

KIC 008190354

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})
008190354-01	OBS	2781.01	1.615768	131.690804	37.8	2.489	17.3	18.5	2.02	5622	1.33	5133.61
008190354-02	OBS	No	320.587798	201.961498	163.5	16.810	8.2	9.7	2.02	5622	2.76	4.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008190354-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008190354-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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 008190354-01

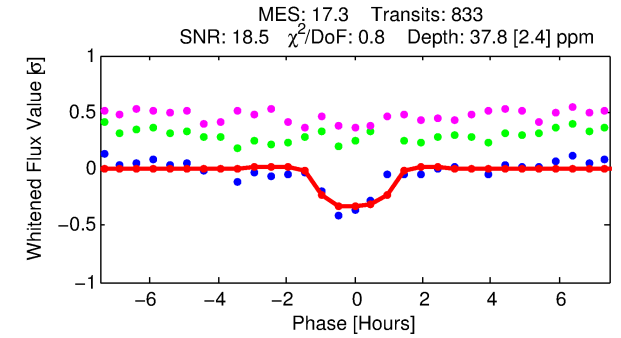
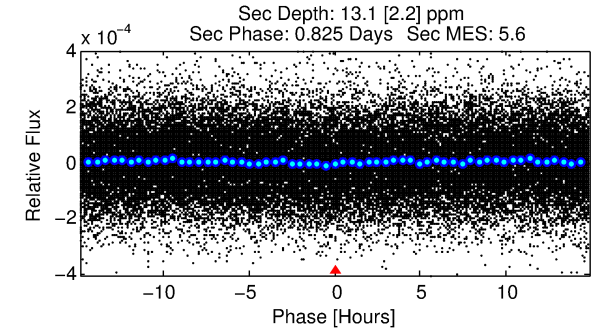
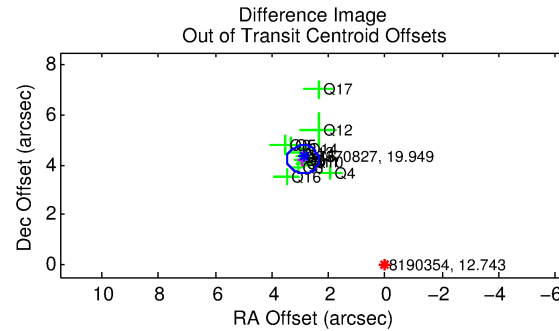
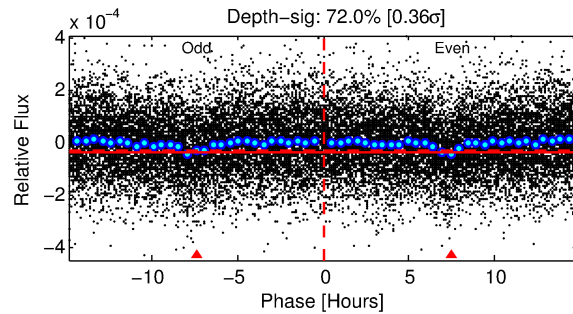
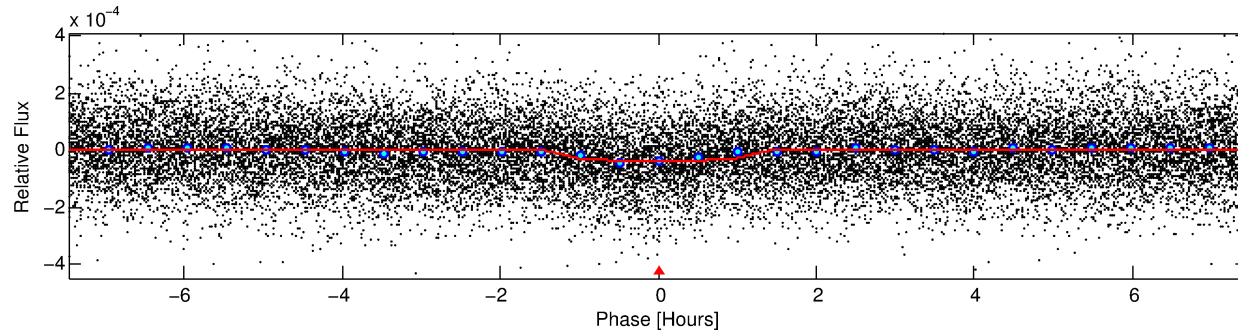
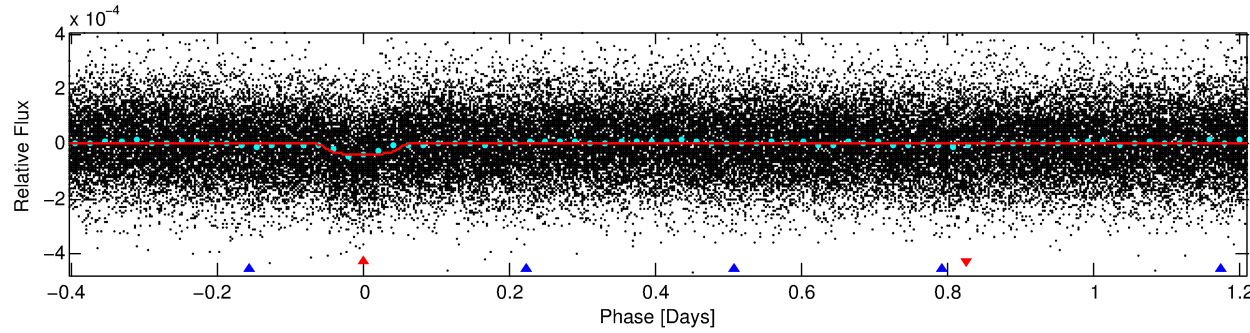
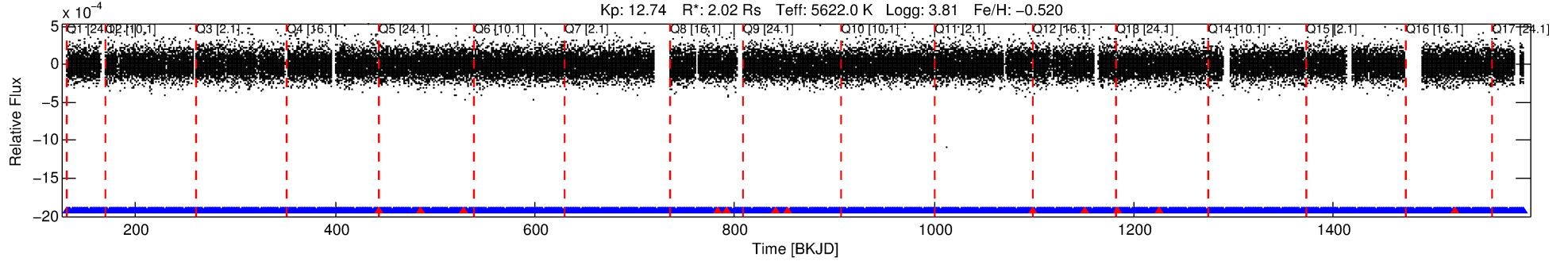
No Significant Match Found

DV One-Page Summary

KIC: 8190354 Candidate: 1 of 2 Period: 1.616 d

KOI: K02781.01 Corr: 0.887

Kp: 12.74 R*: 2.02 Rs Teff: 5622.0 K Logg: 3.81 Fe/H: -0.520



DV Fit Results:

Period = 1.61577 [0.00001] d
Epoch = 131.6908 [0.0020] BKJD
Rp/R* = 0.0060 [0.0010]
a/R* = 3.68 [2.63]
b = 0.70 [0.57]
Seff = 5133.61 [2376.78]
Teq = 2158 [250] K
Rp = 1.33 [0.43] Re
a = 0.0266 [0.0073] AU
Ag = 2.91 [1.70] [1.12σ]
Teffp = 4359 [431] K [4.41σ]

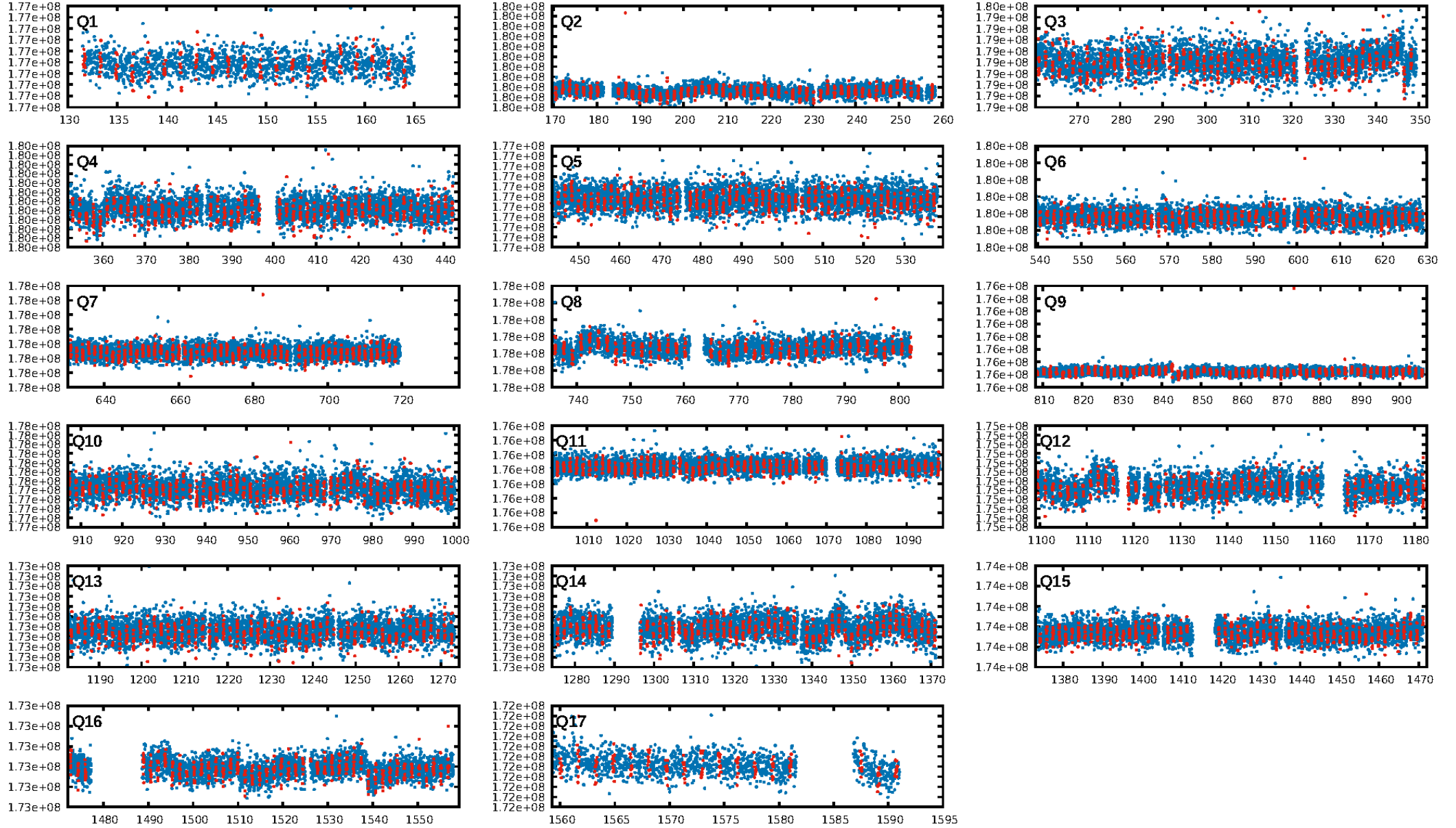
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [450.48σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.23e-64
RollingBand-fgt: 0.98 [783/795]
GhostDiagnostic-chr: 0.6941
Centroid-sig: 0.0%
Centroid-so: 7.308 arcsec [10.30σ]
OotOffset-rm: 5.119 arcsec [27.49σ]
KicOffset-rm: 5.190 arcsec [25.47σ]
OotOffset-st: 2/4/4/4 [14]
KicOffset-st: 2/4/4/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [17/17]

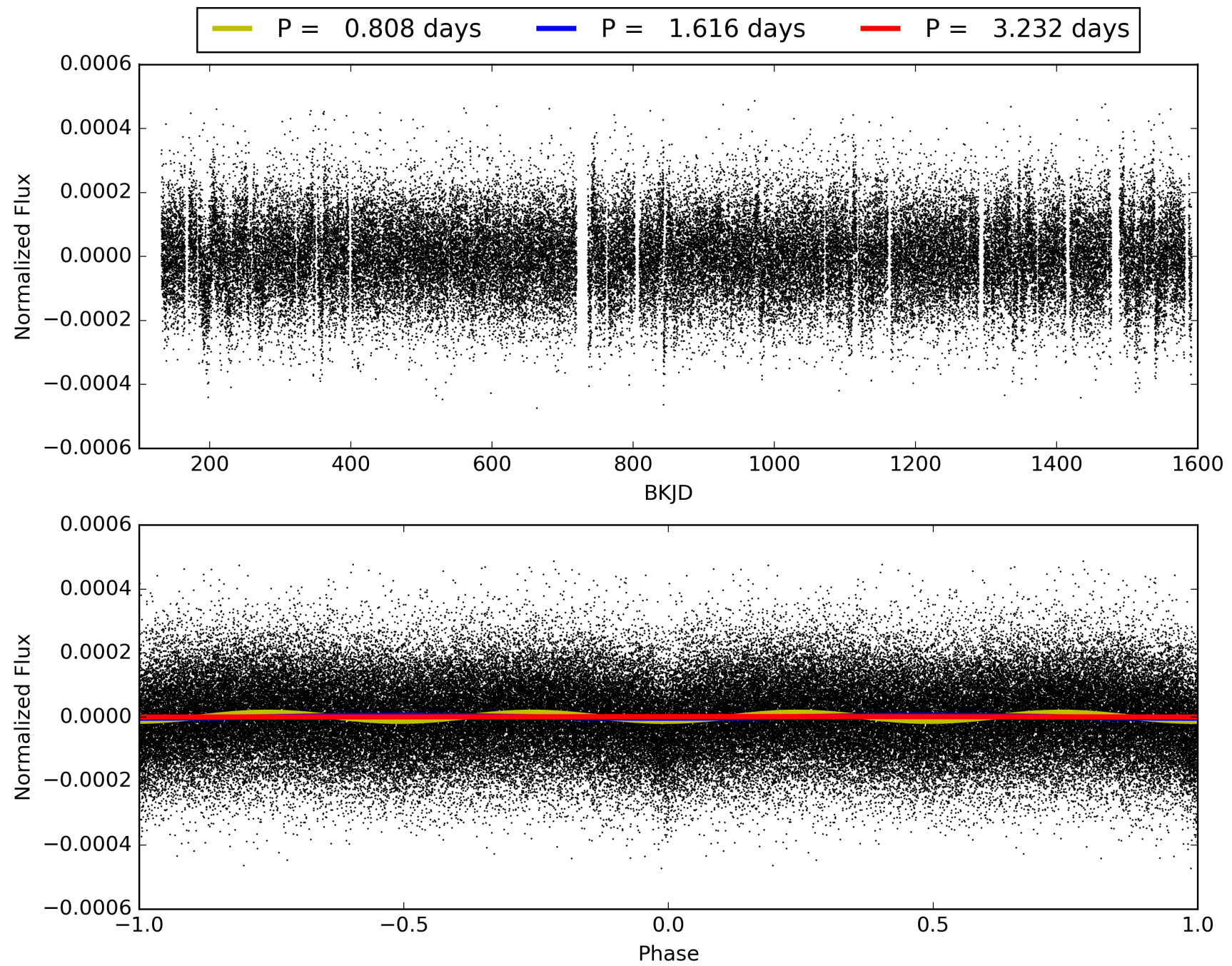
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:45:21 Z

