

KIC 005481390

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})
005481390-01	OBS	No	467.842227	243.011376	1064.7	8.653	14.2	9.5	1.94	9795	7.53	12.96
005481390-02	OBS	No	388.338407	333.755302	1376.9	4.238	10.3	10.0	1.94	9795	7.65	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005481390-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005481390-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

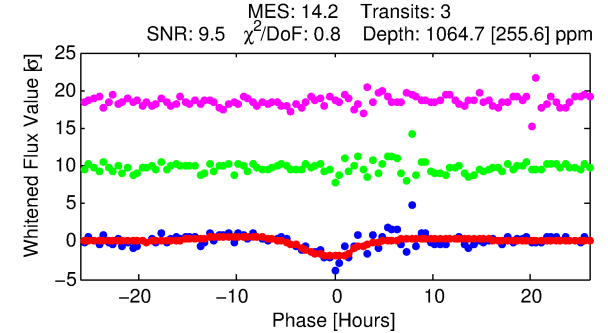
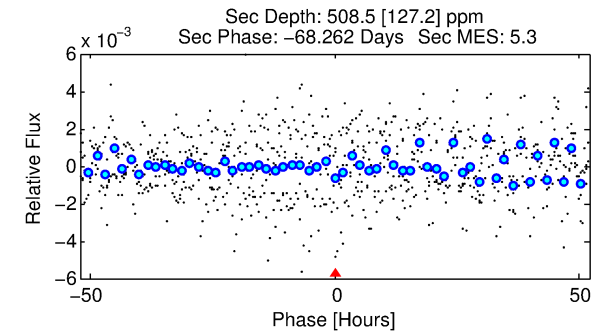
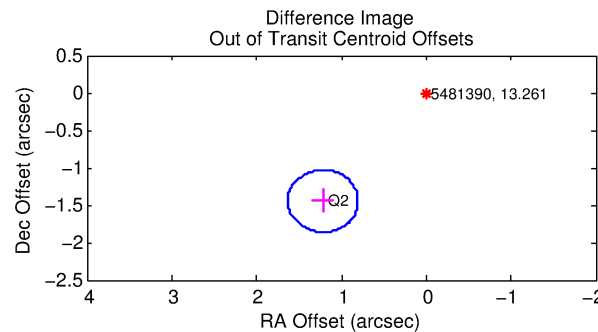
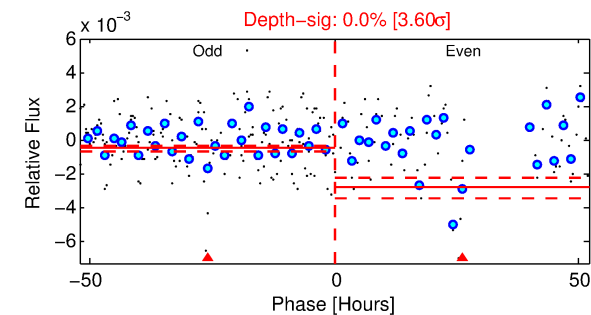
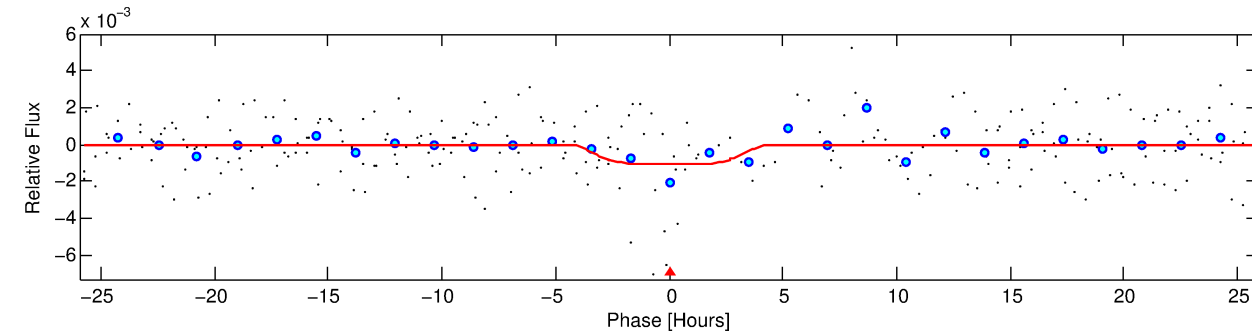
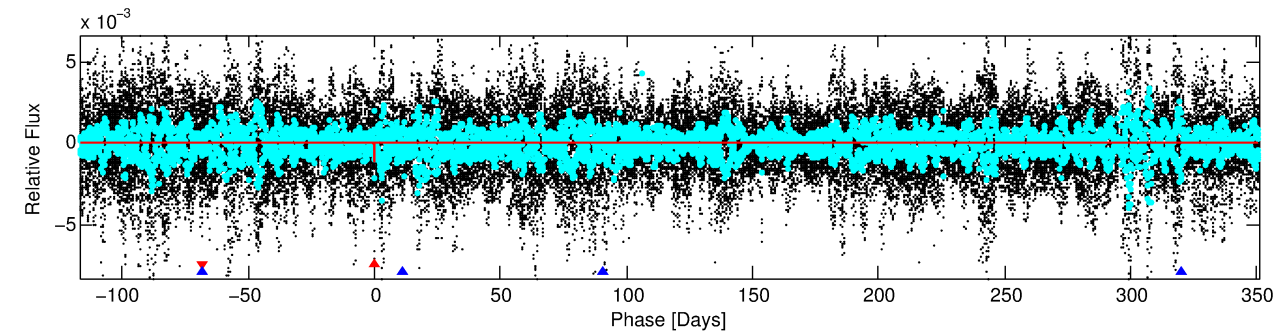
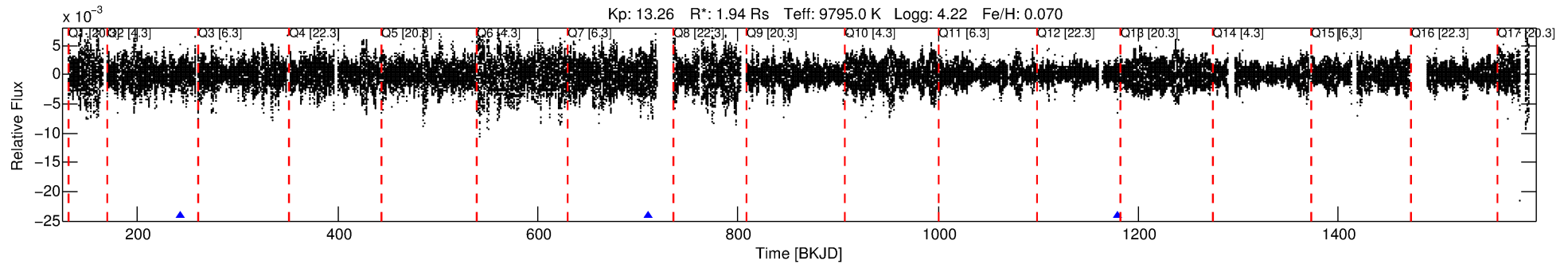
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005481390-01

No Significant Match Found

DV One-Page Summary

KIC: 5481390 Candidate: 1 of 2 Period: 467.842 d



DV Fit Results:

Period = 467.84223 [0.02423] d
Epoch = 243.0114 [0.0280] BKJD
Rp/R* = 0.0355 [0.0072]
a/R* = 177.56 [135.75]
b = 0.94 [0.10]
Seff = 12.96 [6.31]
Teq = 484 [59] K
Rp = 7.53 [3.67] Re
a = 1.5508 [0.5318] AU
Ag = 11857.49 [7851.34] [1.51 σ]
Teffp = 7806 [989] K [7.39 σ]

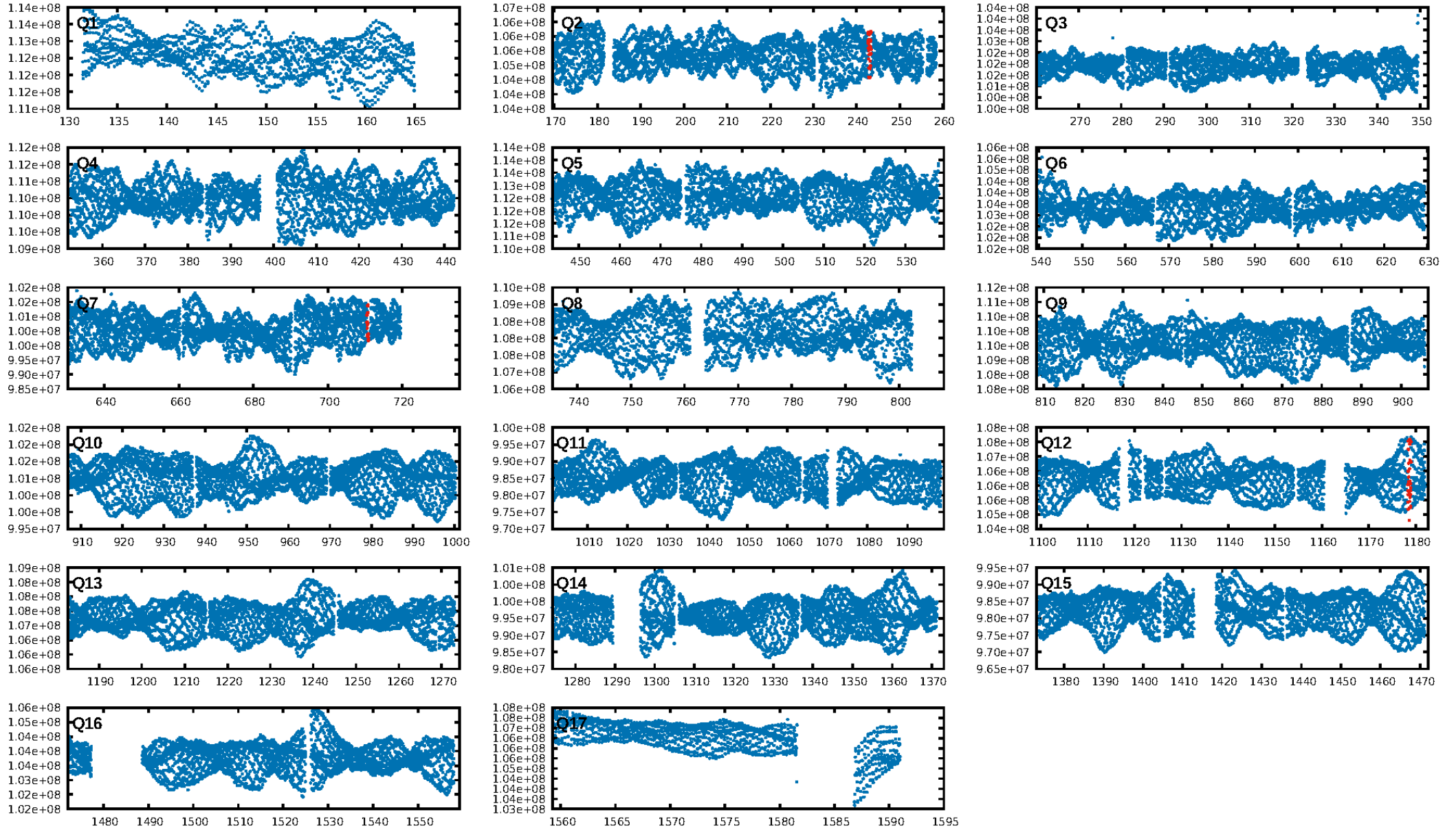
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [198.04 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 4.31e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.118
Centroid-sig: 28.0%
Centroid-so: 0.520 arcsec [0.88 σ]
OotOffset-rm: 1.893 arcsec [13.67 σ]
KicOffset-rm: 1.839 arcsec [13.33 σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [1/1]

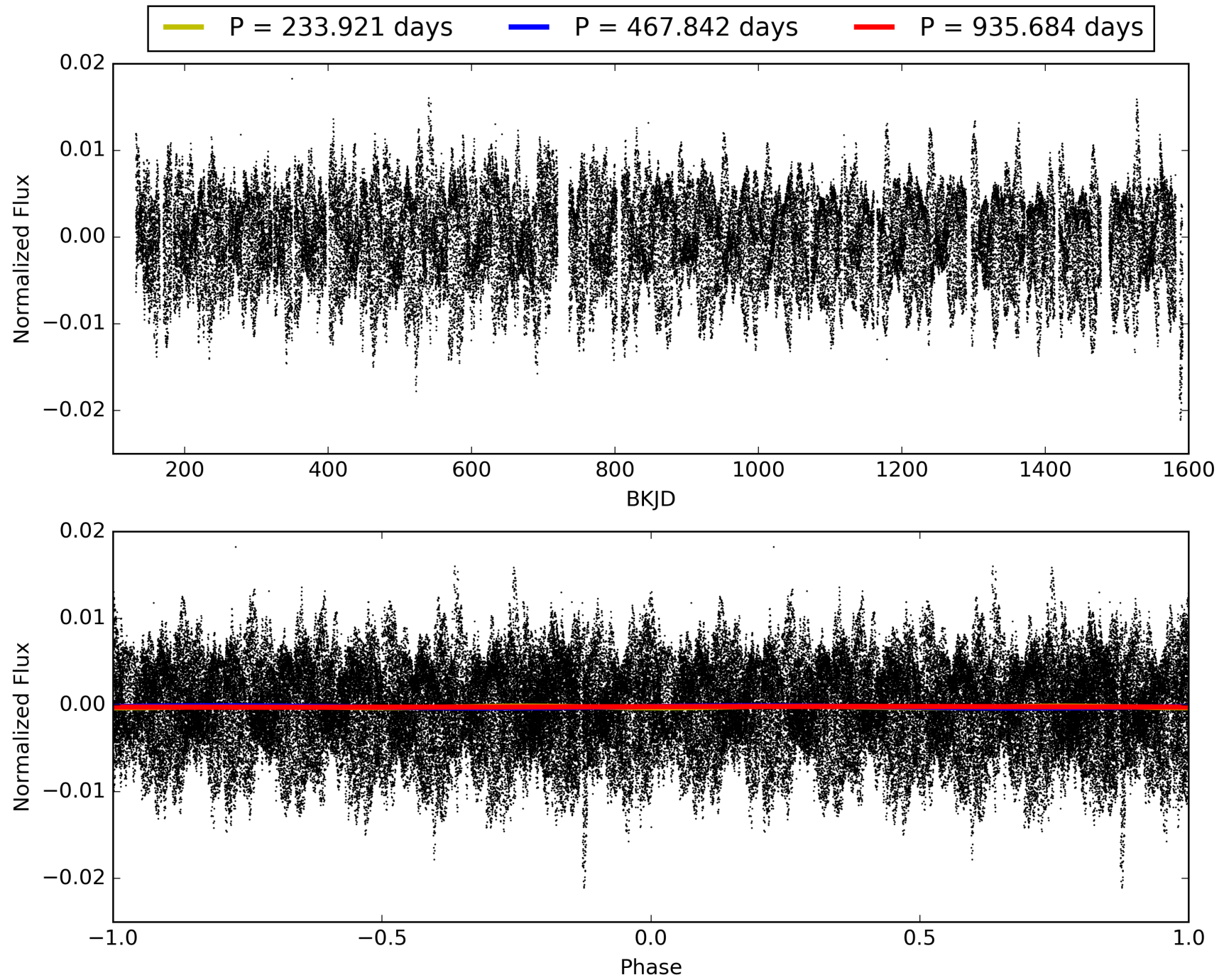
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:00:58 Z

