

KIC 006665064

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})
006665064-01	OBS	6751.02	0.698368	131.701617	505.9	0.896	12.2	16.2	0.96	5761	2.60	3713.18
006665064-02	OBS	6751.01	24.996367	144.964346	699.4	5.817	8.6	8.8	0.96	5761	2.59	31.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006665064-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_FEW_DIFFS—HALO_GHOST
006665064-02	OBS	FP	0.27	1	0	0	0	INDIV_TRANS_RUBBLE

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 006665064-01

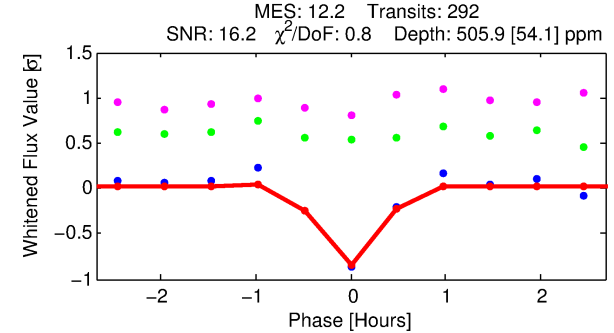
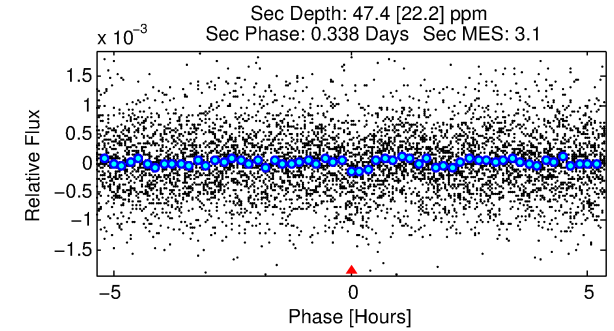
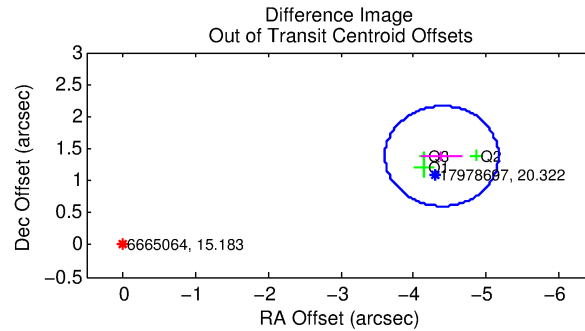
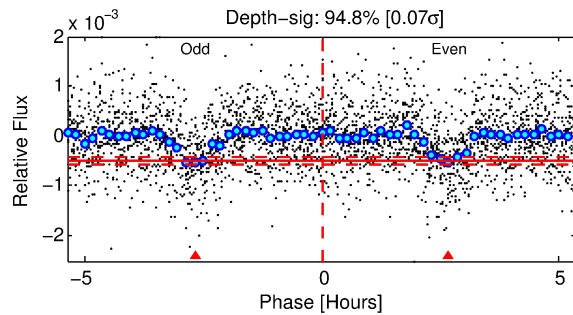
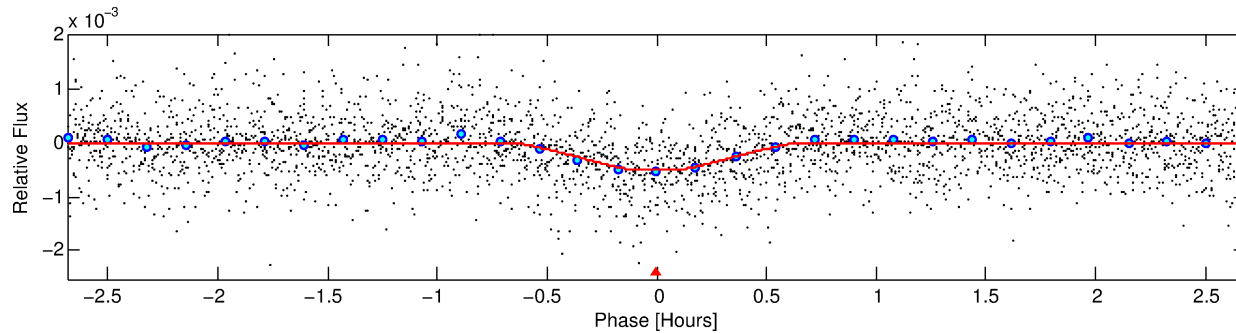
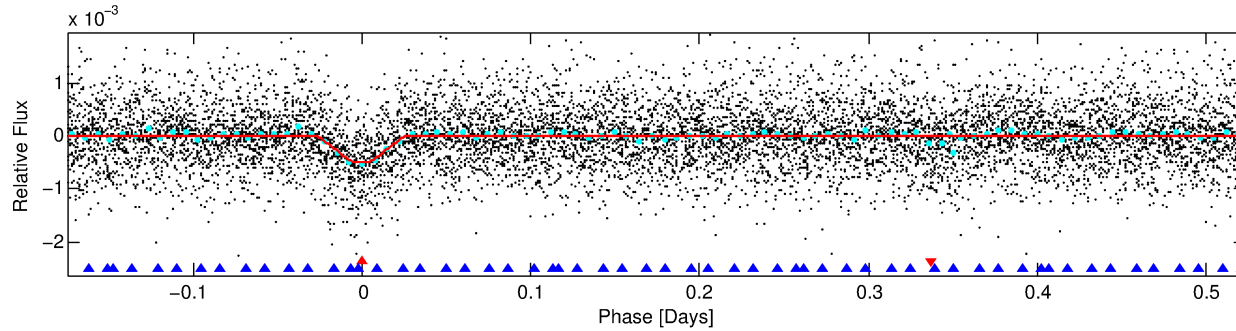
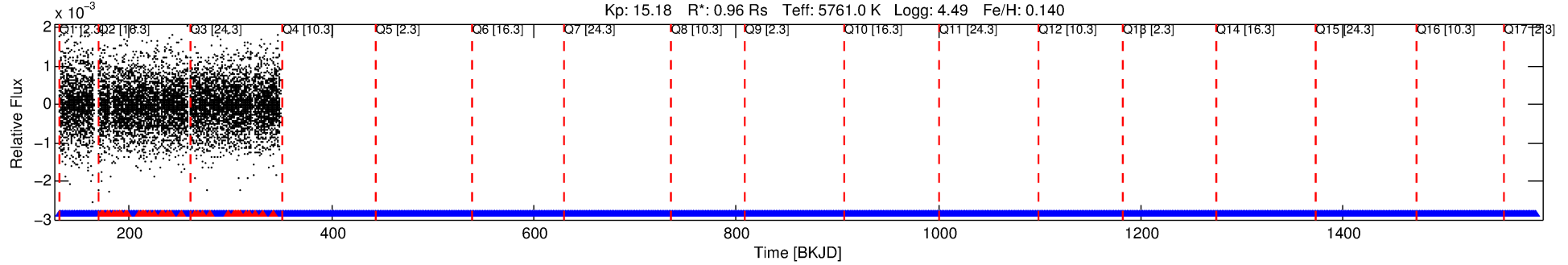
No Significant Match Found

DV One-Page Summary

KIC: 6665064 Candidate: 1 of 2 Period: 0.698 d

KOI: K06751.02 Corr: 0.903

Kp: 15.18 R*: 0.96 Rs Teff: 5761.0 K Logg: 4.49 Fe/H: 0.140



DV Fit Results:

Period = 0.69837 [0.00001] d
Epoch = 131.7016 [0.0012] BKJD
Rp/R* = 0.0249 [0.0119]
a/R* = 3.07 [5.85]
b = 0.90 [0.46]
Seff = 3713.18 [803.36]
Teq = 1991 [108] K
Rp = 2.60 [1.30] Re
a = 0.0156 [0.0021] AU
Ag = 0.94 [1.01] [-0.06σ]
Teff = 3027 [804] K [1.28σ]

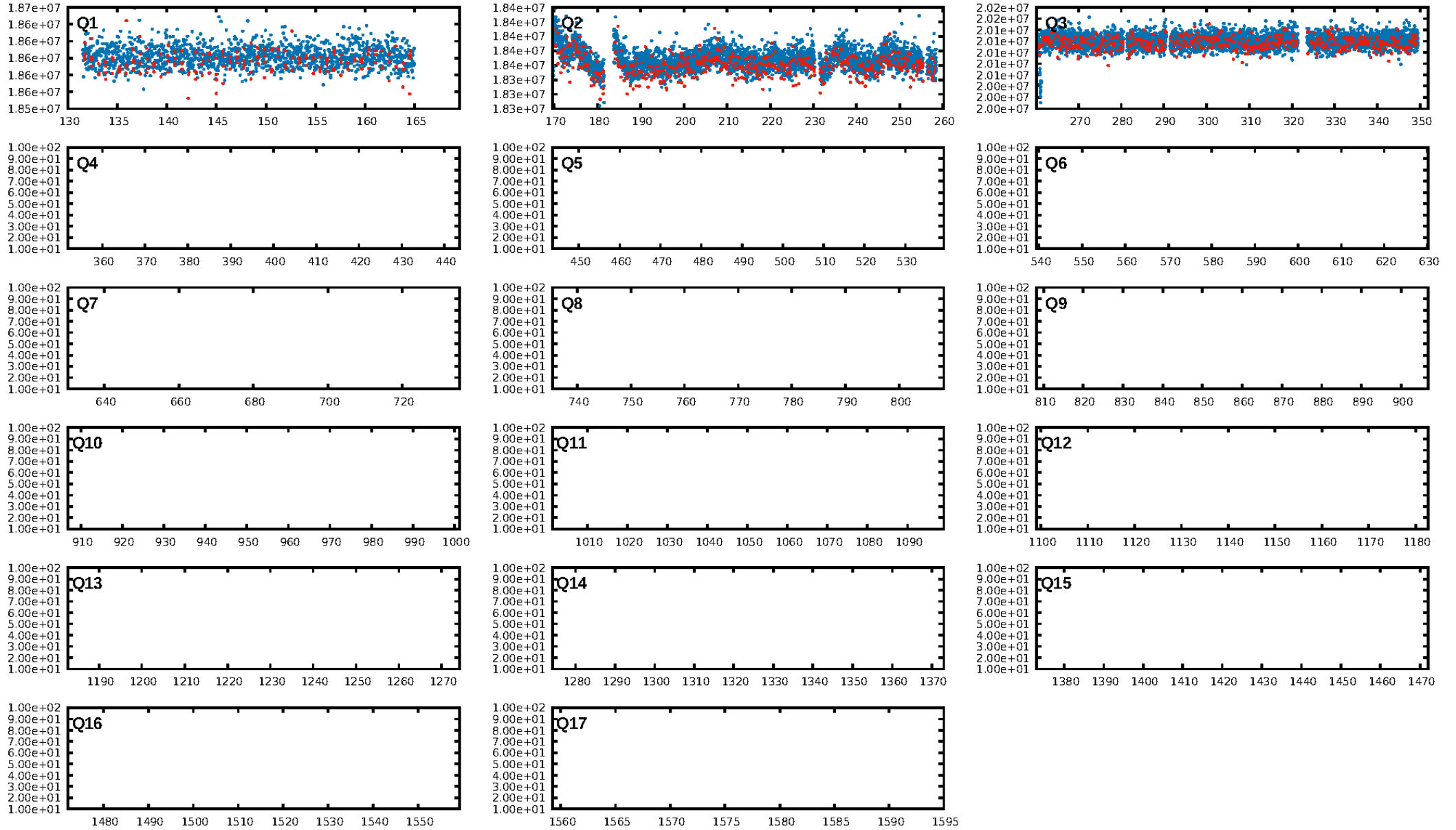
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [99.08σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.52e-33
RollingBand-fgt: 0.84 [204/244]
GhostDiagnostic-chr: -0.04608
Centroid-sig: 0.0%
Centroid-so: 7.350 arcsec [9.40σ]
OotOffset-rm: 4.602 arcsec [17.69σ]
KicOffset-rm: 4.670 arcsec [17.34σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

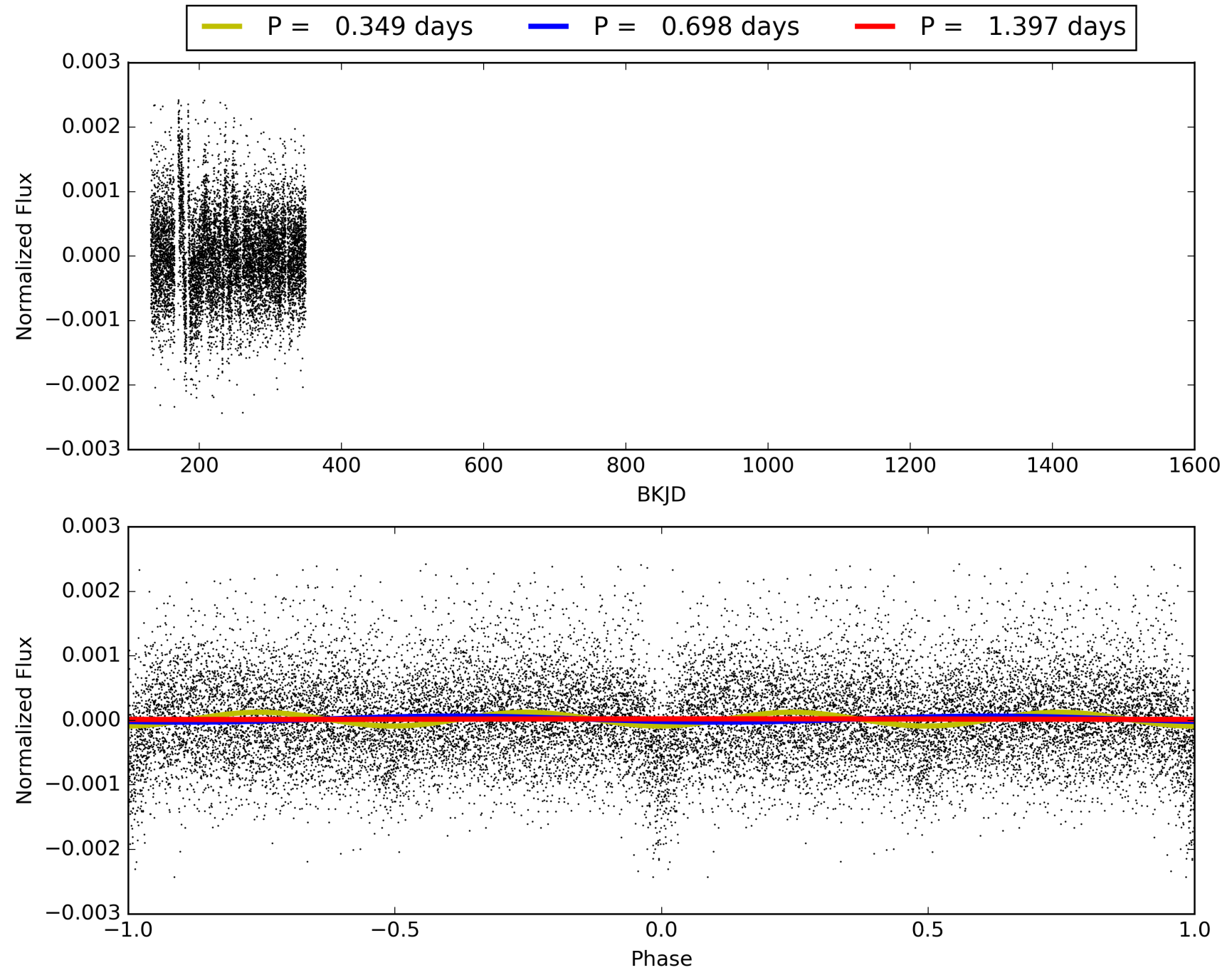
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:04:11 Z

