

KIC 002718672

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})
002718672-01	OBS	No	0.996210	132.192121	6.3	2.251	8.8	8.6	2.06	9534	0.60	48231.83
002718672-02	OBS	No	0.555617	131.980285	3.9	6.512	7.9	7.9	2.06	9534	0.42	105059.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002718672-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—EPHEM_MATCH
002718672-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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.

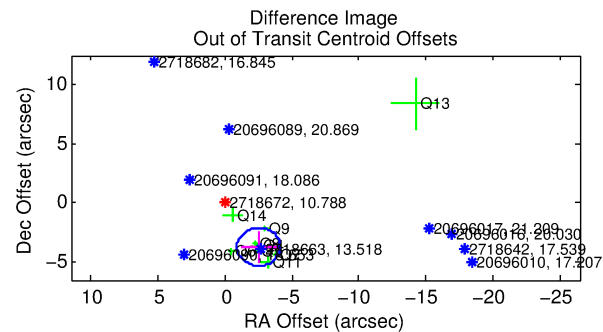
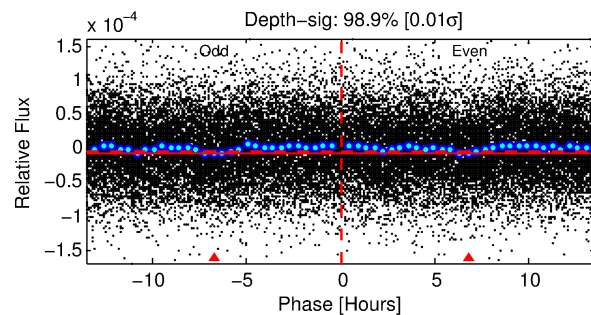
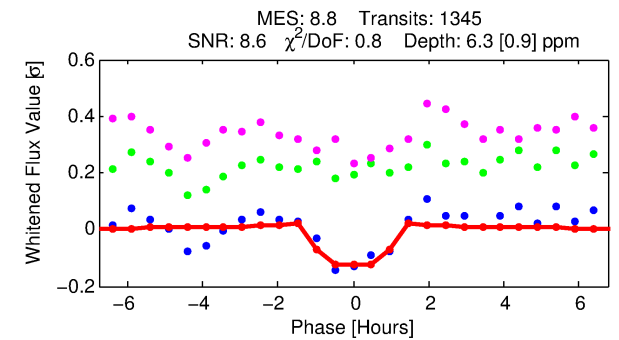
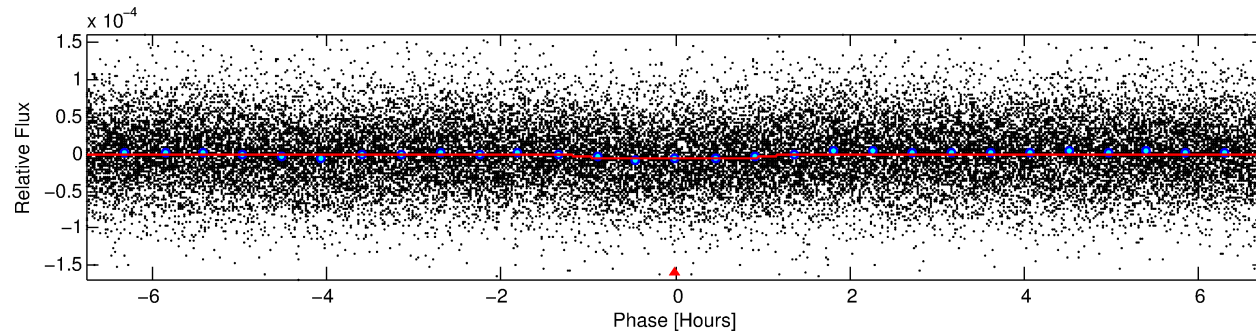
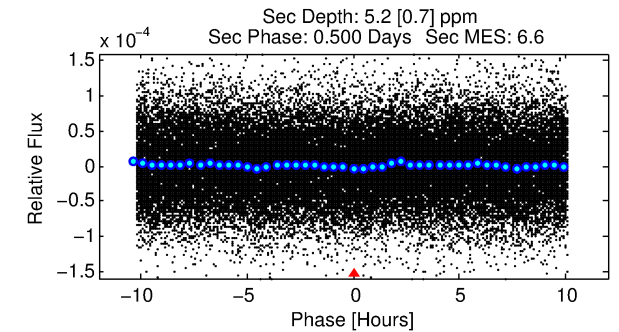
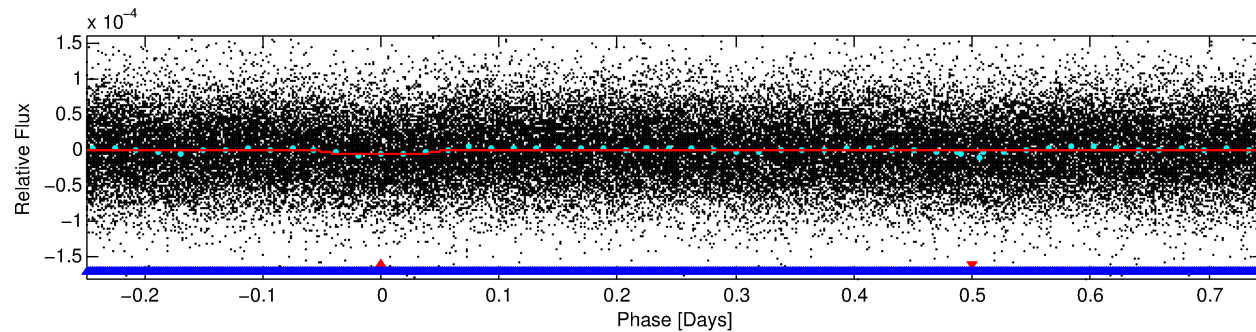
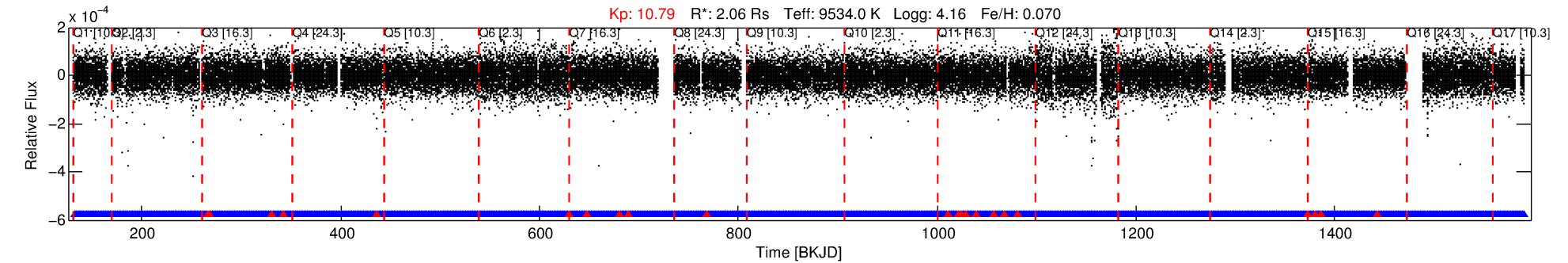
Ephemeris Match Information For 002718672-01

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
002718672-01	2718672	002718663-02	2718663	1:1	4.8	0	-1	13.52	10.79	15.83	Direct-PRF	0	2.75	1.98

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: 2718672 Candidate: 1 of 2 Period: 0.996 d



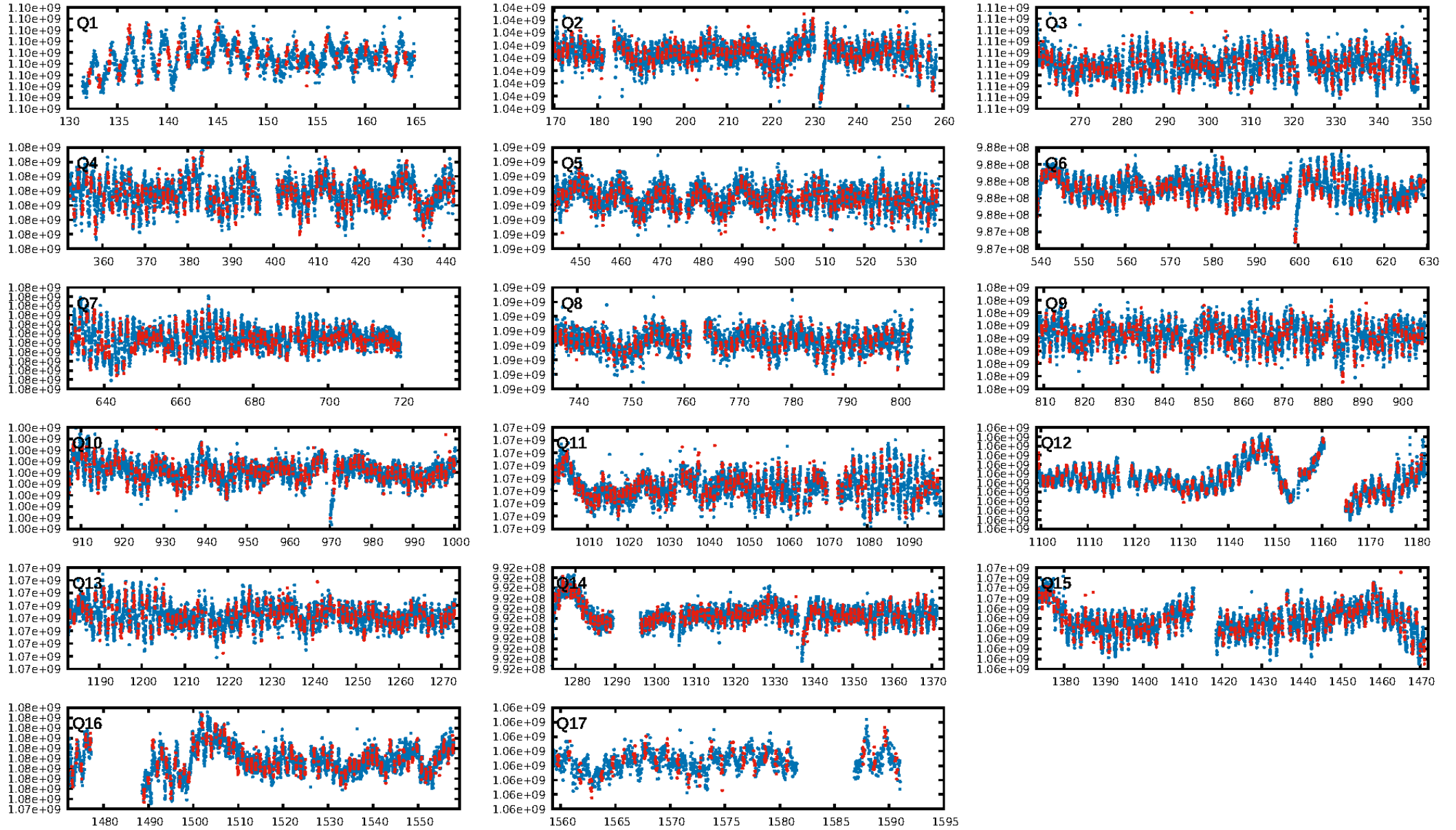
DV Fit Results:

Period = 0.99621 [0.00001] d
Epoch = 132.1921 [0.0031] BKJD
Rp/R* = 0.0027 [0.0003]
a/R* = 1.74 [0.70]
b = 0.90 [0.12]
Seff = 48231.83 [23744.80]
Teff = 3779 [465] K
Rp = 0.60 [0.26] Re
a = 0.0256 [0.0086] AU
Ag = 5.26 [2.76] [1.54σ]
Teffp = 8847 [692] K [6.08σ]

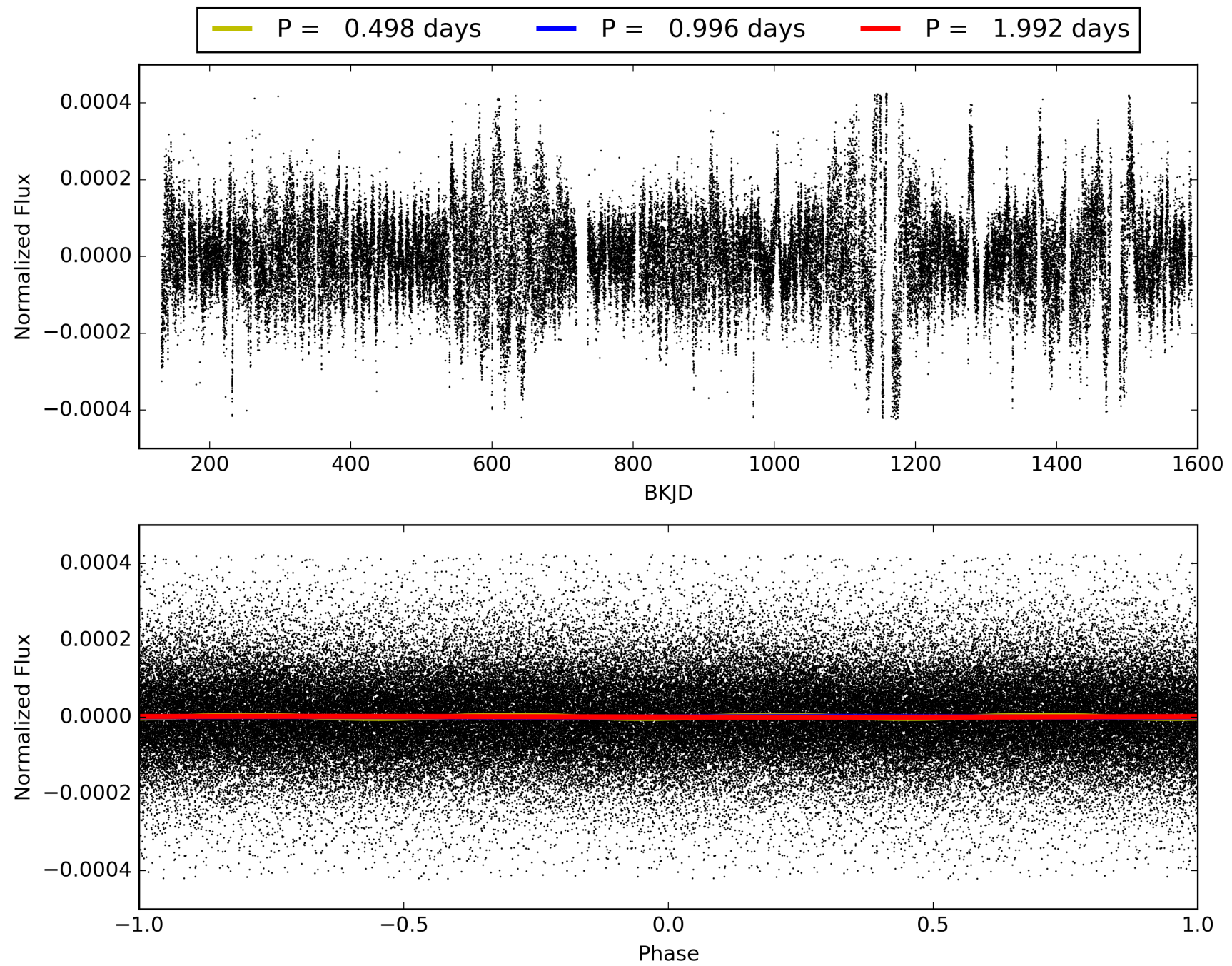
DV Diagnostic Results:

ShortPeriod-sig: 87.5% [1.53σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [1264/1286]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 5.024 arcsec [3.17σ]
OotOffset-rm: 4.462 arcsec [8.32σ]
KicOffset-rm: 4.691 arcsec [7.57σ]
OotOffset-st: 2/2/2/3 [9]
KicOffset-st: 2/2/2/3 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 002718672-01, PDC Light Curves

