

KIC 003836399

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})
003836399-01	OBS	3834.01	1.540351	132.016418	557.0	2.138	116.3	51.4	0.72	4911	2.18	508.05
003836399-02	OBS	No	0.770096	131.881259	0.2	7.495	15.4	0.0	0.72	4911	0.03	1280.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003836399-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
003836399-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

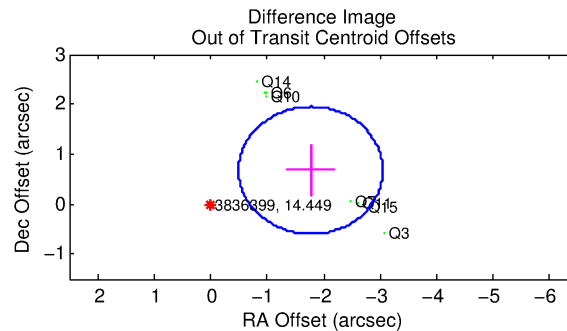
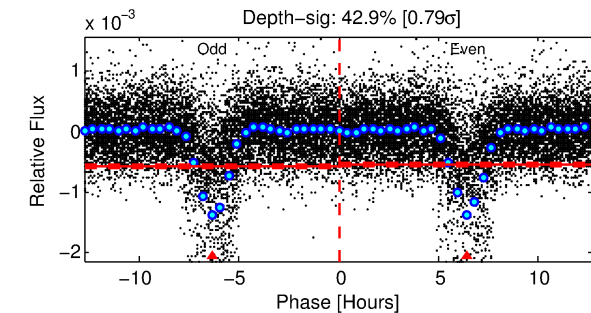
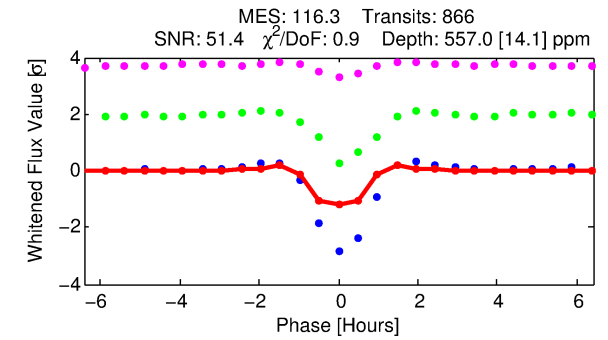
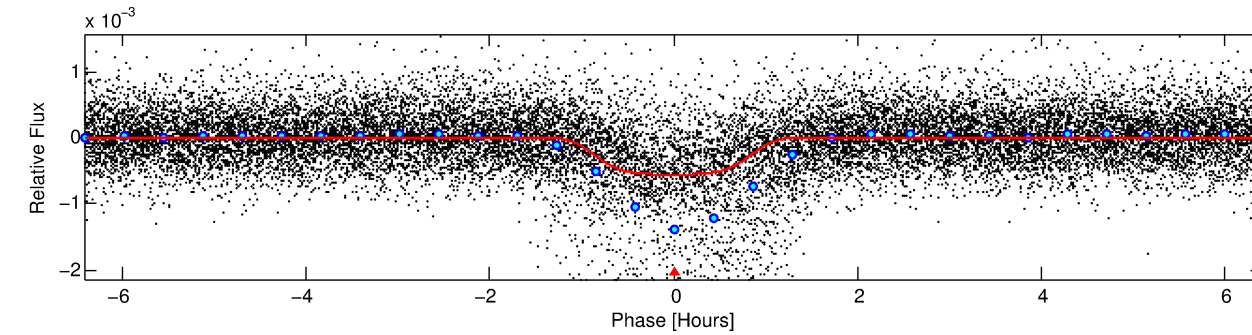
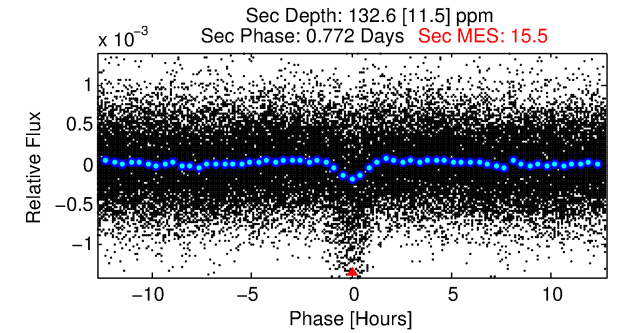
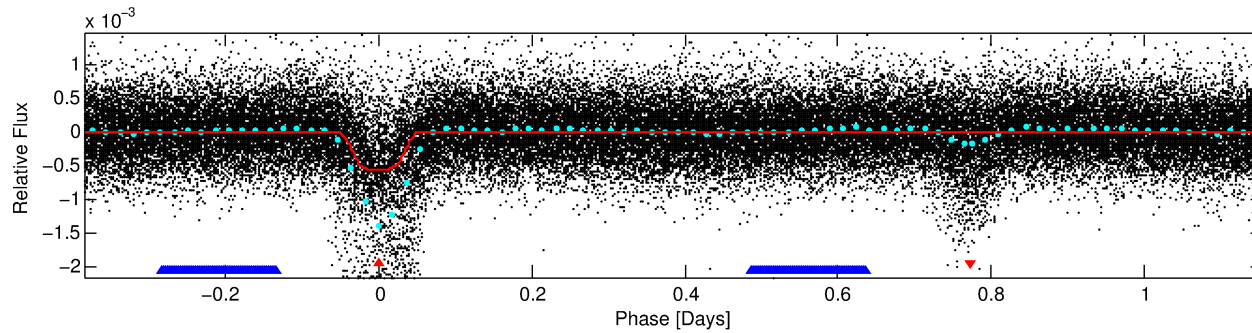
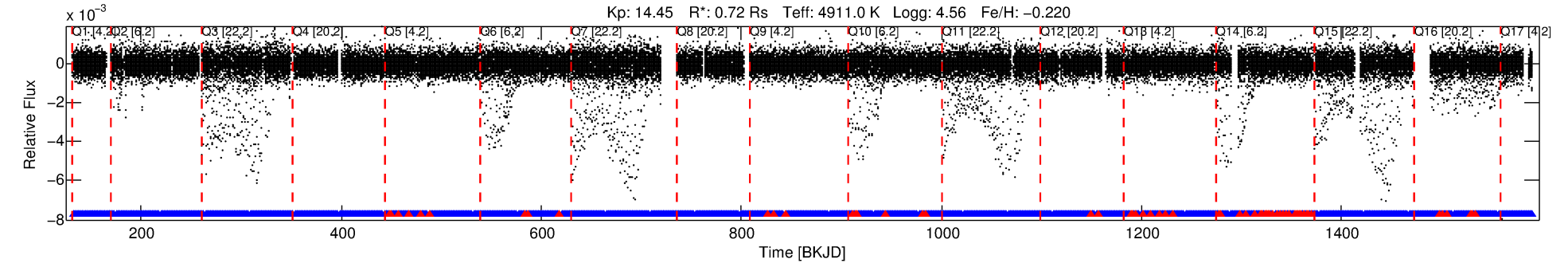
Ephemeris Match Information For 003836399-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
003836399-01	3836399	6363.01	3836413	1:1	13.0	2	3	13.76	14.45	133.14	Direct-PRF	0	2.31	1.26

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 3836399 Candidate: 1 of 2 Period: 1.540 d
KOI: K03834.01 Corr: 0.831



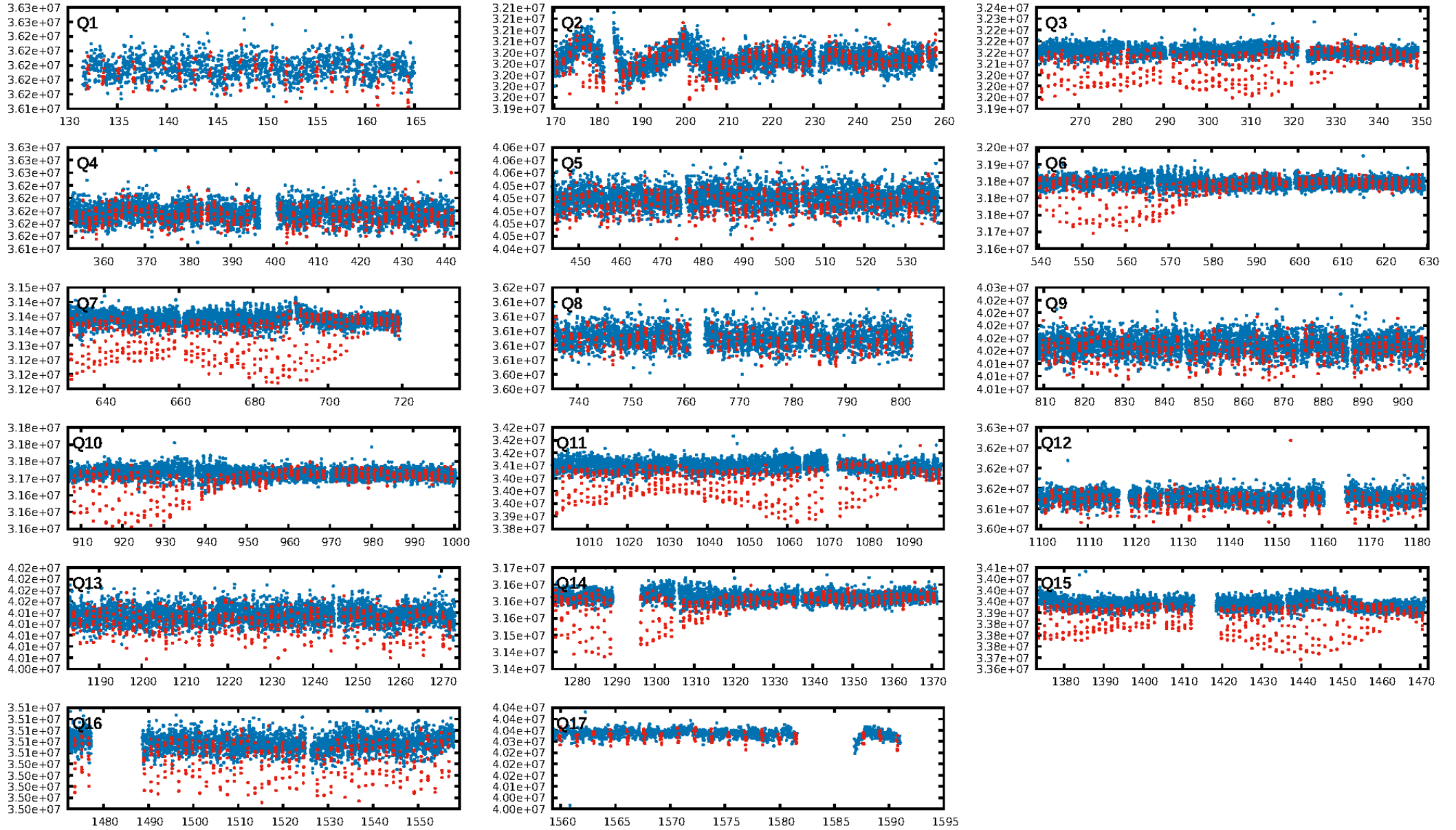
DV Fit Results:

Period = 1.54035 [0.00000] d
Epoch = 132.0164 [0.0005] BKJD
Rp/R* = 0.0275 [0.0012]
a/R* = 2.59 [0.34]
b = 0.93 [0.02]
Seff = 508.05 [85.68]
Teq = 1211 [51] K
Rp = 2.18 [0.23] Re
a = 0.0232 [0.0019] AU
Ag = 8.29 [1.41] [5.16σ]
Teffp = 3176 [135] K [13.61σ]

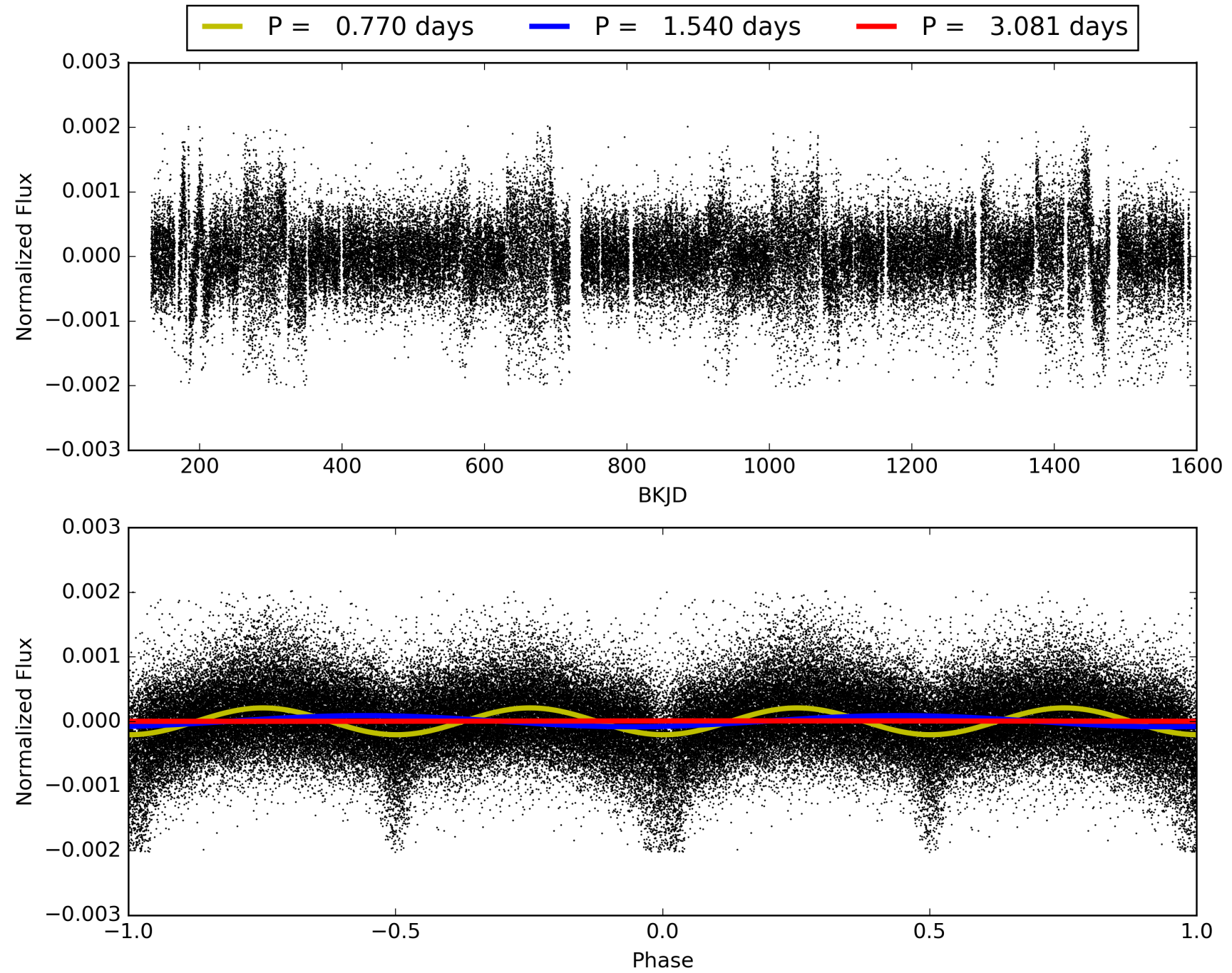
DV Diagnostic Results:

ShortPeriod-sig: 98.2% [2.37σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.93 [766/826]
GhostDiagnostic-chr: -0.4296
Centroid-sig: 0.0%
Centroid-so: 3.868 arcsec [81.65σ]
OotOffset-rm: 1.894 arcsec [4.46σ]
KicOffset-rm: 8.129 arcsec [22.32σ]
OotOffset-st: 3/4/0/0 [7]
KicOffset-st: 4/4/0/0 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003836399-01, PDC Light Curves

