

KIC 008030339

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})
008030339-01	OBS	3954.01	0.652448	132.055559	422.0	1.646	24.3	29.5	0.88	5638	2.19	3558.83
008030339-02	OBS	3954.02	5.716717	136.317960	452.0	2.214	9.7	11.0	0.88	5638	1.96	197.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008030339-01	OBS	FP	0.00	0	1	1	0	MOD_ODDEVEN_DV—CENT_UNRESOLVED_OFFSET
008030339-02	OBS	PC	1.00	0	0	0	0	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 008030339-01

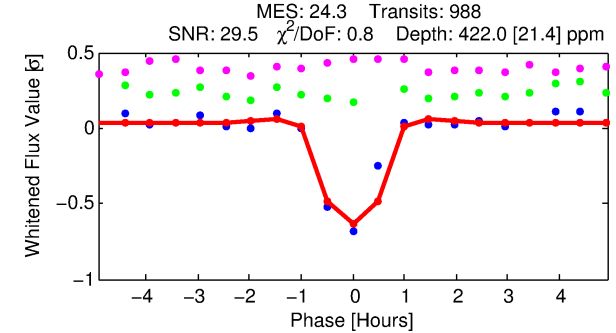
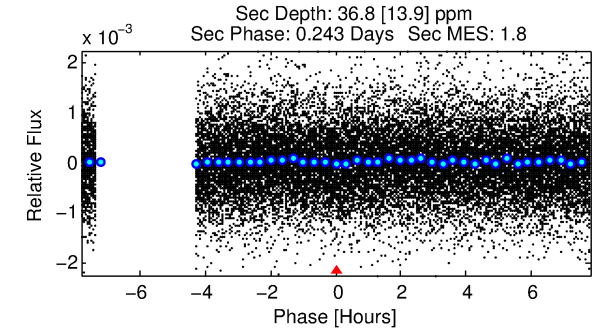
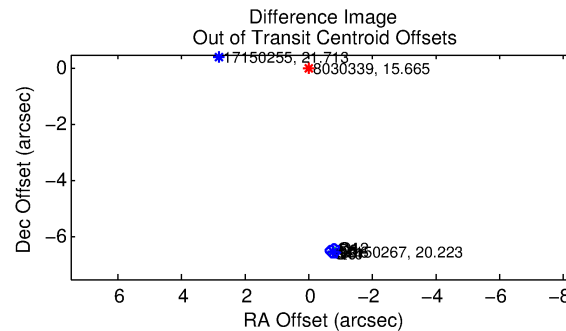
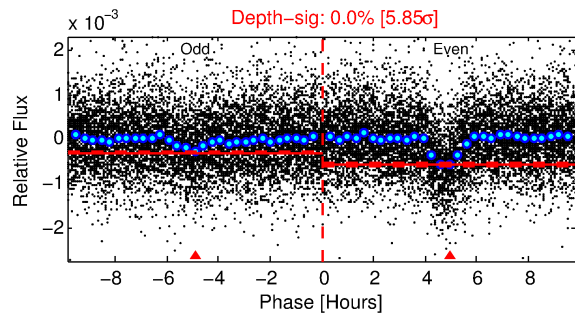
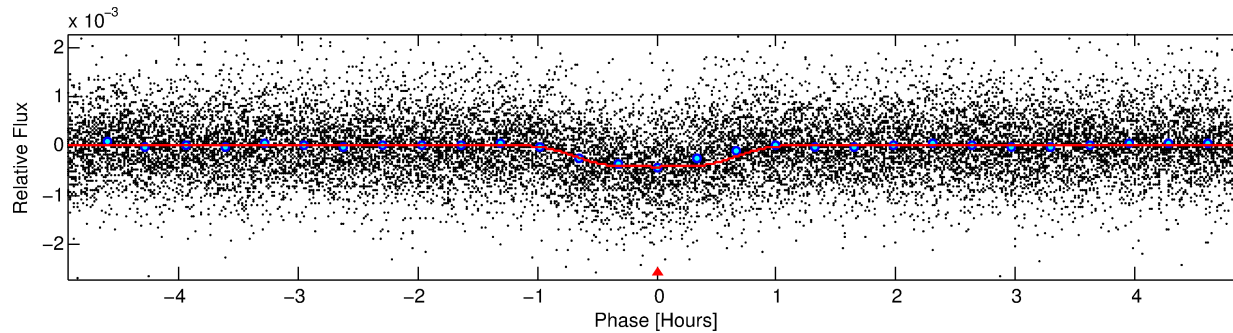
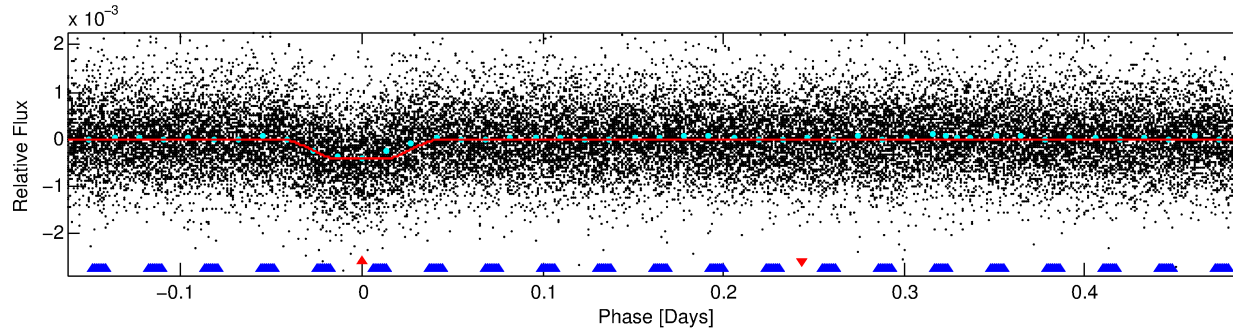
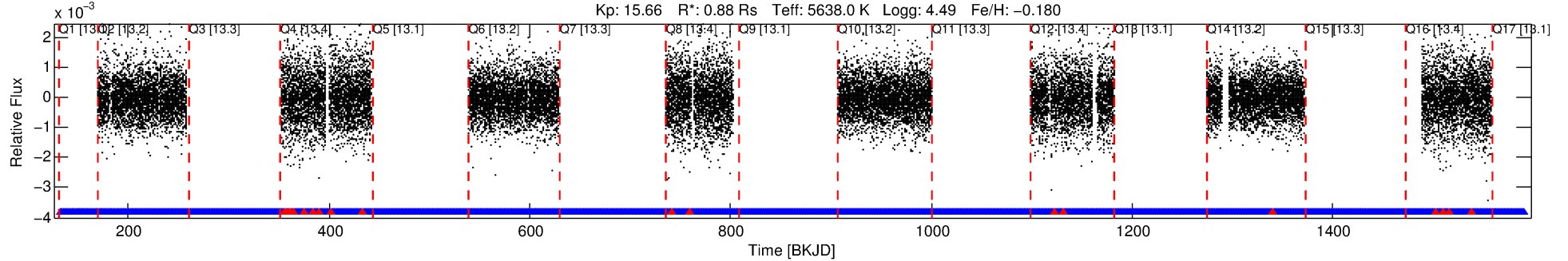
No Significant Match Found

DV One-Page Summary

KIC: 8030339 Candidate: 1 of 2 Period: 0.652 d

KOI: K03954.01 Corr: 0.919

Kp: 15.66 R*: 0.88 Rs Teff: 5638.0 K Logg: 4.49 Fe/H: -0.180



DV Fit Results:

Period = 0.65245 [0.00000] d
Epoch = 132.0556 [0.0007] BKJD
Rp/R* = 0.0227 [0.0040]
a/R* = 1.71 [0.91]
b = 0.91 [0.16]
Seff = 3558.83 [1230.10]
Teq = 1969 [170] K
Rp = 2.19 [0.69] Re
a = 0.0141 [0.0031] AU
Ag = 0.84 [0.51] [-0.31σ]
Teffp = 2915 [390] K [2.22σ]

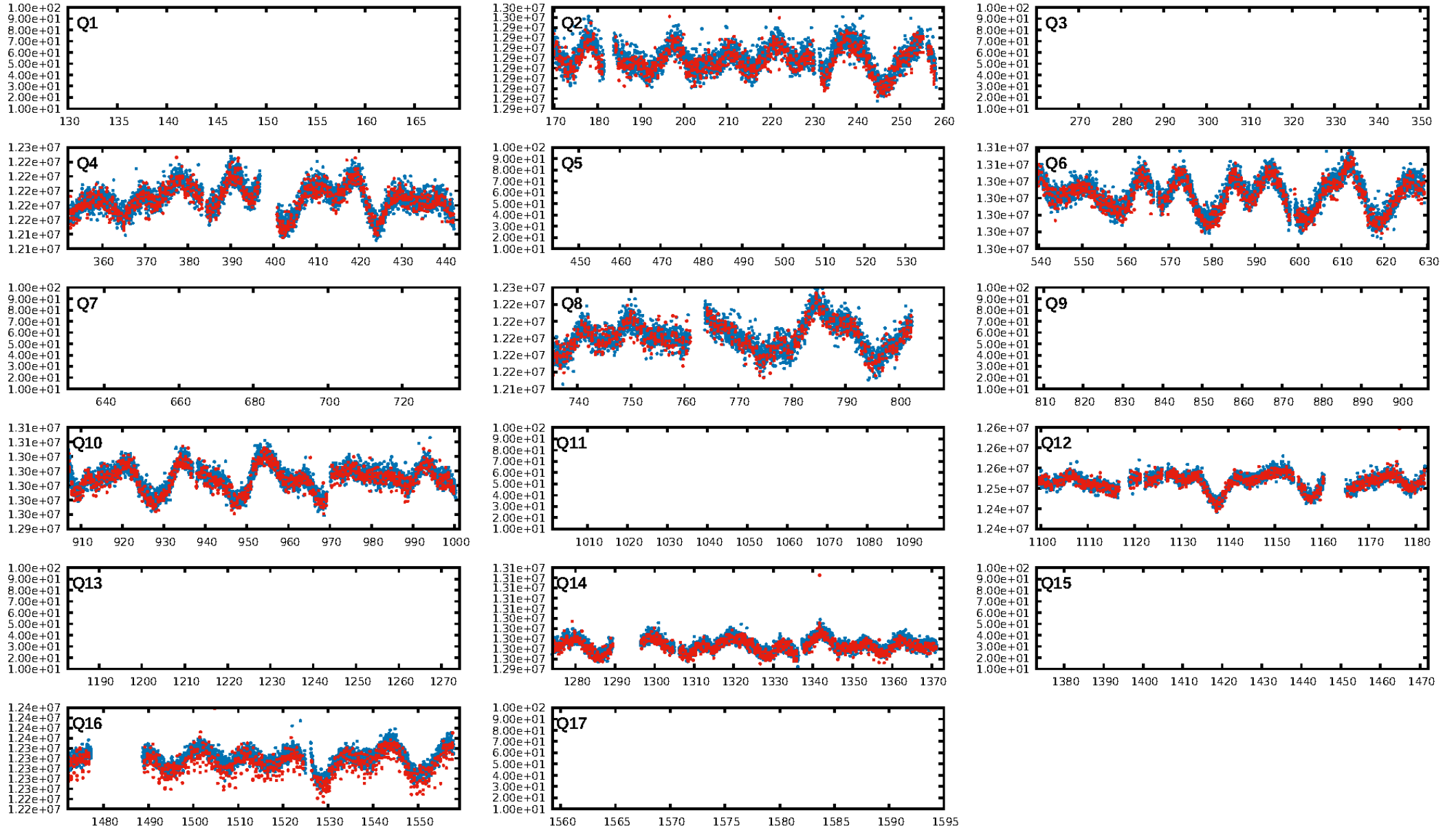
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [44.06σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.53e-122
RollingBand-fgt: 0.98 [967/988]
GhostDiagnostic-chr: -0.7556
Centroid-sig: N/A
Centroid-so: 13.201 arcsec [26.80σ]
OotOffset-rm: 6.557 arcsec [87.52σ]
KicOffset-rm: 6.549 arcsec [94.18σ]
OotOffset-st: 4/0/4/0 [8]
KicOffset-st: 4/0/4/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

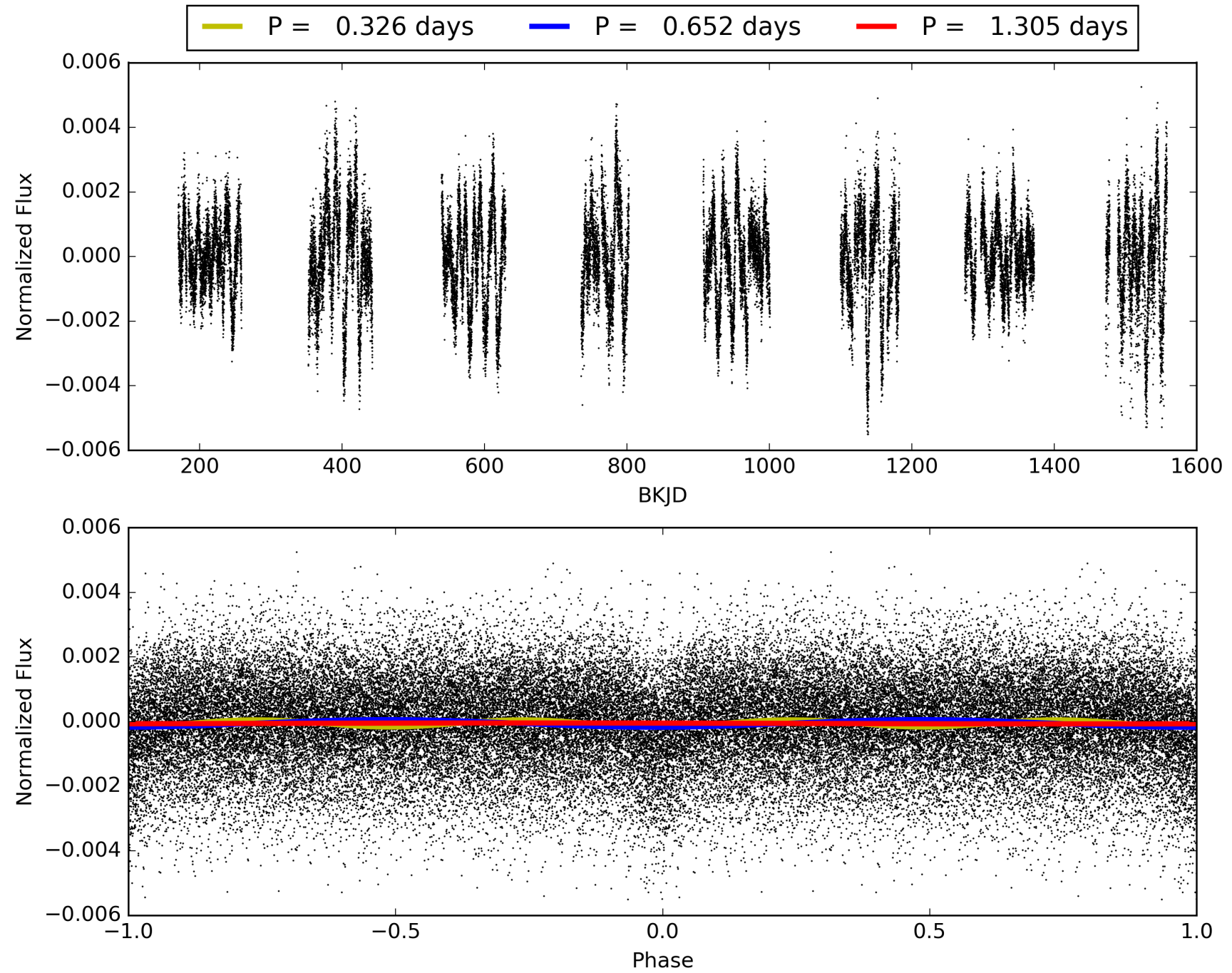
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:15:30 Z