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

TCE 008190354-01, PDC Light Curves

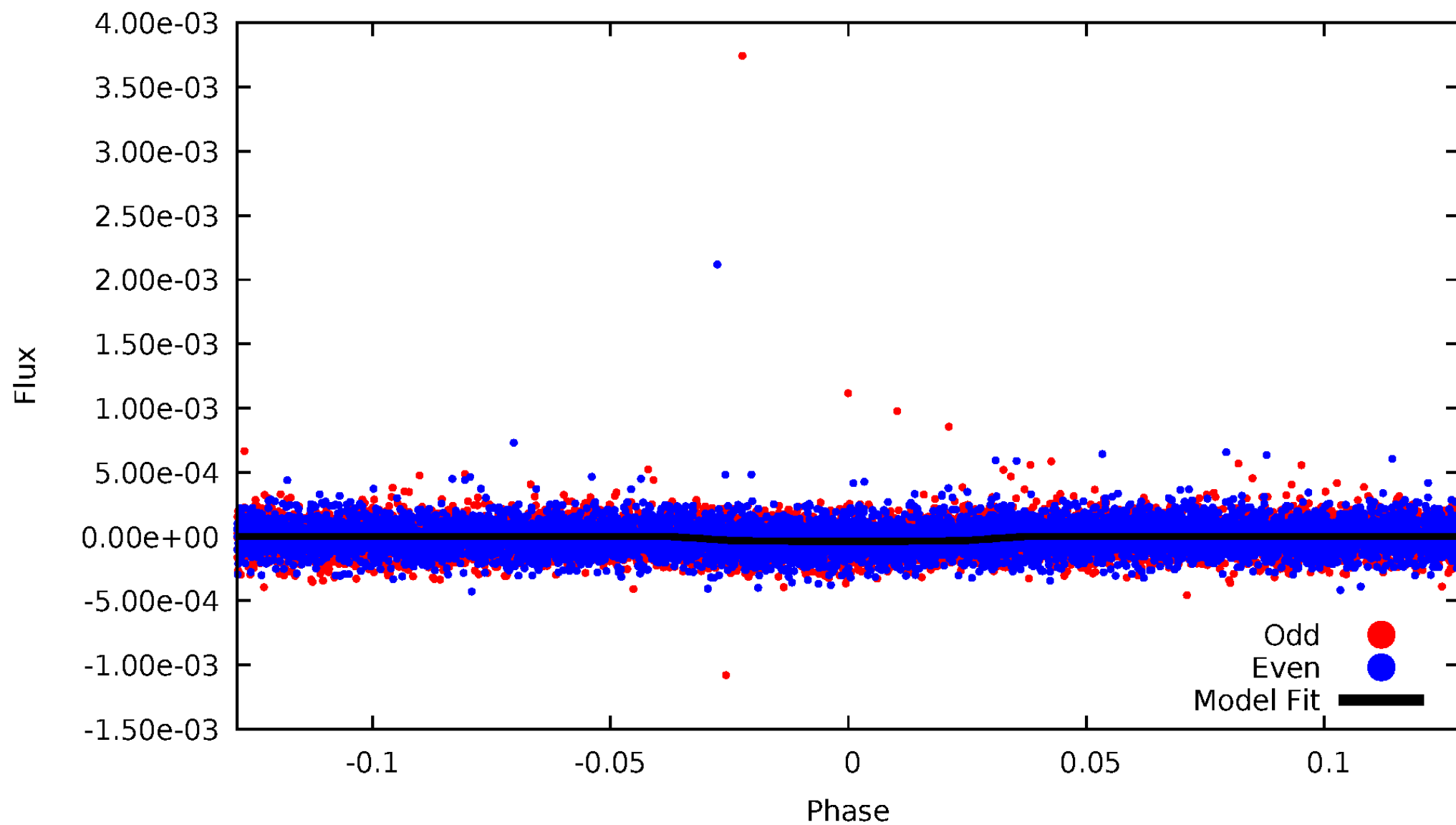


TCE 008190354-01



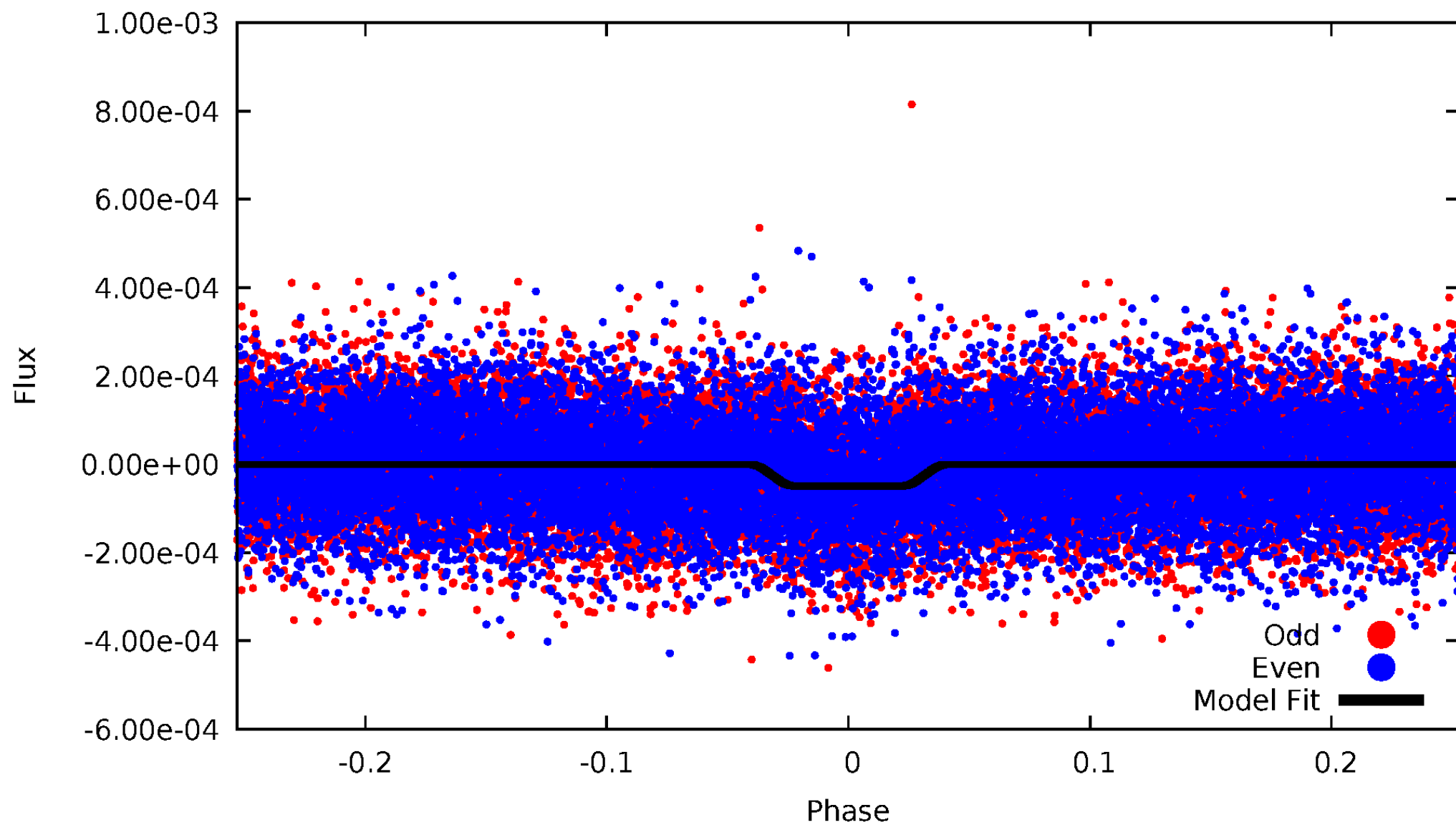
DV Odd/Even

TCE 008190354-01



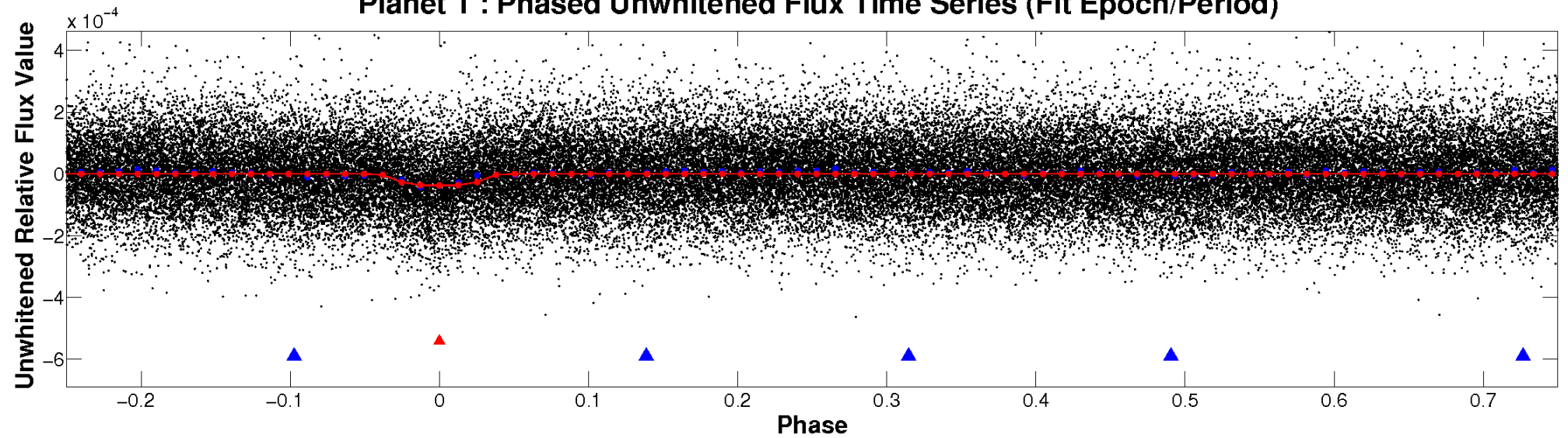
ALT Odd/Even

TCE 008190354-01

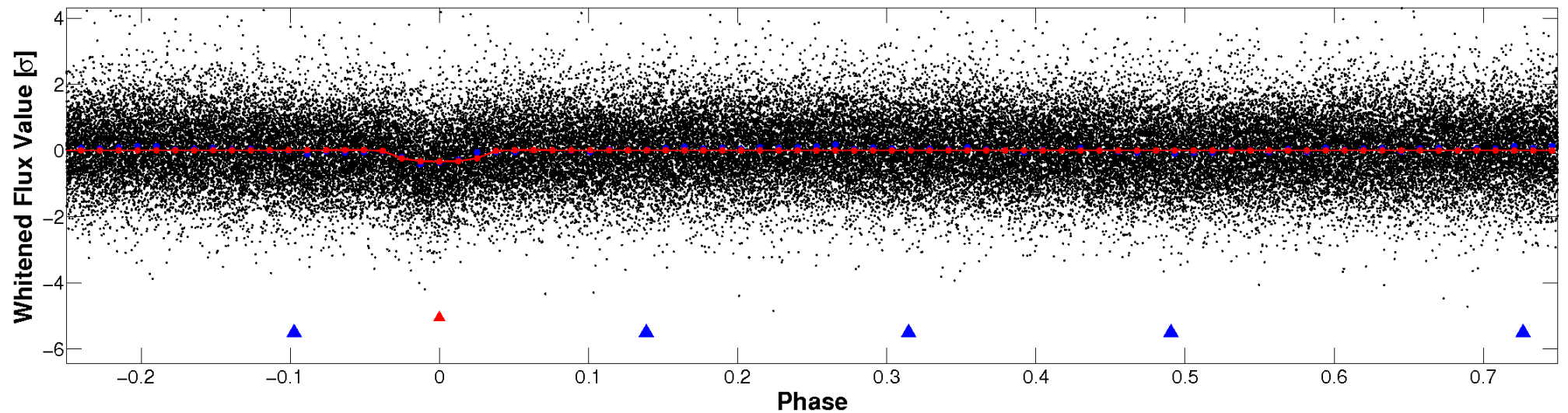


Non-Whitened Vs. Whitened Light Curve

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

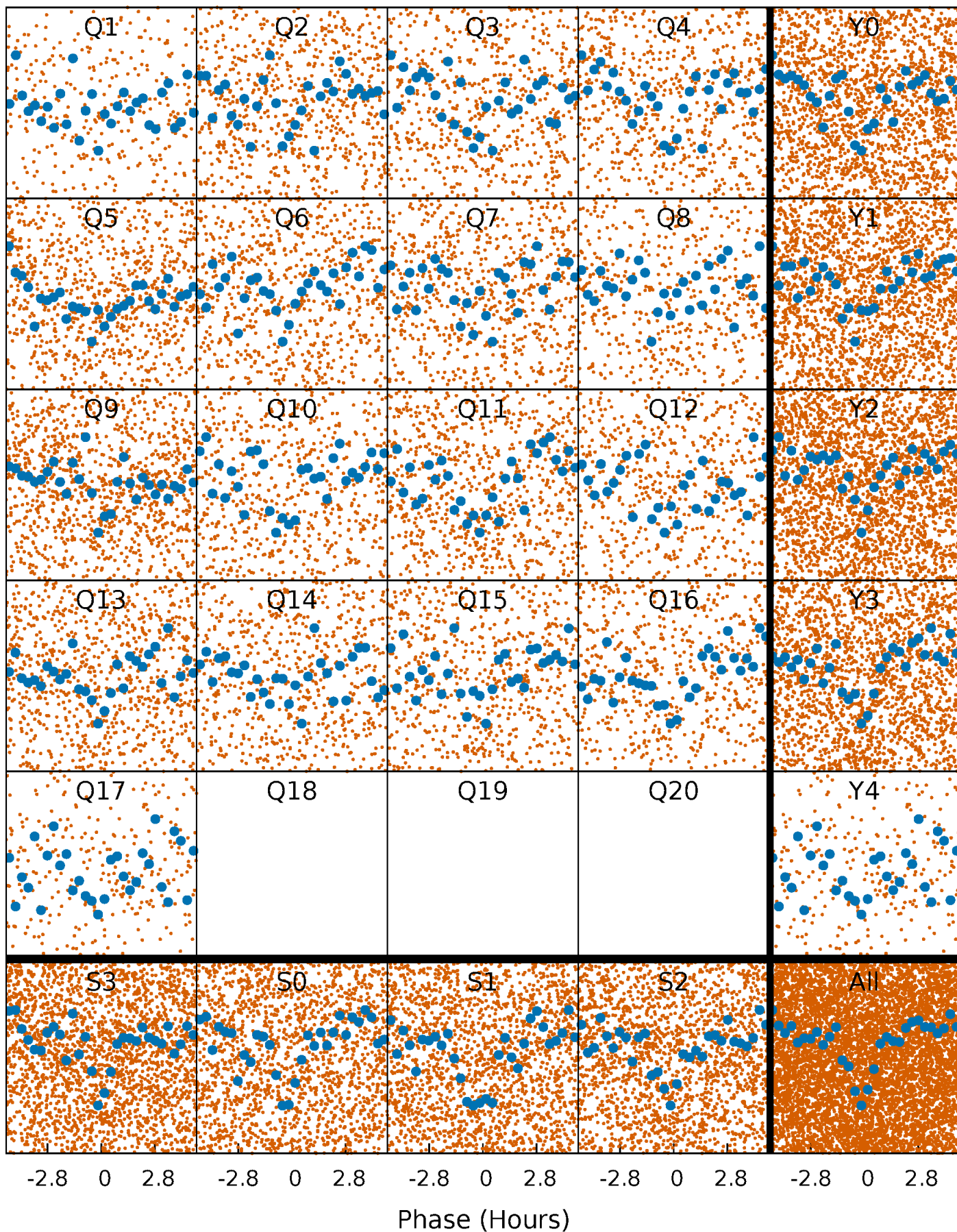


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



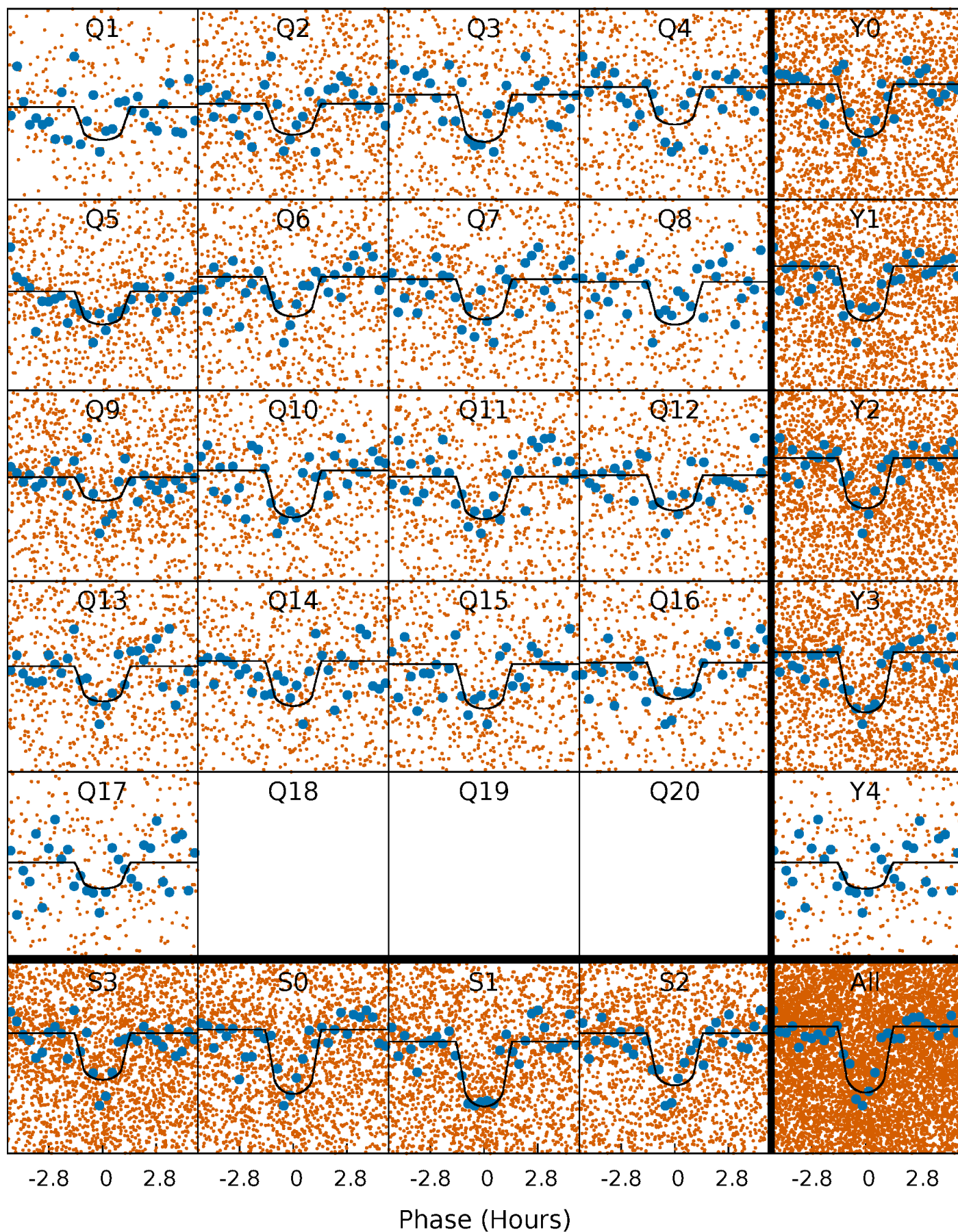
PDC Quarter-Phased Transit Curves

TCE 008190354-01 P= 1.615768 Days $T_0=131.690804$ (BKJD)