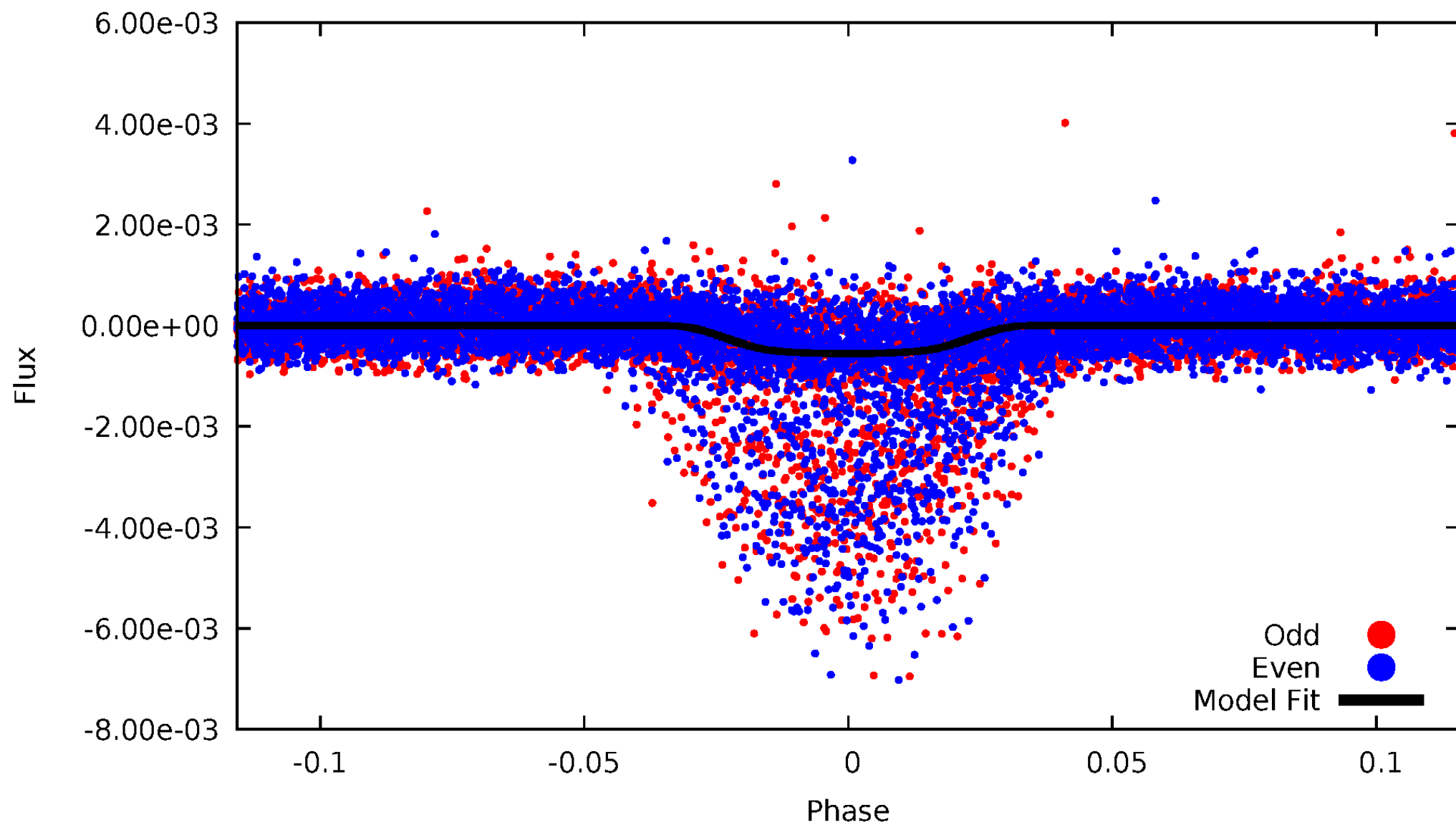


TCE 003836399-01



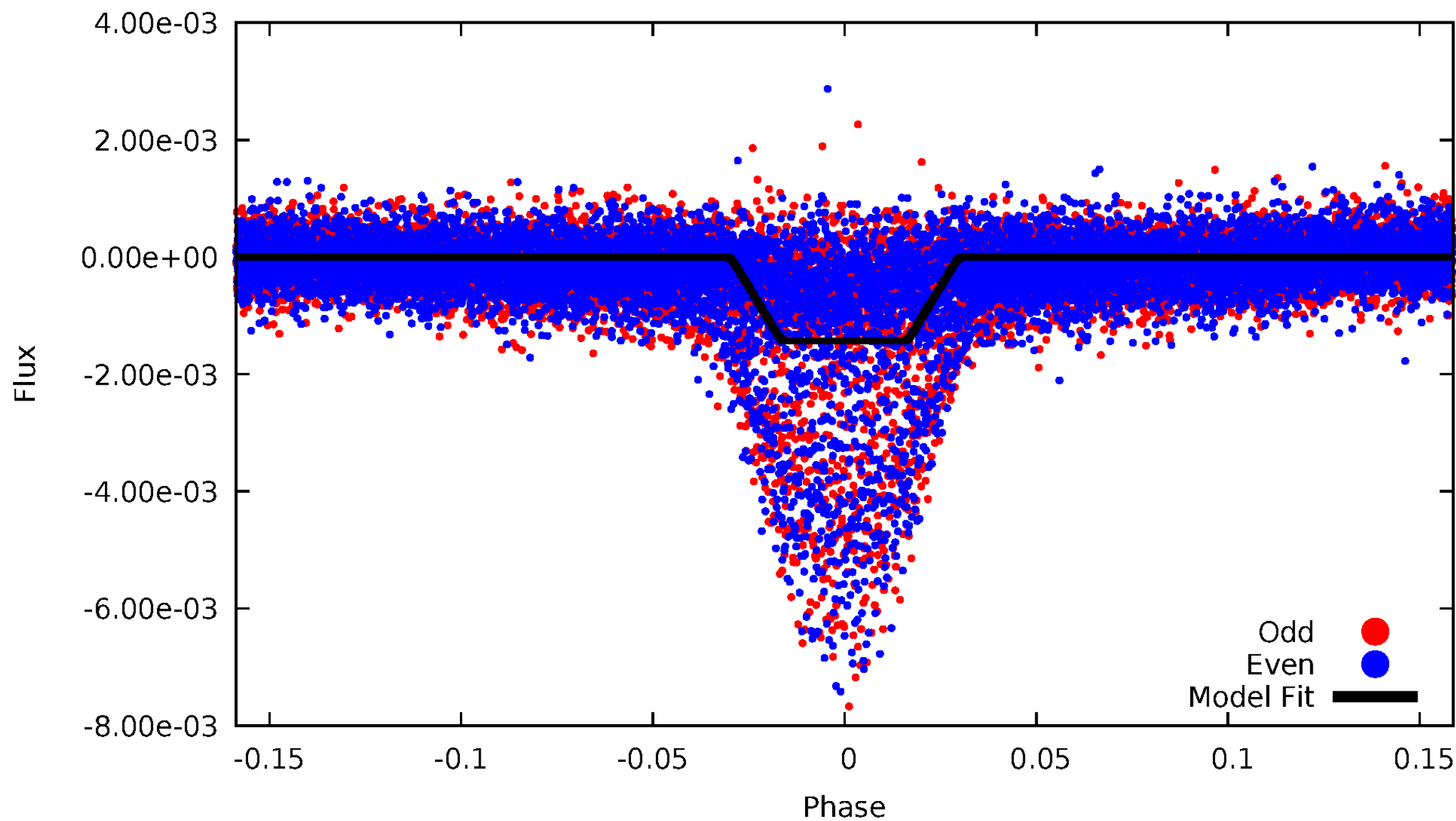
DV Odd/Even

TCE 003836399-01



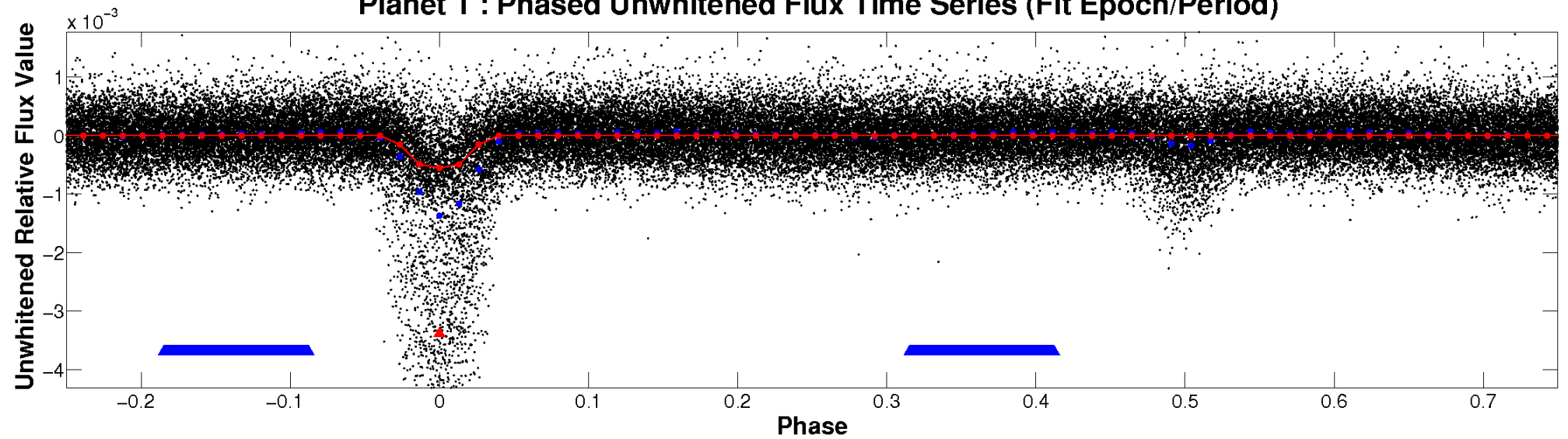
ALT Odd/Even

TCE 003836399-01

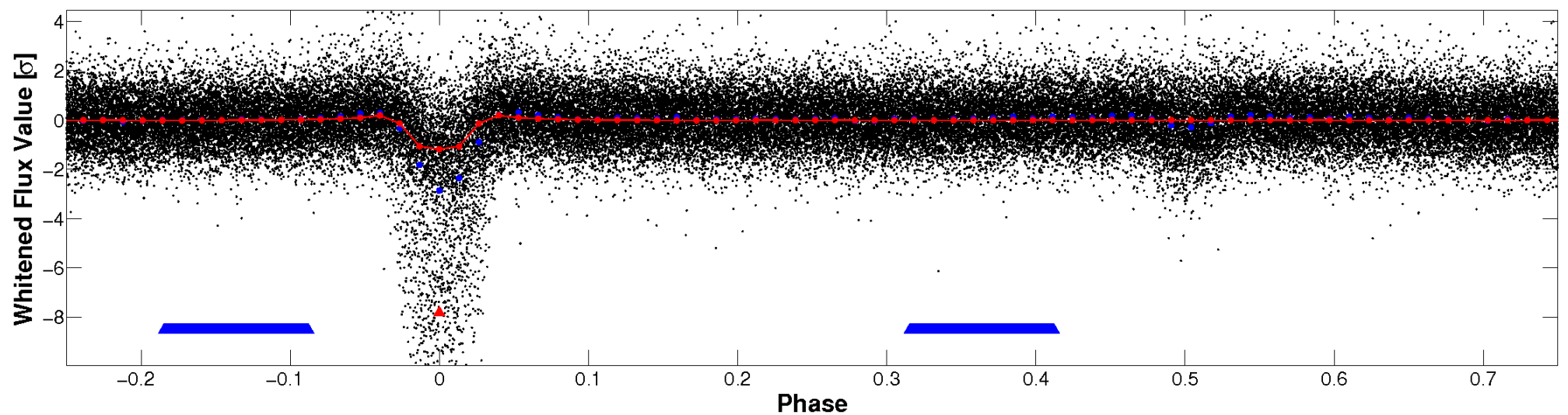


Non-Whitened Vs. Whitened Light Curve

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

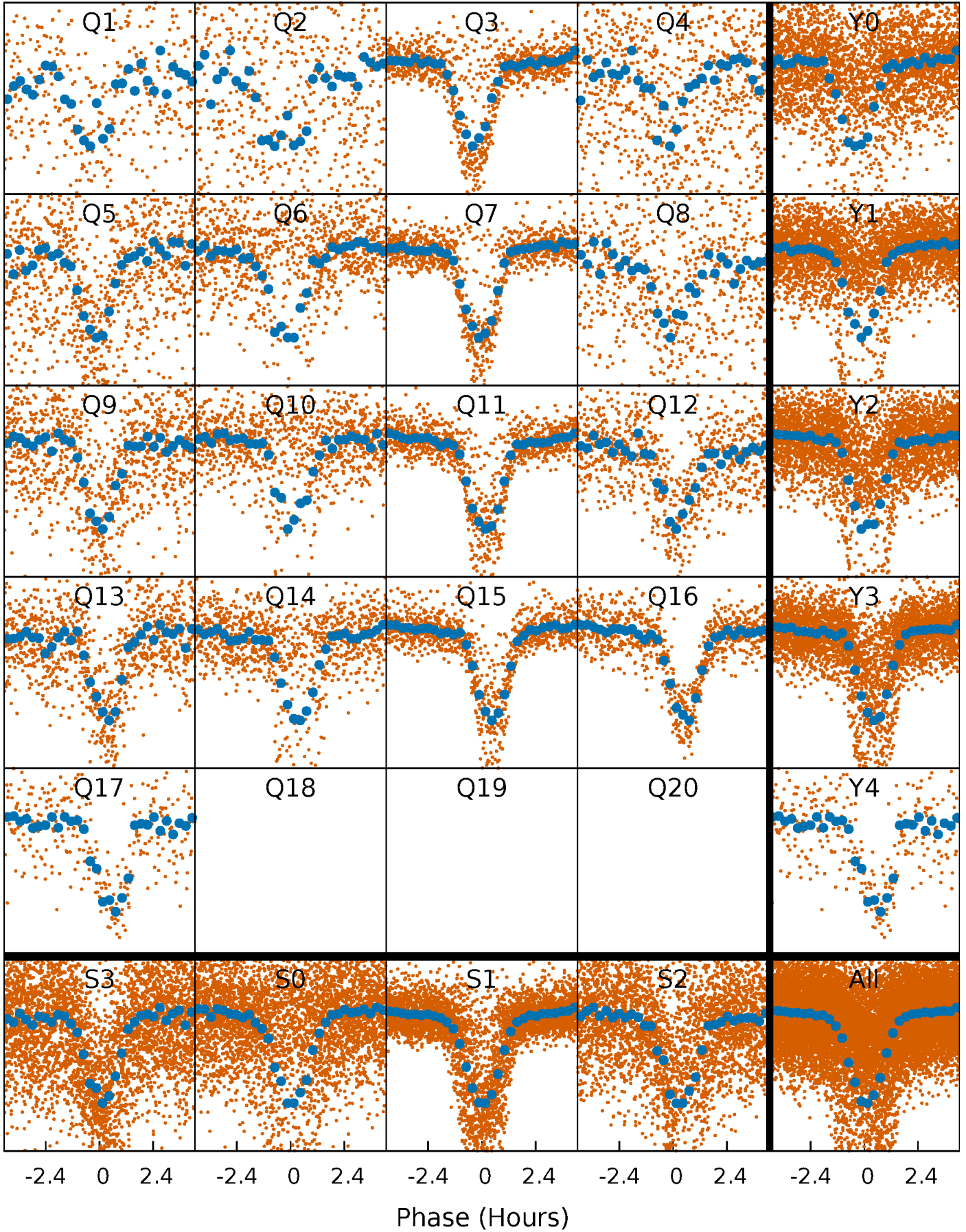


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



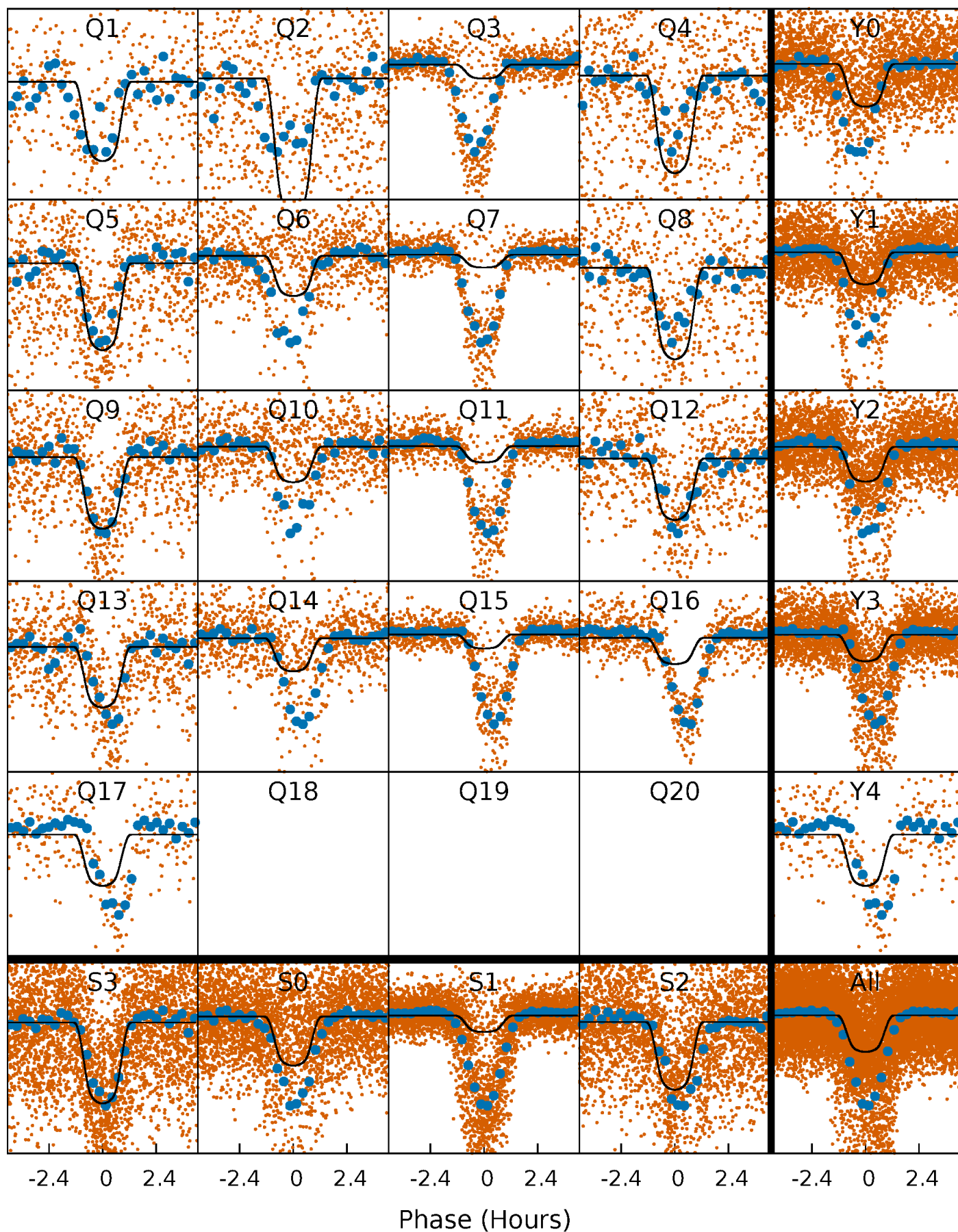
PDC Quarter-Phased Transit Curves

TCE 003836399-01 P= 1.540351 Days $T_0=132.016418$ (BKJD)



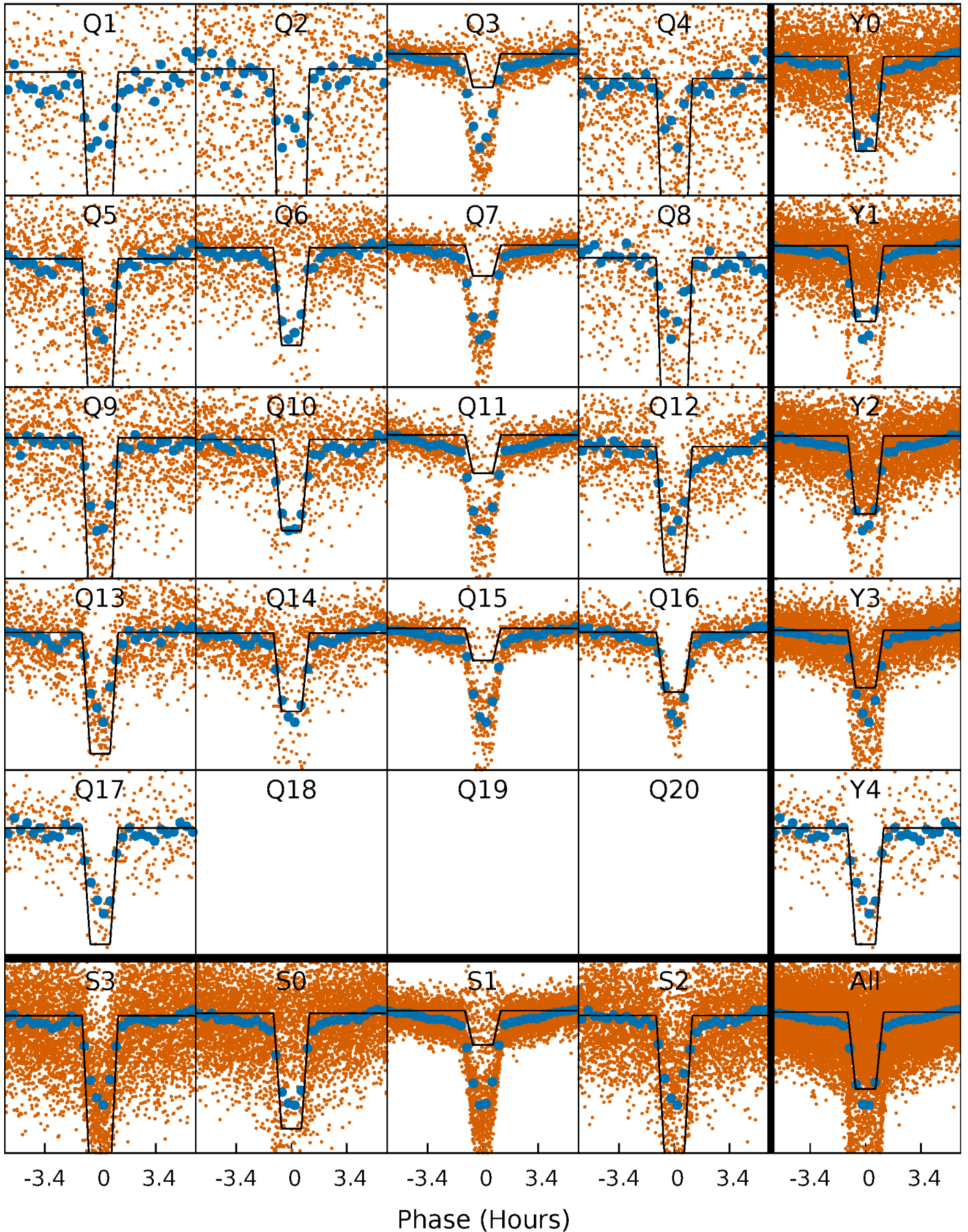
DV Quarter-Phased Transit Curves

TCE 003836399-01 P= 1.540351 Days $T_0=132.016418$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

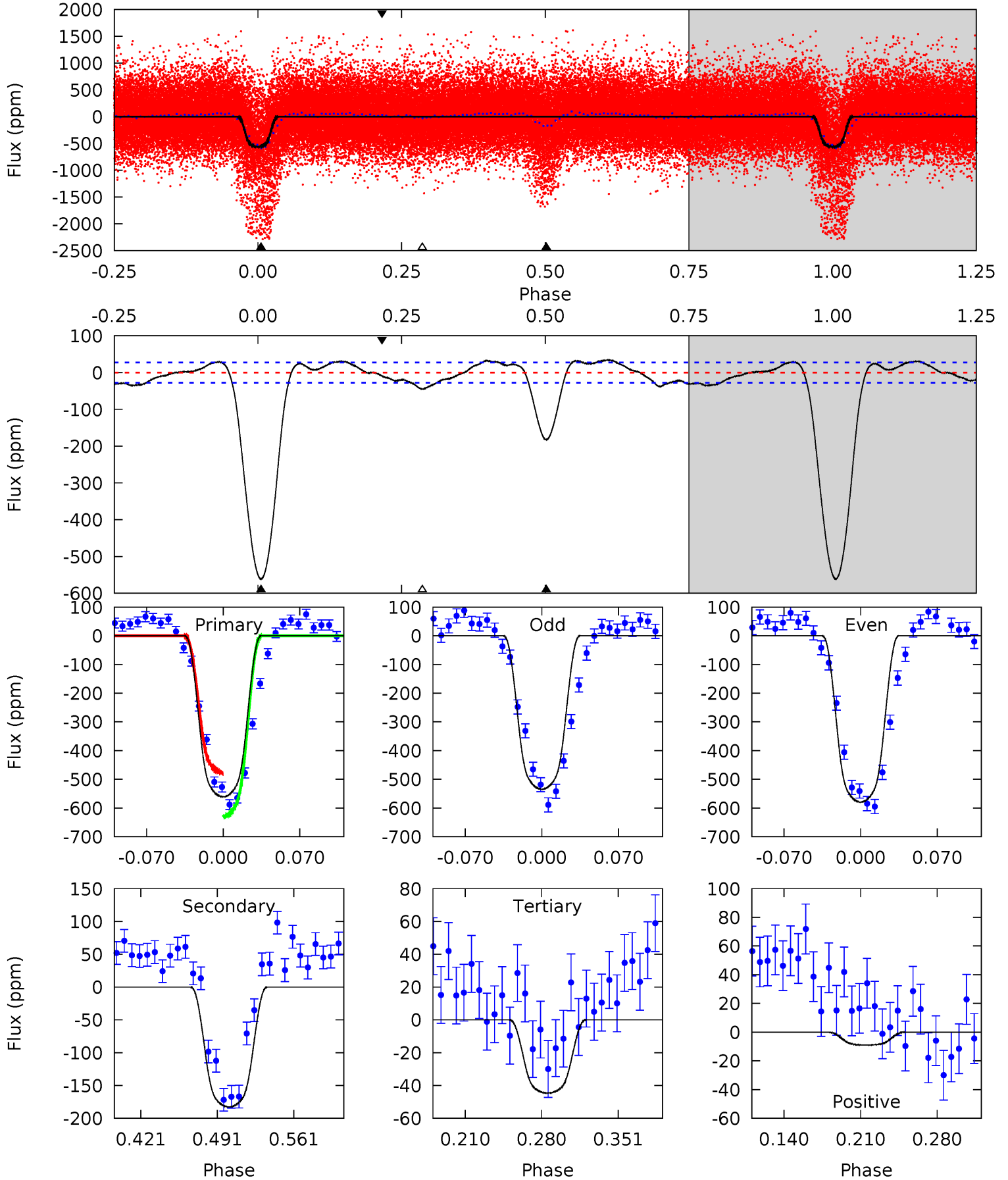
TCE 003836399-01 P= 1.540387 Days $T_0=132.001456$ (BKJD)



