

KIC 004390899

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})
004390899-01	OBS	No	0.831075	132.005059	1.6	1.398	11.1	0.4	1.74	7170	0.22	19200.68
004390899-02	OBS	No	0.832663	132.210201	0.3	2.978	8.6	0.1	1.74	7170	0.13	19151.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004390899-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
004390899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

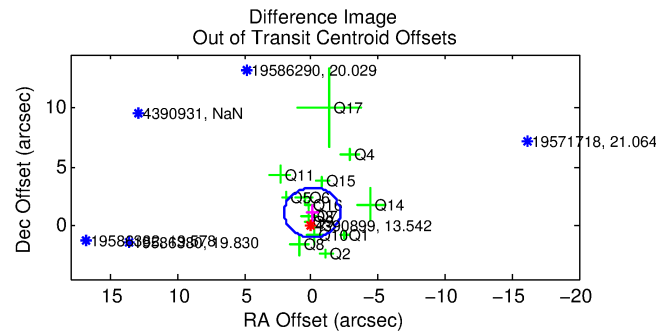
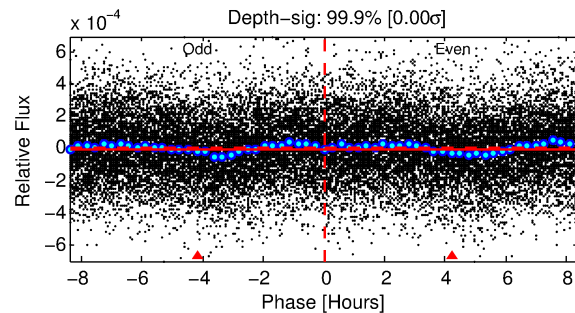
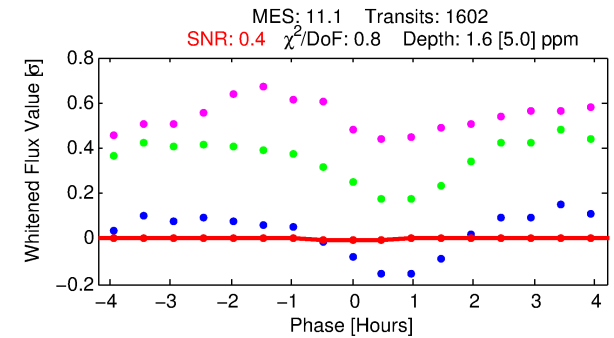
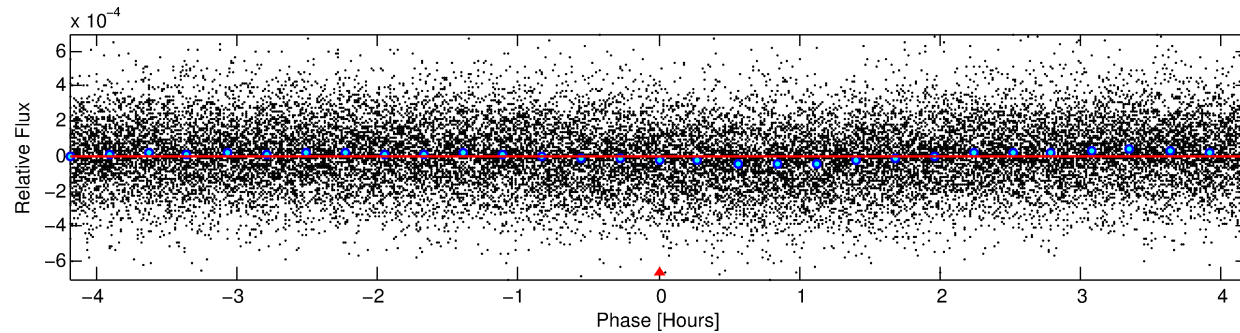
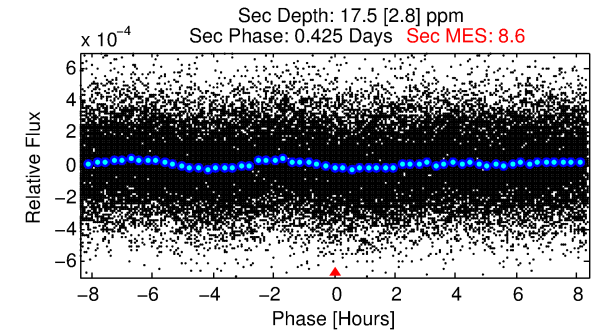
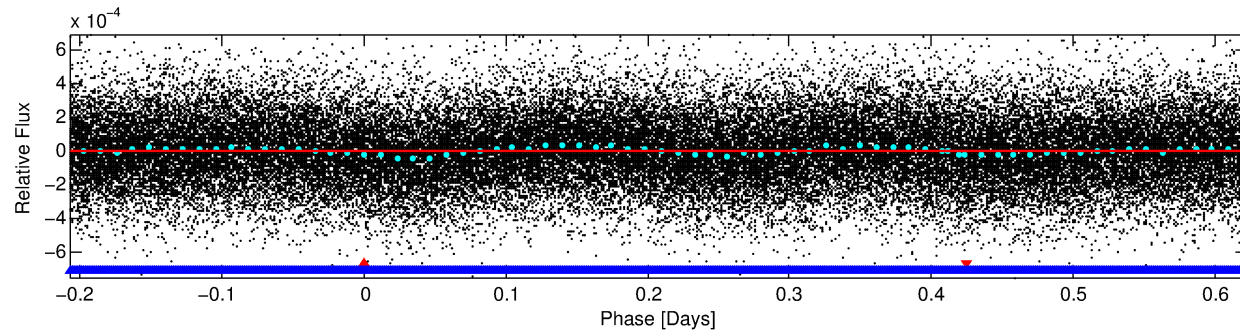
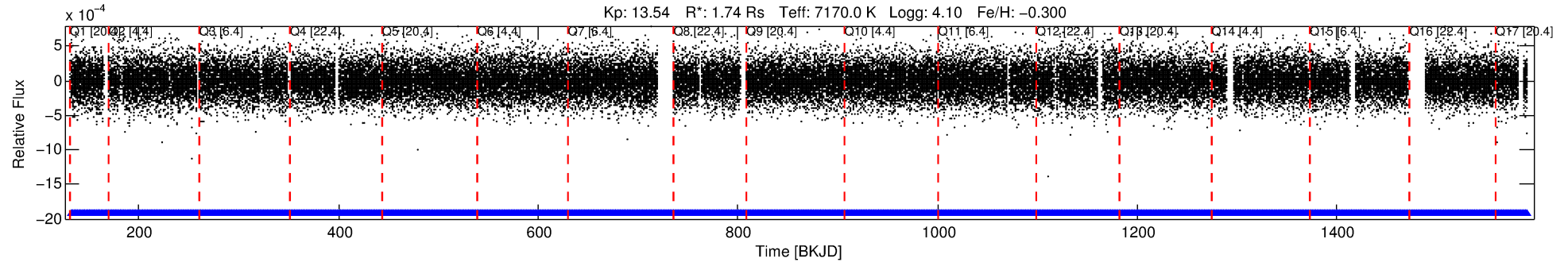
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004390899-01

No Significant Match Found

DV One-Page Summary

KIC: 4390899 Candidate: 1 of 2 Period: 0.831 d



DV Fit Results:

Period = 0.83107 [0.00023] d
Epoch = 132.0051 [0.0473] BKJD
Rp/R* = 0.0012 [0.0130]
a/R* = 4.58 [282.10]
b = 0.03 [2167.89]
Seff = 19200.68 [7517.10]
Teq = 3002 [294] K
Rp = 0.22 [2.47] Re
a = 0.0193 [0.0047] AU
Ag = 71.96 [1589.63] [0.04σ]
Teffp = 13517 [74641] K [0.14σ]

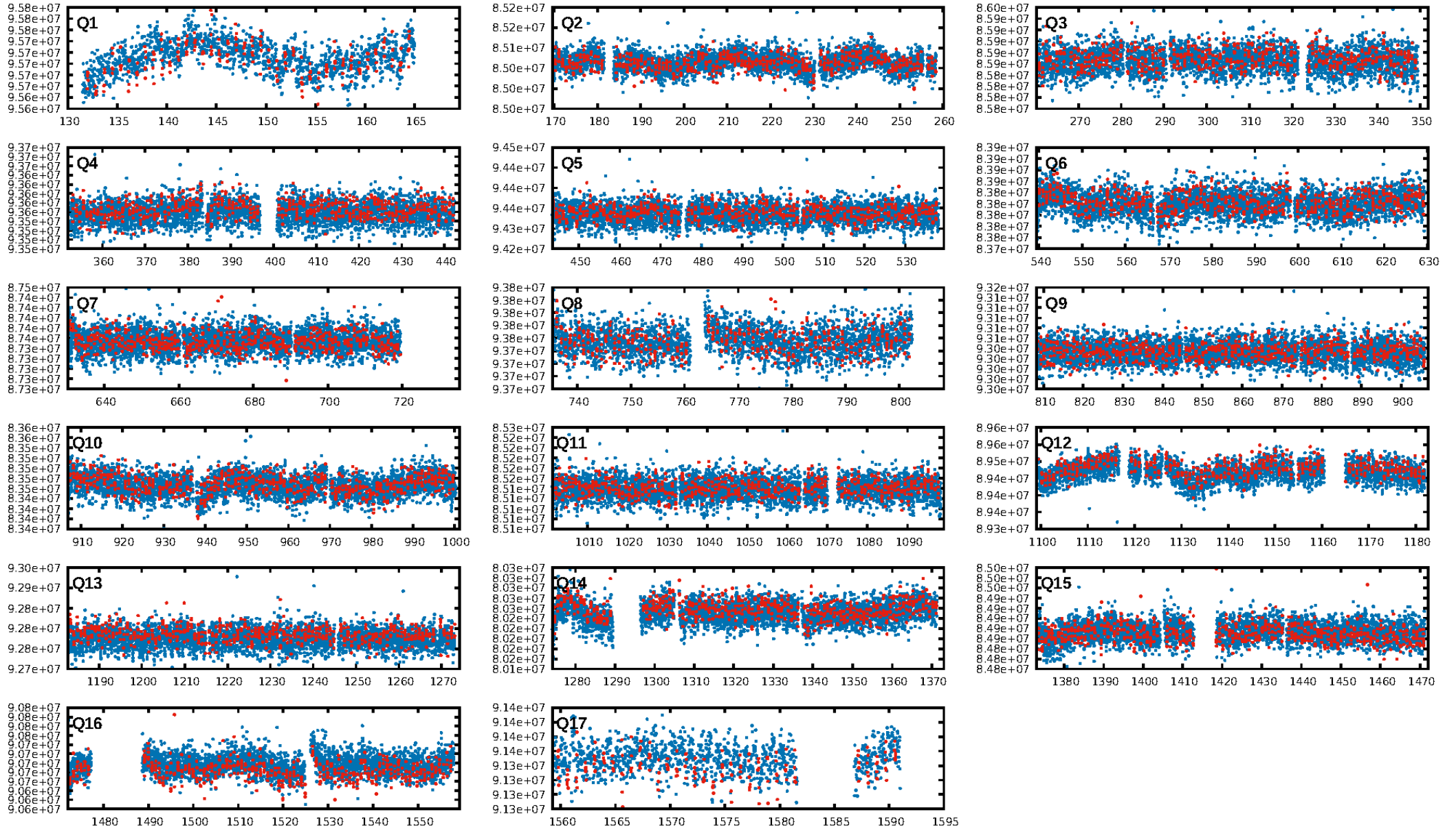
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.9% [0.01σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.02e-21
RollingBand-fgt: 1.00 [1530/1530]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 1.109 arcsec [1.58σ]
KicOffset-rm: 0.295 arcsec [0.40σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.60 [9/15]
DiffImageOverlap-fno: 0.53 [9/17]

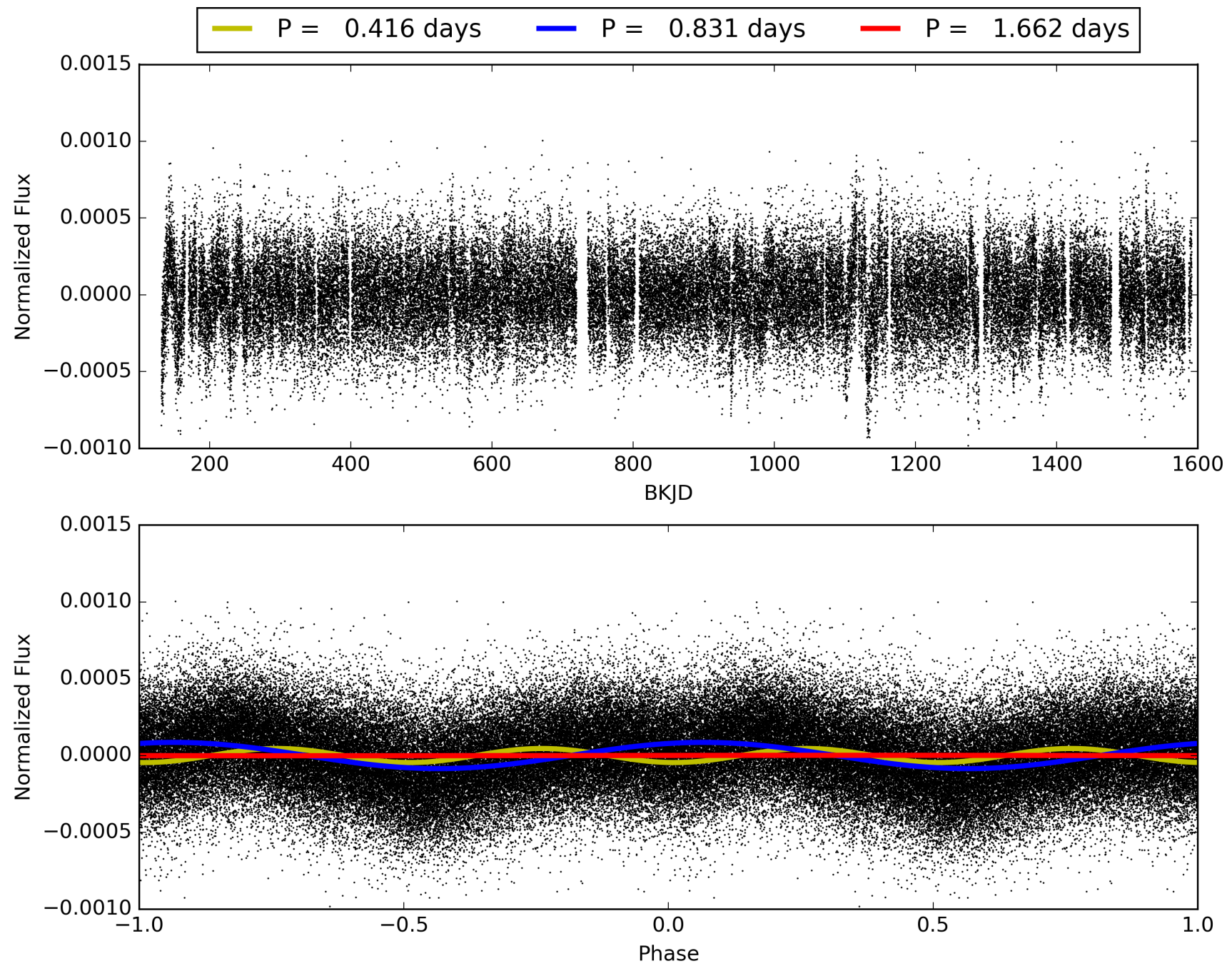
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:23:45 Z