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

TCE 005481390-01, PDC Light Curves

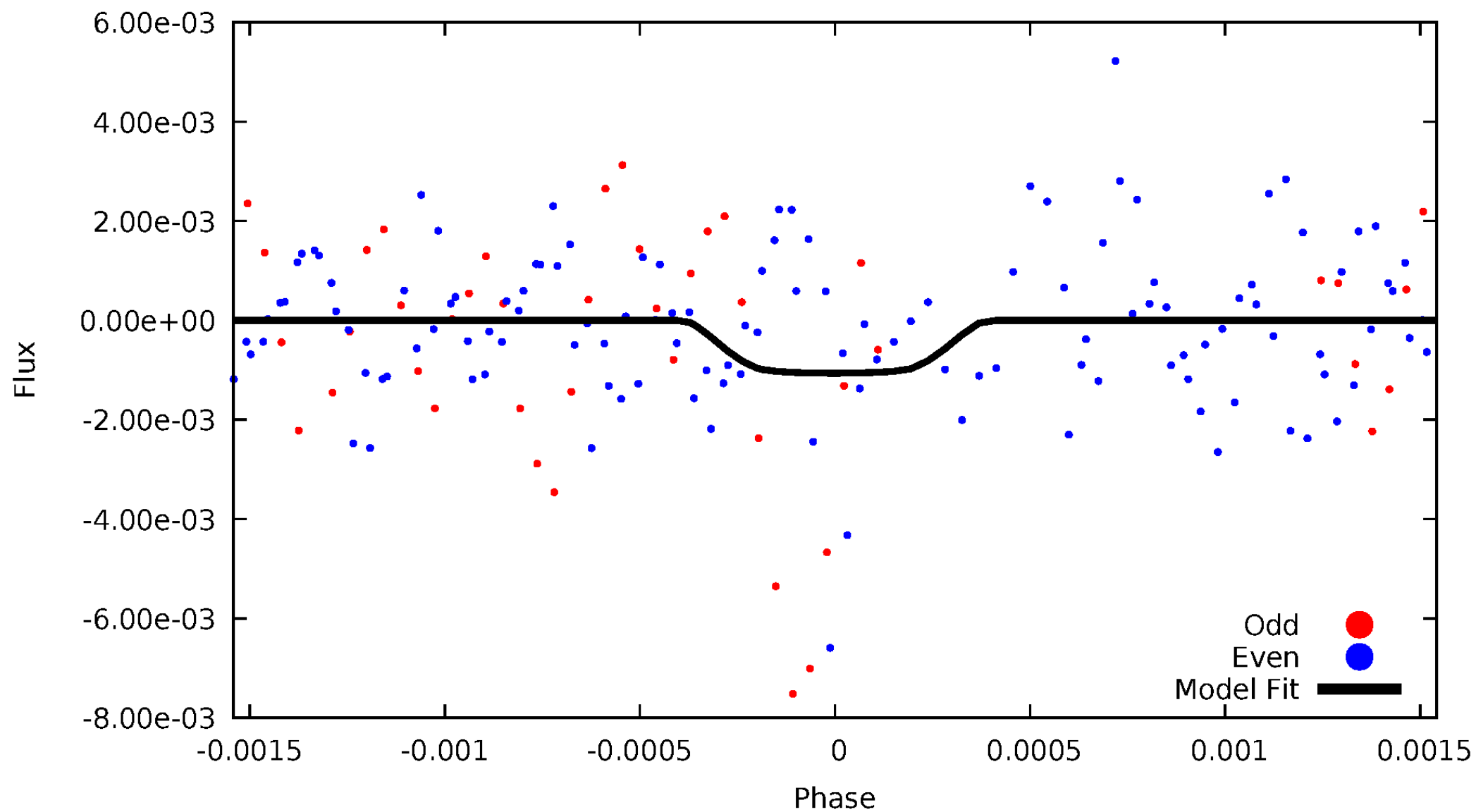


TCE 005481390-01



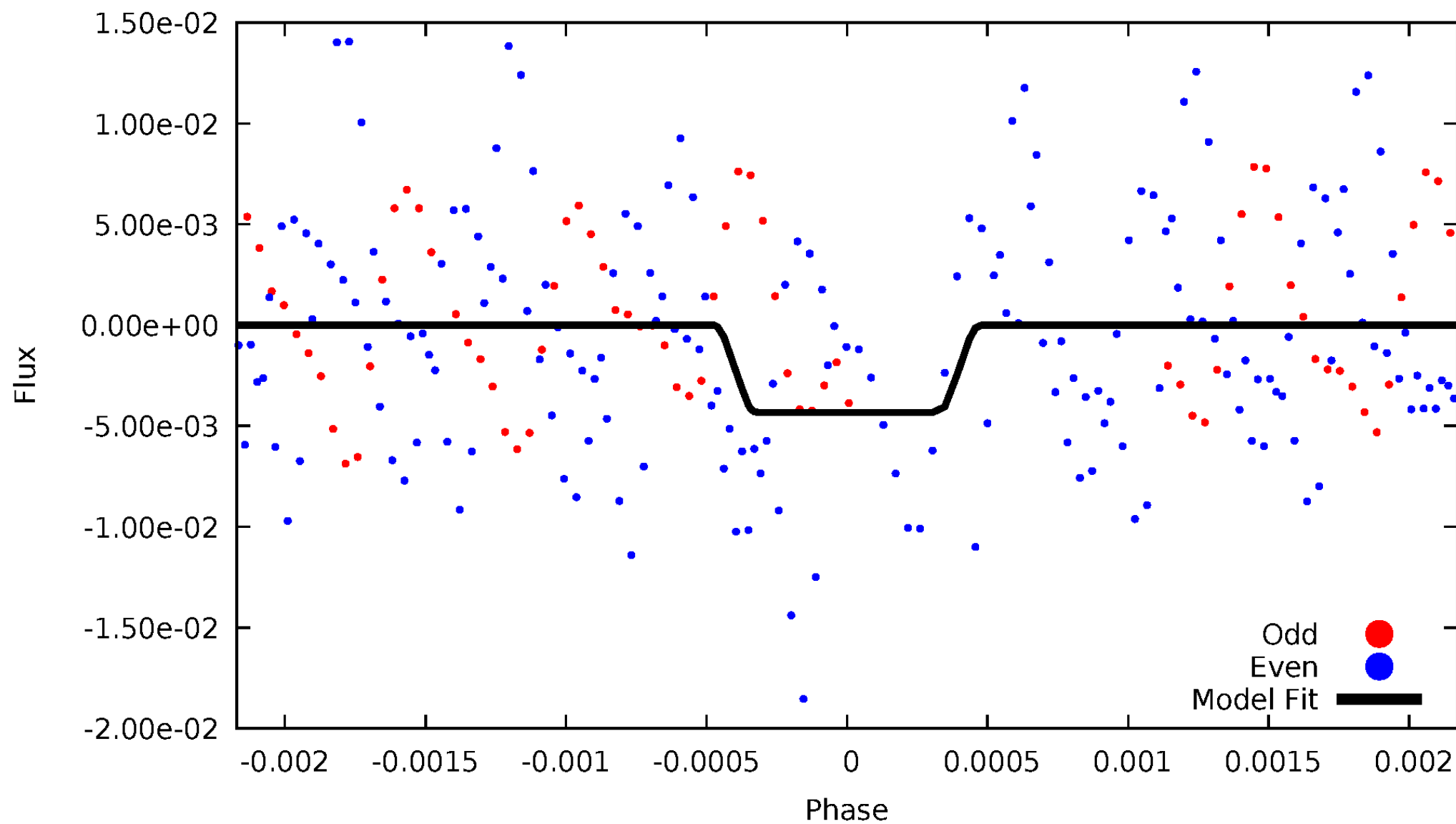
DV Odd/Even

TCE 005481390-01



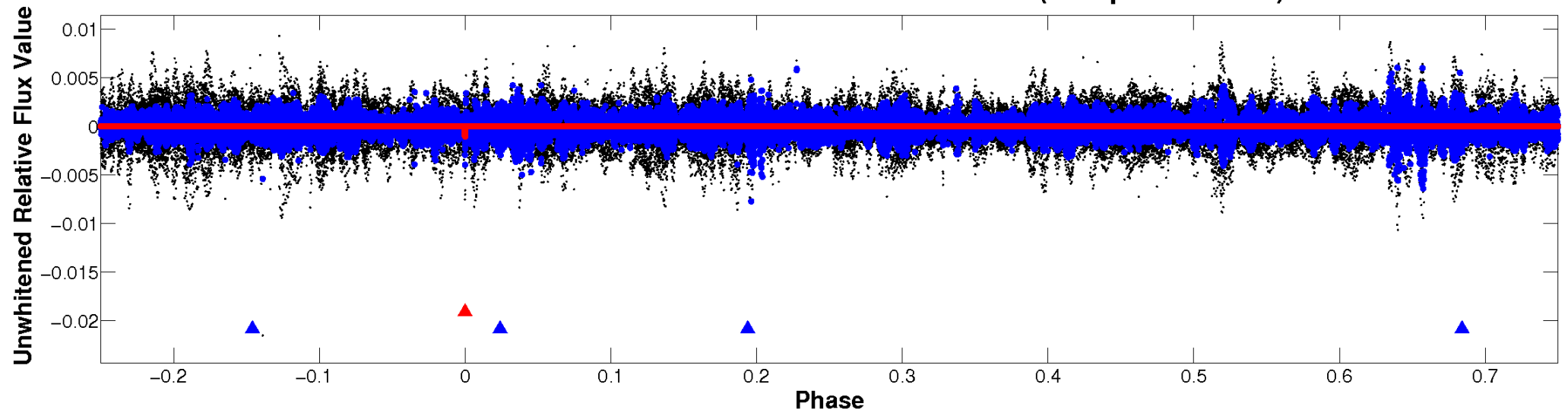
ALT Odd/Even

TCE 005481390-01

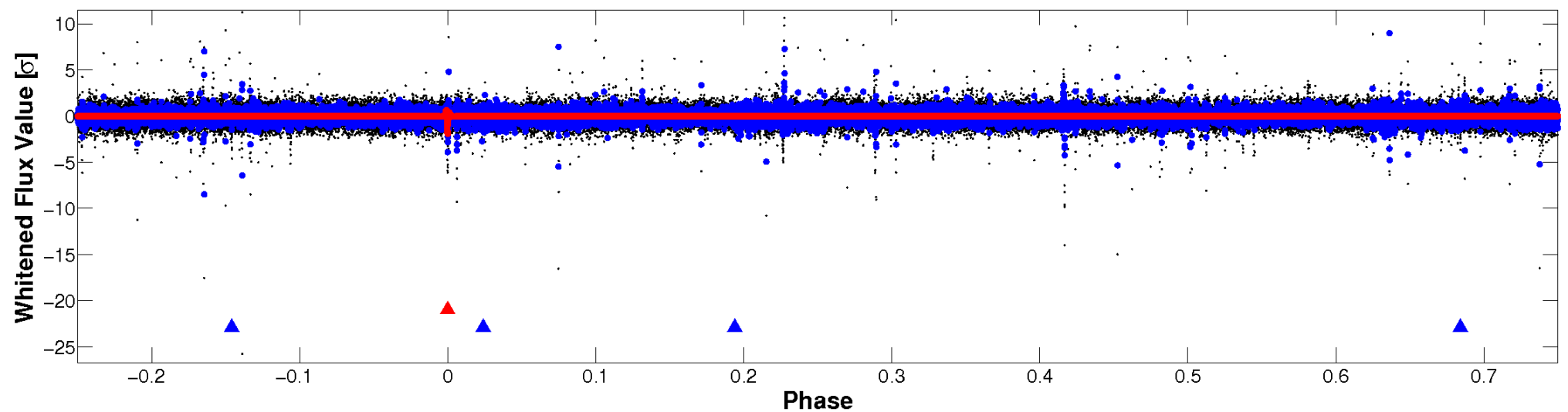


Non-Whitened Vs. Whitened Light Curve

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

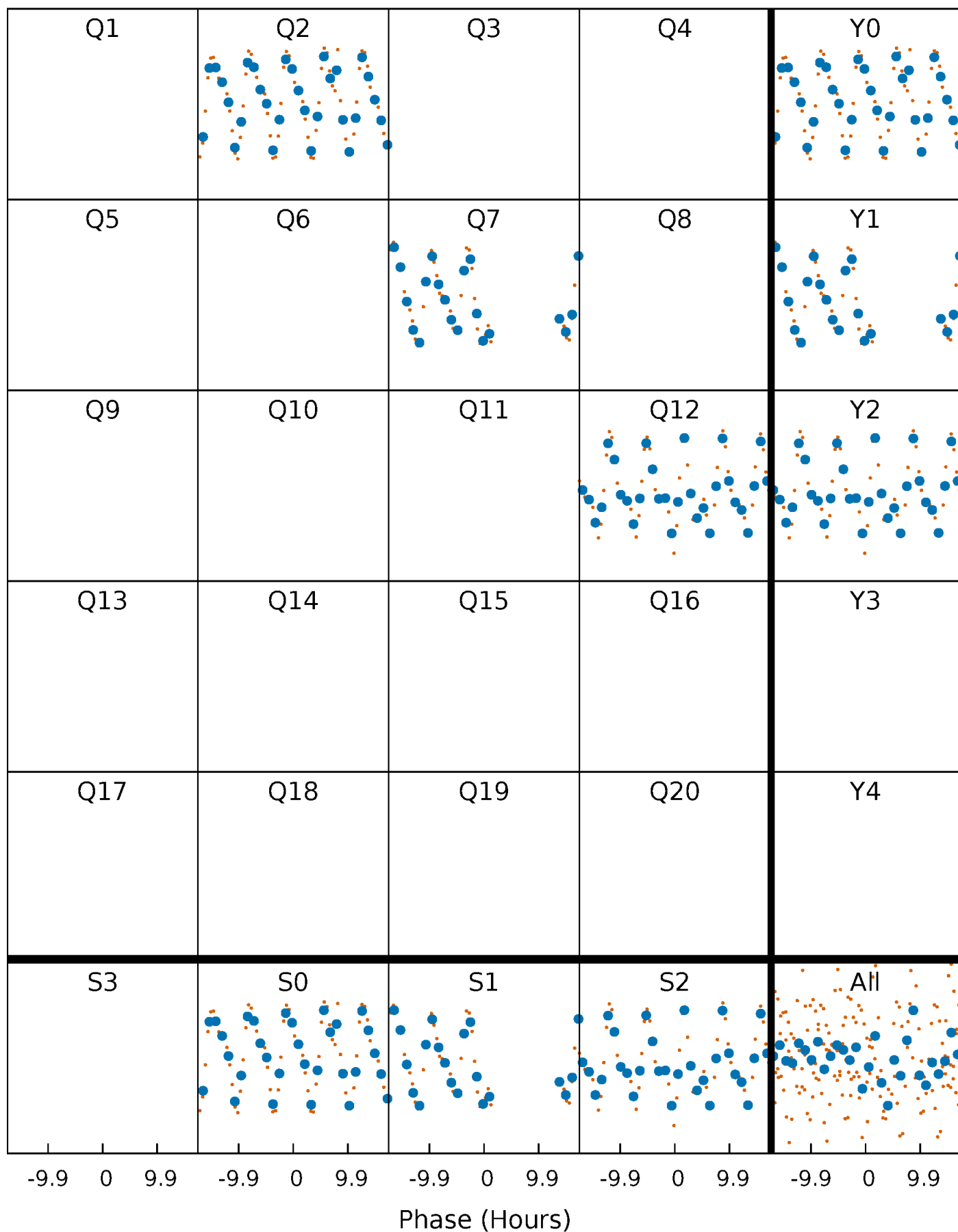


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



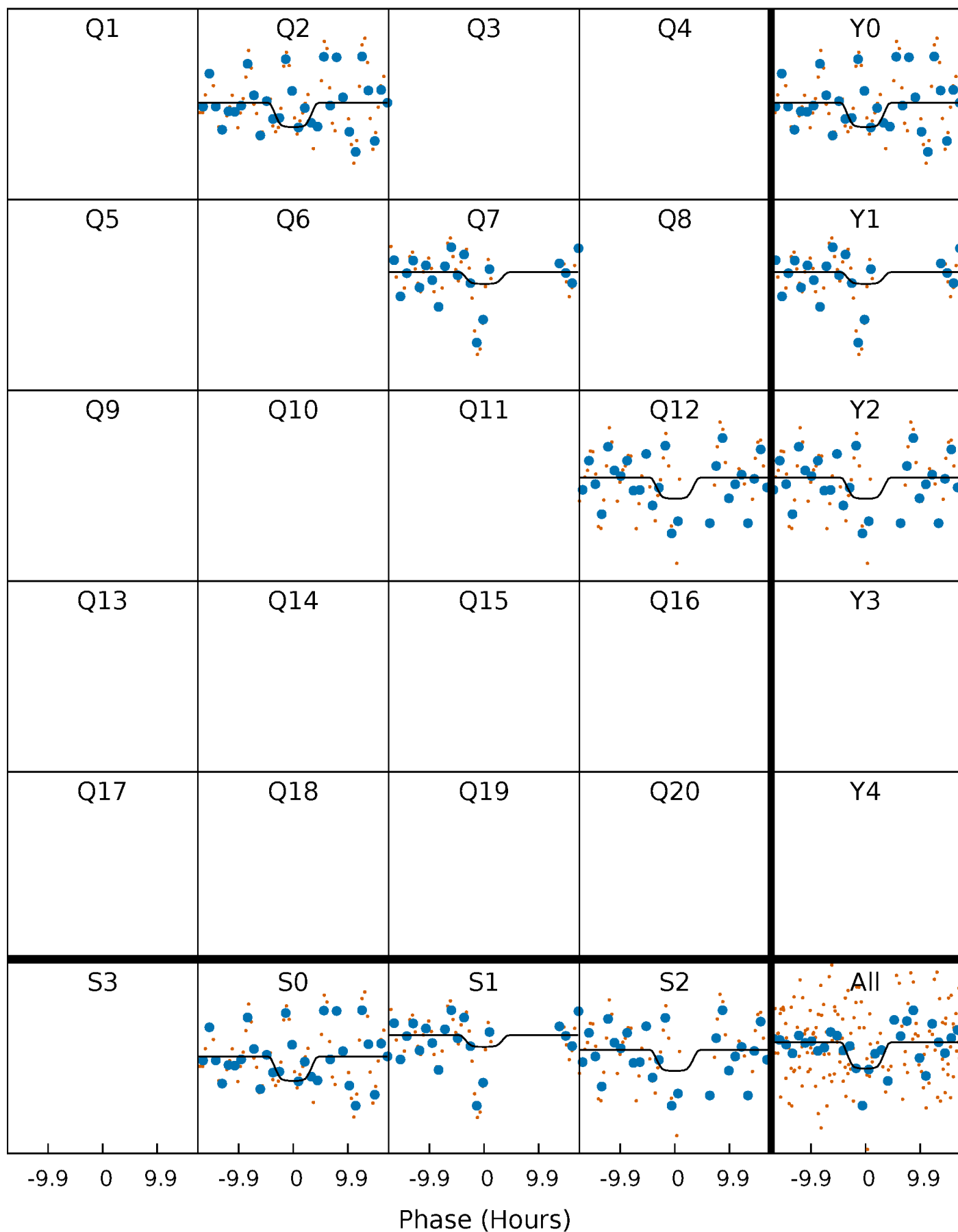
PDC Quarter-Phased Transit Curves

