

KIC 001431794

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})
001431794-01	OBS	No	1.251191	131.756326	148.7	8.854	15.1	17.1	2.35	7329	3.60	19734.69
001431794-02	OBS	No	0.515958	131.614119	399.1	1.500	17.4	-1.0	2.35	7329	4.74	64294.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001431794-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
001431794-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

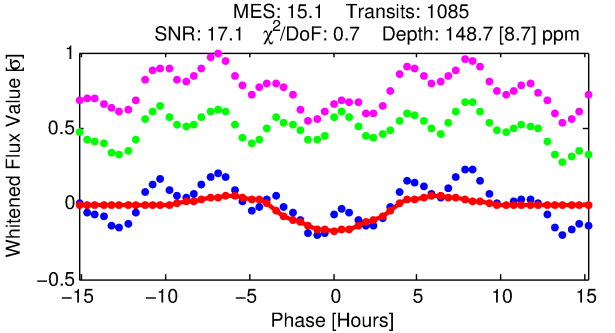
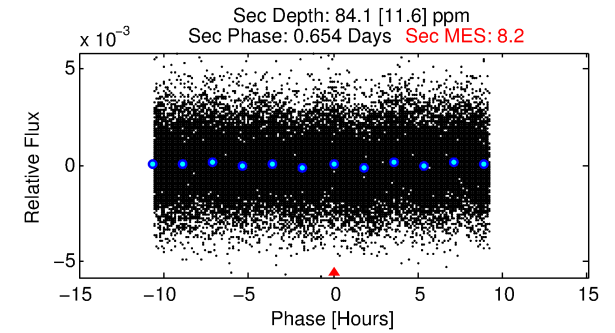
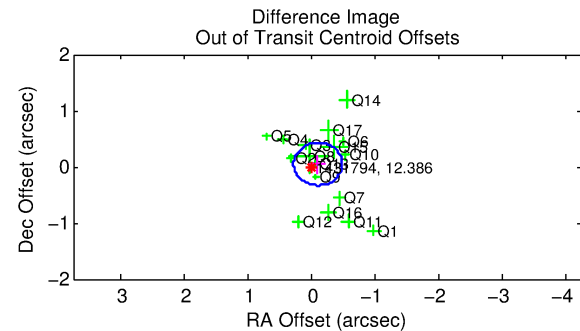
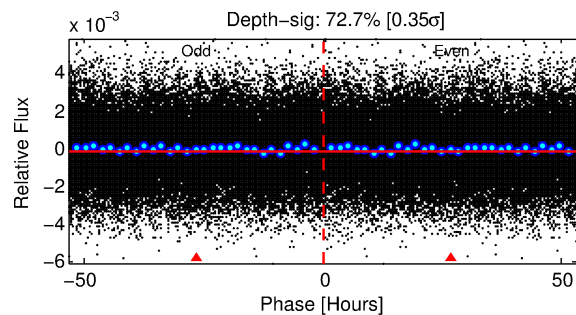
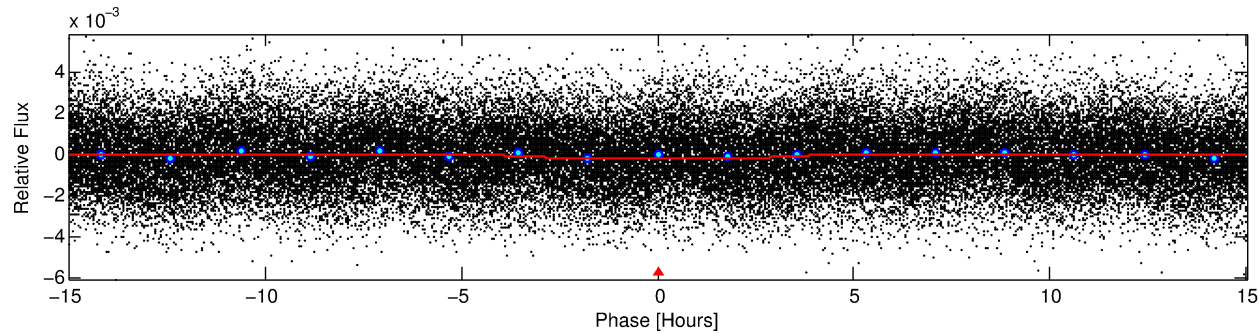
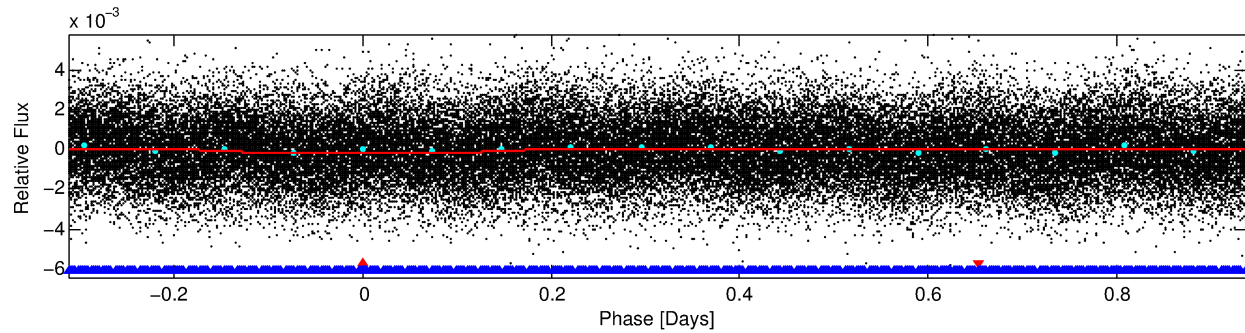
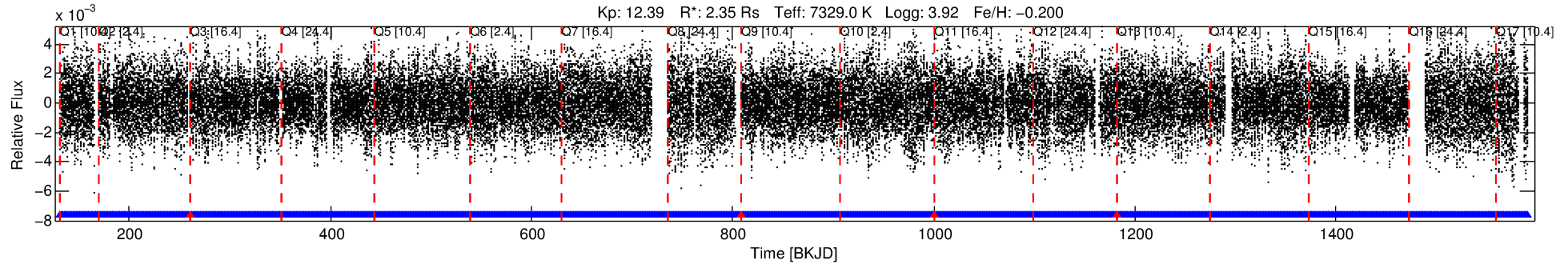
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001431794-01

