

KIC 006185476

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})
006185476-01	OBS	No	17.709372	135.845513	199.2	5.770	29.0	8.5	0.57	4094	1.68	6.60
006185476-02	OBS	No	203.379288	224.851037	1757.6	2.514	22.7	20.1	0.57	4094	2.53	0.26
006185476-03	OBS	No	215.142669	171.913823	1892.5	3.122	23.0	24.9	0.57	4094	2.47	0.24
006185476-04	OBS	No	283.032278	154.281260	2056.2	3.776	19.7	20.7	0.57	4094	3.24	0.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006185476-01	OBS	FP	0.00	1	0	0	0	LPP_DV
006185476-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV
006185476-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006185476-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—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 006185476-01

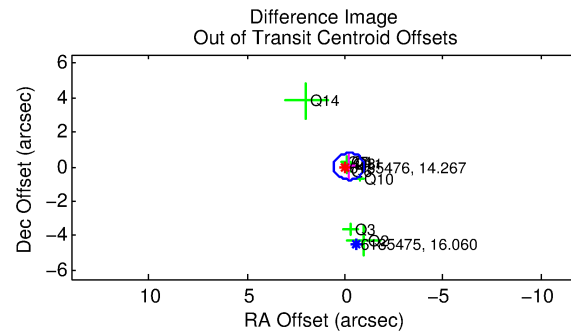
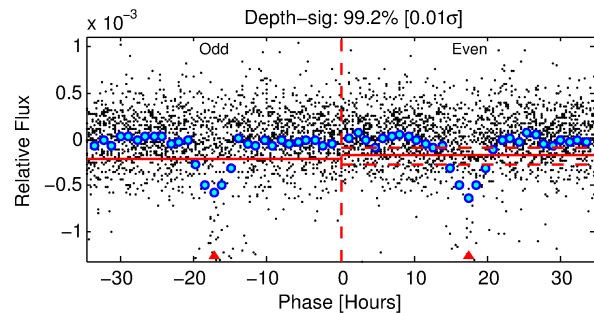
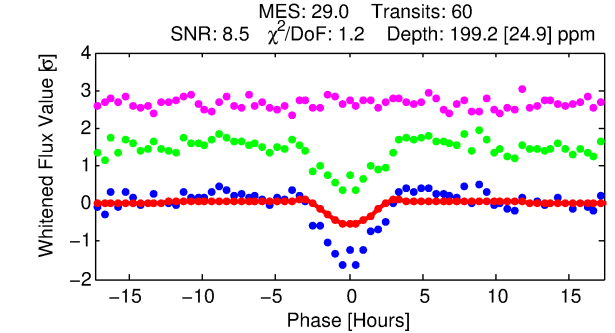
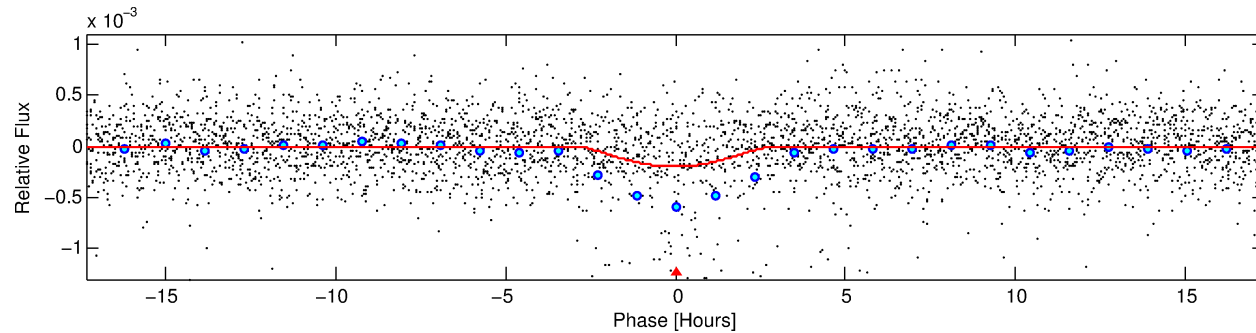
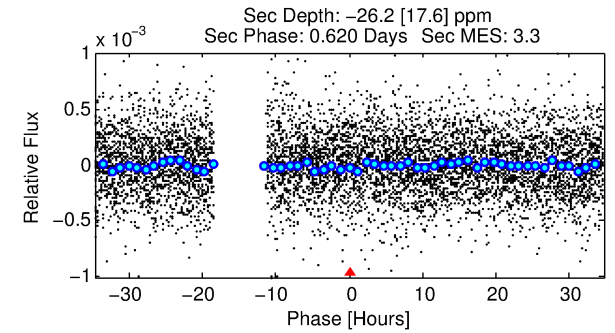
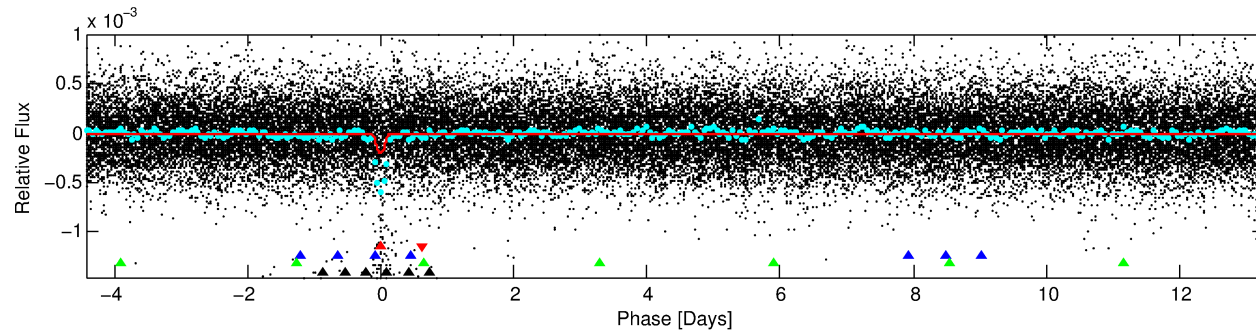
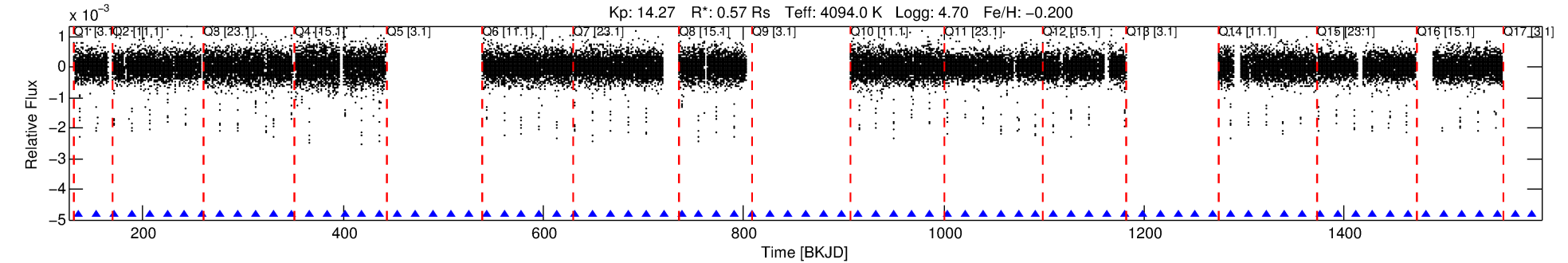
No Significant Match Found

DV One-Page Summary

KIC: 6185476 Candidate: 1 of 4 Period: 17.709 d

KOI: K00227 Corr: No Ephemeris Match

Kp: 14.27 R*: 0.57 Rs Teff: 4094.0 K Logg: 4.70 Fe/H: -0.200



DV Fit Results:

Period = 17.70937 [0.00029] d
Epoch = 135.8455 [0.0143] BKJD
Rp/R* = 0.0270 [0.0941]
a/R* = 5.67 [5.11]
b = 1.00 [0.14]
Seff = 6.60 [0.68]
Teff = 409 [11] K
Rp = 1.68 [5.86] Re
a = 0.1115 [0.0047] AU
Ag = N/A
Teffp = N/A

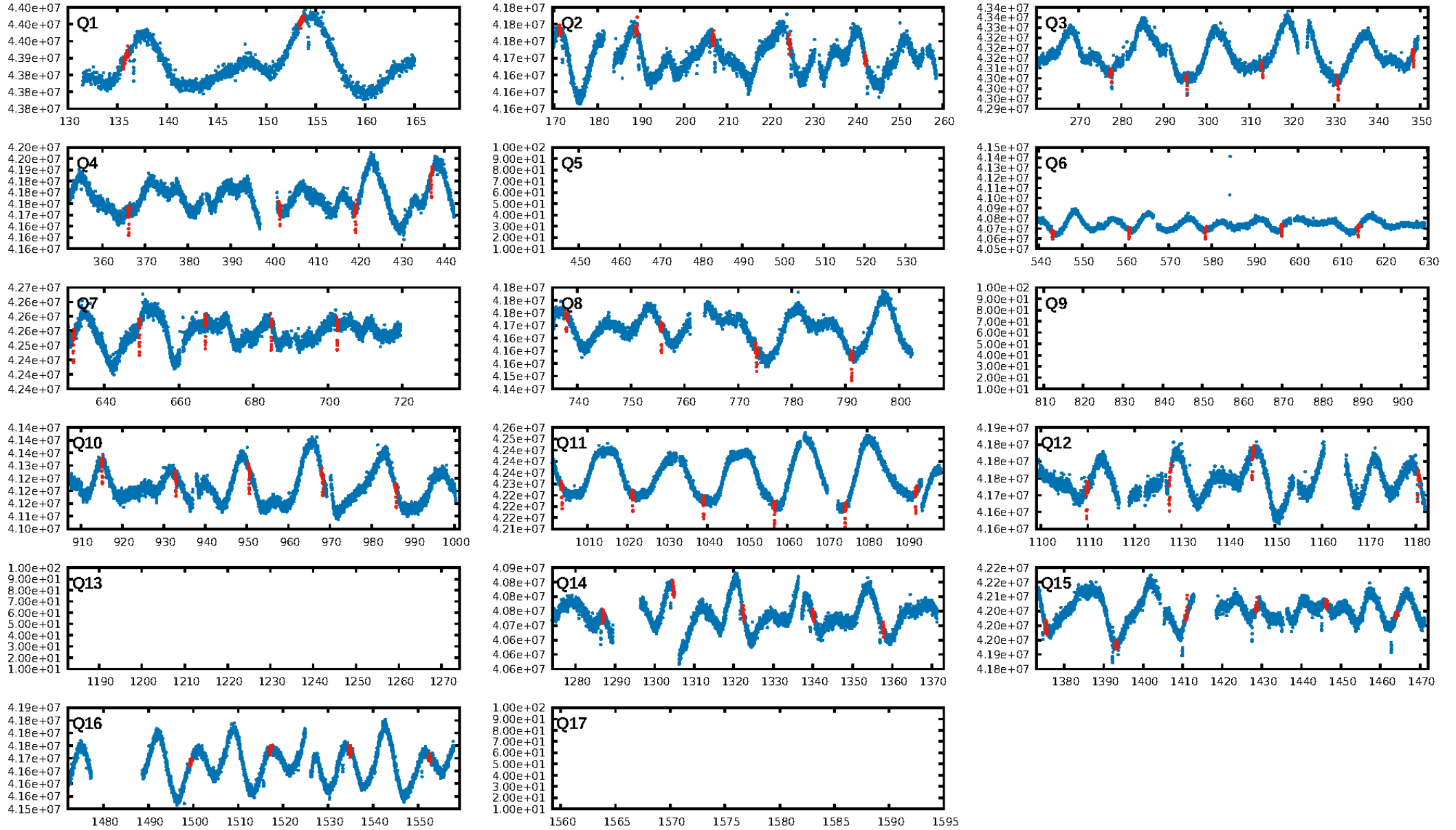
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [707.94σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [58/58]
GhostDiagnostic-chr: 0.7741
Centroid-sig: 90.4%
Centroid-so: 0.070 arcsec [0.07σ]
OotOffset-rm: 0.192 arcsec [0.74σ]
KicOffset-rm: 0.212 arcsec [0.96σ]
OotOffset-st: 4/3/2/0 [9]
KicOffset-st: 4/3/2/0 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 1.00 [13/13]

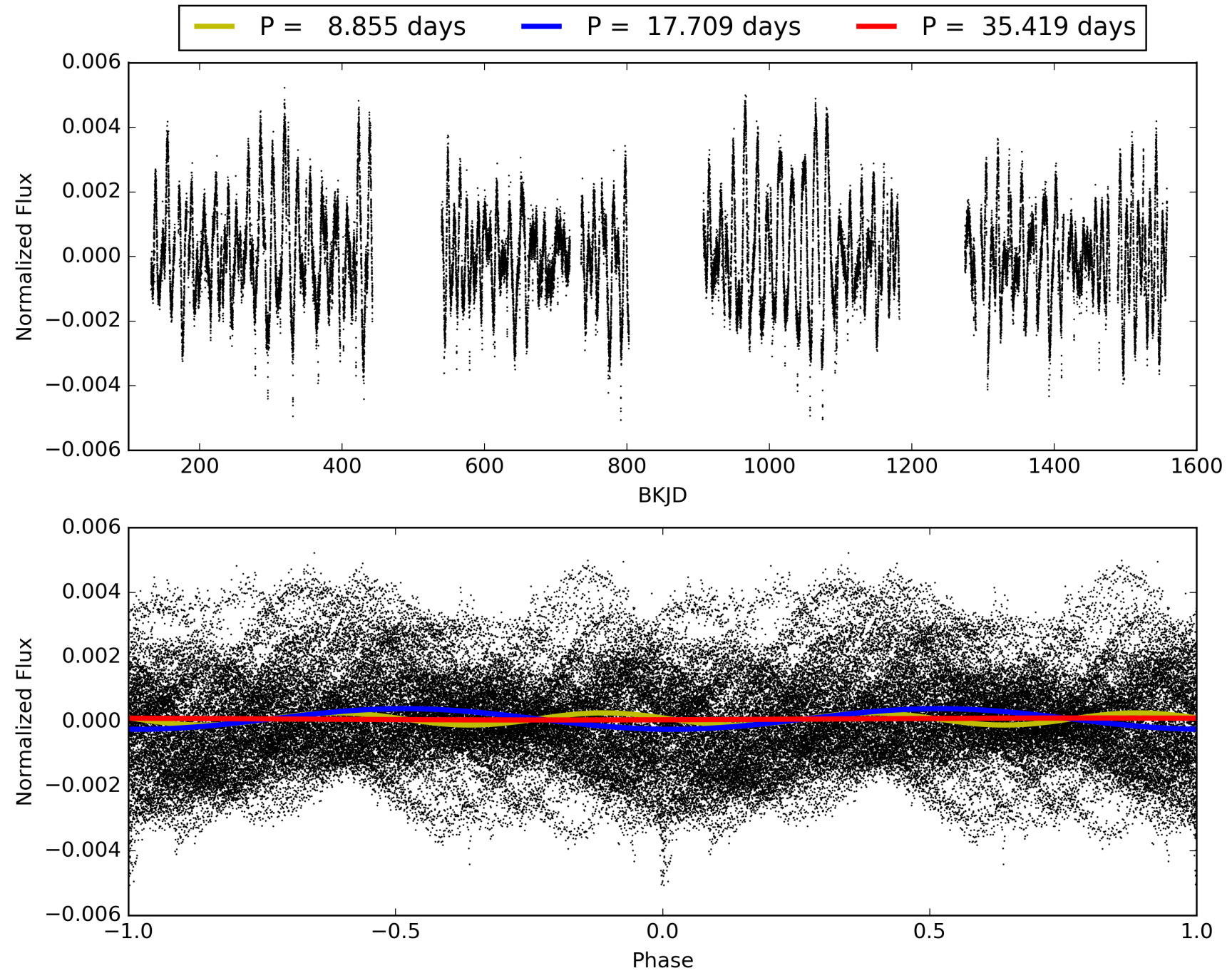
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:06:42 Z

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

TCE 006185476-01, PDC Light Curves

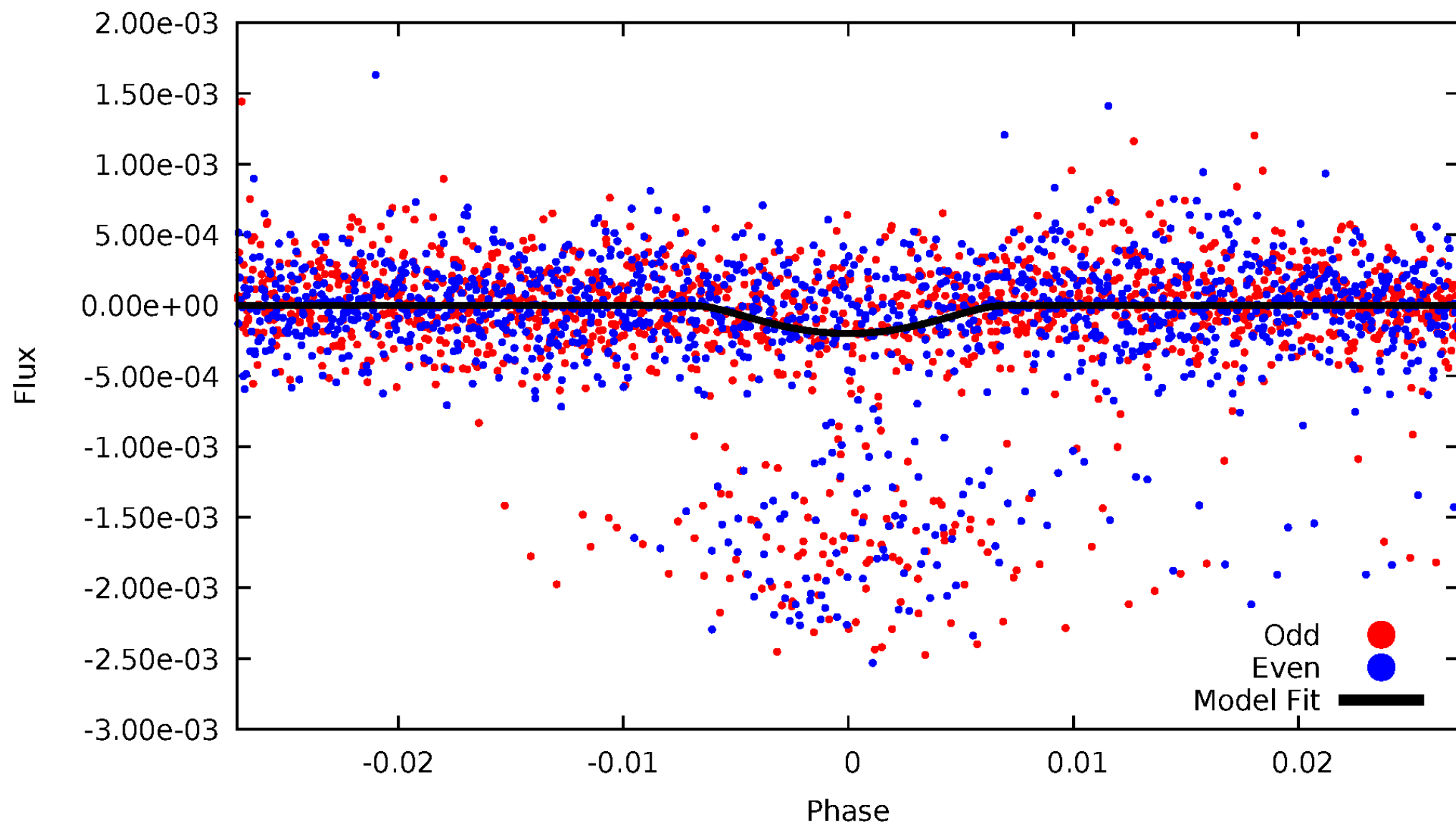


TCE 006185476-01



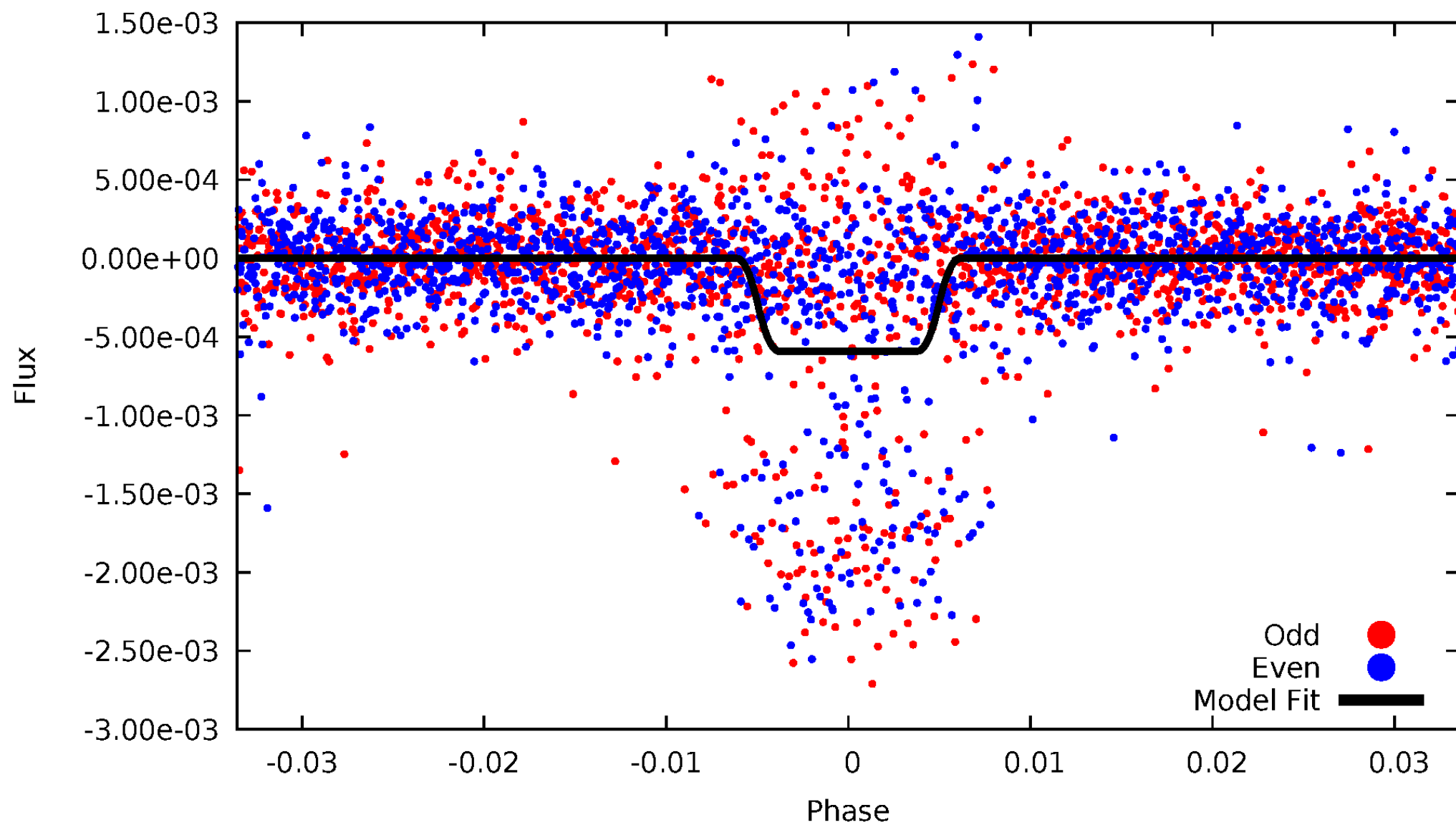
DV Odd/Even

TCE 006185476-01

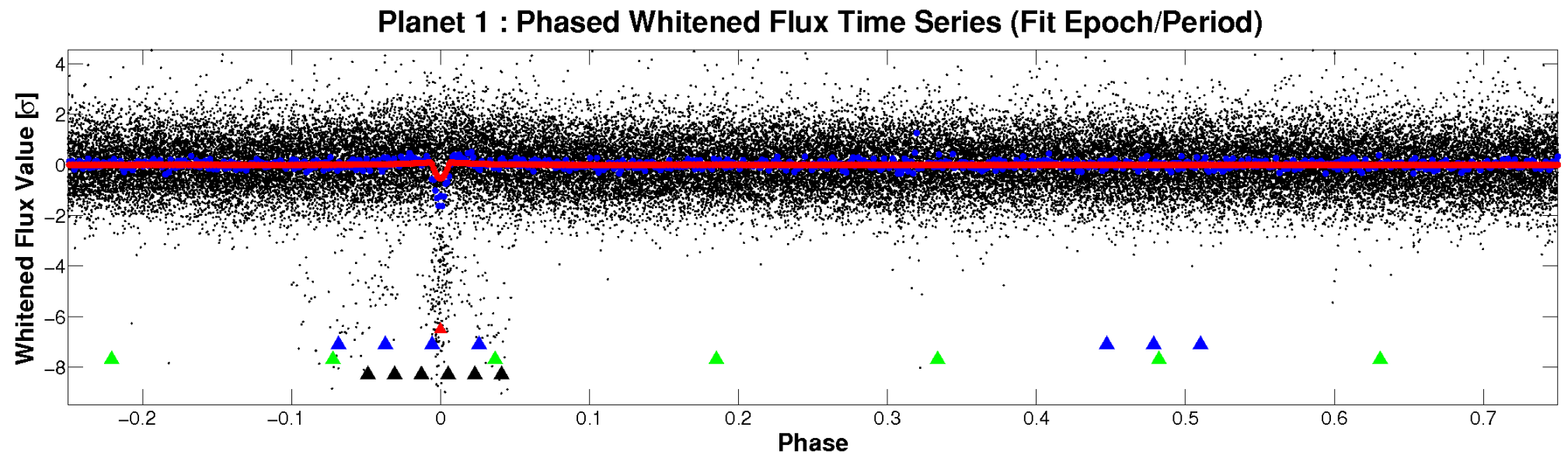
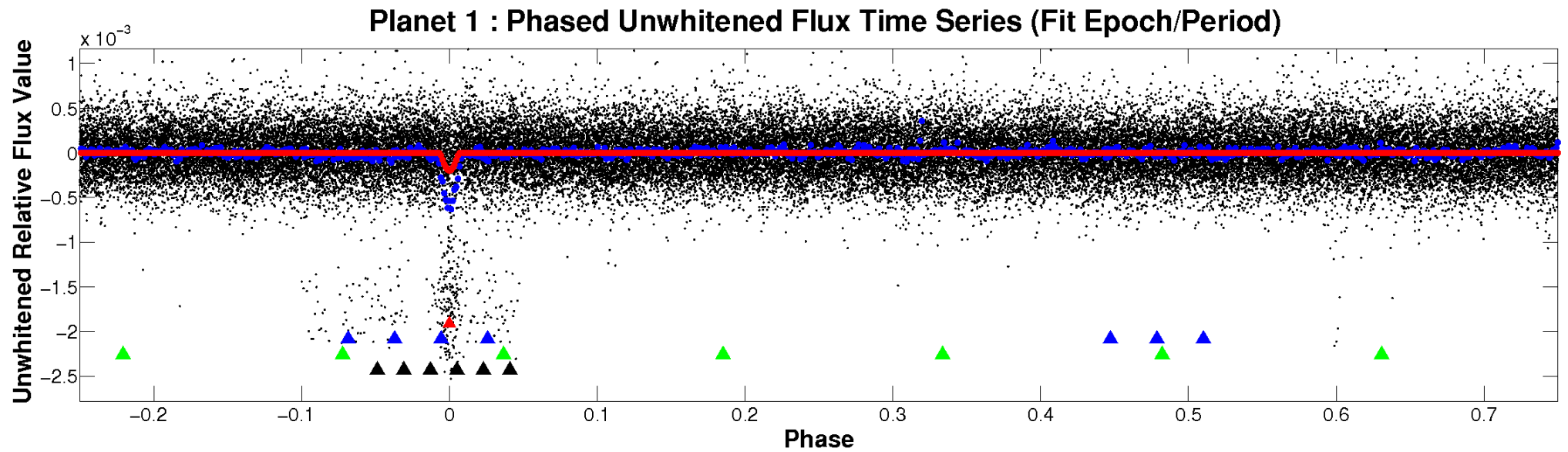


ALT Odd/Even

TCE 006185476-01

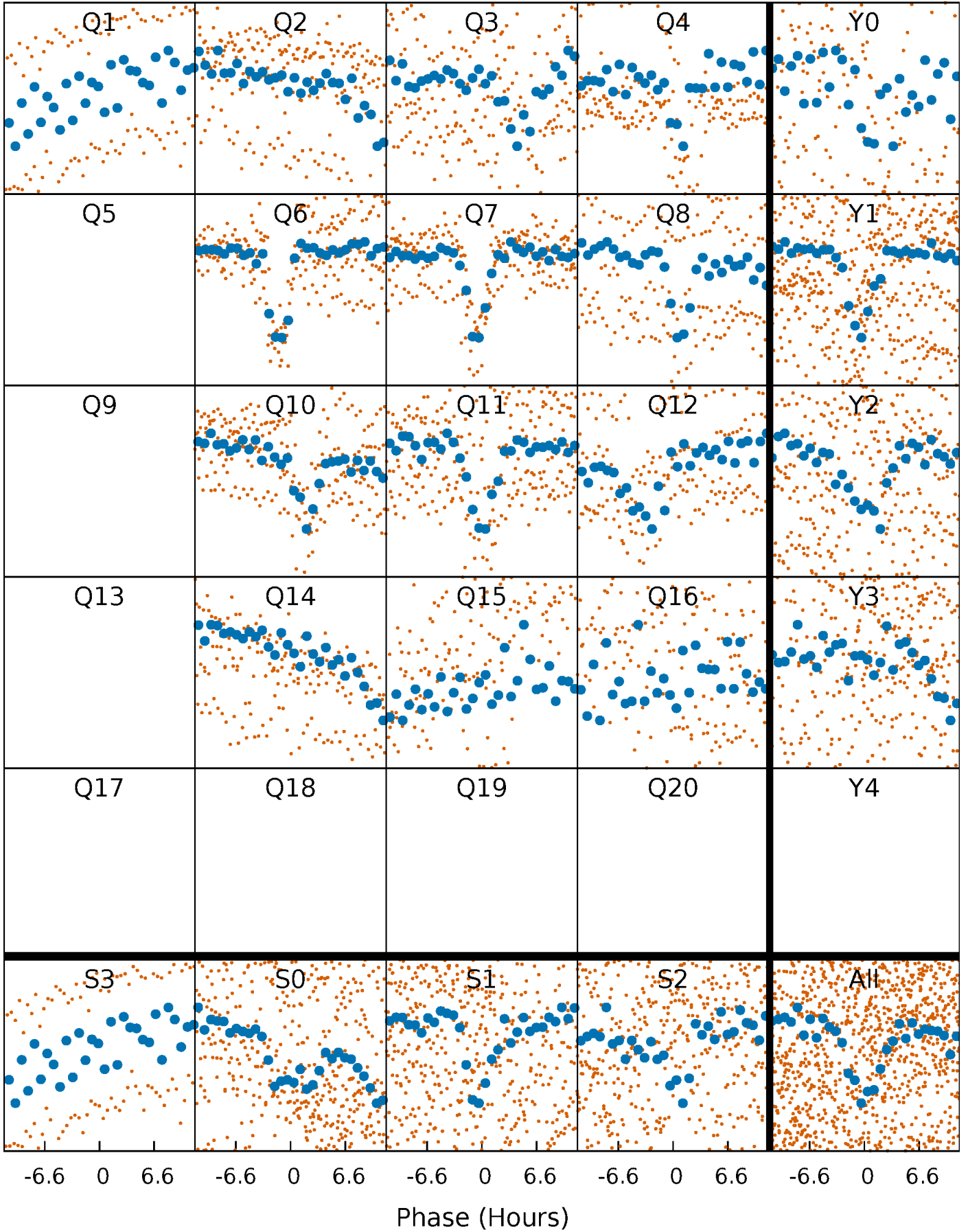


Non-Whitened Vs. Whitened Light Curve



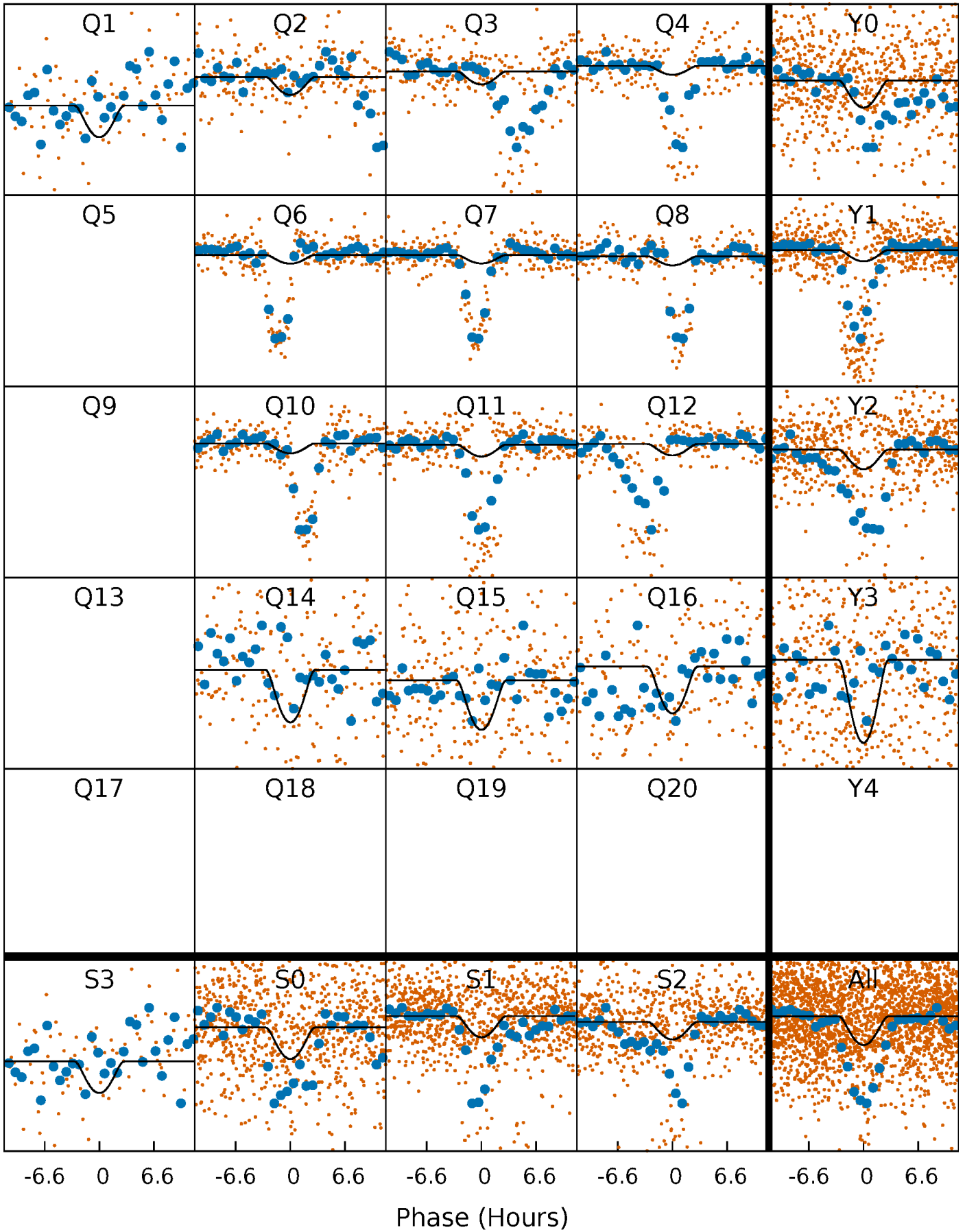
PDC Quarter-Phased Transit Curves

TCE 006185476-01 P= 17.709372 Days $T_0=135.845513$ (BKJD)



