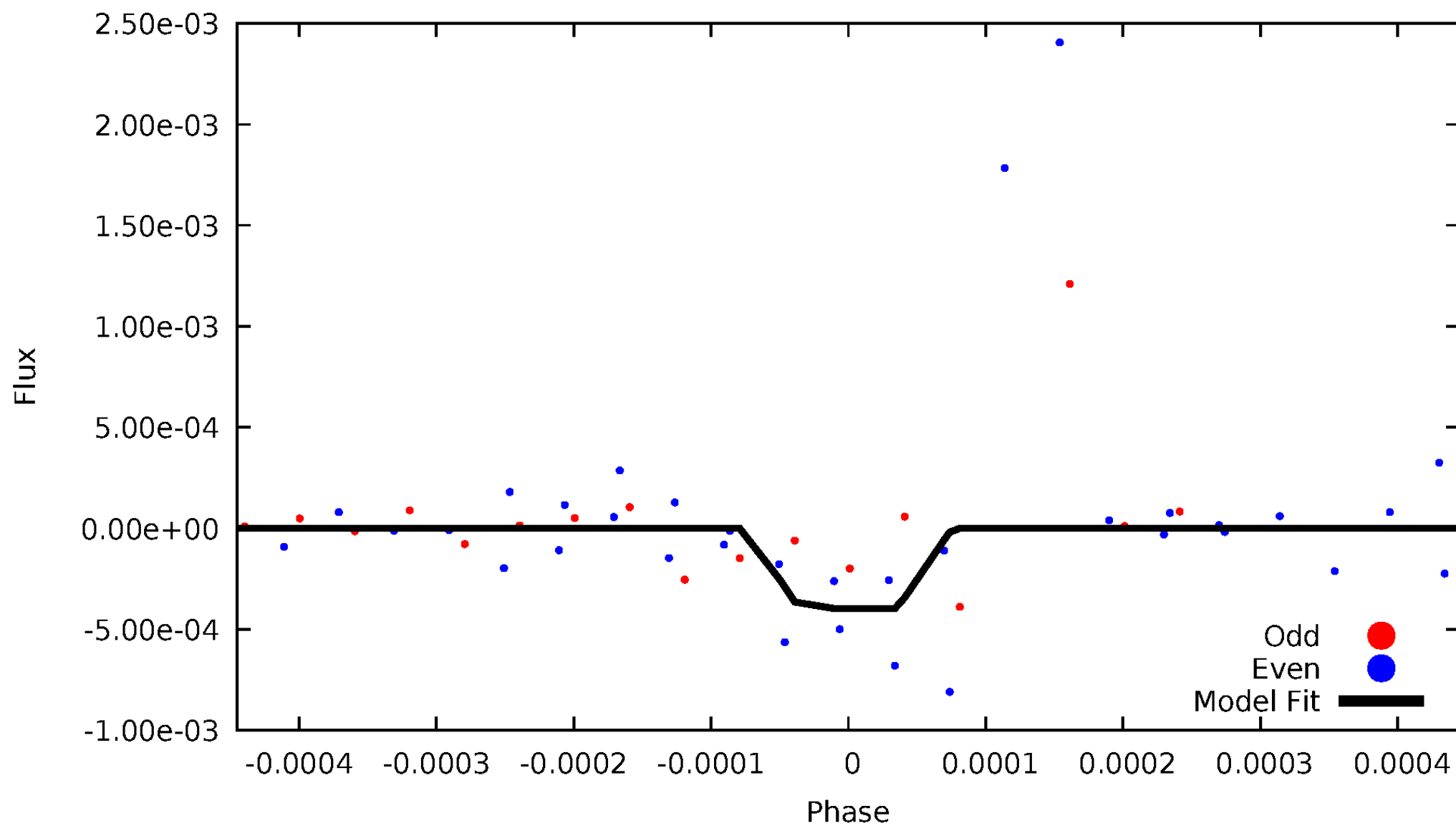
DV Odd/Even

TCE 004919145-02



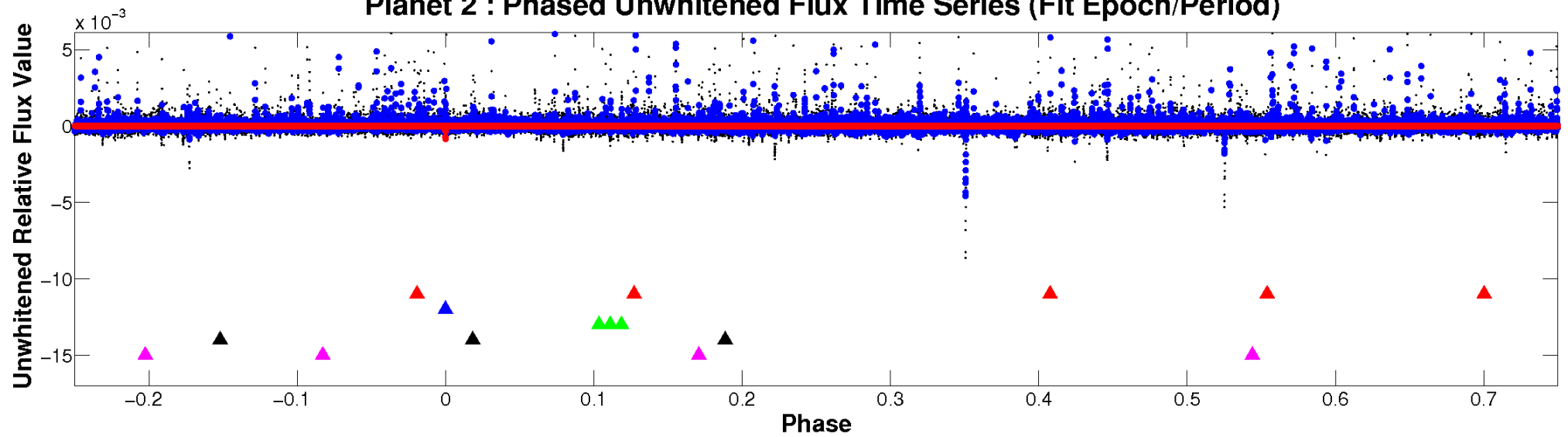
ALT Odd/Even

TCE 004919145-02

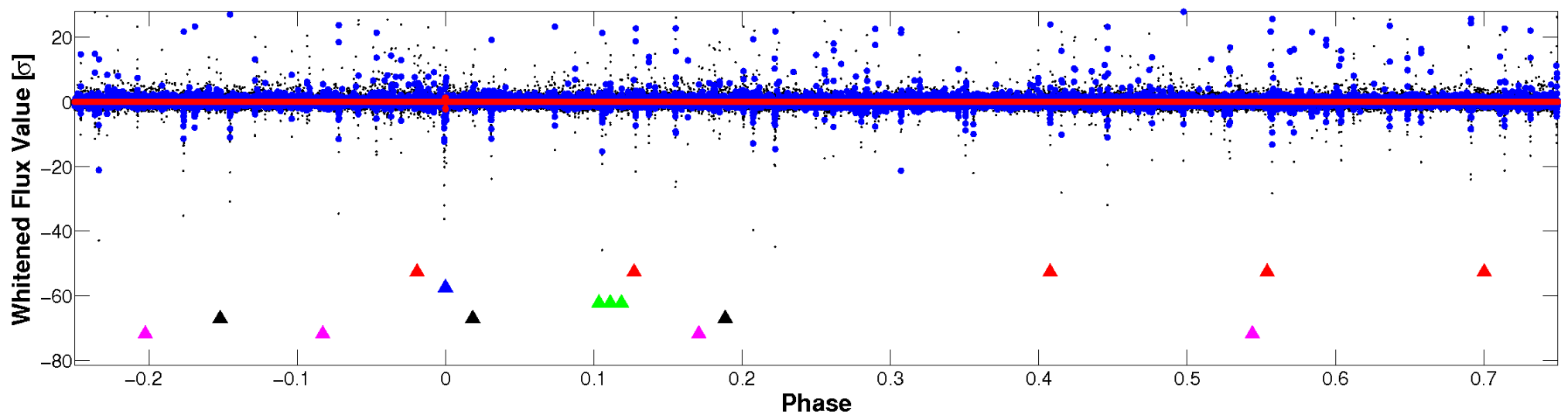


Non-Whitened Vs. Whitened Light Curve

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

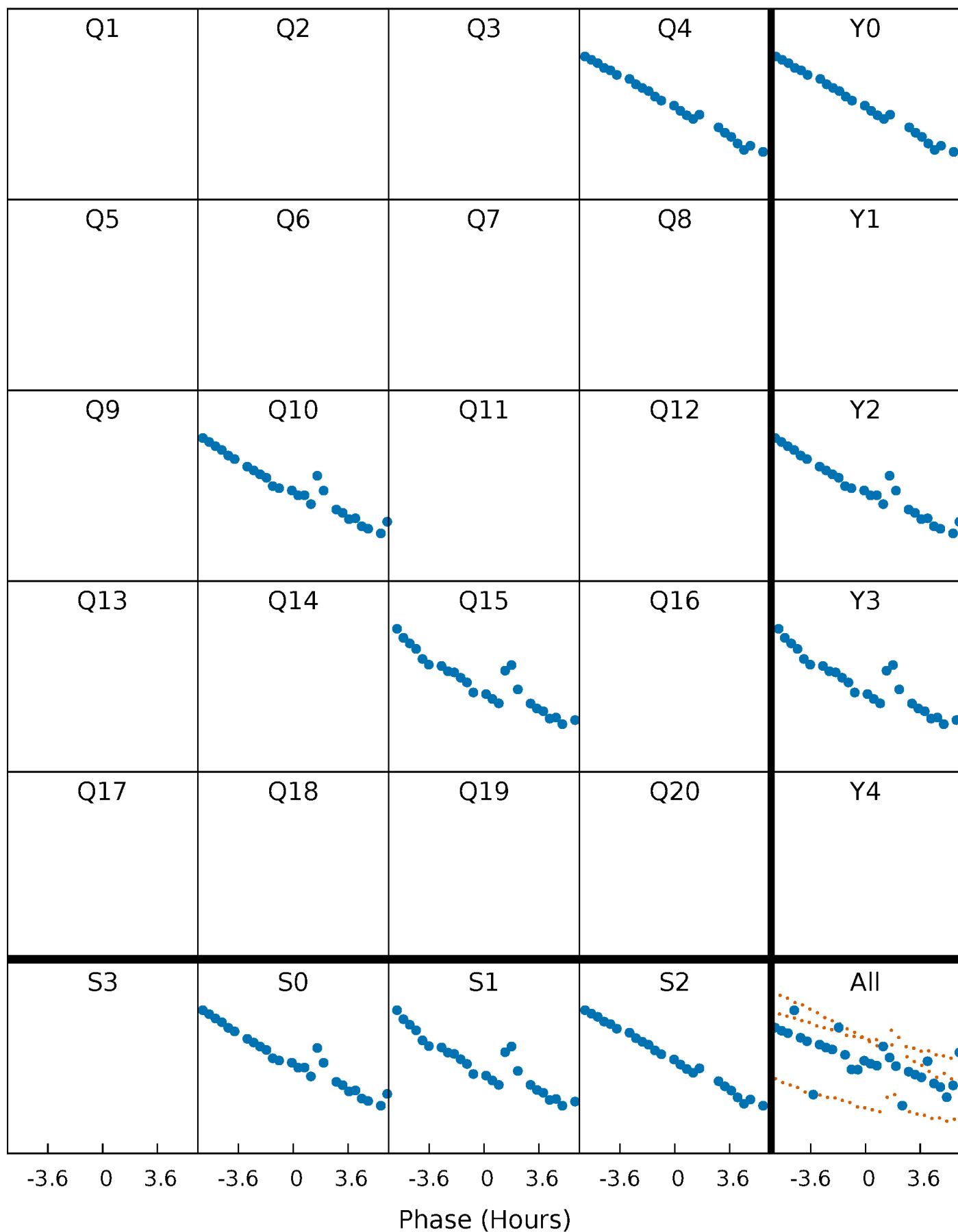


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



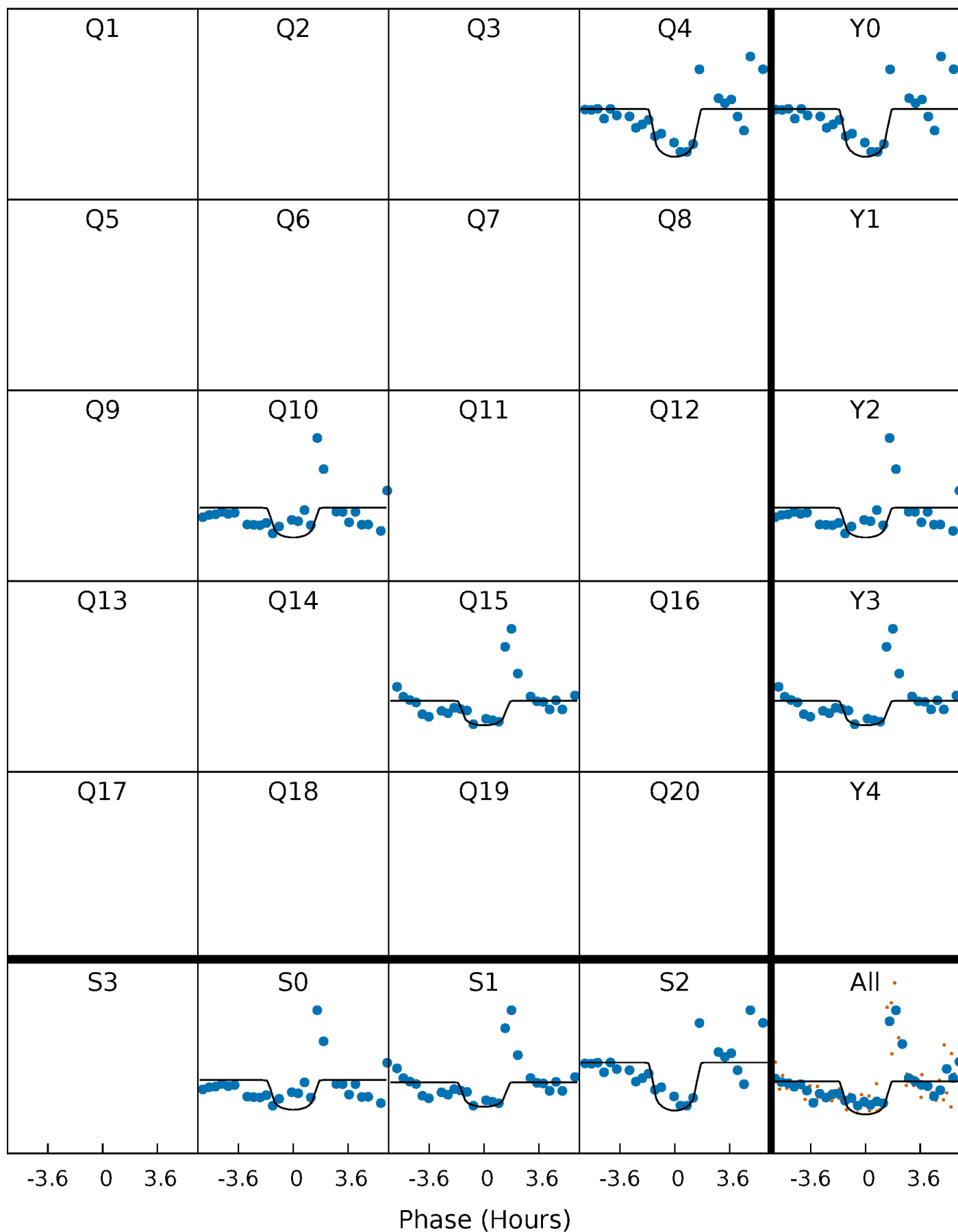
PDC Quarter-Phased Transit Curves

TCE 004919145-02 P=510.172288 Days $T_0=437.593998$ (BKJD)



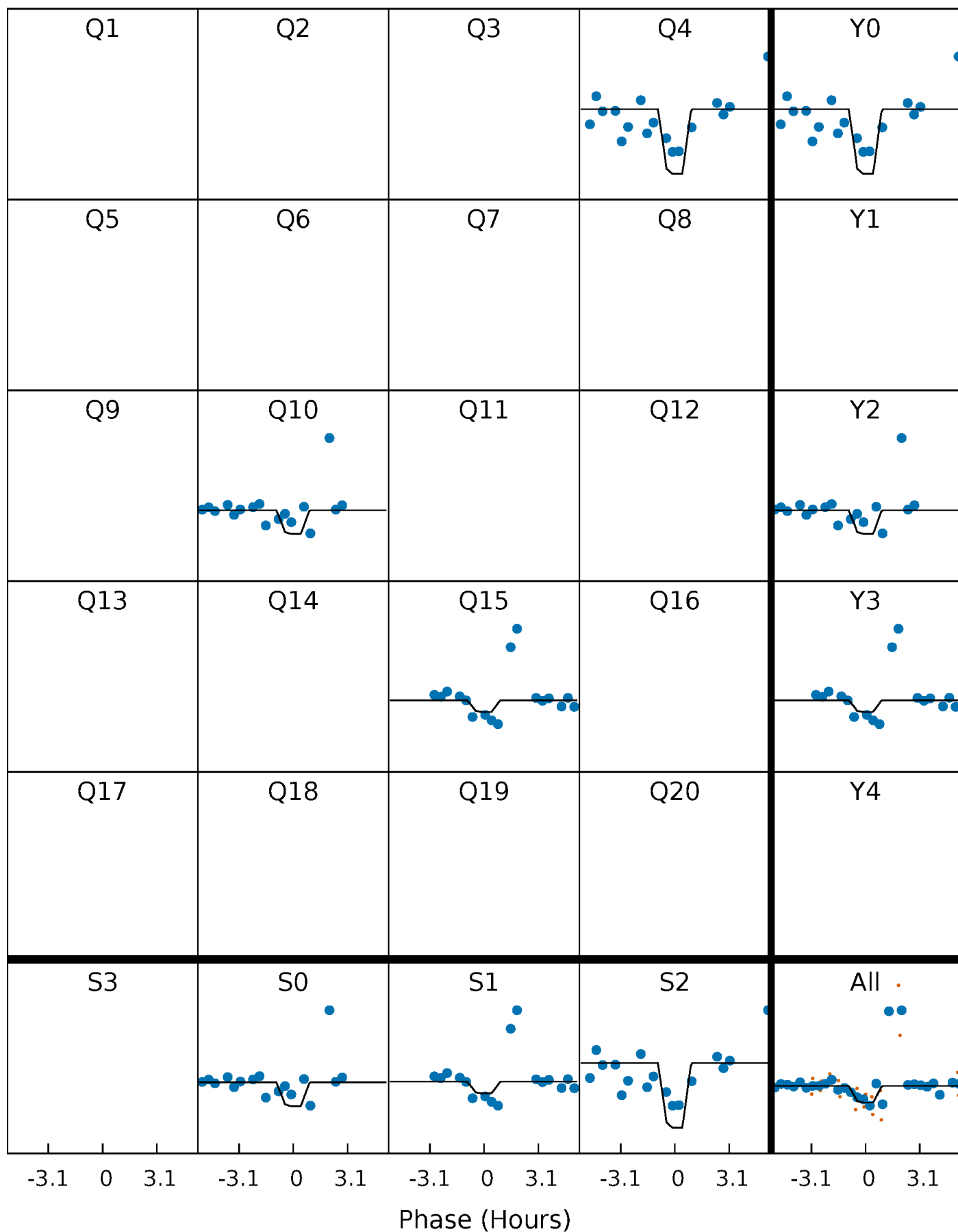
DV Quarter-Phased Transit Curves

TCE 004919145-02 P=510.172288 Days $T_0=437.593998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

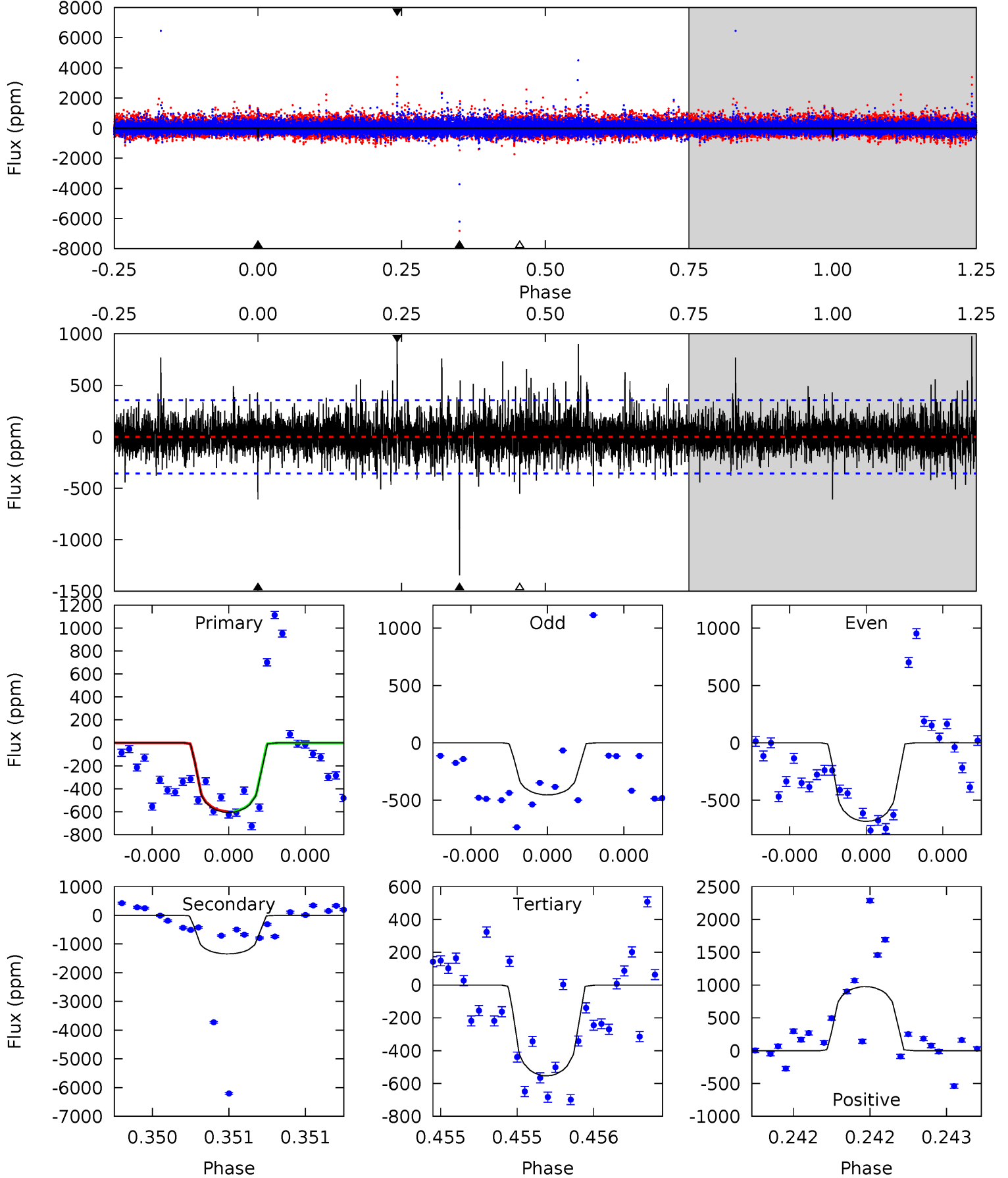
TCE 004919145-02 P=510.164693 Days $T_0=437.610408$ (BKJD)



DV Model-Shift Uniqueness Test

004919145-02, P = 510.172288 Days, E = 437.593998 Days

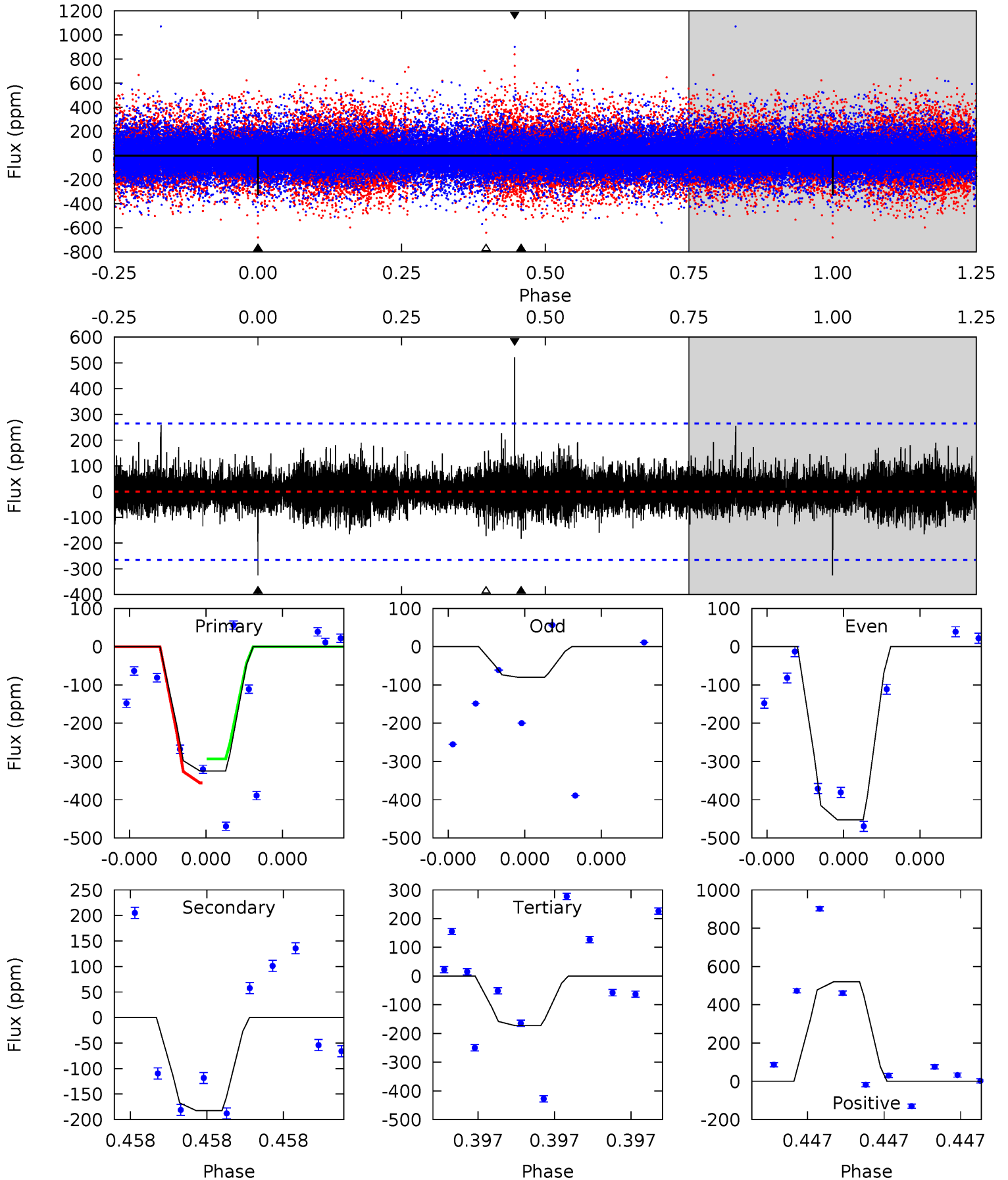
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.63	21.4	8.79	15.5	5.67	3.63	1.94	0.83	-5.89	12.6	5.83	1.19	1.10	0.42	0.01



Alt Model-Shift Uniqueness Test

004919145-02, P = 510.164693 Days, E = 437.610408 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.11	4.00	3.78	11.4	5.80	3.82	0.85	3.33	-4.29	0.22	-7.41	3.86	1.23	0.62	0.69



Stellar Parameters For KIC 004919145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 004919145-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1344 ± 63	$5.98^{+5.62}_{-3.74}$	319^{+15}_{-14}	4830^{+3025}_{-1060}	$31845^{+191289}_{-23311}$
Alt.	-182 ± 46	$5.77^{+5.97}_{-3.89}$	320^{+16}_{-16}	3417^{+1900}_{-647}	4439^{+43081}_{-3362}

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 $A_{obs} \gg 1.0$

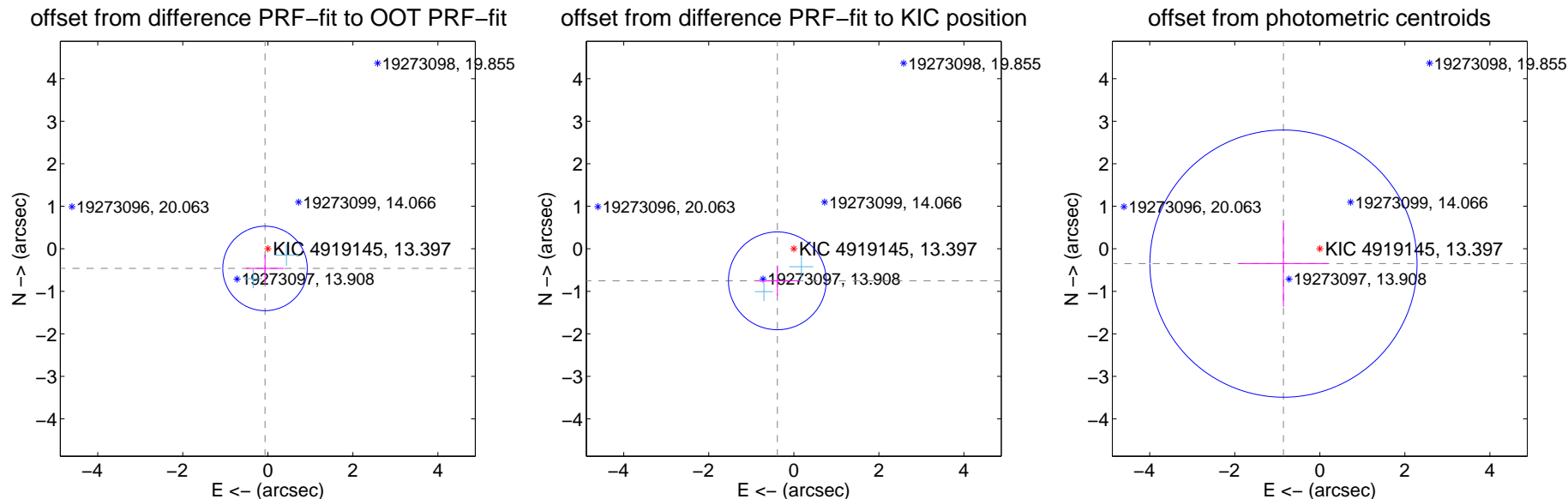
DV Centroid Data

Supplemental centroid analysis for 004919145-02. Kepler magnitude: 13.40. Transit SNR 9.44

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.47 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.466 ± 0.331	1.41	0.066 ± 0.444	-0.462 ± 0.329
PRF-fit source offset from KIC position	0.847 ± 0.383	2.21	0.388 ± 0.499	-0.753 ± 0.346
photometric centroid source offset	0.92 ± 1.05	0.88	0.86 ± 1.05	-0.35 ± 1.02



