

KIC 008771498

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})
008771498-01	OBS	No	1.212845	132.607885	116.0	6.696	11.4	13.3	1.48	6932	2.33	7212.67
008771498-02	OBS	No	1.212810	131.775741	103.6	8.219	14.4	11.4	1.48	6932	1.52	7212.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008771498-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008771498-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

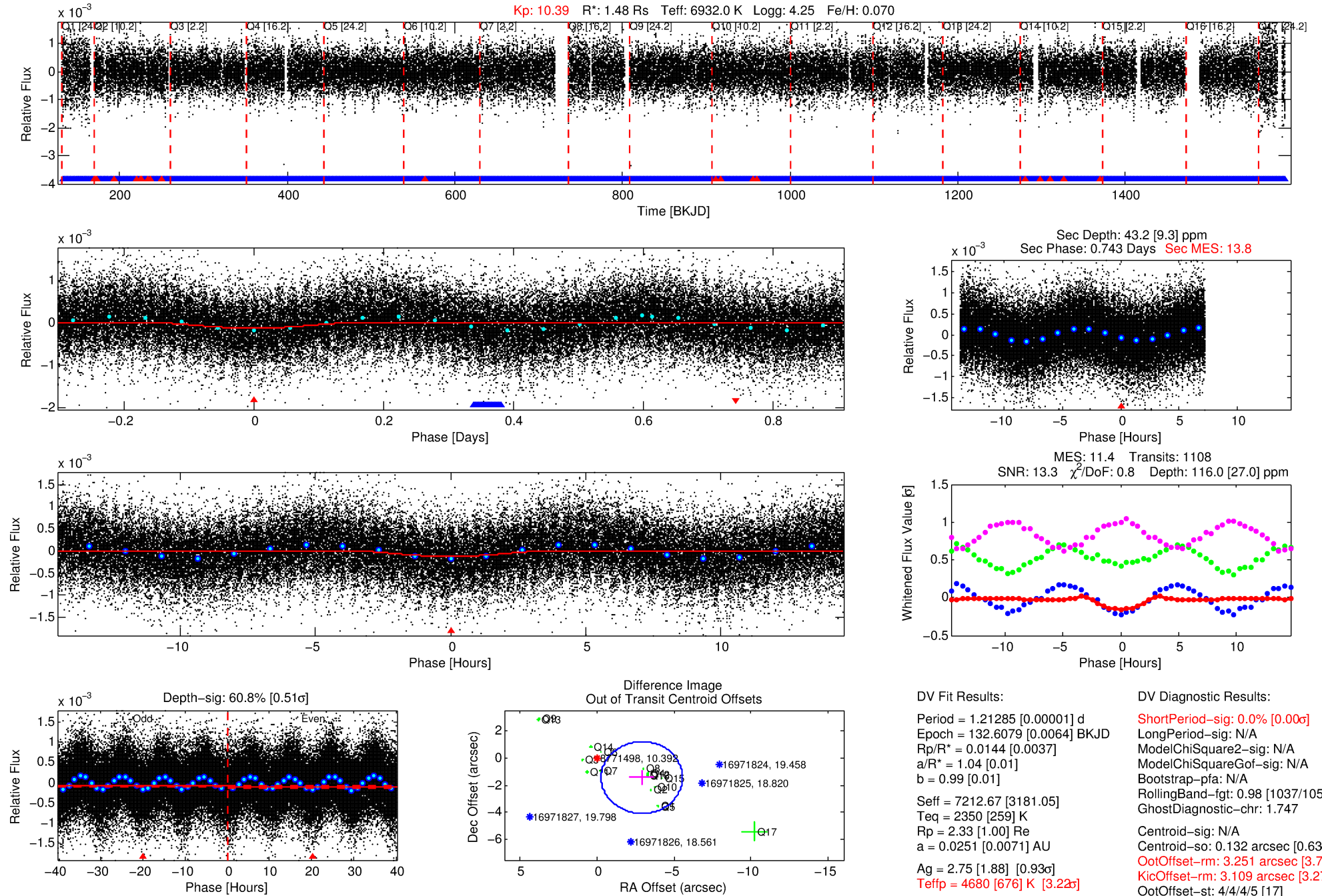
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008771498-01

No Significant Match Found

DV One-Page Summary

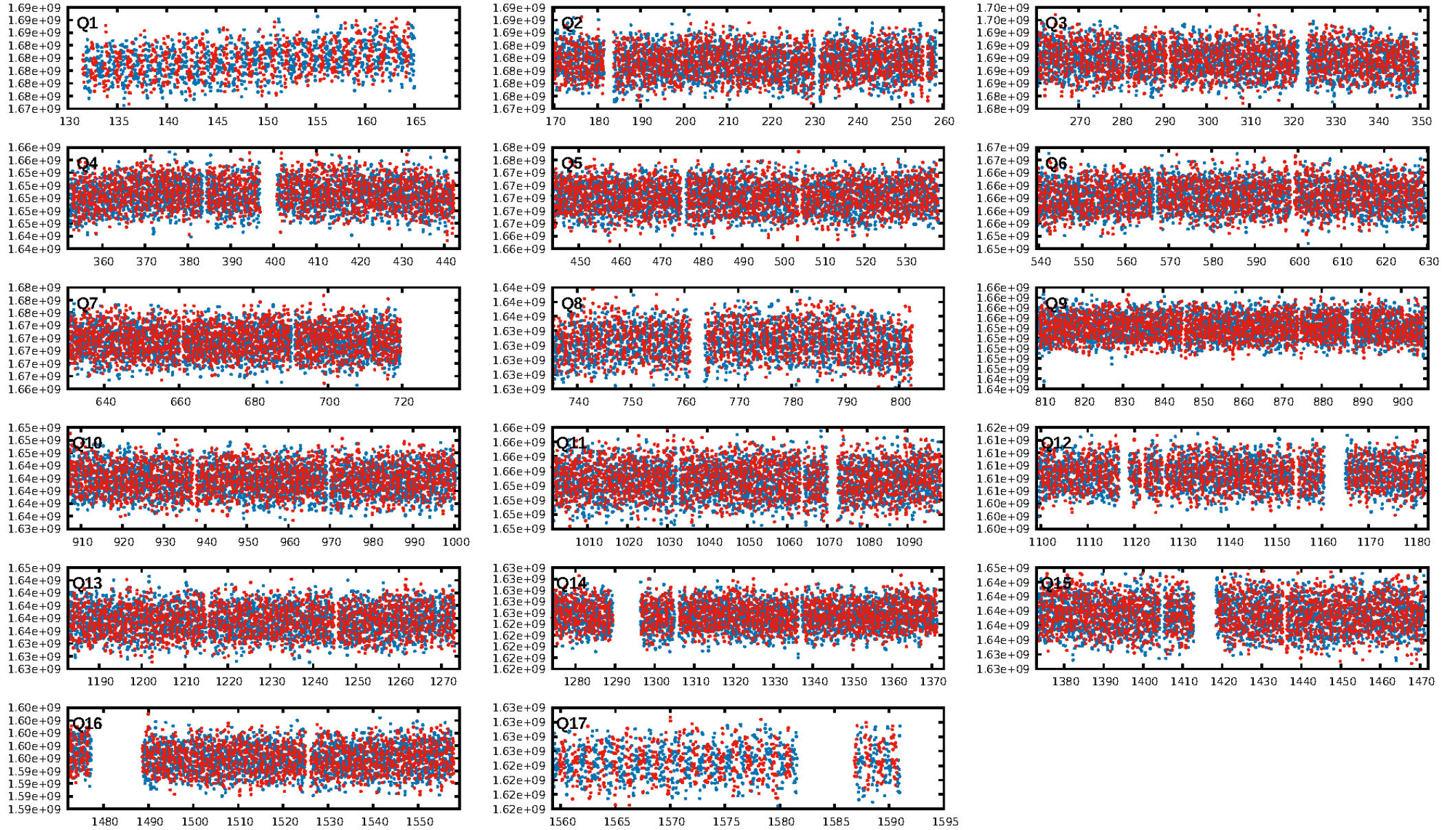
KIC: 8771498 Candidate: 1 of 2 Period: 1.213 d



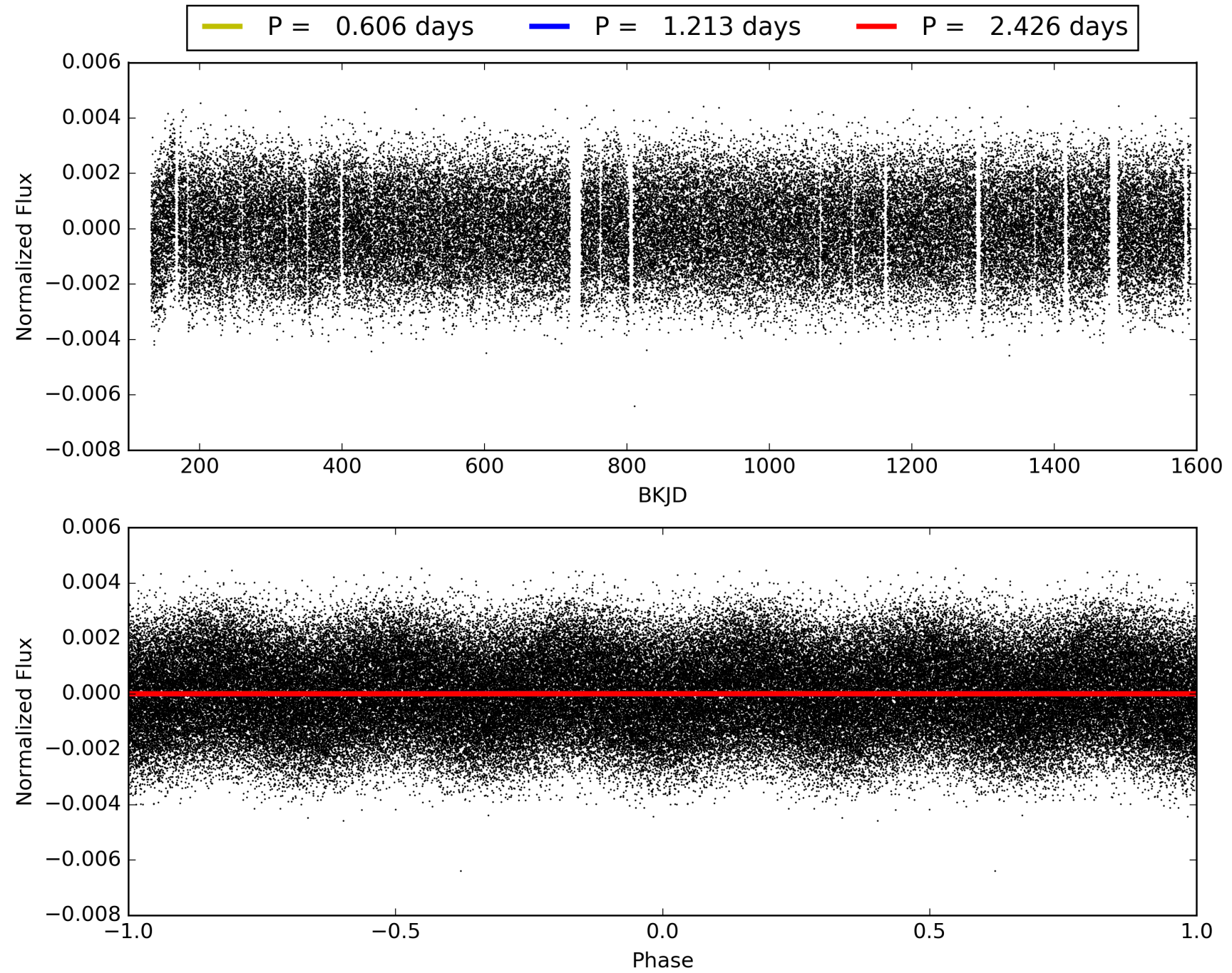
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:52:23 Z