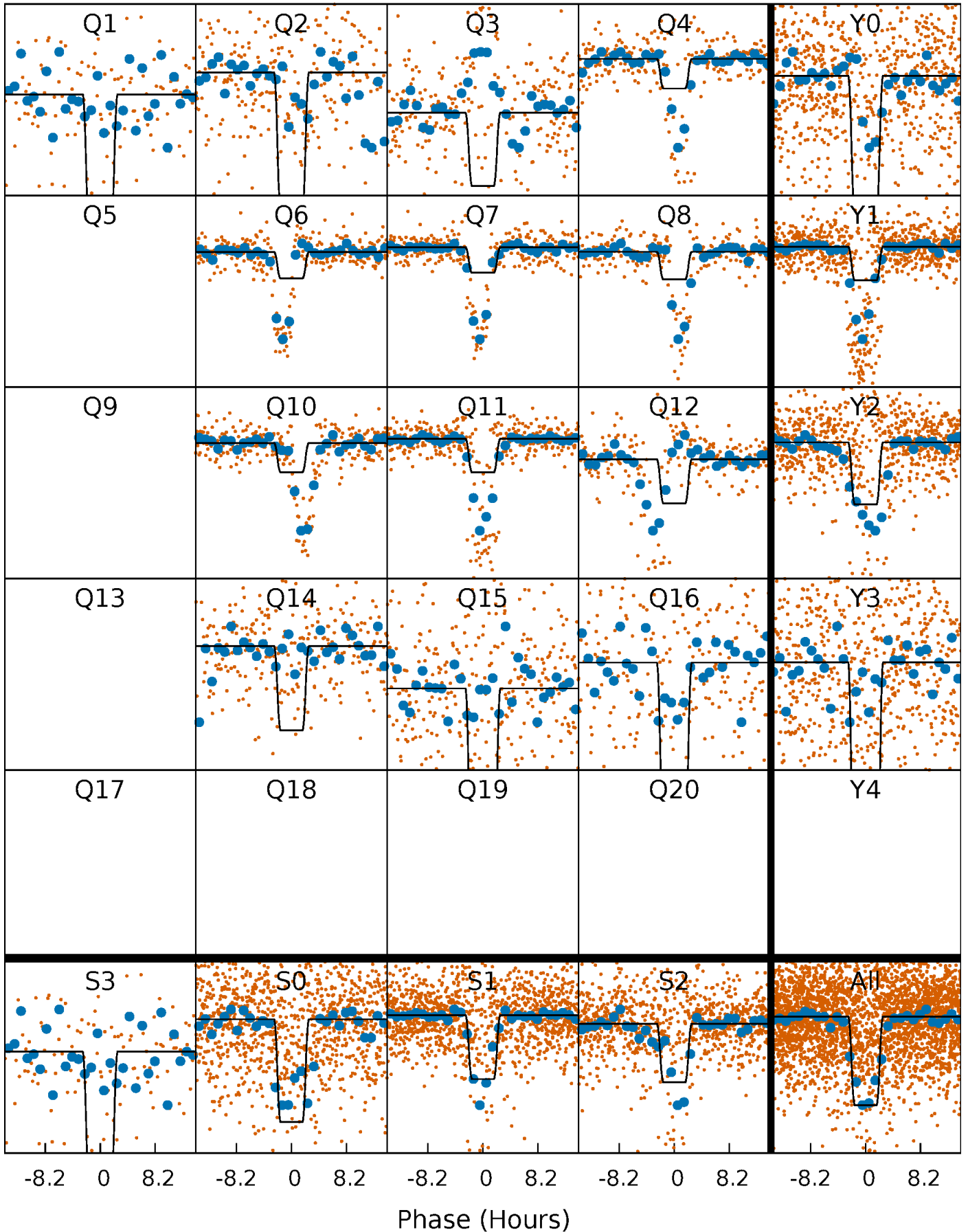
DV Quarter-Phased Transit Curves

TCE 006185476-01 P= 17.709372 Days $T_0=135.845513$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

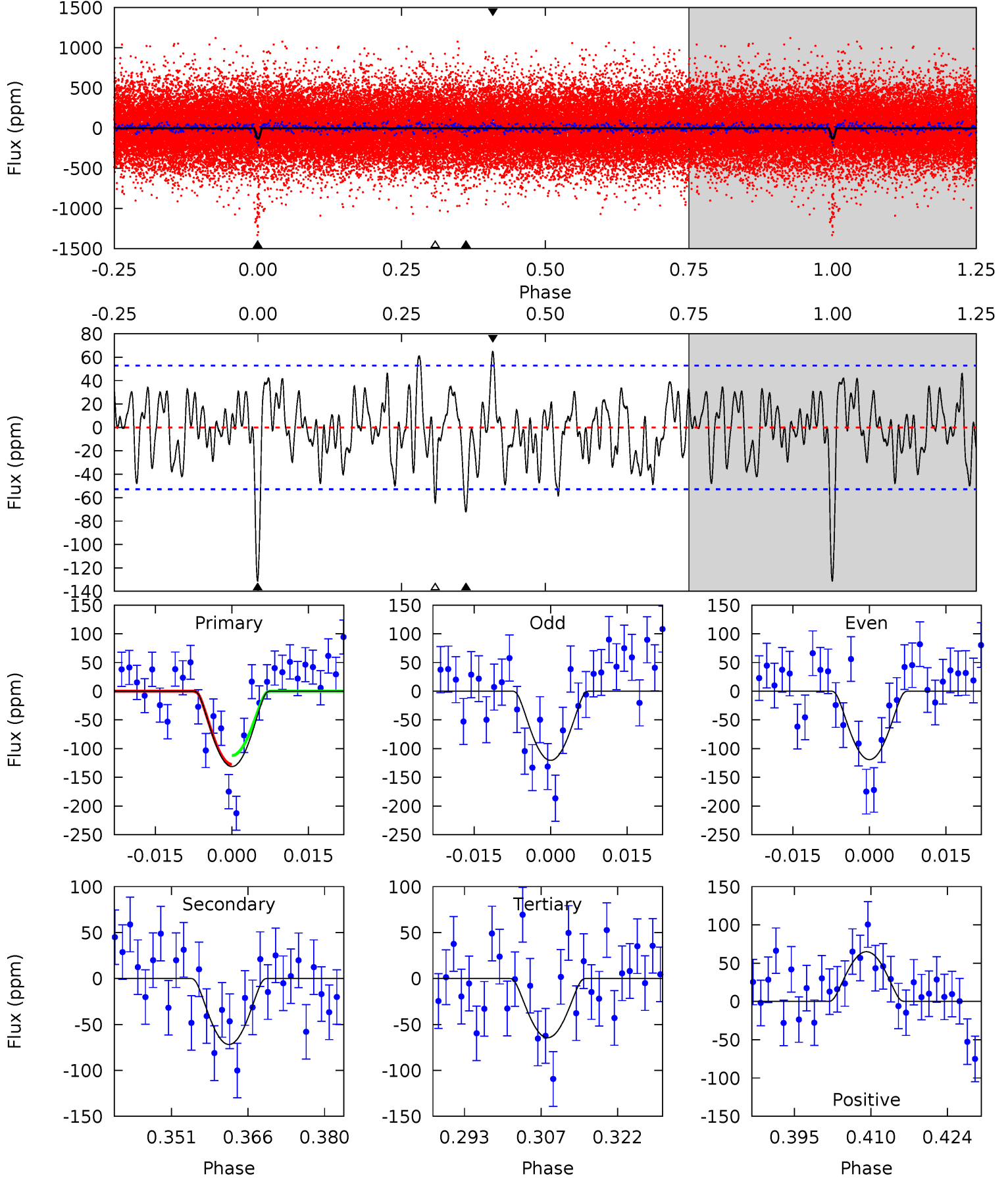
TCE 006185476-01 P= 17.709368 Days $T_0=135.843162$ (BKJD)



DV Model-Shift Uniqueness Test

006185476-01, P = 17.709372 Days, E = 118.136141 Days

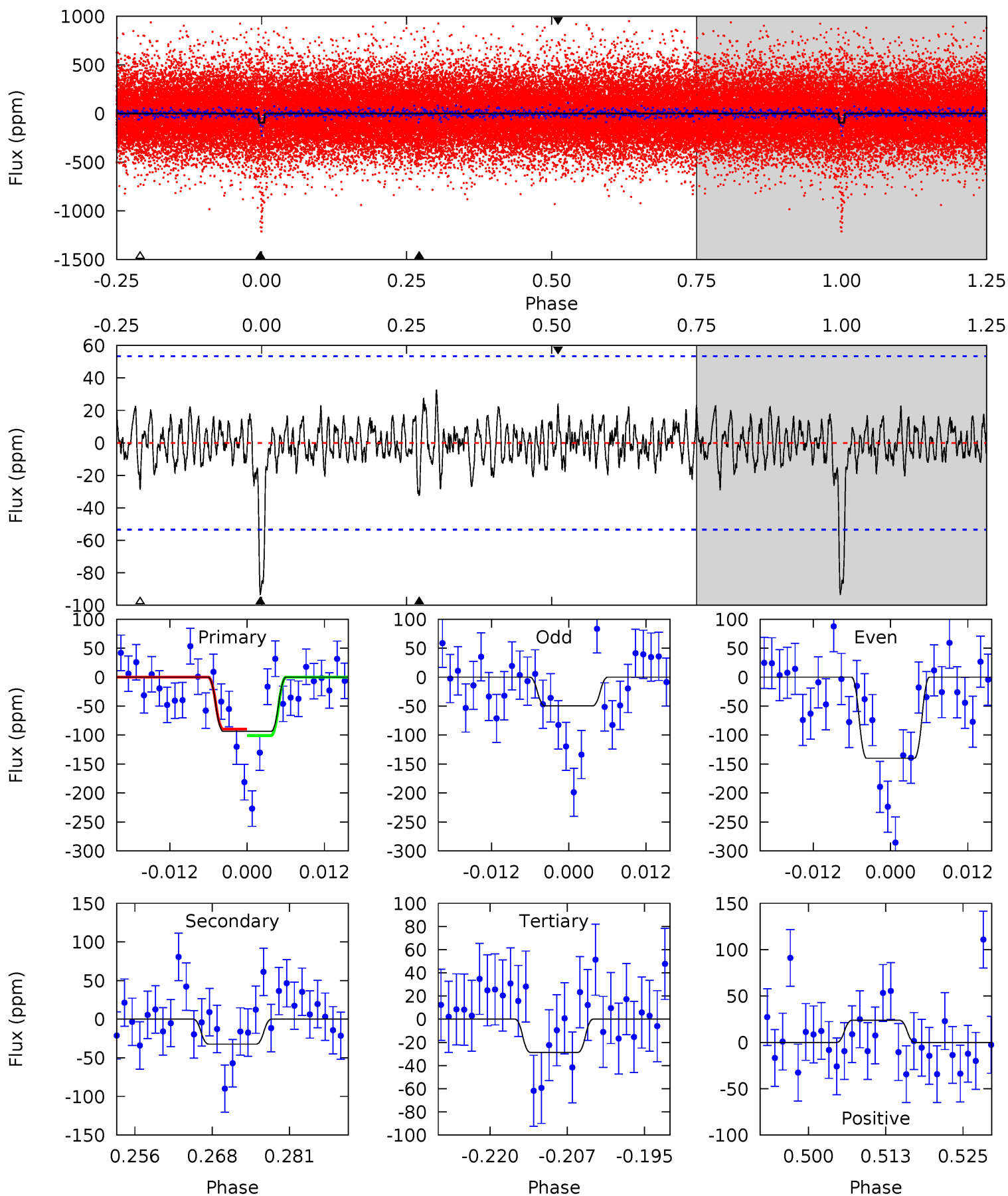
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	6.73	6.04	6.09	4.95	2.44	2.11	6.27	6.22	0.69	0.64	0.06	1.55	0.33	0.72



Alt Model-Shift Uniqueness Test

006185476-01, P = 17.709368 Days, E = 118.133794 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.74	3.02	2.67	2.22	4.99	2.51	0.89	6.07	6.52	0.35	0.80	4.22	1.16	0.26	0.51



Stellar Parameters For KIC 006185476

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4094^{+81}_{-90}	$4.695^{+0.024}_{-0.027}$	$-0.200^{+0.150}_{-0.150}$	$0.571^{+0.031}_{-0.031}$	$0.587^{+0.029}_{-0.038}$	$4.439^{+0.543}_{-0.438}$
	+2%/-2%	+1%/-1%	+75%/-75%	+5%/-5%	+5%/-6%	+12%/-10%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 006185476-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-72 ± 11	$4.30^{+4.35}_{-3.06}$	570^{+13}_{-13}	2262^{+825}_{-331}	27^{+282}_{-21}
Alt.	-32 ± 11	$4.61^{+4.79}_{-3.23}$	571^{+14}_{-14}	2047^{+667}_{-313}	11^{+106}_{-9}

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

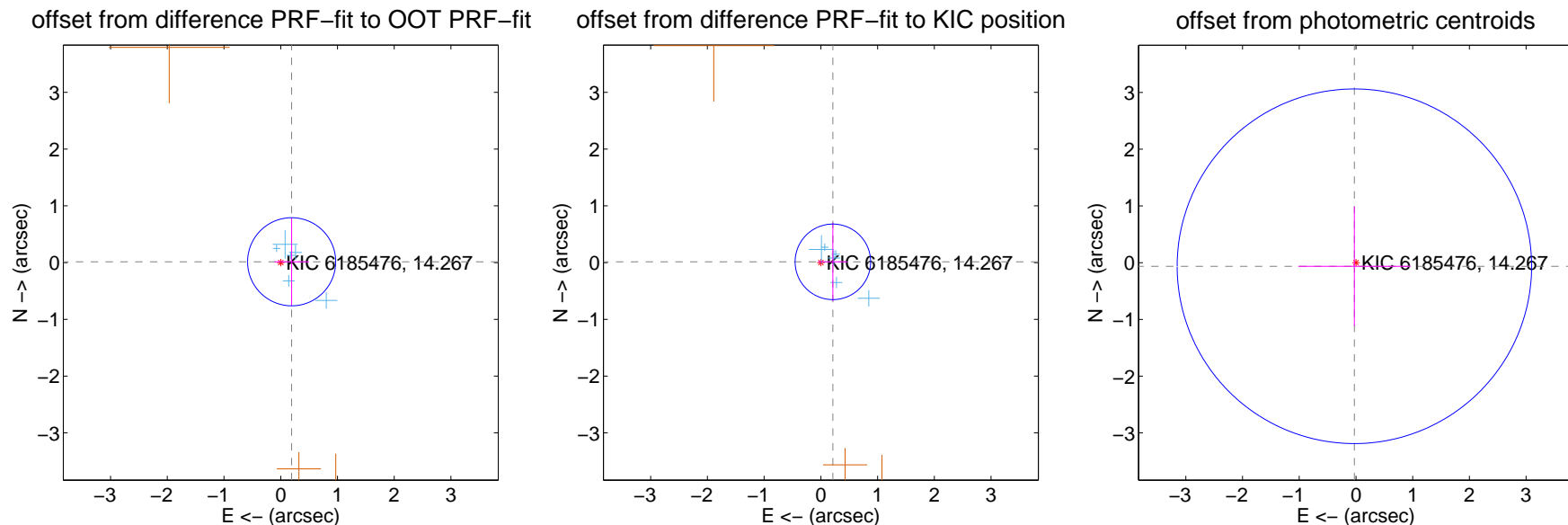
DV Centroid Data

Supplemental centroid analysis for 006185476-01. Kepler magnitude: 14.27. Transit SNR 8.49

There are 6 quarters with good PRF difference image offsets

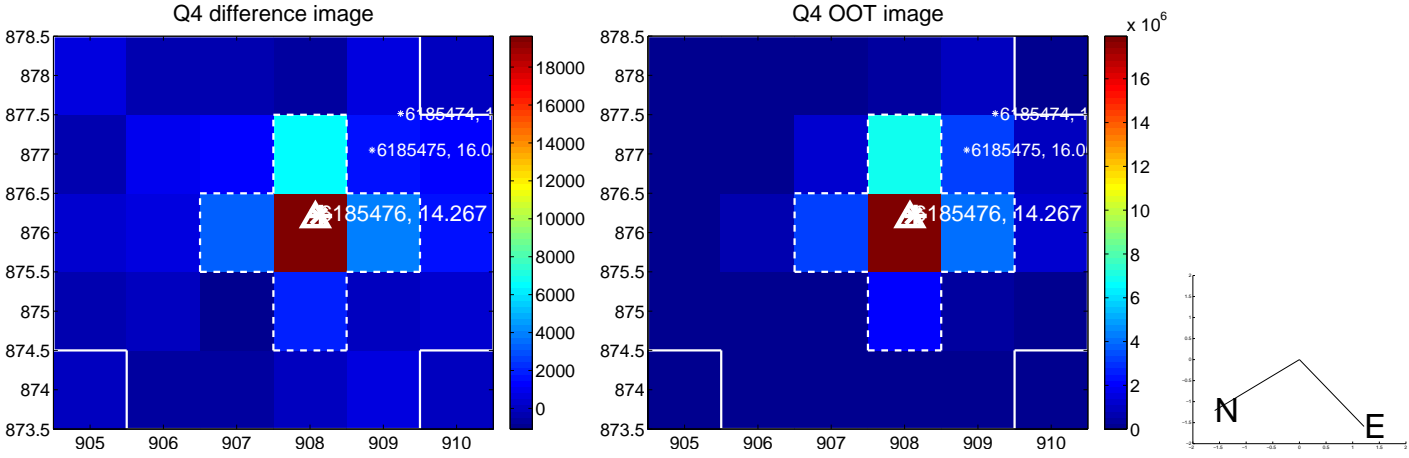
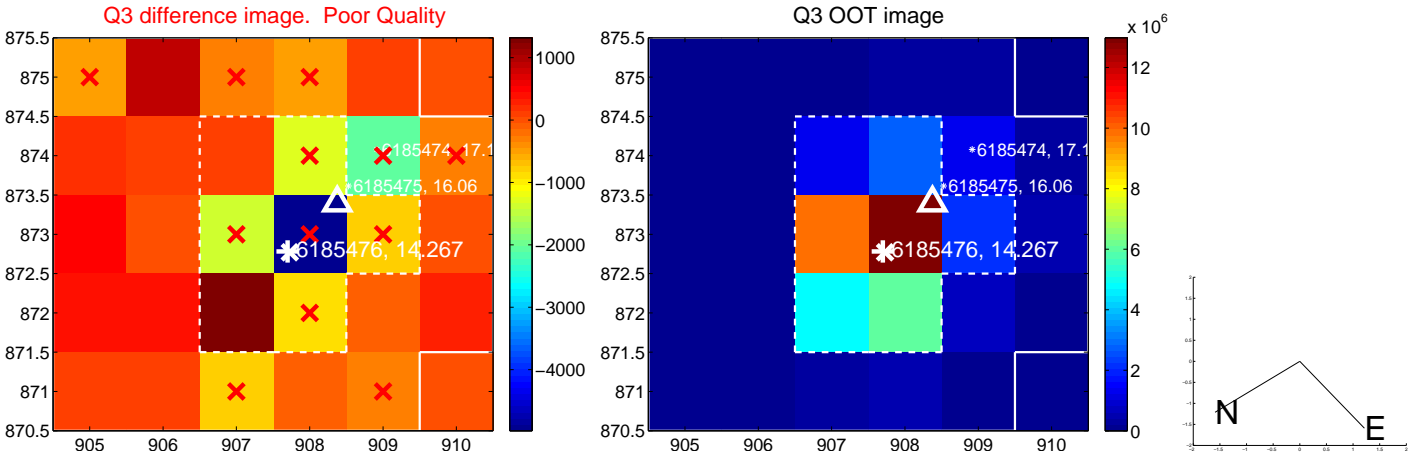
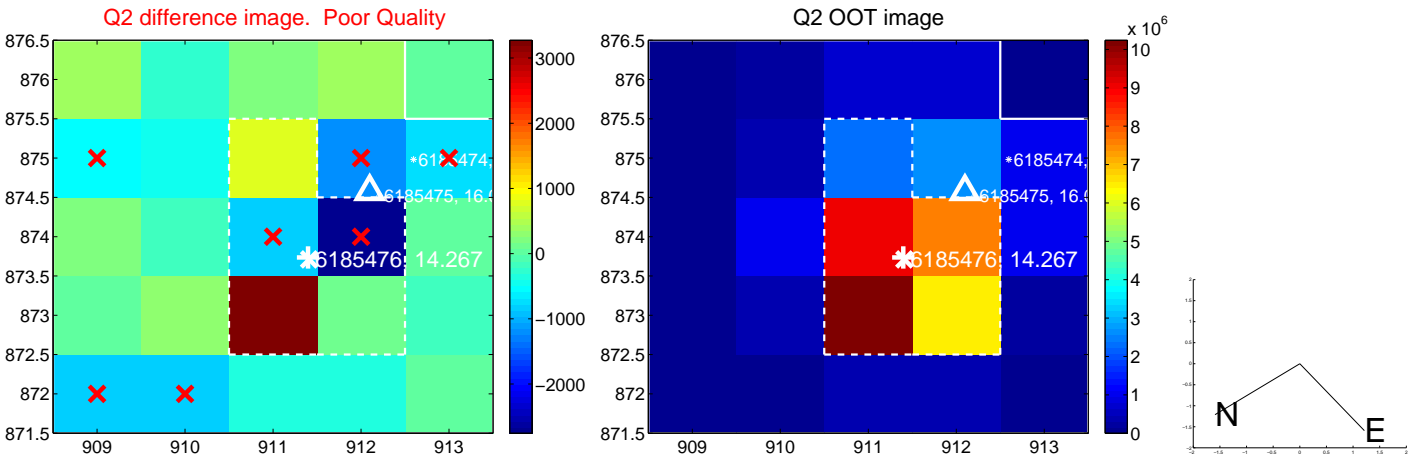
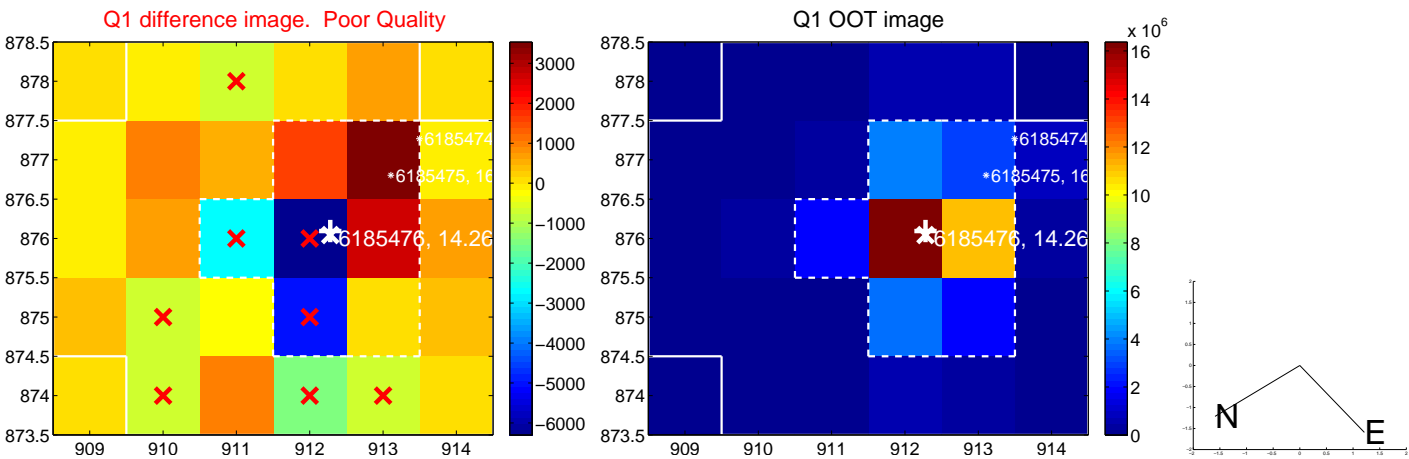
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.192 ± 0.259	0.74	-0.192 ± 0.304	0.014 ± 0.775
PRF-fit source offset from KIC position	0.212 ± 0.222	0.96	-0.212 ± 0.255	0.013 ± 0.689
photometric centroid source offset	0.07 ± 1.04	0.07	0.03 ± 0.99	-0.06 ± 1.05

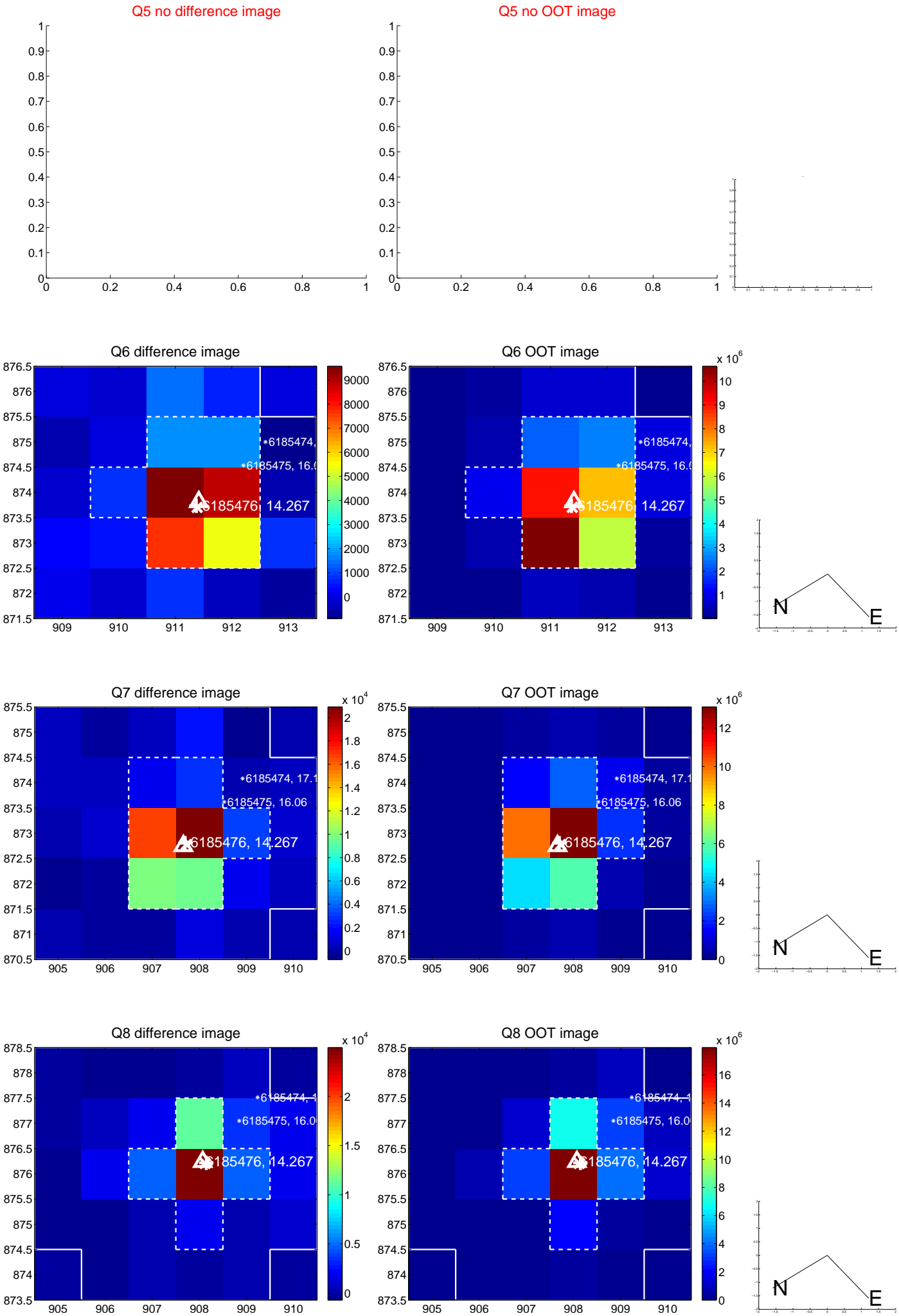


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

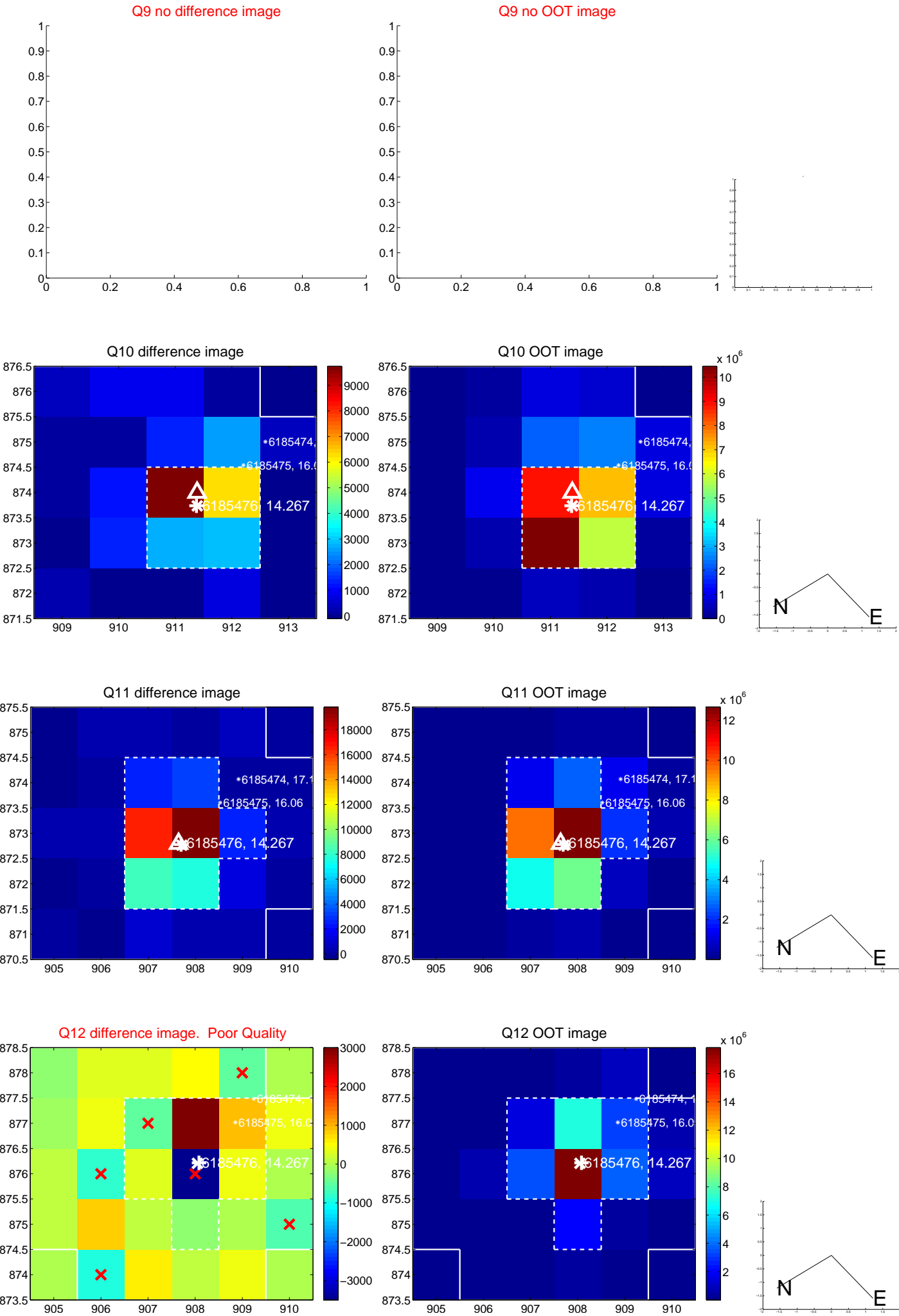
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



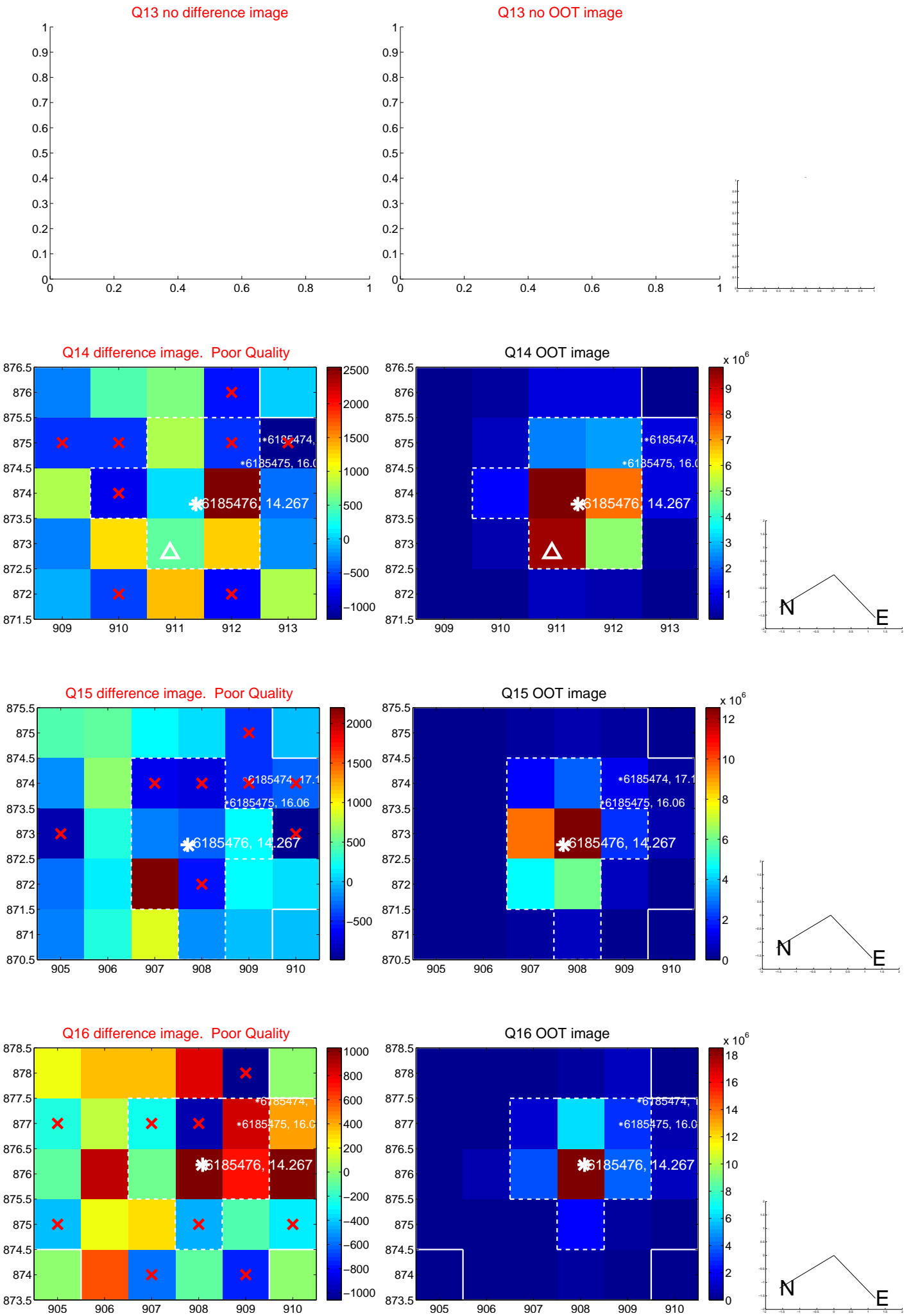
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



