

KIC 010199055

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})
010199055-01	OBS	No	1.634540	131.683818	25.9	6.204	8.4	6.3	2.14	7691	1.13	13657.65
010199055-02	OBS	No	197.636850	147.537910	447.4	14.427	9.2	10.4	2.14	7691	5.21	22.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010199055-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
010199055-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_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.

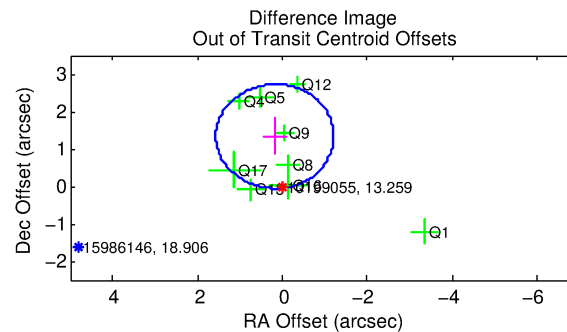
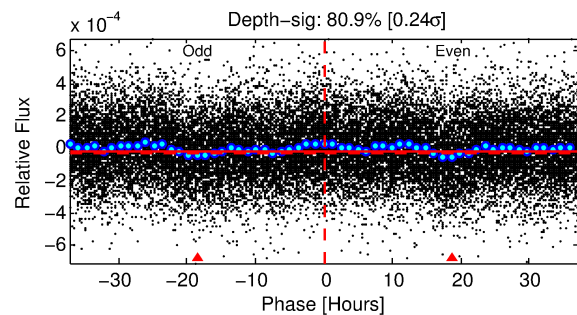
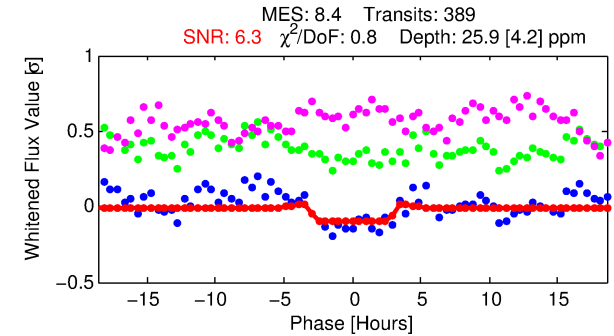
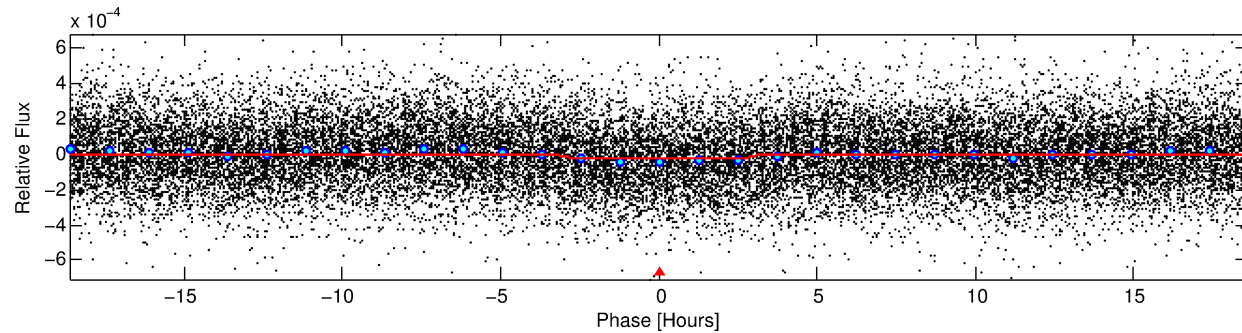
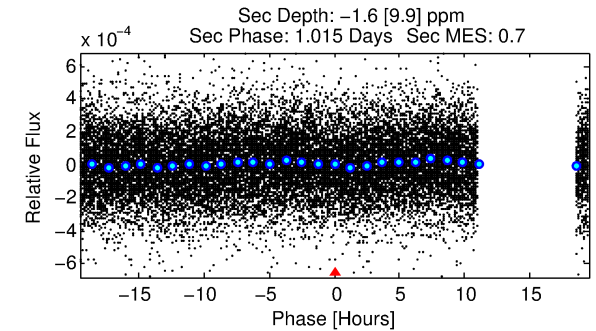
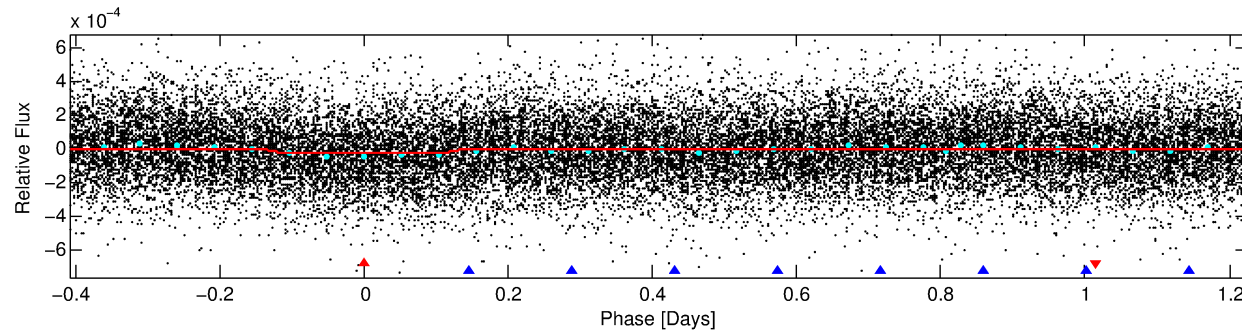
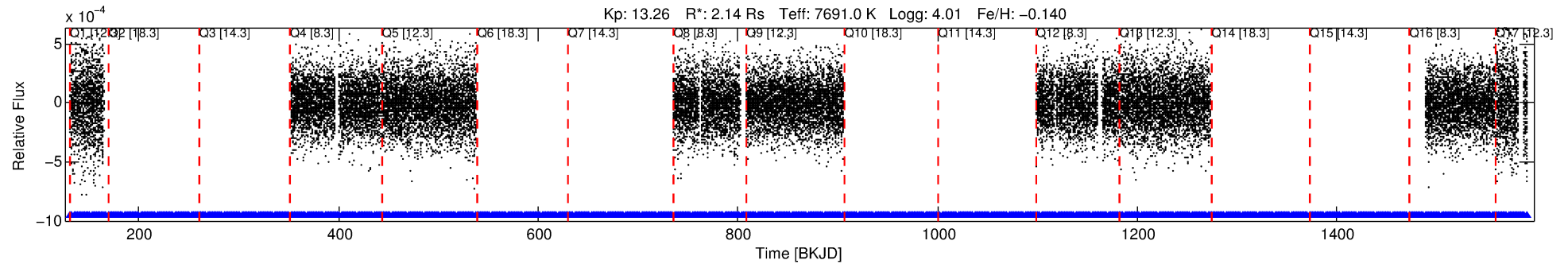
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010199055-01

No Significant Match Found

DV One-Page Summary

KIC: 10199055 Candidate: 1 of 2 Period: 1.635 d



DV Fit Results:

Period = 1.63454 [0.00003] d
Epoch = 131.6838 [0.0072] BKJD
Rp/R* = 0.0048 [0.0021]
a/R* = 1.87 [3.23]
b = 0.53 [3.31]
Seff = 13657.65 [5789.55]
Teq = 2757 [292] K
Rp = 1.13 [0.58] Re
a = 0.0324 [0.0083] AU
Ag = N/A
Teffp = N/A

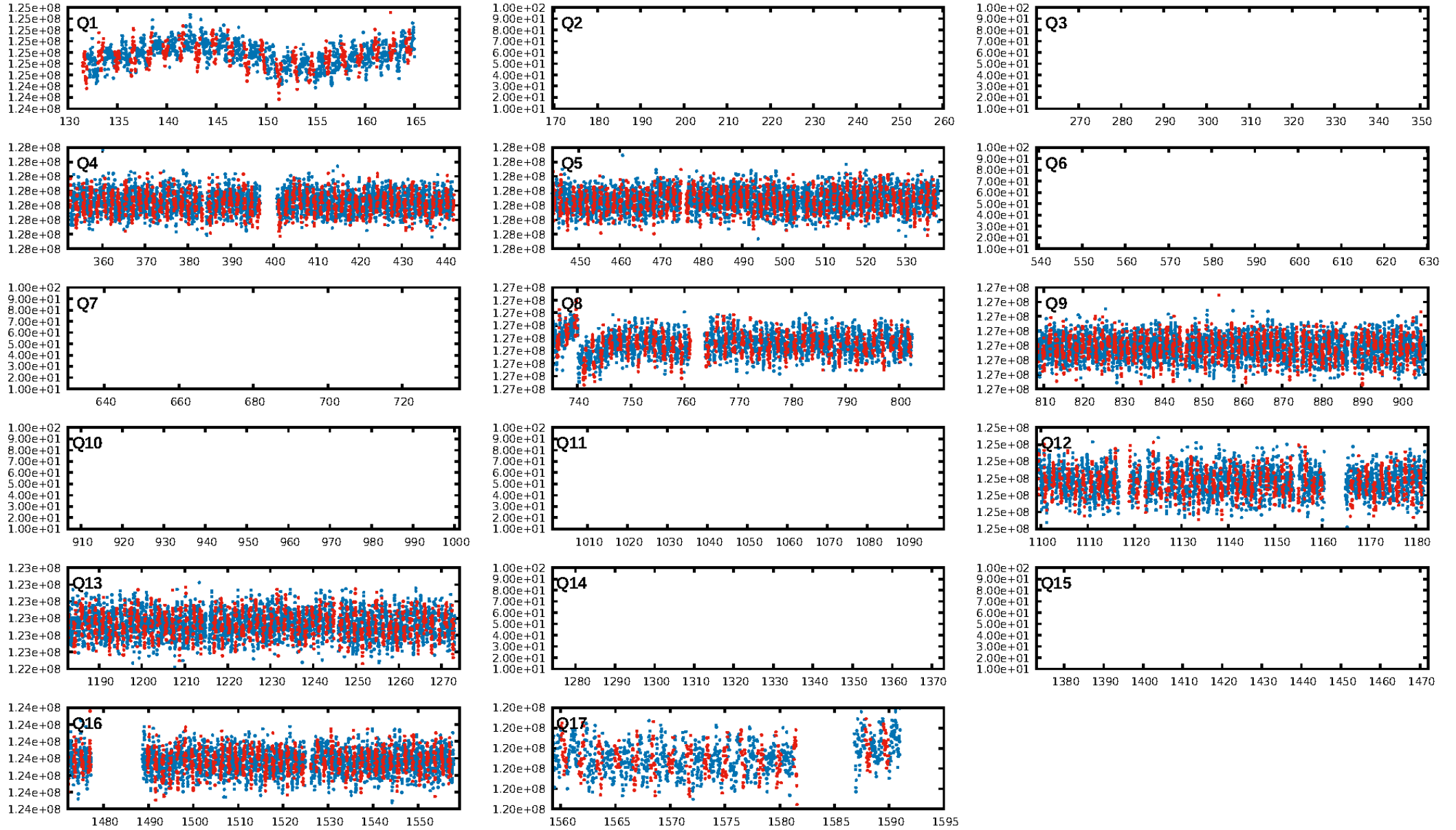
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [299.54σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.13e-12
RollingBand-fgt: 1.00 [352/352]
GhostDiagnostic-chr: -21.87
Centroid-sig: 0.0%
Centroid-so: 2.365 arcsec [2.56σ]
OotOffset-rm: 1.347 arcsec [2.90σ]
KicOffset-rm: 0.780 arcsec [1.78σ]
OotOffset-st: 0/0/4/5 [9]
KicOffset-st: 0/0/4/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 1.00 [9/9]

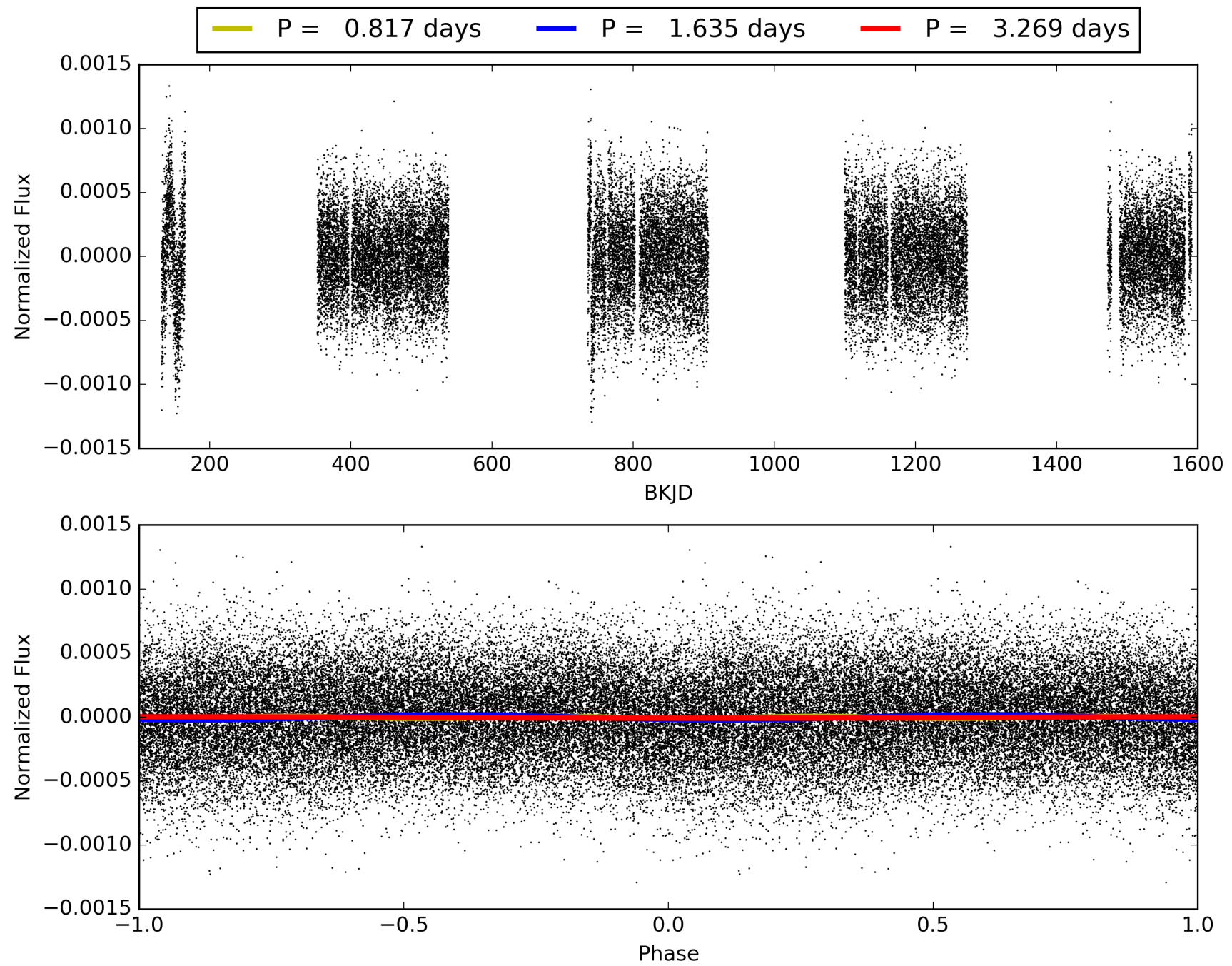
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:20:48 Z