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

TCE 008030339-01, PDC Light Curves

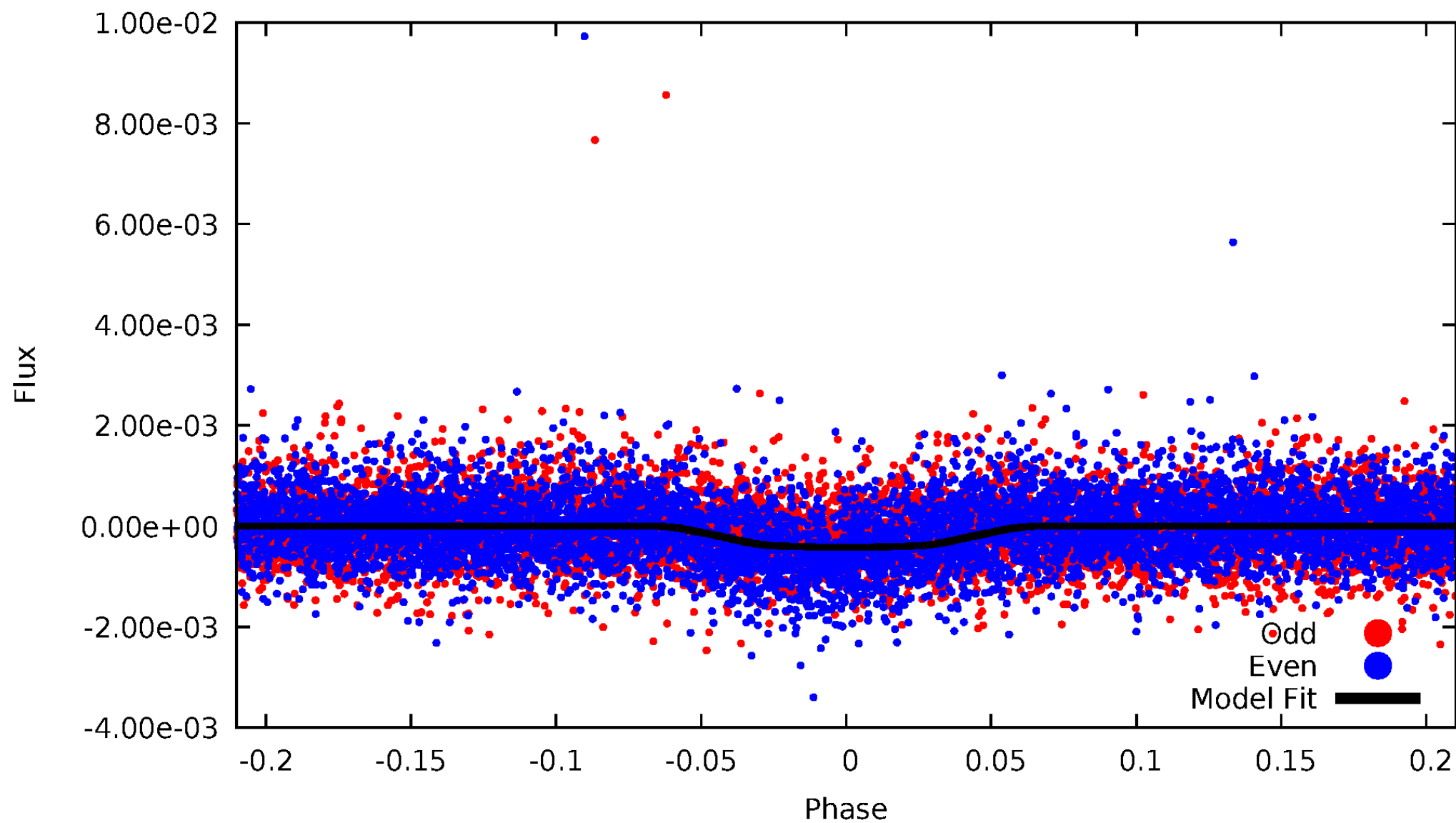


TCE 008030339-01



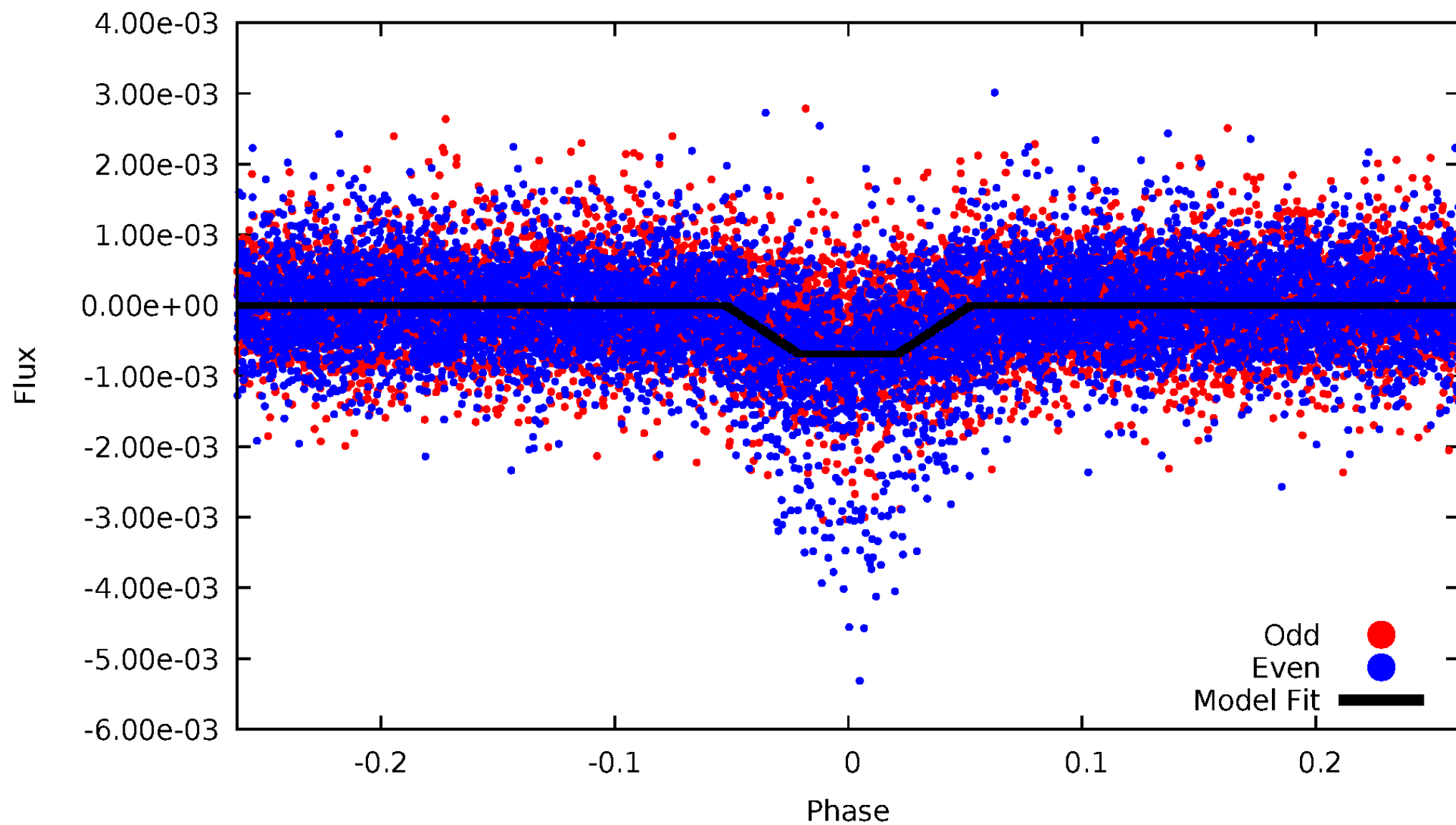
DV Odd/Even

TCE 008030339-01



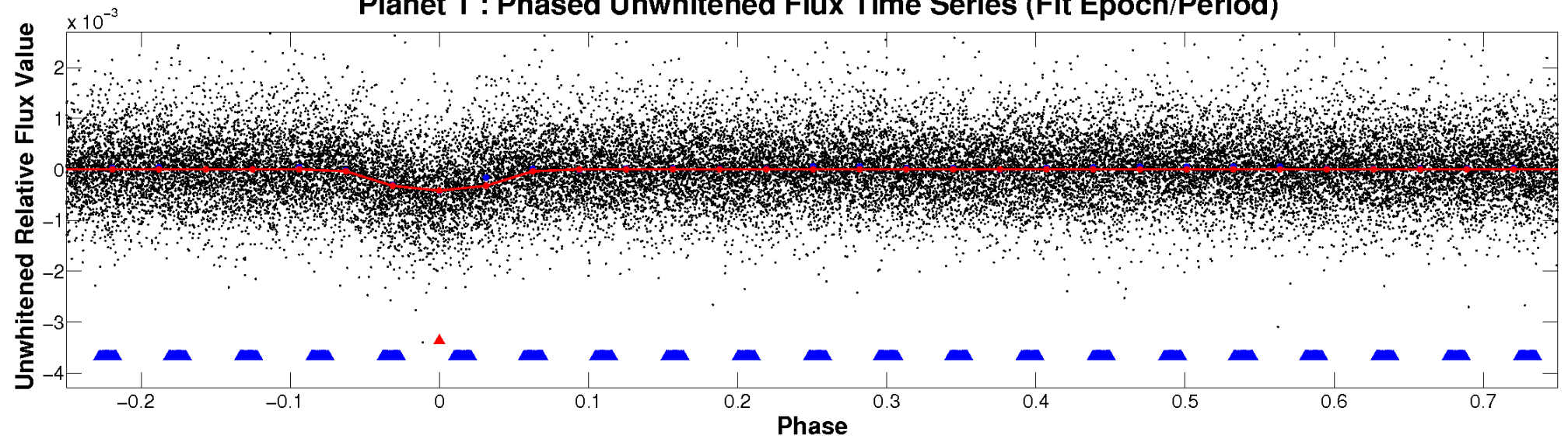
ALT Odd/Even

TCE 008030339-01

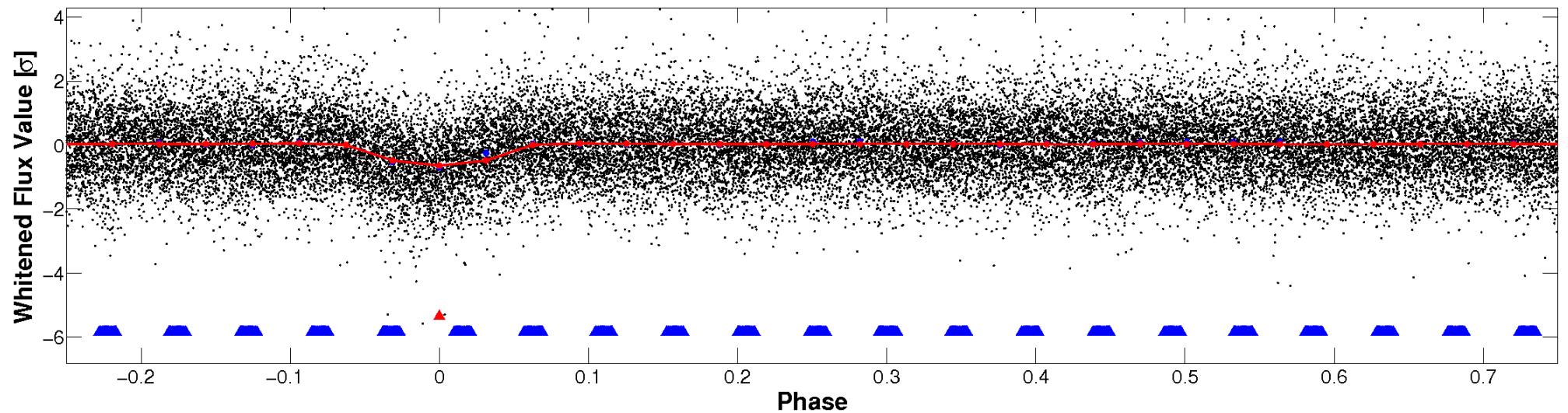


Non-Whitened Vs. Whitened Light Curve

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

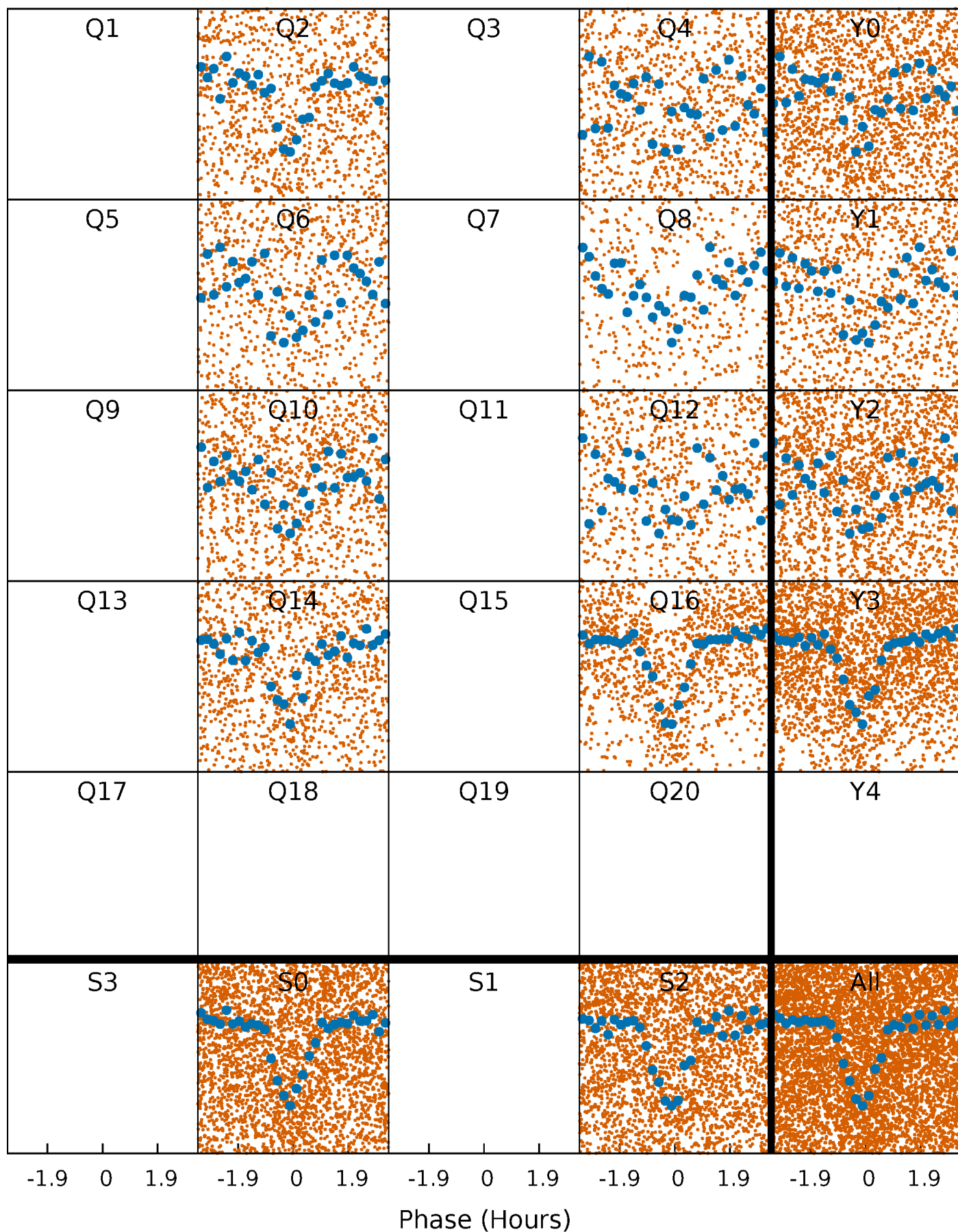


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



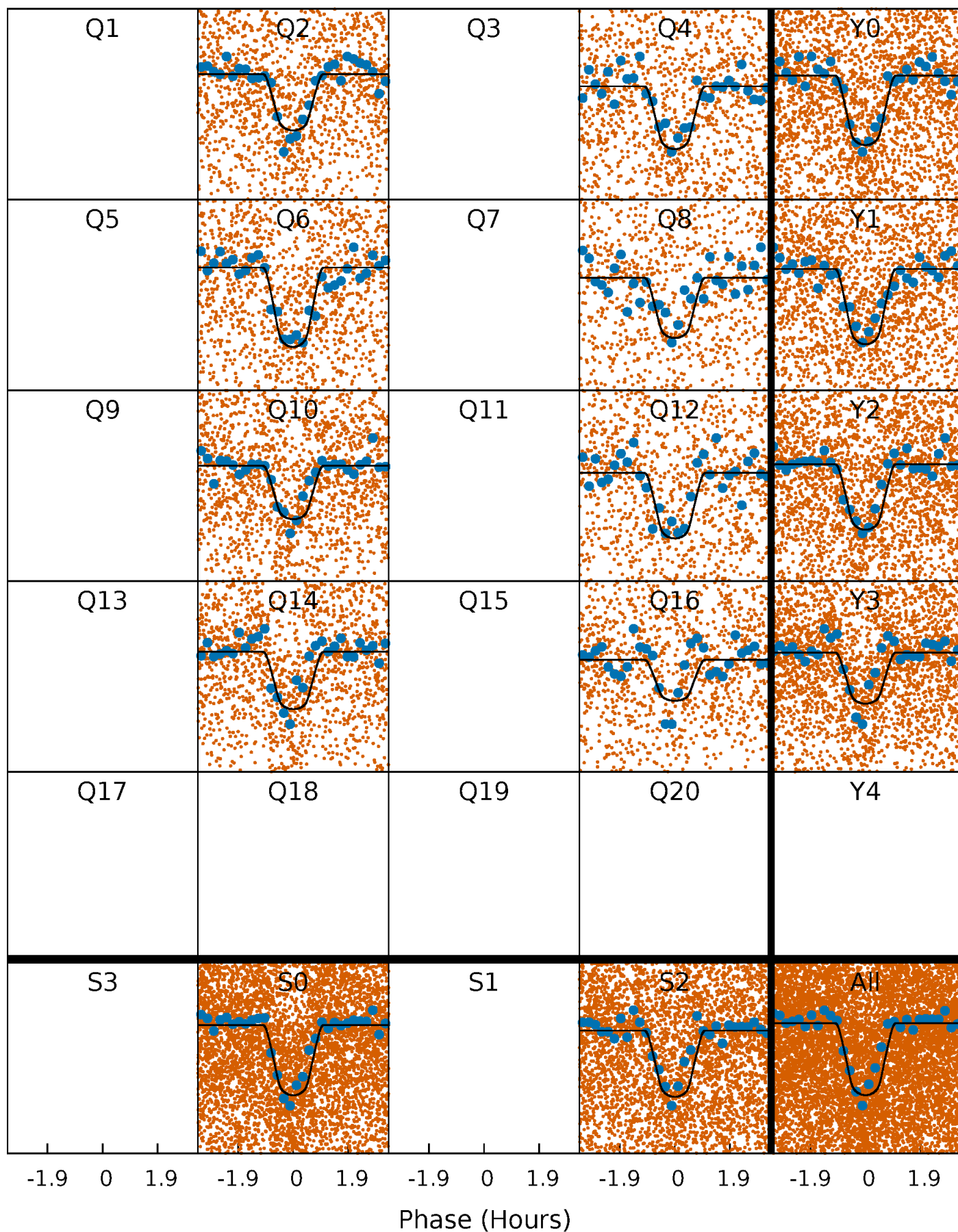
PDC Quarter-Phased Transit Curves

TCE 008030339-01 P= 0.652448 Days $T_0=132.055559$ (BKJD)



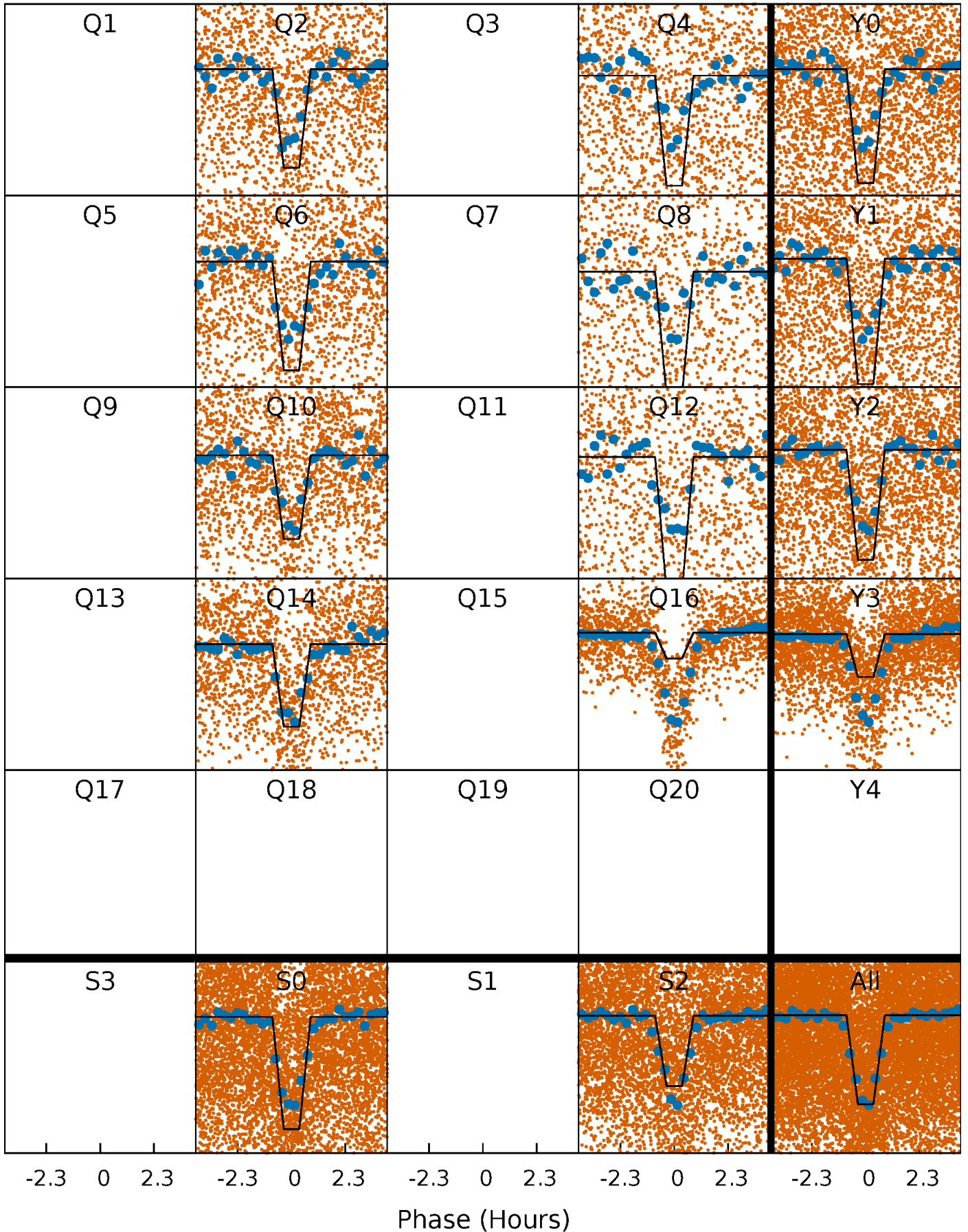
DV Quarter-Phased Transit Curves

TCE 008030339-01 P= 0.652448 Days $T_0=132.055559$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