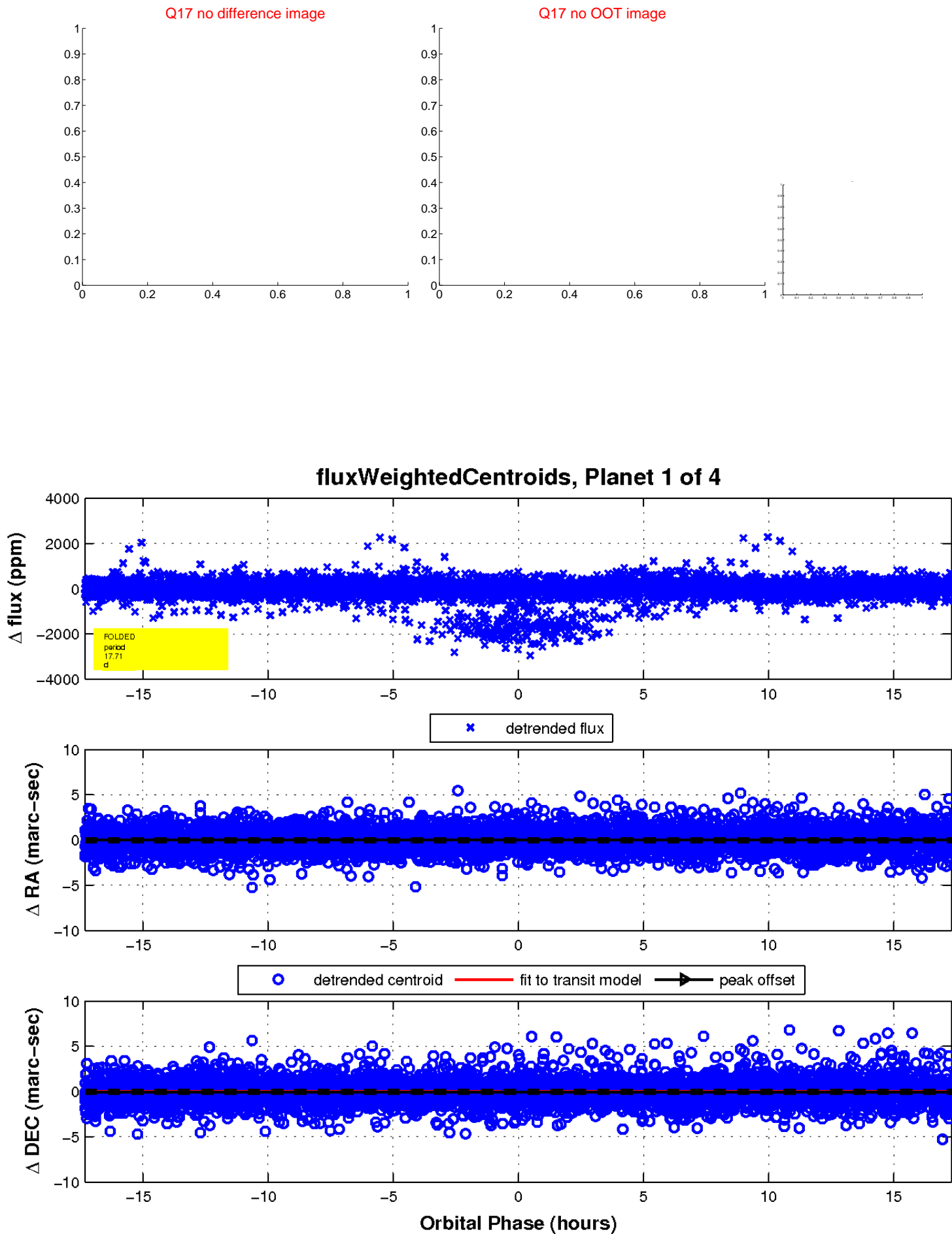
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

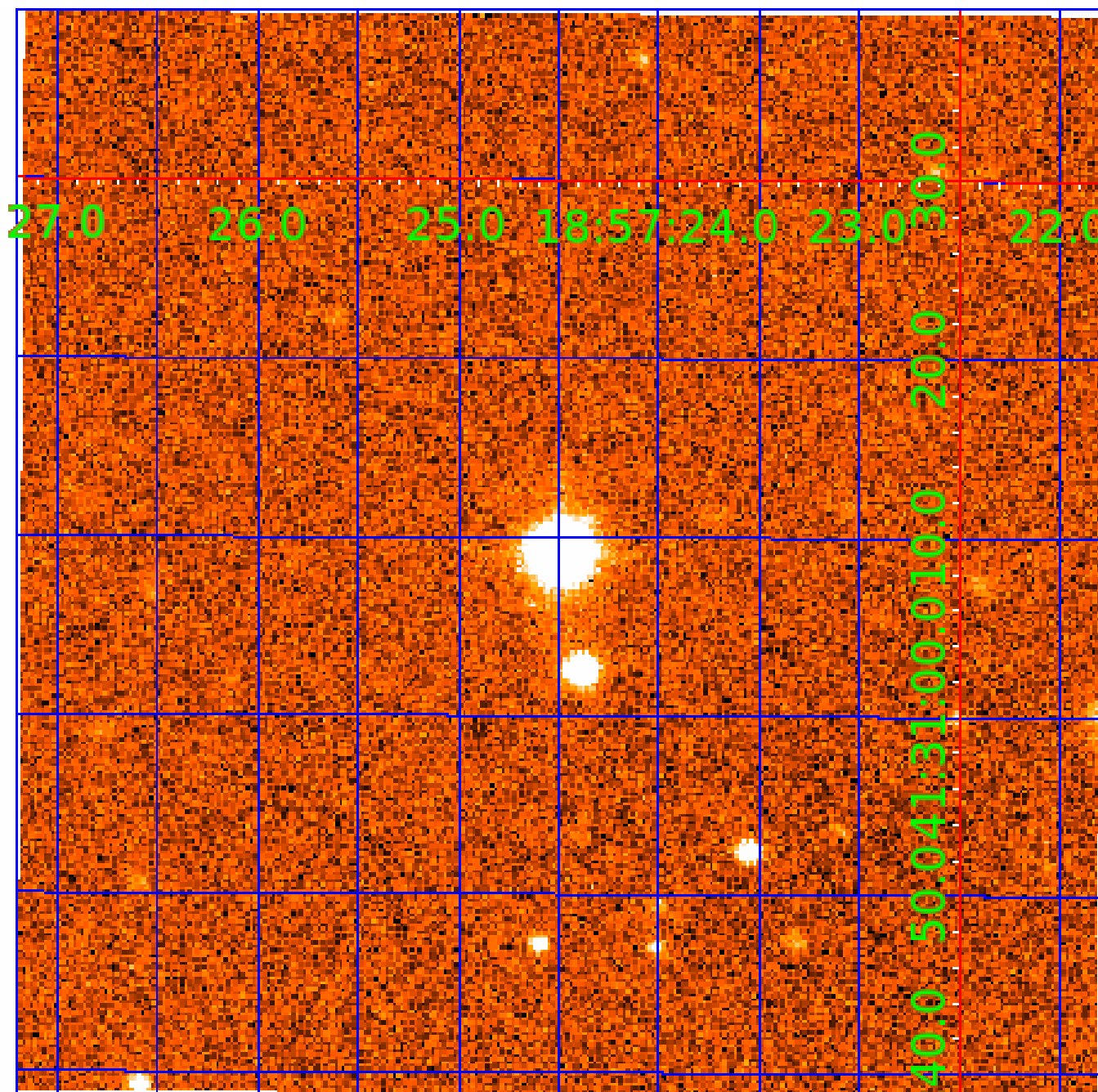


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006185476

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})
006185476-01	OBS	No	17.709372	135.845513	199.2	5.770	29.0	8.5	0.57	4094	1.68	6.60
006185476-02	OBS	No	203.379288	224.851037	1757.6	2.514	22.7	20.1	0.57	4094	2.53	0.26
006185476-03	OBS	No	215.142669	171.913823	1892.5	3.122	23.0	24.9	0.57	4094	2.47	0.24
006185476-04	OBS	No	283.032278	154.281260	2056.2	3.776	19.7	20.7	0.57	4094	3.24	0.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006185476-01	OBS	FP	0.00	1	0	0	0	LPP_DV
006185476-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV
006185476-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006185476-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—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.

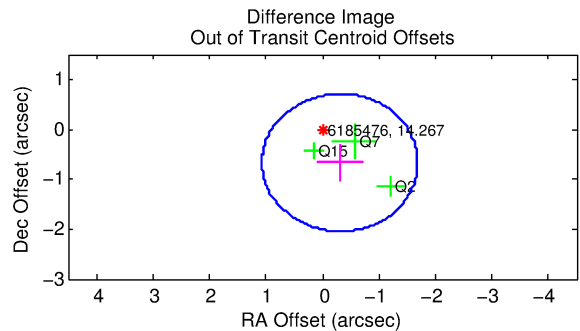
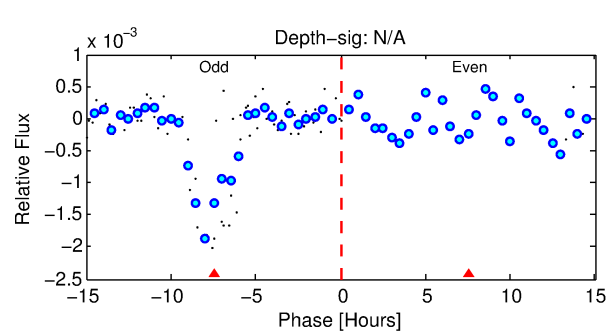
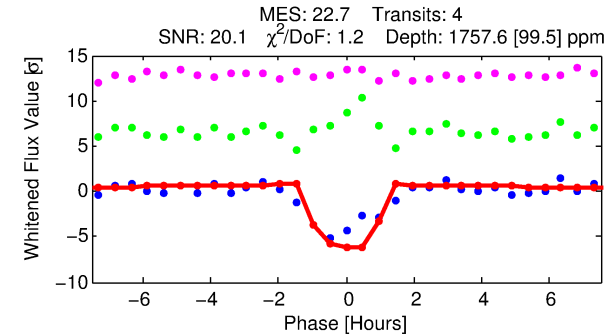
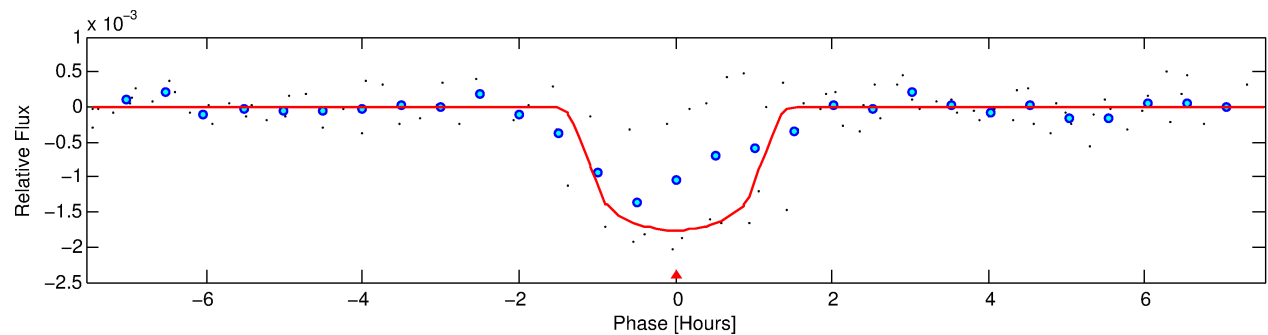
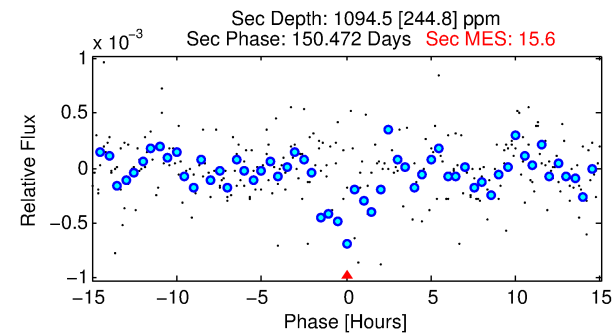
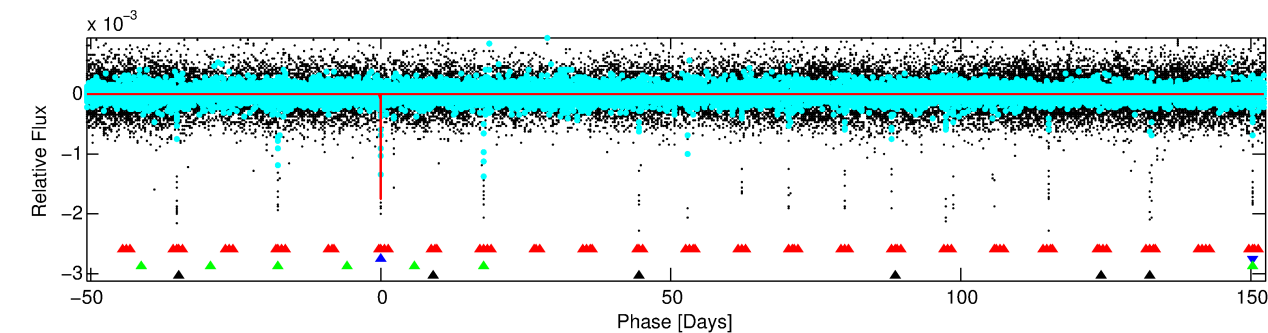
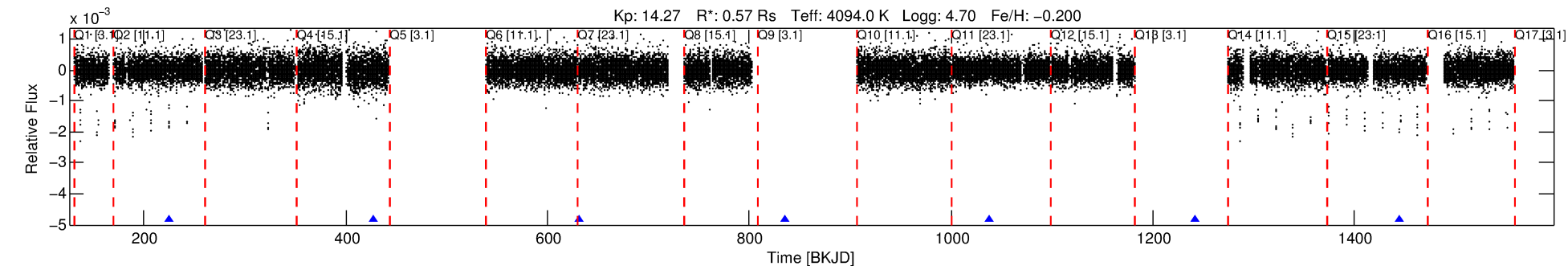
Ephemeris Match Information For 006185476-02

No Significant Match Found

DV One-Page Summary

KIC: 6185476 Candidate: 2 of 4 Period: 203.379 d
KOI: K00227 Corr: No Ephemeris Match

Kp: 14.27 R*: 0.57 Rs Teff: 4094.0 K Logg: 4.70 Fe/H: -0.200



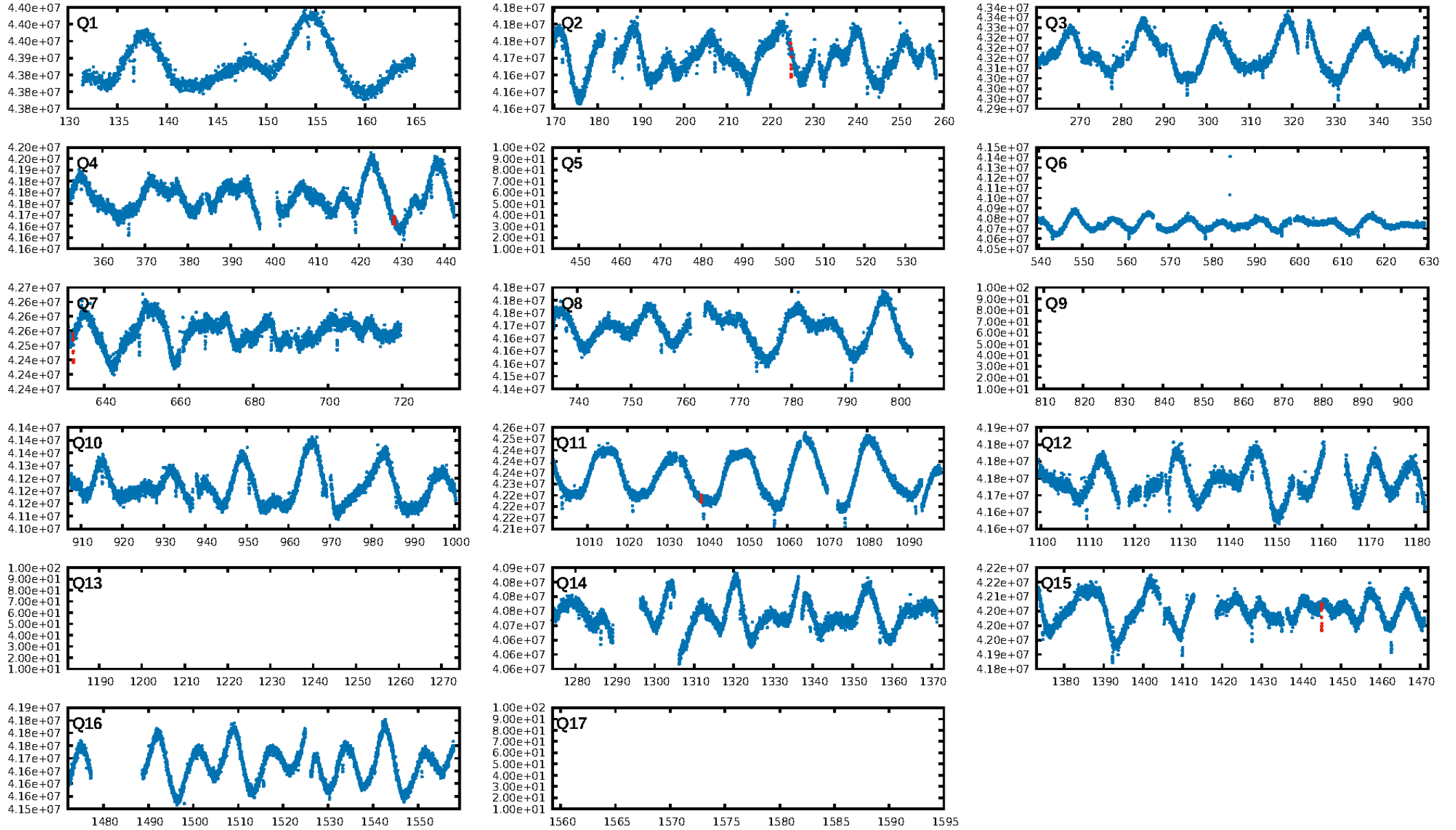
DV Fit Results:

Period = 203.37929 [0.00065] d
Epoch = 224.8510 [0.0025] BKJD
Rp/R* = 0.0407 [0.0222]
a/R* = 493.15 [1022.45]
b = 0.67 [1.76]
Seff = 0.25 [0.03]
Teq = 181 [5] K
Rp = 2.53 [1.39] Re
a = 0.5675 [0.0237] AU
Ag = 30230.55 [33679.73] [0.90σ]
Teffp = 3693 [1031] K [3.41σ]

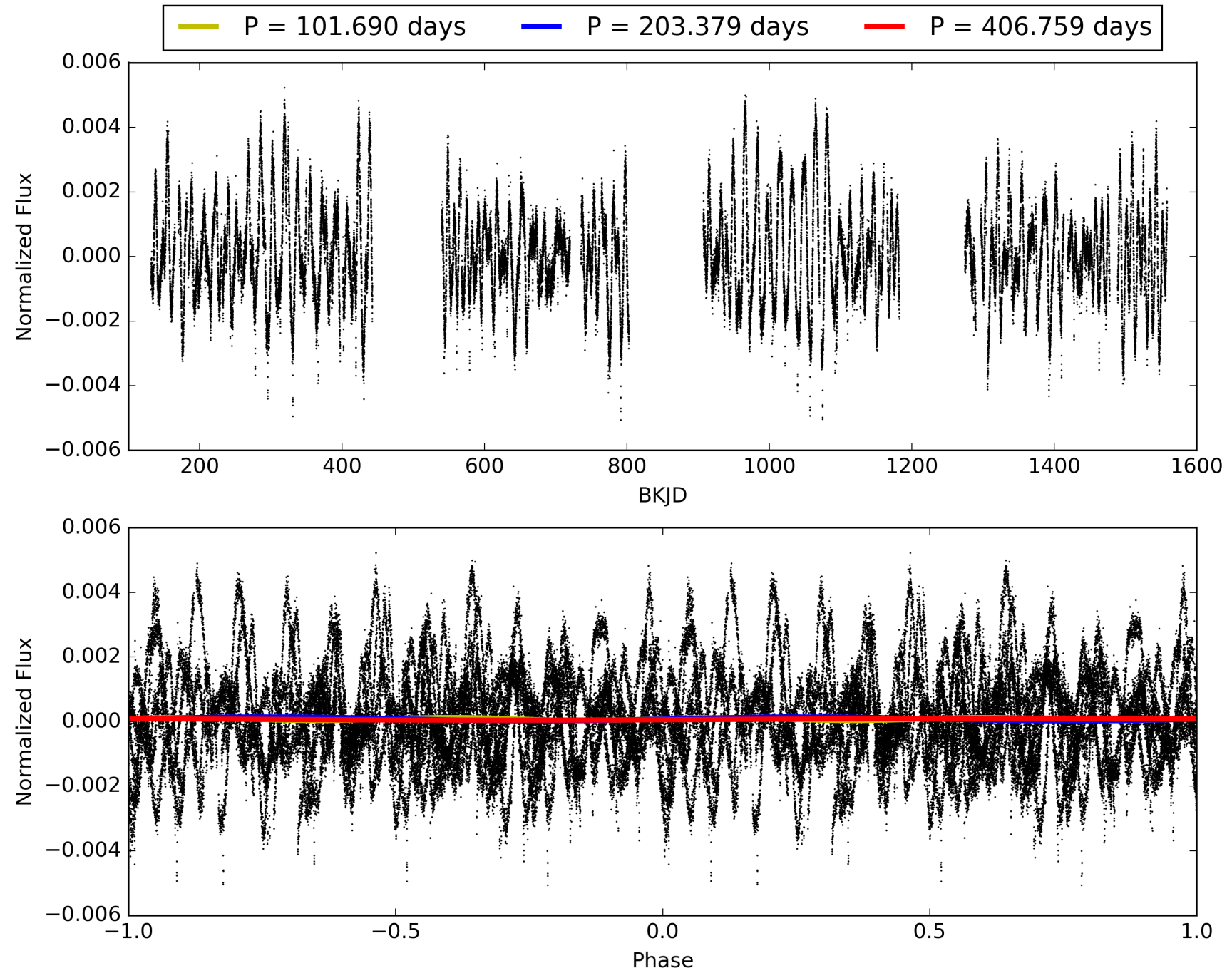
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [707.94σ]
LongPeriod-sig: 100.0% [70.43σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 77.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 4.825
Centroid-sig: 16.4%
Centroid-so: 0.866 arcsec [1.80σ]
OotOffset-rm: 0.737 arcsec [1.60σ]
OotOffset-st: 1/2/0/0 [3]
KicOffset-rm: 0.783 arcsec [2.15σ]
KicOffset-st: 1/2/0/0 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 0.75 [3/4]