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

TCE 008771498-01, PDC Light Curves

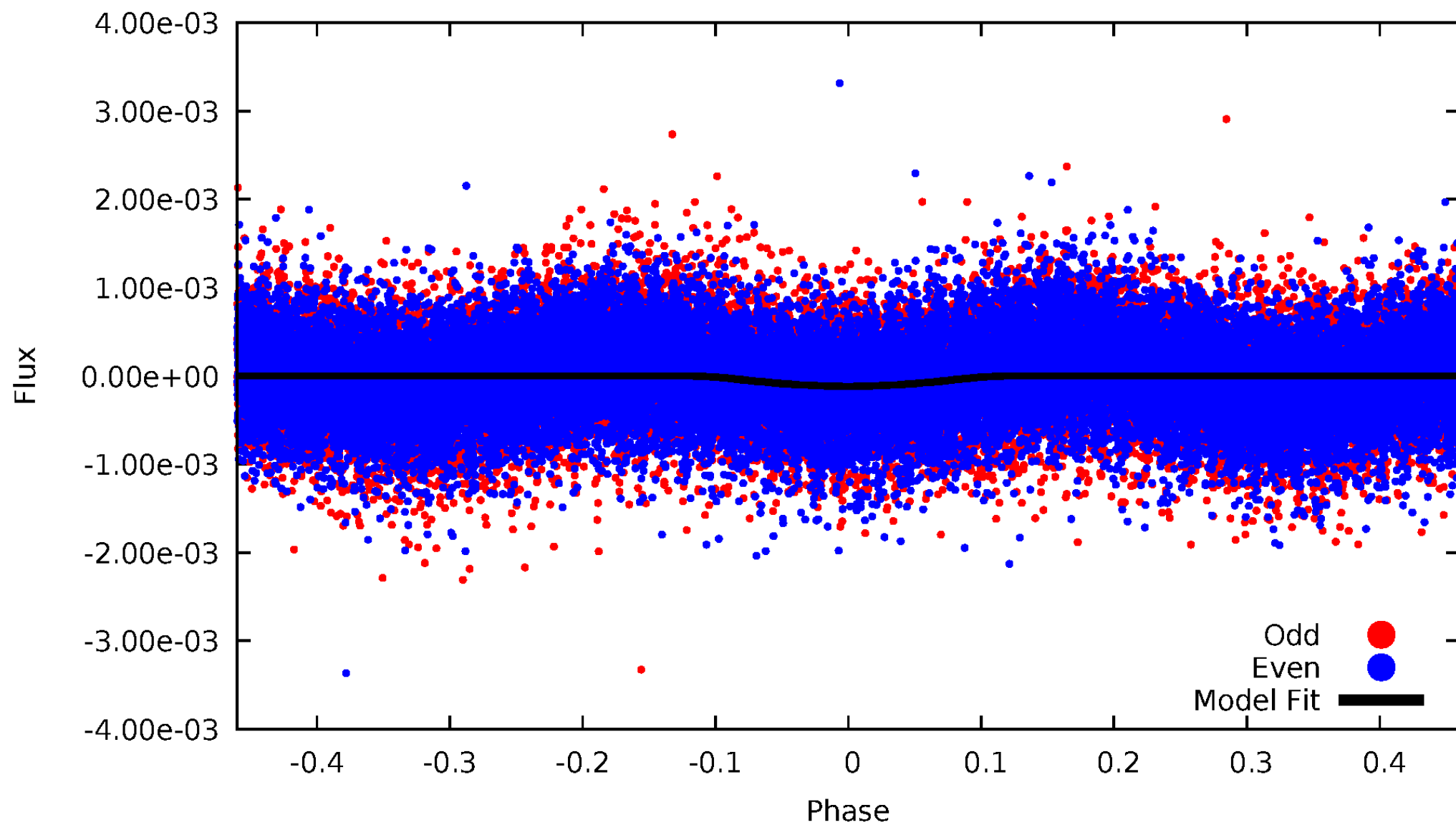


TCE 008771498-01



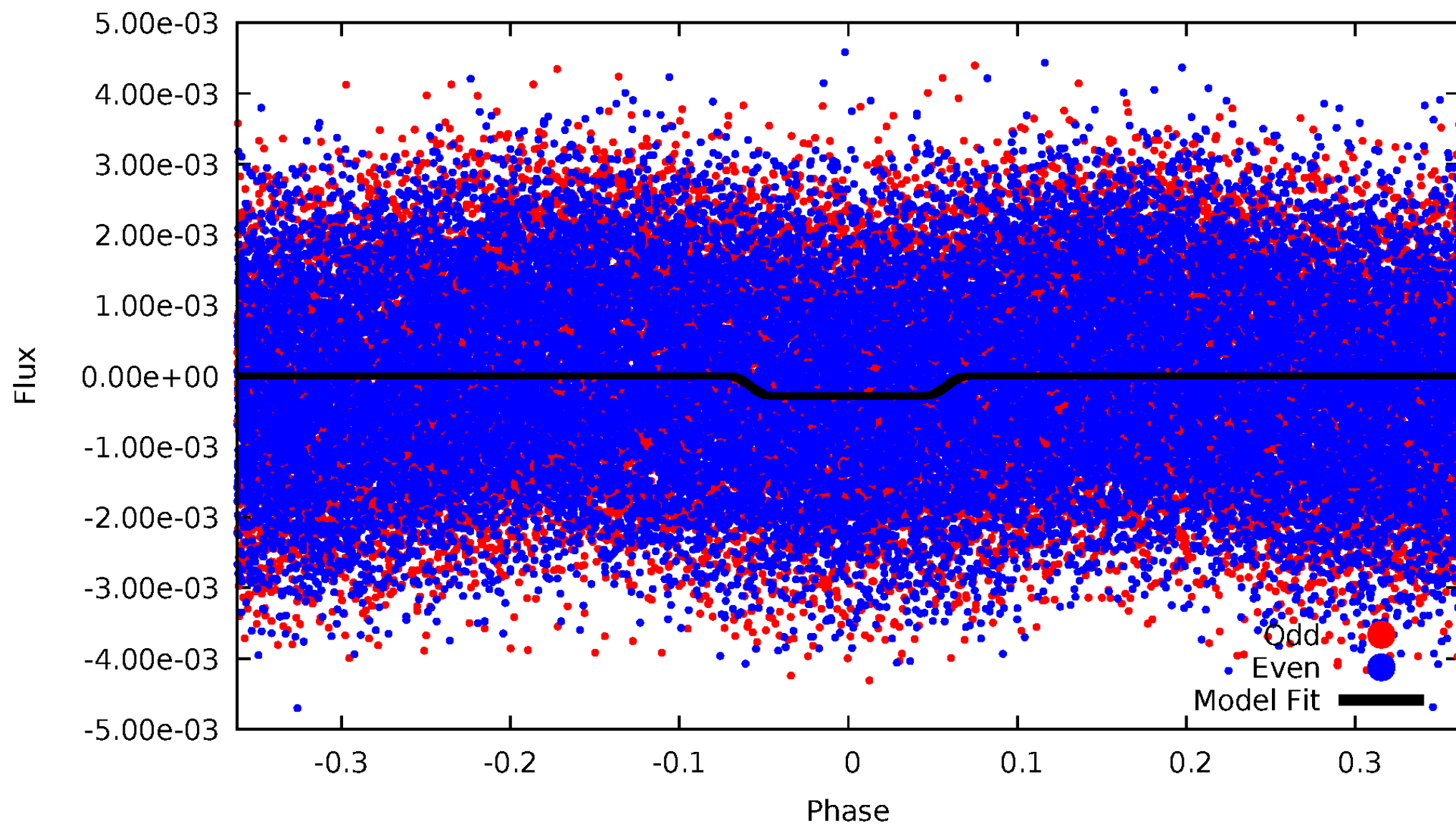
DV Odd/Even

TCE 008771498-01



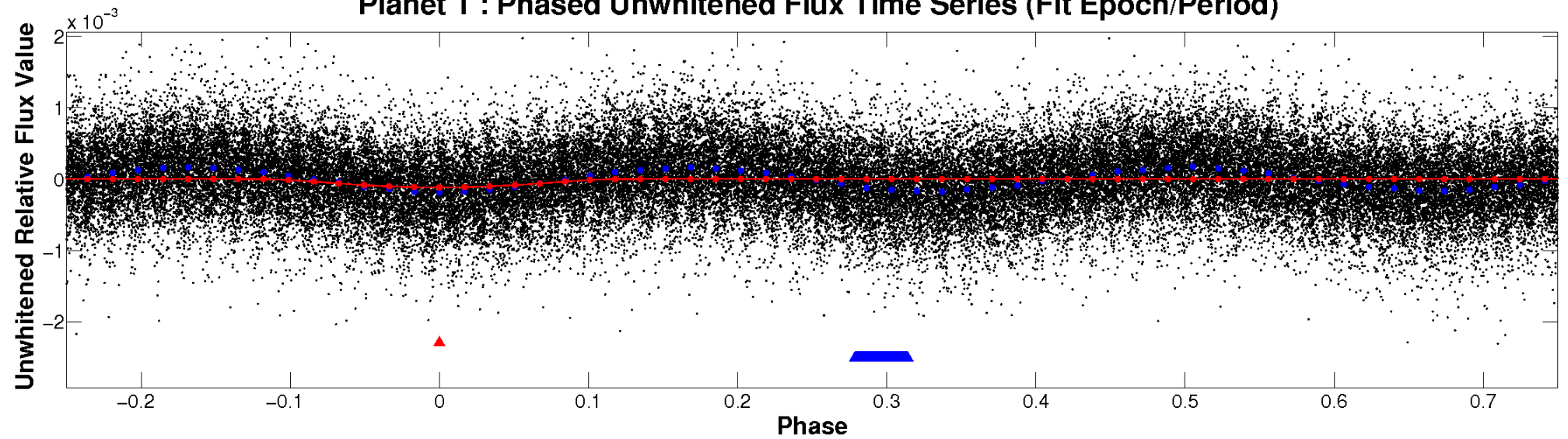
ALT Odd/Even

TCE 008771498-01

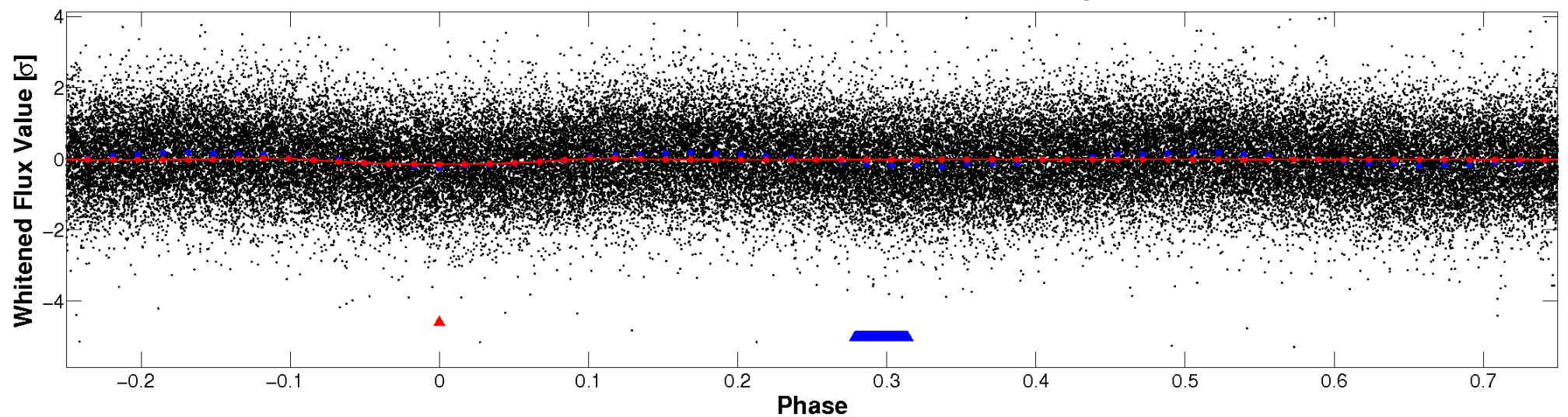


Non-Whitened Vs. Whitened Light Curve

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

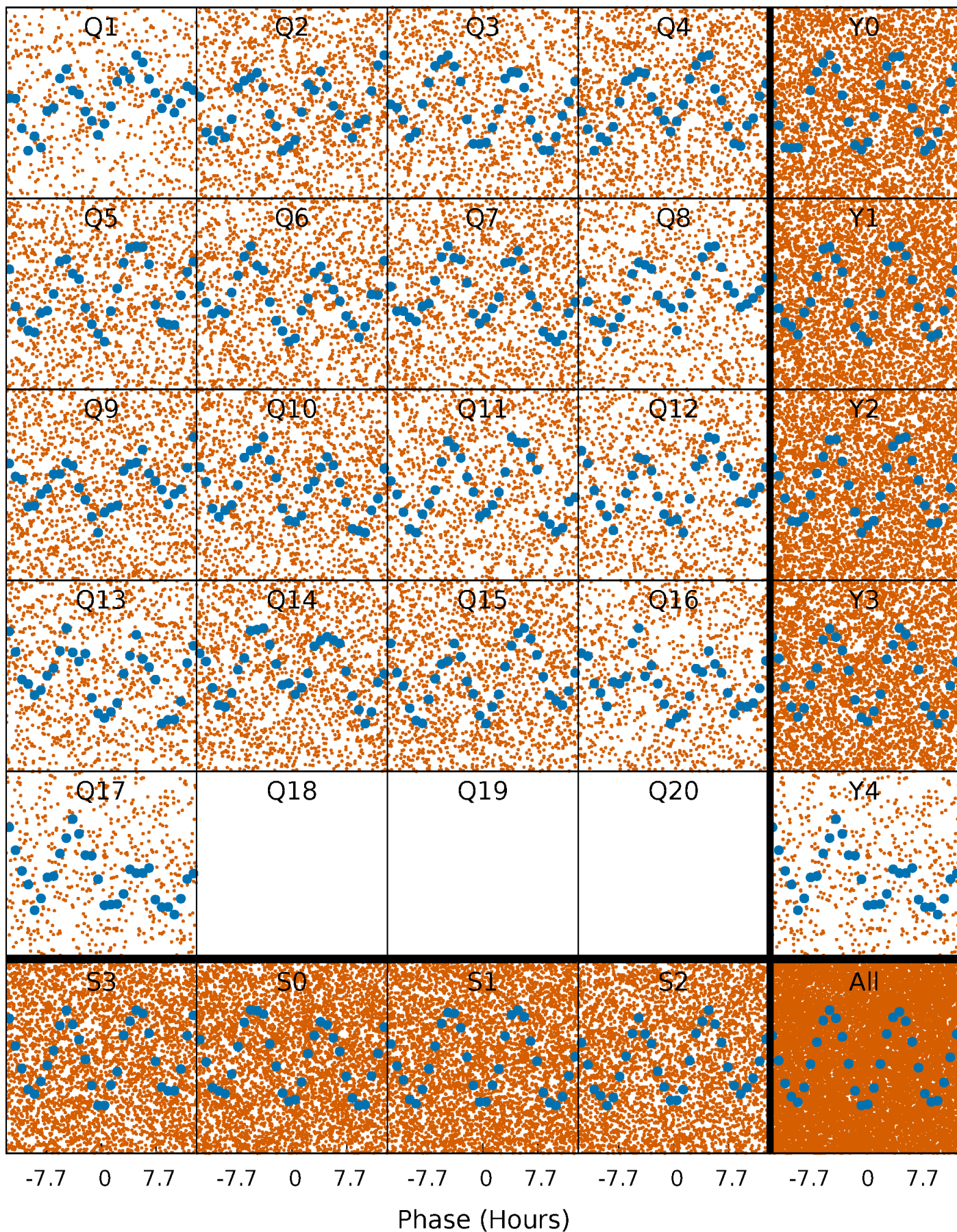


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



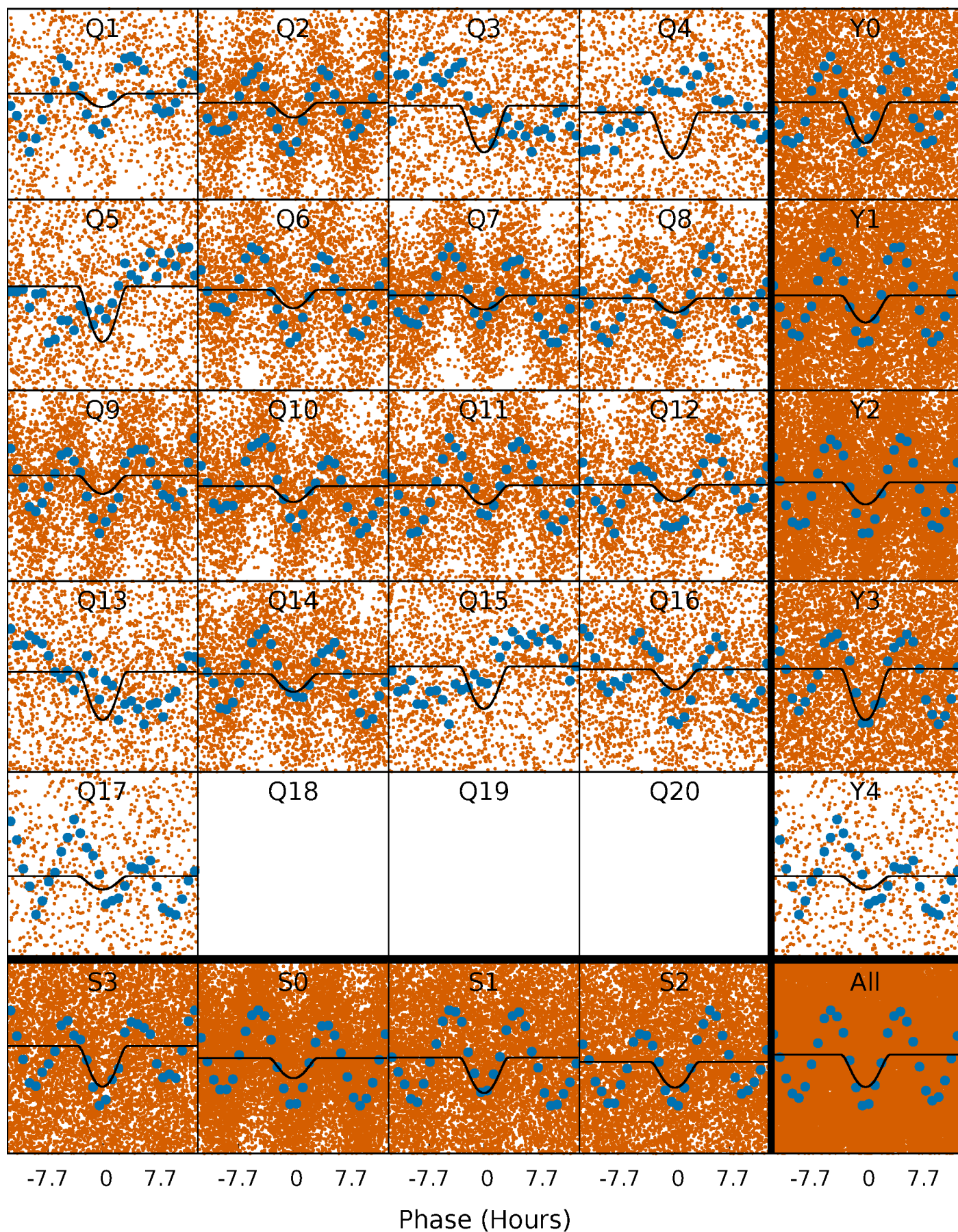
PDC Quarter-Phased Transit Curves

TCE 008771498-01 P= 1.212845 Days $T_0=132.607885$ (BKJD)



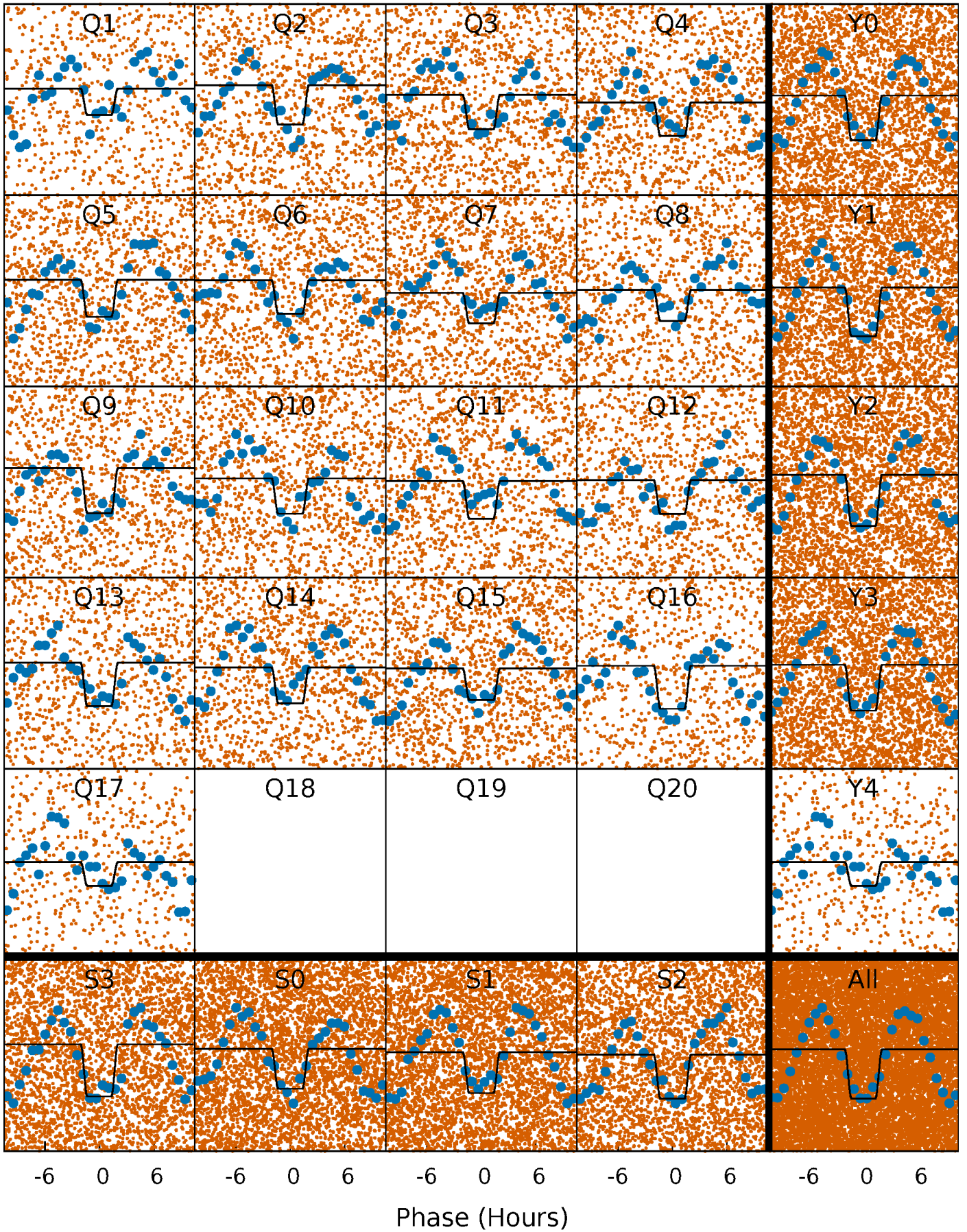
DV Quarter-Phased Transit Curves

TCE 008771498-01 P= 1.212845 Days $T_0=132.607885$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