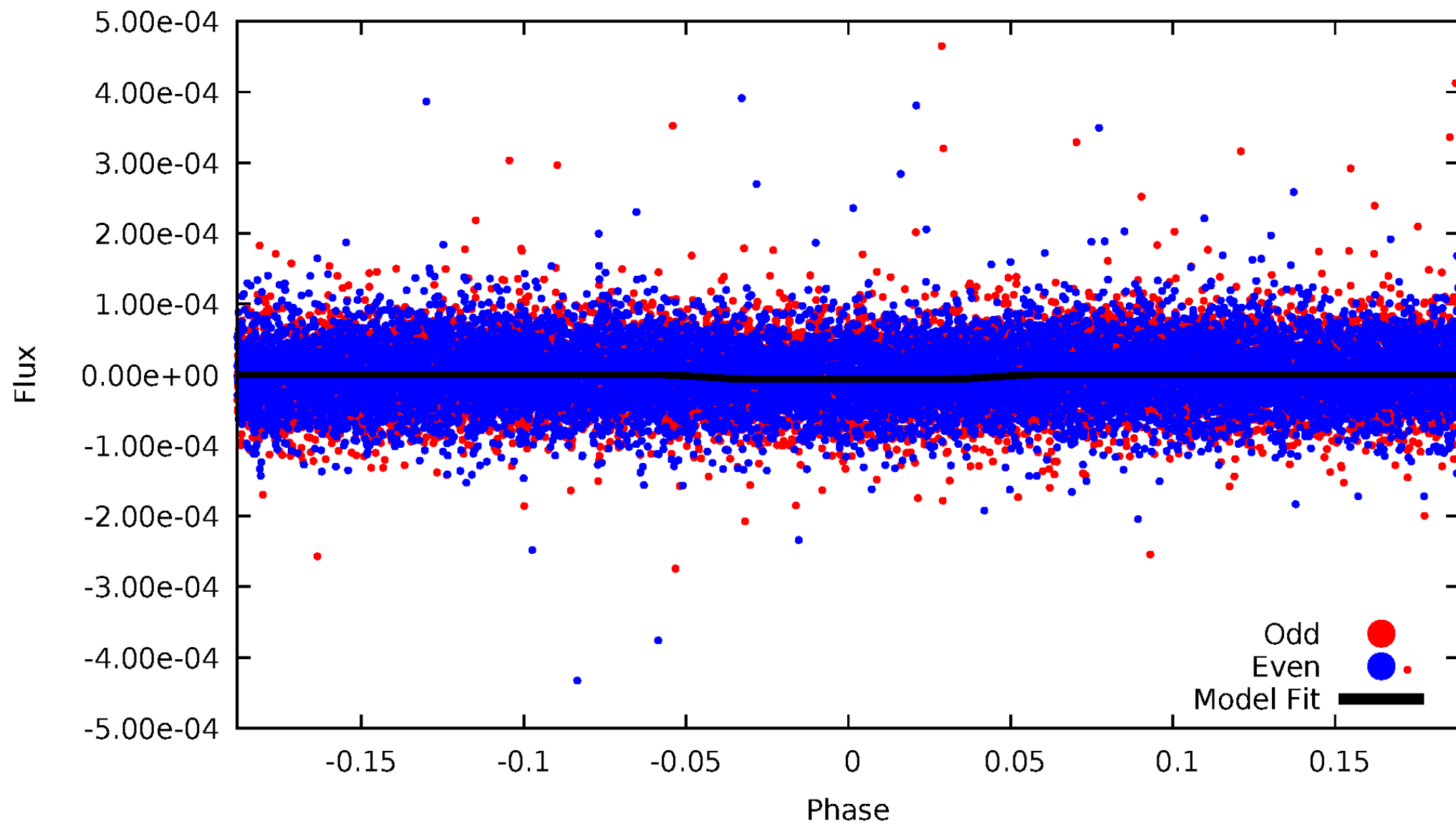


TCE 002718672-01



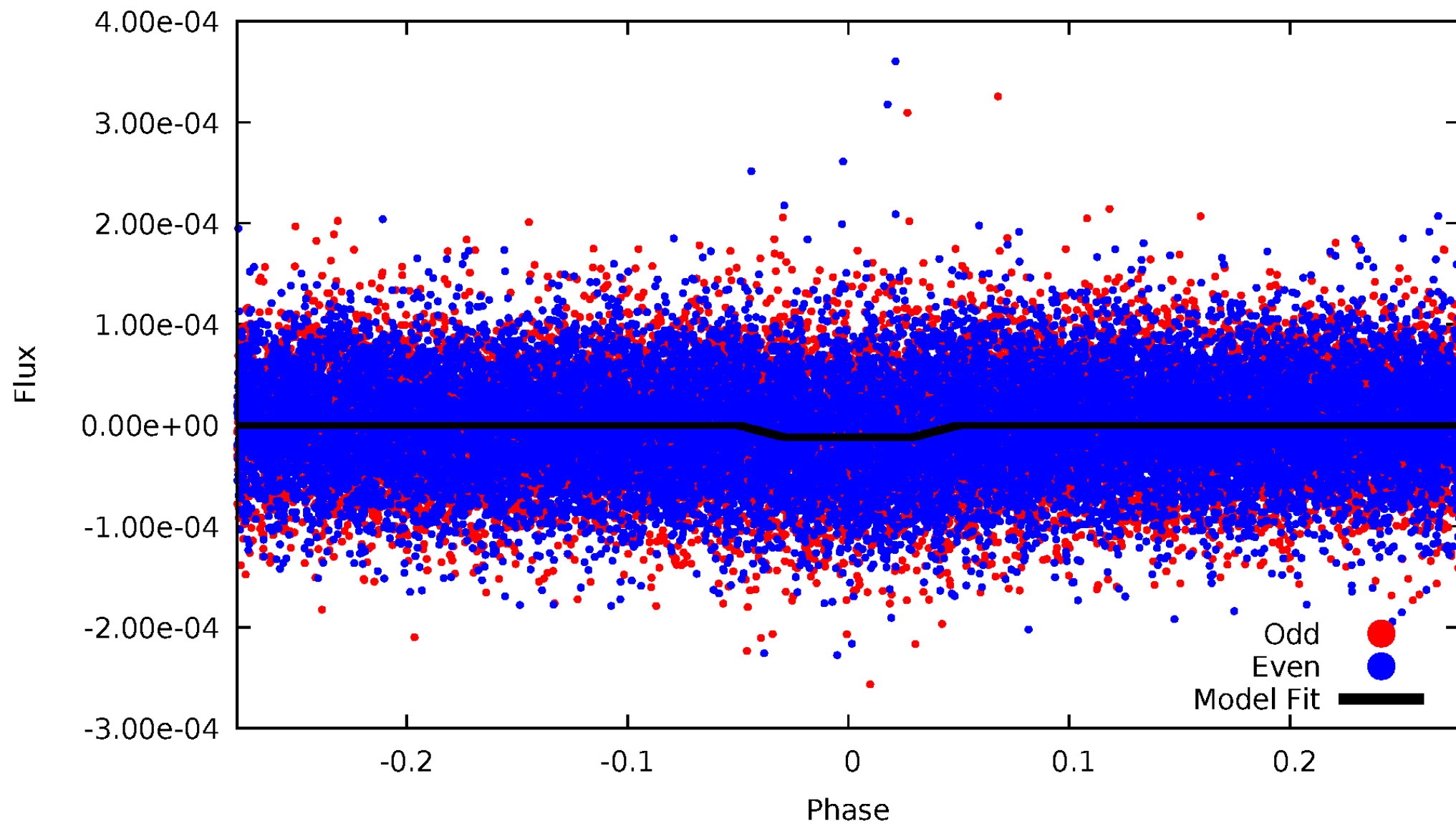
DV Odd/Even

TCE 002718672-01



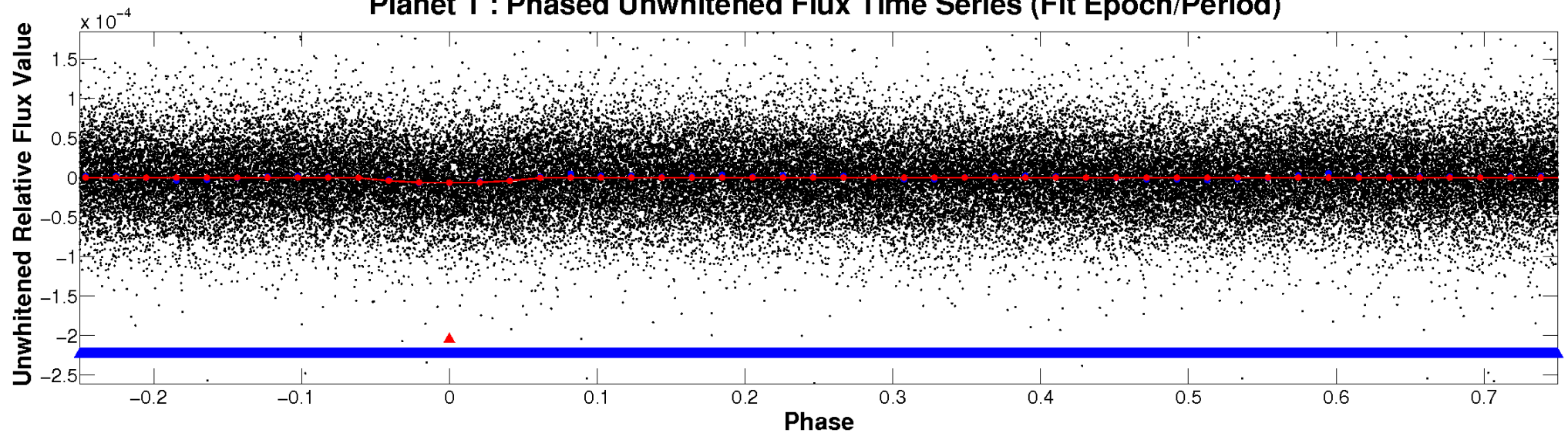
ALT Odd/Even

TCE 002718672-01

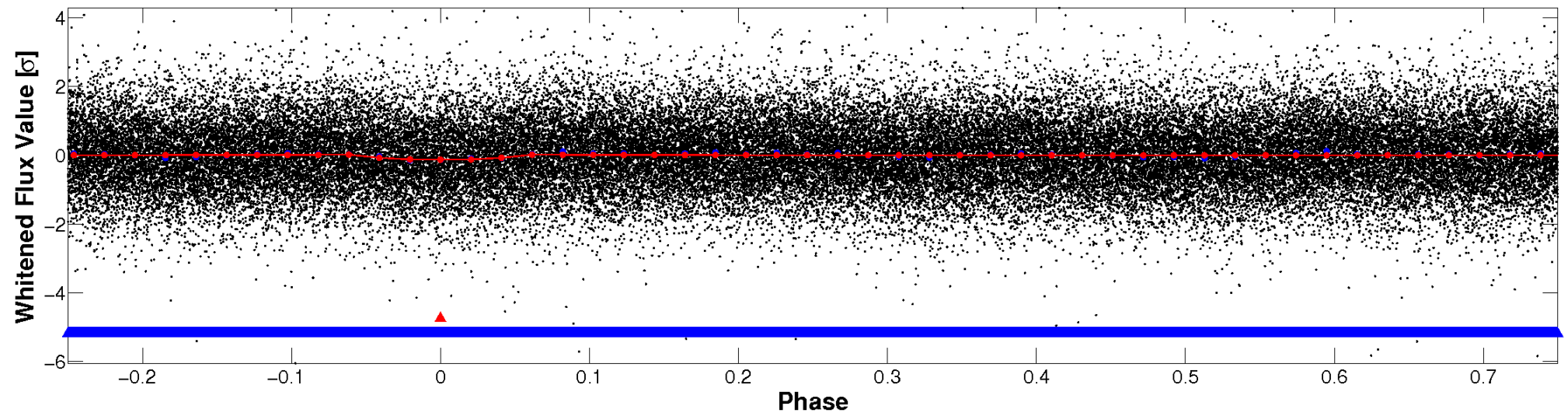


Non-Whitened Vs. Whitened Light Curve

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

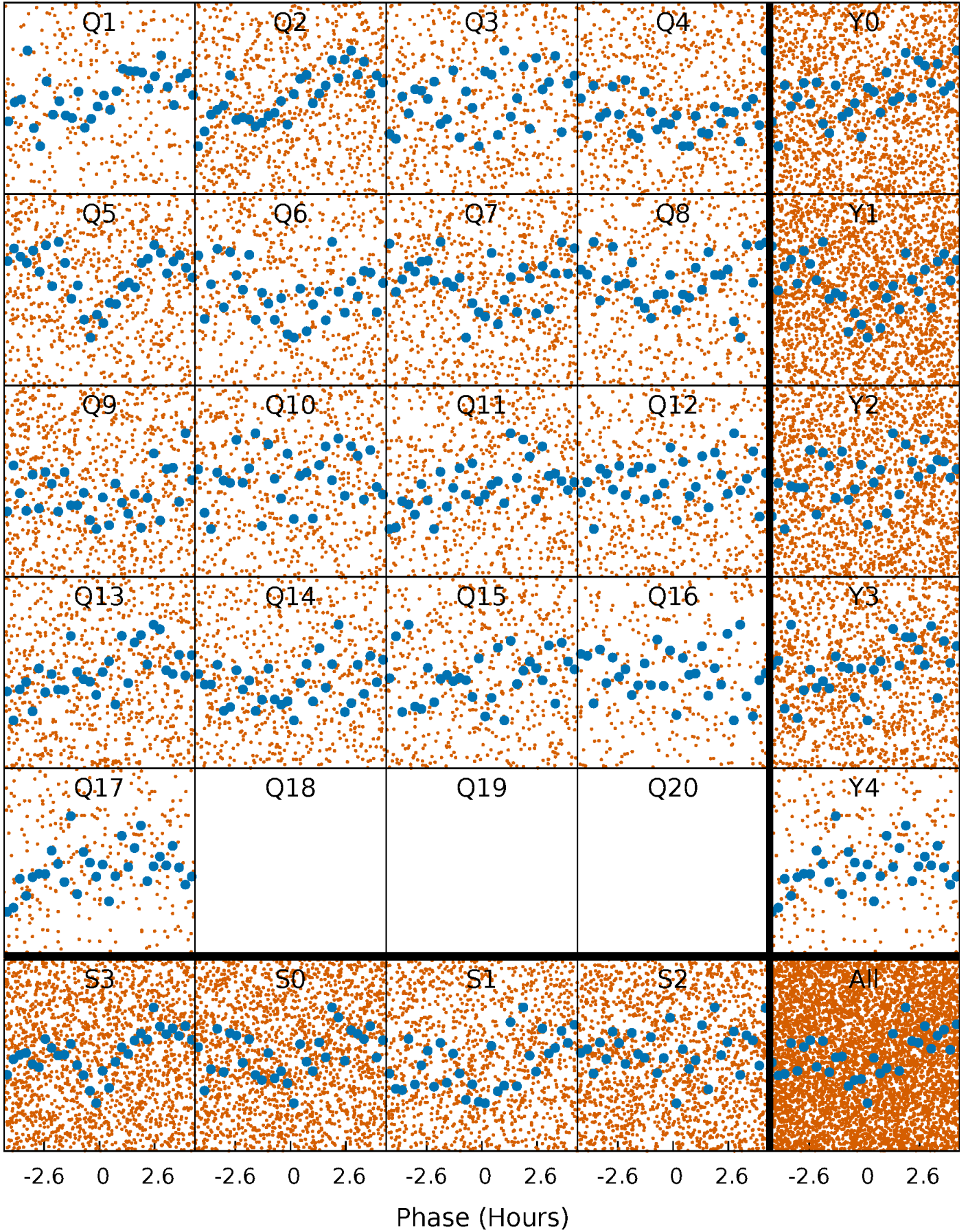


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



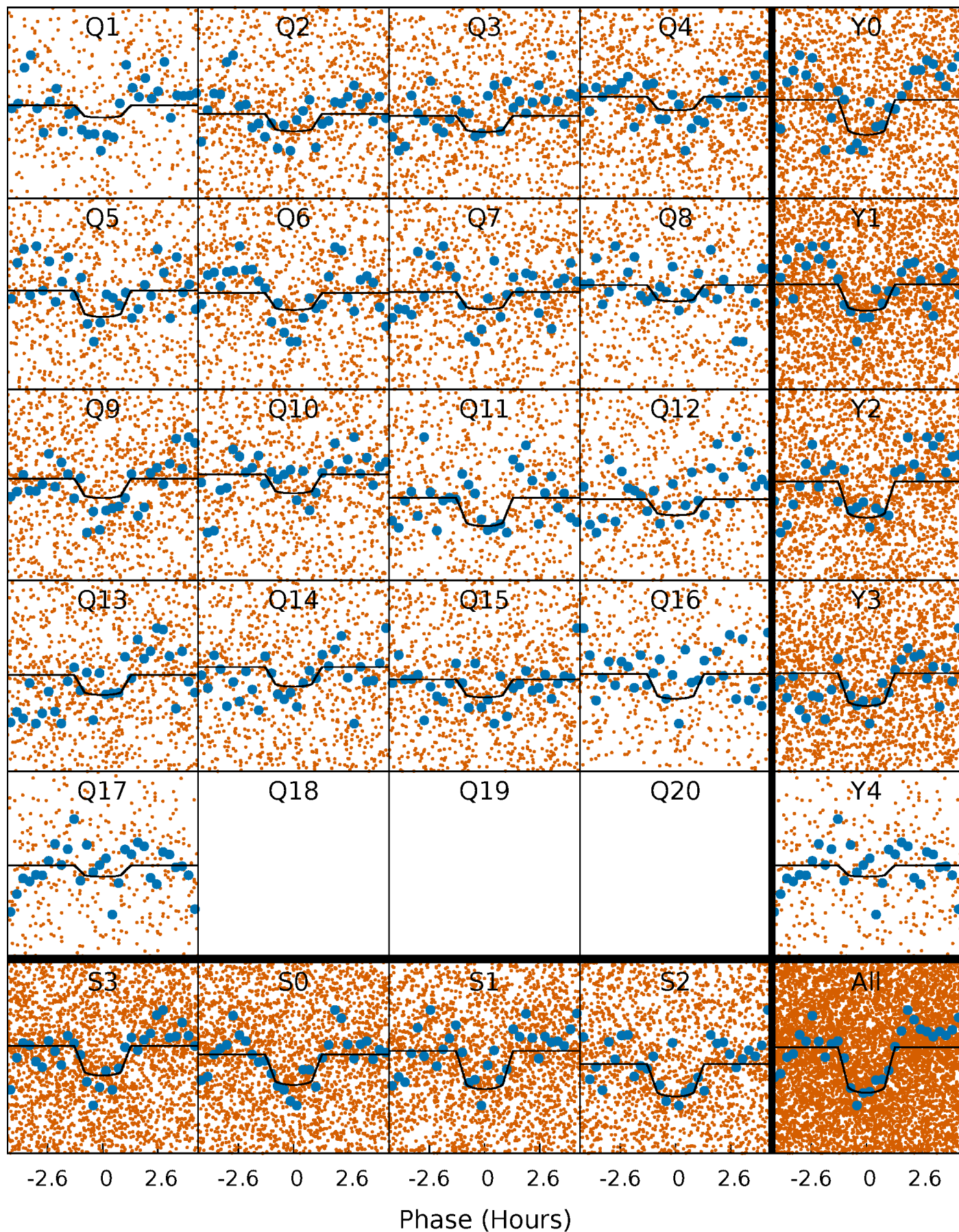
PDC Quarter-Phased Transit Curves

TCE 002718672-01 P= 0.996210 Days $T_0=132.192121$ (BKJD)



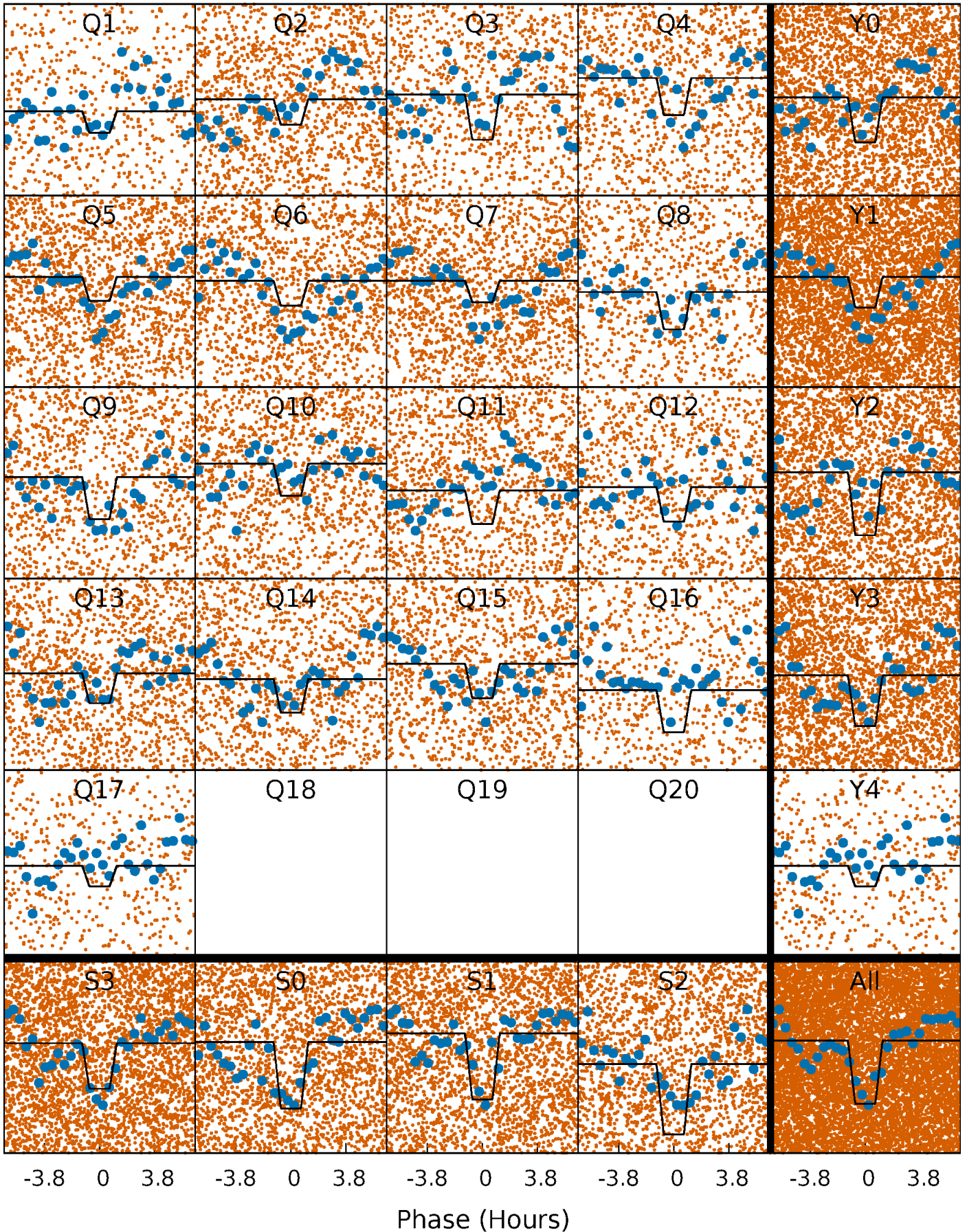
DV Quarter-Phased Transit Curves

TCE 002718672-01 P= 0.996210 Days $T_0=132.192121$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