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

TCE 006665064-01, PDC Light Curves

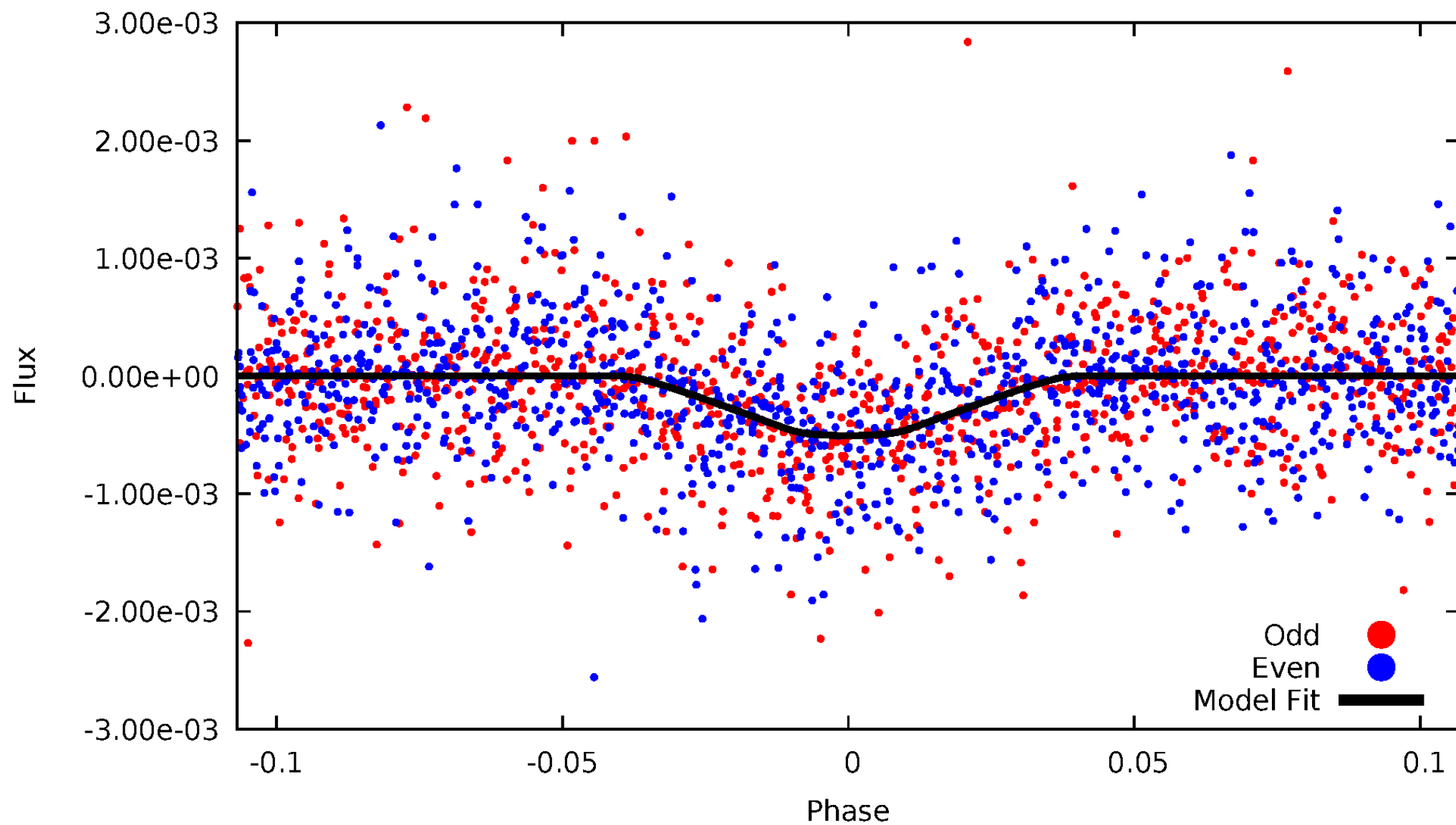


TCE 006665064-01



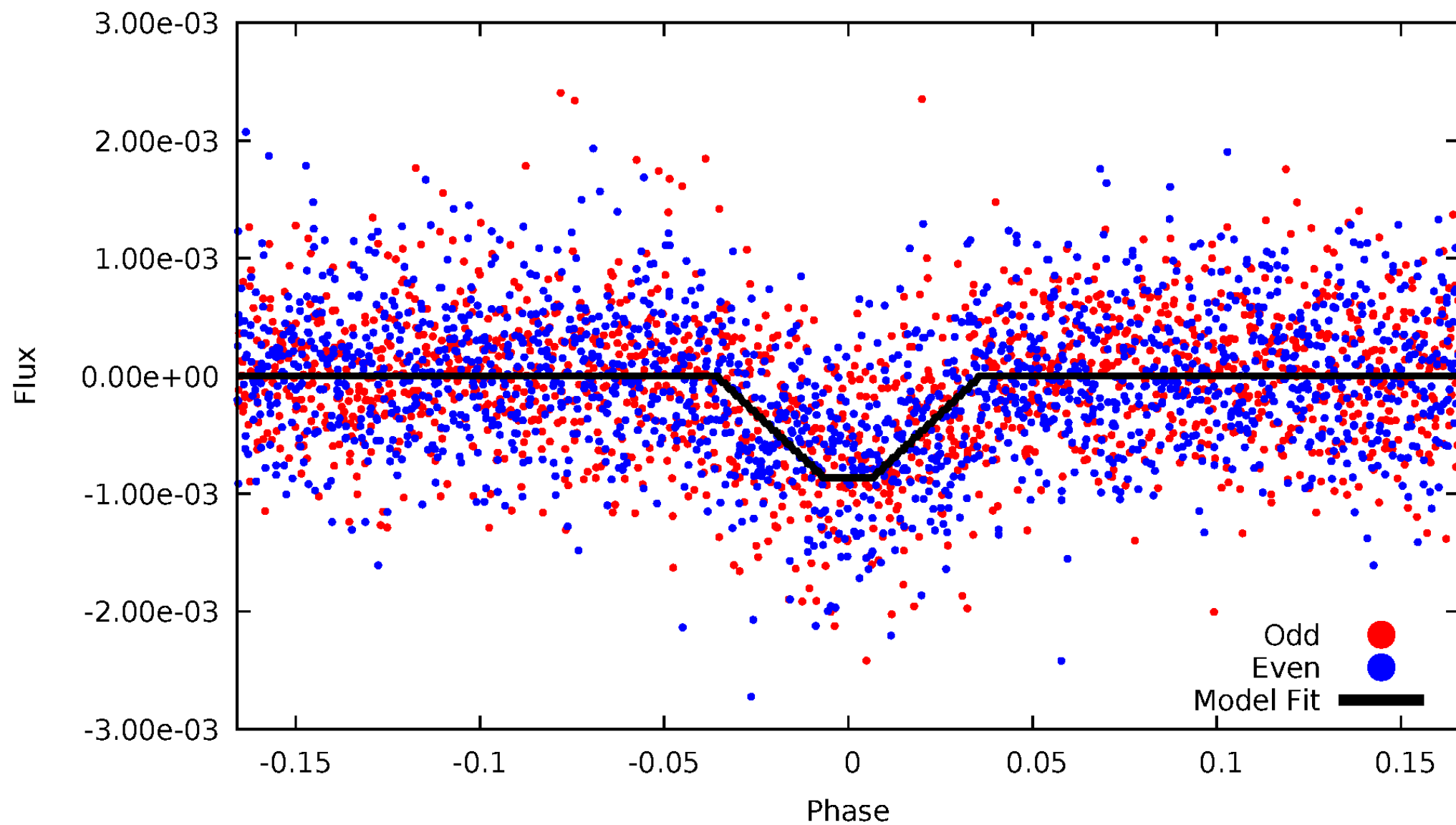
DV Odd/Even

TCE 006665064-01

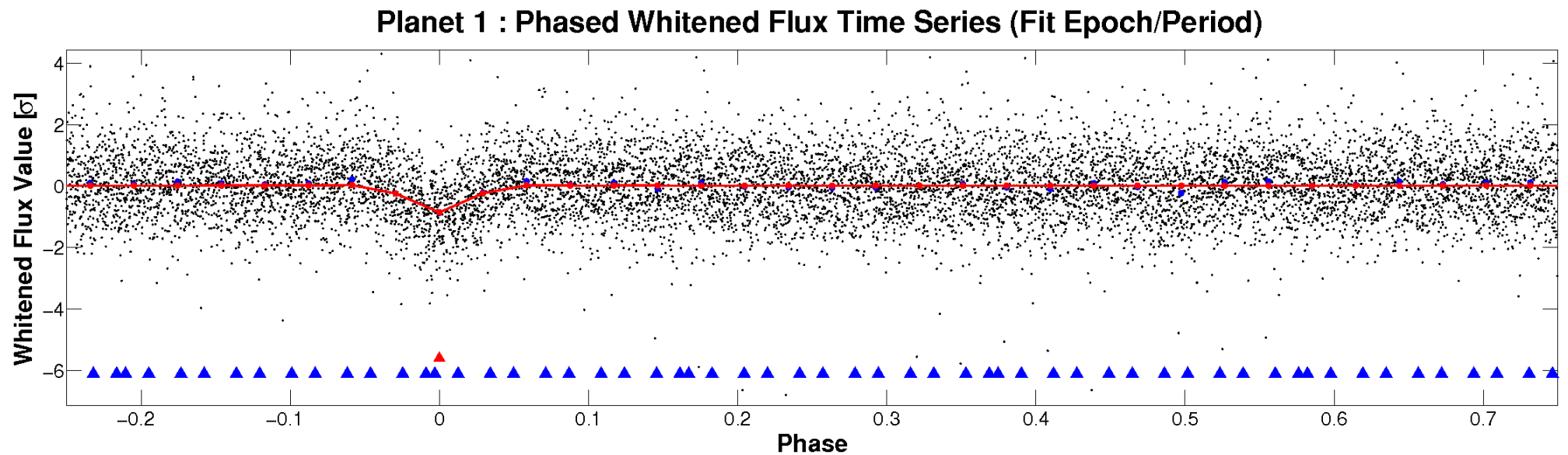
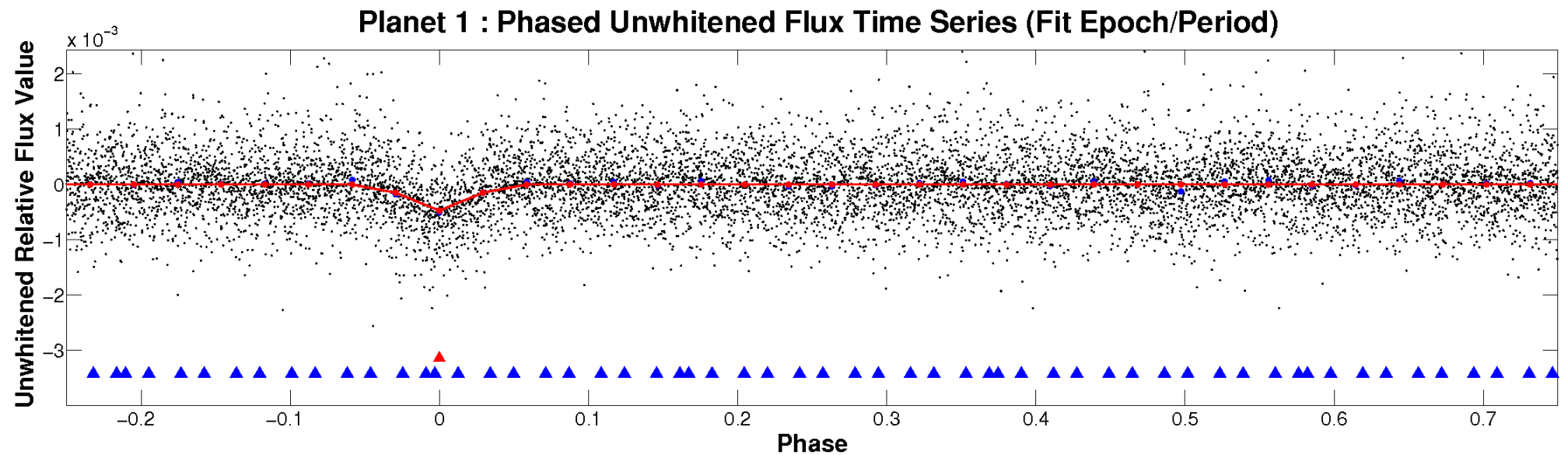


ALT Odd/Even

TCE 006665064-01



Non-Whitened Vs. Whitened Light Curve



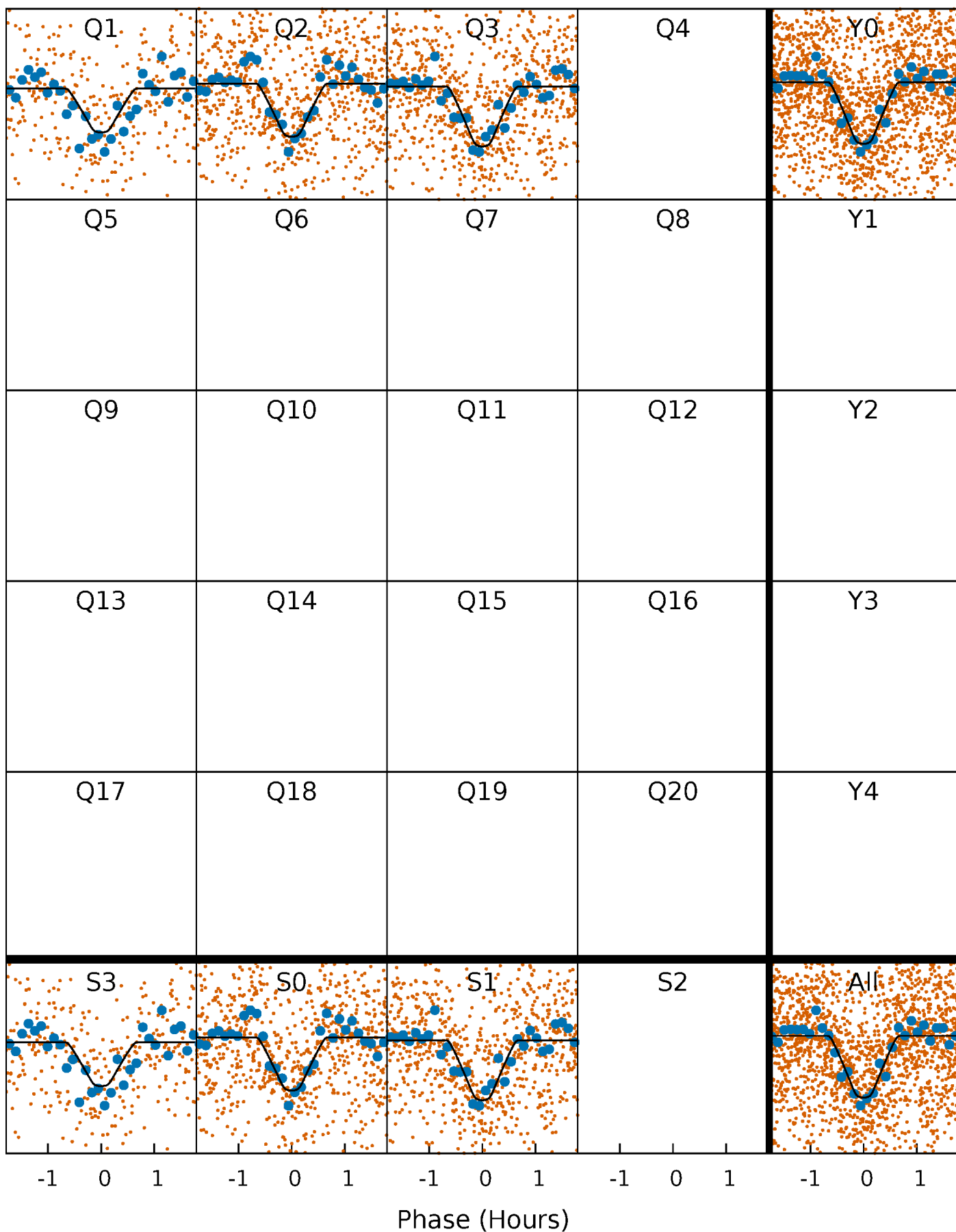
PDC Quarter-Phased Transit Curves

TCE 006665064-01 P= 0.698368 Days $T_0=131.701617$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006665064-01 P= 0.698368 Days $T_0=131.701617$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

