

KIC 006221385

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})
006221385-01	OBS	6145.01	19.672869	134.268385	625.7	5.168	13.2	17.3	1.49	6486	4.31	161.24
006221385-02	OBS	6145.02	32.662099	152.693830	612.4	6.661	13.6	13.5	1.49	6486	4.19	82.02
006221385-03	OBS	6145.03	7.314281	137.479635	246.3	2.456	8.2	9.0	1.49	6486	2.41	603.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006221385-01	OBS	PC	0.94	0	0	0	0	CENT_FEW_DIFFS
006221385-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
006221385-03	OBS	PC	0.80	0	0	0	0	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.

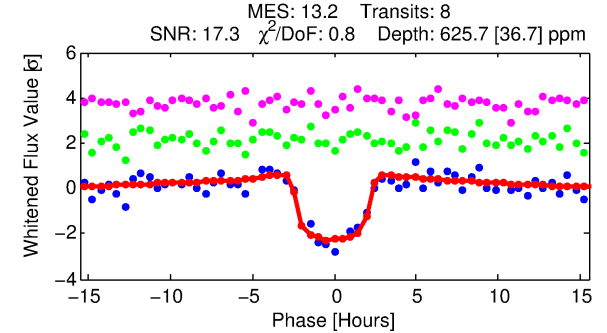
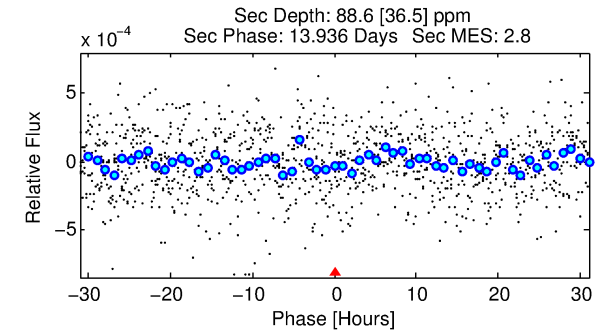
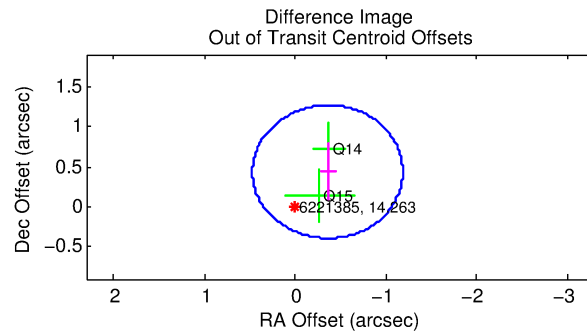
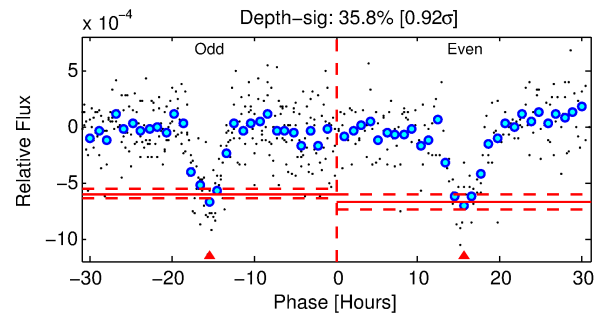
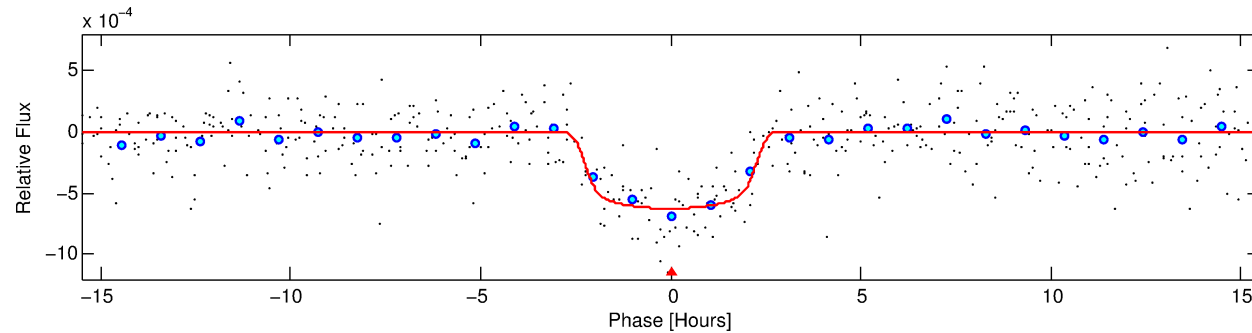
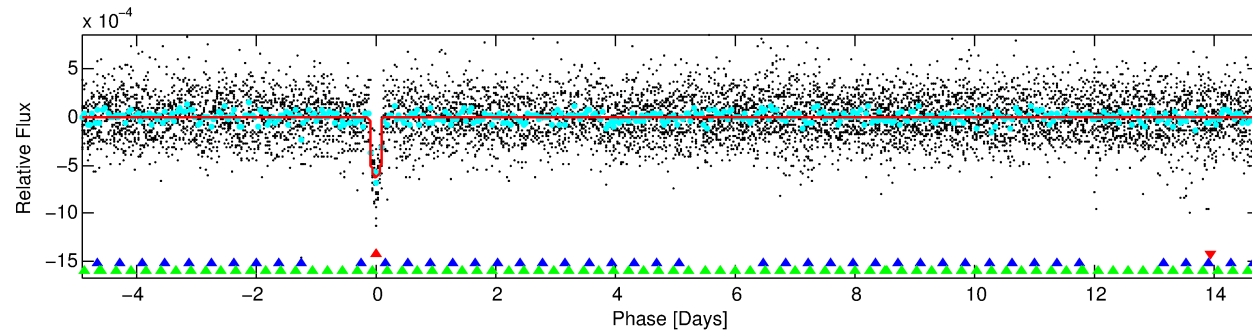
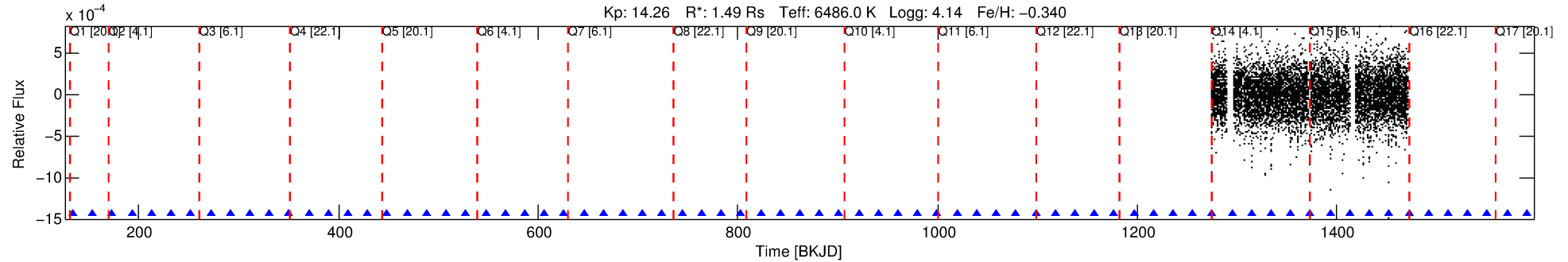
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006221385-01

No Significant Match Found

DV One-Page Summary

KIC: 6221385 Candidate: 1 of 3 Period: 19.673 d
KOI: K06145.01 Corr: 0.915



DV Fit Results:

Period = 19.67287 [0.00081] d
Epoch = 134.2684 [0.0493] BKJD
Rp/R* = 0.0266 [0.0030]
a/R* = 14.77 [9.33]
b = 0.89 [0.15]
Seff = 161.24 [71.16]
Teq = 909 [100] K
Rp = 4.31 [1.27] Re
a = 0.1473 [0.0385] AU
Ag = 56.81 [35.76] [1.56 σ]
Teffp = 3857 [473] K [6.10 σ]

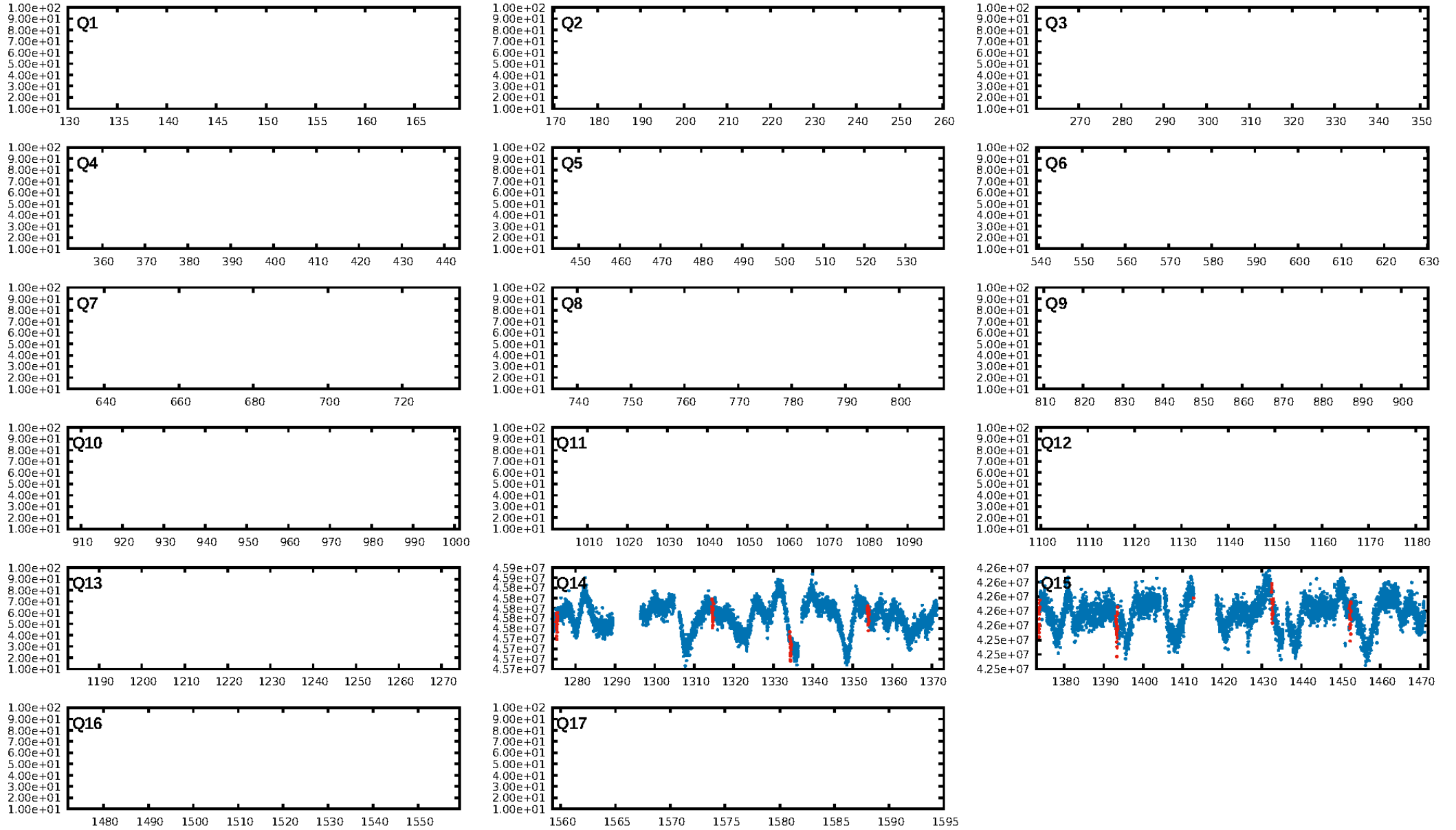
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [51.84 σ]
LongPeriod-sig: 100.0% [36.98 σ]
ModelChiSquare2-sig: 73.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.44e-40
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 5.335
Centroid-sig: N/A
Centroid-so: 0.604 arcsec [0.99 σ]
OotOffset-rm: 0.563 arcsec [2.04 σ]
KicOffset-rm: 0.499 arcsec [2.12 σ]
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]

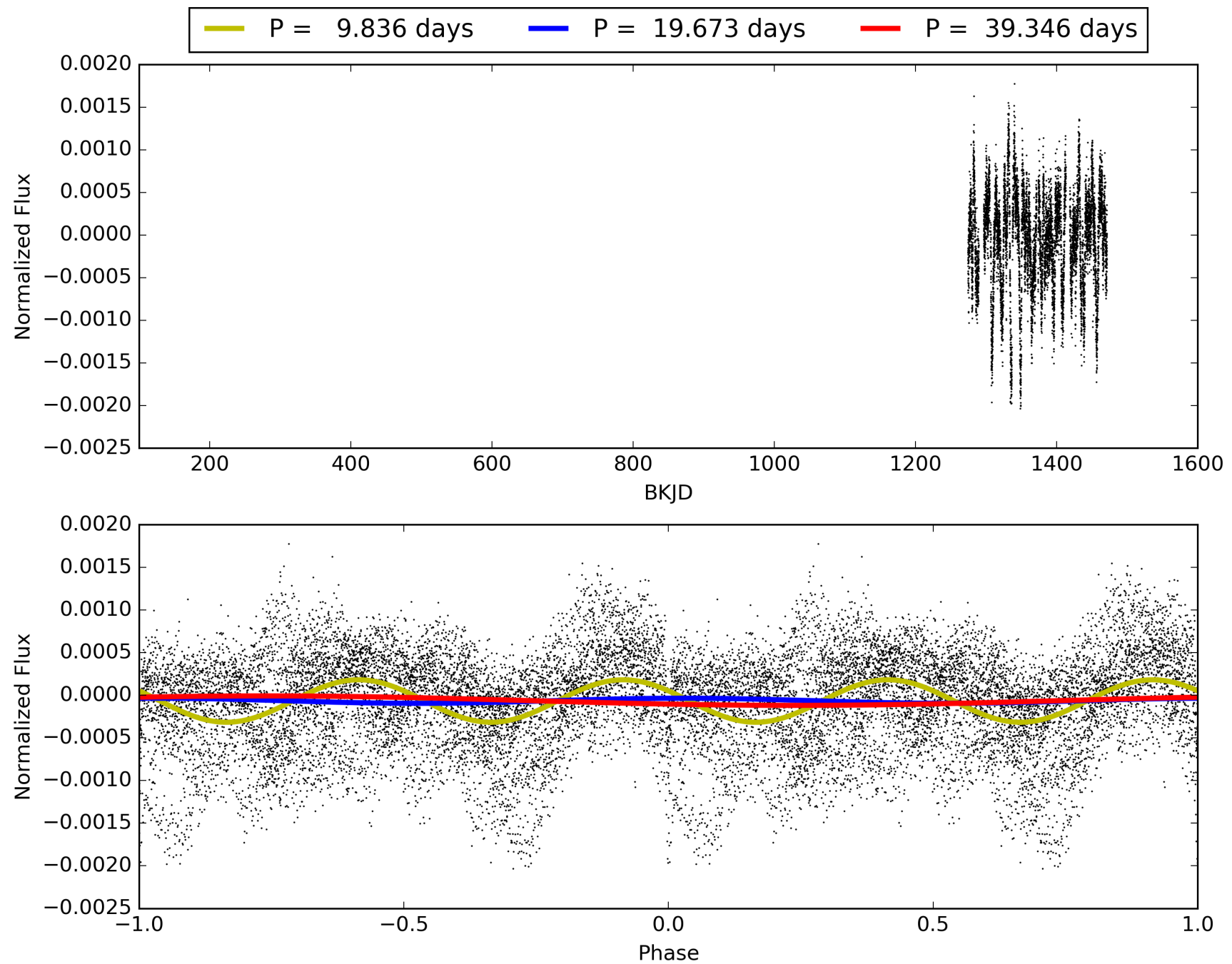
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:19:09 Z

