

KIC 006949494

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})
006949494-01	OBS	No	336.252495	436.978620	3695.9	5.015	20.2	10.1	0.78	5686	8.85	0.72
006949494-02	OBS	No	186.908991	161.667100	1367.0	3.042	11.6	6.1	0.78	5686	3.65	1.57
006949494-03	OBS	No	298.956964	412.297784	3394.6	7.632	12.1	7.0	0.78	5686	4.84	0.84
006949494-04	OBS	No	418.949281	423.397587	1310.3	4.500	13.3	-1.0	0.78	5686	2.81	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006949494-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

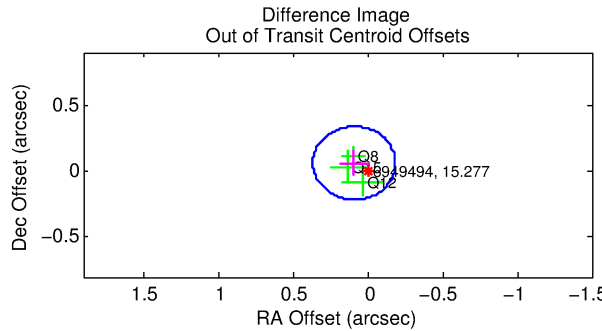
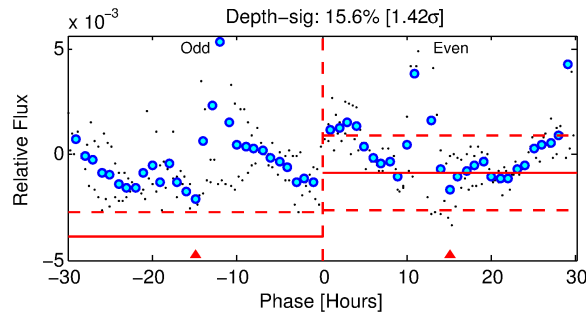
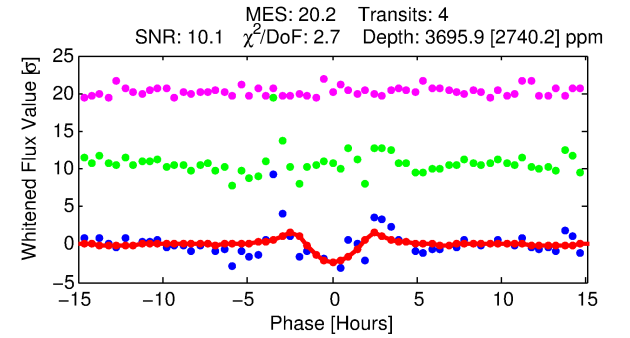
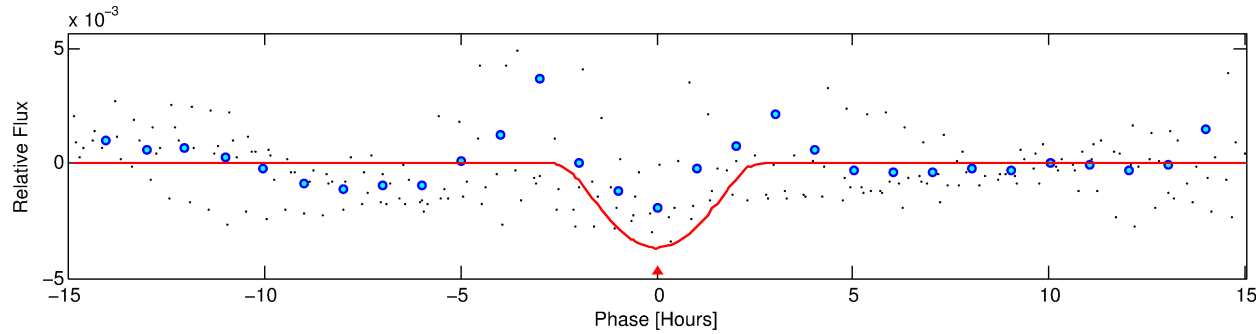
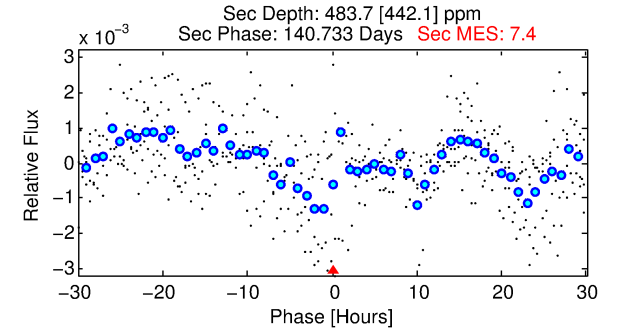
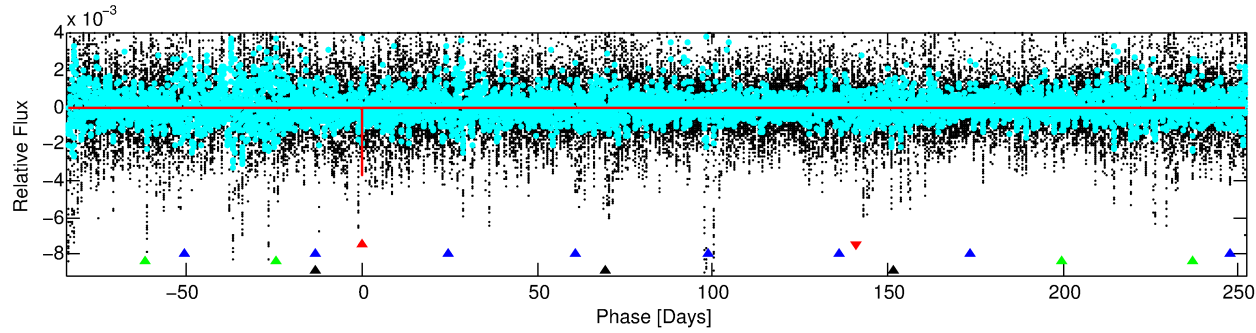
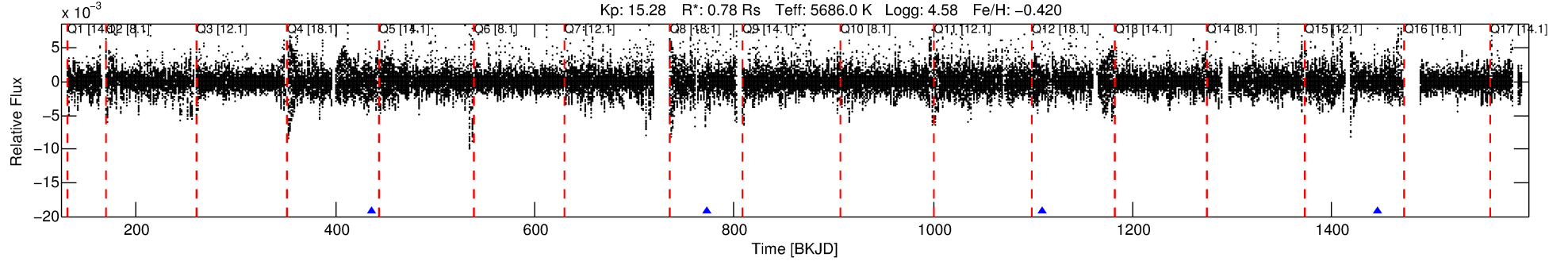
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006949494-01

No Significant Match Found

DV One-Page Summary

KIC: 6949494 Candidate: 1 of 4 Period: 336.252 d



DV Fit Results:

Period = 336.25249 [0.00740] d
Epoch = 436.9786 [0.0144] BKJD
Rp/R* = 0.1037 [0.4495]
a/R* = 239.25 [203.54]
b = 1.00 [0.59]
Seff = 0.72 [0.23]
Teq = 235 [19] K
Rp = 8.85 [38.42] Re
a = 0.8925 [0.1845] AU
Ag = 2707.79 [23624.38] [0.11 σ]
Teffp = 2619 [5709] K [0.42 σ]

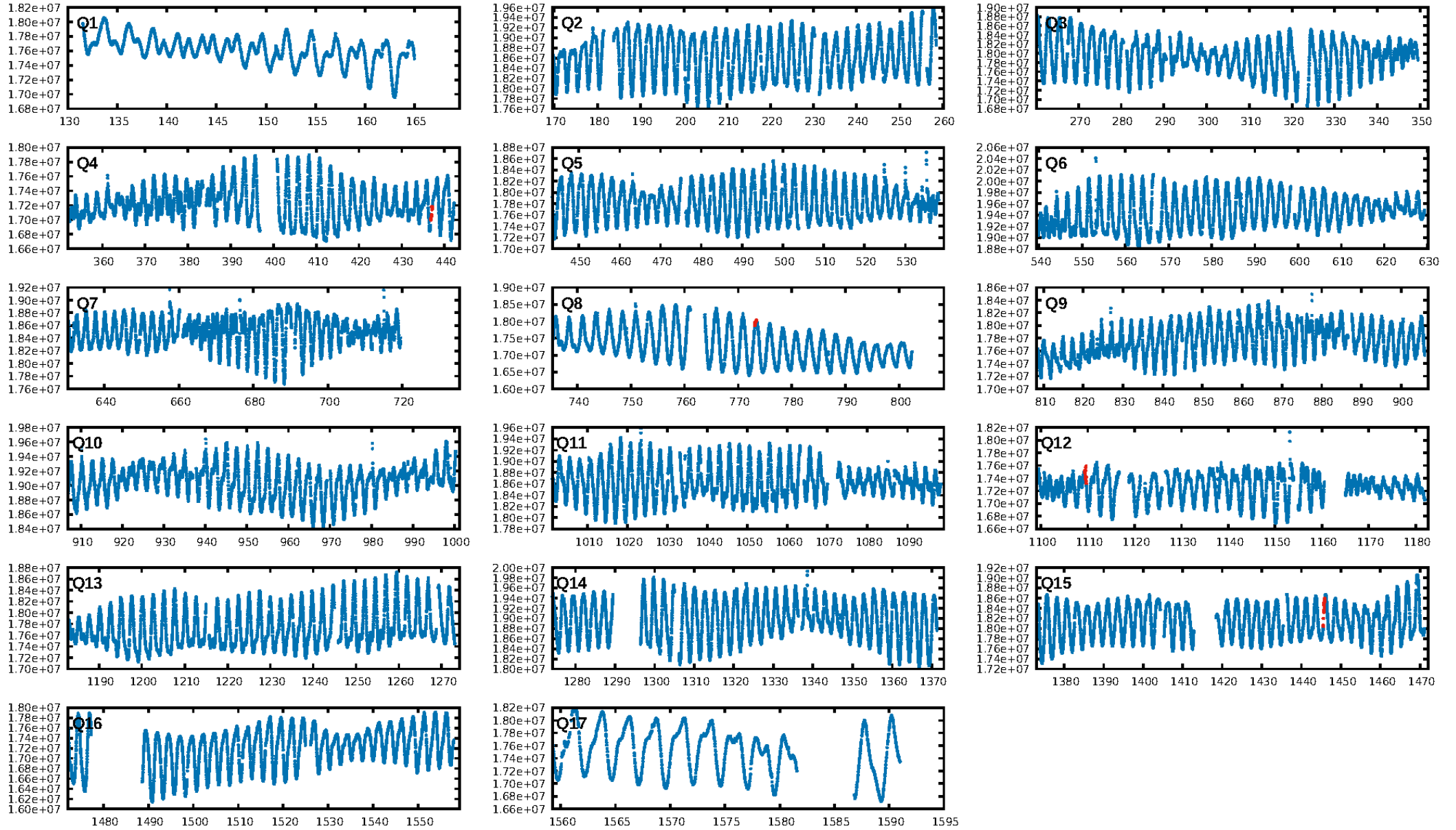
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [98.01 σ]
LongPeriod-sig: 100.0% [294.55 σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 0.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.4691
Centroid-sig: 59.9%
Centroid-so: 0.374 arcsec [0.81 σ]
OotOffset-rm: 0.109 arcsec [1.18 σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.101 arcsec [1.13 σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [4/4]

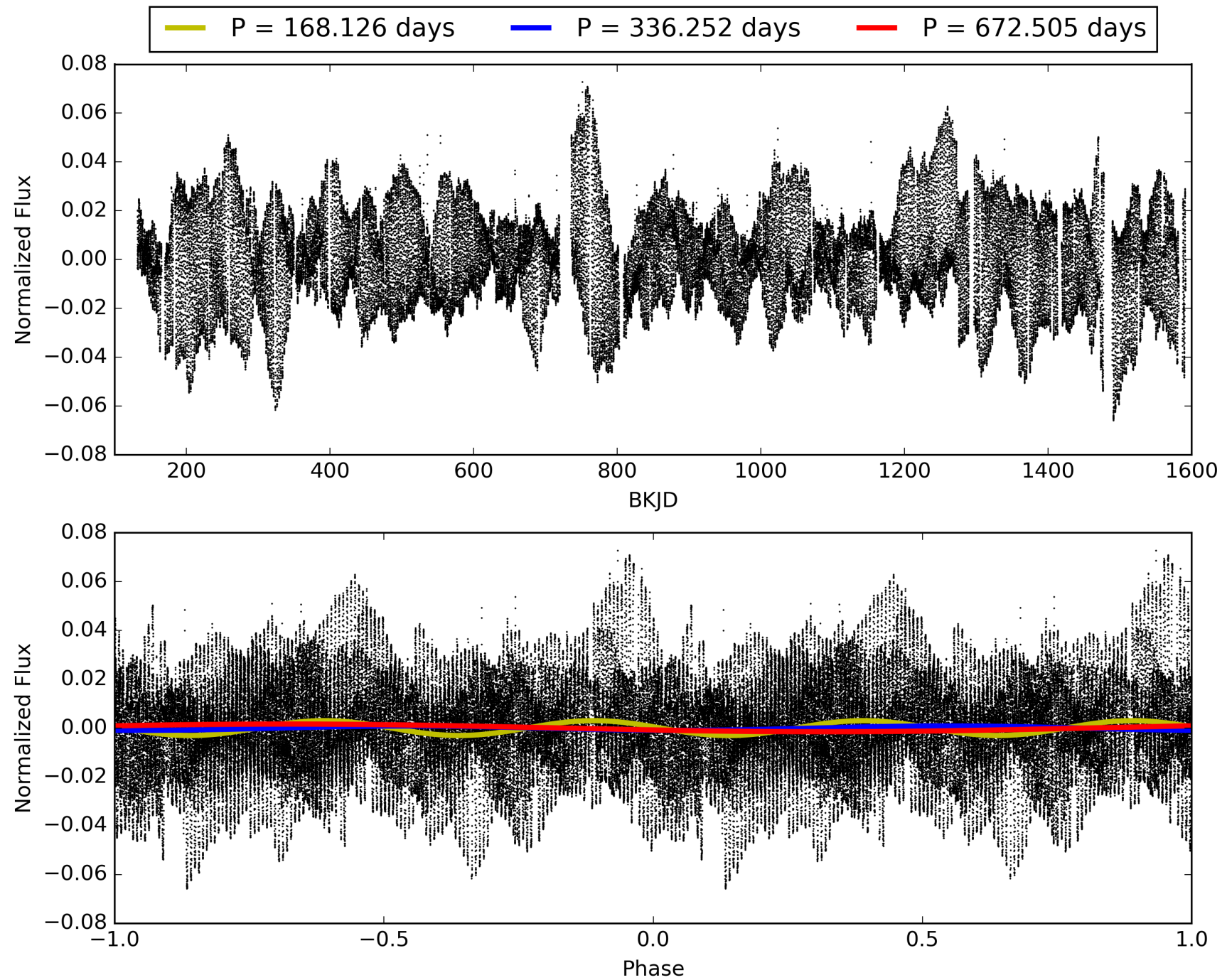
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:02:33 Z

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

TCE 006949494-01, PDC Light Curves

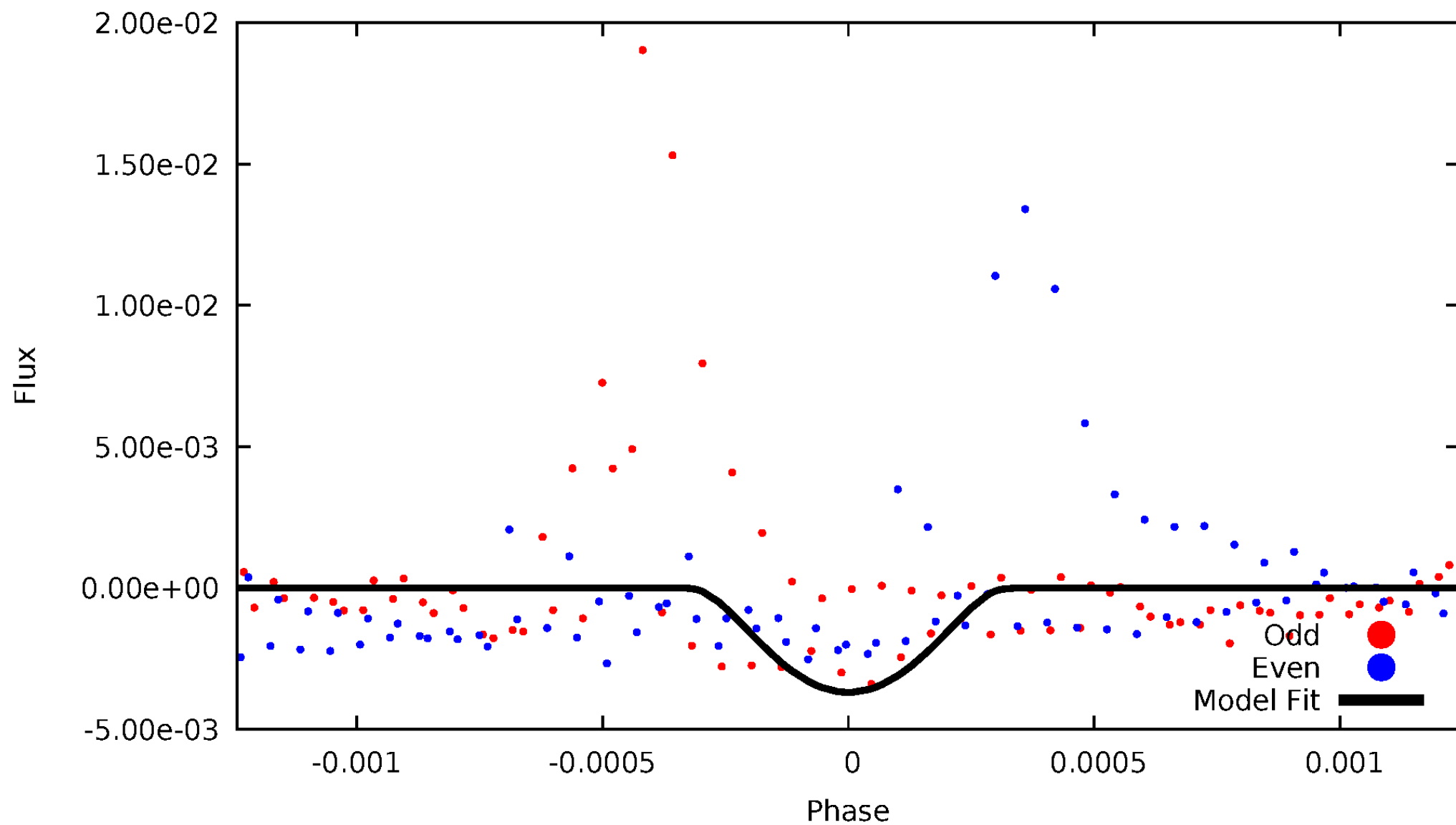


TCE 006949494-01



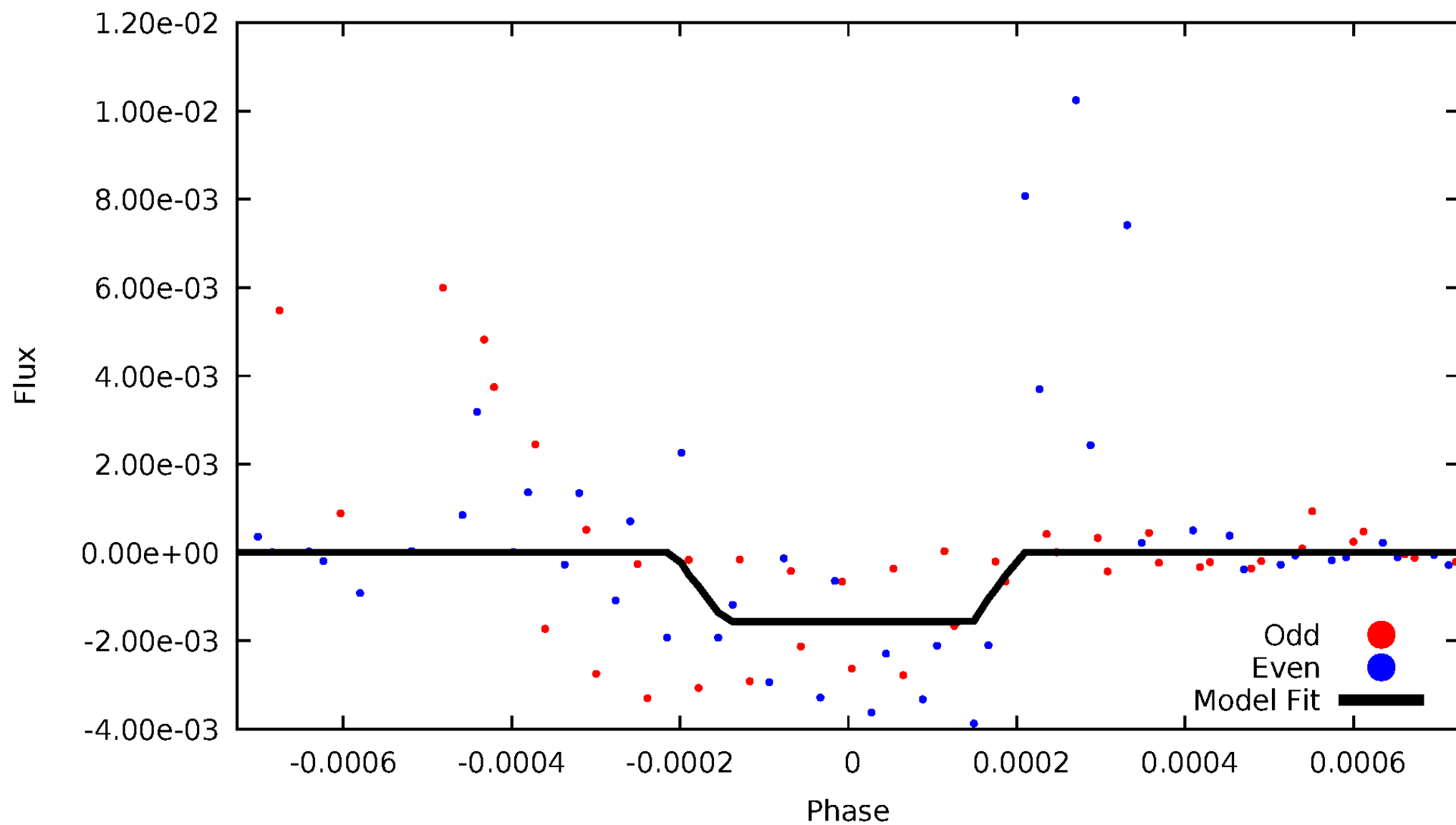
DV Odd/Even

TCE 006949494-01



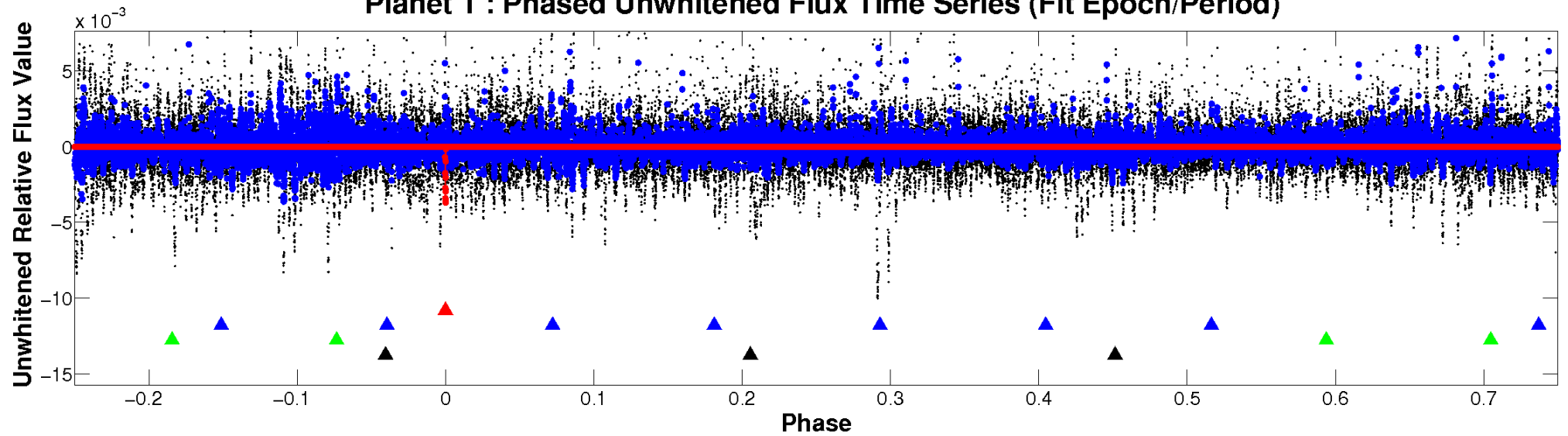
ALT Odd/Even

TCE 006949494-01

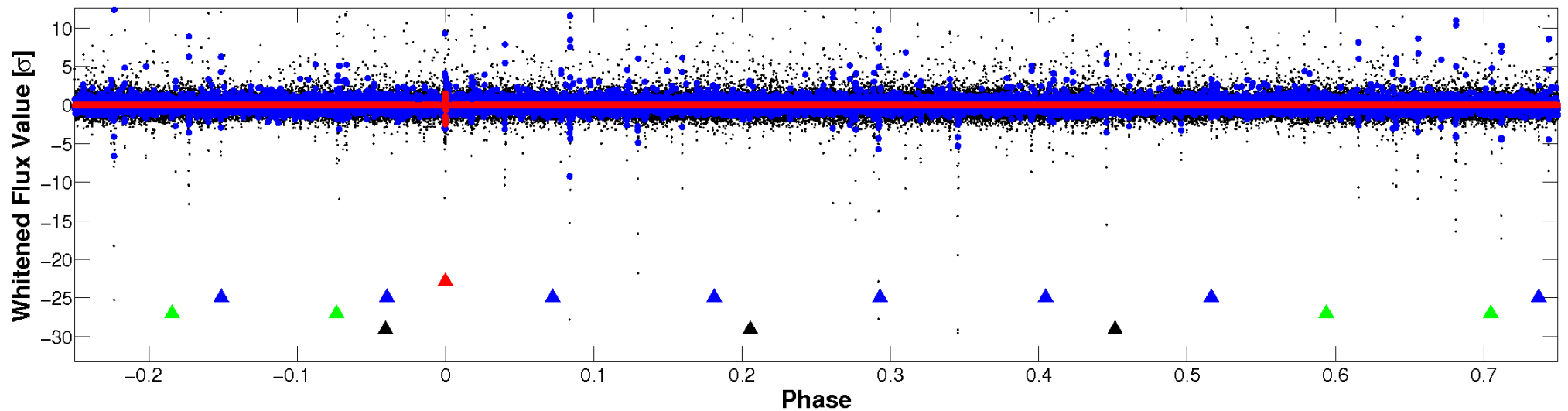


Non-Whitened Vs. Whitened Light Curve

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

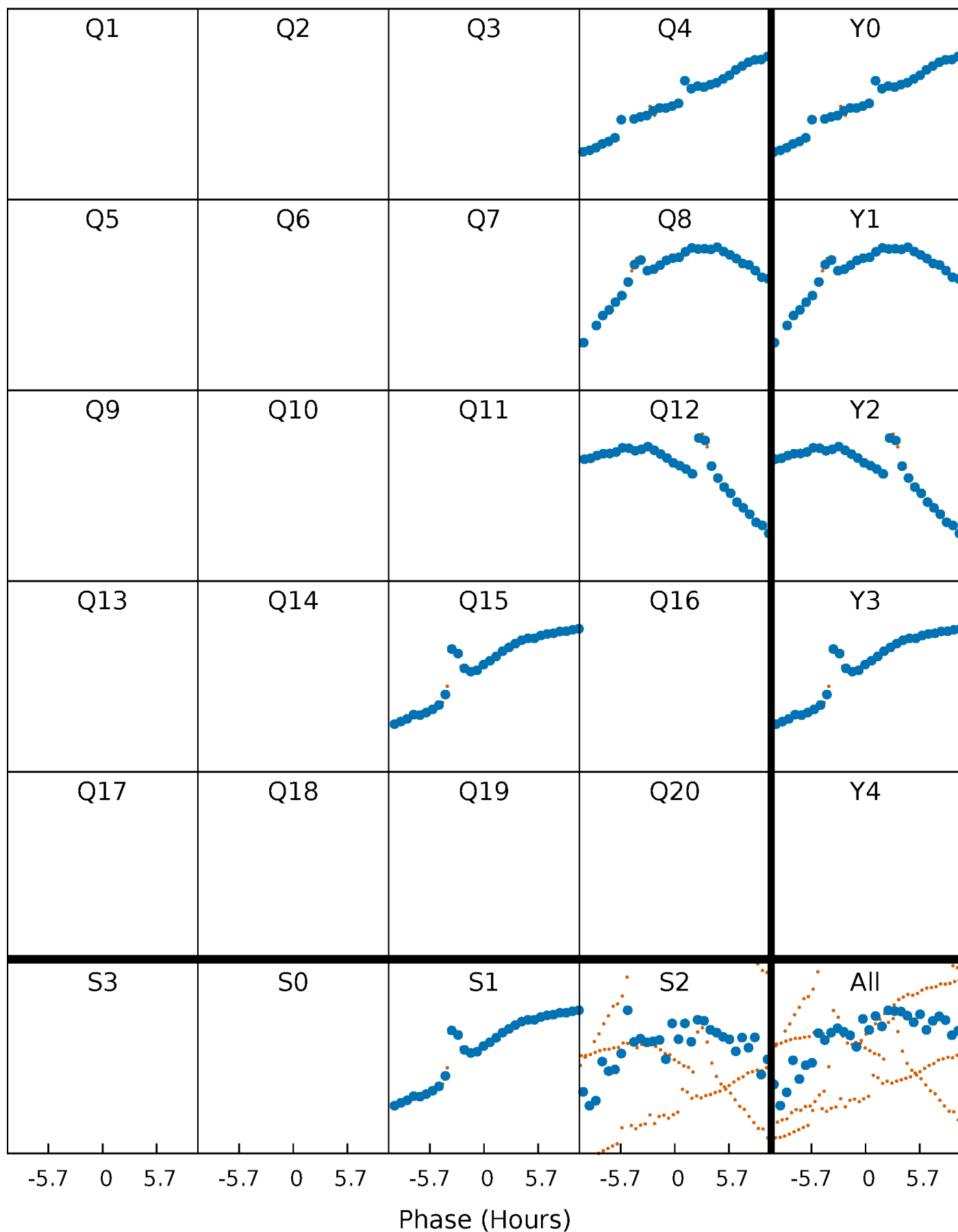


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



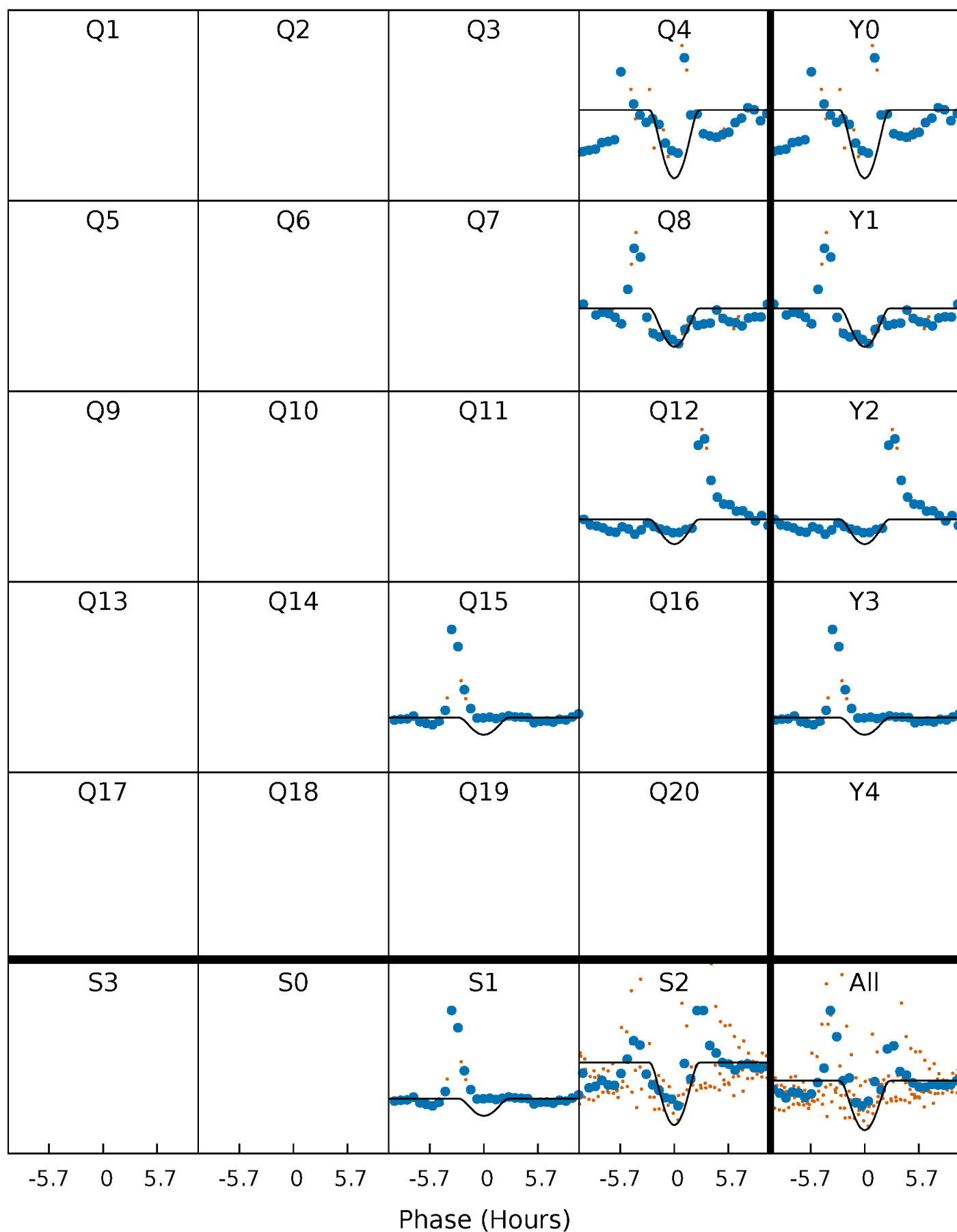
PDC Quarter-Phased Transit Curves

TCE 006949494-01 P=336.252495 Days $T_0=436.978620$ (BKJD)



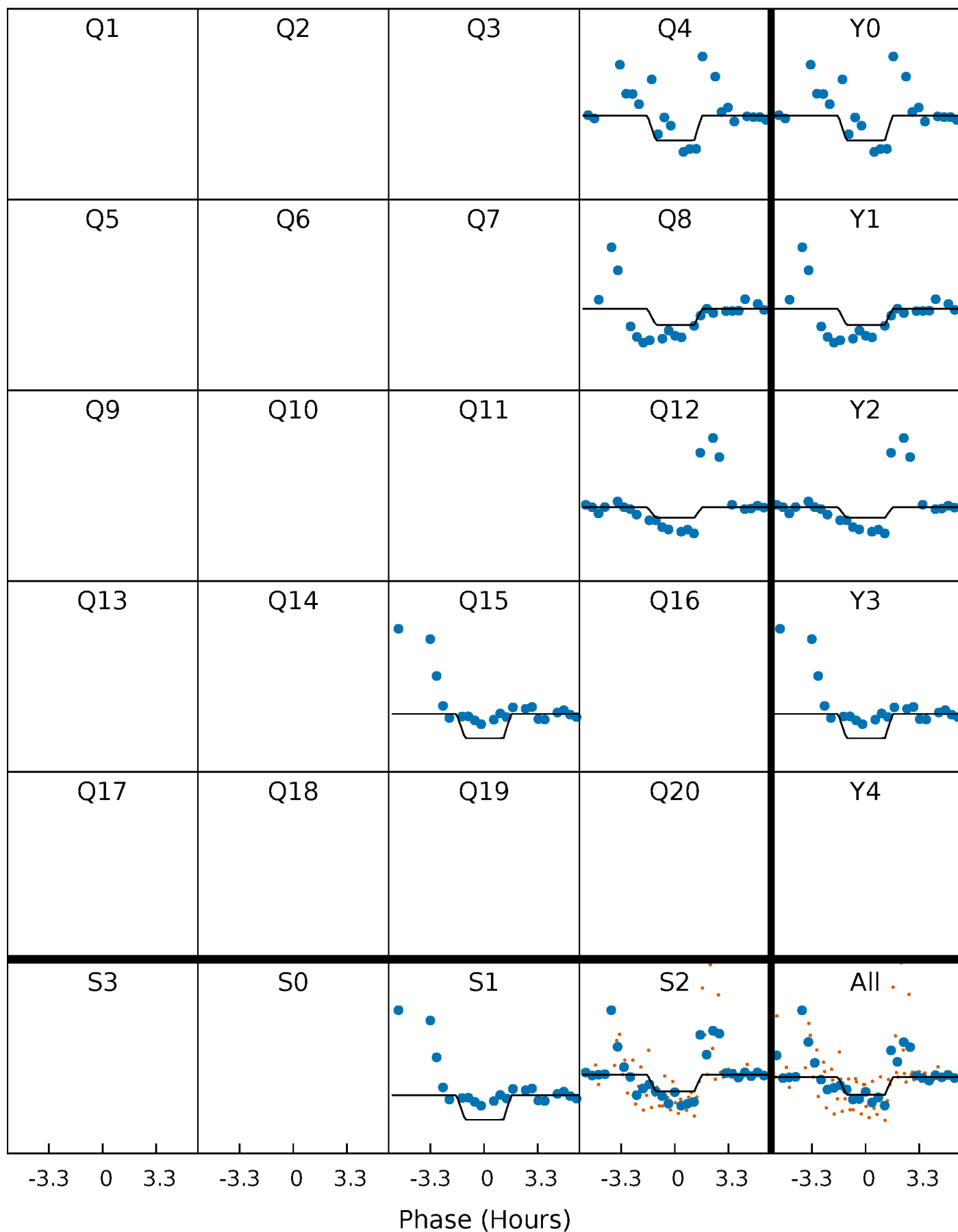
DV Quarter-Phased Transit Curves

TCE 006949494-01 P=336.252495 Days $T_0=436.978620$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