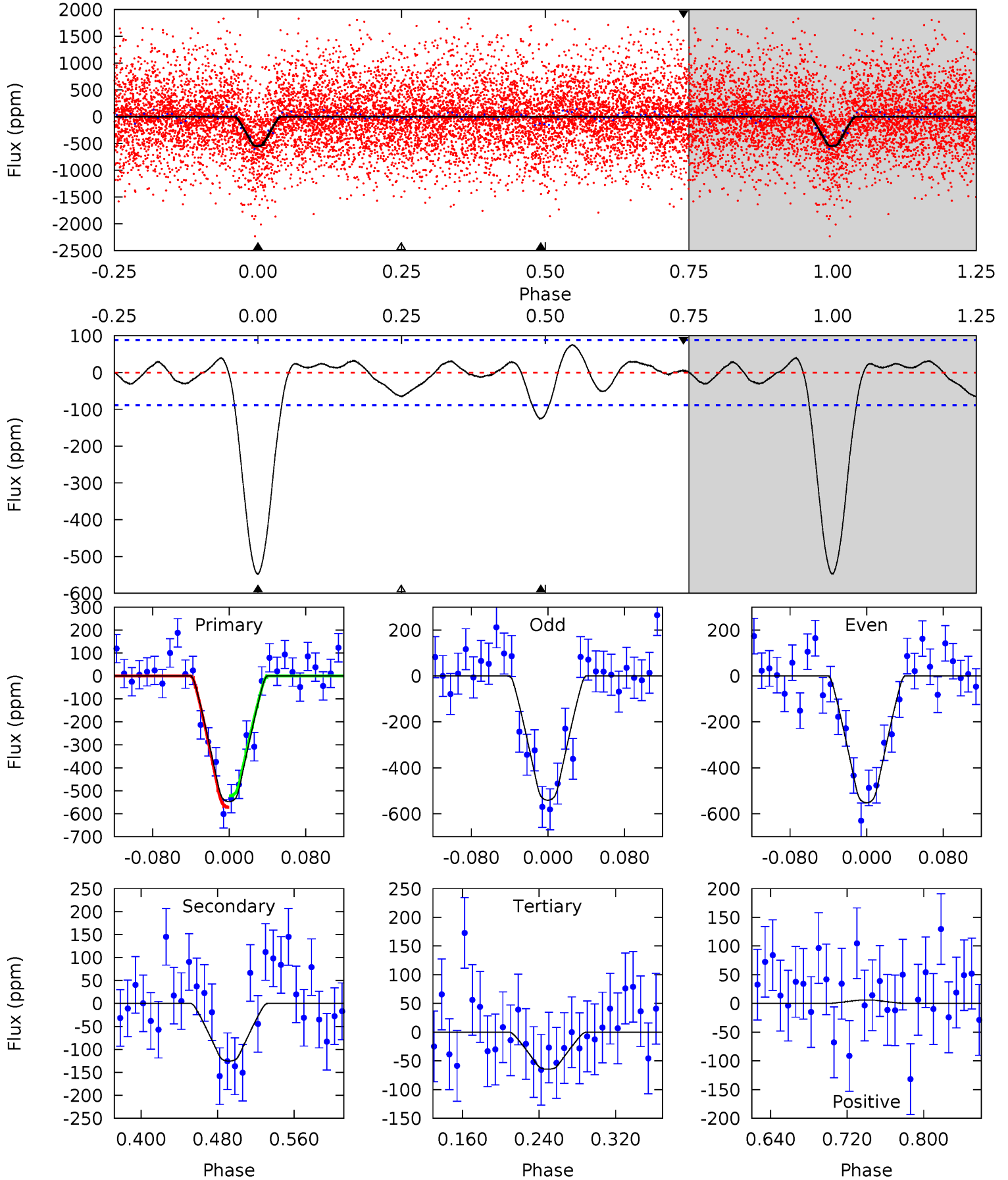
TCE 006665064-01 P= 0.698360 Days $T_0=131.702312$ (BKJD)



DV Model-Shift Uniqueness Test

006665064-01, P = 0.698368 Days, E = 131.003249 Days

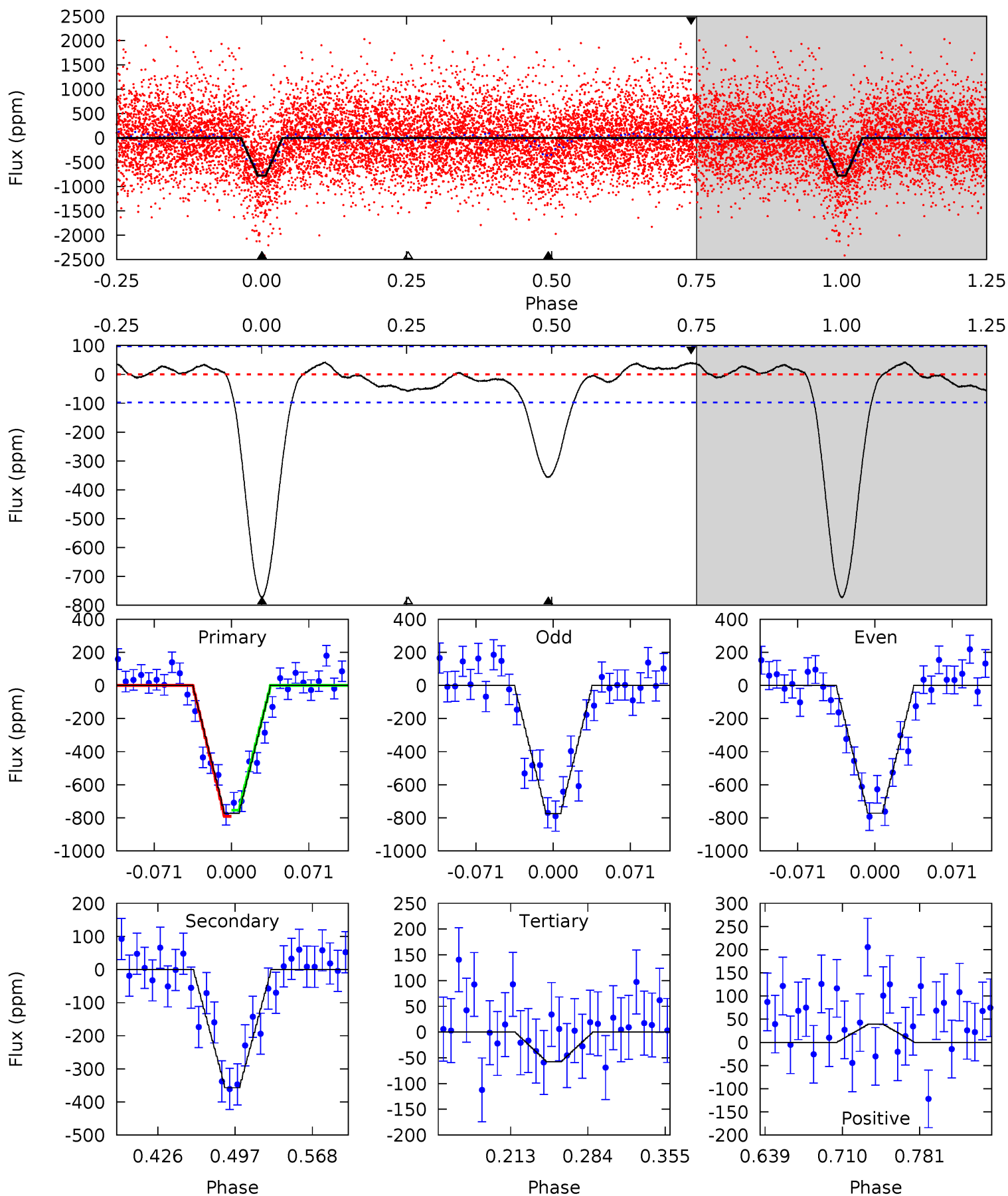
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	6.53	3.36	0.31	4.61	1.75	1.28	25.2	28.2	3.17	6.22	0.28	1.03	0.12	1.28



Alt Model-Shift Uniqueness Test

006665064-01, P = 0.698360 Days, E = 131.003952 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.8	17.0	2.74	1.87	4.64	1.81	1.27	34.0	34.9	14.2	15.1	0.05	1.01	0.05	0.88



Stellar Parameters For KIC 006665064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5761^{+78}_{-78}	$4.492^{+0.022}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$0.956^{+0.143}_{-0.048}$	$1.035^{+0.050}_{-0.068}$	$1.667^{+0.187}_{-0.578}$
	+1%/-1%	+0%/-3%	+107%/-107%	+15%/-5%	+5%/-7%	+11%/-35%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 006665064-01 / KOI 6751.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-125 ± 19	$2.71^{+1.31}_{-1.34}$	2816^{+95}_{-67}	4020^{+1284}_{-633}	$2.272^{+6.358}_{-1.276}$
Alt.	-357 ± 21	$3.16^{+1.26}_{-1.27}$	2815^{+114}_{-65}	4691^{+1200}_{-606}	$4.782^{+7.921}_{-2.393}$

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

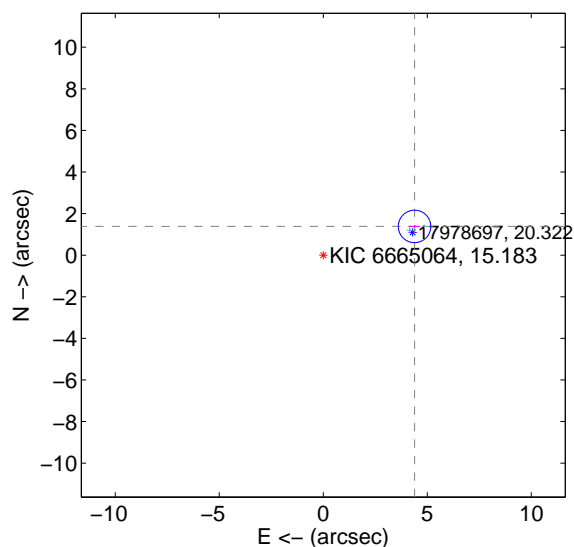
Supplemental centroid analysis for 006665064-01. Kepler magnitude: 15.18. Transit SNR 16.24

There are 3 quarters with good PRF difference image offsets

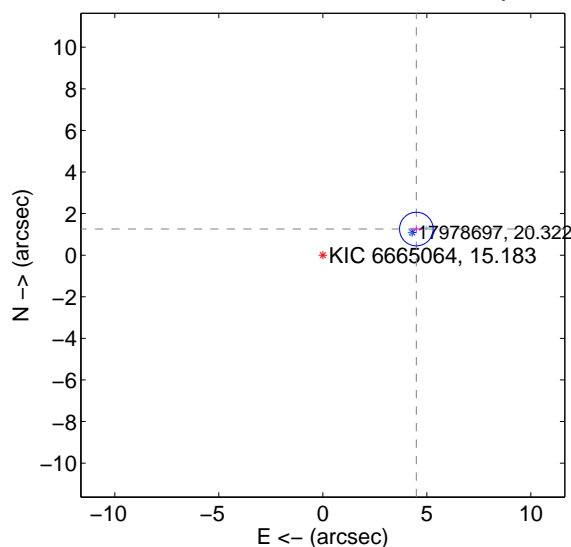
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.602 ± 0.260	17.69	-4.389 ± 0.272	1.383 ± 0.069
PRF-fit source offset from KIC position	4.670 ± 0.269	17.34	-4.498 ± 0.267	1.257 ± 0.087
photometric centroid source offset	7.35 ± 0.78	9.40	-5.16 ± 0.77	5.23 ± 0.80

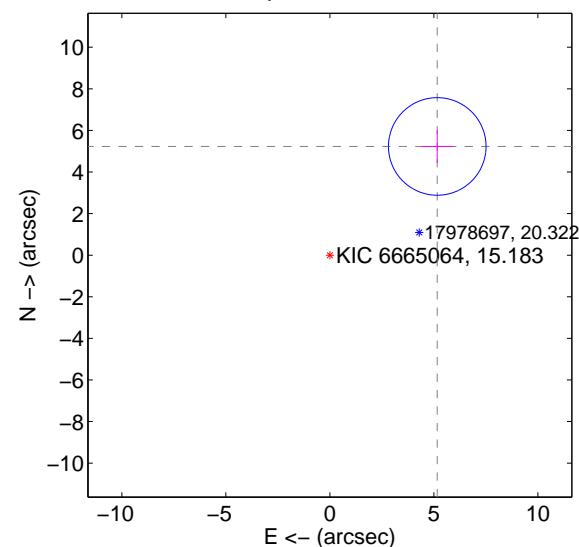
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

