

KIC 010529126

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})
010529126-01	OBS	No	322.601537	349.565324	239.9	3.802	9.2	6.2	0.81	5501	1.41	0.74
010529126-02	OBS	No	437.633389	177.397170	149.7	7.019	10.1	6.1	0.81	5501	1.14	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010529126-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010529126-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—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.

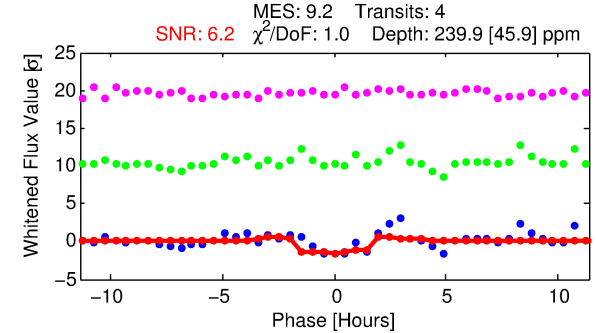
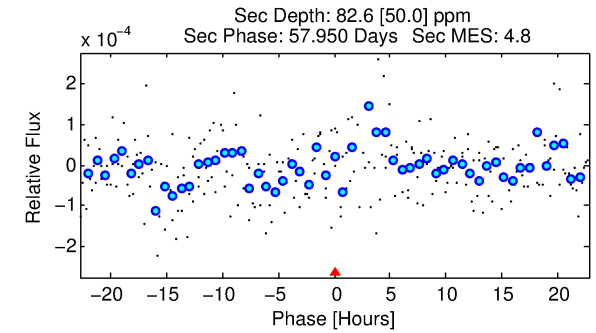
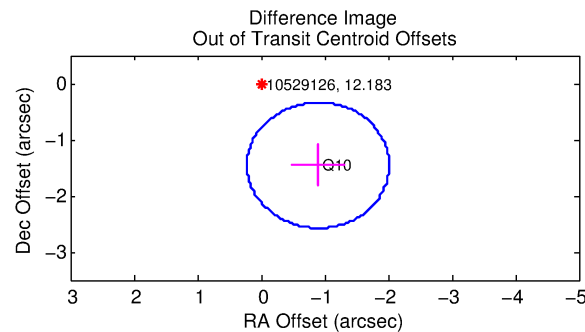
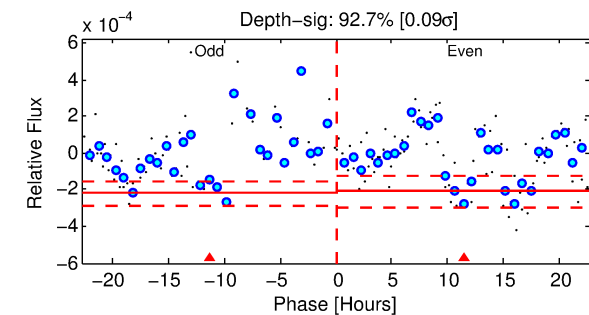
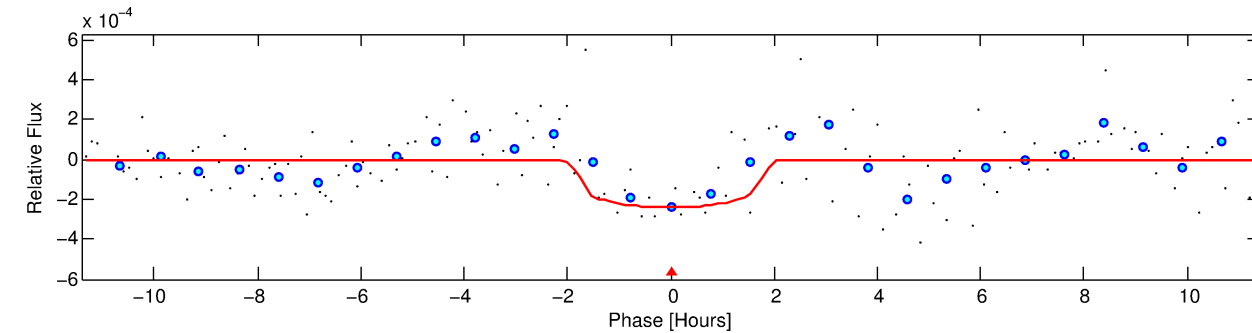
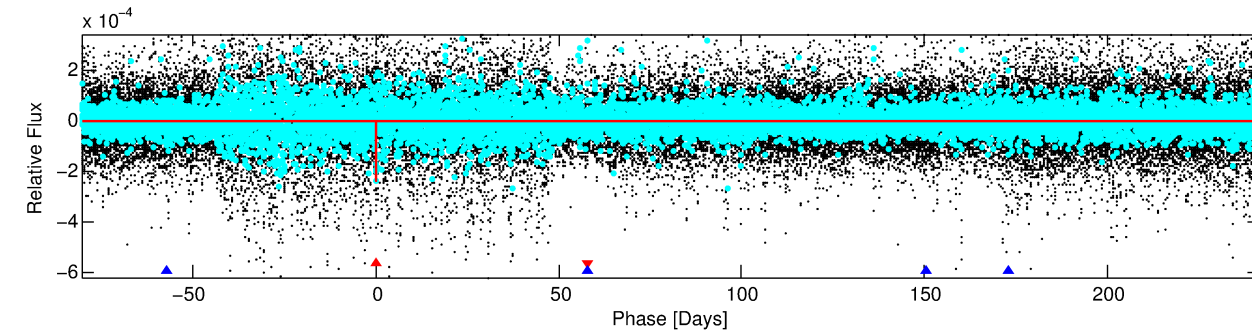
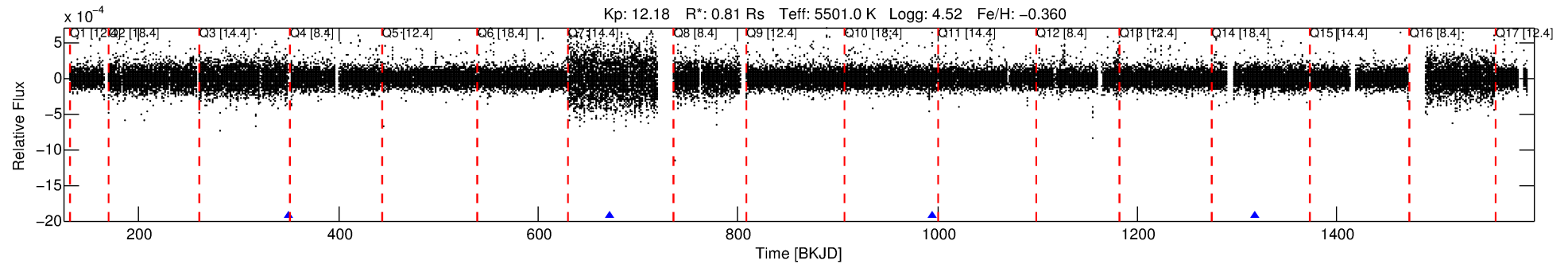
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010529126-01

No Significant Match Found

DV One-Page Summary

KIC: 10529126 Candidate: 1 of 2 Period: 322.602 d



DV Fit Results:

Period = 322.60154 [0.00490] d
Epoch = 349.5653 [0.0096] BKJD
Rp/R* = 0.0160 [0.0145]
a/R* = 384.98 [1531.00]
b = 0.82 [1.57]
Seff = 0.75 [0.15]
Teq = 237 [12] K
Rp = 1.41 [1.30] Re
a = 0.8487 [0.1005] AU
Ag = 16458.18 [31630.19] [0.52σ]
Teffp = 4149 [1989] K [1.97σ]

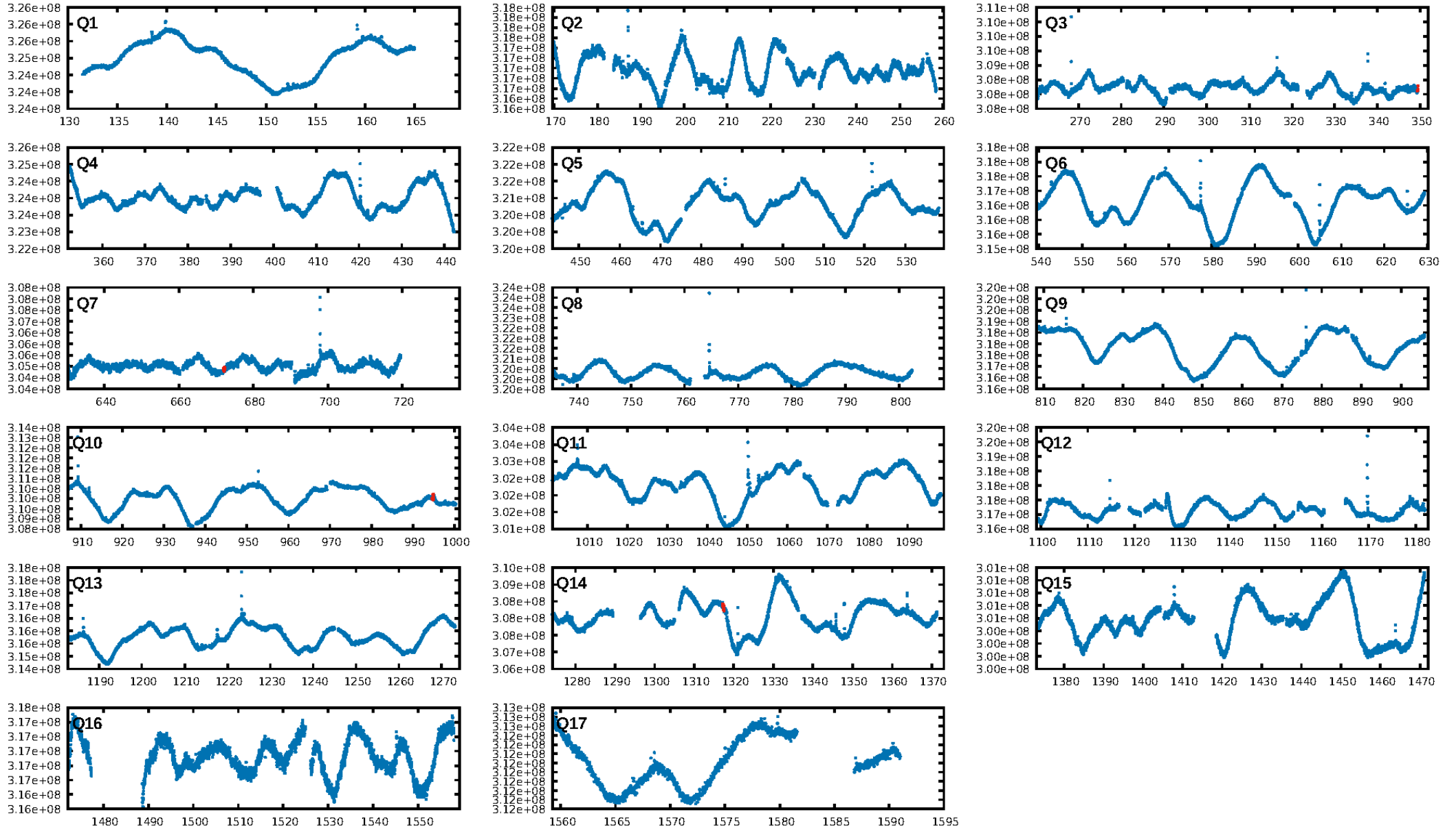
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [345.84σ]
ModelChiSquare2-sig: 93.7%
ModelChiSquareGof-sig: 98.1%
Bootstrap-pfa: 2.69e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.344
Centroid-sig: 49.8%
Centroid-so: 1.083 arcsec [0.94σ]
OotOffset-rm: 1.712 arcsec [4.59σ]
KicOffset-rm: 1.406 arcsec [3.77σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

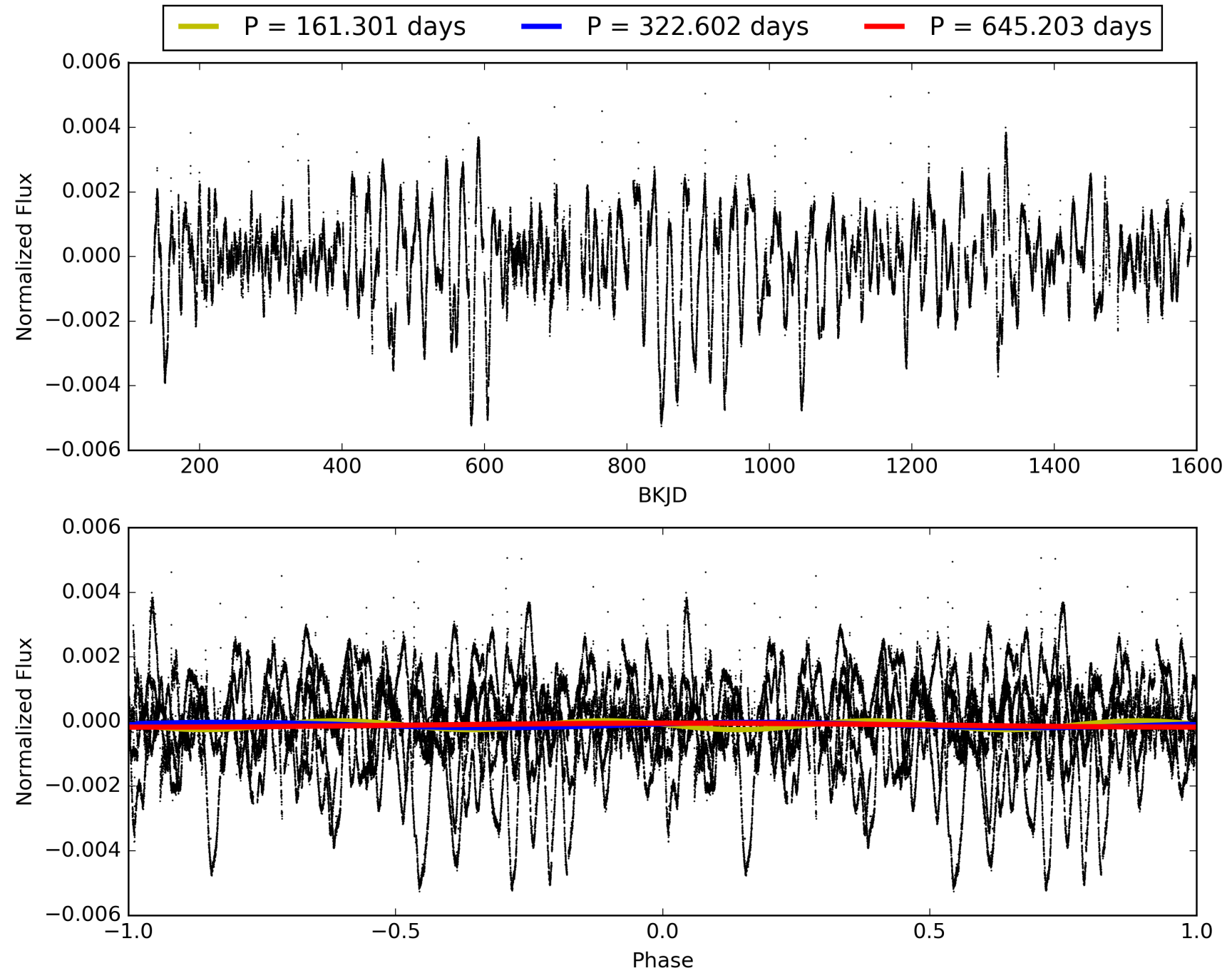
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:54:49 Z