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

TCE 010199055-01, PDC Light Curves

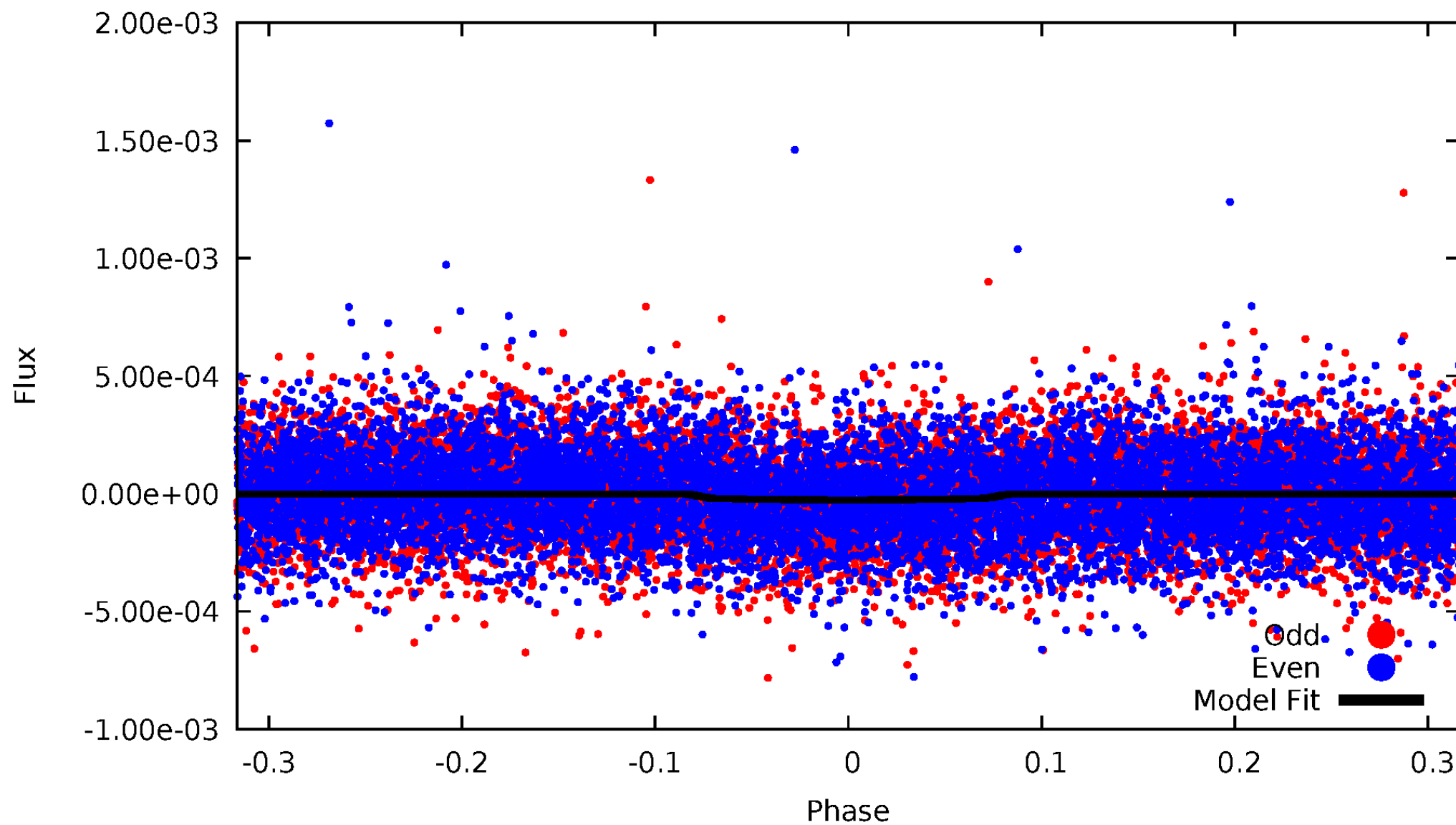


TCE 010199055-01



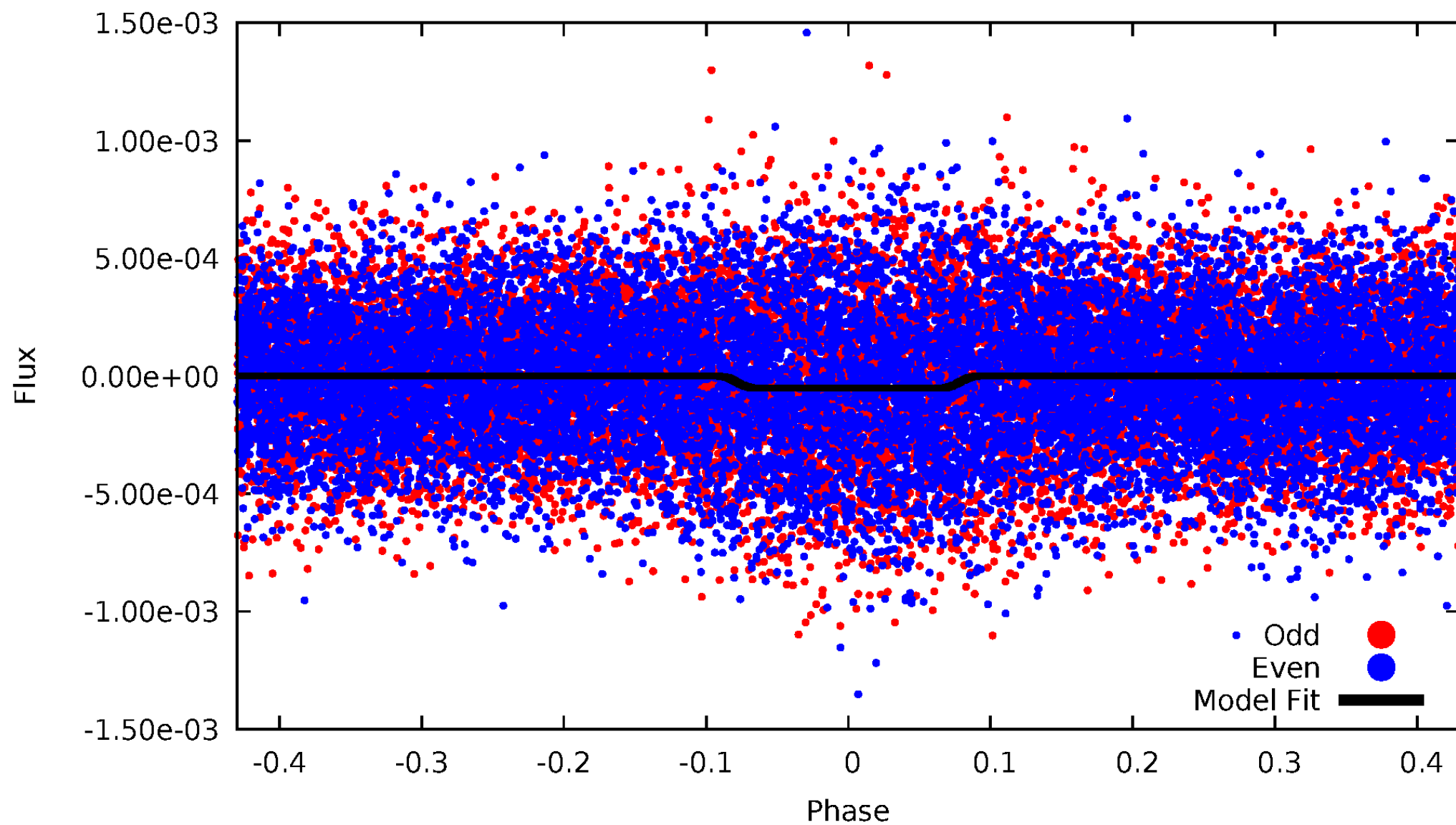
DV Odd/Even

TCE 010199055-01



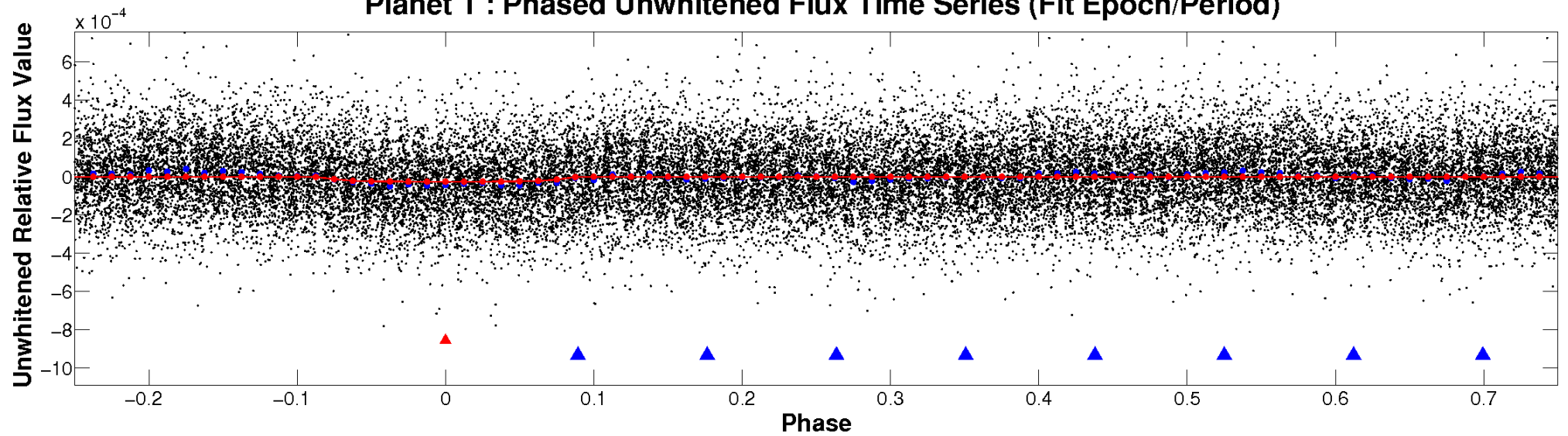
ALT Odd/Even

TCE 010199055-01

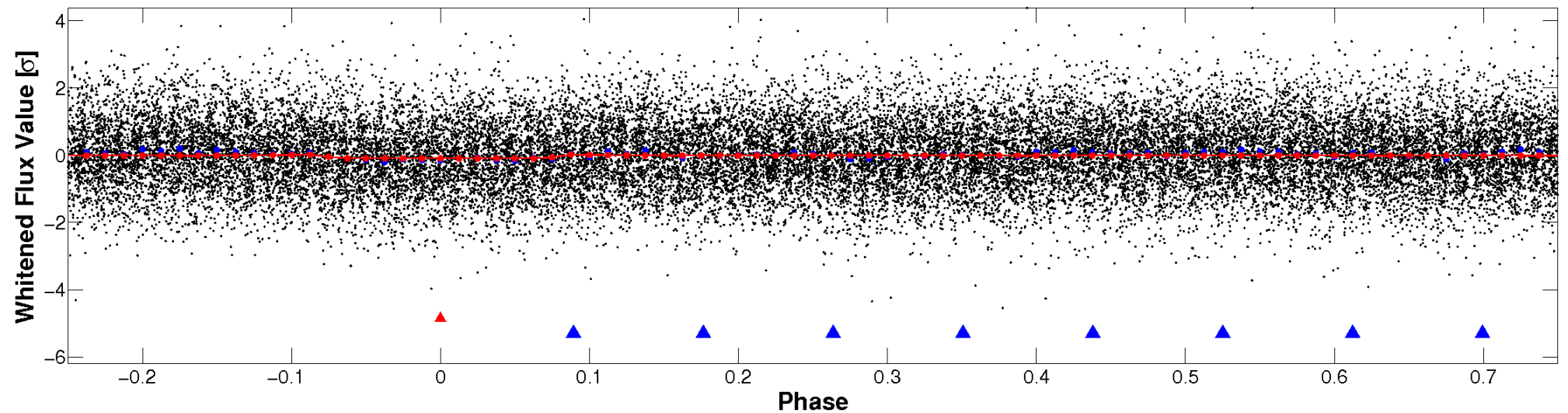


Non-Whitened Vs. Whitened Light Curve

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

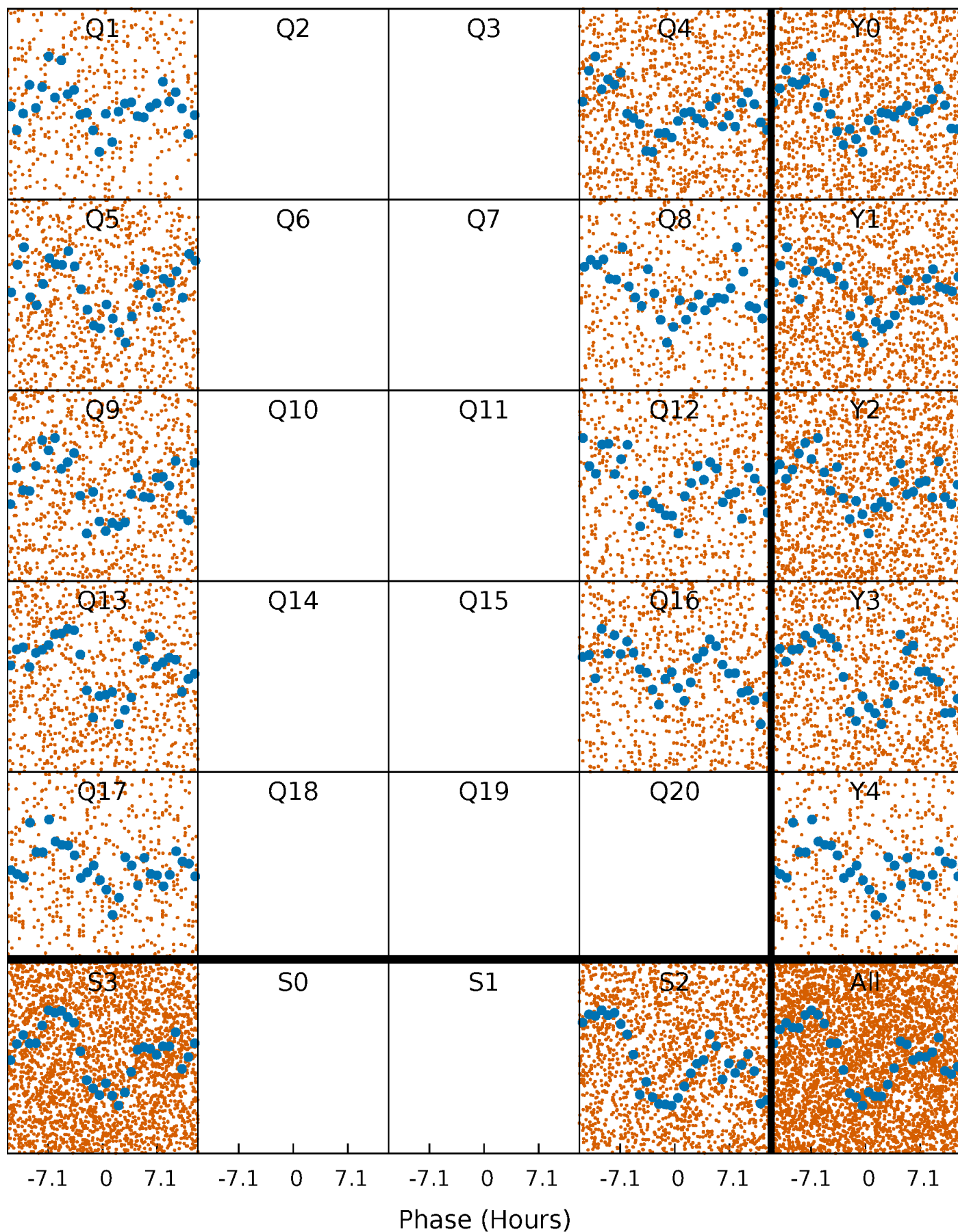


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



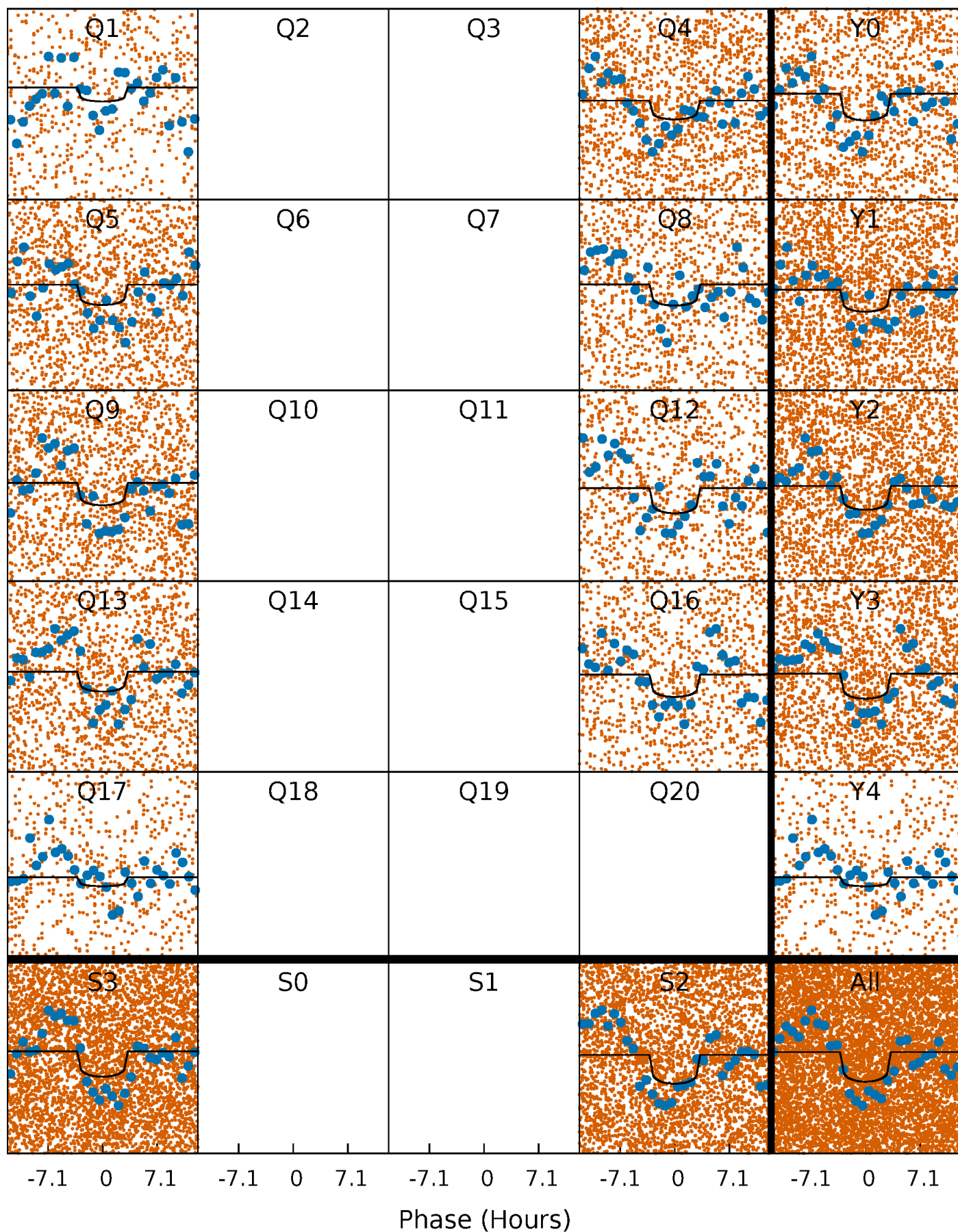
PDC Quarter-Phased Transit Curves

TCE 010199055-01 P= 1.634540 Days $T_0=131.683818$ (BKJD)



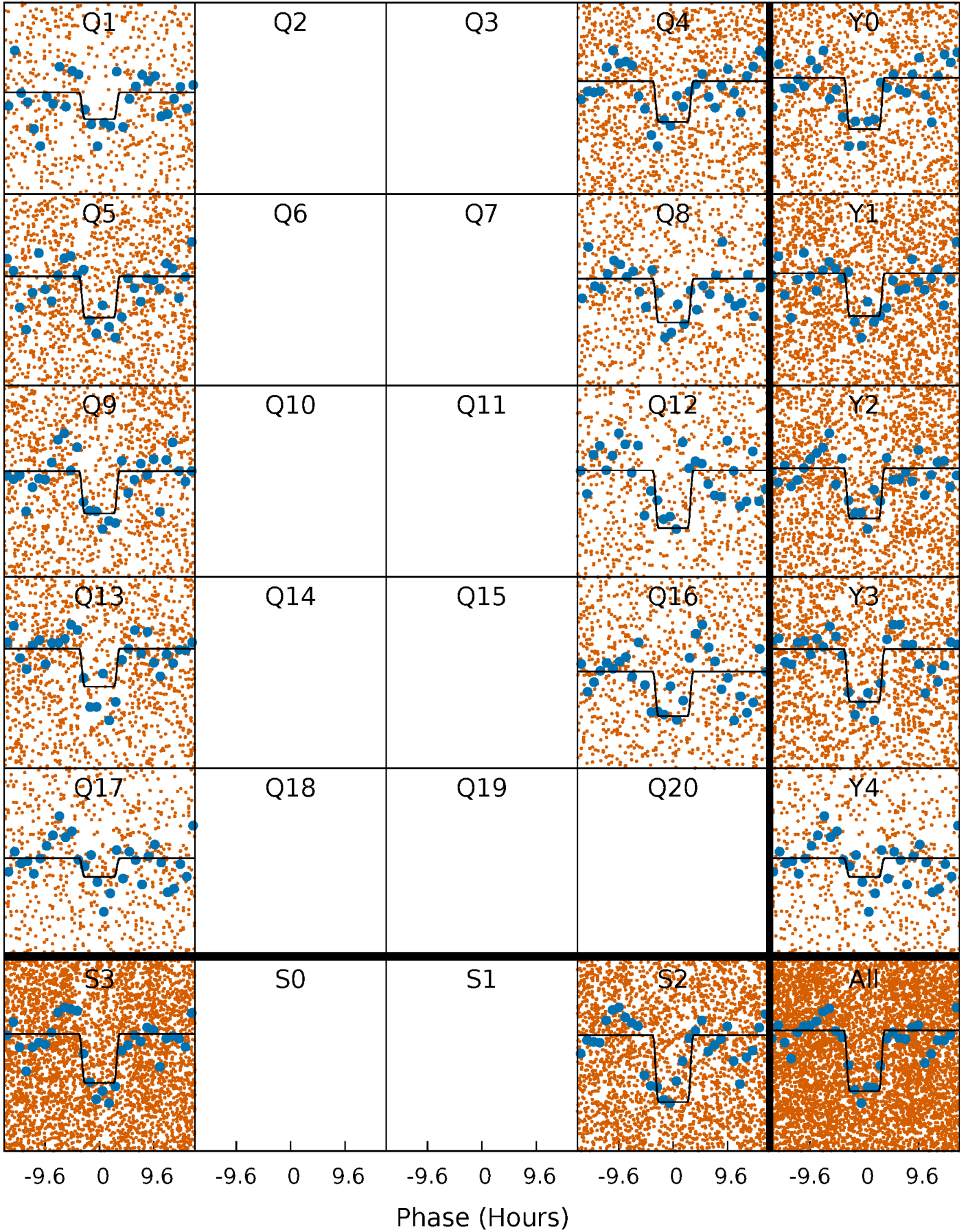
DV Quarter-Phased Transit Curves

TCE 010199055-01 P= 1.634540 Days $T_0=131.683818$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