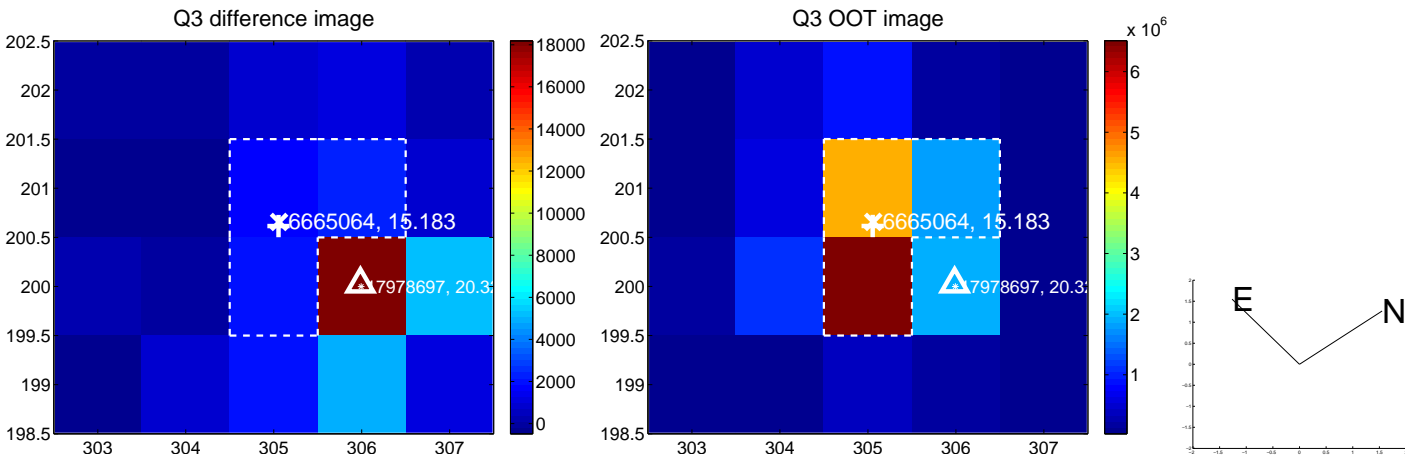
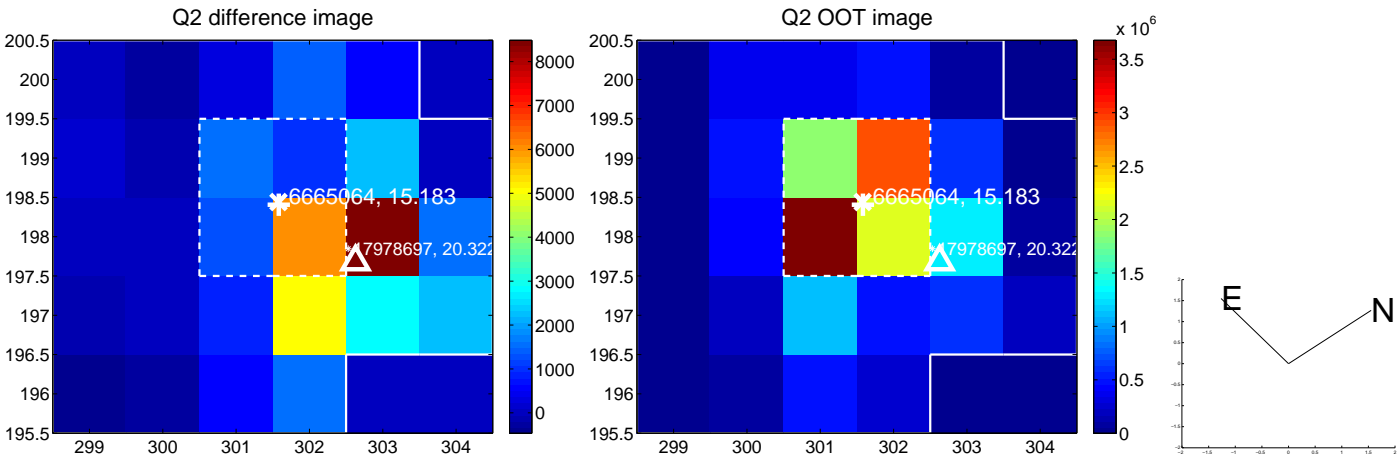
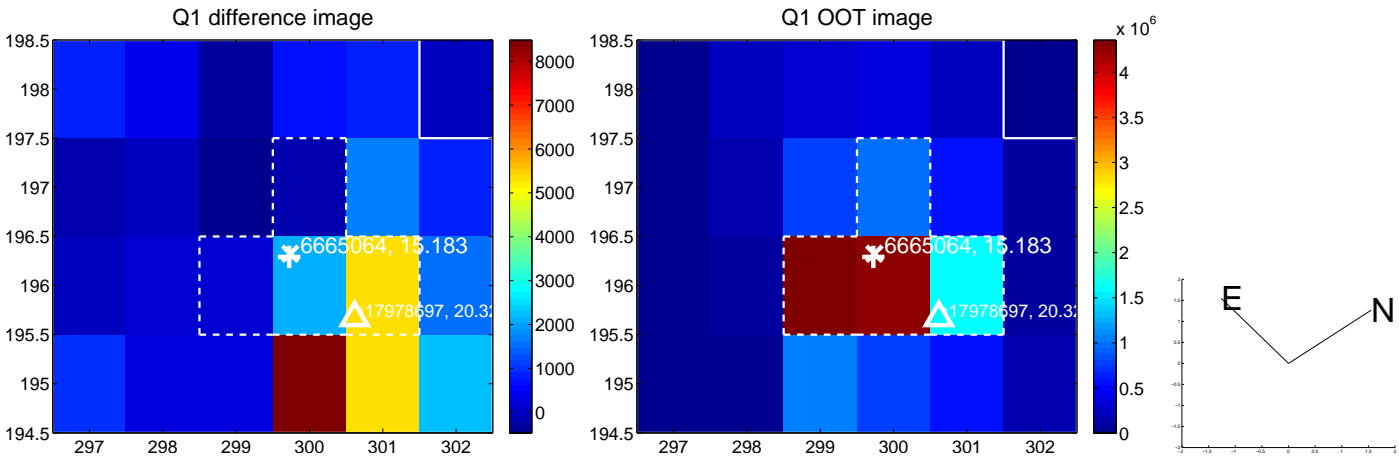


offset from photometric centroids



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.



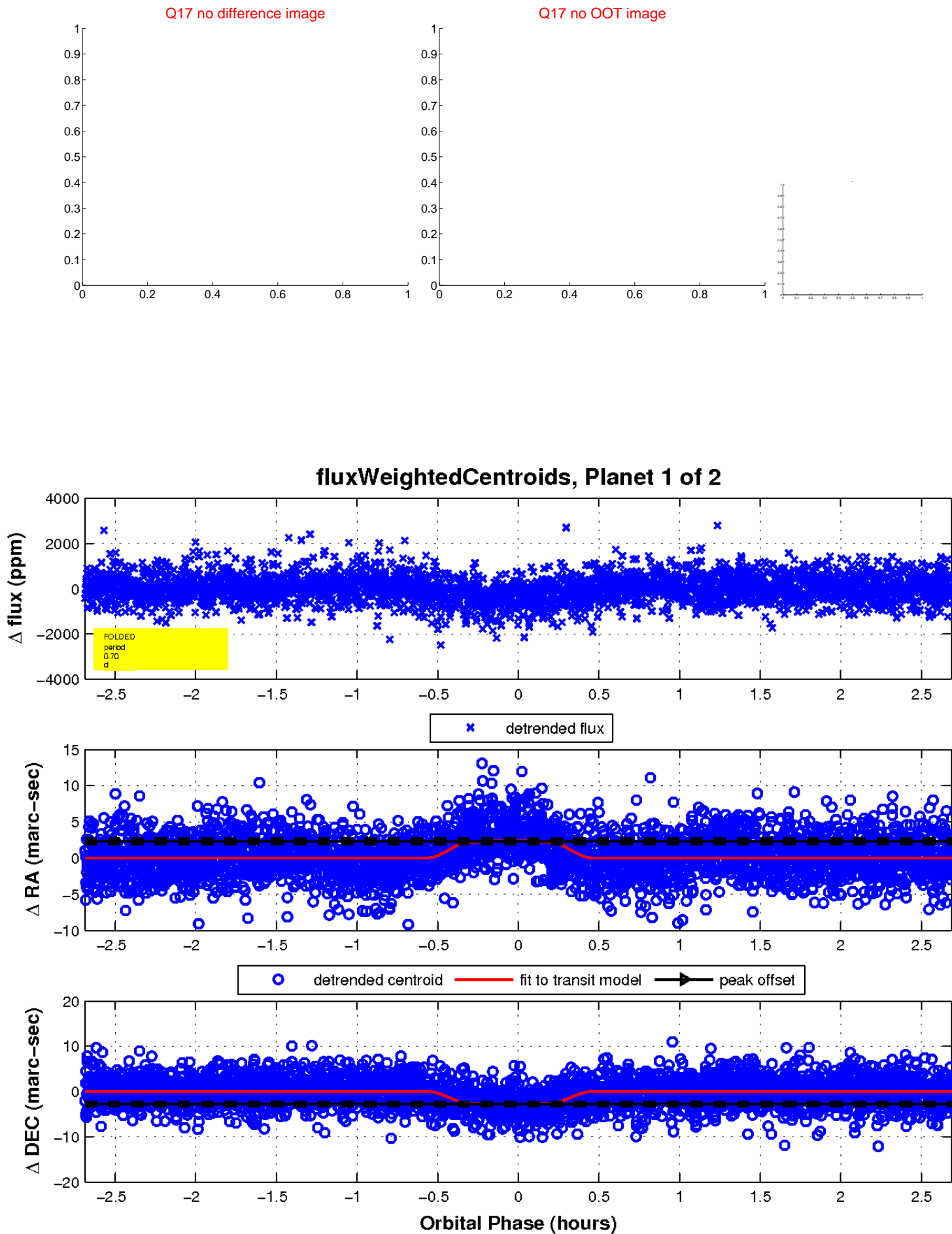
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

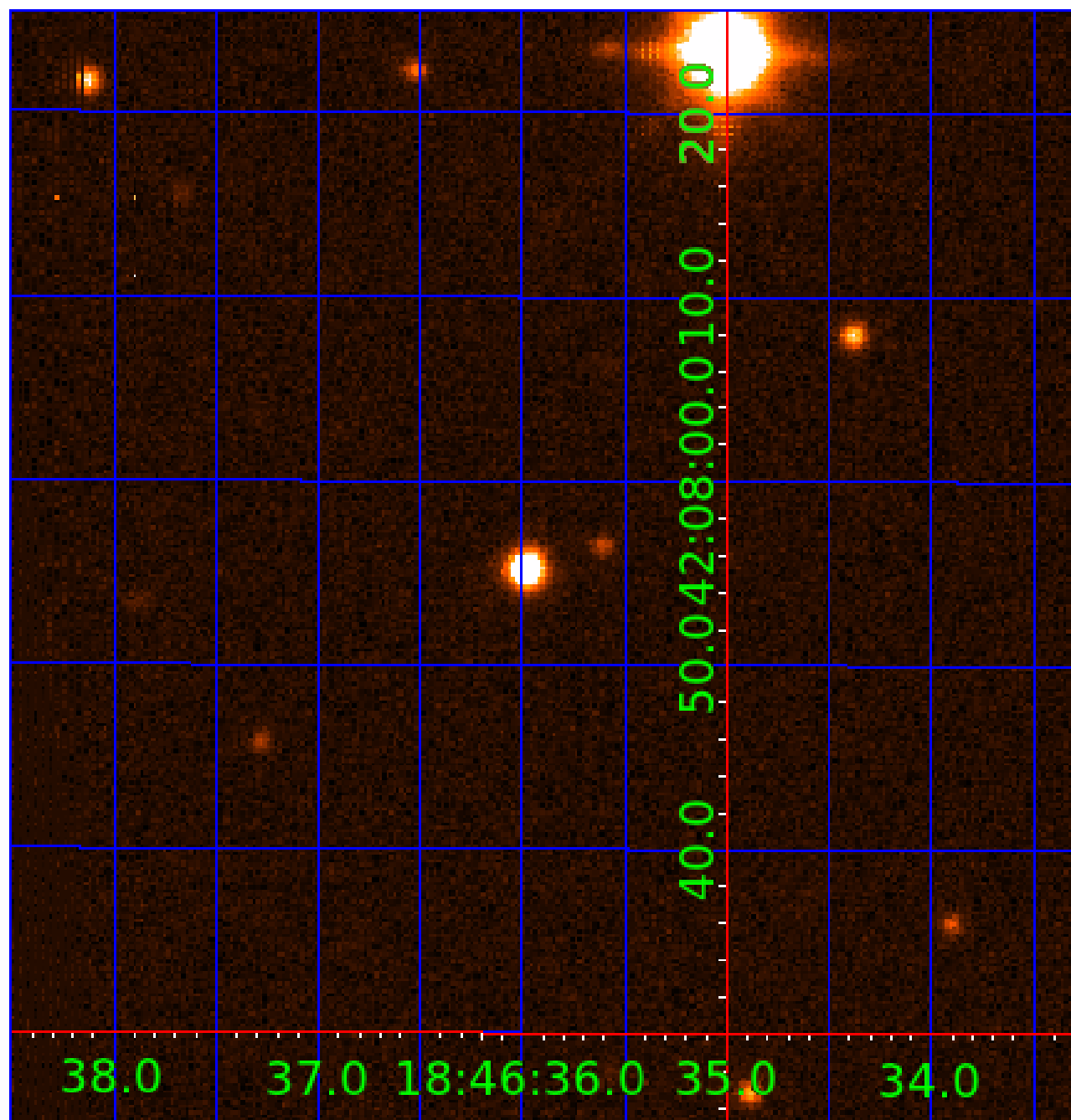


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006665064

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})
006665064-01	OBS	6751.02	0.698368	131.701617	505.9	0.896	12.2	16.2	0.96	5761	2.60	3713.18
006665064-02	OBS	6751.01	24.996367	144.964346	699.4	5.817	8.6	8.8	0.96	5761	2.59	31.48

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006665064-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_FEW_DIFFS—HALO_GHOST
006665064-02	OBS	FP	0.27	1	0	0	0	INDIV_TRANS_RUBBLE

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.