TCE 005481390-01 P=467.842227 Days $T_0=243.011376$ (BKJD)



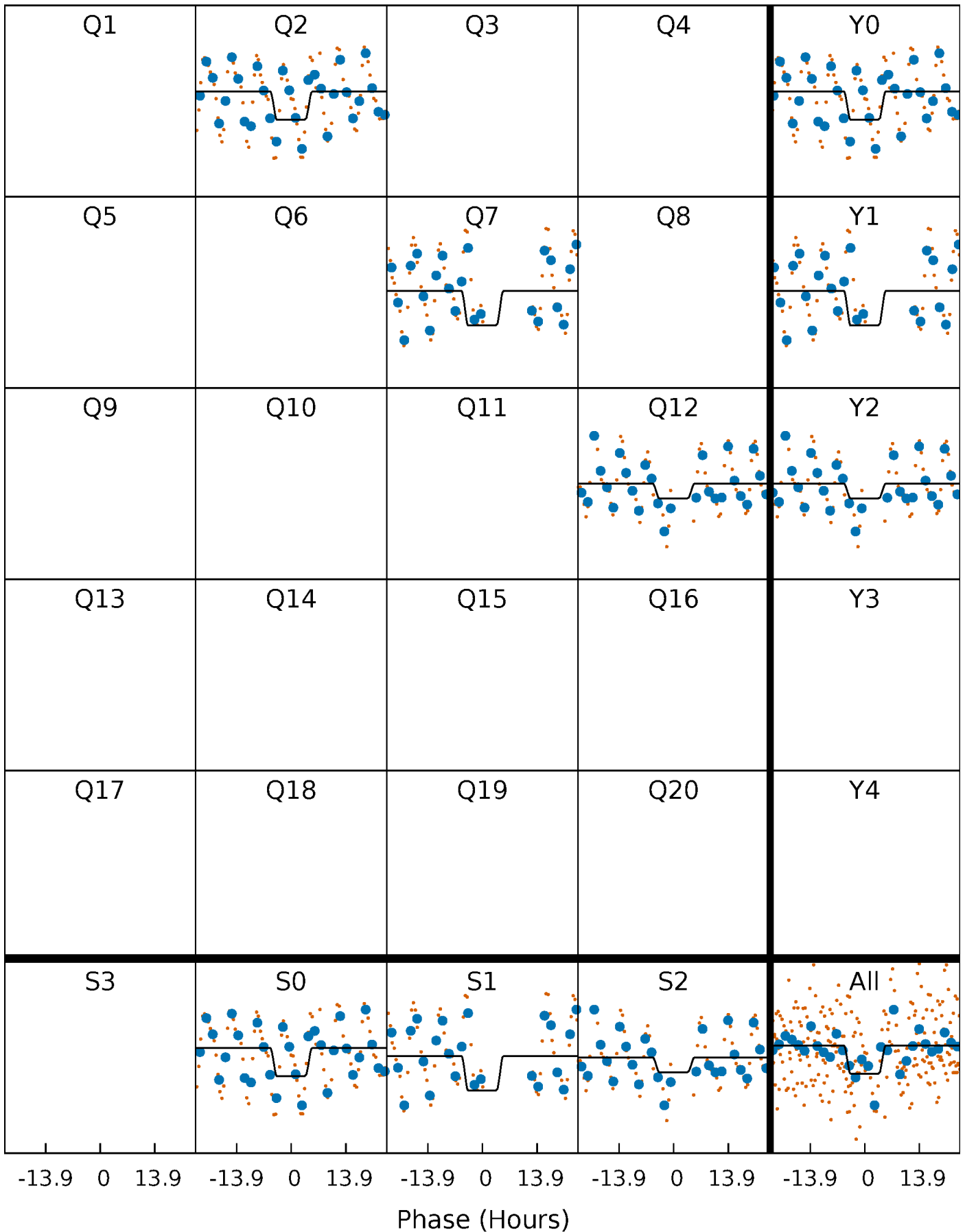
DV Quarter-Phased Transit Curves

TCE 005481390-01 P=467.842227 Days $T_0=243.011376$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

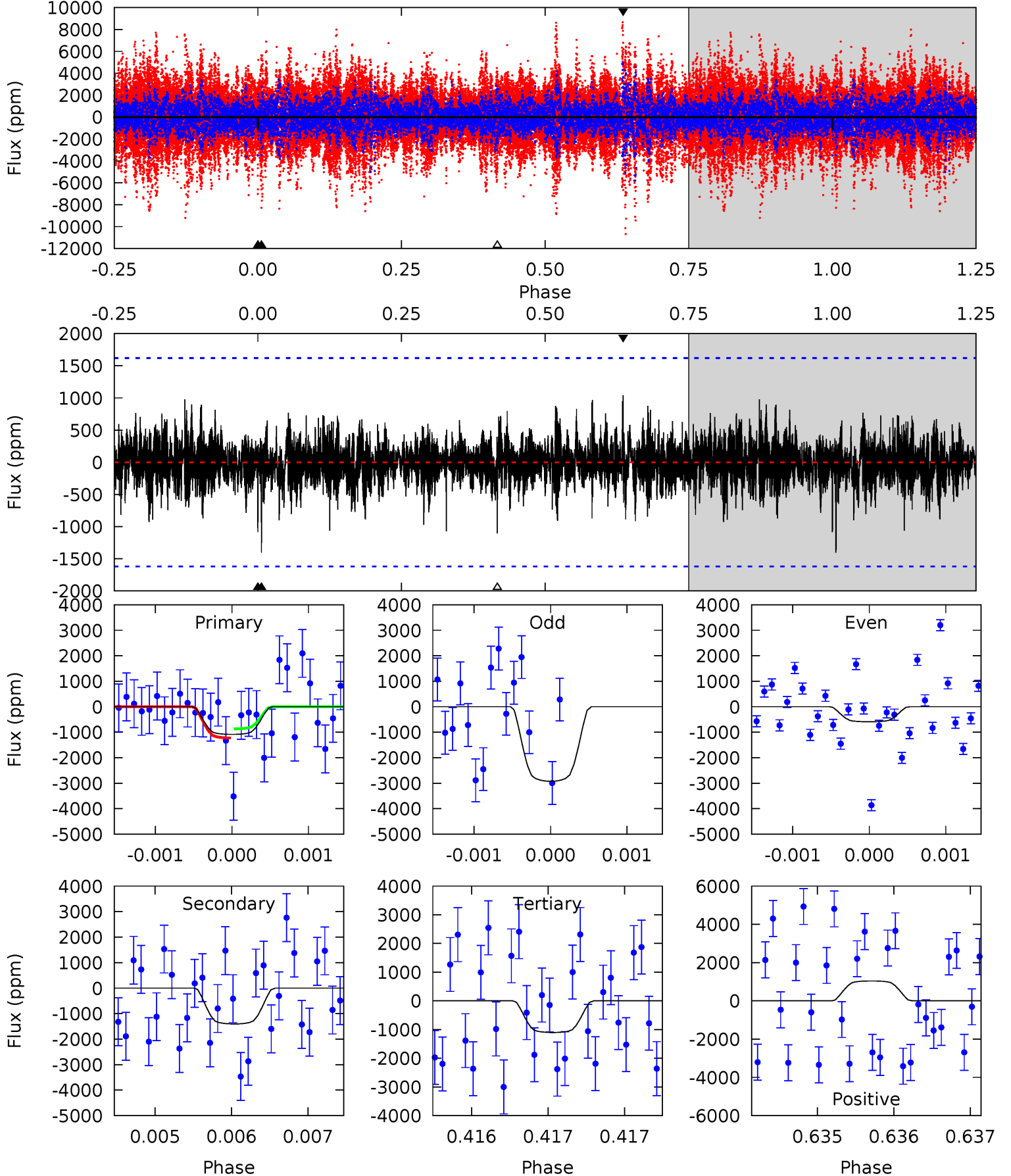
TCE 005481390-01 P=467.860412 Days $T_0=243.042078$ (BKJD)



DV Model-Shift Uniqueness Test

005481390-01, P = 467.842227 Days, E = 243.011376 Days

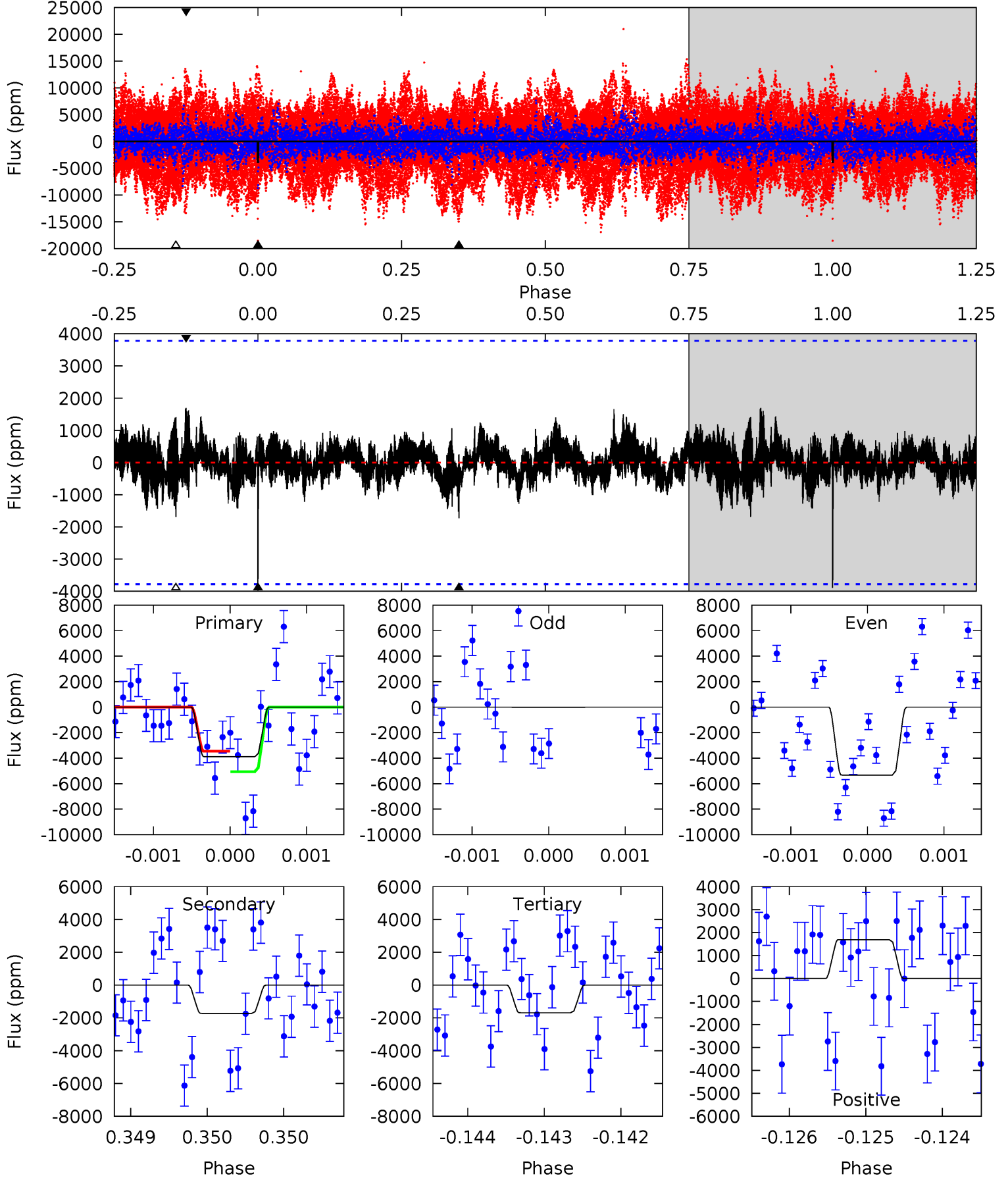
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.69	4.77	3.74	3.54	5.50	3.36	0.78	-0.06	0.15	1.03	1.23	3.50	1.02	0.43	0.58



