

KIC 005616194

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})
005616194-01	OBS	No	0.621787	132.204068	20.2	1.400	11.1	0.6	1.45	6605	0.79	16679.18
005616194-02	OBS	No	70.327777	198.244618	344.8	80.478	8.9	1.5	1.45	6605	2.77	30.49
005616194-04	OBS	No	66.491949	168.462867	2674.7	5.220	7.7	5.3	1.45	6605	7.99	32.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005616194-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
005616194-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005616194-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

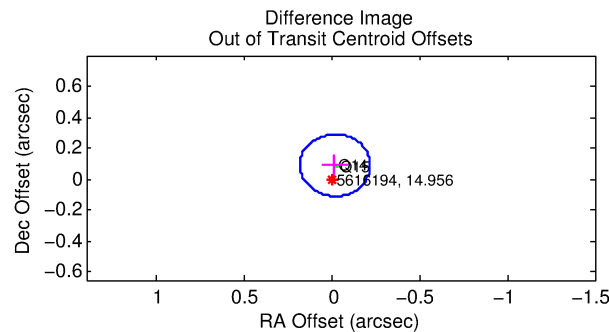
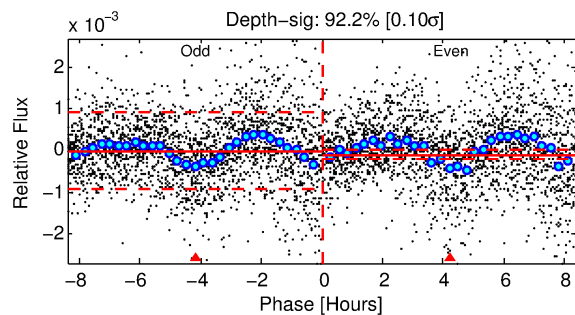
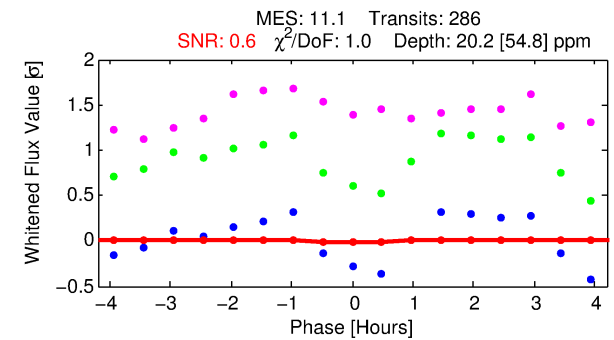
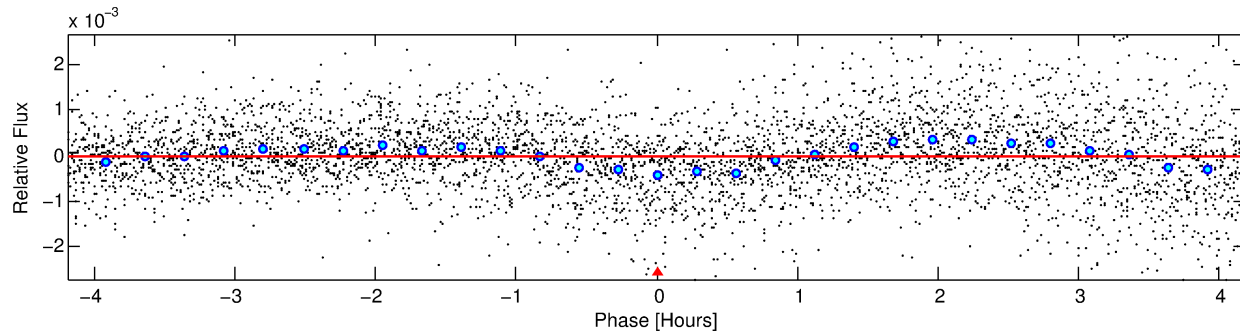
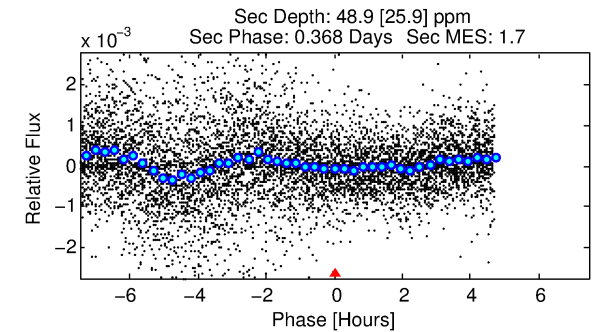
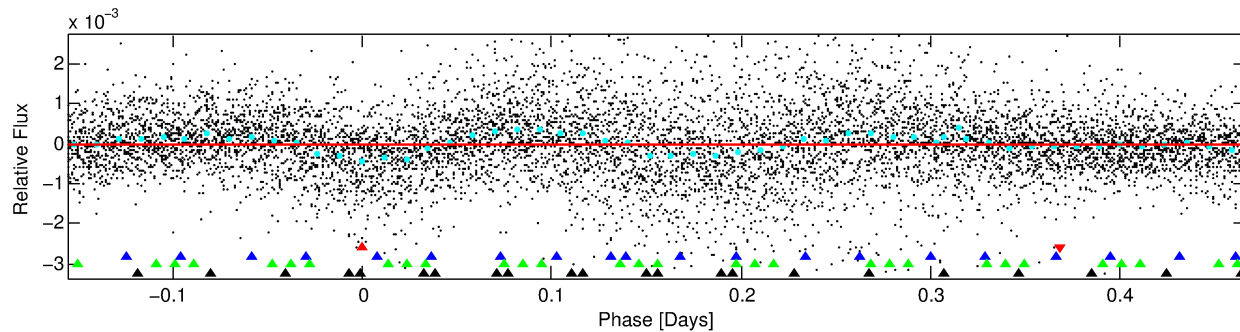
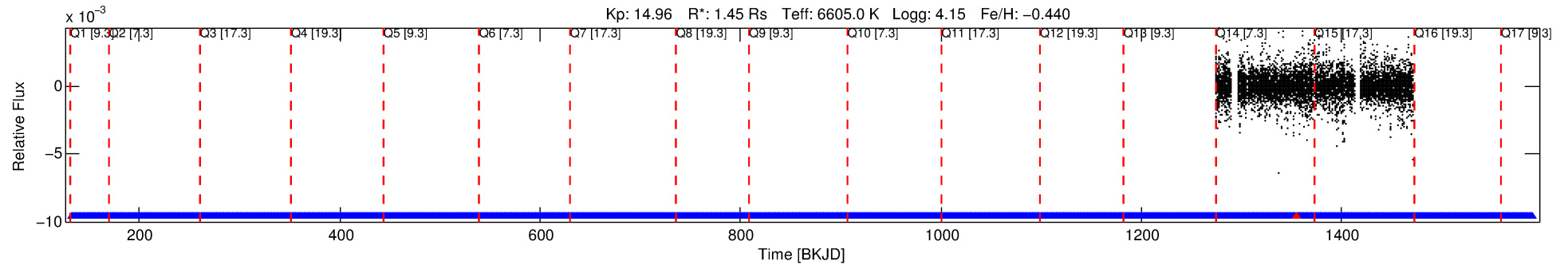
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005616194-01

No Significant Match Found

DV One-Page Summary

KIC: 5616194 Candidate: 1 of 4 Period: 0.622 d



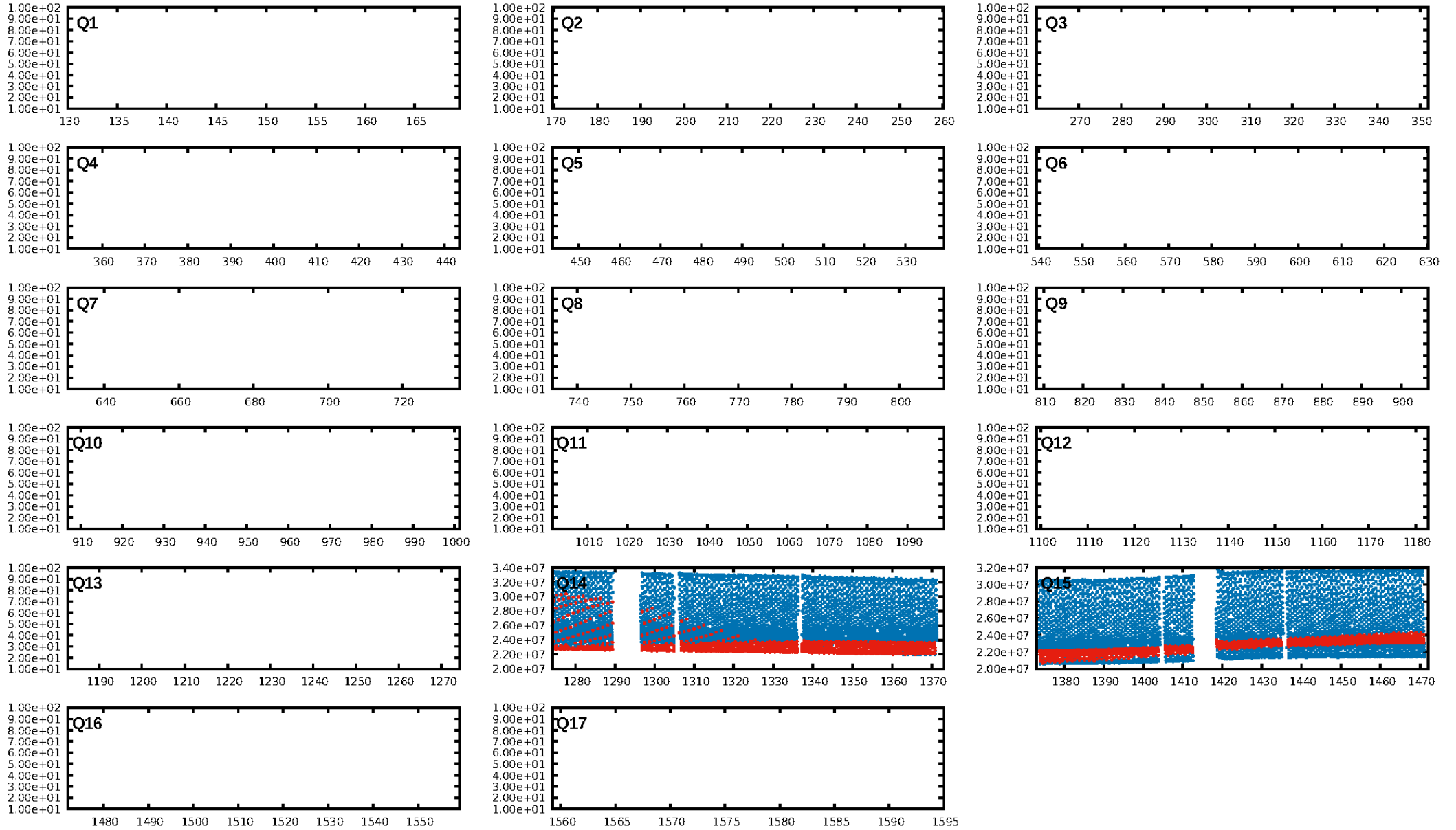
DV Fit Results:

Period = 0.62179 [0.00019] d
Epoch = 132.2041 [0.0260] BKJD
Rp/R* = 0.0050 [0.0209]
a/R* = 1.58 [23.29]
b = 0.93 [3.42]
Seff = 16679.18 [6810.03]
Teq = 2898 [296] K
Rp = 0.79 [3.32] Re
a = 0.0147 [0.0036] AU
Ag = 9.32 [78.44] [0.11σ]
Teffp = 7828 [16459] K [0.30σ]

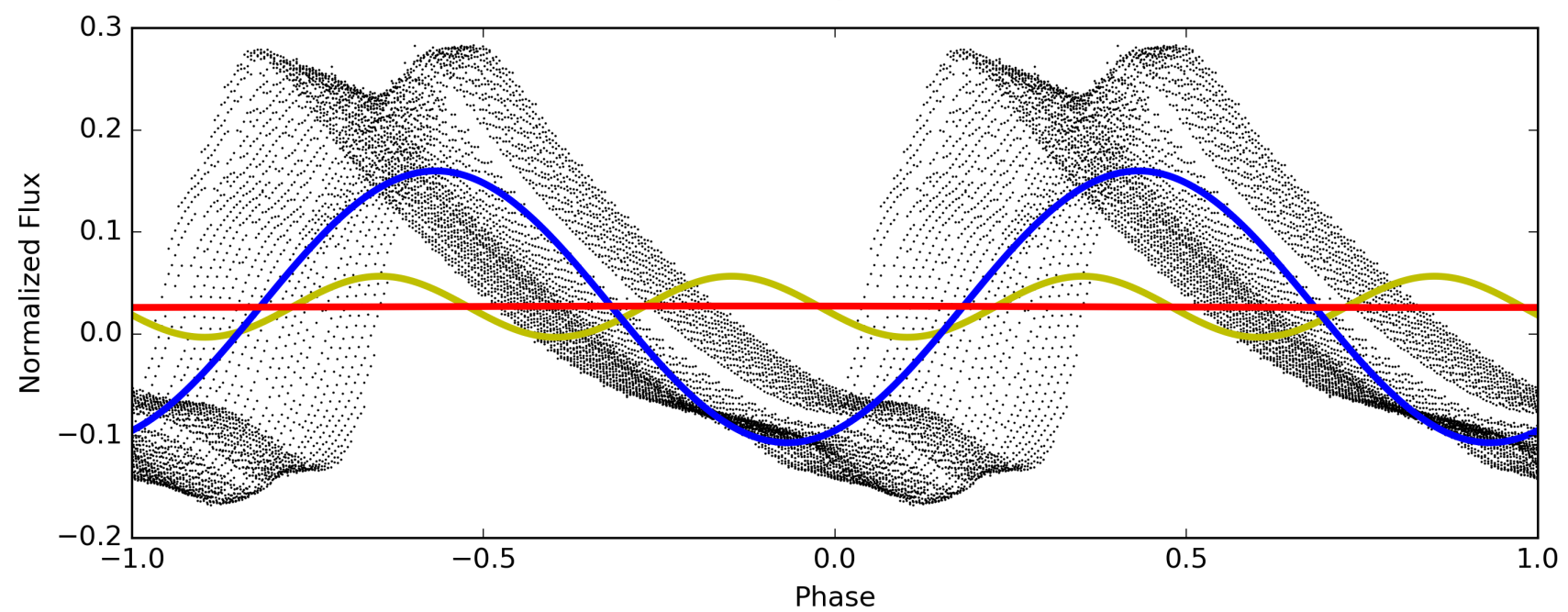
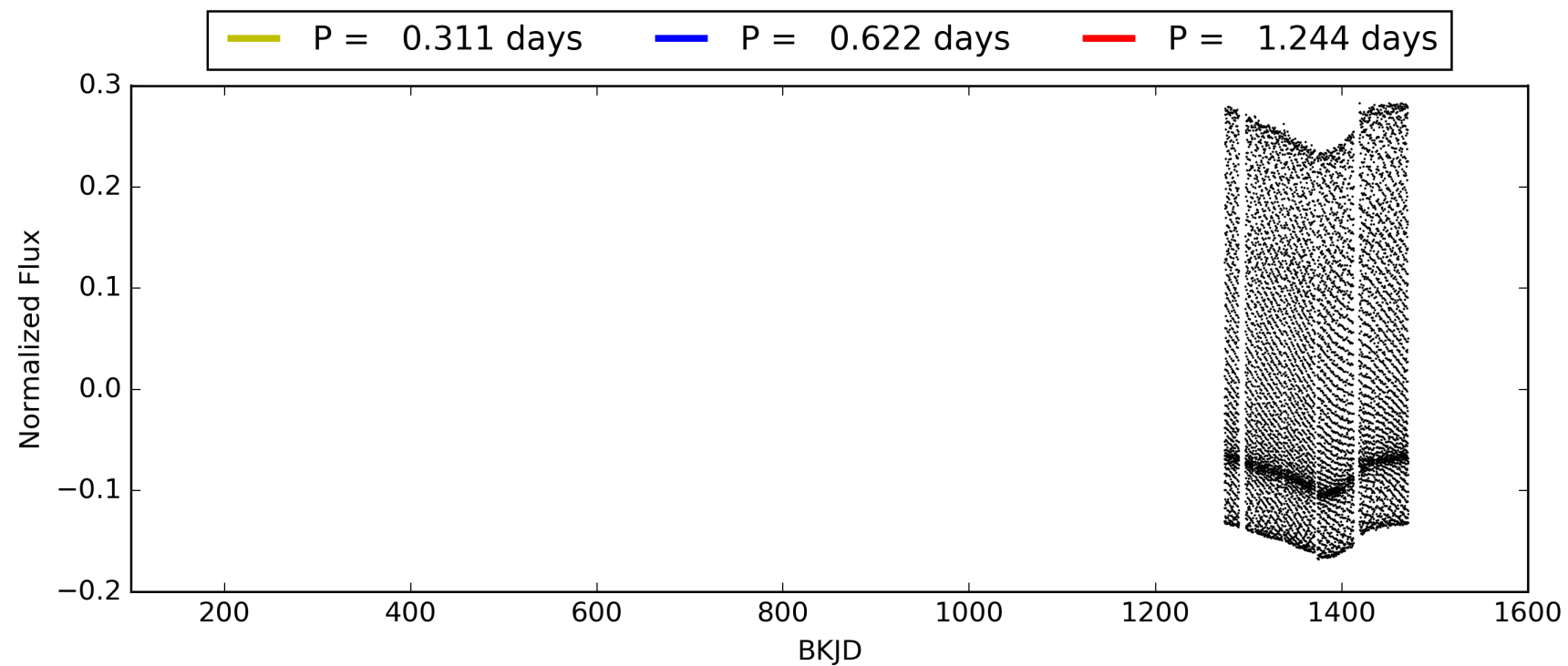
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [305.22σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.51e-21
RollingBand-fgt: 1.00 [285/286]
GhostDiagnostic-chr: -0.1989
Centroid-sig: 0.0%
Centroid-so: 60.194 arcsec [3.53σ]
OotOffset-rm: 0.092 arcsec [1.38σ]
KicOffset-rm: 0.226 arcsec [3.25σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 005616194-01, PDC Light Curves