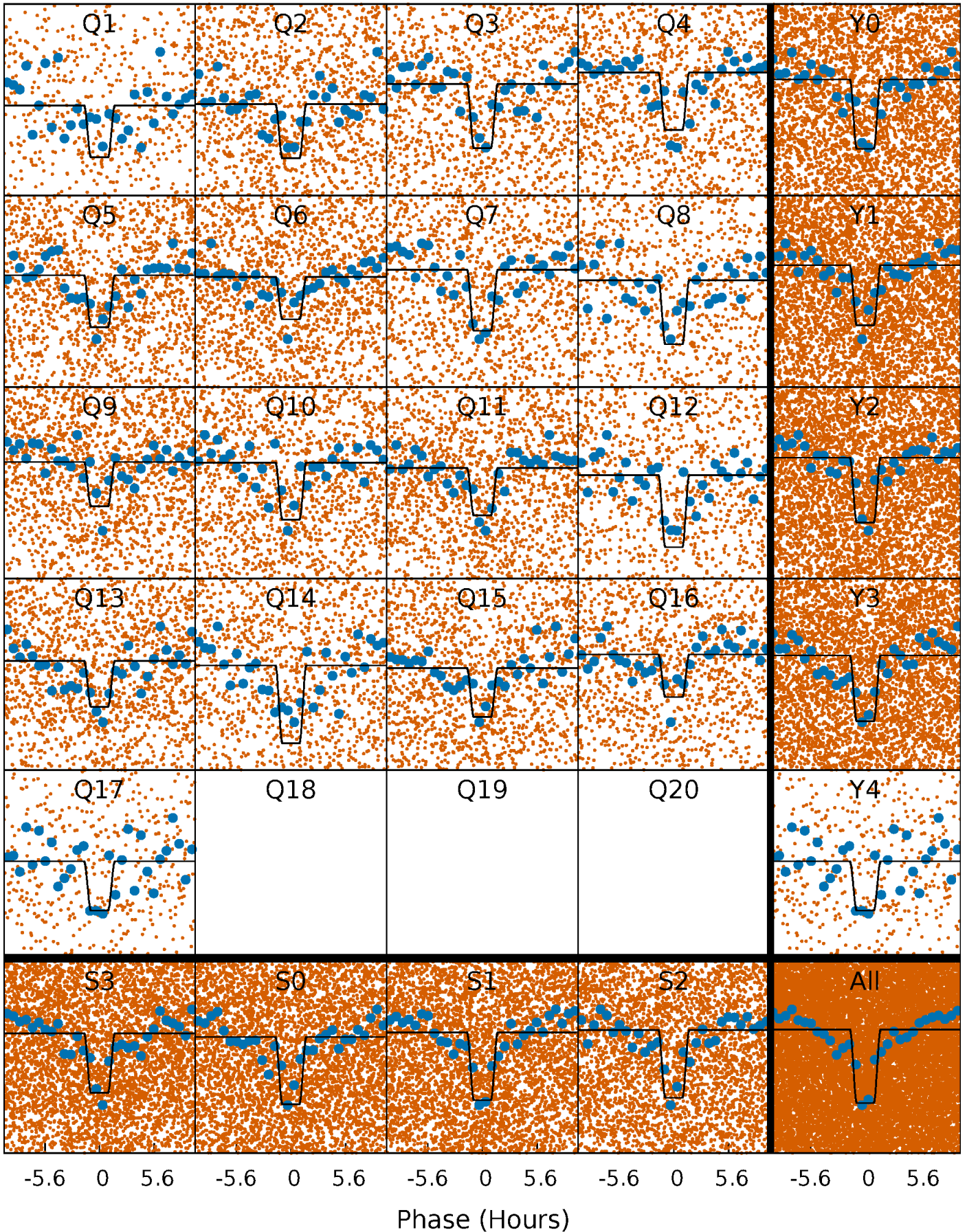
DV Quarter-Phased Transit Curves

TCE 008190354-01 P= 1.615768 Days $T_0=131.690804$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

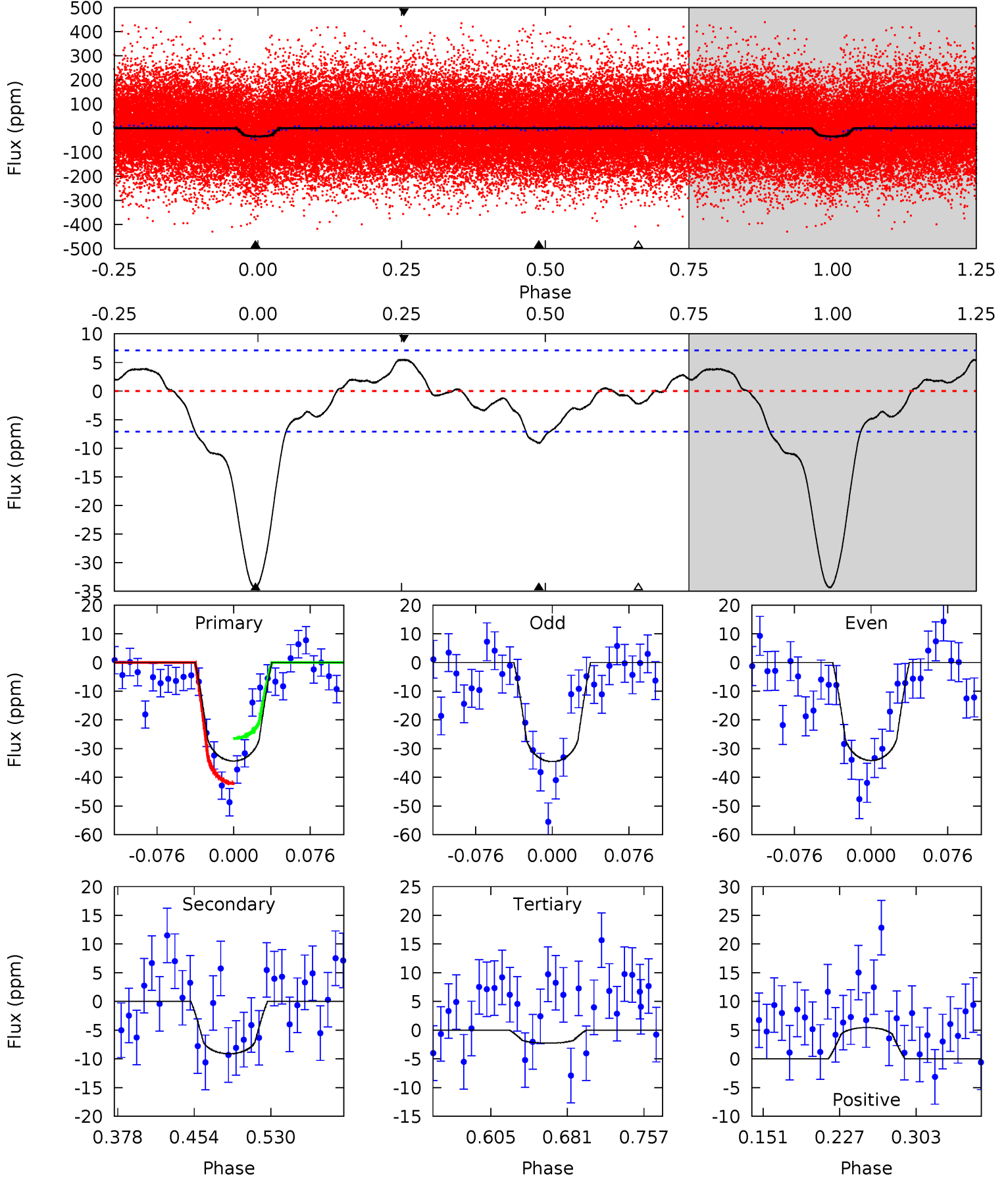
TCE 008190354-01 P= 1.615767 Days $T_0=131.682570$ (BKJD)



DV Model-Shift Uniqueness Test

008190354-01, P = 1.615768 Days, E = 130.075036 Days

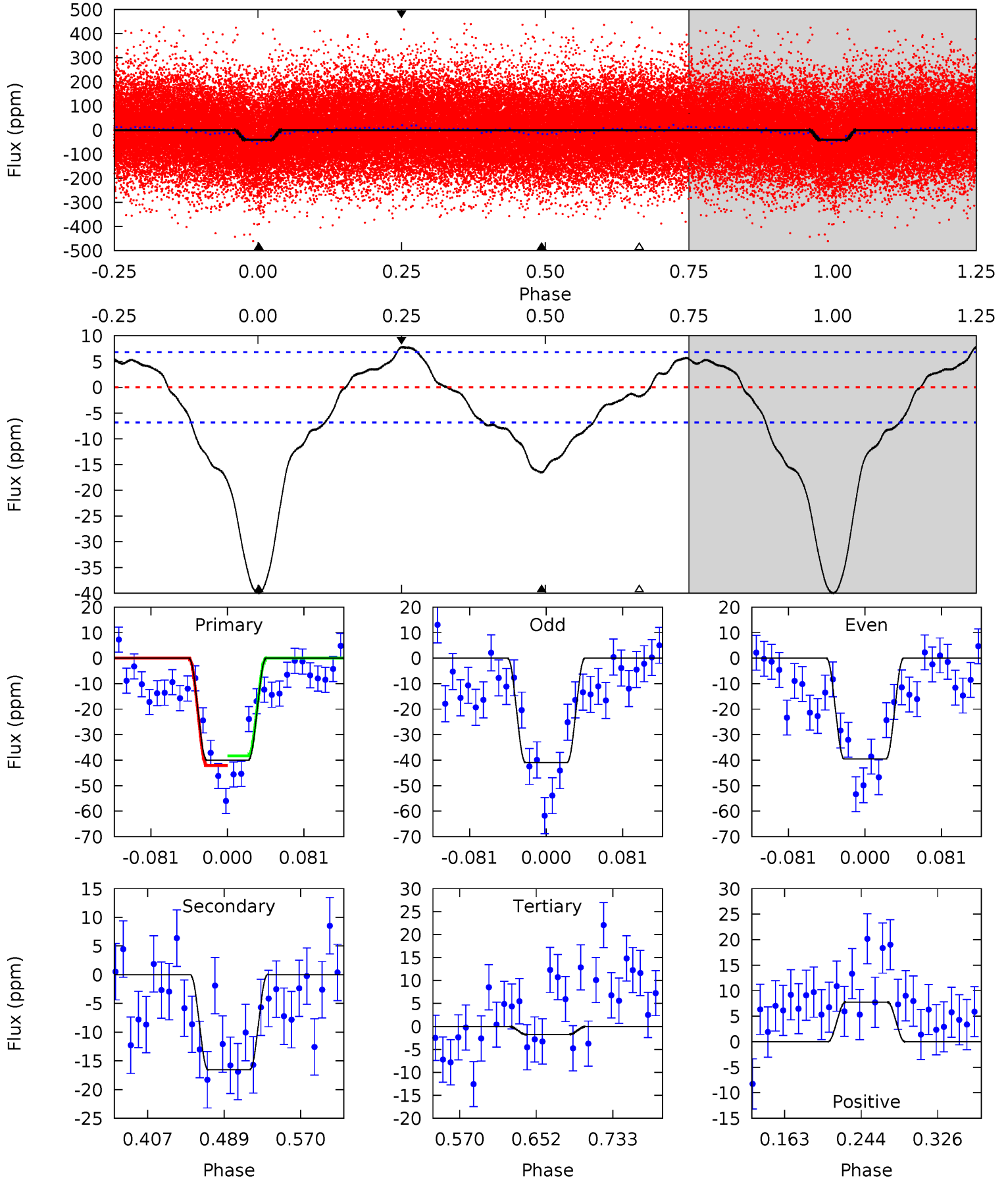
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	5.94	1.47	3.56	4.62	1.78	2.09	20.9	18.8	4.47	2.38	0.14	0.97	0.14	5.10



Alt Model-Shift Uniqueness Test

008190354-01, P = 1.615767 Days, E = 130.066803 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.9	11.1	1.20	5.23	4.61	1.74	3.51	25.7	21.7	9.93	5.90	0.45	1.02	0.16	1.27



Stellar Parameters For KIC 008190354

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5622^{+169}_{-152}	$3.813^{+0.266}_{-0.143}$	$-0.520^{+0.350}_{-0.250}$	$2.017^{+0.496}_{-0.551}$	$0.965^{+0.164}_{-0.110}$	$0.166^{+0.242}_{-0.068}$
	+3%/-3%	+7%/-4%	+67%/-48%	+25%/-27%	+17%/-11%	+146%/-41%
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 008190354-01 / KOI 2781.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-9 ± 2	$1.28^{+0.33}_{-0.27}$	2991^{+212}_{-230}	4111^{+375}_{-323}	$2.168^{+1.411}_{-0.810}$
Alt.	-17 ± 1	$1.51^{+0.35}_{-0.29}$	2976^{+219}_{-239}	4357^{+326}_{-254}	$2.841^{+1.643}_{-0.904}$

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 $A_{obs} \gg 1.0$

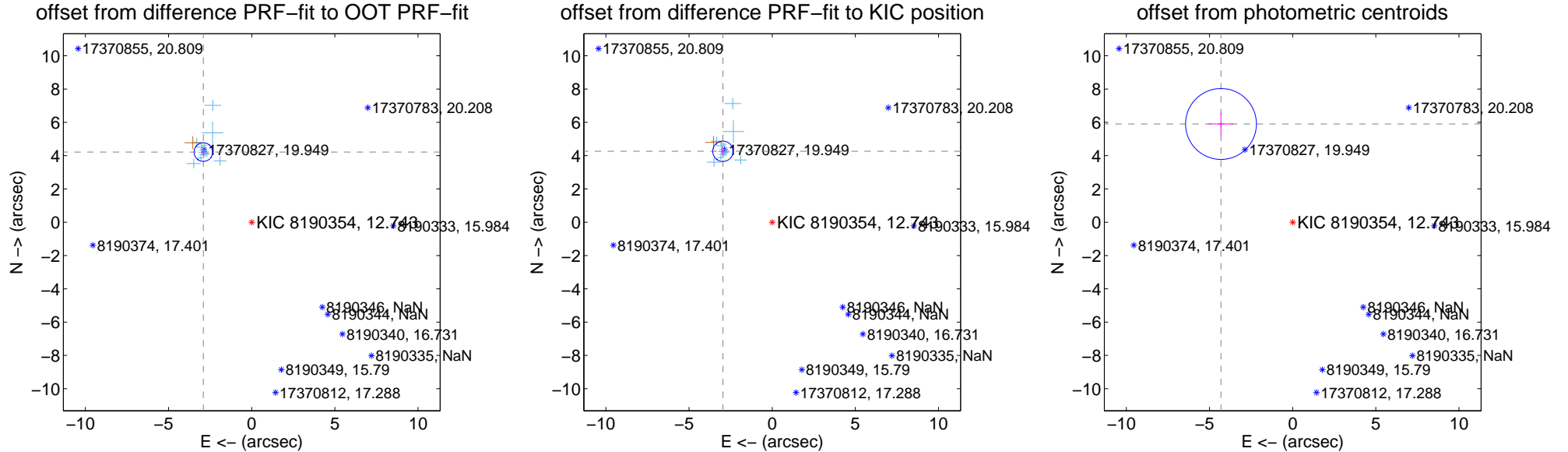
DV Centroid Data

Supplemental centroid analysis for 008190354-01. Kepler magnitude: 12.74. Transit SNR 18.46