Alt Model-Shift Uniqueness Test

005481390-01, P = 467.860412 Days, E = 243.042078 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.62	2.50	2.44	2.45	5.46	3.31	0.59	3.18	3.17	0.06	0.05	3.31	1.32	0.30	1.06



Stellar Parameters For KIC 005481390

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9795^{+306}_{-409}	$4.217^{+0.152}_{-0.228}$	$0.070^{+0.150}_{-0.600}$	$1.944^{+0.860}_{-0.463}$	$2.276^{+0.424}_{-0.518}$	$0.436^{+0.363}_{-0.262}$
	+3%/-4%	+4%/-5%	+214%/-857%	+44%/-24%	+19%/-23%	+83%/-60%
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 005481390-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1405 ± 295	$7.63^{+2.39}_{-1.65}$	681^{+66}_{-50}	10069^{+2071}_{-1494}	29876^{+21883}_{-11960}
Alt.	-1728 ± 692	$14.08^{+3.20}_{-2.36}$	680^{+67}_{-47}	7311^{+910}_{-1022}	10987^{+7347}_{-5258}

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

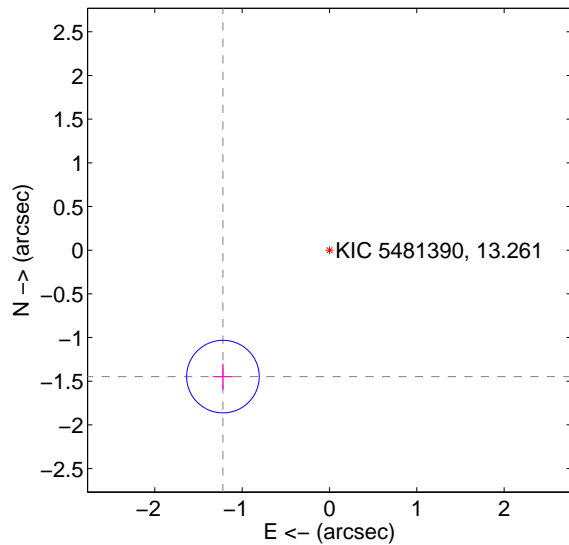
Supplemental centroid analysis for 005481390-01. Kepler magnitude: 13.26. Transit SNR 9.46

There are 0 quarters with good PRF difference image offsets

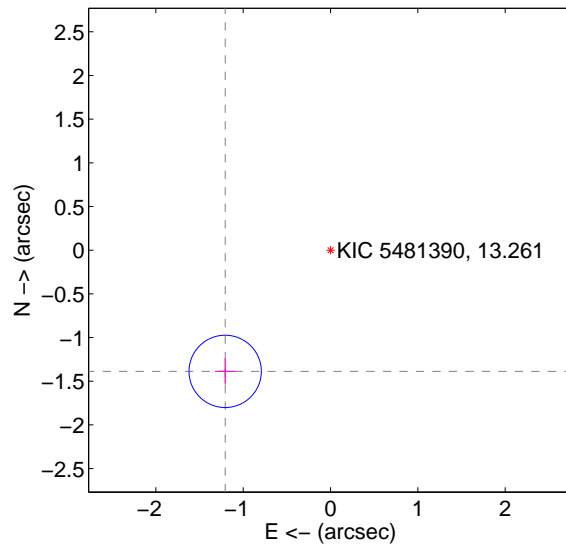
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.893 ± 0.138	13.67	1.220 ± 0.117	-1.447 ± 0.152
PRF-fit source offset from KIC position	1.839 ± 0.138	13.33	1.206 ± 0.117	-1.388 ± 0.152
photometric centroid source offset	0.52 ± 0.59	0.88	0.51 ± 0.59	0.10 ± 0.53

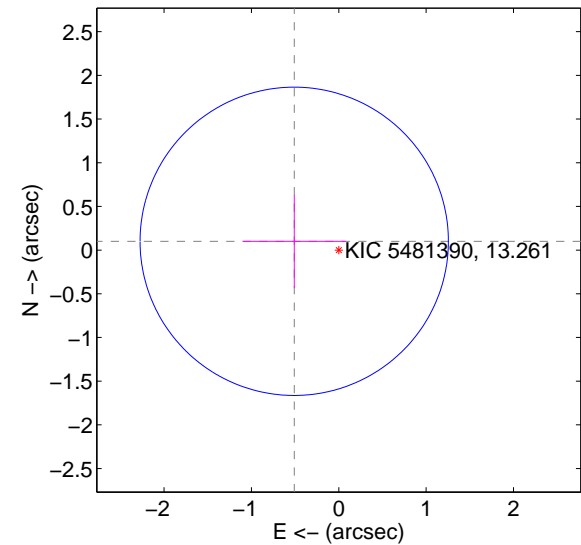
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

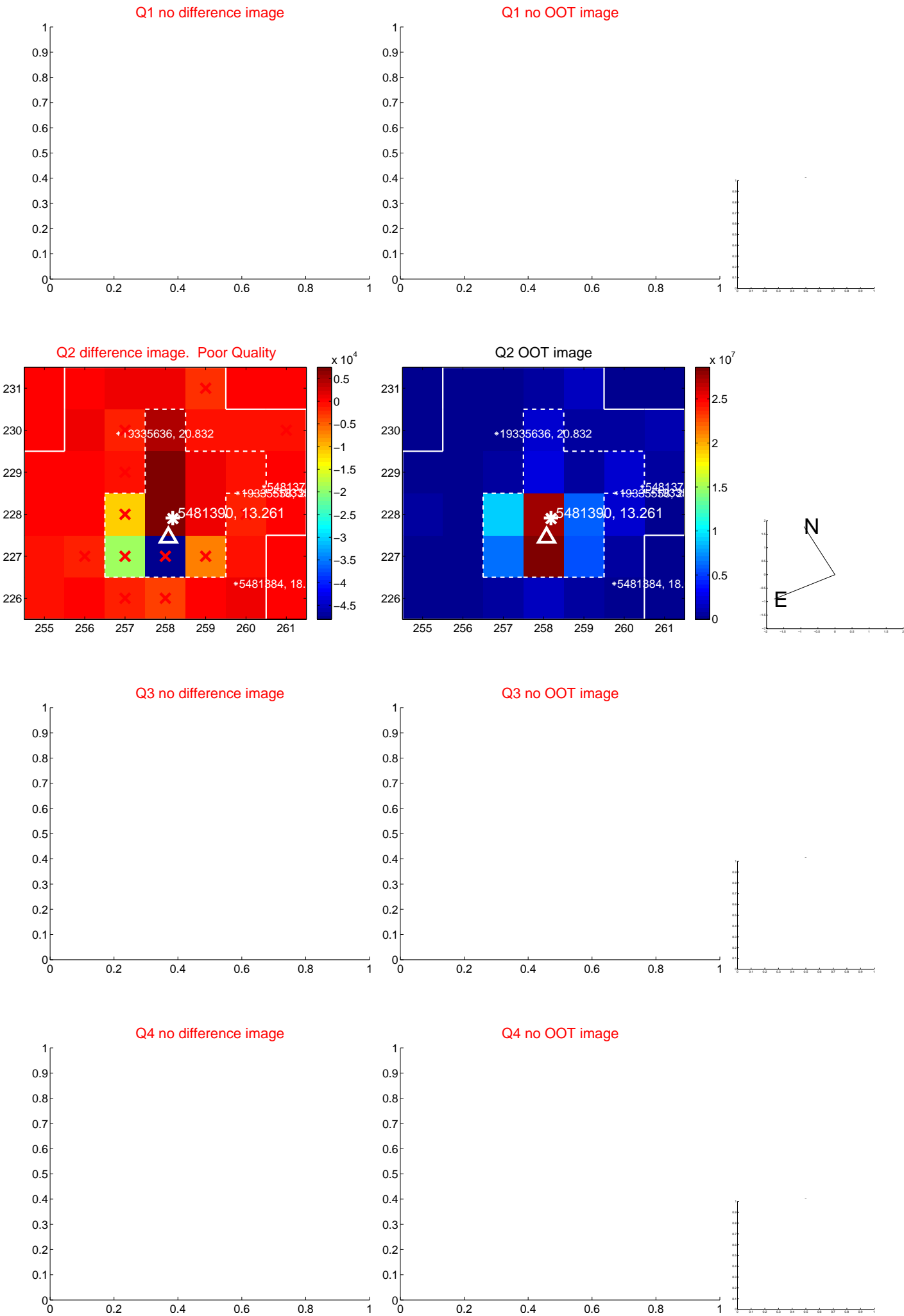


offset from photometric centroids



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.



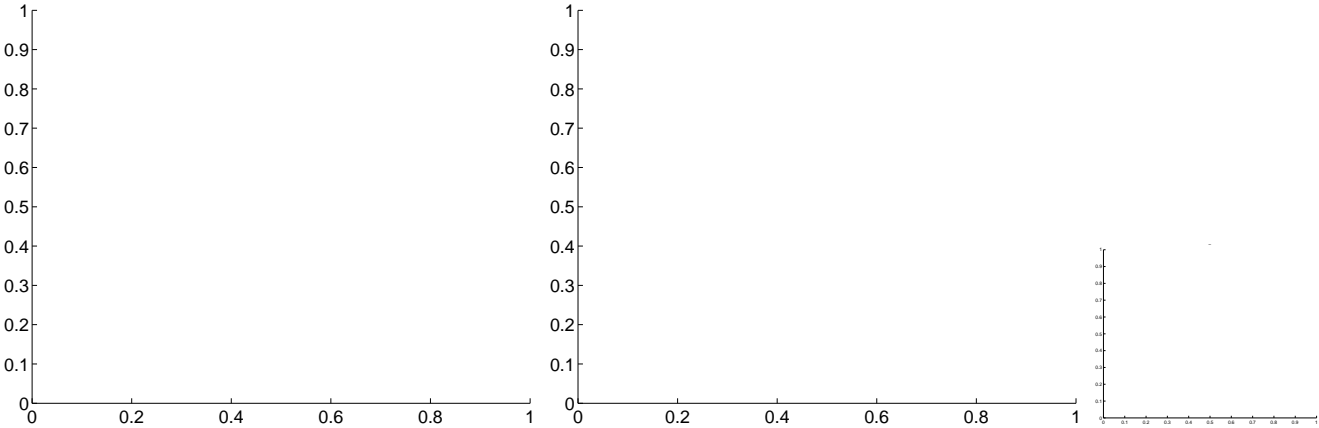
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



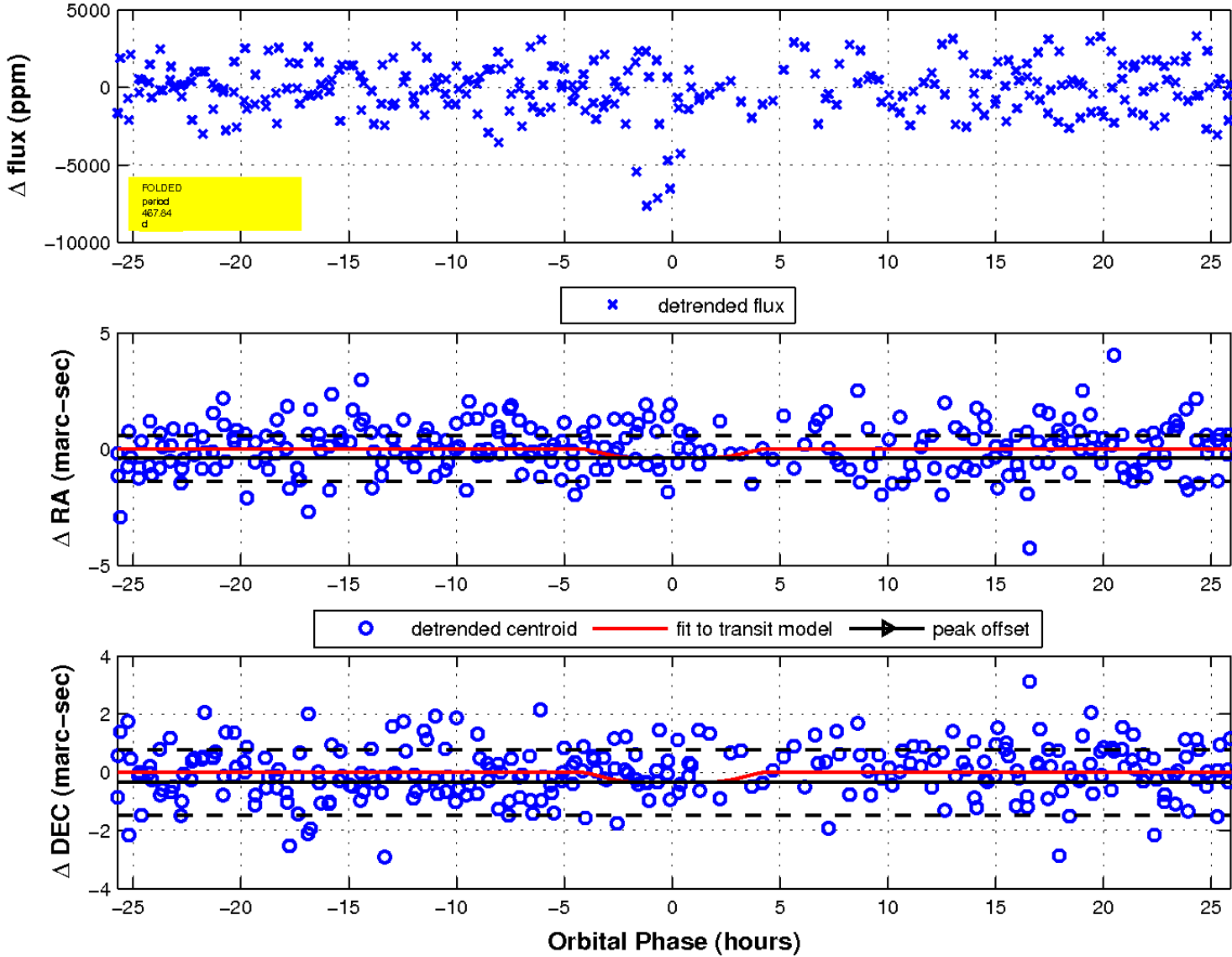
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q17 no difference image