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



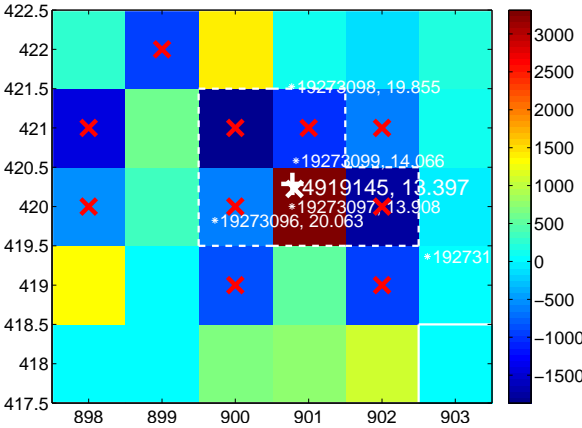
Q3 no difference image



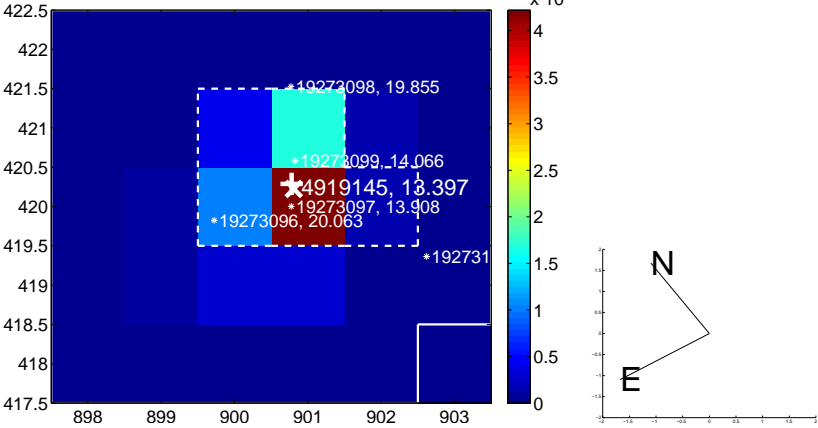
Q3 no OOT image



Q4 difference image. Poor Quality



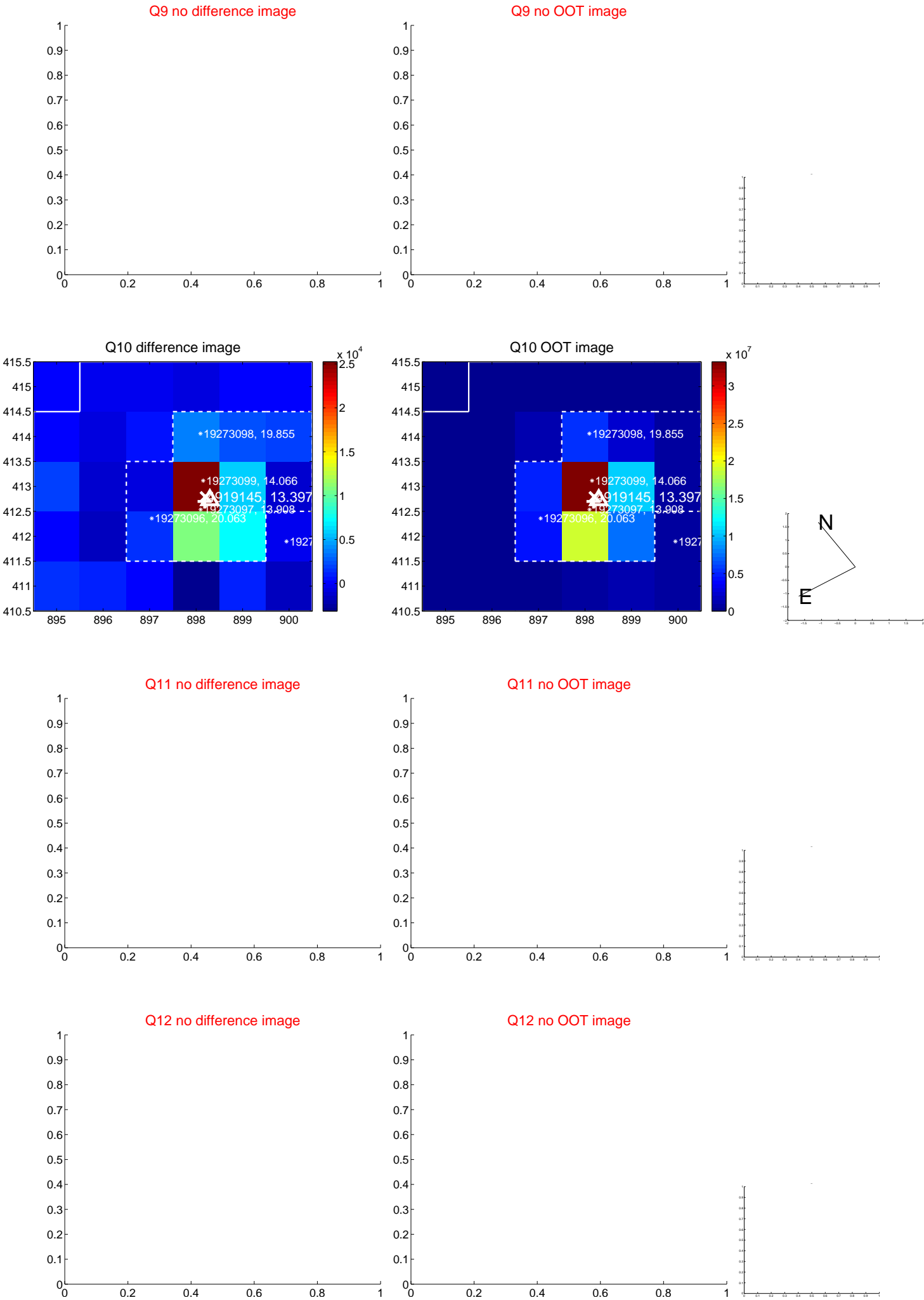
Q4 OOT image



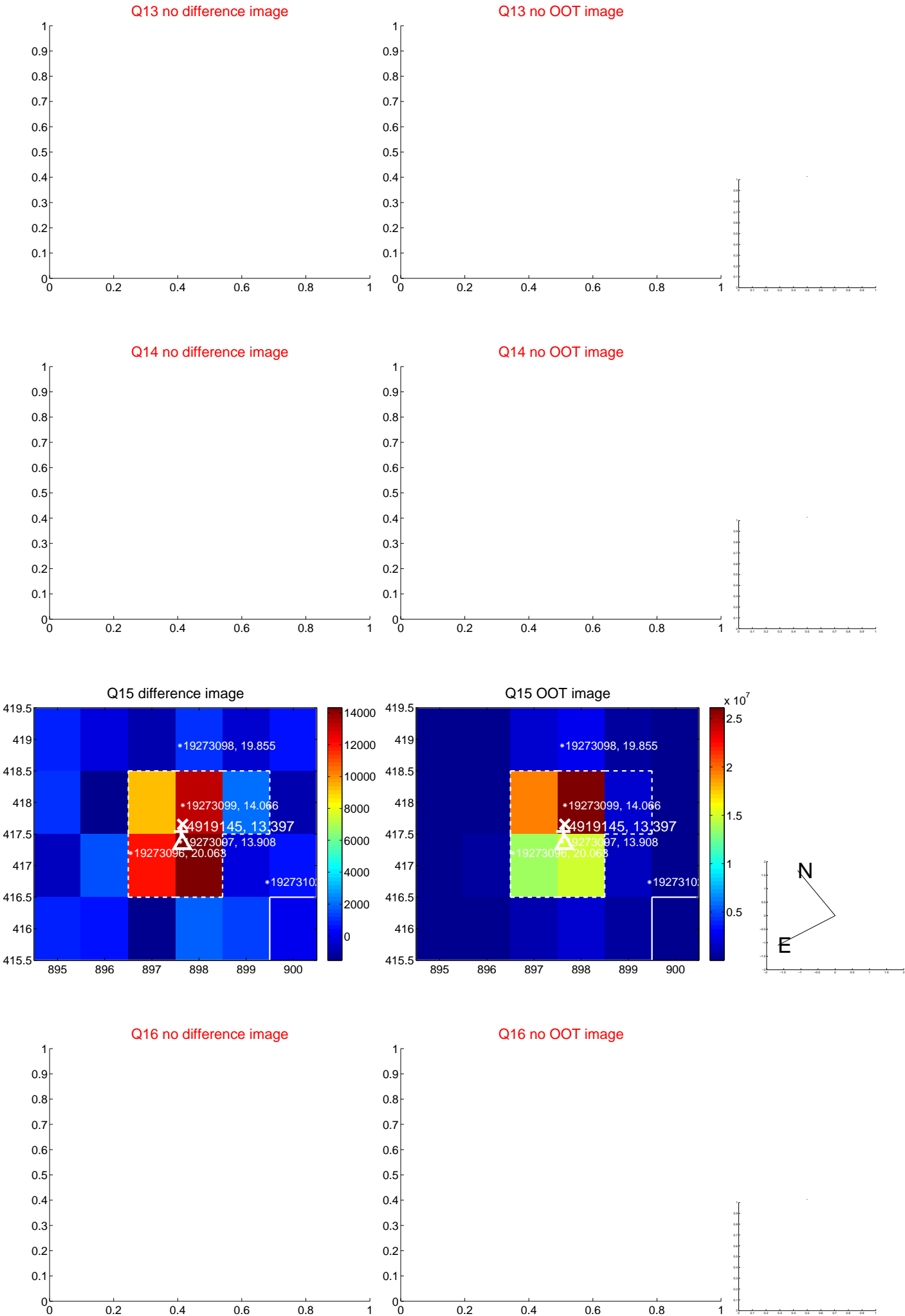
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



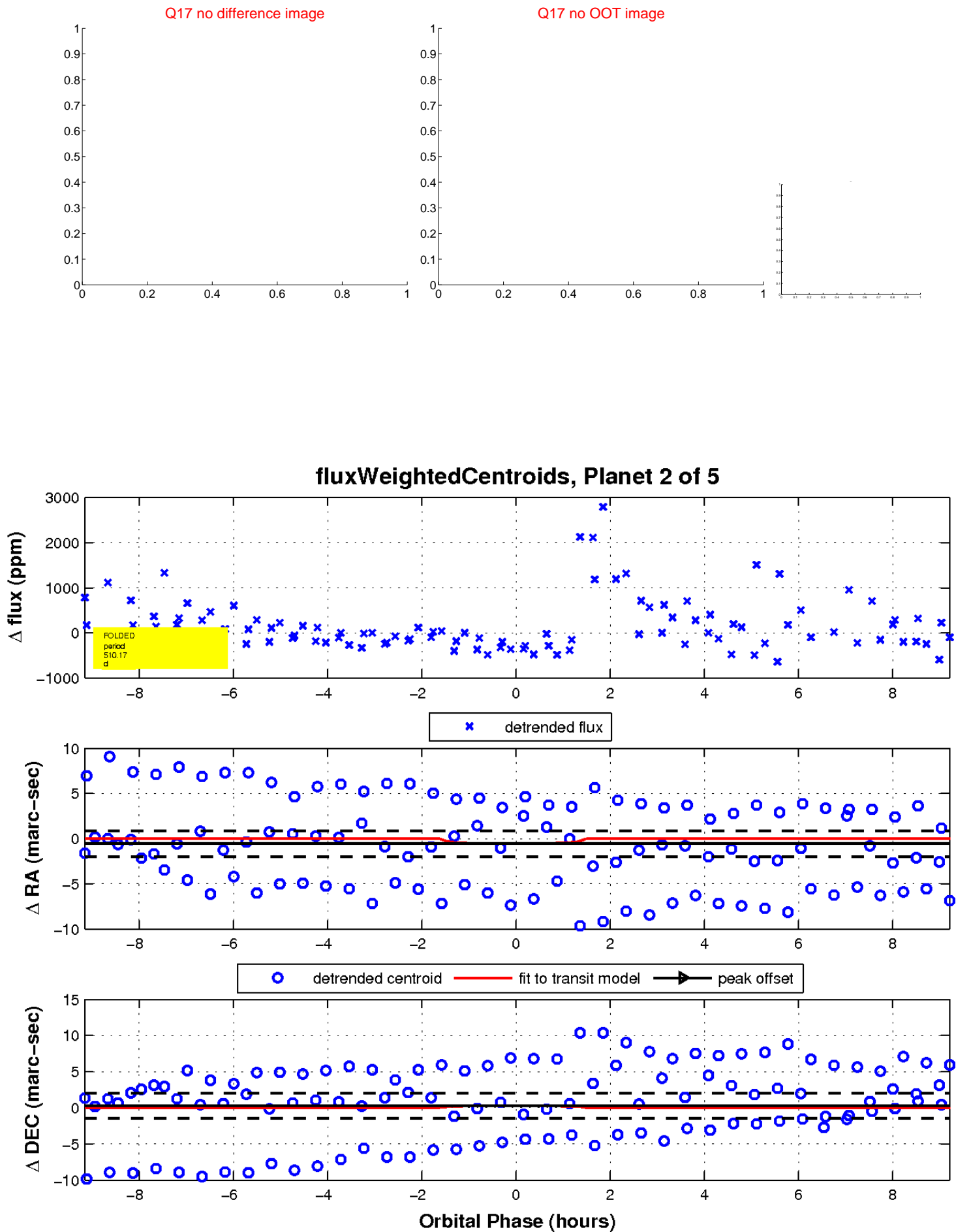
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

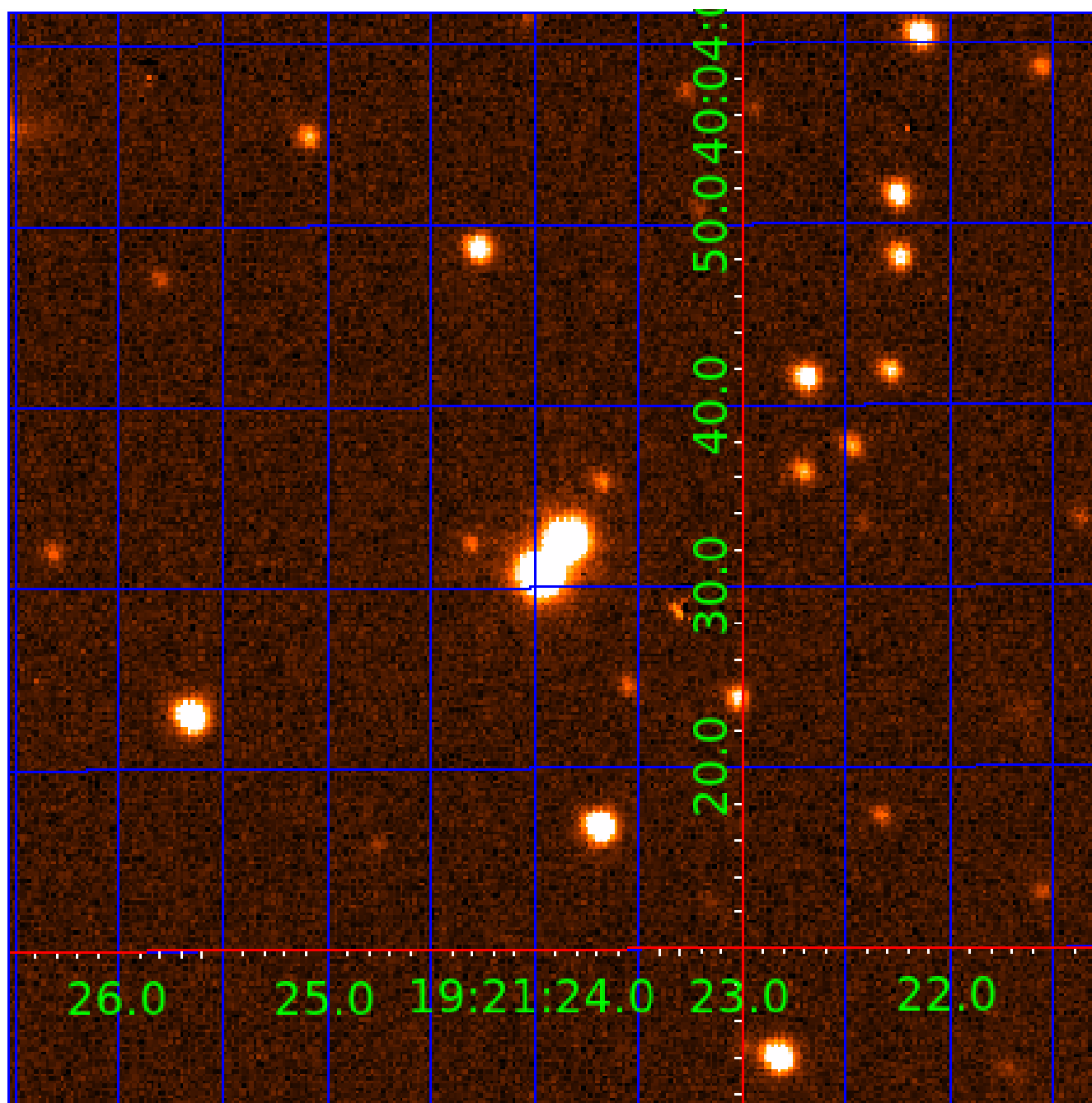


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919145

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})
004919145-01	OBS	No	292.413877	135.405267	547.5	4.067	15.7	4.9	1.00	5780	2.38	1.34
004919145-02	OBS	No	510.172288	437.593998	852.3	3.134	11.6	9.4	1.00	5780	3.12	0.64
004919145-03	OBS	No	506.309891	498.115265	994.1	5.293	15.6	7.1	1.00	5780	3.21	0.65
004919145-04	OBS	No	597.035814	360.095835	757.3	6.781	12.9	5.8	1.00	5780	2.72	0.52
004919145-05	OBS	No	319.764605	395.386457	700.3	2.487	10.2	8.2	1.00	5780	2.88	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919145-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
004919145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

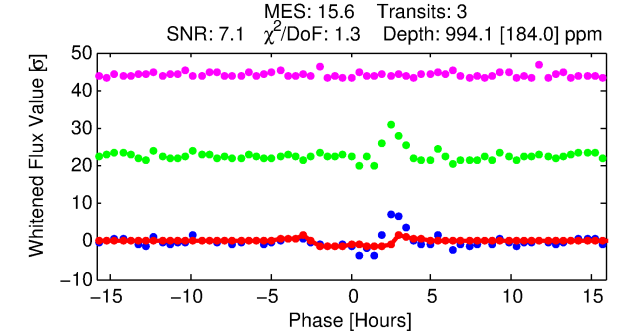
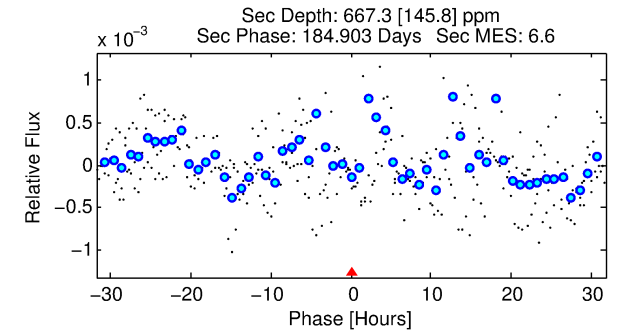
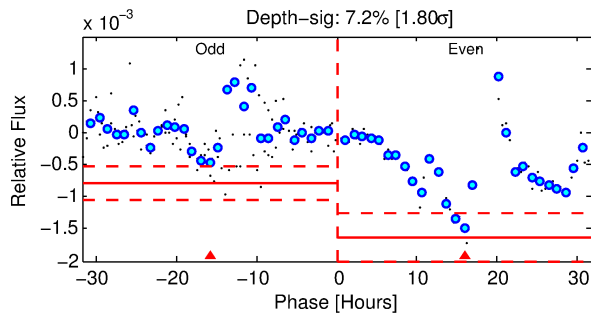
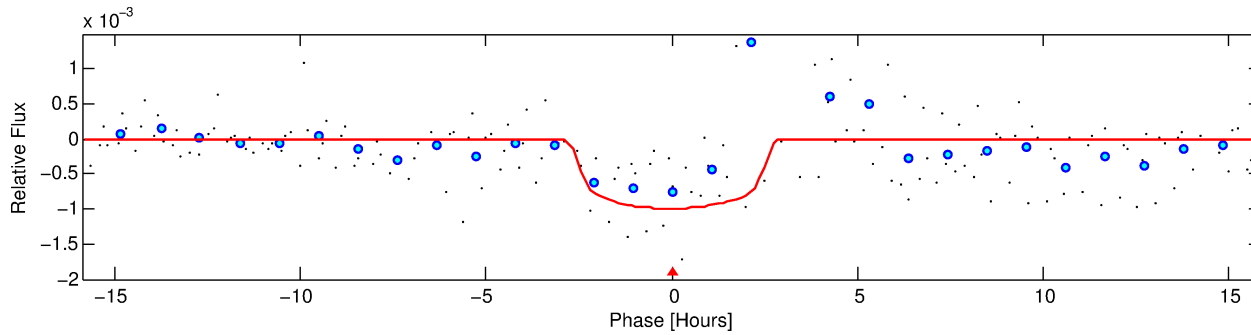
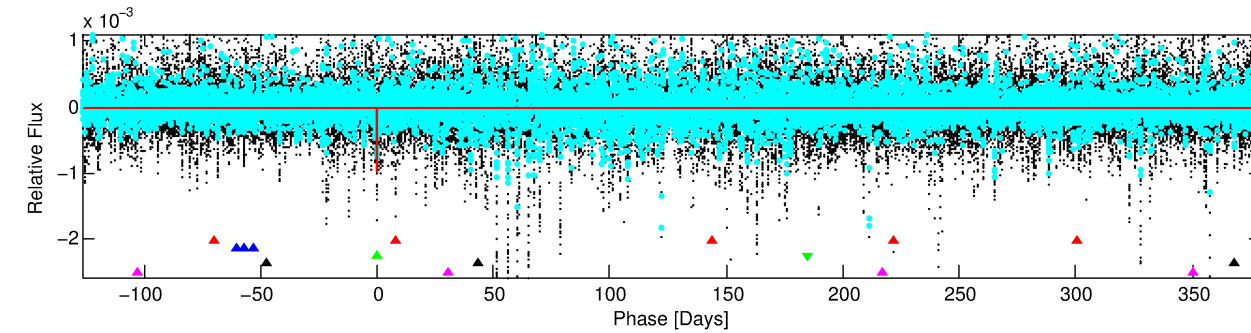
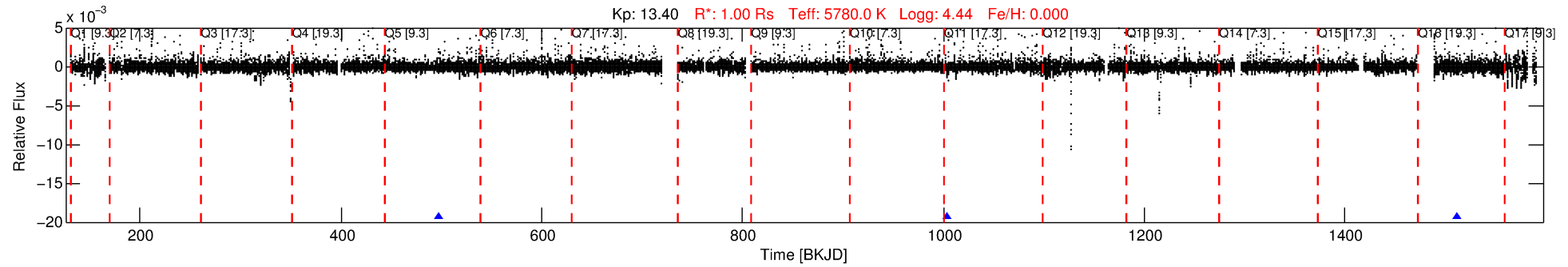
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919145-03

No Significant Match Found

DV One-Page Summary

KIC: 4919145 Candidate: 3 of 5 Period: 506.310 d



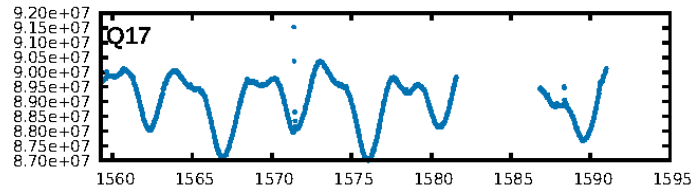
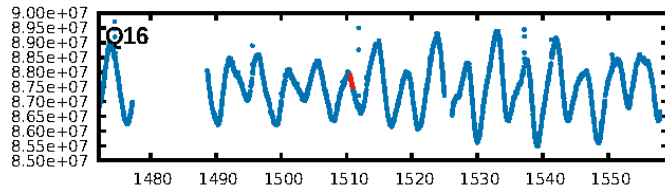
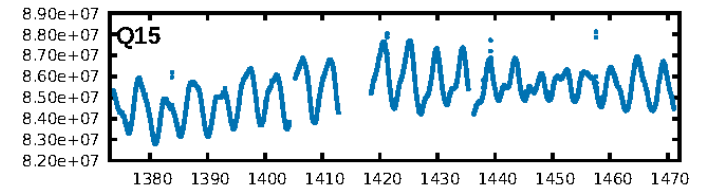
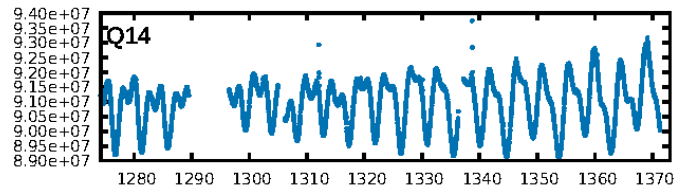
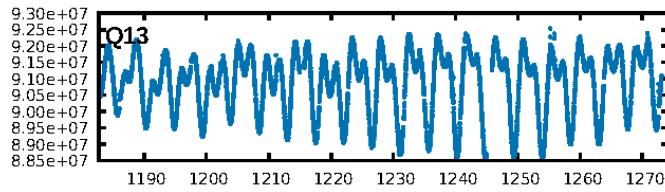
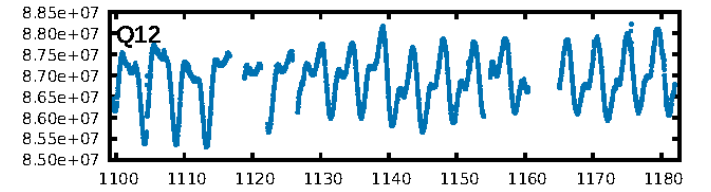
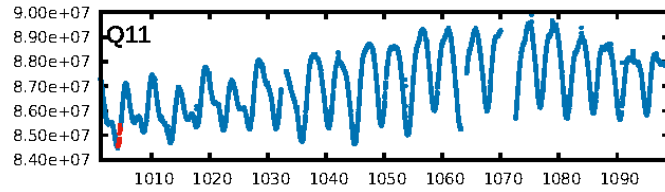
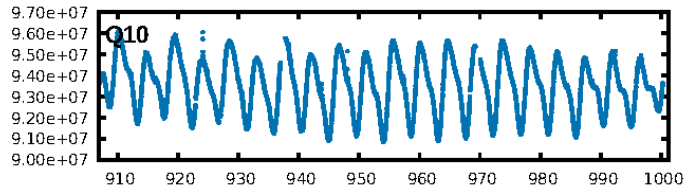
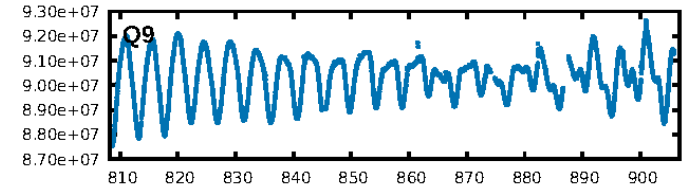
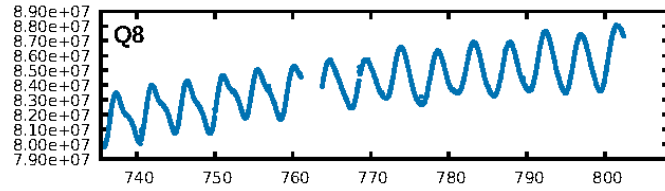
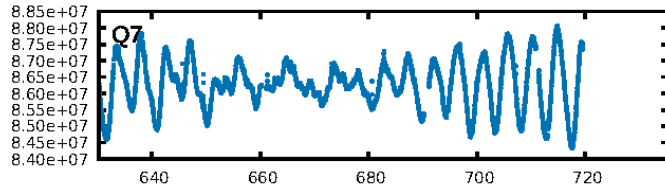
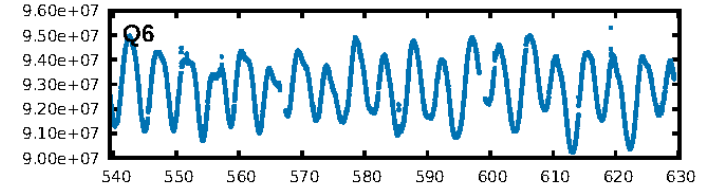
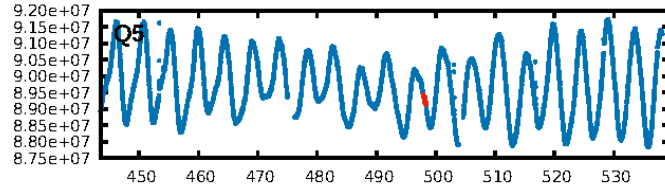
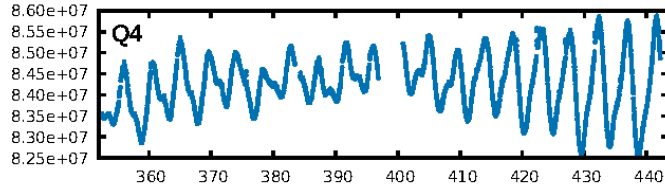
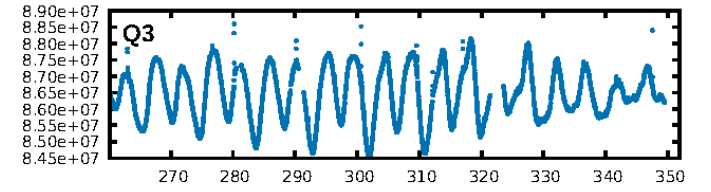
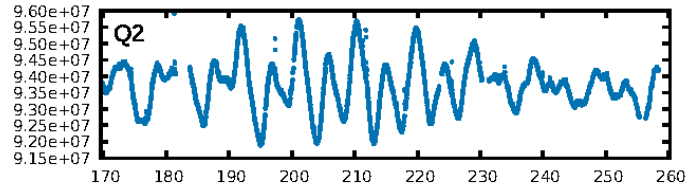
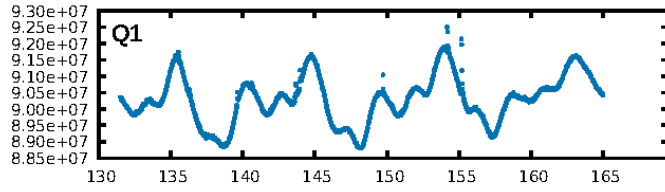
DV Fit Results:

Period = 506.30989 [0.00473] d
Epoch = 498.1153 [0.0063] BKJD
Rp/R* = 0.0294 [0.0330]
a/R* = 672.19 [3208.66]
b = 0.46 [8.22]
Seff = 0.65 [0.00]
Teq = 229 [0] K
Rp = 3.20 [3.60] Re
a = 1.2435 [0.0000] AU
Ag = 55273.18 [124756.10] [0.44 σ]
Teffp = 5421 [3059] K [1.70 σ]

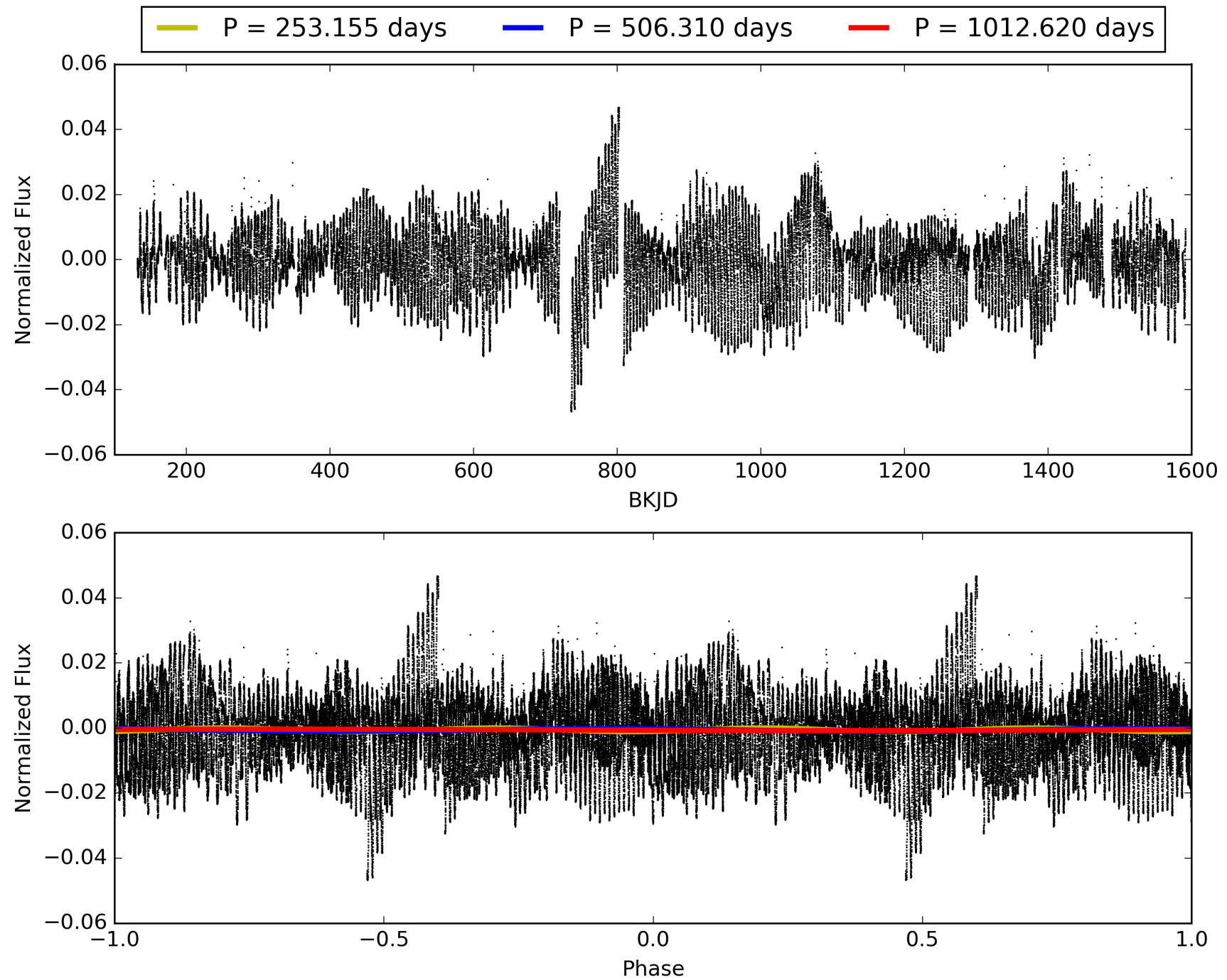
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [765.54 σ]
LongPeriod-sig: 100.0% [15.07 σ]
ModelChiSquare2-sig: 14.5%
ModelChiSquareGof-sig: 82.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.34
Centroid-sig: 6.5%
Centroid-so: 1.652 arcsec [1.61 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0 [0]
KicOffset-st: 0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [2/2]

