

KIC 006119970

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})
006119970-01	OBS	No	365.668981	151.307946	2359.7	22.035	9.2	10.0	0.85	5699	5.18	0.71
006119970-02	OBS	No	512.063584	374.089817	1360.5	26.003	7.8	8.2	0.85	5699	5.76	0.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006119970-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—CENT_FEW_DIFFS
006119970-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

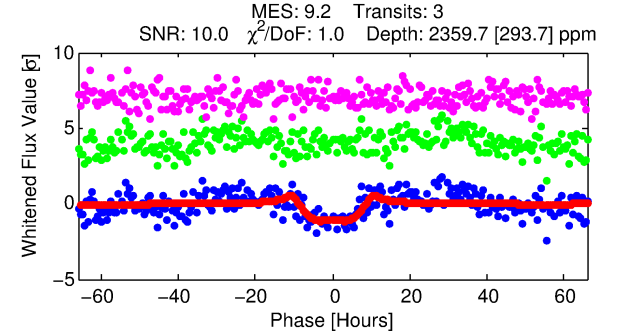
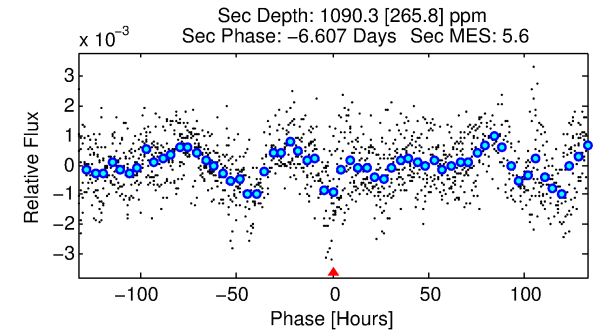
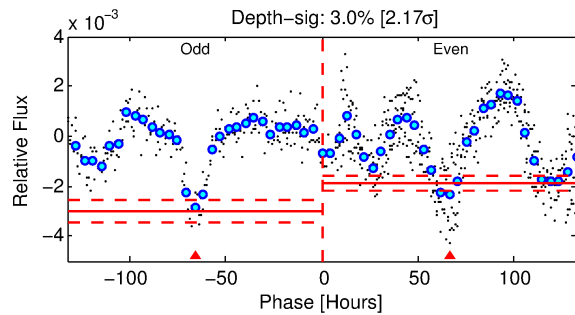
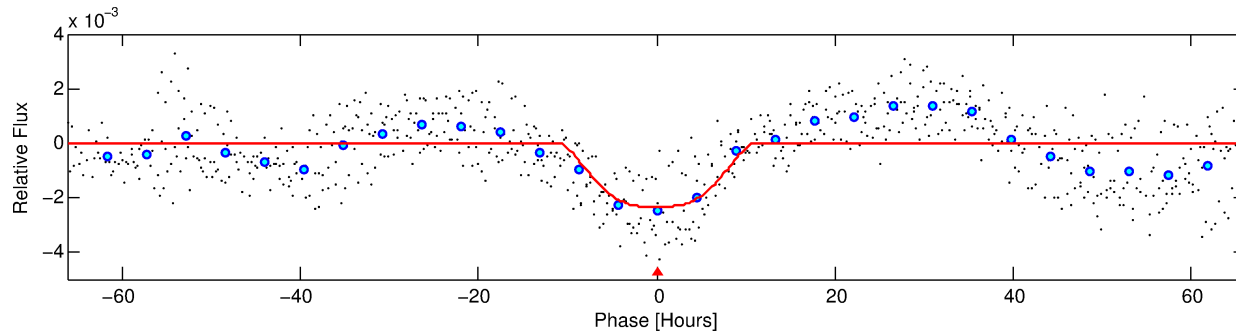
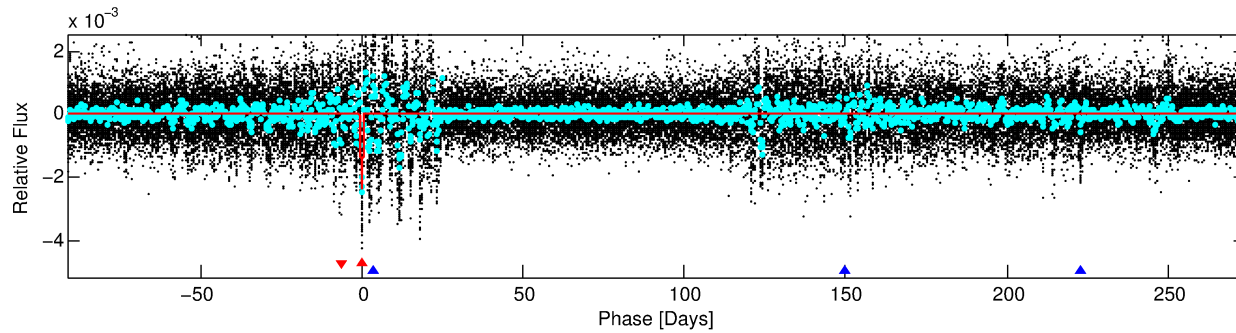
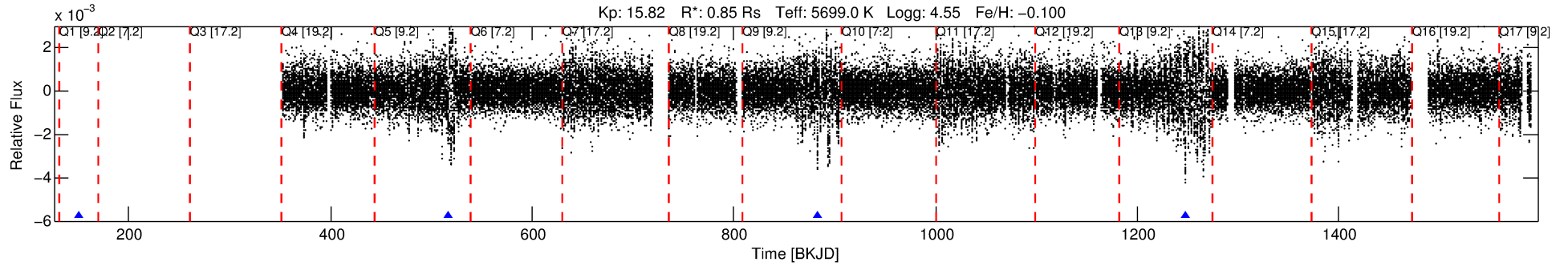
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006119970-01

No Significant Match Found

DV One-Page Summary

KIC: 6119970 Candidate: 1 of 2 Period: 365.669 d



DV Fit Results:

Period = 365.66898 [0.02373] d
Epoch = 151.3079 [0.0484] BKJD
Rp/R* = 0.0557 [0.0043]
a/R* = 61.87 [6.06]
b = 0.94 [0.02]
Seff = 0.71 [0.27]
Teq = 234 [22] K
Rp = 5.19 [1.55] Re
a = 0.9834 [0.2401] AU
Ag = 21575.76 [9894.64] [2.18σ]
Teffp = 4388 [347] K [11.96σ]

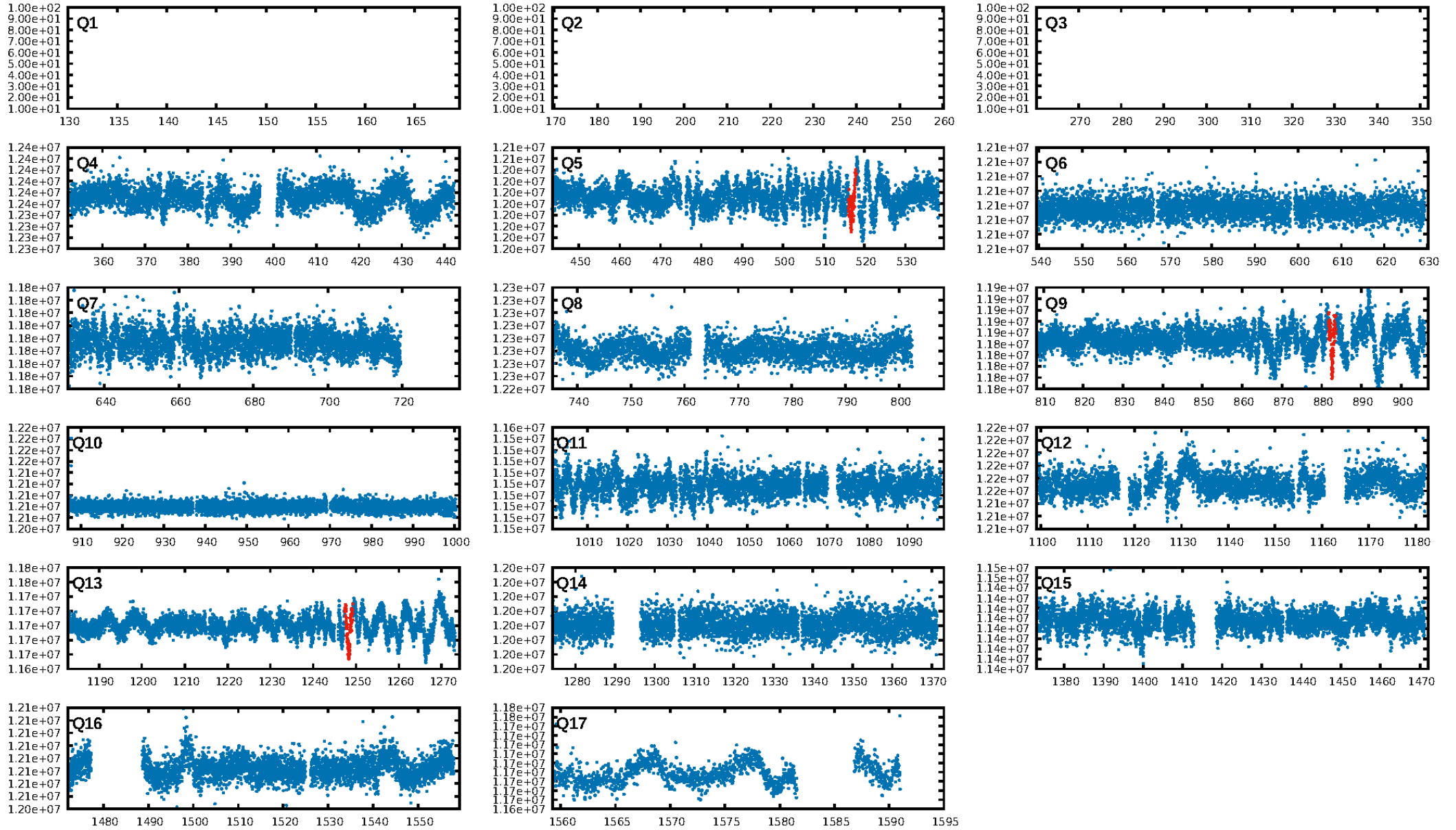
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [103.08σ]
ModelChiSquare2-sig: 1.4%
ModelChiSquareGof-sig: 98.9%
Bootstrap-pfa: 9.20e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.912
Centroid-sig: 0.0%
Centroid-so: 7.274 arcsec [4.00σ]
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 [3/3]

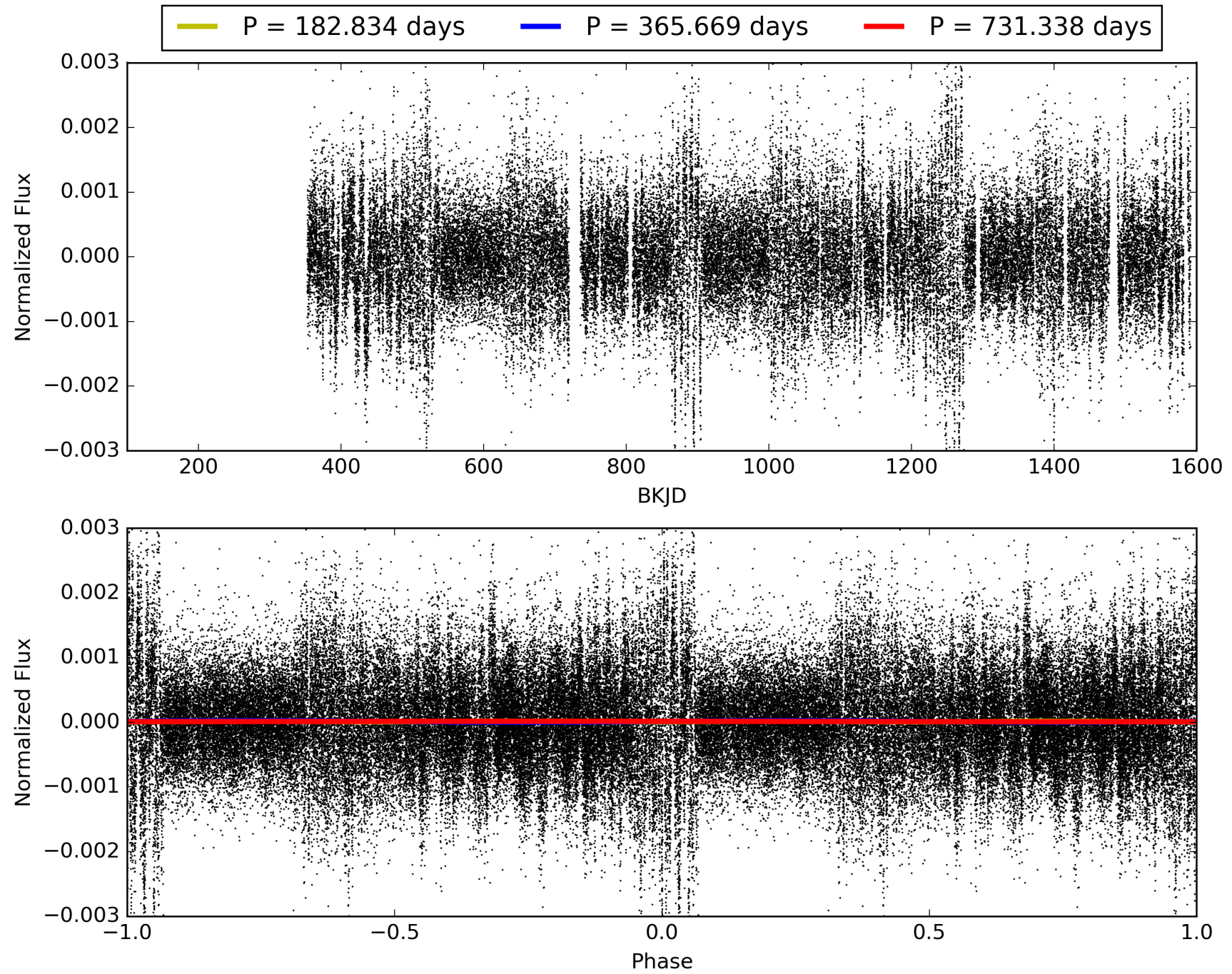
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:01:35 Z