No Significant Match Found

DV One-Page Summary

KIC: 1431794 Candidate: 1 of 2 Period: 1.251 d



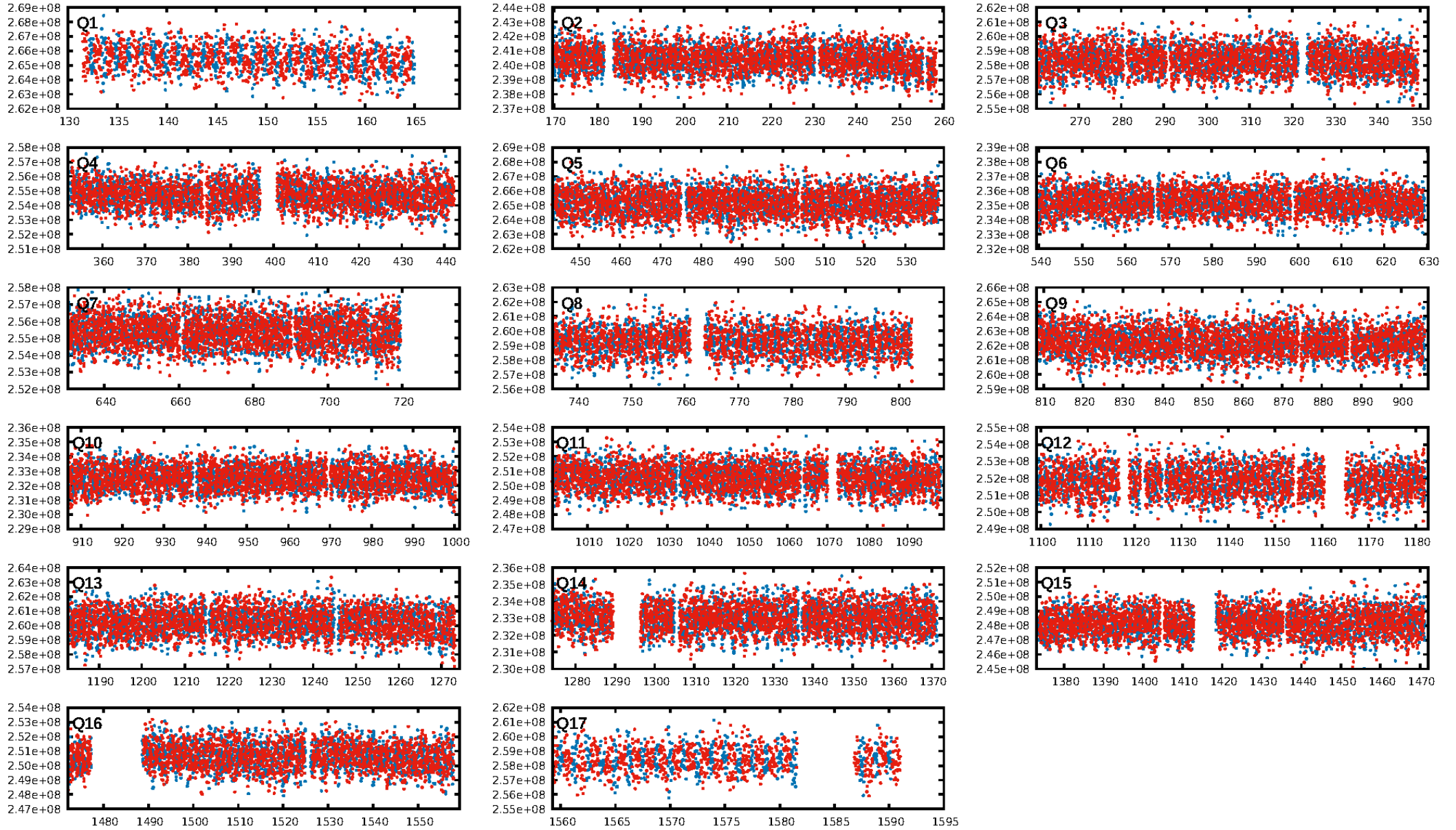
DV Fit Results:

Period = 1.25119 [0.00001] d
Epoch = 131.7563 [0.0075] BKJD
Rp/R* = 0.0141 [0.0006]
a/R* = 1.04 [0.01]
b = 0.96 [0.01]
Seff = 19734.69 [10777.84]
Teq = 3022 [413] K
Rp = 3.60 [1.30] Re
a = 0.0269 [0.0089] AU
Ag = 2.58 [1.40] [1.13 σ]
Teffp = 5920 [342] K [5.40 σ]

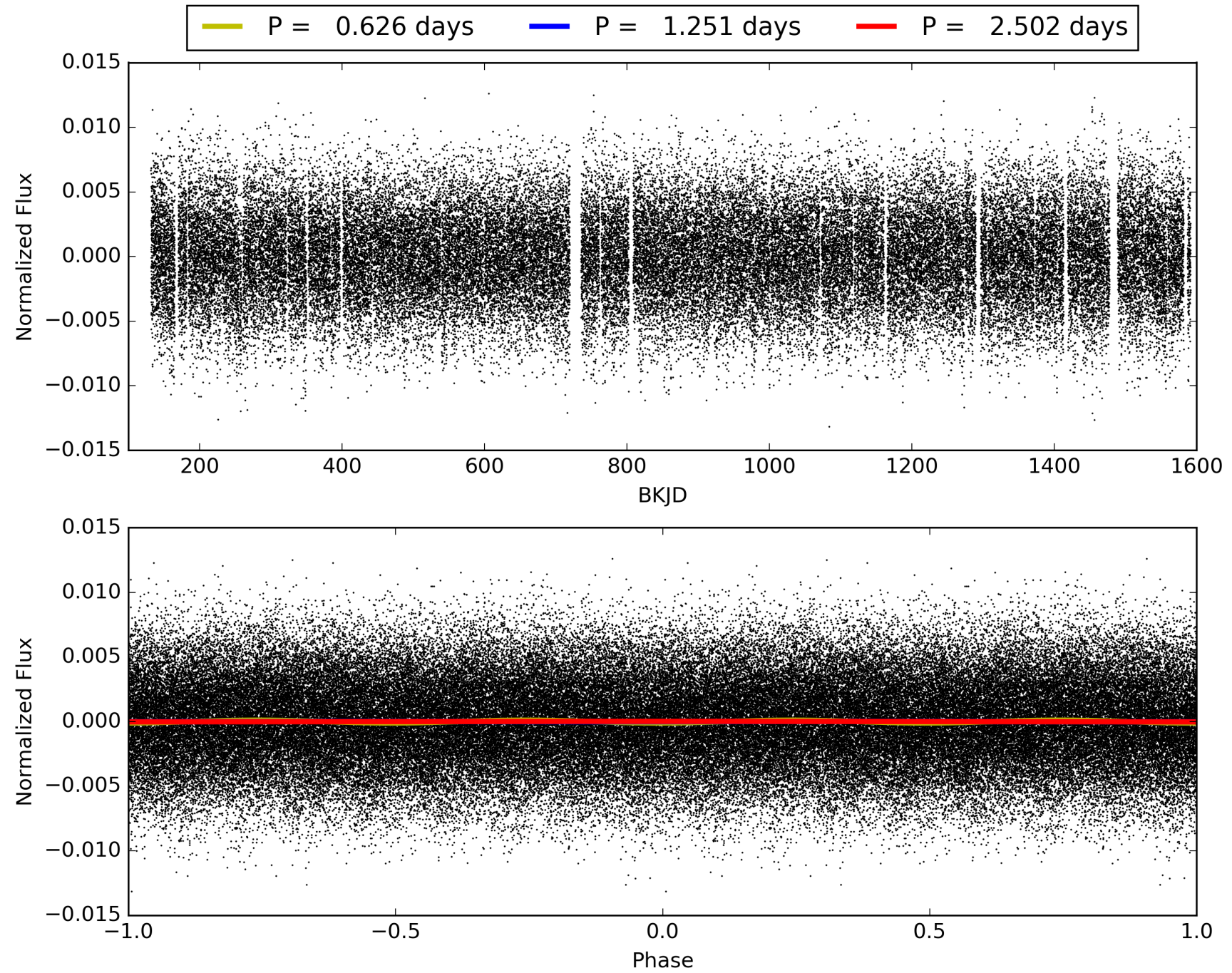
DV Diagnostic Results:

ShortPeriod-sig: 95.1% [1.96 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1032/1036]
GhostDiagnostic-chr: 1.405
Centroid-sig: 48.5%
Centroid-so: 0.141 arcsec [1.22 σ]
OotOffset-rm: 0.107 arcsec [0.84 σ]
KicOffset-rm: 0.098 arcsec [0.73 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

TCE 001431794-01, PDC Light Curves

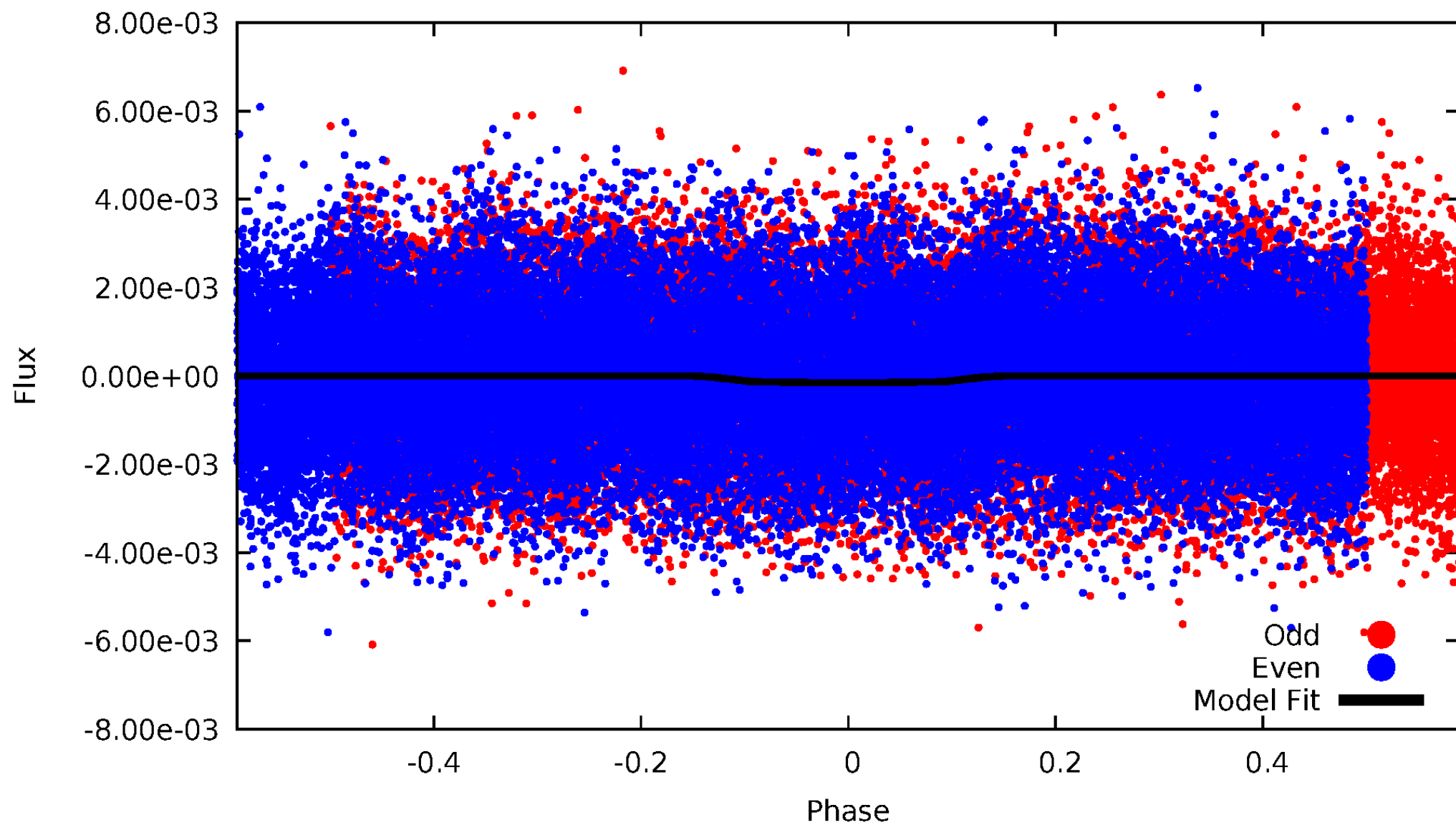


TCE 001431794-01



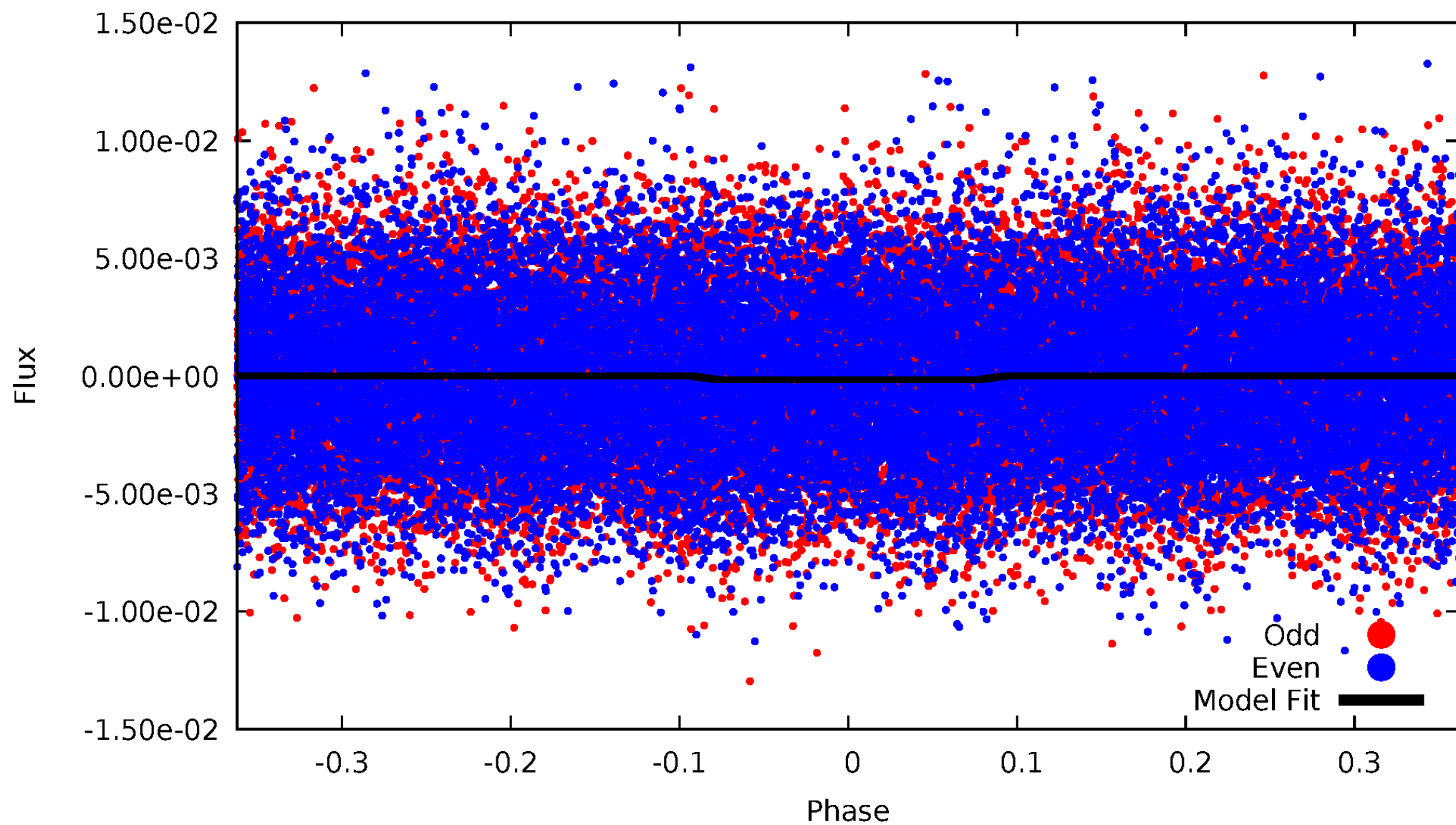
