

KIC 008452639

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})
008452639-01	OBS	No	1.163686	131.675421	115.2	1.369	10.9	7.1	1.56	6759	1.80	8037.06
008452639-02	OBS	No	2.567884	133.444812	343.5	8.306	8.5	10.3	1.56	6759	5.26	2797.55
008452639-03	OBS	No	9.759061	139.986783	633.3	6.172	8.5	8.5	1.56	6759	5.57	471.70
008452639-04	OBS	No	156.472612	254.247268	2356.8	4.660	9.5	8.0	1.56	6759	9.23	11.67
008452639-05	OBS	No	188.721895	219.700798	559.7	3.000	9.3	-1.0	1.56	6759	3.73	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008452639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
008452639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

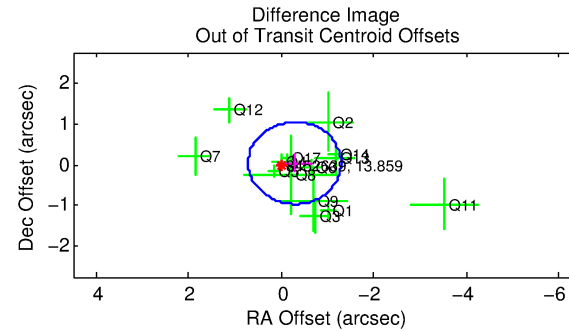
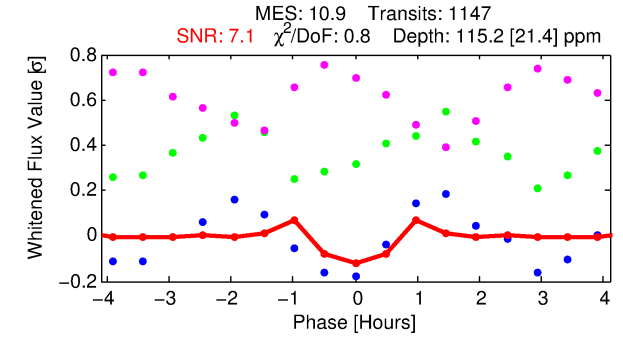
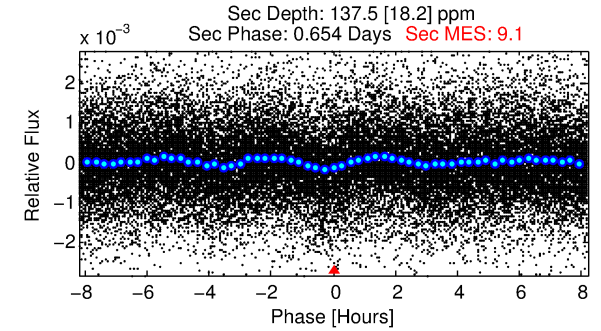
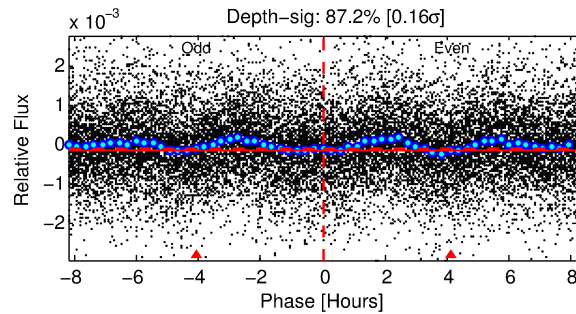
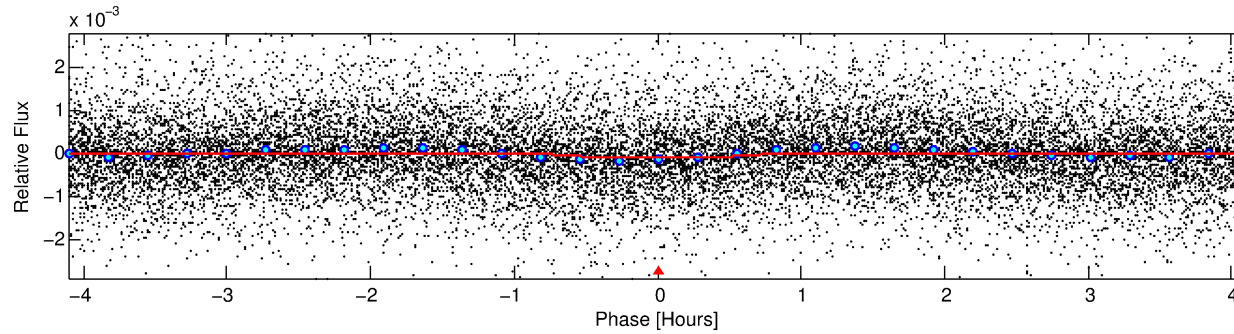
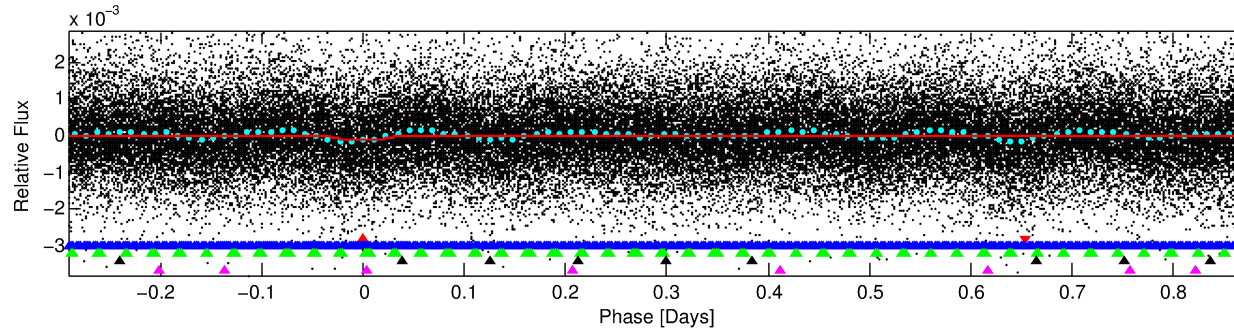
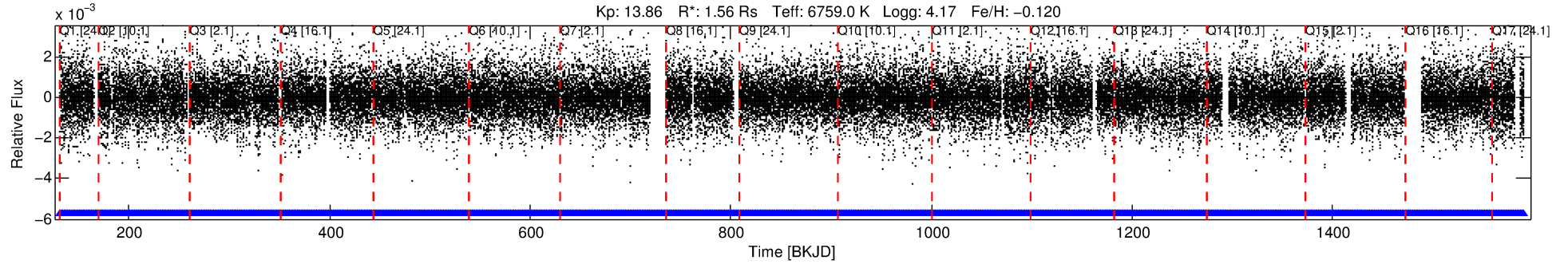
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008452639-01

No Significant Match Found

DV One-Page Summary

KIC: 8452639 Candidate: 1 of 5 Period: 1.164 d



DV Fit Results:

Period = 1.16369 [0.00001] d
Epoch = 131.6754 [0.0016] BKJD
Rp/R* = 0.0105 [0.0029]
a/R* = 4.88 [6.83]
b = 0.69 [1.13]
Seff = 8037.06 [3248.69]
Teq = 2414 [244] K
Rp = 1.80 [0.76] Re
a = 0.0238 [0.0063] AU
Ag = 13.30 [8.91] [1.38 σ]
Teffp = 7129 [1041] K [4.41 σ]

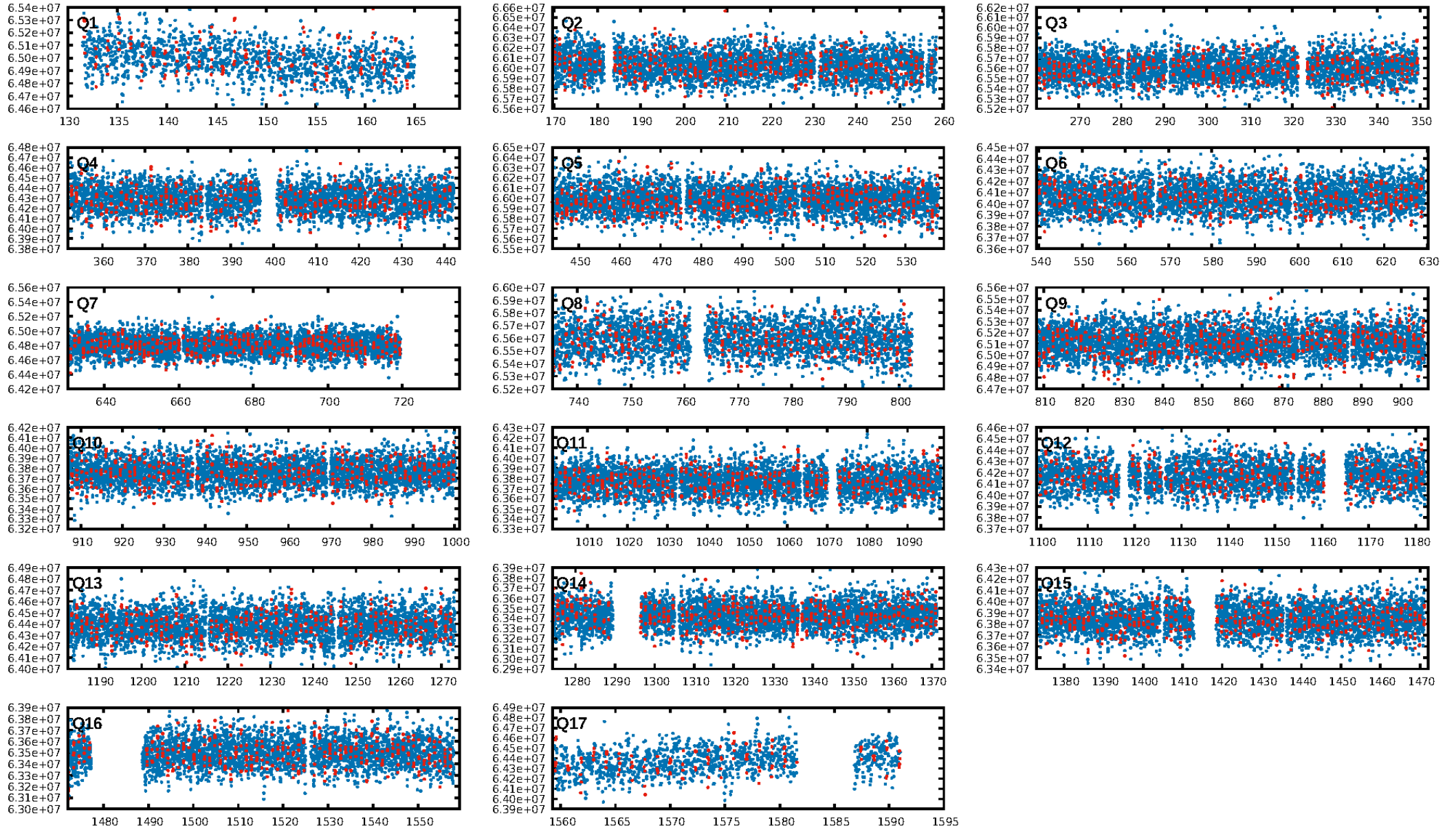
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [4.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1095/1095]
GhostDiagnostic-chr: 0.7732
Centroid-sig: 1.4%
Centroid-so: 0.516 arcsec [1.03 σ]
OotOffset-rm: 0.292 arcsec [0.87 σ]
OotOffset-st: 3/3/3/5 [14]
KicOffset-rm: 0.398 arcsec [1.36 σ]
KicOffset-st: 3/3/3/5 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [17/17]

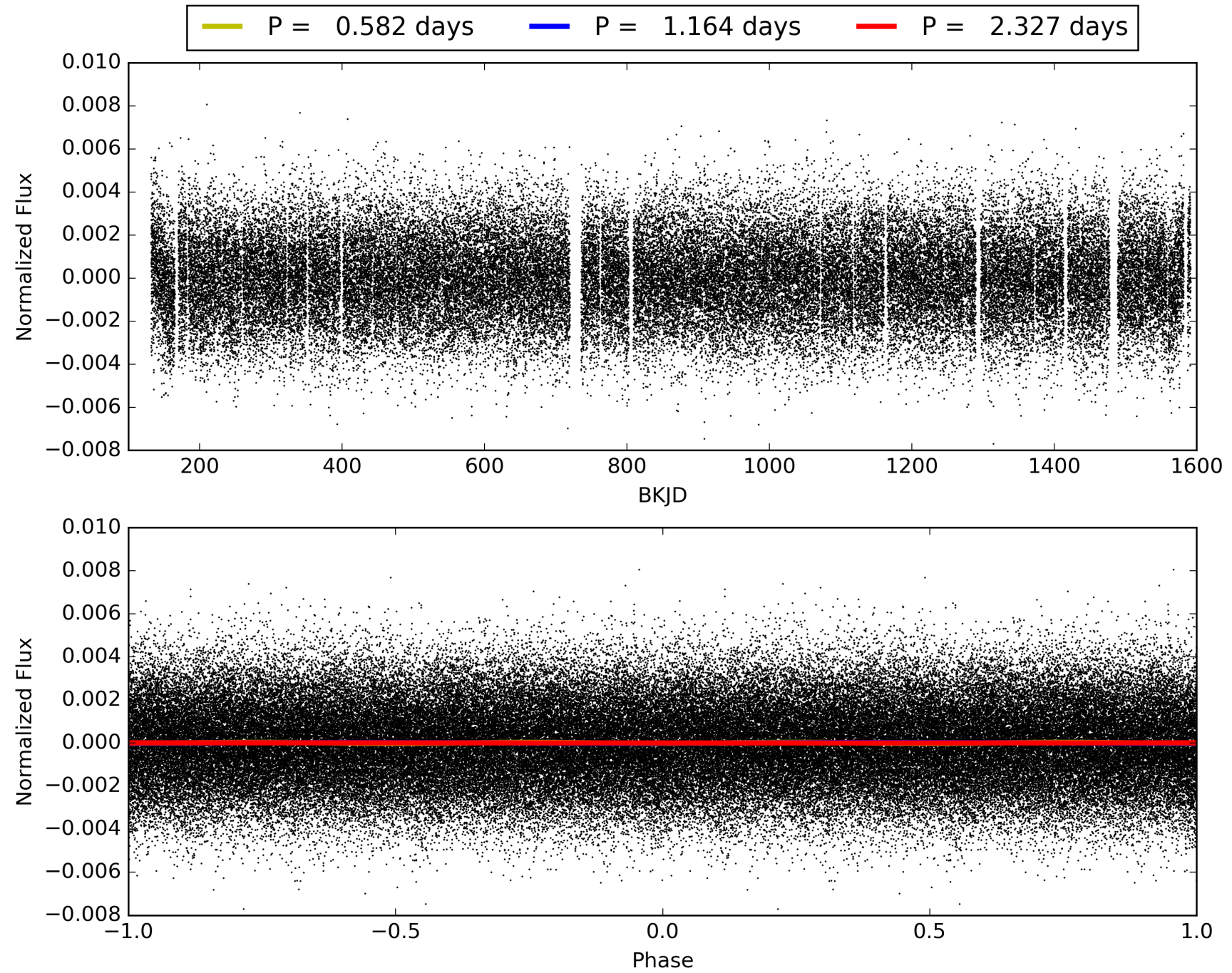
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:16:47 Z

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

TCE 008452639-01, PDC Light Curves

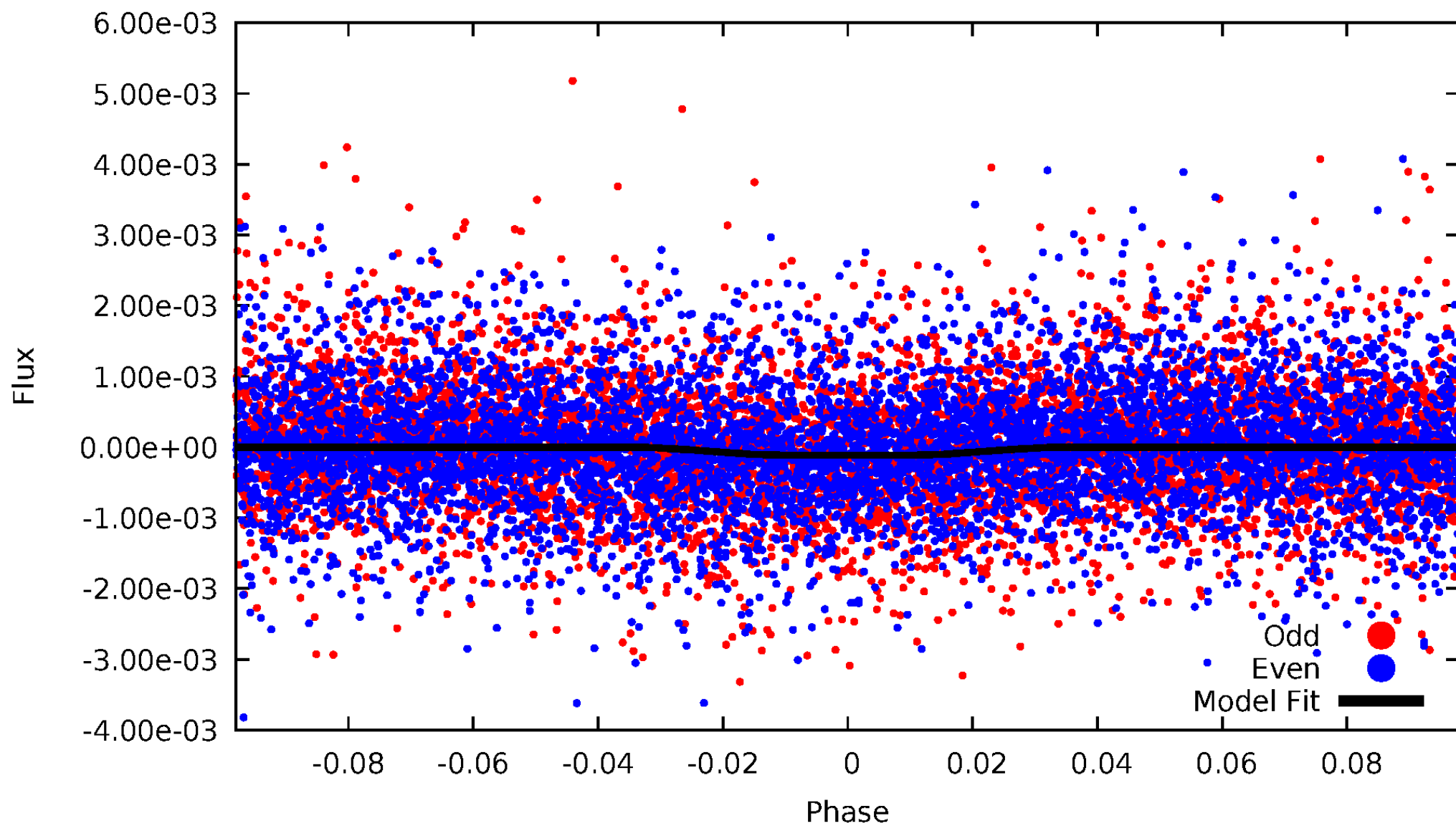


TCE 008452639-01



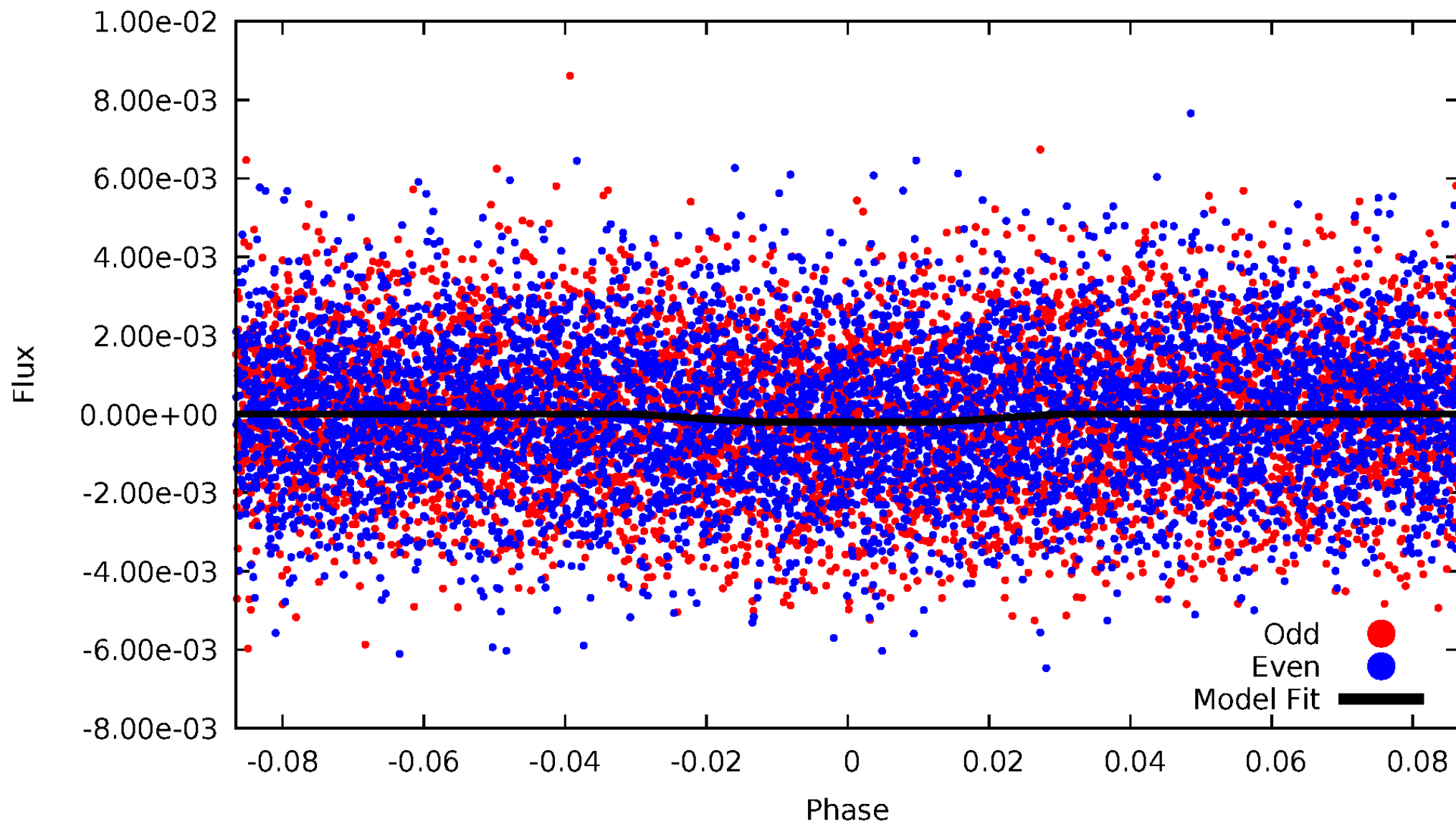
DV Odd/Even

TCE 008452639-01



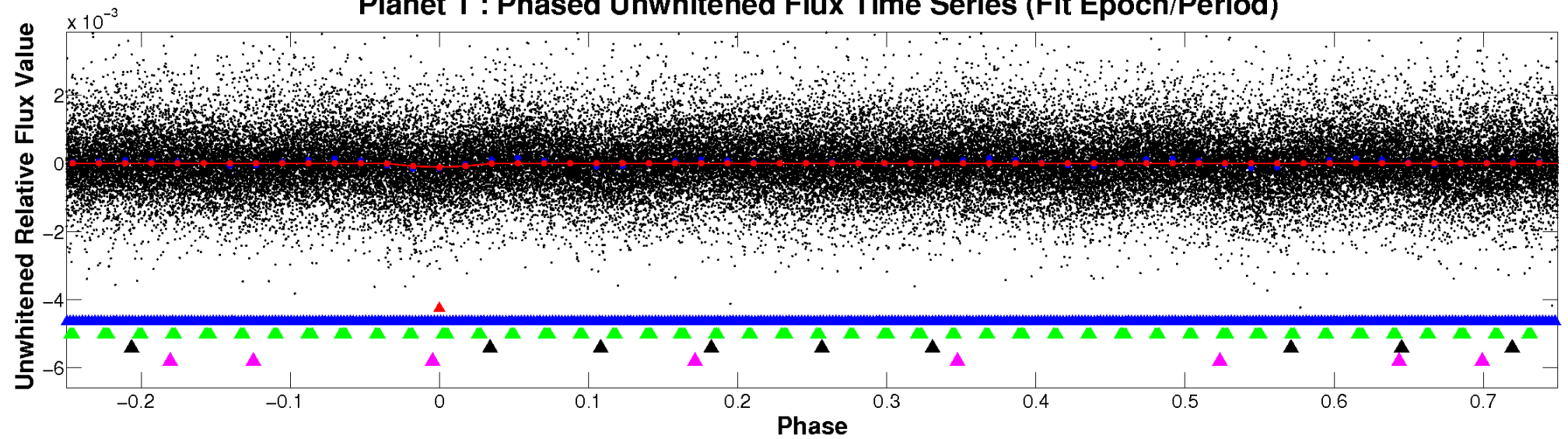
ALT Odd/Even

TCE 008452639-01

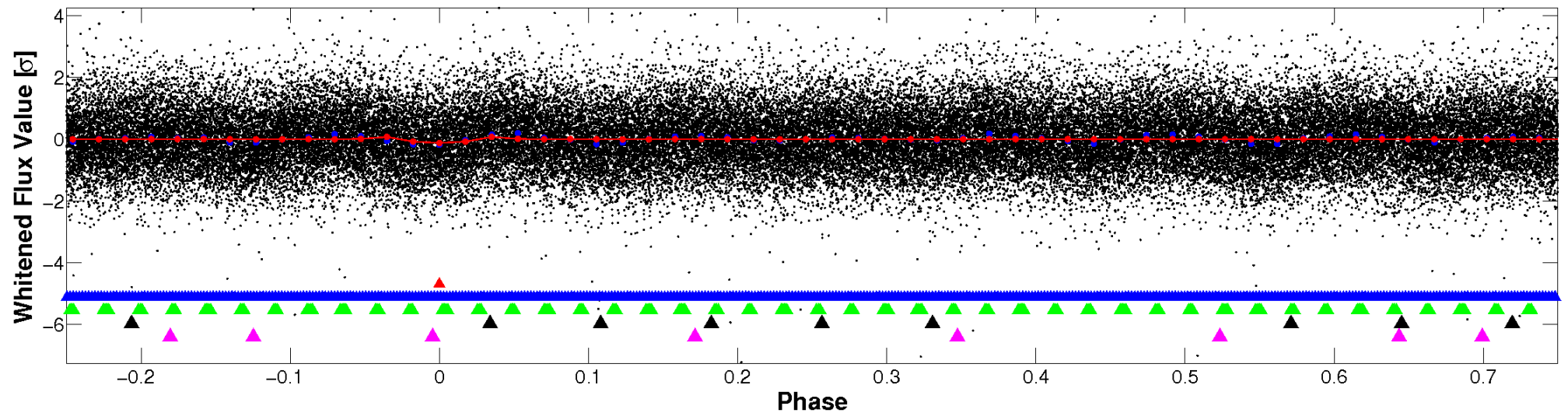


Non-Whitened Vs. Whitened Light Curve

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

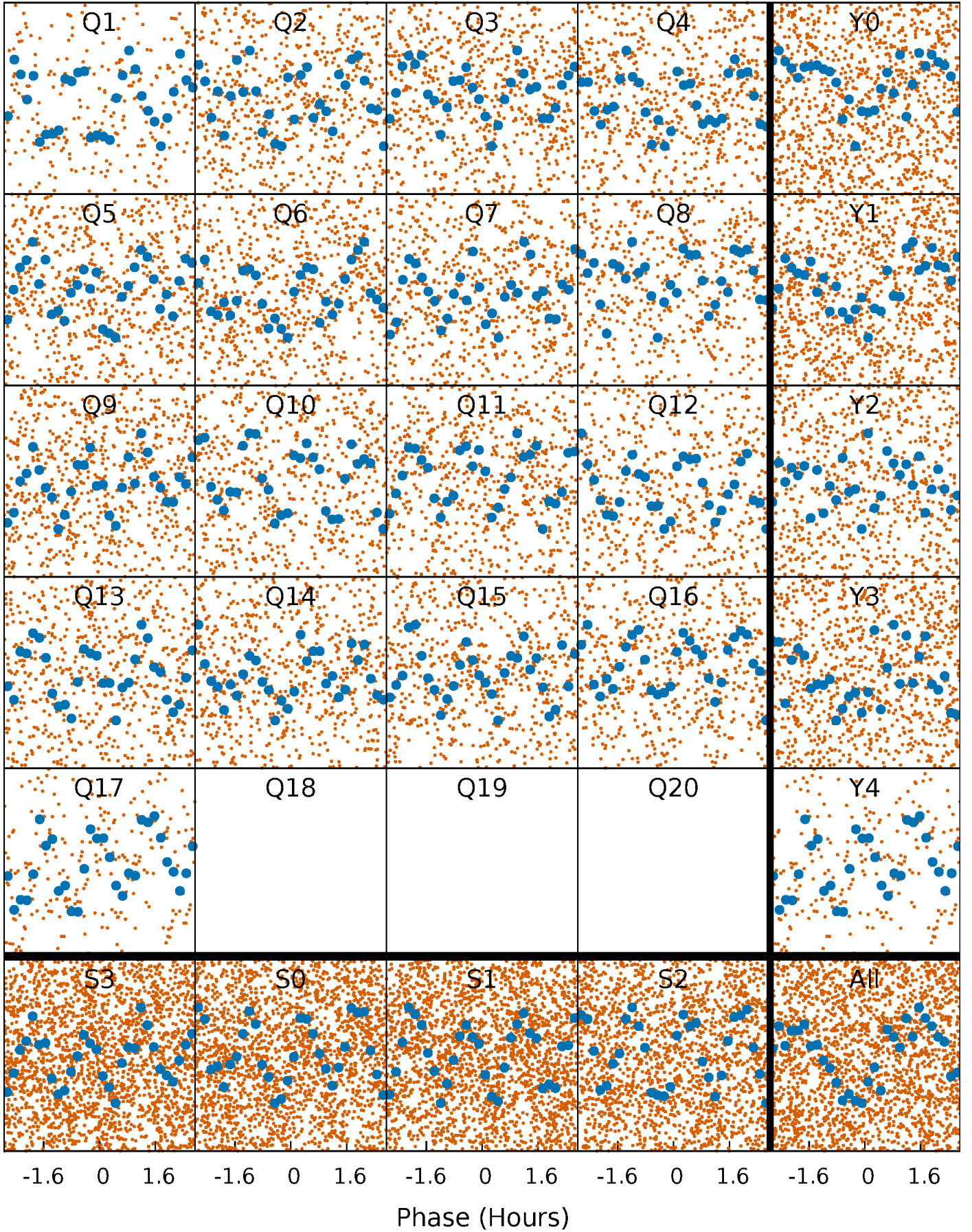


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



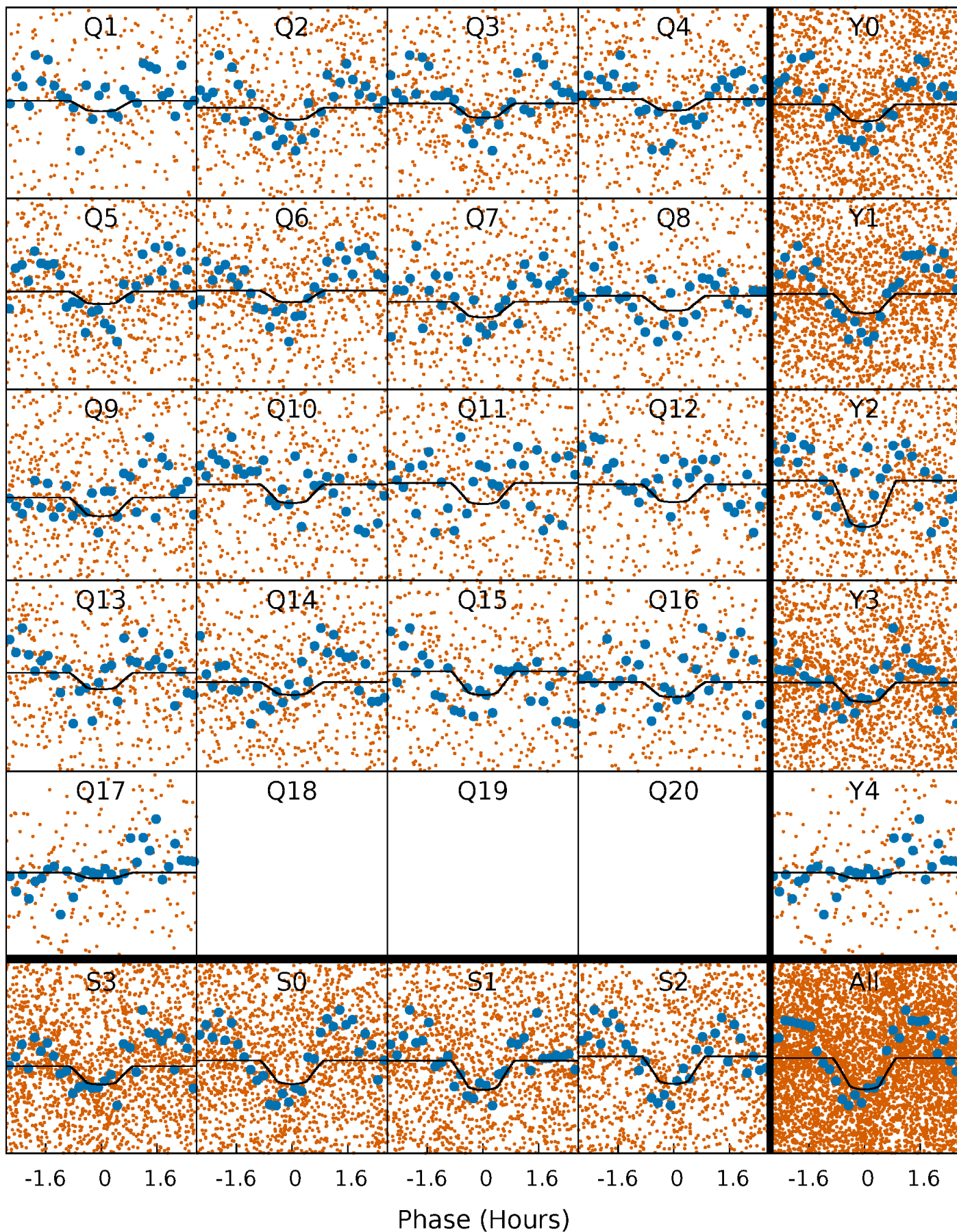
PDC Quarter-Phased Transit Curves

TCE 008452639-01 P= 1.163686 Days $T_0=131.675421$ (BKJD)



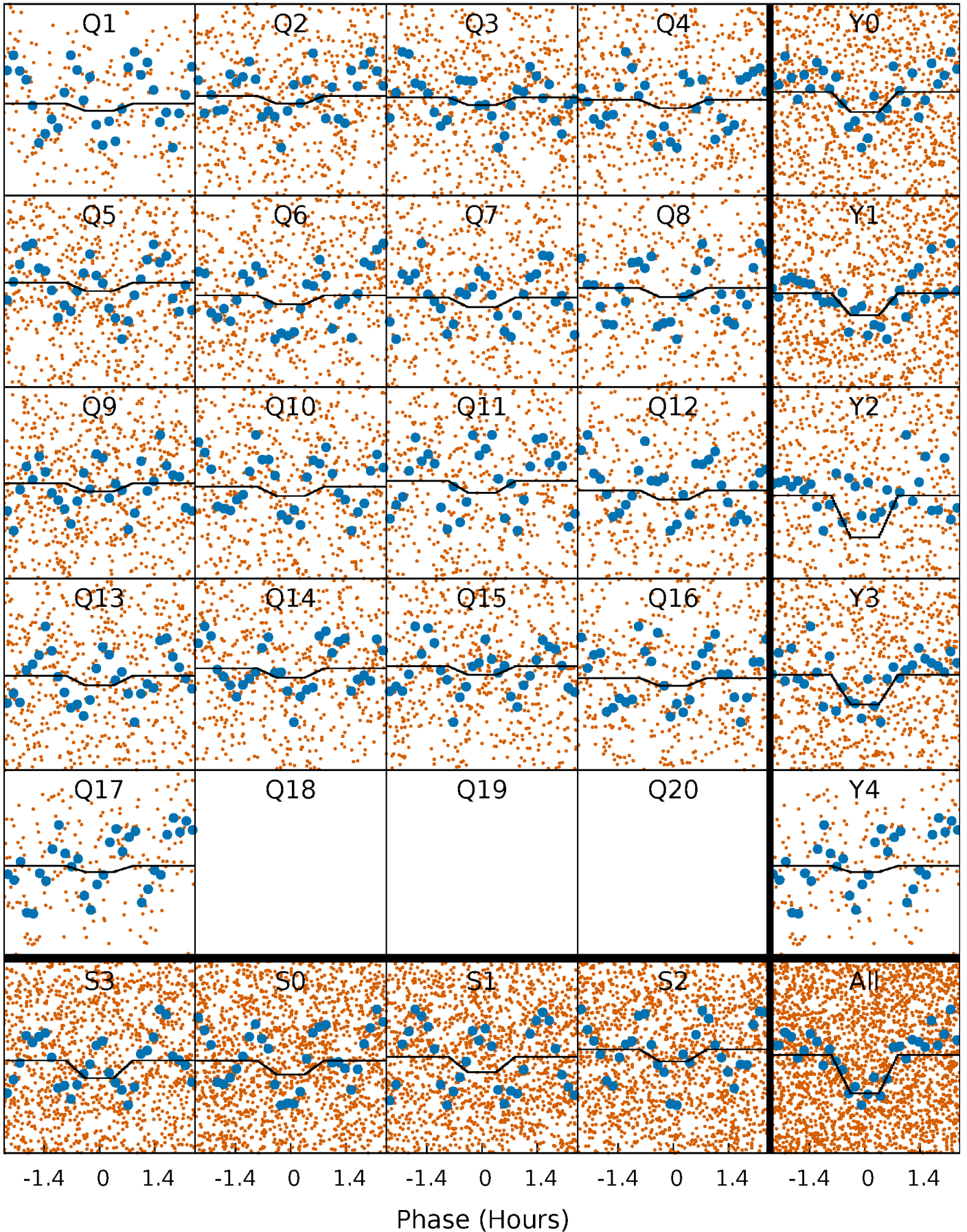
DV Quarter-Phased Transit Curves

TCE 008452639-01 P= 1.163686 Days $T_0=131.675421$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

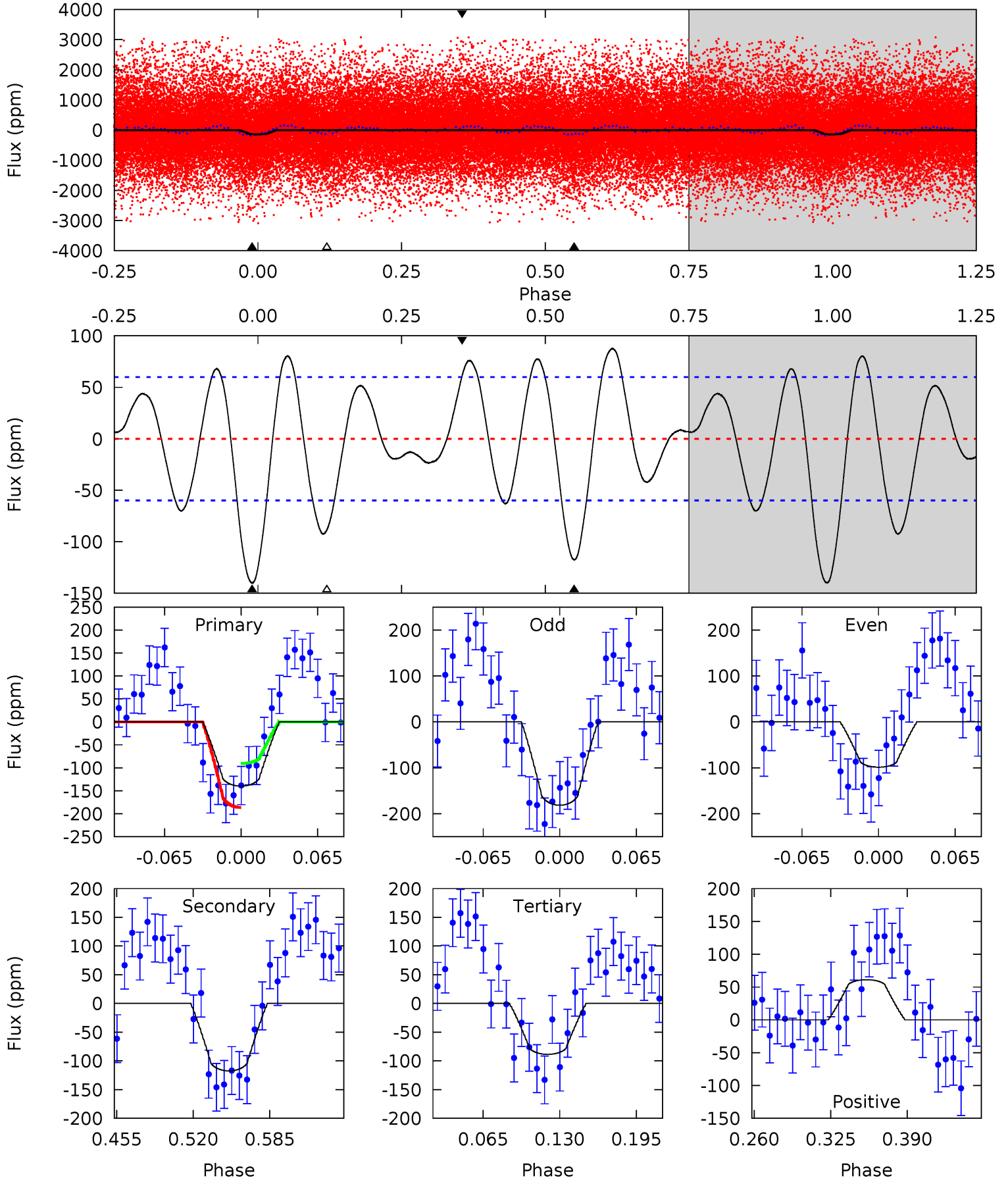
TCE 008452639-01 P= 1.163671 Days $T_0=131.670900$ (BKJD)



DV Model-Shift Uniqueness Test

008452639-01, P = 1.163686 Days, E = 130.511735 Days

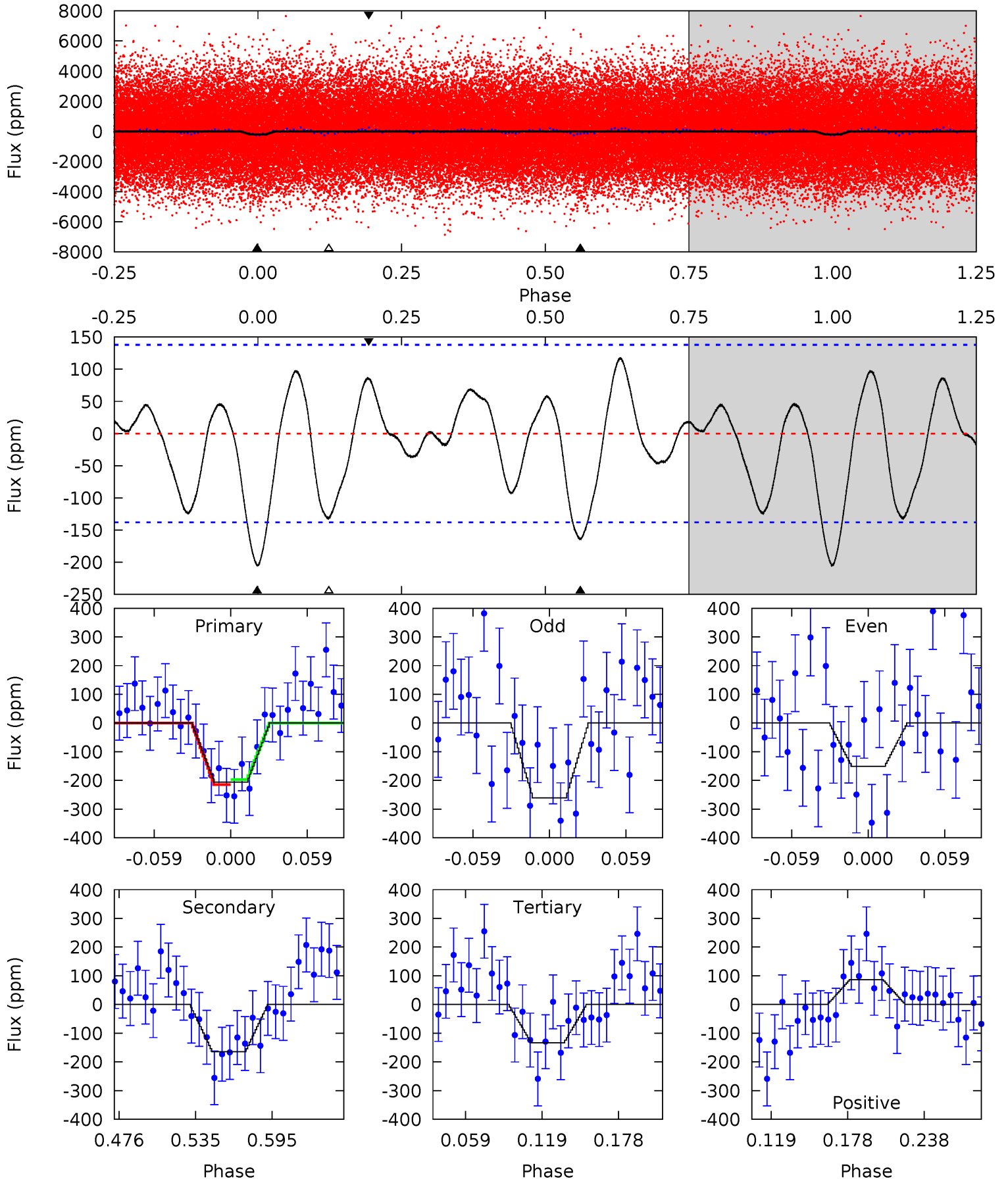
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	9.12	6.88	4.75	4.65	1.85	3.29	3.97	6.10	2.24	4.37	3.23	0.98	0.39	3.74



Alt Model-Shift Uniqueness Test

008452639-01, P = 1.163671 Days, E = 130.507229 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.97	5.58	4.50	2.94	4.67	1.88	1.93	2.47	4.03	1.07	2.64	1.86	0.99	0.36	0.31



Stellar Parameters For KIC 008452639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6759^{+189}_{-283}	$4.175^{+0.158}_{-0.193}$	$-0.120^{+0.250}_{-0.300}$	$1.562^{+0.511}_{-0.341}$	$1.338^{+0.204}_{-0.224}$	$0.494^{+0.409}_{-0.262}$
	+3%/-4%	+4%/-5%	+208%/-250%	+33%/-22%	+15%/-17%	+83%/-53%
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 008452639-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-118 ± 13	$1.82^{+0.59}_{-0.54}$	3376^{+269}_{-236}	6725^{+1379}_{-823}	11^{+10}_{-5}
Alt.	-165 ± 30	$2.43^{+0.68}_{-0.55}$	3383^{+275}_{-239}	6300^{+954}_{-682}	$8.381^{+6.190}_{-3.376}$