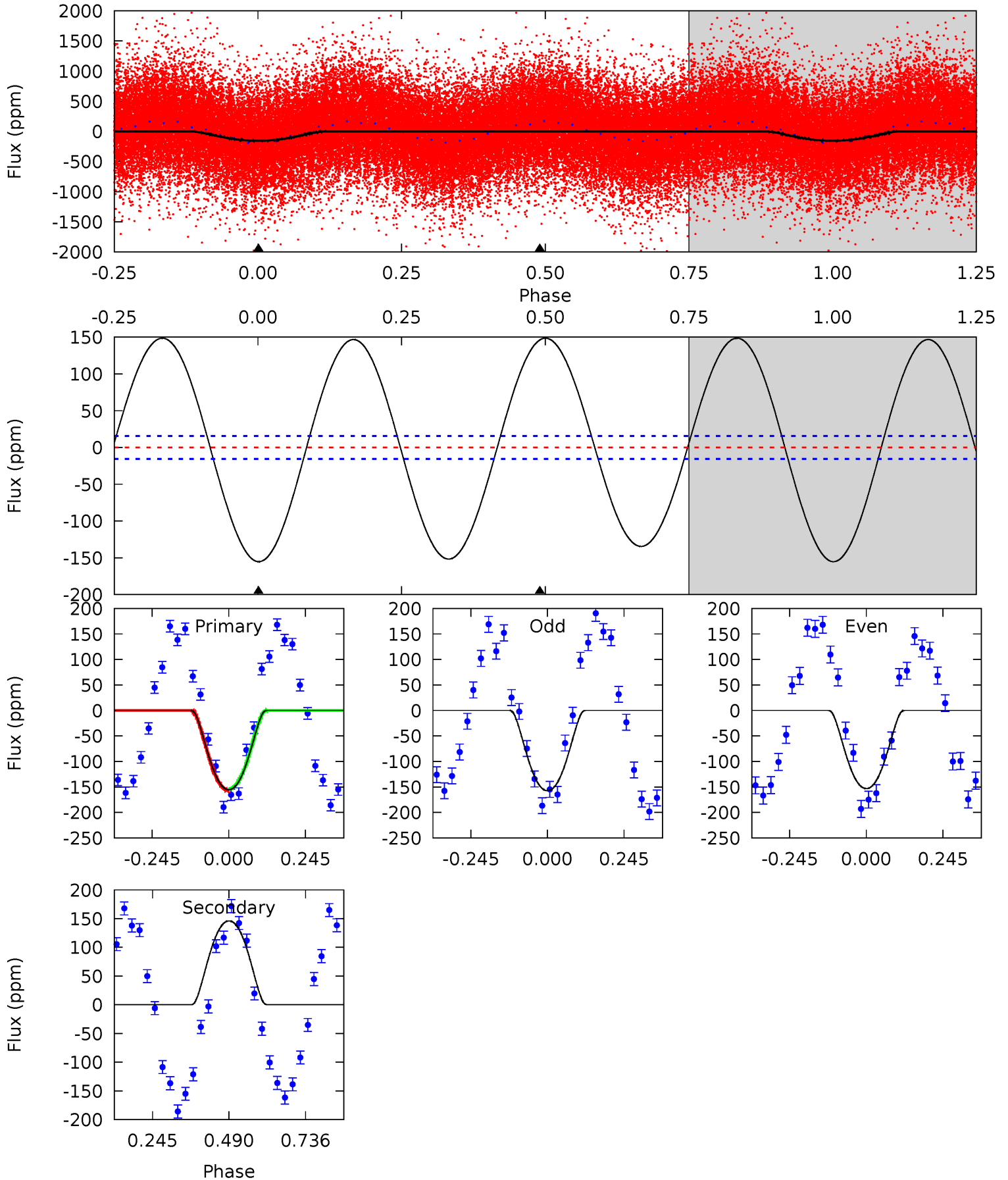
TCE 008771498-01 P= 1.212907 Days $T_0=132.571602$ (BKJD)



DV Model-Shift Uniqueness Test

008771498-01, P = 1.212845 Days, E = 131.395040 Days

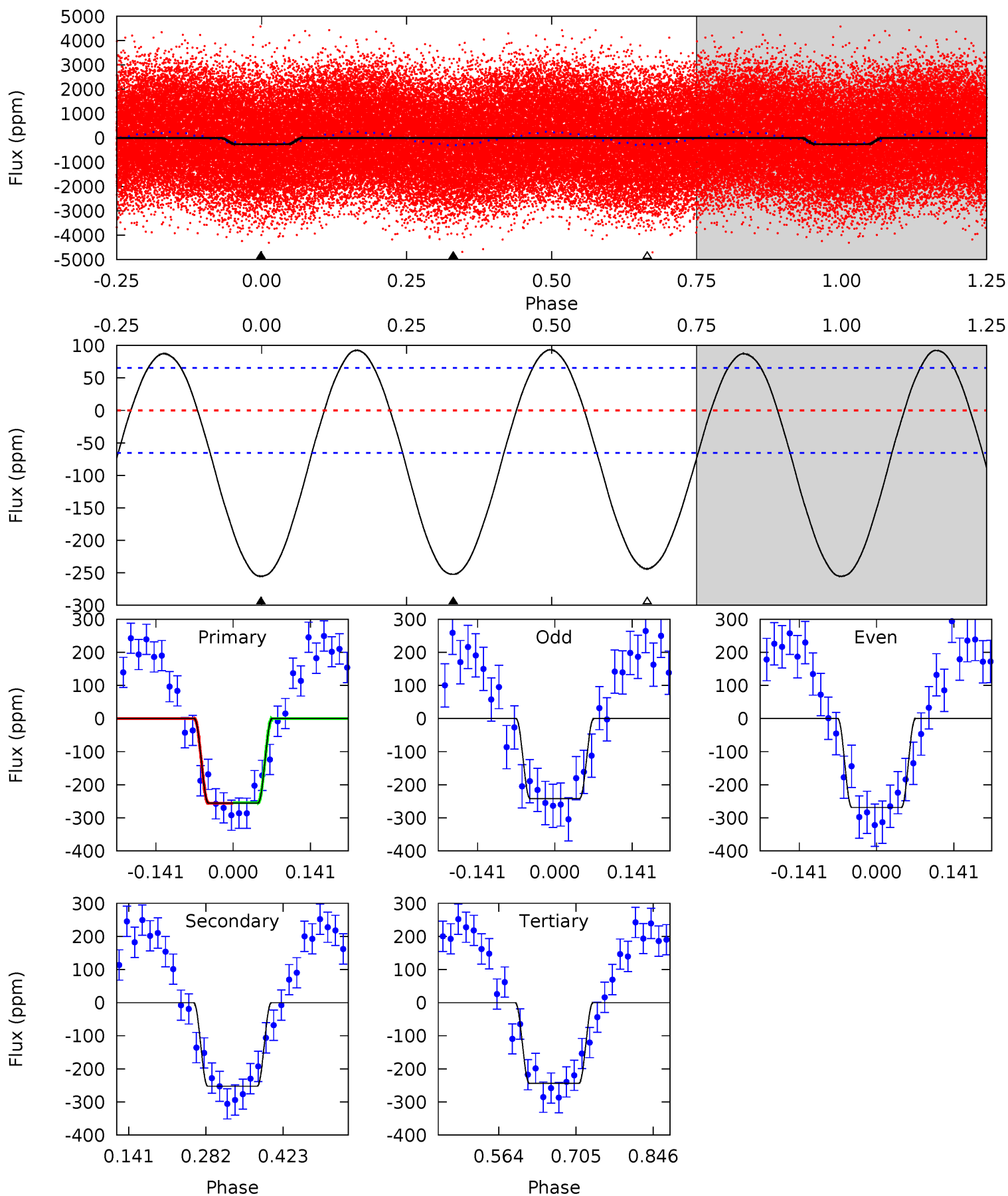
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.6	-41.0	0	0	4.37	1.16	11.7	43.6	43.6	-41.0	-41.0	0.58	1.15	0.49	0.47



Alt Model-Shift Uniqueness Test

008771498-01, P = 1.212907 Days, E = 131.358695 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.5	17.3	16.7	0	4.49	1.47	8.52	0.78	17.5	0.57	17.3	0.92	1.06	0.27	0.07



Stellar Parameters For KIC 008771498

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6932^{+193}_{-303}	$4.252^{+0.087}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.480^{+0.511}_{-0.219}$	$1.428^{+0.213}_{-0.213}$	$0.620^{+0.254}_{-0.345}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008771498-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	146 ± 4	$2.44^{+0.70}_{-0.68}$	3307^{+275}_{-188}	-6270^{+618}_{-1063}	$-8.292^{+3.188}_{-7.303}$
Alt.	-252 ± 15	$2.78^{+0.79}_{-0.63}$	3310^{+253}_{-187}	6612^{+1028}_{-663}	11^{+7}_{-4}

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 $A_{obs} \gg 1.0$

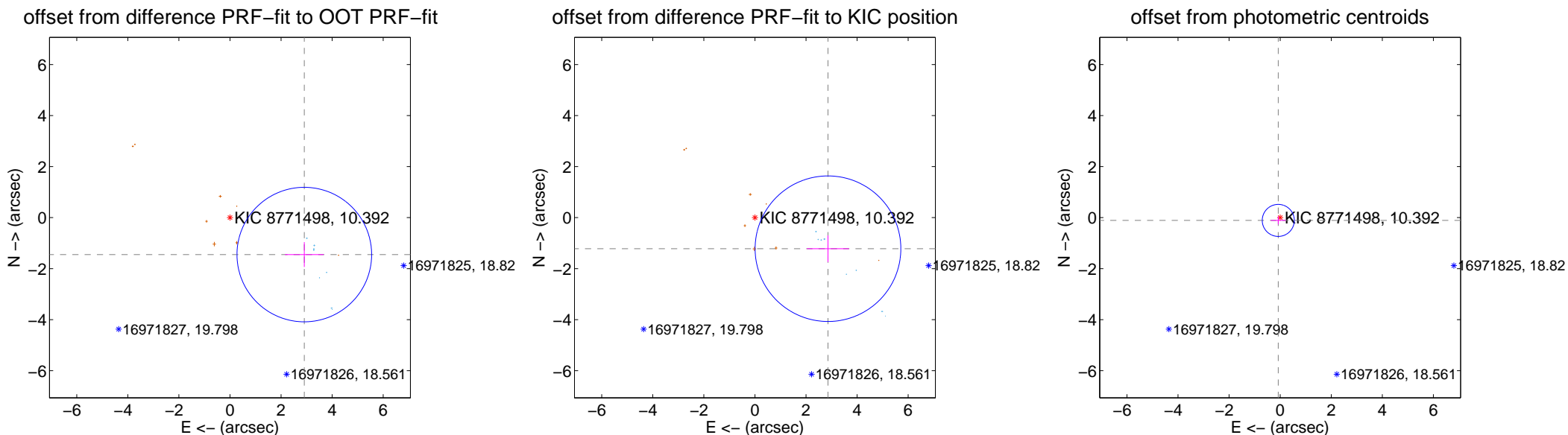
DV Centroid Data

Supplemental centroid analysis for 008771498-01. **Kepler magnitude: 10.39**. Transit SNR 13.26

There are 8 quarters with good PRF difference image offsets

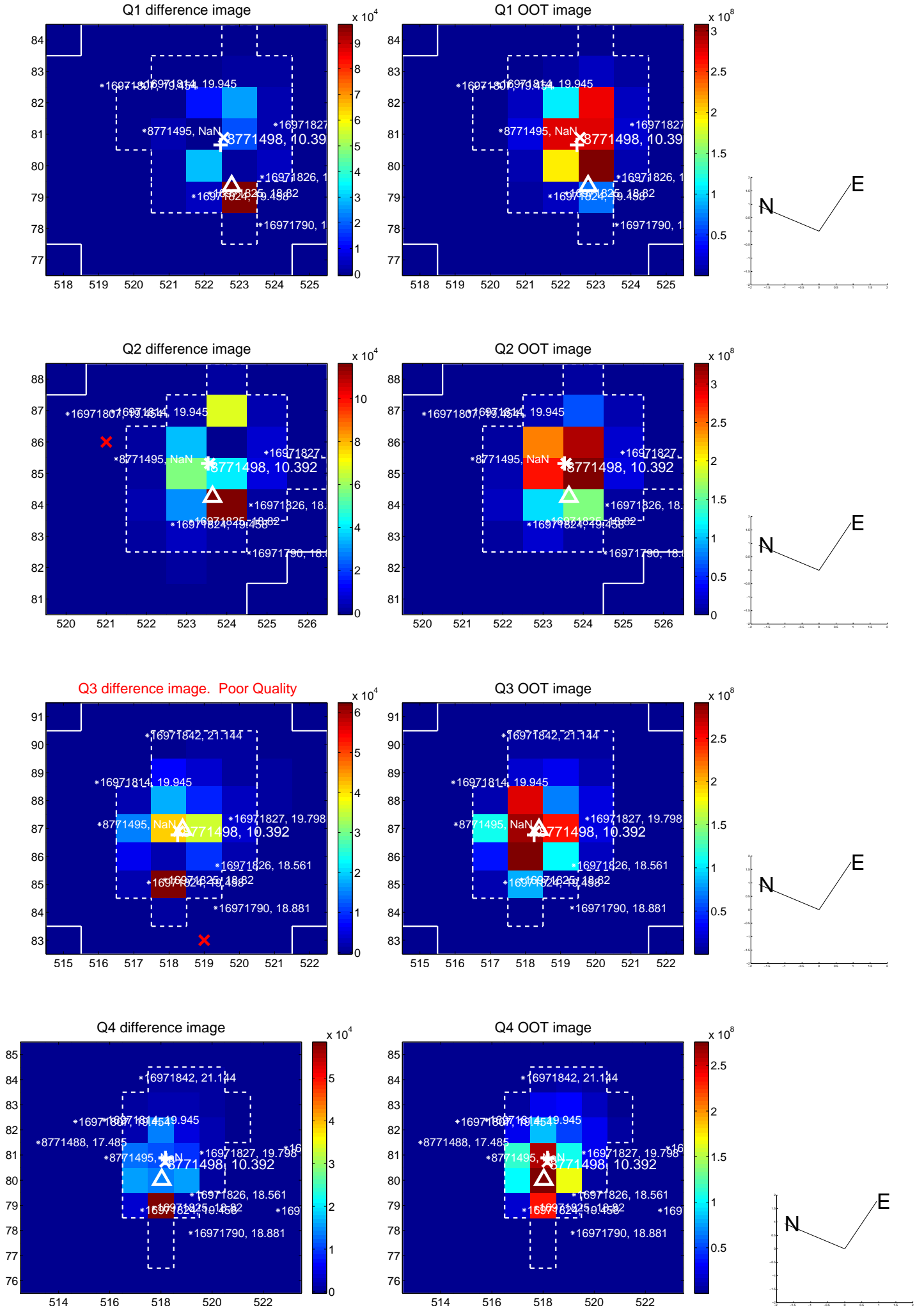
The direct PRF centroid is offset from the target star catalog position by about 1.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.251 ± 0.879	3.70	-2.910 ± 0.758	-1.448 ± 0.487
PRF-fit source offset from KIC position	3.109 ± 0.951	3.27	-2.860 ± 0.826	-1.218 ± 0.522
photometric centroid source offset	0.13 ± 0.21	0.63	0.07 ± 0.29	-0.11 ± 0.15

