

KIC 005390694

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})
005390694-01	OBS	No	1.592199	133.072373	57.1	6.518	9.1	8.4	1.15	6758	0.88	3138.51
005390694-02	OBS	No	182.935313	312.637724	333.4	10.406	7.8	4.9	1.15	6758	2.31	5.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005390694-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005390694-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

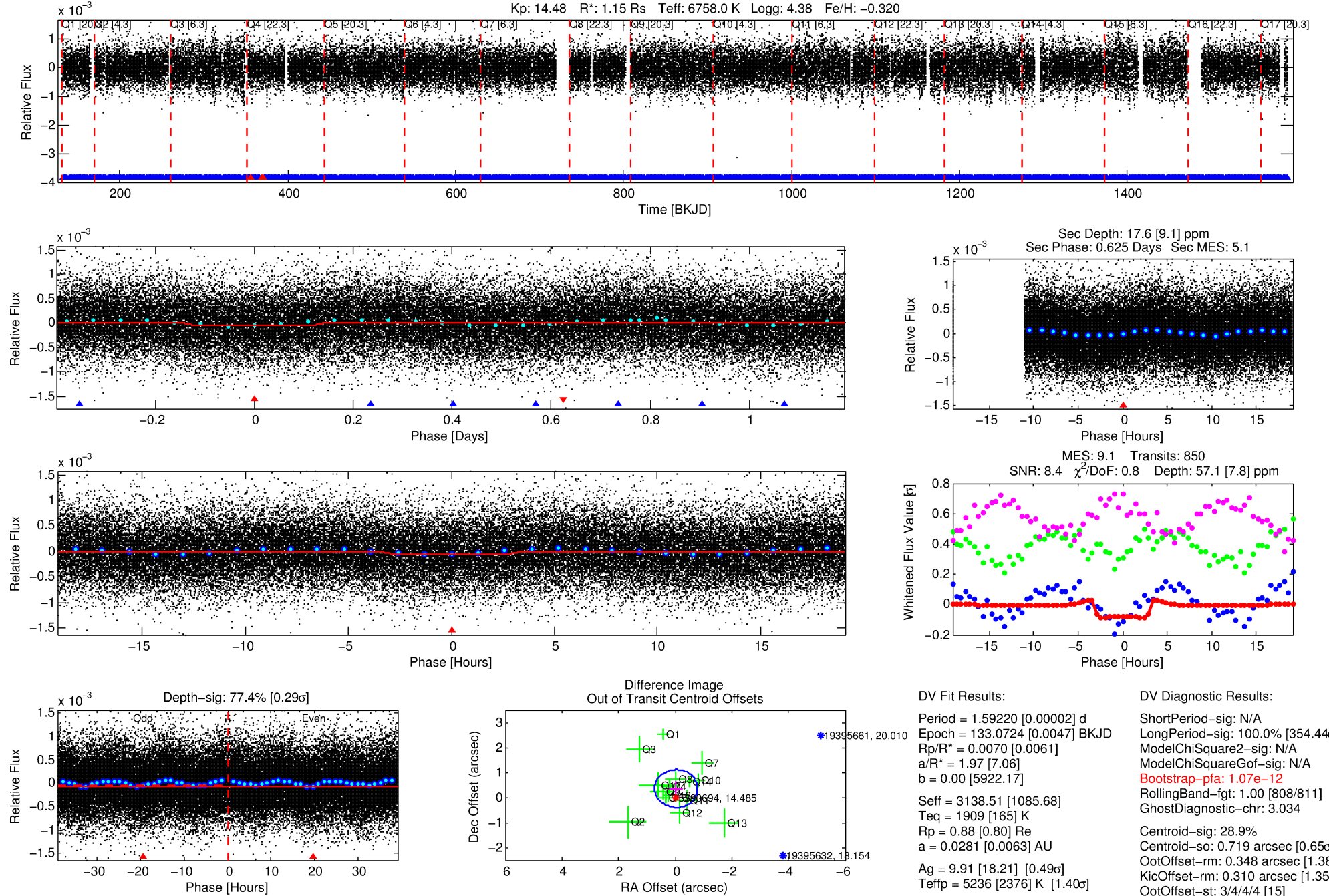
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005390694-01

No Significant Match Found

DV One-Page Summary

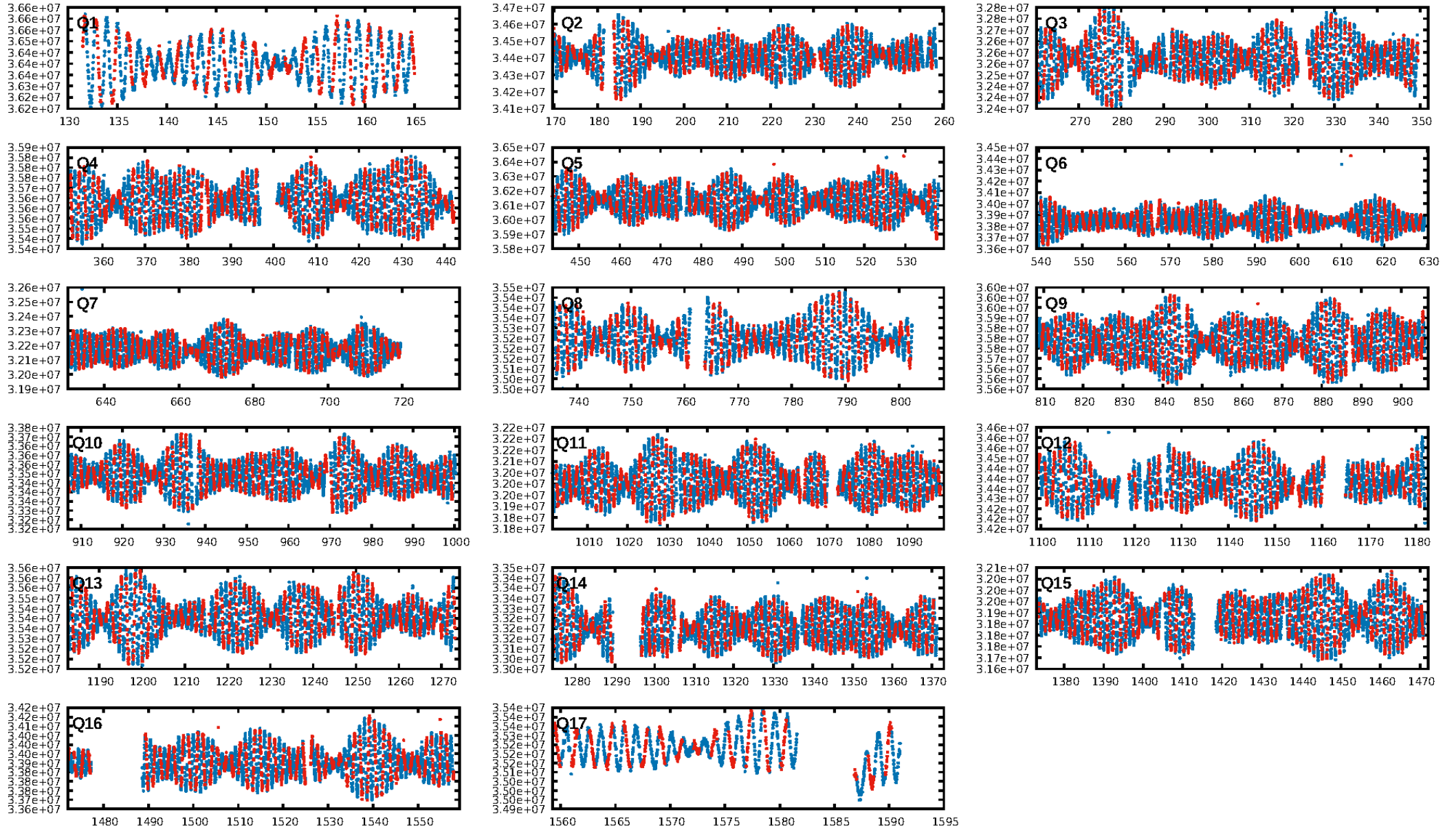
KIC: 5390694 Candidate: 1 of 2 Period: 1.592 d



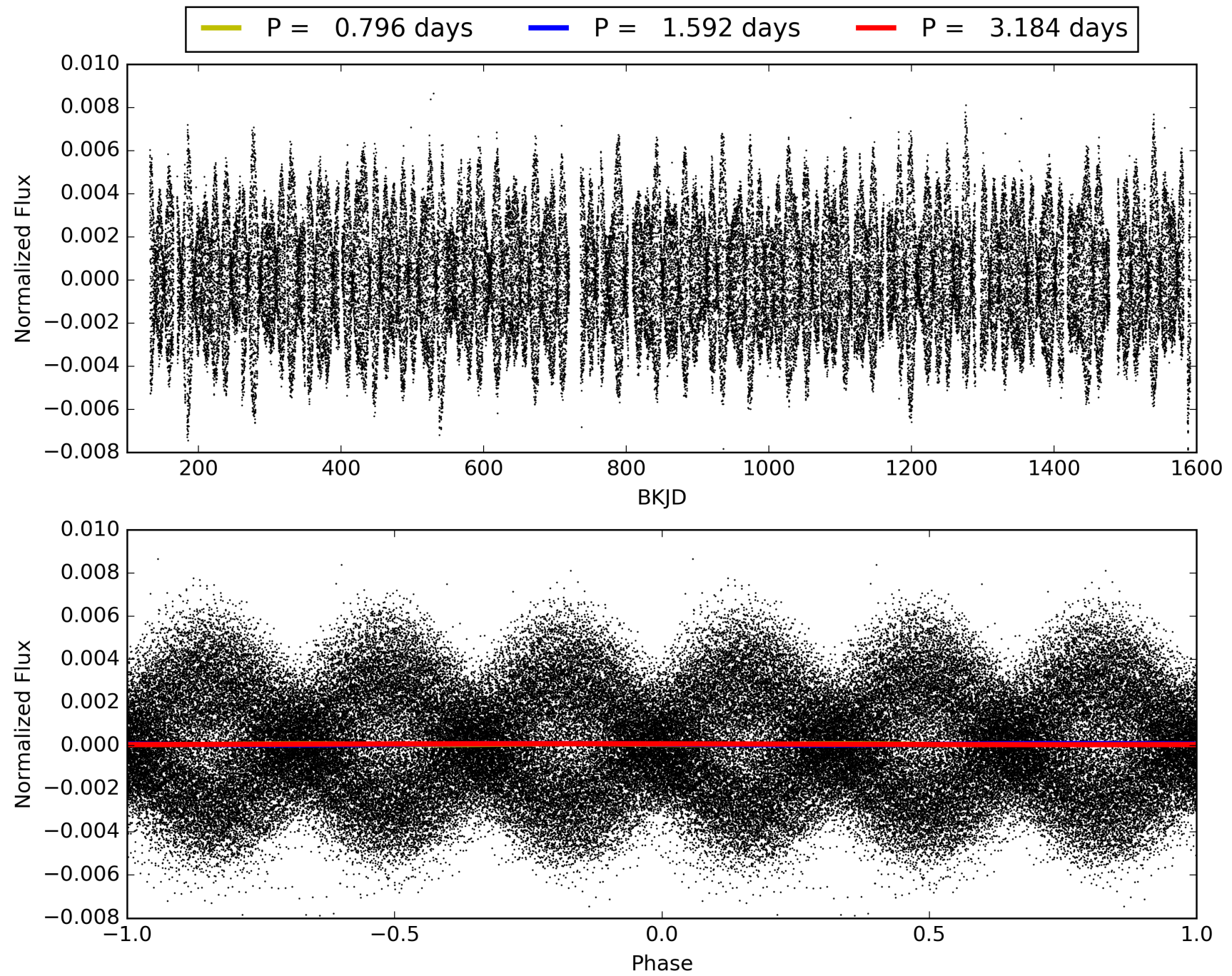
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:34:16 Z