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

TCE 004390899-01, PDC Light Curves

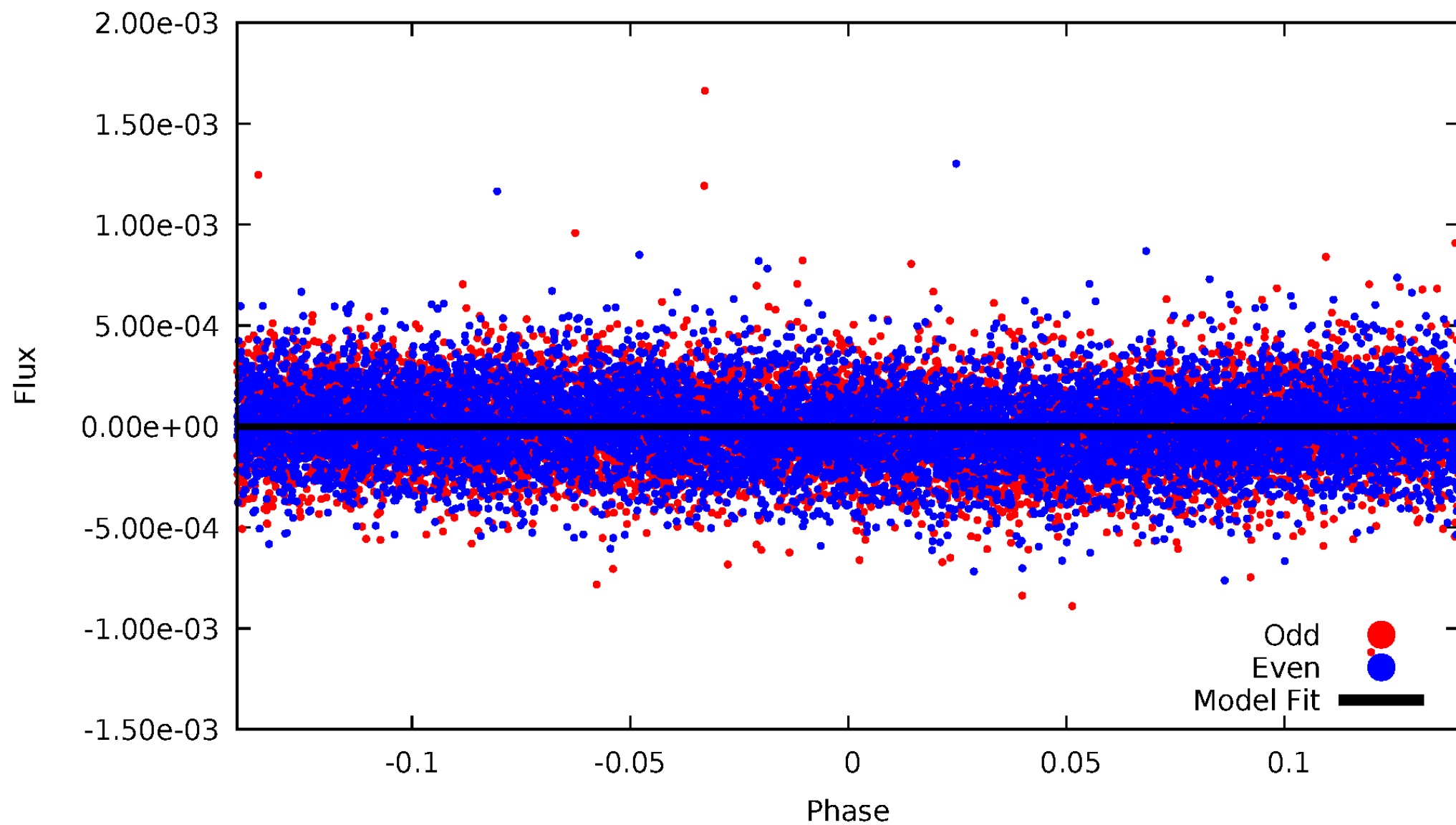


TCE 004390899-01



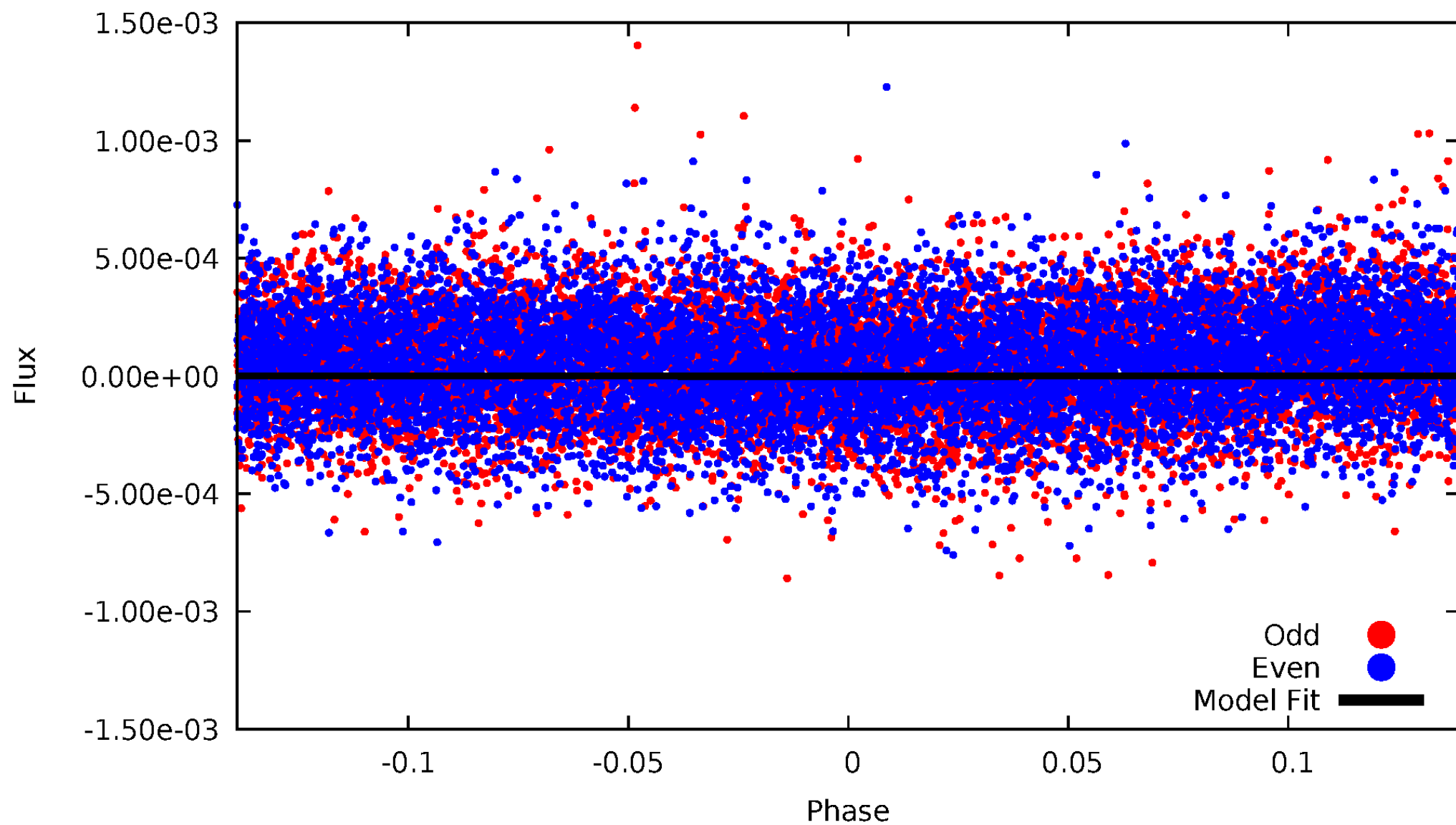
DV Odd/Even

TCE 004390899-01

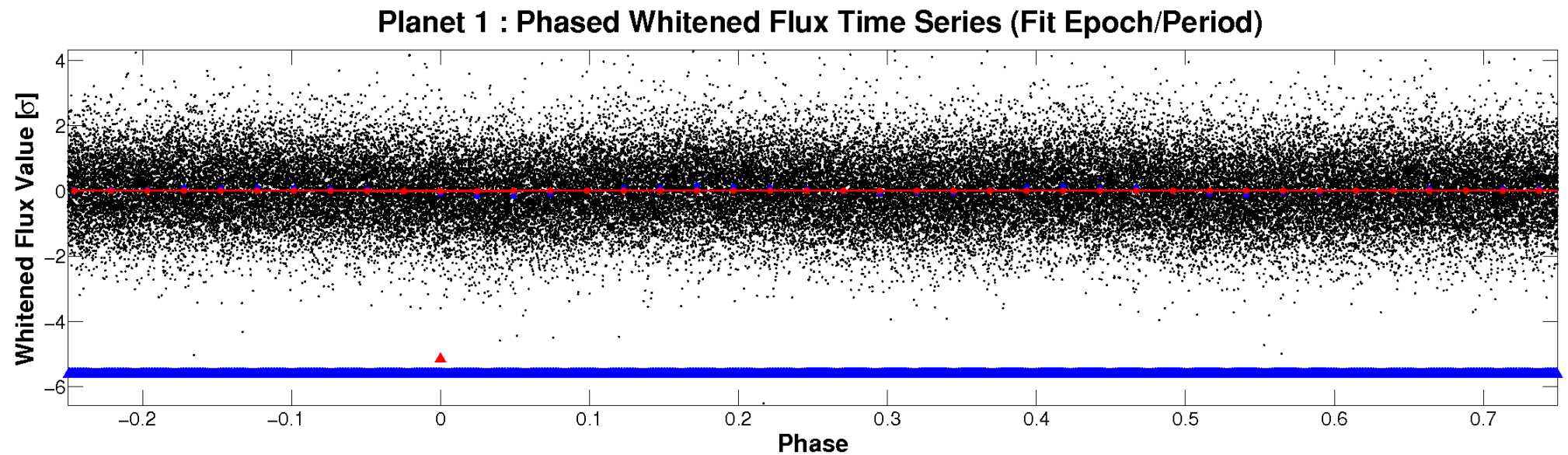
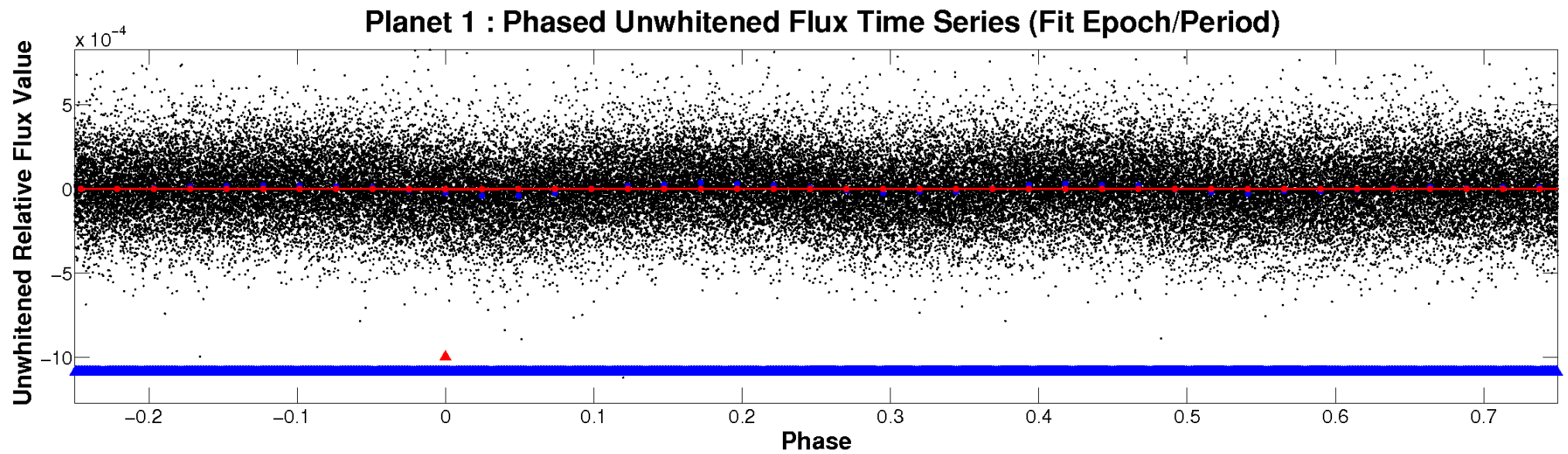


ALT Odd/Even

TCE 004390899-01

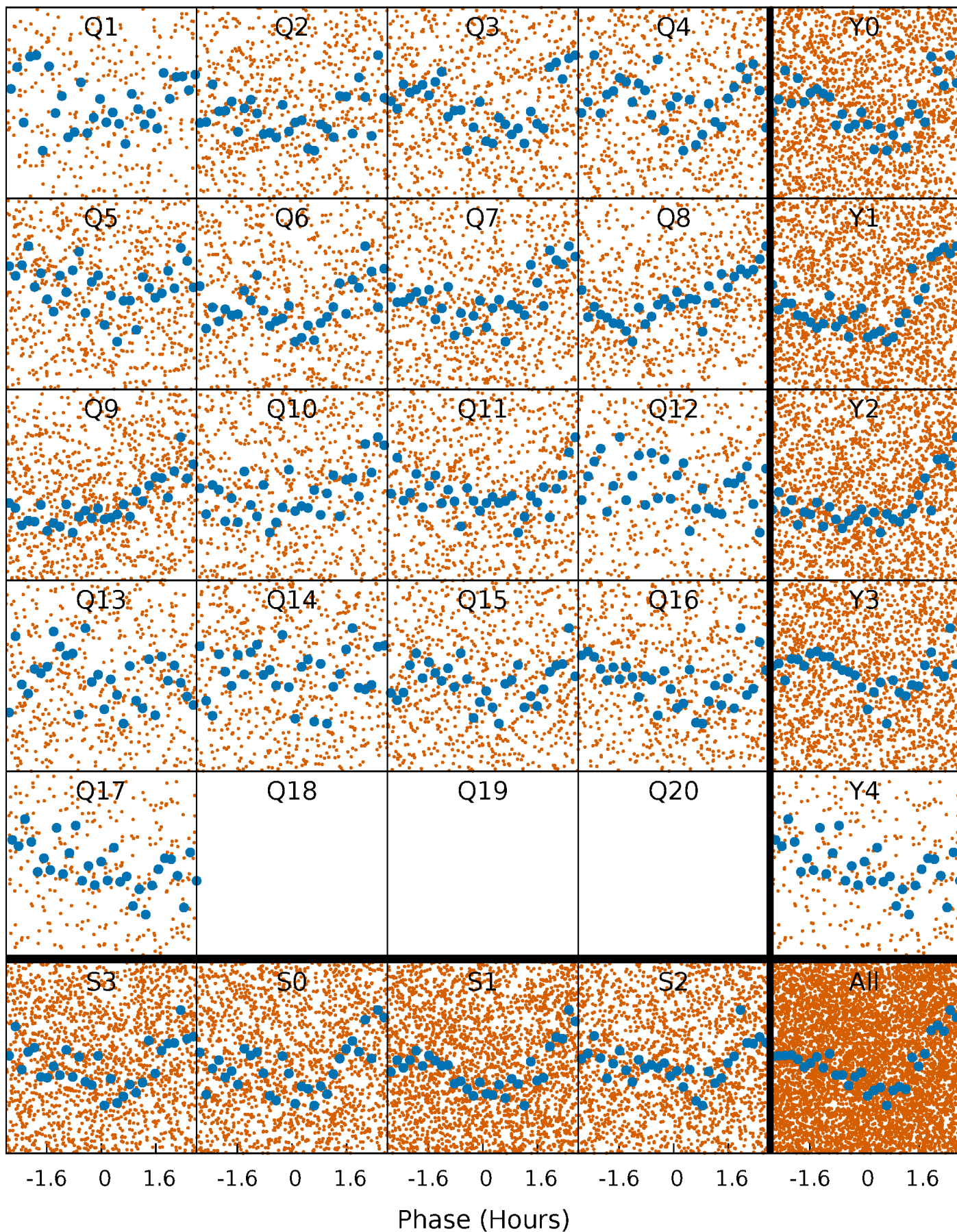


Non-Whitened Vs. Whitened Light Curve



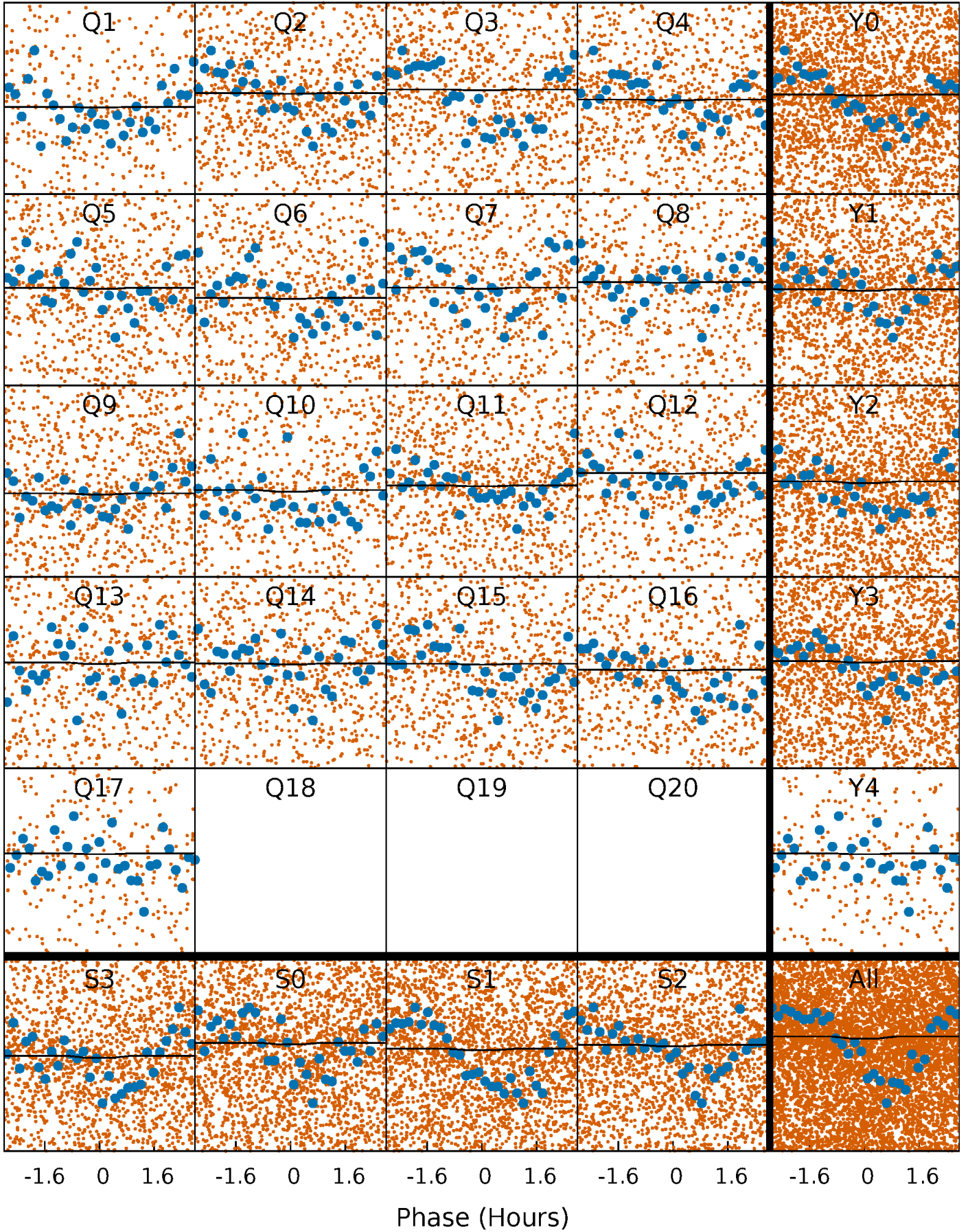
PDC Quarter-Phased Transit Curves

TCE 004390899-01 P= 0.831075 Days $T_0=132.005059$ (BKJD)



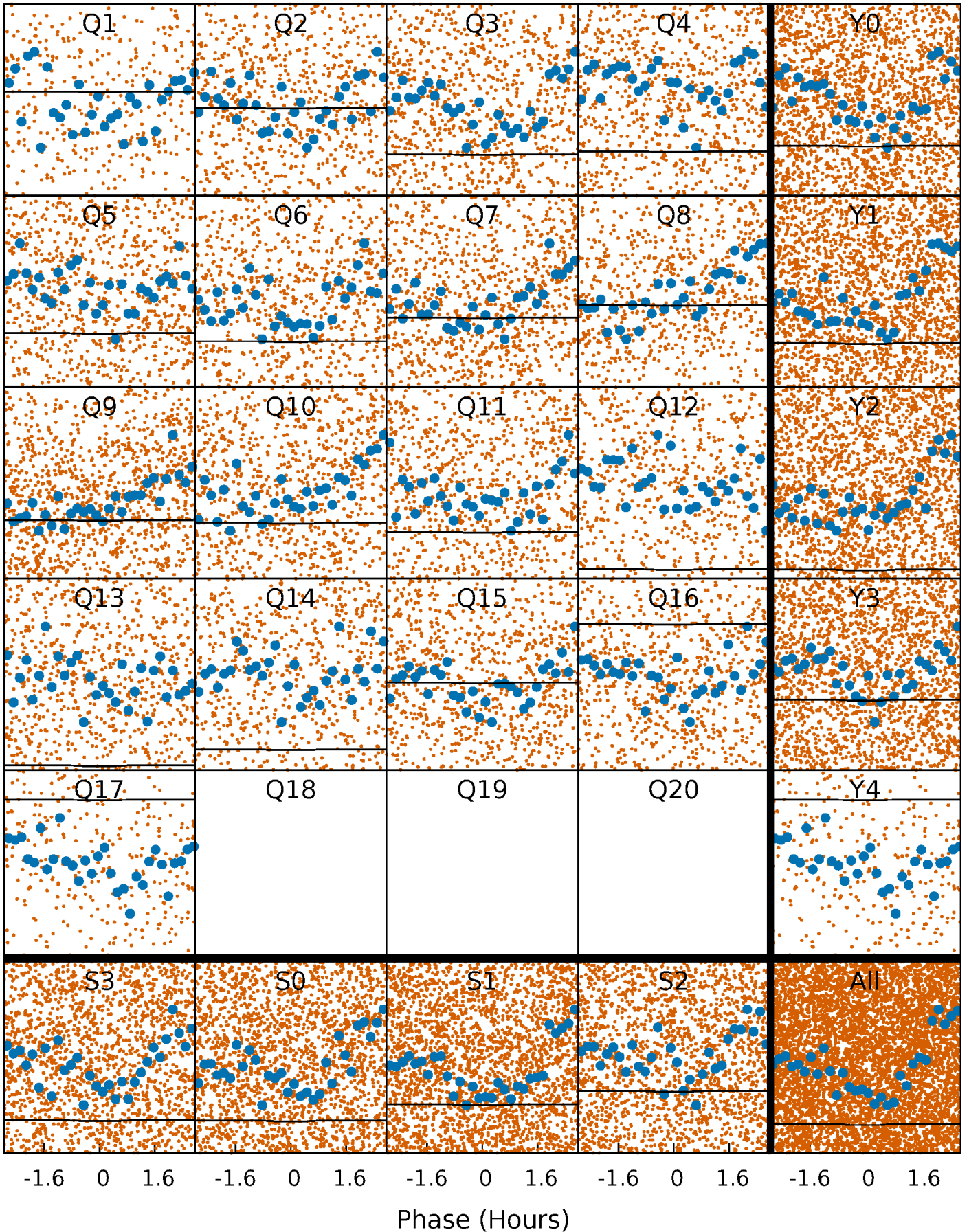
DV Quarter-Phased Transit Curves

TCE 004390899-01 P= 0.831075 Days $T_0=132.005059$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