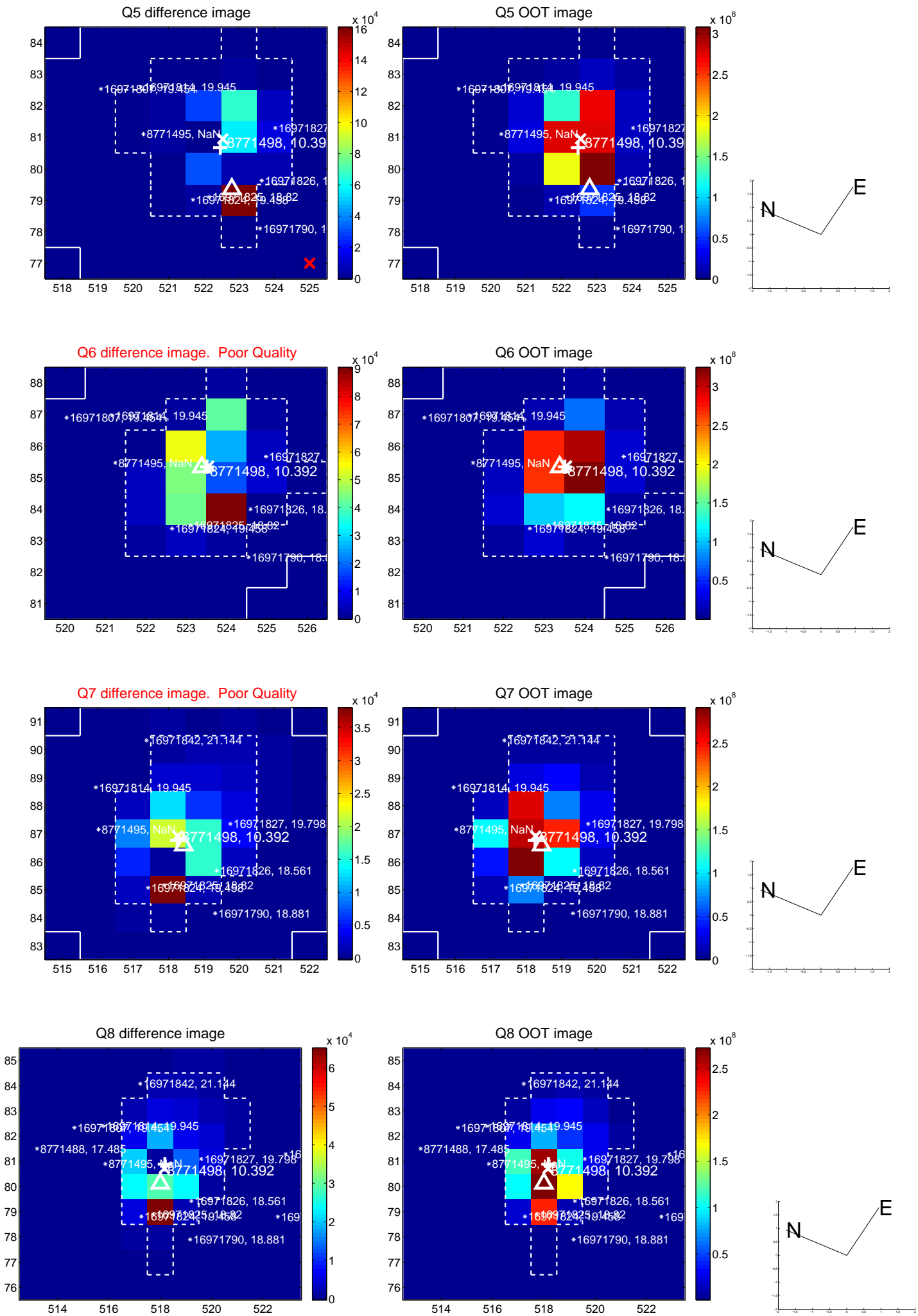


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

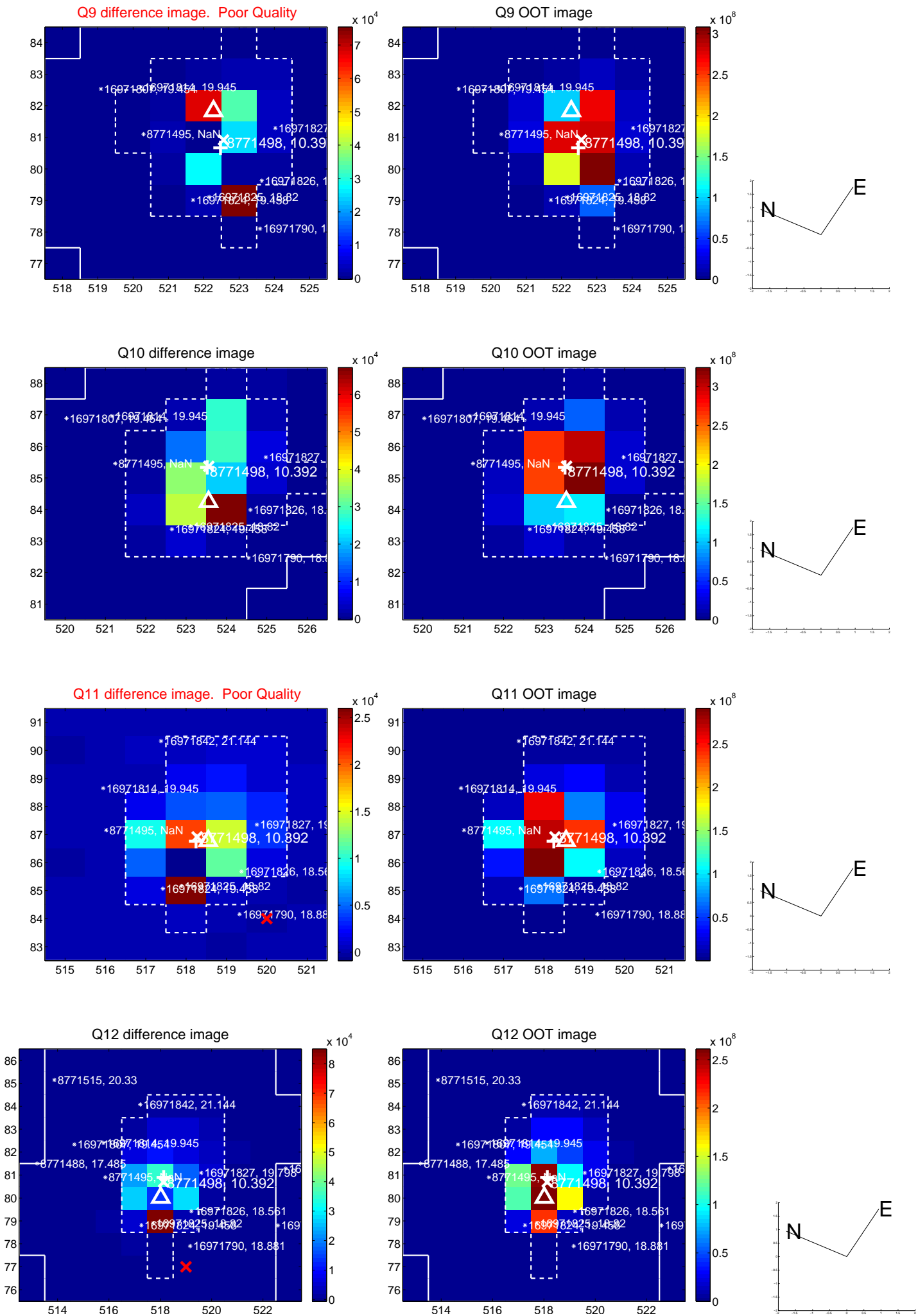
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



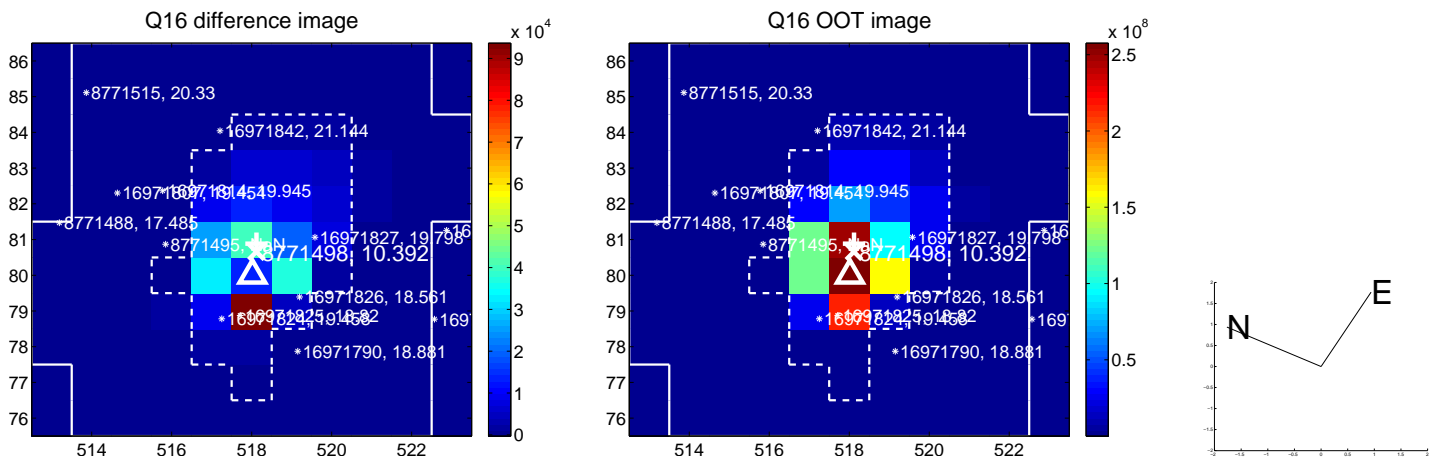
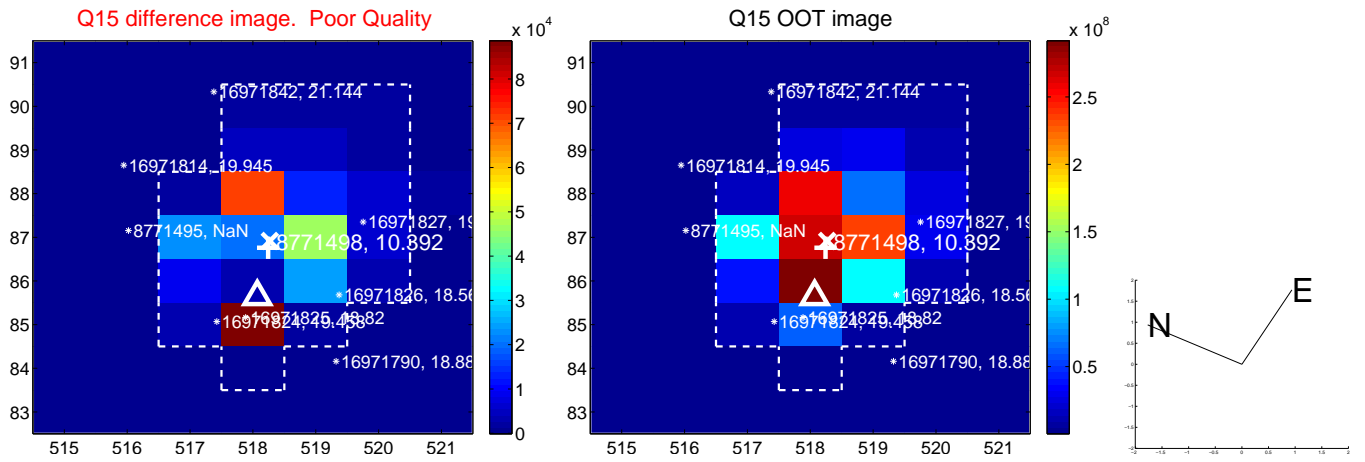
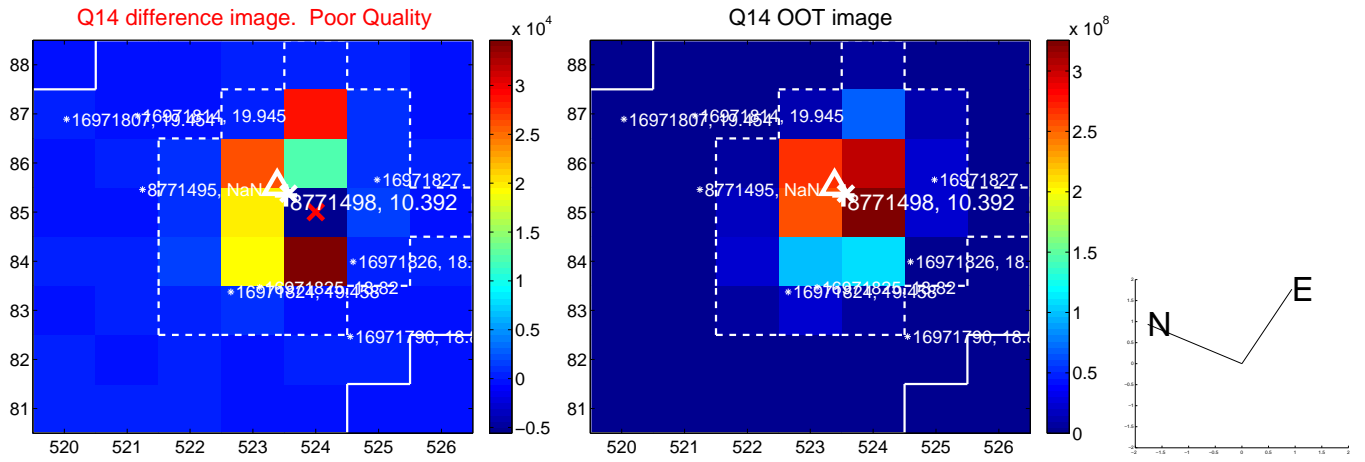
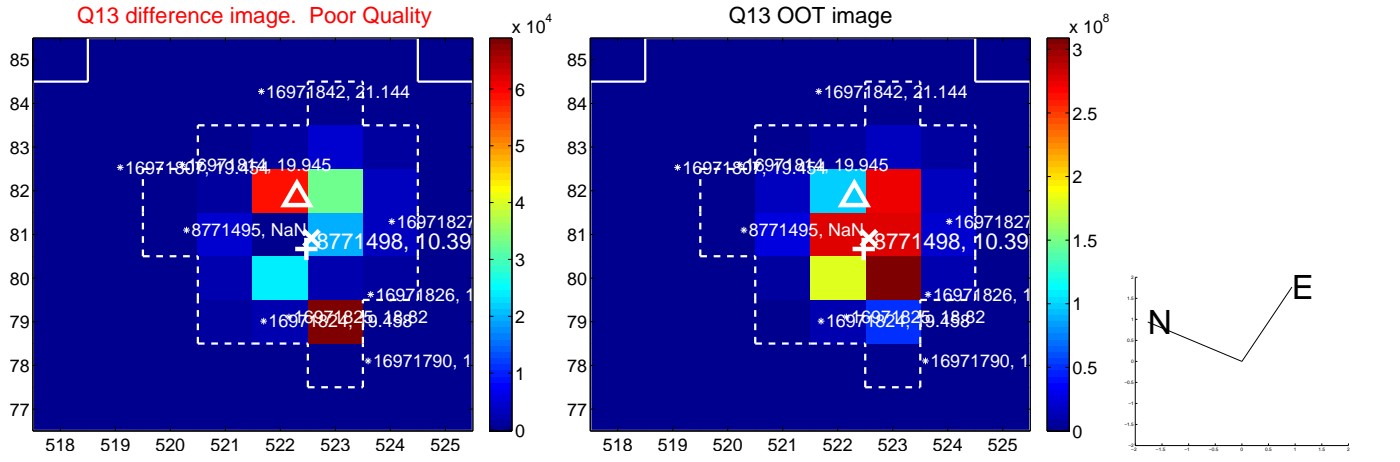
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



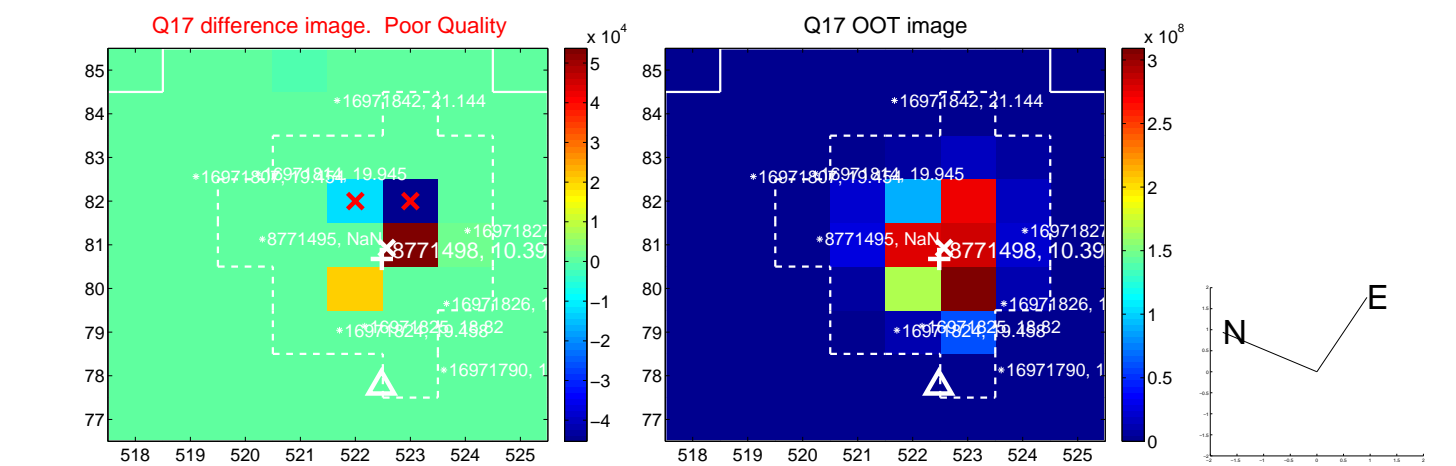
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



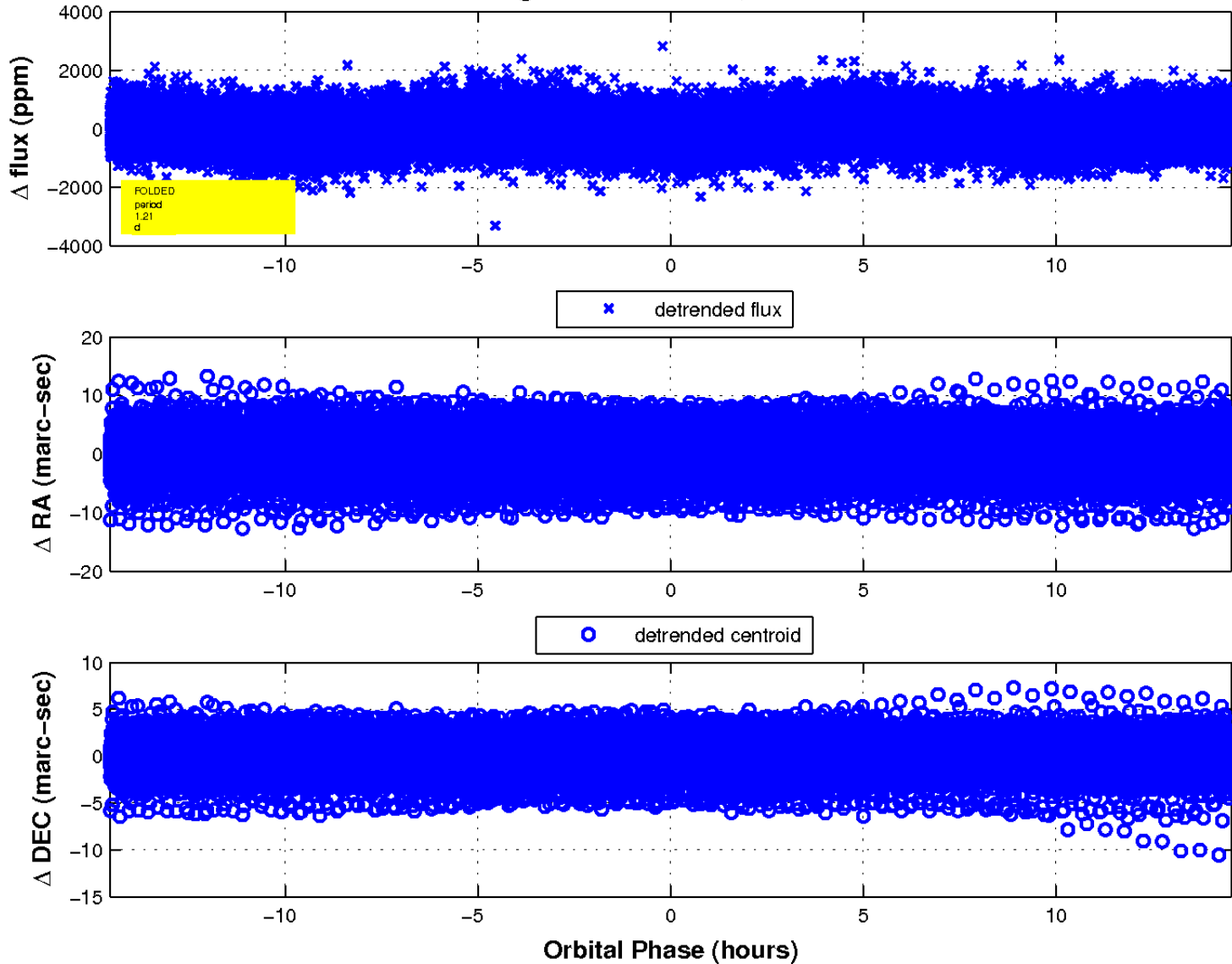
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