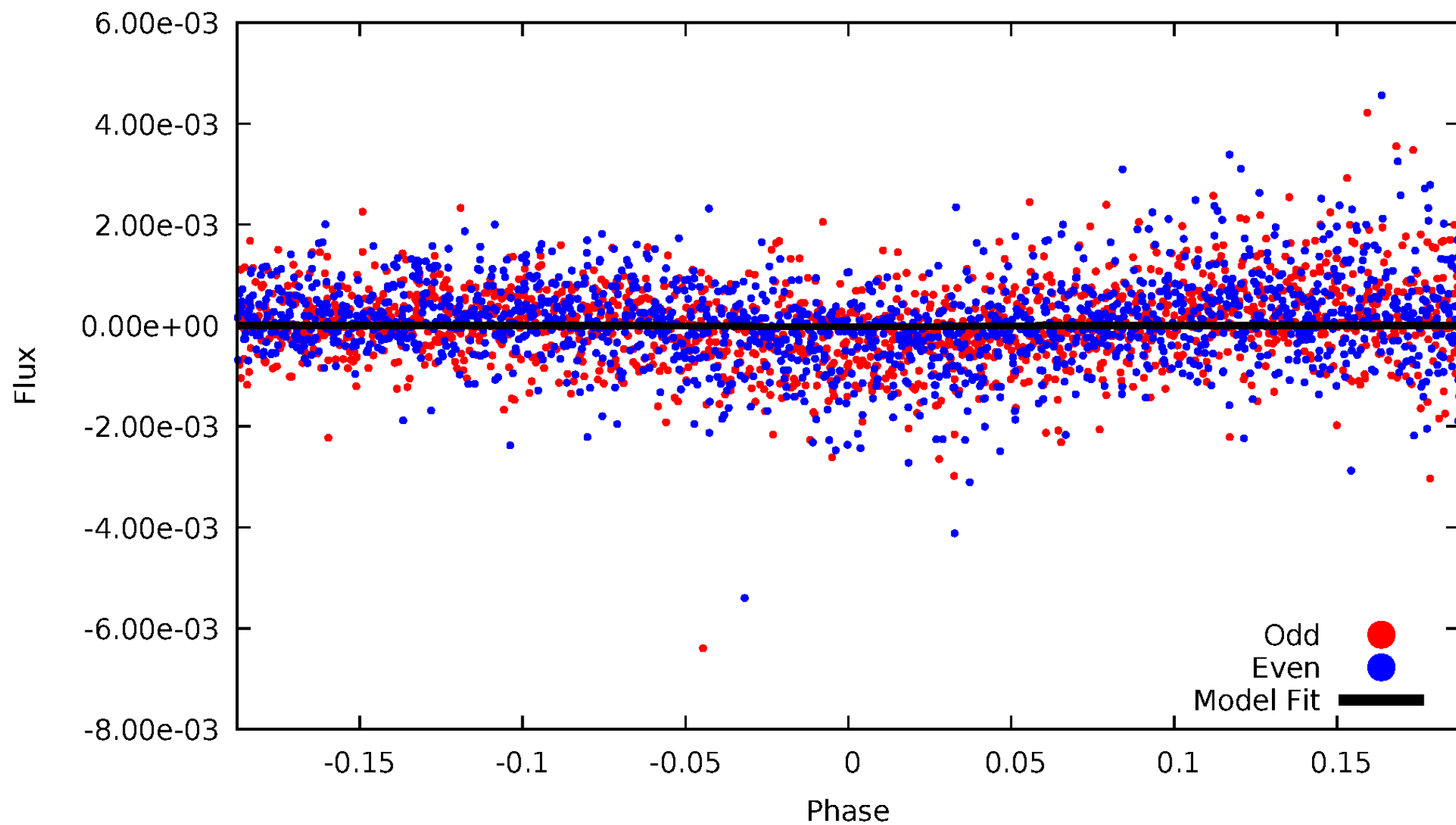


TCE 005616194-01



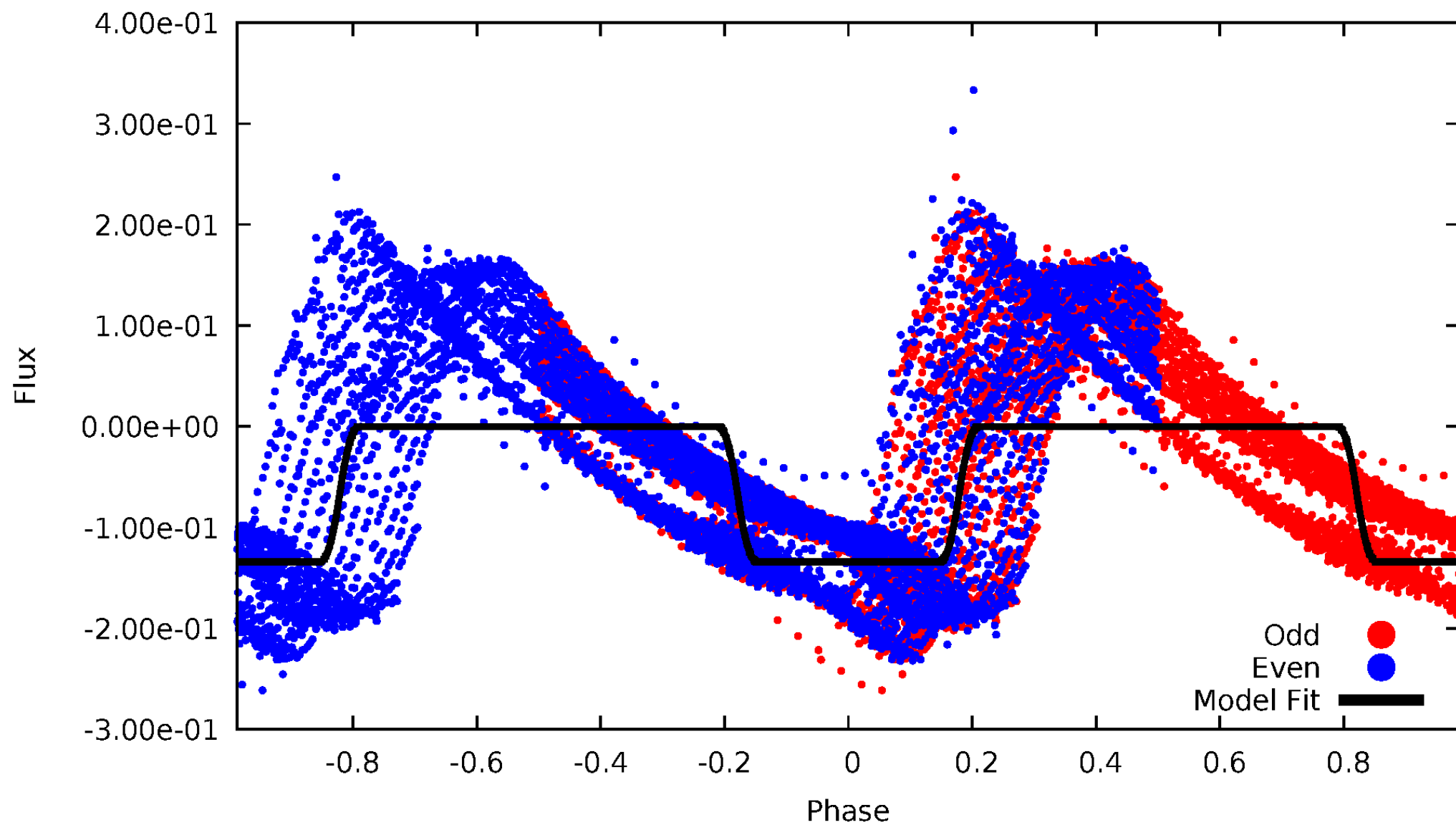
DV Odd/Even

TCE 005616194-01

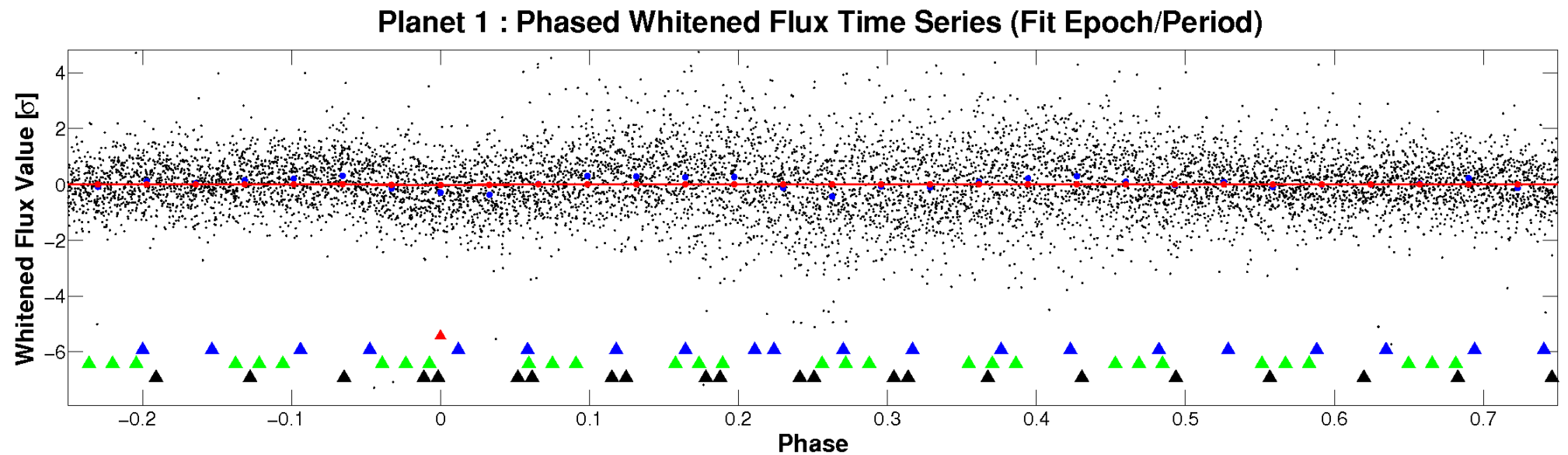
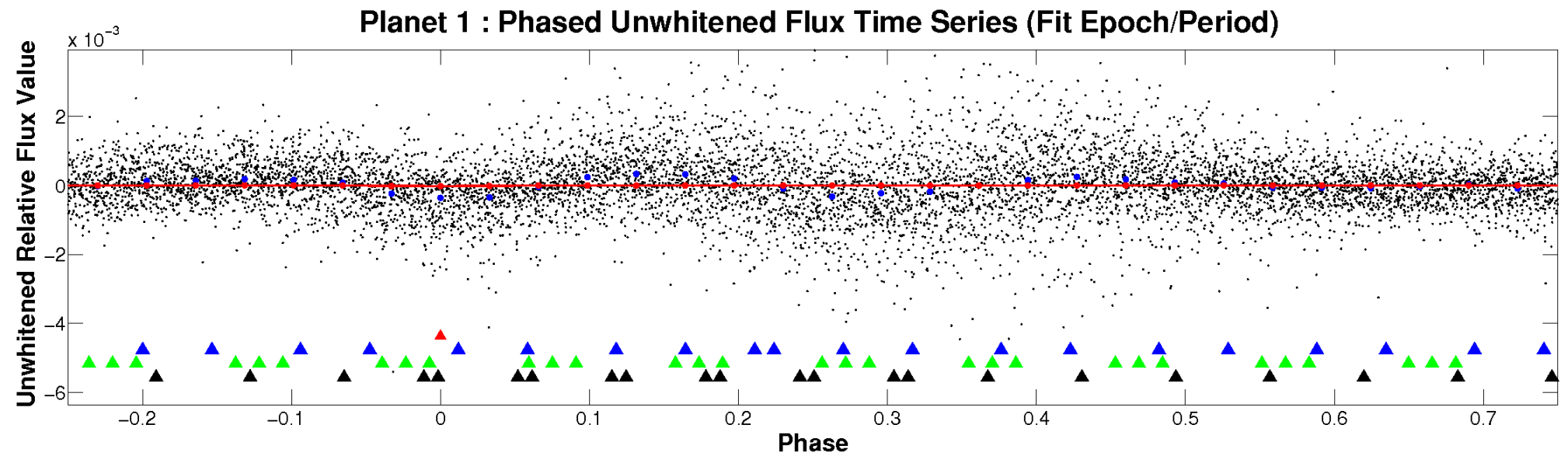


ALT Odd/Even

TCE 005616194-01

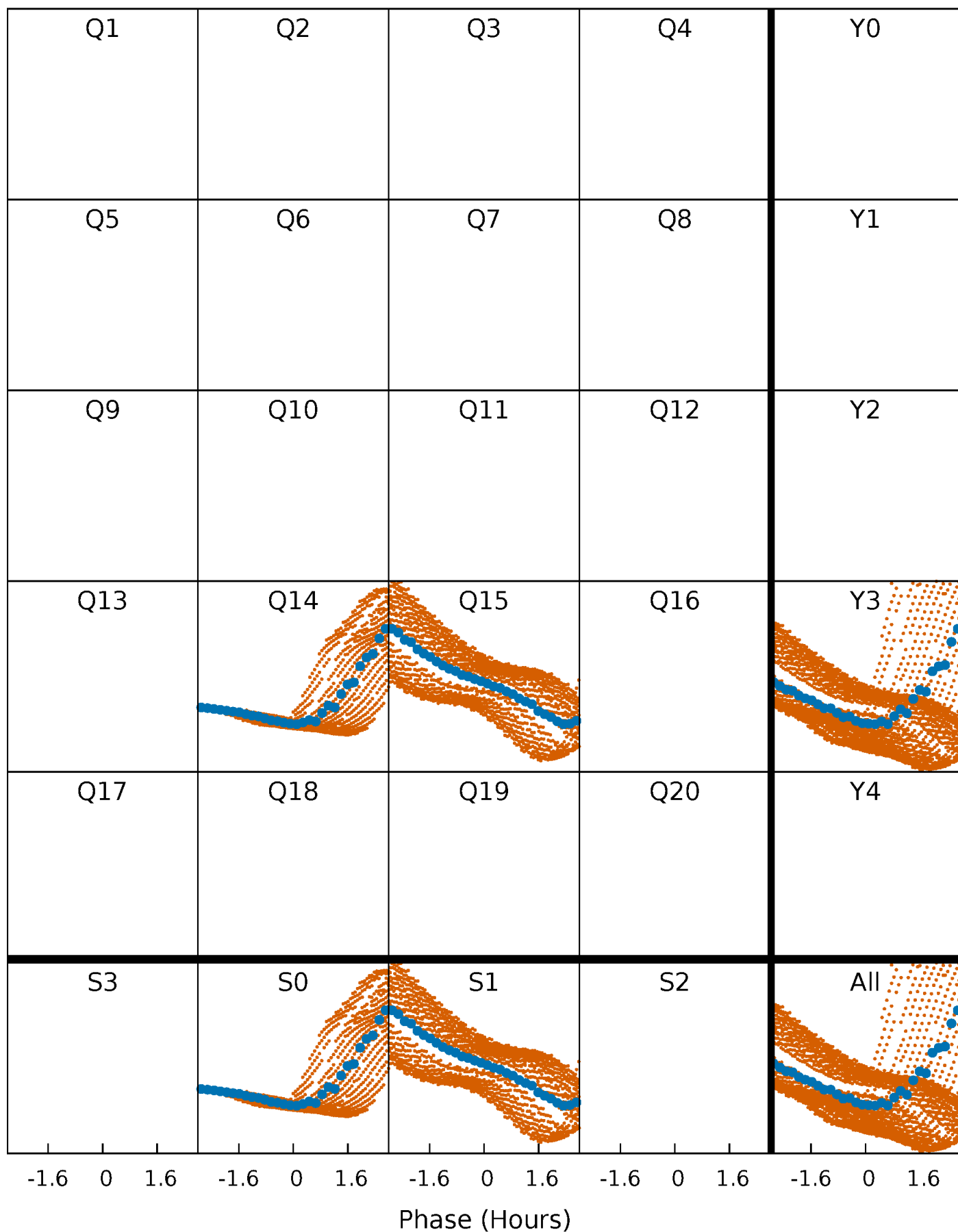


Non-Whitened Vs. Whitened Light Curve



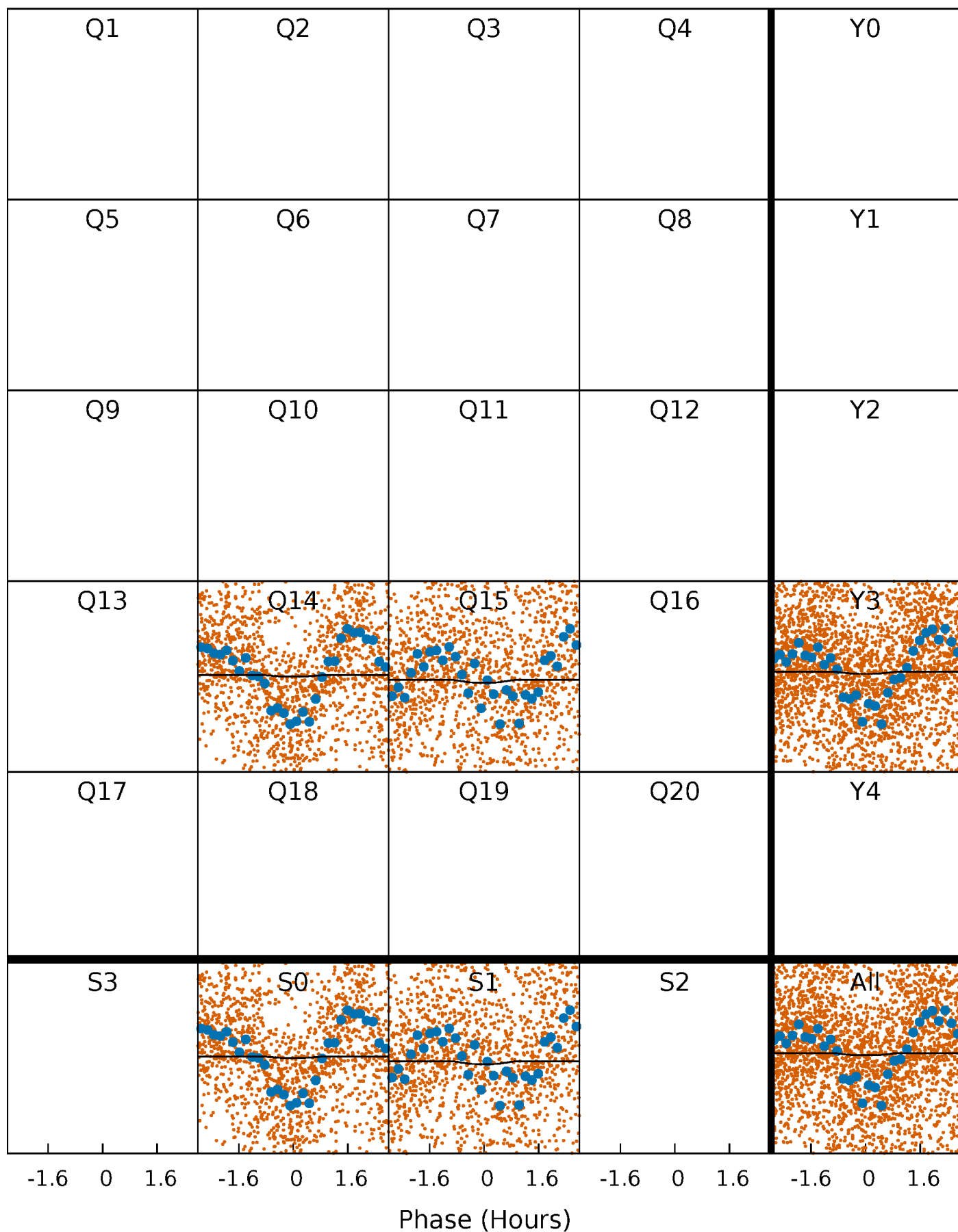
PDC Quarter-Phased Transit Curves

TCE 005616194-01 P= 0.621787 Days $T_0=132.204068$ (BKJD)



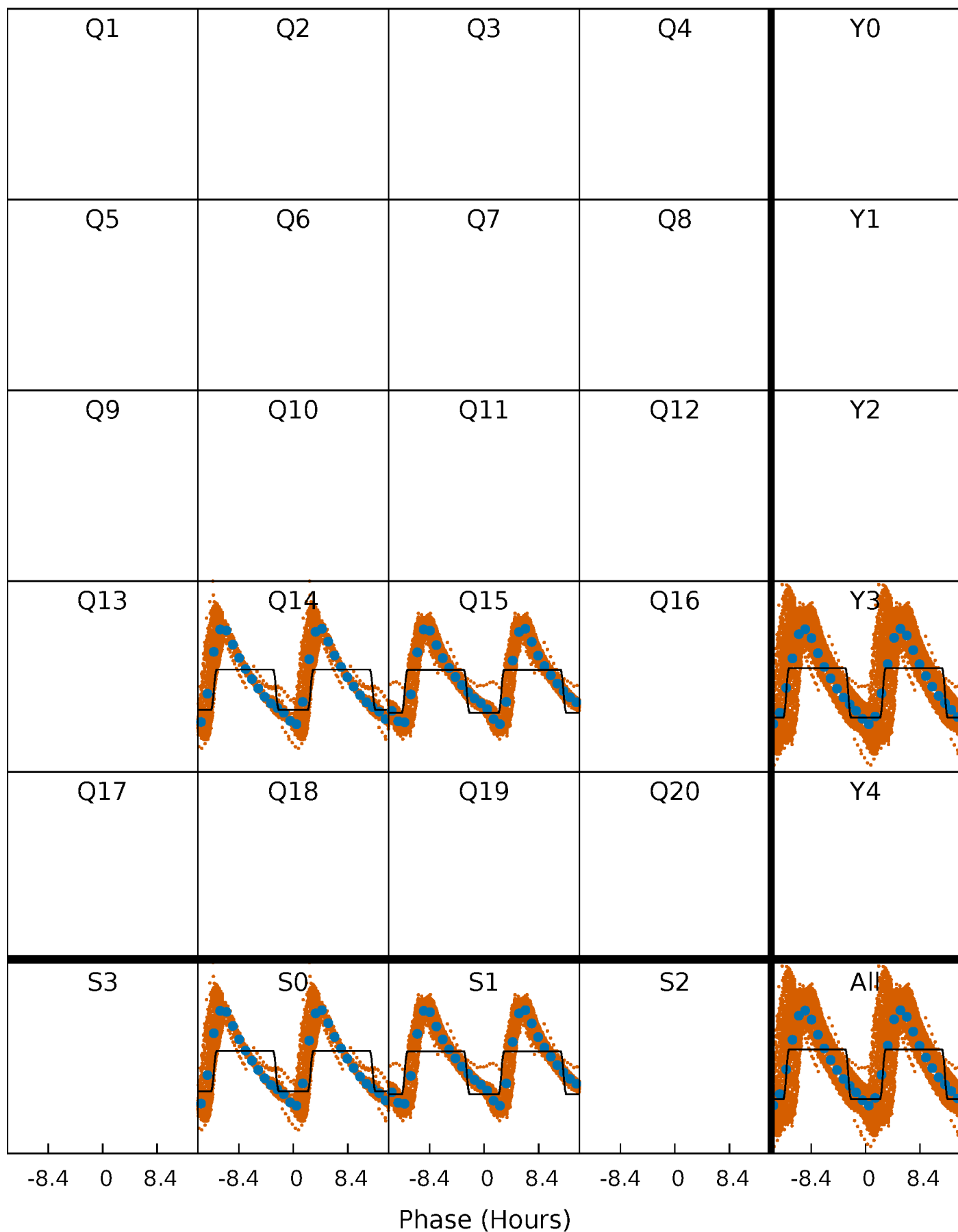
DV Quarter-Phased Transit Curves

TCE 005616194-01 P= 0.621787 Days $T_0=132.204068$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

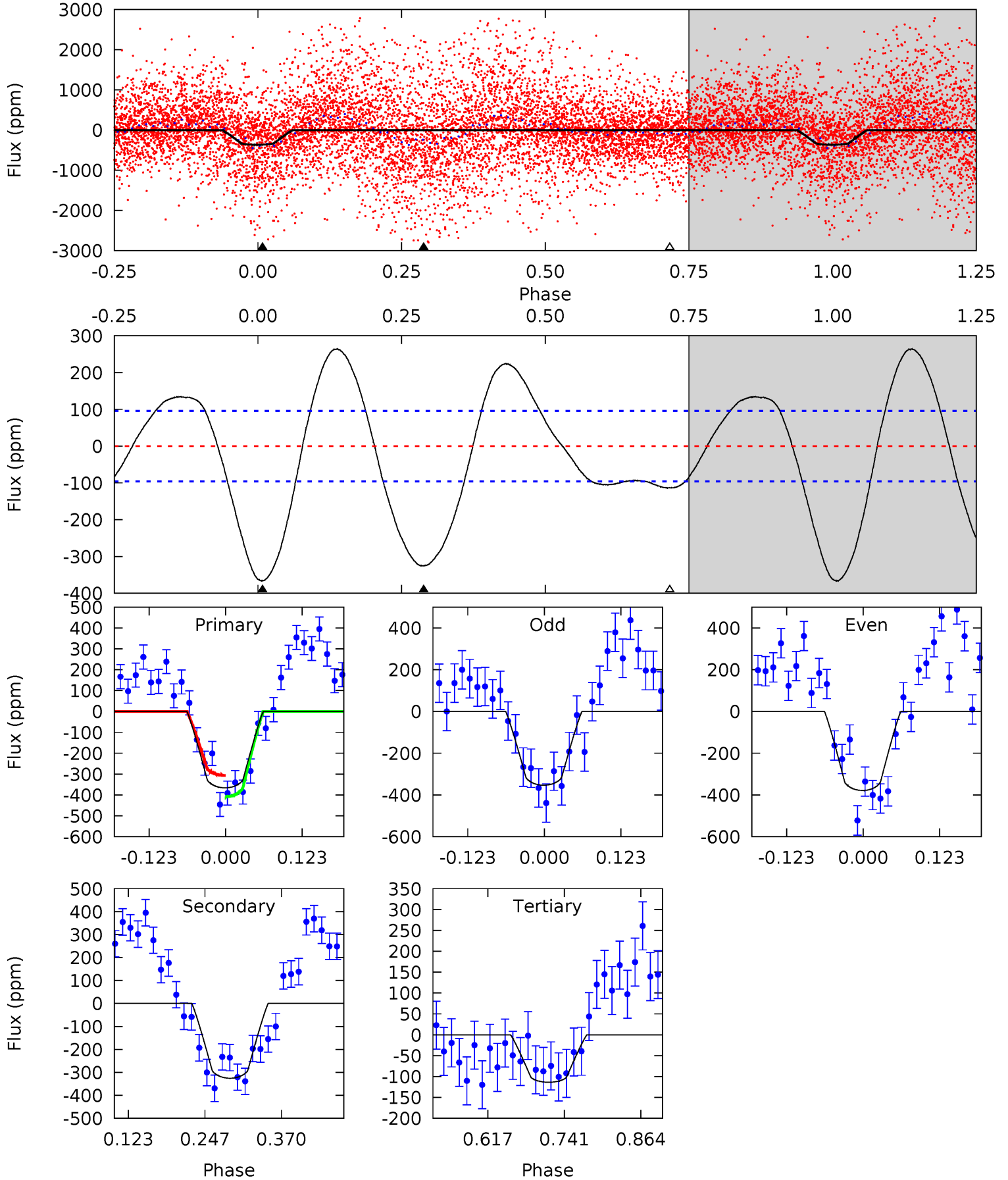
TCE 005616194-01 $P = 0.621902$ Days $T_0 = 131.979837$ (BKJD)