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

TCE 006221385-01, PDC Light Curves

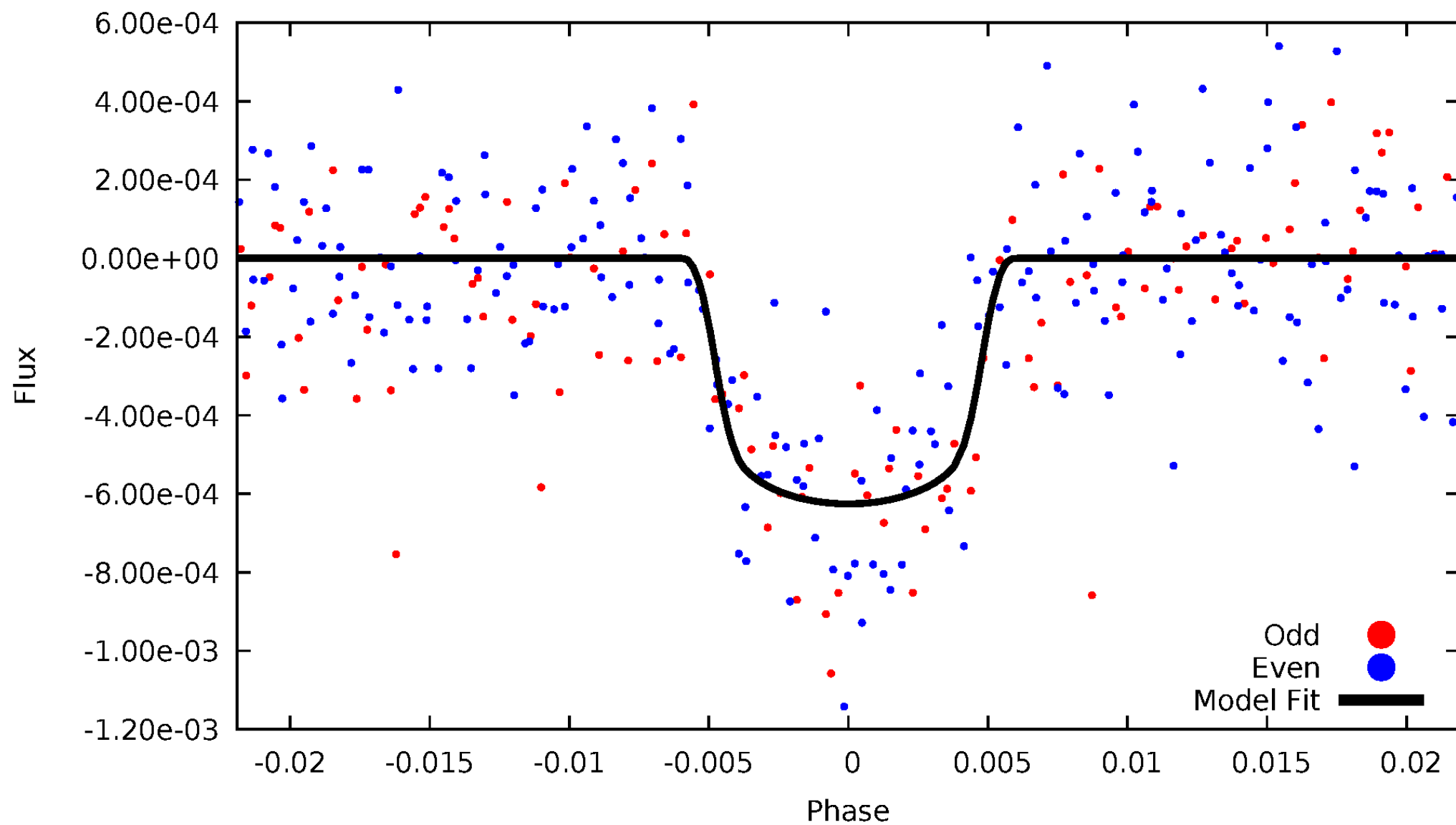


TCE 006221385-01



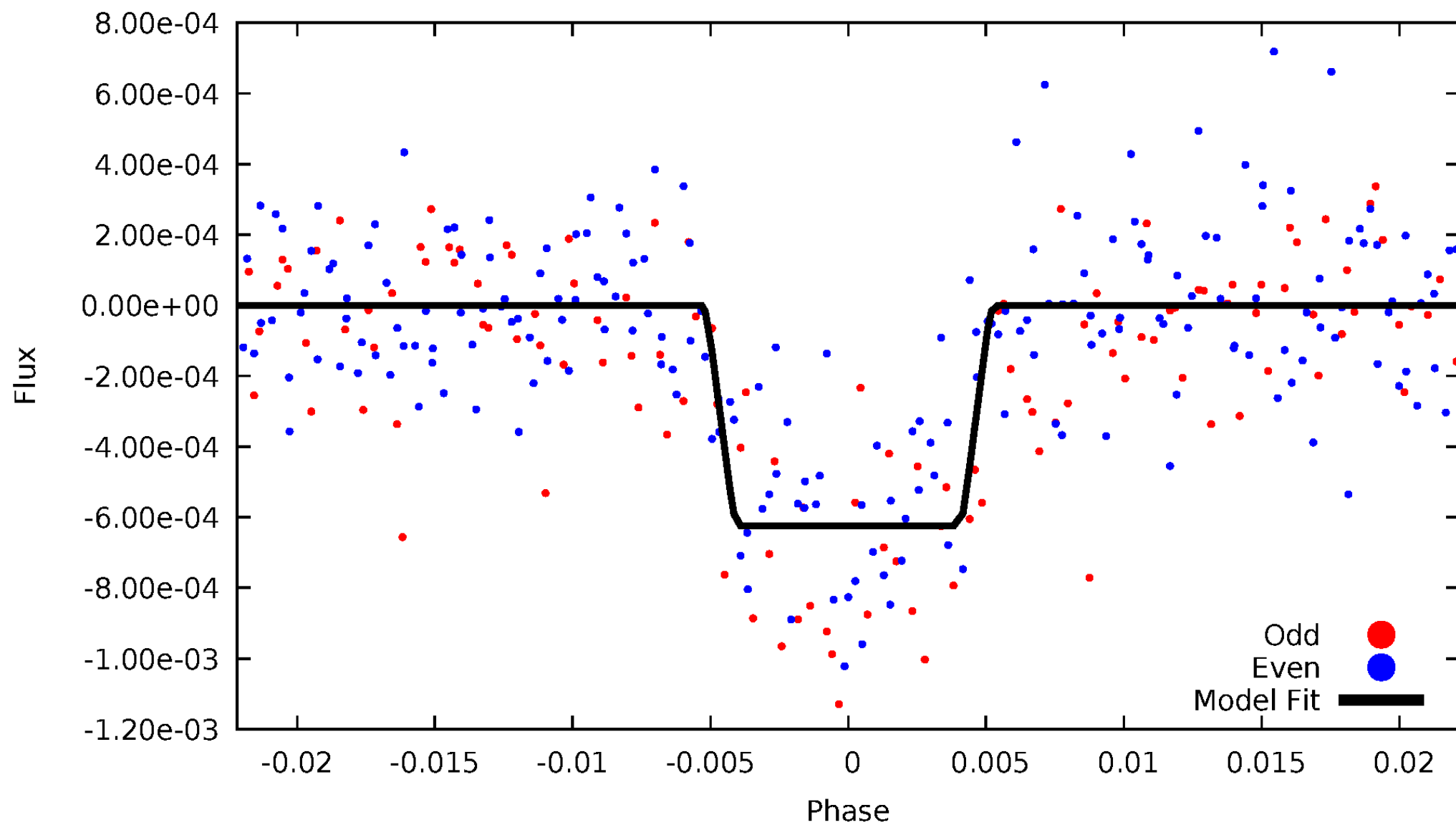
DV Odd/Even

TCE 006221385-01



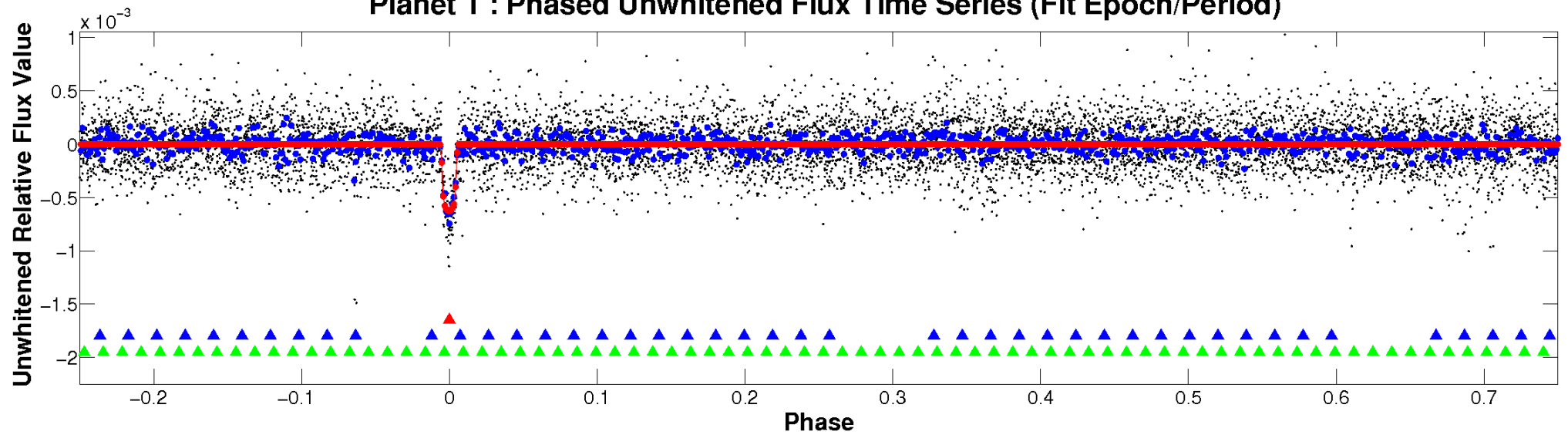
ALT Odd/Even

TCE 006221385-01

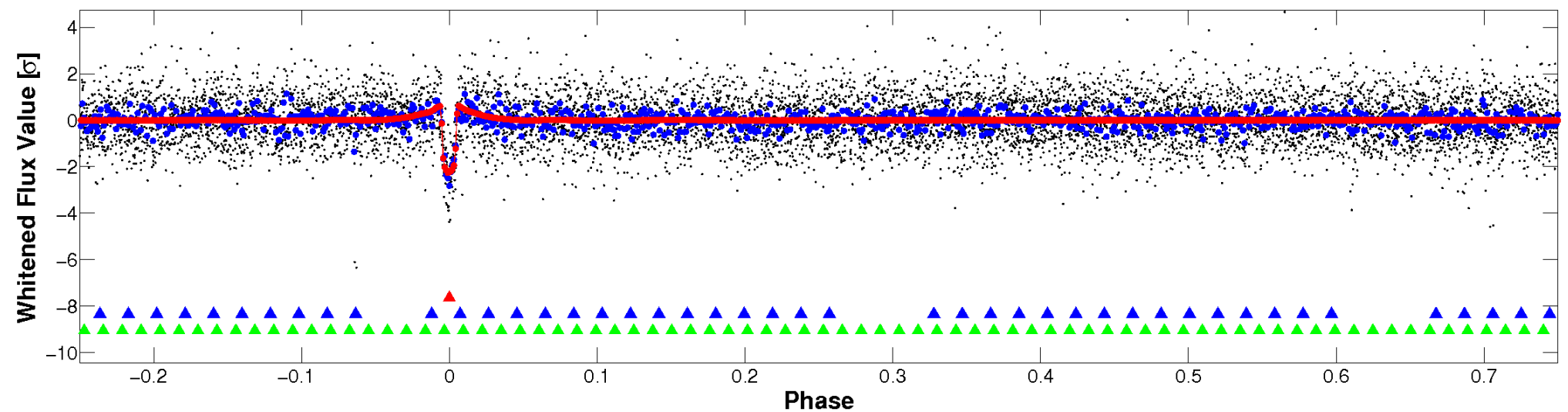


Non-Whitened Vs. Whitened Light Curve

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

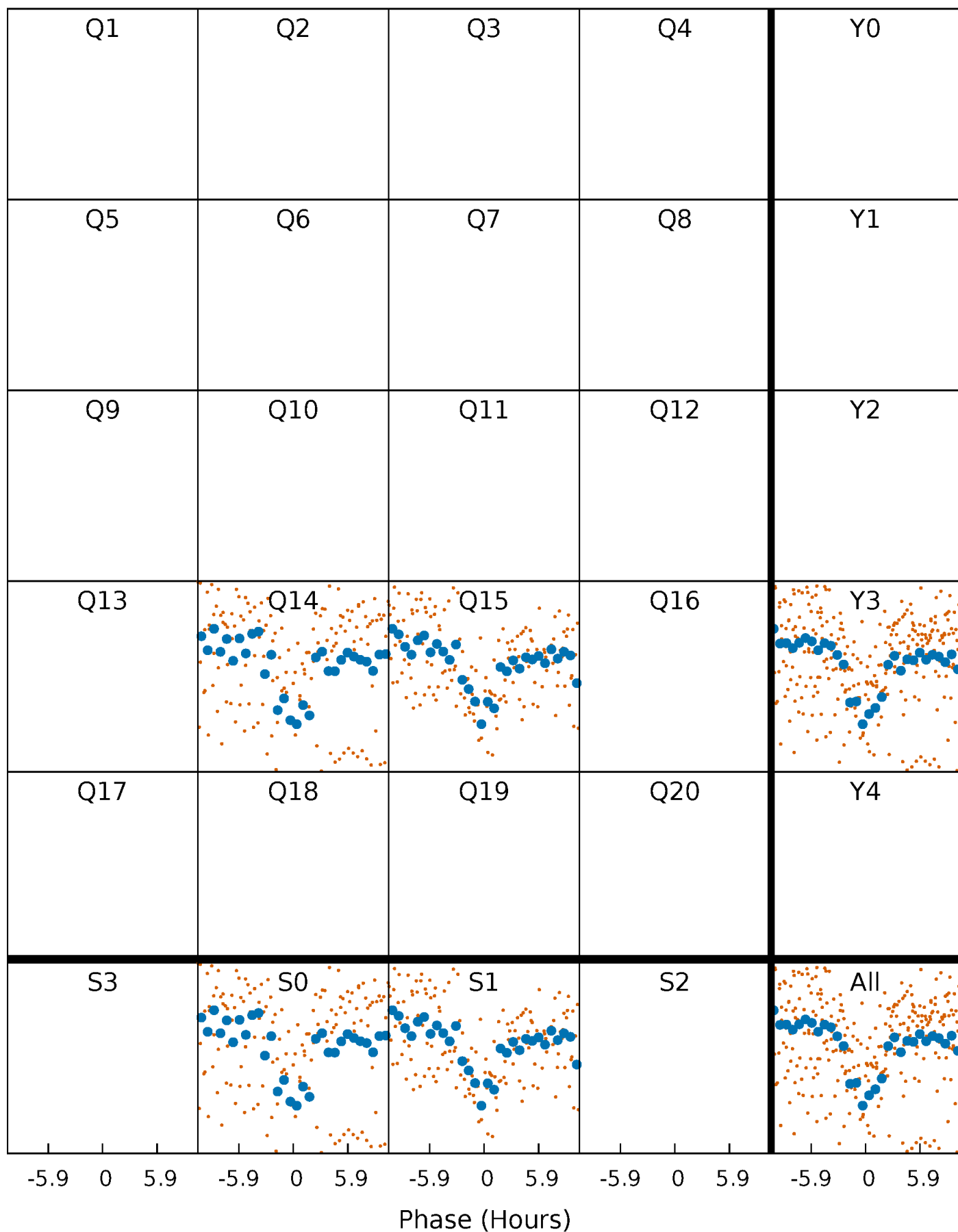


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



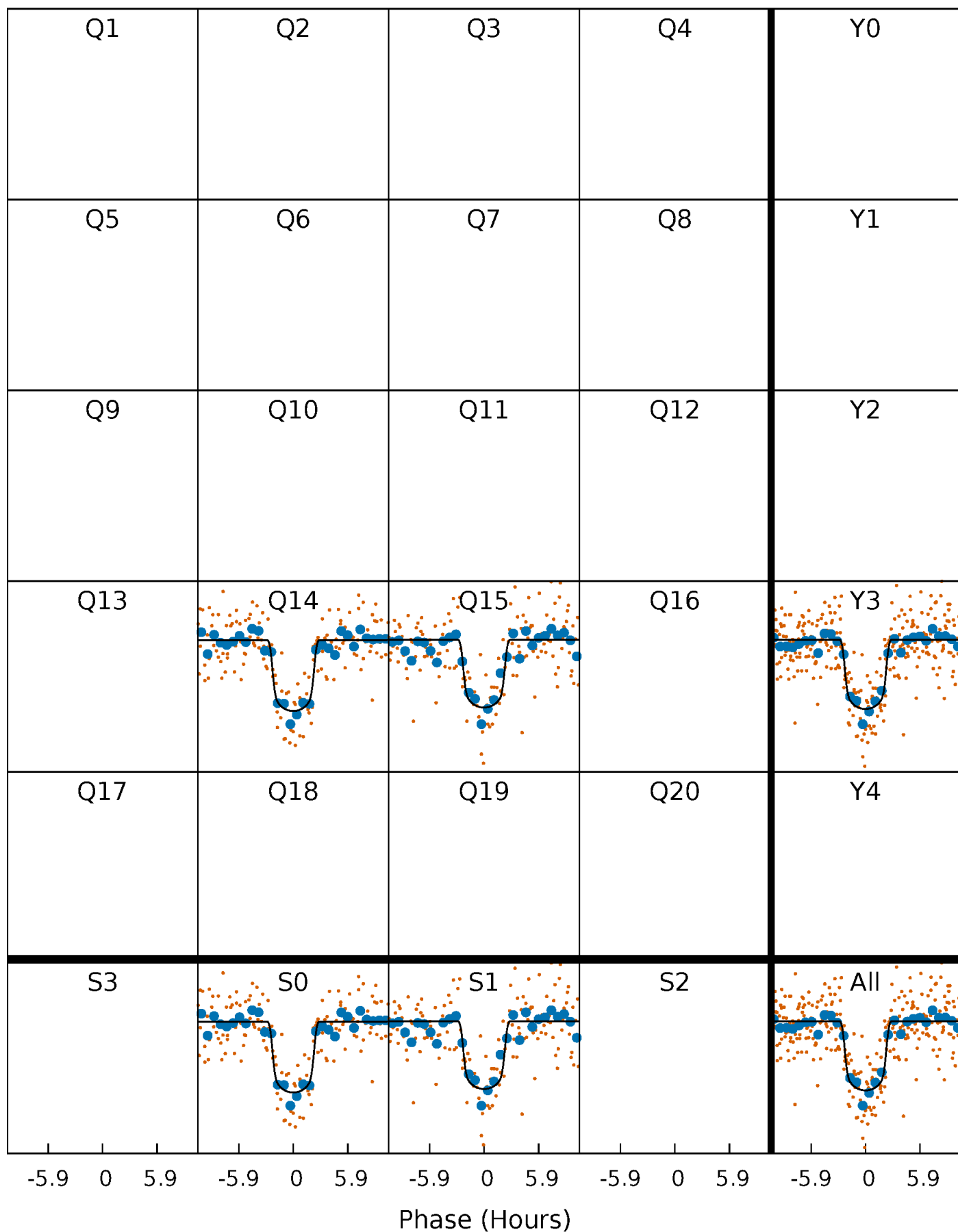
PDC Quarter-Phased Transit Curves

TCE 006221385-01 P= 19.672869 Days $T_0=134.268385$ (BKJD)



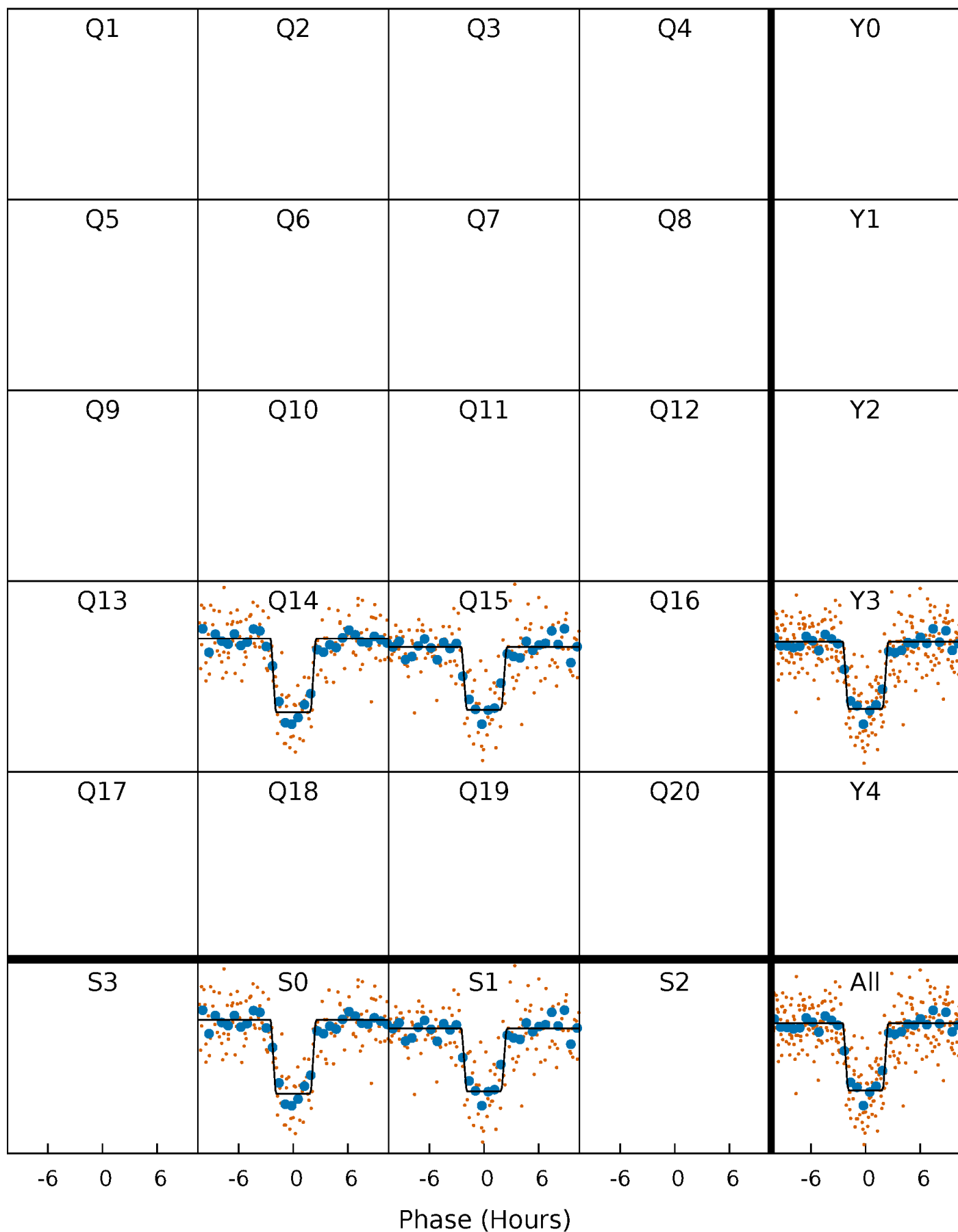
DV Quarter-Phased Transit Curves

TCE 006221385-01 P= 19.672869 Days $T_0=134.268385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

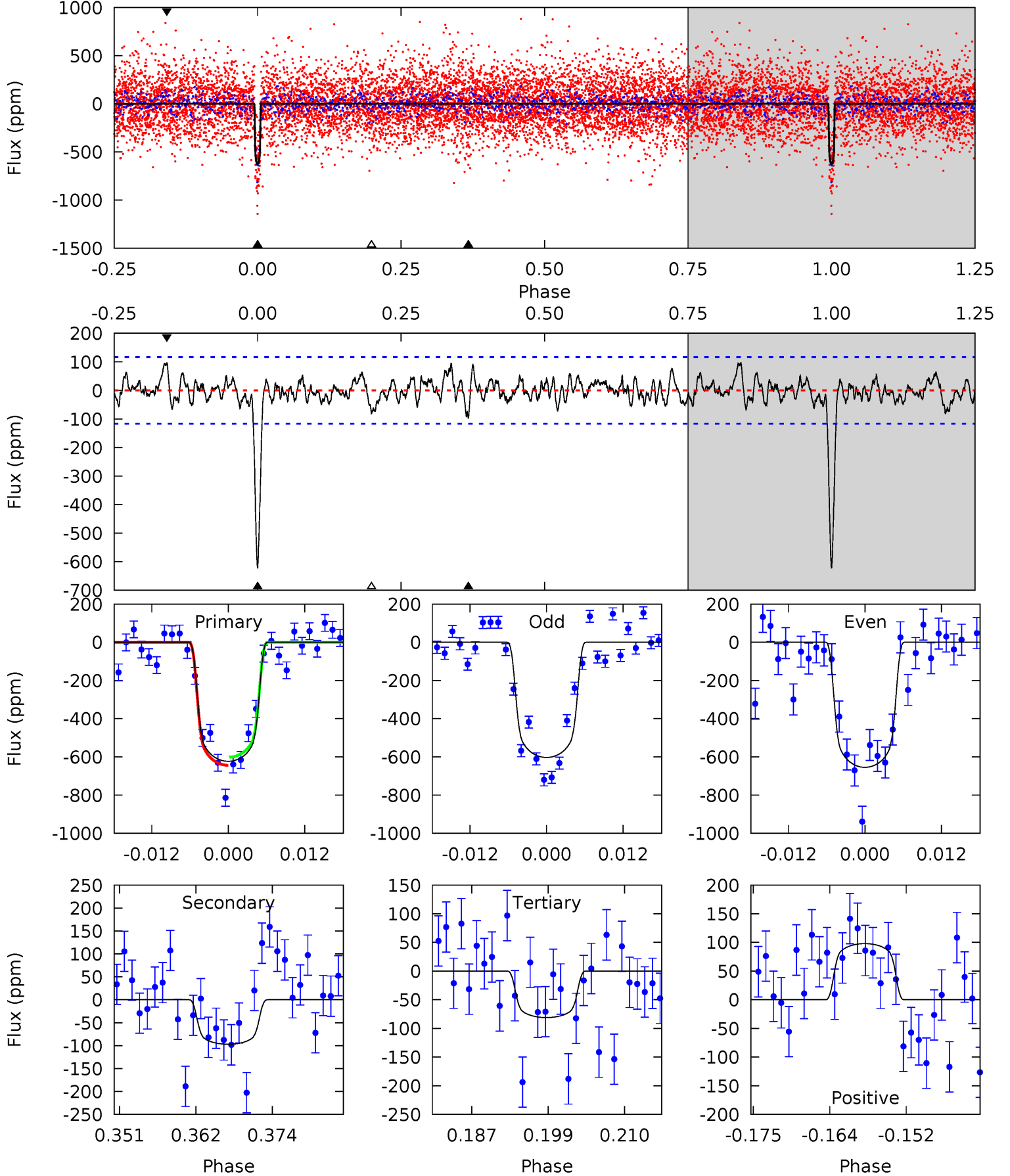
TCE 006221385-01 P= 19.672853 Days $T_0=134.269055$ (BKJD)



DV Model-Shift Uniqueness Test

006221385-01, P = 19.672869 Days, E = 134.268385 Days

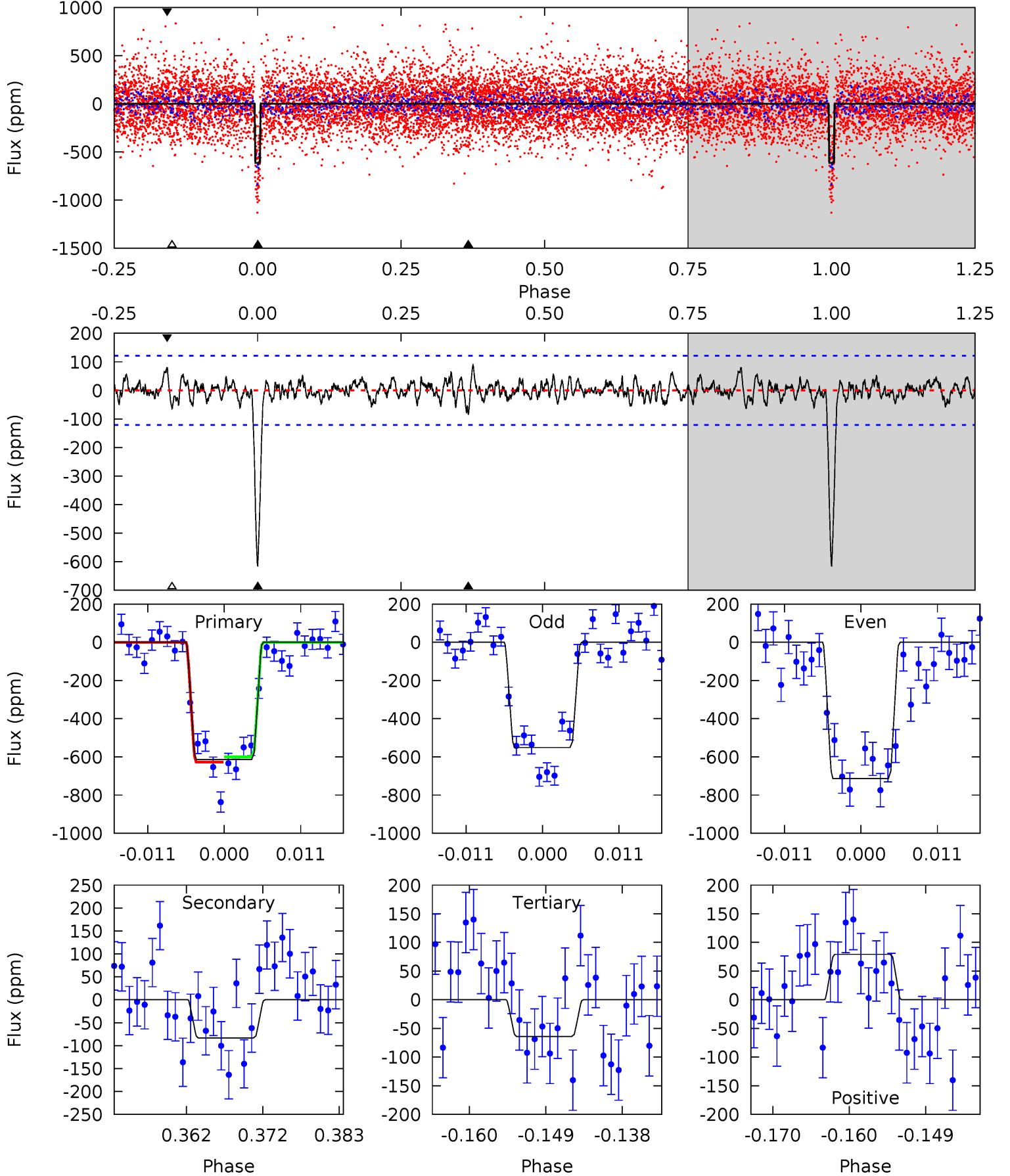
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.6	4.15	3.46	4.19	5.00	2.52	1.31	23.2	22.4	0.68	-0.04	1.07	1.00	0.14	0.91