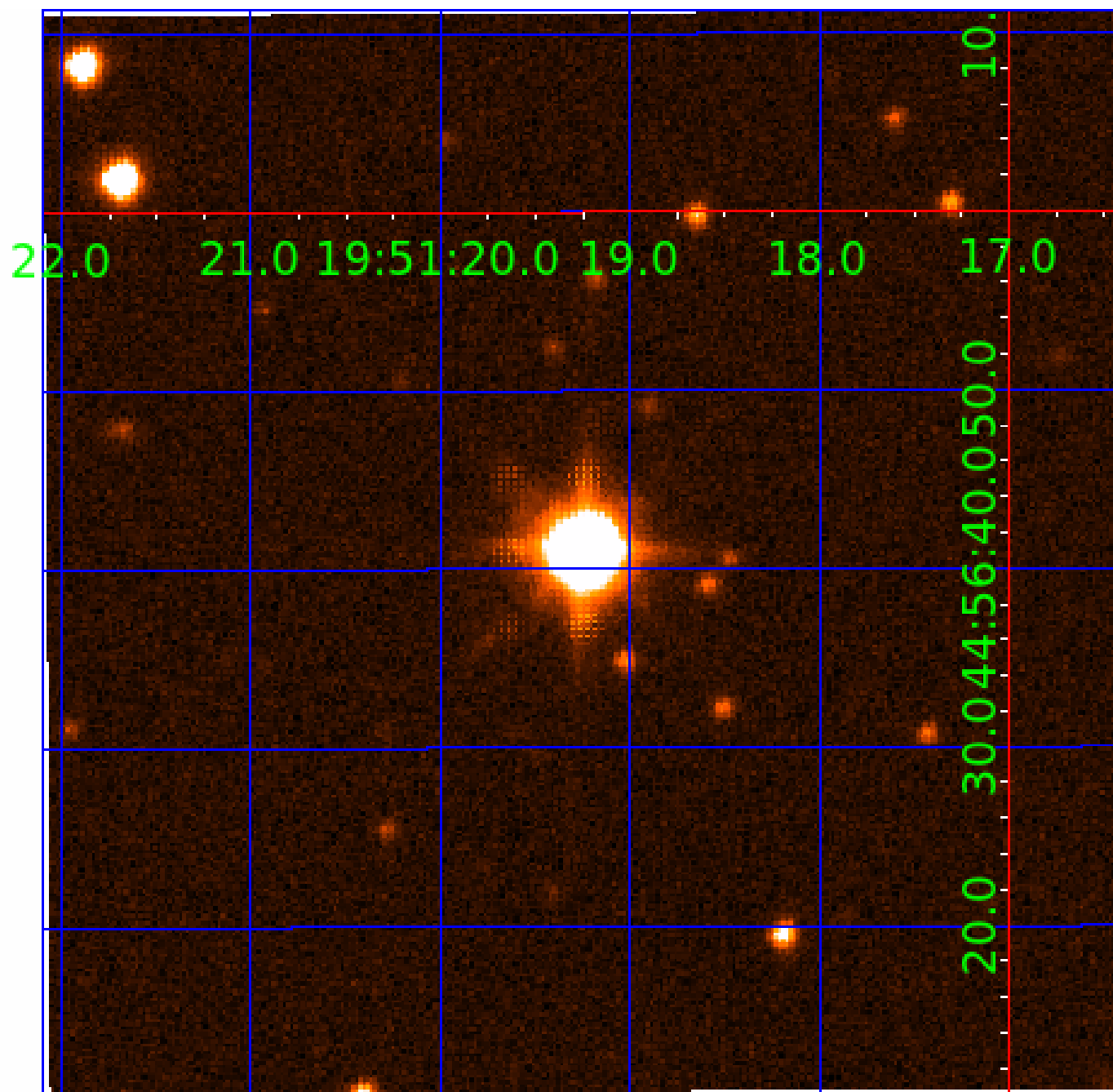


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008771498

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})
008771498-01	OBS	No	1.212845	132.607885	116.0	6.696	11.4	13.3	1.48	6932	2.33	7212.67
008771498-02	OBS	No	1.212810	131.775741	103.6	8.219	14.4	11.4	1.48	6932	1.52	7212.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008771498-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_SATURATED
008771498-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD—CENT_SATURATED

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

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

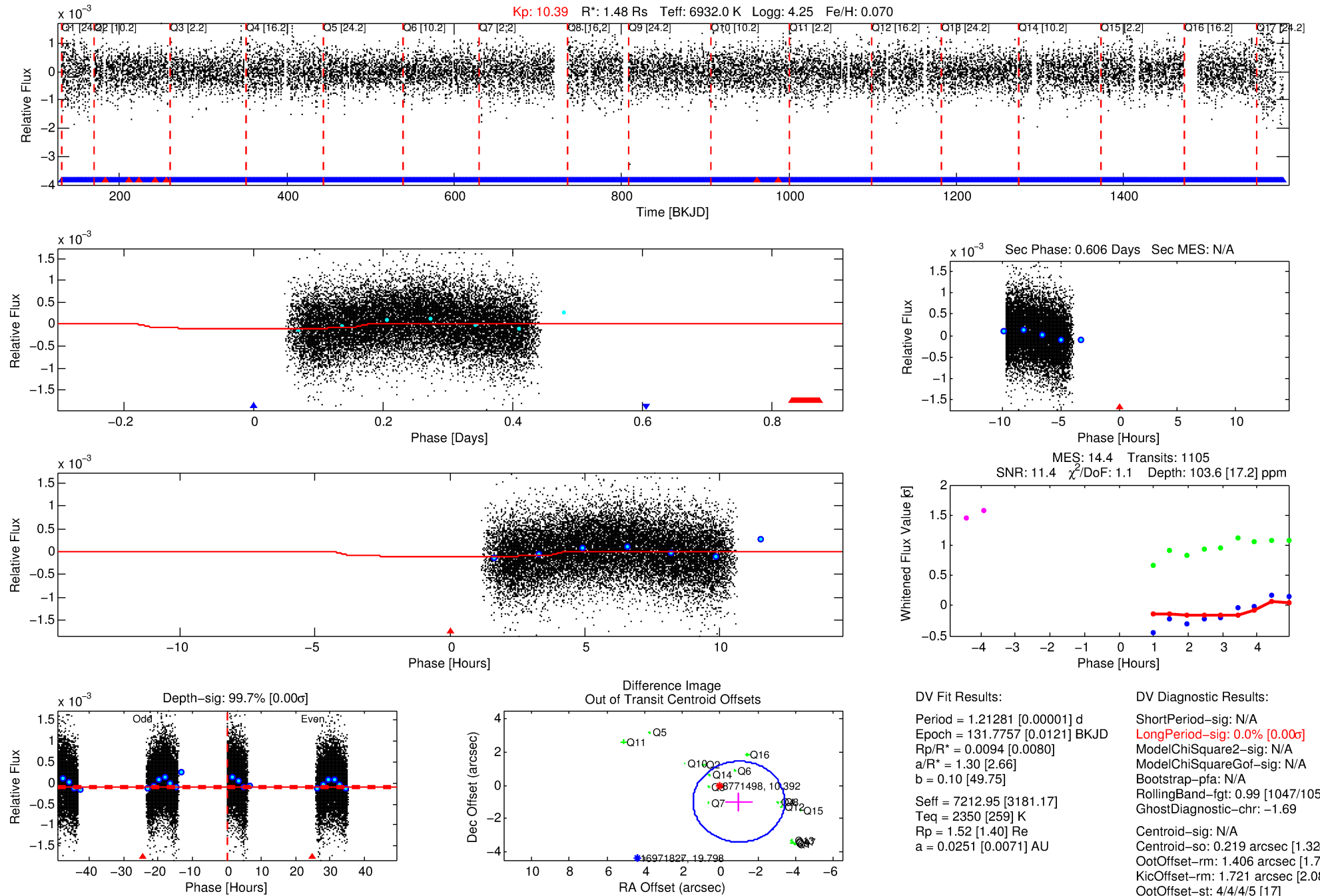
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008771498-02

No Significant Match Found

DV One-Page Summary

KIC: 8771498 Candidate: 2 of 2 Period: 1.213 d



DV Fit Results:

Period = 1.21281 [0.00001] d
Epoch = 131.7757 [0.0121] BKJD
Rp/R* = 0.0094 [0.0080]
a/R* = 1.30 [2.66]
b = 0.10 [49.75]
Seff = 7212.95 [3181.17]
Teq = 2350 [259] K
Rp = 1.52 [1.40] Re
a = 0.0251 [0.0071] AU

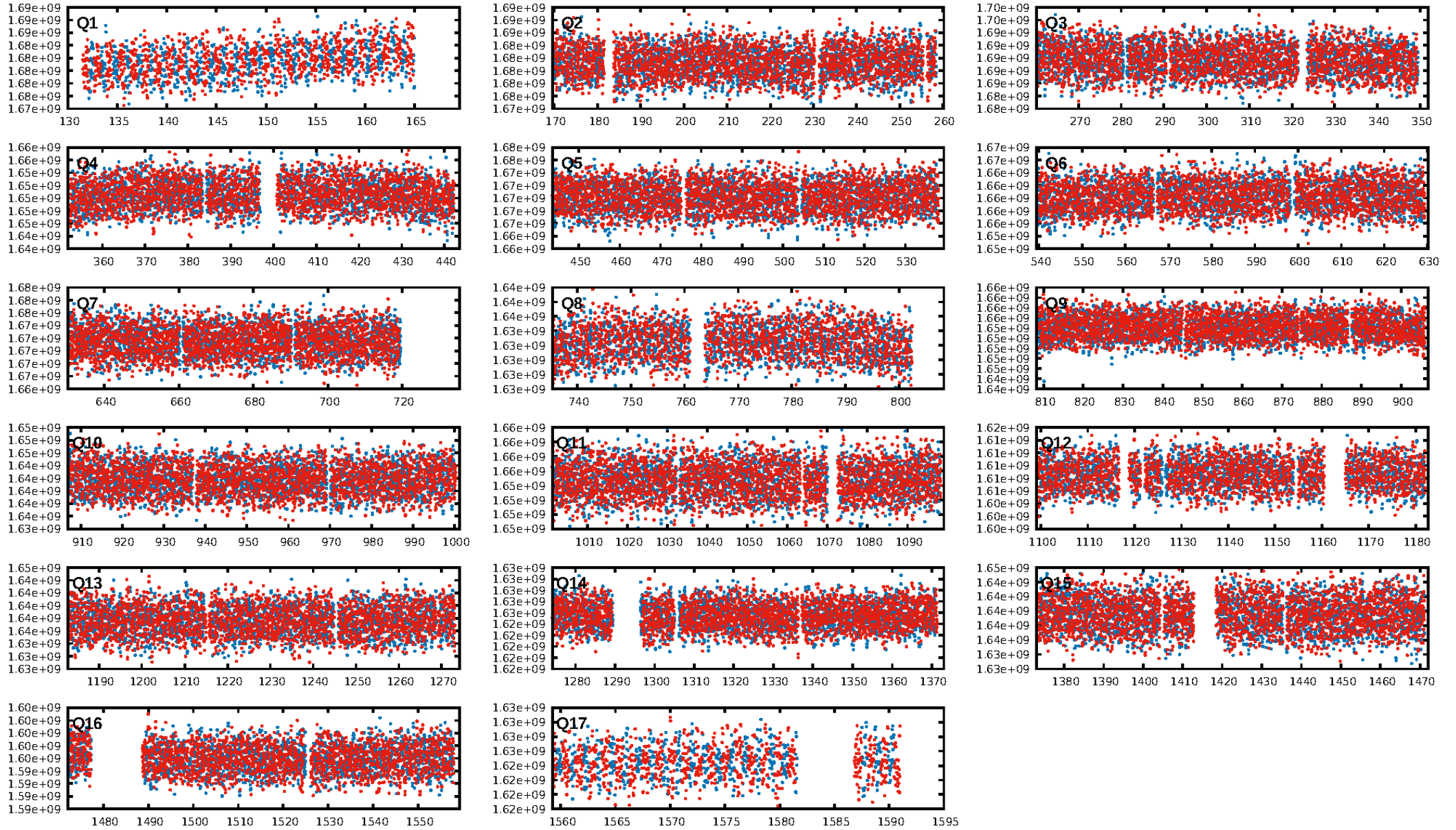
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1047/1054]
GhostDiagnostic-chr: -1.69
Centroid-sig: N/A
Centroid-so: 0.219 arcsec [1.32σ]
OotOffset-rm: 1.406 arcsec [1.73σ]
KicOffset-rm: 1.721 arcsec [2.08σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.24 [4/17]
DiffImageOverlap-fno: 0.00 [0/17]

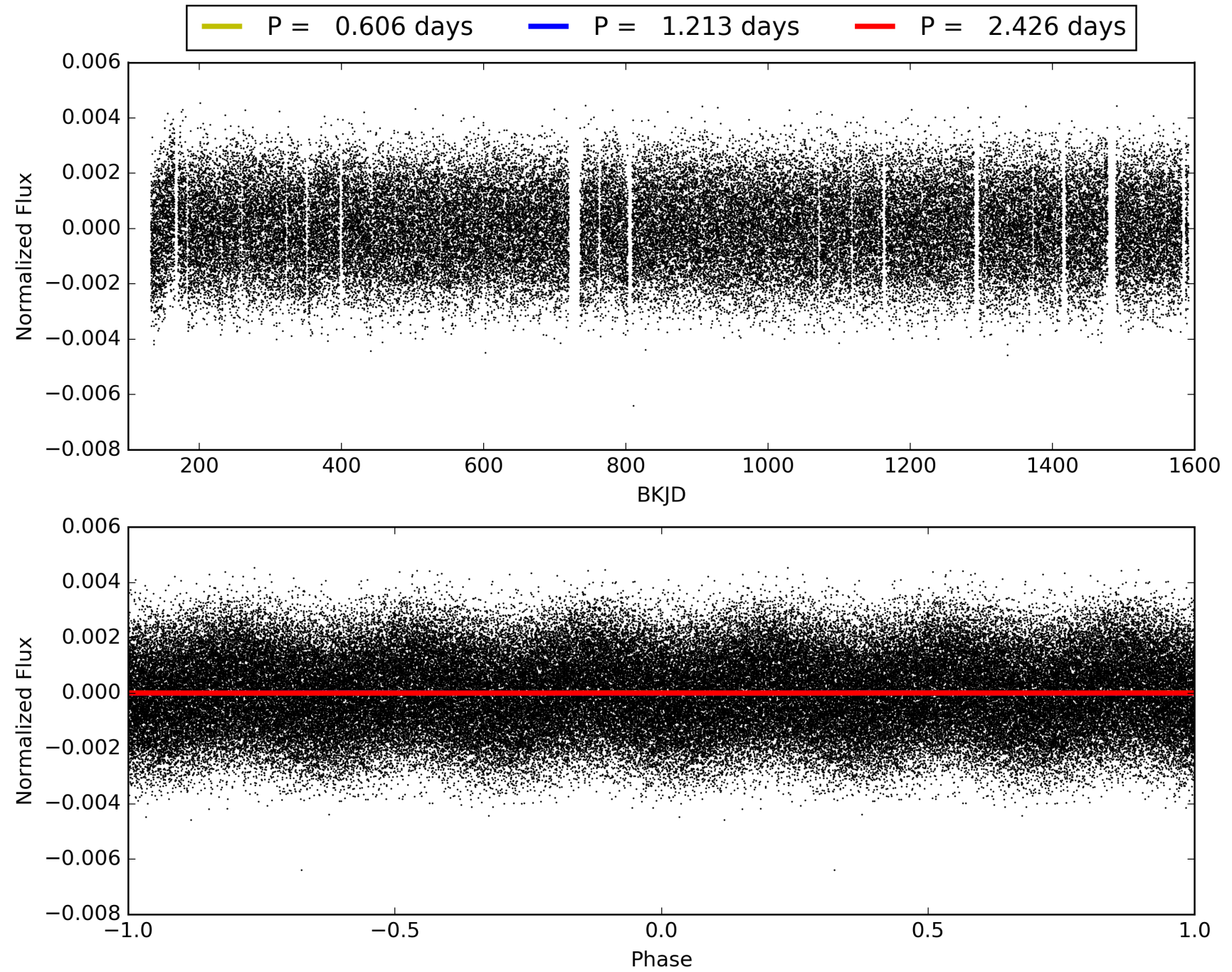
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:52:37 Z