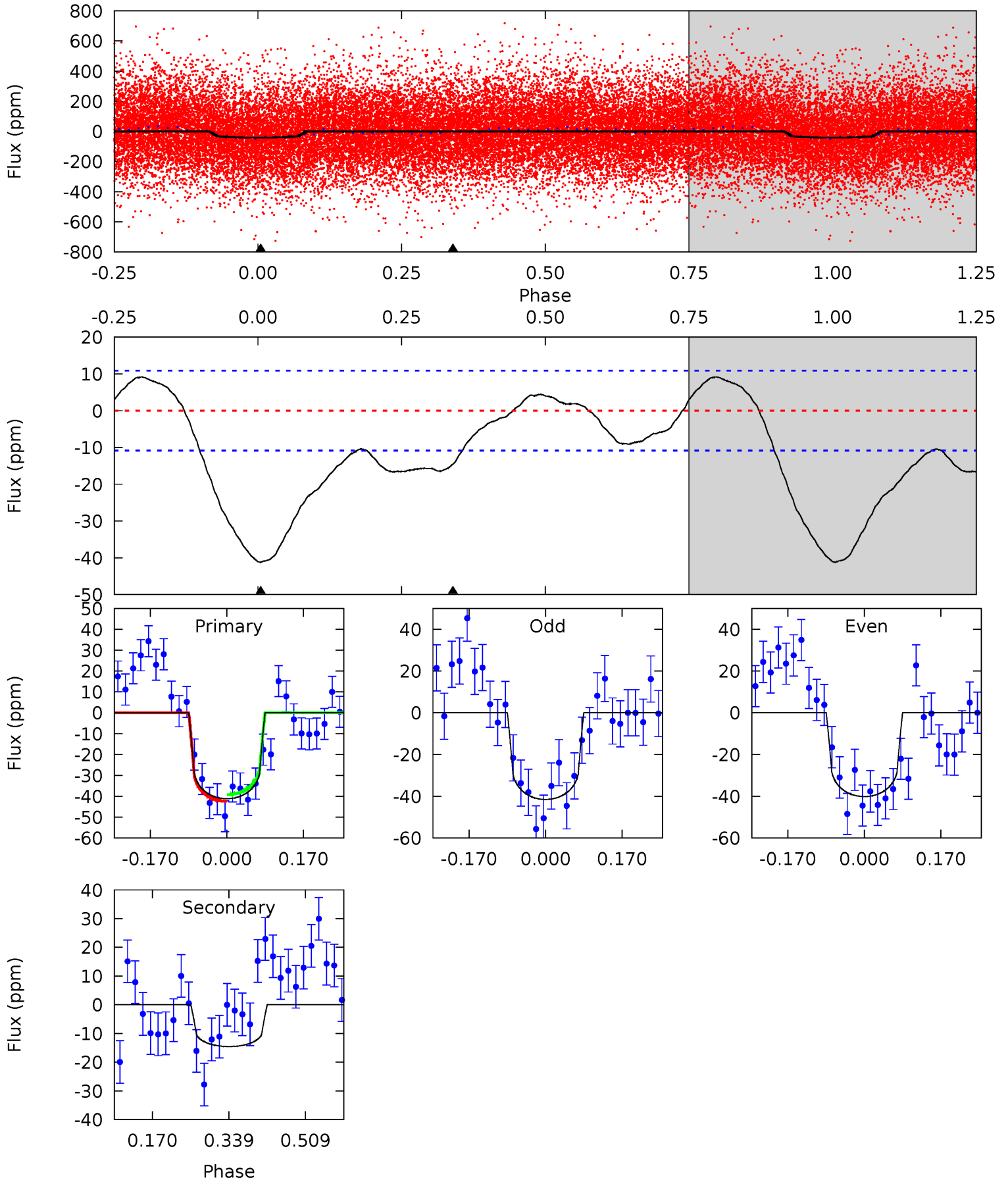
TCE 010199055-01 P= 1.634570 Days $T_0=131.672924$ (BKJD)



DV Model-Shift Uniqueness Test

010199055-01, P = 1.634540 Days, E = 130.049278 Days

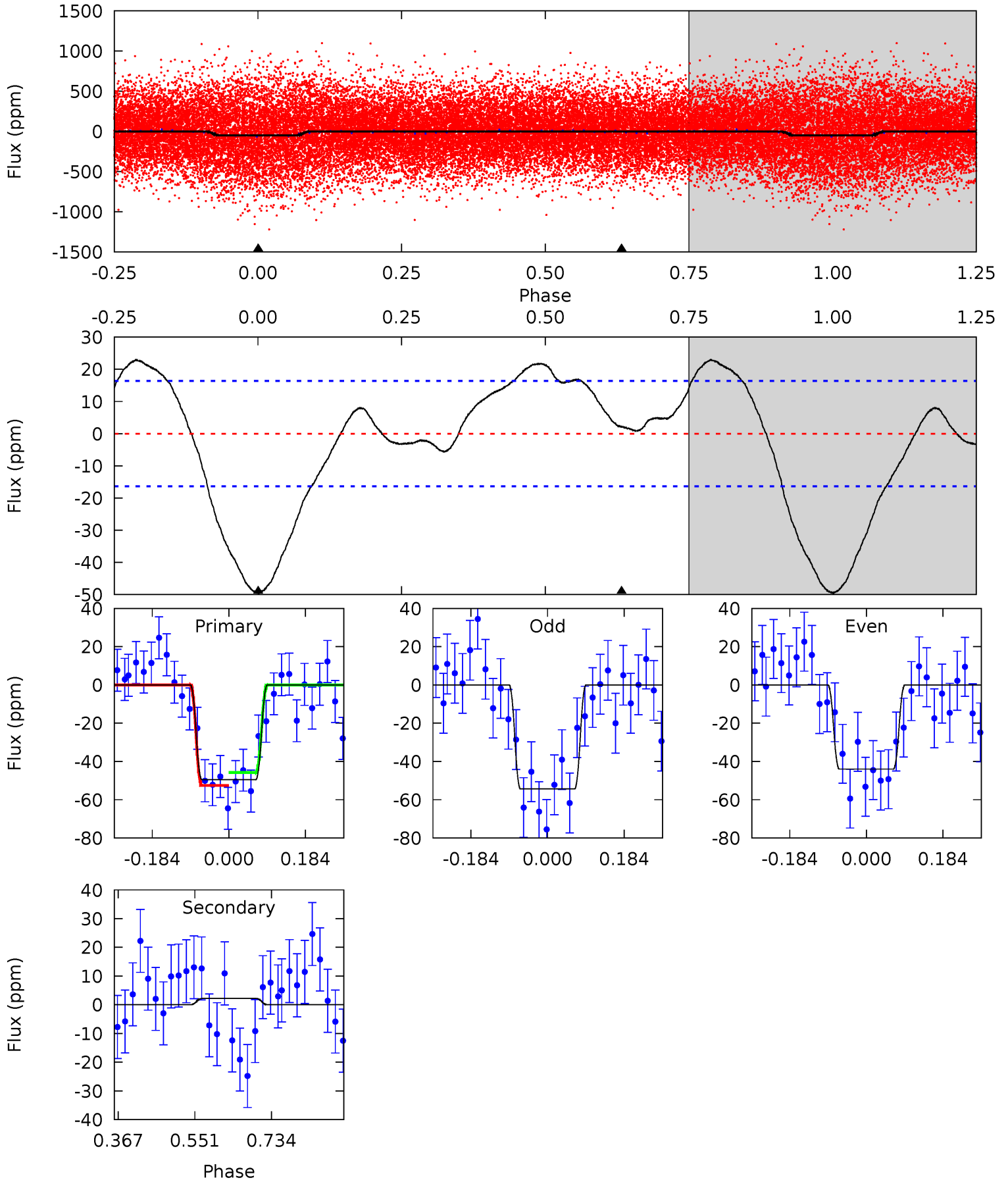
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	5.96	0	0	4.45	1.37	2.46	16.9	16.9	5.96	5.96	0.28	1.08	0.18	0.65



Alt Model-Shift Uniqueness Test

010199055-01, P = 1.634570 Days, E = 130.038354 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	-0.59	0	0	4.44	1.33	1.89	13.4	13.4	-0.59	-0.59	1.41	0.97	0.32	0.93



Stellar Parameters For KIC 010199055

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7691^{+211}_{-316}	$4.008^{+0.222}_{-0.148}$	$-0.140^{+0.200}_{-0.350}$	$2.141^{+0.502}_{-0.614}$	$1.700^{+0.198}_{-0.322}$	$0.244^{+0.312}_{-0.103}$
	+3%/-4%	+6%/-4%	+143%/-250%	+23%/-29%	+12%/-19%	+128%/-42%
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 010199055-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 2	$1.09^{+0.52}_{-0.45}$	3799^{+268}_{-276}	6555^{+2519}_{-1149}	$6.909^{+12.763}_{-3.682}$
Alt.	2 ± 4	$1.62^{+0.52}_{-0.51}$	3816^{+270}_{-313}	-4133^{+1307}_{-765}	$-0.448^{+0.674}_{-1.129}$

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 $A_{obs} \gg 1.0$

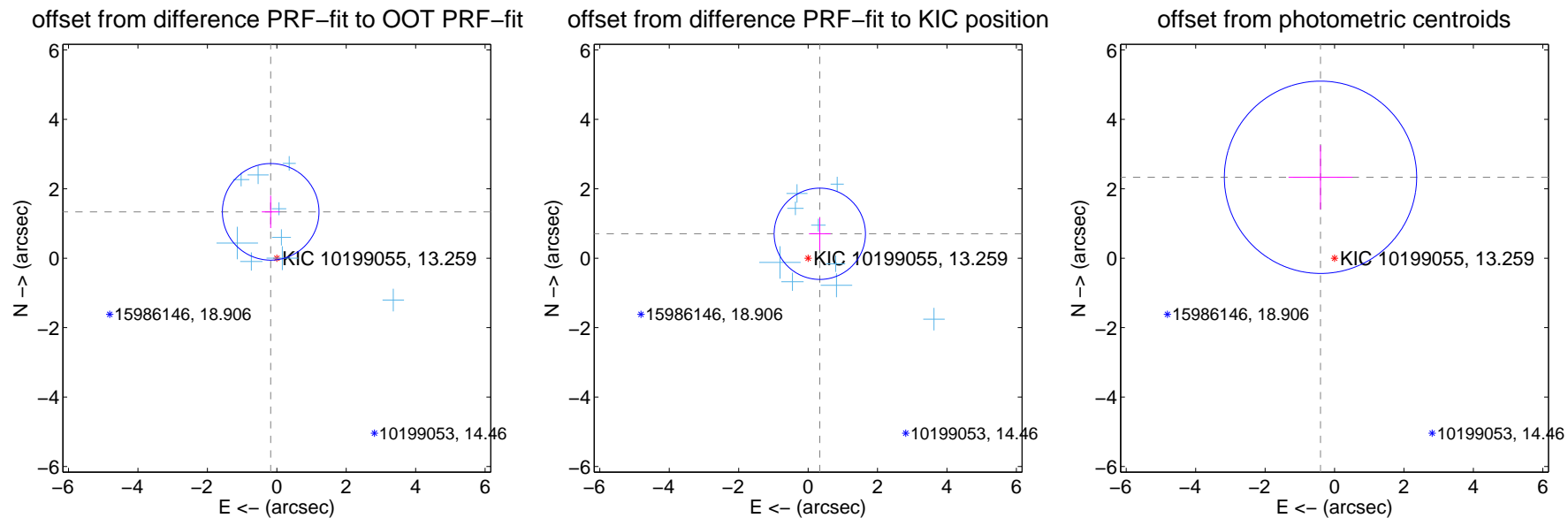
DV Centroid Data

Supplemental centroid analysis for 010199055-01. Kepler magnitude: 13.26. Transit SNR 6.31

There are 9 quarters with good PRF difference image offsets

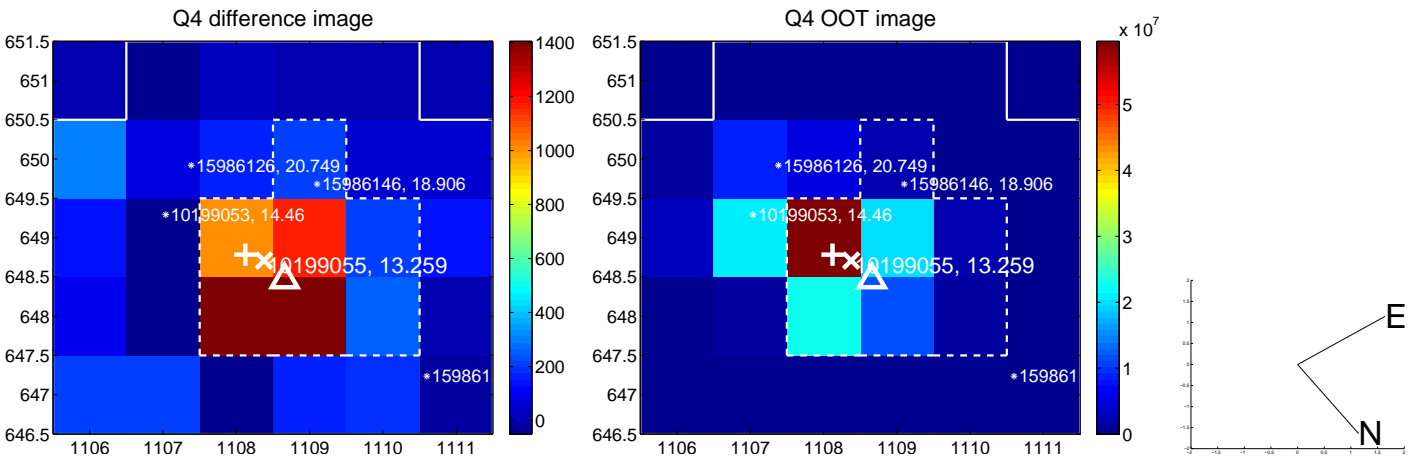
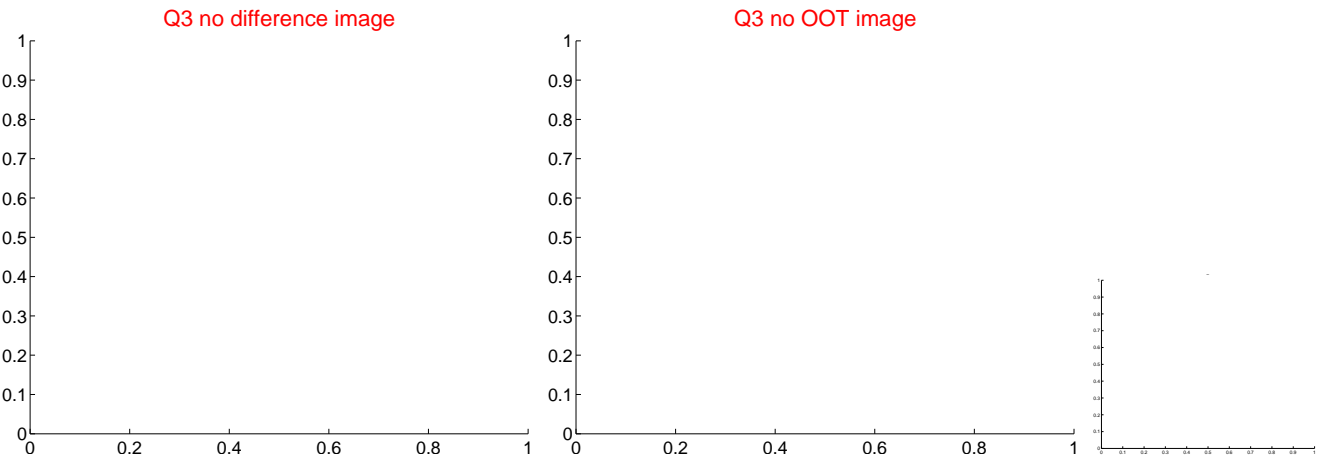
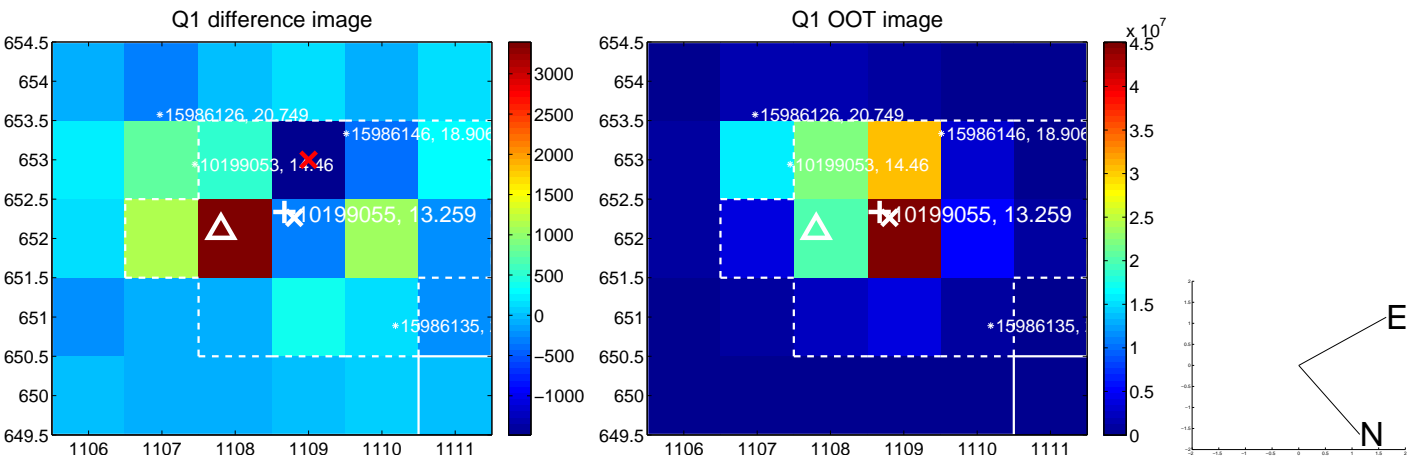
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.347 ± 0.464	2.90	0.176 ± 0.258	1.335 ± 0.466
PRF-fit source offset from KIC position	0.780 ± 0.438	1.78	-0.337 ± 0.311	0.703 ± 0.462
photometric centroid source offset	2.36 ± 0.92	2.56	0.40 ± 0.92	2.33 ± 0.92