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

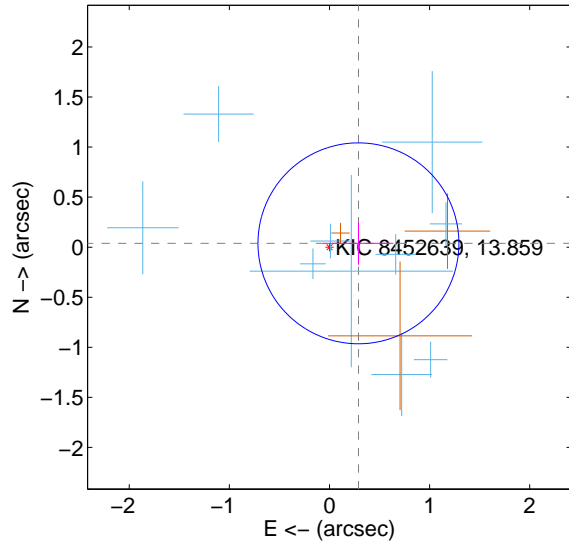
Supplemental centroid analysis for 008452639-01. Kepler magnitude: 13.86. Transit SNR 7.06

There are 11 quarters with good PRF difference image offsets

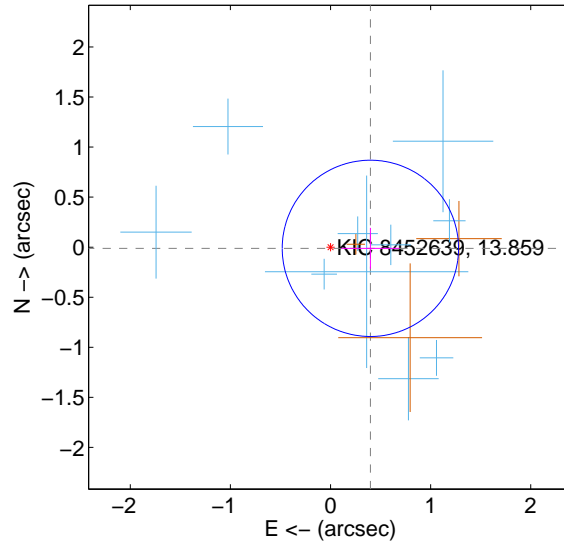
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.292 ± 0.335	0.87	-0.289 ± 0.348	0.038 ± 0.214
PRF-fit source offset from KIC position	0.398 ± 0.294	1.36	-0.398 ± 0.291	-0.012 ± 0.204
photometric centroid source offset	0.52 ± 0.50	1.03	-0.28 ± 0.48	0.43 ± 0.51

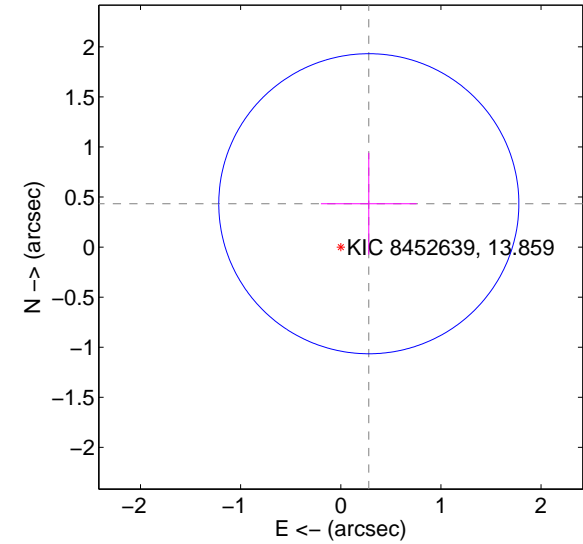
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

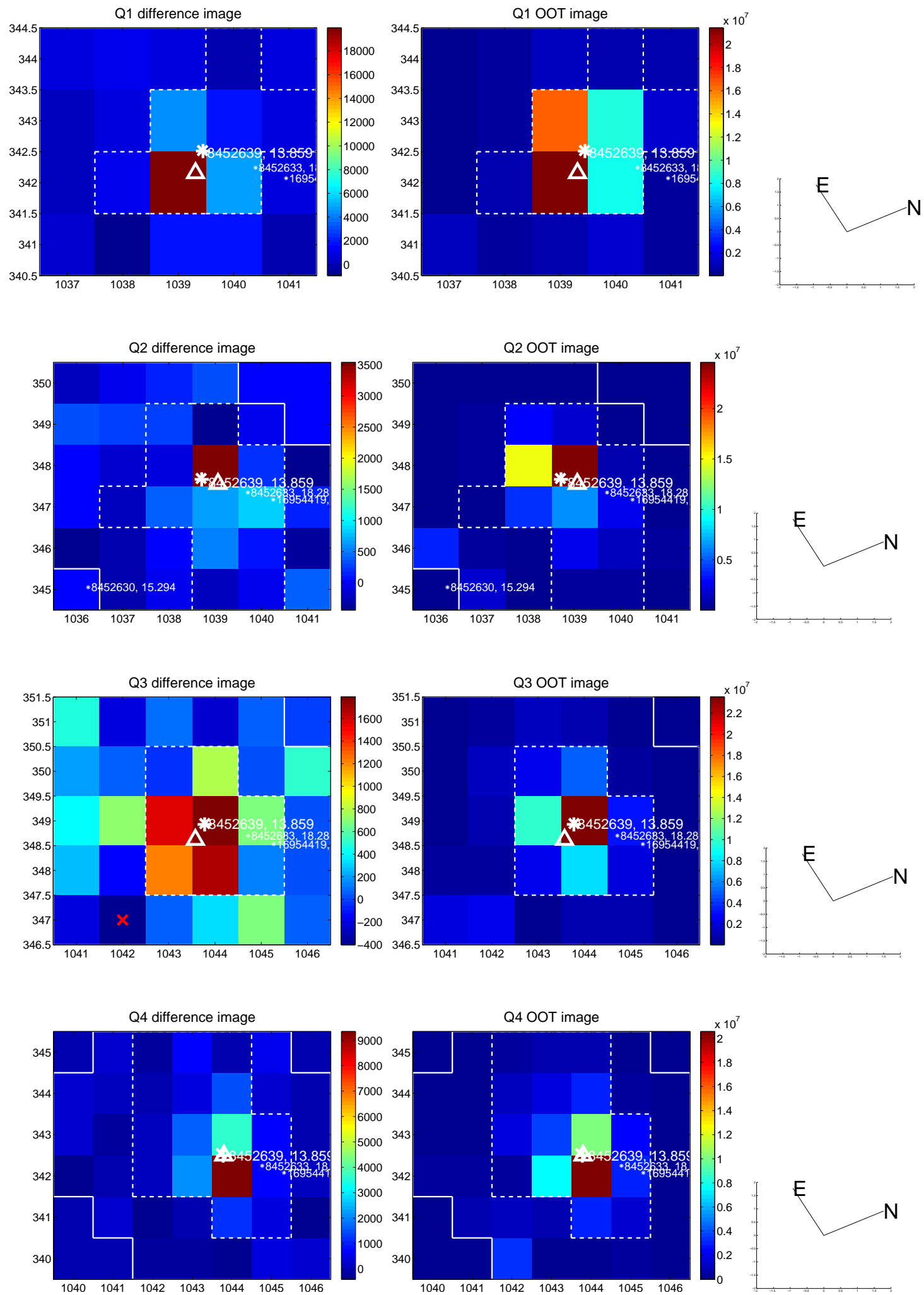


offset from photometric centroids

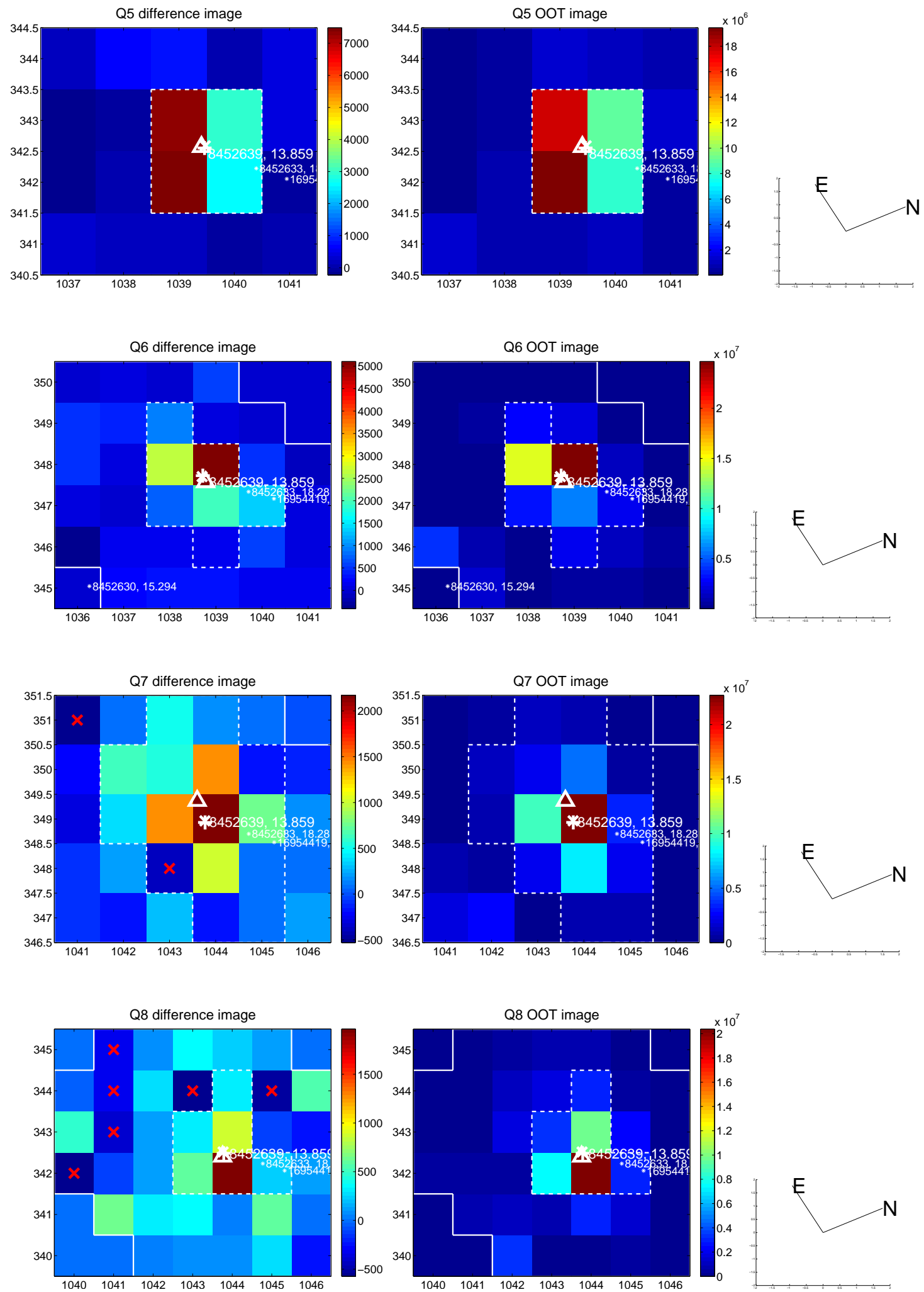


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

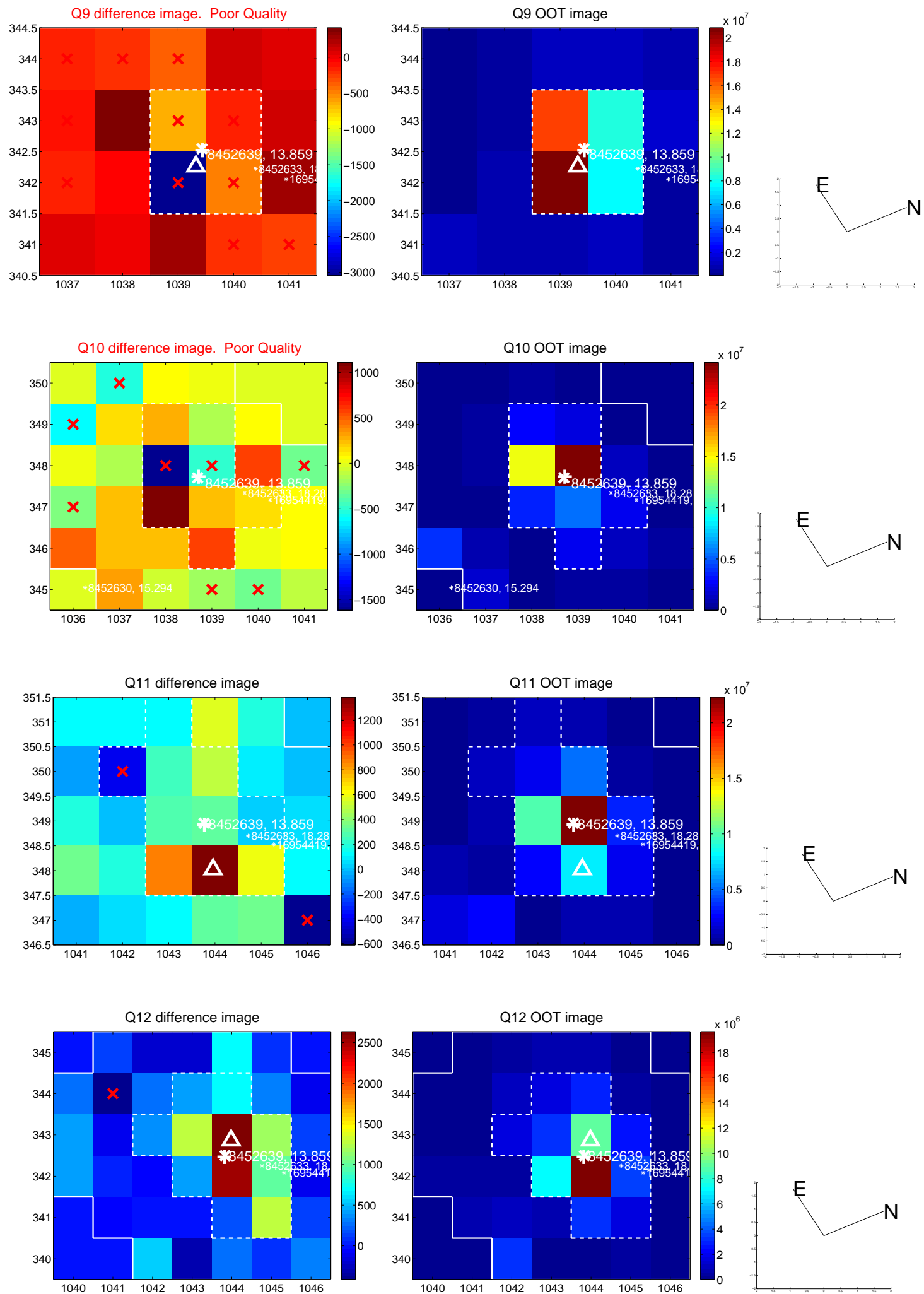
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



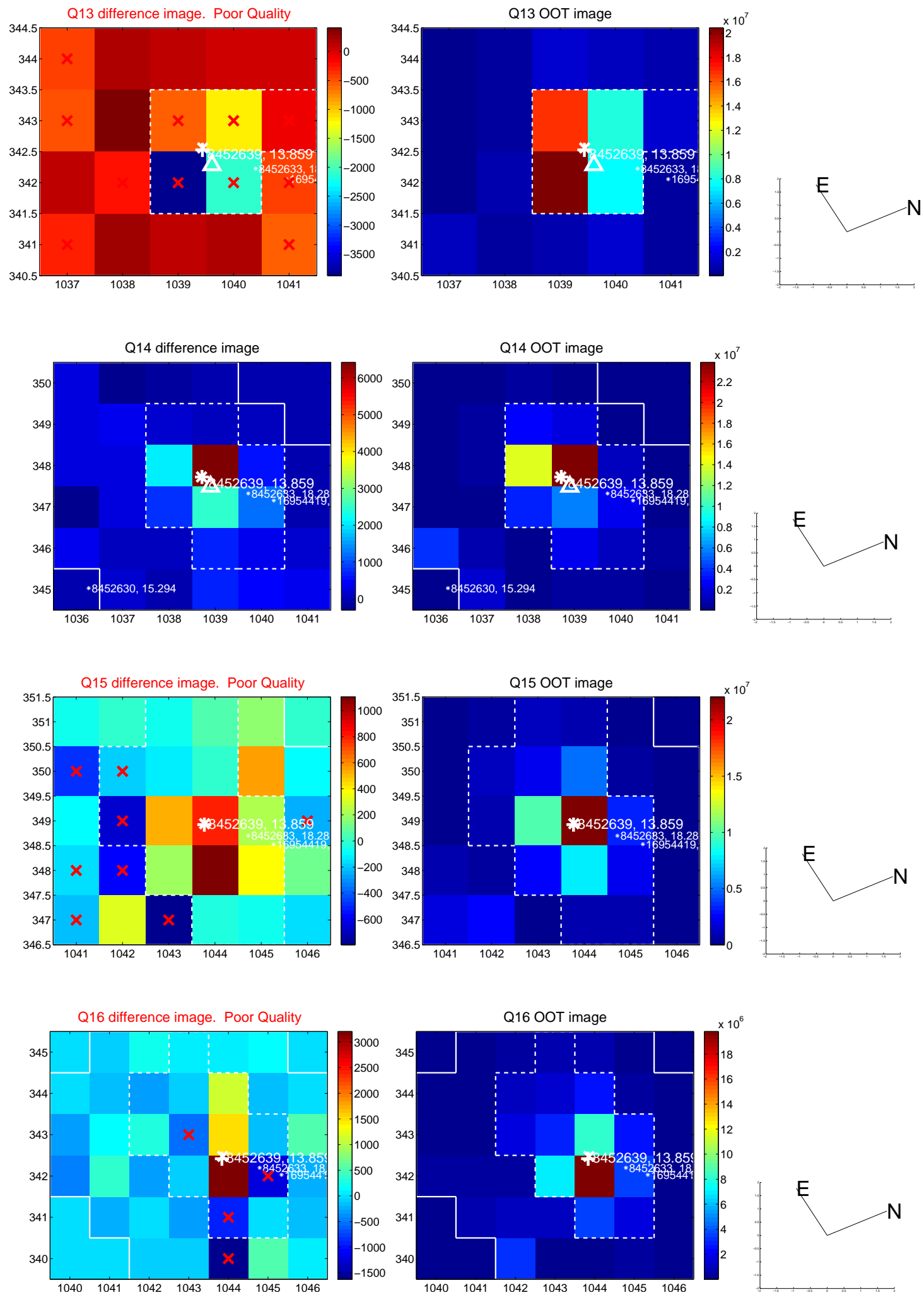
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



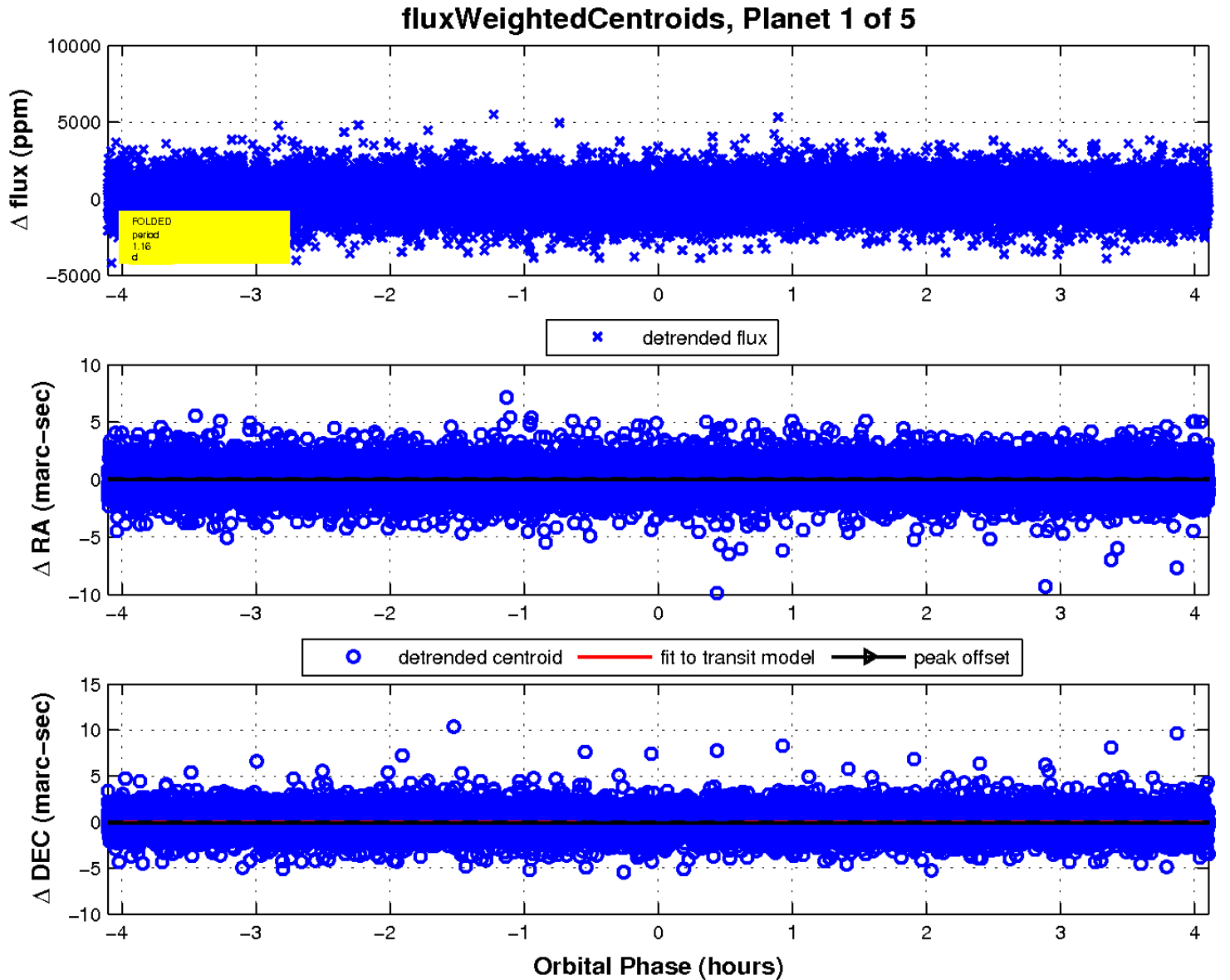
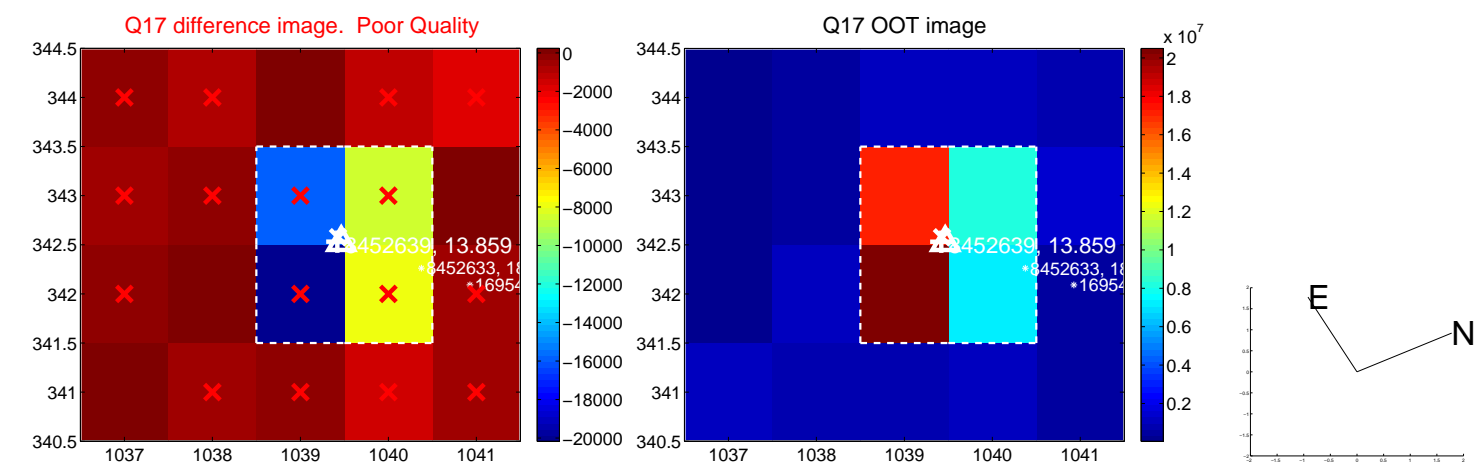
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

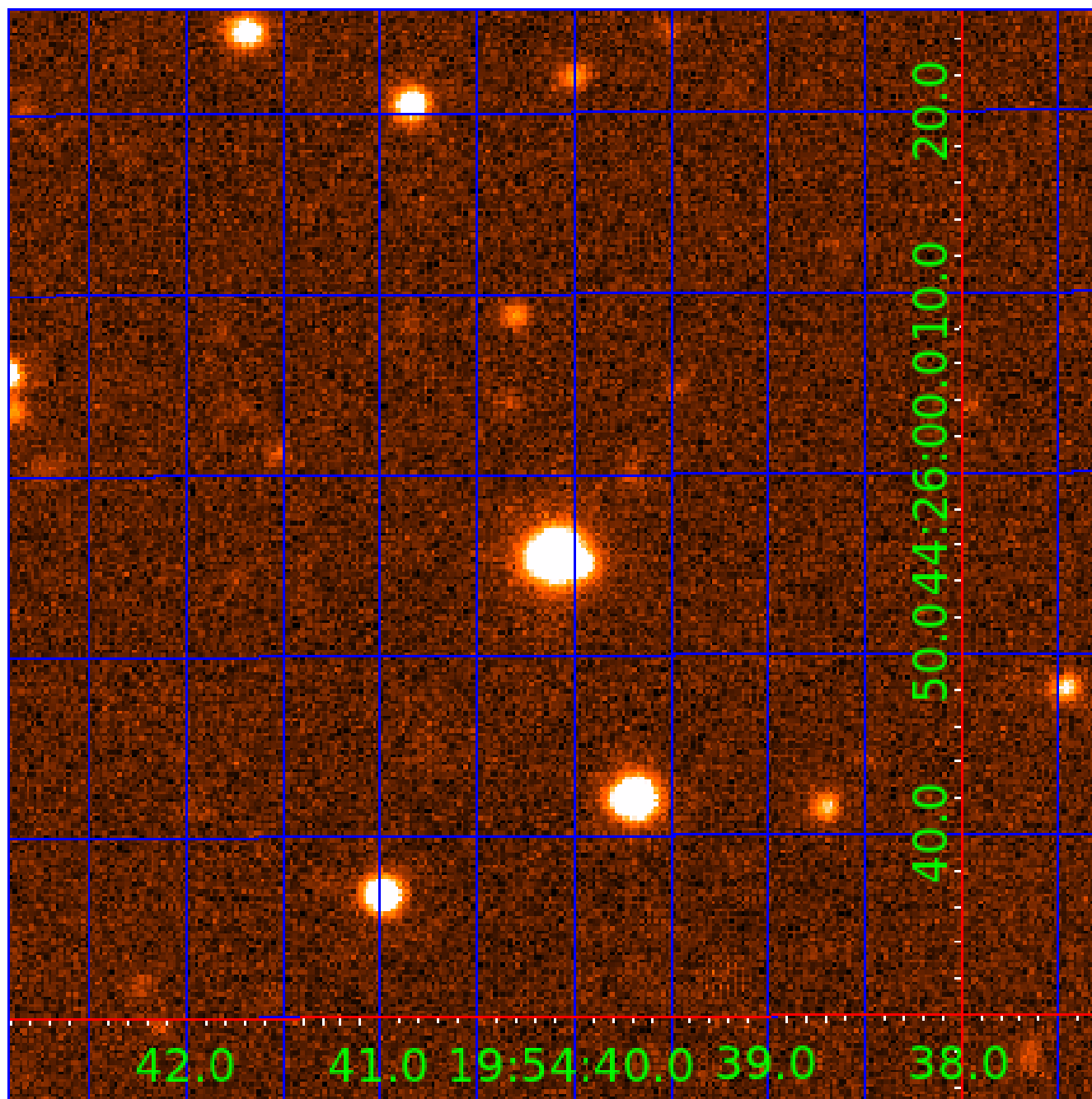


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008452639

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})
008452639-01	OBS	No	1.163686	131.675421	115.2	1.369	10.9	7.1	1.56	6759	1.80	8037.06
008452639-02	OBS	No	2.567884	133.444812	343.5	8.306	8.5	10.3	1.56	6759	5.26	2797.55
008452639-03	OBS	No	9.759061	139.986783	633.3	6.172	8.5	8.5	1.56	6759	5.57	471.70
008452639-04	OBS	No	156.472612	254.247268	2356.8	4.660	9.5	8.0	1.56	6759	9.23	11.67
008452639-05	OBS	No	188.721895	219.700798	559.7	3.000	9.3	-1.0	1.56	6759	3.73	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008452639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
008452639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

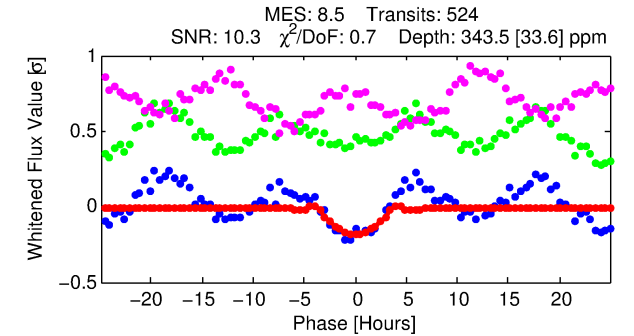
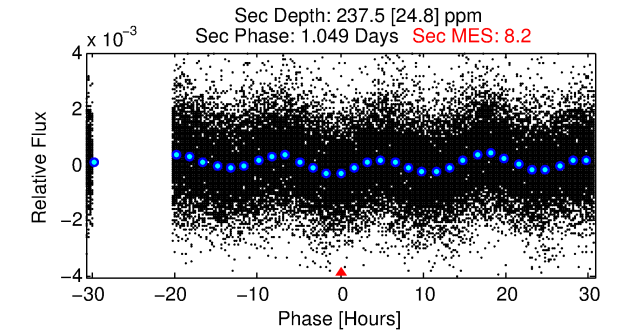
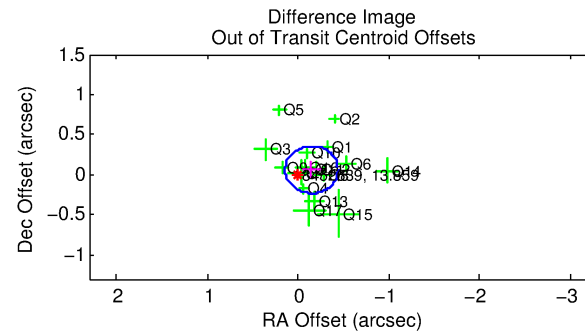
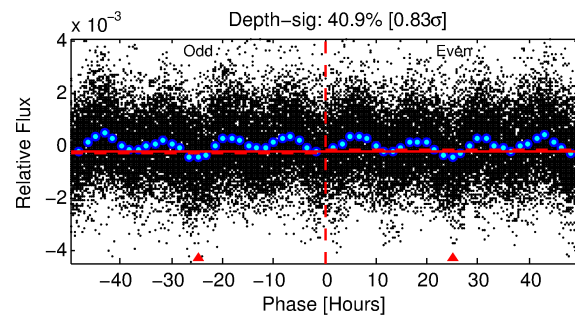
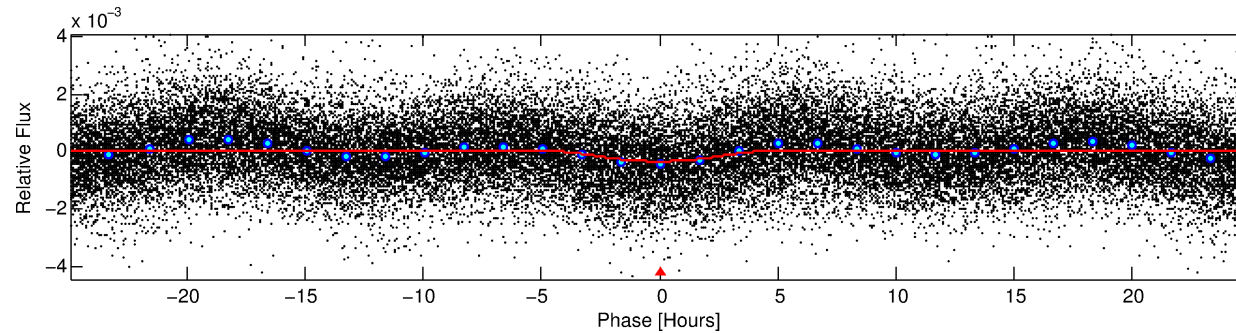
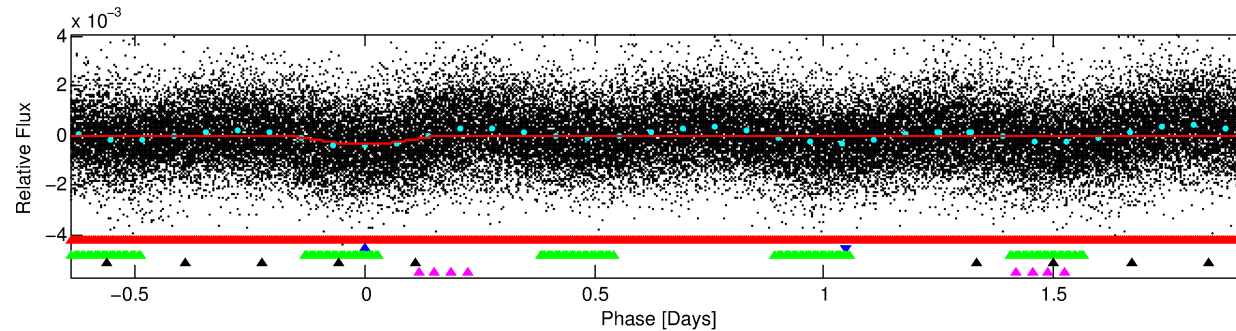
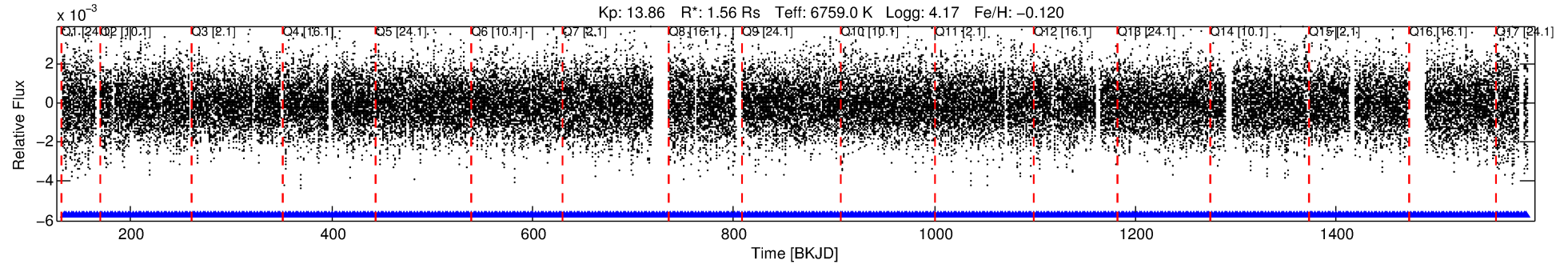
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008452639-02

No Significant Match Found

DV One-Page Summary

KIC: 8452639 Candidate: 2 of 5 Period: 2.568 d



DV Fit Results:

Period = 2.56788 [0.00005] d
Epoch = 133.4448 [0.0126] BKJD
Rp/R* = 0.0309 [0.0408]
a/R* = 1.18 [0.07]
b = 1.00 [0.06]
Seff = 2797.55 [1130.81]
Teq = 1854 [187] K
Rp = 5.26 [7.16] Re
a = 0.0404 [0.0106] AU
Ag = 7.70 [20.57] [0.33 σ]
Teffp = 4777 [3165] K [0.92 σ]

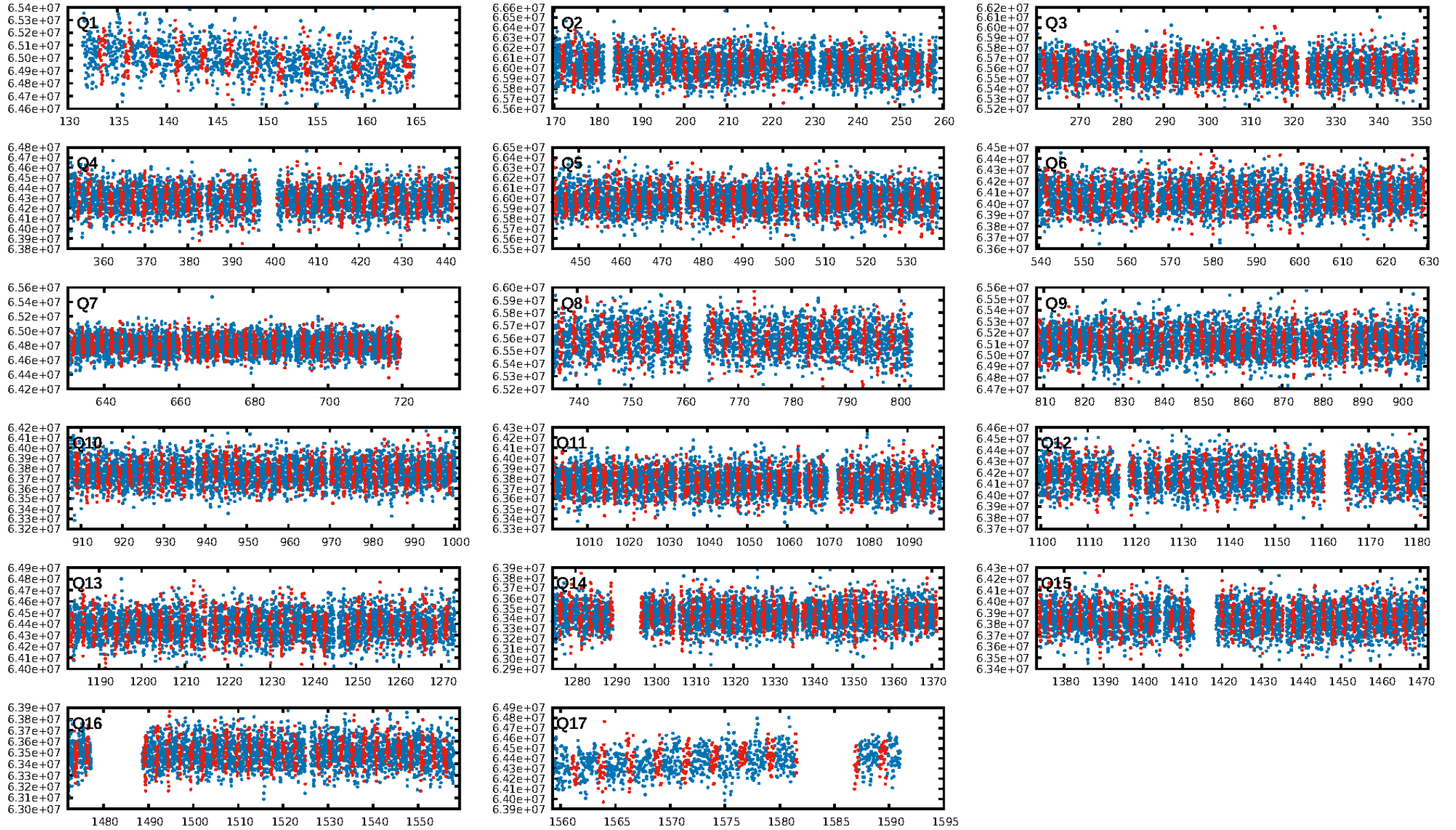
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.00 σ]
LongPeriod-sig: 100.0% [16.68 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [501/501]
GhostDiagnostic-chr: 0.8582
Centroid-sig: 0.0%
Centroid-so: 0.103 arcsec [0.72 σ]
OotOffset-rm: 0.161 arcsec [1.65 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.310 arcsec [3.40 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

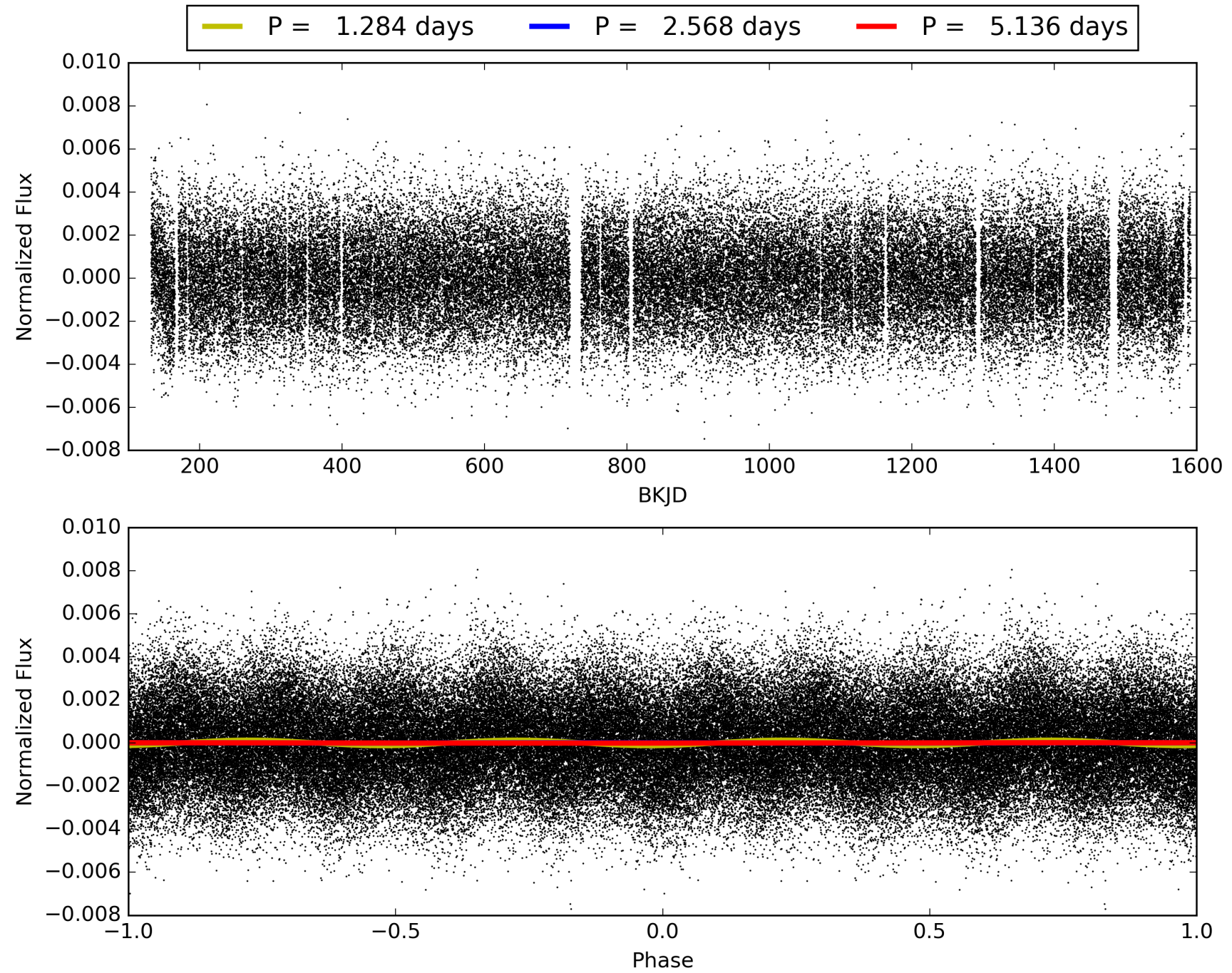
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:16:57 Z