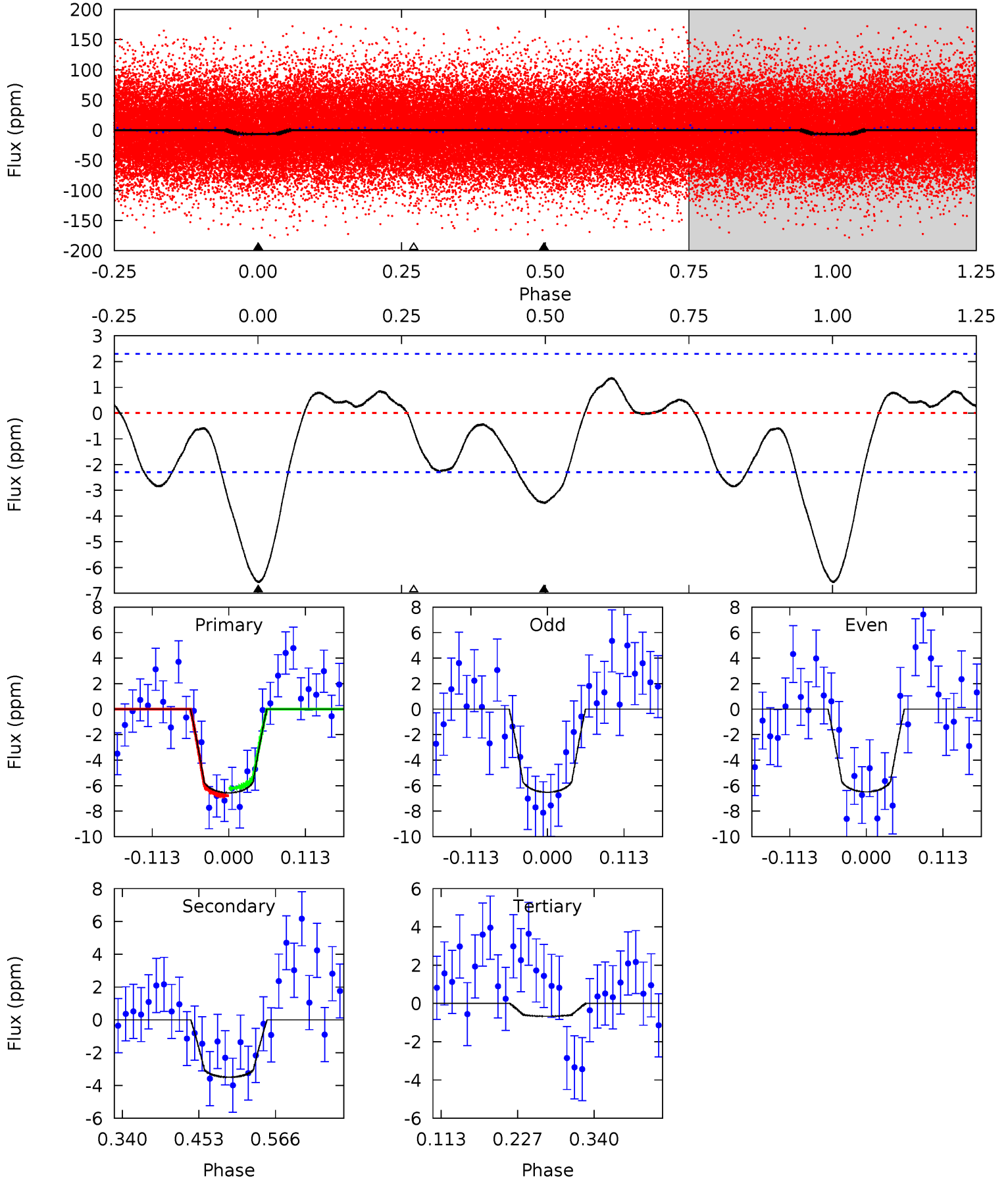
TCE 002718672-01 P= 0.996227 Days $T_0=132.176304$ (BKJD)



DV Model-Shift Uniqueness Test

002718672-01, P = 0.996210 Days, E = 131.195911 Days

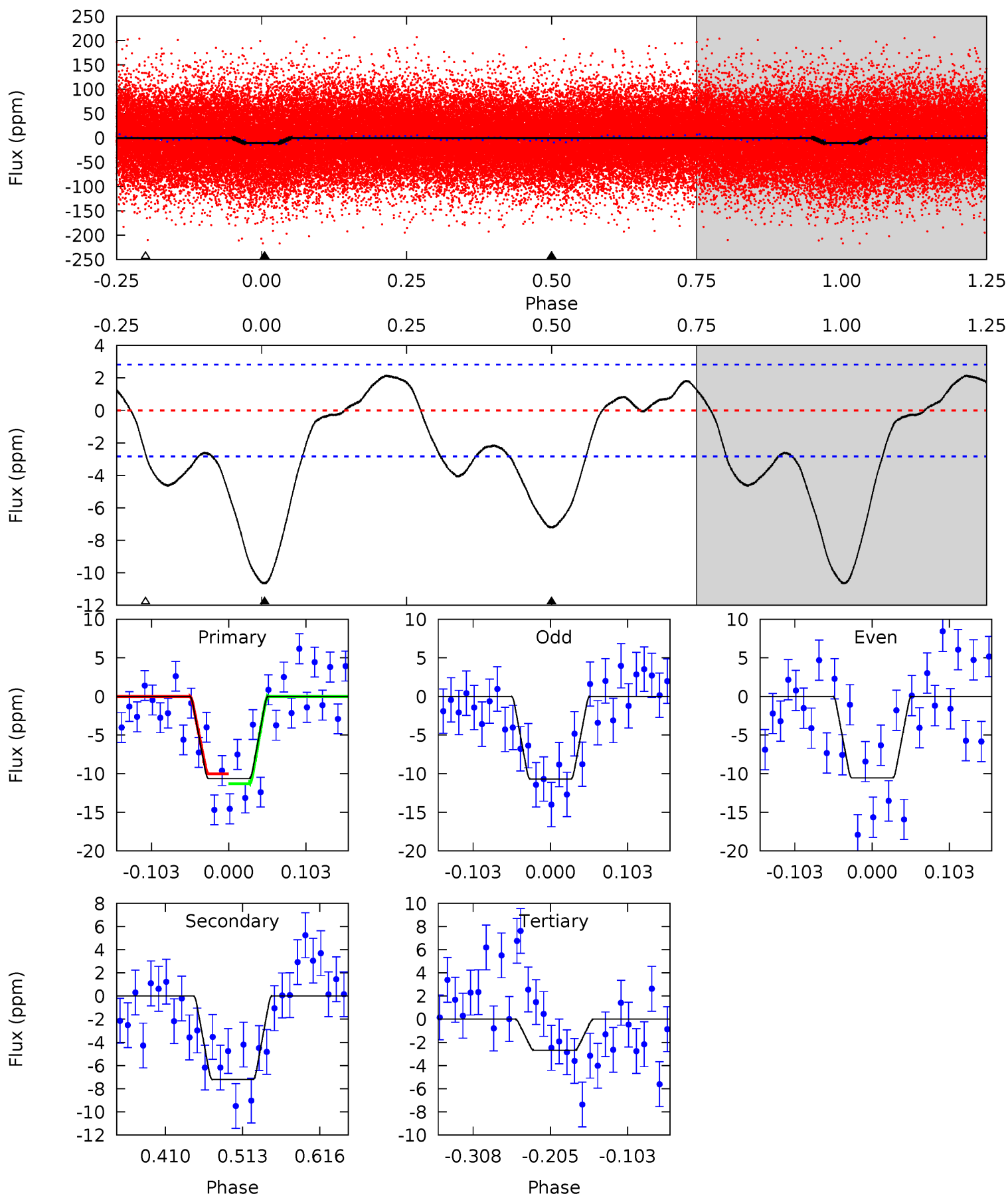
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	6.90	1.32	0	4.54	1.58	2.34	11.6	13.0	5.58	6.90	0.03	0.89	0.17	0.57



Alt Model-Shift Uniqueness Test

002718672-01, P = 0.996227 Days, E = 131.180077 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.2	11.6	4.35	0	4.56	1.63	3.45	12.9	17.2	7.30	11.6	0.12	1.04	0.17	1.02



Stellar Parameters For KIC 002718672

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9534^{+265}_{-430}	$4.160^{+0.126}_{-0.234}$	$0.070^{+0.150}_{-0.600}$	$2.064^{+0.880}_{-0.474}$	$2.248^{+0.429}_{-0.572}$	$0.360^{+0.280}_{-0.209}$
	+3%/-5%	+3%/-6%	+214%/-857%	+43%/-23%	+19%/-25%	+78%/-58%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002718672-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3 ± 1	$0.61^{+0.14}_{-0.11}$	5322^{+490}_{-383}	7352^{+712}_{-604}	$3.356^{+1.518}_{-1.218}$
Alt.	-7 ± 1	$0.79^{+0.17}_{-0.13}$	5331^{+502}_{-400}	7829^{+590}_{-505}	$4.004^{+1.441}_{-1.182}$

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

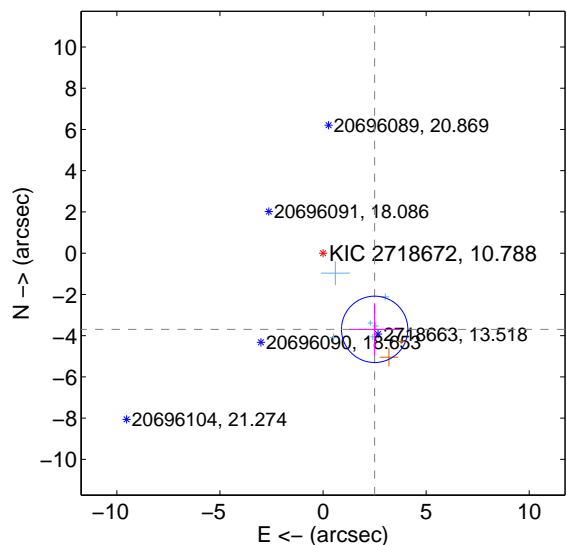
Supplemental centroid analysis for 002718672-01. **Kepler magnitude: 10.79.** Transit SNR 8.65

There are 6 quarters with good PRF difference image offsets

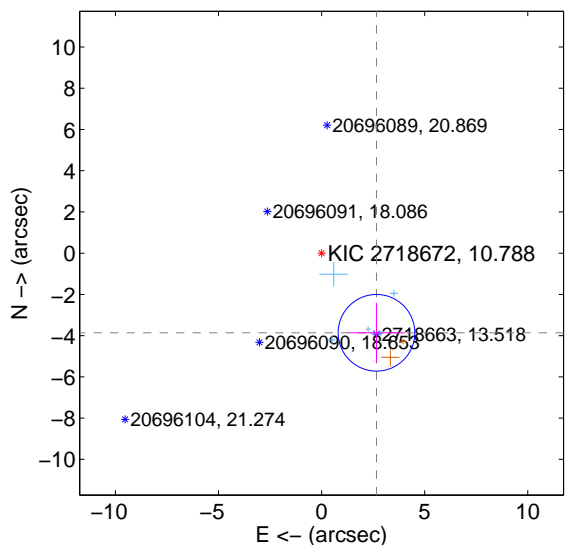
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.462 \pm 0.536	8.32	-2.503 \pm 1.244	-3.694 \pm 1.270
PRF-fit source offset from KIC position	4.691 \pm 0.620	7.57	-2.663 \pm 1.363	-3.862 \pm 1.449
photometric centroid source offset	5.02 \pm 1.58	3.17	-4.15 \pm 1.38	-2.83 \pm 1.95

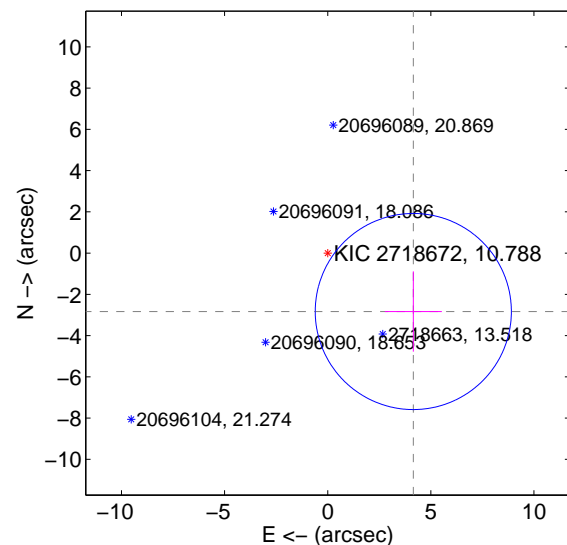
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