DV Model-Shift Uniqueness Test

005616194-01, P = 0.621787 Days, E = 132.204068 Days

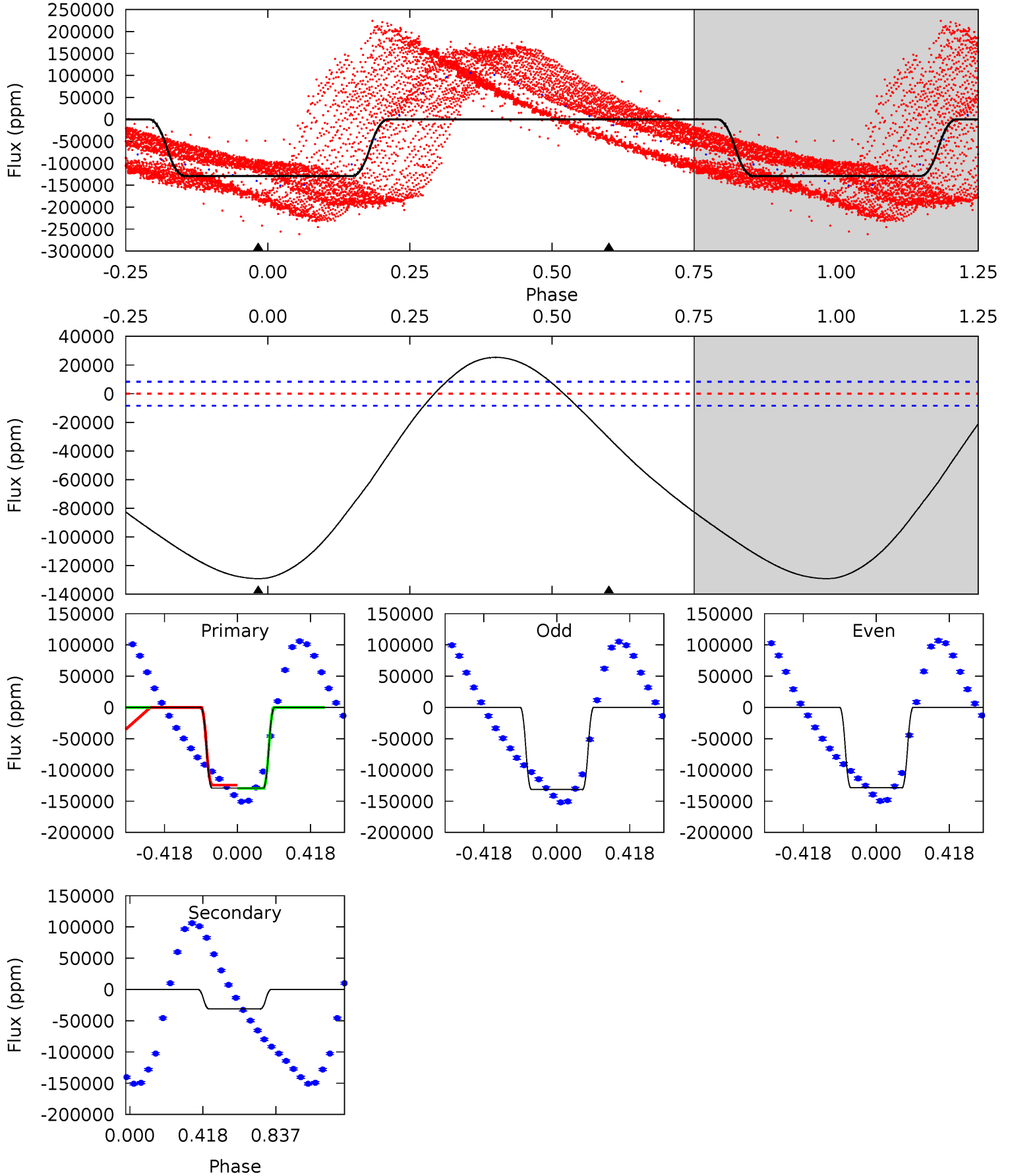
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	15.3	5.36	0	4.52	1.54	5.84	11.9	17.2	9.98	15.3	0.60	1.28	0.42	2.00



Alt Model-Shift Uniqueness Test

005616194-01, P = 0.621902 Days, E = 131.979837 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.7	15.8	0	0	4.25	0.81	6.40	65.7	65.7	15.8	15.8	0.68	0.98	0.16	1.49



Stellar Parameters For KIC 005616194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6605^{+189}_{-236}	$4.152^{+0.220}_{-0.160}$	$-0.440^{+0.250}_{-0.300}$	$1.452^{+0.391}_{-0.391}$	$1.092^{+0.178}_{-0.134}$	$0.503^{+0.619}_{-0.243}$
	+3%/-4%	+5%/-4%	+57%/-68%	+27%/-27%	+16%/-12%	+123%/-48%
Source	KIC0	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 005616194-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-326 ± 21	$2.45^{+2.68}_{-1.75}$	4023^{+277}_{-324}	6882^{+12434}_{-2183}	$6.319^{+68.019}_{-4.894}$
Alt.	-30970 ± 1966	$58.07^{+9.21}_{-8.70}$	4018^{+298}_{-296}	4459^{+215}_{-214}	$1.136^{+0.433}_{-0.270}$

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 $A_{obs} \gg 1.0$

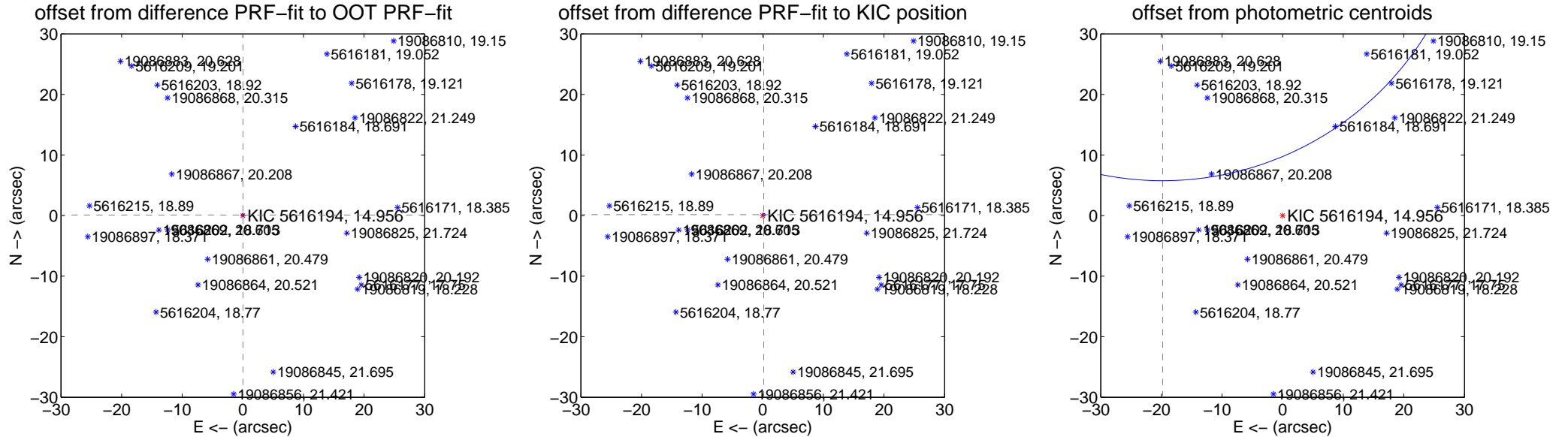
DV Centroid Data

Supplemental centroid analysis for 005616194-01. Kepler magnitude: 14.96. Transit SNR 0.60

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.092 ± 0.067	1.38	-0.017 ± 0.067	0.090 ± 0.067
PRF-fit source offset from KIC position	0.226 ± 0.070	3.25	-0.169 ± 0.067	0.150 ± 0.073
photometric centroid source offset	60.19 ± 17.03	3.53	19.80 ± 11.97	56.84 ± 17.54



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.



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

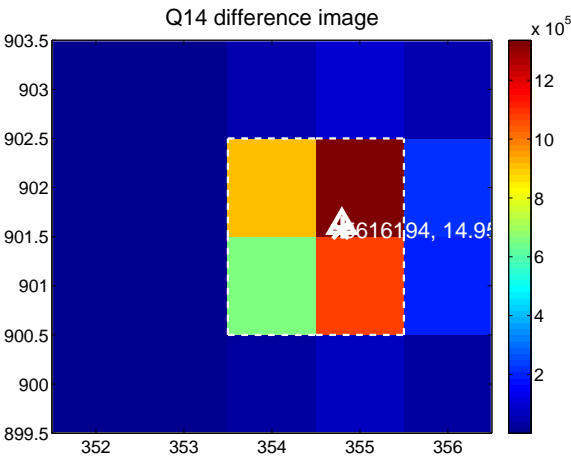
Q13 no difference image



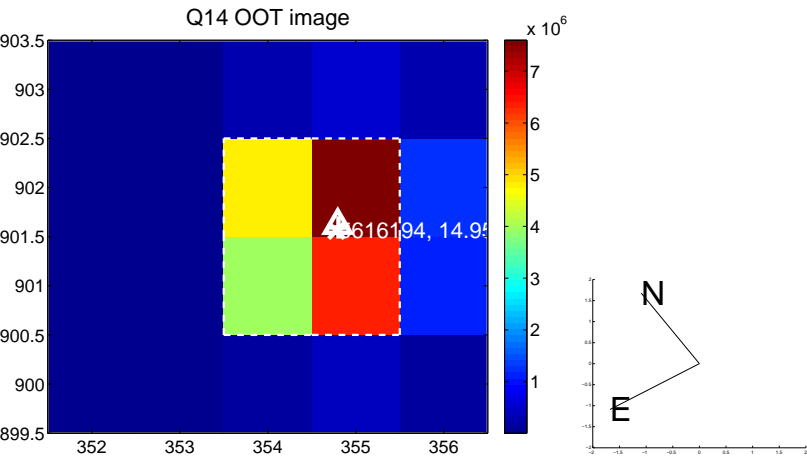
Q13 no OOT image



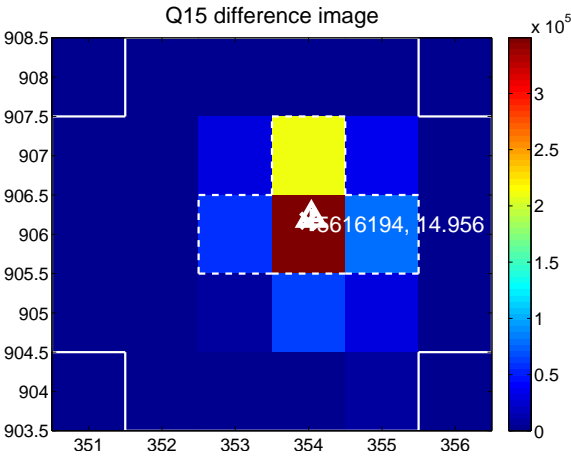
Q14 difference image



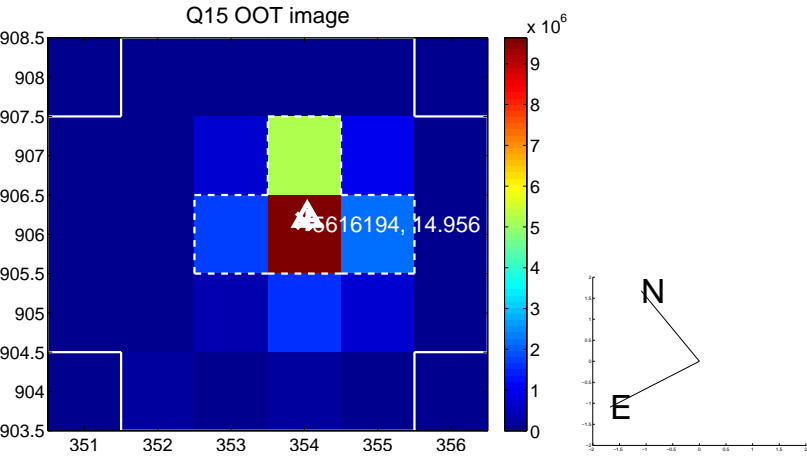
Q14 OOT image



Q15 difference image



Q15 OOT image



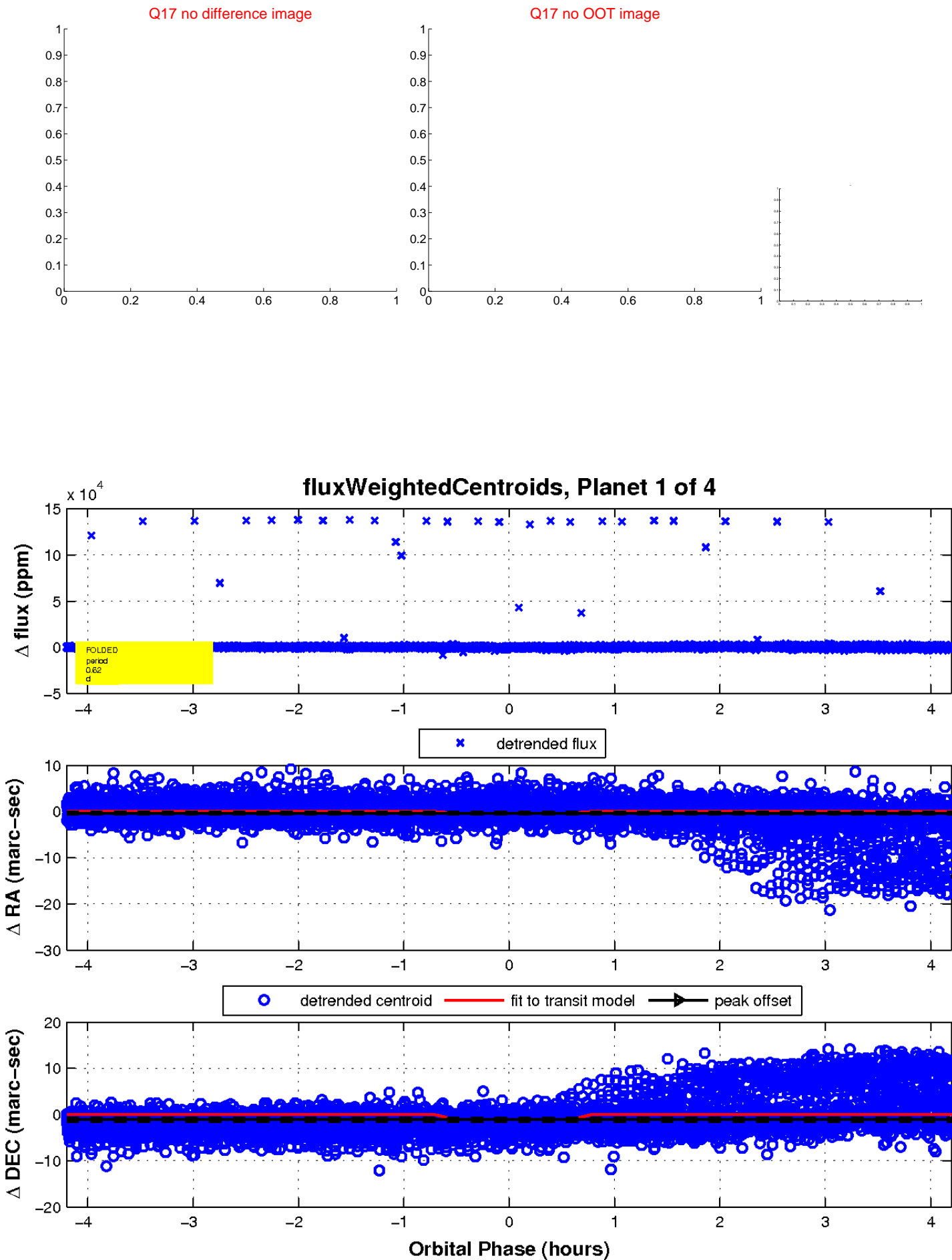
Q16 no difference image



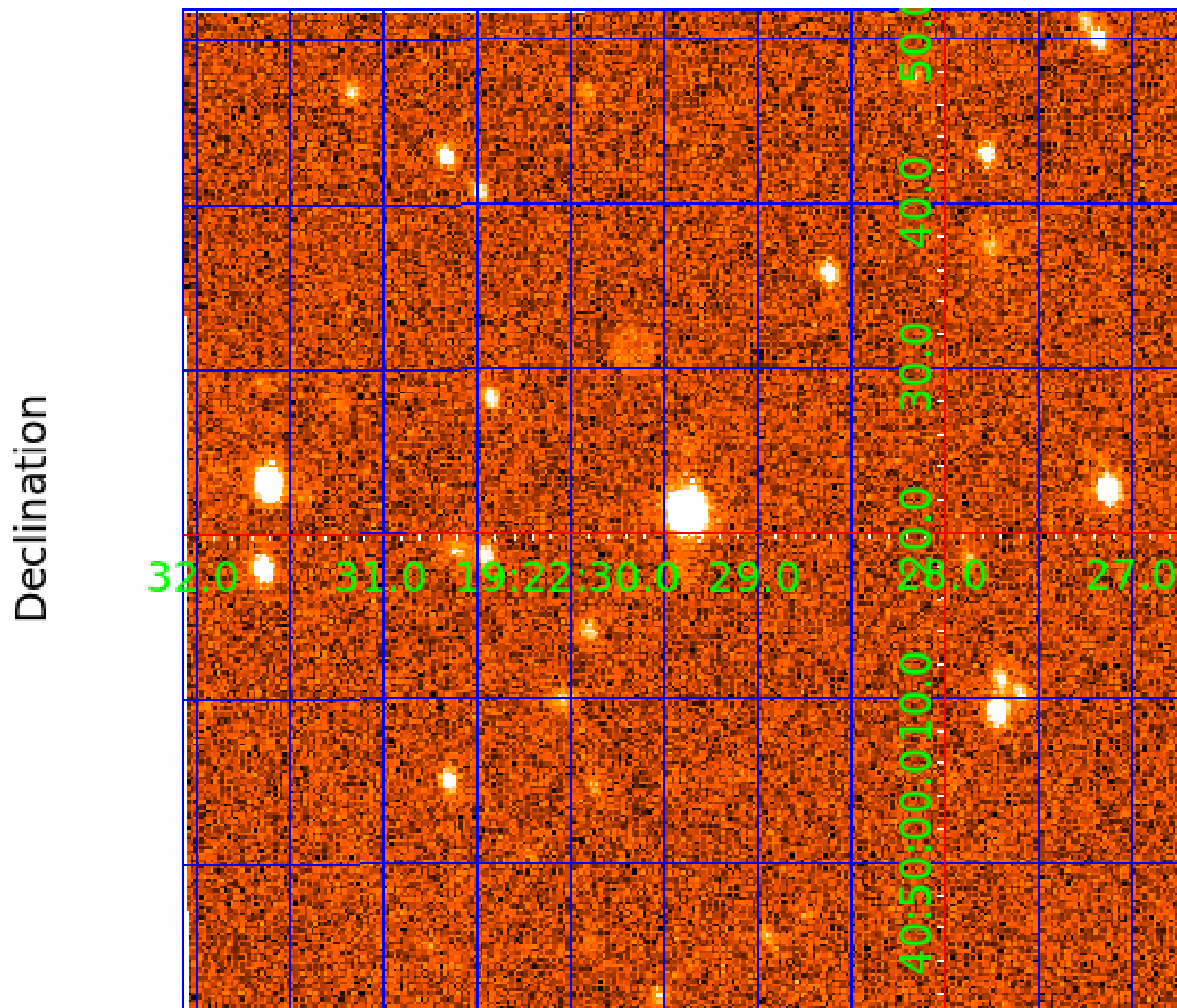
Q16 no OOT image



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



UKIRT Image



KIC 005616194

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})
005616194-01	OBS	No	0.621787	132.204068	20.2	1.400	11.1	0.6	1.45	6605	0.79	16679.18
005616194-02	OBS	No	70.327777	198.244618	344.8	80.478	8.9	1.5	1.45	6605	2.77	30.49
005616194-04	OBS	No	66.491949	168.462867	2674.7	5.220	7.7	5.3	1.45	6605	7.99	32.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005616194-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
005616194-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005616194-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