Q17 no OOT image

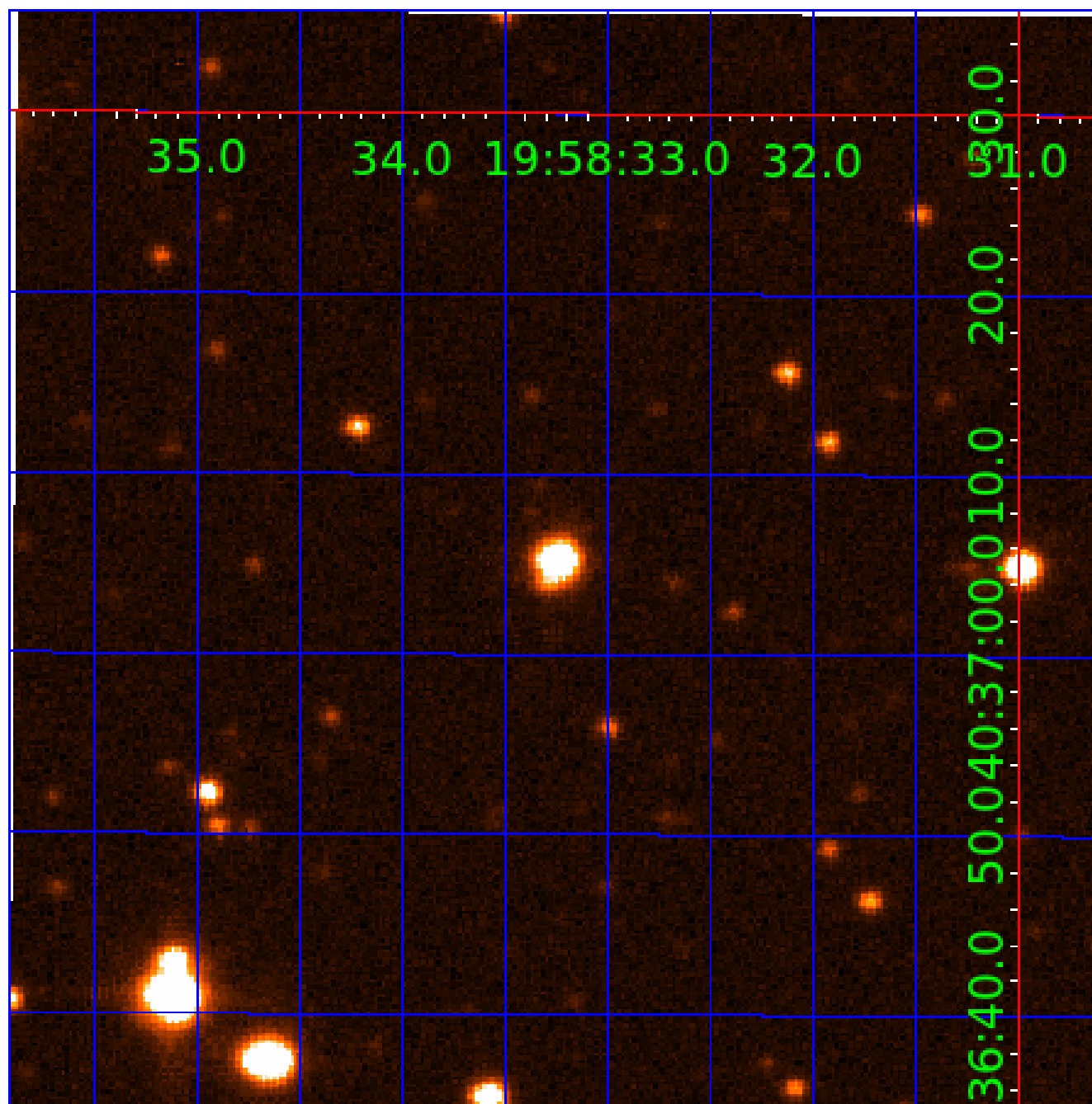


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005481390

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})
005481390-01	OBS	No	467.842227	243.011376	1064.7	8.653	14.2	9.5	1.94	9795	7.53	12.96
005481390-02	OBS	No	388.338407	333.755302	1376.9	4.238	10.3	10.0	1.94	9795	7.65	16.61

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005481390-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005481390-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

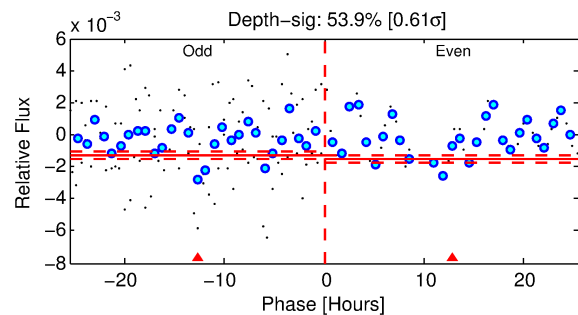
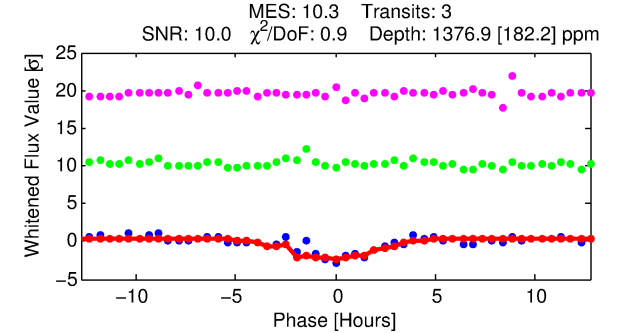
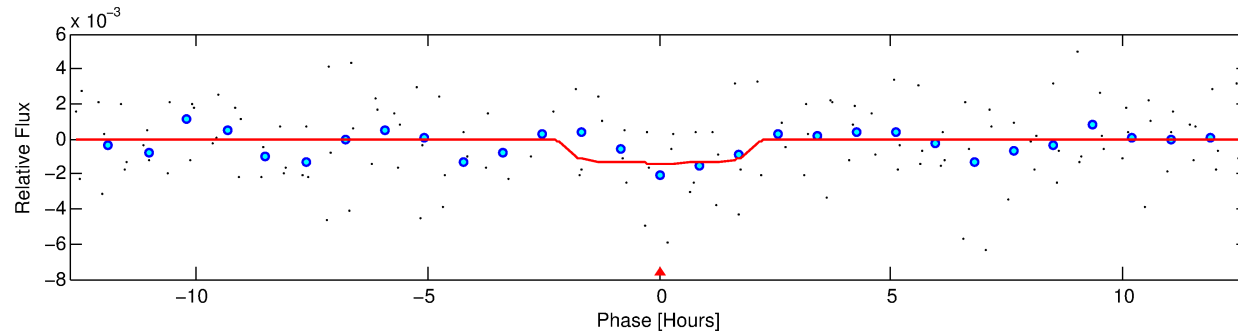
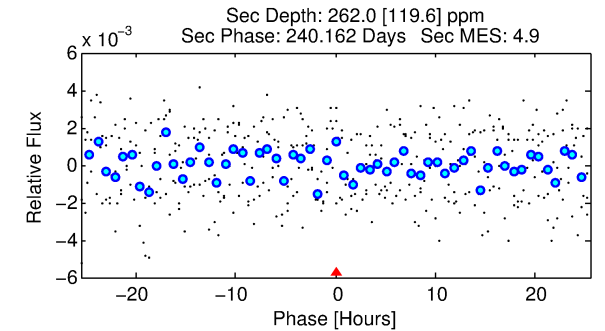
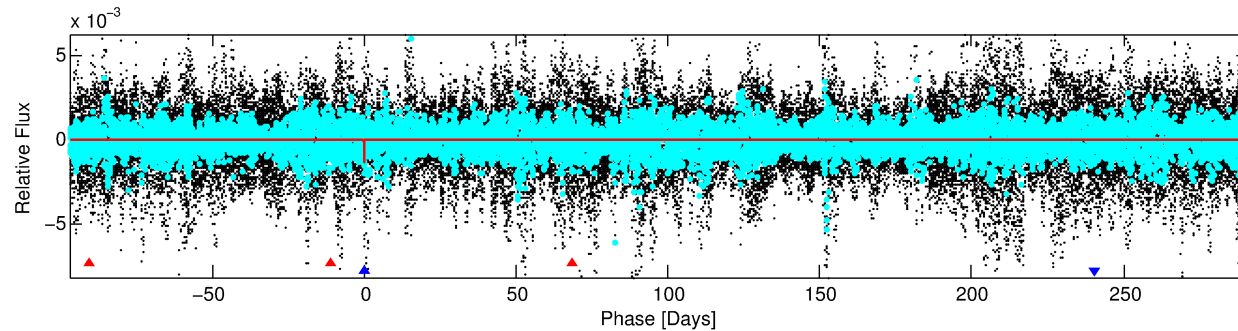
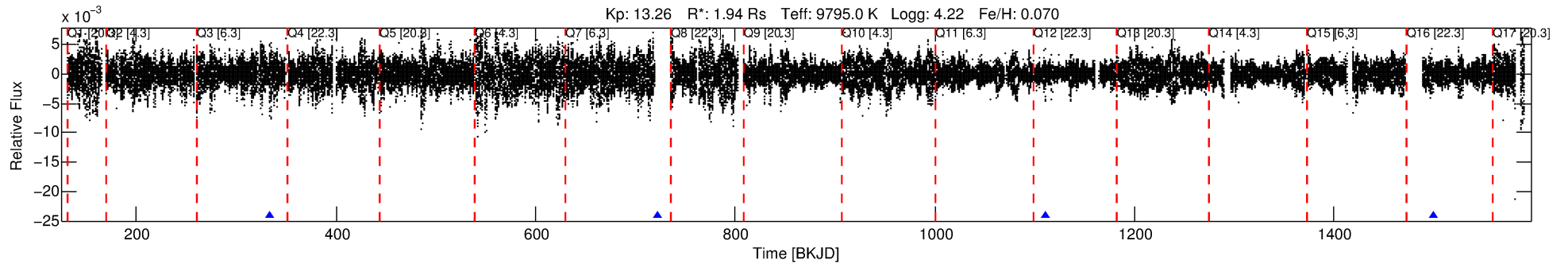
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005481390-02

No Significant Match Found

DV One-Page Summary

KIC: 5481390 Candidate: 2 of 2 Period: 388.338 d



DV Fit Results:

Period = 388.33841 [0.00705] d
Epoch = 333.7553 [0.0137] BKJD
Rp/R* = 0.0361 [0.0139]
a/R* = 584.77 [1627.00]
b = 0.61 [2.81]
Seff = 16.61 [8.09]
Teq = 515 [63] K
Rp = 7.65 [4.49] Re
a = 1.3697 [0.4697] AU
Ag = 4622.26 [4646.01] [0.99 σ]
Teffp = 6563 [1494] K [4.05 σ]

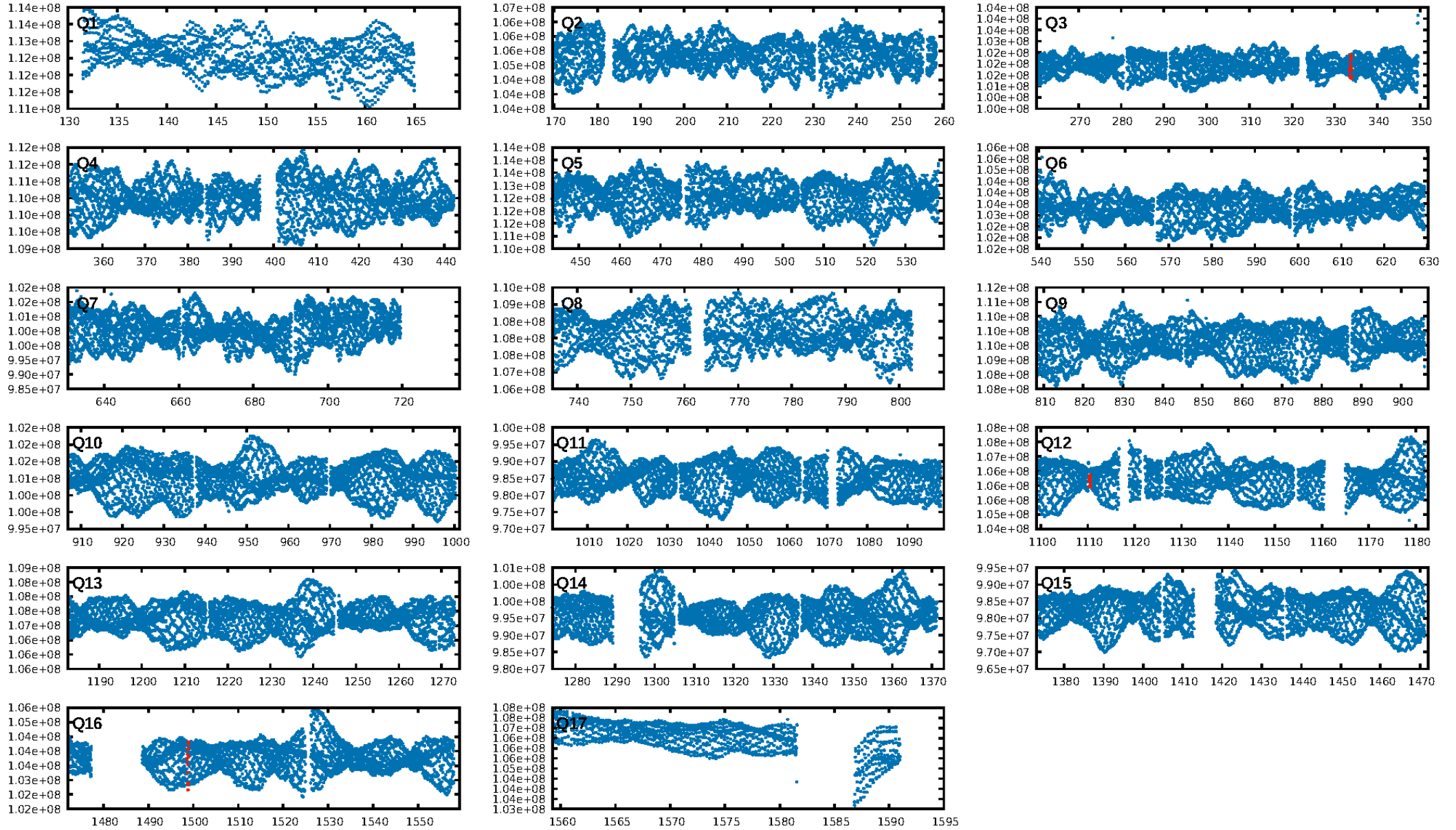
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [198.04 σ]
ModelChiSquare2-sig: 9.7%
ModelChiSquareGof-sig: 94.9%
Bootstrap-pfa: 1.69e-08
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.752
Centroid-sig: 27.0%
Centroid-so: 0.632 arcsec [1.37 σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [1/1]