TCE 004919145-03, PDC Light Curves

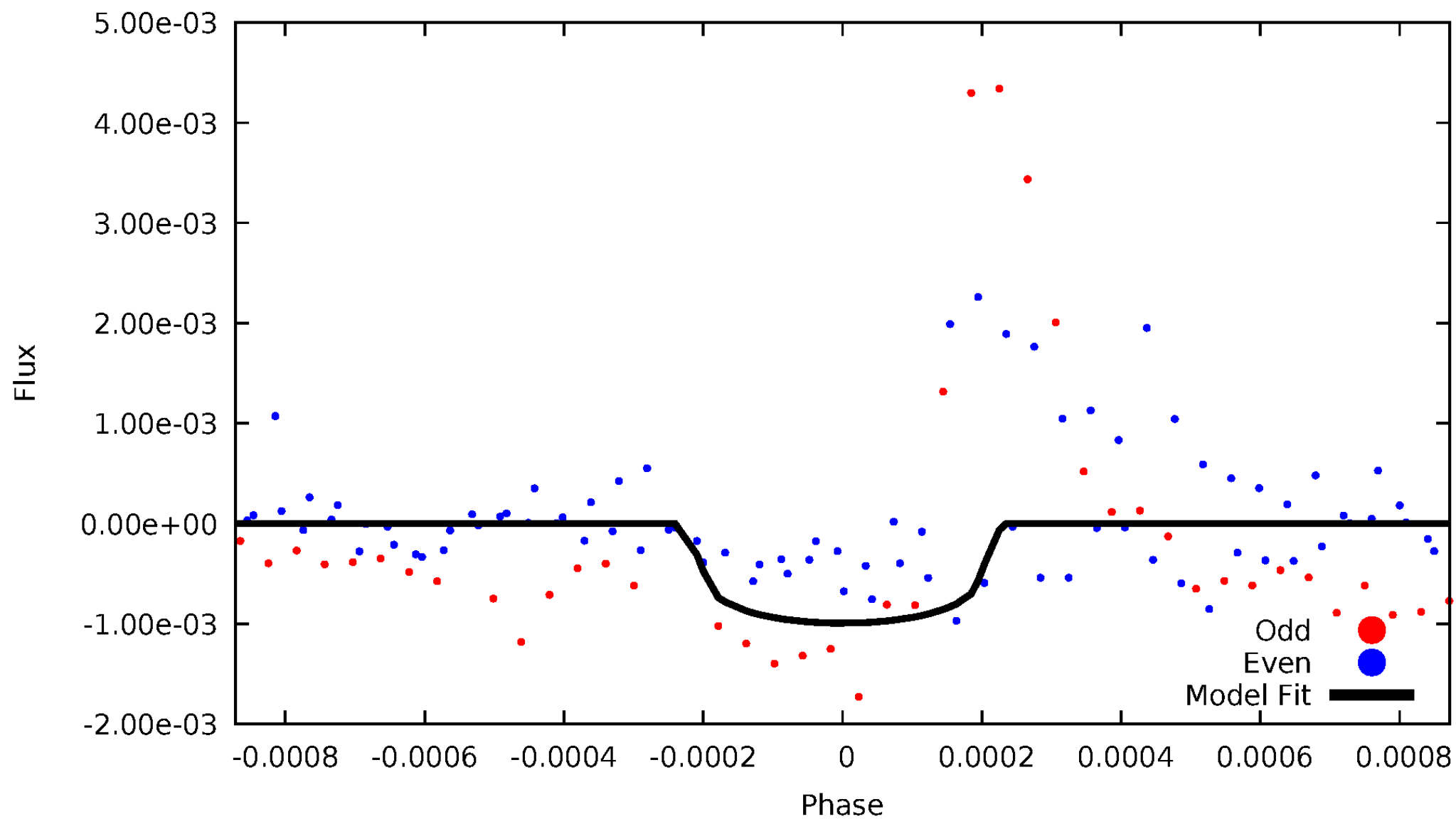


TCE 004919145-03



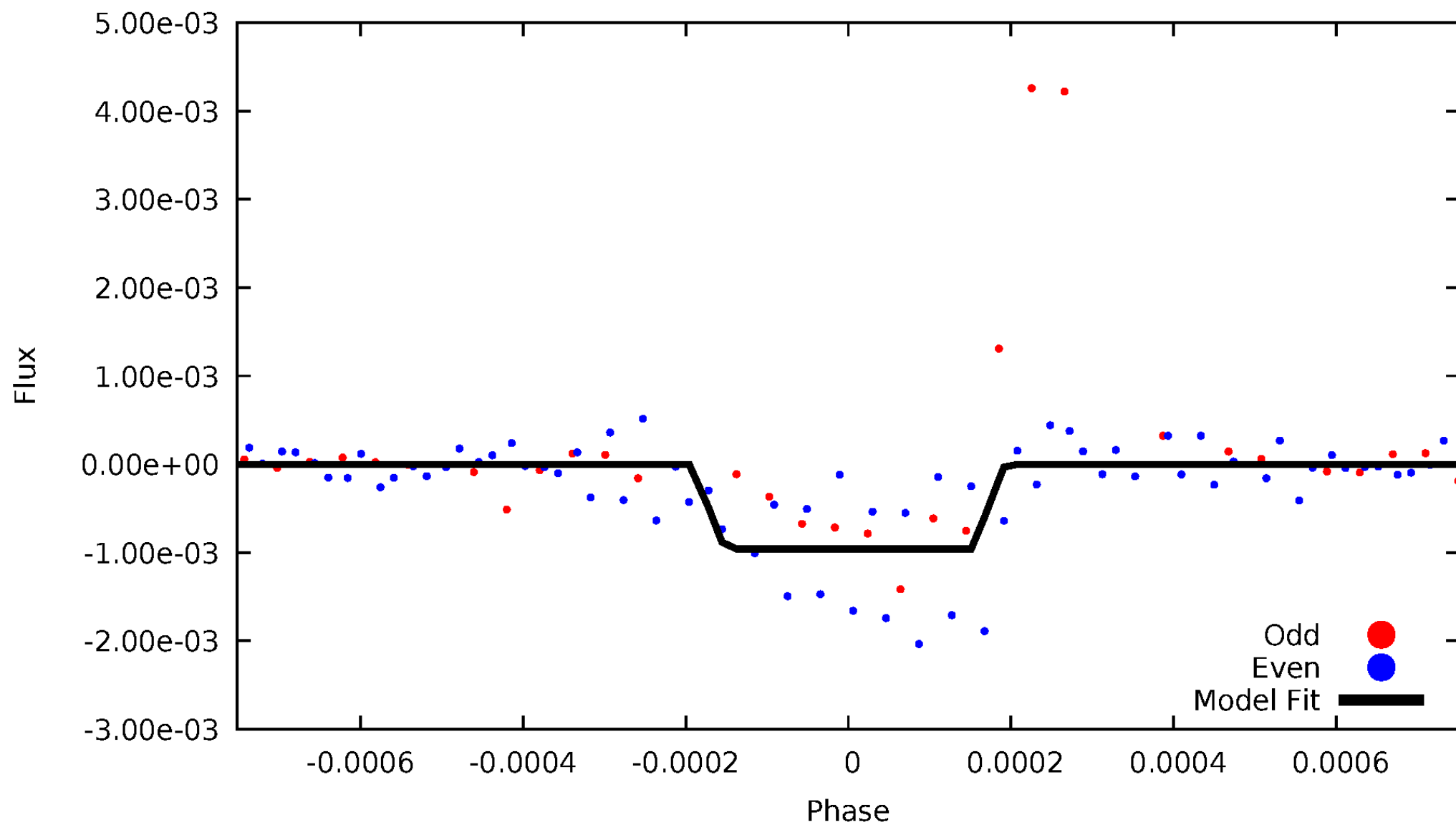
DV Odd/Even

TCE 004919145-03



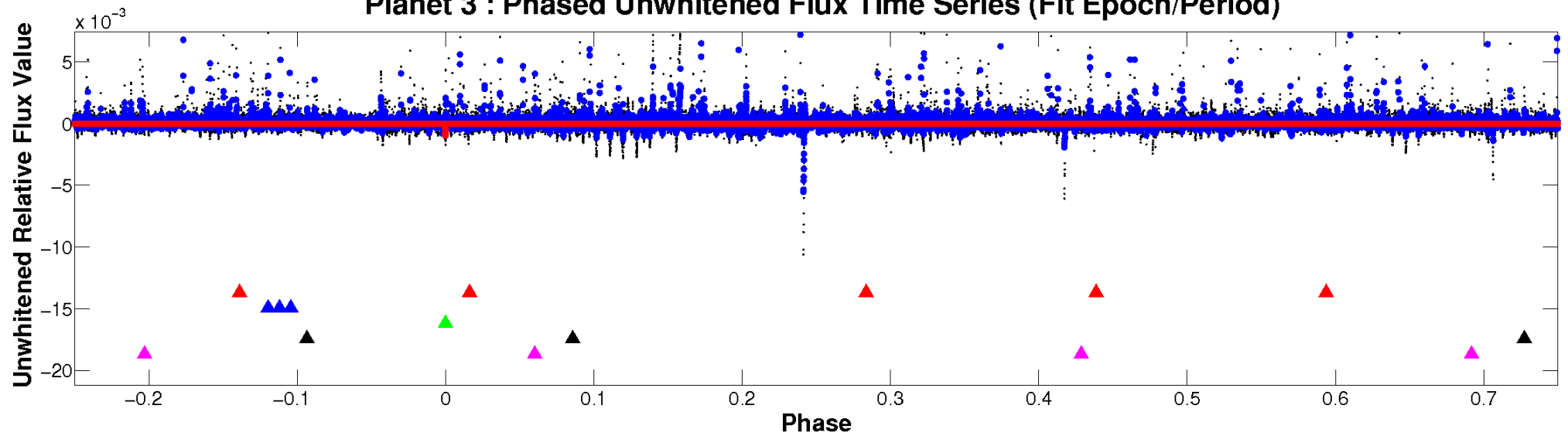
ALT Odd/Even

TCE 004919145-03

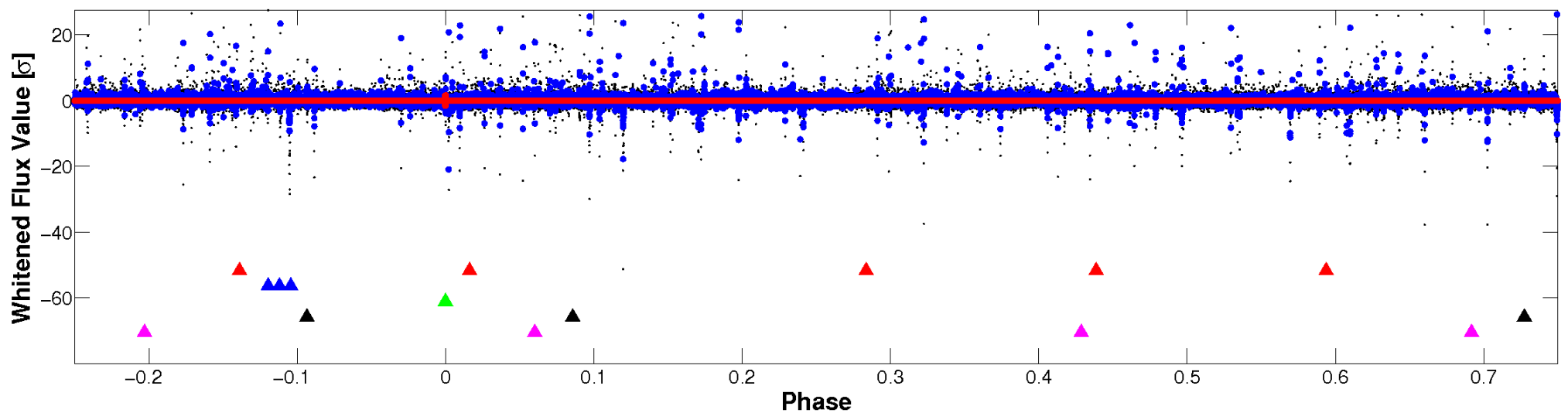


Non-Whitened Vs. Whitened Light Curve

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

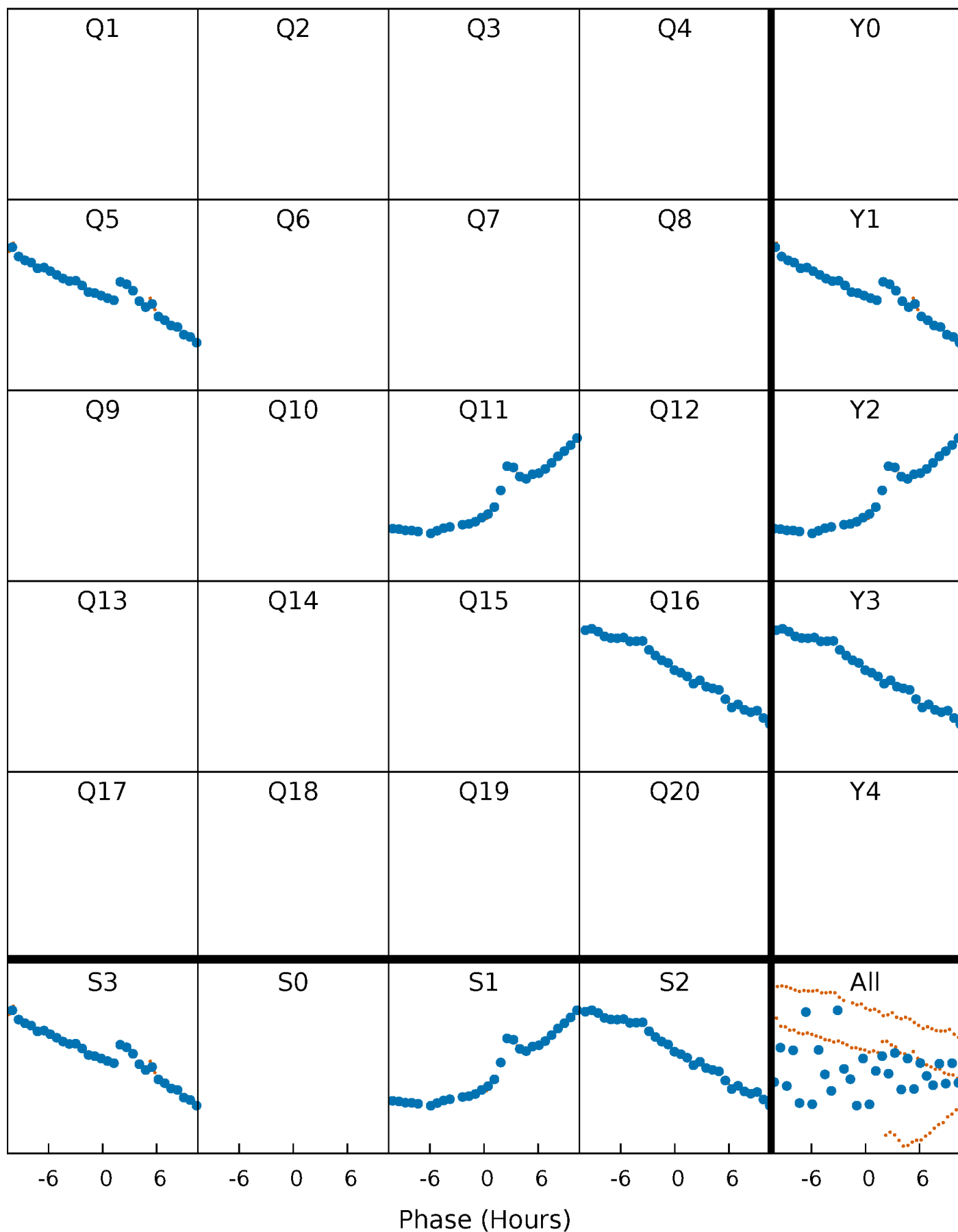


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



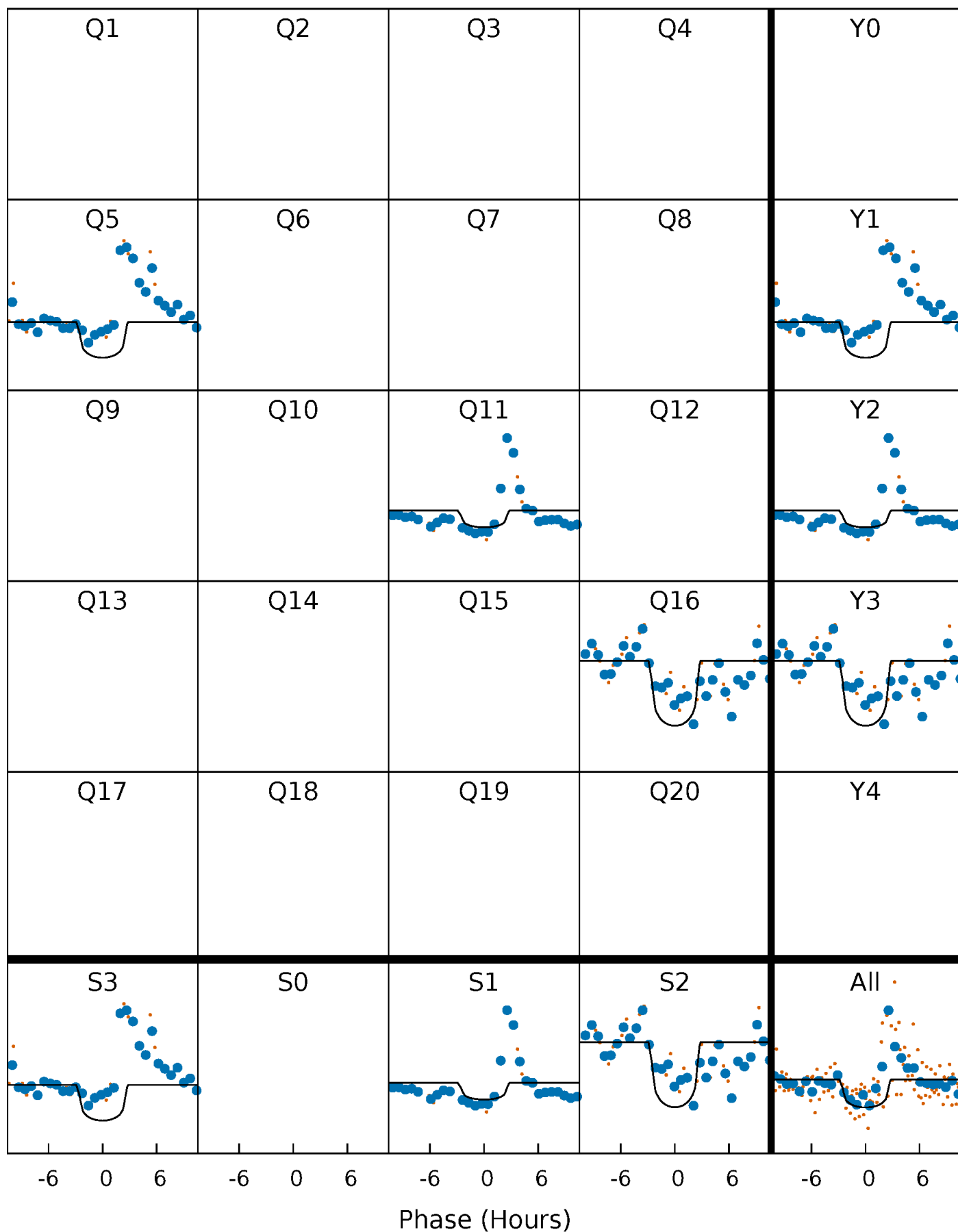
PDC Quarter-Phased Transit Curves

TCE 004919145-03 P=506.309891 Days $T_0=498.115265$ (BKJD)



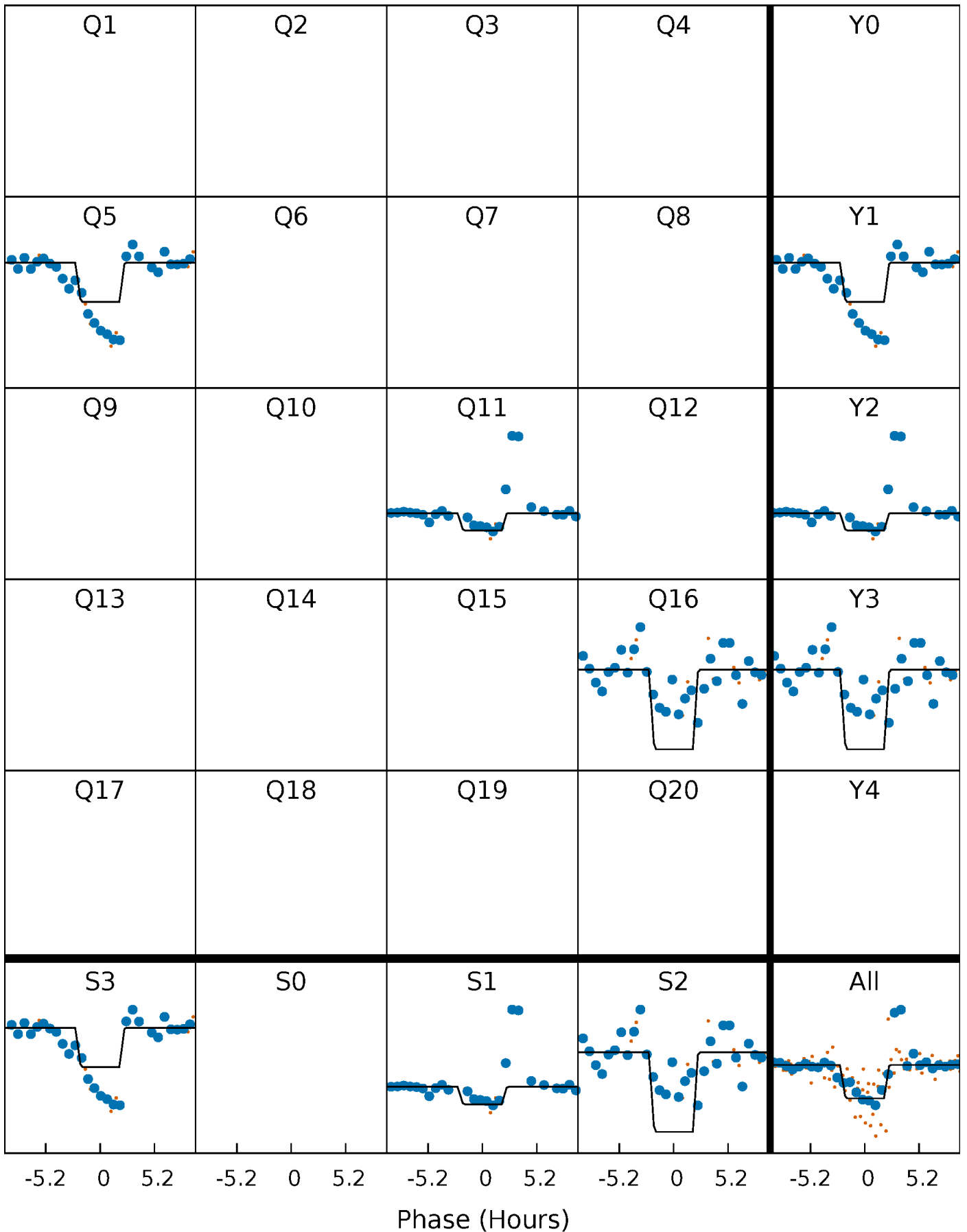
DV Quarter-Phased Transit Curves

TCE 004919145-03 P=506.309891 Days $T_0=498.115265$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

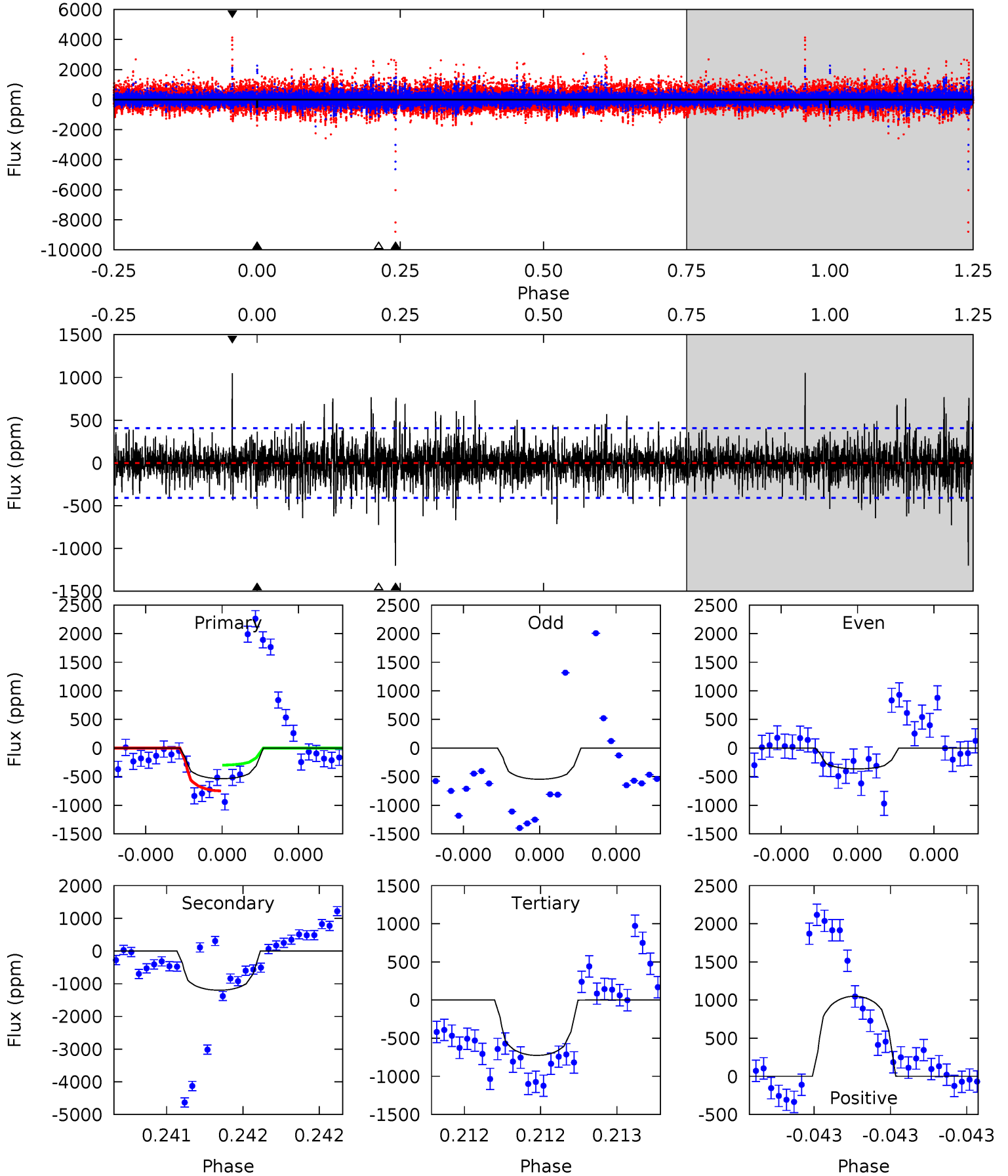
TCE 004919145-03 P=506.316372 Days $T_0=498.088124$ (BKJD)



DV Model-Shift Uniqueness Test

004919145-03, P = 506.309891 Days, E = 498.115265 Days

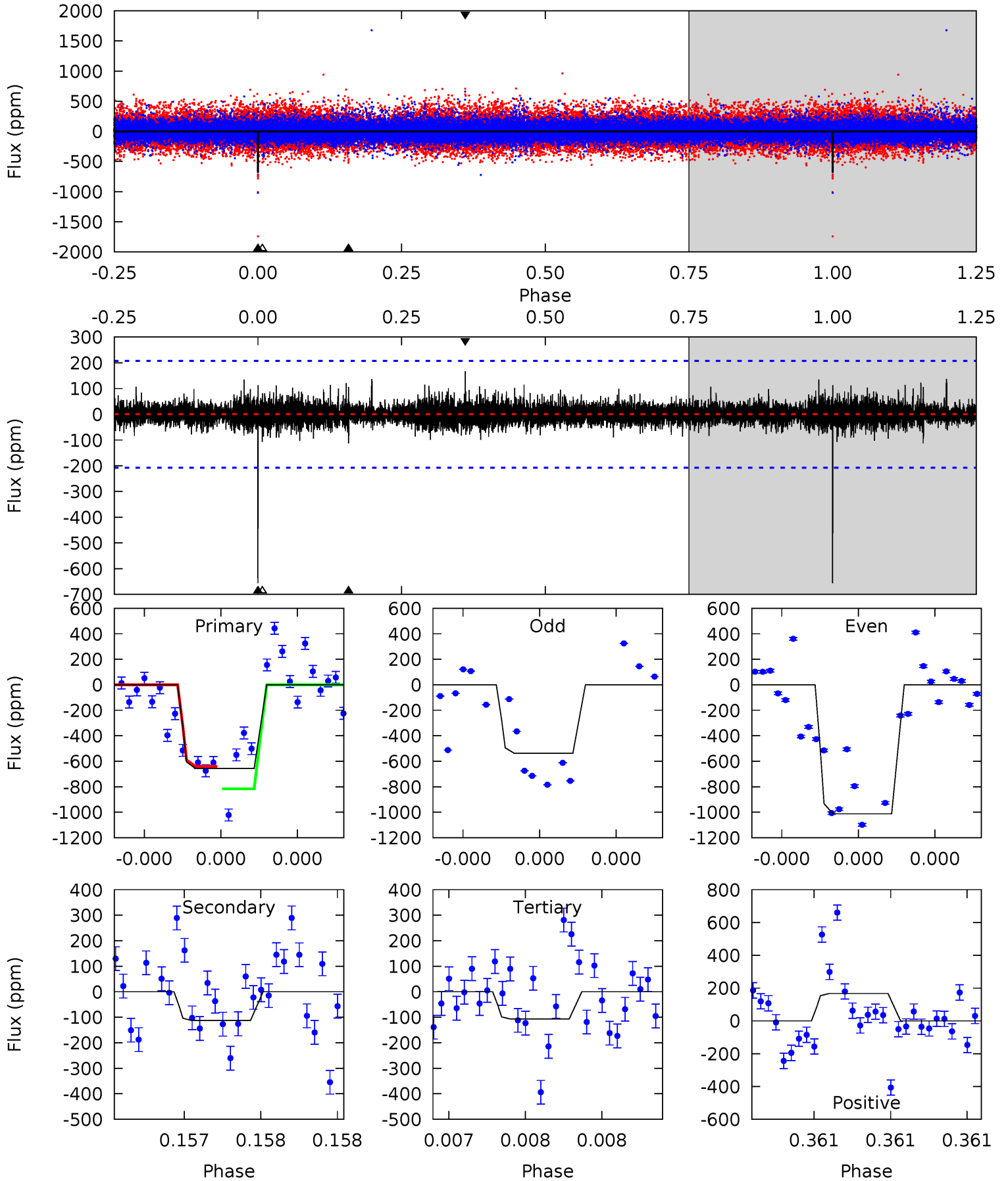
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.36	16.5	9.97	14.4	5.60	3.52	2.03	-2.61	-7.06	6.52	2.07	1.00	0.65	0.47	3.09



Alt Model-Shift Uniqueness Test

004919145-03, P = 506.316372 Days, E = 498.088124 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	3.06	2.90	4.54	5.64	3.58	0.63	14.9	13.3	0.16	-1.48	7.40	1.34	0.20	0



Stellar Parameters For KIC 004919145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 004919145-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1200 ± 73	$4.19^{+3.27}_{-2.79}$	319^{+16}_{-14}	5481^{+4617}_{-1134}	$58329^{+469456}_{-40302}$
Alt.	-113 ± 37	$4.14^{+3.15}_{-2.58}$	320^{+15}_{-16}	3505^{+1577}_{-567}	5318^{+35379}_{-3710}

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 $A_{obs} \gg 1.0$

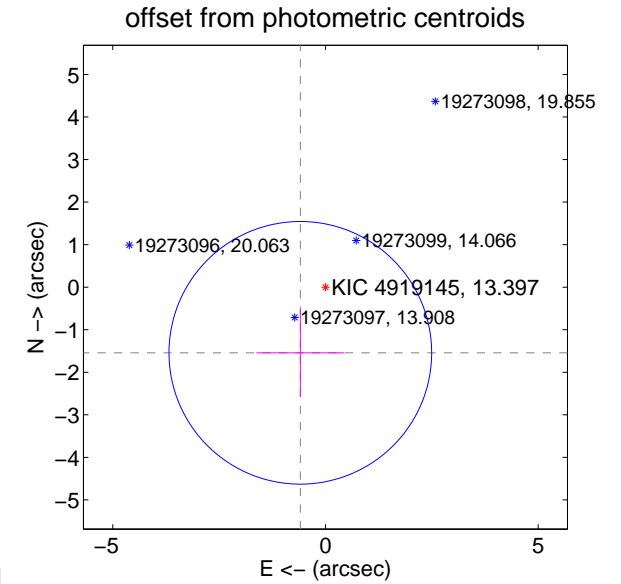
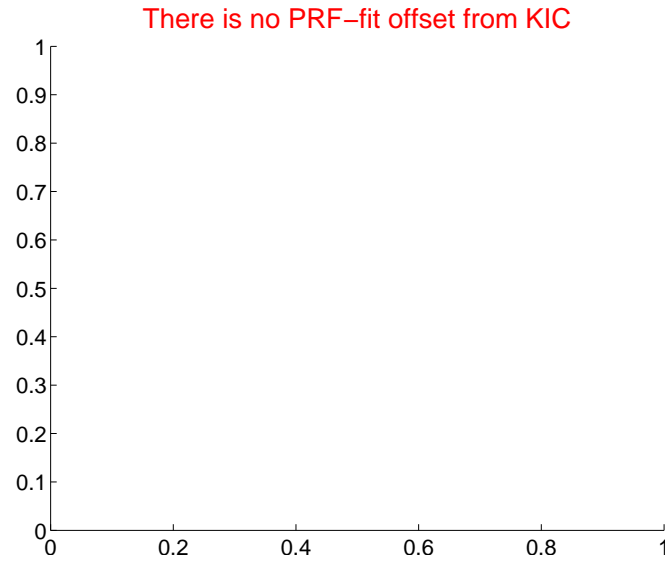
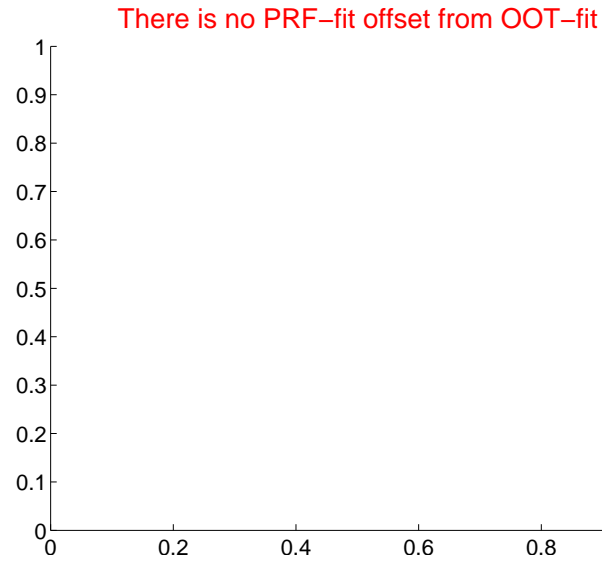
DV Centroid Data