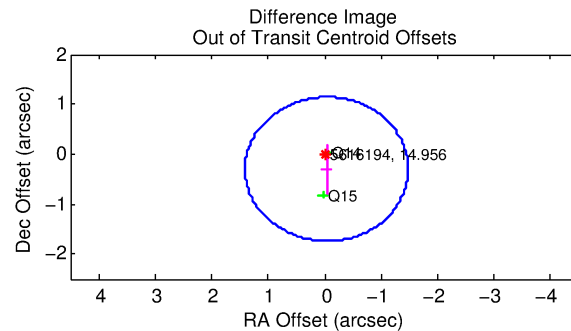
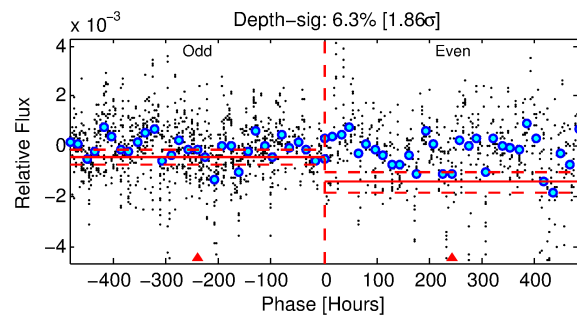
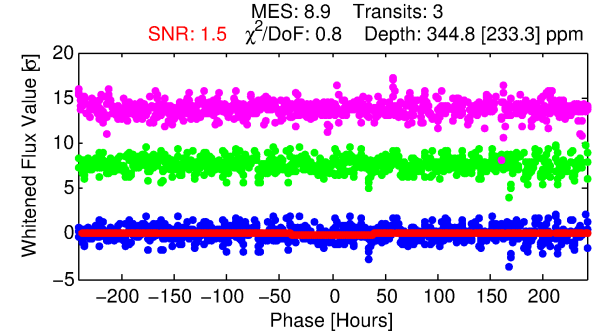
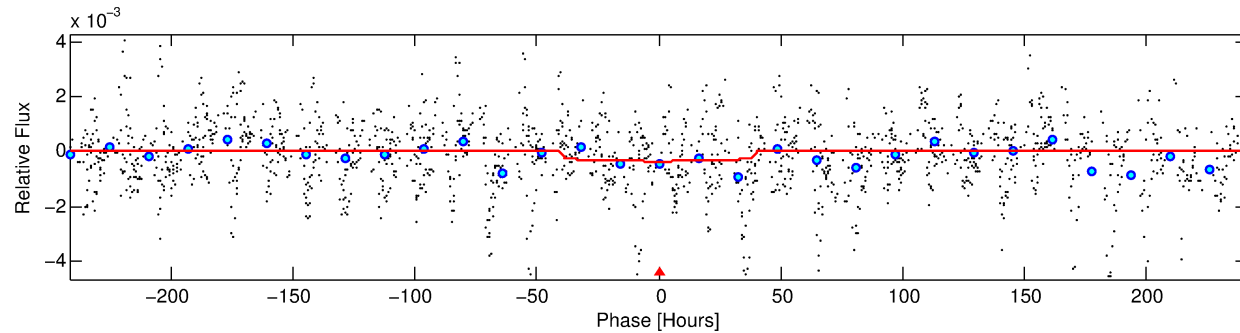
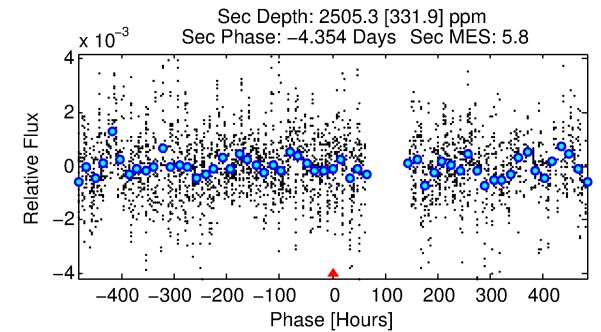
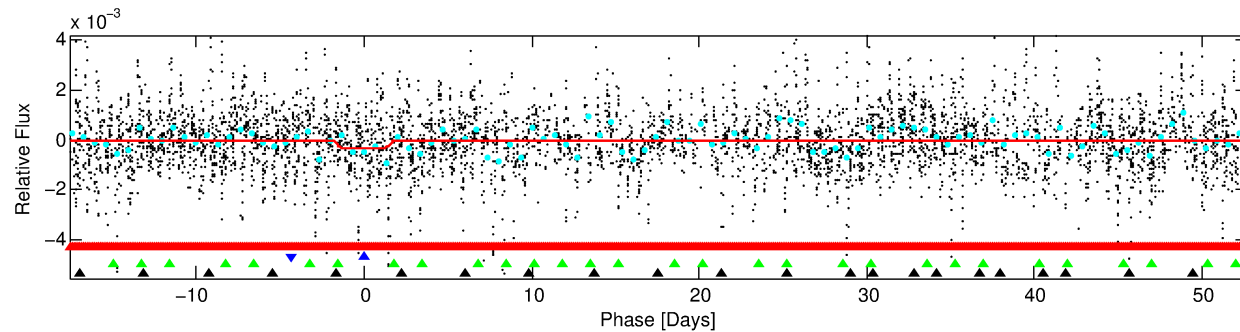
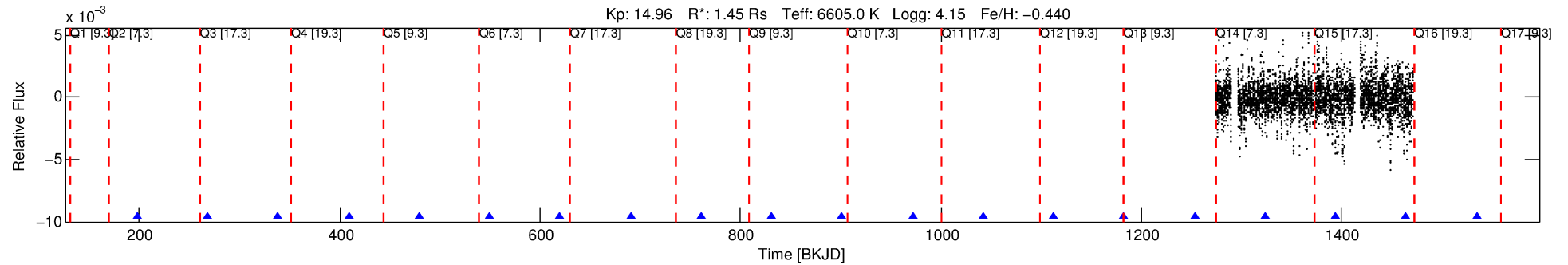
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005616194-02

No Significant Match Found

DV One-Page Summary

KIC: 5616194 Candidate: 2 of 4 Period: 70.328 d



DV Fit Results:

Period = 70.32778 [0.08377] d
Epoch = 198.2446 [1.4317] BKJD
Rp/R* = 0.0175 [0.0084]
a/R* = 6.18 [11.52]
b = 0.44 [3.57]
Seff = 30.49 [12.45]
Teff = 599 [61] K
Rp = 2.77 [1.52] Re
a = 0.3434 [0.0846] AU
Ag = 21217.72 [22100.99] [0.96 σ]
Teffp = 11181 [2740] K [3.86 σ]

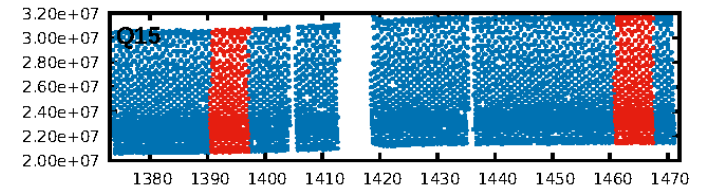
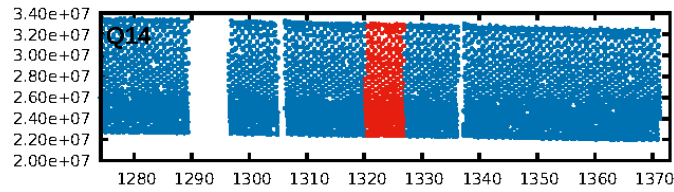
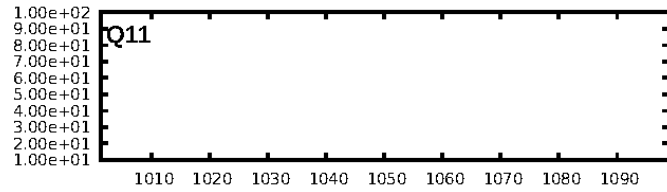
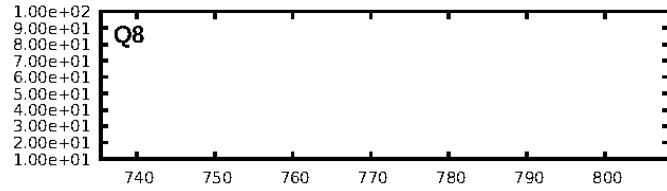
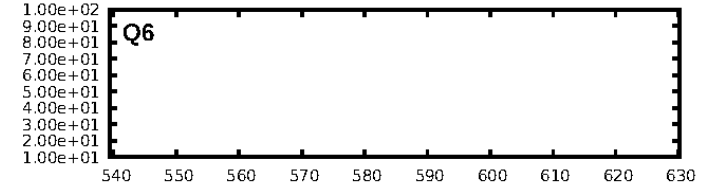
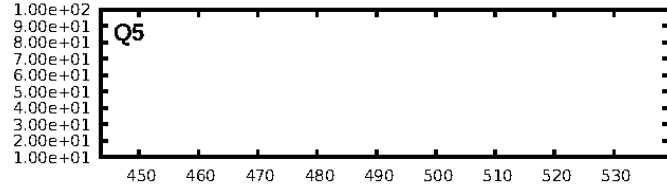
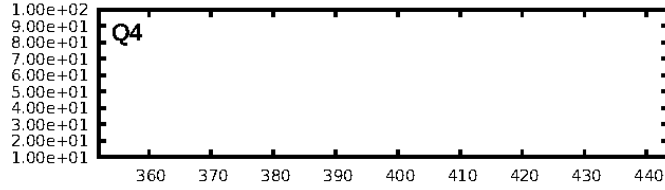
DV Diagnostic Results:

ShortPeriod-sig: 74.6% [1.14 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 84.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.44e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.131
Centroid-sig: 3.6%
Centroid-so: 1.975 arcsec [1.48 σ]
OotOffset-rm: 0.301 arcsec [0.62 σ]
KicOffset-rm: 0.352 arcsec [0.75 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
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DiffImageOverlap-fno: 0.00 [0/2]

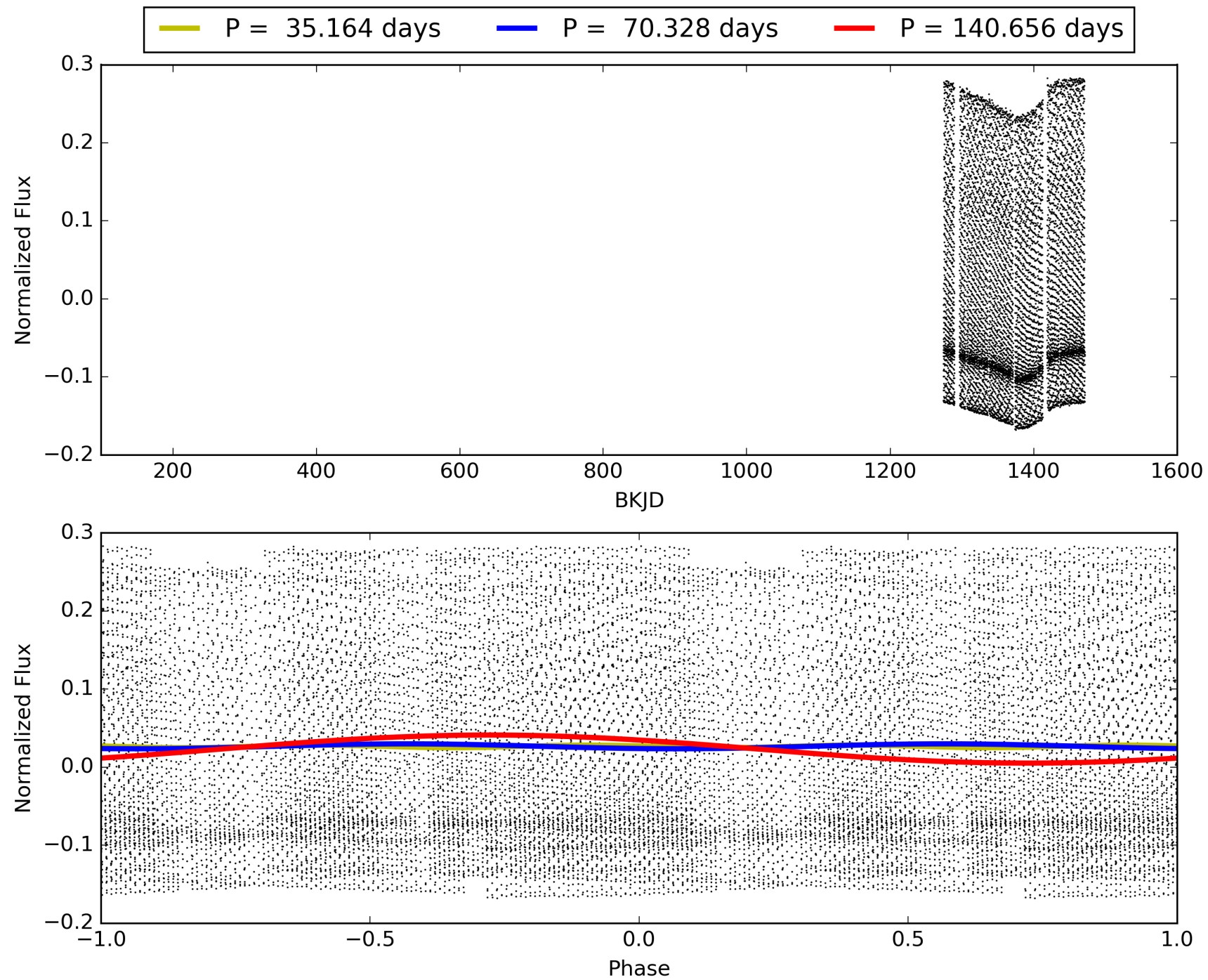
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:29:31 Z

