

KIC 010467629

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})
010467629-02	OBS	No	373.707408	289.814826	1348.6	18.226	8.2	9.7	1.02	6339	4.47	1.38
010467629-04	OBS	No	385.076976	269.770544	1200.4	21.128	7.5	7.4	1.02	6339	6.07	1.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010467629-02	OBS	FP	0.01	1	0	0	0	ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010467629-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

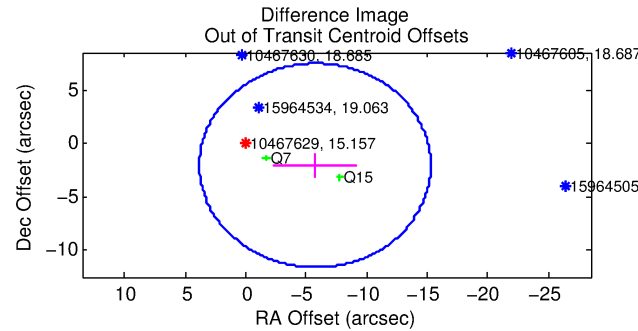
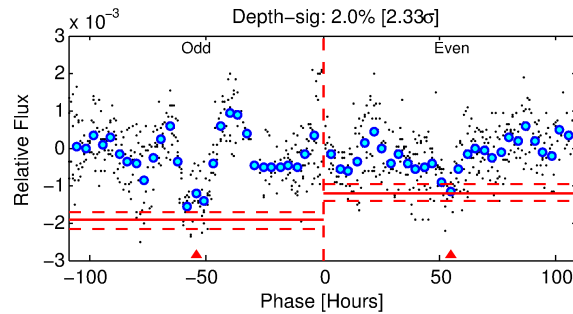
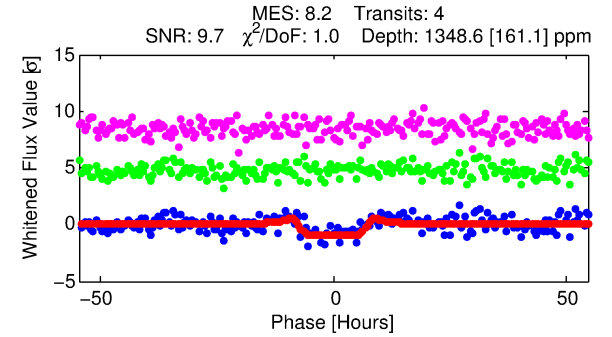
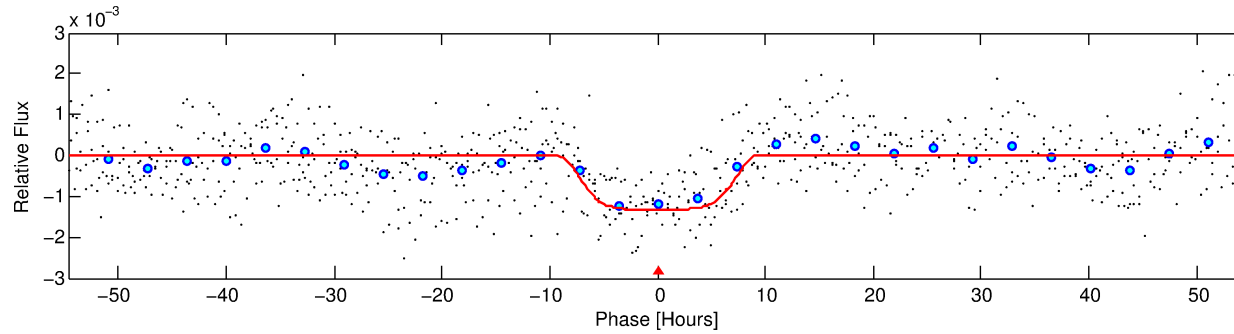
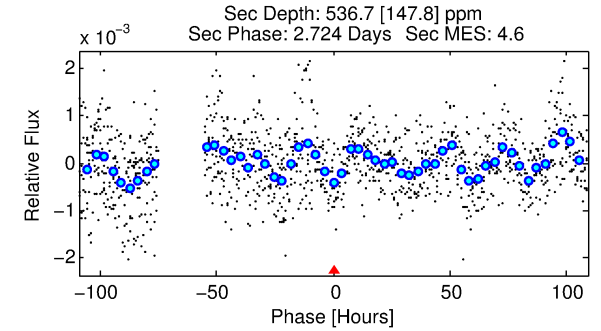
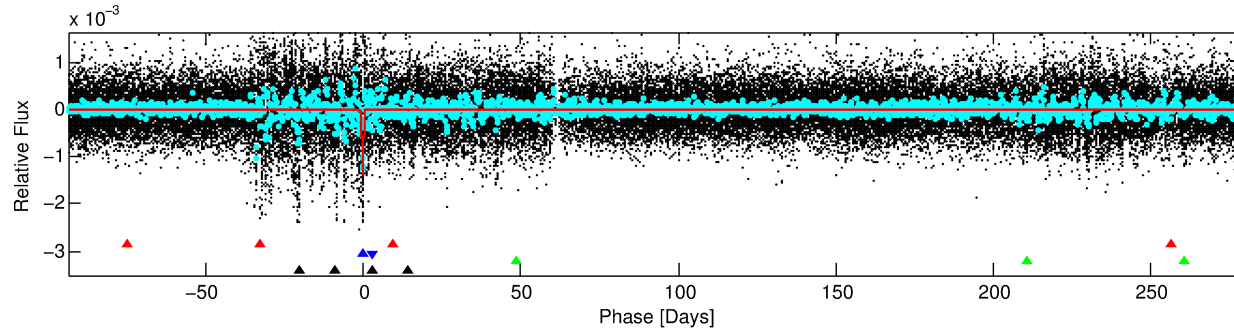
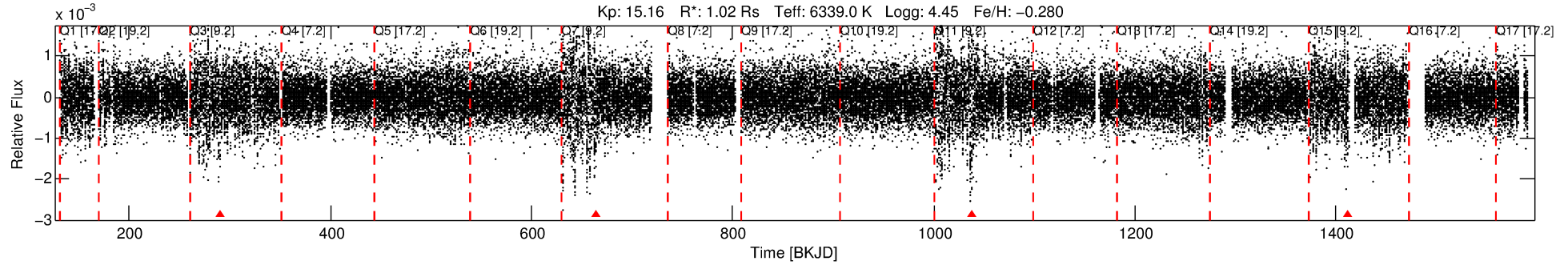
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010467629-02

No Significant Match Found

DV One-Page Summary

KIC: 10467629 Candidate: 2 of 4 Period: 373.707 d



DV Fit Results:

Period = 373.70741 [0.01205] d
Epoch = 289.8148 [0.0234] BKJD
Rp/R* = 0.0403 [0.0028]
a/R* = 75.20 [10.68]
b = 0.92 [0.02]
Seff = 1.38 [0.55]
Teq = 277 [28] K
Rp = 4.47 [1.44] Re
a = 1.0398 [0.2712] AU
Ag = 15951.18 [7741.63] [2.06σ]
Teff = 4806 [409] K [11.06σ]

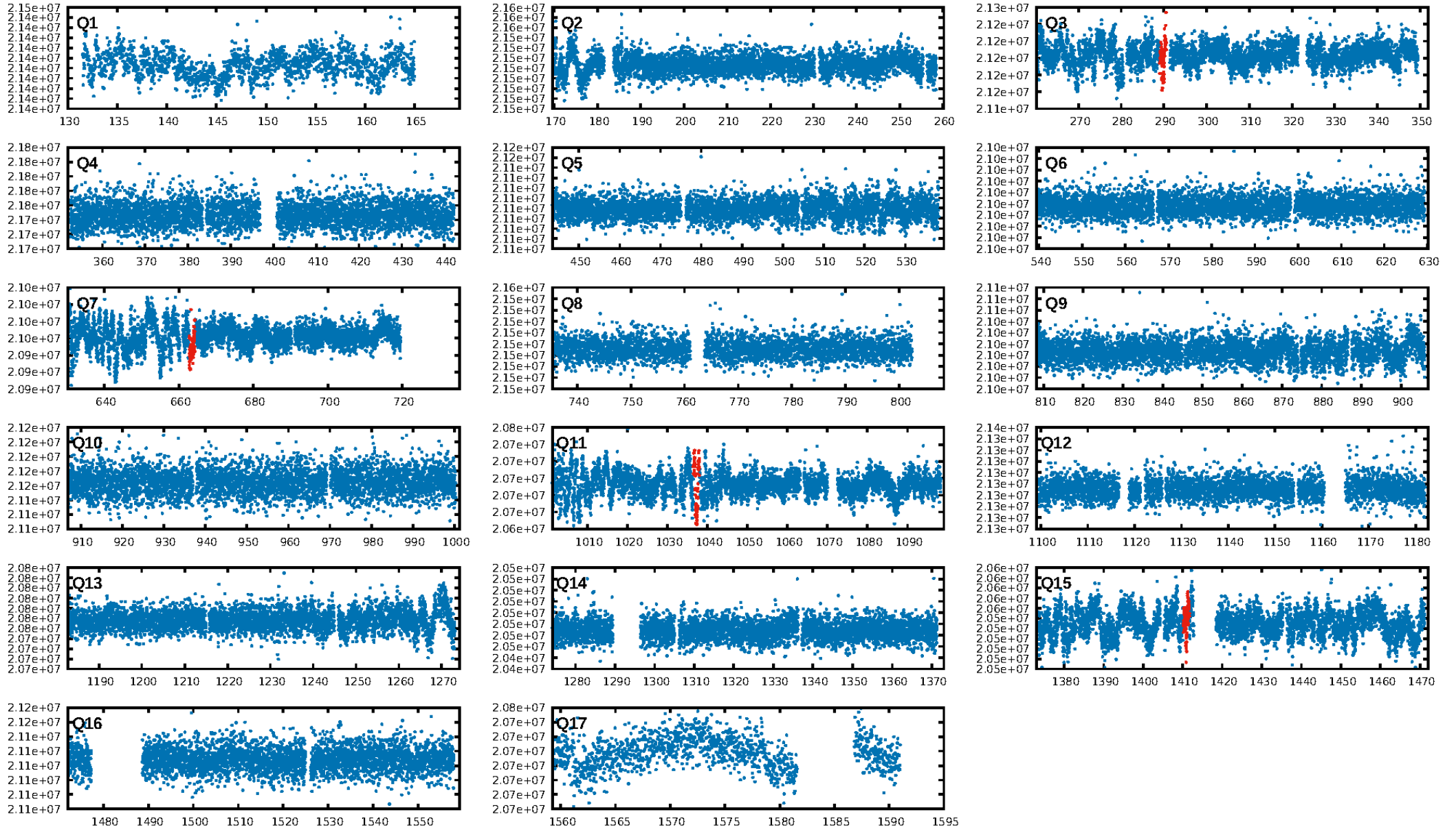
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [9.78σ]
ModelChiSquare2-sig: 3.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 2.72e-11
RollingBand-fgt: 0.00 [0/4]
GhostDiagnostic-chr: 3.431
Centroid-sig: 0.7%
Centroid-so: 3.171 arcsec [2.11σ]
OotOffset-rm: 6.099 arcsec [1.92σ]
OotOffset-st: 0/2/0/0 [2]
KicOffset-rm: 5.960 arcsec [1.88σ]
KicOffset-st: 0/2/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

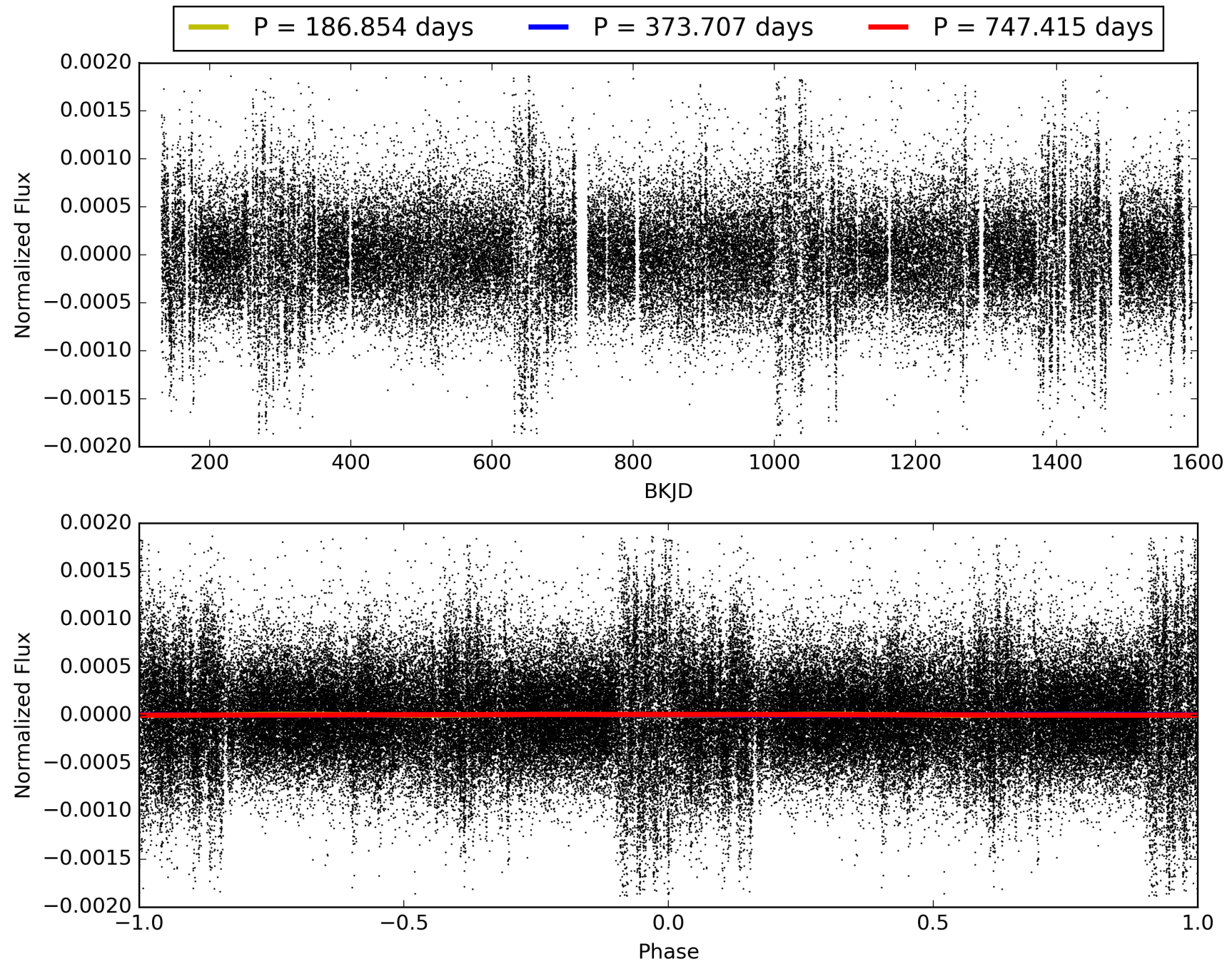
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:47:34 Z

