

KIC 006600439

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})
006600439-01	OBS	No	369.812429	143.867051	184.9	26.422	7.3	5.4	0.93	6046	1.34	1.00
006600439-02	OBS	No	368.193036	308.847036	759.5	32.759	8.0	6.9	0.93	6046	4.93	1.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006600439-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS—HALO_GHOST
006600439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

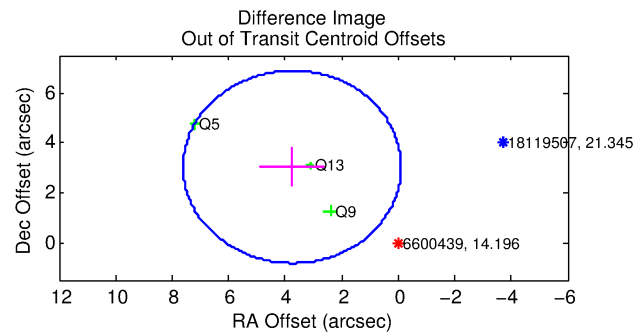
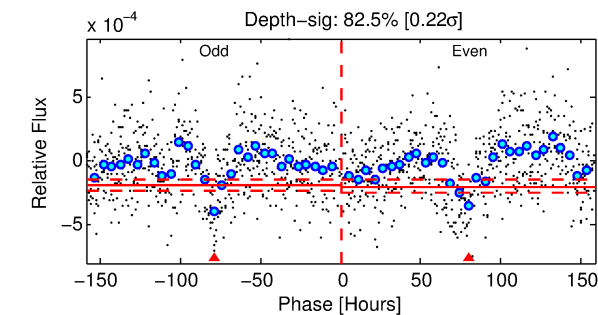
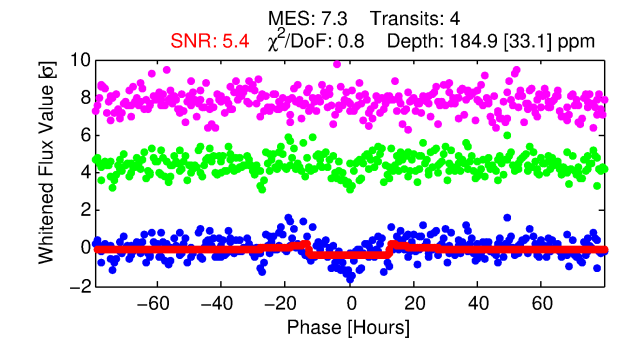
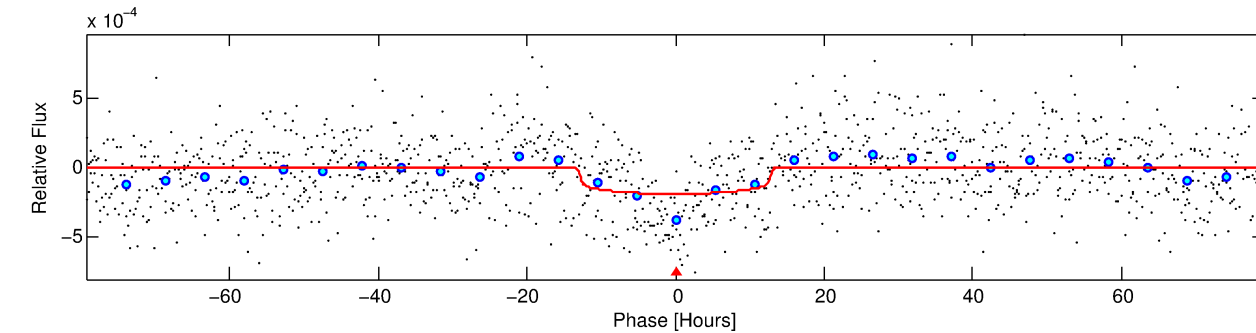
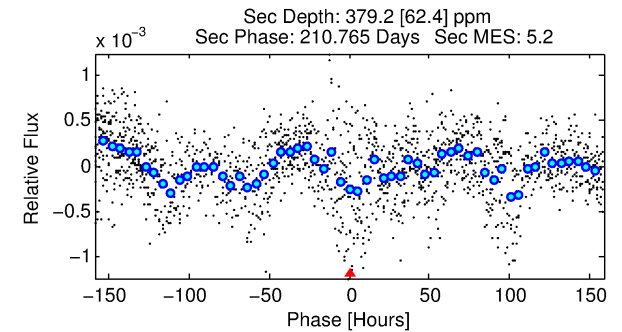
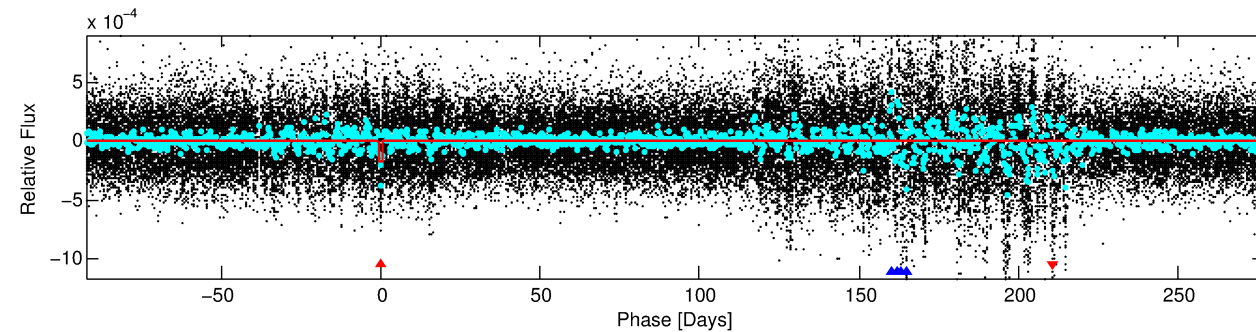
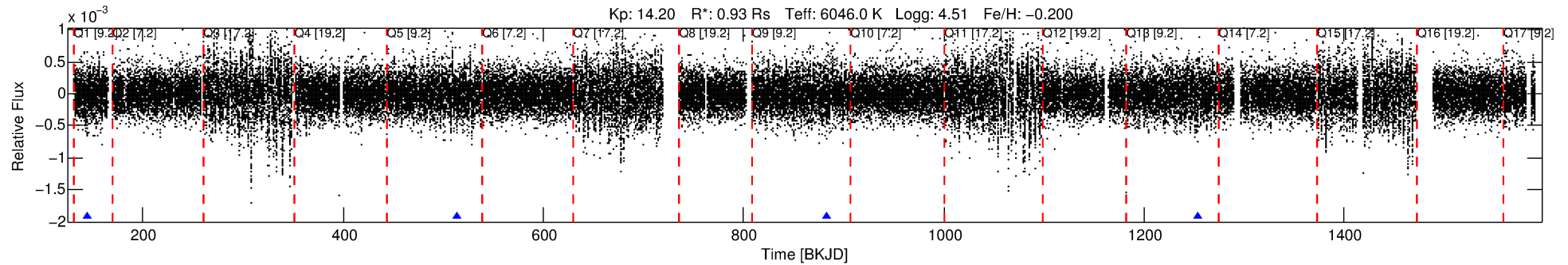
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006600439-01

No Significant Match Found

DV One-Page Summary

KIC: 6600439 Candidate: 1 of 2 Period: 369.812 d



DV Fit Results:

Period = 369.81243 [0.01714] d
Epoch = 143.8671 [0.0333] BKJD
Rp/R* = 0.0132 [0.0044]
a/R* = 80.58 [125.14]
b = 0.68 [1.25]
Seff = 1.00 [0.40]
Teq = 255 [26] K
Rp = 1.34 [0.61] Re
a = 1.0125 [0.2665] AU
Ag = 119318.30 [93175.73] [1.28 σ]
Teff = 7334 [1268] K [5.58 σ]

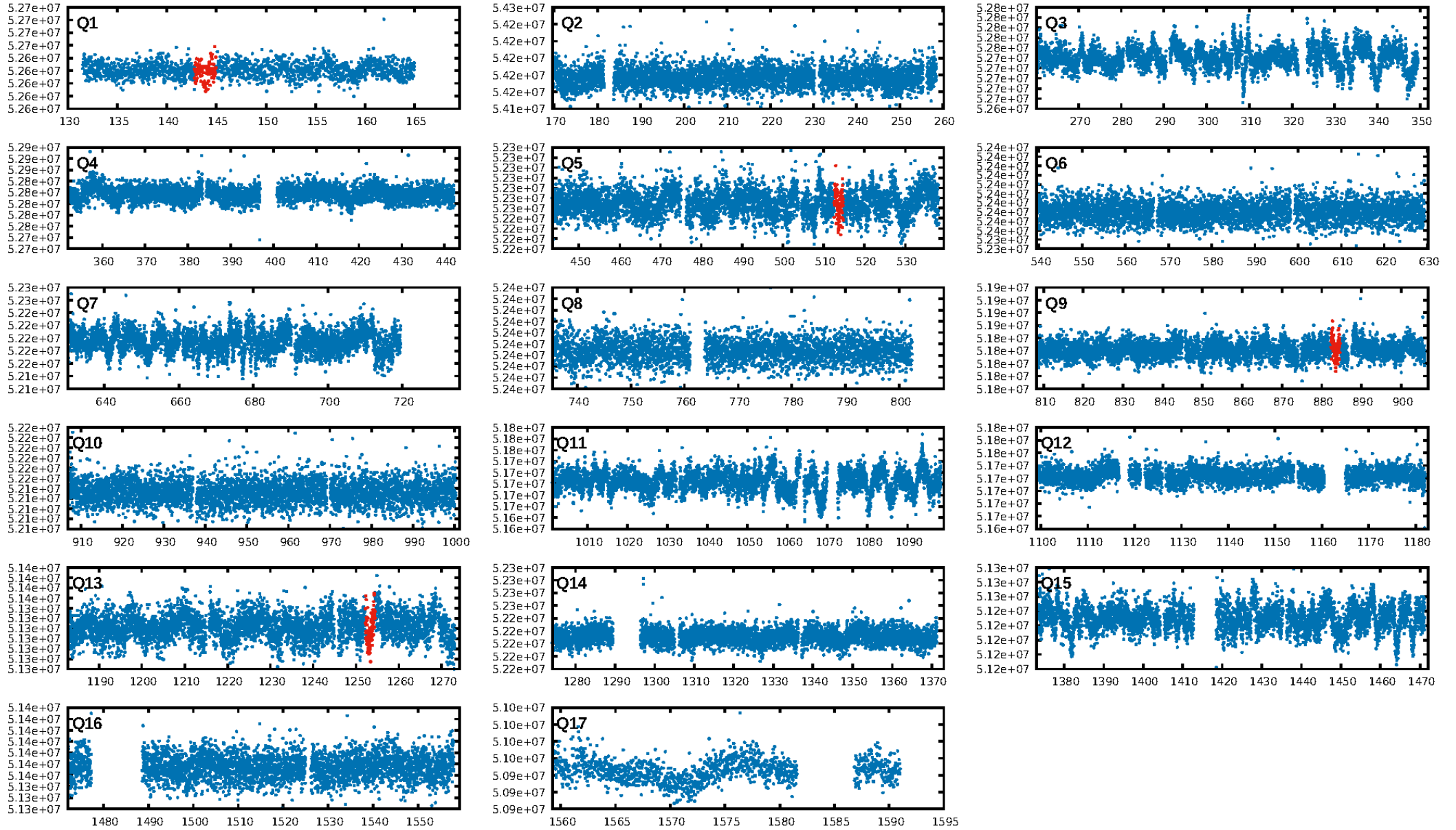
DV Diagnostic Results:

ShortPeriod-sig: 64.4% [0.92 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 39.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.96e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.1732
Centroid-sig: 57.7%
Centroid-so: 1.621 arcsec [0.69 σ]
OotOffset-rm: 4.822 arcsec [3.75 σ]
KicOffset-rm: 4.906 arcsec [3.79 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [4/4]

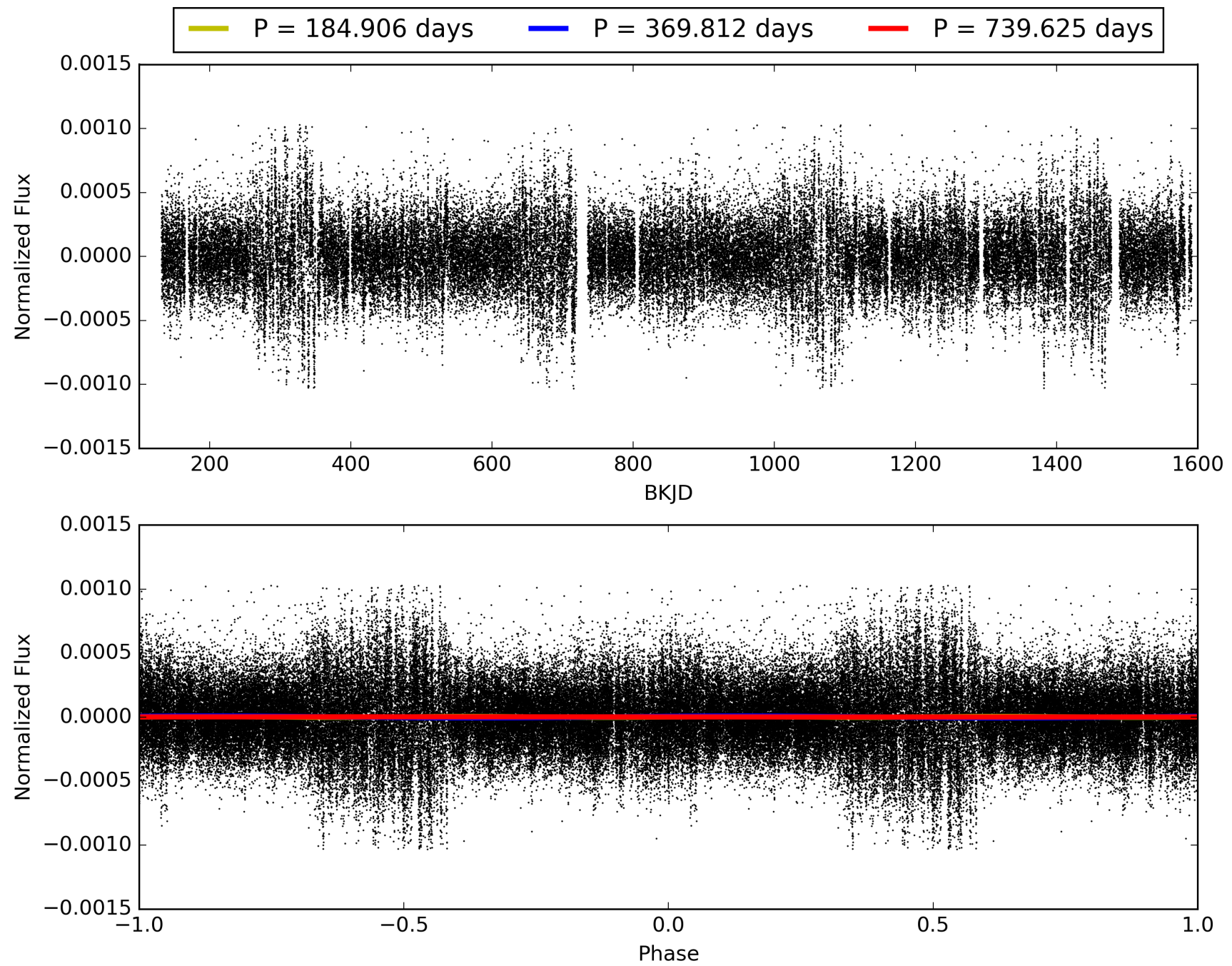
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:52:06 Z