DV Model-Shift Uniqueness Test

003836399-01, P = 1.540351 Days, E = 130.476067 Days

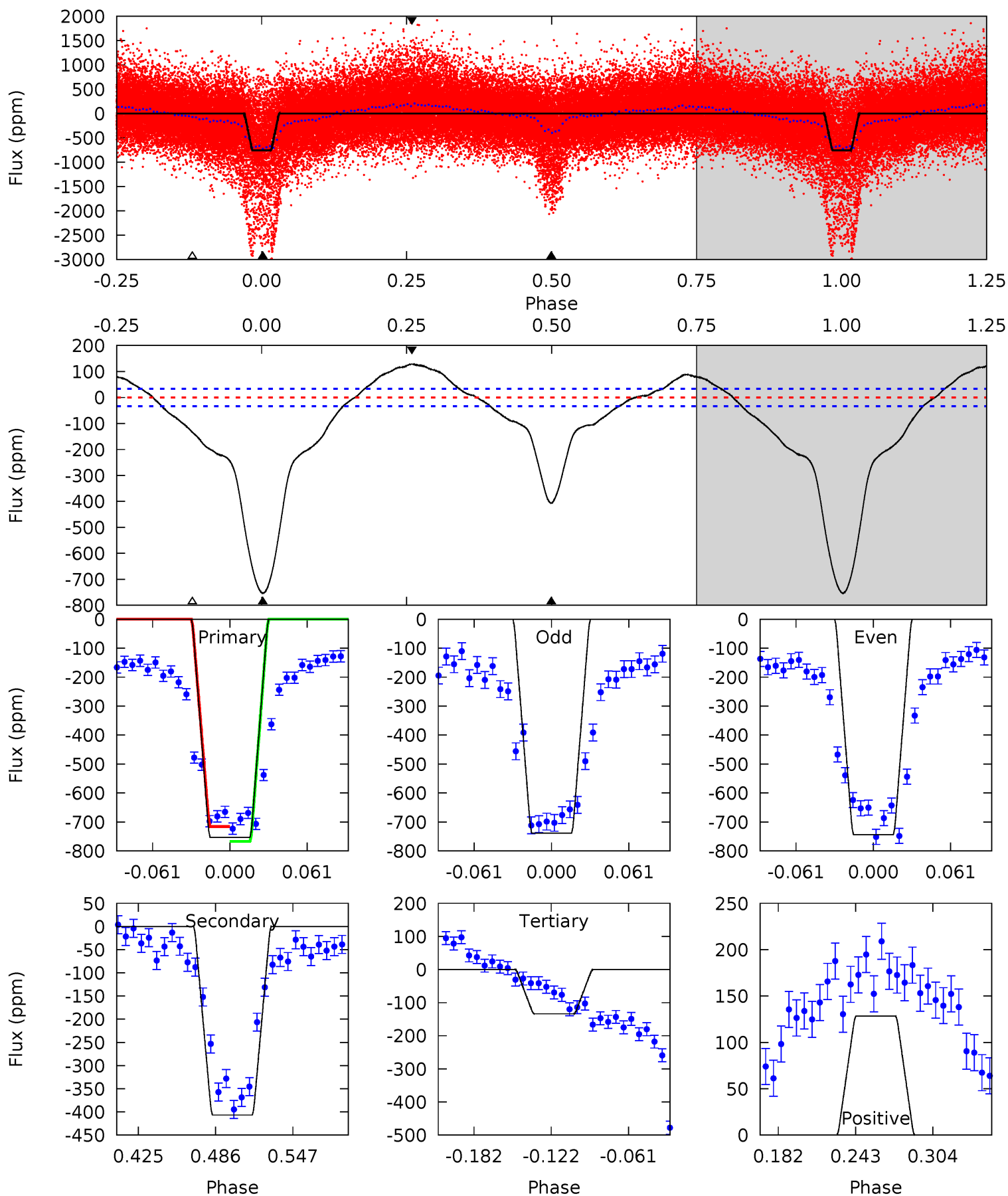
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
94.2	30.7	7.49	-1.52	4.64	1.81	3.85	86.7	95.7	23.2	32.2	3.77	2.09	0.06	12.8



Alt Model-Shift Uniqueness Test

003836399-01, P = 1.540387 Days, E = 130.461069 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
104.4	56.3	18.6	17.8	4.67	1.88	13.4	85.8	86.6	37.8	38.6	0.39	1.95	0.15	0



Stellar Parameters For KIC 003836399

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4911^{+146}_{-131}	$4.564^{+0.066}_{-0.039}$	$-0.220^{+0.300}_{-0.300}$	$0.724^{+0.062}_{-0.069}$	$0.700^{+0.095}_{-0.047}$	$2.603^{+0.728}_{-0.394}$
	+3%/-3%	+1%/-1%	+136%/-136%	+9%/-10%	+14%/-7%	+28%/-15%
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 003836399-01 / KOI 3834.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-183 ± 6	$2.19^{+0.15}_{-0.15}$	1687^{+56}_{-56}	3745^{+108}_{-94}	12^{+2}_{-1}
Alt.	-407 ± 7	$2.99^{+0.18}_{-0.19}$	1685^{+61}_{-57}	3854^{+105}_{-86}	14^{+2}_{-1}

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 $A_{\text{obs}} \gg 1.0$

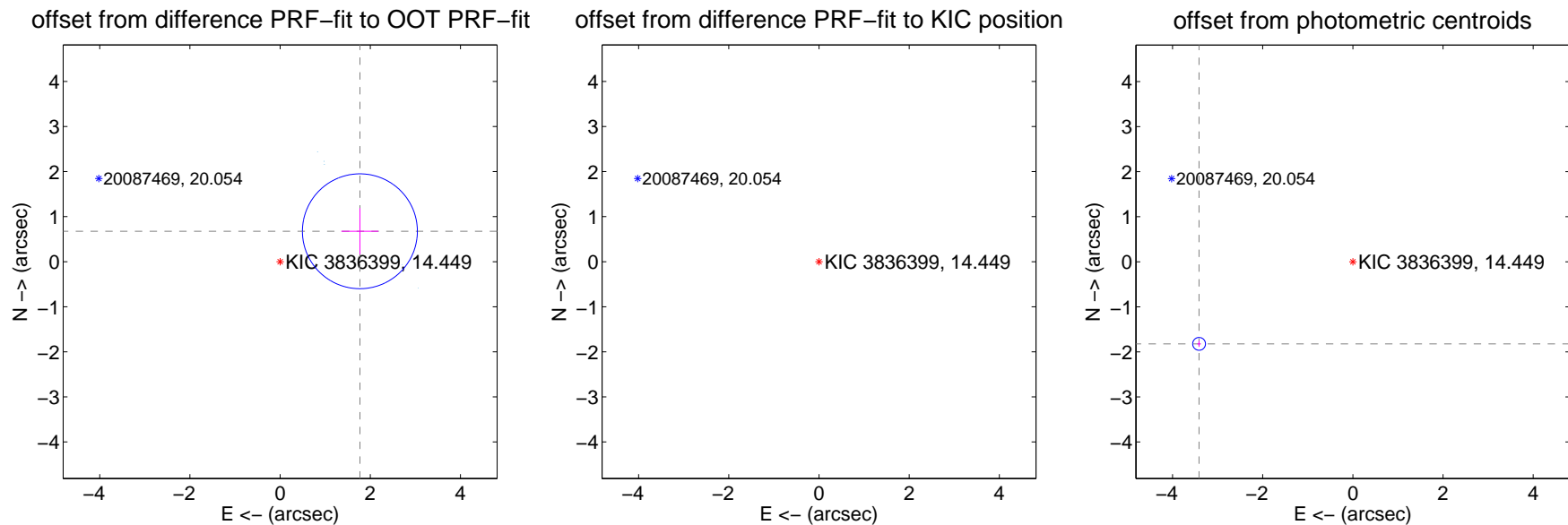
DV Centroid Data

Supplemental centroid analysis for 003836399-01. Kepler magnitude: 14.45. Transit SNR 51.40

There are 8 quarters with good PRF difference image offsets

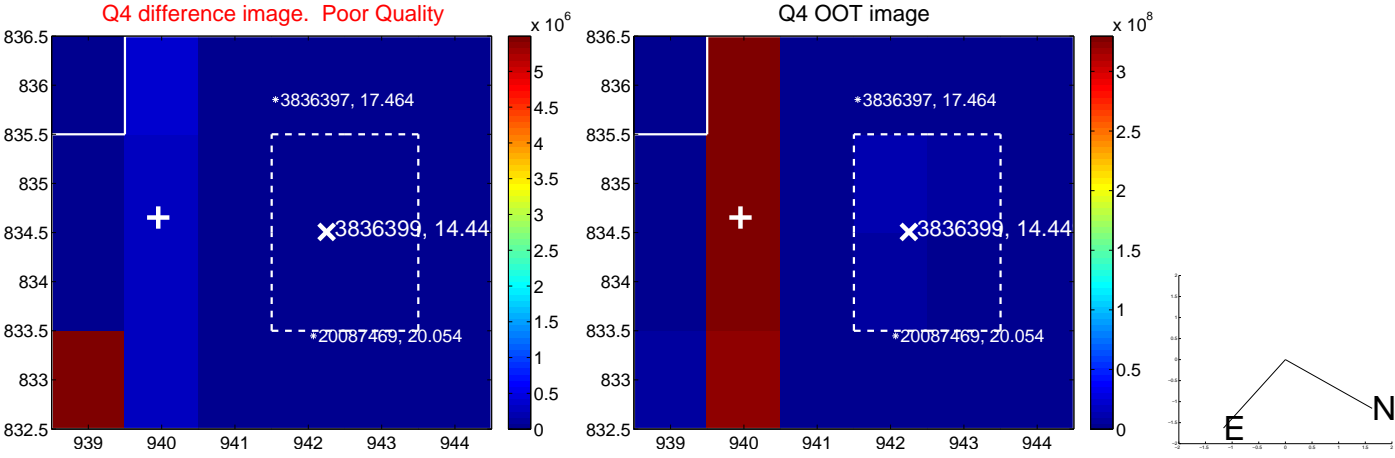
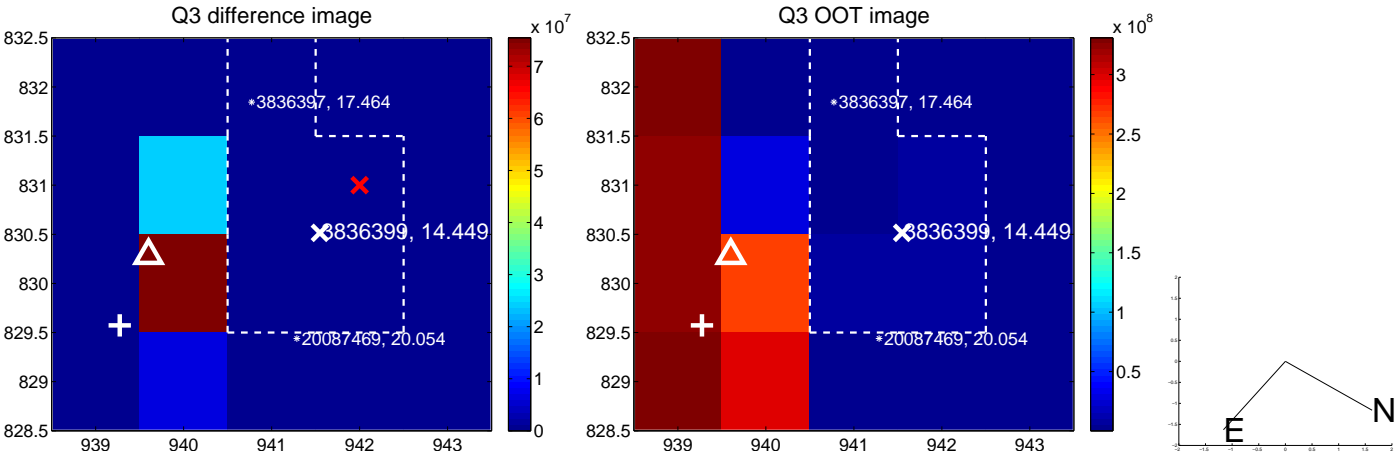
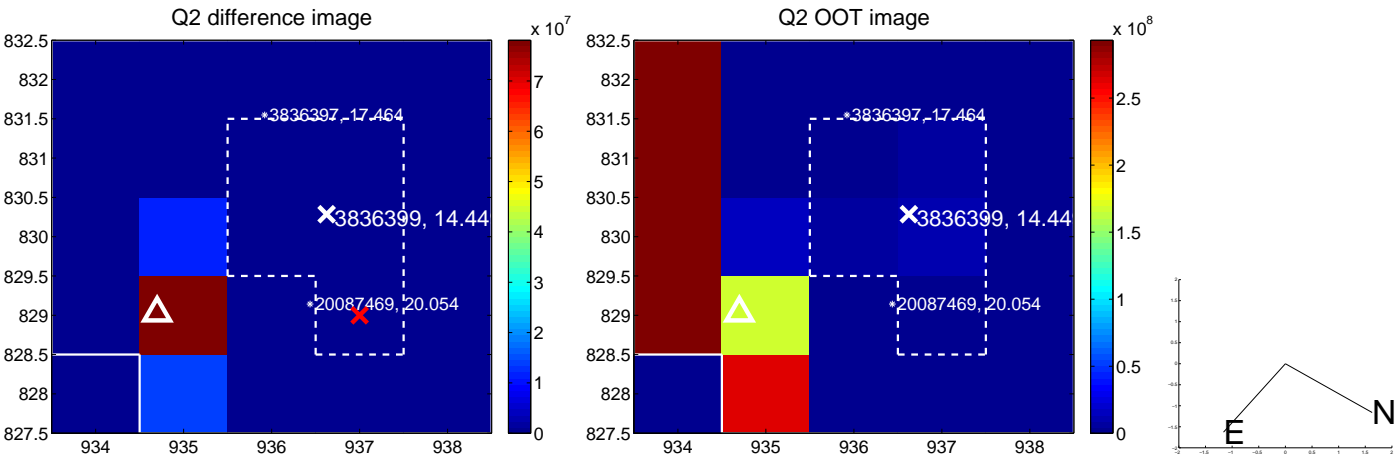
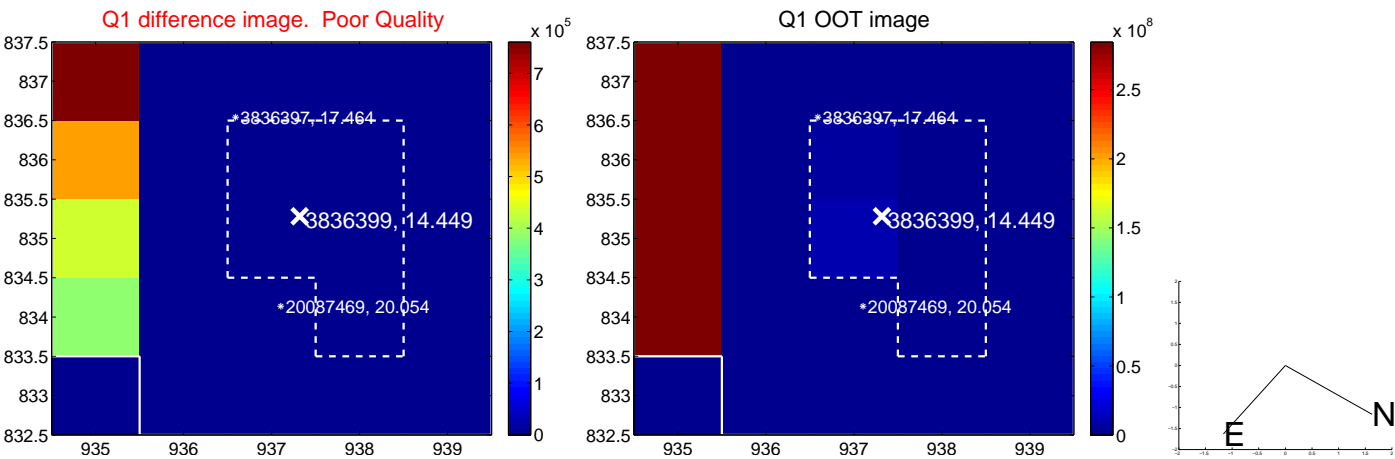
The OOT PRF centroid is offset from the target star catalog position by about 9.96 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.894 ± 0.425	4.46	-1.770 ± 0.411	0.675 ± 0.512
PRF-fit source offset from KIC position	8.129 ± 0.364	22.32	6.429 ± 0.420	-4.975 ± 0.245
photometric centroid source offset	3.87 ± 0.05	81.65	3.41 ± 0.04	-1.82 ± 0.07

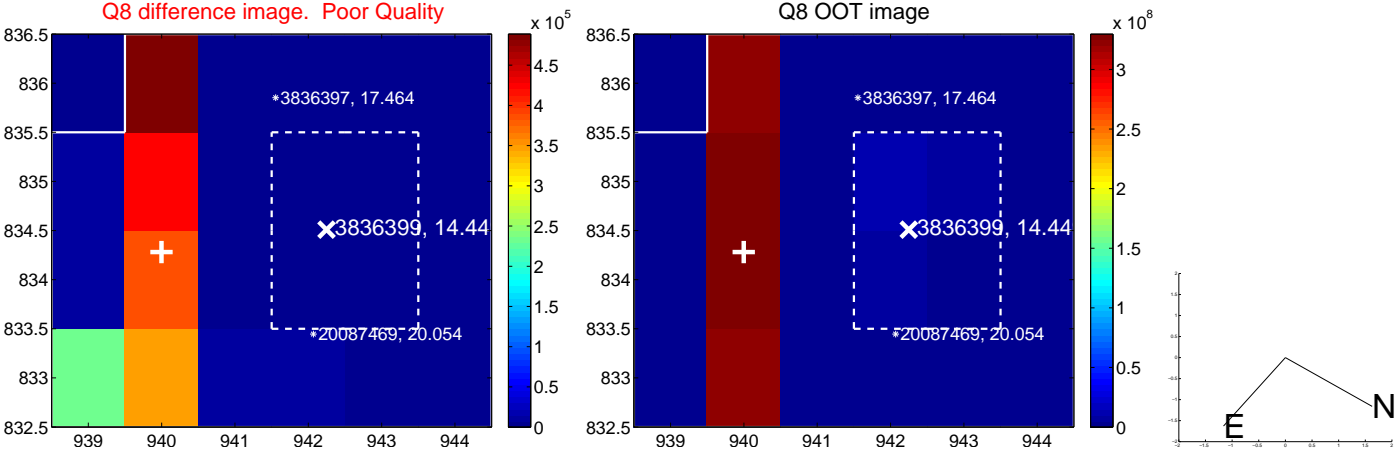
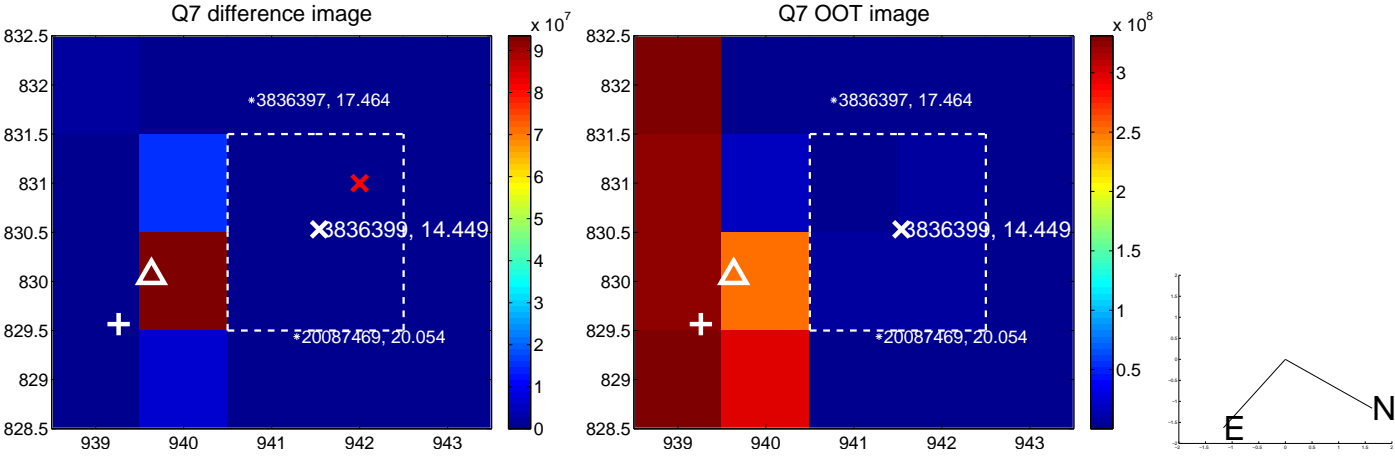
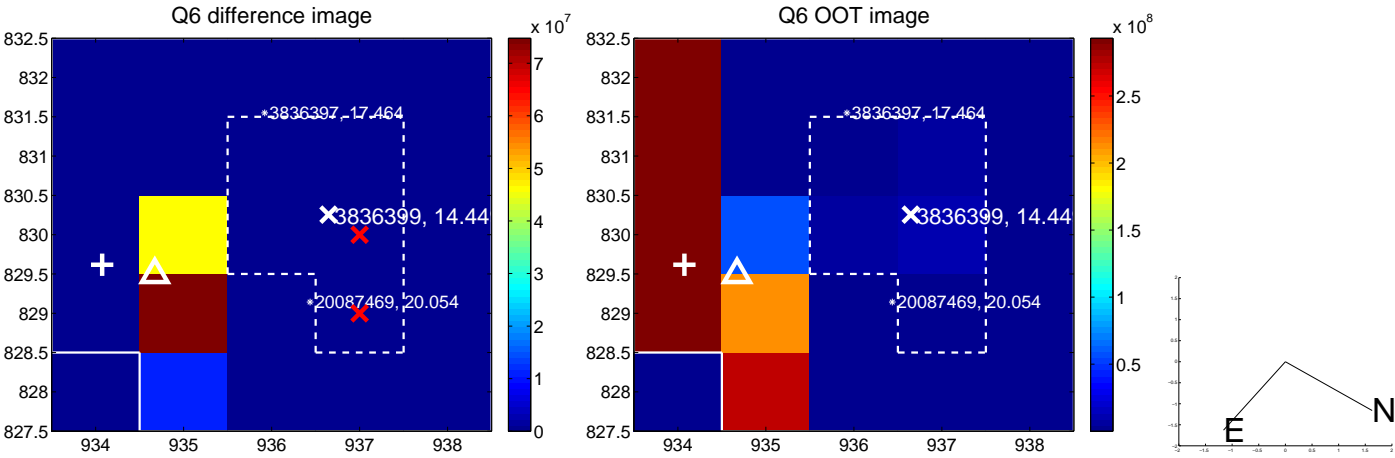
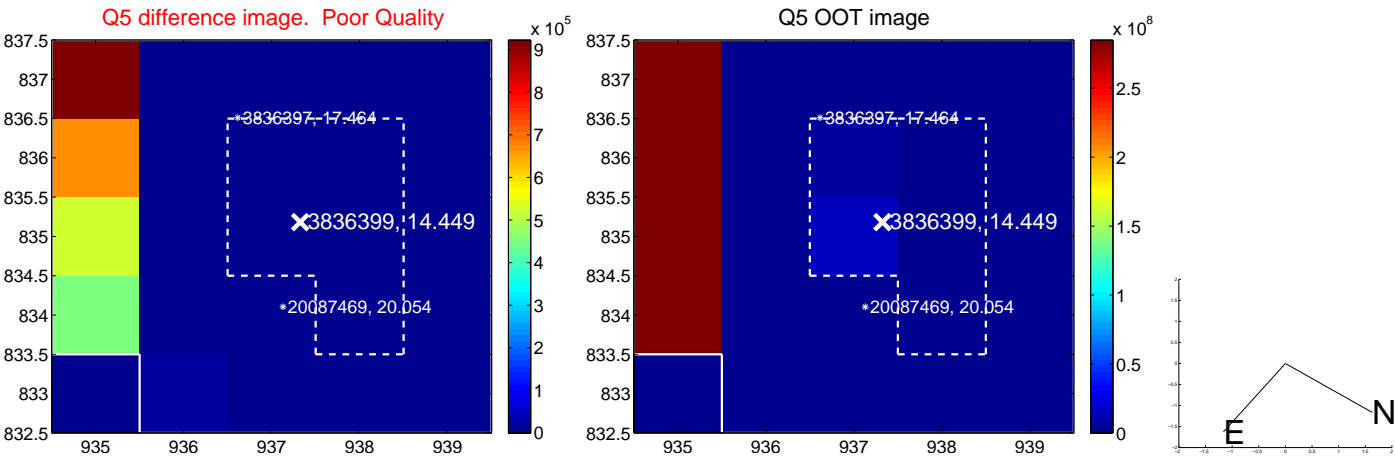