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

TCE 010467629-02, PDC Light Curves

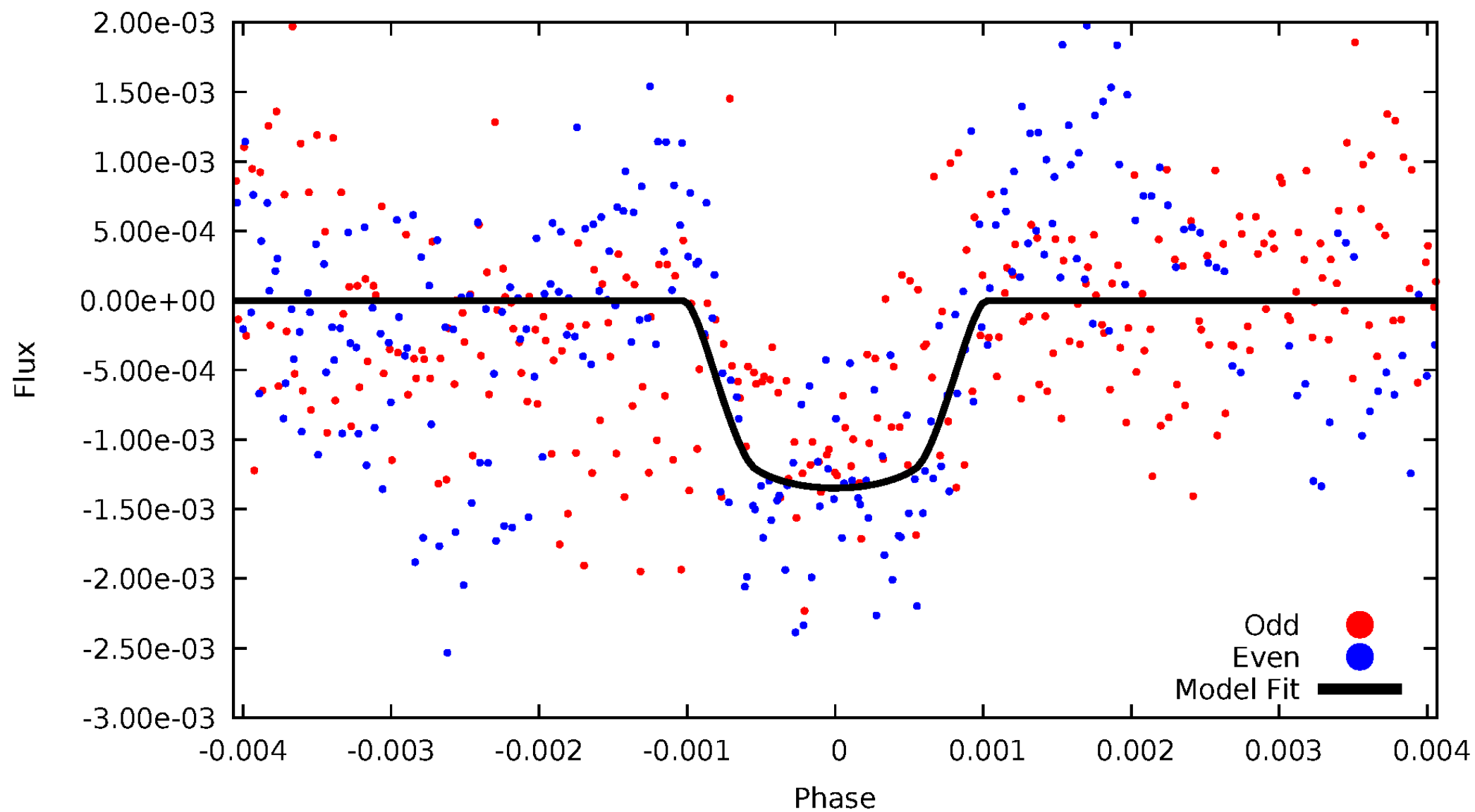


TCE 010467629-02



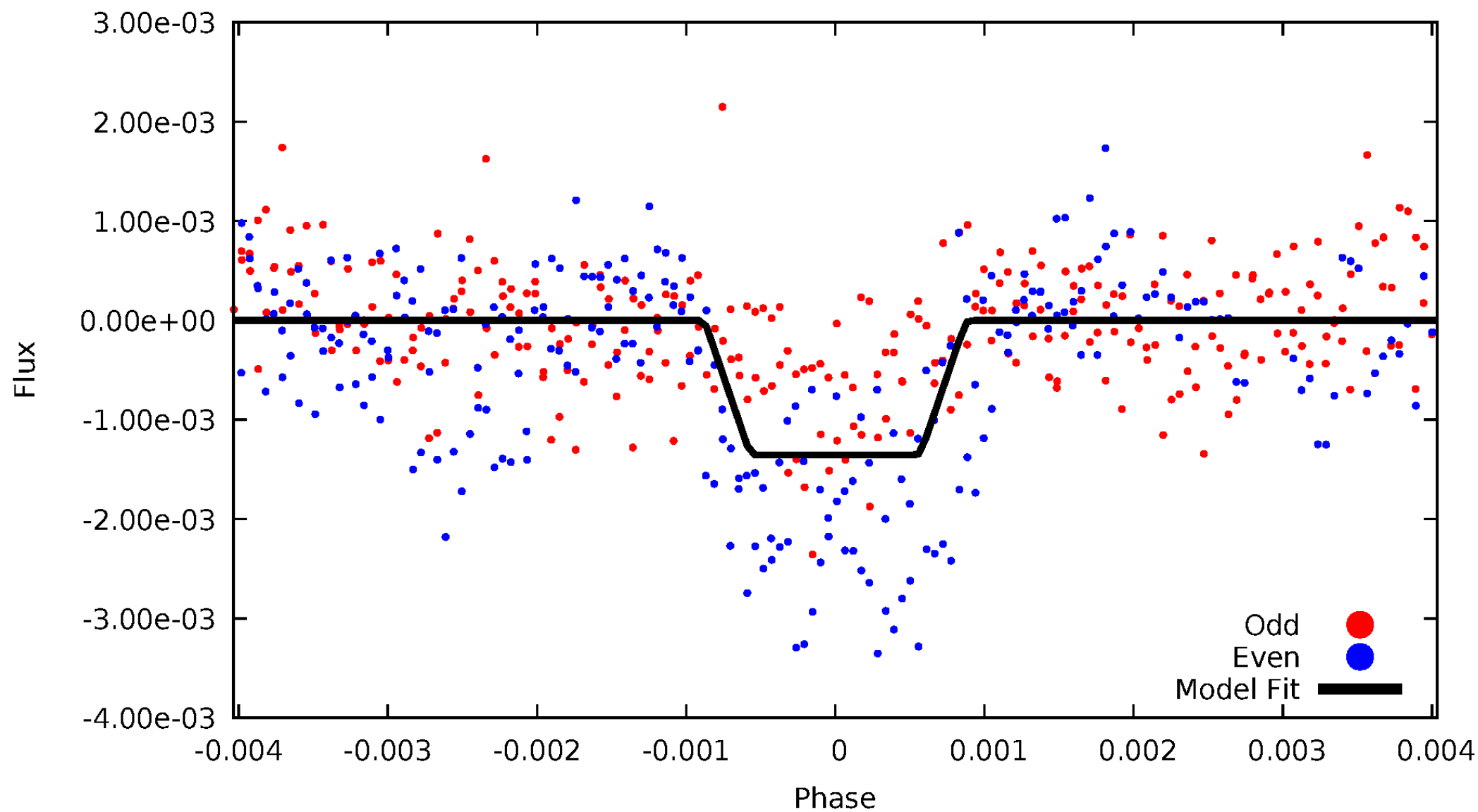
DV Odd/Even

TCE 010467629-02



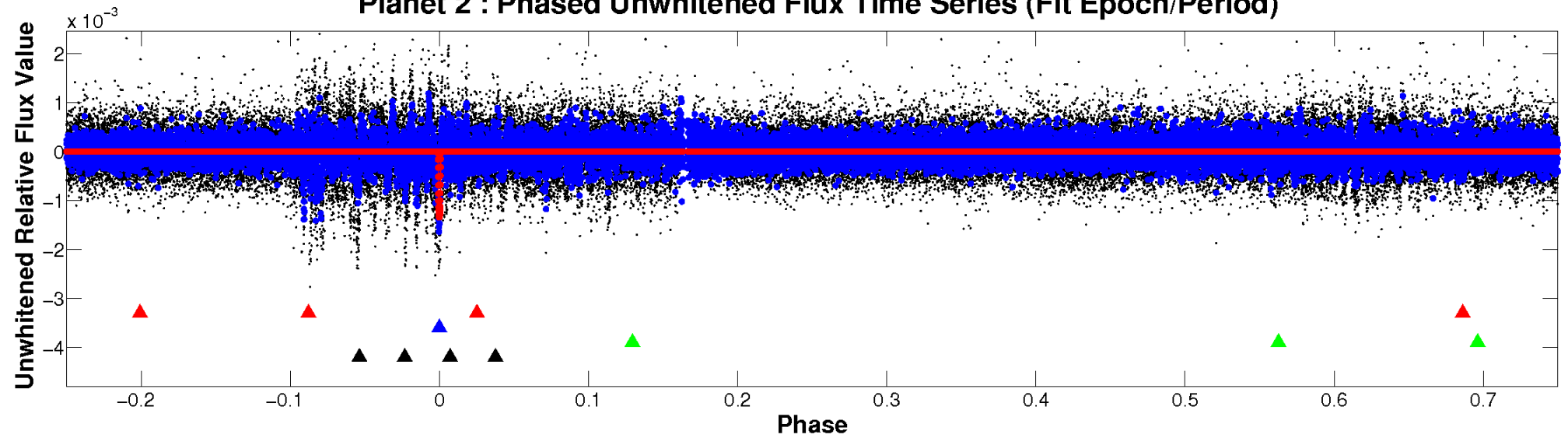
ALT Odd/Even

TCE 010467629-02

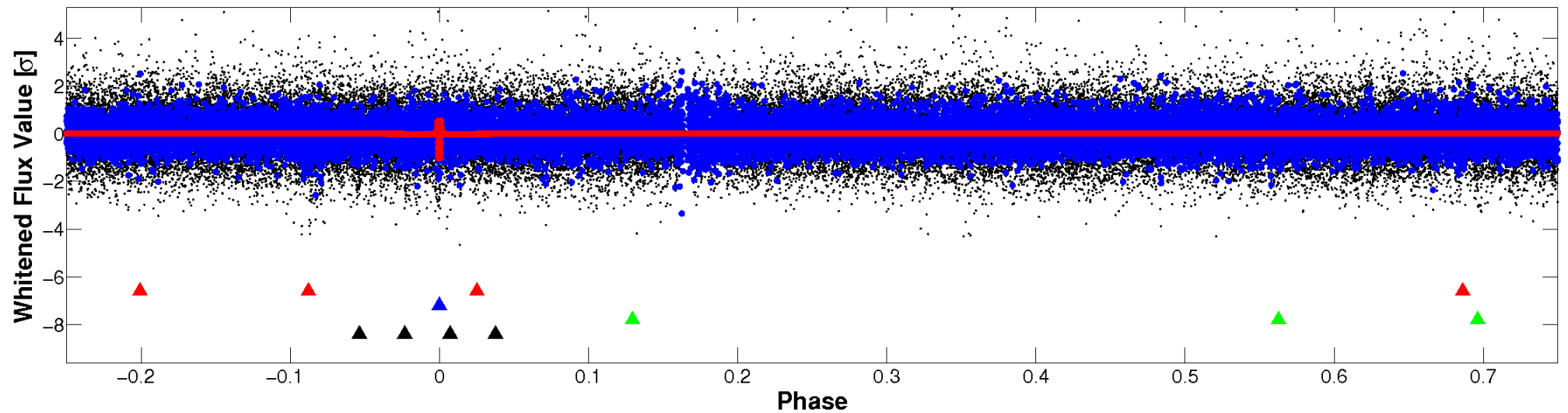


Non-Whitened Vs. Whitened Light Curve

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



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



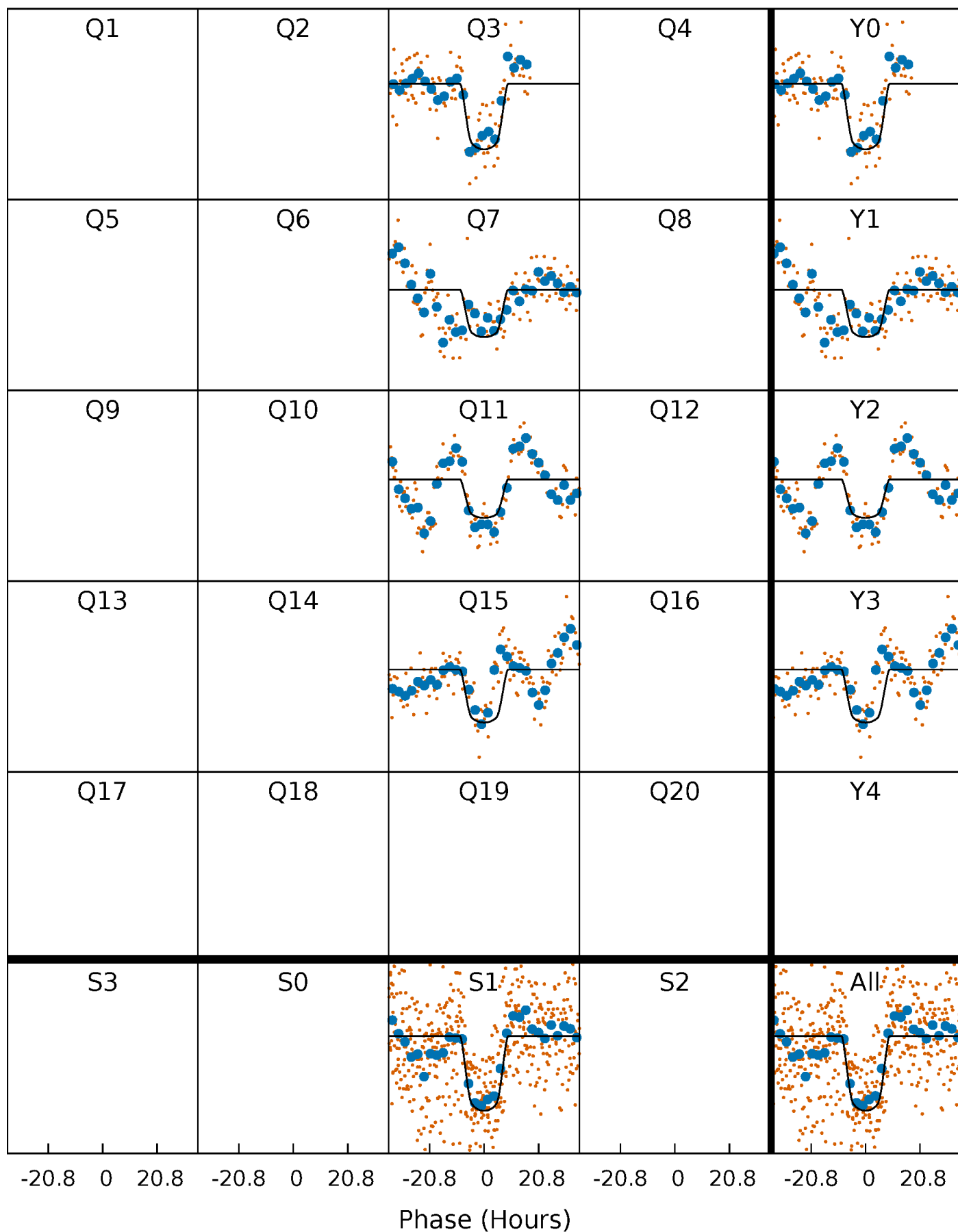
PDC Quarter-Phased Transit Curves

TCE 010467629-02 $P=373.707408$ Days $T_0=289.814826$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010467629-02 $P=373.707408$ Days $T_0=289.814826$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