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

TCE 006600439-01, PDC Light Curves

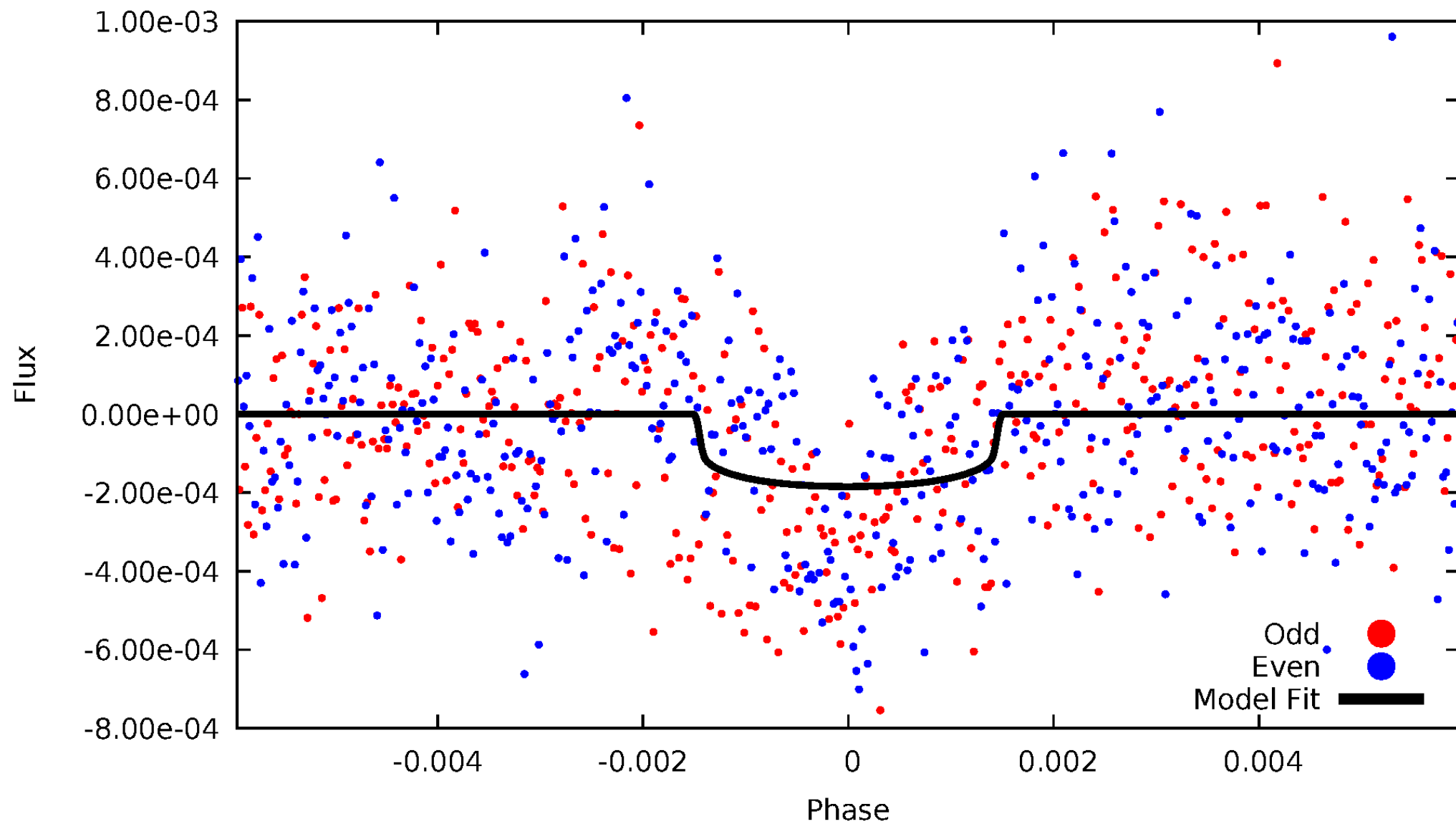


TCE 006600439-01



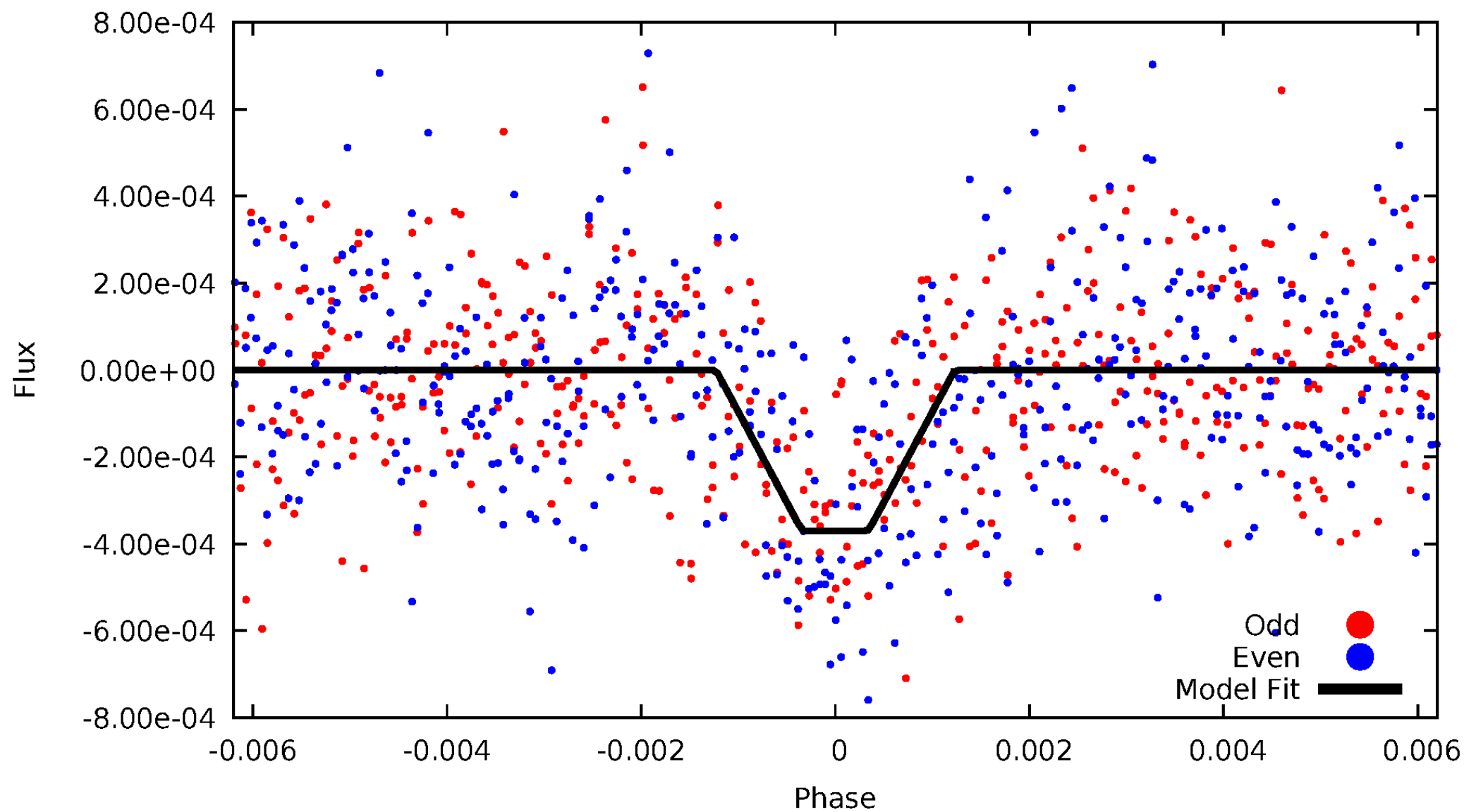
DV Odd/Even

TCE 006600439-01

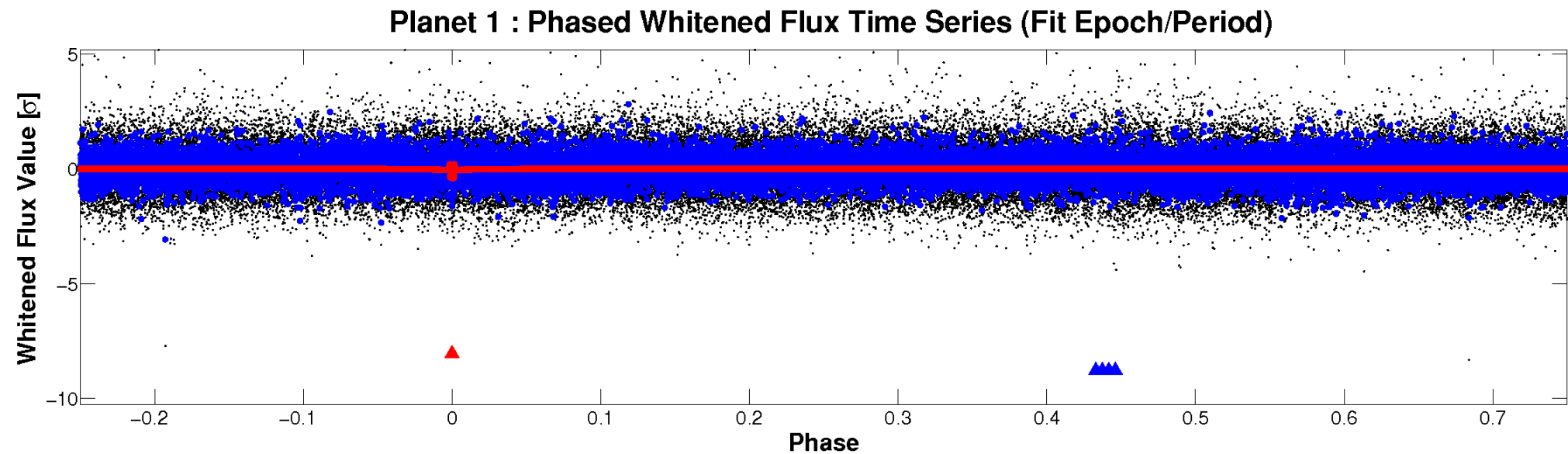
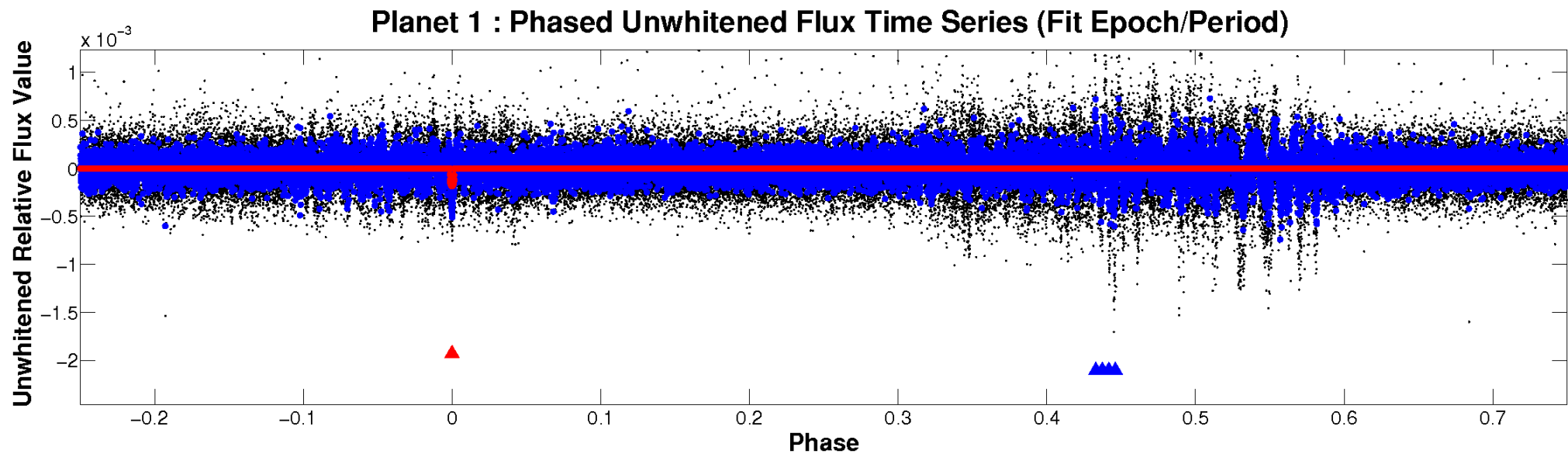


ALT Odd/Even

TCE 006600439-01

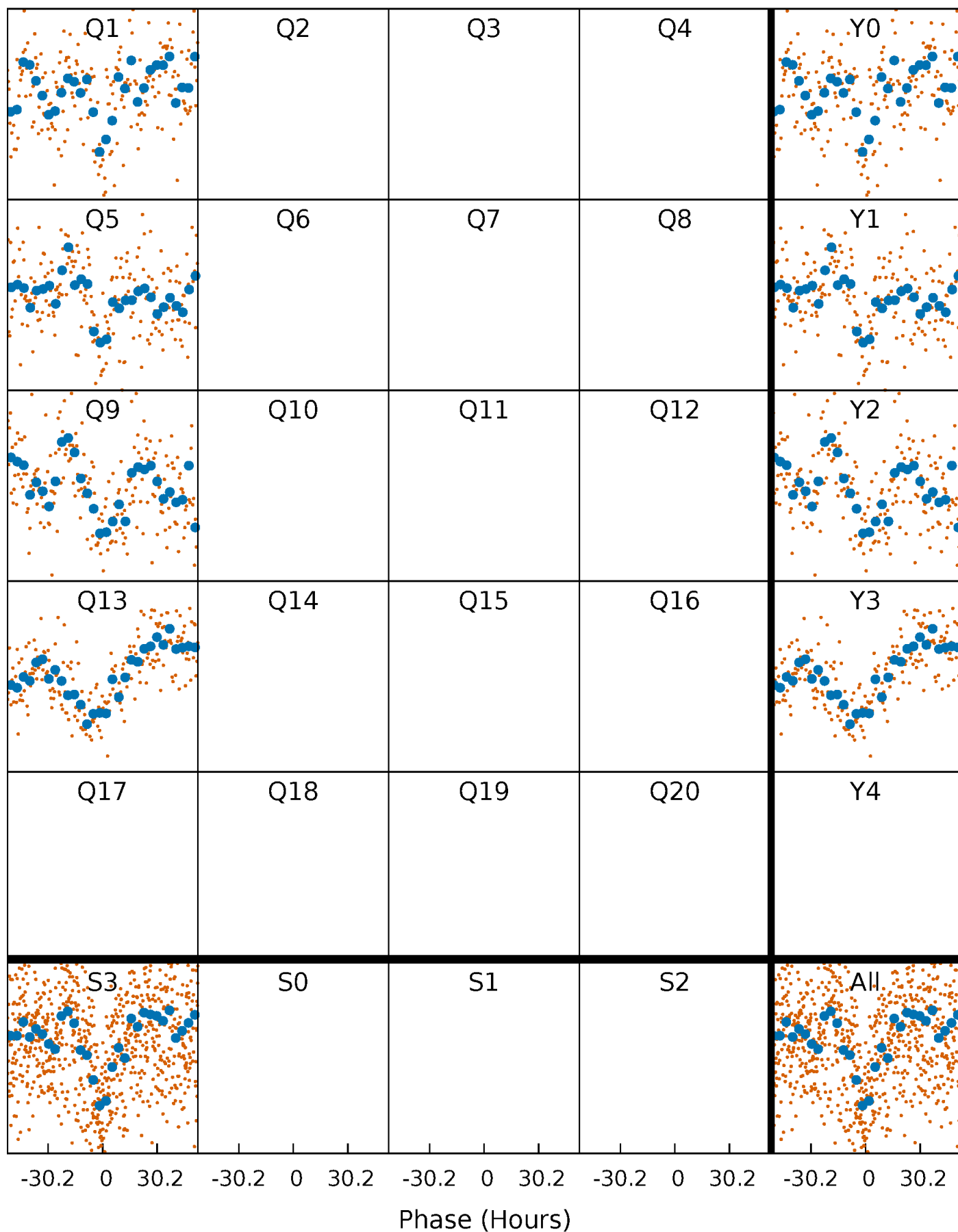


Non-Whitened Vs. Whitened Light Curve



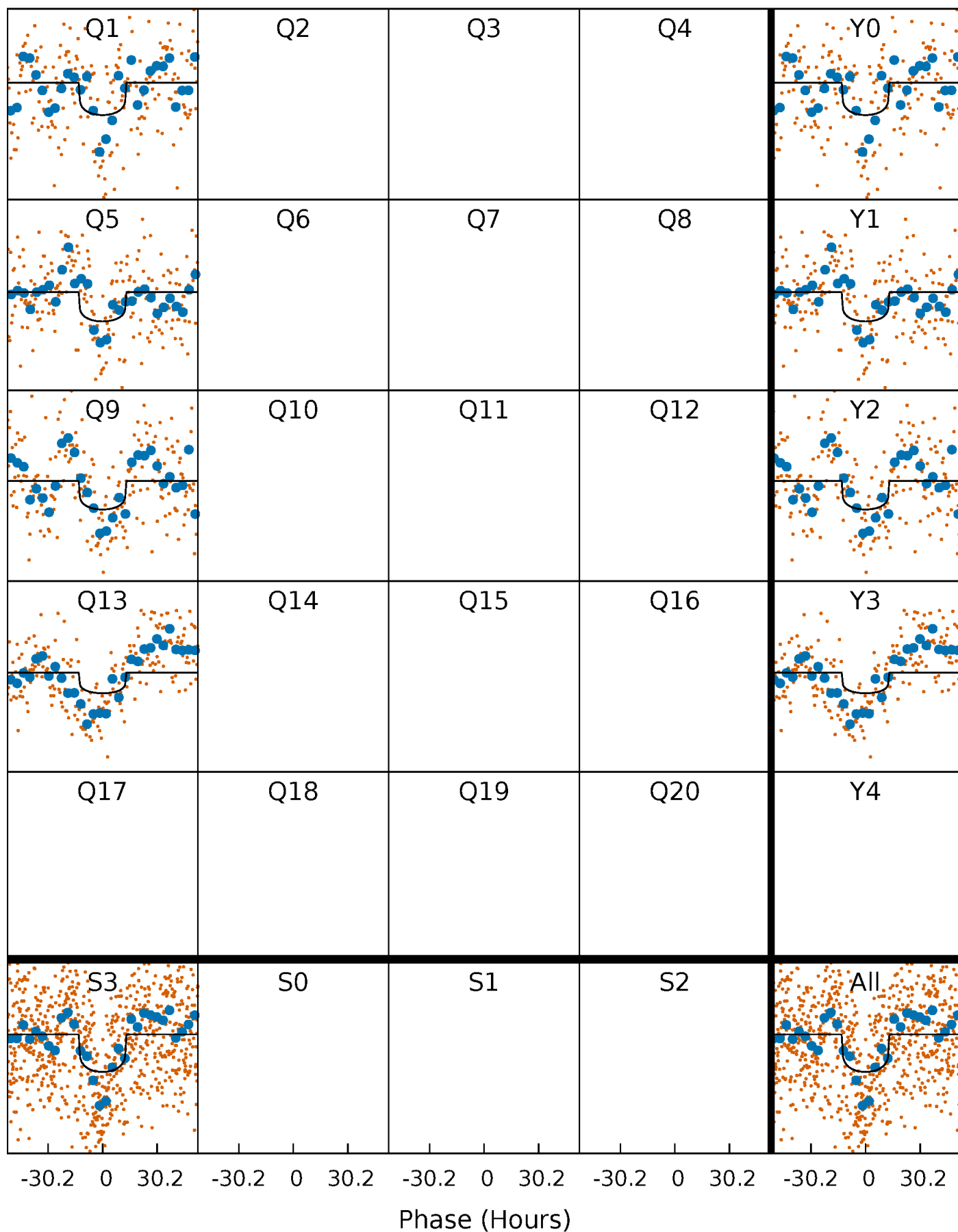
PDC Quarter-Phased Transit Curves

TCE 006600439-01 P=369.812429 Days $T_0=143.867051$ (BKJD)