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

TCE 005390694-01, PDC Light Curves

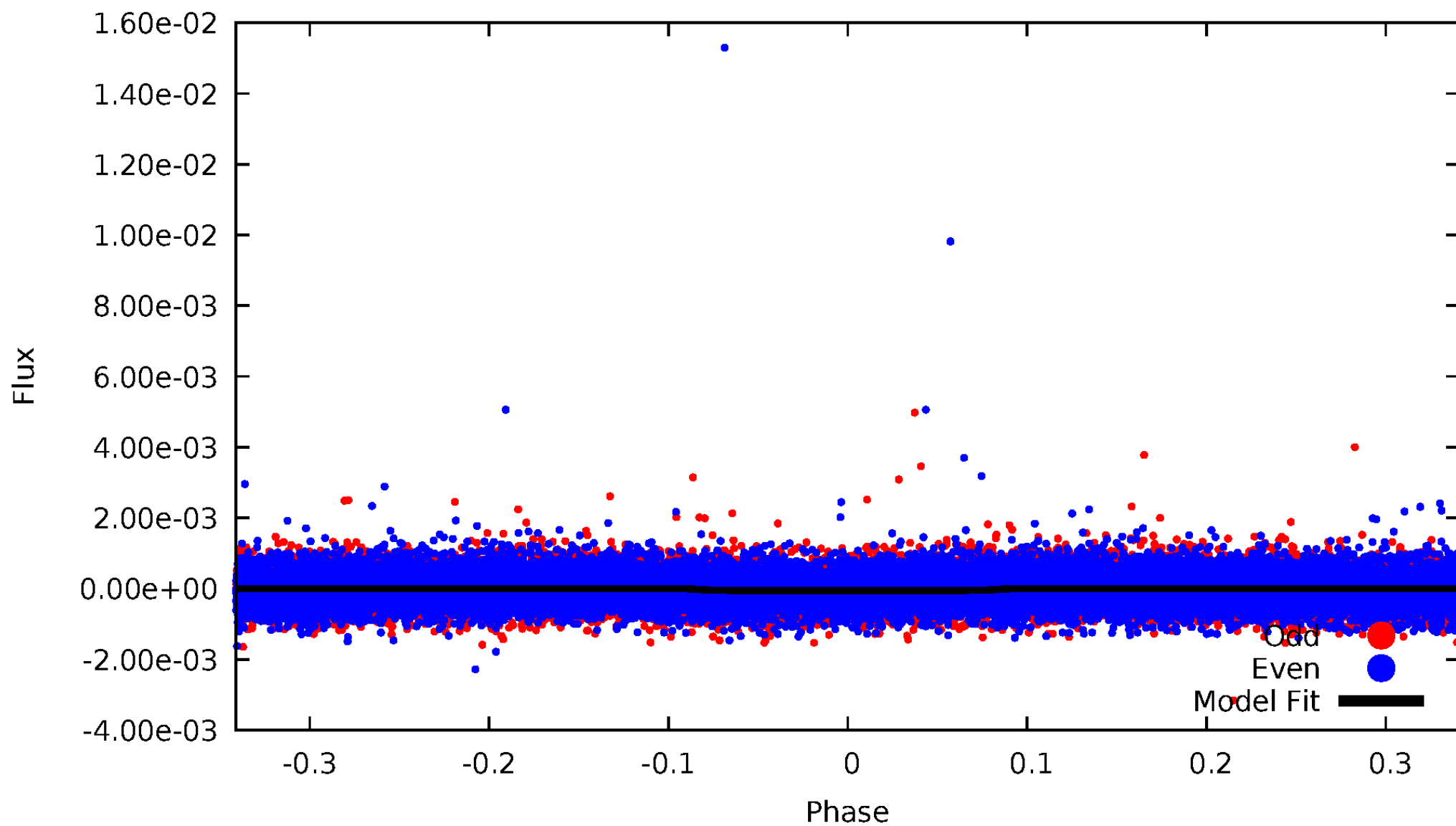


TCE 005390694-01



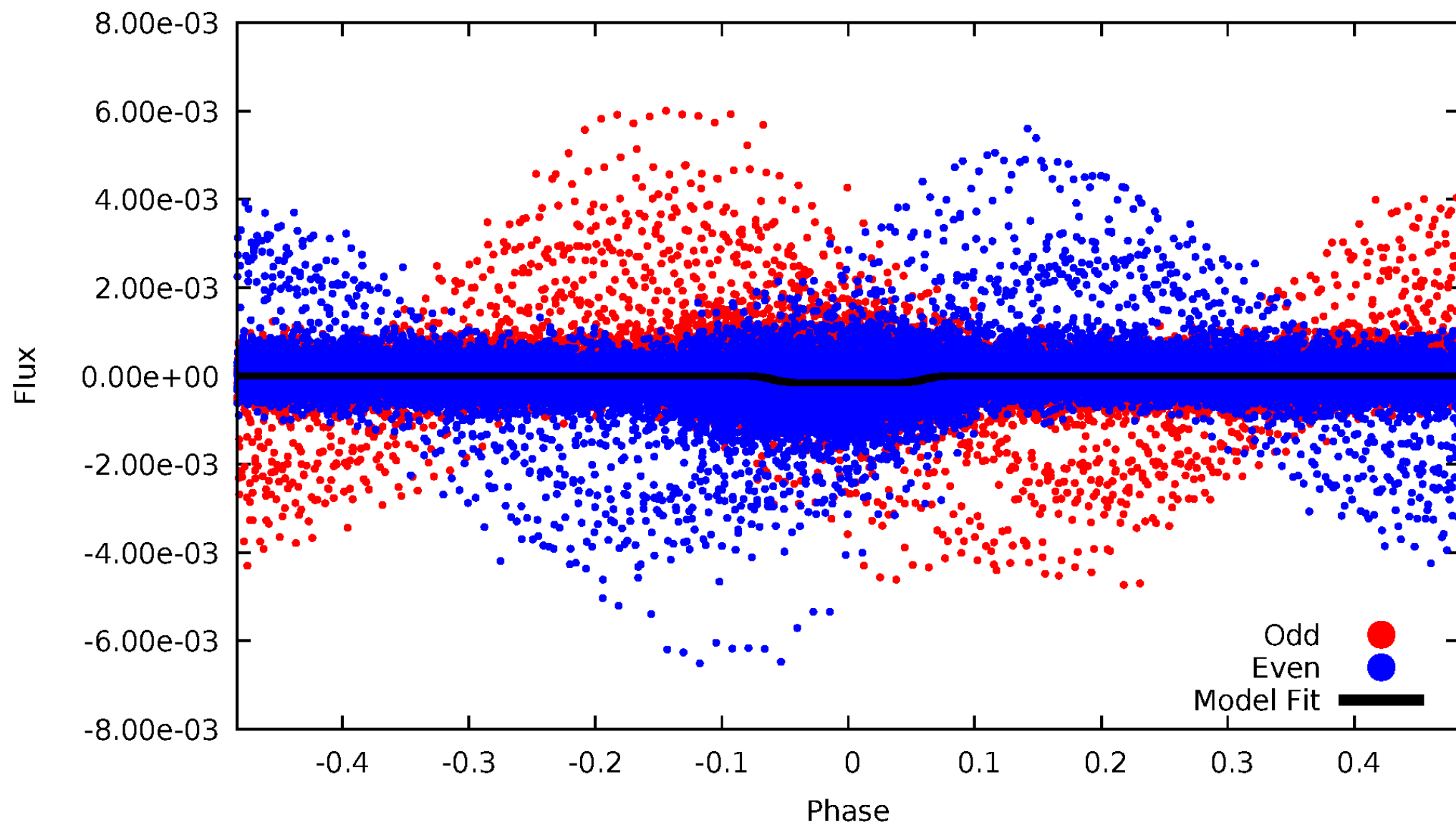
DV Odd/Even

TCE 005390694-01



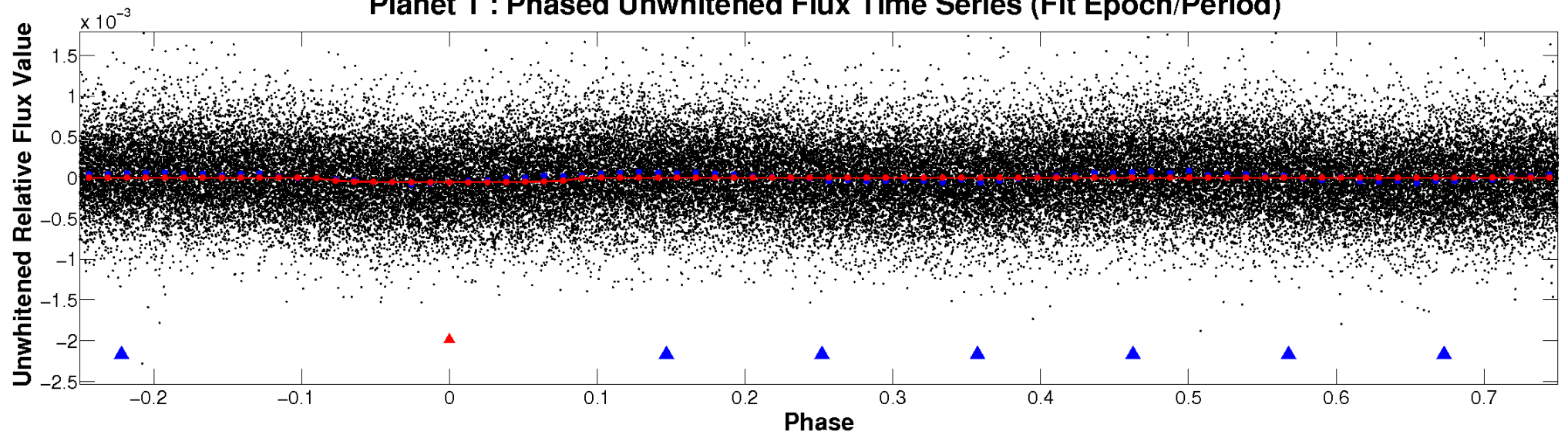
ALT Odd/Even

TCE 005390694-01

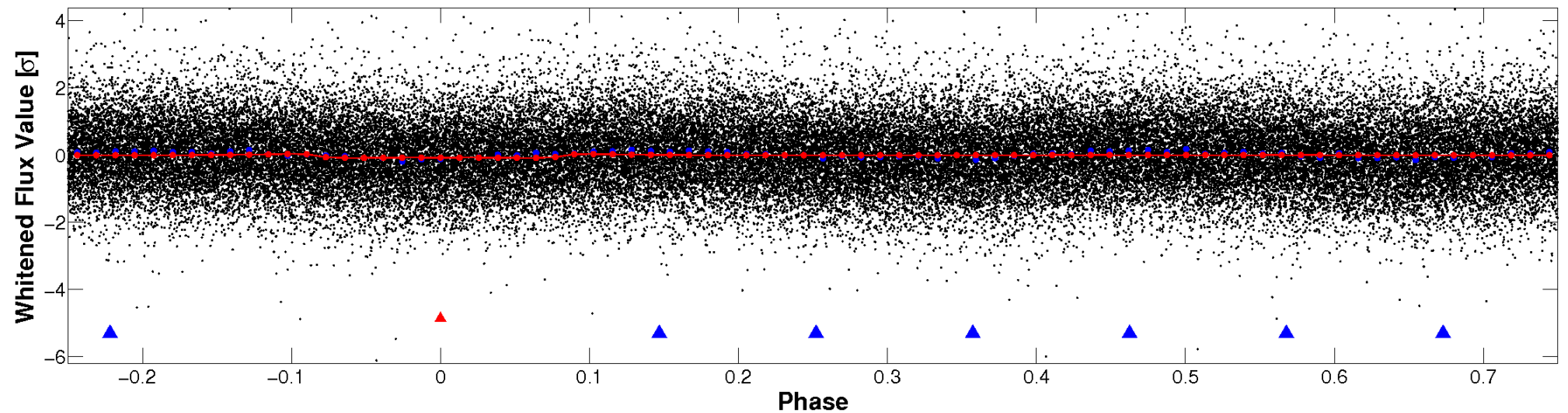


Non-Whitened Vs. Whitened Light Curve

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

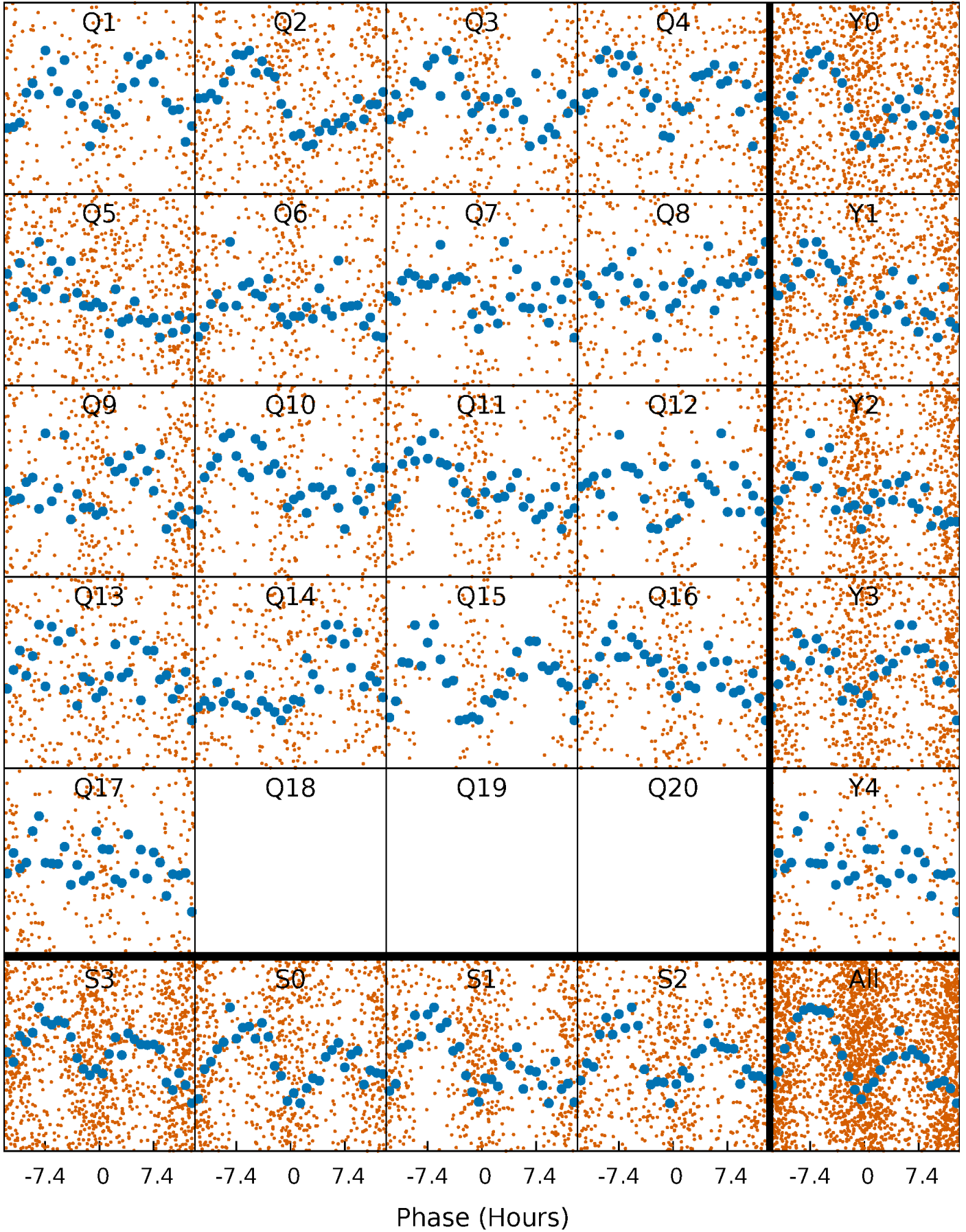


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



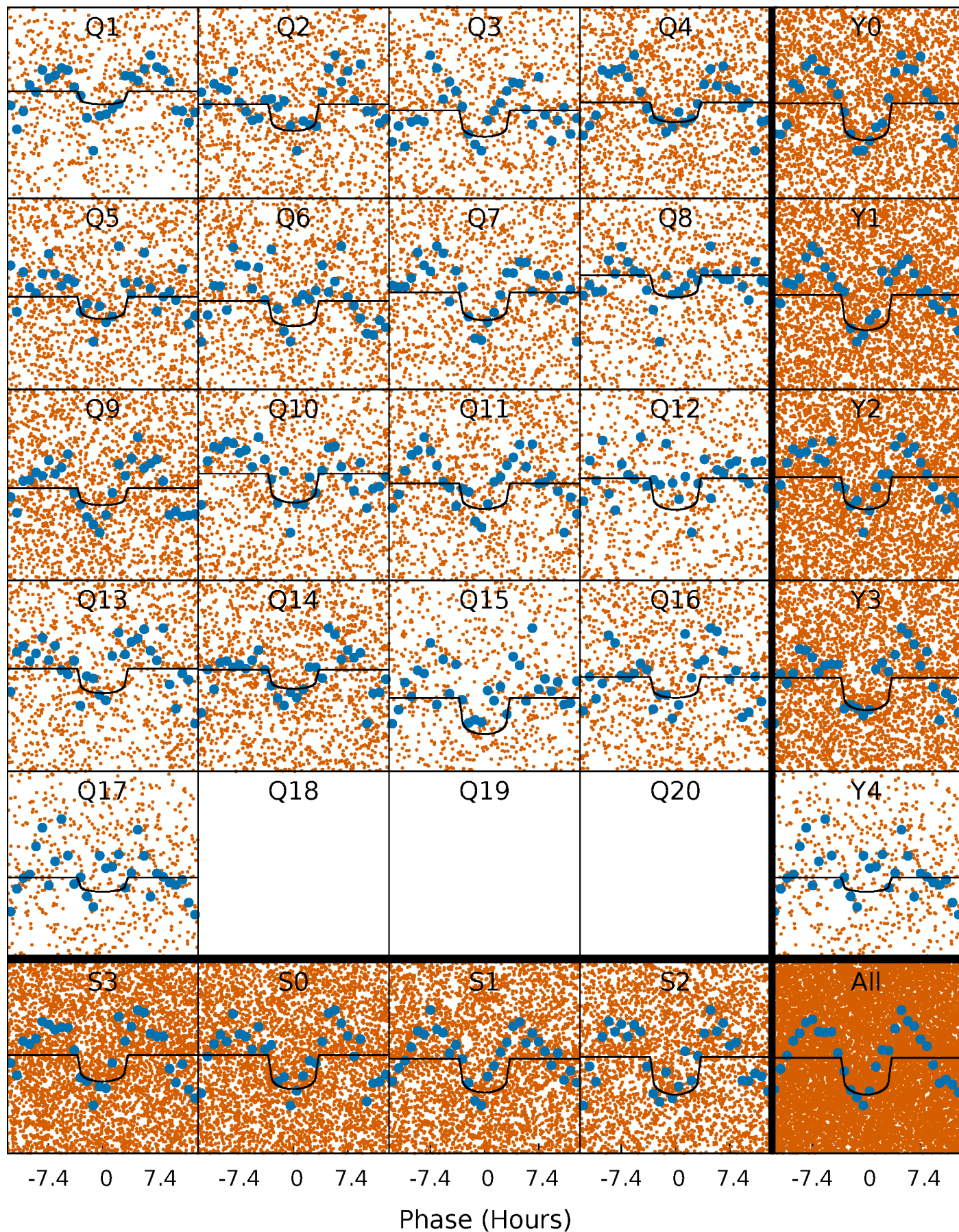
PDC Quarter-Phased Transit Curves

TCE 005390694-01 P= 1.592199 Days $T_0=133.072373$ (BKJD)



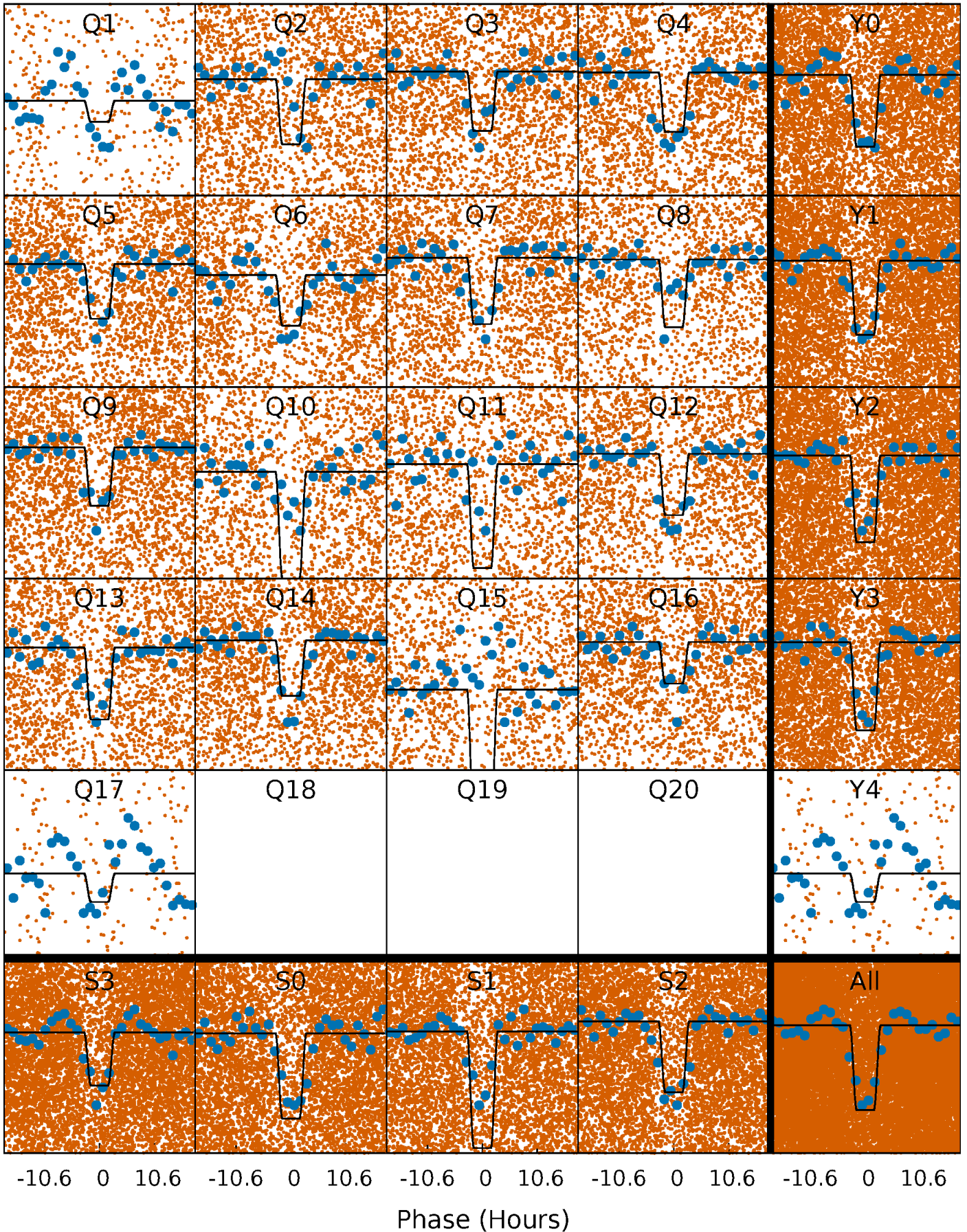
DV Quarter-Phased Transit Curves

TCE 005390694-01 P= 1.592199 Days $T_0=133.072373$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

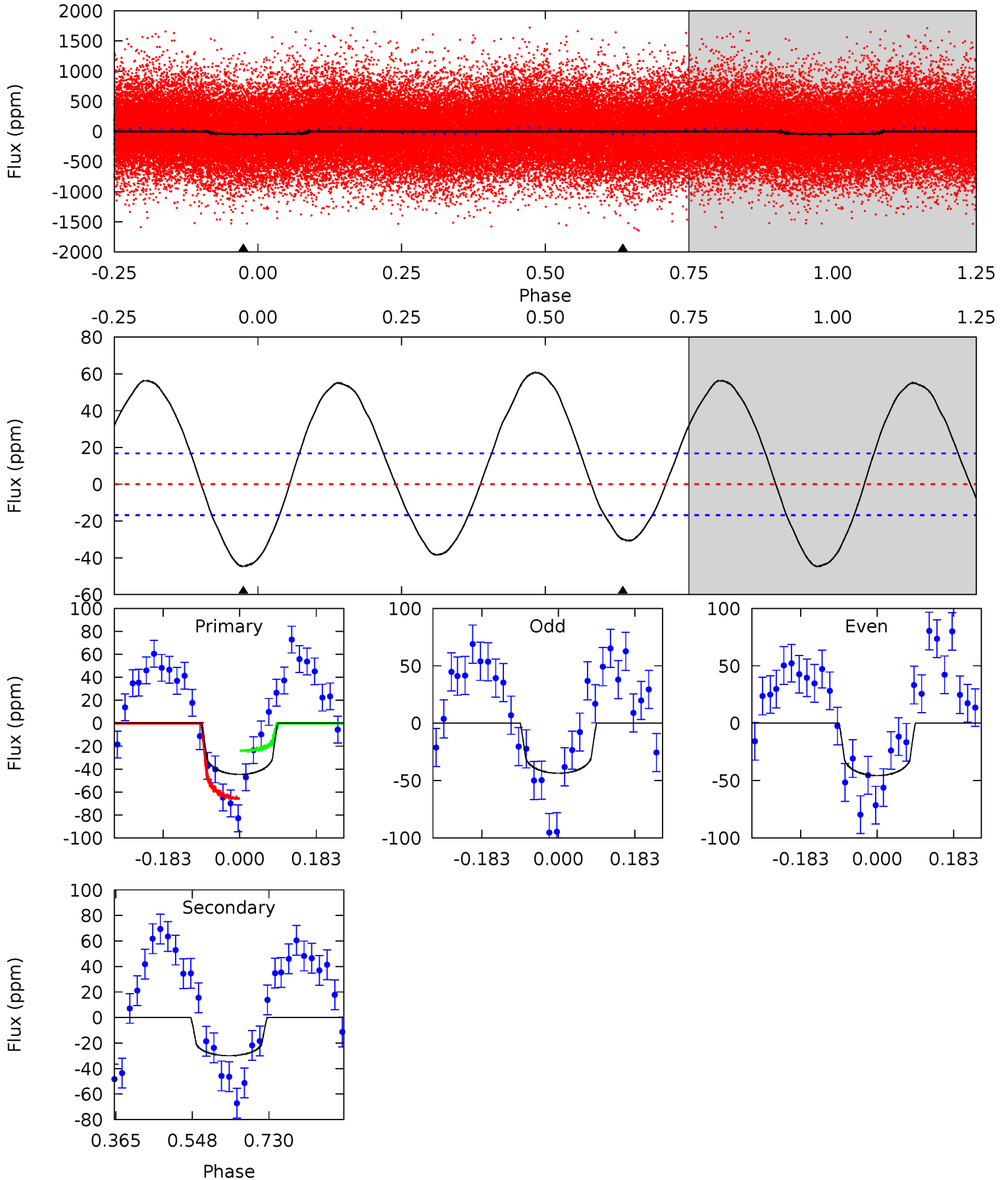
TCE 005390694-01 P= 1.592149 Days $T_0=133.069861$ (BKJD)