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

TCE 005616194-02, PDC Light Curves

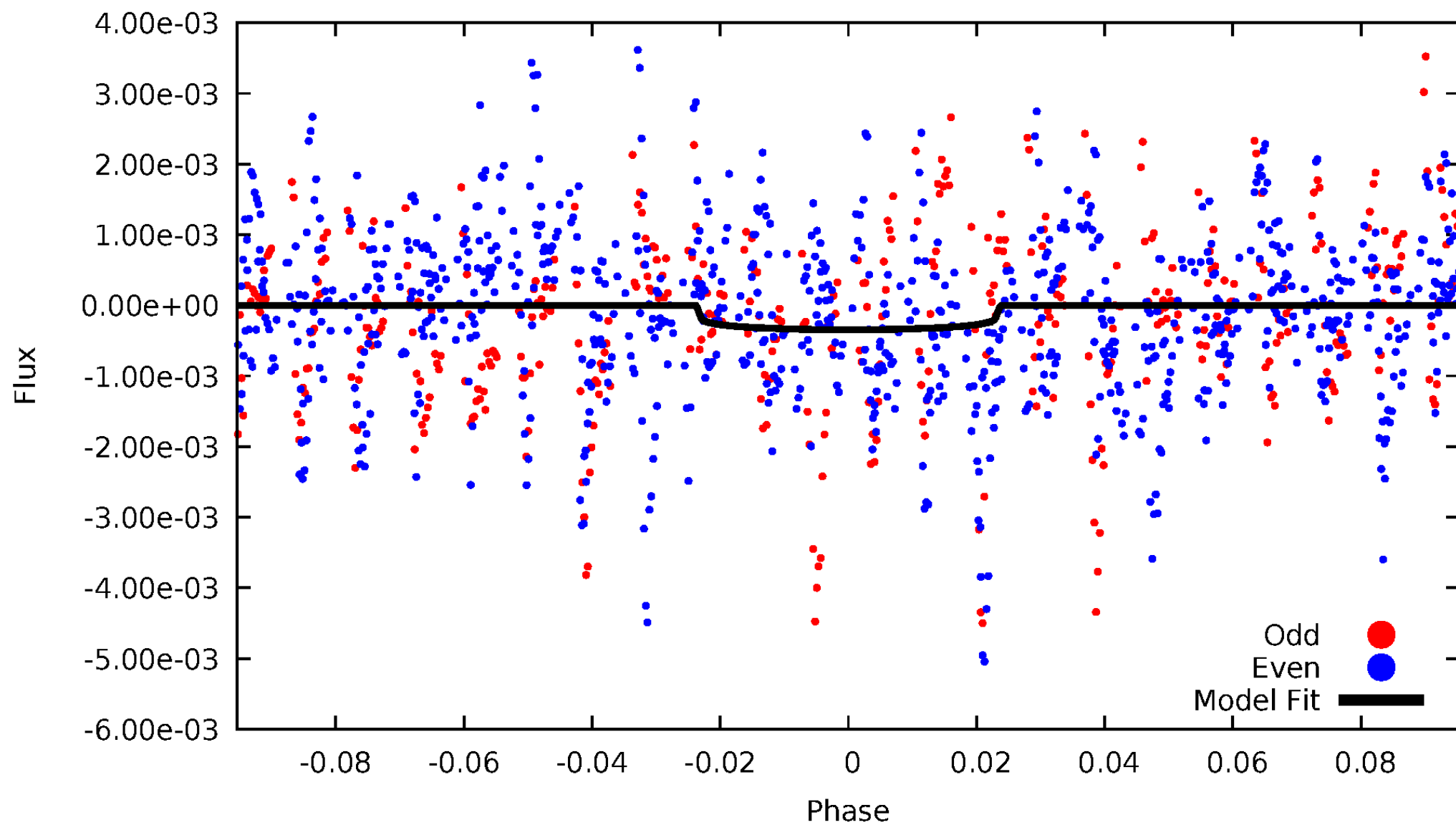


TCE 005616194-02



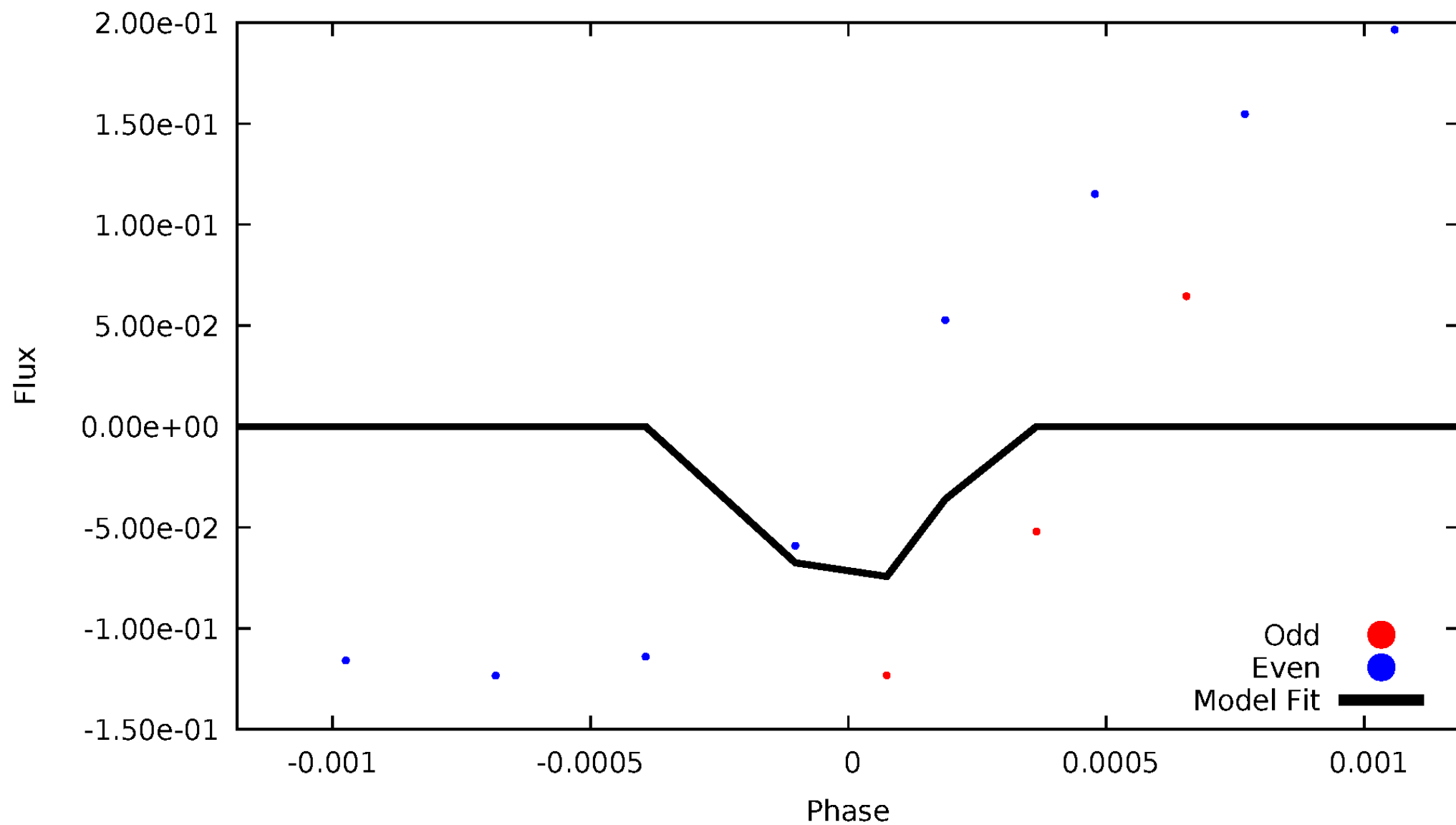
DV Odd/Even

TCE 005616194-02



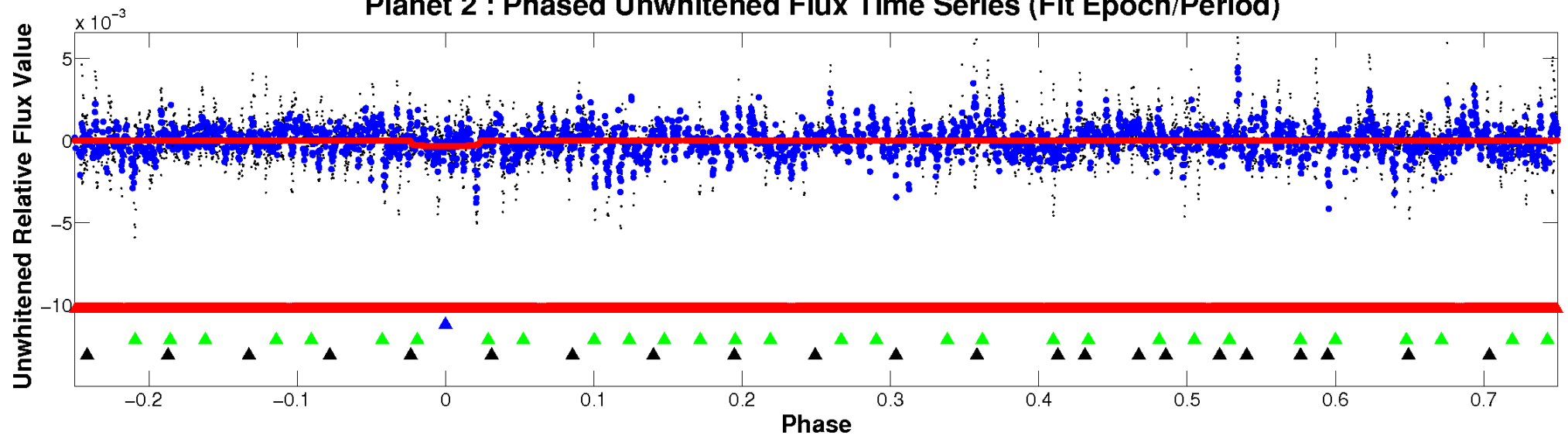
ALT Odd/Even

TCE 005616194-02

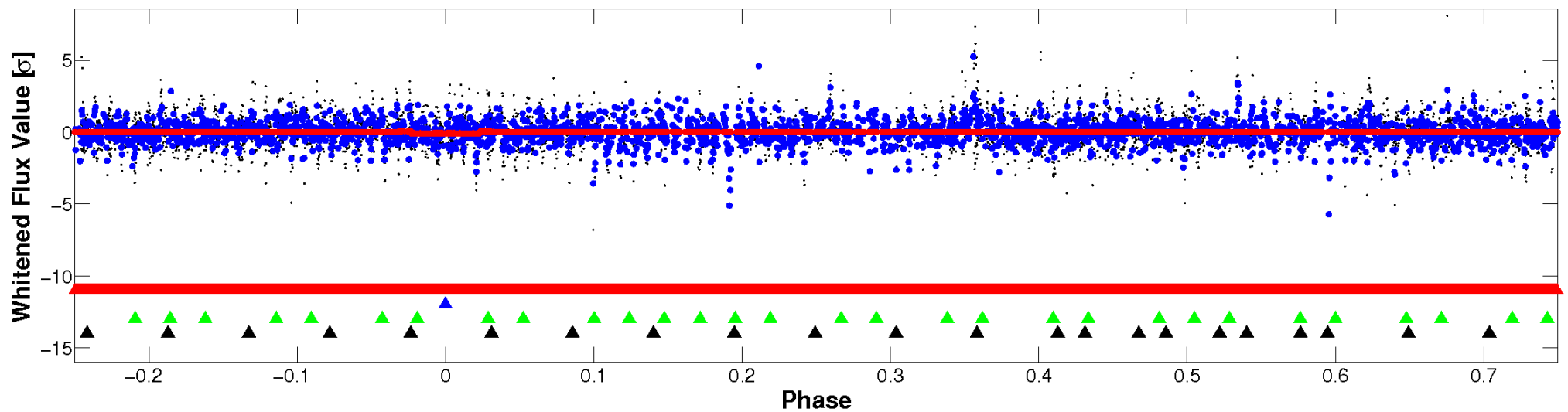


Non-Whitened Vs. Whitened Light Curve

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

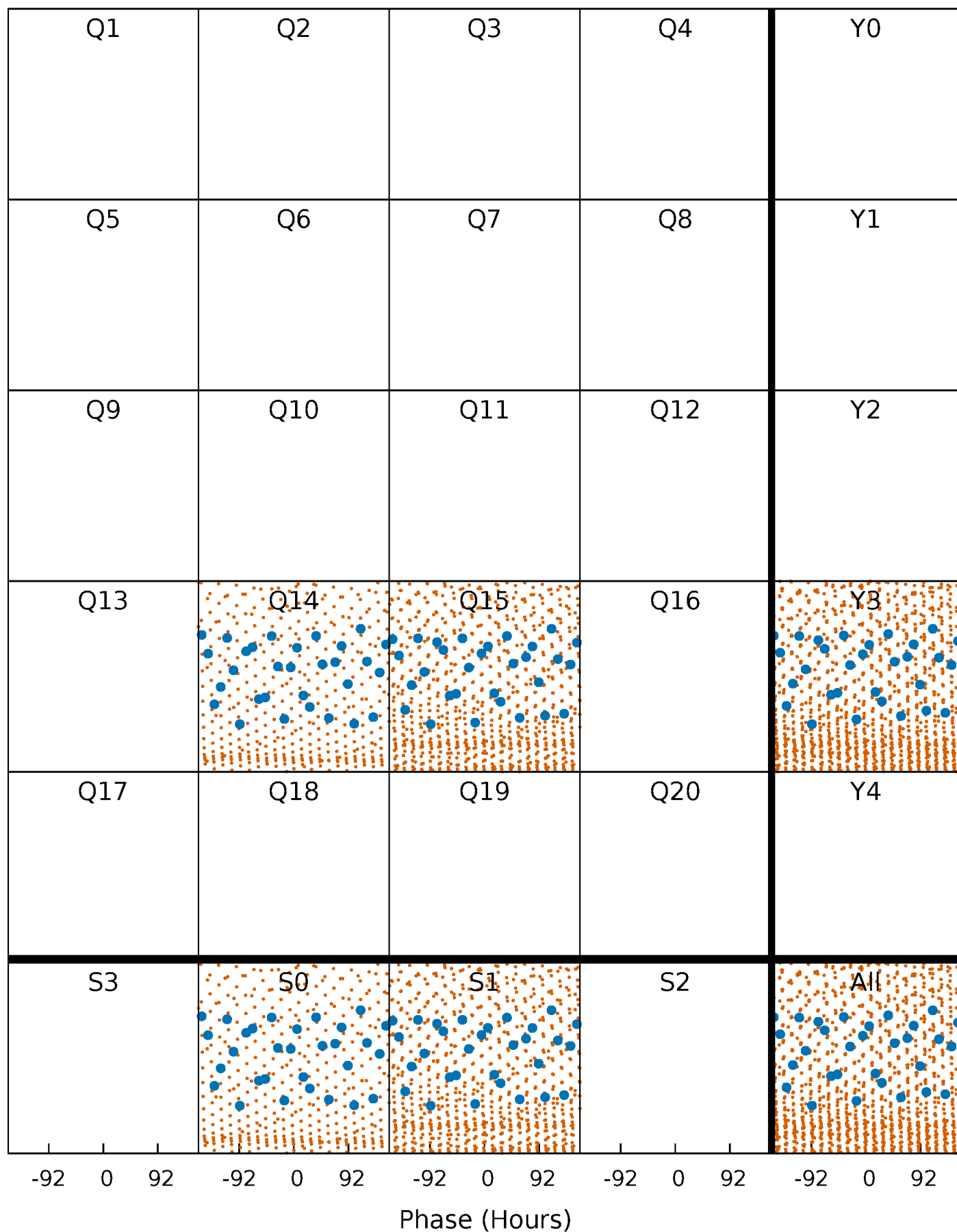


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005616194-02 P= 70.327777 Days $T_0=198.244618$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005616194-02 P= 70.327777 Days $T_0=198.244618$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

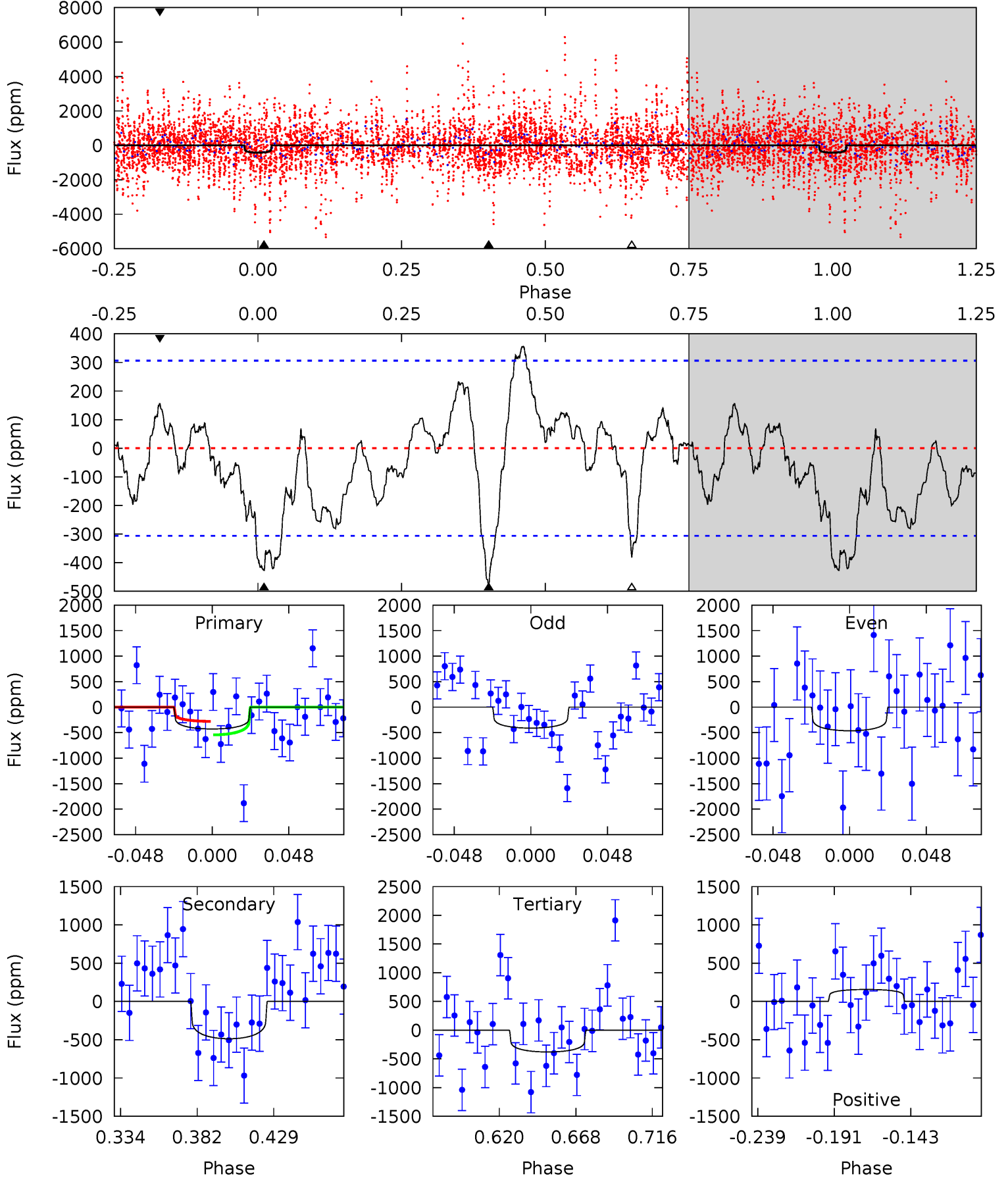
TCE 005616194-02 P= 70.362233 Days T₀=199.004303 (BKJD)



DV Model-Shift Uniqueness Test

005616194-02, P = 70.327777 Days, E = 198.244618 Days

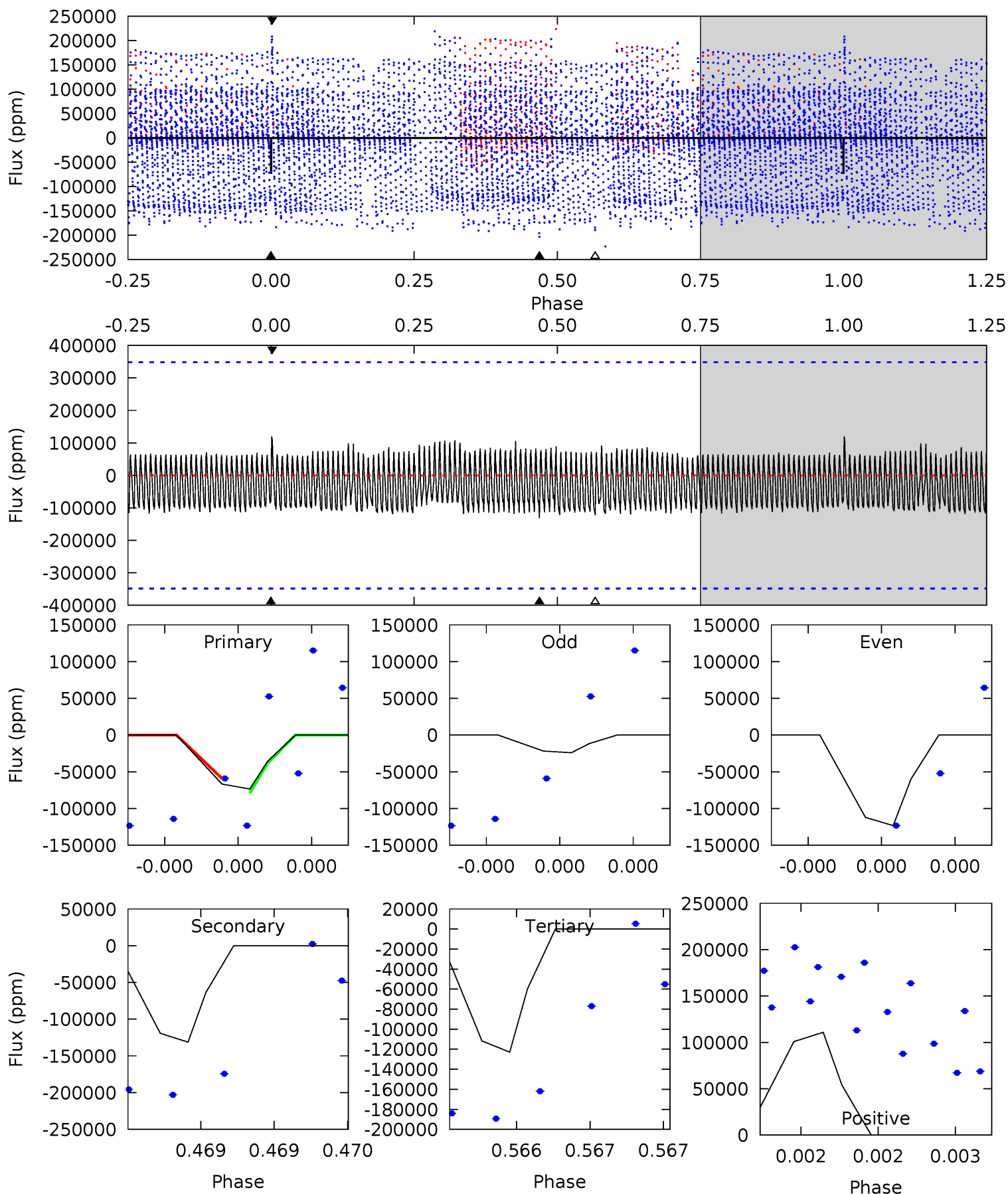
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.60	7.51	5.85	2.42	4.72	1.98	2.02	0.74	4.18	1.66	5.09	0.35	0.96	0.42	2.08



Alt Model-Shift Uniqueness Test

005616194-02, P = 70.362233 Days, E = 199.004303 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.18	2.10	1.97	1.78	5.58	3.50	0.85	-0.79	-0.60	0.13	0.33	0.80	1.00	0.48	0.02



Stellar Parameters For KIC 005616194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6605^{+189}_{-236}	$4.152^{+0.220}_{-0.160}$	$-0.440^{+0.250}_{-0.300}$	$1.452^{+0.391}_{-0.391}$	$1.092^{+0.178}_{-0.134}$	$0.503^{+0.619}_{-0.243}$
	+3%/-4%	+5%/-4%	+57%/-68%	+27%/-27%	+16%/-12%	+123%/-48%
Source	KIC0	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 005616194-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-488 ± 65	$2.68^{+1.54}_{-1.21}$	831^{+64}_{-63}	7558^{+4027}_{-1574}	4323^{+10676}_{-2574}
Alt.	-131242 ± 62389	$50.38^{+7.46}_{-7.41}$	830^{+62}_{-63}	7361^{+1181}_{-1272}	3840^{+3054}_{-1933}

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 $A_{obs} \gg 1.0$

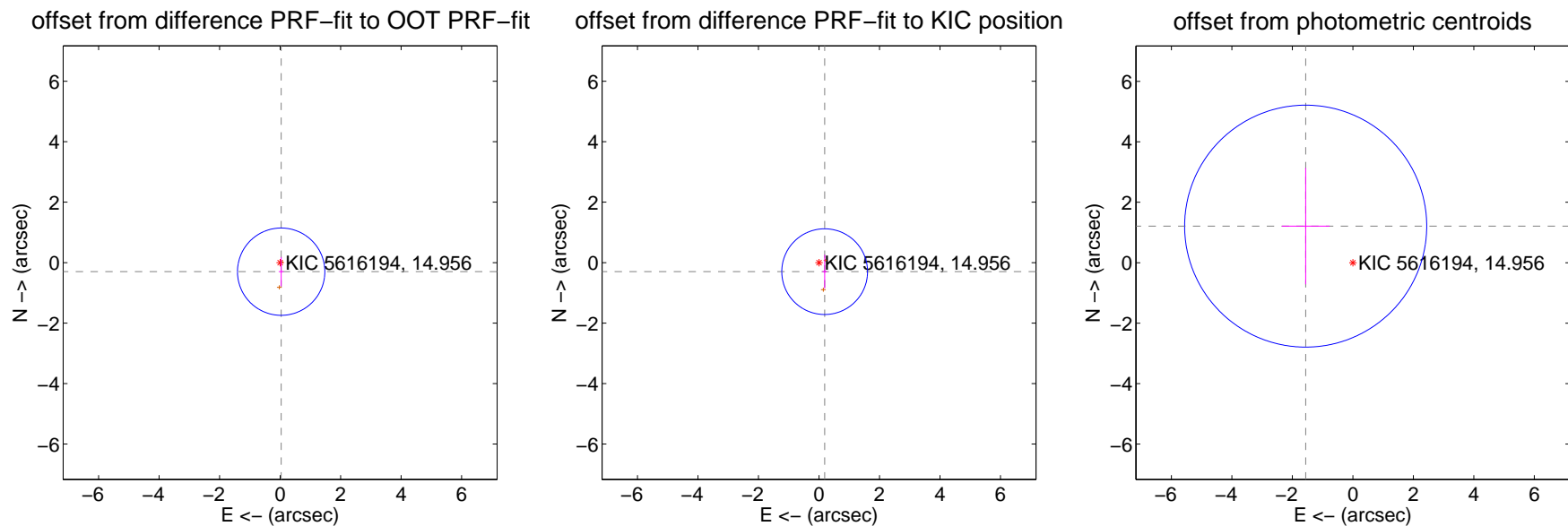
DV Centroid Data

Supplemental centroid analysis for 005616194-02. Kepler magnitude: 14.96. Transit SNR 1.46

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.301 ± 0.481	0.62	-0.035 ± 0.080	-0.299 ± 0.484
PRF-fit source offset from KIC position	0.352 ± 0.472	0.75	-0.188 ± 0.074	-0.298 ± 0.557
photometric centroid source offset	1.97 ± 1.33	1.48	1.56 ± 0.79	1.21 ± 1.92



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

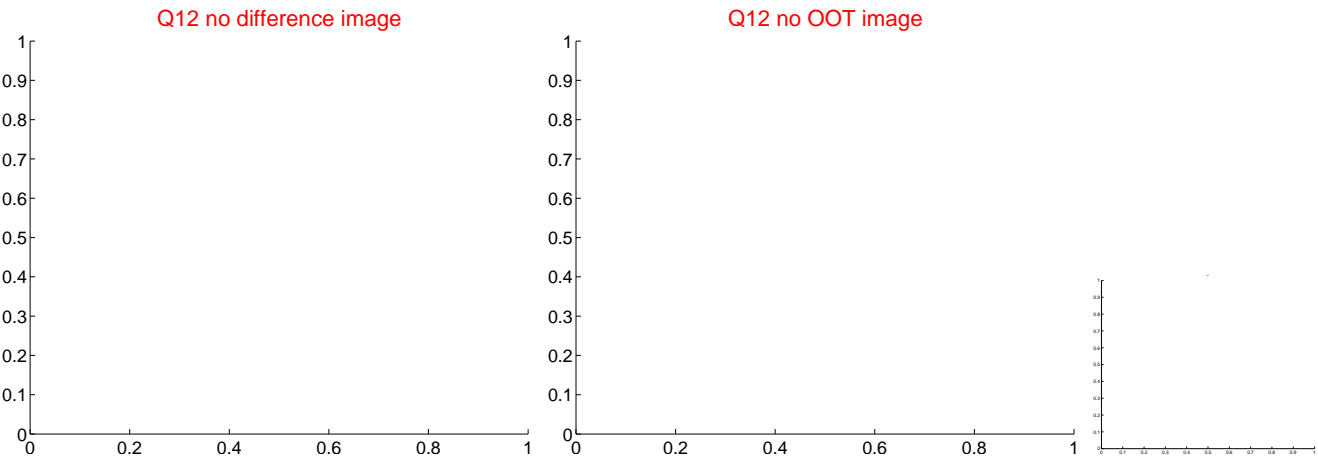
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



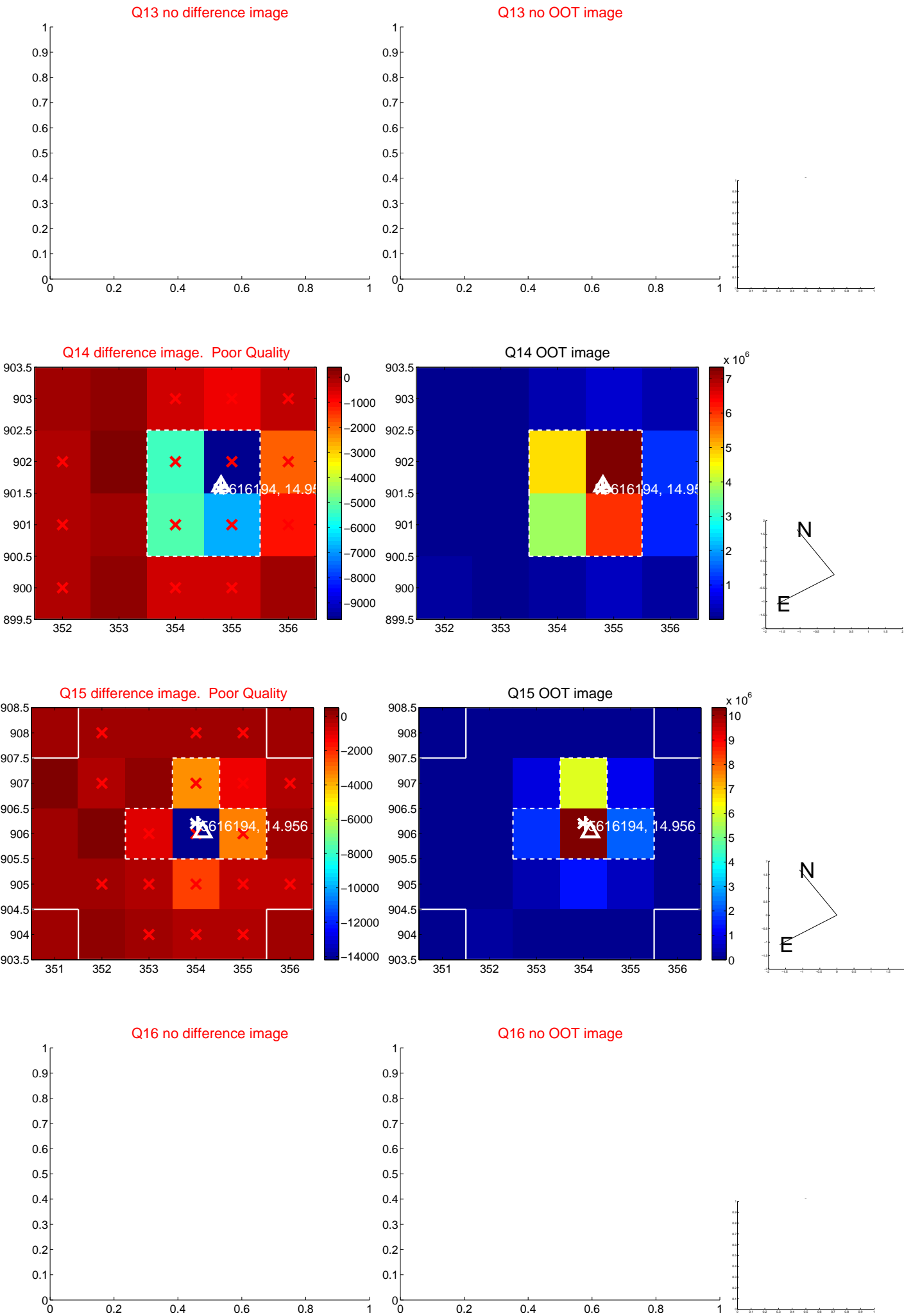
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