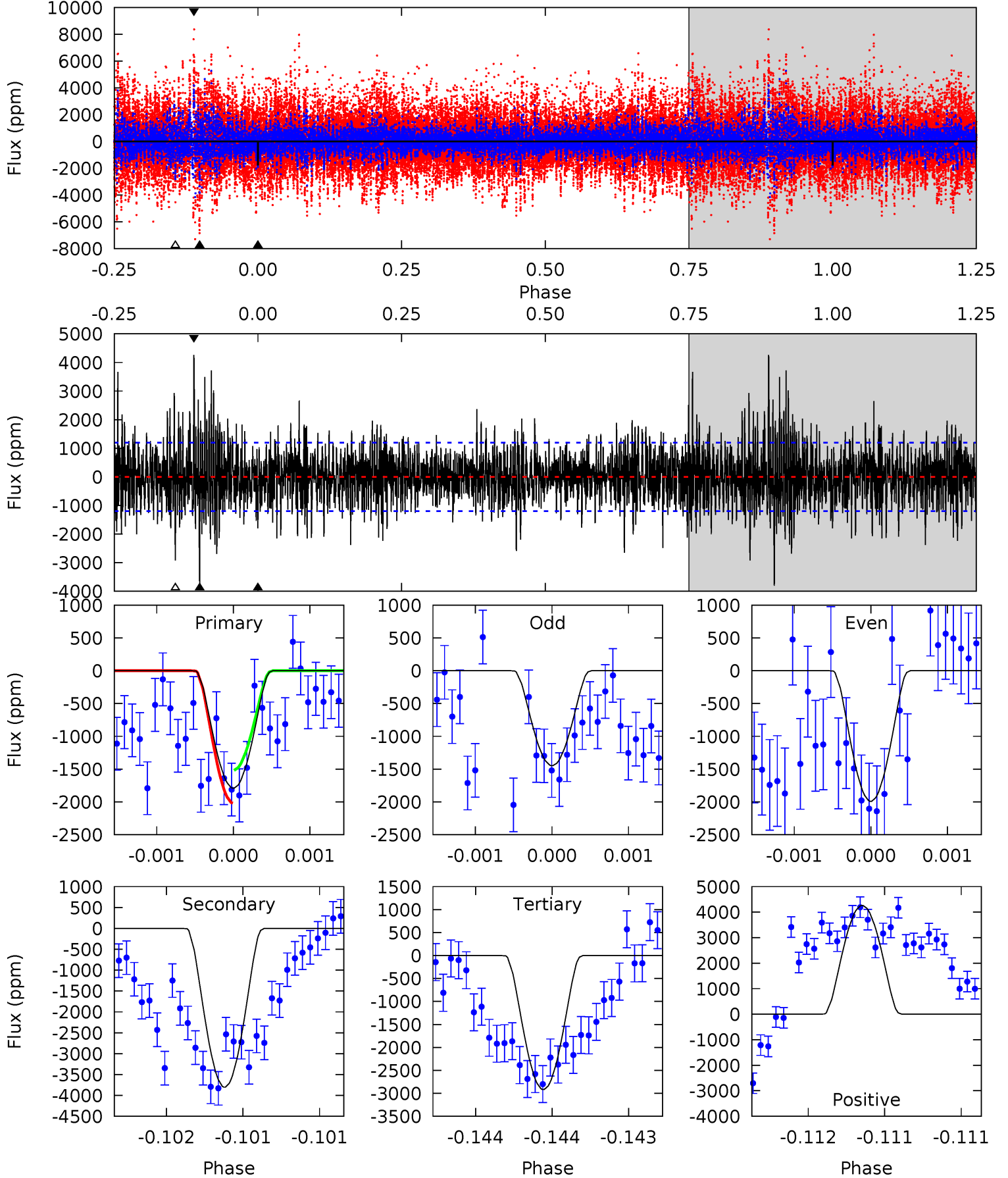
TCE 006949494-01 P=336.288719 Days $T_0=436.936117$ (BKJD)



DV Model-Shift Uniqueness Test

006949494-01, P = 336.252495 Days, E = 100.726125 Days

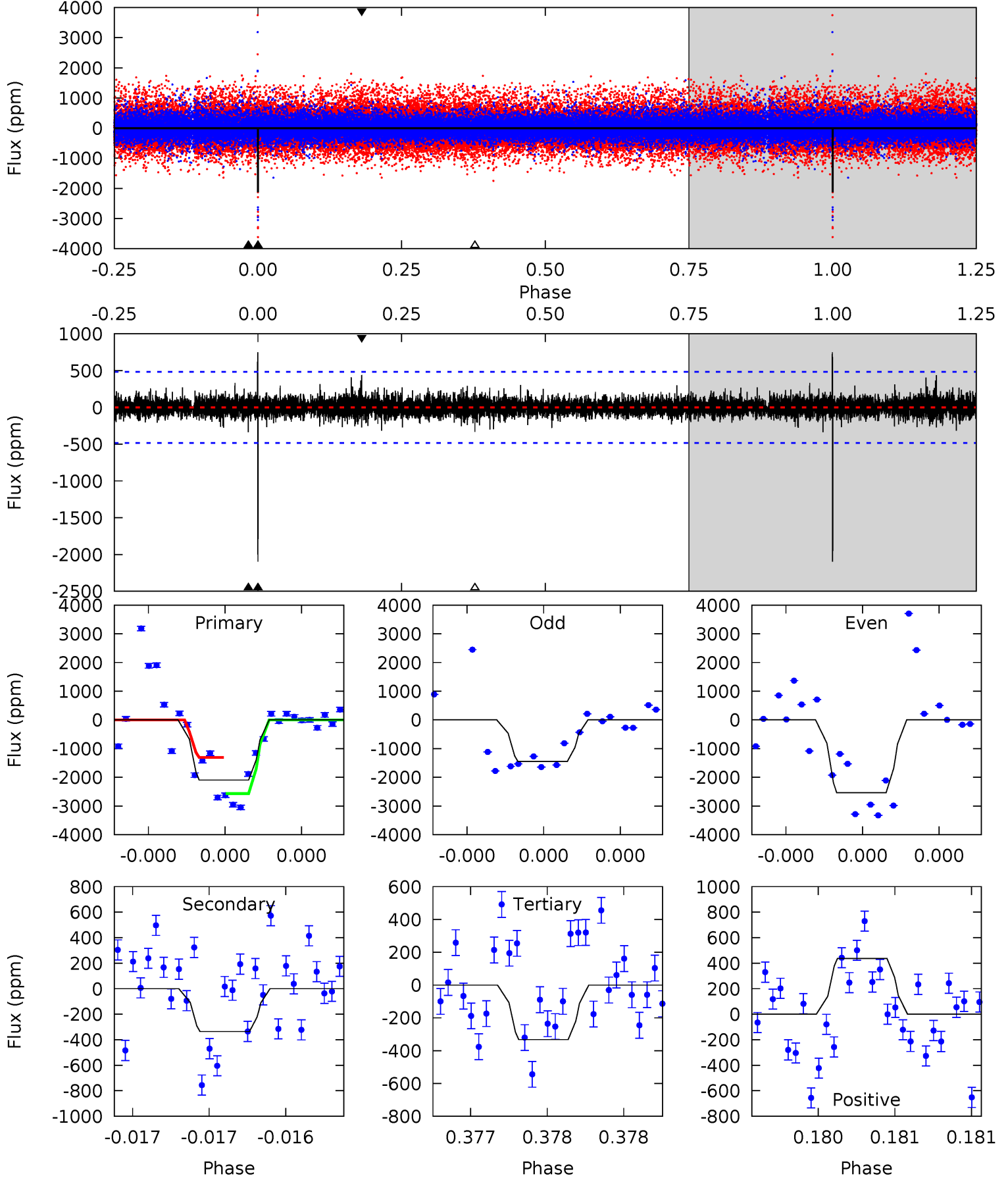
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.26	17.6	13.5	19.7	5.52	3.40	3.44	-5.20	-11.4	4.08	-2.11	1.18	0.99	0.53	1.16



Alt Model-Shift Uniqueness Test

006949494-01, P = 336.288719 Days, E = 100.647398 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.3	3.89	3.85	5.07	5.61	3.53	0.82	20.4	19.2	0.04	-1.18	6.94	0.95	0.26	7.54



Stellar Parameters For KIC 006949494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5686^{+154}_{-172}	$4.575^{+0.040}_{-0.160}$	$-0.420^{+0.300}_{-0.300}$	$0.782^{+0.195}_{-0.065}$	$0.839^{+0.098}_{-0.080}$	$2.473^{+0.509}_{-1.057}$
	+3%/-3%	+1%/-3%	+71%/-71%	+25%/-8%	+12%/-10%	+21%/-43%
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 006949494-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3804 ± 217	$30.60^{+31.47}_{-20.43}$	334^{+19}_{-14}	3043^{+1381}_{-516}	1745^{+14161}_{-1307}
Alt.	-336 ± 86	$26.44^{+31.76}_{-19.11}$	333^{+19}_{-14}	2317^{+930}_{-380}	209^{+2248}_{-169}

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 $A_{obs} \gg 1.0$

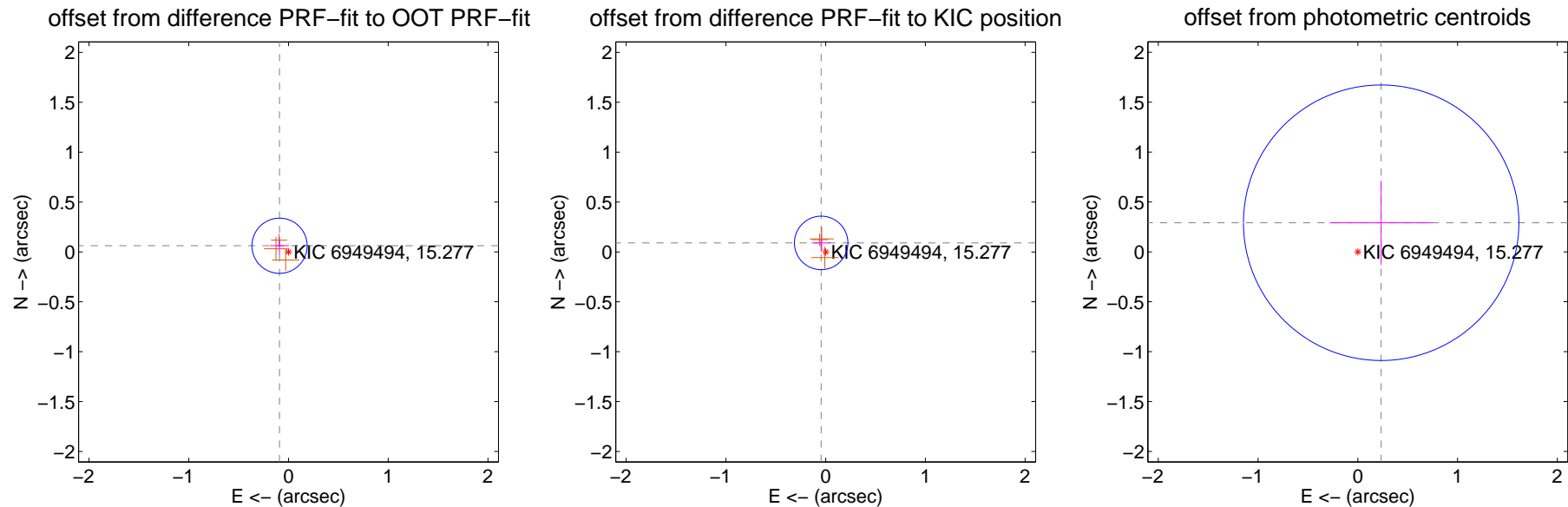
DV Centroid Data

Supplemental centroid analysis for 006949494-01. Kepler magnitude: 15.28. Transit SNR 10.06

There are 0 quarters with good PRF difference image offsets

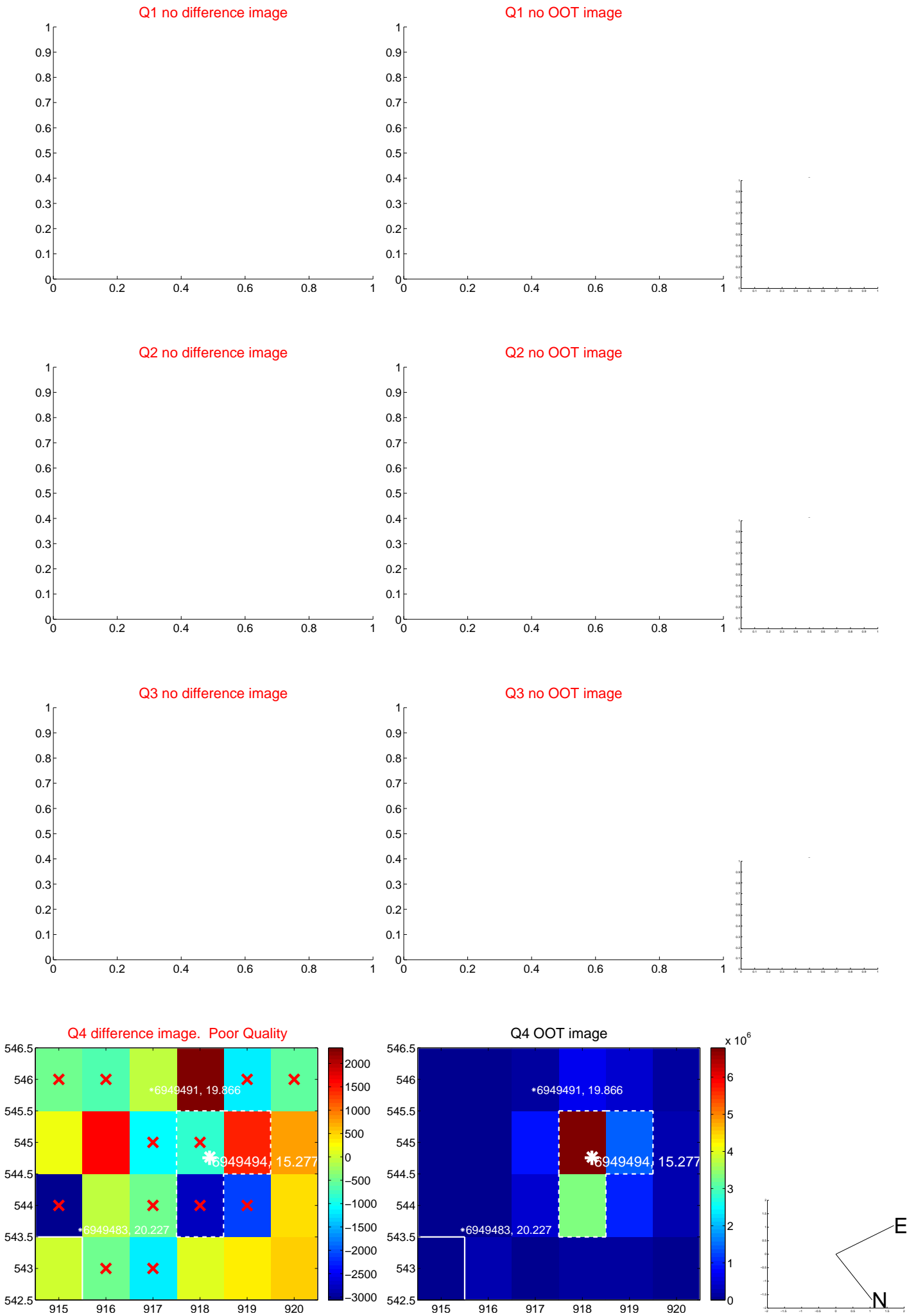
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.109 ± 0.092	1.18	0.090 ± 0.094	0.062 ± 0.088
PRF-fit source offset from KIC position	0.101 ± 0.089	1.13	0.045 ± 0.094	0.090 ± 0.088
photometric centroid source offset	0.37 ± 0.46	0.81	-0.23 ± 0.51	0.29 ± 0.42

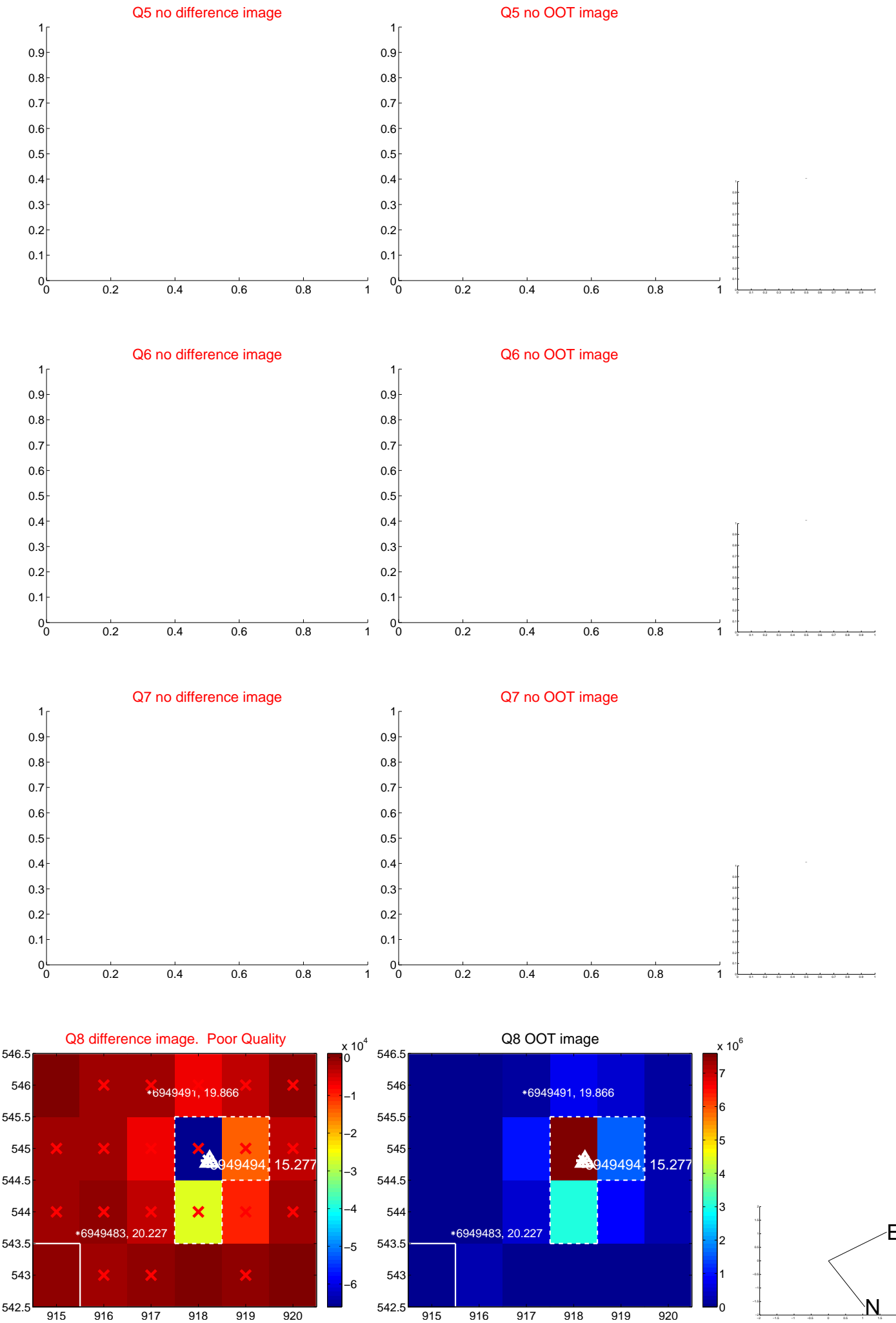


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

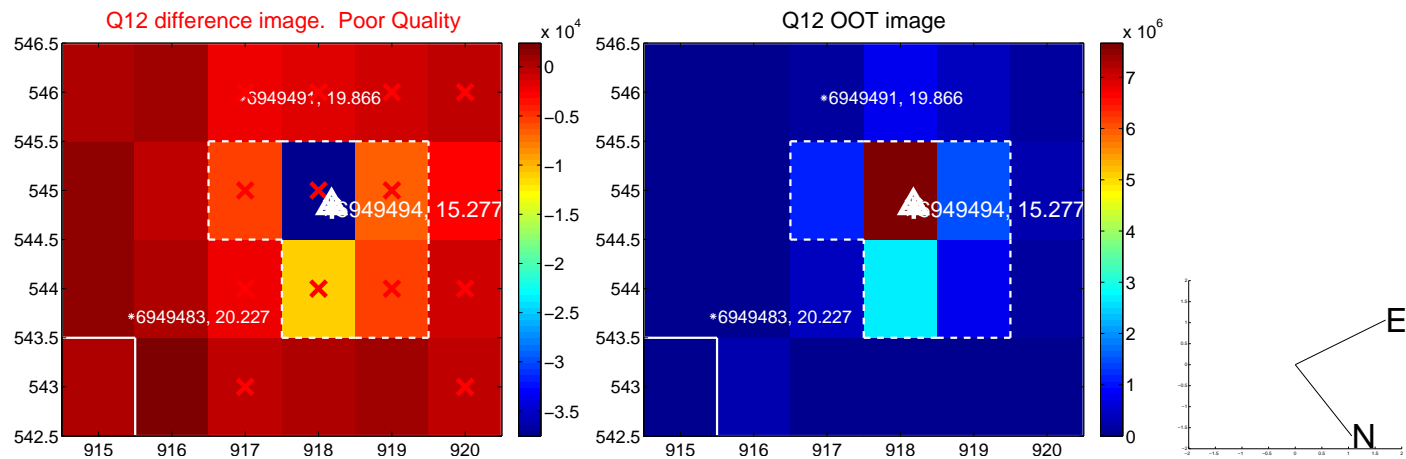
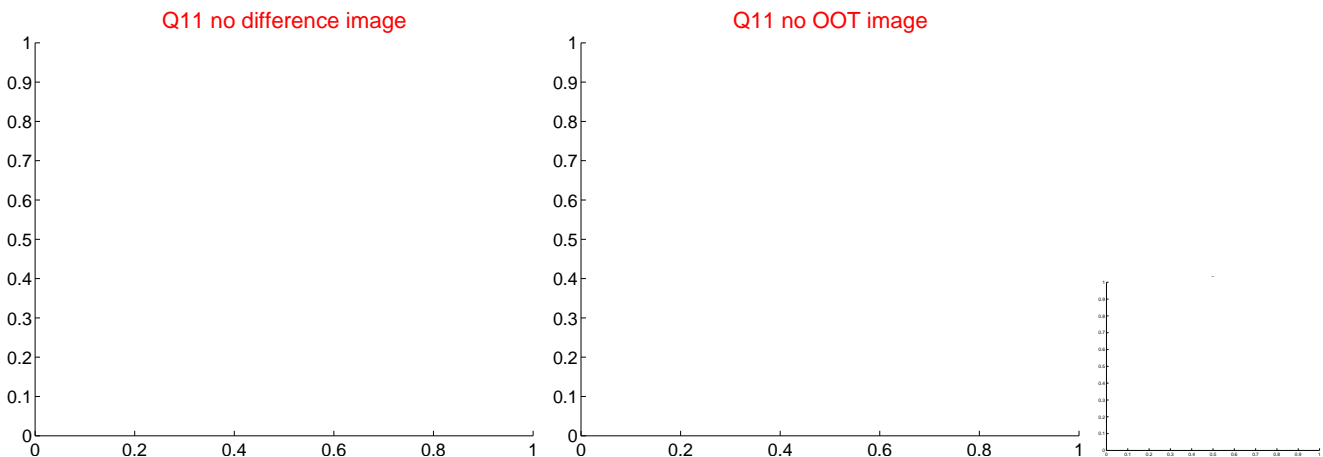
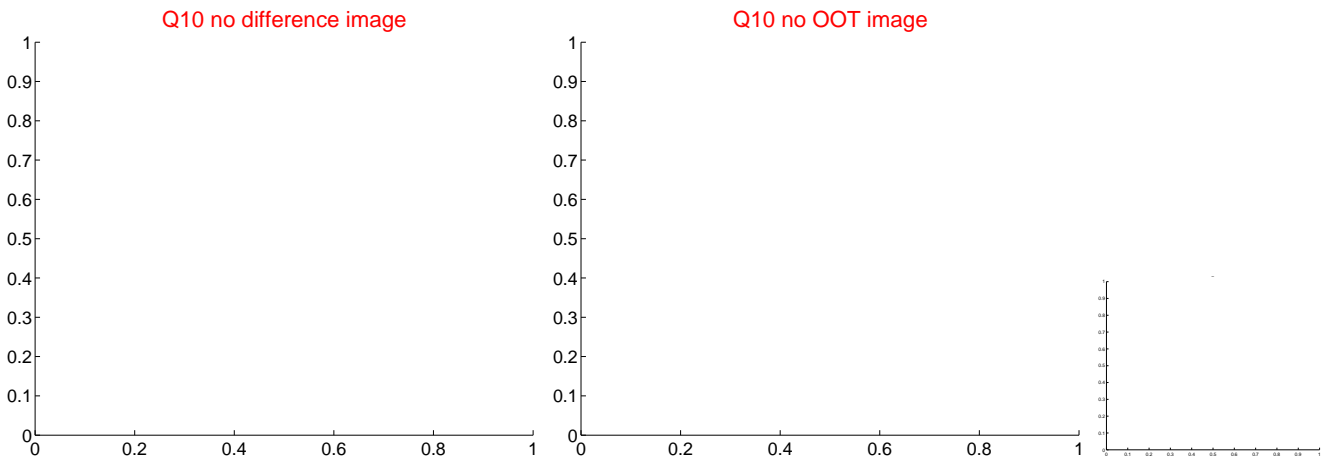
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



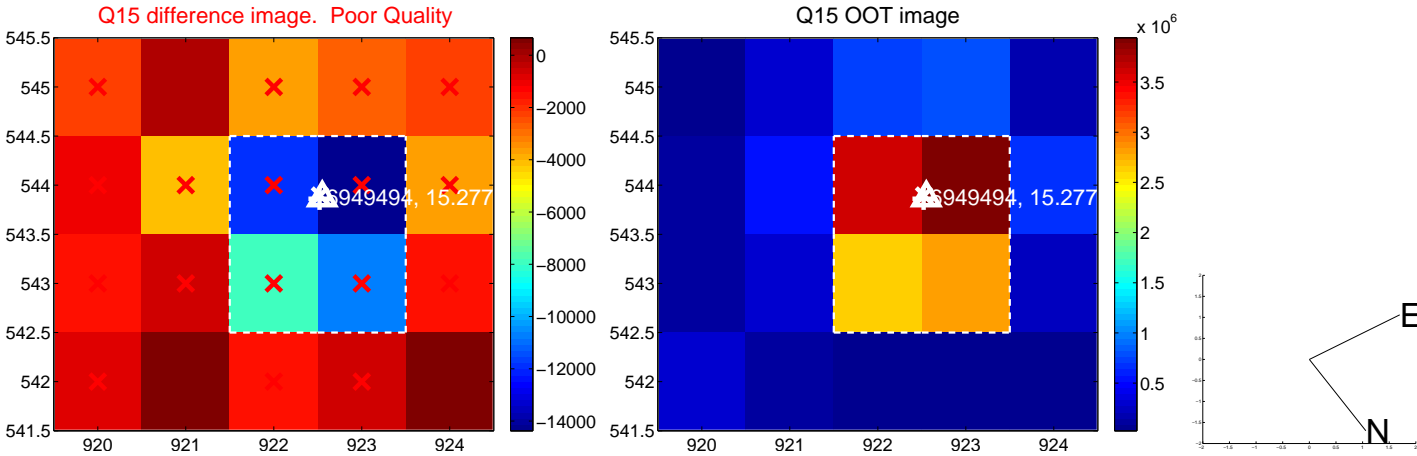
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



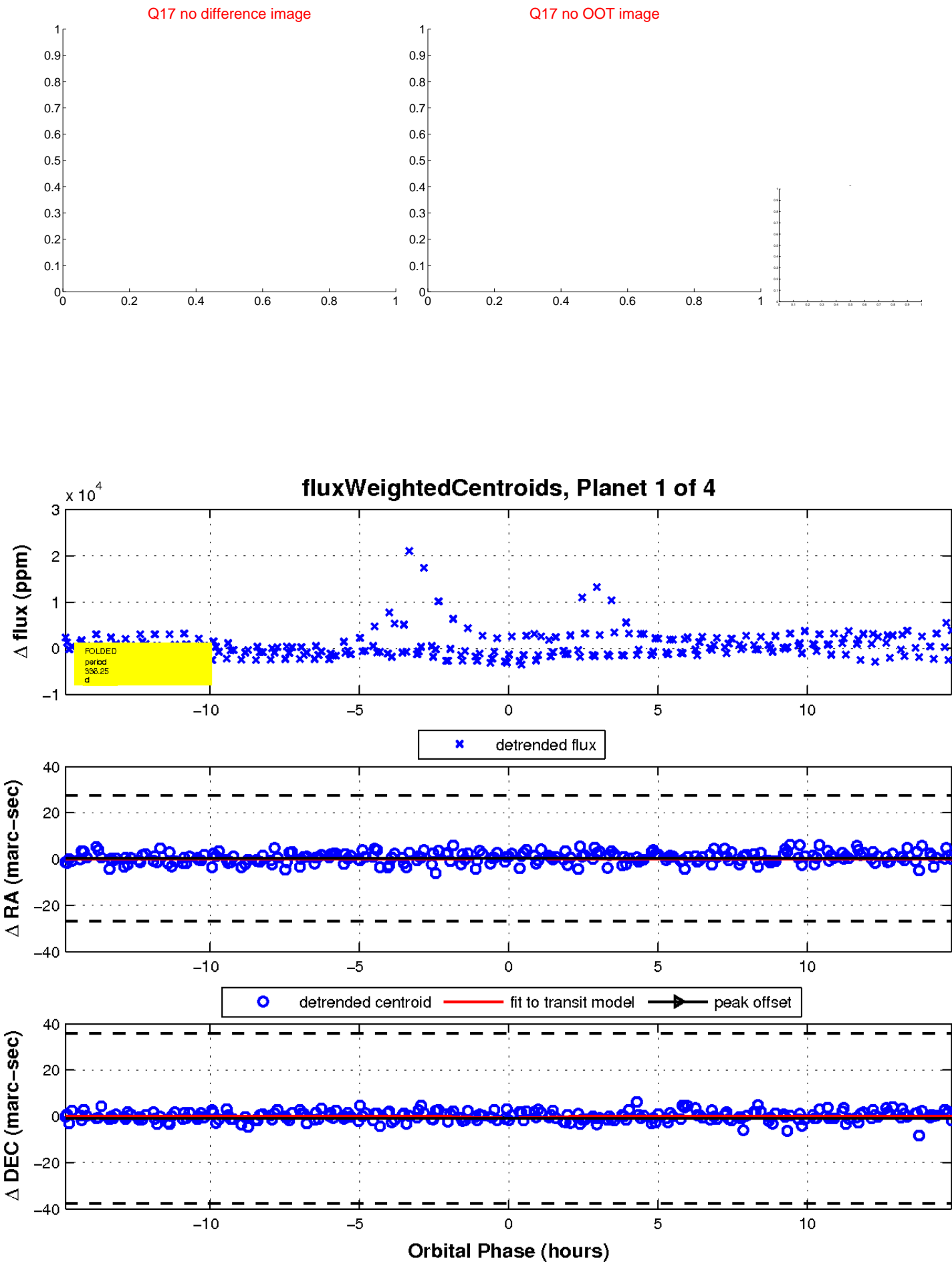
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

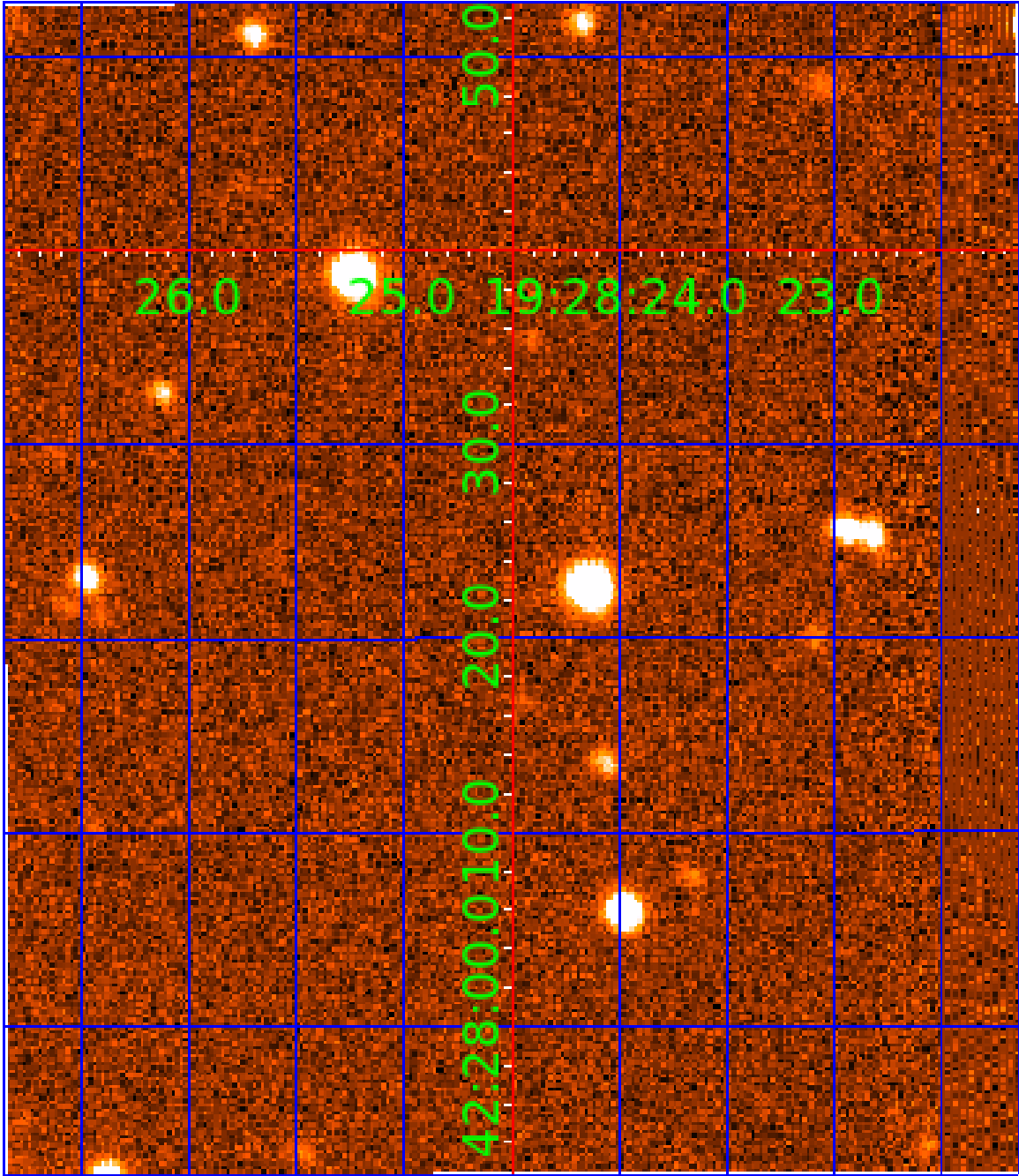


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006949494

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})
006949494-01	OBS	No	336.252495	436.978620	3695.9	5.015	20.2	10.1	0.78	5686	8.85	0.72
006949494-02	OBS	No	186.908991	161.667100	1367.0	3.042	11.6	6.1	0.78	5686	3.65	1.57
006949494-03	OBS	No	298.956964	412.297784	3394.6	7.632	12.1	7.0	0.78	5686	4.84	0.84
006949494-04	OBS	No	418.949281	423.397587	1310.3	4.500	13.3	-1.0	0.78	5686	2.81	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006949494-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