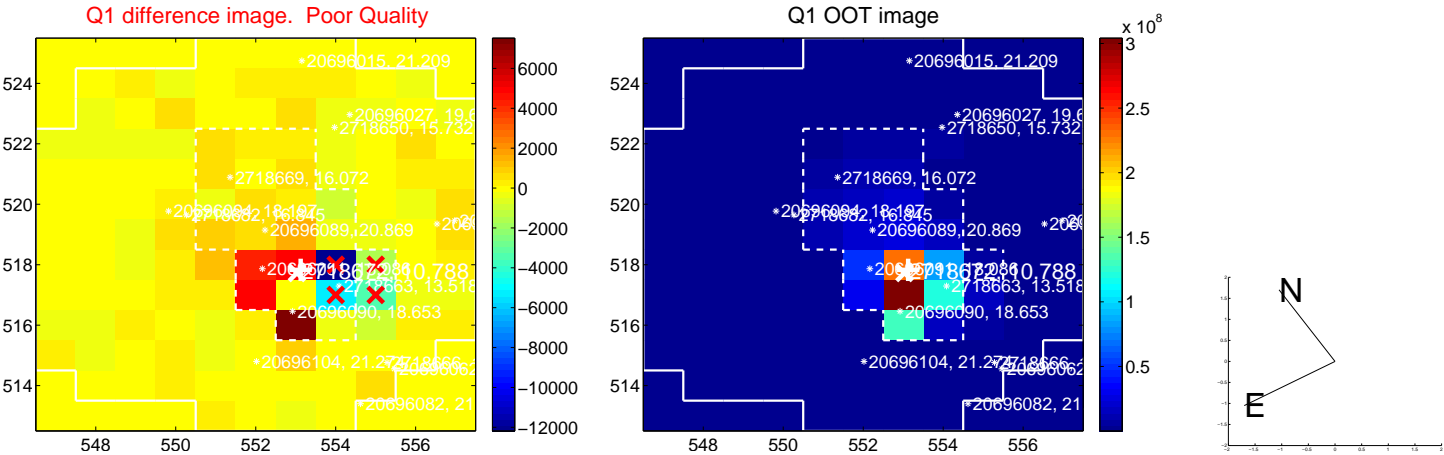


offset from photometric centroids

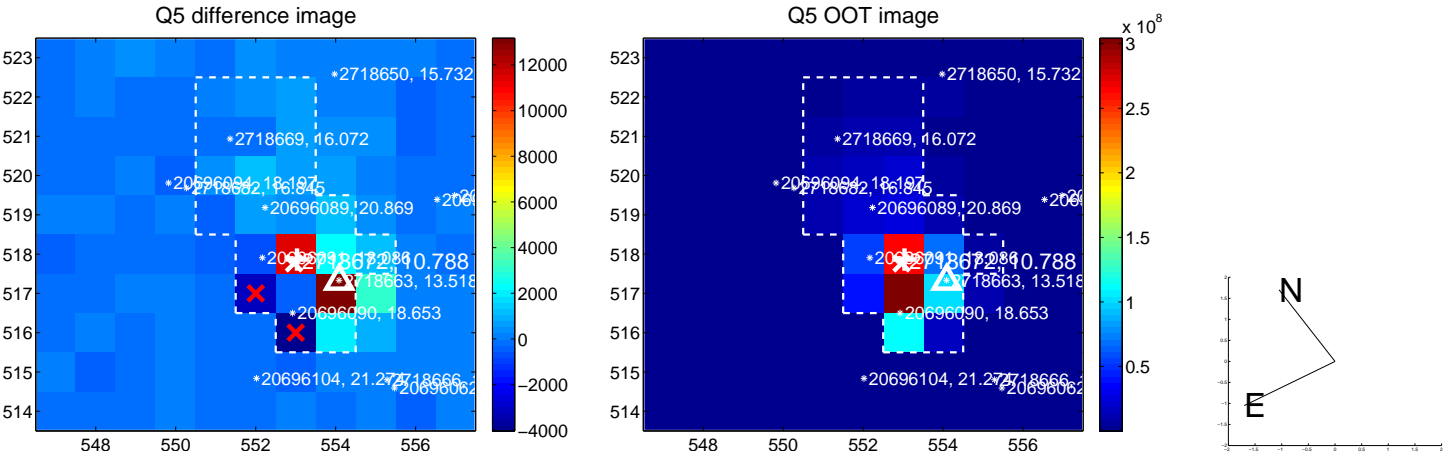


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

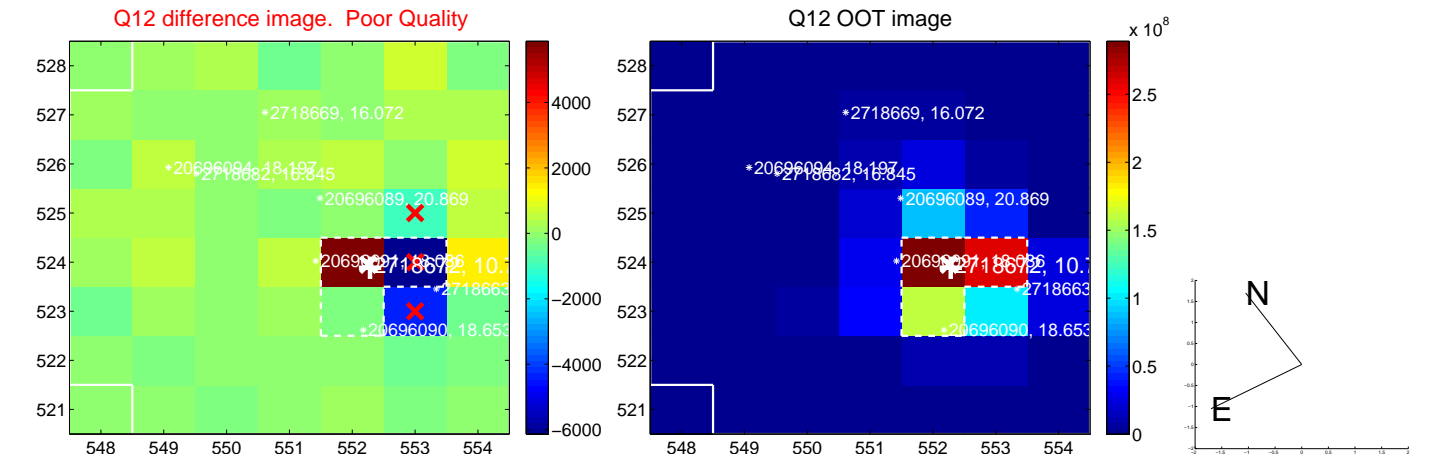
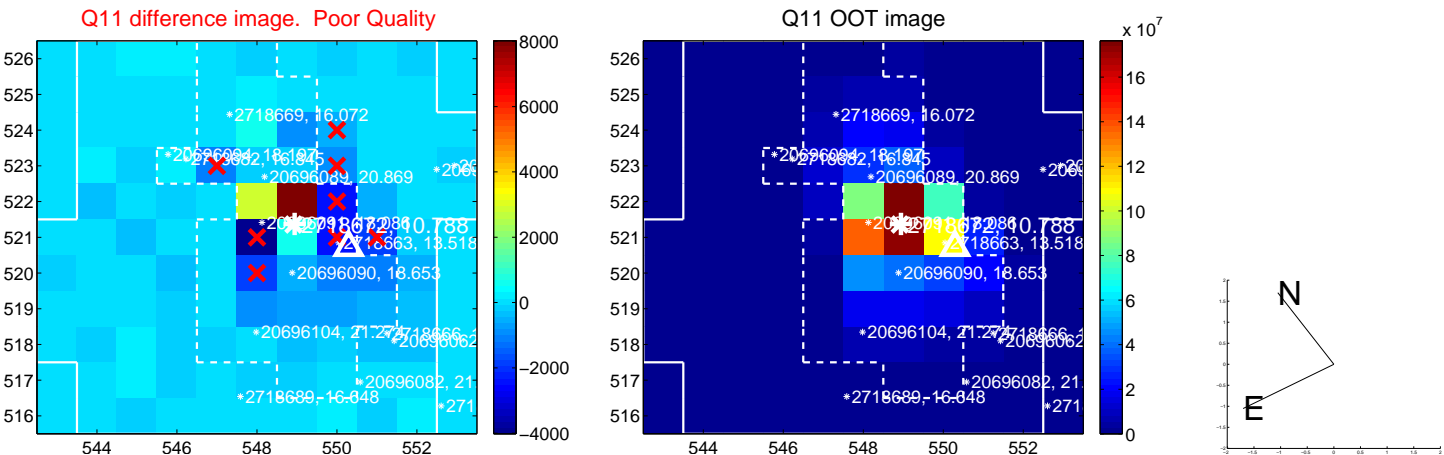
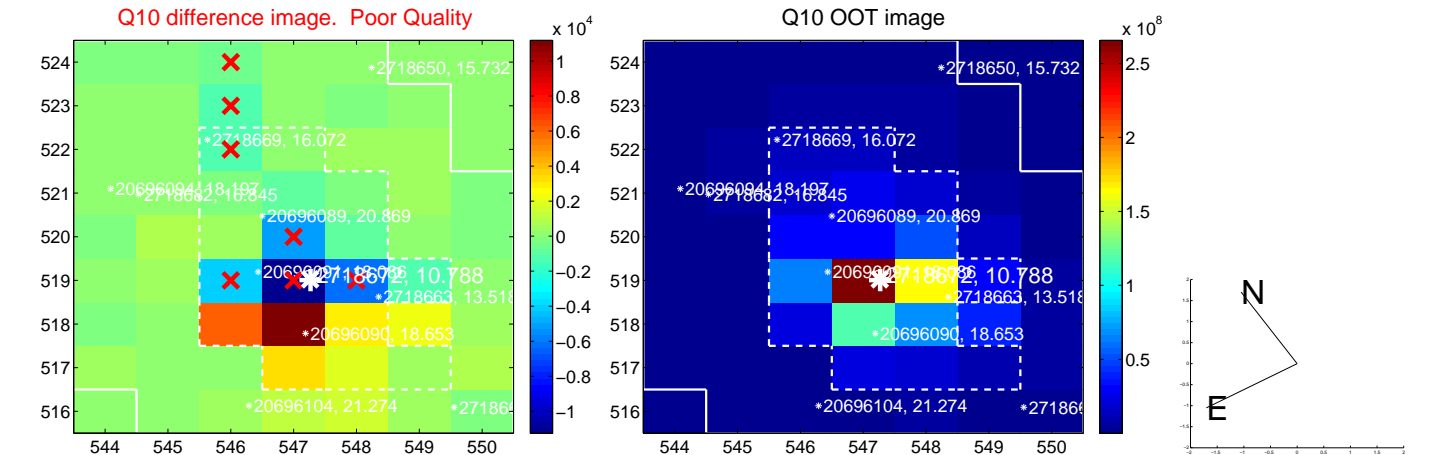
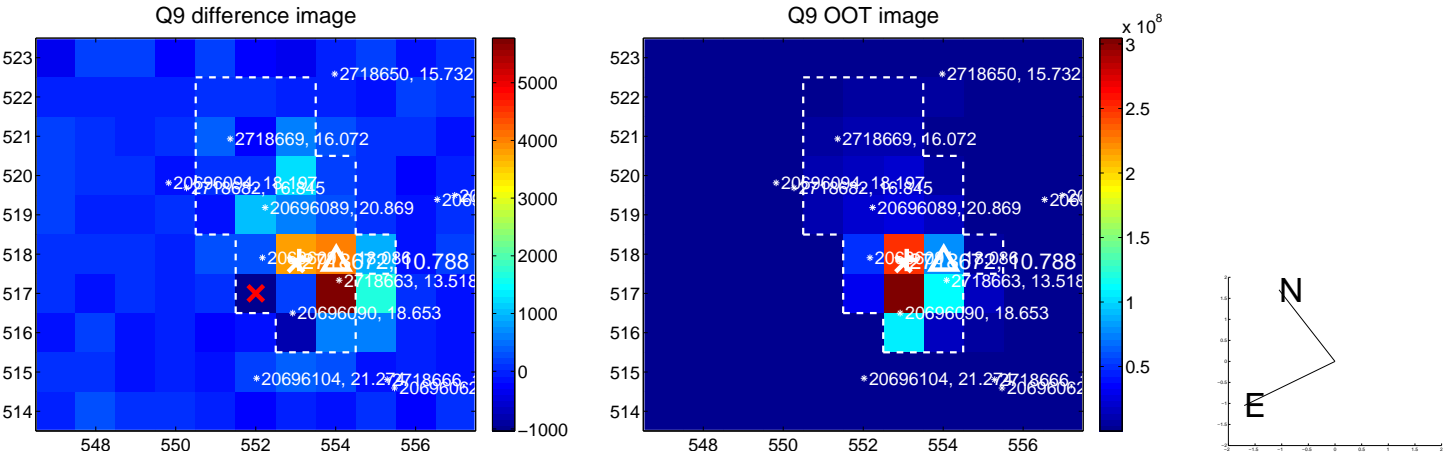
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



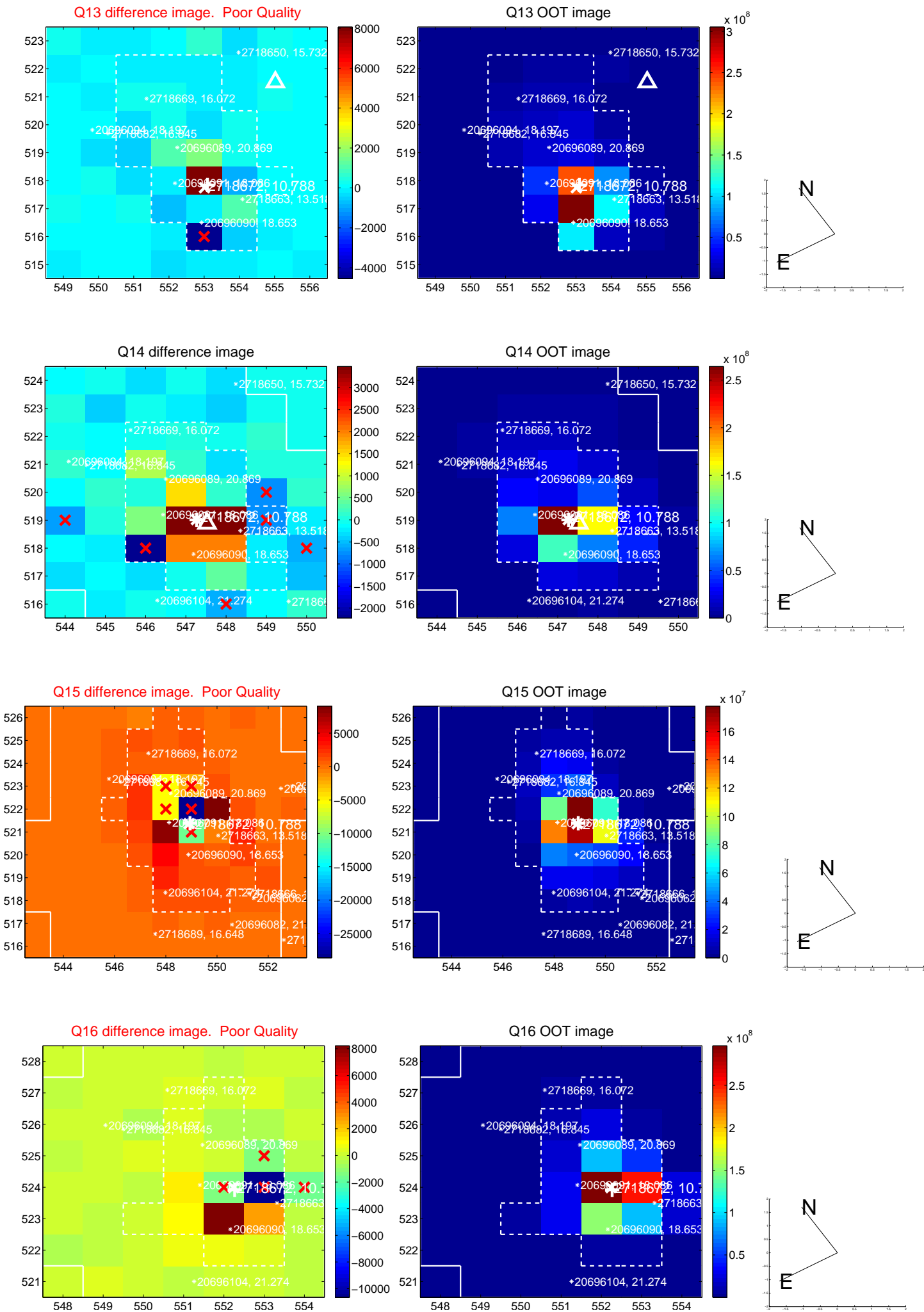
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



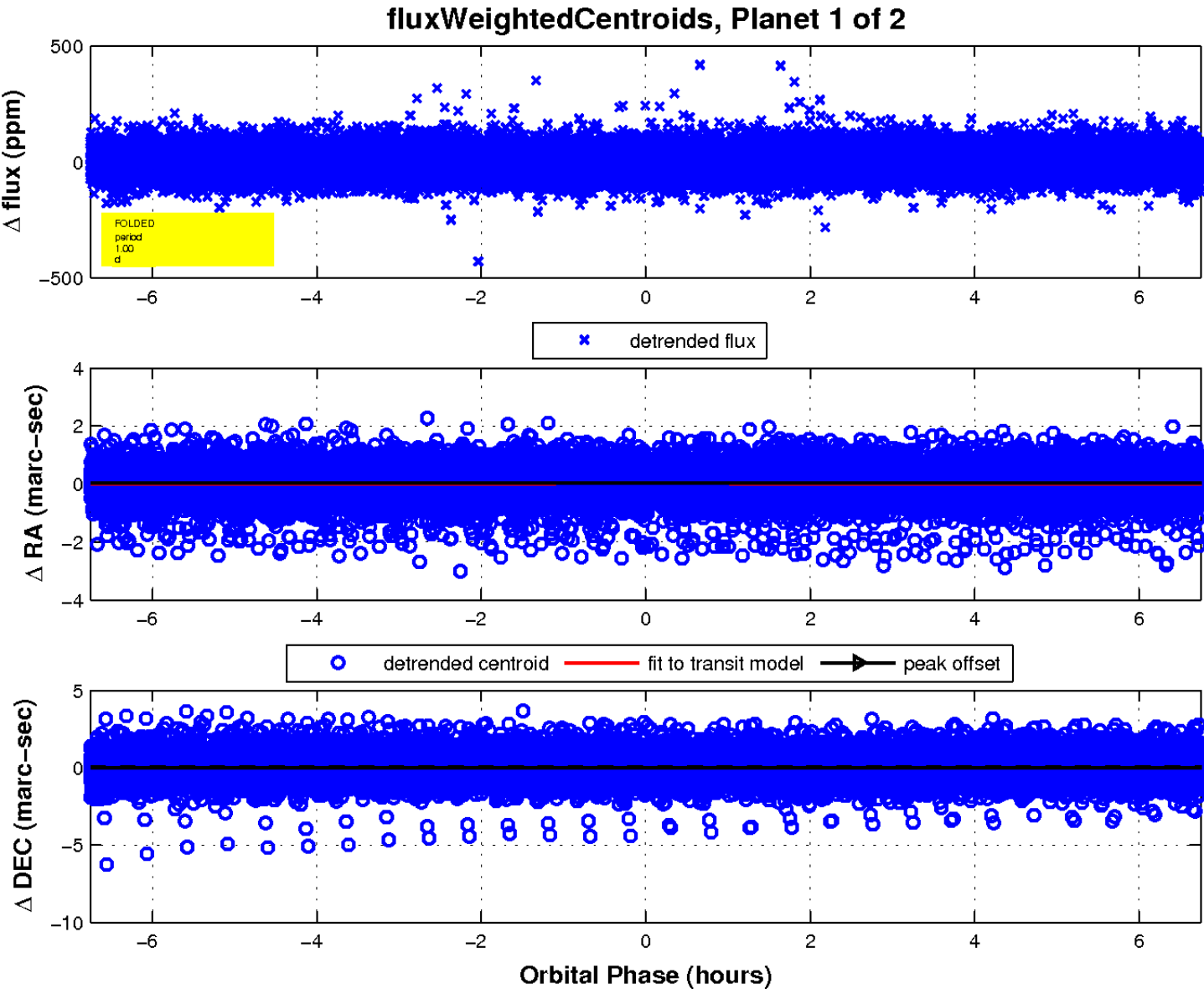
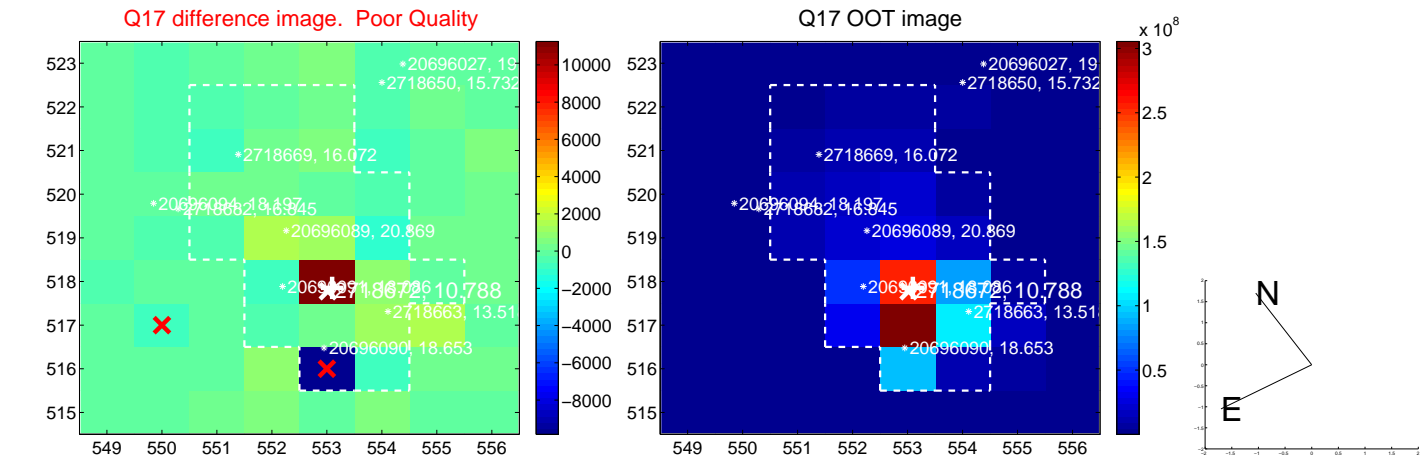
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

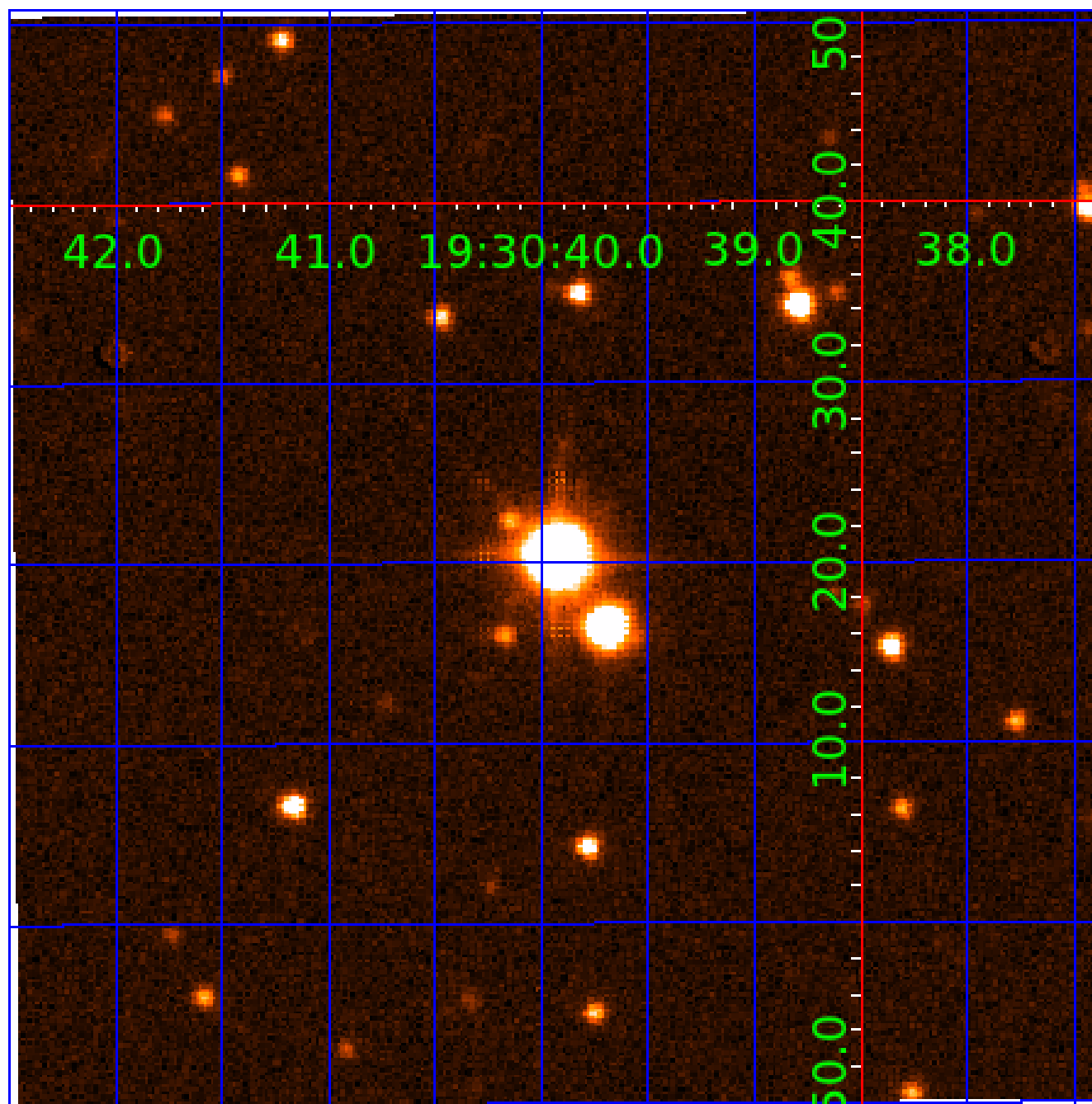


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002718672

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})
002718672-01	OBS	No	0.996210	132.192121	6.3	2.251	8.8	8.6	2.06	9534	0.60	48231.83
002718672-02	OBS	No	0.555617	131.980285	3.9	6.512	7.9	7.9	2.06	9534	0.42	105059.26