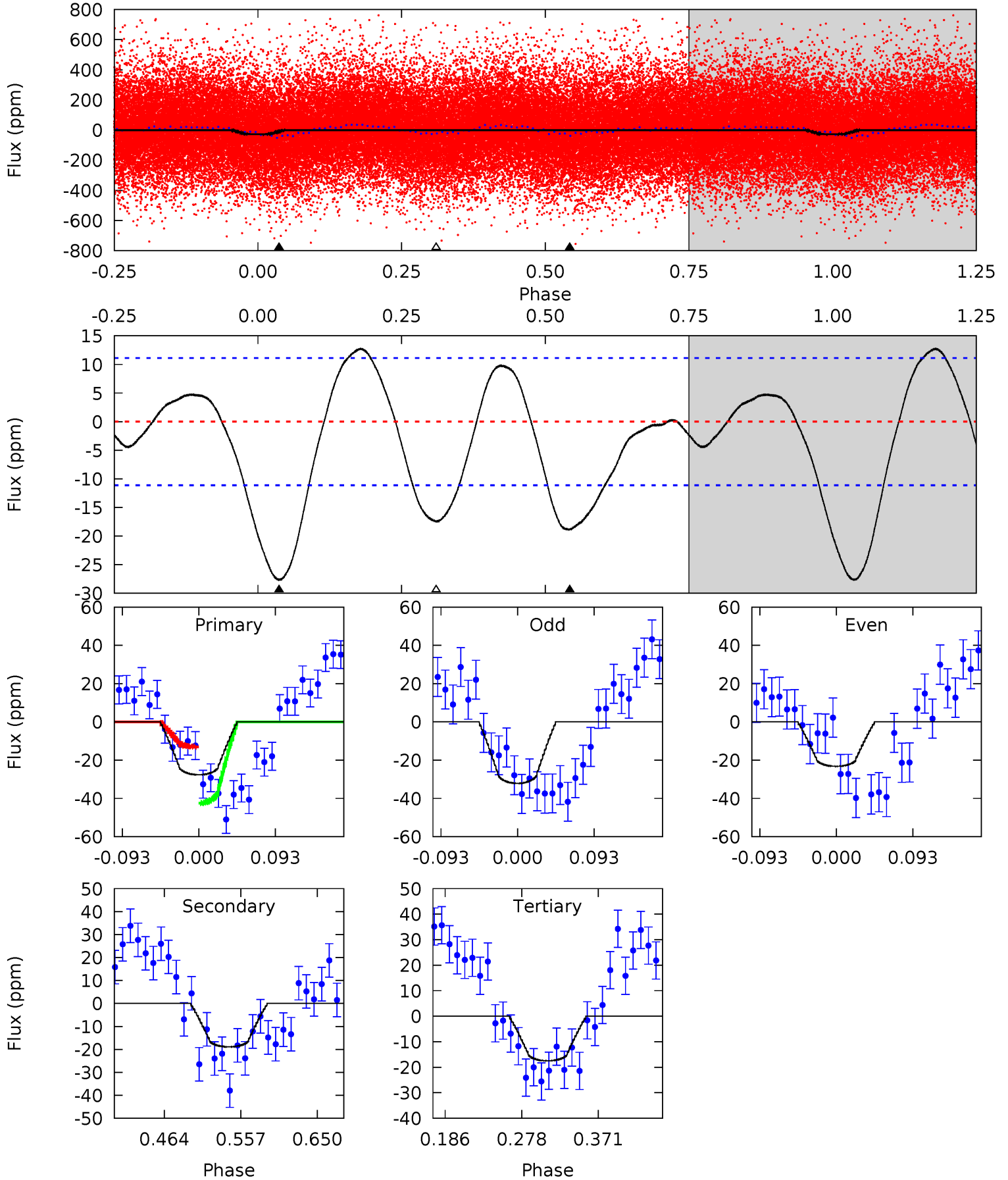
TCE 004390899-01 P= 0.831084 Days $T_0=132.003674$ (BKJD)



DV Model-Shift Uniqueness Test

004390899-01, P = 0.831075 Days, E = 131.173984 Days

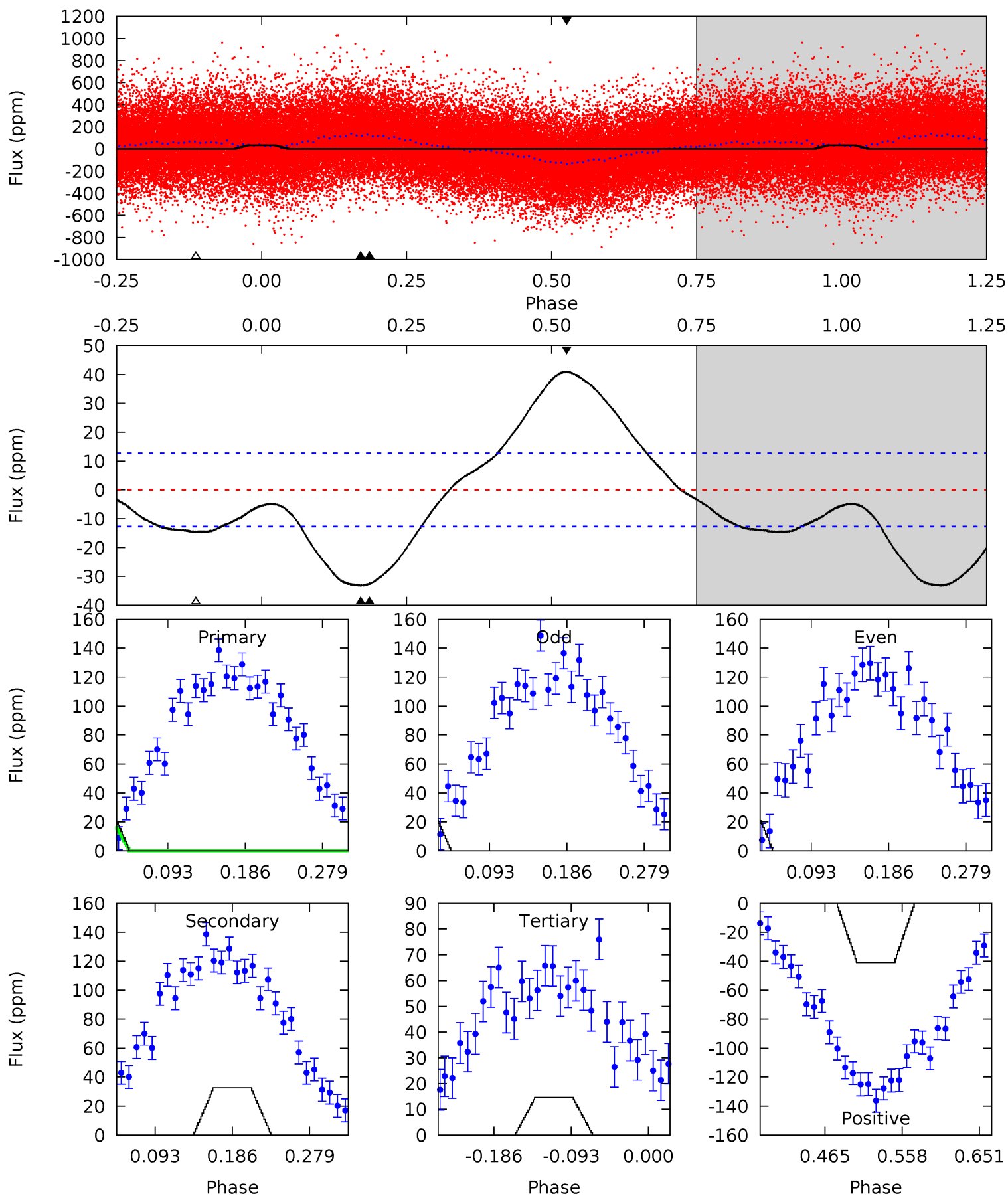
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	7.80	7.20	0	4.58	1.68	3.23	4.20	11.4	0.59	7.80	1.84	0.96	0.32	6.10



Alt Model-Shift Uniqueness Test

004390899-01, P = 0.831084 Days, E = 131.172590 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	11.8	5.28	14.8	4.58	1.68	6.46	6.70	-2.79	6.49	-3.00	0.57	0.91	0.55	2.76



Stellar Parameters For KIC 004390899

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7170^{+224}_{-324}	$4.101^{+0.185}_{-0.167}$	$-0.300^{+0.250}_{-0.350}$	$1.741^{+0.522}_{-0.427}$	$1.397^{+0.205}_{-0.251}$	$0.373^{+0.431}_{-0.173}$
	+3%/-5%	+5%/-4%	+83%/-117%	+30%/-25%	+15%/-18%	+116%/-46%
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 004390899-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 2	$1.81^{+1.95}_{-1.24}$	4174^{+333}_{-323}	4508^{+4274}_{-7120}	$1.128^{+10.795}_{-0.851}$
Alt.	-33 ± 3	$1.67^{+1.93}_{-1.16}$	4188^{+321}_{-321}	5462^{+6499}_{-1871}	$2.311^{+21.637}_{-1.789}$

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 $A_{obs} \gg 1.0$

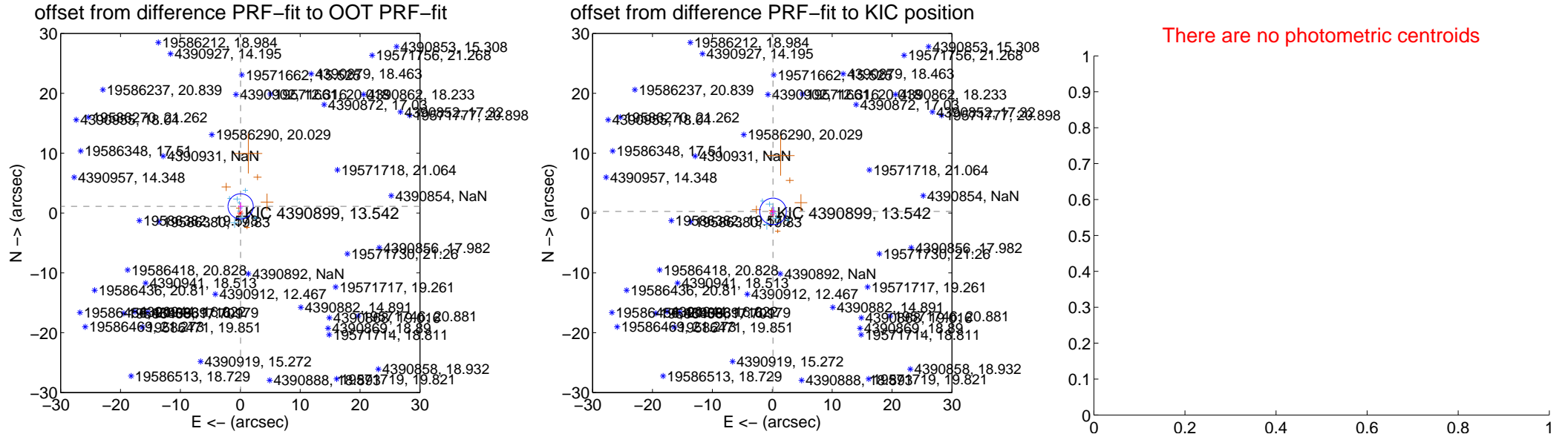
DV Centroid Data

Supplemental centroid analysis for 004390899-01. Kepler magnitude: 13.54. Transit SNR 0.43

There are 9 quarters with good PRF difference image offsets

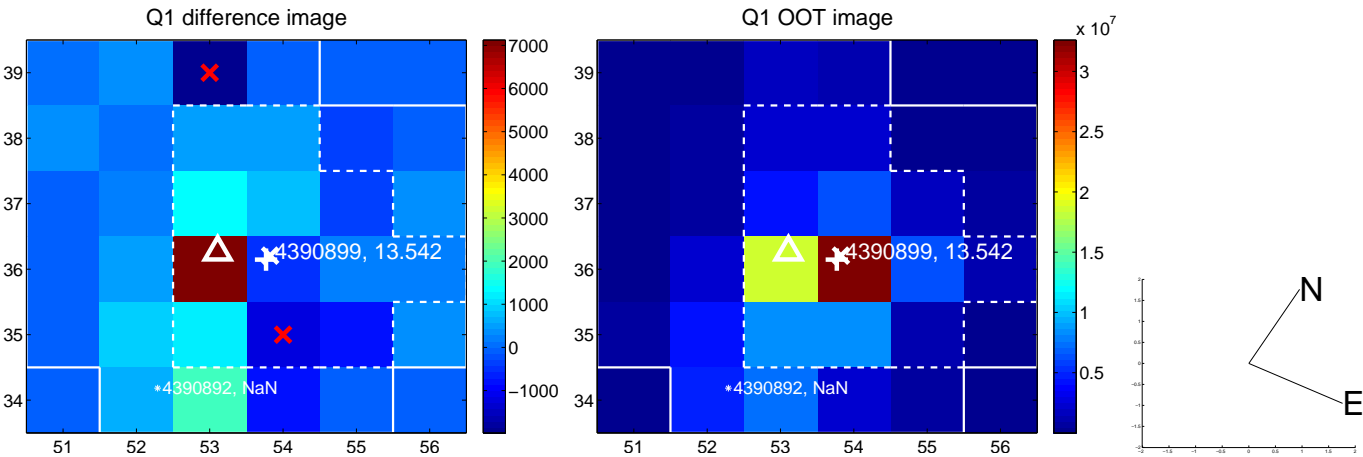
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.109 ± 0.702	1.58	-0.056 ± 0.448	1.108 ± 0.703
PRF-fit source offset from KIC position	0.295 ± 0.738	0.40	-0.128 ± 0.452	0.266 ± 0.753
photometric centroid source offset	—	—	—	—

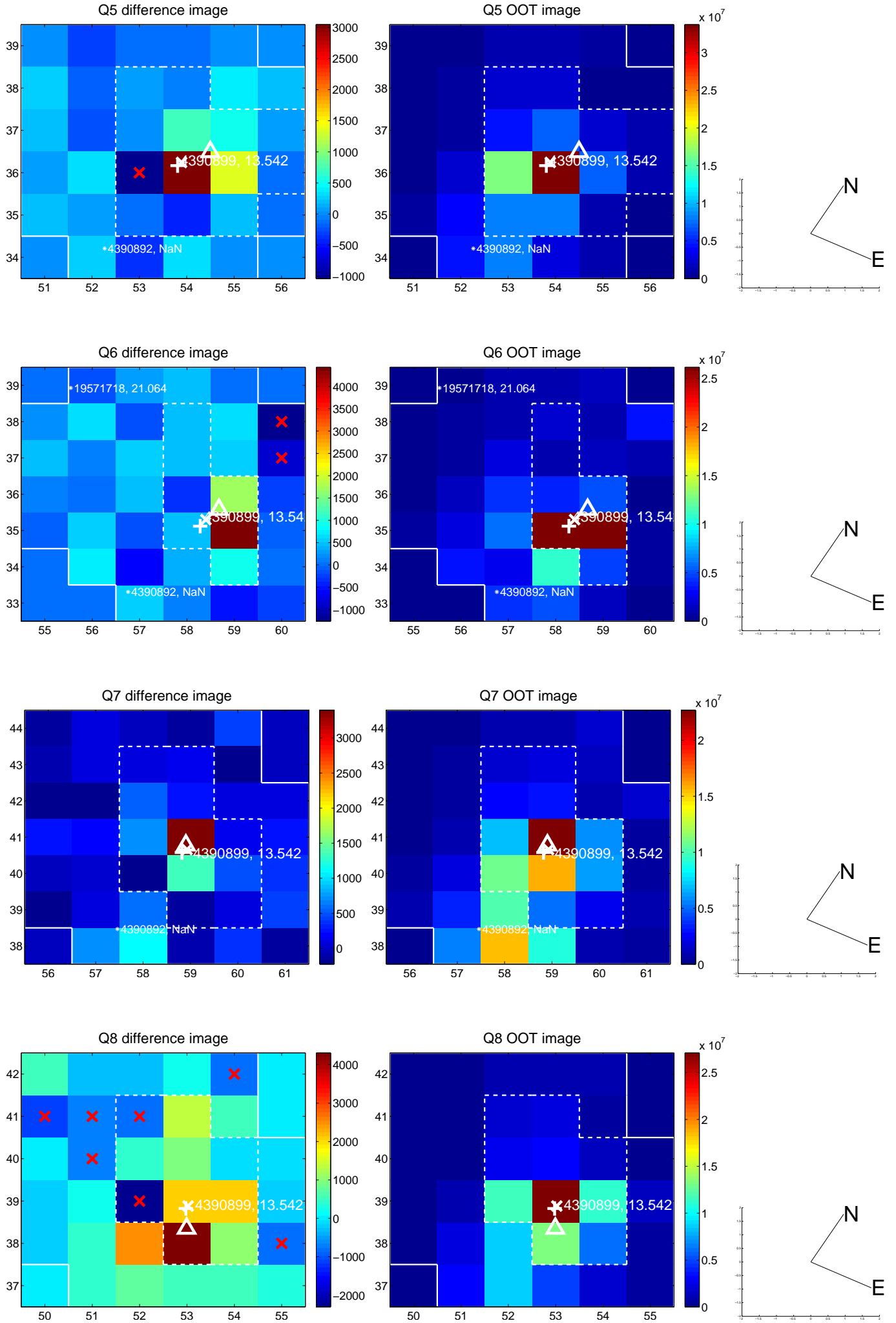


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

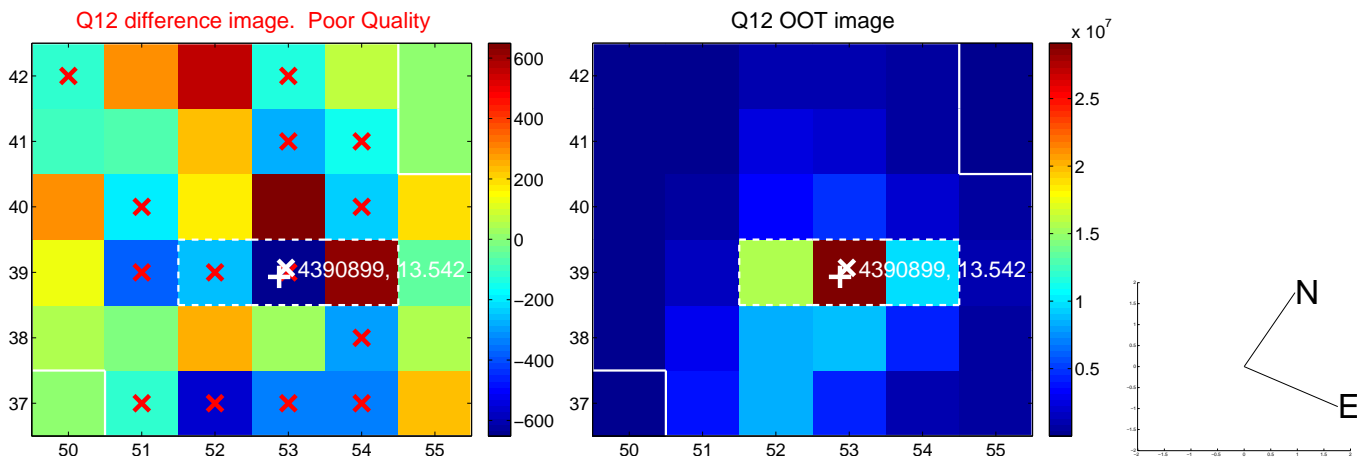
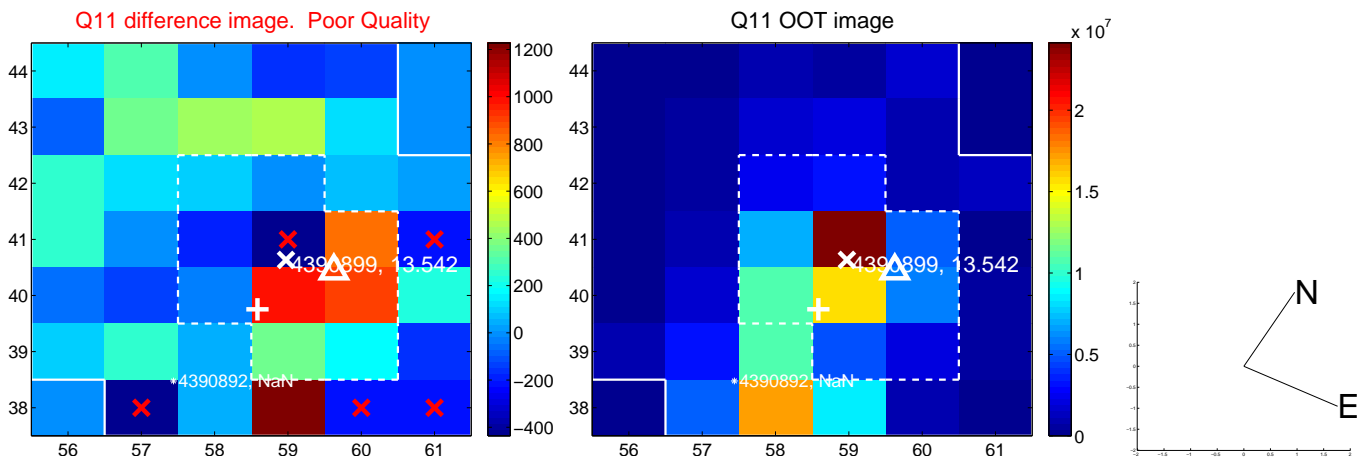
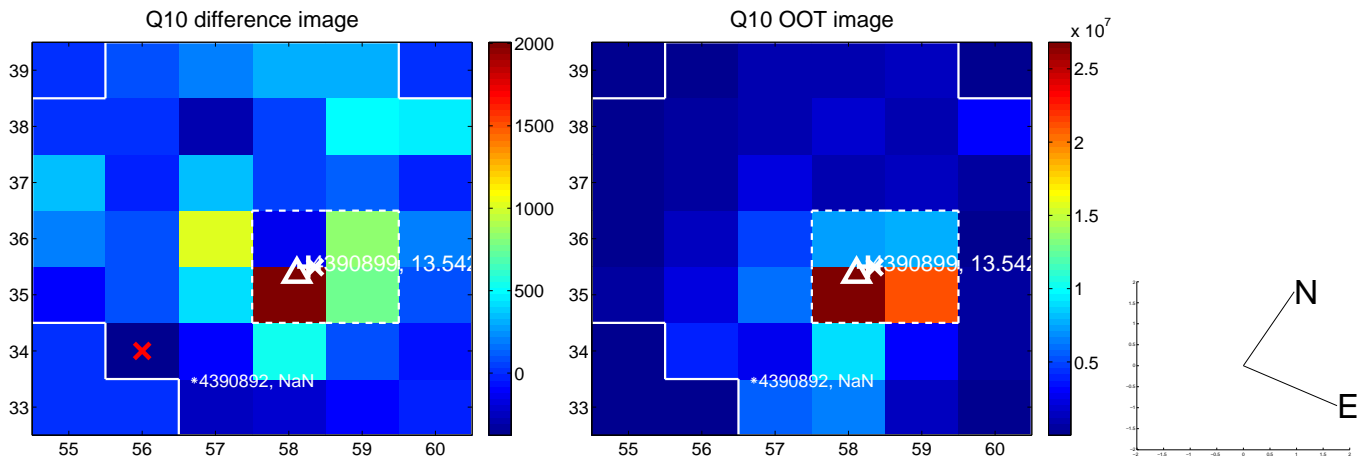
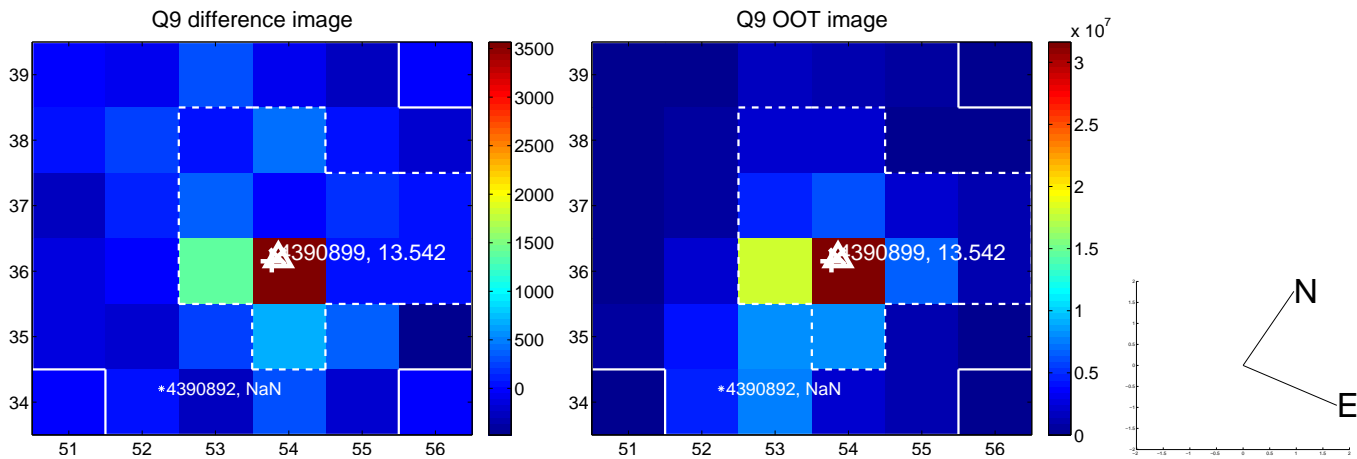
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