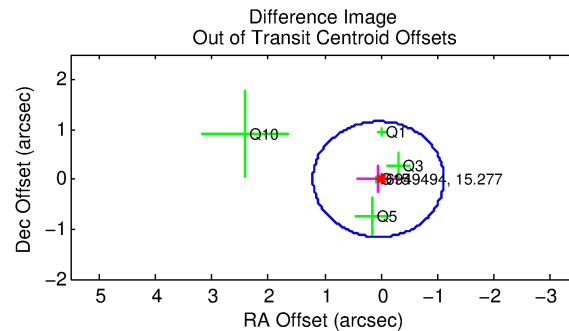
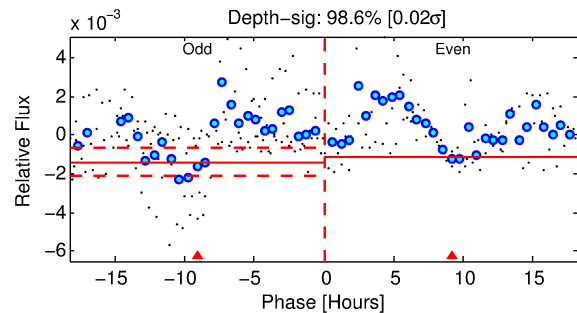
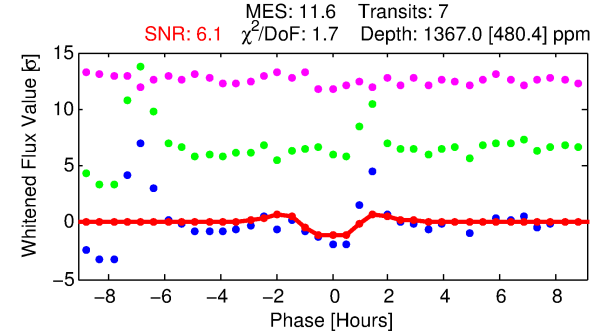
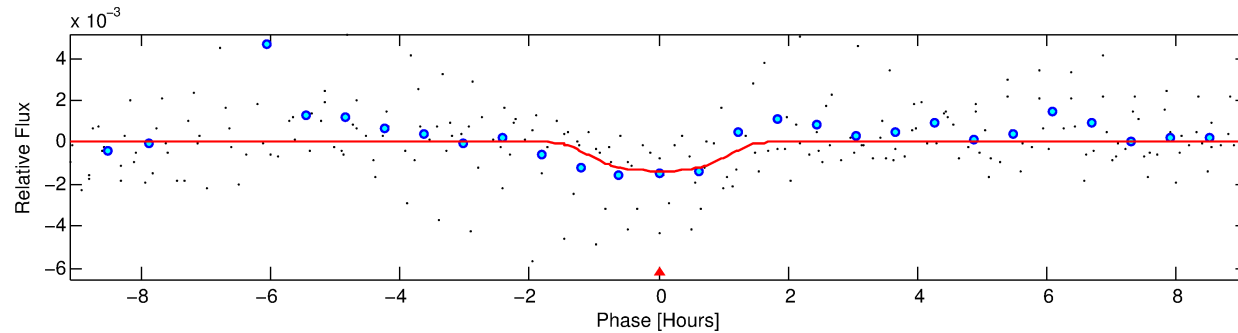
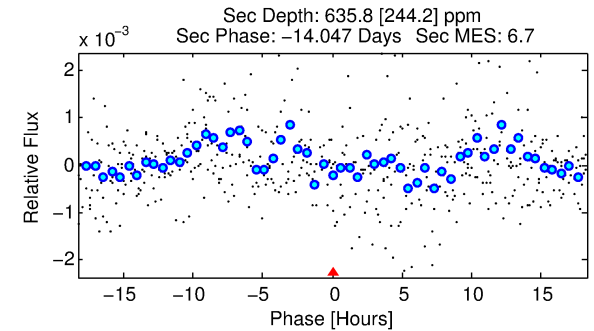
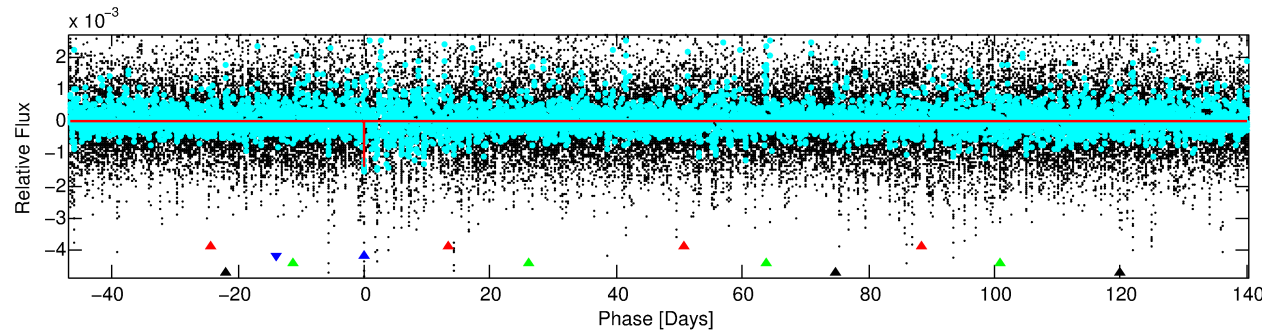
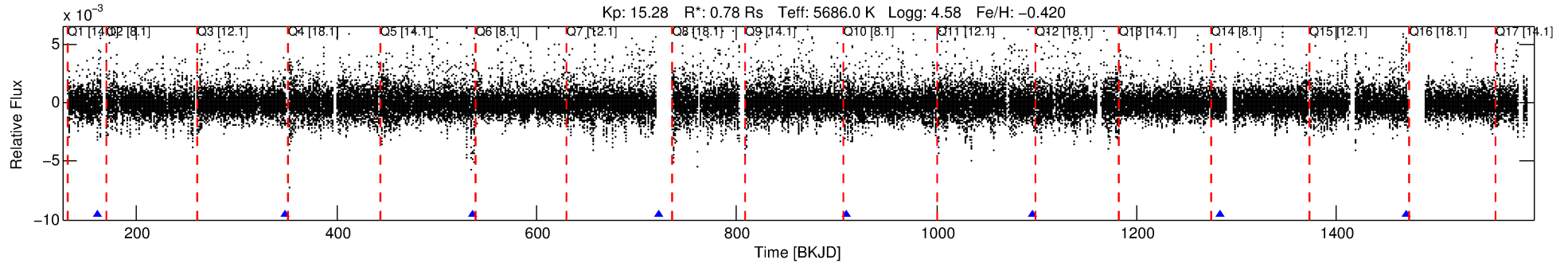
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006949494-02

No Significant Match Found

DV One-Page Summary

KIC: 6949494 Candidate: 2 of 4 Period: 186.909 d



DV Fit Results:

Period = 186.90899 [0.00302] d
Epoch = 161.6671 [0.0124] BKJD
Rp/R* = 0.0428 [0.0105]
a/R* = 205.39 [98.72]
b = 0.95 [0.06]
Seff = 1.57 [0.50]
Teq = 286 [23] K
Rp = 3.66 [1.28] Re
a = 0.6034 [0.1247] AU
Ag = 9530.69 [6569.23] [1.45σ]
Teffp = 4363 [691] K [5.89σ]

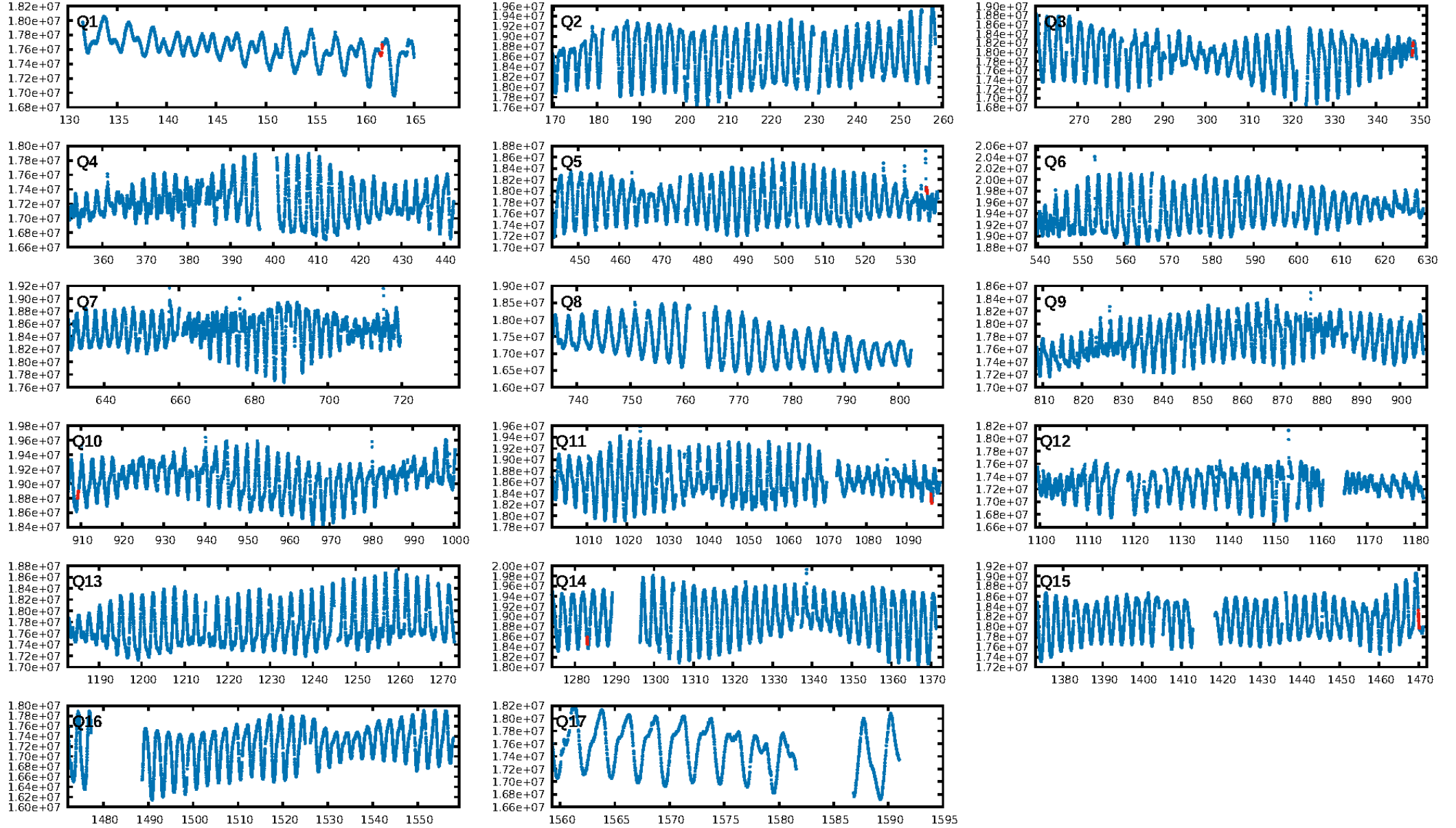
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [327.31σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 57.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: -4.645
Centroid-sig: 50.3%
Centroid-so: 0.555 arcsec [0.60σ]
OotOffset-rm: 0.049 arcsec [0.13σ]
OotOffset-st: 1/2/0/2 [5]
KicOffset-rm: 0.109 arcsec [0.53σ]
KicOffset-st: 1/2/0/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [5/5]

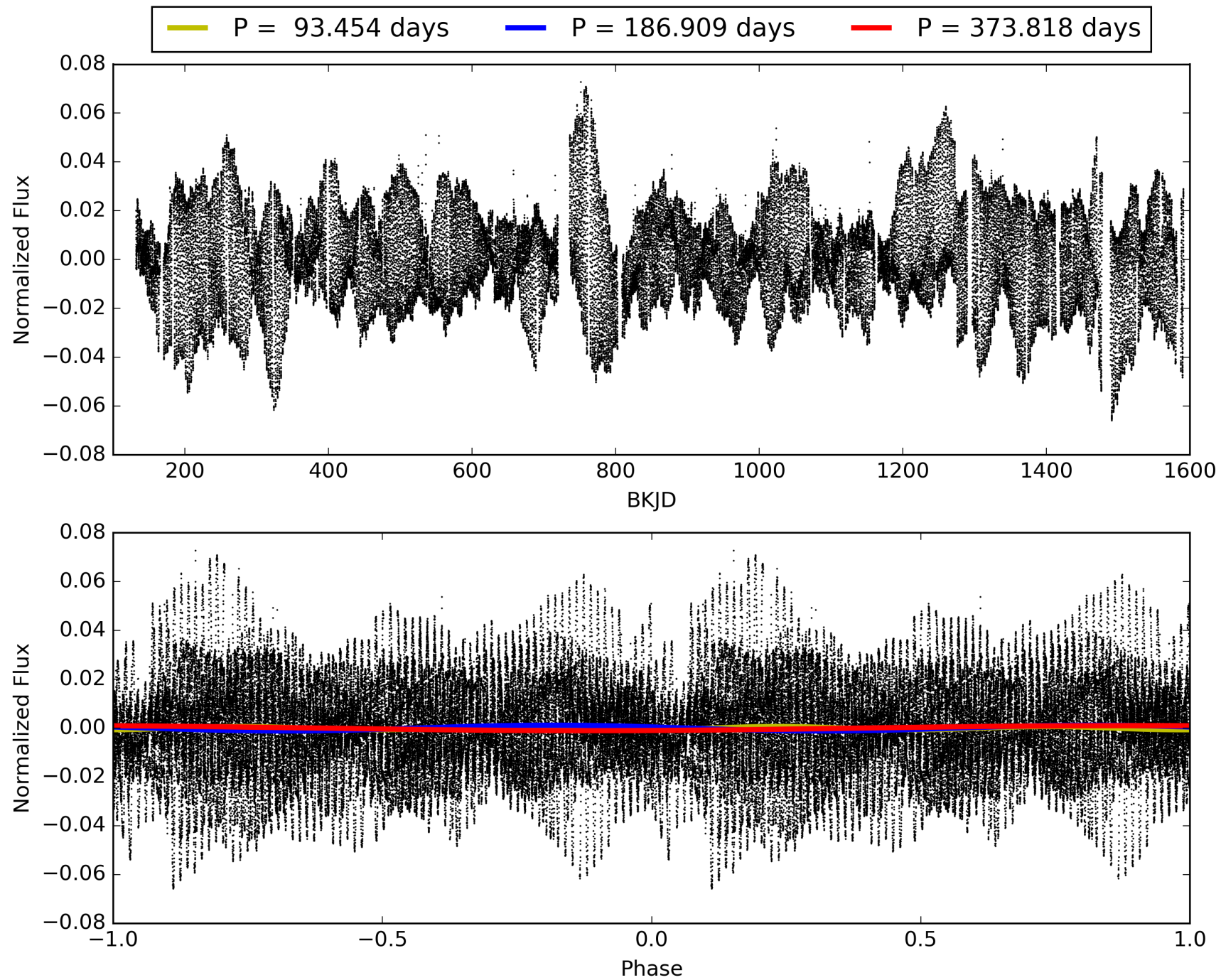
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:02:44 Z

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

TCE 006949494-02, PDC Light Curves

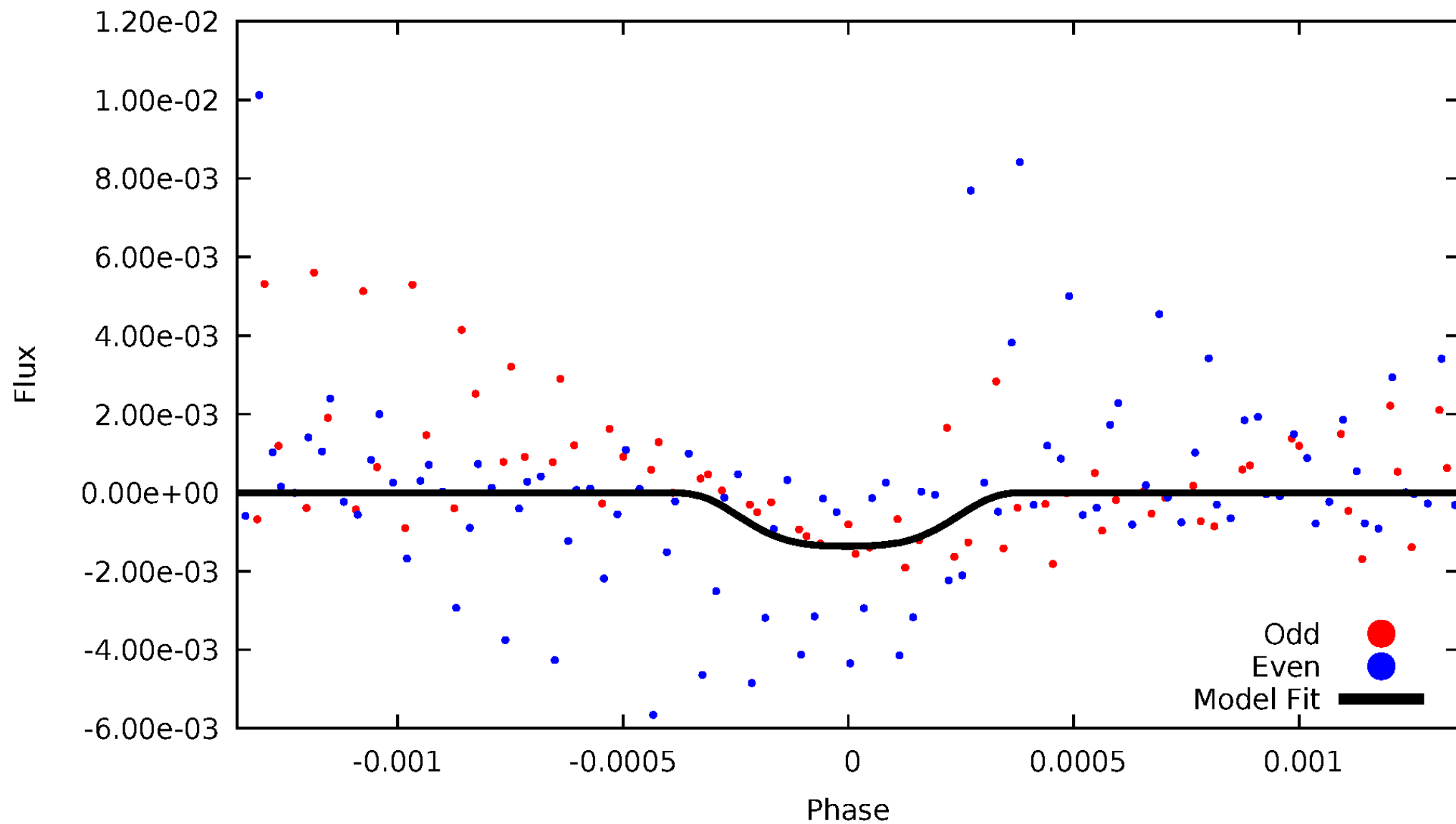


TCE 006949494-02



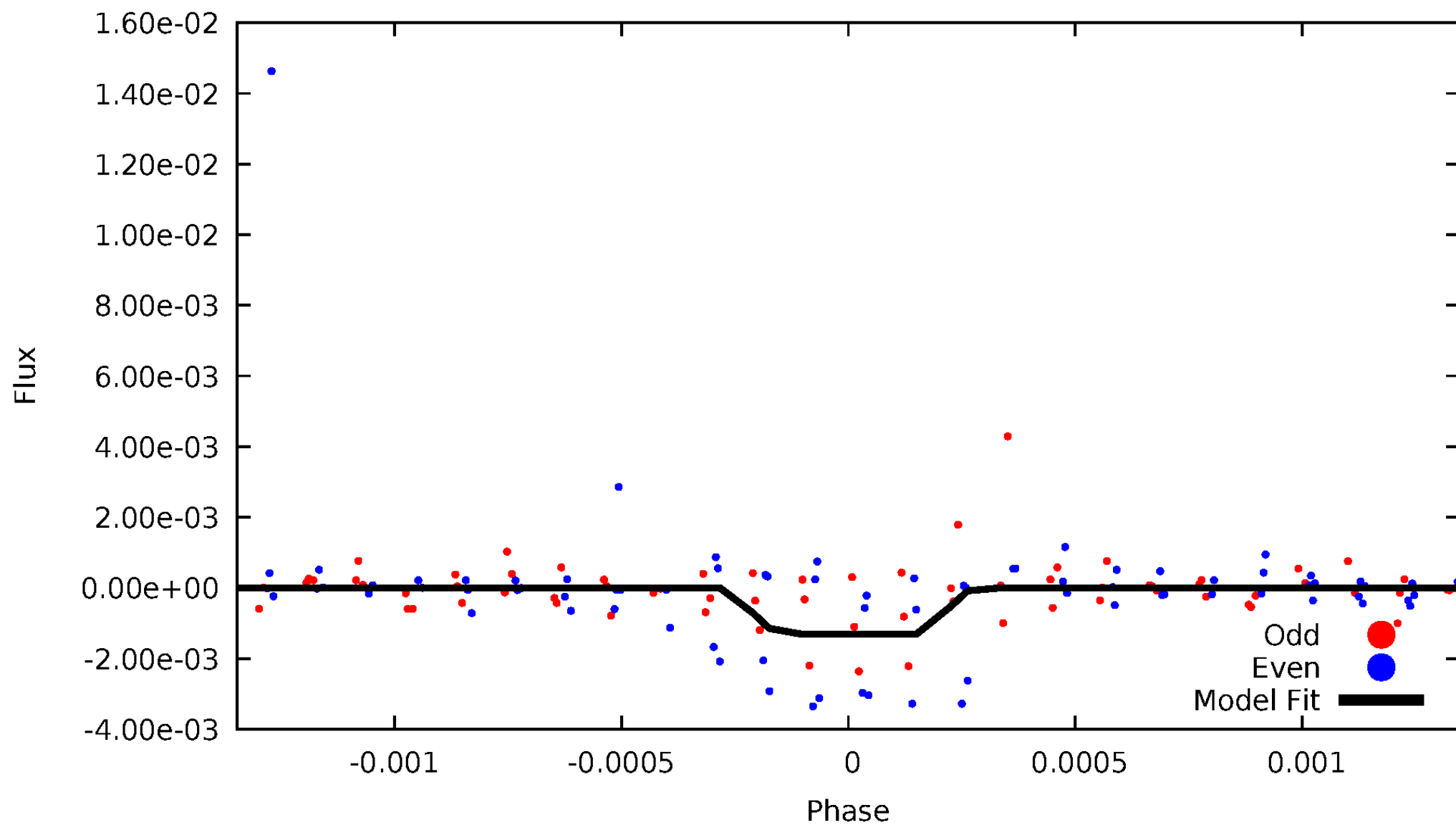
DV Odd/Even

TCE 006949494-02



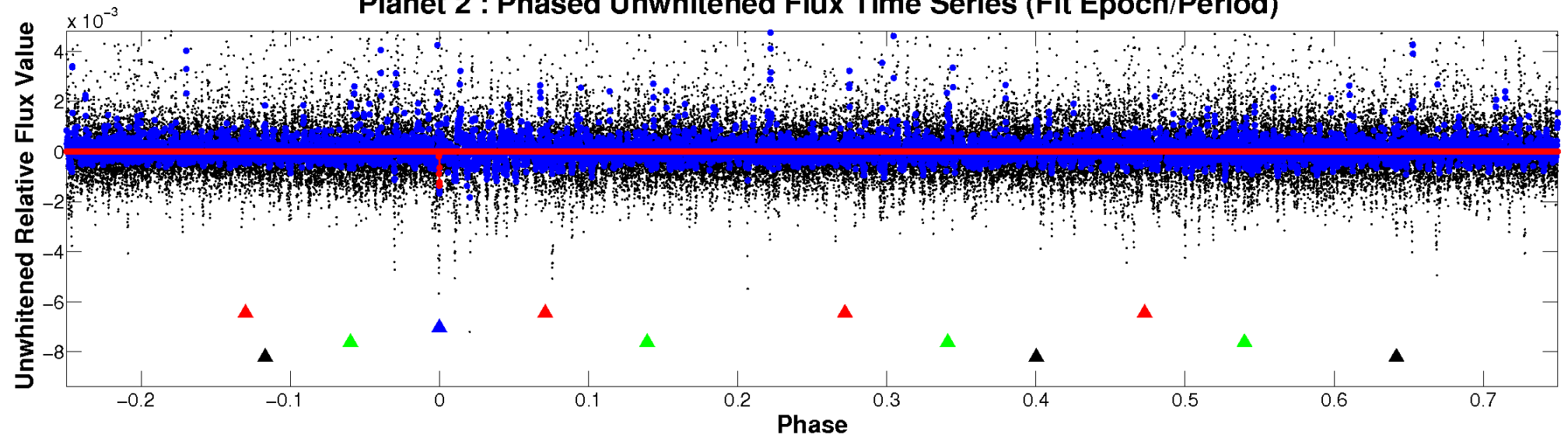
ALT Odd/Even

TCE 006949494-02

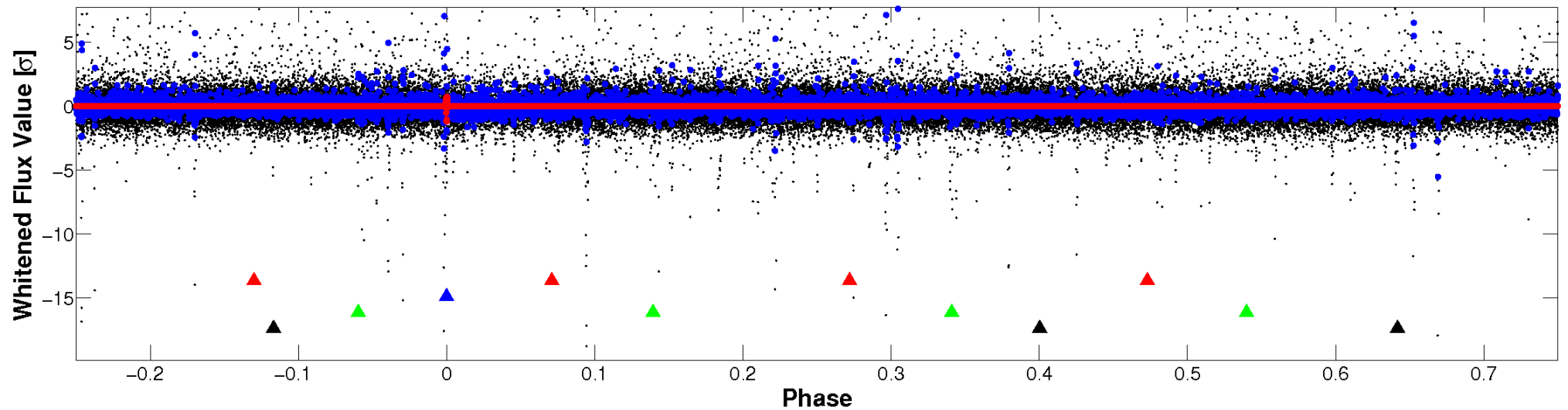


Non-Whitened Vs. Whitened Light Curve

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

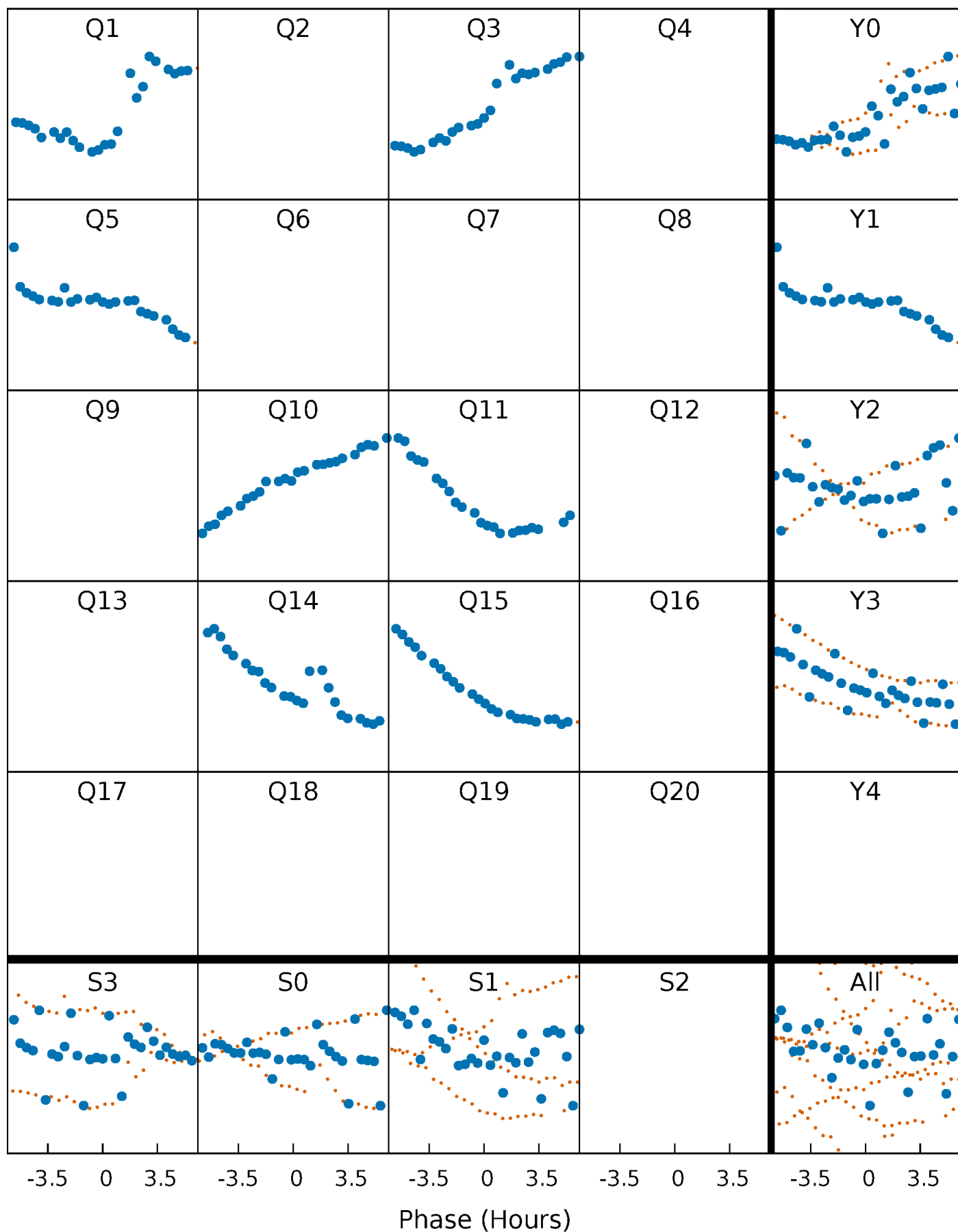


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



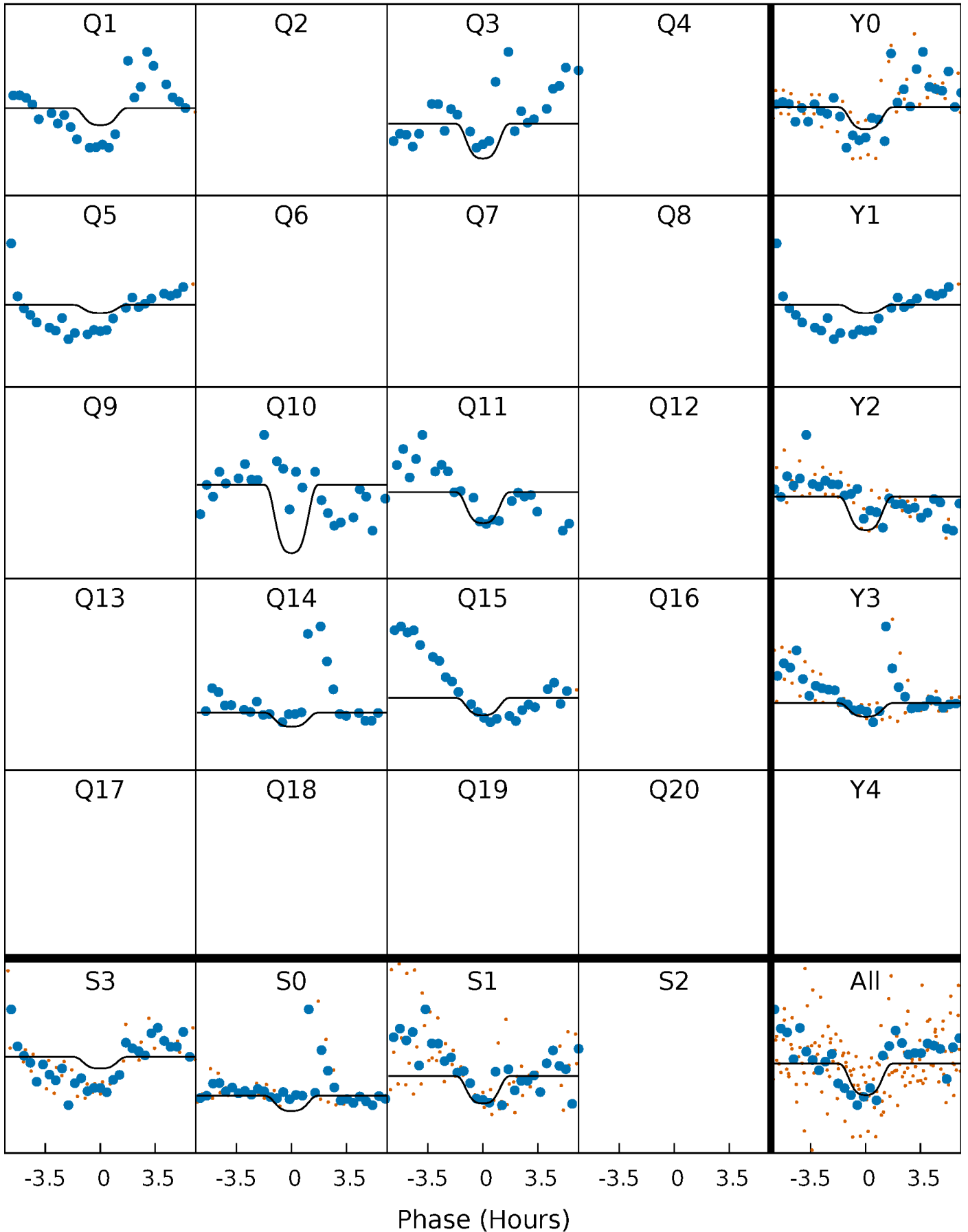
PDC Quarter-Phased Transit Curves

TCE 006949494-02 P=186.908991 Days $T_0=161.667100$ (BKJD)



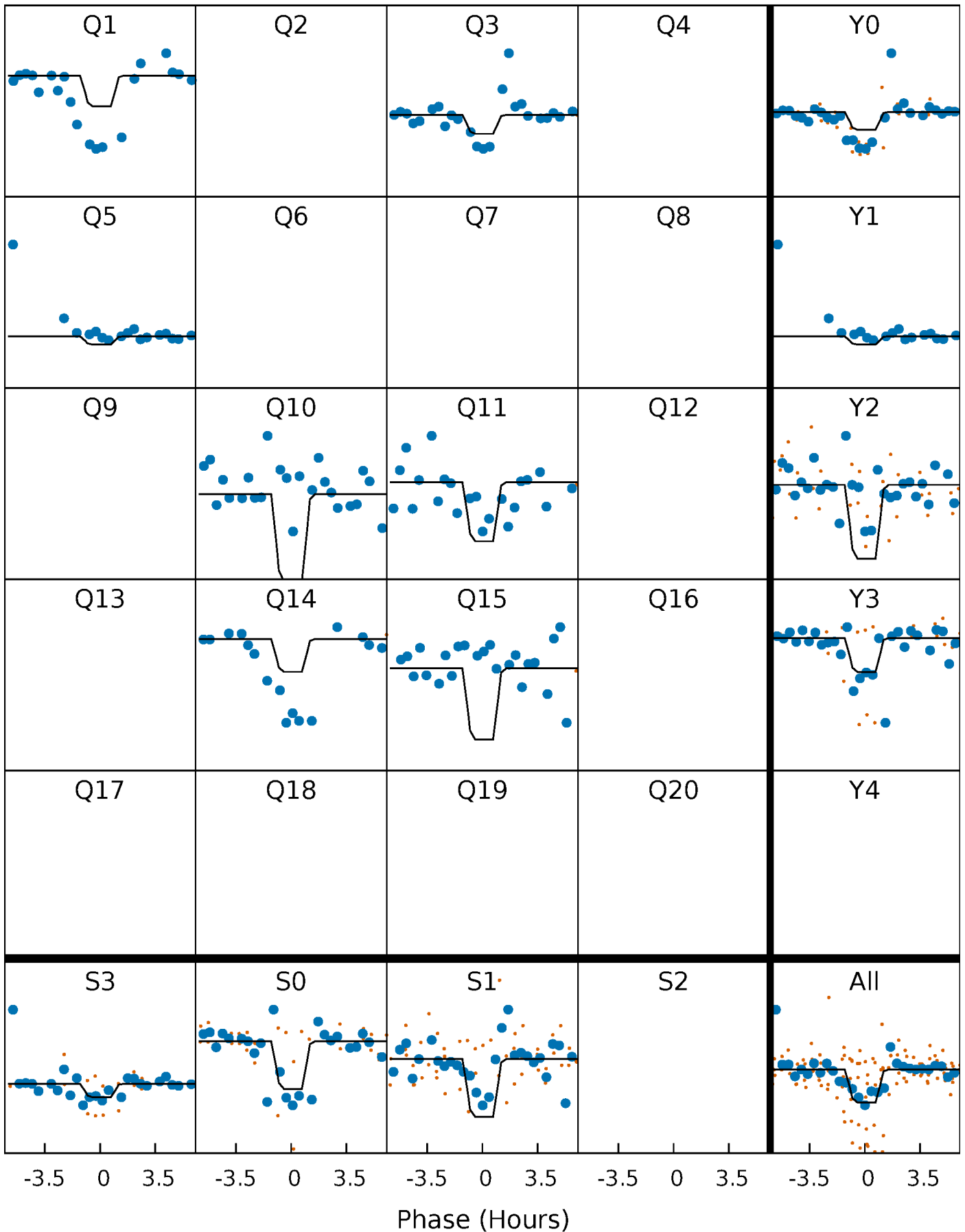
DV Quarter-Phased Transit Curves

TCE 006949494-02 P=186.908991 Days $T_0=161.667100$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