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

TCE 008452639-02, PDC Light Curves

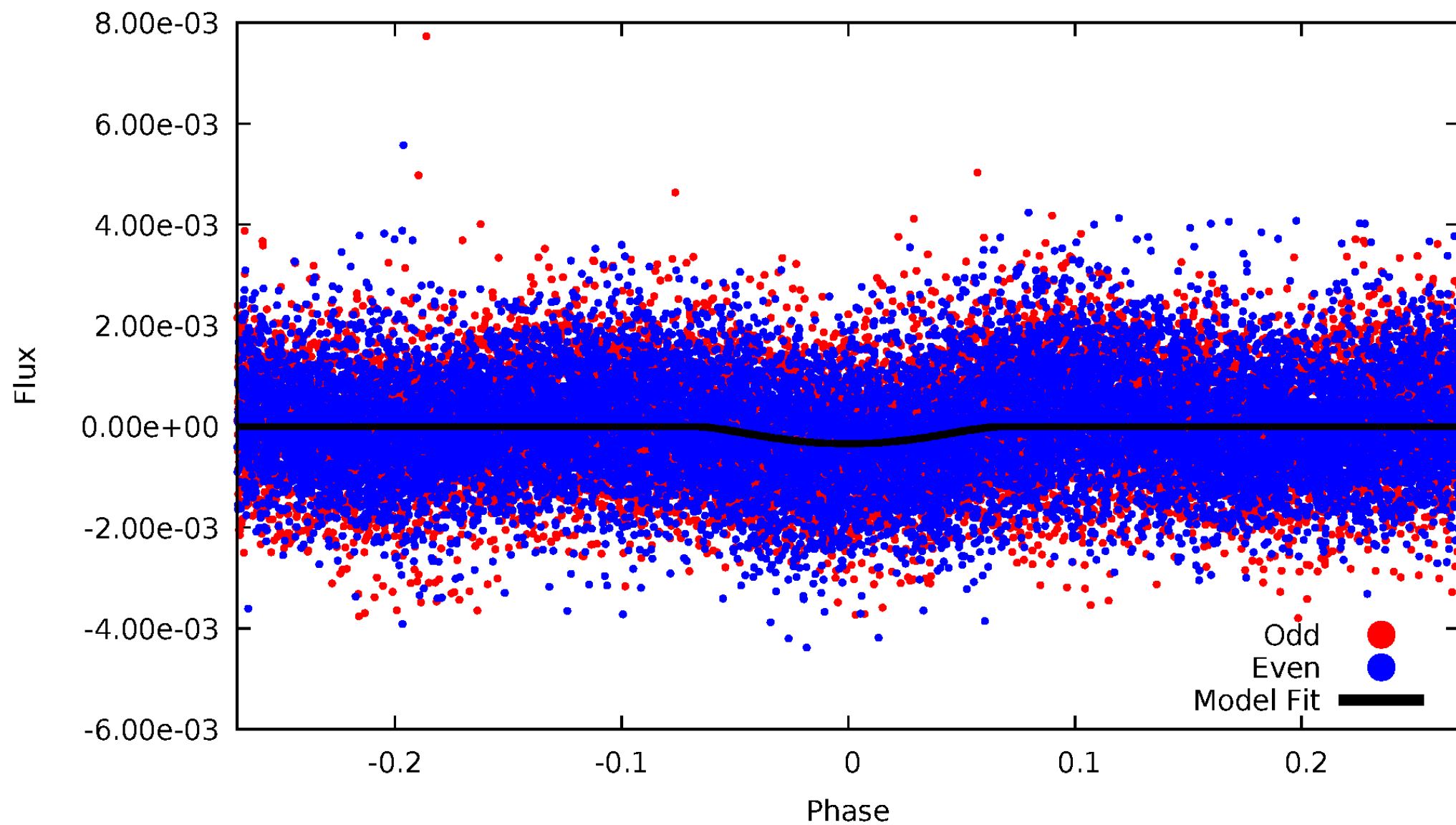


TCE 008452639-02



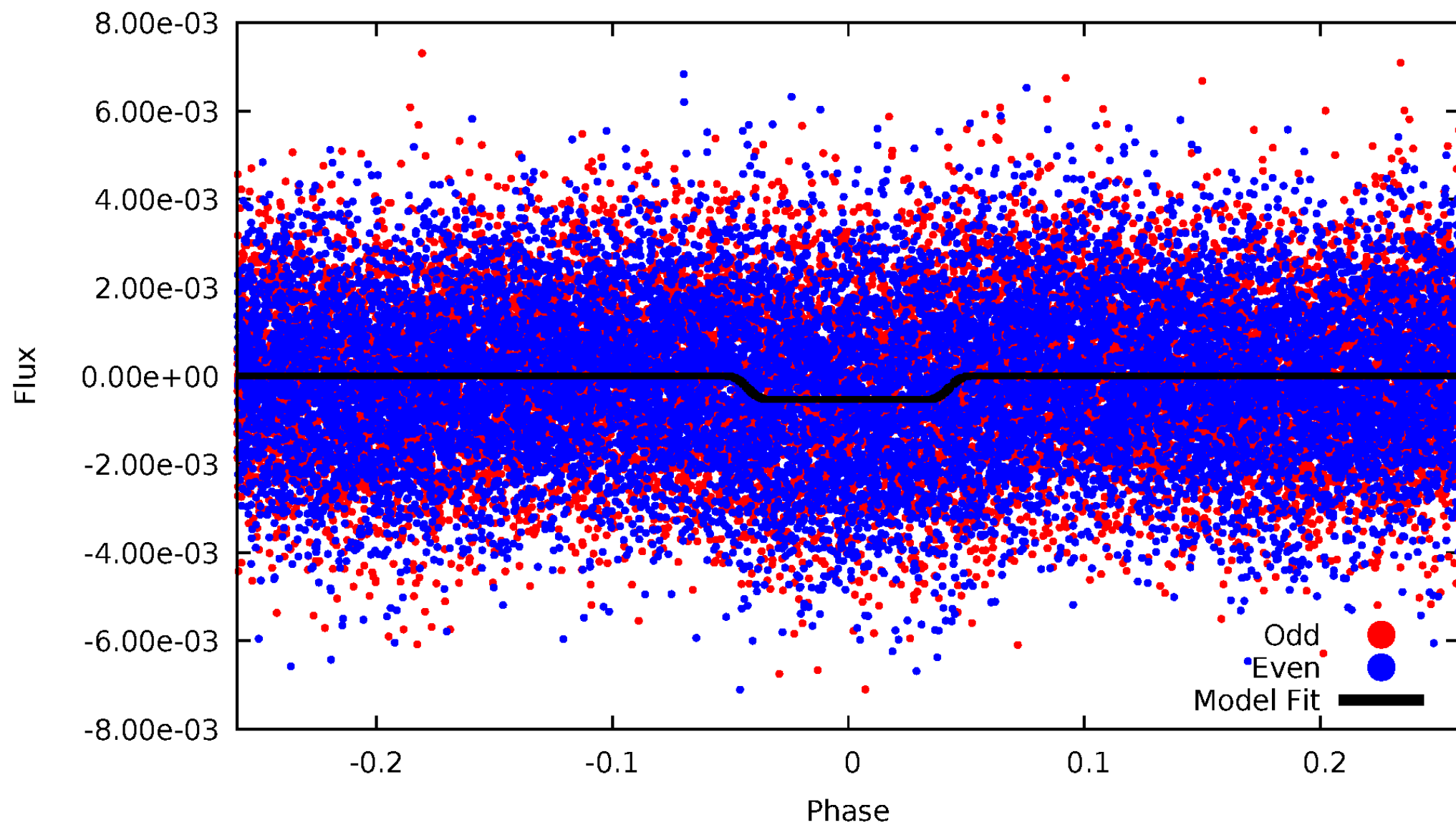
DV Odd/Even

TCE 008452639-02



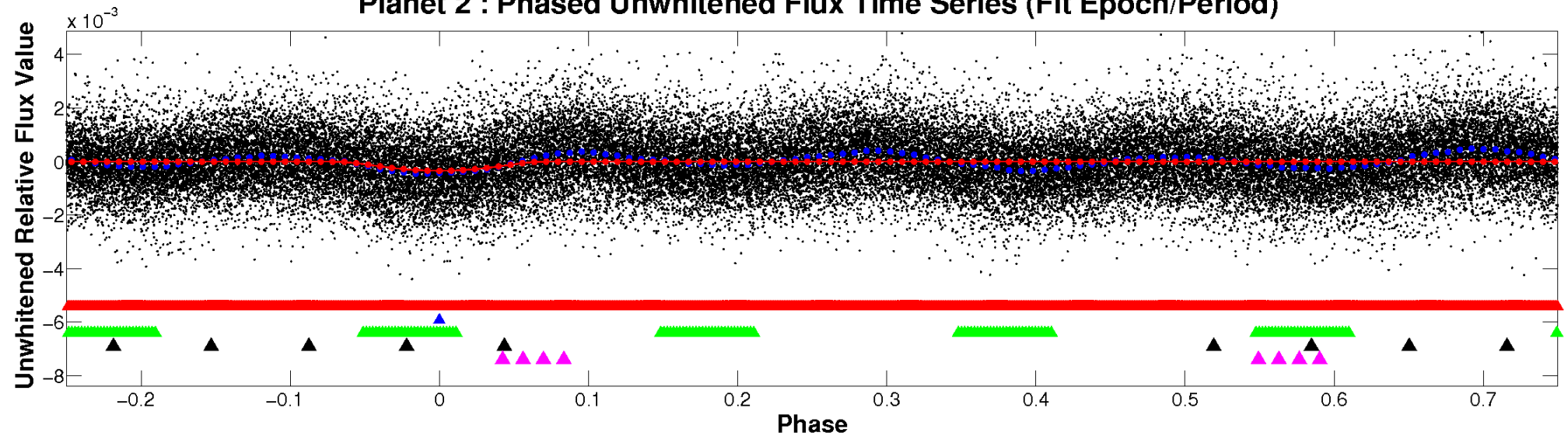
ALT Odd/Even

TCE 008452639-02

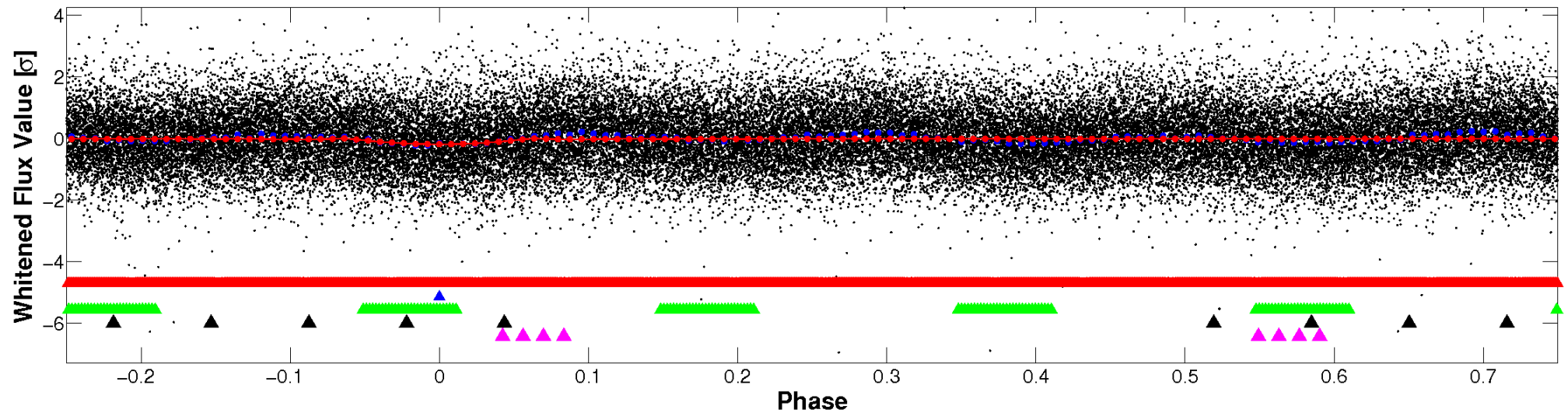


Non-Whitened Vs. Whitened Light Curve

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

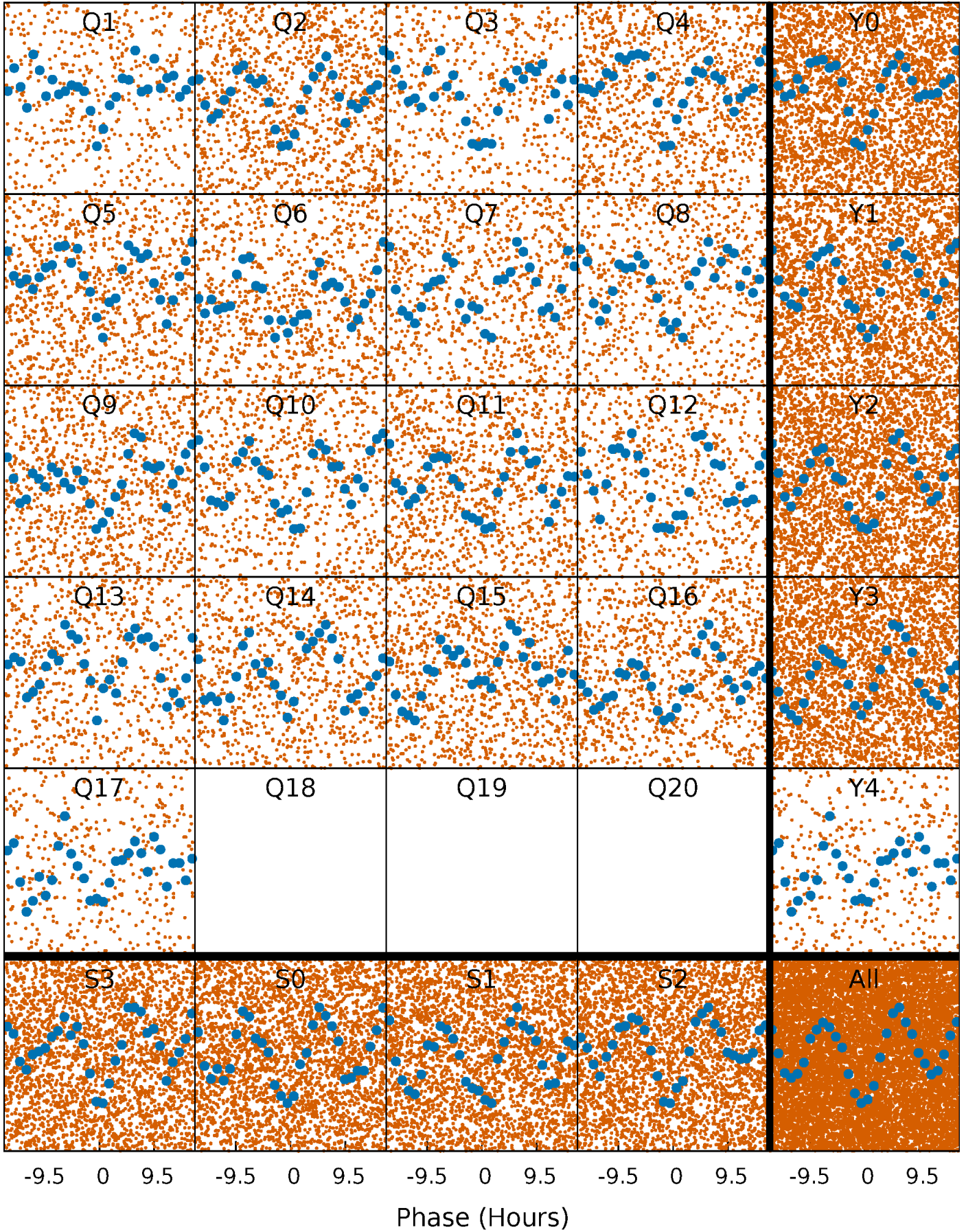


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



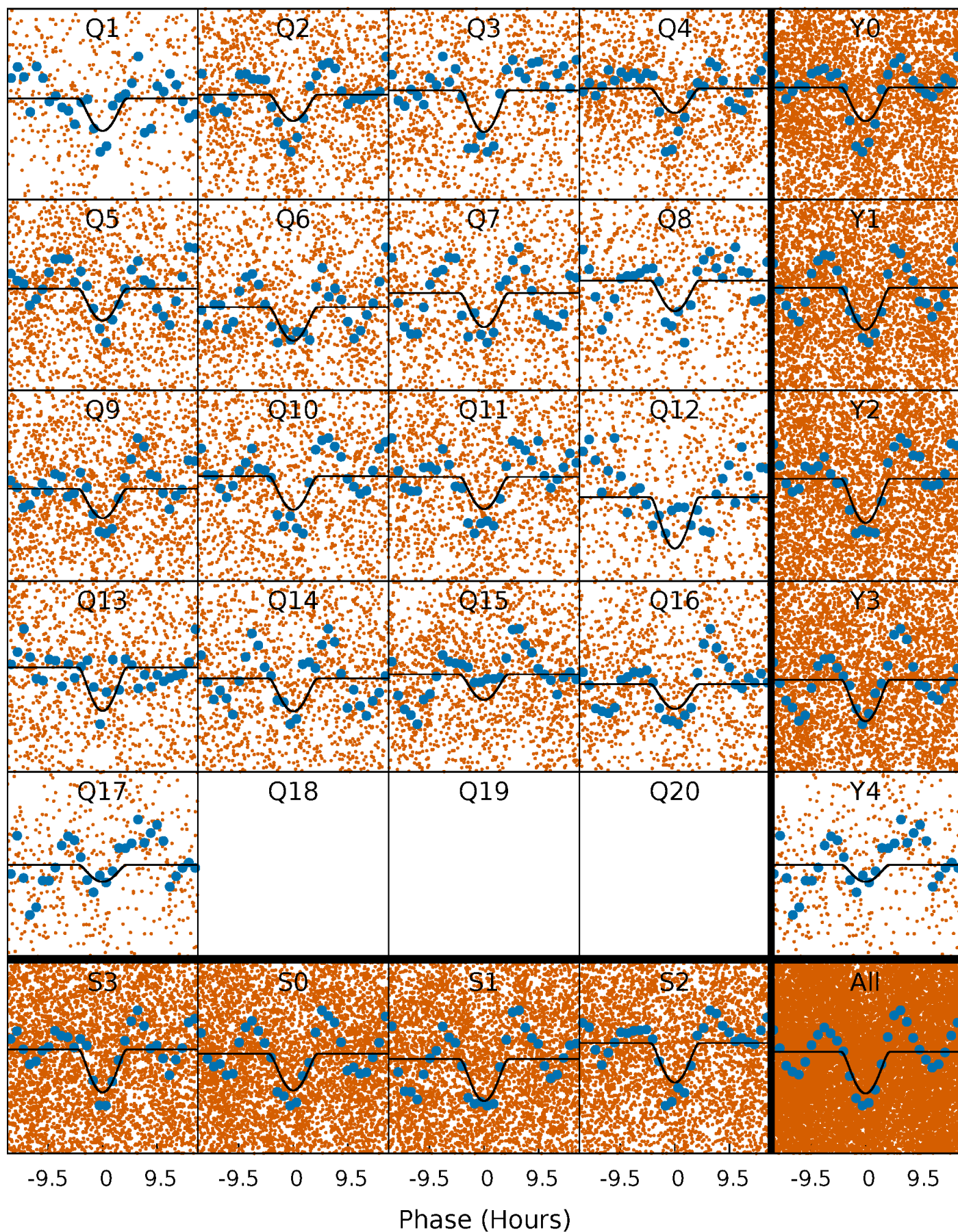
PDC Quarter-Phased Transit Curves

TCE 008452639-02 P= 2.567884 Days $T_0=133.444812$ (BKJD)



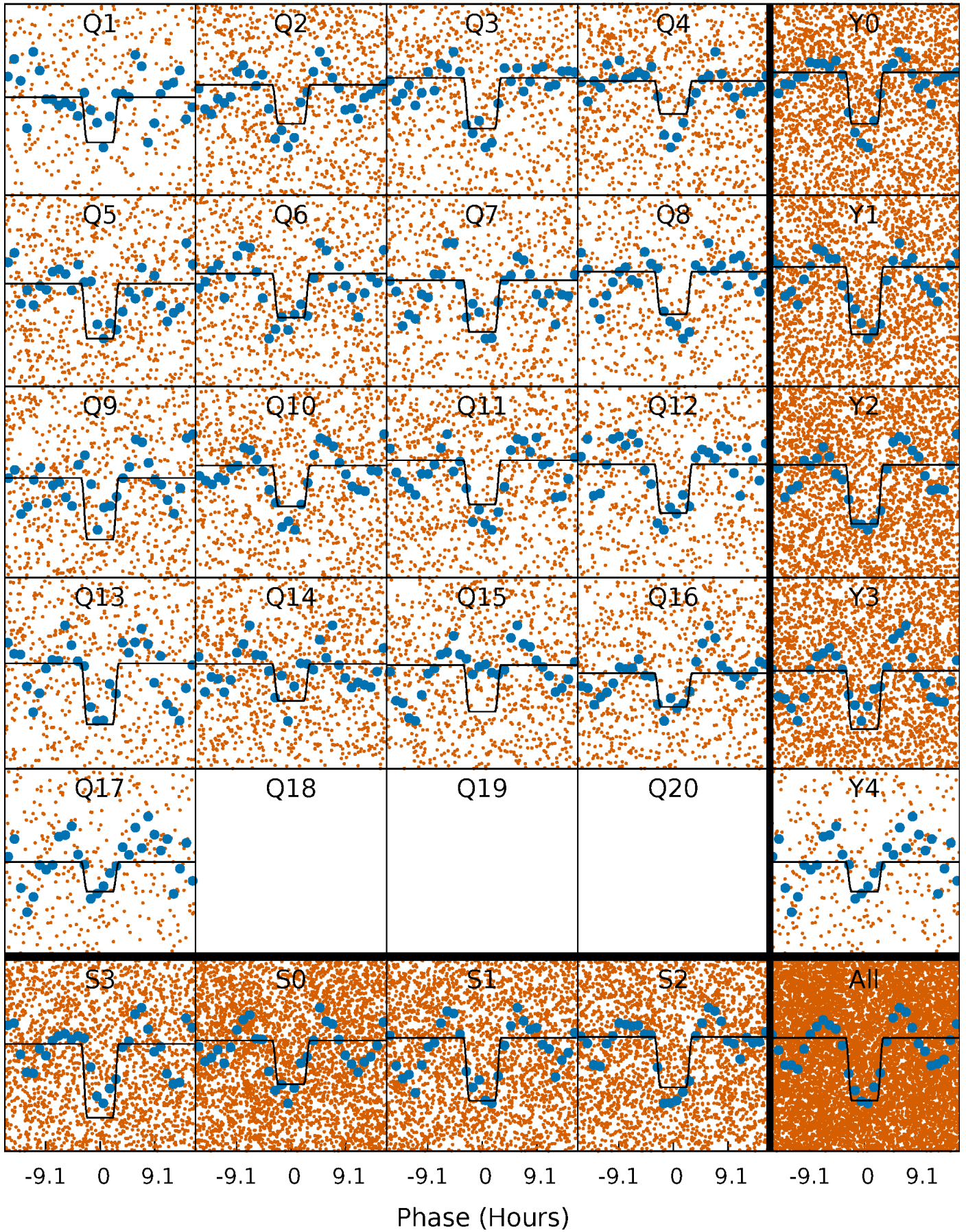
DV Quarter-Phased Transit Curves

TCE 008452639-02 P= 2.567884 Days $T_0=133.444812$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

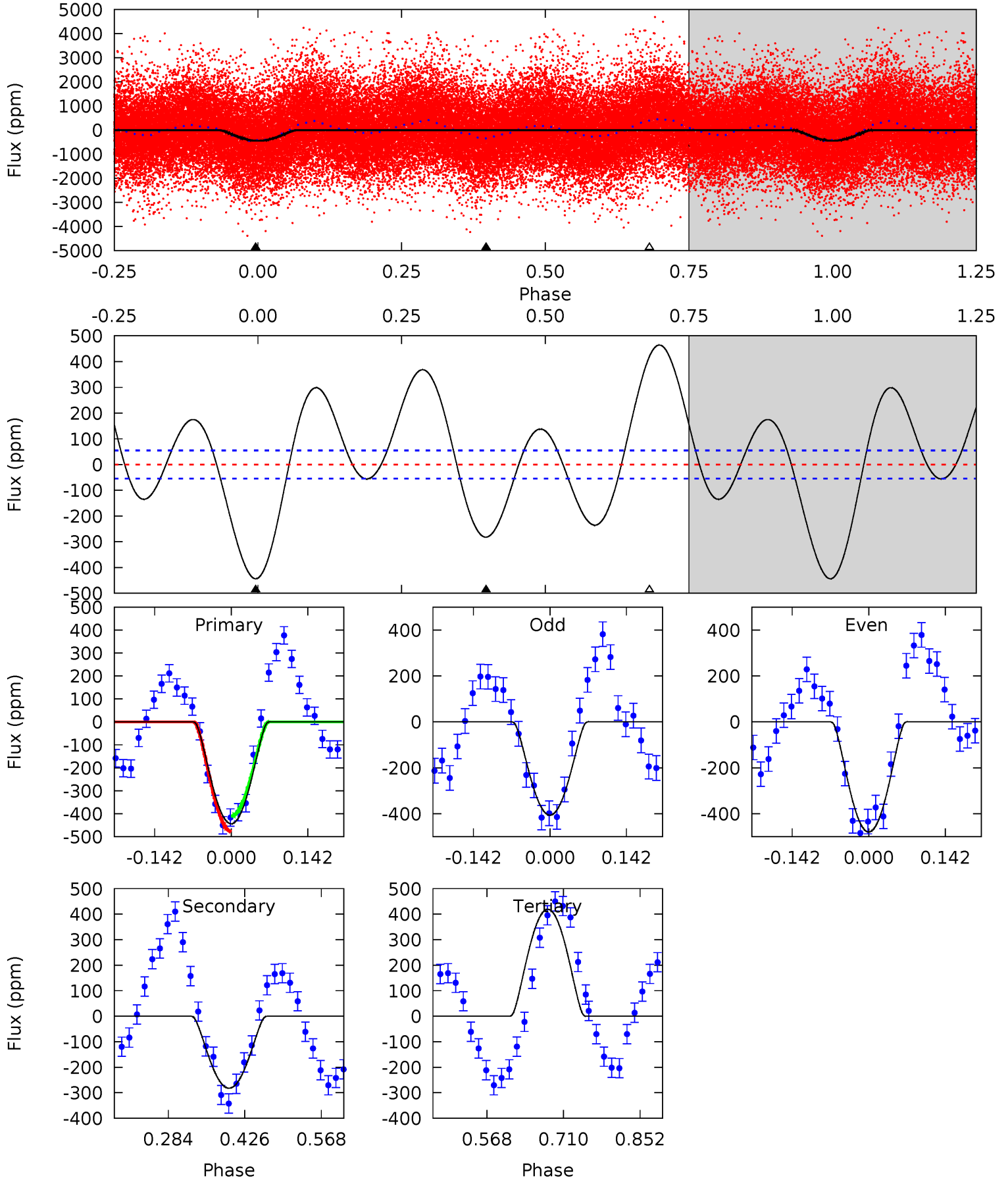
TCE 008452639-02 $P = 2.567902$ Days $T_0 = 133.428845$ (BKJD)



DV Model-Shift Uniqueness Test

008452639-02, P = 2.567884 Days, E = 130.876928 Days

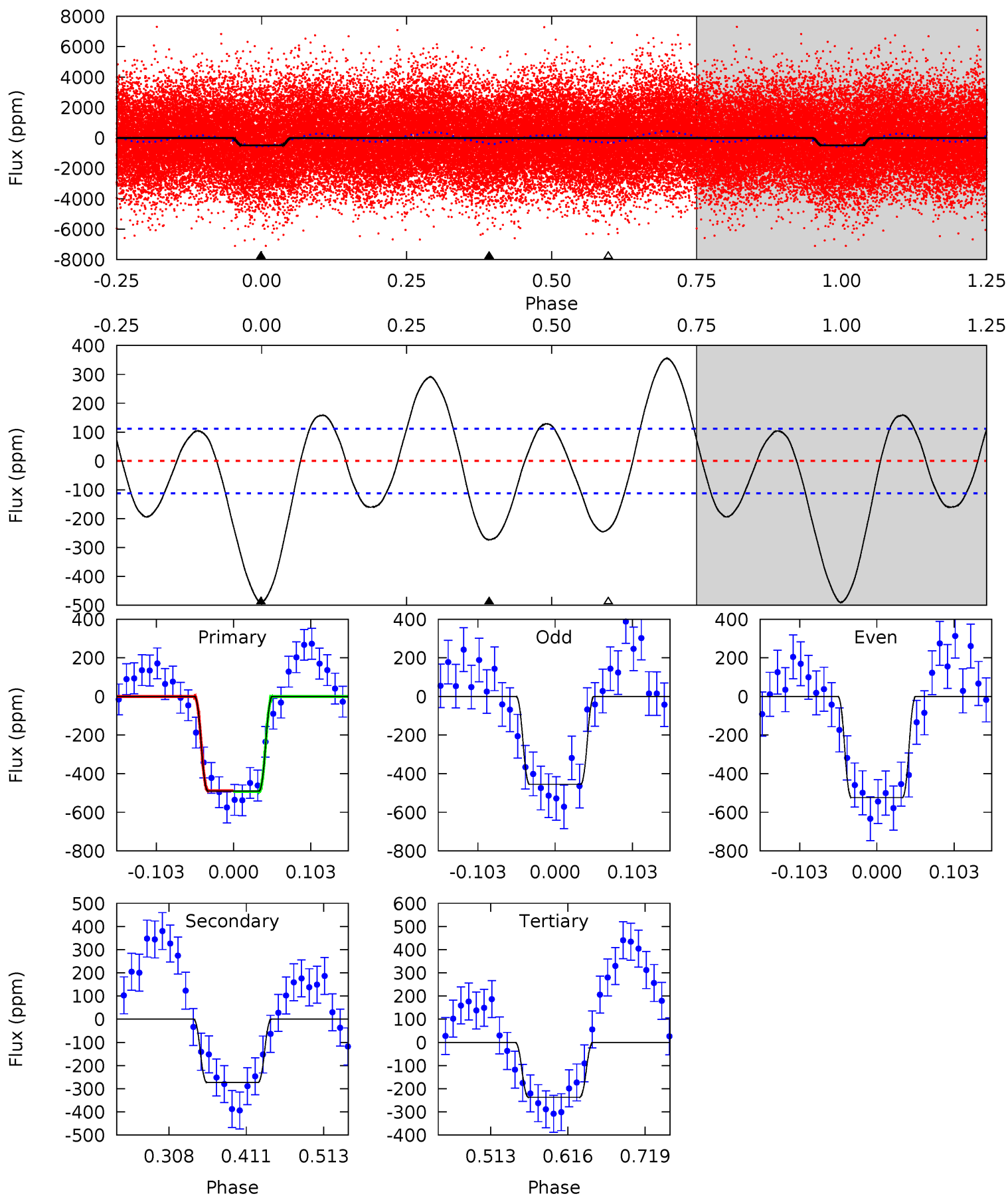
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.4	23.2	-34.4	0	4.49	1.47	16.4	70.8	36.4	57.5	23.2	3.01	1.11	0.51	2.71



Alt Model-Shift Uniqueness Test

008452639-02, P = 2.567902 Days, E = 130.860943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.0	11.1	9.65	0	4.56	1.63	6.84	10.3	20.0	1.48	11.1	1.39	1.20	0.42	0.09



Stellar Parameters For KIC 008452639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6759^{+189}_{-283}	$4.175^{+0.158}_{-0.193}$	$-0.120^{+0.250}_{-0.300}$	$1.562^{+0.511}_{-0.341}$	$1.338^{+0.204}_{-0.224}$	$0.494^{+0.409}_{-0.262}$
	+3%/-4%	+4%/-5%	+208%/-250%	+33%/-22%	+15%/-17%	+83%/-53%
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 008452639-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-282±12	$7.40^{+6.34}_{-4.74}$	2595^{+232}_{-178}	4396^{+2648}_{-945}	$4.746^{+29.569}_{-3.430}$
Alt.	-273±25	$6.45^{+6.27}_{-4.50}$	2585^{+222}_{-156}	4551^{+3978}_{-1047}	$5.850^{+57.247}_{-4.330}$

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 $A_{obs} \gg 1.0$

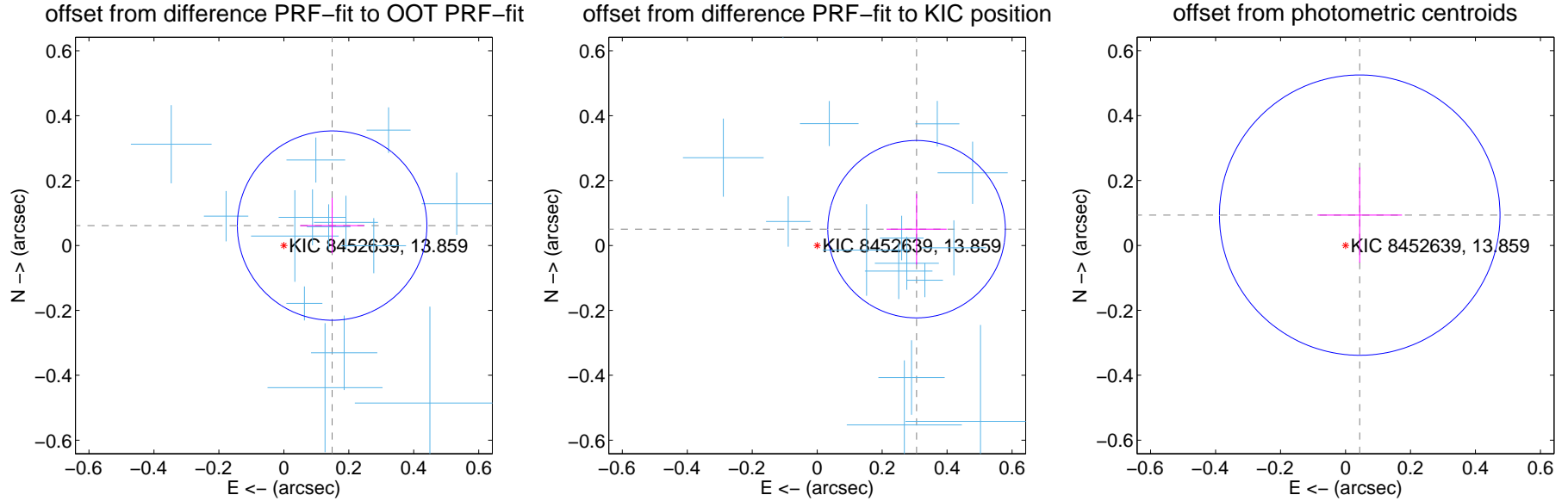
DV Centroid Data

Supplemental centroid analysis for 008452639-02. Kepler magnitude: 13.86. Transit SNR 10.32

There are 17 quarters with good PRF difference image offsets

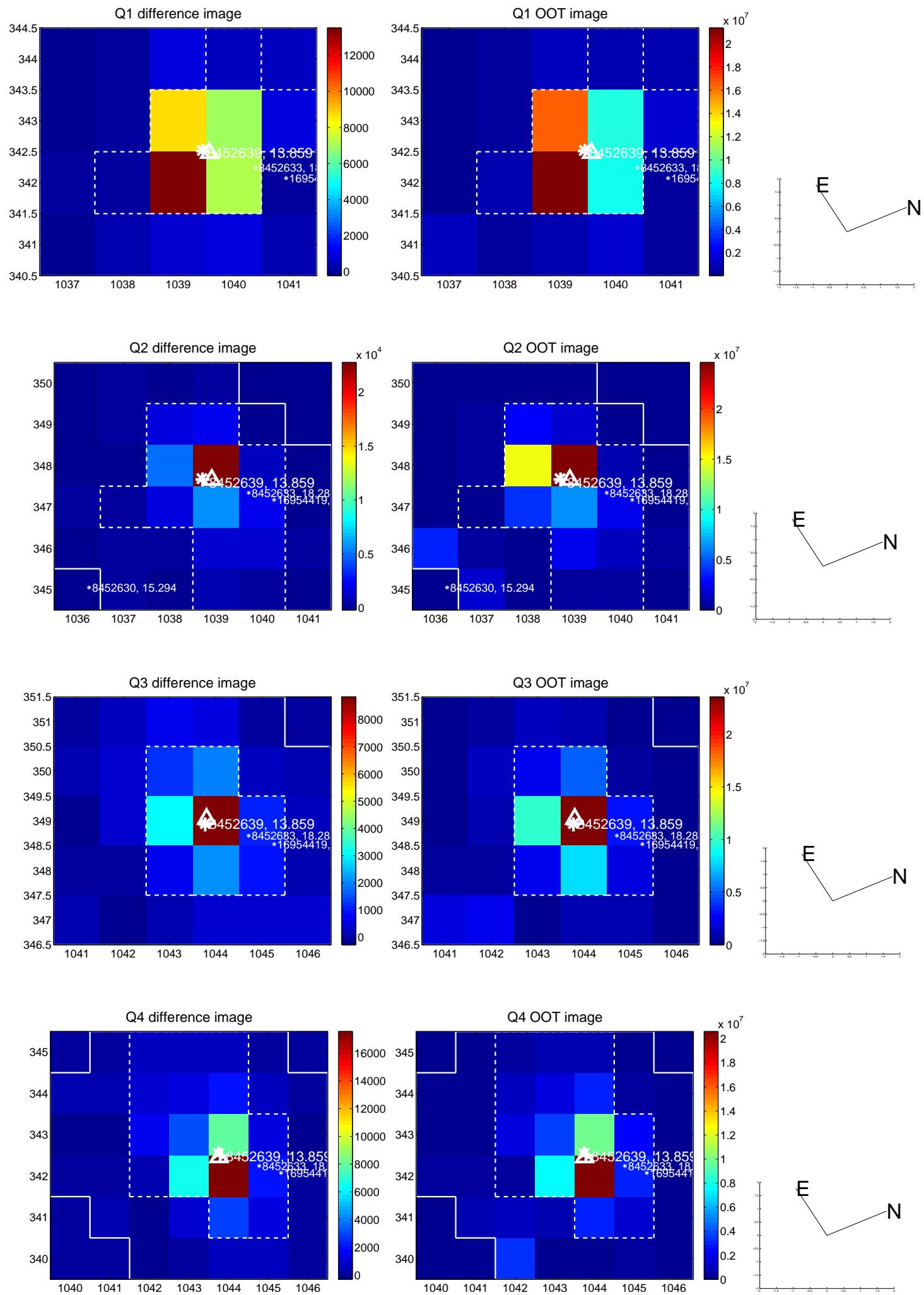
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.161 ± 0.097	1.65	-0.149 ± 0.099	0.061 ± 0.086
PRF-fit source offset from KIC position	0.310 ± 0.091	3.40	-0.306 ± 0.093	0.050 ± 0.109
photometric centroid source offset	0.10 ± 0.14	0.72	-0.04 ± 0.13	0.09 ± 0.15

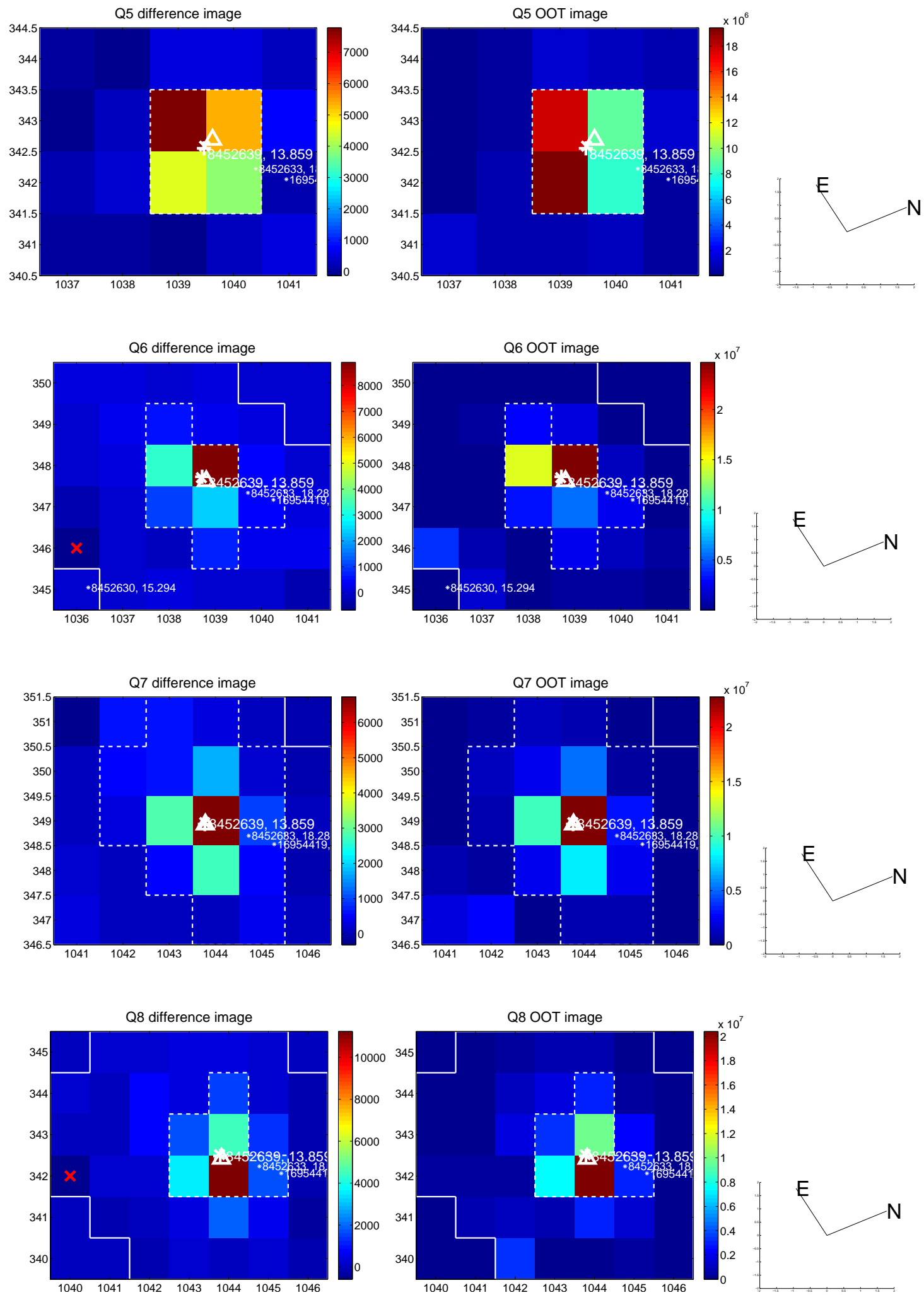


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

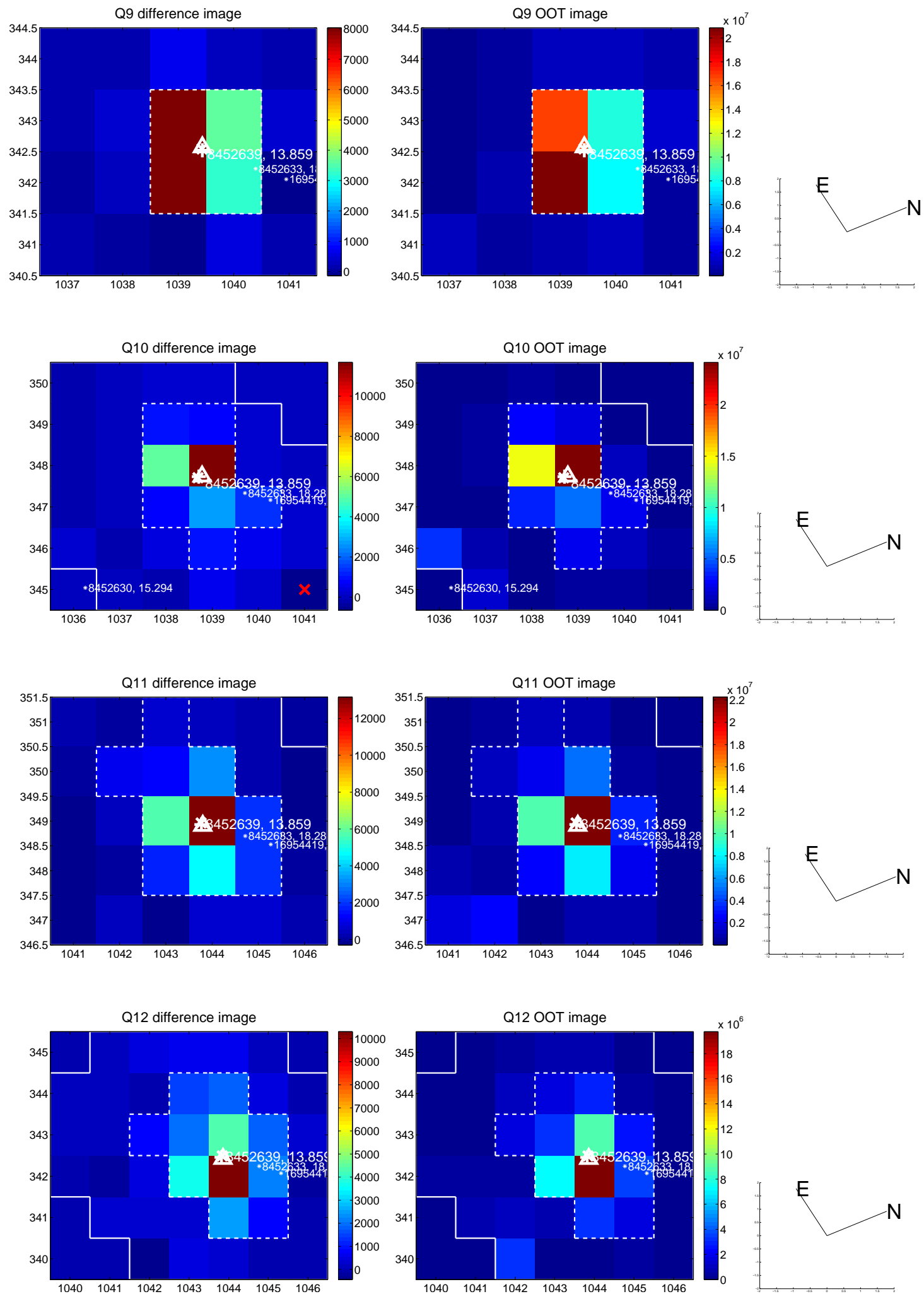
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



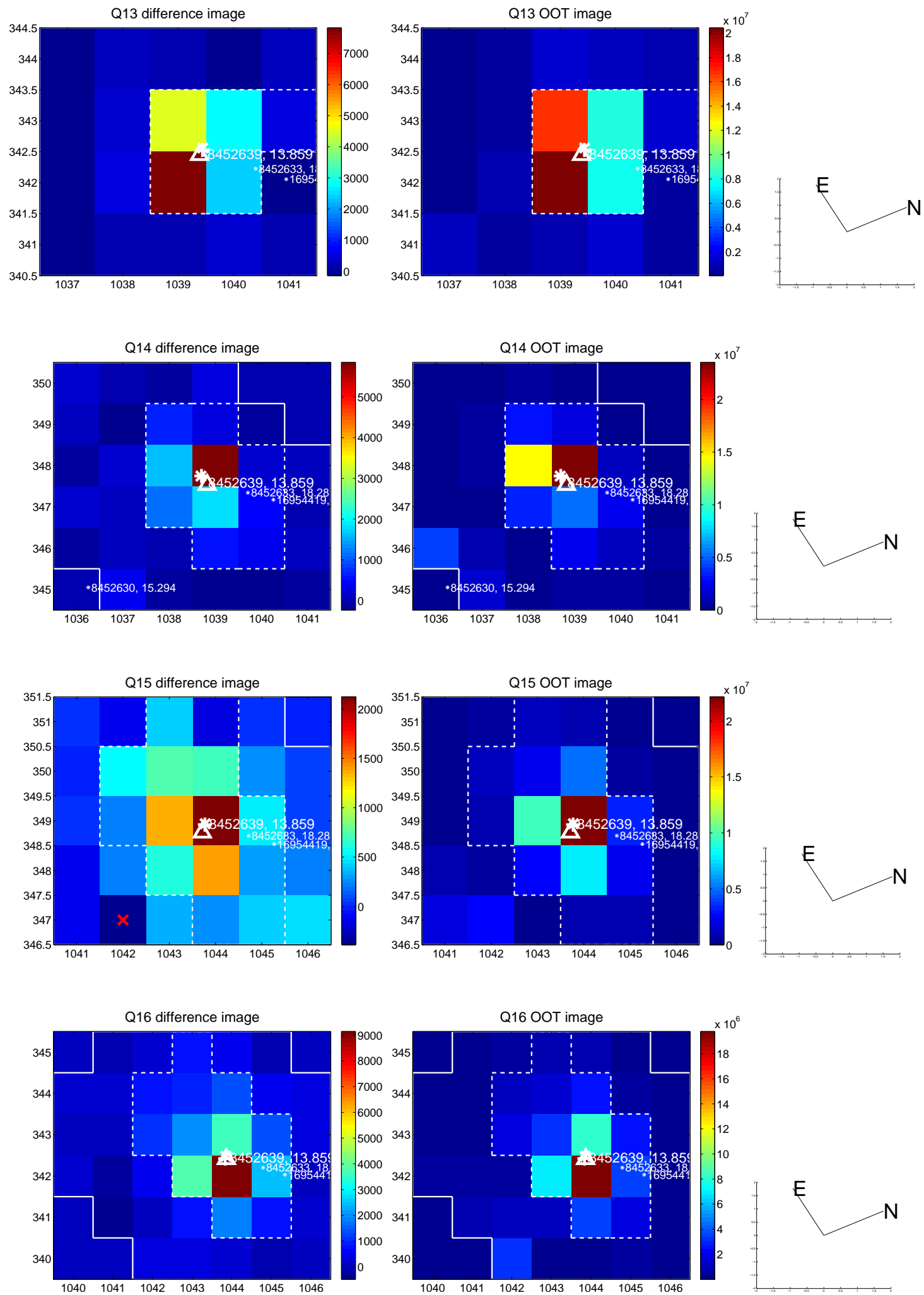
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



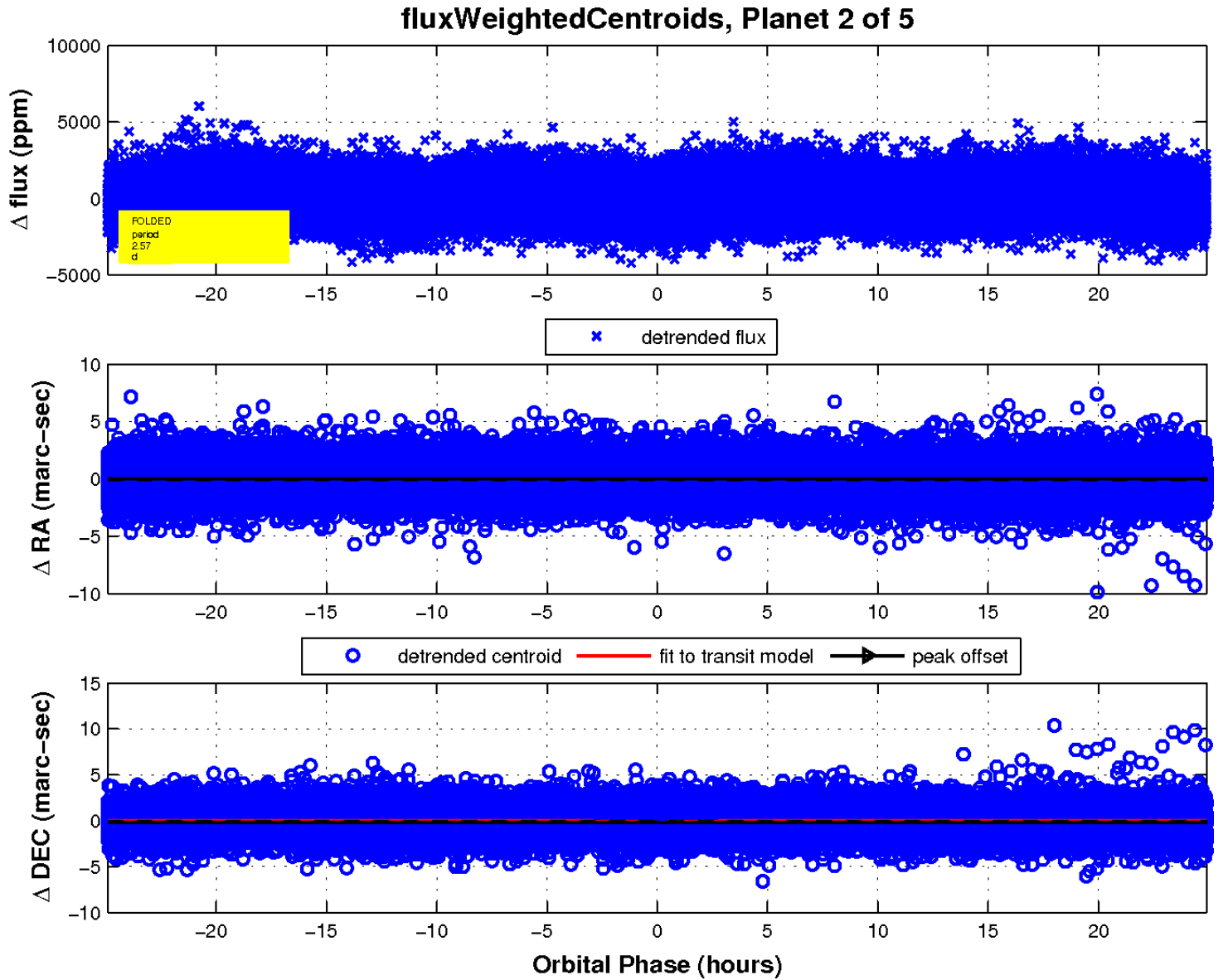
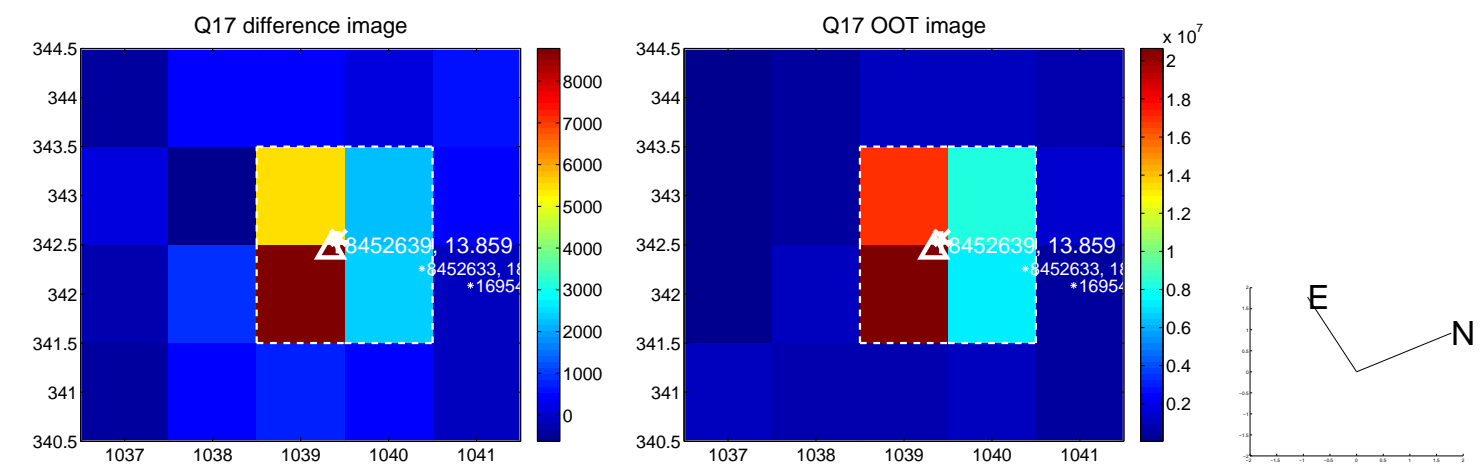
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