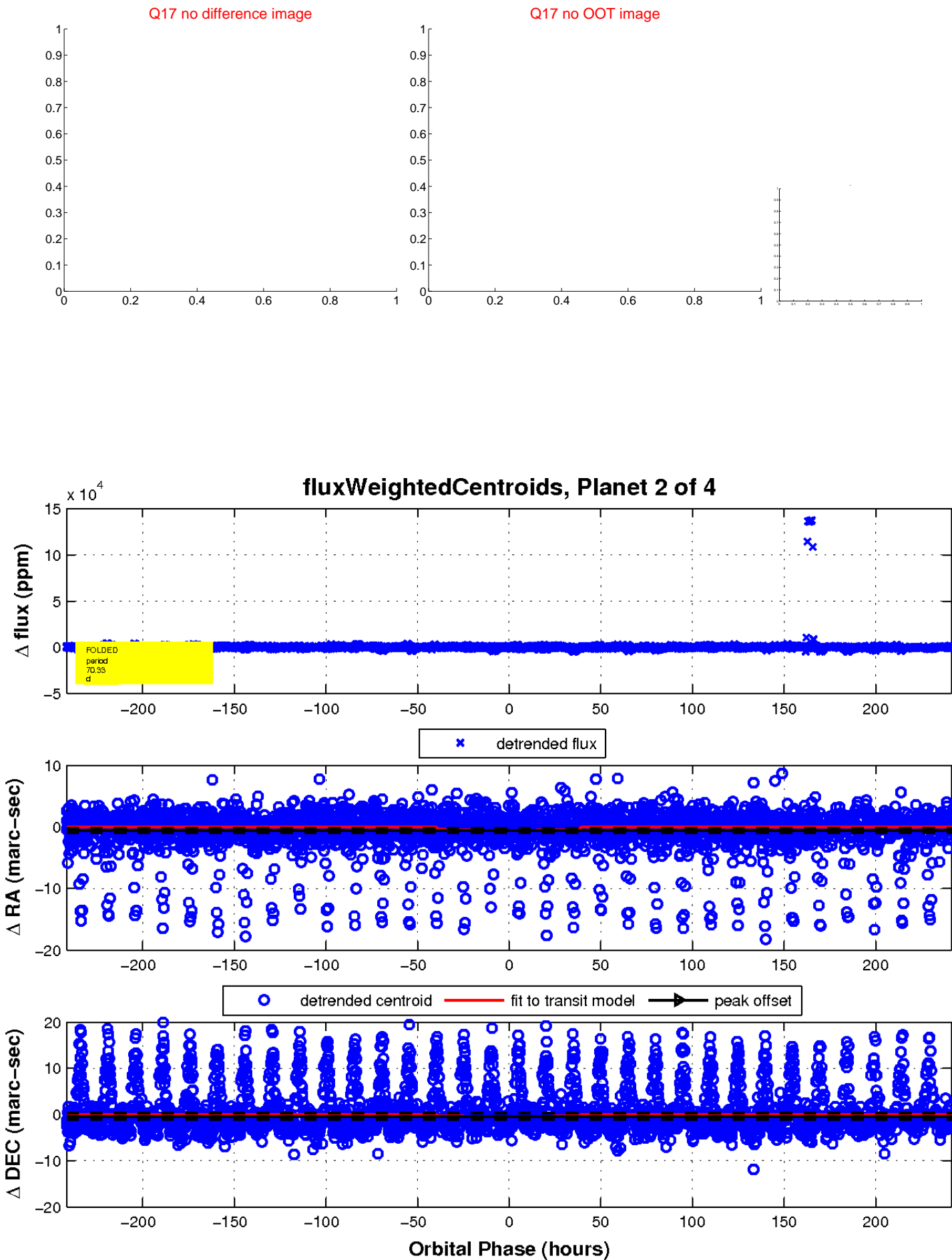
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



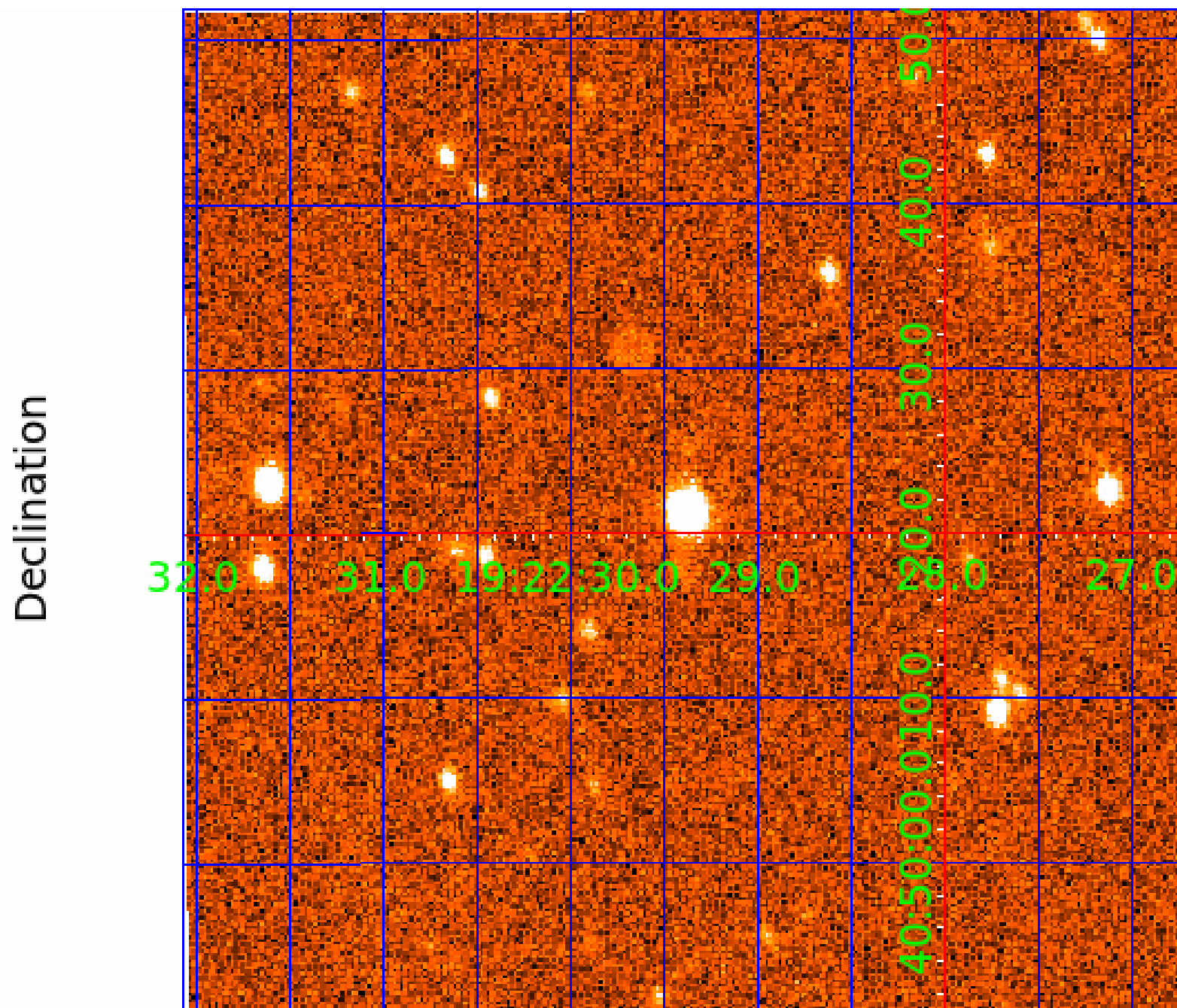
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005616194

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})
005616194-01	OBS	No	0.621787	132.204068	20.2	1.400	11.1	0.6	1.45	6605	0.79	16679.18
005616194-02	OBS	No	70.327777	198.244618	344.8	80.478	8.9	1.5	1.45	6605	2.77	30.49
005616194-04	OBS	No	66.491949	168.462867	2674.7	5.220	7.7	5.3	1.45	6605	7.99	32.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005616194-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_FEW_DIFFS—HALO_GHOST
005616194-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
005616194-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

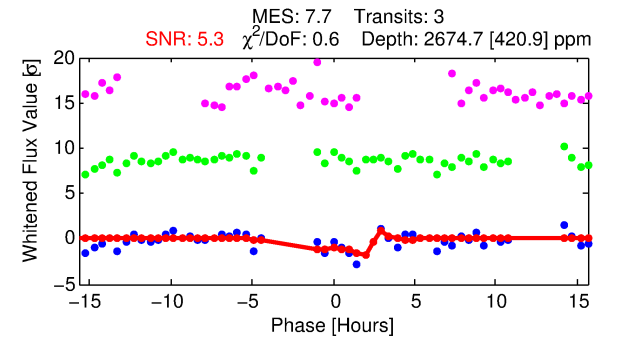
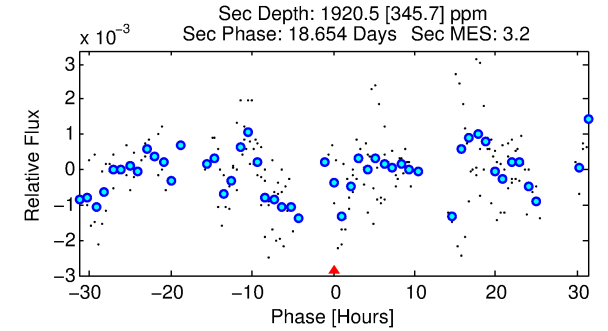
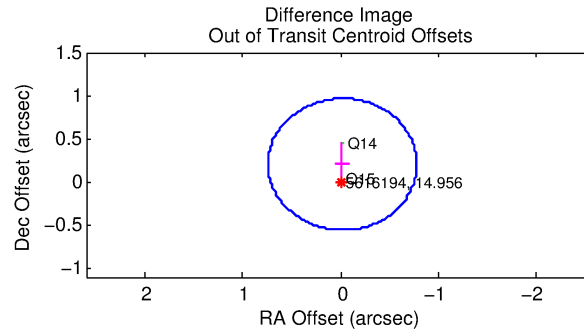
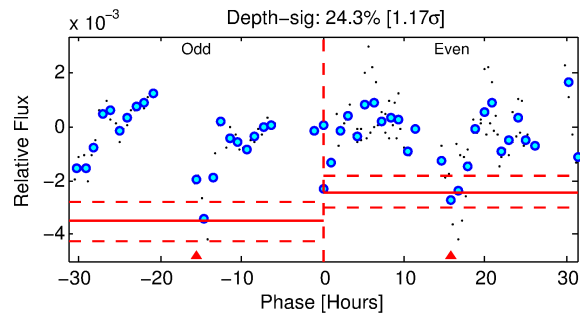
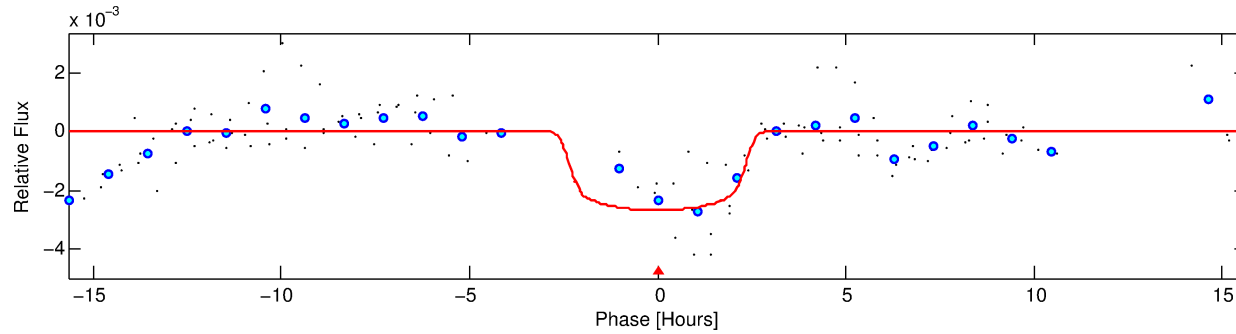
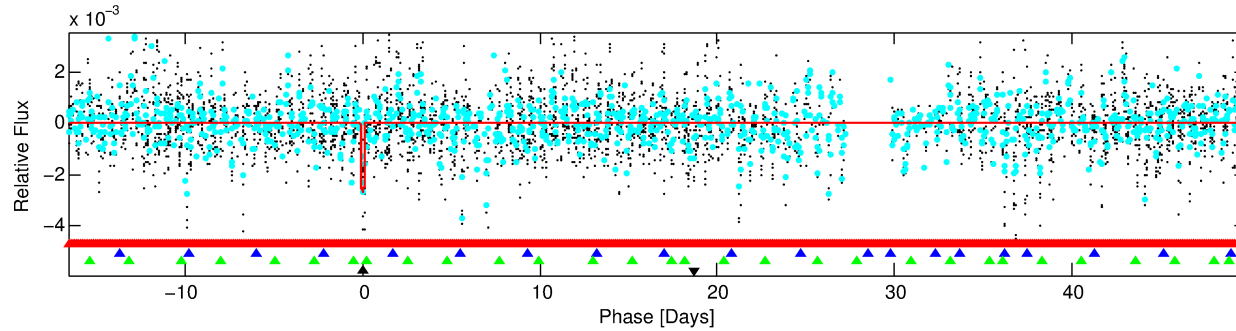
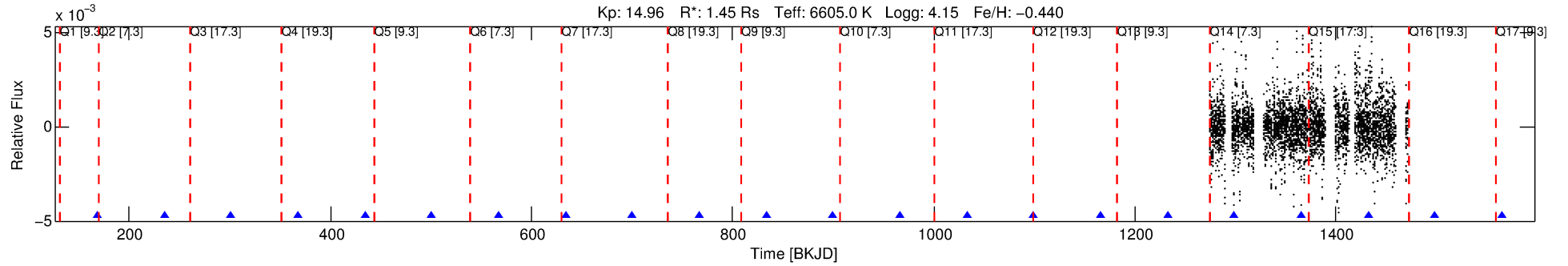
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005616194-04

No Significant Match Found

DV One-Page Summary

KIC: 5616194 Candidate: 4 of 4 Period: 66.492 d



DV Fit Results:

Period = 66.49195 [0.00385] d
Epoch = 168.4629 [0.0756] BKJD
Rp/R* = 0.0504 [0.0424]
a/R* = 78.56 [378.07]
b = 0.67 [3.83]
Seff = 32.86 [13.42]
Teq = 611 [62] K
Rp = 7.99 [7.06] Re
a = 0.3308 [0.0815] AU
Ag = 1809.80 [3140.21] [0.58 σ]
Teffp = 6157 [2614] K [2.12 σ]

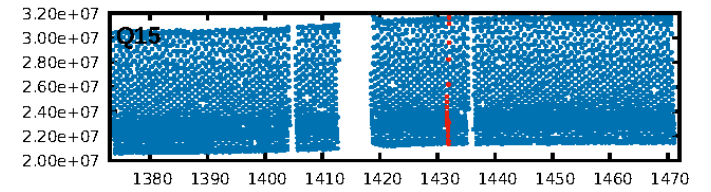
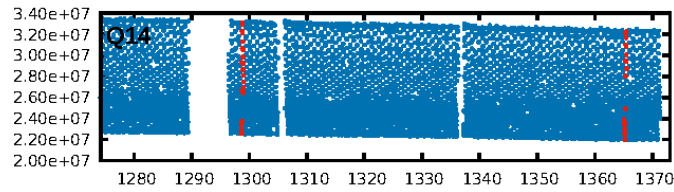
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [68.48 σ]
LongPeriod-sig: 74.6% [1.14 σ]
ModelChiSquare2-sig: 75.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.24e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 45.19
Centroid-sig: 92.6%
Centroid-so: 0.226 arcsec [0.31 σ]
OotOffset-rm: 0.204 arcsec [0.81 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.255 arcsec [1.11 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/2]

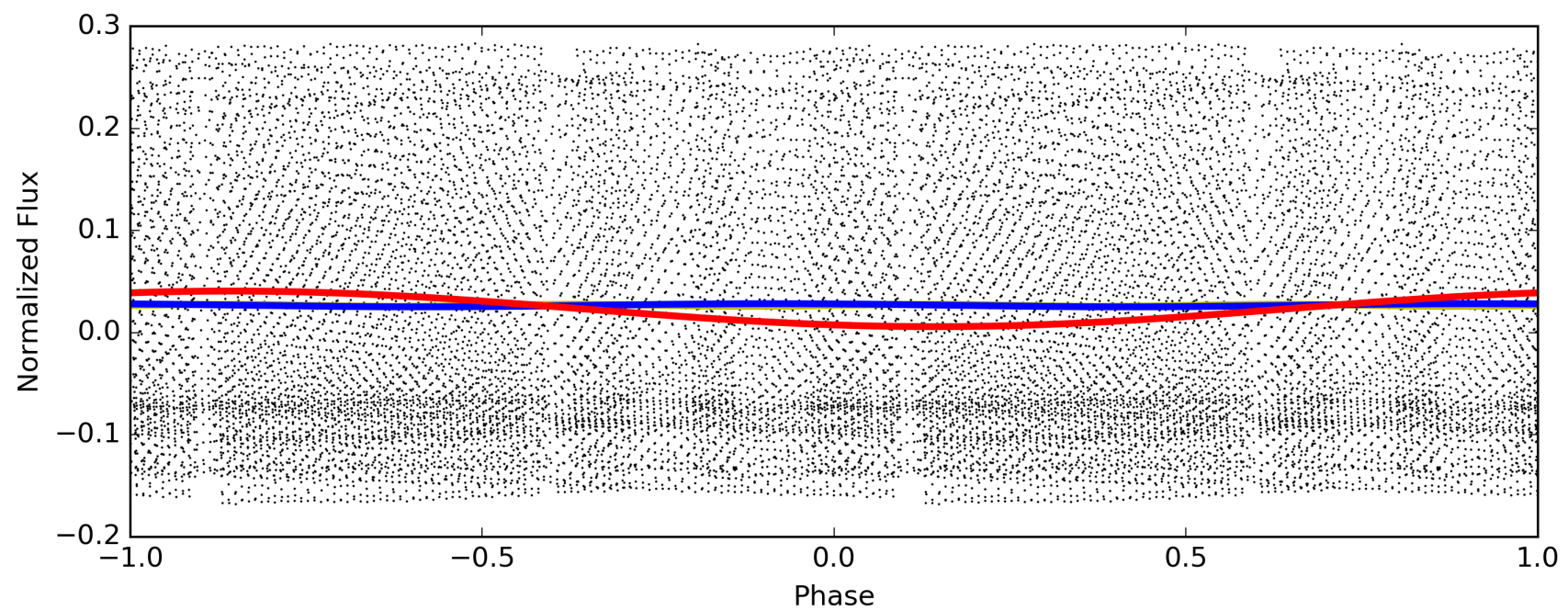
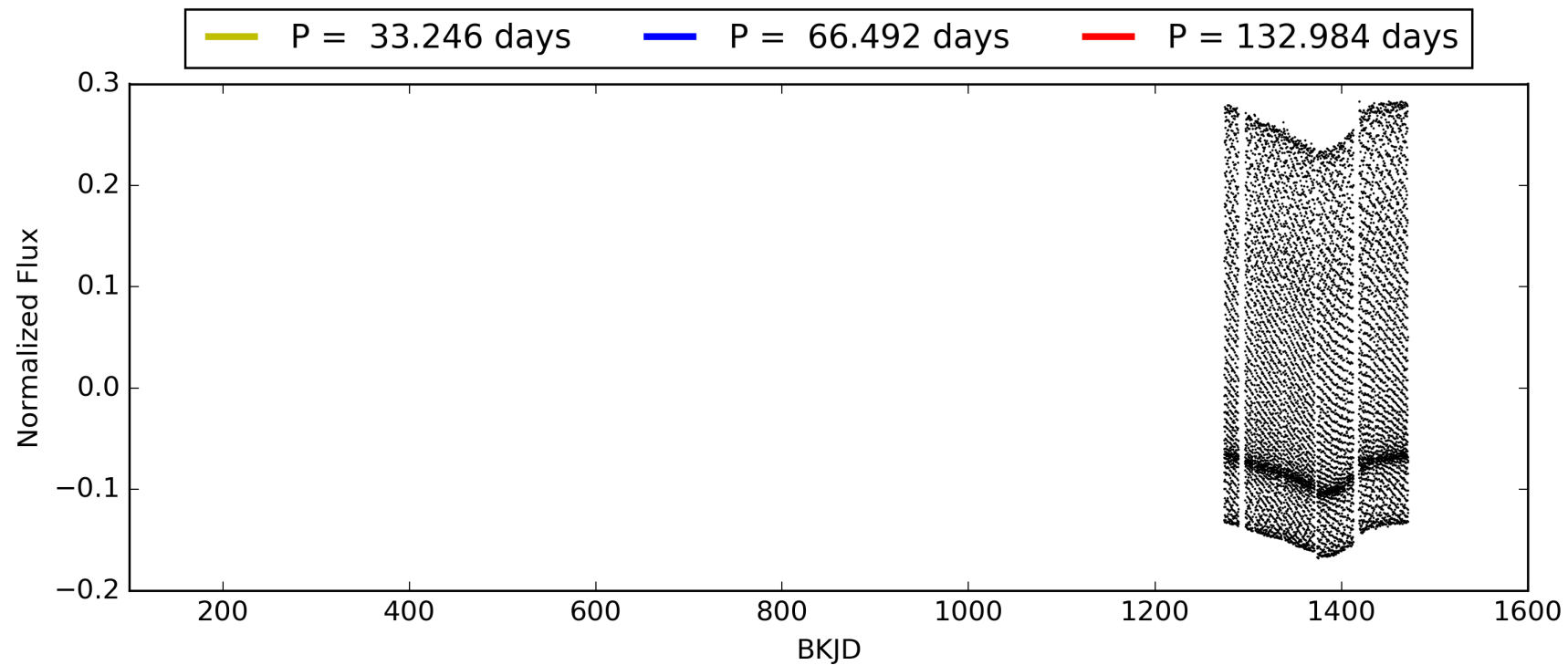
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:29:36 Z