There are 13 quarters with good PRF difference image offsets

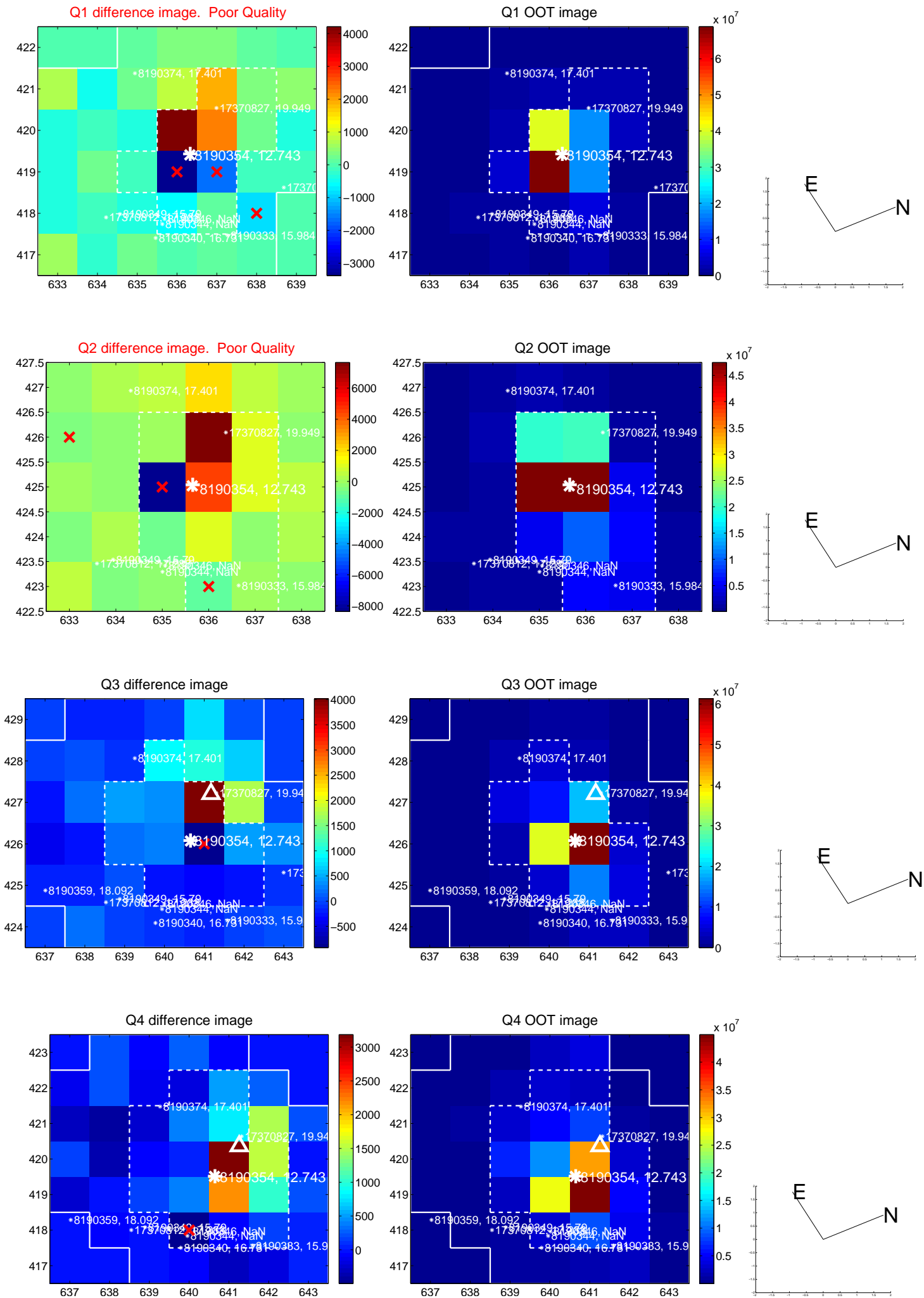
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.119 ± 0.186	27.49	2.906 ± 0.131	4.214 ± 0.238
PRF-fit source offset from KIC position	5.190 ± 0.204	25.47	2.963 ± 0.131	4.261 ± 0.255
photometric centroid source offset	7.31 ± 0.71	10.30	4.31 ± 0.75	5.90 ± 0.69

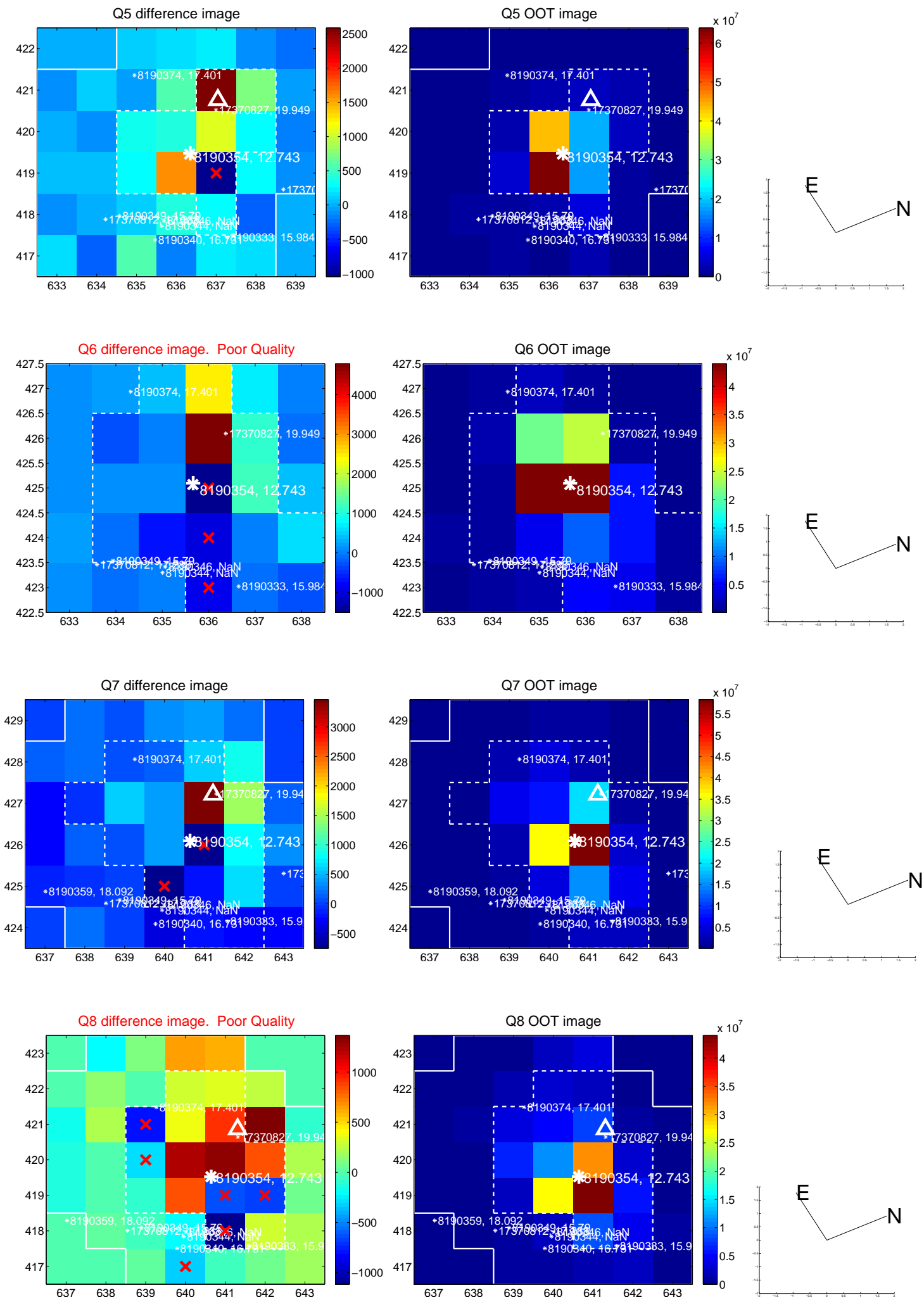


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

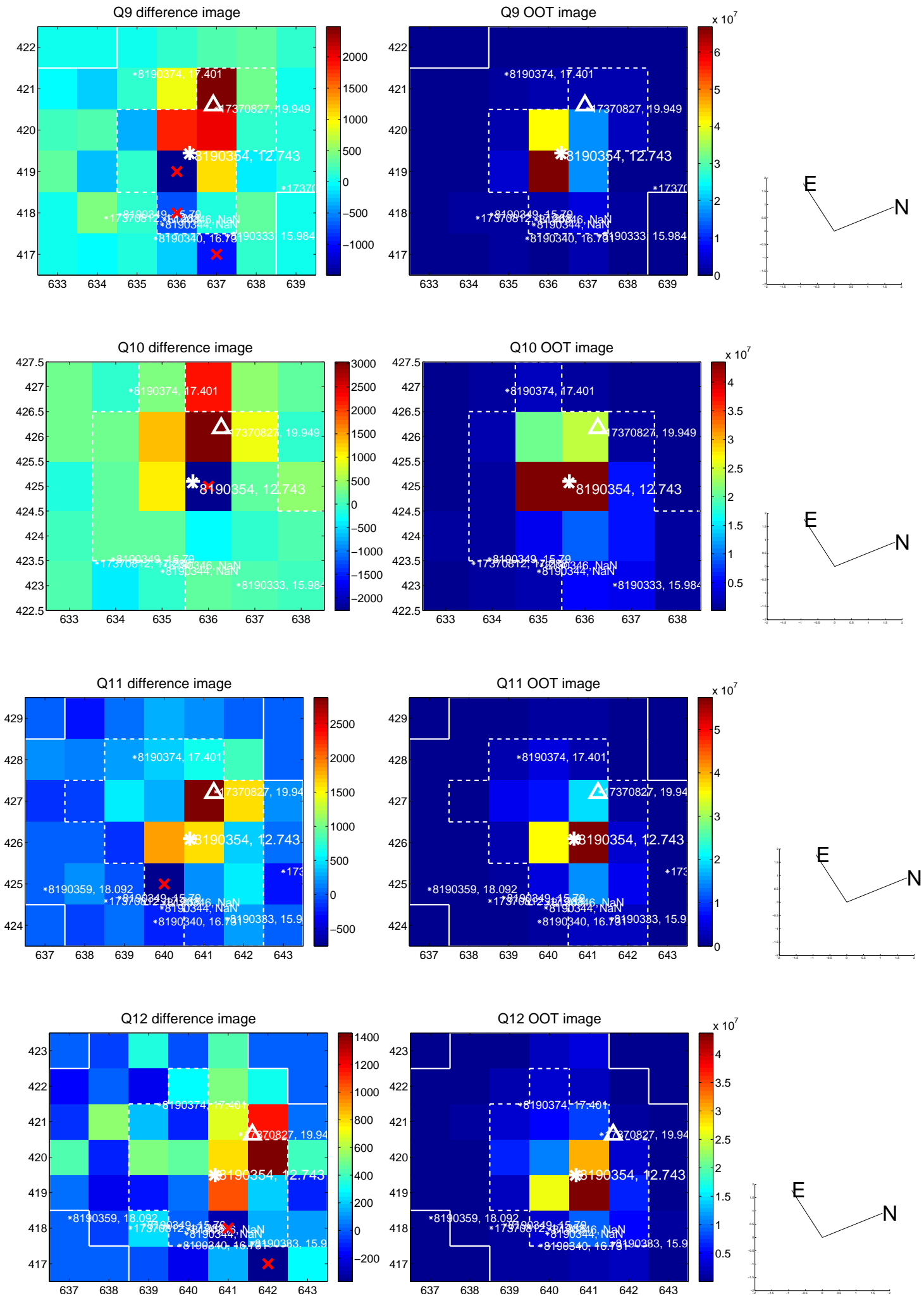
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



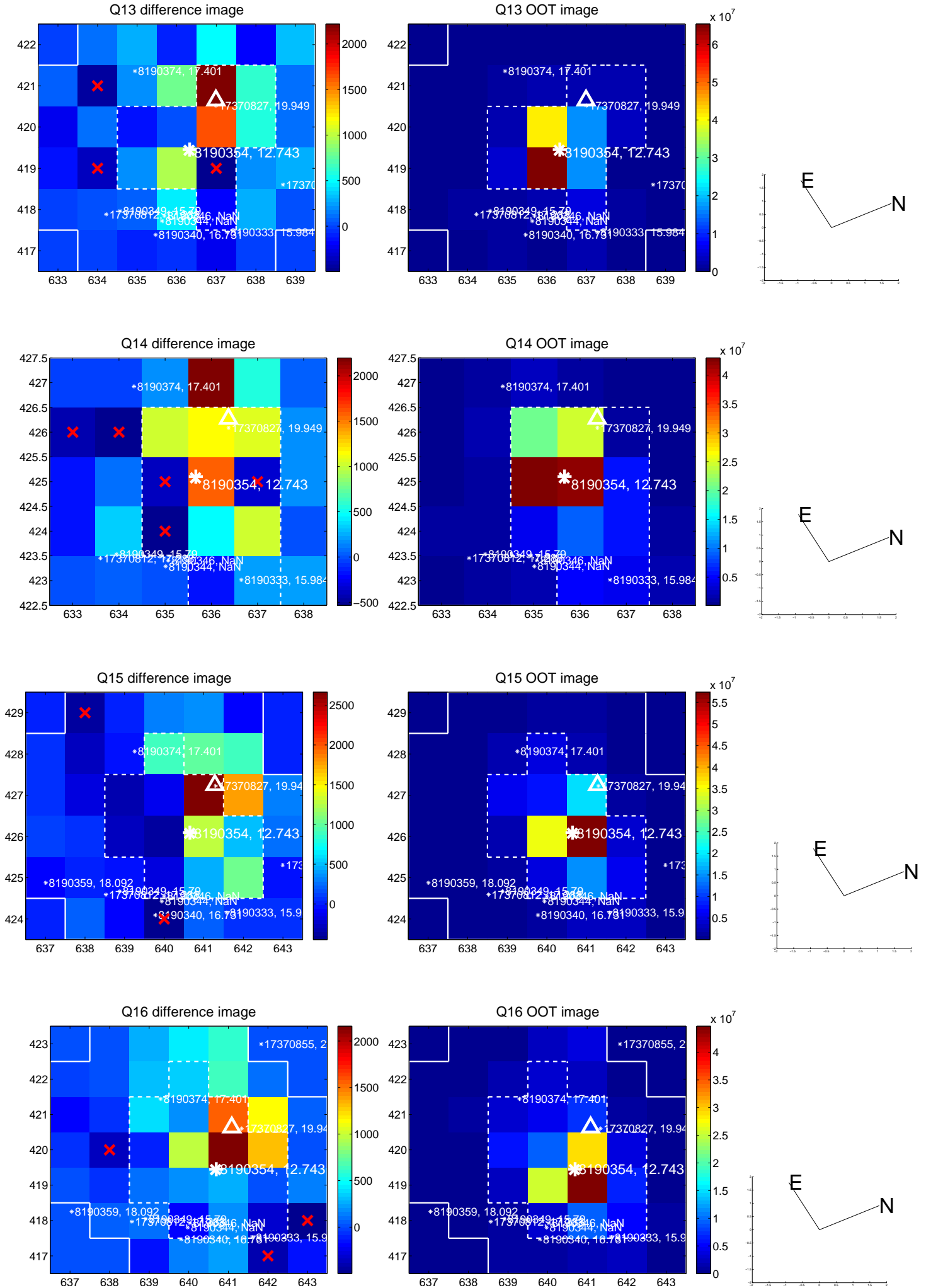
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