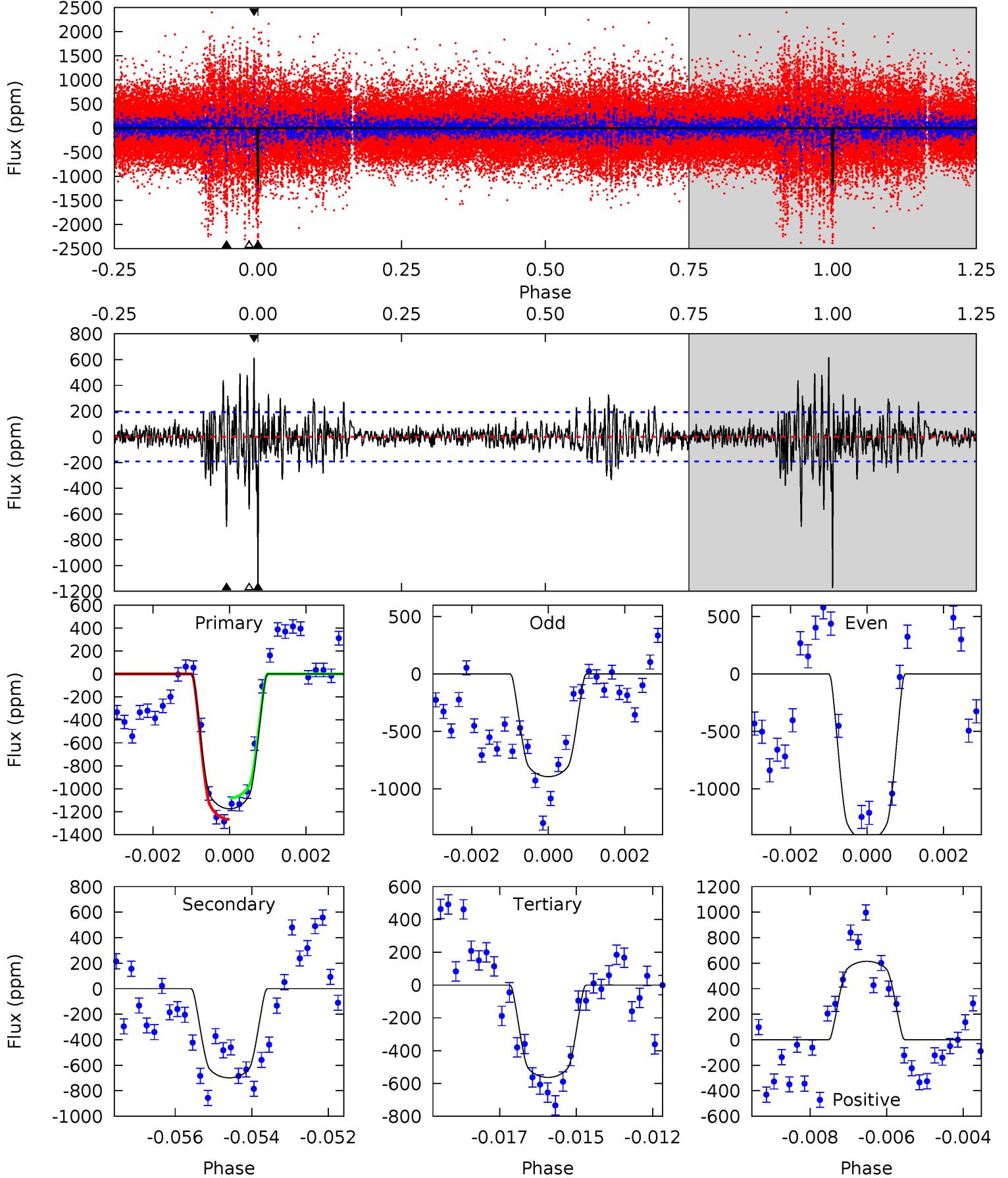
TCE 010467629-02 $P=373.688945$ Days $T_0=289.849648$ (BKJD)



DV Model-Shift Uniqueness Test

010467629-02, P = 373.707408 Days, E = 289.814826 Days

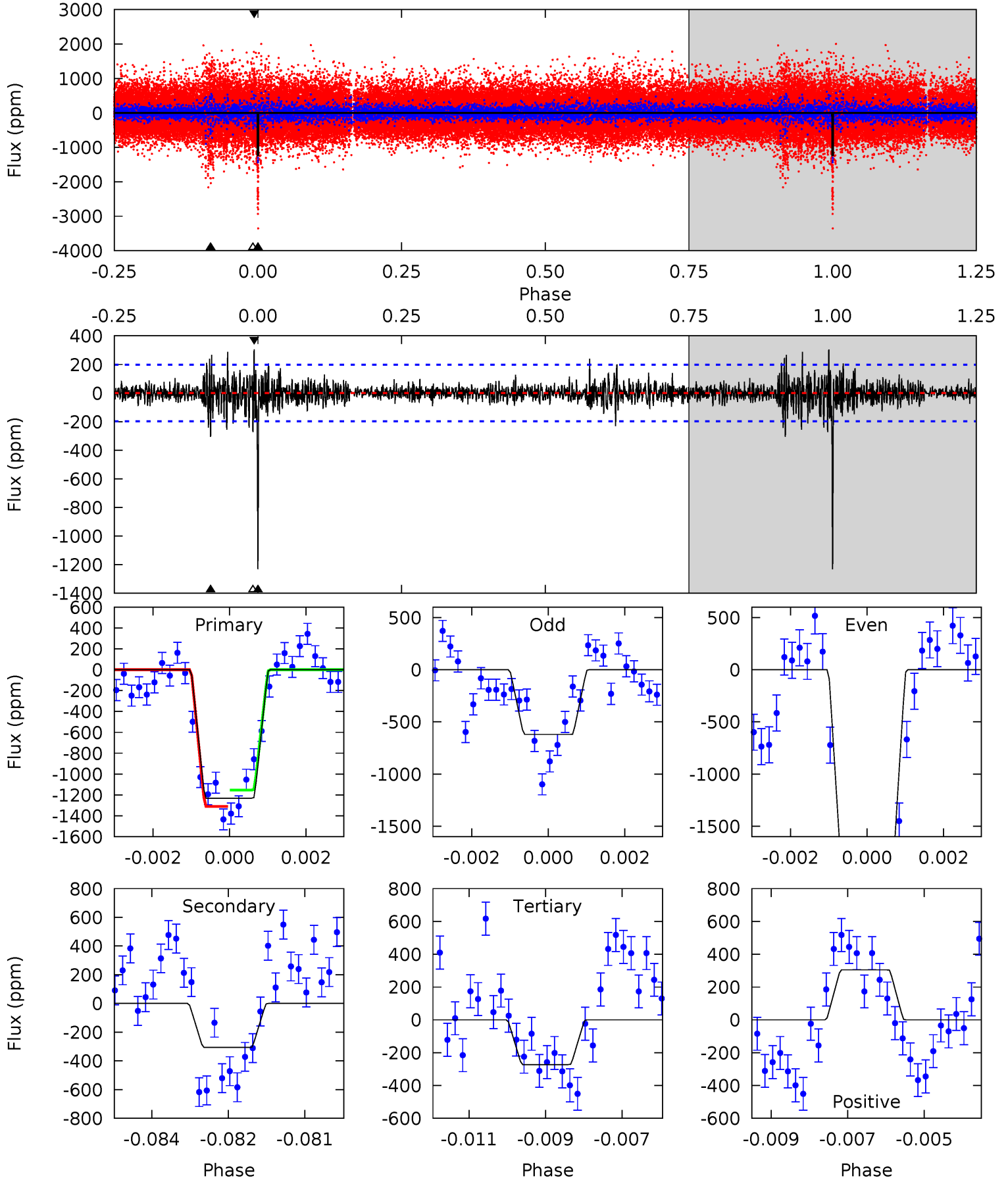
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.6	19.4	15.6	17.1	5.32	3.08	2.72	17.0	15.5	3.76	2.33	7.69	1.06	0.34	2.57



Alt Model-Shift Uniqueness Test

010467629-02, P = 373.688945 Days, E = 289.849648 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.3	8.27	7.37	8.23	5.35	3.13	1.37	25.9	25.0	0.90	0.03	20.2	1.12	0.20	2.11



Stellar Parameters For KIC 010467629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6339^{+169}_{-226}	$4.454^{+0.054}_{-0.202}$	$-0.280^{+0.250}_{-0.300}$	$1.017^{+0.320}_{-0.107}$	$1.069^{+0.143}_{-0.143}$	$1.432^{+0.393}_{-0.734}$
	+3%/-4%	+1%/-5%	+89%/-107%	+31%/-11%	+13%/-13%	+27%/-51%
Source	PHO1	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 010467629-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-698 ± 36	$4.59^{+0.80}_{-0.50}$	393^{+28}_{-19}	5177^{+220}_{-220}	19188^{+4559}_{-5234}
Alt.	-306 ± 37	$4.26^{+0.68}_{-0.52}$	394^{+27}_{-18}	4527^{+216}_{-193}	10005^{+2566}_{-2754}

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

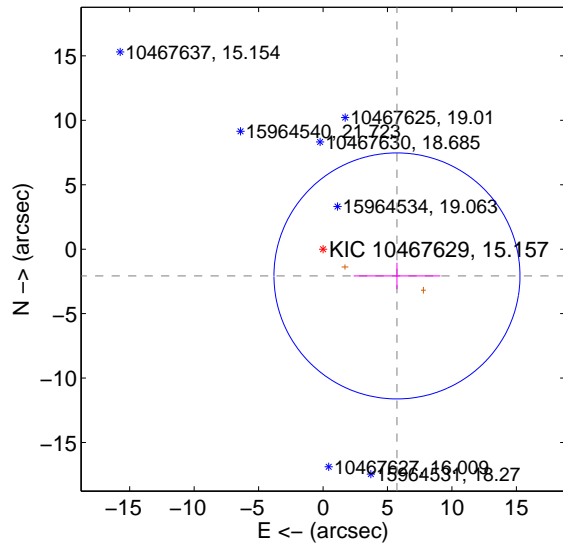
Supplemental centroid analysis for 010467629-02. Kepler magnitude: 15.16. Transit SNR 9.74

There are 0 quarters with good PRF difference image offsets

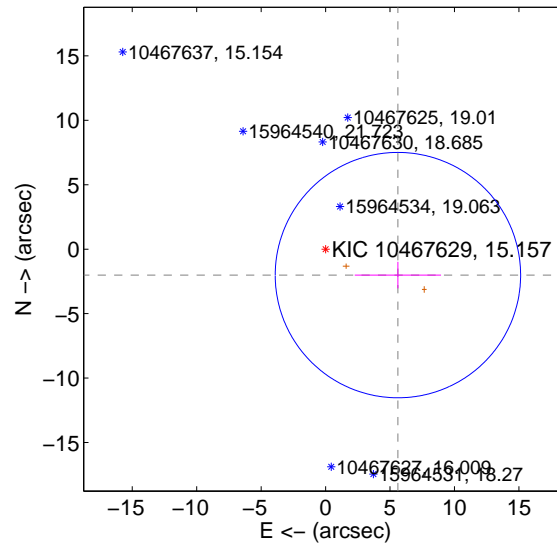
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.099 ± 3.180	1.92	-5.735 ± 3.362	-2.075 ± 1.024
PRF-fit source offset from KIC position	5.960 ± 3.172	1.88	-5.611 ± 3.350	-2.011 ± 1.029
photometric centroid source offset	3.17 ± 1.50	2.11	-2.92 ± 1.54	-1.24 ± 1.31

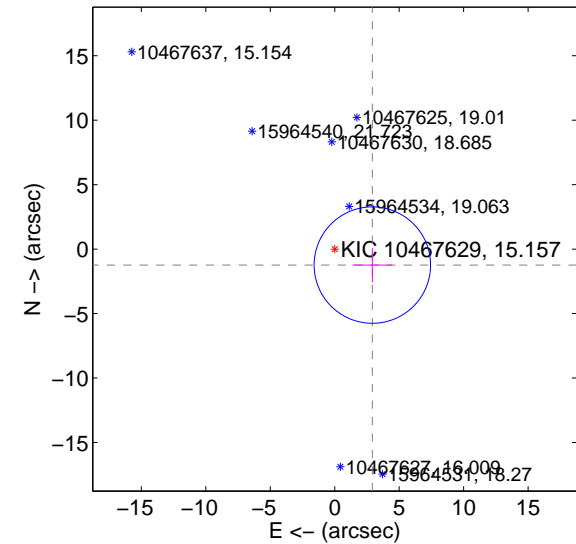
offset from difference PRF-fit to OOT PRF-fit



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.