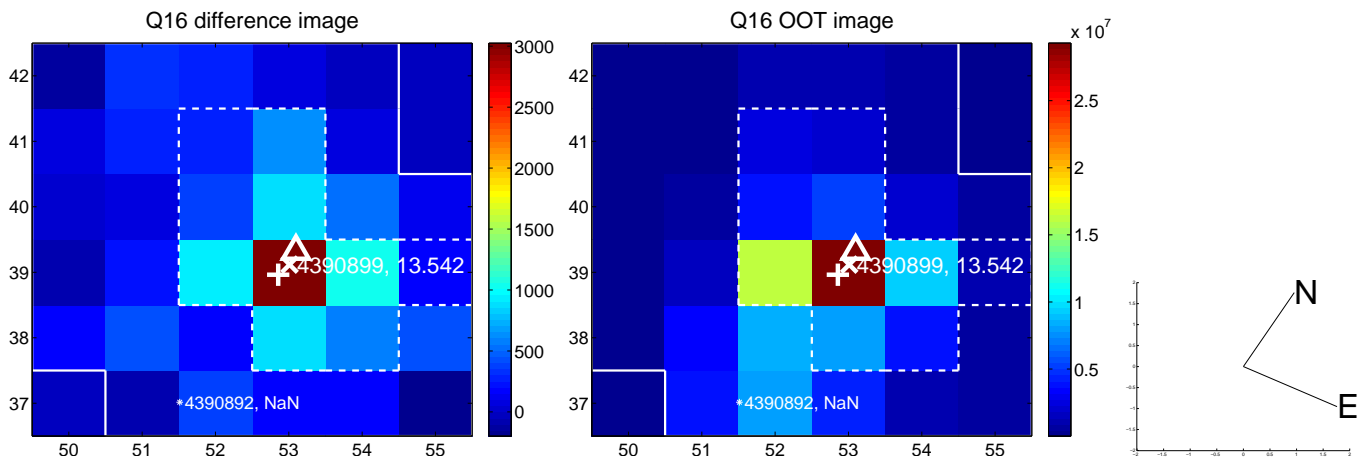
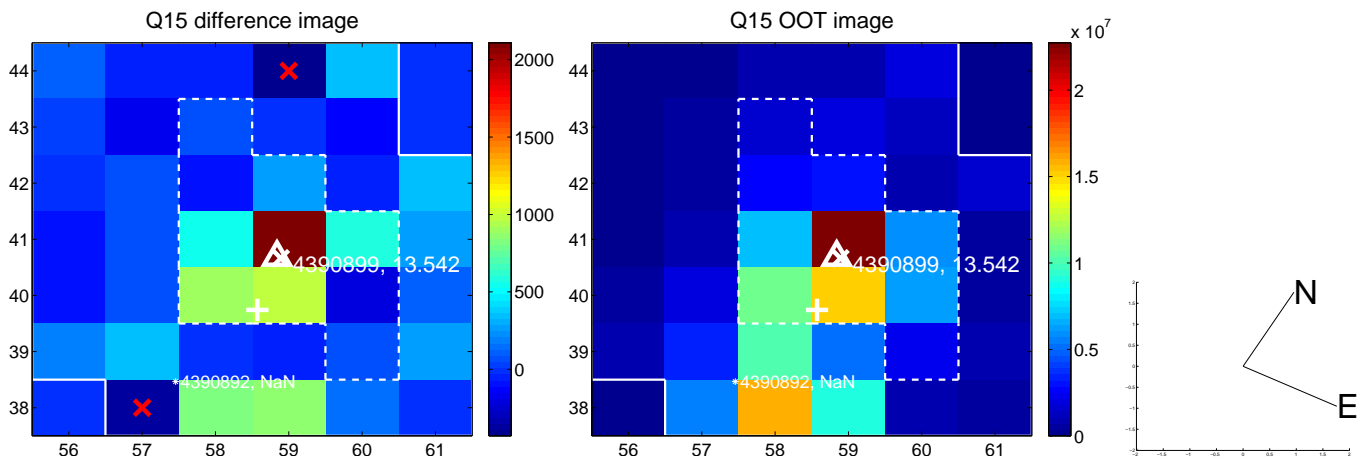
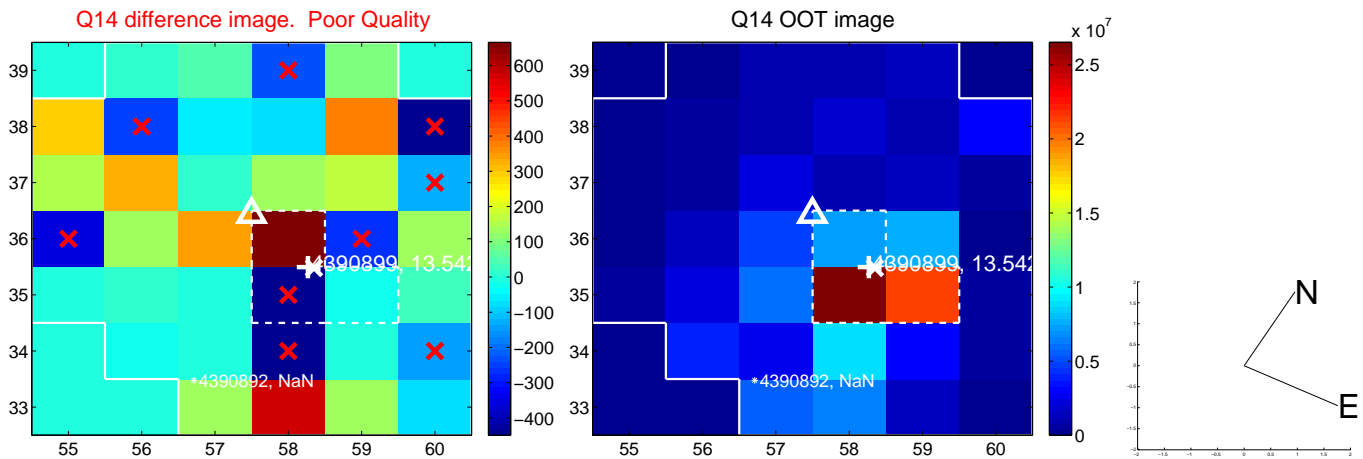
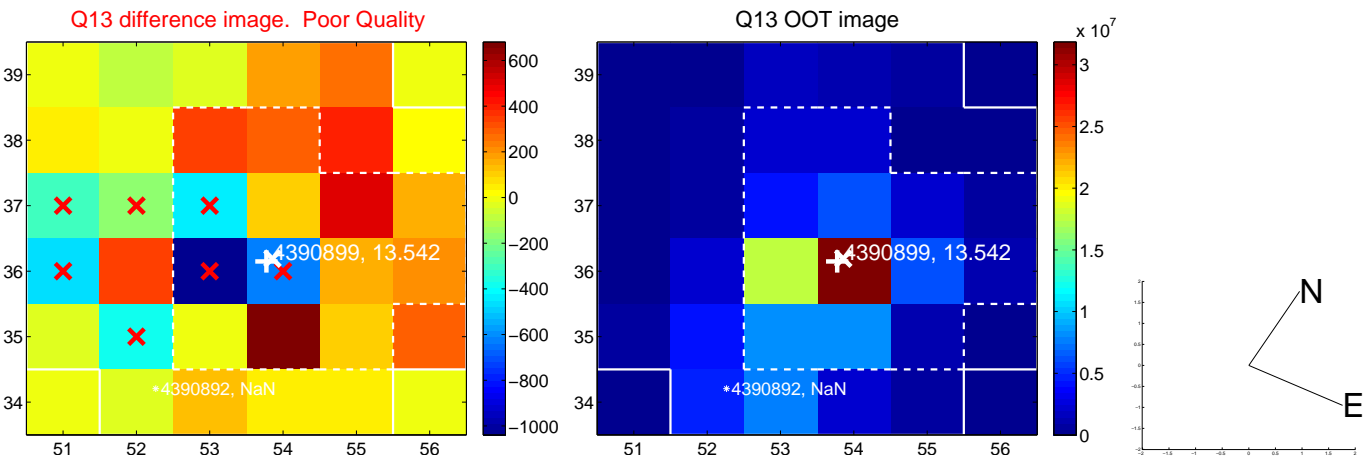
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



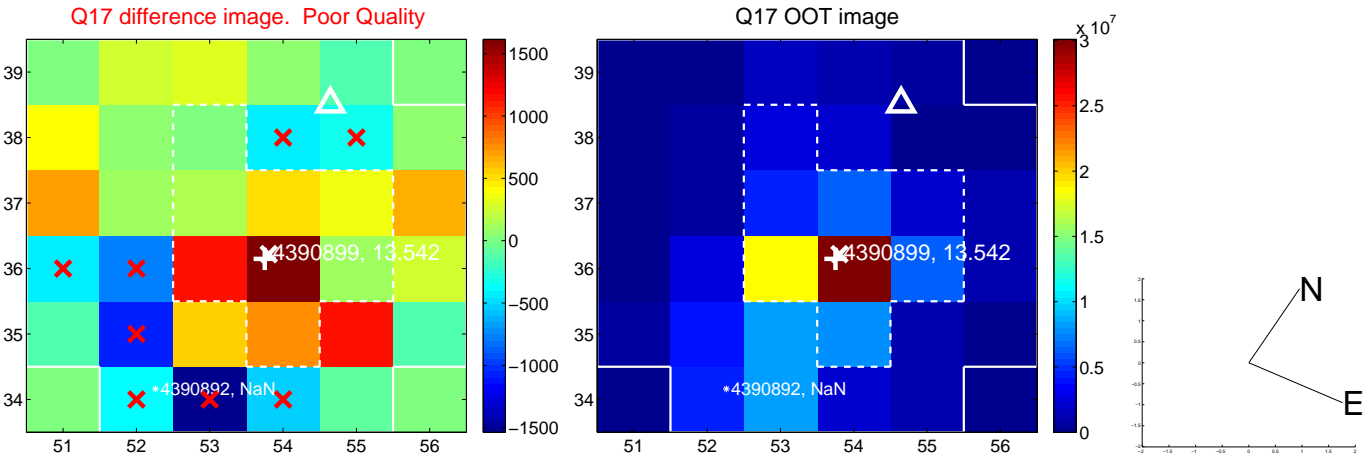
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



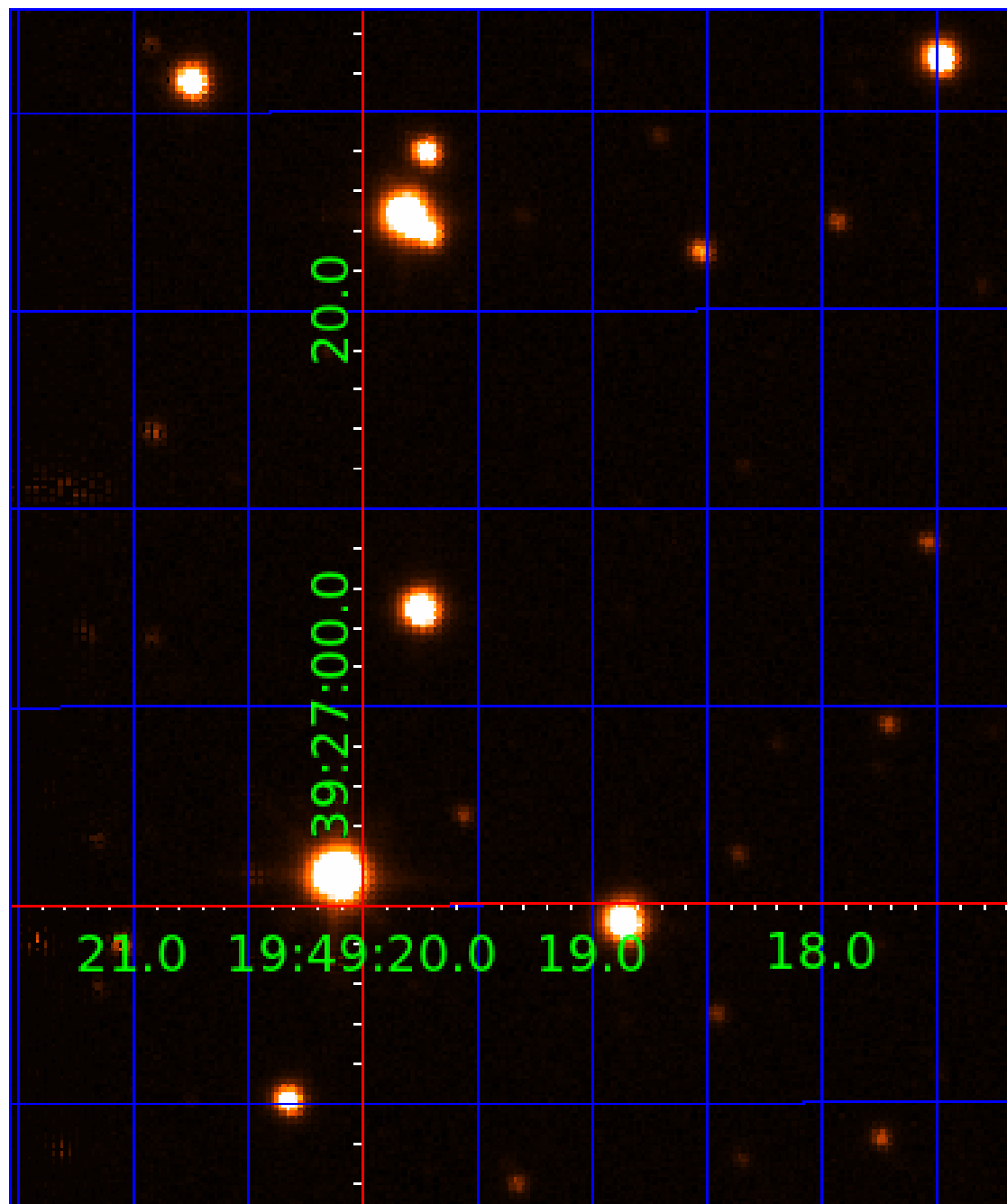
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



KIC 004390899

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})
004390899-01	OBS	No	0.831075	132.005059	1.6	1.398	11.1	0.4	1.74	7170	0.22	19200.68
004390899-02	OBS	No	0.832663	132.210201	0.3	2.978	8.6	0.1	1.74	7170	0.13	19151.86

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004390899-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_KIC_POS
004390899-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