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

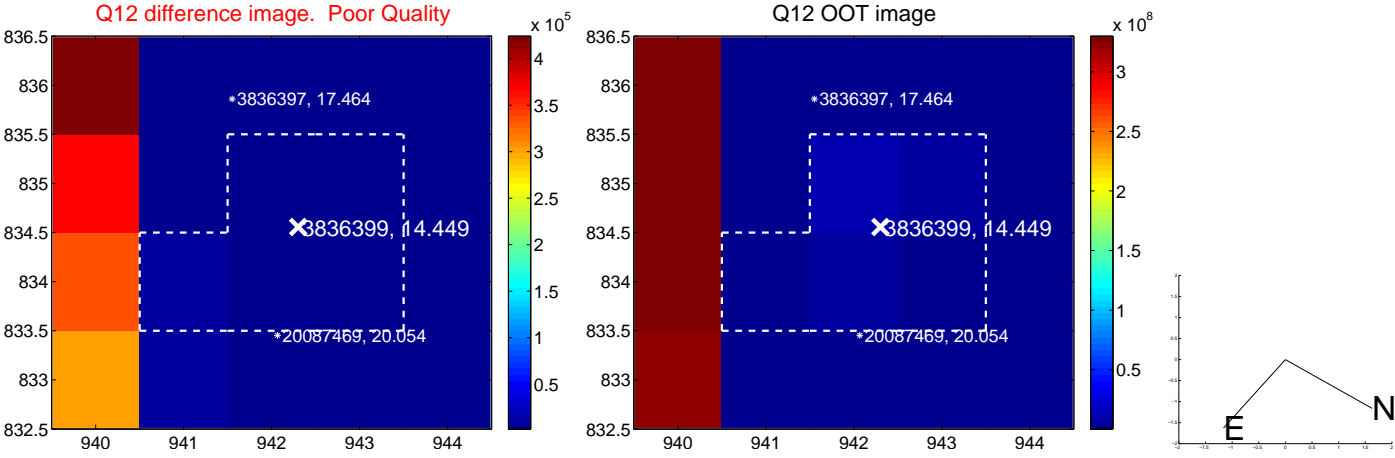
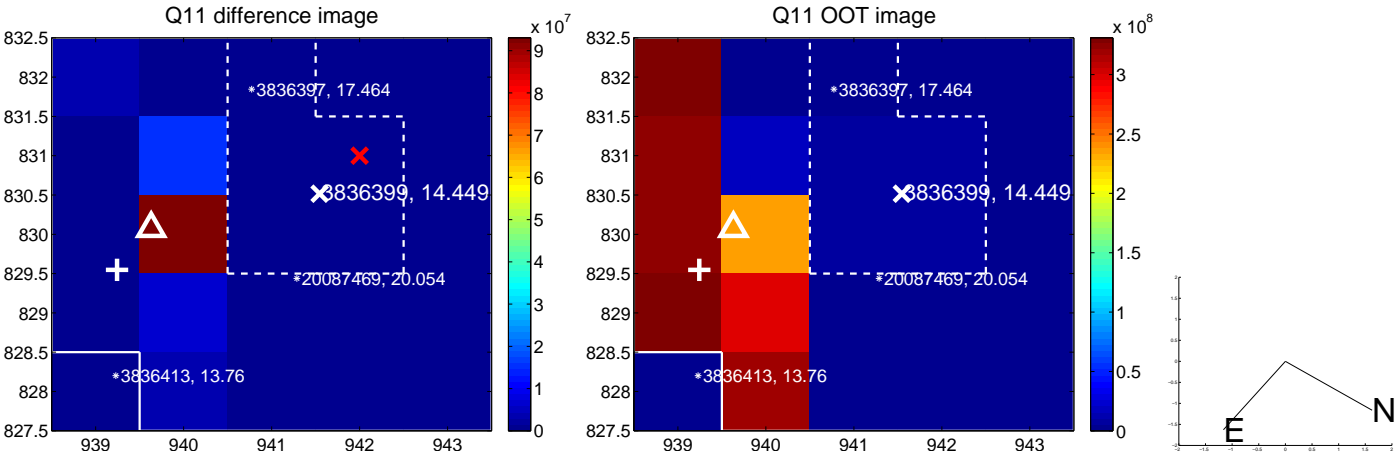
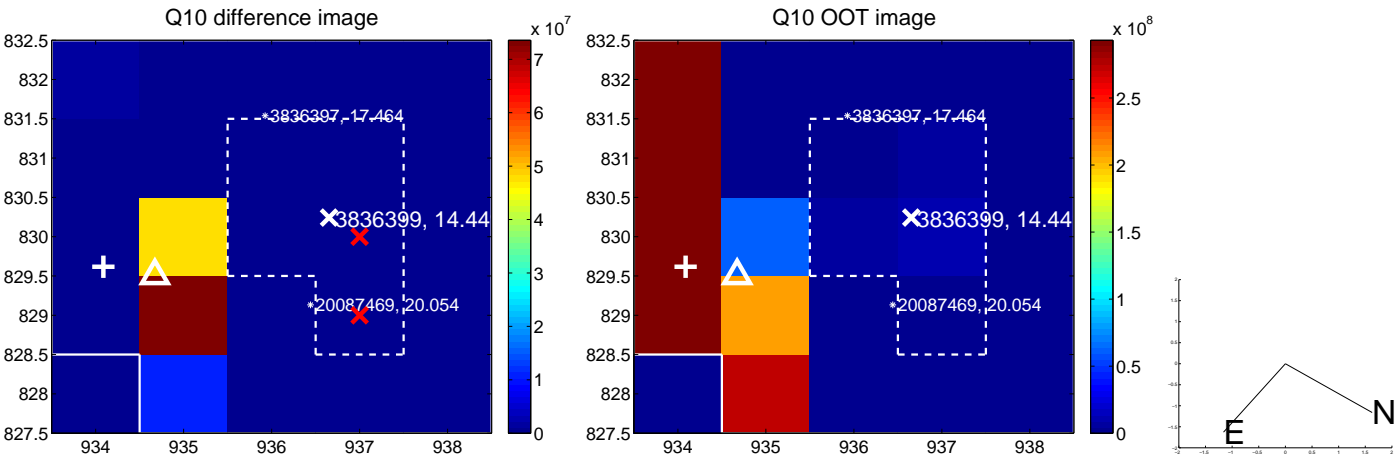
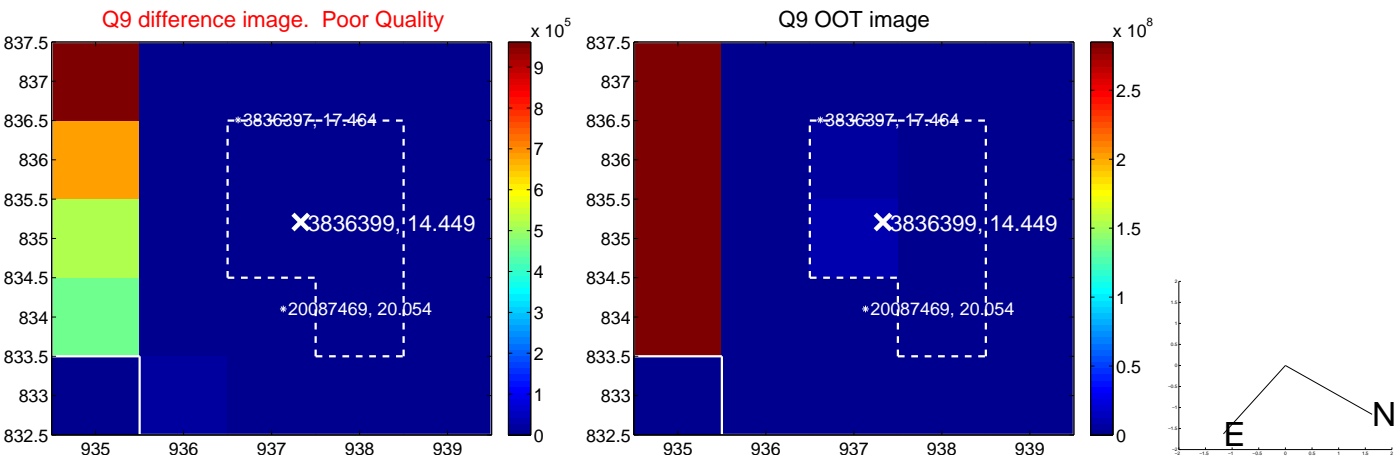
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



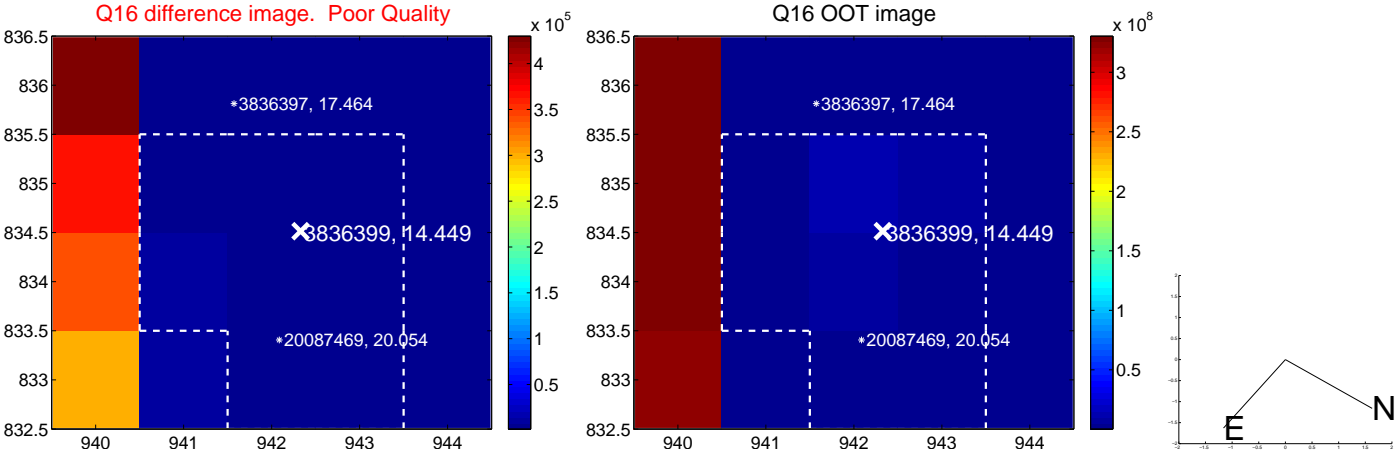
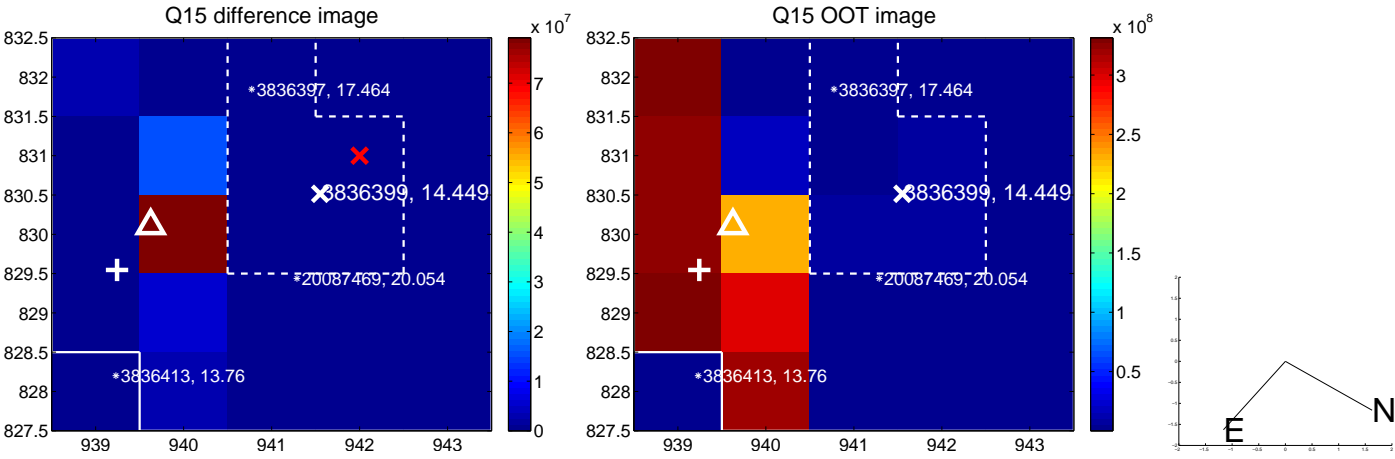
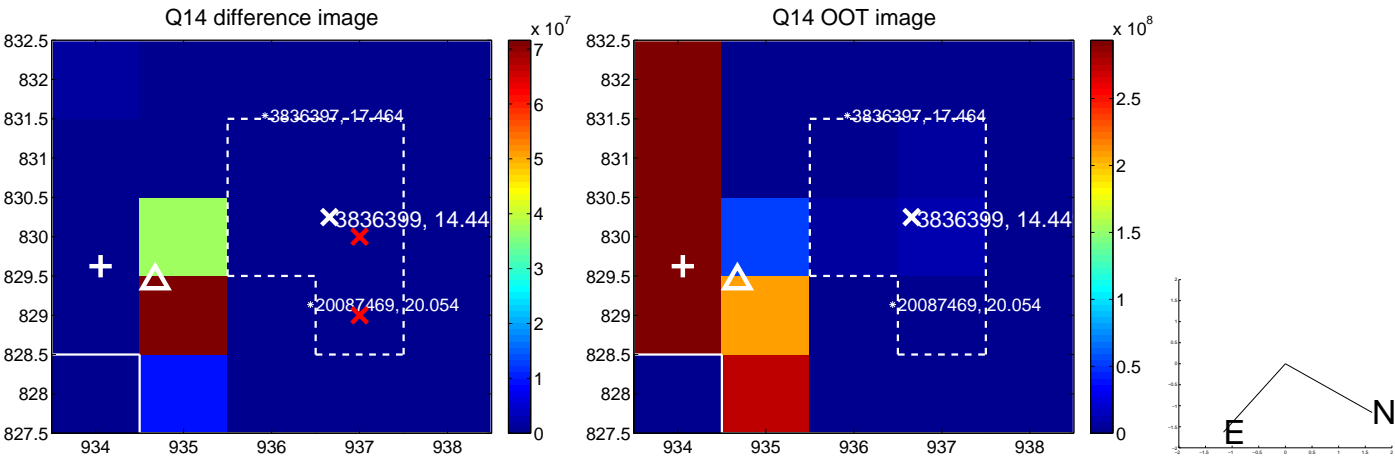
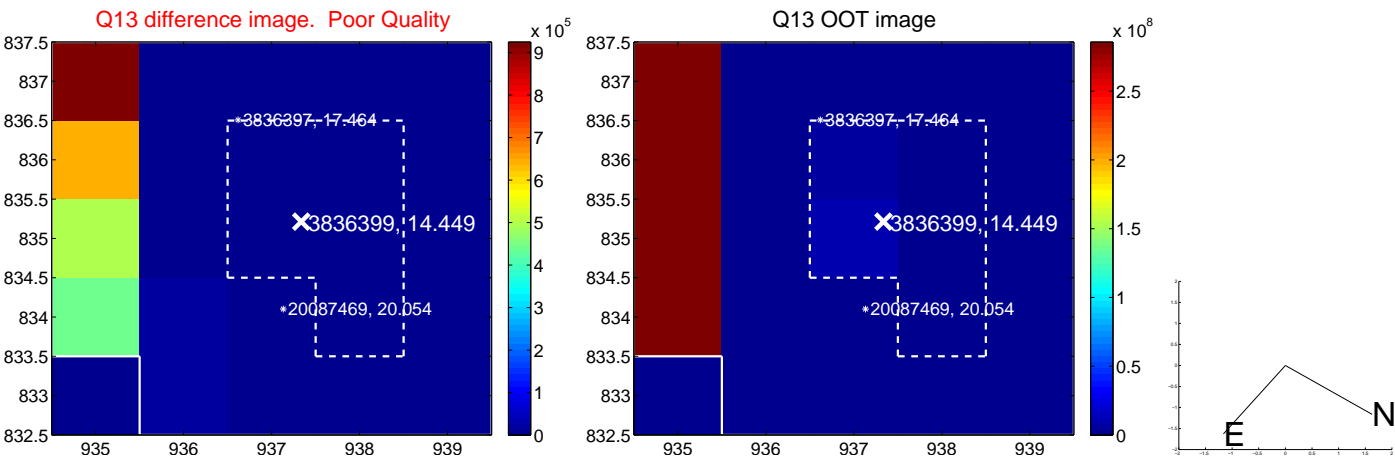
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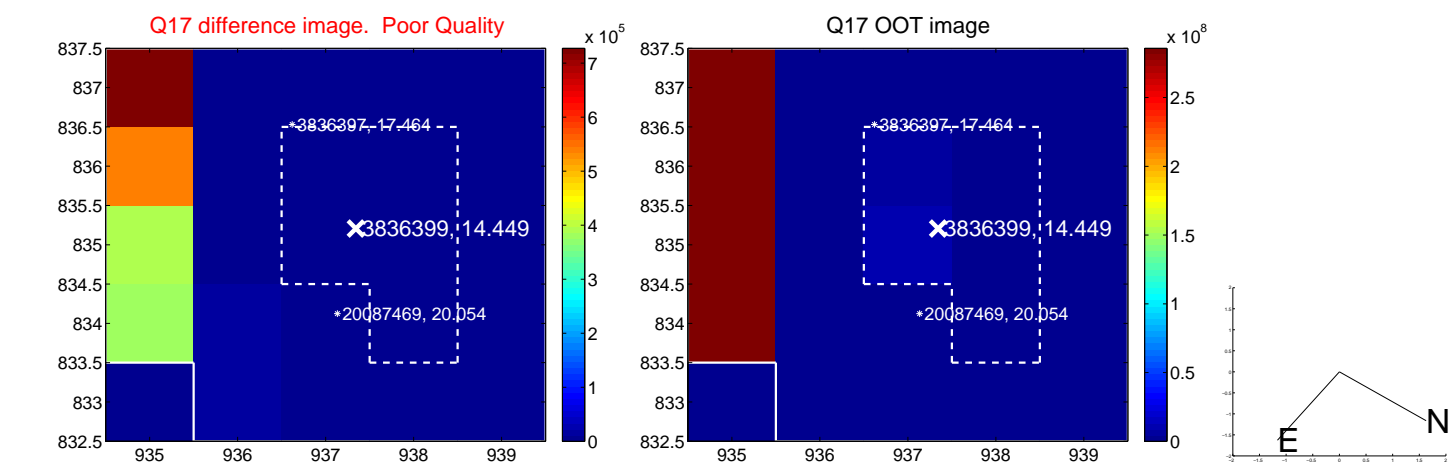
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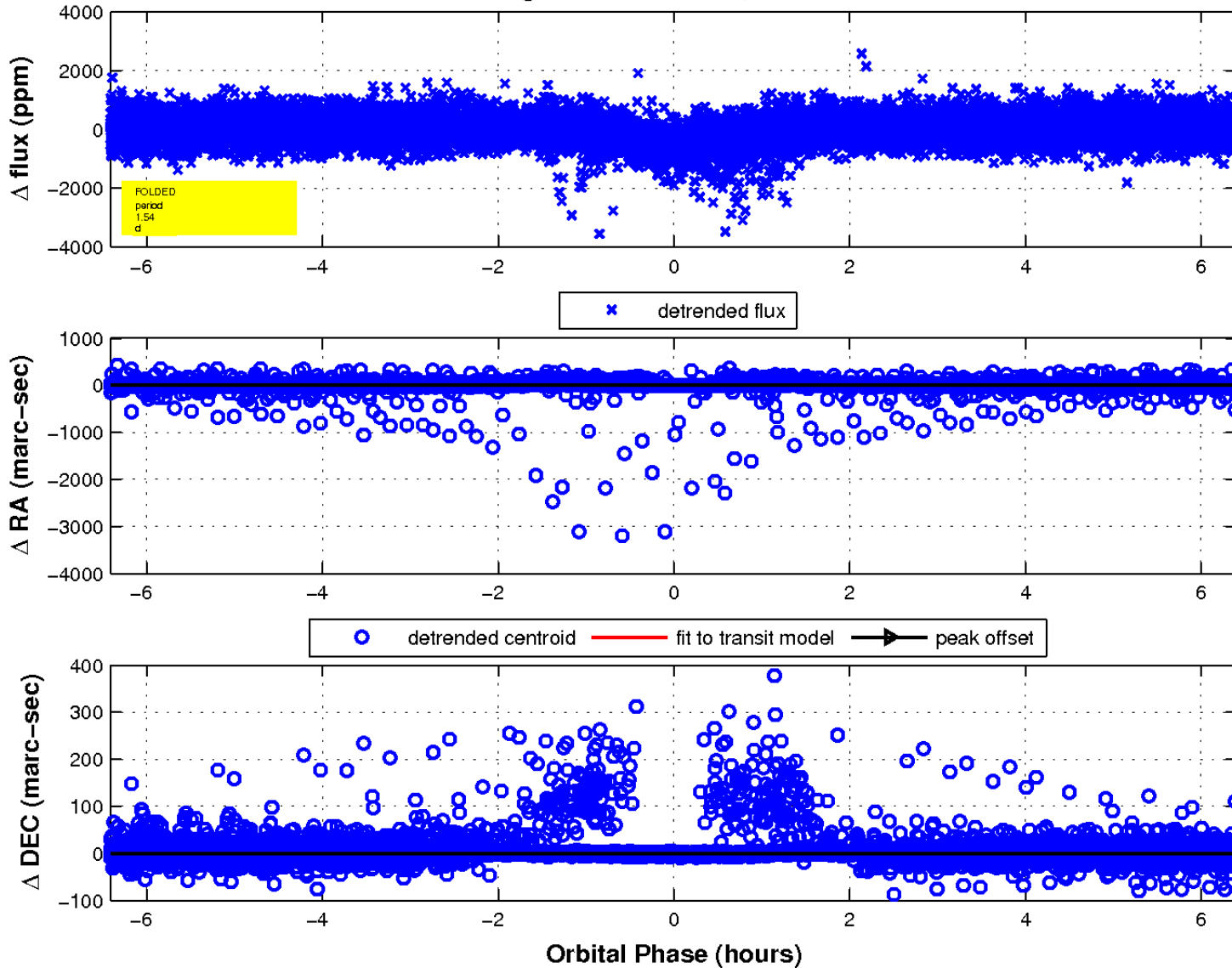
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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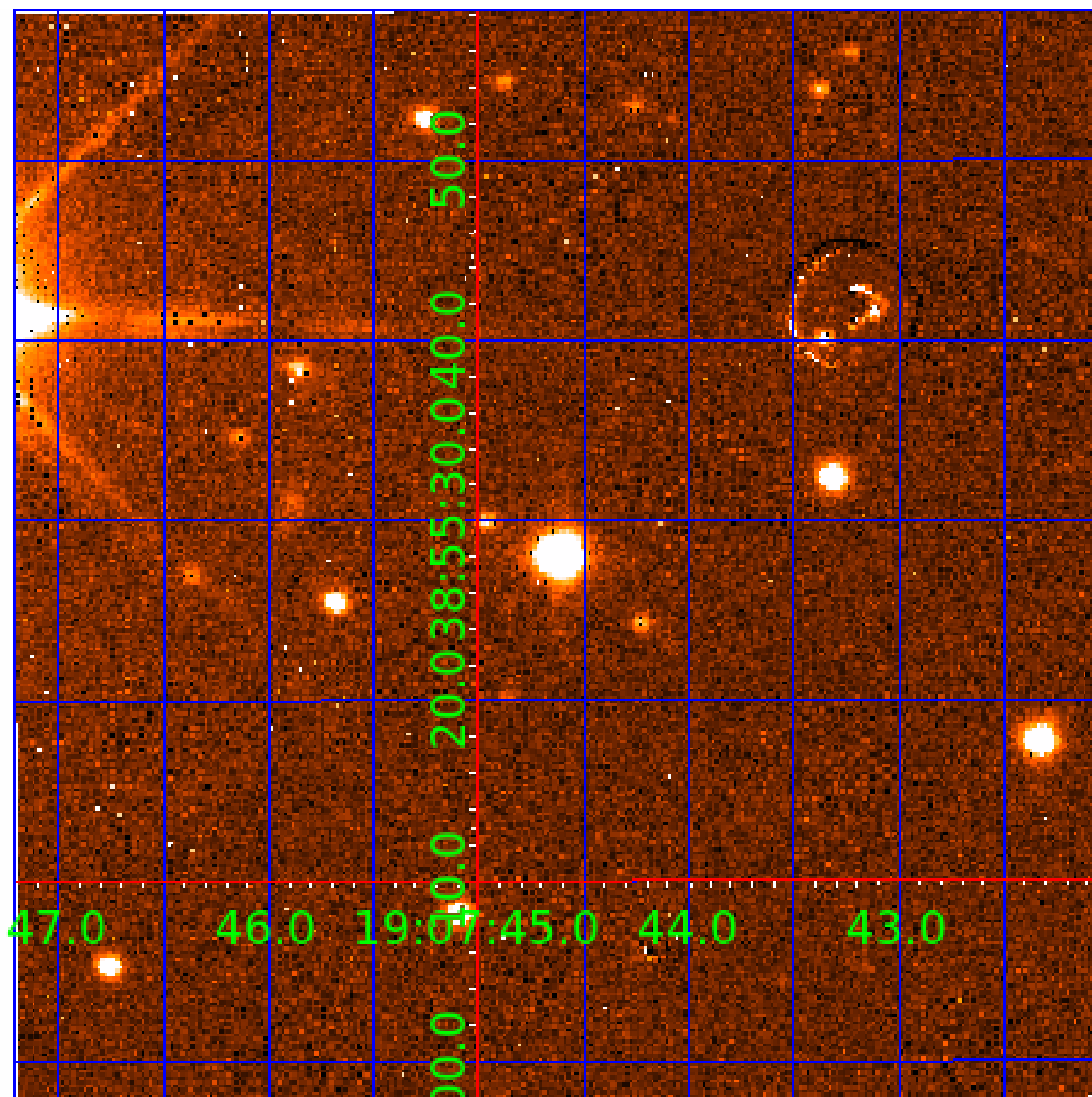