Supplemental centroid analysis for 004919145-03. Kepler magnitude: 13.40. Transit SNR 7.11

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.65 ± 1.03	1.61	0.59 ± 1.03	-1.54 ± 1.03

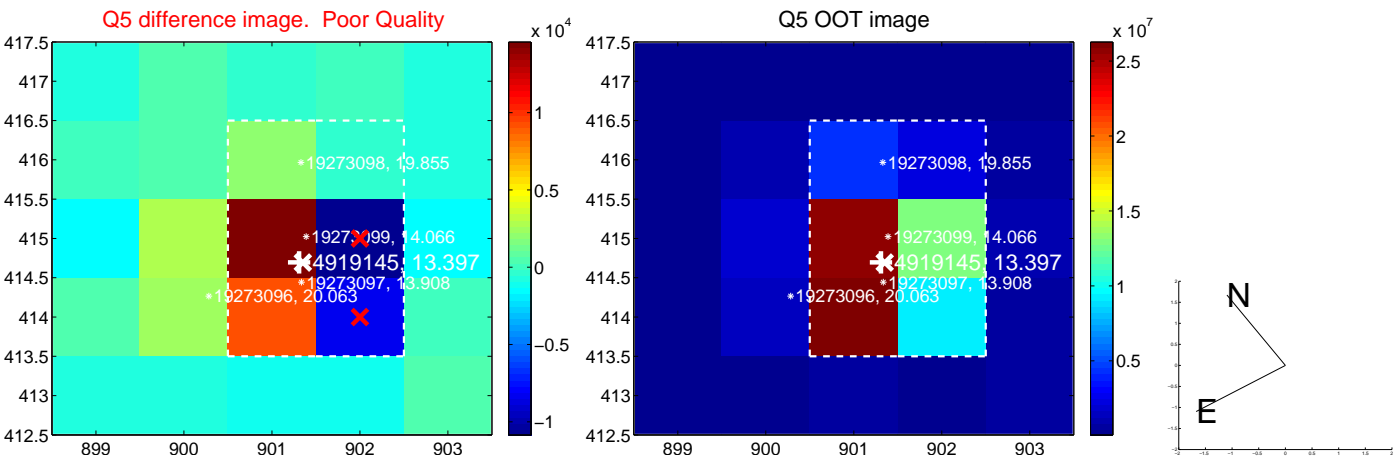


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



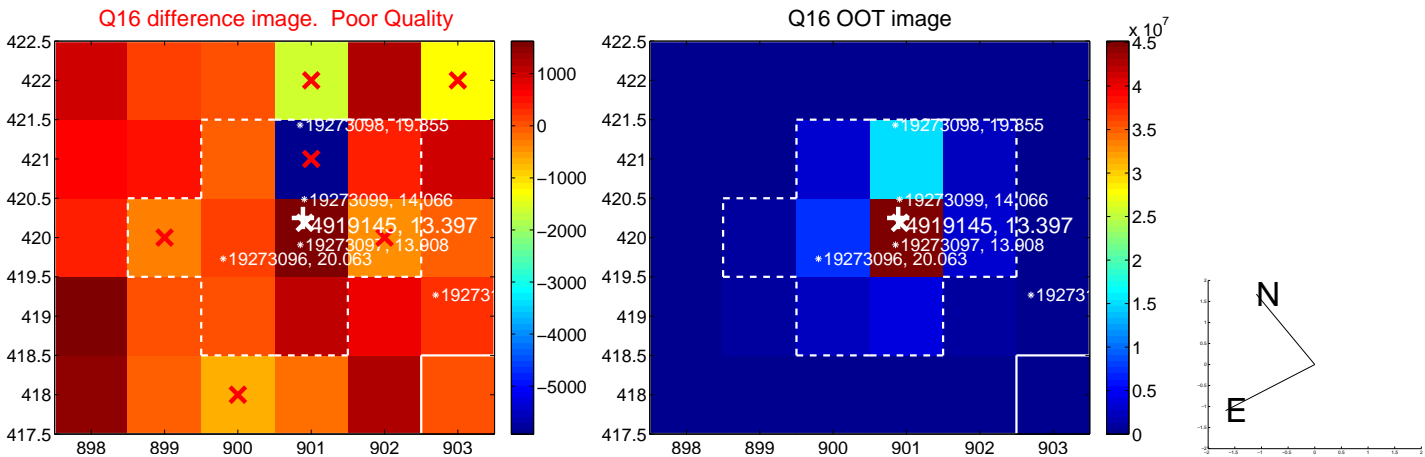
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



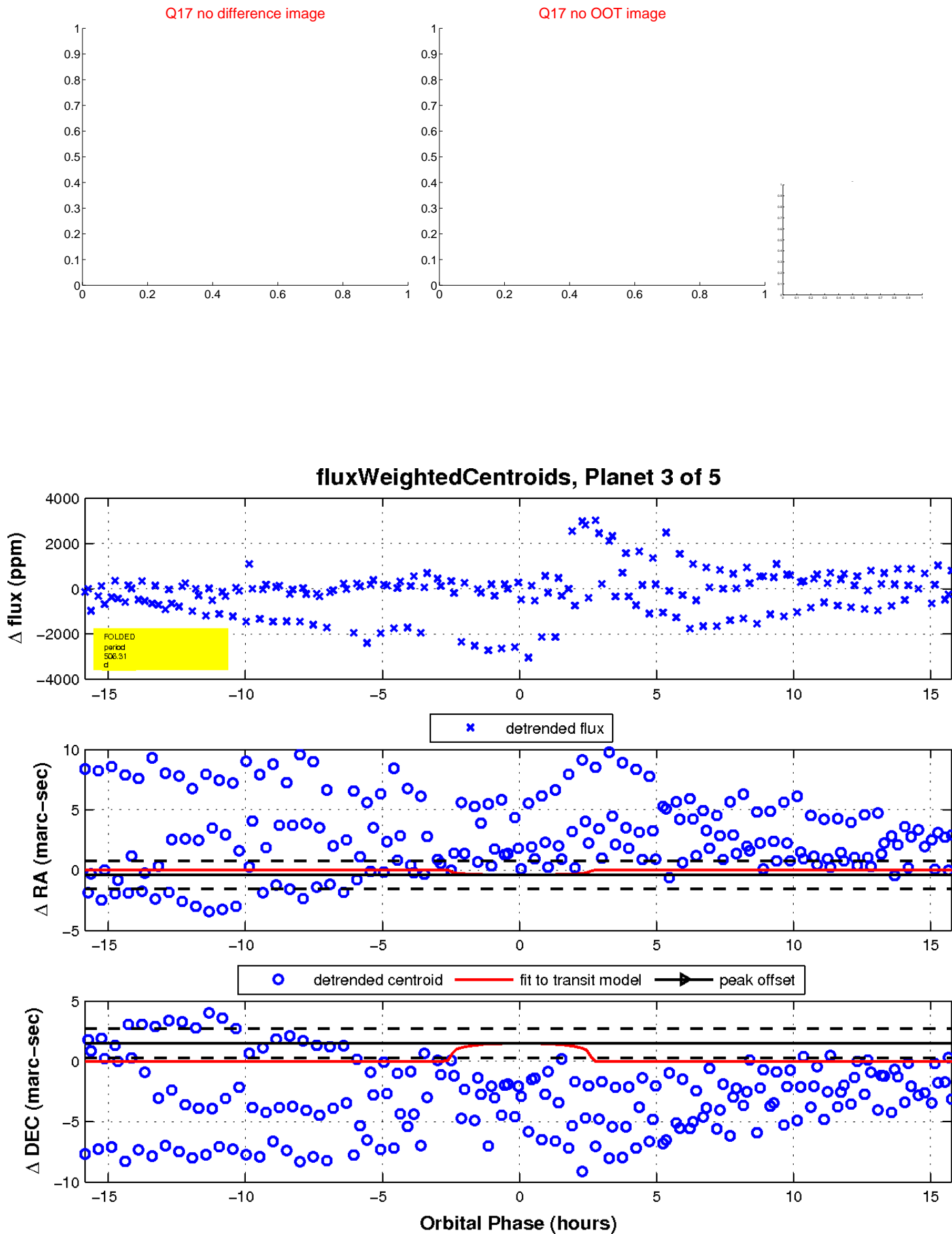
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

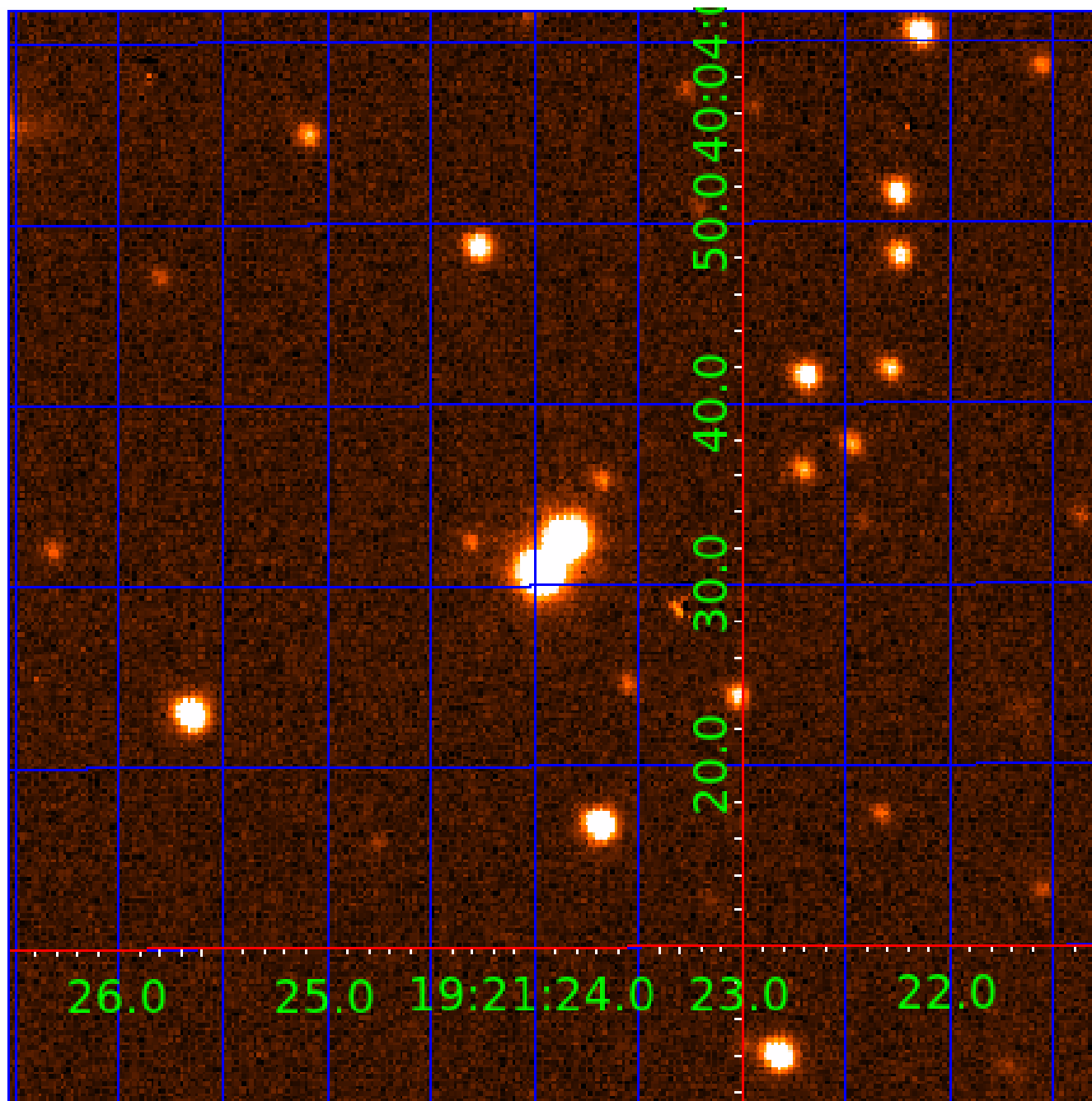


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919145

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})
004919145-01	OBS	No	292.413877	135.405267	547.5	4.067	15.7	4.9	1.00	5780	2.38	1.34
004919145-02	OBS	No	510.172288	437.593998	852.3	3.134	11.6	9.4	1.00	5780	3.12	0.64
004919145-03	OBS	No	506.309891	498.115265	994.1	5.293	15.6	7.1	1.00	5780	3.21	0.65
004919145-04	OBS	No	597.035814	360.095835	757.3	6.781	12.9	5.8	1.00	5780	2.72	0.52
004919145-05	OBS	No	319.764605	395.386457	700.3	2.487	10.2	8.2	1.00	5780	2.88	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919145-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
004919145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

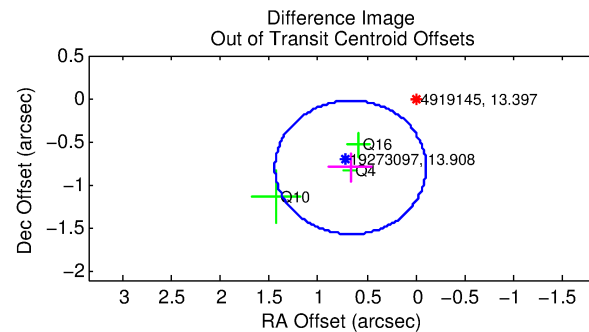
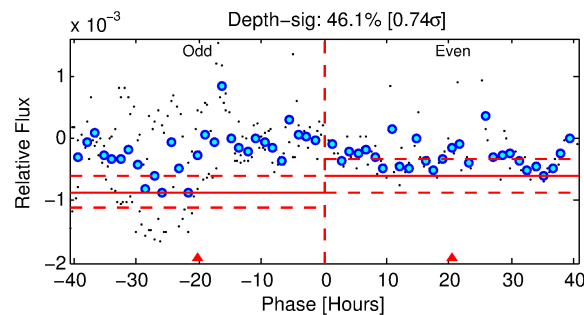
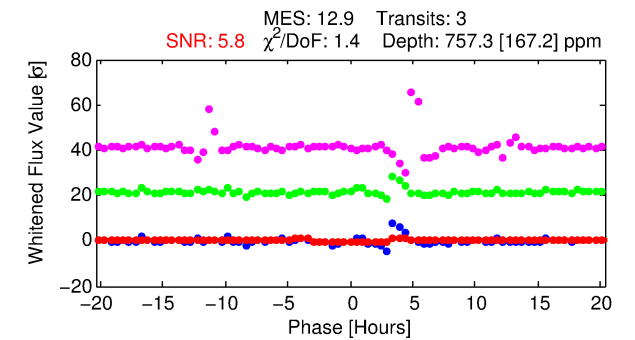
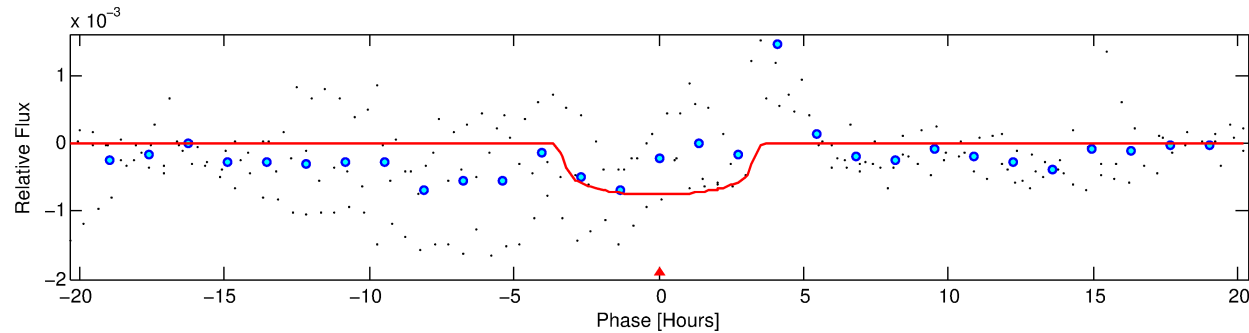
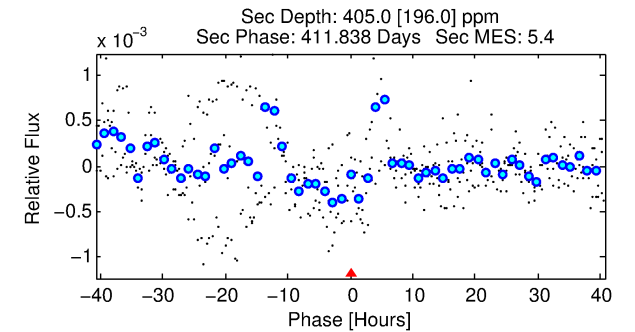
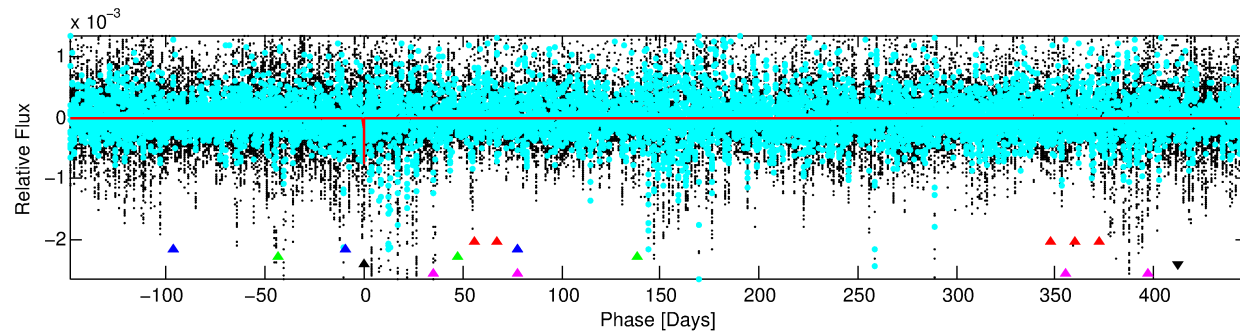
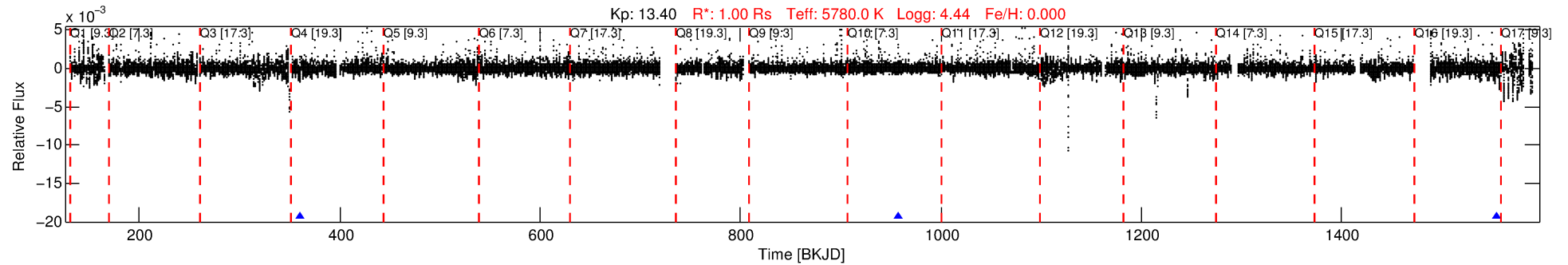
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919145-04

No Significant Match Found

DV One-Page Summary

KIC: 4919145 Candidate: 4 of 5 Period: 597.036 d



DV Fit Results:

Period = 597.03581 [0.00671] d
Epoch = 360.0958 [0.0088] BKJD
Rp/R* = 0.0249 [0.0470]
a/R* = 689.27 [5631.30]
b = 0.02 [366.72]
Seff = 0.52 [0.00]
Teq = 216 [0] K
Rp = 2.72 [5.13] Re
a = 1.3879 [0.0000] AU
Ag = 57922.58 [219907.95] [0.26 sigma]
Teffp = 5192 [4928] K [1.01 sigma]

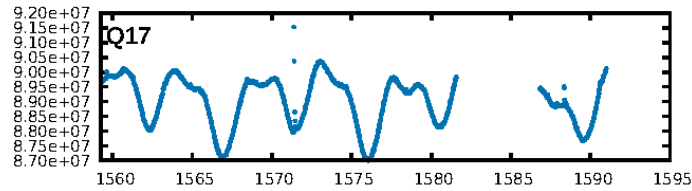
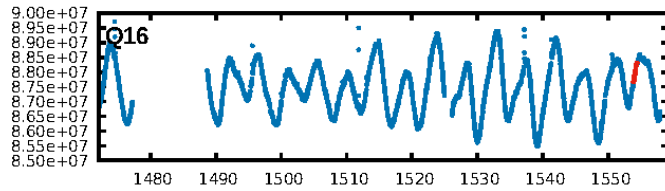
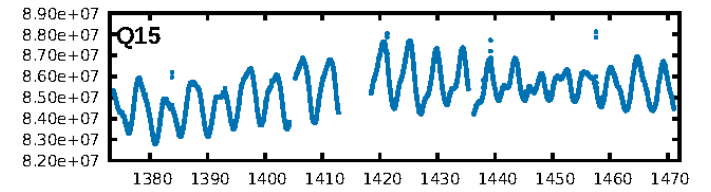
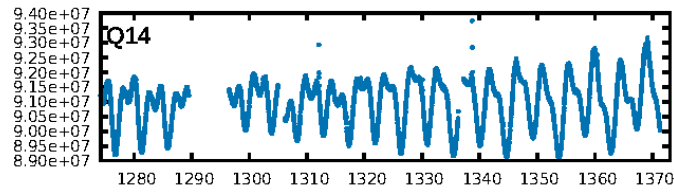
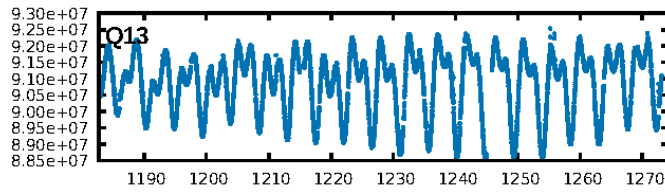
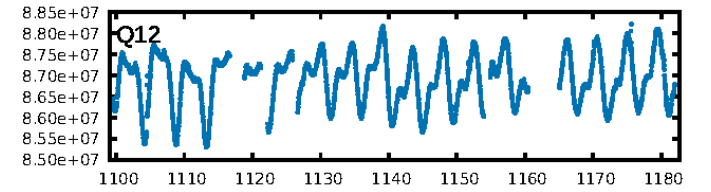
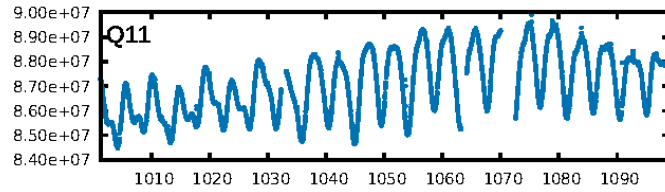
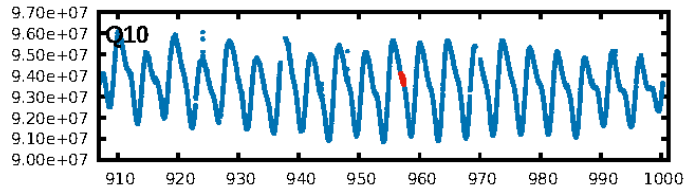
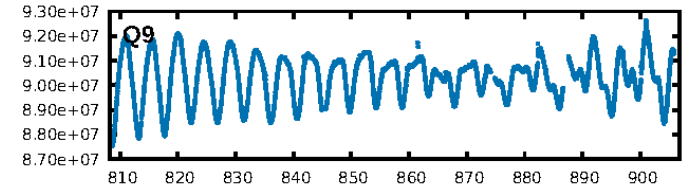
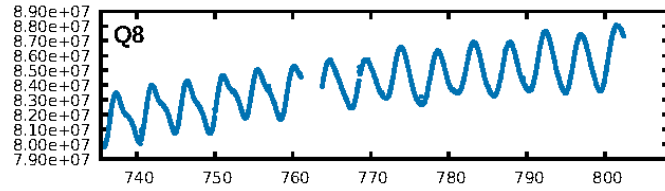
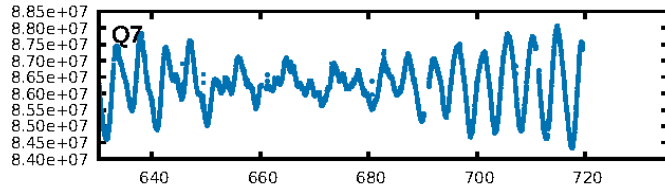
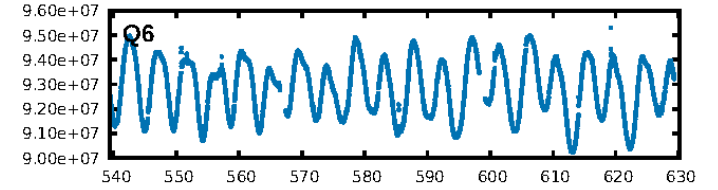
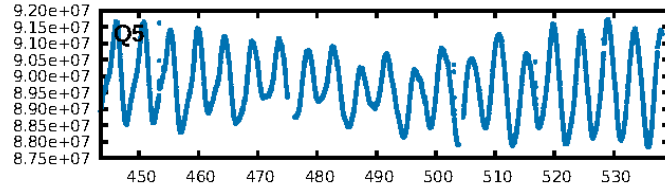
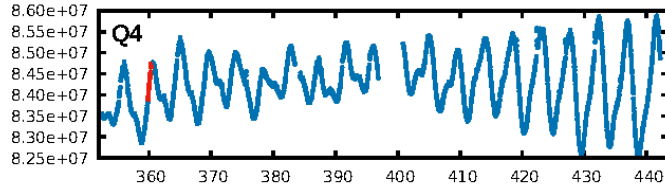
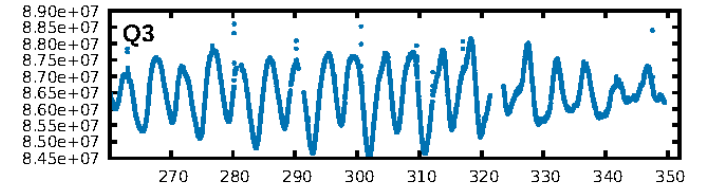
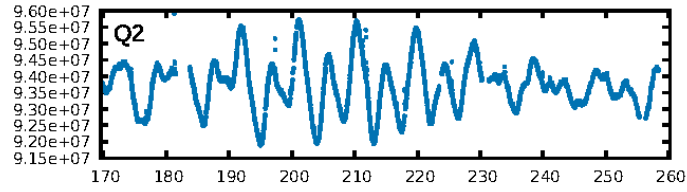
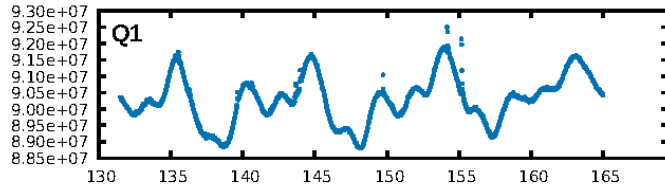
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [279.09 sigma]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.4%
ModelChiSquareGof-sig: 80.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.426
Centroid-sig: 0.3%
Centroid-so: 3.135 arcsec [2.47 sigma]
OotOffset-rm: 1.040 arcsec [4.04 sigma]
KicOffset-rm: 0.835 arcsec [2.61 sigma]
OotOffset-st: 1/0/2/0 [3]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

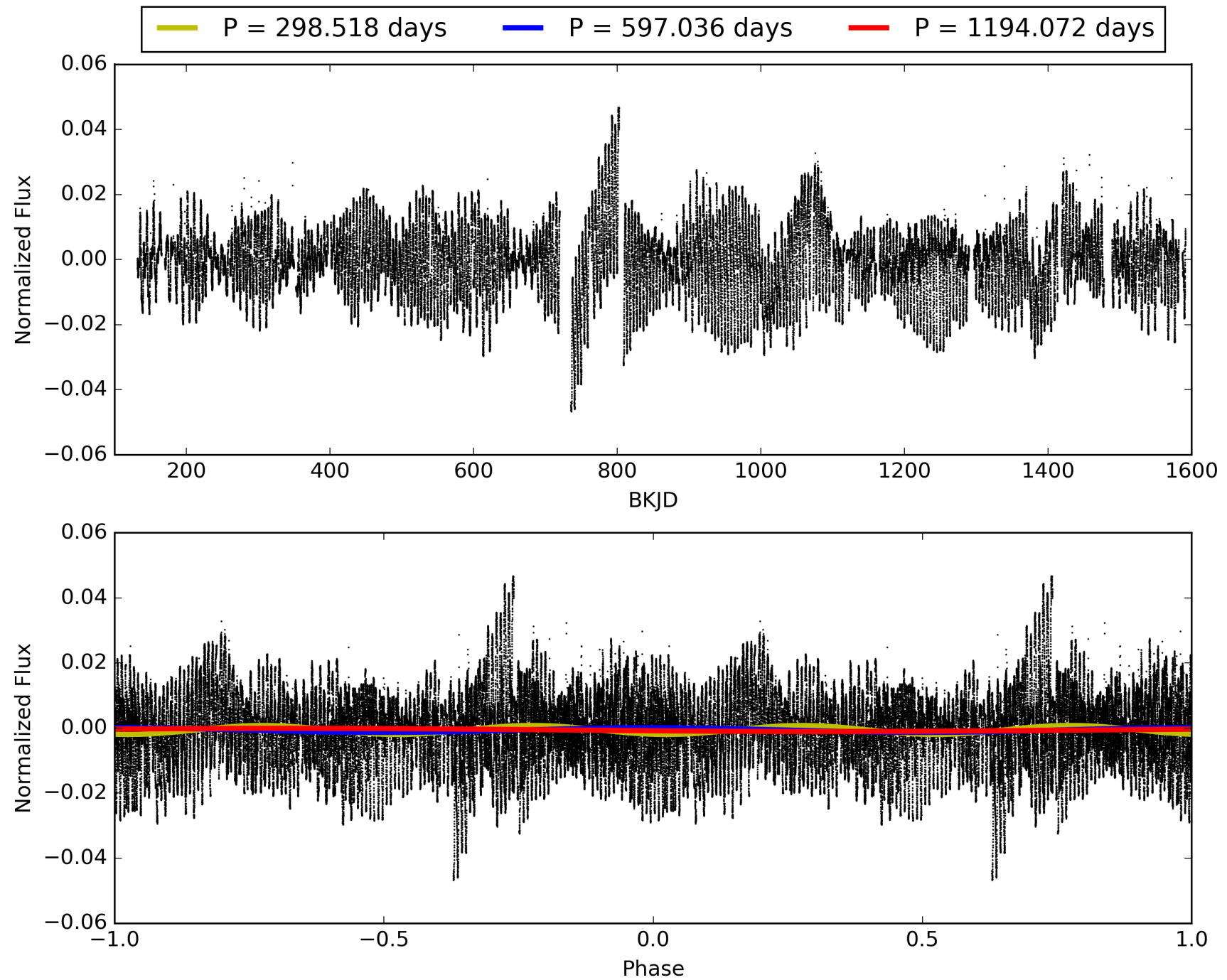
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:02:05 Z