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

TCE 008771498-02, PDC Light Curves

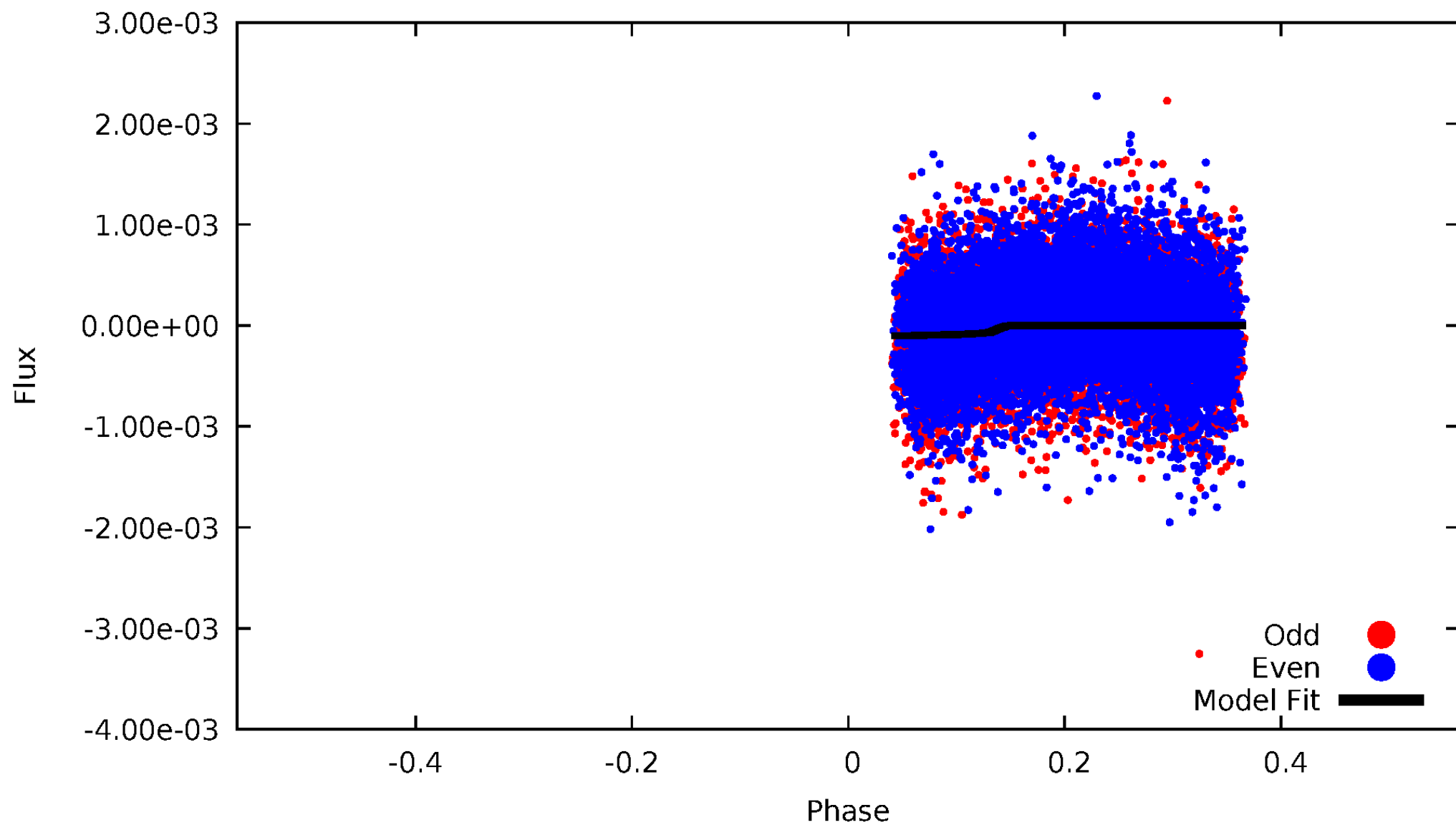


TCE 008771498-02



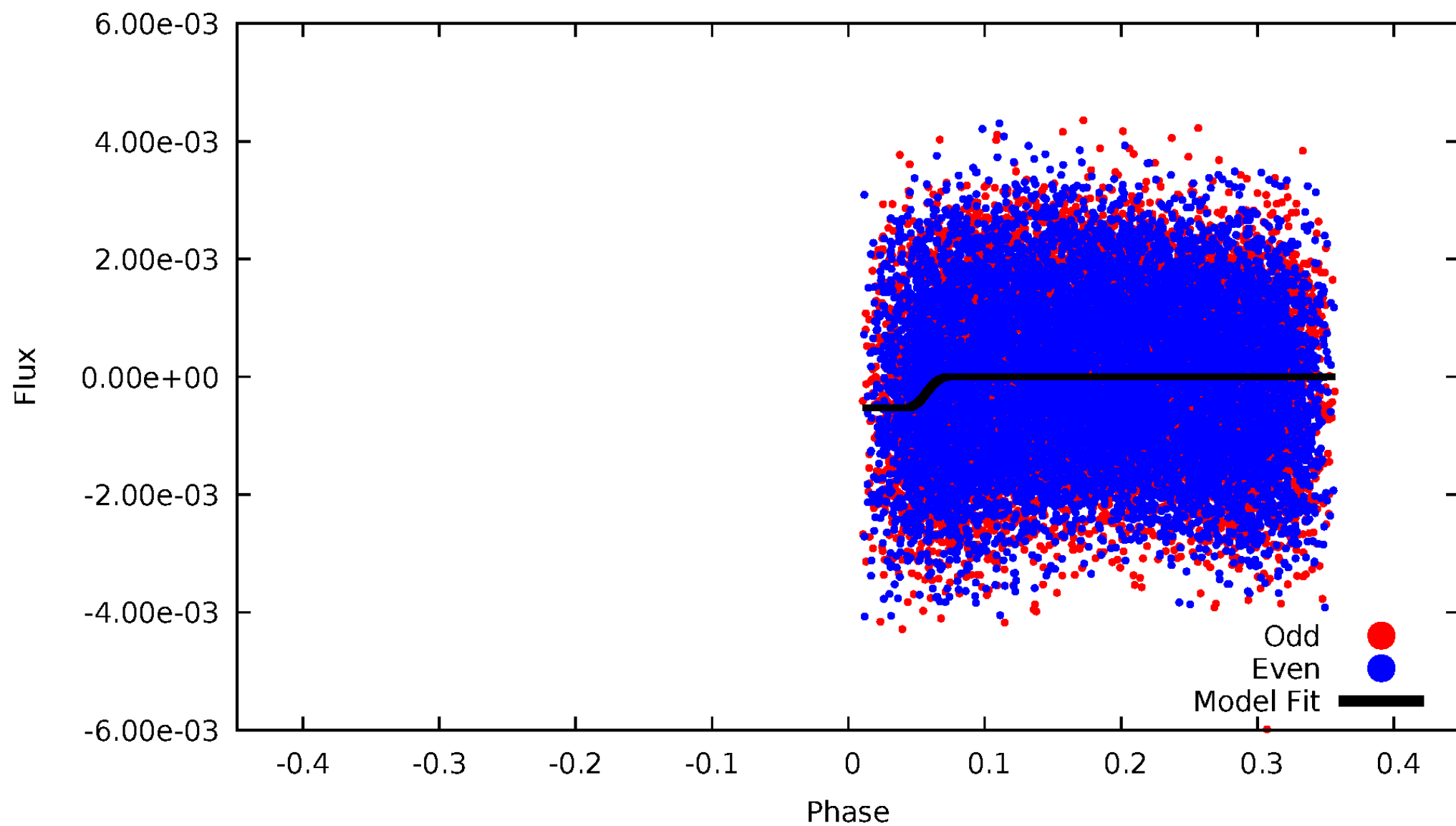
DV Odd/Even

TCE 008771498-02



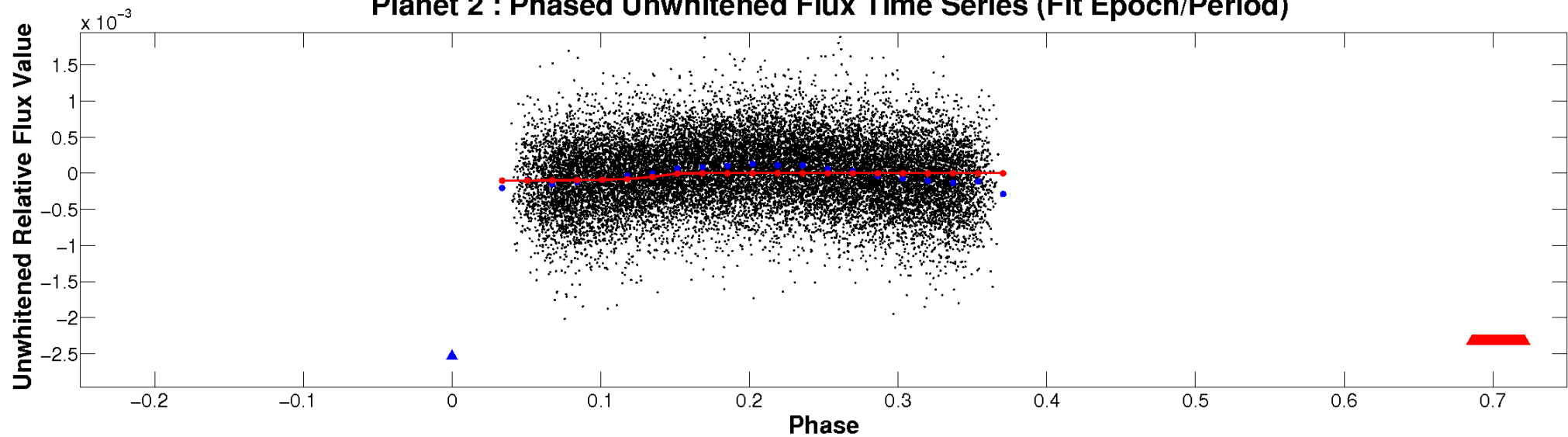
ALT Odd/Even

TCE 008771498-02

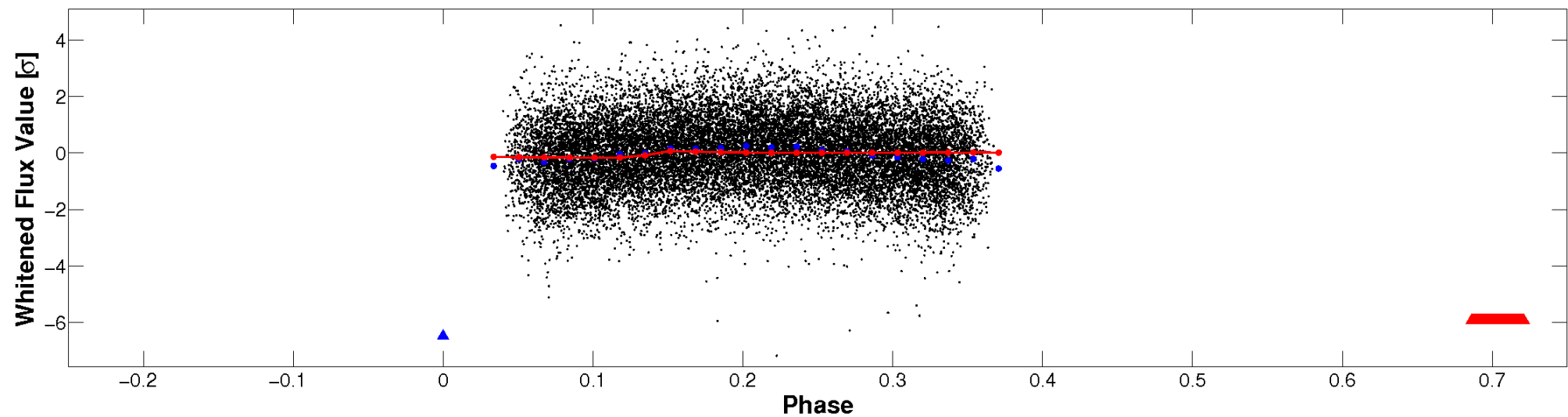


Non-Whitened Vs. Whitened Light Curve

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

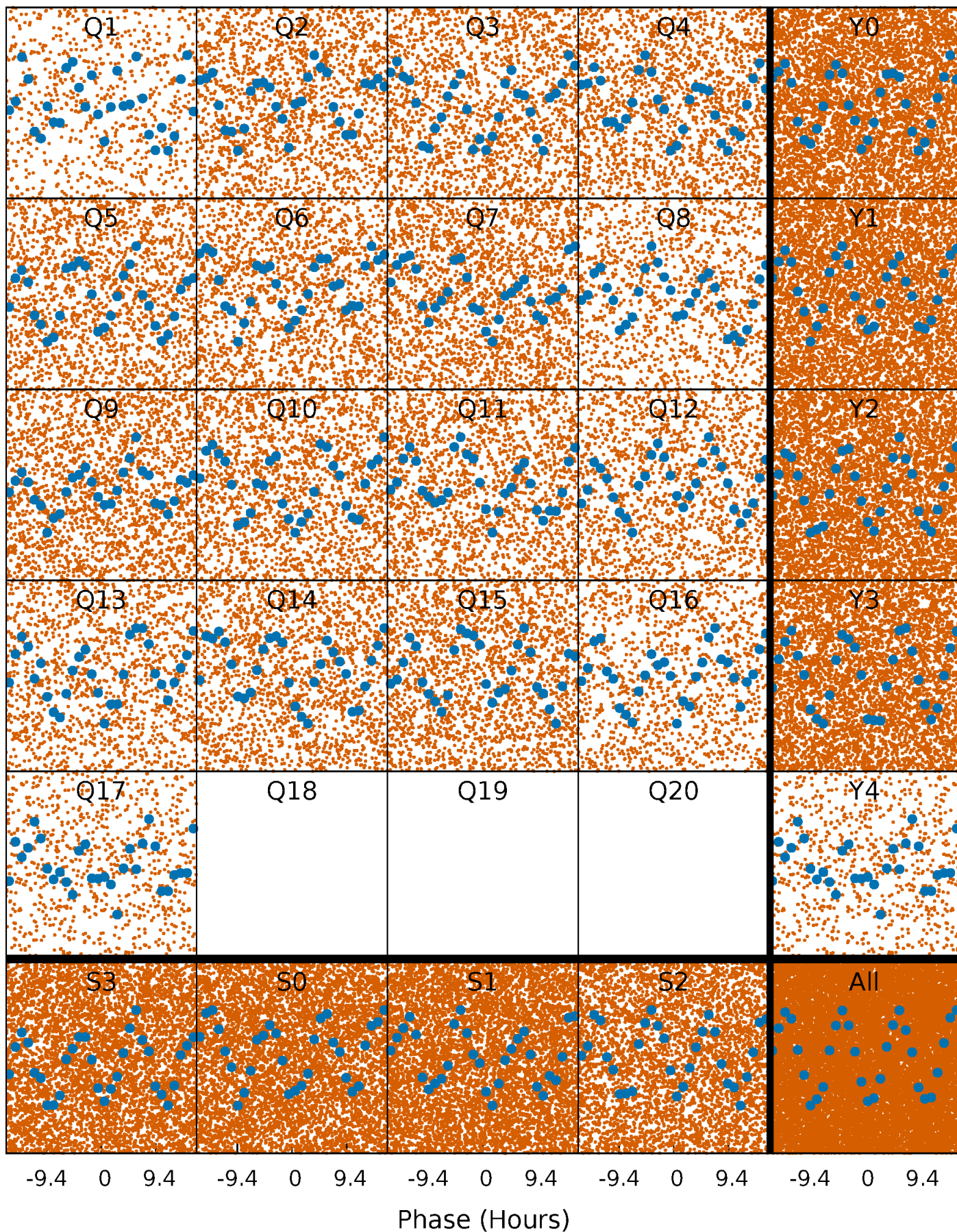


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



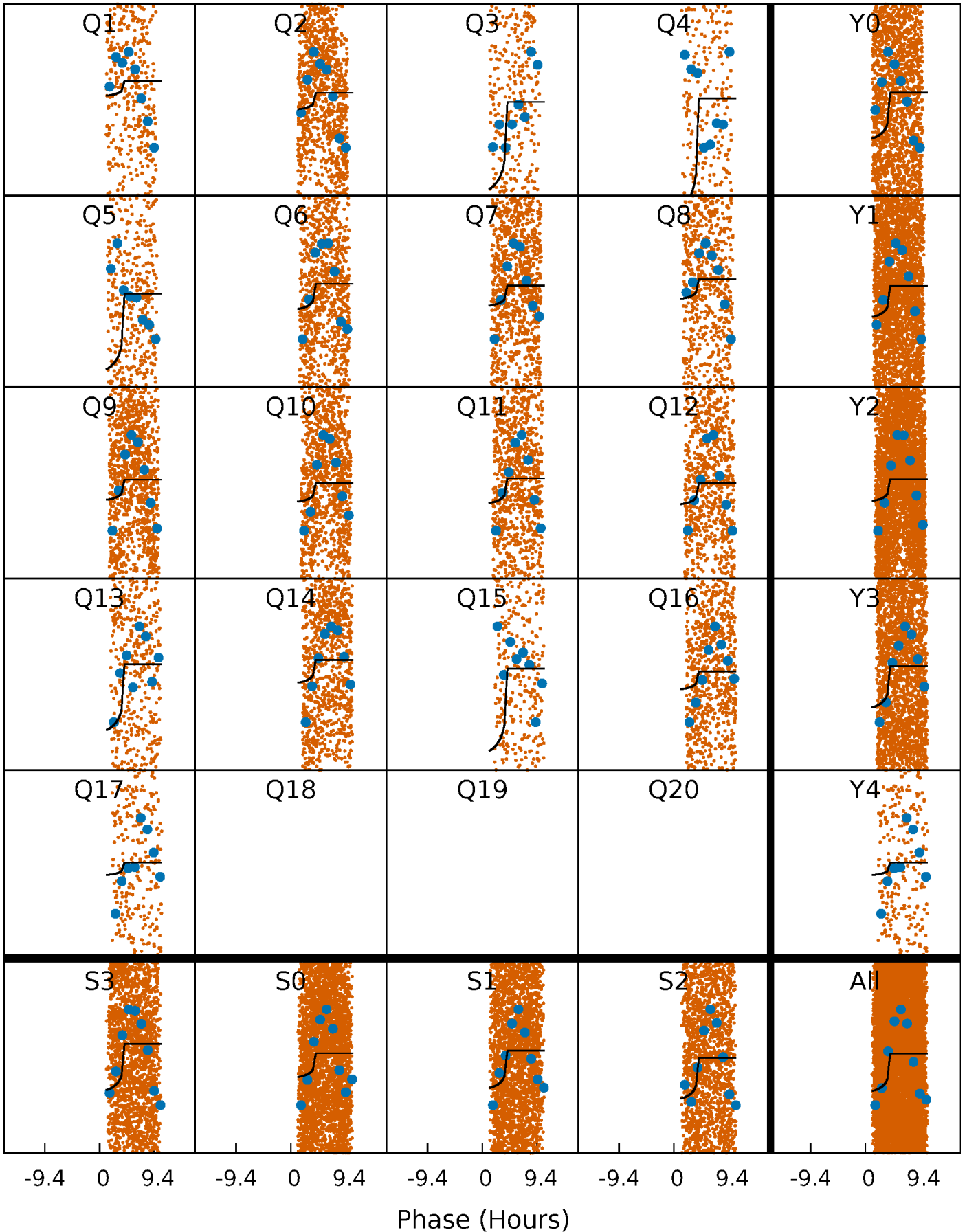
PDC Quarter-Phased Transit Curves

TCE 008771498-02 P= 1.212810 Days $T_0=131.775742$ (BKJD)