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003836399

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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003836399-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—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.

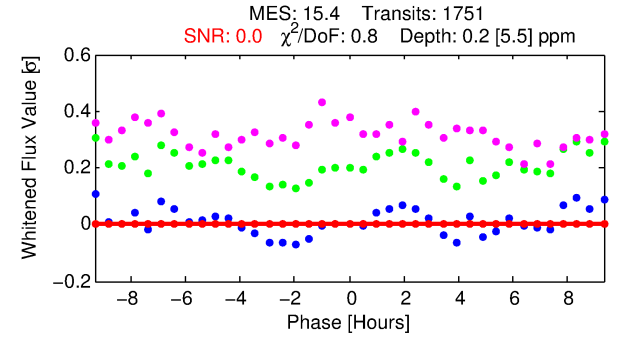
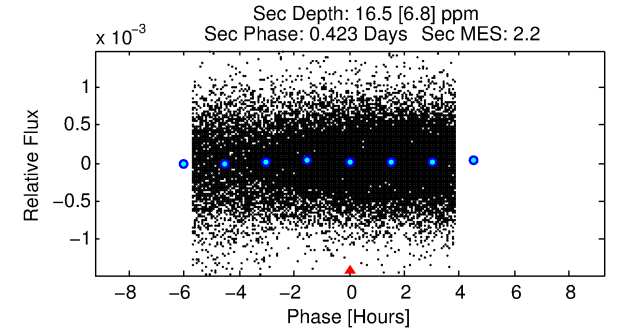
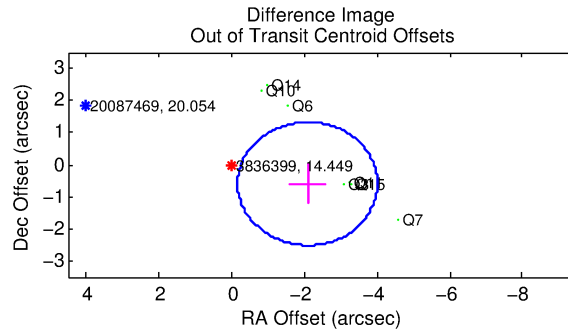
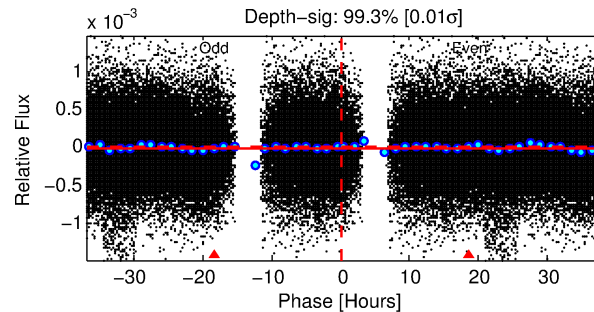
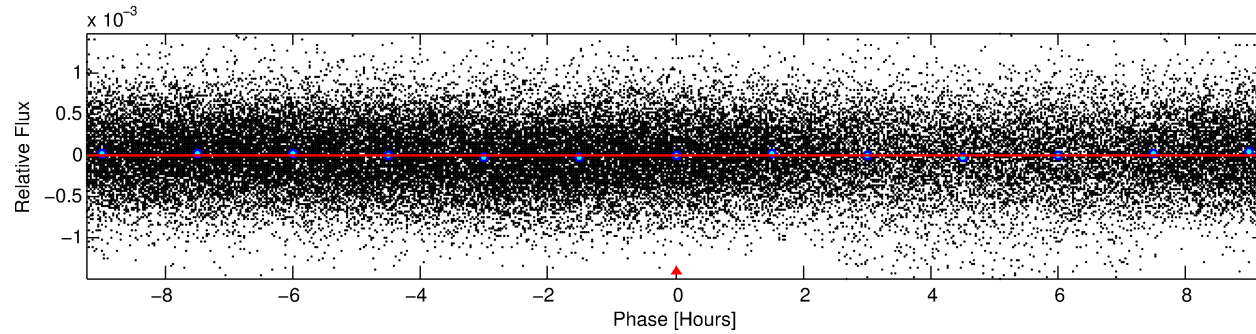
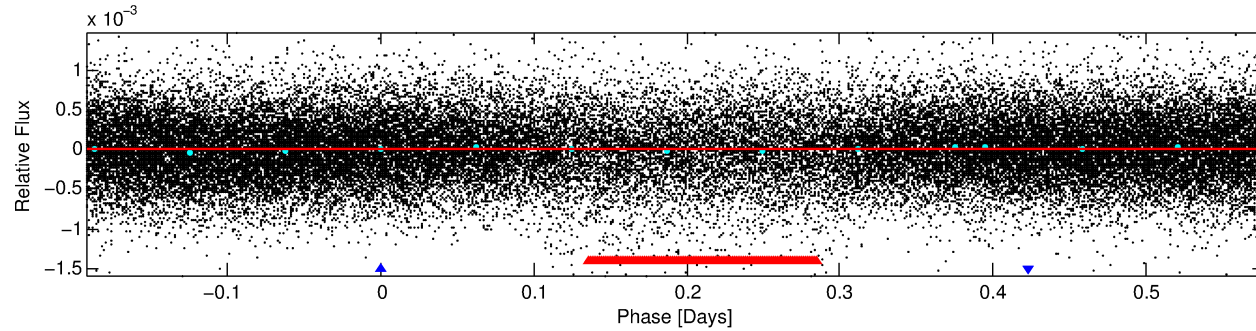
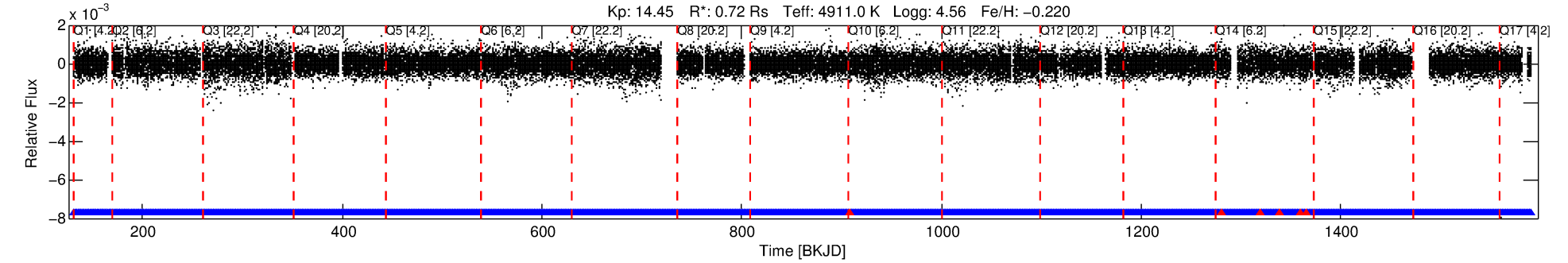
Ephemeris Match Information For 003836399-02

No Significant Match Found

DV One-Page Summary

KIC: 3836399 Candidate: 2 of 2 Period: 0.770 d
KOI: K03834 Corr: No Ephemeris Match

Kp: 14.45 R*: 0.72 Rs Teff: 4911.0 K Logg: 4.56 Fe/H: -0.220



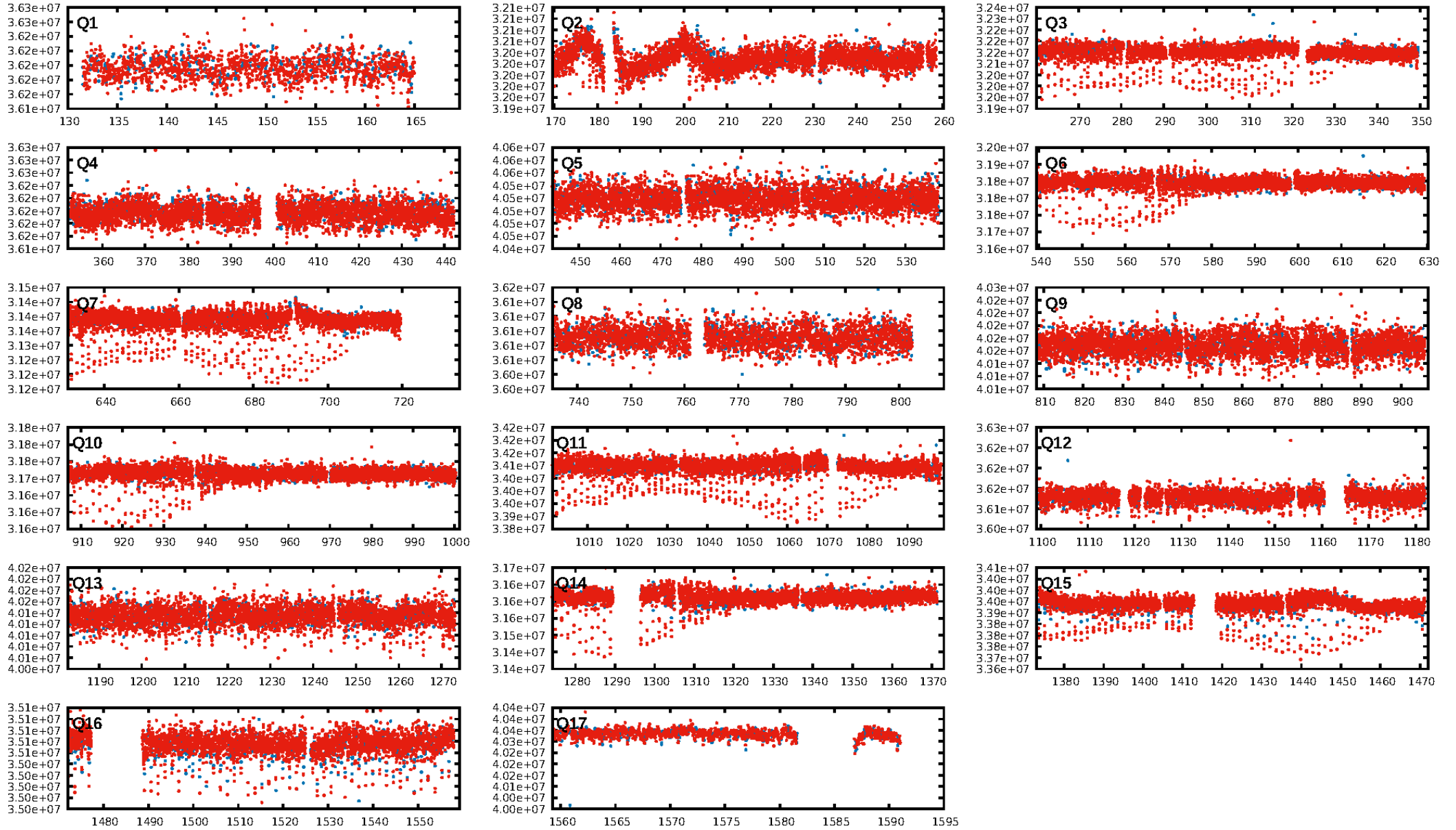
DV Fit Results:

Period = 0.77010 [0.00425] d
Epoch = 131.8813 [1.8843] BKJD
Rp/R* = 0.0004 [0.0495]
a/R* = 1.04 [39.42]
b = 0.24 [1842.57]
Seff = 1280.38 [216.14]
Teq = 1525 [64] K
Rp = 0.03 [3.91] Re
a = 0.0146 [0.0012] AU
Ag = 2287.27 [615568.09] [0.00σ]
Teffp = 16309 [1097311] K [0.01σ]

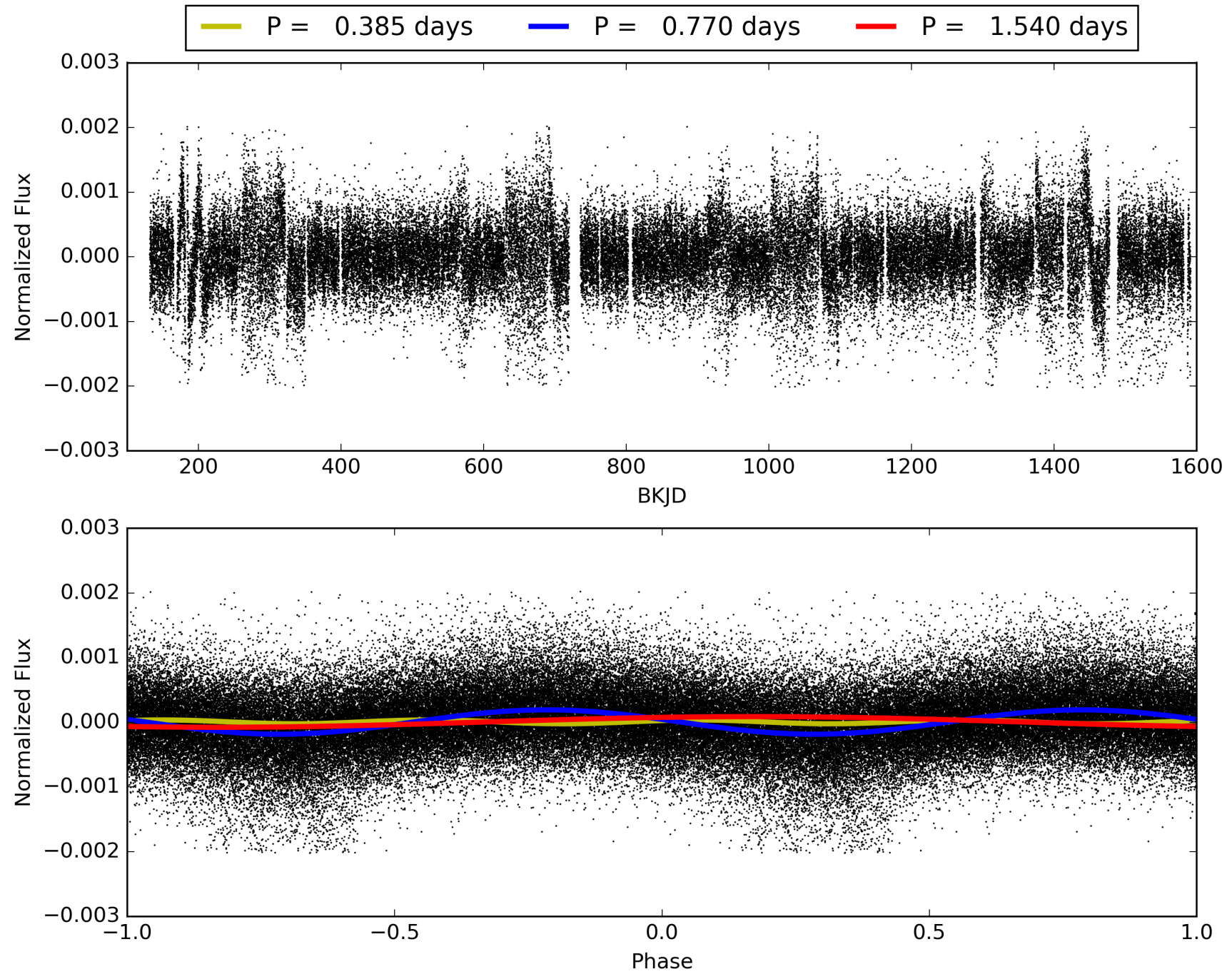
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.2% [2.37σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1667/1673]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 2.172 arcsec [3.39σ]
KicOffset-rm: 8.298 arcsec [9.68σ]
OotOffset-st: 3/4/0/0 [7]
KicOffset-st: 4/4/0/1 [9]
DiffImageQuality-fgm: 0.33 [3/9]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 003836399-02, PDC Light Curves