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002718672-01	OBS	FP	0.00	1	0	0	1	LPP_DV—MOD_NONUNIQ_ALT—CENT_SATURATED—EPHEM_MATCH
002718672-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

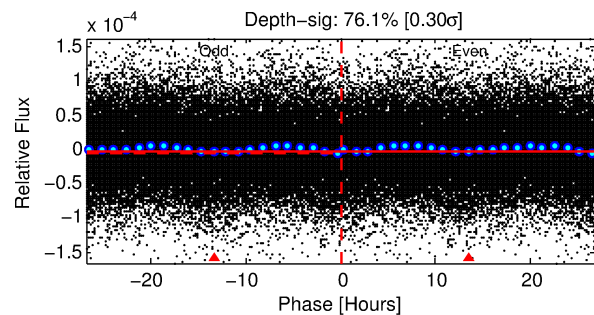
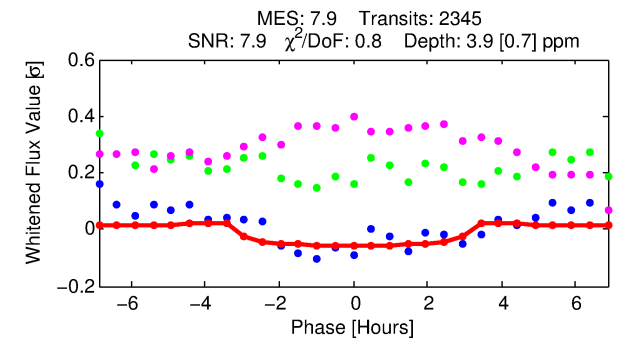
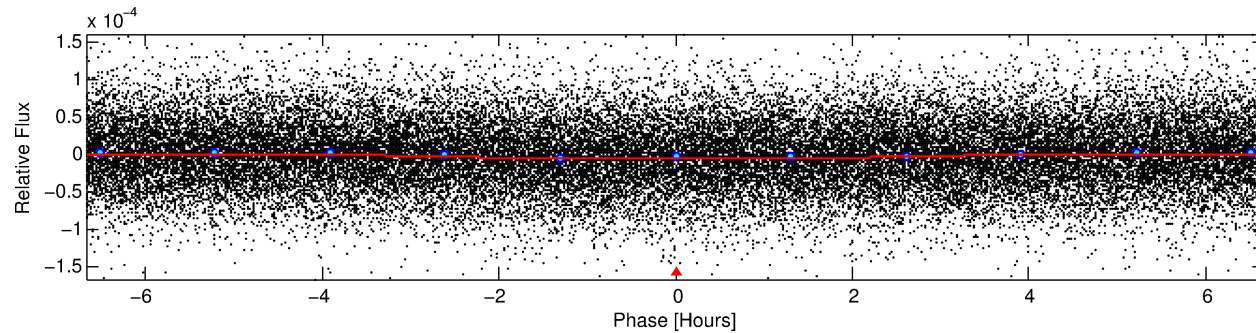
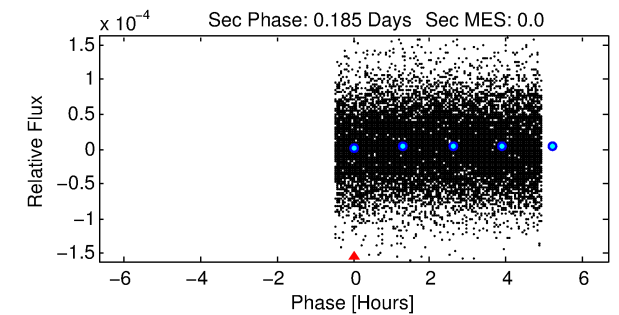
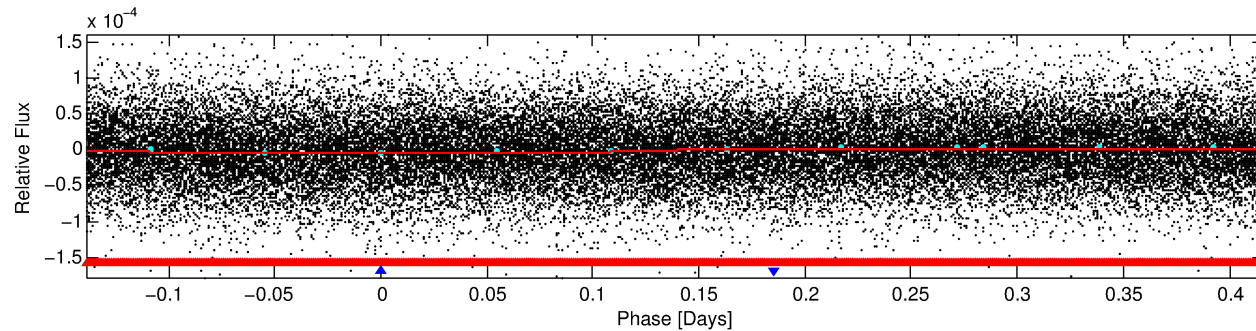
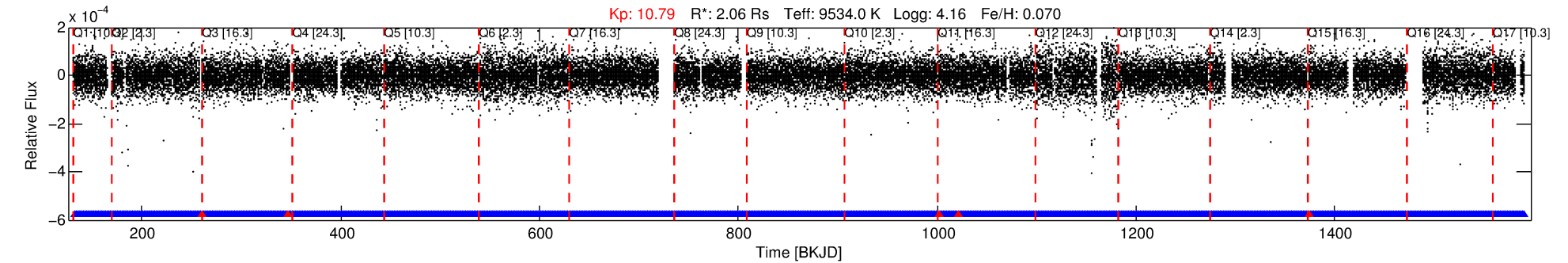
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002718672-02

No Significant Match Found

DV One-Page Summary

KIC: 2718672 Candidate: 2 of 2 Period: 0.556 d



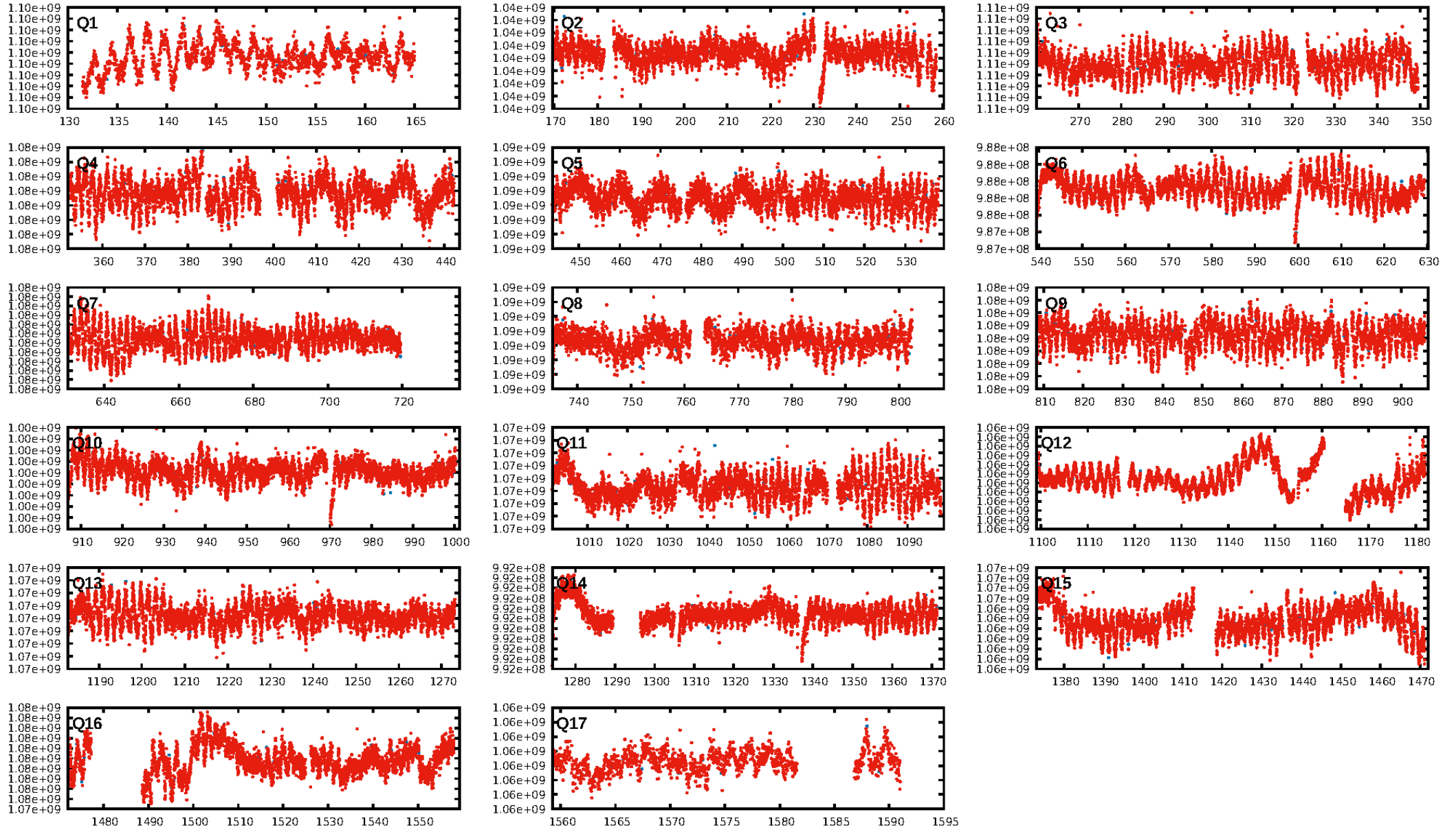
DV Fit Results:

Period = 0.55562 [0.00001] d
Epoch = 131.9803 [0.0064] BKJD
 $R_p/R^* = 0.0018$ [0.0011]
 $a/R^* = 1.00$ [0.02]
 $b = 0.09$ [45.15]
 $\text{Seff} = 105059.26$ [51721.26]
 $T_{\text{eq}} = 4591$ [565] K
 $R_p = 0.42$ [0.31] R_e
 $a = 0.0173$ [0.0058] AU
 $A_g = \text{N/A}$
 $T_{\text{effp}} = \text{N/A}$

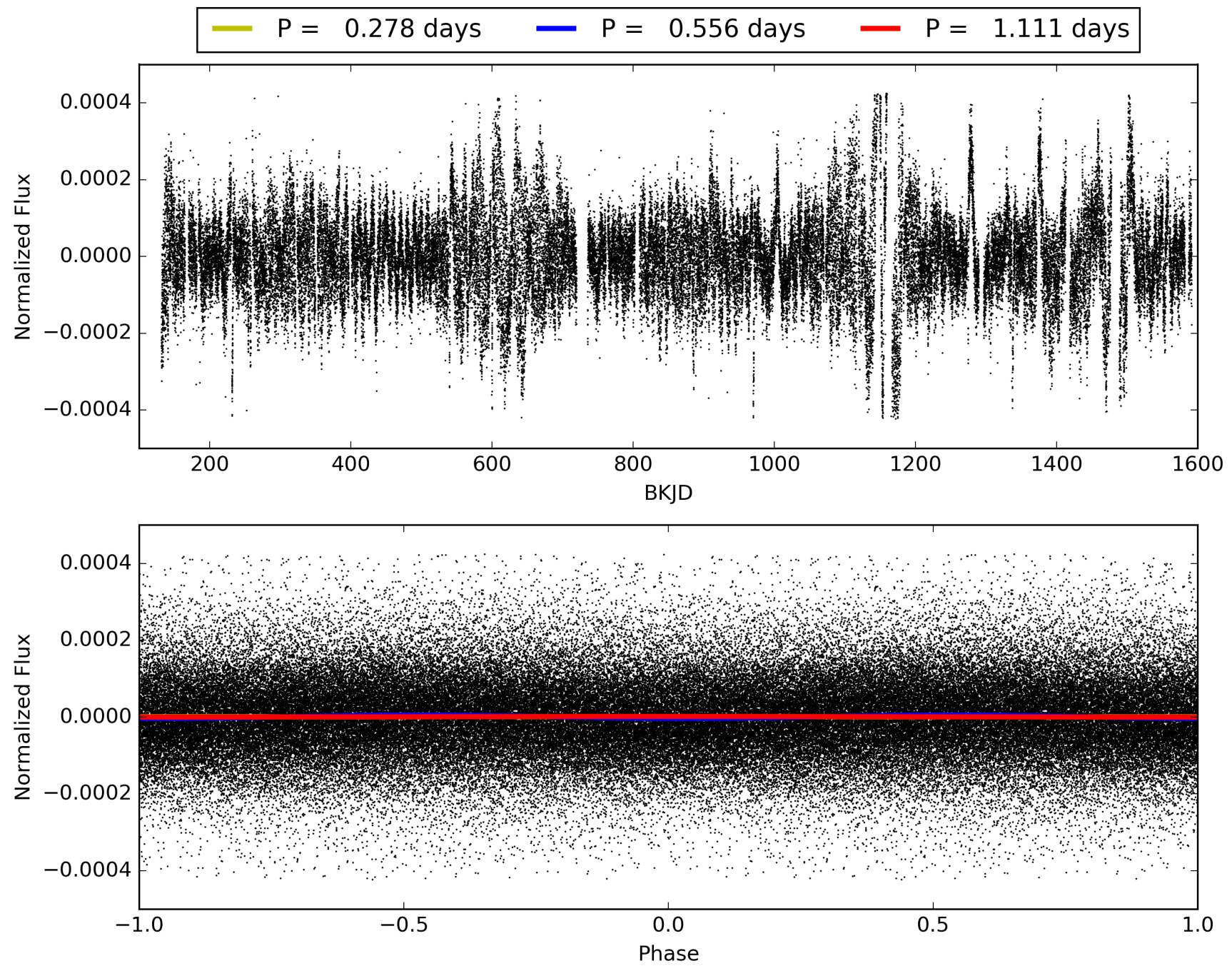
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 87.5% [1.53σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2232/2238]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002718672-02, PDC Light Curves