DV Odd/Even

TCE 001431794-01



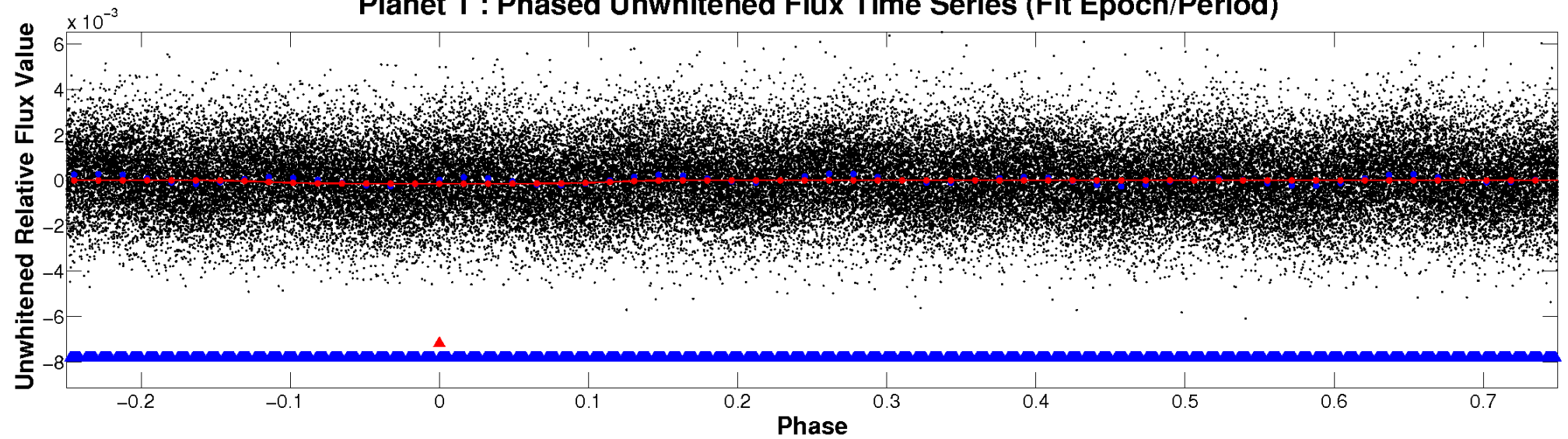
ALT Odd/Even

TCE 001431794-01

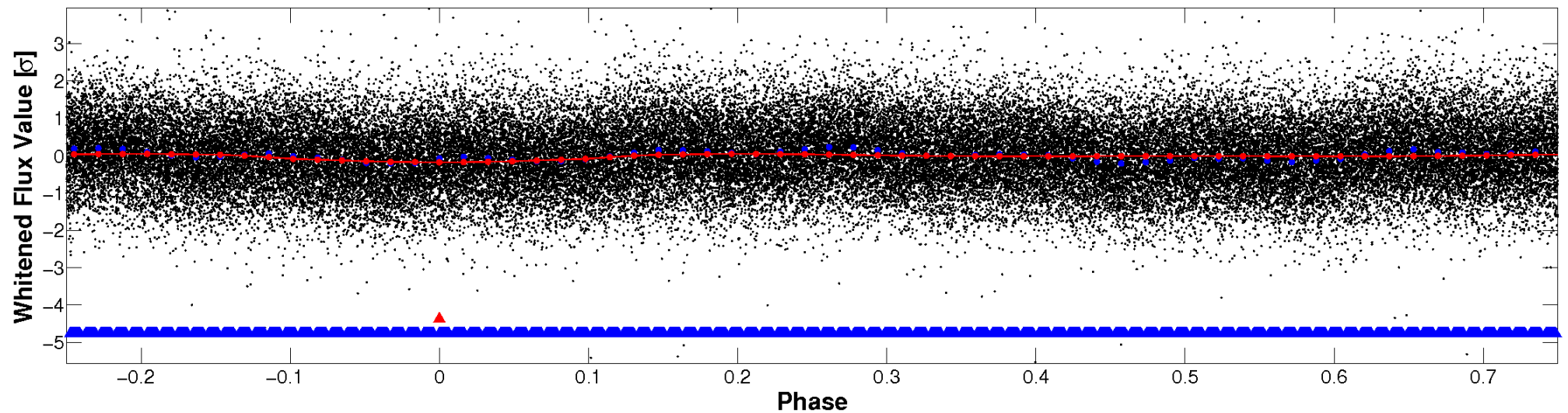


Non-Whitened Vs. Whitened Light Curve

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