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

TCE 004919145-04, PDC Light Curves

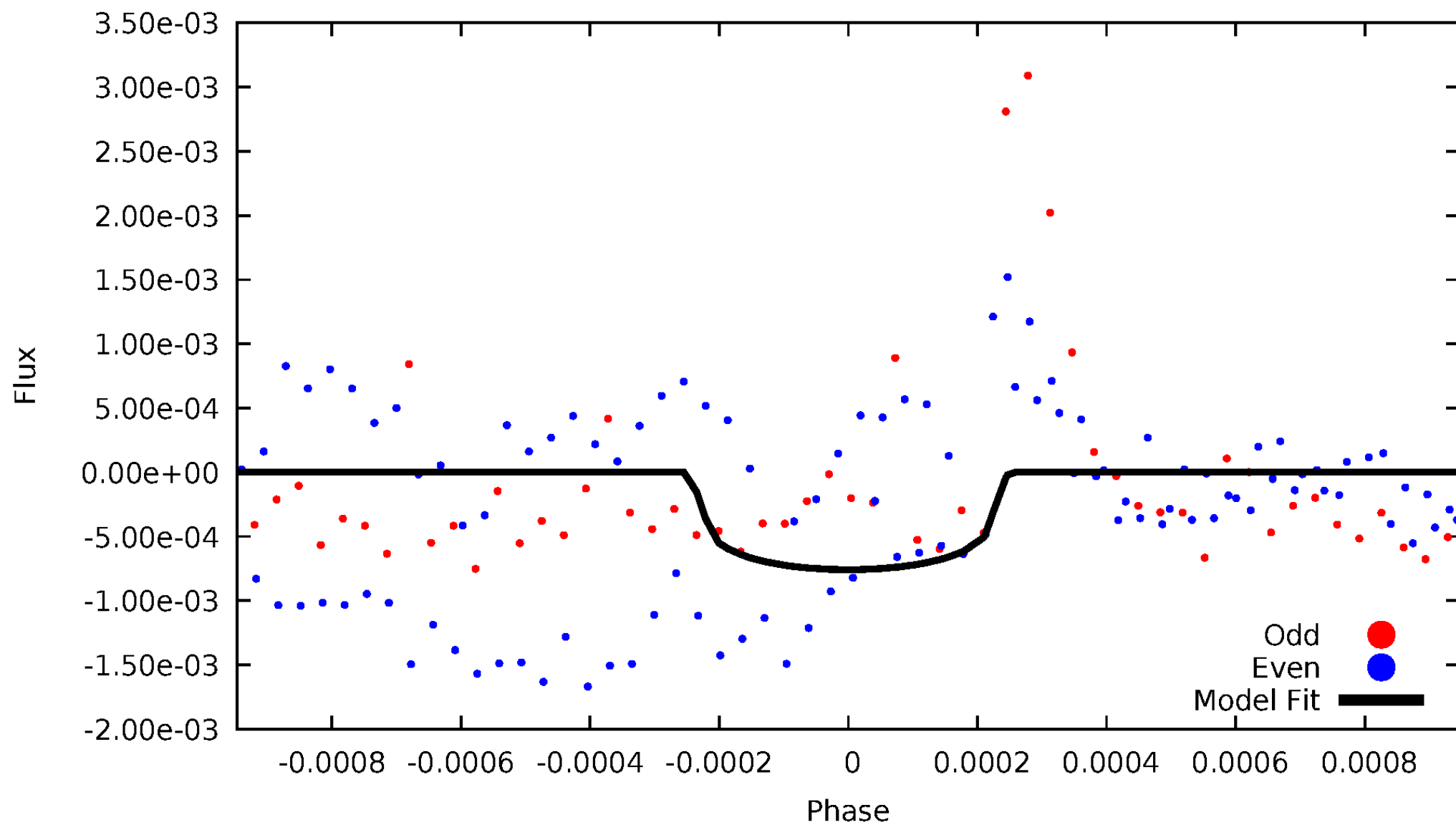


TCE 004919145-04



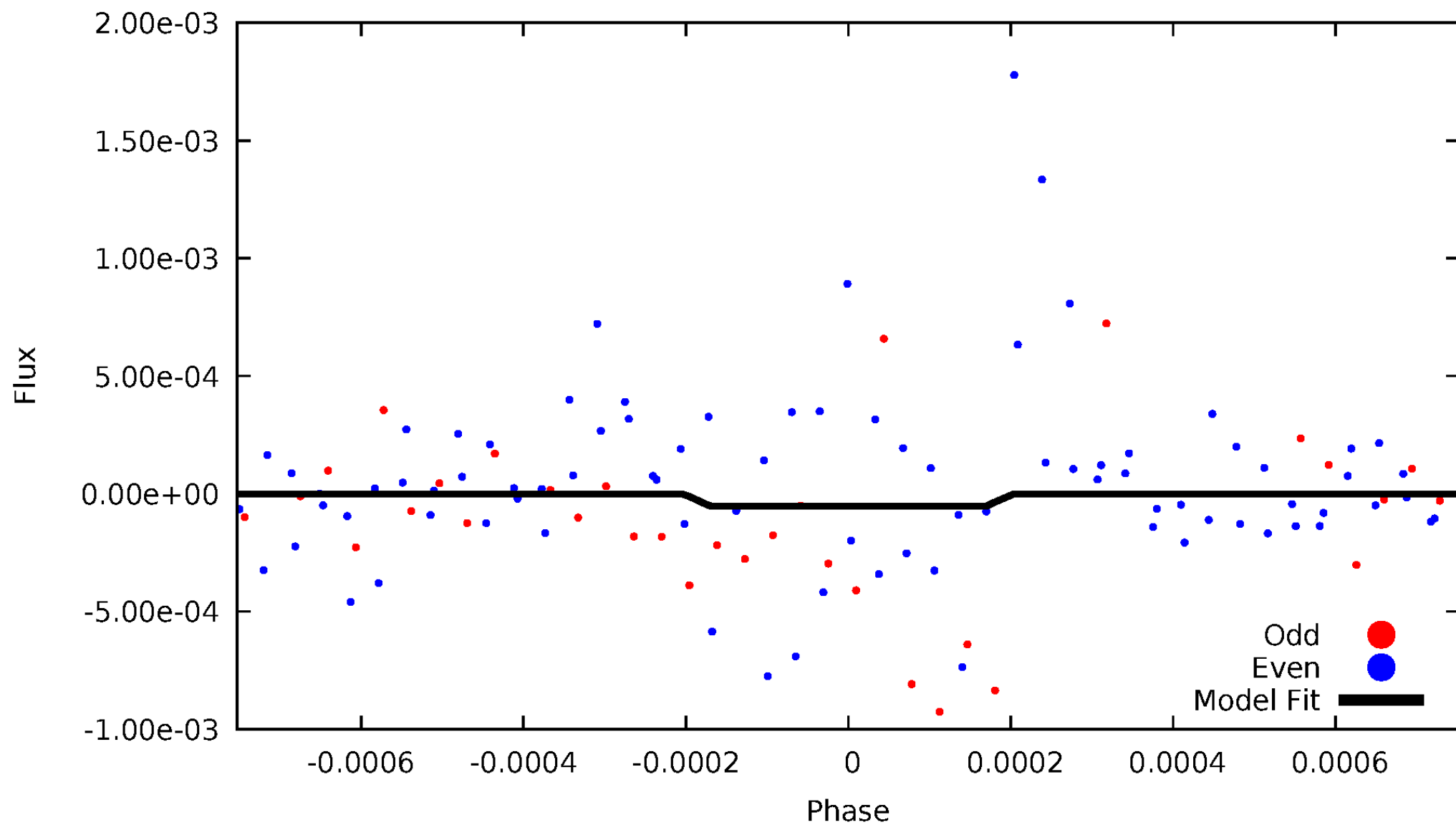
DV Odd/Even

TCE 004919145-04



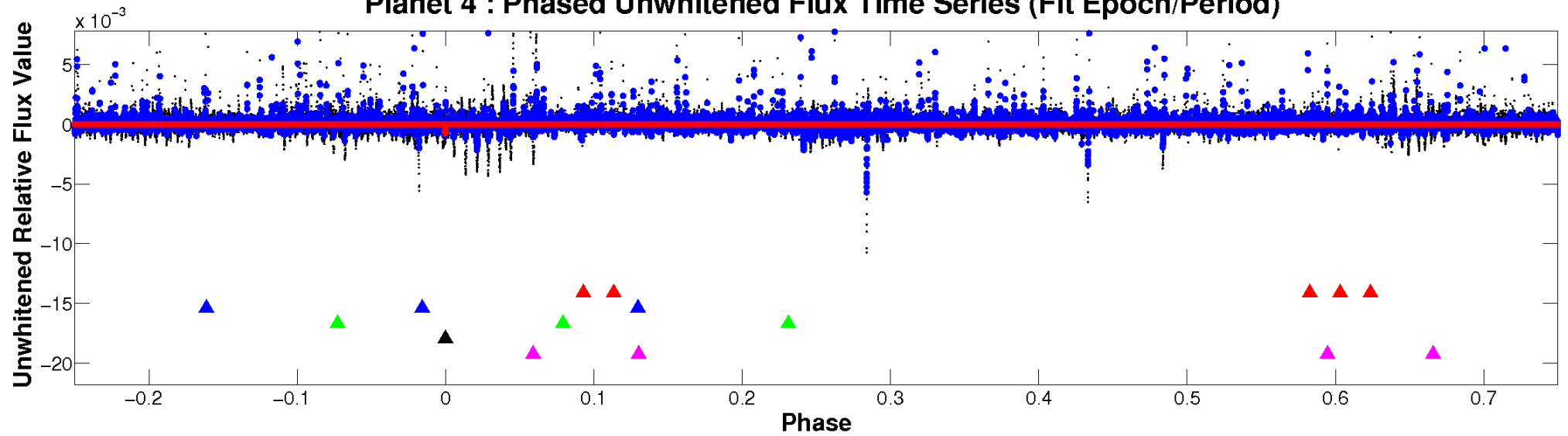
ALT Odd/Even

TCE 004919145-04

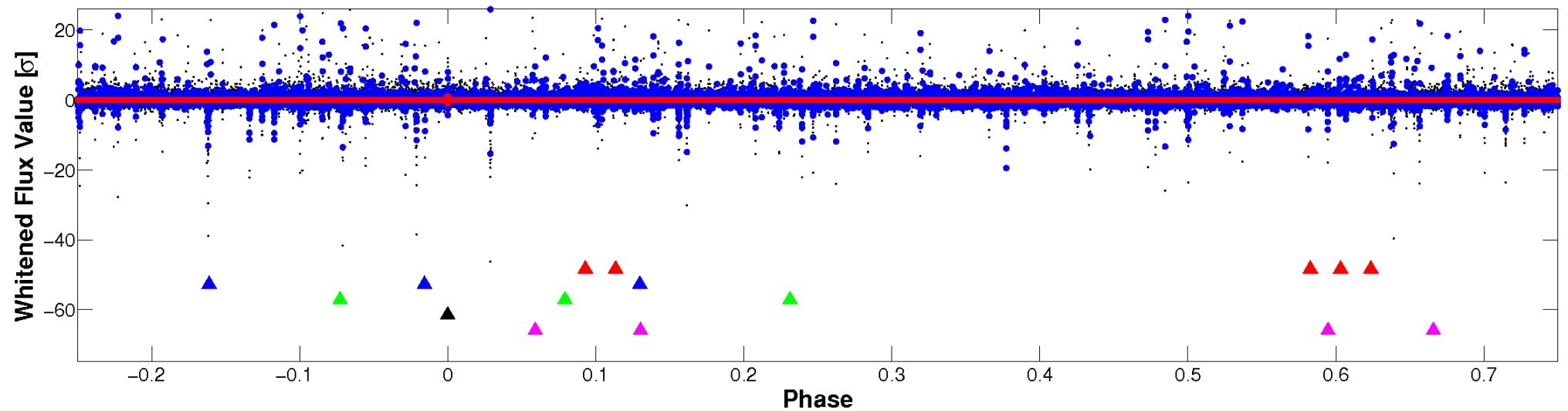


Non-Whitened Vs. Whitened Light Curve

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

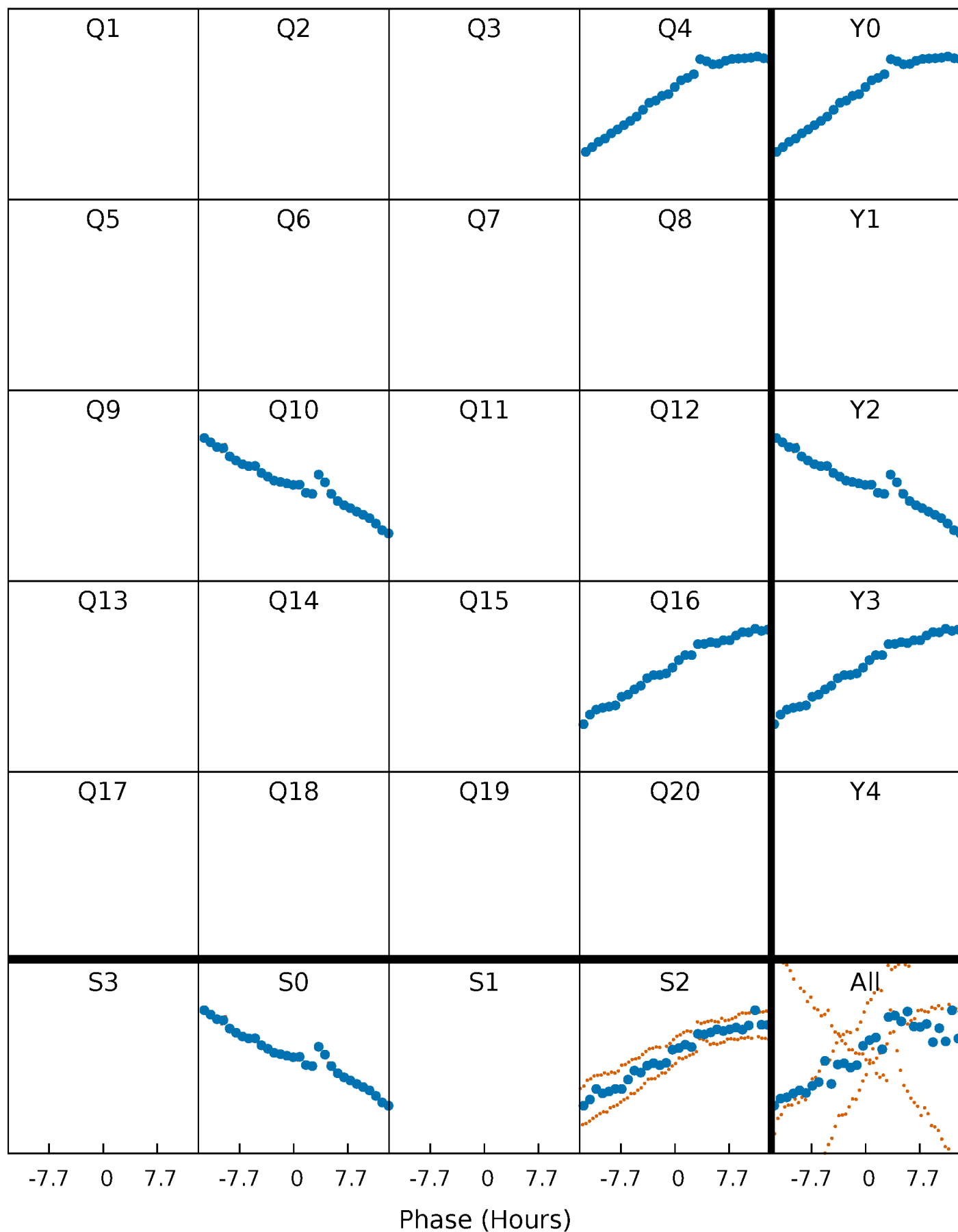


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



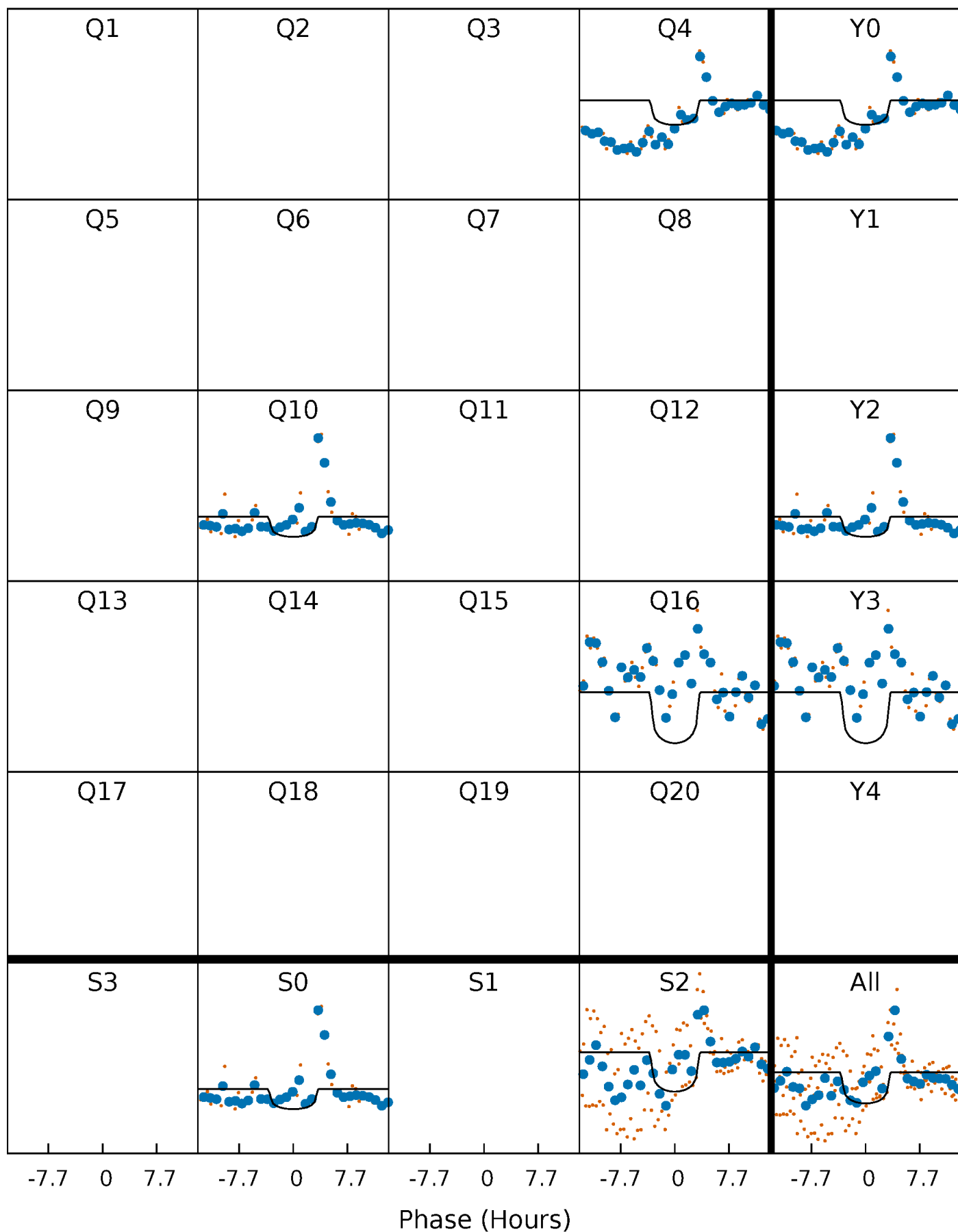
PDC Quarter-Phased Transit Curves

TCE 004919145-04 P=597.035814 Days $T_0=360.095835$ (BKJD)



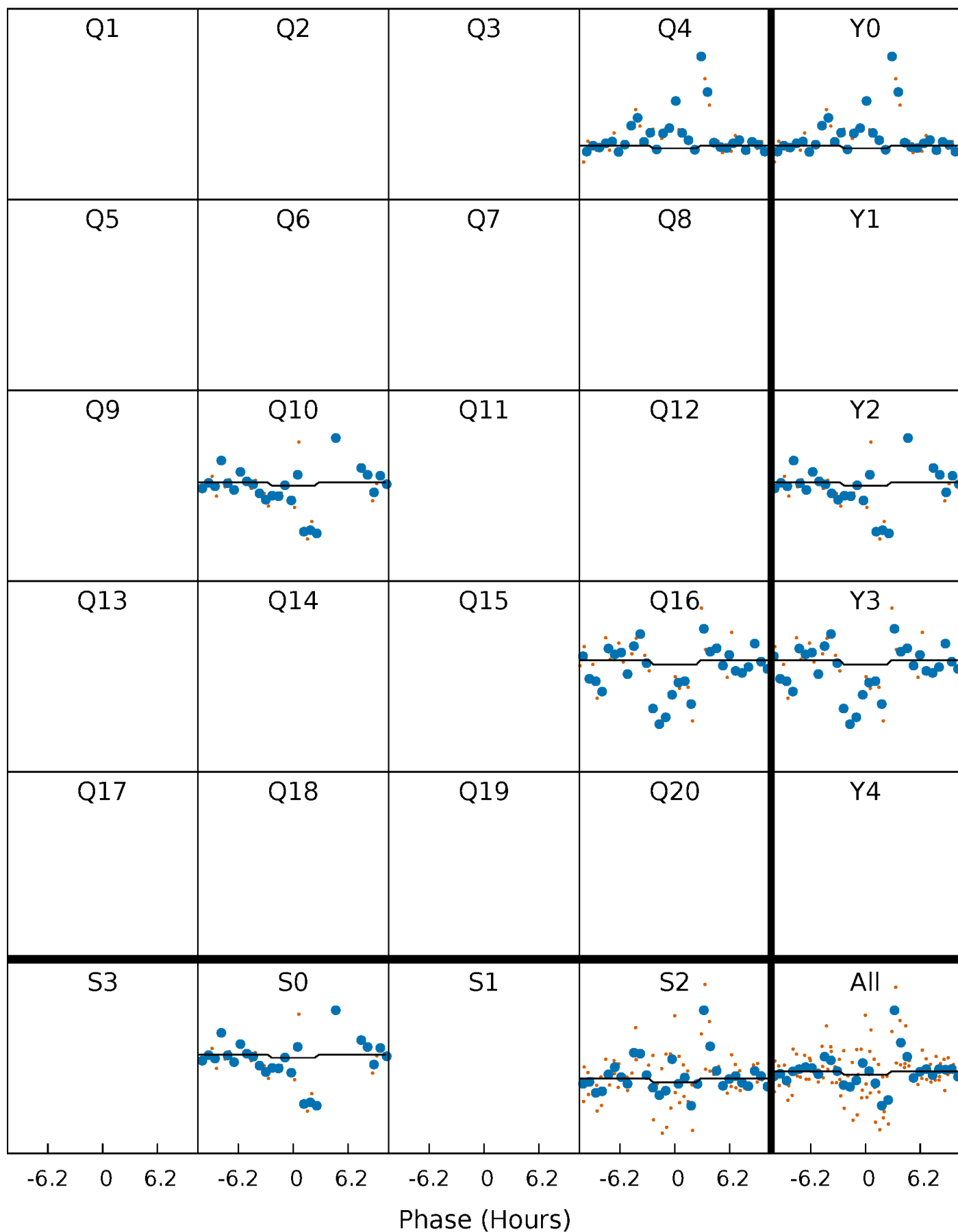
DV Quarter-Phased Transit Curves

TCE 004919145-04 $P=597.035814$ Days $T_0=360.095835$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

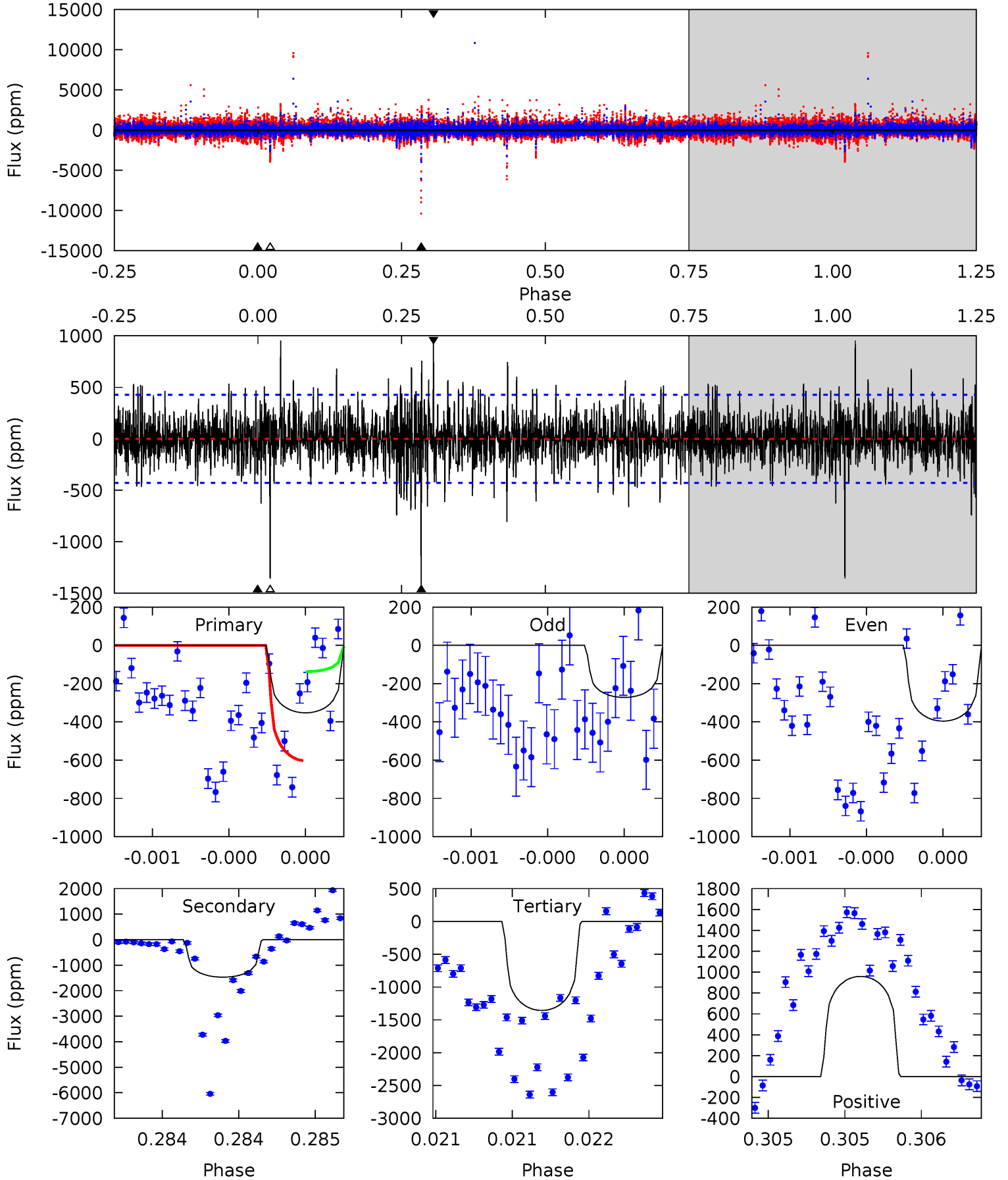
TCE 004919145-04 P=597.027756 Days $T_0=360.121148$ (BKJD)



DV Model-Shift Uniqueness Test

004919145-04, P = 597.035814 Days, E = 360.095835 Days

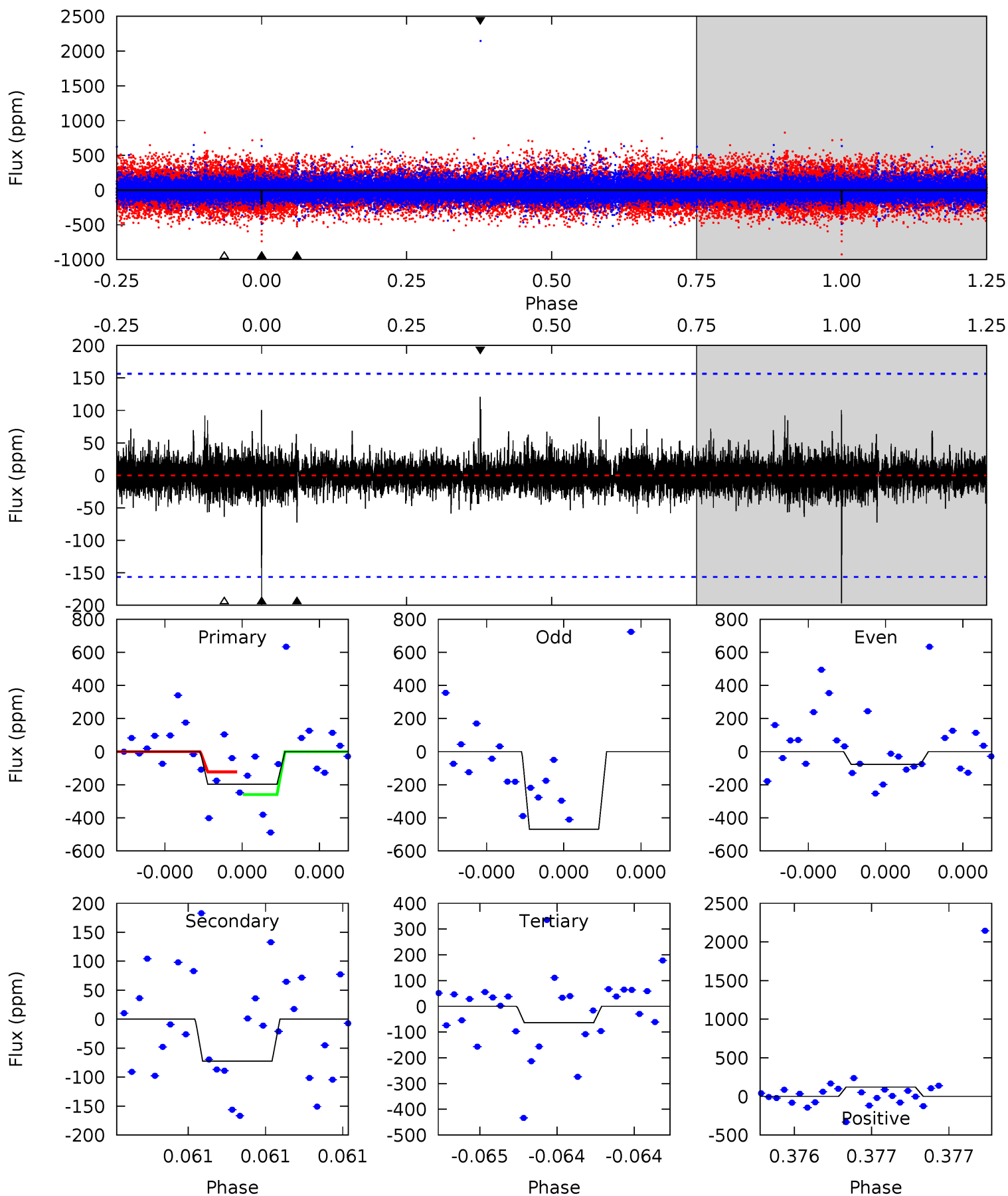
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.60	19.2	17.7	12.5	5.58	3.49	2.32	-13.1	-7.90	1.48	6.65	0.63	1.18	0.39	3.00



Alt Model-Shift Uniqueness Test

004919145-04, P = 597.027756 Days, E = 360.121148 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.08	2.61	2.30	4.34	5.62	3.56	0.53	4.78	2.74	0.31	-1.73	6.65	0.57	0.38	0



Stellar Parameters For KIC 004919145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 004919145-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1470 ± 77	$4.46^{+4.45}_{-3.00}$	303^{+15}_{-15}	5585^{+5569}_{-1410}	$78867^{+621644}_{-59684}$
Alt.	-73 ± 28	$3.84^{+3.51}_{-2.64}$	302^{+15}_{-14}	3361^{+1729}_{-607}	4997^{+46924}_{-3757}

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

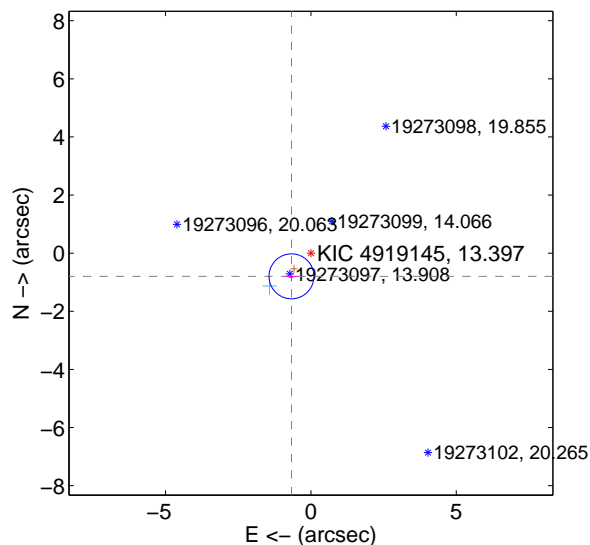
Supplemental centroid analysis for 004919145-04. Kepler magnitude: 13.40. Transit SNR 5.82

There are 1 quarters with good PRF difference image offsets

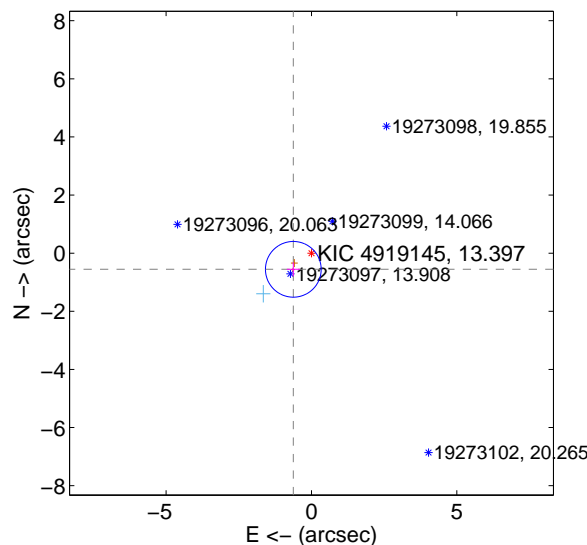
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.040 ± 0.258	4.04	0.669 ± 0.223	-0.797 ± 0.168
PRF-fit source offset from KIC position	0.835 ± 0.320	2.61	0.624 ± 0.227	-0.555 ± 0.238
photometric centroid source offset	3.13 ± 1.27	2.47	2.69 ± 1.27	-1.61 ± 1.27