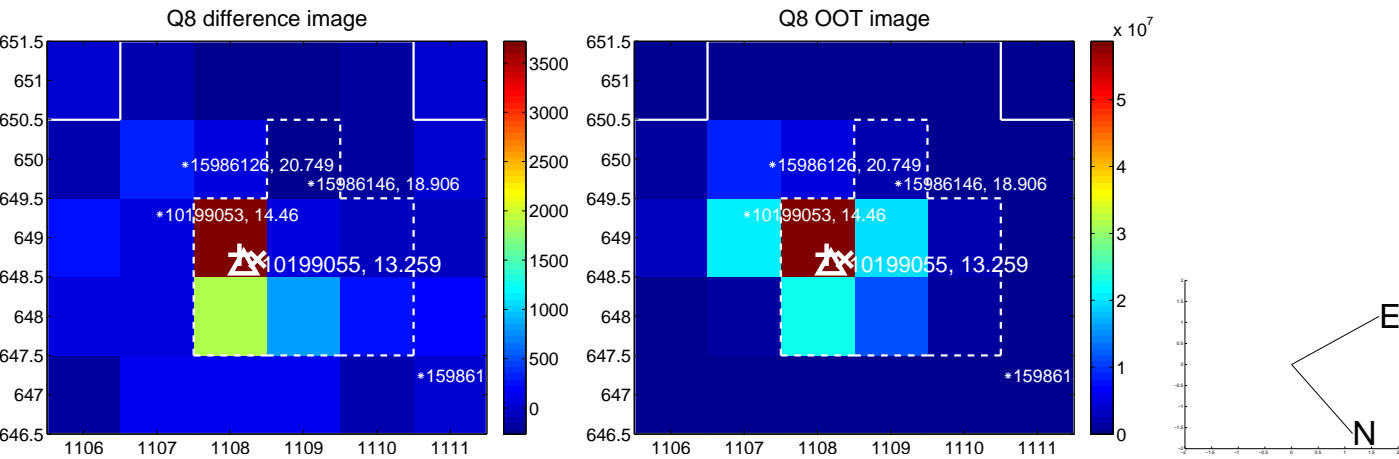
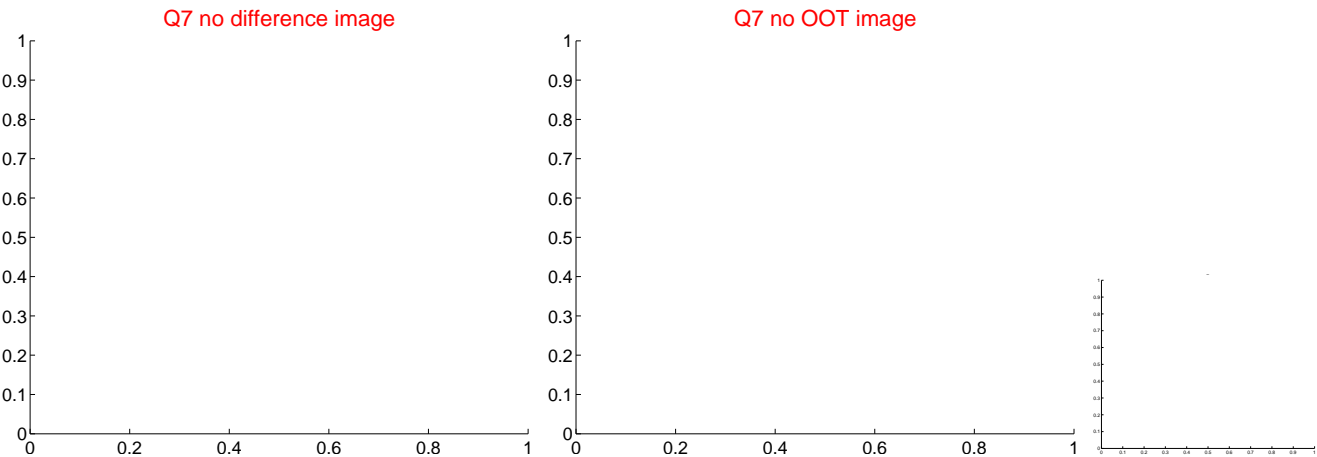
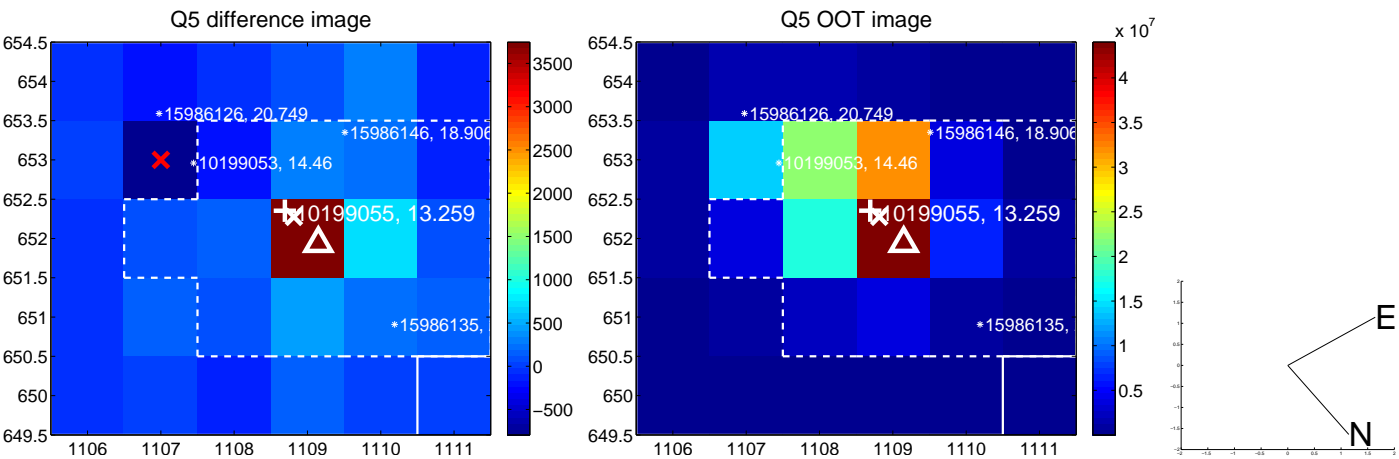


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

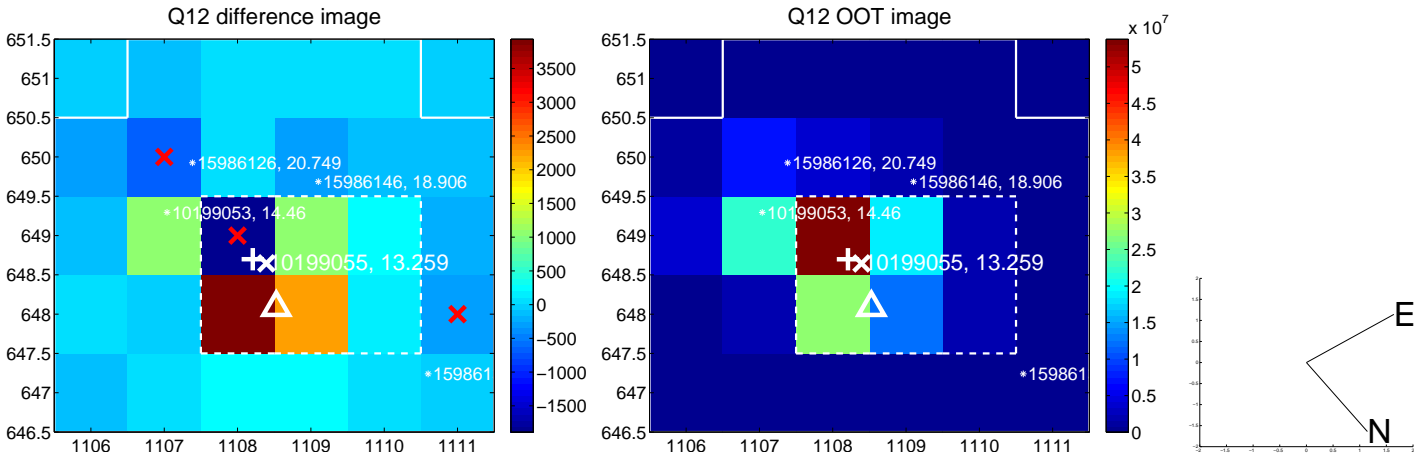
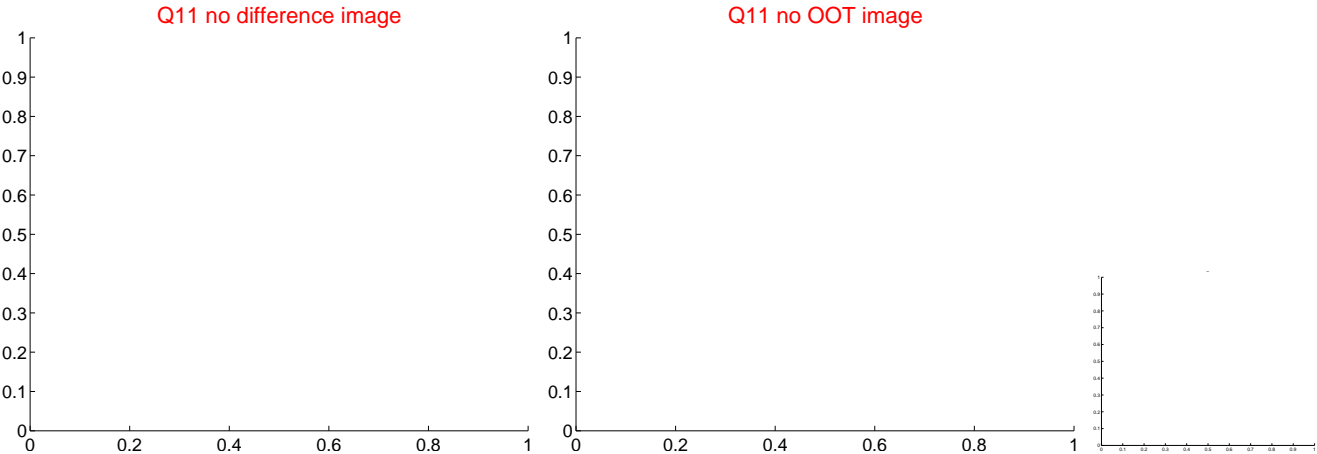
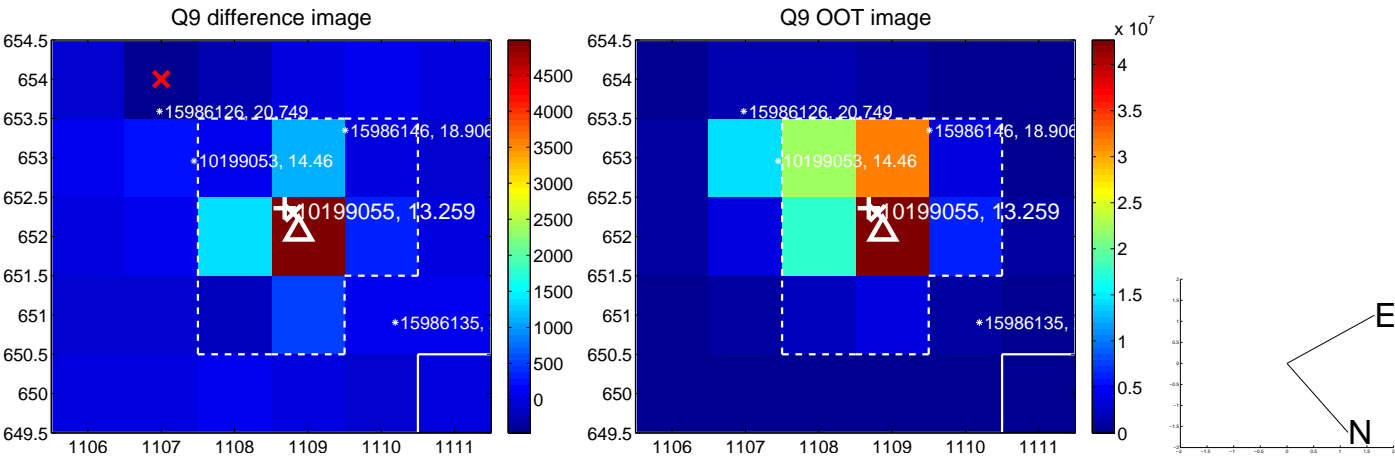
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



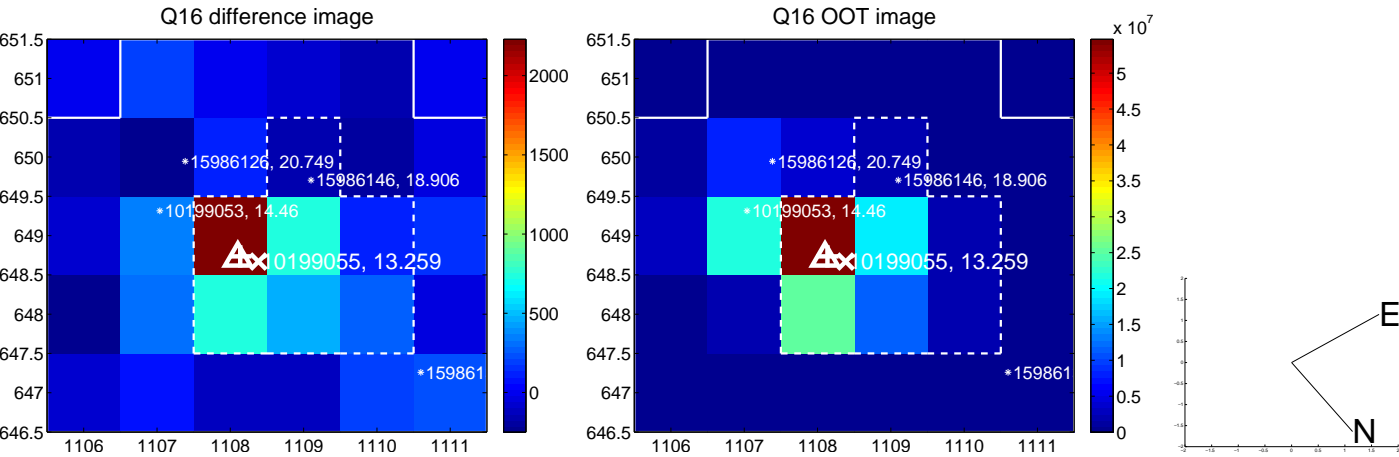
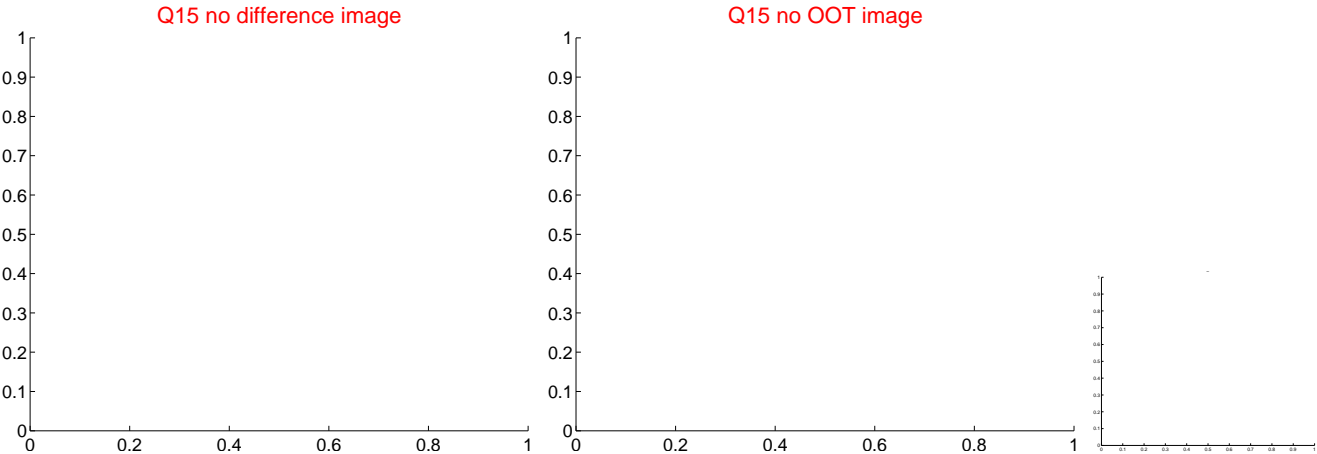
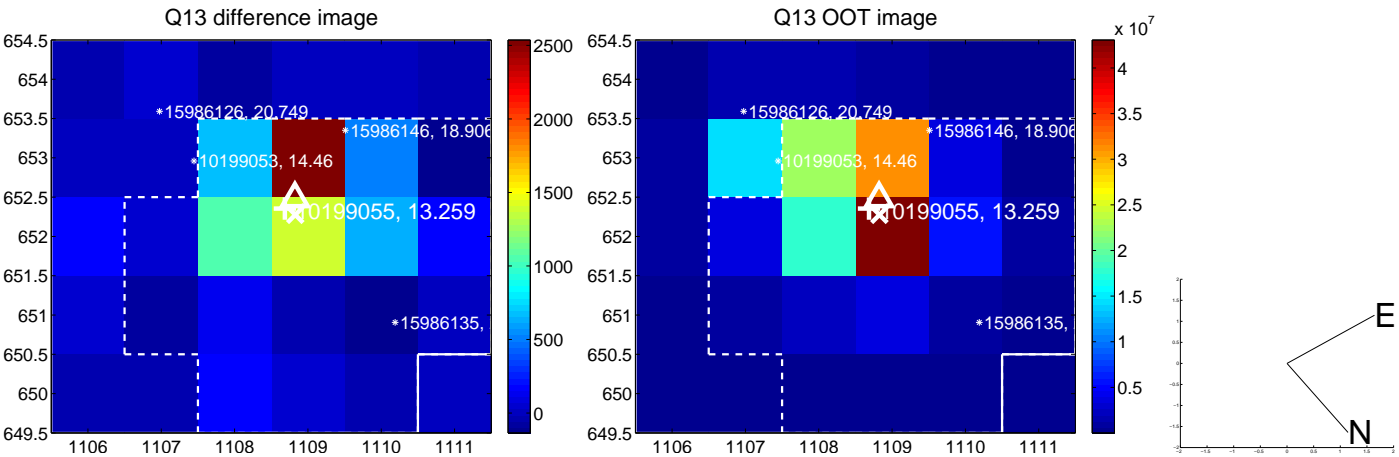
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



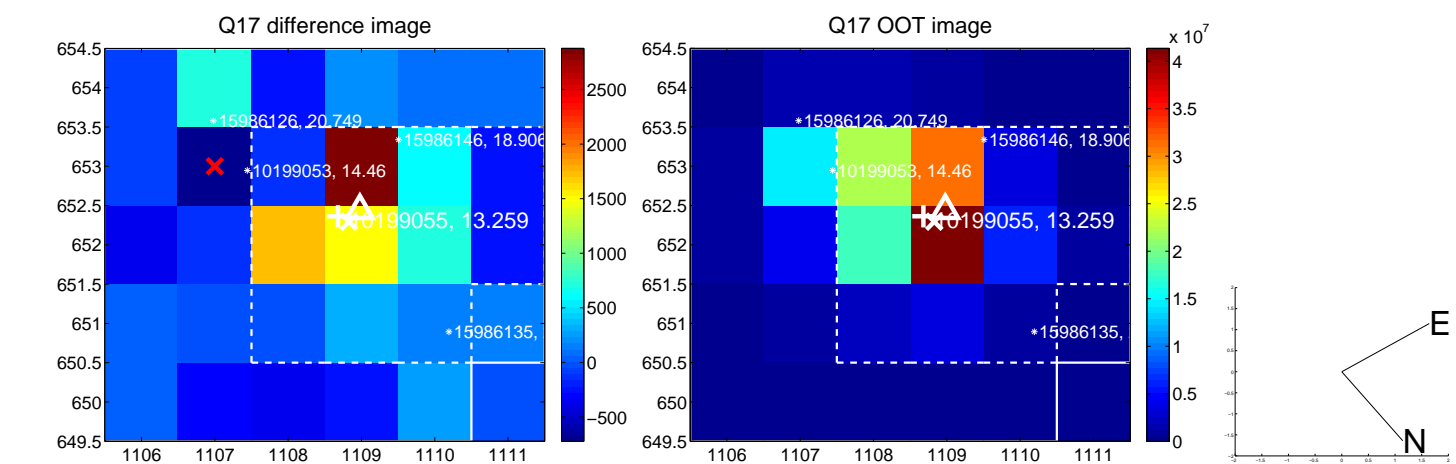
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