Q5 no difference image



Q5 no OOT image



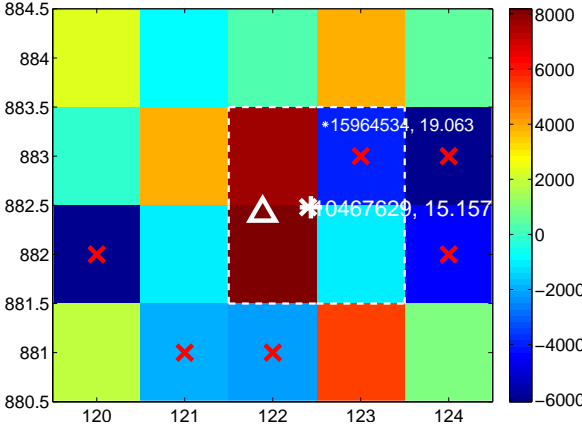
Q6 no difference image



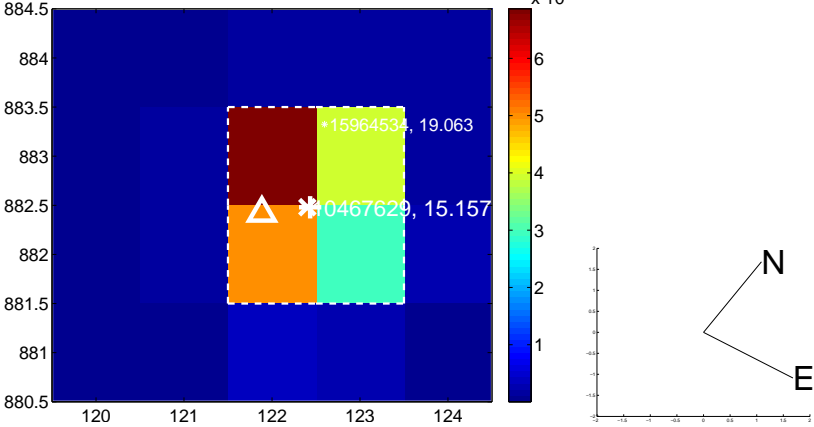
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



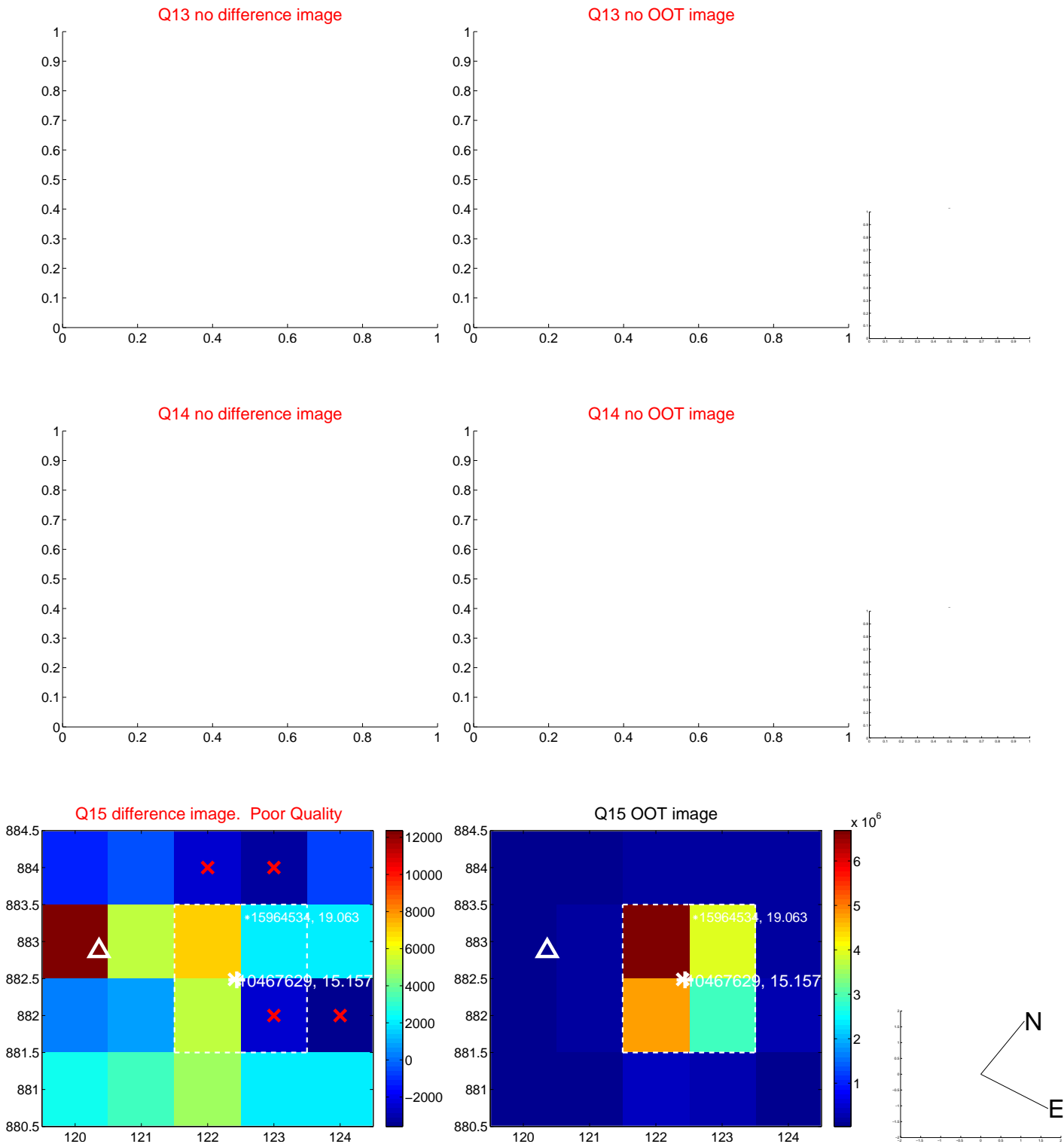
Q8 no OOT image



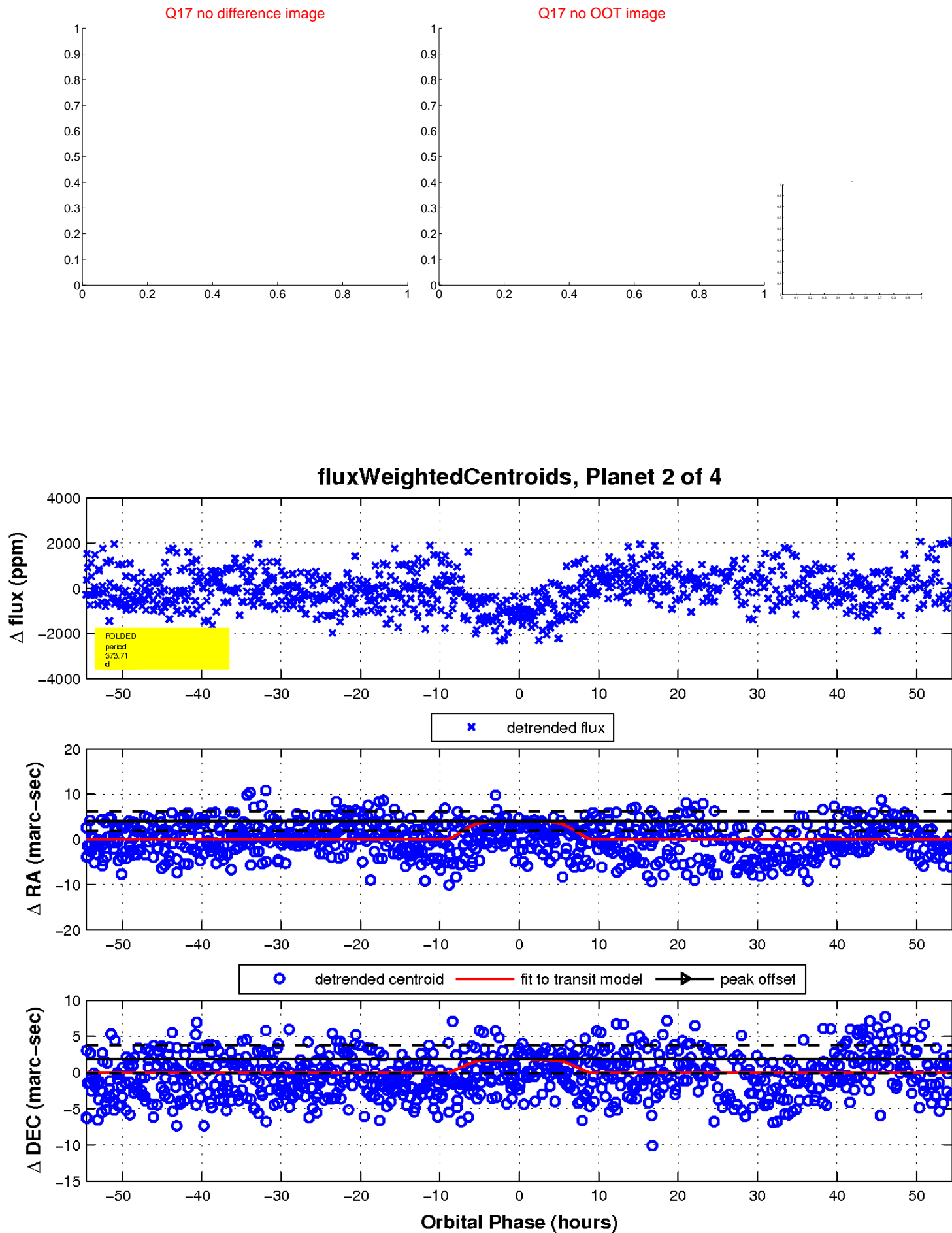
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

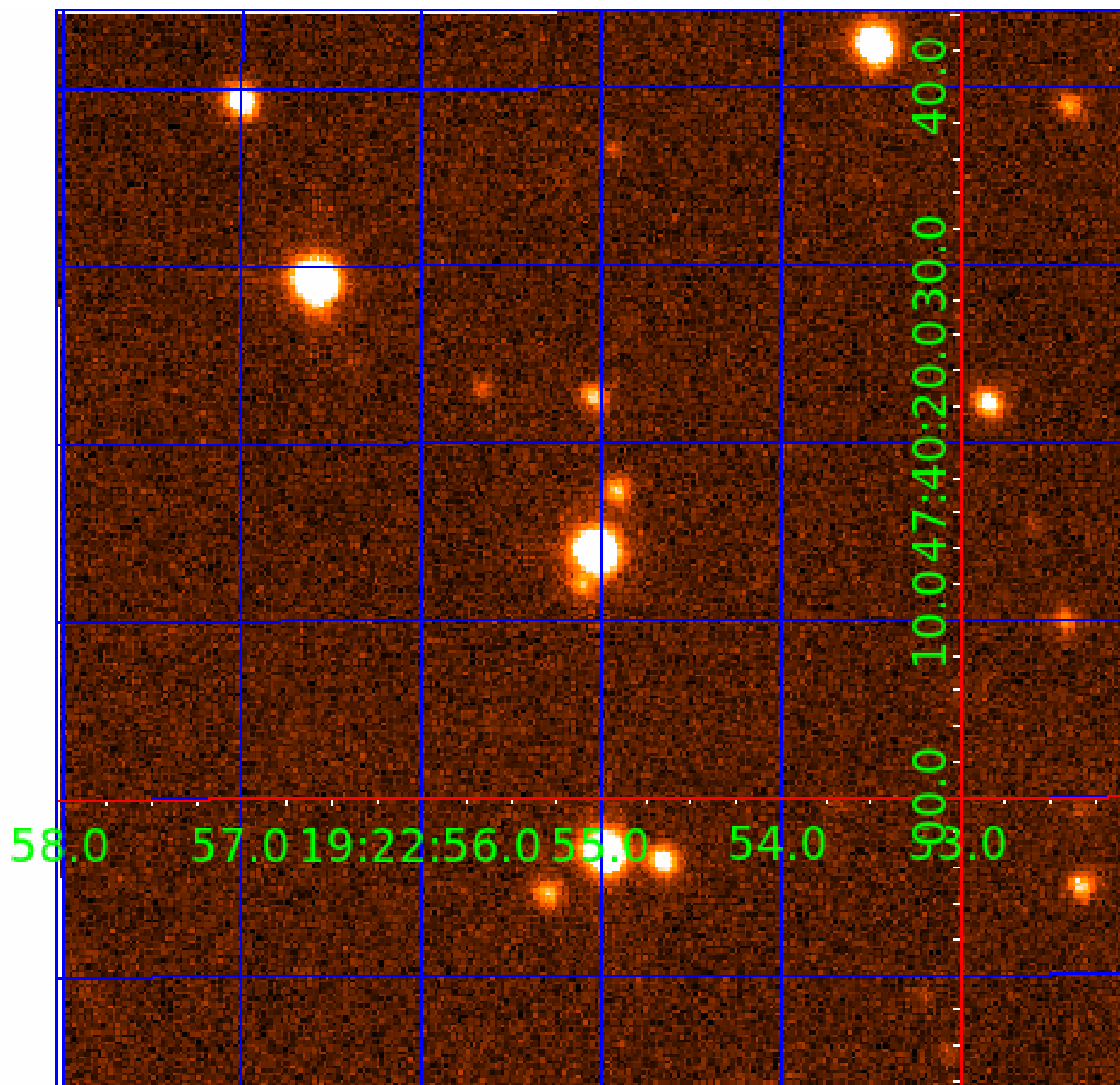


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010467629

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})
010467629-02	OBS	No	373.707408	289.814826	1348.6	18.226	8.2	9.7	1.02	6339	4.47	1.38
010467629-04	OBS	No	385.076976	269.770544	1200.4	21.128	7.5	7.4	1.02	6339	6.07	1.33

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010467629-02	OBS	FP	0.01	1	0	0	0	ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS
010467629-04	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