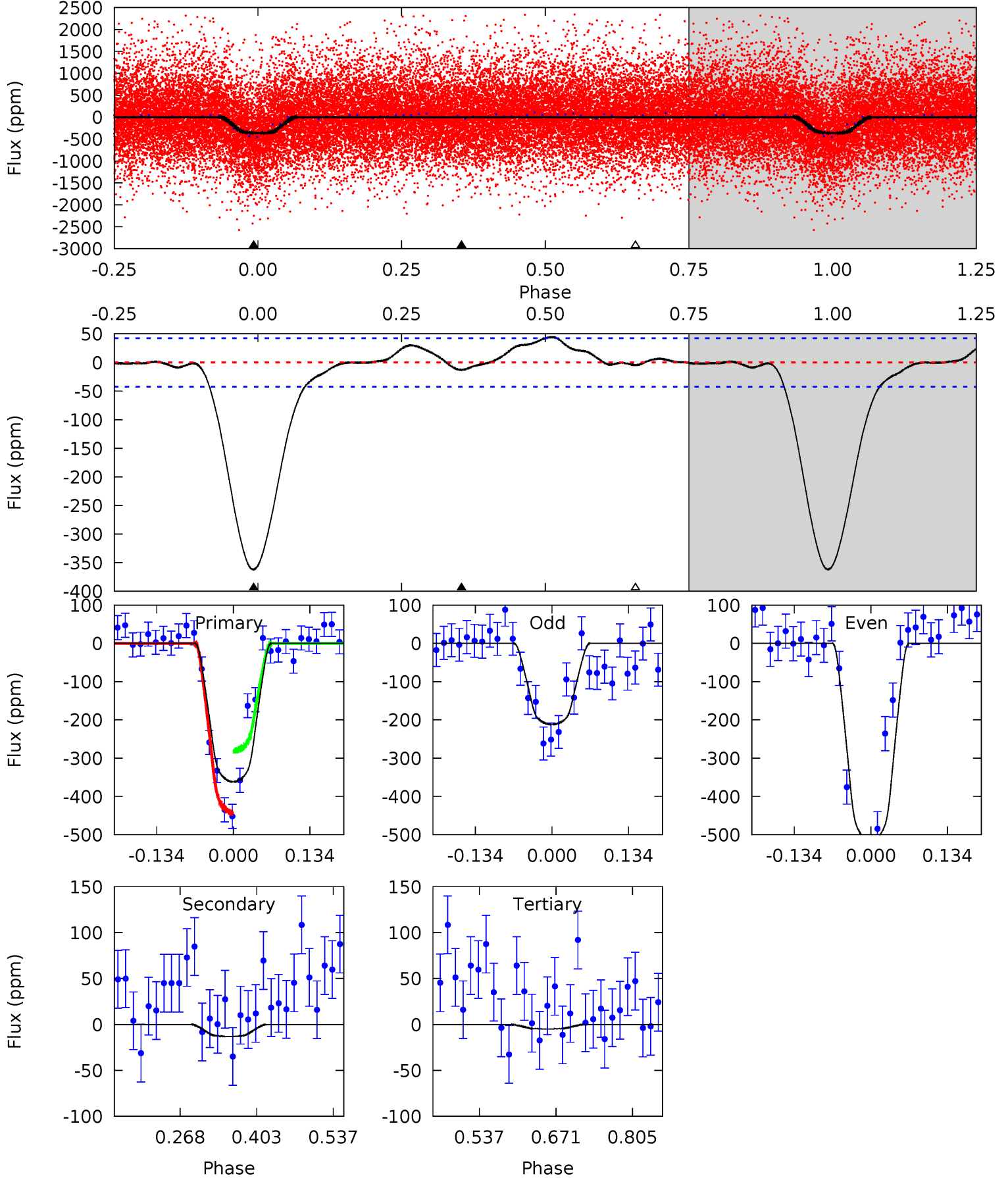
TCE 008030339-01 P= 0.652443 Days $T_0=132.056255$ (BKJD)



DV Model-Shift Uniqueness Test

008030339-01, P = 0.652448 Days, E = 132.055559 Days

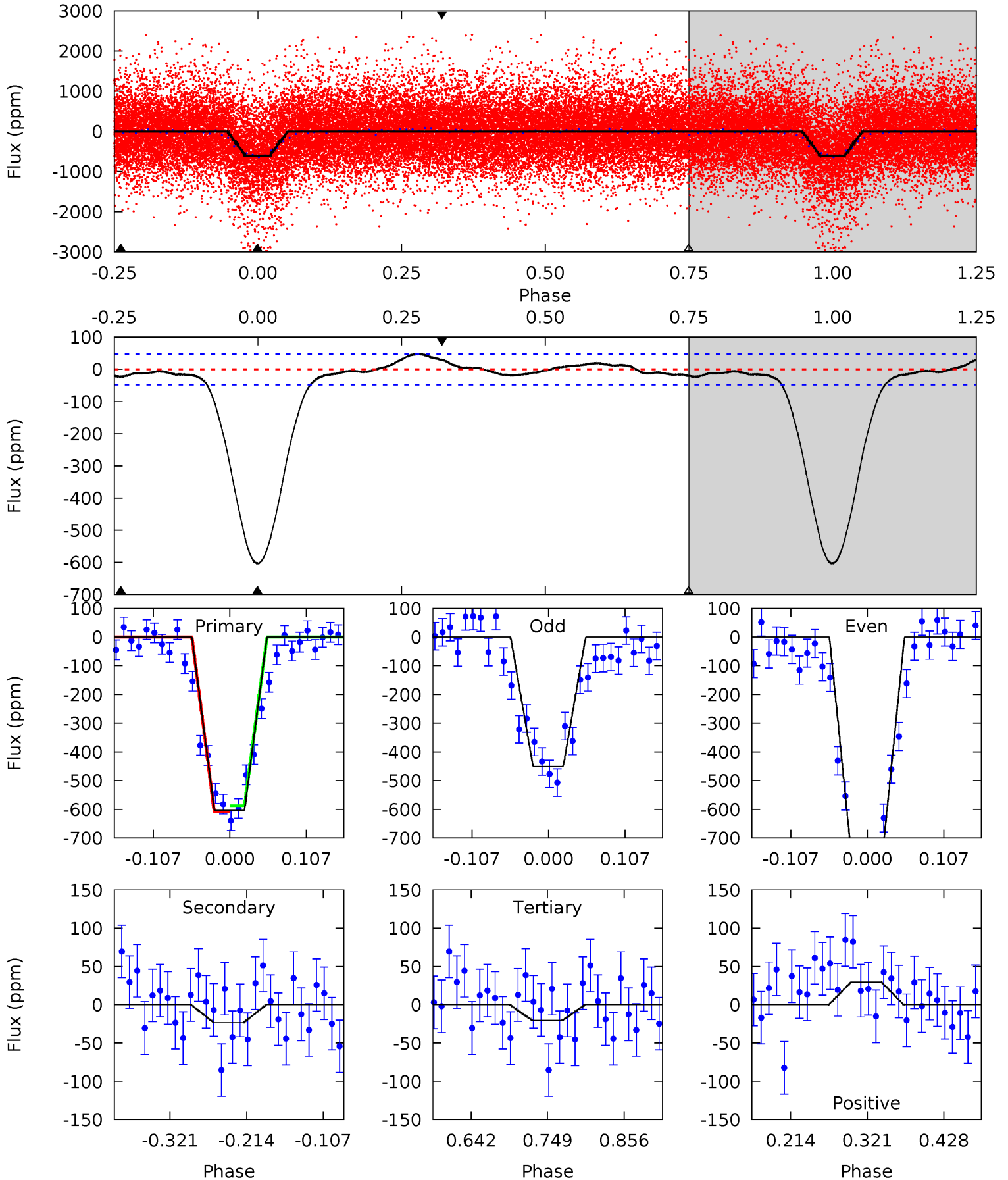
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.4	1.39	0.52	0	4.50	1.50	1.45	37.9	38.4	0.87	1.39	16.3	0.97	0.11	8.68



Alt Model-Shift Uniqueness Test

008030339-01, P = 0.652443 Days, E = 132.056255 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.7	2.23	1.96	2.85	4.55	1.61	1.71	55.7	54.8	0.27	-0.62	15.5	1.17	0.07	1.04



Stellar Parameters For KIC 008030339

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+186}_{-186}	$4.488^{+0.075}_{-0.175}$	$-0.180^{+0.300}_{-0.300}$	$0.883^{+0.229}_{-0.098}$	$0.875^{+0.115}_{-0.083}$	$1.789^{+0.578}_{-0.863}$
	+3%/-3%	+2%/-4%	+167%/-167%	+26%/-11%	+13%/-9%	+32%/-48%
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 008030339-01 / KOI 3954.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 9	$2.24^{+0.53}_{-0.46}$	2782^{+190}_{-139}	-2269^{+5142}_{-638}	$0.262^{+0.290}_{-0.203}$
Alt.	-23 ± 10	$2.60^{+0.52}_{-0.43}$	2799^{+179}_{-150}	2422^{+551}_{-5065}	$0.365^{+0.241}_{-0.185}$

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

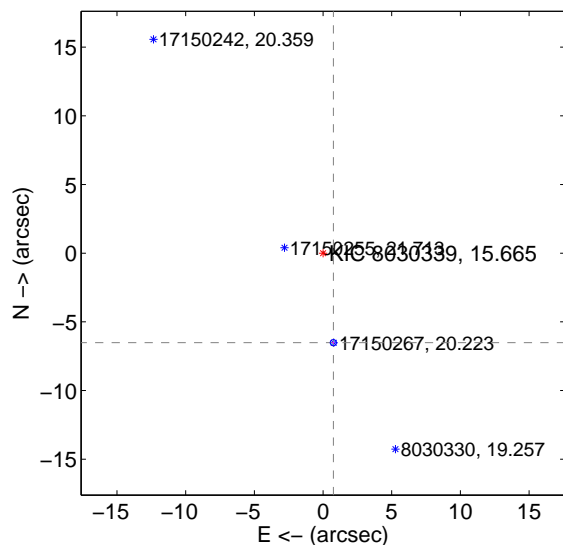
Supplemental centroid analysis for 008030339-01. Kepler magnitude: 15.66. Transit SNR 29.51

There are 8 quarters with good PRF difference image offsets

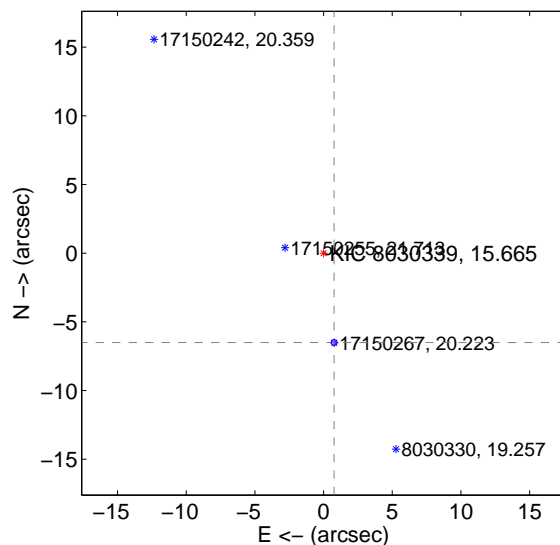
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.557 ± 0.075	87.52	-0.752 ± 0.072	-6.514 ± 0.075
PRF-fit source offset from KIC position	6.549 ± 0.070	94.18	-0.766 ± 0.069	-6.505 ± 0.070
photometric centroid source offset	13.20 ± 0.49	26.80	-2.29 ± 0.43	-13.00 ± 0.49

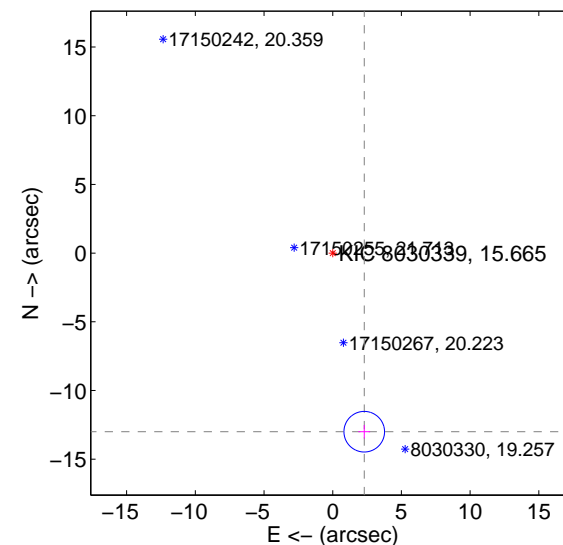
offset from difference PRF-fit to OOT PRF-fit



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.

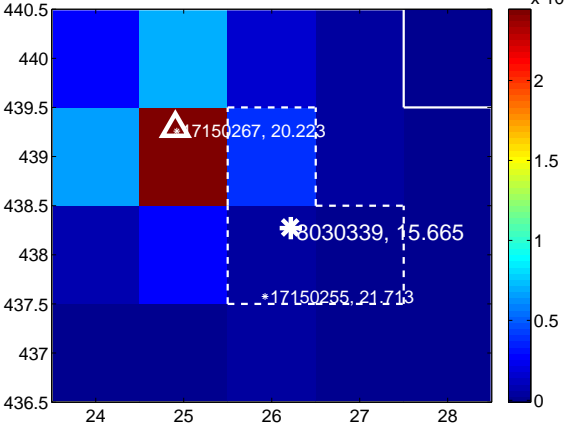
Q1 no difference image



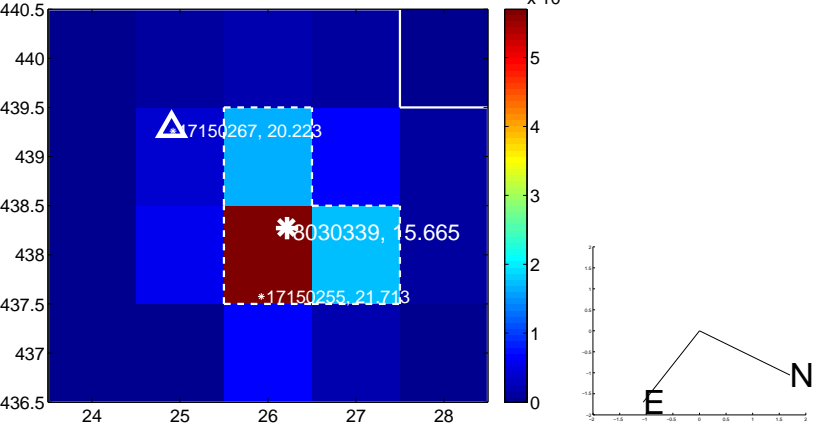
Q1 no OOT image



Q2 difference image



Q2 OOT image



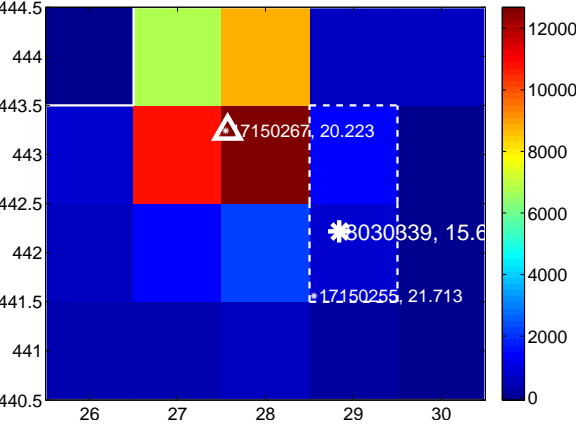
Q3 no difference image



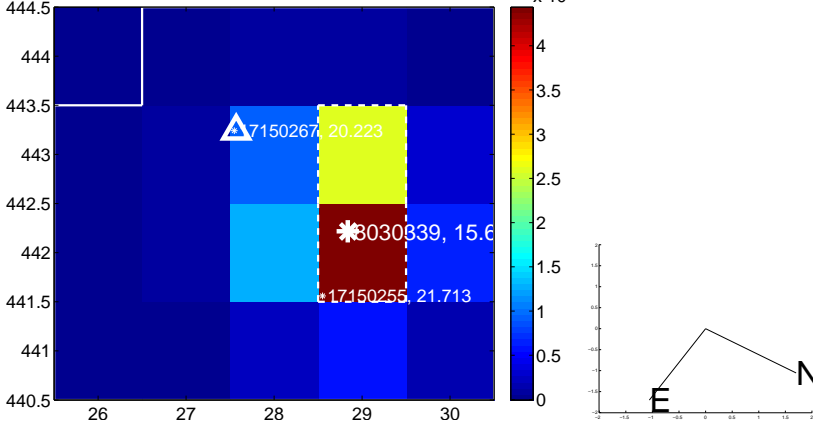
Q3 no OOT image



Q4 difference image



Q4 OOT image



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

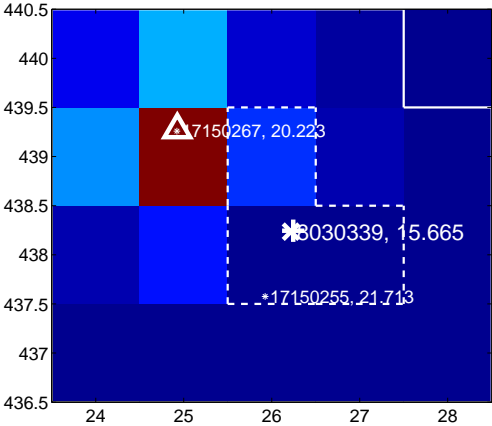
Q5 no difference image



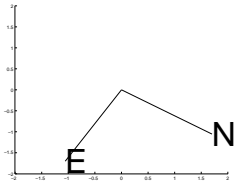
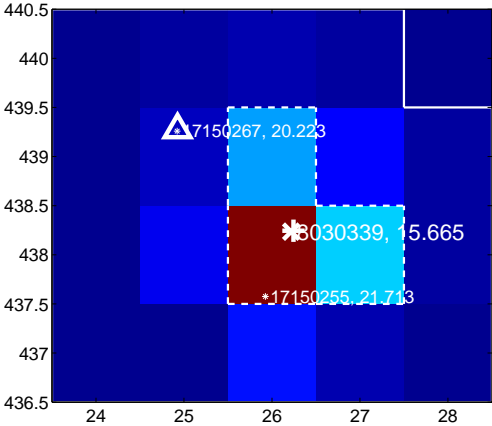
Q5 no OOT image