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

TCE 010529126-01, PDC Light Curves

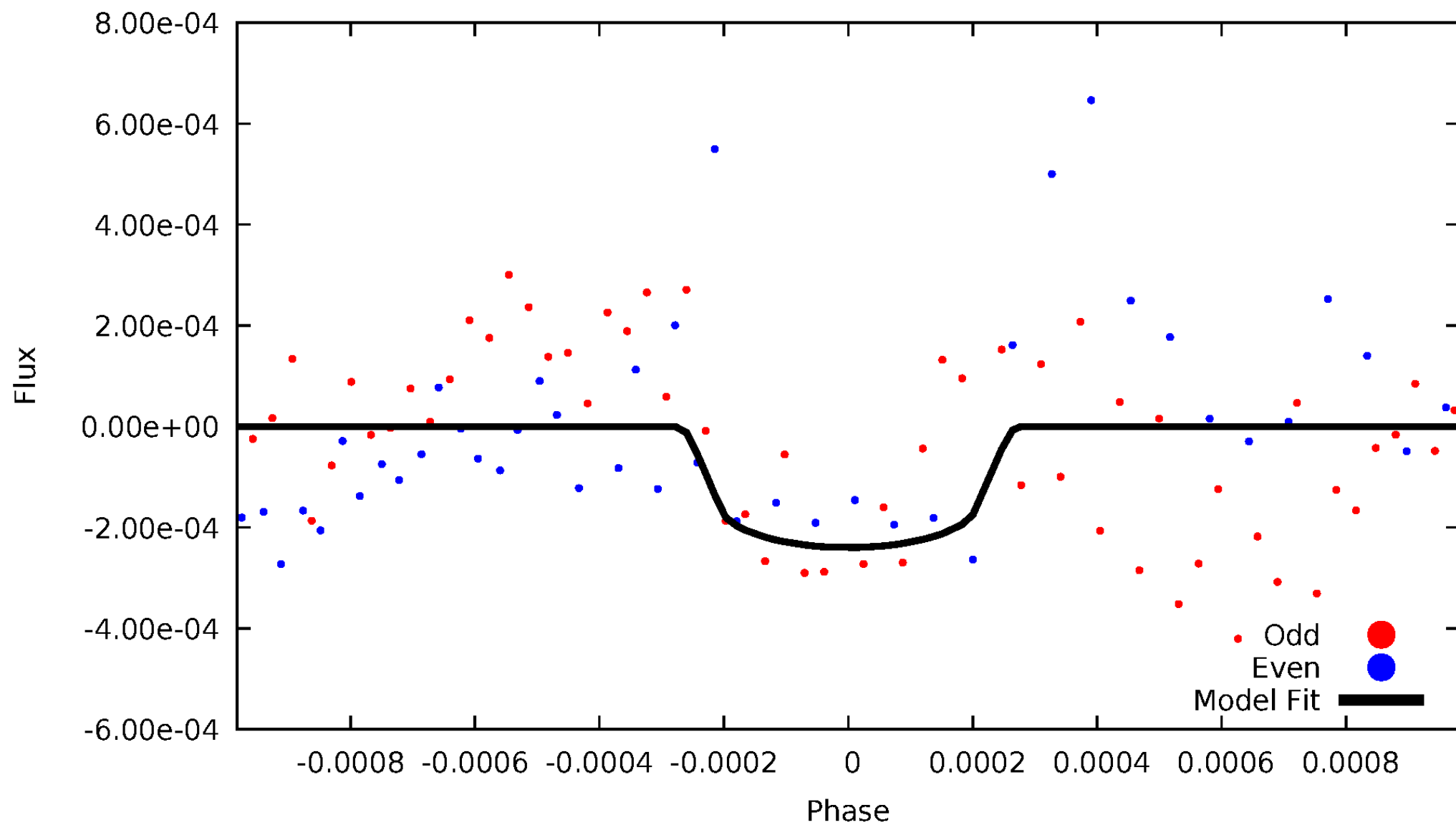


TCE 010529126-01



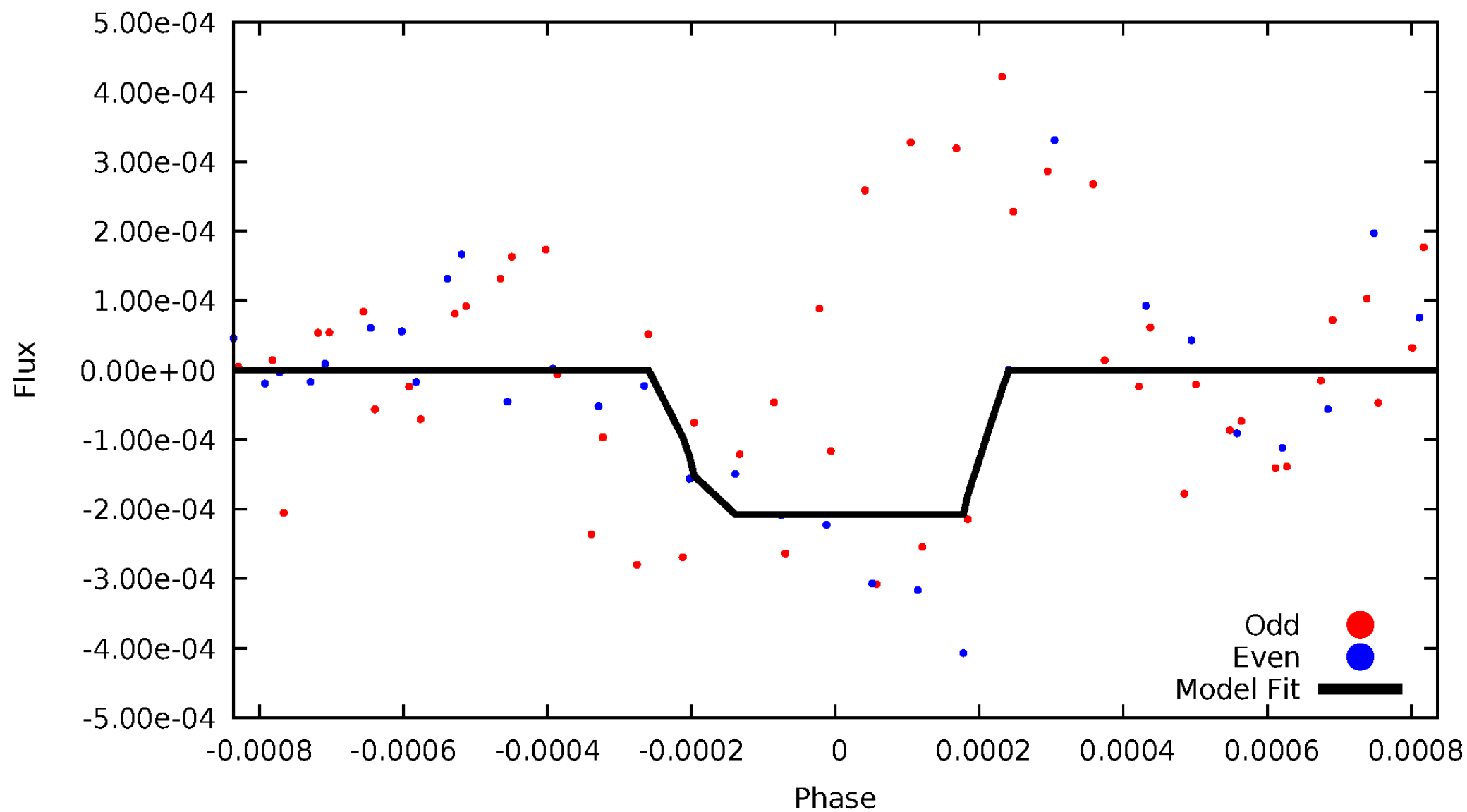
DV Odd/Even

TCE 010529126-01



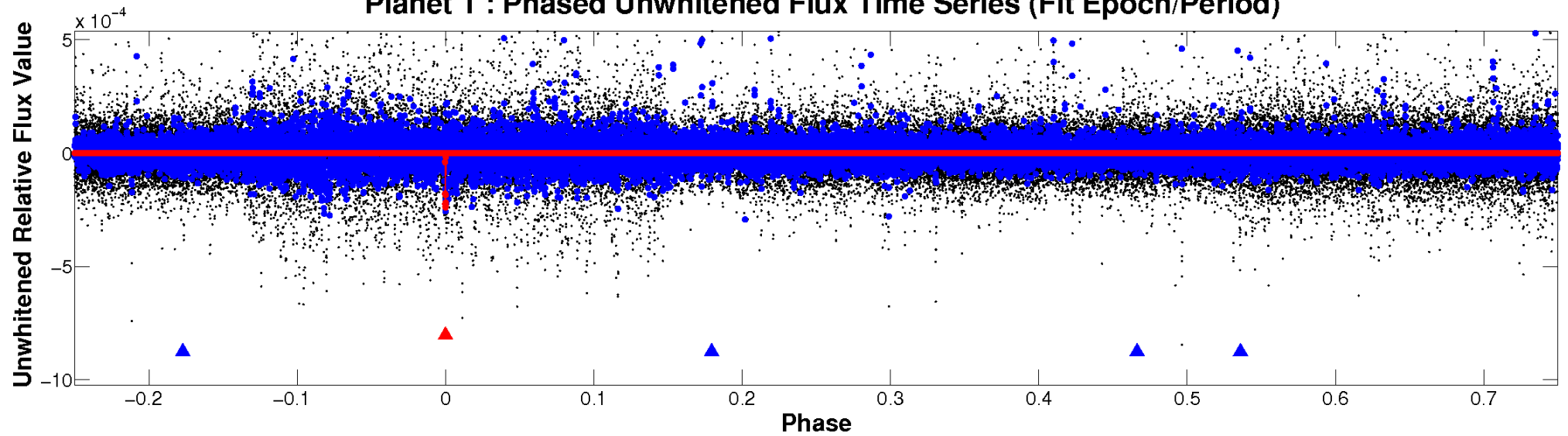
ALT Odd/Even

TCE 010529126-01

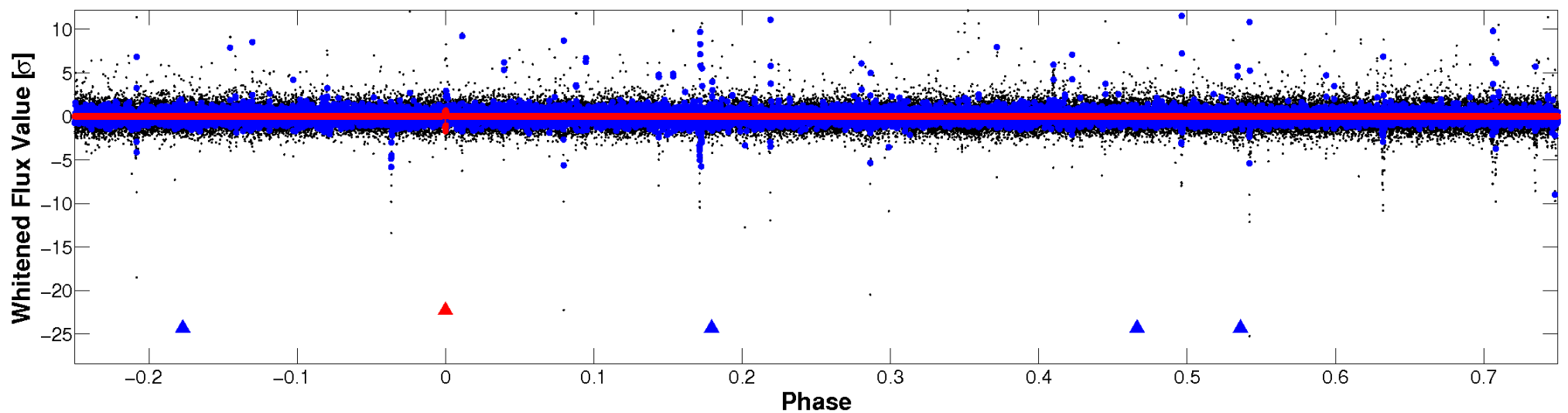


Non-Whitened Vs. Whitened Light Curve

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

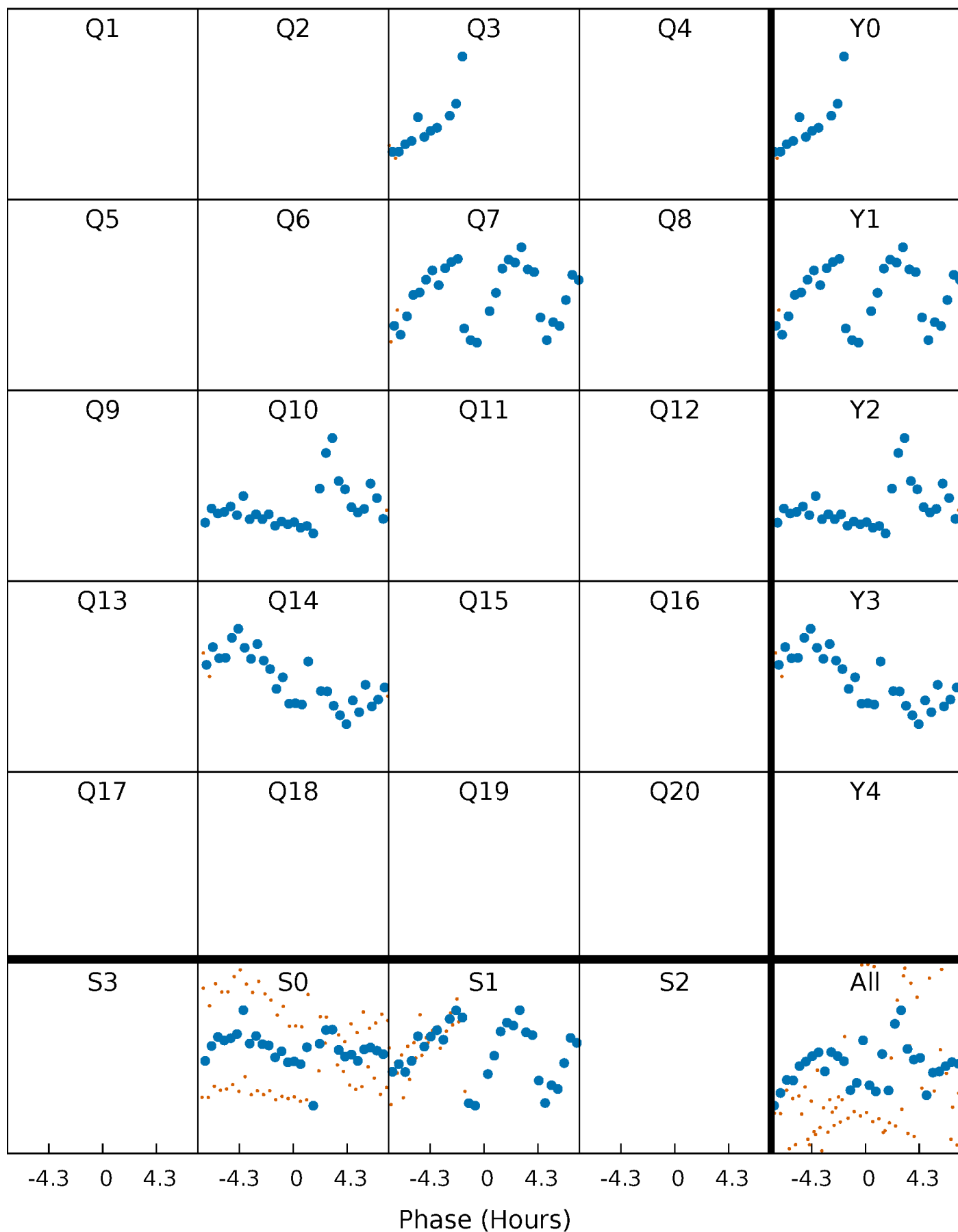


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



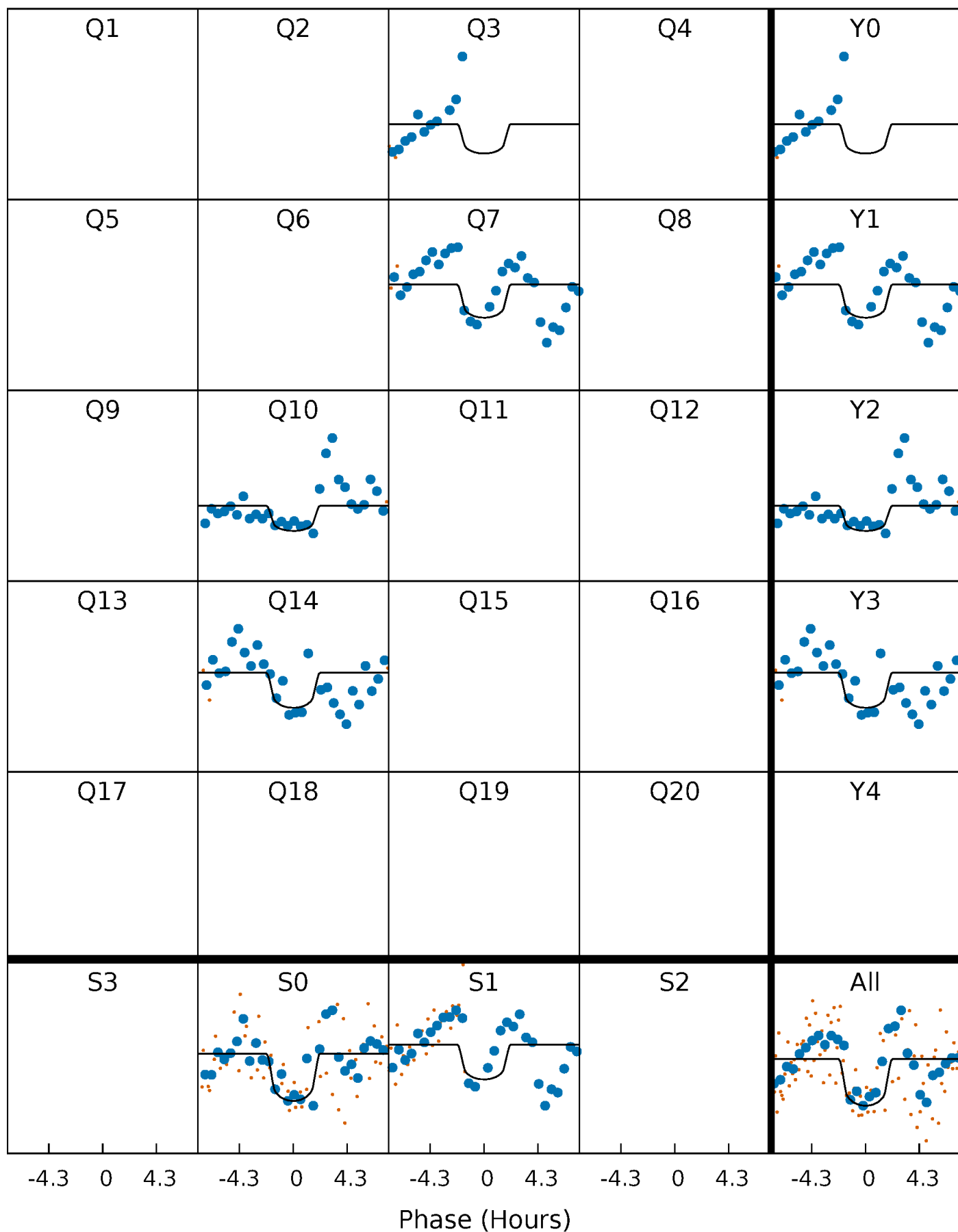
PDC Quarter-Phased Transit Curves

TCE 010529126-01 P=322.601537 Days $T_0=349.565324$ (BKJD)