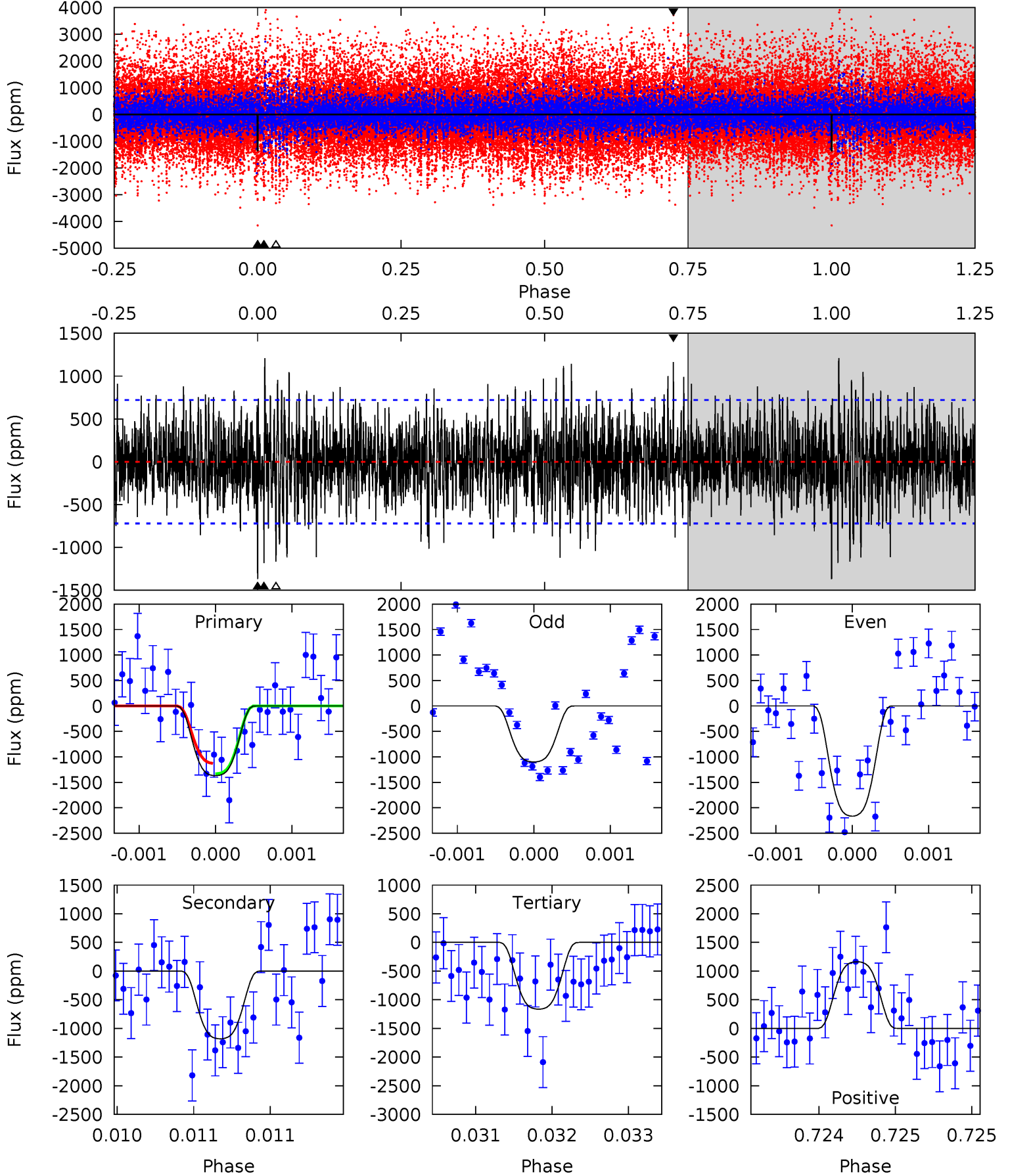
TCE 006949494-02 P=186.906572 Days $T_0=161.665174$ (BKJD)



DV Model-Shift Uniqueness Test

006949494-02, P = 186.908991 Days, E = 161.667100 Days

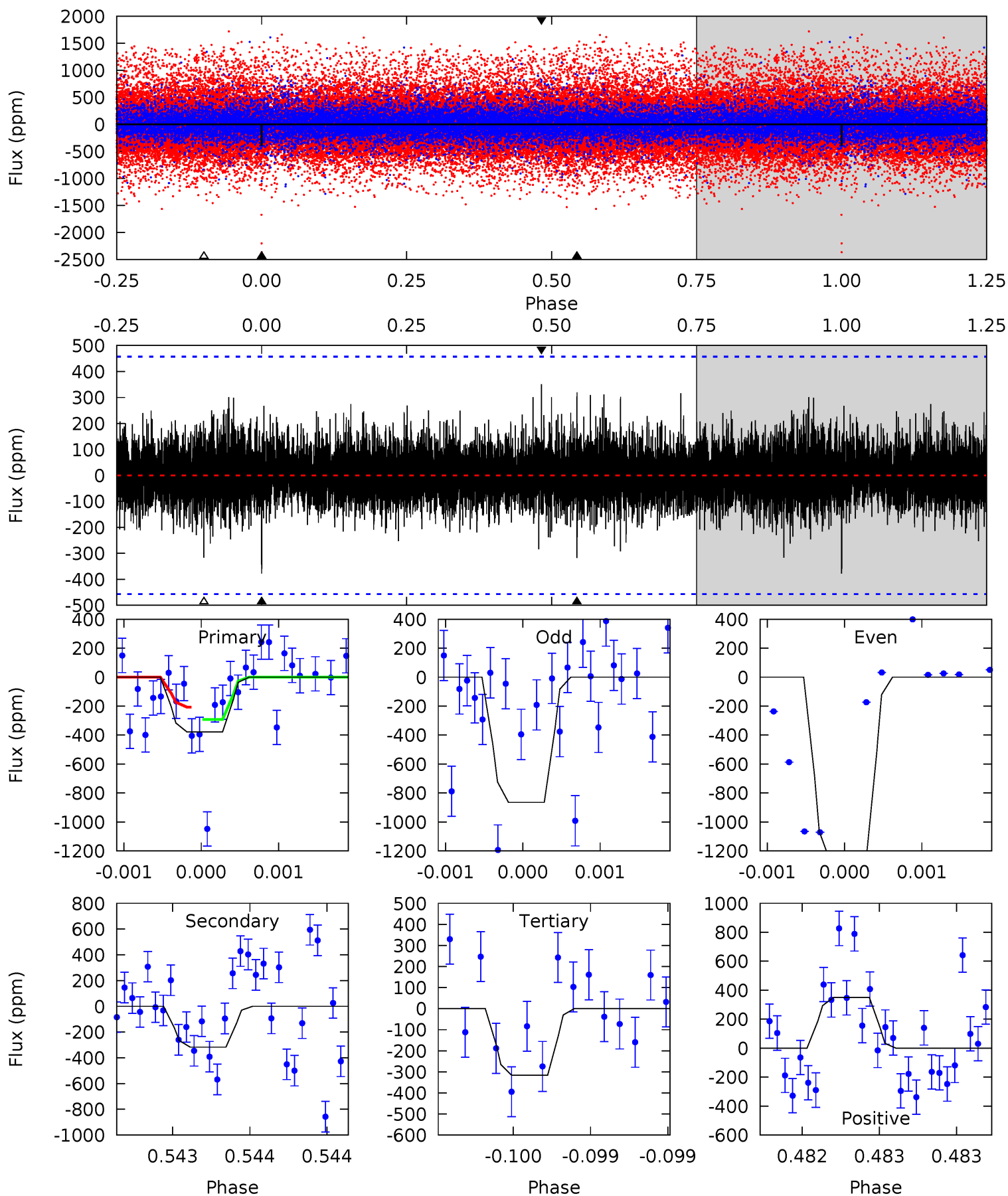
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	9.01	8.88	8.87	5.50	3.37	2.40	1.56	1.57	0.13	0.14	4.12	1.29	0.47	0.77



Alt Model-Shift Uniqueness Test

006949494-02, P = 186.906572 Days, E = 161.665174 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	3.86	3.85	4.26	5.56	3.46	0.90	0.75	0.34	0.01	-0.40	2.83	1.69	0.48	0



Stellar Parameters For KIC 006949494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5686^{+154}_{-172}	$4.575^{+0.040}_{-0.160}$	$-0.420^{+0.300}_{-0.300}$	$0.782^{+0.195}_{-0.065}$	$0.839^{+0.098}_{-0.080}$	$2.473^{+0.509}_{-1.057}$
	+3%/-3%	+1%/-3%	+71%/-71%	+25%/-8%	+12%/-10%	+21%/-43%
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 006949494-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1181 ± 131	$3.78^{+1.01}_{-0.97}$	406^{+23}_{-17}	5139^{+770}_{-461}	16181^{+13605}_{-6192}
Alt.	-317 ± 82	$3.25^{+0.99}_{-0.91}$	406^{+23}_{-17}	4188^{+649}_{-424}	5746^{+6407}_{-2668}

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

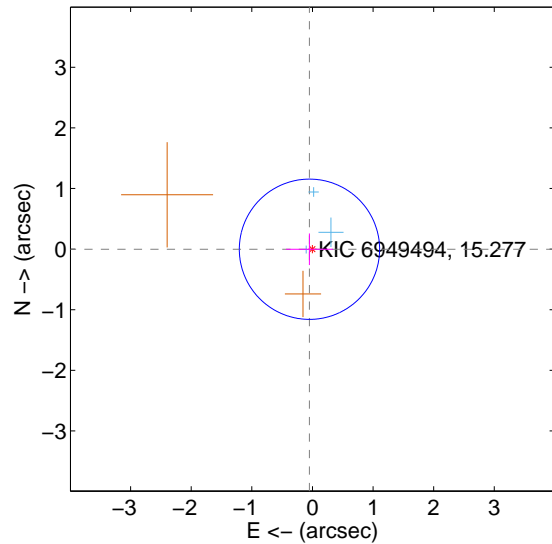
Supplemental centroid analysis for 006949494-02. Kepler magnitude: 15.28. Transit SNR 6.06

There are 3 quarters with good PRF difference image offsets

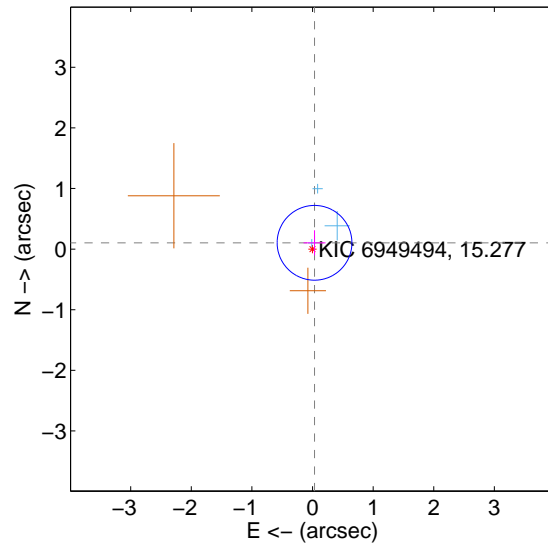
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.049 ± 0.386	0.13	0.049 ± 0.387	-0.002 ± 0.261
PRF-fit source offset from KIC position	0.109 ± 0.206	0.53	-0.033 ± 0.182	0.104 ± 0.208
photometric centroid source offset	0.55 ± 0.92	0.60	0.47 ± 0.92	0.29 ± 0.93

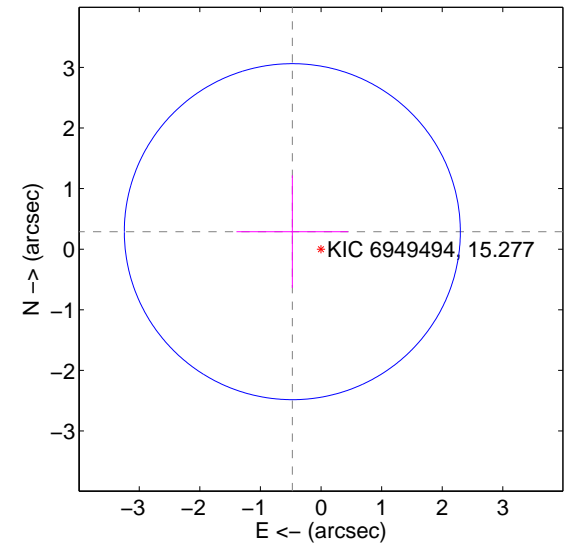
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

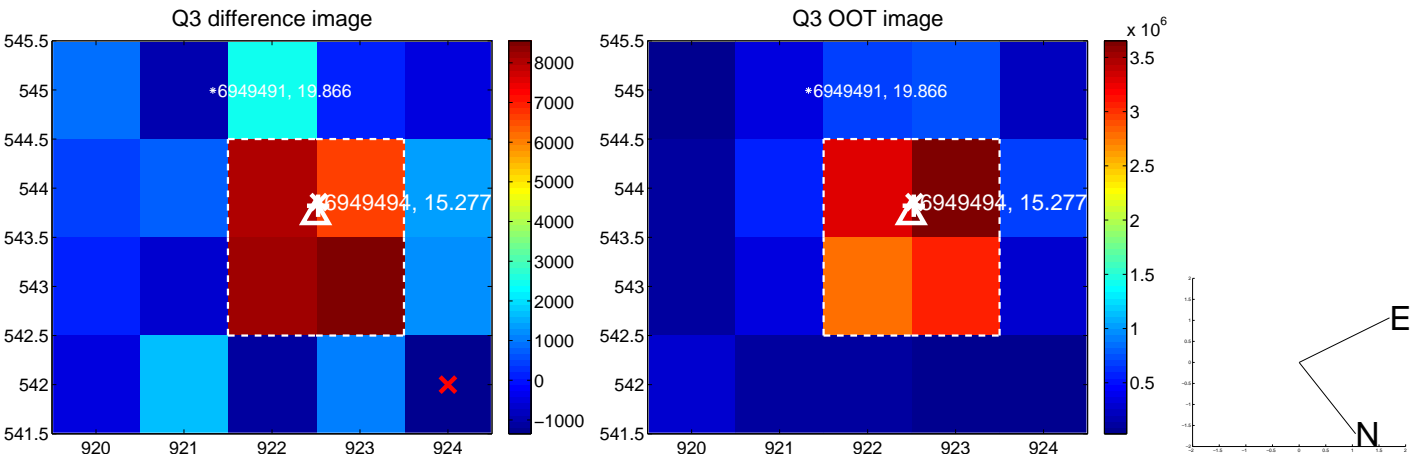
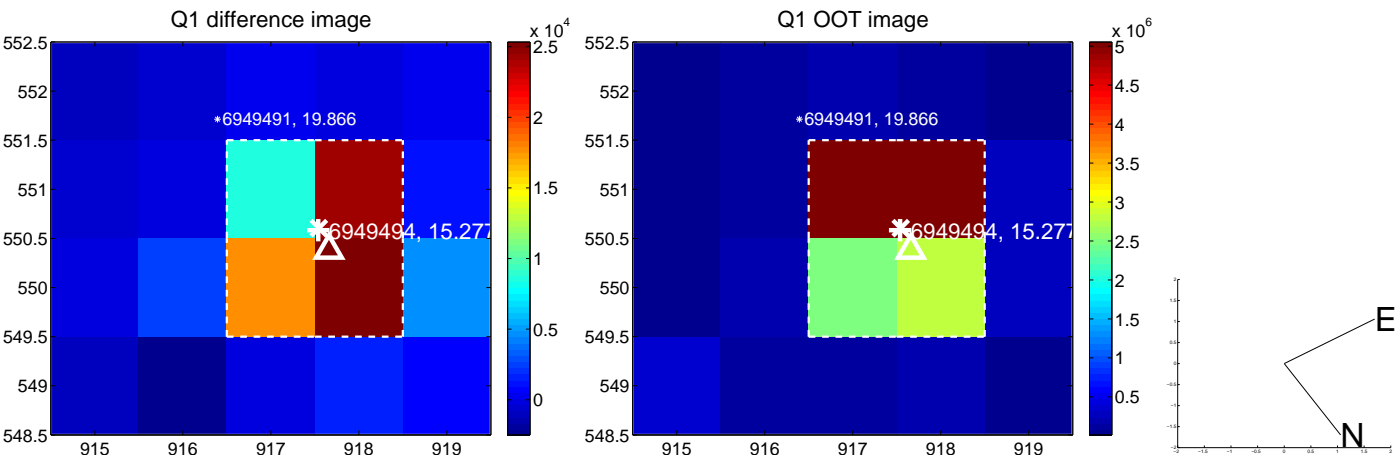


offset from photometric centroids

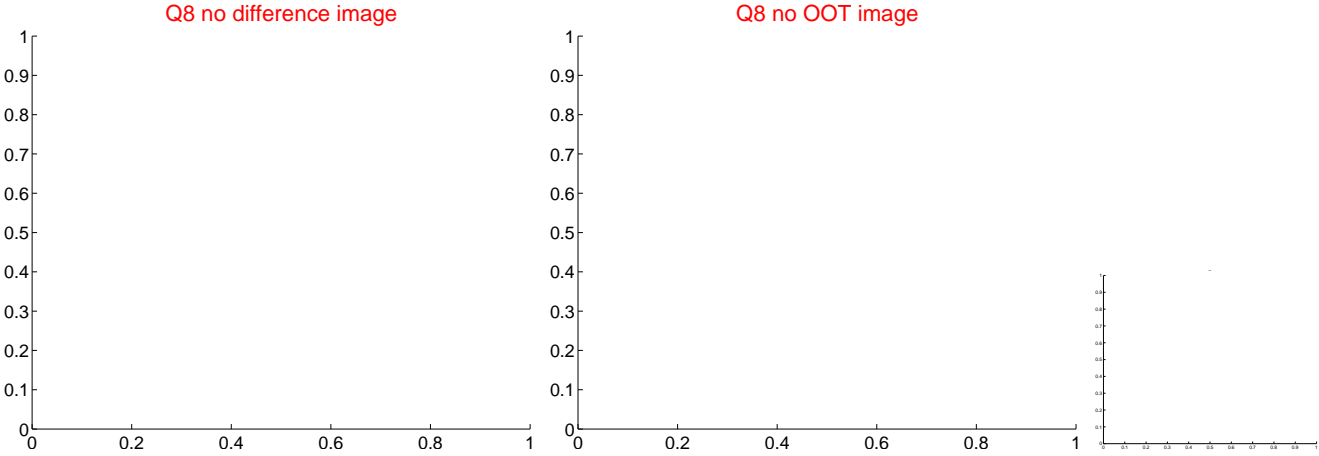
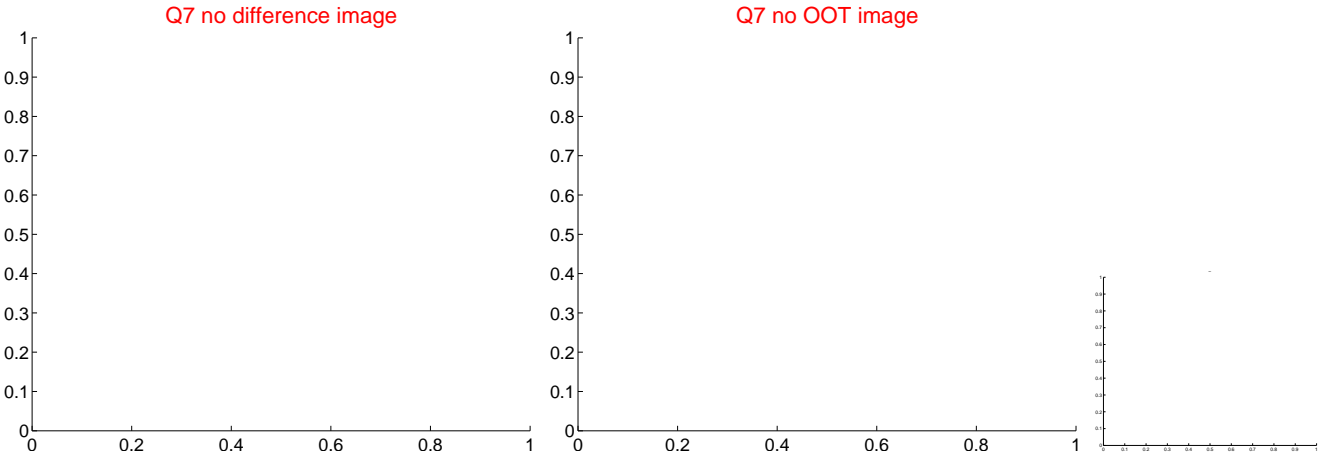
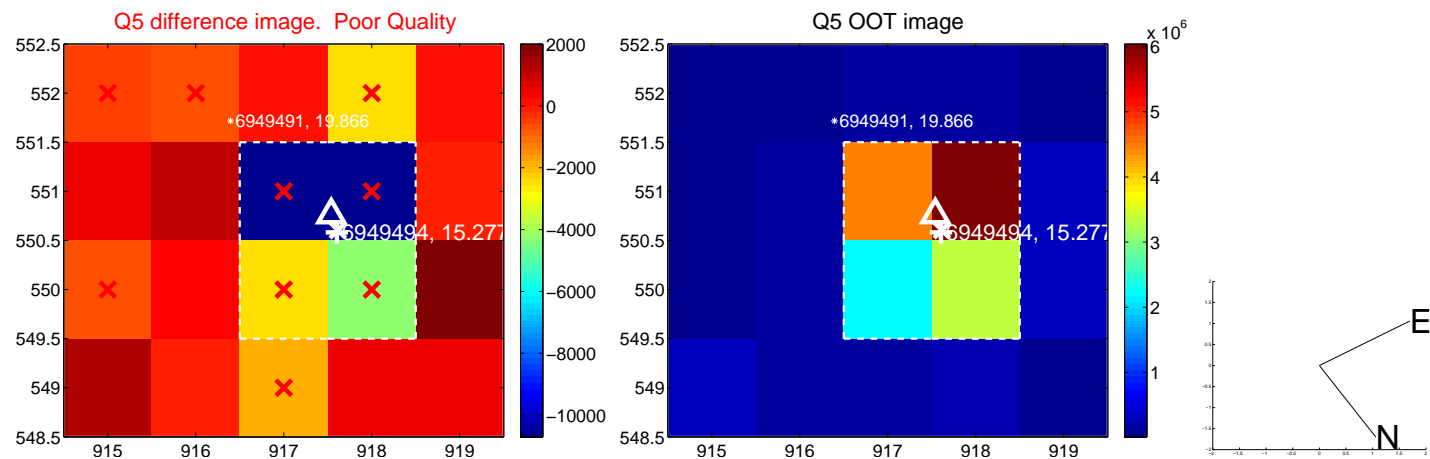


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

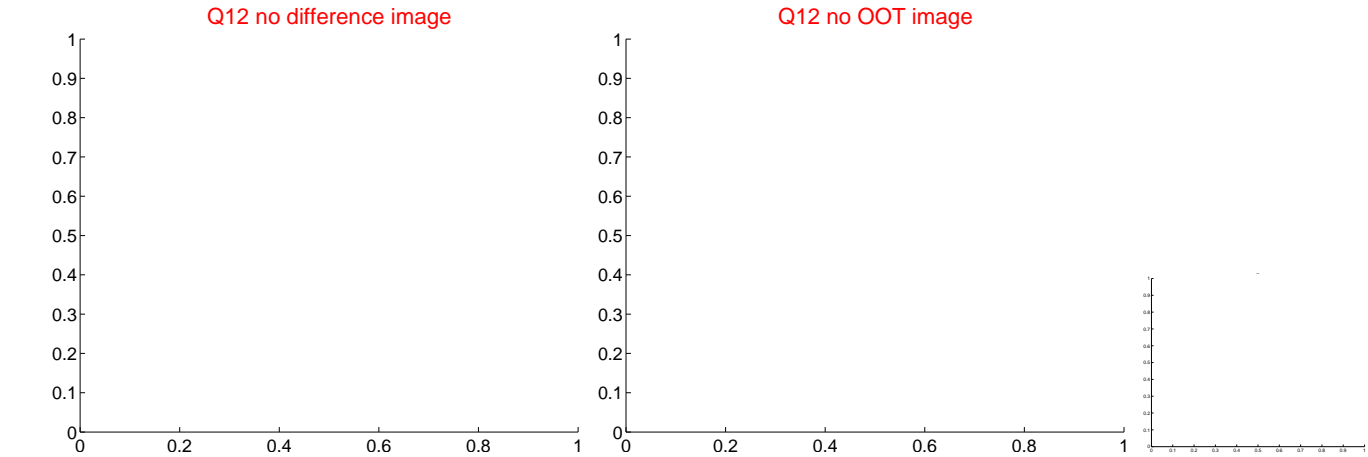
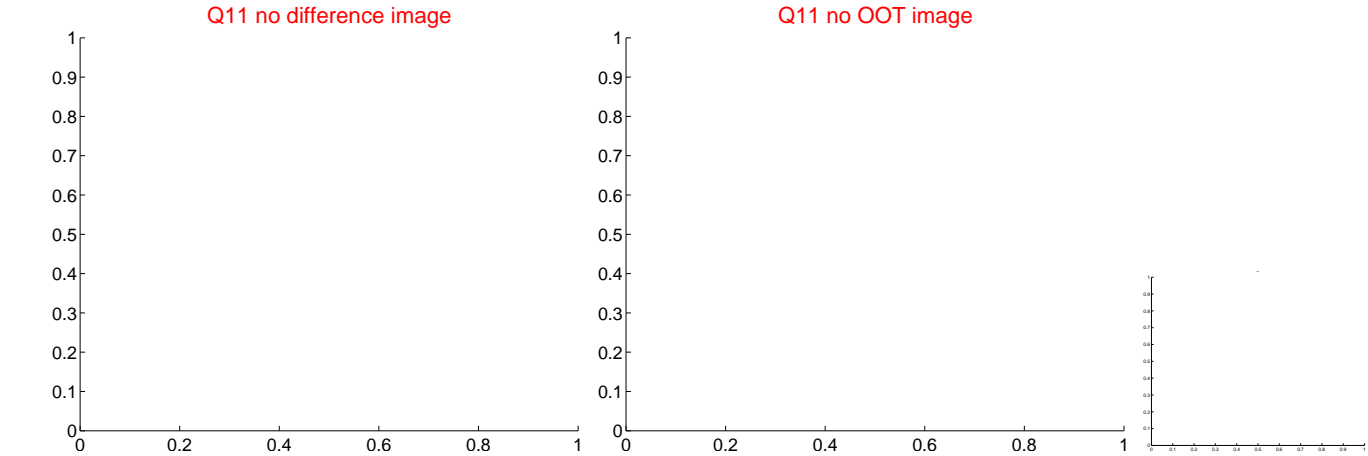
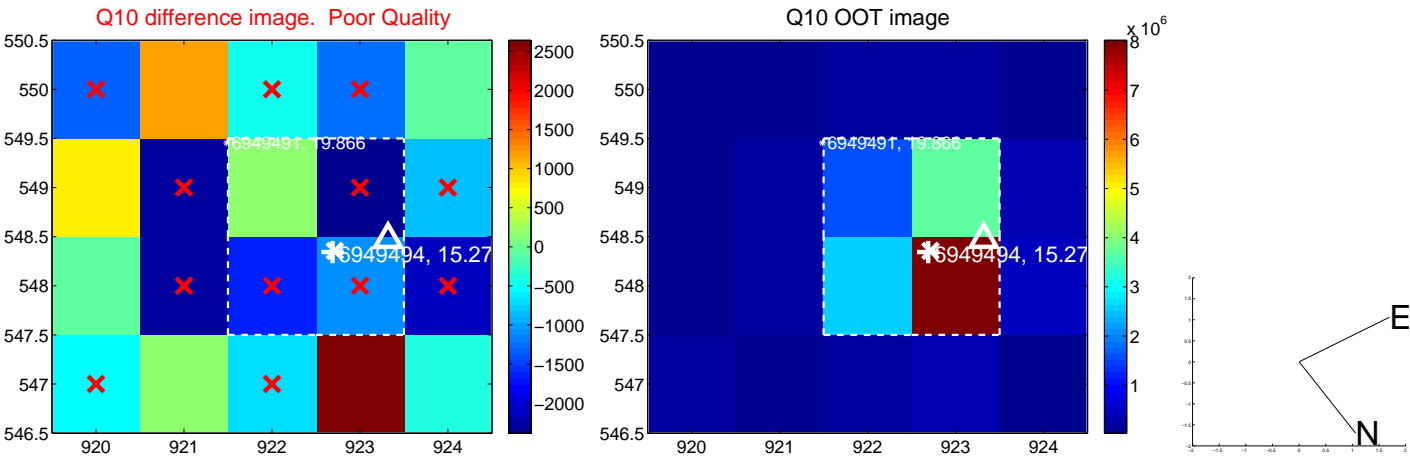
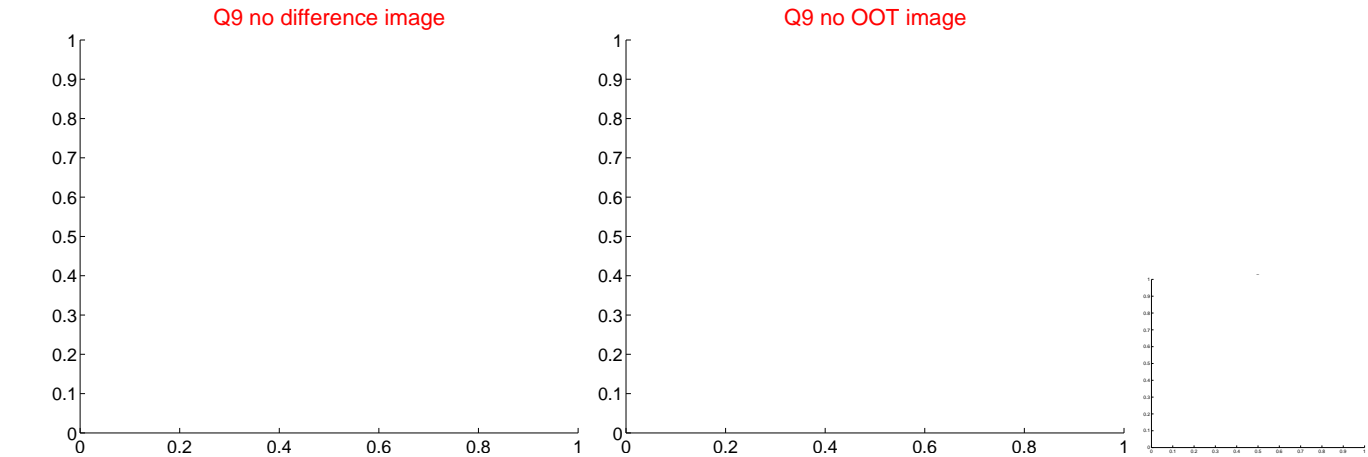
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



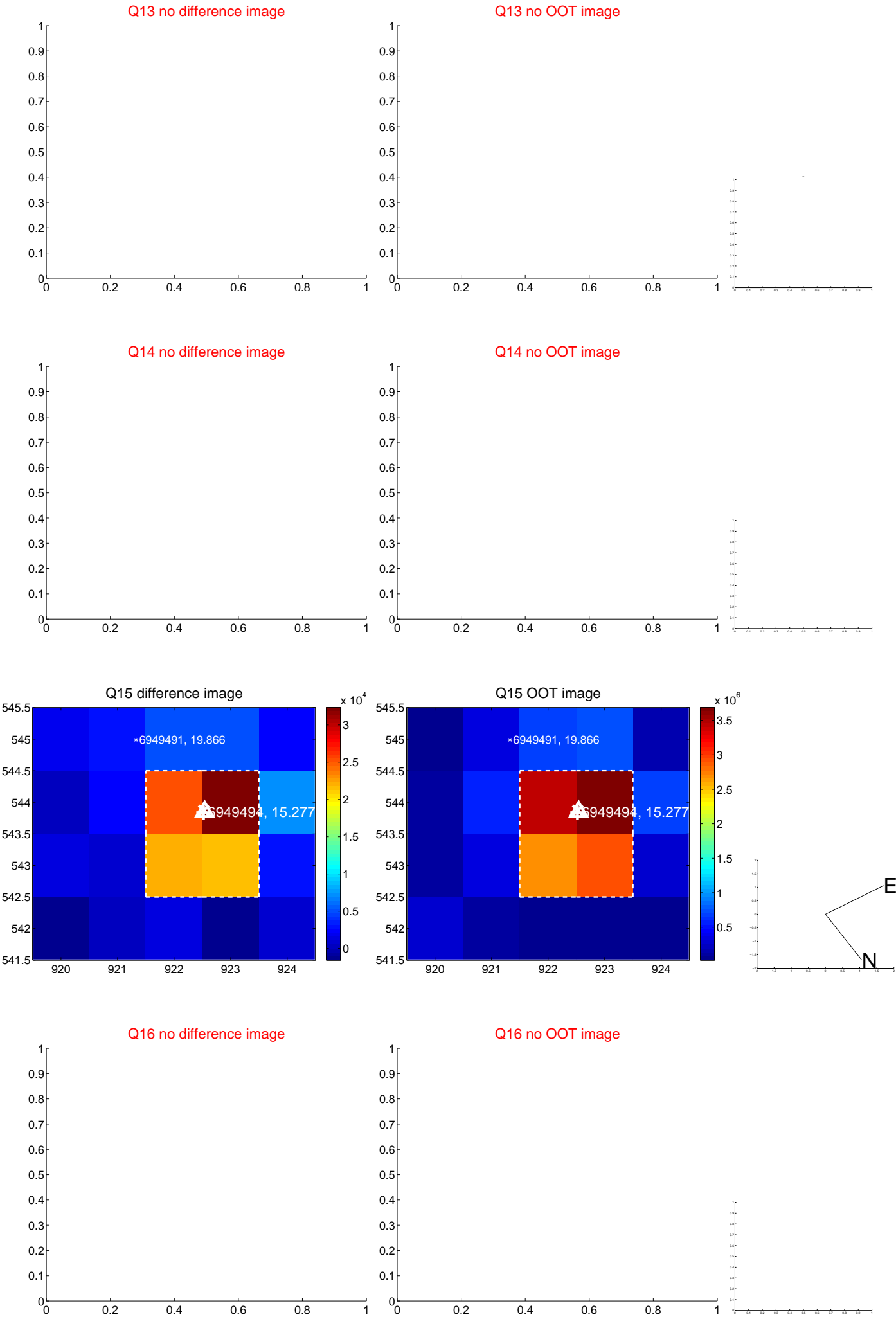
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



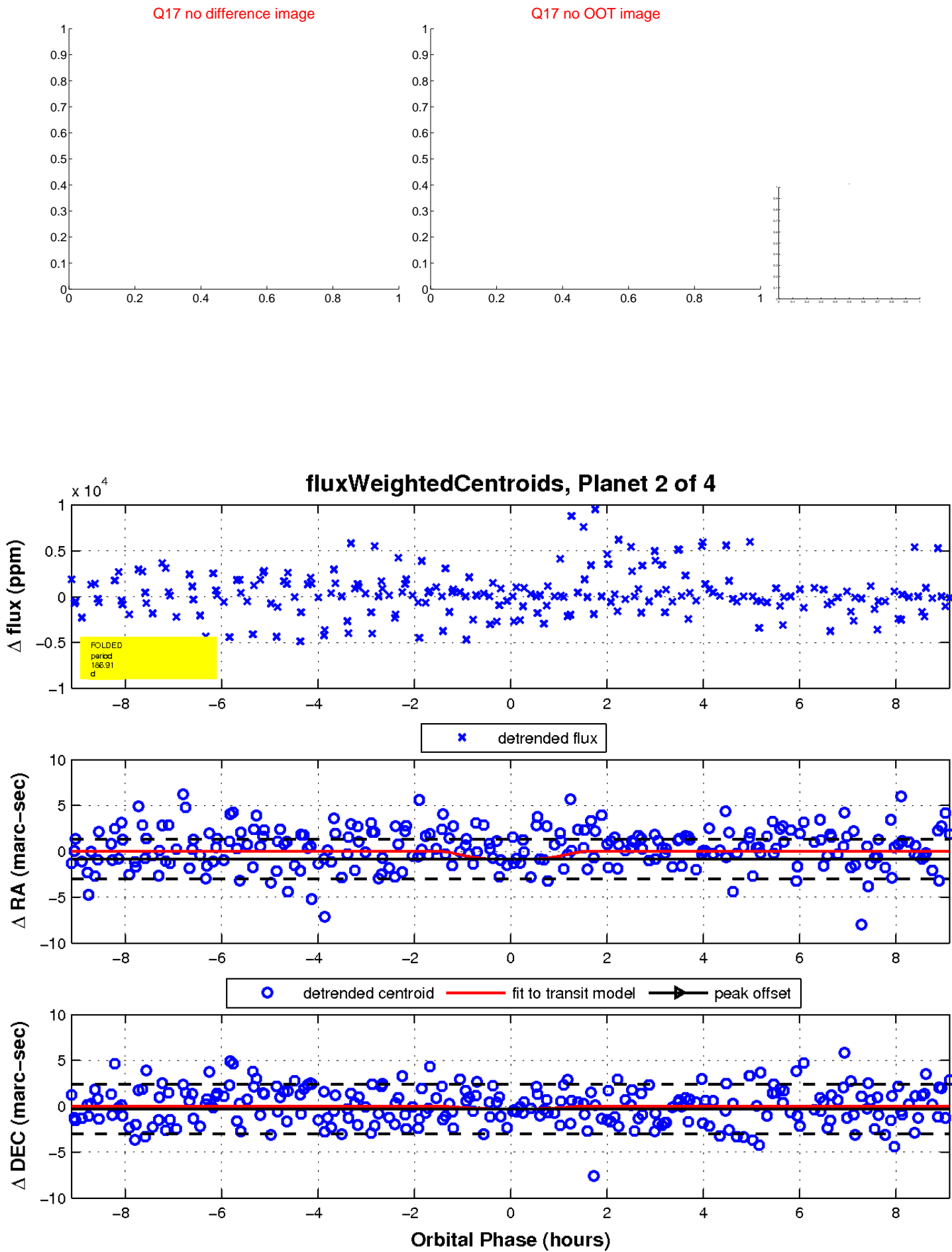
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