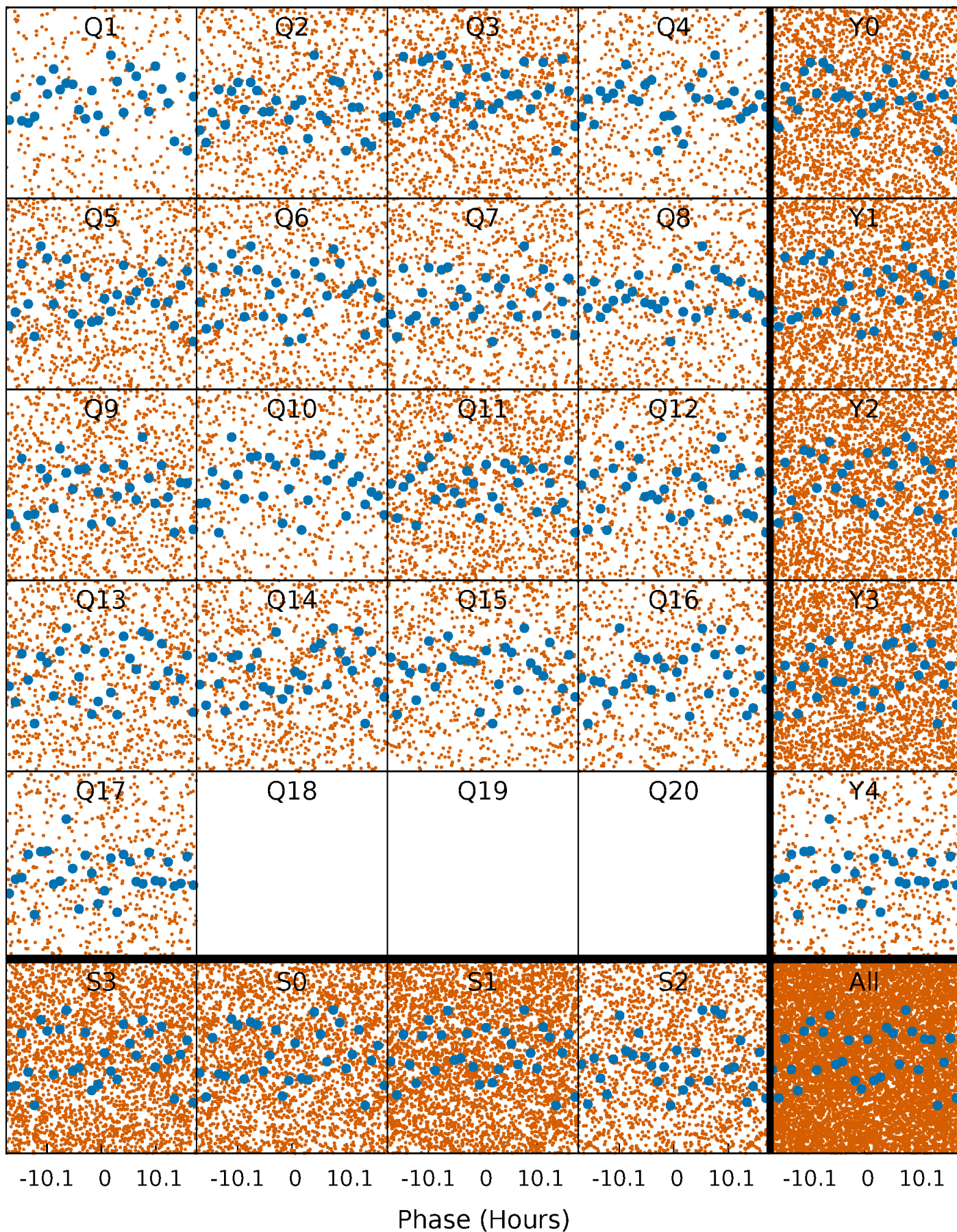


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



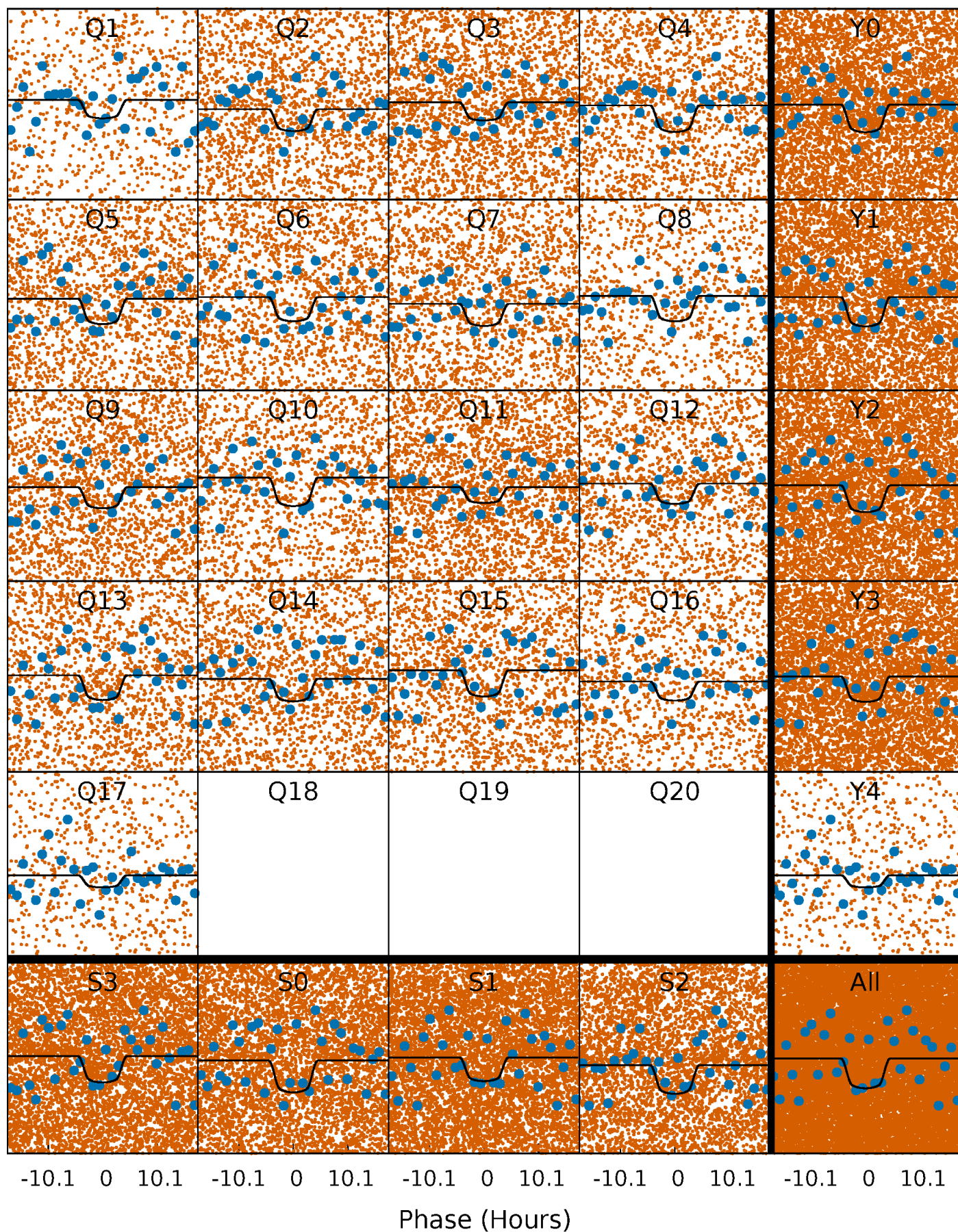
PDC Quarter-Phased Transit Curves