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

TCE 006119970-01, PDC Light Curves

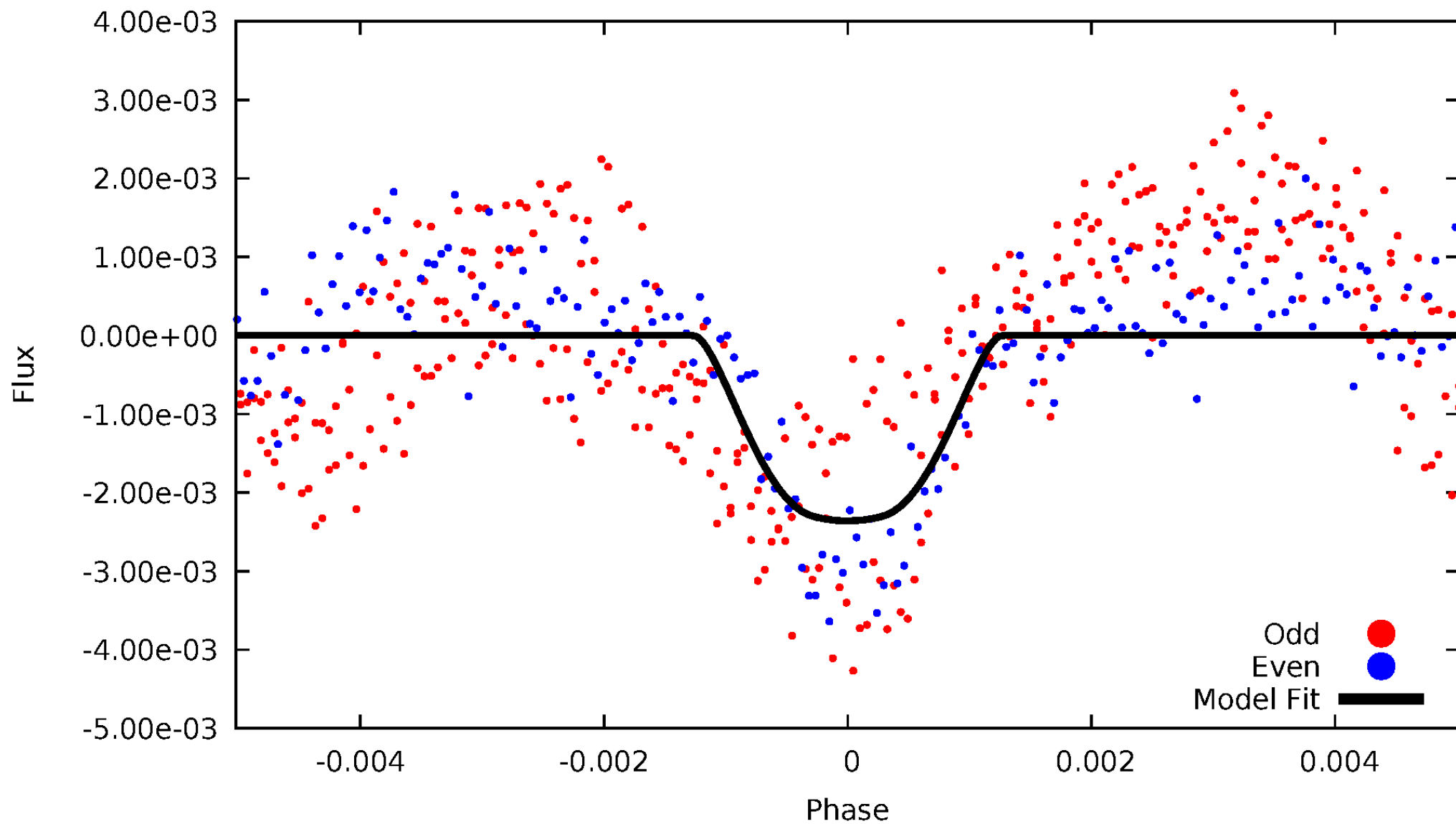


TCE 006119970-01



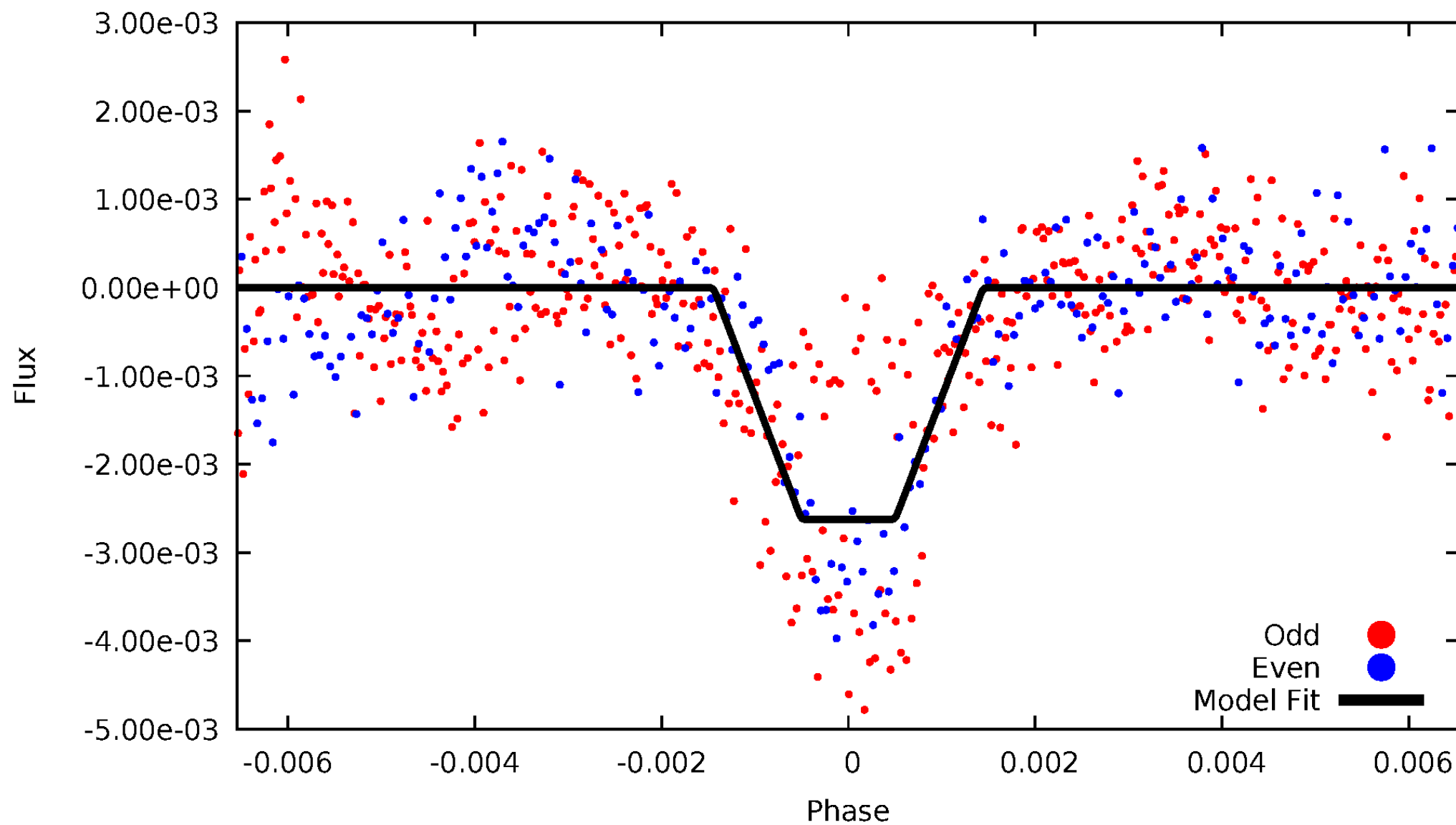
DV Odd/Even

TCE 006119970-01

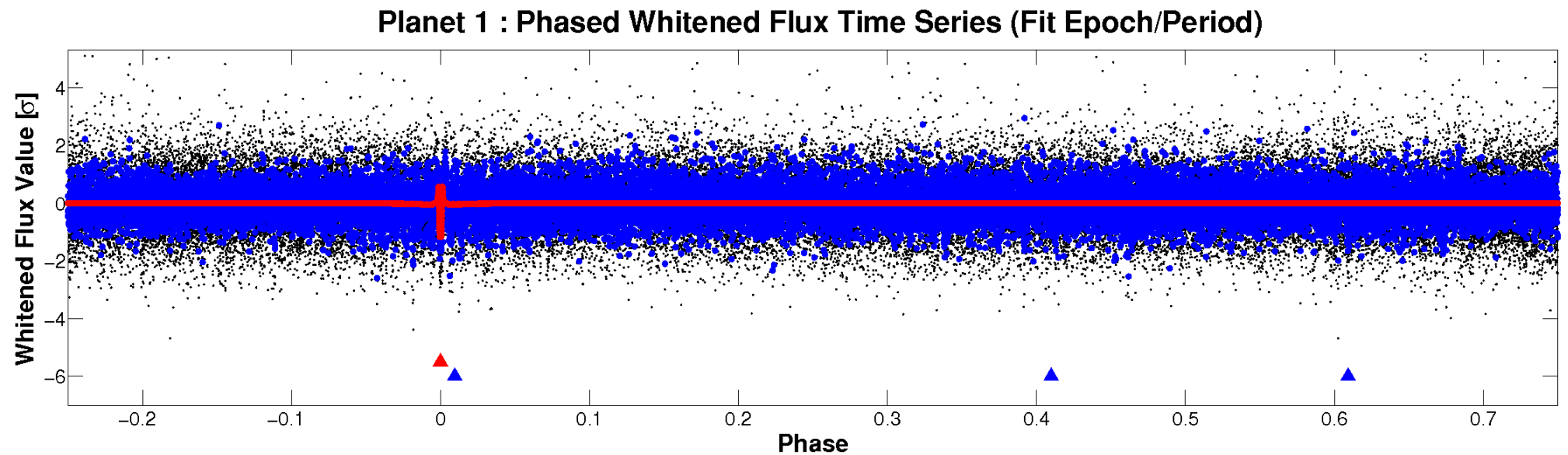
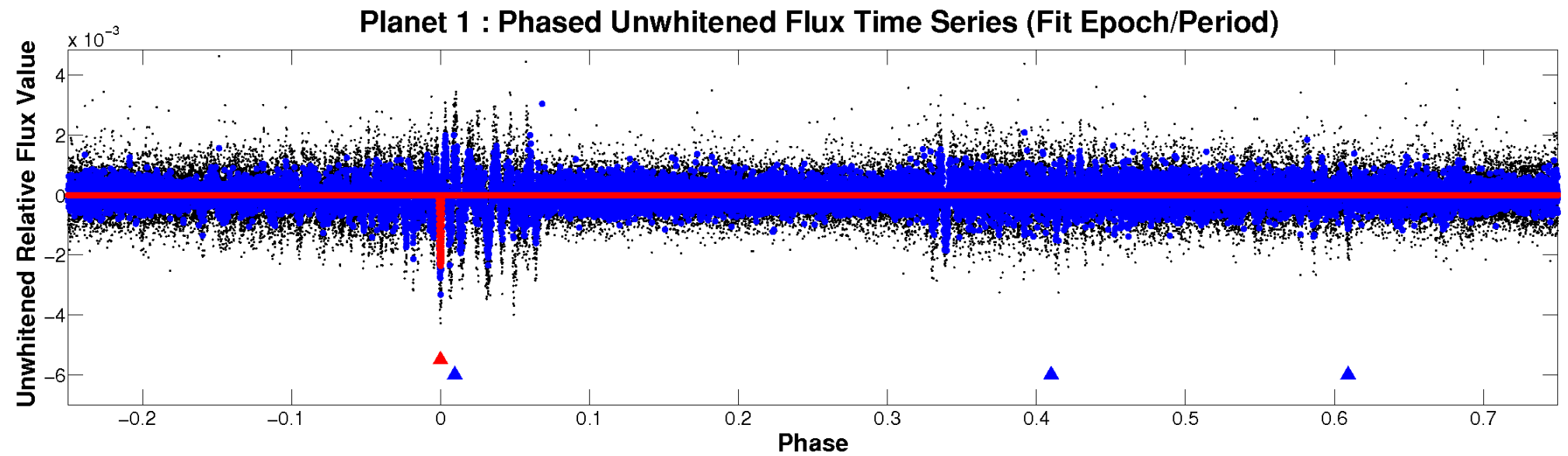