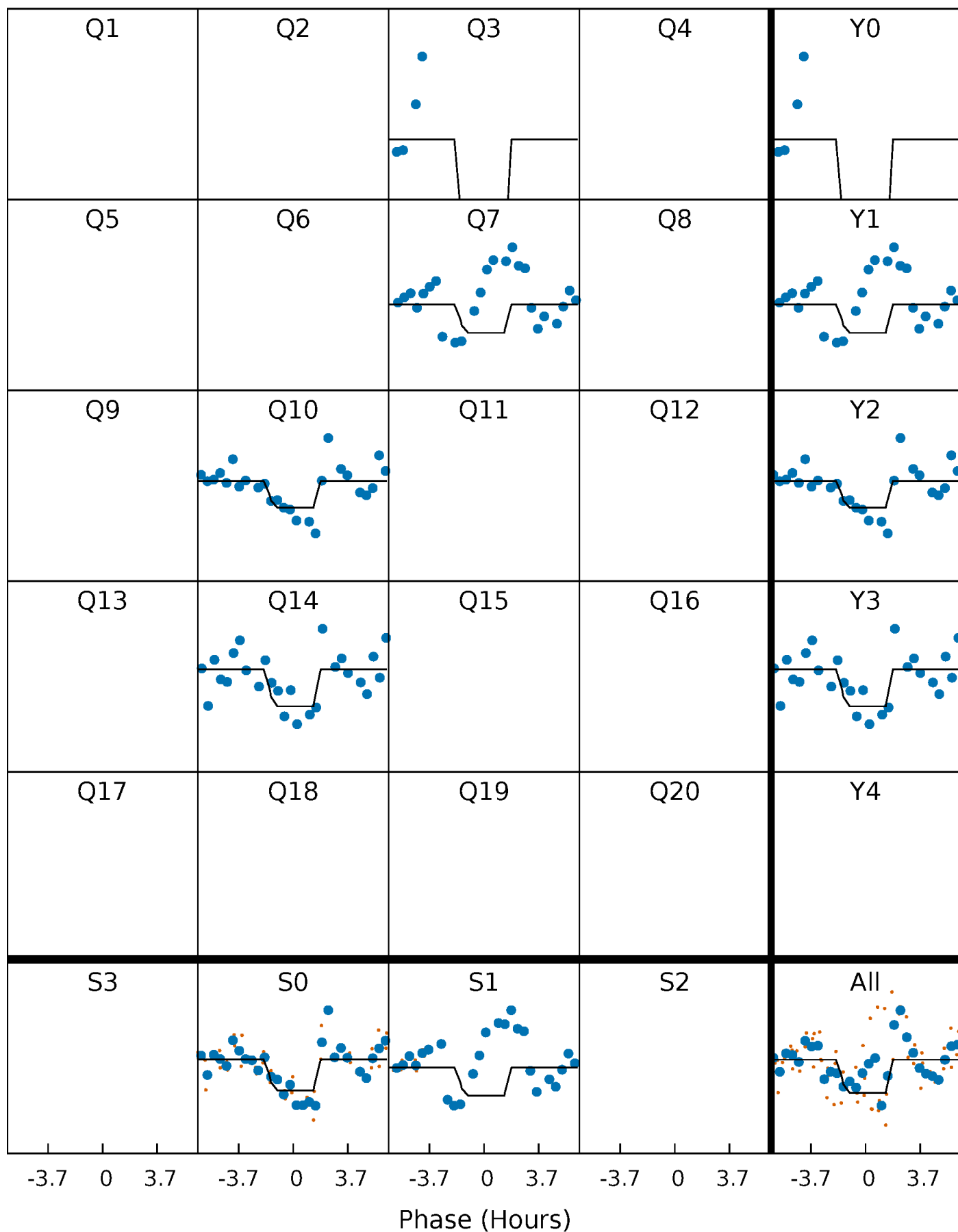
DV Quarter-Phased Transit Curves

TCE 010529126-01 P=322.601537 Days $T_0=349.565324$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

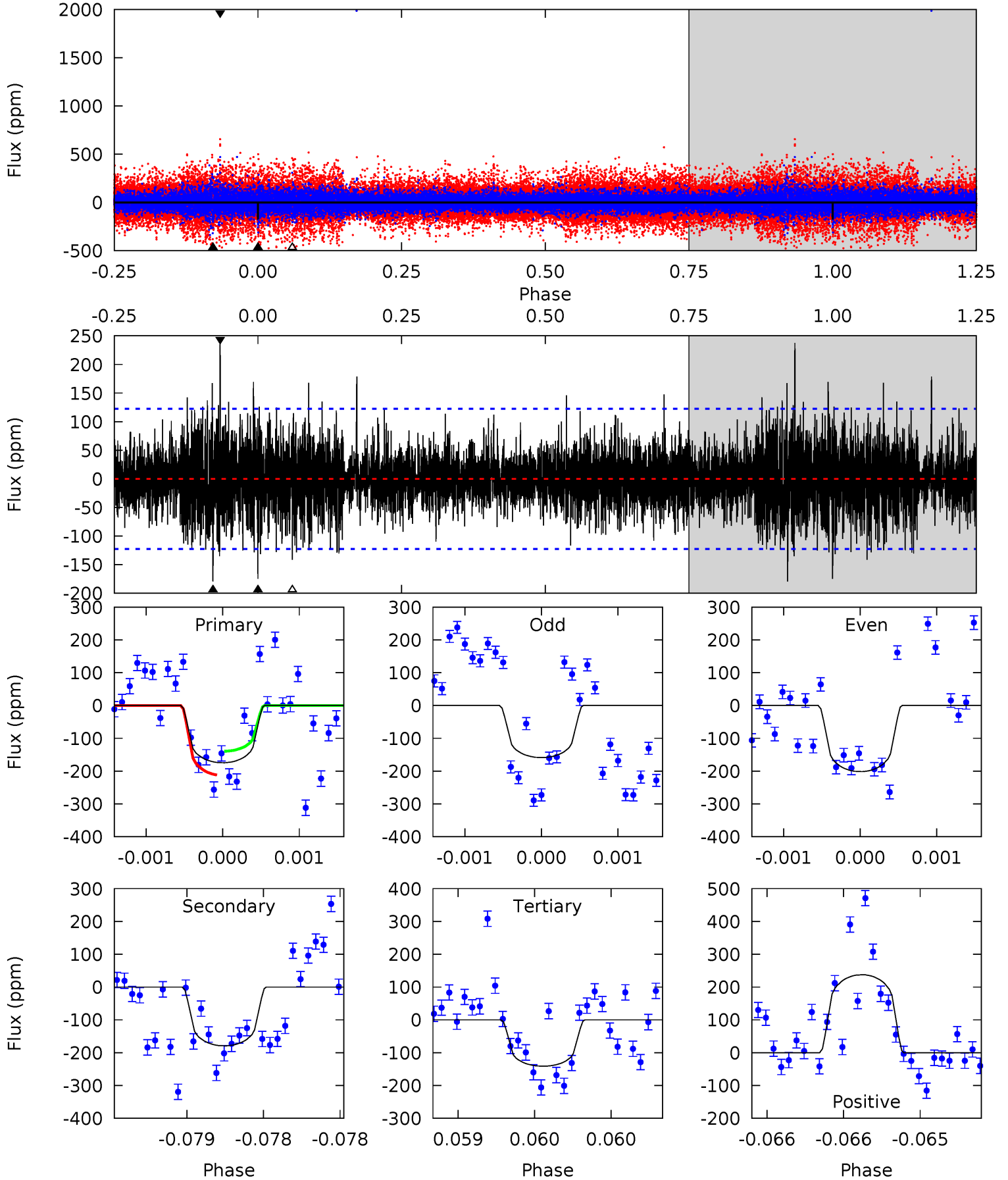
TCE 010529126-01 P=322.563177 Days $T_0=349.649408$ (BKJD)



DV Model-Shift Uniqueness Test

010529126-01, P = 322.601537 Days, E = 26.963787 Days

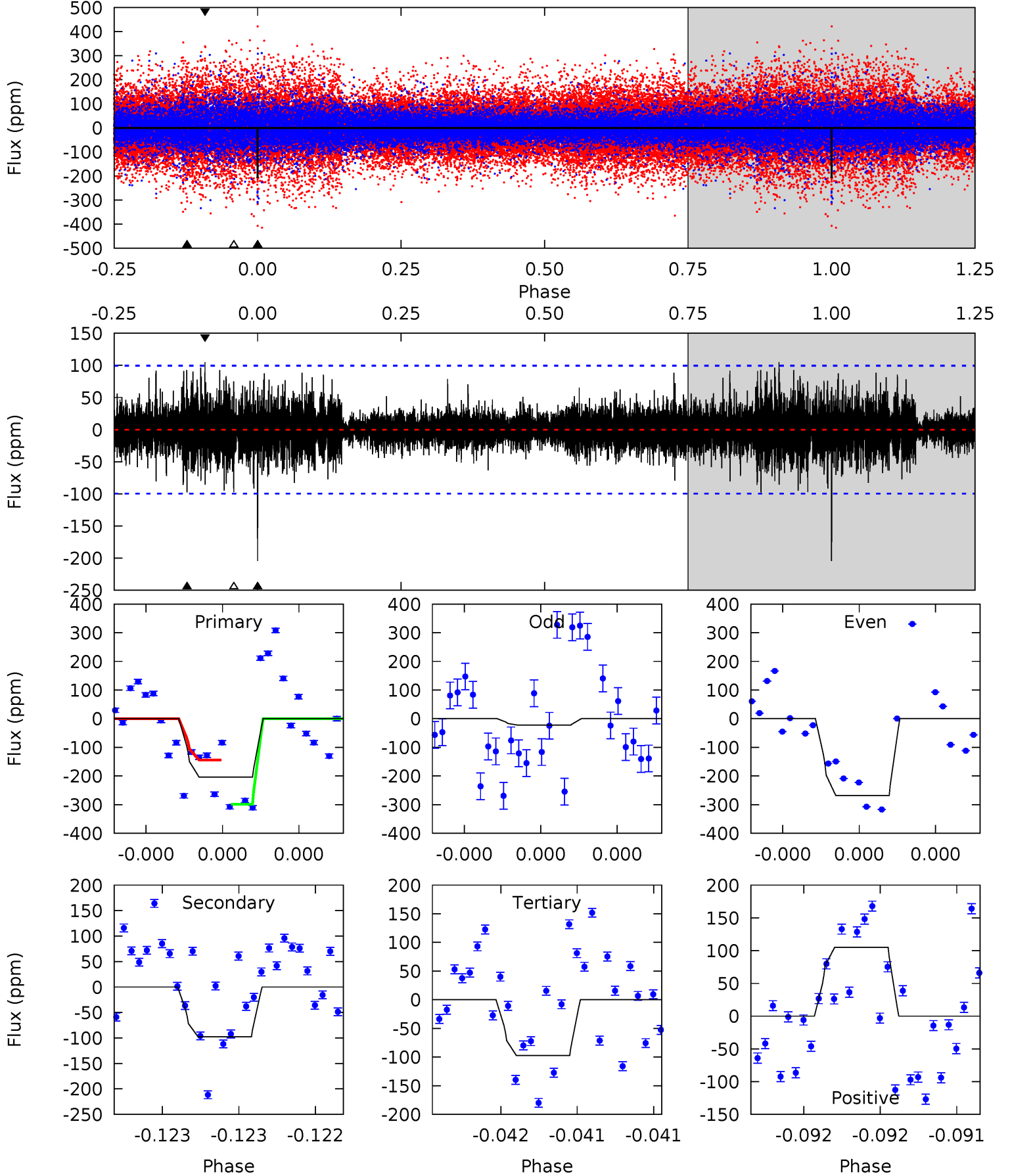
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.94	8.15	6.43	10.8	5.57	3.48	1.66	1.51	-2.86	1.72	-2.65	0.88	1.05	0.57	1.65



Alt Model-Shift Uniqueness Test

010529126-01, $P = 322.563177$ Days, $E = 27.086231$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.48	5.45	5.90	5.59	3.51	1.10	6.00	5.55	0.03	-0.42	7.23	0.49	0.34	4.33



Stellar Parameters For KIC 010529126

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5501^{+148}_{-148}	$4.516^{+0.077}_{-0.085}$	$-0.360^{+0.300}_{-0.300}$	$0.809^{+0.120}_{-0.087}$	$0.784^{+0.097}_{-0.065}$	$2.083^{+0.727}_{-0.585}$
	+3%/-3%	+2%/-2%	+83%/-83%	+15%/-11%	+12%/-8%	+35%/-28%
Source	PHO1	FLK73	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 010529126-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-179 ± 22	$1.57^{+1.33}_{-1.01}$	332^{+13}_{-14}	4853^{+3166}_{-982}	$28178^{+185526}_{-19844}$
Alt.	-98 ± 18	$1.58^{+1.11}_{-0.98}$	331^{+13}_{-13}	4310^{+2203}_{-781}	15174^{+85657}_{-10106}

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

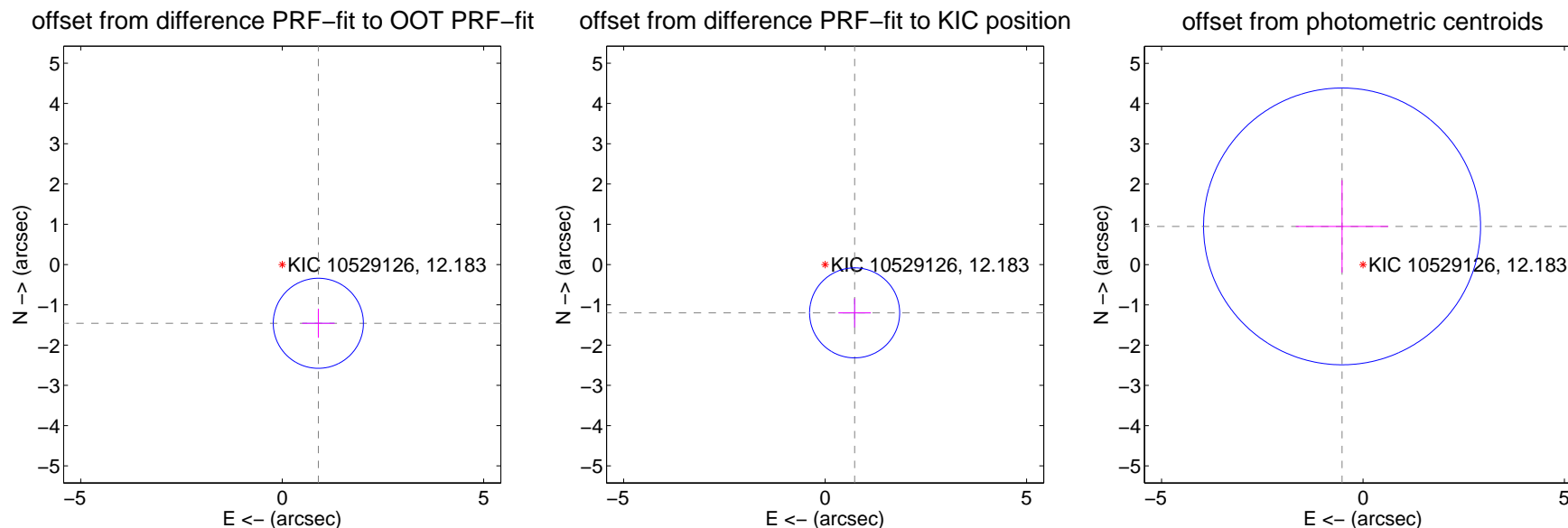
DV Centroid Data

Supplemental centroid analysis for 010529126-01. Kepler magnitude: 12.18. Transit SNR 6.22

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.712 ± 0.373	4.59	-0.896 ± 0.403	-1.459 ± 0.361
PRF-fit source offset from KIC position	1.406 ± 0.373	3.77	-0.732 ± 0.403	-1.200 ± 0.361
photometric centroid source offset	1.08 ± 1.15	0.94	0.52 ± 1.15	0.95 ± 1.15



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

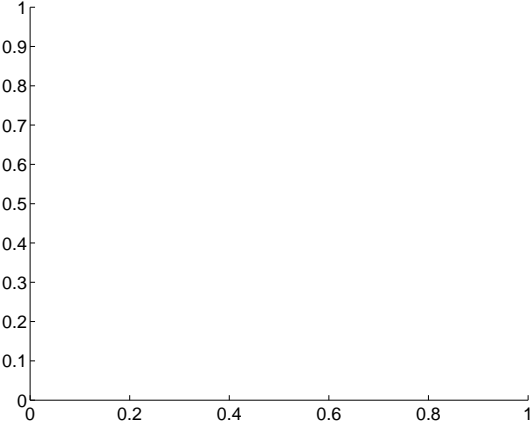
Q5 no difference image



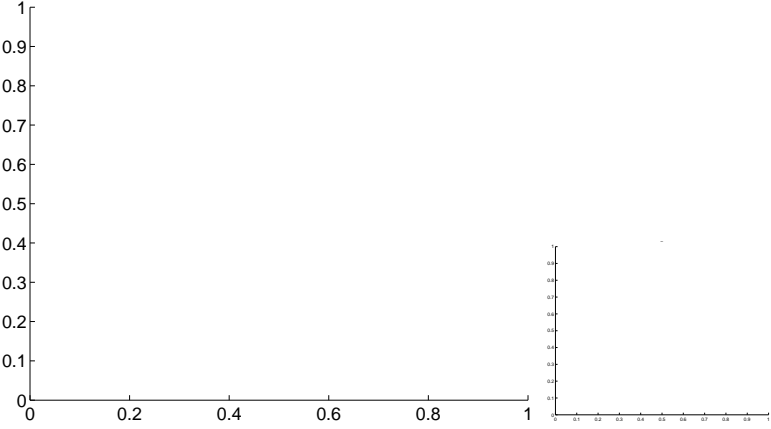
Q5 no OOT image



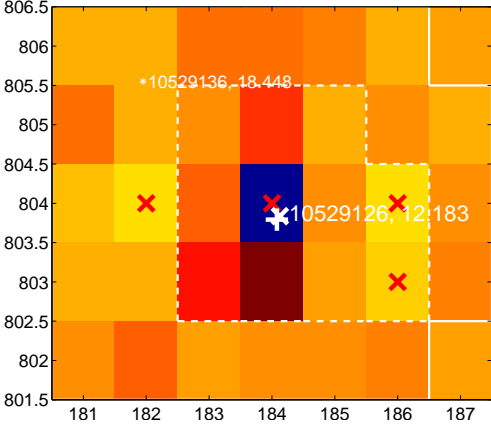
Q6 no difference image



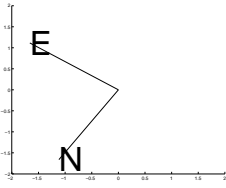
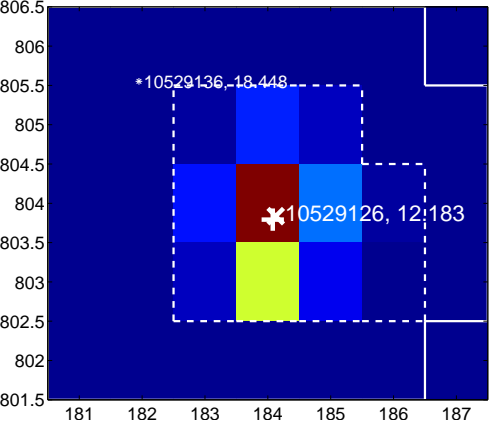
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