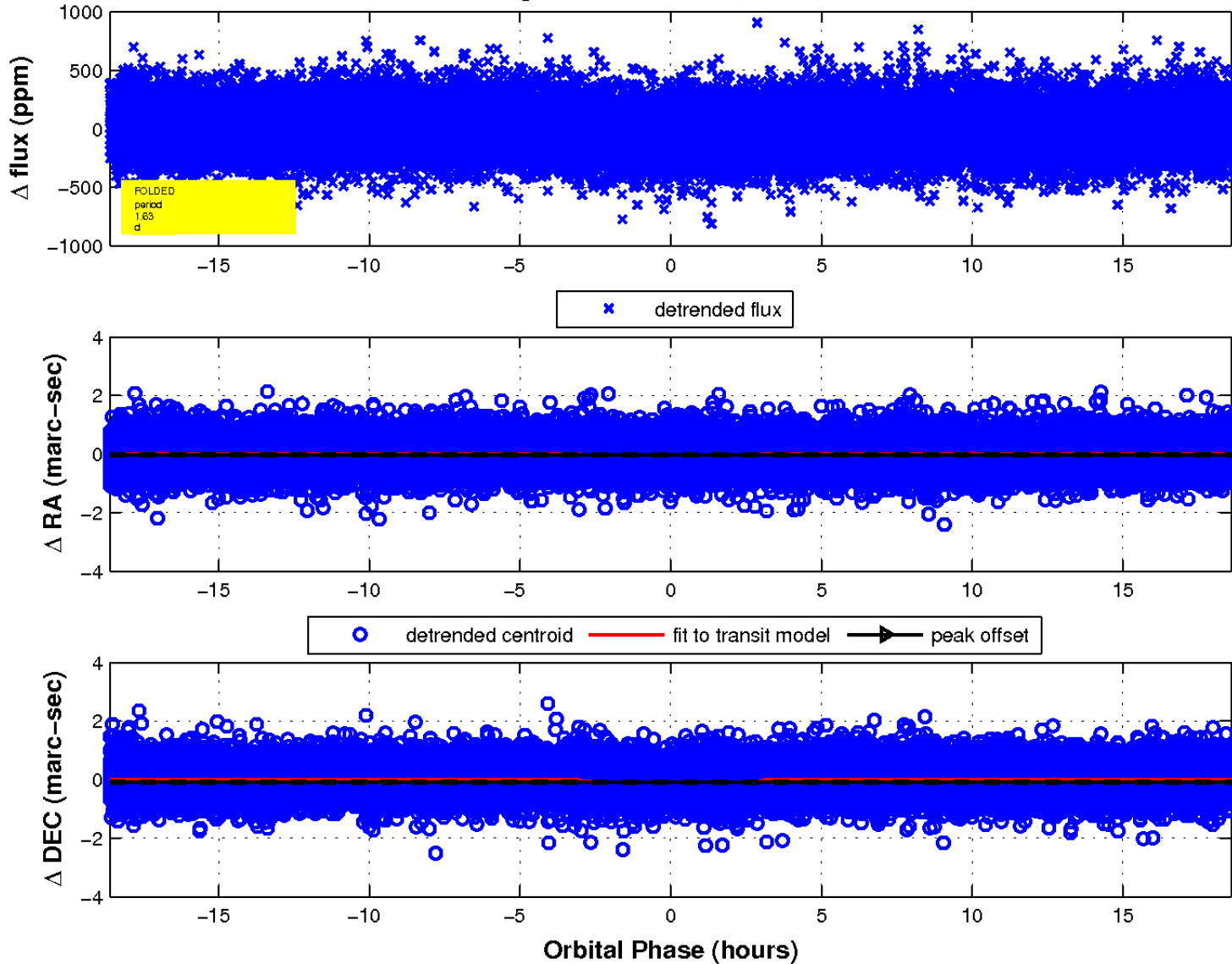
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



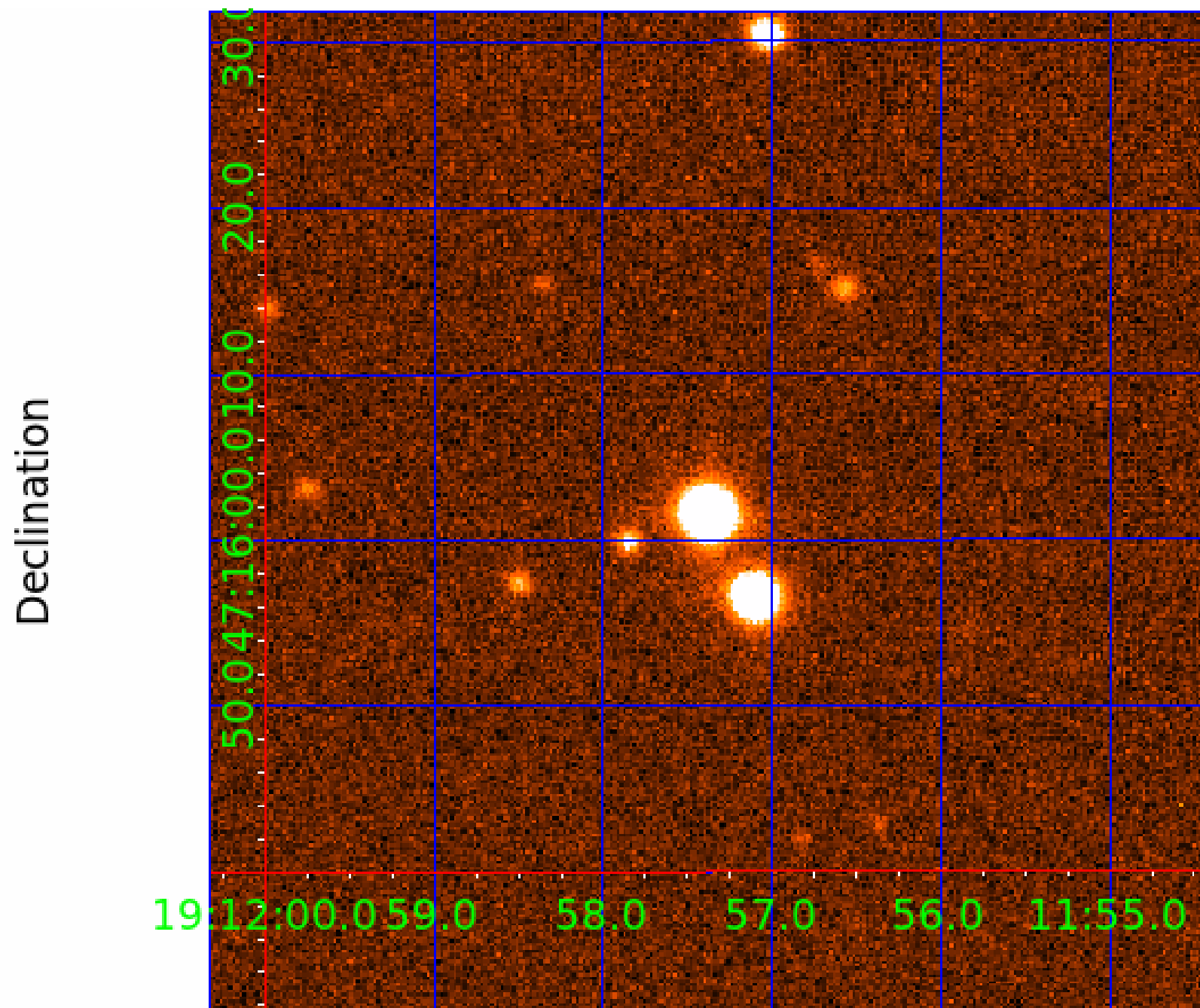
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 010199055

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})
010199055-01	OBS	No	1.634540	131.683818	25.9	6.204	8.4	6.3	2.14	7691	1.13	13657.65
010199055-02	OBS	No	197.636850	147.537910	447.4	14.427	9.2	10.4	2.14	7691	5.21	22.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010199055-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
010199055-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—MOD_NONUNIQ_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.

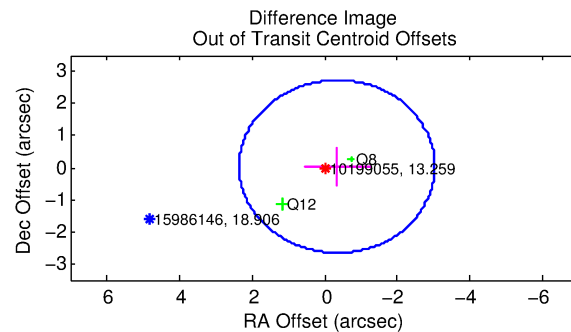
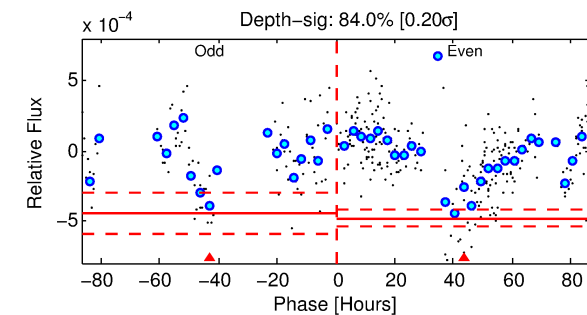
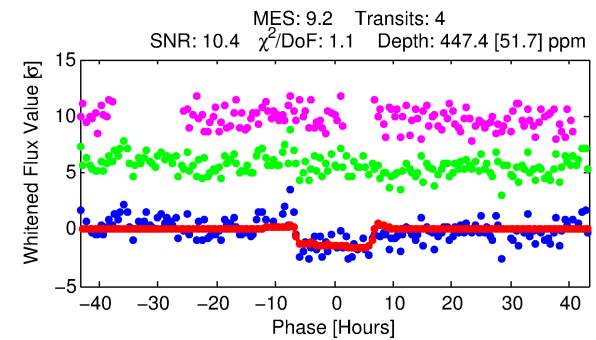
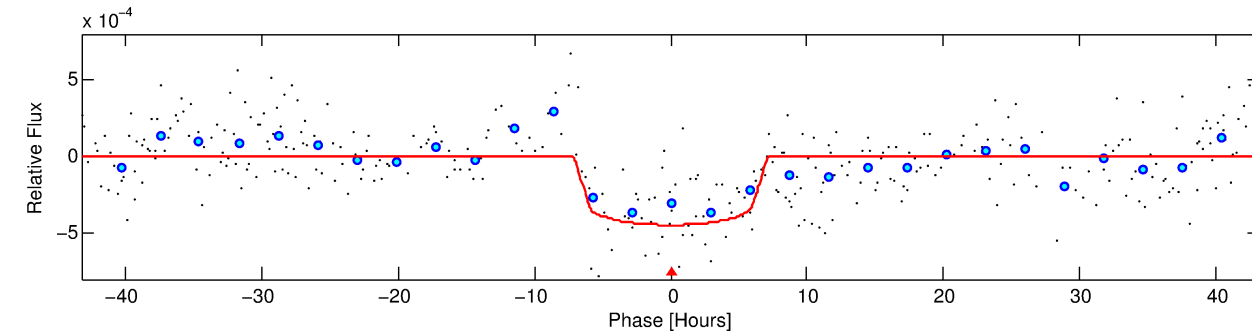
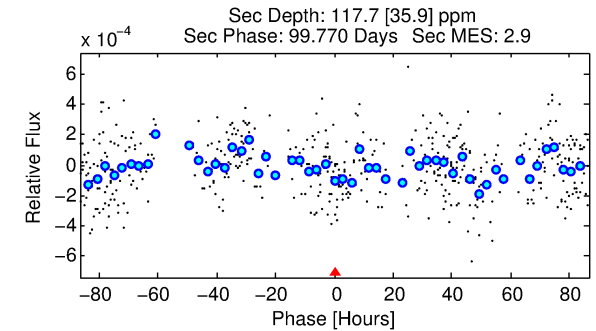
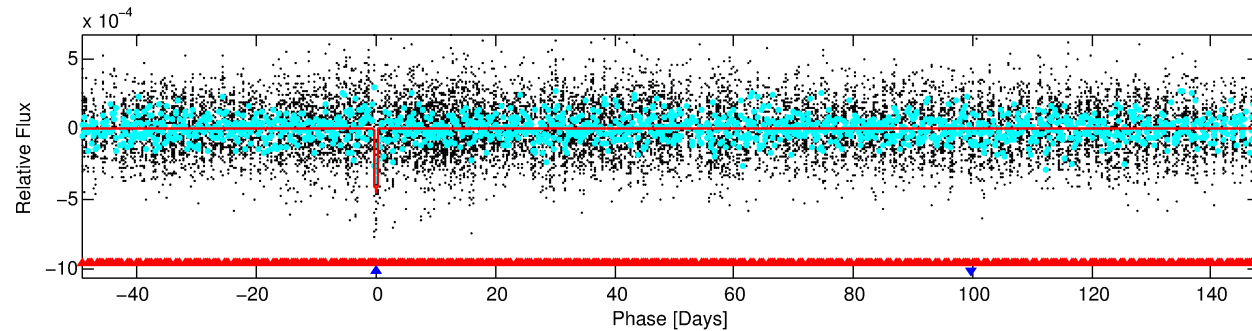
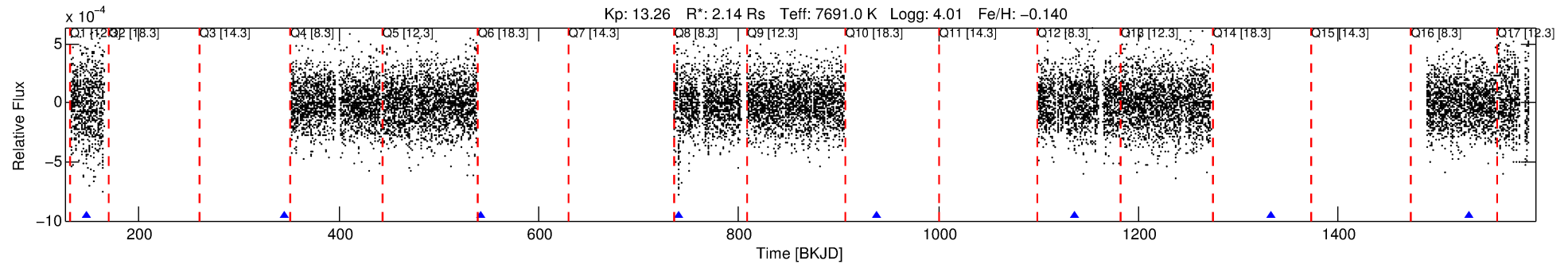
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010199055-02

No Significant Match Found

DV One-Page Summary

KIC: 10199055 Candidate: 2 of 2 Period: 197.637 d



DV Fit Results:

Period = 197.63685 [0.00590] d
Epoch = 147.5379 [0.0231] BKJD
Rp/R* = 0.0223 [0.0019]
a/R* = 53.56 [18.88]
b = 0.89 [0.09]
Seff = 22.84 [9.68]
Teq = 557 [59] K
Rp = 5.21 [1.56] Re
a = 0.7931 [0.2031] AU
Ag = 1499.84 [788.02] [1.90σ]
Teffp = 5364 [520] K [9.18σ]

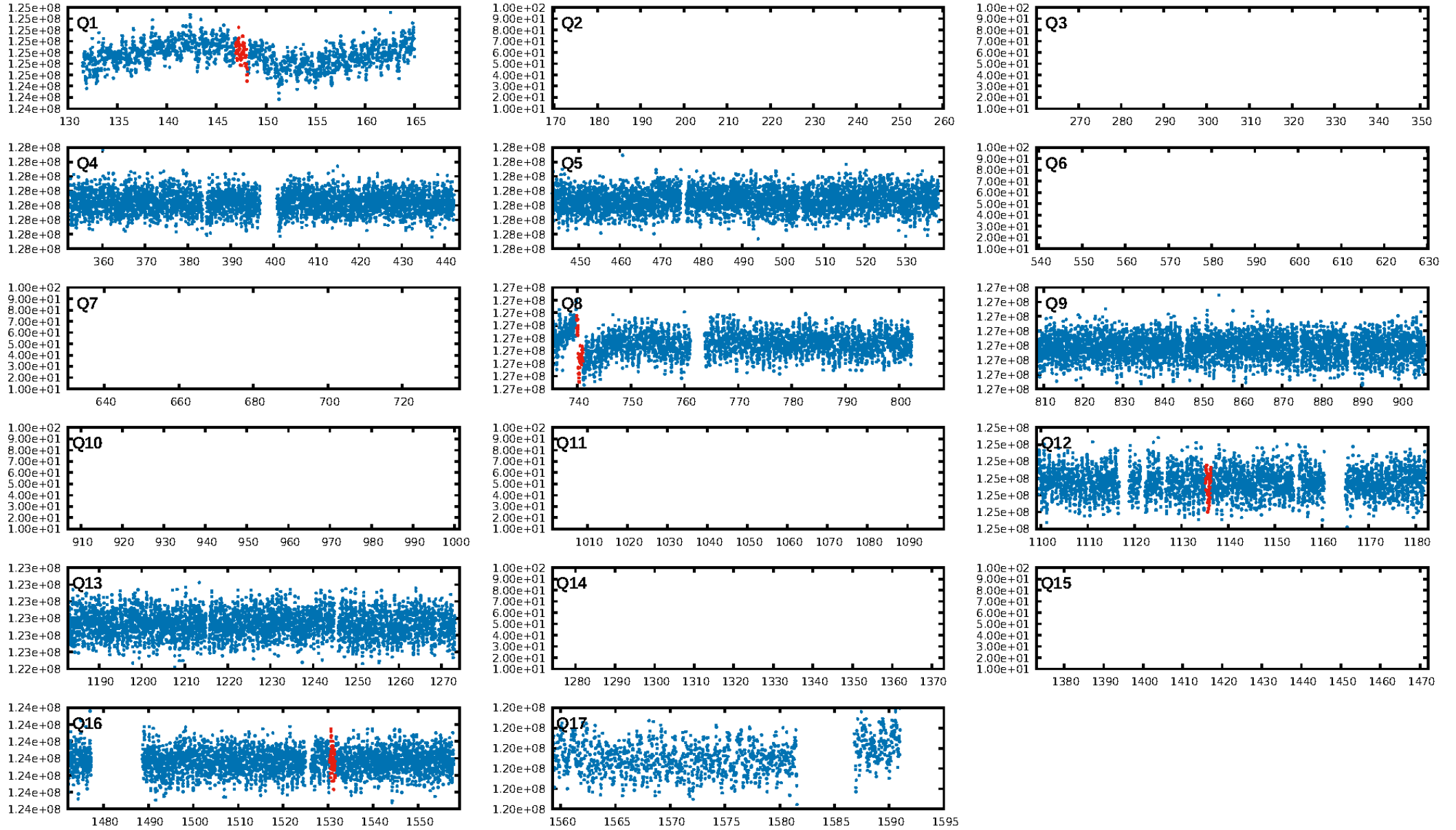
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [299.54σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.35e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -4.789
Centroid-sig: 68.3%
Centroid-so: 1.469 arcsec [3.85σ]
OotOffset-rm: 0.344 arcsec [0.38σ]
KicOffset-rm: 0.875 arcsec [1.08σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.00 [0/4]