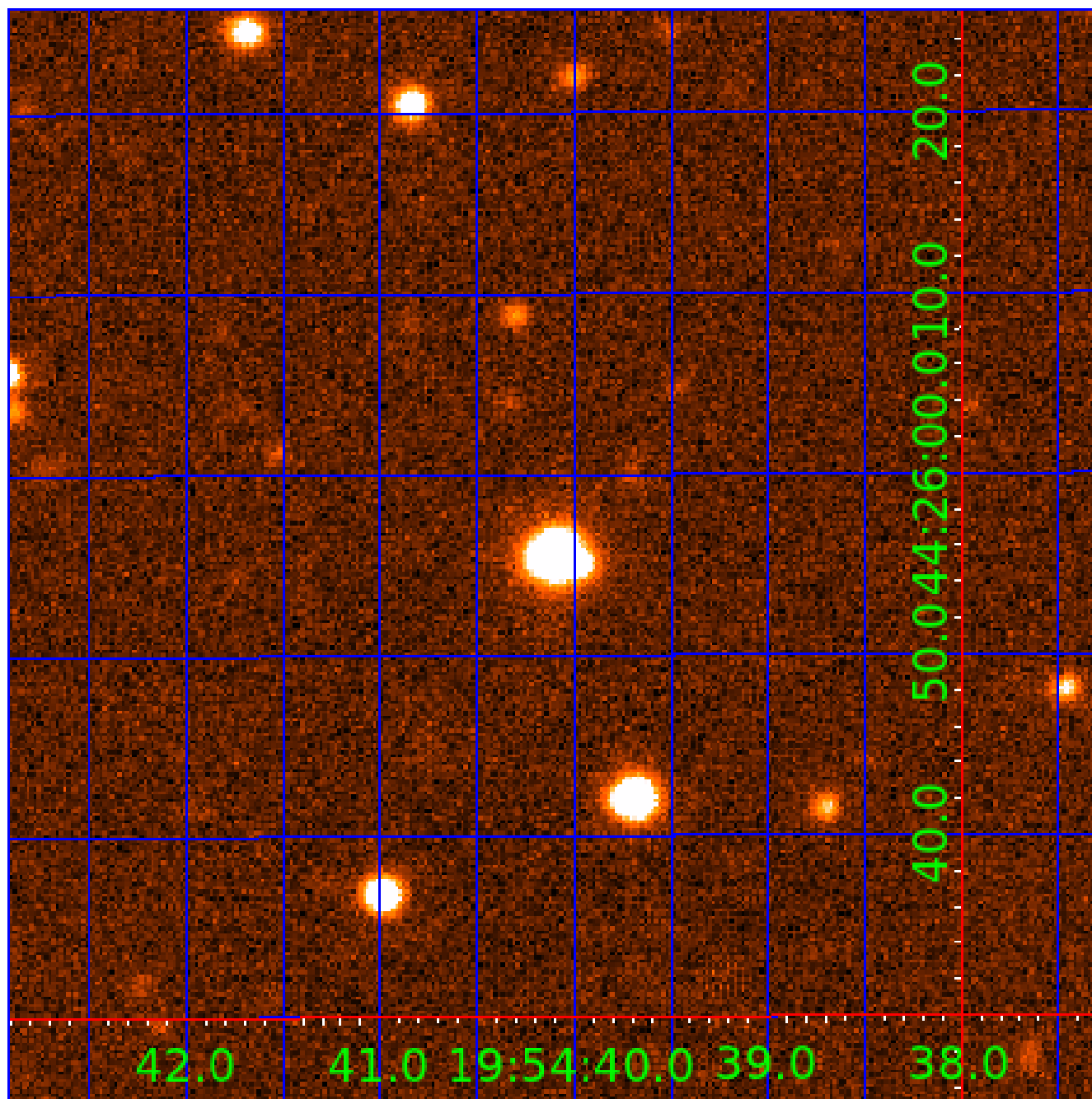


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008452639

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})
008452639-01	OBS	No	1.163686	131.675421	115.2	1.369	10.9	7.1	1.56	6759	1.80	8037.06
008452639-02	OBS	No	2.567884	133.444812	343.5	8.306	8.5	10.3	1.56	6759	5.26	2797.55
008452639-03	OBS	No	9.759061	139.986783	633.3	6.172	8.5	8.5	1.56	6759	5.57	471.70
008452639-04	OBS	No	156.472612	254.247268	2356.8	4.660	9.5	8.0	1.56	6759	9.23	11.67
008452639-05	OBS	No	188.721895	219.700798	559.7	3.000	9.3	-1.0	1.56	6759	3.73	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008452639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
008452639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

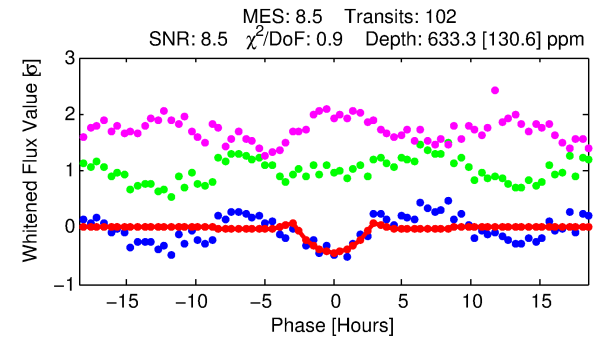
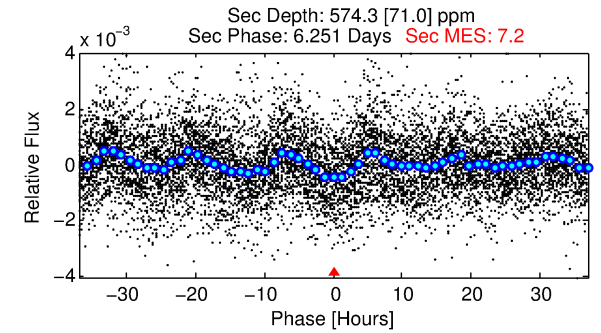
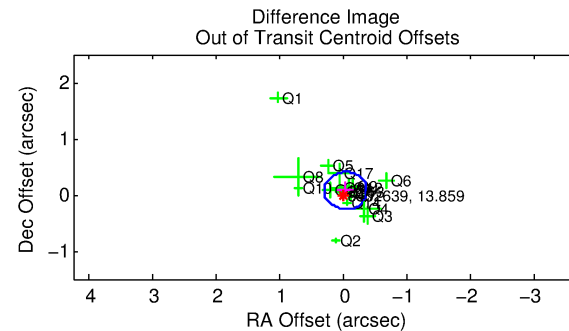
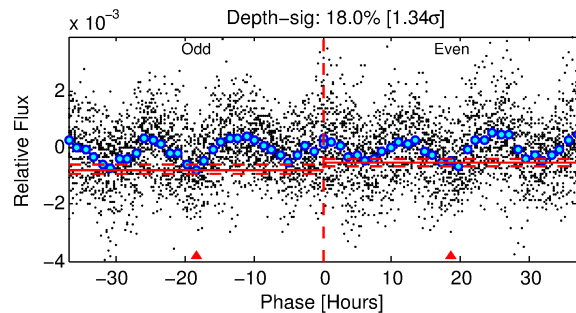
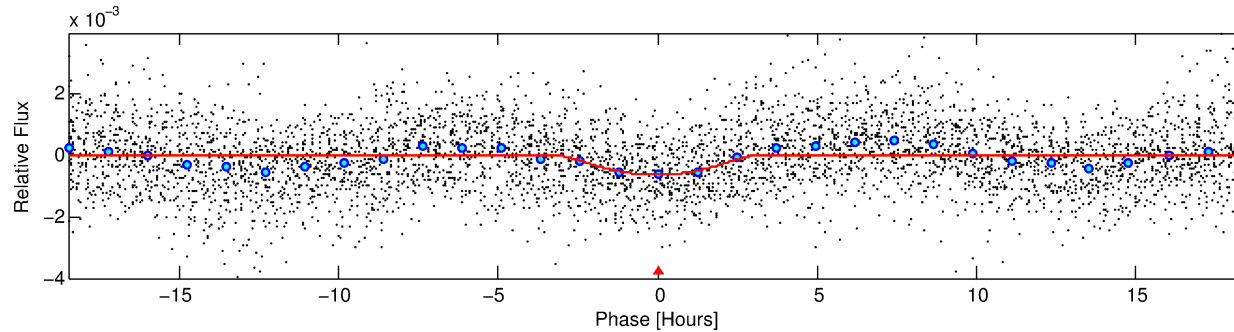
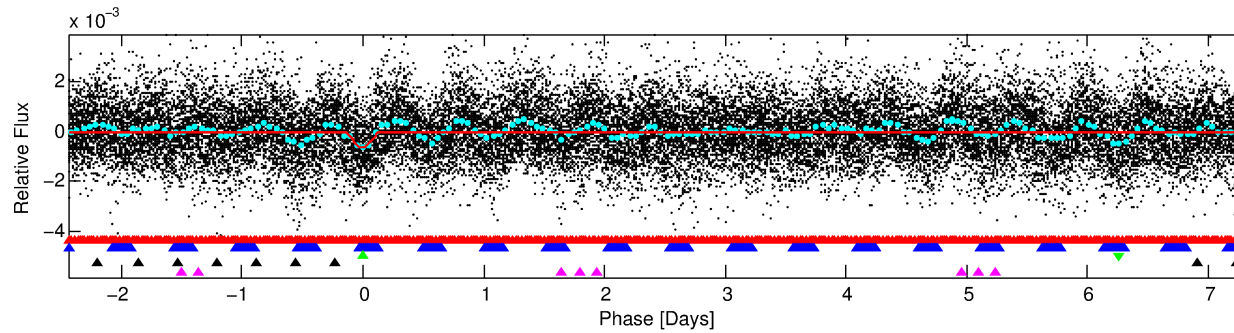
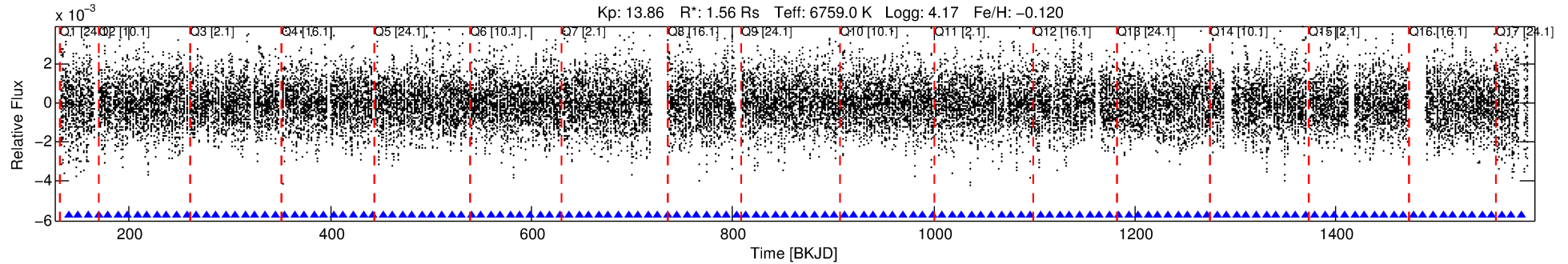
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008452639-03

No Significant Match Found

DV One-Page Summary

KIC: 8452639 Candidate: 3 of 5 Period: 9.759 d



DV Fit Results:

Period = 9.75906 [0.00017] d
Epoch = 139.9868 [0.0141] BKJD
Rp/R* = 0.0327 [0.0170]
a/R* = 4.05 [0.94]
b = 0.98 [0.04]
Seff = 471.70 [190.67]
Teff = 1188 [120] K
Rp = 5.57 [3.42] Re
a = 0.0983 [0.0259] AU
Ag = 98.58 [109.40] [0.89 σ]
Teffp = 5789 [1535] K [2.99 σ]

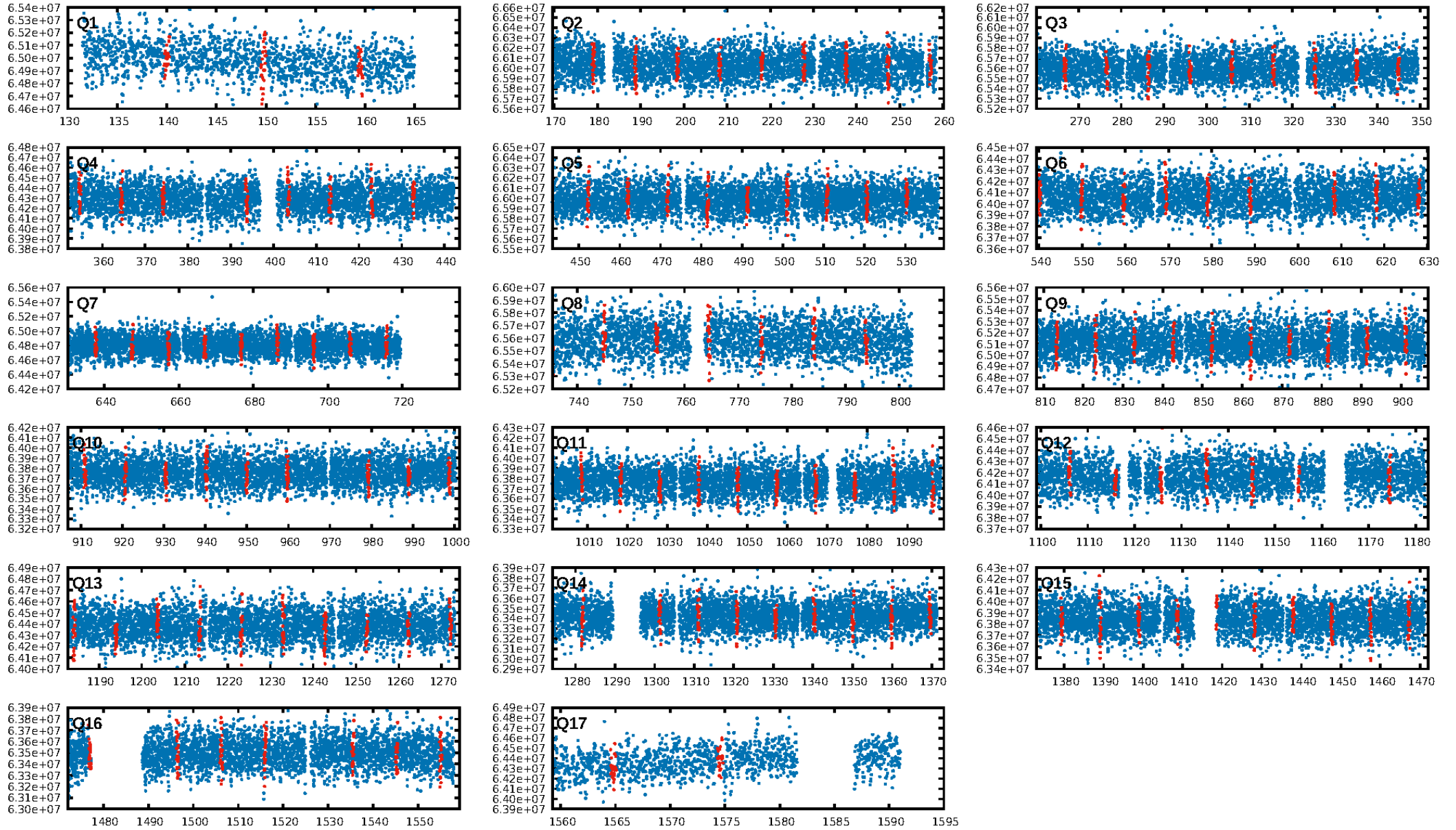
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.68 σ]
LongPeriod-sig: 100.0% [455.31 σ]
ModelChiSquare2-sig: 4.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [99/99]
GhostDiagnostic-chr: 1.883
Centroid-sig: 0.1%
Centroid-so: 0.728 arcsec [4.11 σ]
OotOffset-rm: 0.079 arcsec [0.71 σ]
KicOffset-rm: 0.130 arcsec [1.28 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 0.24 [4/17]

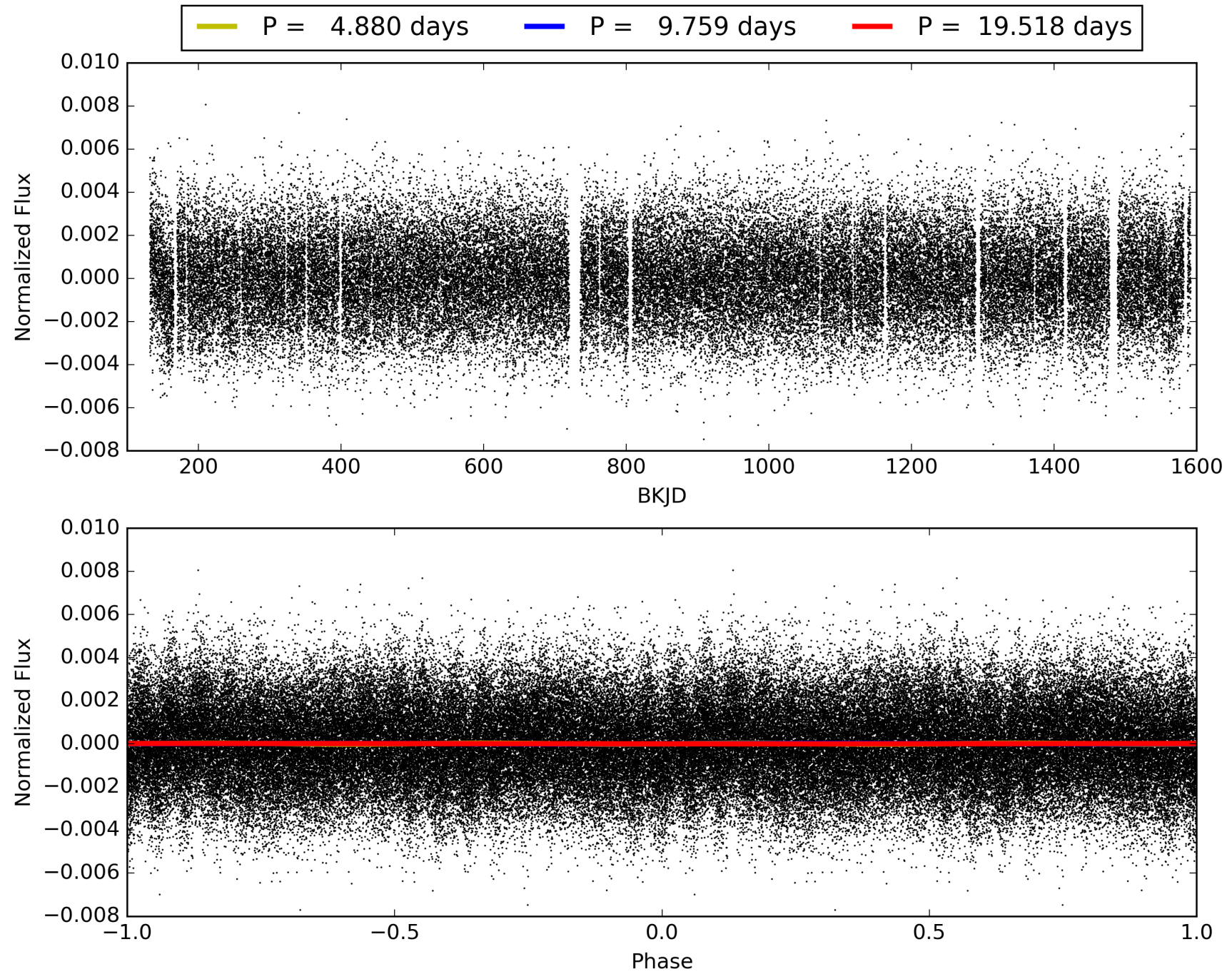
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:17:06 Z

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

TCE 008452639-03, PDC Light Curves

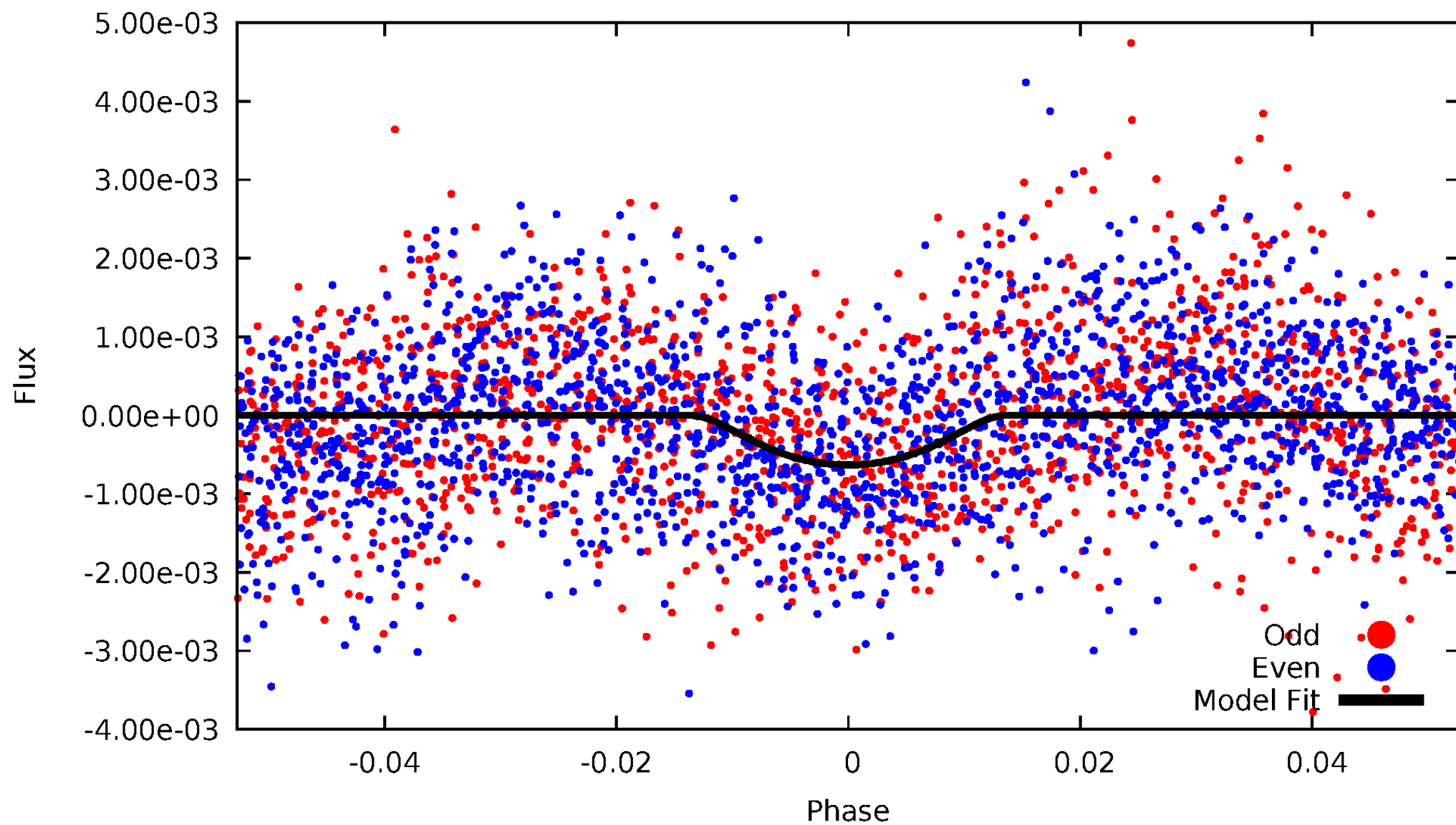


TCE 008452639-03



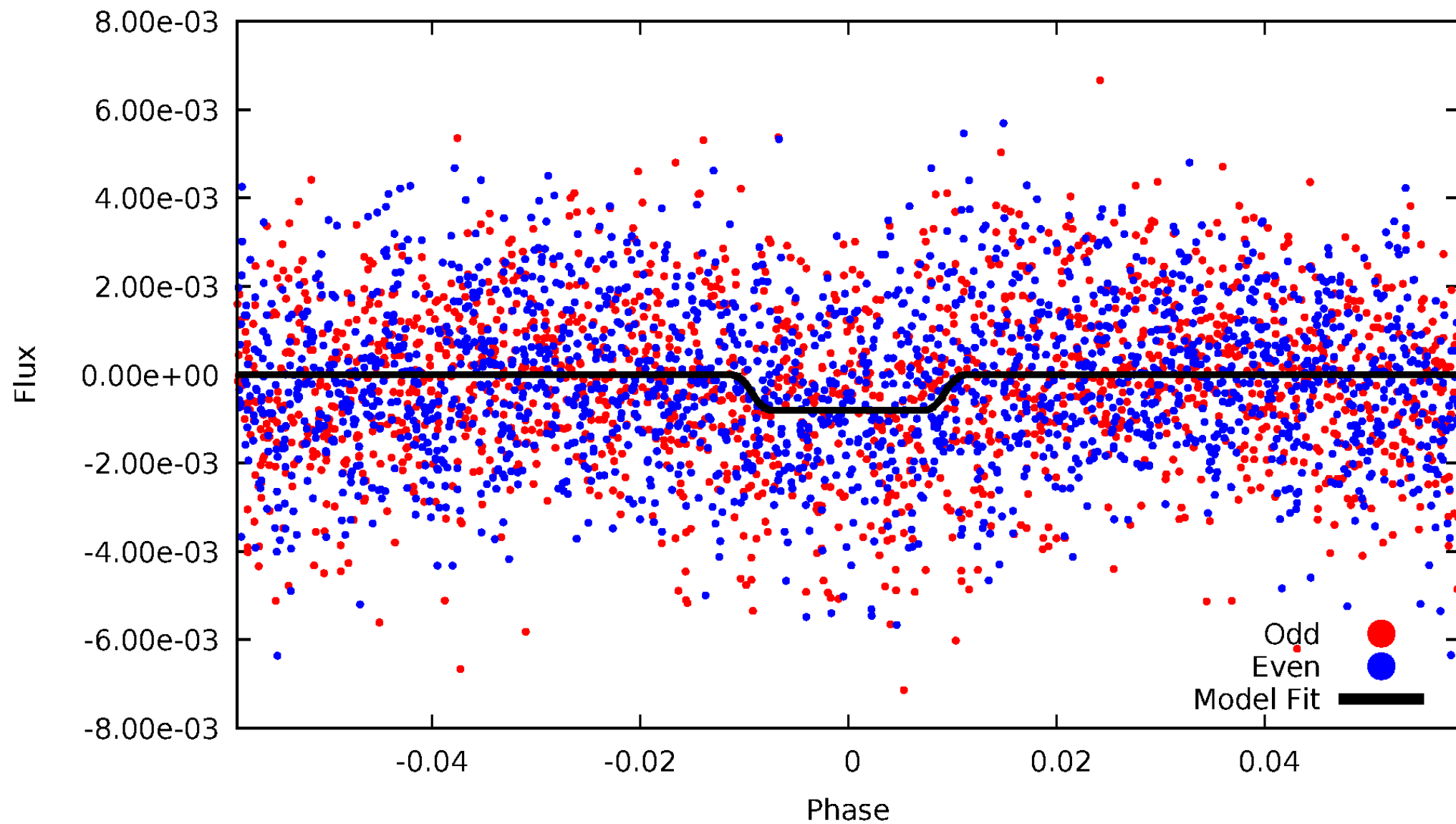
DV Odd/Even

TCE 008452639-03



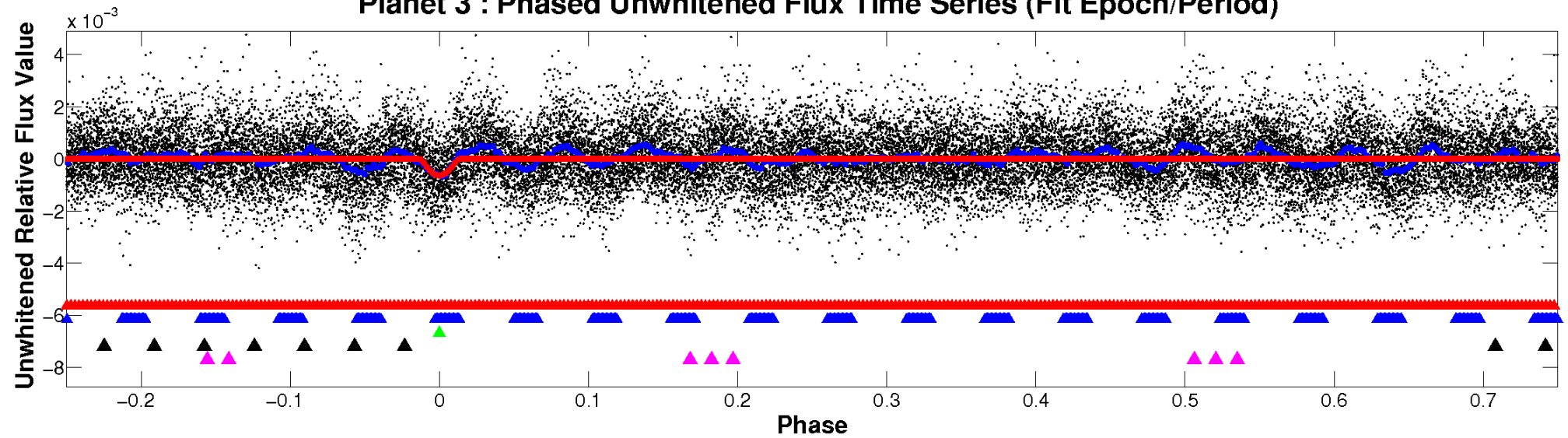
ALT Odd/Even

TCE 008452639-03

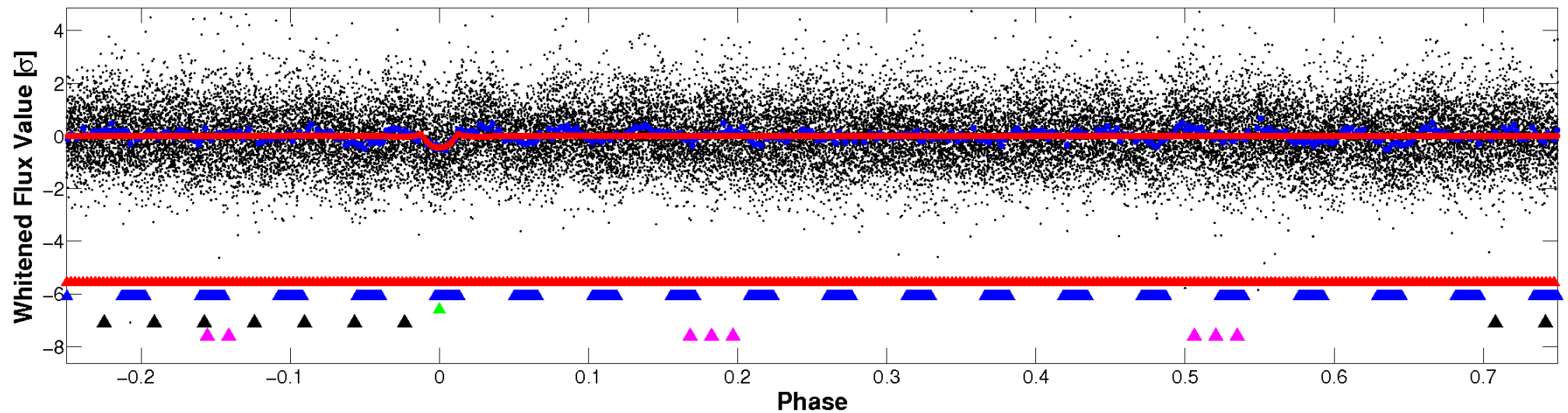


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

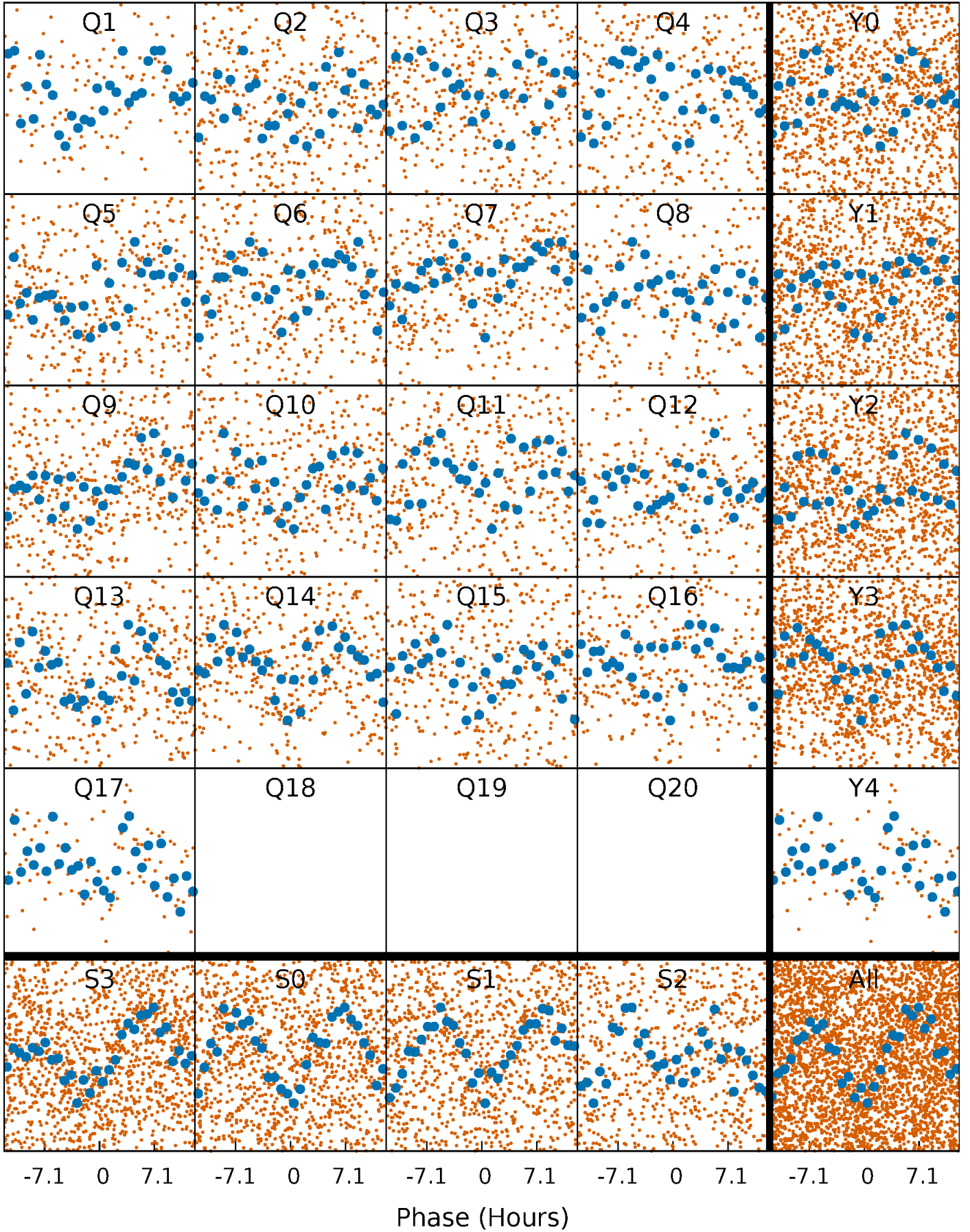


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



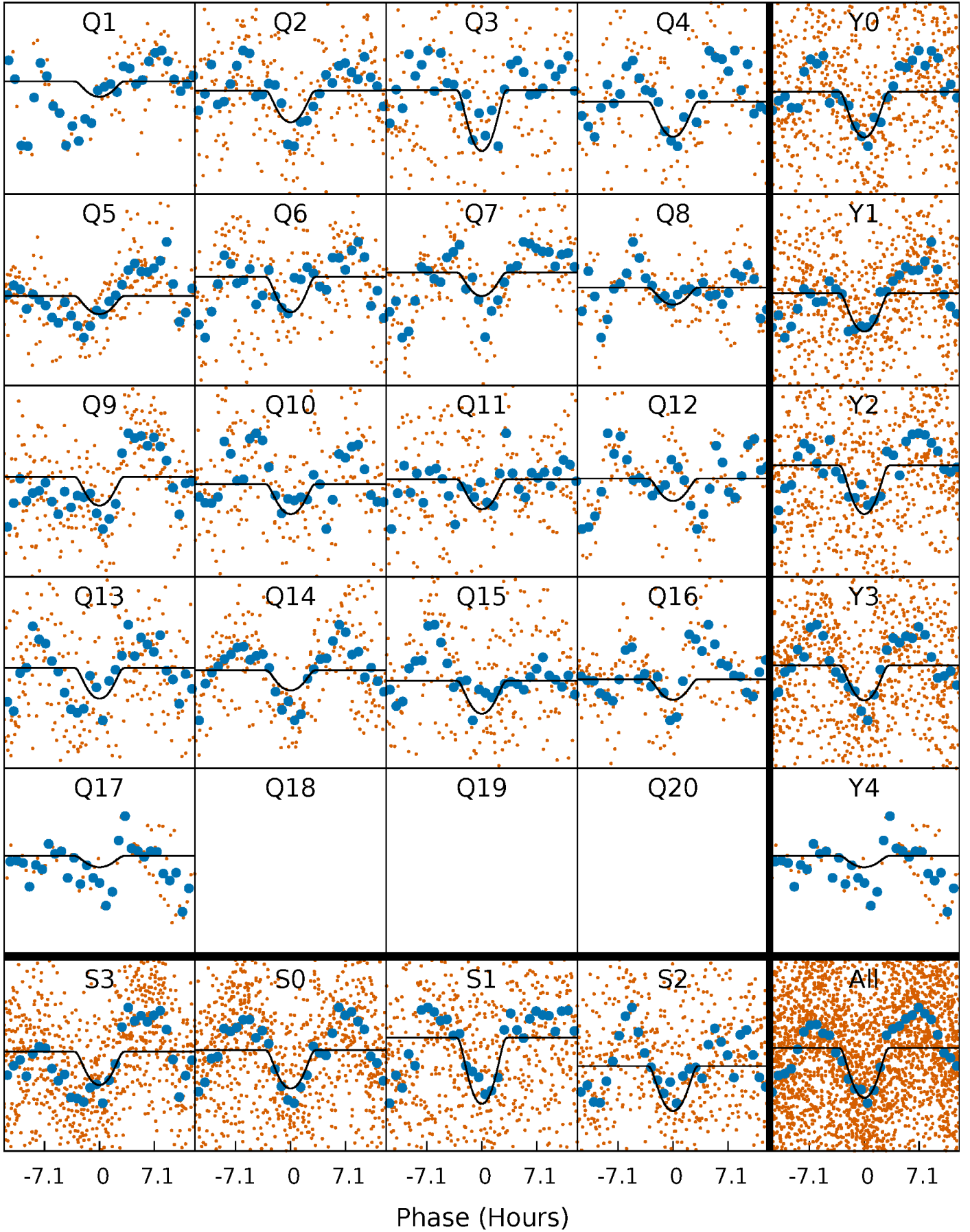
PDC Quarter-Phased Transit Curves

TCE 008452639-03 $P = 9.759061$ Days $T_0 = 139.986783$ (BKJD)



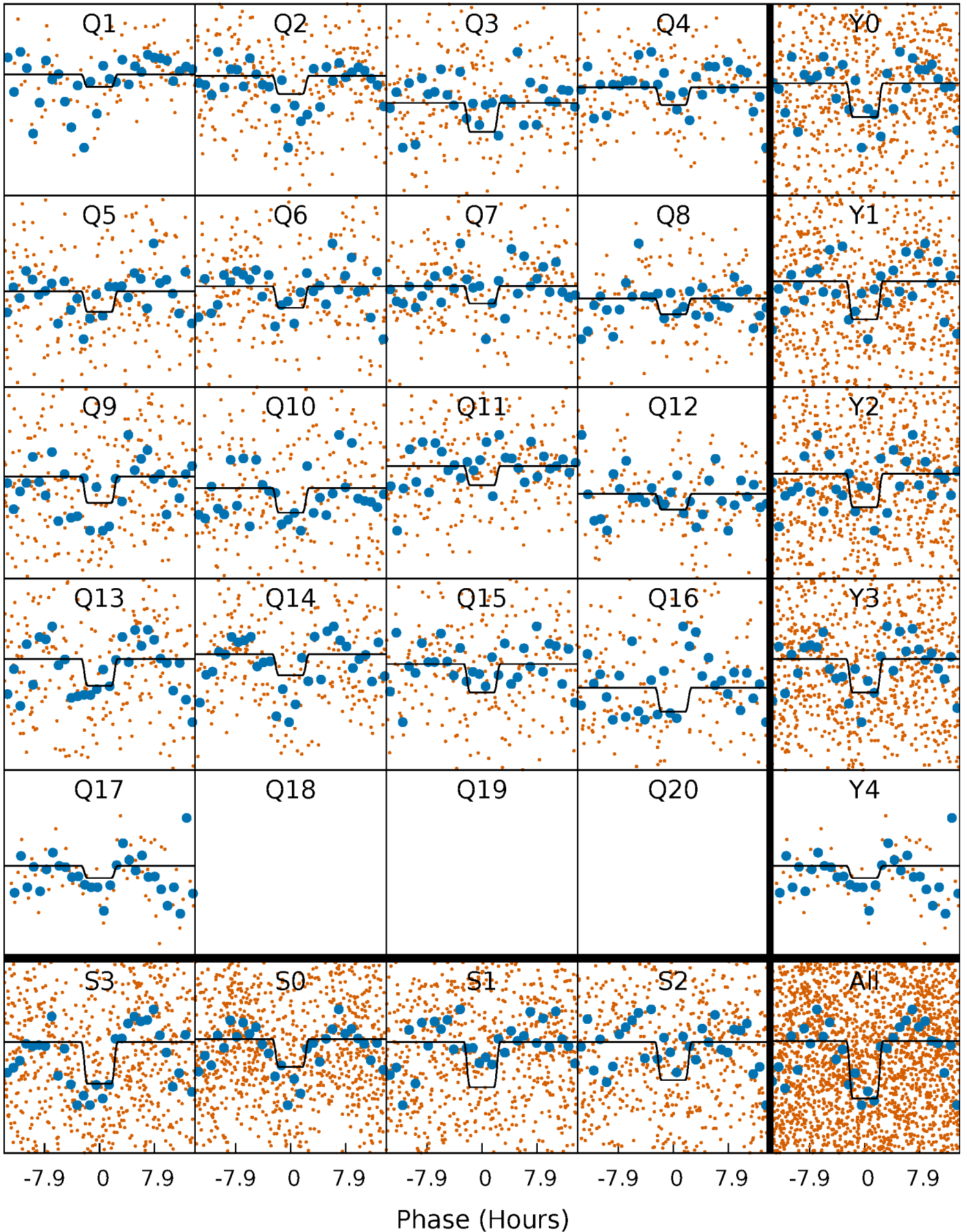
DV Quarter-Phased Transit Curves

TCE 008452639-03 $P = 9.759061$ Days $T_0 = 139.986783$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

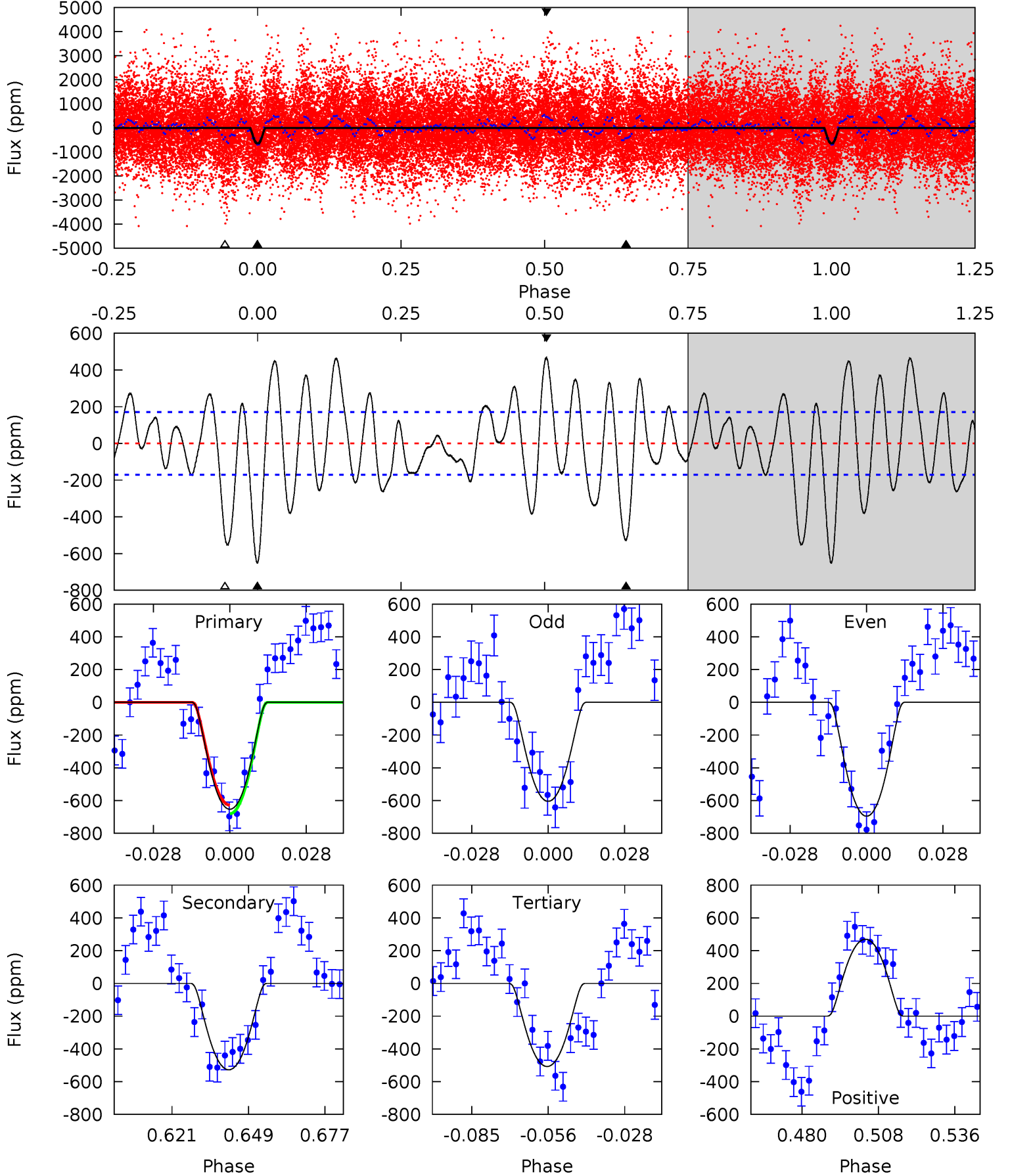
TCE 008452639-03 P= 9.759260 Days $T_0=139.968780$ (BKJD)