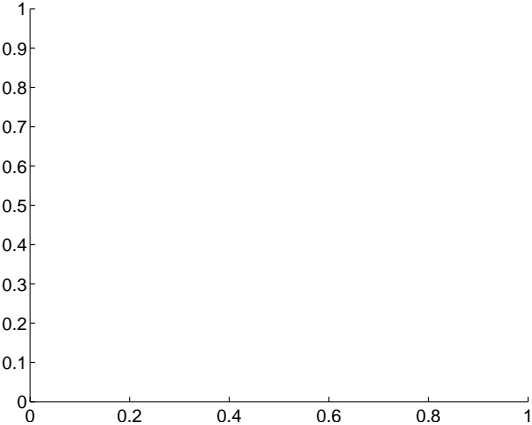
Q6 difference image



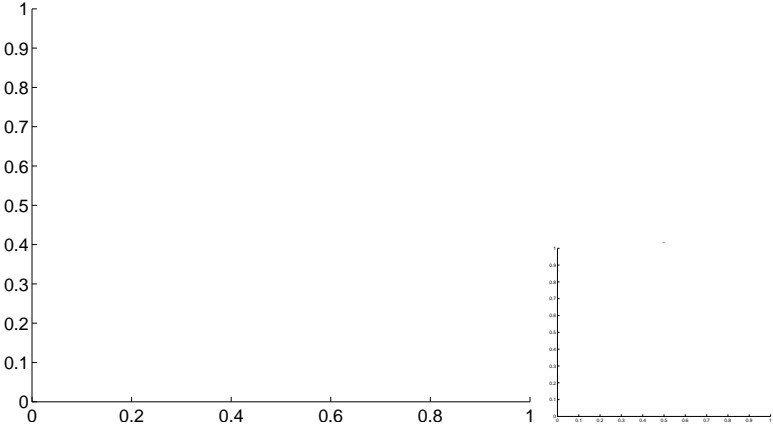
Q6 OOT image



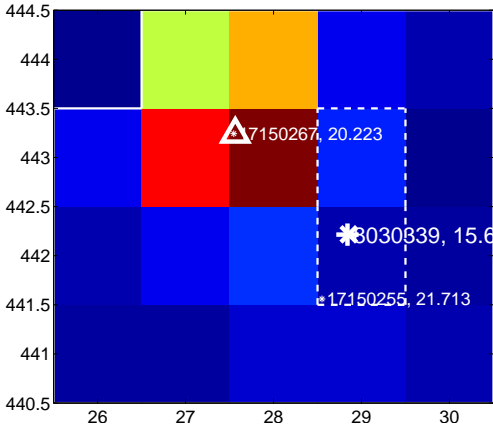
Q7 no difference image



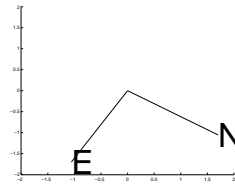
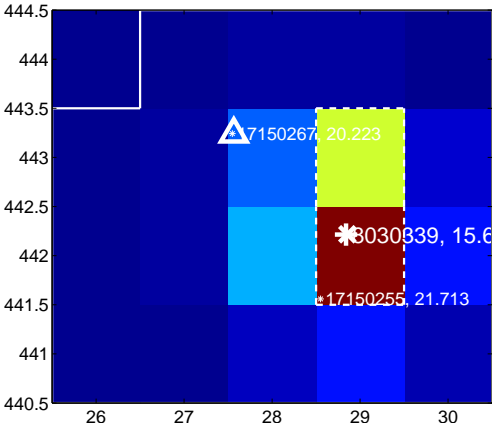
Q7 no OOT image



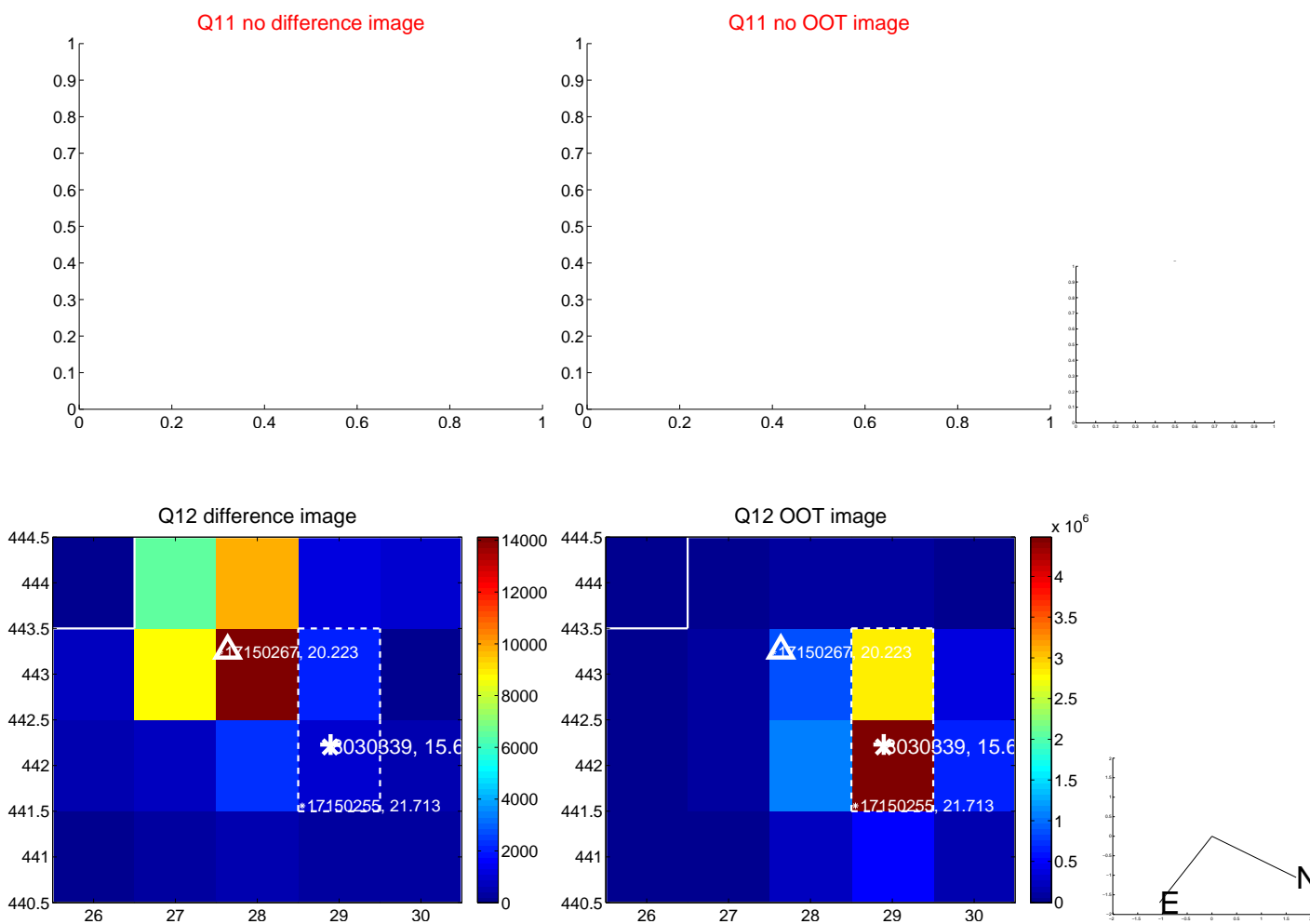
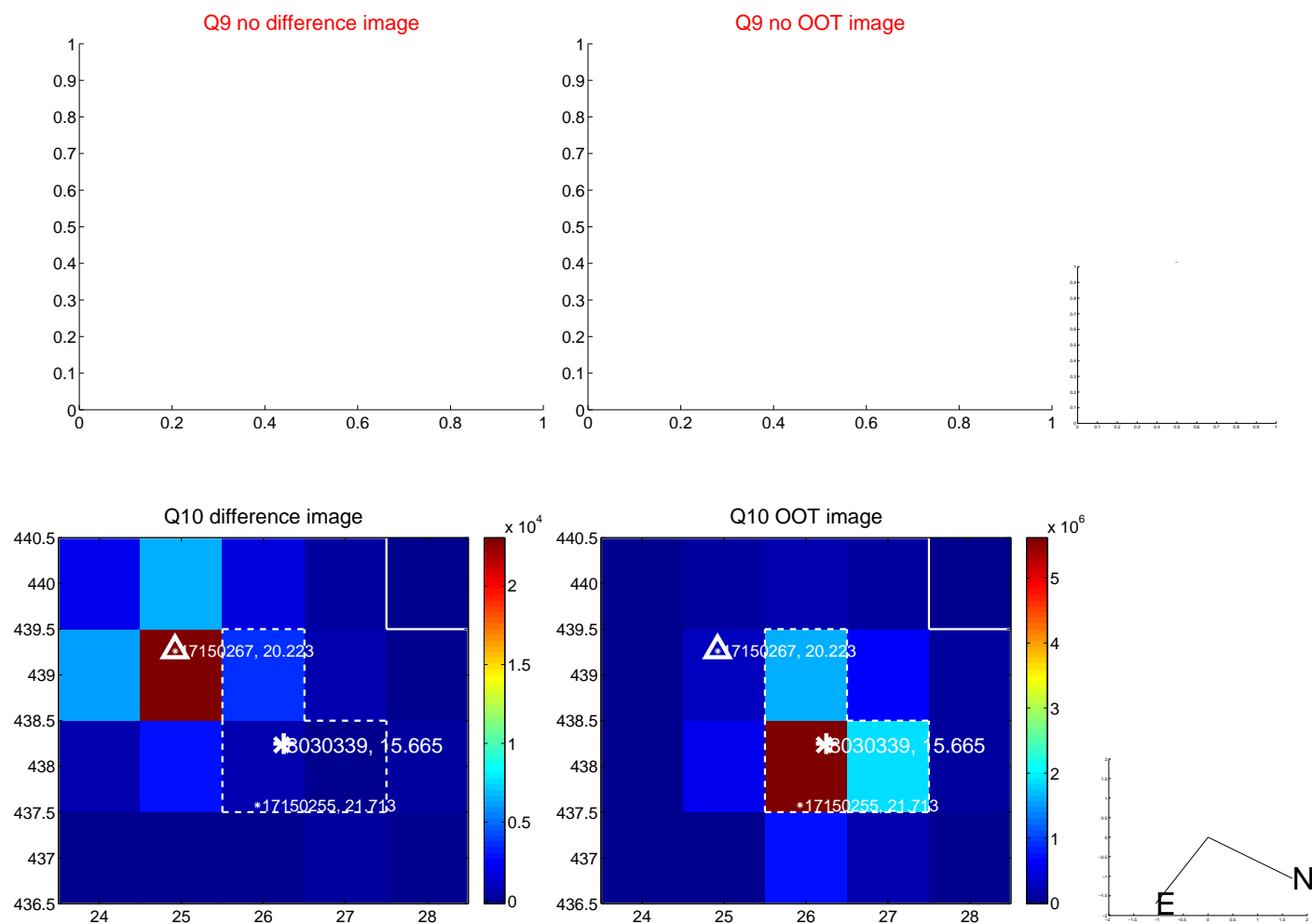
Q8 difference image



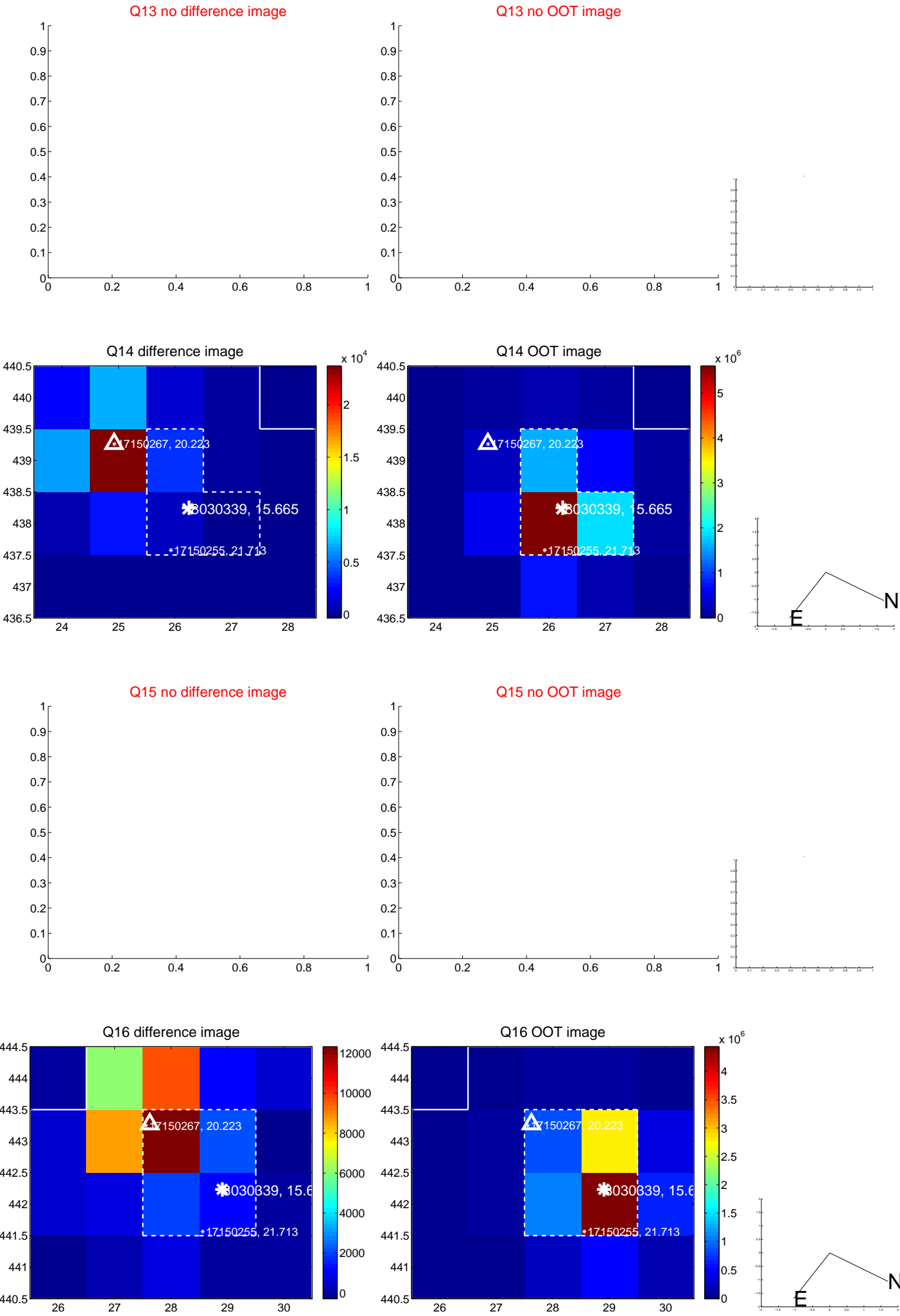
Q8 OOT image



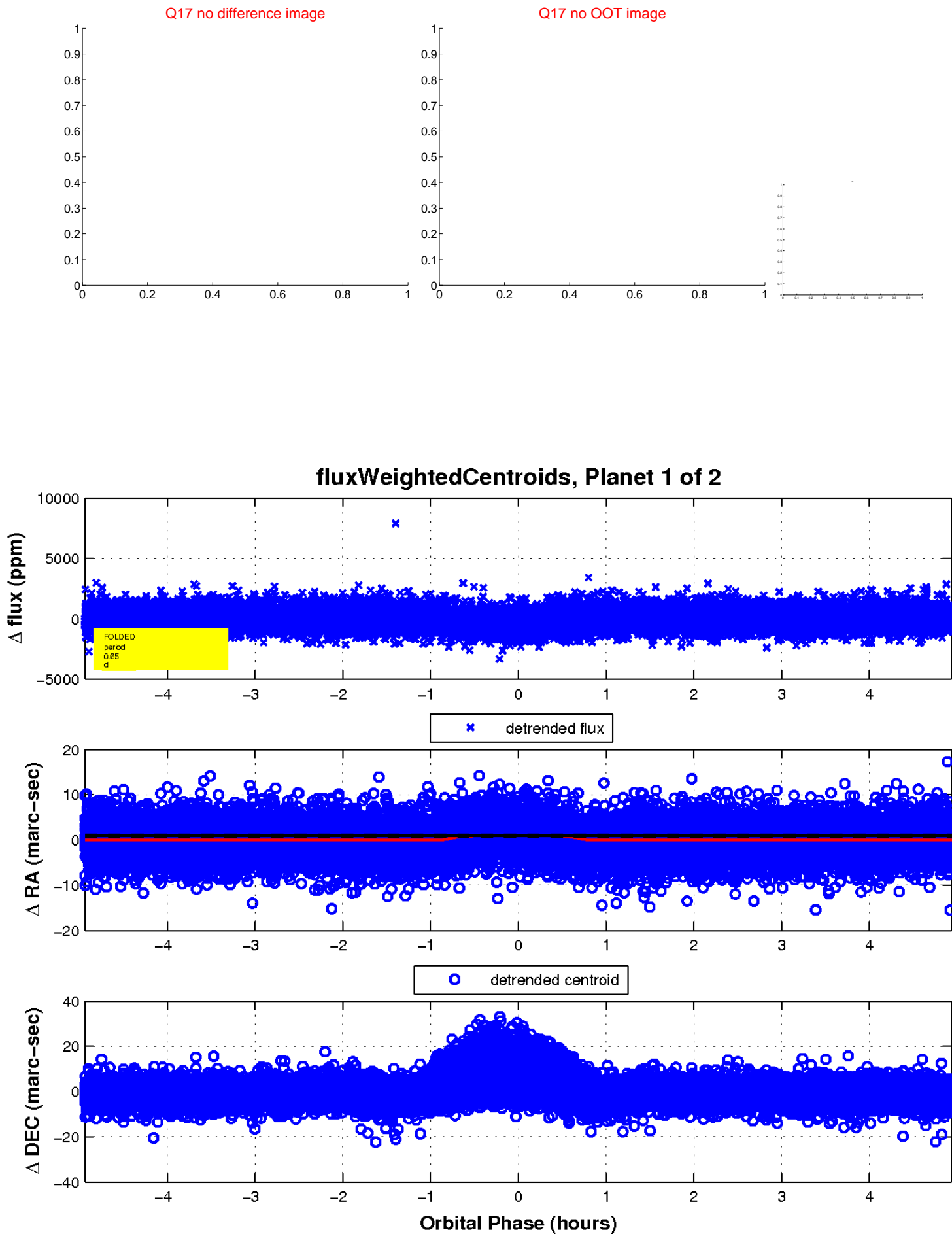
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