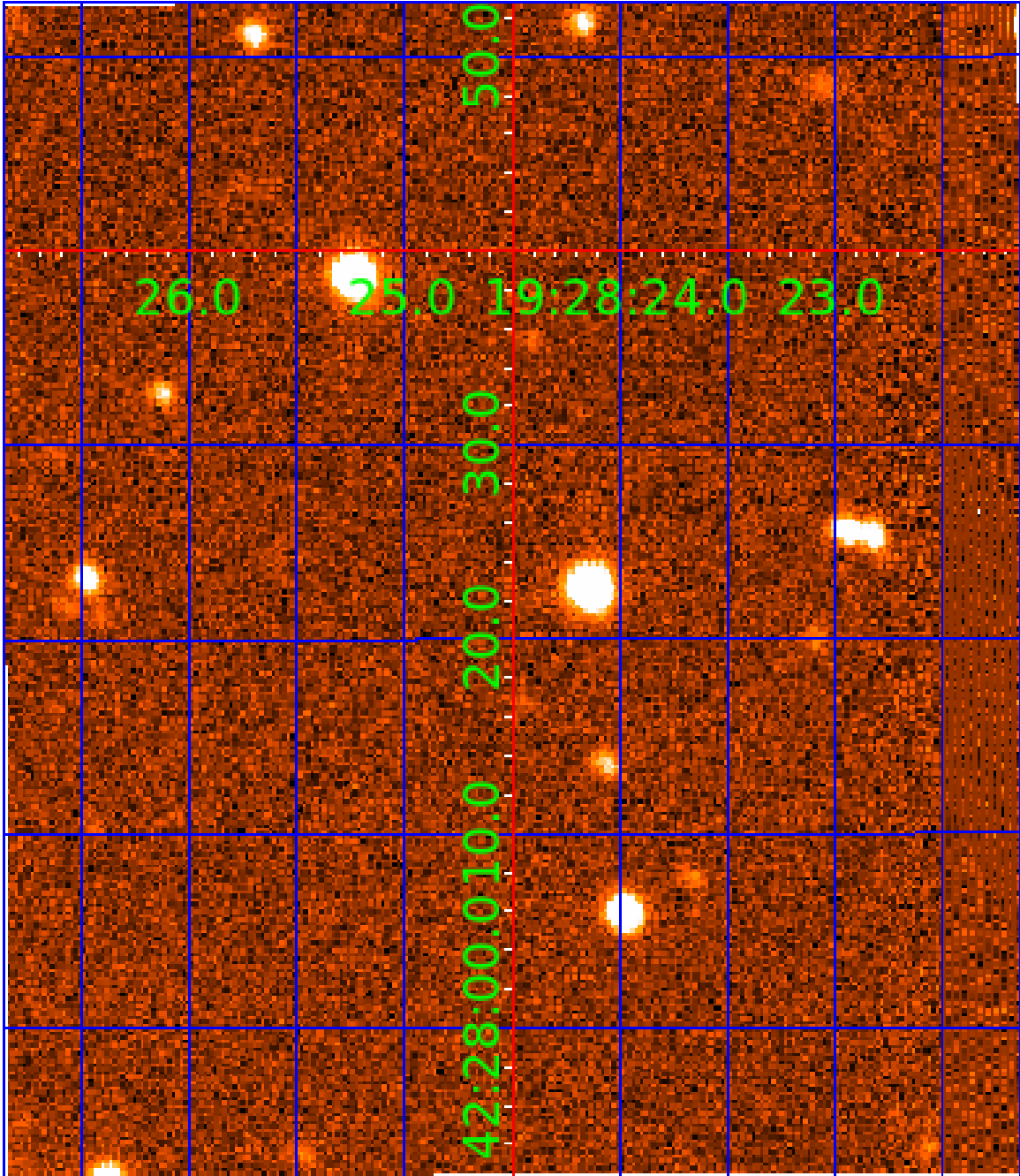


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006949494

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})
006949494-01	OBS	No	336.252495	436.978620	3695.9	5.015	20.2	10.1	0.78	5686	8.85	0.72
006949494-02	OBS	No	186.908991	161.667100	1367.0	3.042	11.6	6.1	0.78	5686	3.65	1.57
006949494-03	OBS	No	298.956964	412.297784	3394.6	7.632	12.1	7.0	0.78	5686	4.84	0.84
006949494-04	OBS	No	418.949281	423.397587	1310.3	4.500	13.3	-1.0	0.78	5686	2.81	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006949494-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

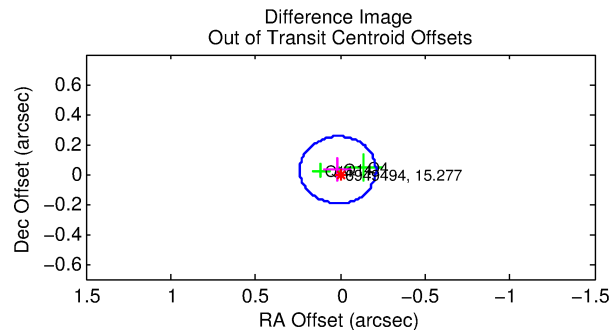
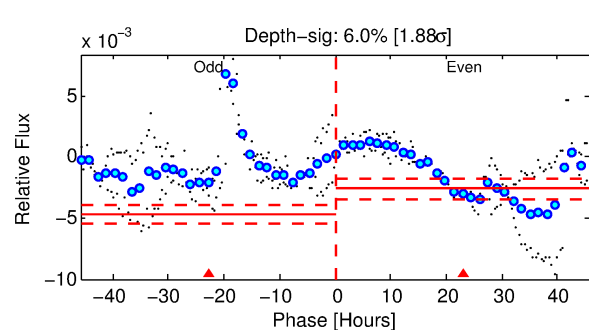
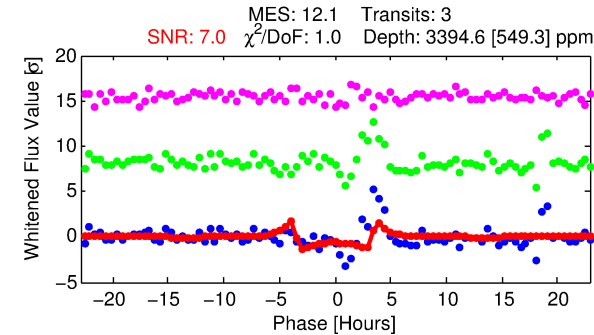
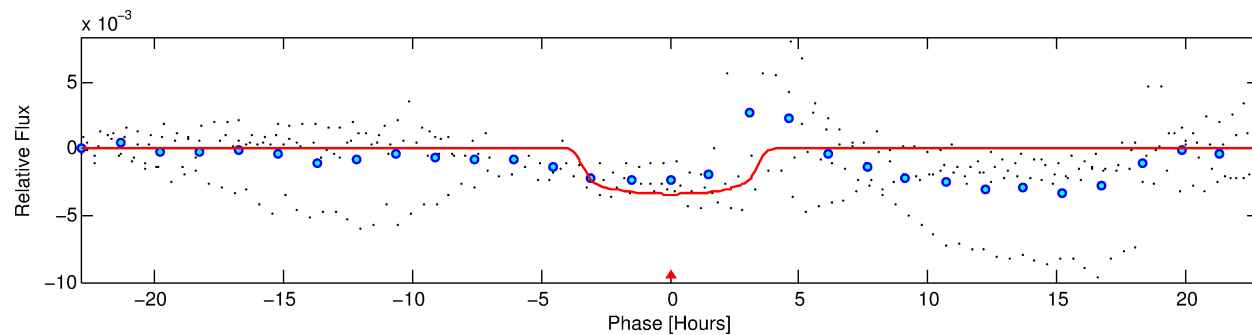
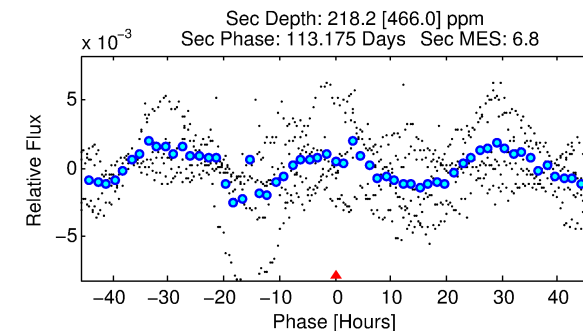
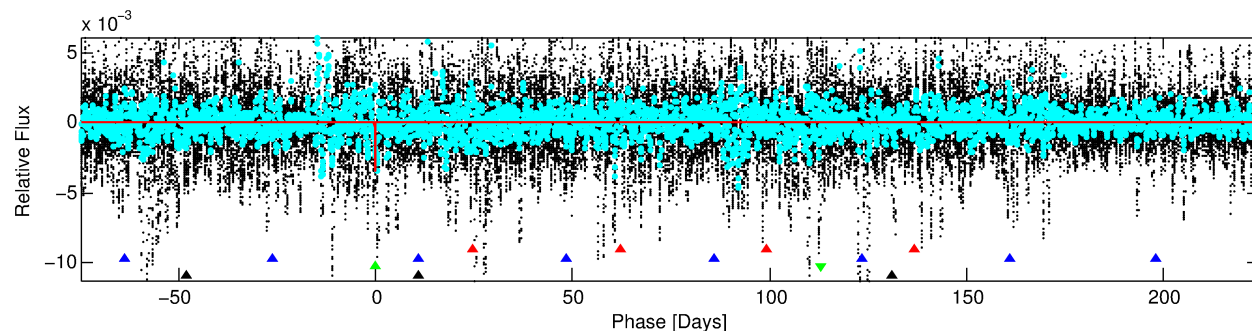
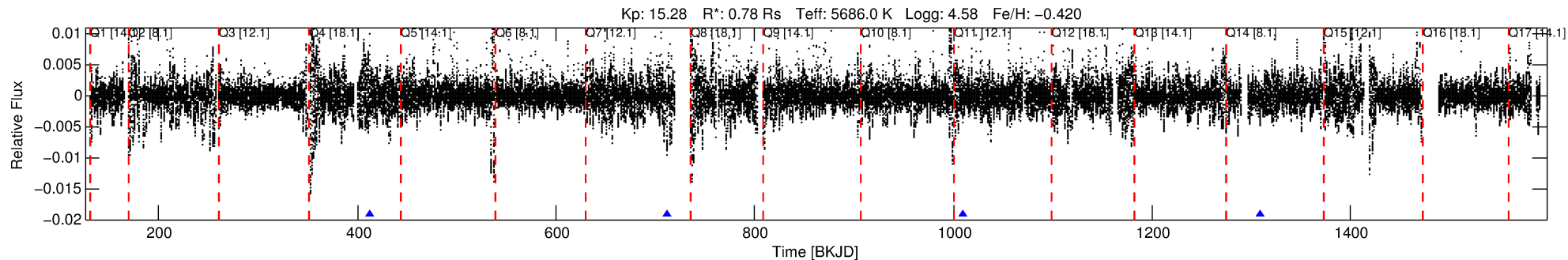
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006949494-03

No Significant Match Found

DV One-Page Summary

KIC: 6949494 Candidate: 3 of 4 Period: 298.957 d



DV Fit Results:

Period = 298.95696 [0.00339] d
Epoch = 412.2978 [0.0080] BKJD
Rp/R* = 0.0567 [0.0069]
a/R* = 242.10 [79.13]
b = 0.68 [0.26]
Seff = 0.84 [0.27]
Teq = 244 [20] K
Rp = 4.84 [1.34] Re
a = 0.8252 [0.1706] AU
Ag = 3490.03 [7573.54] [0.46σ]
Teff = 2902 [1562] K [1.70σ]

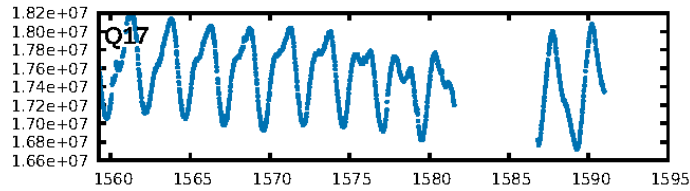
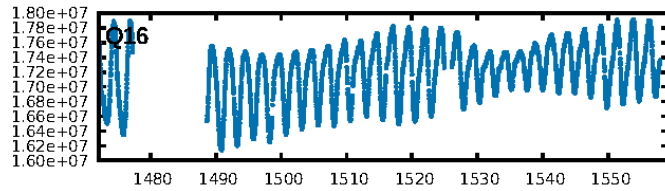
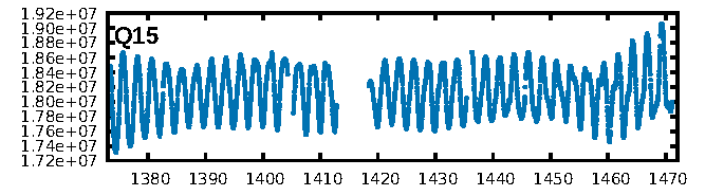
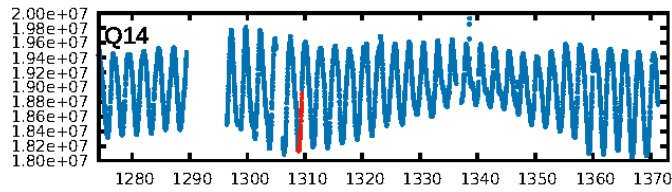
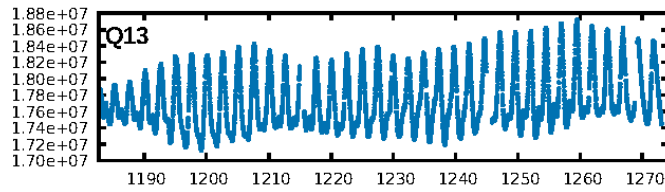
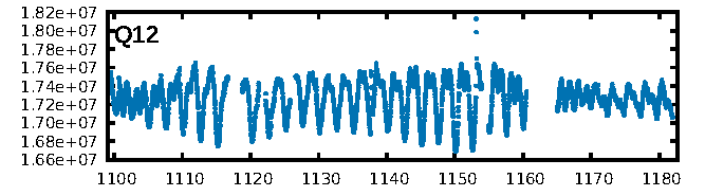
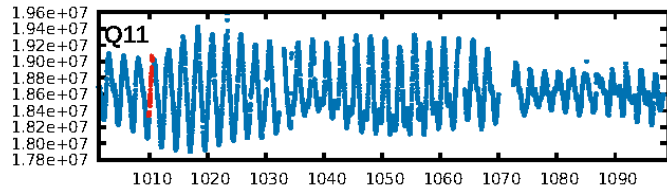
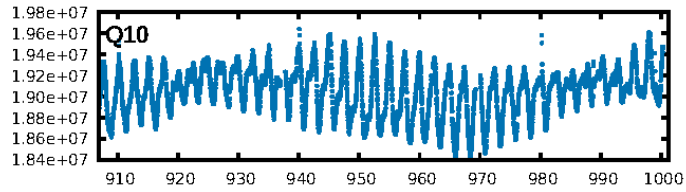
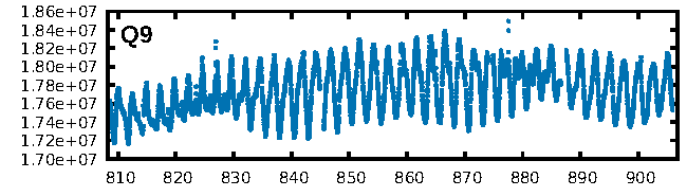
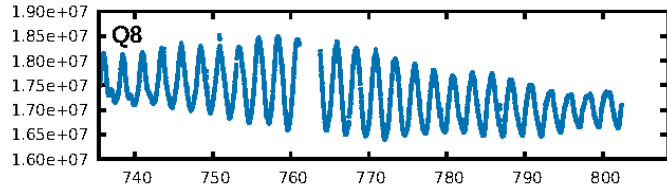
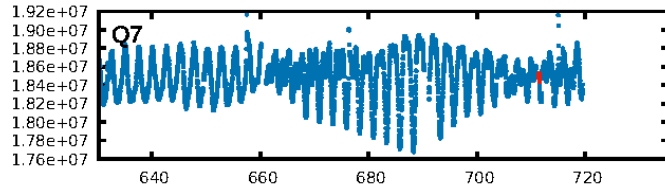
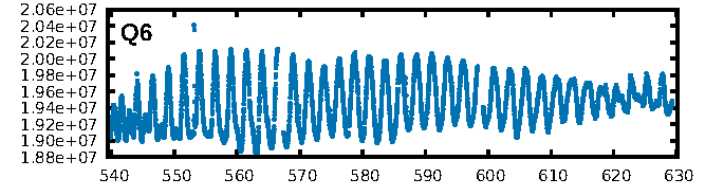
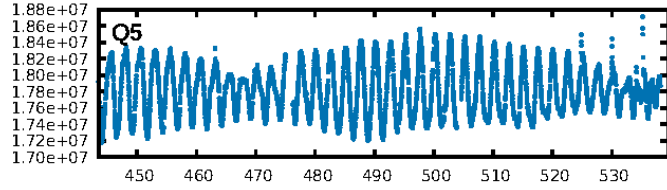
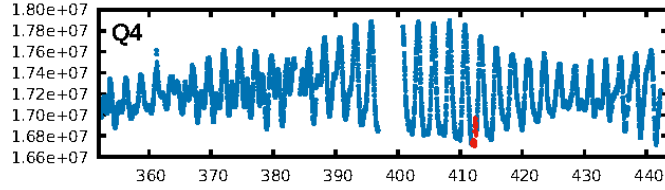
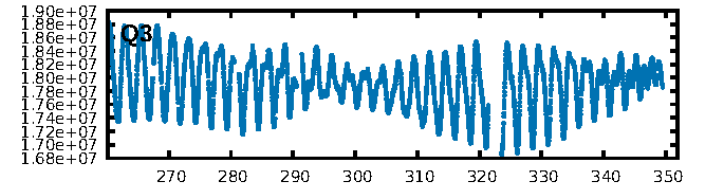
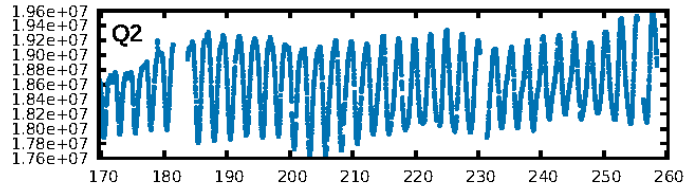
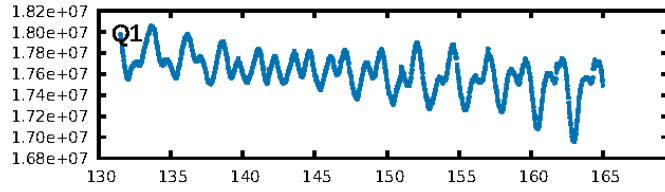
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [327.31σ]
LongPeriod-sig: 100.0% [98.01σ]
ModelChiSquare2-sig: 71.9%
ModelChiSquareGof-sig: 96.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.864
Centroid-sig: 4.6%
Centroid-so: 0.484 arcsec [1.44σ]
OotOffset-rm: 0.031 arcsec [0.41σ]
KicOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

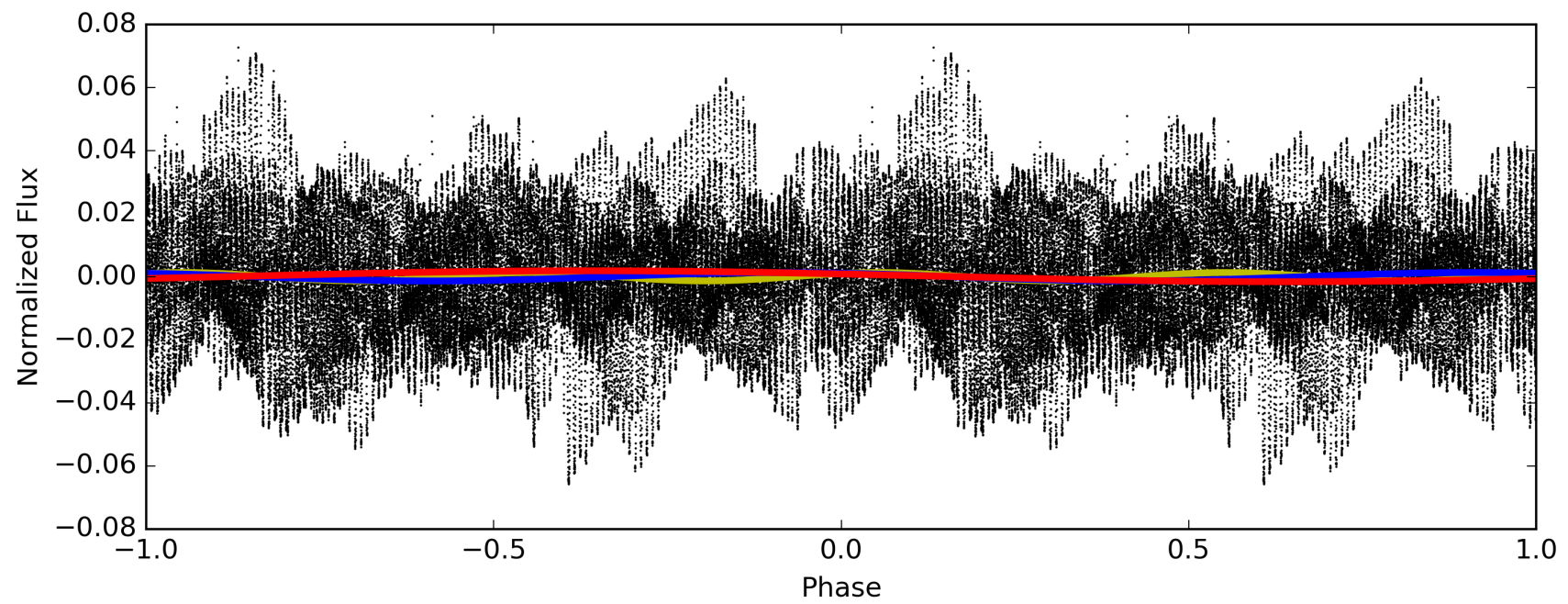
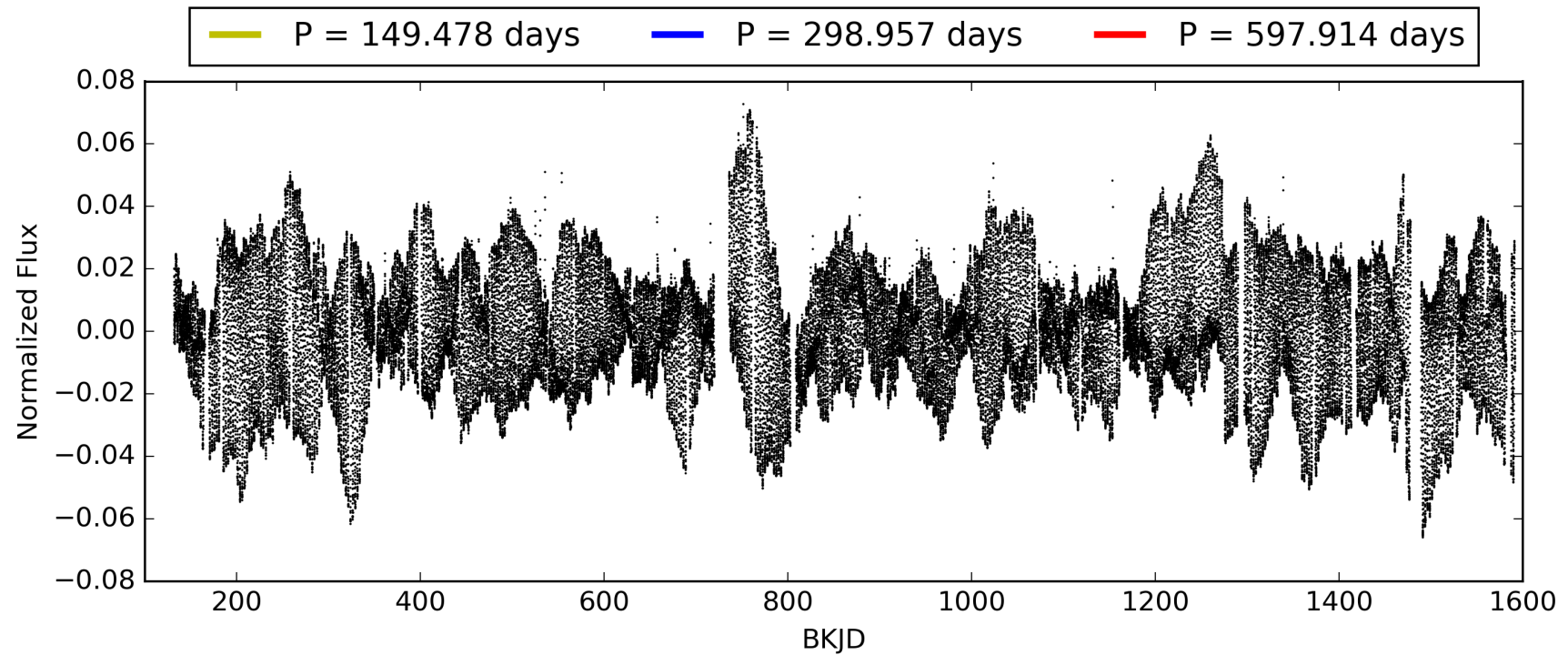
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:02:54 Z