TCE 006185476-02, PDC Light Curves

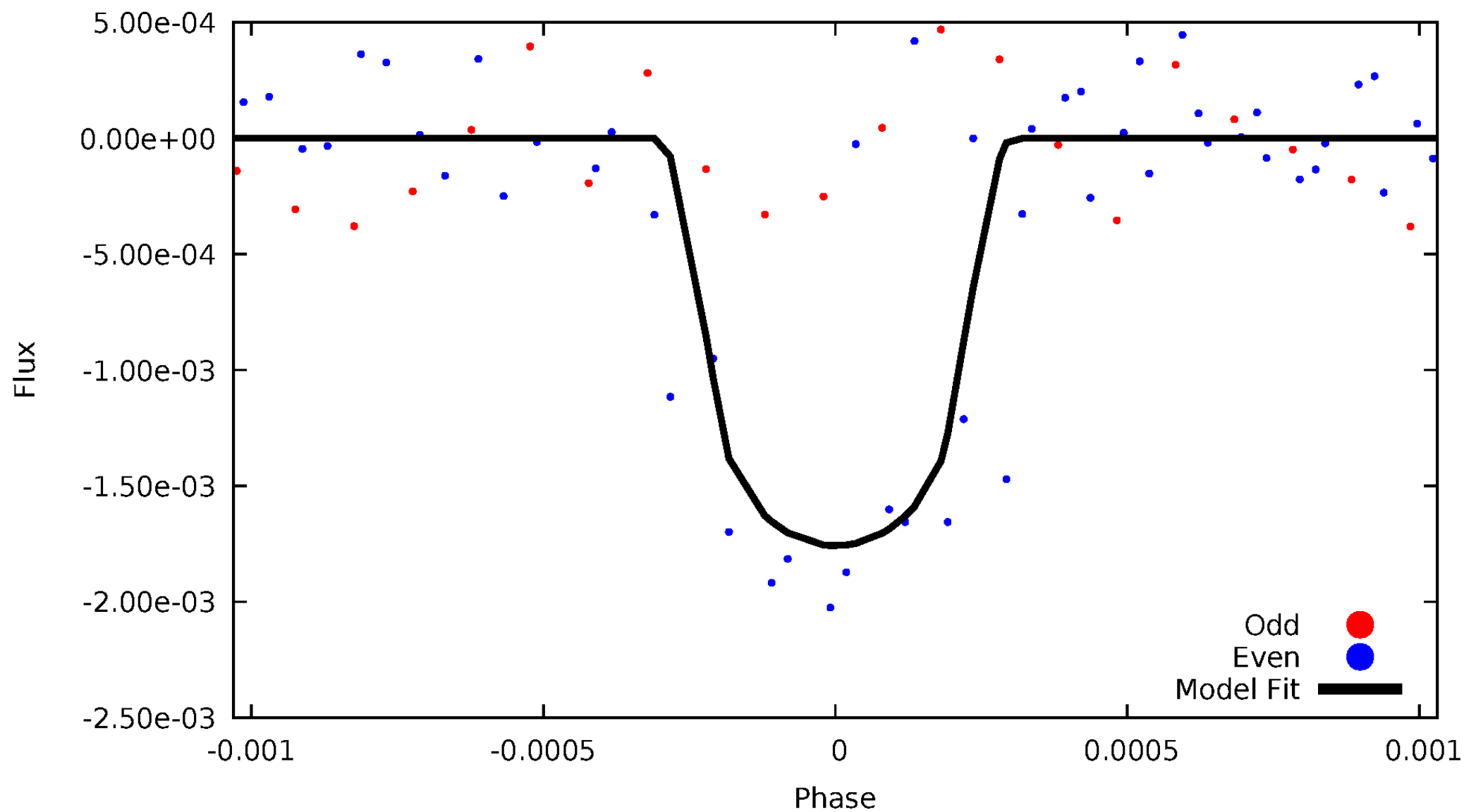


TCE 006185476-02



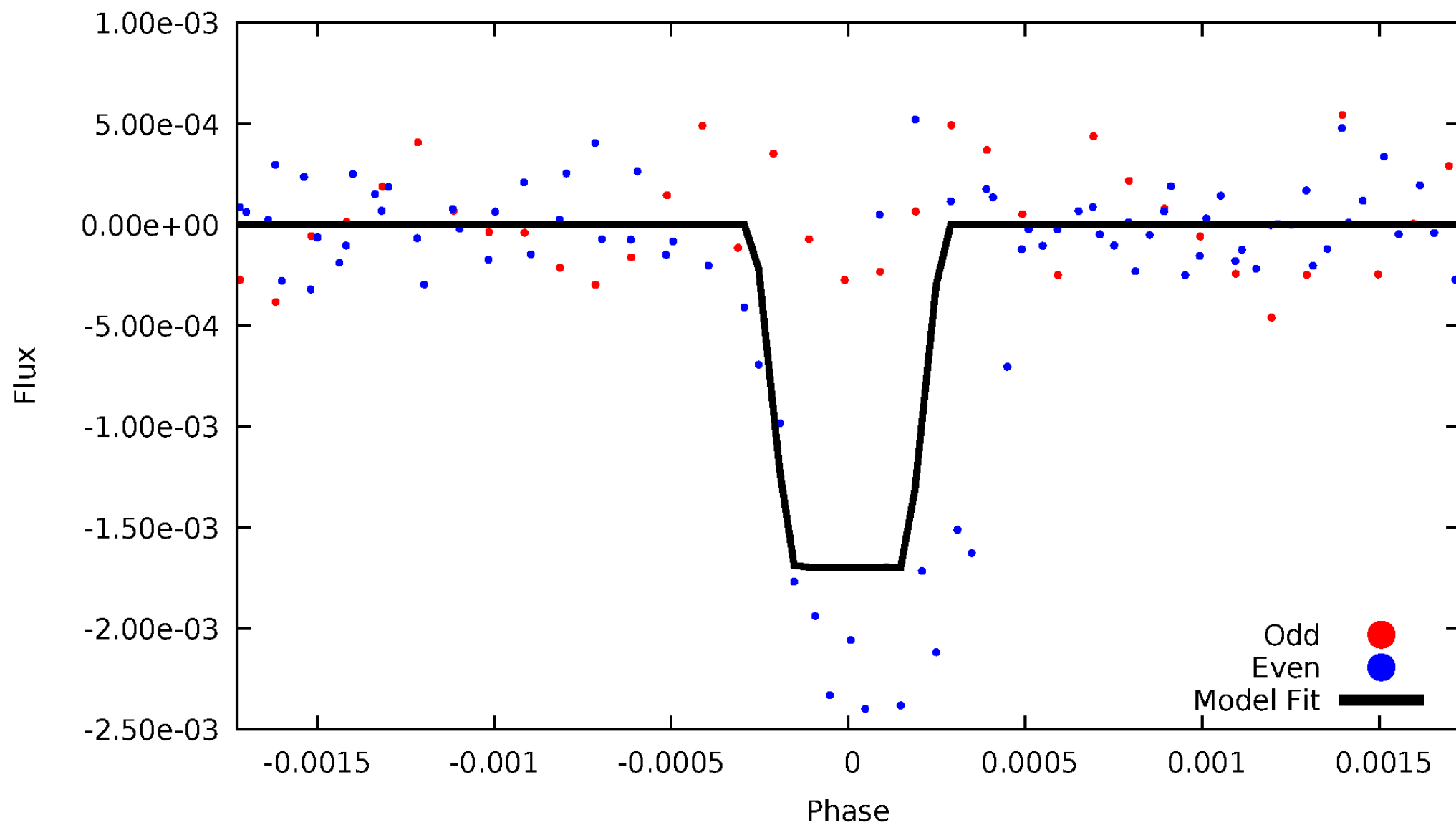
DV Odd/Even

TCE 006185476-02



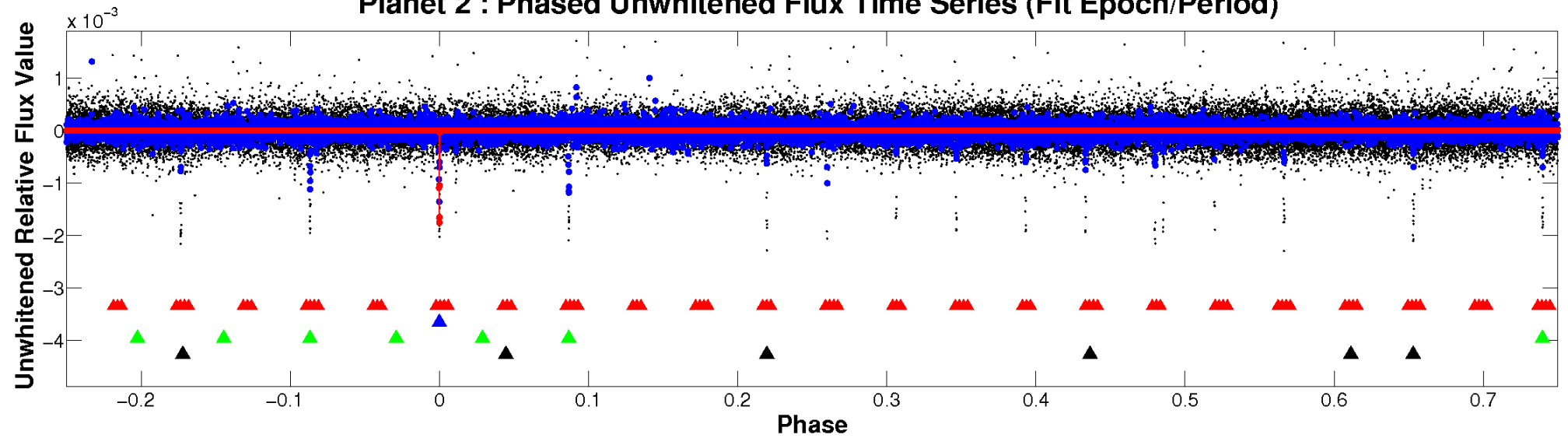
ALT Odd/Even

TCE 006185476-02

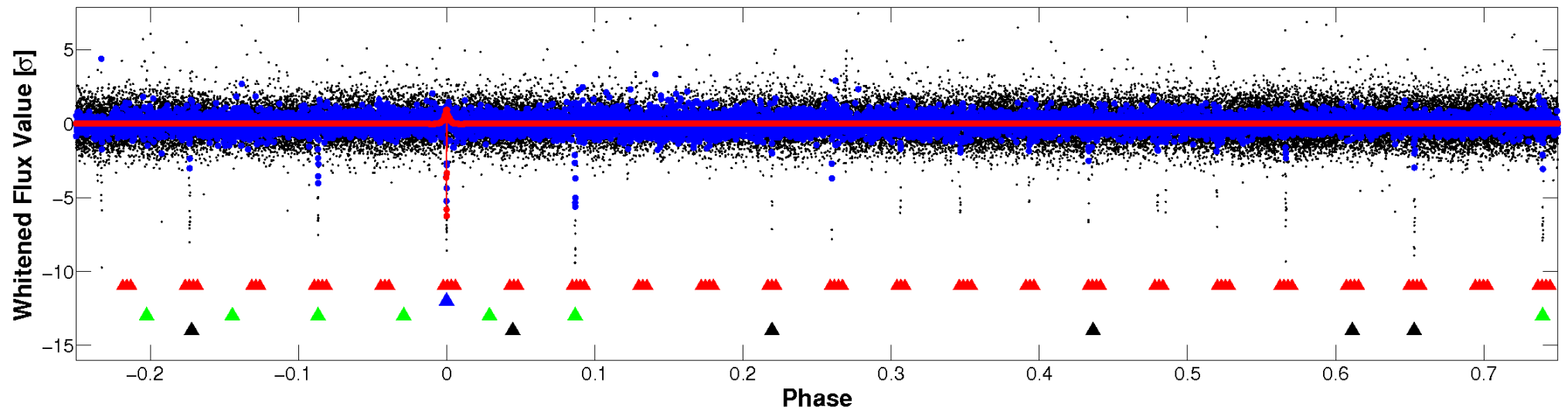


Non-Whitened Vs. Whitened Light Curve

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

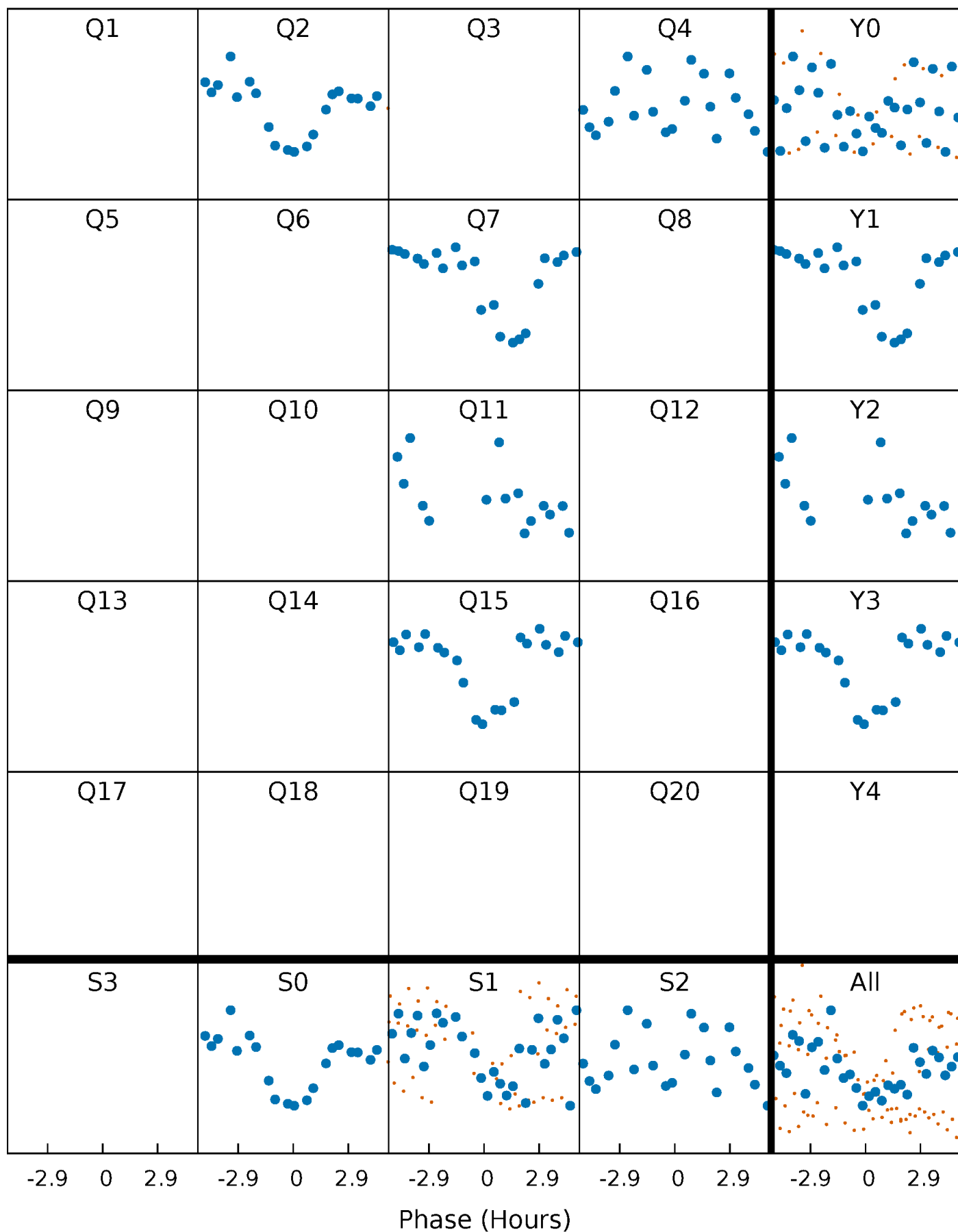


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



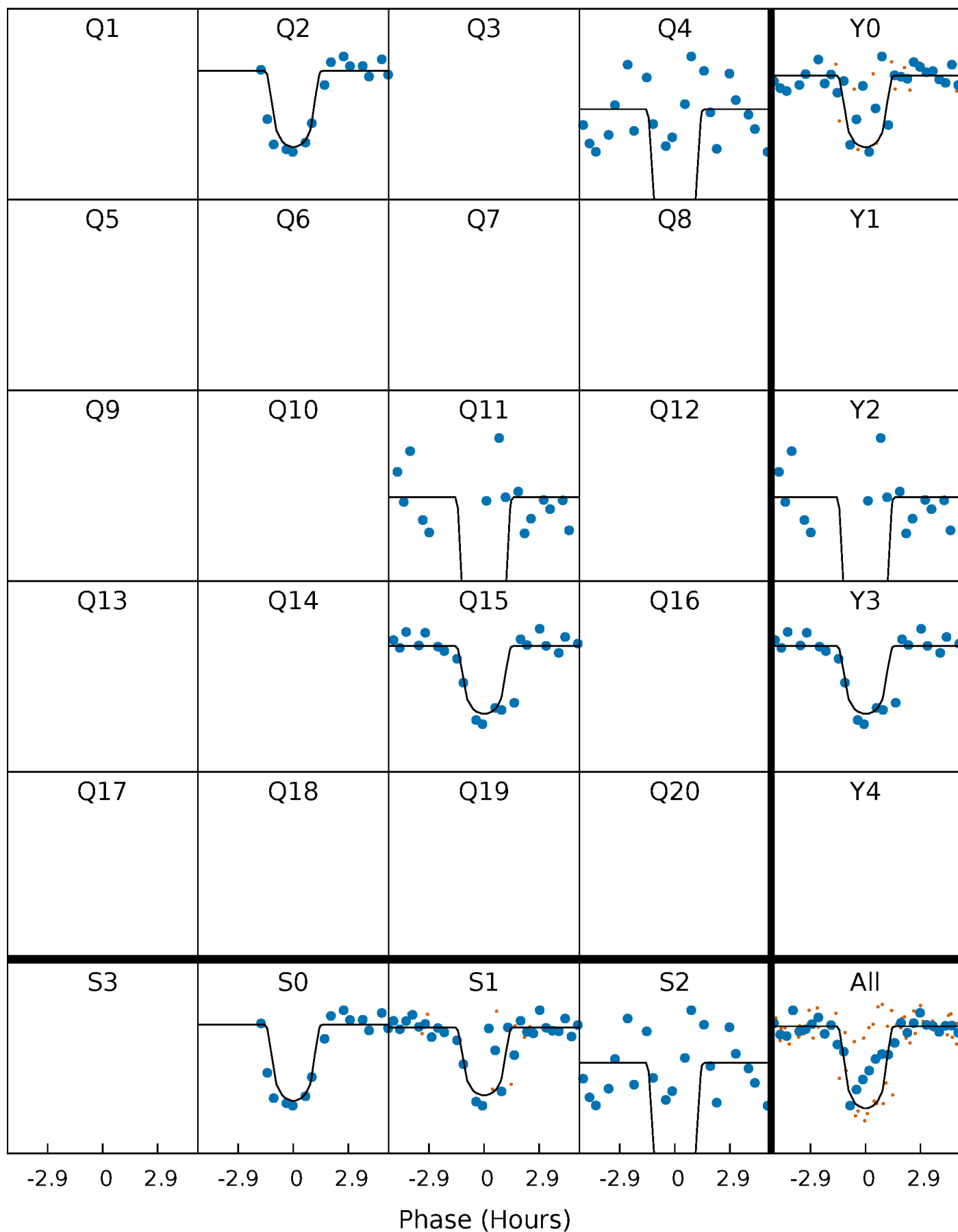
PDC Quarter-Phased Transit Curves

TCE 006185476-02 P=203.379288 Days $T_0=224.851037$ (BKJD)



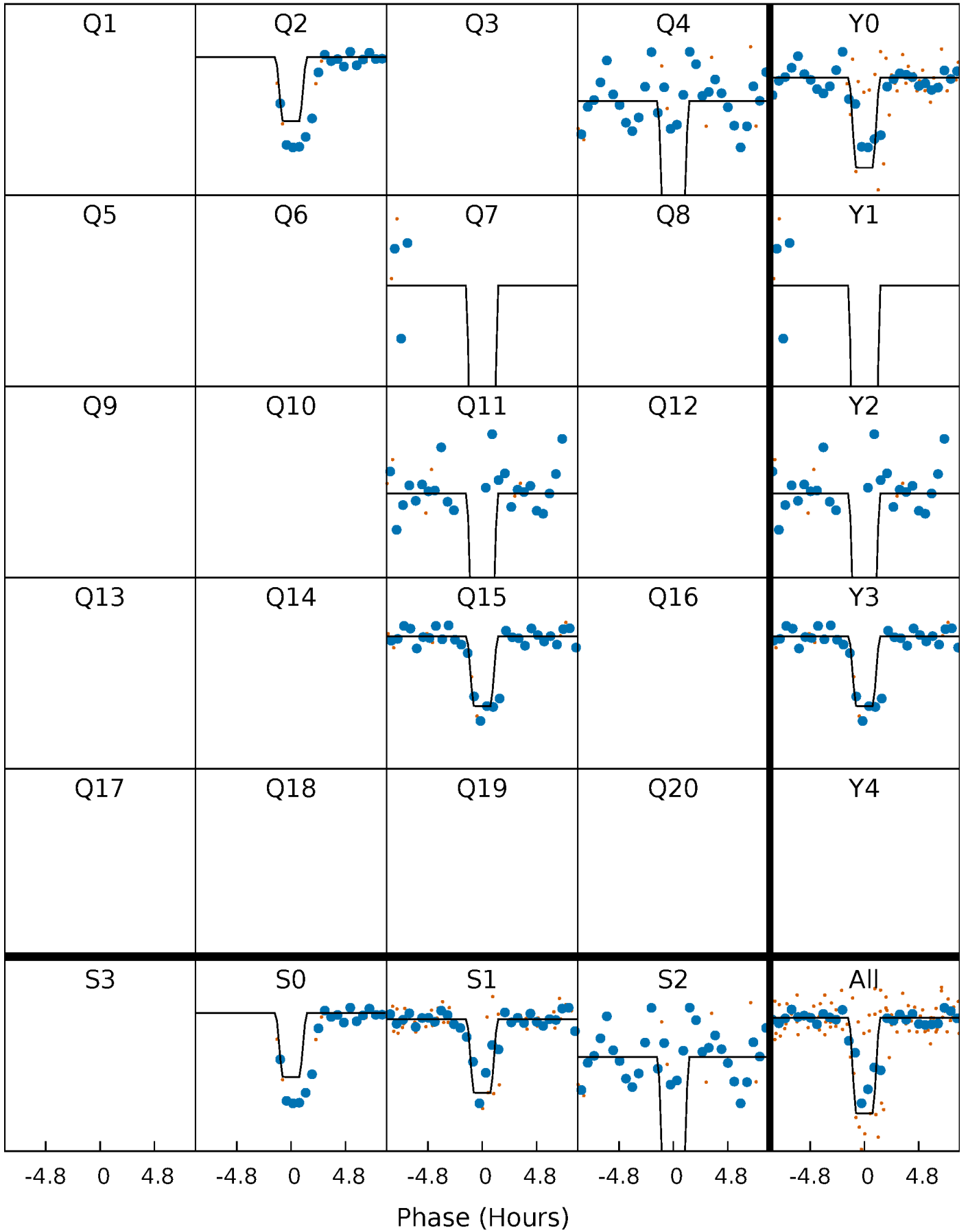
DV Quarter-Phased Transit Curves

TCE 006185476-02 P=203.379288 Days $T_0=224.851037$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

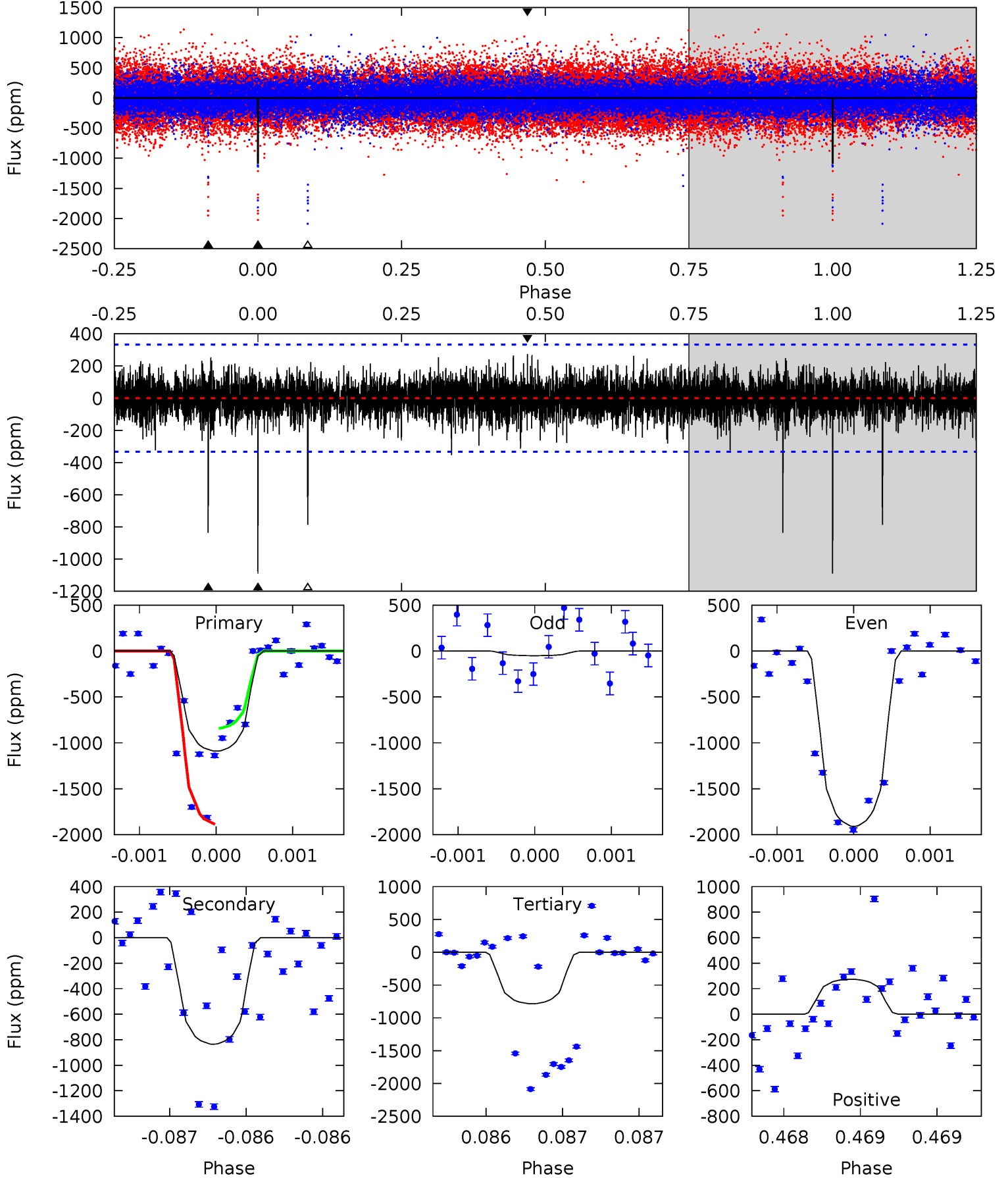
TCE 006185476-02 P=203.383138 Days $T_0=224.824793$ (BKJD)



DV Model-Shift Uniqueness Test

006185476-02, P = 203.379288 Days, E = 21.471749 Days

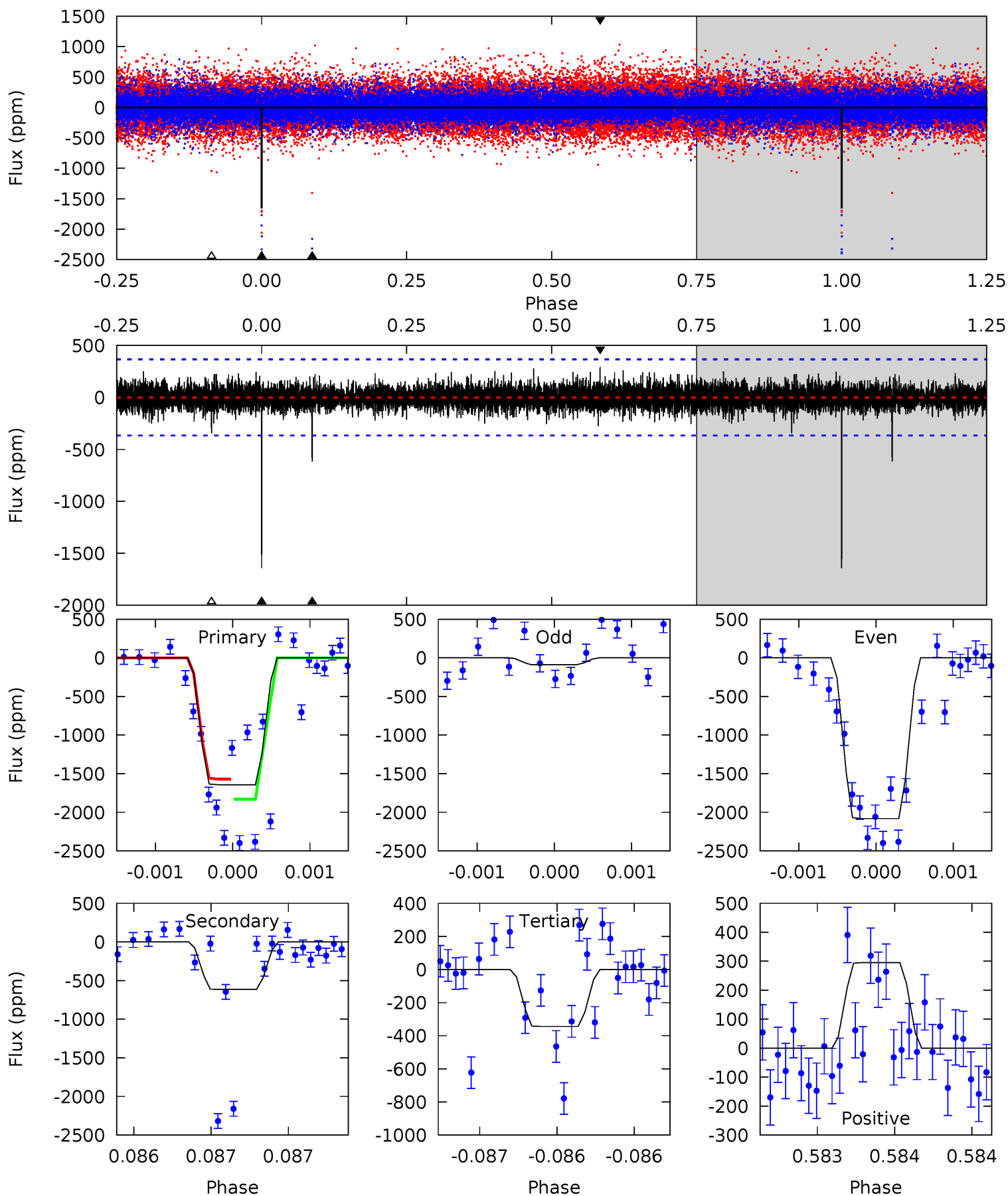
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.2	14.0	13.1	4.59	5.57	3.47	1.32	5.10	13.6	0.83	9.38	12.7	0.94	0.20	7.65



Alt Model-Shift Uniqueness Test

006185476-02, P = 203.383138 Days, E = 21.441655 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	9.37	5.24	4.50	5.57	3.48	1.07	19.8	20.5	4.13	4.87	15.0	1.01	0.15	1.89



Stellar Parameters For KIC 006185476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4094^{+81}_{-90}	$4.695^{+0.024}_{-0.027}$	$-0.200^{+0.150}_{-0.150}$	$0.571^{+0.031}_{-0.031}$	$0.587^{+0.029}_{-0.038}$	$4.439^{+0.543}_{-0.438}$
	+2%/-2%	+1%/-1%	+75%/-75%	+5%/-5%	+5%/-6%	+12%/-10%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 006185476-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-835 ± 60	$2.69^{+1.29}_{-1.36}$	253^{+6}_{-5}	3566^{+1060}_{-417}	20187^{+64125}_{-11037}
Alt.	-615 ± 66	$2.60^{+1.32}_{-1.22}$	253^{+6}_{-6}	3426^{+814}_{-396}	15804^{+39889}_{-8875}

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 $A_{obs} \gg 1.0$

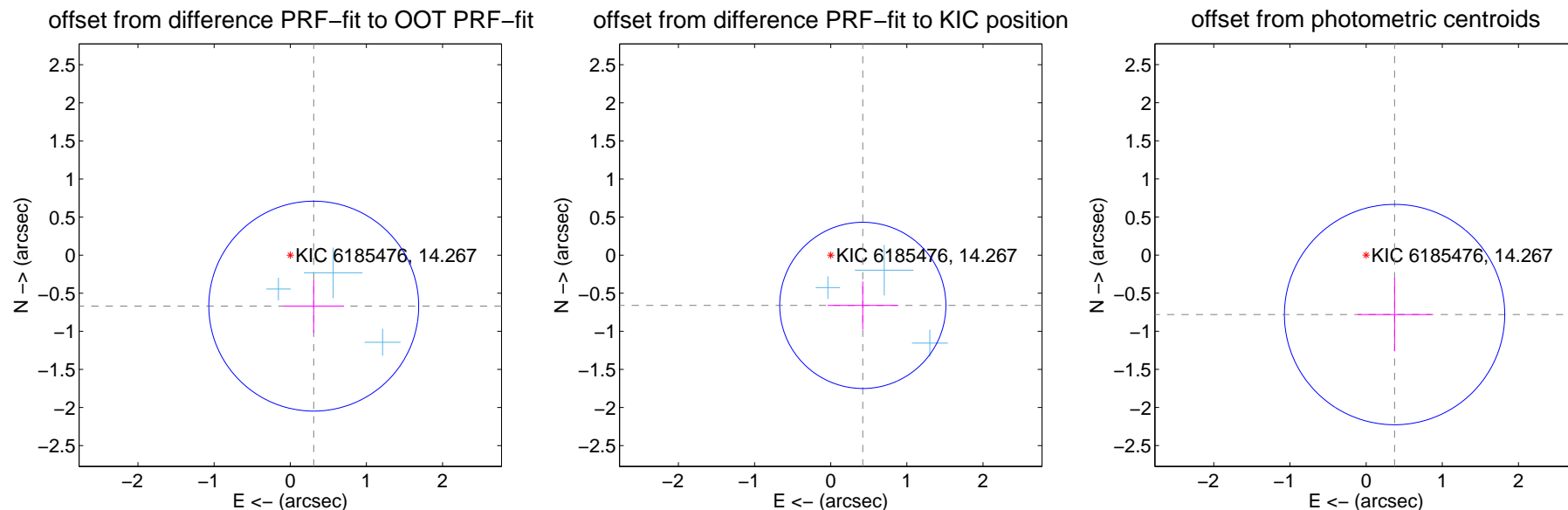
DV Centroid Data

Supplemental centroid analysis for 006185476-02. Kepler magnitude: 14.27. Transit SNR 20.06

There are 3 quarters with good PRF difference image offsets

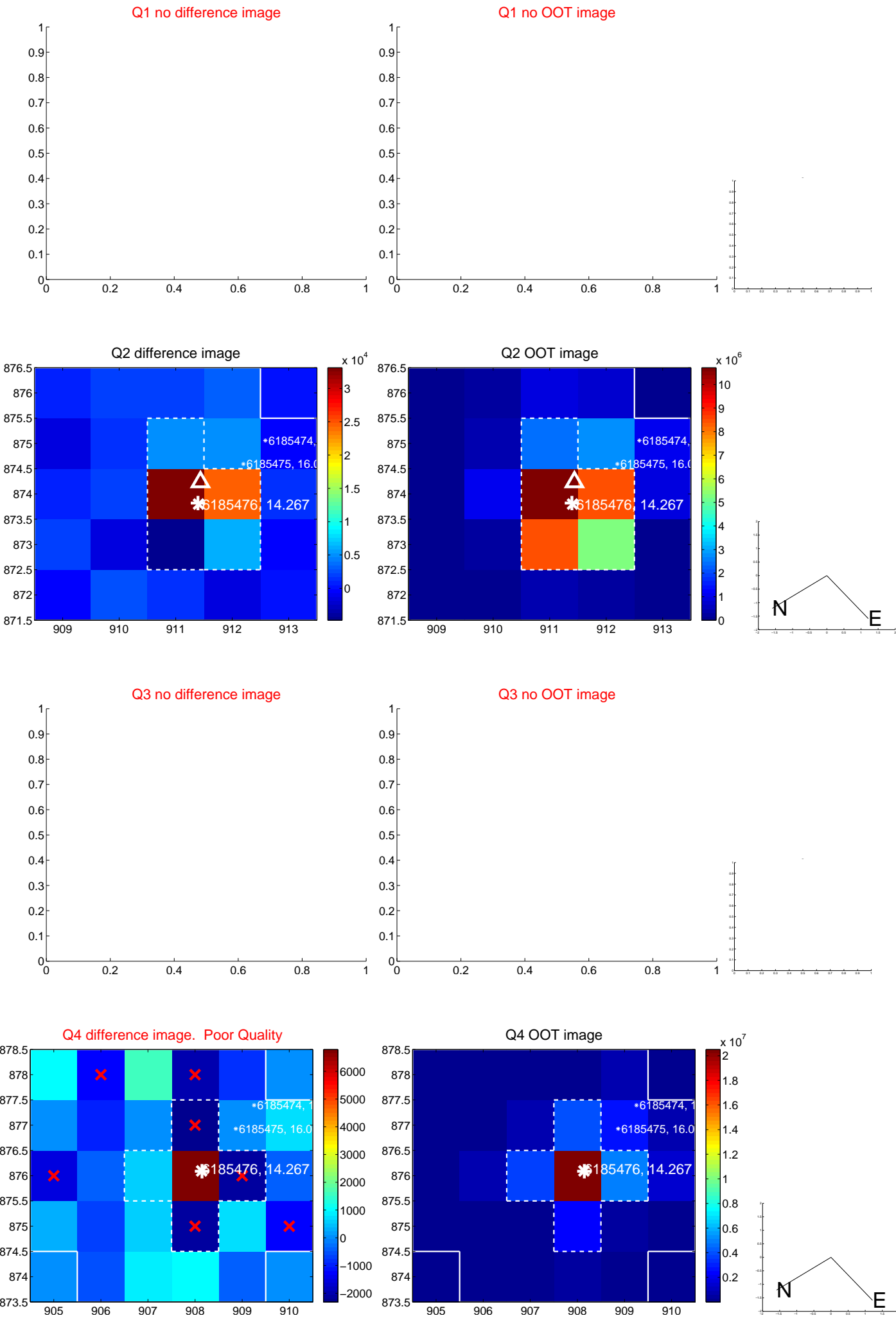
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.737 ± 0.459	1.60	-0.309 ± 0.397	-0.670 ± 0.350
PRF-fit source offset from KIC position	0.783 ± 0.364	2.15	-0.421 ± 0.461	-0.660 ± 0.315
photometric centroid source offset	0.87 ± 0.48	1.80	-0.37 ± 0.48	-0.78 ± 0.48

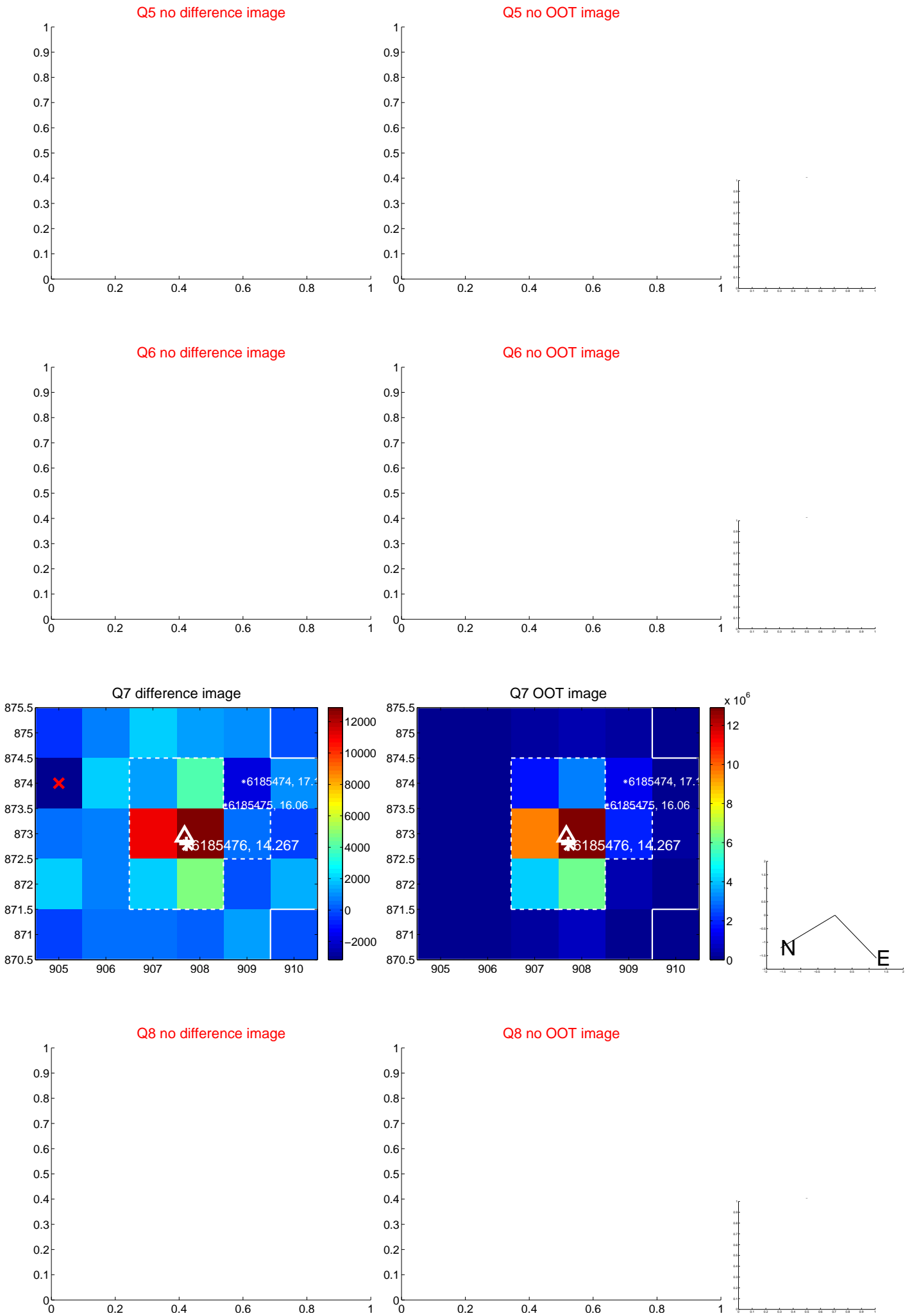


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

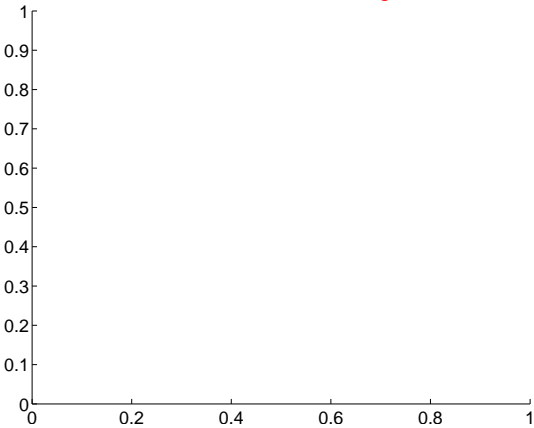


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

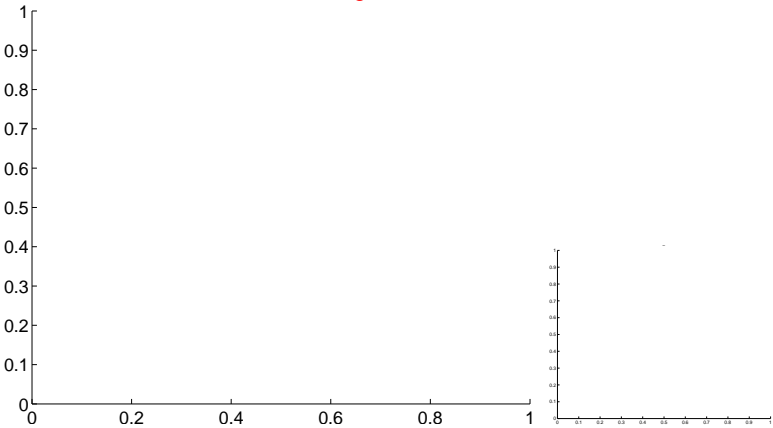


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

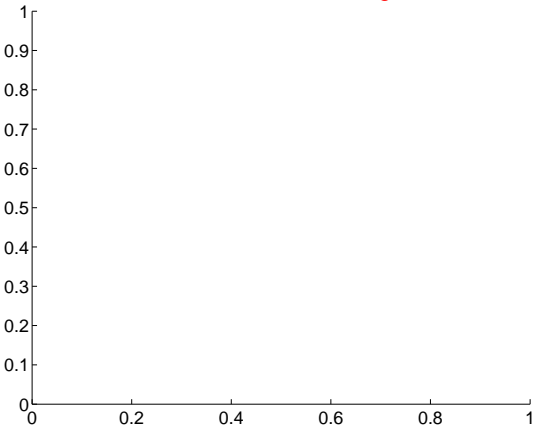
Q13 no difference image



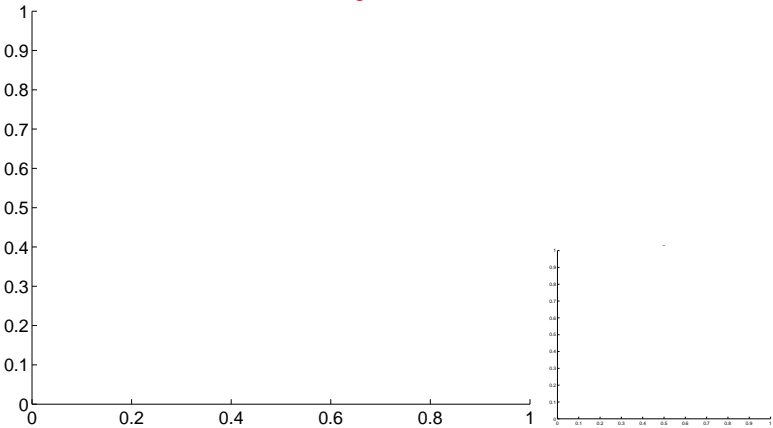
Q13 no OOT image



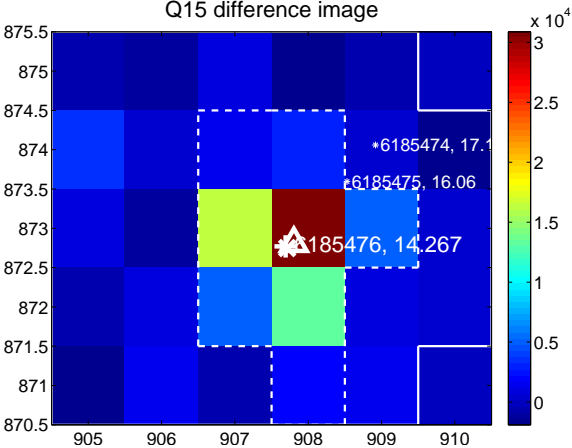
Q14 no difference image



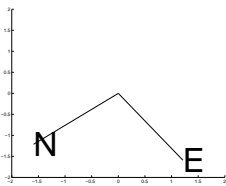
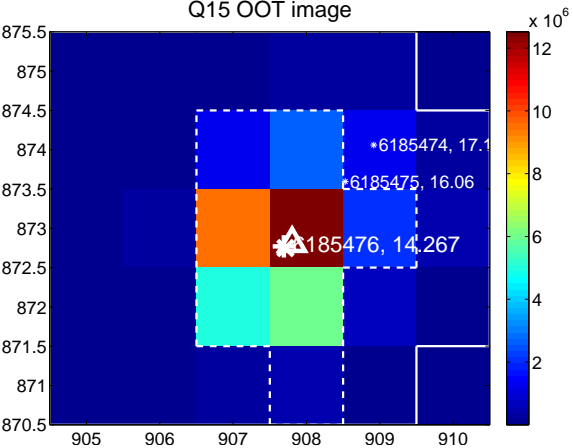
Q14 no OOT image