Alt Model-Shift Uniqueness Test

006221385-01, P = 19.672853 Days, E = 134.269055 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	3.44	2.64	3.27	5.01	2.55	1.00	22.7	22.1	0.80	0.17	3.30	1.07	0.13	0.57



Stellar Parameters For KIC 006221385

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6486^{+181}_{-227}	$4.136^{+0.246}_{-0.164}$	$-0.340^{+0.250}_{-0.300}$	$1.485^{+0.402}_{-0.402}$	$1.098^{+0.177}_{-0.145}$	$0.472^{+0.616}_{-0.217}$
	+3%/-3%	+6%/-4%	+74%/-88%	+27%/-27%	+16%/-13%	+130%/-46%
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 006221385-01 / KOI 6145.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-97 ± 23	$4.28^{+0.84}_{-0.84}$	1262^{+95}_{-99}	4196^{+299}_{-262}	64^{+36}_{-22}
Alt.	-83 ± 24	$4.01^{+0.75}_{-0.74}$	1256^{+85}_{-95}	4164^{+323}_{-327}	61^{+41}_{-25}

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 $A_{obs} \gg 1.0$

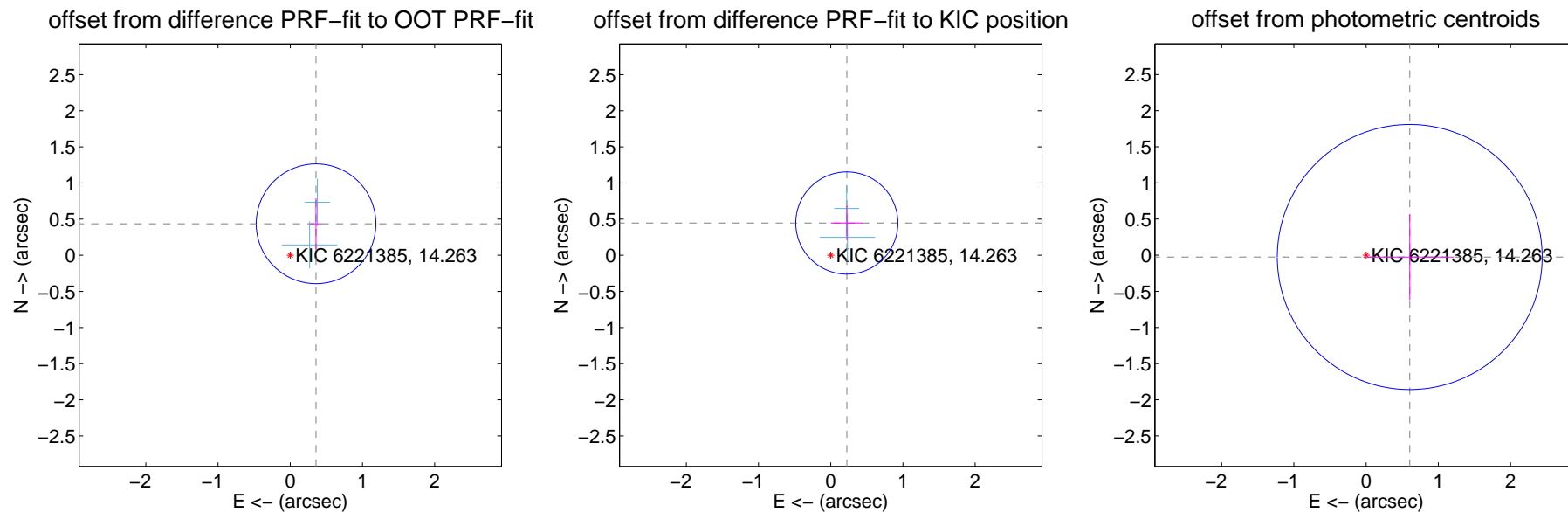
DV Centroid Data

Supplemental centroid analysis for 006221385-01. Kepler magnitude: 14.26. Transit SNR 17.29

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.563 ± 0.276	2.04	-0.357 ± 0.082	0.436 ± 0.351
PRF-fit source offset from KIC position	0.499 ± 0.236	2.12	-0.223 ± 0.221	0.446 ± 0.239
photometric centroid source offset	0.60 ± 0.61	0.99	-0.60 ± 0.61	-0.02 ± 0.59



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.

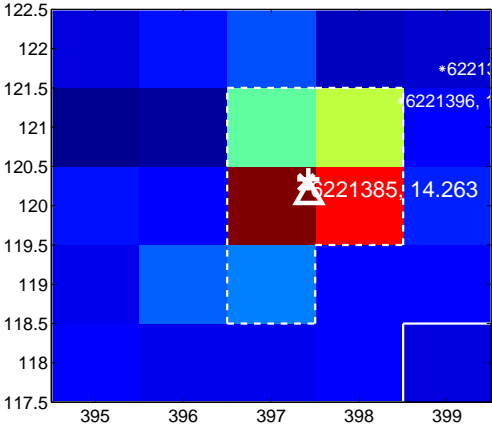
Q13 no difference image



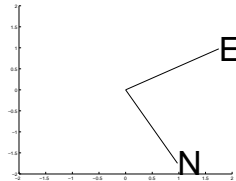
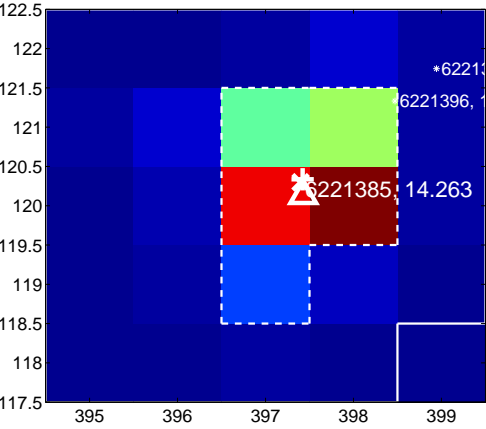
Q13 no OOT image



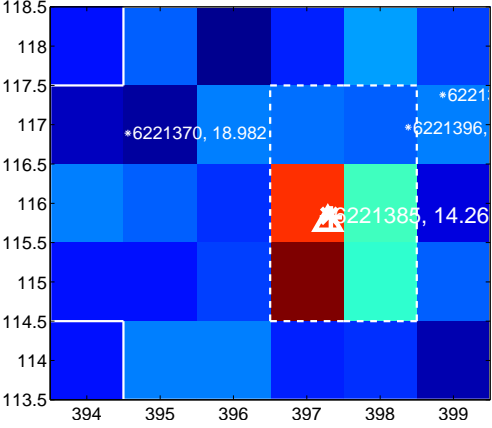
Q14 difference image



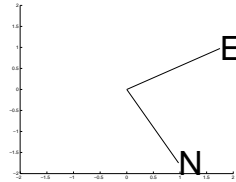
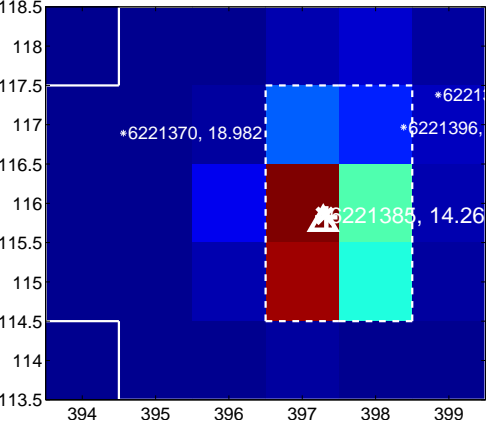
Q14 OOT image



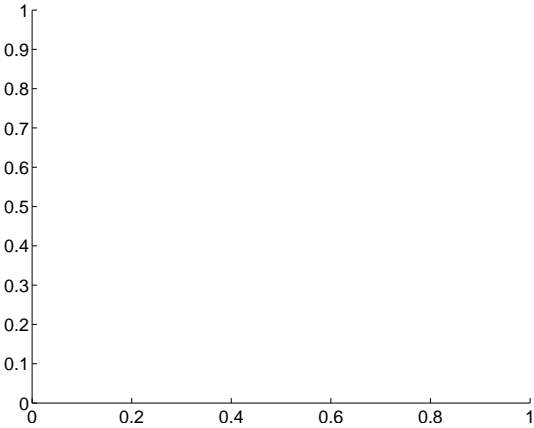
Q15 difference image



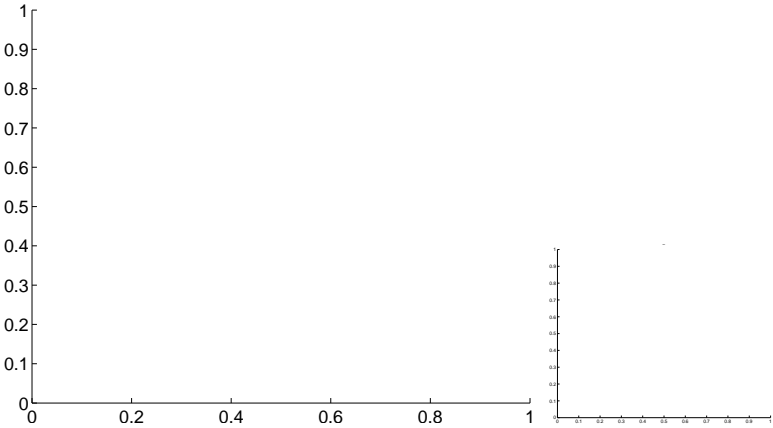
Q15 OOT image



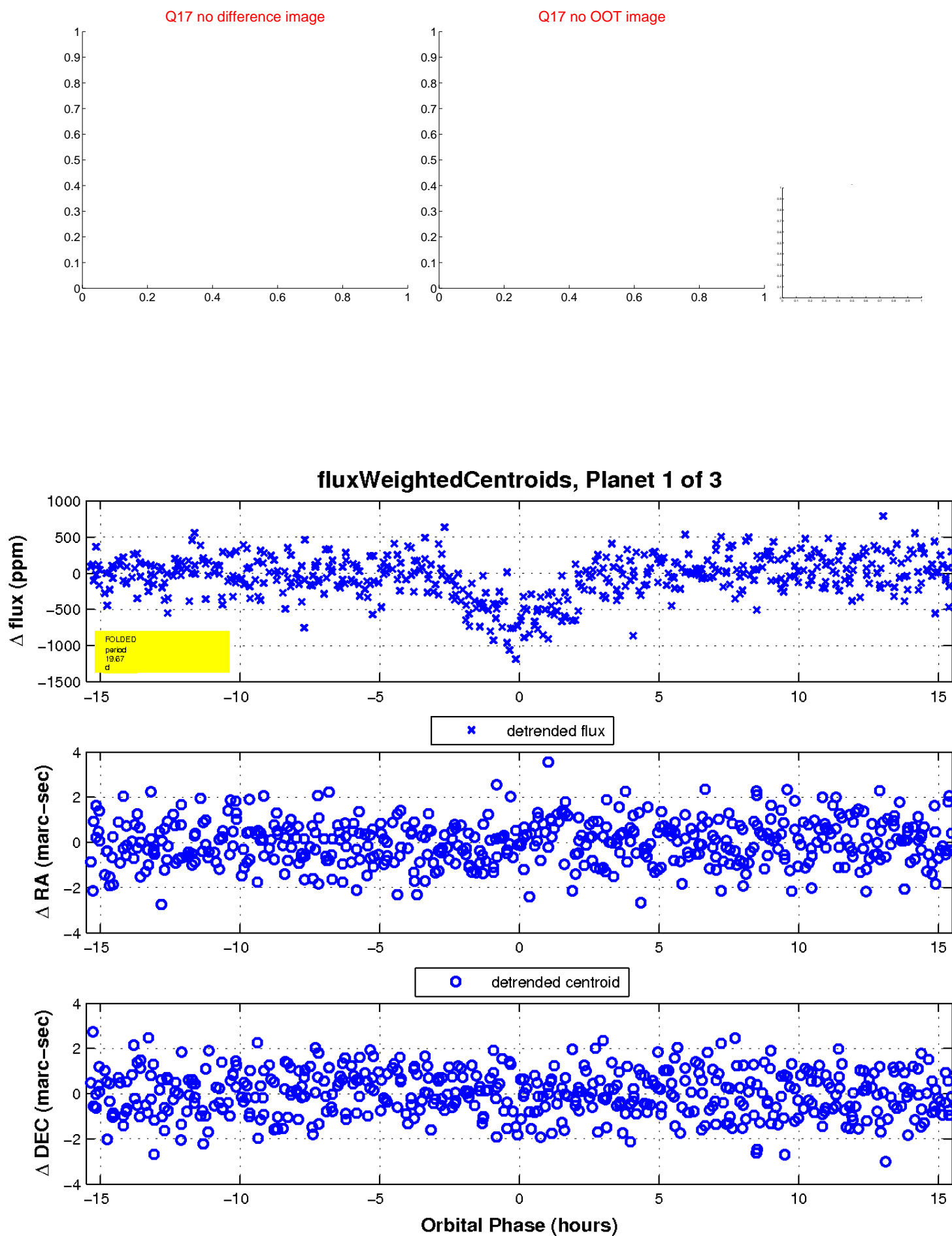
Q16 no difference image



Q16 no OOT image

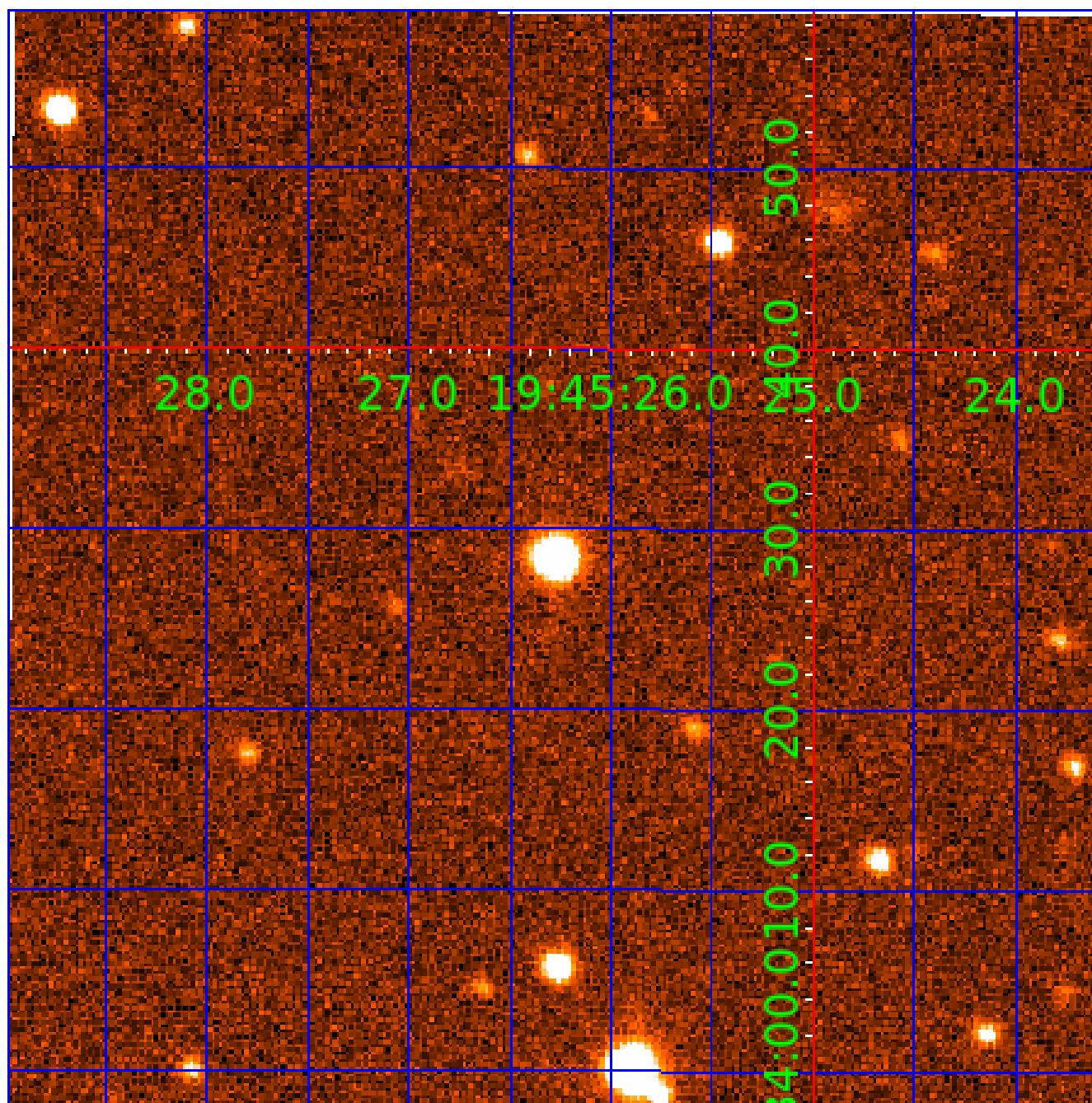


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006221385

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})
006221385-01	OBS	6145.01	19.672869	134.268385	625.7	5.168	13.2	17.3	1.49	6486	4.31	161.24
006221385-02	OBS	6145.02	32.662099	152.693830	612.4	6.661	13.6	13.5	1.49	6486	4.19	82.02
006221385-03	OBS	6145.03	7.314281	137.479635	246.3	2.456	8.2	9.0	1.49	6486	2.41	603.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006221385-01	OBS	PC	0.94	0	0	0	0	CENT_FEW_DIFFS
006221385-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
006221385-03	OBS	PC	0.80	0	0	0	0	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 006221385-02

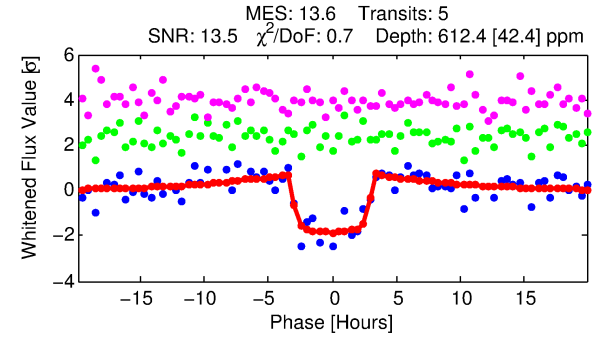
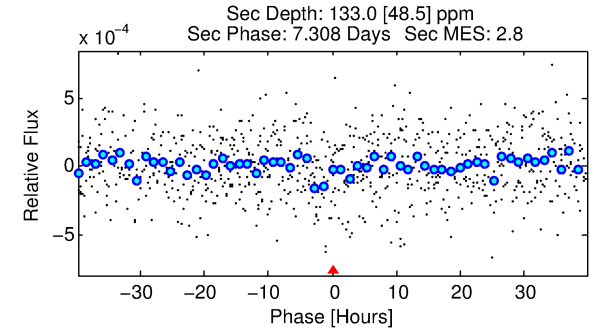
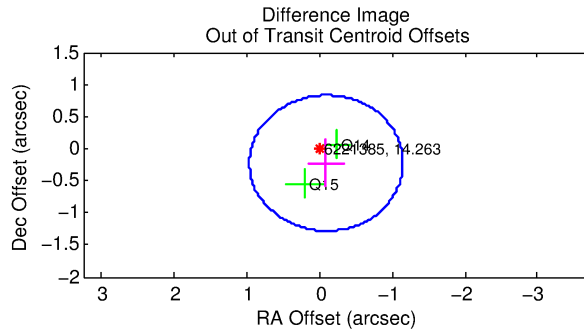
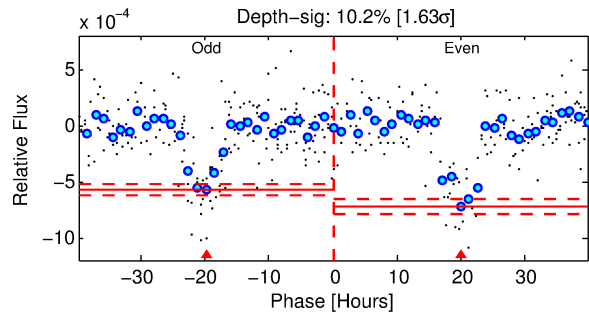
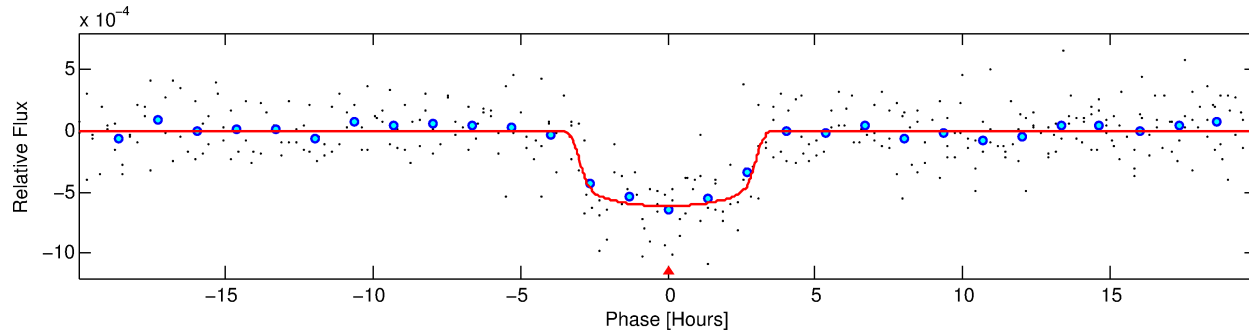
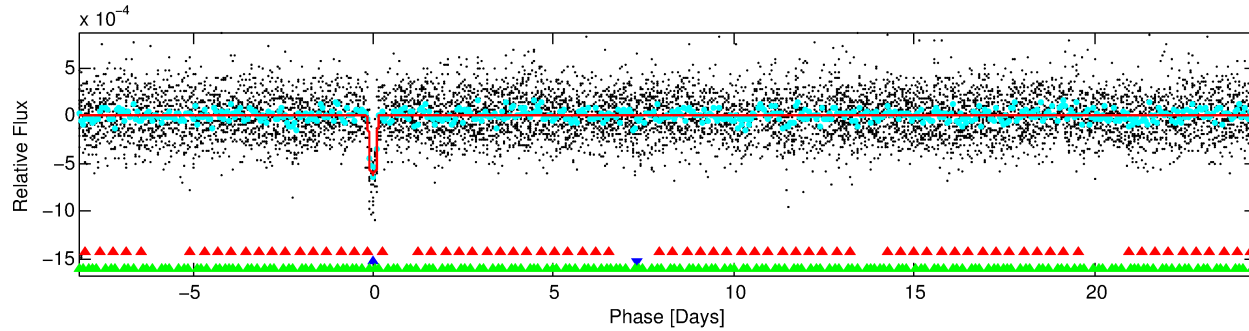
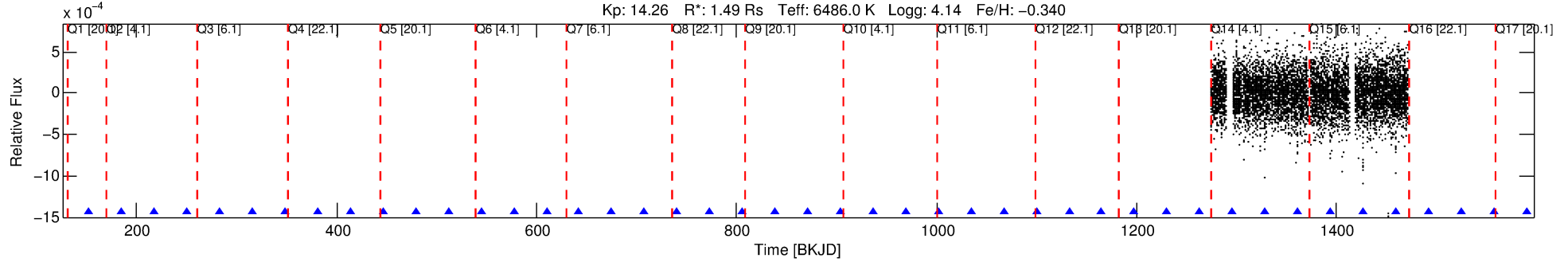
No Significant Match Found