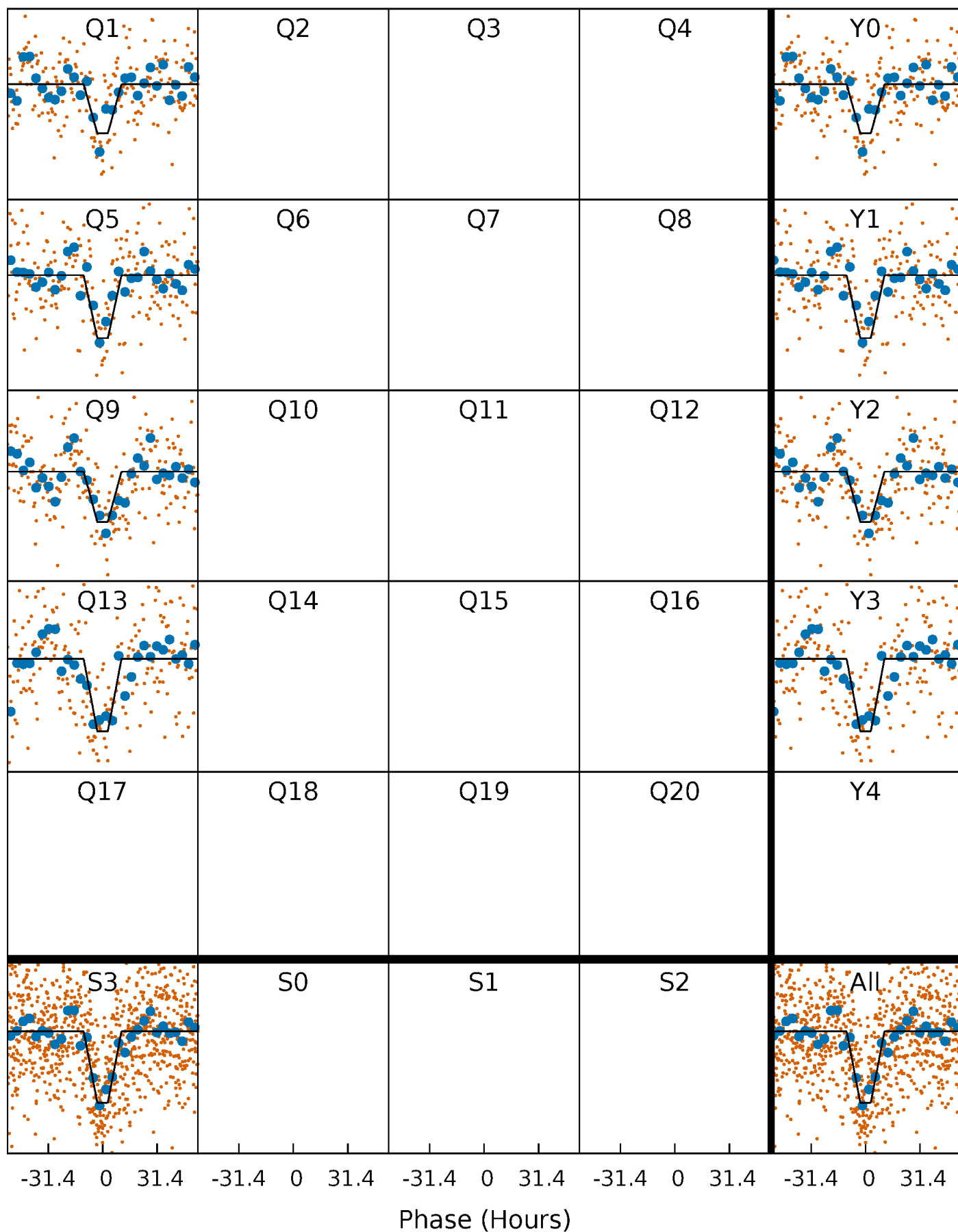
DV Quarter-Phased Transit Curves

TCE 006600439-01 $P=369.812429$ Days $T_0=143.867051$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

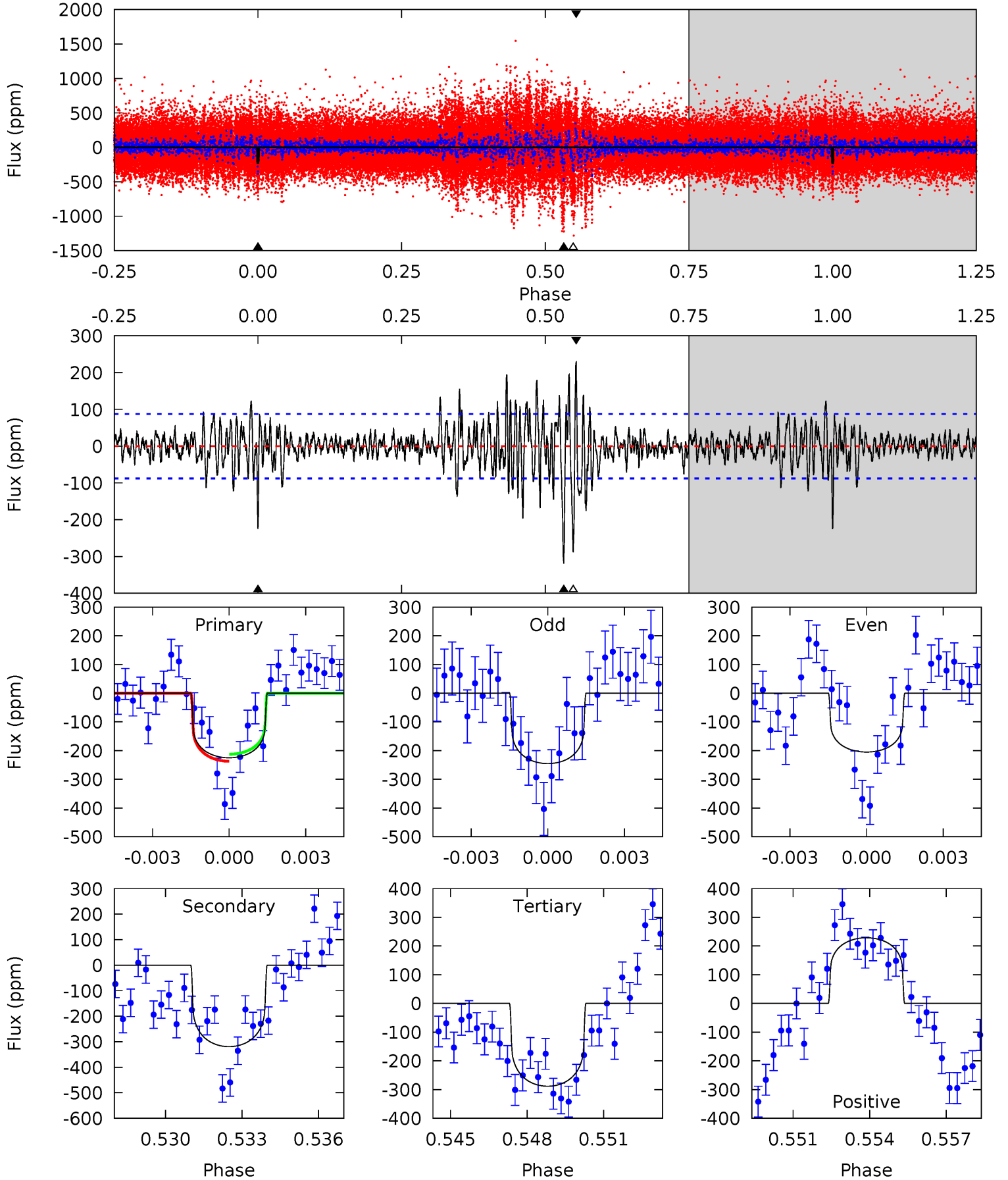
TCE 006600439-01 P=369.745268 Days $T_0=143.914937$ (BKJD)



DV Model-Shift Uniqueness Test

006600439-01, P = 369.812429 Days, E = 143.867051 Days

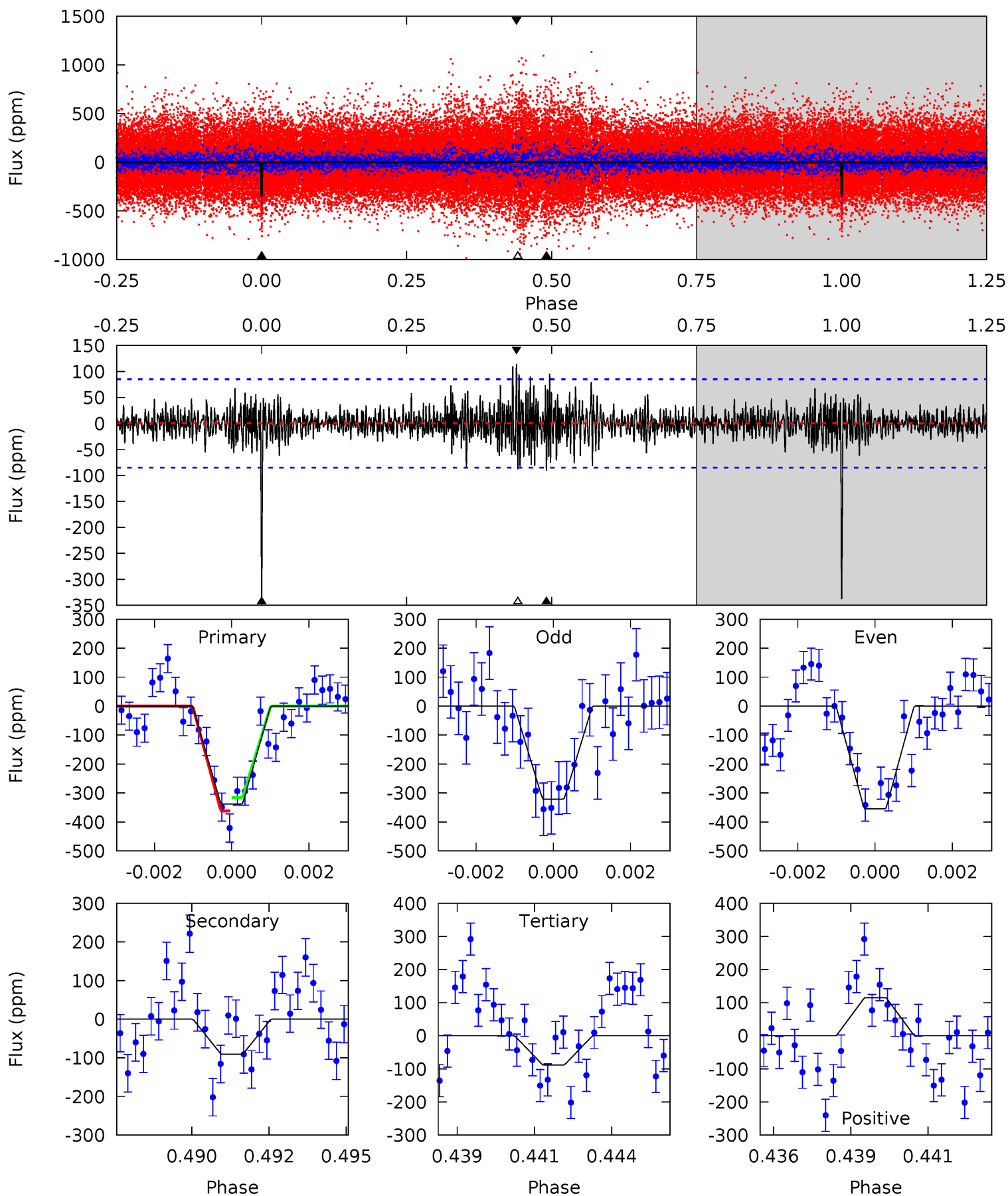
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	19.1	17.3	13.7	5.25	2.97	2.98	-3.79	-0.23	1.85	5.42	1.20	1.10	0.42	0.74



Alt Model-Shift Uniqueness Test

006600439-01, P = 369.745268 Days, E = 143.914937 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	5.64	5.49	7.14	5.29	3.03	1.44	15.5	13.9	0.15	-1.50	1.06	0.98	0.25	1.45



Stellar Parameters For KIC 006600439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6046^{+163}_{-181}	$4.509^{+0.052}_{-0.208}$	$-0.200^{+0.250}_{-0.350}$	$0.927^{+0.291}_{-0.097}$	$1.011^{+0.130}_{-0.143}$	$1.789^{+0.373}_{-0.902}$
	+3%/-3%	+1%/-5%	+125%/-175%	+31%/-10%	+13%/-14%	+21%/-50%
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 006600439-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-319±17	$1.41^{+0.54}_{-0.48}$	364^{+26}_{-17}	7078^{+1952}_{-1032}	$89855^{+114782}_{-42629}$
Alt.	-91±16	$2.02^{+0.56}_{-0.48}$	364^{+26}_{-16}	4443^{+509}_{-363}	12265^{+9447}_{-5042}

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 $A_{obs} \gg 1.0$

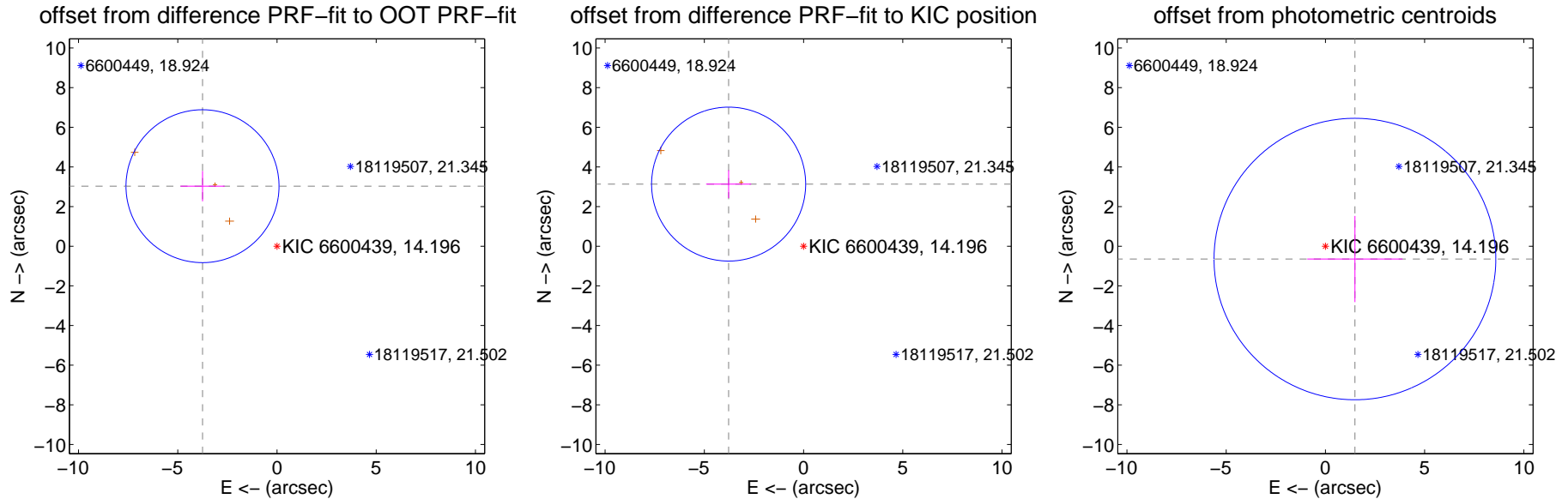
DV Centroid Data

Supplemental centroid analysis for 006600439-01. Kepler magnitude: 14.20. Transit SNR 5.36