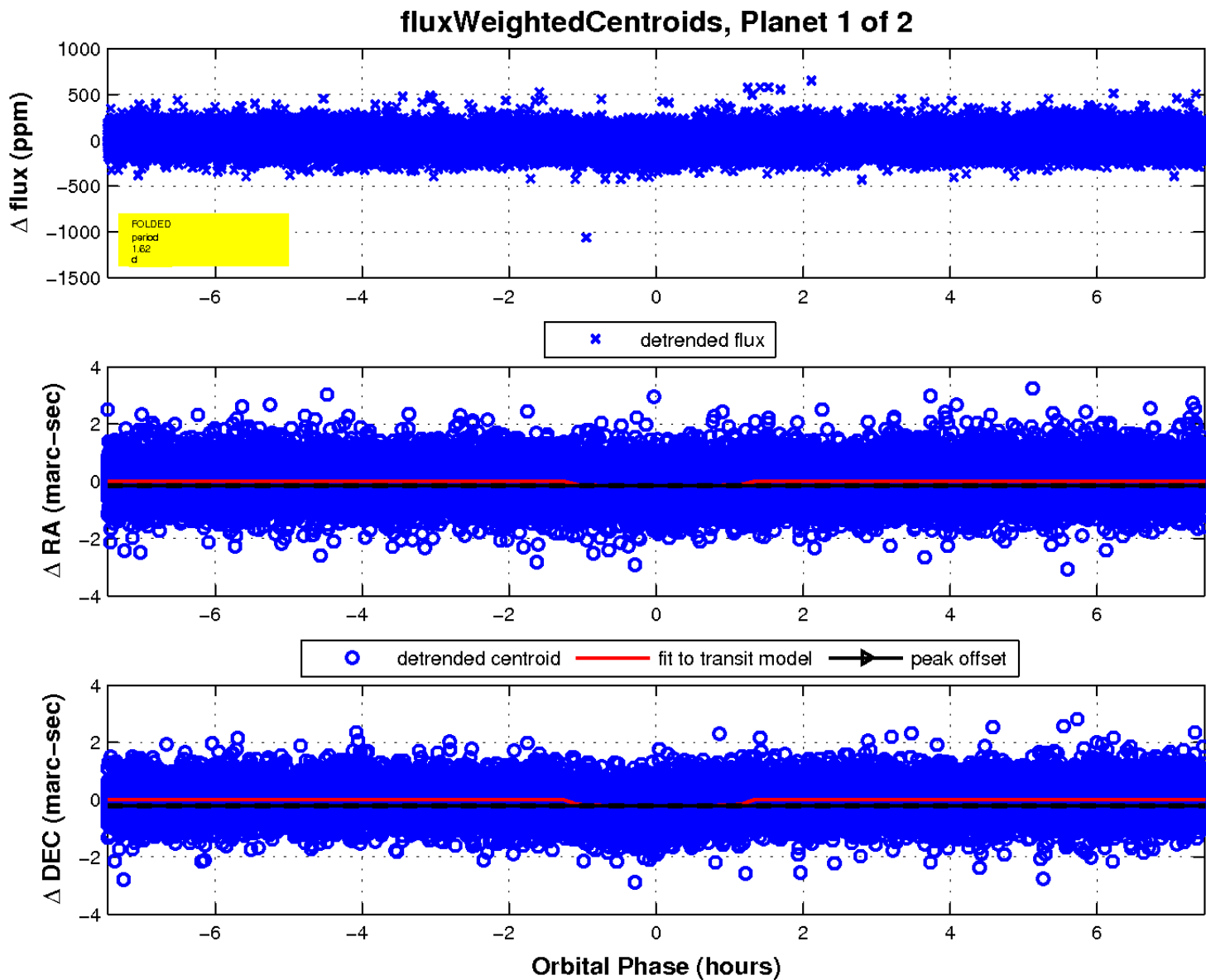
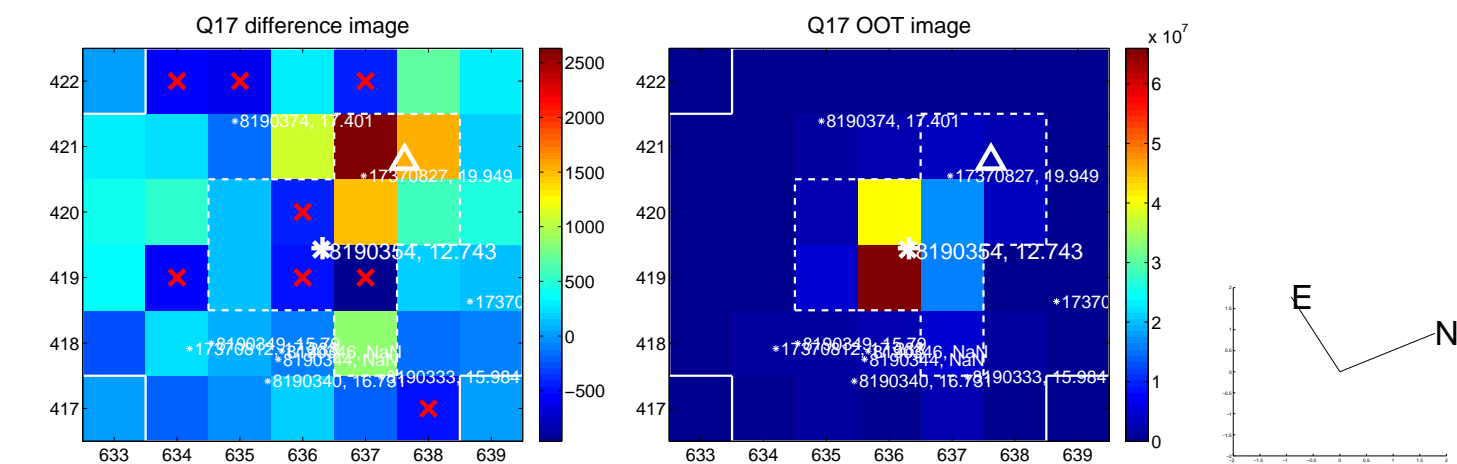
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



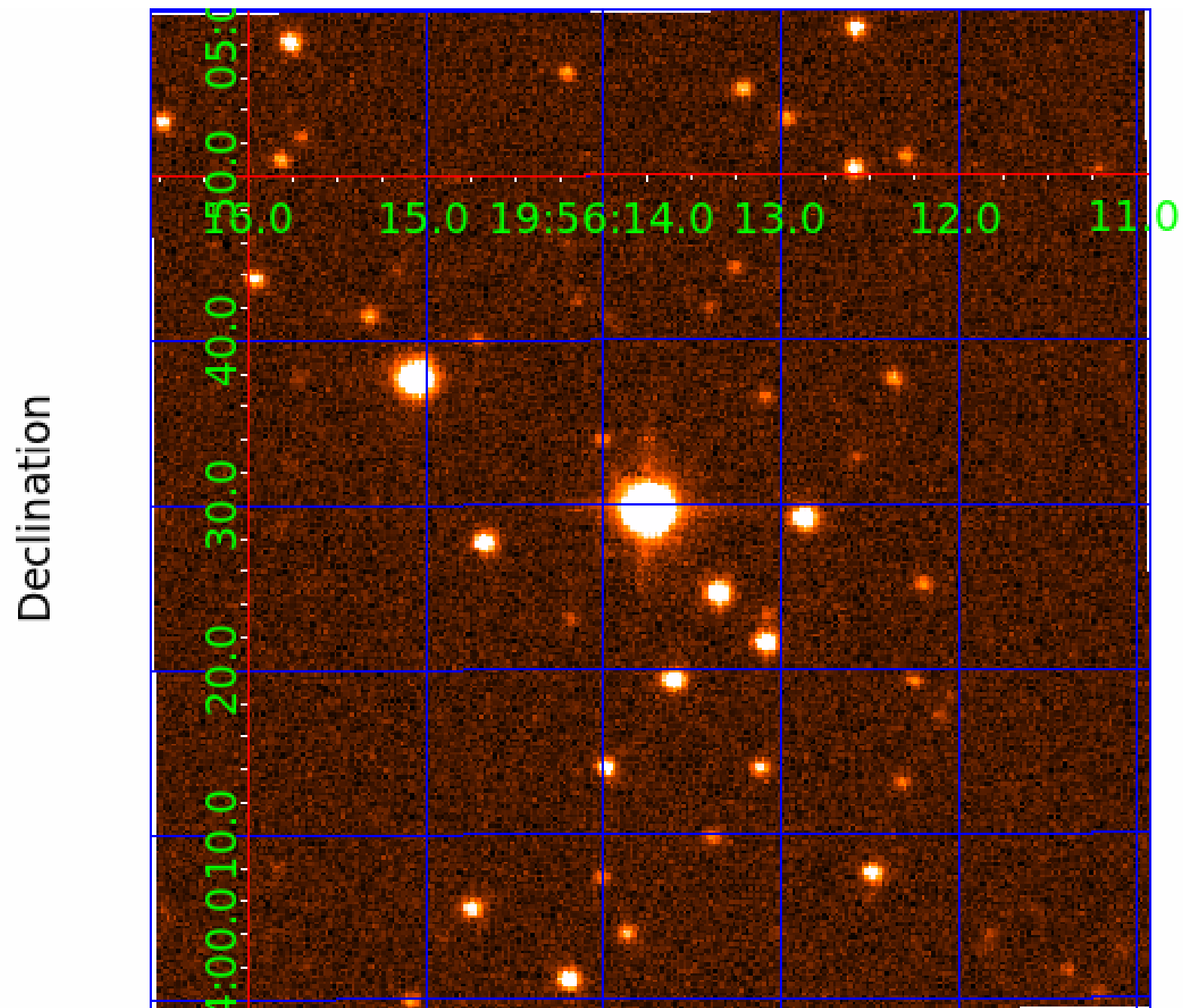
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008190354

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})
008190354-01	OBS	2781.01	1.615768	131.690804	37.8	2.489	17.3	18.5	2.02	5622	1.33	5133.61
008190354-02	OBS	No	320.587798	201.961498	163.5	16.810	8.2	9.7	2.02	5622	2.76	4.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008190354-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008190354-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

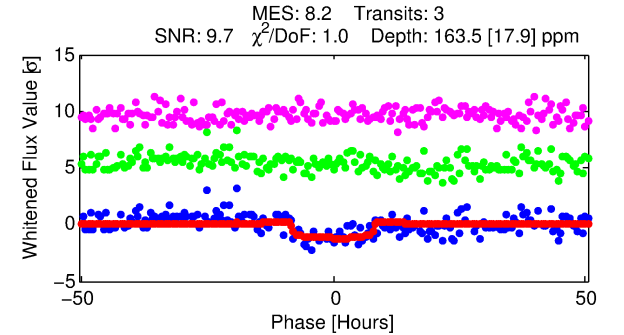
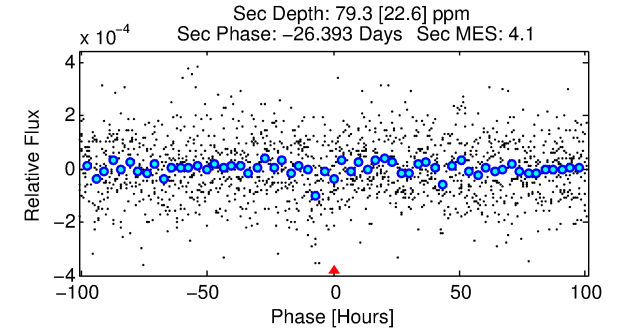
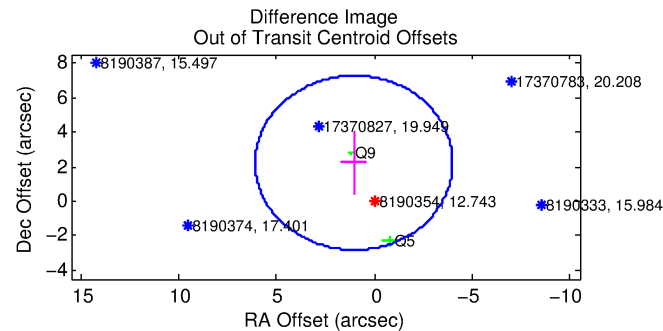
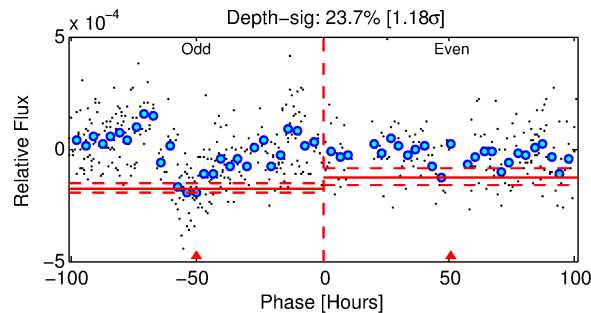
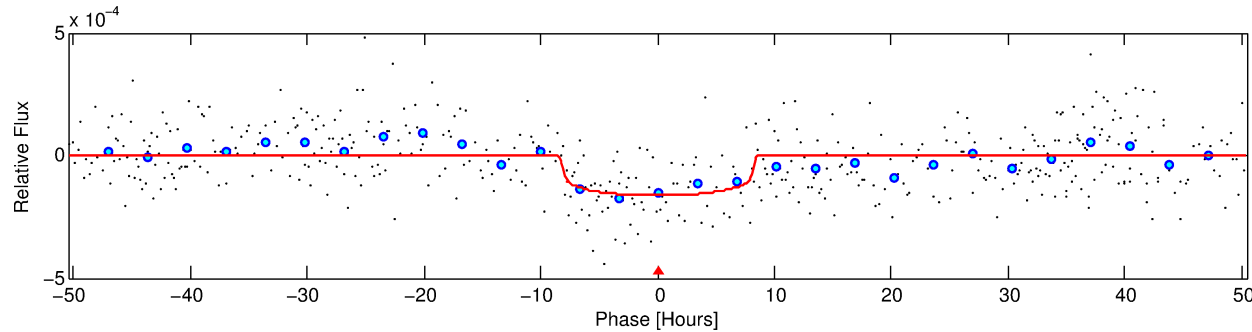
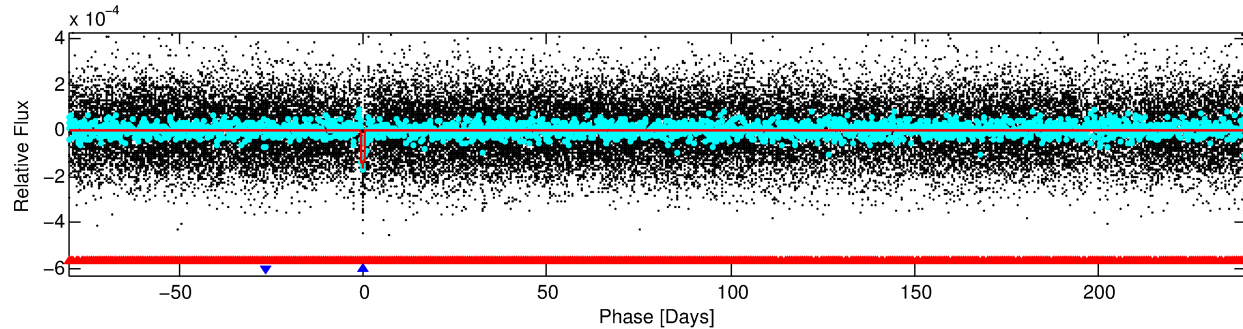
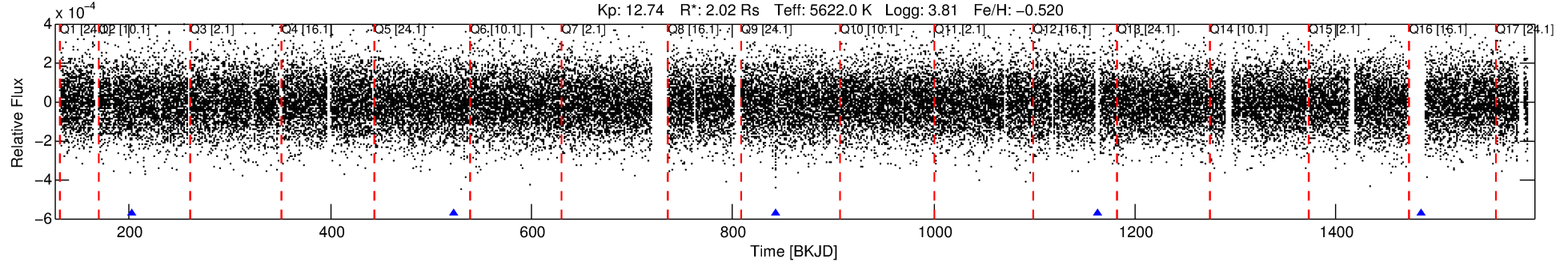
Ephemeris Match Information For 008190354-02

No Significant Match Found

DV One-Page Summary

KIC: 8190354 Candidate: 2 of 2 Period: 320.588 d
KOI: K02781 Corr: No Ephemeris Match

Kp: 12.74 R*: 2.02 Rs Teff: 5622.0 K Logg: 3.81 Fe/H: -0.520



DV Fit Results:

Period = 320.58780 [0.01411] d
Epoch = 201.9615 [0.0184] BKJD
Rp/R* = 0.0125 [0.0051]
a/R* = 105.47 [199.35]
b = 0.71 [1.33]
Seff = 4.44 [2.05]
Teq = 370 [43] K
Rp = 2.76 [1.35] Re
a = 0.9060 [0.2479] AU
Ag = 4700.07 [4551.12] [1.03σ]
Teff = 4737 [1027] K [4.25σ]

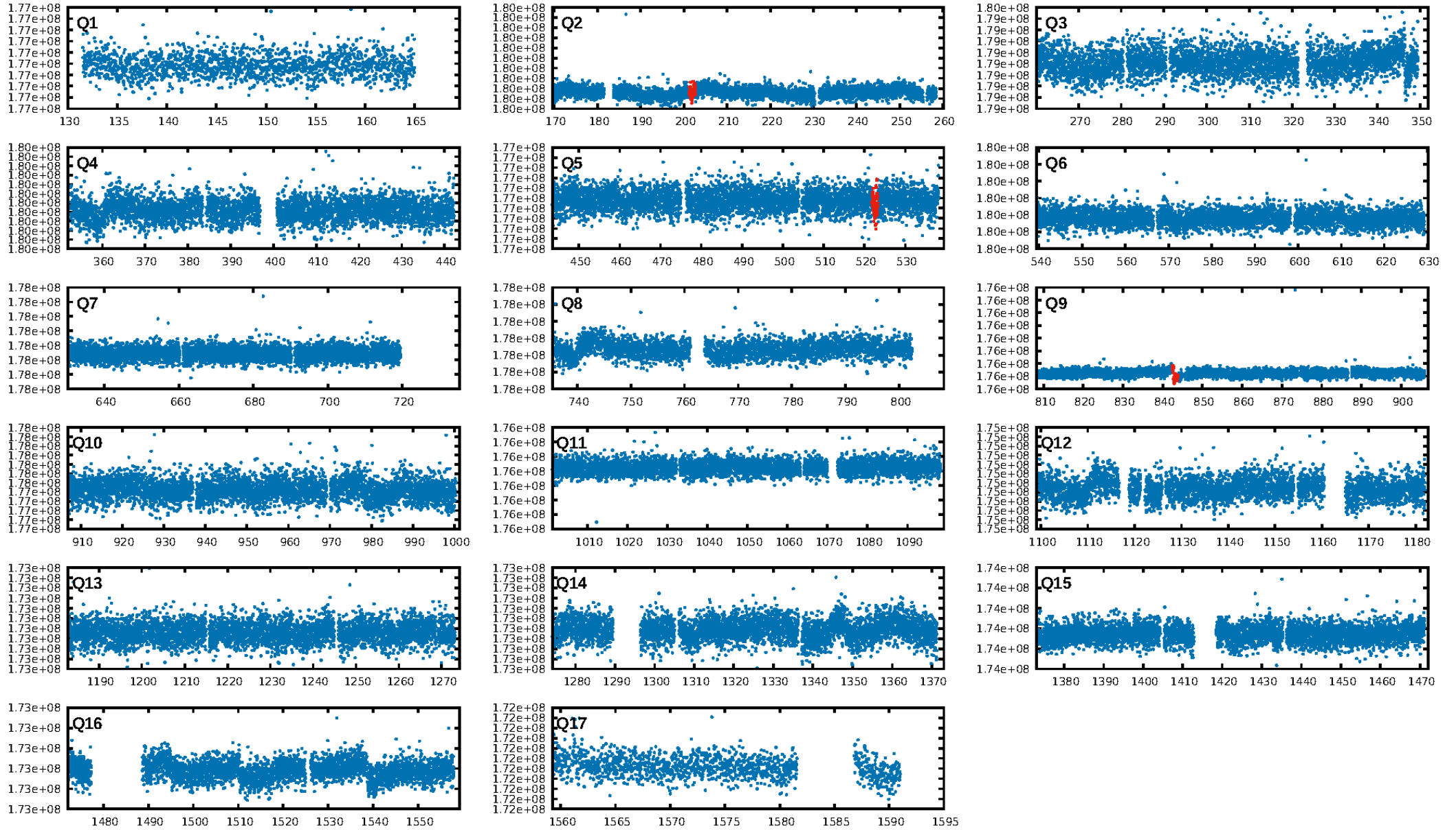
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [450.48σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.30e-16
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 9.838
Centroid-sig: 0.1%
Centroid-so: 3.339 arcsec [2.32σ]
OotOffset-rm: 2.457 arcsec [1.46σ]
KicOffset-rm: 2.520 arcsec [1.51σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/3]