DV One-Page Summary

KIC: 6221385 Candidate: 2 of 3 Period: 32.662 d

KOI: K06145 Corr: No Ephemeris Match

Kp: 14.26 R*: 1.49 Rs Teff: 6486.0 K Logg: 4.14 Fe/H: -0.340



DV Fit Results:

Period = 32.66210 [0.00225] d
Epoch = 152.6938 [0.0851] BKJD
Rp/R* = 0.0259 [0.0024]
a/R* = 20.62 [9.56]
b = 0.87 [0.14]
Seff = 82.02 [36.20]
Teq = 767 [85] K
Rp = 4.19 [1.20] Re
a = 0.2065 [0.0539] AU
Ag = 177.68 [104.14] [1.70σ]
Teffp = 4332 [469] K [7.47σ]

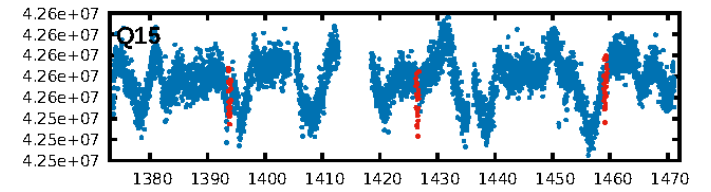
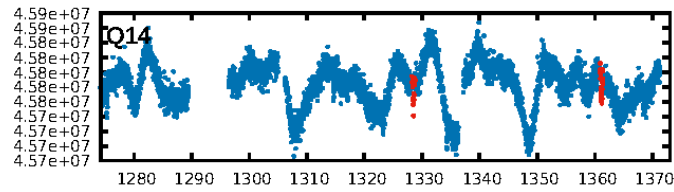
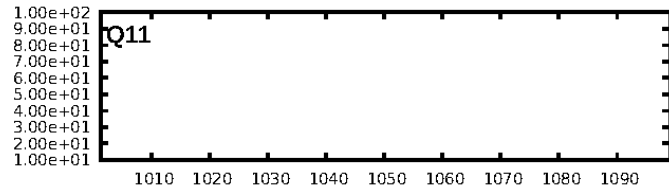
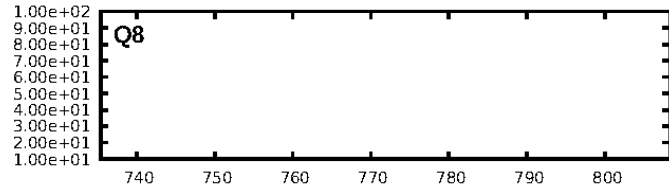
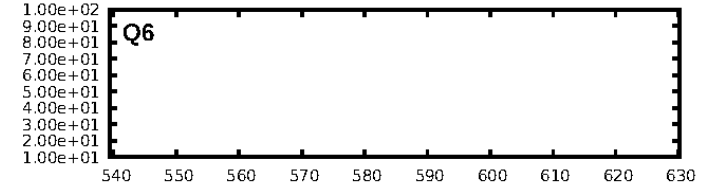
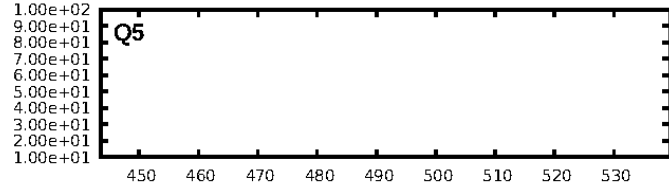
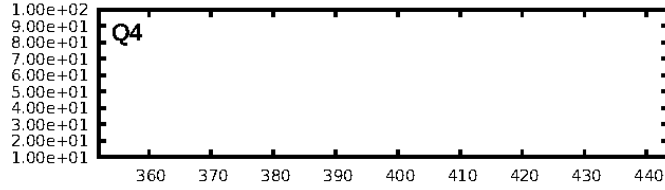
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [36.98σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 44.8%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 3.44e-42
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: -19.45
Centroid-sig: N/A
Centroid-so: 0.160 arcsec [0.24σ]
OotOffset-rm: 0.243 arcsec [0.69σ]
KicOffset-rm: 0.219 arcsec [0.84σ]
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]

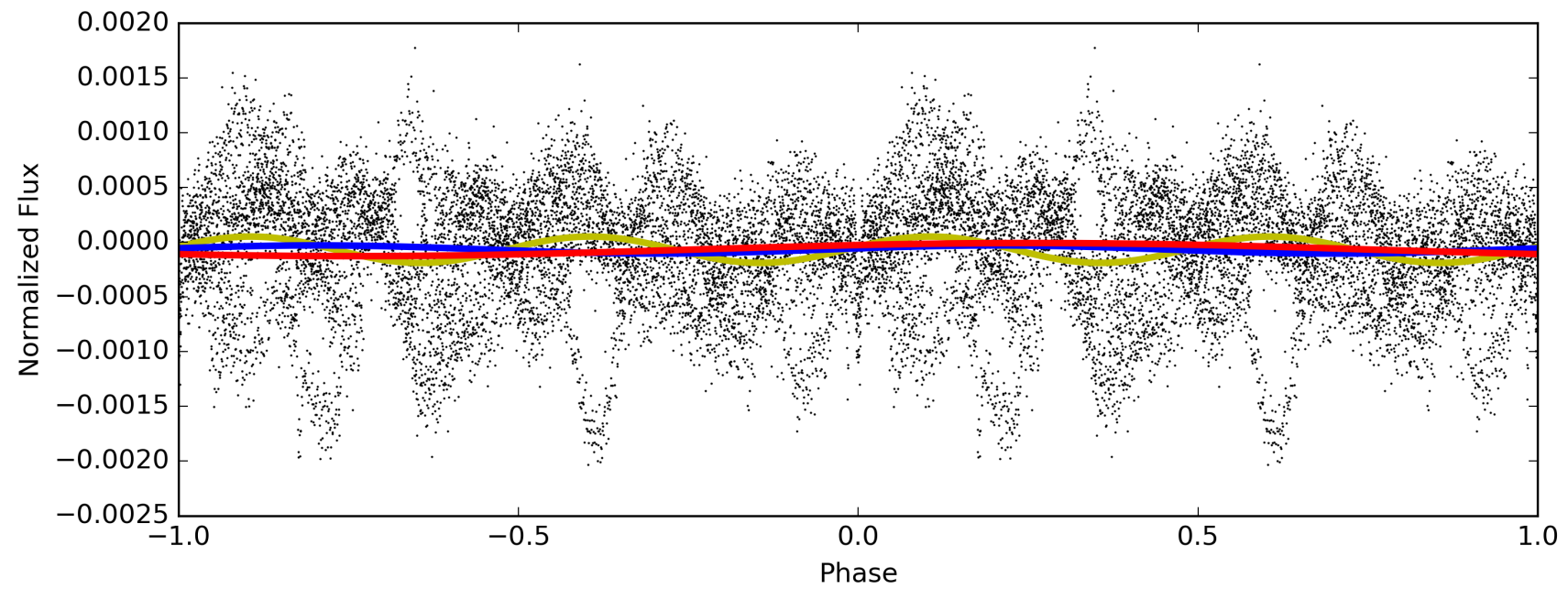
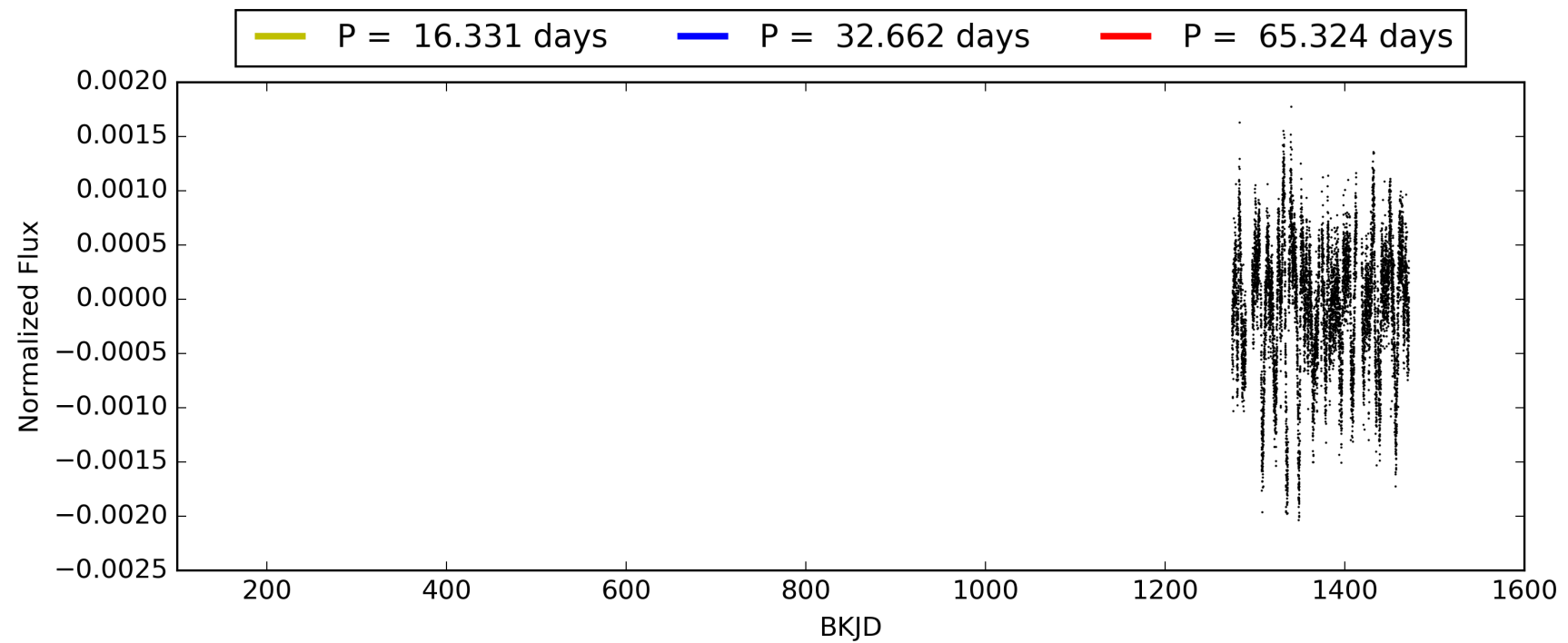
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:19:13 Z