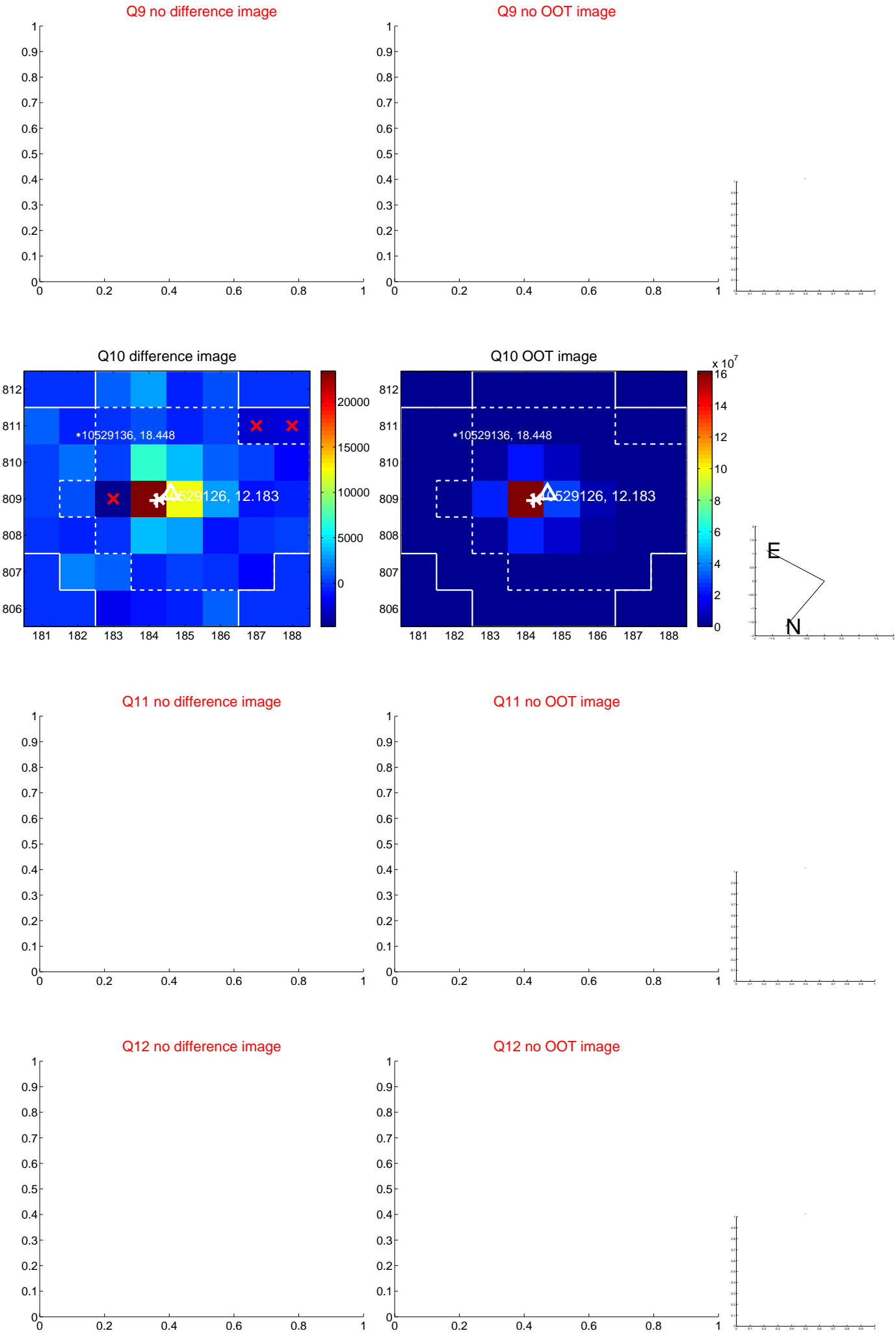
Q8 no difference image



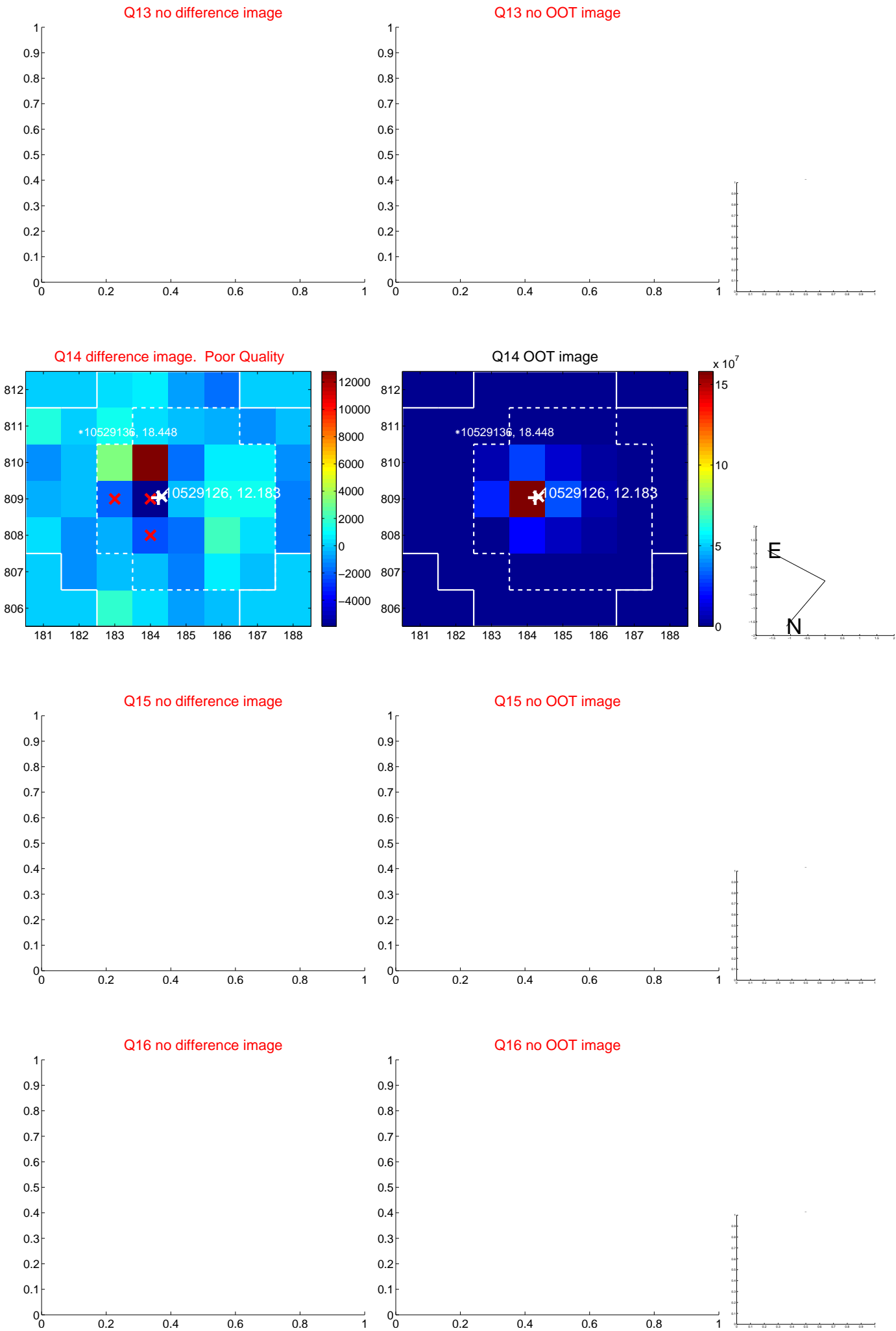
Q8 no OOT image



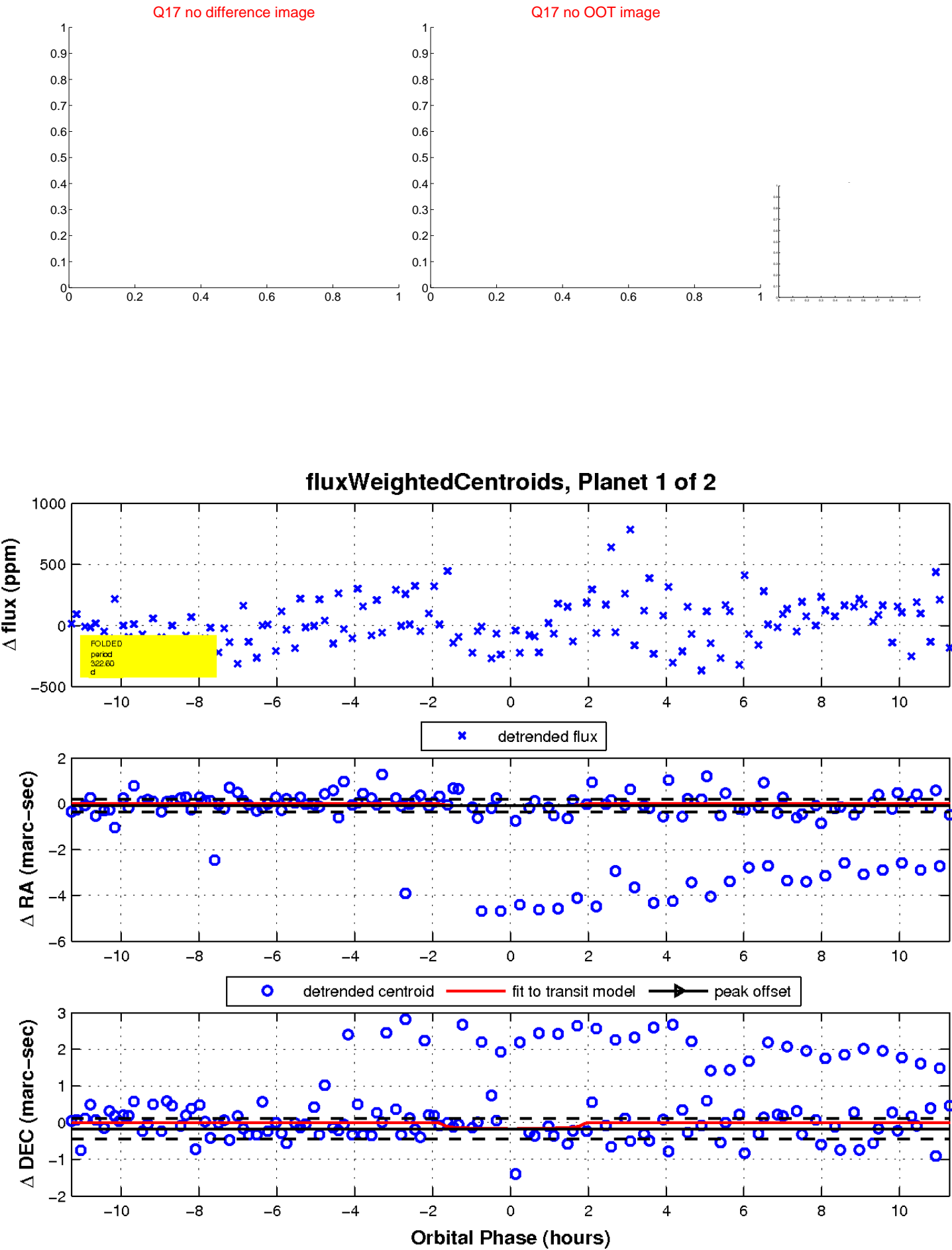
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



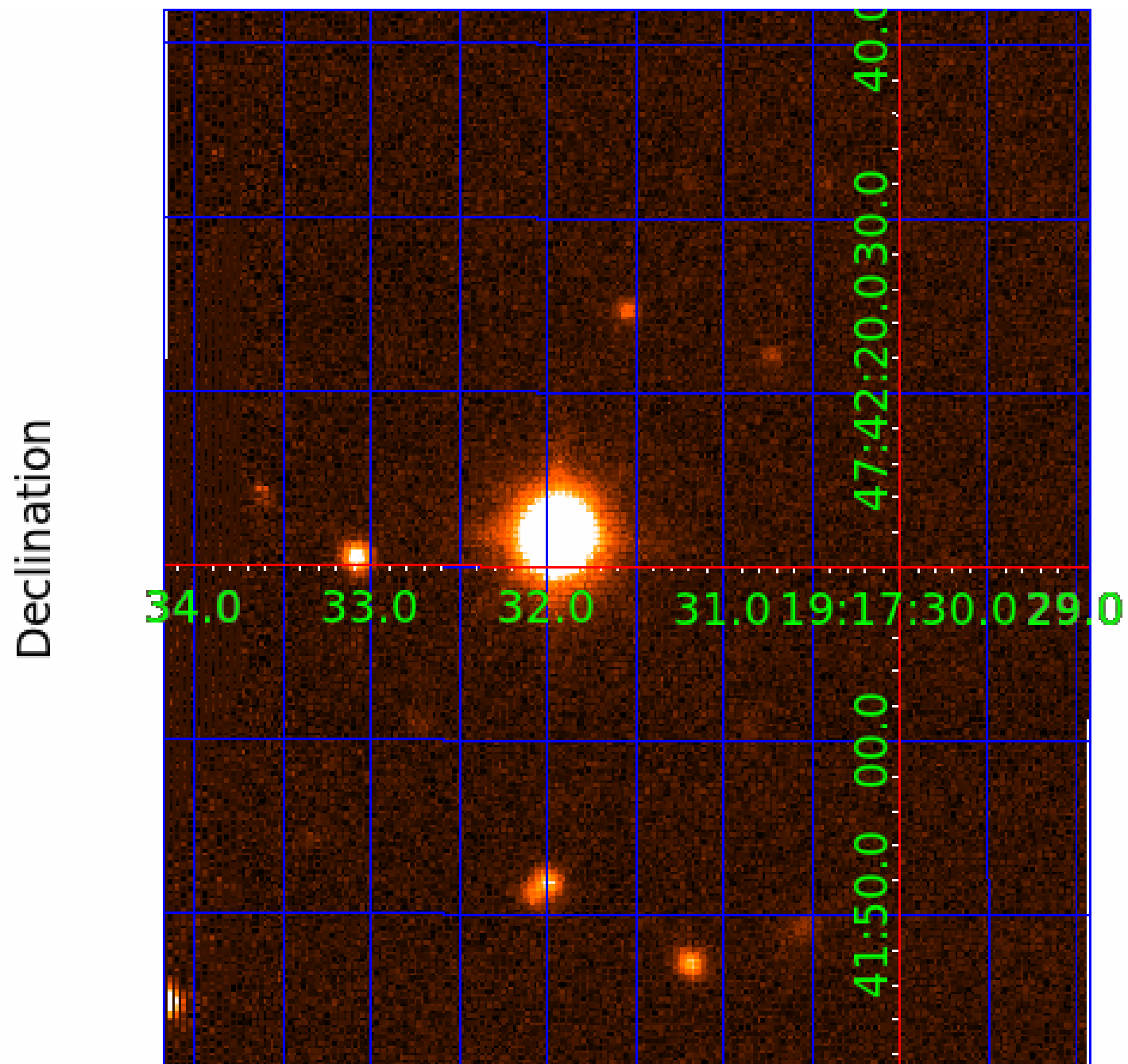
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 010529126

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})
010529126-01	OBS	No	322.601537	349.565324	239.9	3.802	9.2	6.2	0.81	5501	1.41	0.74
010529126-02	OBS	No	437.633389	177.397170	149.7	7.019	10.1	6.1	0.81	5501	1.14	0.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010529126-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010529126-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_POS_DV—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.