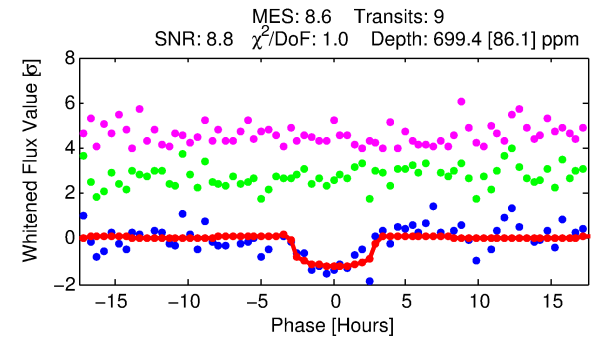
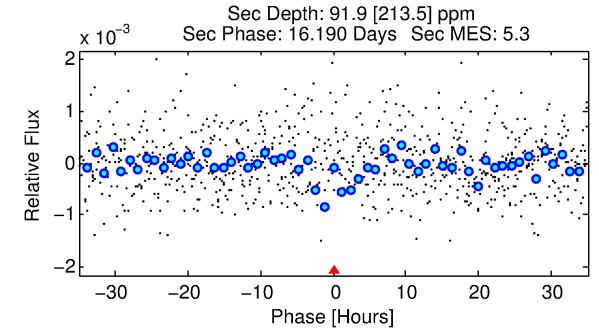
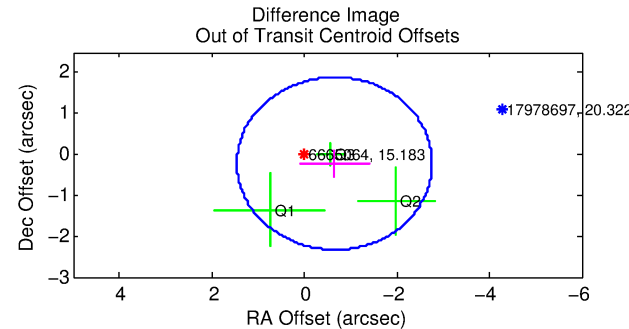
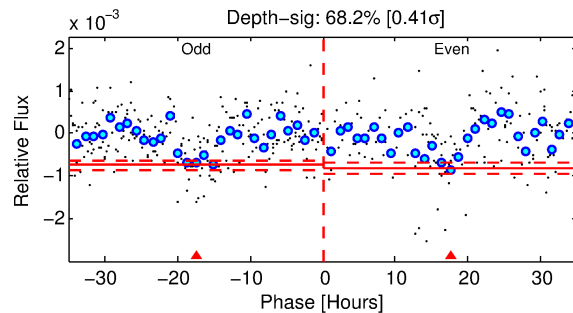
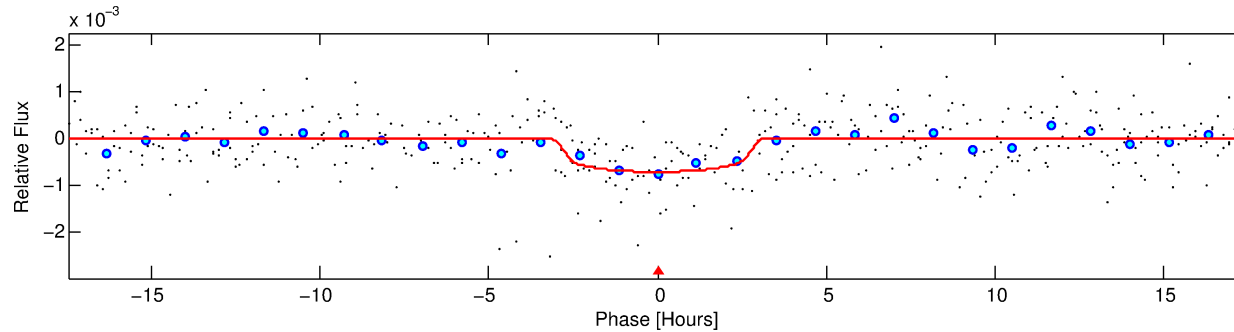
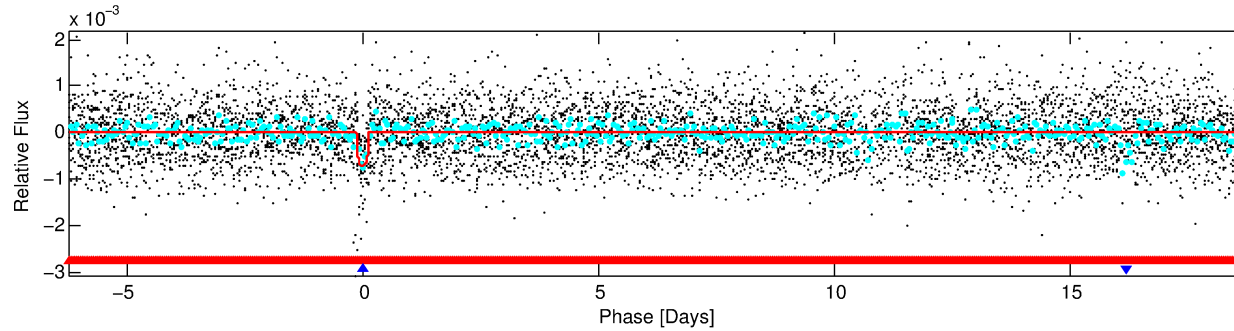
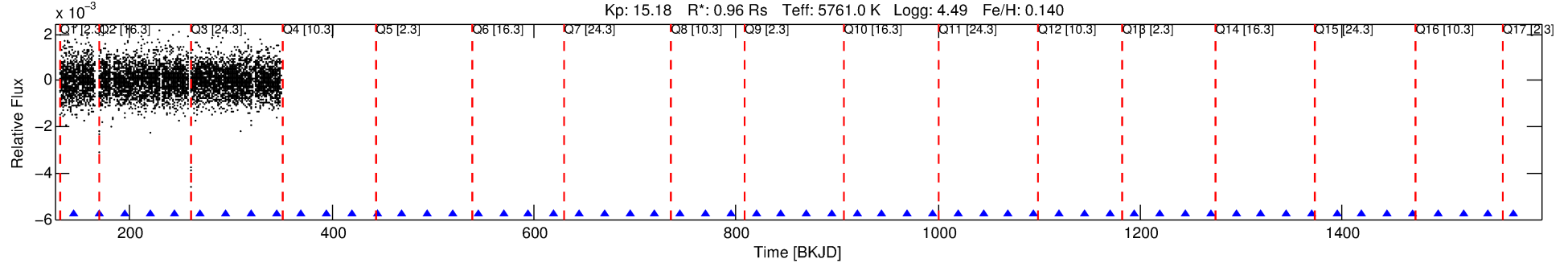
Ephemeris Match Information For 006665064-02

No Significant Match Found

DV One-Page Summary

KIC: 6665064 Candidate: 2 of 2 Period: 24.996 d
KOI: K06751.01 Corr: 0.931

Kp: 15.18 R*: 0.96 Rs Teff: 5761.0 K Logg: 4.49 Fe/H: 0.140



DV Fit Results:

Period = 24.99637 [0.00250] d
Epoch = 144.9643 [0.0115] BKJD
Rp/R* = 0.0248 [0.0367]
a/R* = 28.91 [180.69]
b = 0.52 [8.74]
Seff = 31.48 [6.81]
Teq = 604 [33] K
Rp = 2.59 [3.84] Re
a = 0.1693 [0.0230] AU
Ag = 215.88 [812.35] [0.26σ]
Teffp = 3580 [3363] K [0.88σ]

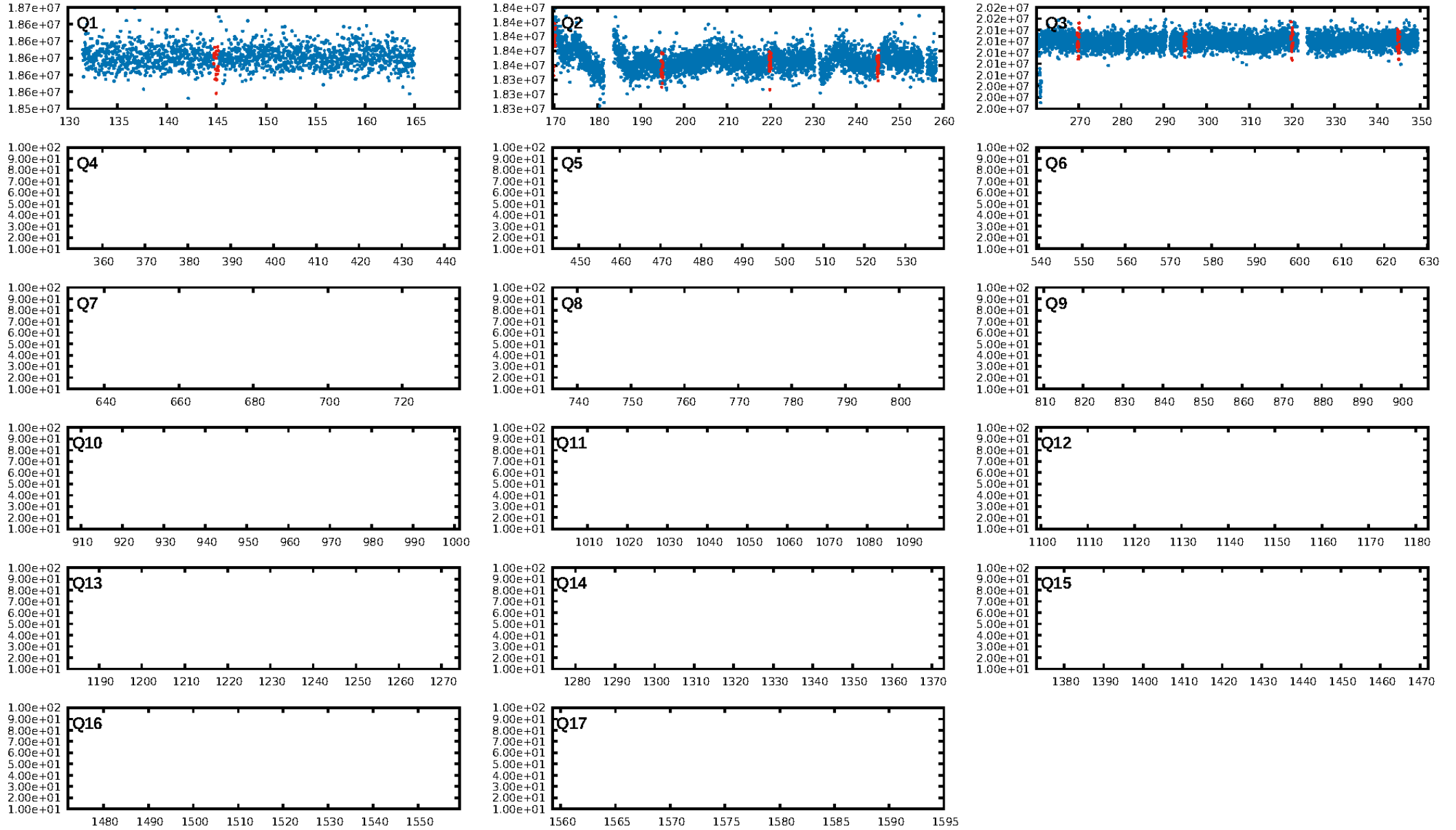
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [99.08σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 20.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.00e-17
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 1.434
Centroid-sig: 13.1%
Centroid-so: 0.970 arcsec [0.84σ]
OotOffset-rm: 0.690 arcsec [0.98σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.833 arcsec [1.46σ]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.00 [0/3]

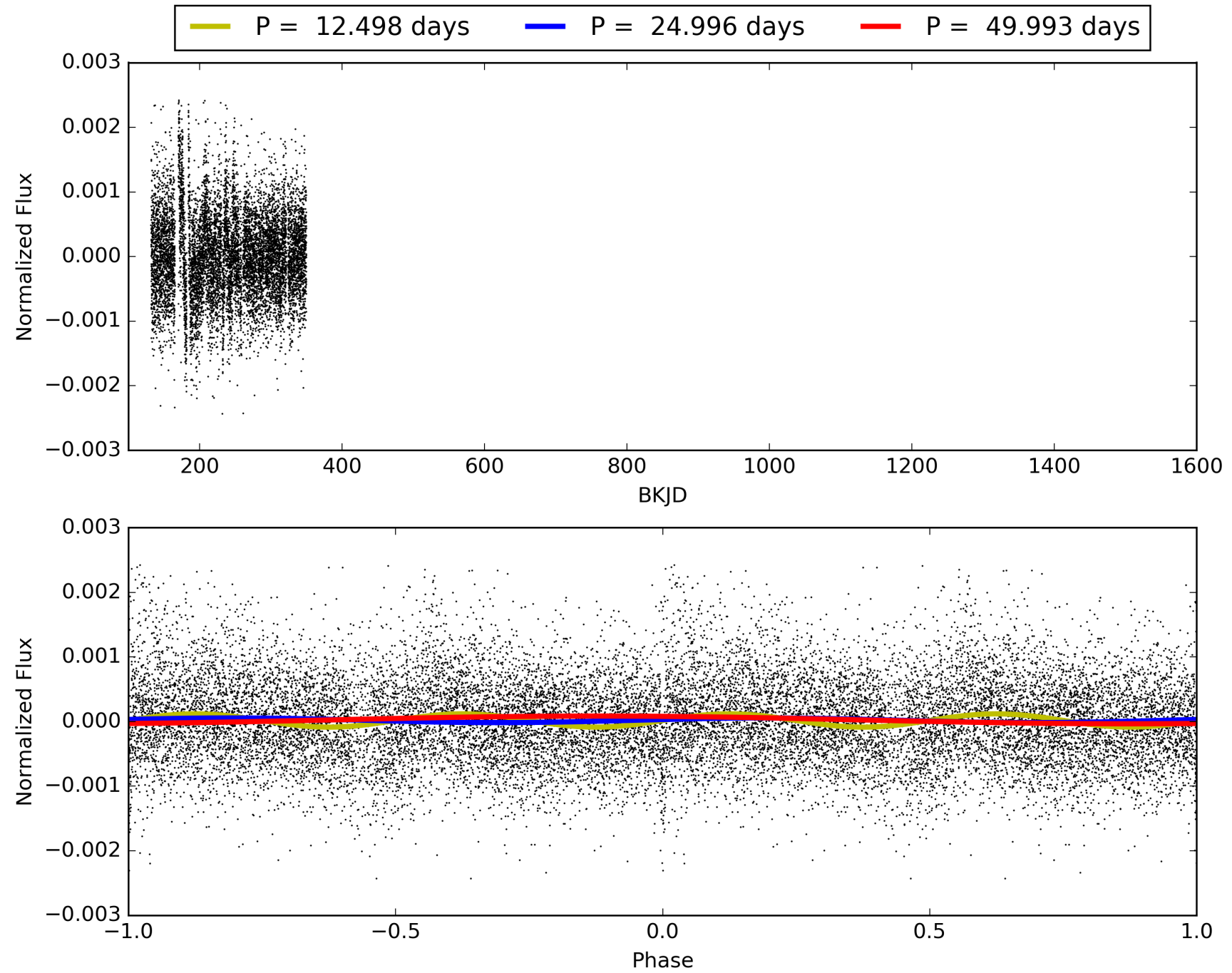
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 10:04:19 Z