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

TCE 006221385-02, PDC Light Curves

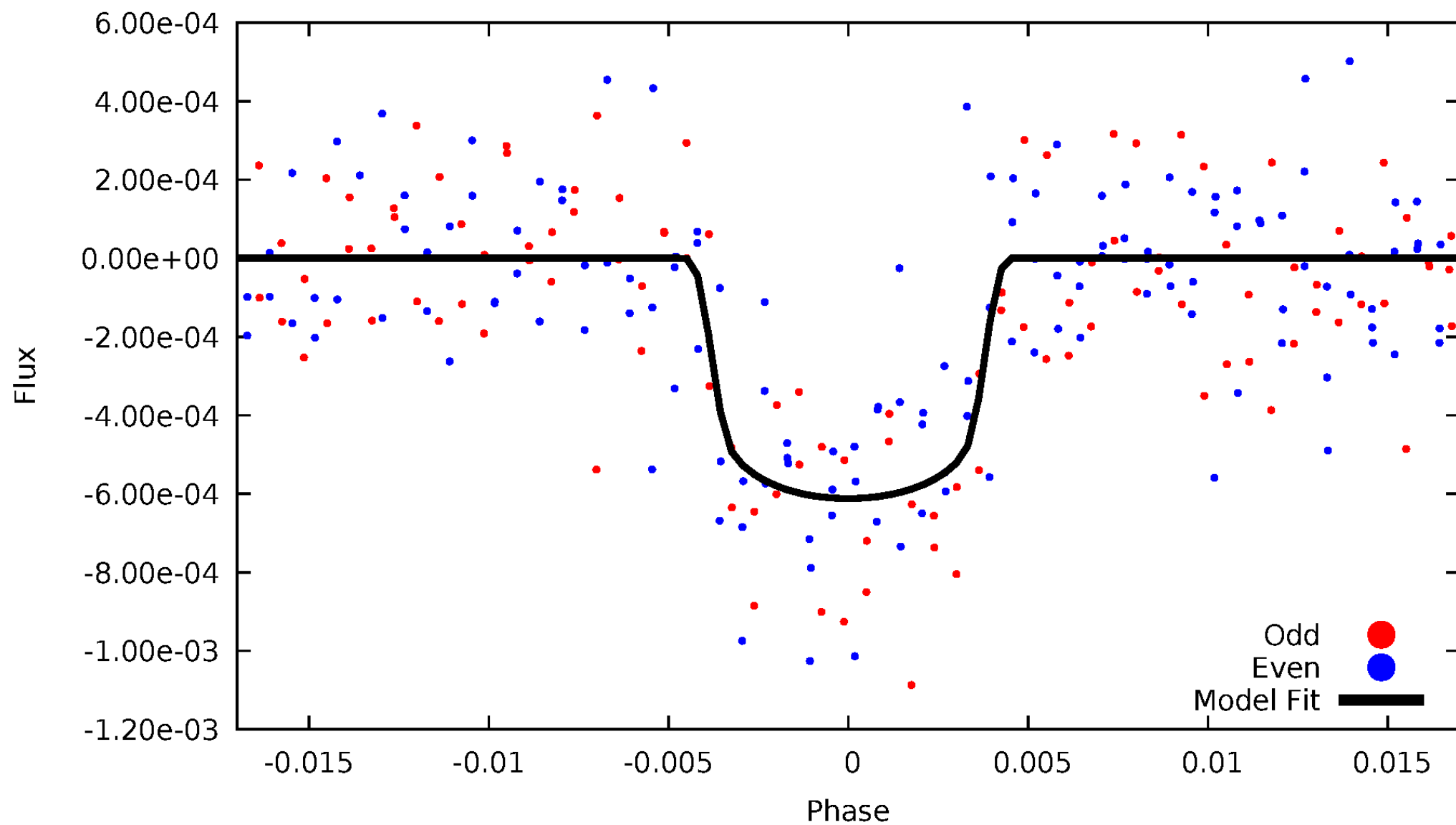


TCE 006221385-02



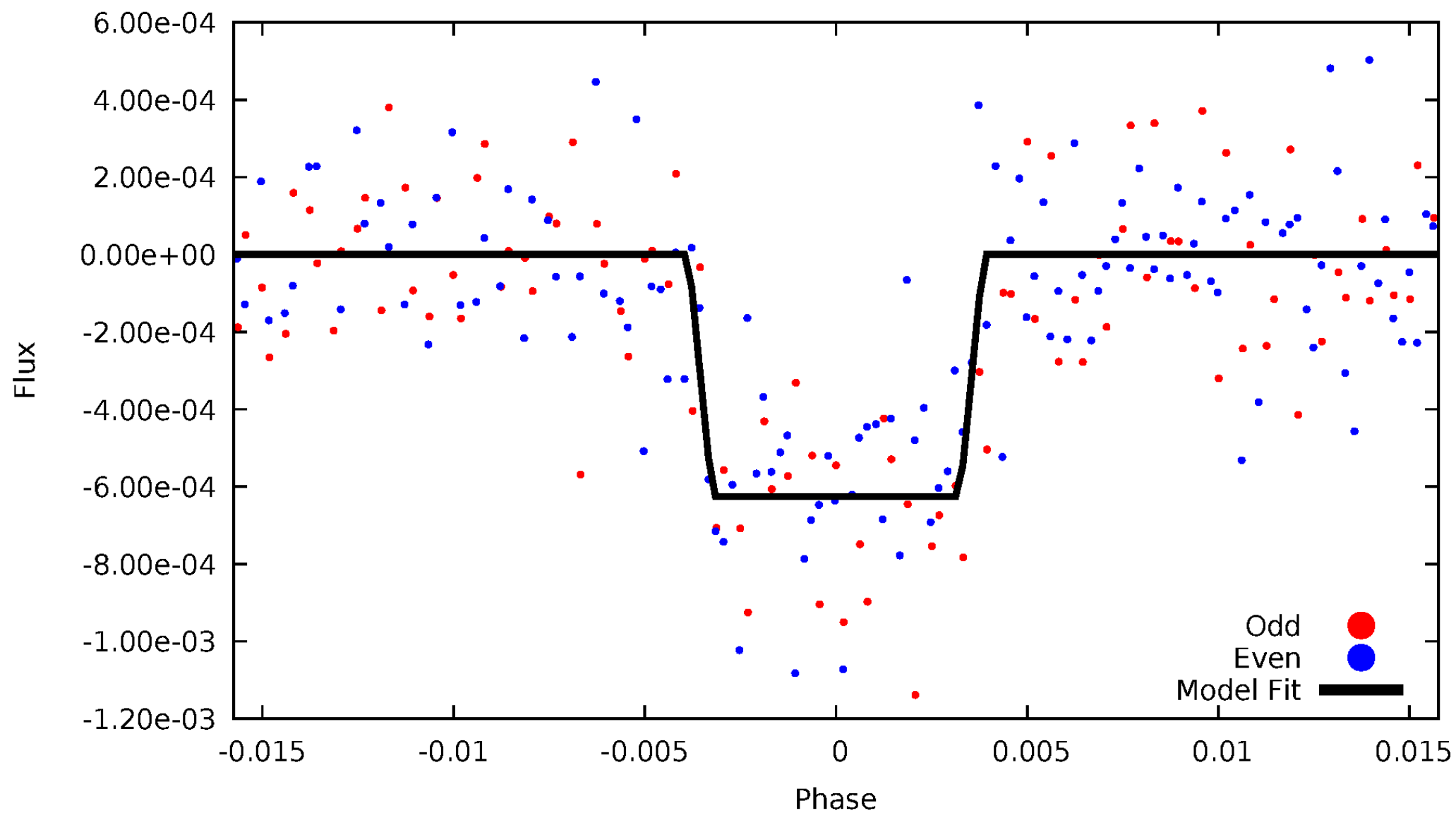
DV Odd/Even

TCE 006221385-02



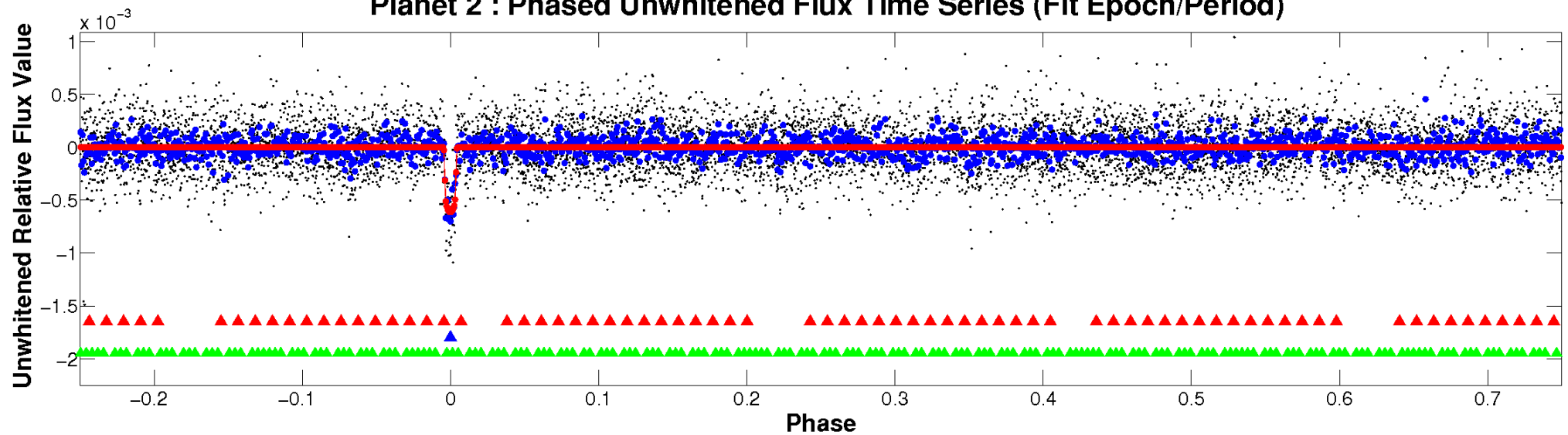
ALT Odd/Even

TCE 006221385-02

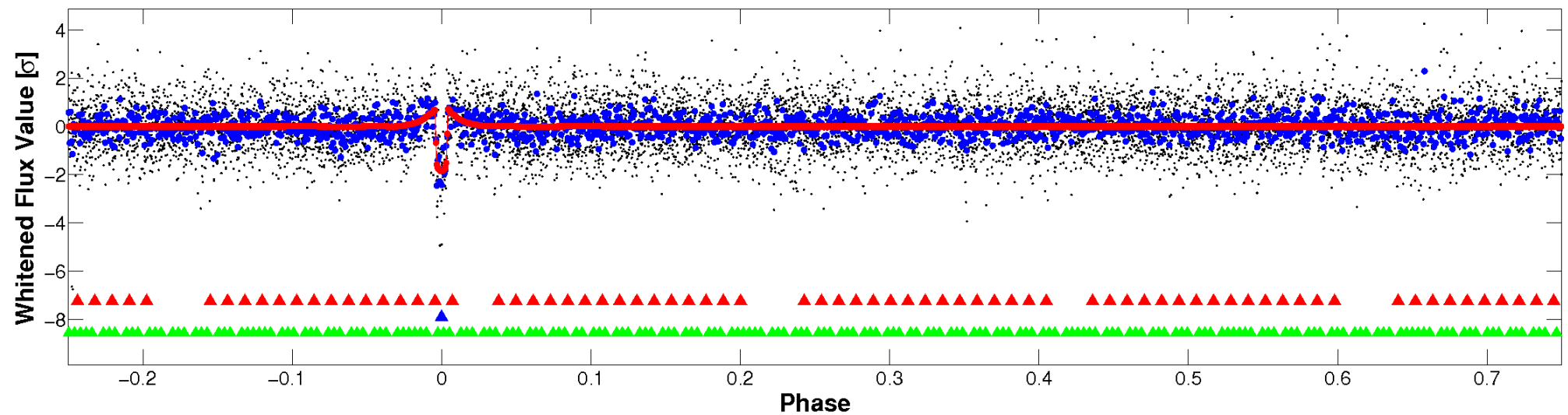


Non-Whitened Vs. Whitened Light Curve

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

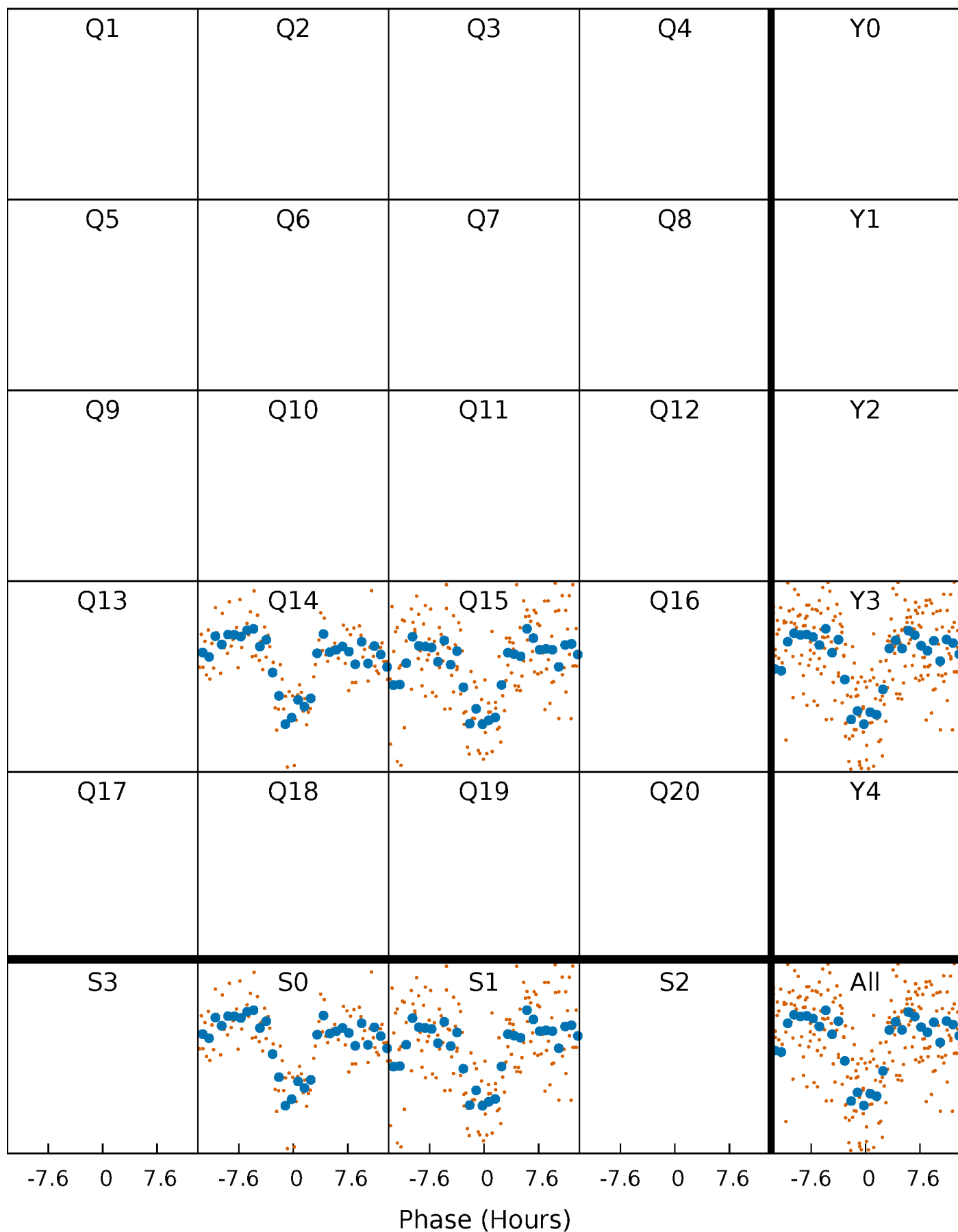


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



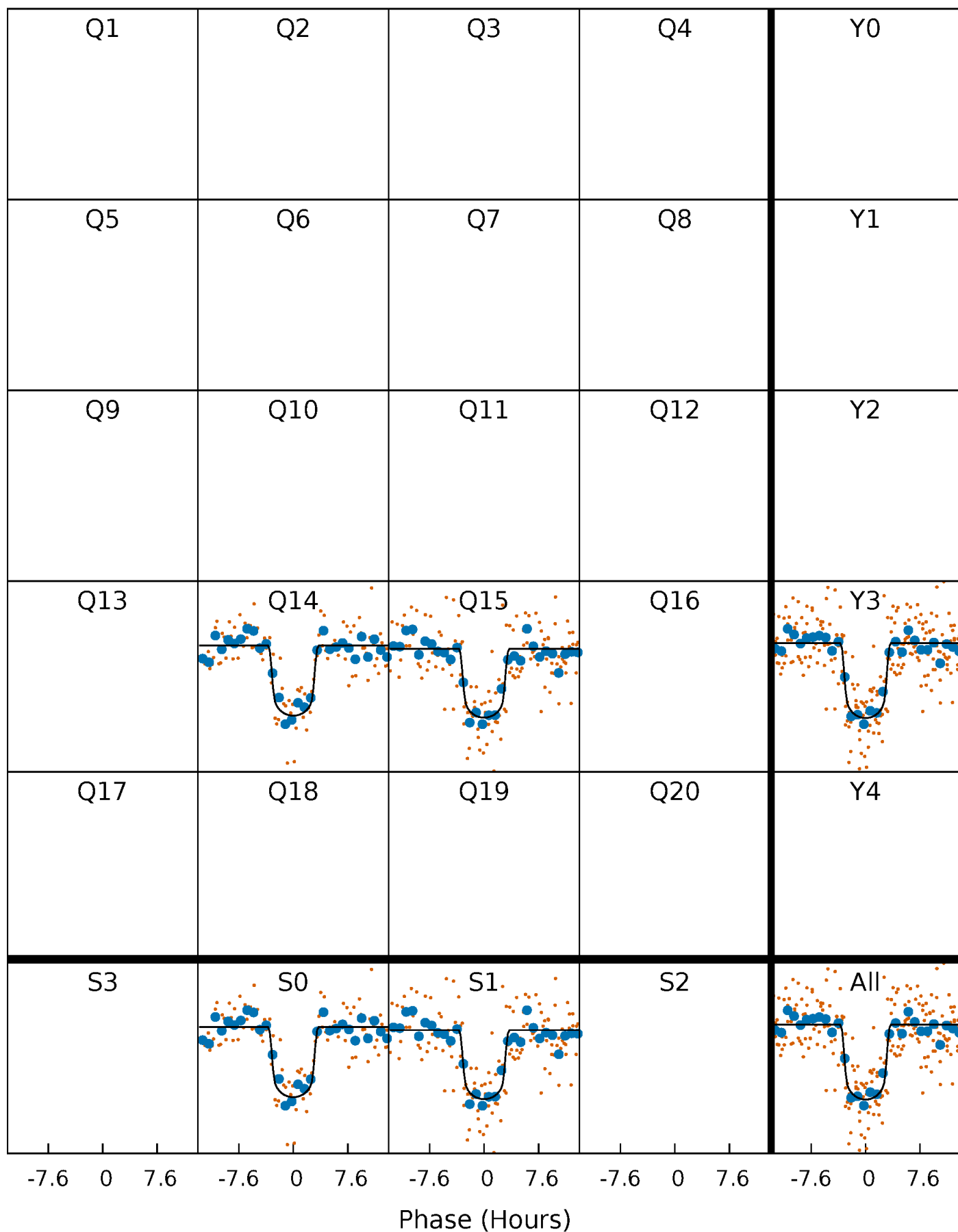
PDC Quarter-Phased Transit Curves

TCE 006221385-02 P= 32.662099 Days $T_0=152.693830$ (BKJD)



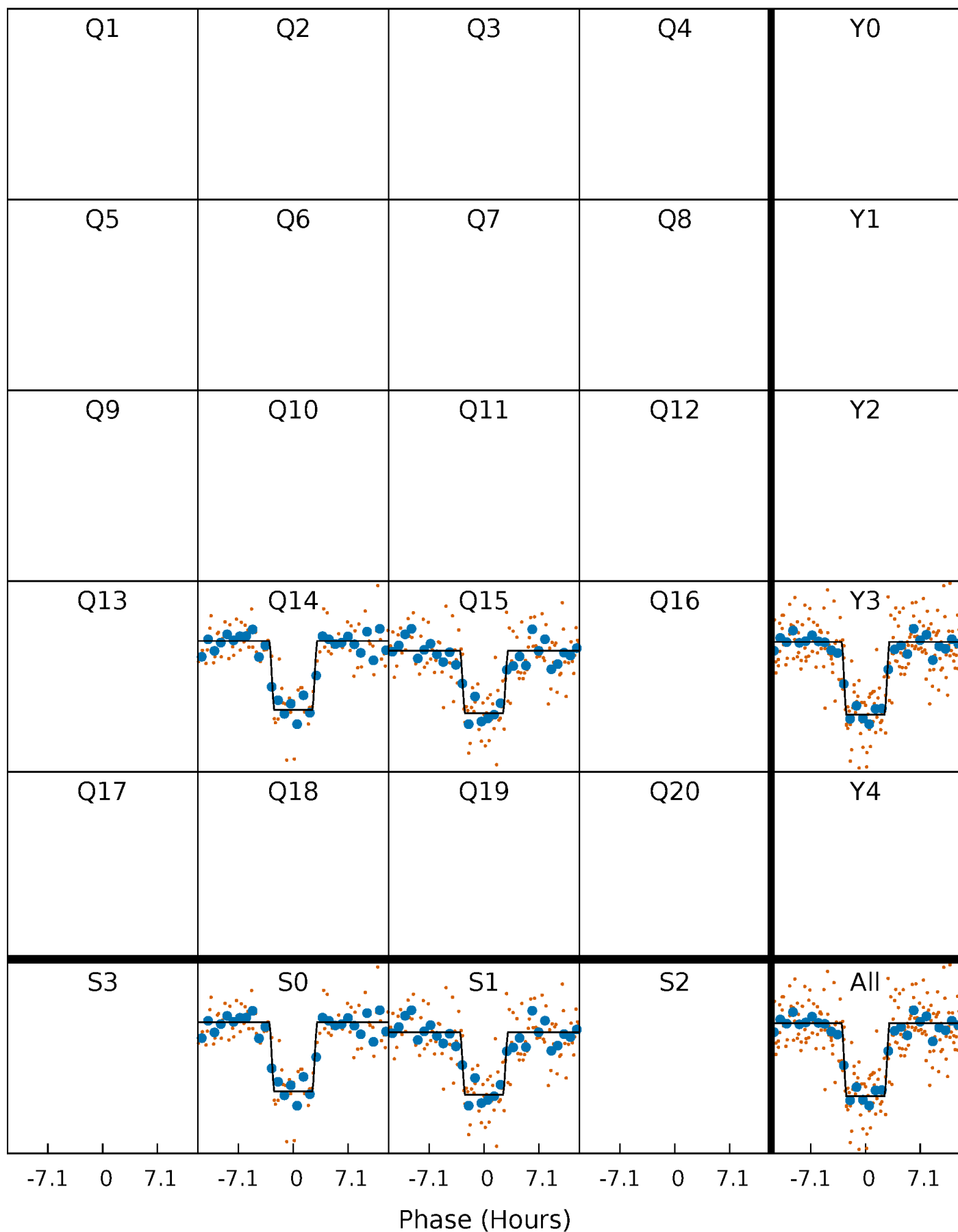
DV Quarter-Phased Transit Curves

TCE 006221385-02 P= 32.662099 Days $T_0=152.693830$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

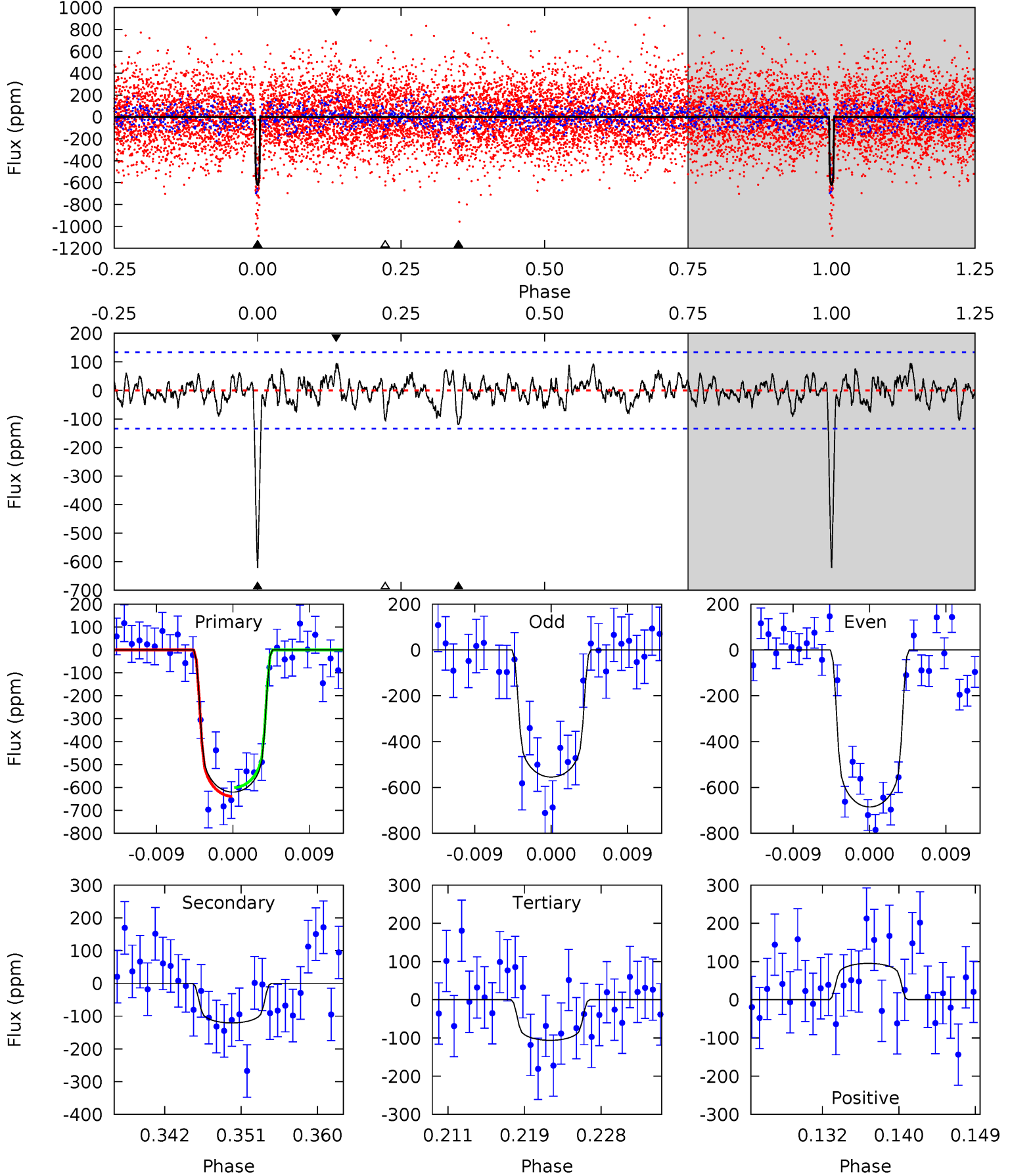
TCE 006221385-02 P= 32.658630 Days $T_0=152.818572$ (BKJD)



DV Model-Shift Uniqueness Test

006221385-02, $P = 32.662099$ Days, $E = 152.693830$ Days

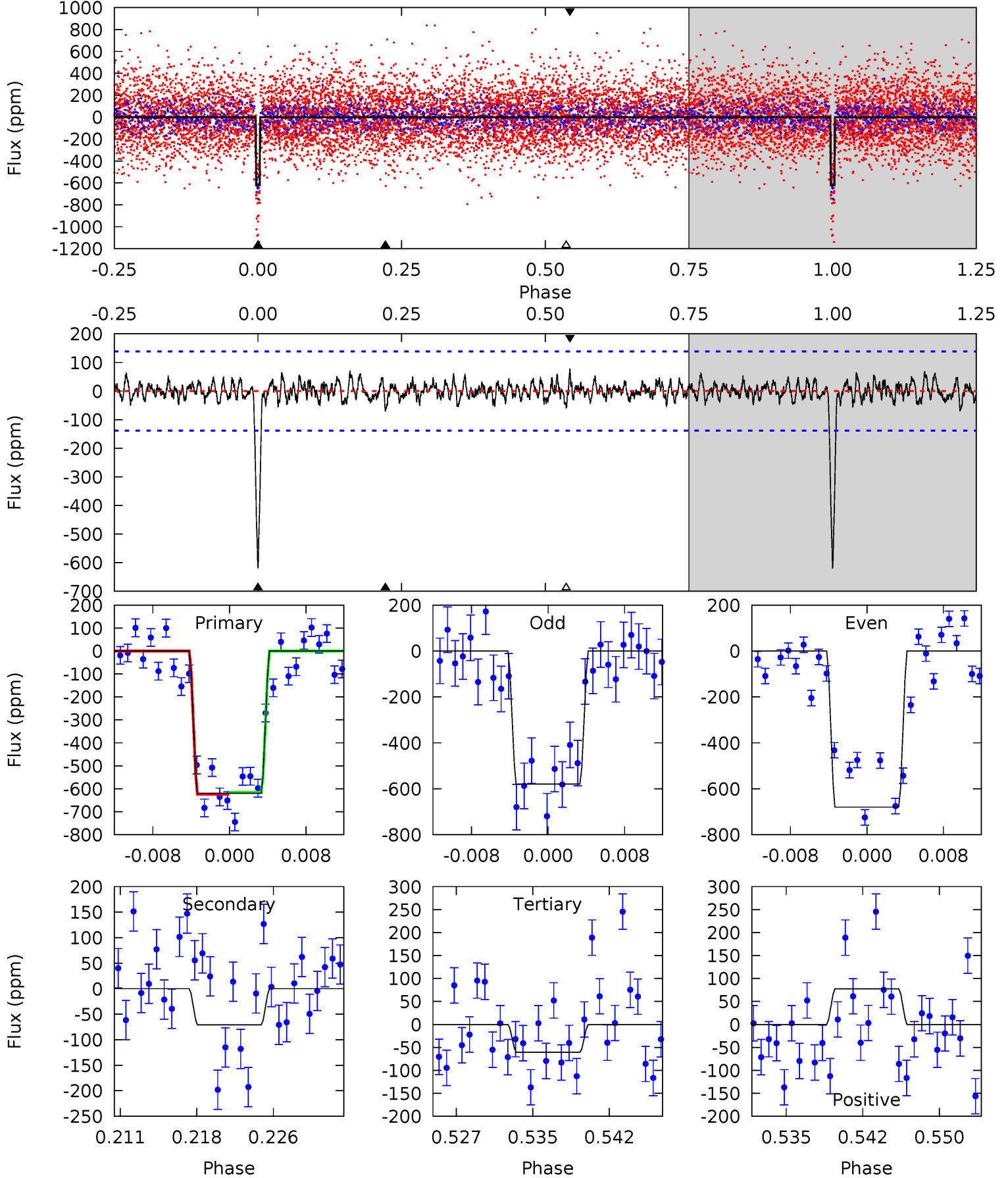
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	4.57	4.02	3.60	5.05	2.62	1.27	19.5	19.9	0.55	0.97	2.46	1.05	0.13	0.72



Alt Model-Shift Uniqueness Test

006221385-02, $P = 32.658630$ Days, $E = 152.818572$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.8	2.61	2.22	2.84	5.08	2.67	0.84	20.5	19.9	0.39	-0.23	1.81	1.02	0.11	0.16



Stellar Parameters For KIC 006221385

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6486^{+181}_{-227}	$4.136^{+0.246}_{-0.164}$	$-0.340^{+0.250}_{-0.300}$	$1.485^{+0.402}_{-0.402}$	$1.098^{+0.177}_{-0.145}$	$0.472^{+0.616}_{-0.217}$
	+3%/-3%	+6%/-4%	+74%/-88%	+27%/-27%	+16%/-13%	+130%/-46%
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 006221385-02 / KOI 6145.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-121 ± 26	$4.13^{+0.86}_{-0.69}$	1066^{+83}_{-87}	4418^{+255}_{-269}	165^{+87}_{-56}
Alt.	-71 ± 27	$4.06^{+0.72}_{-0.71}$	1067^{+85}_{-81}	4059^{+321}_{-348}	103^{+61}_{-44}

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

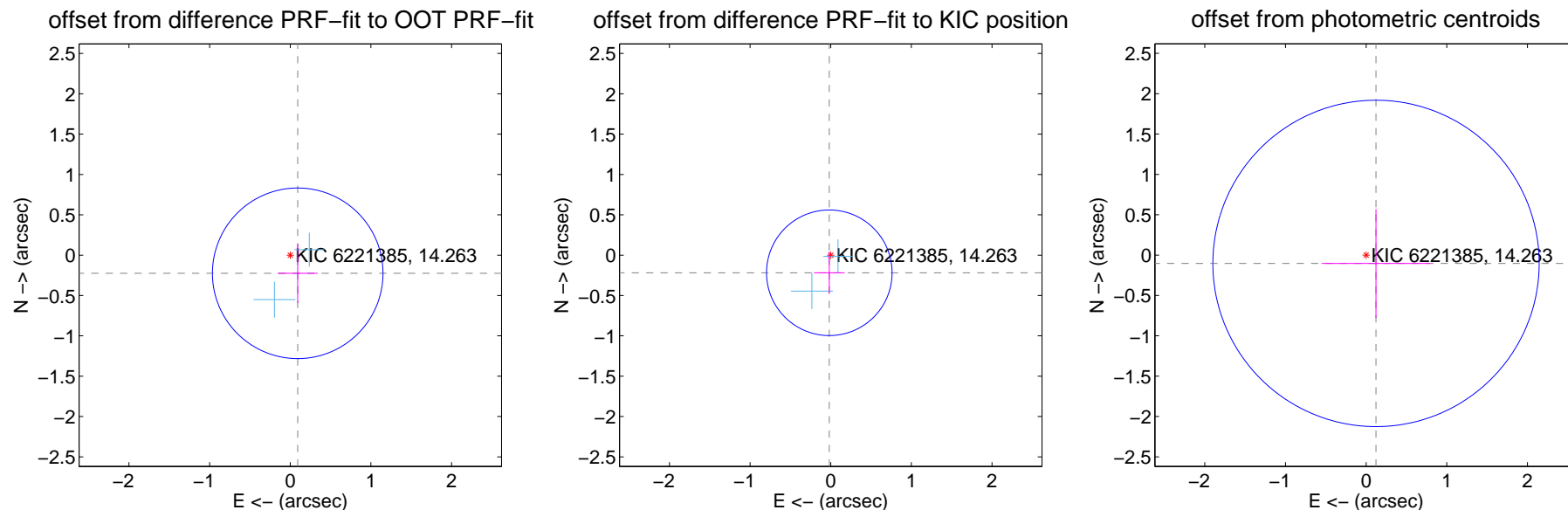
DV Centroid Data

Supplemental centroid analysis for 006221385-02. Kepler magnitude: 14.26. Transit SNR 13.53

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.243 ± 0.352	0.69	-0.092 ± 0.248	-0.225 ± 0.367
PRF-fit source offset from KIC position	0.219 ± 0.259	0.84	0.017 ± 0.190	-0.218 ± 0.260
photometric centroid source offset	0.16 ± 0.67	0.24	-0.12 ± 0.67	-0.10 ± 0.67



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.