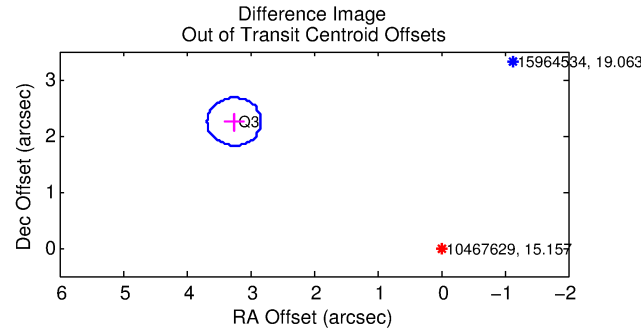
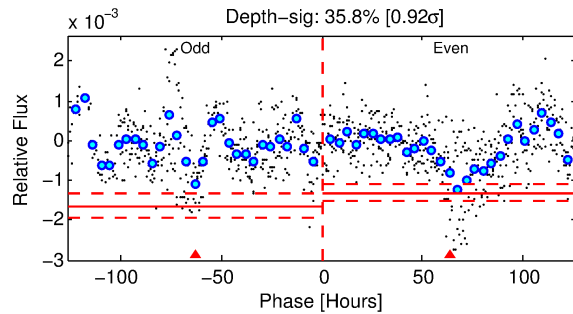
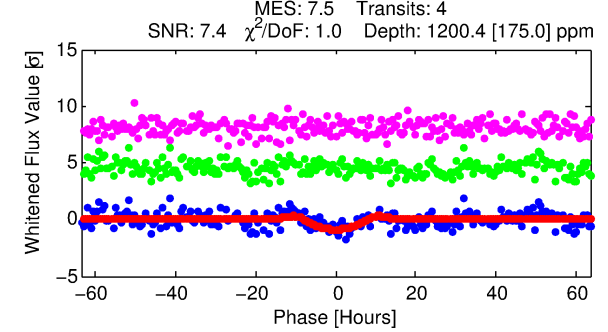
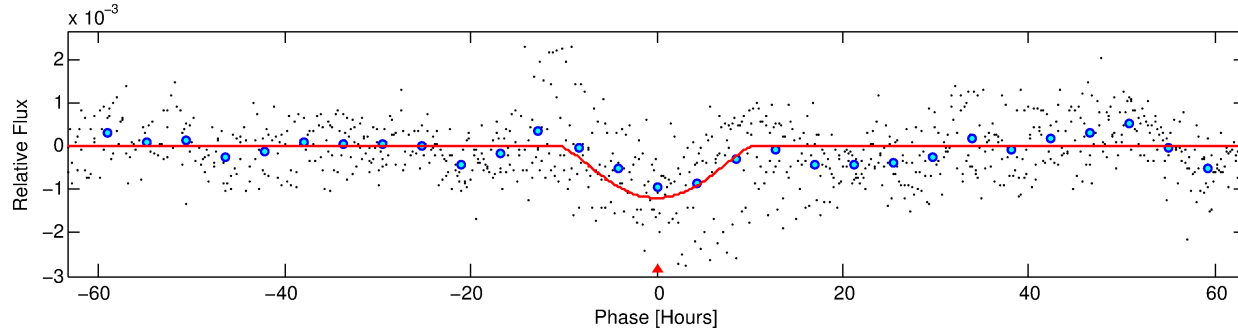
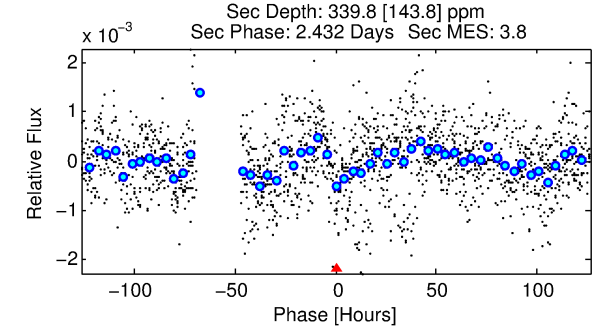
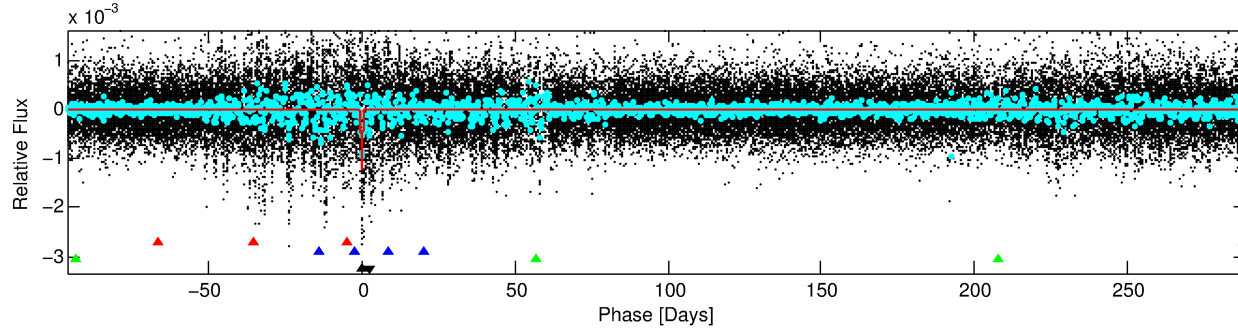
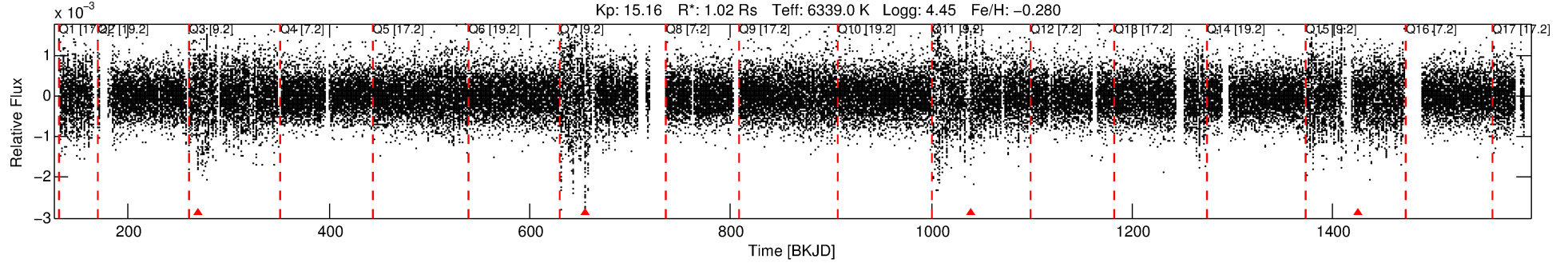
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010467629-04

No Significant Match Found

DV One-Page Summary

KIC: 10467629 Candidate: 4 of 4 Period: 385.077 d



DV Fit Results:

Period = 385.07698 [0.02367] d
Epoch = 269.7705 [0.0473] BKJD
Rp/R* = 0.0547 [0.0965]
a/R* = 49.79 [23.57]
b = 0.99 [0.15]
Seff = 1.33 [0.53]
Teq = 274 [27] K
Rp = 6.07 [10.88] Re
a = 1.0607 [0.2767] AU
Ag = 5702.58 [20375.79] [0.28σ]
Teff = 3679 [3271] K [1.04σ]

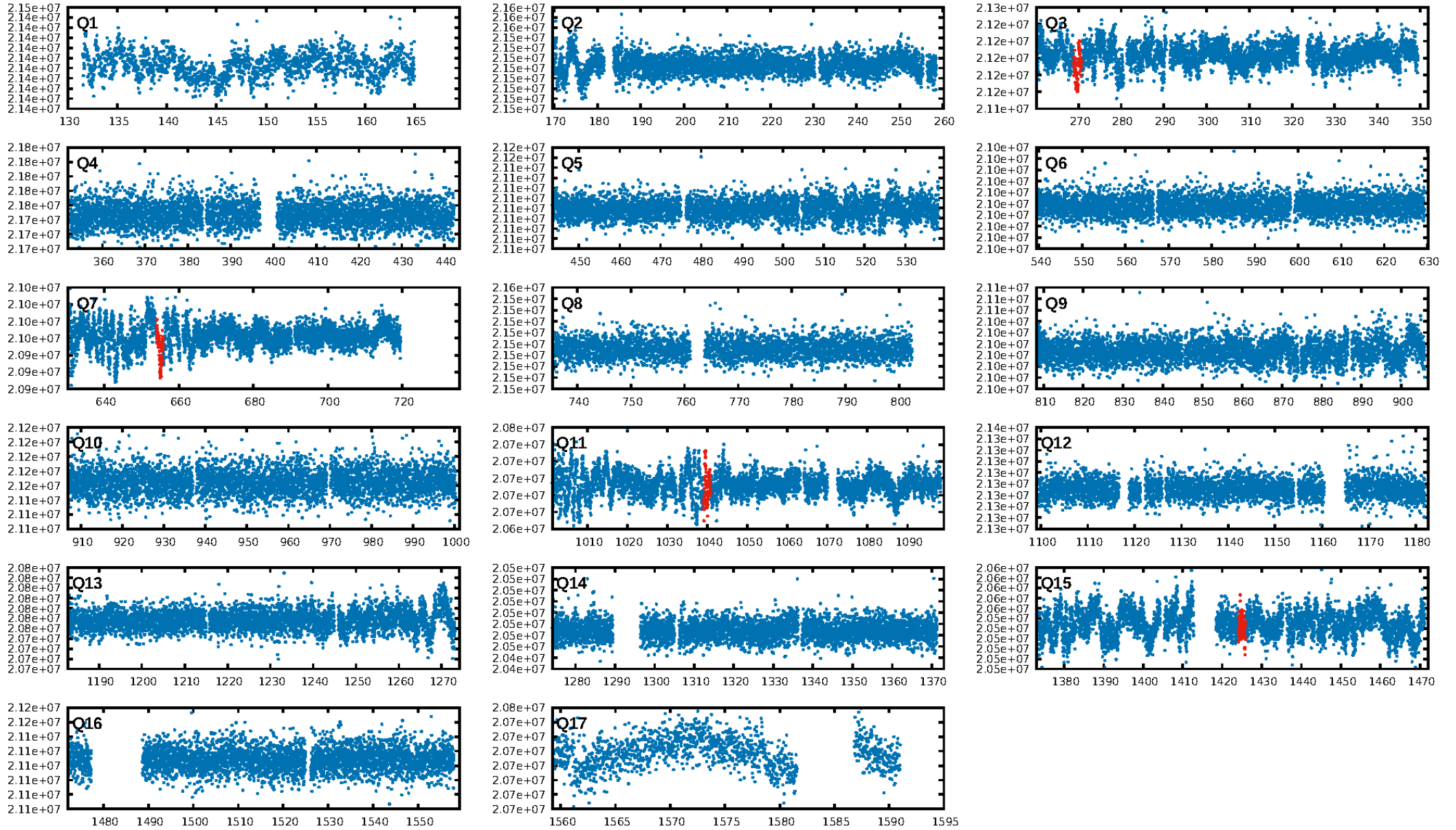
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.78σ]
LongPeriod-sig: 100.0% [33.39σ]
ModelChiSquare2-sig: 10.3%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 1.08e-09
RollingBand-fgt: 0.00 [0/4]
GhostDiagnostic-chr: -4.146
Centroid-sig: 52.5%
Centroid-so: 1.515 arcsec [0.79σ]
OotOffset-rm: 3.954 arcsec [27.91σ]
KicOffset-rm: 4.080 arcsec [28.82σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

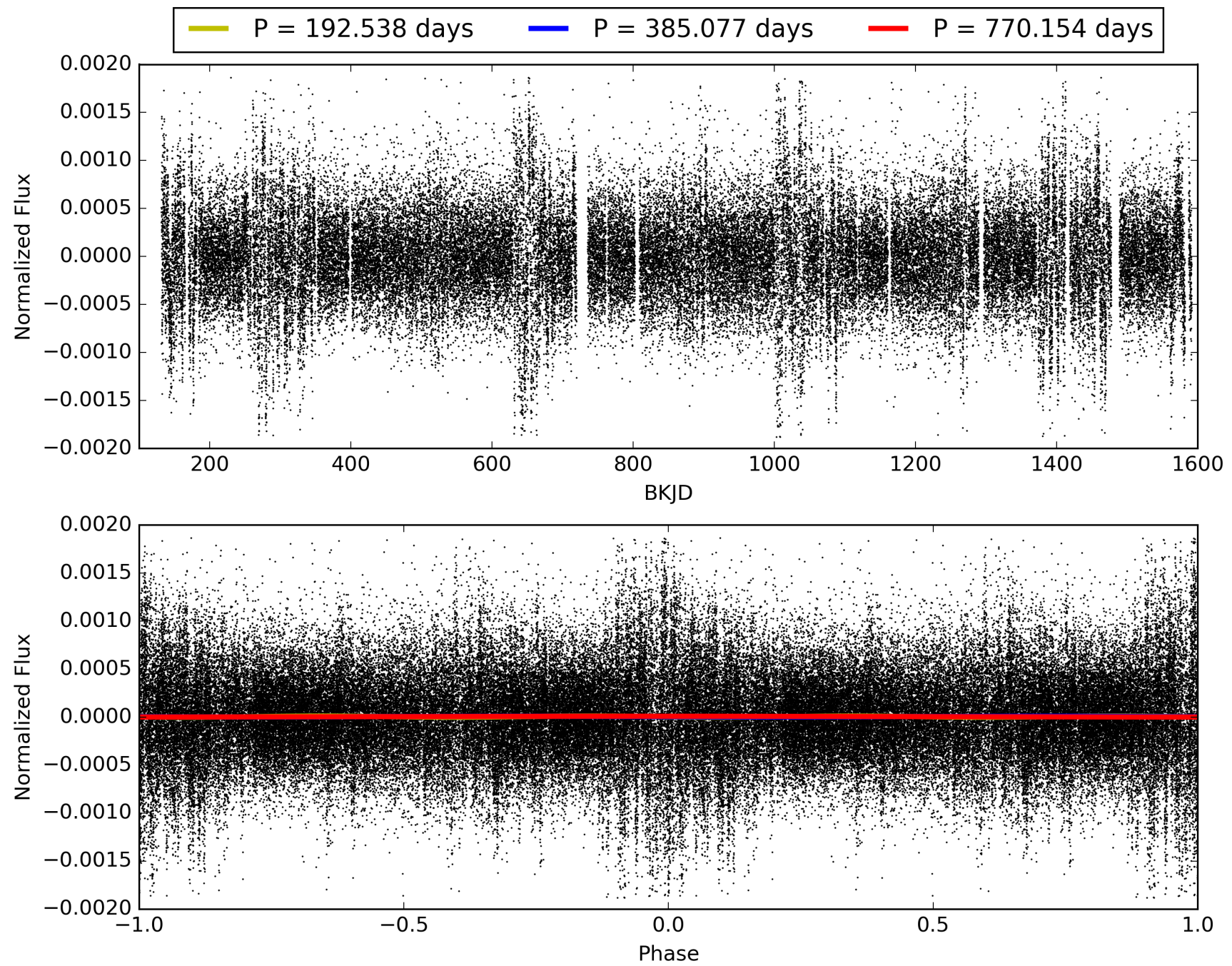
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:47:52 Z