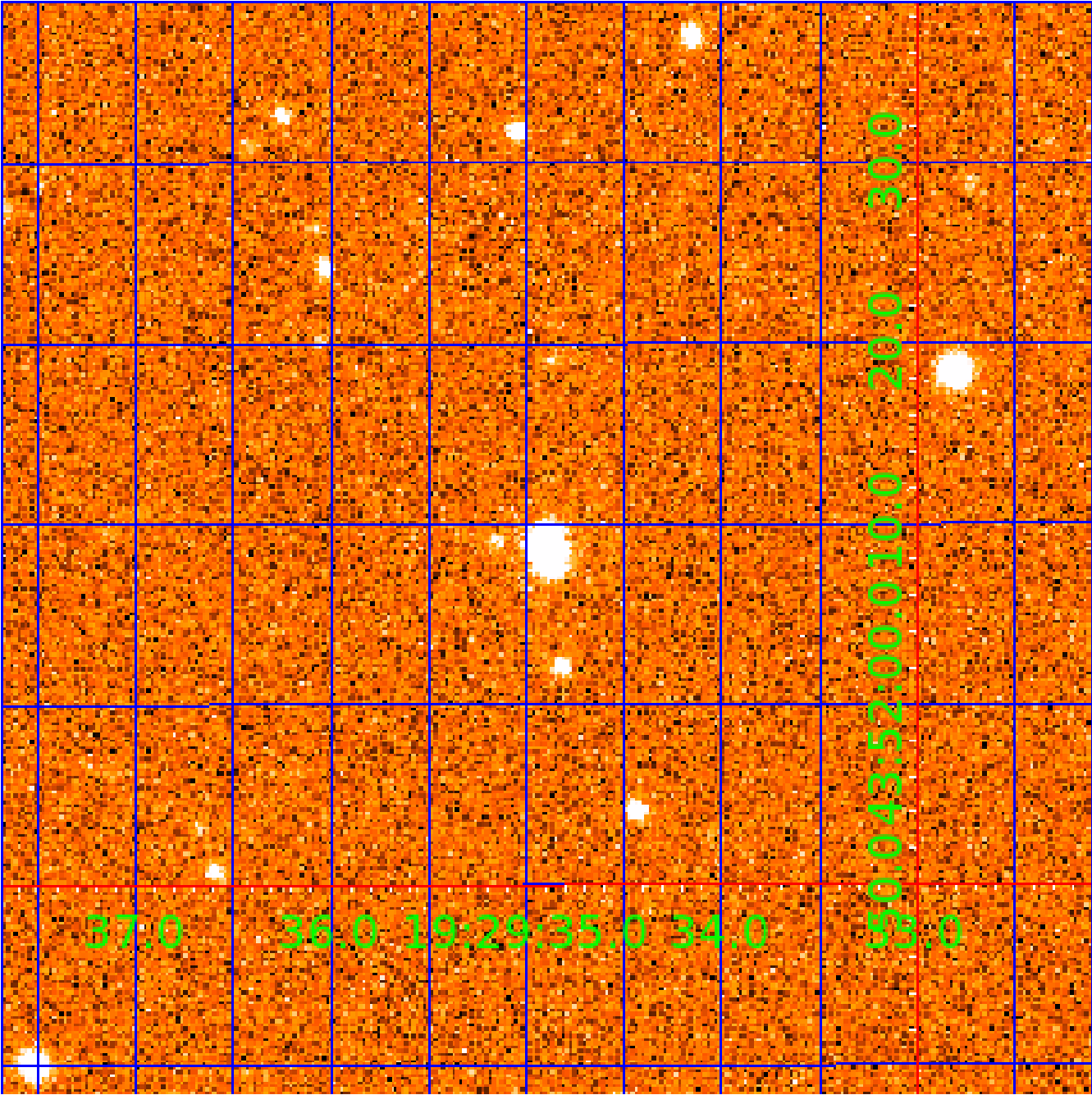


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008030339

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})
008030339-01	OBS	3954.01	0.652448	132.055559	422.0	1.646	24.3	29.5	0.88	5638	2.19	3558.83
008030339-02	OBS	3954.02	5.716717	136.317960	452.0	2.214	9.7	11.0	0.88	5638	1.96	197.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008030339-01	OBS	FP	0.00	0	1	1	0	MOD_ODDEVEN_DV—CENT_UNRESOLVED_OFFSET
008030339-02	OBS	PC	1.00	0	0	0	0	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.

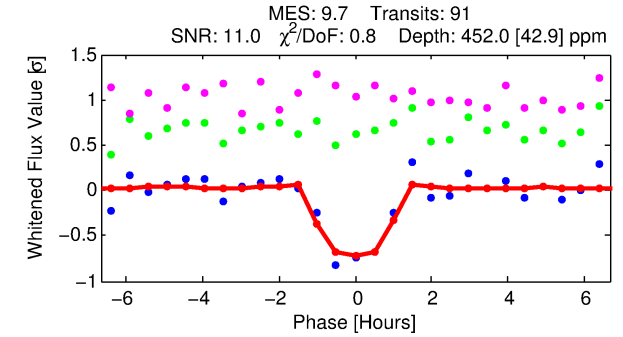
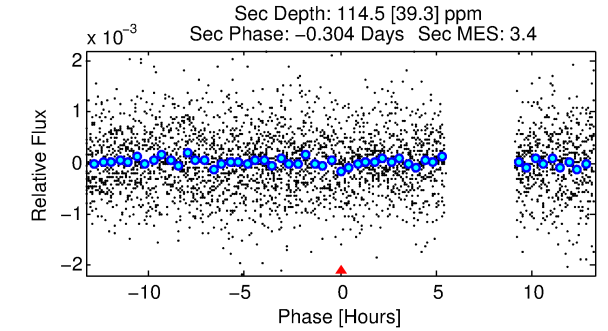
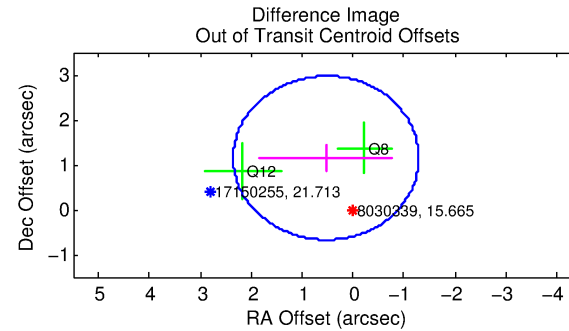
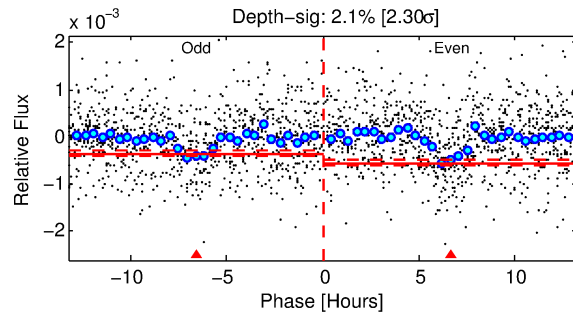
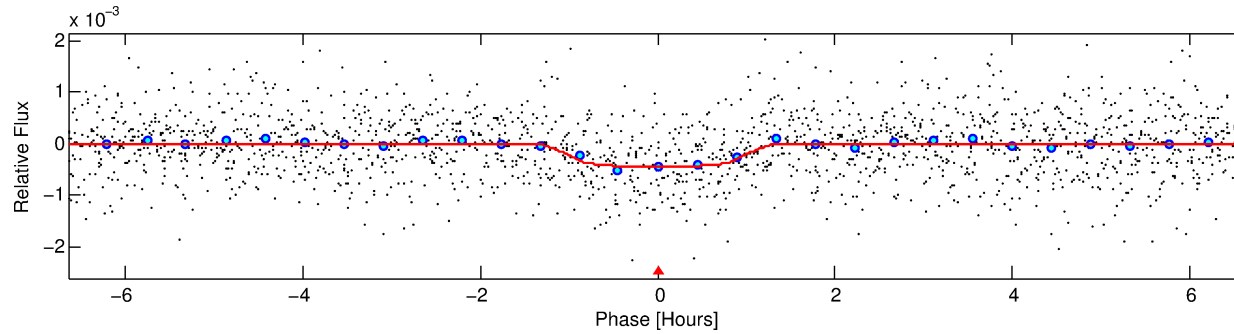
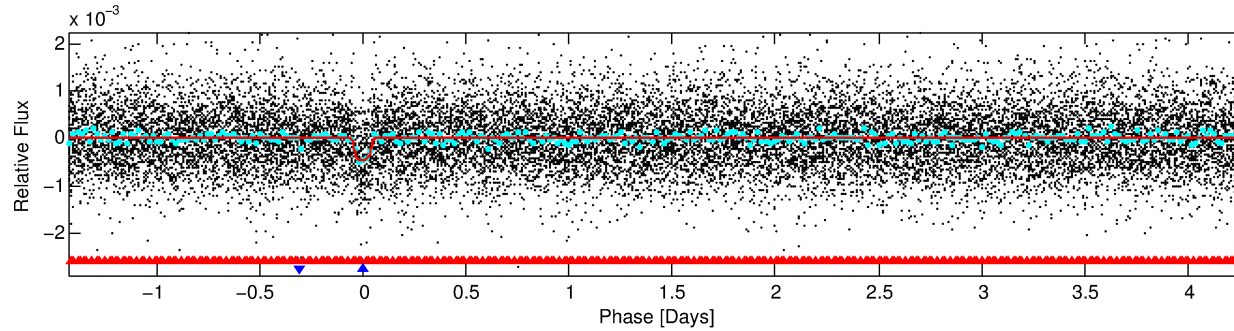
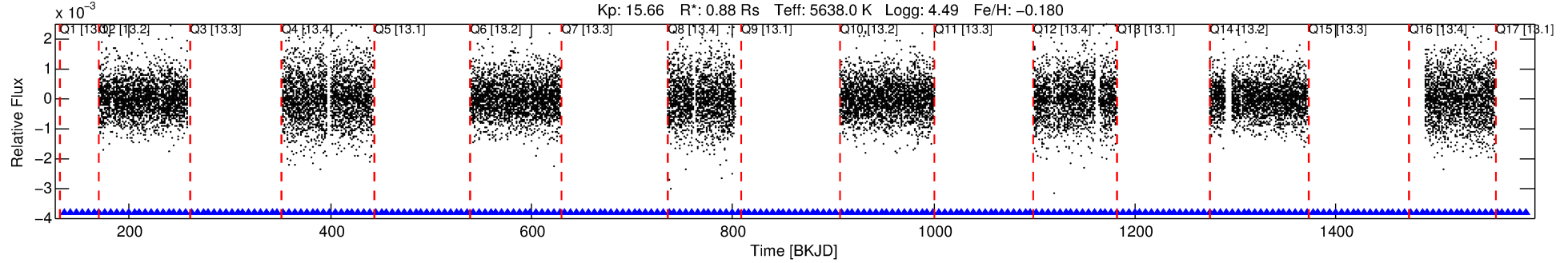
Ephemeris Match Information For 008030339-02

No Significant Match Found

DV One-Page Summary

KIC: 8030339 Candidate: 2 of 2 Period: 5.717 d
KOI: K03954.02 Corr: 0.940

Kp: 15.66 R*: 0.88 Rs Teff: 5638.0 K Logg: 4.49 Fe/H: -0.180



DV Fit Results:

Period = 5.71672 [0.00003] d
Epoch = 136.3180 [0.0039] BKJD
Rp/R* = 0.0203 [0.0296]
a/R* = 16.25 [100.97]
b = 0.60 [6.67]
Seff = 197.02 [68.10]
Teq = 955 [83] K
Rp = 1.96 [2.89] Re
a = 0.0599 [0.0131] AU
Ag = 58.93 [173.81] [0.33σ]
Teff = 4092 [3003] K [1.04σ]

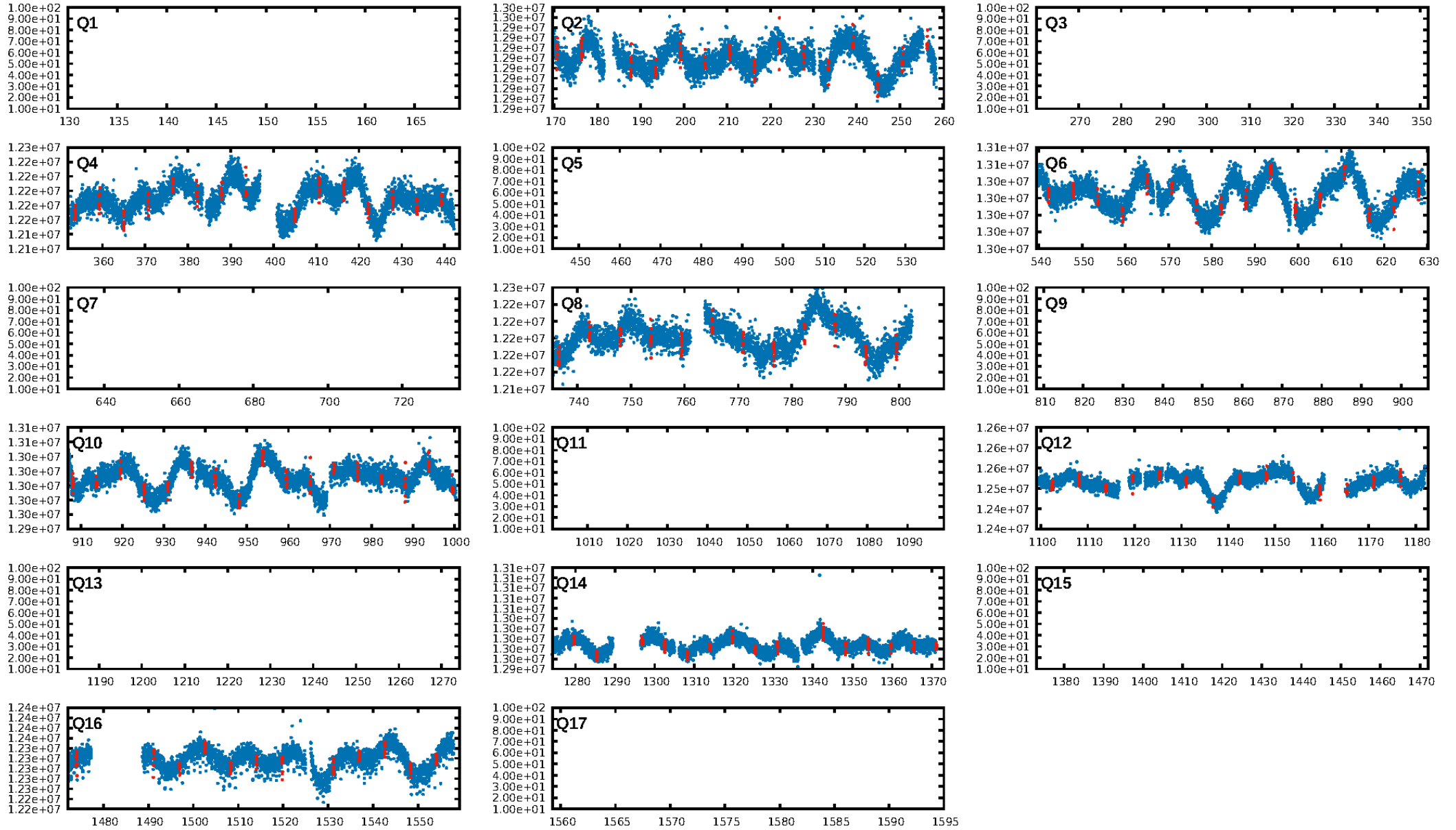
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [44.06σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.83e-21
RollingBand-fgt: 1.00 [91/91]
GhostDiagnostic-chr: 12.49
Centroid-sig: N/A
Centroid-so: 1.826 arcsec [1.85σ]
OotOffset-rm: 1.264 arcsec [2.08σ]
KicOffset-rm: 1.227 arcsec [2.08σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 0.75 [6/8]

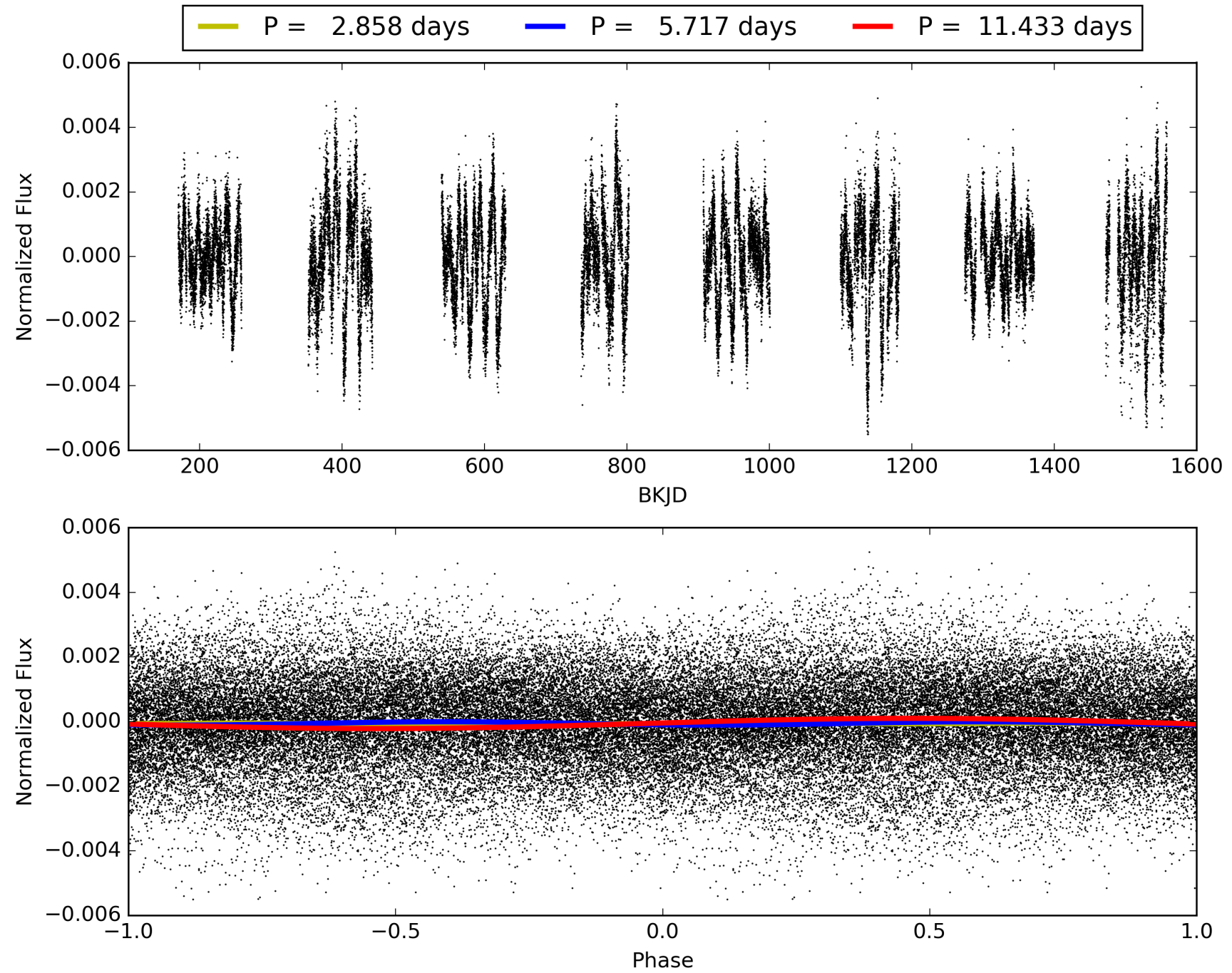
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:15:36 Z