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

TCE 005616194-04, PDC Light Curves

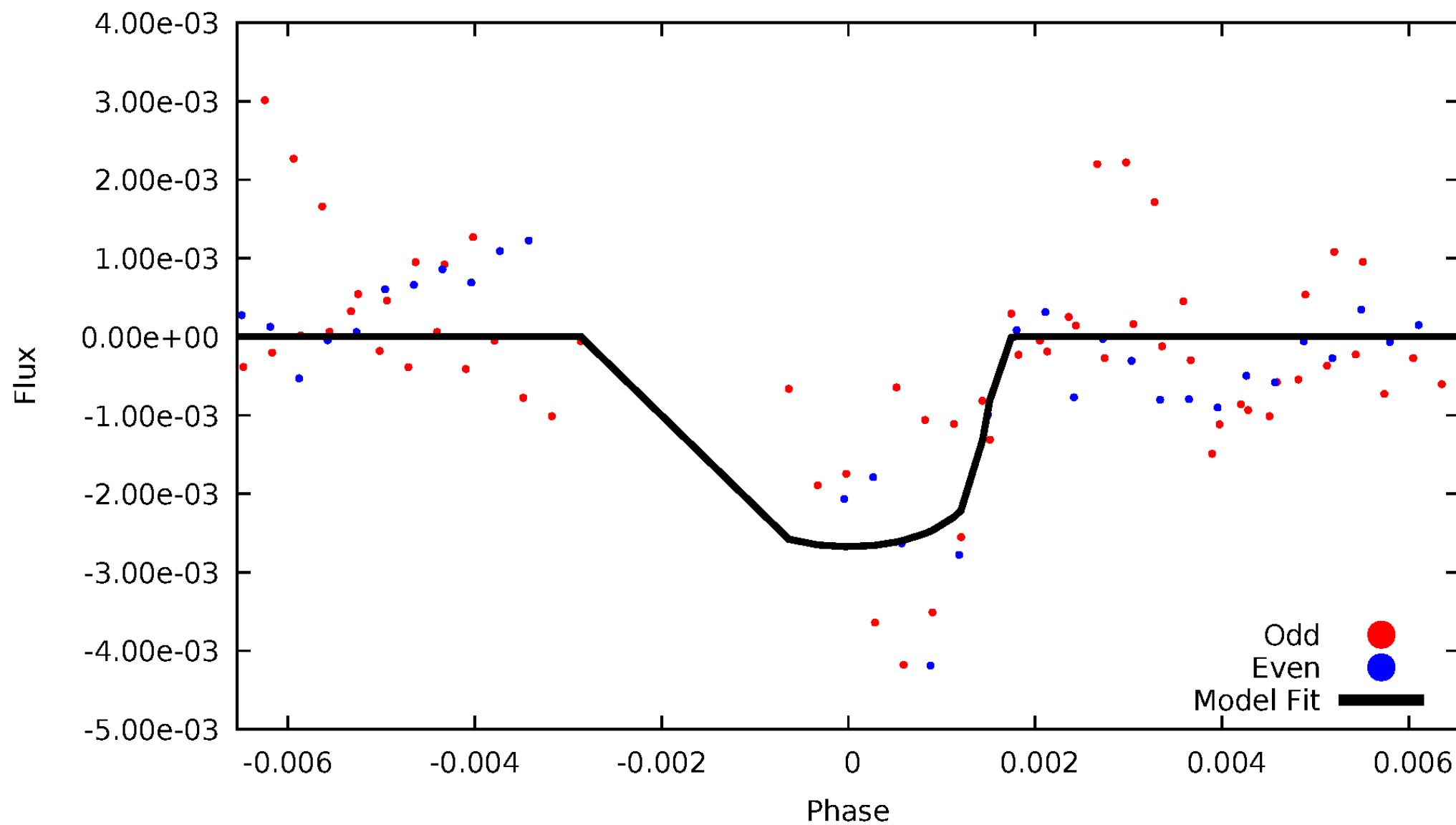


TCE 005616194-04



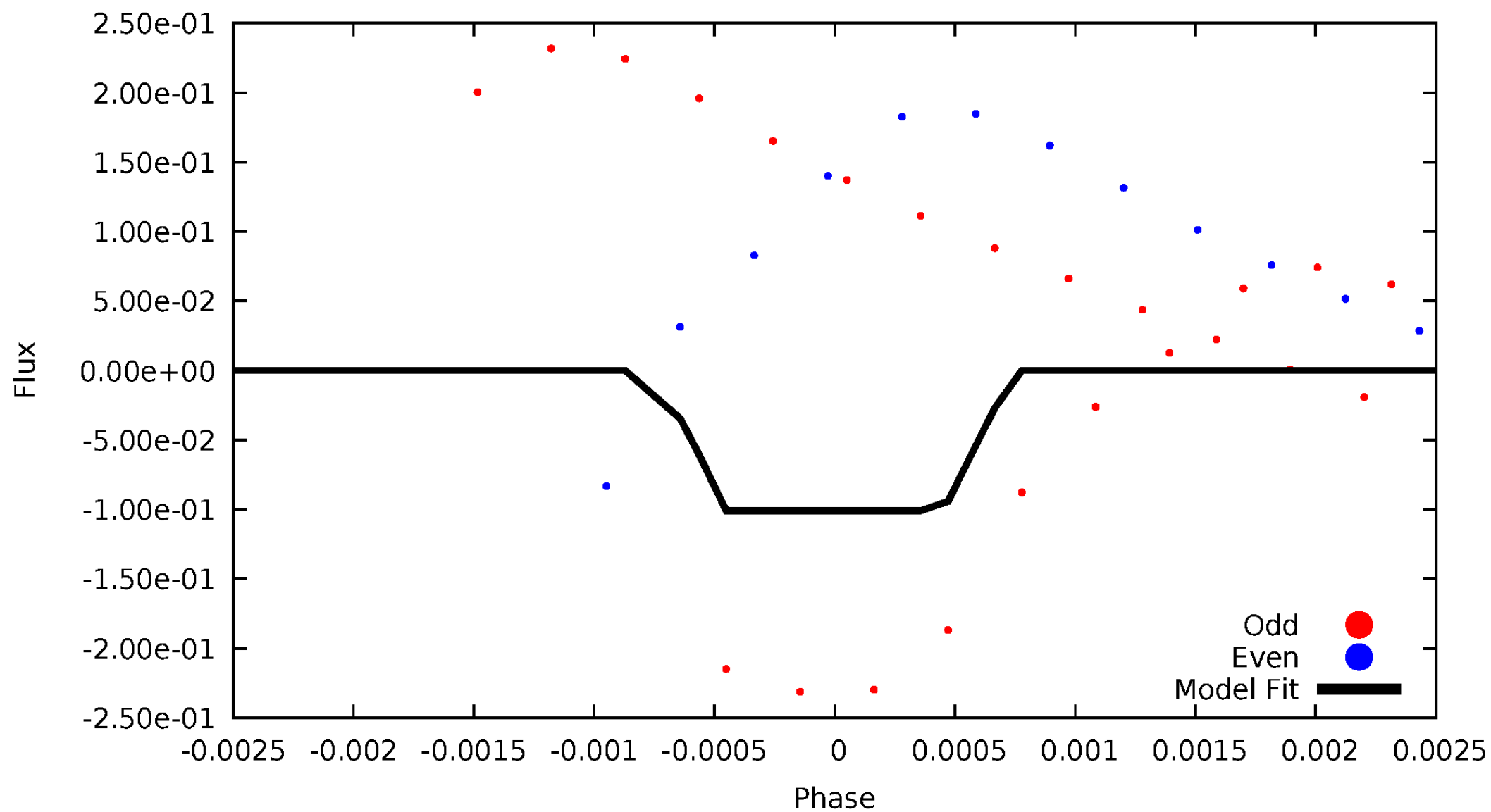
DV Odd/Even

TCE 005616194-04



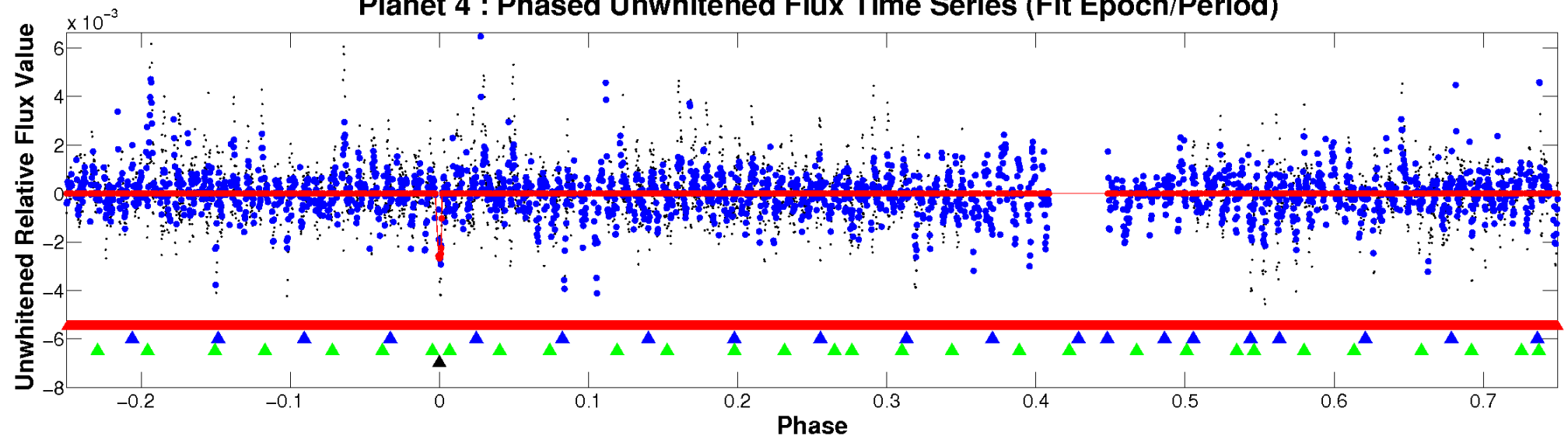
ALT Odd/Even

TCE 005616194-04

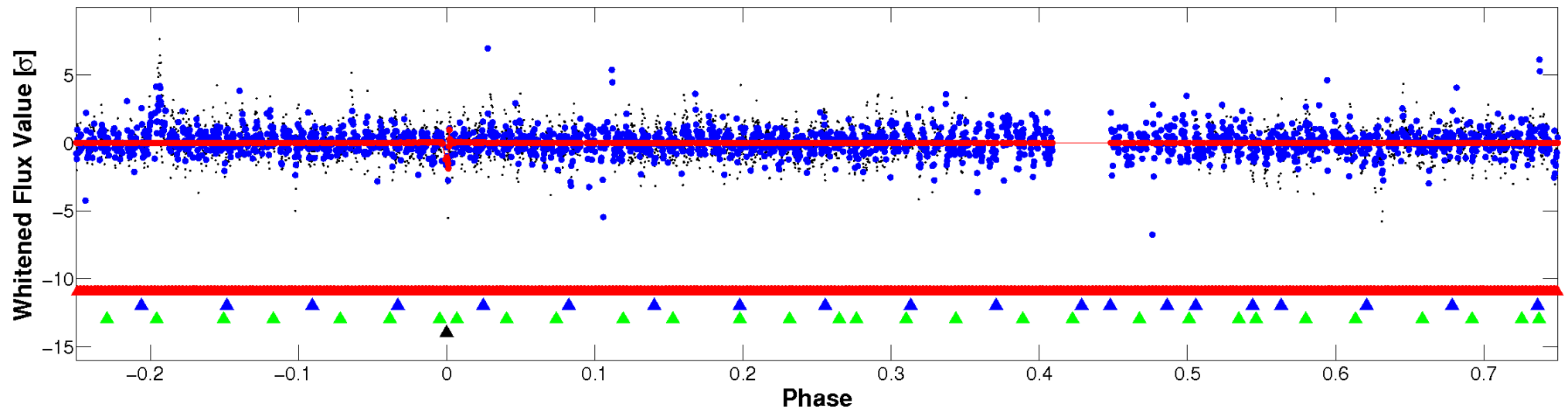


Non-Whitened Vs. Whitened Light Curve

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

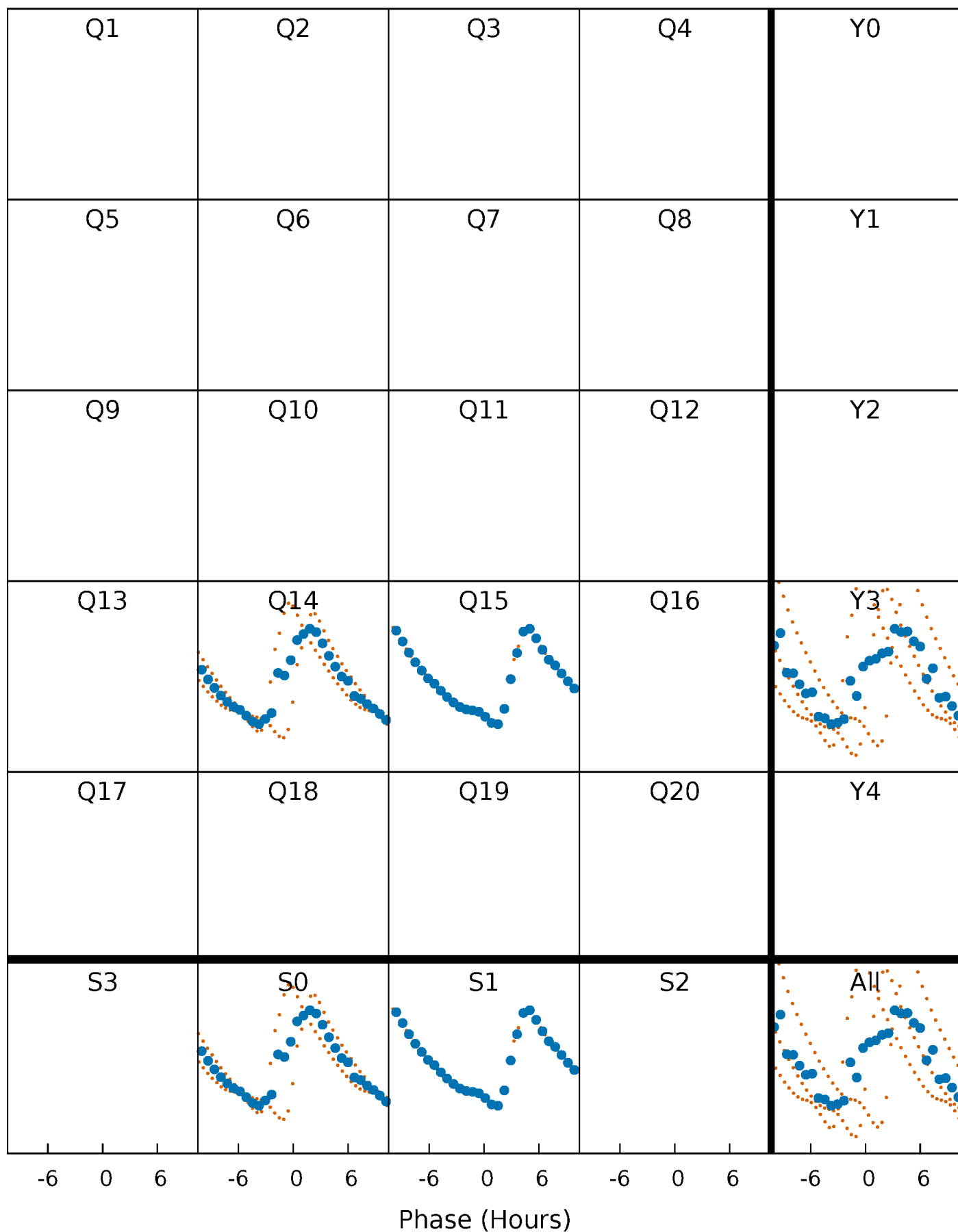


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



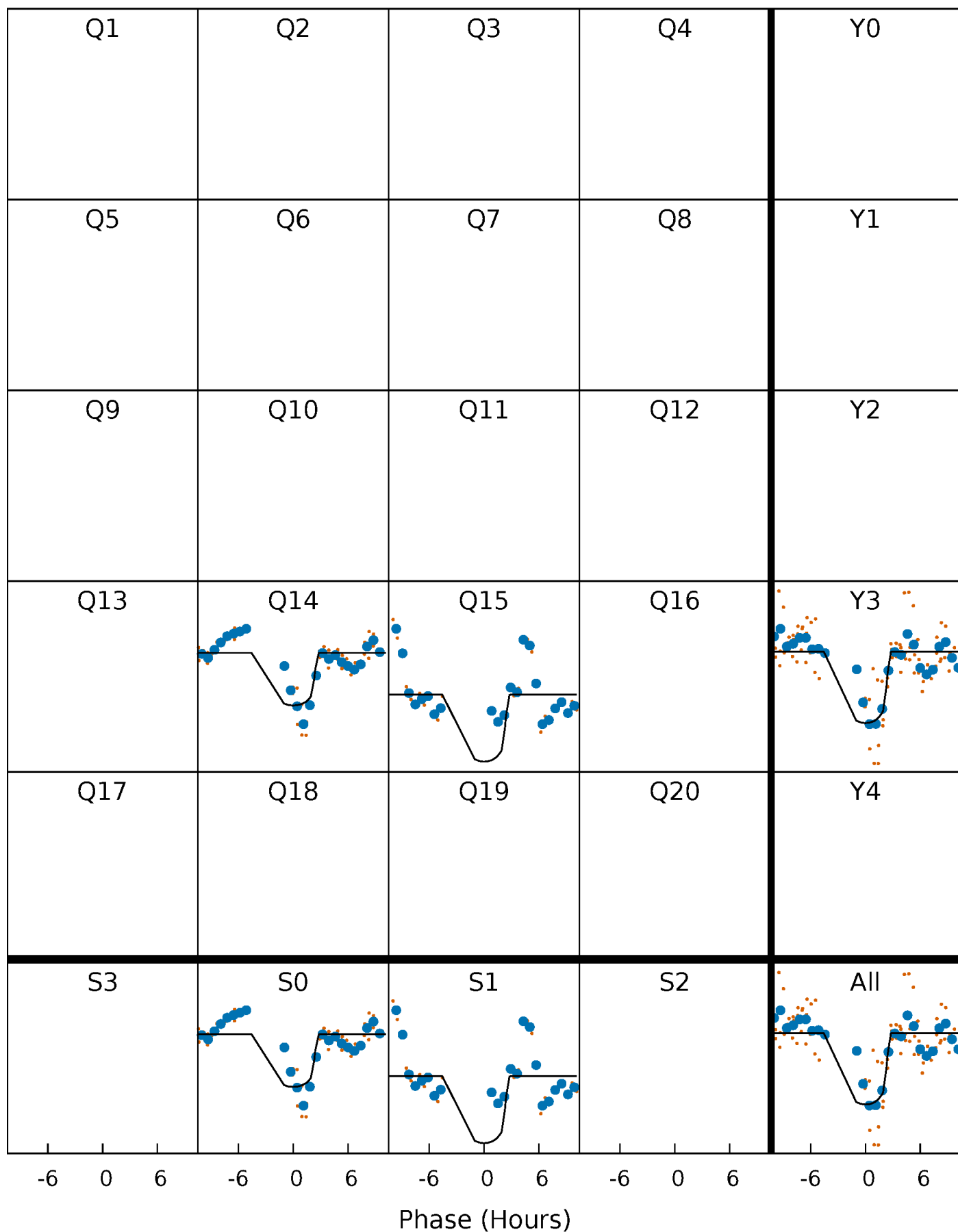
PDC Quarter-Phased Transit Curves

TCE 005616194-04 P= 66.491949 Days $T_0=168.462867$ (BKJD)