DV Model-Shift Uniqueness Test

005390694-01, P = 1.592199 Days, E = 131.480174 Days

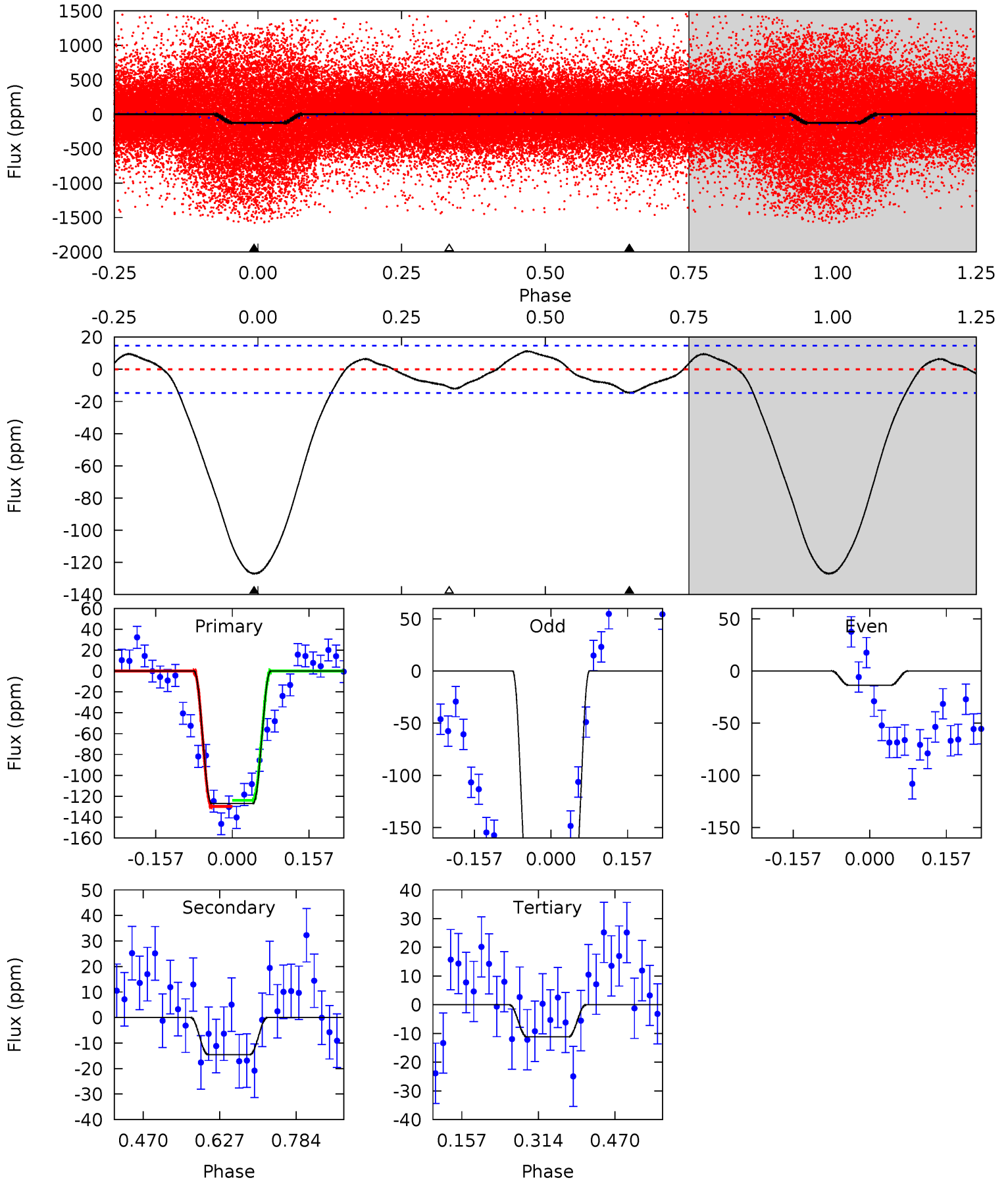
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	7.90	0	0	4.44	1.33	7.90	11.8	11.8	7.90	7.90	0.26	0.79	0.58	5.54



Alt Model-Shift Uniqueness Test

005390694-01, P = 1.592149 Days, E = 131.477712 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.7	4.42	3.41	0	4.47	1.42	2.06	35.3	38.7	1.01	4.42	33.8	1.26	0.08	0.90



Stellar Parameters For KIC 005390694

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6758^{+188}_{-235}	$4.383^{+0.060}_{-0.168}$	$-0.320^{+0.250}_{-0.350}$	$1.153^{+0.318}_{-0.136}$	$1.178^{+0.153}_{-0.153}$	$1.083^{+0.341}_{-0.540}$
	+3%/-3%	+1%/-4%	+78%/-109%	+28%/-12%	+13%/-13%	+31%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005390694-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-30 ± 4	$1.02^{+0.74}_{-0.60}$	2705^{+174}_{-128}	5594^{+3802}_{-1179}	12^{+64}_{-8}
Alt.	-15 ± 3	$1.61^{+0.76}_{-0.72}$	2716^{+160}_{-130}	3934^{+1049}_{-626}	$2.355^{+4.843}_{-1.364}$

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

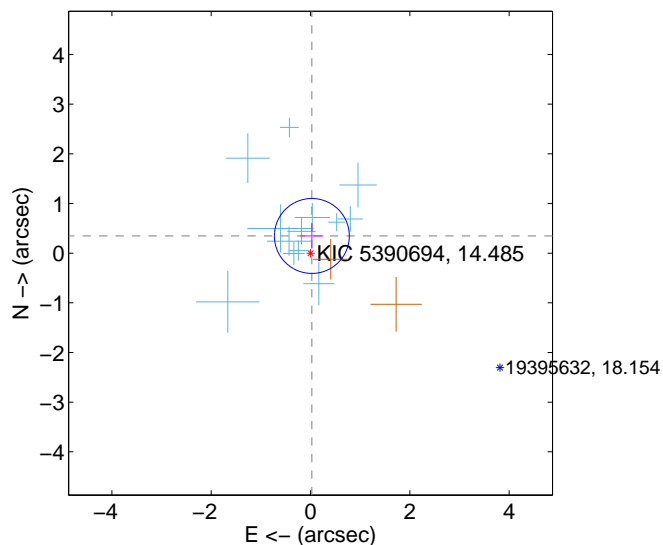
Supplemental centroid analysis for 005390694-01. Kepler magnitude: 14.48. Transit SNR 8.42

There are 13 quarters with good PRF difference image offsets

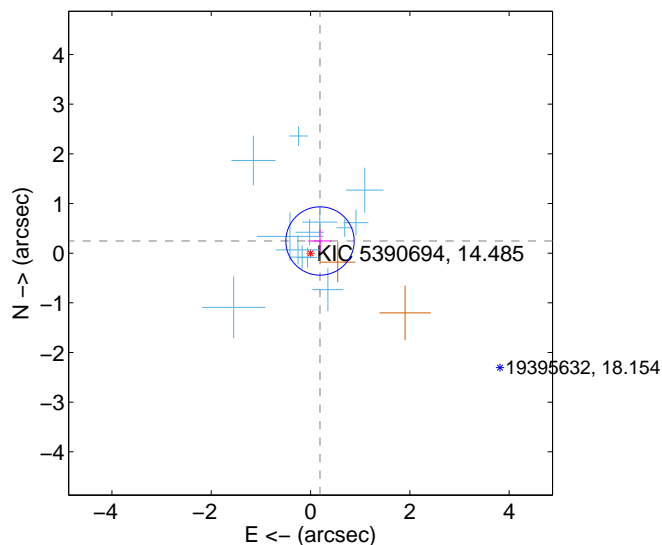
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.348 ± 0.251	1.38	-0.027 ± 0.231	0.347 ± 0.255
PRF-fit source offset from KIC position	0.310 ± 0.229	1.35	-0.190 ± 0.235	0.245 ± 0.236
photometric centroid source offset	0.72 ± 1.11	0.65	-0.72 ± 1.11	-0.05 ± 0.98

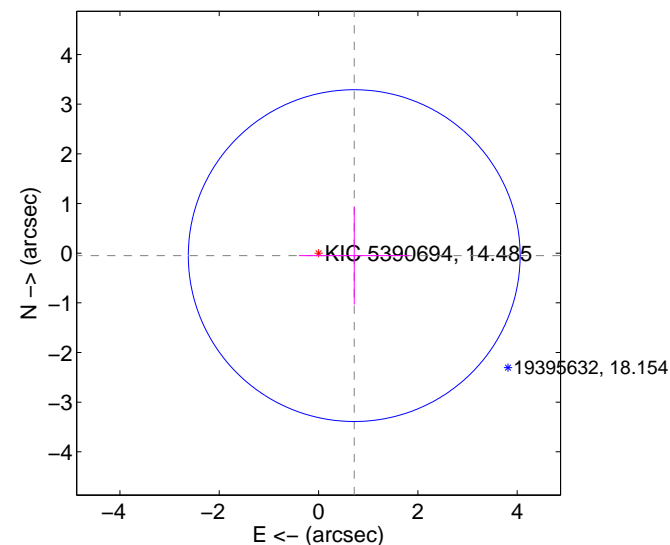
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

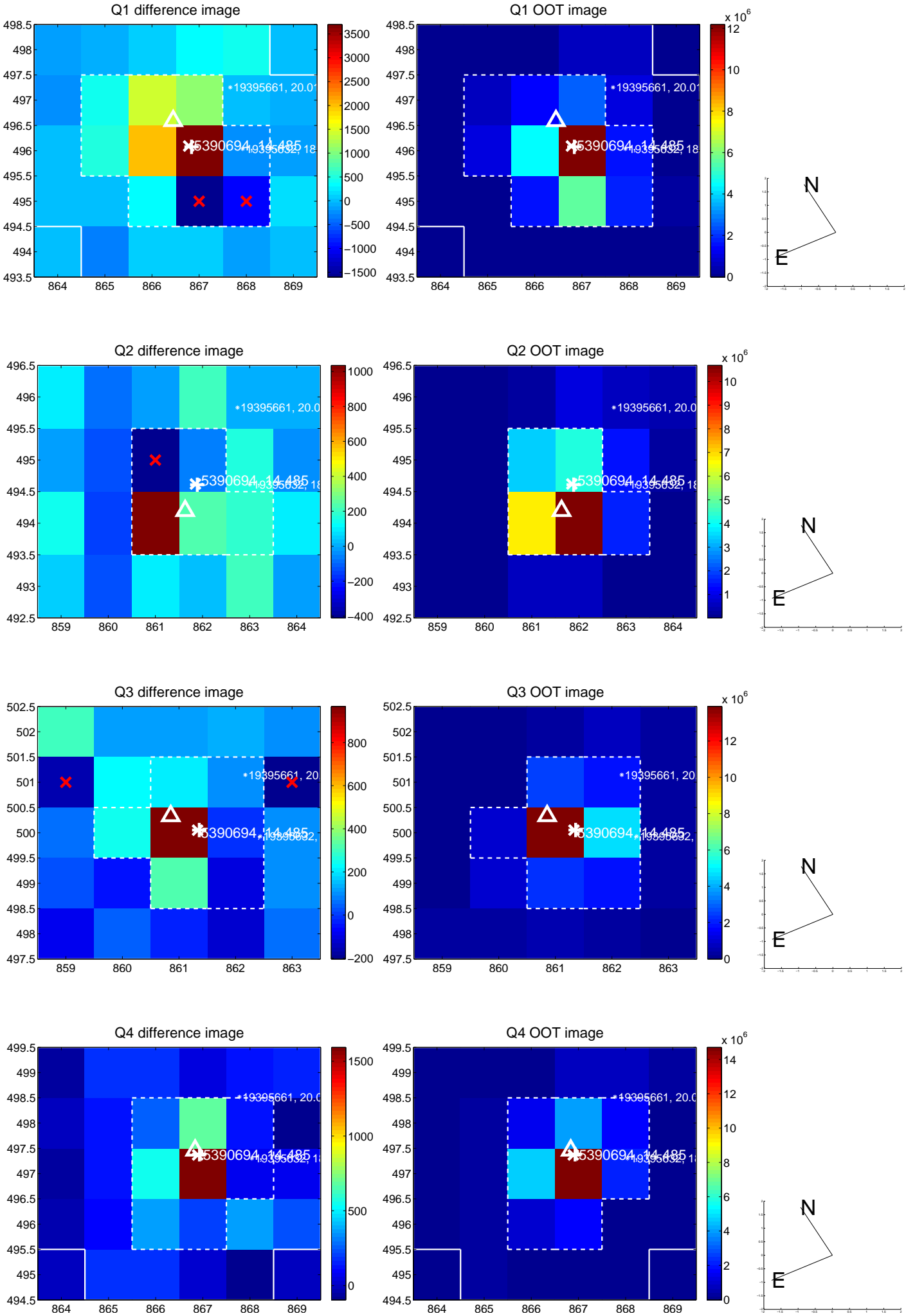


offset from photometric centroids

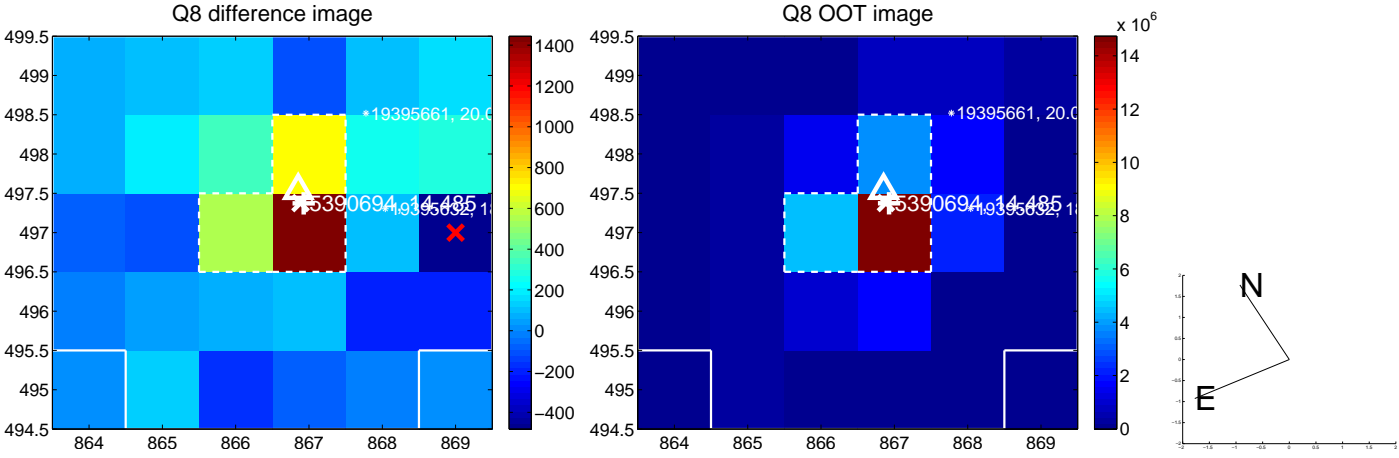
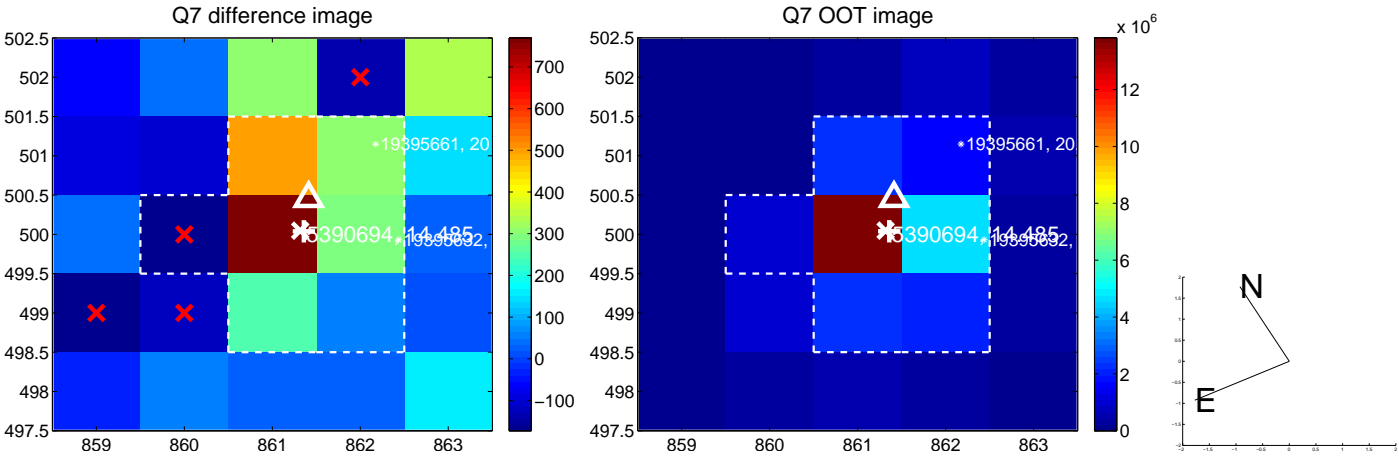
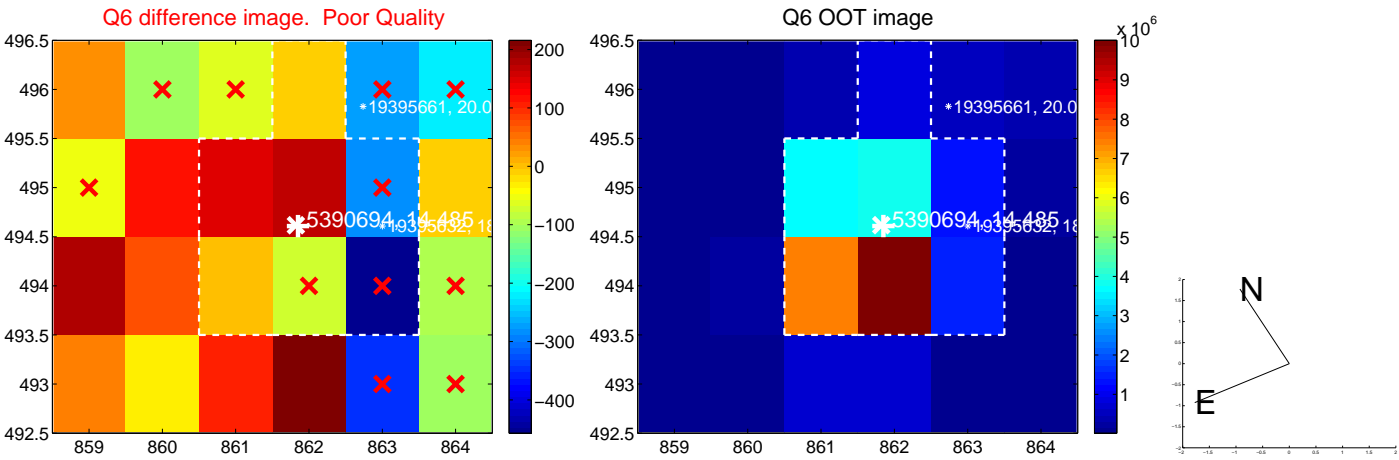
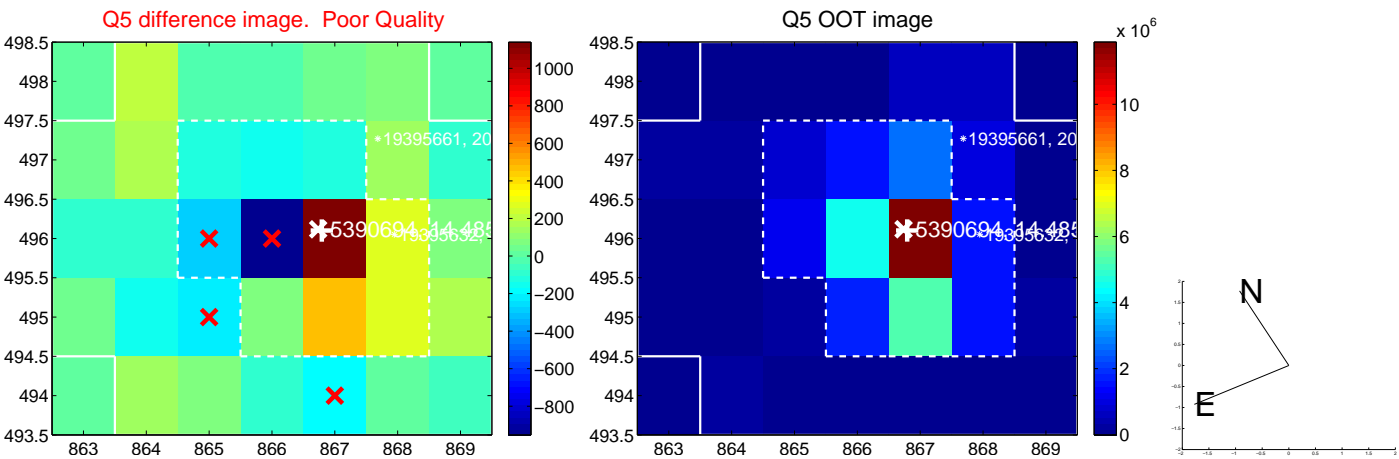