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

TCE 008030339-02, PDC Light Curves

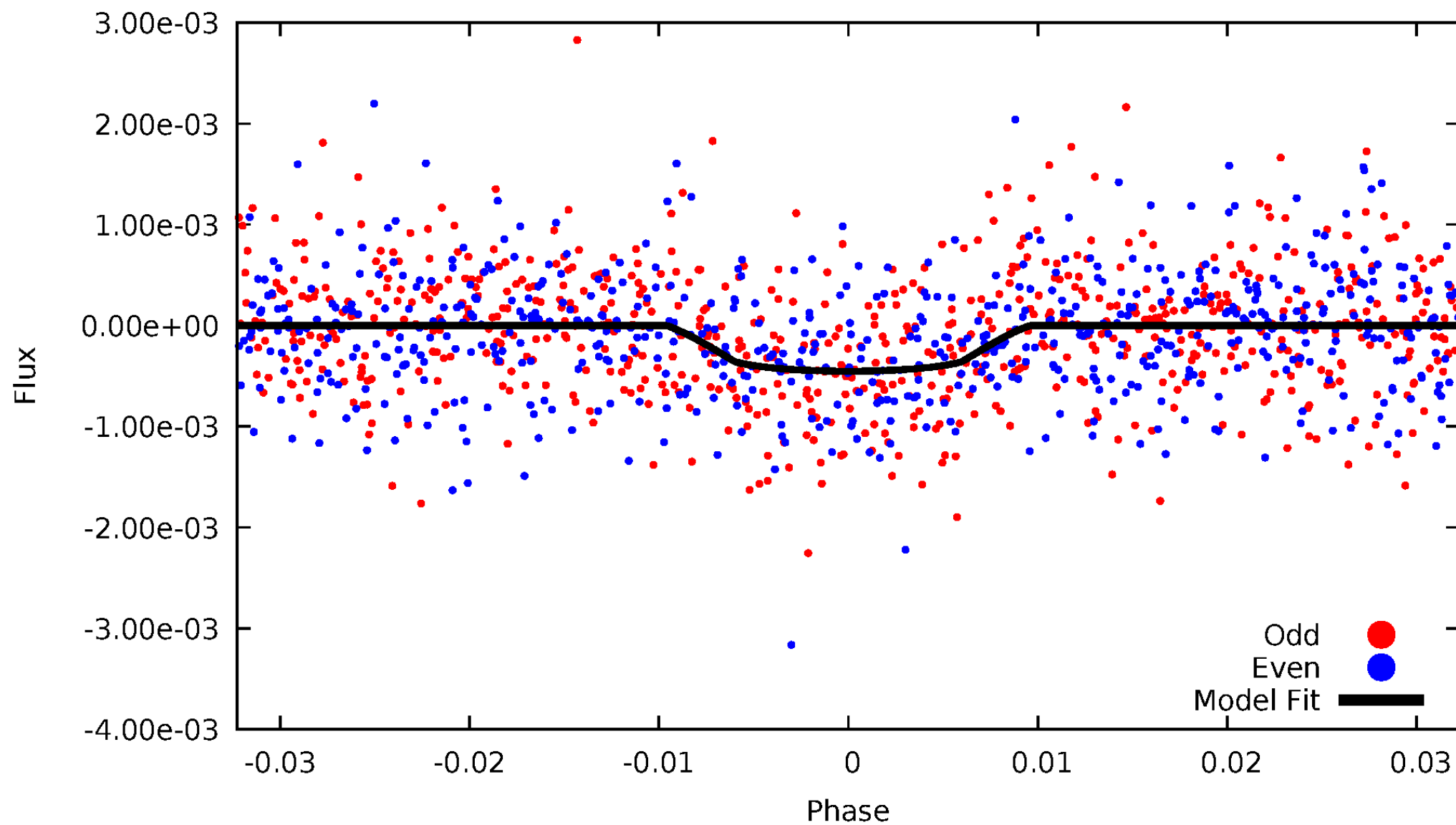


TCE 008030339-02



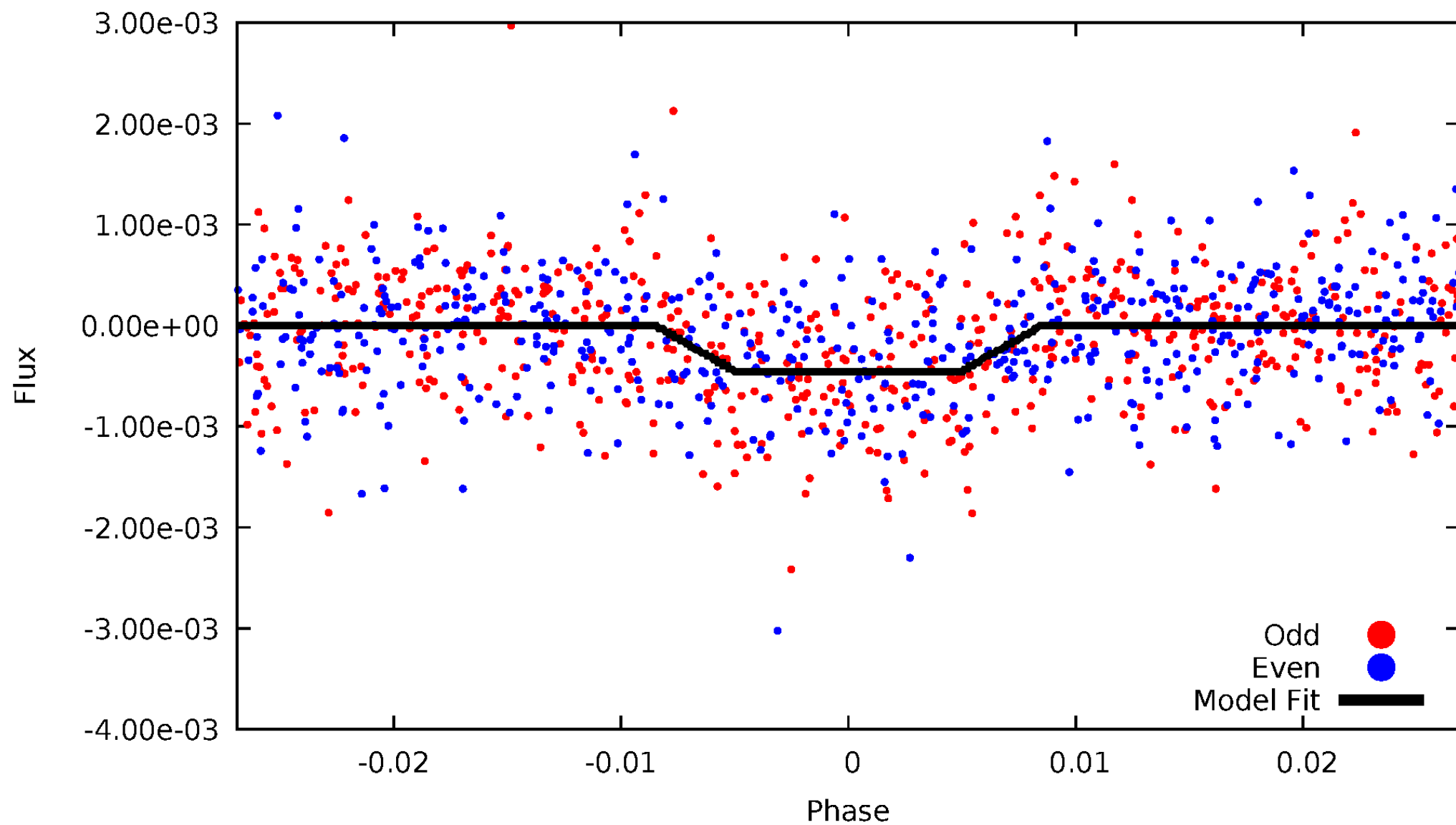
DV Odd/Even

TCE 008030339-02



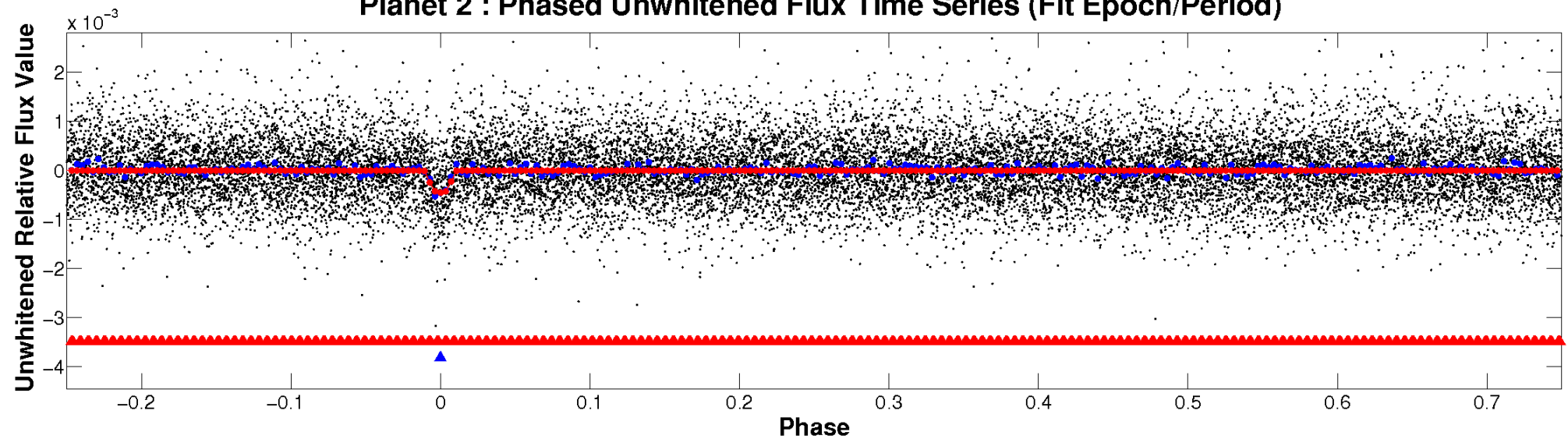
ALT Odd/Even

TCE 008030339-02

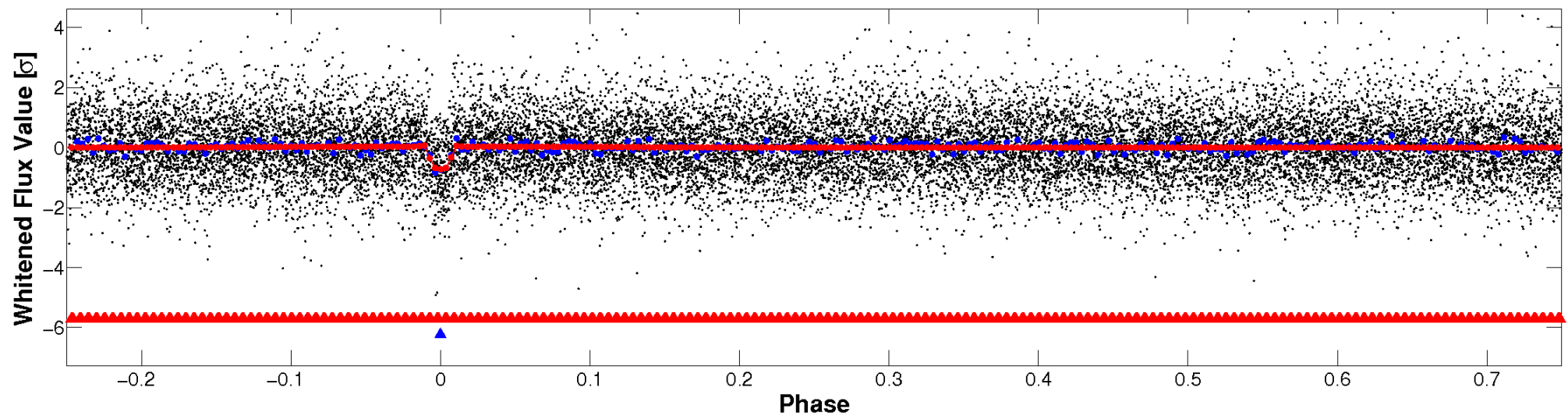


Non-Whitened Vs. Whitened Light Curve

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

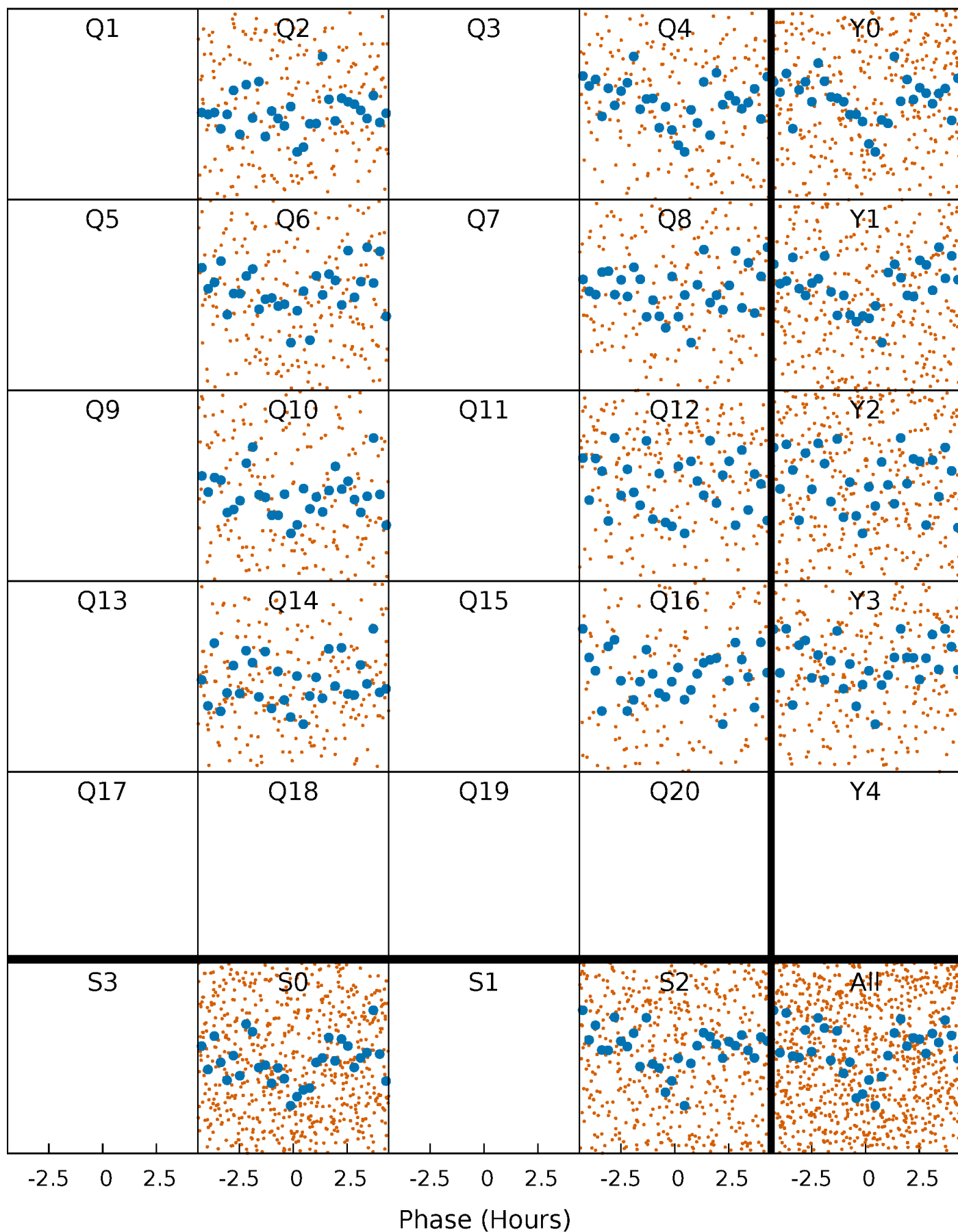


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



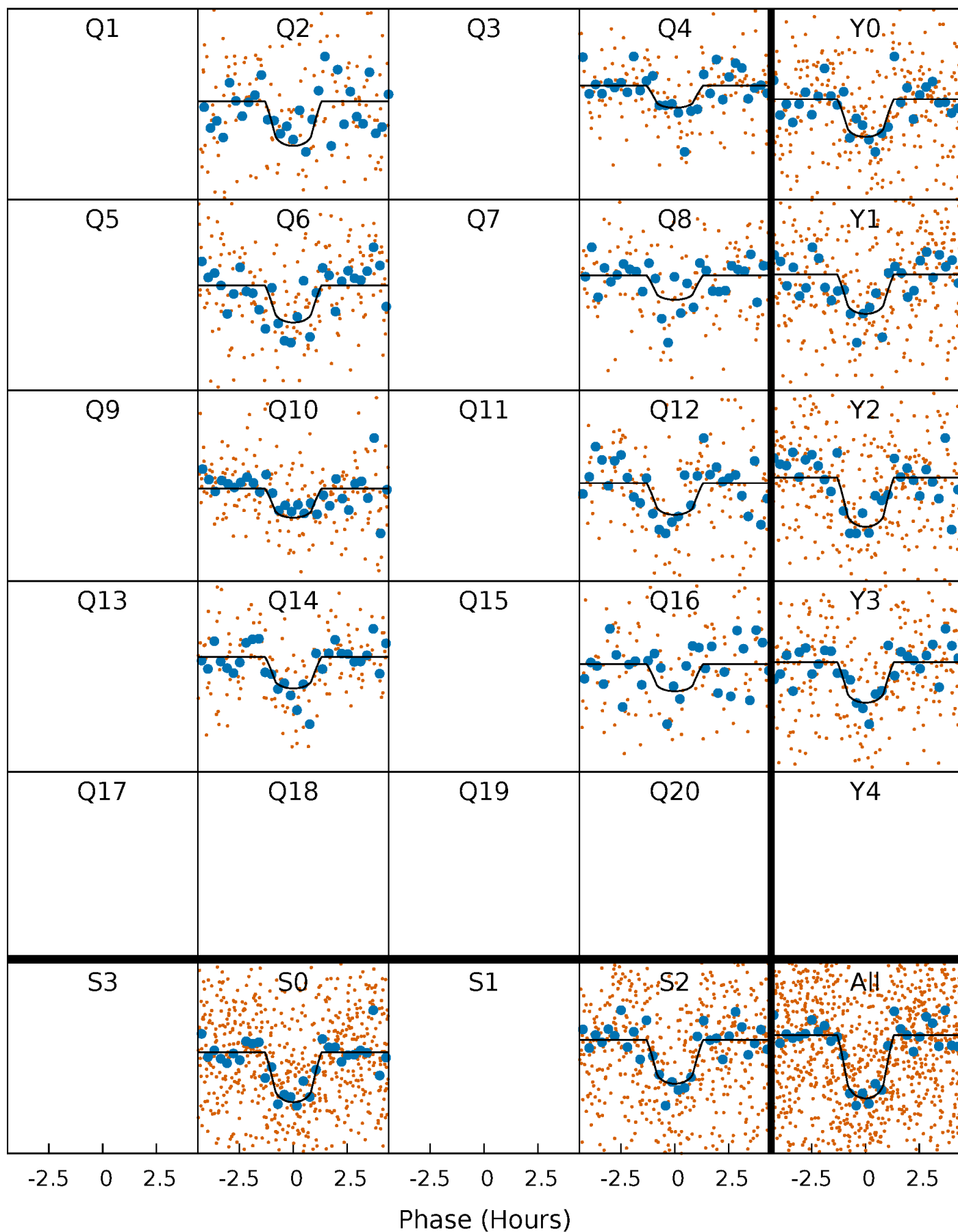
PDC Quarter-Phased Transit Curves

TCE 008030339-02 P= 5.716717 Days $T_0=136.317960$ (BKJD)