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

TCE 006665064-02, PDC Light Curves

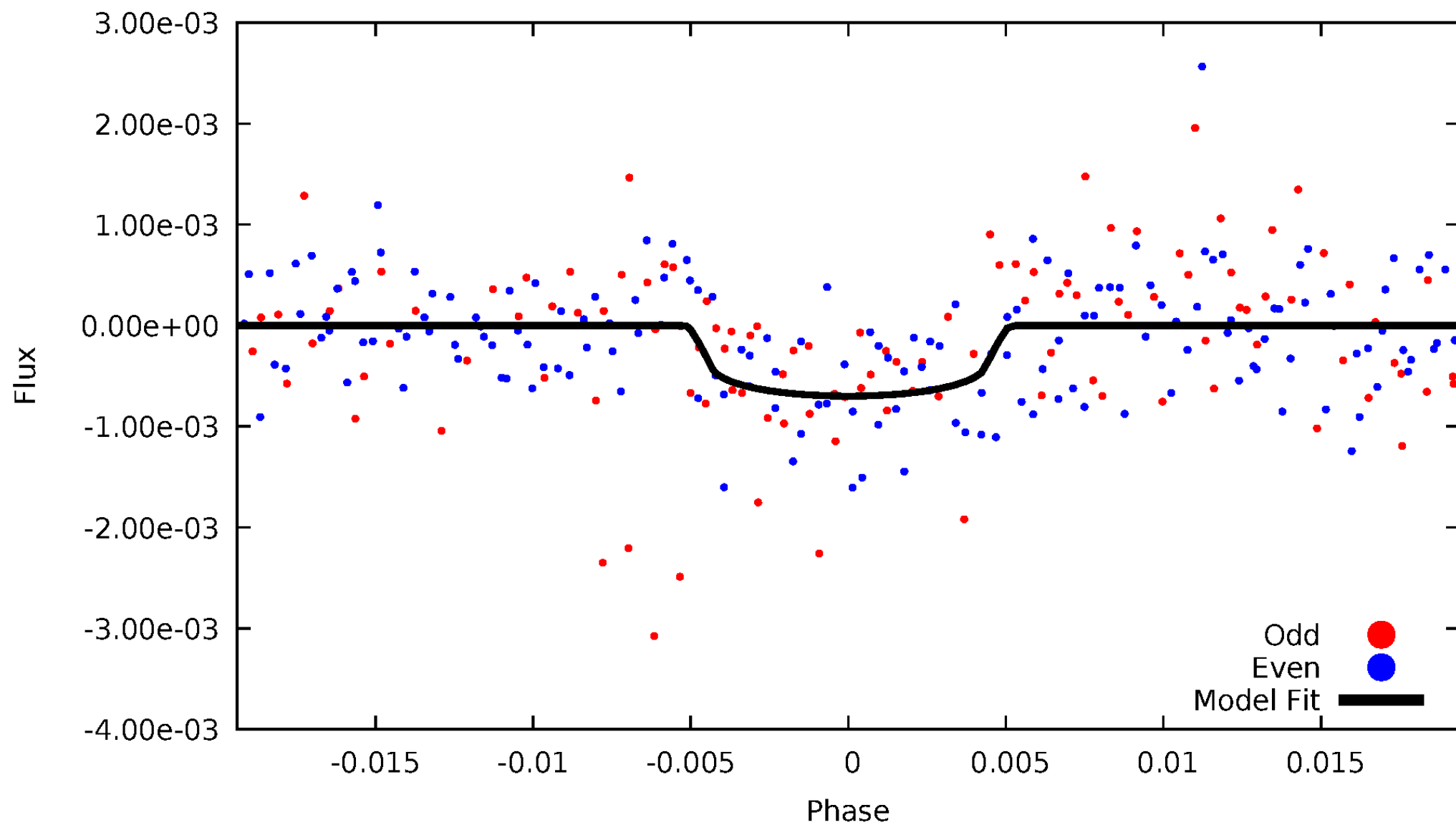


TCE 006665064-02



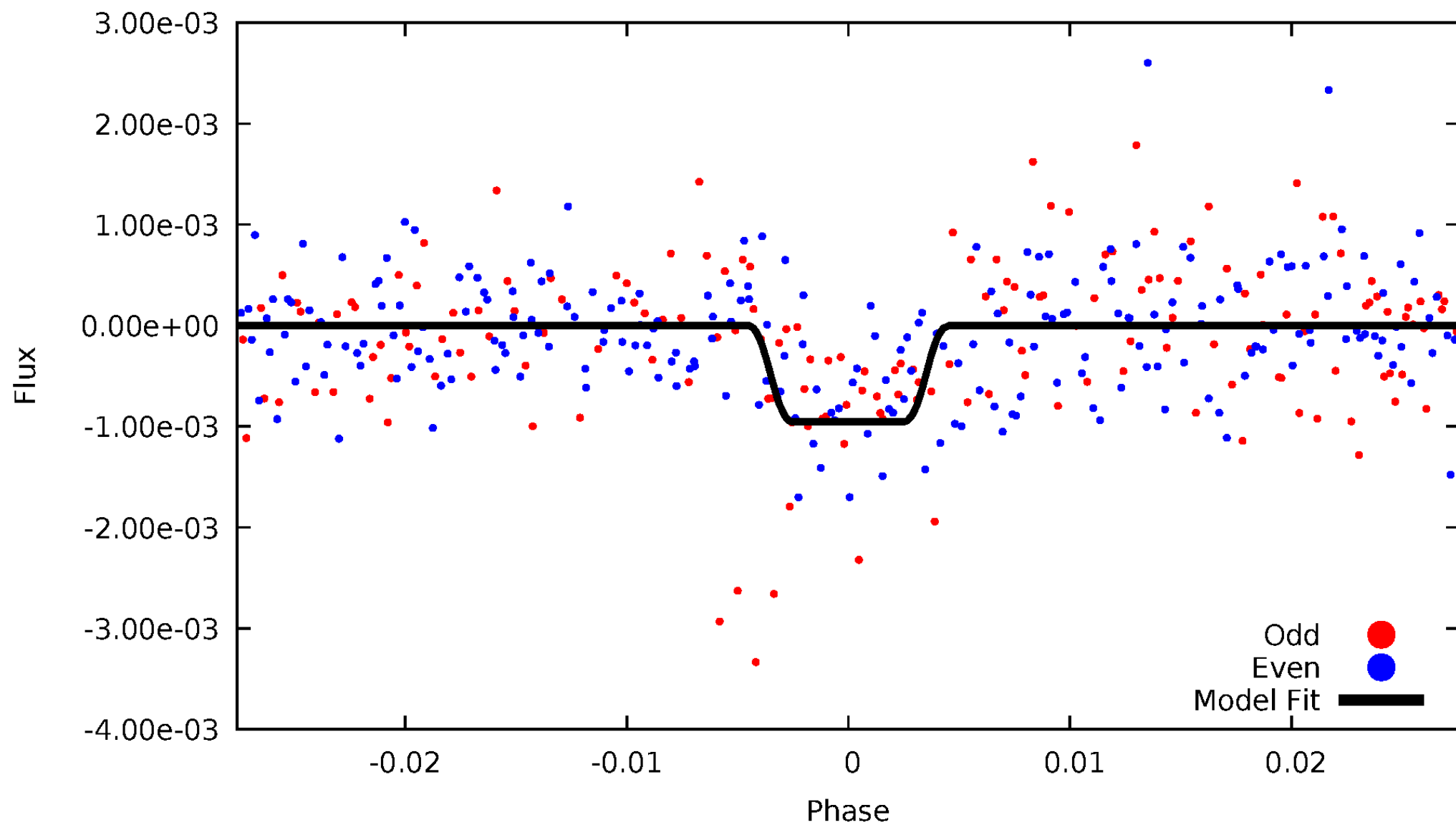
DV Odd/Even

TCE 006665064-02



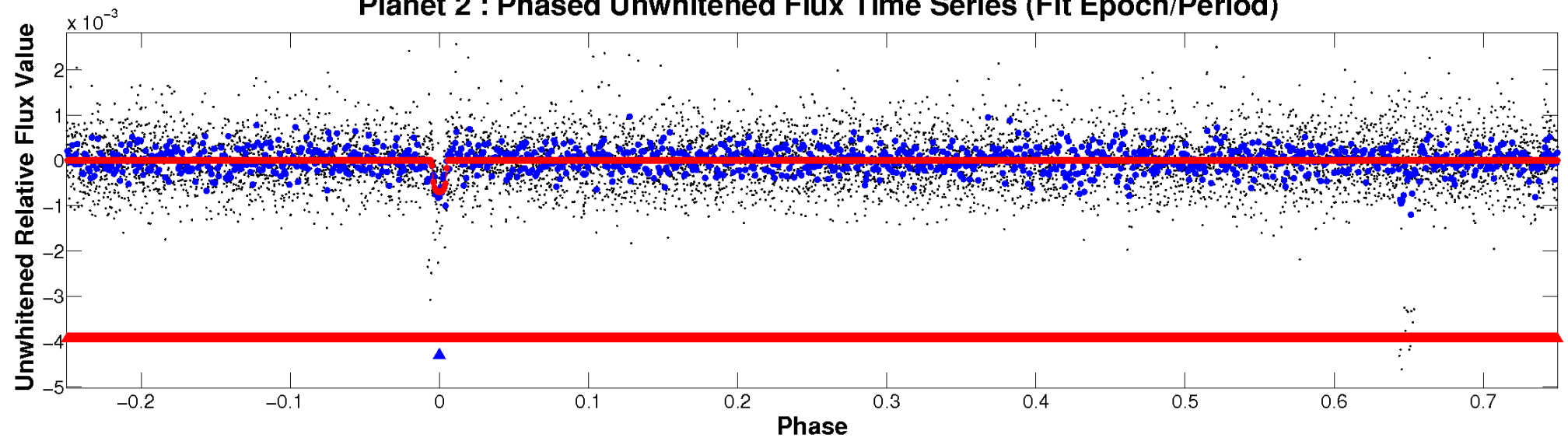
ALT Odd/Even

TCE 006665064-02

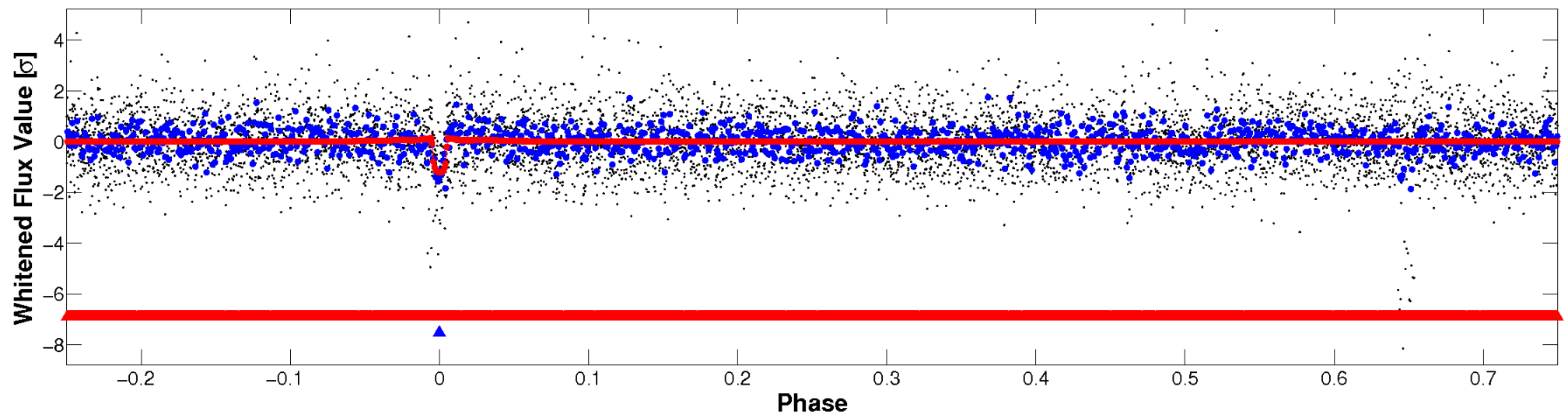


Non-Whitened Vs. Whitened Light Curve

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

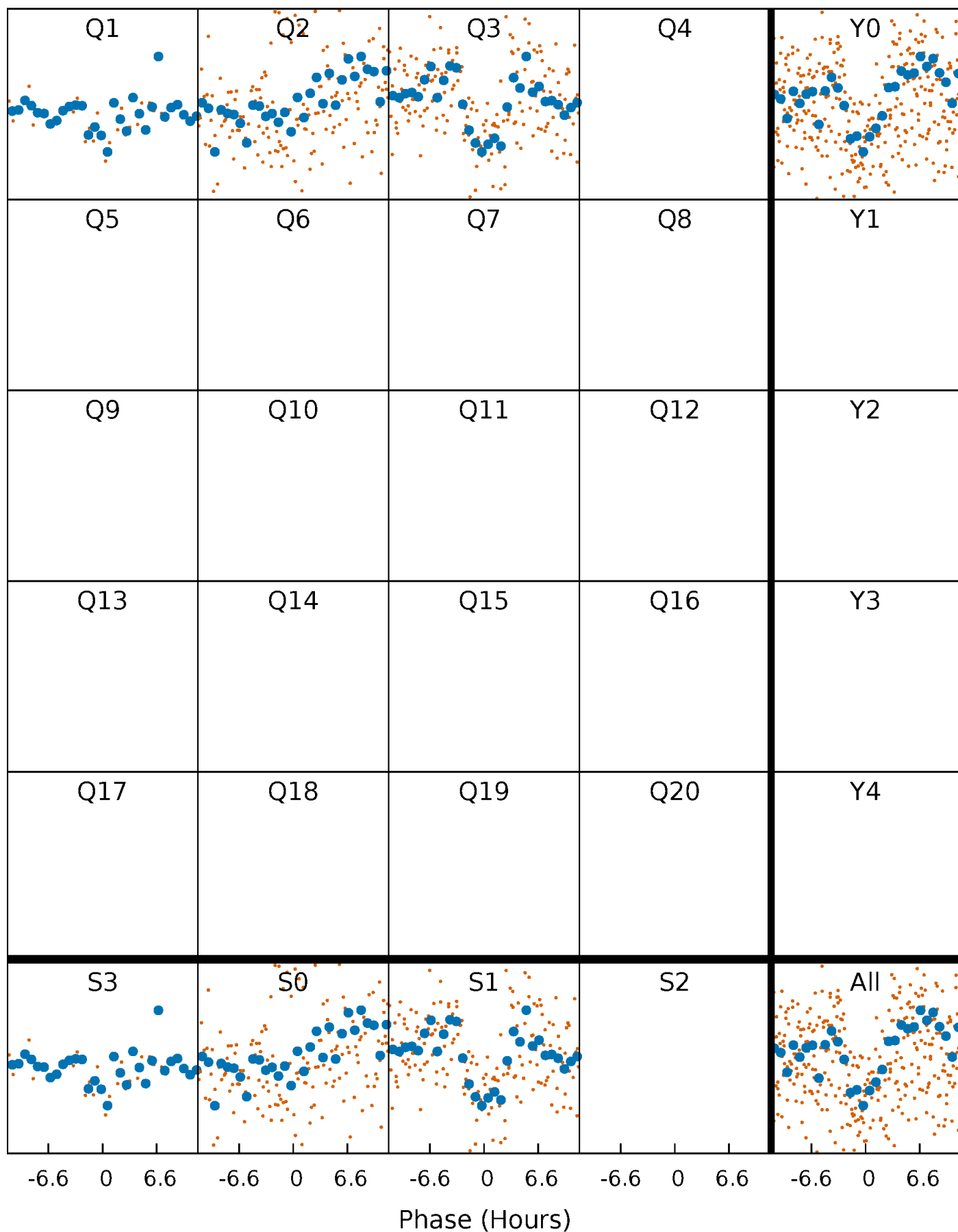


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



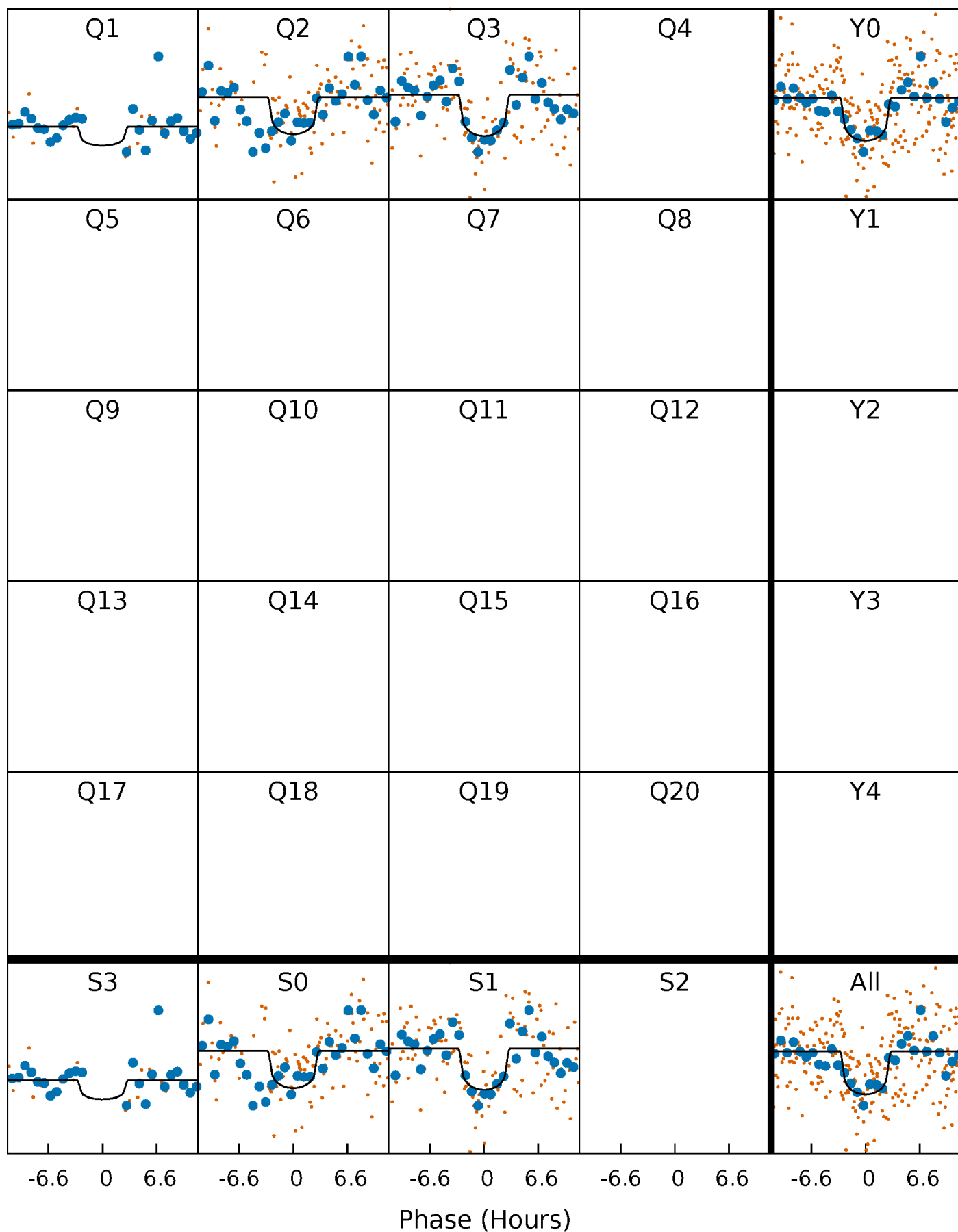
PDC Quarter-Phased Transit Curves

TCE 006665064-02 $P = 24.996367$ Days $T_0 = 144.964346$ (BKJD)



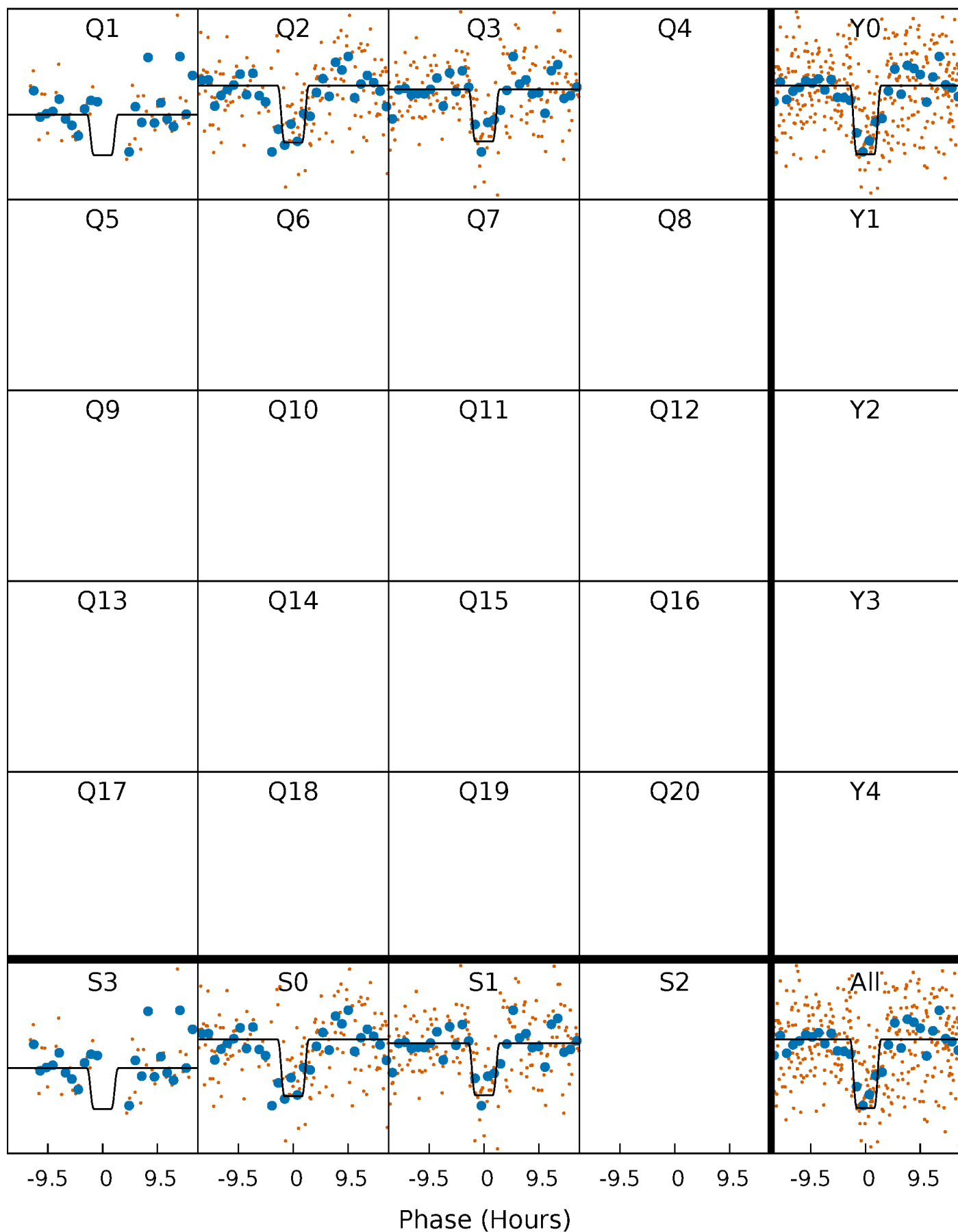
DV Quarter-Phased Transit Curves

TCE 006665064-02 P= 24.996367 Days $T_0=144.964346$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

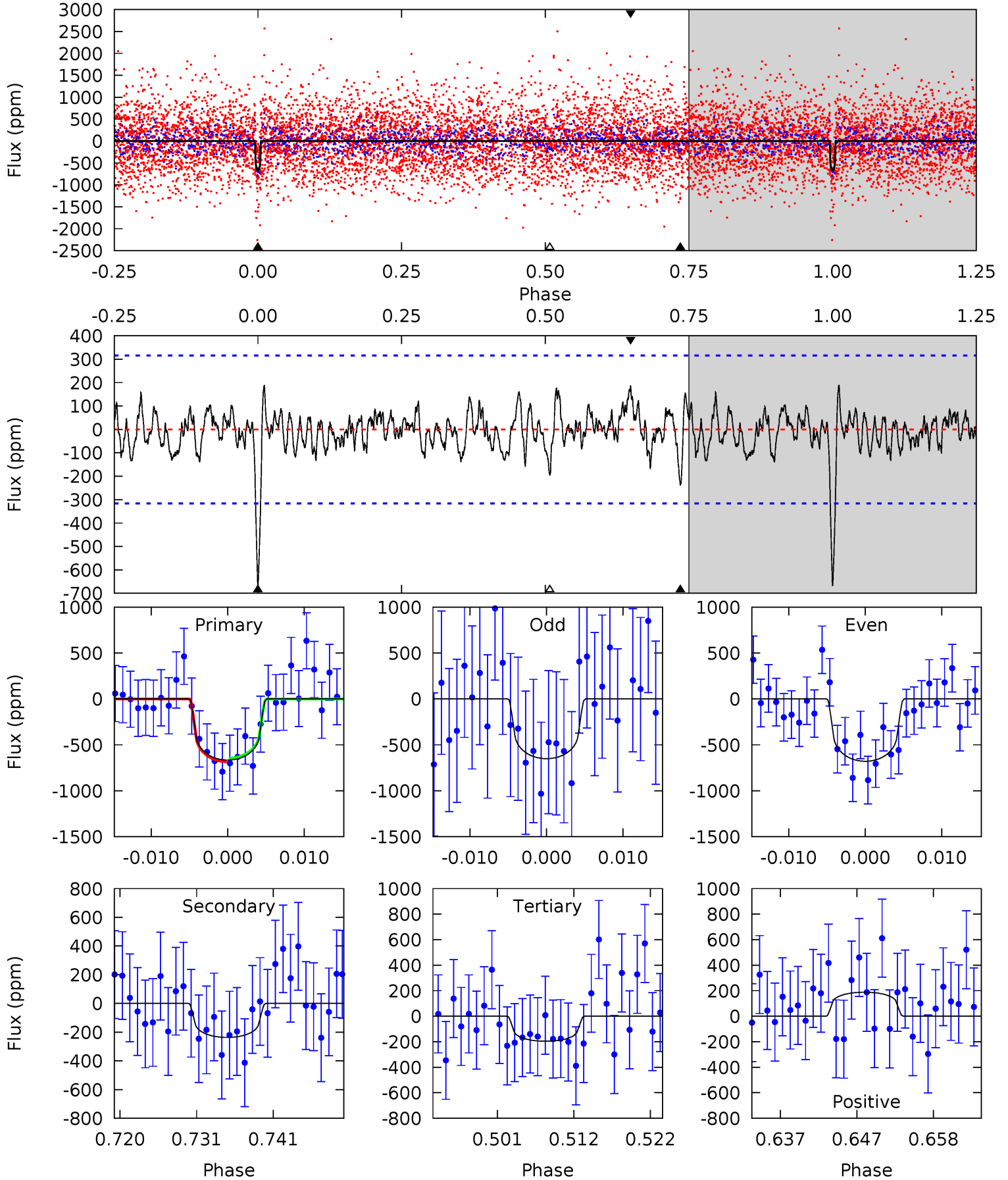
TCE 006665064-02 P= 25.003748 Days $T_0=144.907256$ (BKJD)



DV Model-Shift Uniqueness Test