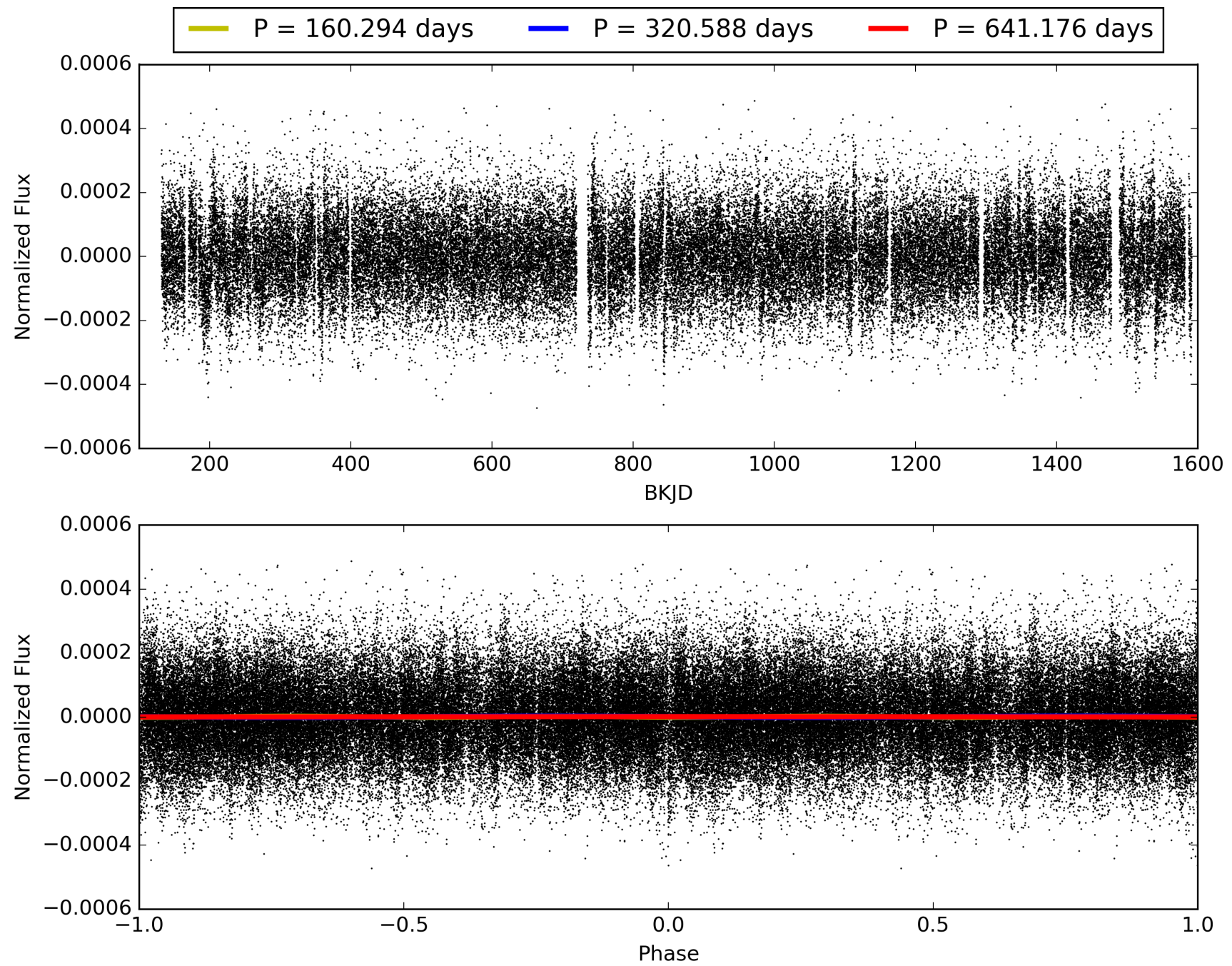
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 01:45:31 Z