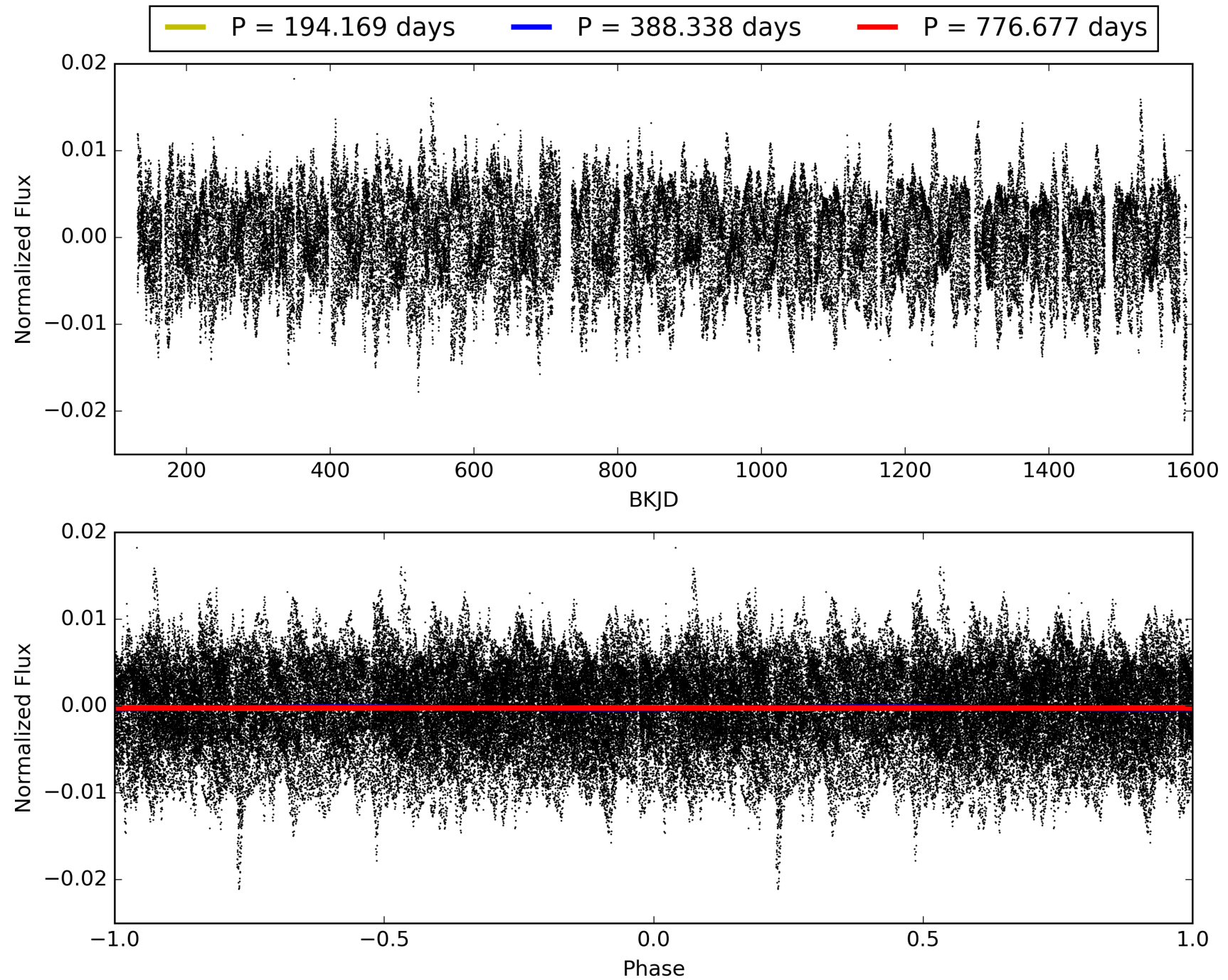
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 12:01:13 Z