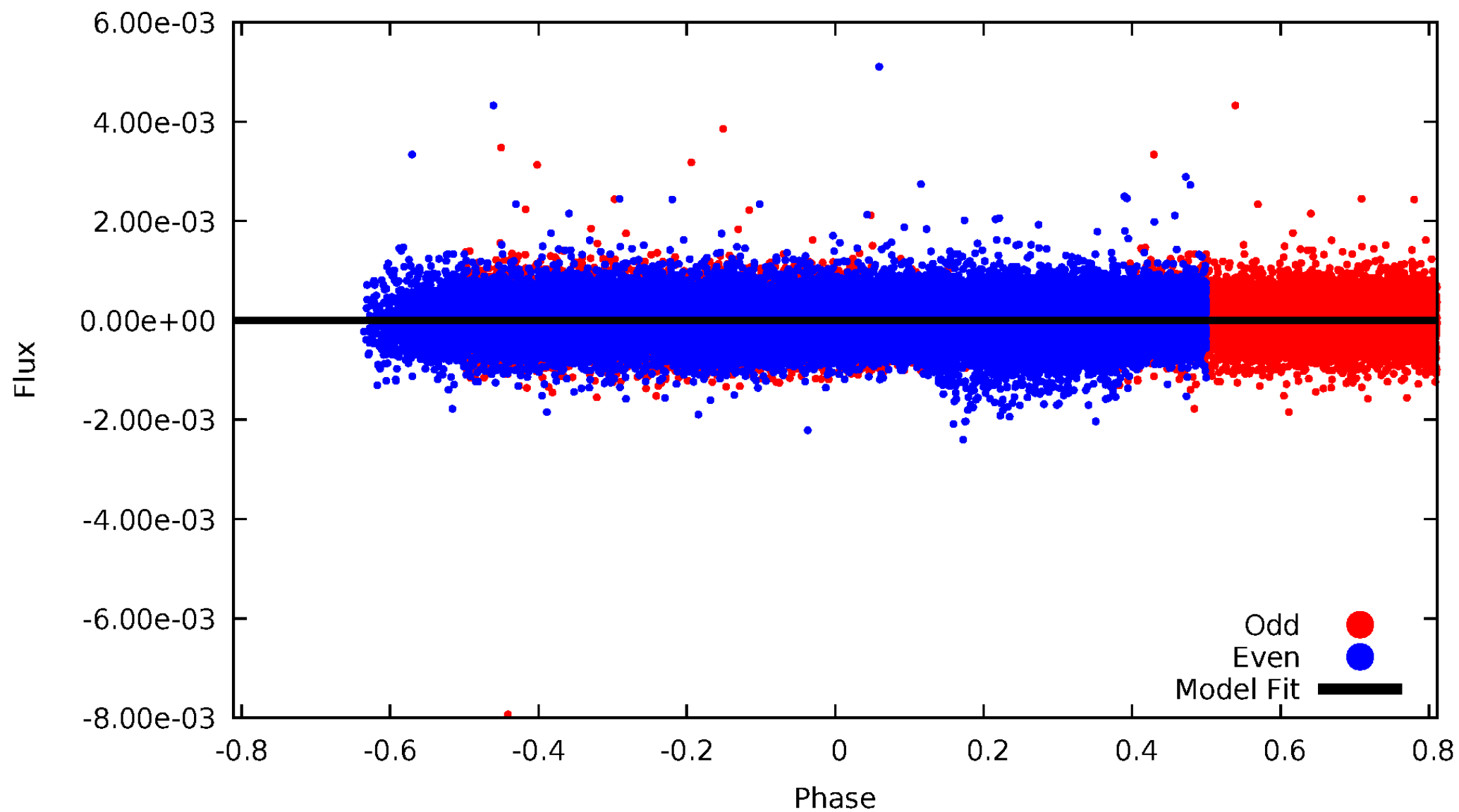


TCE 003836399-02



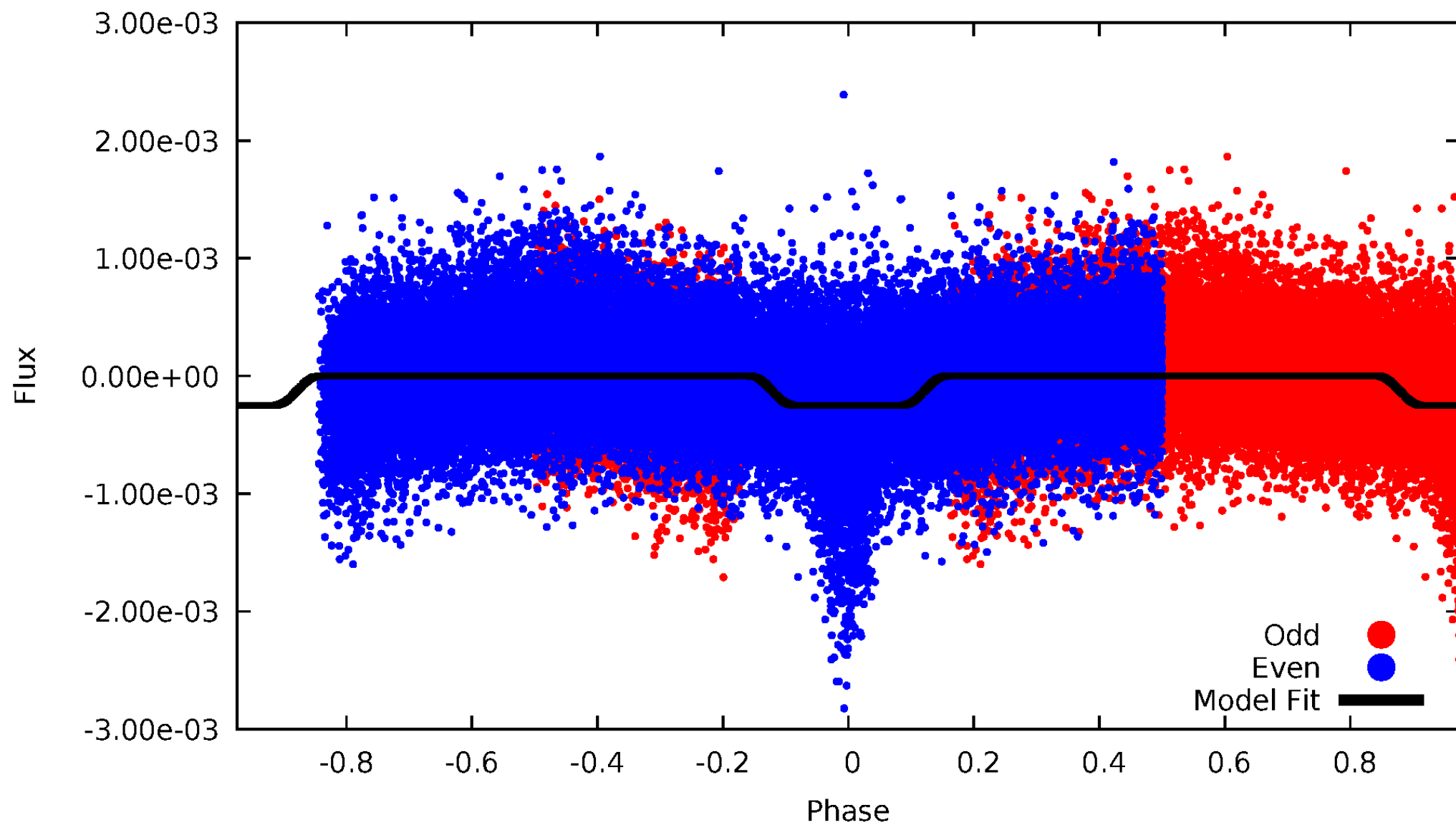
DV Odd/Even

TCE 003836399-02



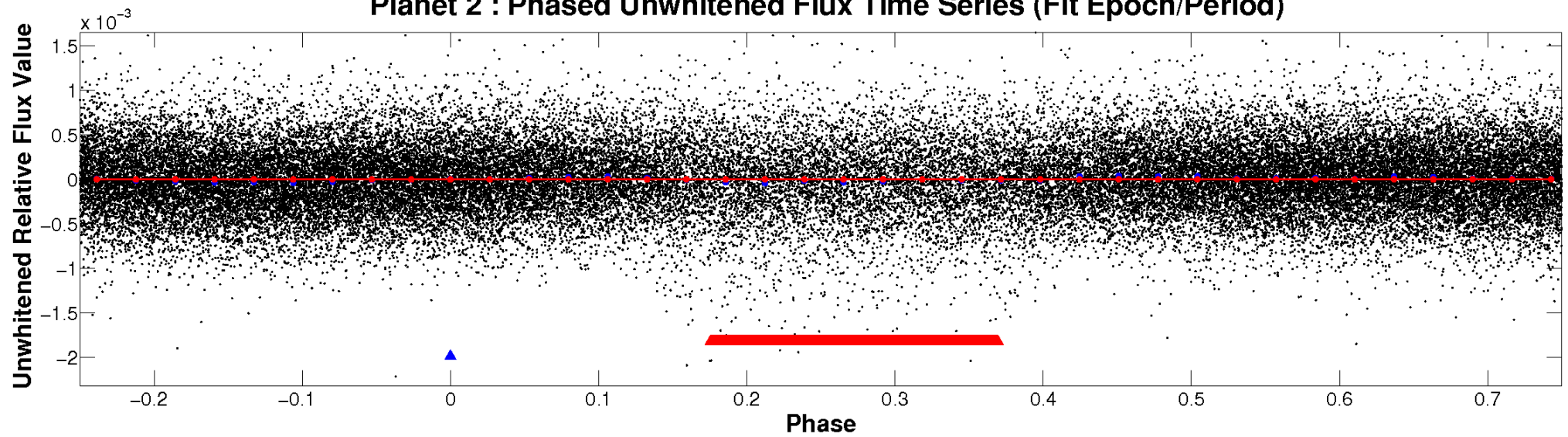
ALT Odd/Even

TCE 003836399-02

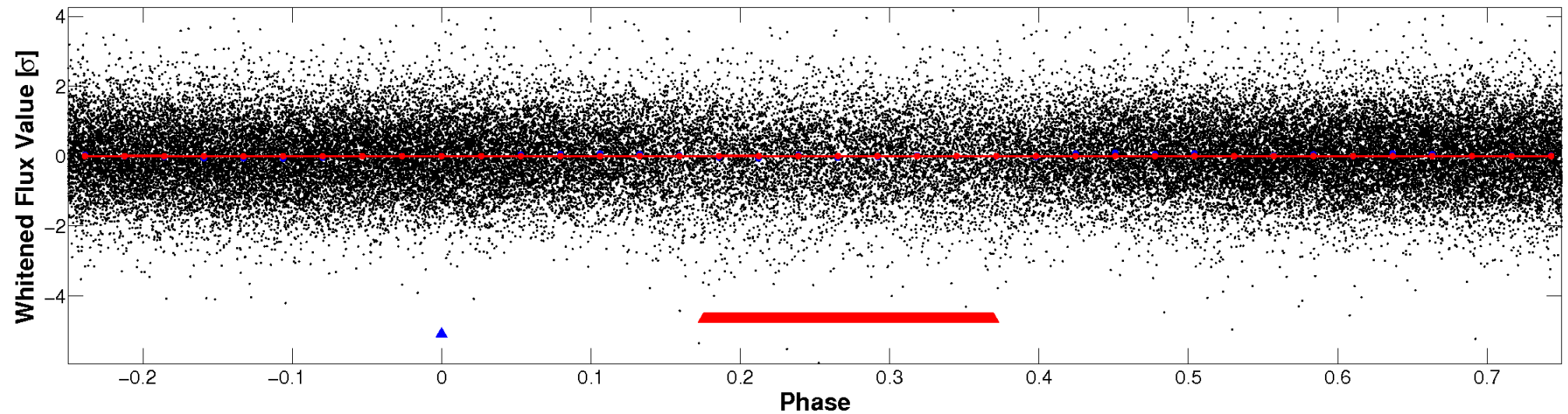


Non-Whitened Vs. Whitened Light Curve

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

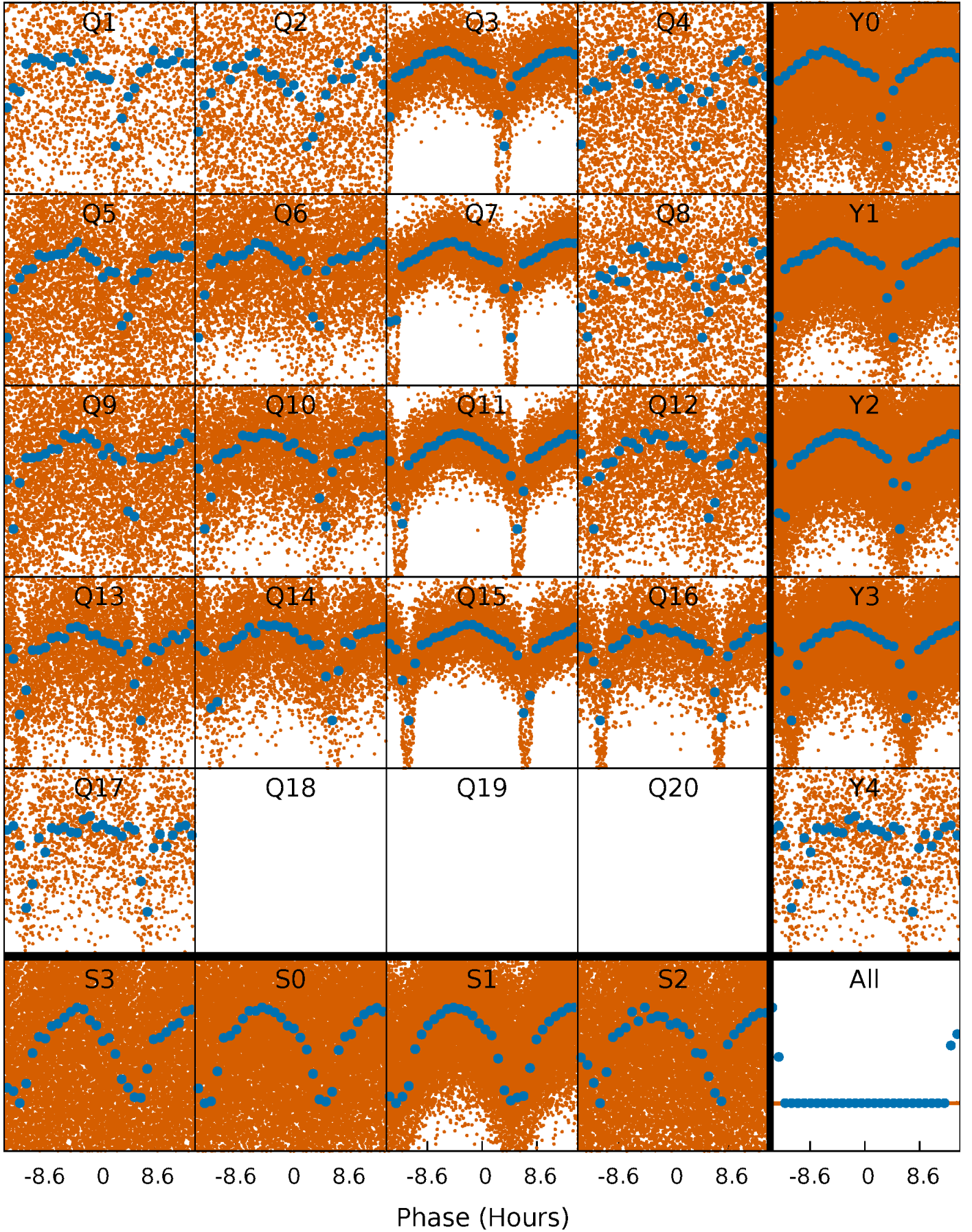


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



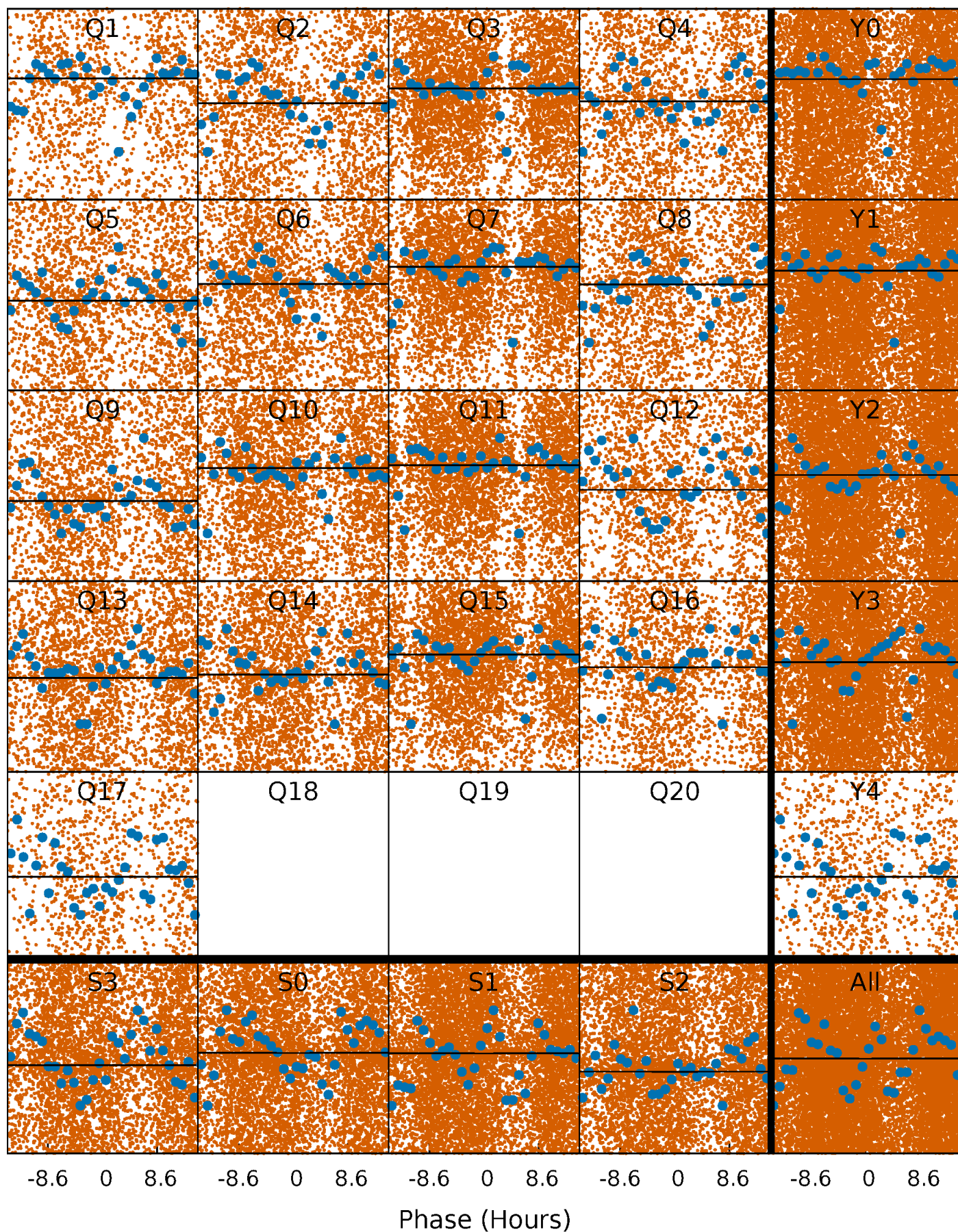
PDC Quarter-Phased Transit Curves

TCE 003836399-02 $P = 0.770096$ Days $T_0 = 131.881259$ (BKJD)



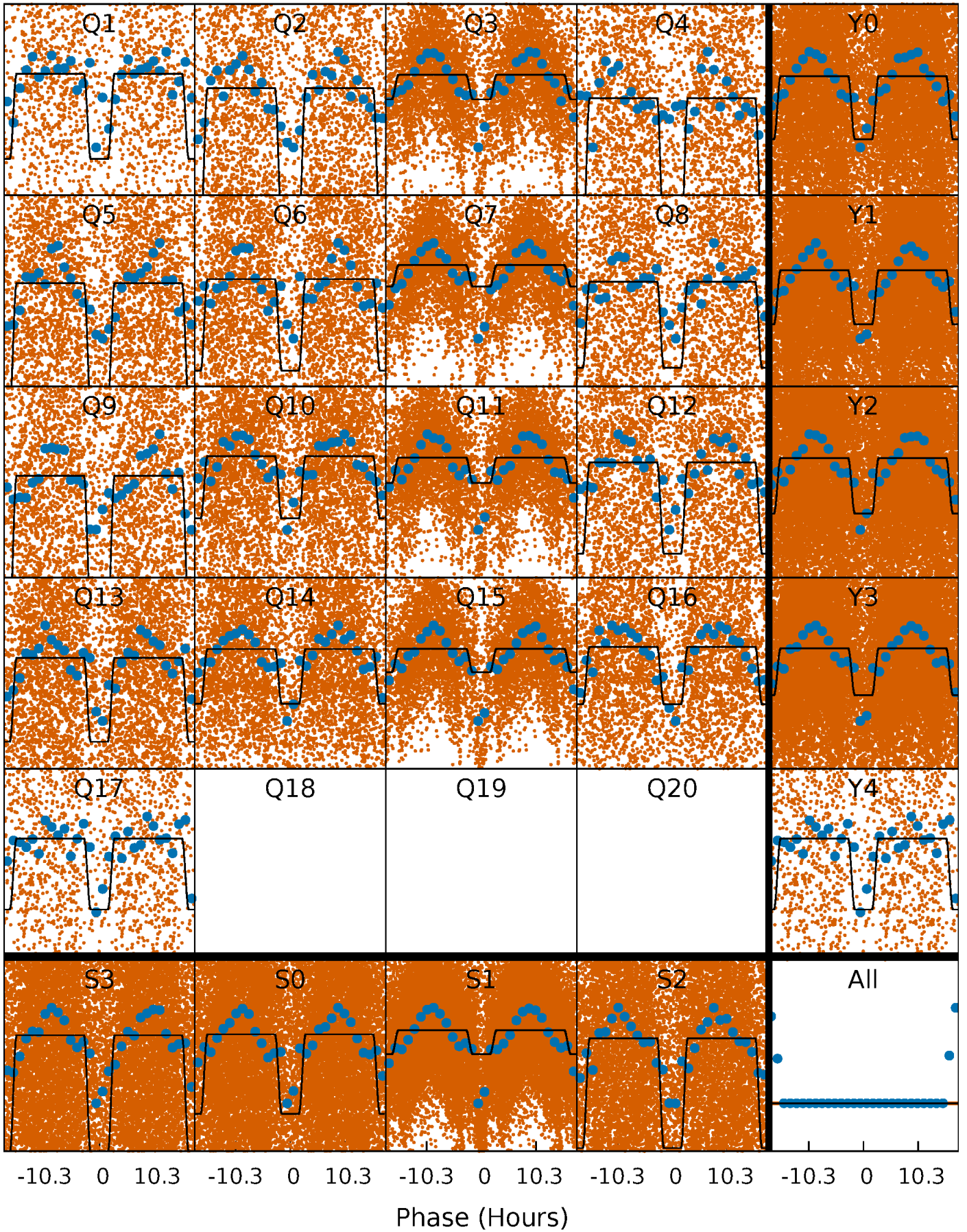
DV Quarter-Phased Transit Curves

TCE 003836399-02 P= 0.770096 Days $T_0=131.881259$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