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

TCE 008190354-02, PDC Light Curves

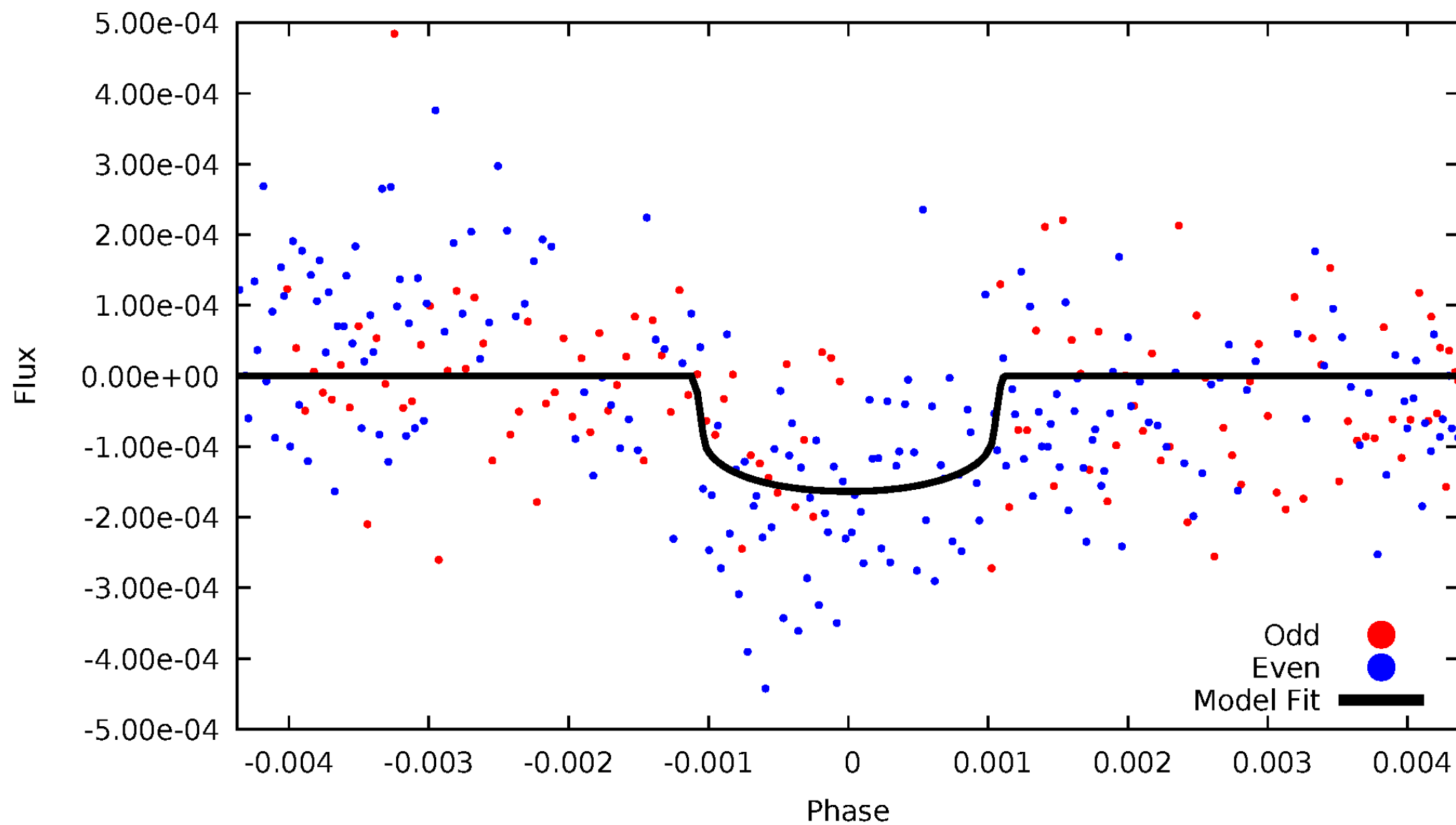


TCE 008190354-02



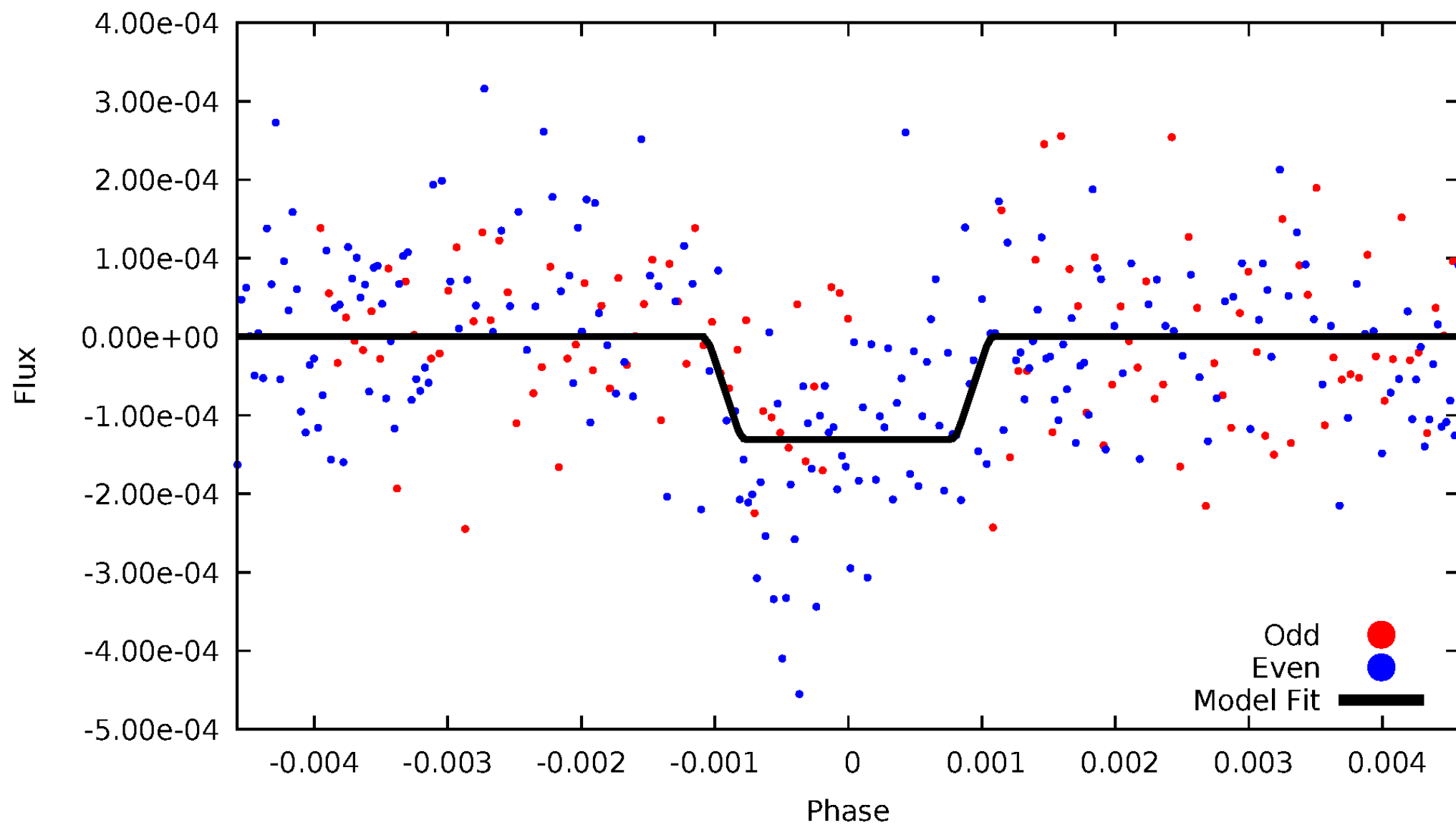
DV Odd/Even

TCE 008190354-02



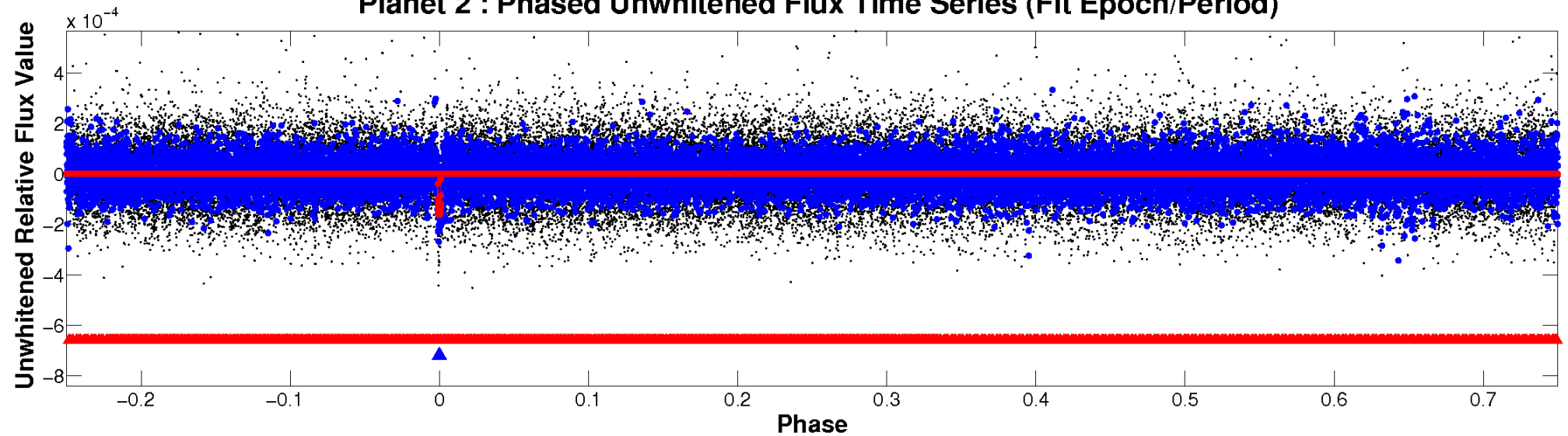
ALT Odd/Even

TCE 008190354-02

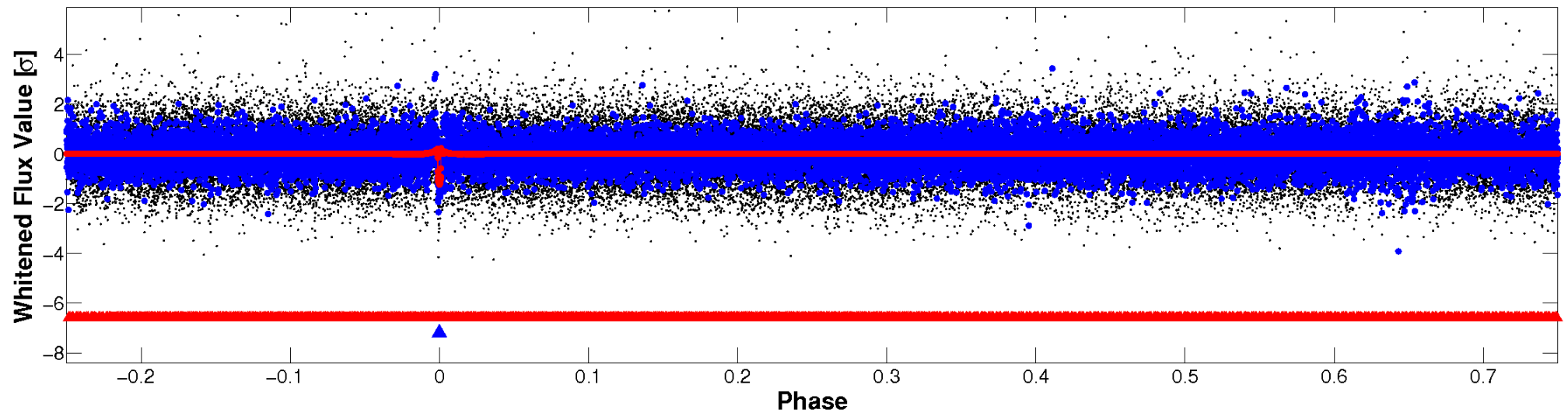


Non-Whitened Vs. Whitened Light Curve

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

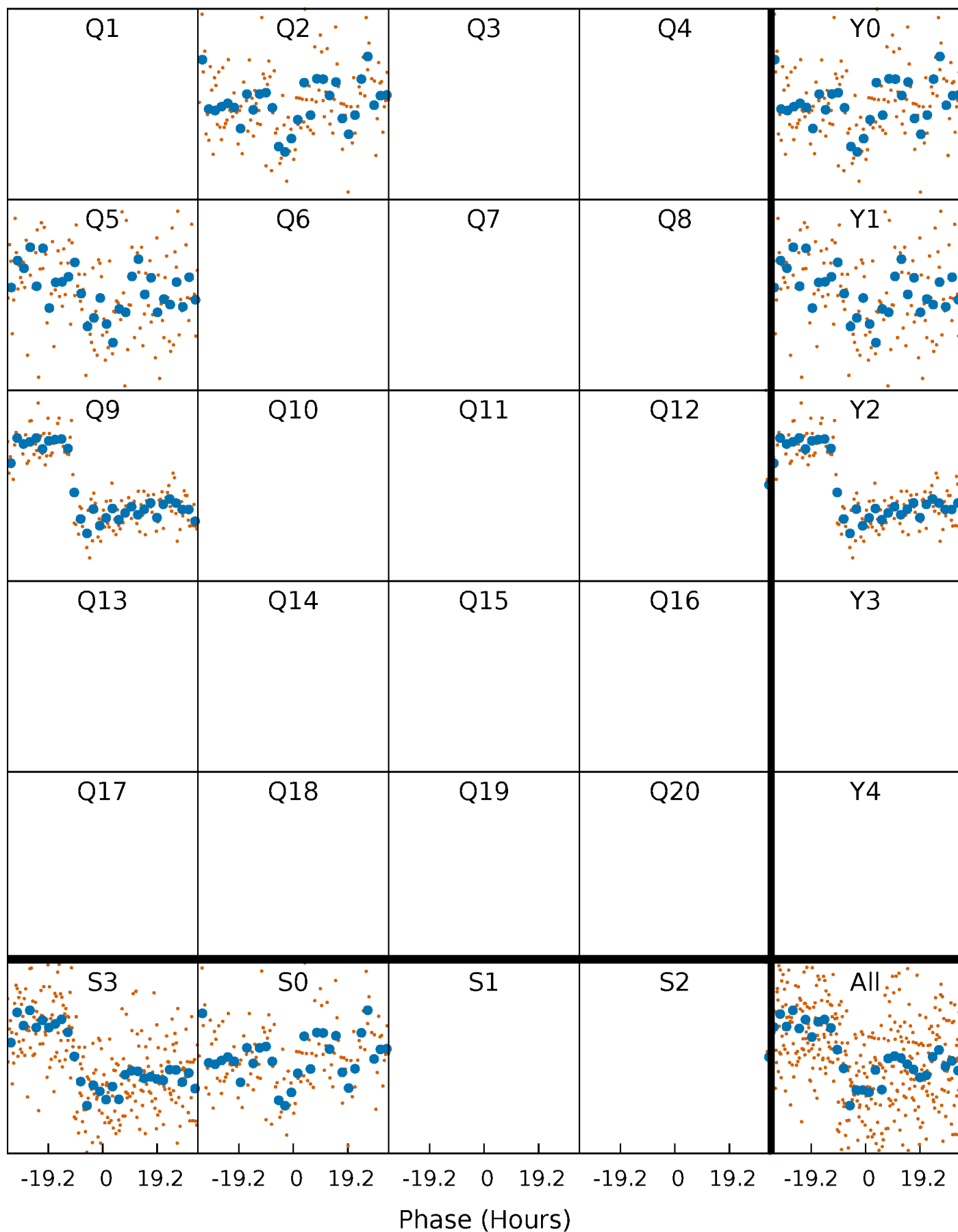


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



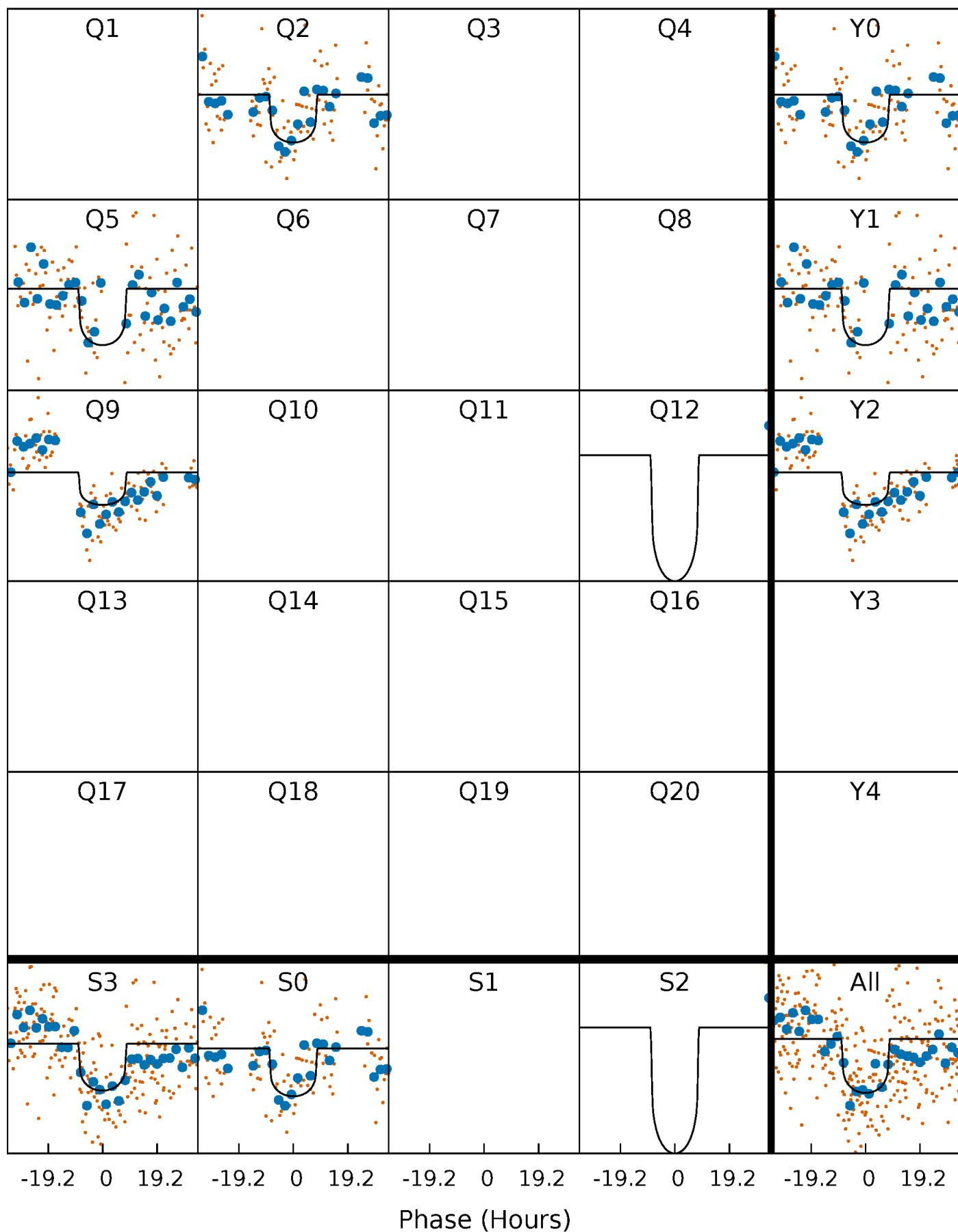
PDC Quarter-Phased Transit Curves

TCE 008190354-02 $P=320.587798$ Days $T_0=201.961498$ (BKJD)



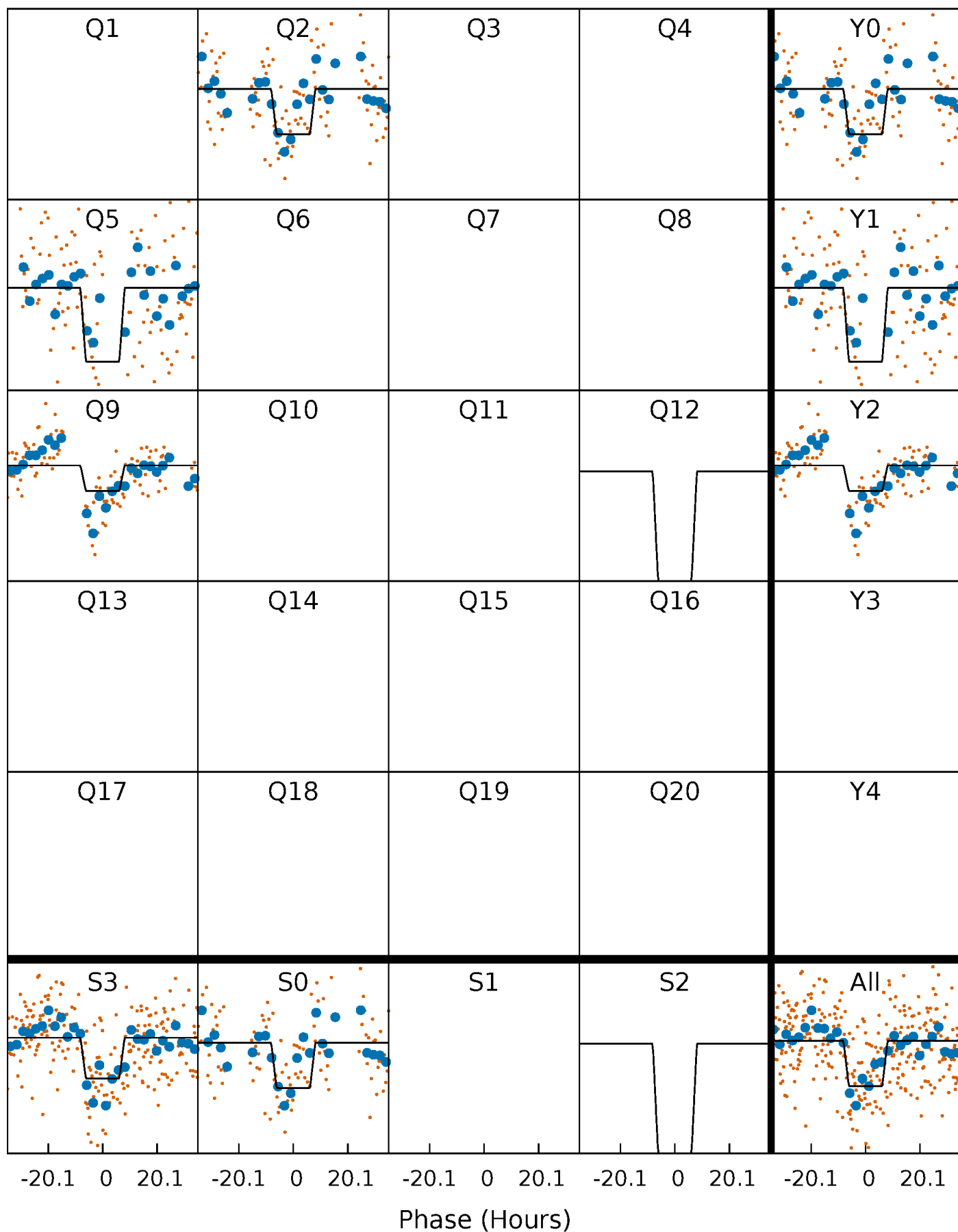
DV Quarter-Phased Transit Curves

TCE 008190354-02 P=320.587798 Days $T_0=201.961498$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

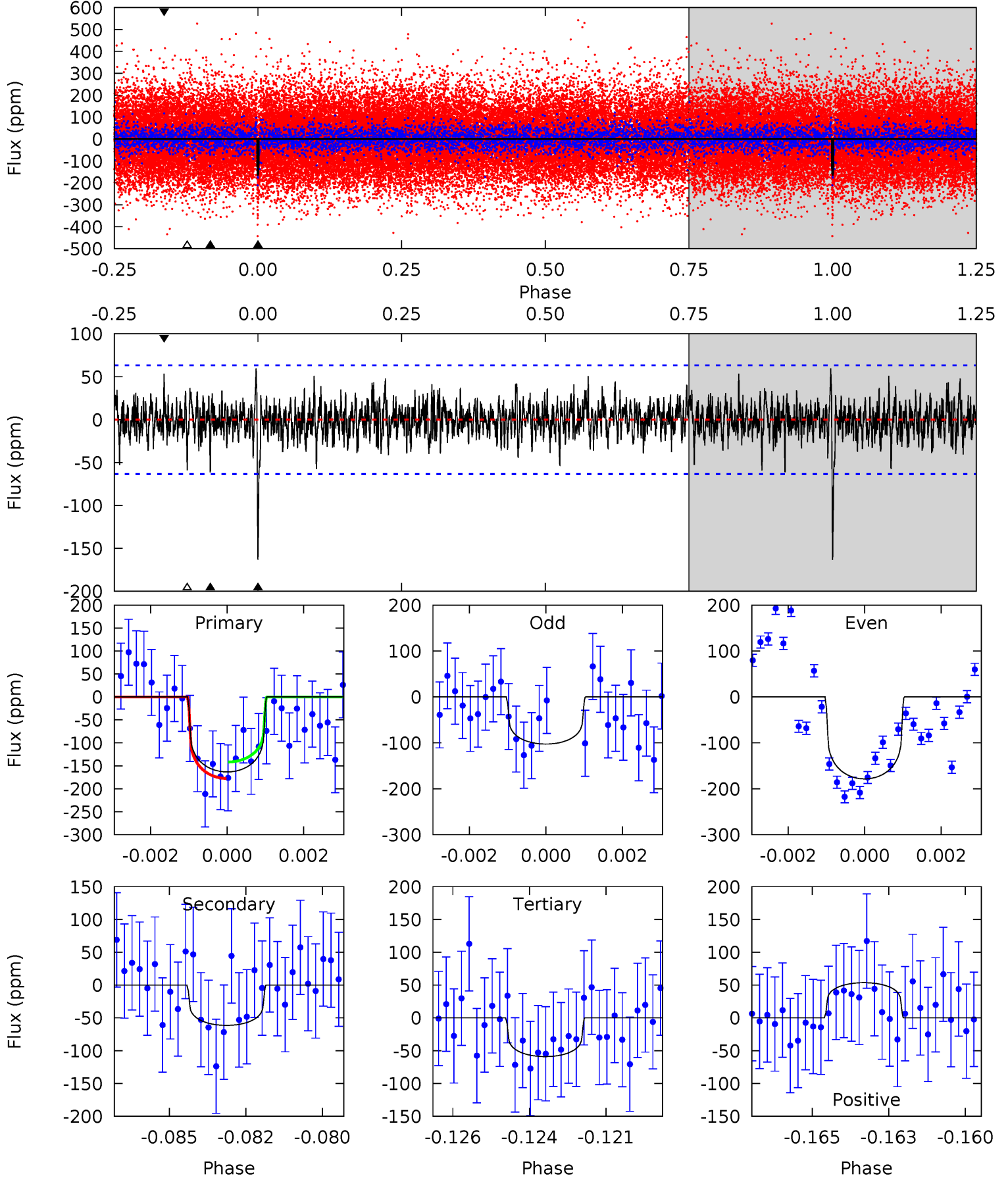
TCE 008190354-02 P=320.534445 Days $T_0=201.995856$ (BKJD)