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

TCE 006949494-03, PDC Light Curves

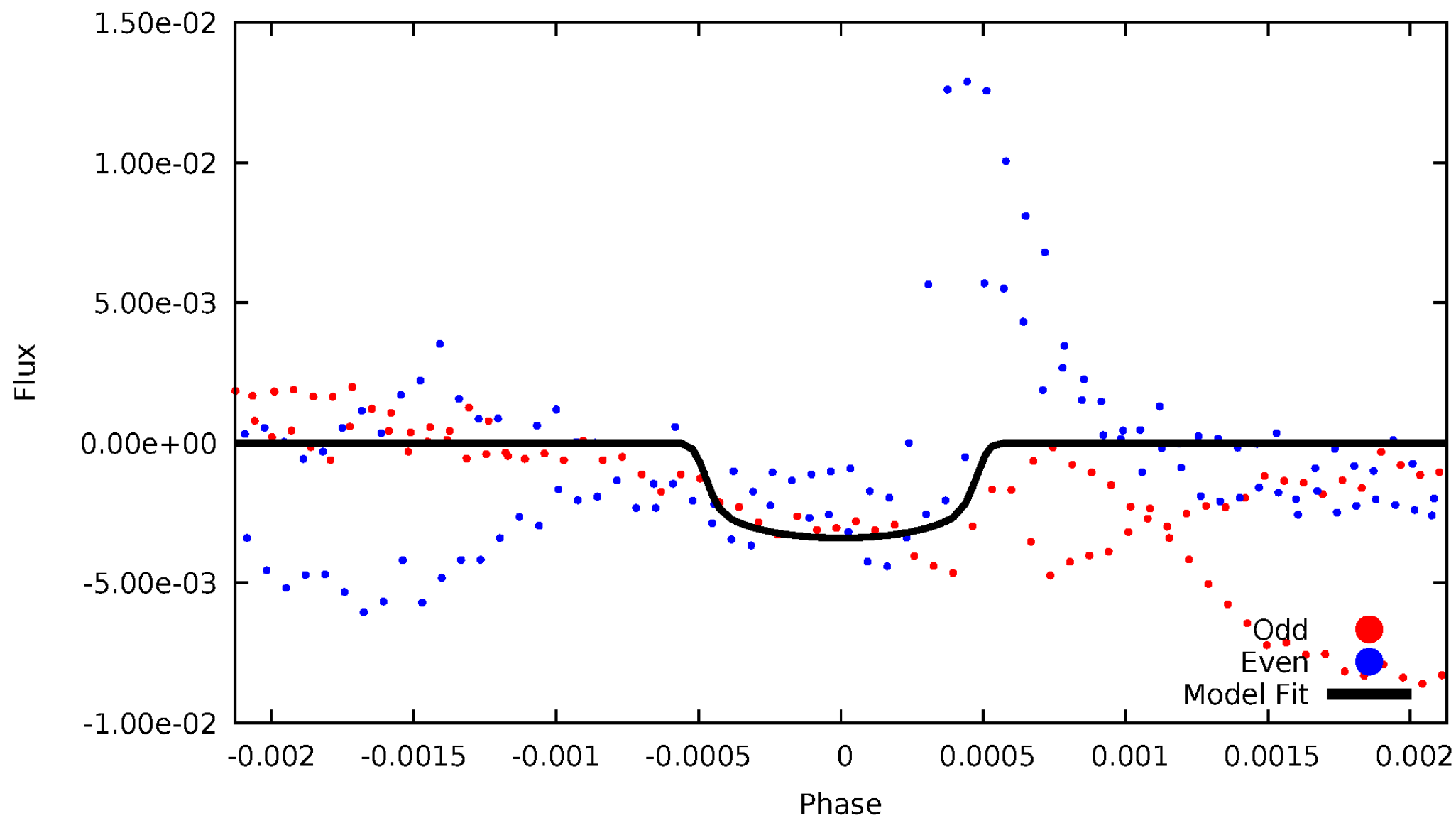


TCE 006949494-03



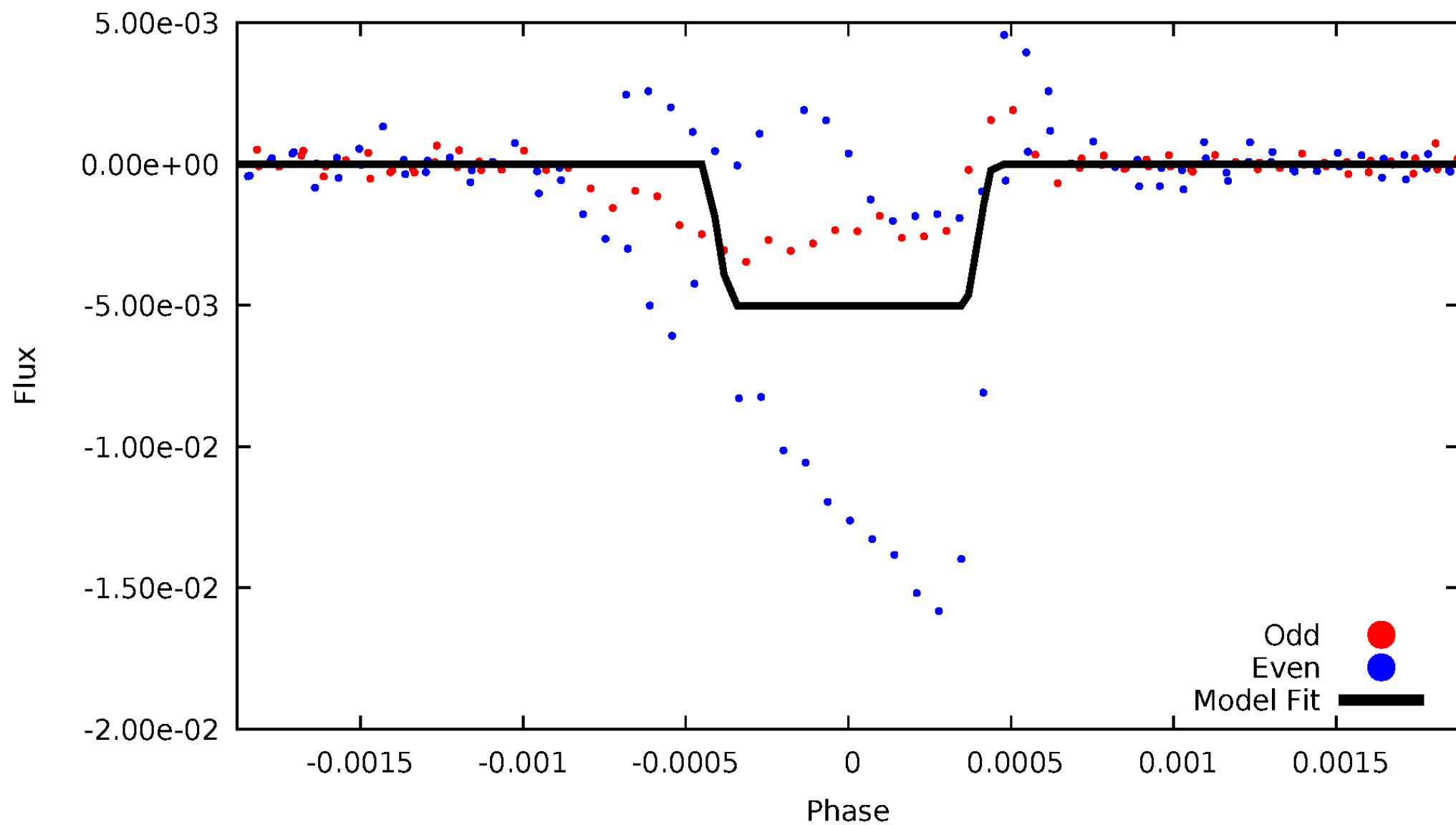
DV Odd/Even

TCE 006949494-03



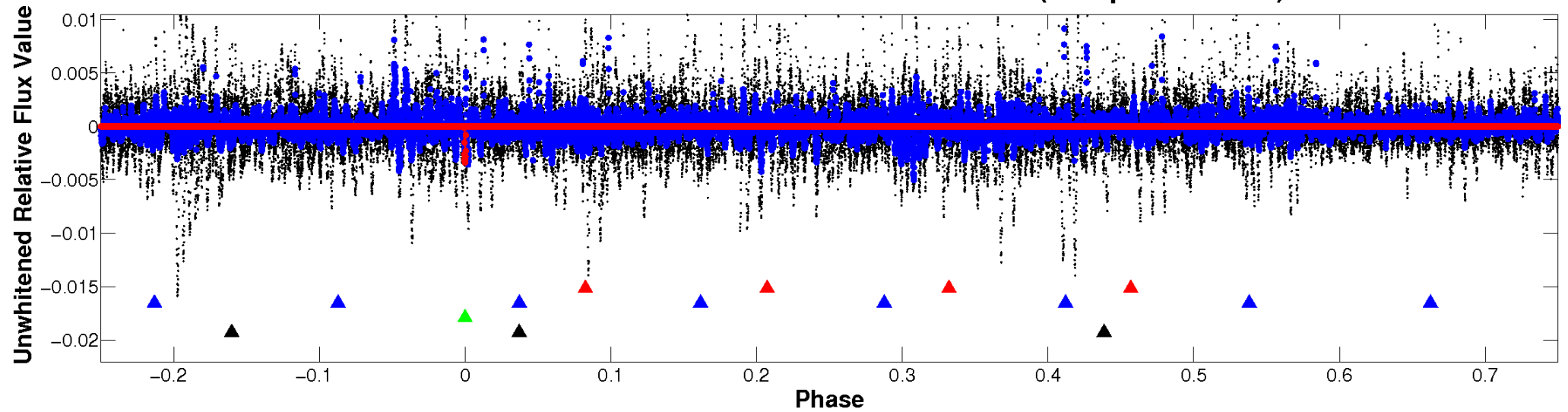
ALT Odd/Even

TCE 006949494-03

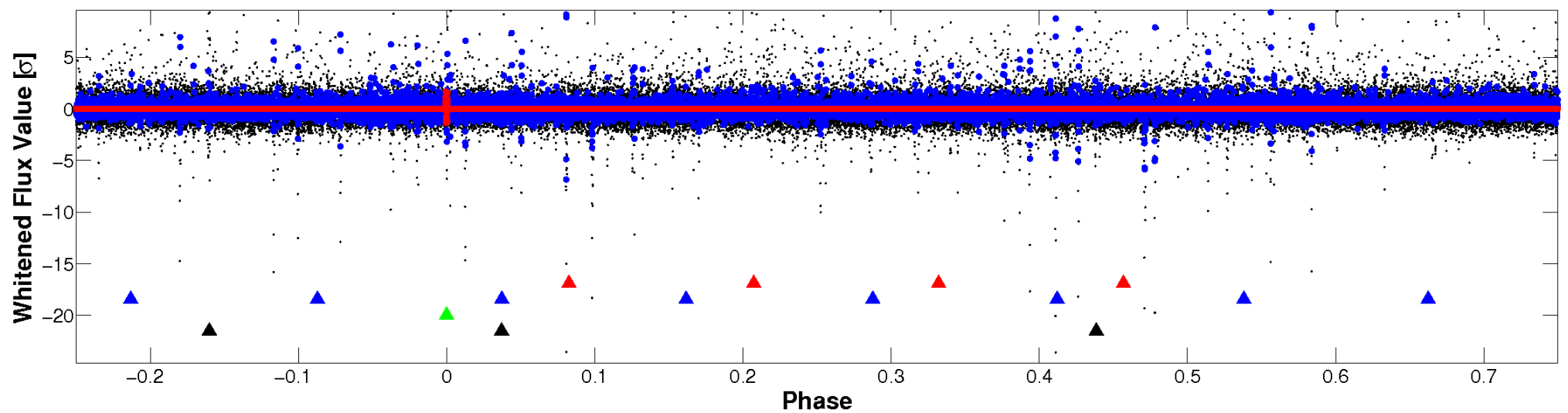


Non-Whitened Vs. Whitened Light Curve

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

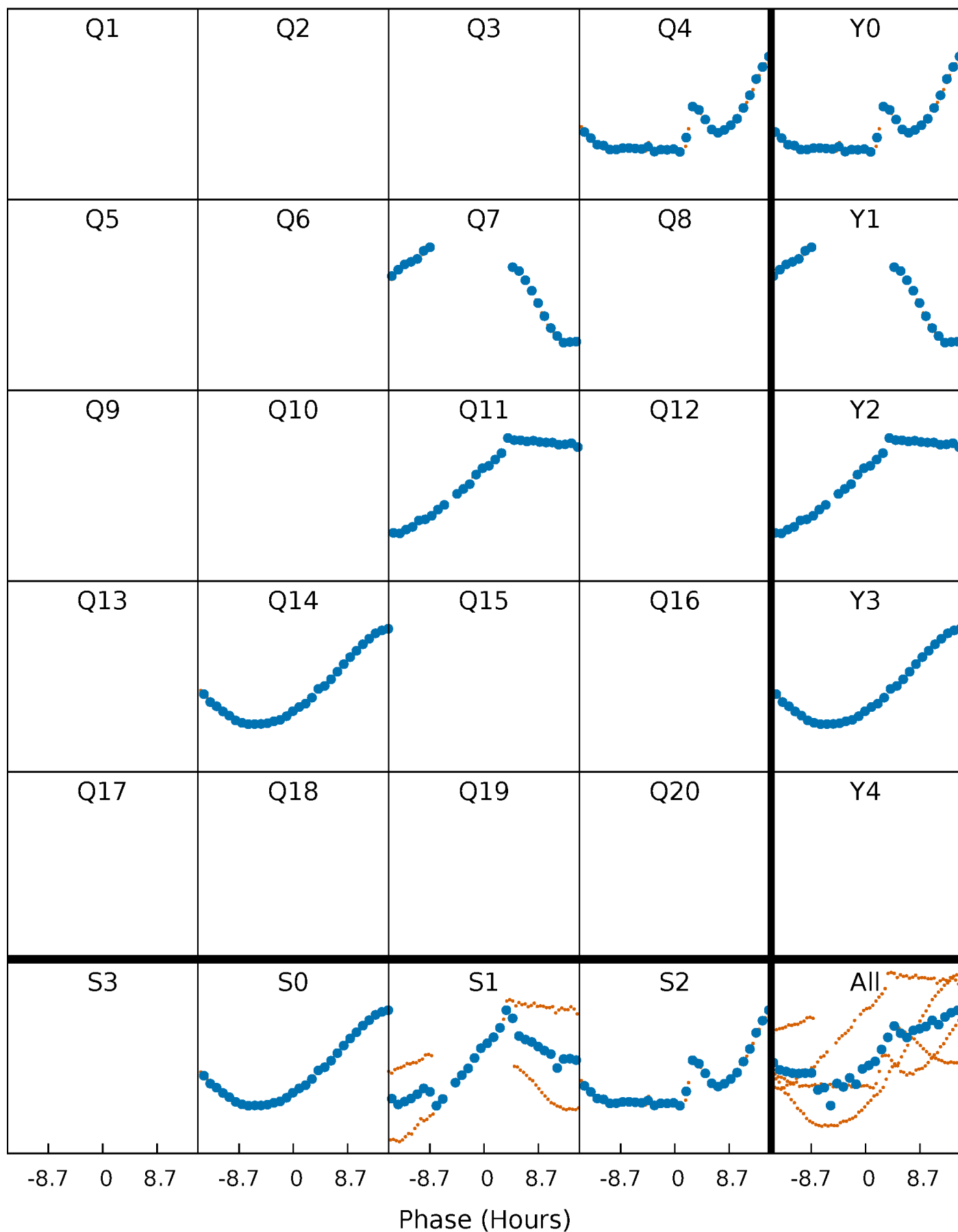


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



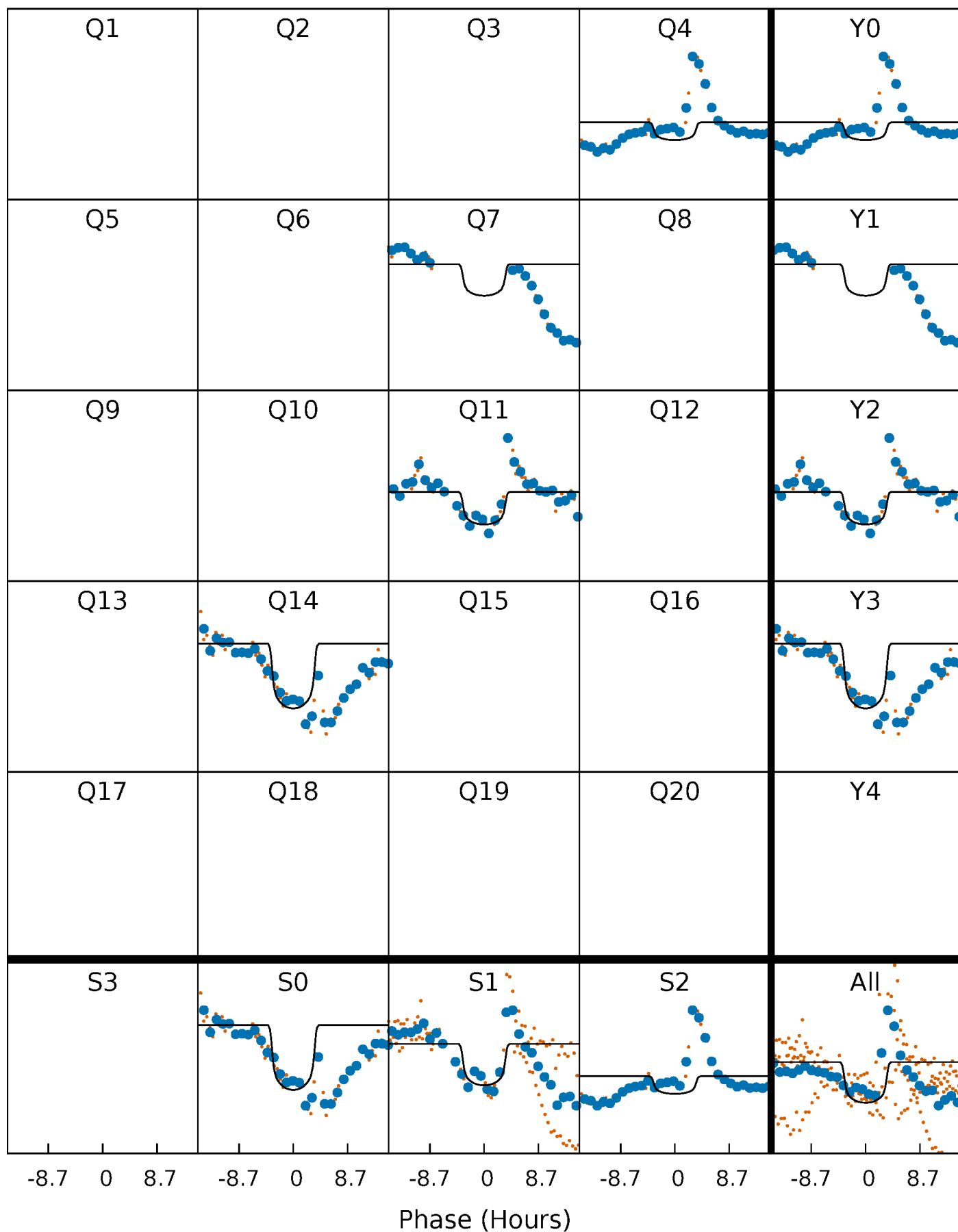
PDC Quarter-Phased Transit Curves

TCE 006949494-03 $P=298.956964$ Days $T_0=412.297784$ (BKJD)



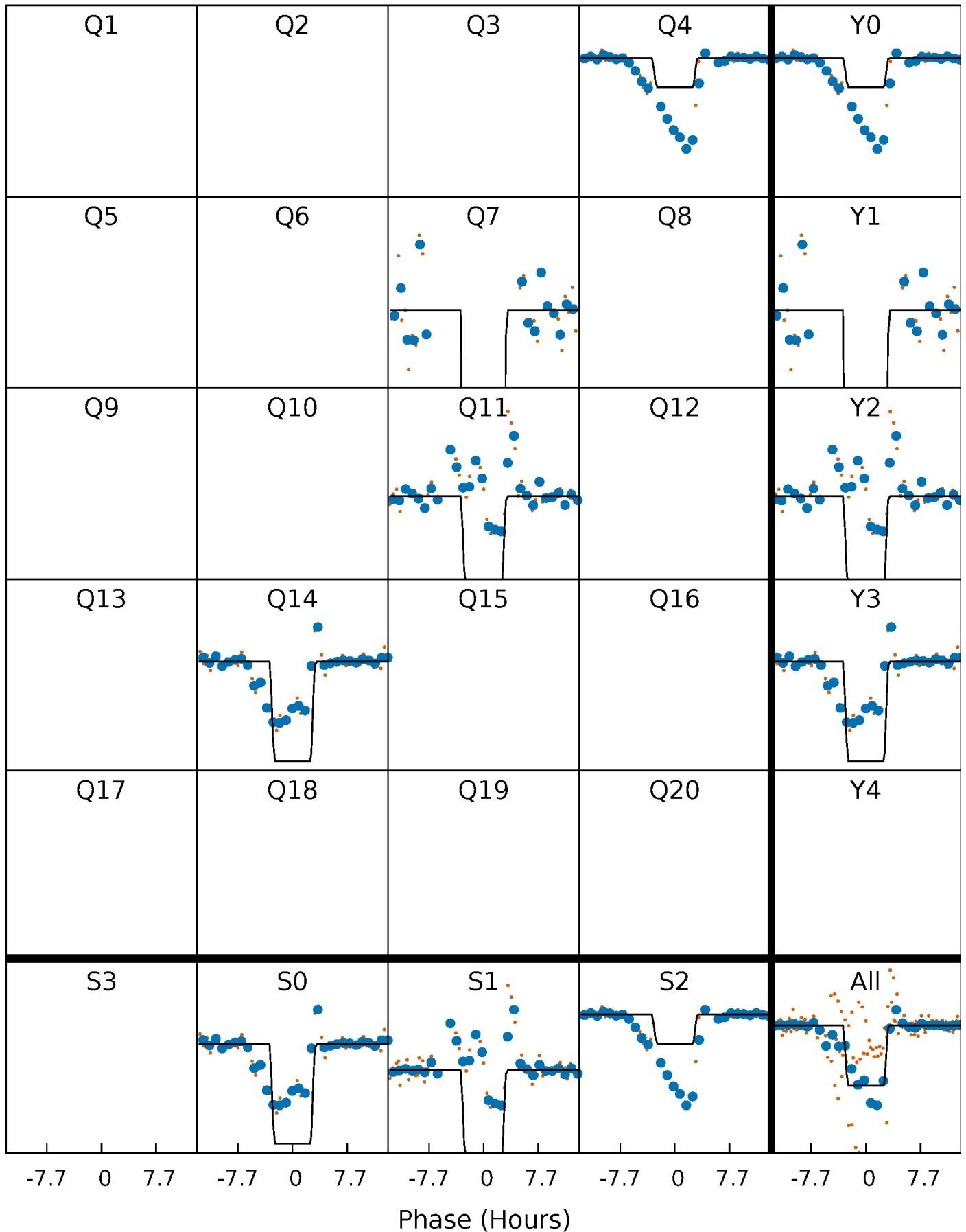
DV Quarter-Phased Transit Curves

TCE 006949494-03 $P=298.956964$ Days $T_0=412.297784$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

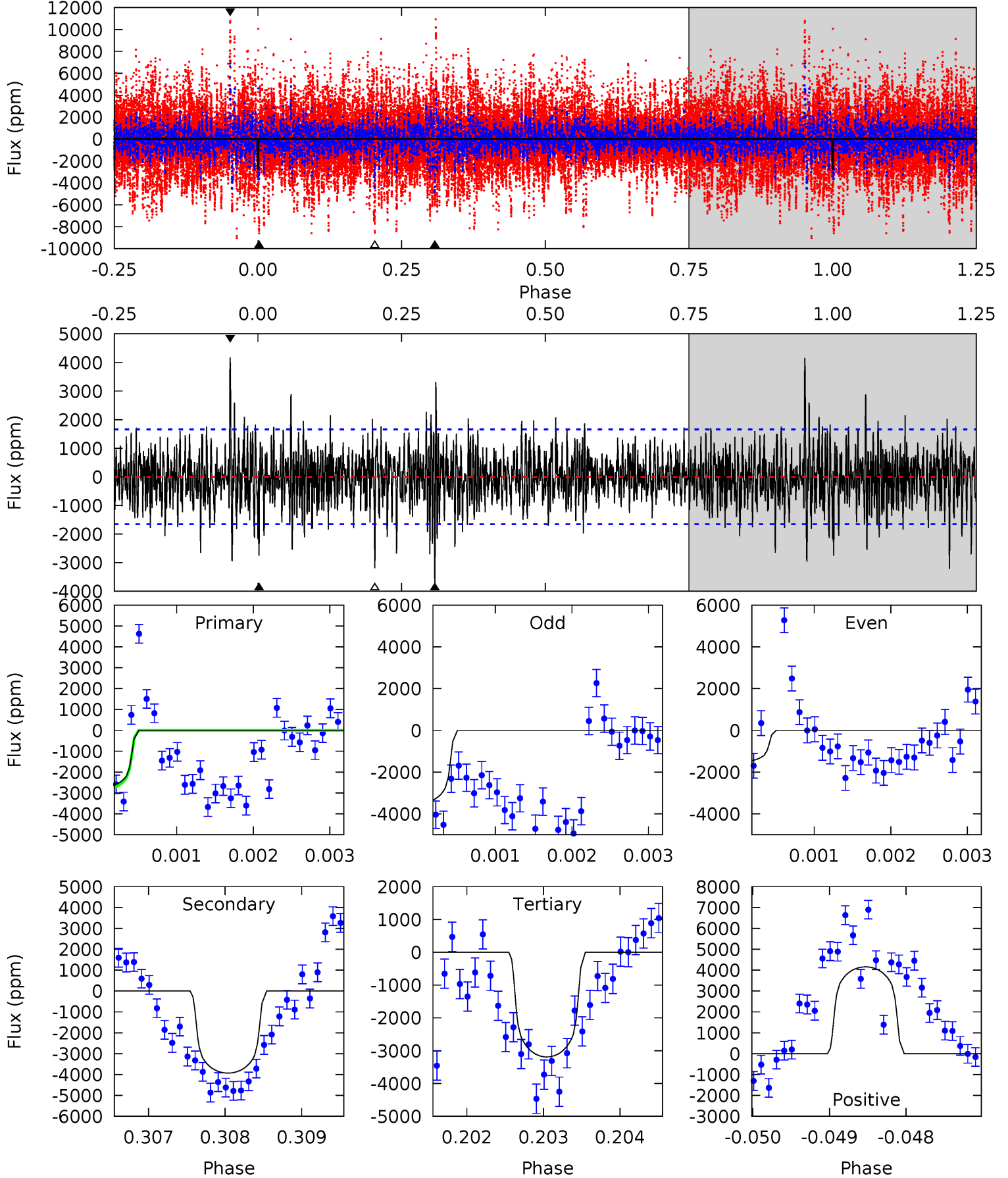
TCE 006949494-03 P=298.977039 Days $T_0=412.265324$ (BKJD)



DV Model-Shift Uniqueness Test

006949494-03, P = 298.956964 Days, E = 113.340820 Days

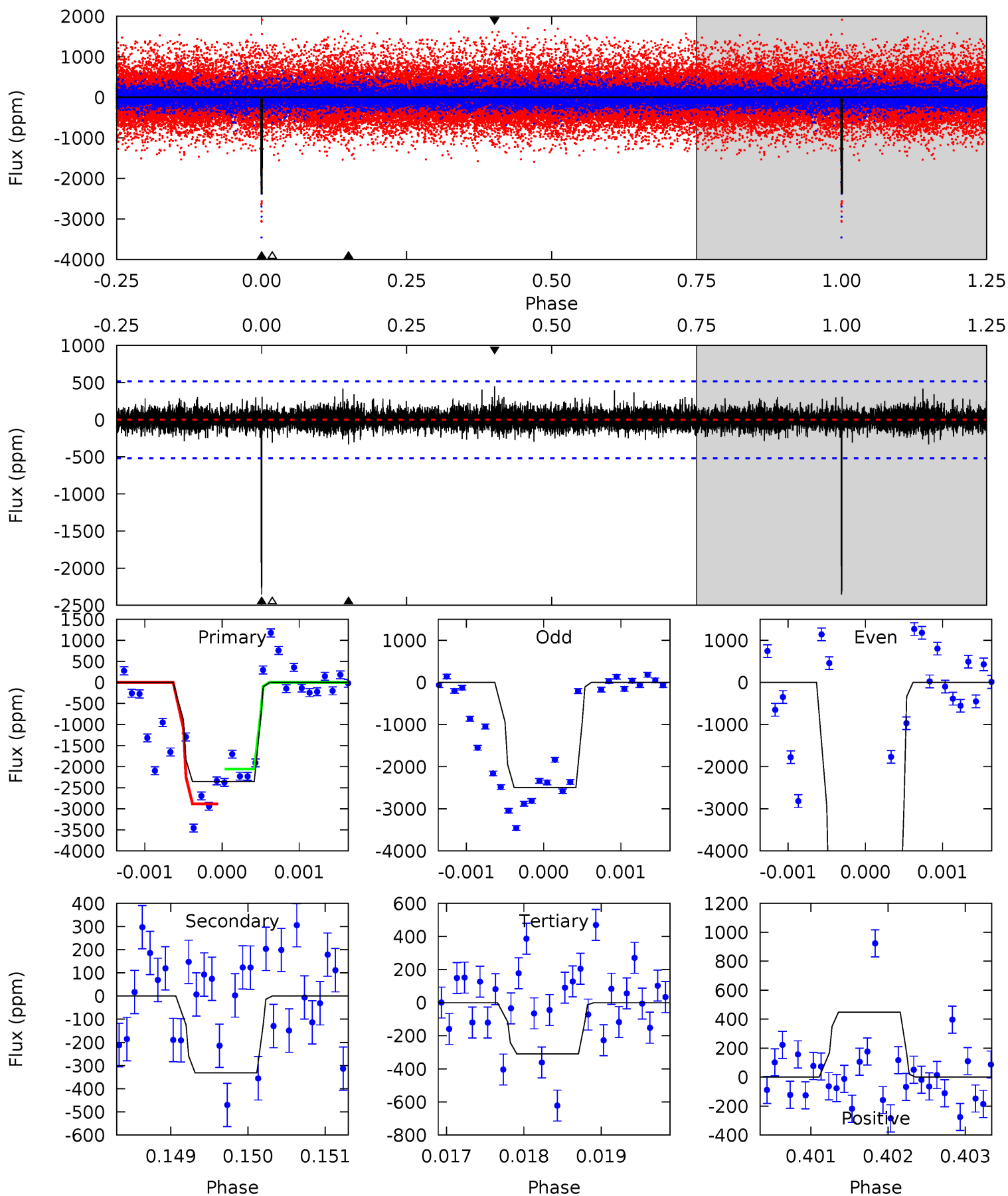
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.02	12.9	10.5	13.6	5.43	3.25	2.42	-1.43	-4.60	2.42	-0.74	3.06	0.59	0.51	0.51



Alt Model-Shift Uniqueness Test

006949494-03, P = 298.977039 Days, E = 113.288285 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.9	3.51	3.27	4.75	5.49	3.35	0.81	21.6	20.2	0.24	-1.24	34.7	2.03	0.16	4.10



Stellar Parameters For KIC 006949494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5686^{+154}_{-172}	$4.575^{+0.040}_{-0.160}$	$-0.420^{+0.300}_{-0.300}$	$0.782^{+0.195}_{-0.065}$	$0.839^{+0.098}_{-0.080}$	$2.473^{+0.509}_{-1.057}$
	+3%/-3%	+1%/-3%	+71%/-71%	+25%/-8%	+12%/-10%	+21%/-43%
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 006949494-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3929 ± 305	$5.01^{+0.86}_{-0.71}$	347^{+19}_{-15}	5956^{+462}_{-383}	57240^{+21452}_{-14362}
Alt.	-332 ± 94	$6.22^{+0.88}_{-0.73}$	346^{+21}_{-13}	3399^{+195}_{-211}	3088^{+1441}_{-1010}

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

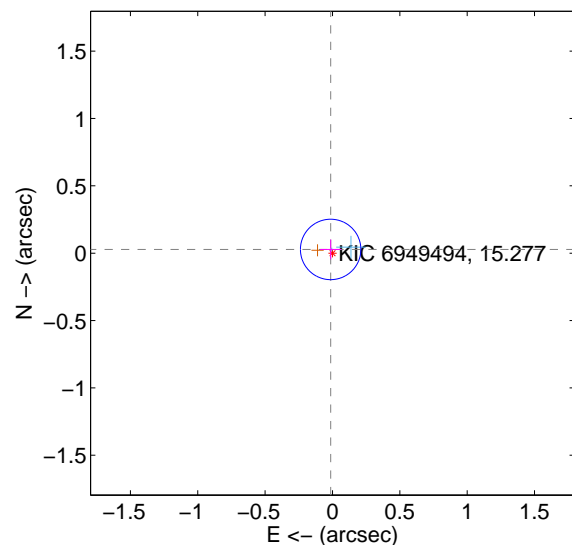
Supplemental centroid analysis for 006949494-03. Kepler magnitude: 15.28. Transit SNR 7.04

There are 2 quarters with good PRF difference image offsets

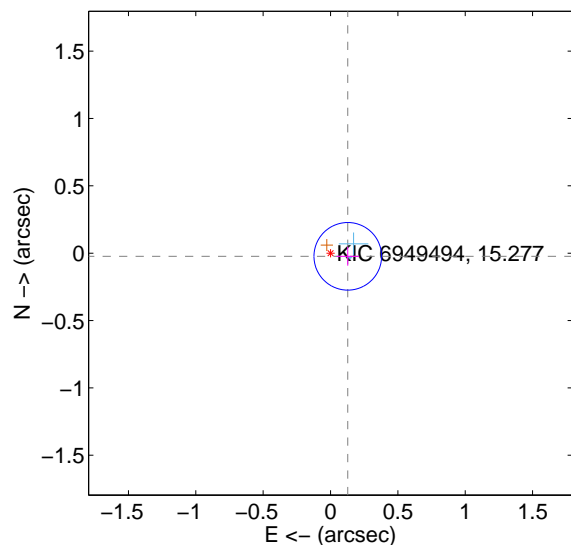
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.031 ± 0.075	0.41	0.014 ± 0.078	0.028 ± 0.074
PRF-fit source offset from KIC position	0.130 ± 0.084	1.56	-0.128 ± 0.084	-0.023 ± 0.070
photometric centroid source offset	0.48 ± 0.34	1.44	-0.02 ± 0.39	0.48 ± 0.34

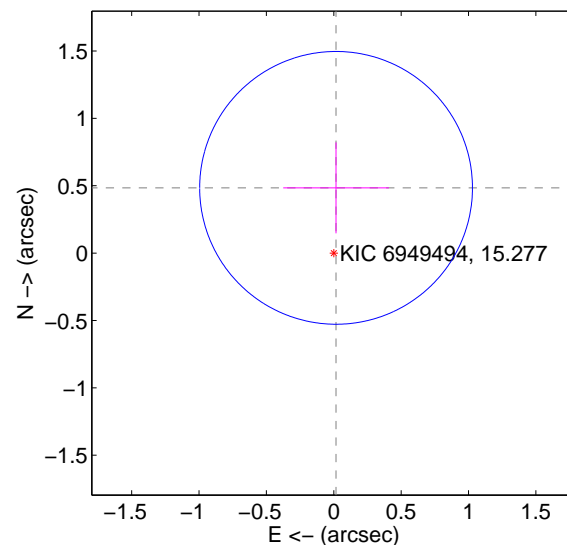
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

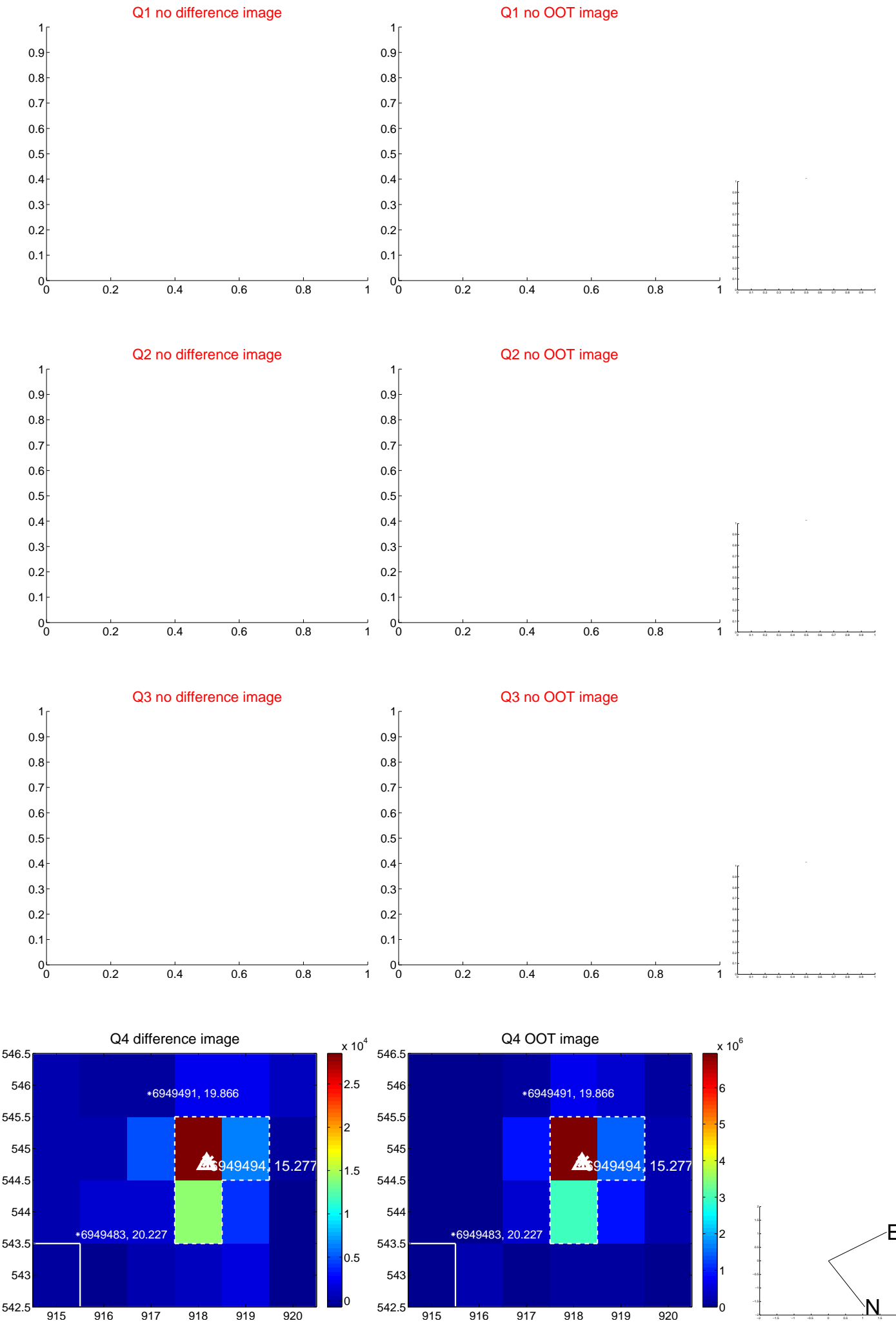


offset from photometric centroids



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

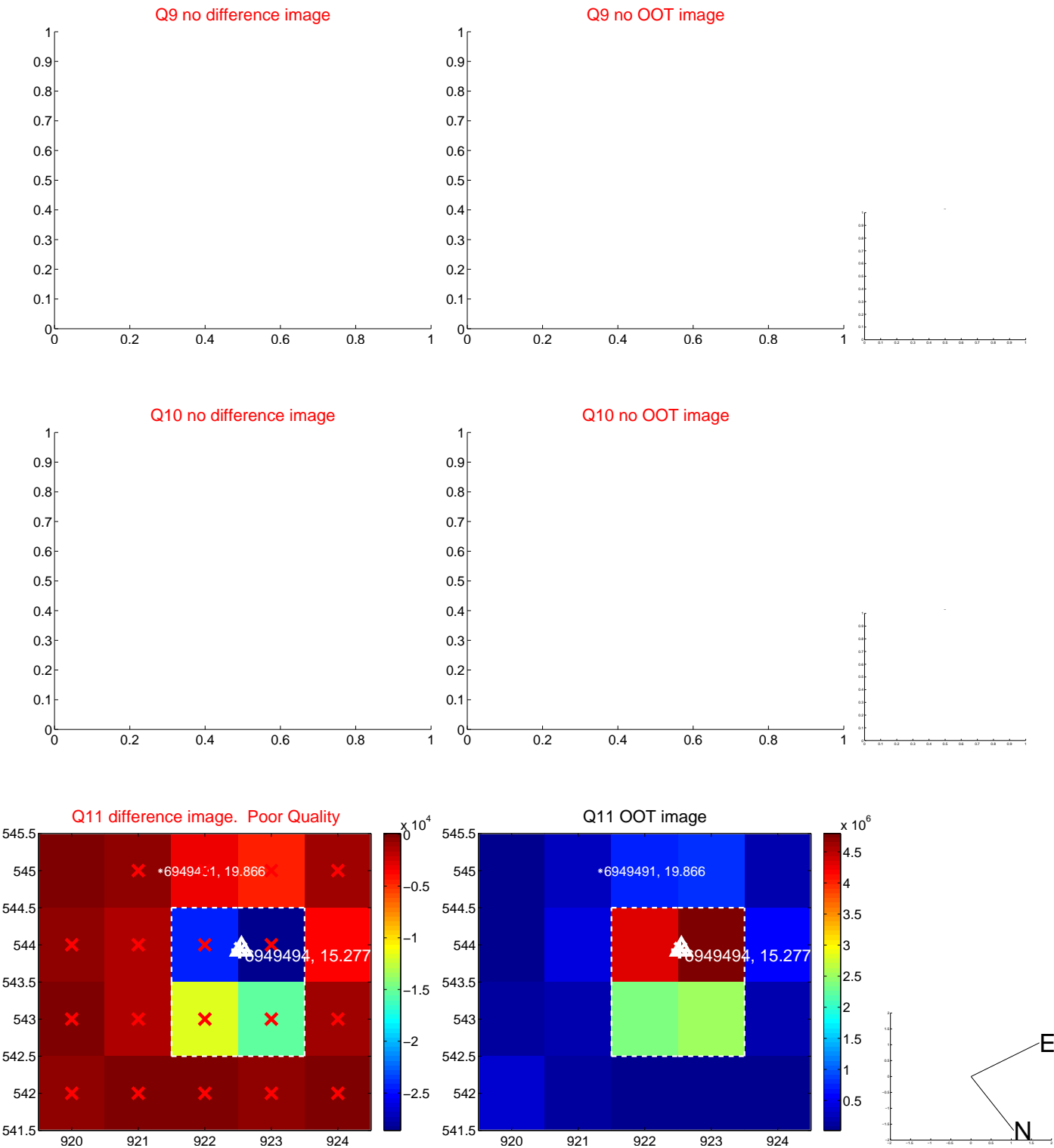
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