There are 0 quarters with good PRF difference image offsets

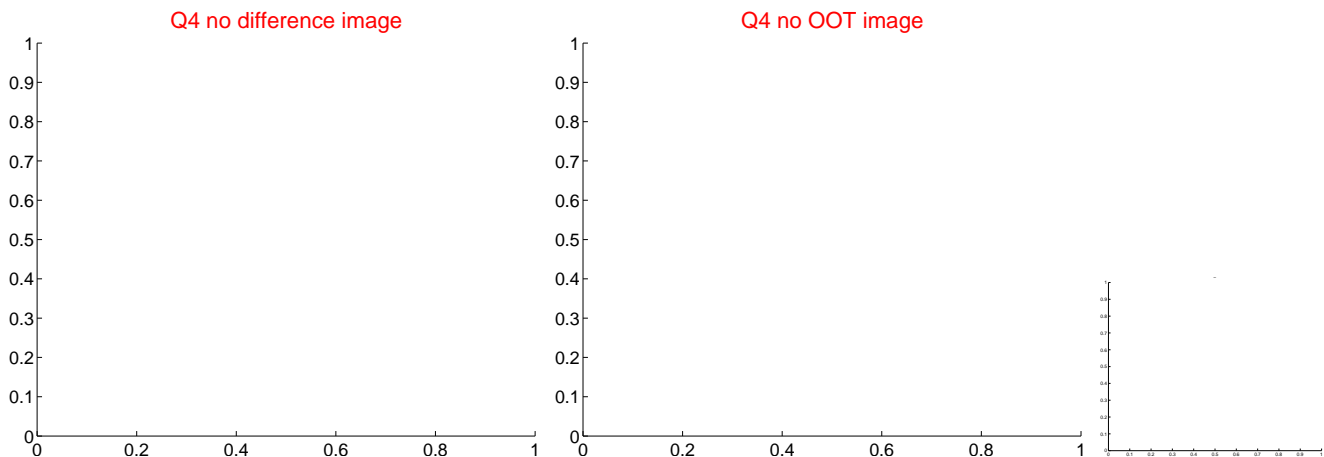
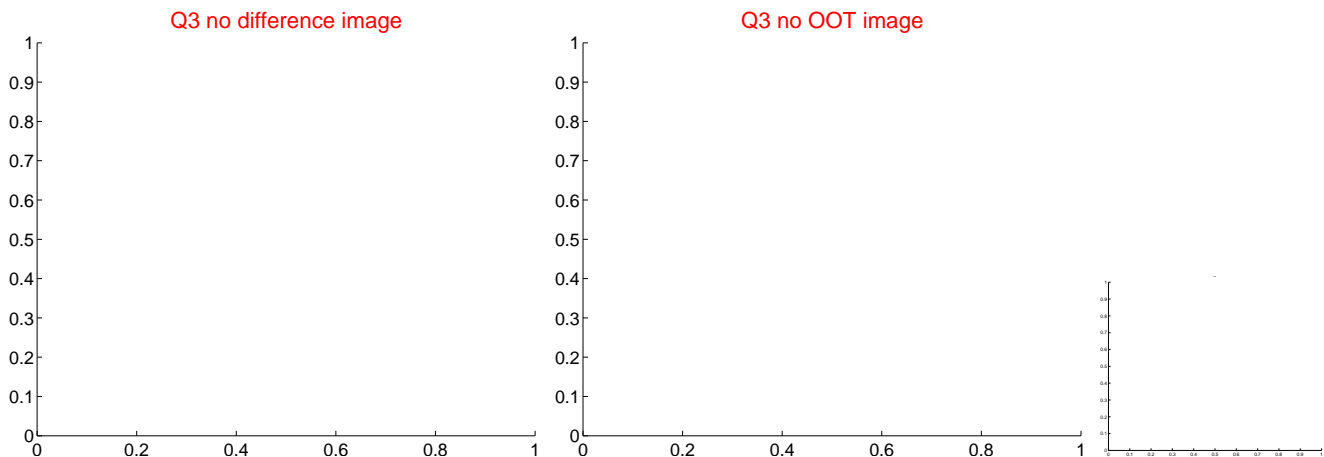
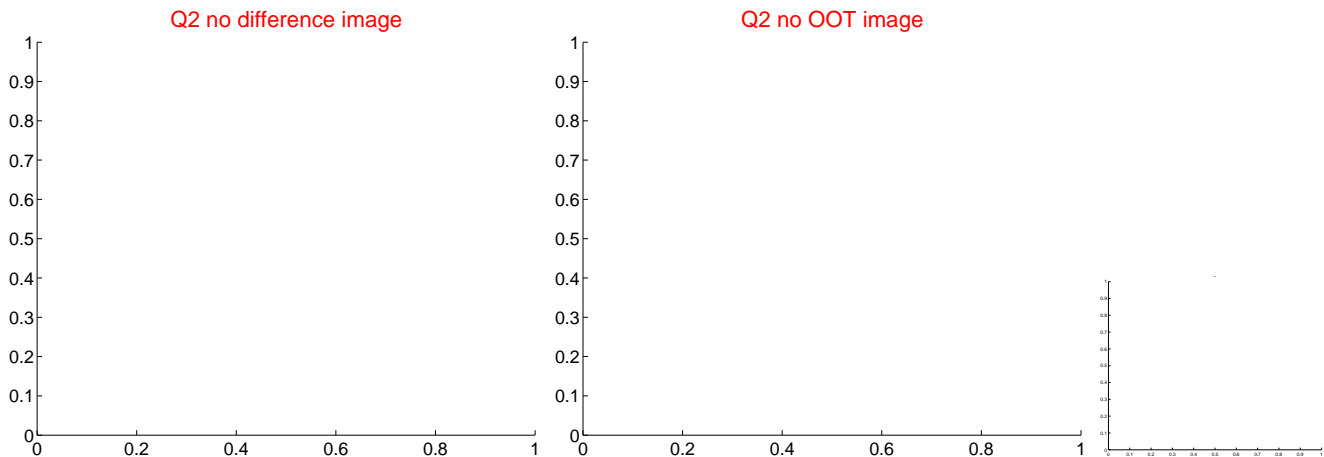
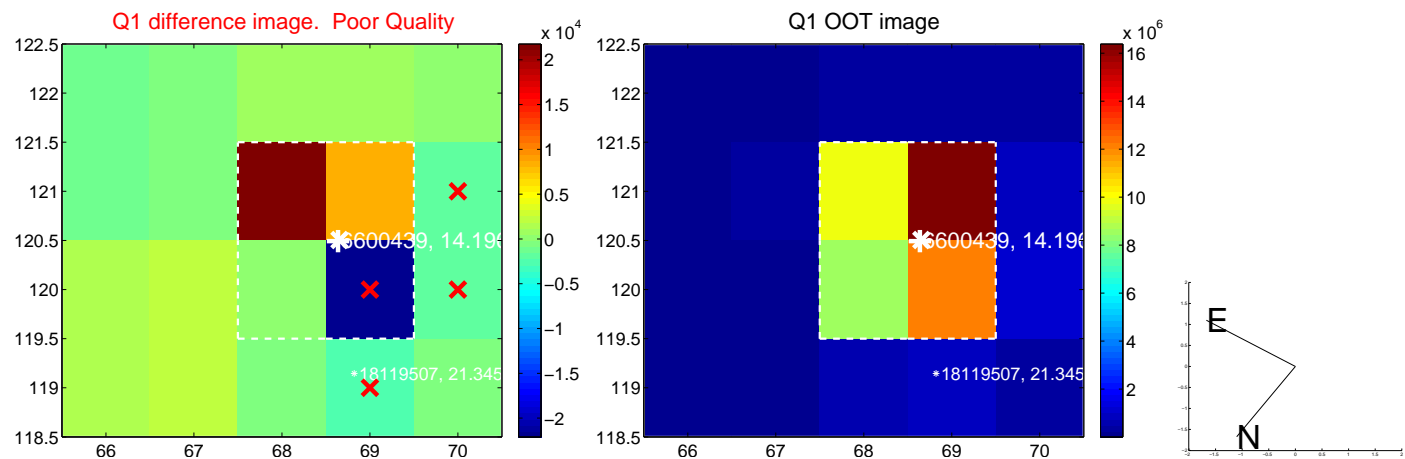
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.822 ± 1.285	3.75	3.753 ± 1.114	3.028 ± 0.764
PRF-fit source offset from KIC position	4.906 ± 1.294	3.79	3.775 ± 1.135	3.133 ± 0.703
photometric centroid source offset	1.62 ± 2.37	0.69	-1.49 ± 2.40	-0.65 ± 2.18

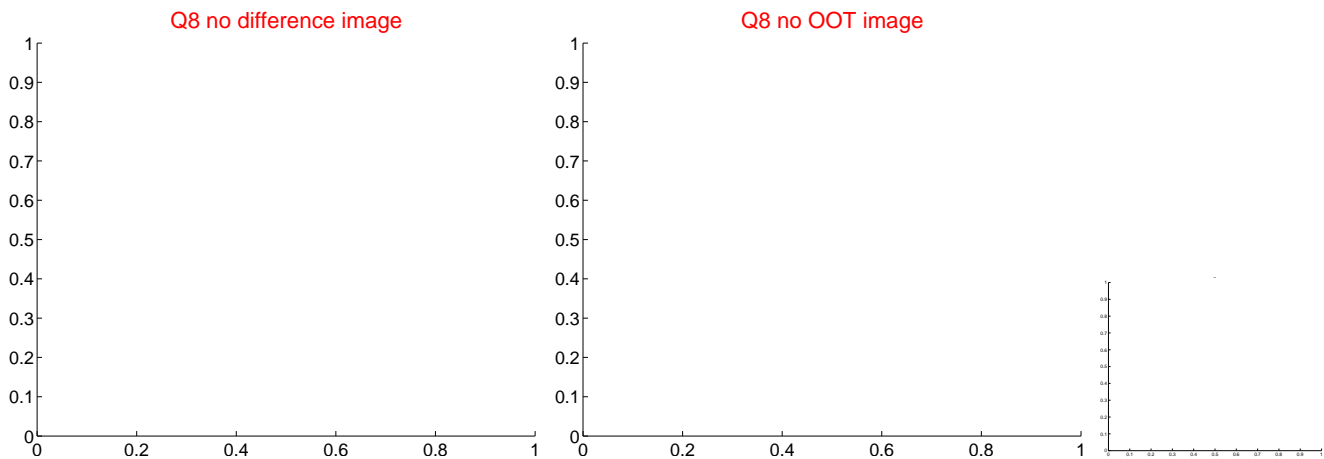
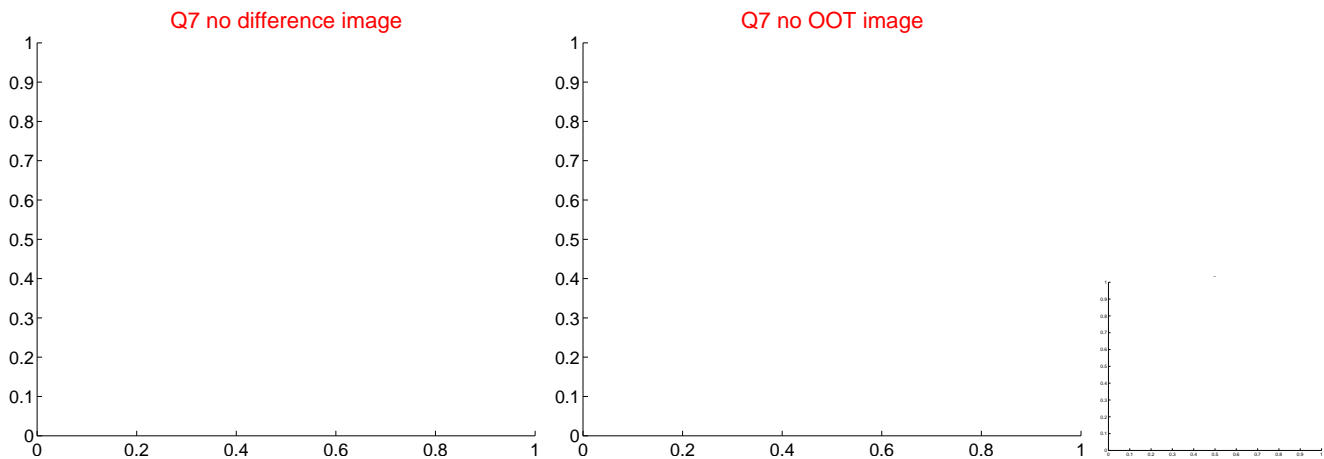
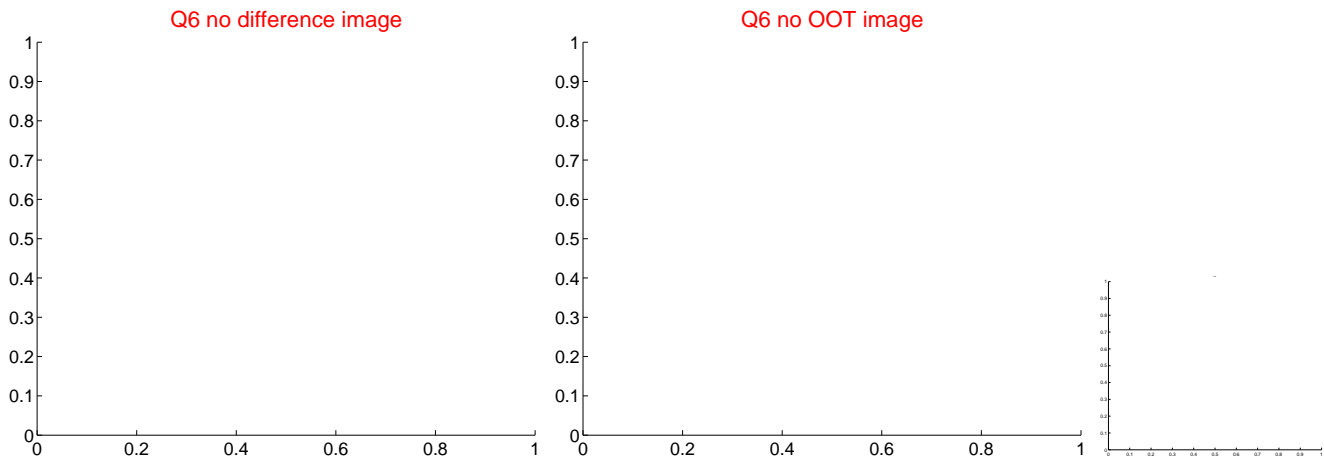
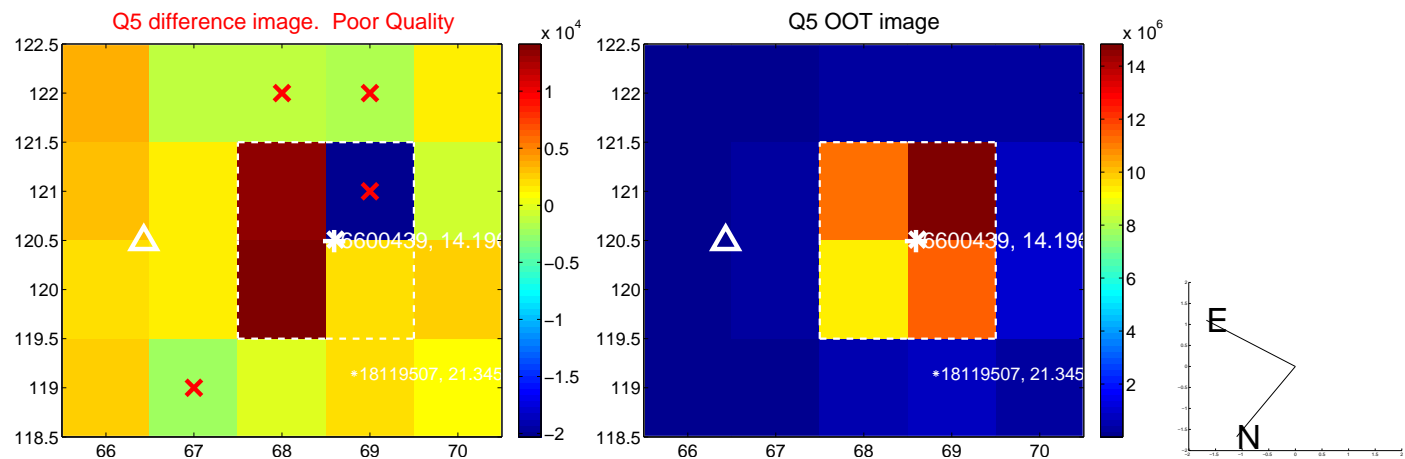


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

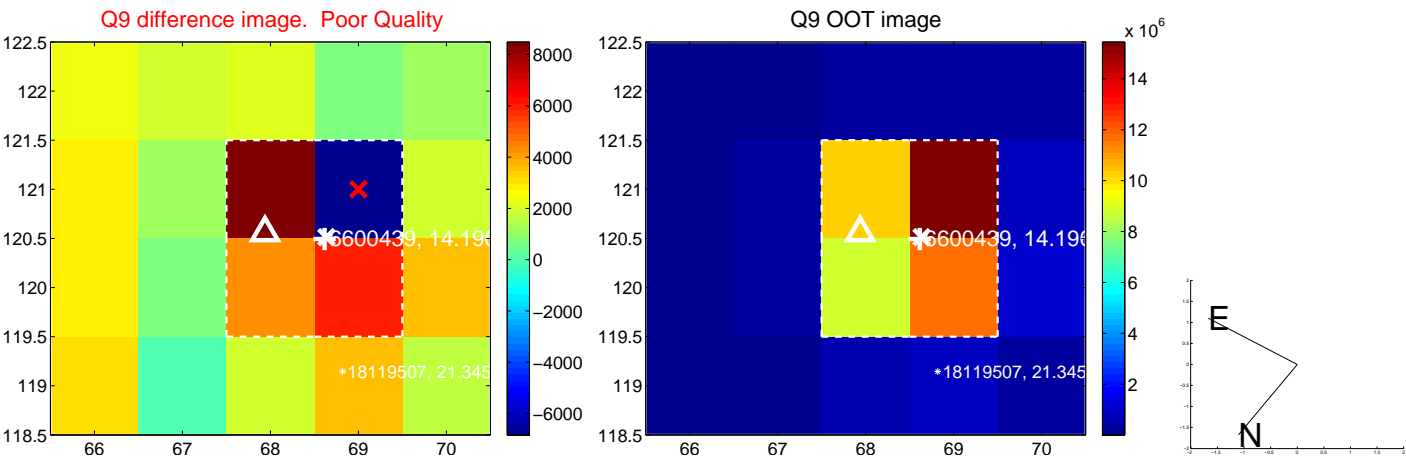
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



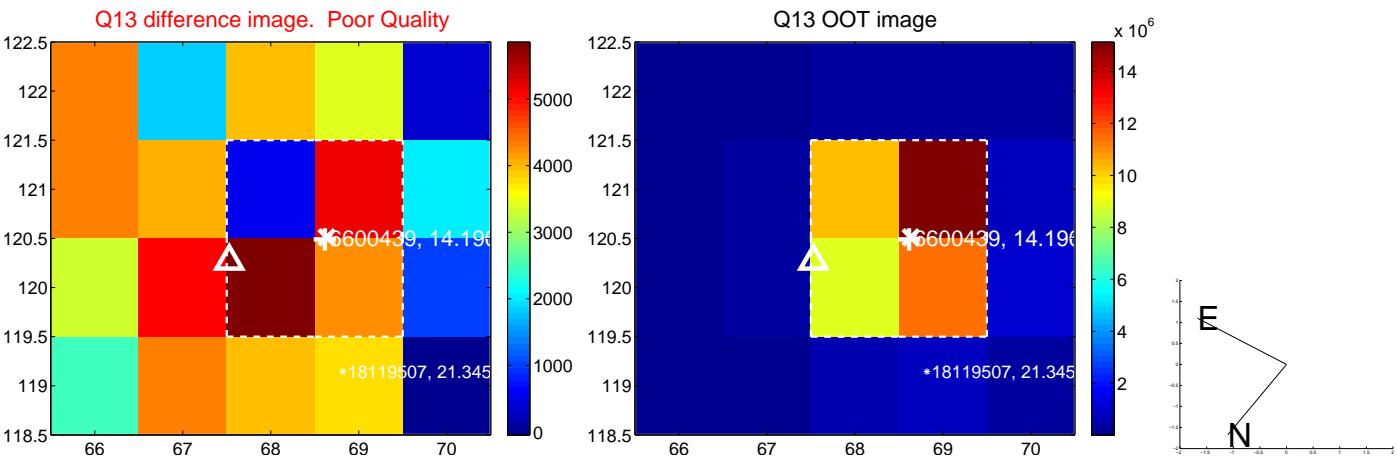
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