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

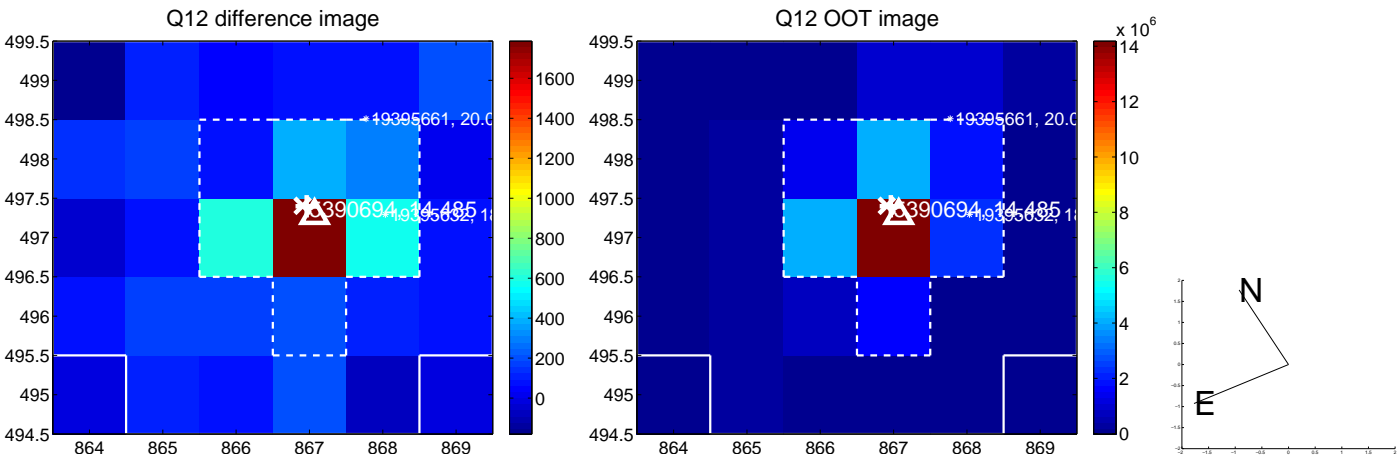
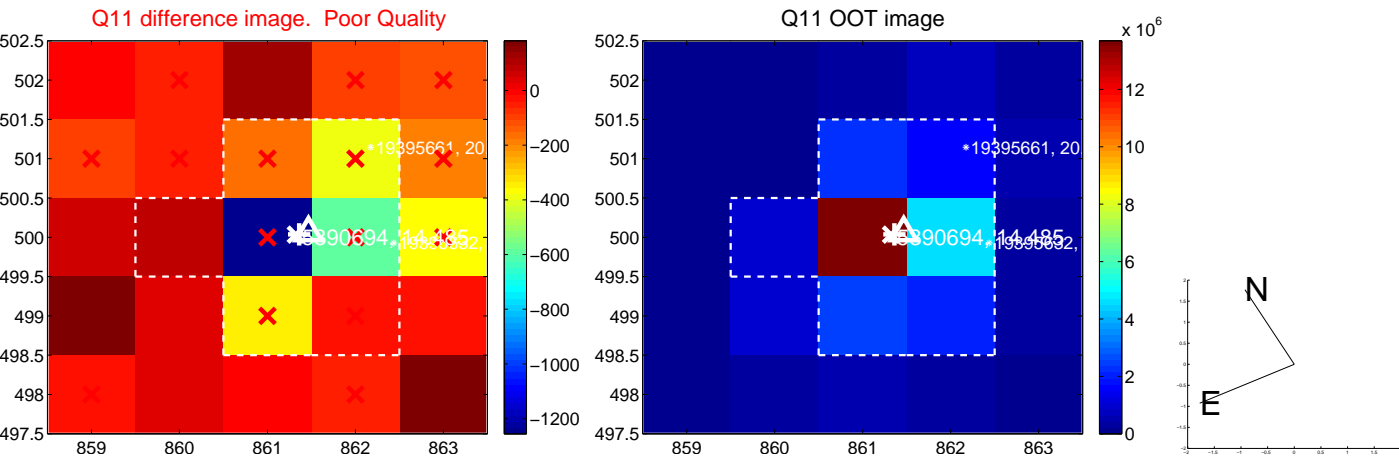
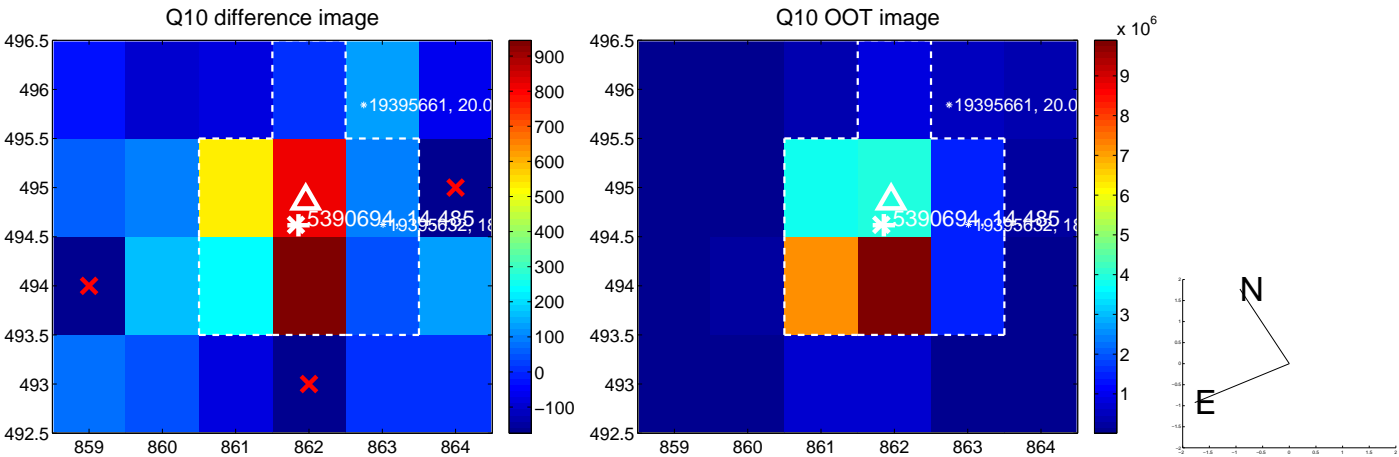
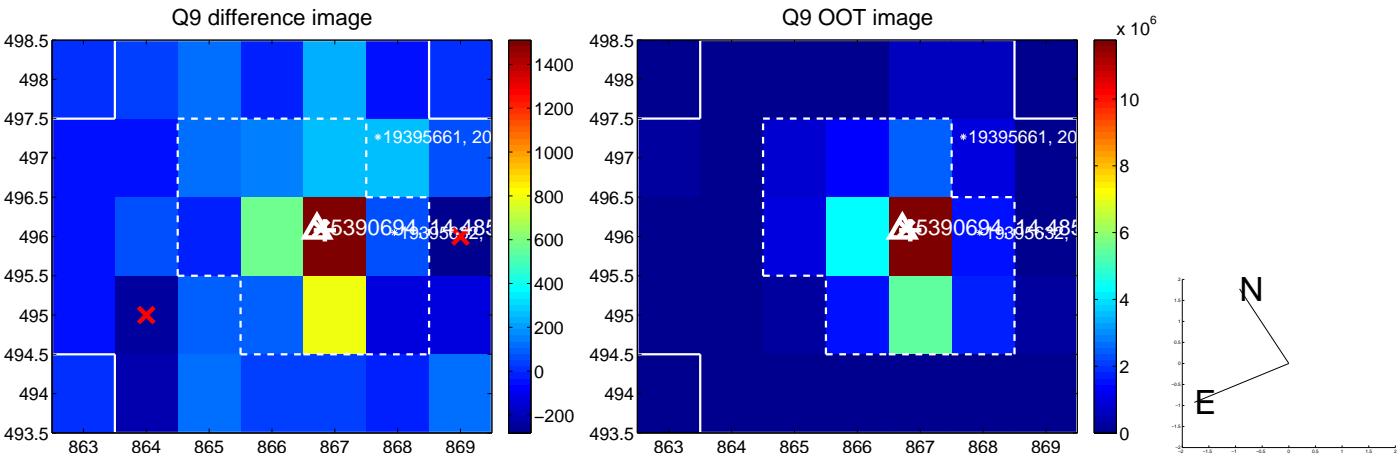
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



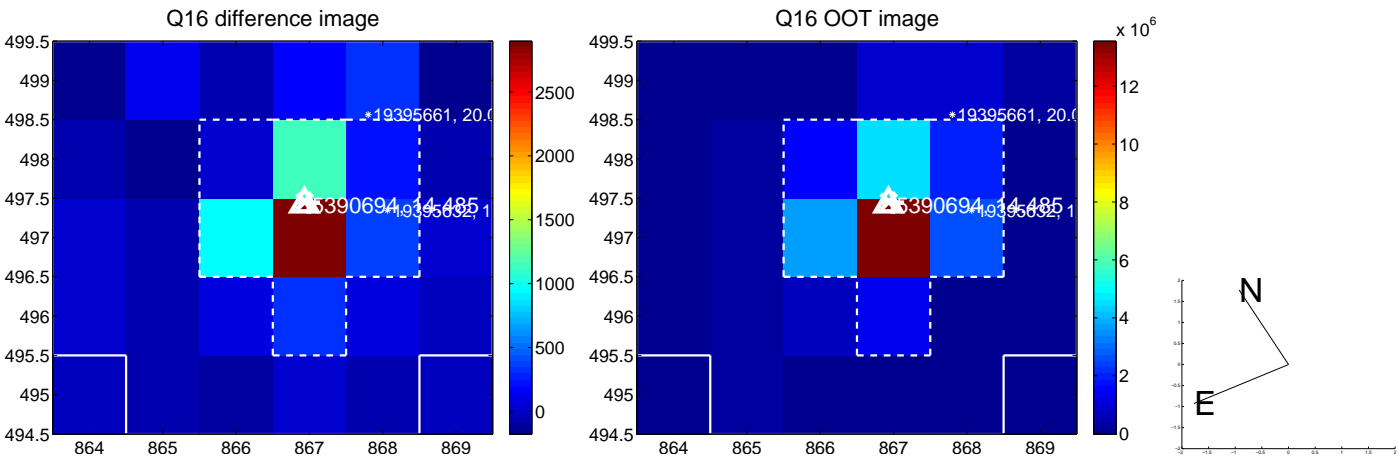
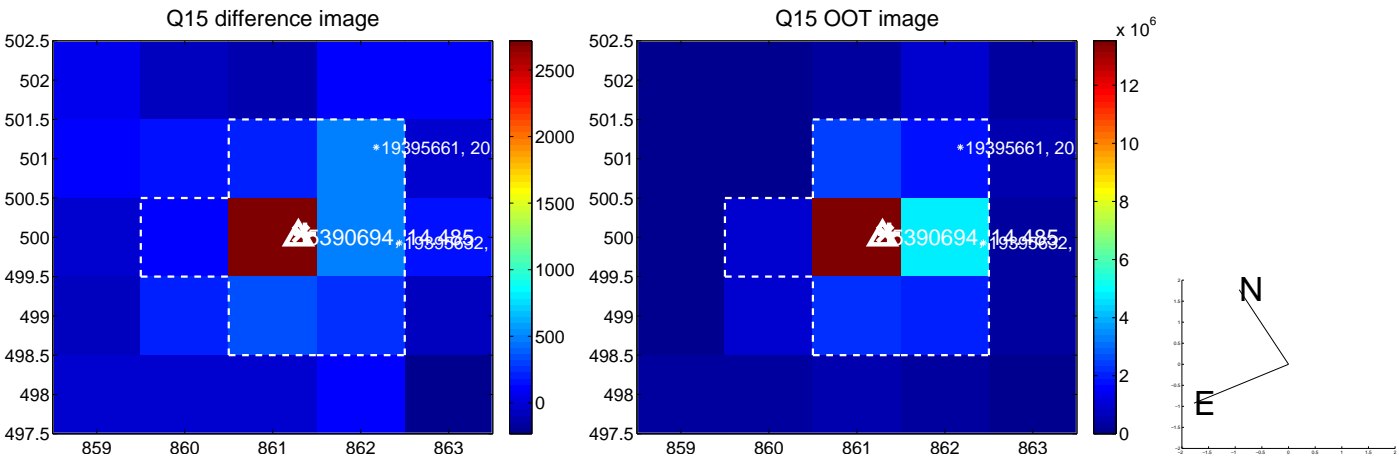
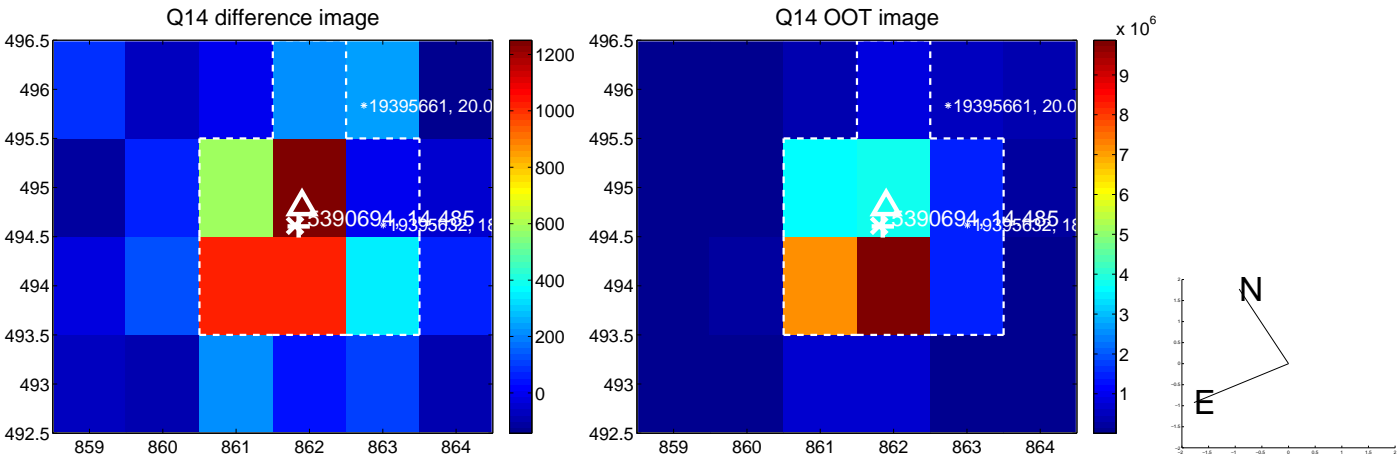
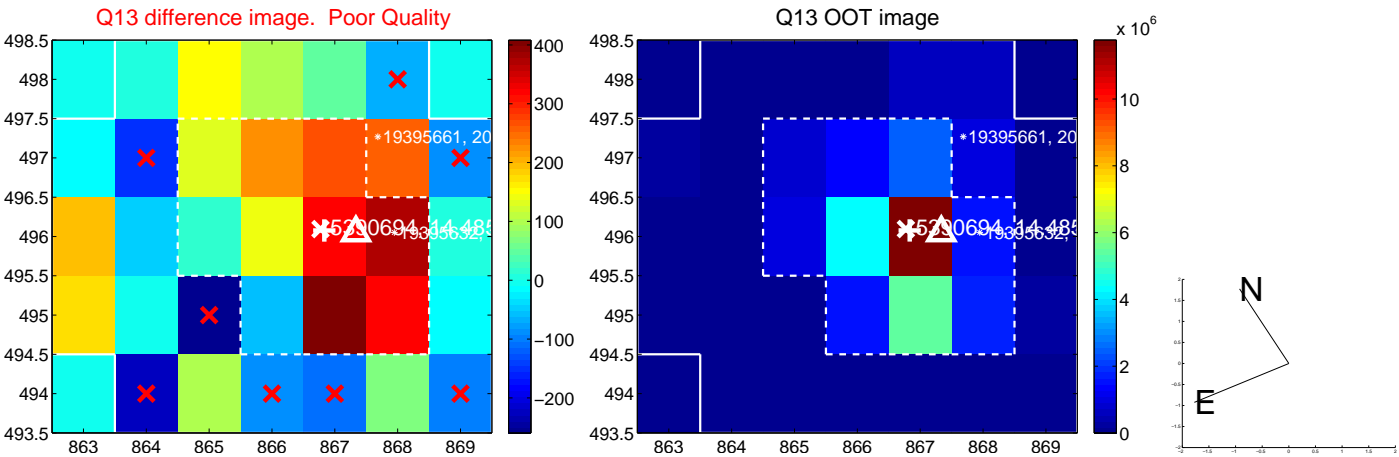
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



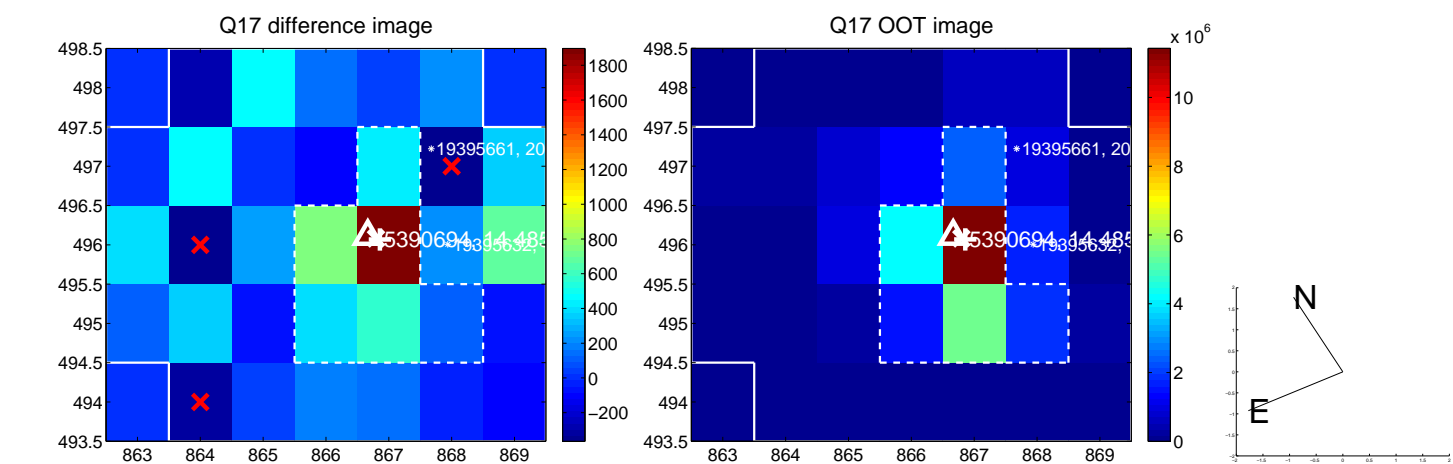
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