006665064-02, $P = 24.996367$ Days, $E = 119.967979$ Days

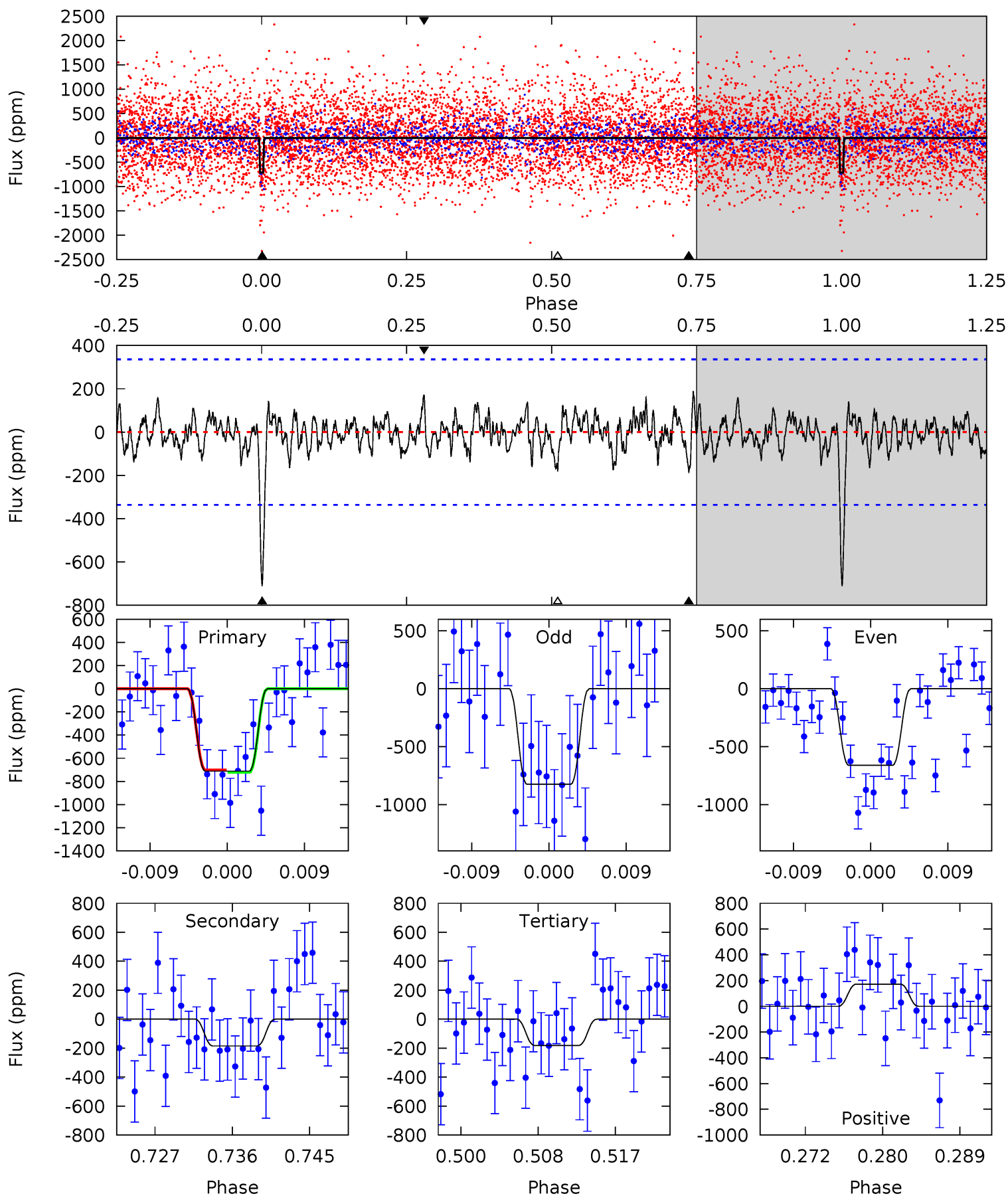
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	3.76	3.12	2.99	5.02	2.56	1.02	7.45	7.58	0.64	0.77	0.22	0.92	0.22	0.30



Alt Model-Shift Uniqueness Test

006665064-02, P = 25.003748 Days, E = 119.903508 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	2.78	2.73	2.59	5.05	2.62	0.94	7.97	8.11	0.05	0.19	1.23	0.81	0.21	0.15



Stellar Parameters For KIC 006665064

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5761^{+78}_{-78}	$4.492^{+0.022}_{-0.120}$	$0.140^{+0.150}_{-0.150}$	$0.956^{+0.143}_{-0.048}$	$1.035^{+0.050}_{-0.068}$	$1.667^{+0.187}_{-0.578}$
	+1%/-1%	+0%/-3%	+107%/-107%	+15%/-5%	+5%/-7%	+11%/-35%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 006665064-02 / KOI 6751.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-237 ± 63	$4.03^{+3.08}_{-2.66}$	856^{+34}_{-21}	4015^{+2237}_{-727}	222^{+1714}_{-154}
Alt.	-185 ± 67	$4.32^{+3.69}_{-2.85}$	856^{+32}_{-21}	3757^{+1966}_{-692}	155^{+1103}_{-113}