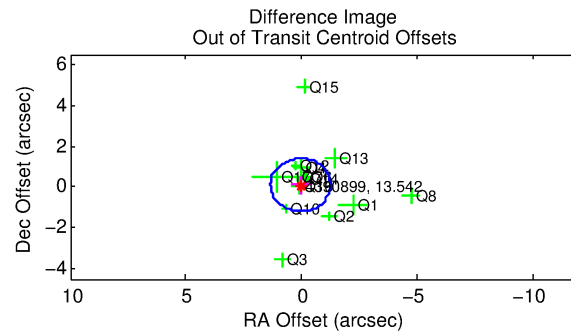
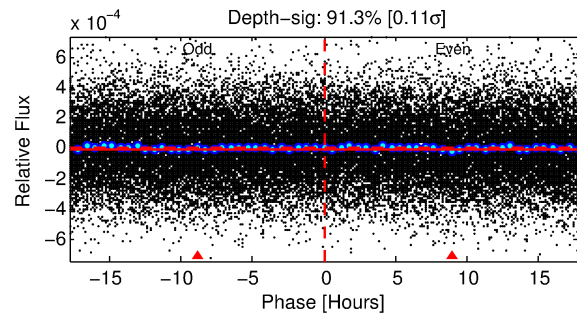
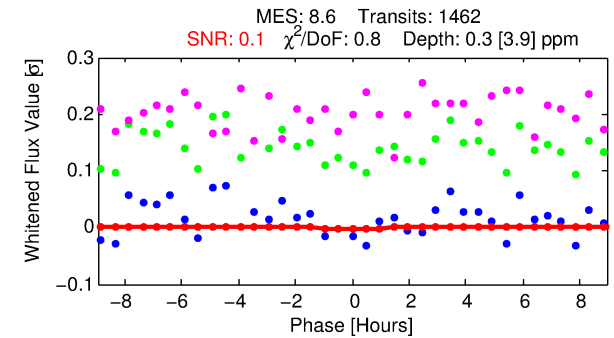
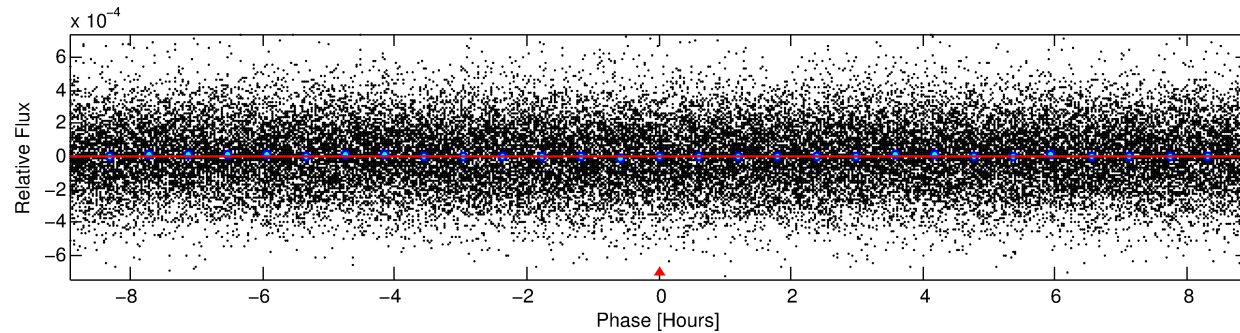
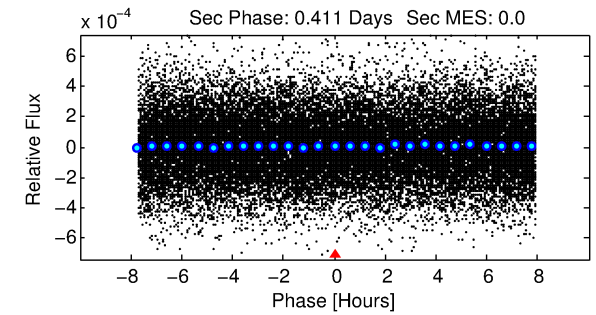
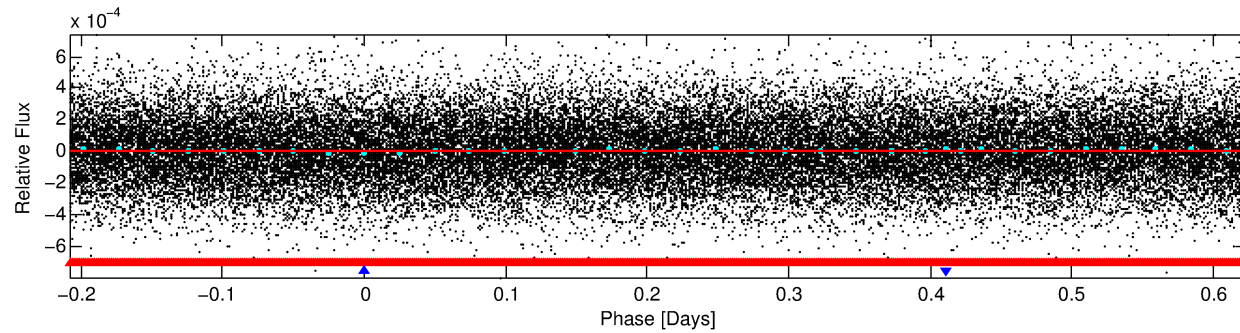
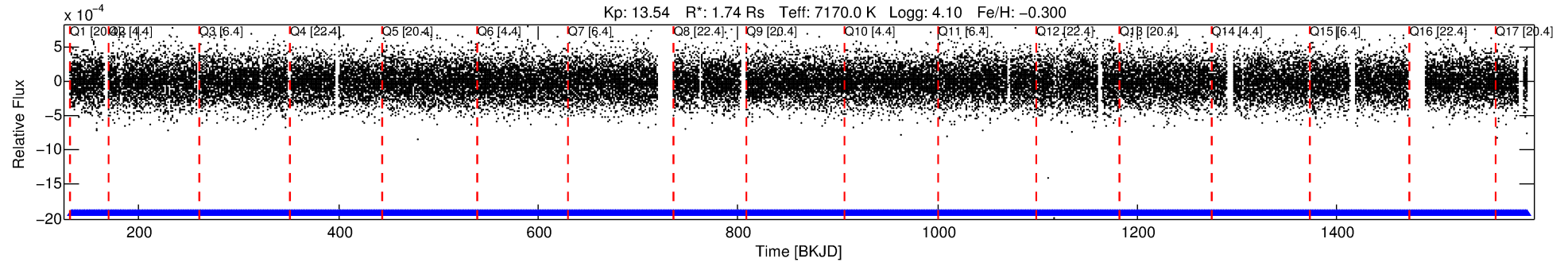
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004390899-02

No Significant Match Found

DV One-Page Summary

KIC: 4390899 Candidate: 2 of 2 Period: 0.833 d



DV Fit Results:

Period = 0.83266 [0.00094] d
Epoch = 132.2102 [0.2810] BKJD
Rp/R* = 0.0007 [0.0043]
a/R* = 1.13 [4.76]
b = 0.97 [1.41]
Seff = 19151.86 [7498.04]
Teq = 3000 [294] K
Rp = 0.13 [0.82] Re
a = 0.0194 [0.0047] AU
Ag = N/A
Teffp = N/A

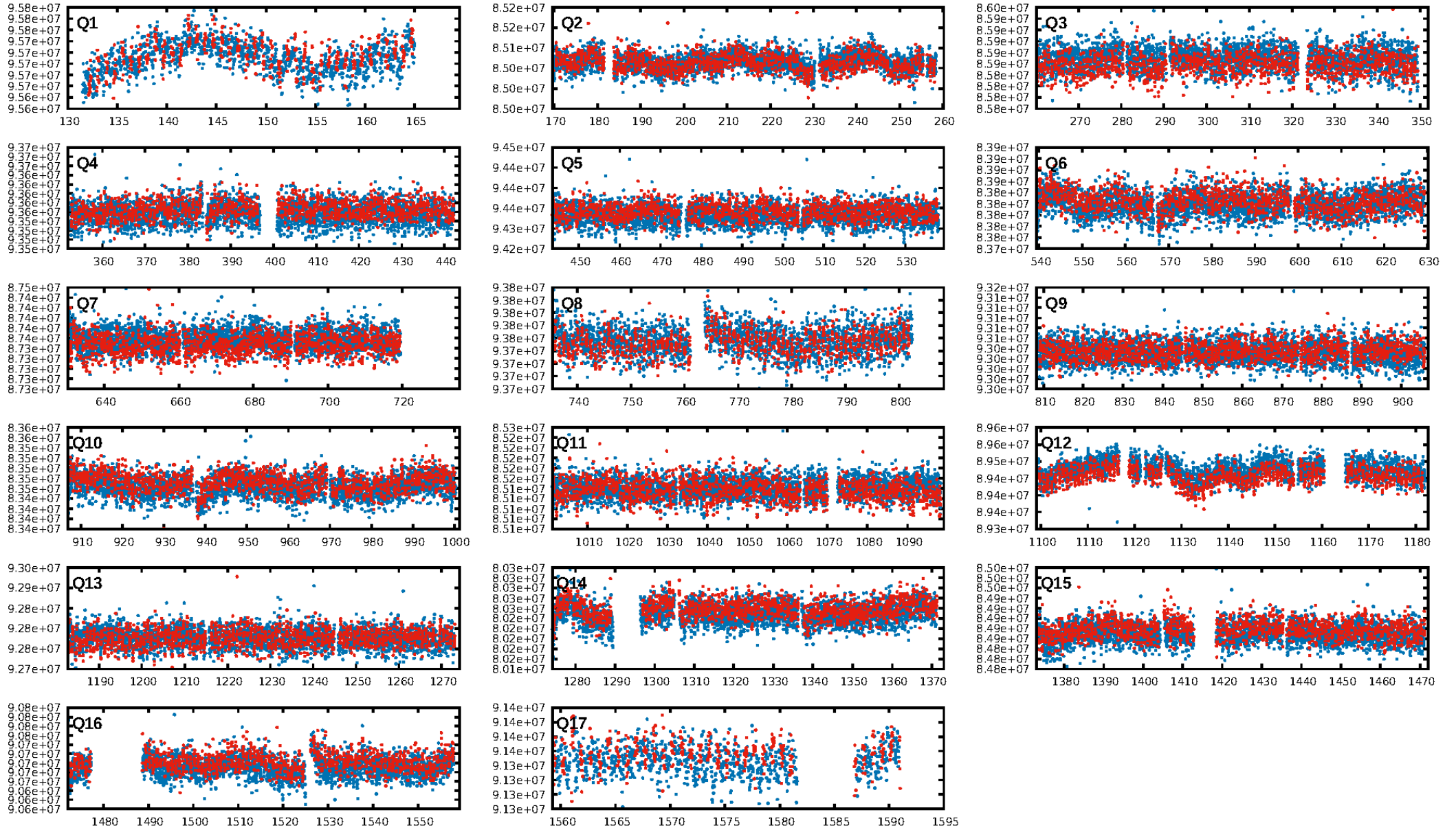
DV Diagnostic Results:

ShortPeriod-sig: 0.9% [0.01σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.32e-14
RollingBand-fgt: 1.00 [1389/1389]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.115 arcsec [0.26σ]
KicOffset-rm: 0.187 arcsec [0.50σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.29 [4/14]
DiffImageOverlap-fno: 0.41 [7/17]

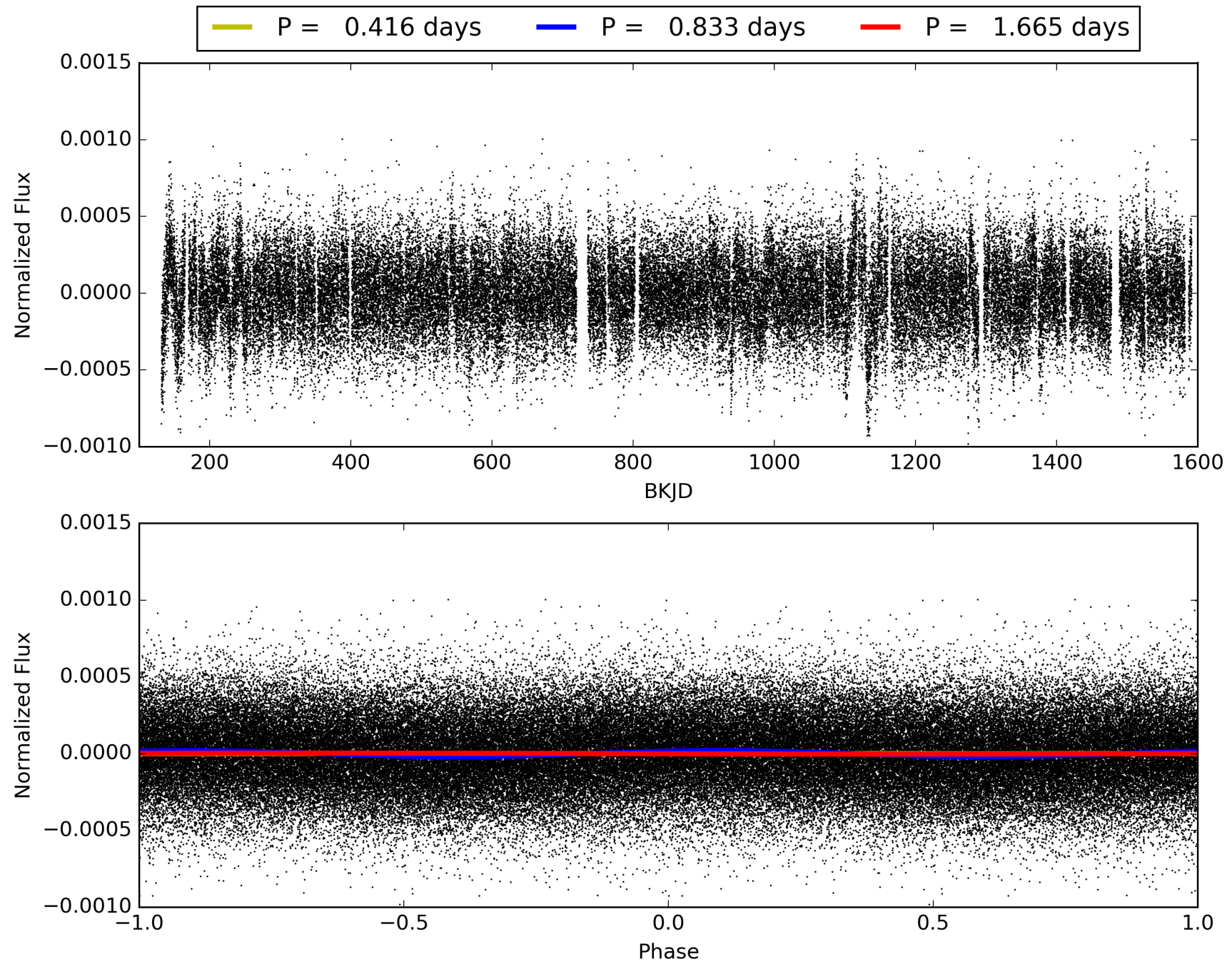
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 17:23:56 Z