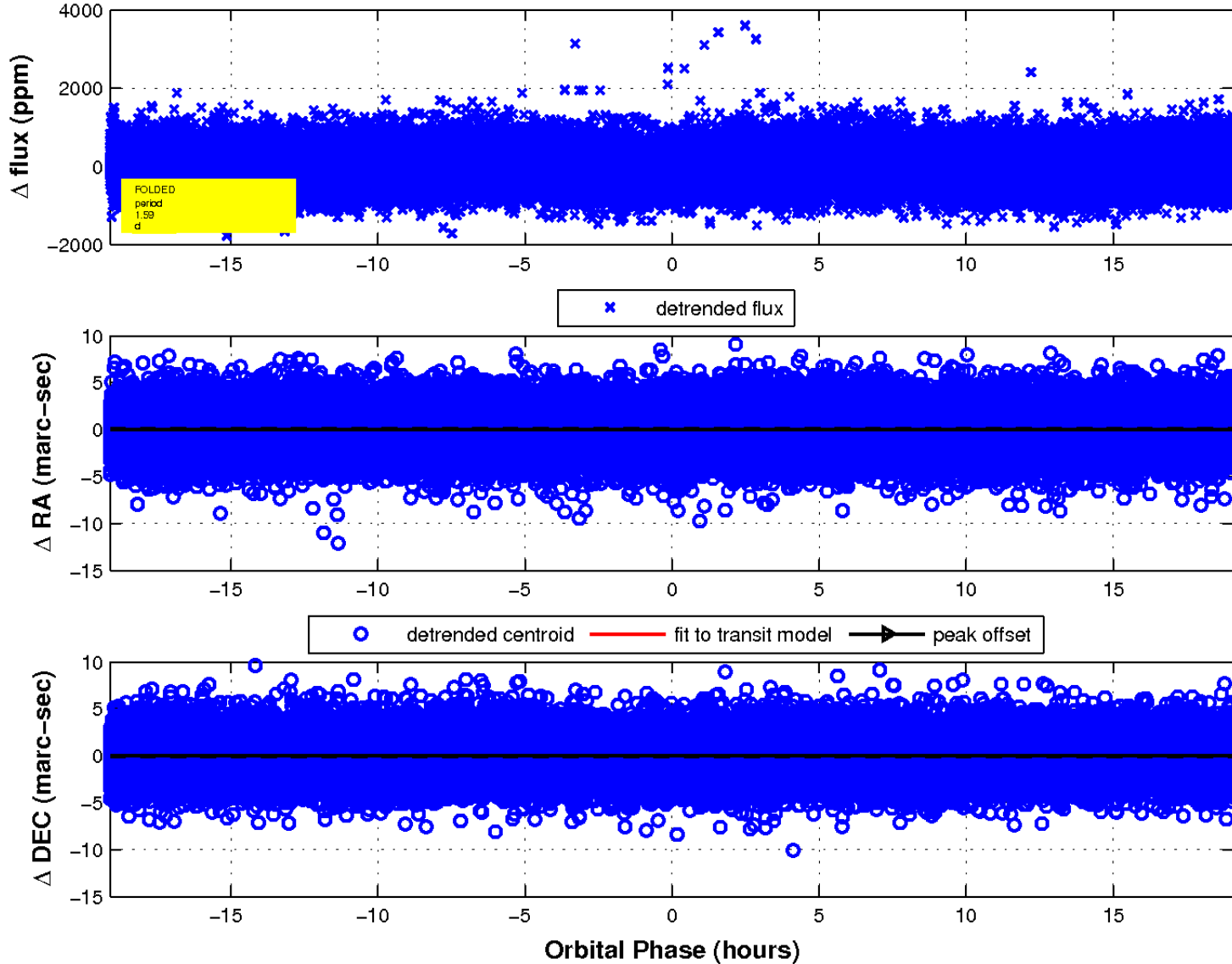
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

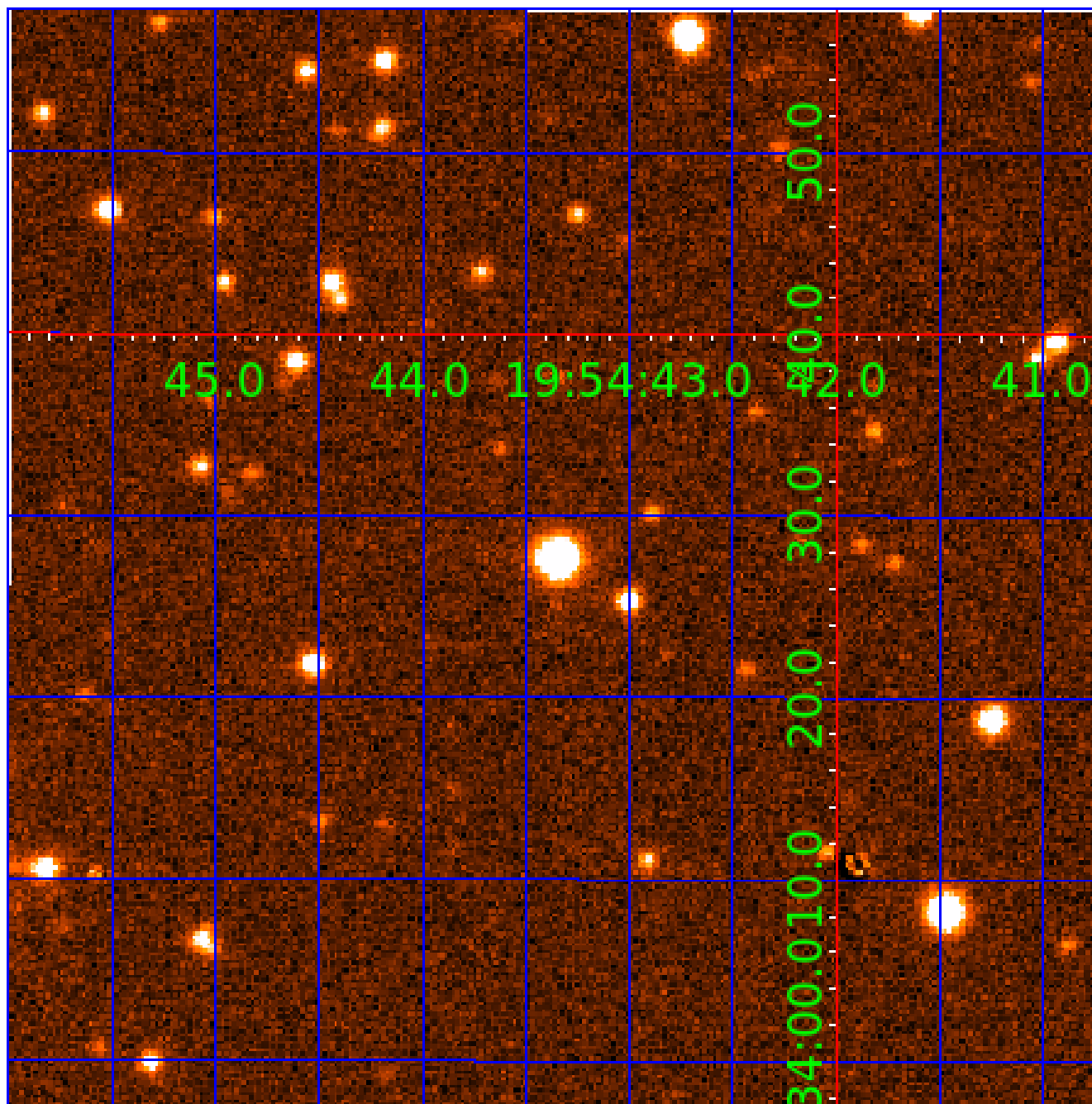


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005390694

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})
005390694-01	OBS	No	1.592199	133.072373	57.1	6.518	9.1	8.4	1.15	6758	0.88	3138.51
005390694-02	OBS	No	182.935313	312.637724	333.4	10.406	7.8	4.9	1.15	6758	2.31	5.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005390694-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
005390694-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—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.

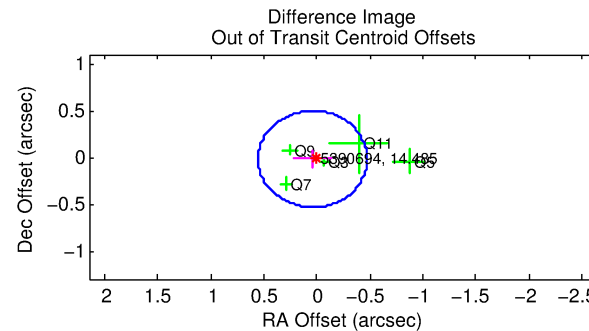
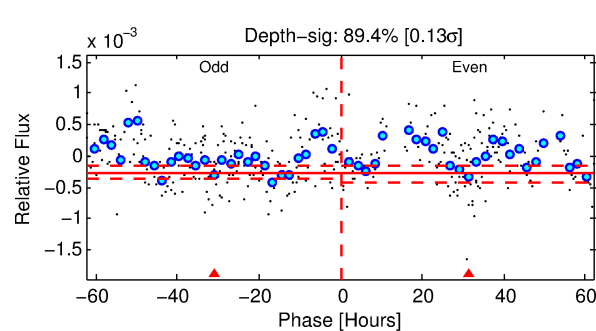
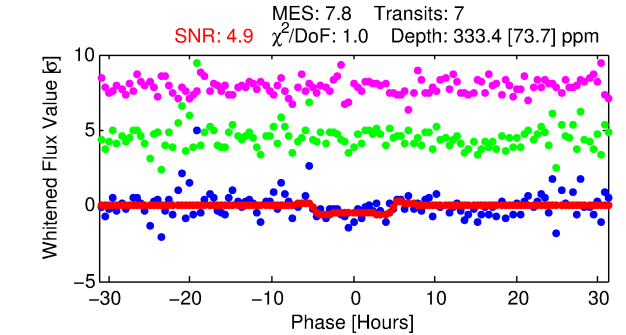
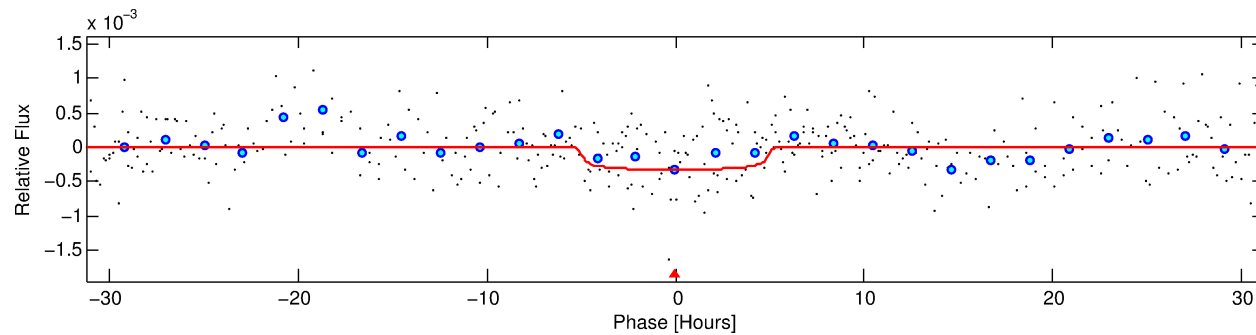
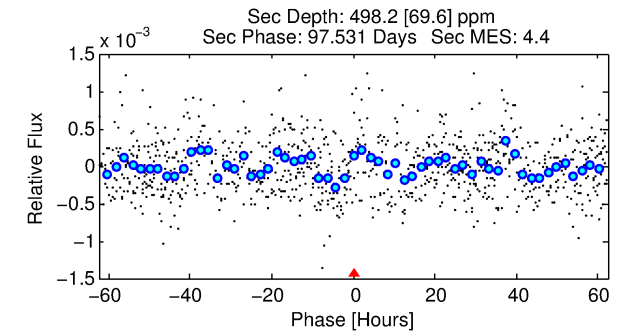
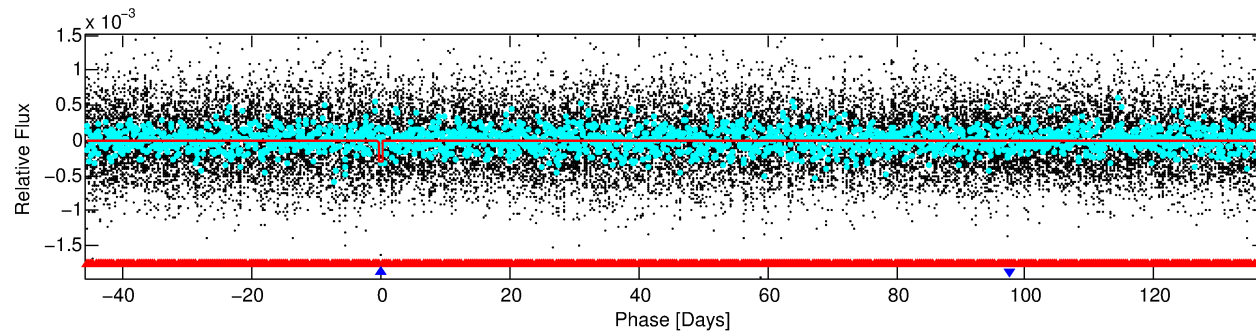
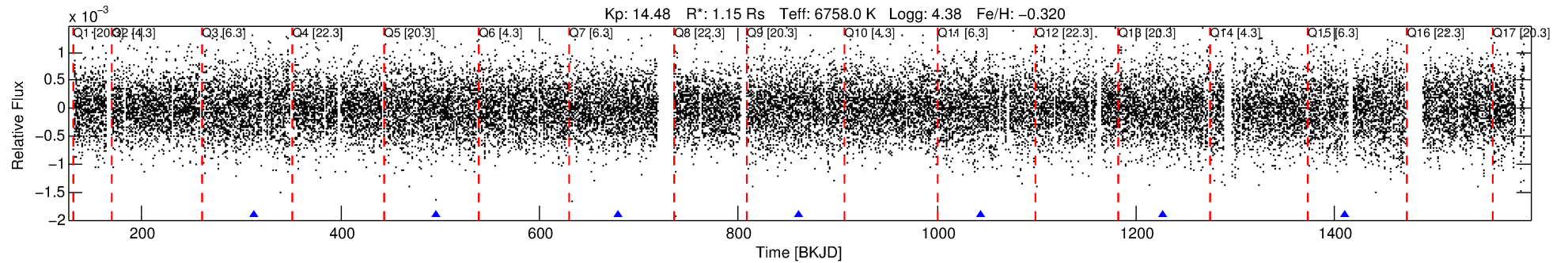
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005390694-02

No Significant Match Found

DV One-Page Summary

KIC: 5390694 Candidate: 2 of 2 Period: 182.935 d



DV Fit Results:

Period = 182.93531 [0.01041] d
Epoch = 312.6377 [0.0356] BKJD
Rp/R* = 0.0183 [0.0081]
a/R* = 87.89 [216.41]
b = 0.78 [1.25]
Seff = 5.62 [1.94]
Teq = 393 [34] K
Rp = 2.31 [1.21] Re
a = 0.6649 [0.1493] AU
Ag = 22787.77 [21737.96] [1.05 σ]
Teffp = 7458 [1698] K [4.16 σ]

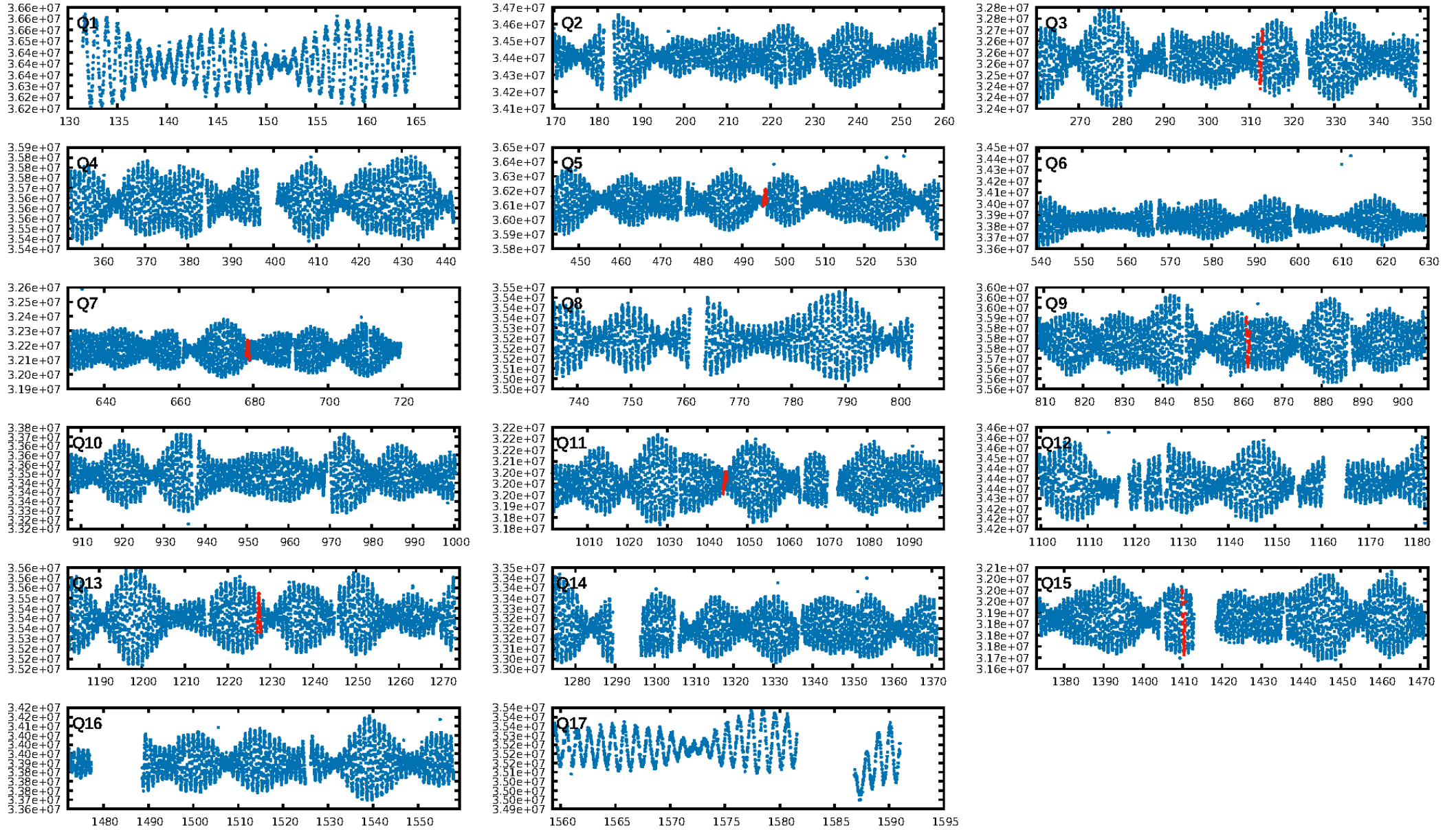
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [354.44 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 71.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.71e-11
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 16.35
Centroid-sig: 1.3%
Centroid-so: 3.128 arcsec [1.71 σ]
OotOffset-rm: 0.046 arcsec [0.27 σ]
KicOffset-rm: 0.126 arcsec [0.85 σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/5]