ALT Odd/Even

TCE 006119970-01

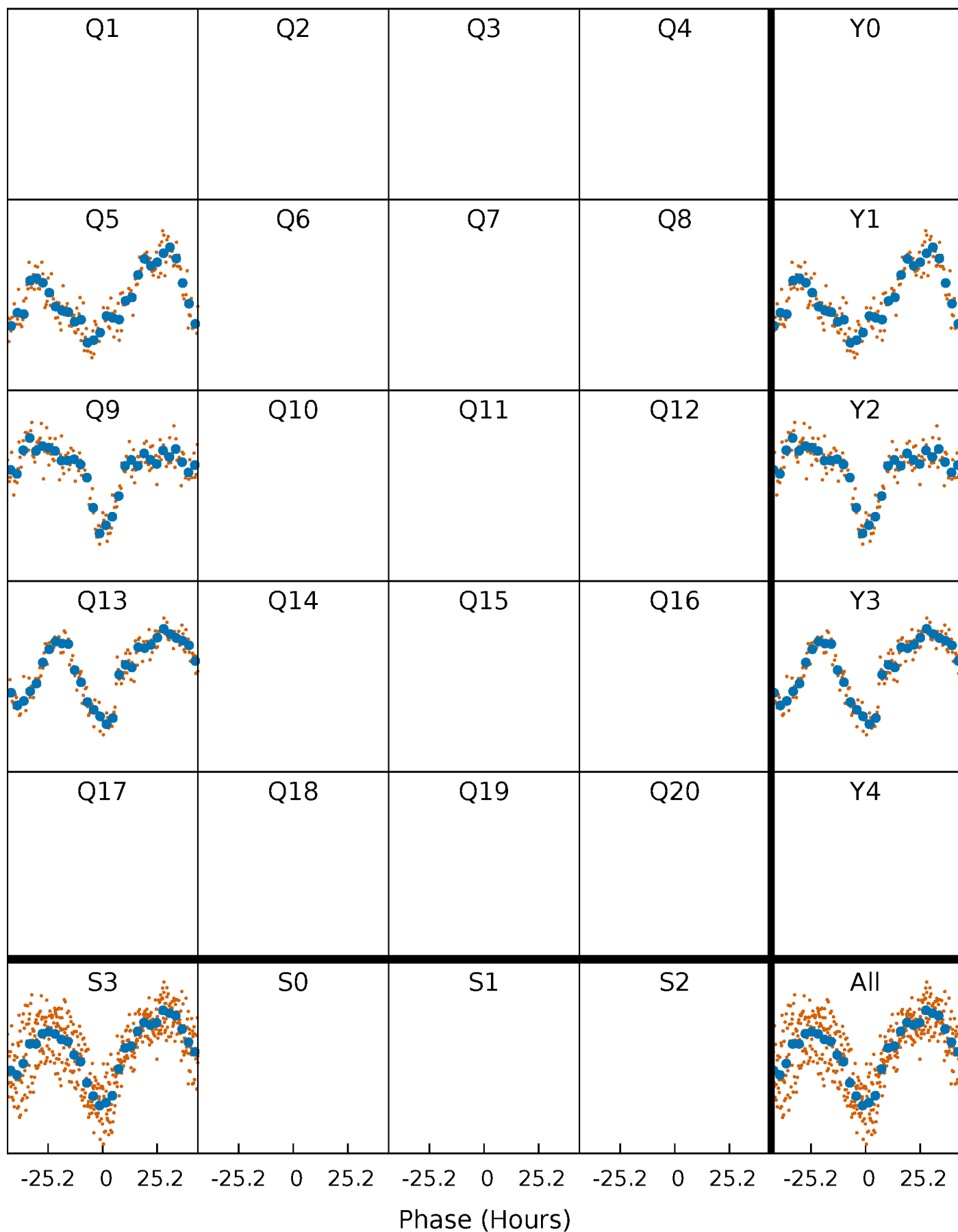


Non-Whitened Vs. Whitened Light Curve



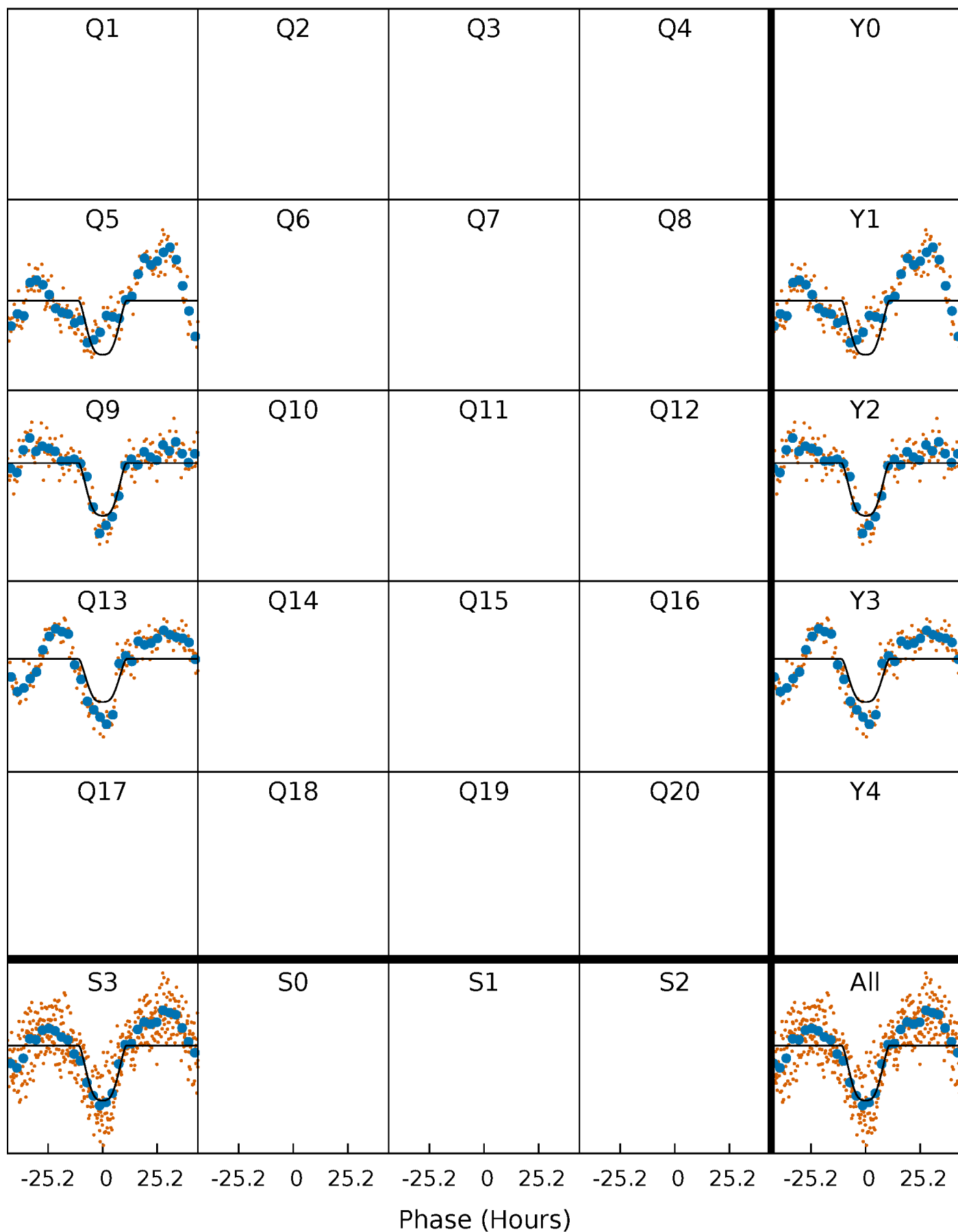
PDC Quarter-Phased Transit Curves

TCE 006119970-01 P=365.668981 Days $T_0=151.307946$ (BKJD)



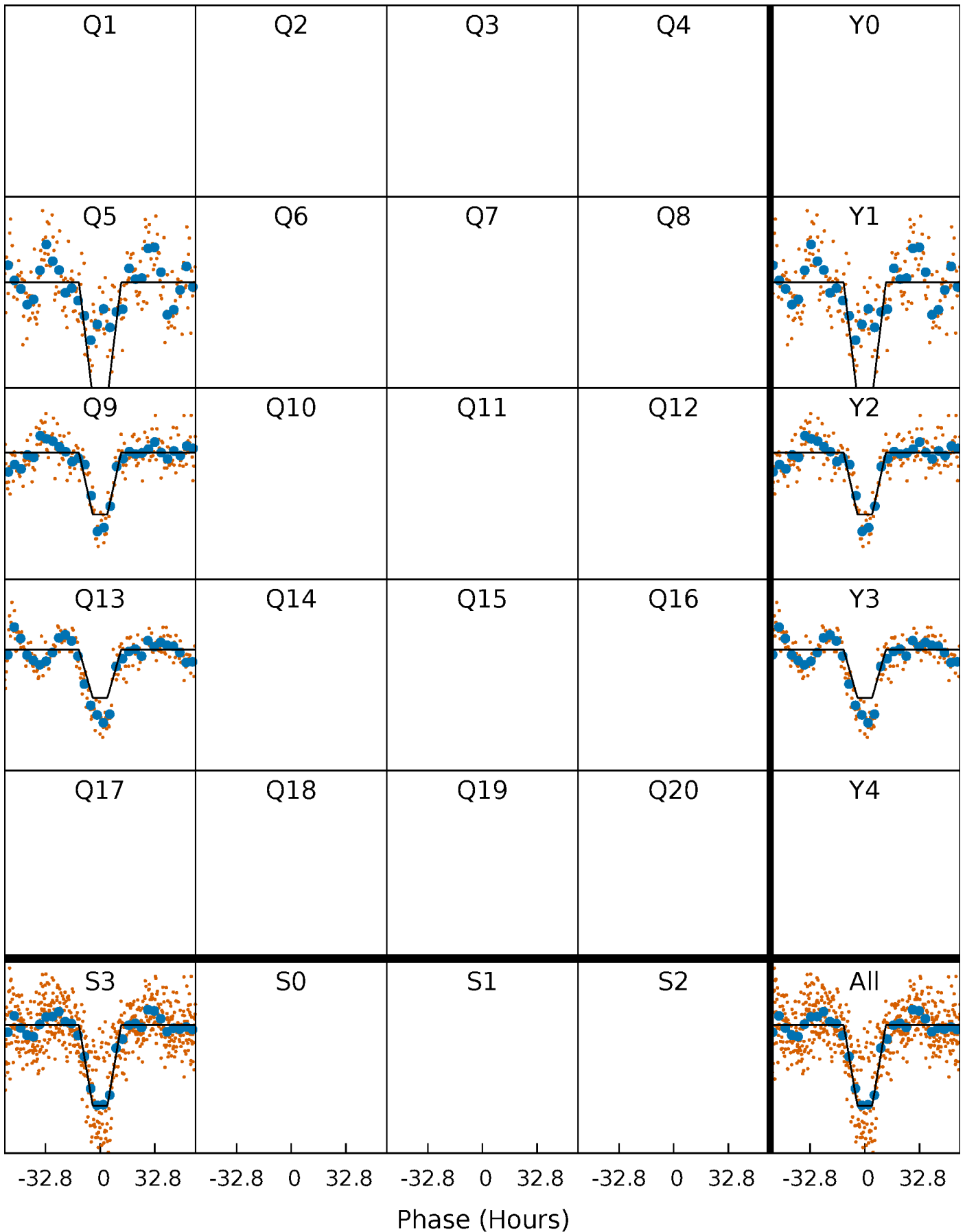
DV Quarter-Phased Transit Curves

TCE 006119970-01 P=365.668981 Days $T_0=151.307946$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

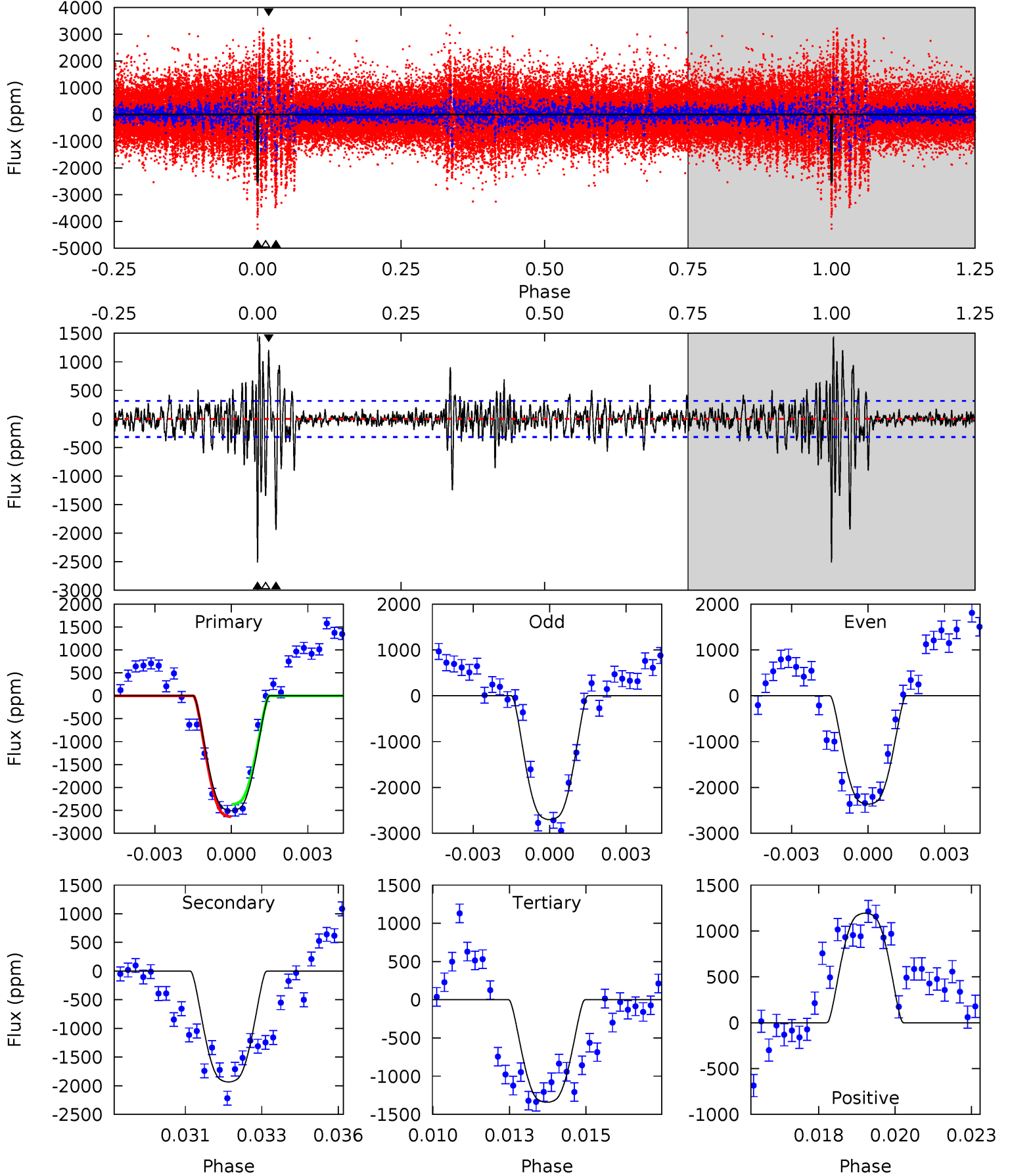
TCE 006119970-01 P=365.631311 Days $T_0=151.374011$ (BKJD)