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

TCE 004390899-02, PDC Light Curves

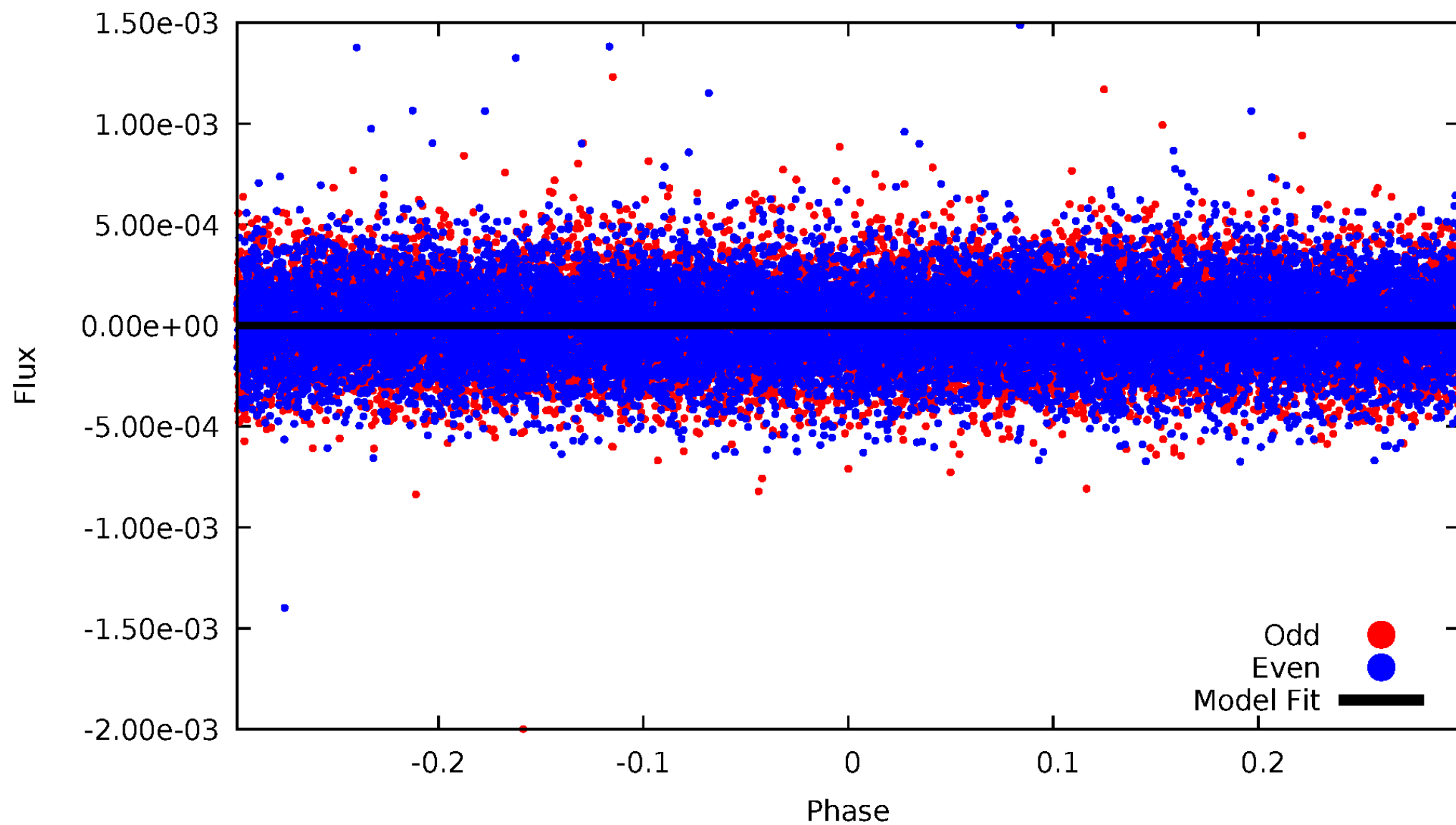


TCE 004390899-02



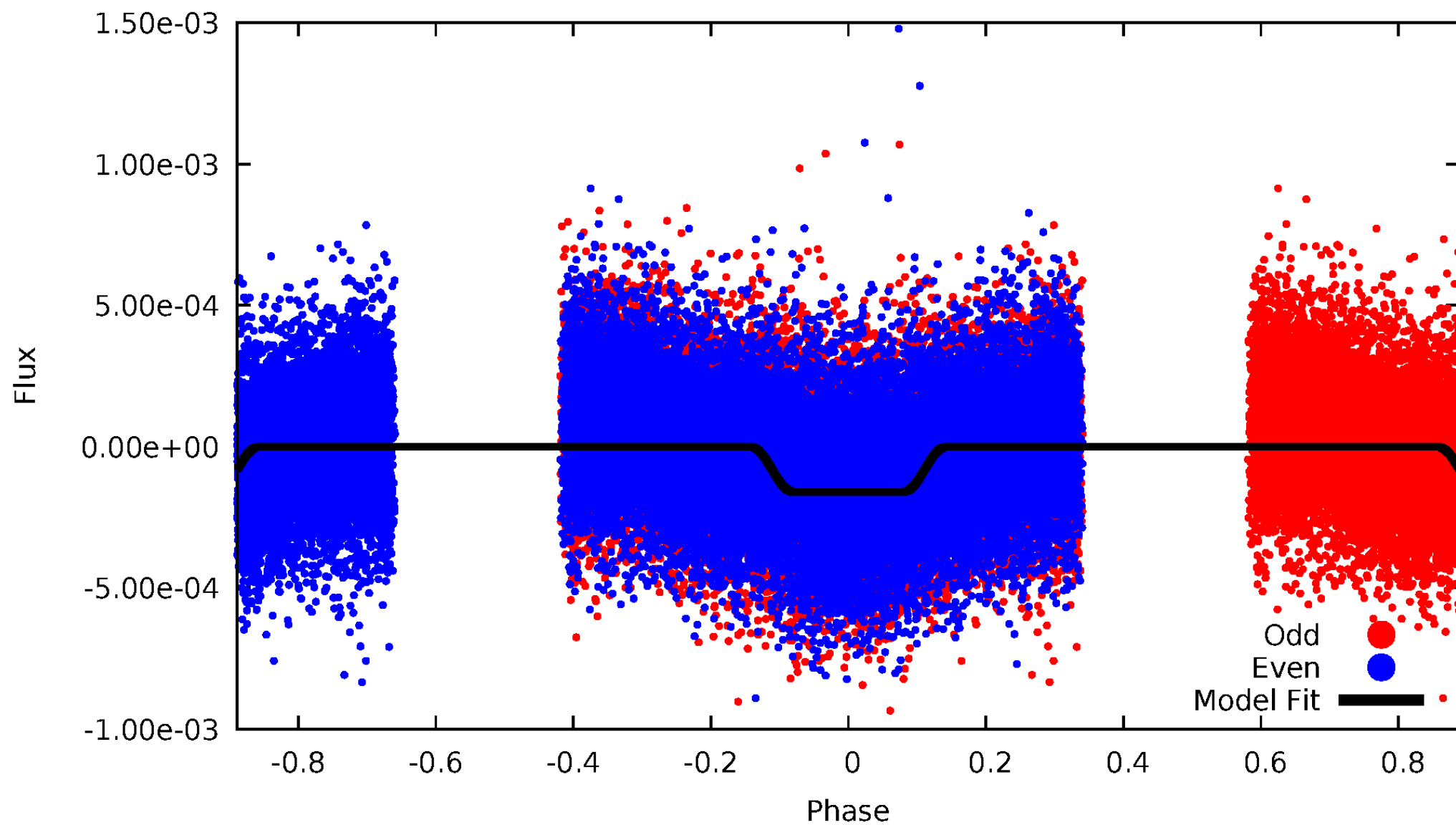
DV Odd/Even

TCE 004390899-02



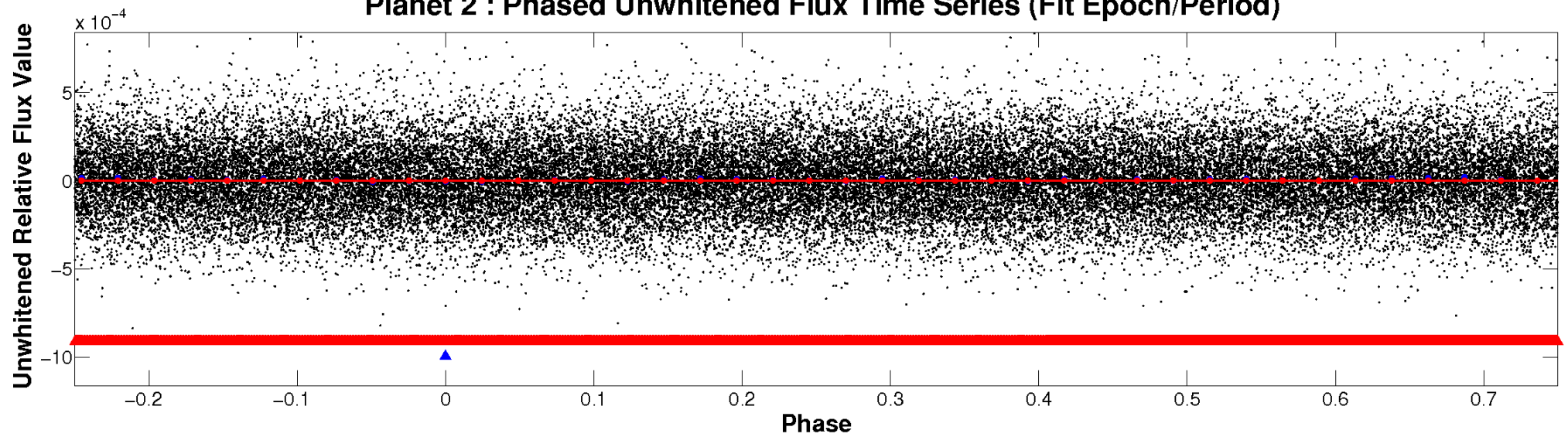
ALT Odd/Even

TCE 004390899-02

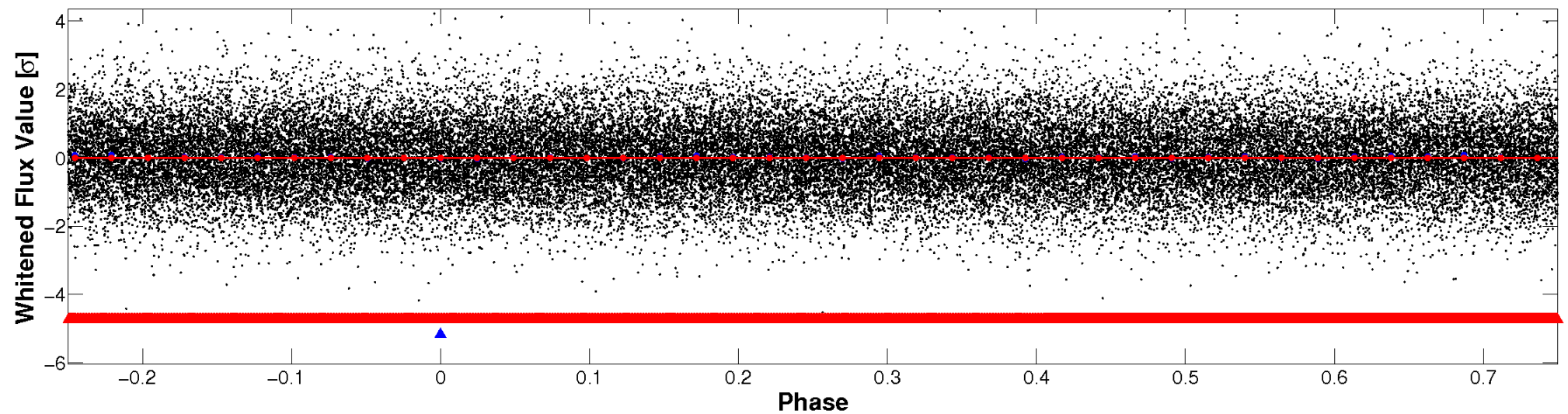


Non-Whitened Vs. Whitened Light Curve

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

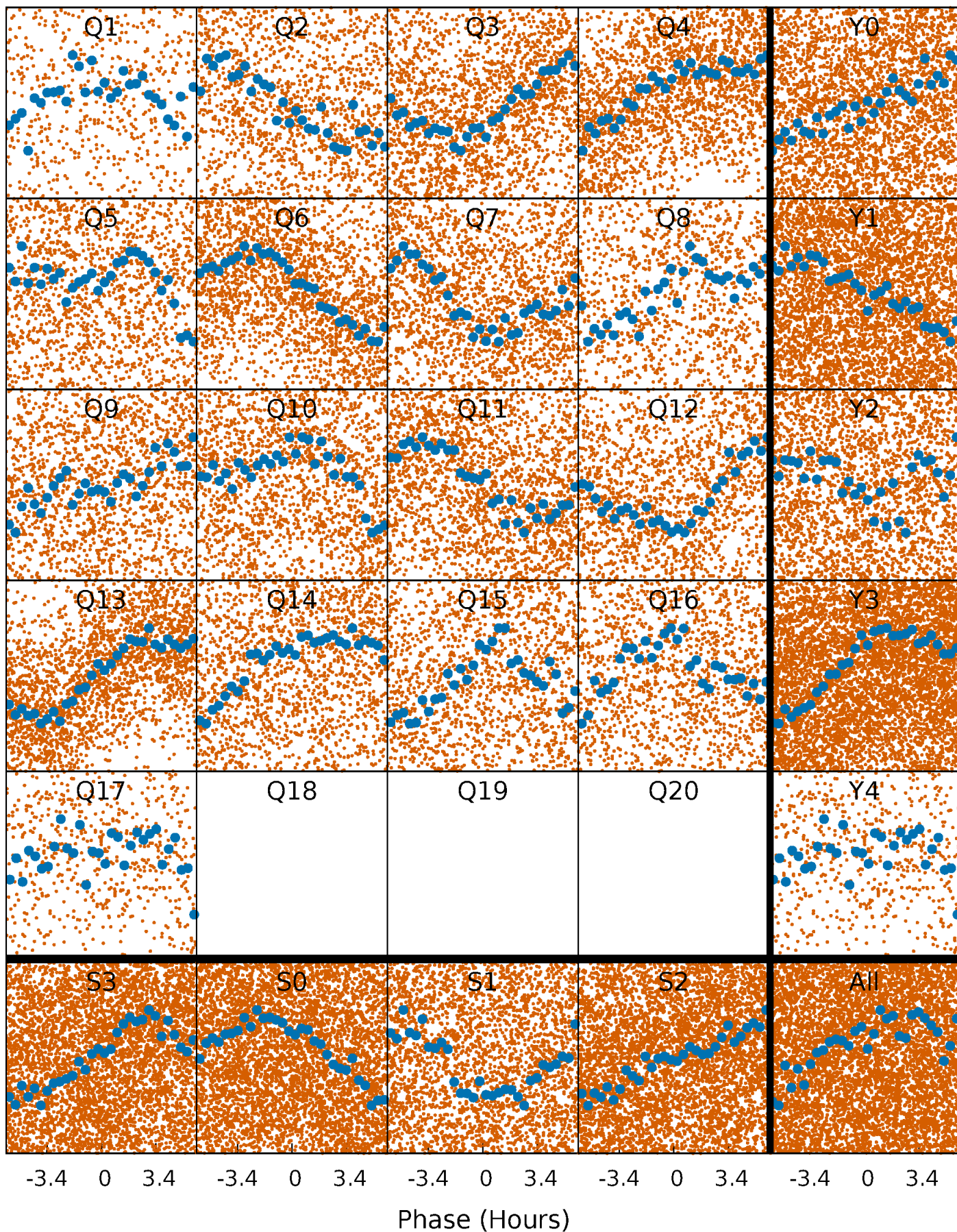


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



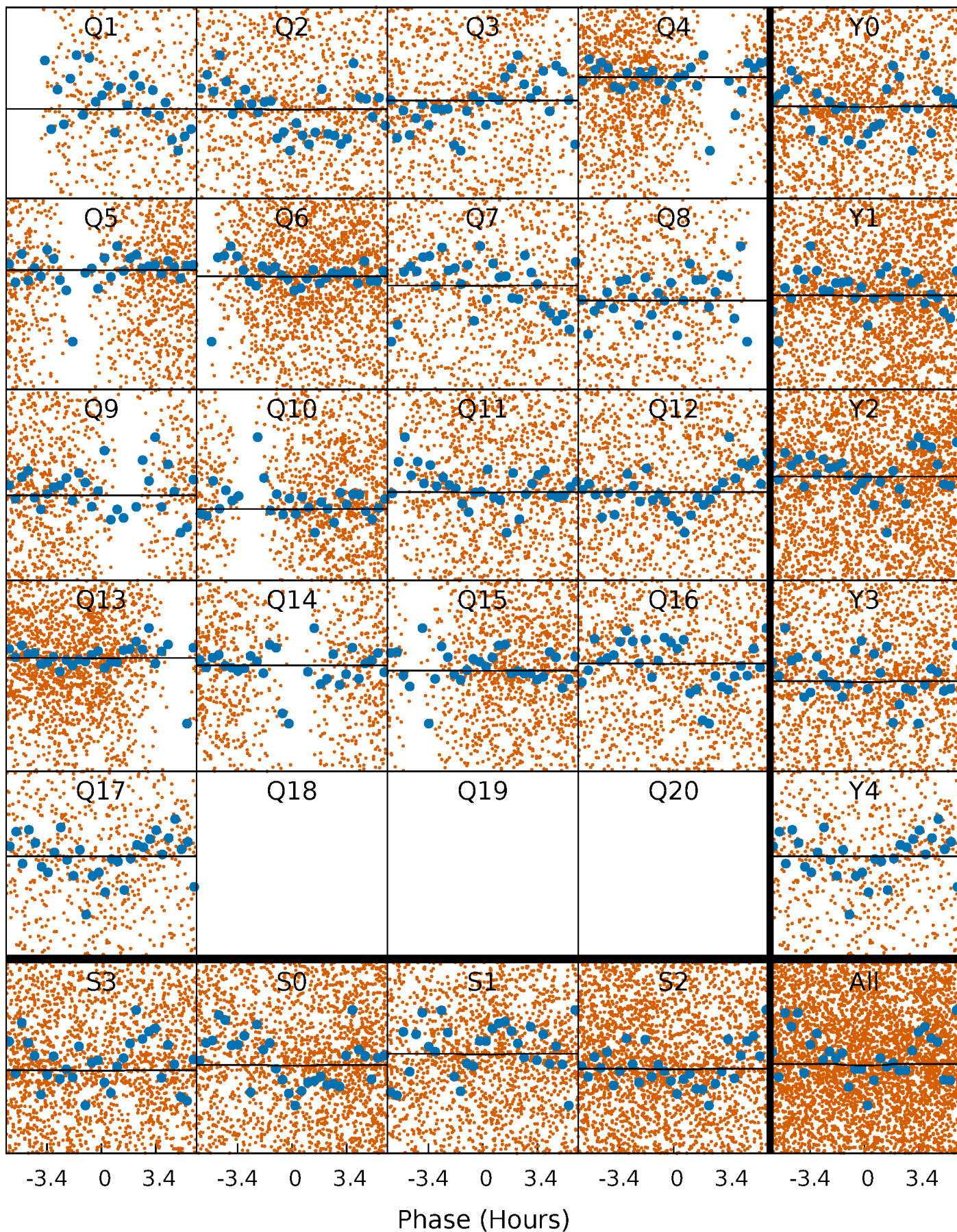
PDC Quarter-Phased Transit Curves

TCE 004390899-02 P= 0.832663 Days $T_0=132.210201$ (BKJD)



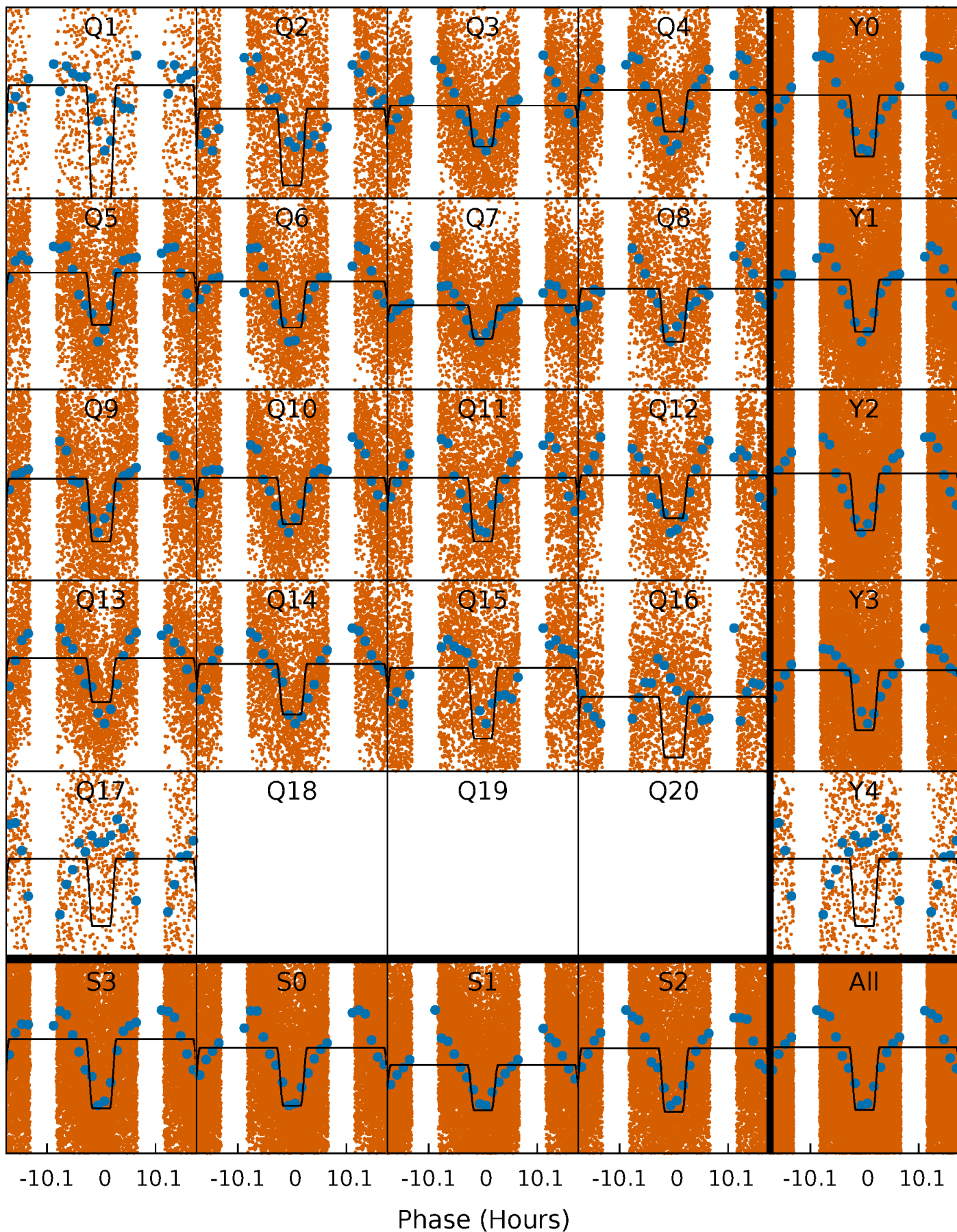
DV Quarter-Phased Transit Curves

TCE 004390899-02 P= 0.832663 Days $T_0=132.210201$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

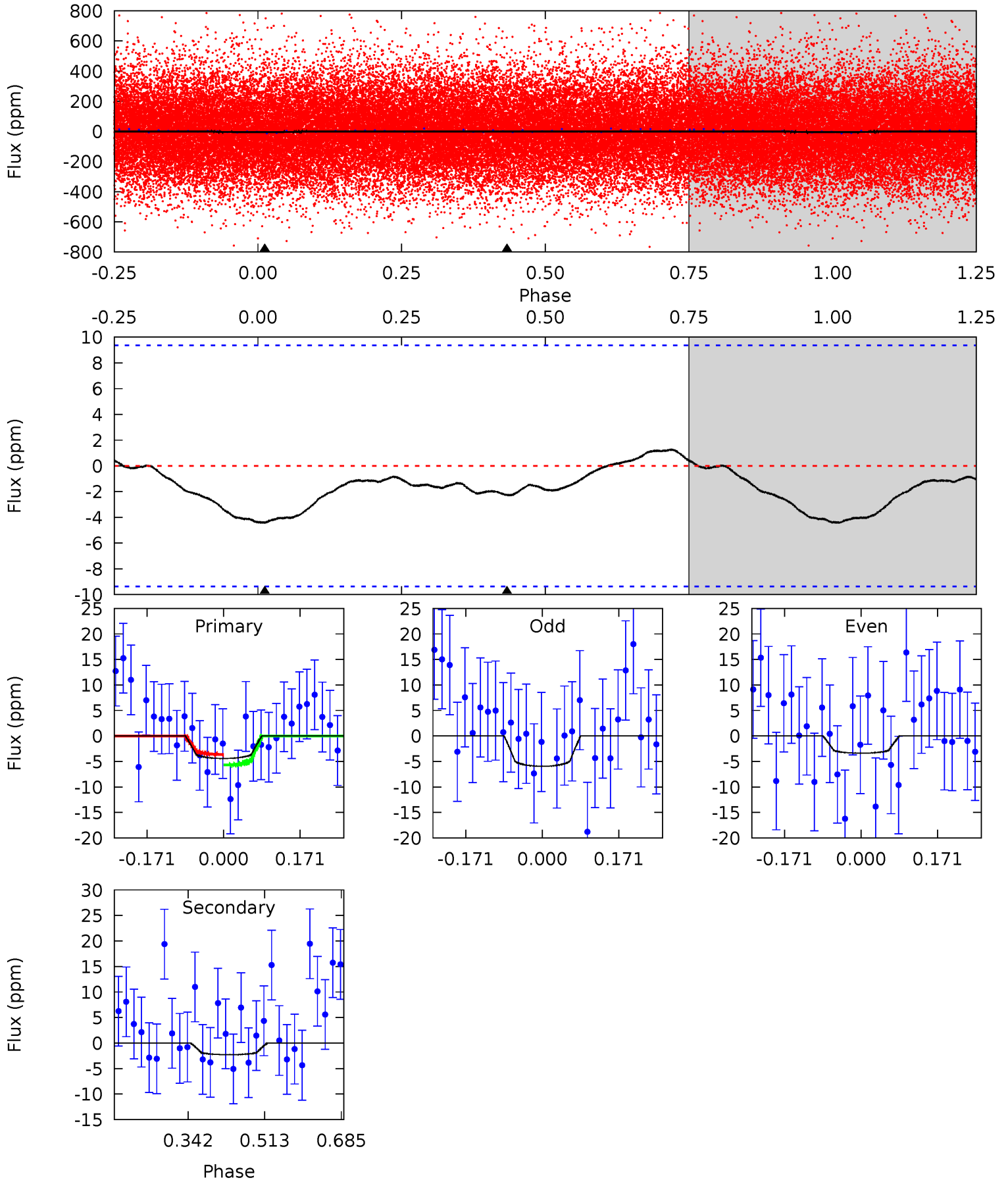
TCE 004390899-02 $P = 0.831070$ Days $T_0 = 131.626406$ (BKJD)