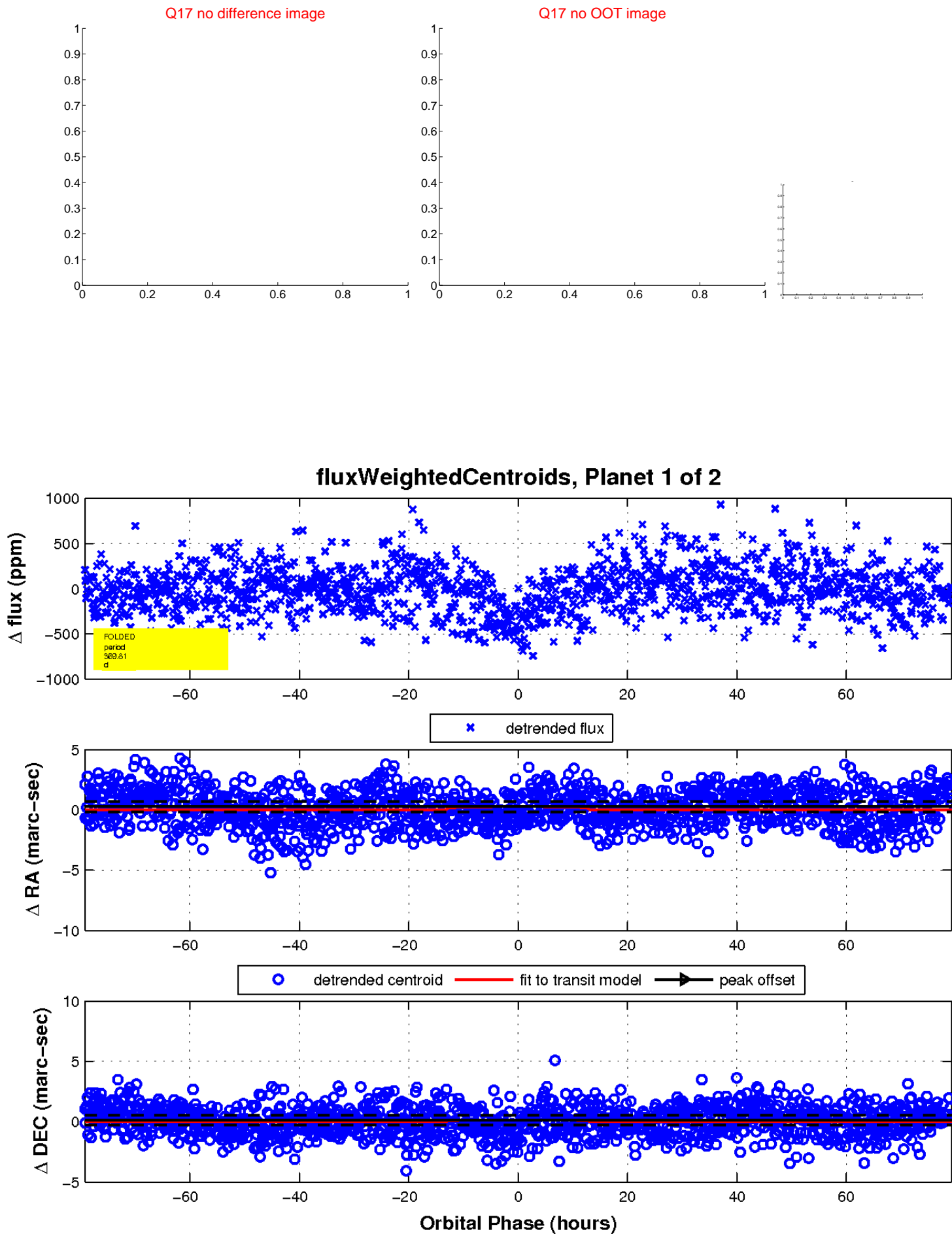
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

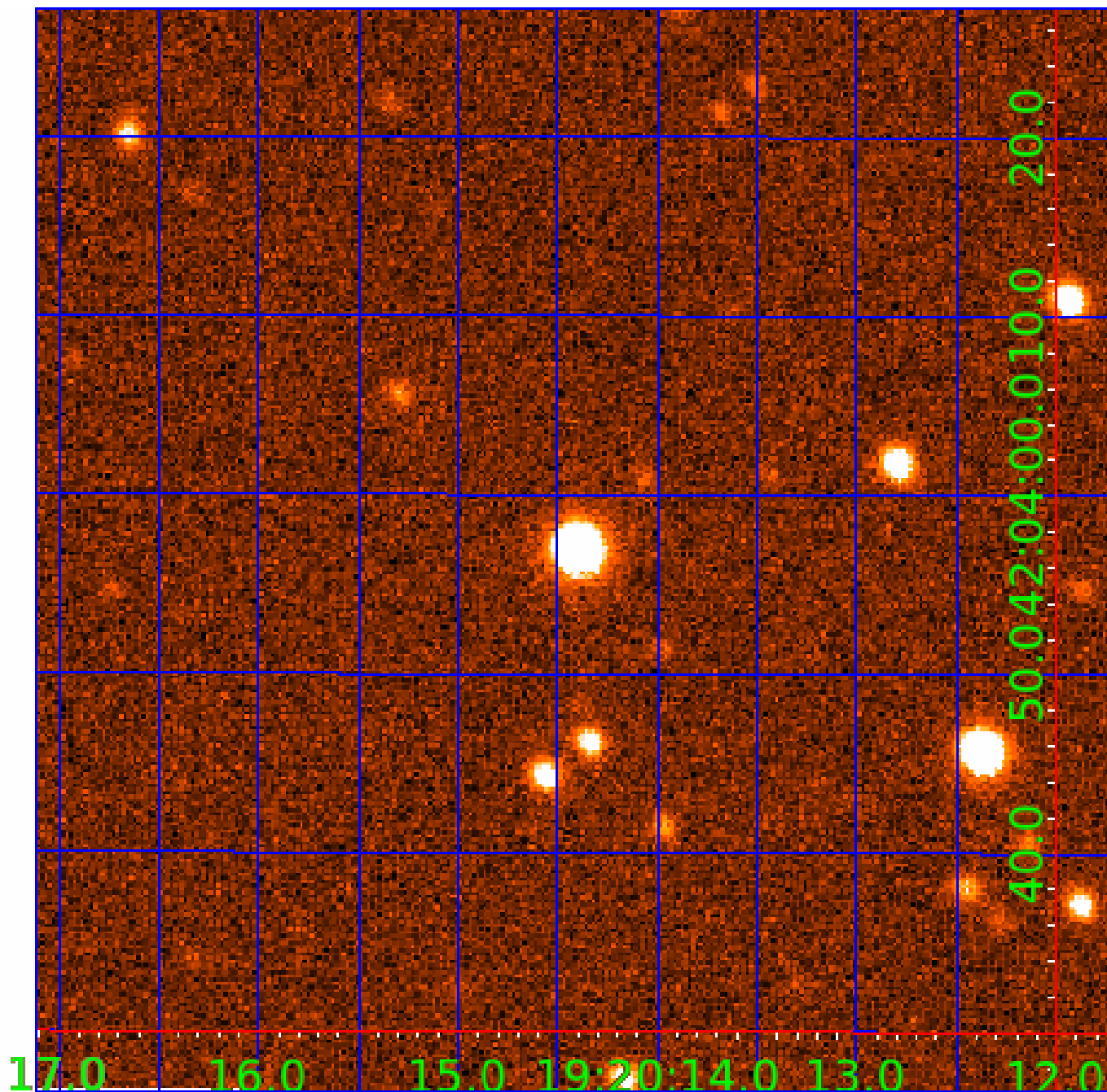


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006600439

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})
006600439-01	OBS	No	369.812429	143.867051	184.9	26.422	7.3	5.4	0.93	6046	1.34	1.00
006600439-02	OBS	No	368.193036	308.847036	759.5	32.759	8.0	6.9	0.93	6046	4.93	1.01

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006600439-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—MOD_NONUNIQ_DV—MOD_TER_DV—CENT_FEW_DIFFS—HALO_GHOST
006600439-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

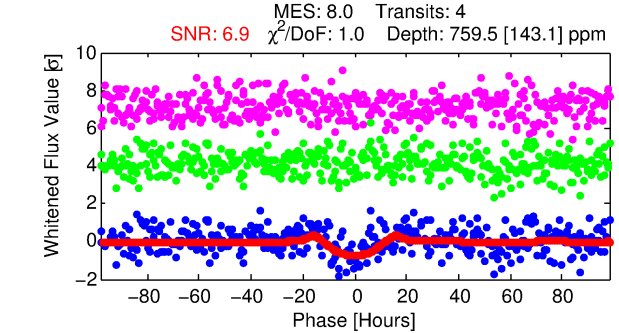
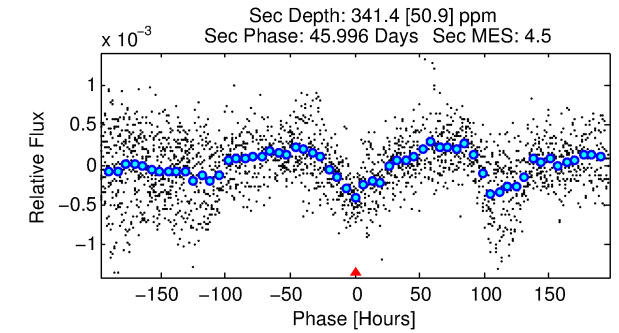
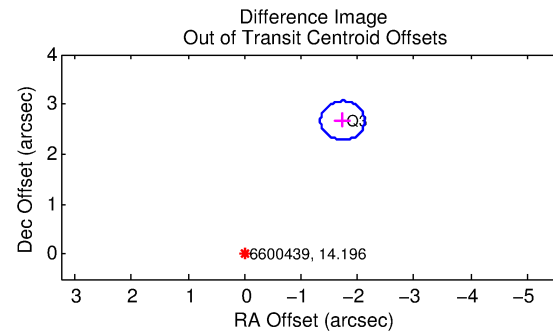
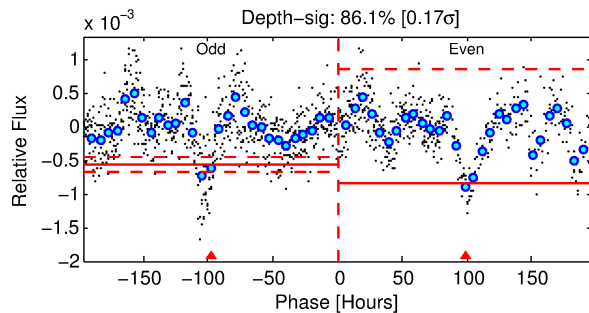
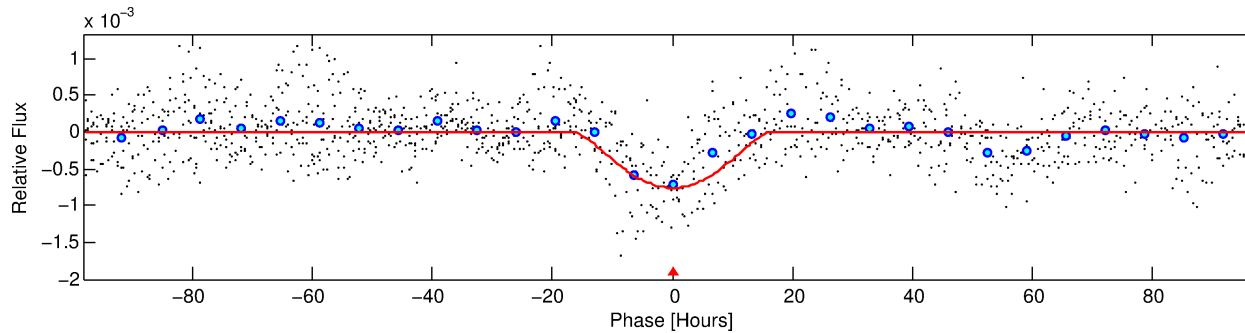
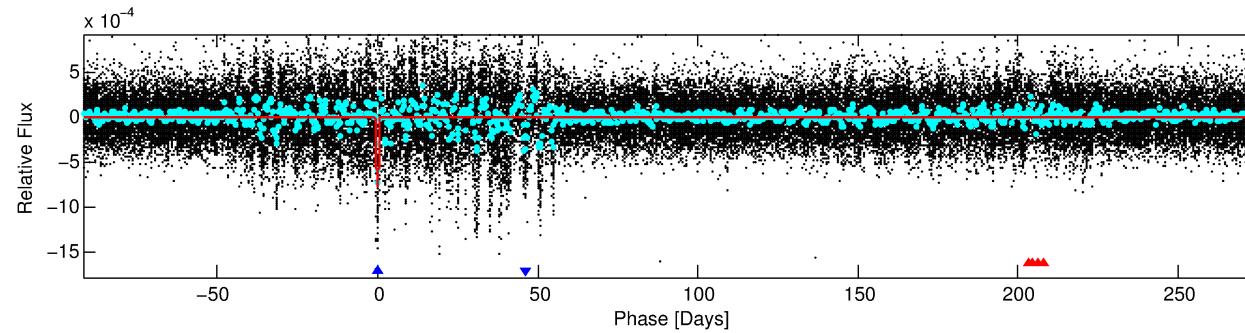
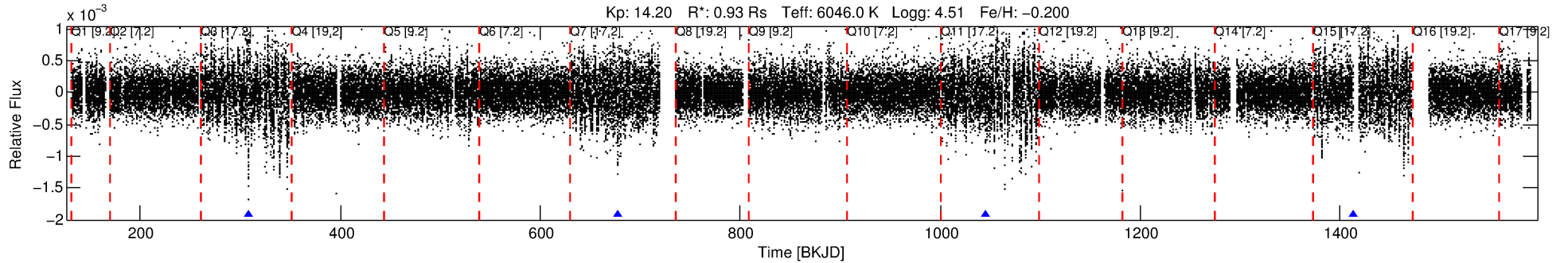
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006600439-02

No Significant Match Found

DV One-Page Summary

KIC: 6600439 Candidate: 2 of 2 Period: 368.193 d



DV Fit Results:

Period = 368.19304 [0.04607] d
Epoch = 308.8470 [0.0634] BKJD
Rp/R* = 0.0487 [0.1004]
a/R* = 27.20 [13.30]
b = 1.00 [0.14]
Seff = 1.01 [0.40]
Teq = 256 [26] K
Rp = 4.93 [10.27] Re
a = 1.0096 [0.2657] AU
Ag = 7888.98 [32692.55] [0.24 σ]
Teffp = 3724 [3844] K [0.90 σ]