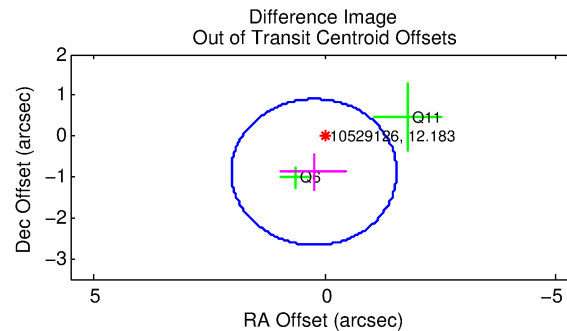
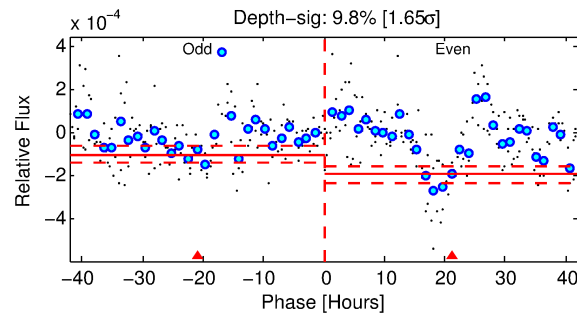
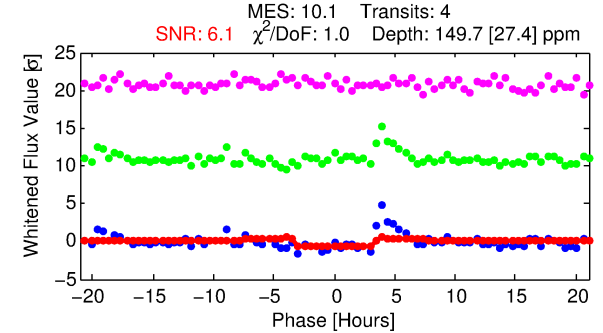
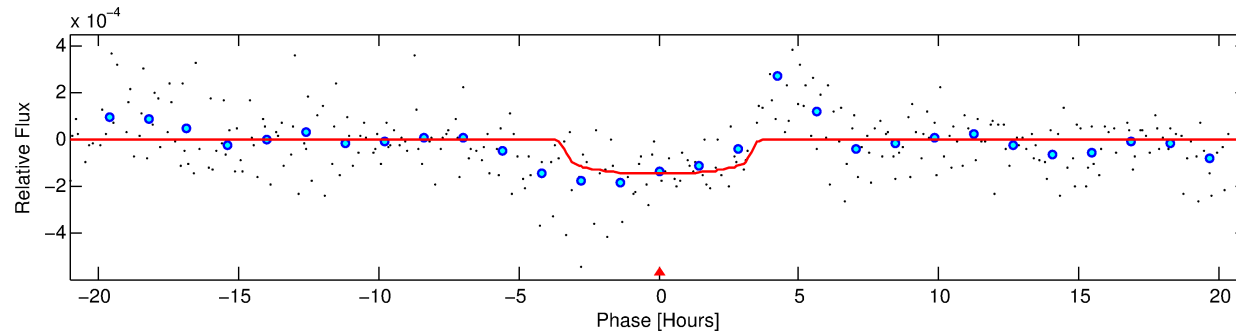
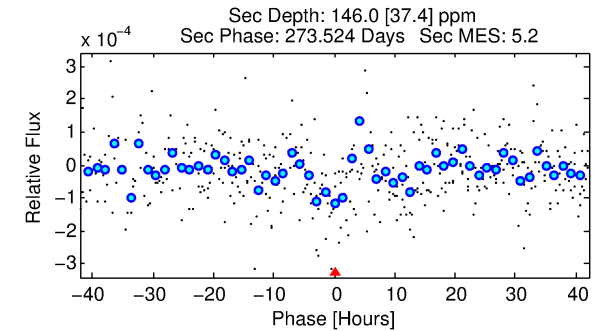
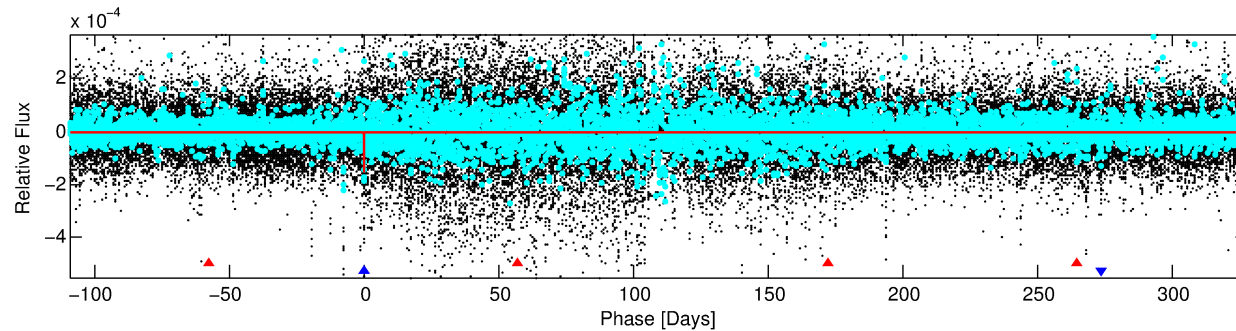
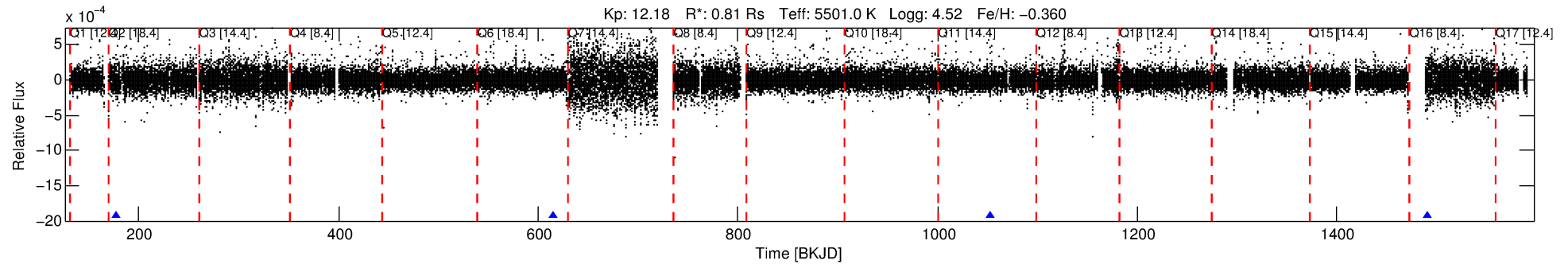
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010529126-02

No Significant Match Found

DV One-Page Summary

KIC: 10529126 Candidate: 2 of 2 Period: 437.633 d



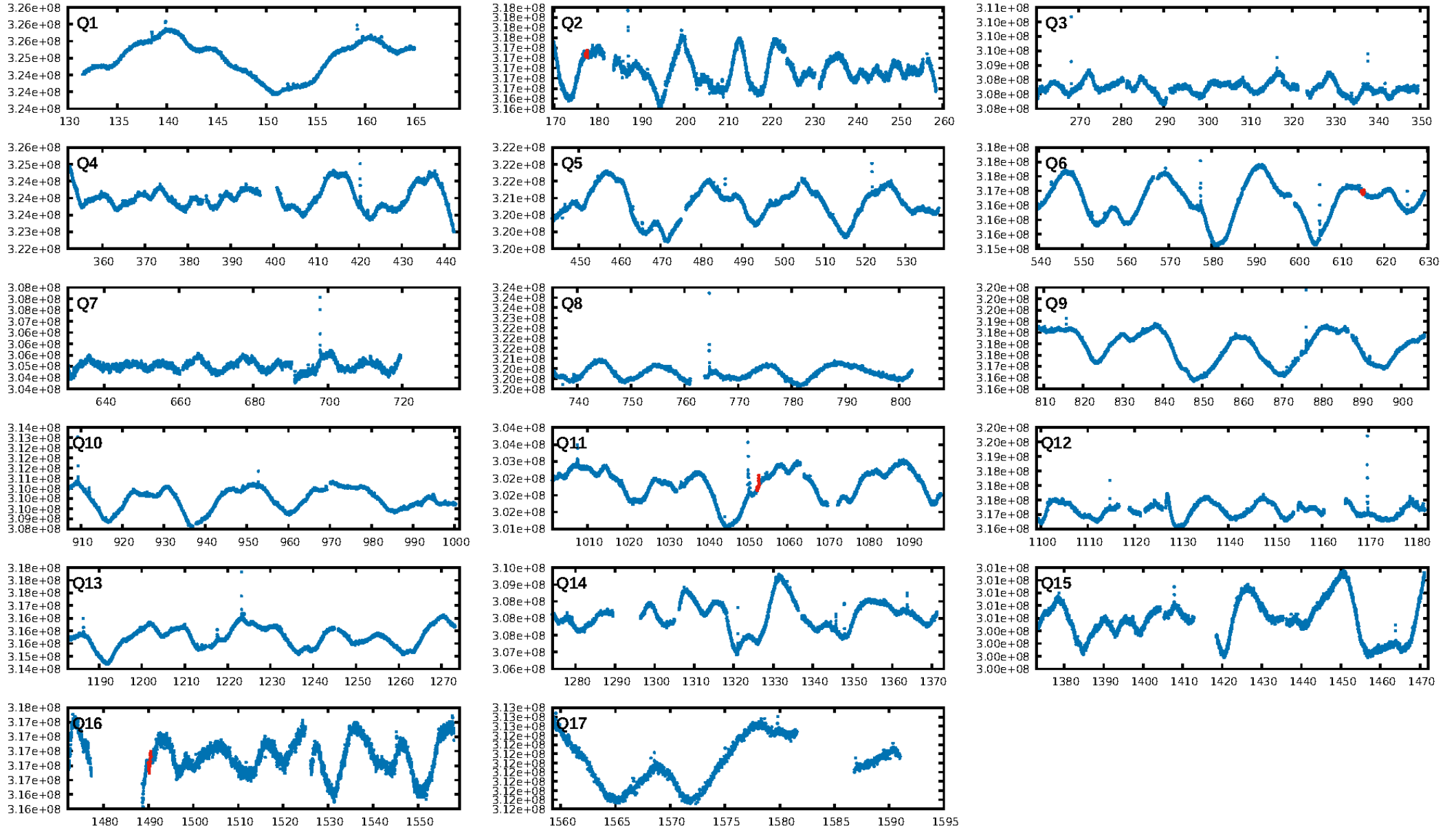
DV Fit Results:

Period = 437.63339 [0.00710] d
Epoch = 177.3972 [0.0137] BKJD
Rp/R* = 0.0129 [0.0052]
a/R* = 253.43 [441.14]
b = 0.86 [0.52]
Seff = 0.50 [0.10]
Teq = 214 [10] K
Rp = 1.14 [0.49] Re
a = 1.0401 [0.1232] AU
Ag = 66689.12 [56892.91] [1.17 σ]
Teffp = 5318 [1122] K [4.55 σ]

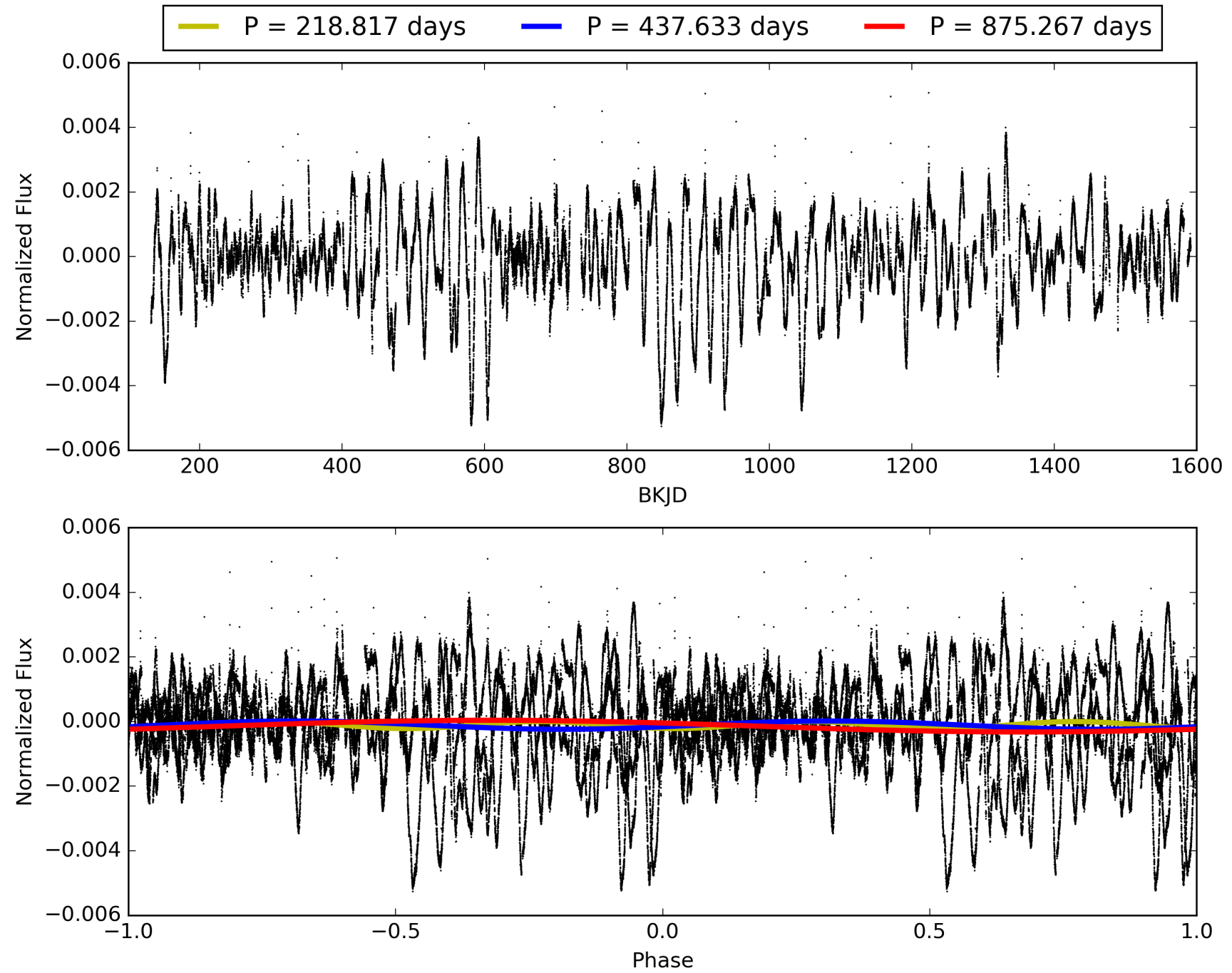
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [345.84 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 50.2%
ModelChiSquareGof-sig: 99.3%
Bootstrap-pfa: 1.02e-11
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6021
Centroid-sig: 11.8%
Centroid-so: 1.068 arcsec [1.06 σ]
OotOffset-rm: 0.912 arcsec [1.53 σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-rm: 0.702 arcsec [0.58 σ]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 010529126-02, PDC Light Curves