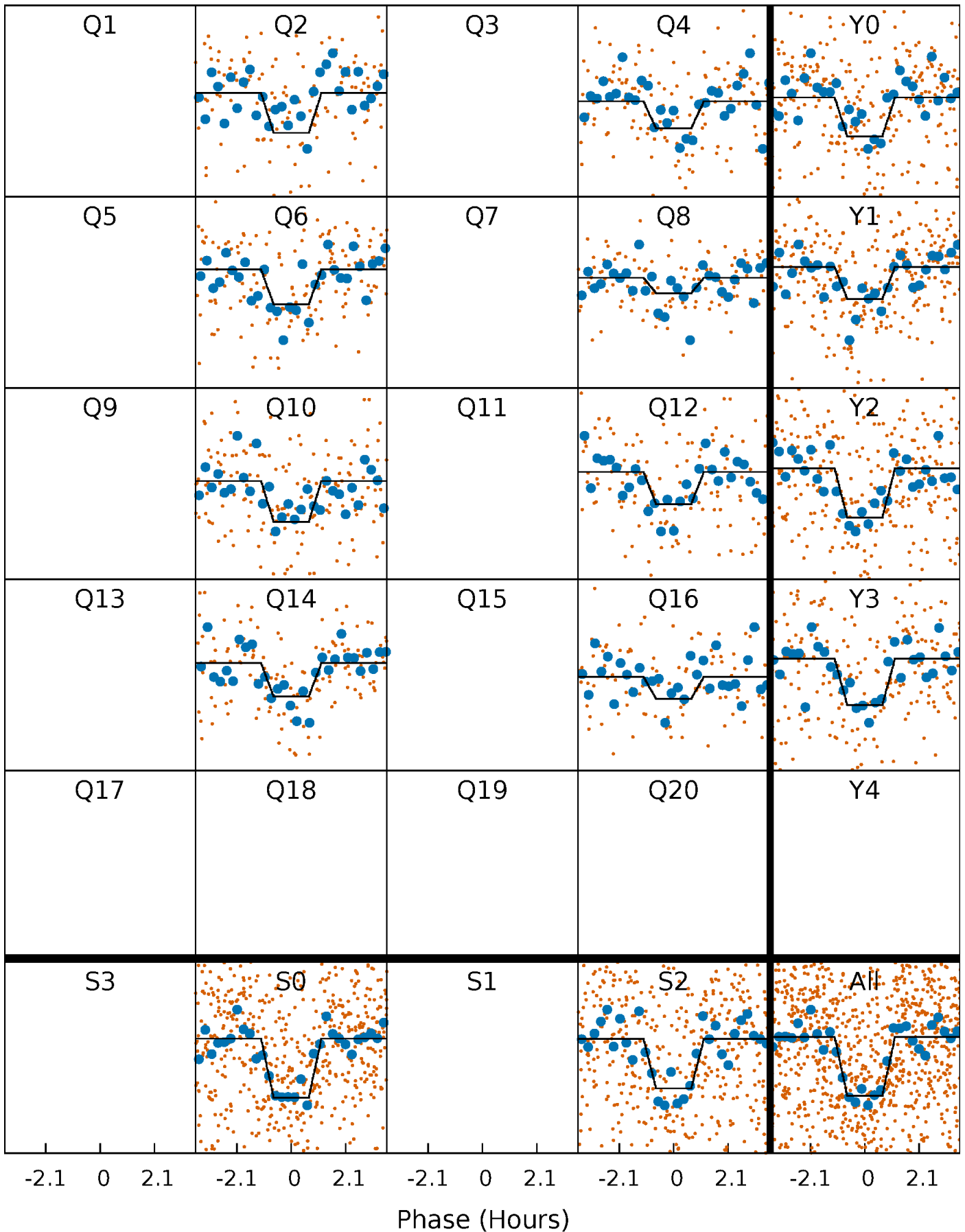
DV Quarter-Phased Transit Curves

TCE 008030339-02 P= 5.716717 Days $T_0=136.317960$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

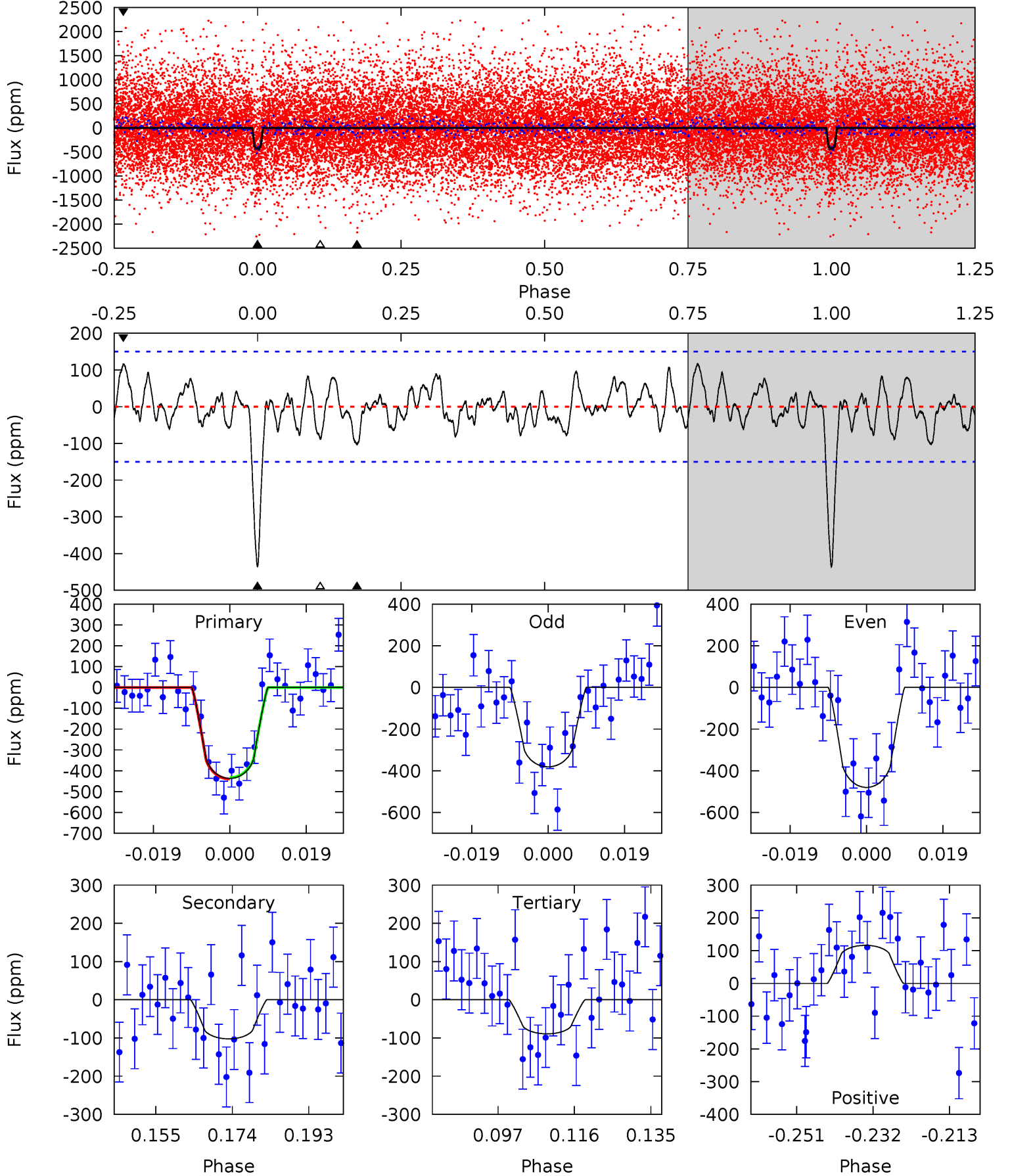
TCE 008030339-02 P= 5.716698 Days $T_0=136.321864$ (BKJD)



DV Model-Shift Uniqueness Test

008030339-02, P = 5.716717 Days, E = 136.317960 Days

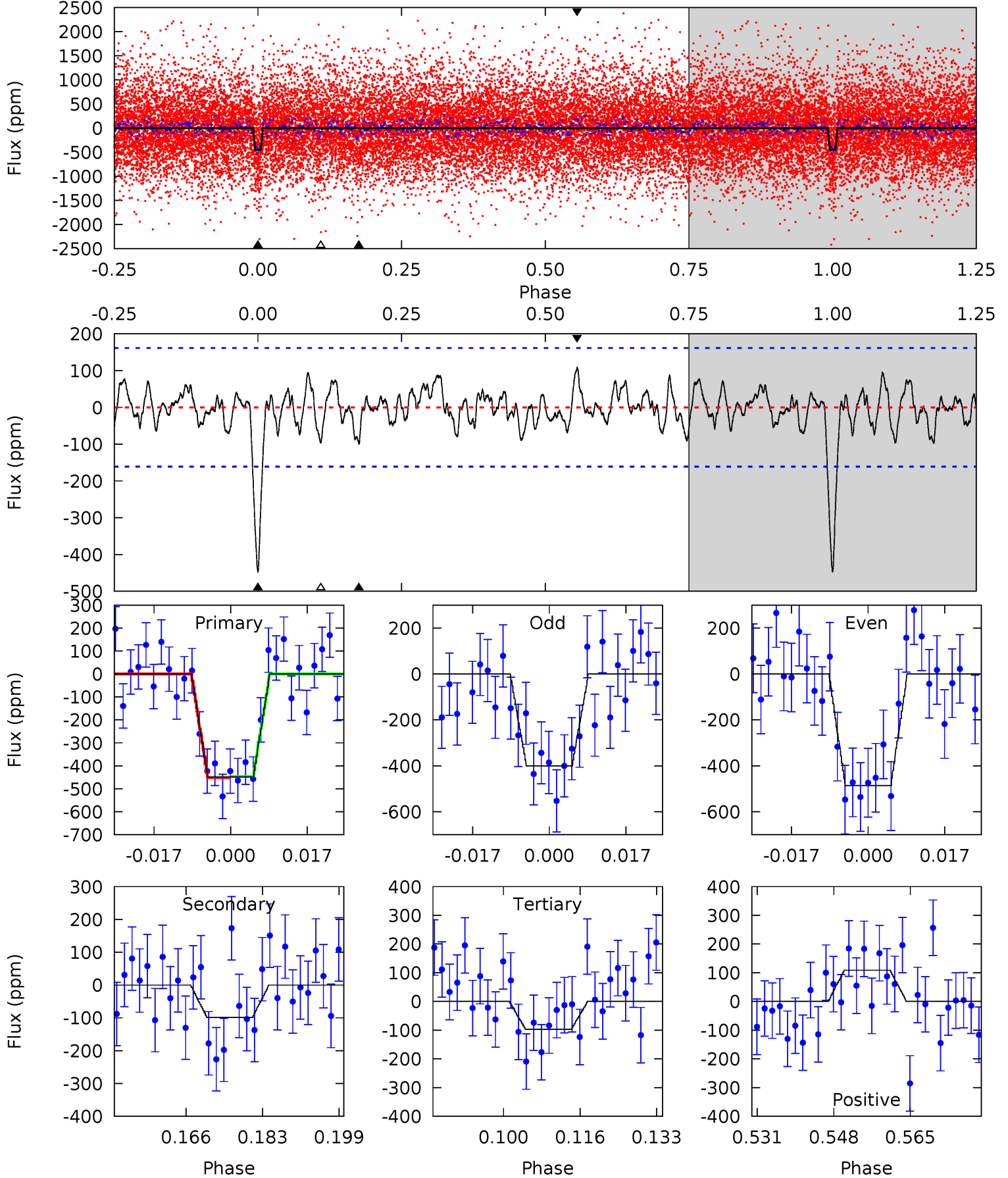
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	3.34	2.91	3.79	4.90	2.34	1.35	11.3	10.5	0.43	-0.45	1.61	0.99	0.21	0.10



Alt Model-Shift Uniqueness Test

008030339-02, P = 5.716698 Days, E = 136.321864 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	3.01	2.98	3.33	4.93	2.40	1.19	10.7	10.4	0.03	-0.32	1.29	1.03	0.20	0.09



Stellar Parameters For KIC 008030339

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5638^{+186}_{-186}	$4.488^{+0.075}_{-0.175}$	$-0.180^{+0.300}_{-0.300}$	$0.883^{+0.229}_{-0.098}$	$0.875^{+0.115}_{-0.083}$	$1.789^{+0.578}_{-0.863}$
	+3%/-3%	+2%/-4%	+167%/-167%	+26%/-11%	+13%/-9%	+32%/-48%
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 008030339-02 / KOI 3954.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-102 ± 31	$3.13^{+2.63}_{-2.08}$	1353^{+95}_{-65}	3655^{+1915}_{-674}	21^{+167}_{-15}
Alt.	-99 ± 33	$3.02^{+2.79}_{-2.02}$	1353^{+78}_{-64}	3635^{+1959}_{-722}	20^{+162}_{-15}

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

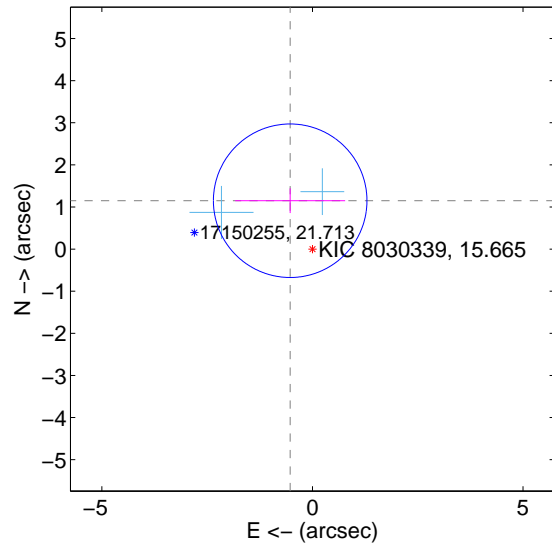
Supplemental centroid analysis for 008030339-02. Kepler magnitude: 15.66. Transit SNR 10.99

There are 2 quarters with good PRF difference image offsets

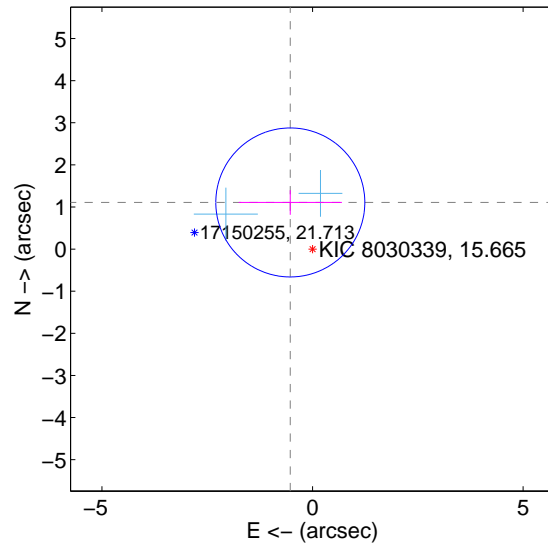
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.264 ± 0.608	2.08	0.529 ± 1.306	1.148 ± 0.293
PRF-fit source offset from KIC position	1.227 ± 0.590	2.08	0.528 ± 1.225	1.107 ± 0.293
photometric centroid source offset	1.83 ± 0.99	1.85	1.78 ± 0.98	0.41 ± 1.14

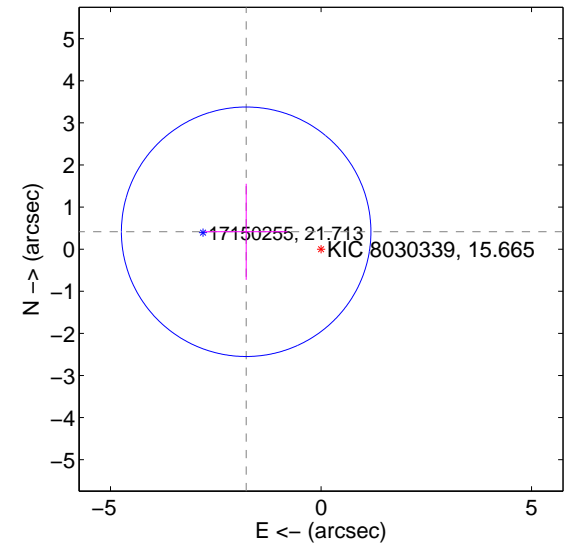
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