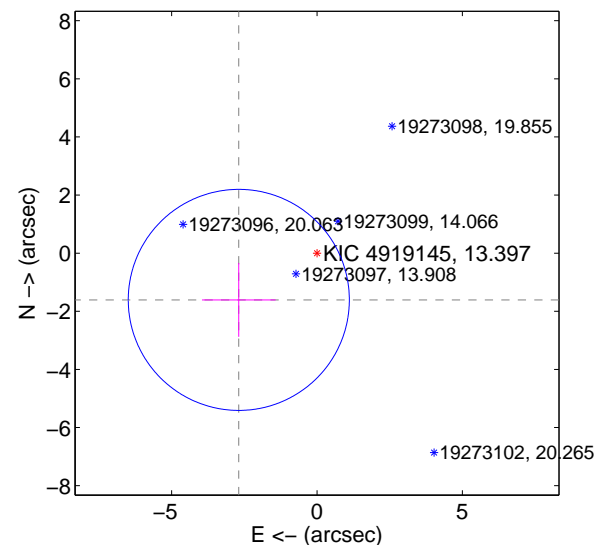
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

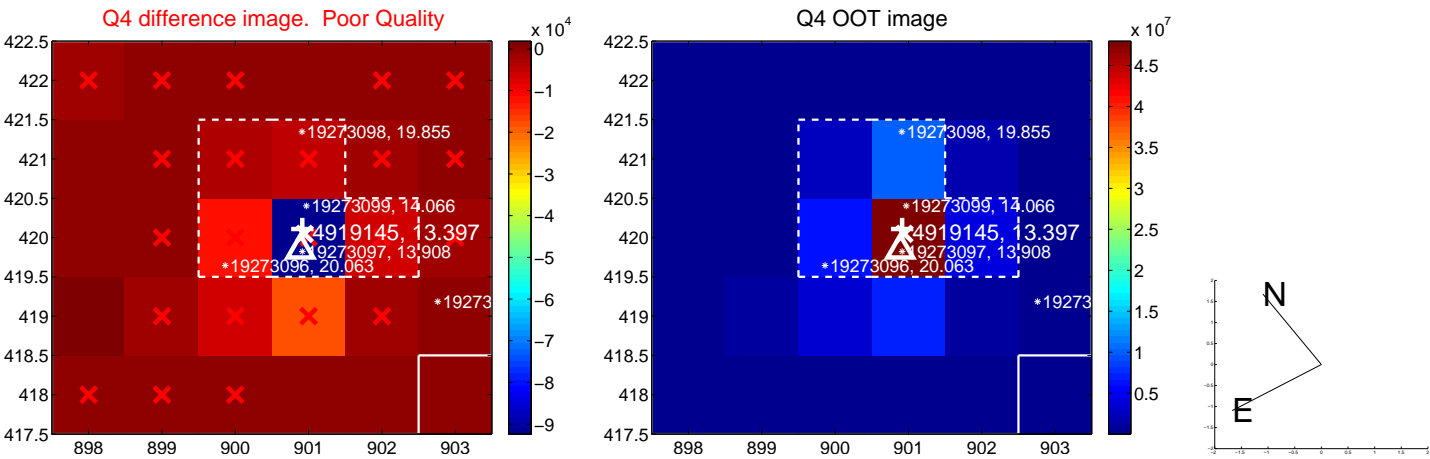


offset from photometric centroids



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

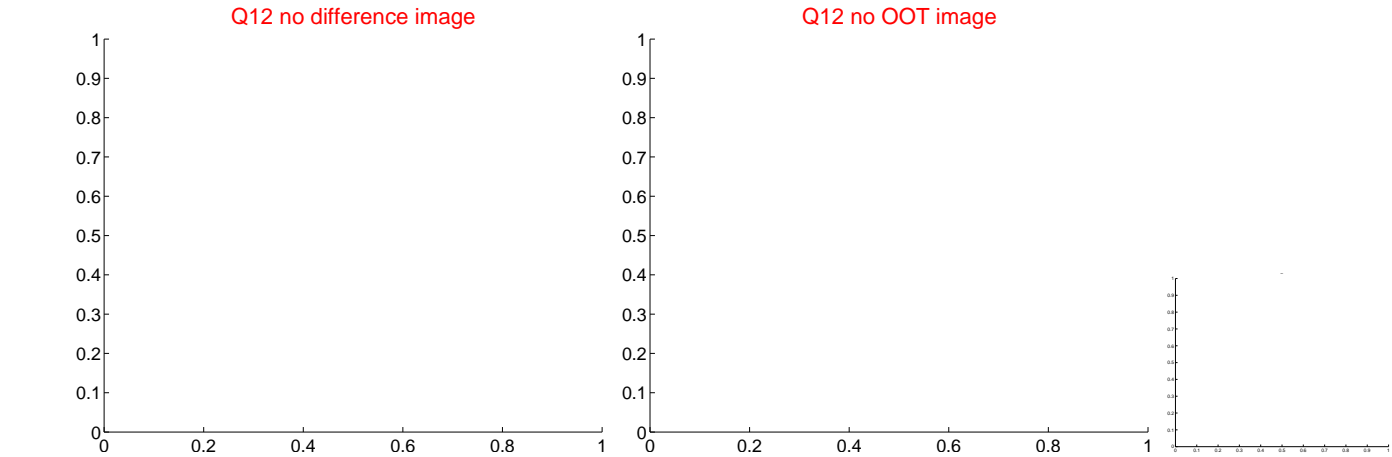
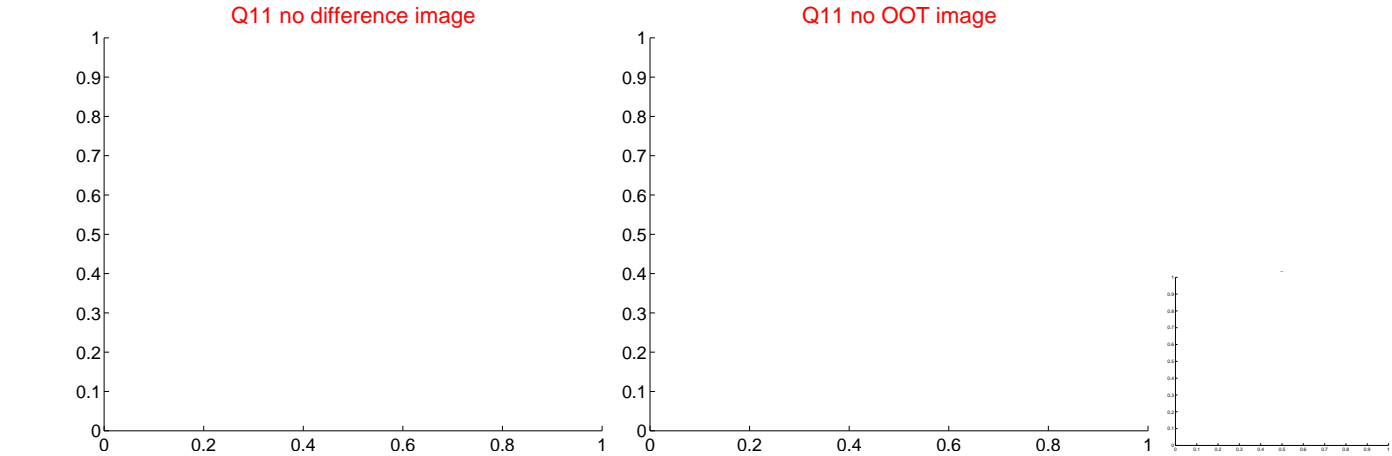
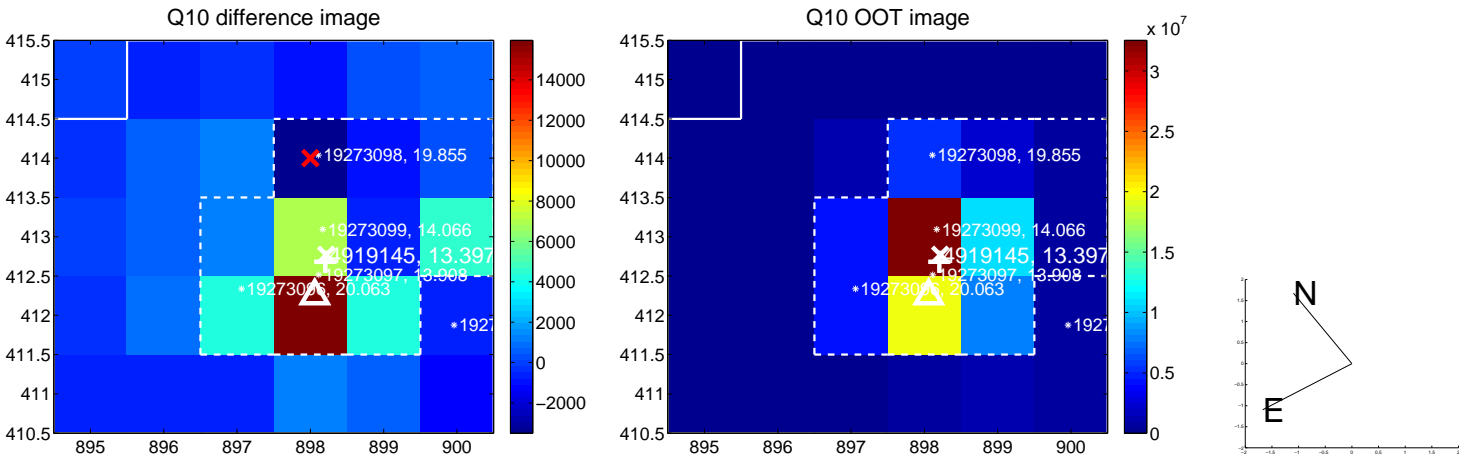
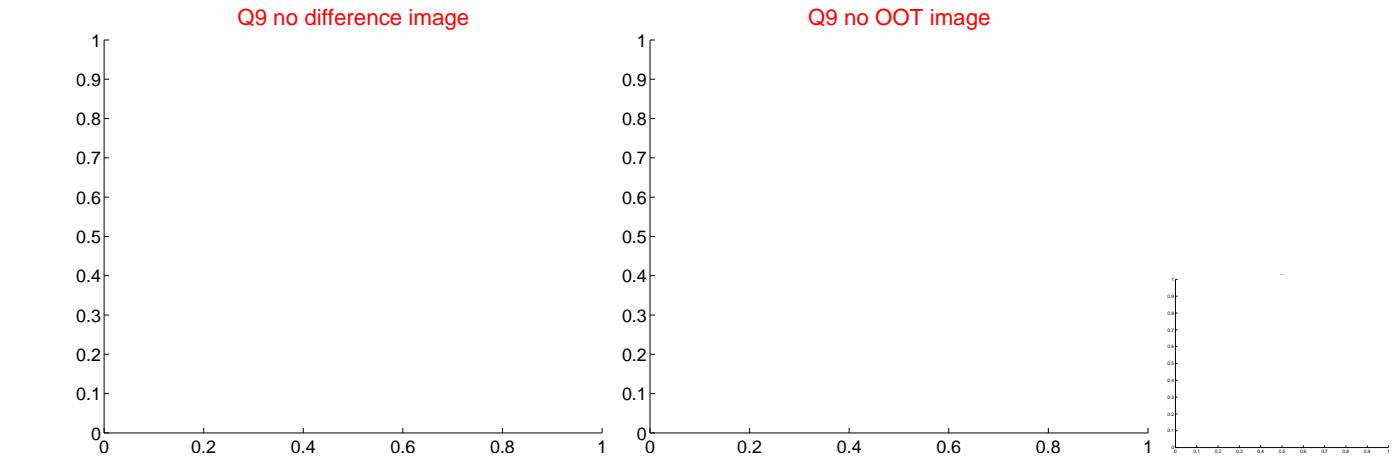
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



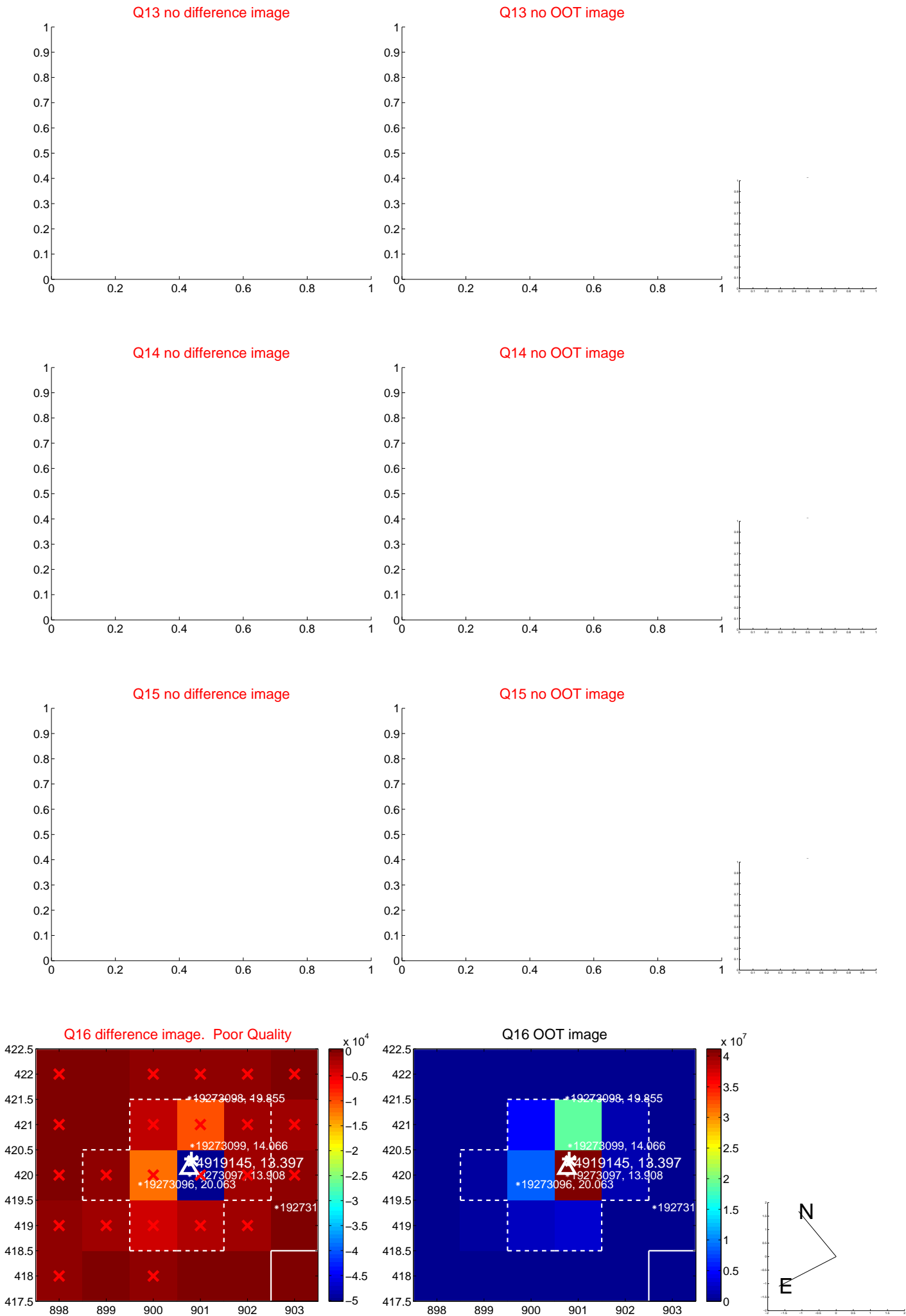
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



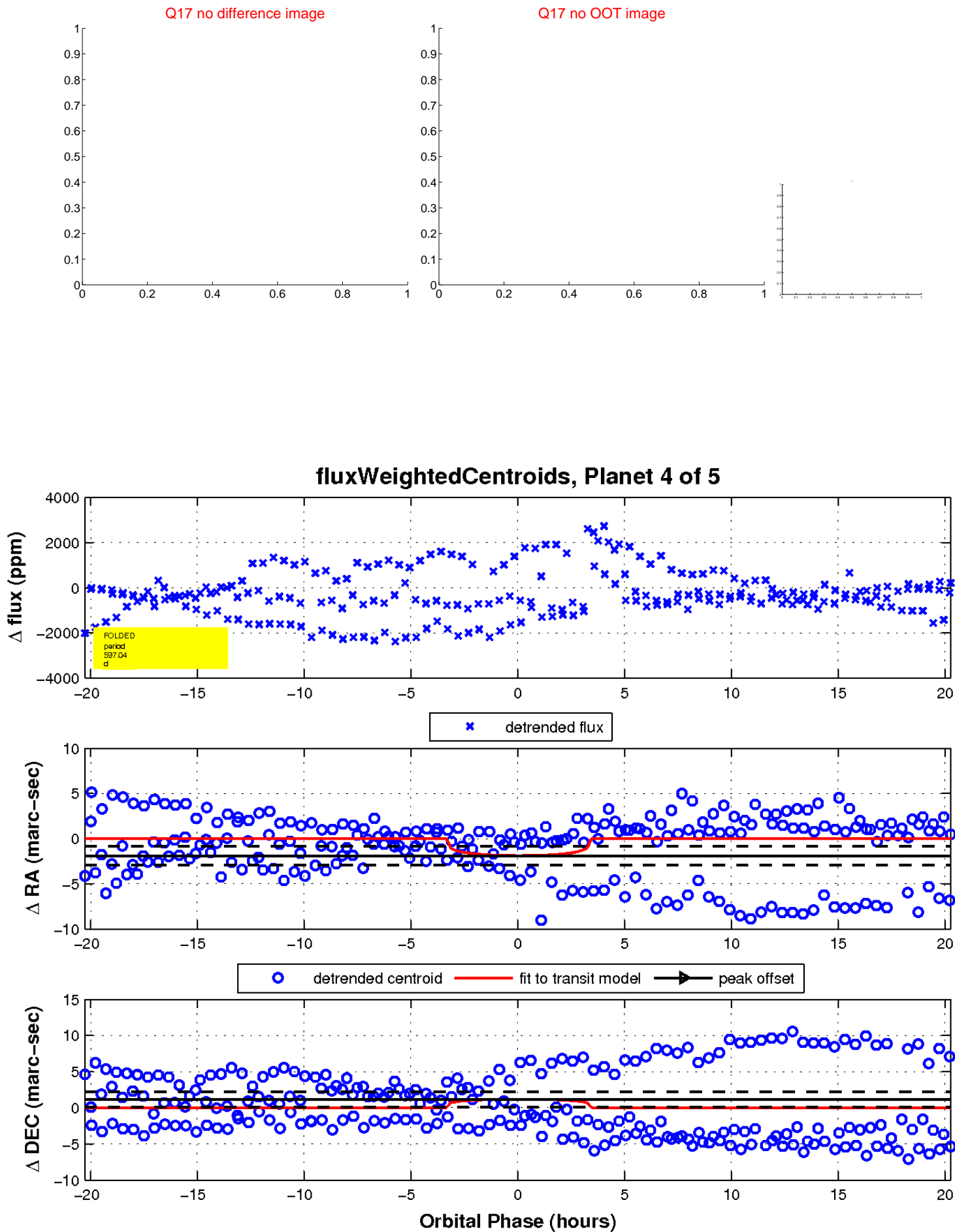
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

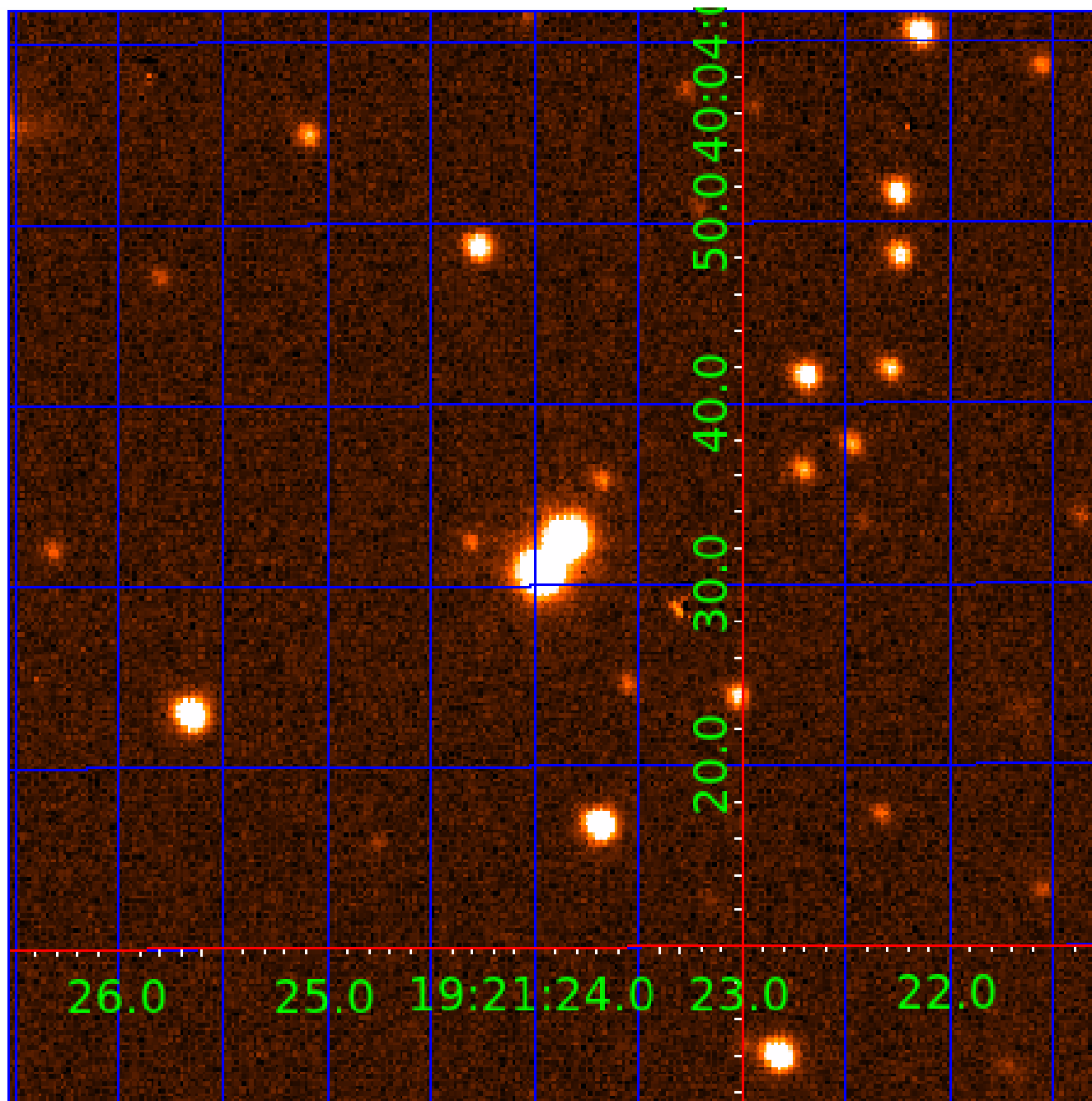


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919145

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})
004919145-01	OBS	No	292.413877	135.405267	547.5	4.067	15.7	4.9	1.00	5780	2.38	1.34
004919145-02	OBS	No	510.172288	437.593998	852.3	3.134	11.6	9.4	1.00	5780	3.12	0.64
004919145-03	OBS	No	506.309891	498.115265	994.1	5.293	15.6	7.1	1.00	5780	3.21	0.65
004919145-04	OBS	No	597.035814	360.095835	757.3	6.781	12.9	5.8	1.00	5780	2.72	0.52
004919145-05	OBS	No	319.764605	395.386457	700.3	2.487	10.2	8.2	1.00	5780	2.88	1.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919145-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—MOD_POS_ALT—CENT_FEW_DIFFS
004919145-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919145-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

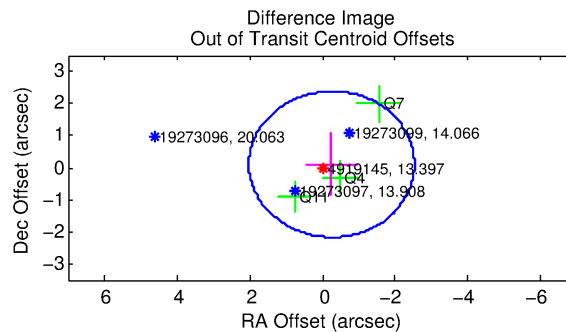
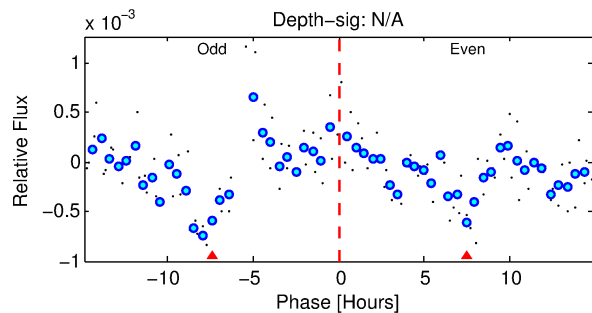
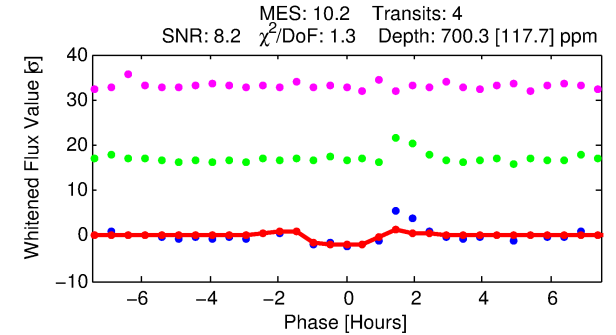
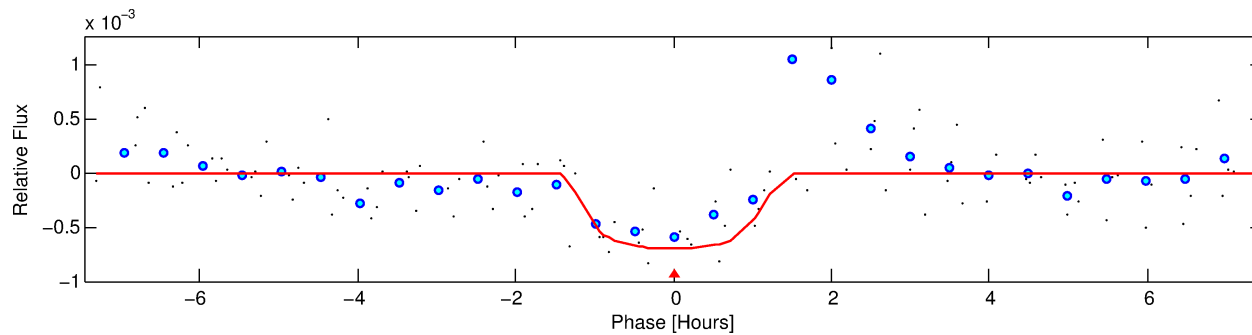
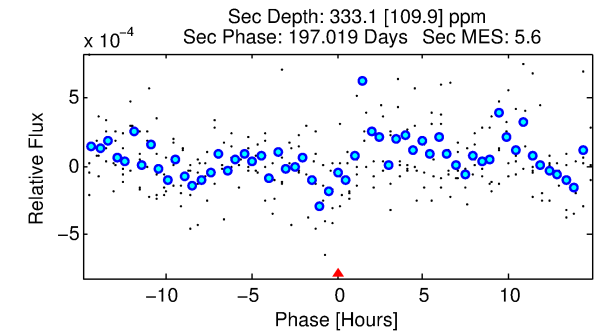
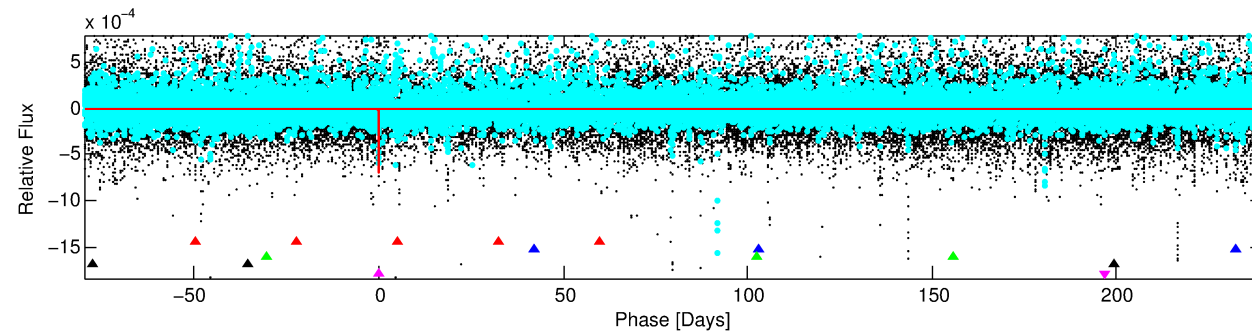
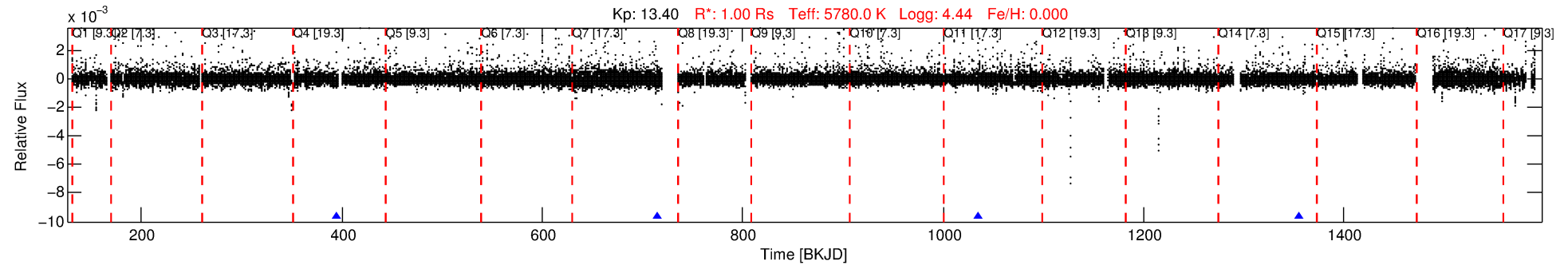
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919145-05