DV Model-Shift Uniqueness Test

008190354-02, P = 320.587798 Days, E = 201.961498 Days

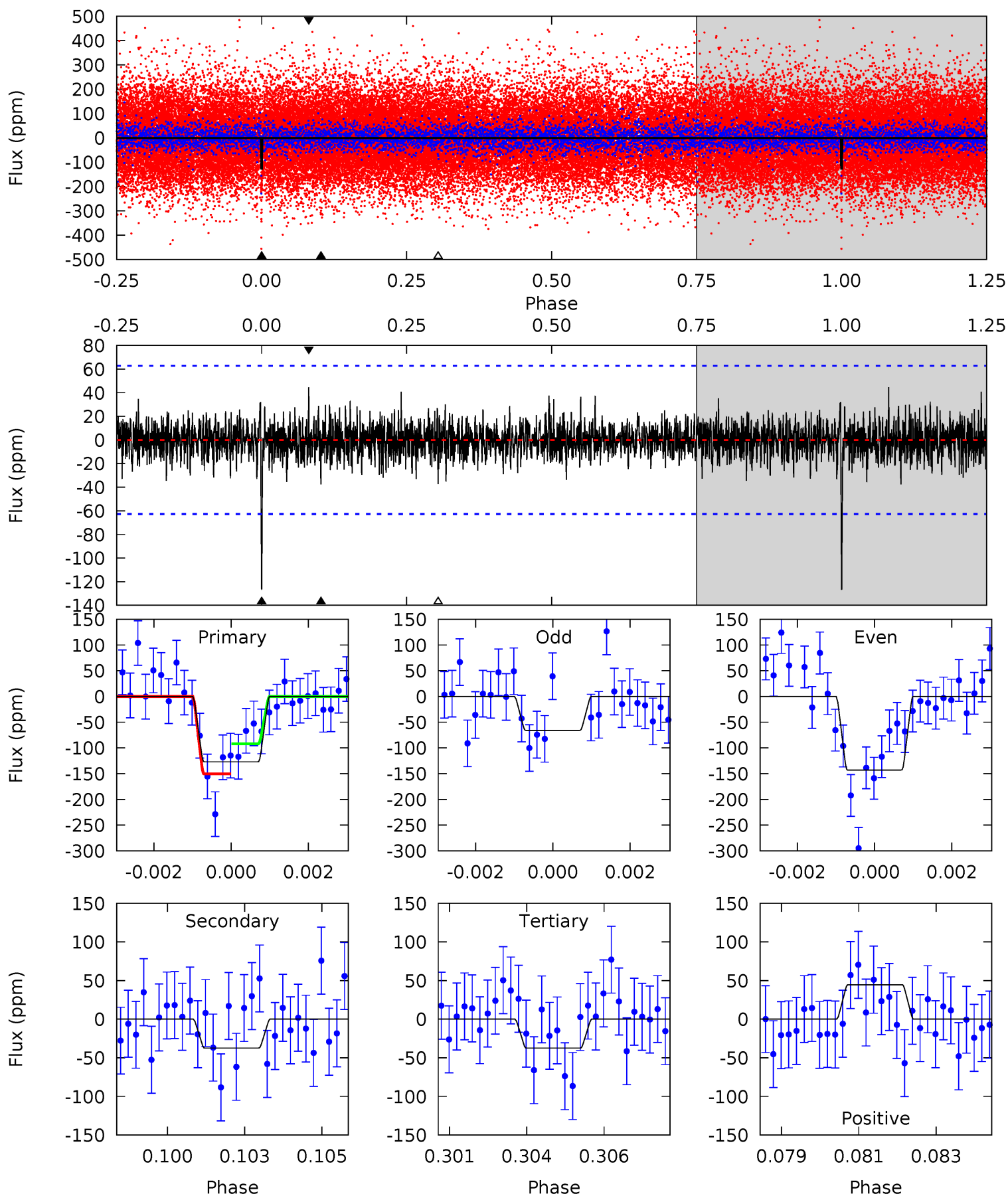
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	5.15	4.95	4.49	5.31	3.07	1.30	8.74	9.19	0.20	0.66	2.62	1.27	0.27	1.48



Alt Model-Shift Uniqueness Test

008190354-02, P = 320.534445 Days, E = 201.995856 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	3.16	3.16	3.77	5.31	3.06	0.89	7.57	6.96	0.00	-0.61	2.70	1.34	0.26	2.45



Stellar Parameters For KIC 008190354

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5622^{+169}_{-152}	$3.813^{+0.266}_{-0.143}$	$-0.520^{+0.350}_{-0.250}$	$2.017^{+0.496}_{-0.551}$	$0.965^{+0.164}_{-0.110}$	$0.166^{+0.242}_{-0.068}$
	+3%/-3%	+7%/-4%	+67%/-48%	+25%/-27%	+17%/-11%	+146%/-41%
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 008190354-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-61 ± 12	$2.69^{+1.20}_{-1.17}$	512^{+34}_{-39}	4602^{+1151}_{-601}	3945^{+8155}_{-2150}
Alt.	-37 ± 12	$2.48^{+1.18}_{-0.98}$	512^{+36}_{-42}	4251^{+1016}_{-540}	2664^{+5461}_{-1566}

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

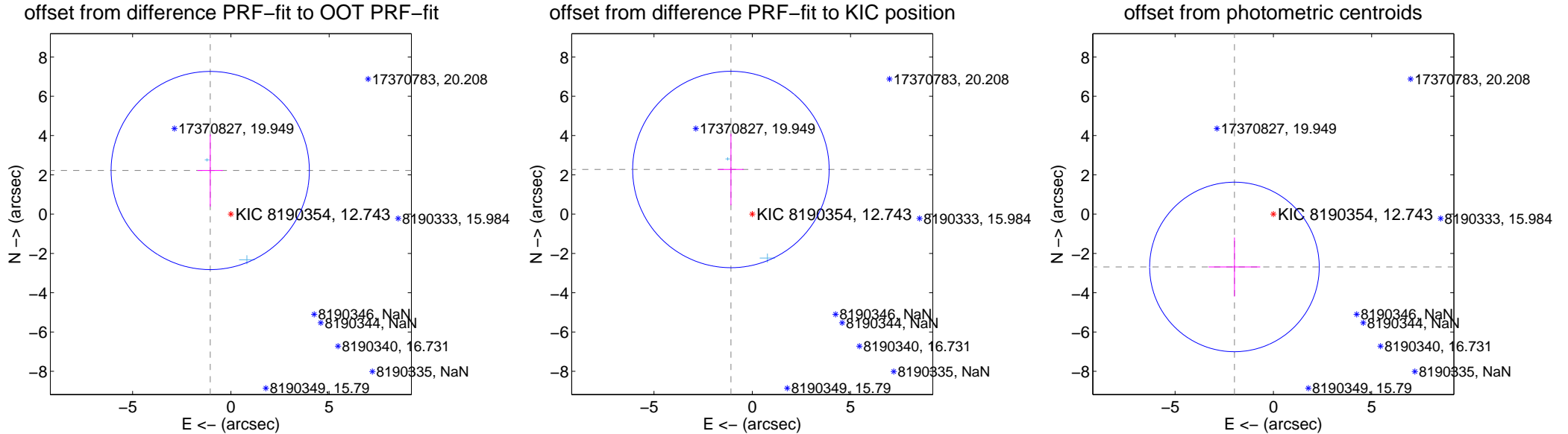
DV Centroid Data

Supplemental centroid analysis for 008190354-02. Kepler magnitude: 12.74. Transit SNR 9.74

There are 2 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.457 ± 1.681	1.46	1.051 ± 0.646	2.221 ± 1.835
PRF-fit source offset from KIC position	2.520 ± 1.666	1.51	1.087 ± 0.644	2.273 ± 1.821
photometric centroid source offset	3.34 ± 1.44	2.32	1.98 ± 1.31	-2.69 ± 1.50



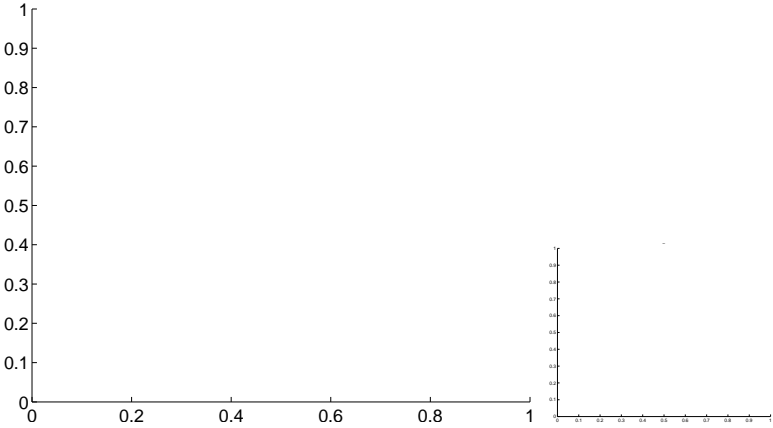
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

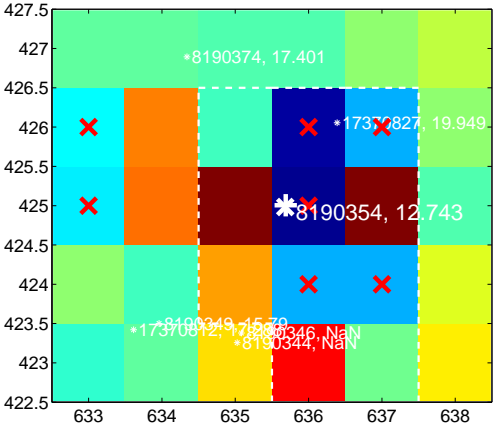
Q1 no difference image



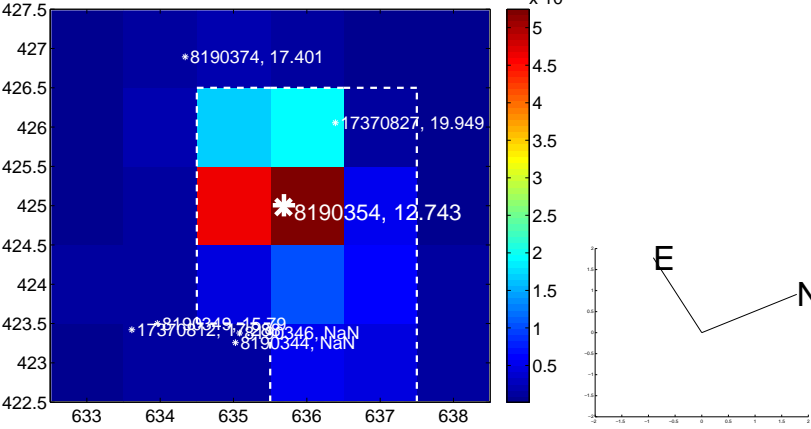
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



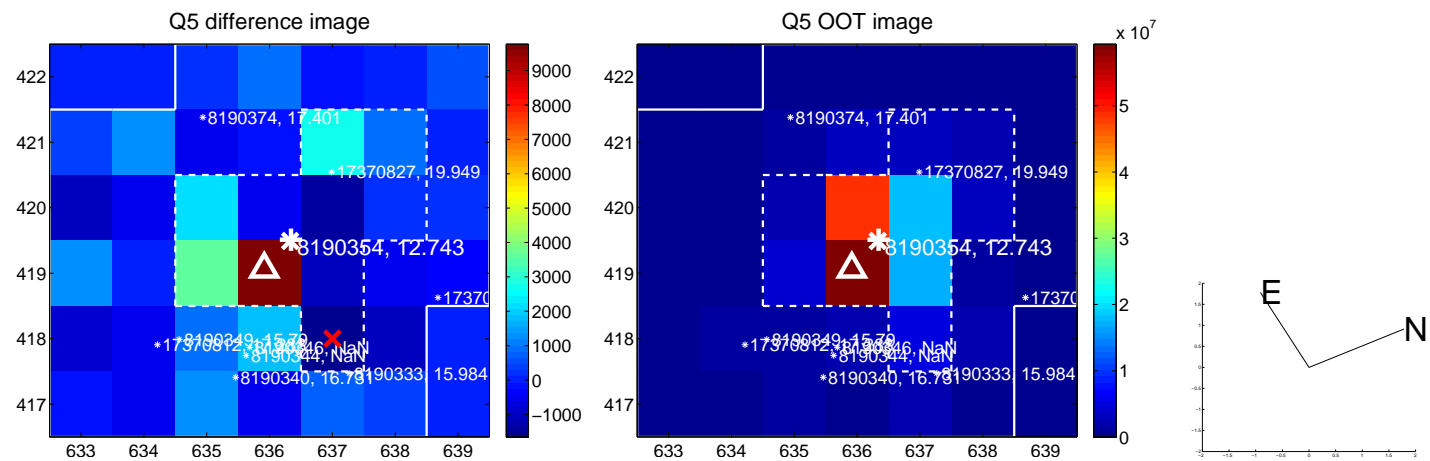
Q4 no difference image



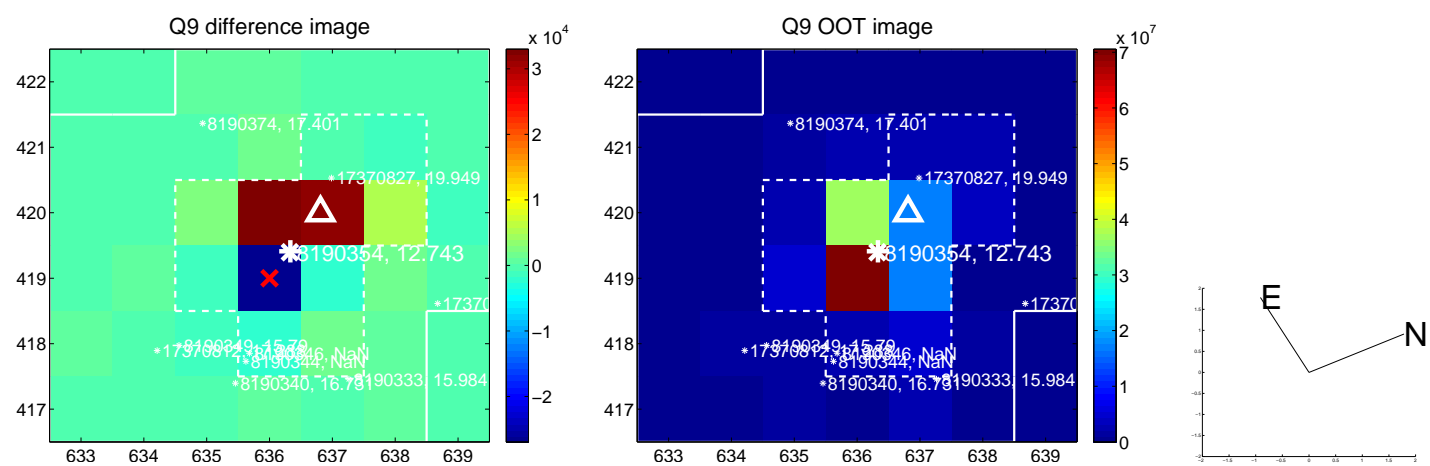
Q4 no OOT image



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



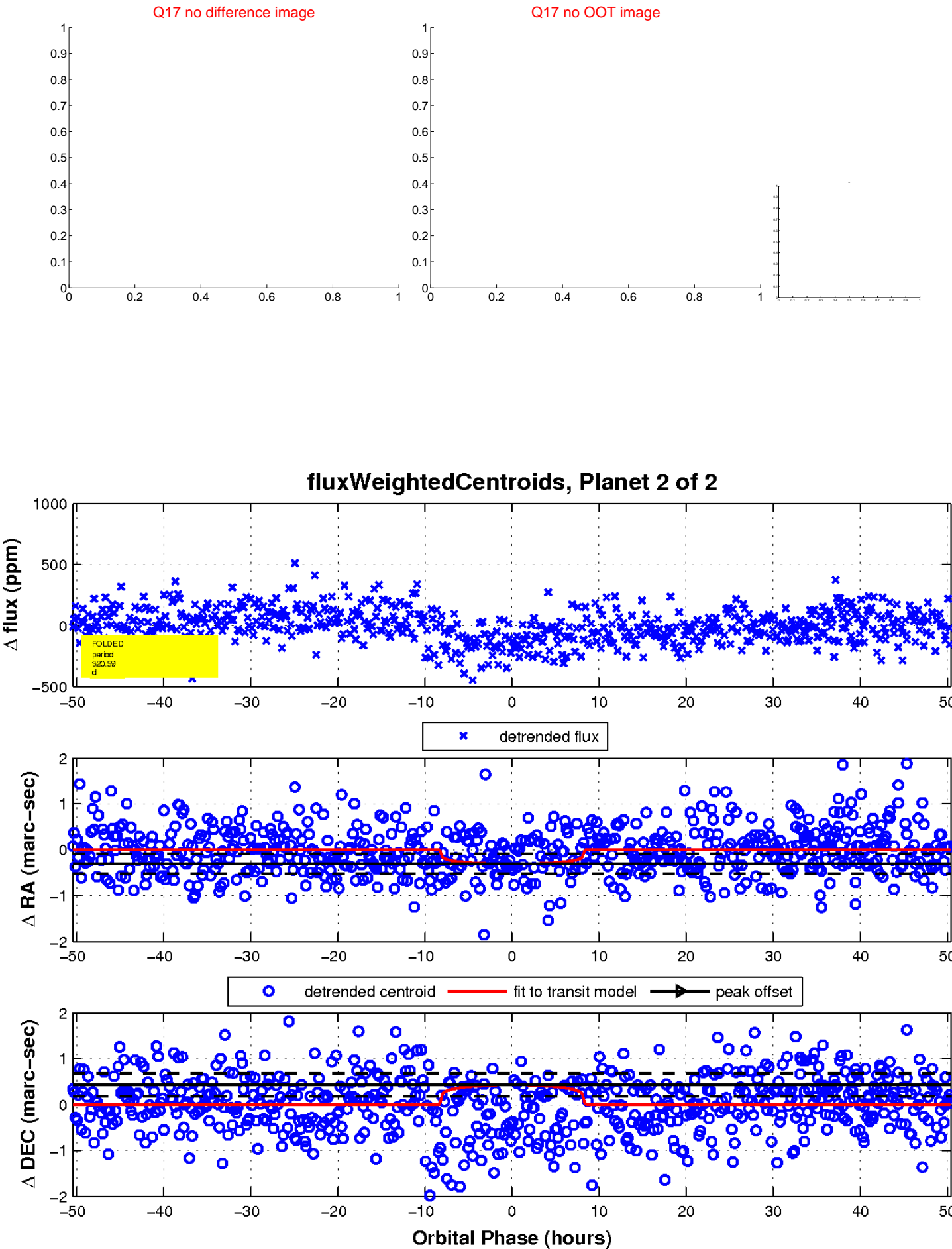
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