Q15 difference image



Q15 OOT image



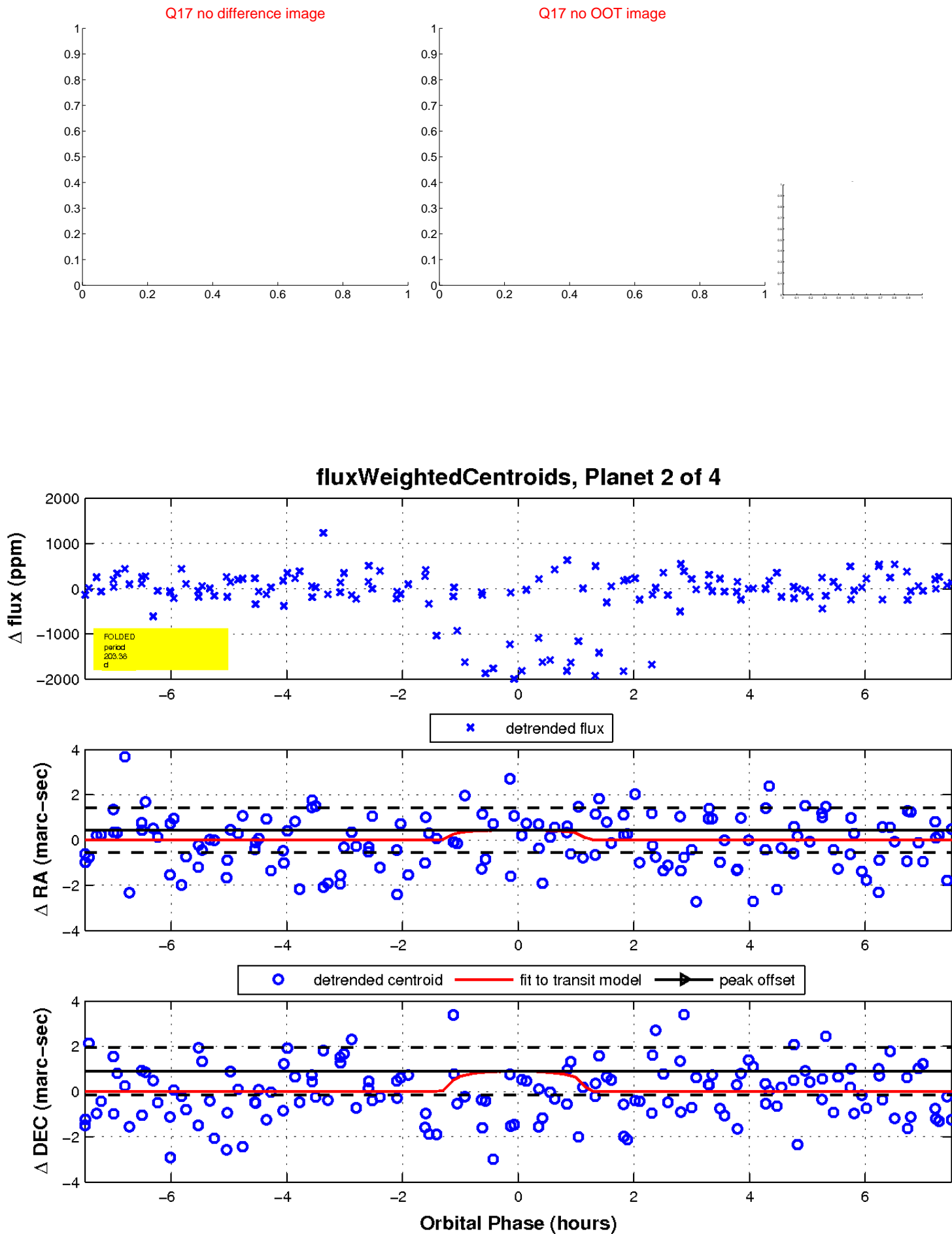
Q16 no difference image



Q16 no OOT image

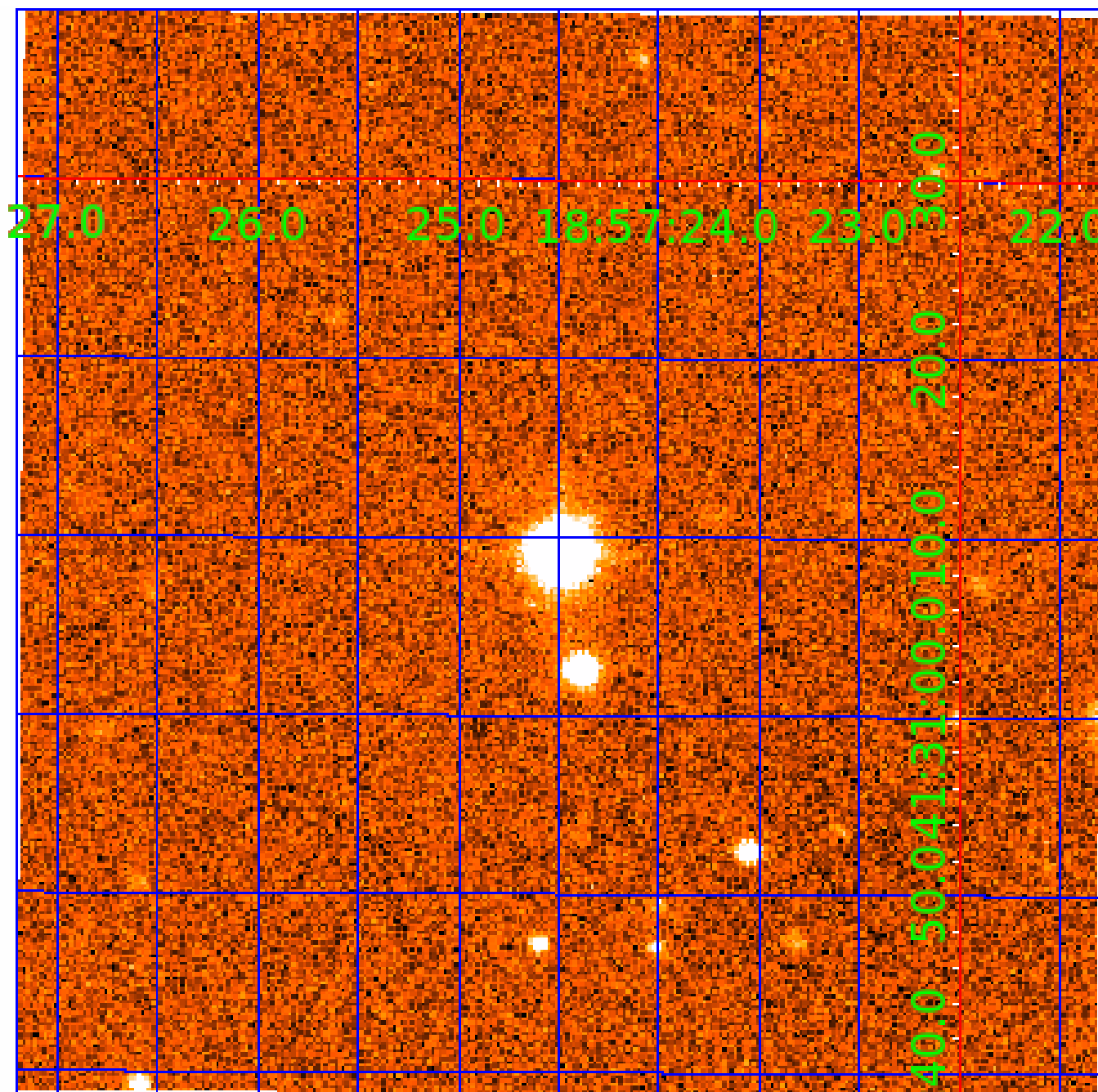


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006185476

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})
006185476-01	OBS	No	17.709372	135.845513	199.2	5.770	29.0	8.5	0.57	4094	1.68	6.60
006185476-02	OBS	No	203.379288	224.851037	1757.6	2.514	22.7	20.1	0.57	4094	2.53	0.26
006185476-03	OBS	No	215.142669	171.913823	1892.5	3.122	23.0	24.9	0.57	4094	2.47	0.24
006185476-04	OBS	No	283.032278	154.281260	2056.2	3.776	19.7	20.7	0.57	4094	3.24	0.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006185476-01	OBS	FP	0.00	1	0	0	0	LPP_DV
006185476-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV
006185476-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006185476-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—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.

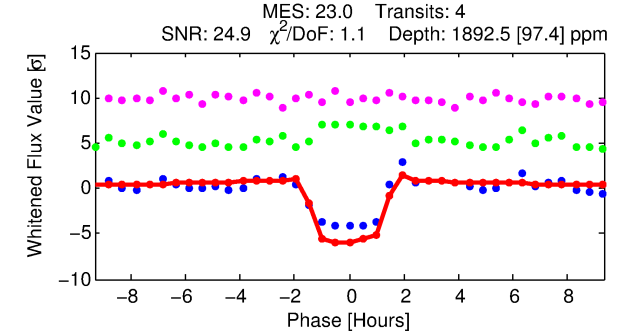
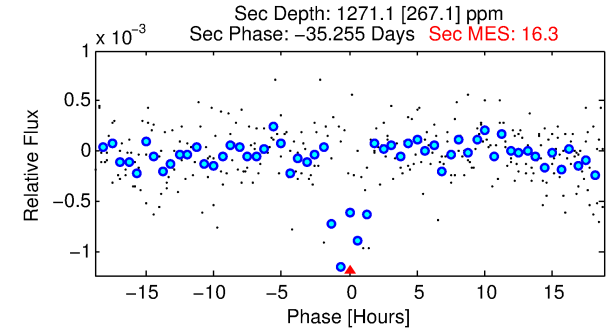
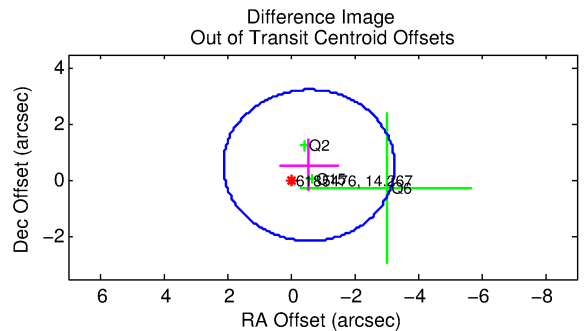
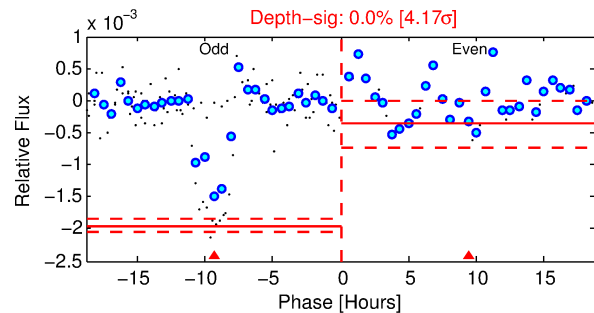
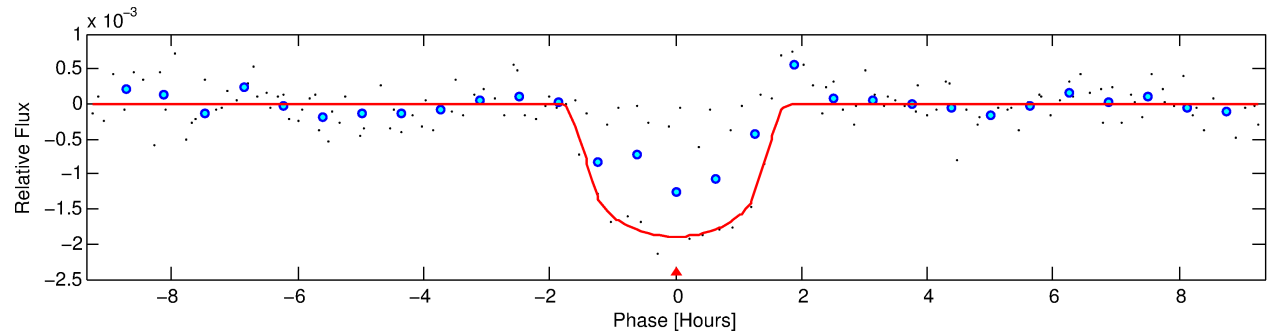
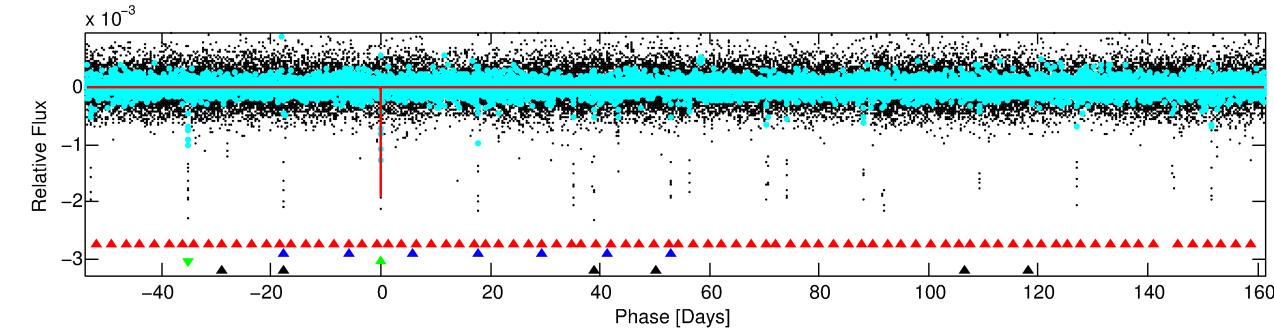
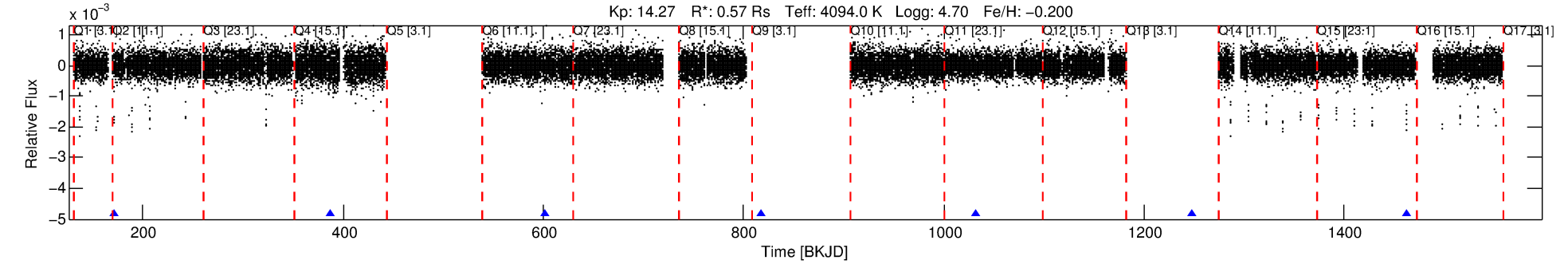
Ephemeris Match Information For 006185476-03

No Significant Match Found

DV One-Page Summary

KIC: 6185476 Candidate: 3 of 4 Period: 215.143 d
KOI: K00227 Corr: No Ephemeris Match

Kp: 14.27 R*: 0.57 Rs Teff: 4094.0 K Logg: 4.70 Fe/H: -0.200



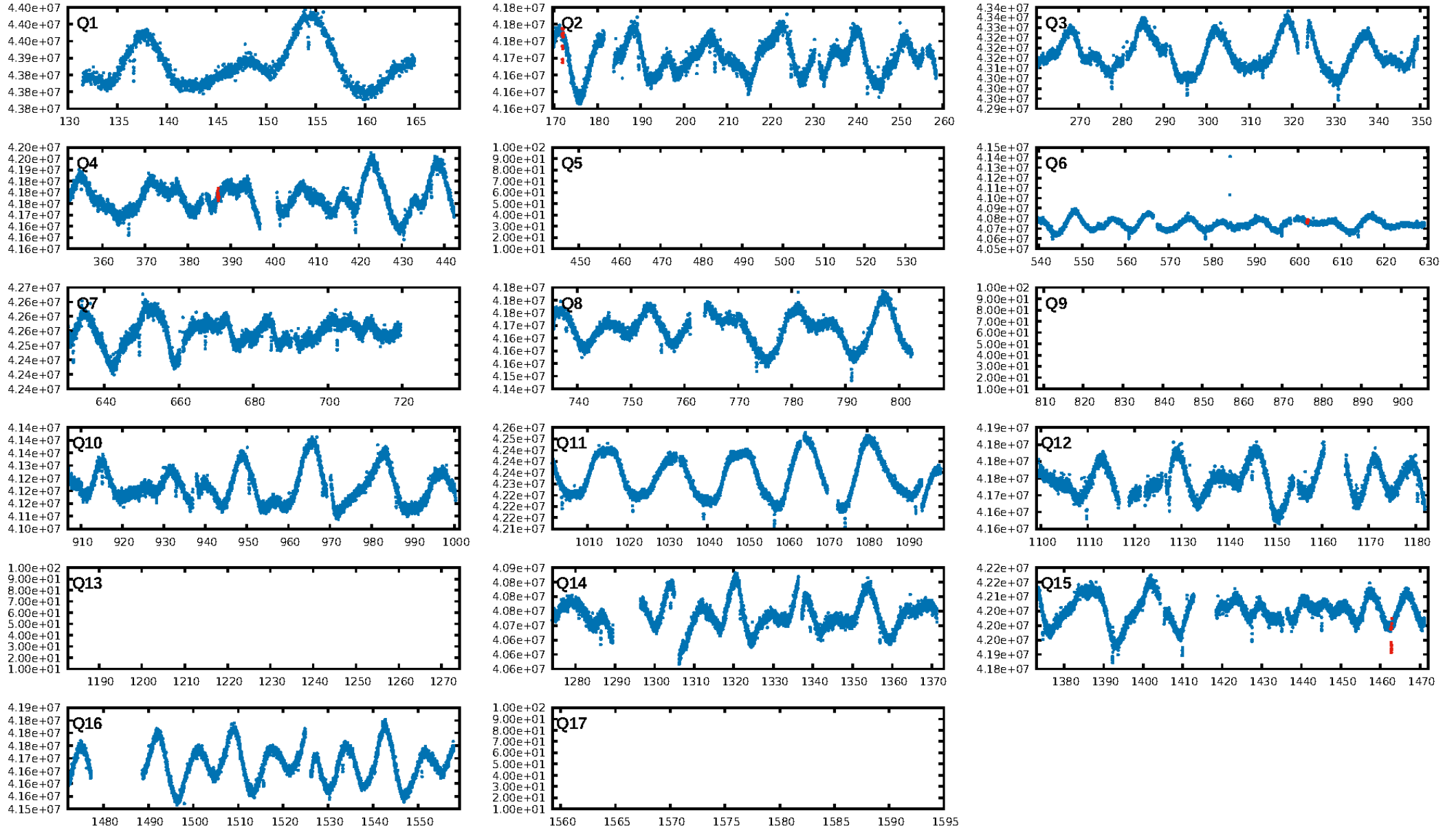
DV Fit Results:

Period = 215.14267 [0.00065] d
Epoch = 171.9138 [0.0020] BKJD
Rp/R* = 0.0397 [0.0255]
a/R* = 515.35 [1222.58]
b = 0.35 [6.04]
Seff = 0.24 [0.02]
Teq = 178 [5] K
Rp = 2.47 [1.59] Re
a = 0.5892 [0.0246] AU
Ag = 39749.10 [51846.41] [0.77σ]
Teffp = 3882 [1267] K [2.92σ]

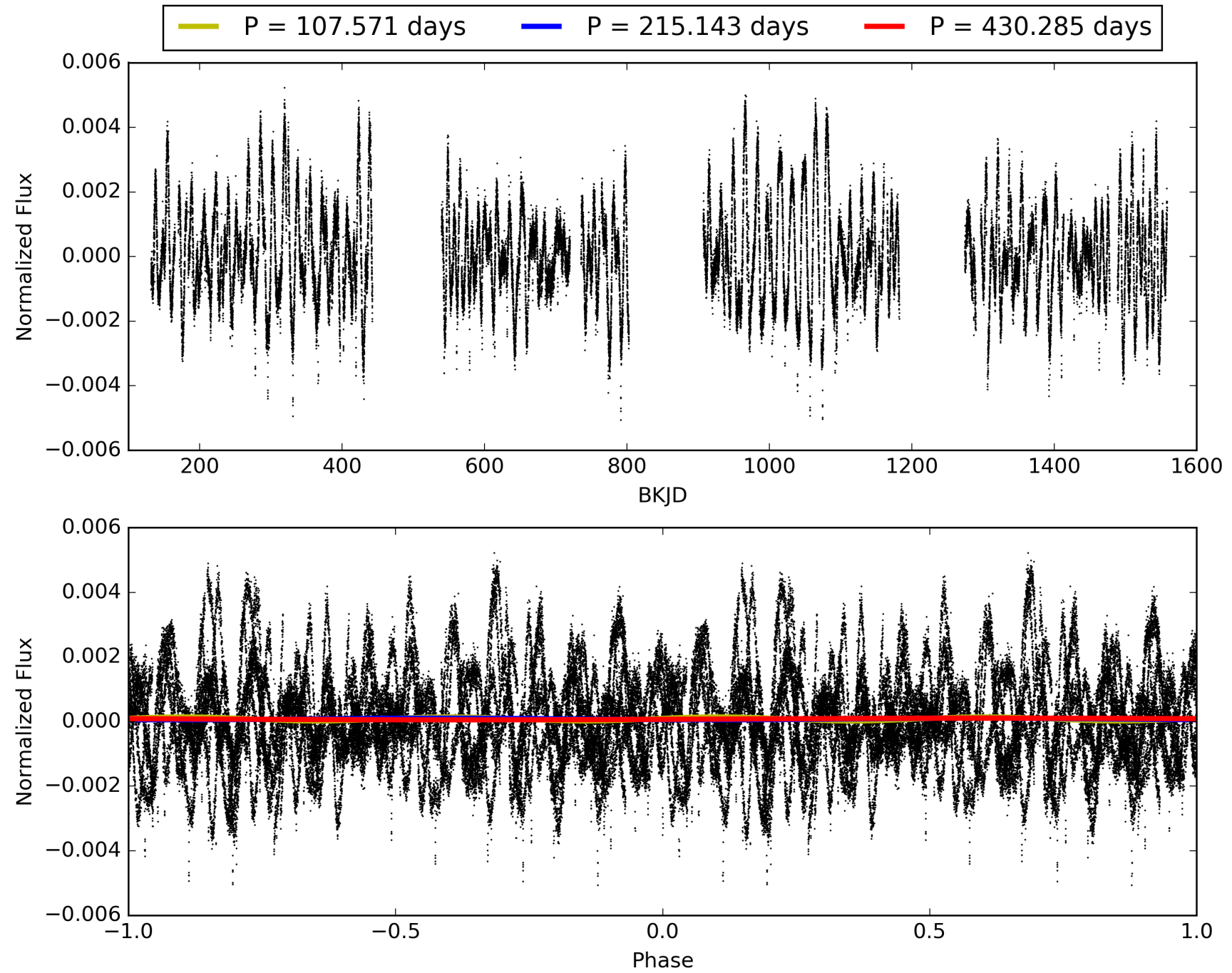
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [70.43σ]
LongPeriod-sig: 100.0% [332.54σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 91.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.696
Centroid-sig: 35.0%
Centroid-so: 0.645 arcsec [1.38σ]
OotOffset-rm: 0.794 arcsec [0.88σ]
KicOffset-rm: 0.893 arcsec [1.00σ]
OotOffset-st: 2/1/0/0 [3]
KicOffset-st: 2/1/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 006185476-03, PDC Light Curves

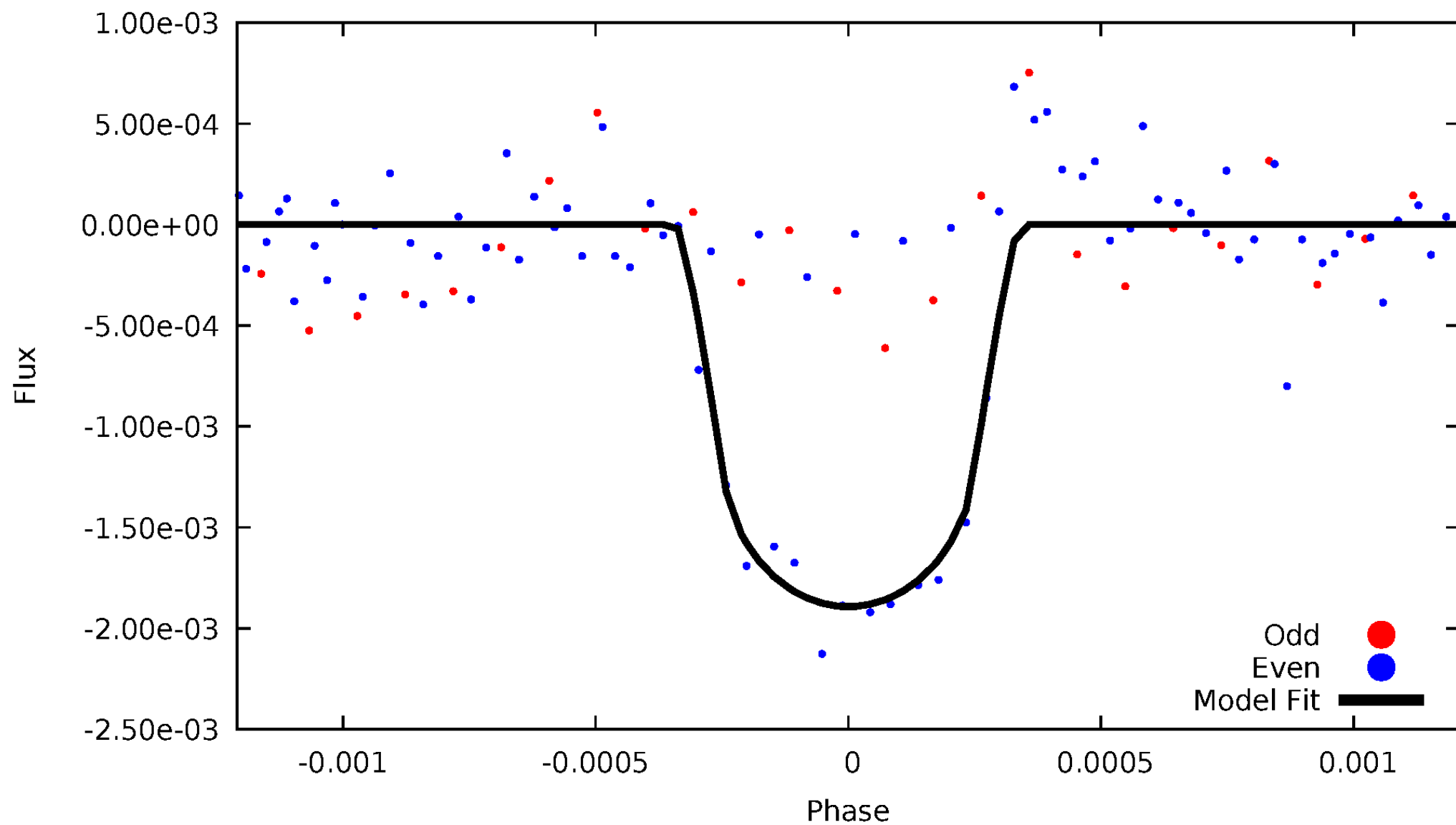


TCE 006185476-03



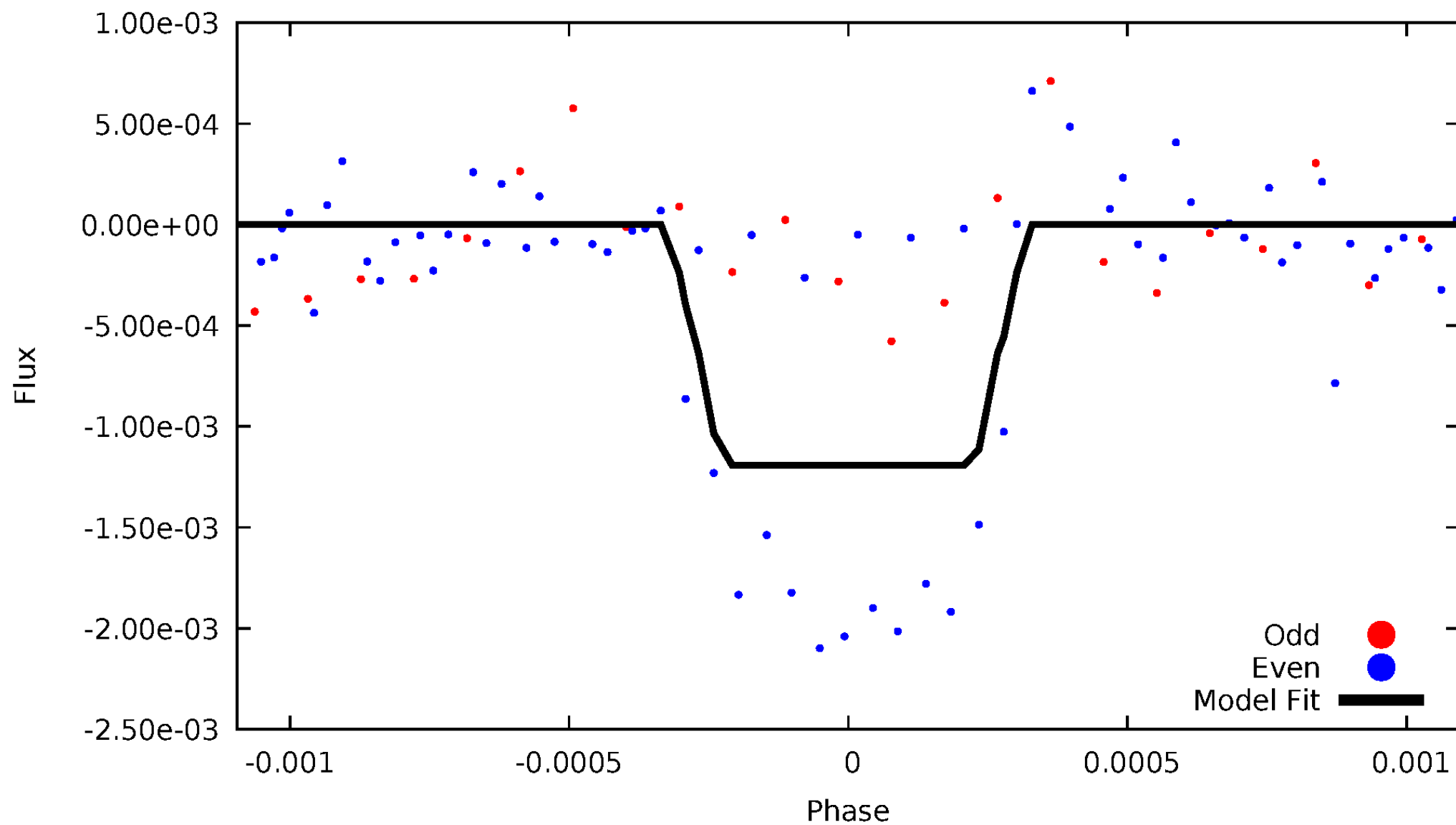
DV Odd/Even

TCE 006185476-03



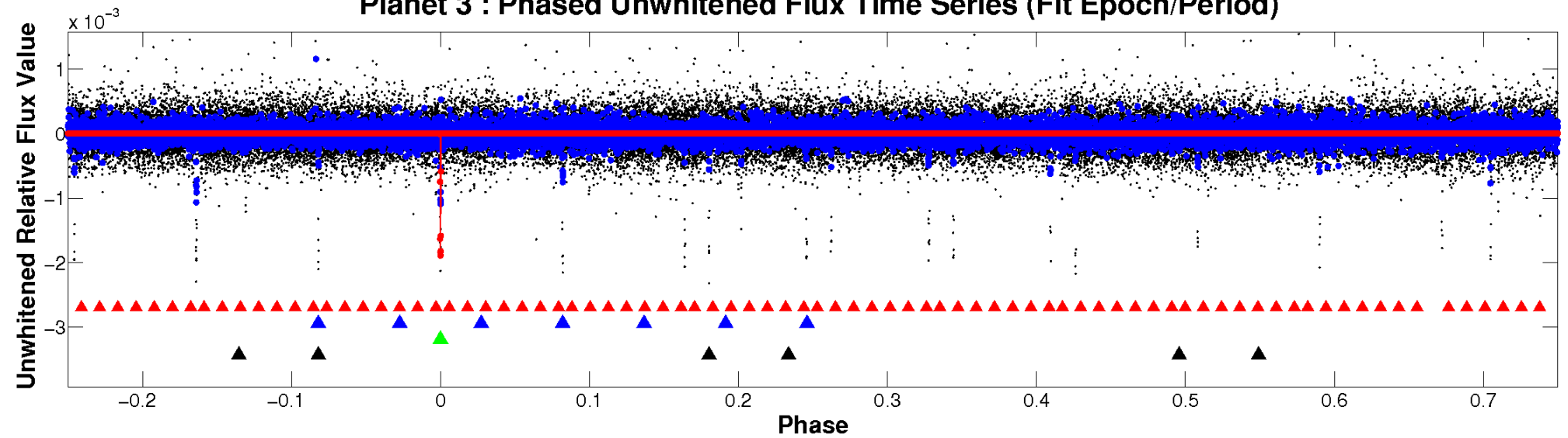
ALT Odd/Even

TCE 006185476-03

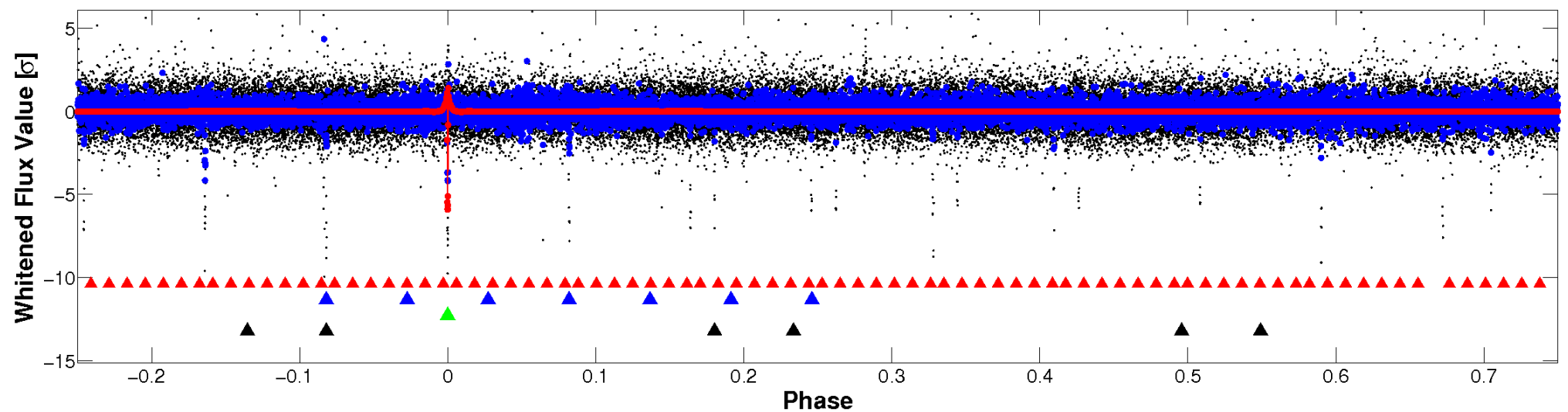


Non-Whitened Vs. Whitened Light Curve

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



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



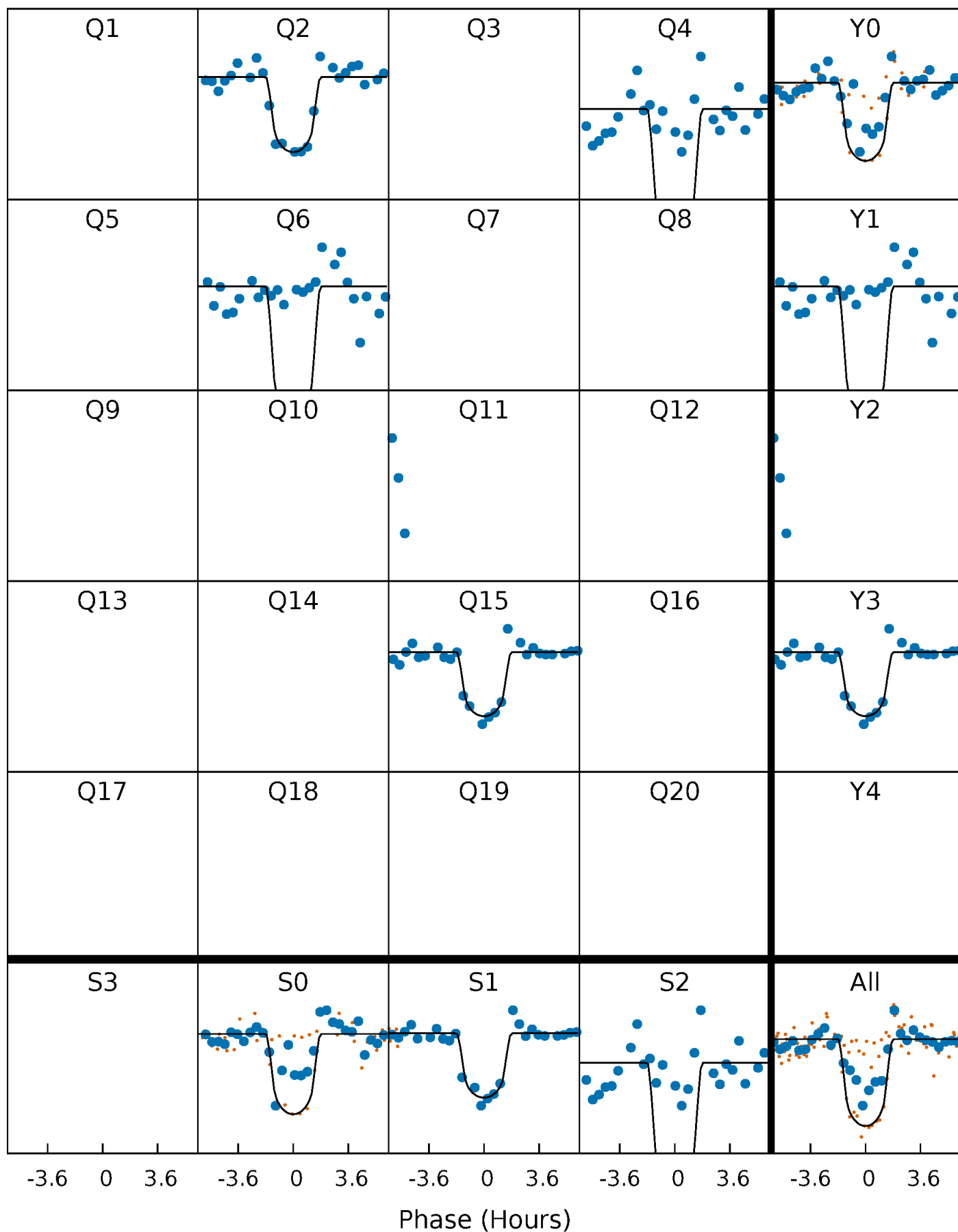
PDC Quarter-Phased Transit Curves

TCE 006185476-03 $P=215.142669$ Days $T_0=171.913824$ (BKJD)