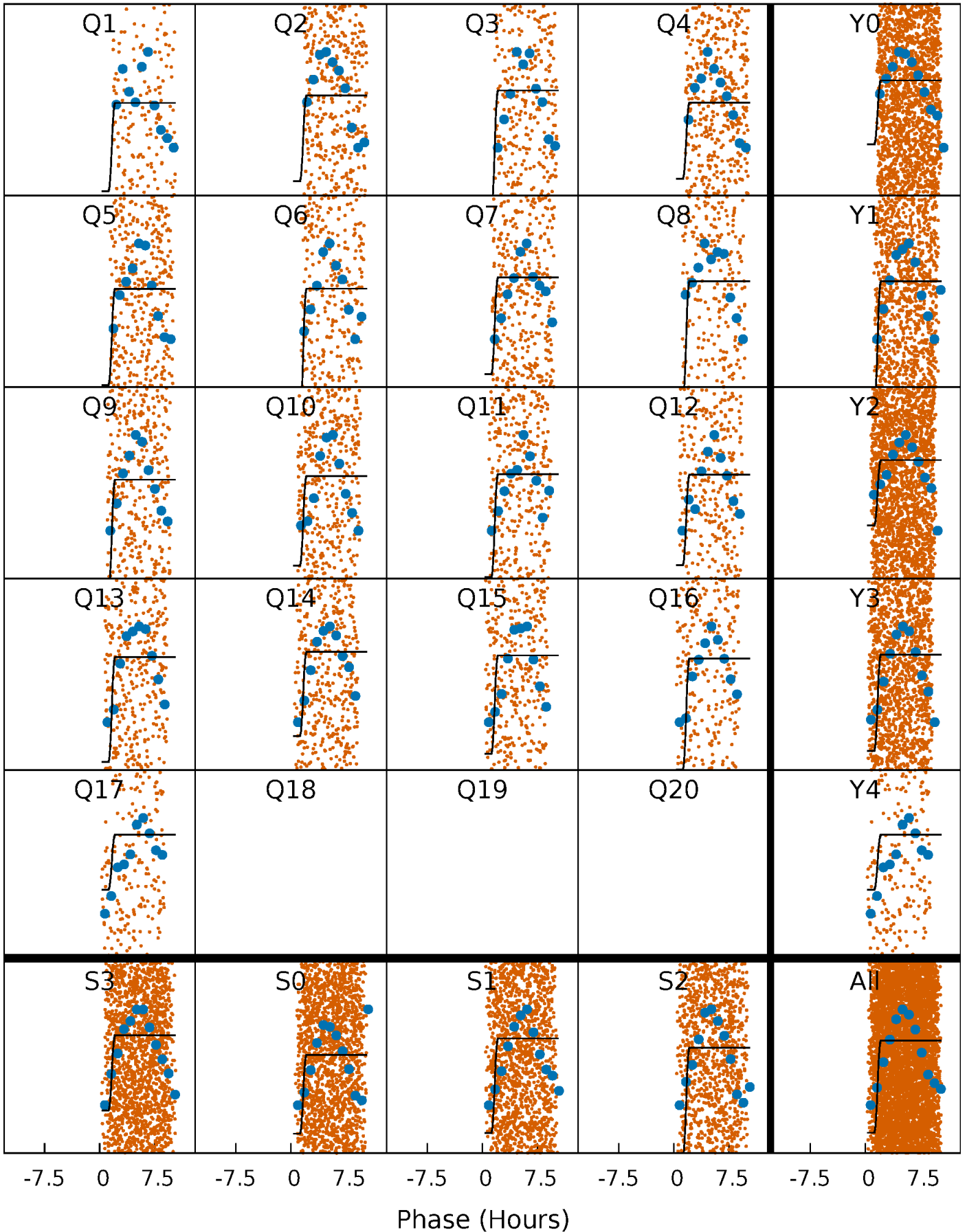
DV Quarter-Phased Transit Curves

TCE 008771498-02 $P = 1.212810$ Days $T_0 = 131.775742$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

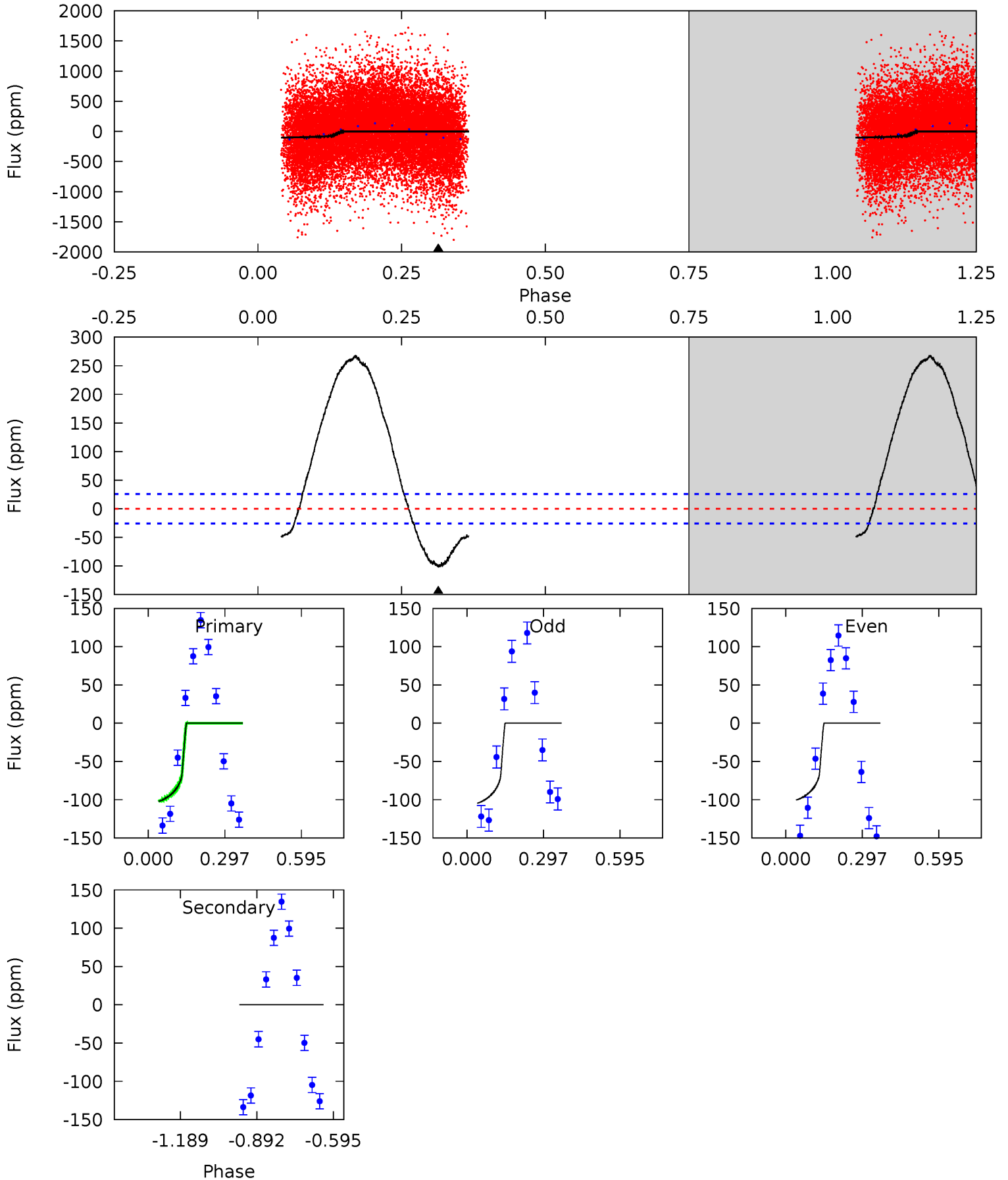
TCE 008771498-02 P= 1.212900 Days $T_0=131.746138$ (BKJD)



DV Model-Shift Uniqueness Test

008771498-02, P = 1.212810 Days, E = 131.775742 Days

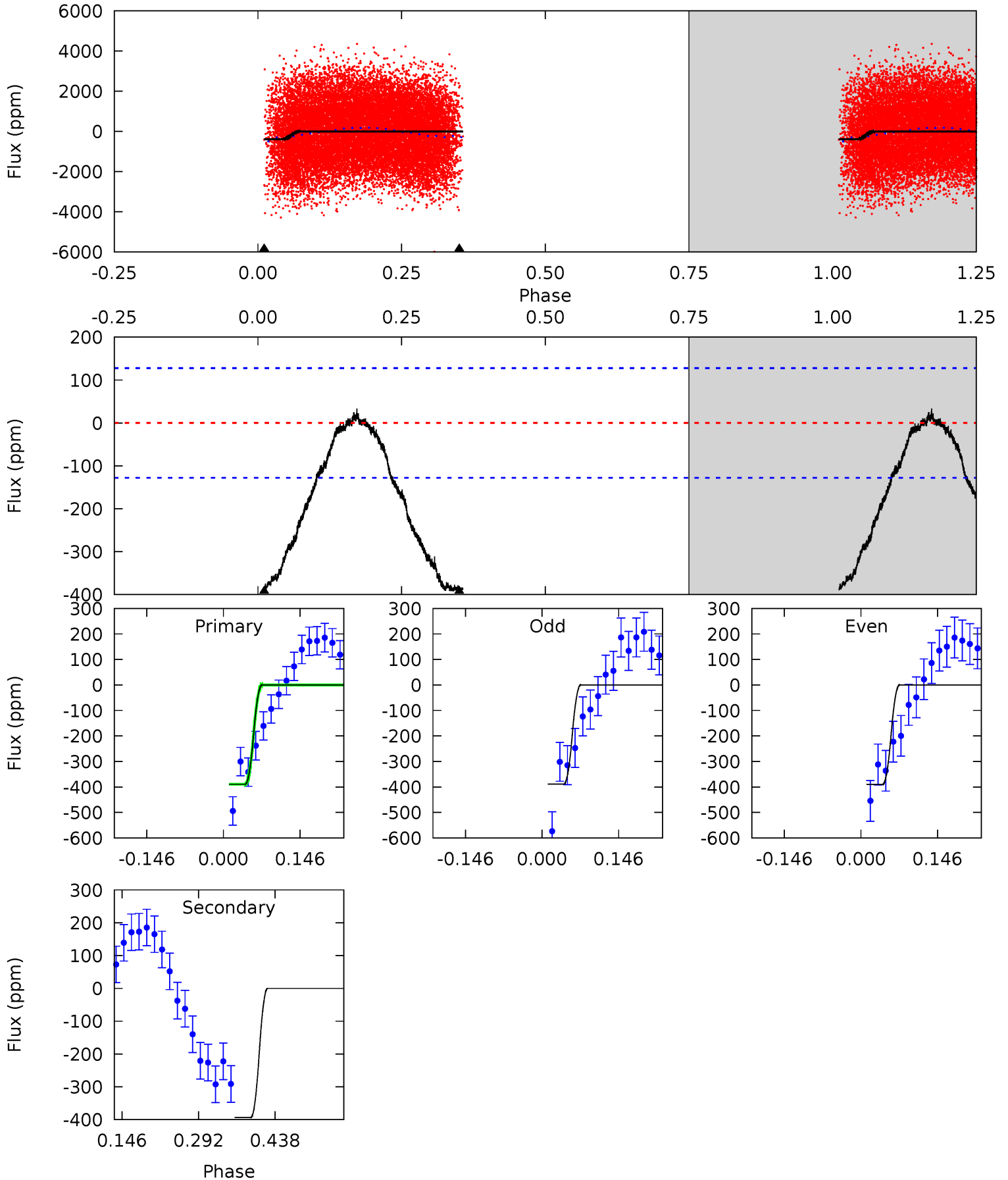
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.1	0	0	0	4.33	1.04	5.40	17.1	17.1	0	0	0.35	1.12	0.72	0



Alt Model-Shift Uniqueness Test

008771498-02, P = 1.212900 Days, E = 131.746138 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	13.8	0	0	4.48	1.45	0.43	13.7	13.7	13.8	13.8	0.02	0.94	0.08	0



Stellar Parameters For KIC 008771498

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6932^{+193}_{-303}	$4.252^{+0.087}_{-0.217}$	$0.070^{+0.200}_{-0.350}$	$1.480^{+0.511}_{-0.219}$	$1.428^{+0.213}_{-0.213}$	$0.620^{+0.254}_{-0.345}$
	+3%/-4%	+2%/-5%	+286%/-500%	+35%/-15%	+15%/-15%	+41%/-56%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 008771498-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 6	$1.74^{+1.25}_{-1.07}$	3320^{+262}_{-213}	-3262^{+6923}_{-925}	$-0.001^{+0.953}_{-0.962}$
Alt.	-393 ± 28	$3.86^{+1.45}_{-1.44}$	3339^{+283}_{-198}	6344^{+1793}_{-929}	$8.999^{+13.861}_{-4.297}$

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 $A_{obs} \gg 1.0$

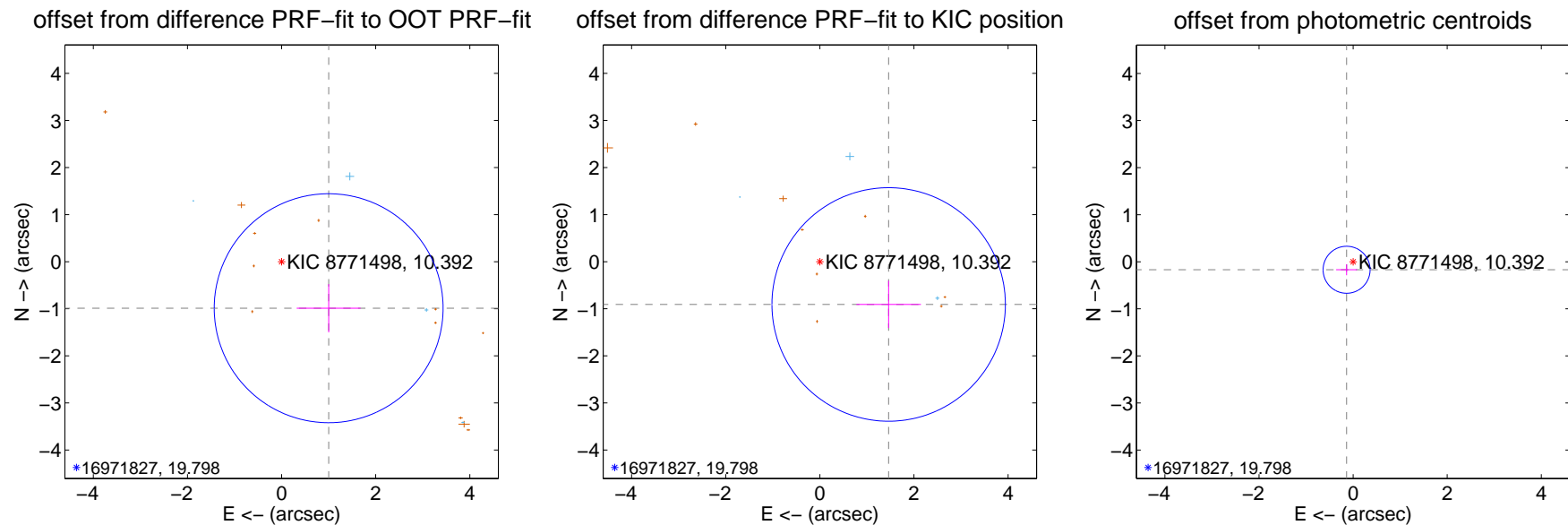
DV Centroid Data

Supplemental centroid analysis for 008771498-02. **Kepler magnitude: 10.39.** Transit SNR 11.41