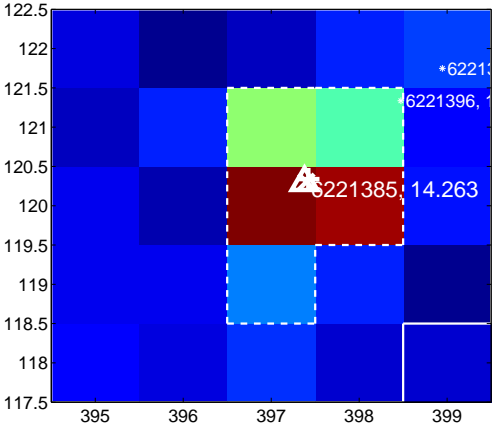
Q13 no difference image



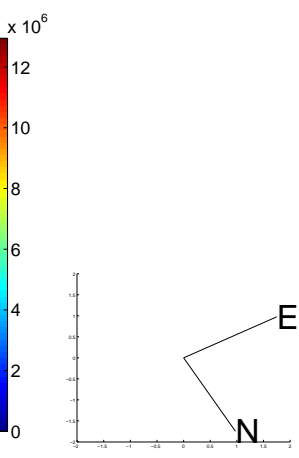
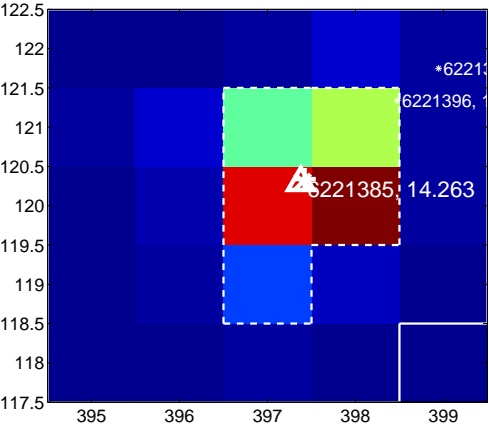
Q13 no OOT image



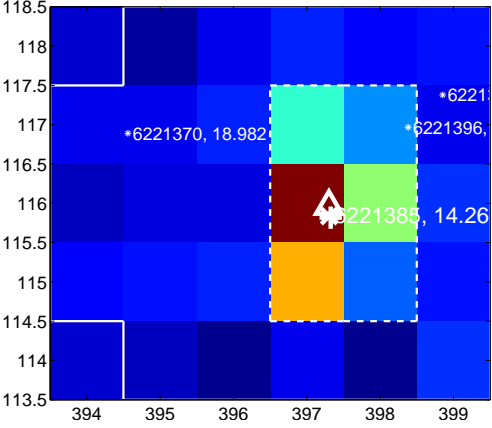
Q14 difference image



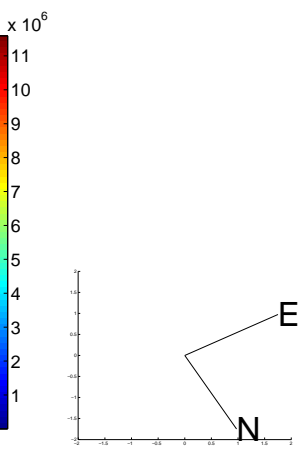
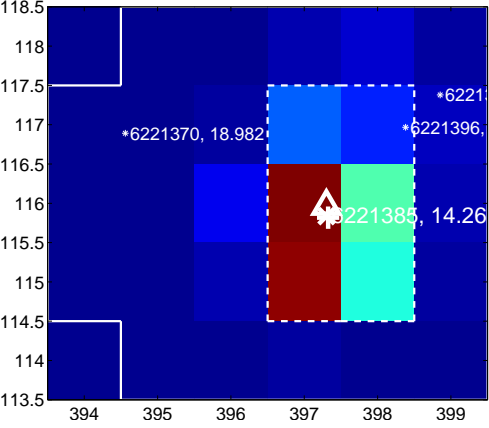
Q14 OOT image



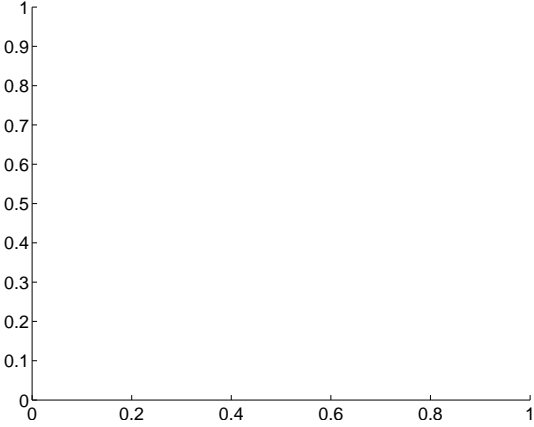
Q15 difference image



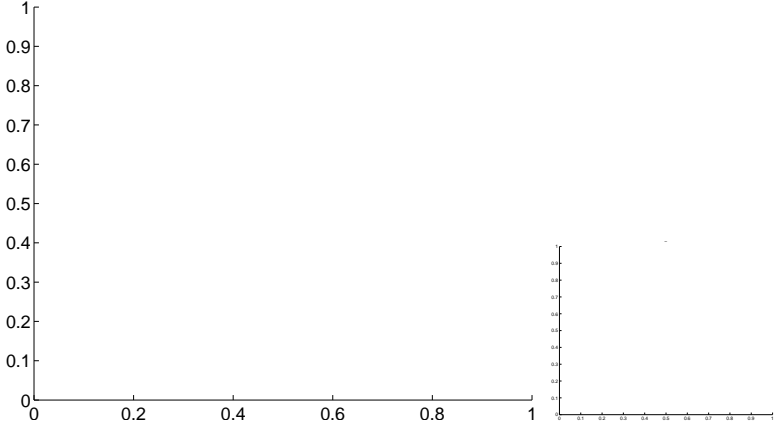
Q15 OOT image



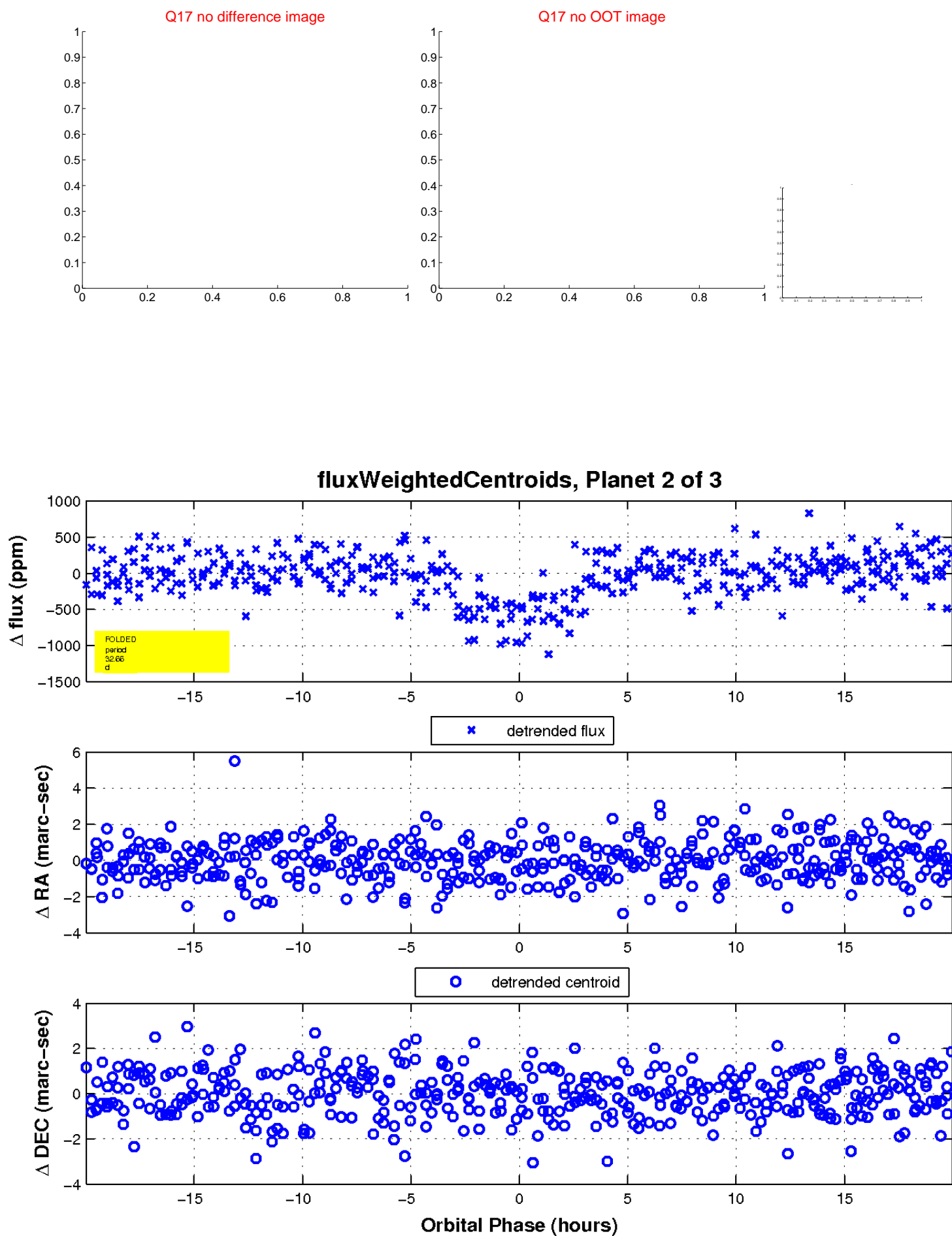
Q16 no difference image



Q16 no OOT image

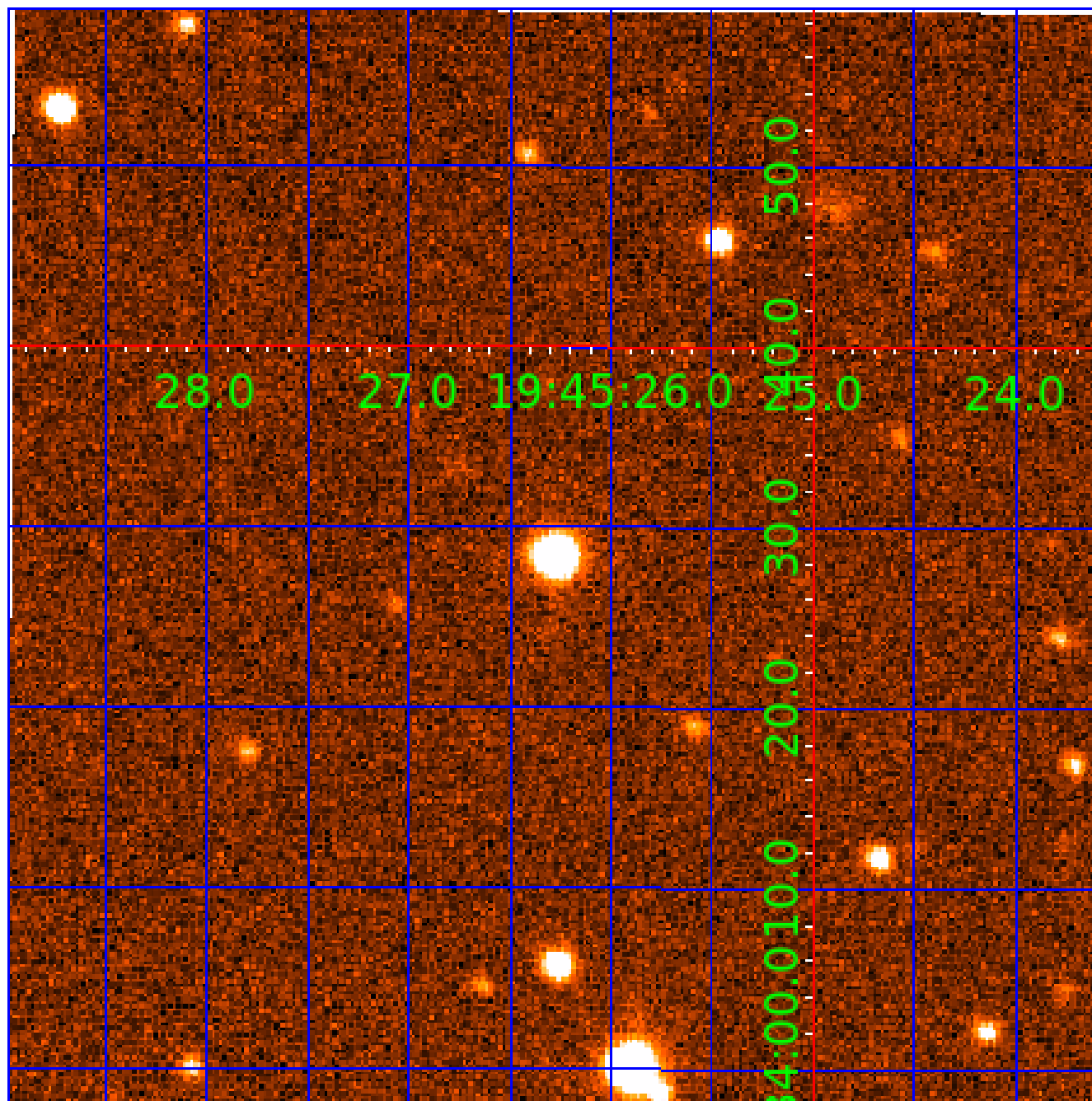


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006221385

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})
006221385-01	OBS	6145.01	19.672869	134.268385	625.7	5.168	13.2	17.3	1.49	6486	4.31	161.24
006221385-02	OBS	6145.02	32.662099	152.693830	612.4	6.661	13.6	13.5	1.49	6486	4.19	82.02
006221385-03	OBS	6145.03	7.314281	137.479635	246.3	2.456	8.2	9.0	1.49	6486	2.41	603.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006221385-01	OBS	PC	0.94	0	0	0	0	CENT_FEW_DIFFS
006221385-02	OBS	PC	1.00	0	0	0	0	CENT_FEW_DIFFS
006221385-03	OBS	PC	0.80	0	0	0	0	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.

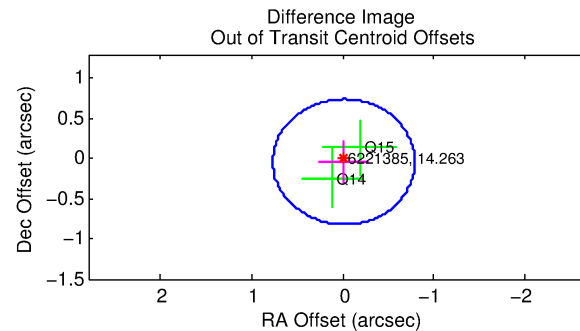
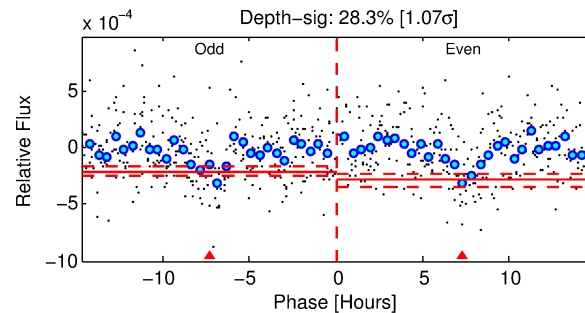
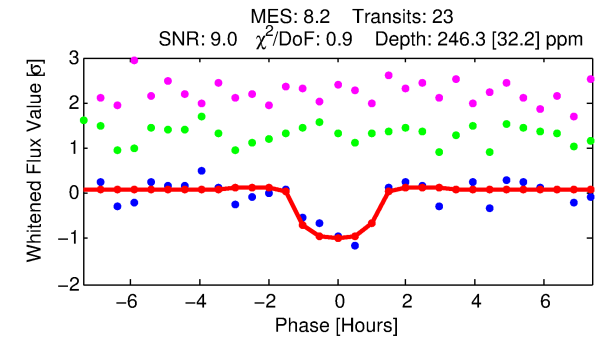
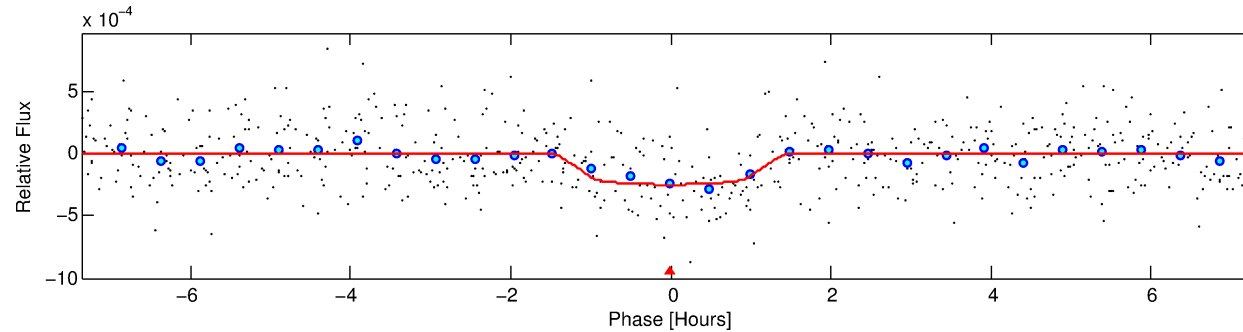
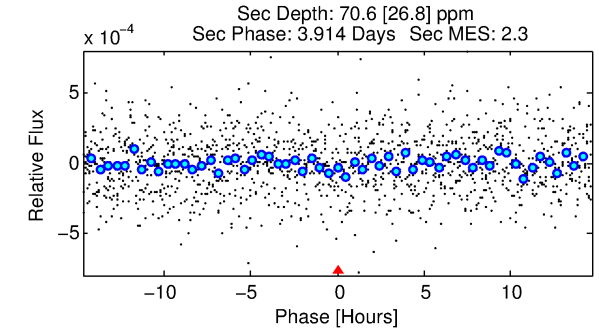
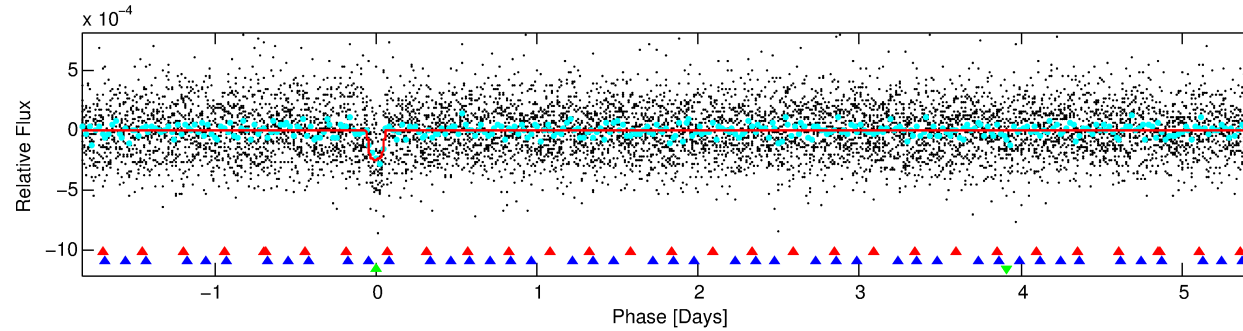
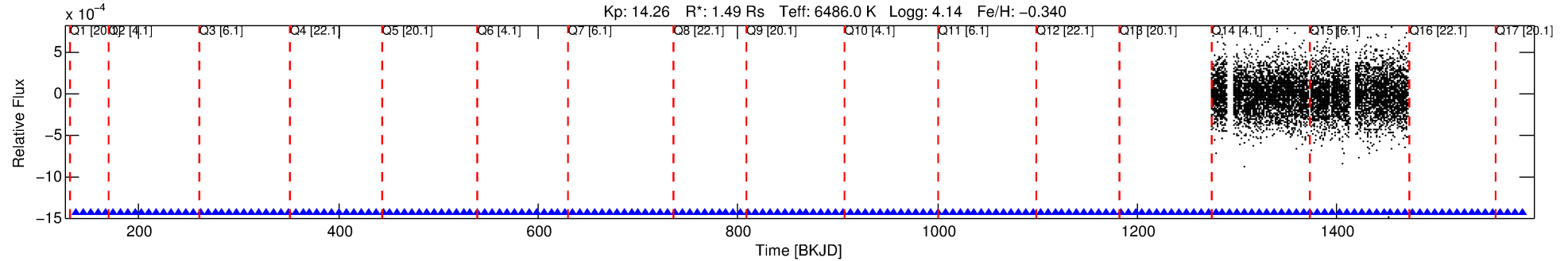
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006221385-03