DV Model-Shift Uniqueness Test

004390899-02, P = 0.832663 Days, E = 131.377538 Days

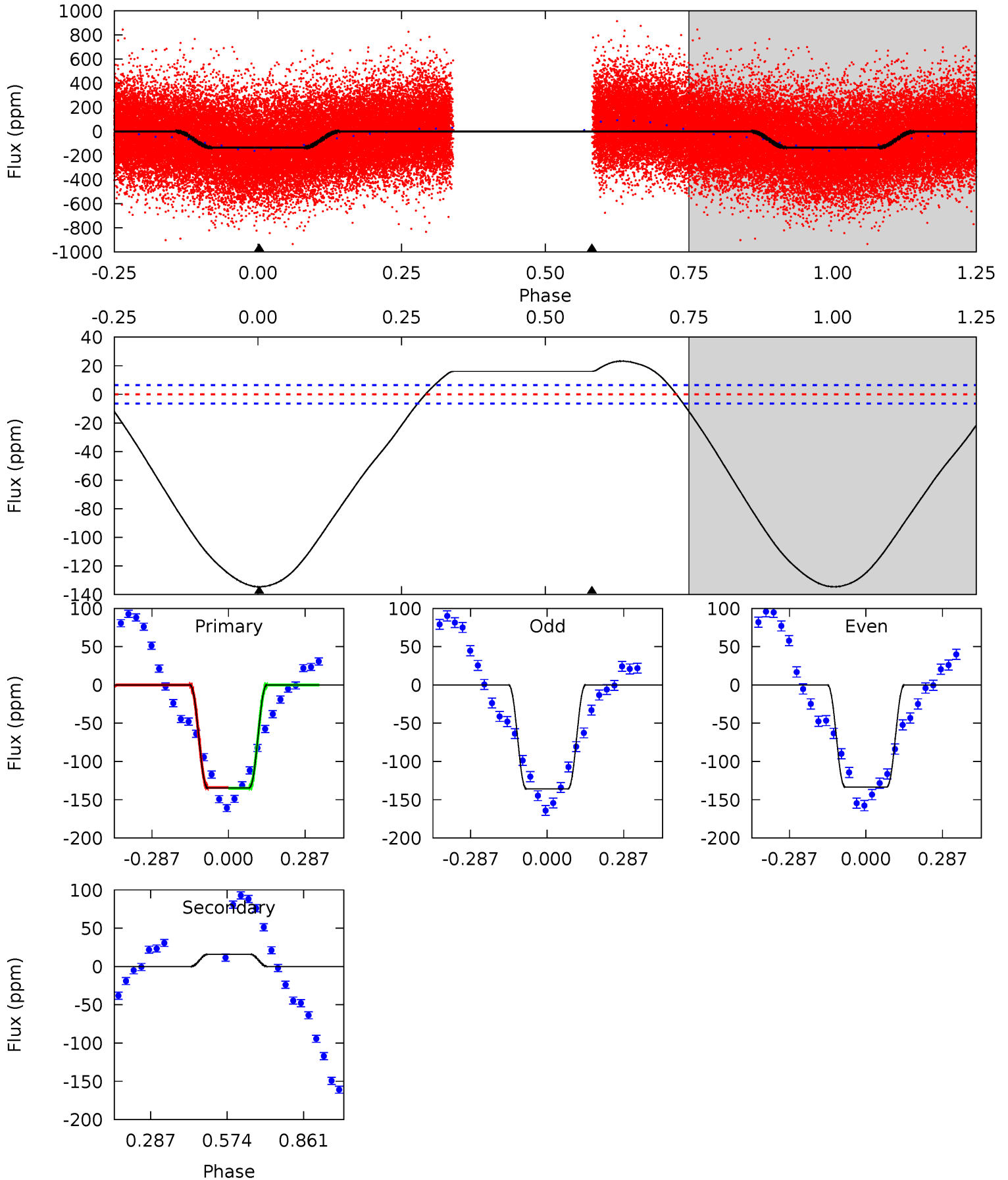
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.10	1.08	0	0	4.45	1.37	0.39	2.10	2.10	1.08	1.08	0.61	1.30	0.22	0.49



Alt Model-Shift Uniqueness Test

004390899-02, P = 0.831070 Days, E = 130.795336 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.9	-10.7	0	0	4.34	1.06	6.61	89.9	89.9	-10.7	-10.7	0.75	0.98	0.15	0.31



Stellar Parameters For KIC 004390899

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7170^{+224}_{-324}	$4.101^{+0.185}_{-0.167}$	$-0.300^{+0.250}_{-0.350}$	$1.741^{+0.522}_{-0.427}$	$1.397^{+0.205}_{-0.251}$	$0.373^{+0.431}_{-0.173}$
	+3%/-5%	+5%/-4%	+83%/-117%	+30%/-25%	+15%/-18%	+116%/-46%
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 004390899-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2 ± 2	$0.59^{+0.65}_{-0.40}$	4175^{+344}_{-332}	4224^{+4012}_{-7905}	$0.897^{+9.030}_{-0.827}$
Alt.	16 ± 1	$2.40^{+0.94}_{-0.82}$	4163^{+330}_{-317}	-4594^{+343}_{-599}	$-0.571^{+0.276}_{-0.733}$

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 $A_{obs} \gg 1.0$

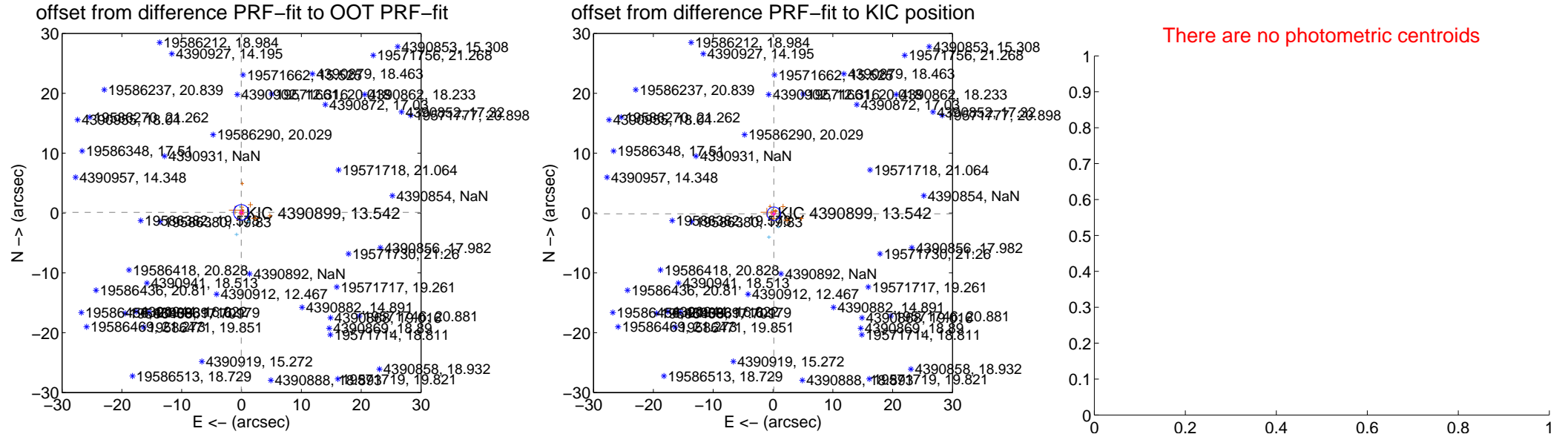
DV Centroid Data

Supplemental centroid analysis for 004390899-02. Kepler magnitude: 13.54. Transit SNR 0.11

There are 4 quarters with good PRF difference image offsets

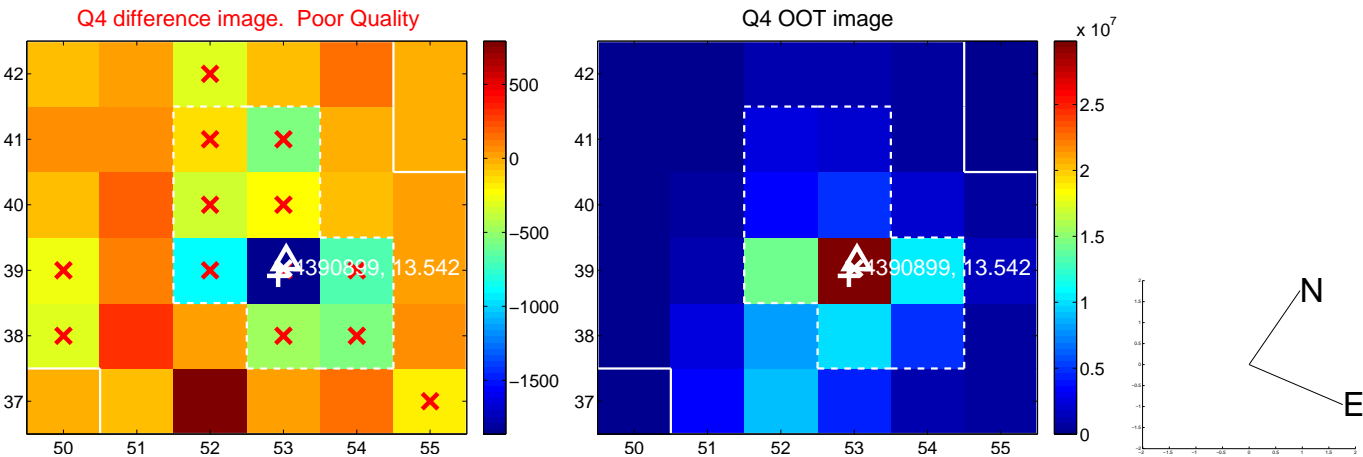
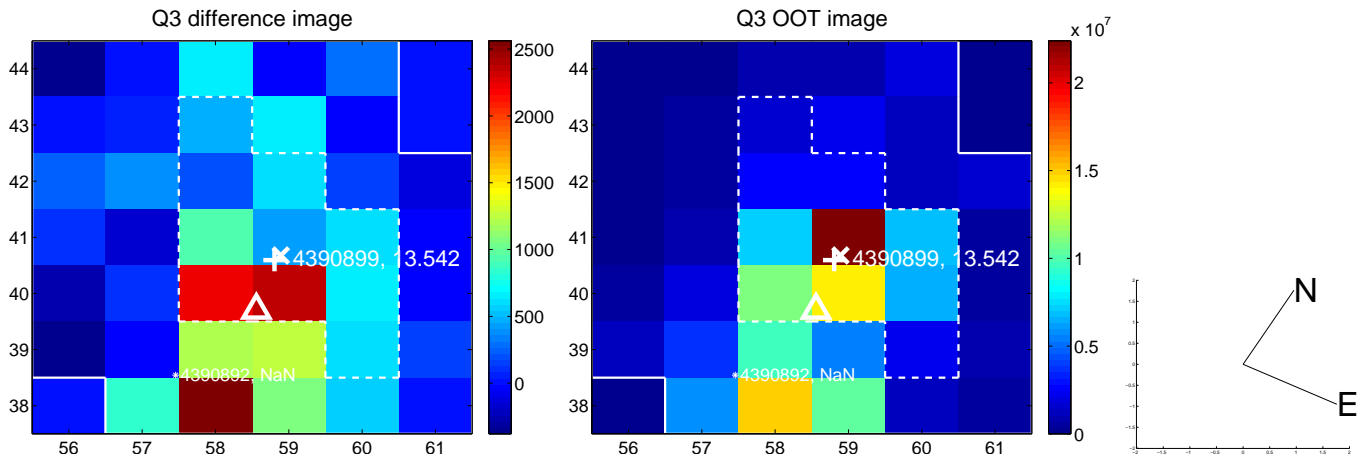
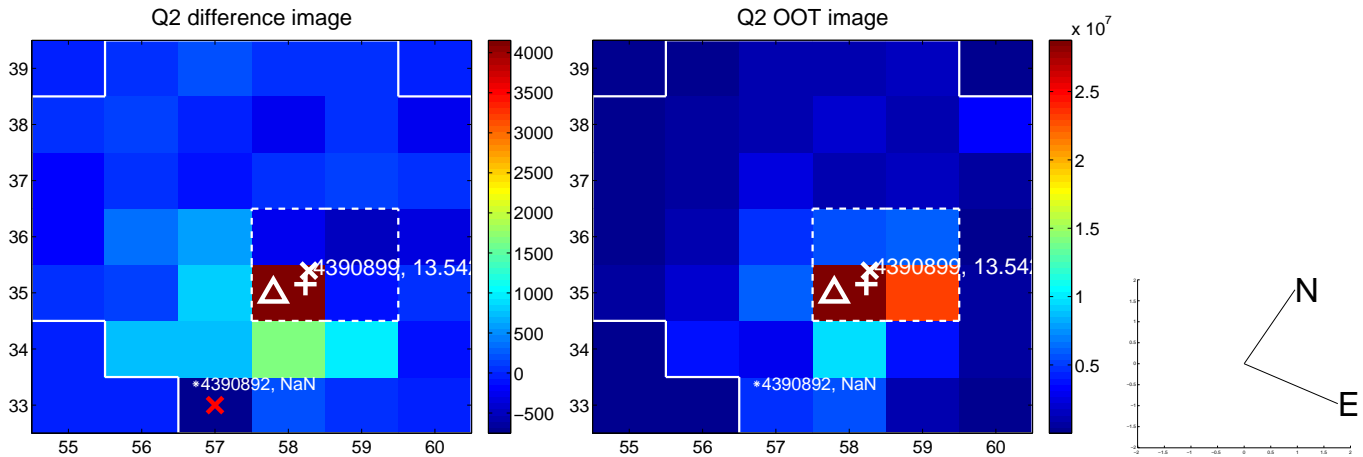
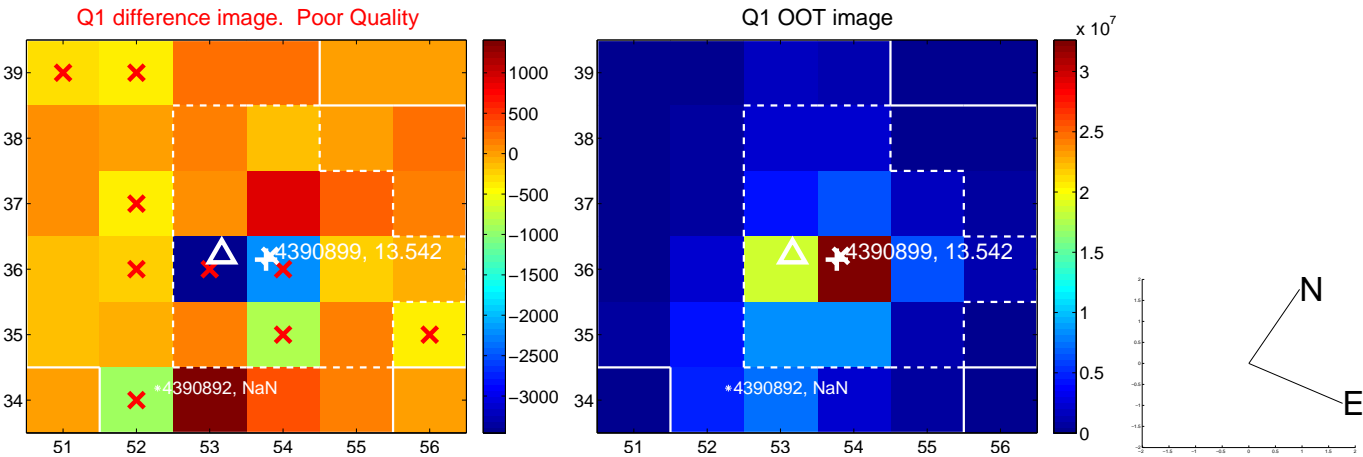
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.115 ± 0.433	0.26	0.047 ± 0.405	0.104 ± 0.427
PRF-fit source offset from KIC position	0.187 ± 0.377	0.50	-0.133 ± 0.383	-0.131 ± 0.373
photometric centroid source offset	—	—	—	—

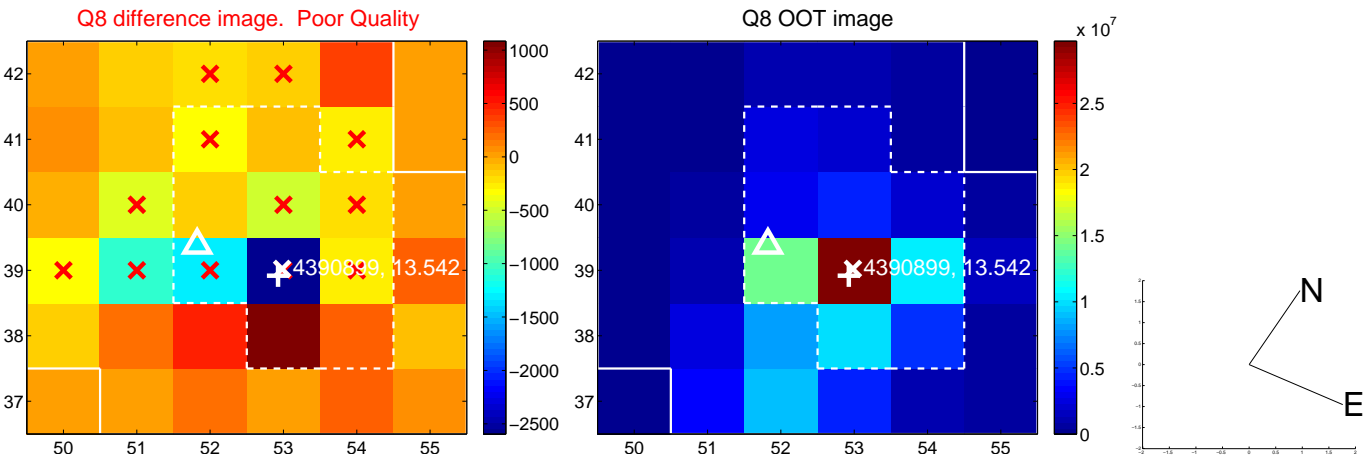
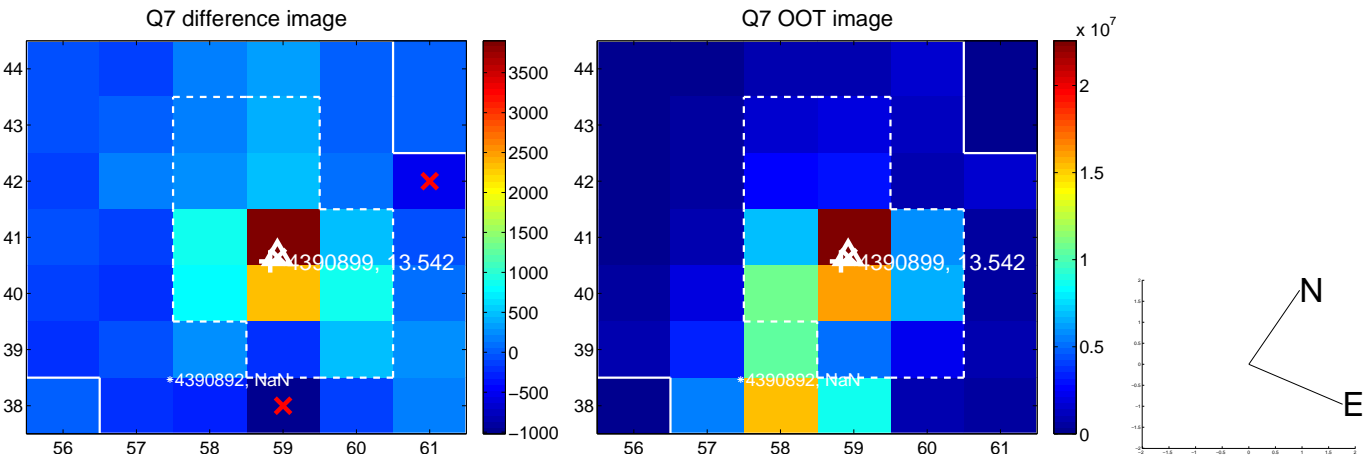
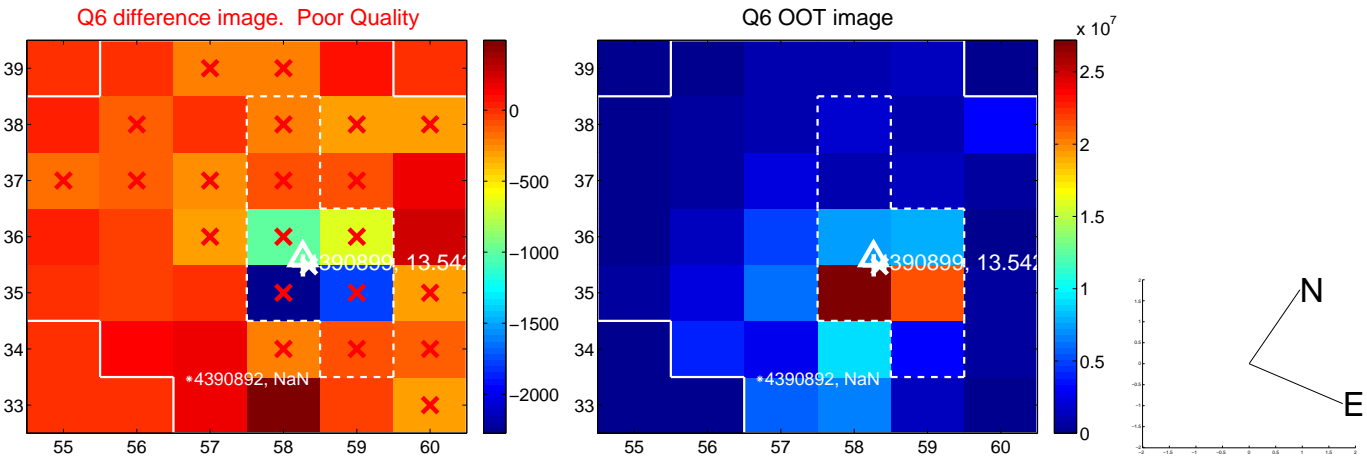
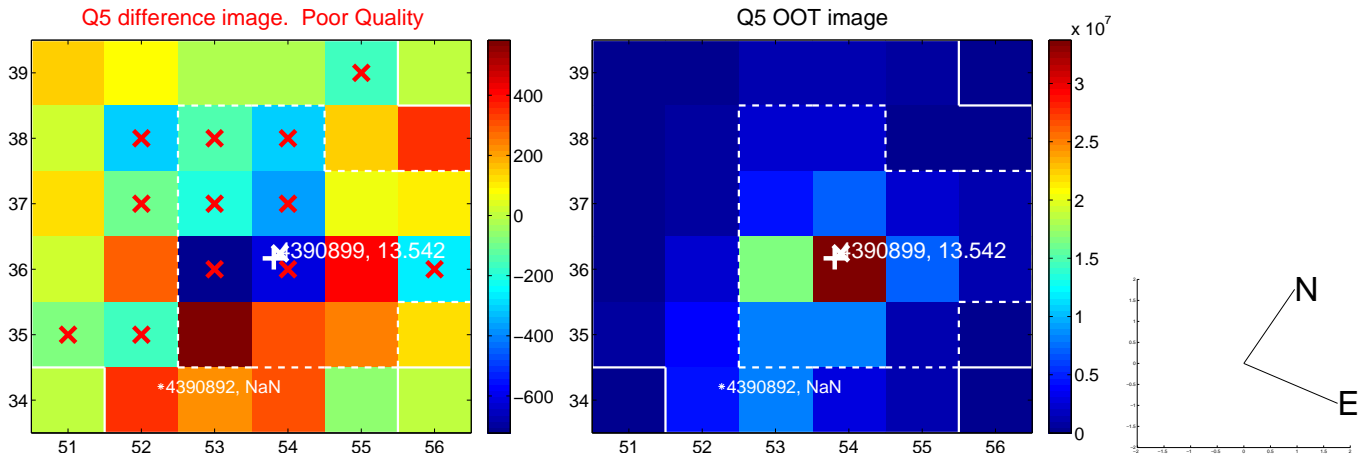