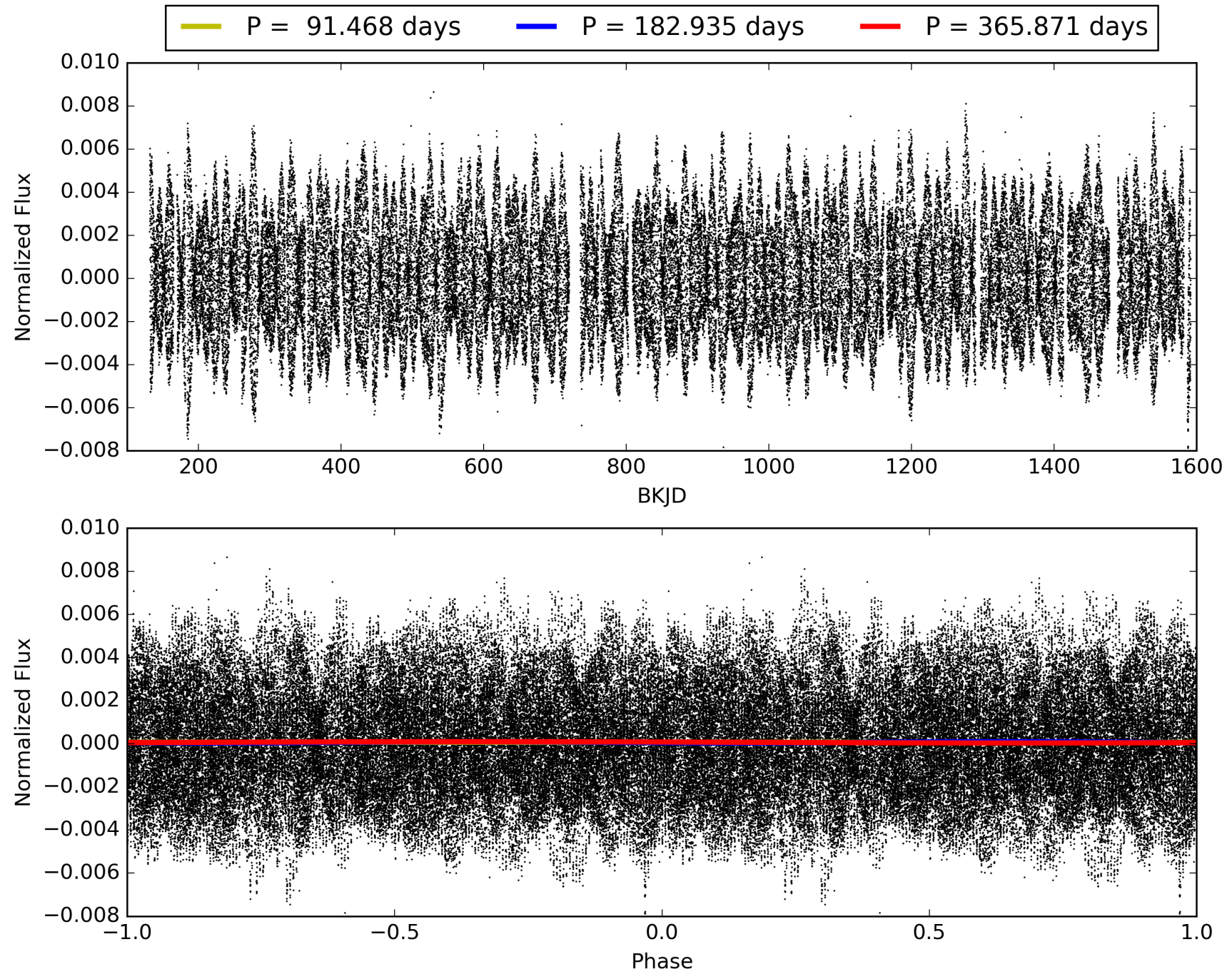
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:34:27 Z