DV Model-Shift Uniqueness Test

006119970-01, P = 365.668981 Days, E = 151.307946 Days

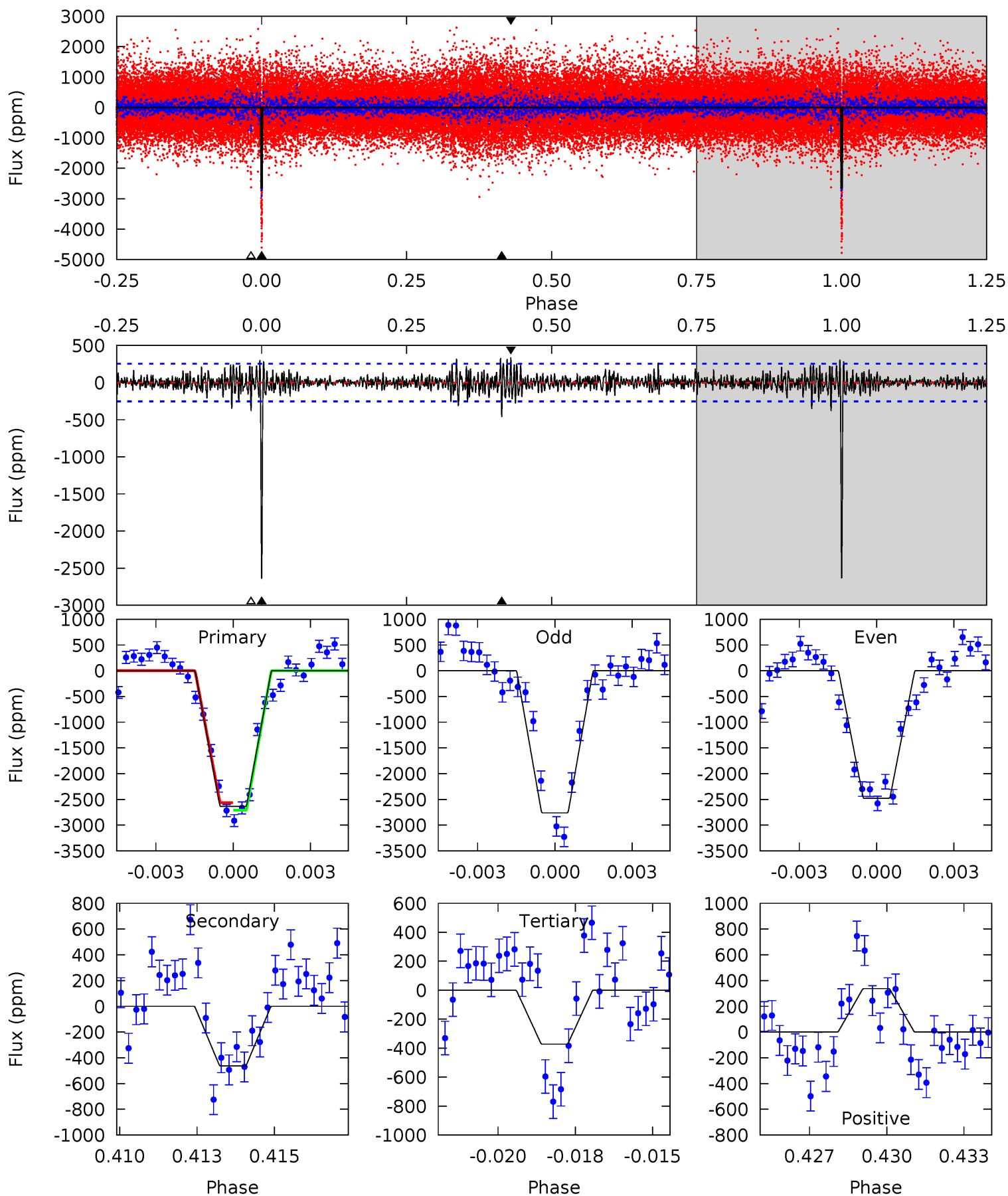
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
41.9	32.3	22.4	19.9	5.28	3.02	3.82	19.5	22.0	9.88	12.3	2.69	0.91	0.36	2.19



Alt Model-Shift Uniqueness Test

006119970-01, $P = 365.631311$ Days, $E = 151.374011$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.5	9.56	7.71	6.99	5.26	2.98	1.55	46.8	47.6	1.86	2.57	2.74	0.93	0.11	1.54



Stellar Parameters For KIC 006119970

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5699^{+186}_{-186}	$4.553^{+0.035}_{-0.196}$	$-0.100^{+0.300}_{-0.300}$	$0.853^{+0.246}_{-0.066}$	$0.950^{+0.104}_{-0.115}$	$2.159^{+0.412}_{-1.083}$
	+3%/-3%	+1%/-4%	+300%/-300%	+29%/-8%	+11%/-12%	+19%/-50%
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 006119970-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1934 ± 60	$5.40^{+0.84}_{-0.55}$	335^{+23}_{-15}	5125^{+233}_{-225}	34518^{+7852}_{-8135}
Alt.	-462 ± 48	$4.97^{+0.84}_{-0.56}$	336^{+22}_{-16}	3995^{+172}_{-158}	9532^{+2709}_{-2415}

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

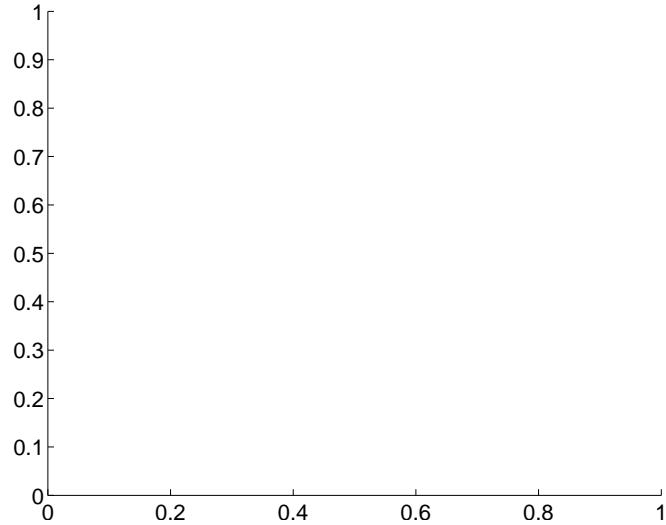
Supplemental centroid analysis for 006119970-01. Kepler magnitude: 15.82. Transit SNR 9.97

There are 0 quarters with good PRF difference image offsets

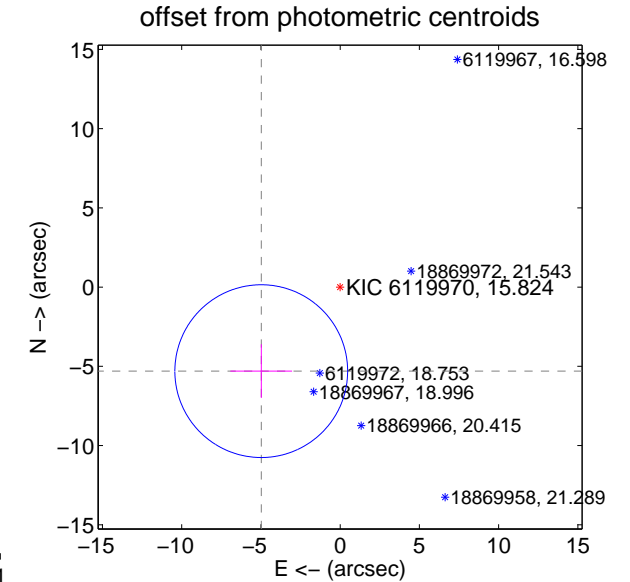
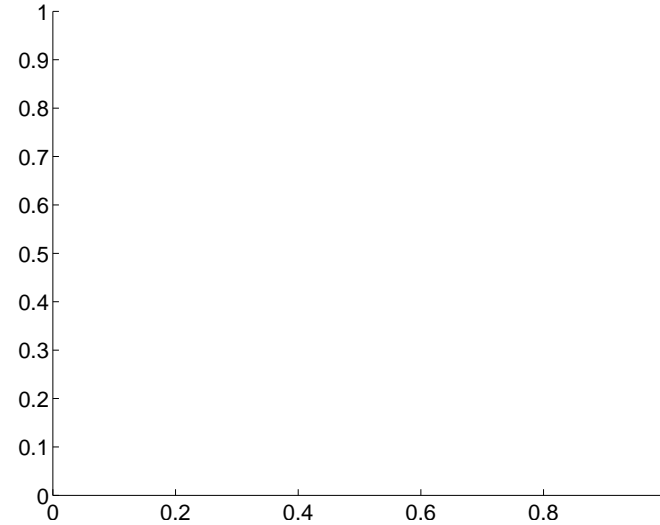
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	7.27 ± 1.82	4.00	4.98 ± 1.95	-5.30 ± 1.69

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

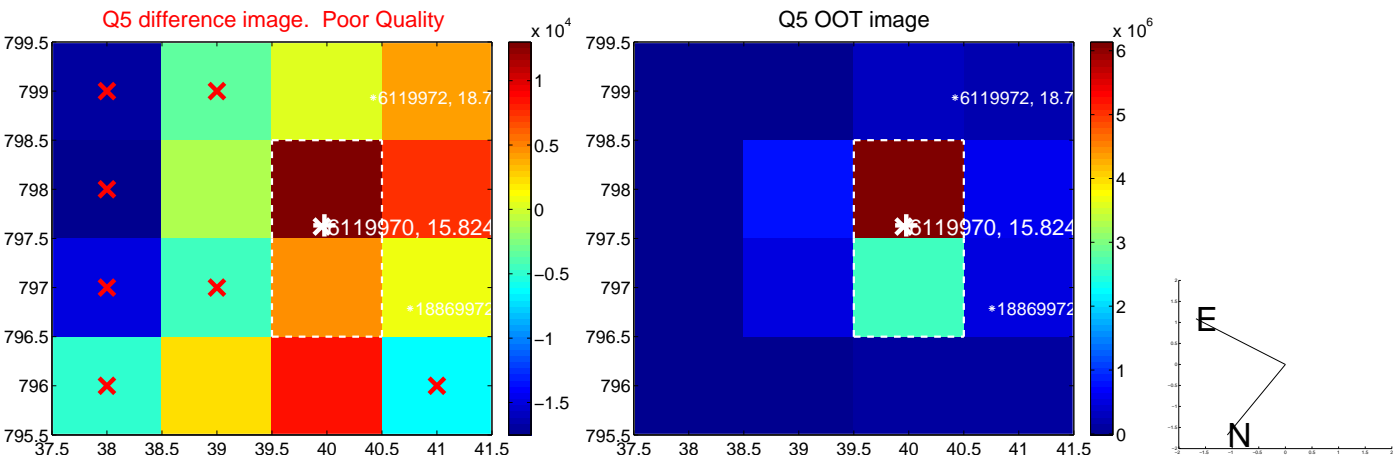


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

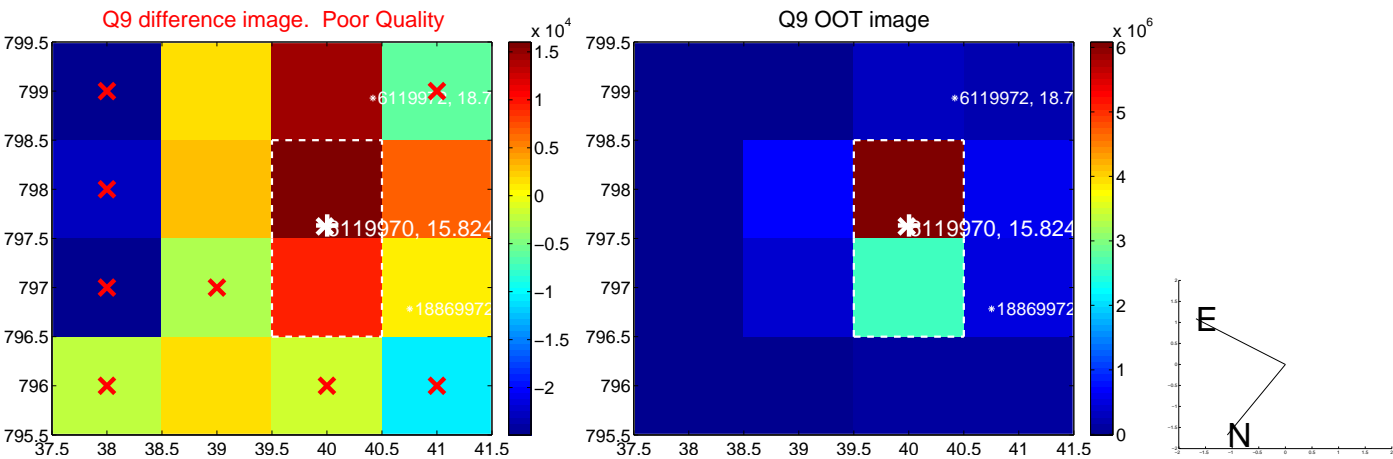
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



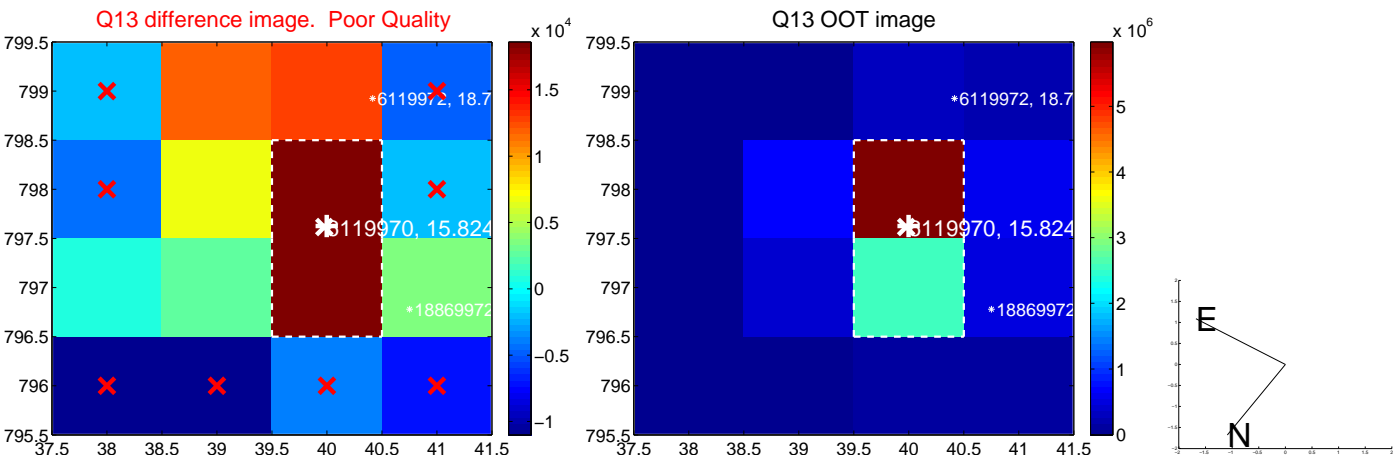
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