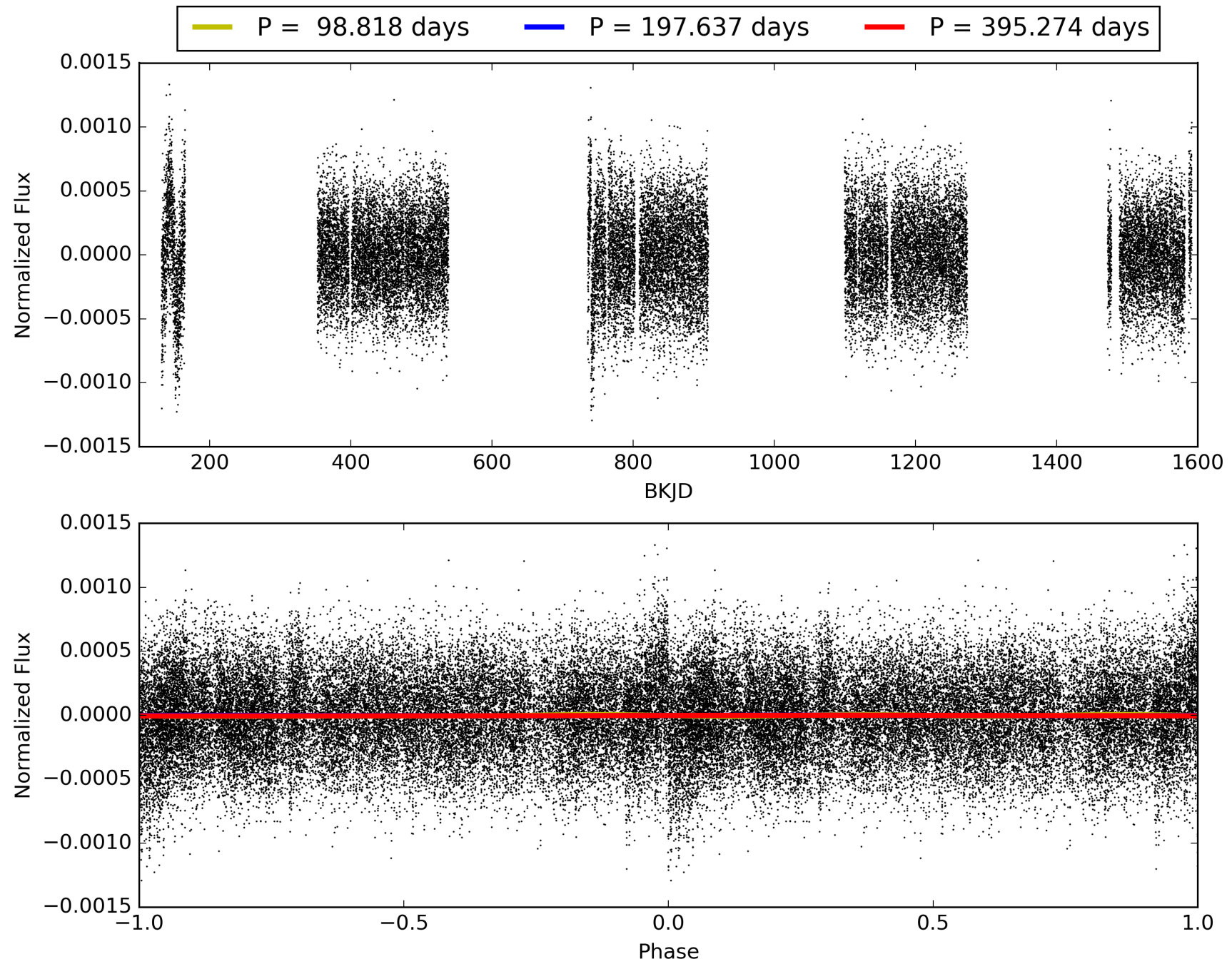
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:20:55 Z

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

TCE 010199055-02, PDC Light Curves

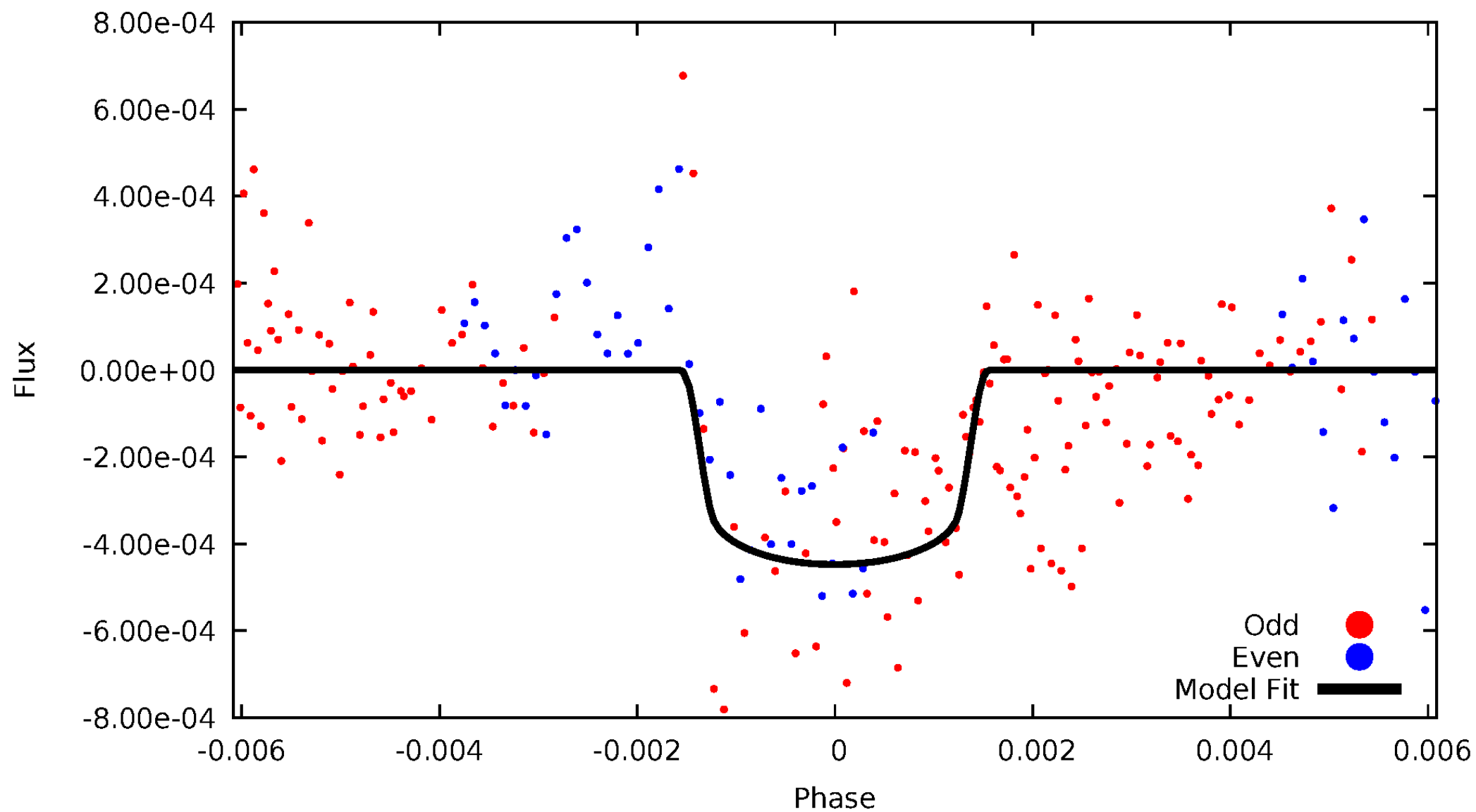


TCE 010199055-02



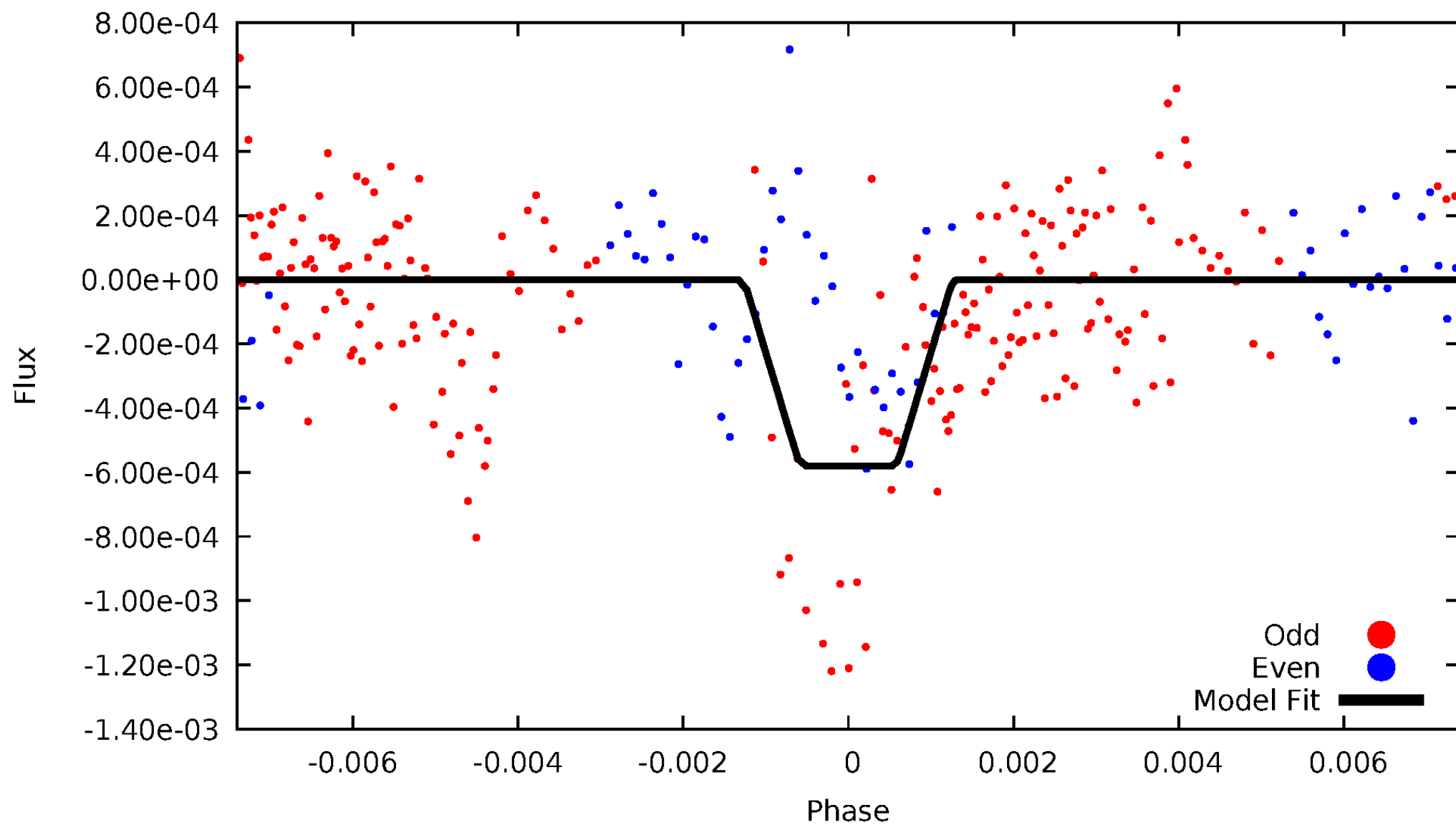
DV Odd/Even

TCE 010199055-02



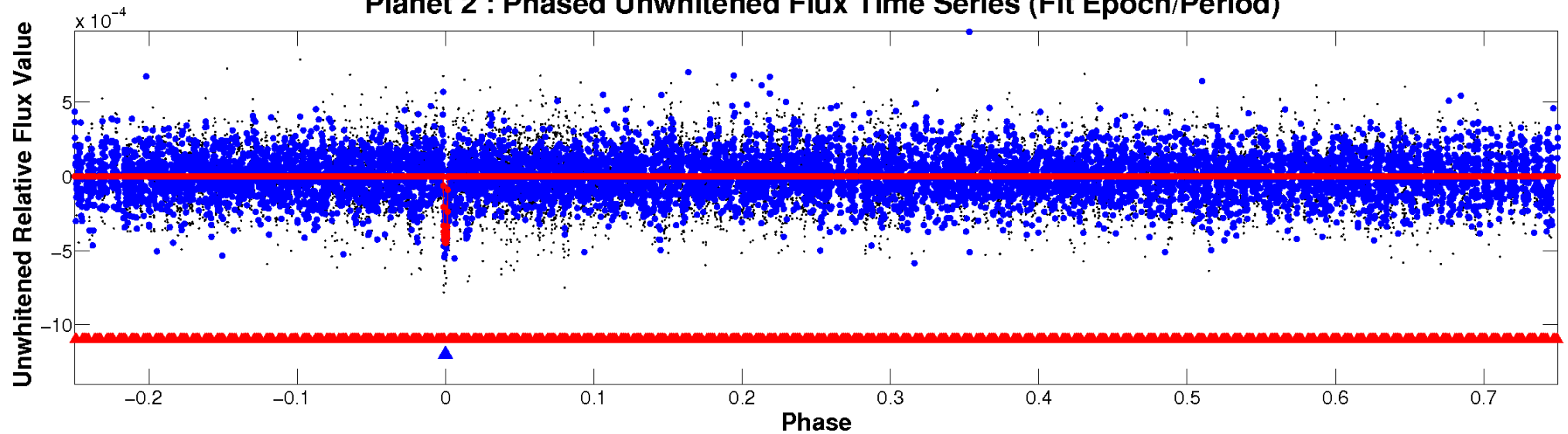
ALT Odd/Even

TCE 010199055-02

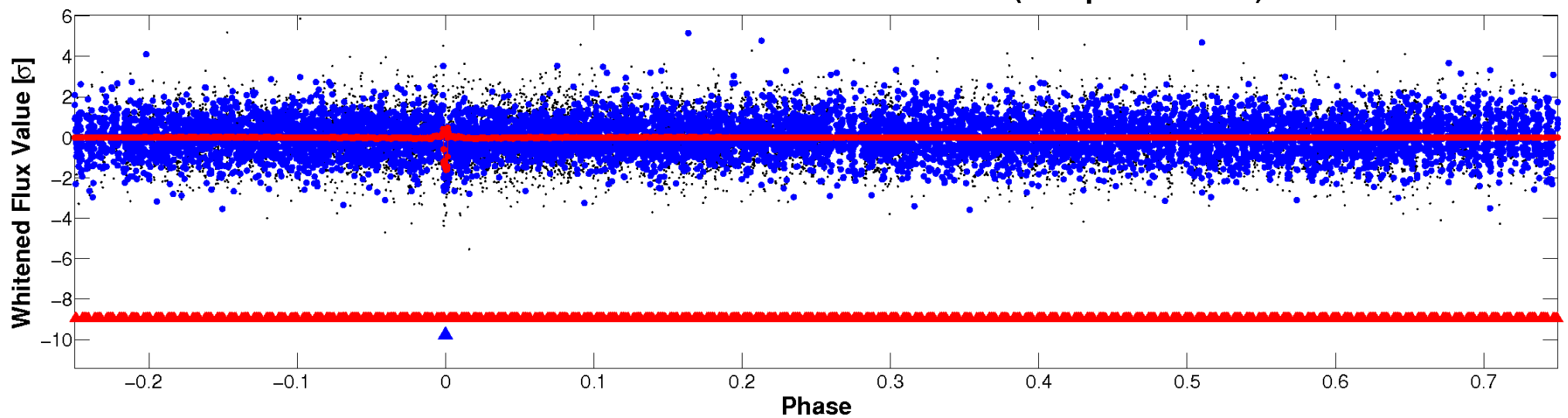


Non-Whitened Vs. Whitened Light Curve

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

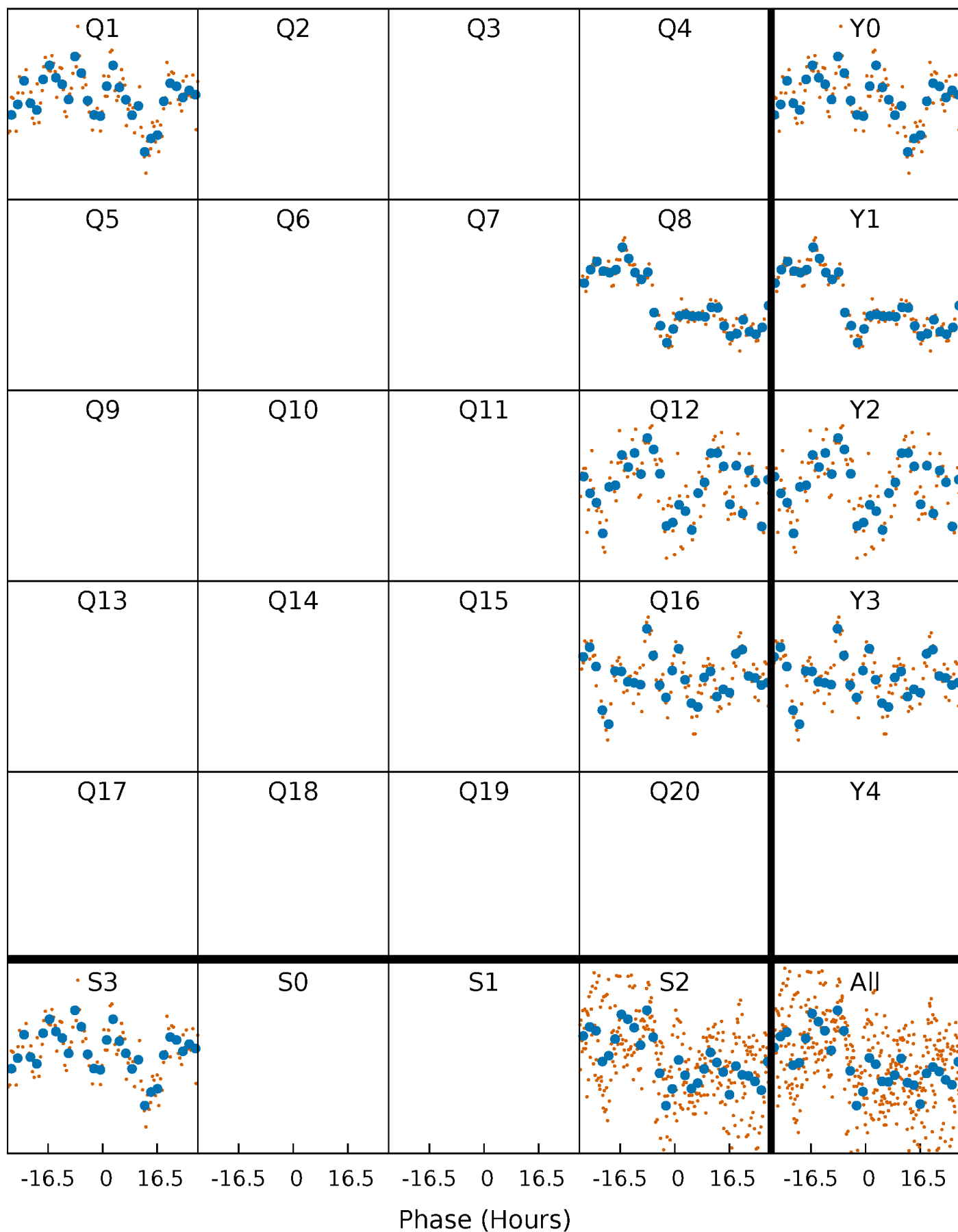


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



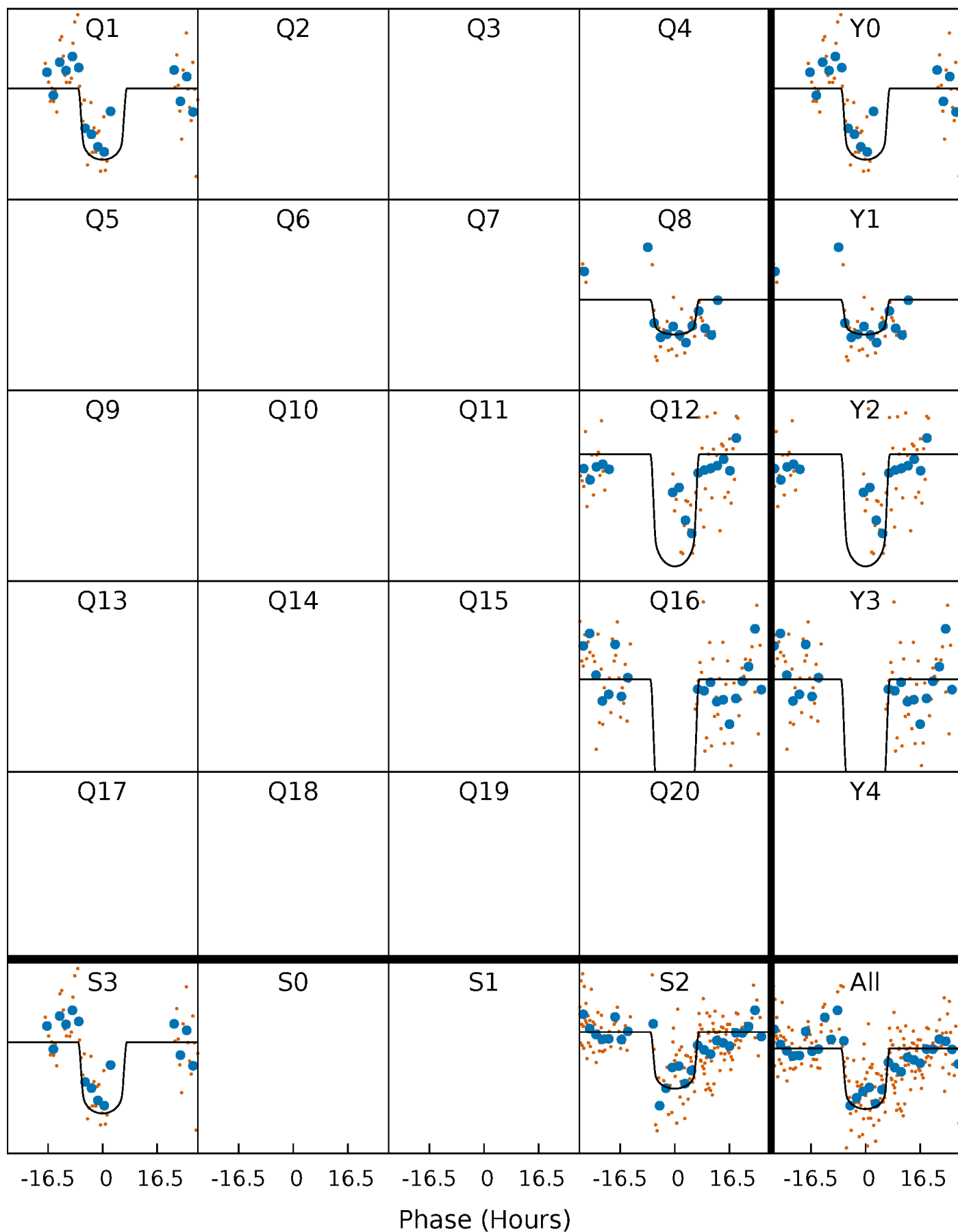
PDC Quarter-Phased Transit Curves

TCE 010199055-02 $P=197.636850$ Days $T_0=147.537910$ (BKJD)