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

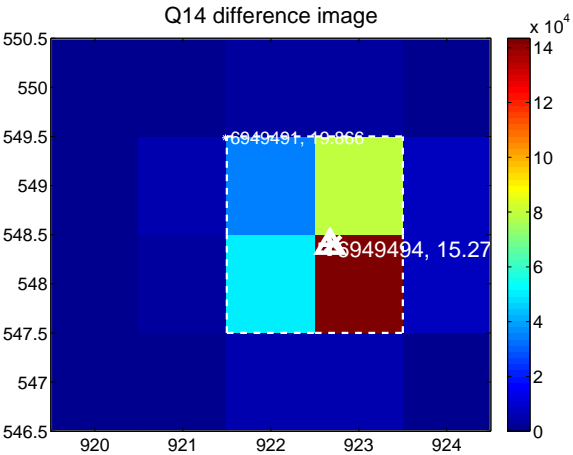
Q13 no difference image



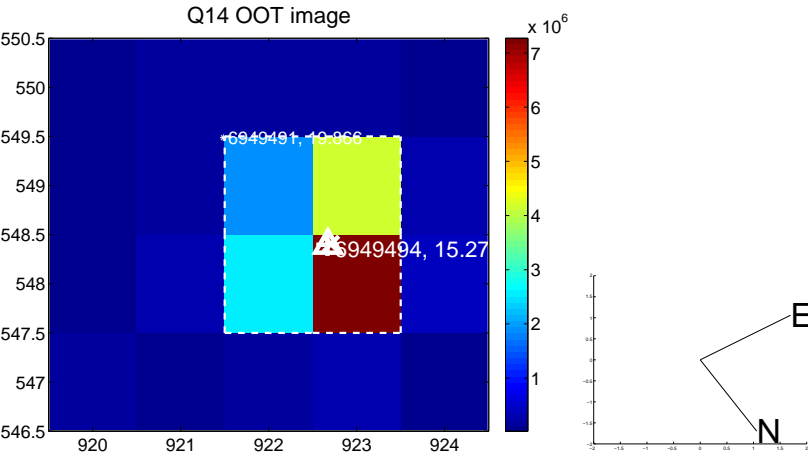
Q13 no OOT image



Q14 difference image



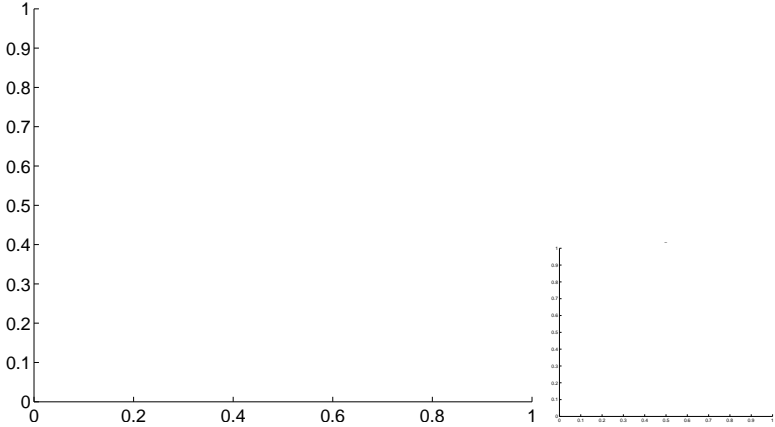
Q14 OOT image



Q15 no difference image



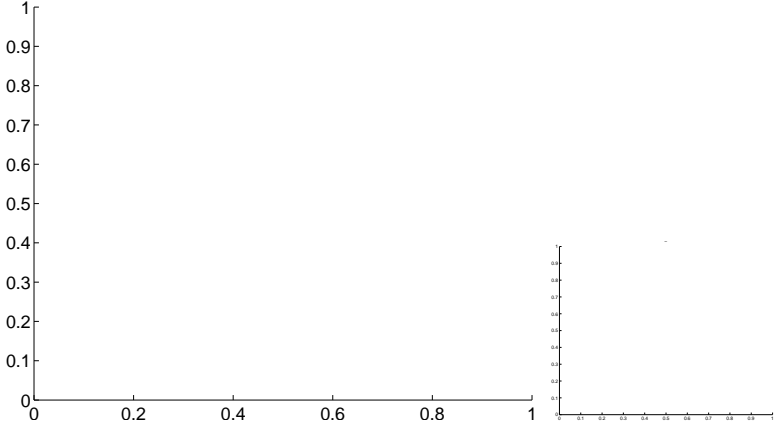
Q15 no OOT image



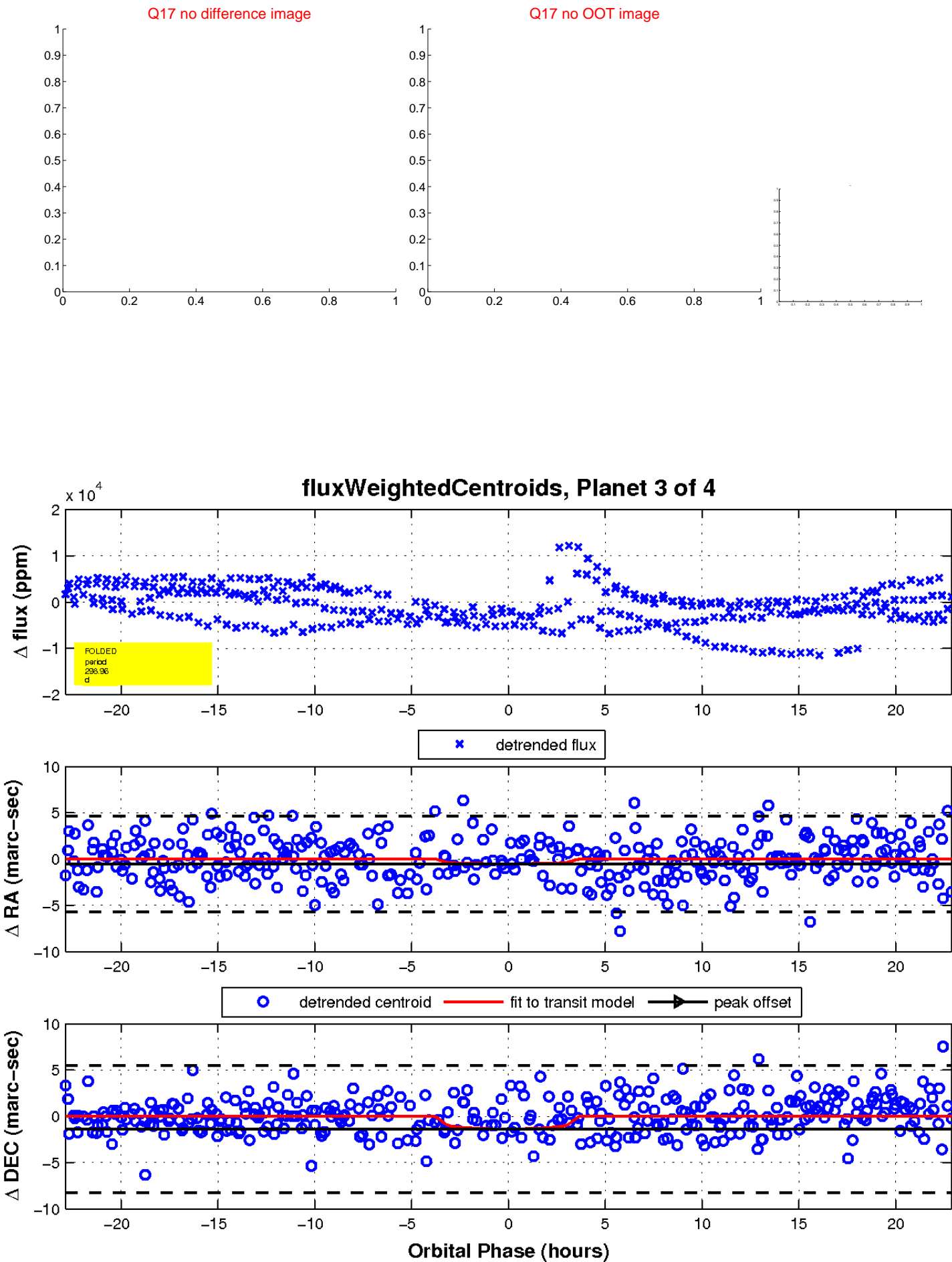
Q16 no difference image



Q16 no OOT image

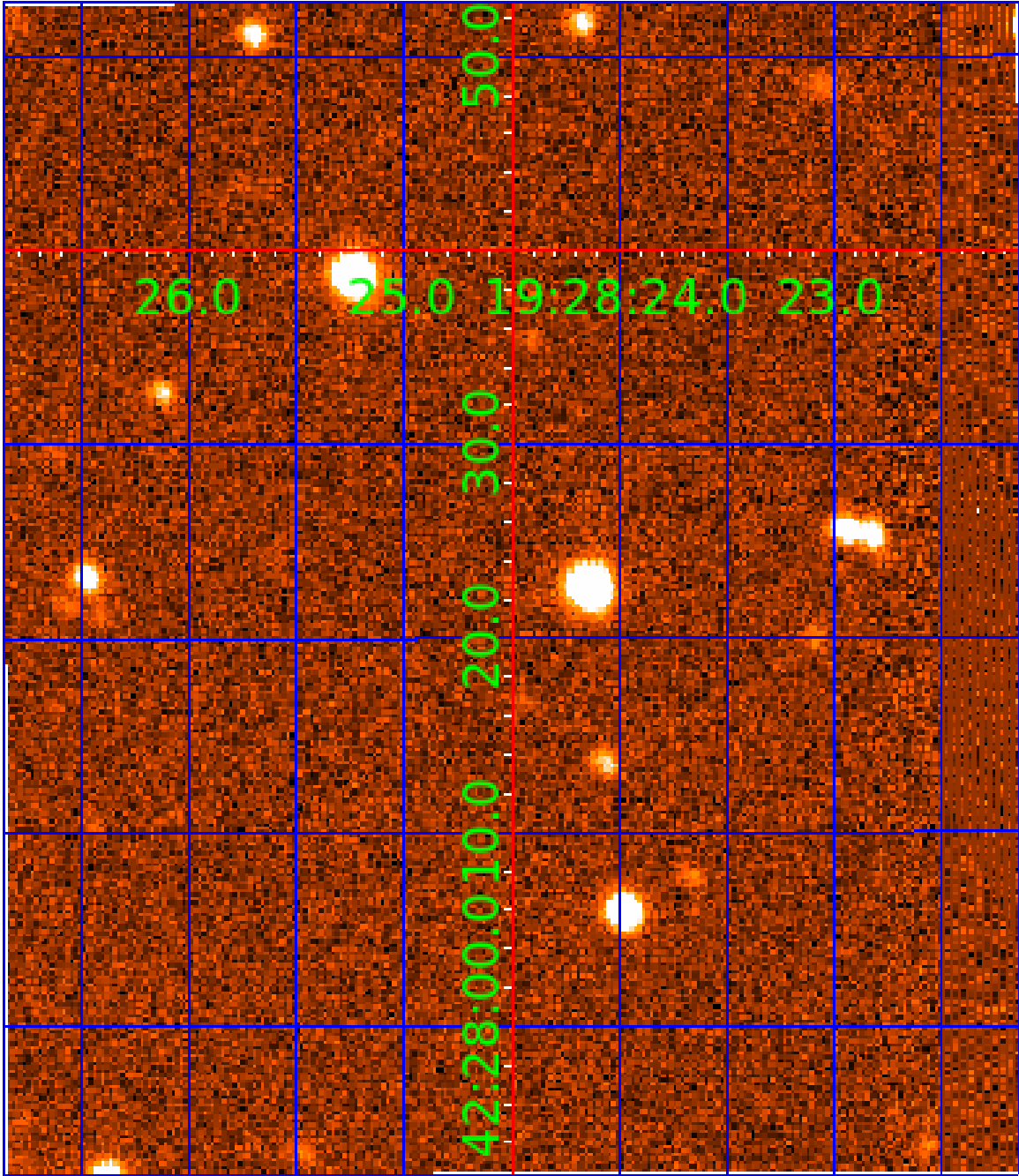


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006949494

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})
006949494-01	OBS	No	336.252495	436.978620	3695.9	5.015	20.2	10.1	0.78	5686	8.85	0.72
006949494-02	OBS	No	186.908991	161.667100	1367.0	3.042	11.6	6.1	0.78	5686	3.65	1.57
006949494-03	OBS	No	298.956964	412.297784	3394.6	7.632	12.1	7.0	0.78	5686	4.84	0.84
006949494-04	OBS	No	418.949281	423.397587	1310.3	4.500	13.3	-1.0	0.78	5686	2.81	0.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006949494-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
006949494-03	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006949494-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—CENT_NOFITS—HALO_GHOST

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

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

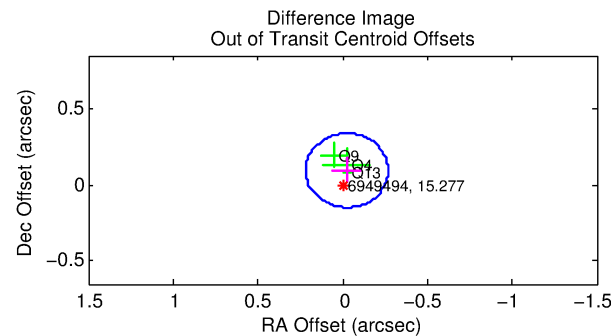
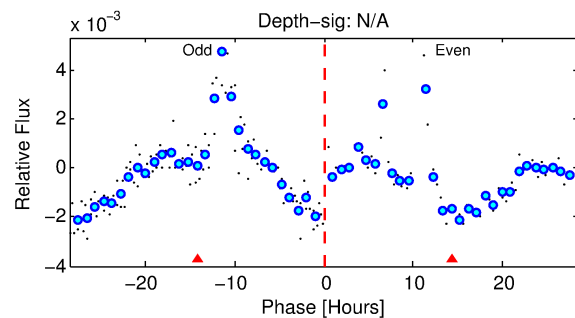
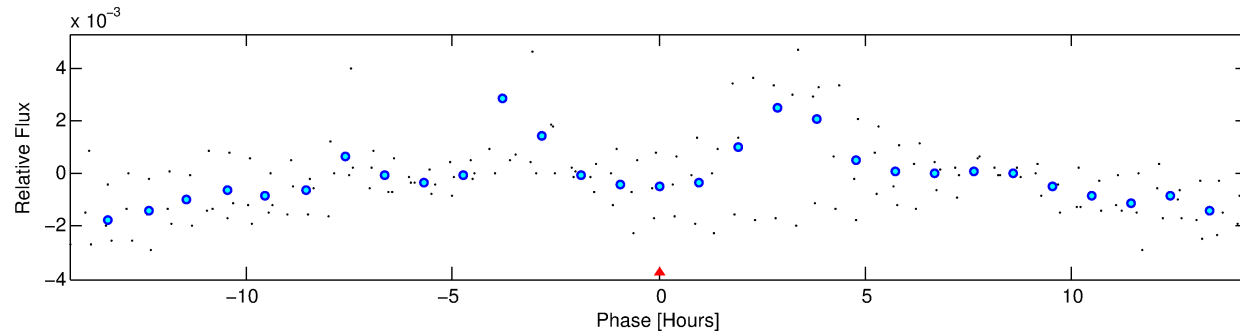
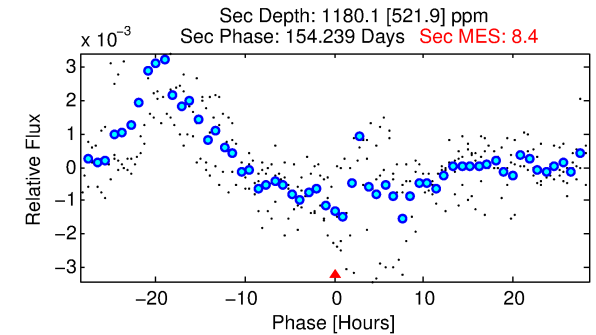
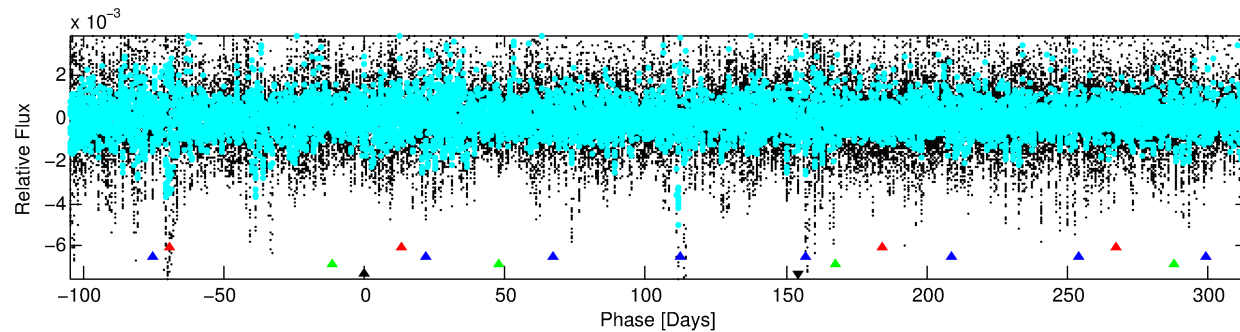
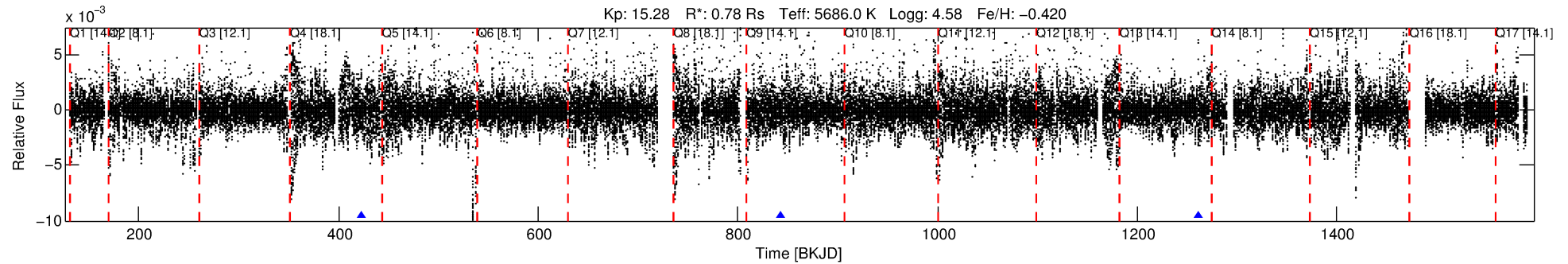
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006949494-04

No Significant Match Found

DV One-Page Summary

KIC: 6949494 Candidate: 4 of 4 Period: 418.949 d



TPS TCE Results:

Period = 418.94928 d
Epoch = 423.3976 BKJD

DV fit results are unavailable

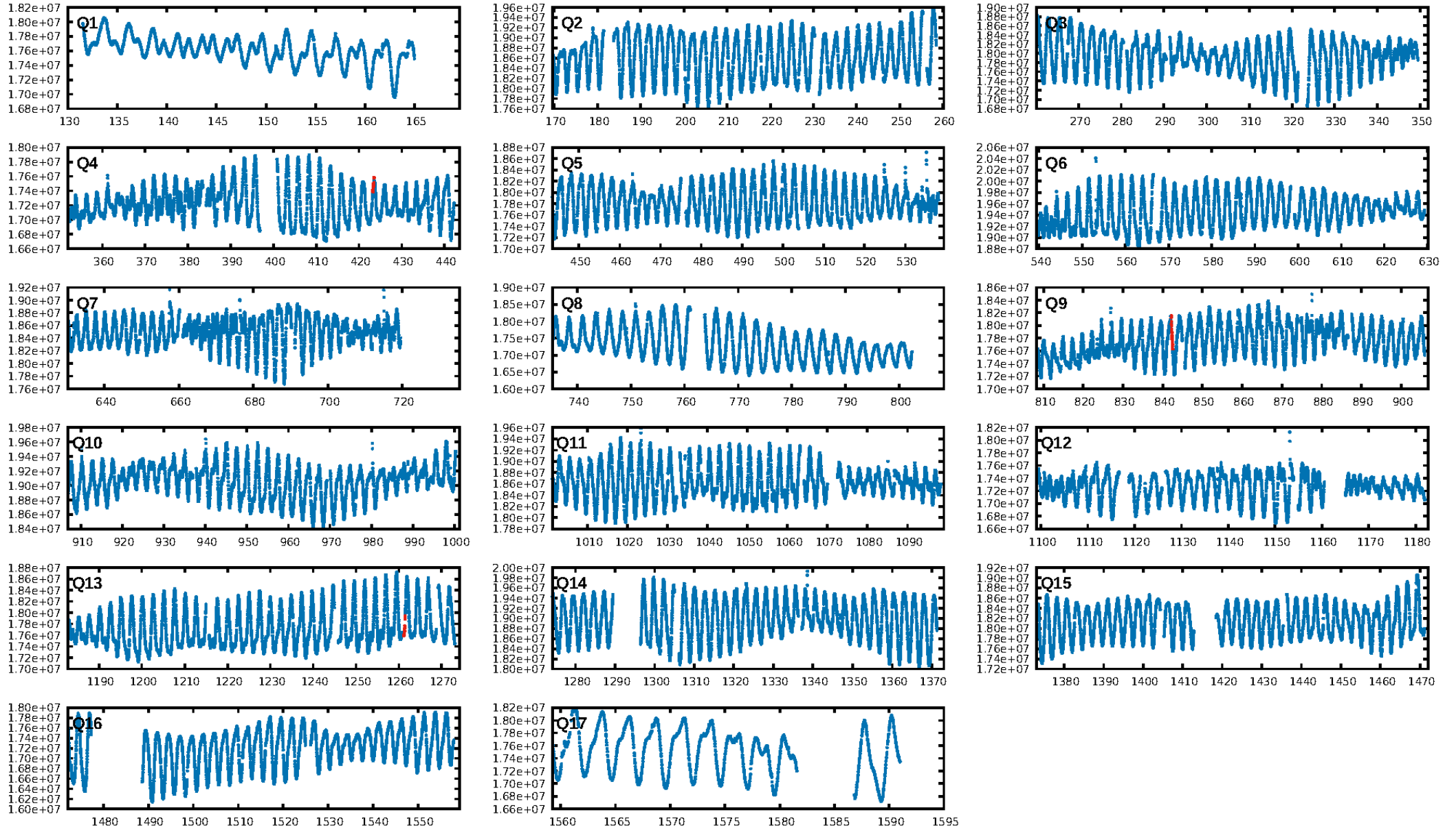
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [294.55σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.04142
Centroid-sig: 52.9%
Centroid-so: 0.325 arcsec [0.53σ]
OotOffset-rm: 0.099 arcsec [1.22σ]
KicOffset-rm: 0.148 arcsec [1.76σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

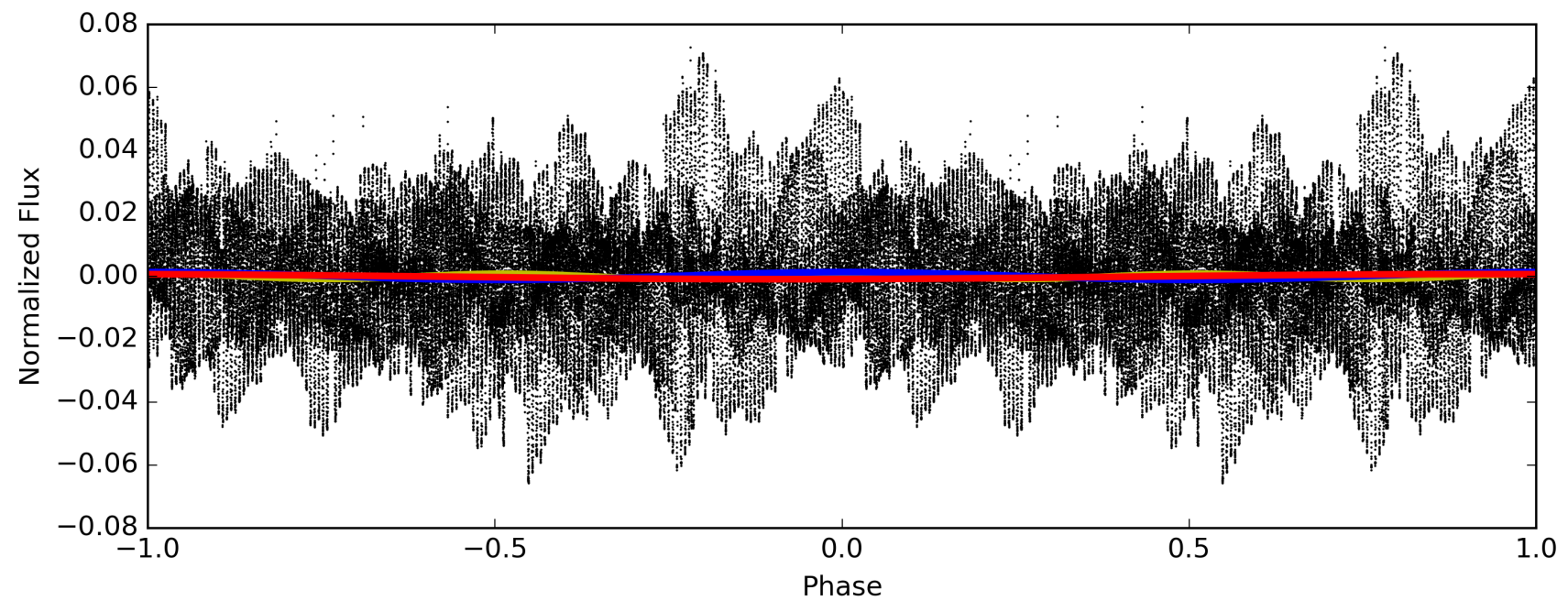
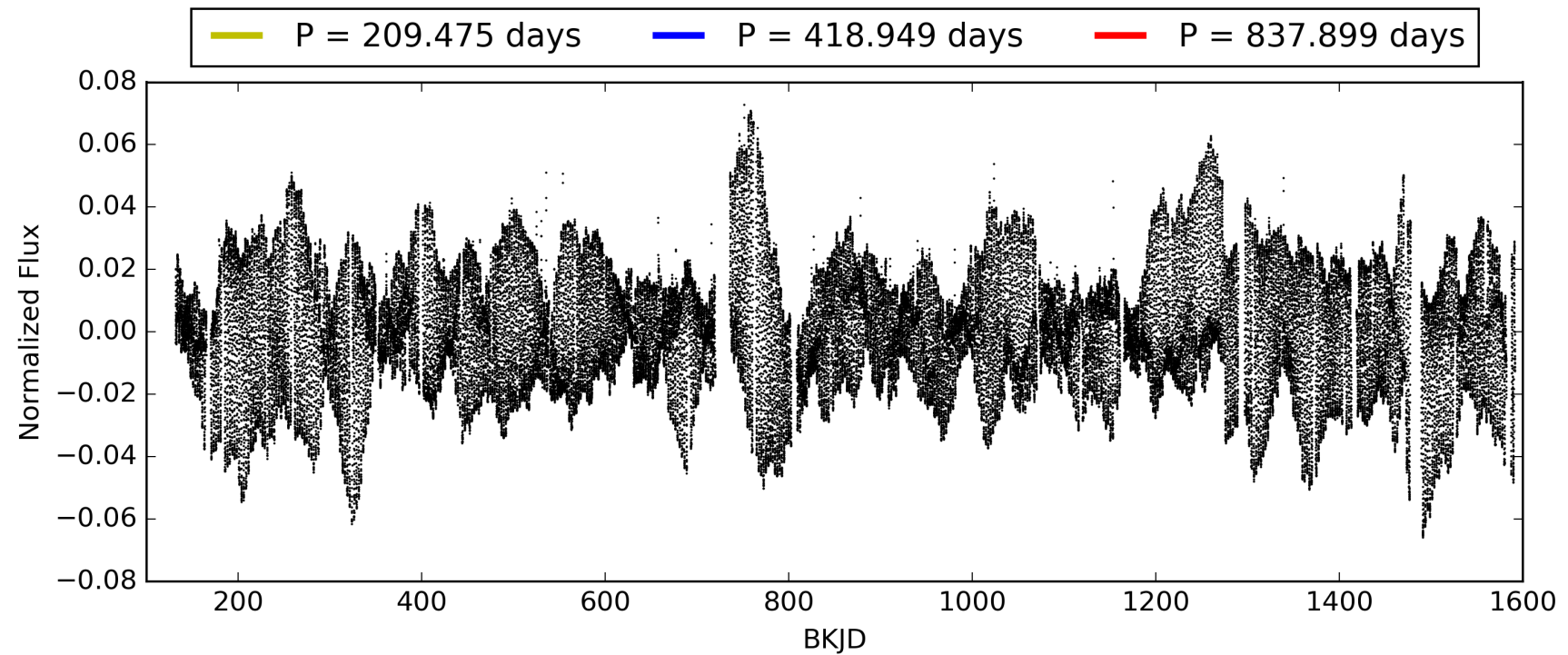
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:03:09 Z

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

TCE 006949494-04, PDC Light Curves

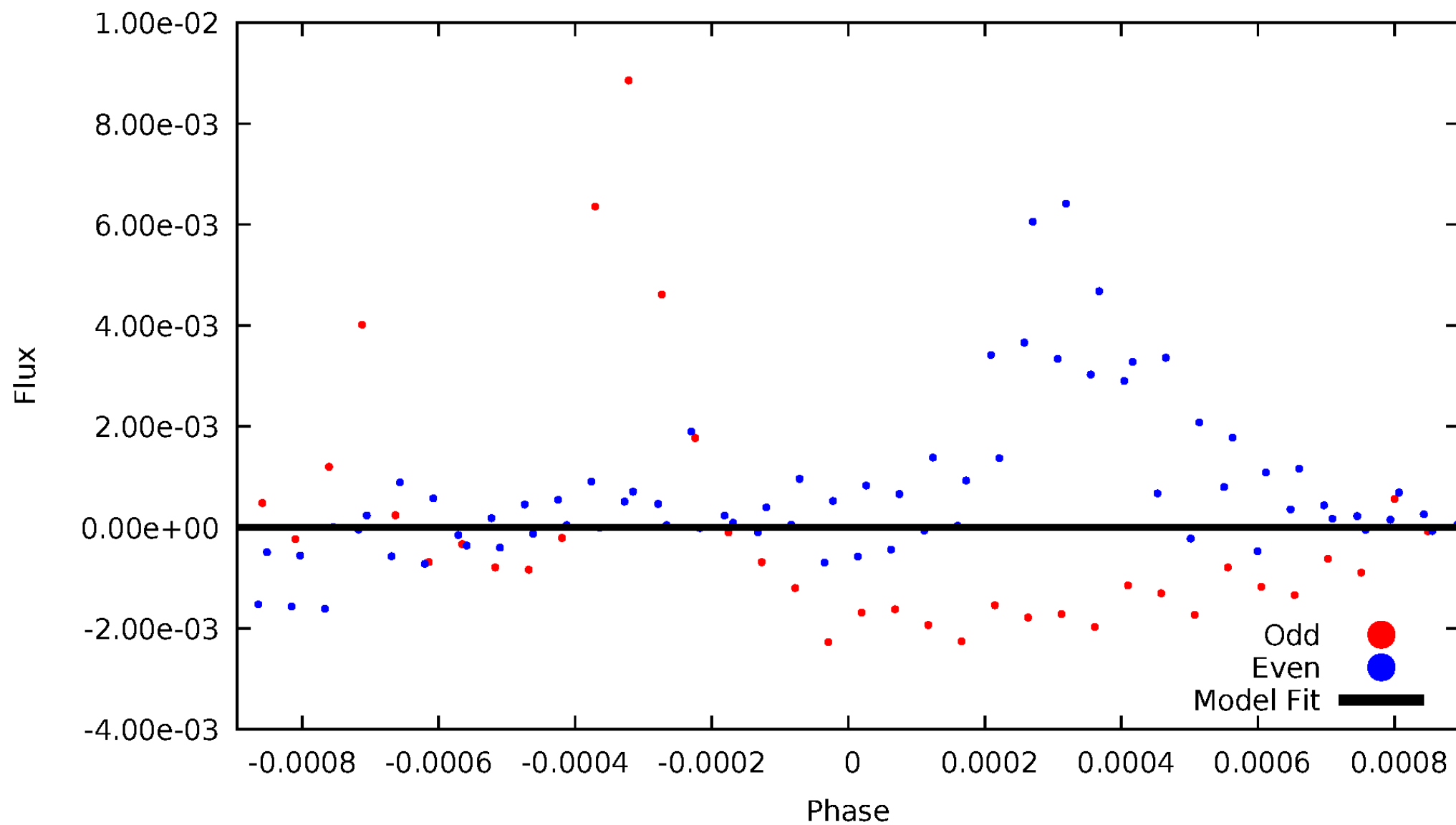


TCE 006949494-04



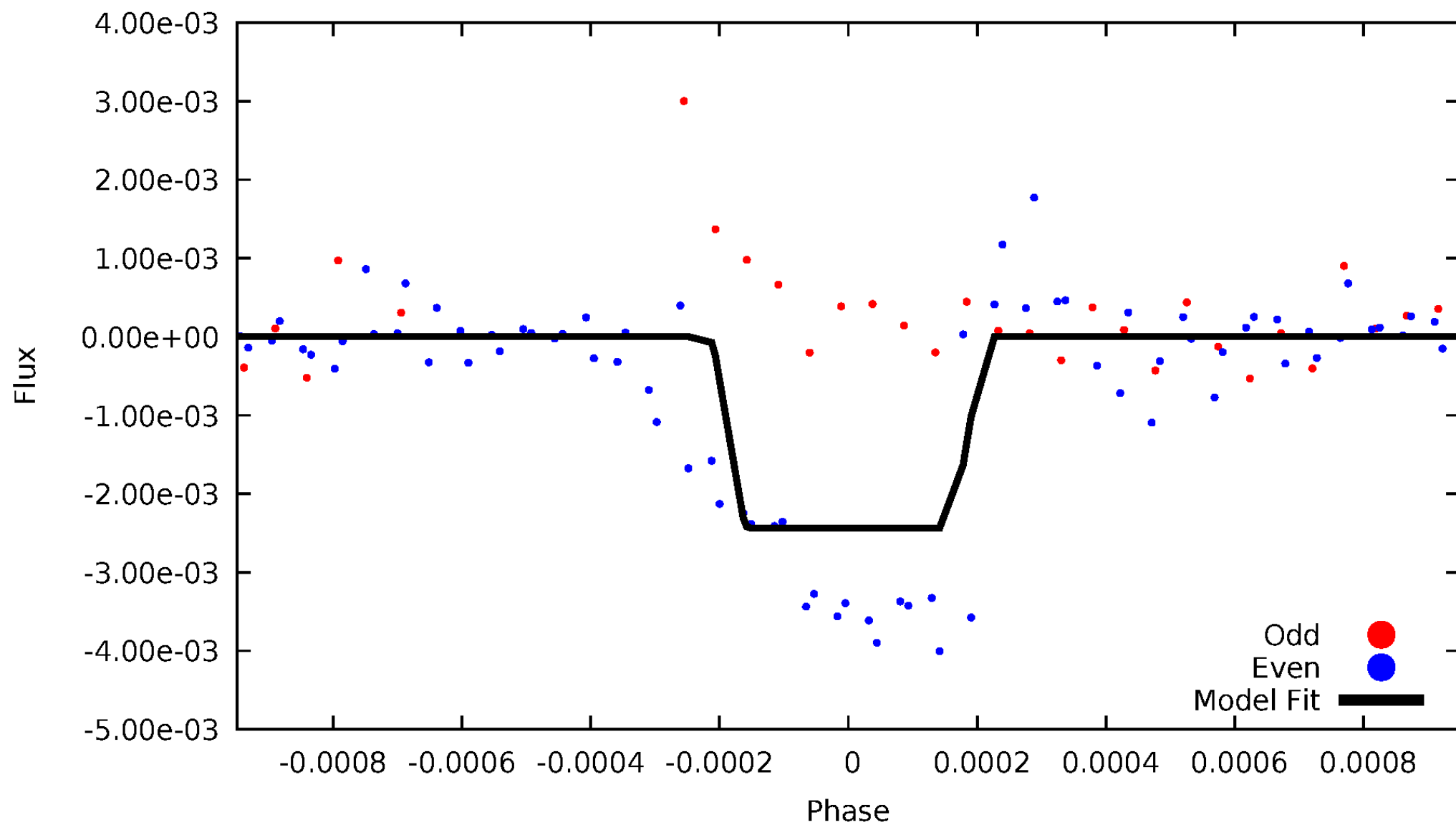
DV Odd/Even

TCE 006949494-04



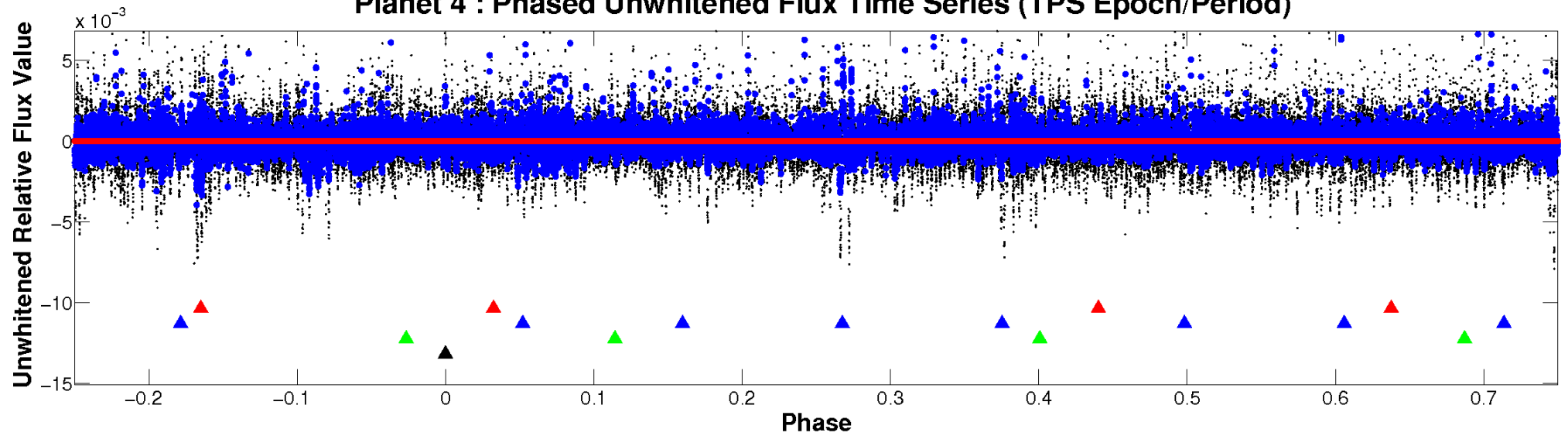
ALT Odd/Even

TCE 006949494-04

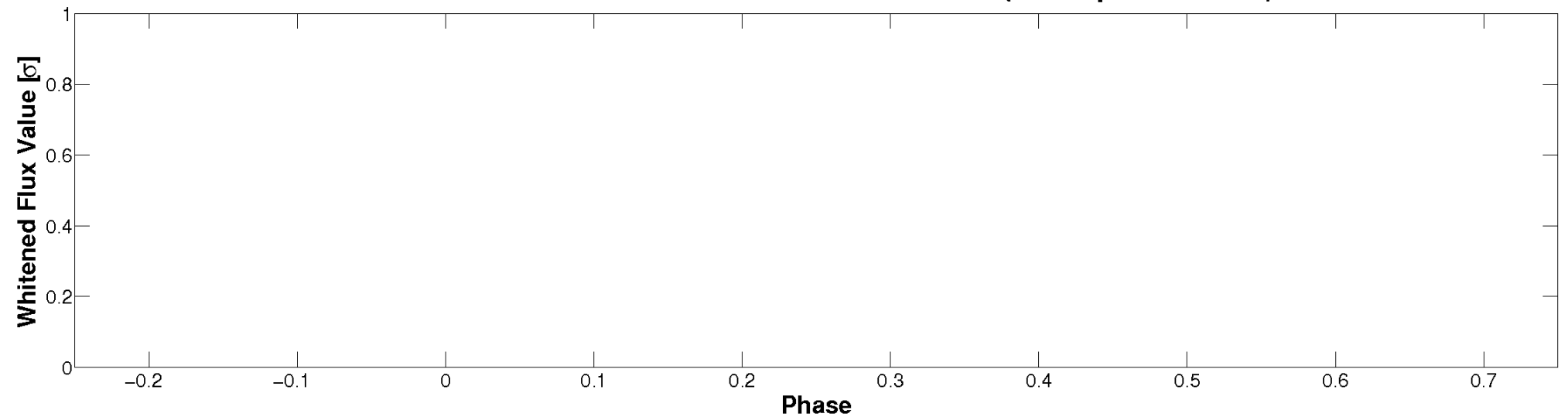


Non-Whitened Vs. Whitened Light Curve

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

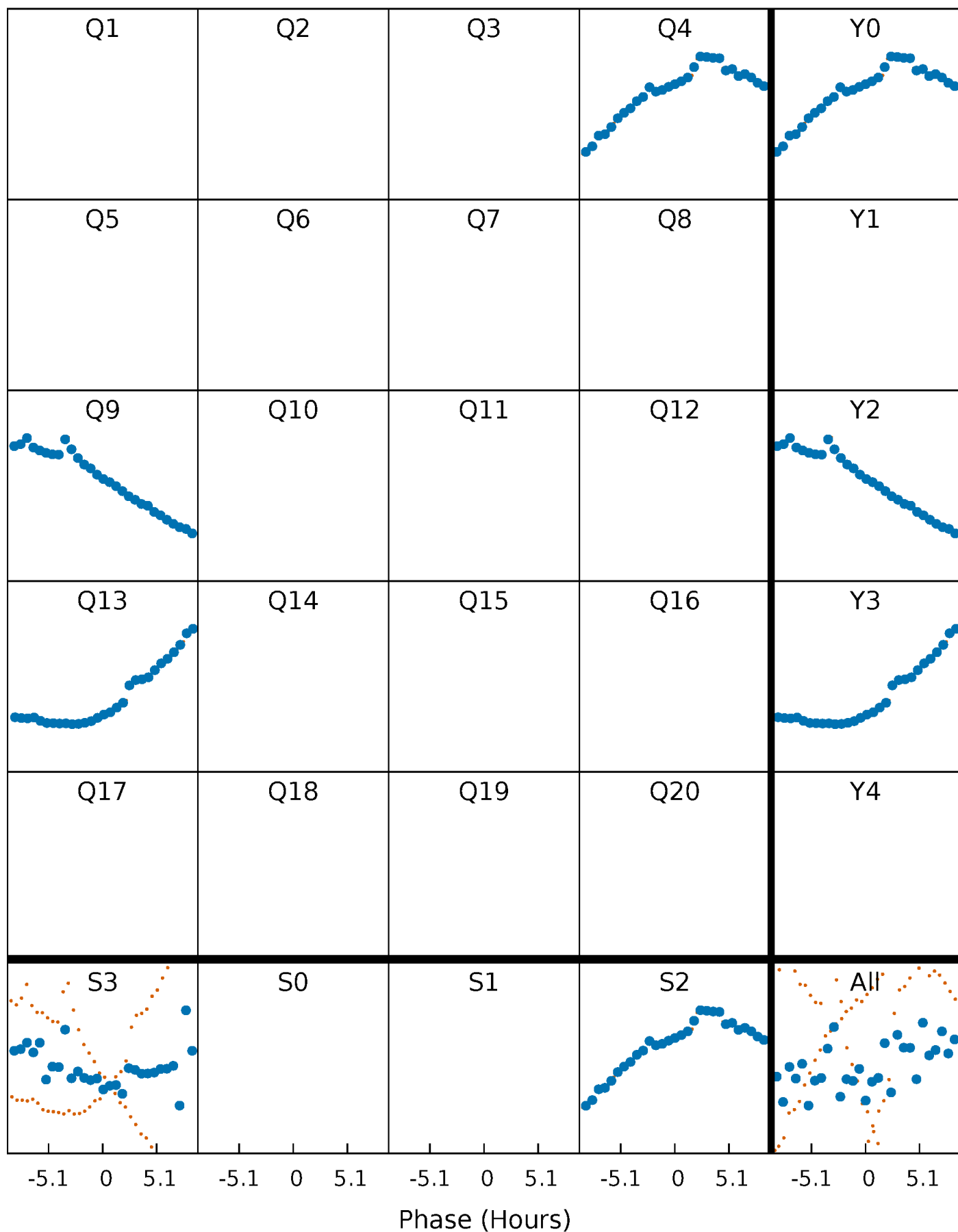


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



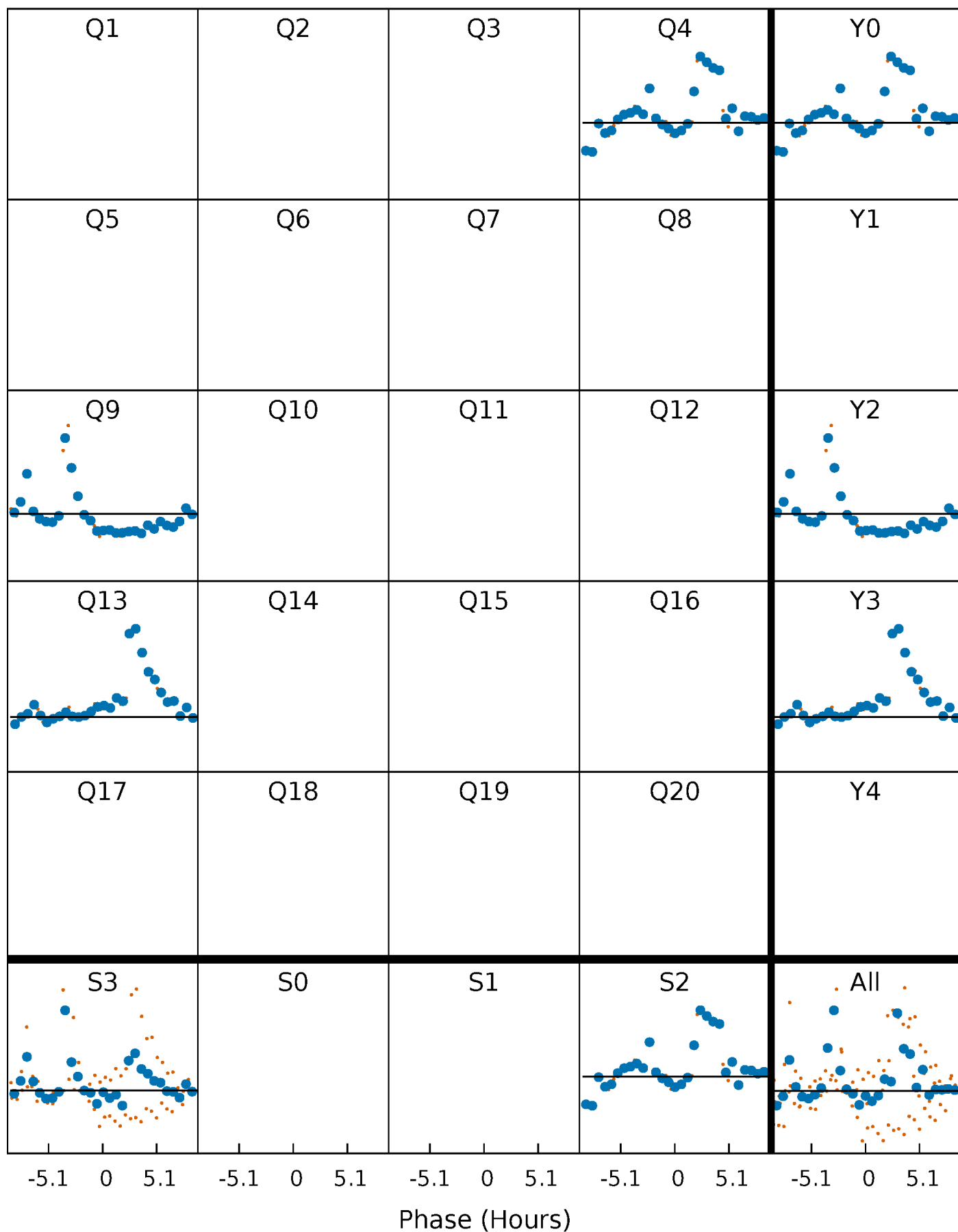
PDC Quarter-Phased Transit Curves

TCE 006949494-04 P=418.949281 Days $T_0=423.397587$ (BKJD)