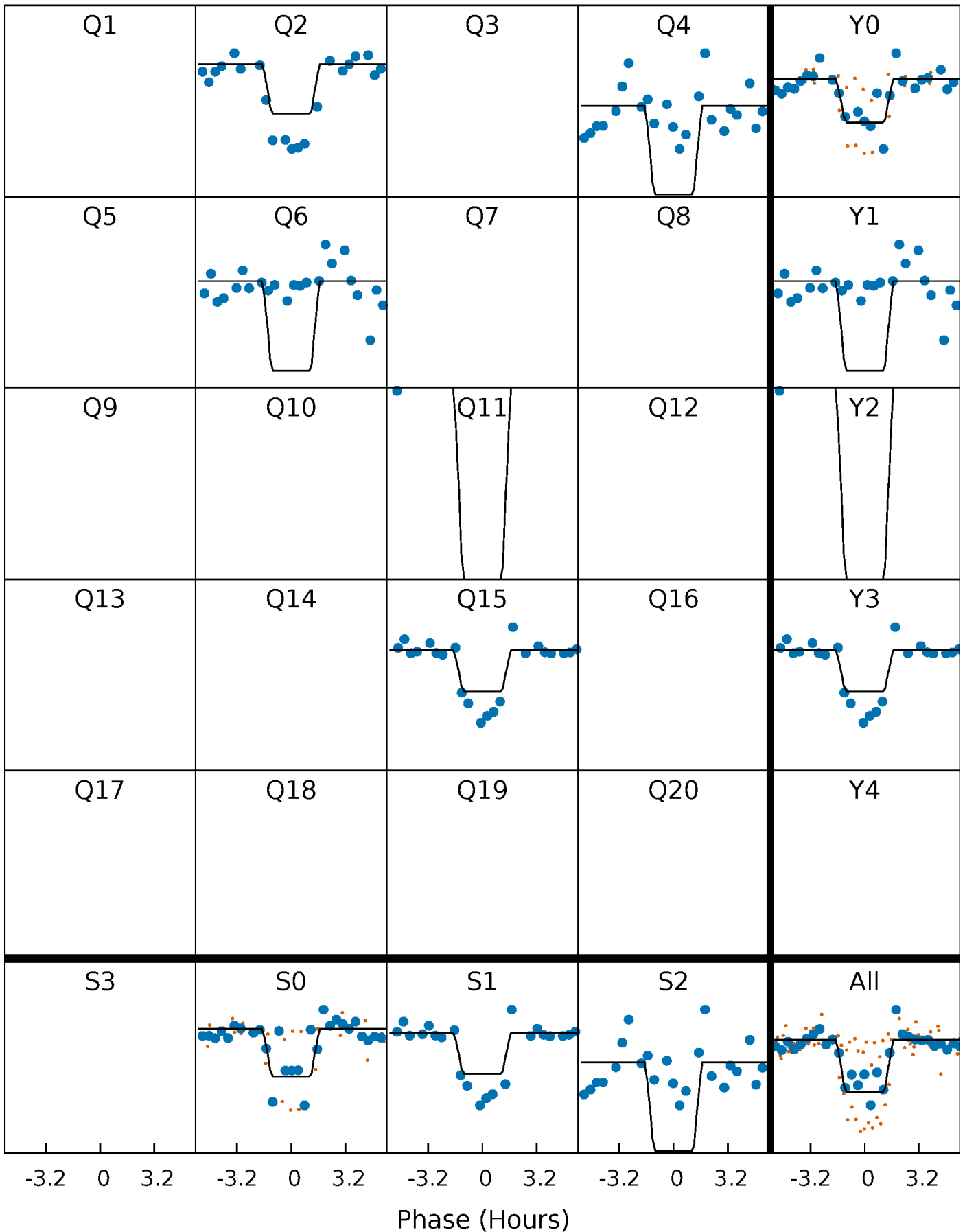
DV Quarter-Phased Transit Curves

TCE 006185476-03 P=215.142669 Days $T_0=171.913824$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

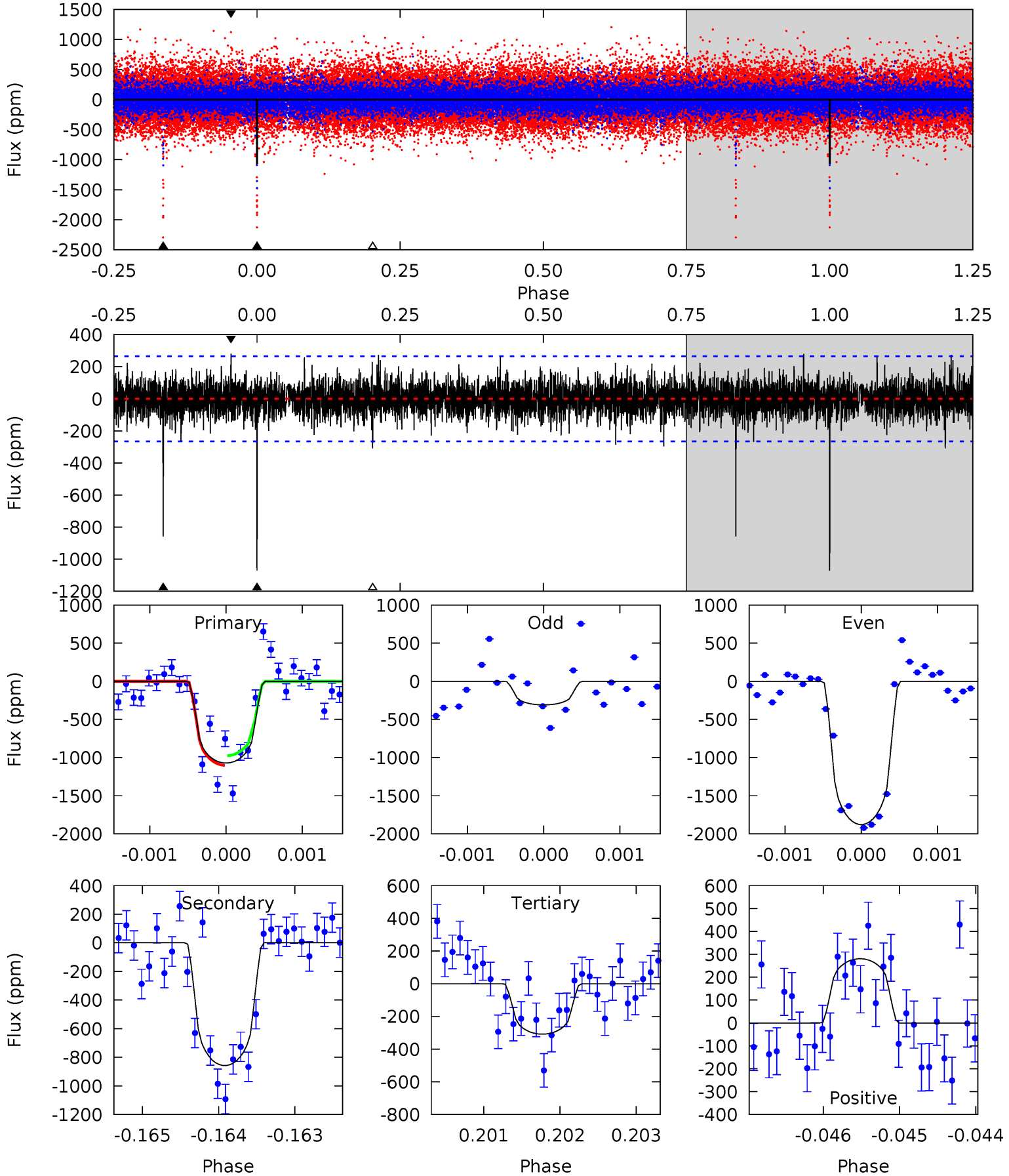
TCE 006185476-03 $P=215.142814$ Days $T_0=171.912777$ (BKJD)



DV Model-Shift Uniqueness Test

006185476-03, P = 215.142669 Days, E = 171.913824 Days

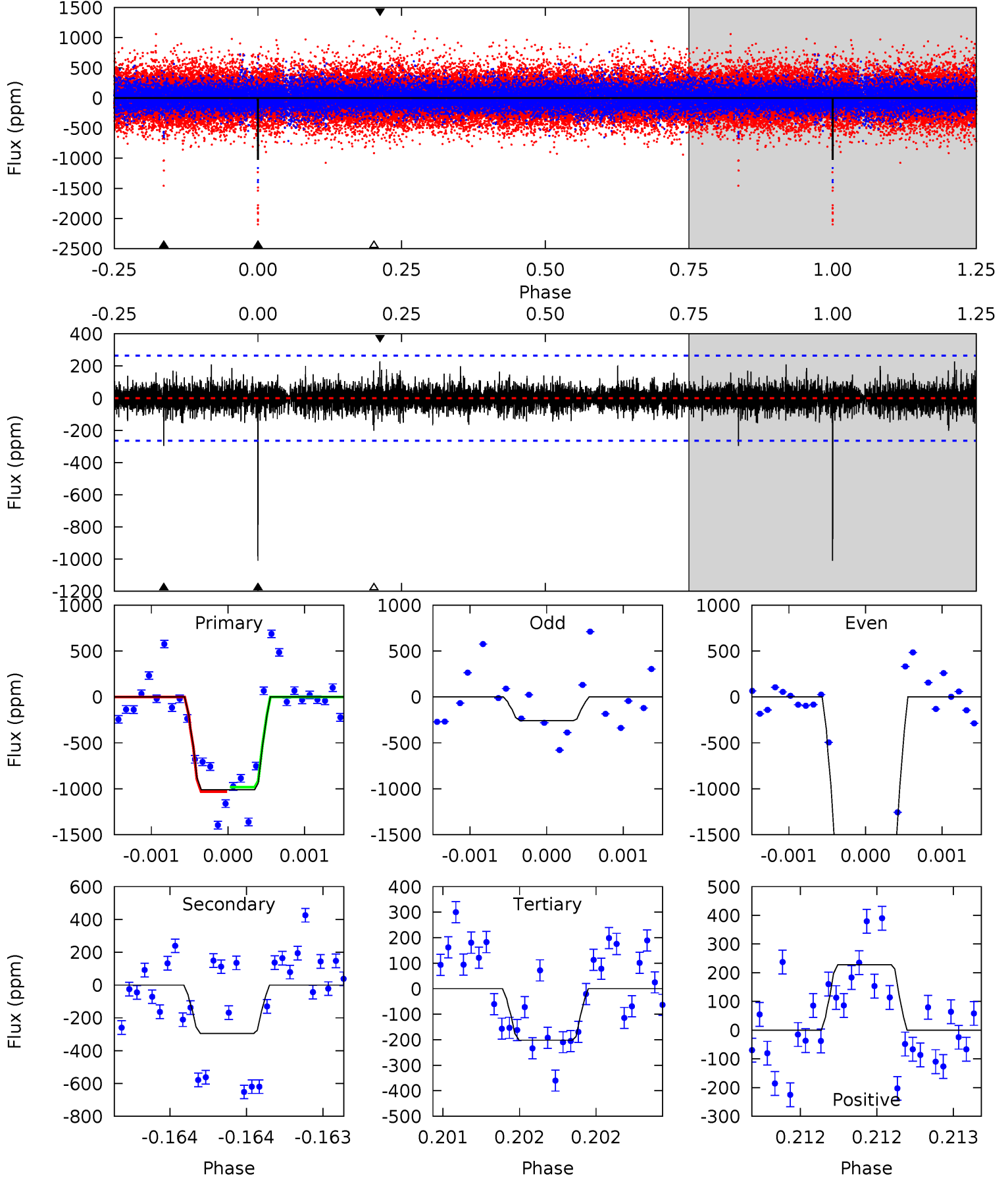
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	17.8	6.42	5.83	5.52	3.39	1.48	15.8	16.4	11.4	12.0	12.8	0.95	0.21	1.28



Alt Model-Shift Uniqueness Test

006185476-03, P = 215.142814 Days, E = 171.912777 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	6.19	4.23	4.79	5.54	3.43	1.00	16.9	16.4	1.96	1.41	13.1	1.01	0.18	0.51



Stellar Parameters For KIC 006185476

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4094^{+81}_{-90}	$4.695^{+0.024}_{-0.027}$	$-0.200^{+0.150}_{-0.150}$	$0.571^{+0.031}_{-0.031}$	$0.587^{+0.029}_{-0.038}$	$4.439^{+0.543}_{-0.438}$
	+2%/-2%	+1%/-1%	+75%/-75%	+5%/-5%	+5%/-6%	+12%/-10%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 006185476-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-858 ± 48	$2.62^{+1.56}_{-1.52}$	248^{+6}_{-6}	3624^{+1295}_{-487}	$24150^{+108323}_{-14494}$
Alt.	-295 ± 48	$2.35^{+1.50}_{-1.27}$	248^{+6}_{-7}	3157^{+992}_{-404}	9795^{+41426}_{-6112}

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

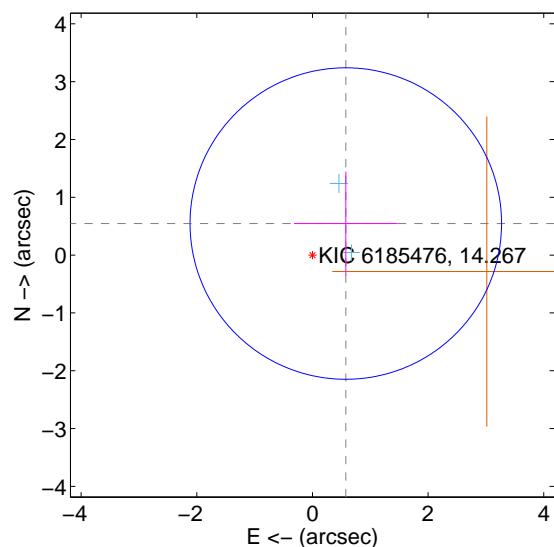
Supplemental centroid analysis for 006185476-03. Kepler magnitude: 14.27. Transit SNR 24.92

There are 2 quarters with good PRF difference image offsets

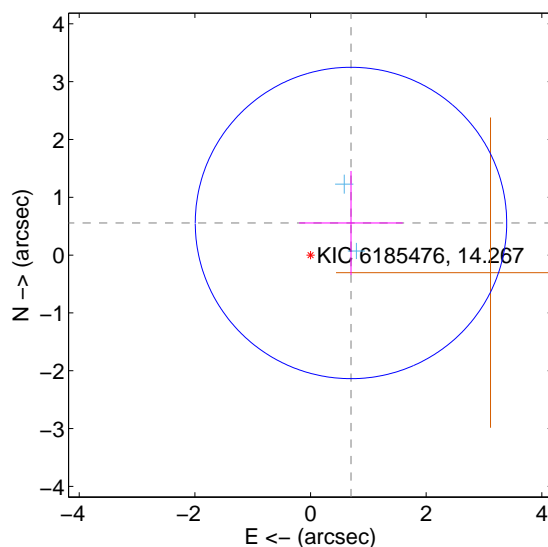
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.794 ± 0.898	0.88	-0.577 ± 0.896	0.546 ± 0.899
PRF-fit source offset from KIC position	0.893 ± 0.897	1.00	-0.699 ± 0.896	0.556 ± 0.899
photometric centroid source offset	0.64 ± 0.47	1.38	-0.21 ± 0.47	-0.61 ± 0.47

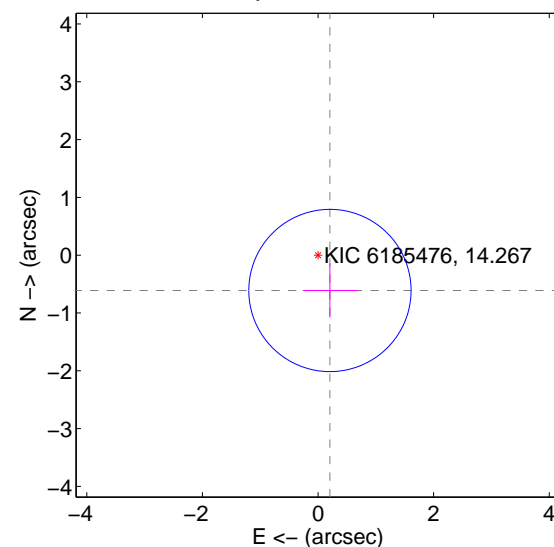
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

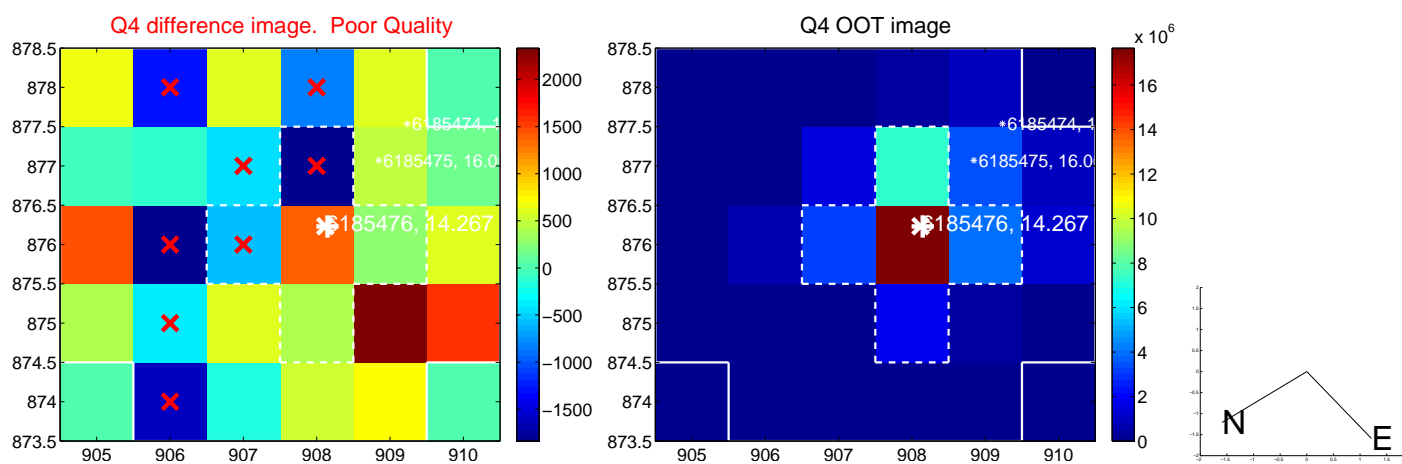
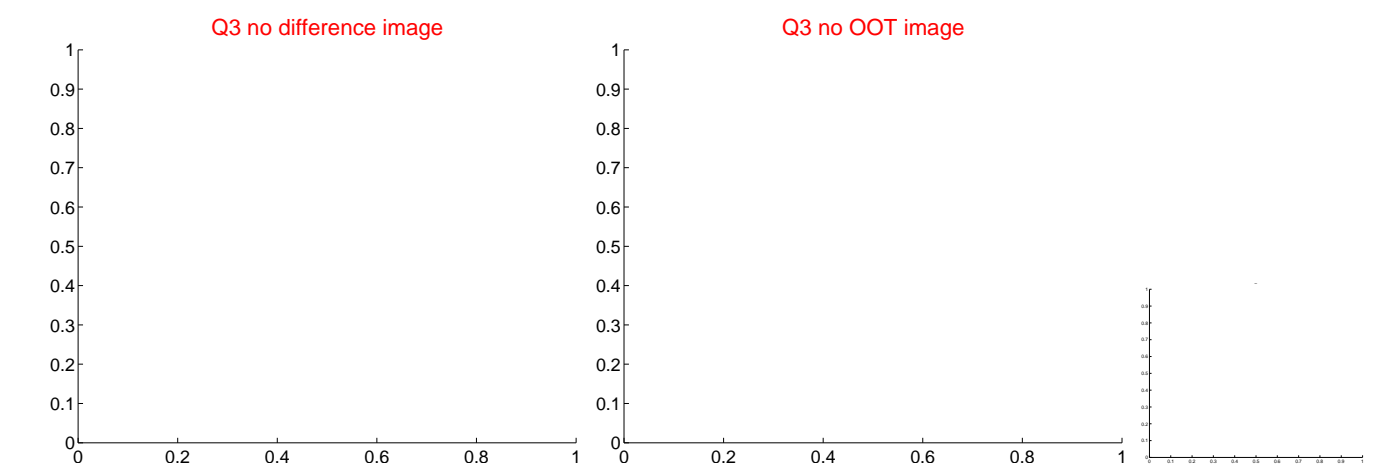
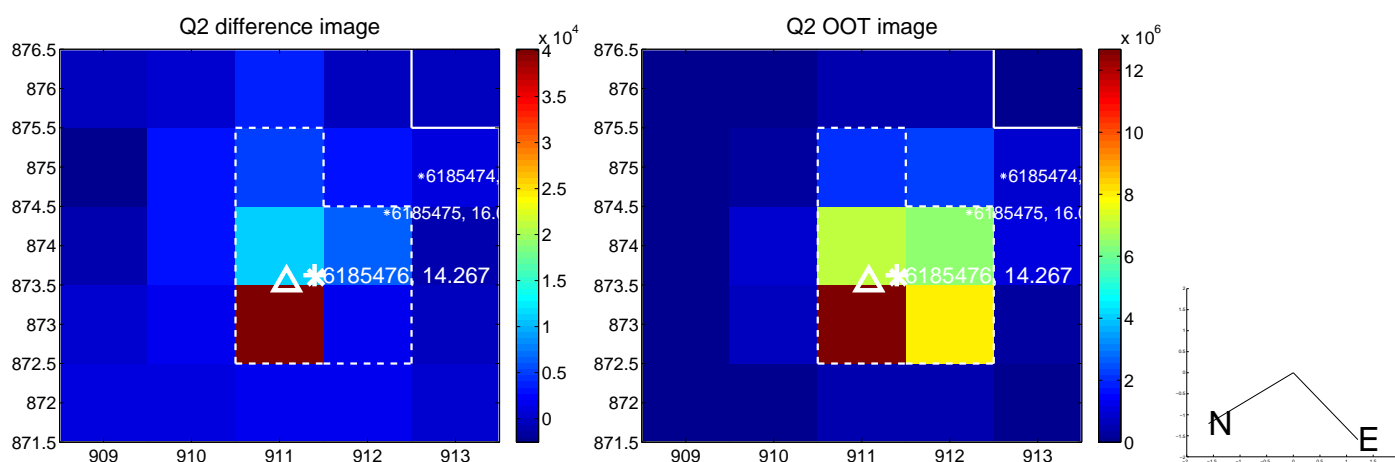
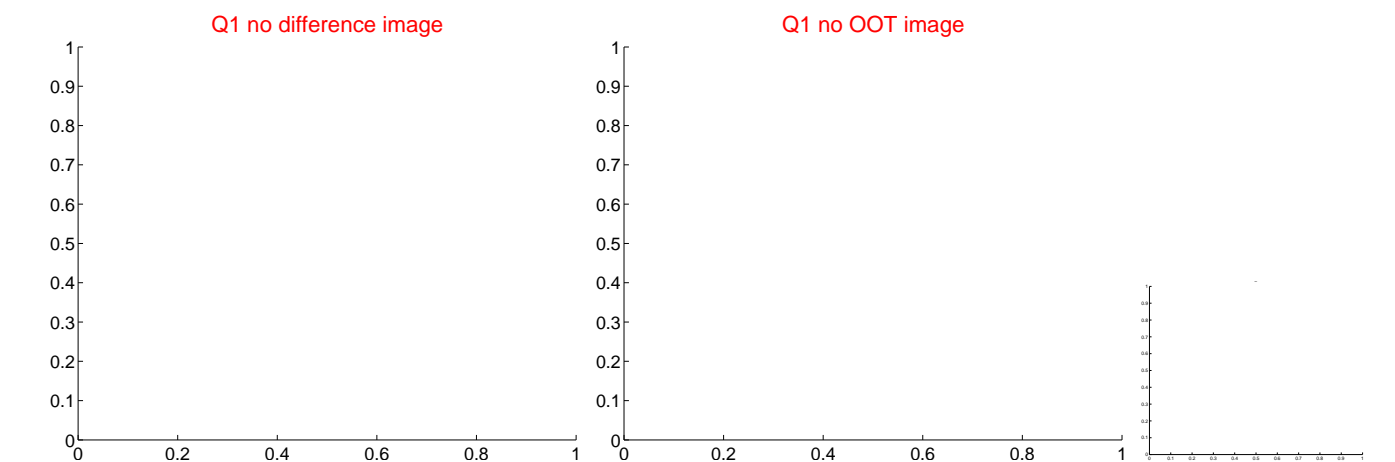


offset from photometric centroids

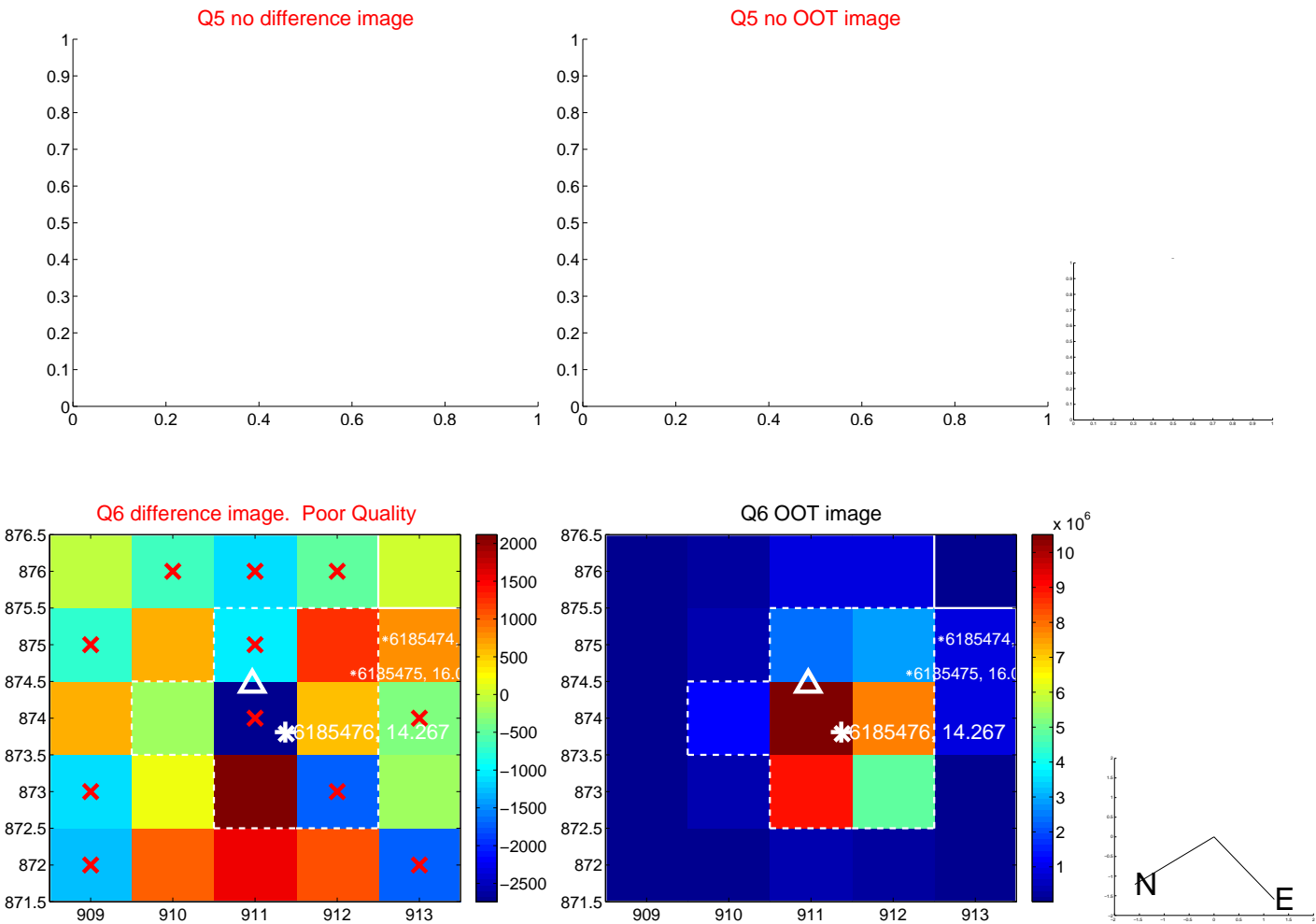


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



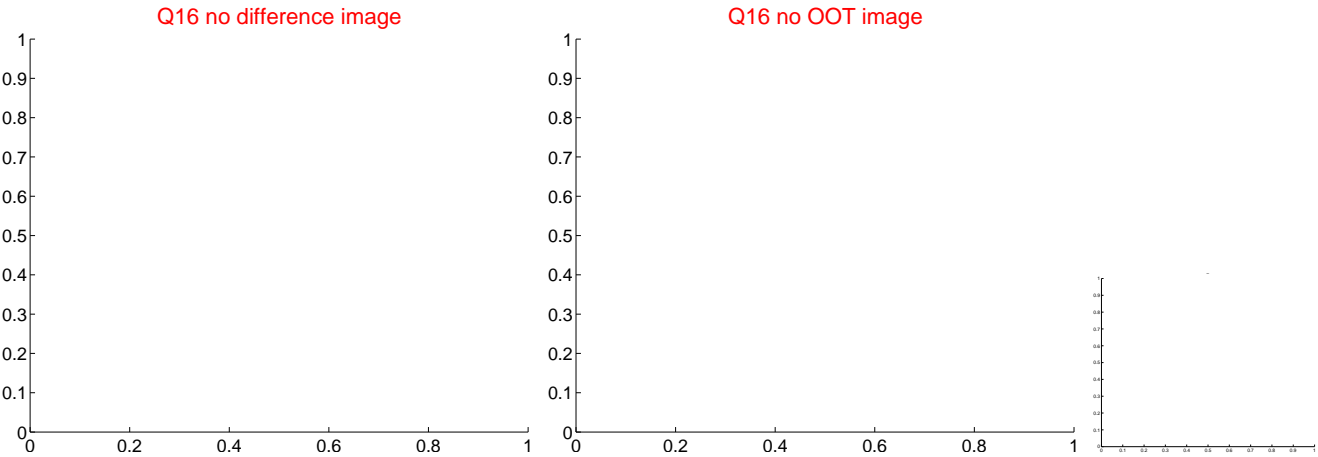
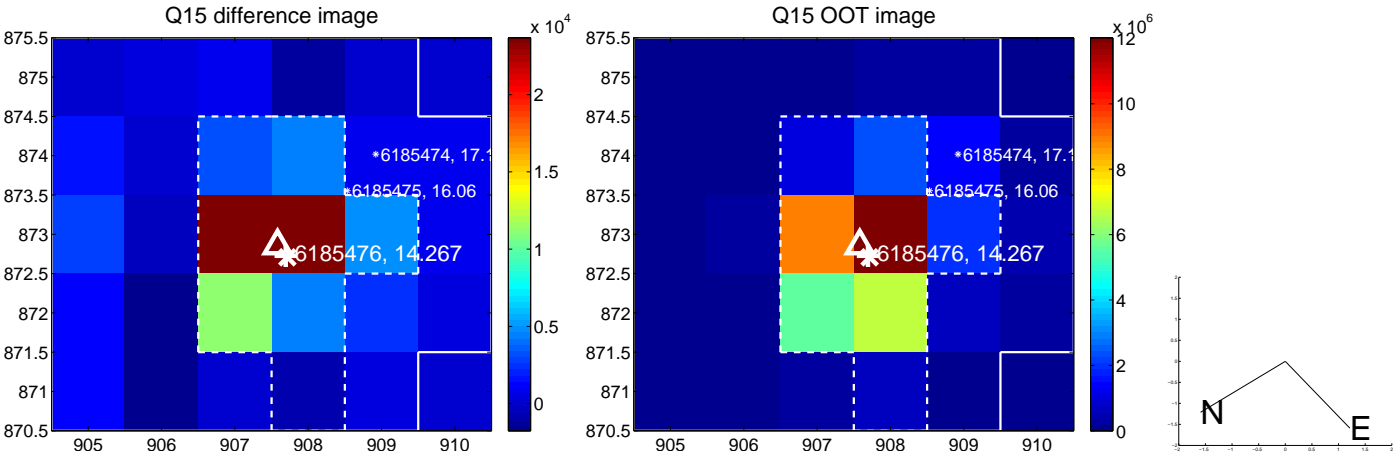
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