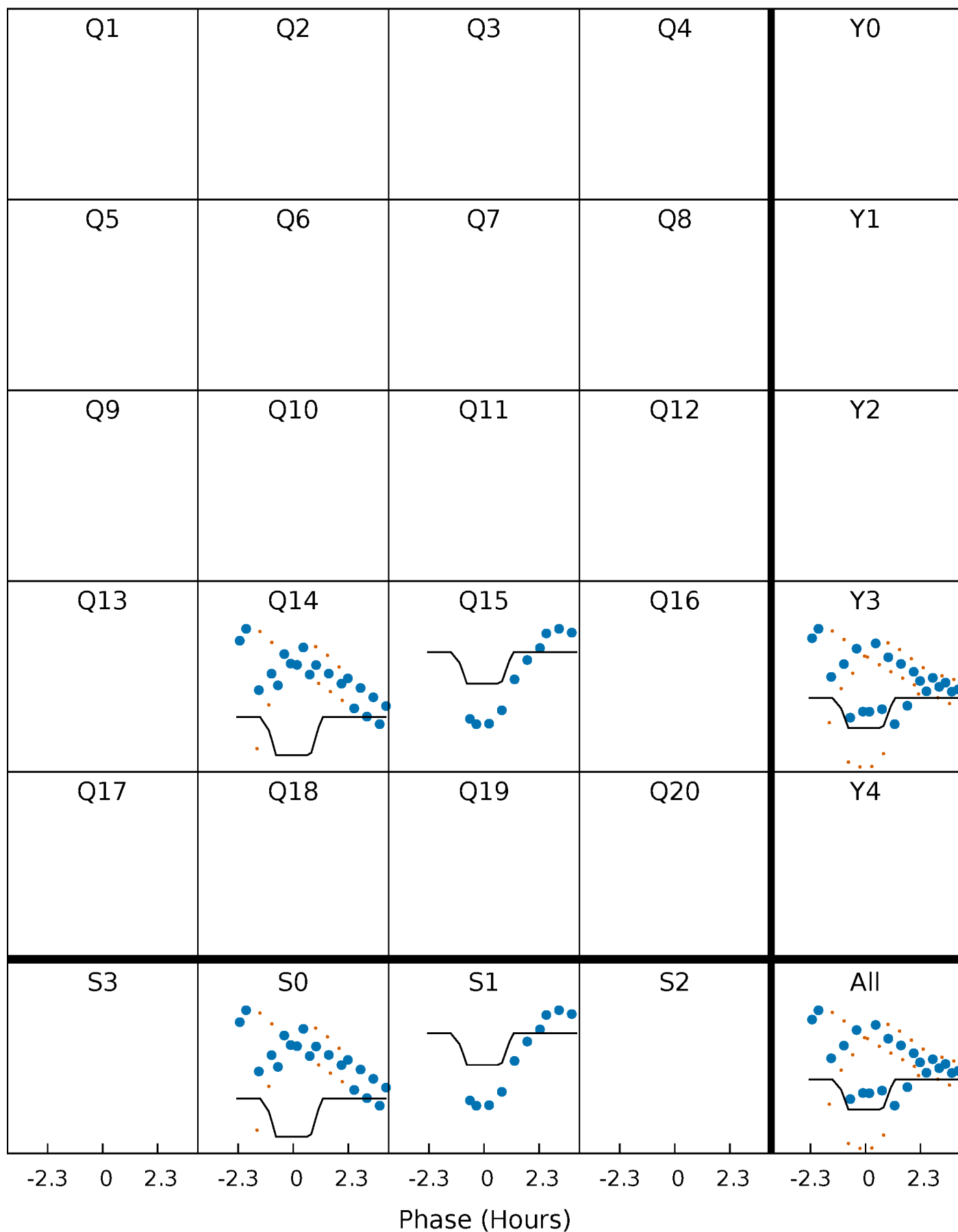
DV Quarter-Phased Transit Curves

TCE 005616194-04 P= 66.491949 Days $T_0=168.462867$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

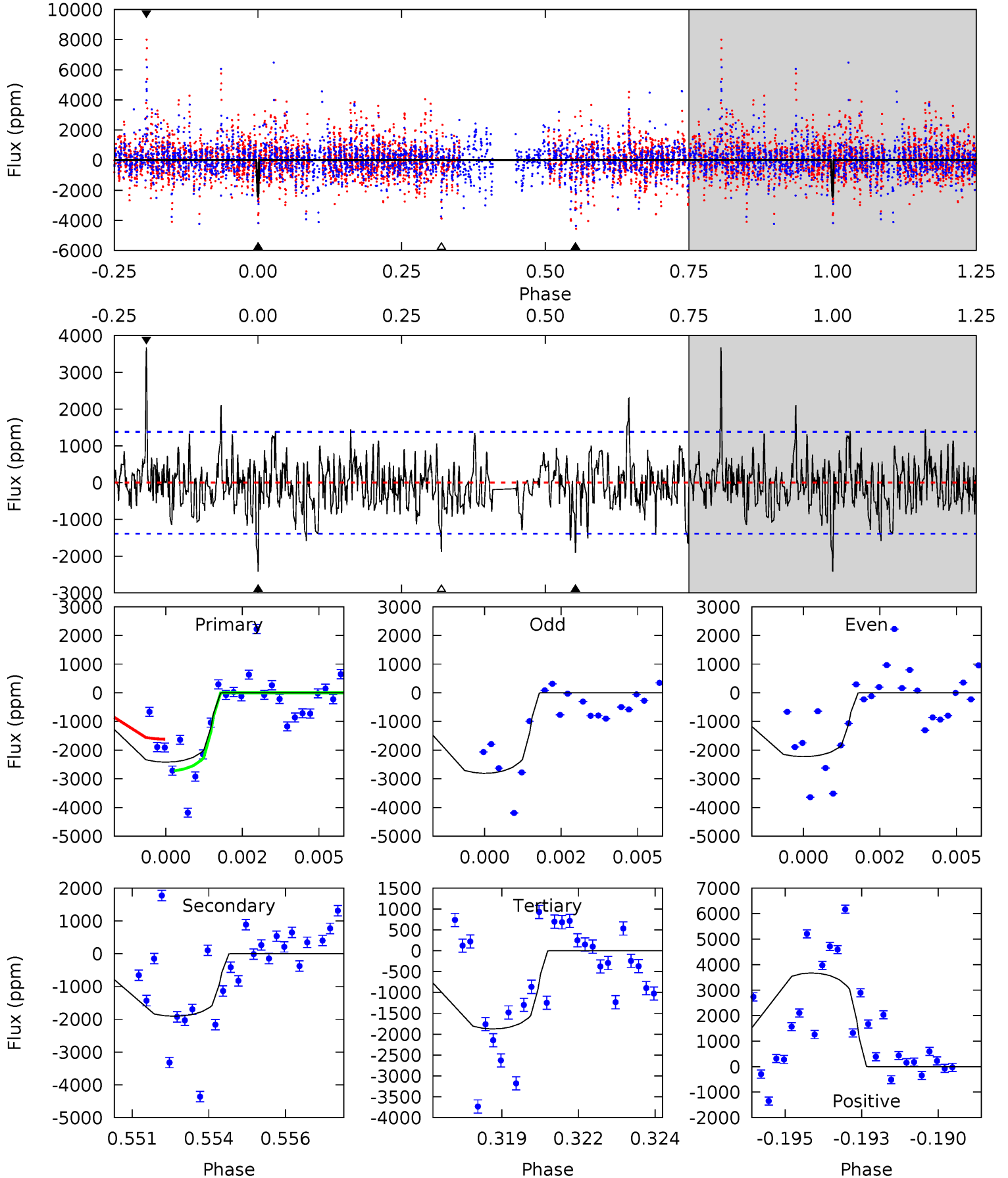
TCE 005616194-04 P= 66.495818 Days $T_0=168.453527$ (BKJD)



DV Model-Shift Uniqueness Test

005616194-04, P = 66.491949 Days, E = 168.462867 Days

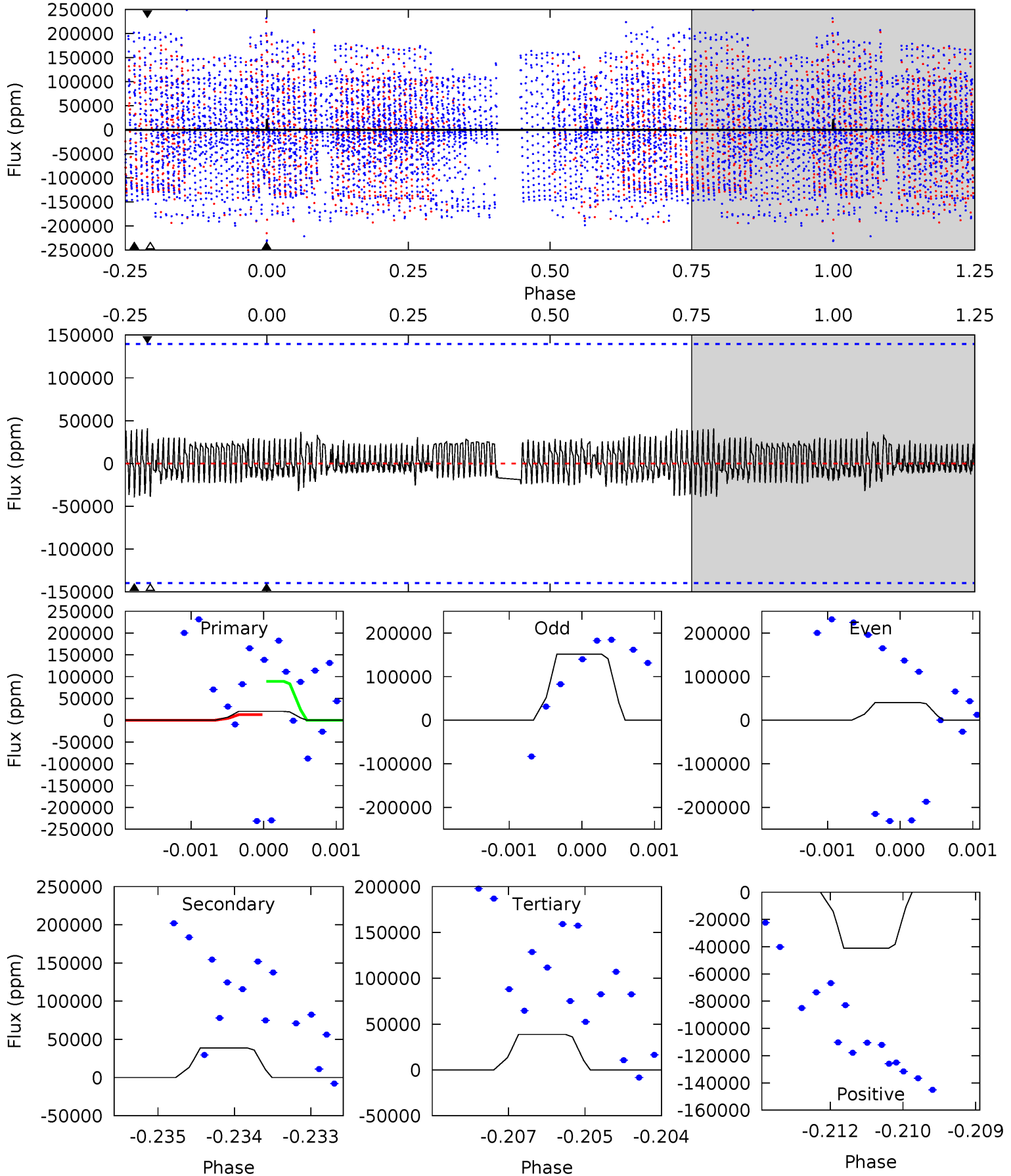
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.23	7.28	7.16	14.0	5.29	3.03	2.06	2.08	-4.78	0.12	-6.74	1.03	0.80	0.60	1.54



Alt Model-Shift Uniqueness Test

005616194-04, P = 66.495818 Days, E = 168.453527 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.79	1.50	1.50	1.59	5.40	3.21	0.60	-0.71	-0.80	0.00	-0.09	2.06	0.21	0.51	1.42



Stellar Parameters For KIC 005616194

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6605^{+189}_{-236}	$4.152^{+0.220}_{-0.160}$	$-0.440^{+0.250}_{-0.300}$	$1.452^{+0.391}_{-0.391}$	$1.092^{+0.178}_{-0.134}$	$0.503^{+0.619}_{-0.243}$
	+3%/-4%	+5%/-4%	+57%/-68%	+27%/-27%	+16%/-12%	+123%/-48%
Source	KIC0	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 005616194-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1907 ± 262	$8.79^{+6.35}_{-5.04}$	845^{+65}_{-62}	5772^{+3647}_{-1222}	1434^{+6585}_{-932}
Alt.	-38690 ± 25843	$49.47^{+10.02}_{-9.29}$	844^{+61}_{-65}	5303^{+784}_{-1040}	1020^{+887}_{-694}

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 $A_{obs} \gg 1.0$

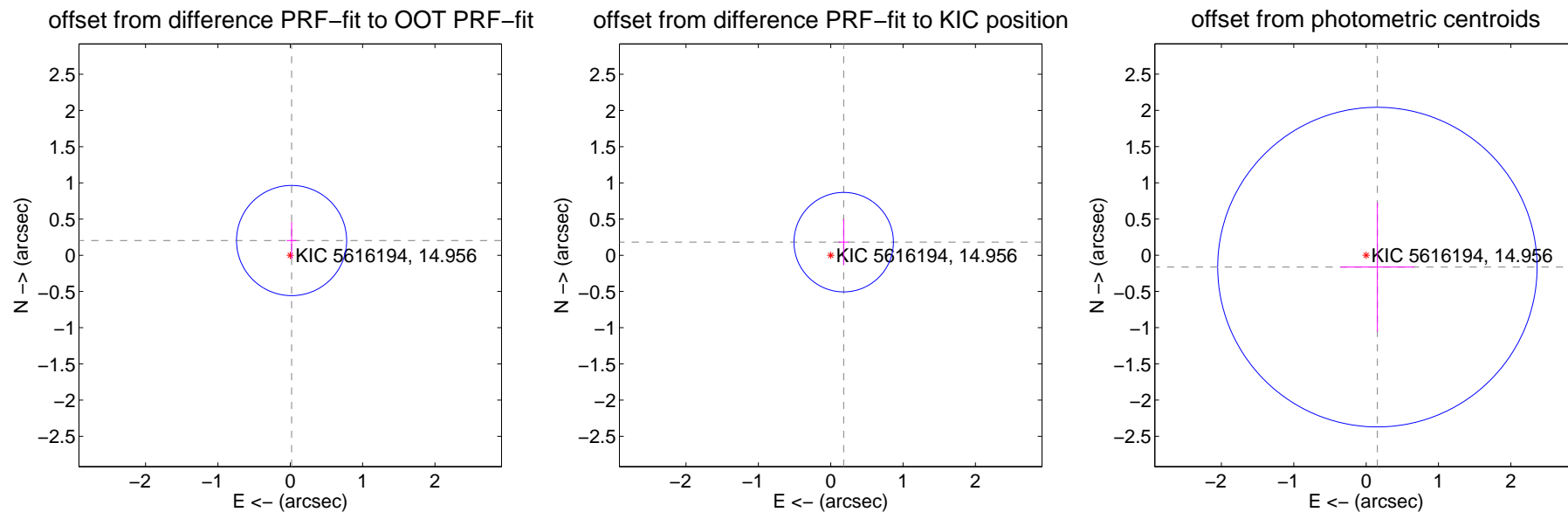
DV Centroid Data

Supplemental centroid analysis for 005616194-04. Kepler magnitude: 14.96. Transit SNR 5.32

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.254	0.81	-0.018 ± 0.067	0.204 ± 0.255
PRF-fit source offset from KIC position	0.255 ± 0.229	1.11	-0.180 ± 0.068	0.181 ± 0.315
photometric centroid source offset	0.23 ± 0.74	0.31	-0.16 ± 0.51	-0.16 ± 0.89



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

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



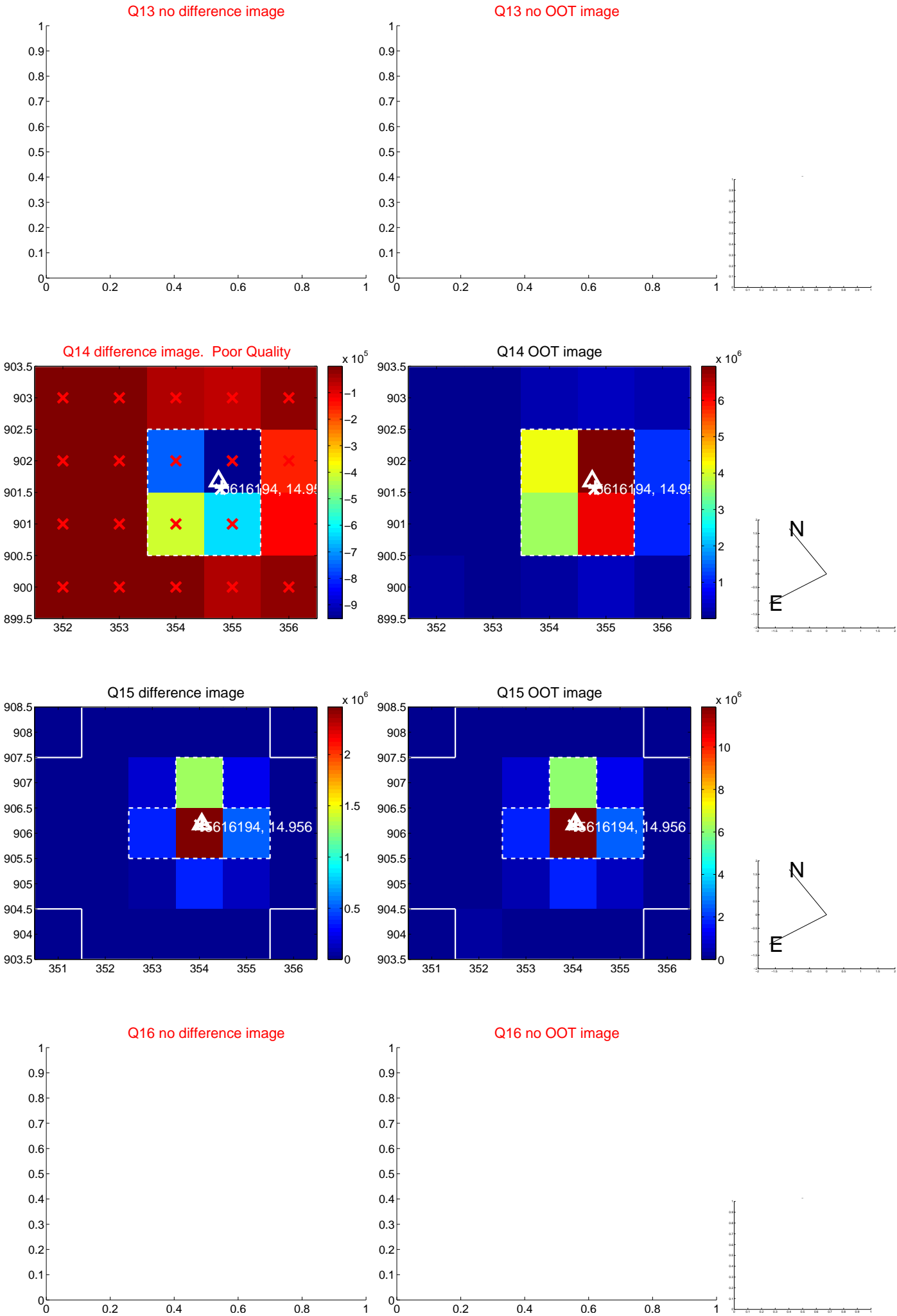
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



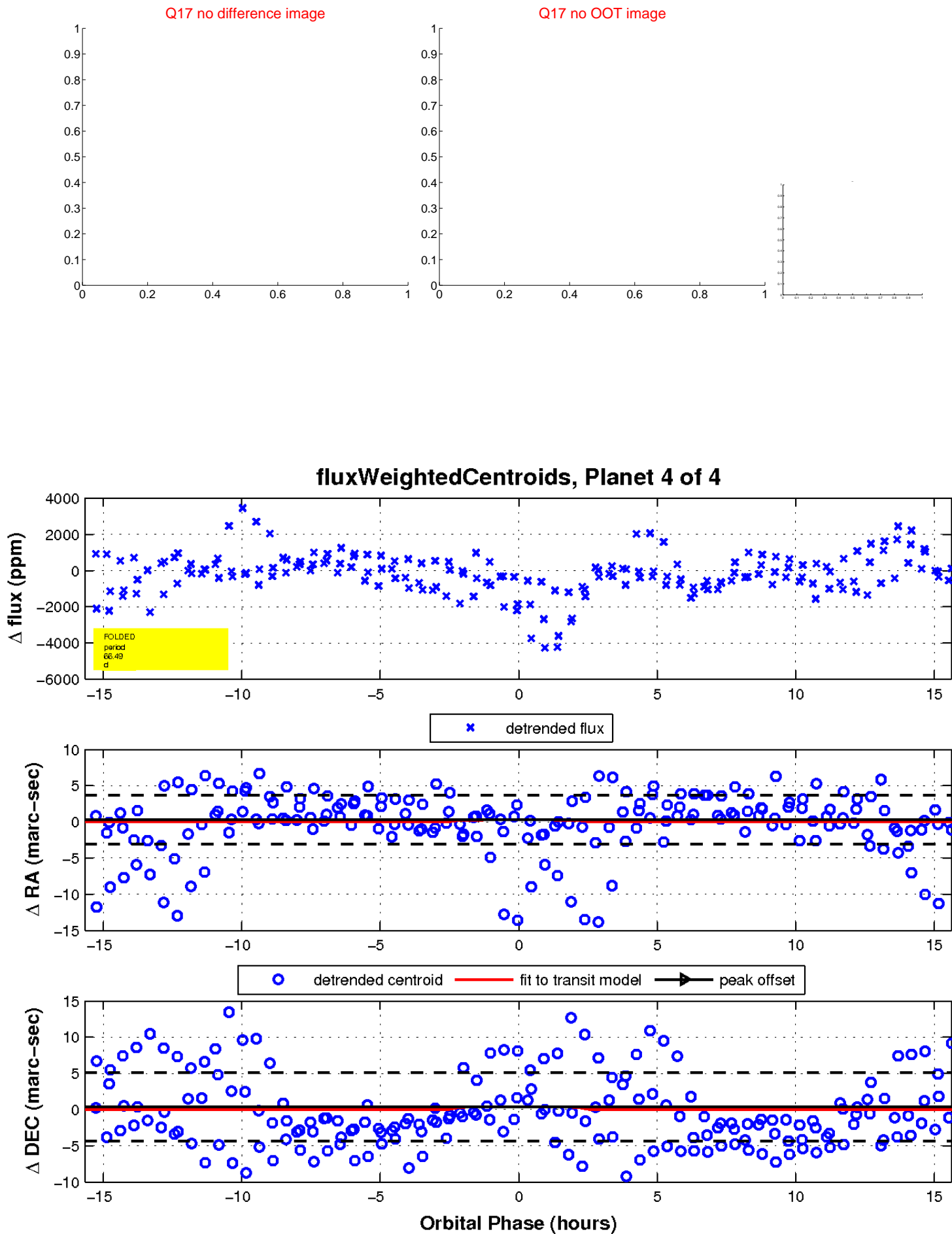
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