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

TCE 005390694-02, PDC Light Curves

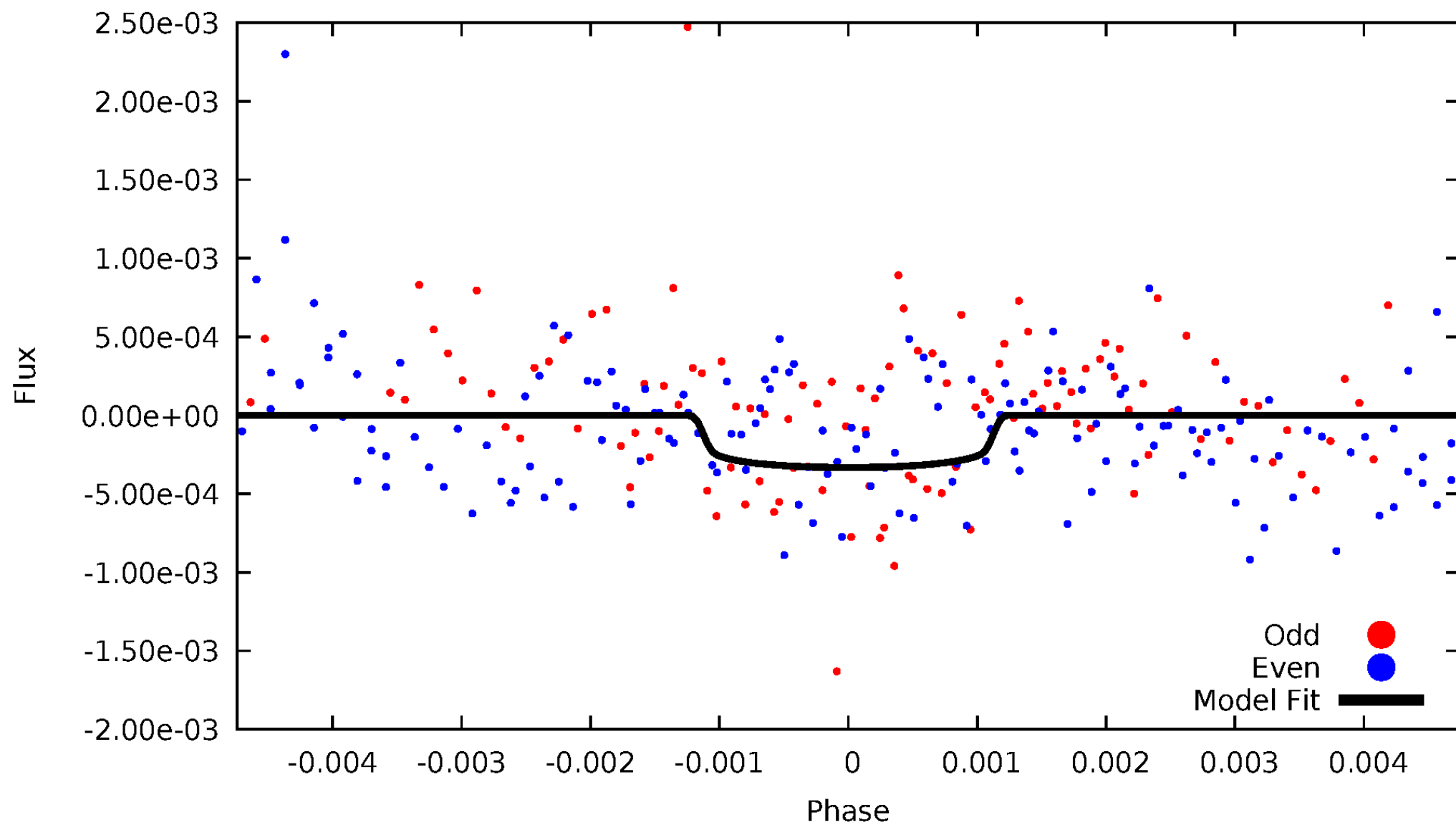


TCE 005390694-02



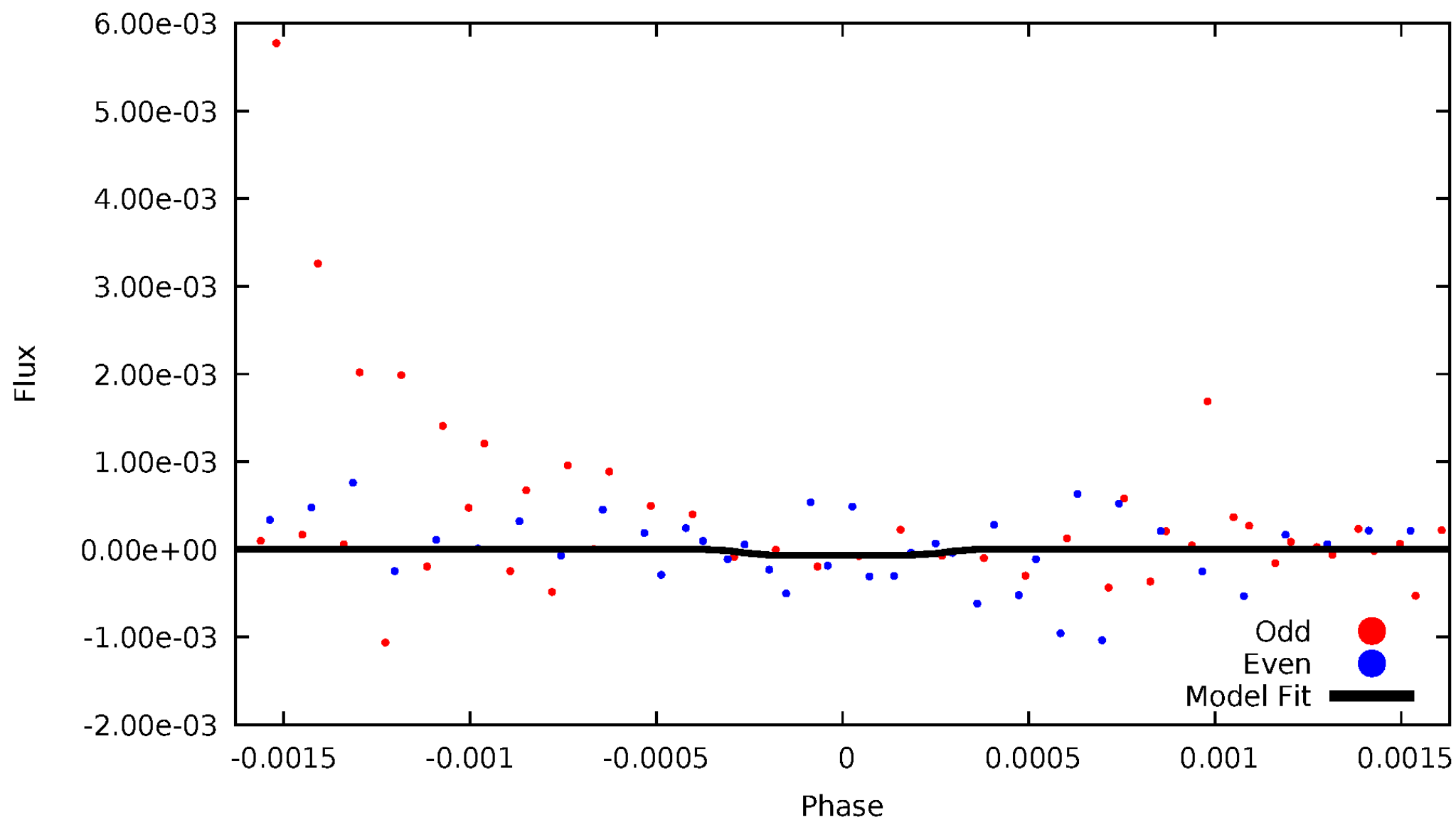
DV Odd/Even

TCE 005390694-02



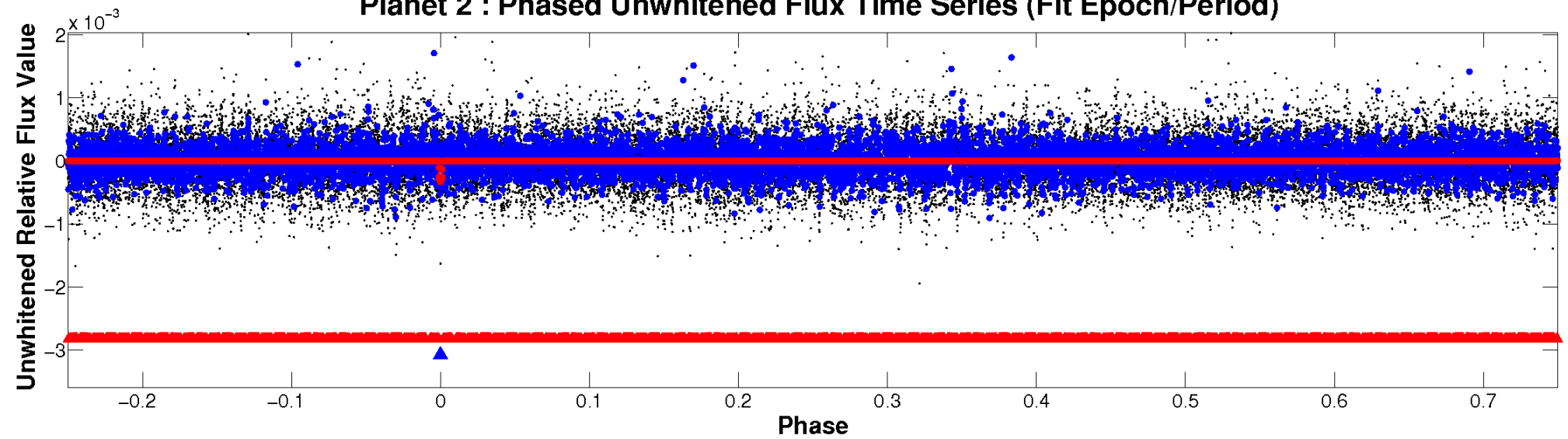
ALT Odd/Even

TCE 005390694-02

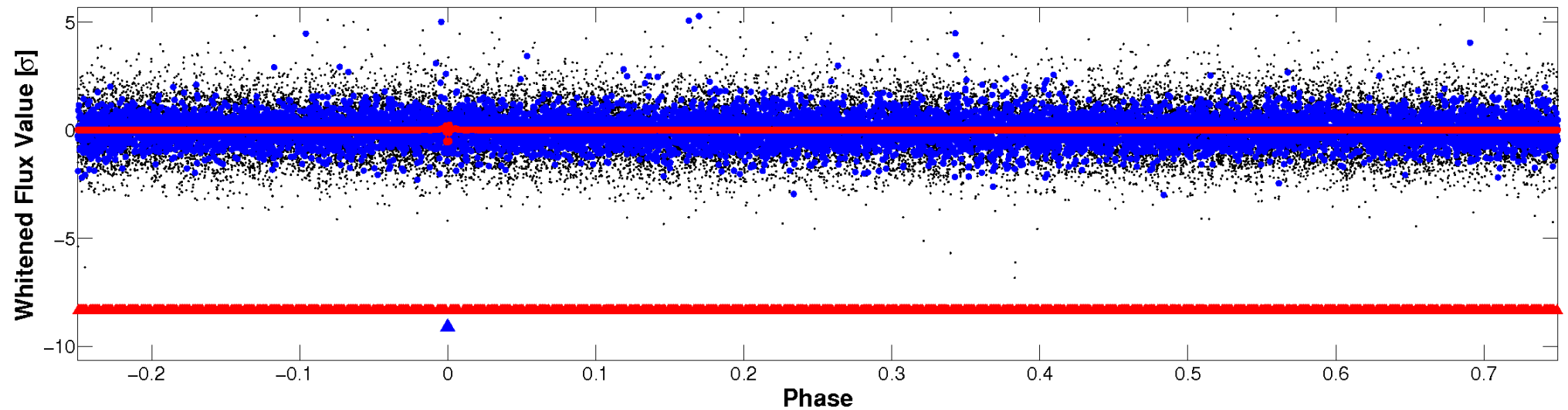


Non-Whitened Vs. Whitened Light Curve

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

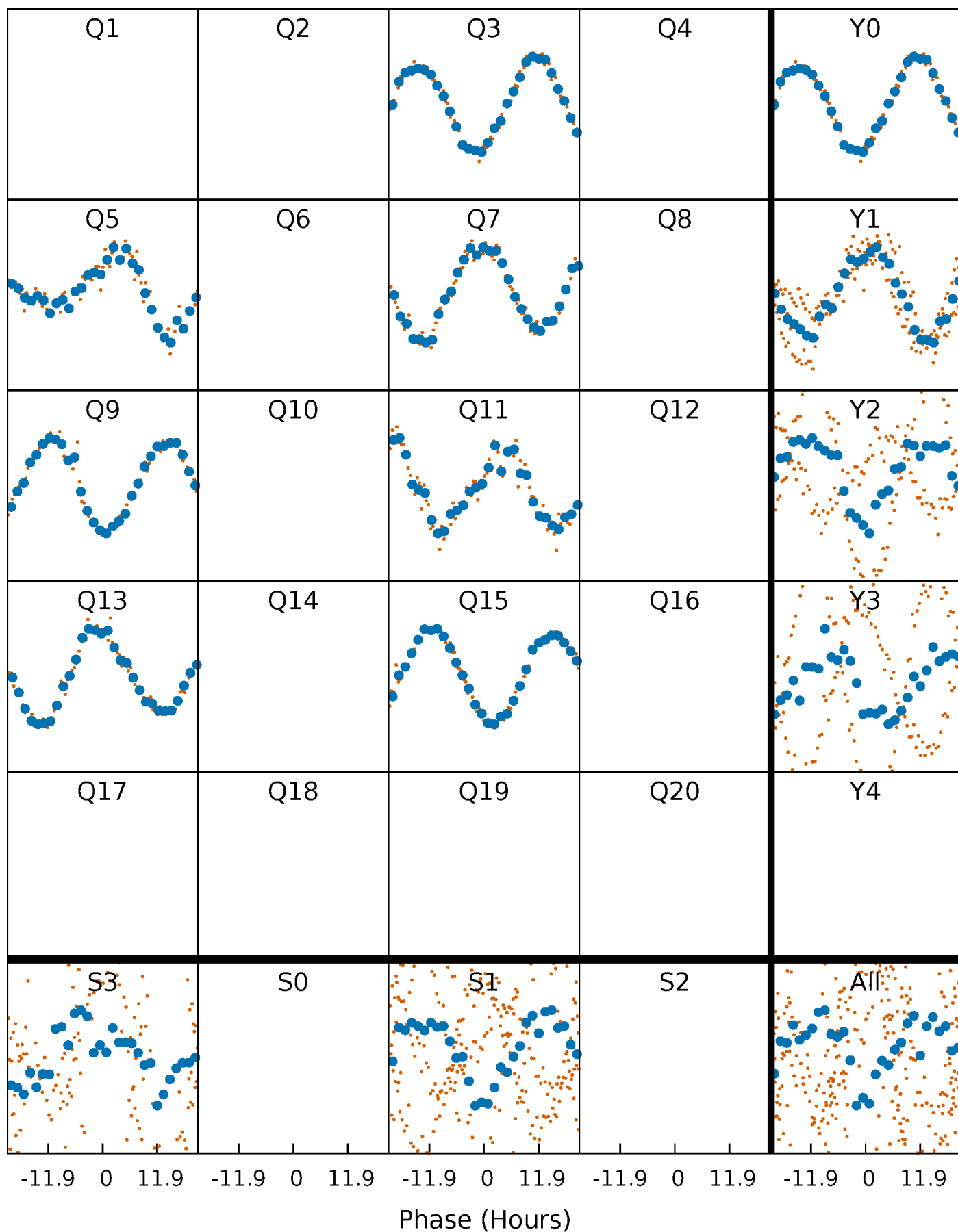


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



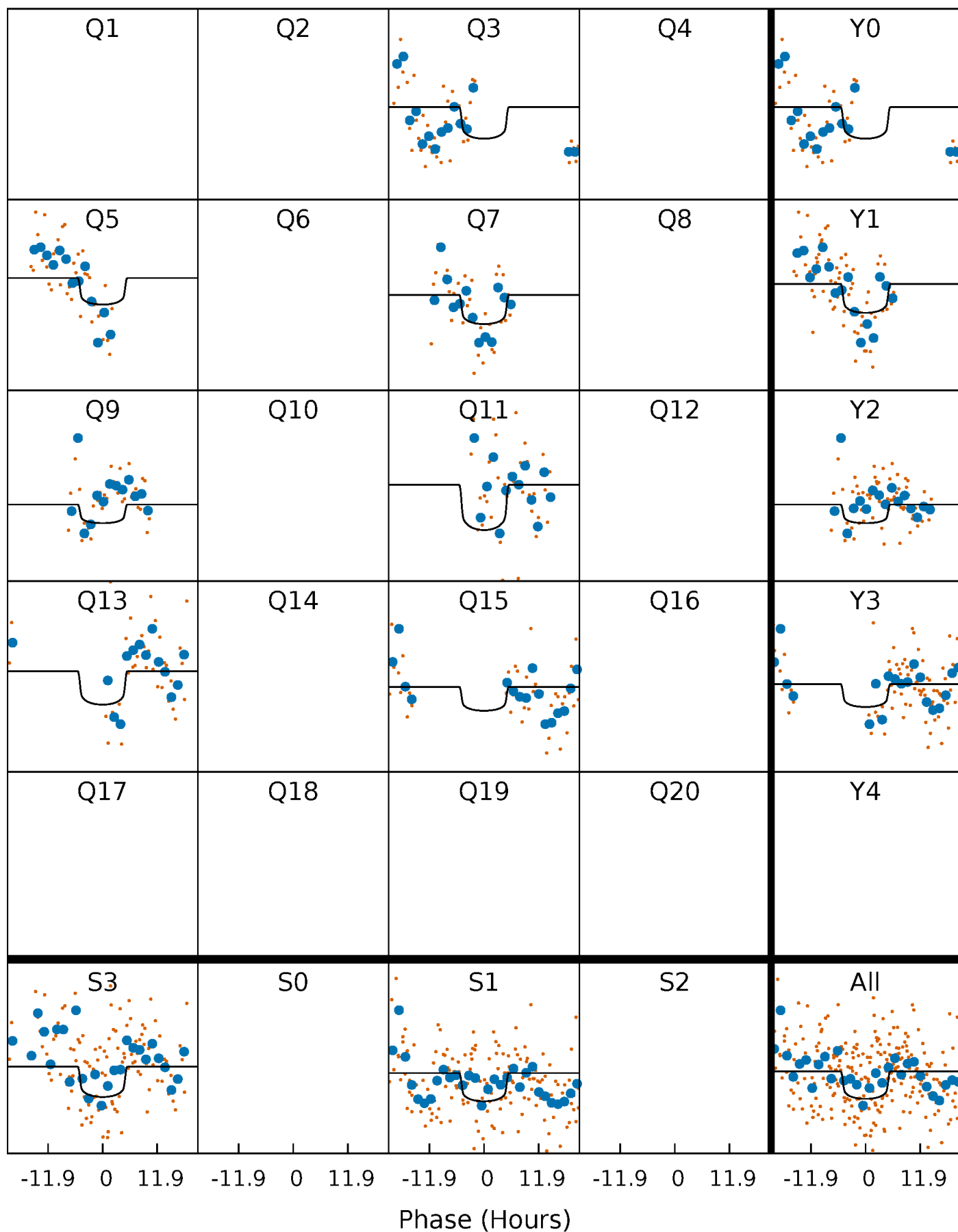
PDC Quarter-Phased Transit Curves

TCE 005390694-02 $P=182.935313$ Days $T_0=312.637724$ (BKJD)



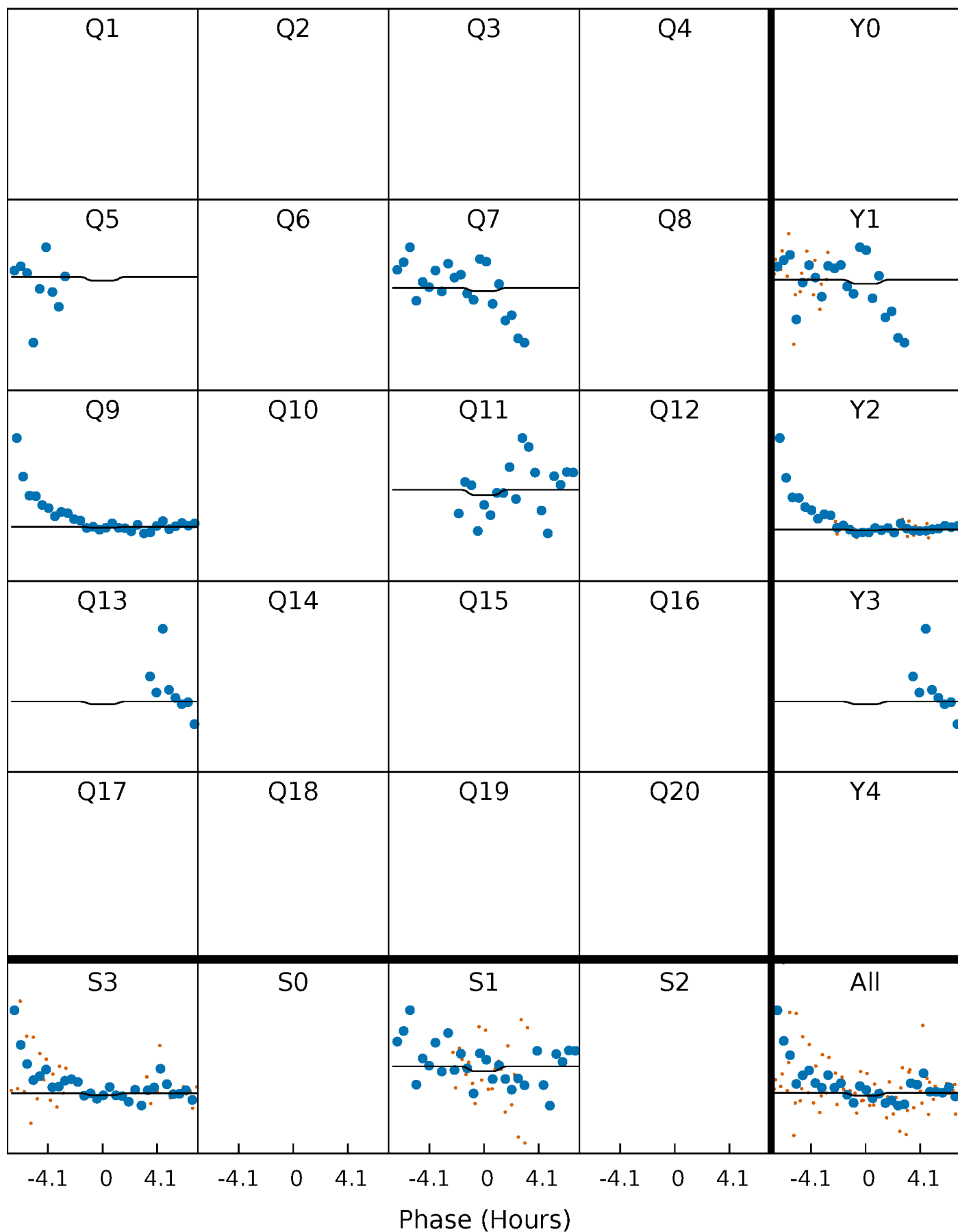
DV Quarter-Phased Transit Curves

TCE 005390694-02 P=182.935313 Days $T_0=312.637724$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

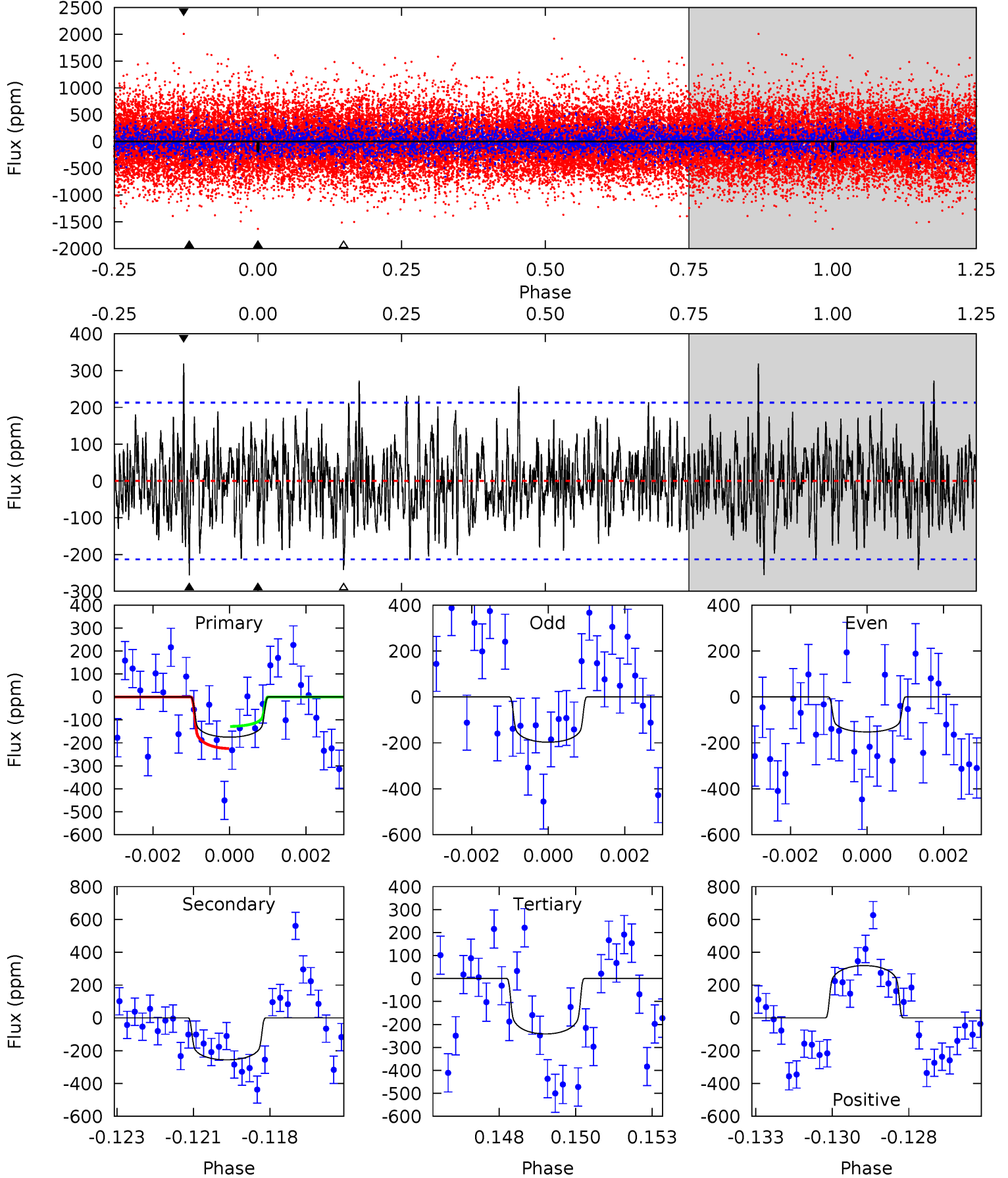
TCE 005390694-02 $P=182.856268$ Days $T_0=312.924827$ (BKJD)



DV Model-Shift Uniqueness Test

005390694-02, P = 182.935313 Days, E = 129.702411 Days

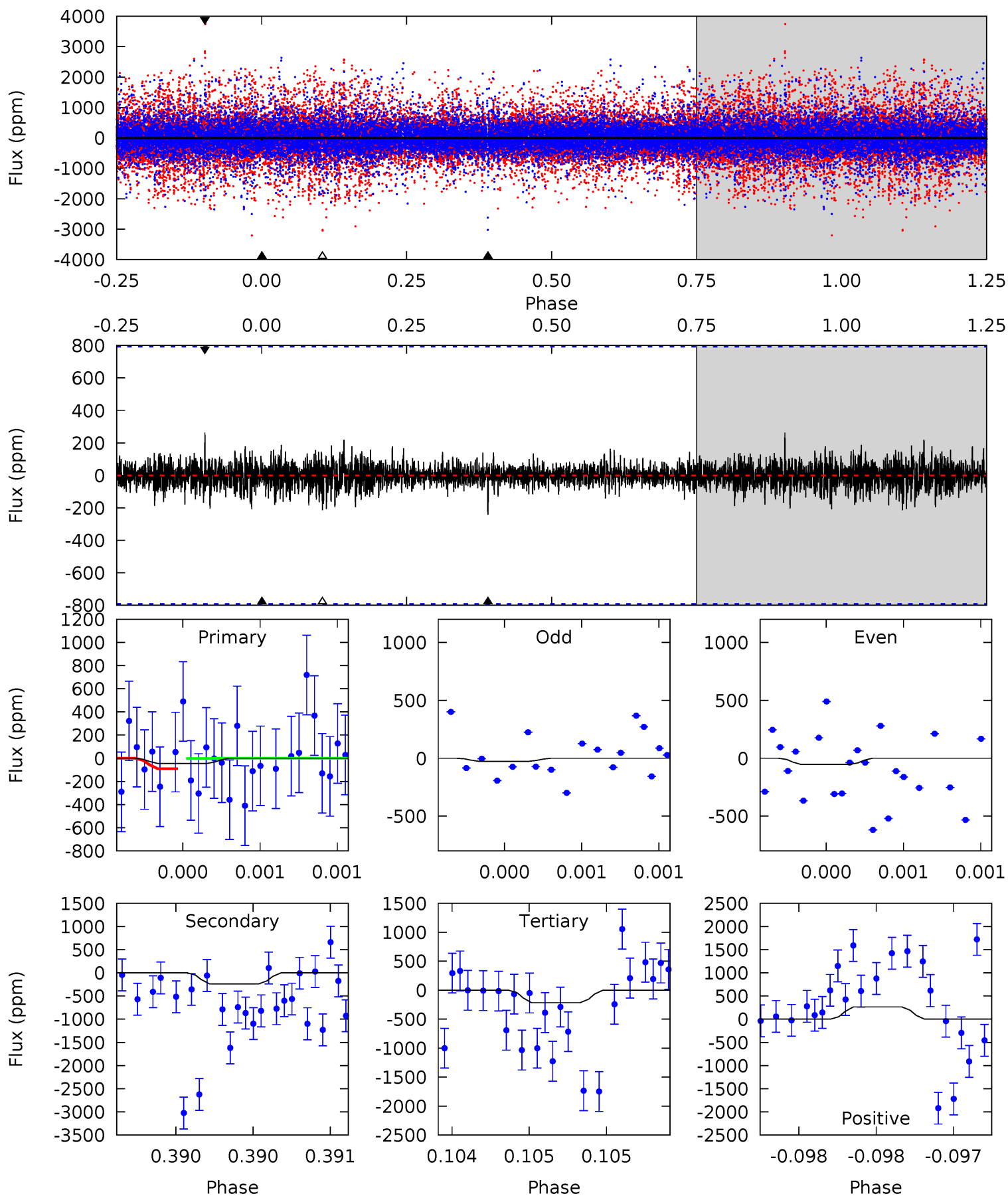
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.35	6.36	6.00	7.92	5.29	3.03	1.93	-1.65	-3.57	0.36	-1.56	0.56	1.00	0.55	1.19



Alt Model-Shift Uniqueness Test

005390694-02, P = 182.856268 Days, E = 130.068559 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.32	1.68	1.50	1.84	5.54	3.43	0.36	-1.18	-1.53	0.18	-0.16	0.08	1.72	0.52	0.31



Stellar Parameters For KIC 005390694

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6758^{+188}_{-235}	$4.383^{+0.060}_{-0.168}$	$-0.320^{+0.250}_{-0.350}$	$1.153^{+0.318}_{-0.136}$	$1.178^{+0.153}_{-0.153}$	$1.083^{+0.341}_{-0.540}$
	+3%/-3%	+1%/-4%	+78%/-109%	+28%/-12%	+13%/-13%	+31%/-50%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 005390694-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-256 ± 40	$2.31^{+1.21}_{-0.95}$	556^{+37}_{-26}	6437^{+2440}_{-1214}	11721^{+22585}_{-6876}
Alt.	-241 ± 143	$1.28^{+0.90}_{-0.79}$	557^{+33}_{-27}	8450^{+10507}_{-2609}	$31408^{+186111}_{-23320}$

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

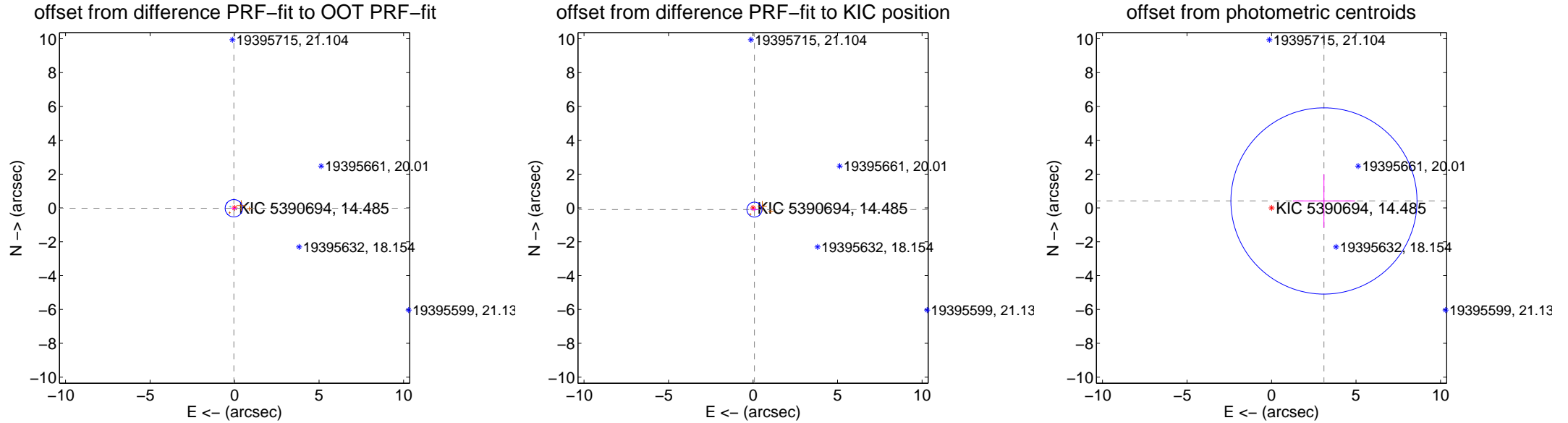
DV Centroid Data

Supplemental centroid analysis for 005390694-02. Kepler magnitude: 14.48. Transit SNR 4.92