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

TCE 010467629-04, PDC Light Curves

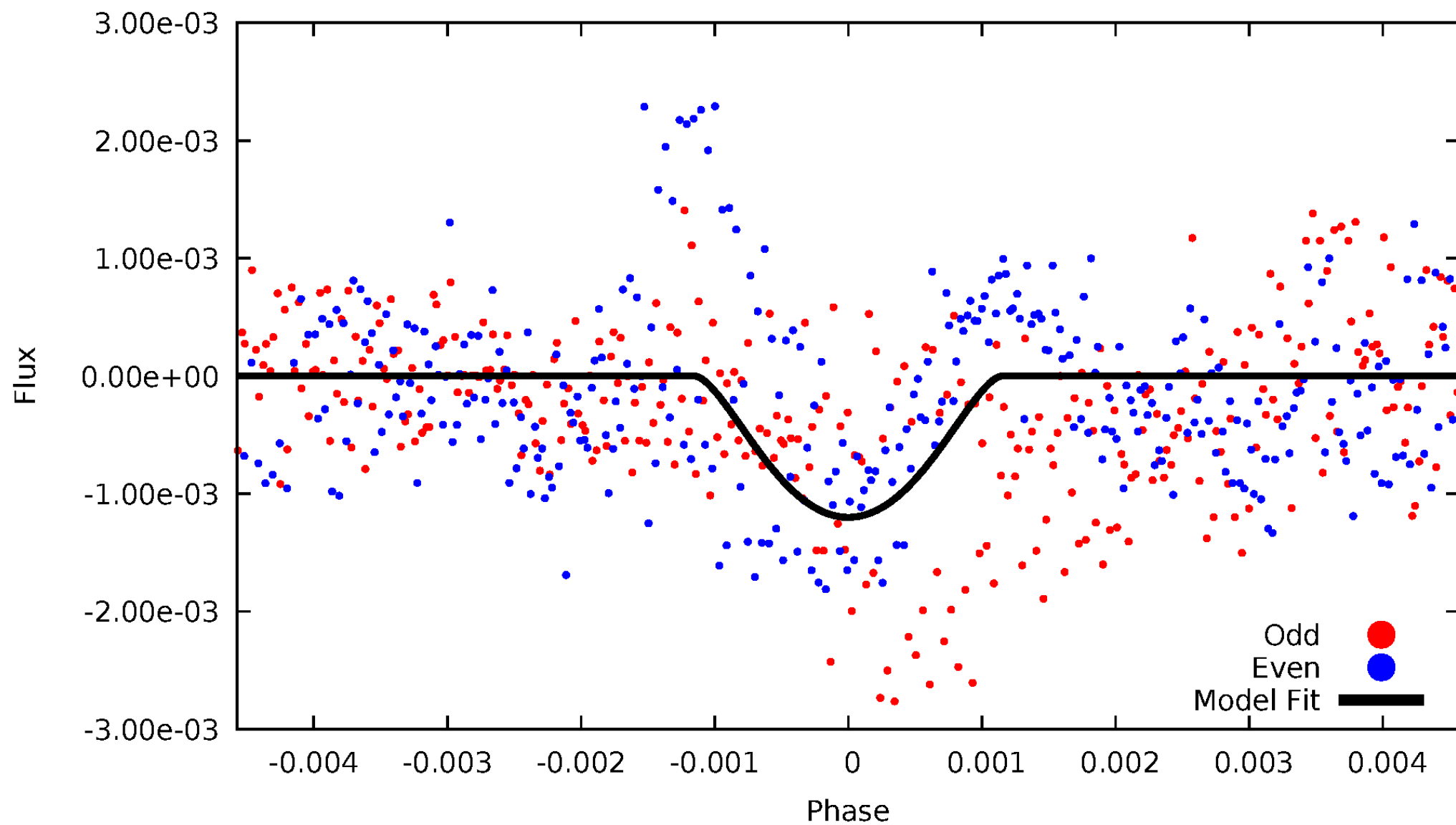


TCE 010467629-04



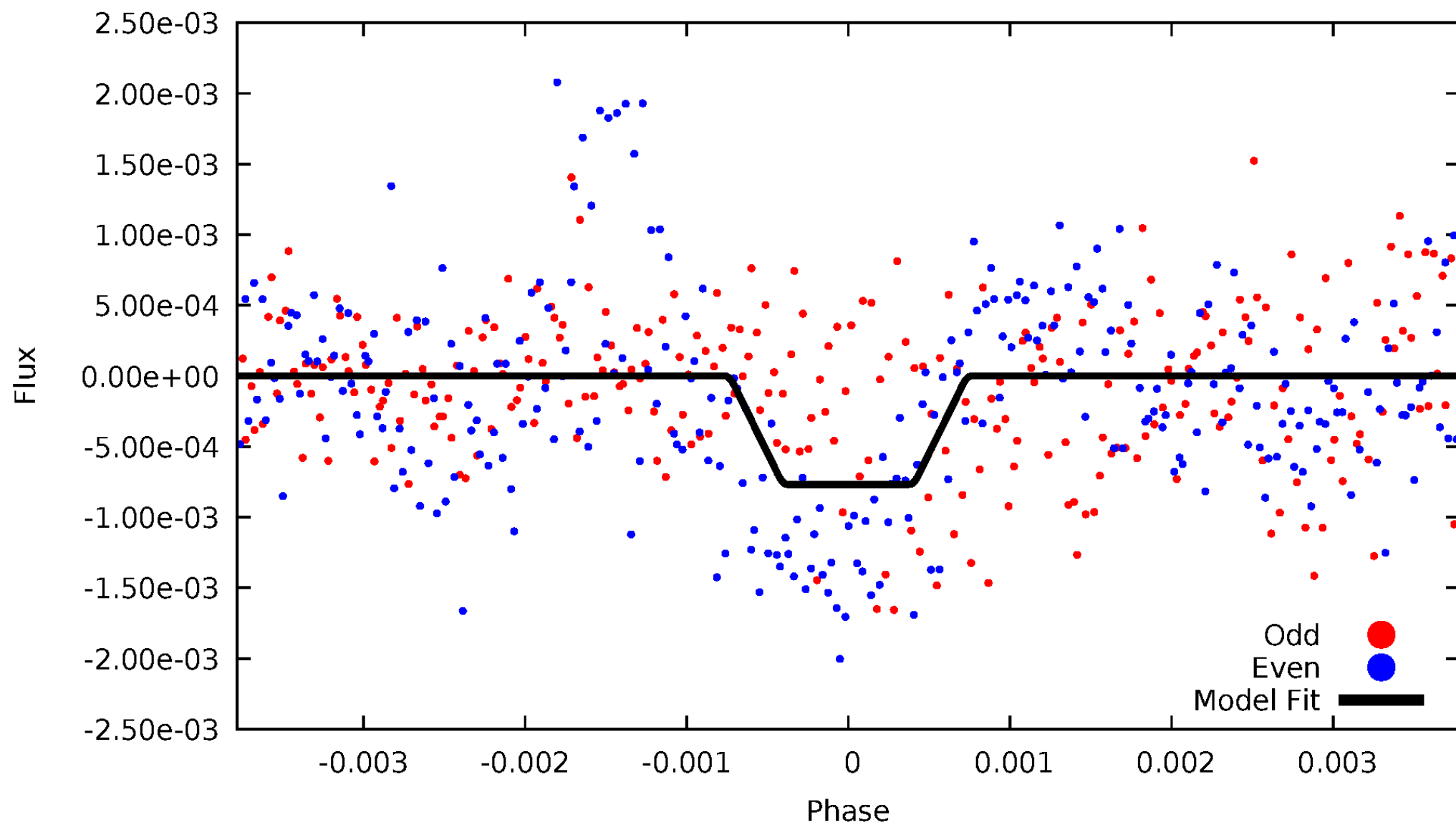
DV Odd/Even

TCE 010467629-04



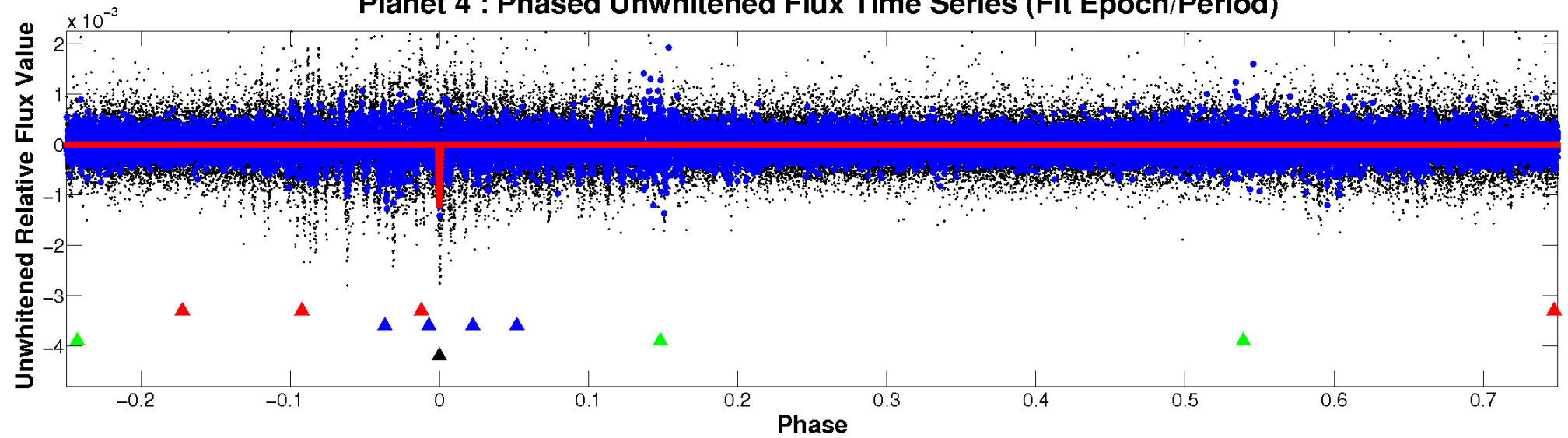
ALT Odd/Even

TCE 010467629-04

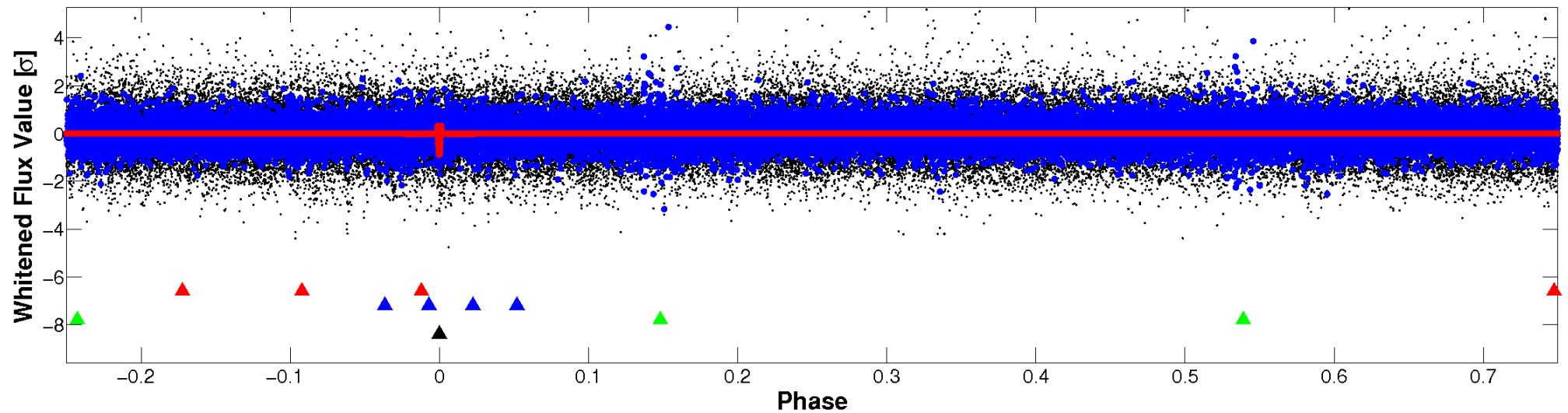


Non-Whitened Vs. Whitened Light Curve

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

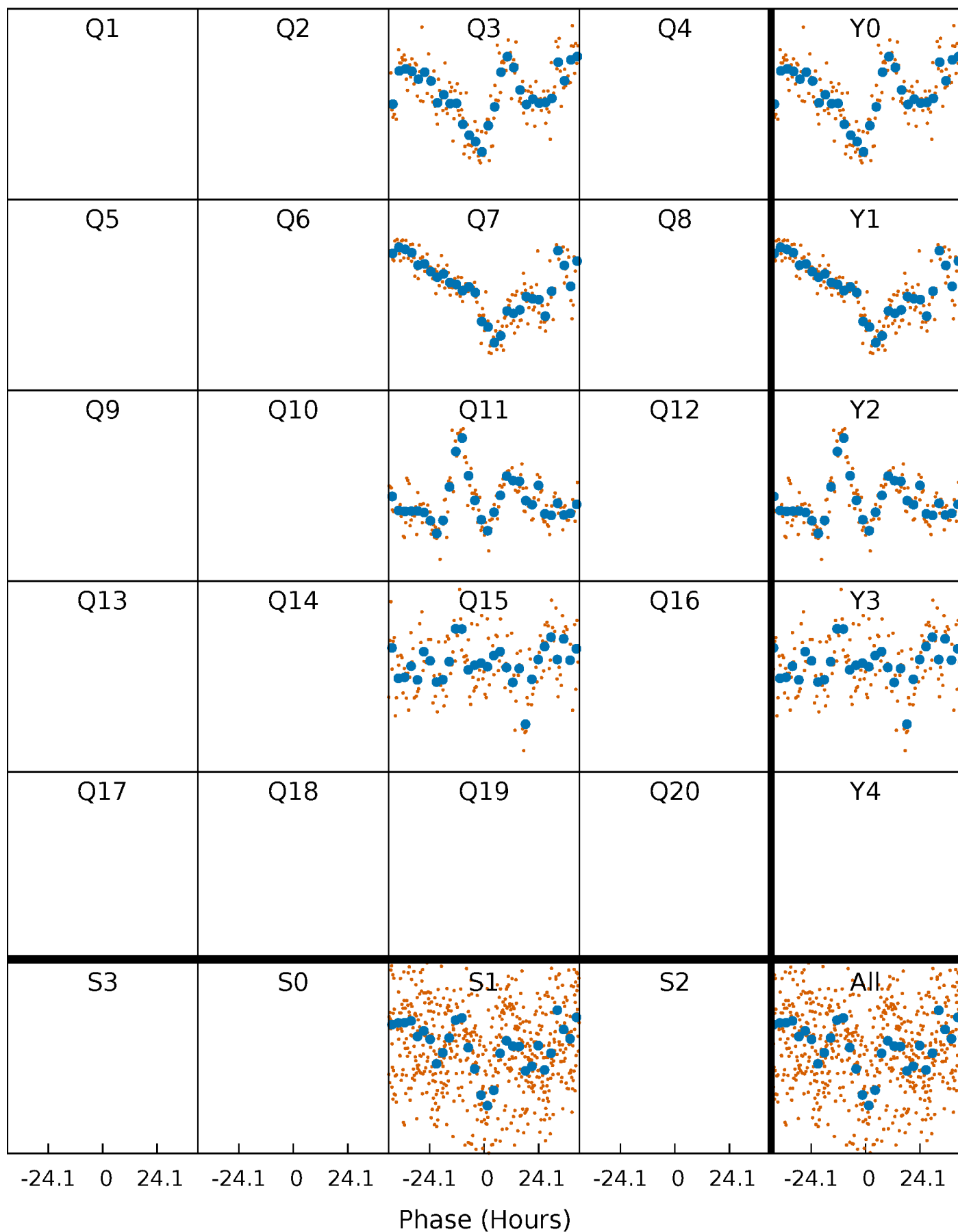


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



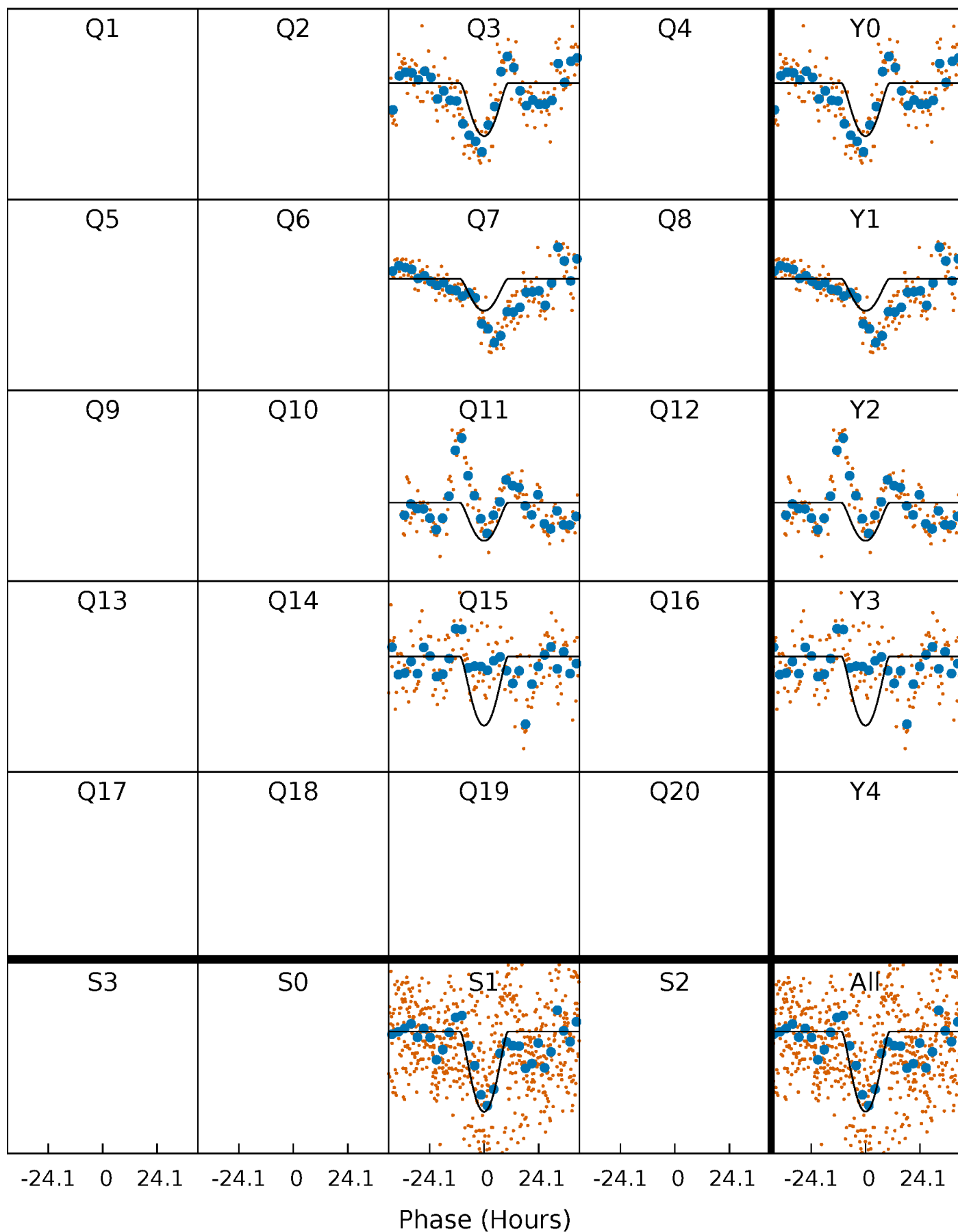
PDC Quarter-Phased Transit Curves

TCE 010467629-04 $P=385.076976$ Days $T_0=269.770544$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010467629-04 $P=385.076976$ Days $T_0=269.770544$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

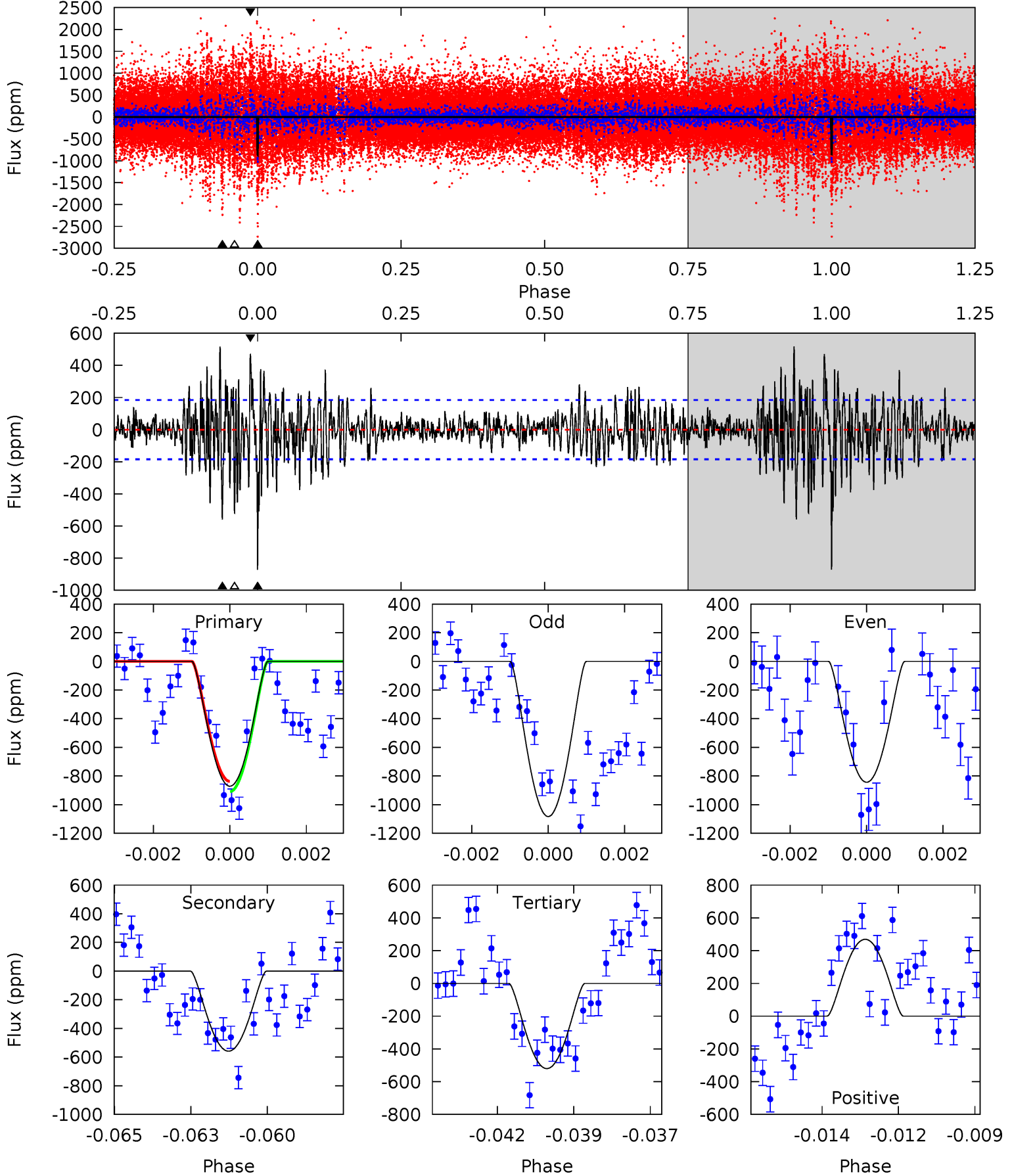
TCE 010467629-04 $P=385.158984$ Days $T_0=269.712643$ (BKJD)



DV Model-Shift Uniqueness Test

010467629-04, P = 385.076976 Days, E = 269.770544 Days

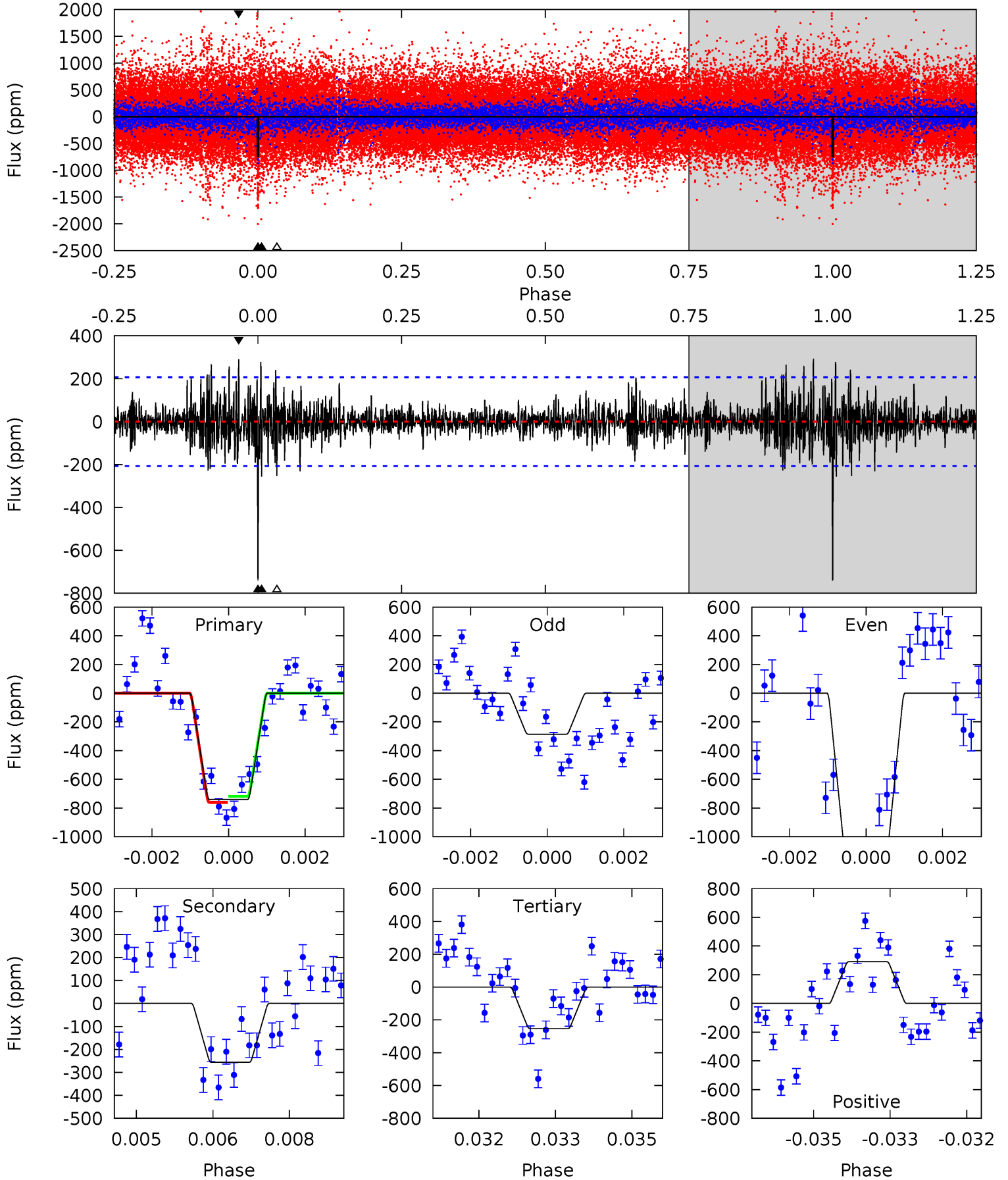
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.0	16.0	14.9	13.5	5.30	3.05	3.21	10.1	11.5	1.10	2.57	3.55	1.14	0.37	1.03



Alt Model-Shift Uniqueness Test