No Significant Match Found

DV One-Page Summary

KIC: 6221385 Candidate: 3 of 3 Period: 7.314 d
KOI: K06145.03 Corr: 0.793



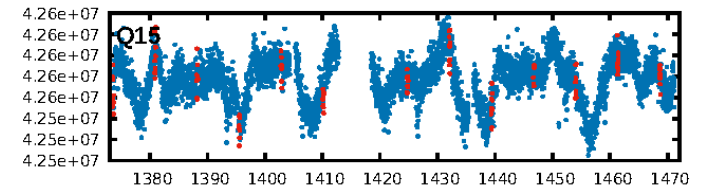
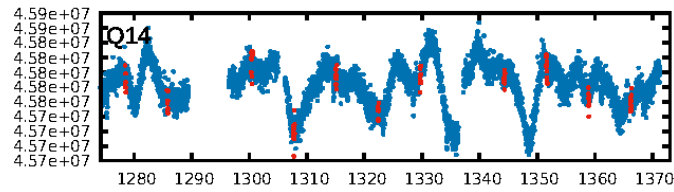
DV Fit Results:

Period = 7.31428 [0.00005] d
Epoch = 137.4796 [0.0071] BKJD
Rp/R* = 0.0149 [0.0125]
a/R* = 19.95 [89.96]
b = 0.51 [6.56]
Seff = 603.10 [266.16]
Teq = 1264 [139] K
Rp = 2.41 [2.13] Re
a = 0.0761 [0.0199] AU
Ag = 38.66 [68.61] [0.55σ]
Teffp = 4872 [2107] K [1.71σ]

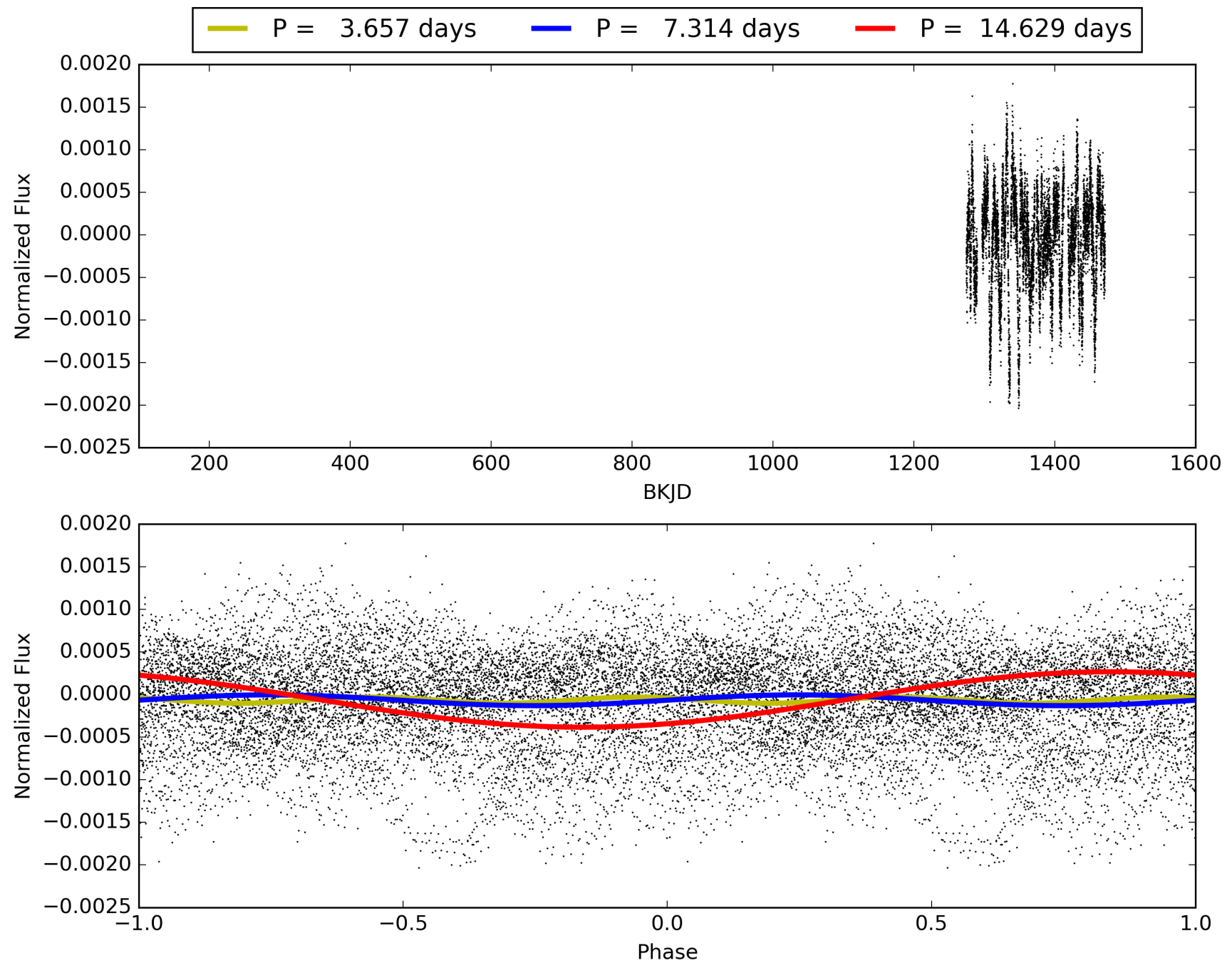
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [51.84σ]
ModelChiSquare2-sig: 96.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.89e-15
RollingBand-fgt: 1.00 [23/23]
GhostDiagnostic-chr: -1.74
Centroid-sig: N/A
Centroid-so: 2.360 arcsec [1.89σ]
OotOffset-rm: 0.042 arcsec [0.16σ]
KicOffset-rm: 0.095 arcsec [0.35σ]
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 006221385-03, PDC Light Curves

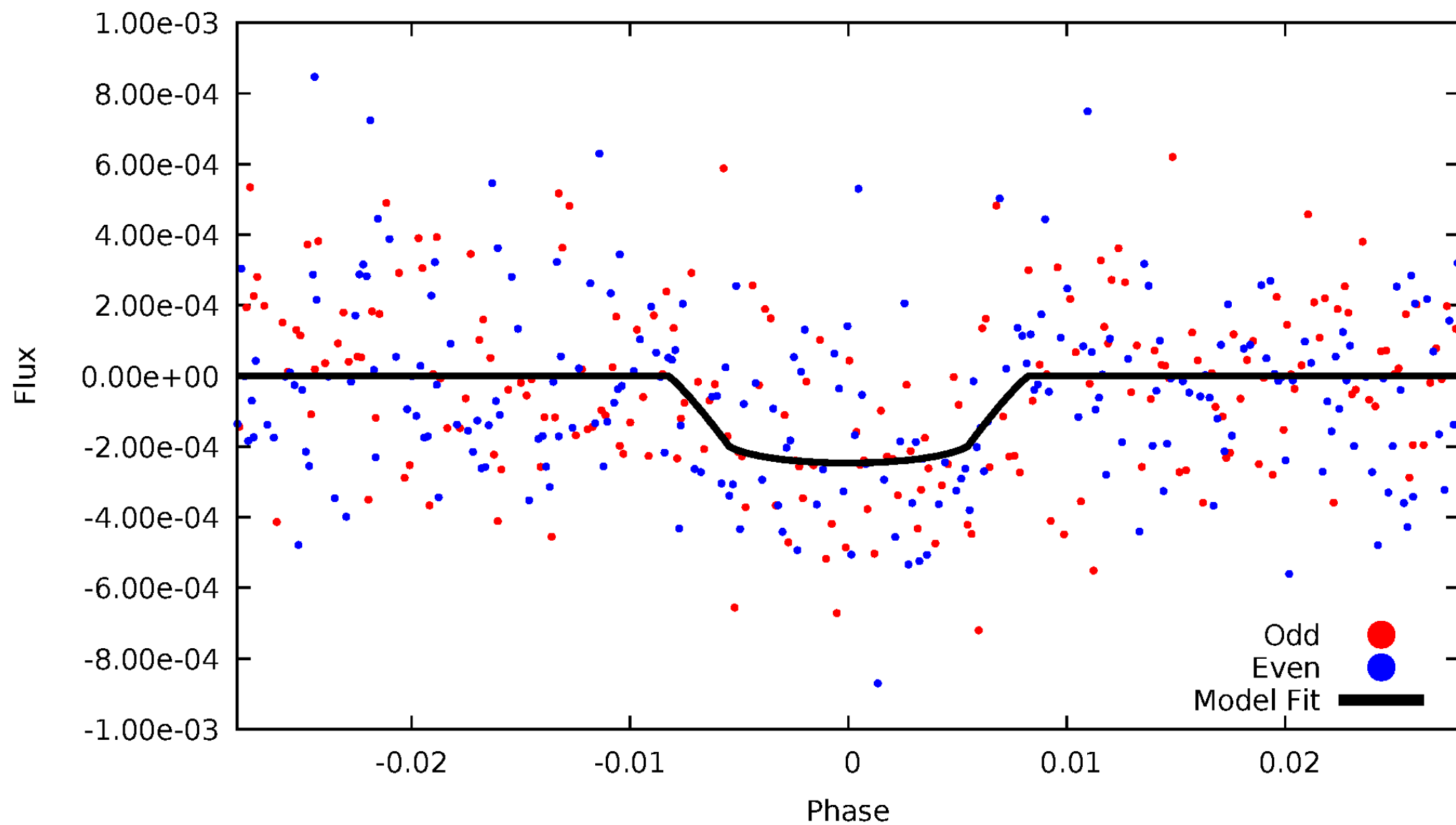


TCE 006221385-03



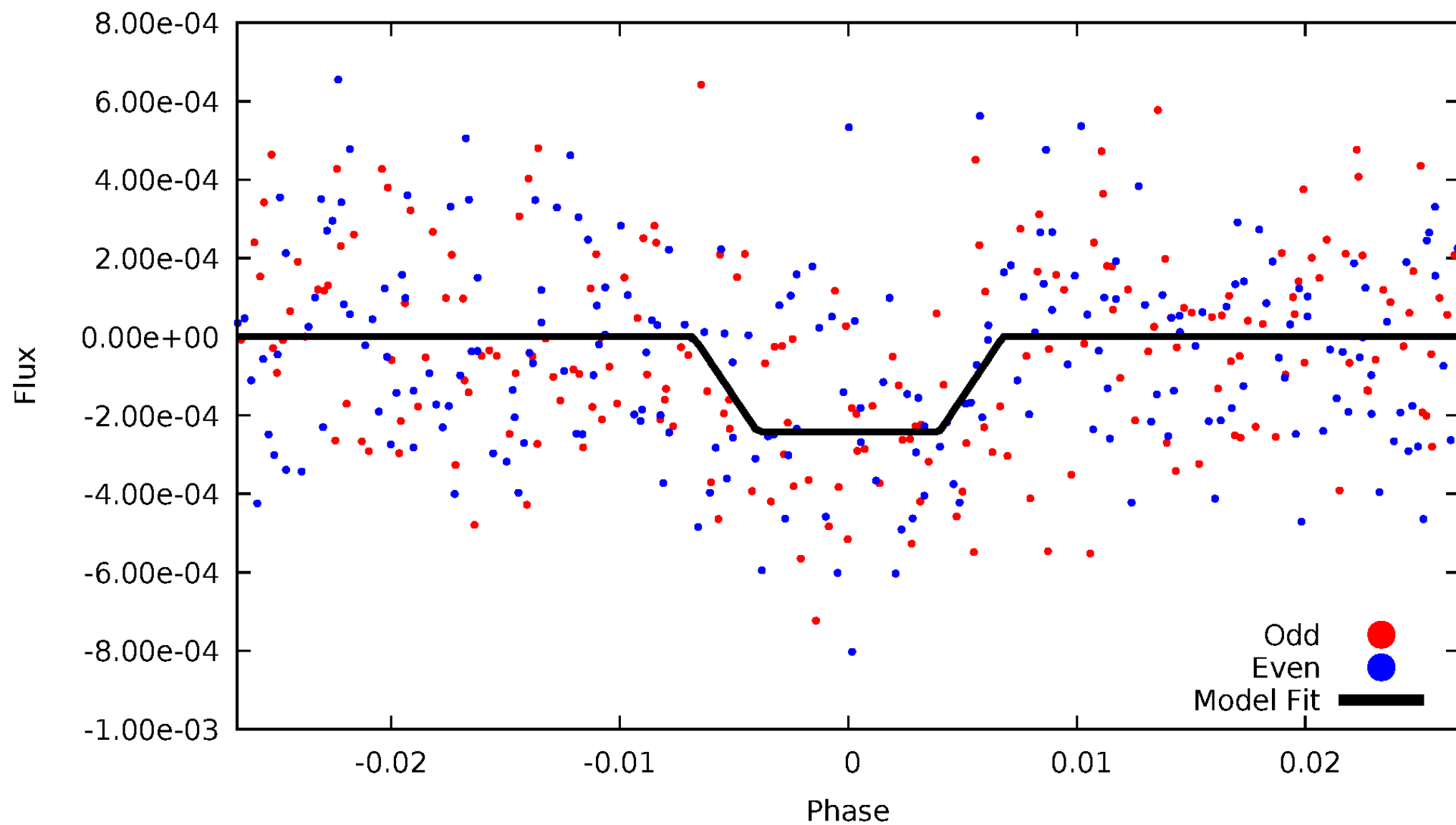
DV Odd/Even

TCE 006221385-03

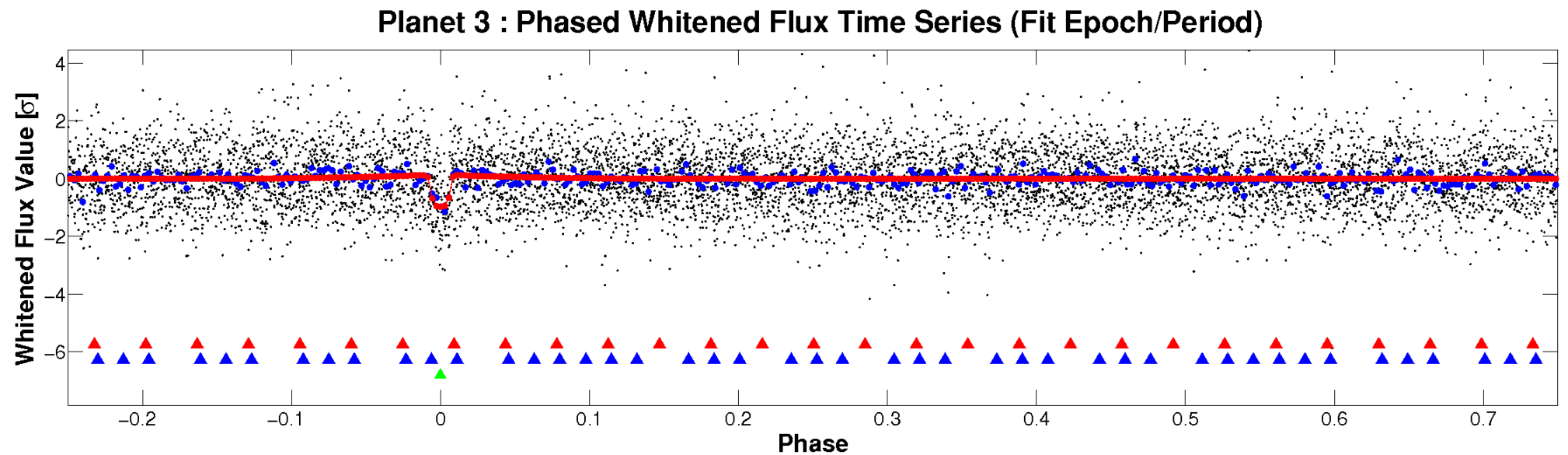
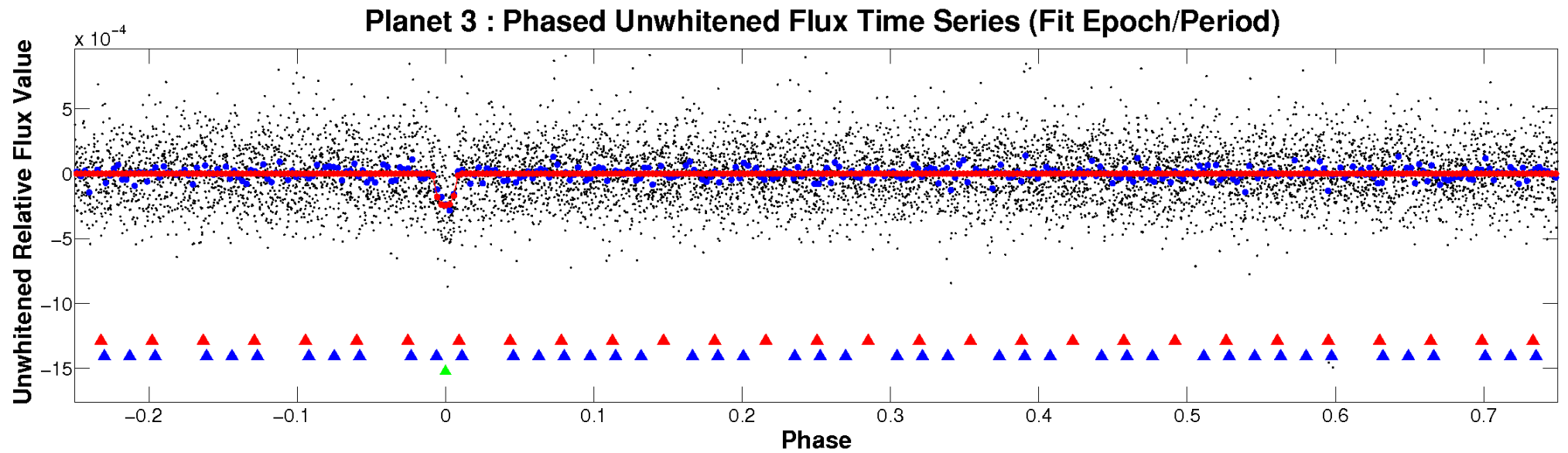


ALT Odd/Even

TCE 006221385-03

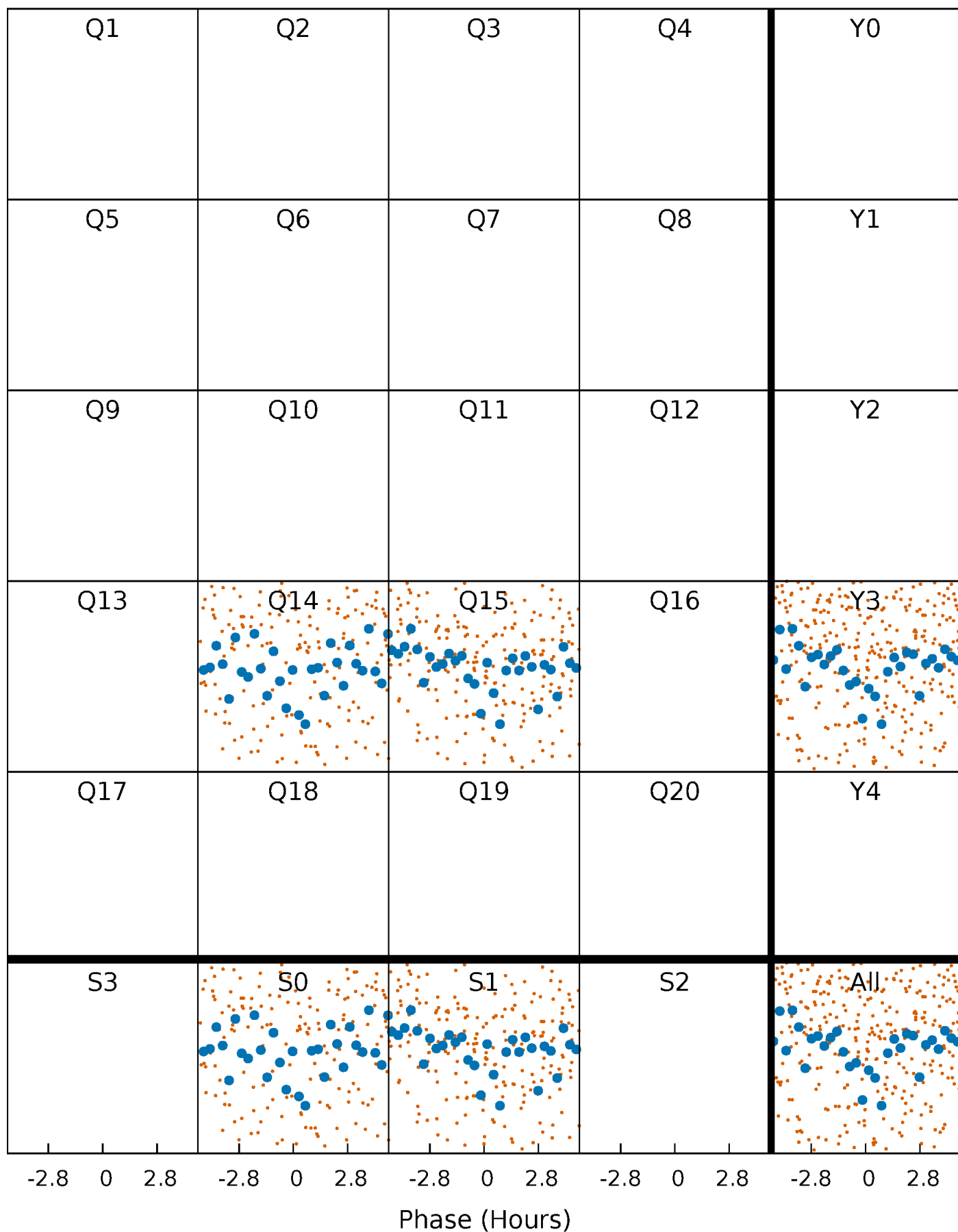


Non-Whitened Vs. Whitened Light Curve



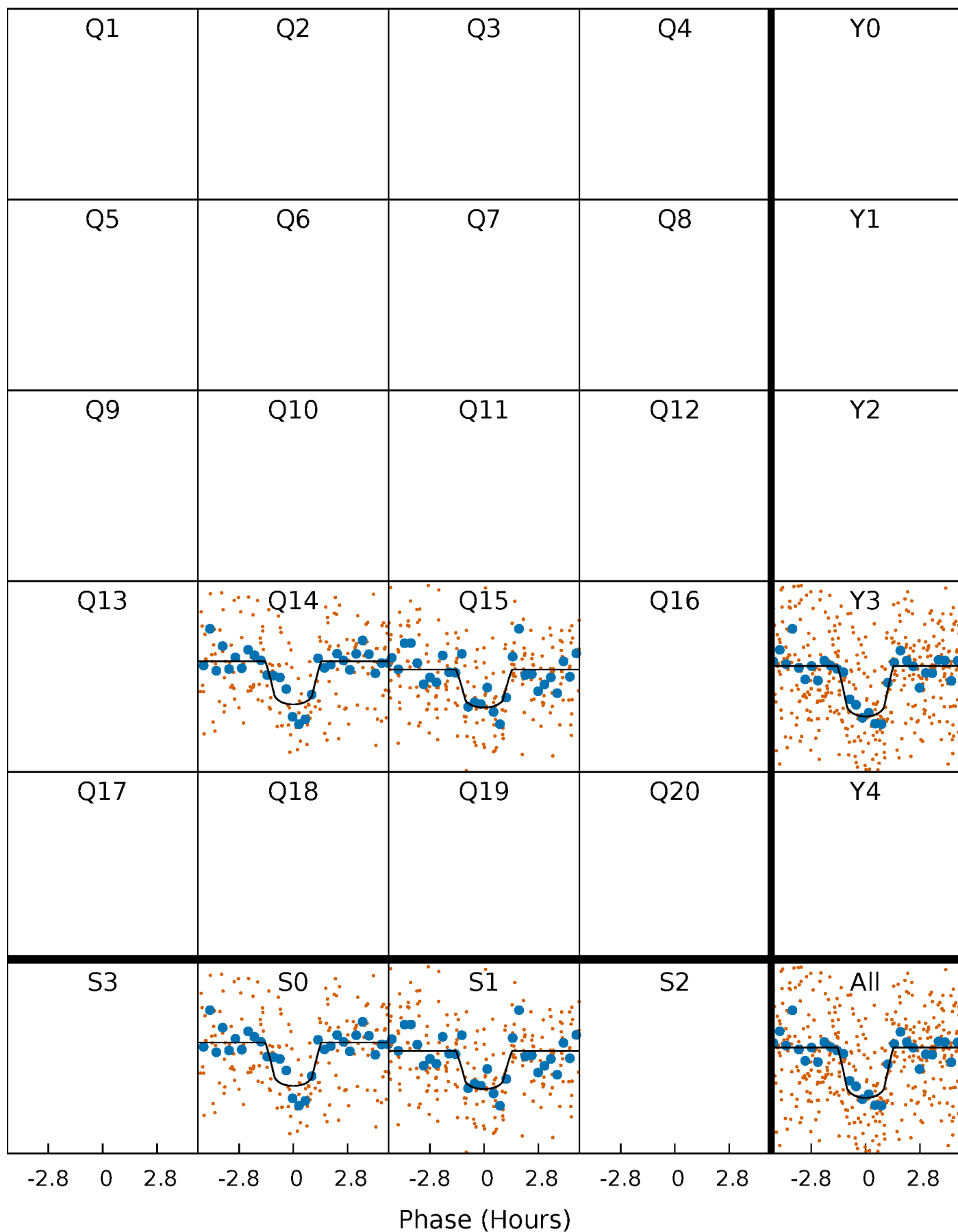
PDC Quarter-Phased Transit Curves

TCE 006221385-03 P= 7.314281 Days $T_0=137.479635$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 006221385-03 P= 7.314281 Days $T_0=137.479635$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