There are 2 quarters with good PRF difference image offsets

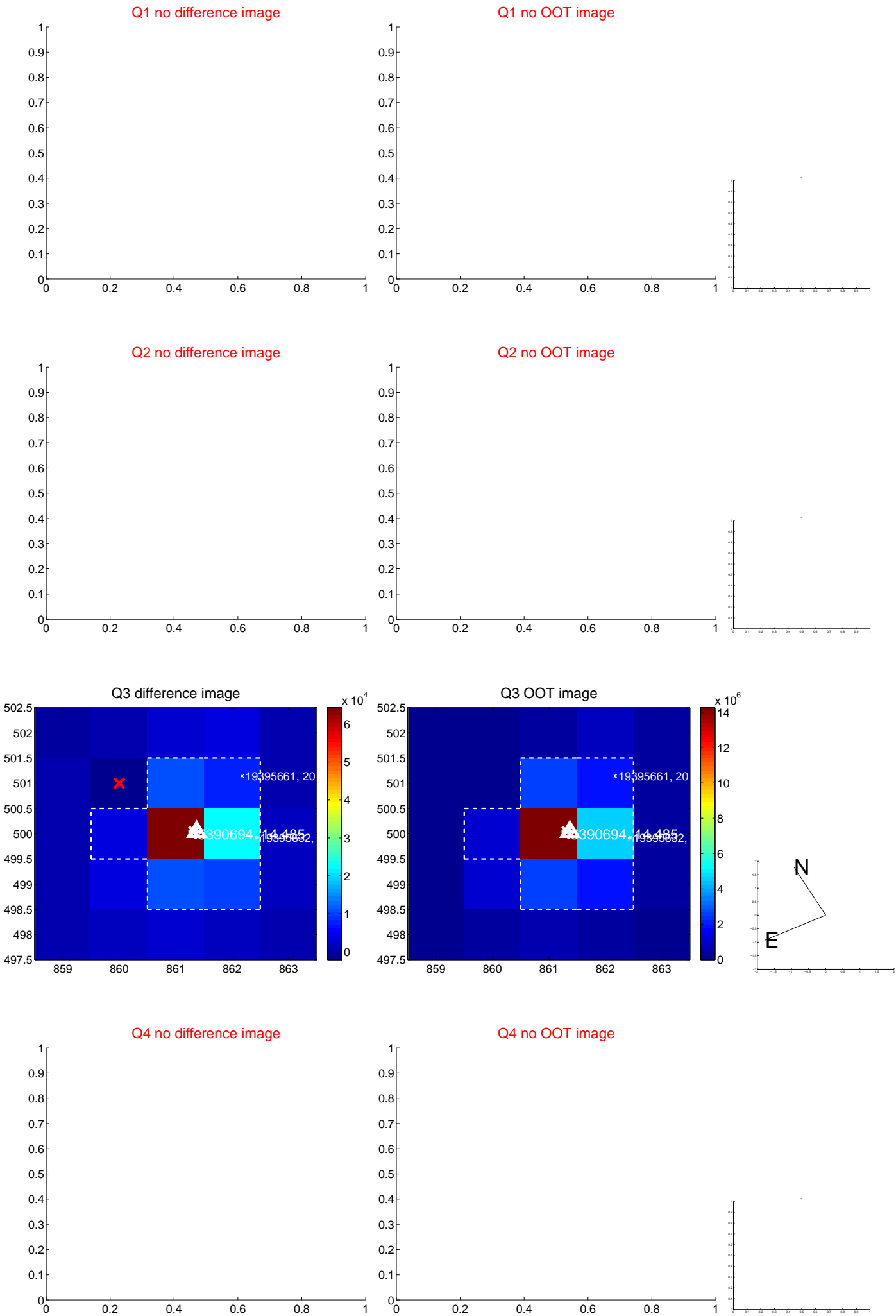
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.046 ± 0.172	0.27	0.042 ± 0.170	-0.019 ± 0.098
PRF-fit source offset from KIC position	0.126 ± 0.148	0.85	-0.080 ± 0.215	-0.098 ± 0.096
photometric centroid source offset	3.13 ± 1.83	1.71	-3.10 ± 1.84	0.41 ± 1.58

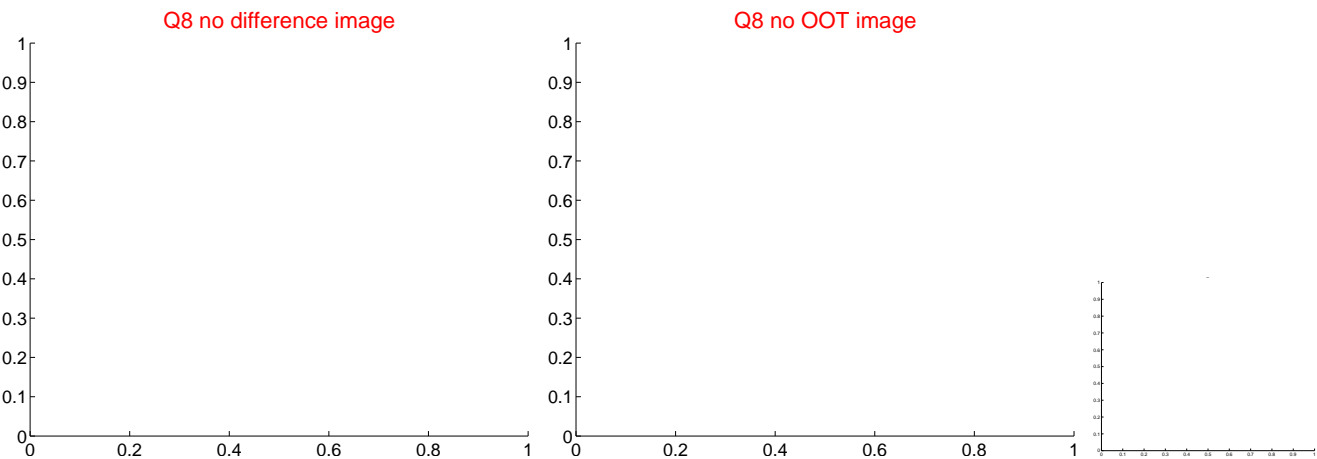
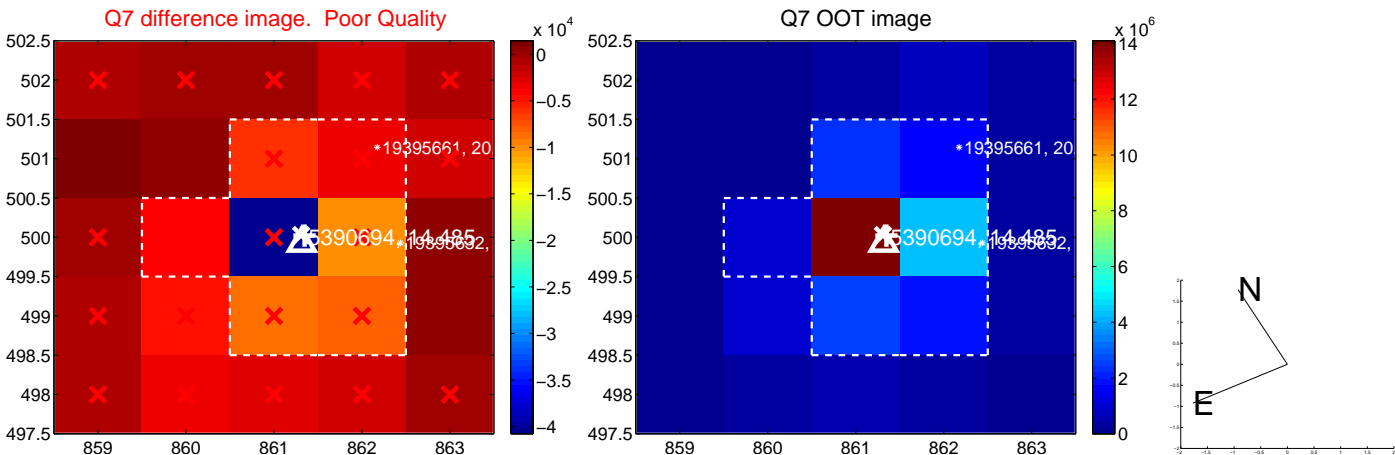
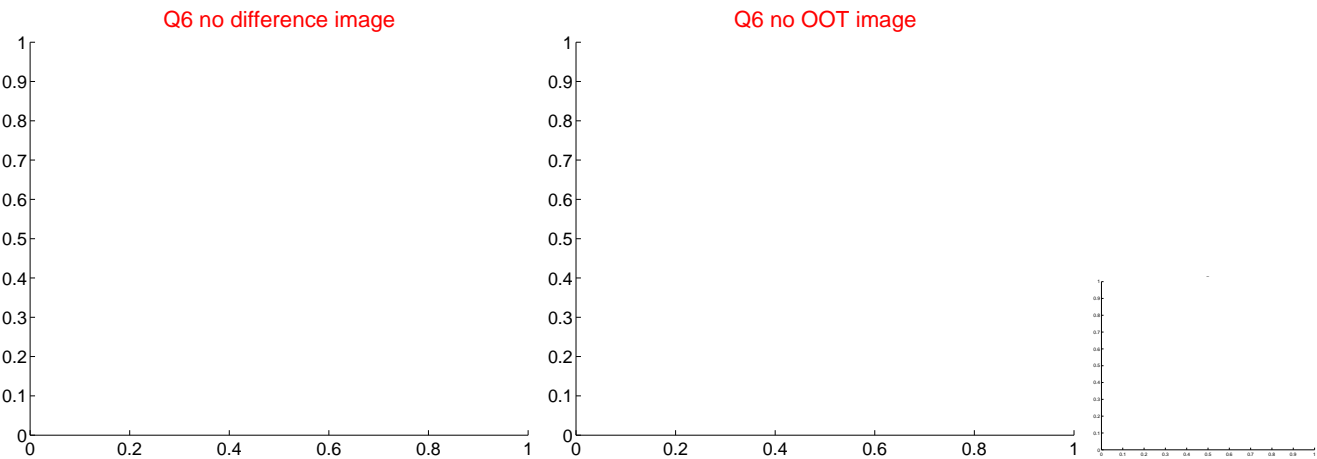
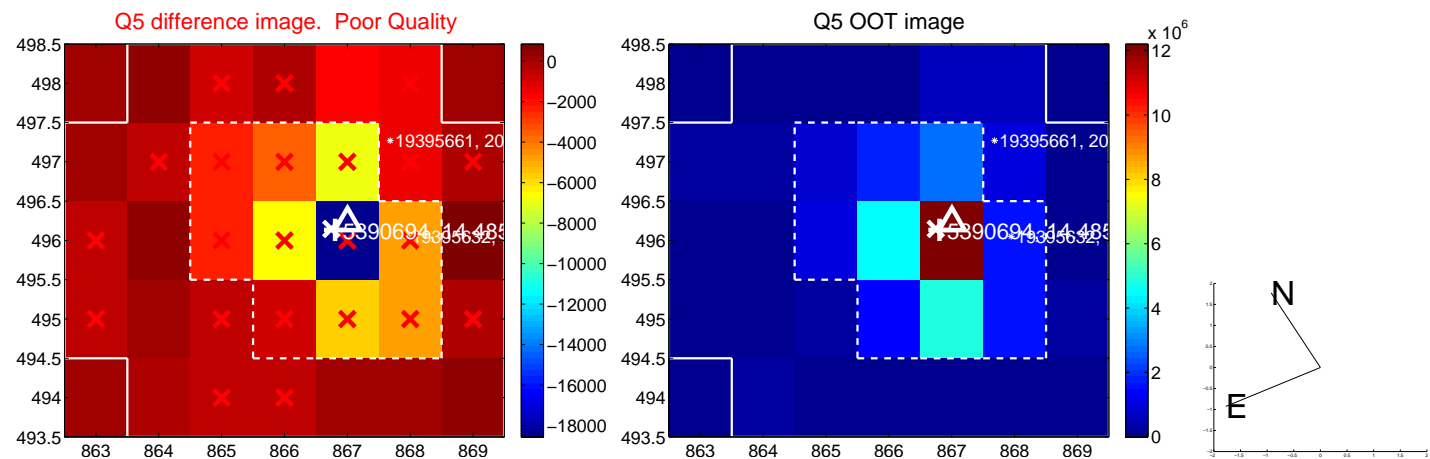


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

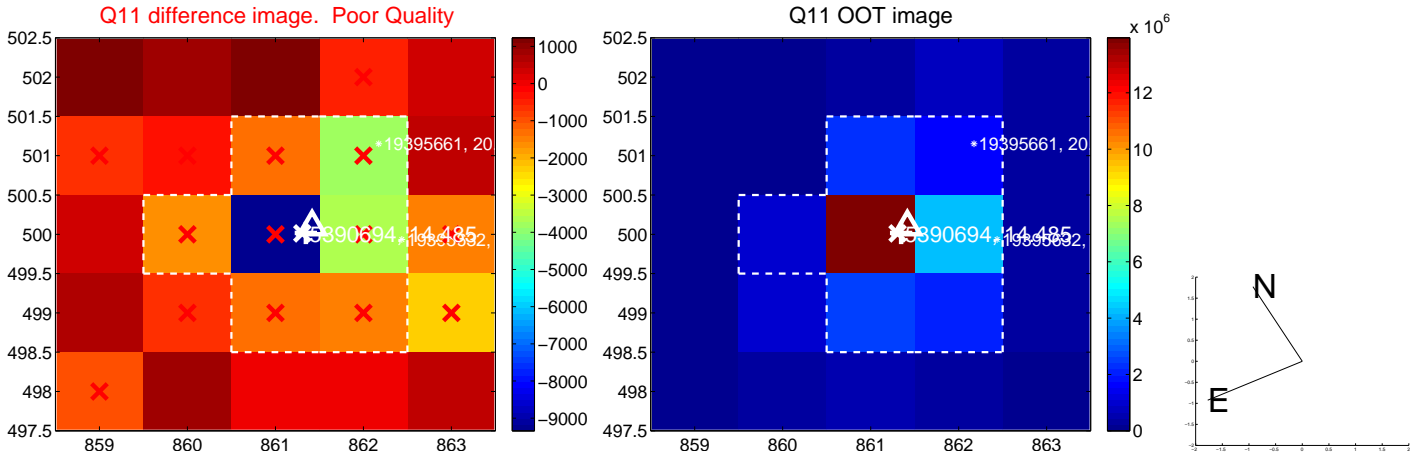
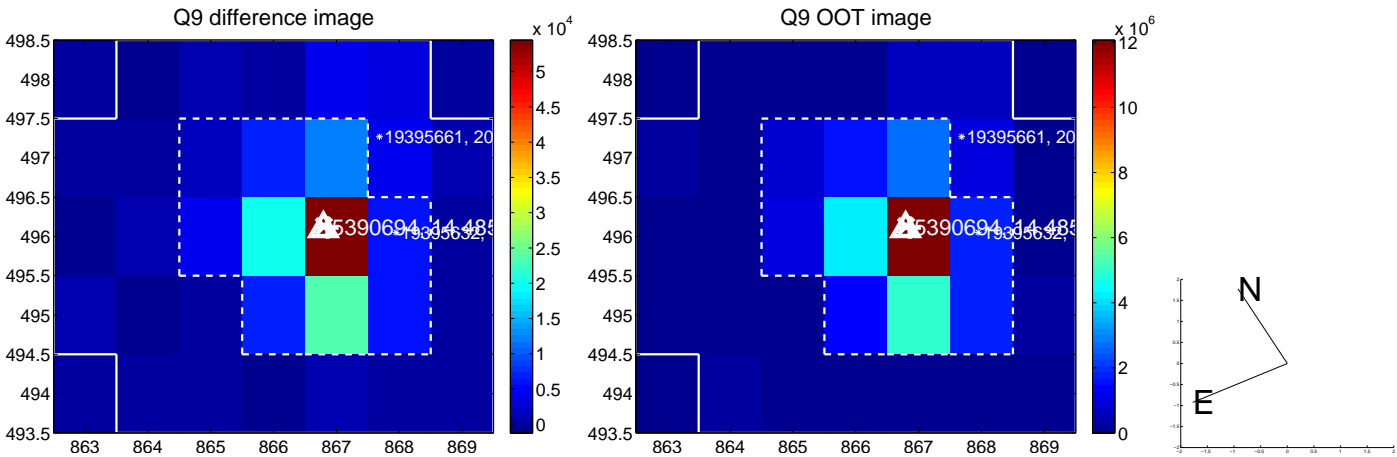
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



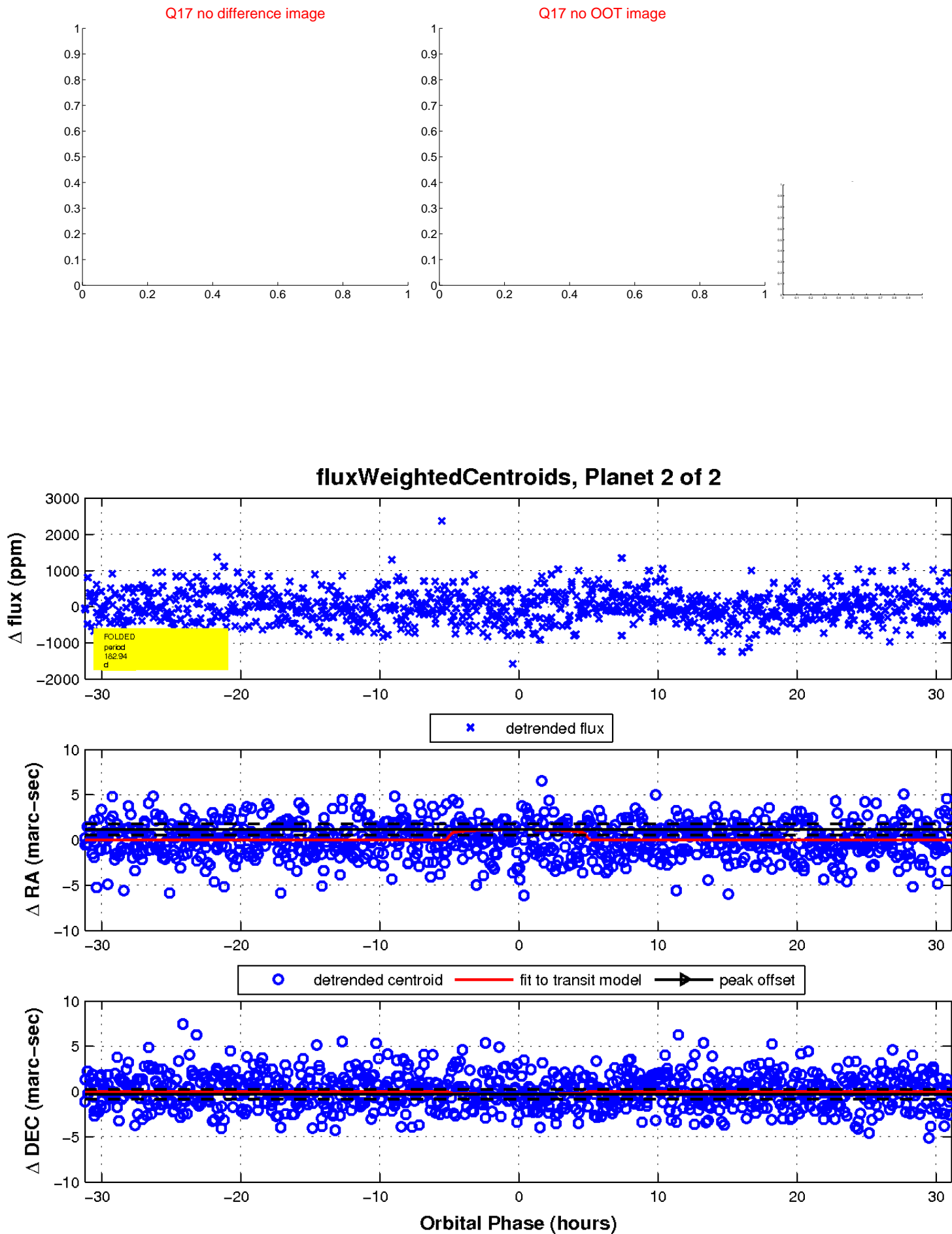
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