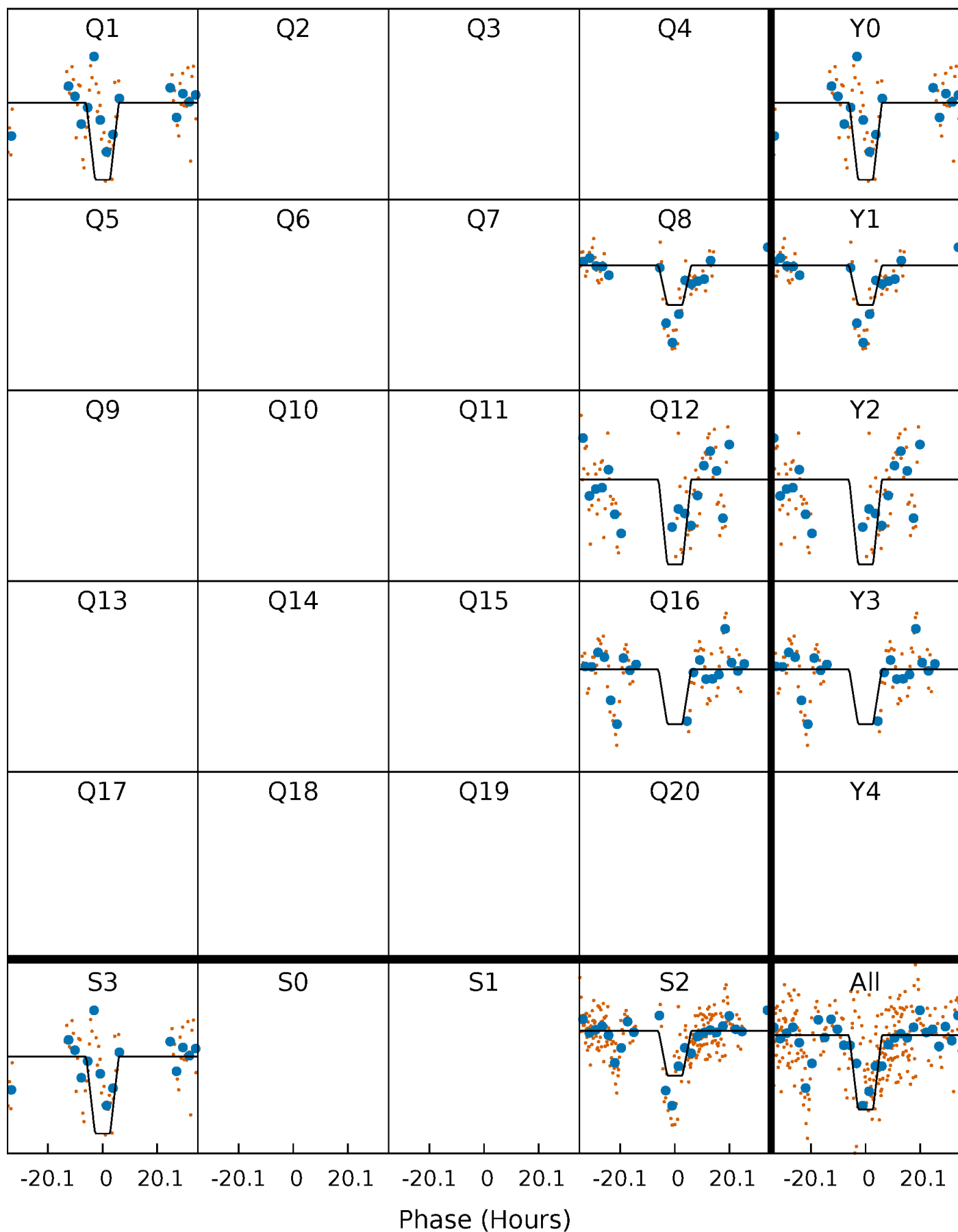
DV Quarter-Phased Transit Curves

TCE 010199055-02 $P=197.636850$ Days $T_0=147.537910$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

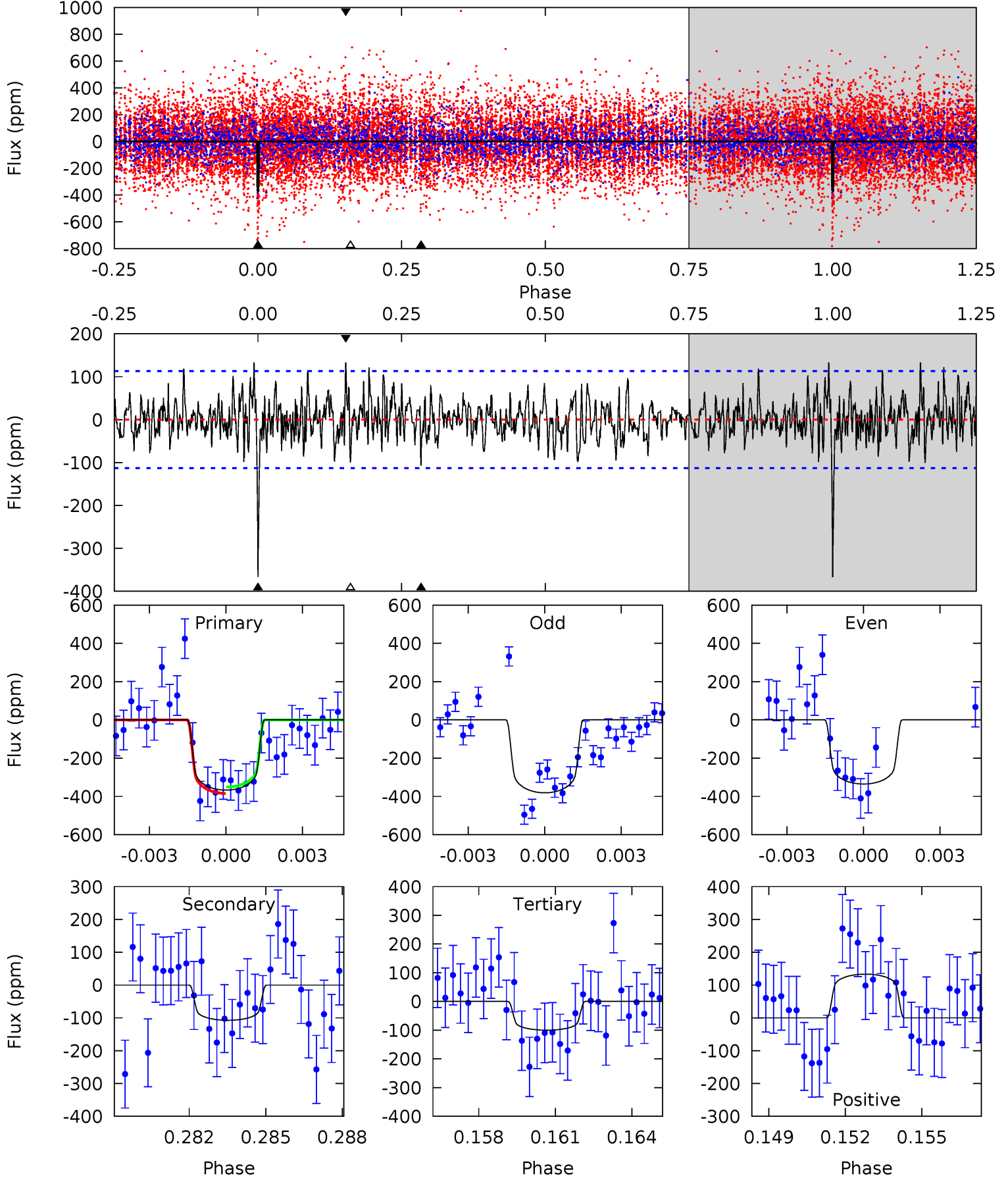
TCE 010199055-02 P=197.667448 Days $T_0=147.366635$ (BKJD)



DV Model-Shift Uniqueness Test

010199055-02, P = 197.636850 Days, E = 147.537910 Days

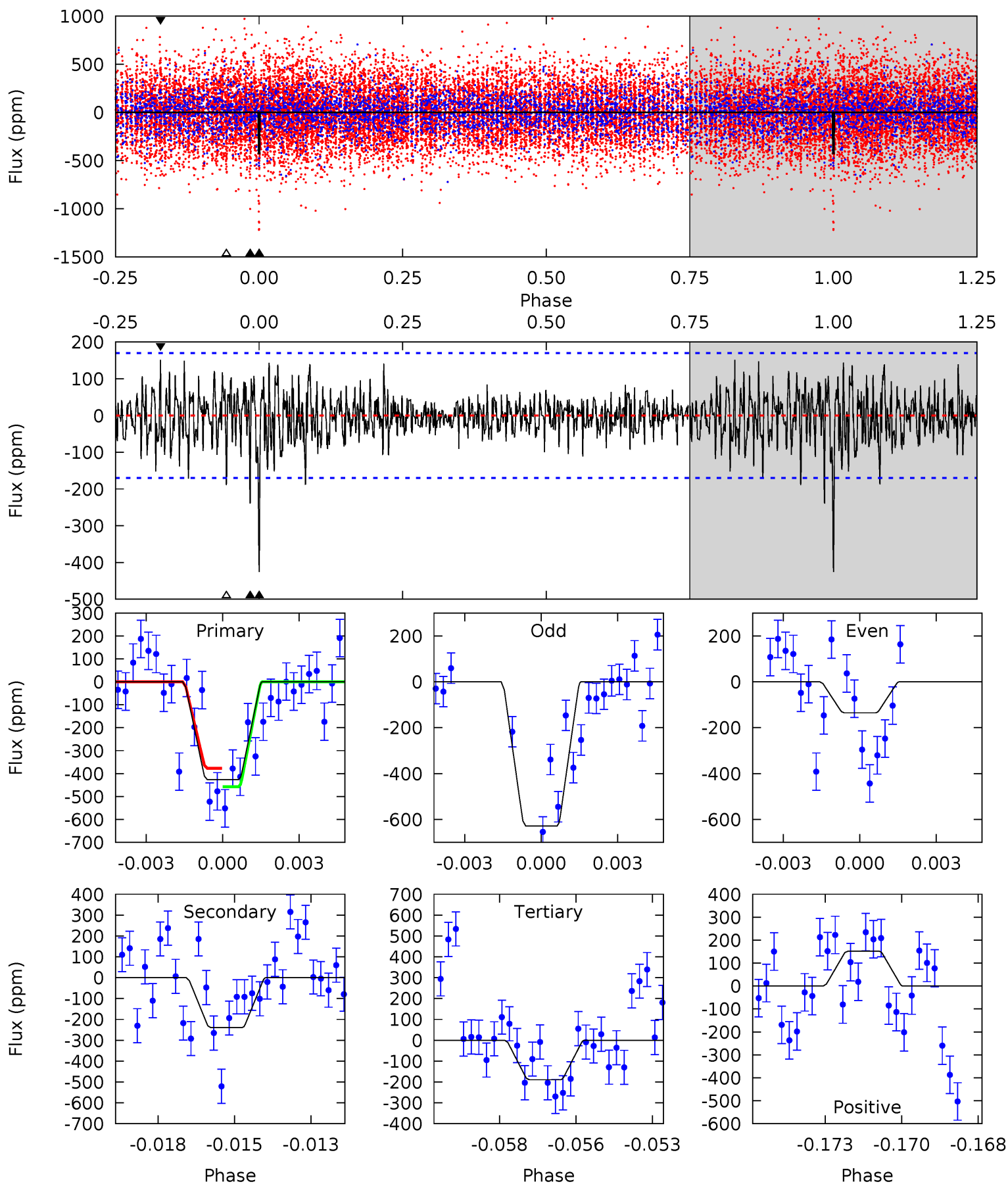
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.0	4.98	4.64	6.18	5.25	2.96	1.70	12.4	10.8	0.34	-1.20	0.96	1.08	0.27	0.77



Alt Model-Shift Uniqueness Test

010199055-02, P = 197.667448 Days, E = 147.366635 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	7.45	5.89	4.71	5.28	3.02	1.51	7.36	8.54	1.57	2.74	7.56	1.74	0.26	1.19



Stellar Parameters For KIC 010199055

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7691^{+211}_{-316}	$4.008^{+0.222}_{-0.148}$	$-0.140^{+0.200}_{-0.350}$	$2.141^{+0.502}_{-0.614}$	$1.700^{+0.198}_{-0.322}$	$0.244^{+0.312}_{-0.103}$
	+3%/-4%	+6%/-4%	+143%/-250%	+23%/-29%	+12%/-19%	+128%/-42%
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 010199055-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-107 ± 22	$5.13^{+0.89}_{-0.90}$	774^{+53}_{-63}	5176^{+339}_{-317}	1391^{+716}_{-433}
Alt.	-240 ± 32	$5.51^{+1.00}_{-0.88}$	774^{+60}_{-63}	6026^{+376}_{-353}	2661^{+1100}_{-762}

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 $A_{obs} \gg 1.0$

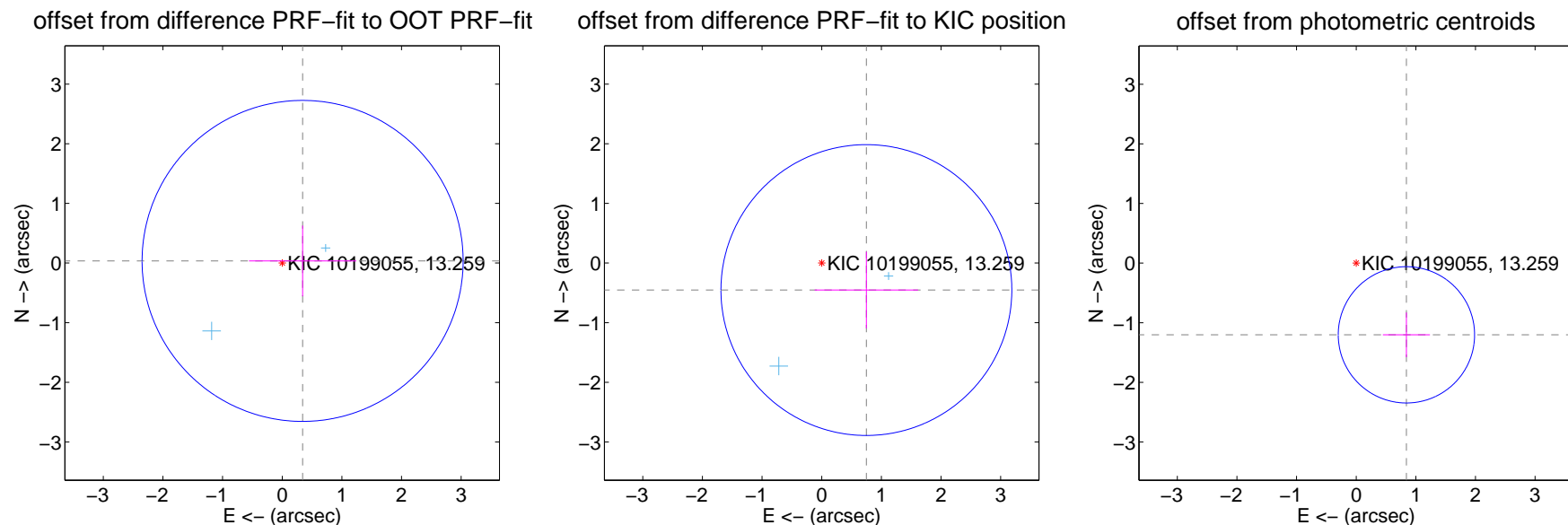
DV Centroid Data

Supplemental centroid analysis for 010199055-02. Kepler magnitude: 13.26. Transit SNR 10.42