DV Model-Shift Uniqueness Test

008452639-03, P = 9.759061 Days, E = 130.227722 Days

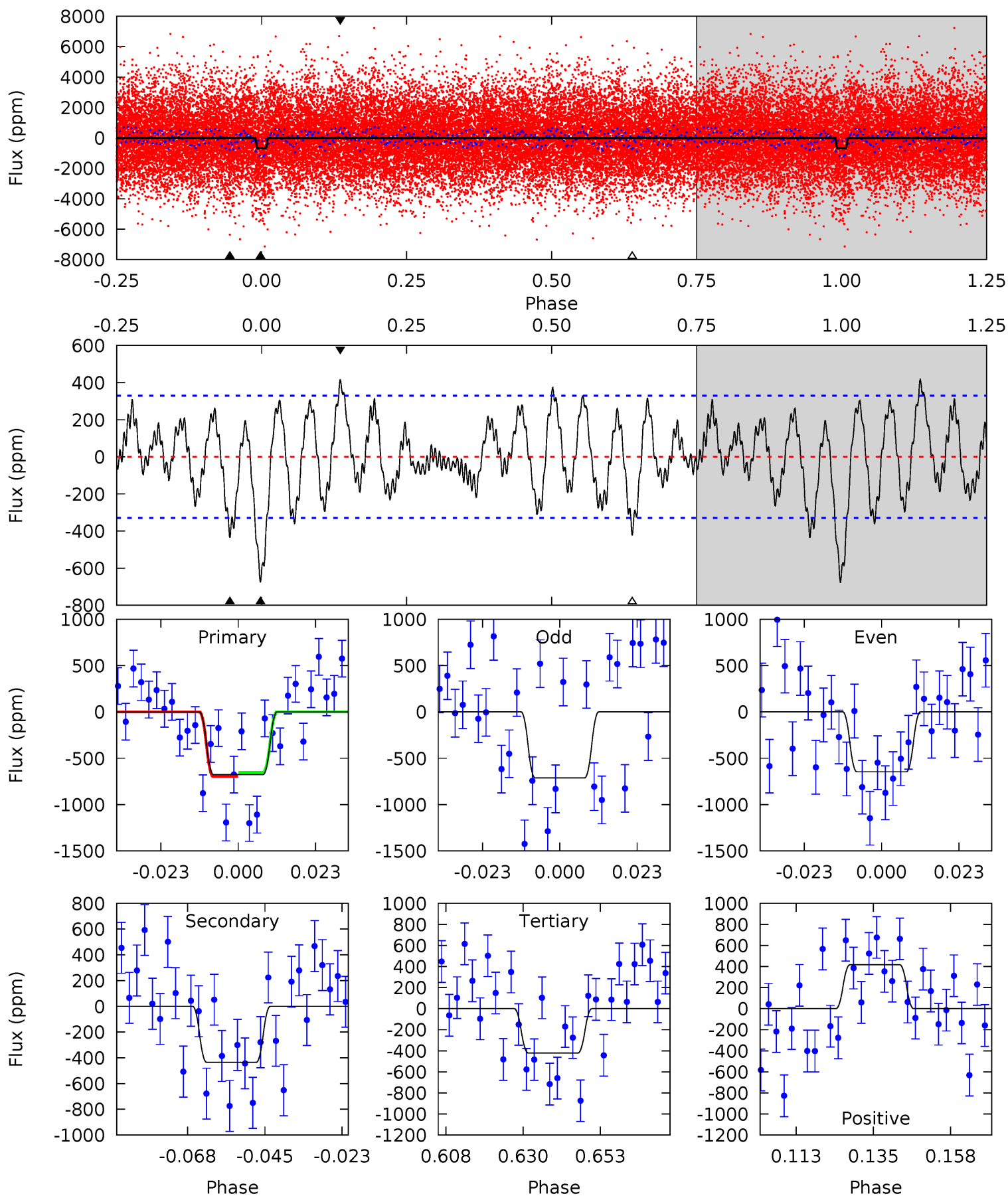
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	14.9	14.3	13.3	4.82	2.19	5.67	4.12	5.19	0.56	1.64	1.28	0.82	0.42	0.74



Alt Model-Shift Uniqueness Test

008452639-03, P = 9.759260 Days, E = 130.209520 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.00	6.43	6.22	6.17	4.87	2.28	2.40	3.78	3.83	0.21	0.26	0.48	1.29	0.38	0.33



Stellar Parameters For KIC 008452639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6759^{+189}_{-283}	$4.175^{+0.158}_{-0.193}$	$-0.120^{+0.250}_{-0.300}$	$1.562^{+0.511}_{-0.341}$	$1.338^{+0.204}_{-0.224}$	$0.494^{+0.409}_{-0.262}$
	+3%/-4%	+4%/-5%	+208%/-250%	+33%/-22%	+15%/-17%	+83%/-53%
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 008452639-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-527 ± 35	$5.67^{+2.73}_{-2.88}$	1662^{+130}_{-126}	5607^{+2493}_{-913}	89^{+265}_{-50}
Alt.	-435 ± 68	$5.01^{+3.24}_{-2.73}$	1662^{+123}_{-112}	5699^{+2948}_{-1095}	93^{+331}_{-59}

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 $A_{obs} \gg 1.0$

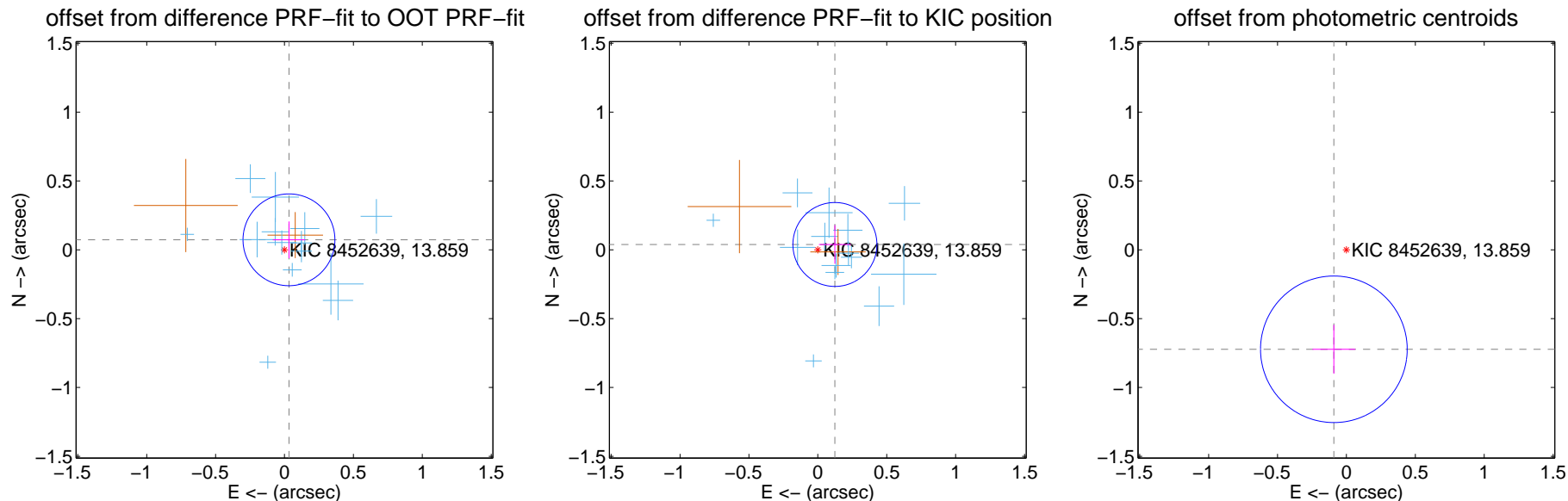
DV Centroid Data

Supplemental centroid analysis for 008452639-03. Kepler magnitude: 13.86. Transit SNR 8.53

There are 15 quarters with good PRF difference image offsets

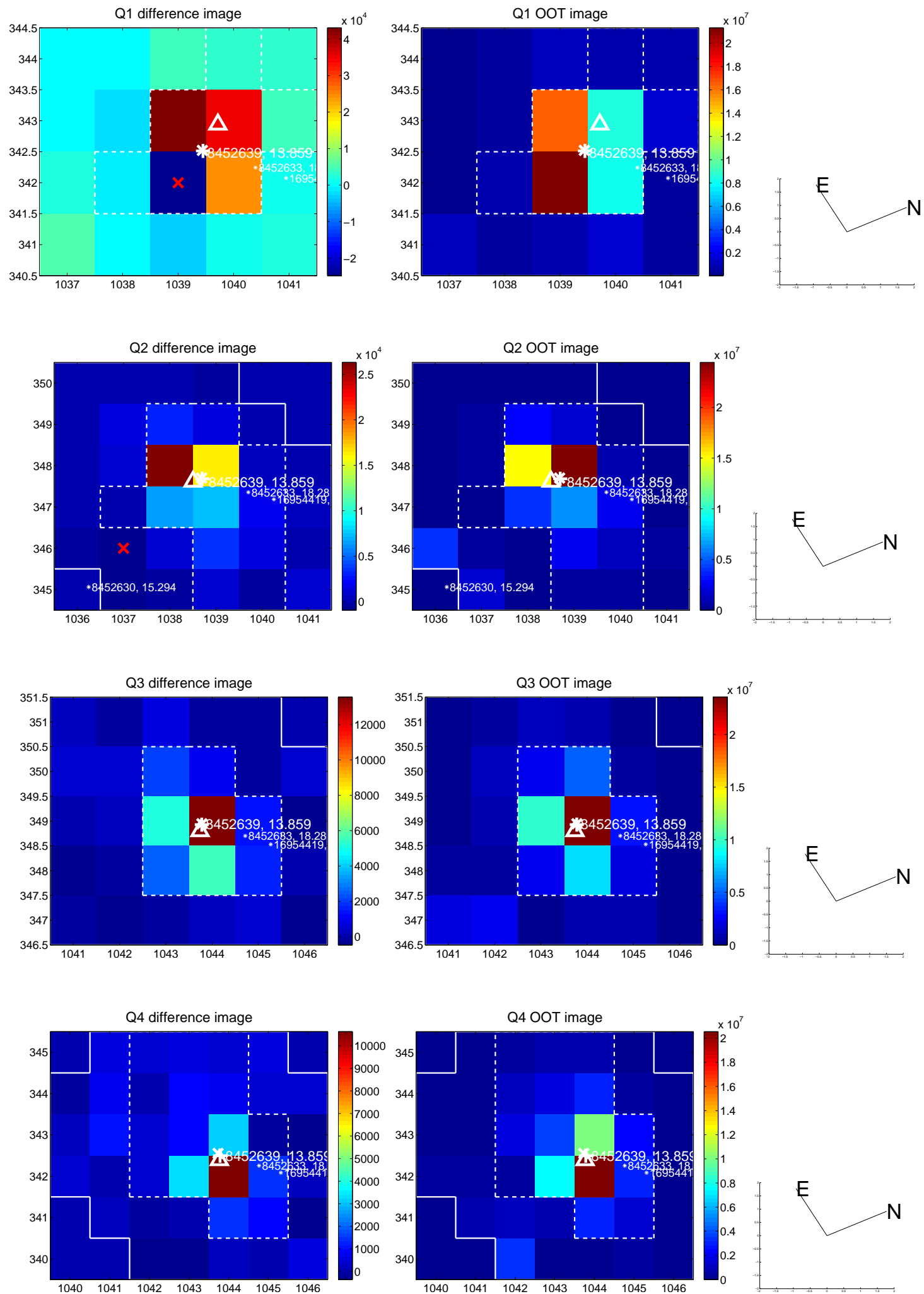
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.079 ± 0.111	0.71	-0.032 ± 0.117	0.072 ± 0.133
PRF-fit source offset from KIC position	0.130 ± 0.102	1.28	-0.124 ± 0.116	0.039 ± 0.141
photometric centroid source offset	0.73 ± 0.18	4.11	0.09 ± 0.16	-0.72 ± 0.18

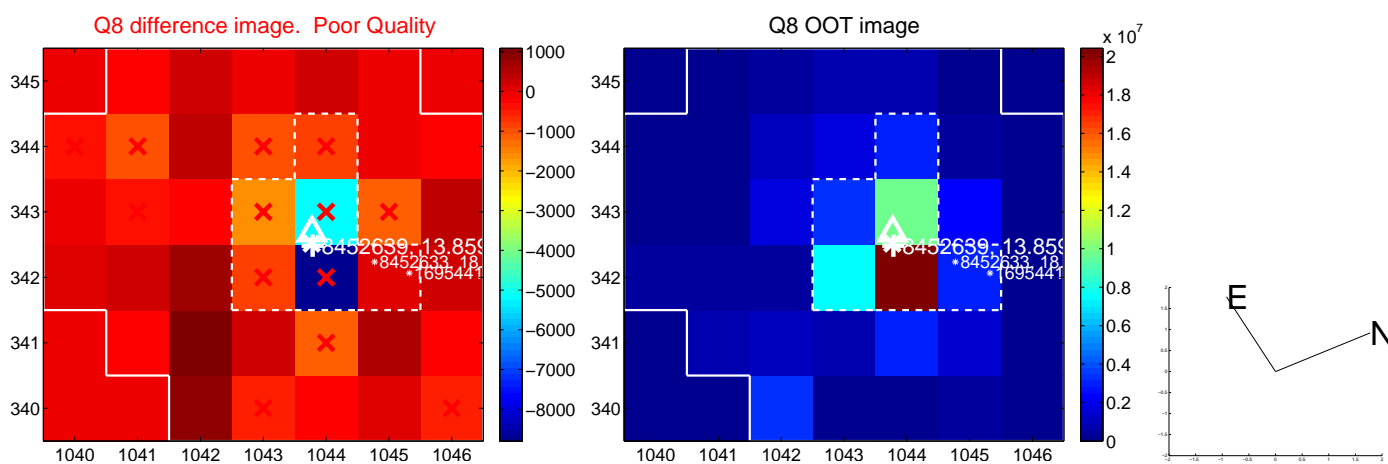
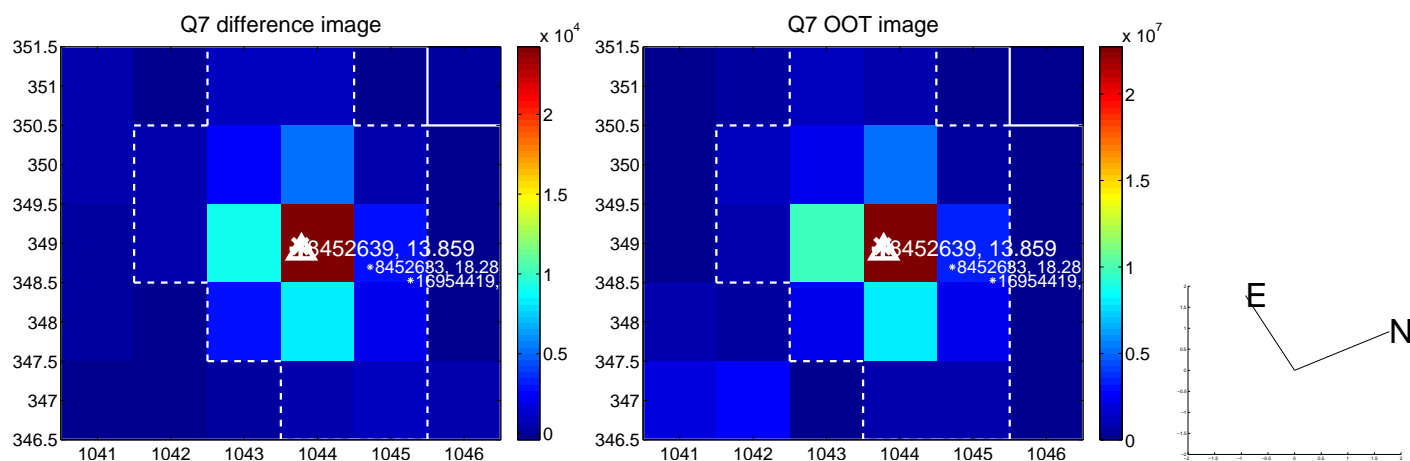
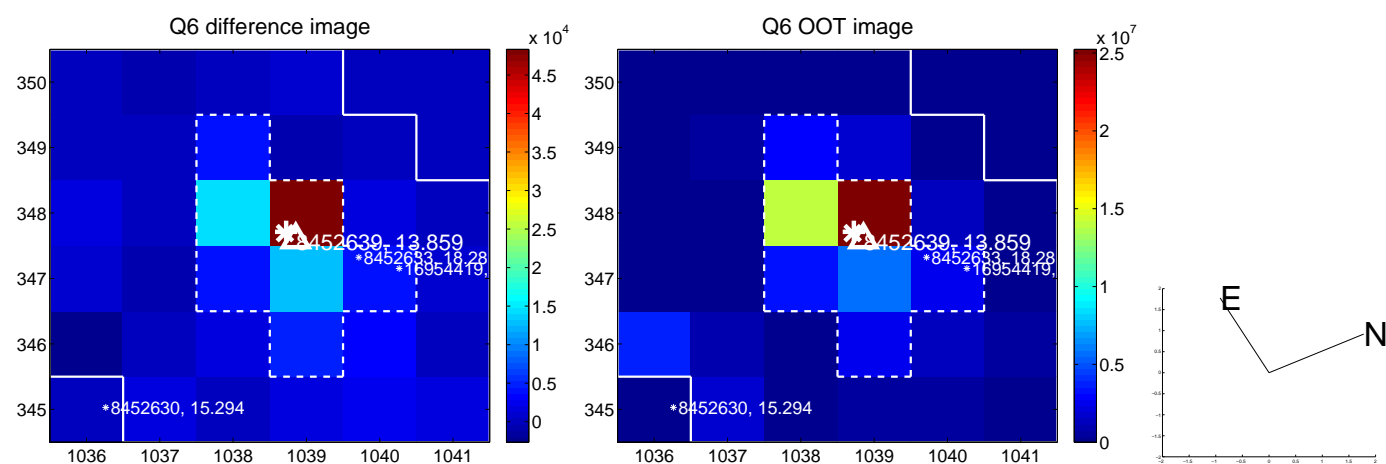
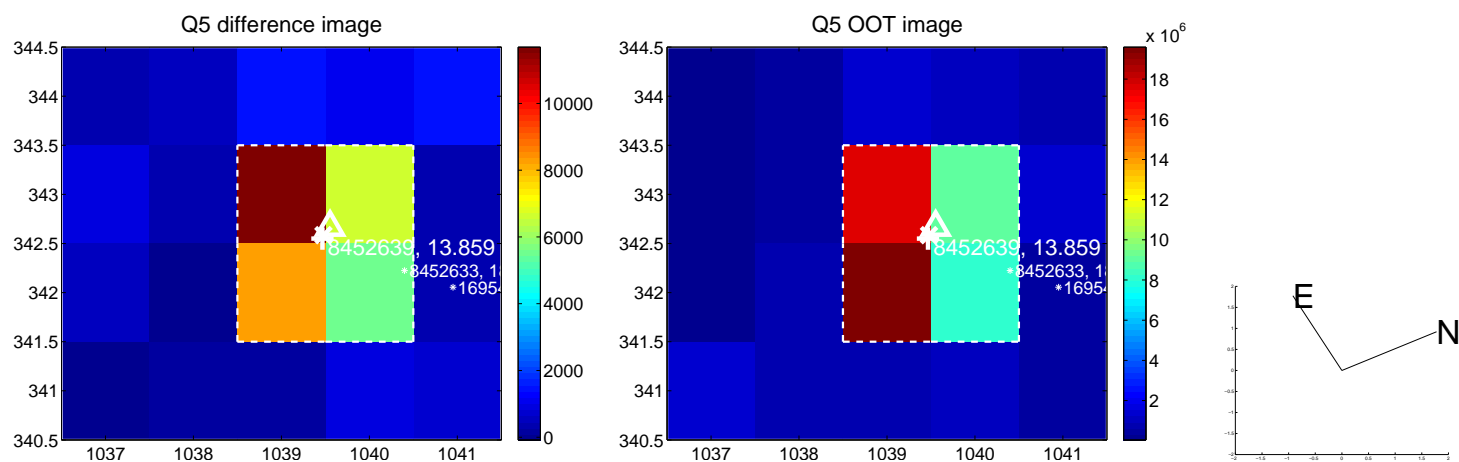


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

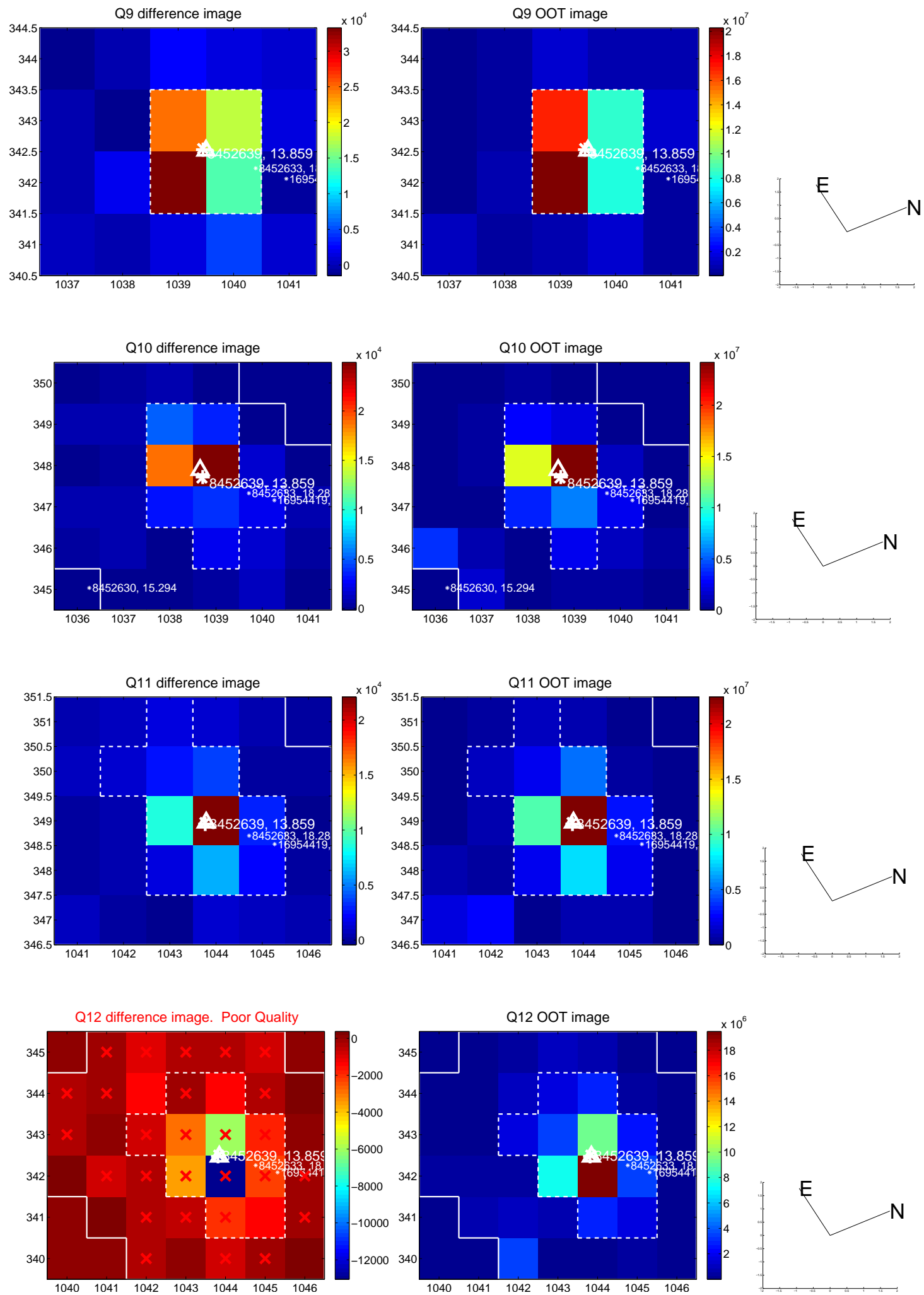
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



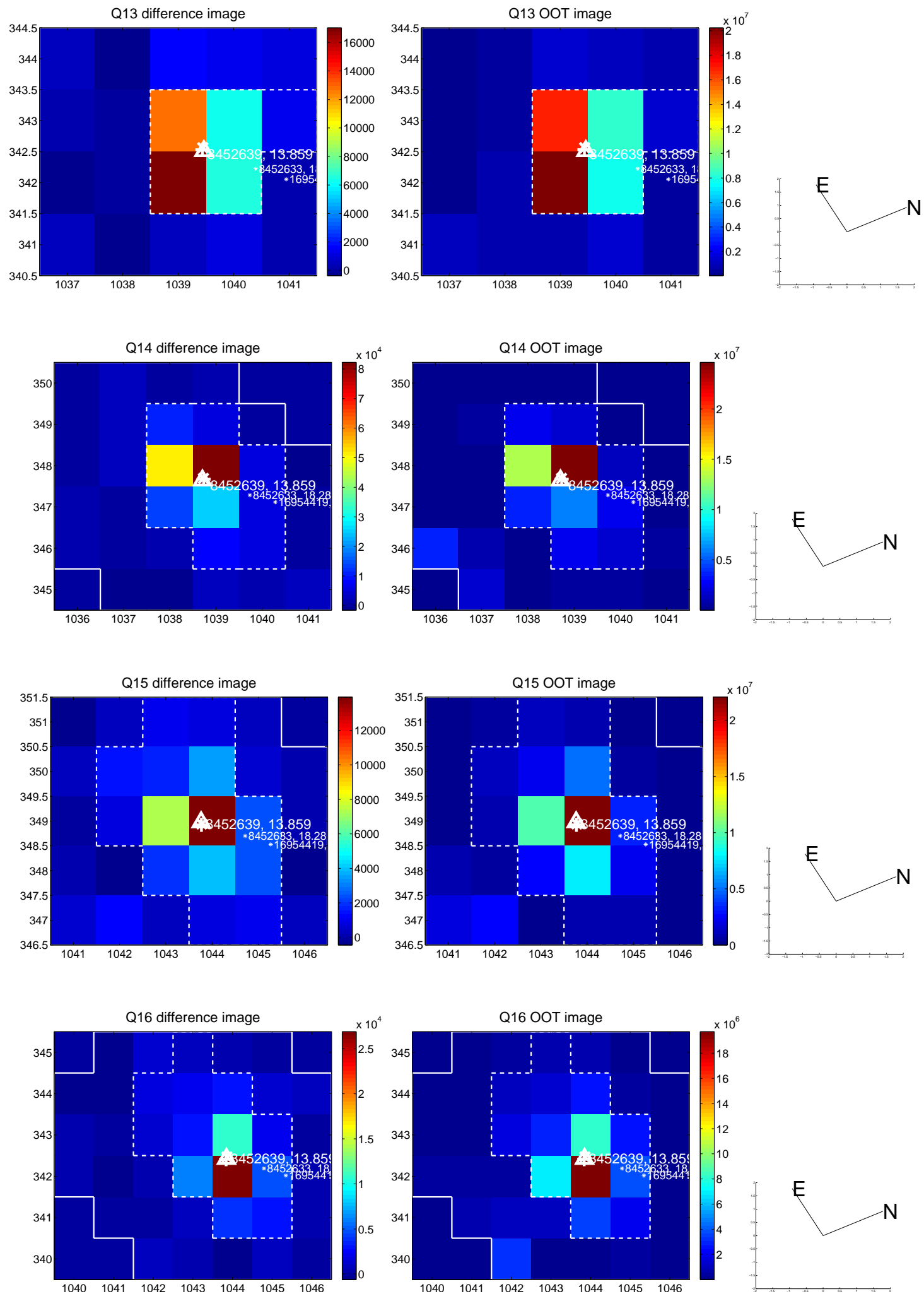
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



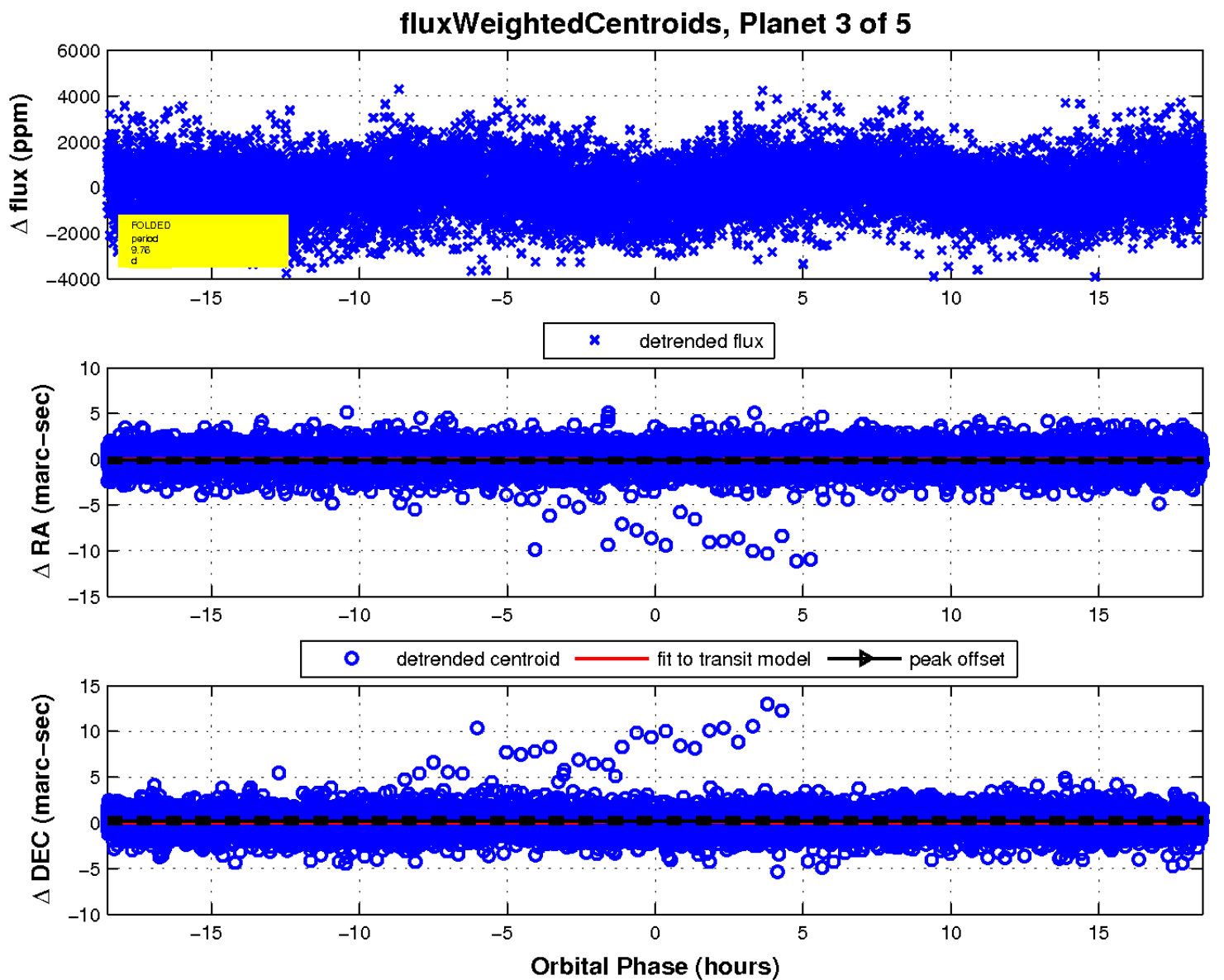
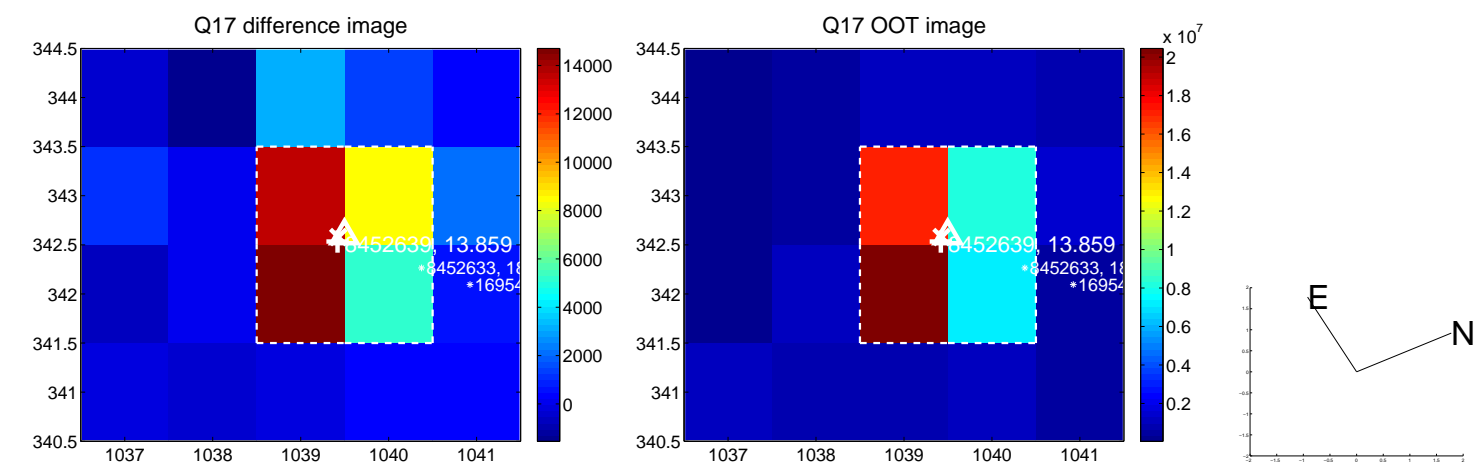
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

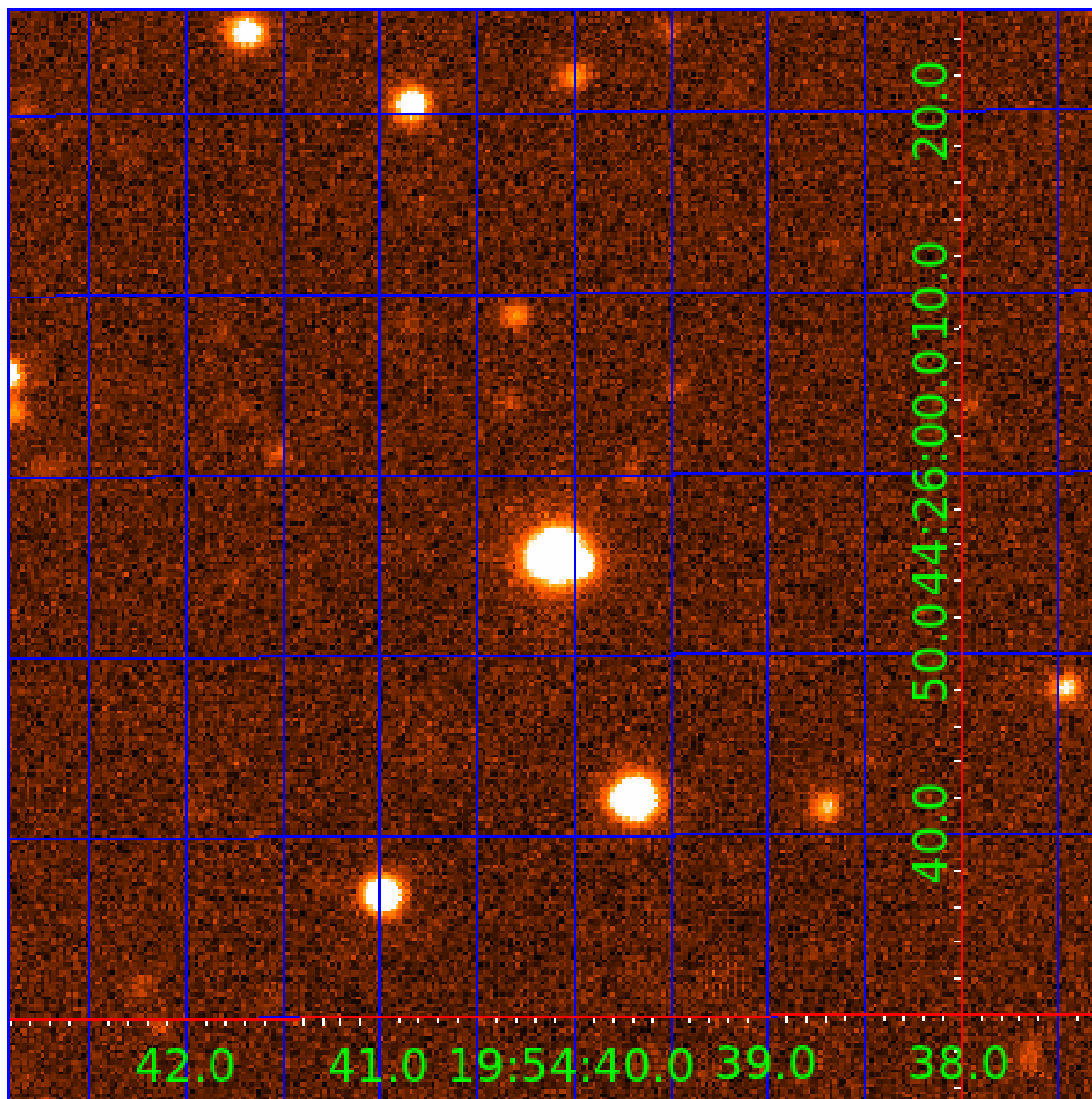


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008452639

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})
008452639-01	OBS	No	1.163686	131.675421	115.2	1.369	10.9	7.1	1.56	6759	1.80	8037.06
008452639-02	OBS	No	2.567884	133.444812	343.5	8.306	8.5	10.3	1.56	6759	5.26	2797.55
008452639-03	OBS	No	9.759061	139.986783	633.3	6.172	8.5	8.5	1.56	6759	5.57	471.70
008452639-04	OBS	No	156.472612	254.247268	2356.8	4.660	9.5	8.0	1.56	6759	9.23	11.67
008452639-05	OBS	No	188.721895	219.700798	559.7	3.000	9.3	-1.0	1.56	6759	3.73	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008452639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
008452639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

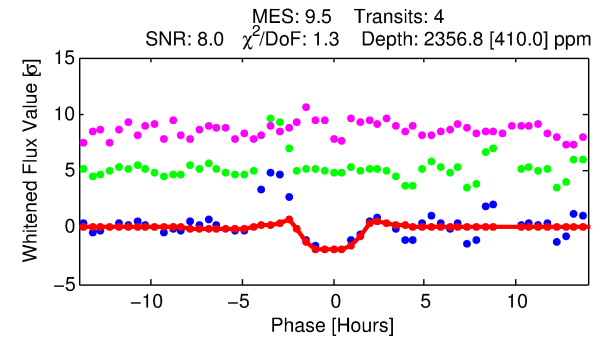
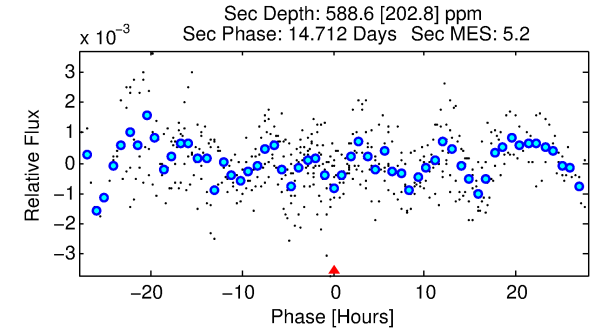
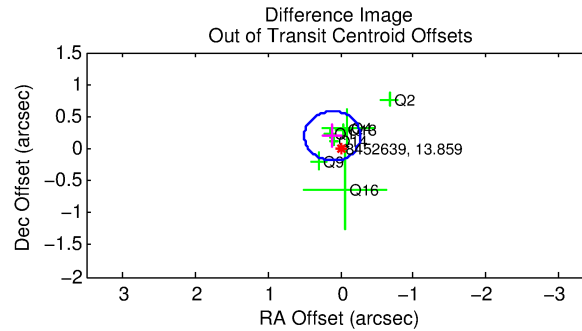
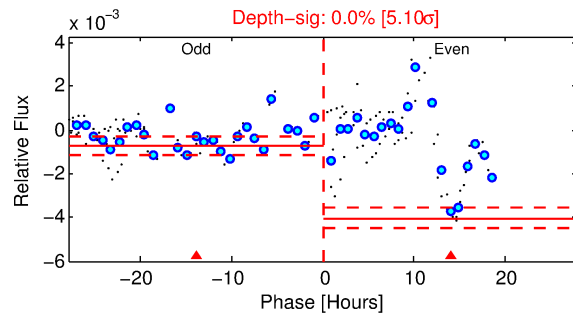
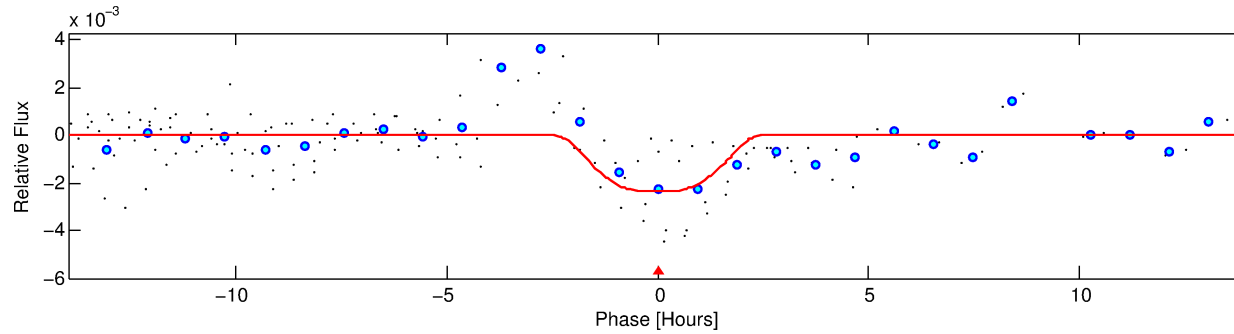
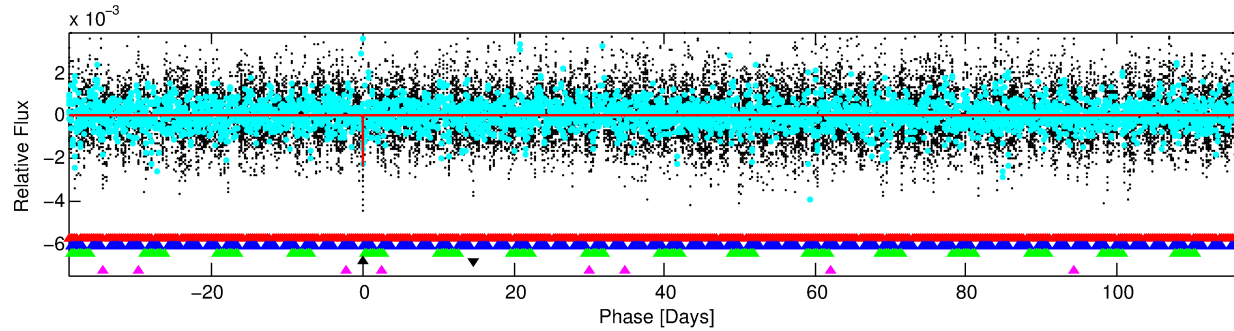
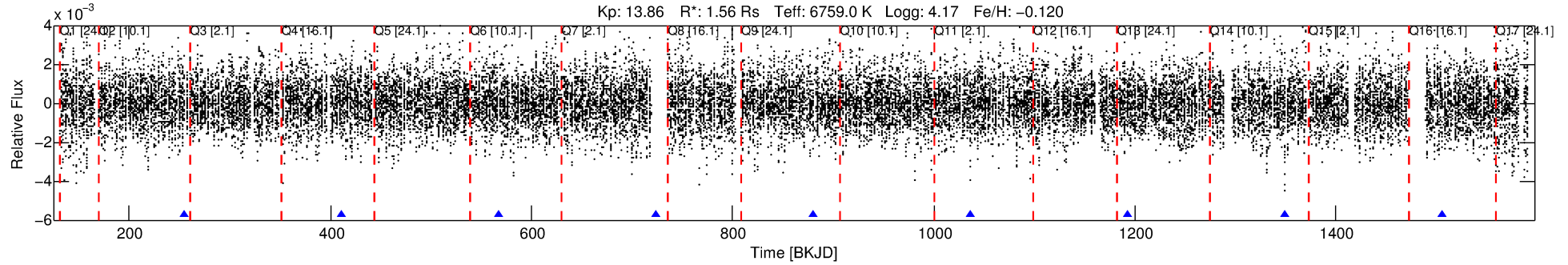
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008452639-04

No Significant Match Found

DV One-Page Summary

KIC: 8452639 Candidate: 4 of 5 Period: 156.473 d



DV Fit Results:

Period = 156.47261 [0.00580] d
Epoch = 254.2473 [0.0343] BKJD
Rp/R* = 0.0542 [0.0058]
a/R* = 123.43 [22.47]
b = 0.94 [0.03]
Seff = 11.67 [4.72]
Teff = 471 [48] K
Rp = 9.23 [3.18] Re
a = 0.6253 [0.1649] AU
Ag = 1484.74 [813.31] [1.82 σ]
Teffp = 4523 [496] K [8.12 σ]

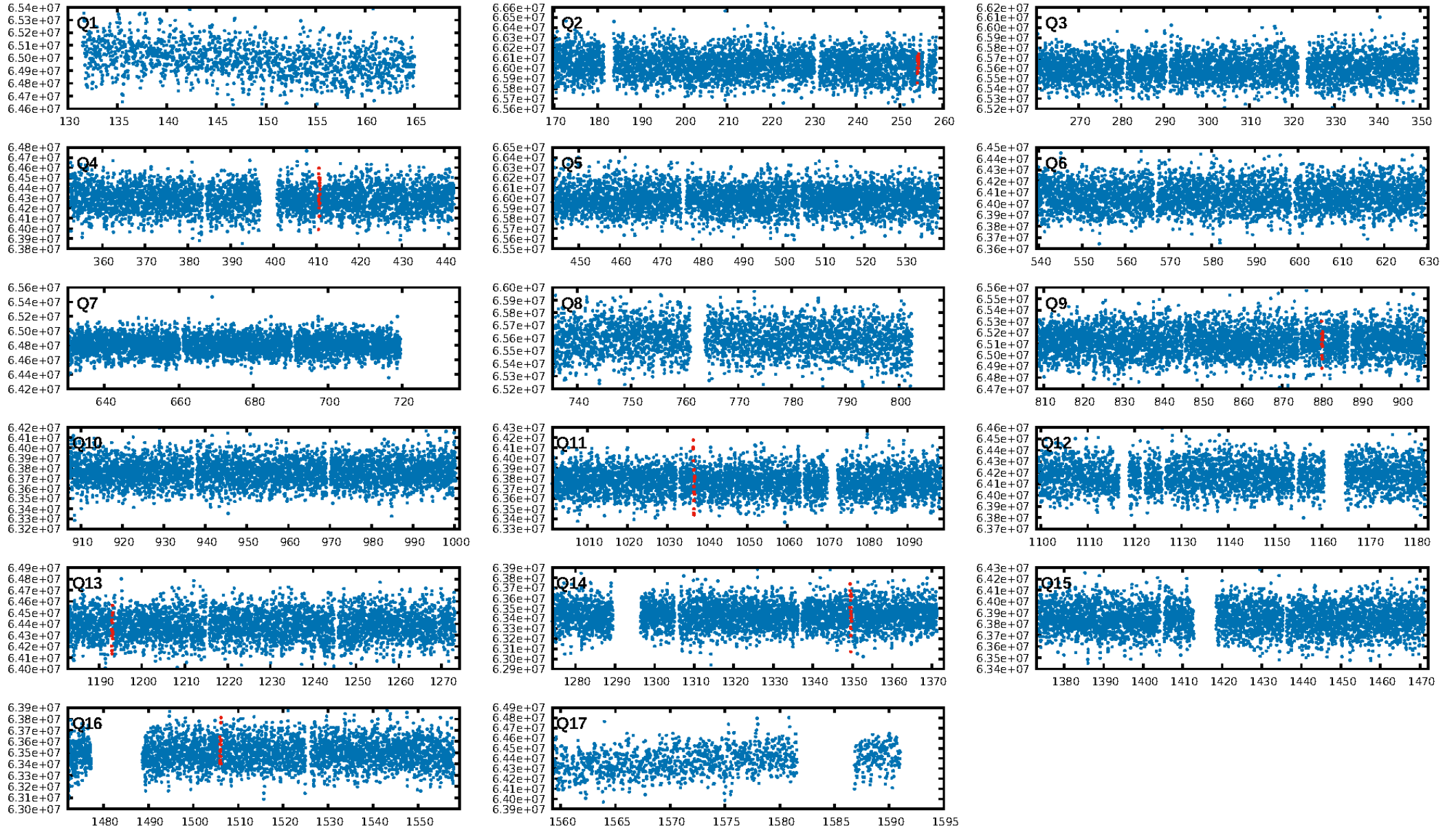
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [455.31 σ]
LongPeriod-sig: 100.0% [139.66 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 47.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.742
Centroid-sig: 66.7%
Centroid-so: 0.487 arcsec [2.28 σ]
OotOffset-rm: 0.226 arcsec [1.76 σ]
OotOffset-st: 2/1/2/2 [7]
KicOffset-rm: 0.211 arcsec [1.23 σ]
KicOffset-st: 2/1/2/2 [7]
DiffImageQuality-fgm: 0.86 [6/7]
DiffImageOverlap-fno: 0.14 [1/7]