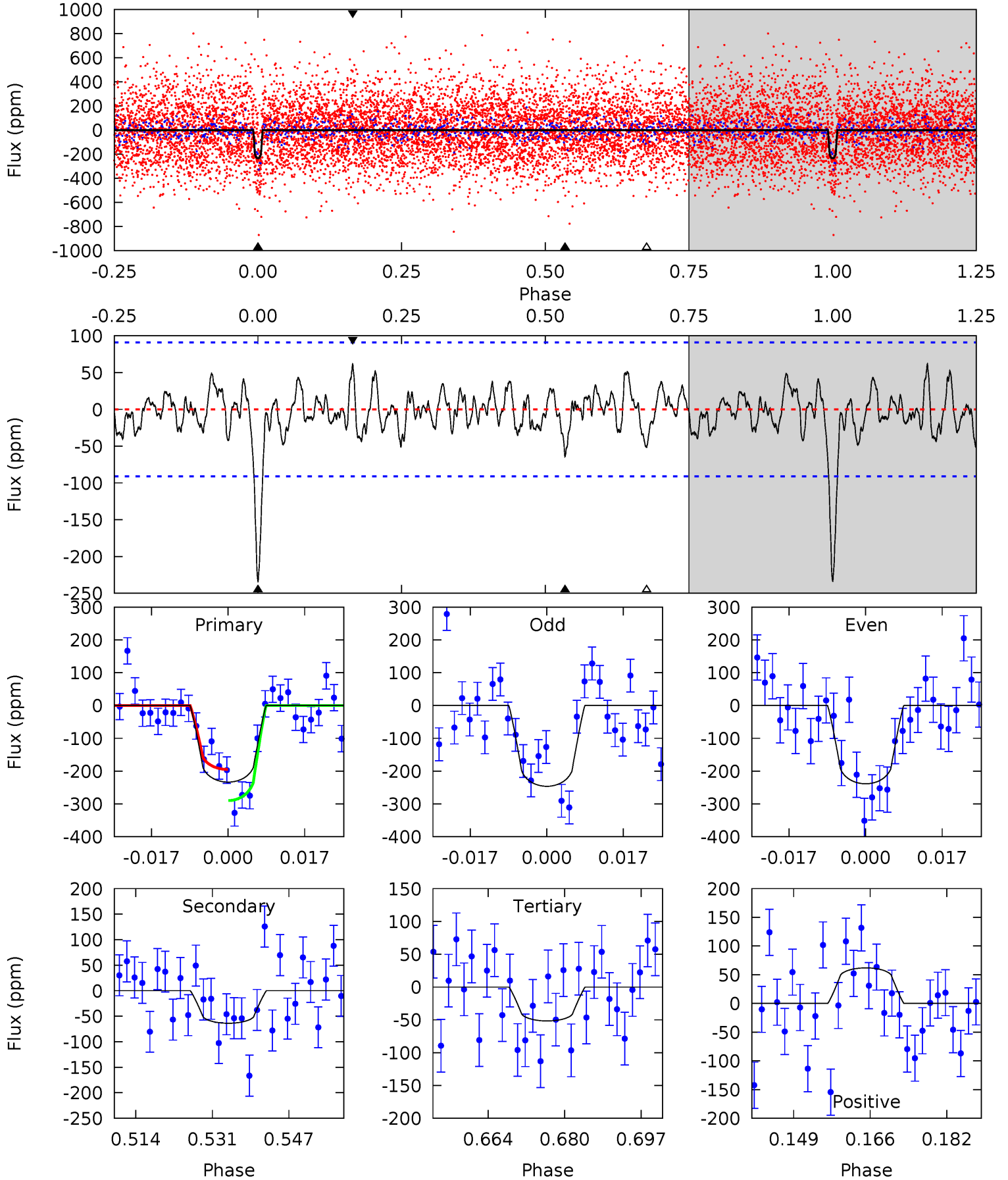
TCE 006221385-03 P= 7.313979 Days $T_0=137.536510$ (BKJD)



DV Model-Shift Uniqueness Test

006221385-03, P = 7.314281 Days, E = 137.479635 Days

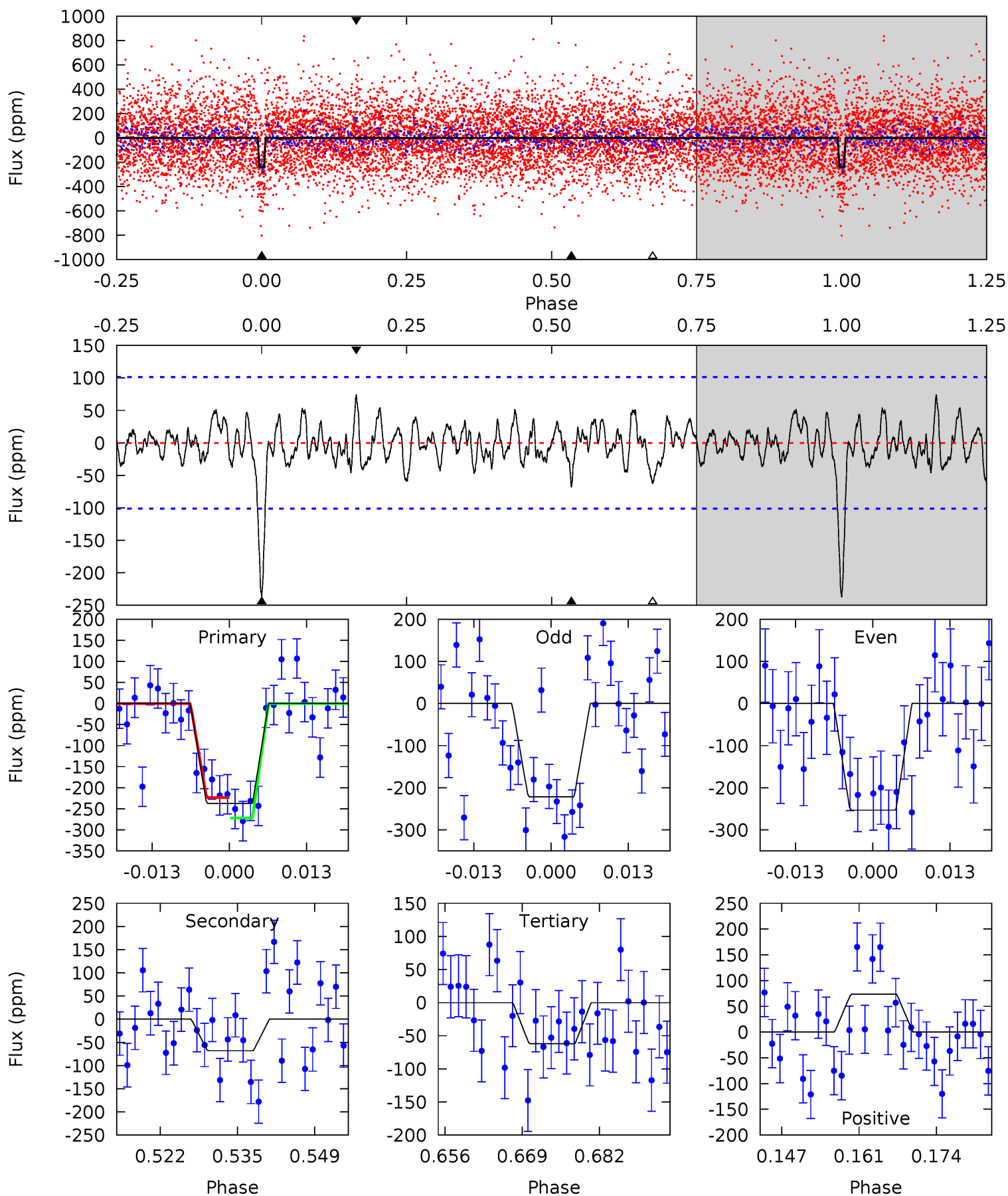
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	3.45	2.79	3.35	4.93	2.40	1.16	9.84	9.28	0.66	0.10	0.21	1.07	0.21	2.56



Alt Model-Shift Uniqueness Test

006221385-03, P = 7.313979 Days, E = 137.536510 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.7	3.34	3.05	3.62	4.97	2.47	1.16	8.60	8.04	0.29	-0.27	0.78	1.01	0.24	1.19



Stellar Parameters For KIC 006221385

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6486^{+181}_{-227}	$4.136^{+0.246}_{-0.164}$	$-0.340^{+0.250}_{-0.300}$	$1.485^{+0.402}_{-0.402}$	$1.098^{+0.177}_{-0.145}$	$0.472^{+0.616}_{-0.217}$
	+3%/-3%	+6%/-4%	+74%/-88%	+27%/-27%	+16%/-13%	+130%/-46%
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 006221385-03 / KOI 6145.03

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-64 ± 18	$2.68^{+2.10}_{-1.51}$	1754^{+135}_{-138}	4597^{+2043}_{-896}	28^{+119}_{-20}
Alt.	-68 ± 20	$2.73^{+1.97}_{-1.67}$	1750^{+137}_{-145}	4610^{+2519}_{-856}	29^{+163}_{-19}

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

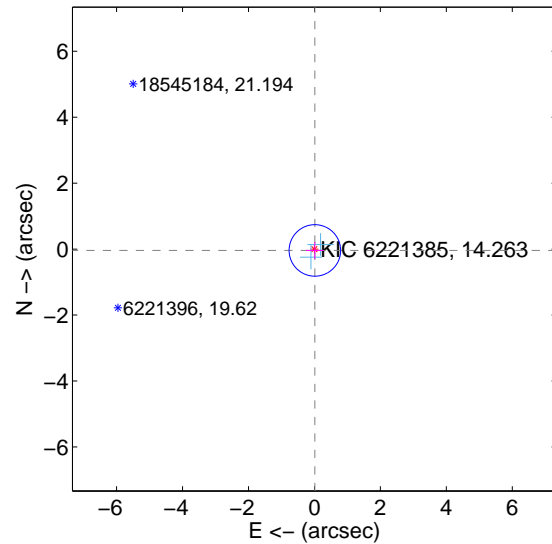
Supplemental centroid analysis for 006221385-03. Kepler magnitude: 14.26. Transit SNR 8.97

There are 2 quarters with good PRF difference image offsets

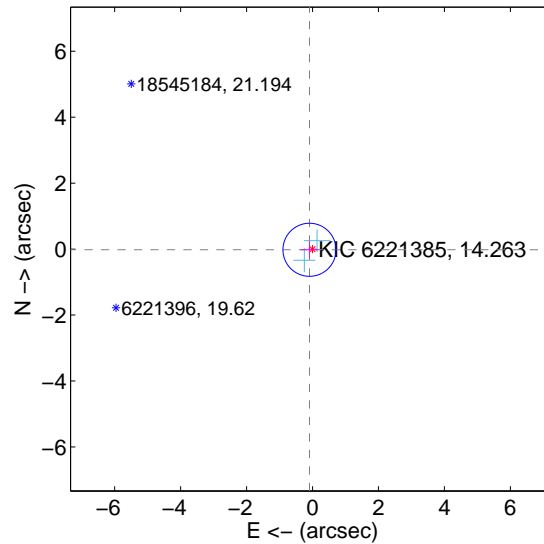
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.042 ± 0.260	0.16	-0.013 ± 0.269	-0.040 ± 0.259
PRF-fit source offset from KIC position	0.095 ± 0.268	0.35	0.092 ± 0.269	-0.021 ± 0.259
photometric centroid source offset	2.36 ± 1.25	1.89	2.28 ± 1.25	0.60 ± 1.25

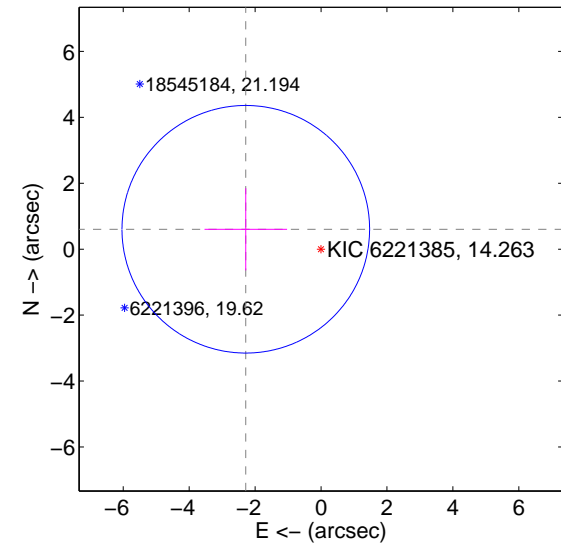
offset from difference PRF-fit to OOT PRF-fit



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.



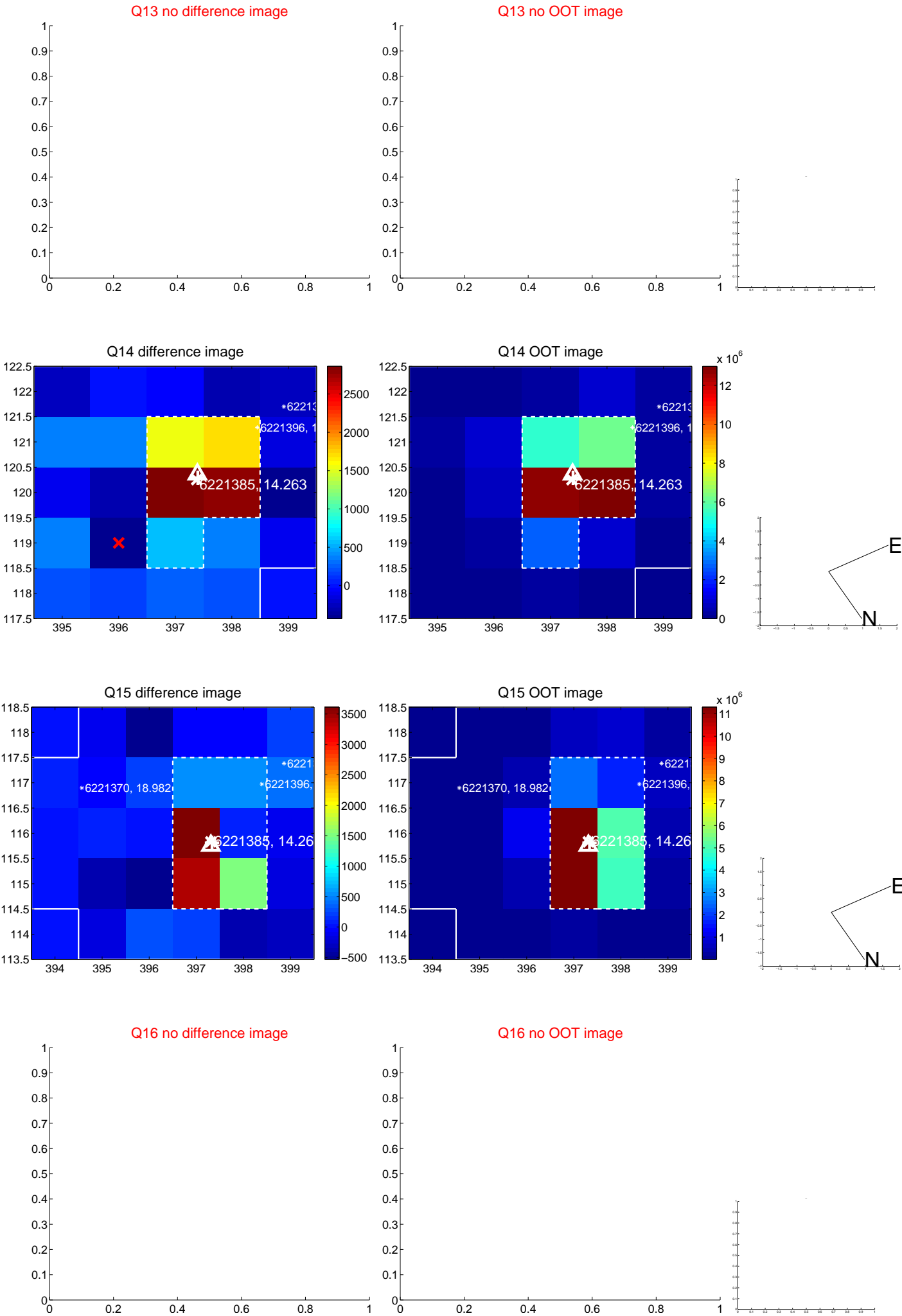
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



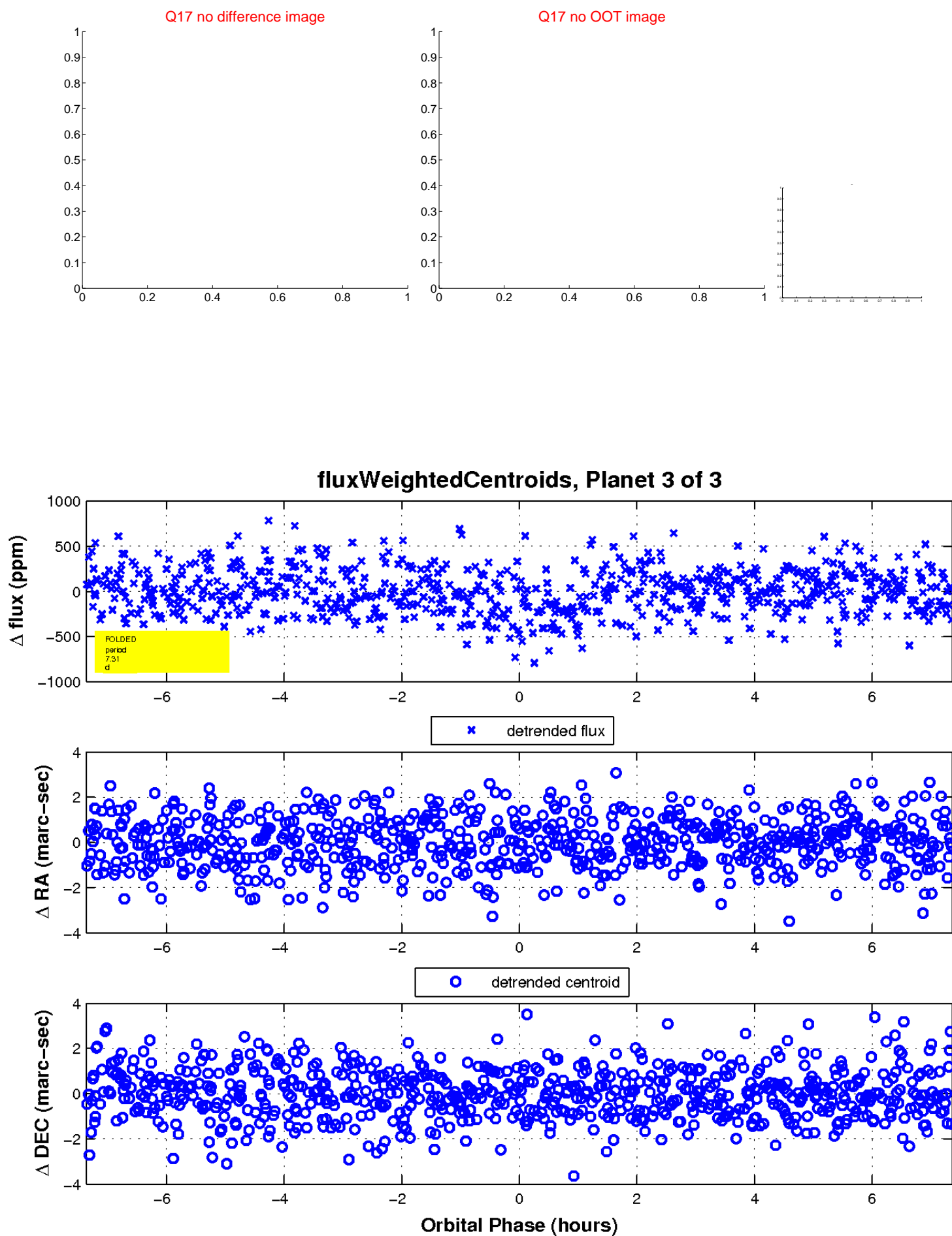
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