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

TCE 005481390-02, PDC Light Curves

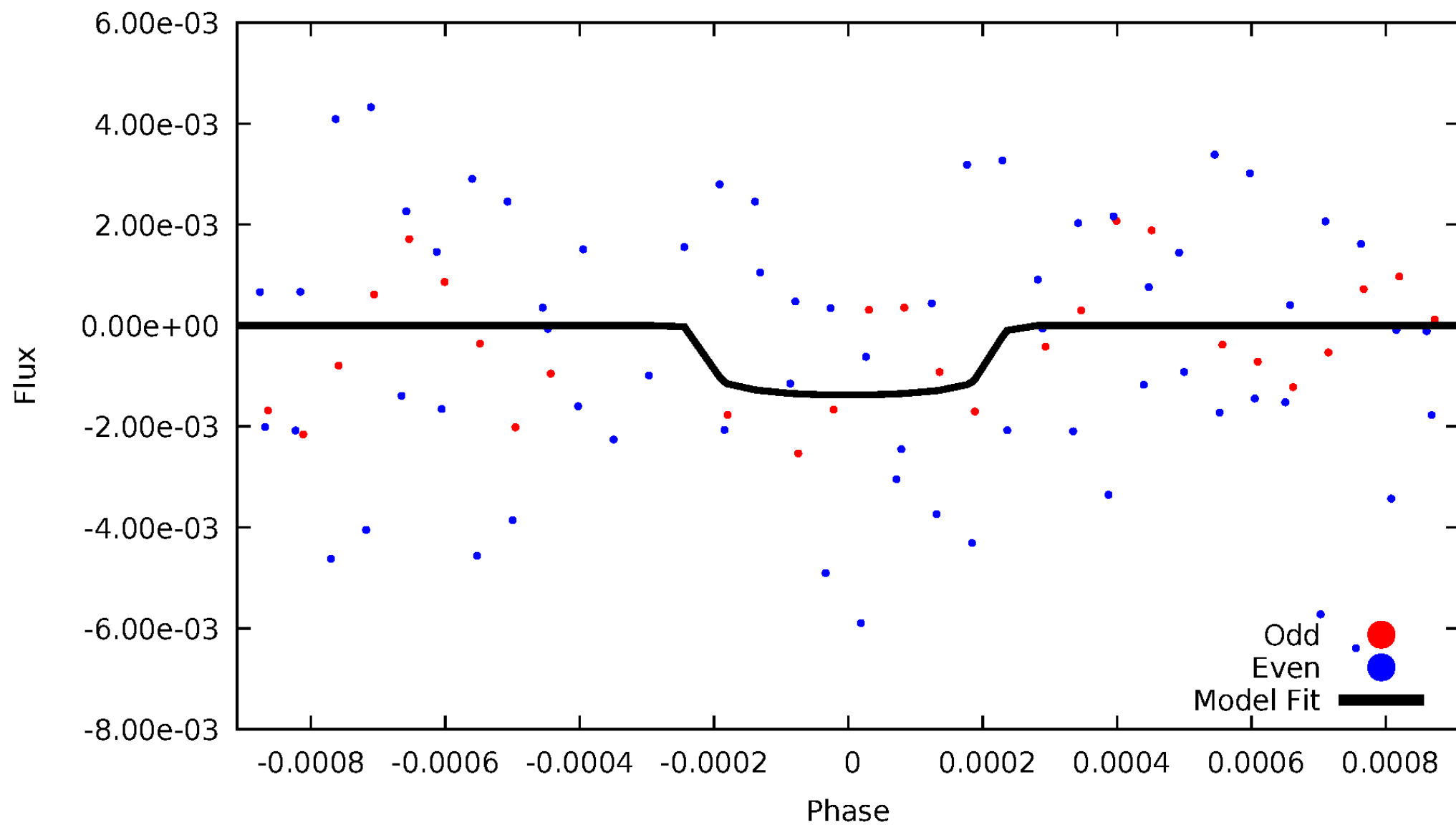


TCE 005481390-02



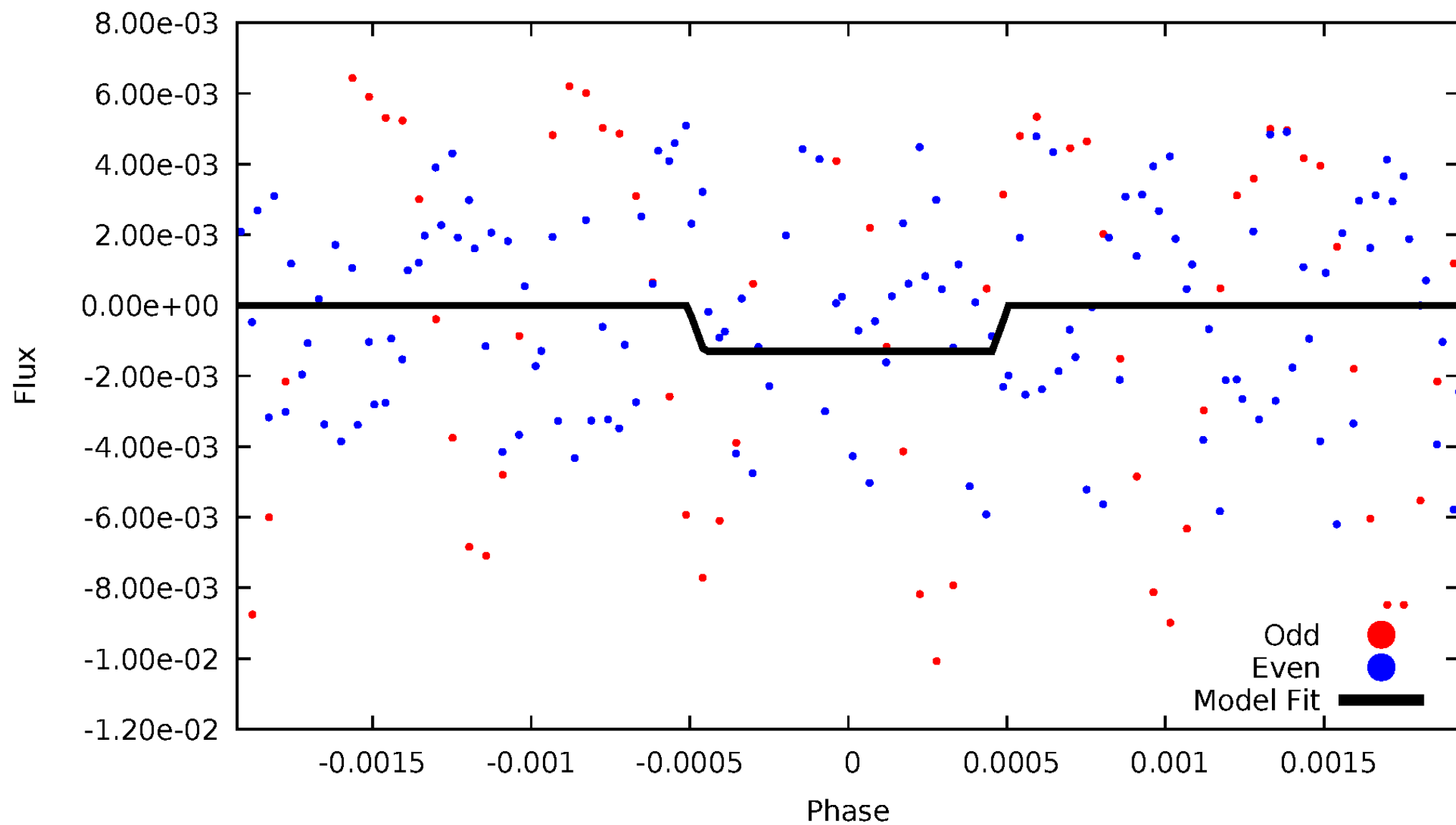
DV Odd/Even

TCE 005481390-02



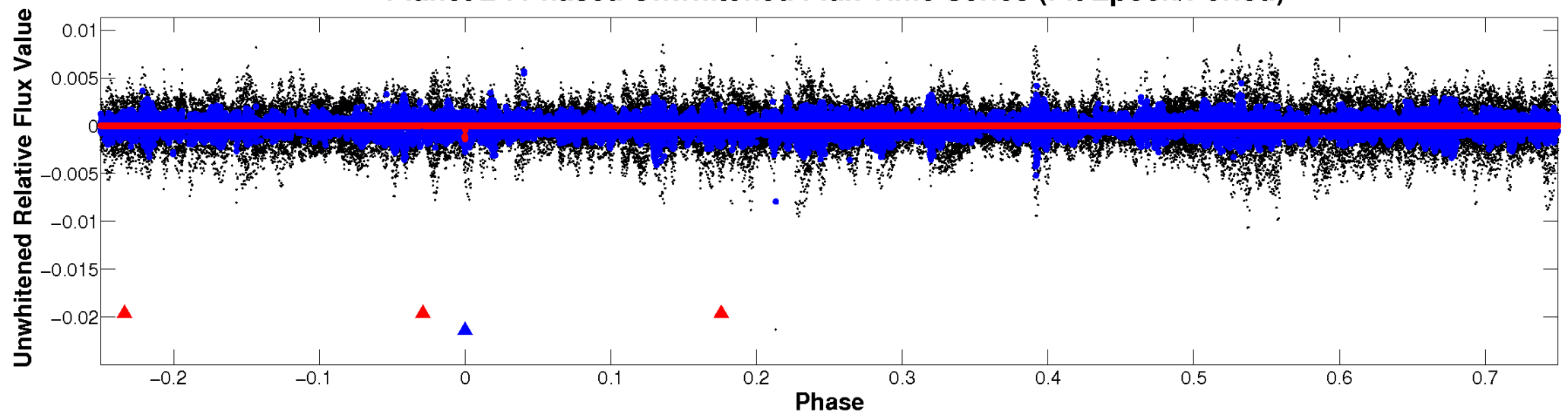
ALT Odd/Even

TCE 005481390-02

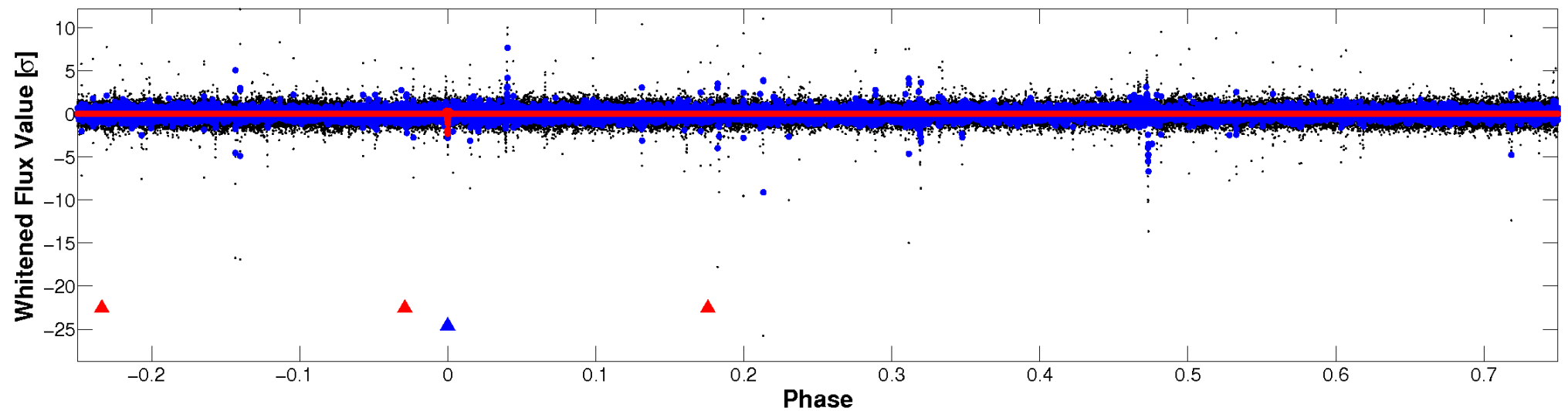


Non-Whitened Vs. Whitened Light Curve

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

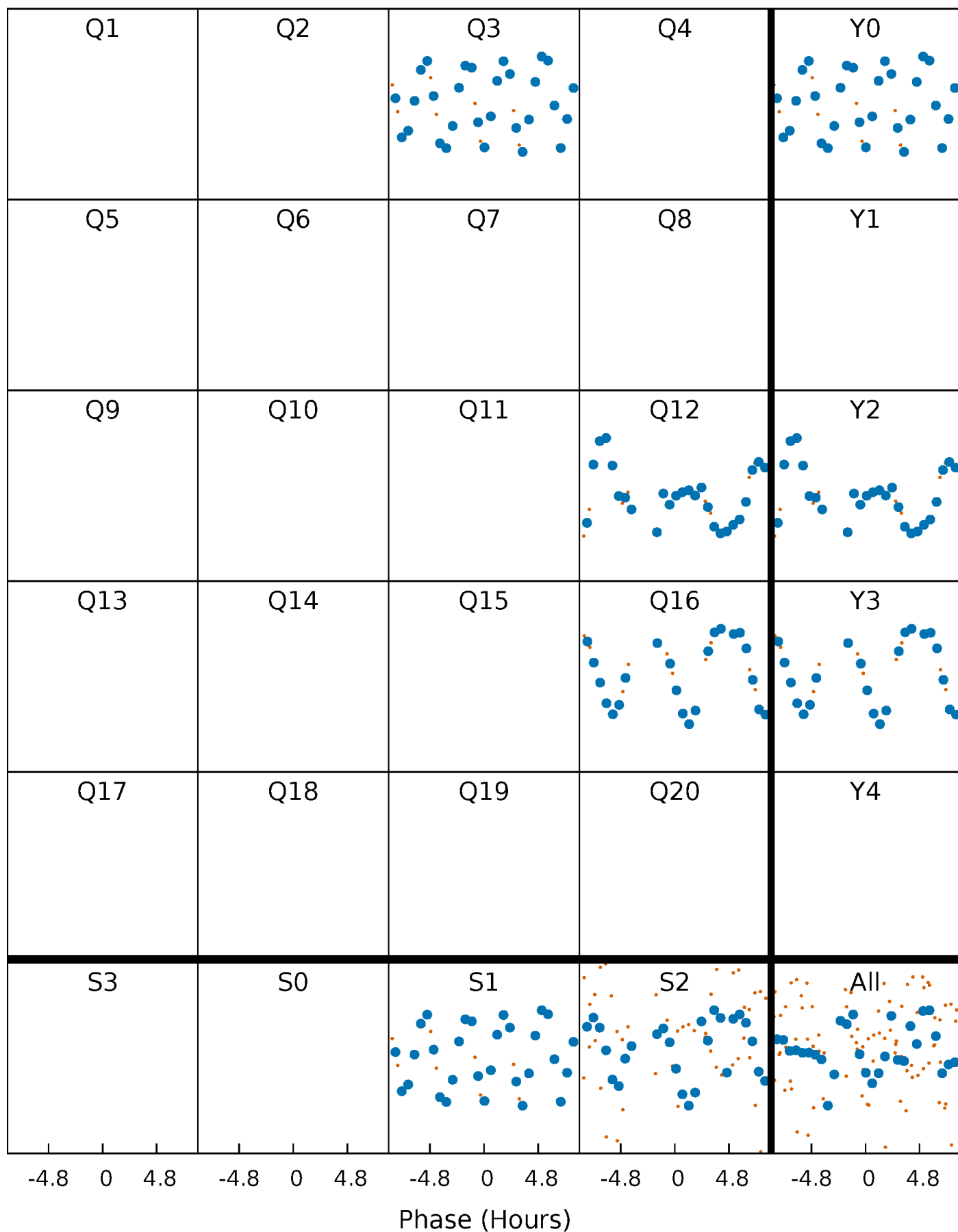


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



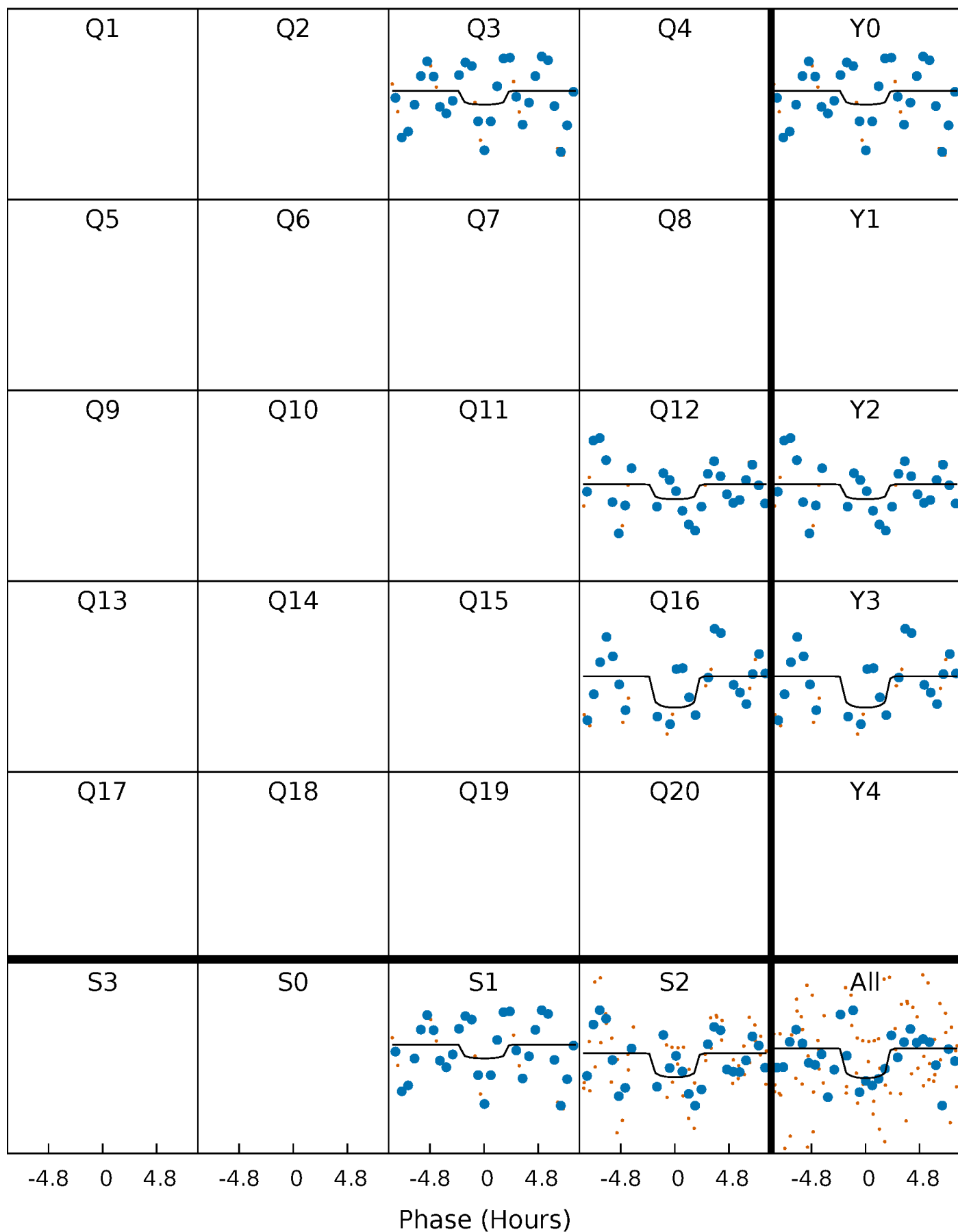
PDC Quarter-Phased Transit Curves

TCE 005481390-02 $P=388.338407$ Days $T_0=333.755302$ (BKJD)



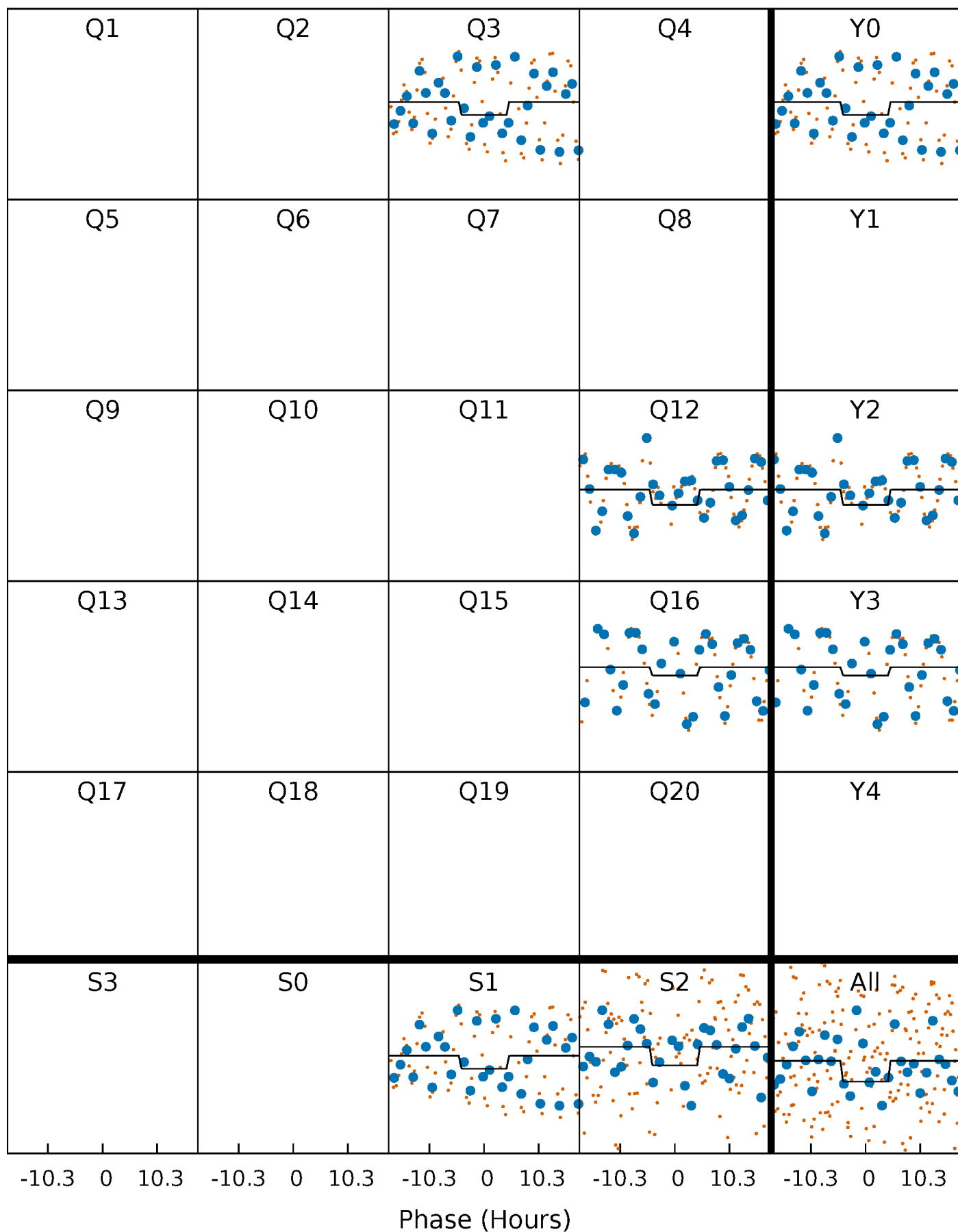
DV Quarter-Phased Transit Curves

TCE 005481390-02 $P=388.338407$ Days $T_0=333.755302$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

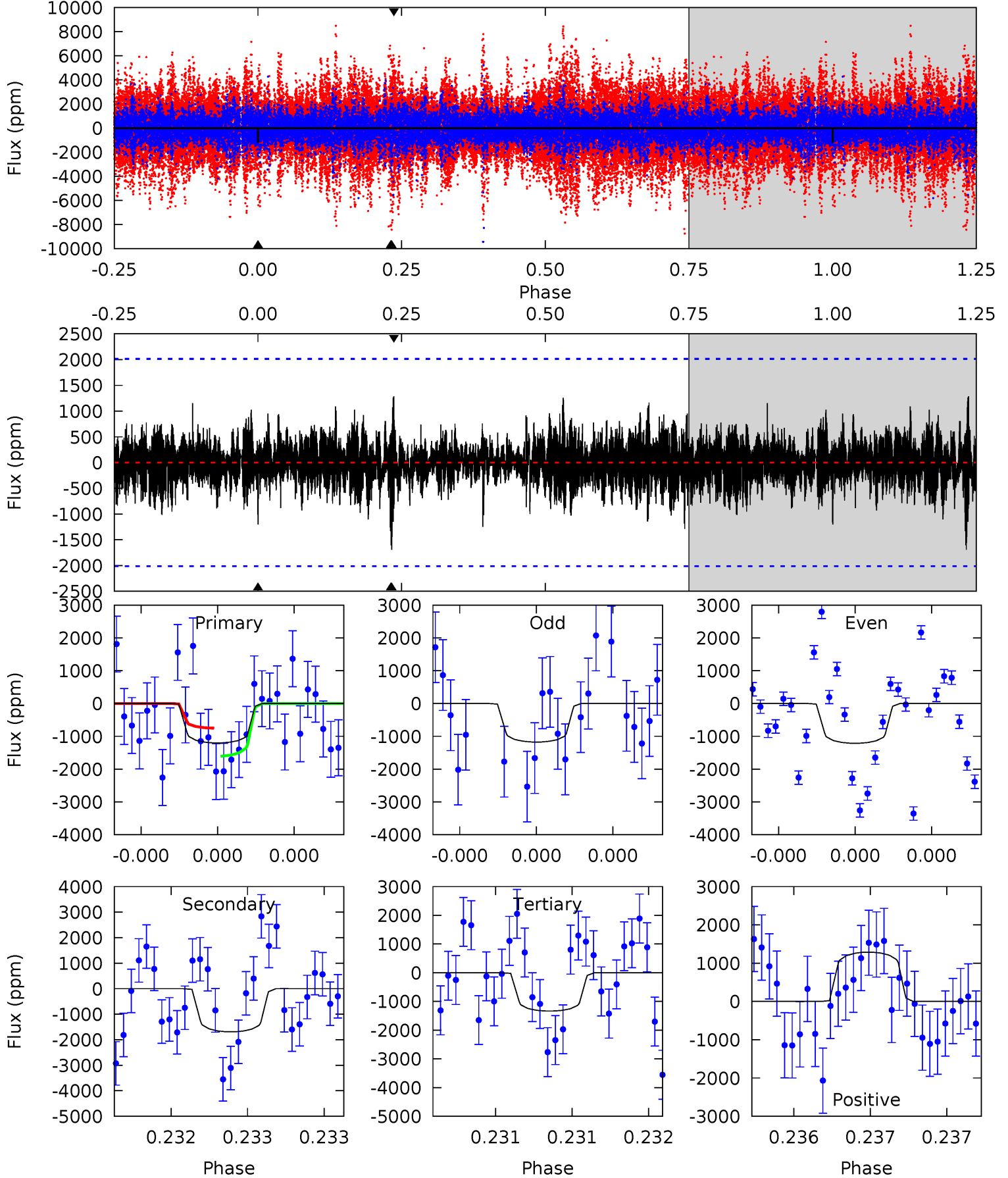
TCE 005481390-02 $P=388.326185$ Days $T_0=333.736693$ (BKJD)