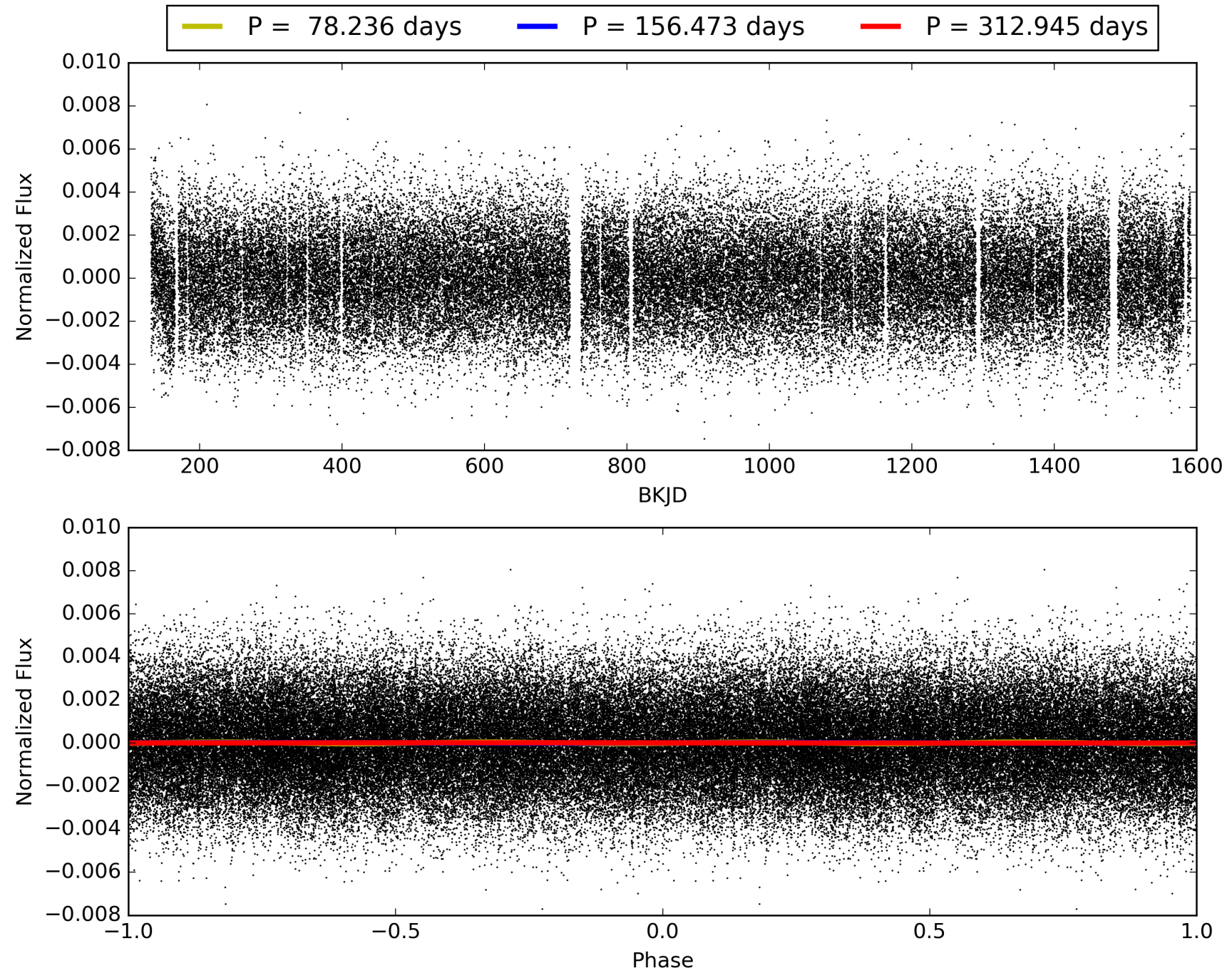
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:17:13 Z

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

TCE 008452639-04, PDC Light Curves

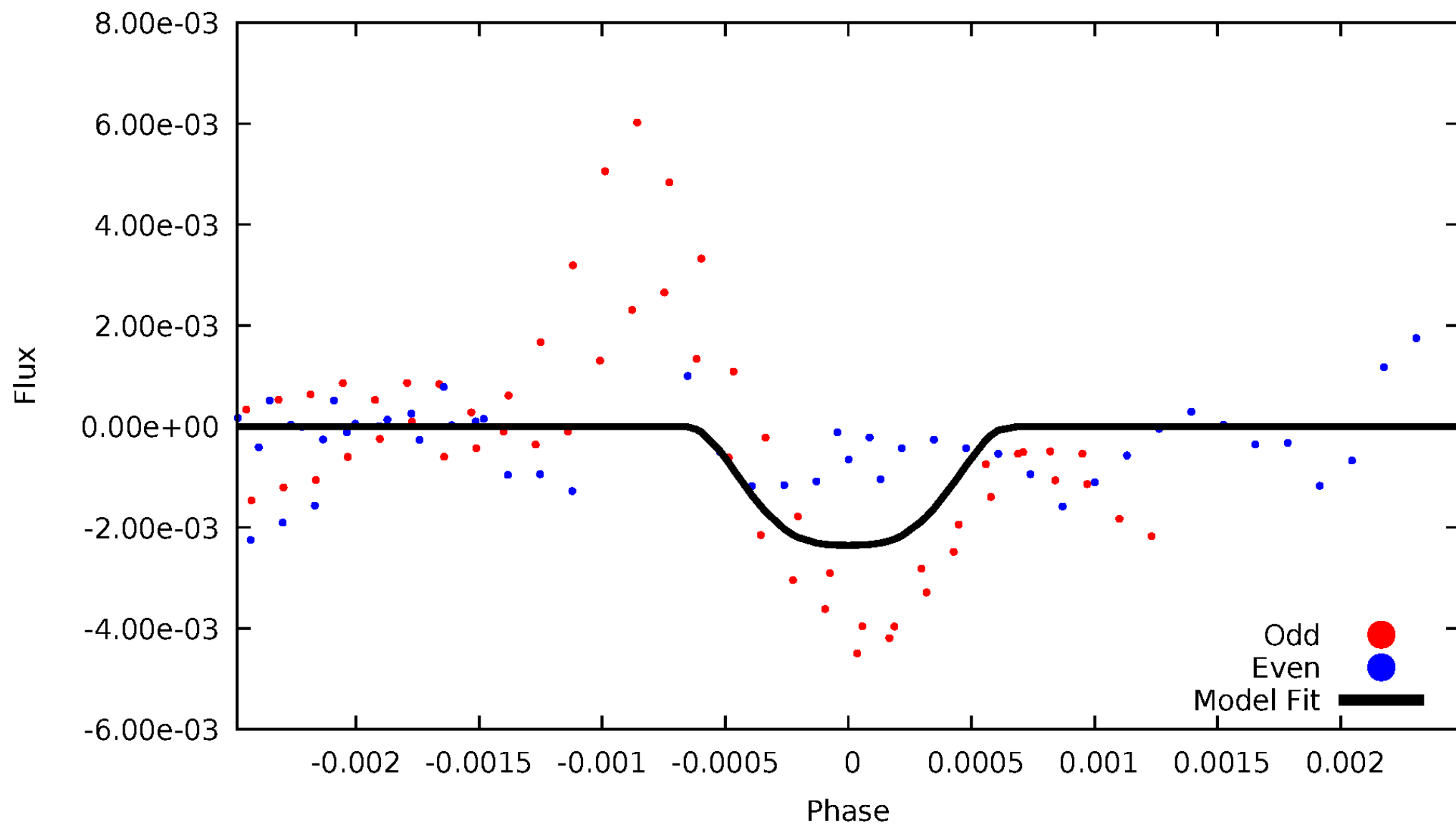


TCE 008452639-04



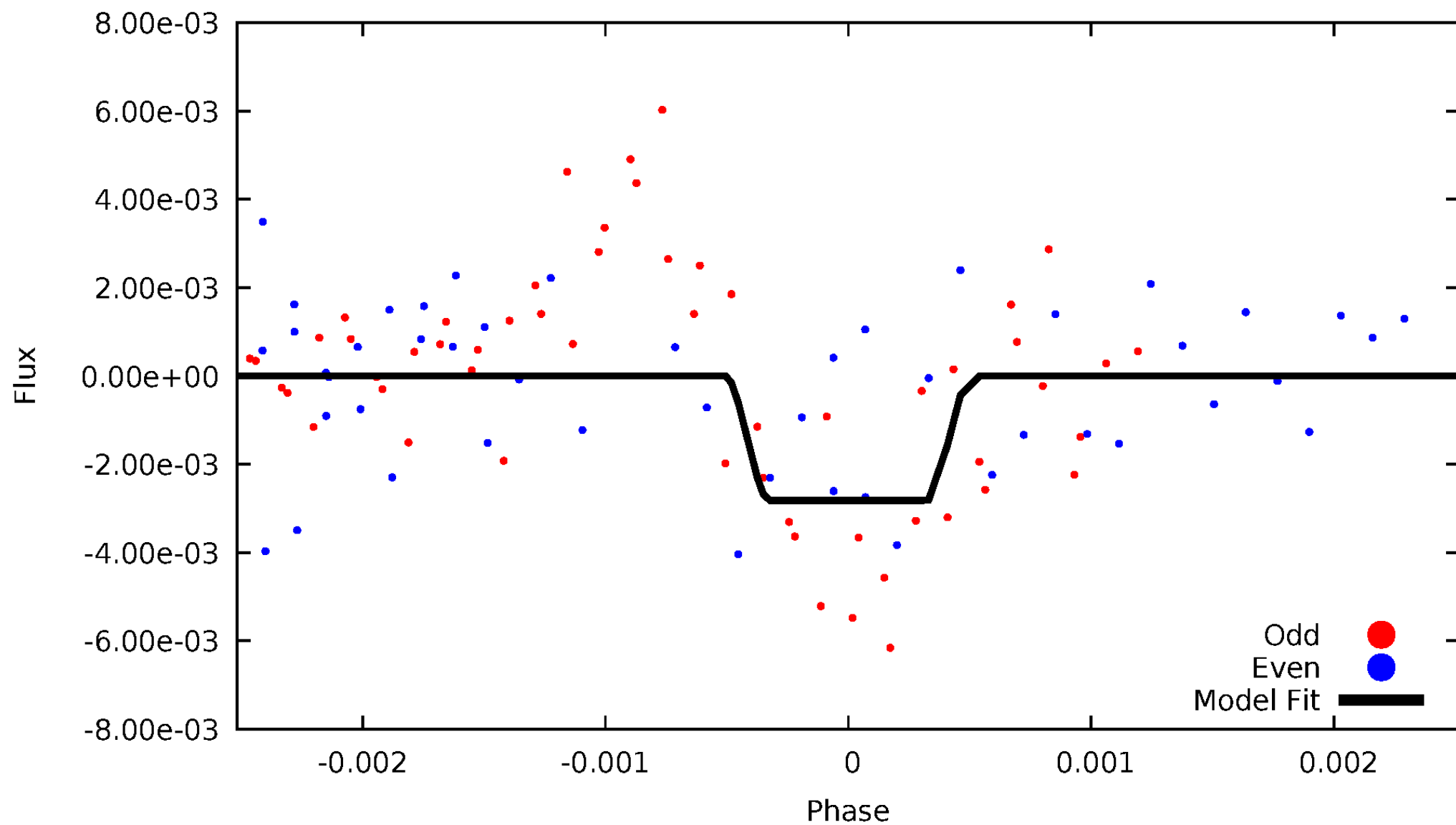
DV Odd/Even

TCE 008452639-04



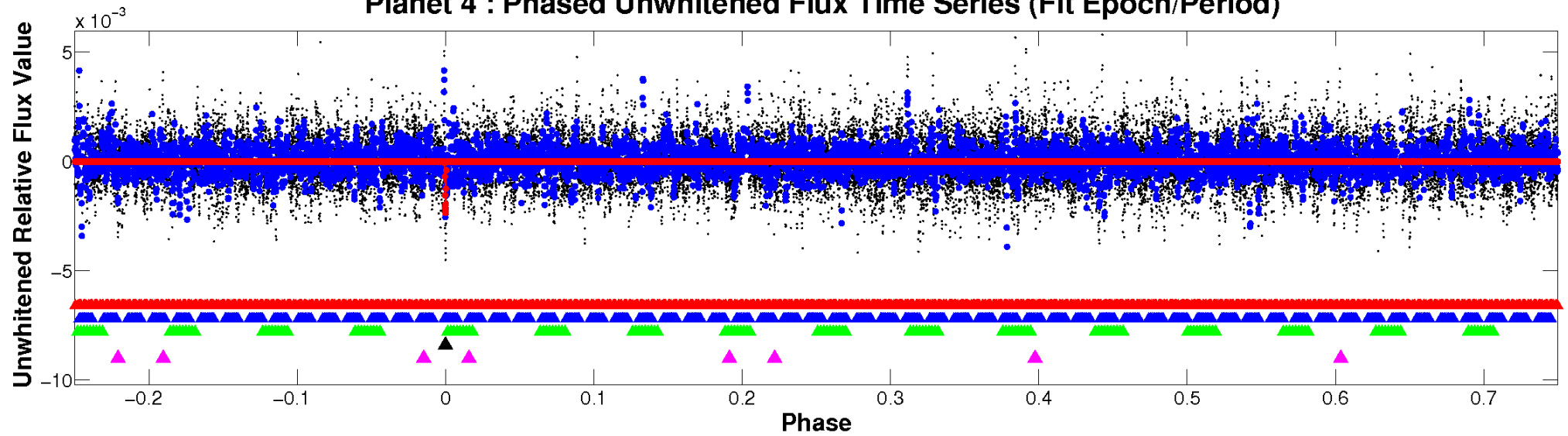
ALT Odd/Even

TCE 008452639-04

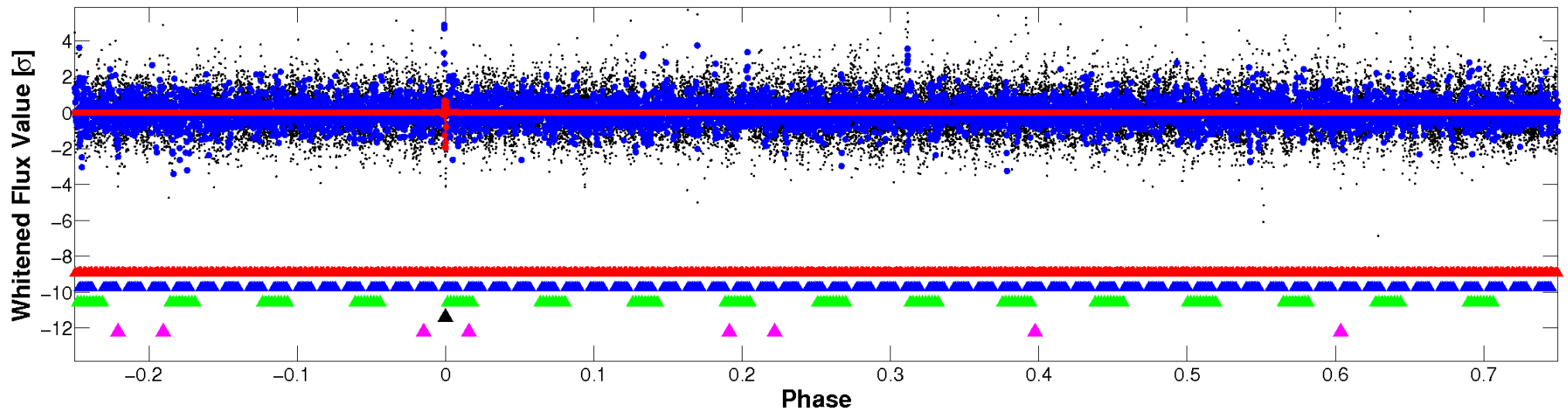


Non-Whitened Vs. Whitened Light Curve

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

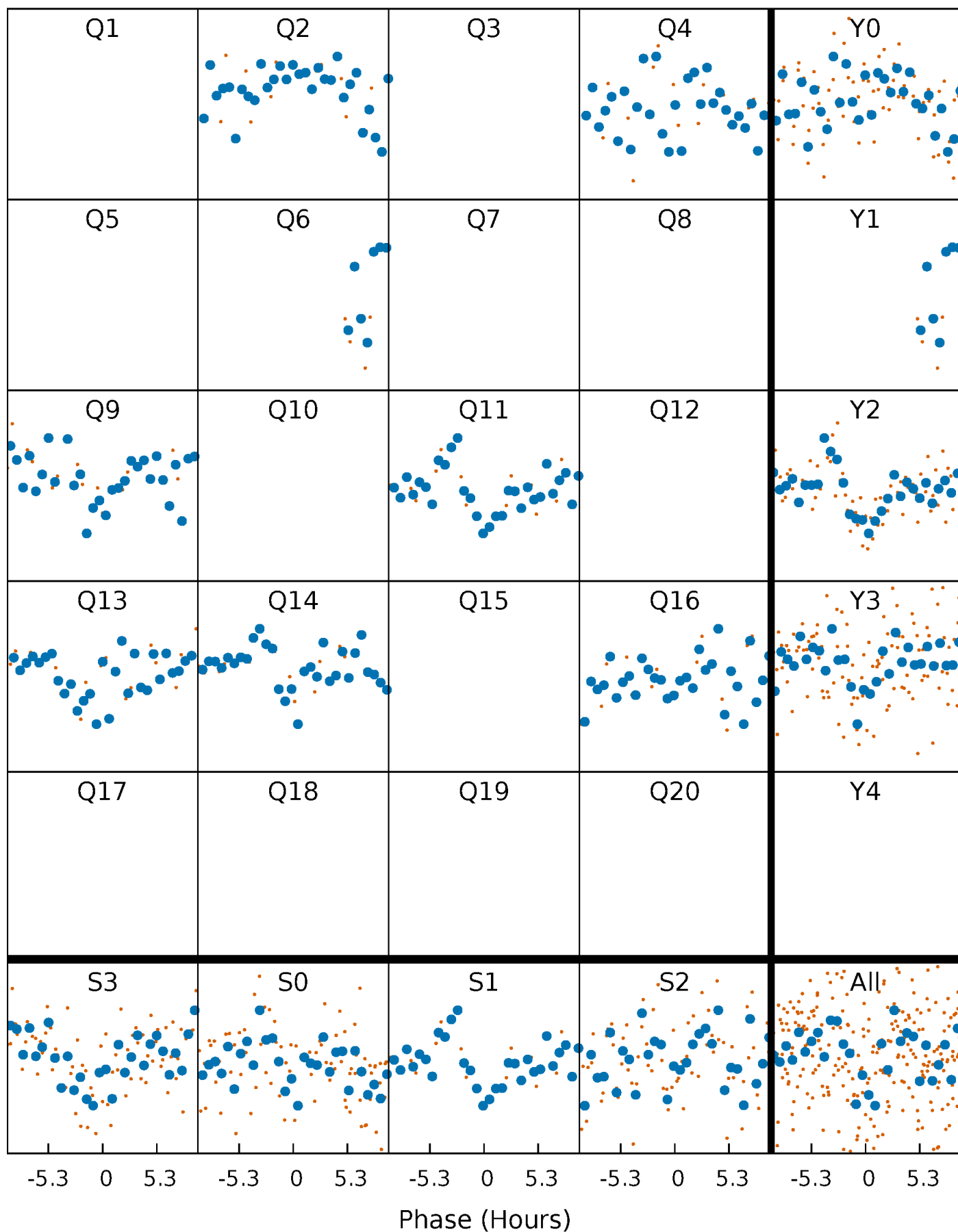


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



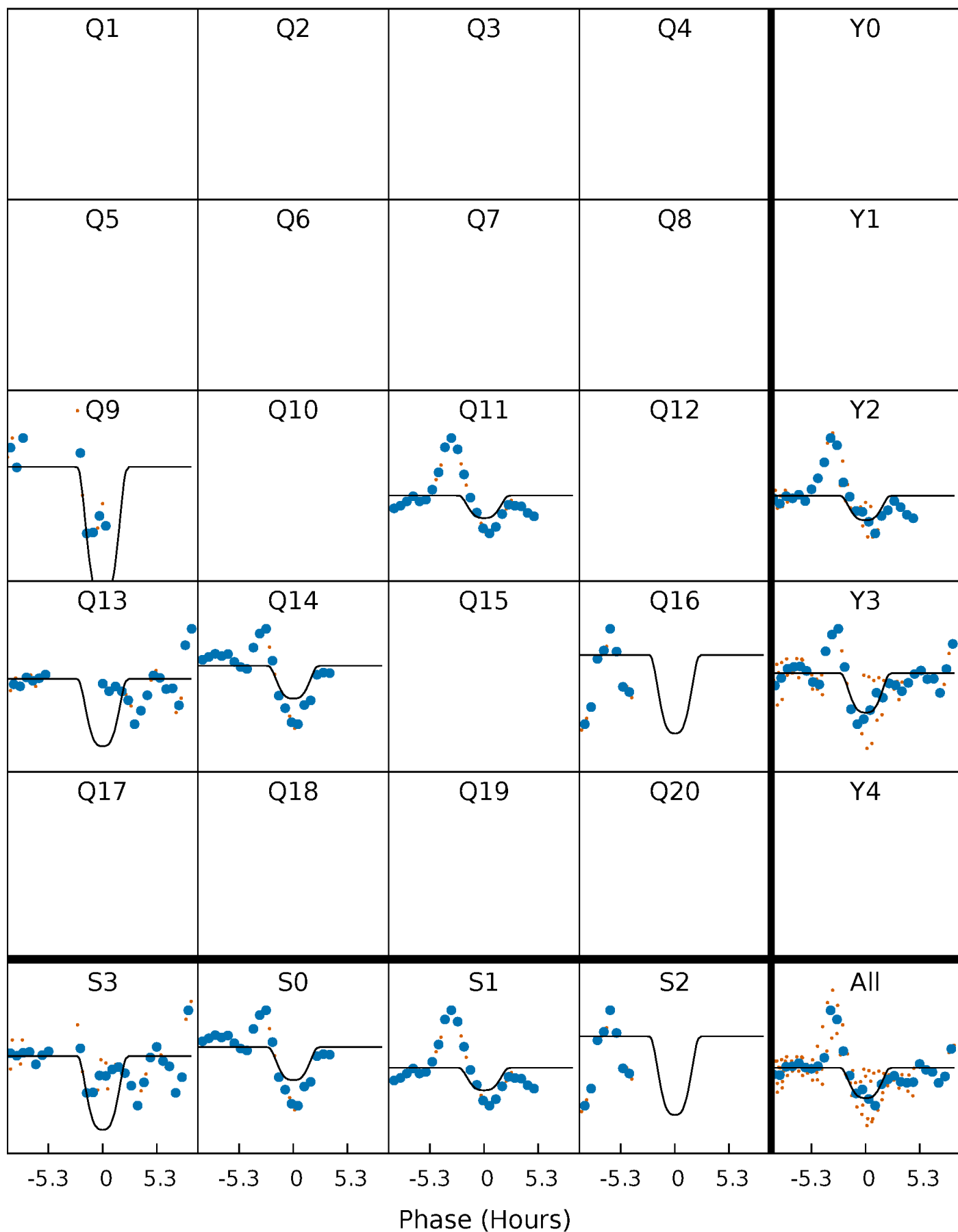
PDC Quarter-Phased Transit Curves

TCE 008452639-04 P=156.472612 Days $T_0=254.247268$ (BKJD)



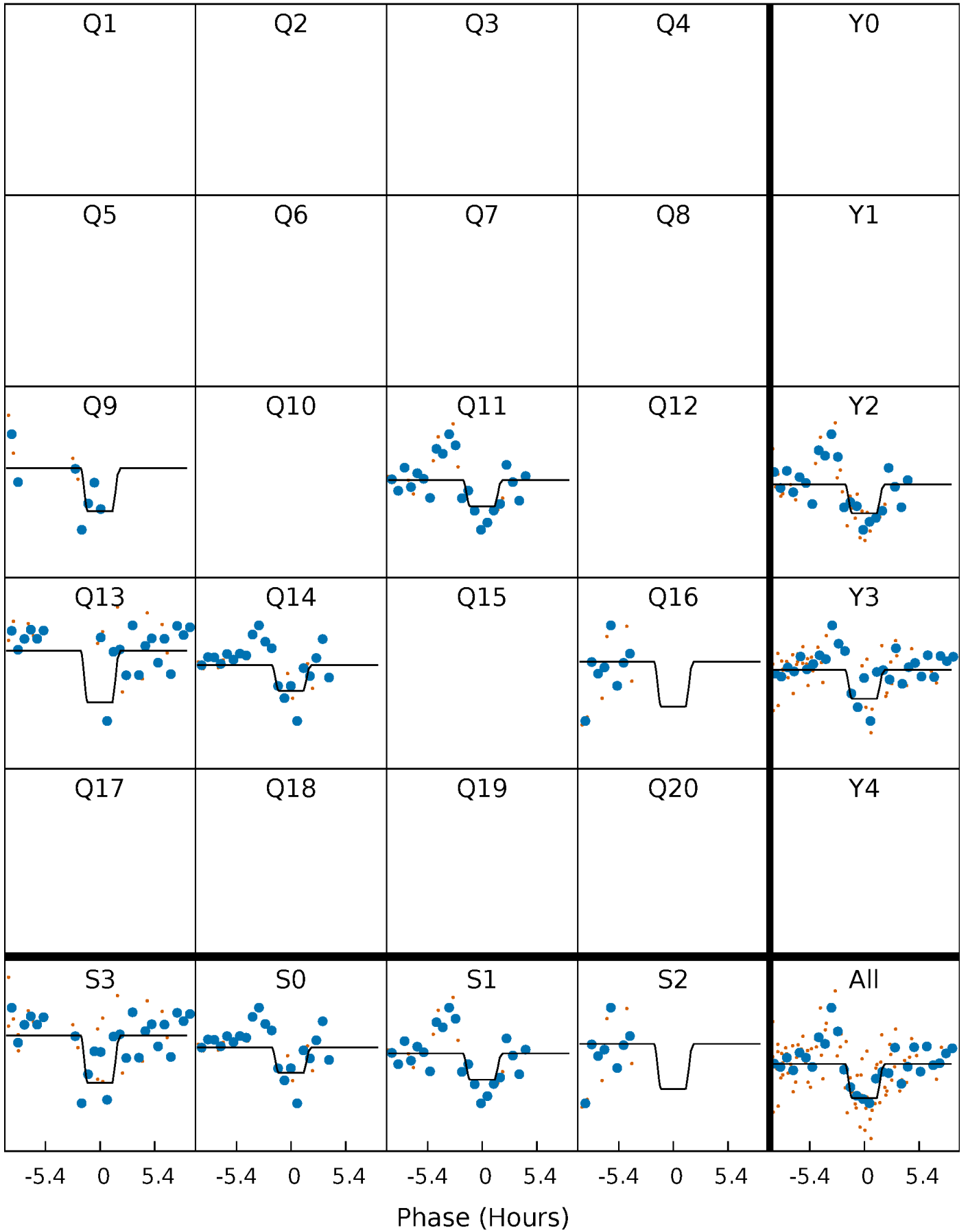
DV Quarter-Phased Transit Curves

TCE 008452639-04 $P=156.472612$ Days $T_0=254.247268$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

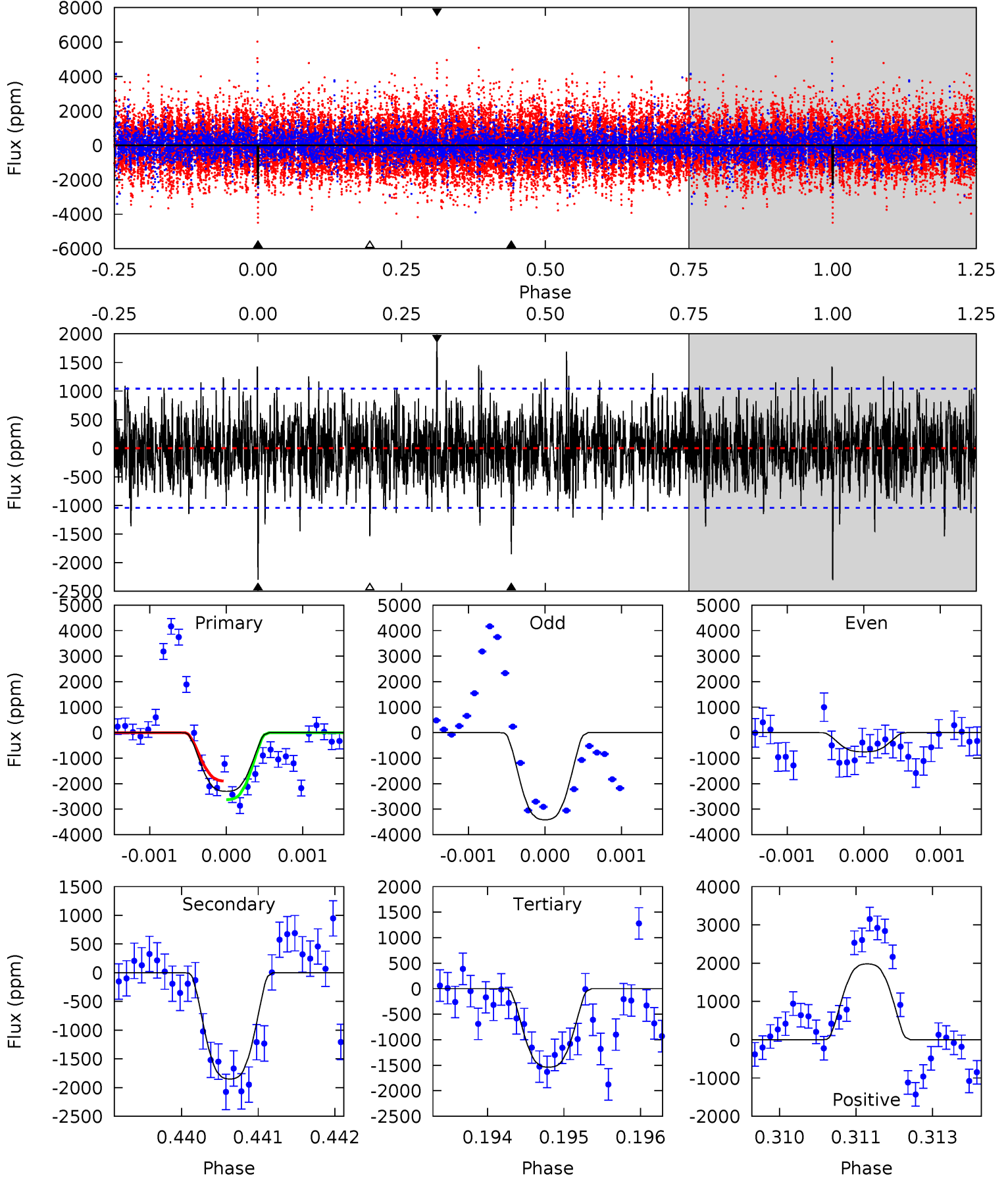
TCE 008452639-04 P=156.469135 Days $T_0=254.270808$ (BKJD)



DV Model-Shift Uniqueness Test

008452639-04, P = 156.472612 Days, E = 97.774656 Days

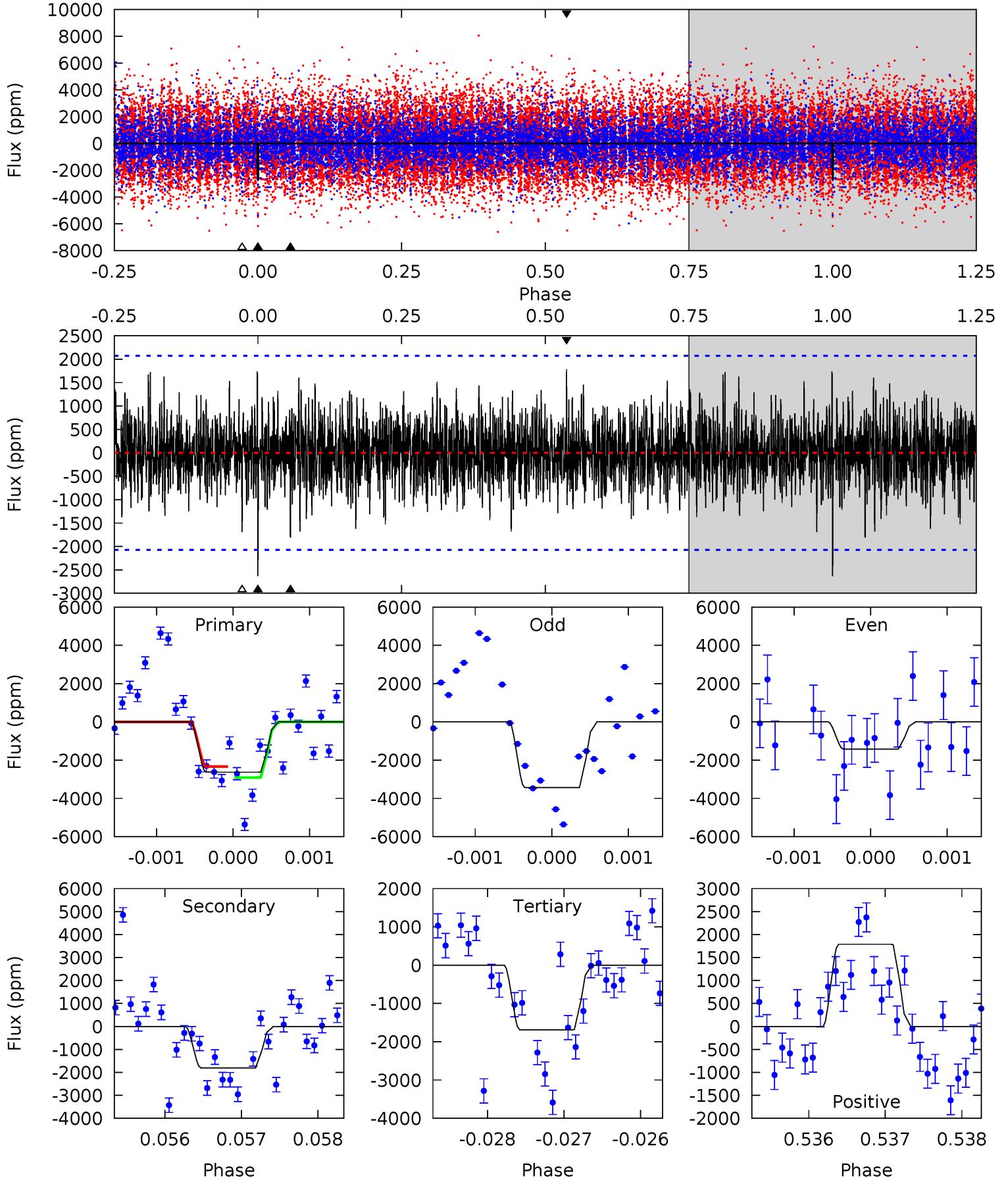
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	9.63	8.00	10.3	5.42	3.23	2.17	3.96	1.66	1.63	-0.68	6.69	1.01	0.46	1.90



Alt Model-Shift Uniqueness Test

008452639-04, P = 156.469135 Days, E = 97.801673 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.93	4.77	4.45	4.71	5.47	3.32	1.30	2.48	2.22	0.32	0.06	2.65	0.95	0.40	0.75



Stellar Parameters For KIC 008452639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6759^{+189}_{-283}	$4.175^{+0.158}_{-0.193}$	$-0.120^{+0.250}_{-0.300}$	$1.562^{+0.511}_{-0.341}$	$1.338^{+0.204}_{-0.224}$	$0.494^{+0.409}_{-0.262}$
	+3%/-4%	+4%/-5%	+208%/-250%	+33%/-22%	+15%/-17%	+83%/-53%
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 008452639-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1852 ± 192	$9.26^{+1.99}_{-1.51}$	663^{+51}_{-51}	5992^{+439}_{-389}	4561^{+1995}_{-1429}
Alt.	-1811 ± 380	$9.10^{+1.94}_{-1.46}$	661^{+49}_{-48}	5963^{+569}_{-443}	4601^{+2244}_{-1621}

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 $A_{obs} \gg 1.0$

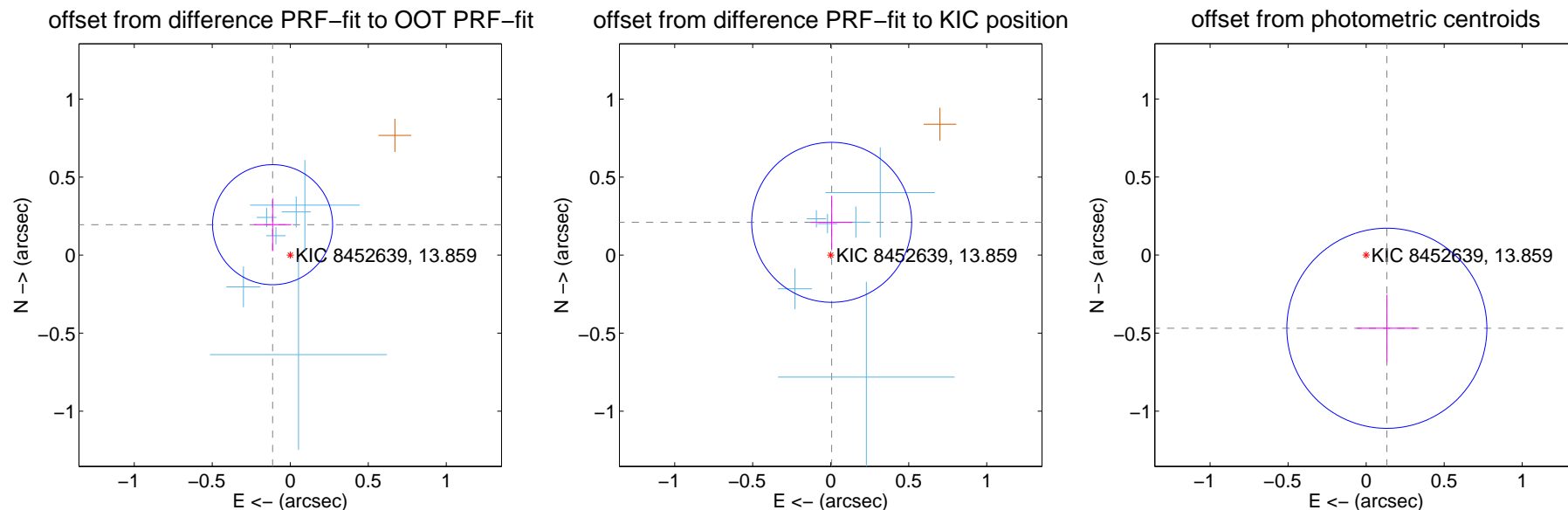
DV Centroid Data

Supplemental centroid analysis for 008452639-04. Kepler magnitude: 13.86. Transit SNR 8.03

There are 6 quarters with good PRF difference image offsets

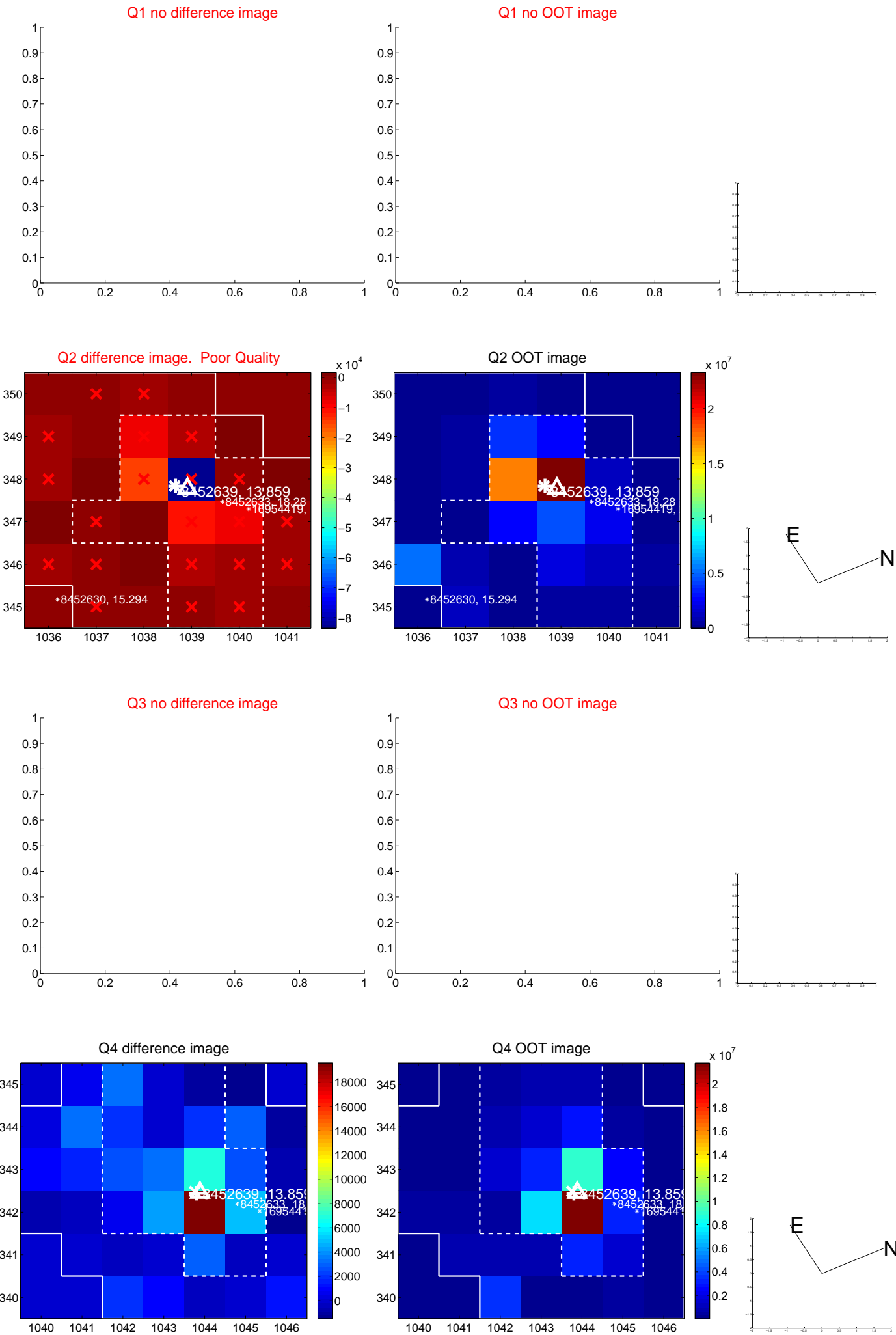
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.226 ± 0.128	1.76	0.113 ± 0.120	0.195 ± 0.169
PRF-fit source offset from KIC position	0.211 ± 0.171	1.23	-0.006 ± 0.134	0.210 ± 0.170
photometric centroid source offset	0.49 ± 0.21	2.28	-0.13 ± 0.19	-0.47 ± 0.22

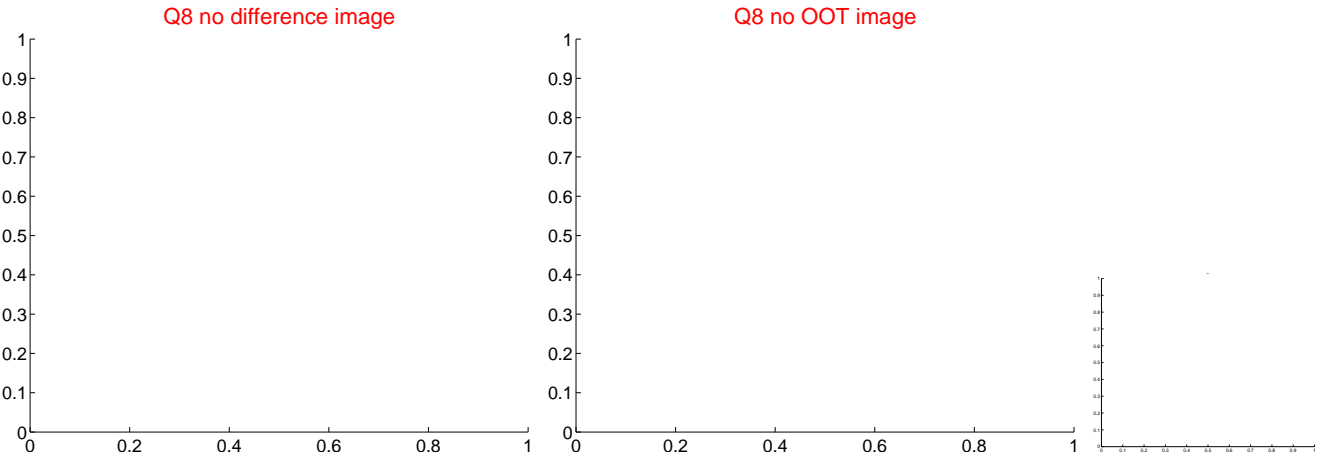
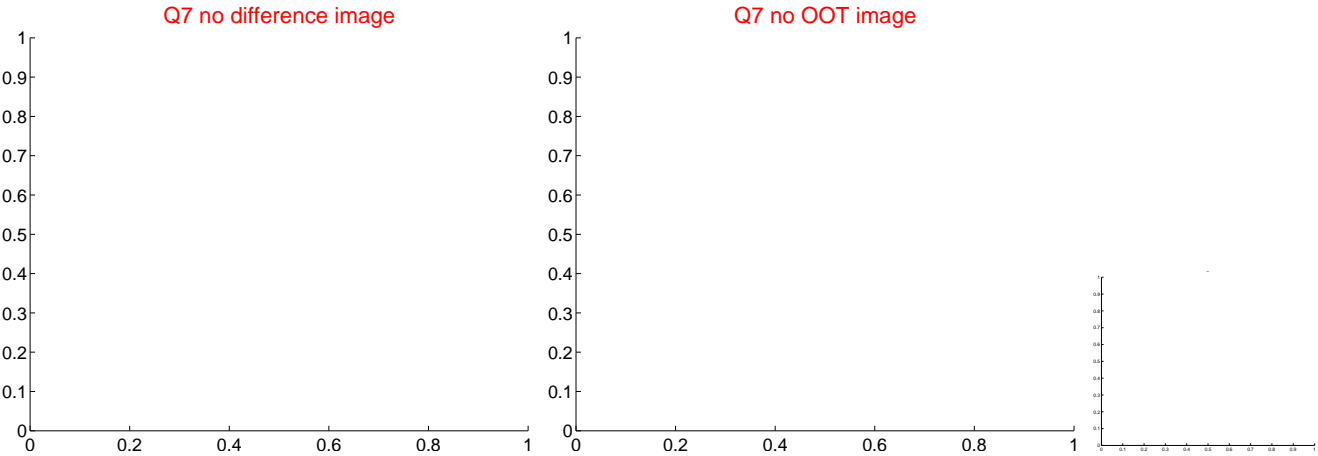
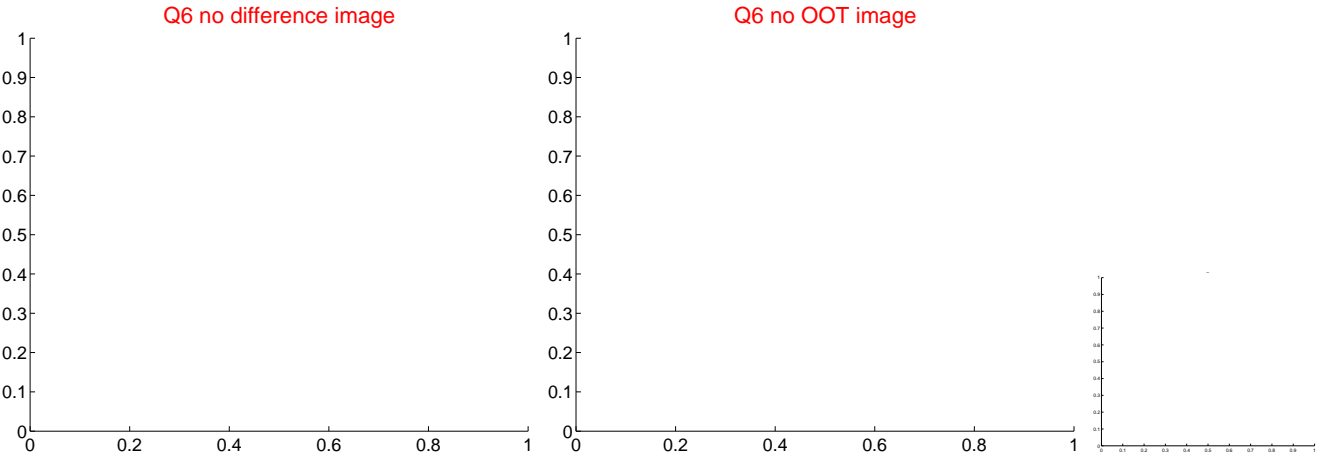
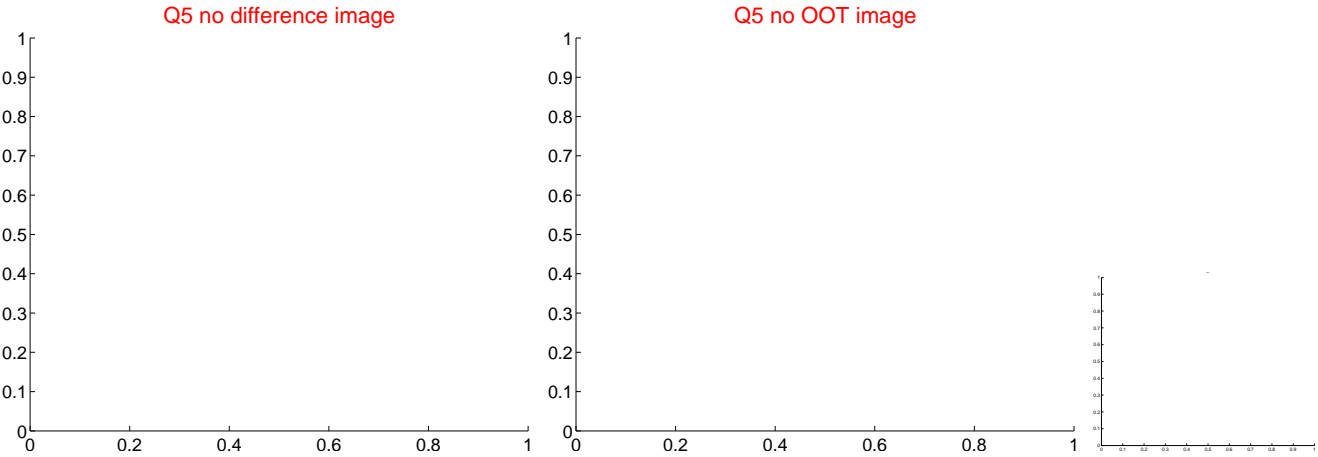