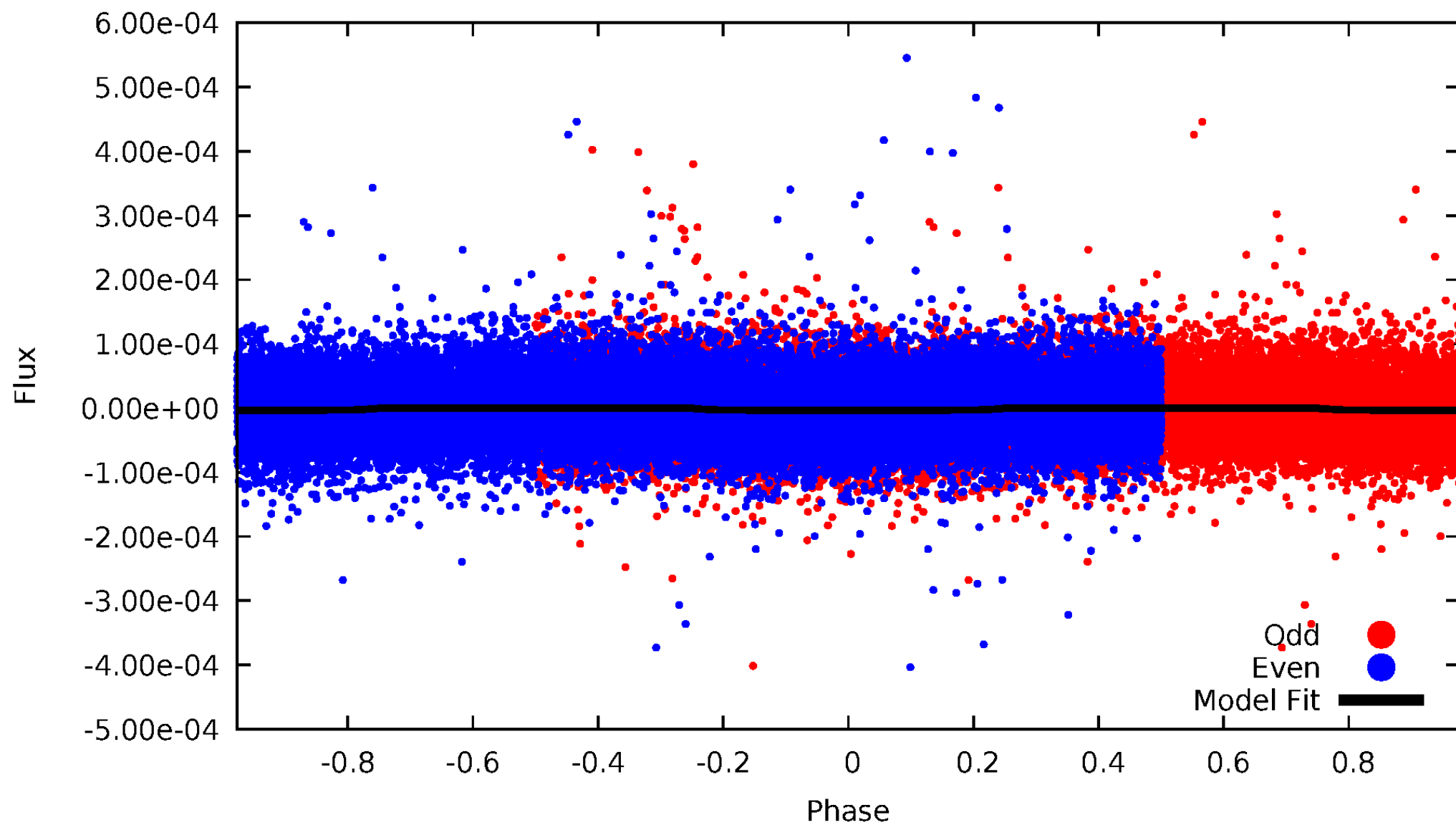


TCE 002718672-02



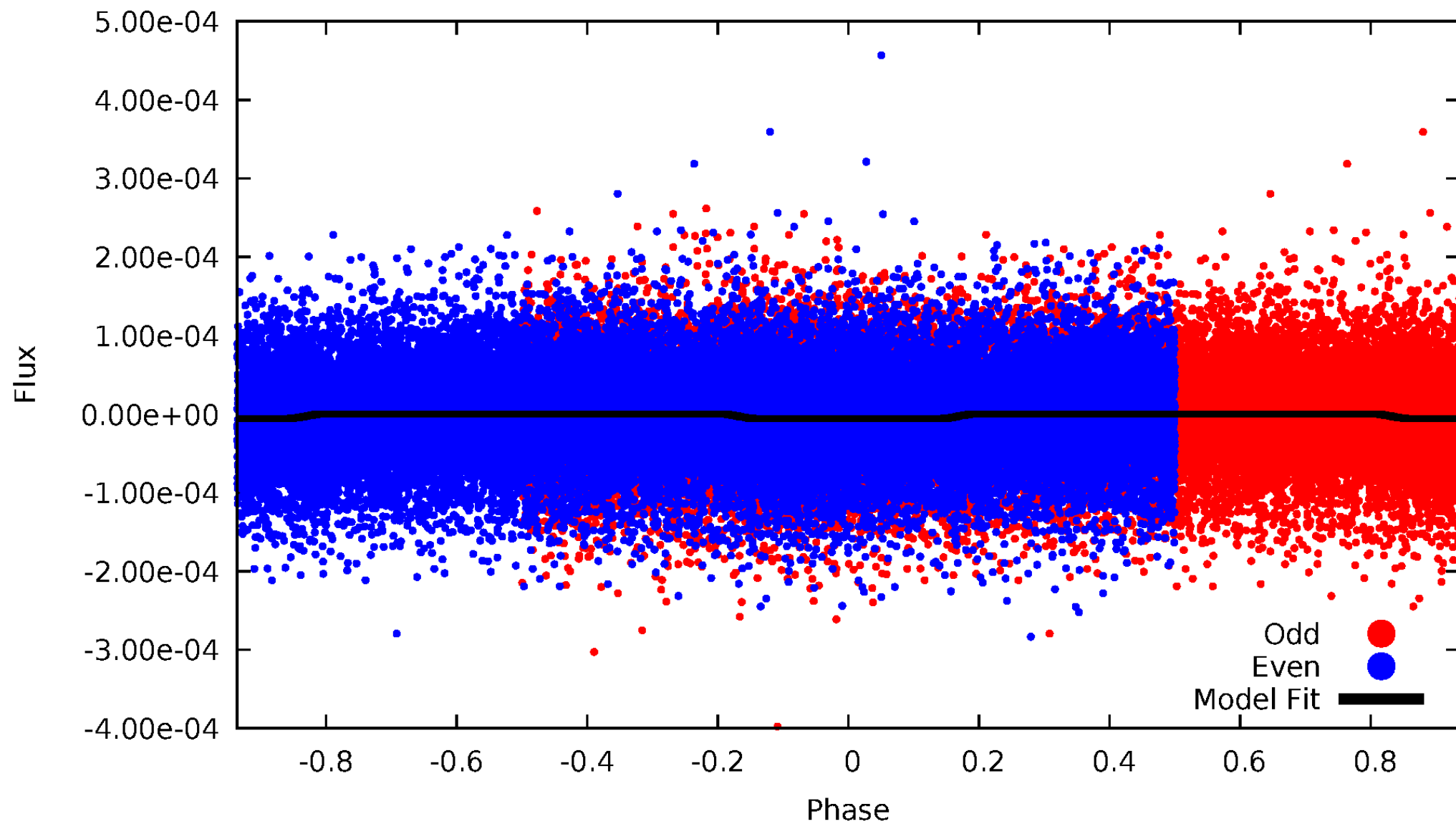
DV Odd/Even

TCE 002718672-02



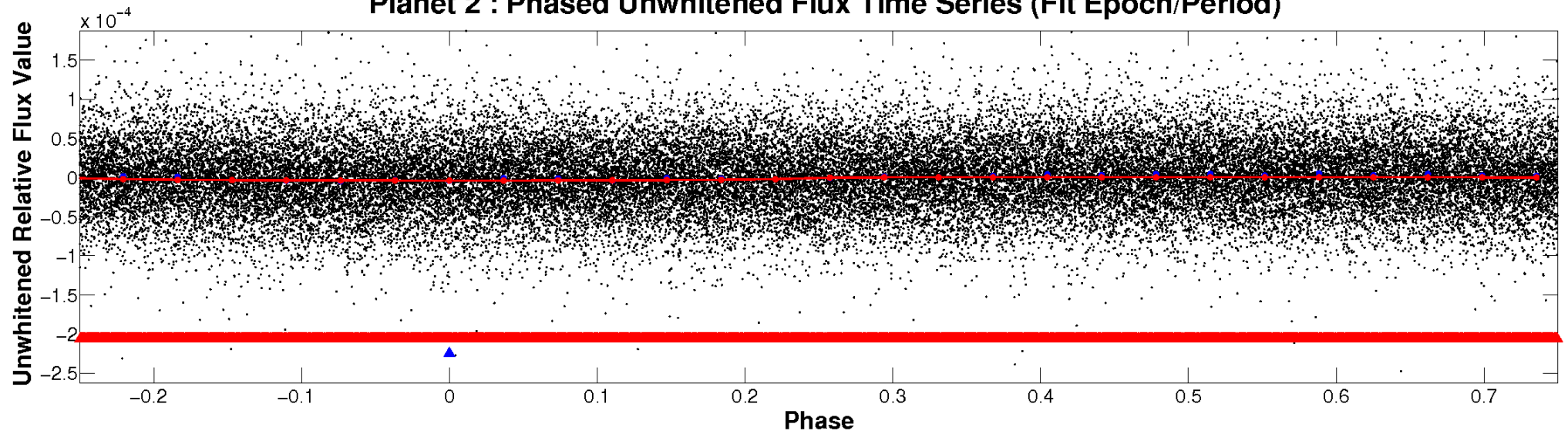
ALT Odd/Even

TCE 002718672-02

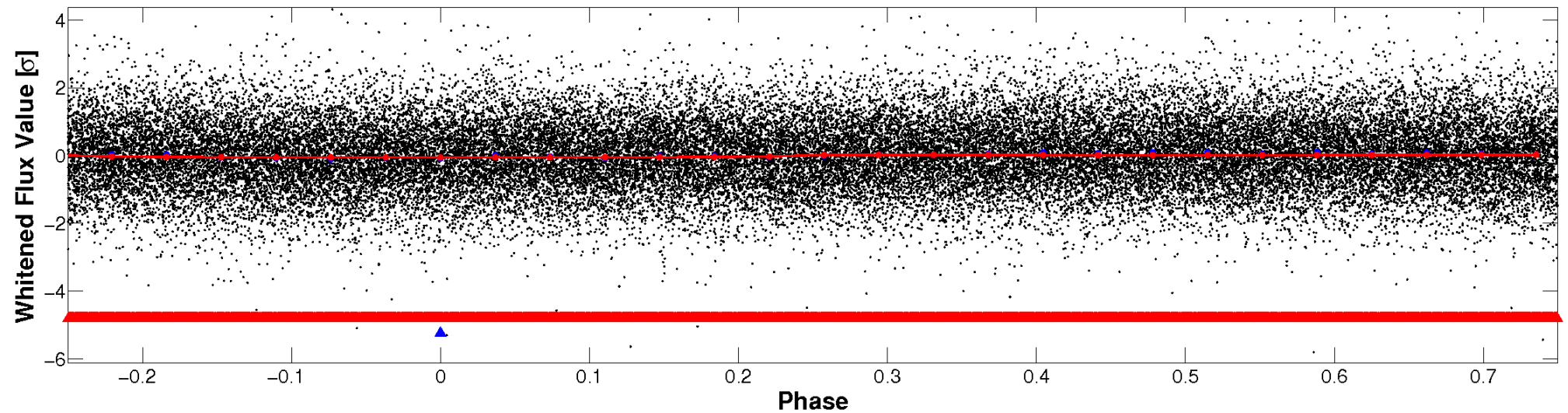


Non-Whitened Vs. Whitened Light Curve

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

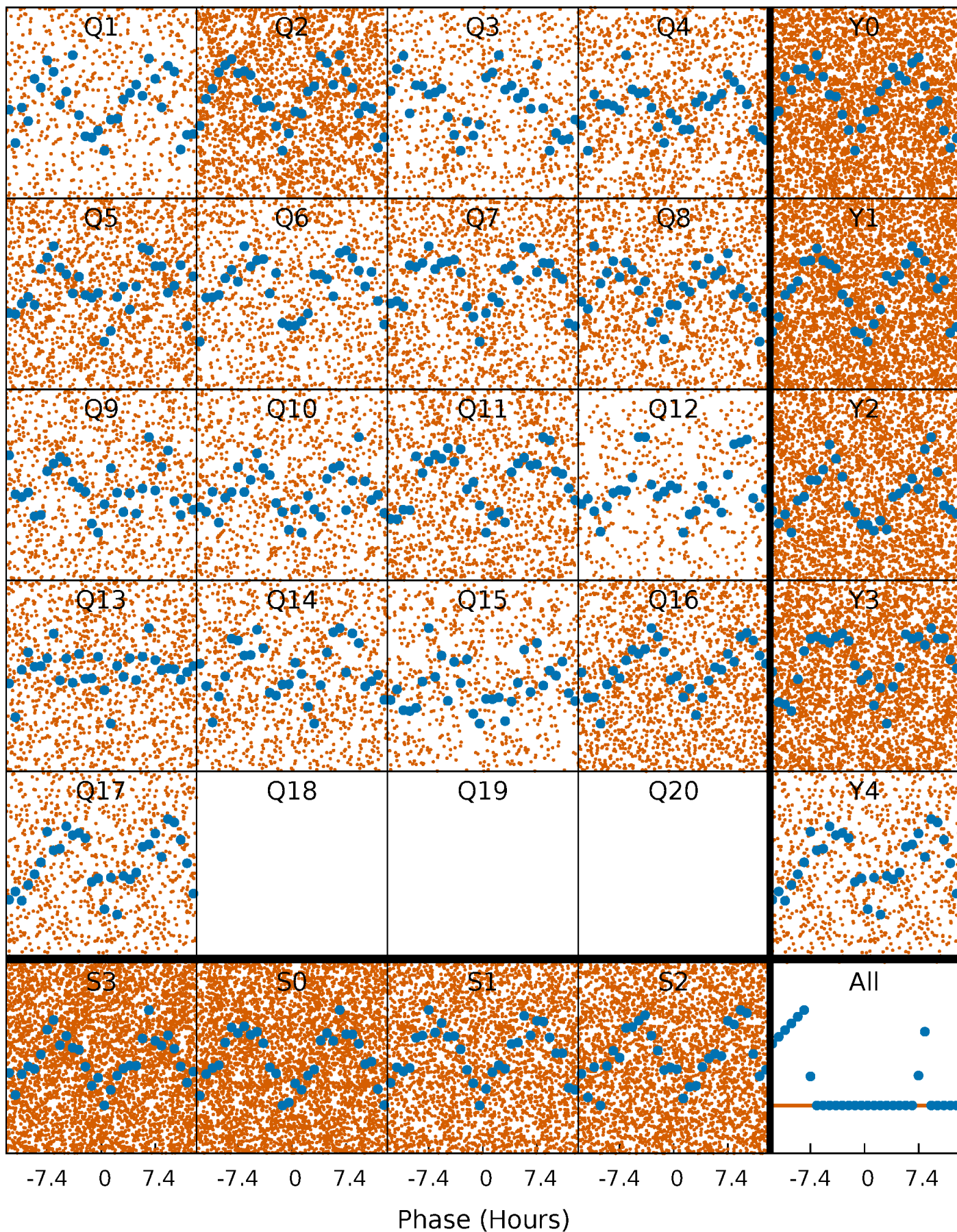


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



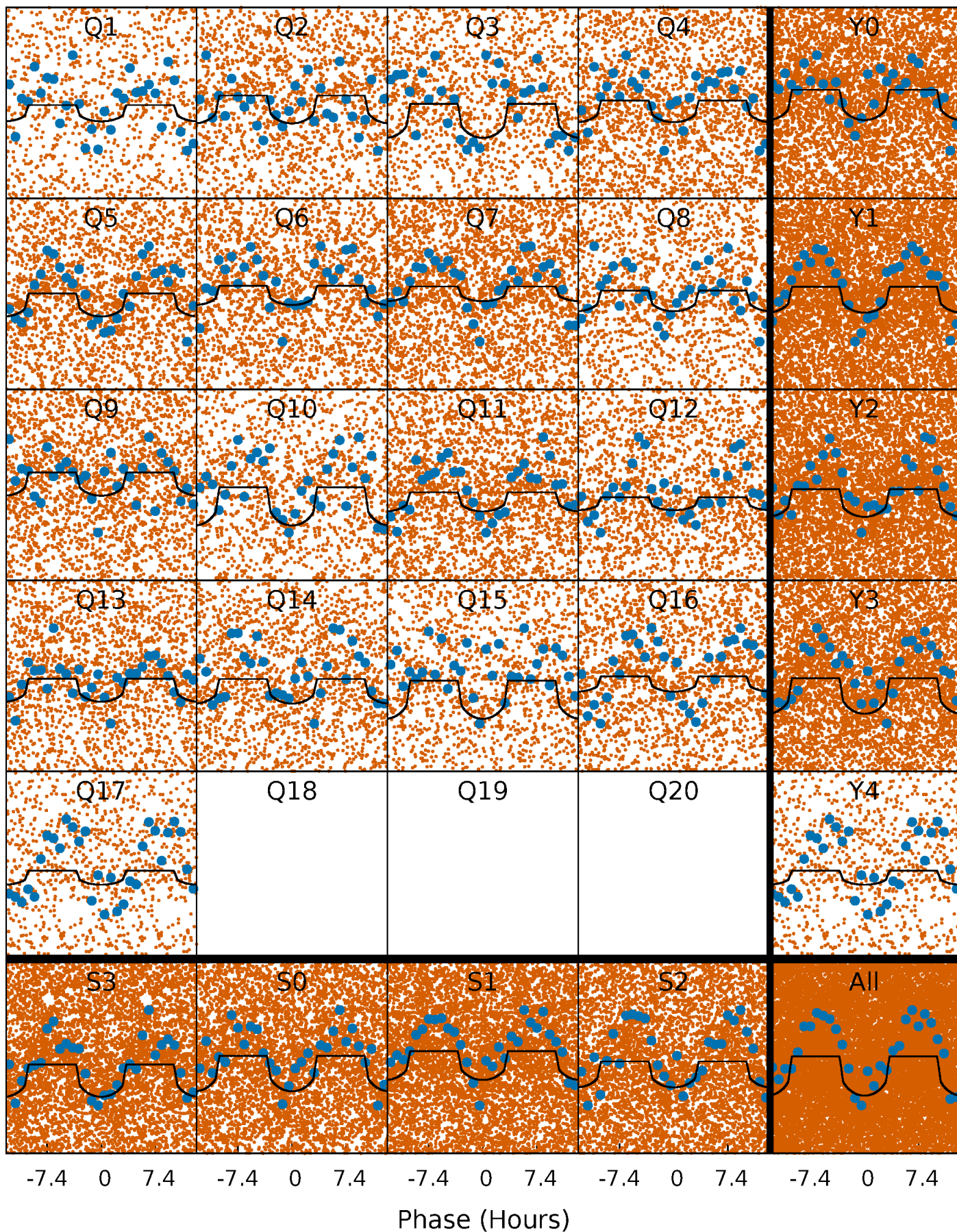
PDC Quarter-Phased Transit Curves

TCE 002718672-02 P= 0.555617 Days $T_0=131.980285$ (BKJD)



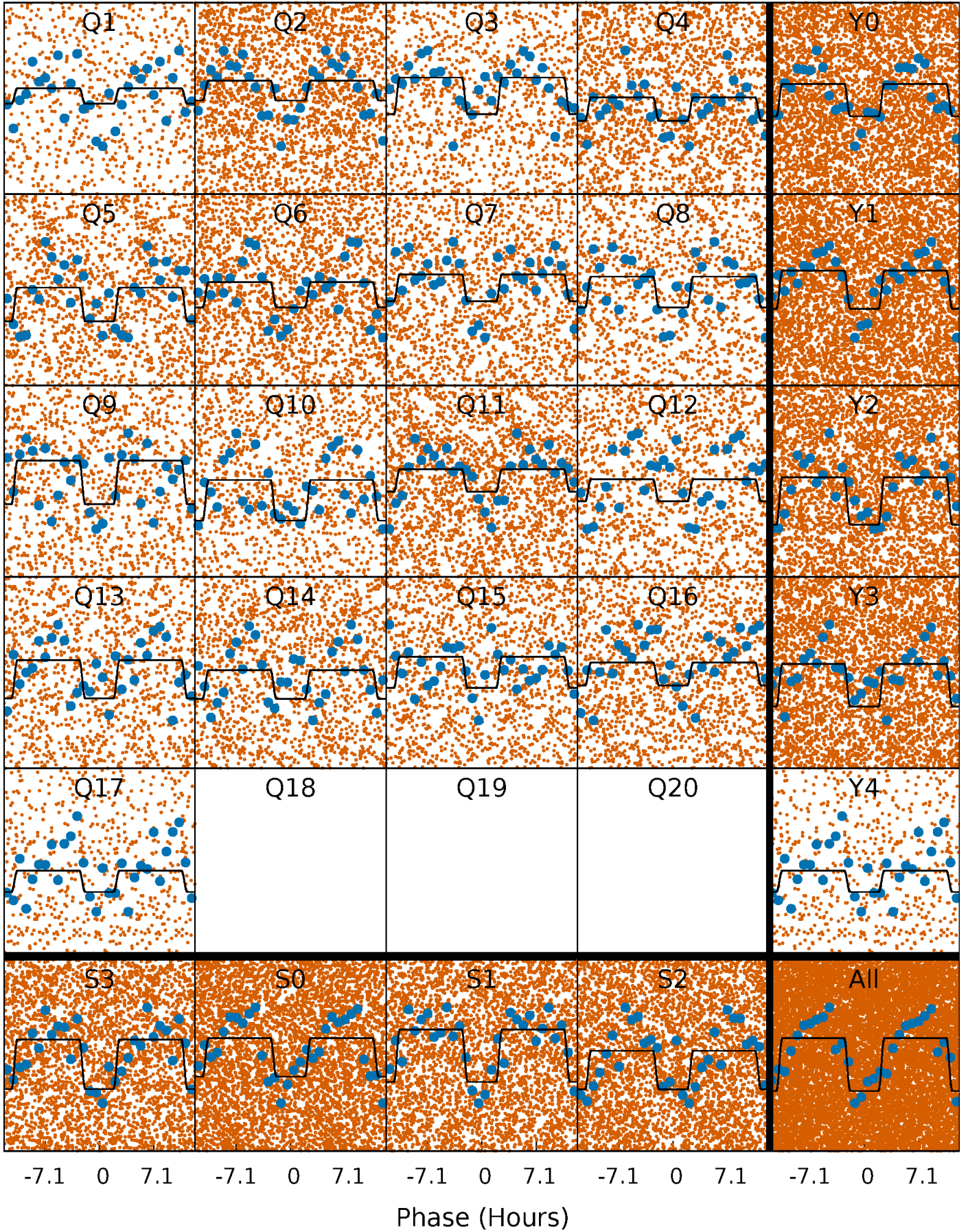
DV Quarter-Phased Transit Curves

TCE 002718672-02 P= 0.555617 Days $T_0=131.980285$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