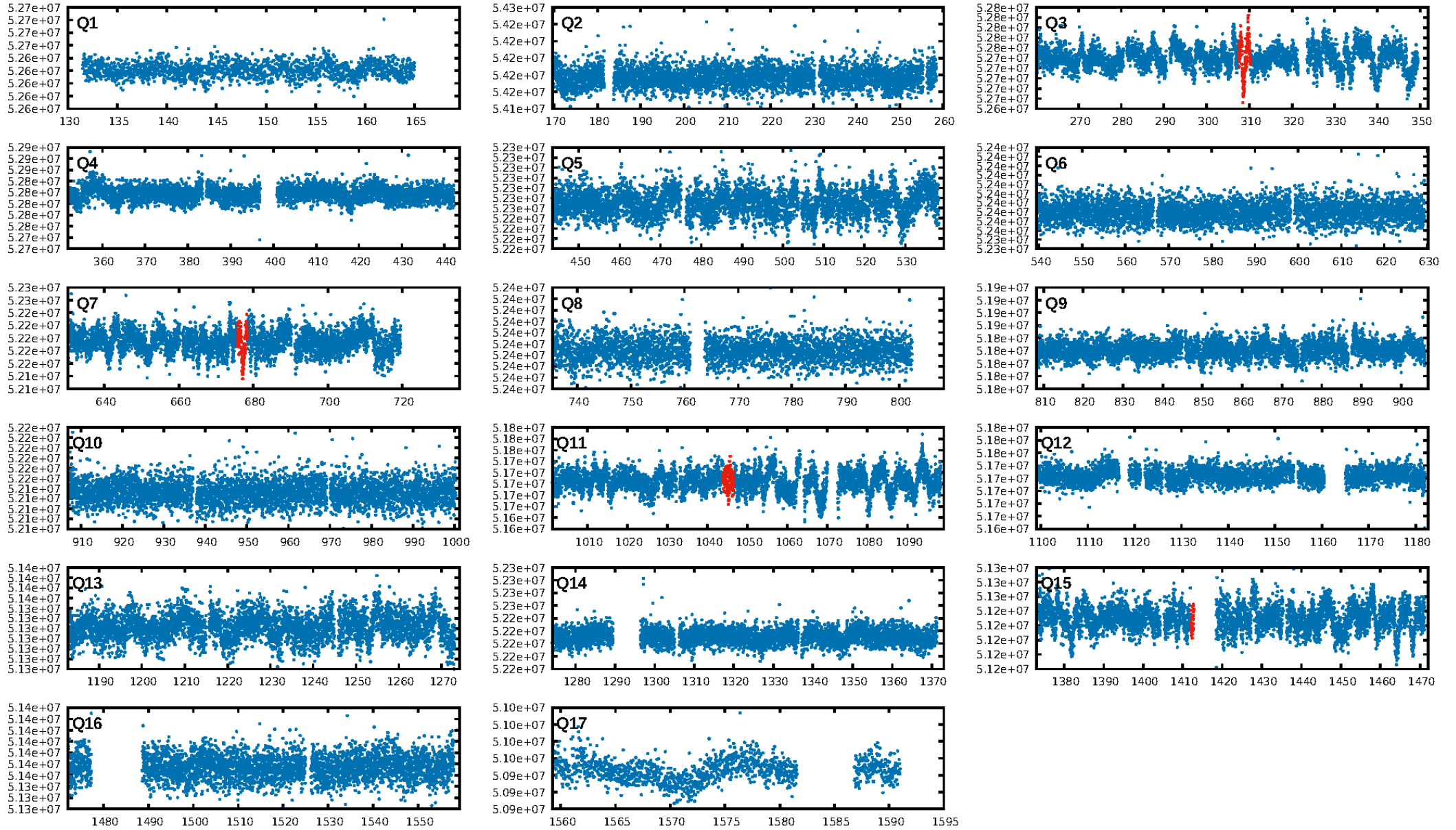
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 64.4% [0.92 σ]
ModelChiSquare2-sig: 9.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.86e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.9075
Centroid-sig: 0.0%
Centroid-so: 4.390 arcsec [2.48 σ]
OotOffset-rm: 3.186 arcsec [24.51 σ]
KicOffset-rm: 3.362 arcsec [25.87 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [3/3]

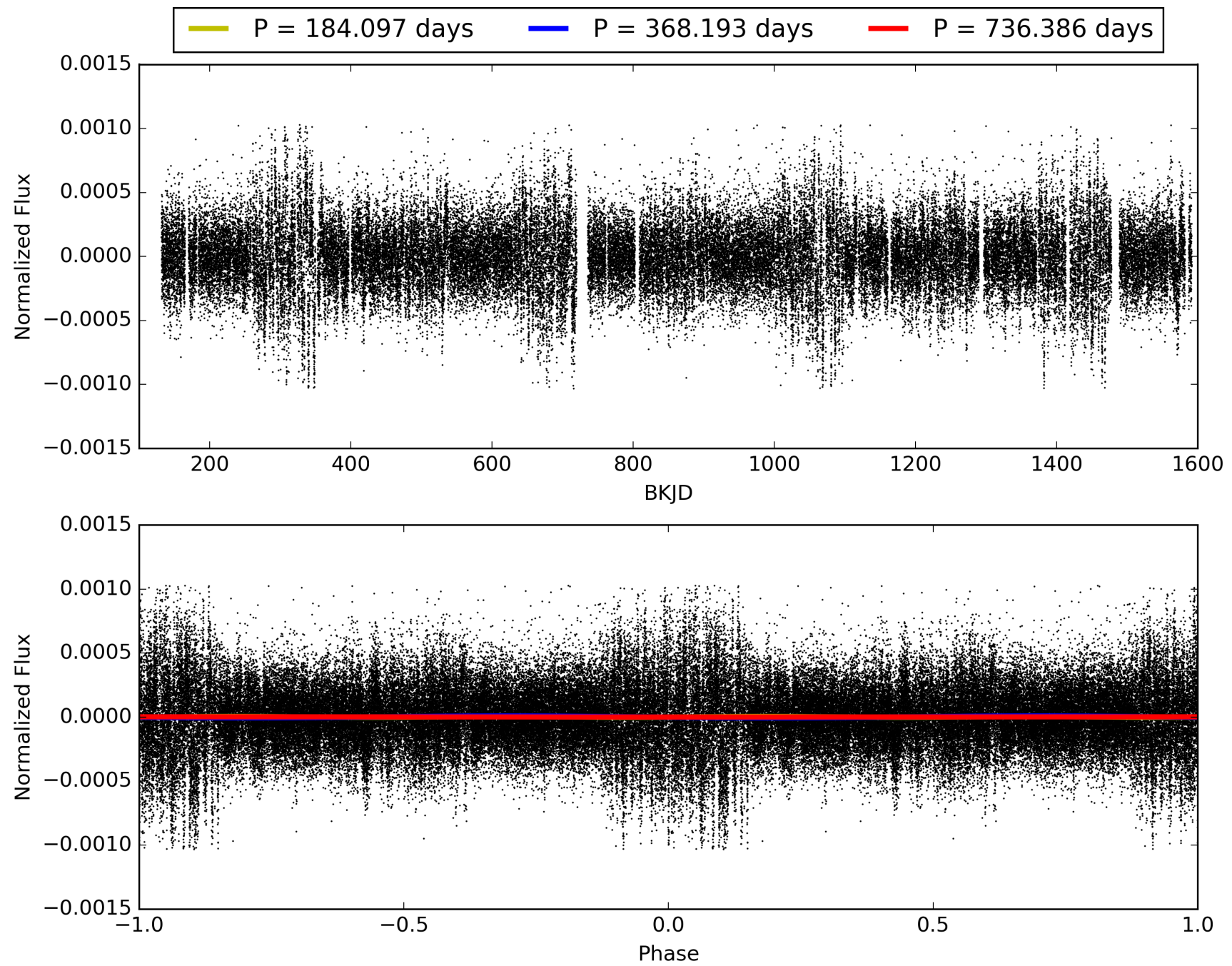
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:52:14 Z