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

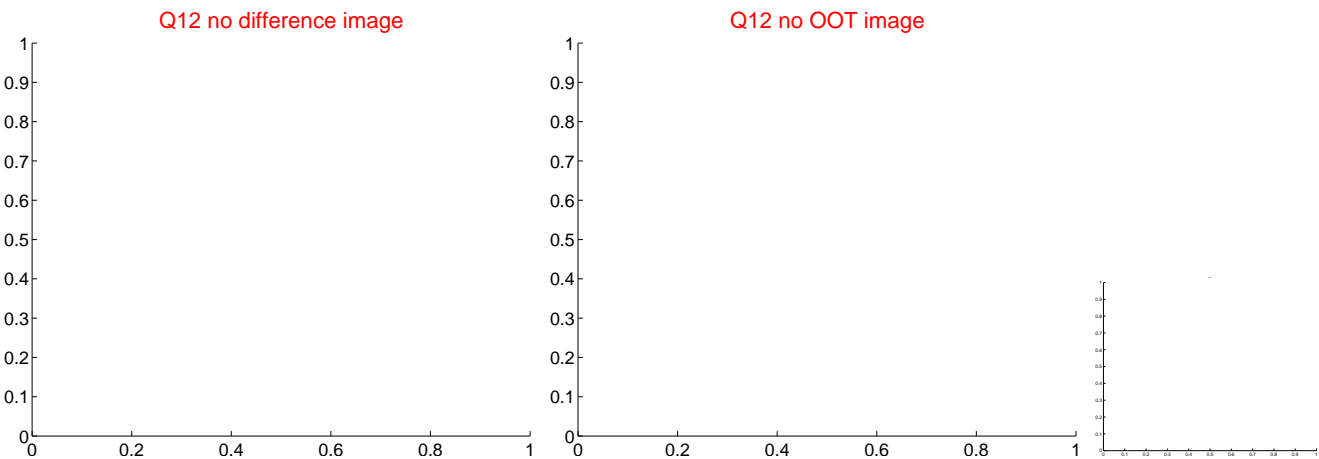
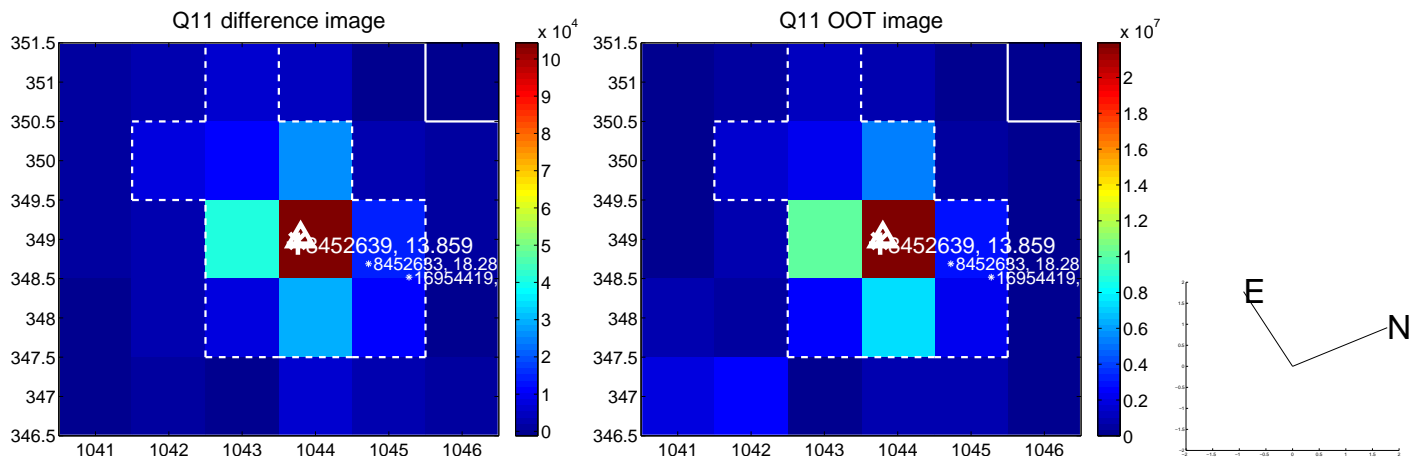
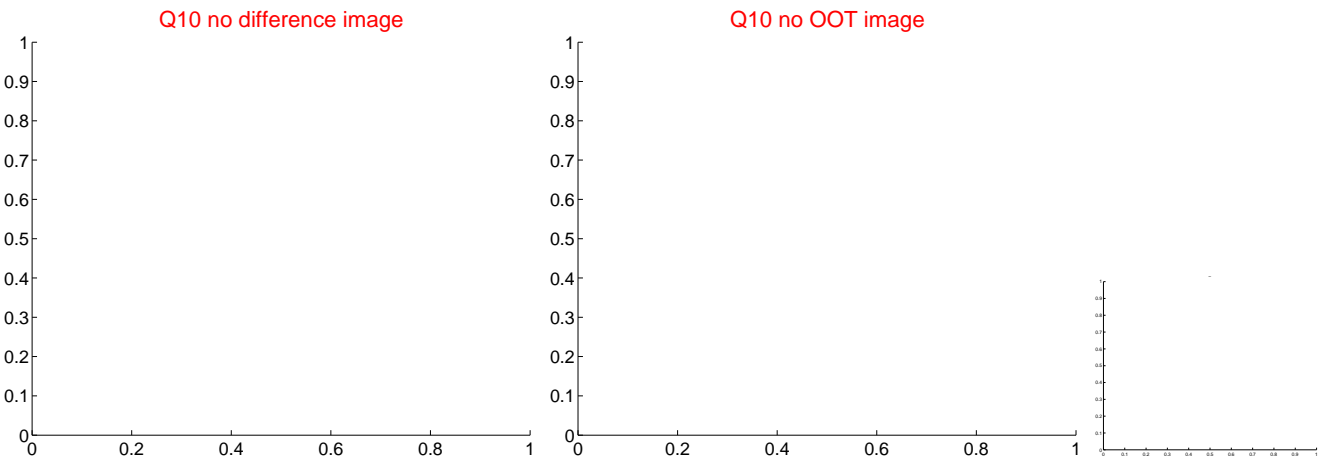
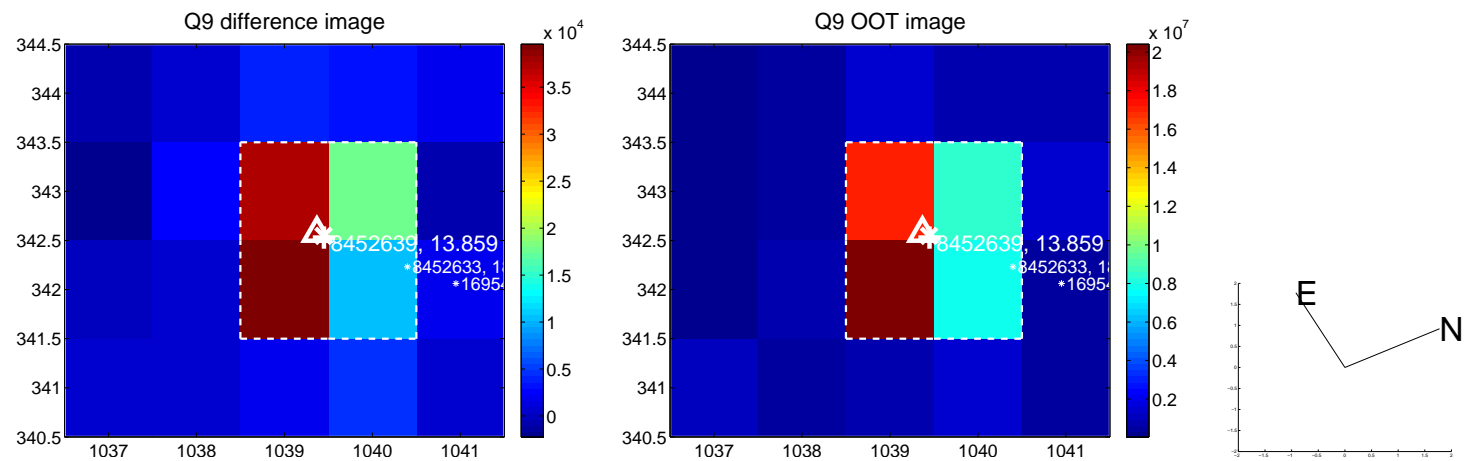
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



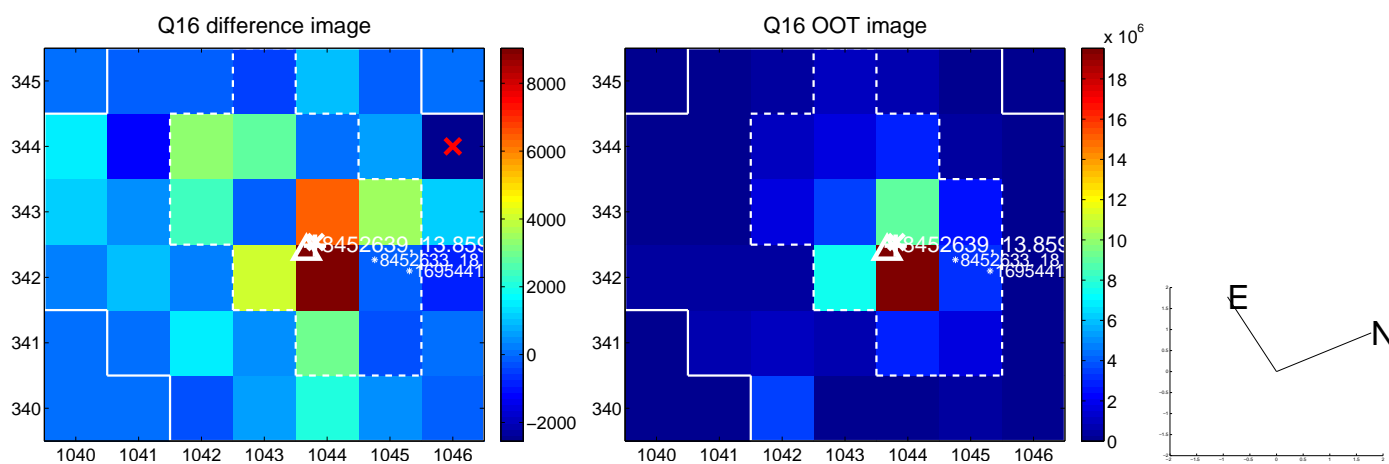
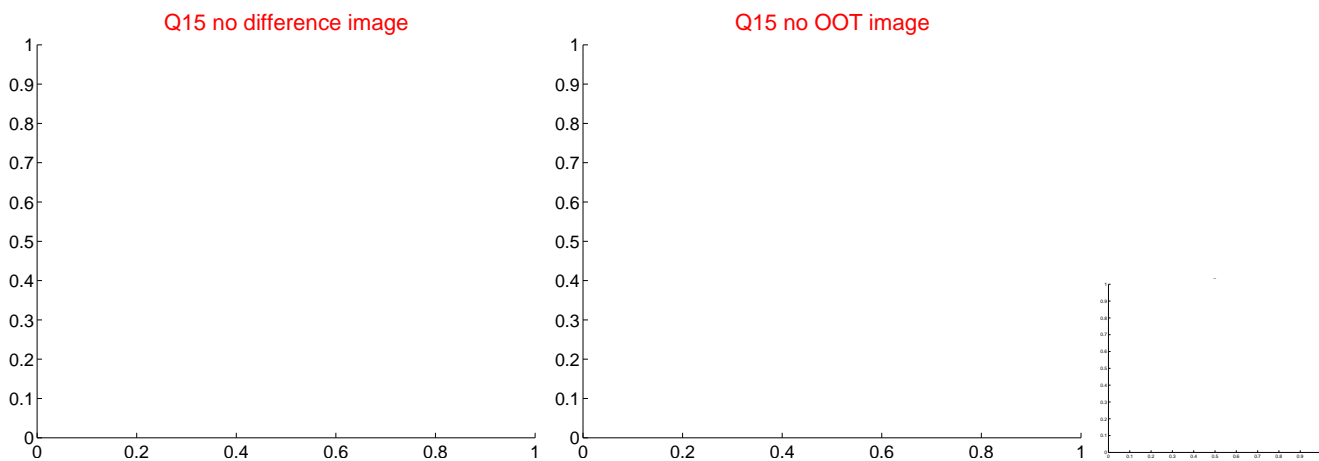
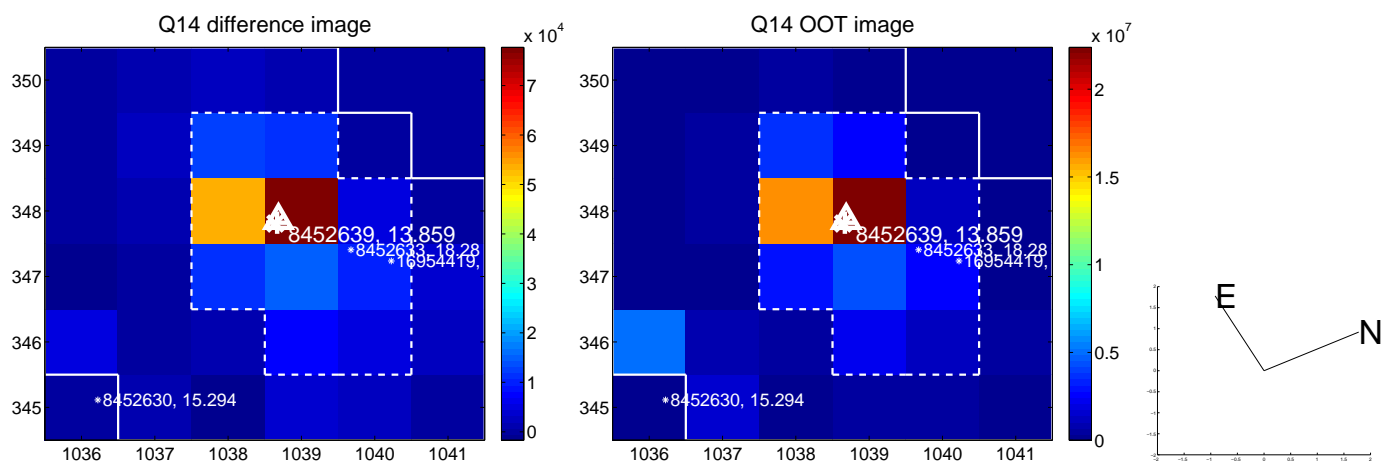
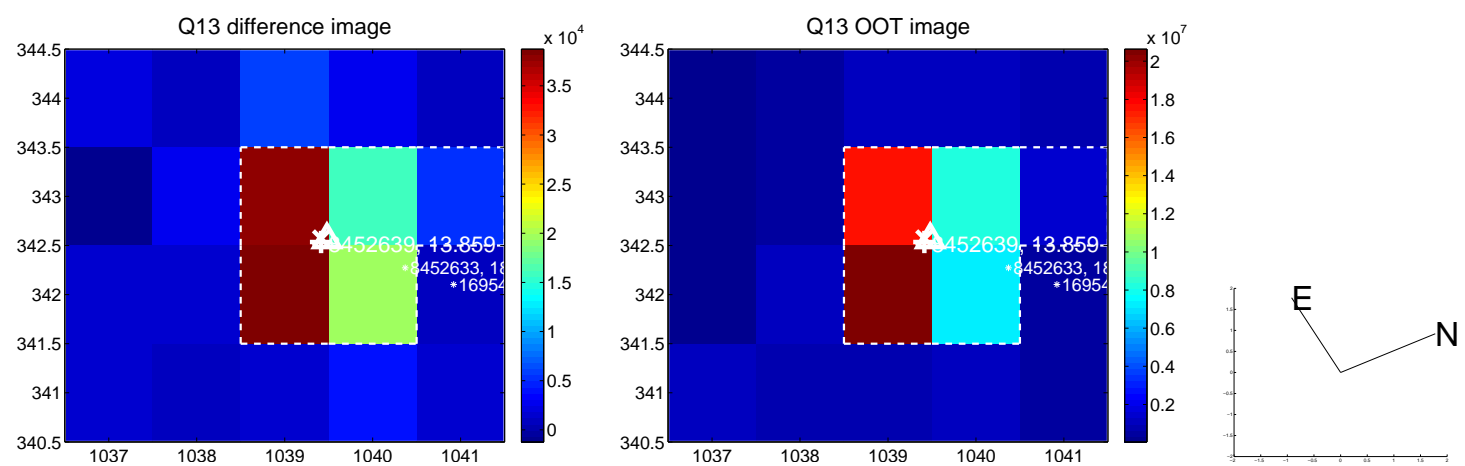
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



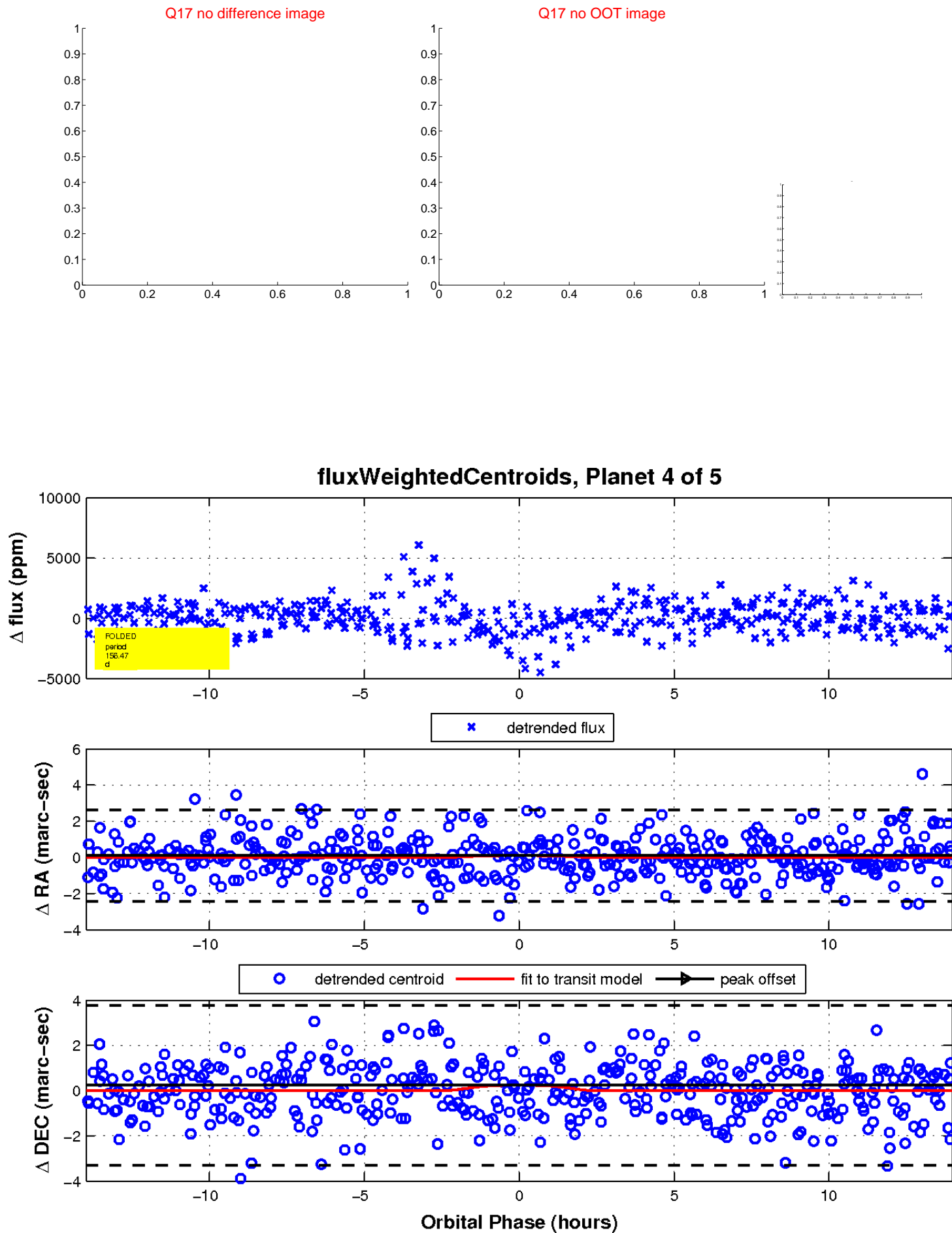
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

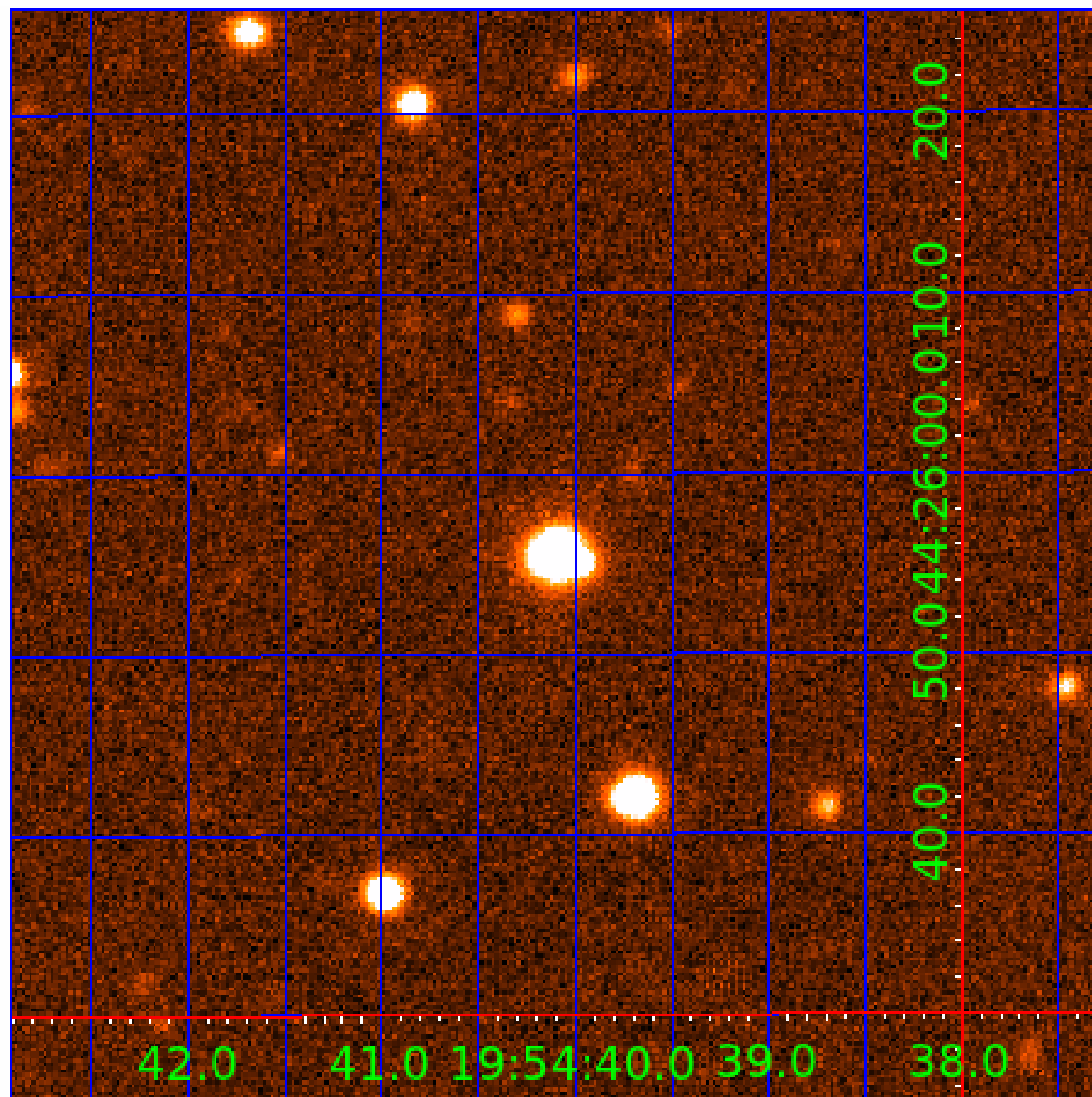


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008452639

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})
008452639-01	OBS	No	1.163686	131.675421	115.2	1.369	10.9	7.1	1.56	6759	1.80	8037.06
008452639-02	OBS	No	2.567884	133.444812	343.5	8.306	8.5	10.3	1.56	6759	5.26	2797.55
008452639-03	OBS	No	9.759061	139.986783	633.3	6.172	8.5	8.5	1.56	6759	5.57	471.70
008452639-04	OBS	No	156.472612	254.247268	2356.8	4.660	9.5	8.0	1.56	6759	9.23	11.67
008452639-05	OBS	No	188.721895	219.700798	559.7	3.000	9.3	-1.0	1.56	6759	3.73	9.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008452639-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008452639-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT
008452639-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_NOFITS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

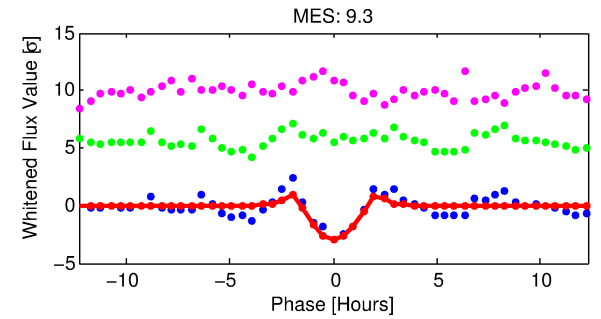
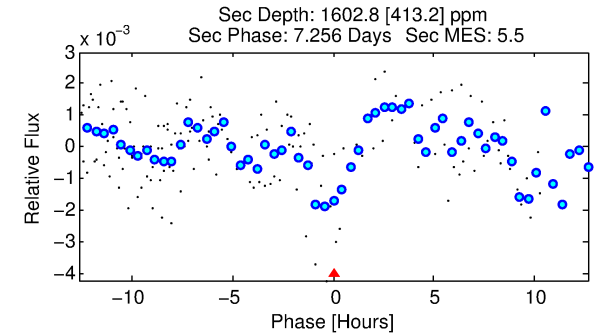
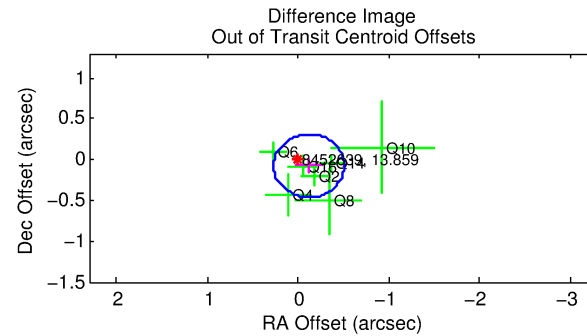
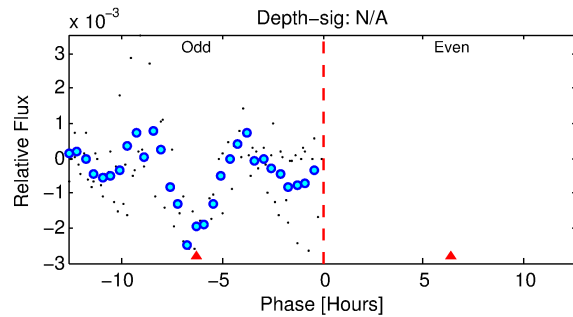
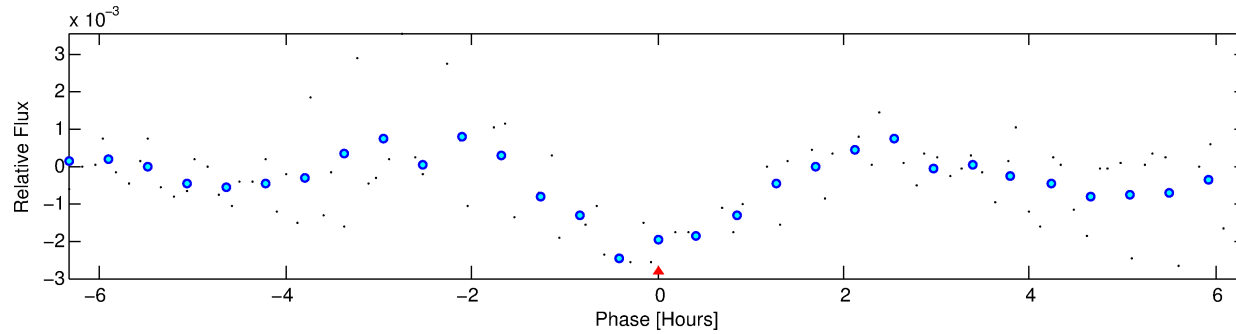
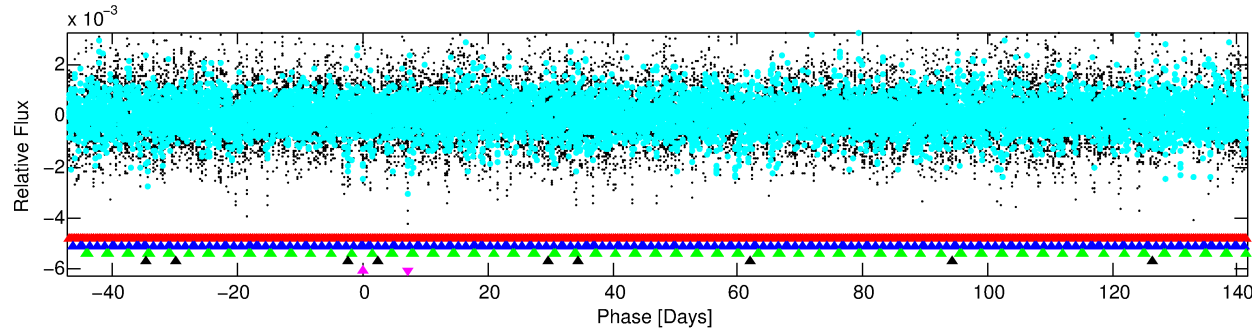
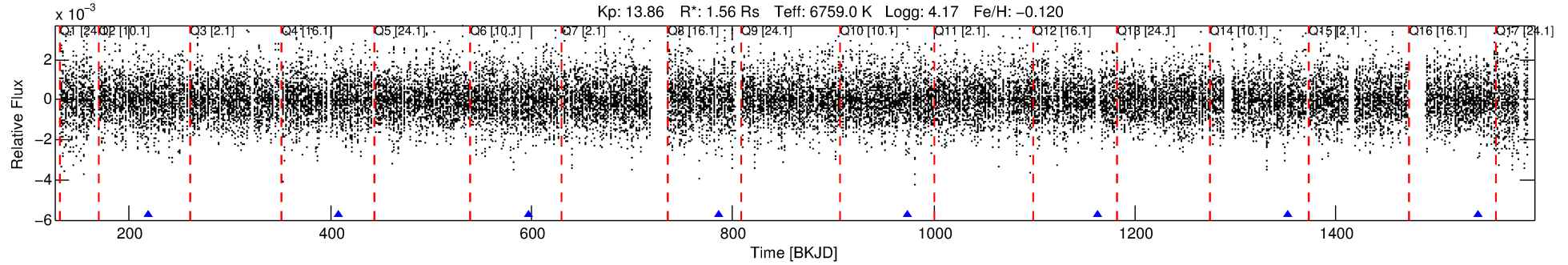
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008452639-05

No Significant Match Found

DV One-Page Summary

KIC: 8452639 Candidate: 5 of 5 Period: 188.722 d



TPS TCE Results:

Period = 188.72189 d
Epoch = 219.7008 BKJD

DV fit results are unavailable

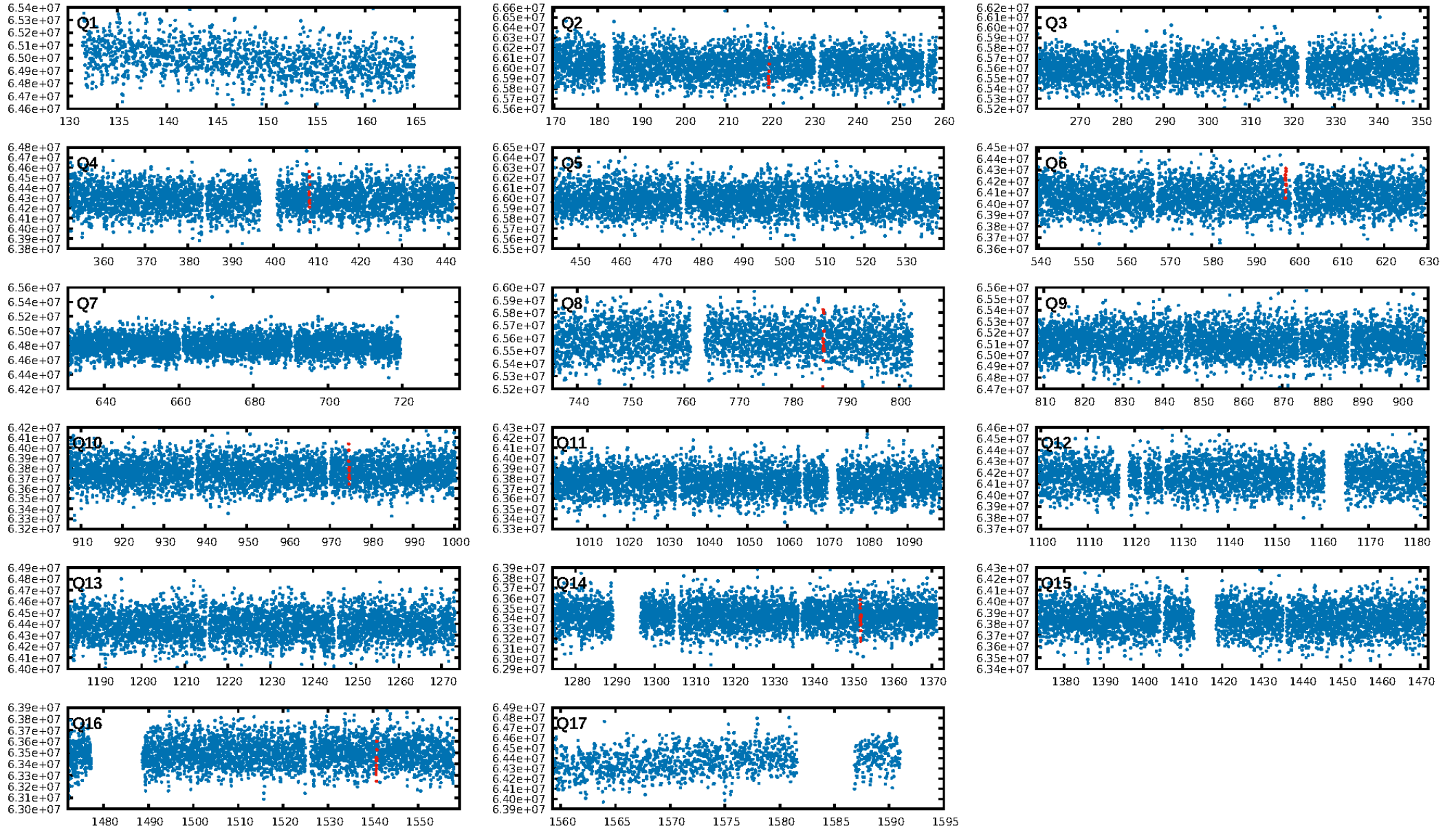
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [139.66σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -12.71
Centroid-sig: 1.4%
Centroid-so: 0.234 arcsec [0.67σ]
OotOffset-rm: 0.141 arcsec [1.10σ]
KicOffset-rm: 0.271 arcsec [1.86σ]
OotOffset-st: 4/0/3/0 [7]
KicOffset-st: 4/0/3/0 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 0.43 [3/7]

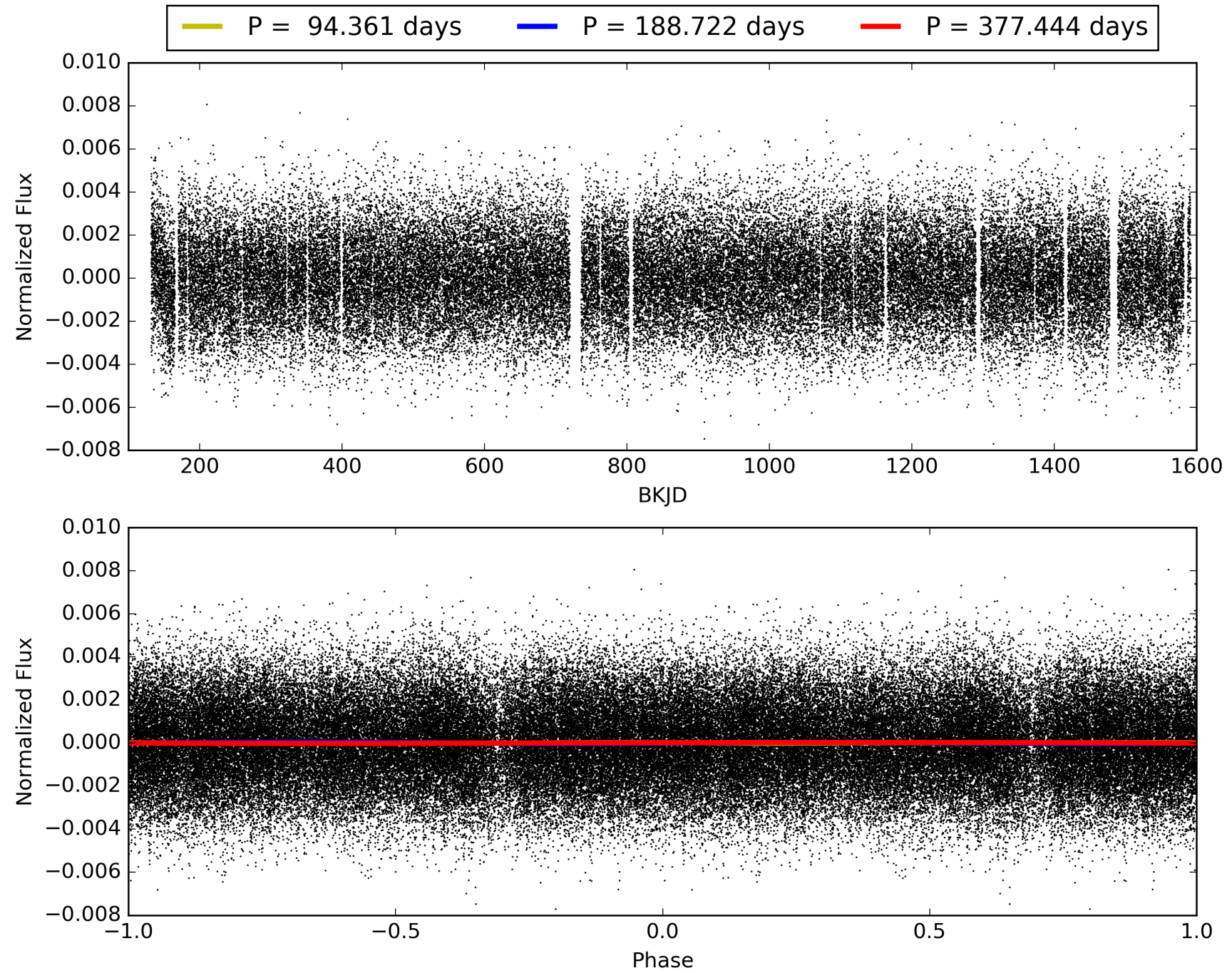
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:17:22 Z