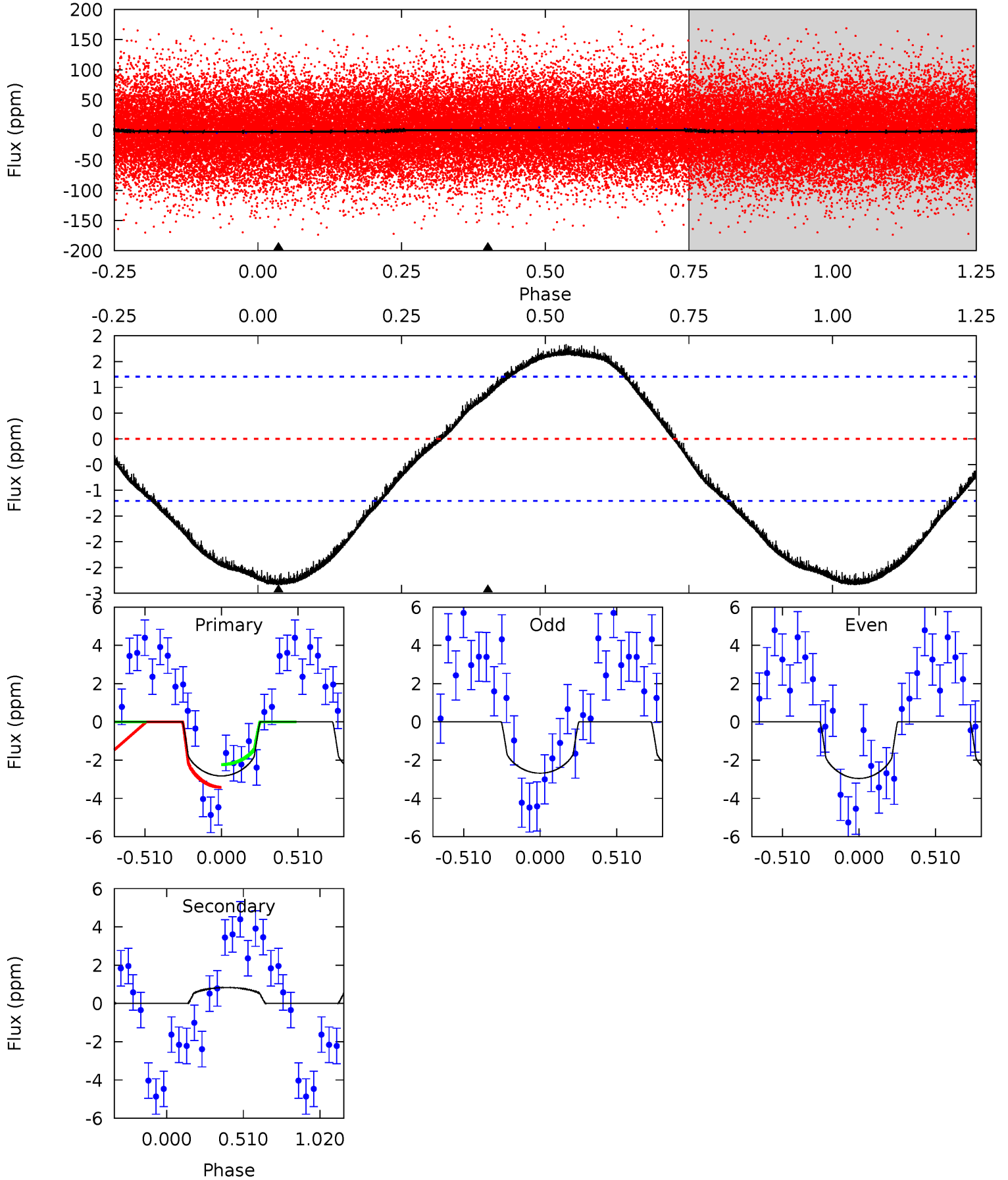
TCE 002718672-02 P= 0.555633 Days $T_0=131.952552$ (BKJD)



DV Model-Shift Uniqueness Test

002718672-02, P = 0.555617 Days, E = 131.424668 Days

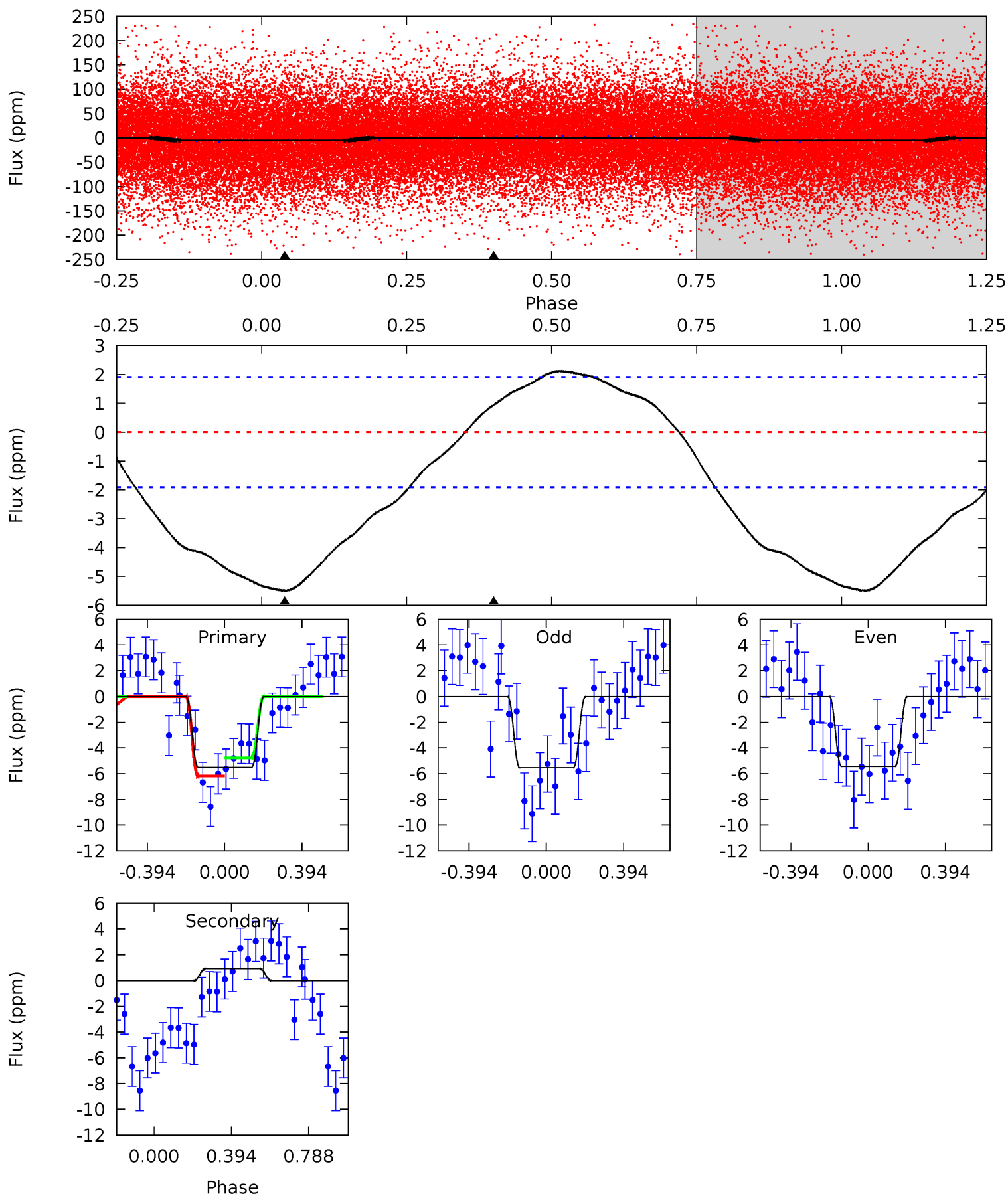
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.86	-2.91	0	0	4.21	0.66	1.53	9.86	9.86	-2.91	-2.91	0.48	1.76	0.39	2.07



Alt Model-Shift Uniqueness Test

002718672-02, P = 0.555633 Days, E = 131.396919 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.3	-2.08	0	0	4.27	0.85	1.73	12.3	12.3	-2.08	-2.08	0.11	1.15	0.28	1.55



Stellar Parameters For KIC 002718672

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9534^{+265}_{-430}	$4.160^{+0.126}_{-0.234}$	$0.070^{+0.150}_{-0.600}$	$2.064^{+0.880}_{-0.474}$	$2.248^{+0.429}_{-0.572}$	$0.360^{+0.280}_{-0.209}$
	+3%/-5%	+3%/-6%	+214%/-857%	+43%/-23%	+19%/-25%	+78%/-58%
Source	KIC0	KIC0	KIC0	DSEP		

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

Secondary Eclipse Parameters for KIC 002718672-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	1 ± 0	$0.46^{+0.29}_{-0.23}$	6510^{+596}_{-457}	-6641^{+883}_{-2864}	$-0.589^{+0.384}_{-2.167}$
Alt.	1 ± 0	$0.57^{+0.30}_{-0.28}$	6480^{+636}_{-450}	-6319^{+726}_{-2009}	$-0.440^{+0.286}_{-1.271}$

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 $A_{obs} \gg 1.0$

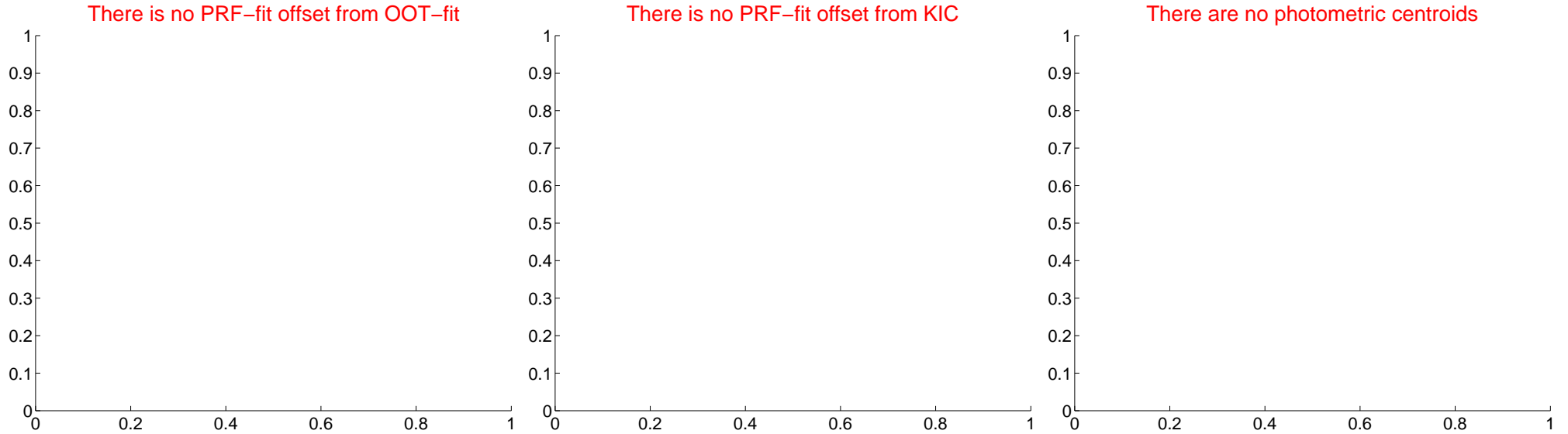
DV Centroid Data

Supplemental centroid analysis for 002718672-02. **Kepler magnitude: 10.79.** Transit SNR 7.87

There are 0 quarters with good PRF difference image offsets

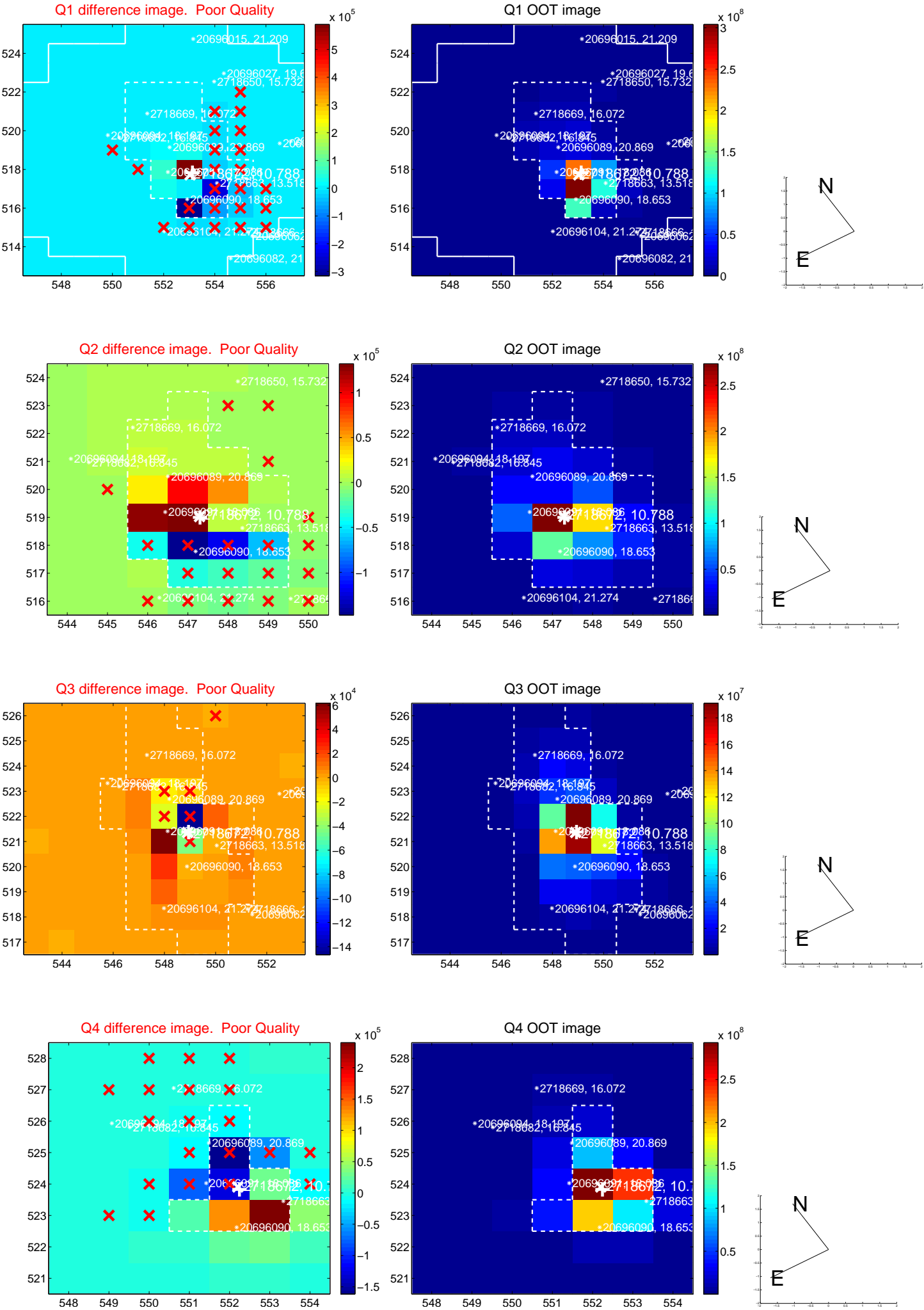
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	—	—	—	—