No Significant Match Found

DV One-Page Summary

KIC: 4919145 Candidate: 5 of 5 Period: 319.765 d



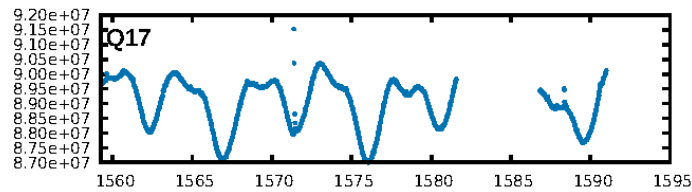
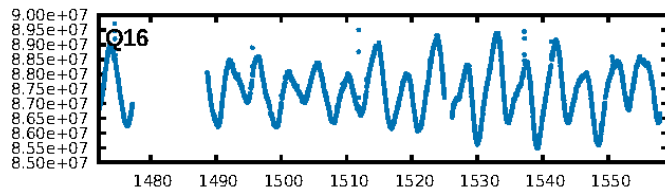
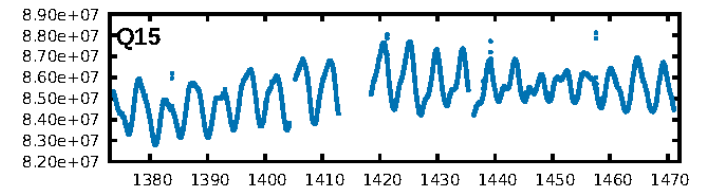
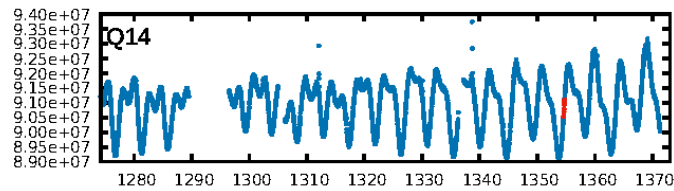
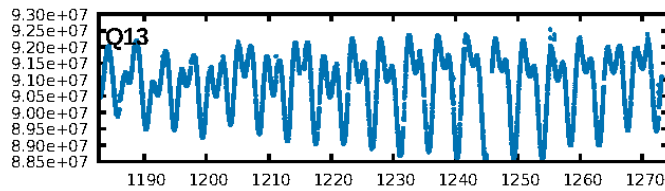
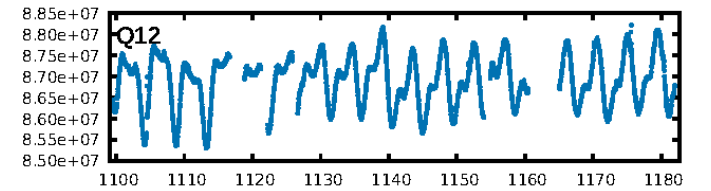
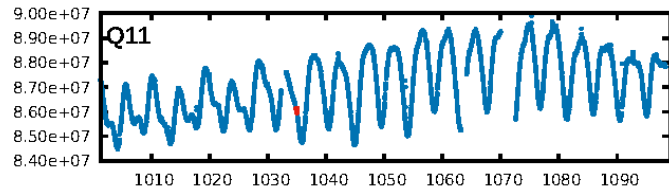
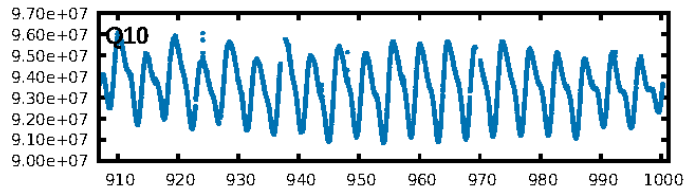
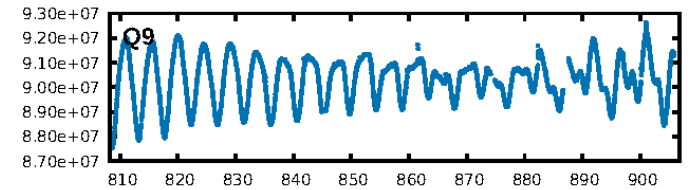
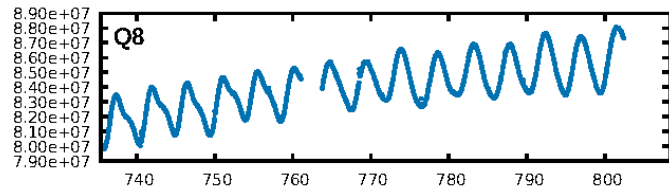
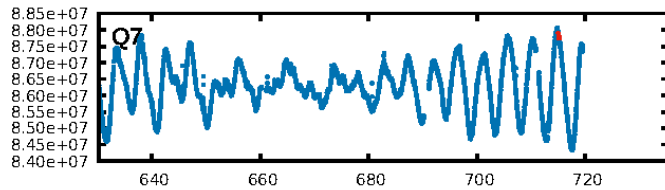
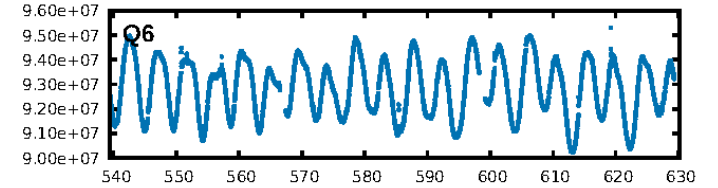
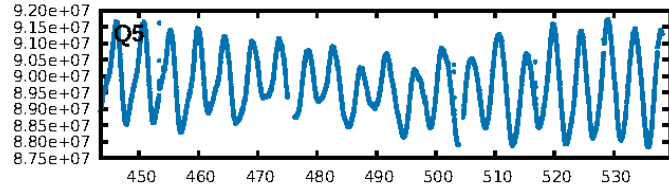
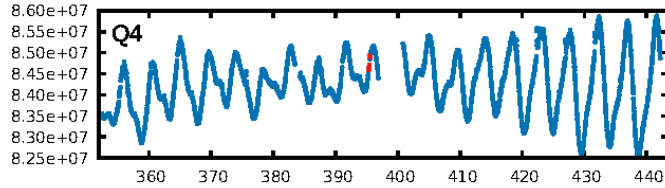
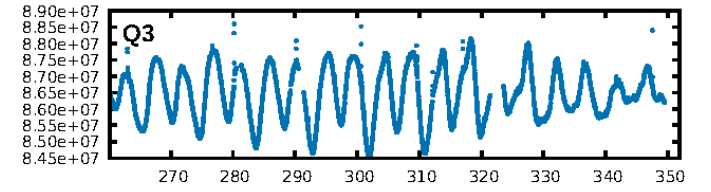
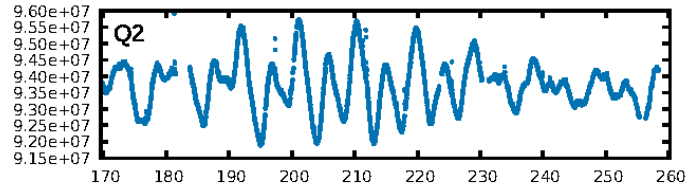
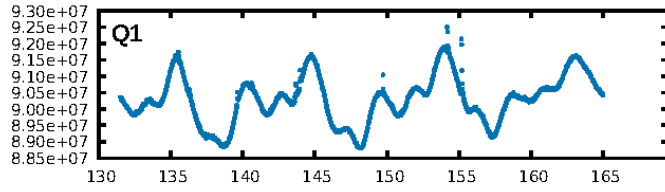
DV Fit Results:

Period = 319.76460 [0.00322] d
Epoch = 395.3865 [0.0062] BKJD
Rp/R* = 0.0264 [0.0406]
a/R* = 689.36 [4659.18]
b = 0.75 [4.01]
Seff = 1.19 [0.00]
T_{eq} = 267 [0] K
Rp = 2.88 [4.43] Re
a = 0.9153 [0.0000] AU
Ag = 18539.68 [57455.93] [0.32σ]
T_{eff} = 4808 [3725] K [1.22σ]

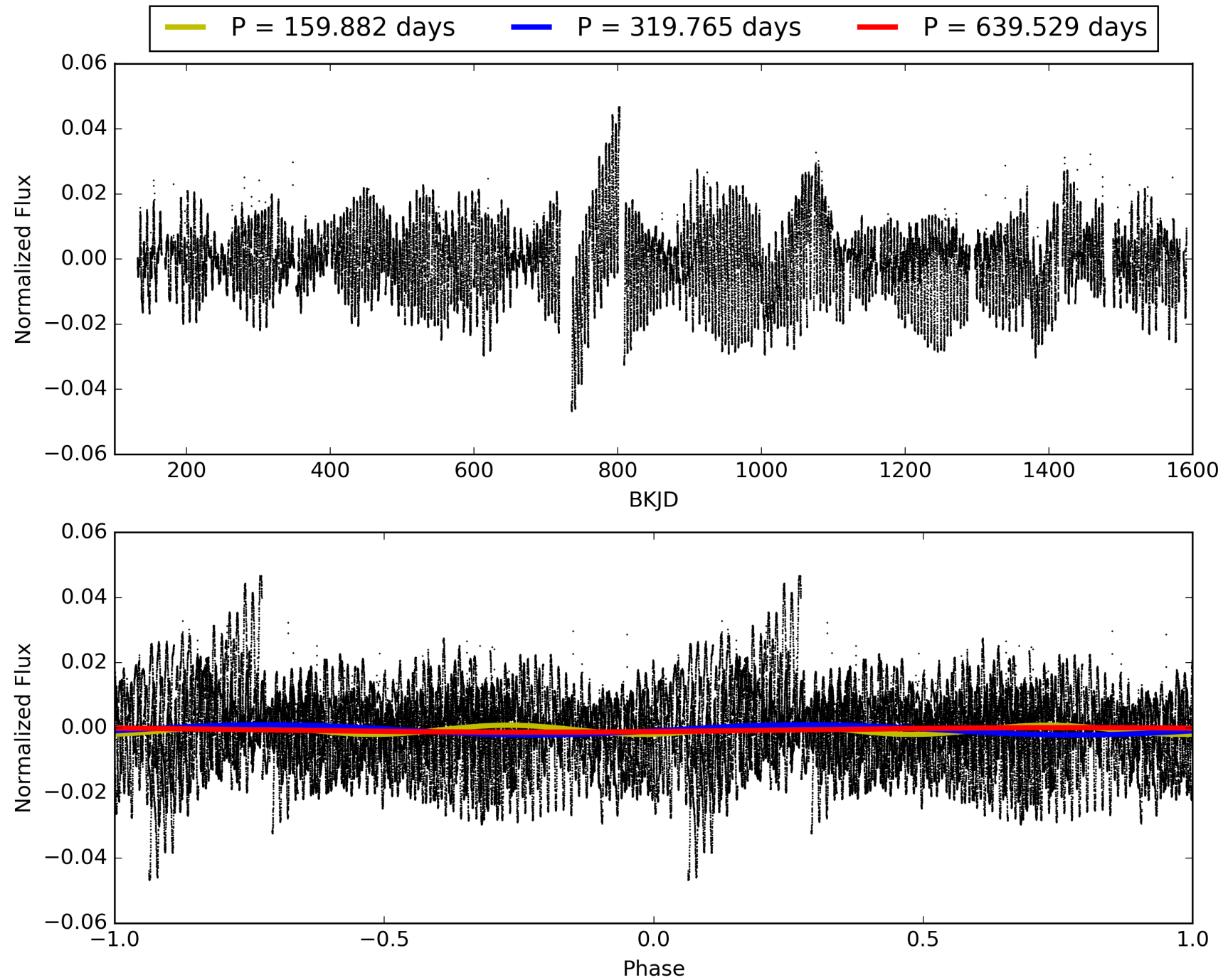
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [137.69σ]
LongPeriod-sig: 100.0% [765.54σ]
ModelChiSquare2-sig: 7.7%
ModelChiSquareGof-sig: 36.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.001
Centroid-sig: 47.0%
Centroid-so: 1.019 arcsec [1.02σ]
OotOffset-rm: 0.274 arcsec [0.36σ]
KicOffset-rm: 0.102 arcsec [0.10σ]
OotOffset-st: 0/2/1/0 [3]
KicOffset-st: 0/2/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 004919145-05, PDC Light Curves

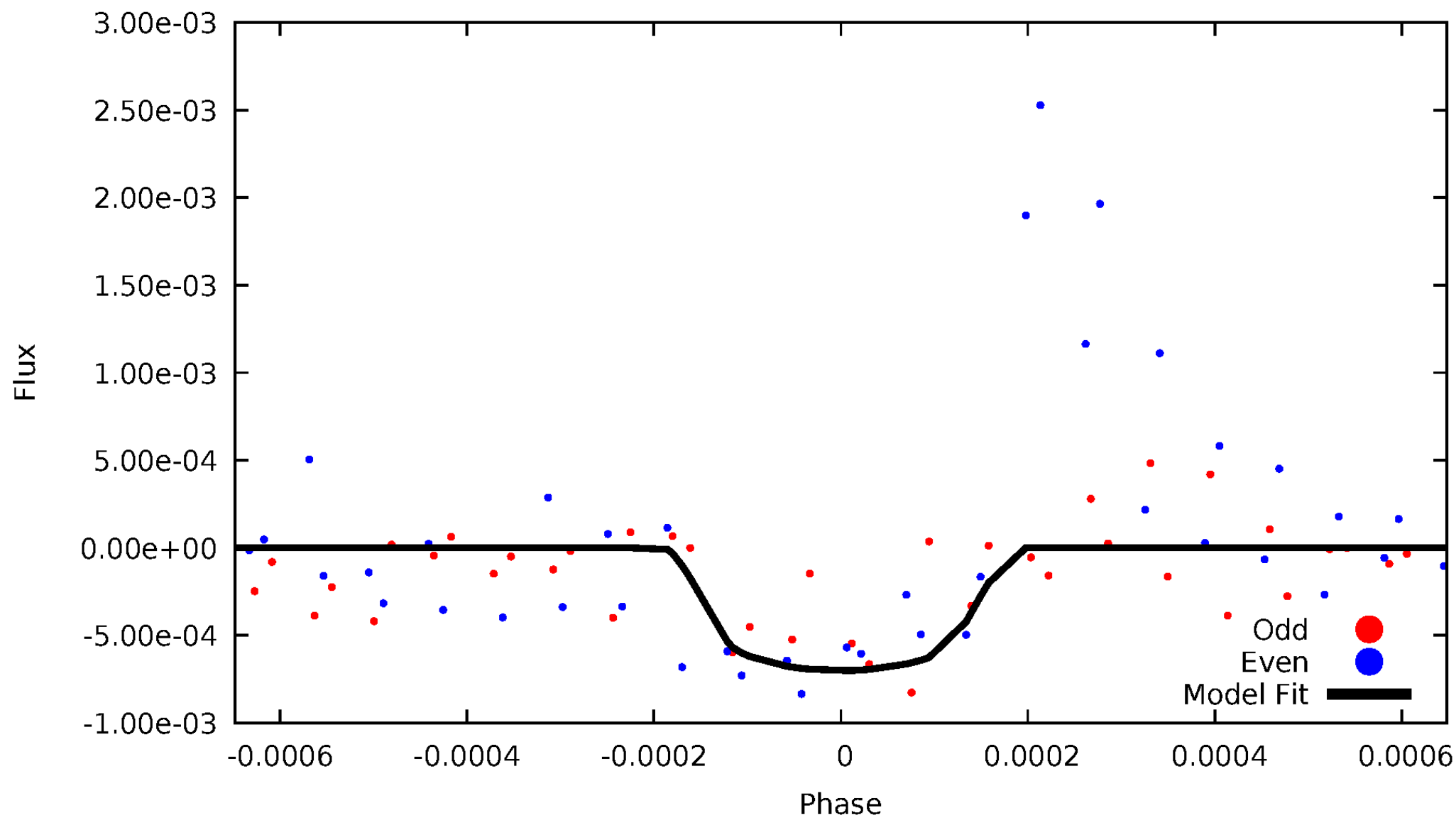


TCE 004919145-05



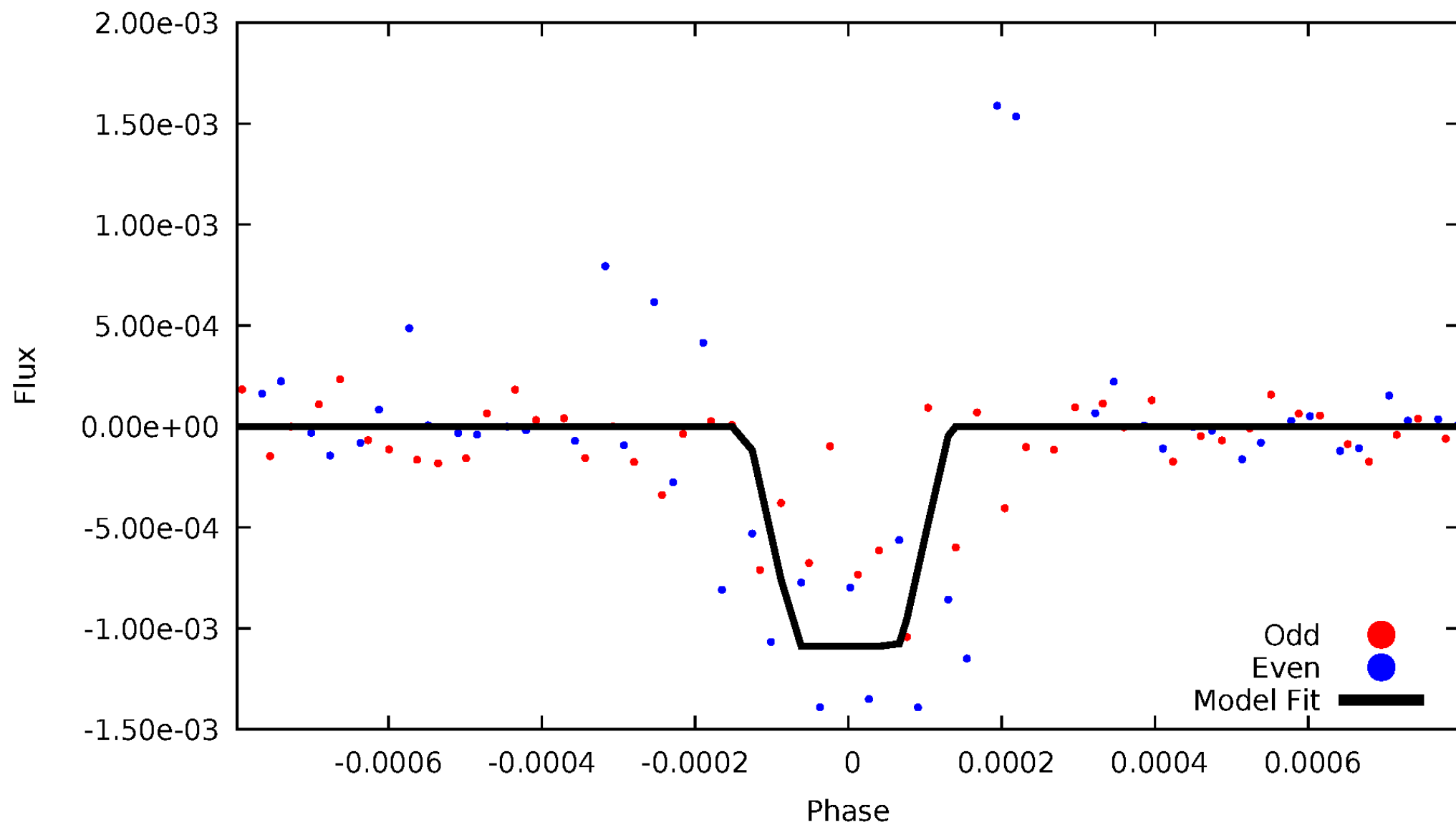
DV Odd/Even

TCE 004919145-05



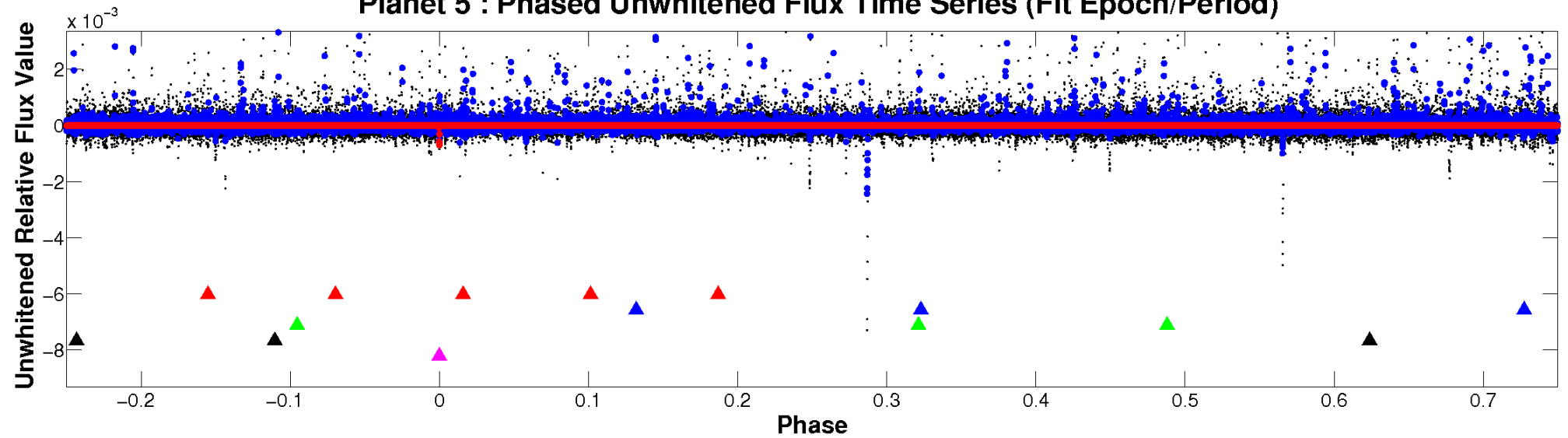
ALT Odd/Even

TCE 004919145-05

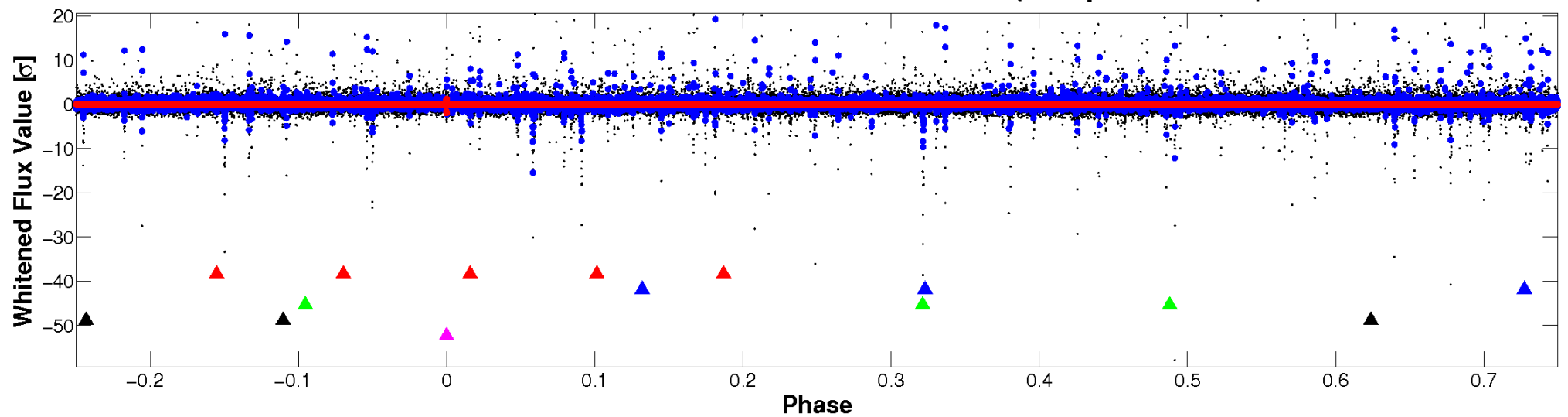


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

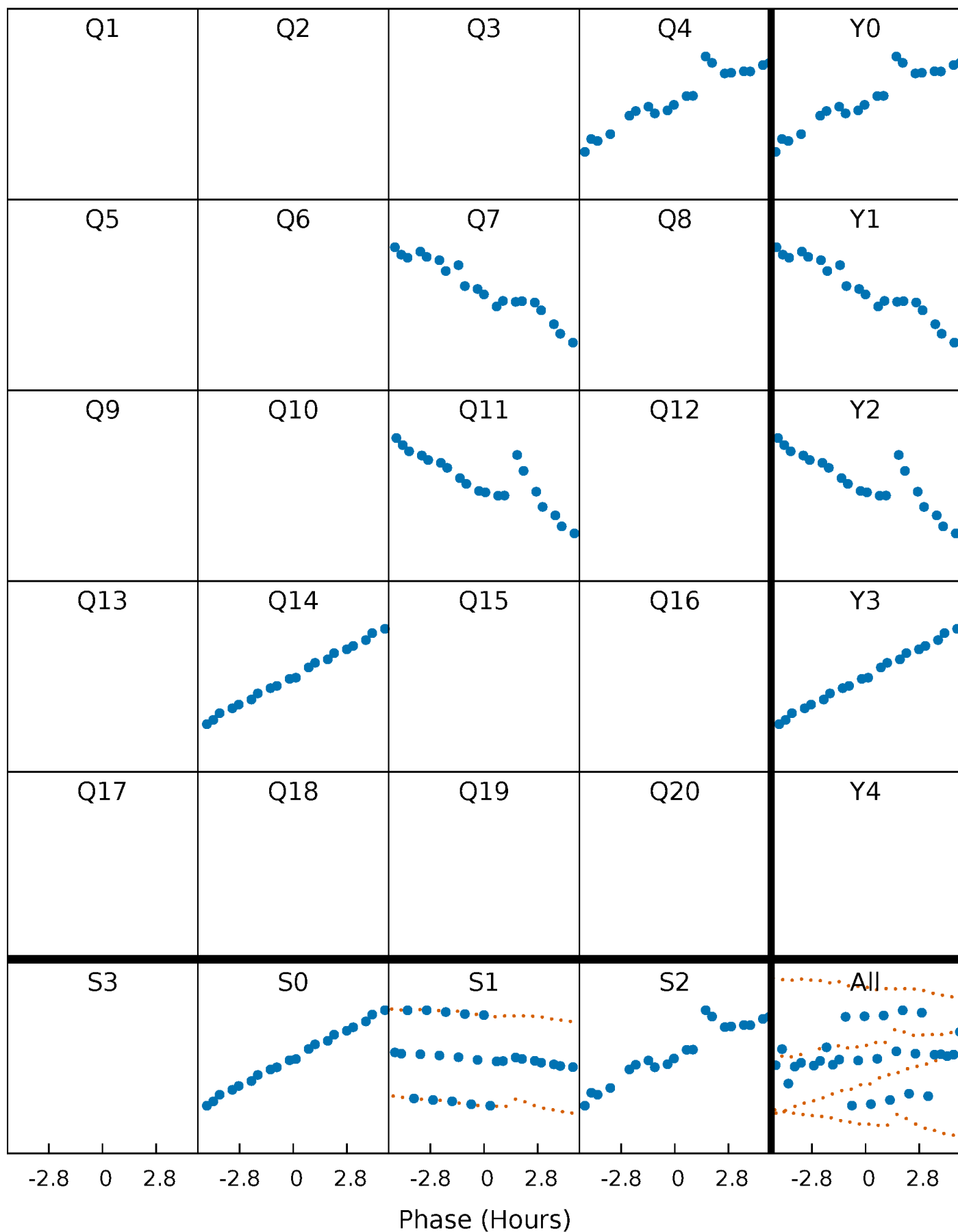


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



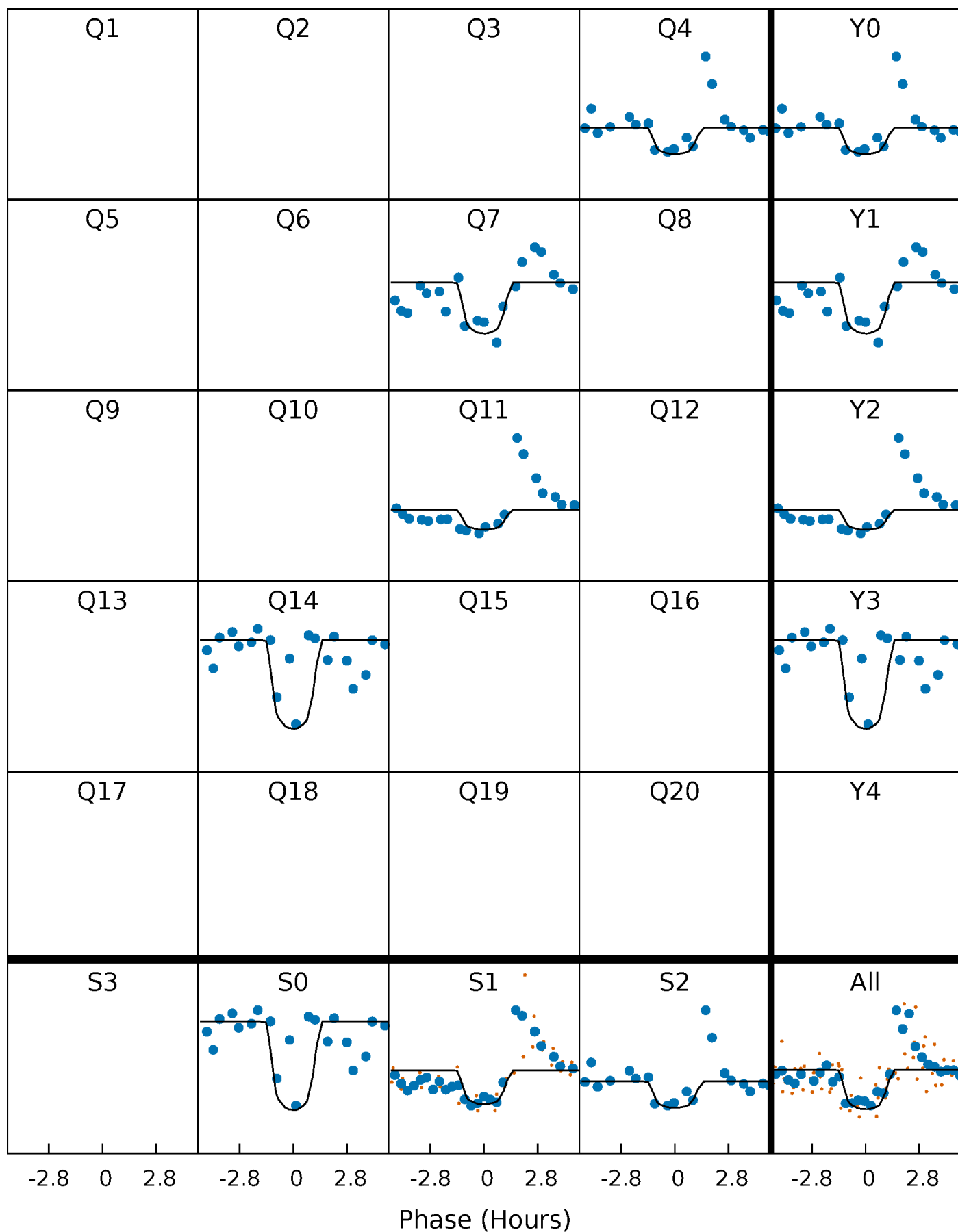
PDC Quarter-Phased Transit Curves

TCE 004919145-05 $P=319.764605$ Days $T_0=395.386457$ (BKJD)



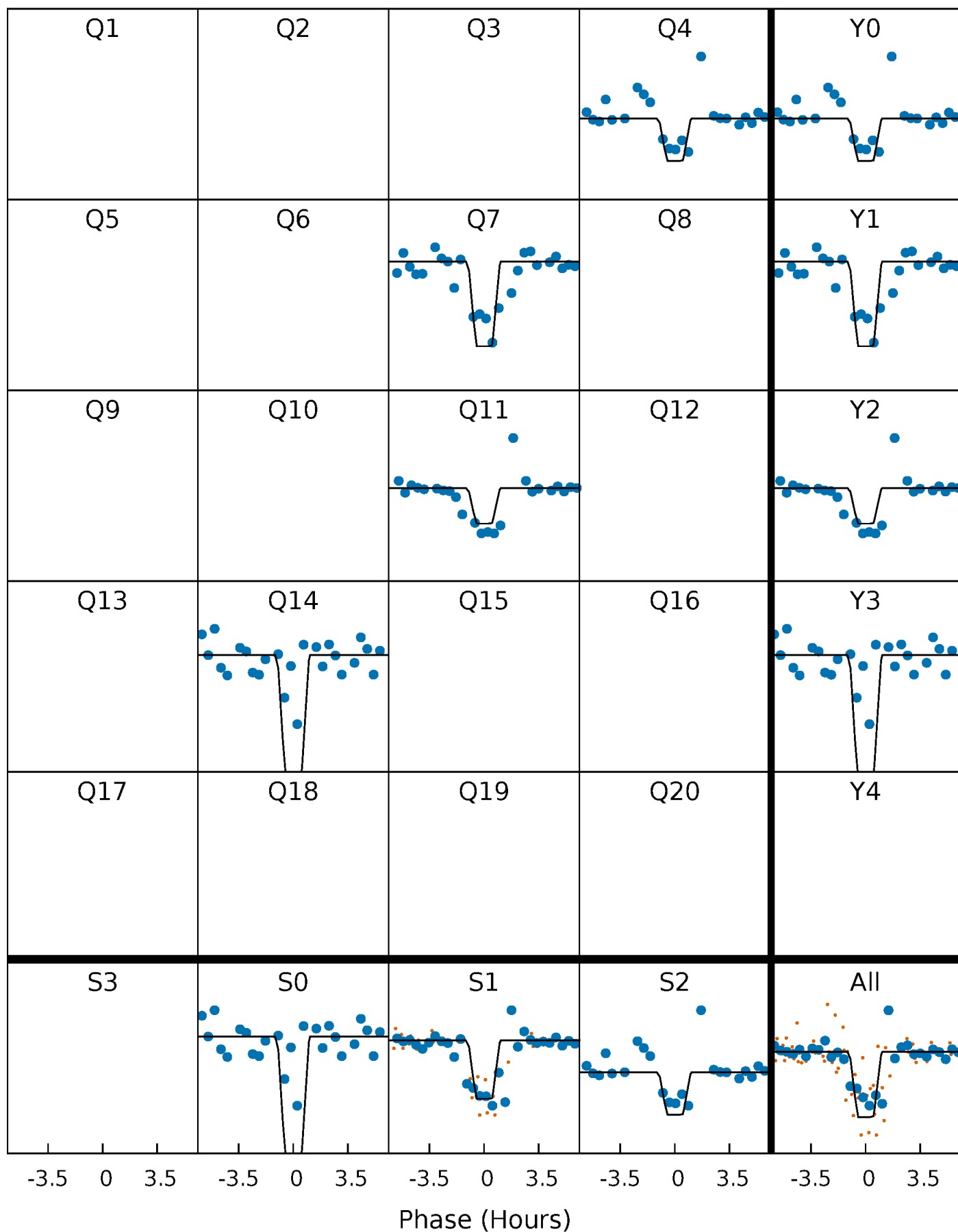
DV Quarter-Phased Transit Curves

TCE 004919145-05 $P=319.764605$ Days $T_0=395.386457$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