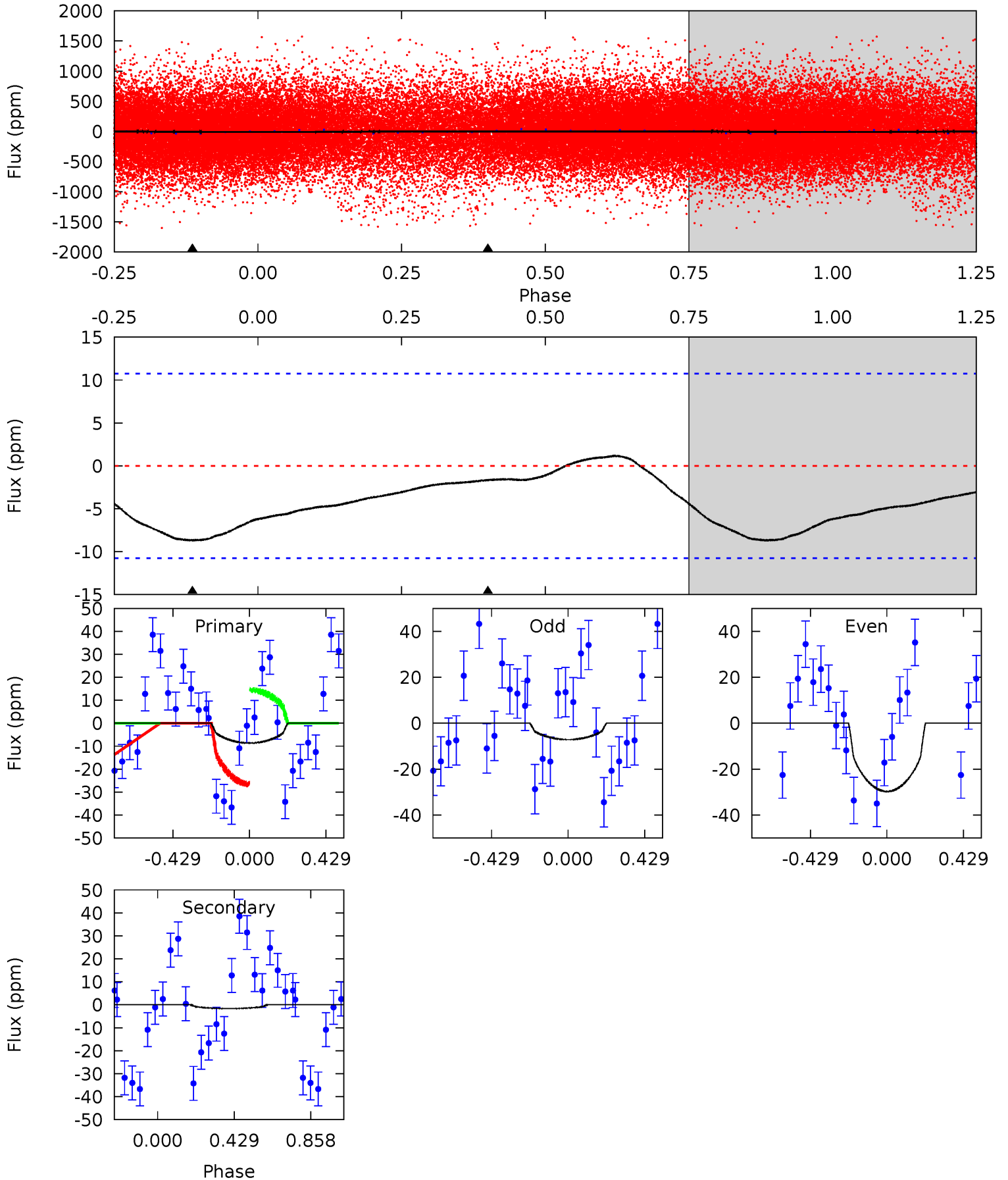
TCE 003836399-02 $P = 0.770197$ Days $T_0 = 132.001122$ (BKJD)



DV Model-Shift Uniqueness Test

003836399-02, P = 0.770096 Days, E = 131.111163 Days

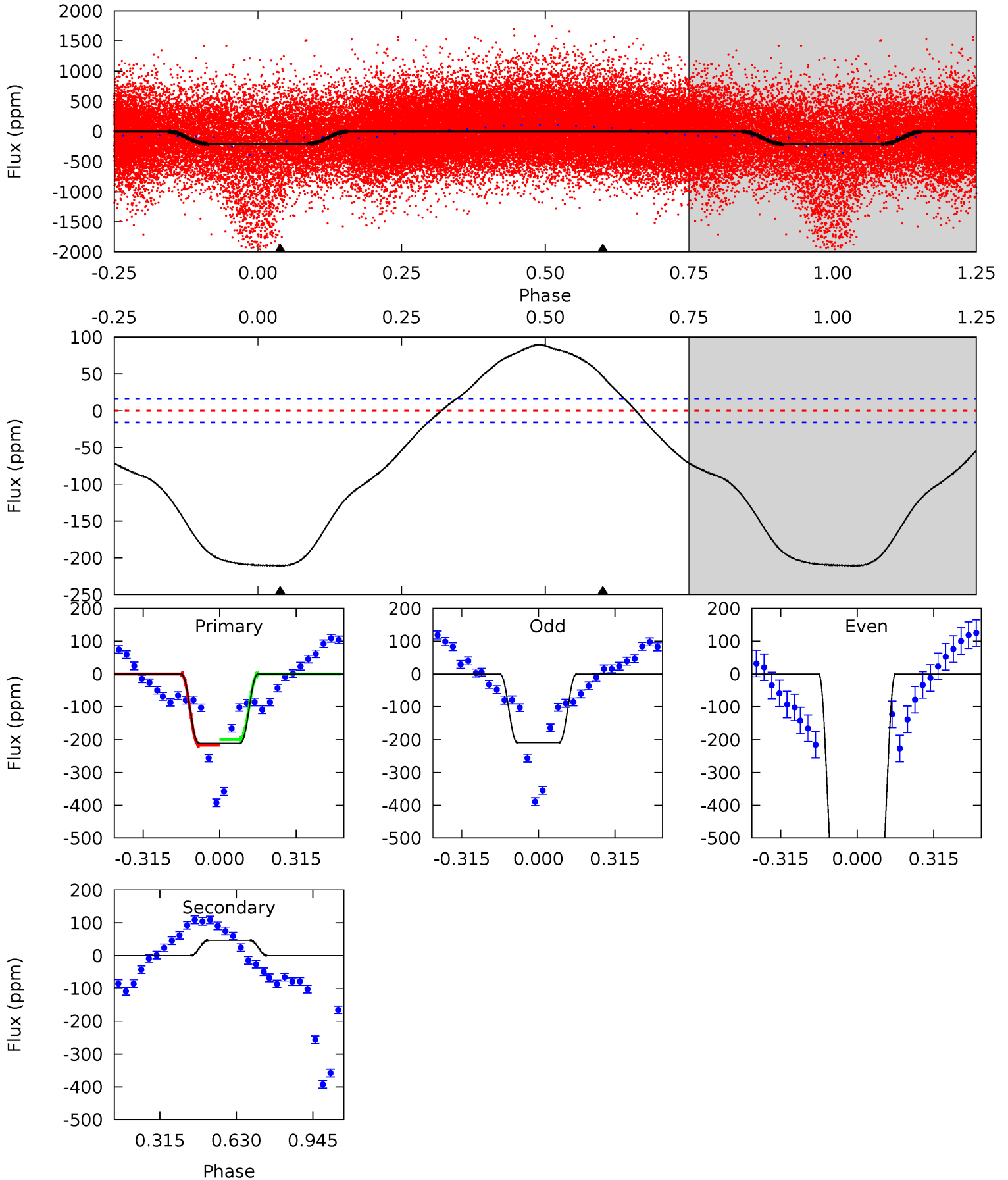
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.43	0.66	0	0	4.25	0.79	1.05	3.43	3.43	0.66	0.66	4.50	1.78	0.12	2.36



Alt Model-Shift Uniqueness Test

003836399-02, P = 0.770197 Days, E = 131.230925 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
56.7	-12.5	0	0	4.32	1.00	4.21	56.7	56.7	-12.5	-12.5	2.69	1.40	0.30	2.03



Stellar Parameters For KIC 003836399

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4911^{+146}_{-131}	$4.564^{+0.066}_{-0.039}$	$-0.220^{+0.300}_{-0.300}$	$0.724^{+0.062}_{-0.069}$	$0.700^{+0.095}_{-0.047}$	$2.603^{+0.728}_{-0.394}$
	+3%/-3%	+1%/-1%	+136%/-136%	+9%/-10%	+14%/-7%	+28%/-15%
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 003836399-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2 ± 3	$2.60^{+3.00}_{-1.84}$	2118^{+77}_{-73}	-2503^{+385}_{-88}	$0.018^{+0.221}_{-0.026}$
Alt.	47 ± 4	$3.01^{+3.05}_{-2.09}$	2120^{+77}_{-75}	-2951^{+283}_{-1059}	$-0.617^{+0.467}_{-5.921}$

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 $A_{\text{obs}} \gg 1.0$

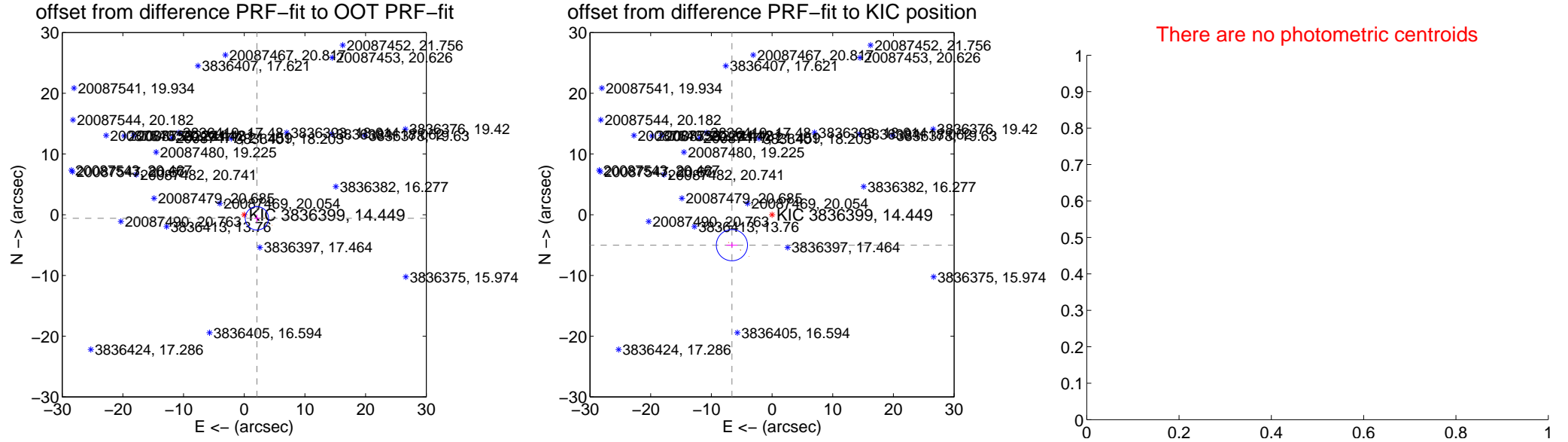
DV Centroid Data

Supplemental centroid analysis for 003836399-02. Kepler magnitude: 14.45. Transit SNR 0.04

There are 3 quarters with good PRF difference image offsets

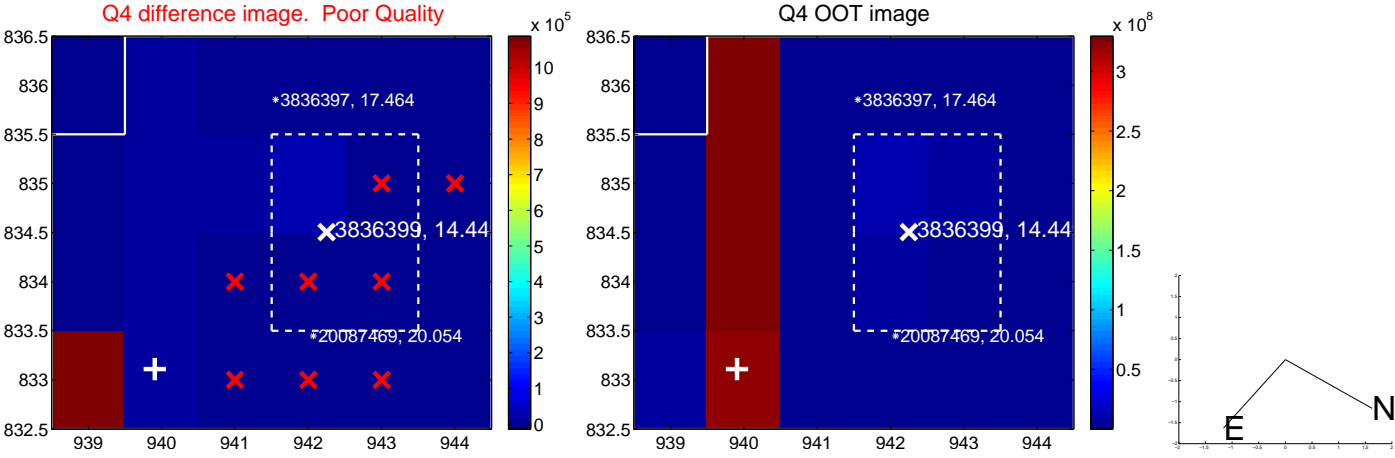
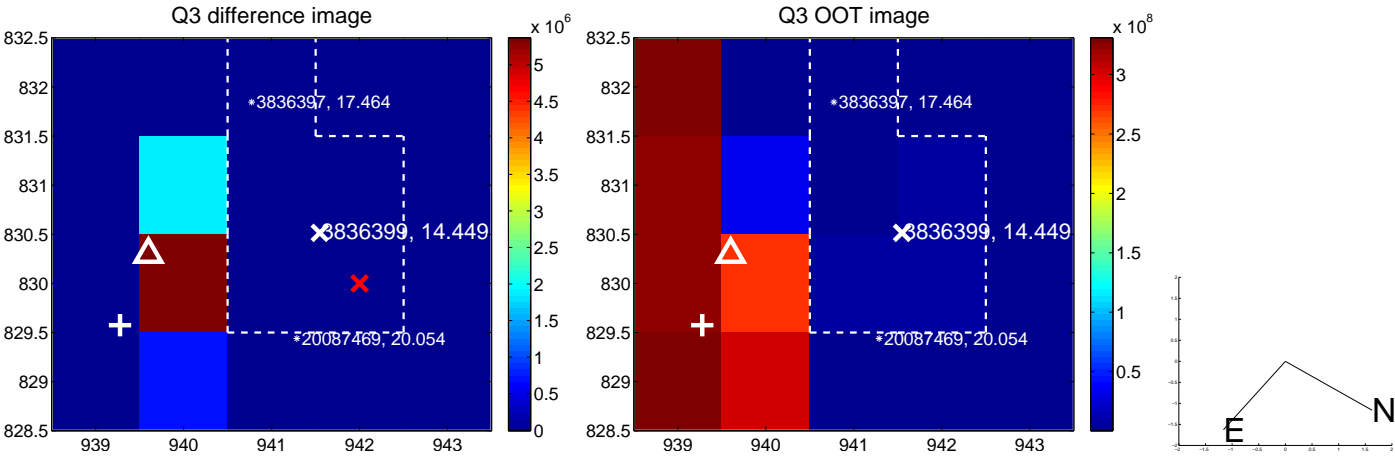
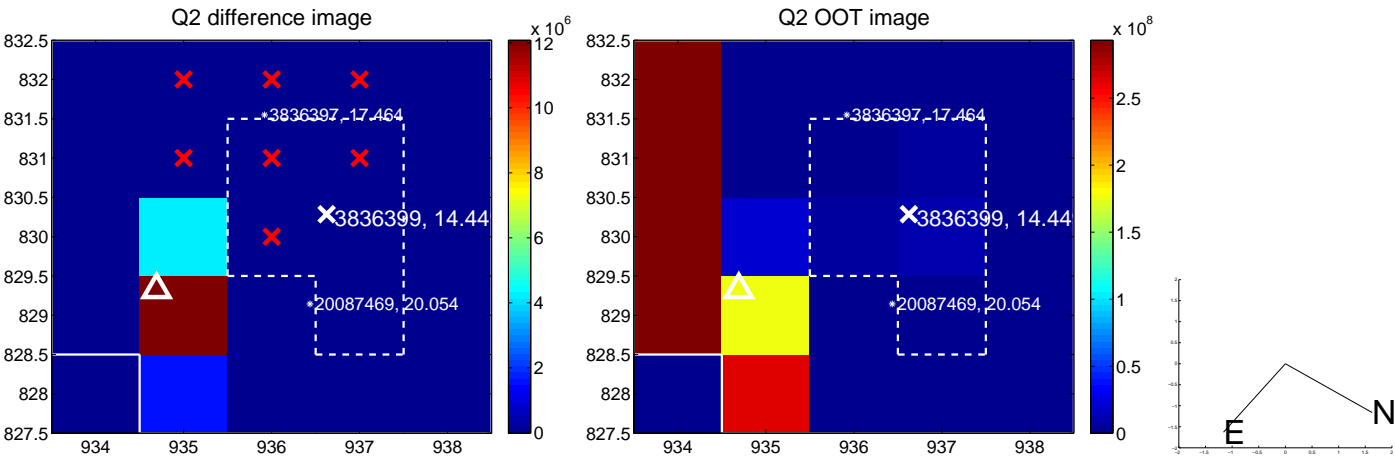
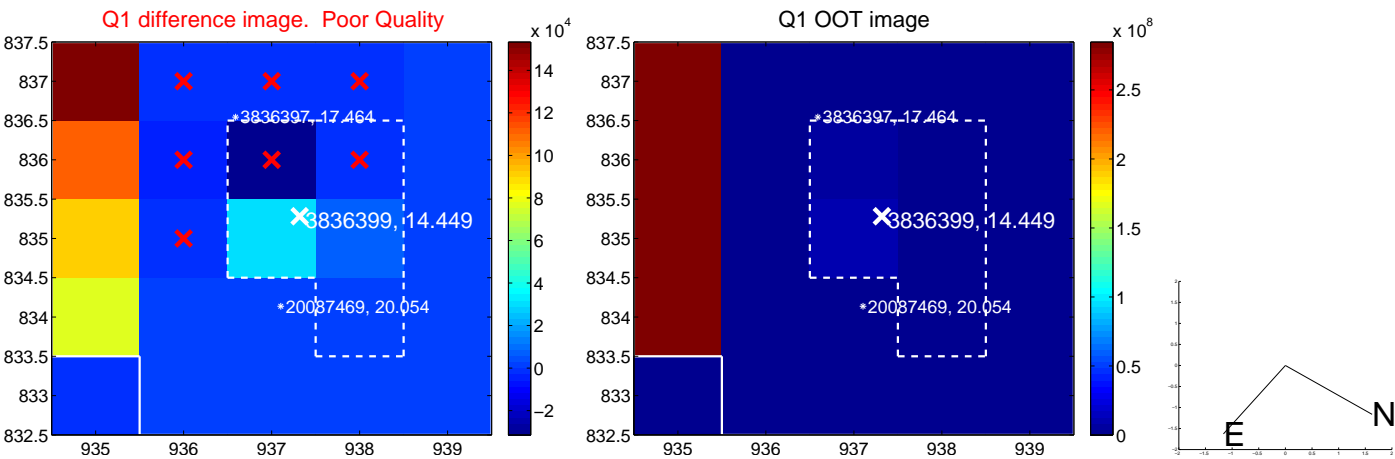
The OOT PRF centroid is offset from the target star catalog position by about 9.99 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.172 ± 0.640	3.39	-2.088 ± 0.496	-0.596 ± 0.605
PRF-fit source offset from KIC position	8.298 ± 0.857	9.68	6.613 ± 0.900	-5.012 ± 0.425
photometric centroid source offset	—	—	—	—

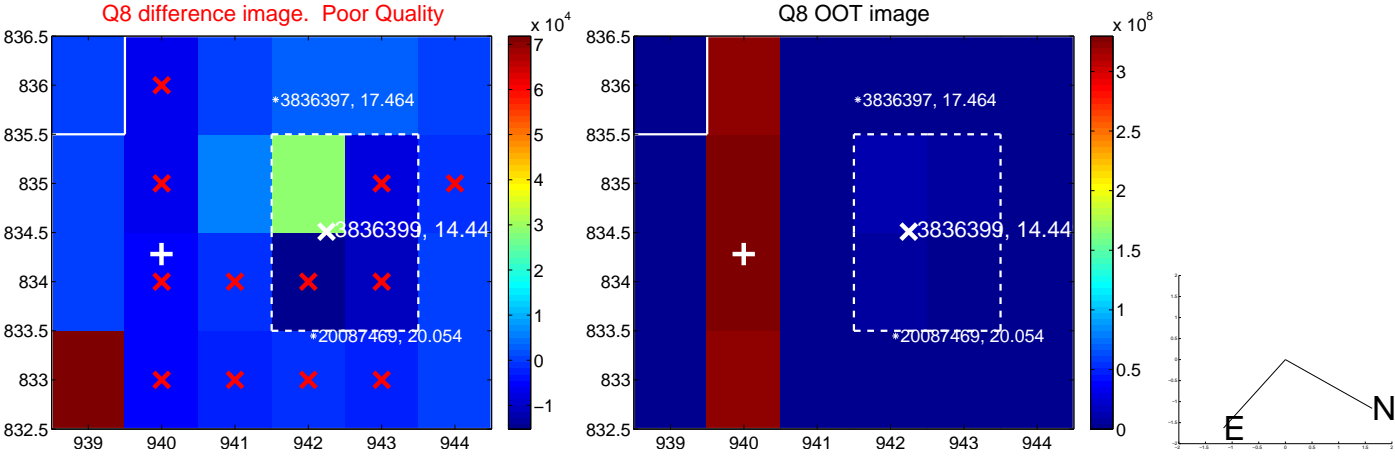
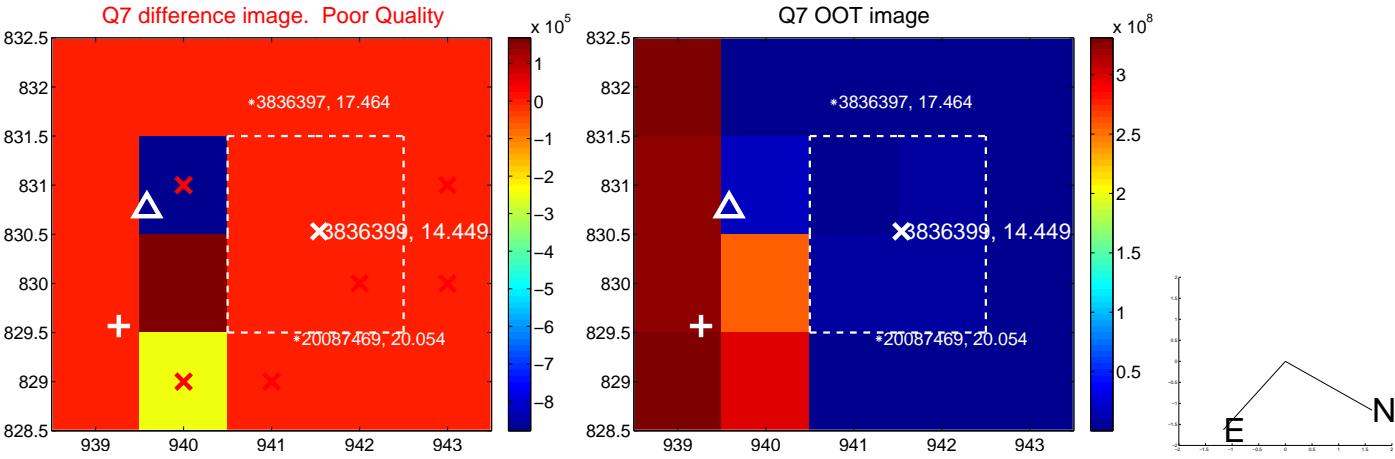
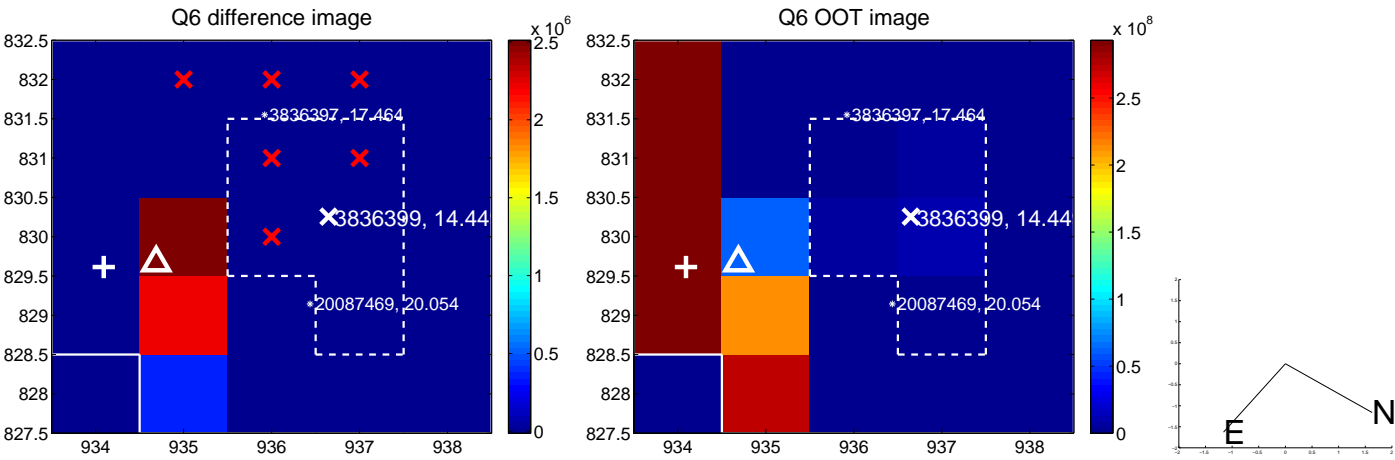
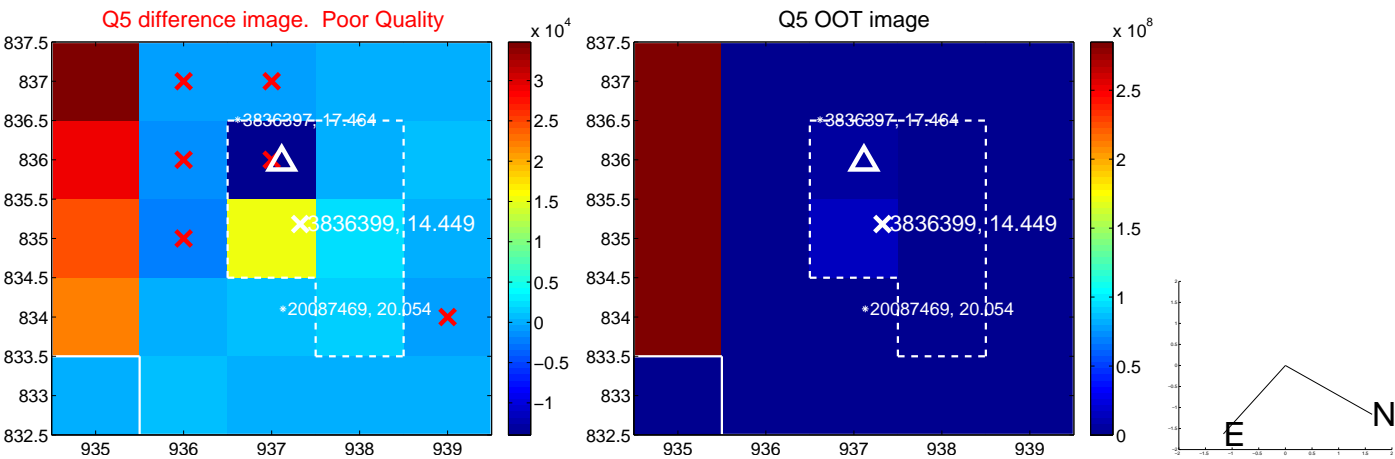