010467629-04, P = 385.158984 Days, E = 269.712643 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	6.65	6.56	7.55	5.38	3.17	1.46	12.7	11.7	0.09	-0.90	11.5	0.83	0.28	0.55



Stellar Parameters For KIC 010467629

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6339^{+169}_{-226}	$4.454^{+0.054}_{-0.202}$	$-0.280^{+0.250}_{-0.300}$	$1.017^{+0.320}_{-0.107}$	$1.069^{+0.143}_{-0.143}$	$1.432^{+0.393}_{-0.734}$
	+3%/-4%	+1%/-5%	+89%/-107%	+31%/-11%	+13%/-13%	+27%/-51%
Source	PHO1	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 010467629-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-559 ± 35	$9.85^{+10.00}_{-6.61}$	389^{+27}_{-19}	3728^{+2046}_{-718}	3583^{+29109}_{-2743}
Alt.	-256 ± 38	$9.03^{+8.99}_{-6.14}$	390^{+28}_{-19}	3405^{+1711}_{-612}	1943^{+17551}_{-1465}

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

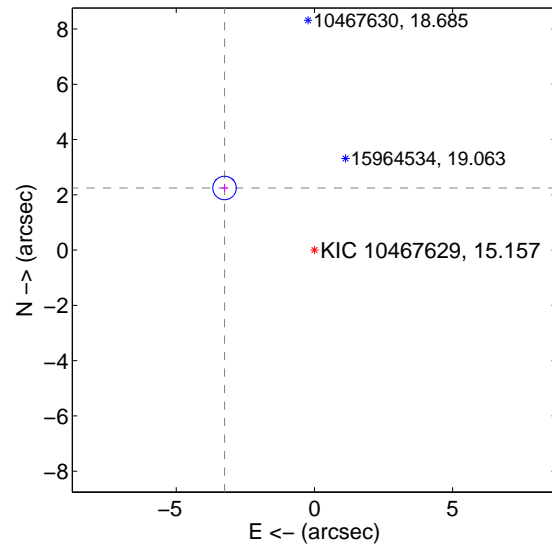
Supplemental centroid analysis for 010467629-04. Kepler magnitude: 15.16. Transit SNR 7.39

There are 1 quarters with good PRF difference image offsets

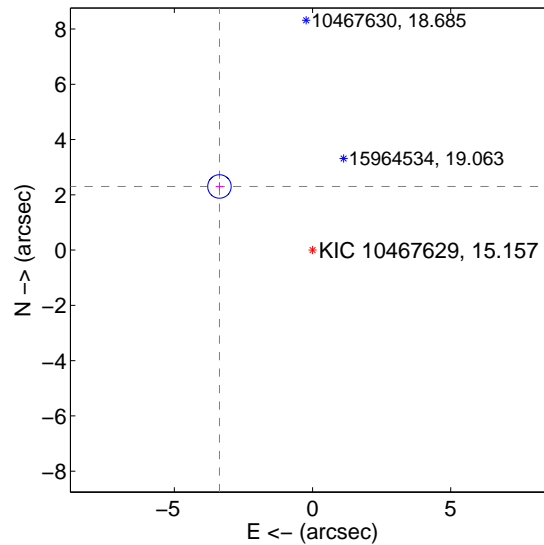
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.954 ± 0.142	27.91	3.252 ± 0.137	2.248 ± 0.150
PRF-fit source offset from KIC position	4.080 ± 0.142	28.82	3.368 ± 0.137	2.303 ± 0.150
photometric centroid source offset	1.51 ± 1.93	0.79	1.24 ± 2.03	0.87 ± 1.71