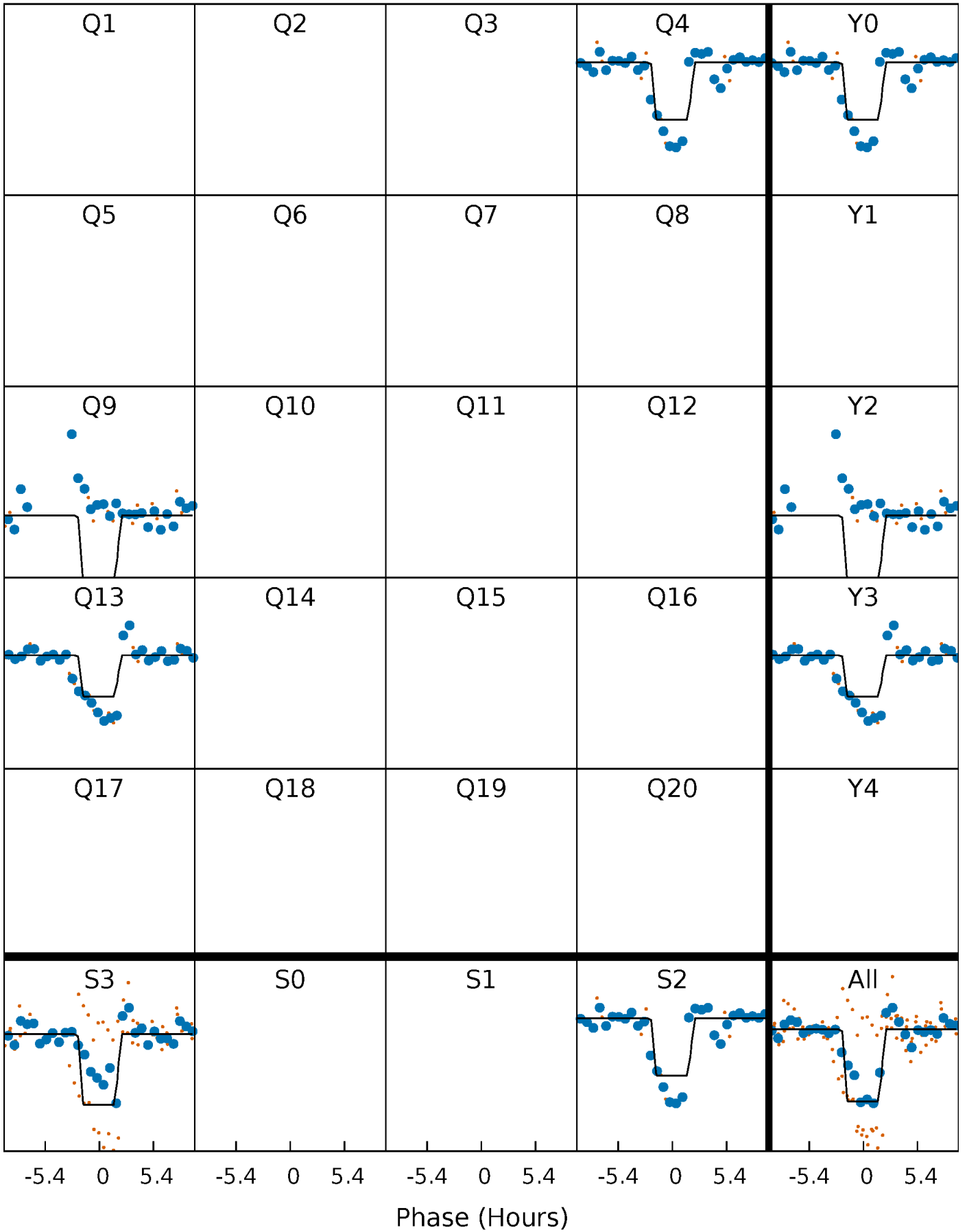
DV Quarter-Phased Transit Curves

TCE 006949494-04 $P=418.949281$ Days $T_0=423.397587$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

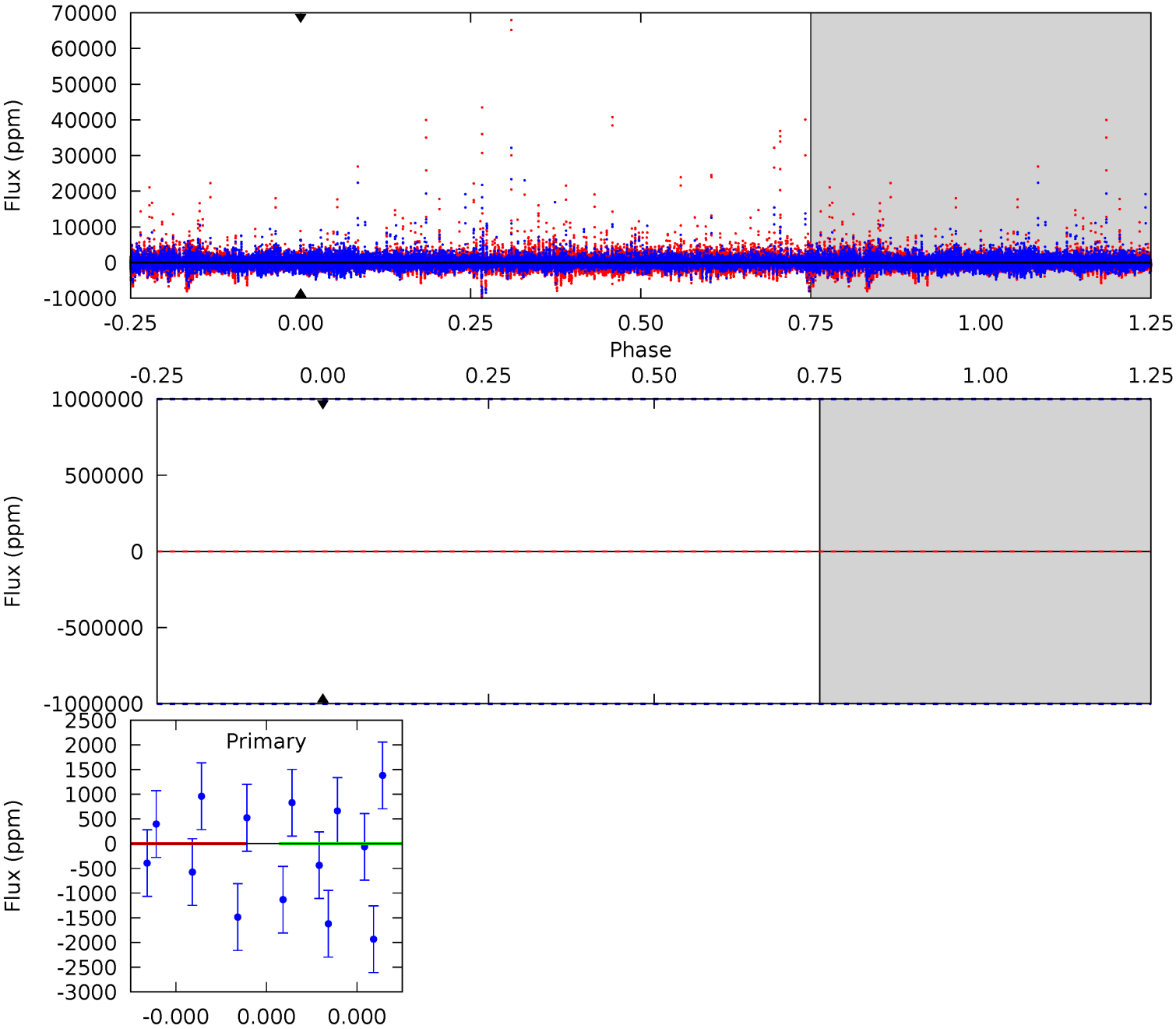
TCE 006949494-04 $P=418.949281$ Days $T_0=423.410452$ (BKJD)



DV Model-Shift Uniqueness Test

006949494-04, P = 418.949281 Days, E = 4.448306 Days

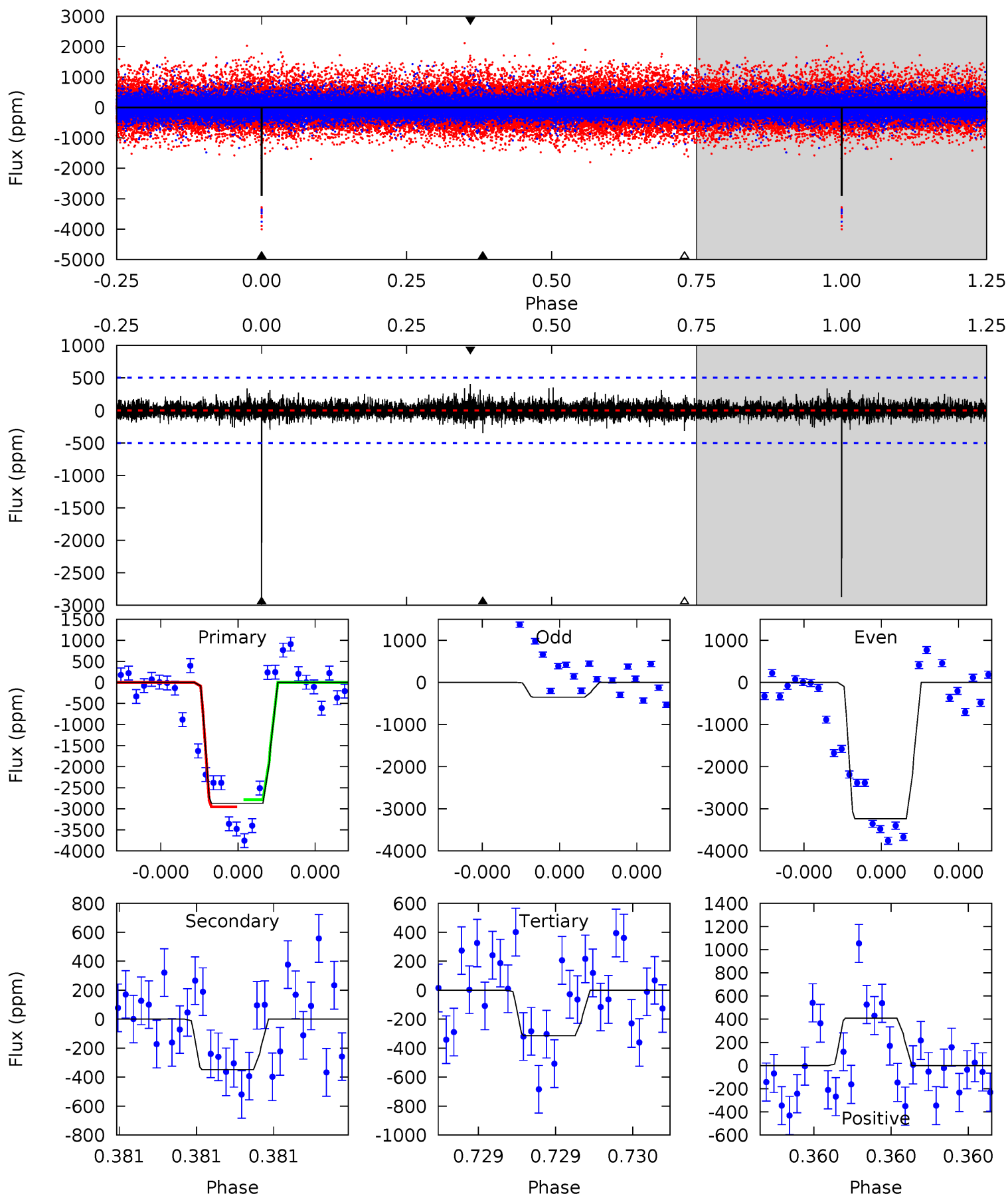
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

006949494-04, P = 418.949281 Days, E = 4.461171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.9	3.87	3.49	4.54	5.60	3.52	0.73	28.4	27.3	0.38	-0.67	17.4	0.68	0.12	0.96



Stellar Parameters For KIC 006949494

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5686^{+154}_{-172}	$4.575^{+0.040}_{-0.160}$	$-0.420^{+0.300}_{-0.300}$	$0.782^{+0.195}_{-0.065}$	$0.839^{+0.098}_{-0.080}$	$2.473^{+0.509}_{-1.057}$
	+3%/-3%	+1%/-3%	+71%/-71%	+25%/-8%	+12%/-10%	+21%/-43%
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 006949494-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$7.22^{+7.18}_{-4.82}$	310^{+17}_{-13}	3844^{+14560}_{-22659}	$10306^{+2112460}_{-2133505}$
Alt.	-349 ± 90	$7.86^{+7.70}_{-4.99}$	310^{+18}_{-13}	3159^{+1312}_{-533}	3146^{+20638}_{-2356}

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

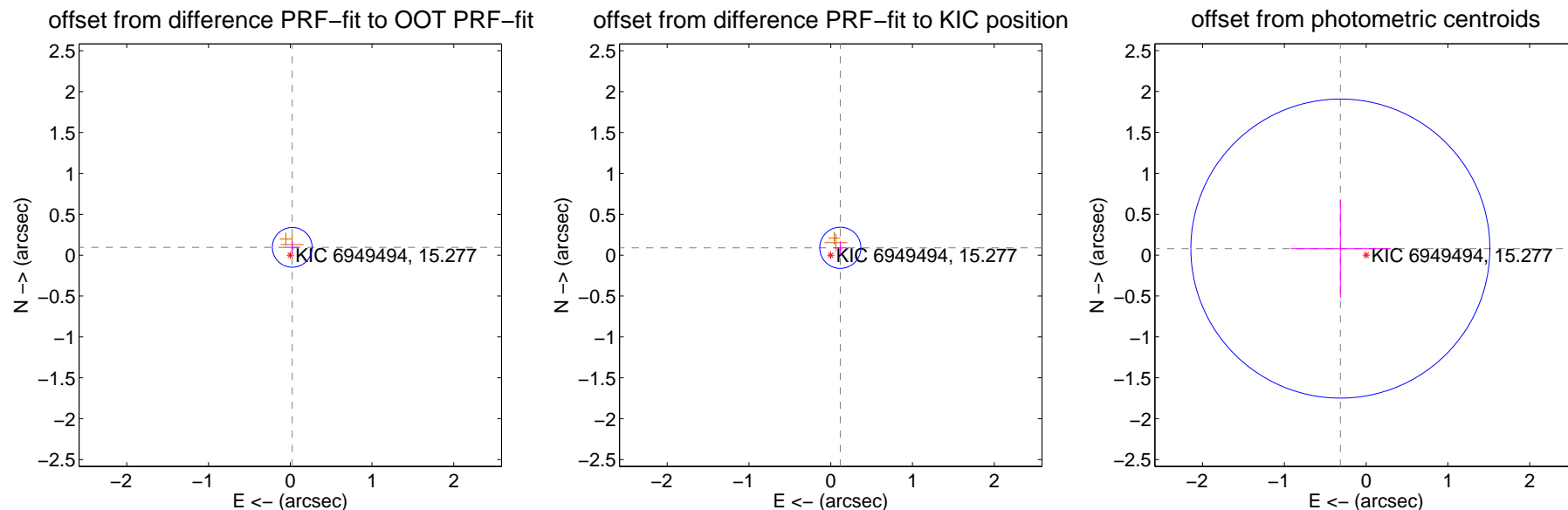
DV Centroid Data

Supplemental centroid analysis for 006949494-04. Kepler magnitude: 15.28. Transit SNR -1.00

There are 1 quarters with good PRF difference image offsets

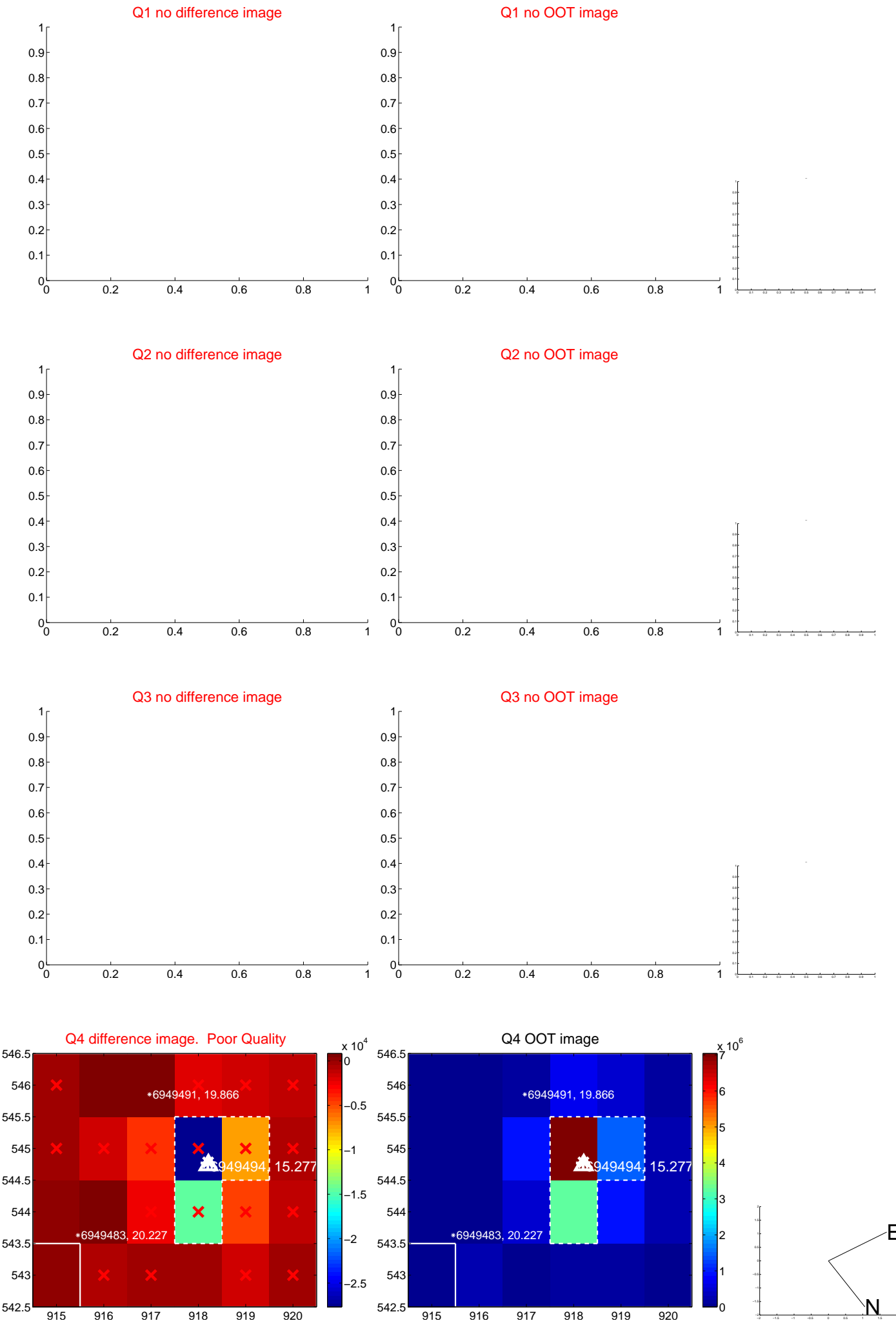
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.099 ± 0.081	1.22	-0.024 ± 0.086	0.096 ± 0.081
PRF-fit source offset from KIC position	0.148 ± 0.084	1.76	-0.117 ± 0.086	0.090 ± 0.081
photometric centroid source offset	0.33 ± 0.61	0.53	0.32 ± 0.61	0.08 ± 0.60



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

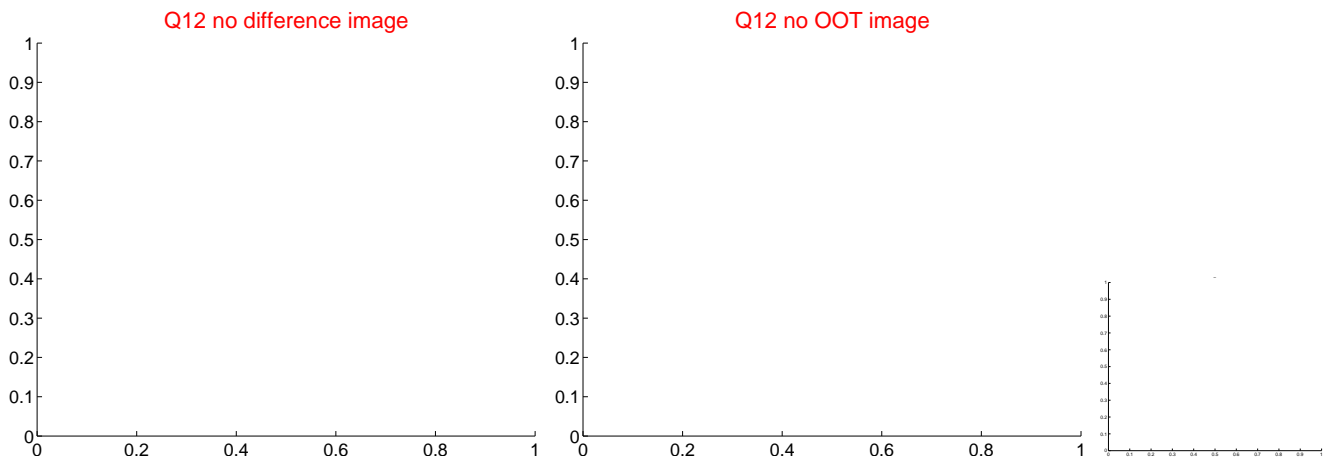
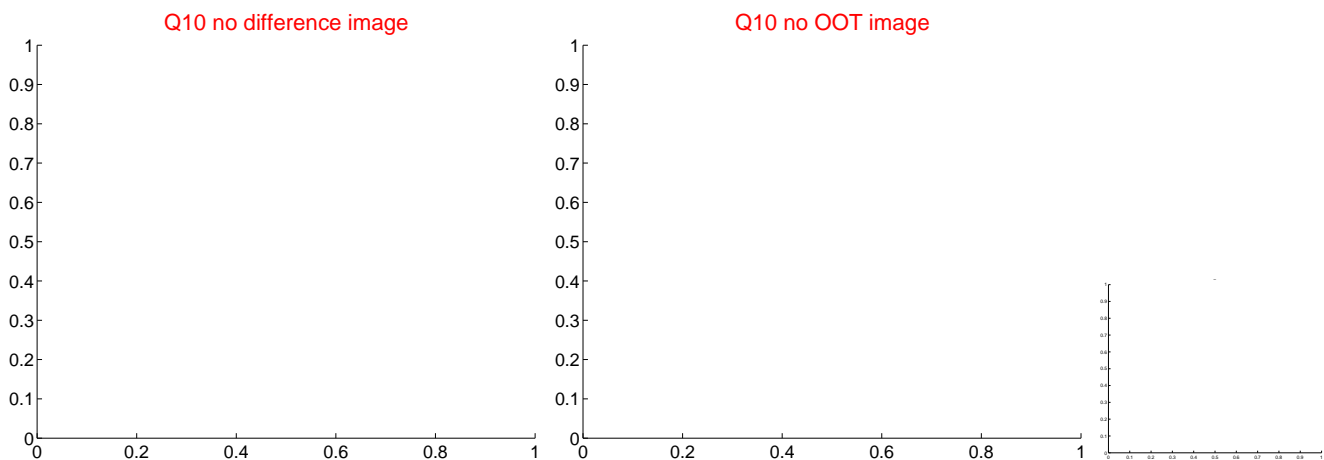
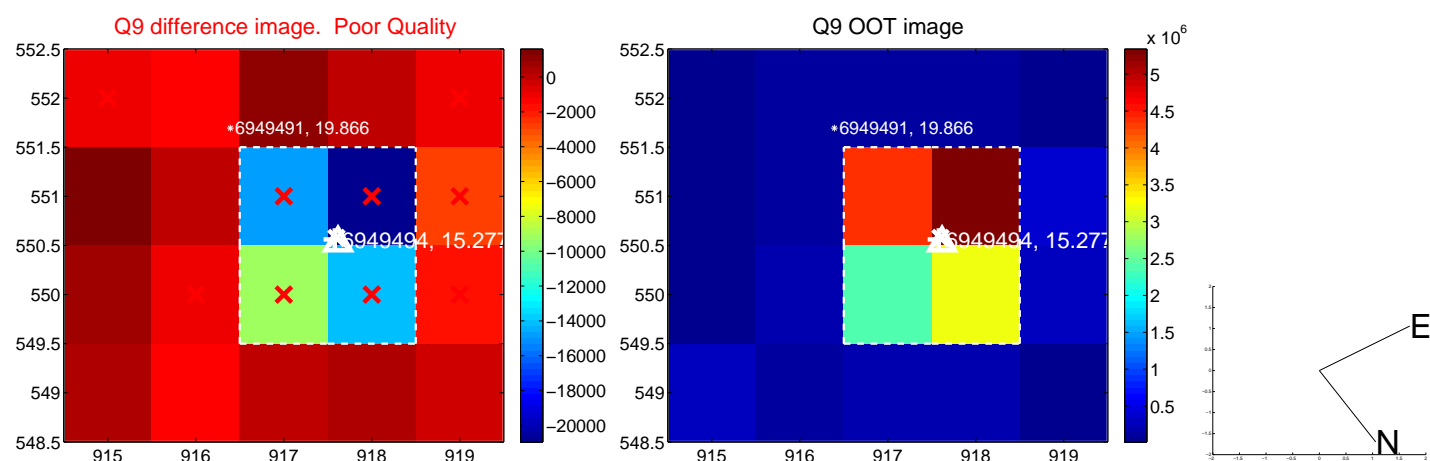
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



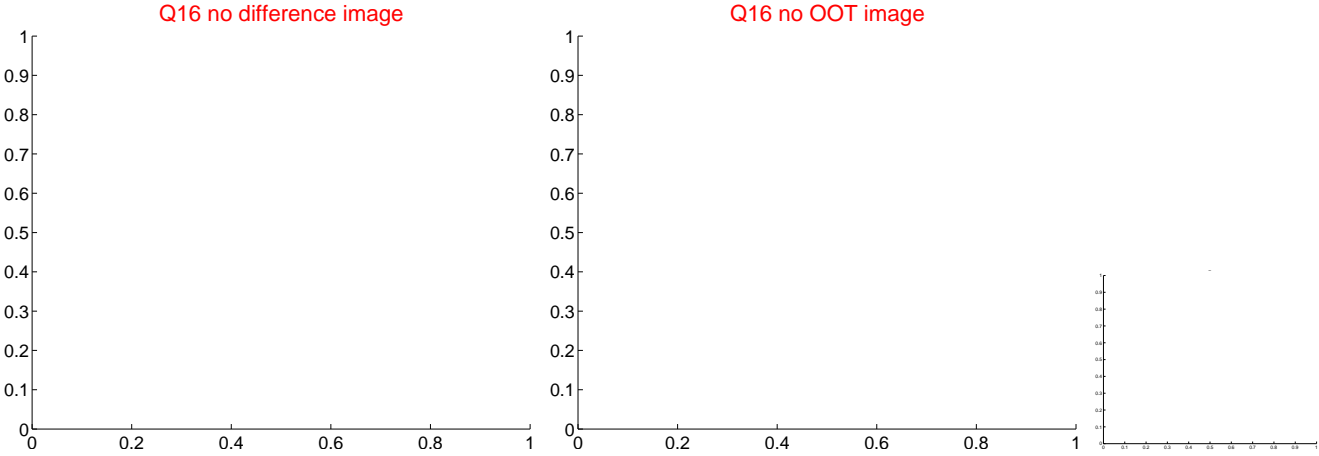
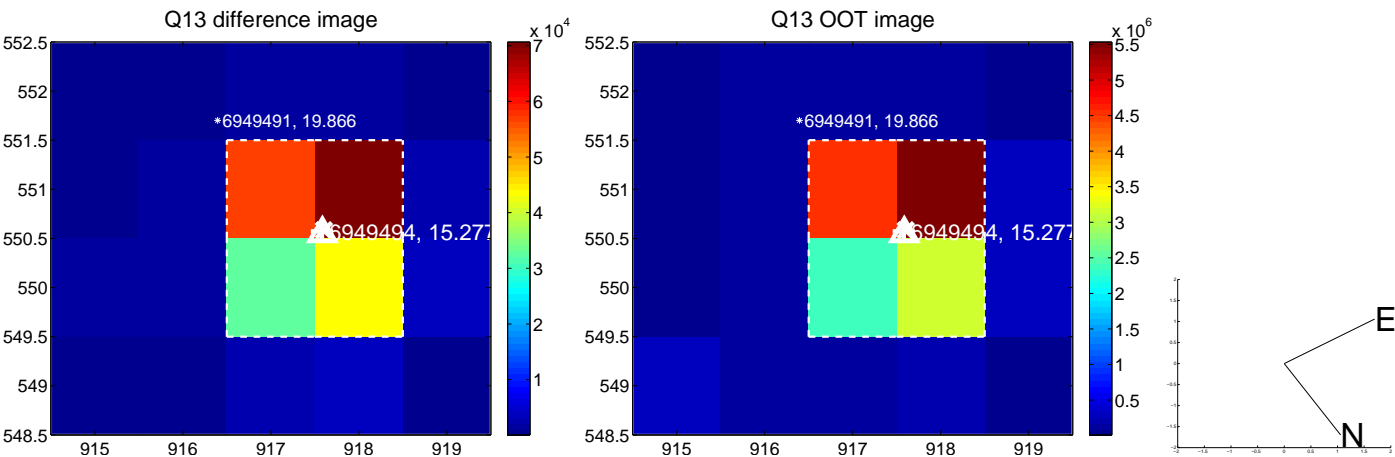
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



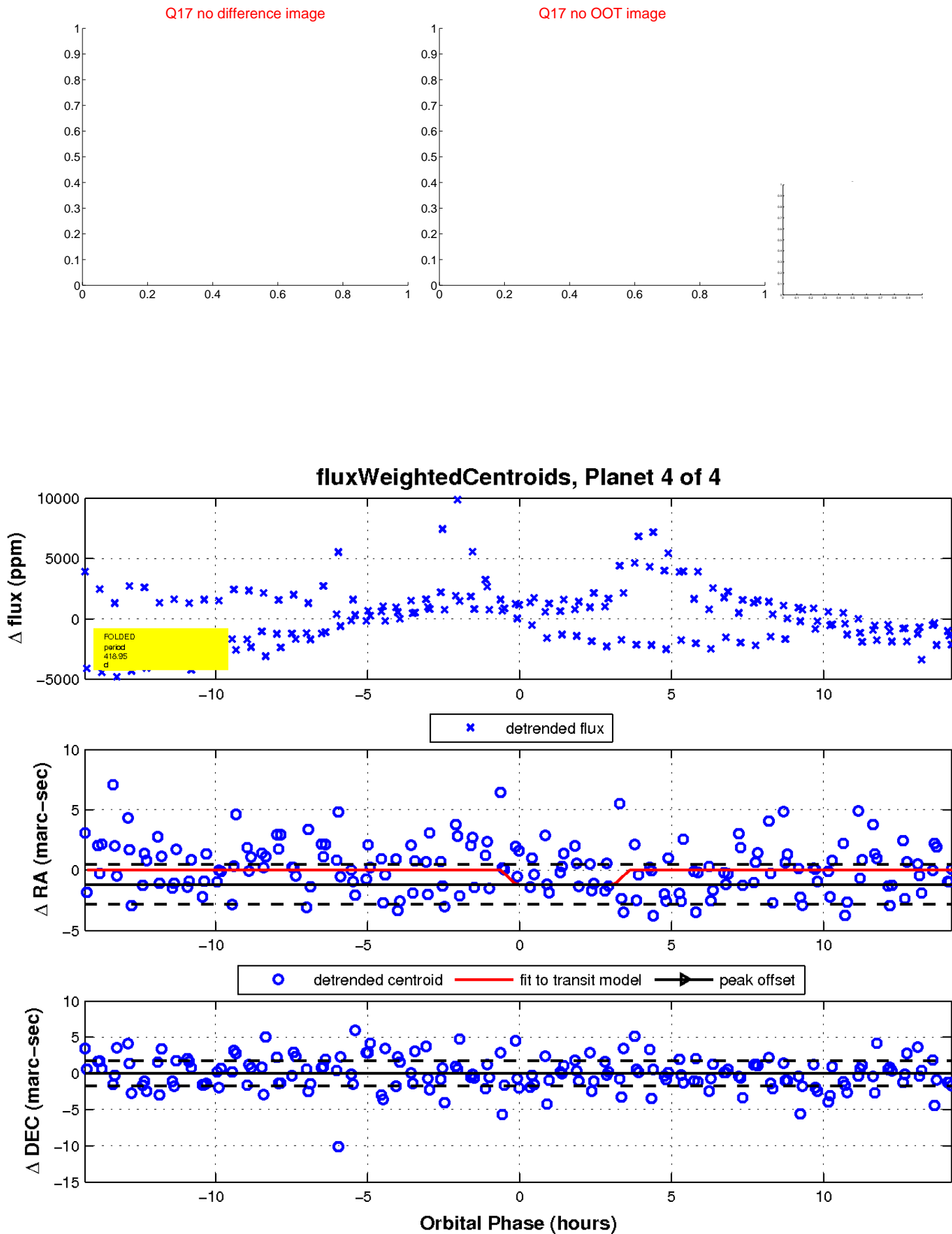
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