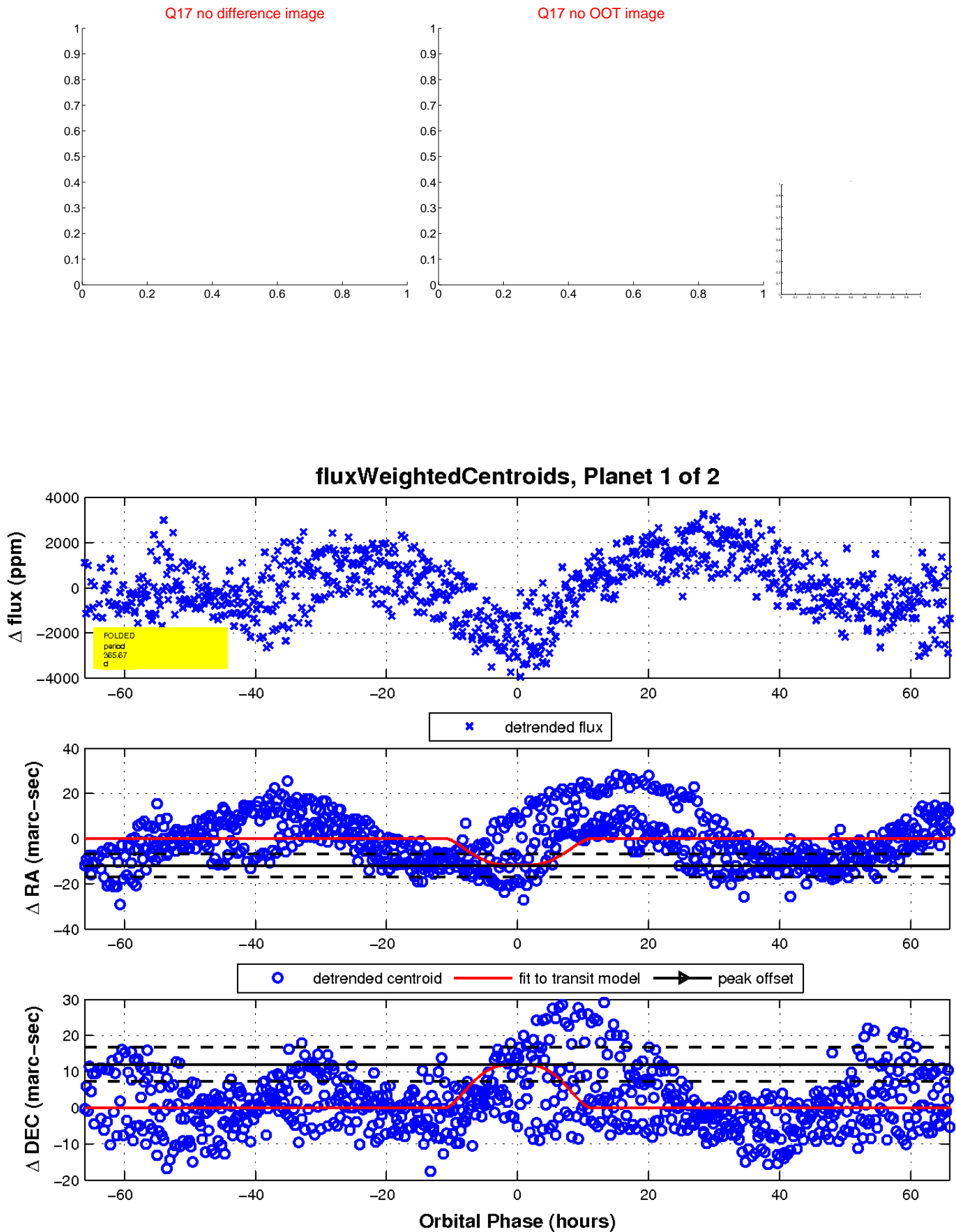
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

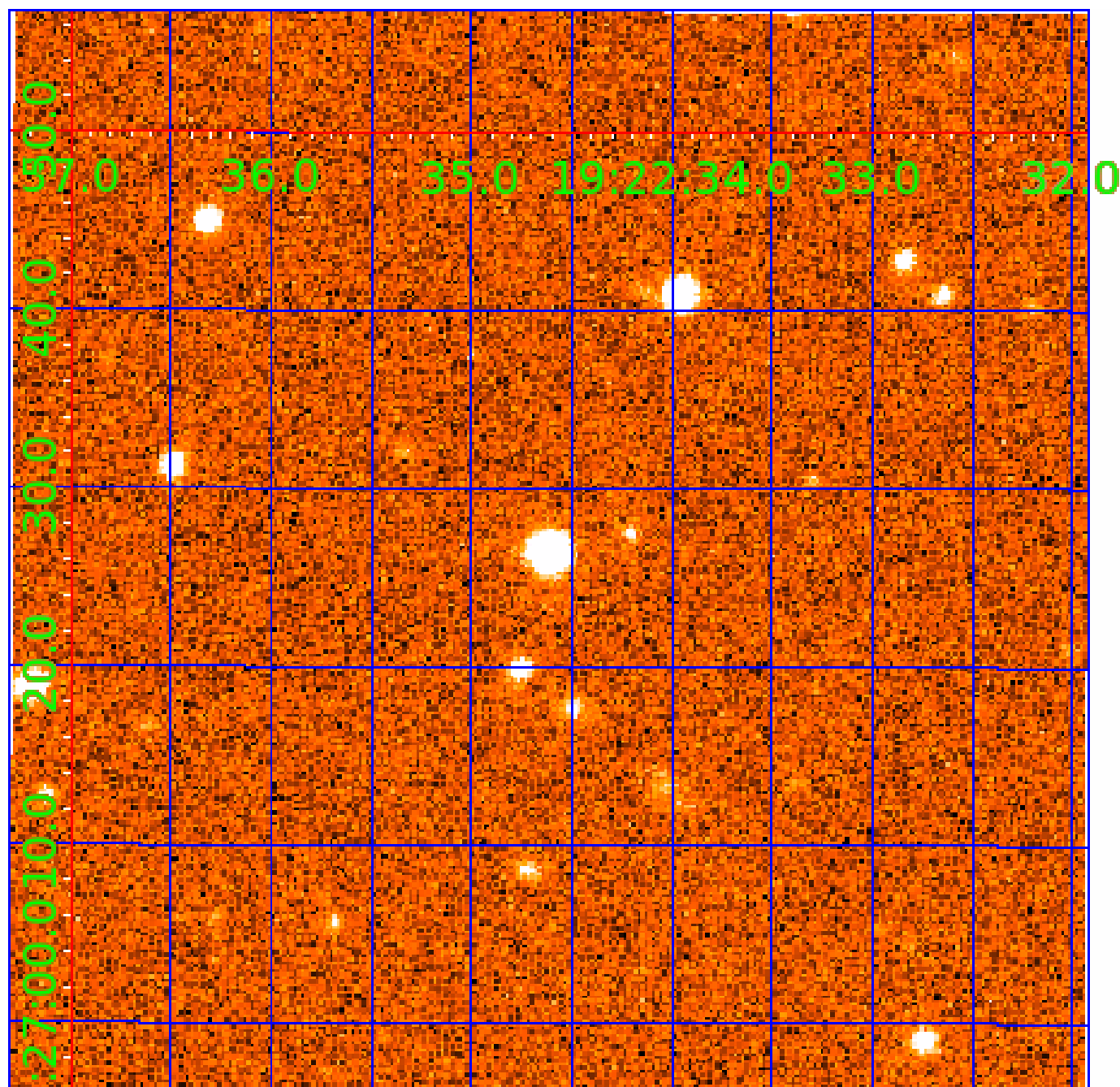


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006119970

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})
006119970-01	OBS	No	365.668981	151.307946	2359.7	22.035	9.2	10.0	0.85	5699	5.18	0.71
006119970-02	OBS	No	512.063584	374.089817	1360.5	26.003	7.8	8.2	0.85	5699	5.76	0.45

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006119970-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—CENT_FEW_DIFFS
006119970-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

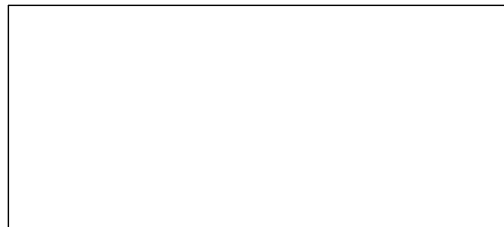
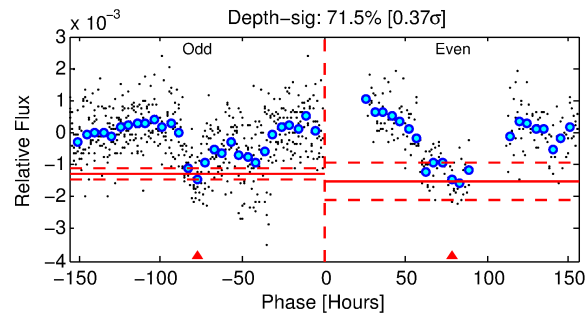
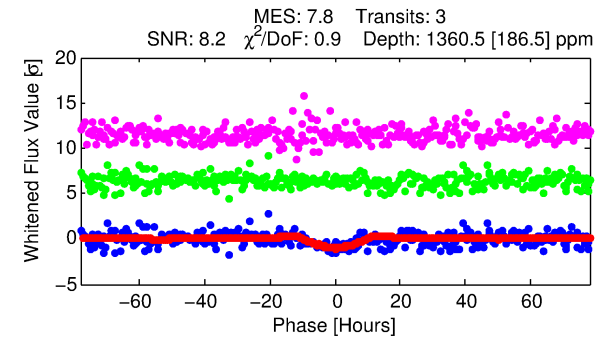
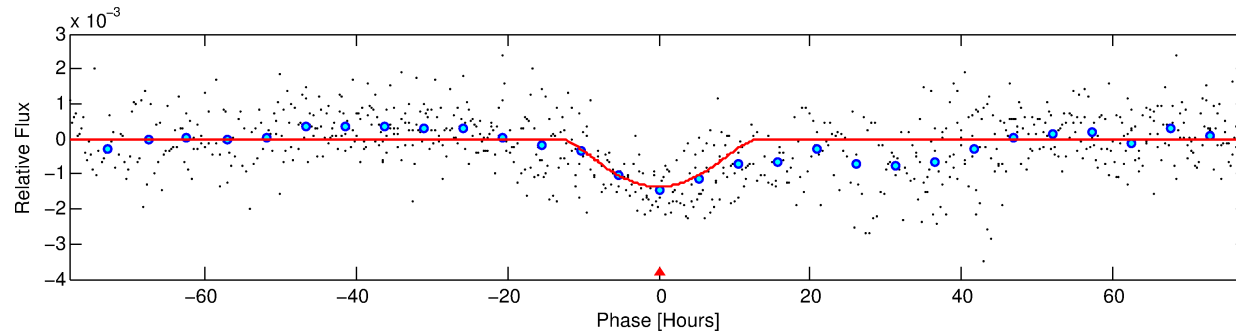
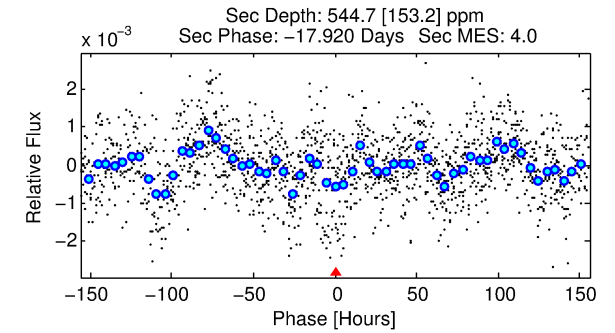
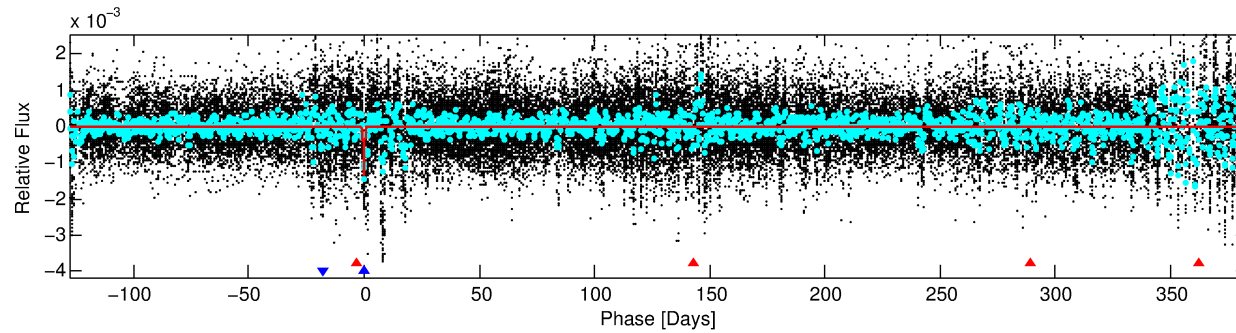
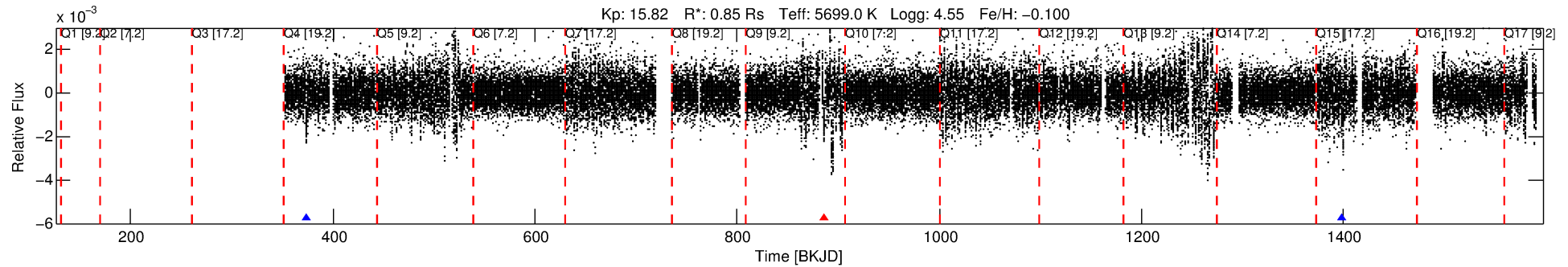
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006119970-02

No Significant Match Found

DV One-Page Summary

KIC: 6119970 Candidate: 2 of 2 Period: 512.064 d



DV Fit Results:

Period = 512.06358 [0.03848] d
Epoch = 374.0898 [0.0367] BKJD
Rp/R* = 0.0618 [0.1449]
a/R* = 55.90 [32.17]
b = 0.99 [0.22]
Seff = 0.45 [0.17]
Teq = 209 [20] K
Rp = 5.76 [13.59] Re
a = 1.2309 [0.3005] AU
Ag = 13705.30 [64519.23] [0.21σ]
Teffp = 3501 [4110] K [0.80σ]

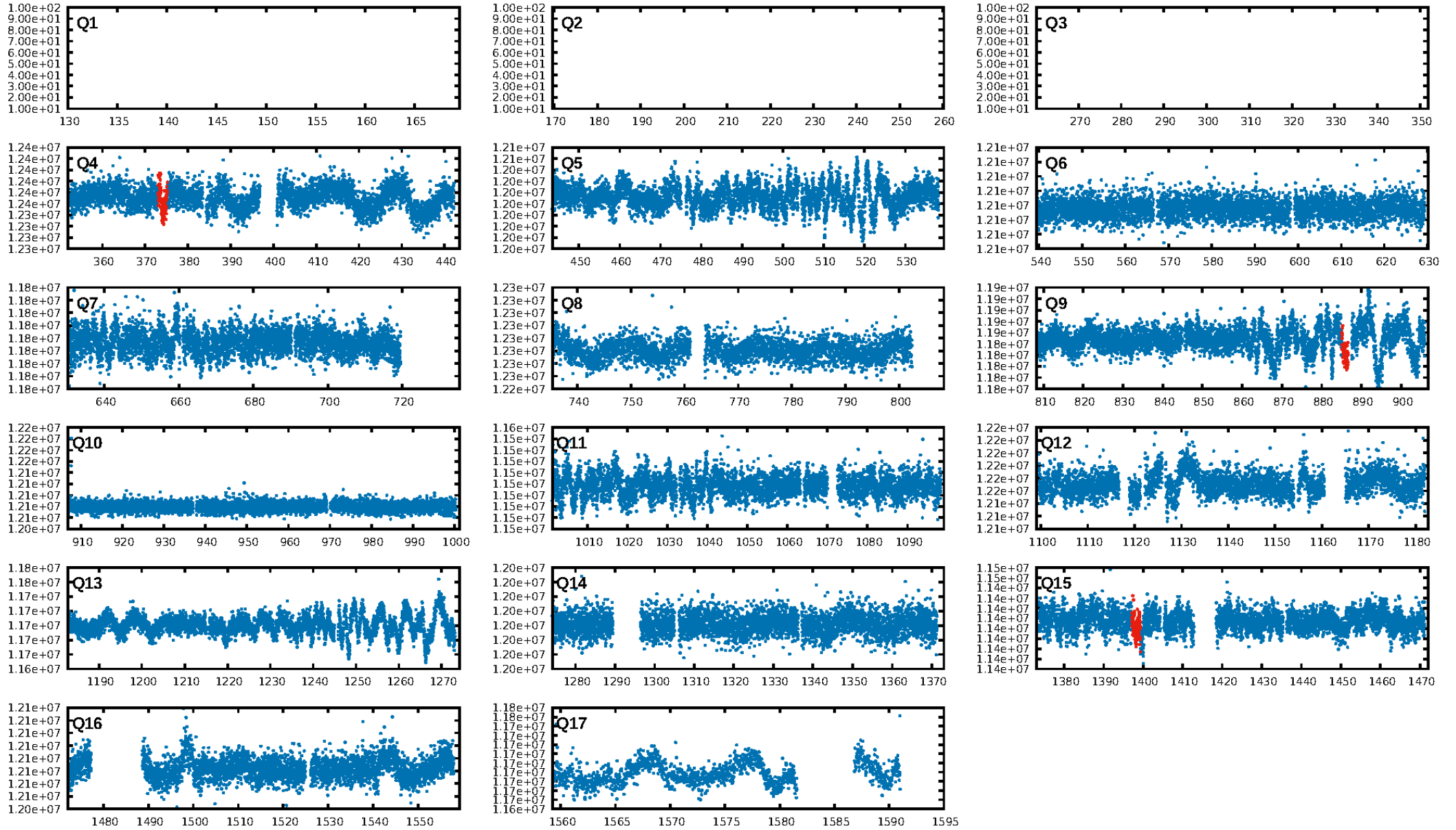
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [103.08σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 62.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.50e-08
RollingBand-fgt: 0.67 [2/3]
GhostDiagnostic-chr: -0.3649
Centroid-sig: 57.9%
Centroid-so: 1.633 arcsec [0.80σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: N/A

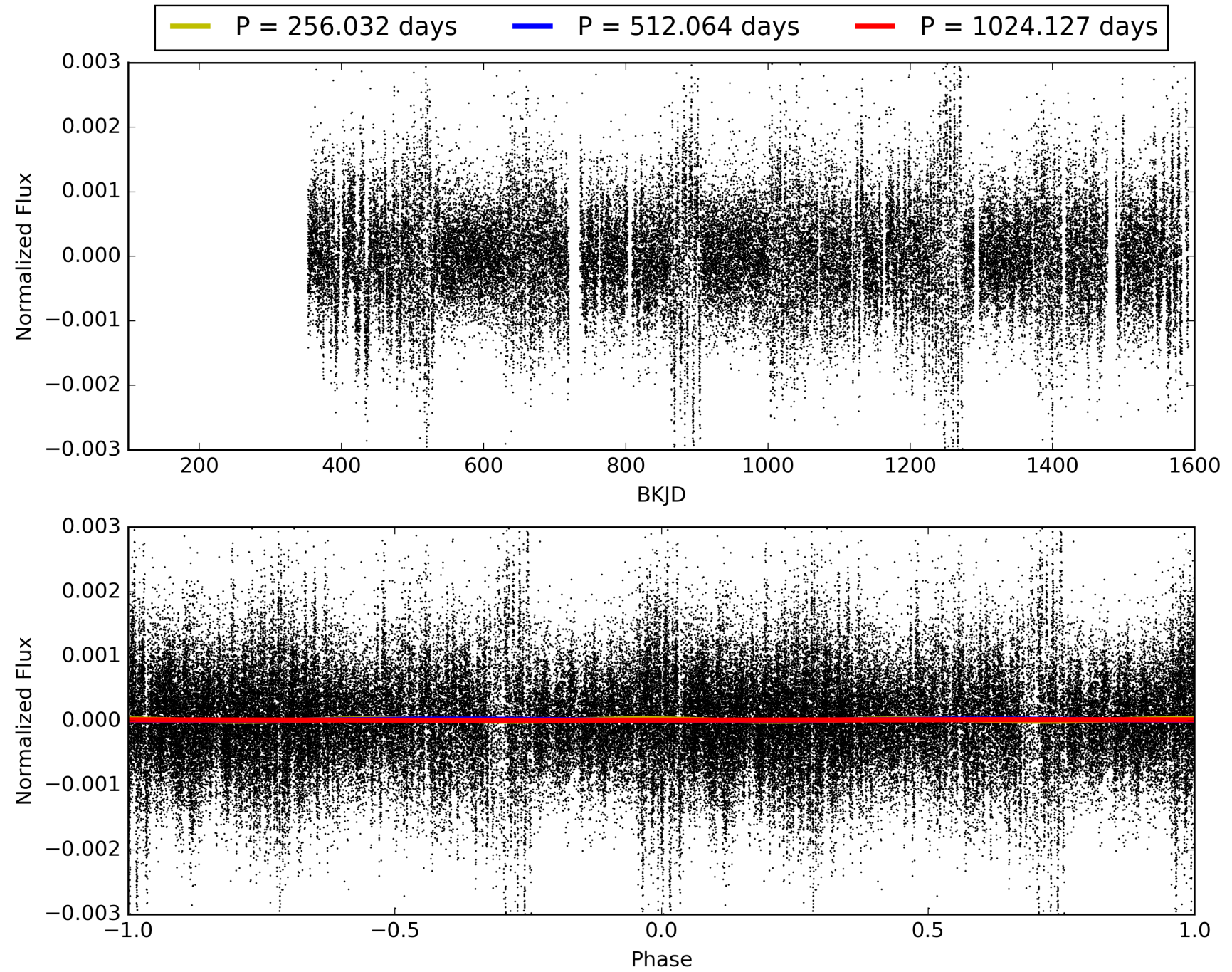
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:01:43 Z