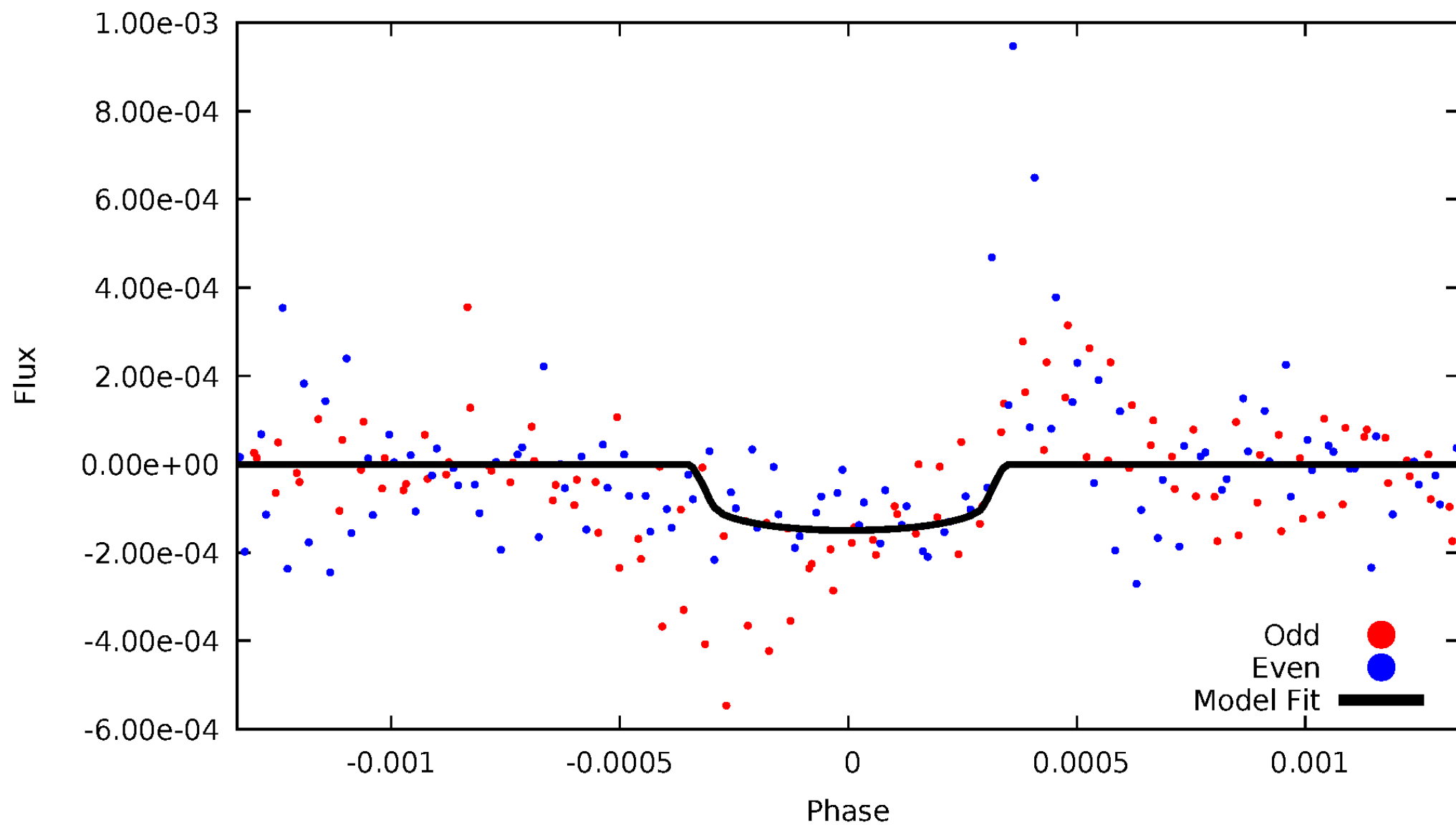


TCE 010529126-02



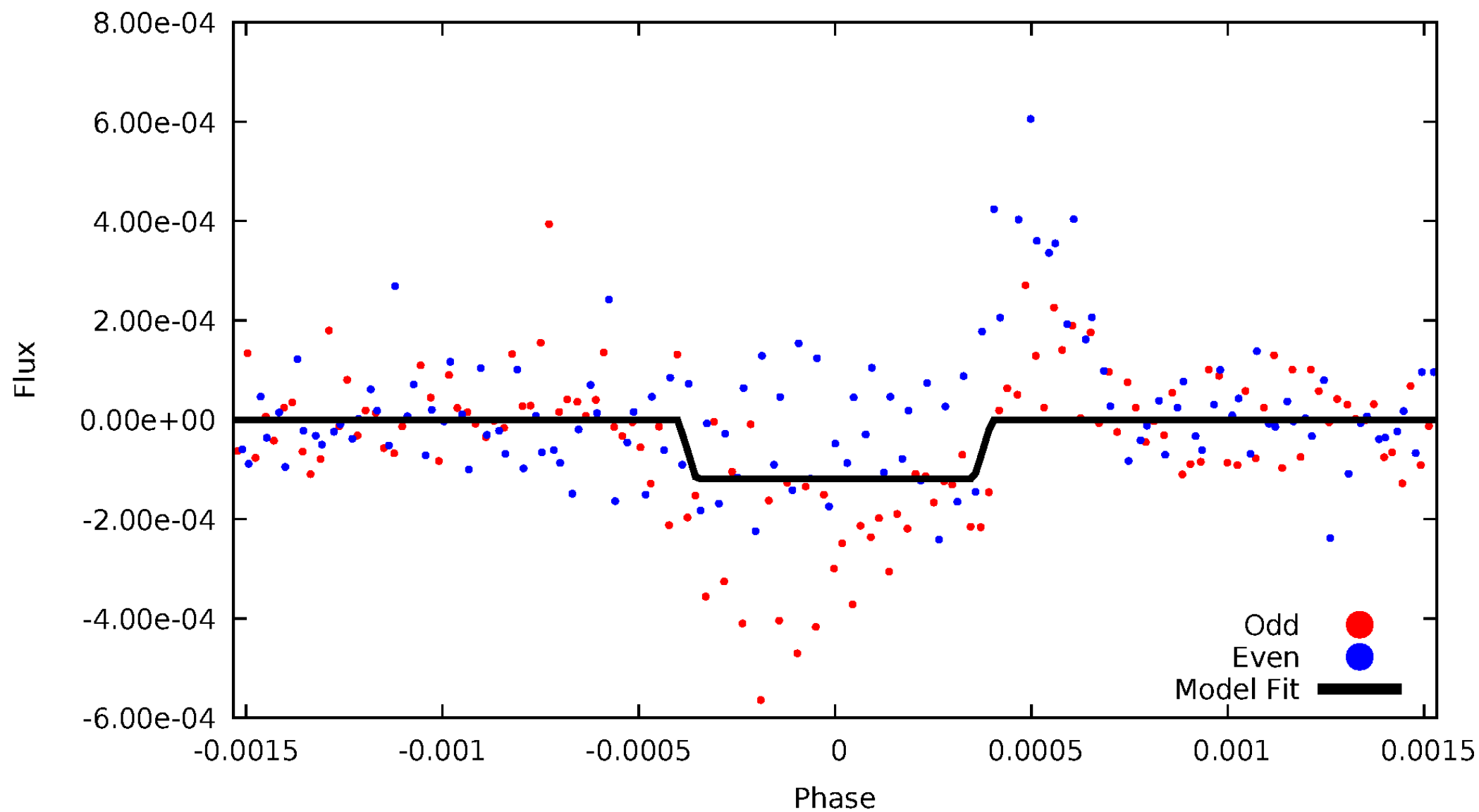
DV Odd/Even

TCE 010529126-02



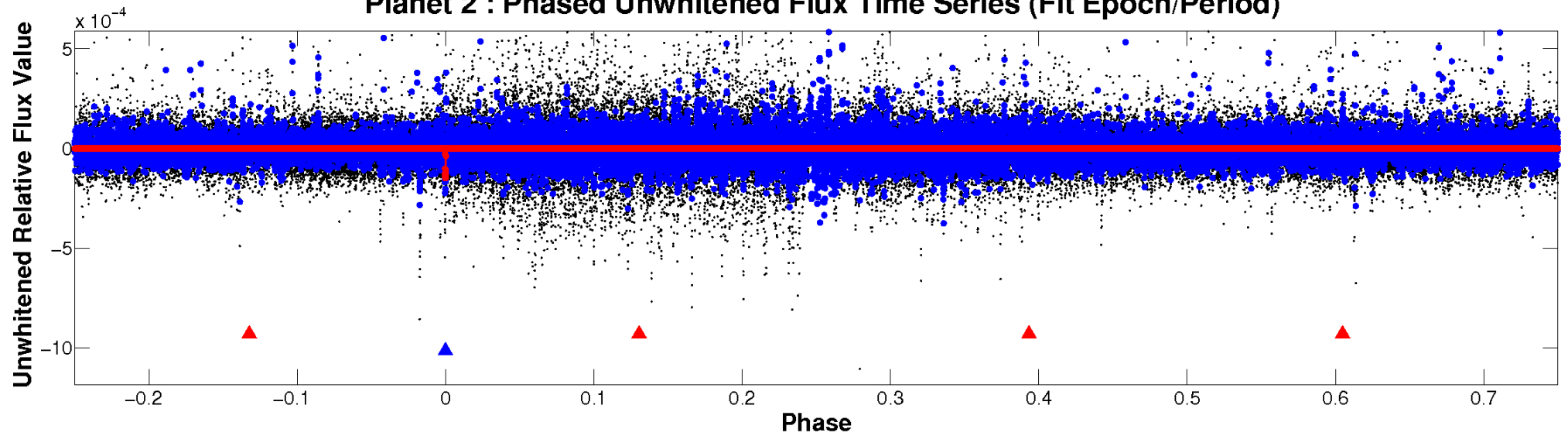
ALT Odd/Even

TCE 010529126-02

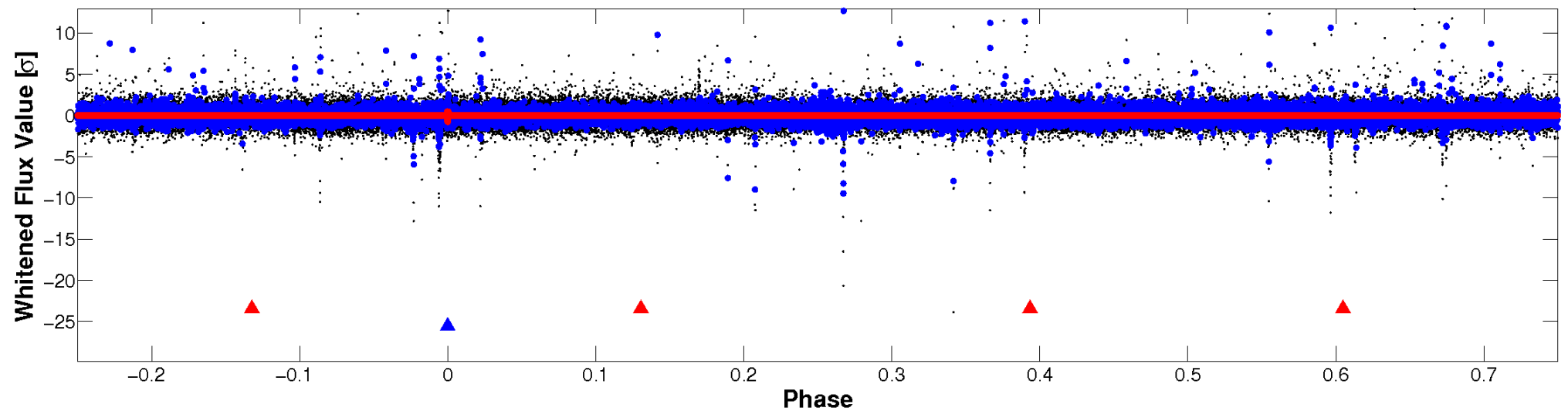


Non-Whitened Vs. Whitened Light Curve

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

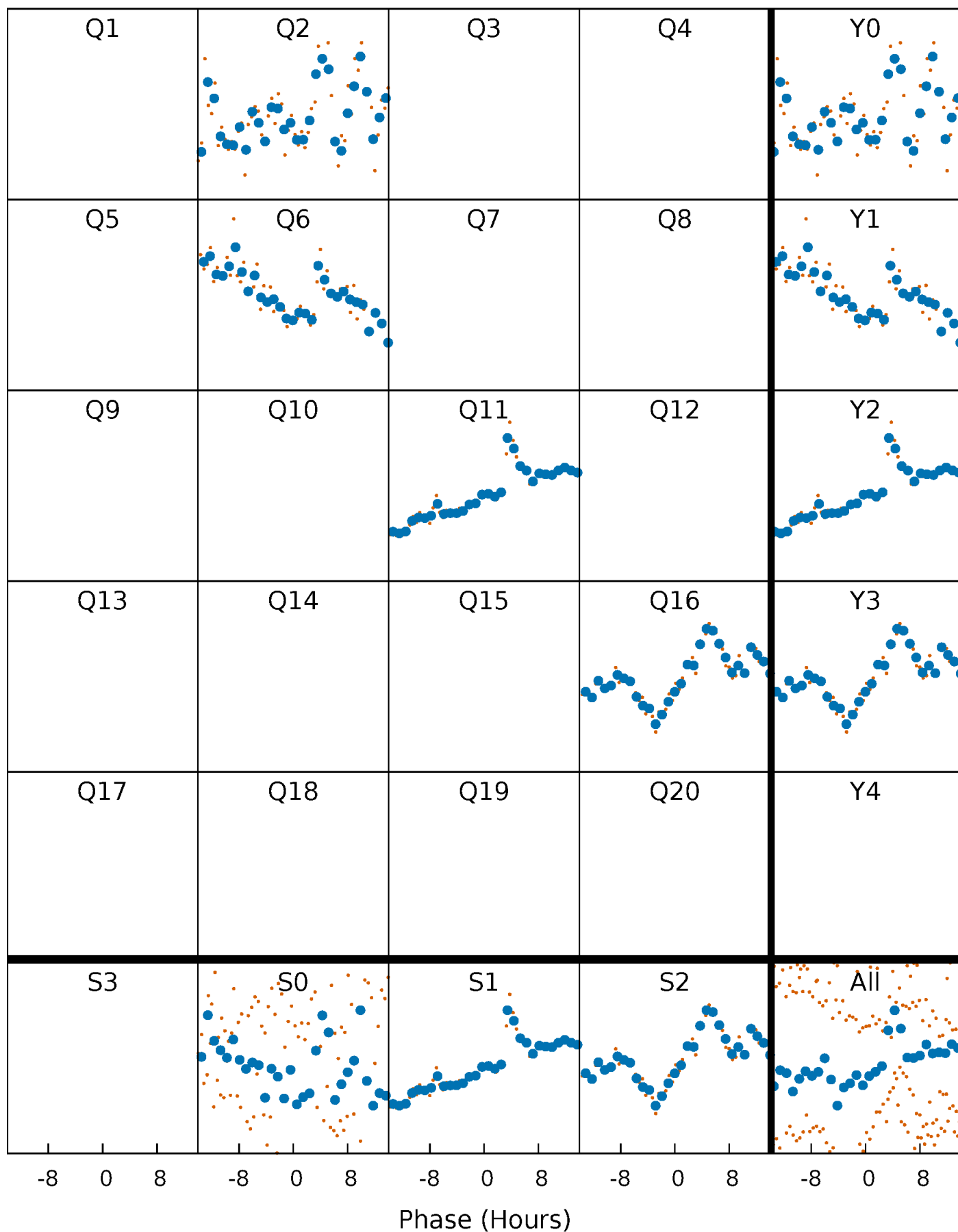


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



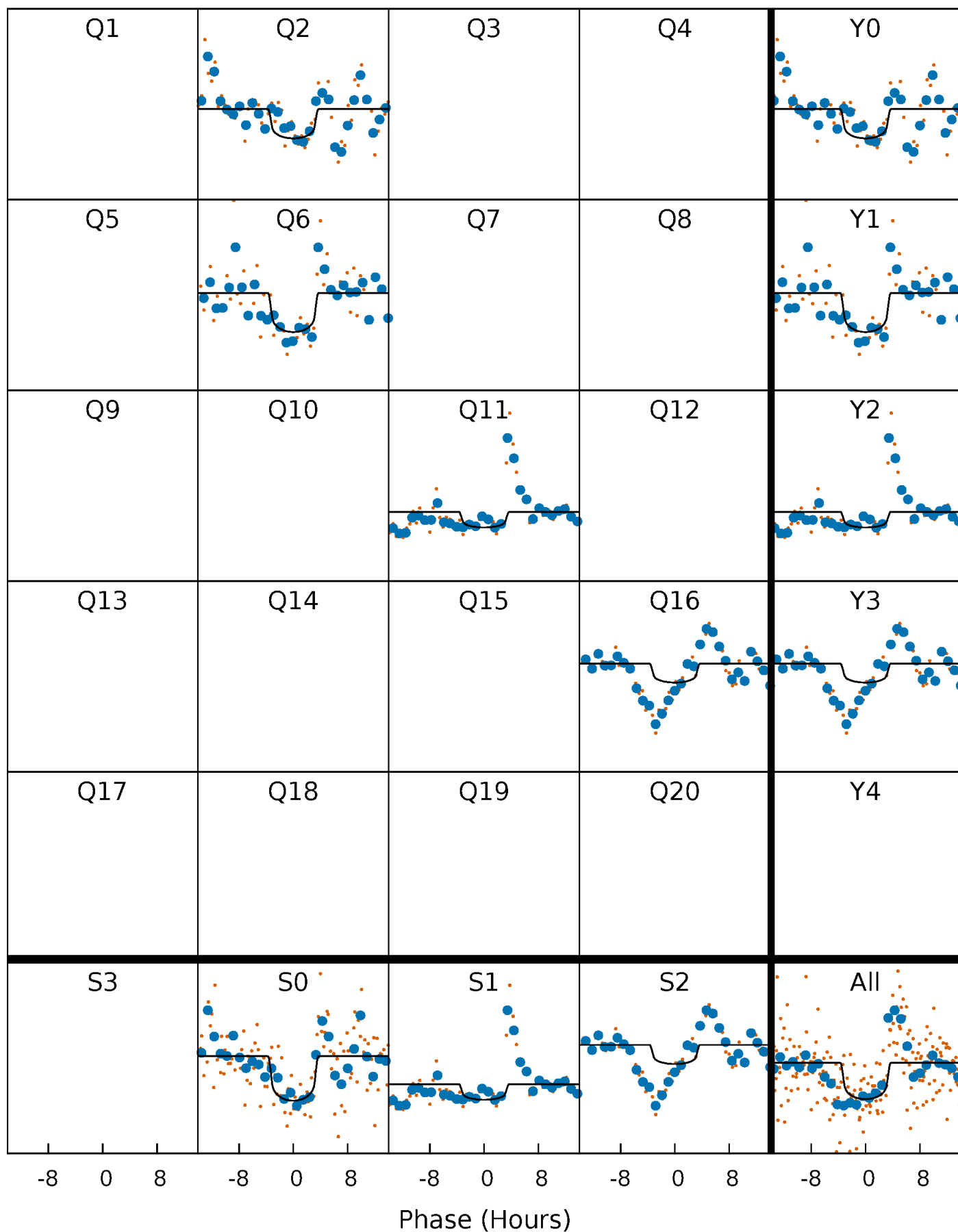
PDC Quarter-Phased Transit Curves

TCE 010529126-02 P=437.633389 Days $T_0=177.397170$ (BKJD)



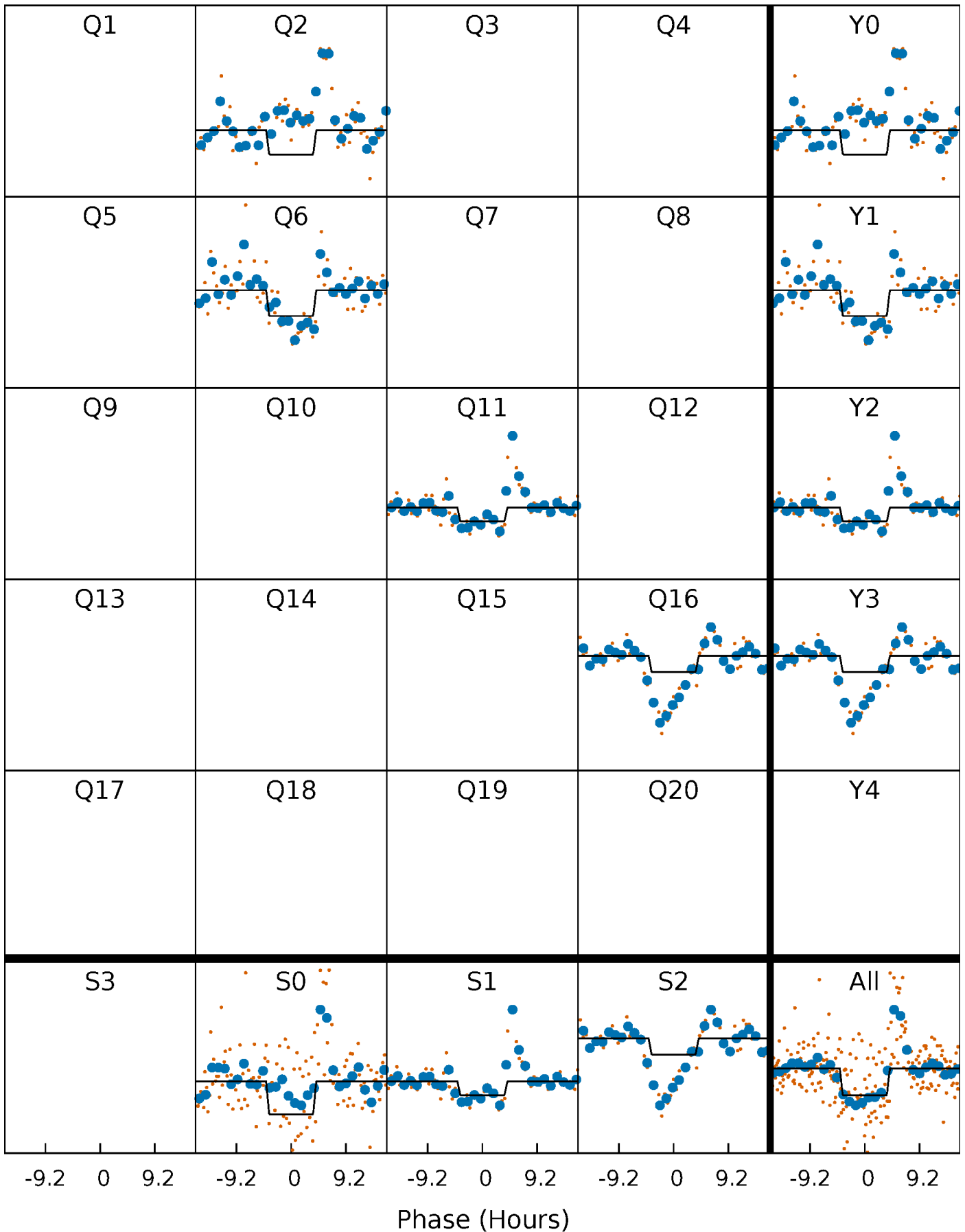
DV Quarter-Phased Transit Curves

TCE 010529126-02 P=437.633389 Days $T_0=177.397170$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