There are 4 quarters with good PRF difference image offsets

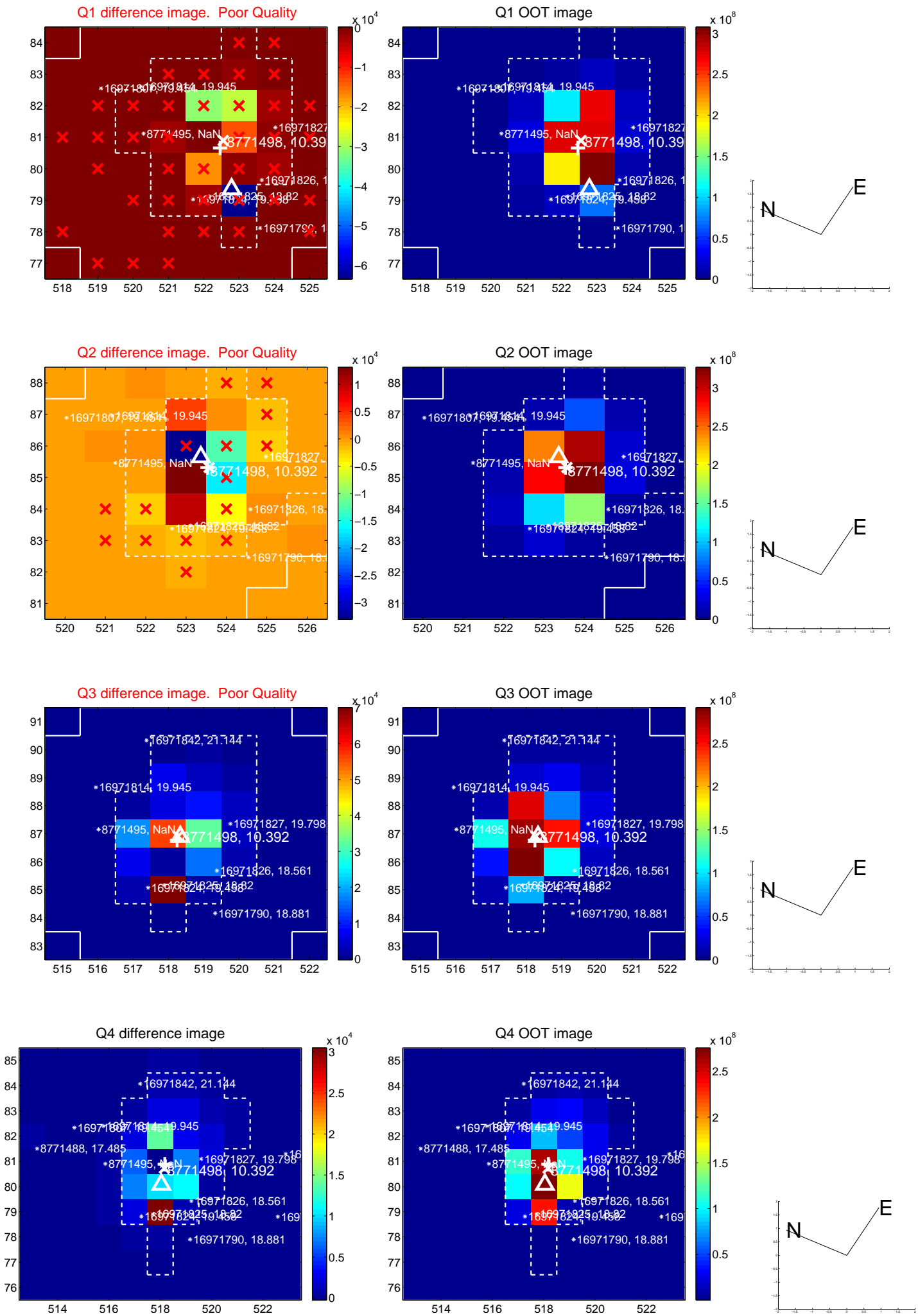
The direct PRF centroid is offset from the target star catalog position by about 1.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.406 ± 0.811	1.73	-1.000 ± 0.679	-0.988 ± 0.513
PRF-fit source offset from KIC position	1.721 ± 0.827	2.08	-1.462 ± 0.686	-0.908 ± 0.501
photometric centroid source offset	0.22 ± 0.17	1.32	0.14 ± 0.22	-0.17 ± 0.12

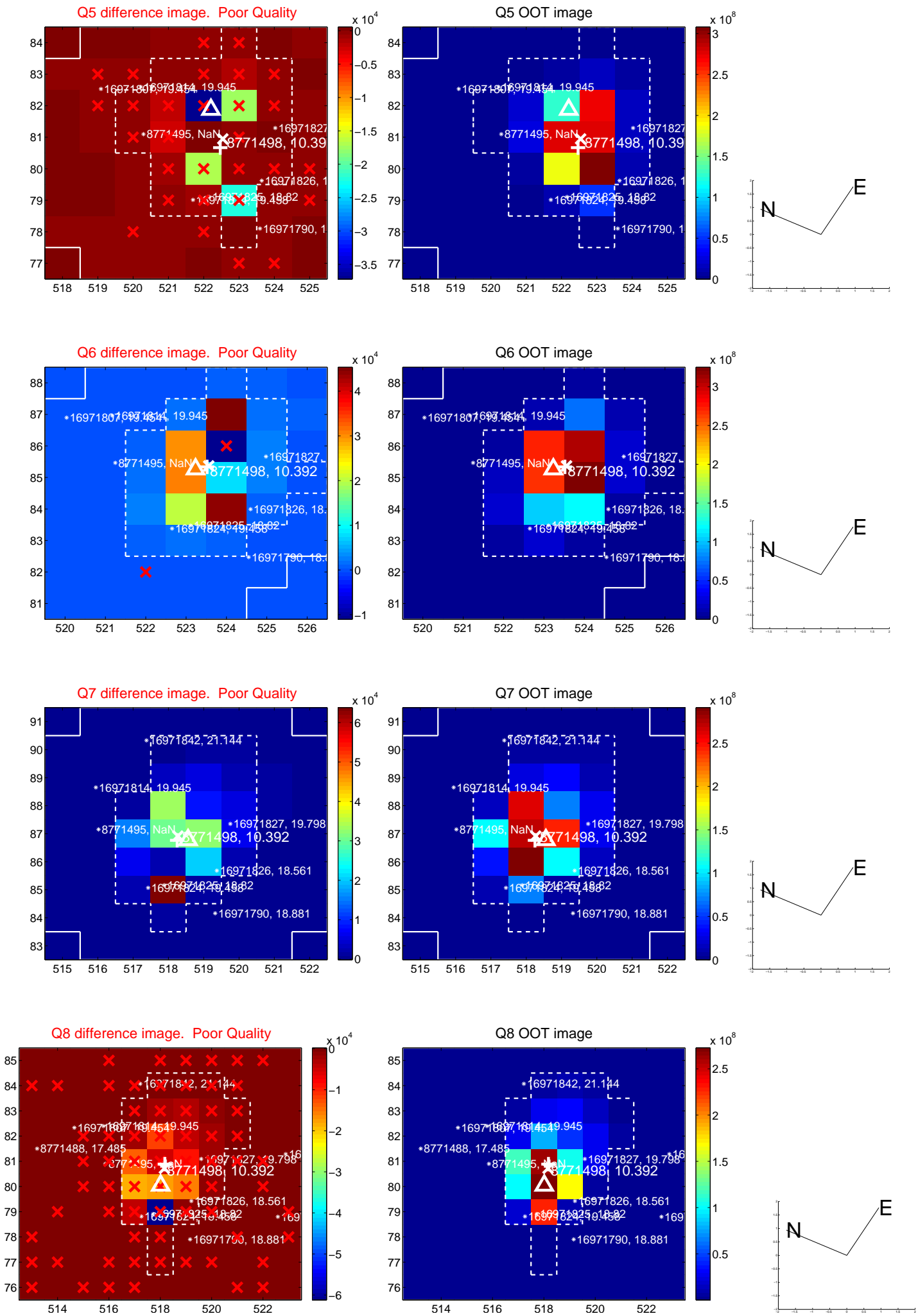


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

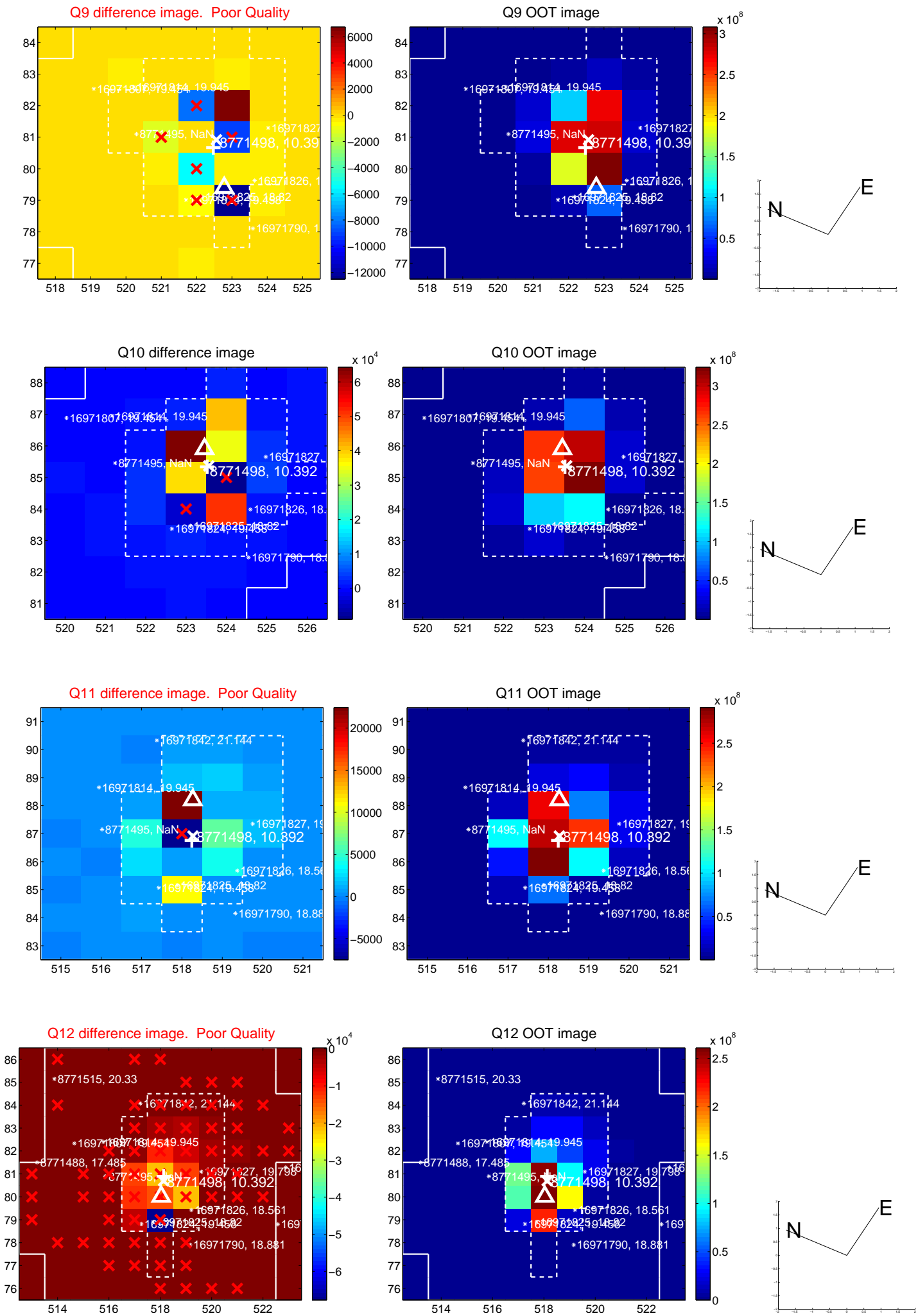
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



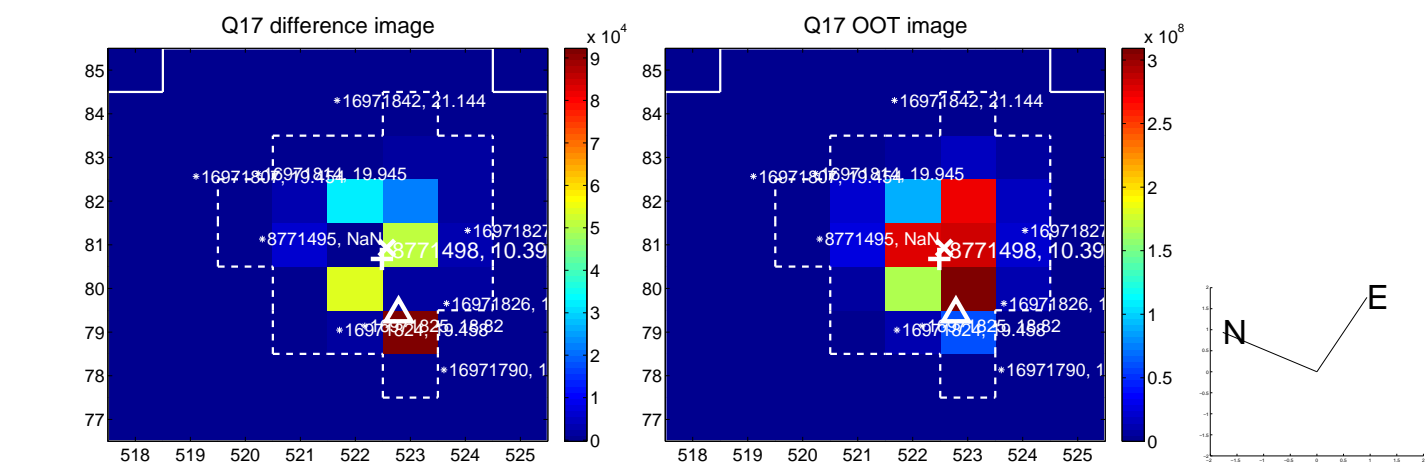
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



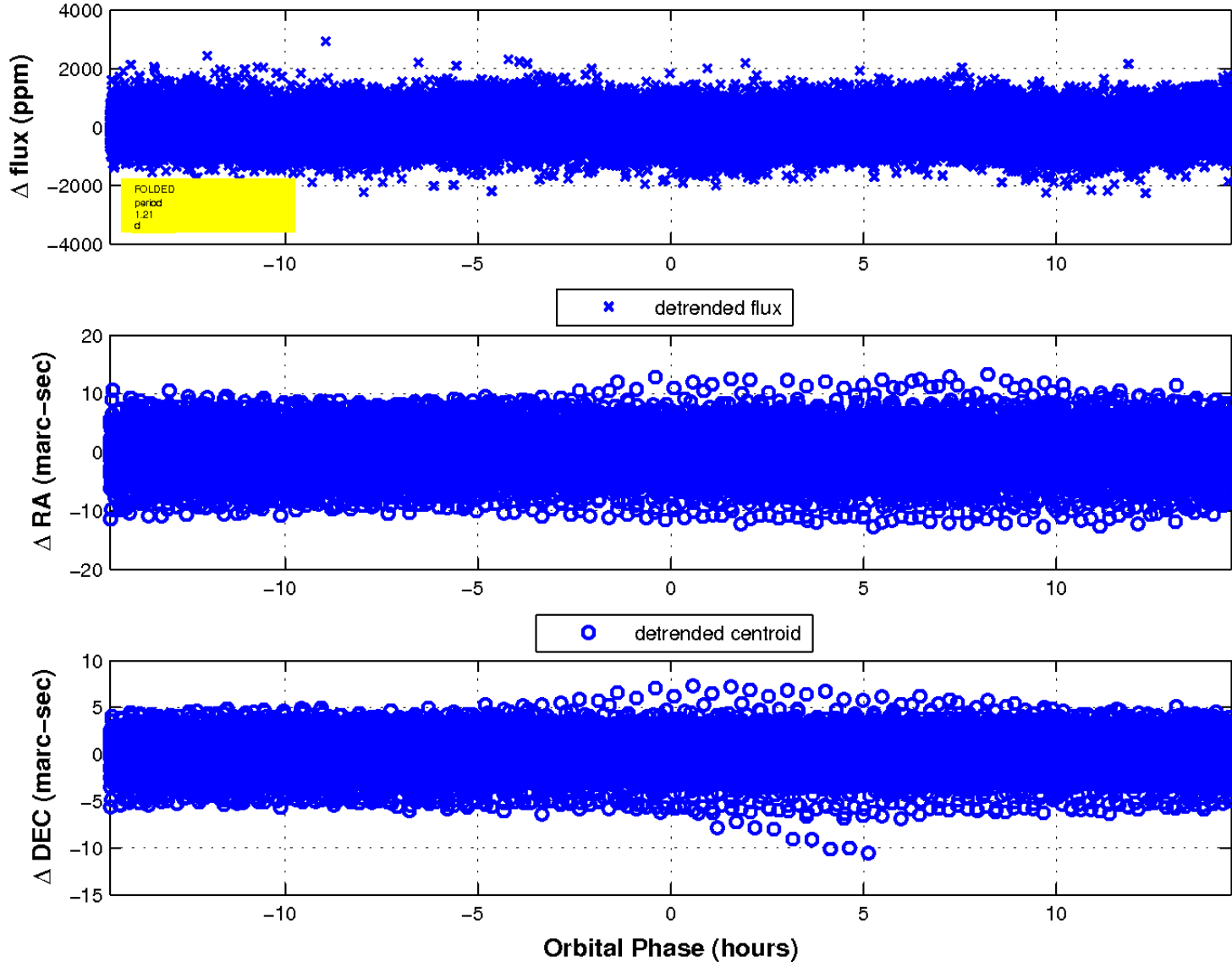
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