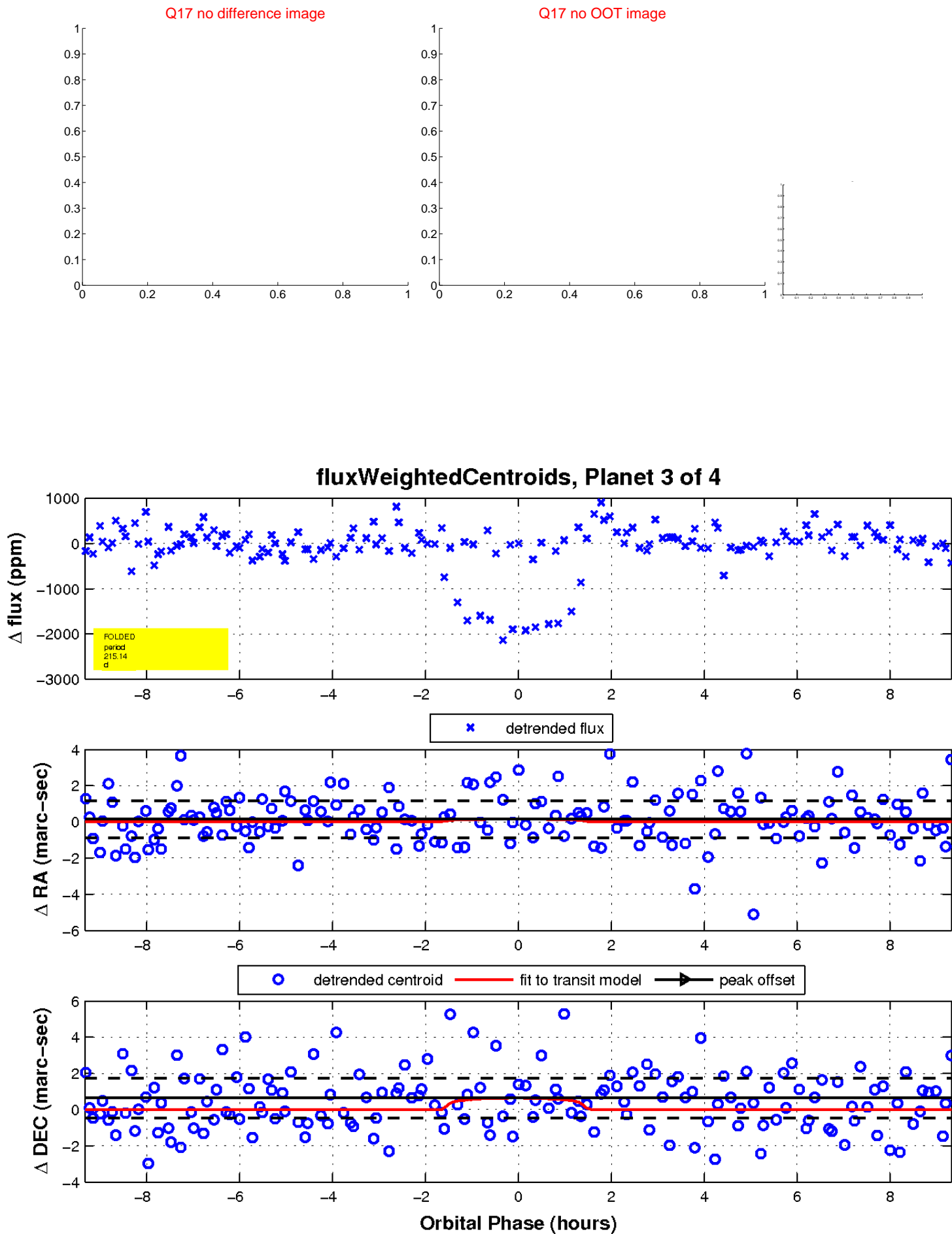
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

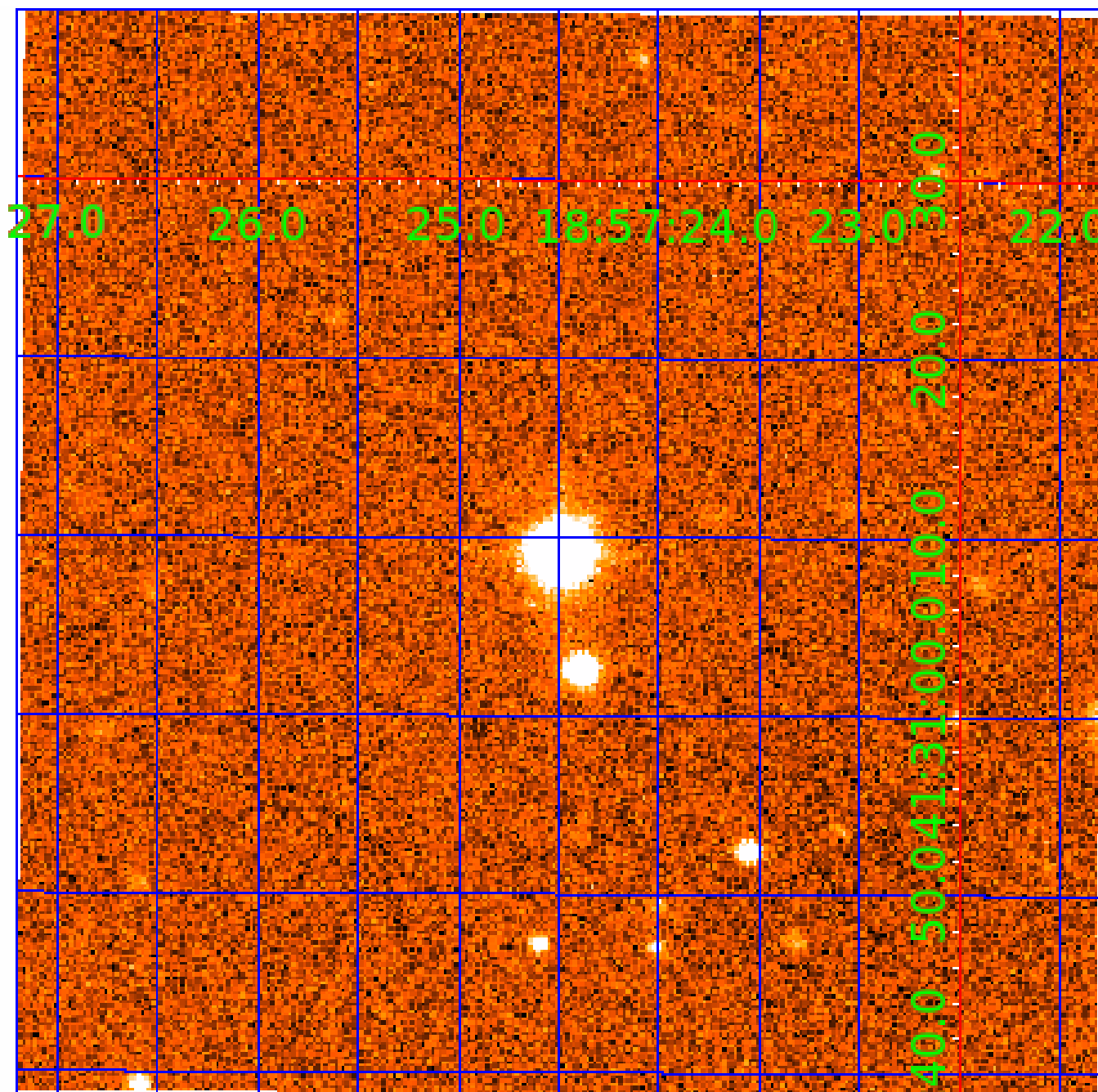


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006185476

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})
006185476-01	OBS	No	17.709372	135.845513	199.2	5.770	29.0	8.5	0.57	4094	1.68	6.60
006185476-02	OBS	No	203.379288	224.851037	1757.6	2.514	22.7	20.1	0.57	4094	2.53	0.26
006185476-03	OBS	No	215.142669	171.913823	1892.5	3.122	23.0	24.9	0.57	4094	2.47	0.24
006185476-04	OBS	No	283.032278	154.281260	2056.2	3.776	19.7	20.7	0.57	4094	3.24	0.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006185476-01	OBS	FP	0.00	1	0	0	0	LPP_DV
006185476-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV
006185476-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006185476-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—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.

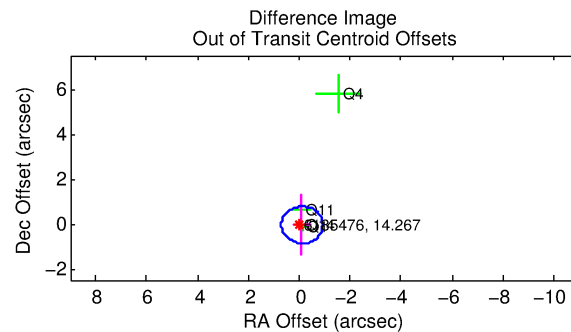
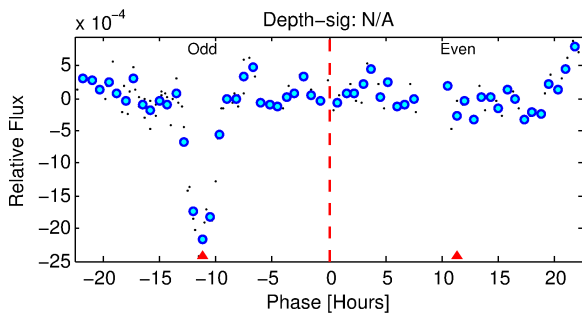
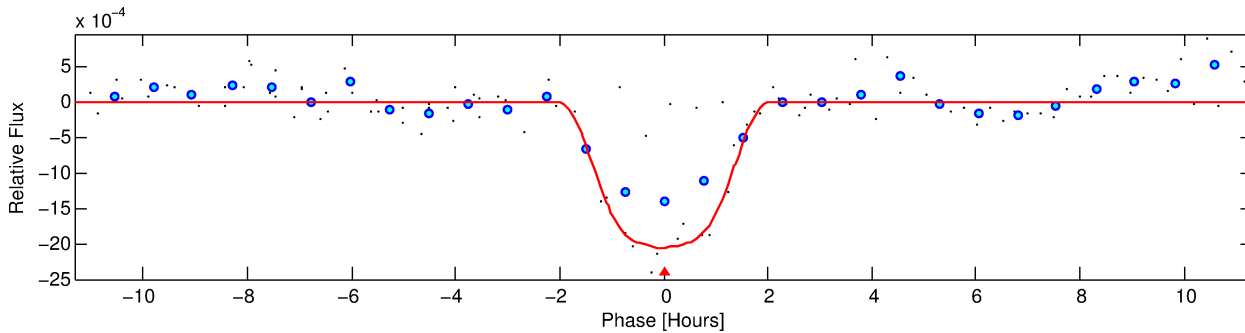
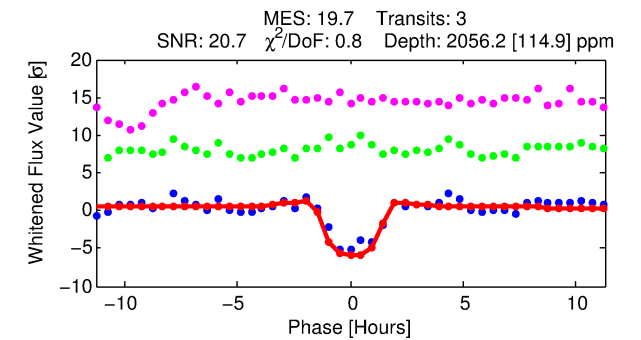
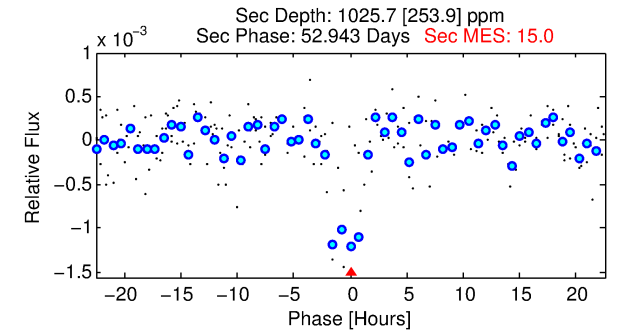
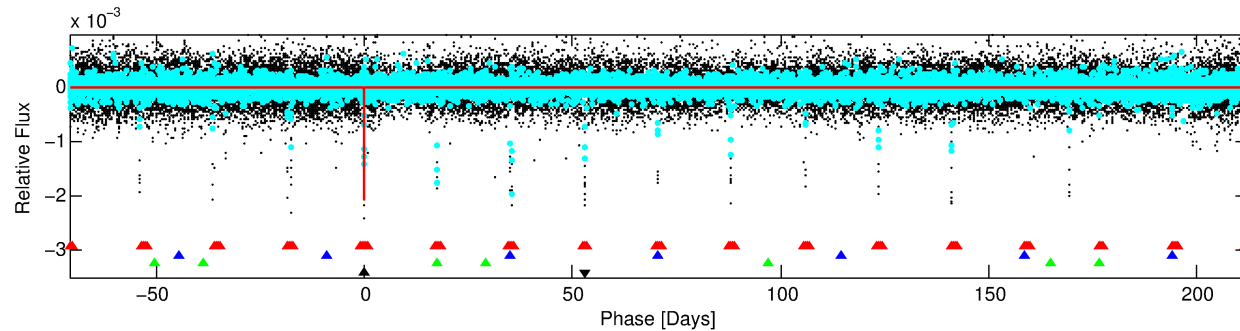
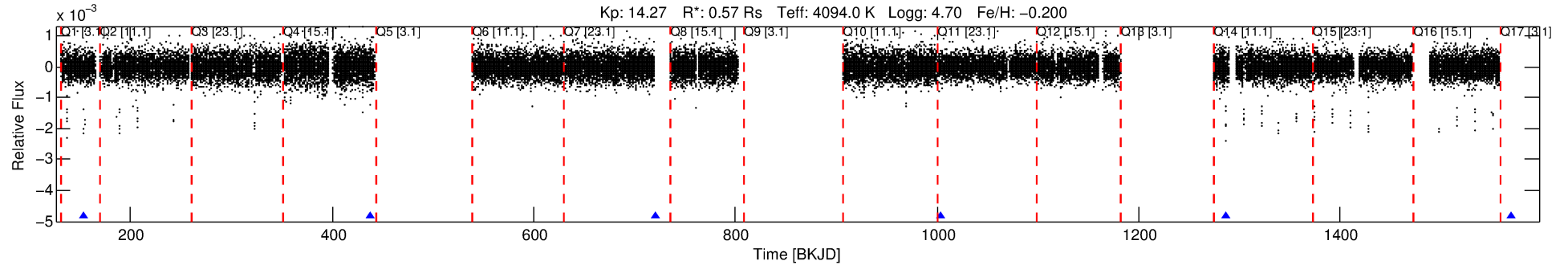
Ephemeris Match Information For 006185476-04

No Significant Match Found

DV One-Page Summary

KIC: 6185476 Candidate: 4 of 4 Period: 283.032 d
KOI: K00227 Corr: No Ephemeris Match

Kp: 14.27 R*: 0.57 Rs Teff: 4094.0 K Logg: 4.70 Fe/H: -0.200



DV Fit Results:

Period = 283.03228 [0.00108] d
Epoch = 154.2813 [0.0026] BKJD
Rp/R* = 0.0519 [0.0025]
a/R* = 284.40 [31.58]
b = 0.93 [0.02]
Seff = 0.16 [0.02]
Teq = 162 [4] K
Rp = 3.24 [0.23] Re
a = 0.7074 [0.0295] AU
Ag = 26958.21 [7309.16] [3.69σ]
Teffp = 3215 [225] K [13.58σ]

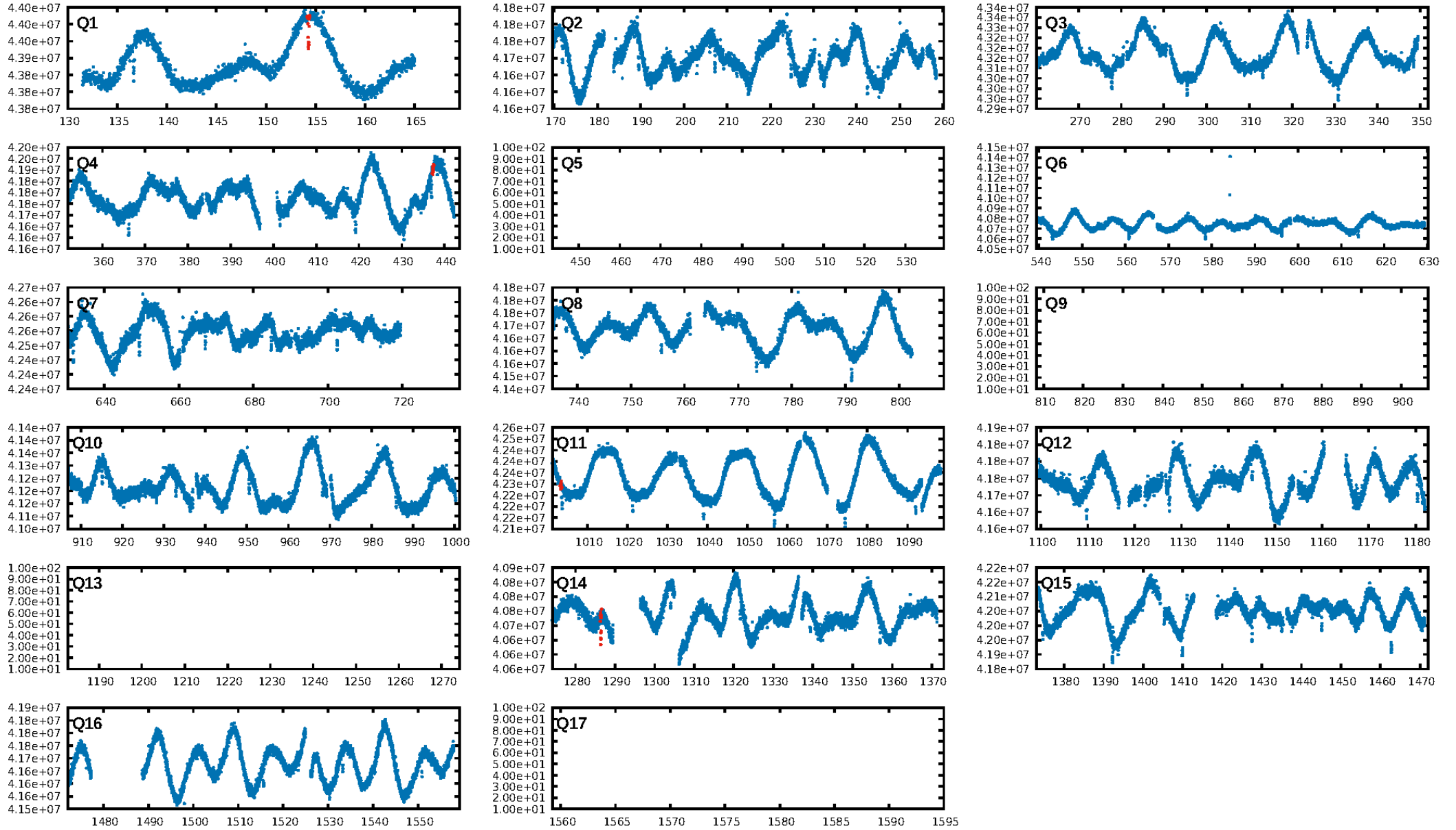
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [332.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.7%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -8.247
Centroid-sig: 63.3%
Centroid-so: 0.198 arcsec [0.49σ]
OotOffset-rm: 0.122 arcsec [0.45σ]
OotOffset-st: 1/1/1/1 [4]
KicOffset-rm: 0.286 arcsec [1.14σ]
KicOffset-st: 1/1/1/1 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 0.50 [2/4]

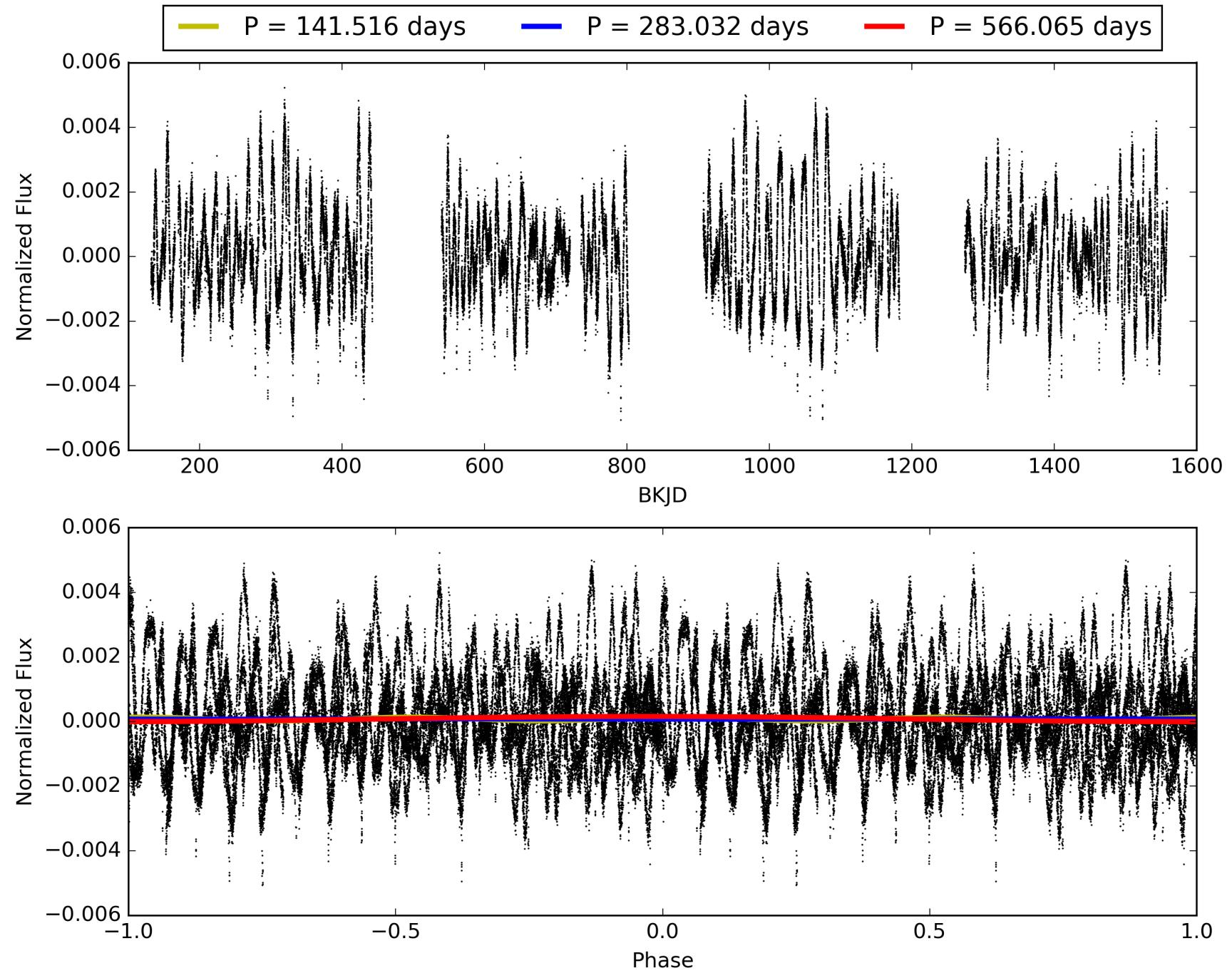
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:07:14 Z