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

TCE 008452639-05, PDC Light Curves

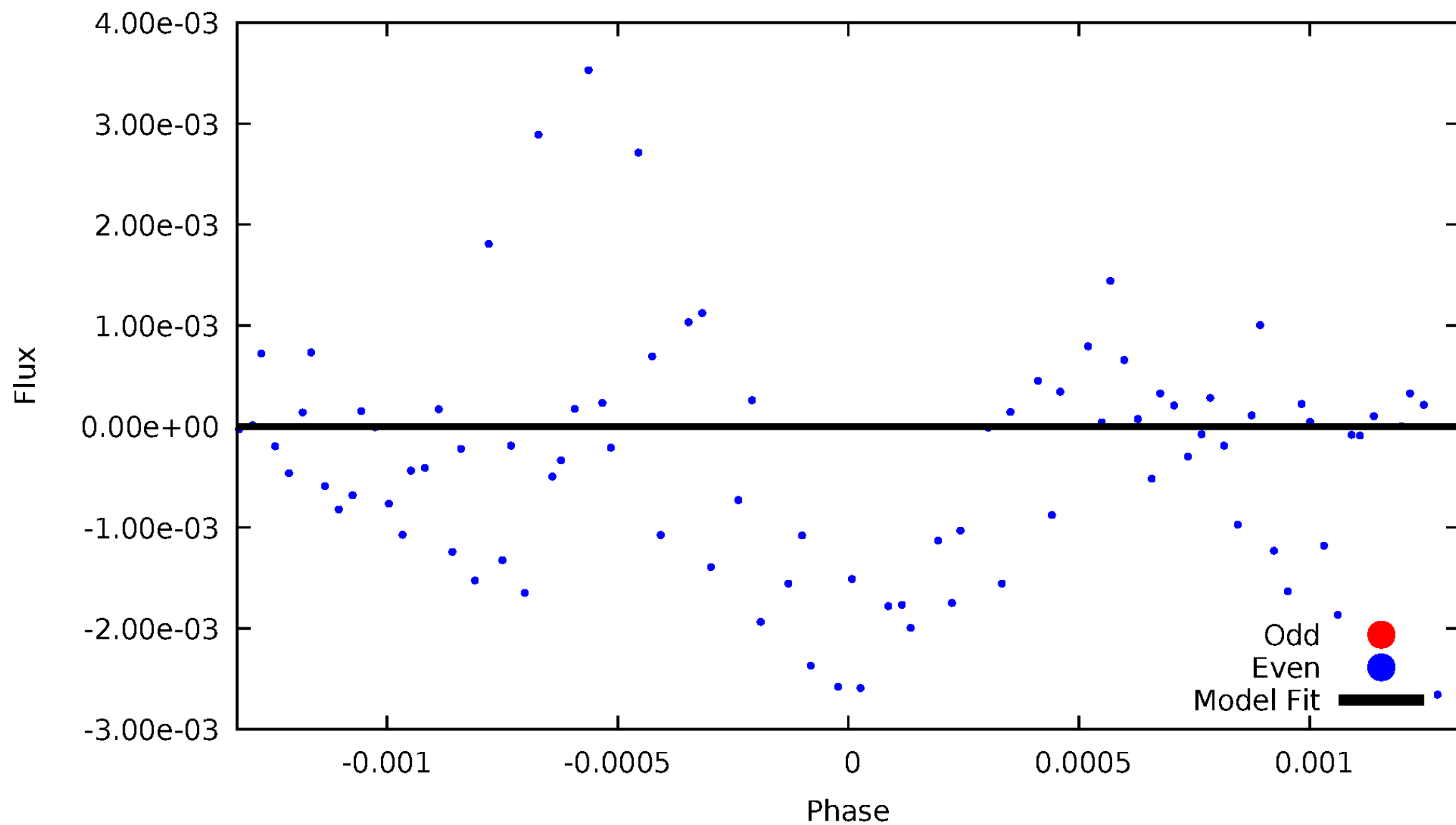


TCE 008452639-05



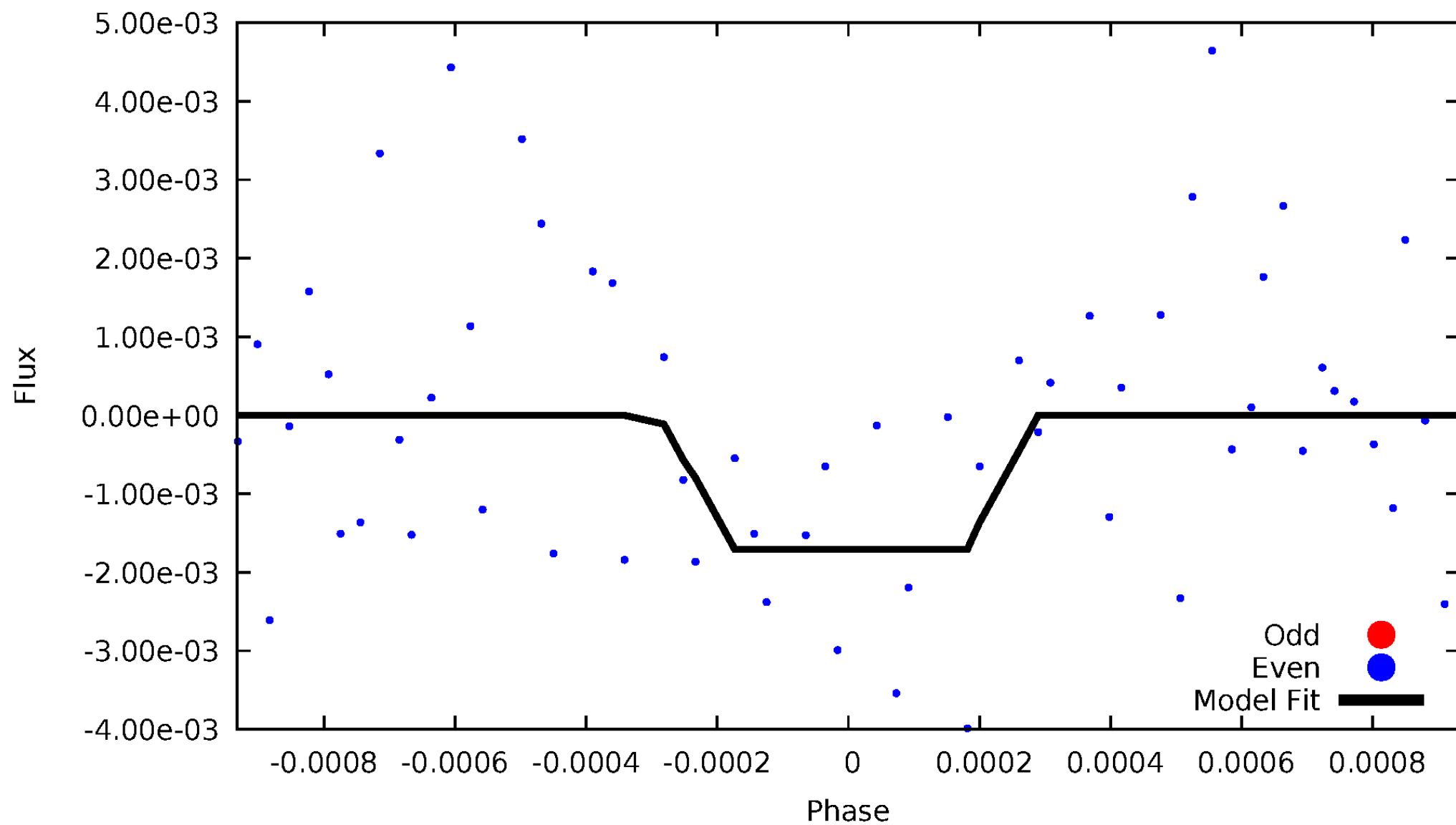
DV Odd/Even

TCE 008452639-05

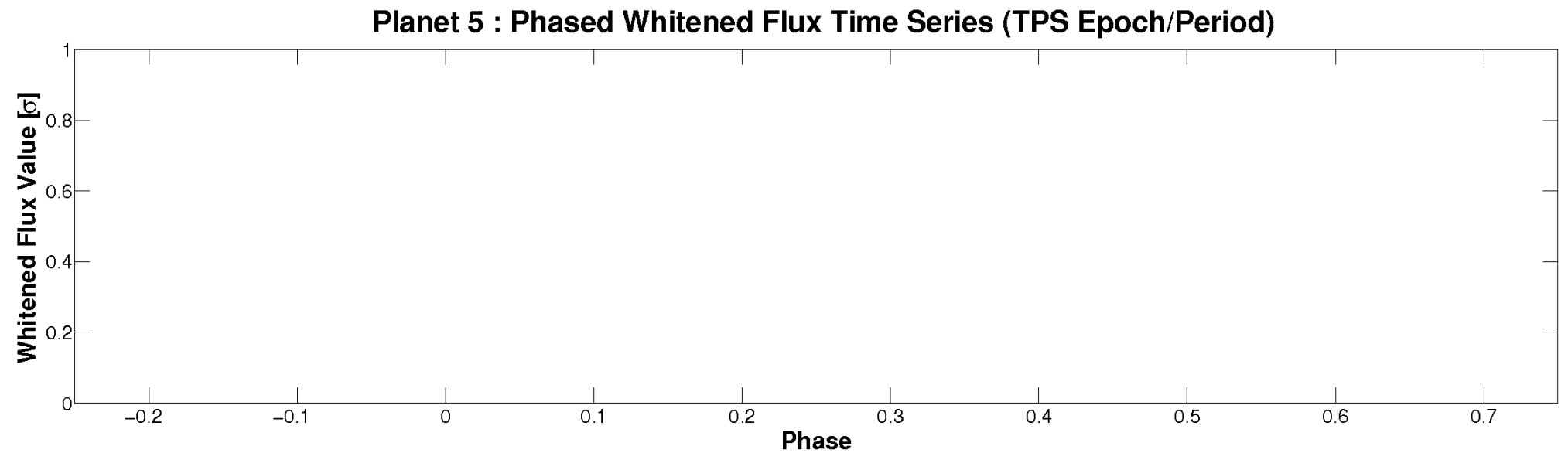
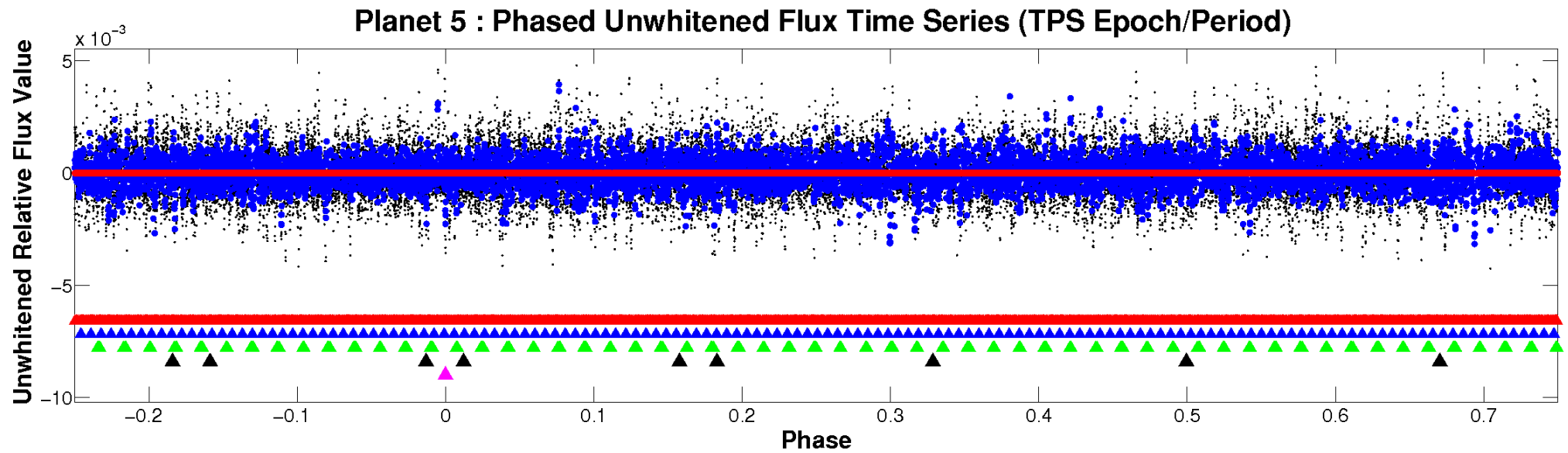


ALT Odd/Even

TCE 008452639-05

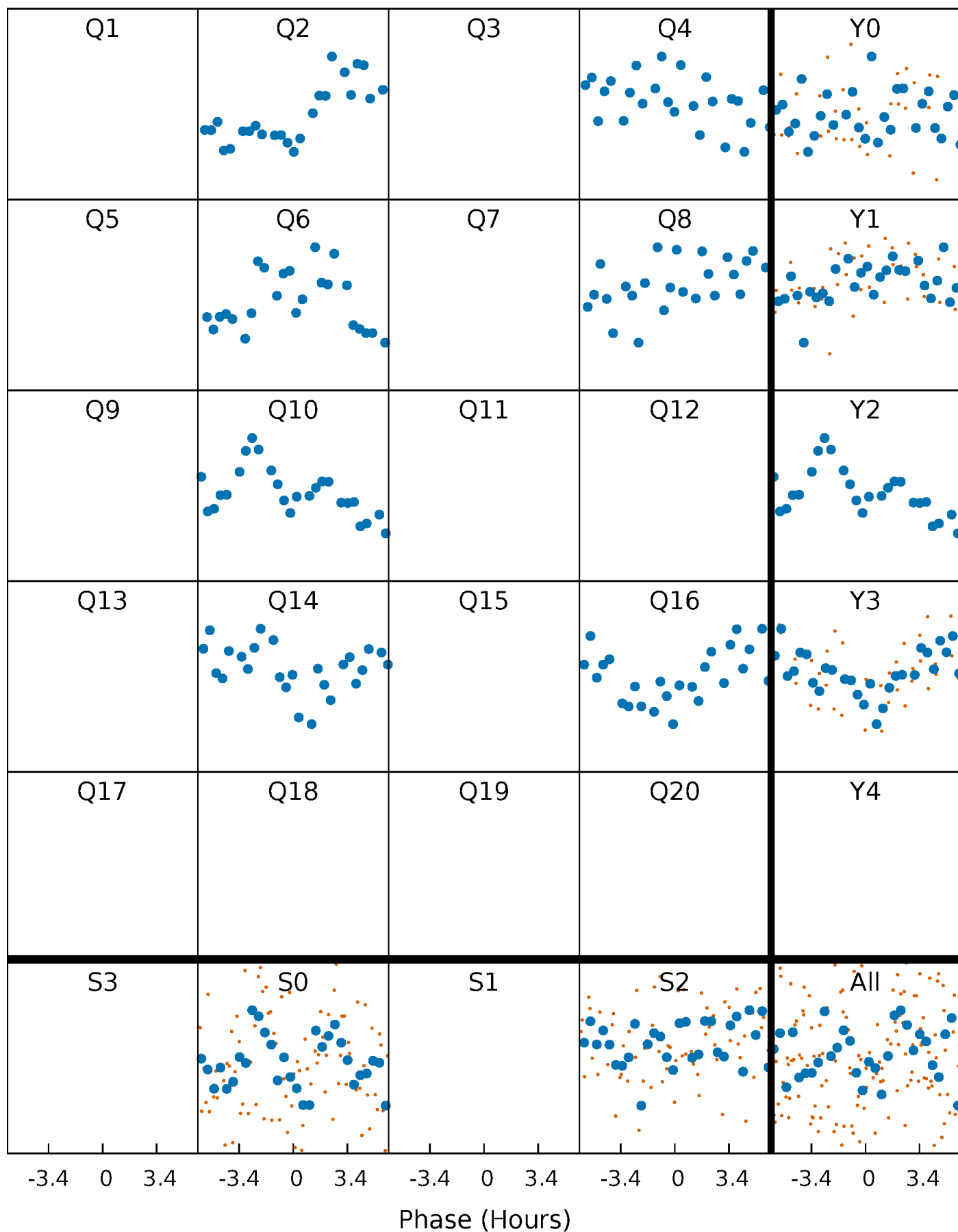


Non-Whitened Vs. Whitened Light Curve



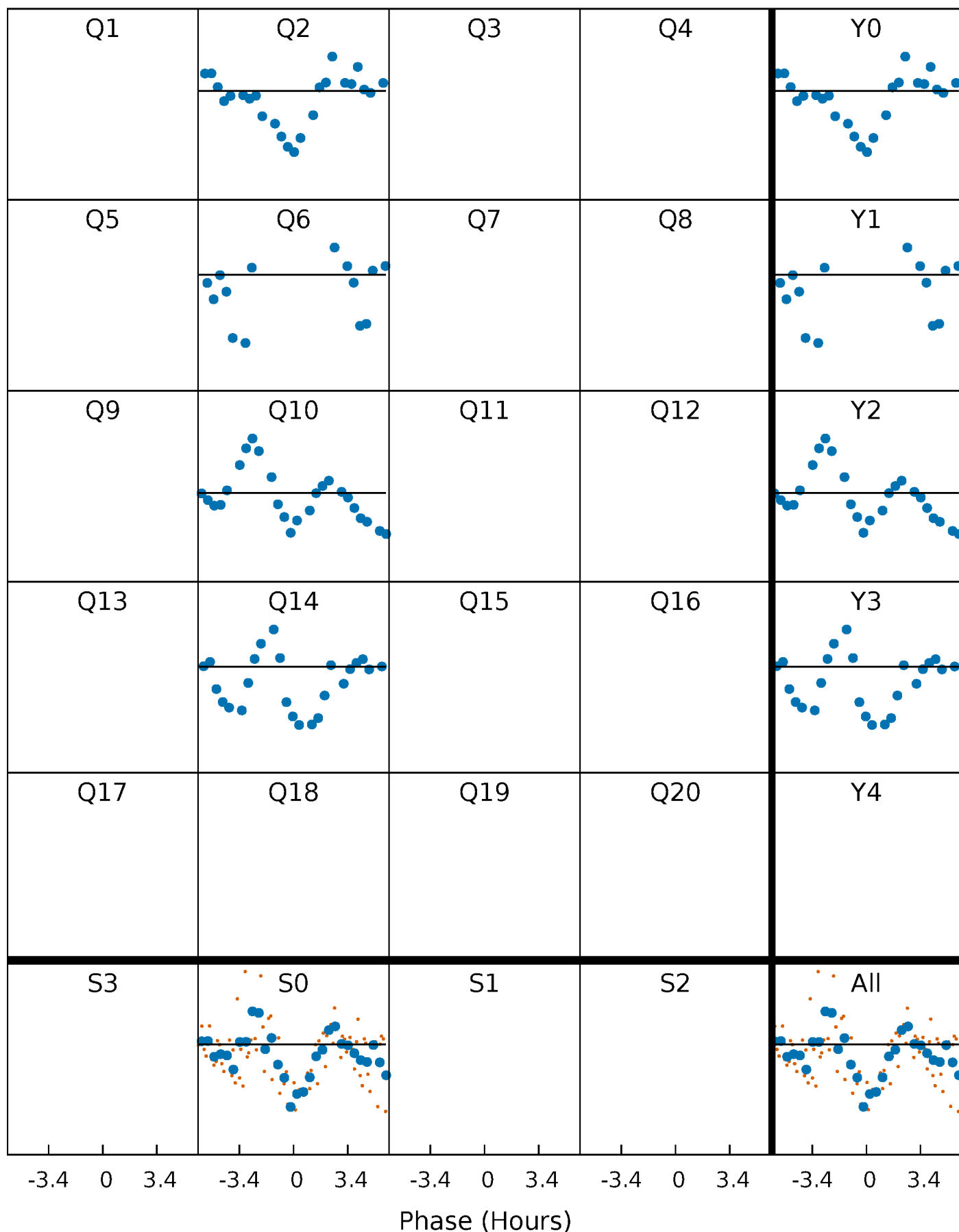
PDC Quarter-Phased Transit Curves

TCE 008452639-05 $P=188.721895$ Days $T_0=219.700798$ (BKJD)



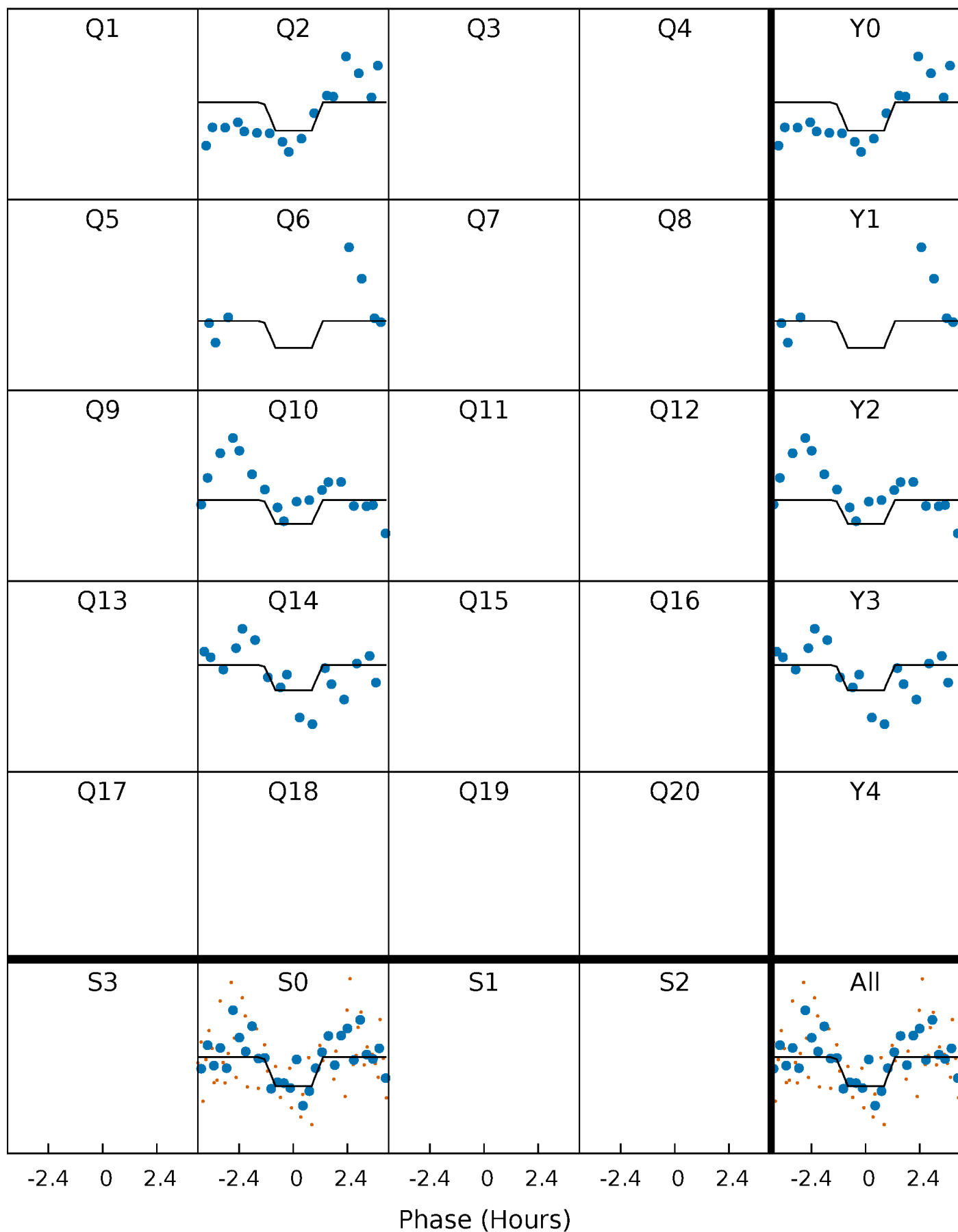
DV Quarter-Phased Transit Curves

TCE 008452639-05 P=188.721895 Days $T_0=219.700798$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

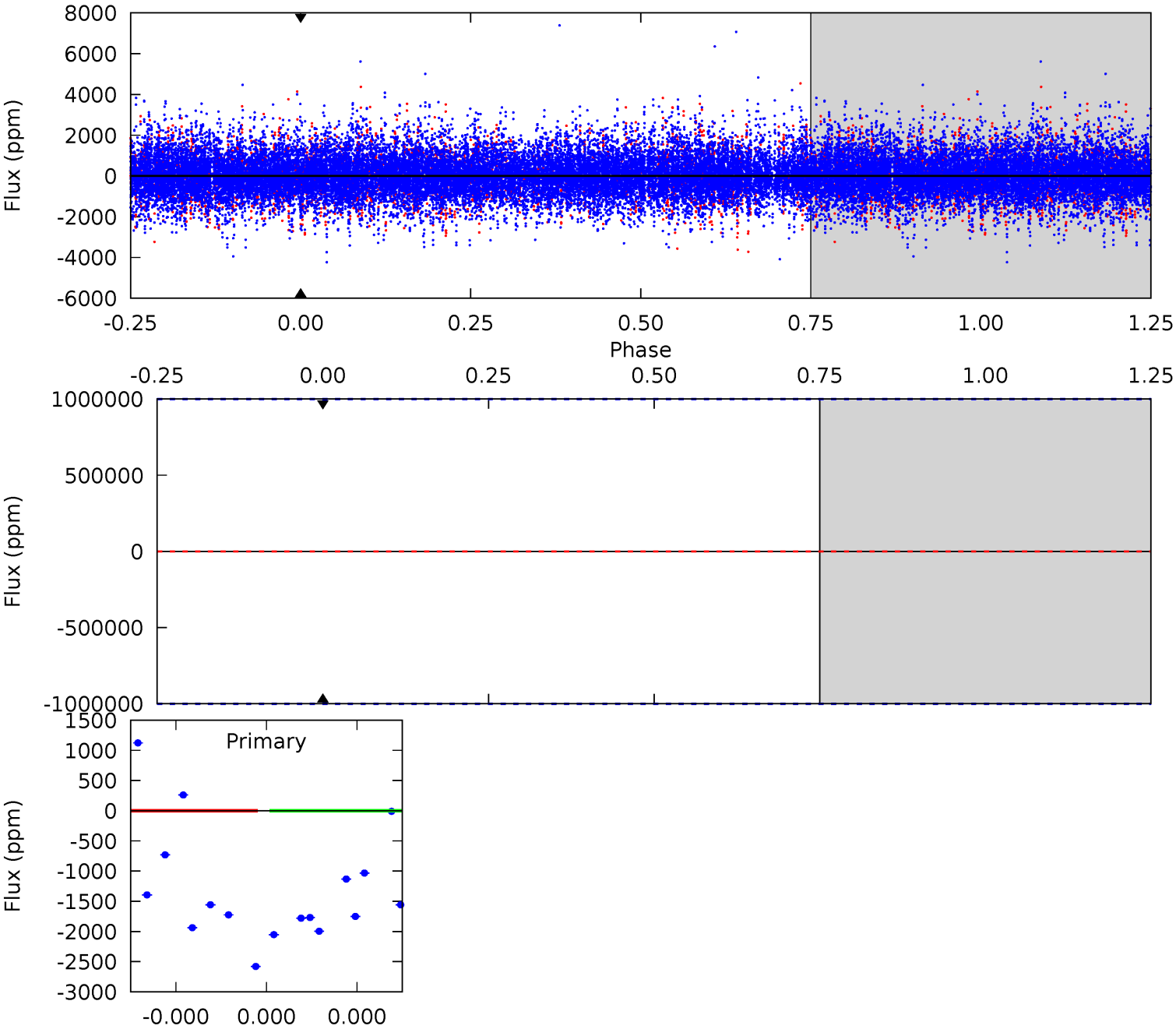
TCE 008452639-05 P=188.721895 Days $T_0=219.708916$ (BKJD)



DV Model-Shift Uniqueness Test

008452639-05, P = 188.721895 Days, E = 30.978903 Days

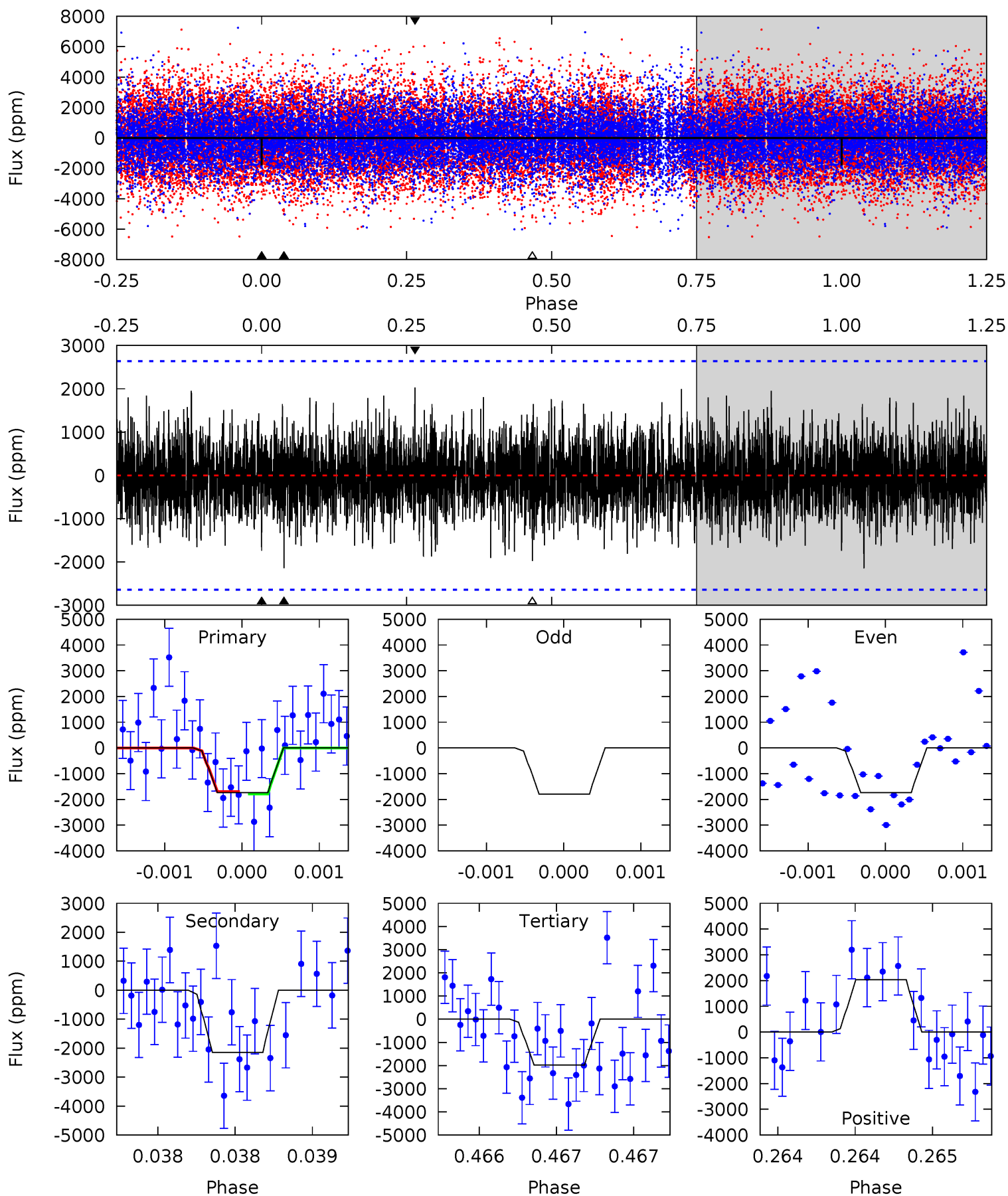
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008452639-05, P = 188.721895 Days, E = 30.987021 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.66	4.52	4.15	4.27	5.56	3.46	1.17	-0.50	-0.62	0.36	0.24	0.06	0.75	0.49	0.10



Stellar Parameters For KIC 008452639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6759^{+189}_{-283}	$4.175^{+0.158}_{-0.193}$	$-0.120^{+0.250}_{-0.300}$	$1.562^{+0.511}_{-0.341}$	$1.338^{+0.204}_{-0.224}$	$0.494^{+0.409}_{-0.262}$
	+3%/-4%	+4%/-5%	+208%/-250%	+33%/-22%	+15%/-17%	+83%/-53%
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 008452639-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$13.26^{+13.75}_{-9.07}$	621^{+47}_{-47}	4689^{+28256}_{-33333}	$2187^{+344243}_{-266735}$
Alt.	-2144 ± 475	$15.11^{+15.33}_{-9.78}$	621^{+47}_{-43}	4963^{+3330}_{-1146}	2500^{+17560}_{-1874}

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 $A_{obs} \gg 1.0$

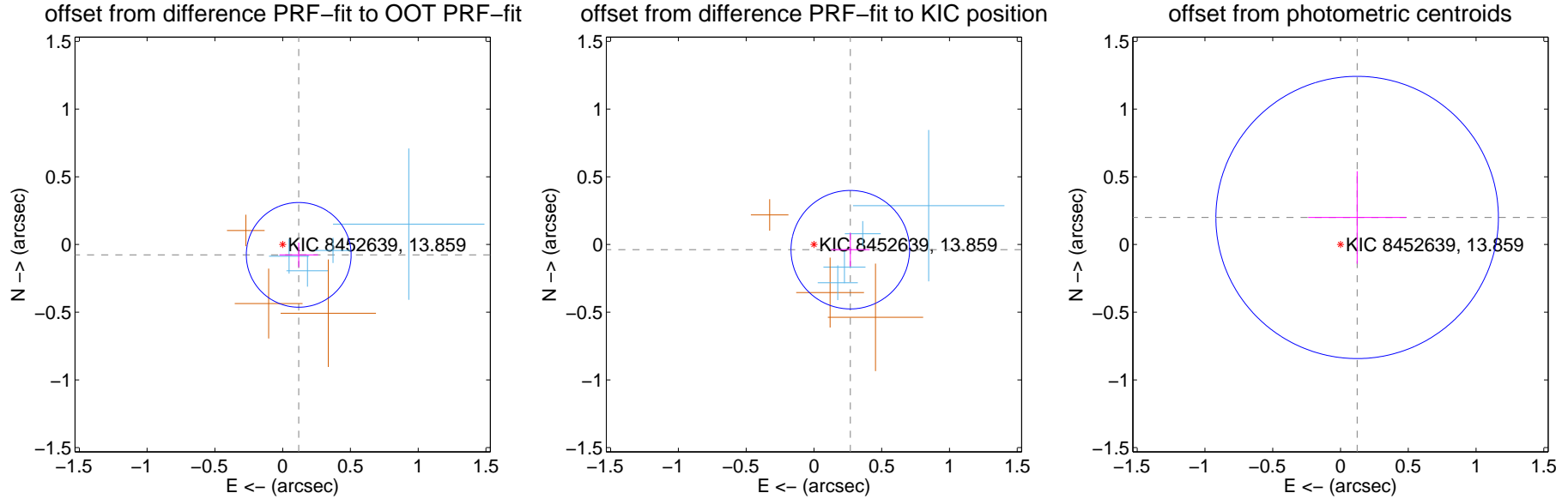
DV Centroid Data

Supplemental centroid analysis for 008452639-05. Kepler magnitude: 13.86. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

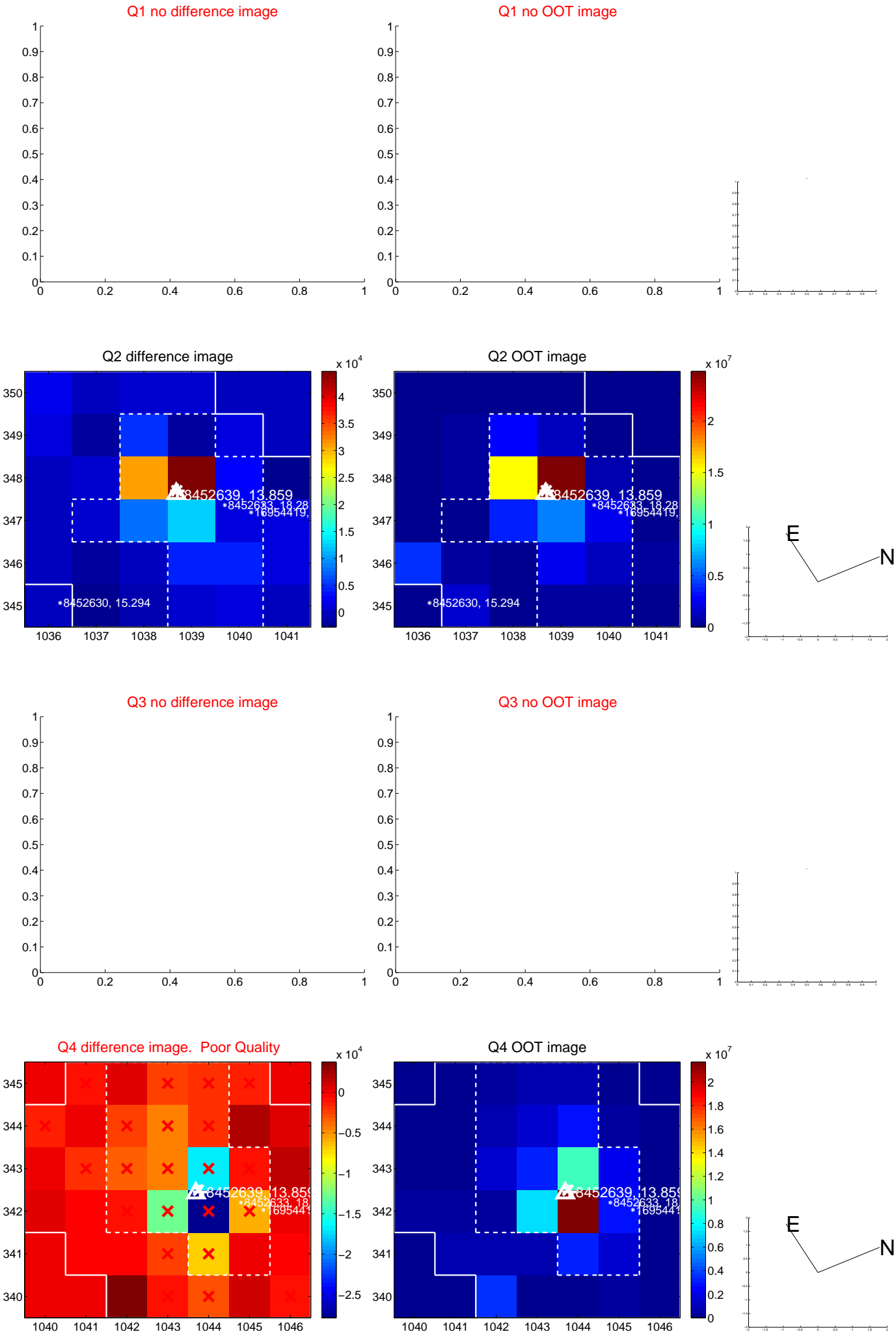
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.141 ± 0.129	1.10	-0.119 ± 0.142	-0.077 ± 0.090
PRF-fit source offset from KIC position	0.271 ± 0.146	1.86	-0.268 ± 0.143	-0.038 ± 0.124
photometric centroid source offset	0.23 ± 0.35	0.67	-0.12 ± 0.36	0.20 ± 0.34

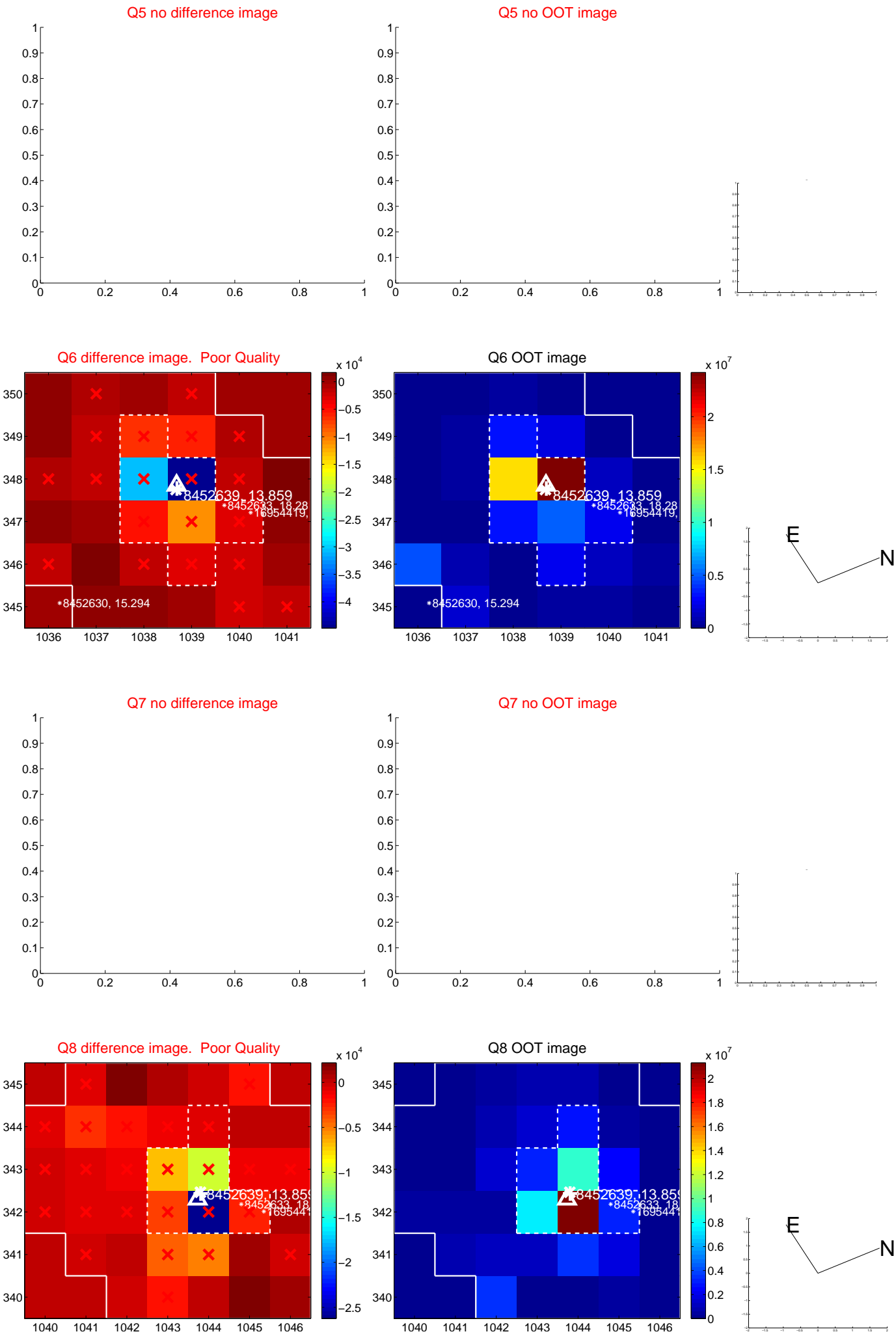


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

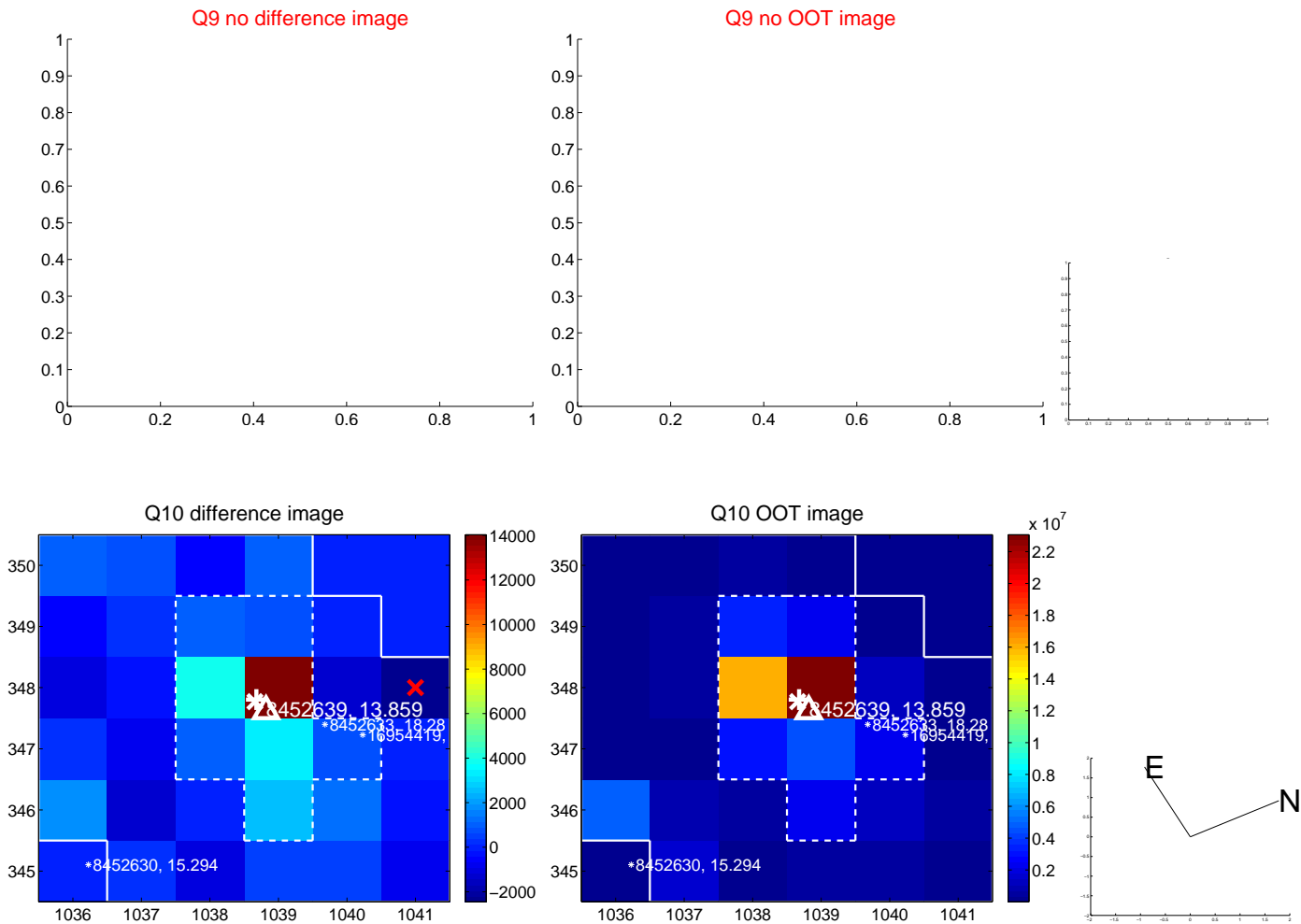
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



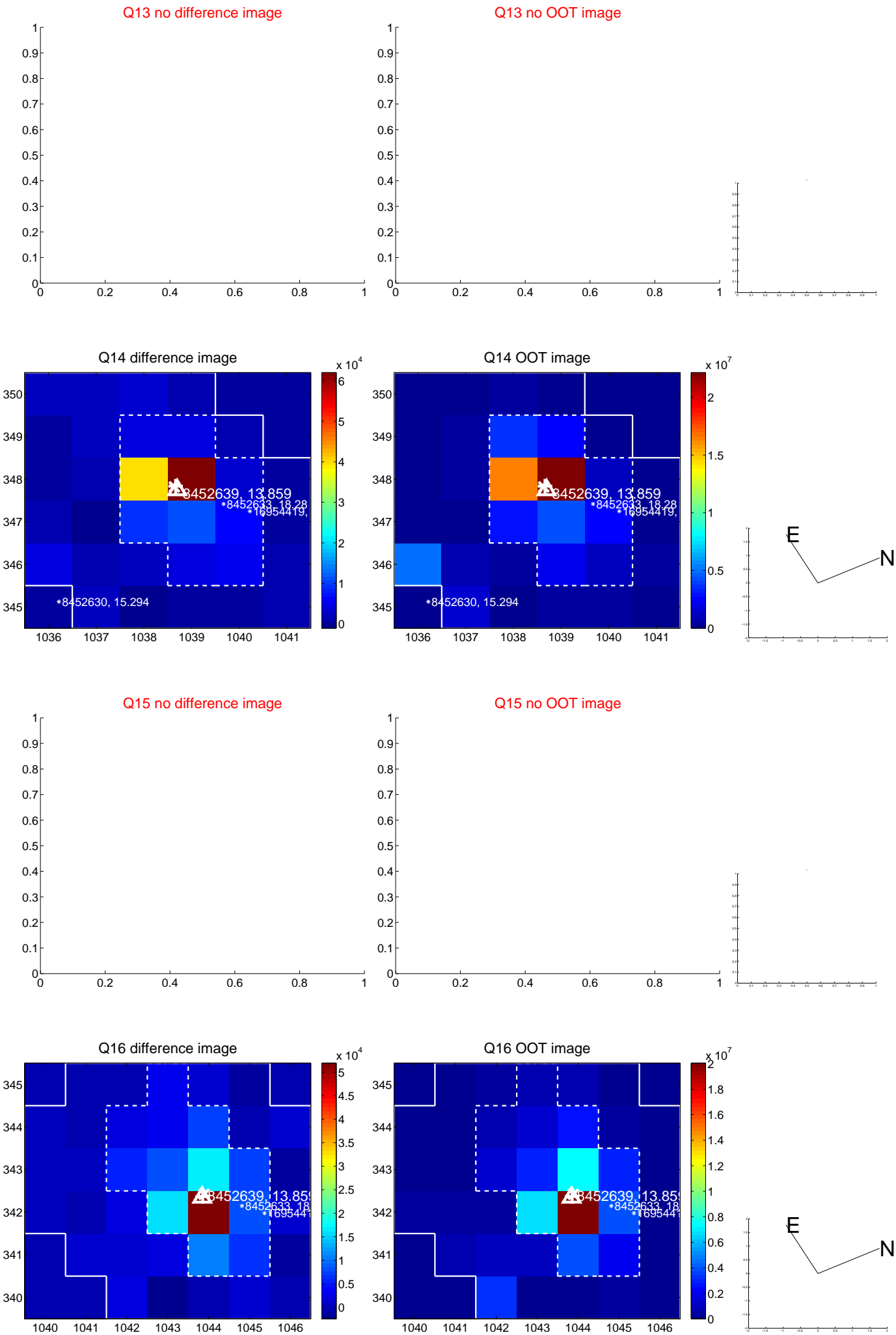
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



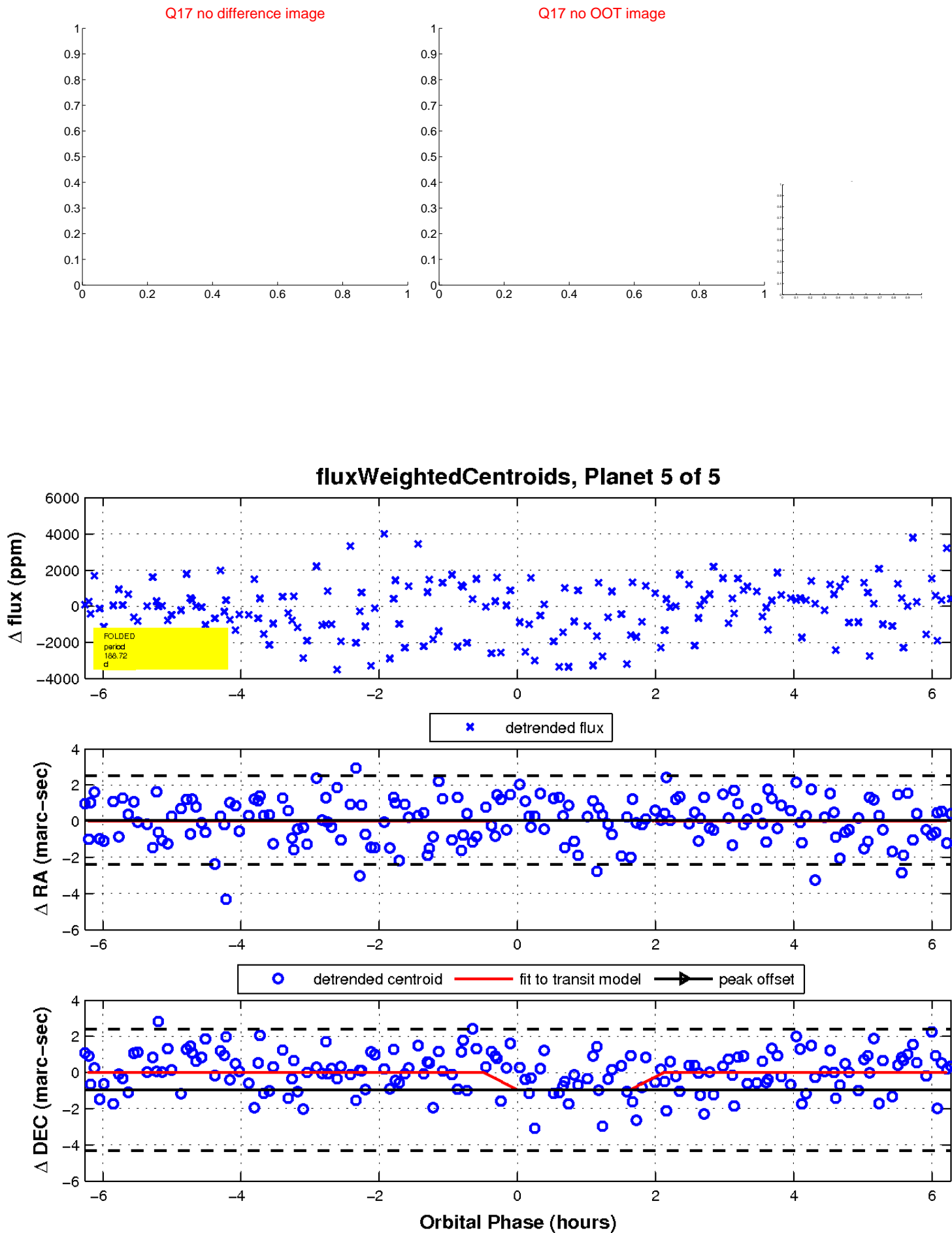
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