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

TCE 006600439-02, PDC Light Curves

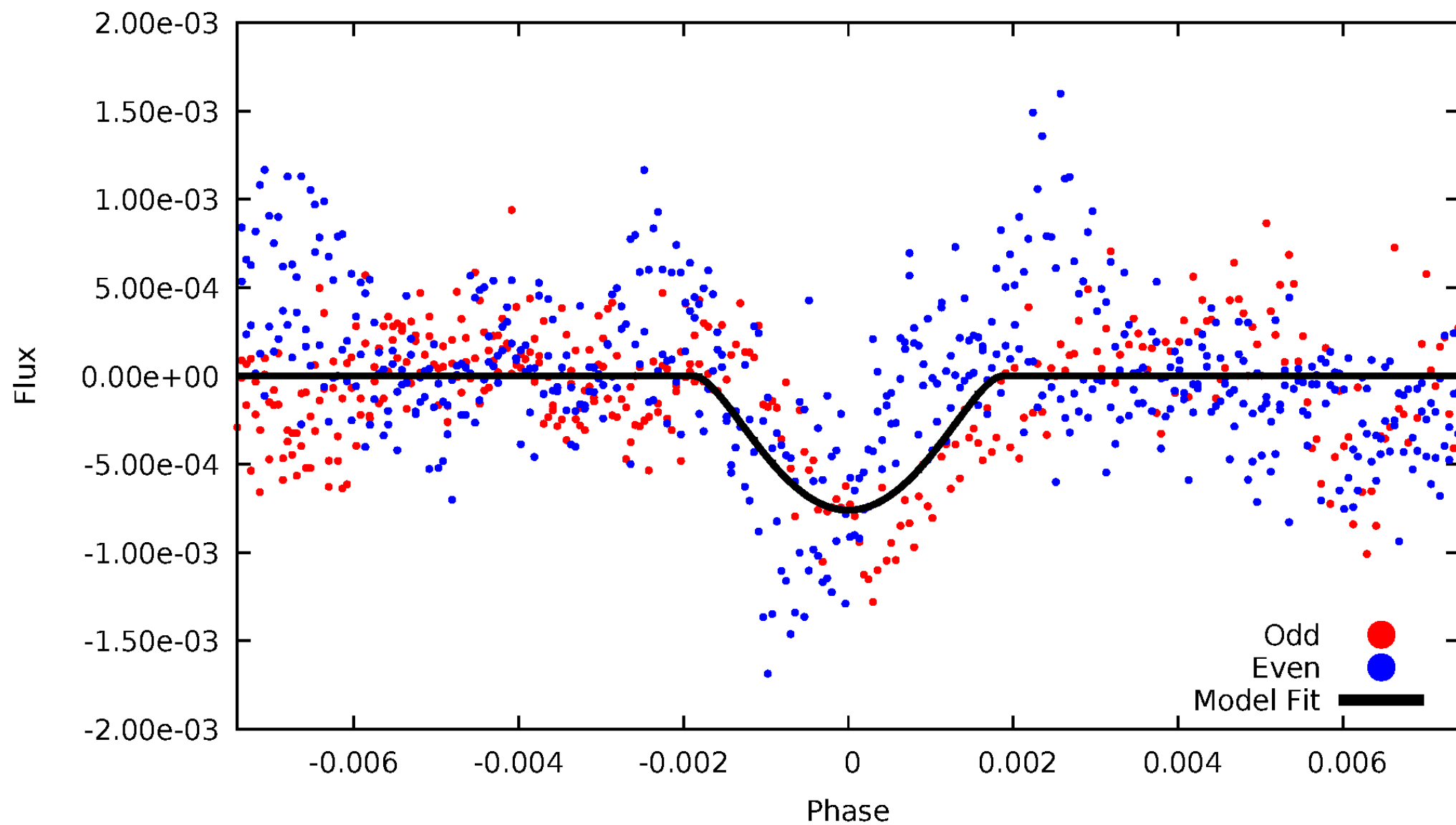


TCE 006600439-02



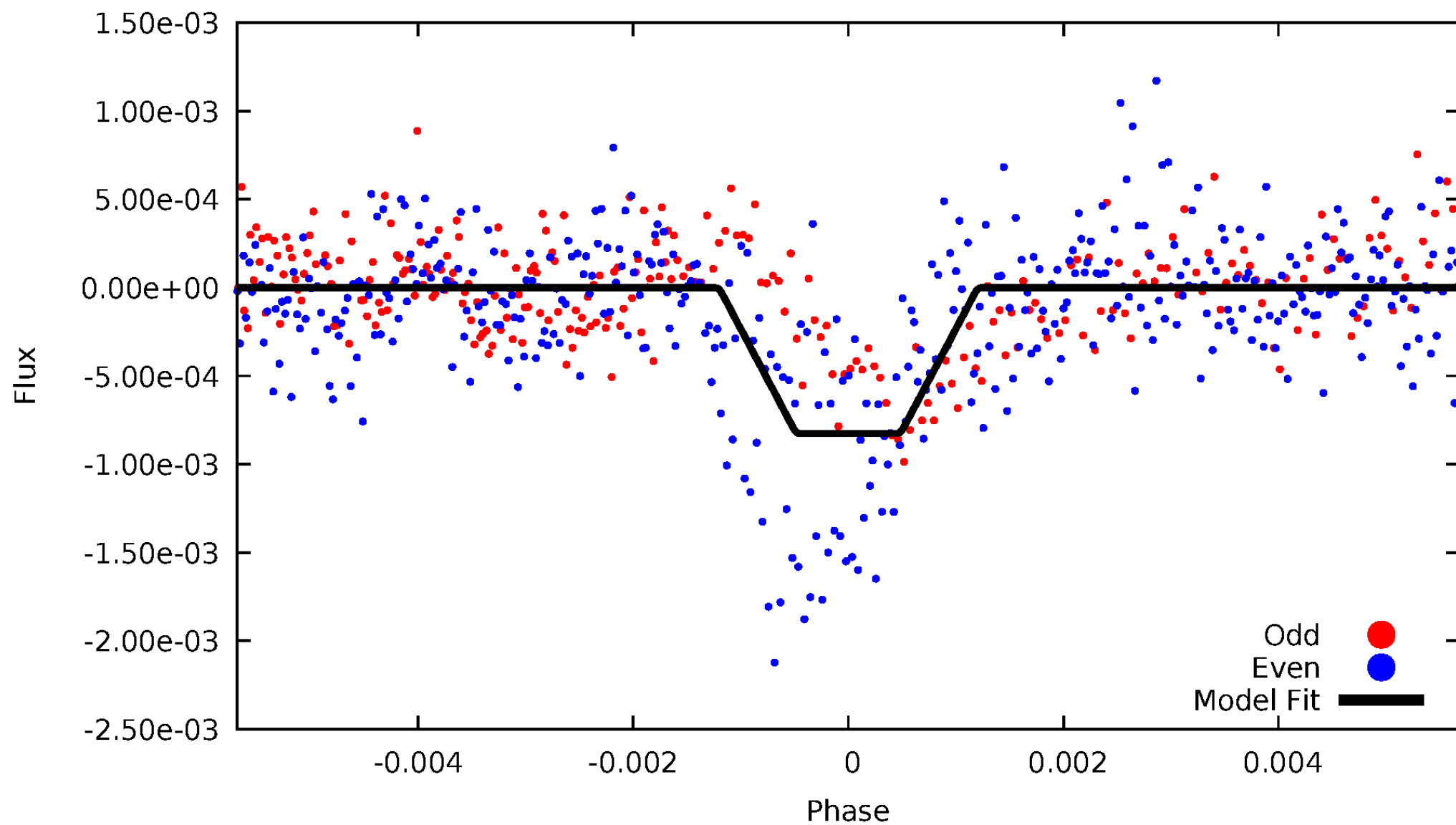
DV Odd/Even

TCE 006600439-02



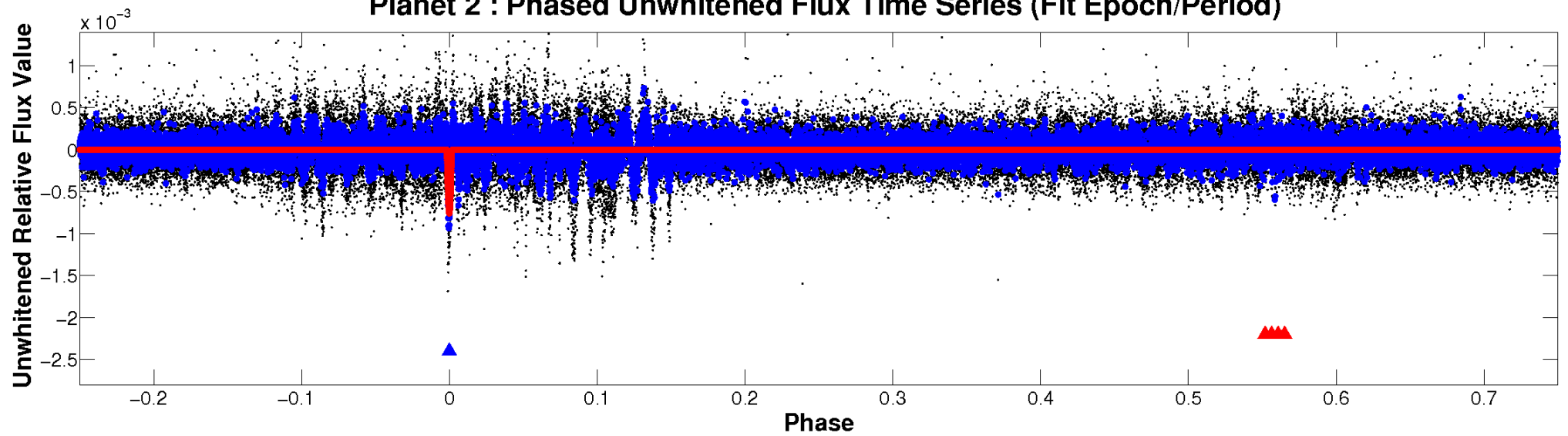
ALT Odd/Even

TCE 006600439-02

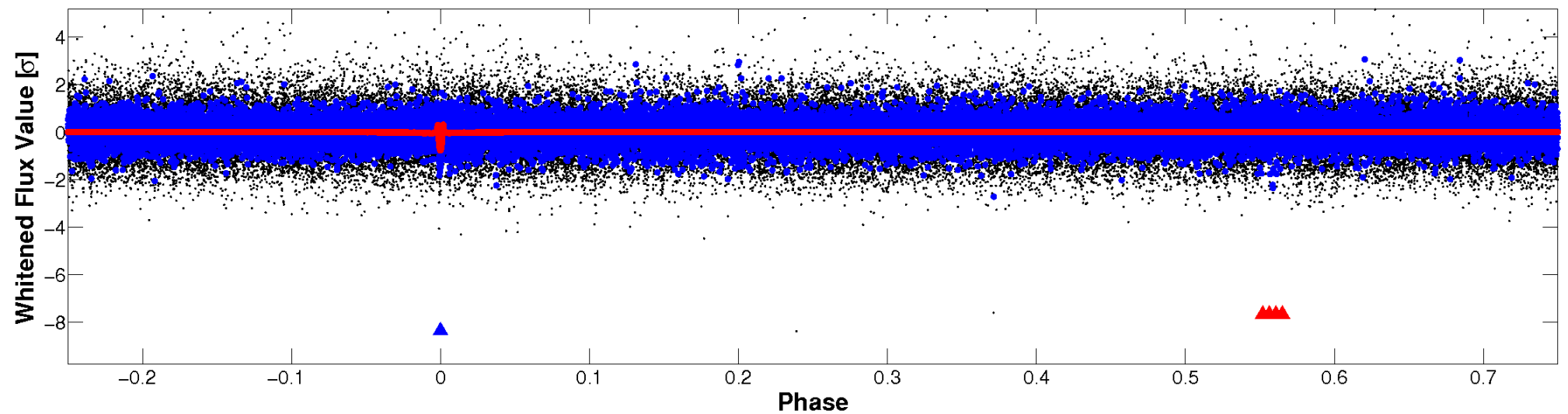


Non-Whitened Vs. Whitened Light Curve

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



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



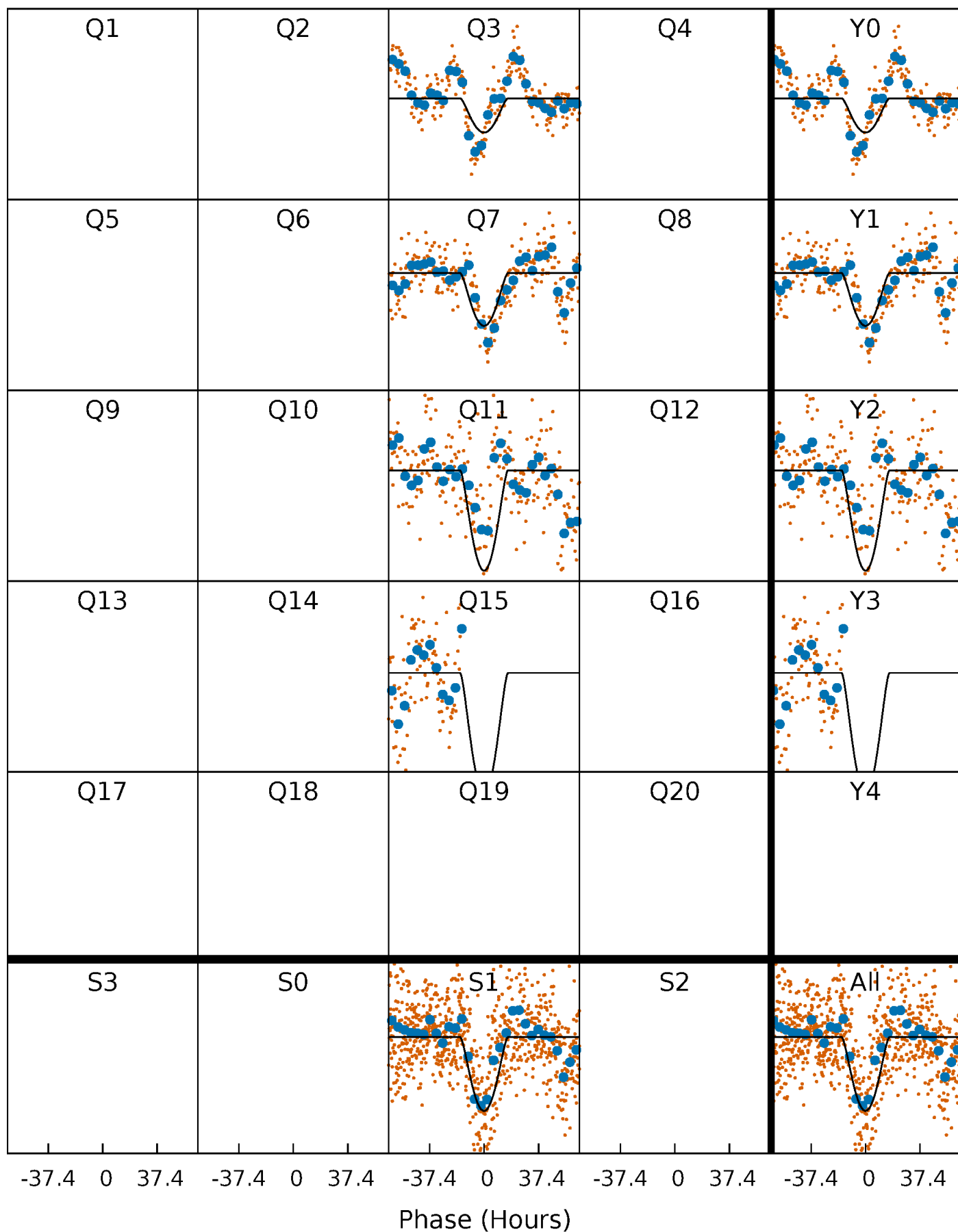
PDC Quarter-Phased Transit Curves

TCE 006600439-02 $P=368.193036$ Days $T_0=308.847036$ (BKJD)



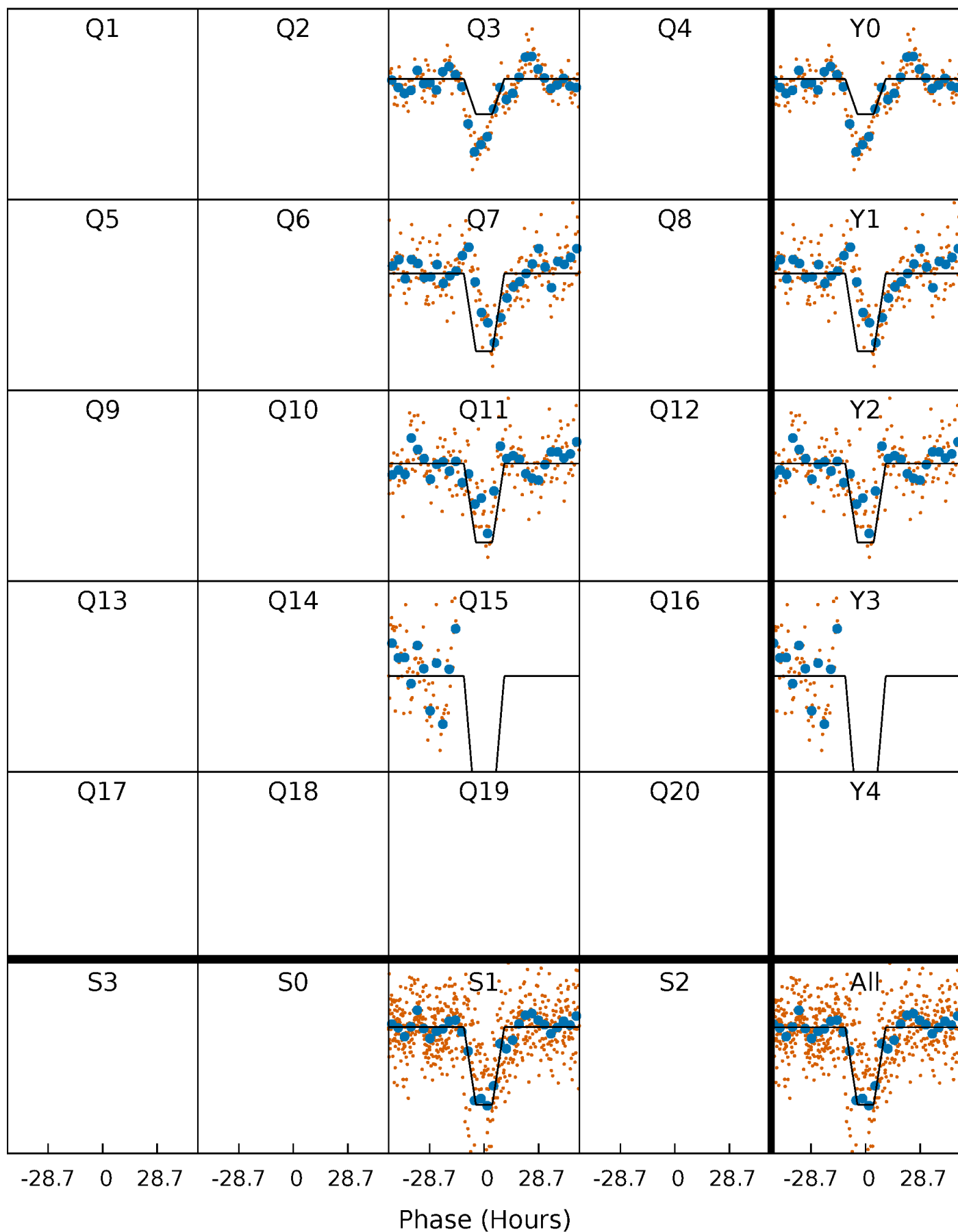
DV Quarter-Phased Transit Curves

TCE 006600439-02 $P=368.193036$ Days $T_0=308.847036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

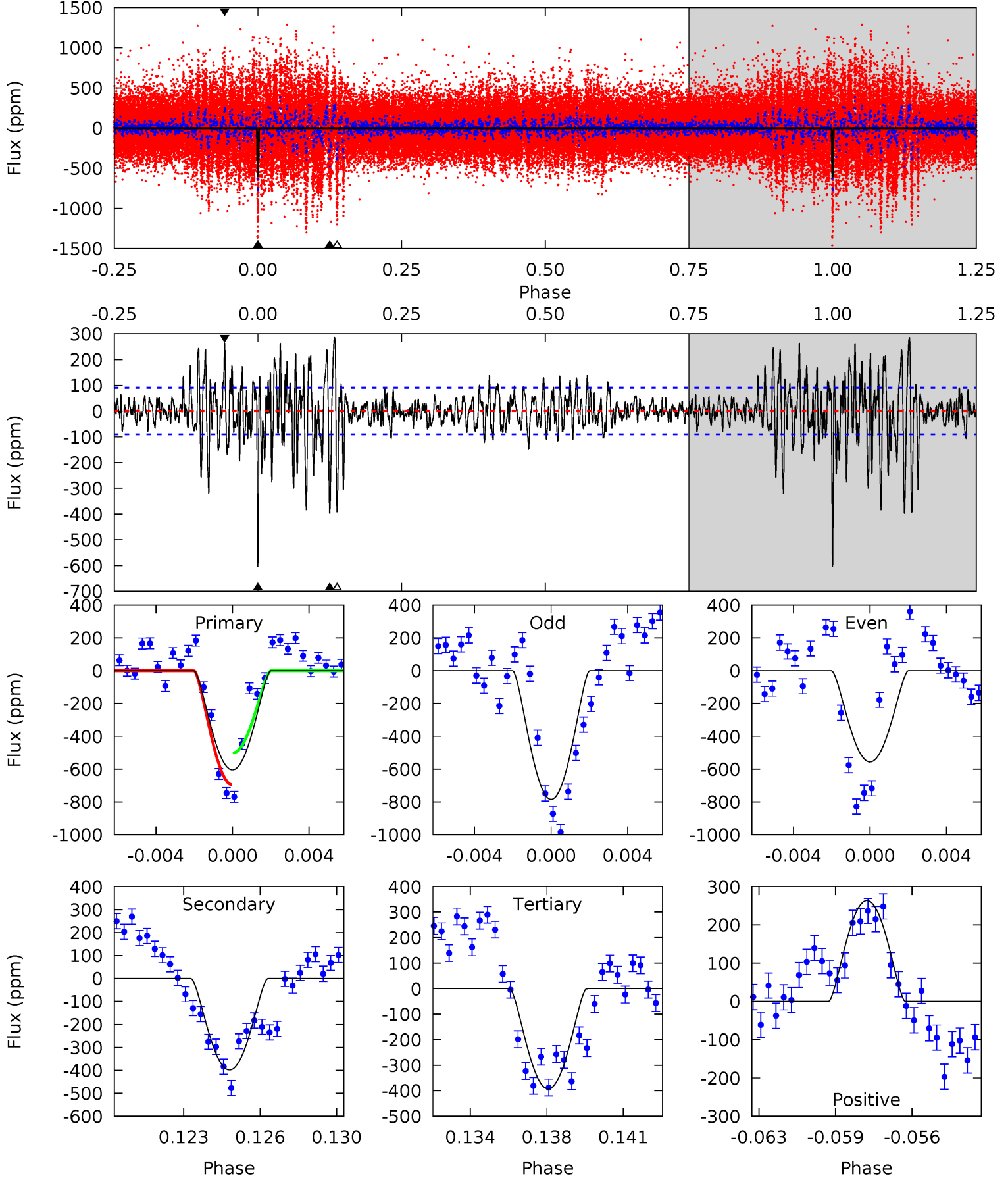
TCE 006600439-02 $P=368.219562$ Days $T_0=308.739832$ (BKJD)



DV Model-Shift Uniqueness Test

006600439-02, P = 368.193036 Days, E = 308.847036 Days

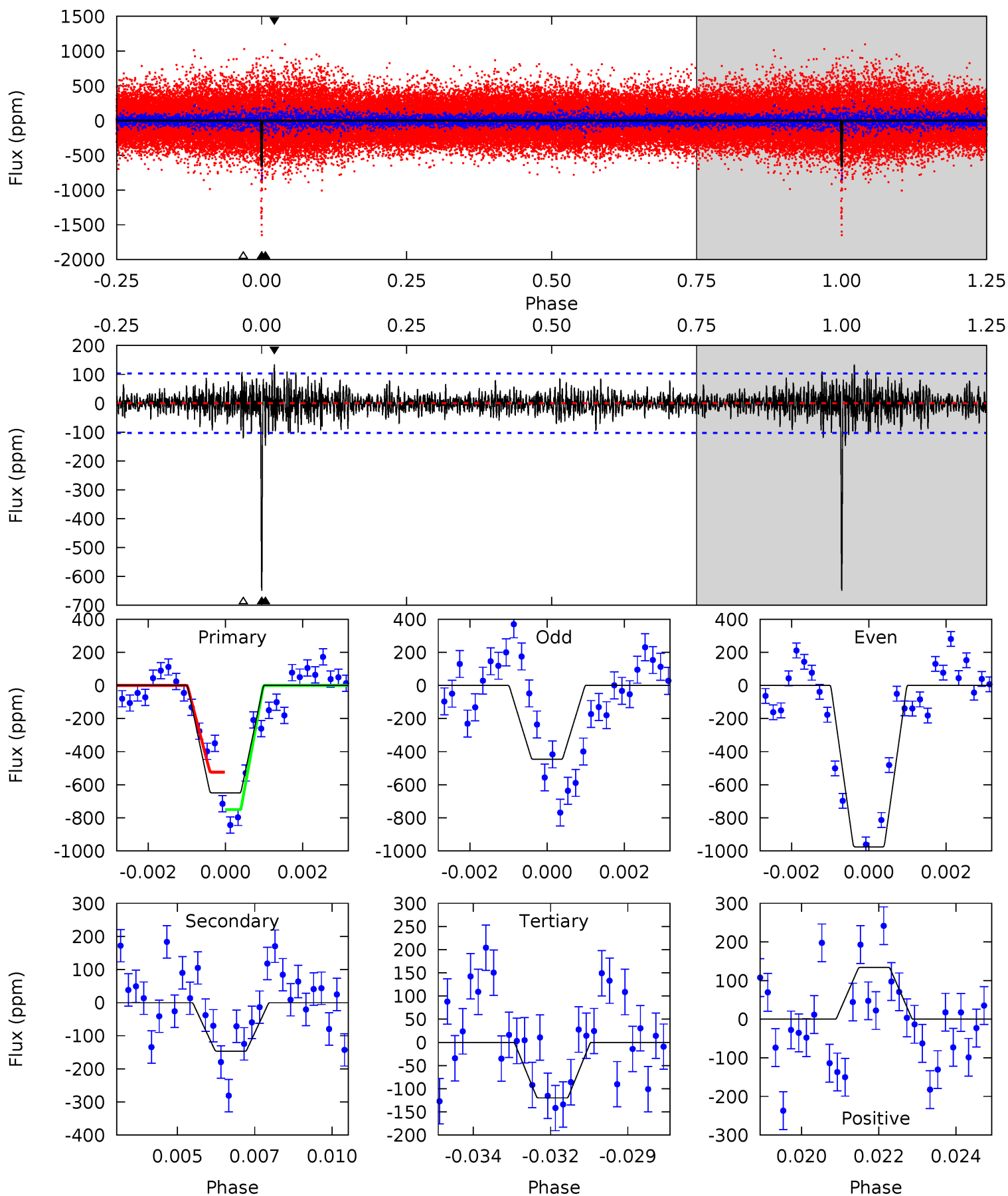
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.8	22.9	22.6	15.2	5.21	2.90	4.45	12.2	19.6	0.34	7.73	6.33	-2.25	0.32	5.51



Alt Model-Shift Uniqueness Test

006600439-02, P = 368.219562 Days, E = 308.739832 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	7.53	6.15	6.88	5.29	3.03	1.44	27.1	26.4	1.37	0.64	13.3	1.70	0.17	5.74



Stellar Parameters For KIC 006600439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6046^{+163}_{-181}	$4.509^{+0.052}_{-0.208}$	$-0.200^{+0.250}_{-0.350}$	$0.927^{+0.291}_{-0.097}$	$1.011^{+0.130}_{-0.143}$	$1.789^{+0.373}_{-0.902}$
	+3%/-3%	+1%/-5%	+125%/-175%	+31%/-10%	+13%/-14%	+21%/-50%
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 006600439-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-398 ± 17	$9.95^{+8.62}_{-6.77}$	364^{+26}_{-16}	3332^{+1667}_{-545}	2271^{+18020}_{-1646}
Alt.	-147 ± 19	$8.36^{+8.60}_{-5.84}$	364^{+26}_{-16}	3015^{+1499}_{-501}	1118^{+11616}_{-842}