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

TCE 006185476-04, PDC Light Curves

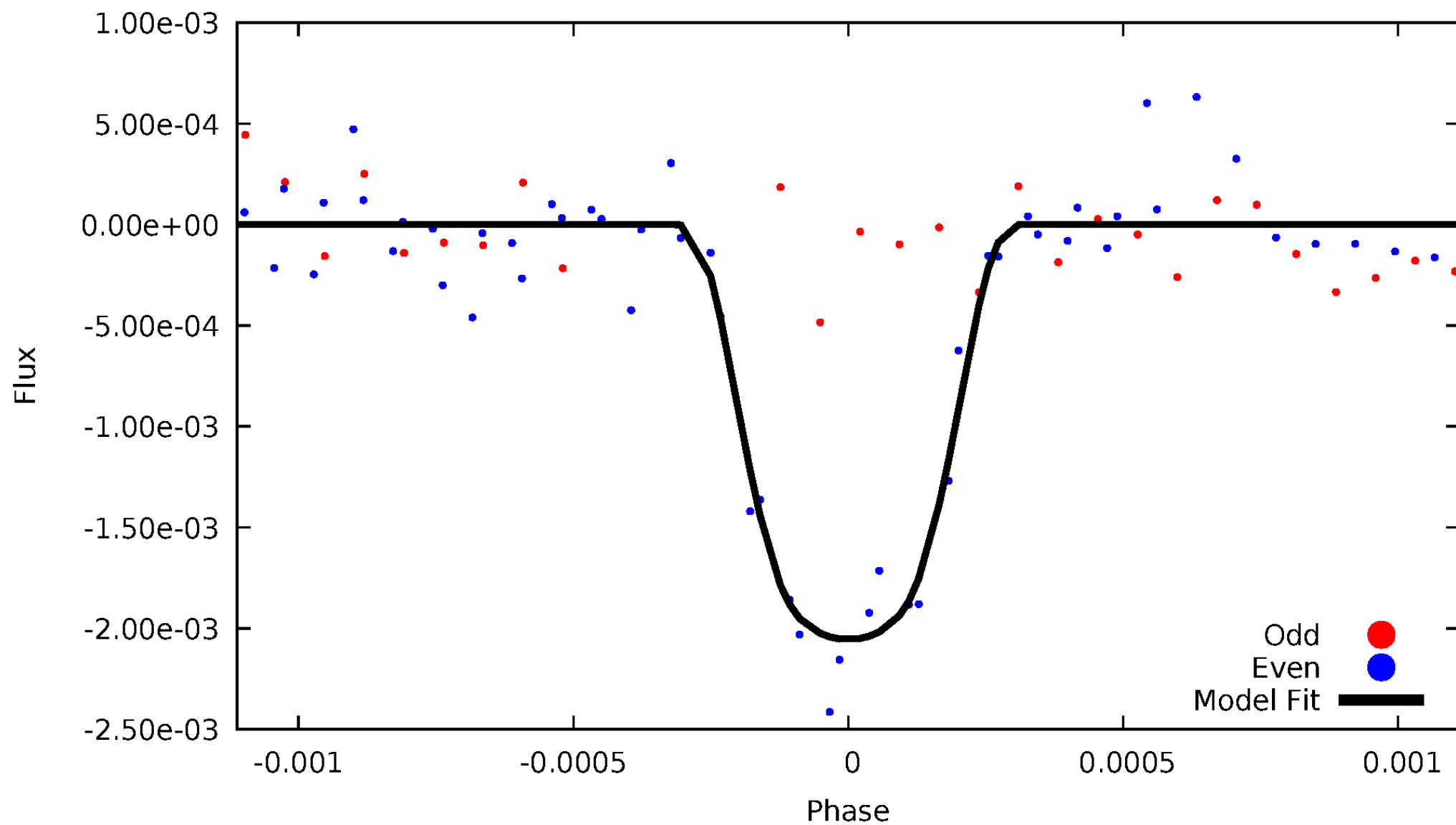


TCE 006185476-04



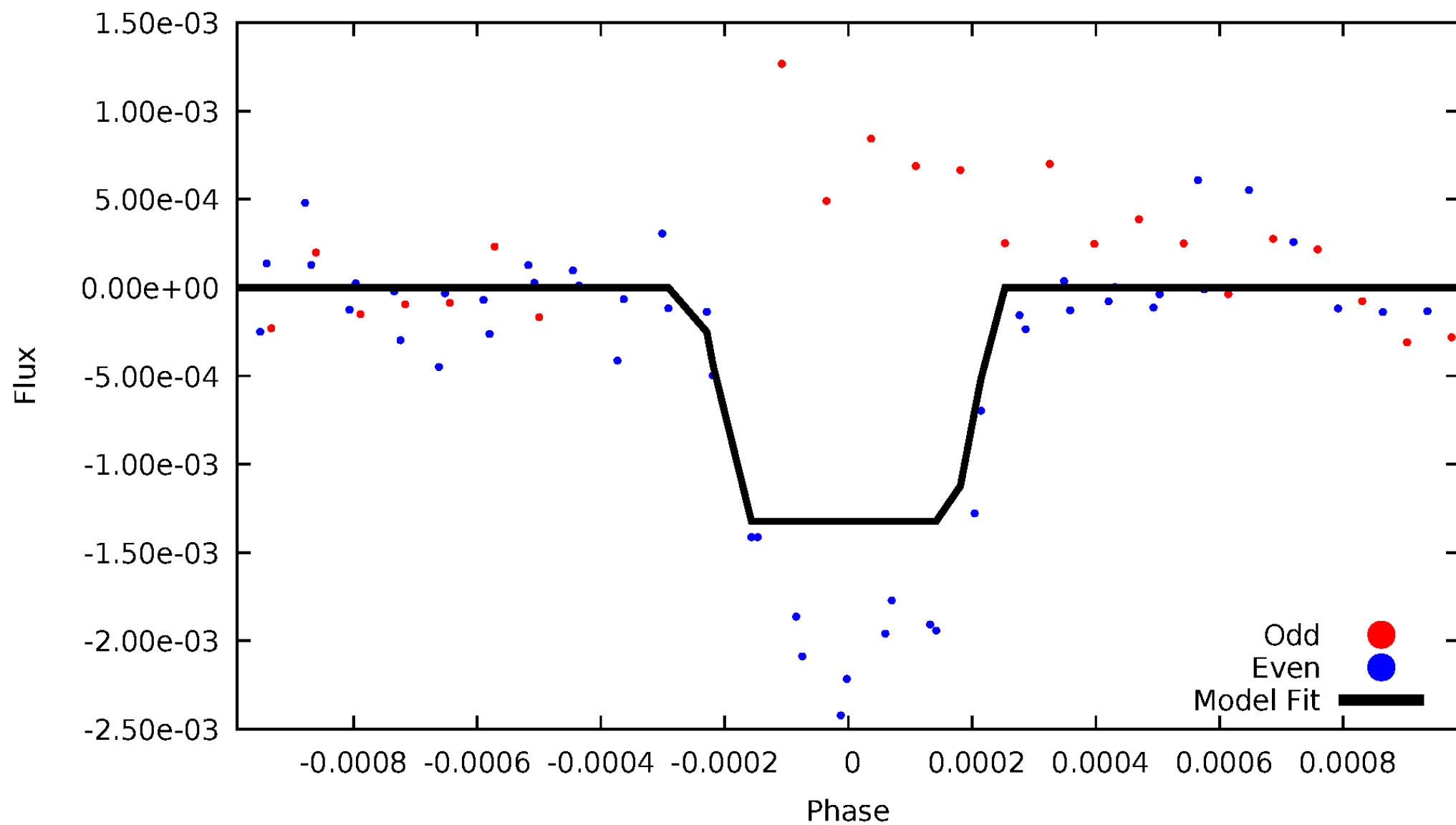
DV Odd/Even

TCE 006185476-04



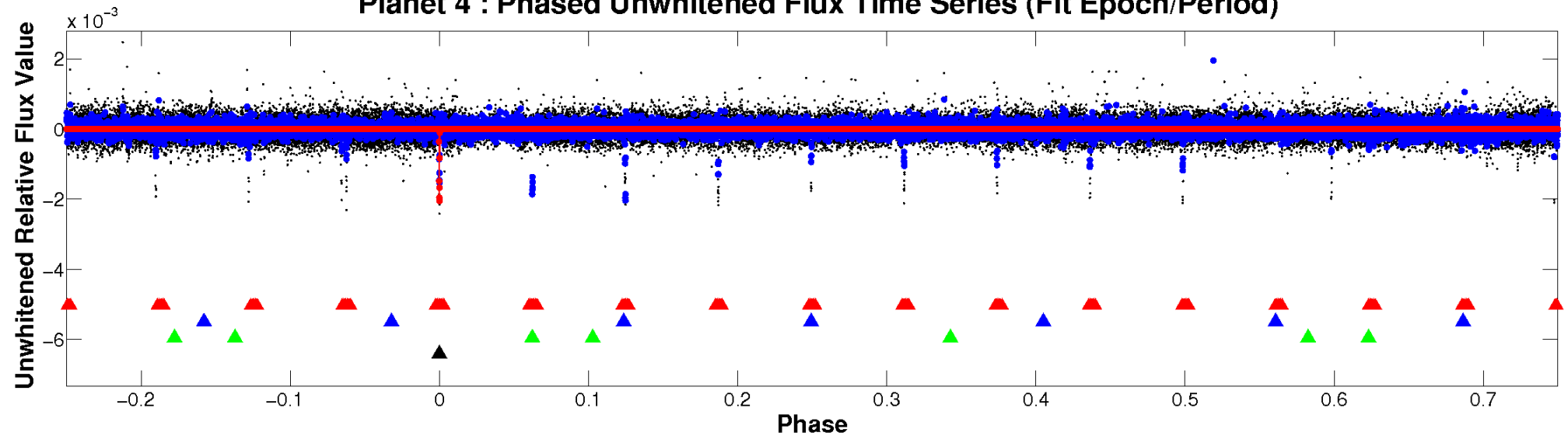
ALT Odd/Even

TCE 006185476-04

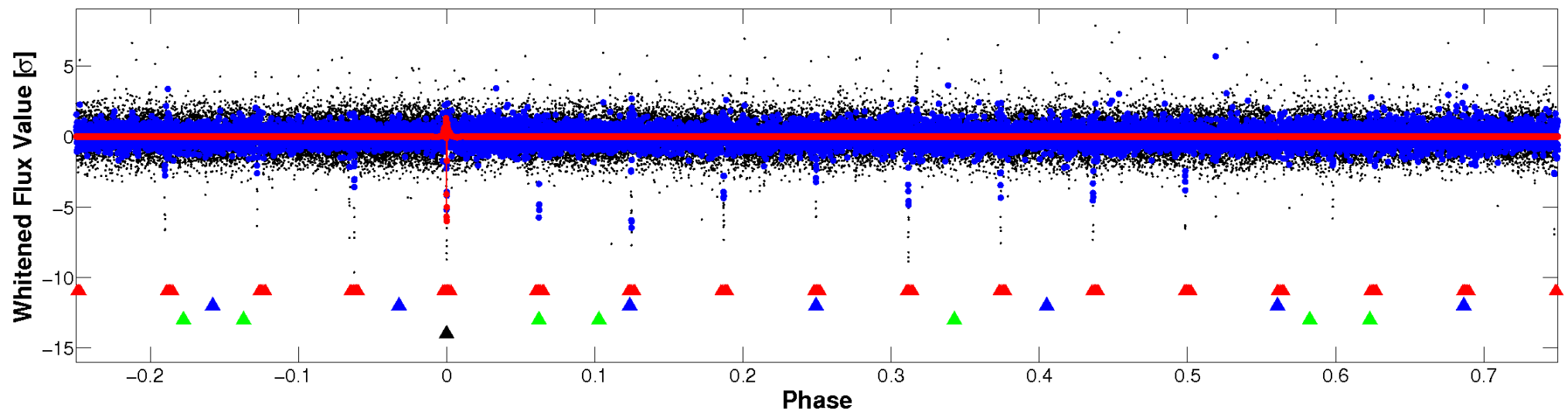


Non-Whitened Vs. Whitened Light Curve

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

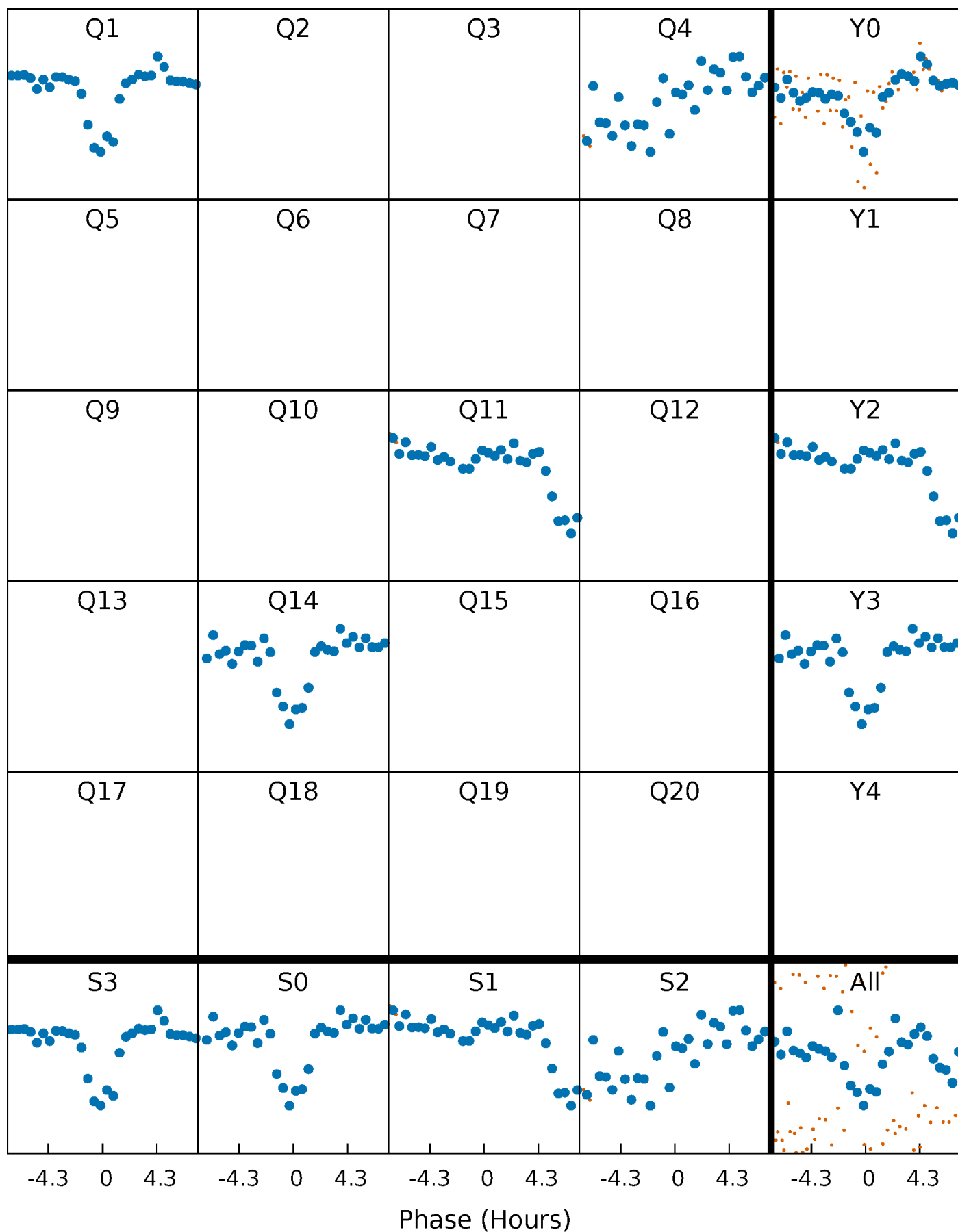


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



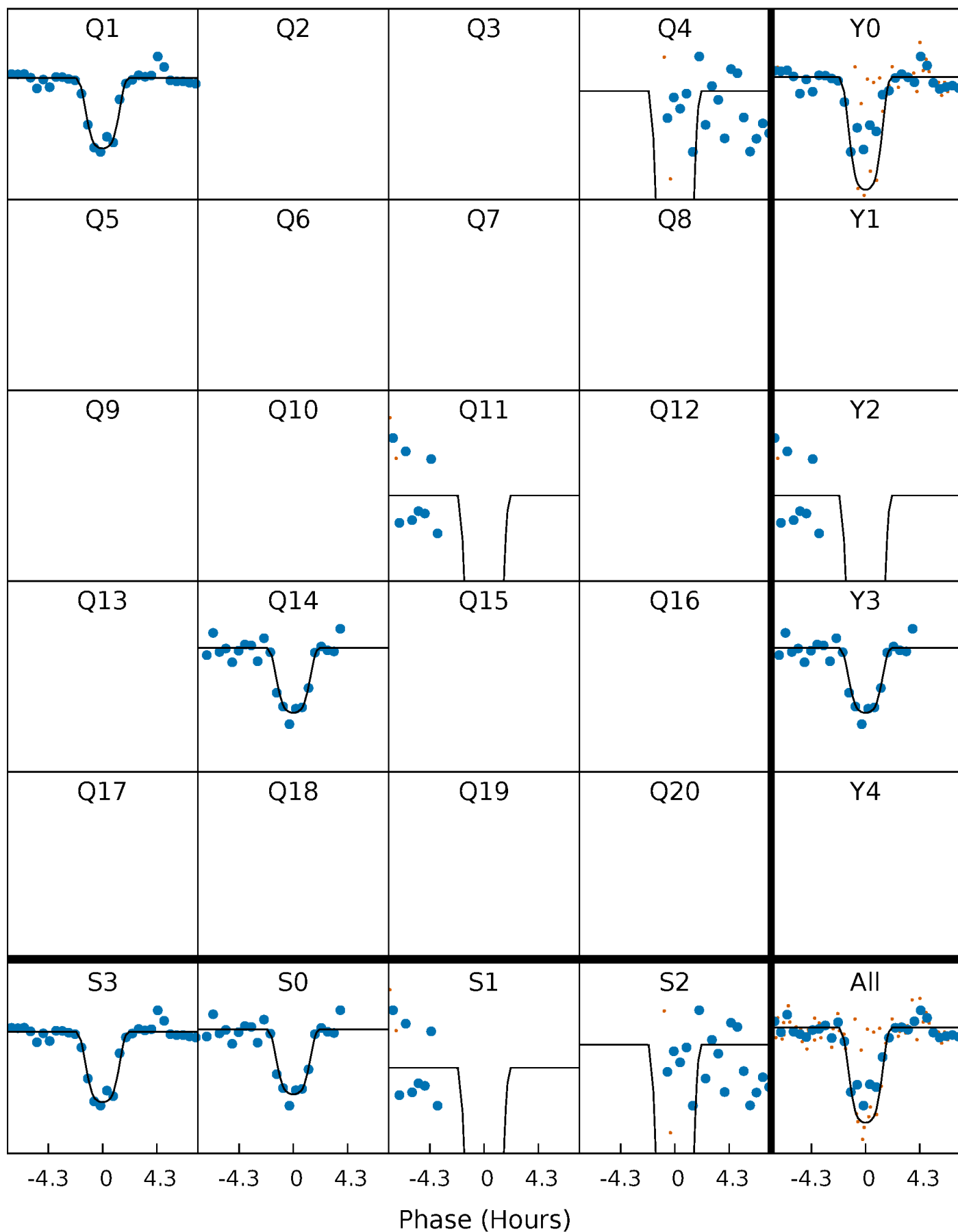
PDC Quarter-Phased Transit Curves

TCE 006185476-04 $P=283.032278$ Days $T_0=154.281260$ (BKJD)



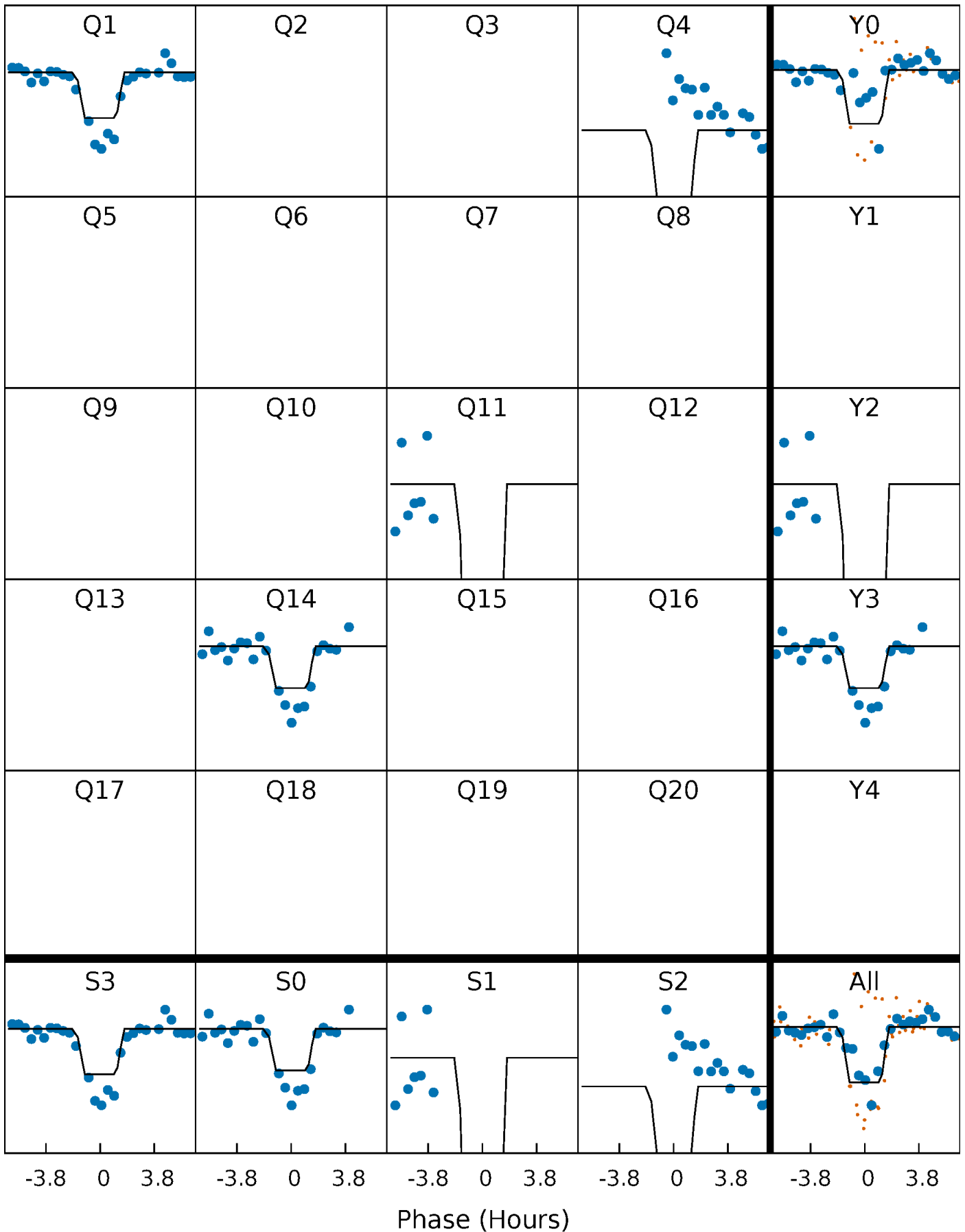
DV Quarter-Phased Transit Curves

TCE 006185476-04 P=283.032278 Days $T_0=154.281260$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

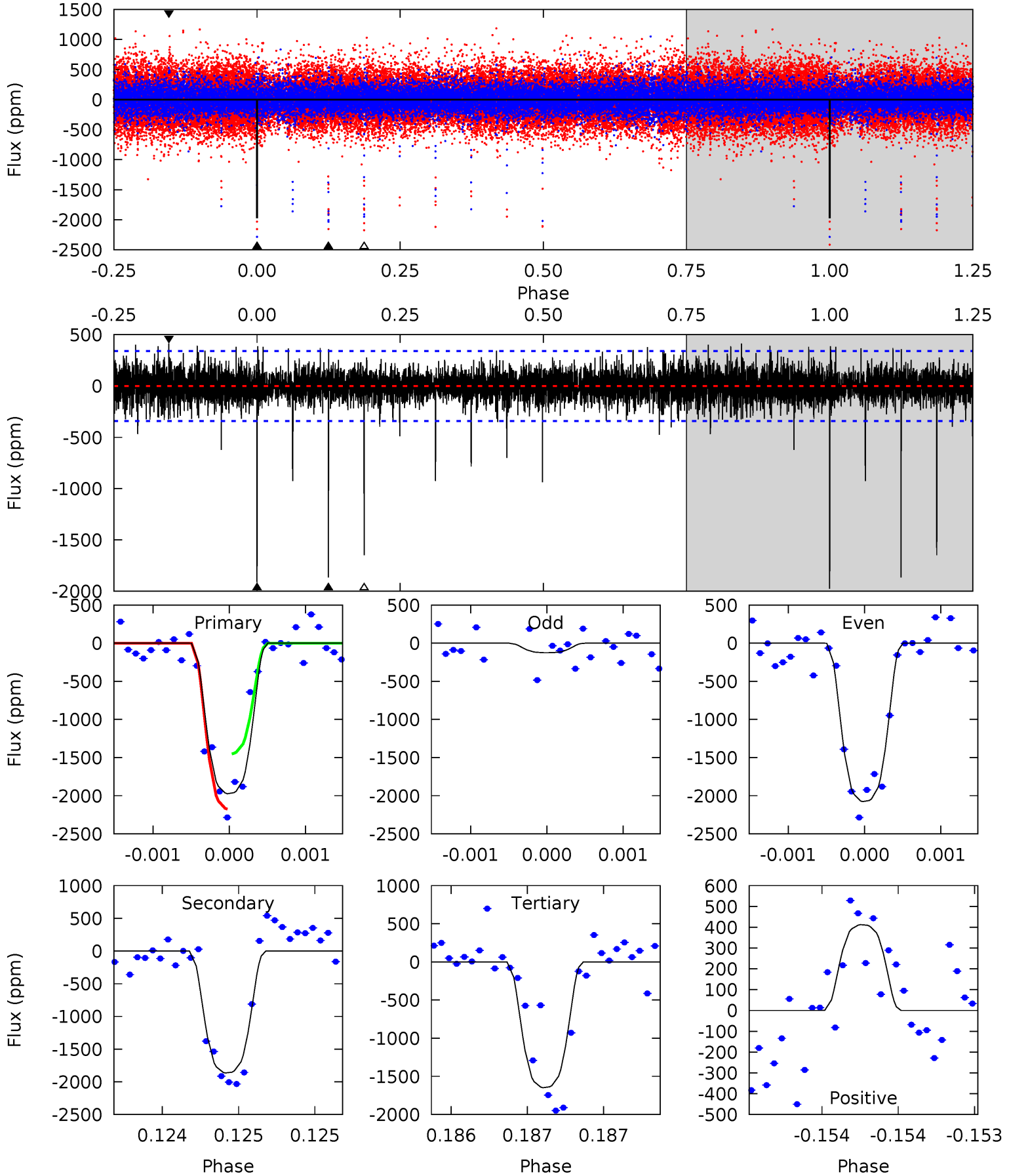
TCE 006185476-04 P=283.031700 Days $T_0=154.277343$ (BKJD)



DV Model-Shift Uniqueness Test

006185476-04, P = 283.032278 Days, E = 154.281260 Days

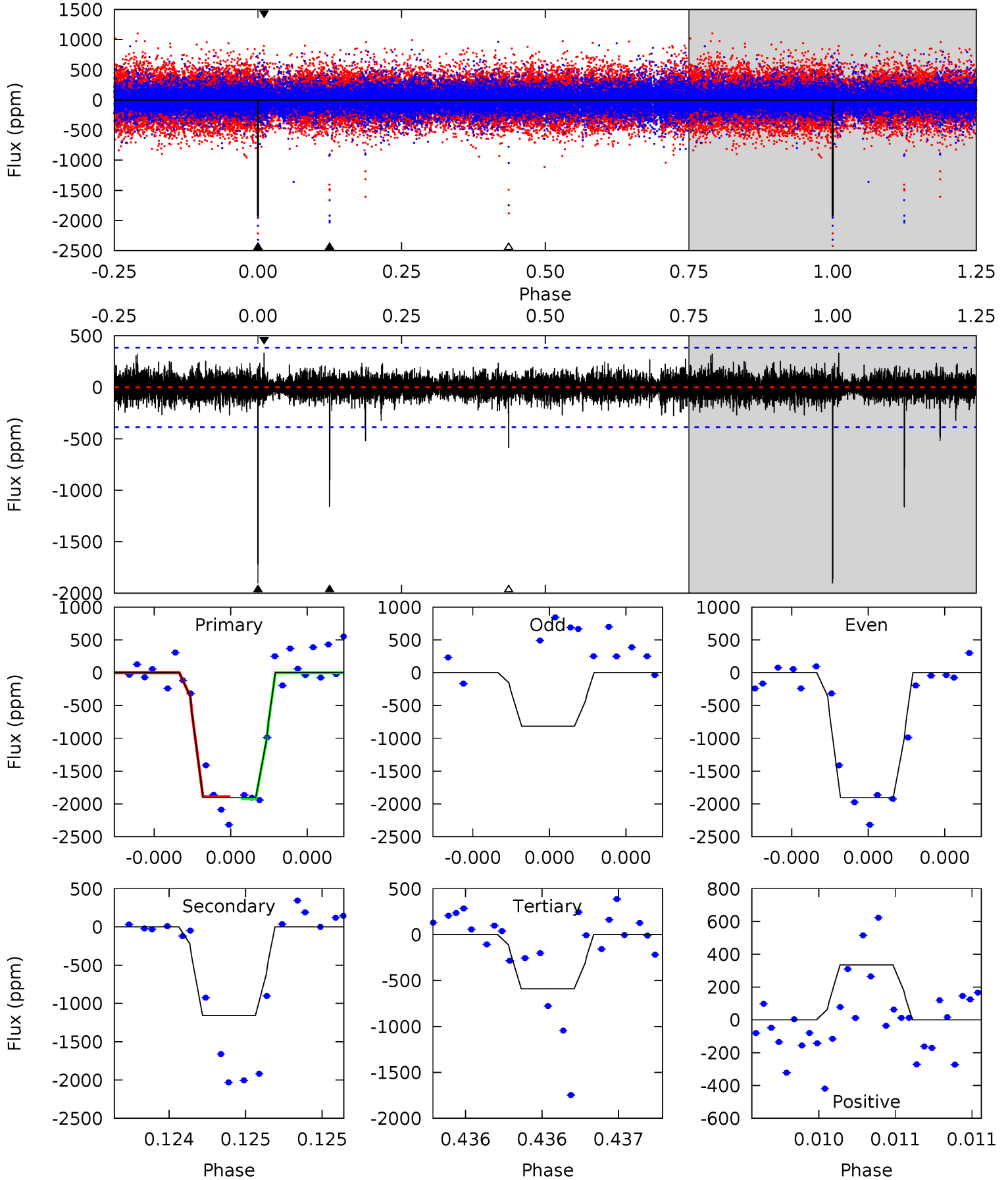
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.0	30.3	26.8	6.69	5.54	3.43	1.76	5.27	25.3	3.50	23.6	15.5	0.71	0.17	5.94



Alt Model-Shift Uniqueness Test

006185476-04, P = 283.031700 Days, E = 154.277343 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.6	16.8	8.56	4.85	5.60	3.52	1.03	19.0	22.7	8.24	11.9	8.92	0.53	0.15	0.26



Stellar Parameters For KIC 006185476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4094^{+81}_{-90}	$4.695^{+0.024}_{-0.027}$	$-0.200^{+0.150}_{-0.150}$	$0.571^{+0.031}_{-0.031}$	$0.587^{+0.029}_{-0.038}$	$4.439^{+0.543}_{-0.438}$
	+2%/-2%	+1%/-1%	+75%/-75%	+5%/-5%	+5%/-6%	+12%/-10%
Source	SPE60	SPE60	SPE60	DSEP		

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

Secondary Eclipse Parameters for KIC 006185476-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1865 ± 62	$3.24^{+0.20}_{-0.20}$	226^{+5}_{-5}	3829^{+106}_{-96}	49274^{+5849}_{-5926}
Alt.	-1159 ± 69	$2.27^{+0.17}_{-0.18}$	227^{+5}_{-5}	3996^{+145}_{-129}	61714^{+11307}_{-9040}

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 $A_{obs} \gg 1.0$

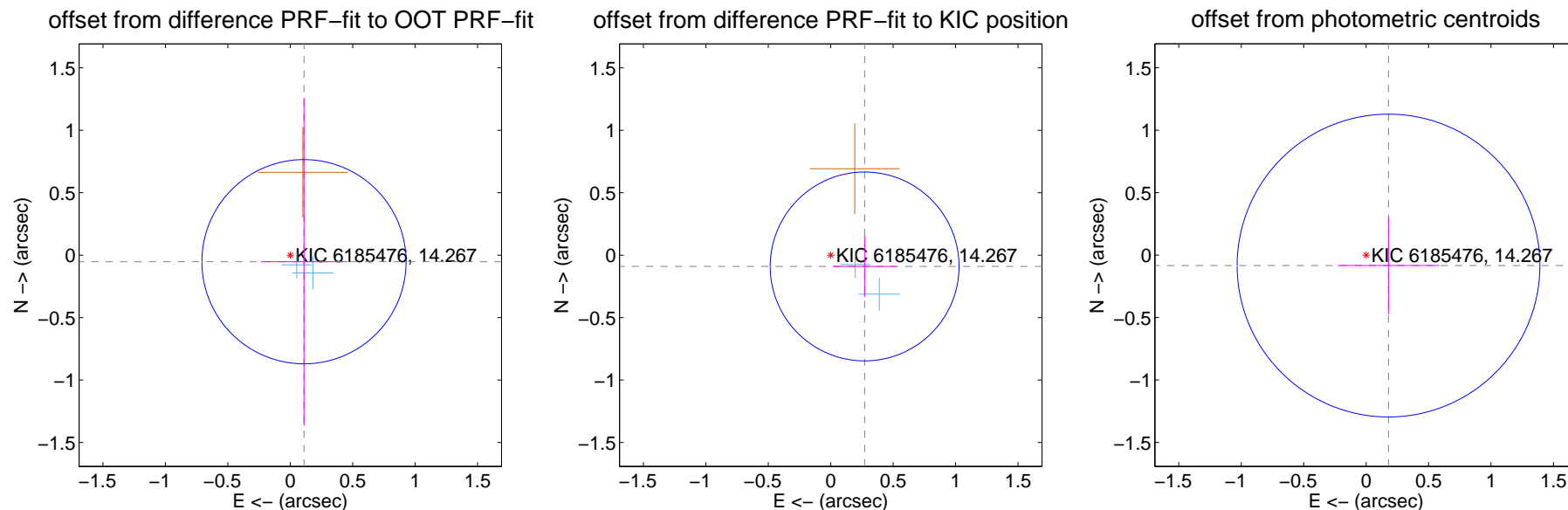
DV Centroid Data

Supplemental centroid analysis for 006185476-04. Kepler magnitude: 14.27. Transit SNR 20.66

There are 2 quarters with good PRF difference image offsets

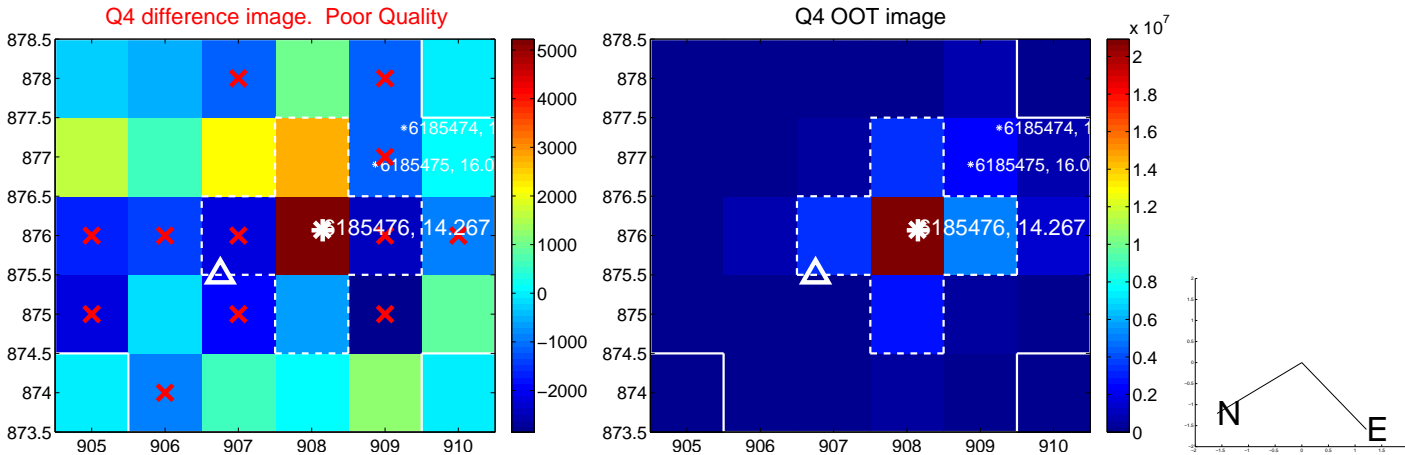
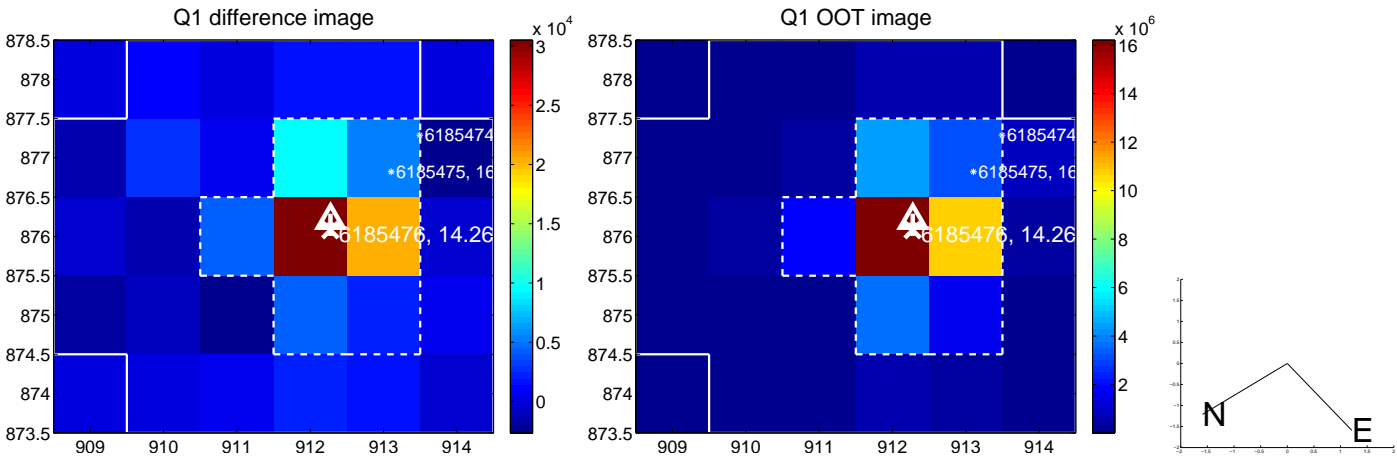
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.122 ± 0.273	0.45	-0.110 ± 0.346	-0.052 ± 1.311
PRF-fit source offset from KIC position	0.286 ± 0.252	1.14	-0.272 ± 0.253	-0.090 ± 0.245
photometric centroid source offset	0.20 ± 0.40	0.49	-0.18 ± 0.41	-0.08 ± 0.39



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

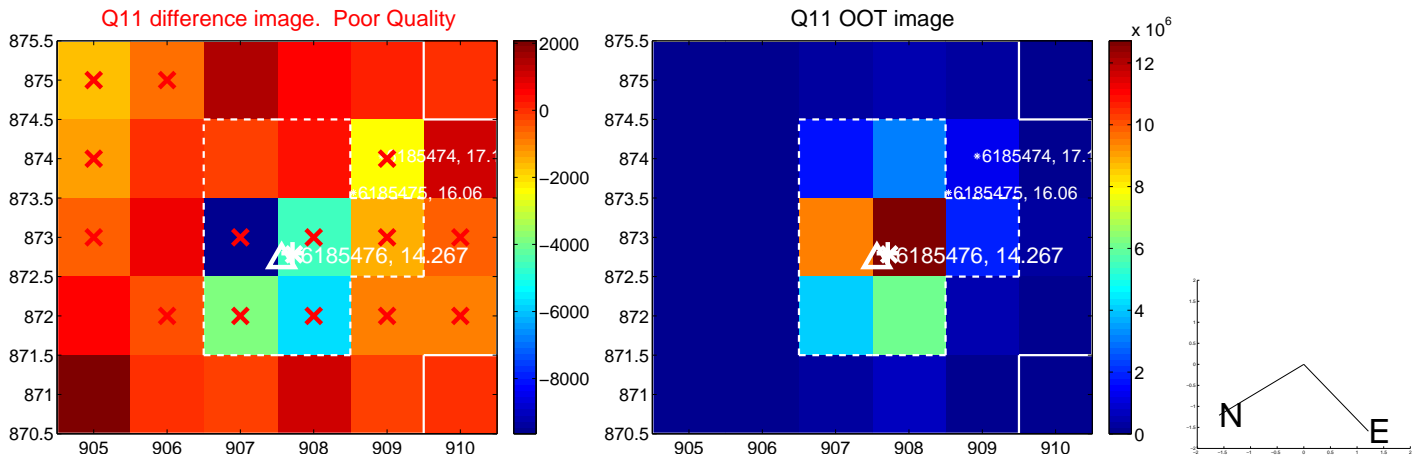
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



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

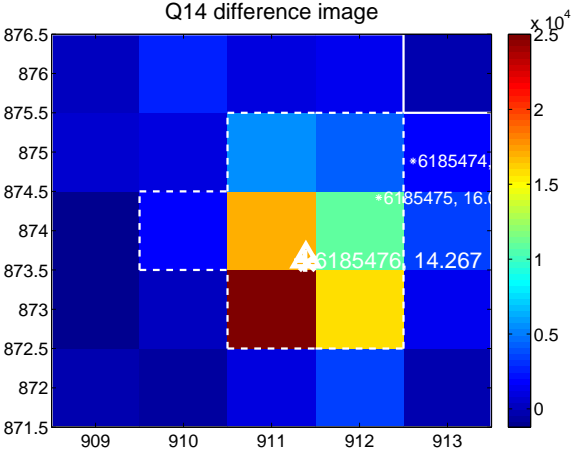
Q13 no difference image



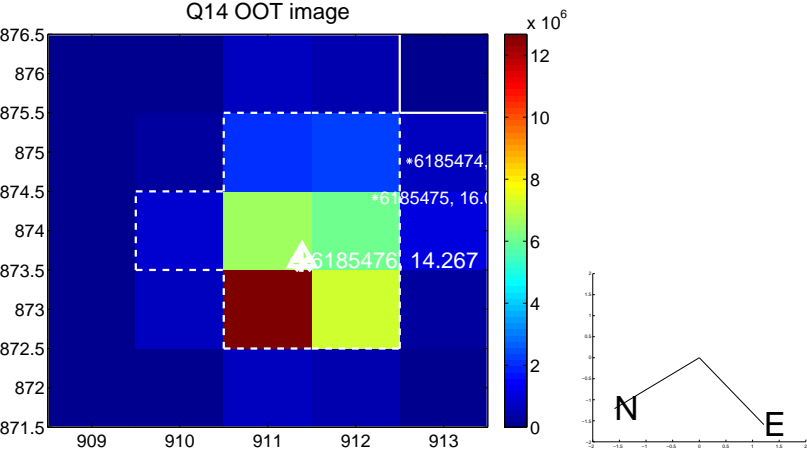
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



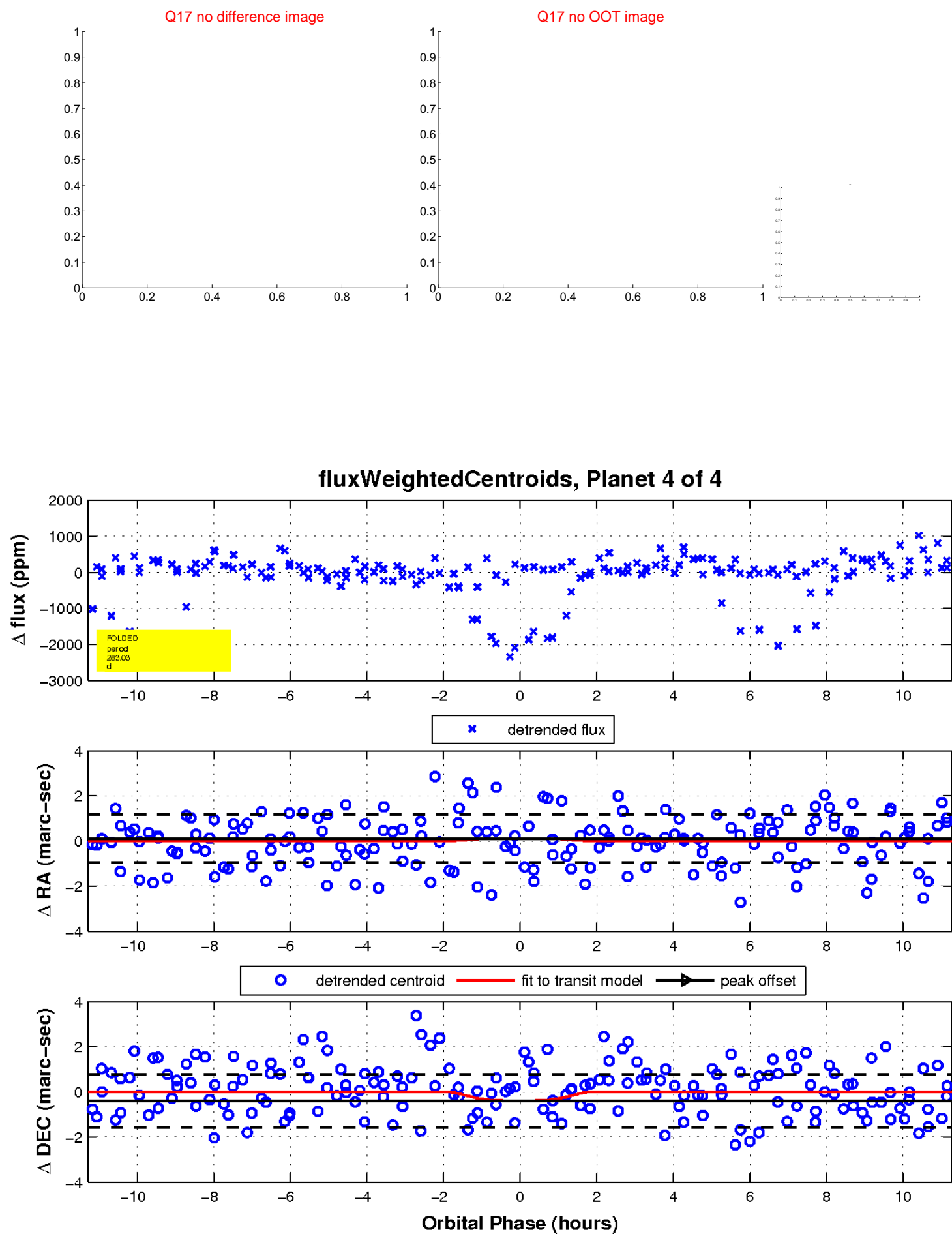
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