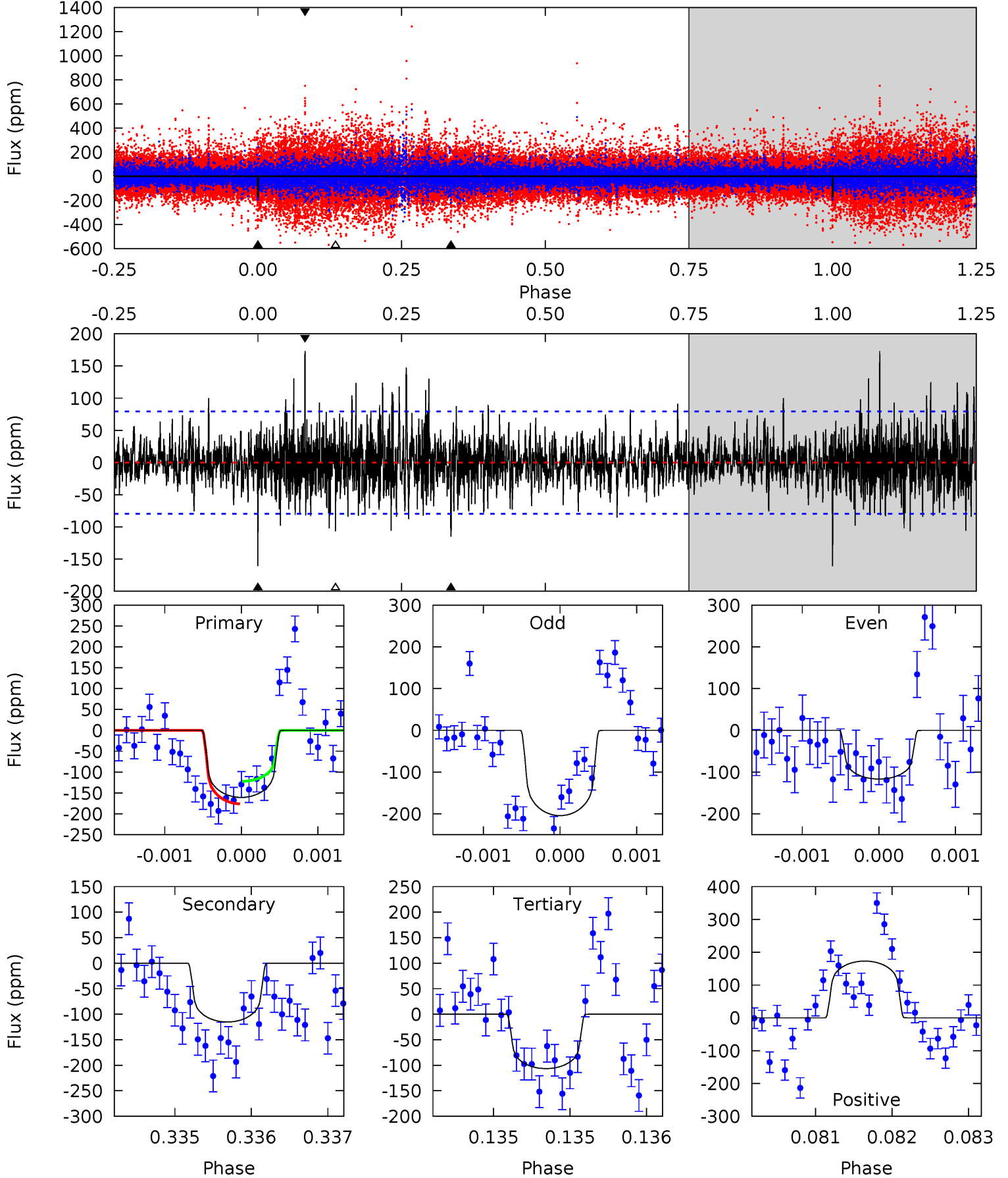
TCE 010529126-02 P=437.639177 Days $T_0=177.345862$ (BKJD)



DV Model-Shift Uniqueness Test

010529126-02, P = 437.633389 Days, E = 177.397170 Days

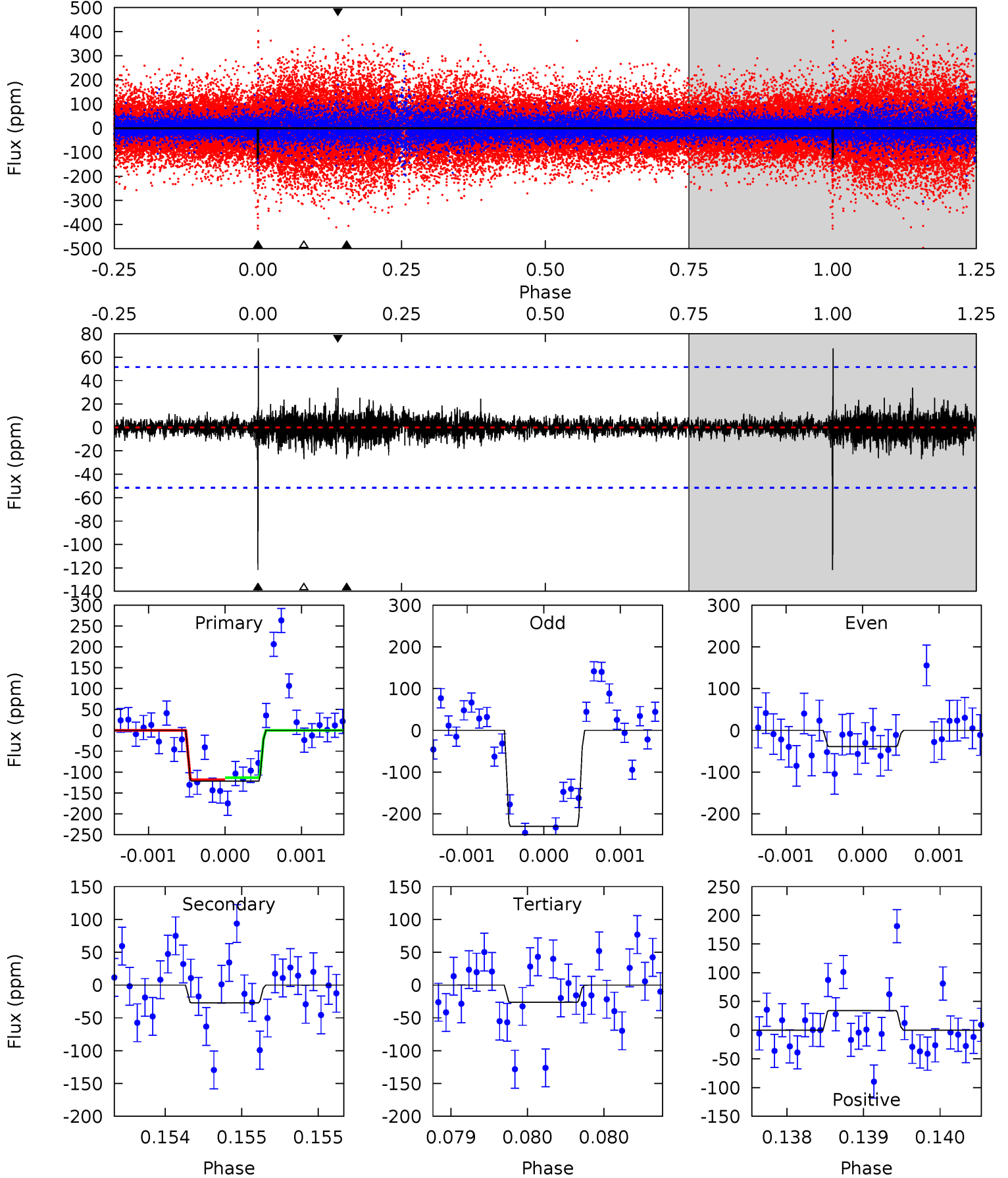
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	7.99	7.39	12.0	5.52	3.39	1.94	3.75	-0.87	0.60	-4.02	2.69	1.11	0.52	1.89



Alt Model-Shift Uniqueness Test

010529126-02, P = 437.639177 Days, E = 177.345862 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	2.87	2.80	3.62	5.50	3.36	0.55	10.2	9.35	0.07	-0.75	10.3	0.94	0.36	0.27



Stellar Parameters For KIC 010529126

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5501^{+148}_{-148}	$4.516^{+0.077}_{-0.085}$	$-0.360^{+0.300}_{-0.300}$	$0.809^{+0.120}_{-0.087}$	$0.784^{+0.097}_{-0.065}$	$2.083^{+0.727}_{-0.585}$
	+3%/-3%	+2%/-2%	+83%/-83%	+15%/-11%	+12%/-8%	+35%/-28%
Source	PHO1	FLK73	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 010529126-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-115 ± 14	$1.16^{+0.49}_{-0.48}$	300^{+12}_{-12}	5043^{+1448}_{-697}	50795^{+96261}_{-26505}
Alt.	-27 ± 9	$0.96^{+0.47}_{-0.41}$	299^{+12}_{-11}	4017^{+1009}_{-565}	16566^{+36684}_{-10124}

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

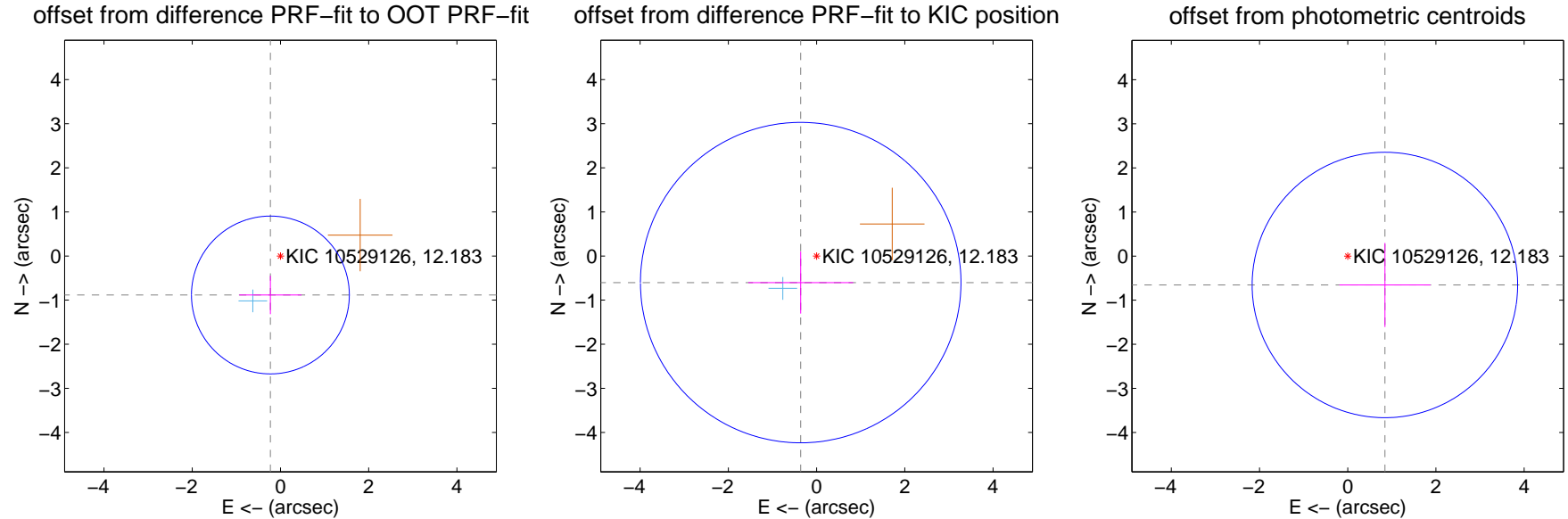
DV Centroid Data

Supplemental centroid analysis for 010529126-02. Kepler magnitude: 12.18. Transit SNR 6.08

There are 1 quarters with good PRF difference image offsets

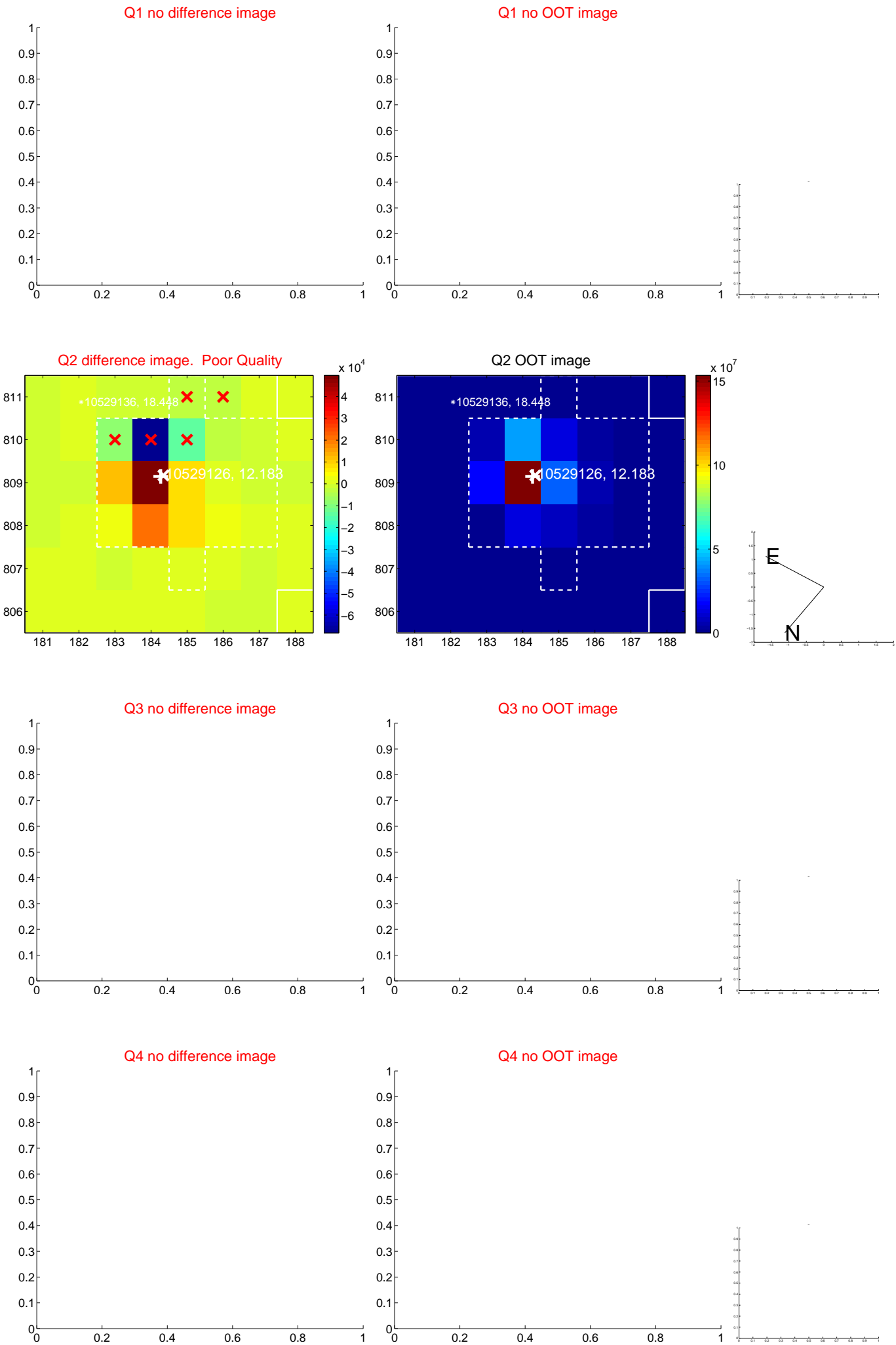
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.912 ± 0.596	1.53	0.228 ± 0.706	-0.883 ± 0.436
PRF-fit source offset from KIC position	0.702 ± 1.211	0.58	0.360 ± 1.189	-0.602 ± 0.702
photometric centroid source offset	1.07 ± 1.00	1.06	-0.84 ± 1.03	-0.65 ± 0.95