DV Model-Shift Uniqueness Test

005481390-02, P = 388.338407 Days, E = 333.755302 Days

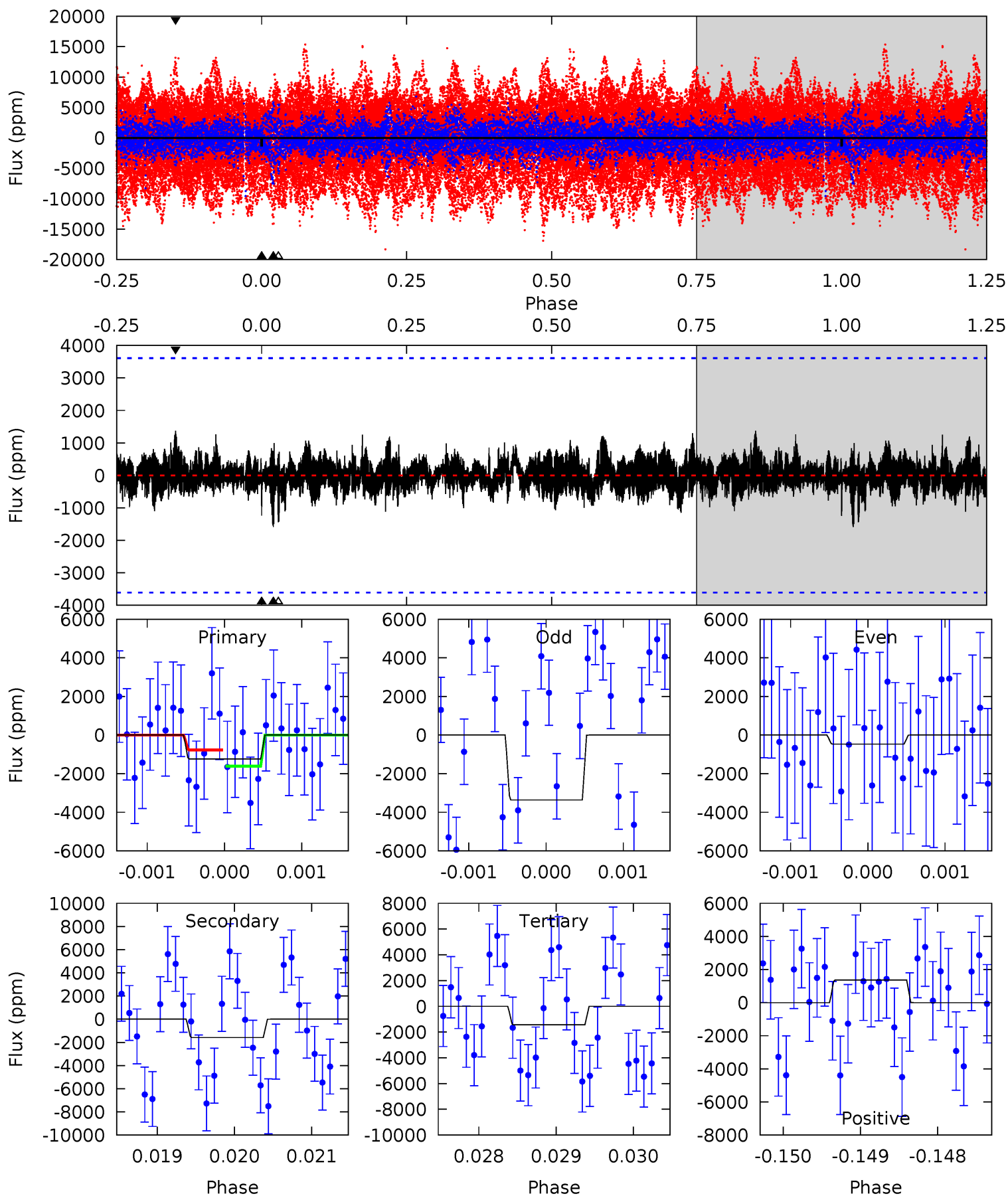
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.33	4.68	3.70	3.57	5.58	3.49	0.81	-0.37	-0.24	0.98	1.11	0.05	1.02	0.43	1.18



Alt Model-Shift Uniqueness Test

005481390-02, P = 388.326185 Days, E = 333.736693 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.88	2.40	2.17	2.07	5.46	3.30	0.48	-0.30	-0.20	0.23	0.33	1.97	1.99	0.46	0.62



Stellar Parameters For KIC 005481390

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	9795^{+306}_{-409}	$4.217^{+0.152}_{-0.228}$	$0.070^{+0.150}_{-0.600}$	$1.944^{+0.860}_{-0.463}$	$2.276^{+0.424}_{-0.518}$	$0.436^{+0.363}_{-0.262}$
	+3%/-4%	+4%/-5%	+214%/-857%	+44%/-24%	+19%/-23%	+83%/-60%
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 005481390-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1689 ± 361	$7.66^{+3.85}_{-2.93}$	722^{+67}_{-53}	10851^{+5711}_{-2549}	28597^{+50092}_{-15695}
Alt.	-1587 ± 661	$7.99^{+3.39}_{-3.03}$	722^{+69}_{-53}	10090^{+5229}_{-2525}	24199^{+42406}_{-14725}

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

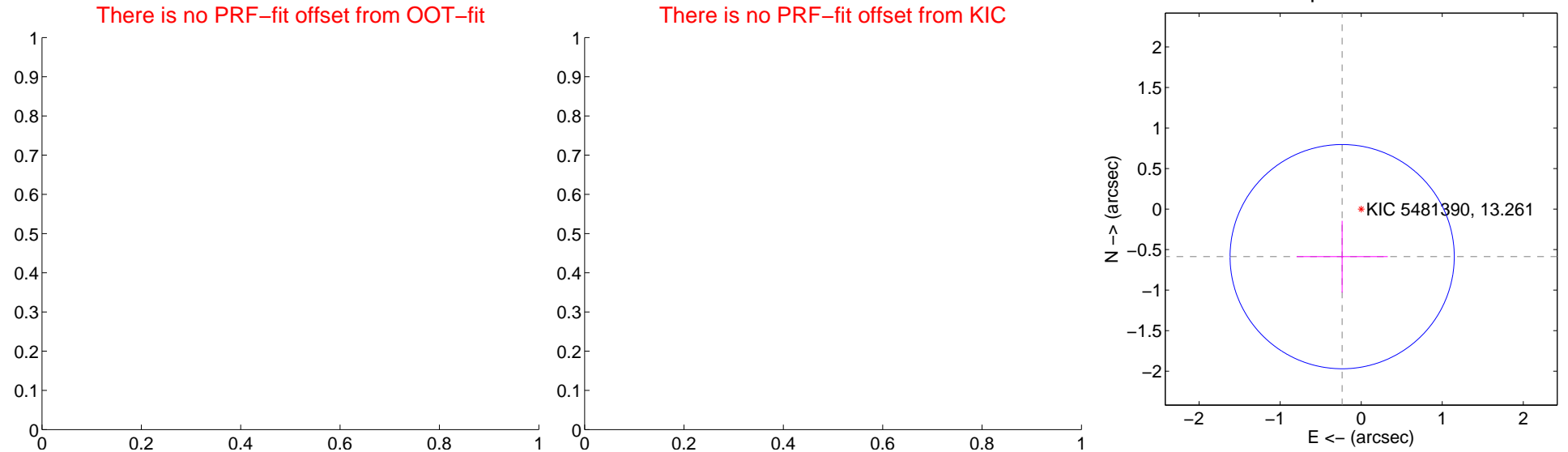
DV Centroid Data

Supplemental centroid analysis for 005481390-02. Kepler magnitude: 13.26. Transit SNR 10.01

There are 0 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	0.63 ± 0.46	1.37	0.23 ± 0.56	-0.59 ± 0.44



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.

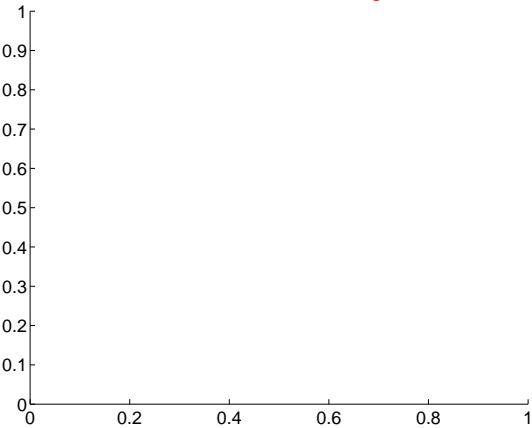
Q1 no difference image



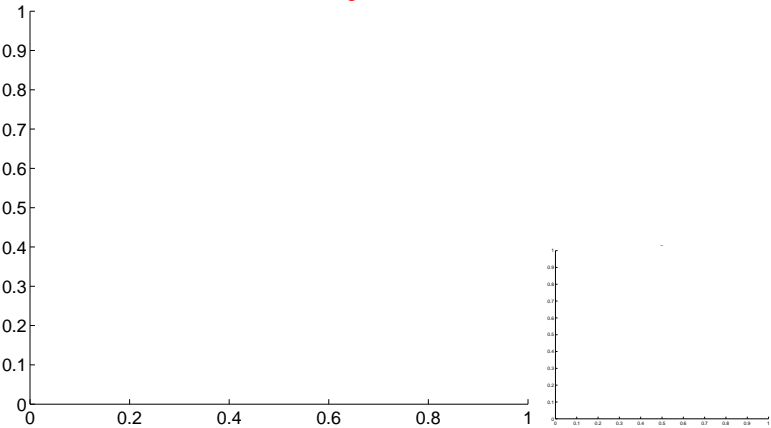
Q1 no OOT image



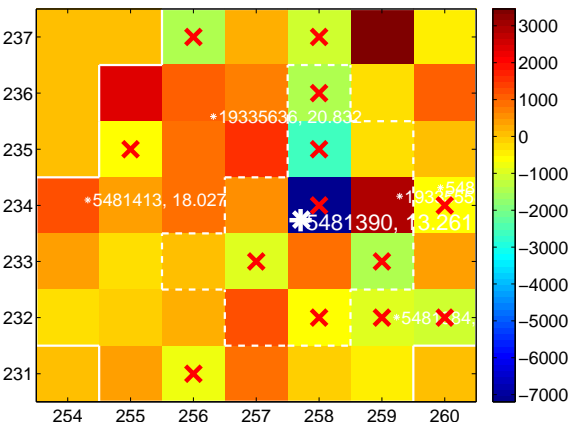
Q2 no difference image



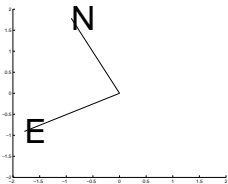
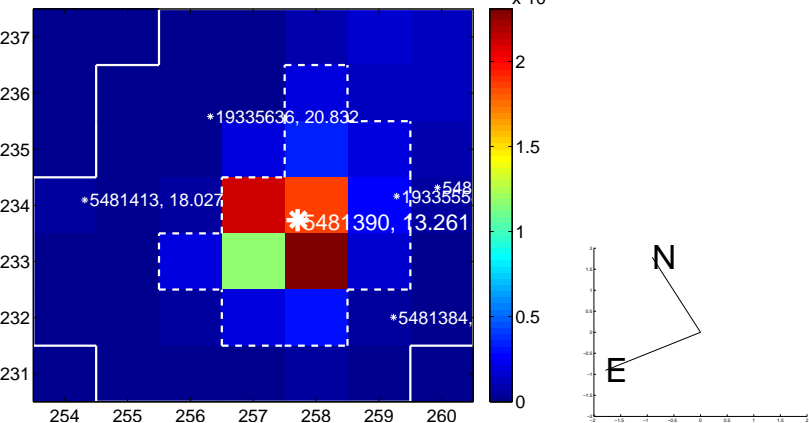
Q2 no OOT image



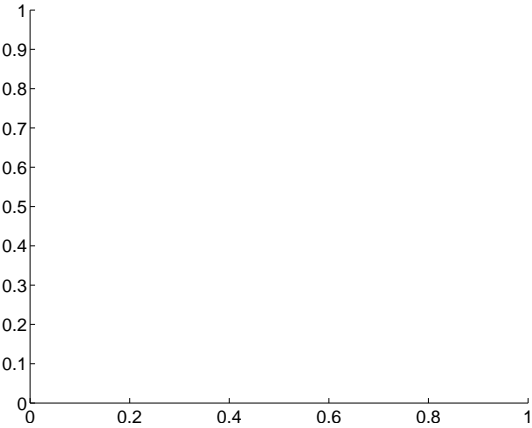
Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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



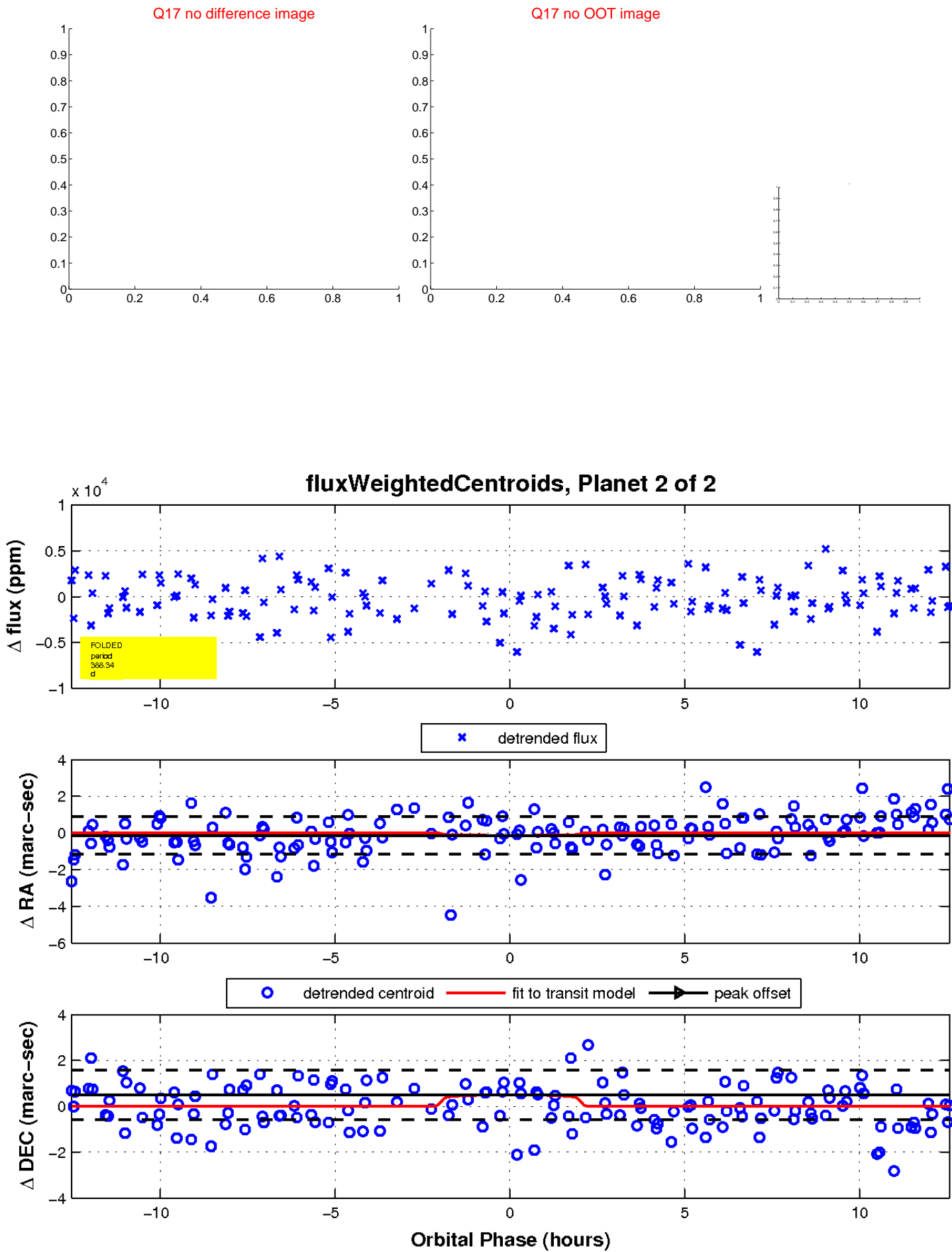
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