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 $A_{obs} \gg 1.0$

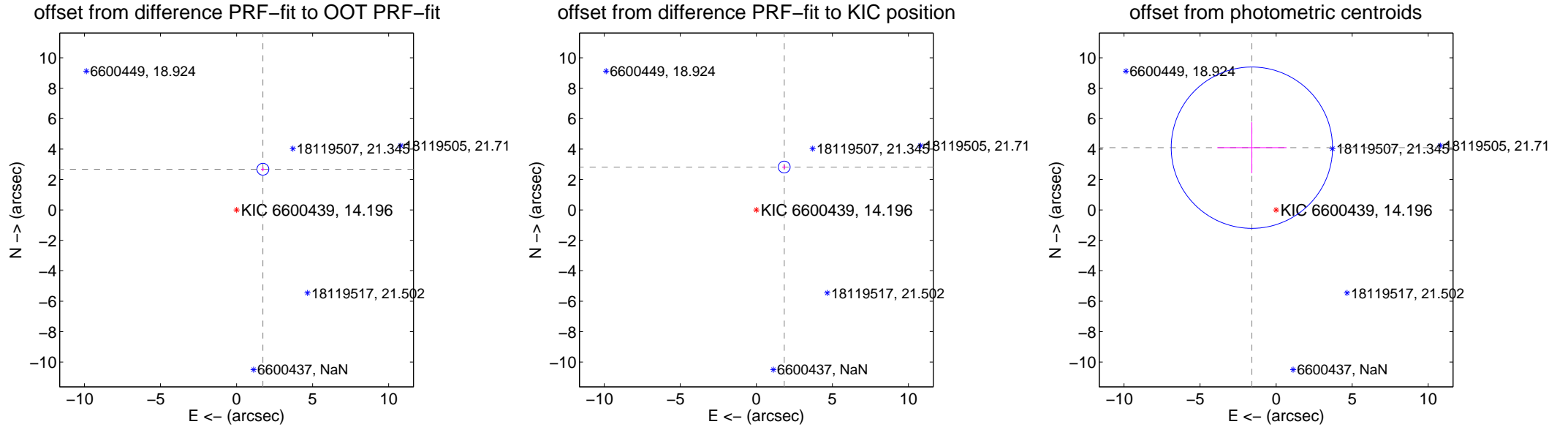
DV Centroid Data

Supplemental centroid analysis for 006600439-02. Kepler magnitude: 14.20. Transit SNR 6.93

There are 0 quarters with good PRF difference image offsets

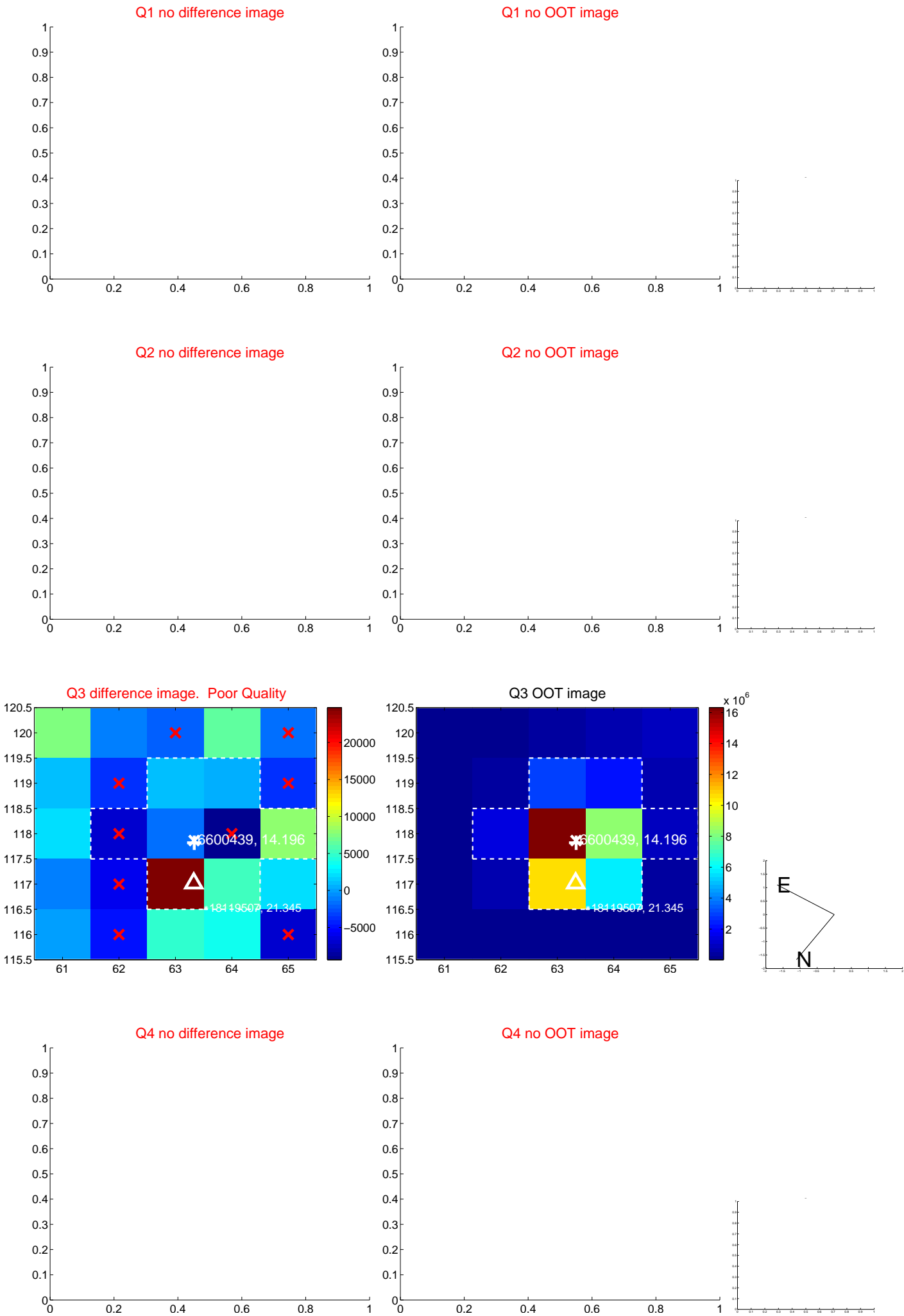
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.186 ± 0.130	24.51	-1.731 ± 0.124	2.674 ± 0.133
PRF-fit source offset from KIC position	3.362 ± 0.130	25.87	-1.833 ± 0.124	2.818 ± 0.133
photometric centroid source offset	4.39 ± 1.77	2.48	1.59 ± 2.28	4.09 ± 1.68



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.

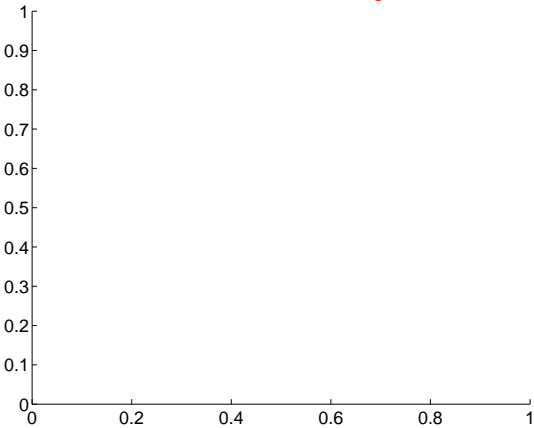
Q5 no difference image



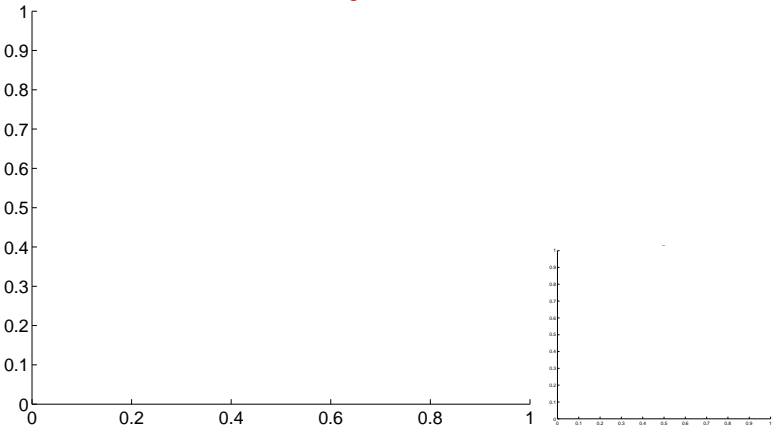
Q5 no OOT image



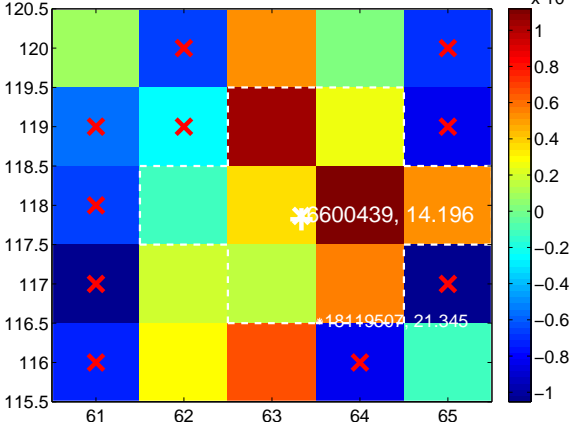
Q6 no difference image



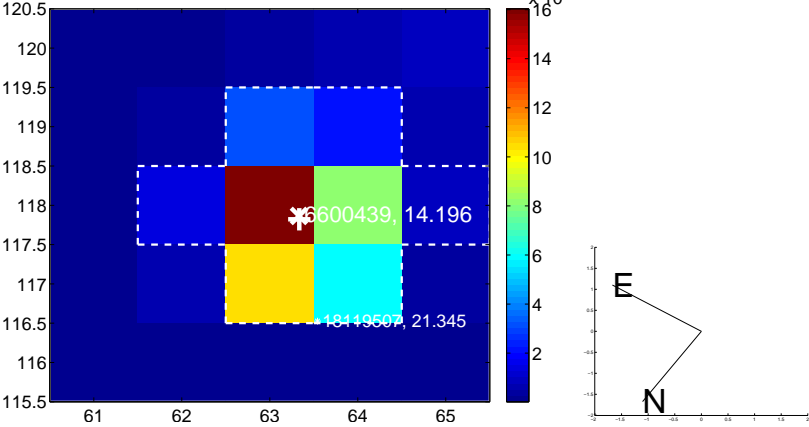
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



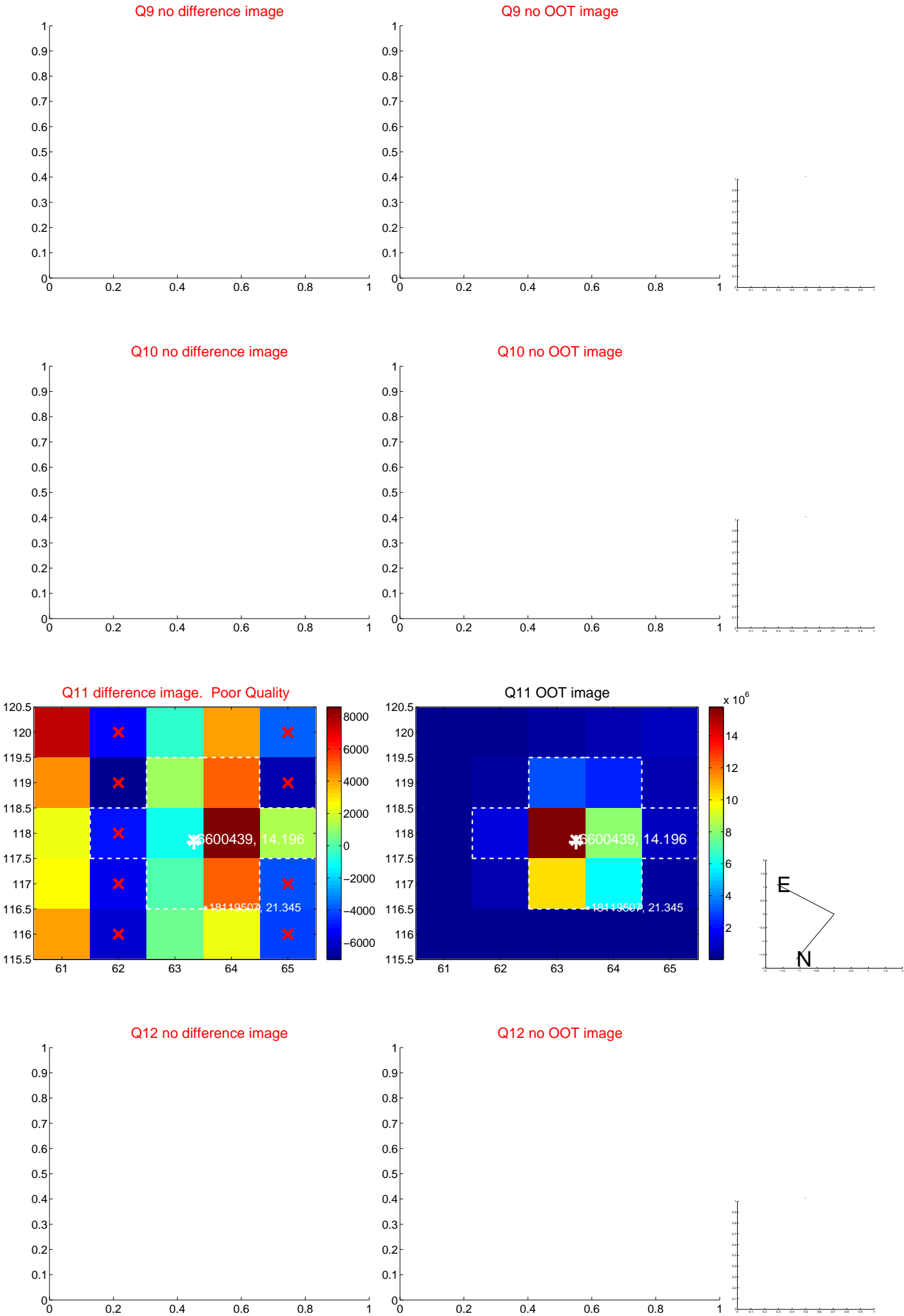
Q8 no difference image



Q8 no OOT image



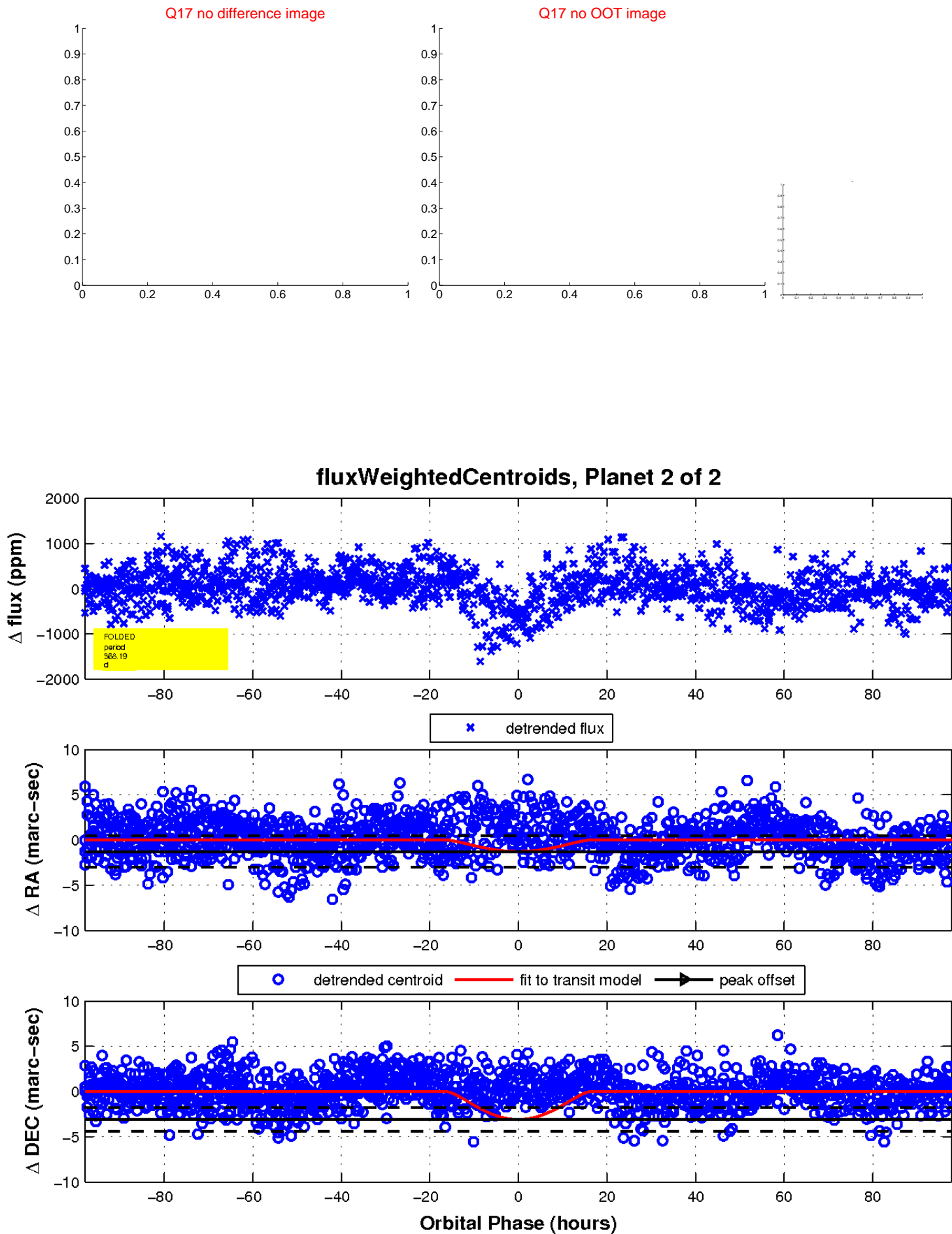
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