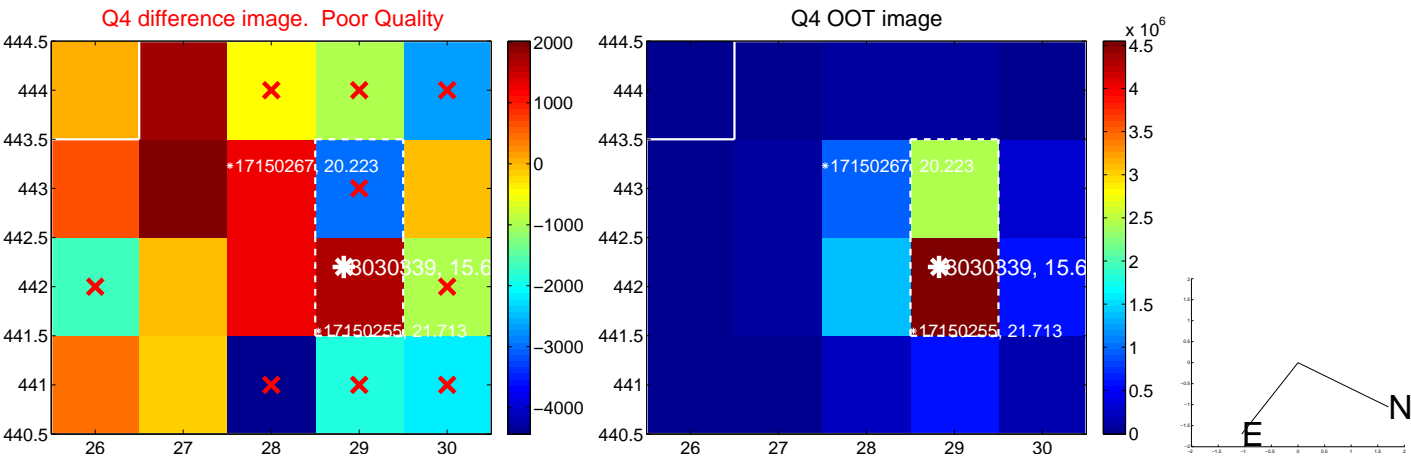
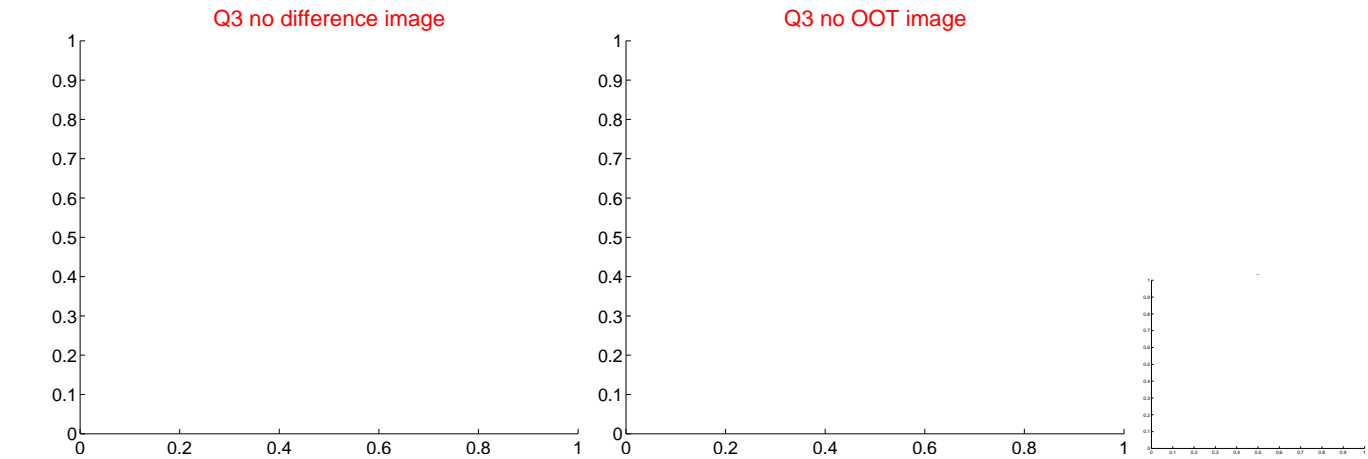
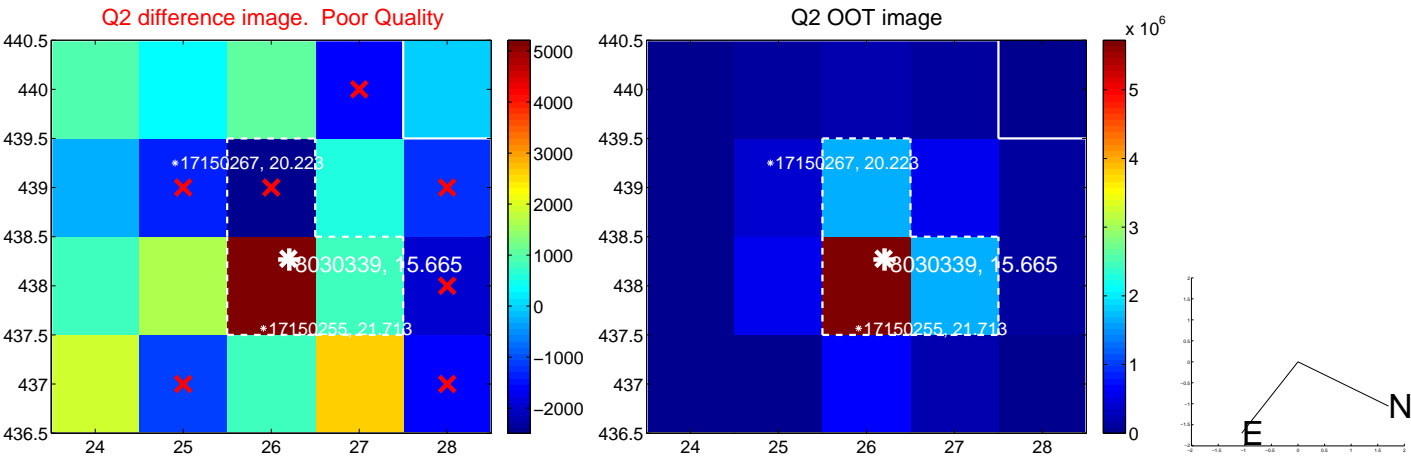
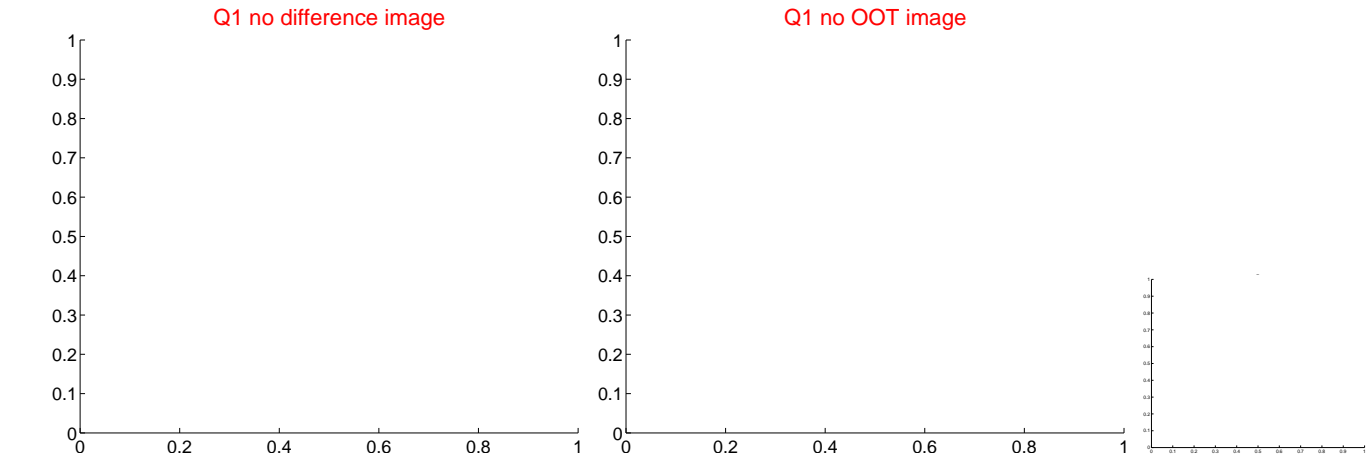


offset from photometric centroids

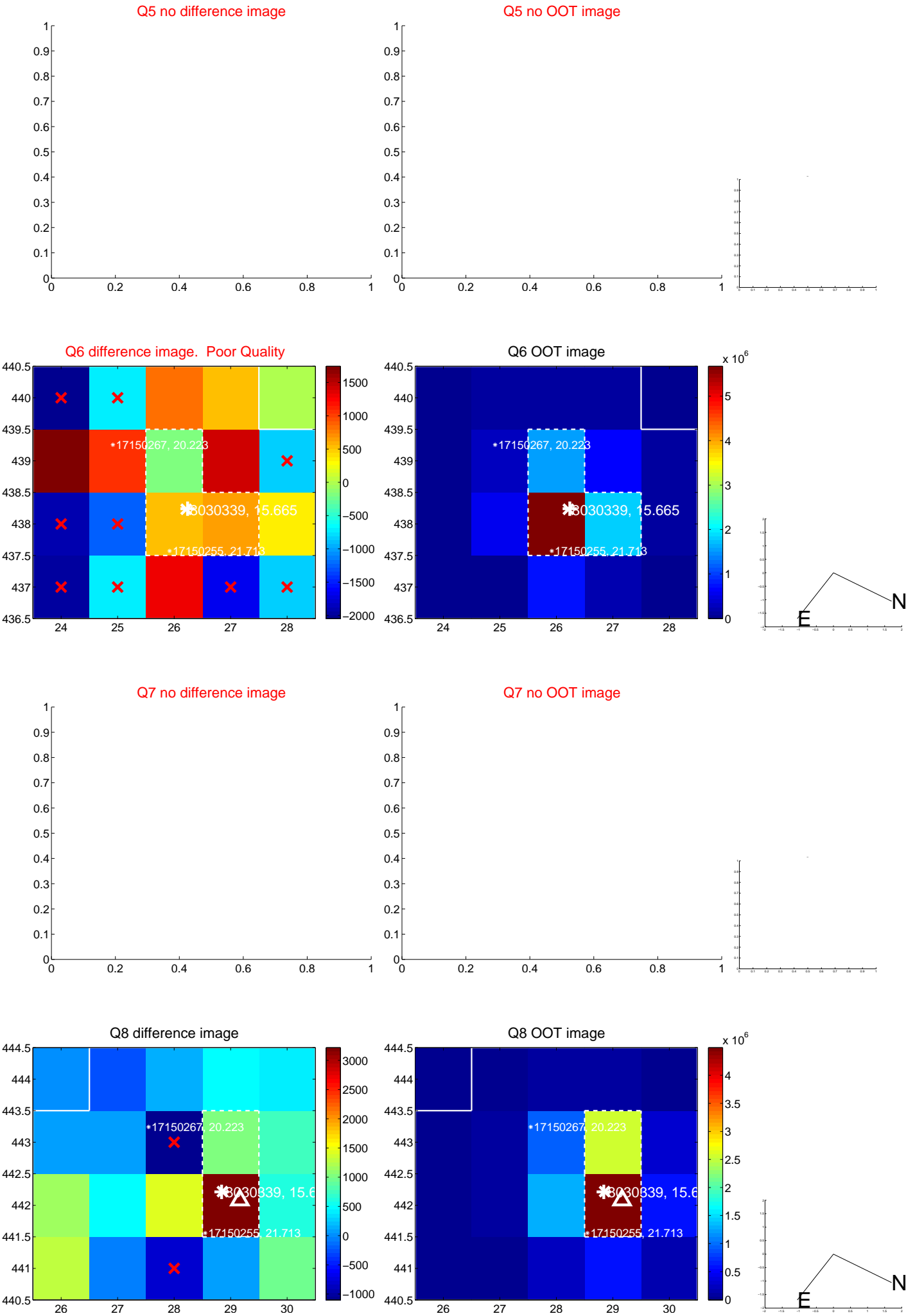


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

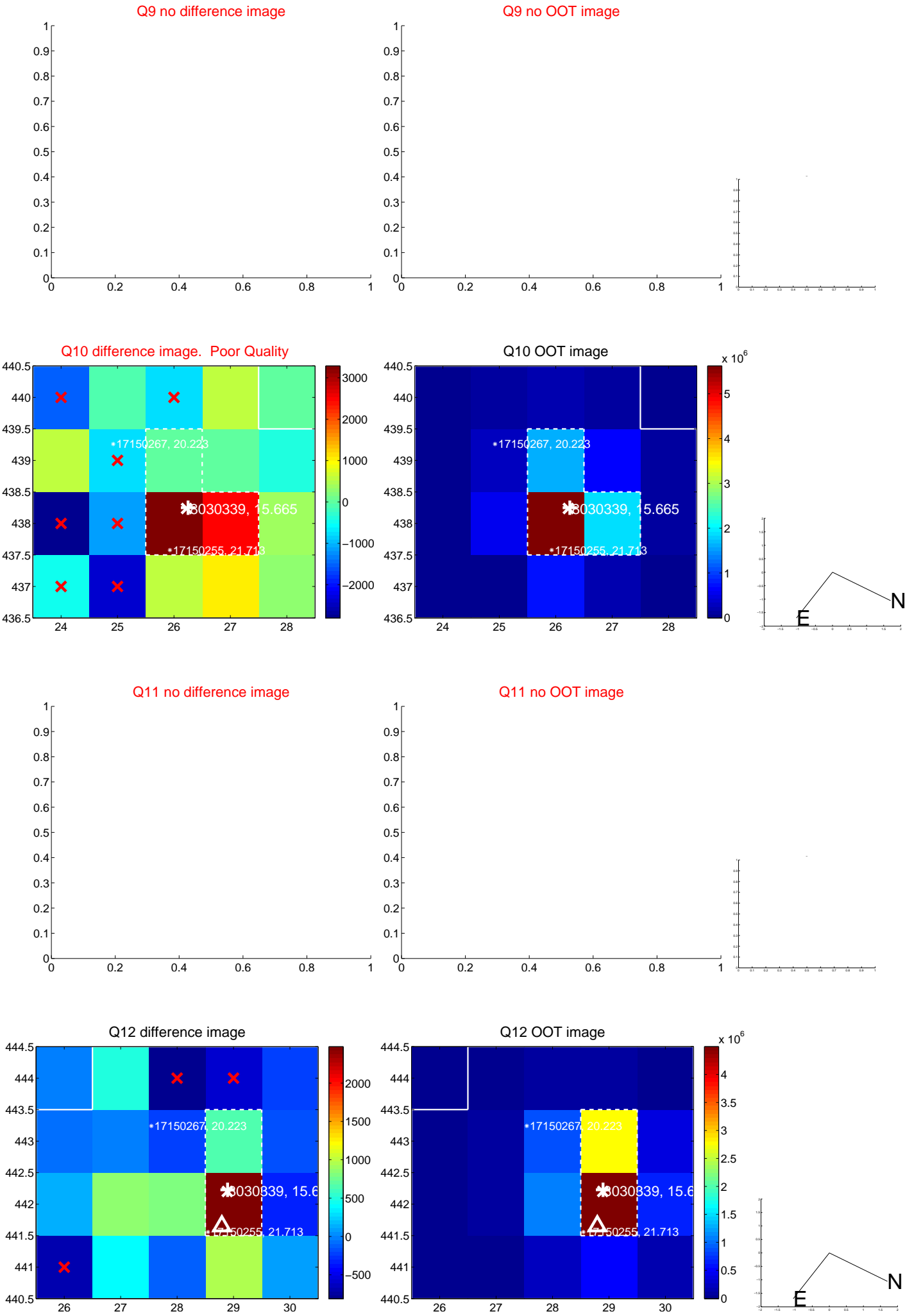
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



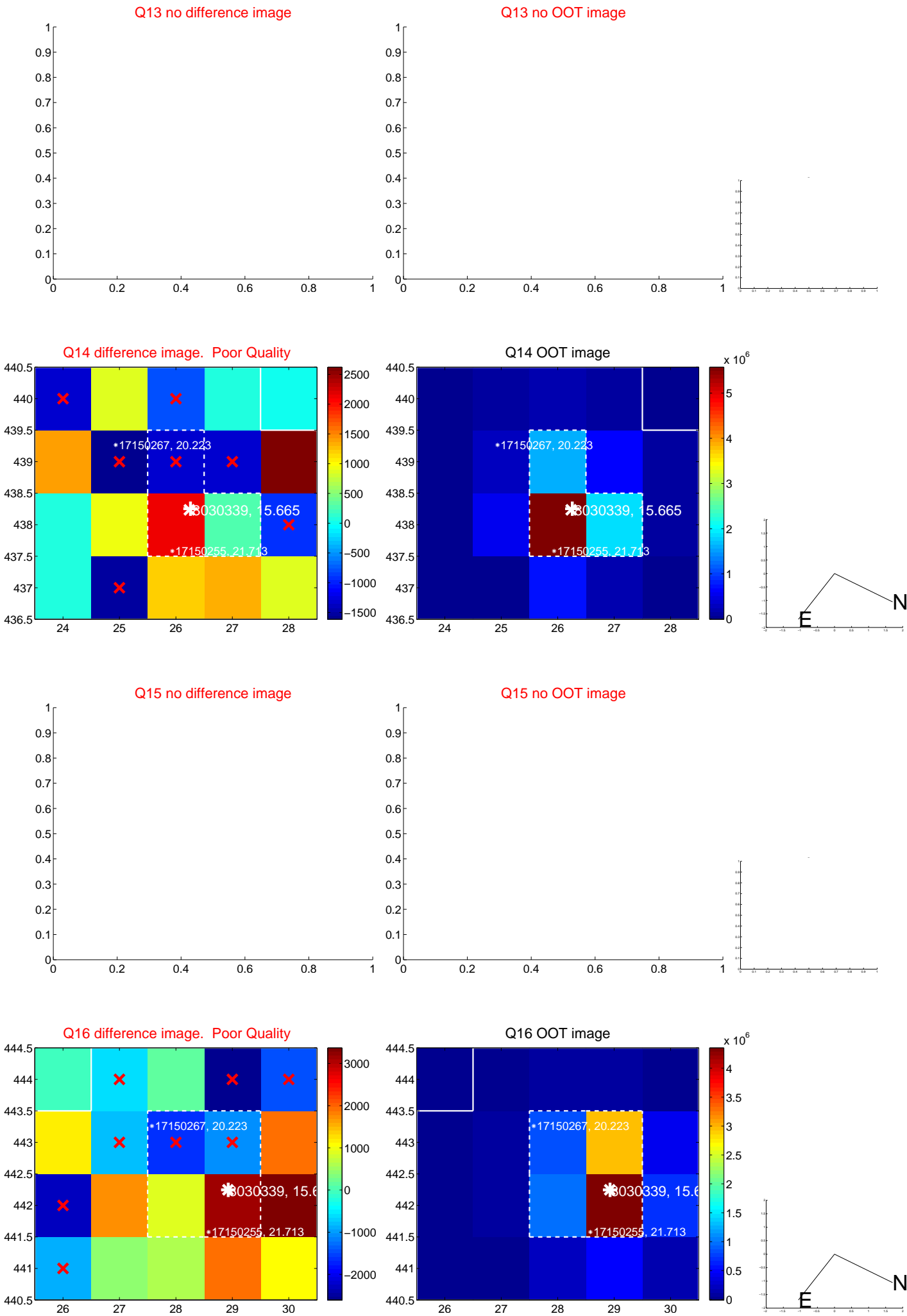
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



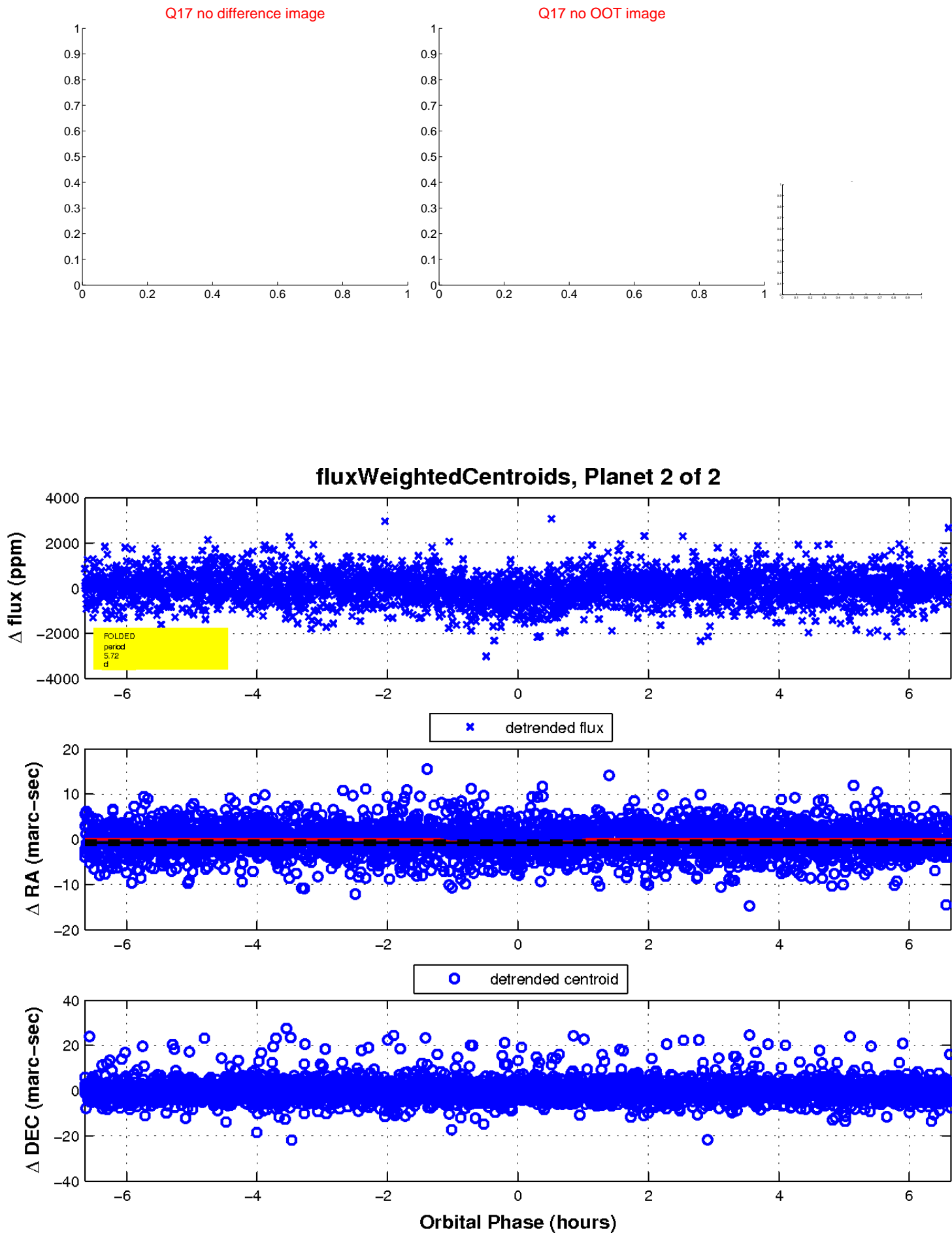
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