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

TCE 006119970-02, PDC Light Curves

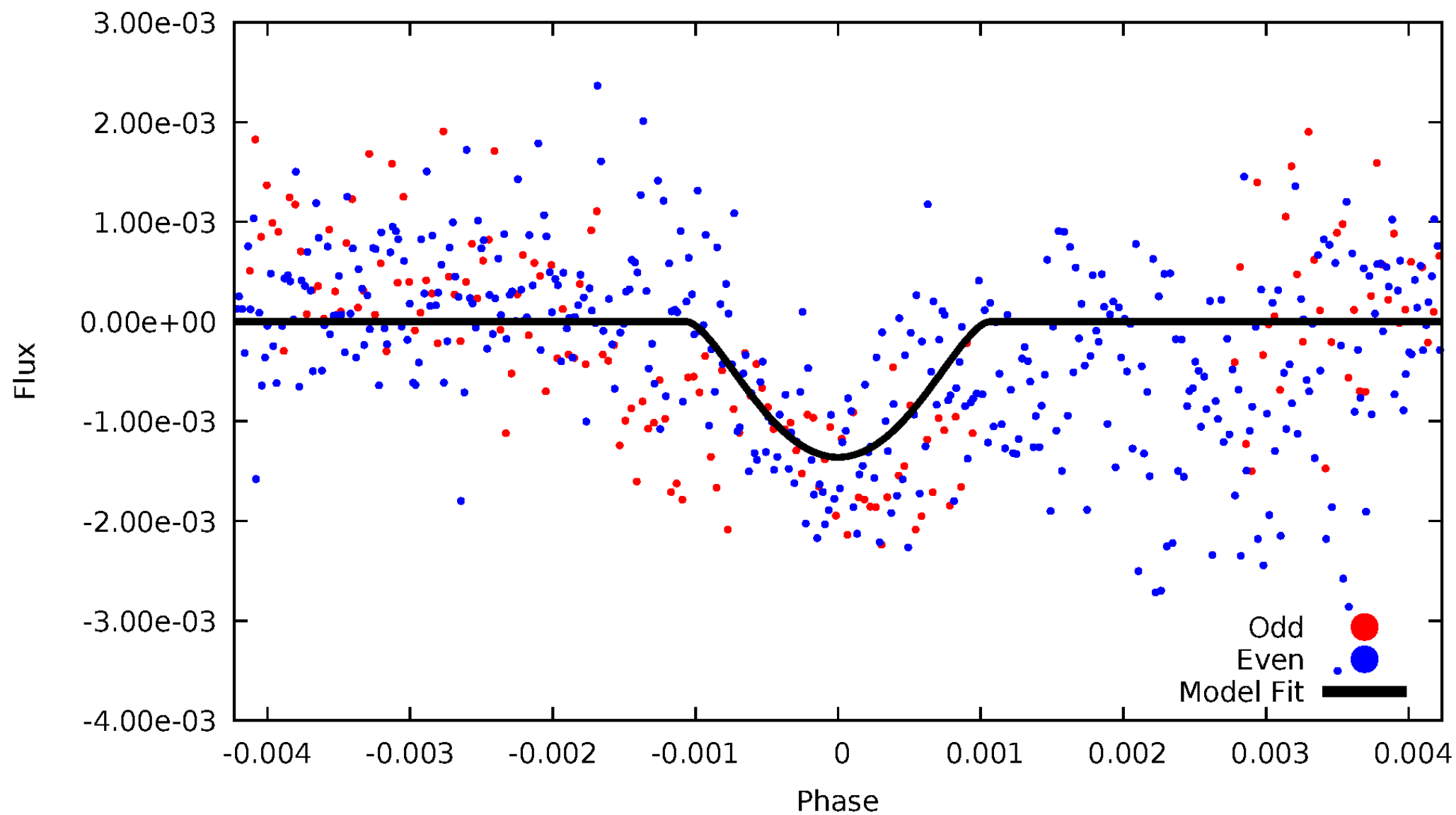


TCE 006119970-02



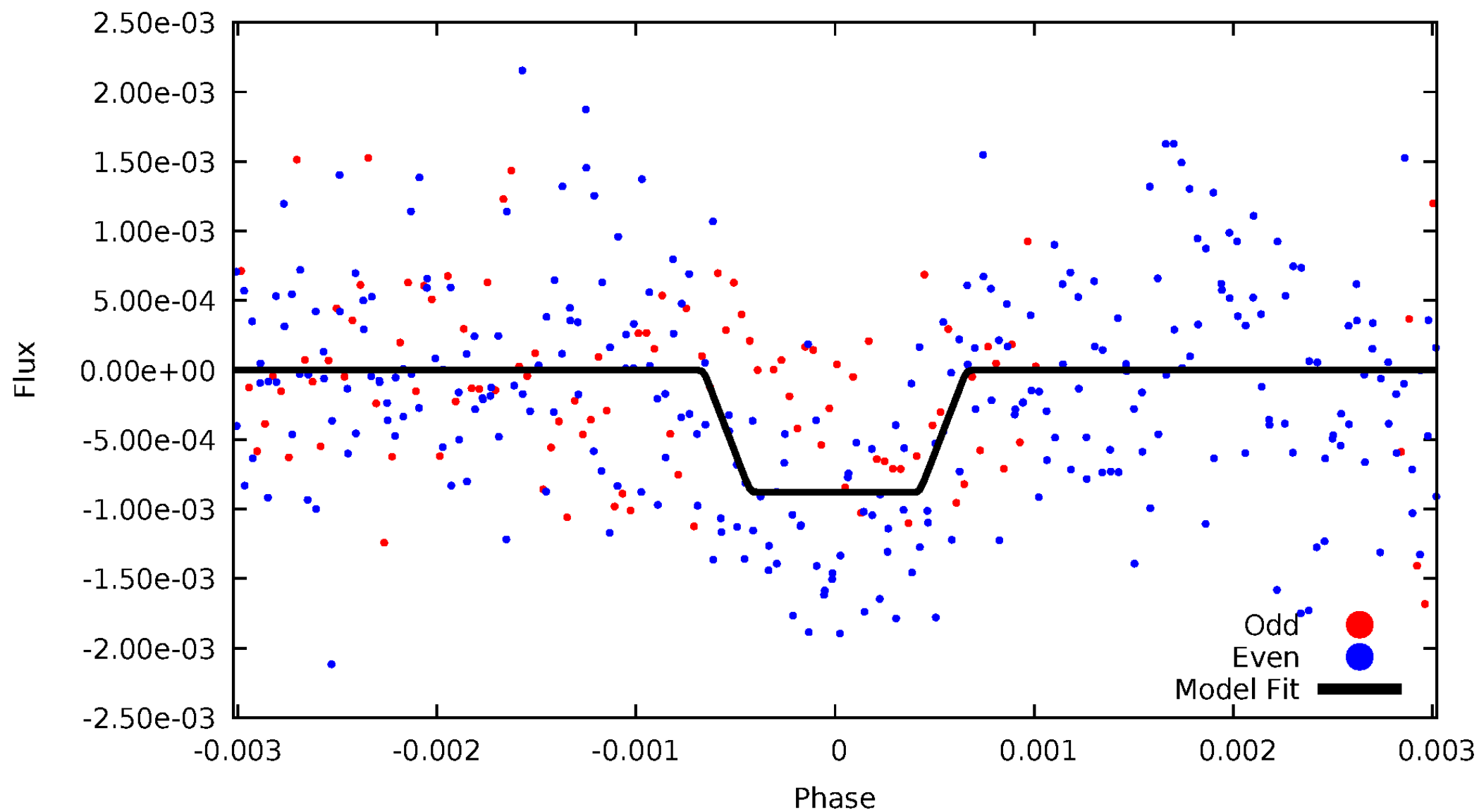
DV Odd/Even

TCE 006119970-02



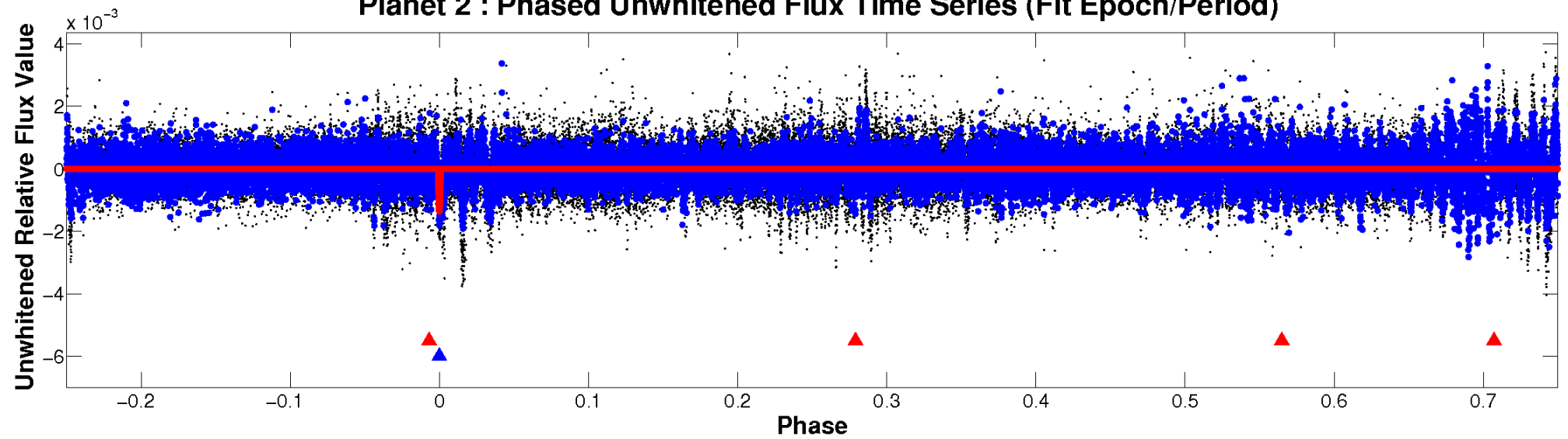
ALT Odd/Even

TCE 006119970-02

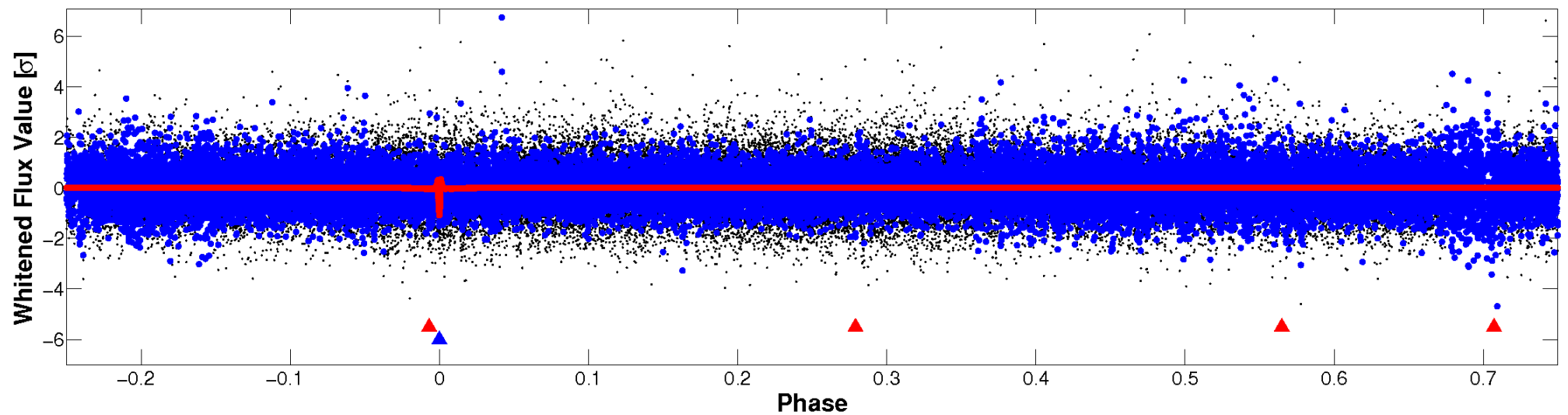


Non-Whitened Vs. Whitened Light Curve

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 006119970-02 P=512.063584 Days $T_0=374.089817$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006119970-02 P=512.063584 Days $T_0=374.089817$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

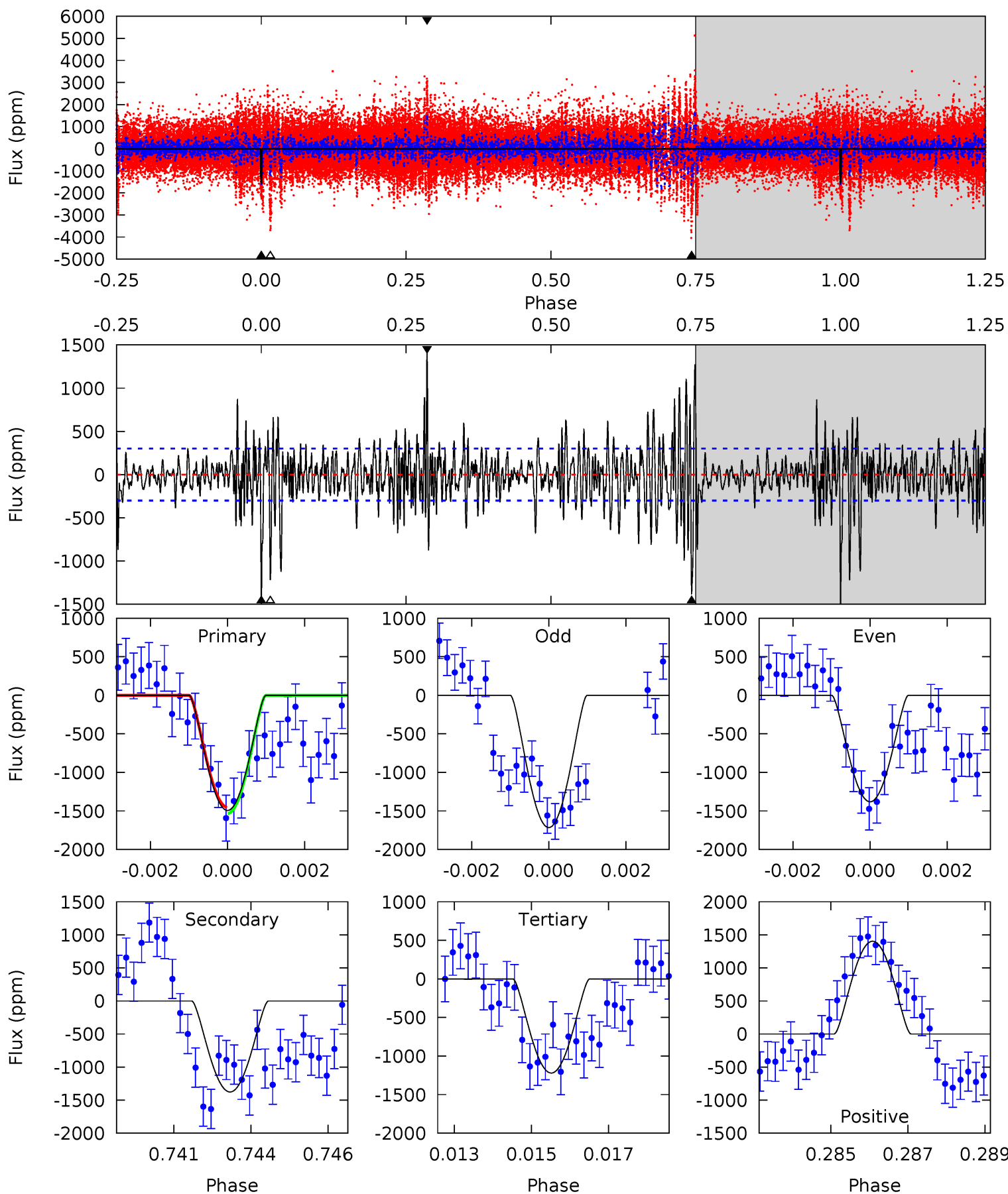
TCE 006119970-02 $P=512.037769$ Days $T_0=374.082810$ (BKJD)



DV Model-Shift Uniqueness Test

006119970-02, P = 512.063584 Days, E = 374.089817 Days

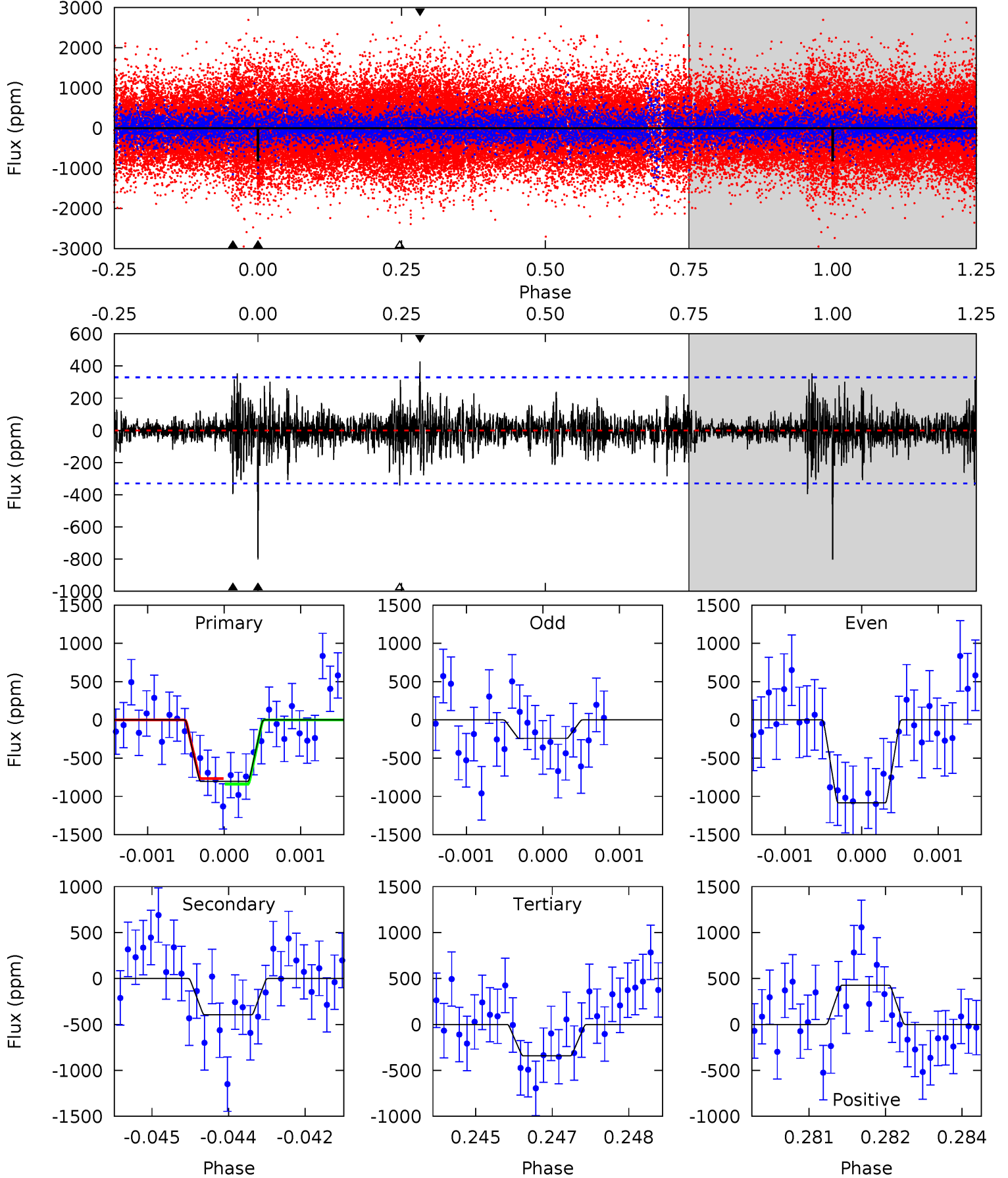
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.4	24.3	21.6	24.8	5.31	3.07	4.84	4.83	1.61	2.77	-0.45	2.79	0.87	0.48	0.71



Alt Model-Shift Uniqueness Test

006119970-02, P = 512.037769 Days, E = 374.082810 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	6.48	5.60	7.00	5.40	3.21	1.30	7.57	6.17	0.88	-0.53	6.43	0.92	0.35	0.60



Stellar Parameters For KIC 006119970

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5699^{+186}_{-186}	$4.553^{+0.035}_{-0.196}$	$-0.100^{+0.300}_{-0.300}$	$0.853^{+0.246}_{-0.066}$	$0.950^{+0.104}_{-0.115}$	$2.159^{+0.412}_{-1.083}$
	+3%/-3%	+1%/-4%	+300%/-300%	+29%/-8%	+11%/-12%	+19%/-50%
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 006119970-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1377 ± 57	$12.75^{+10.73}_{-8.88}$	301^{+19}_{-14}	3544^{+2072}_{-619}	6920^{+67200}_{-4872}
Alt.	-395 ± 61	$11.35^{+10.69}_{-7.96}$	298^{+19}_{-13}	3013^{+1419}_{-478}	2566^{+23447}_{-1872}