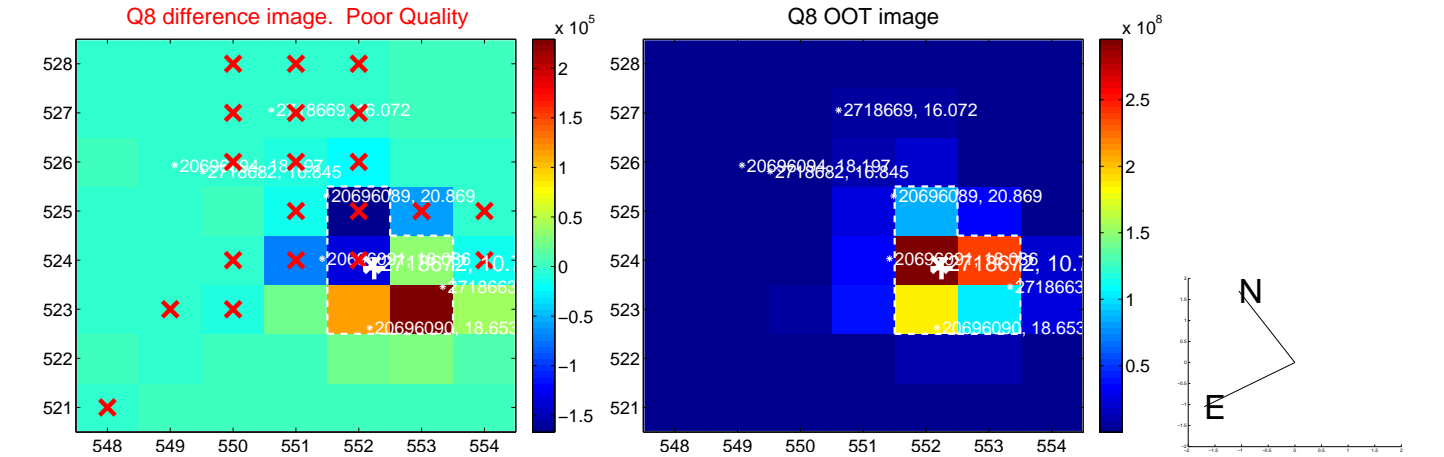
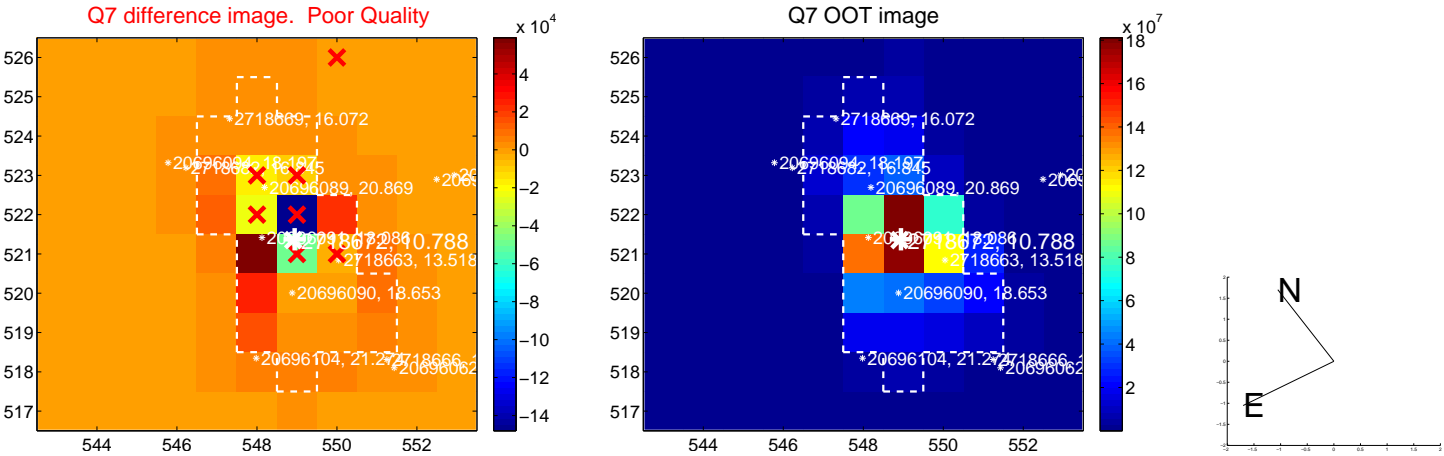
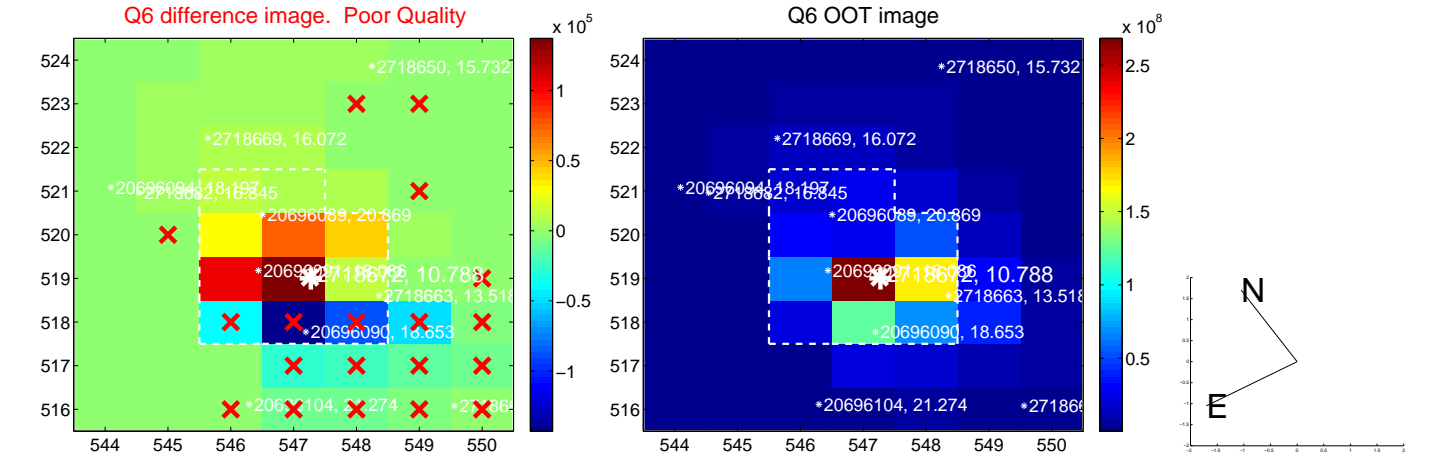
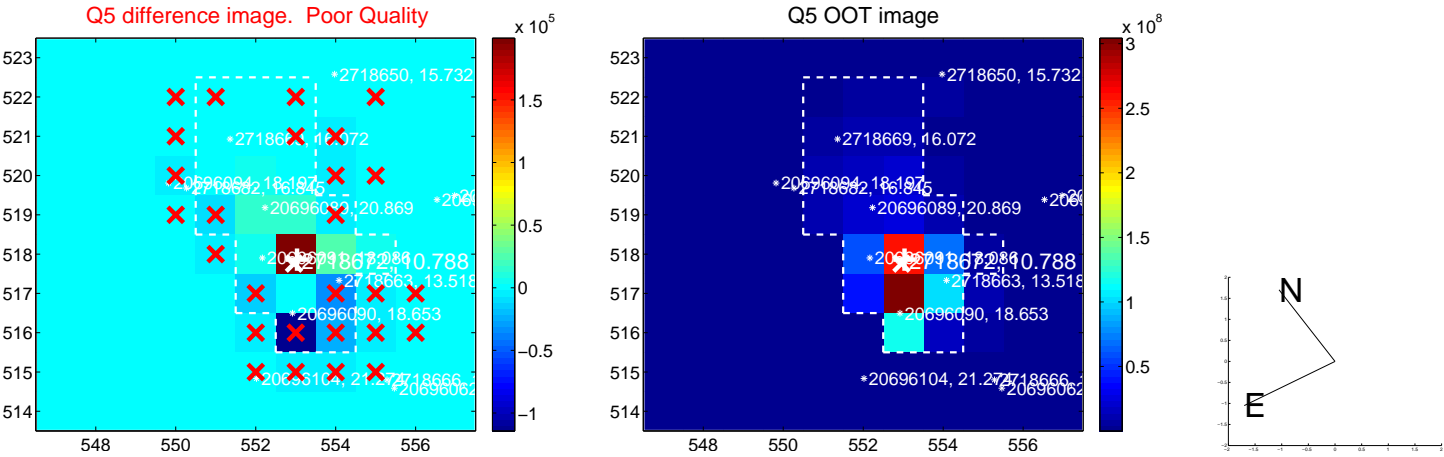


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

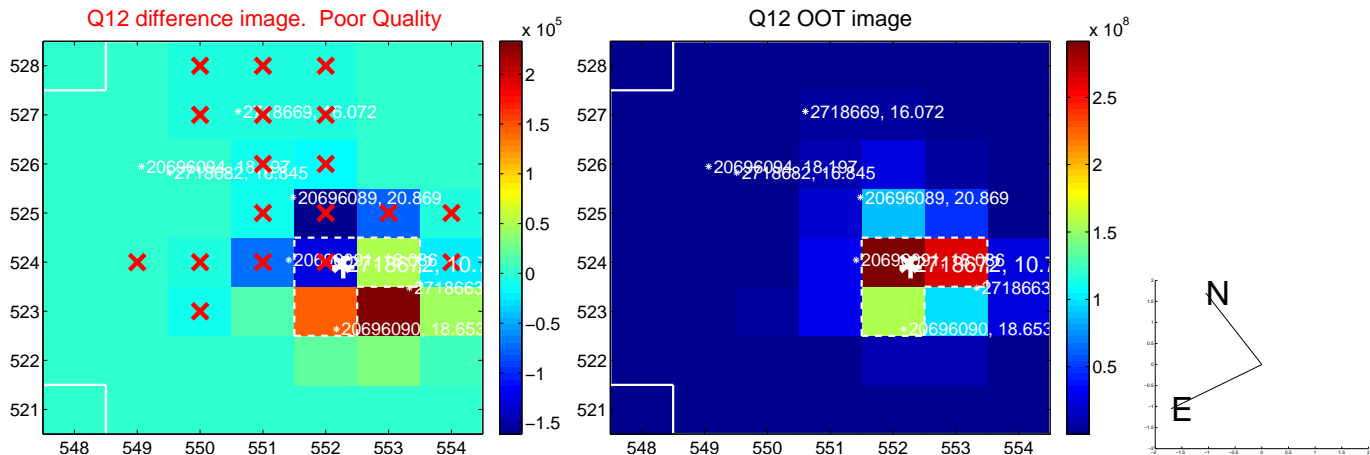
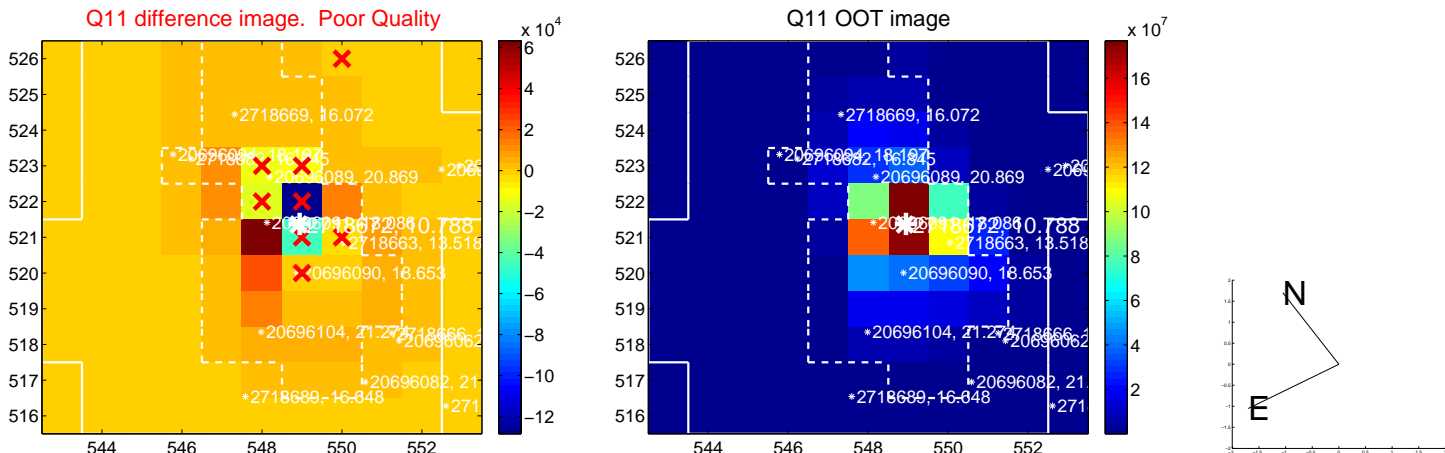
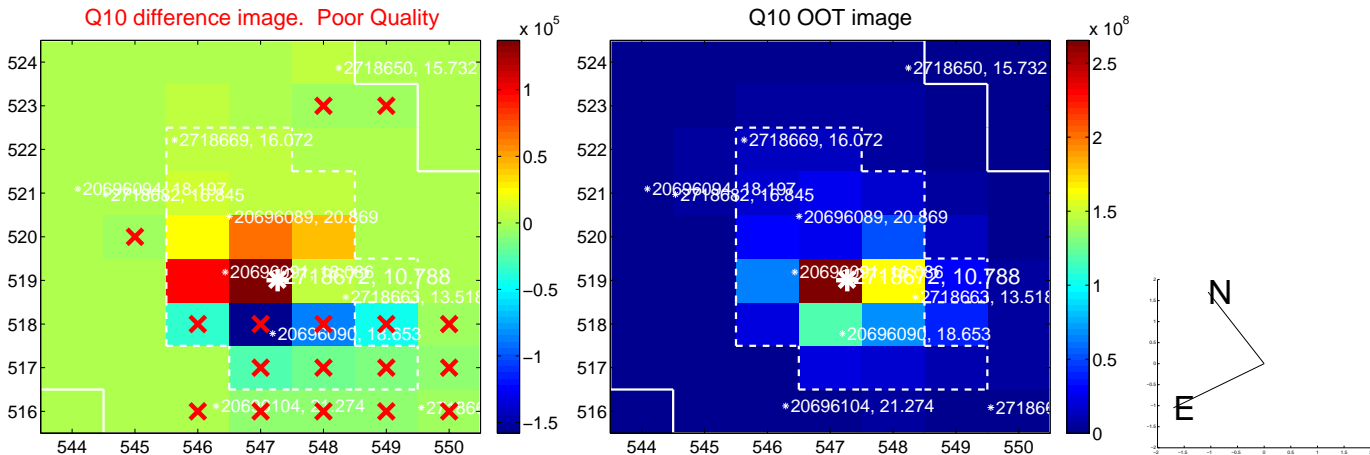
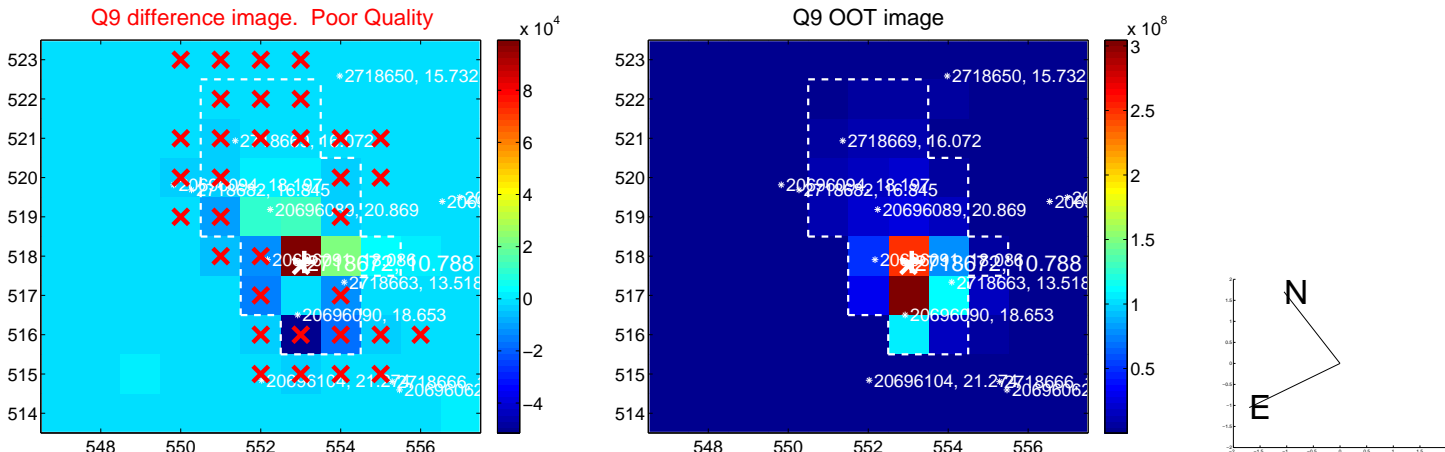
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



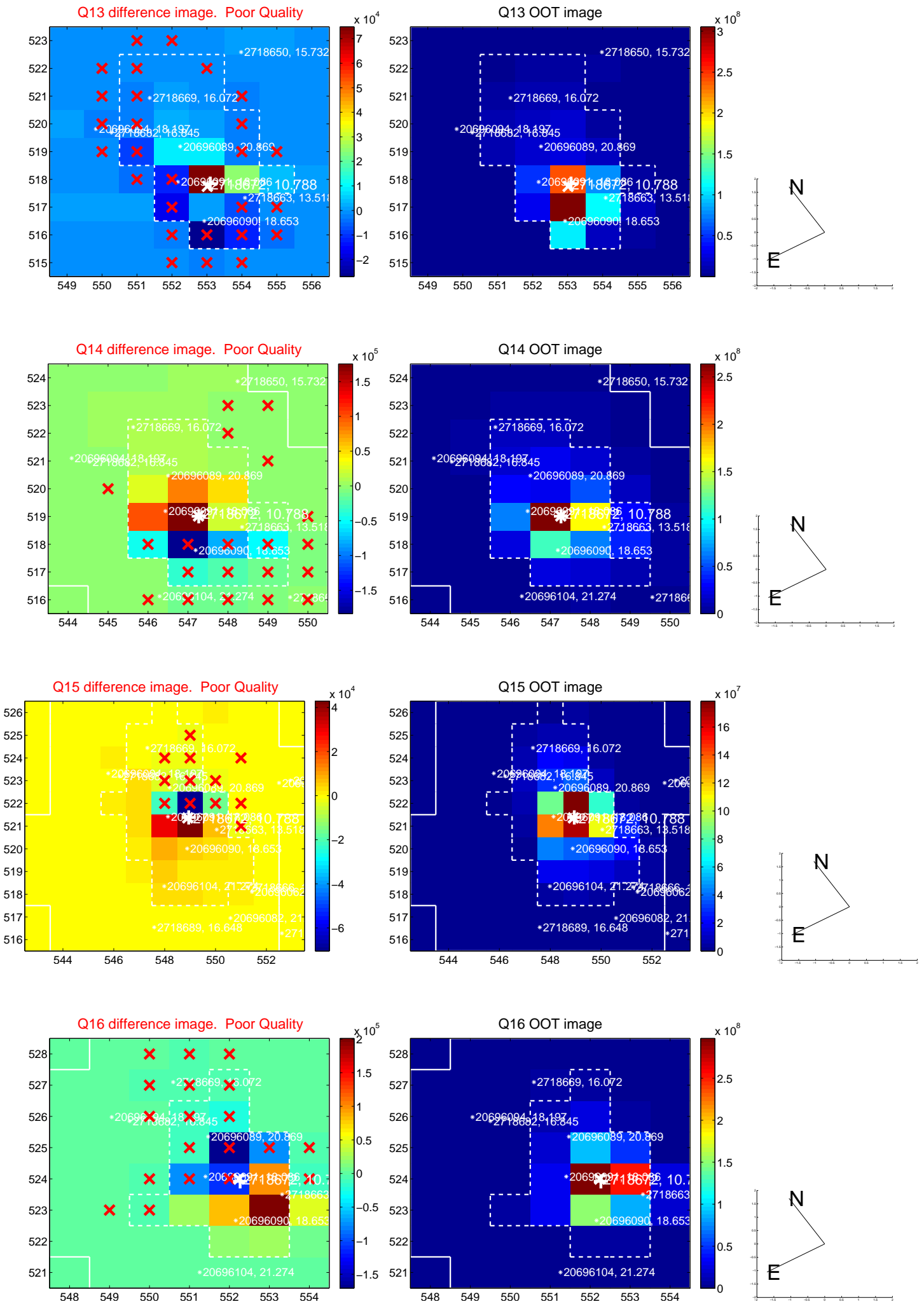
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



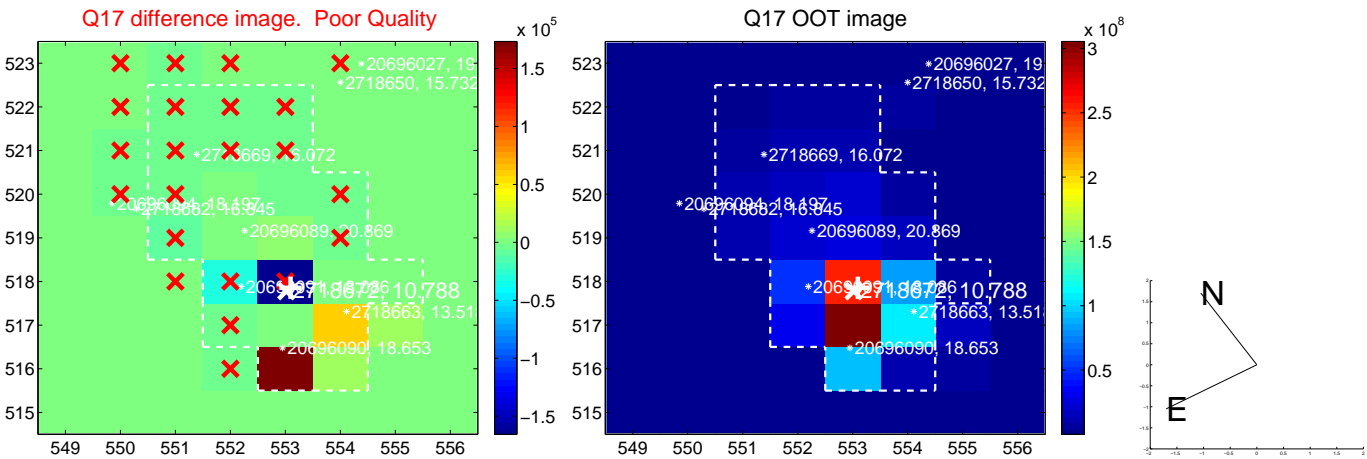
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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folded centroid time series figure for this object.

UKIRT Image

Declination