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 $A_{obs} \gg 1.0$

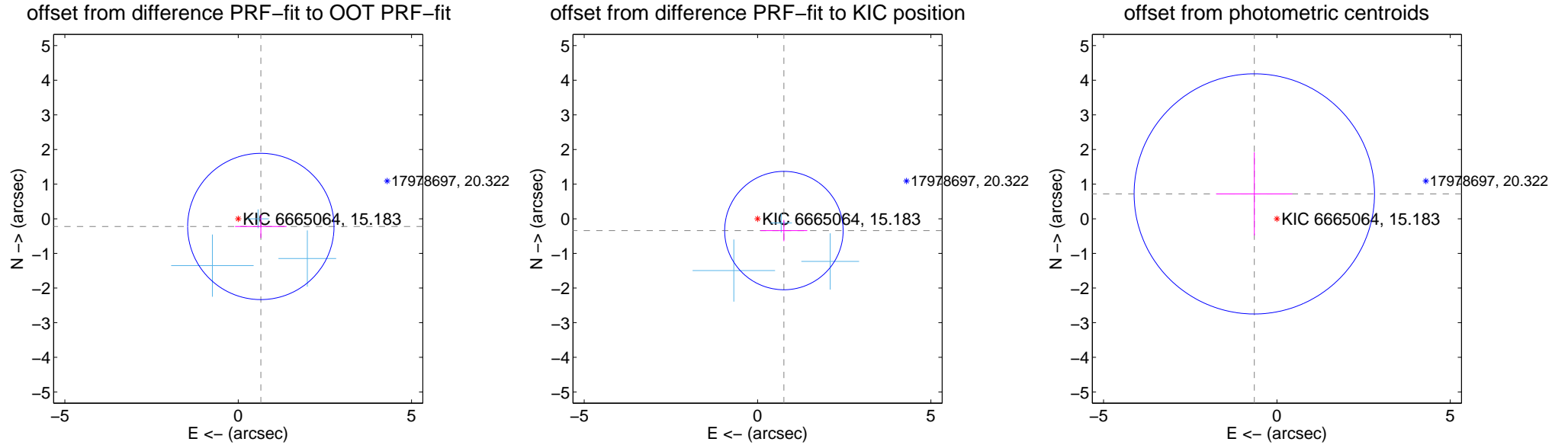
DV Centroid Data

Supplemental centroid analysis for 006665064-02. Kepler magnitude: 15.18. Transit SNR 8.82

There are 3 quarters with good PRF difference image offsets

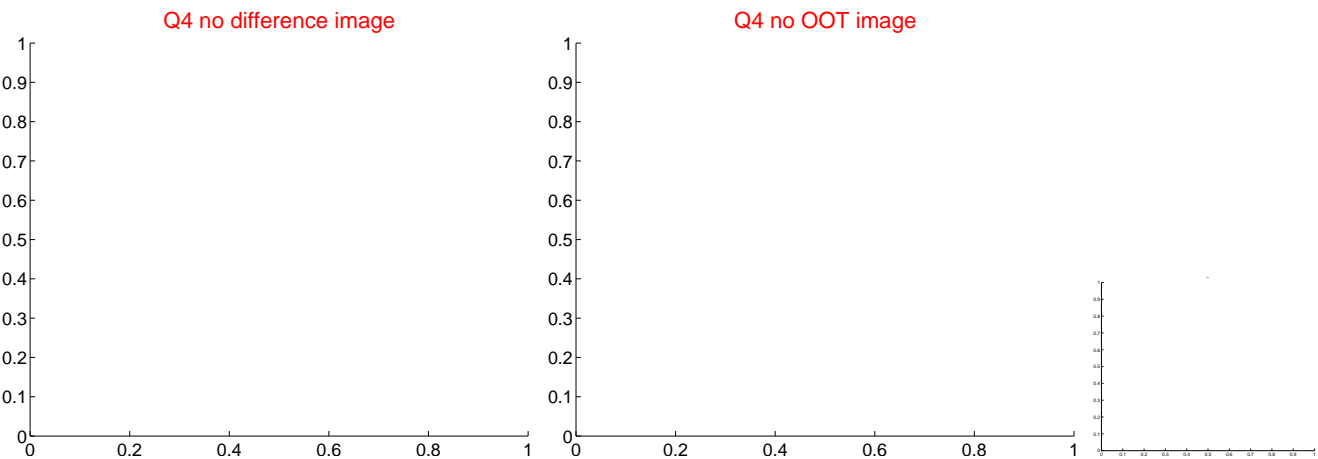
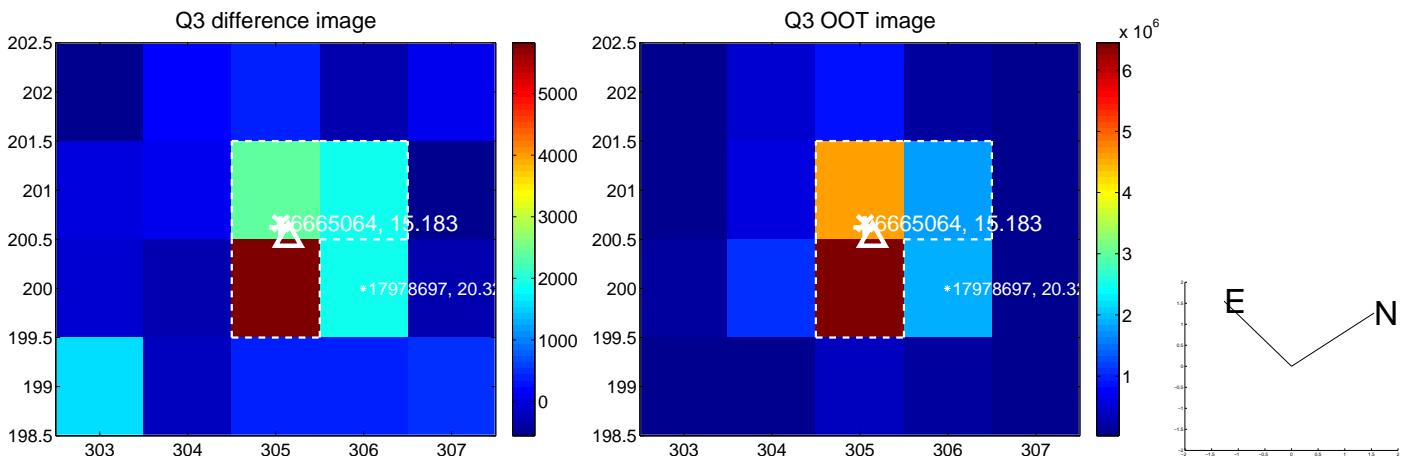
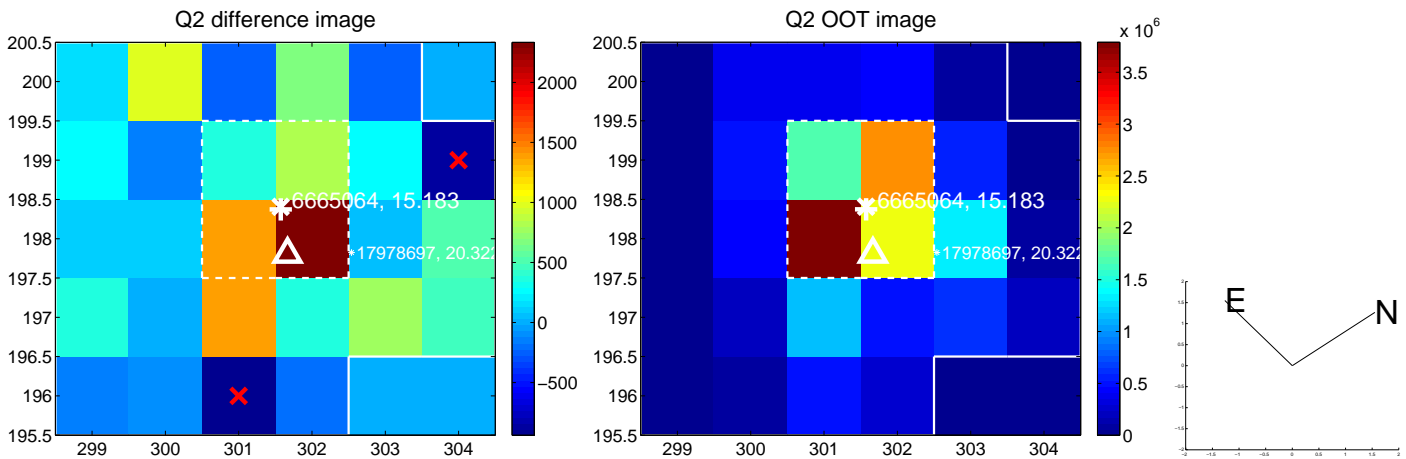
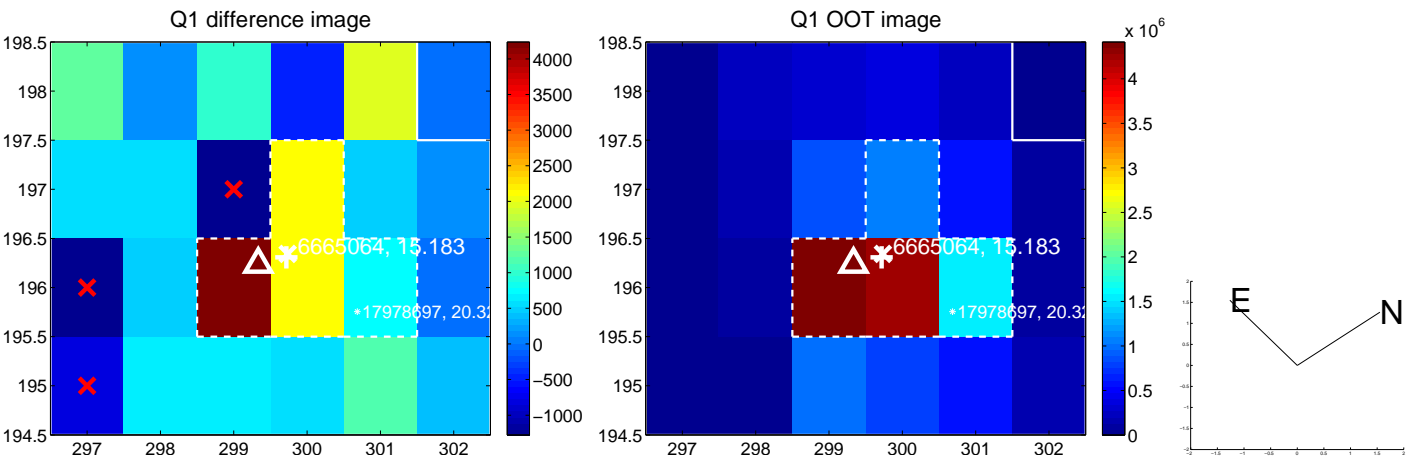
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.690 ± 0.704	0.98	-0.653 ± 0.742	-0.222 ± 0.332
PRF-fit source offset from KIC position	0.833 ± 0.570	1.46	-0.760 ± 0.675	-0.341 ± 0.308
photometric centroid source offset	0.97 ± 1.16	0.84	0.65 ± 1.10	0.72 ± 1.20



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.



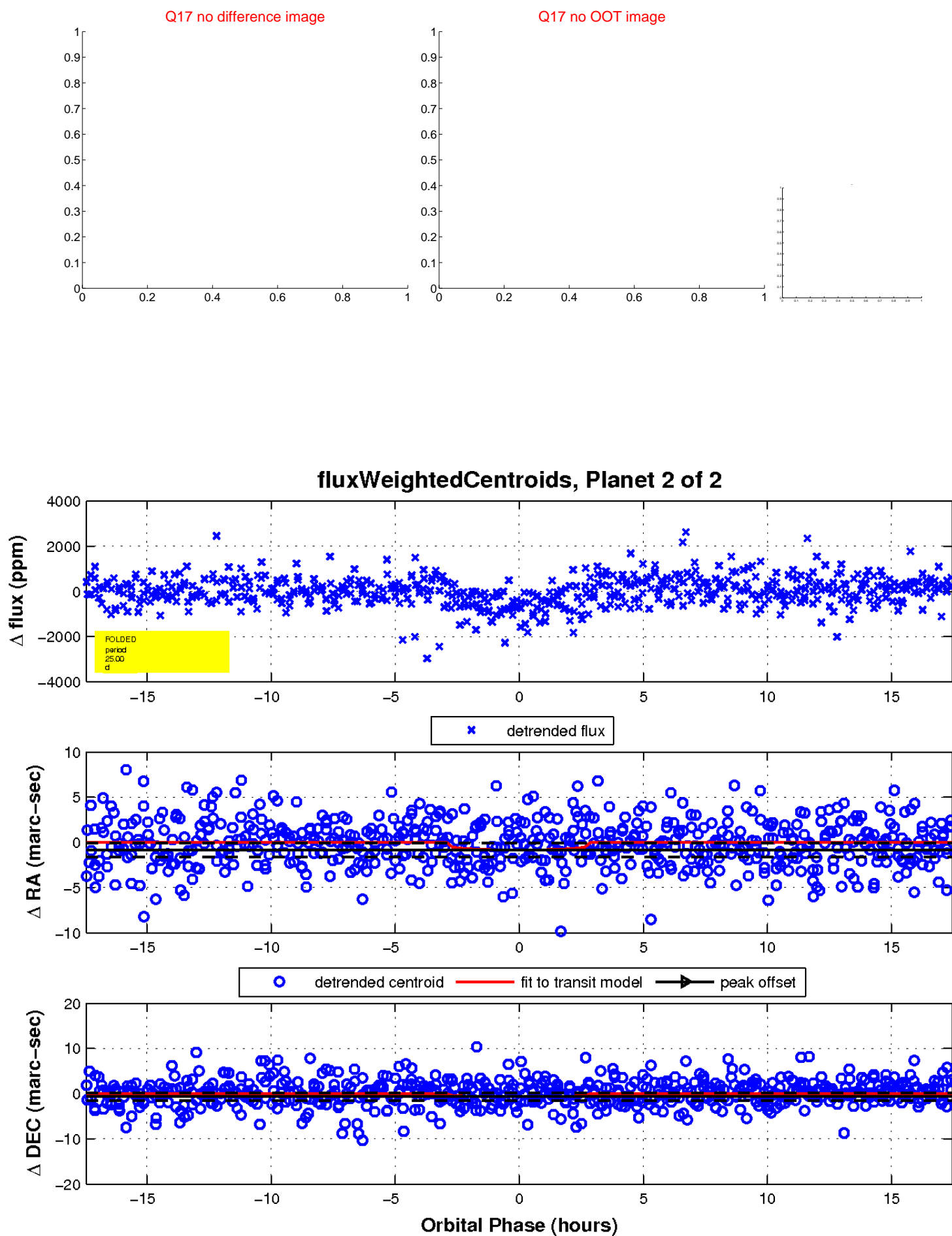
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