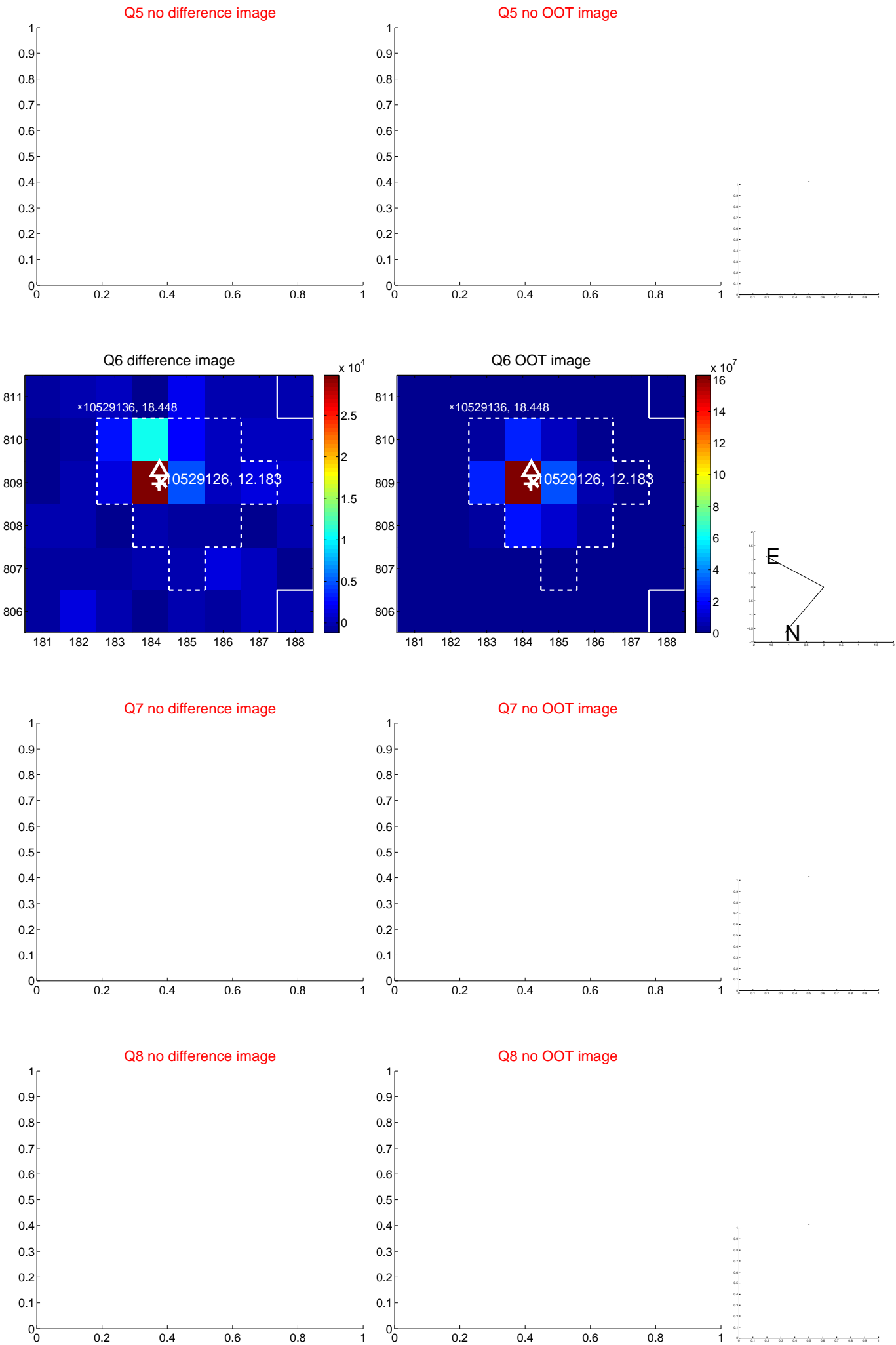


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

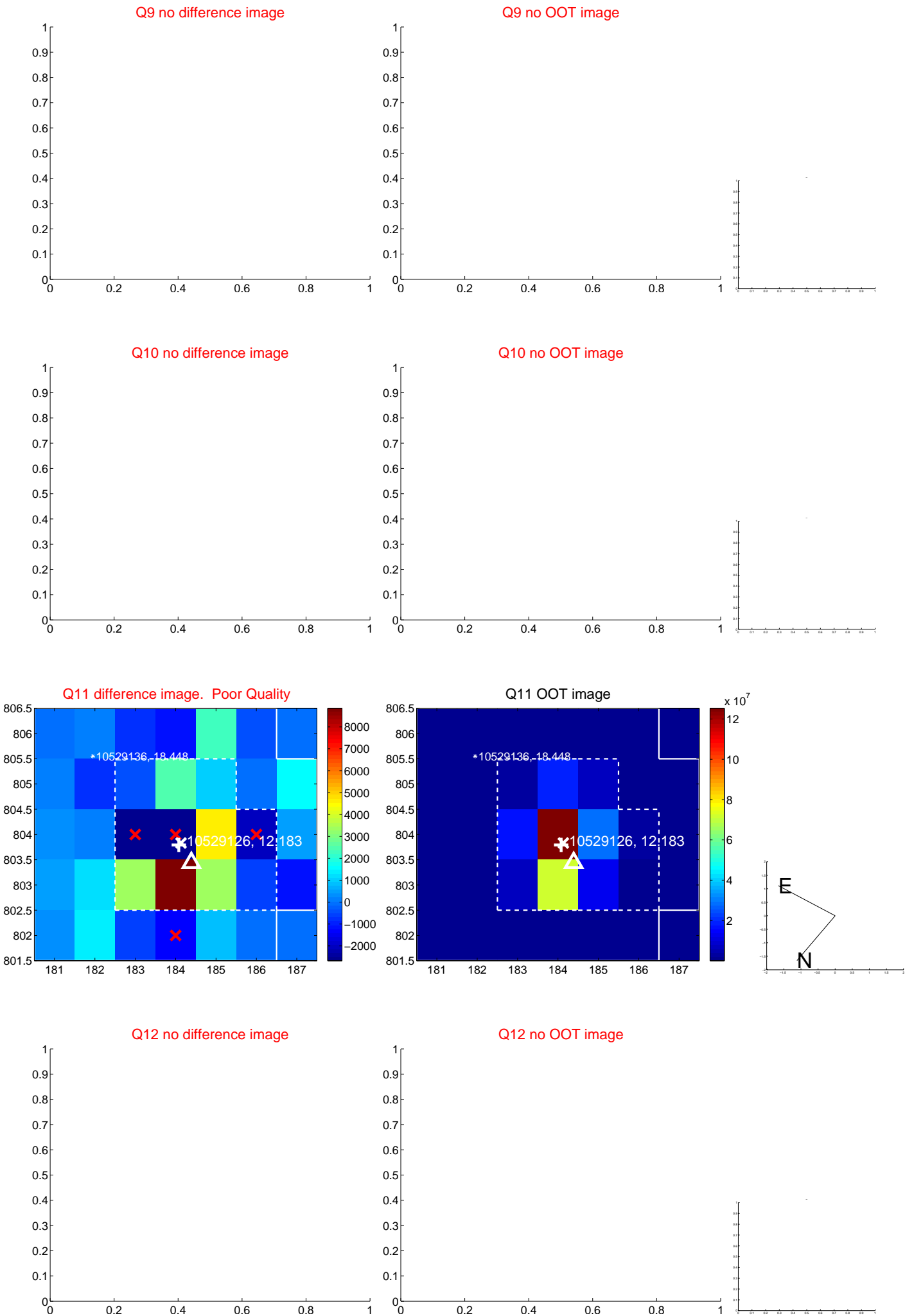
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



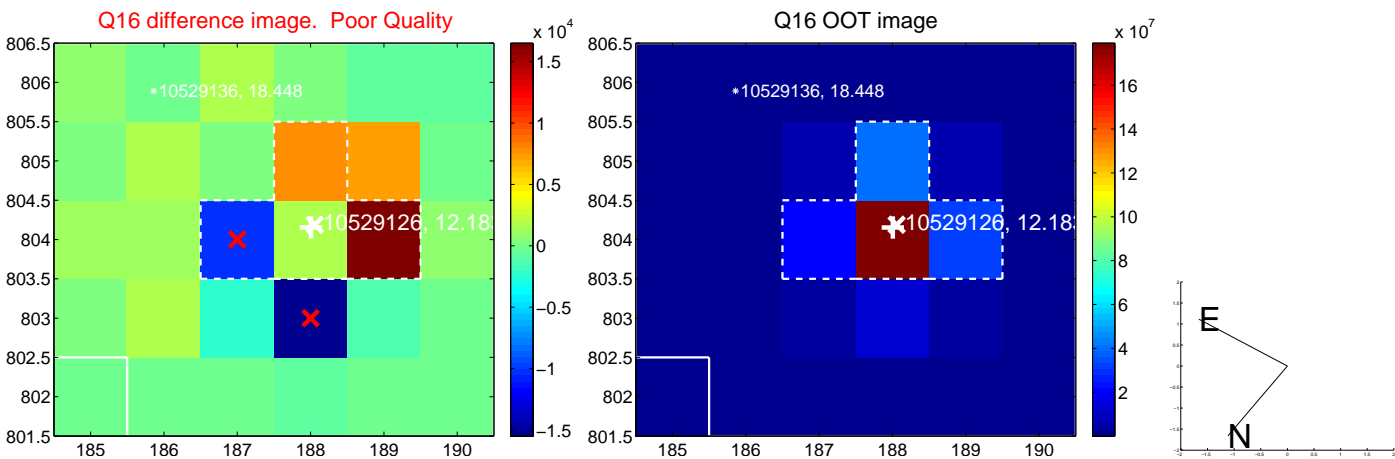
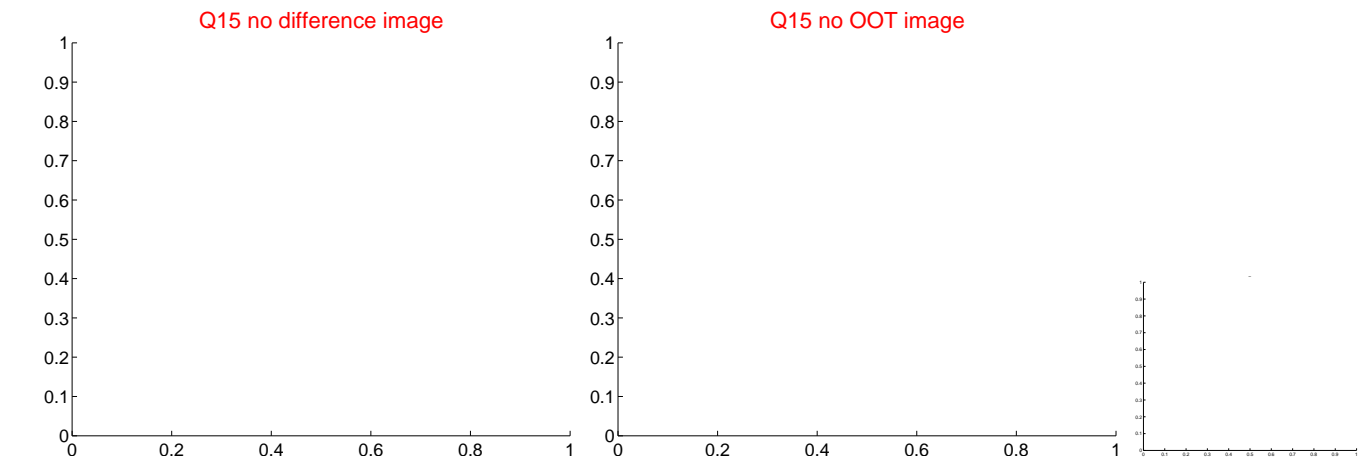
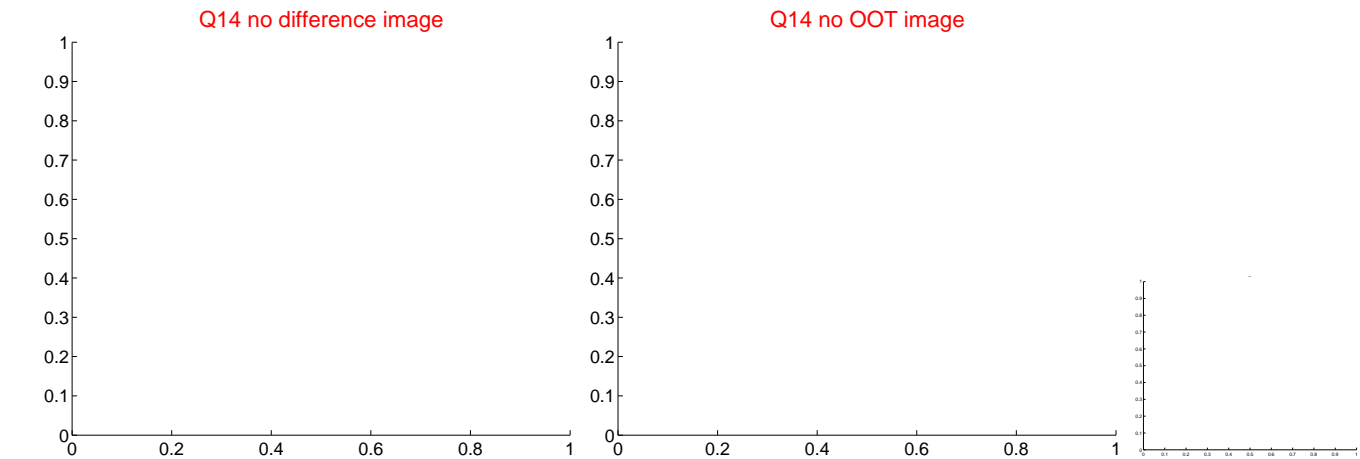
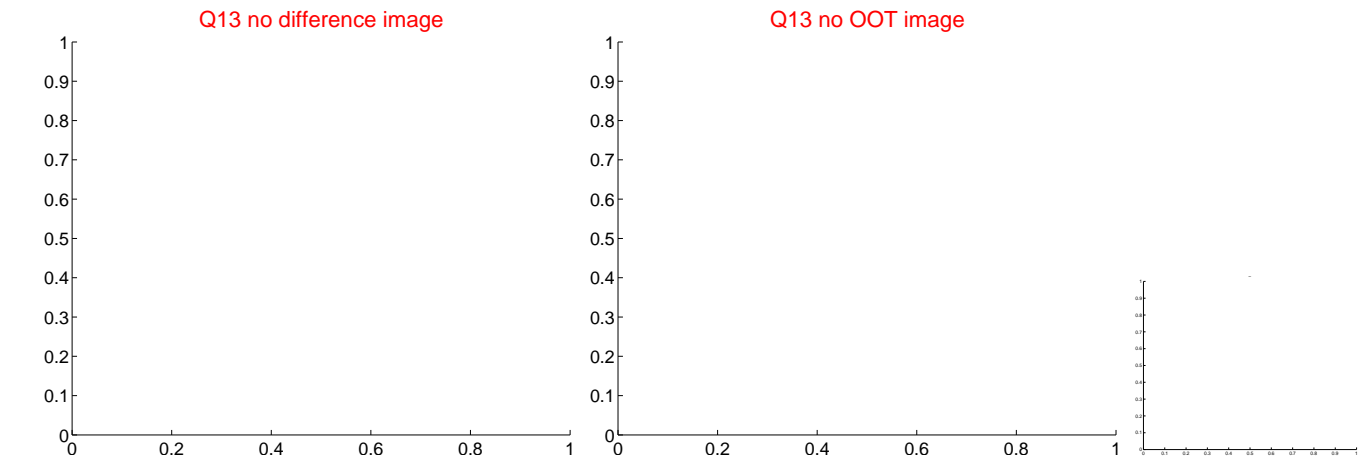
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



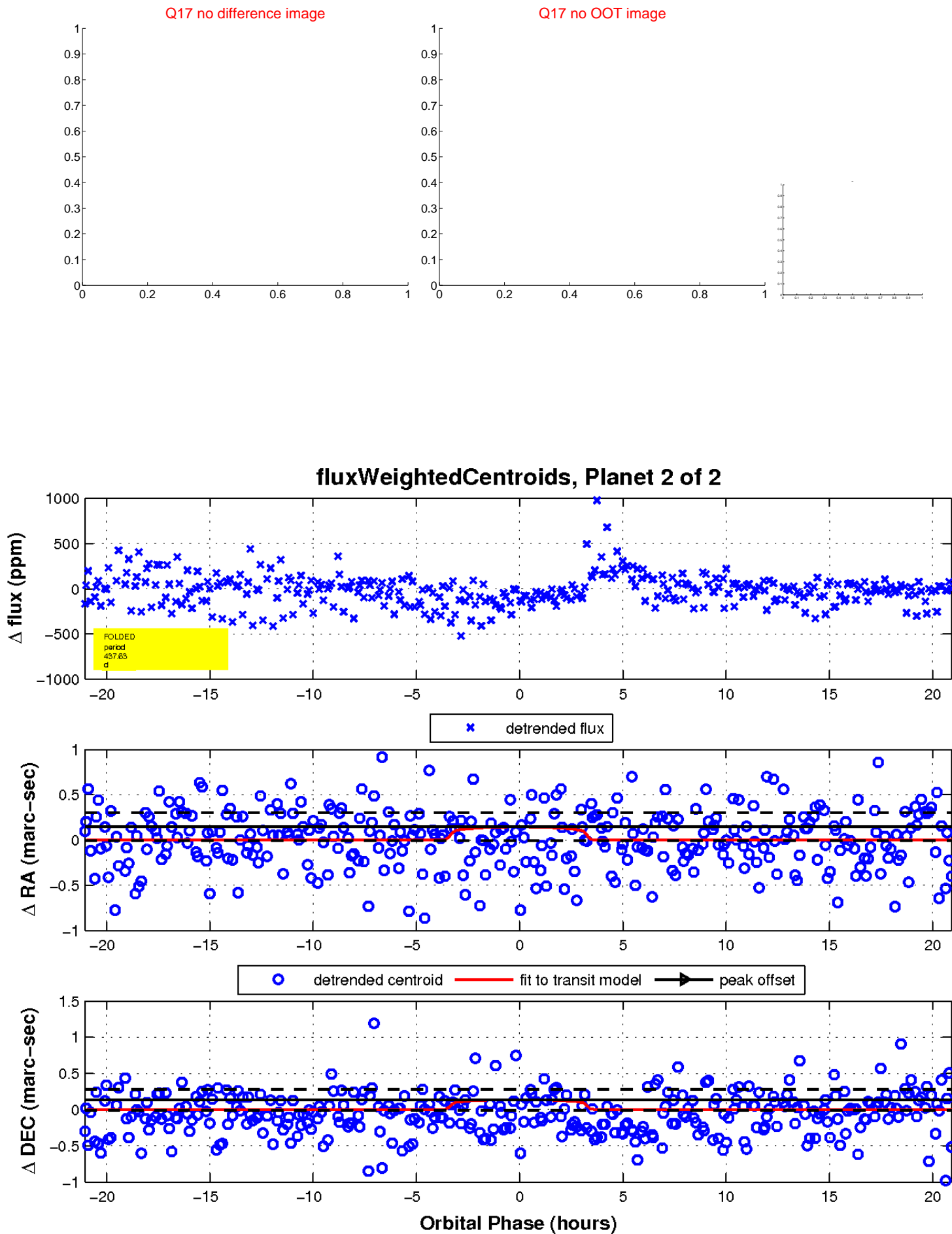
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



UKIRT Image