There are 2 quarters with good PRF difference image offsets

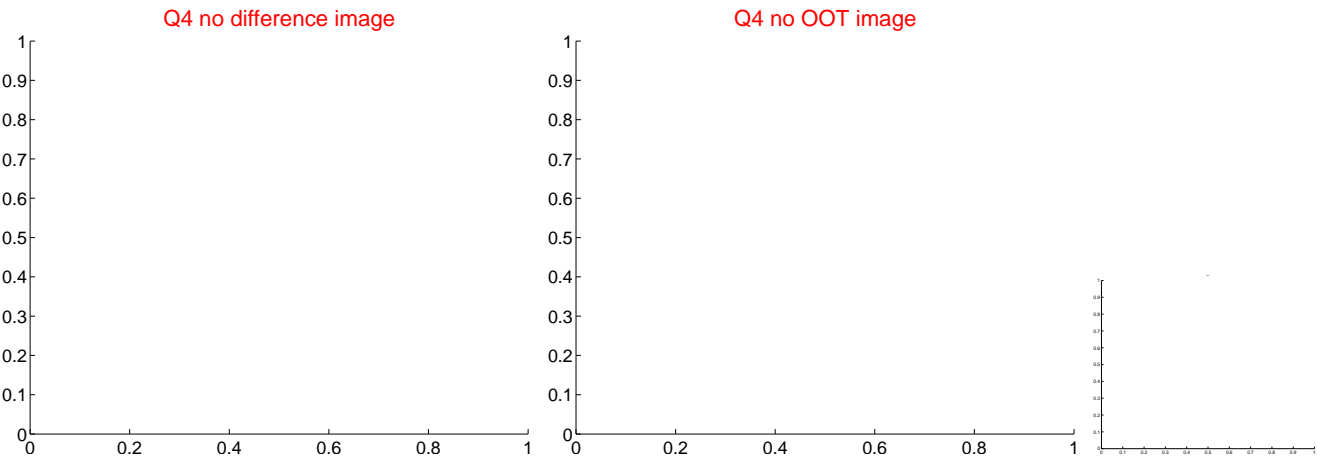
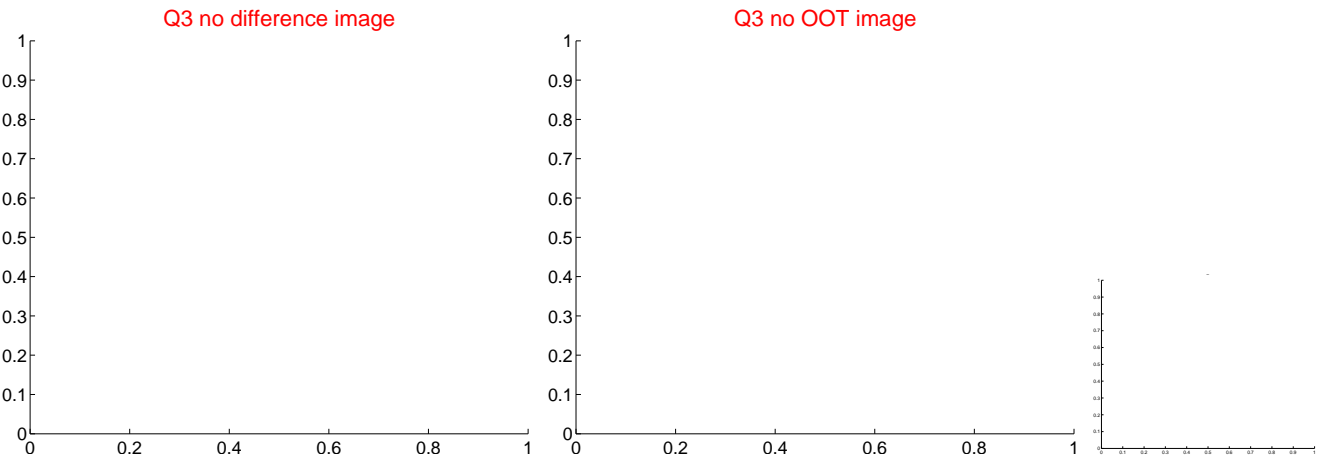
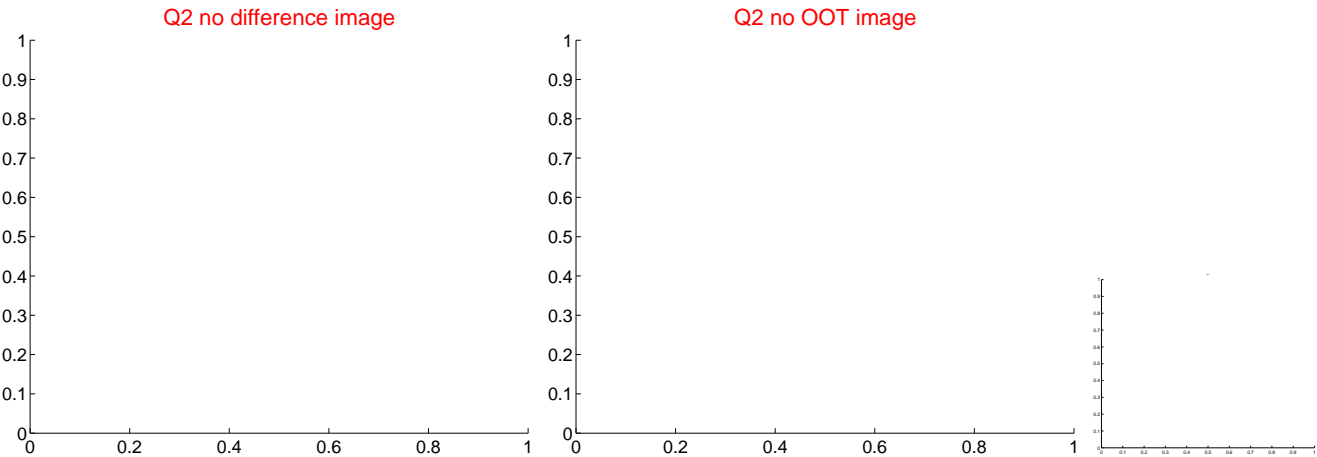
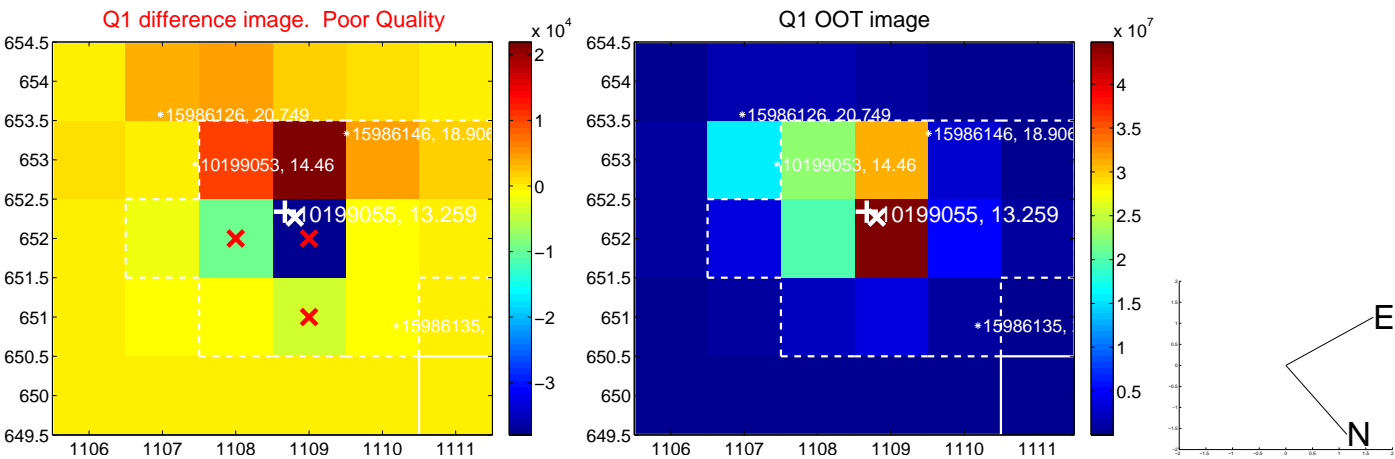
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.344 ± 0.897	0.38	-0.342 ± 0.900	0.036 ± 0.593
PRF-fit source offset from KIC position	0.875 ± 0.813	1.08	-0.749 ± 0.867	-0.453 ± 0.643
photometric centroid source offset	1.47 ± 0.38	3.85	-0.84 ± 0.39	-1.20 ± 0.37

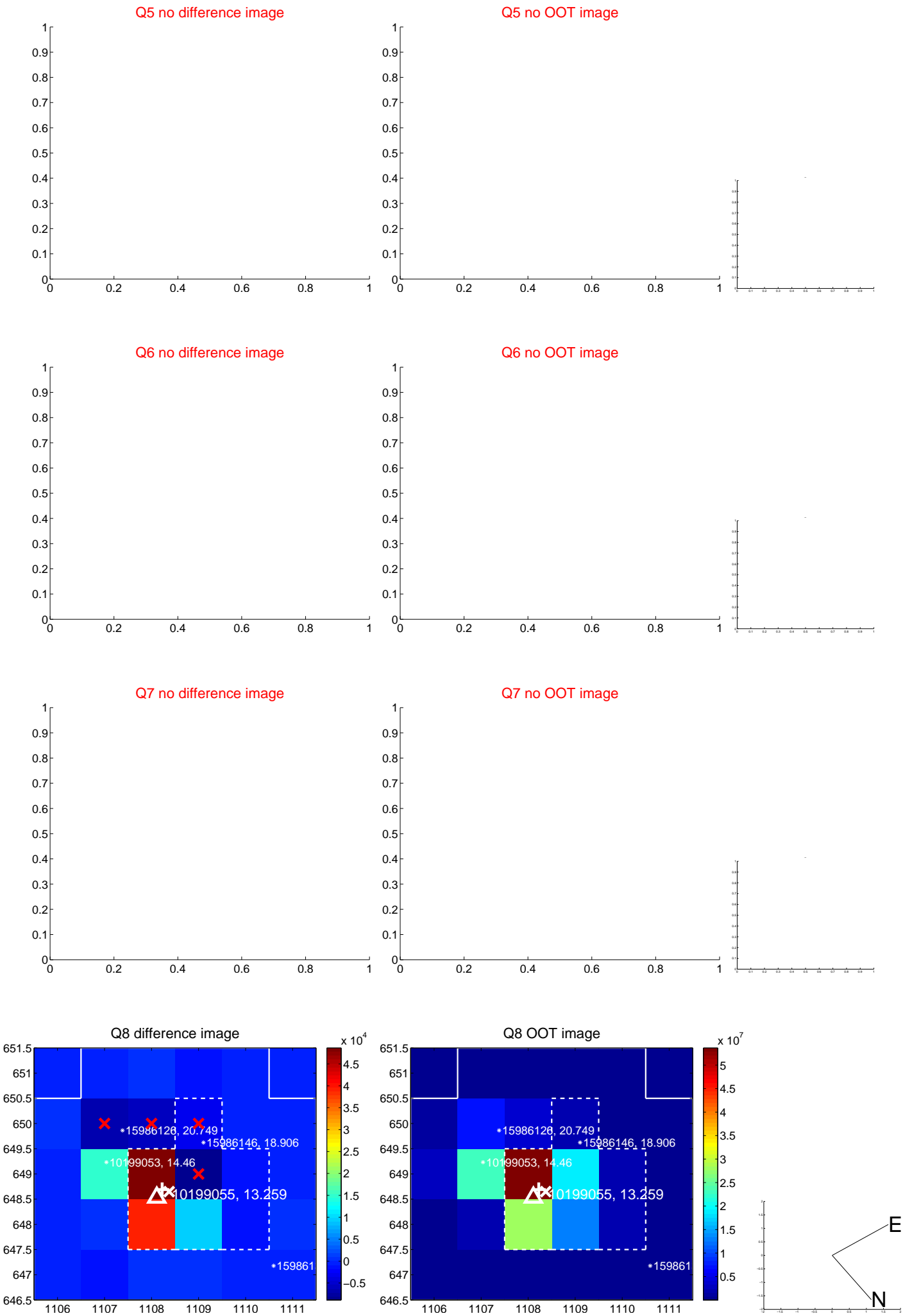


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

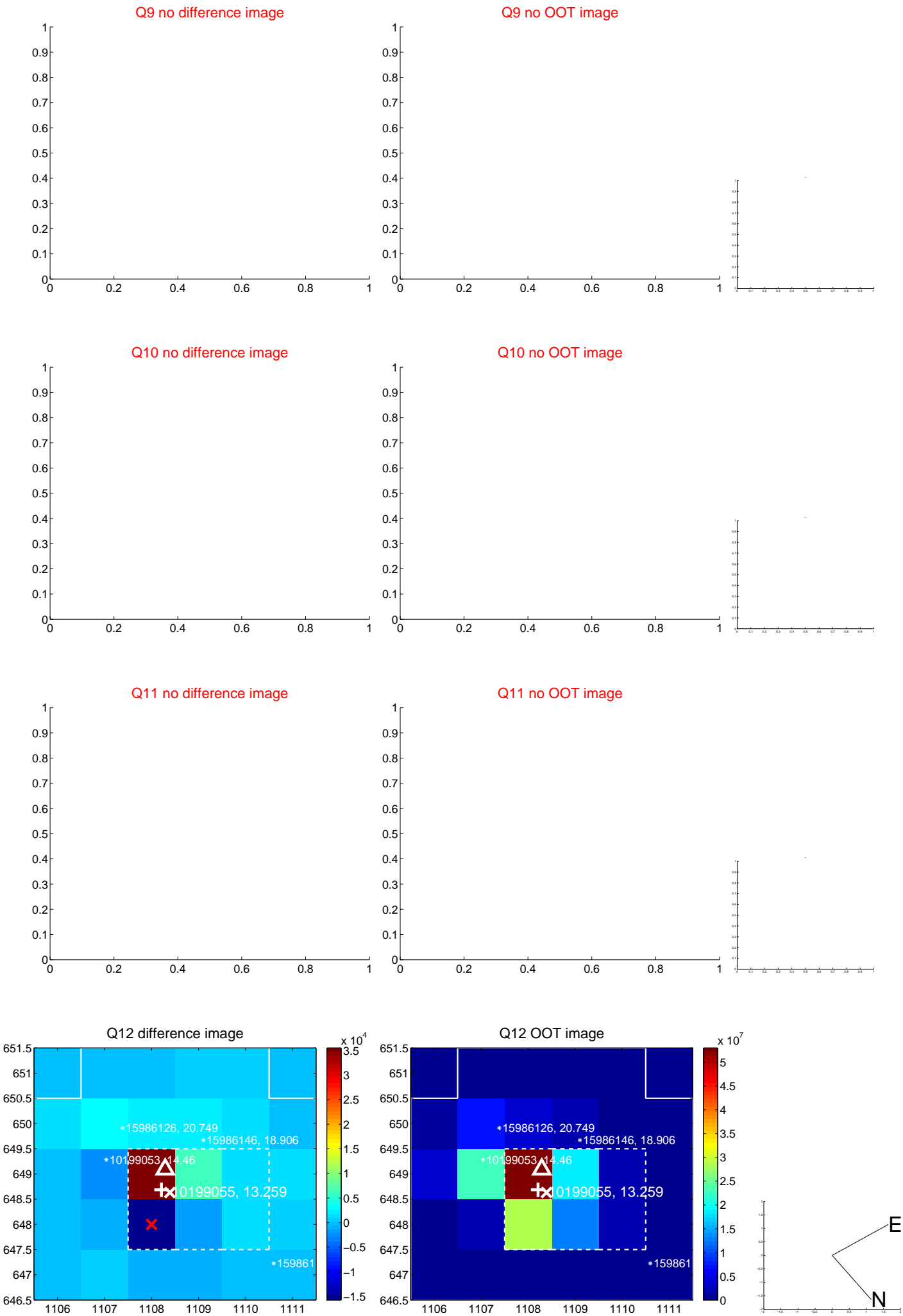
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



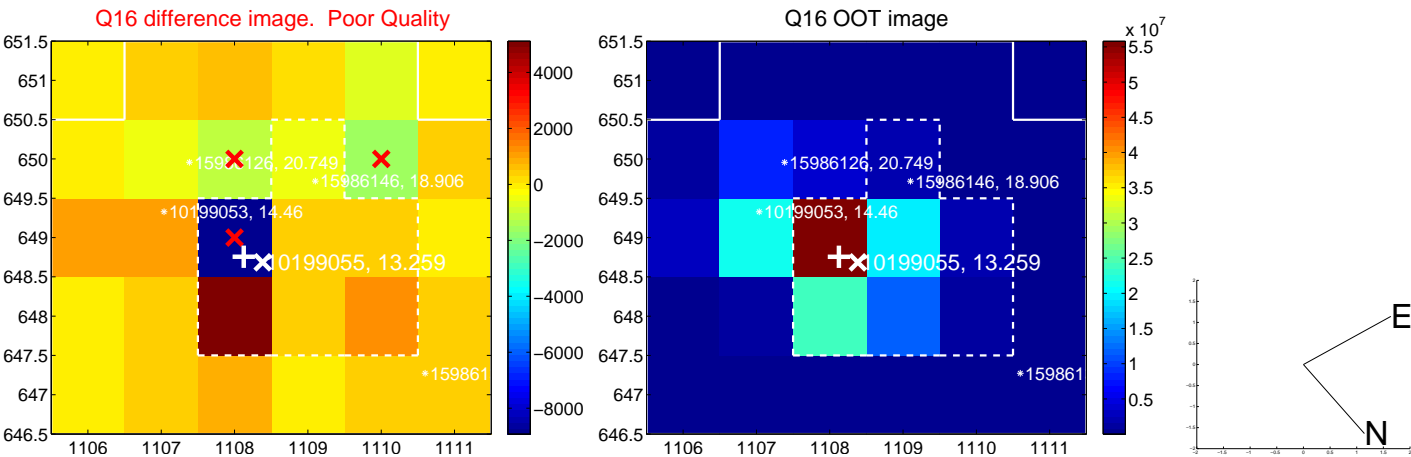
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



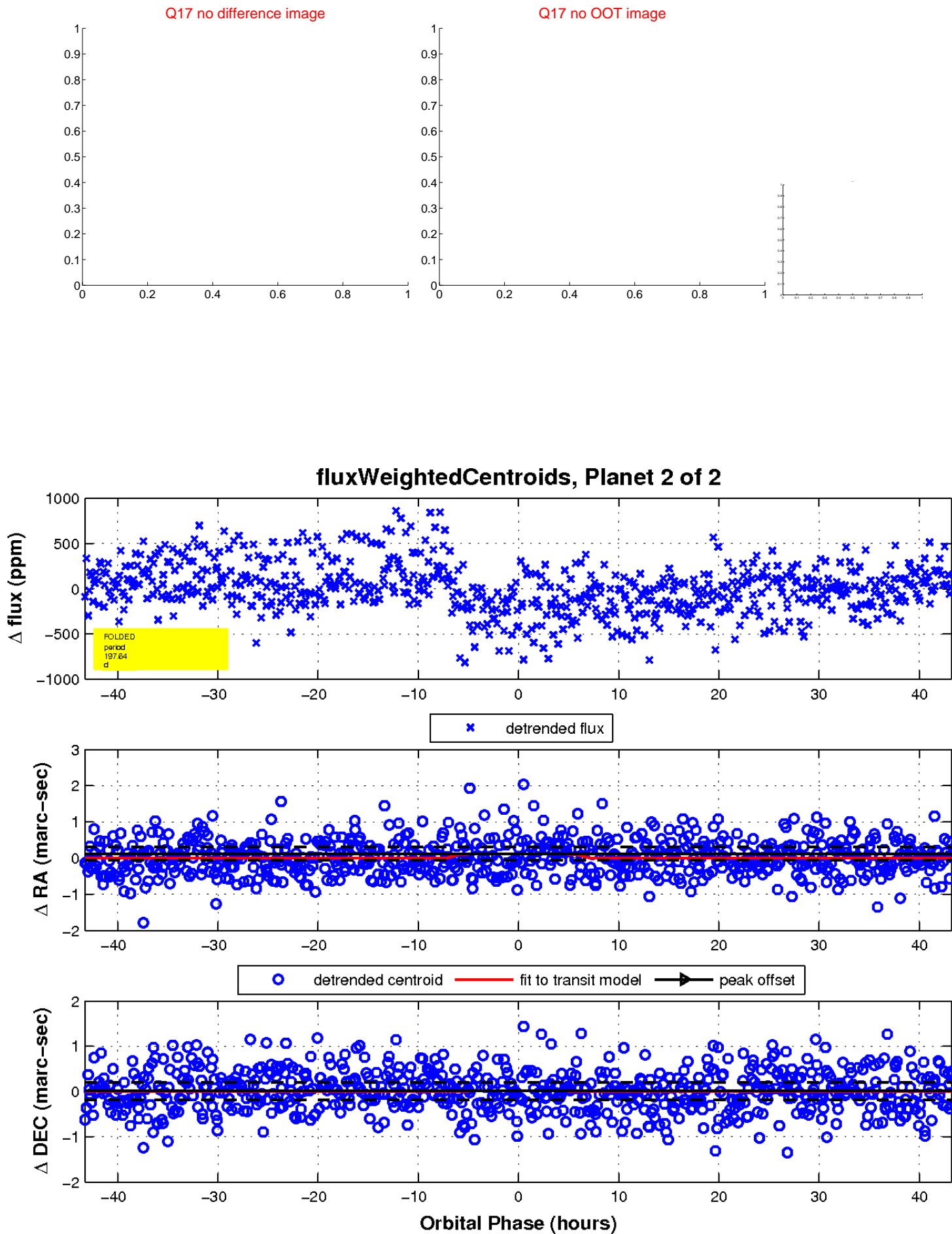
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