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

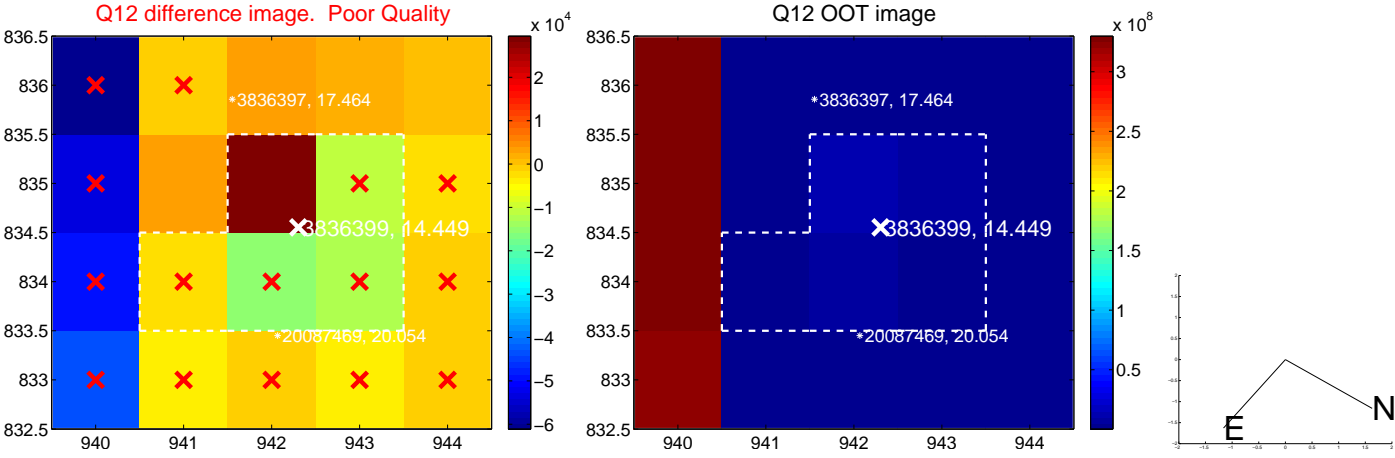
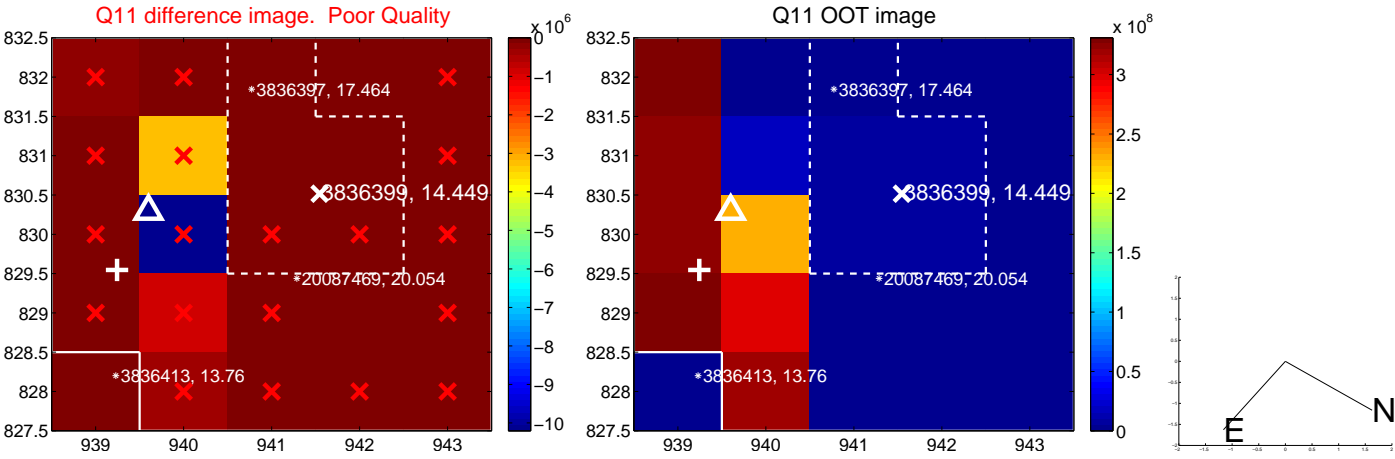
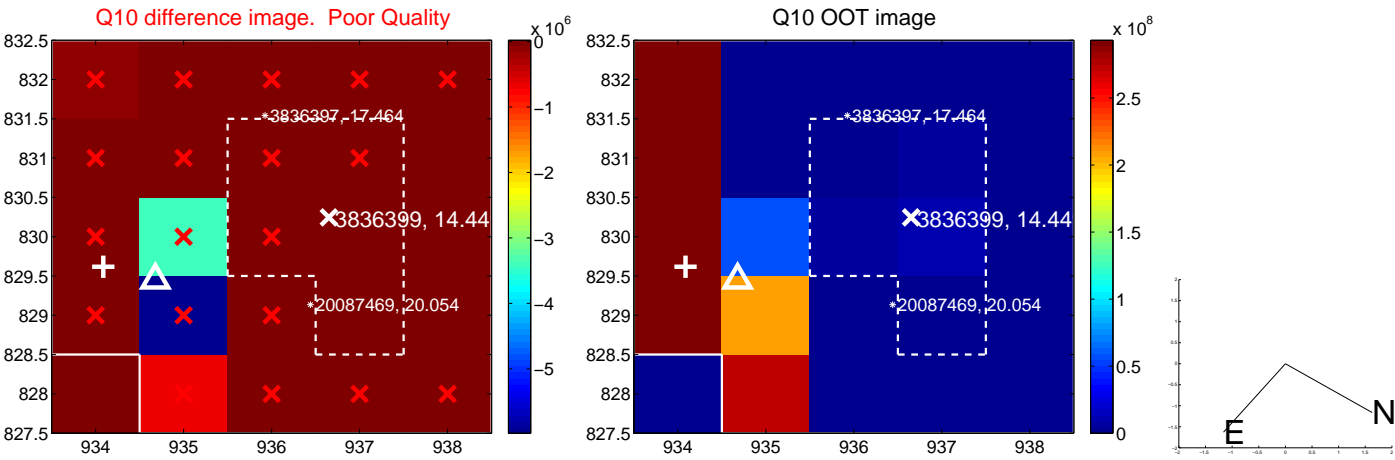
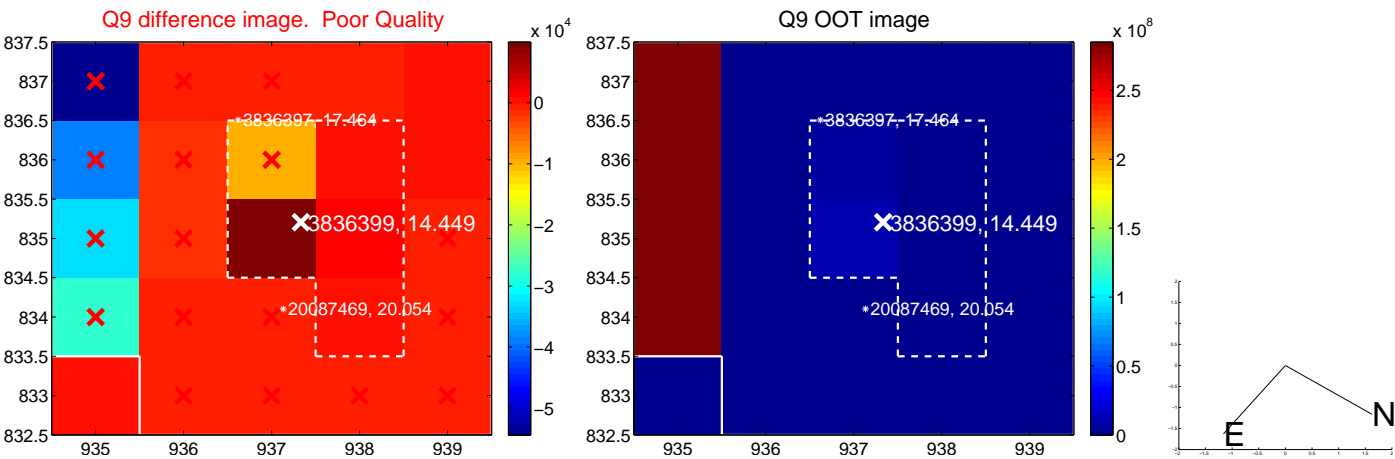
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



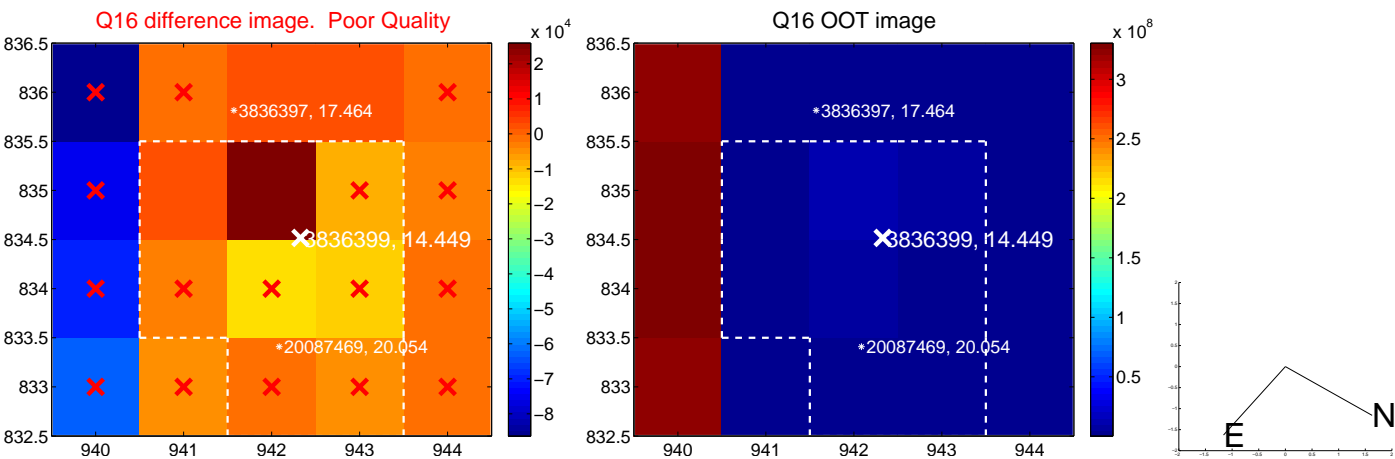
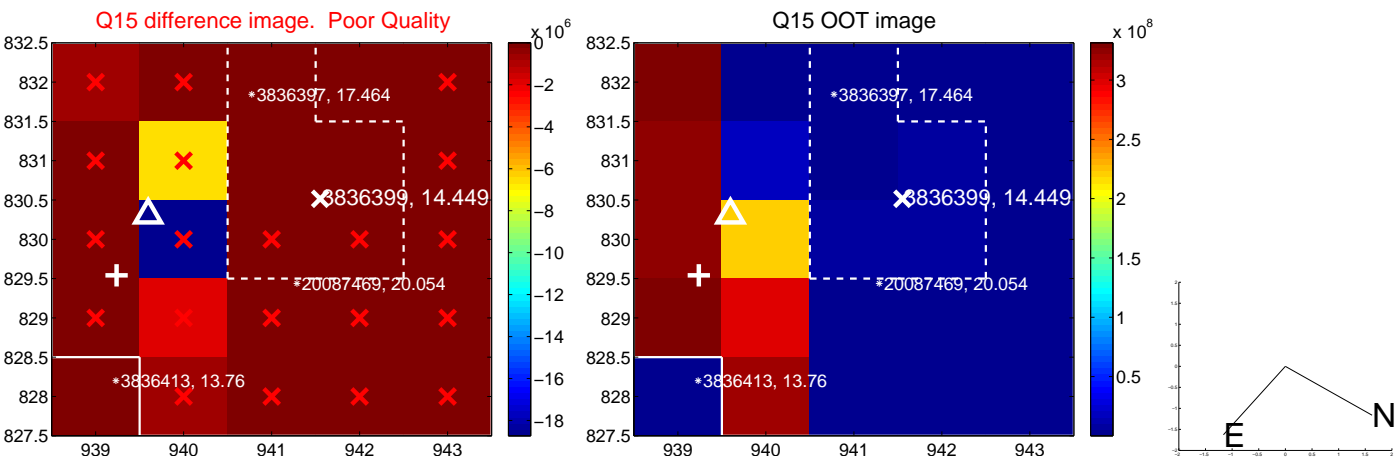
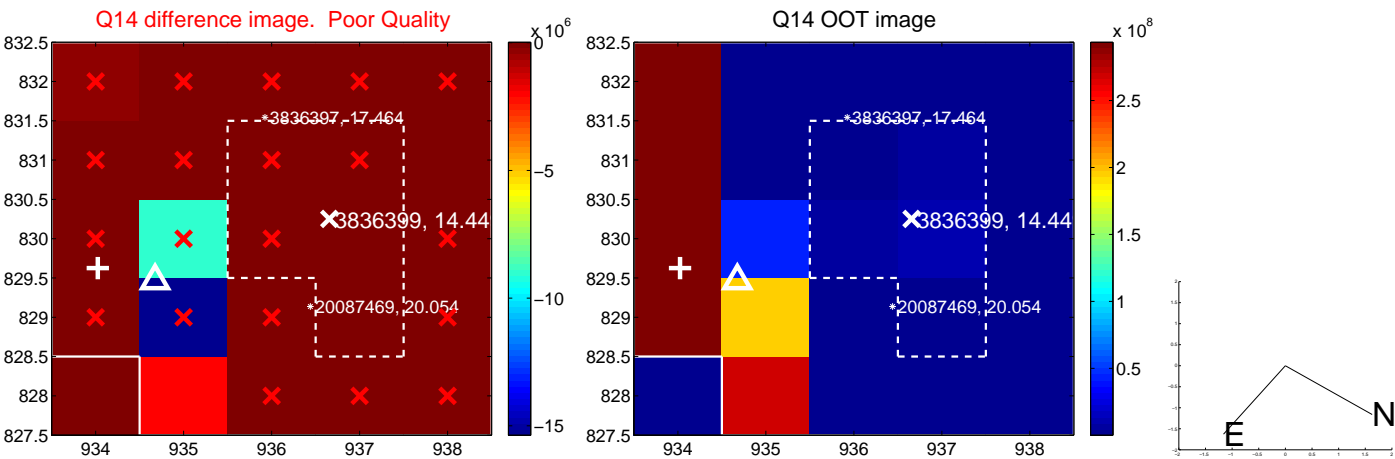
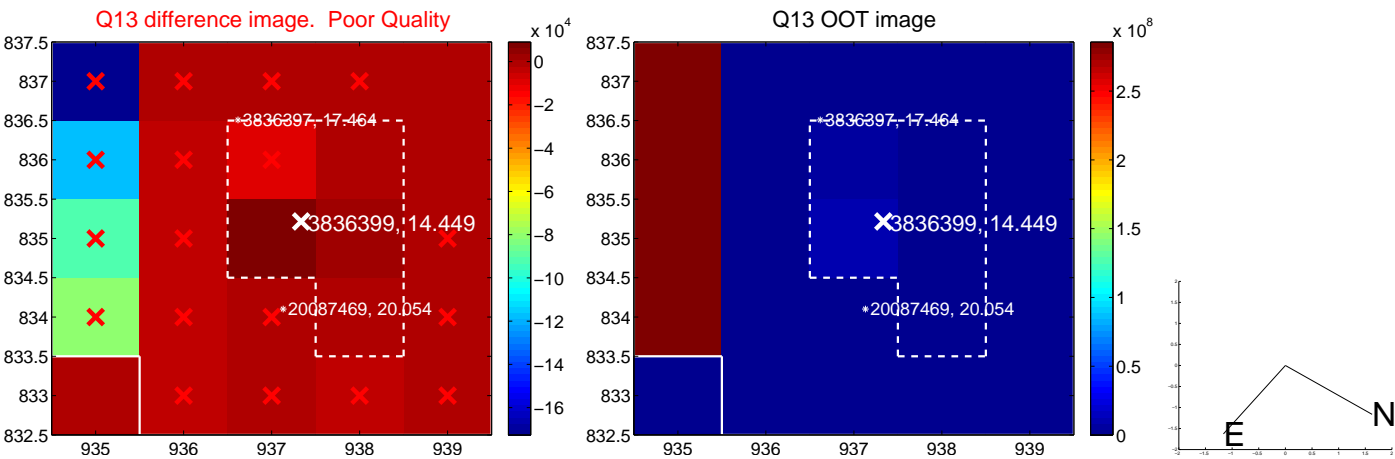
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



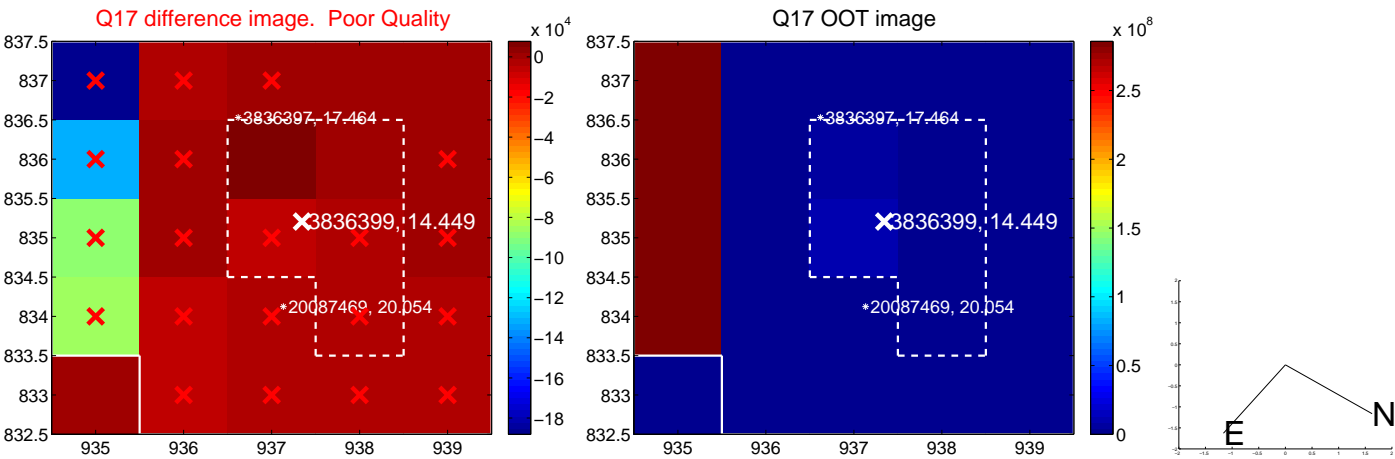
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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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