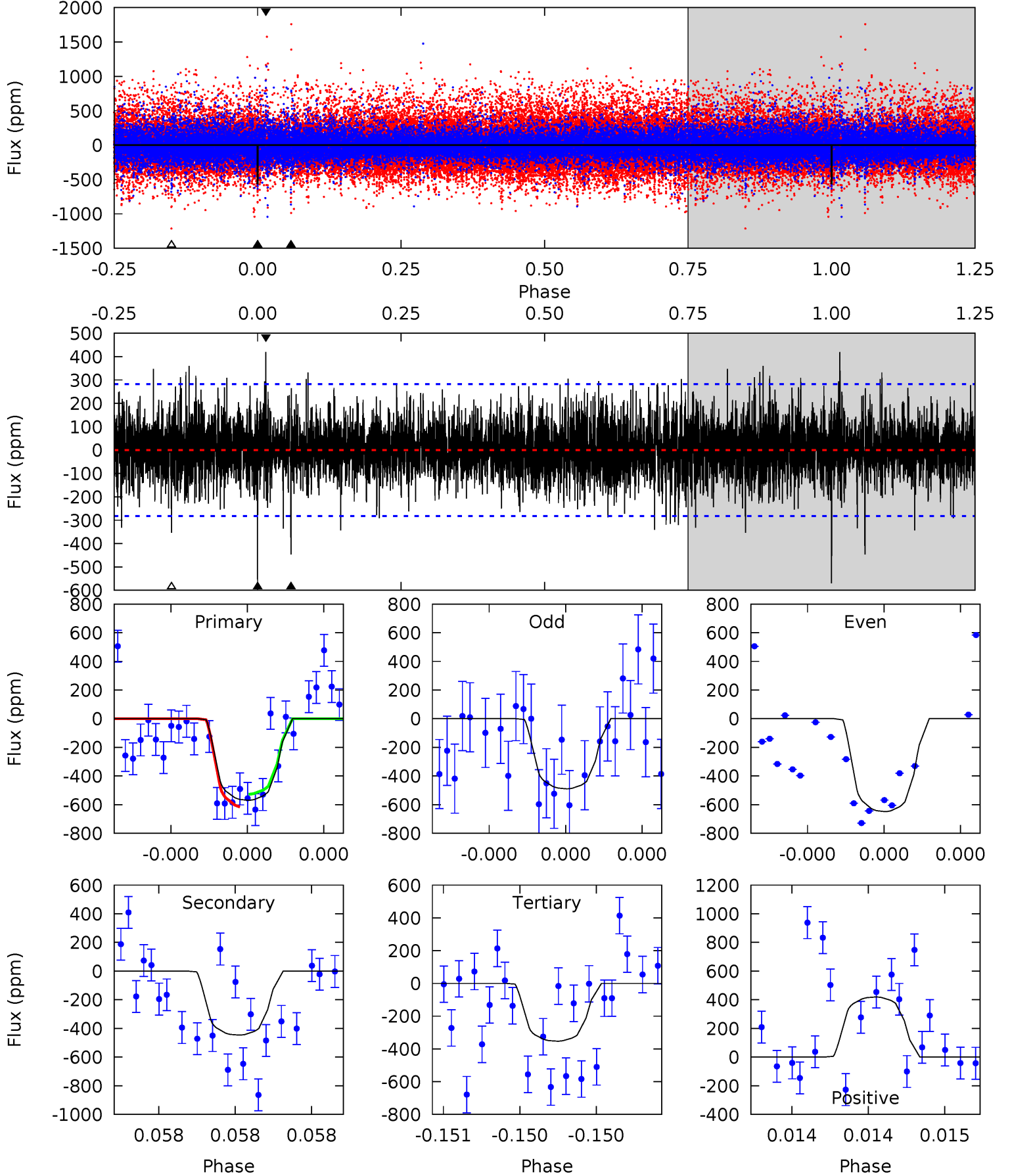
TCE 004919145-05 $P=319.763176$ Days $T_0=395.387646$ (BKJD)



DV Model-Shift Uniqueness Test

004919145-05, $P = 319.764605$ Days, $E = 75.621852$ Days

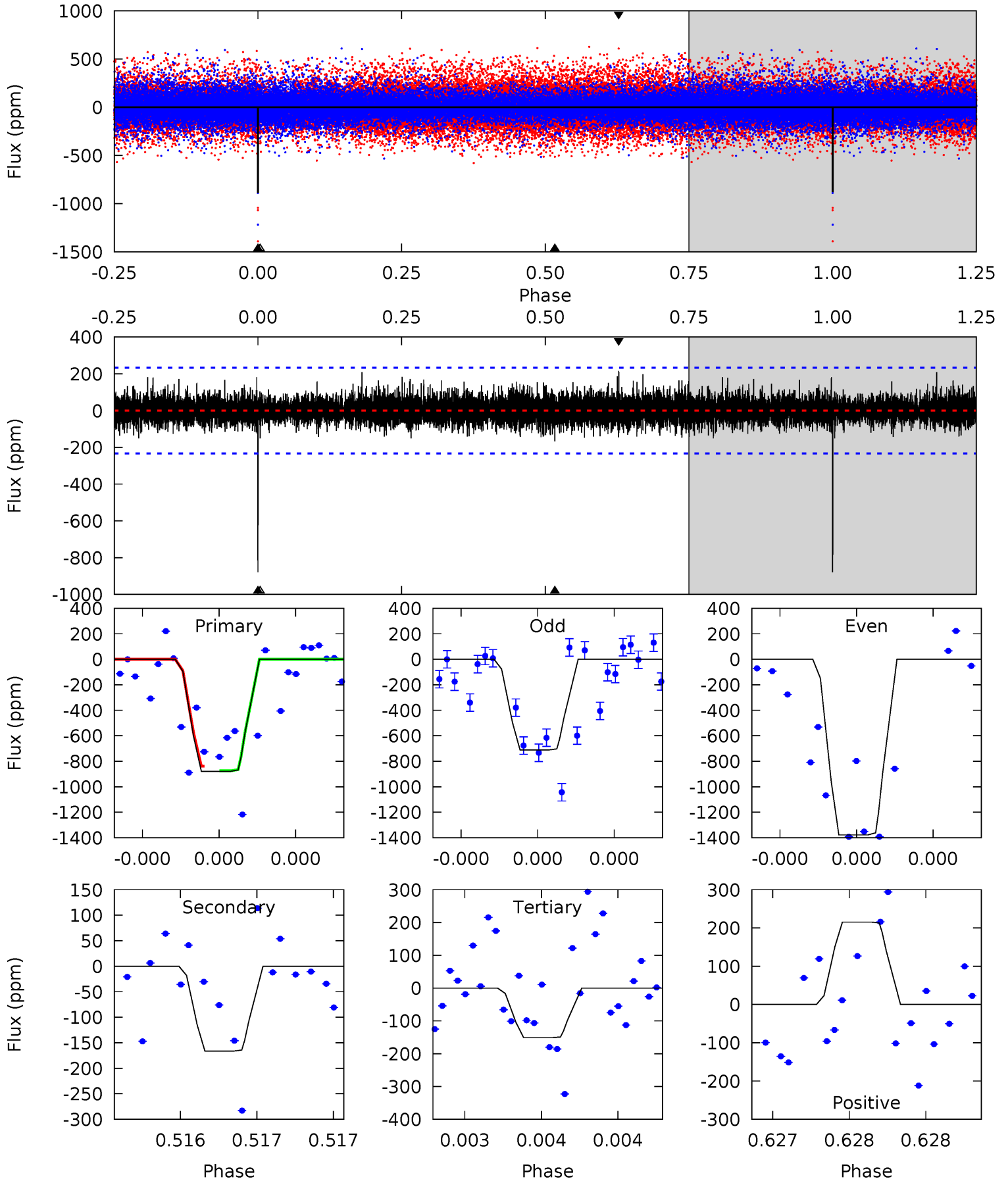
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	8.93	7.06	8.39	5.64	3.58	1.75	4.33	3.00	1.87	0.54	1.48	0.92	0.42	0.89



Alt Model-Shift Uniqueness Test

004919145-05, P = 319.763176 Days, E = 75.624470 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	4.06	3.68	5.26	5.68	3.65	1.02	17.8	16.2	0.38	-1.20	8.77	1.09	0.20	0



Stellar Parameters For KIC 004919145

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5780^{+1}_{-1}	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

Secondary Eclipse Parameters for KIC 004919145-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-447 ± 50	$4.45^{+3.88}_{-2.91}$	372^{+16}_{-17}	4330^{+2695}_{-830}	10375^{+72941}_{-7470}
Alt.	-166 ± 41	$4.89^{+3.71}_{-3.12}$	372^{+18}_{-18}	3560^{+1659}_{-595}	3211^{+20966}_{-2242}

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 $A_{obs} \gg 1.0$

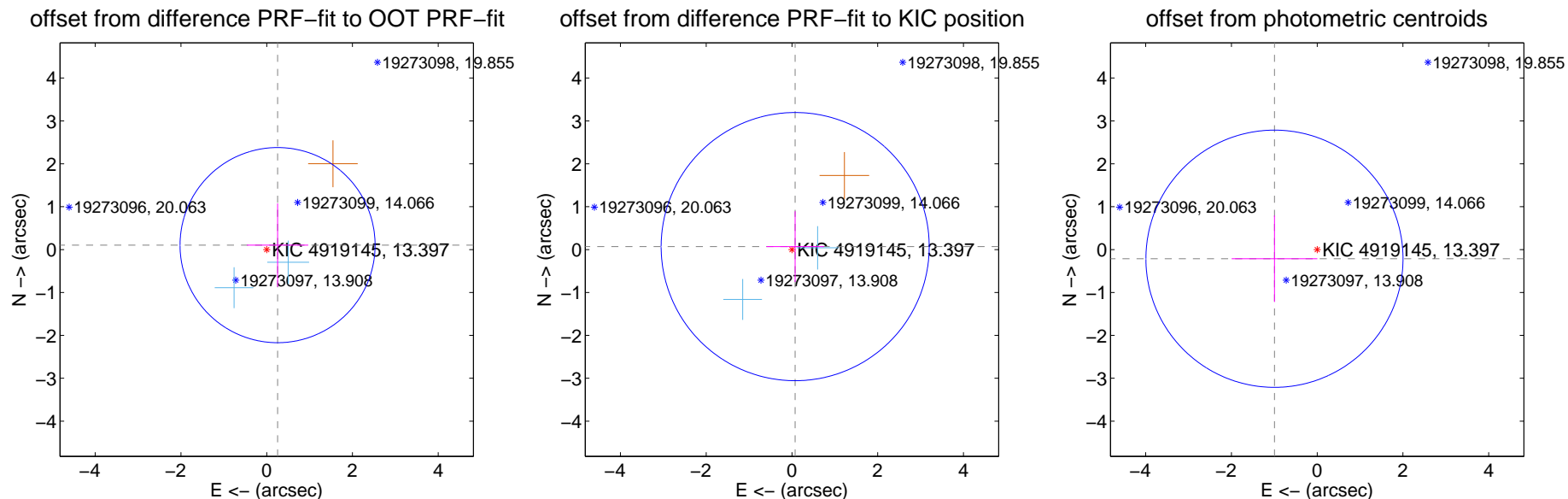
DV Centroid Data

Supplemental centroid analysis for 004919145-05. Kepler magnitude: 13.40. Transit SNR 8.20

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.274 ± 0.758	0.36	-0.253 ± 0.716	0.104 ± 0.971
PRF-fit source offset from KIC position	0.102 ± 1.042	0.10	-0.075 ± 0.670	0.069 ± 0.824
photometric centroid source offset	1.02 ± 1.00	1.02	1.00 ± 1.00	-0.21 ± 1.01



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

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

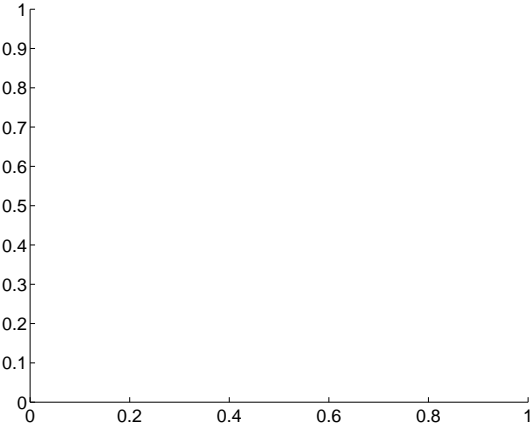
Q1 no difference image



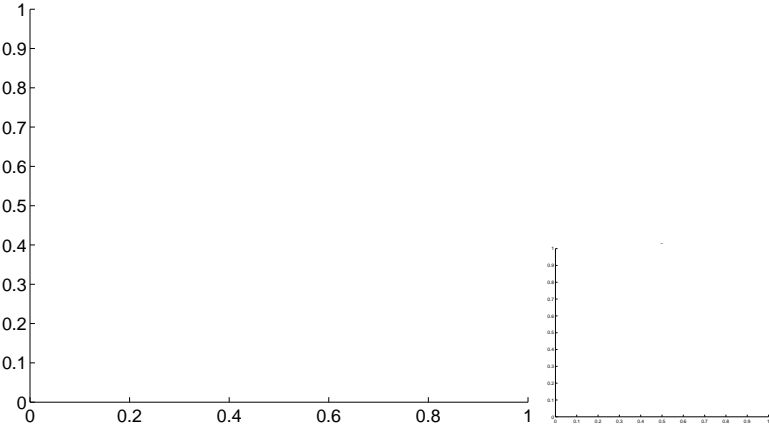
Q1 no OOT image



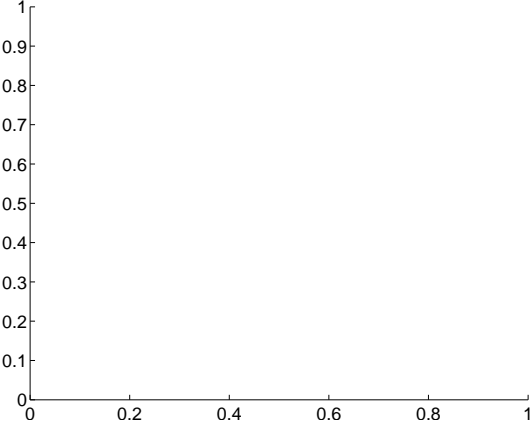
Q2 no difference image



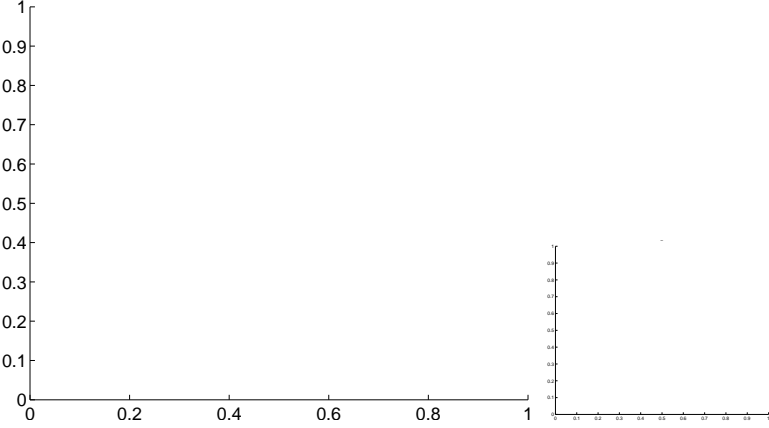
Q2 no OOT image



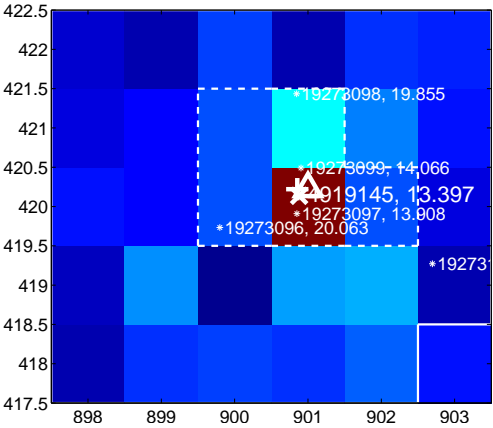
Q3 no difference image



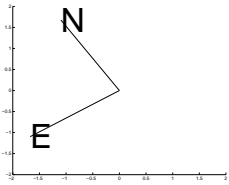
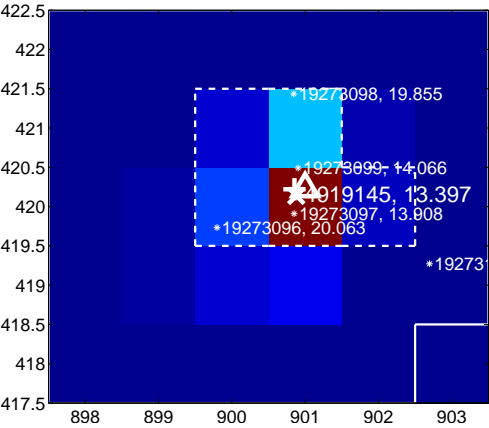
Q3 no OOT image



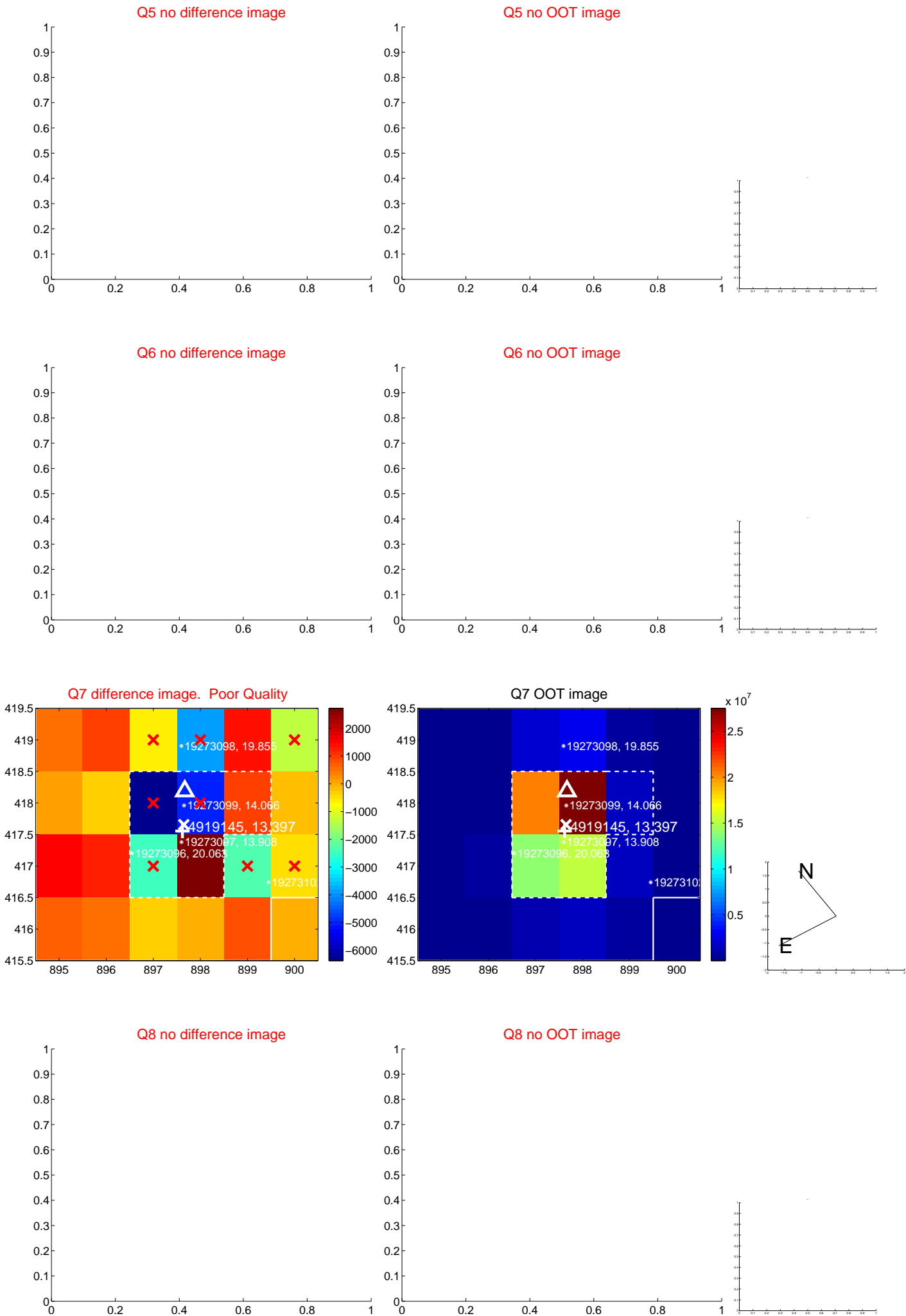
Q4 difference image



Q4 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.

Q9 no difference image



Q9 no OOT image



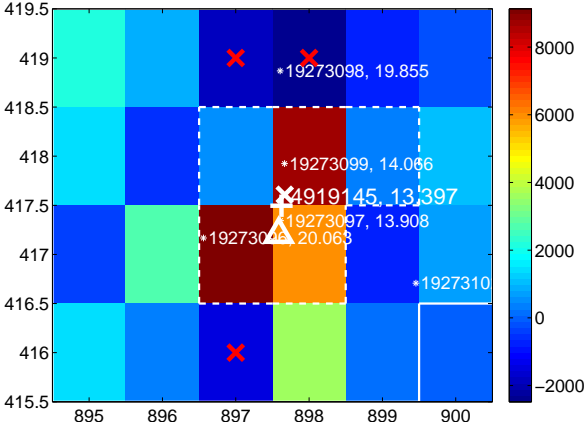
Q10 no difference image



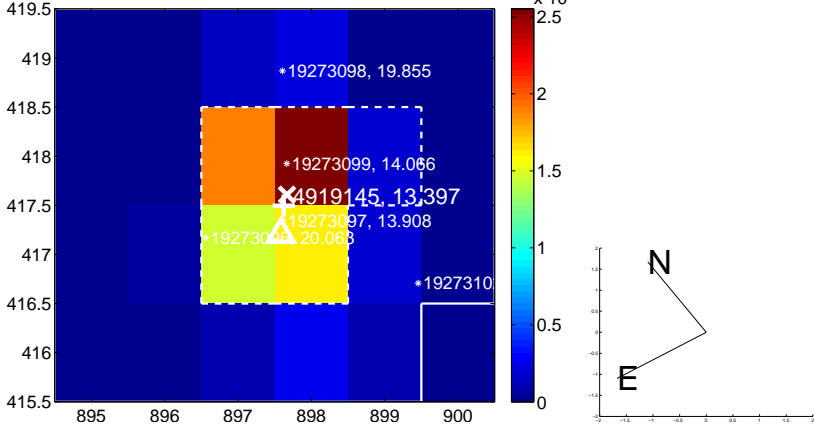
Q10 no OOT image



Q11 difference image



Q11 OOT image



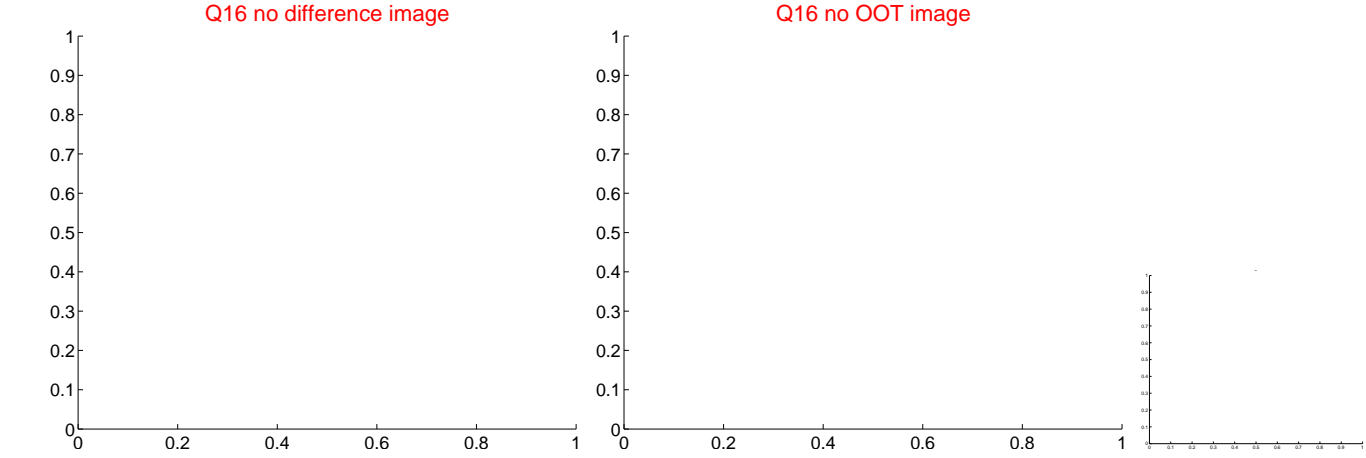
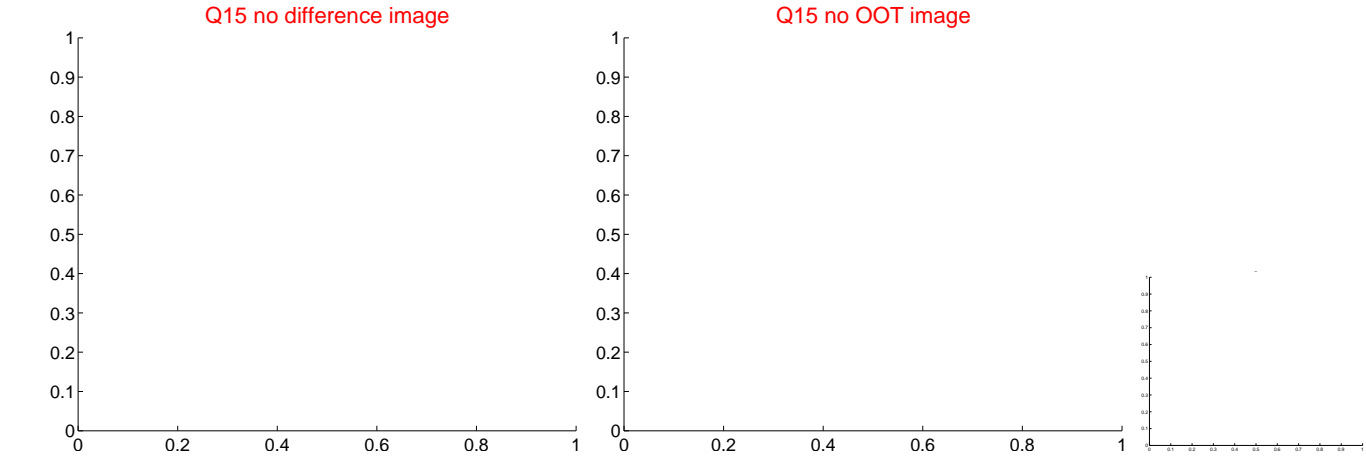
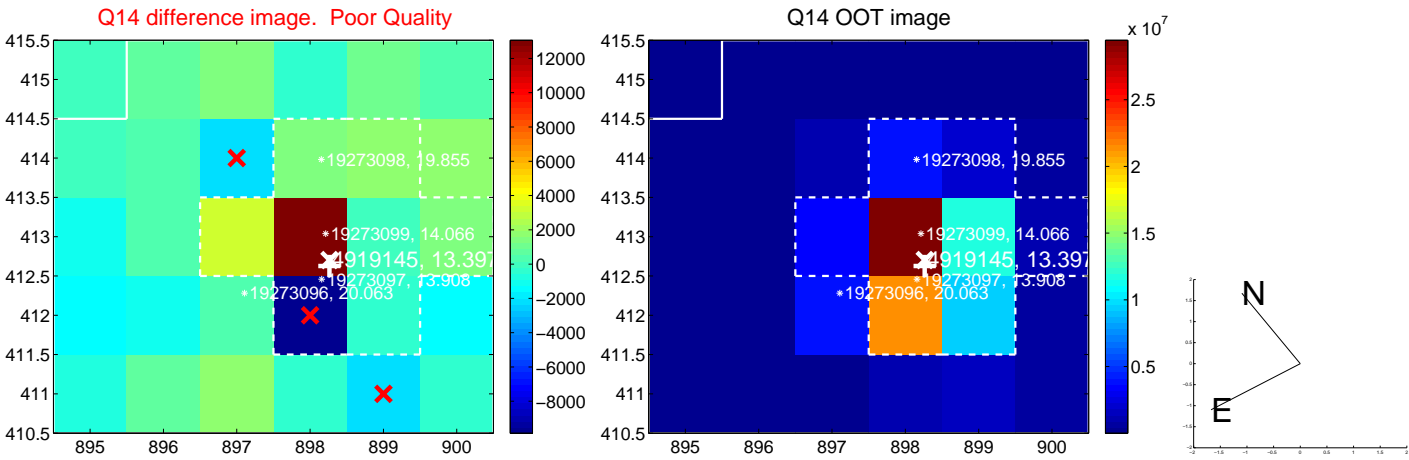
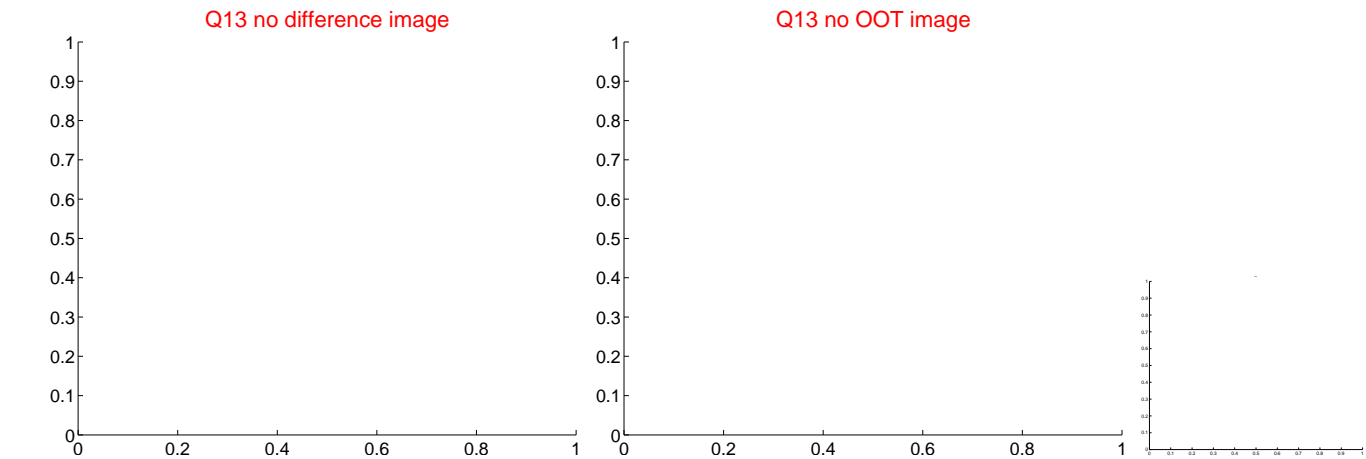
Q12 no difference image



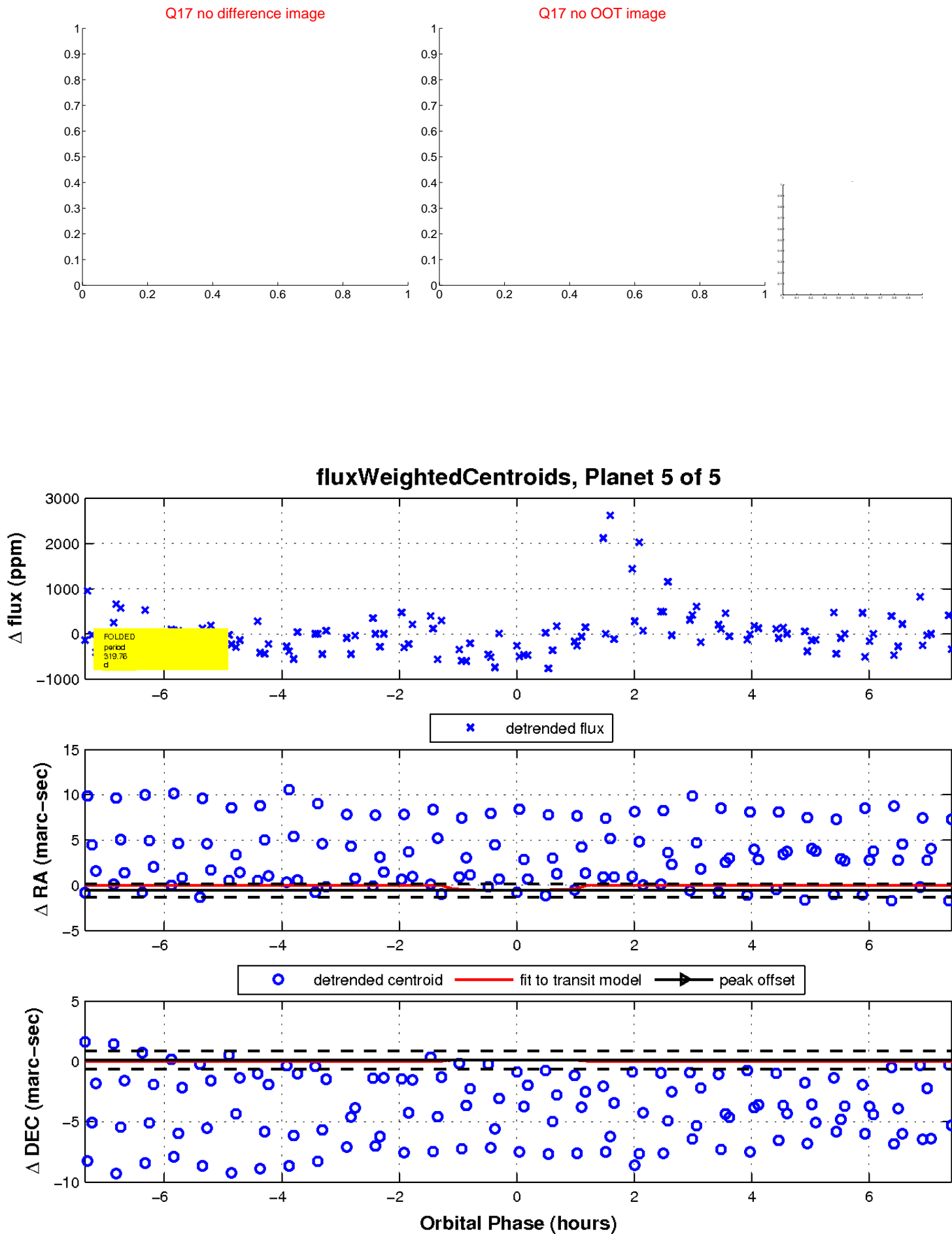
Q12 no OOT image



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



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



UKIRT Image

Declination