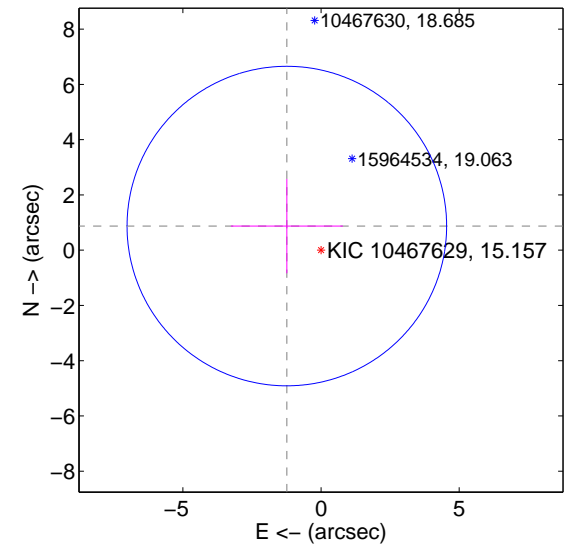
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

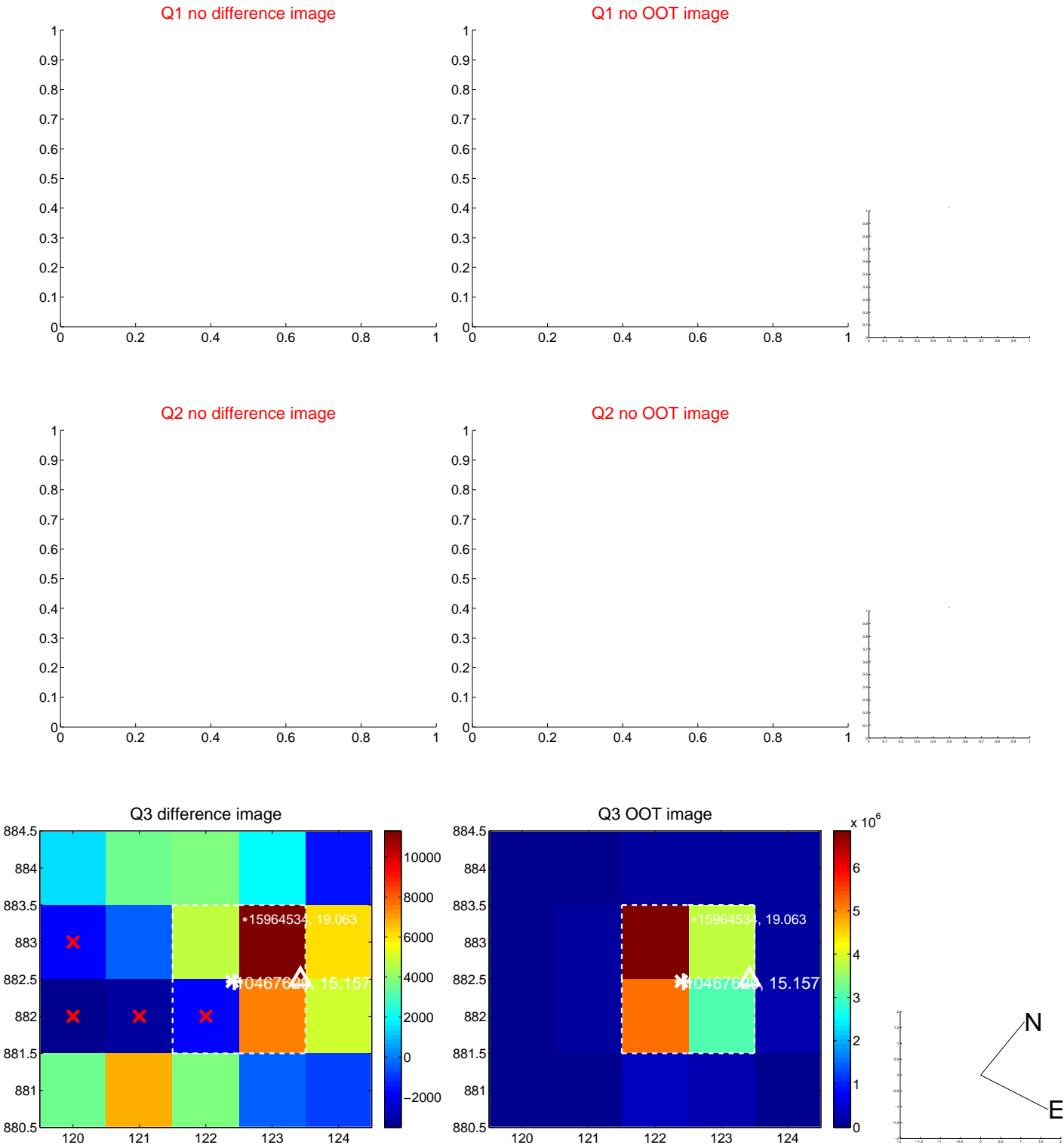


offset from photometric centroids



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.

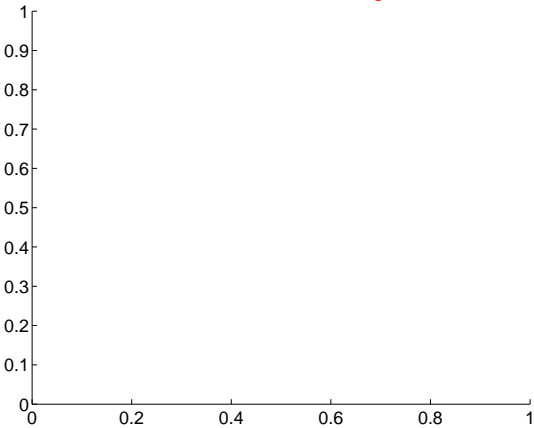
Q5 no difference image



Q5 no OOT image



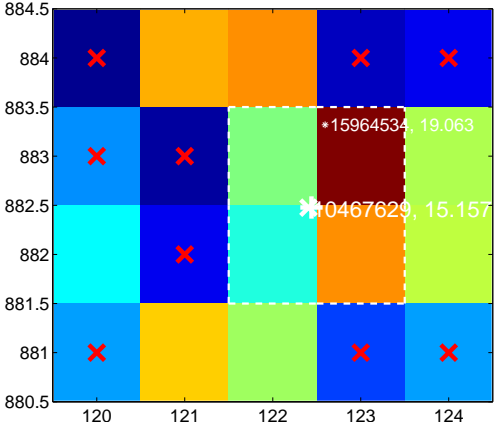
Q6 no difference image



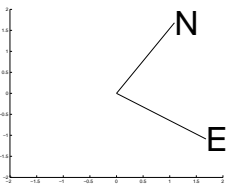
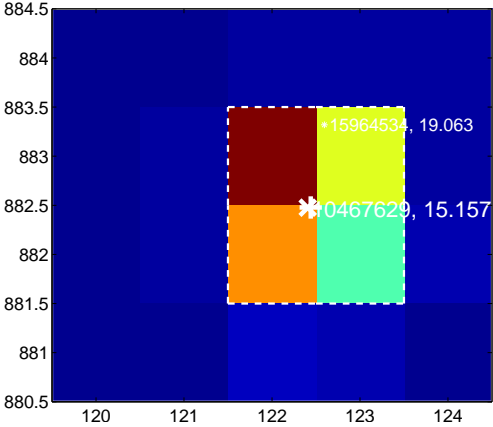
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



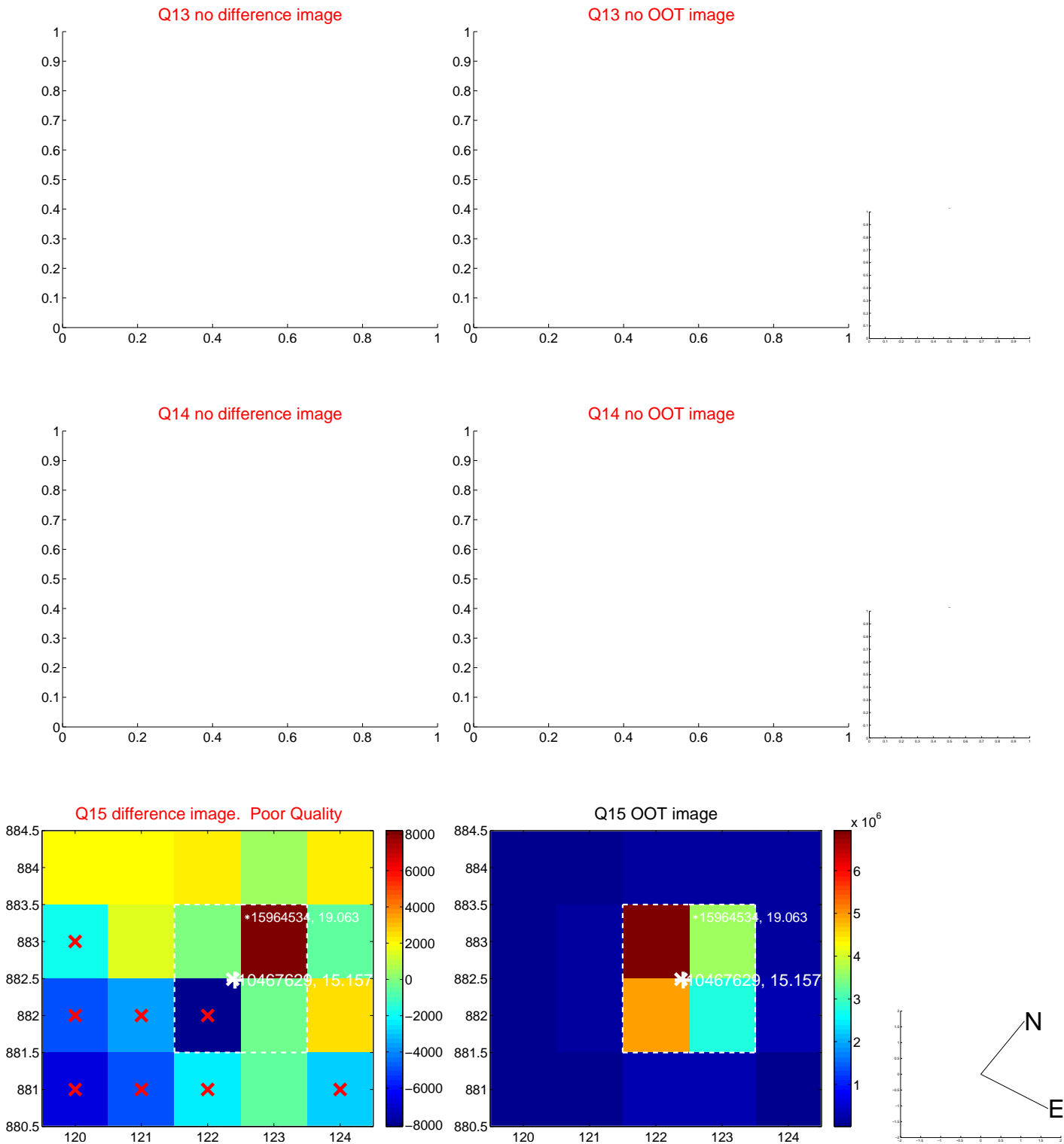
Q8 no OOT image



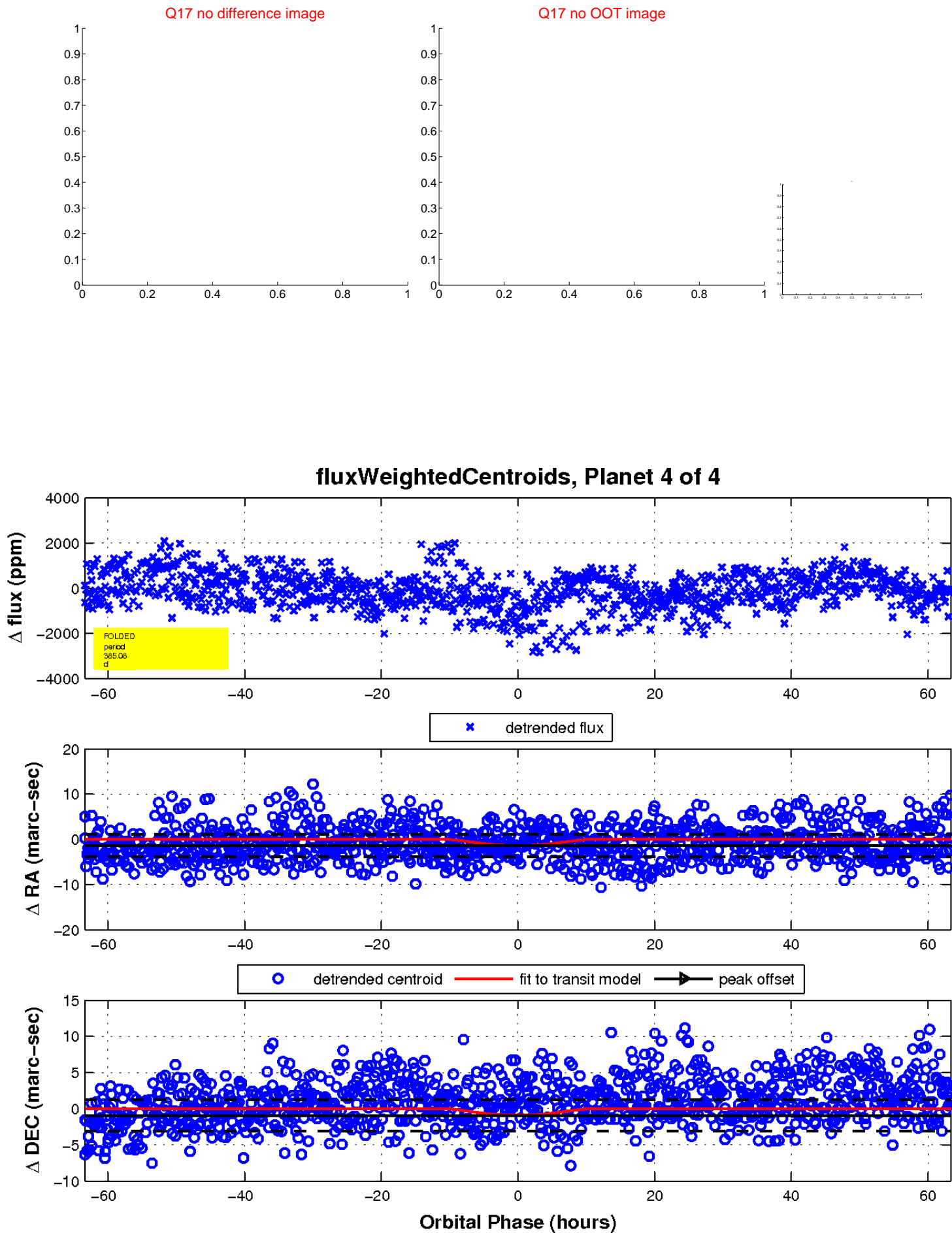
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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