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

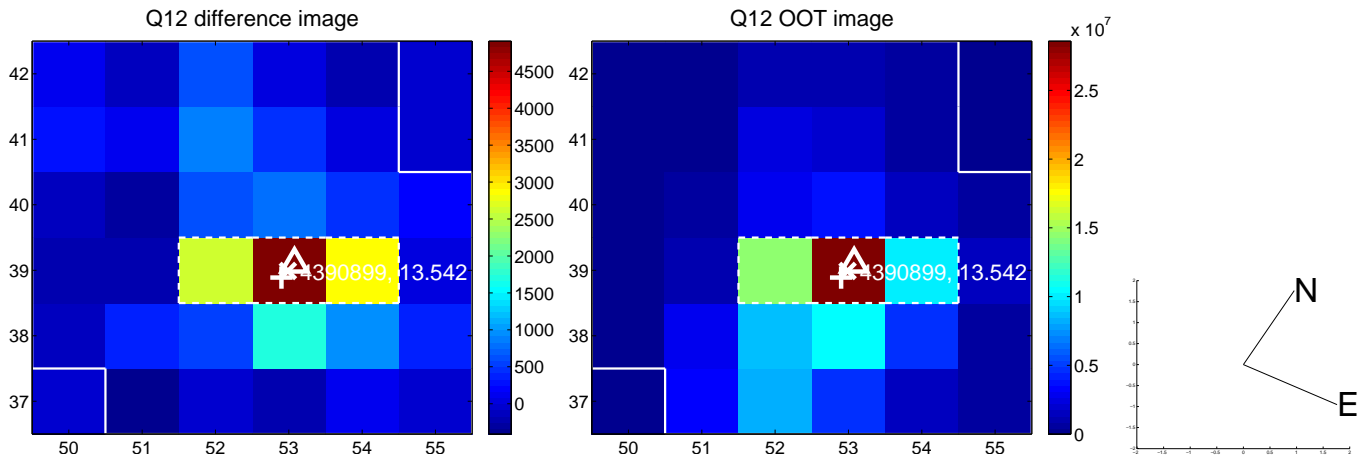
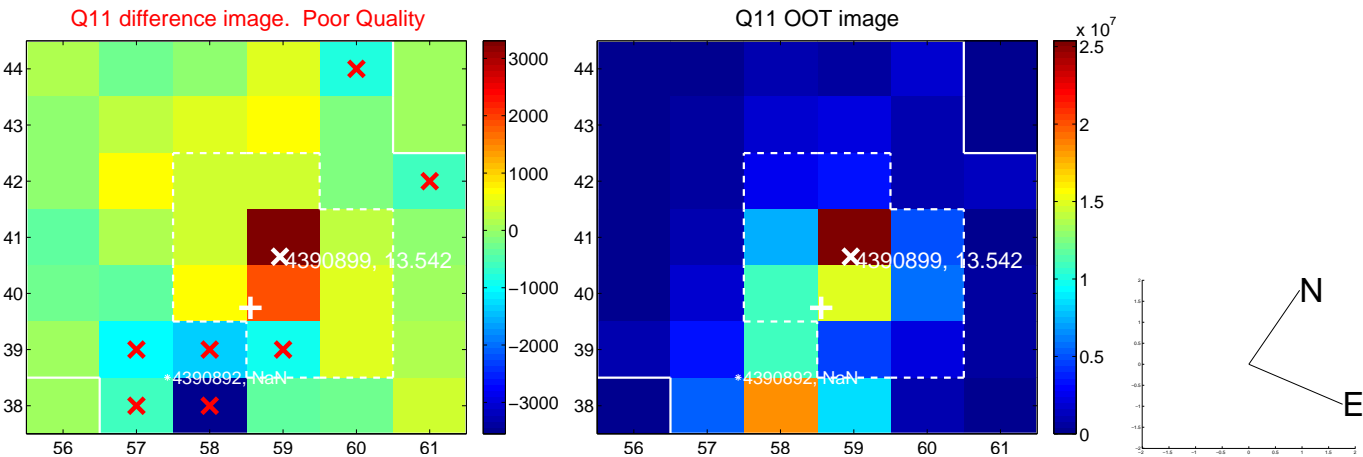
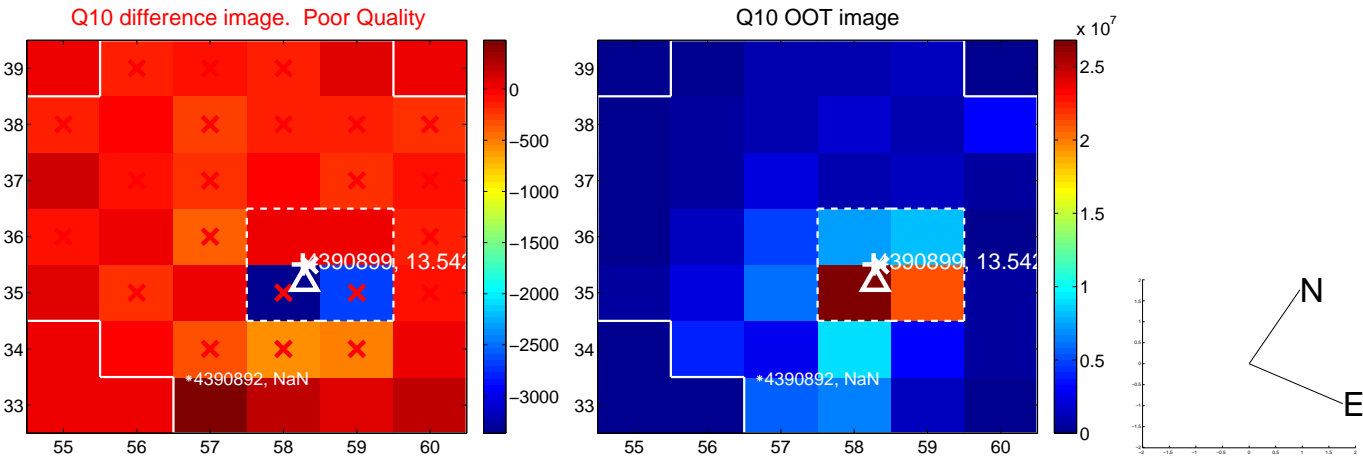
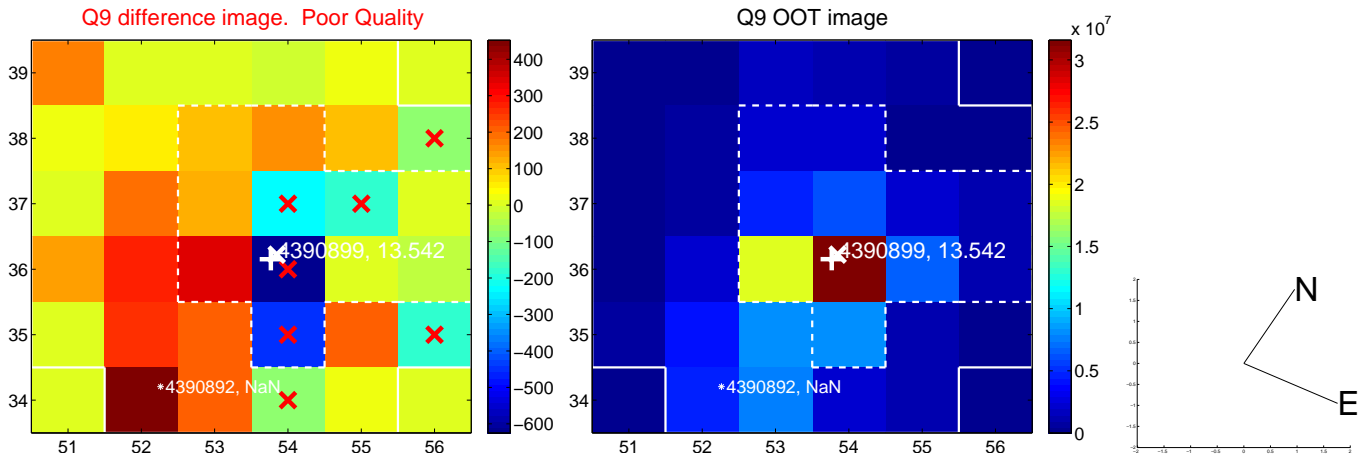
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



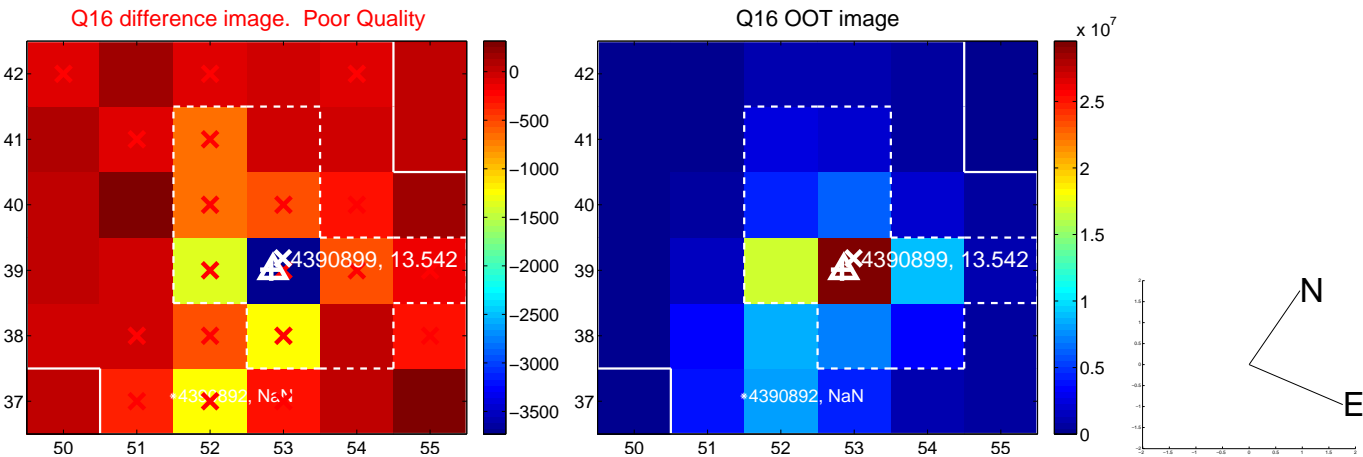
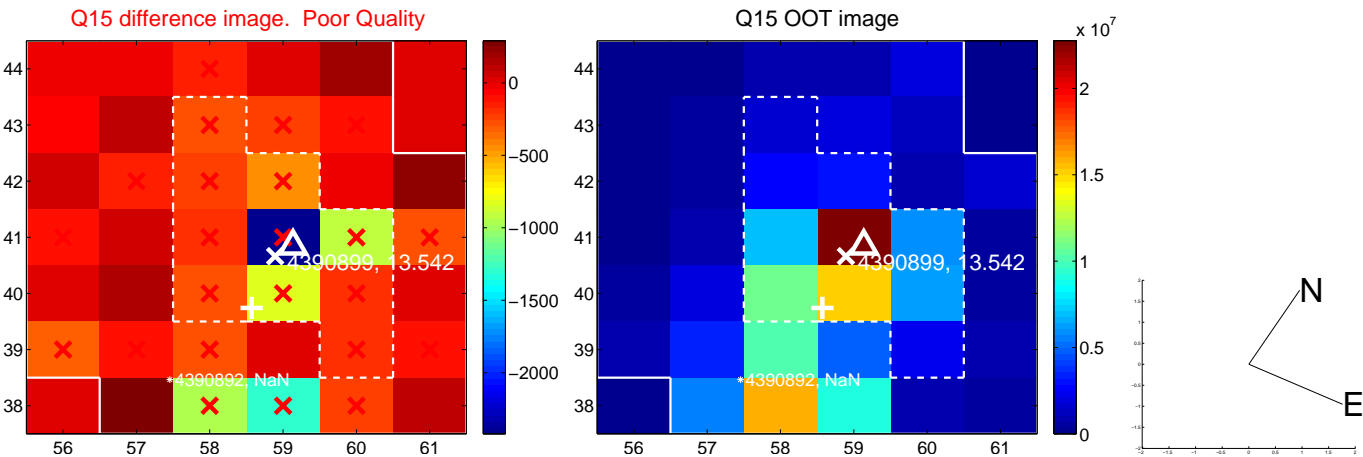
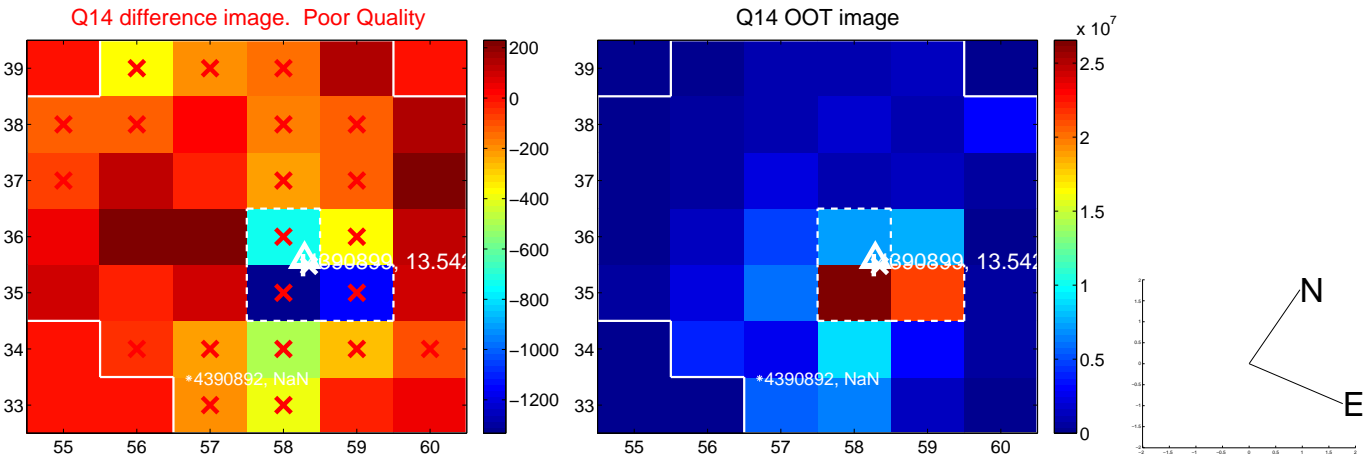
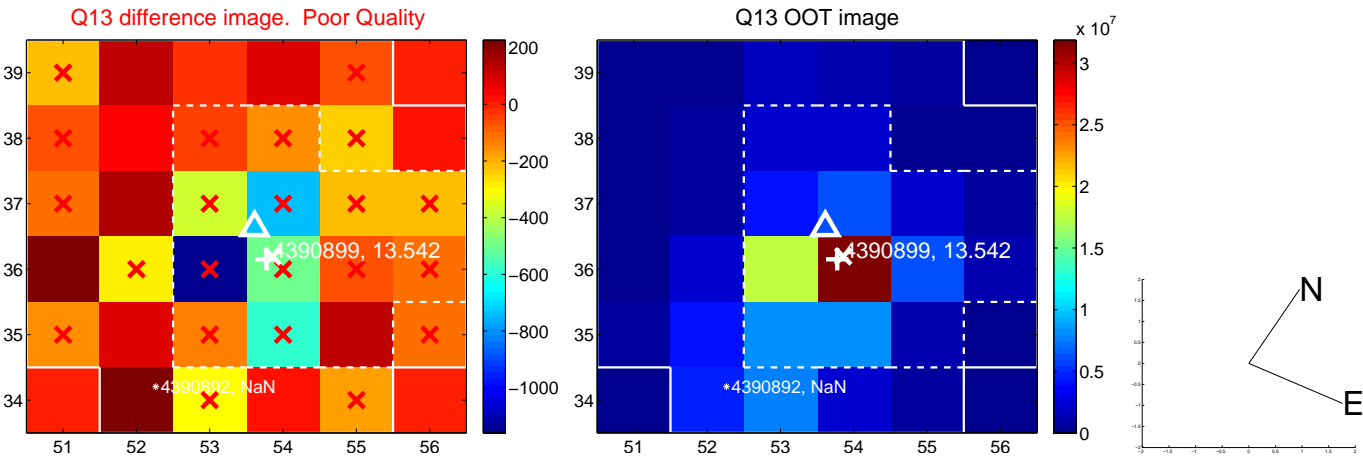
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



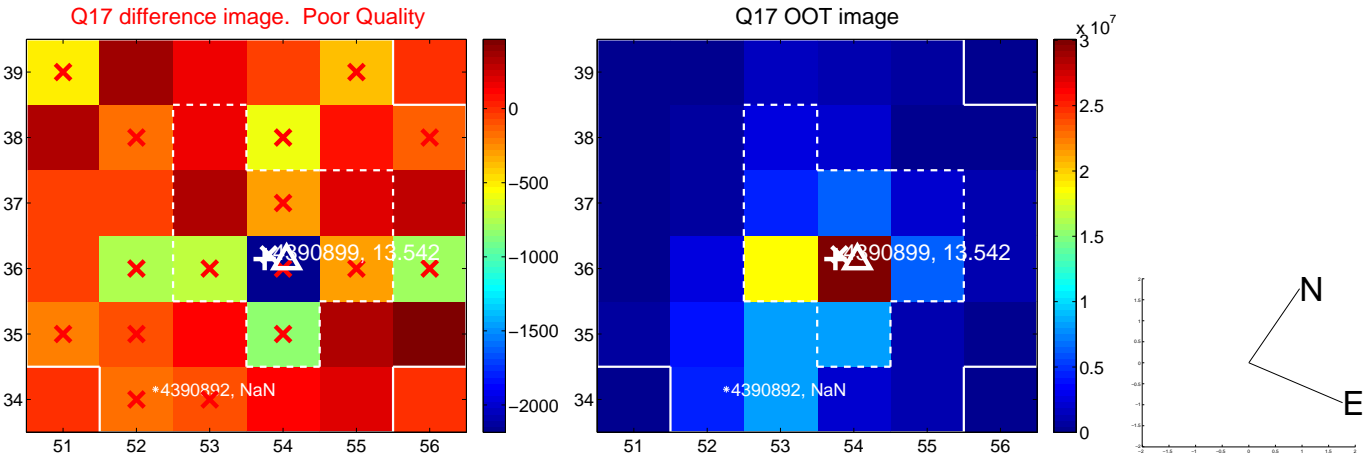
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