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 $A_{obs} \gg 1.0$

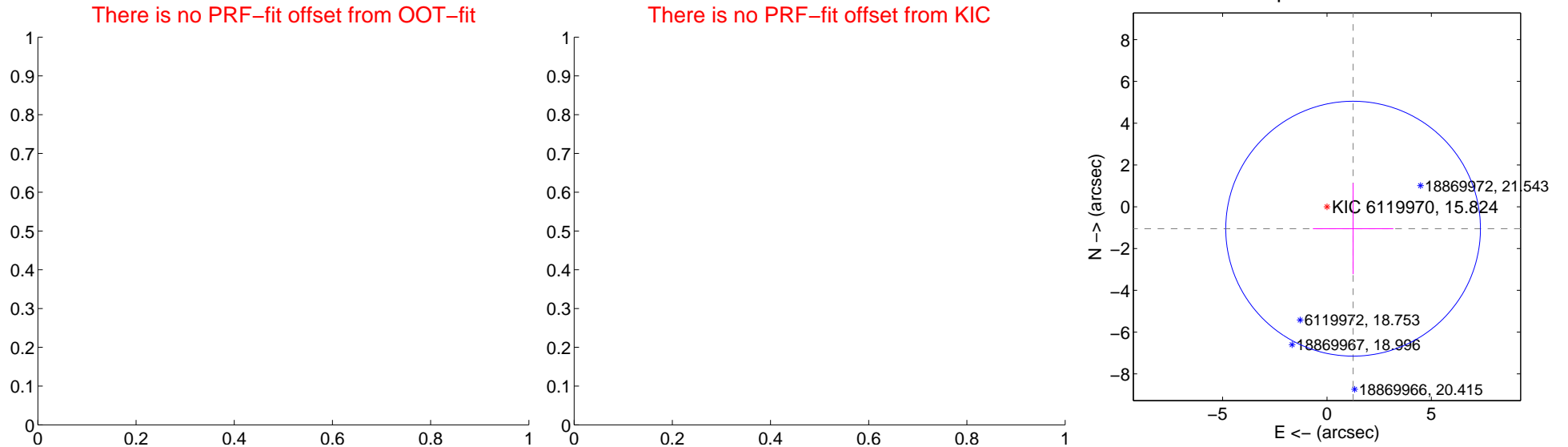
DV Centroid Data

Supplemental centroid analysis for 006119970-02. Kepler magnitude: 15.82. Transit SNR 8.16

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	1.63 ± 2.03	0.80	-1.25 ± 1.93	-1.05 ± 2.18



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.

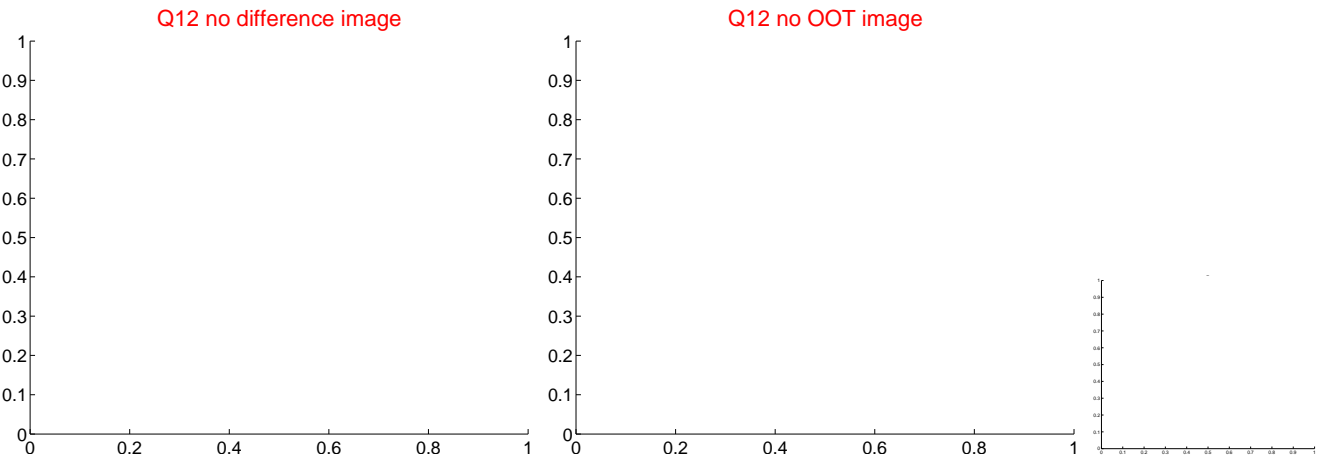
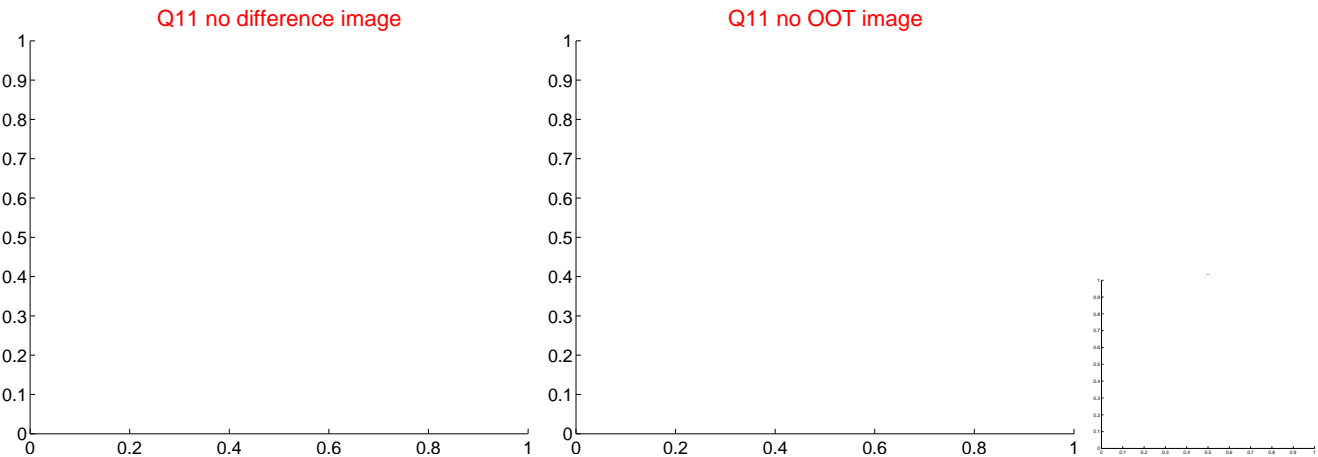
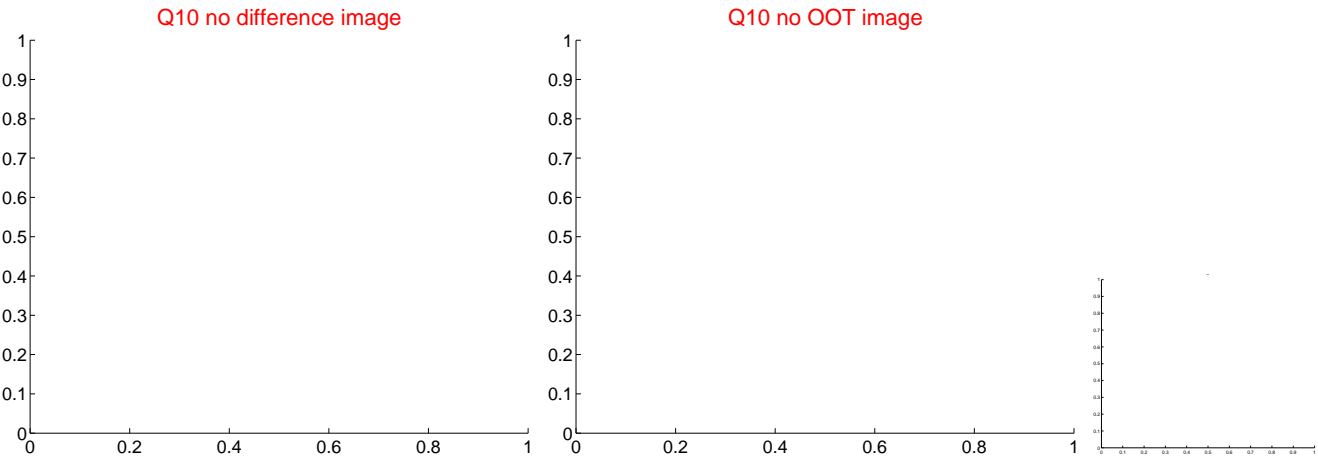
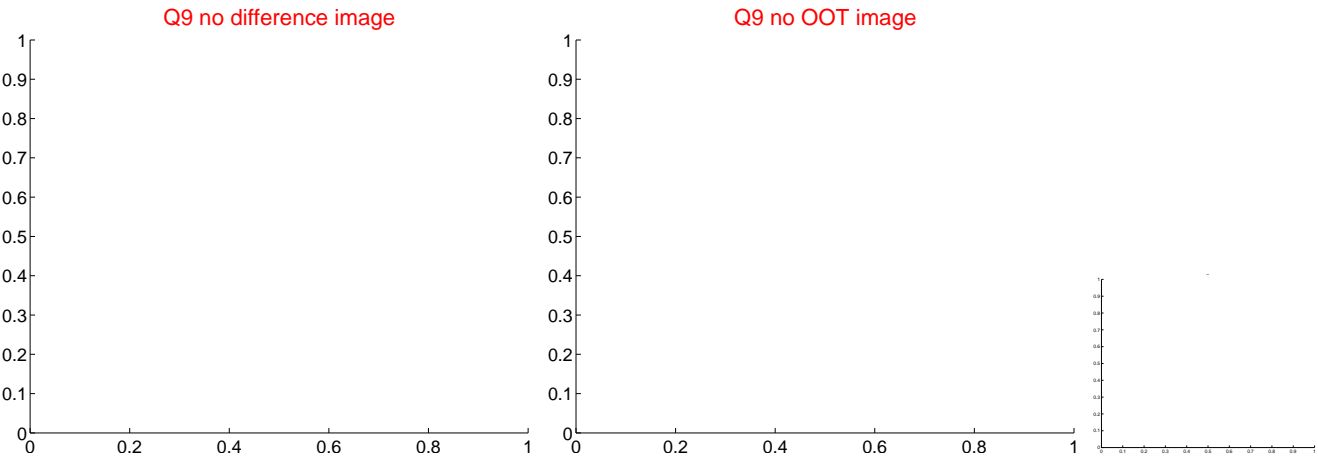
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



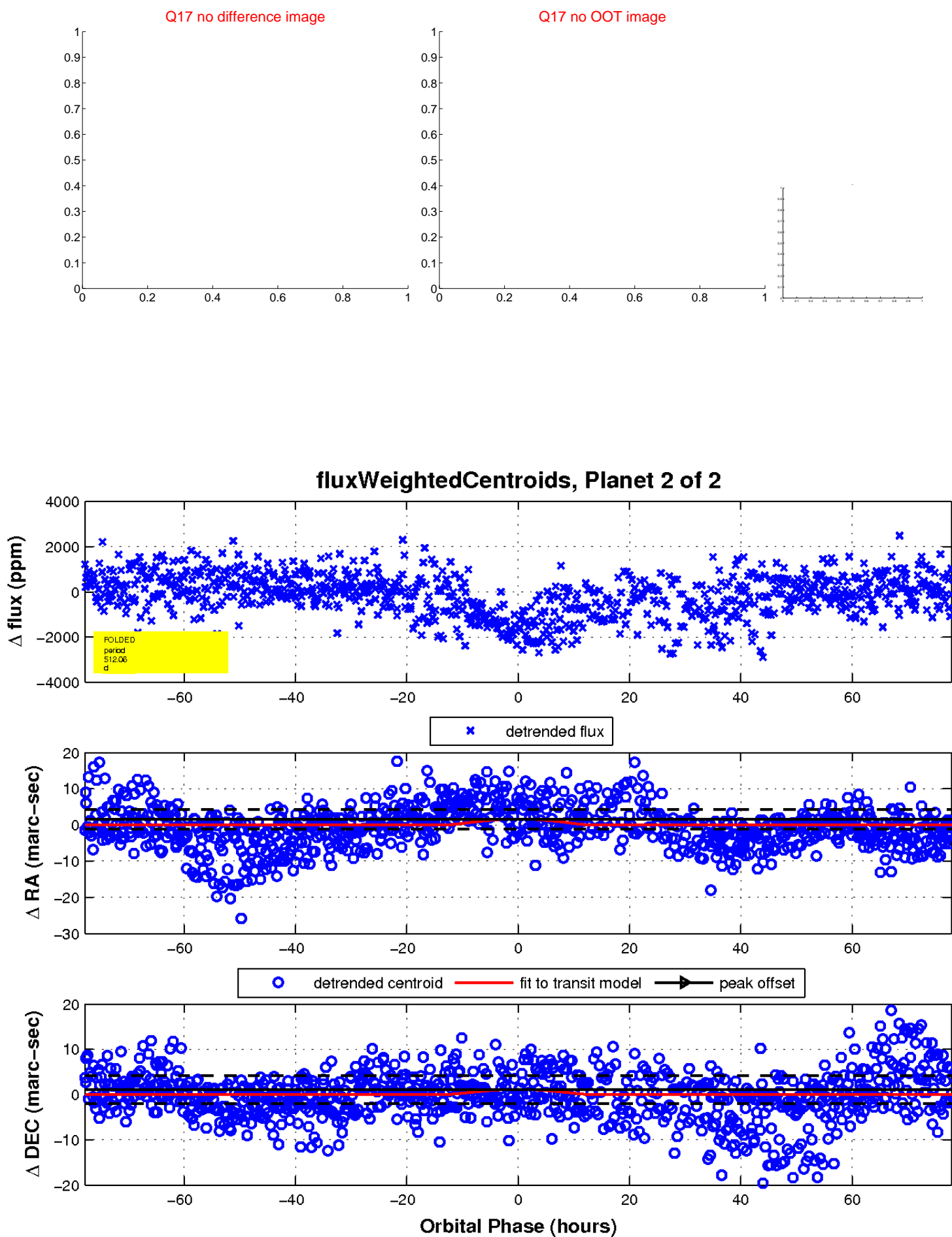
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