TCE 001431794-01 P= 1.251191 Days $T_0=131.756326$ (BKJD)



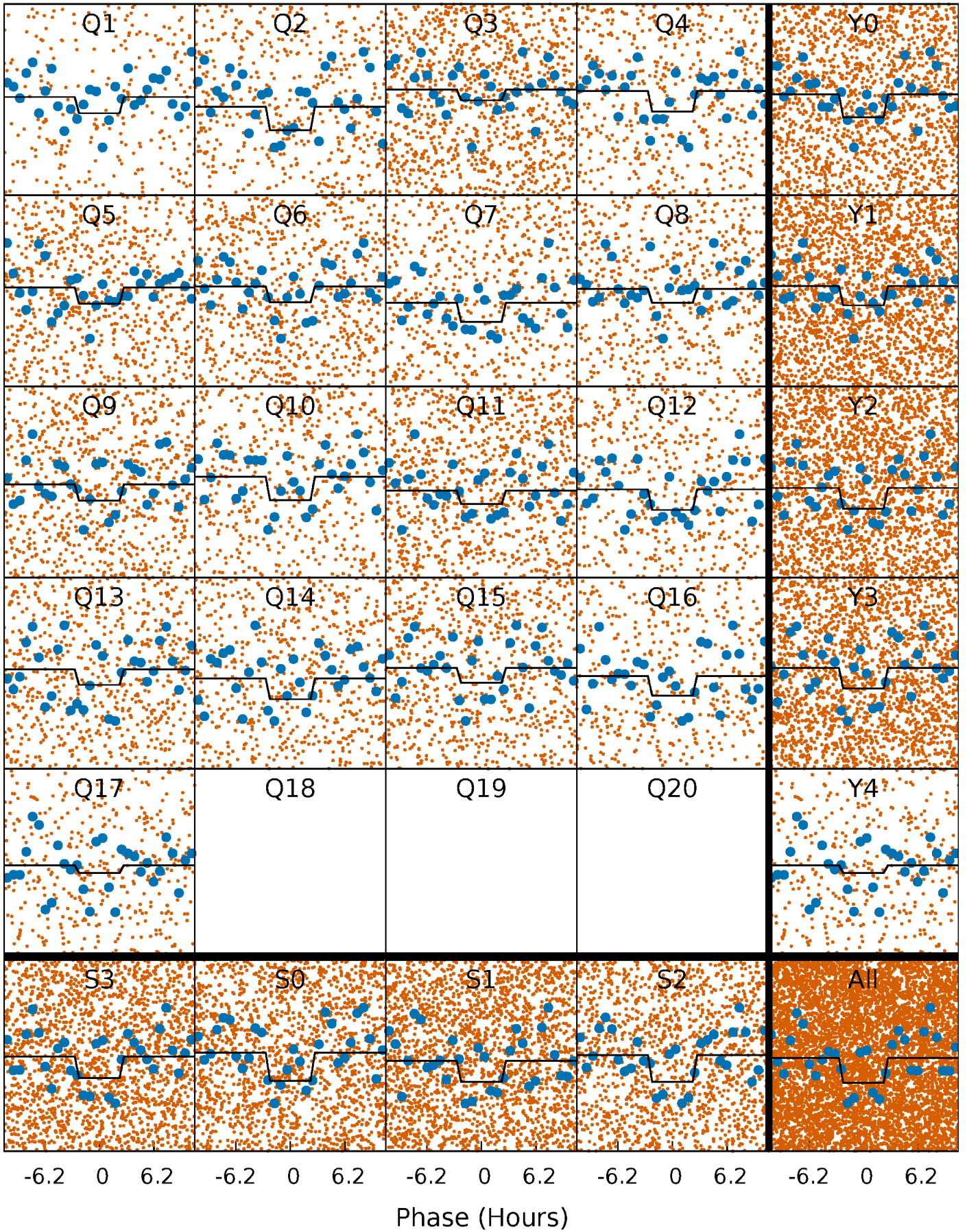
DV Quarter-Phased Transit Curves

TCE 001431794-01 P= 1.251191 Days $T_0=131.756326$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

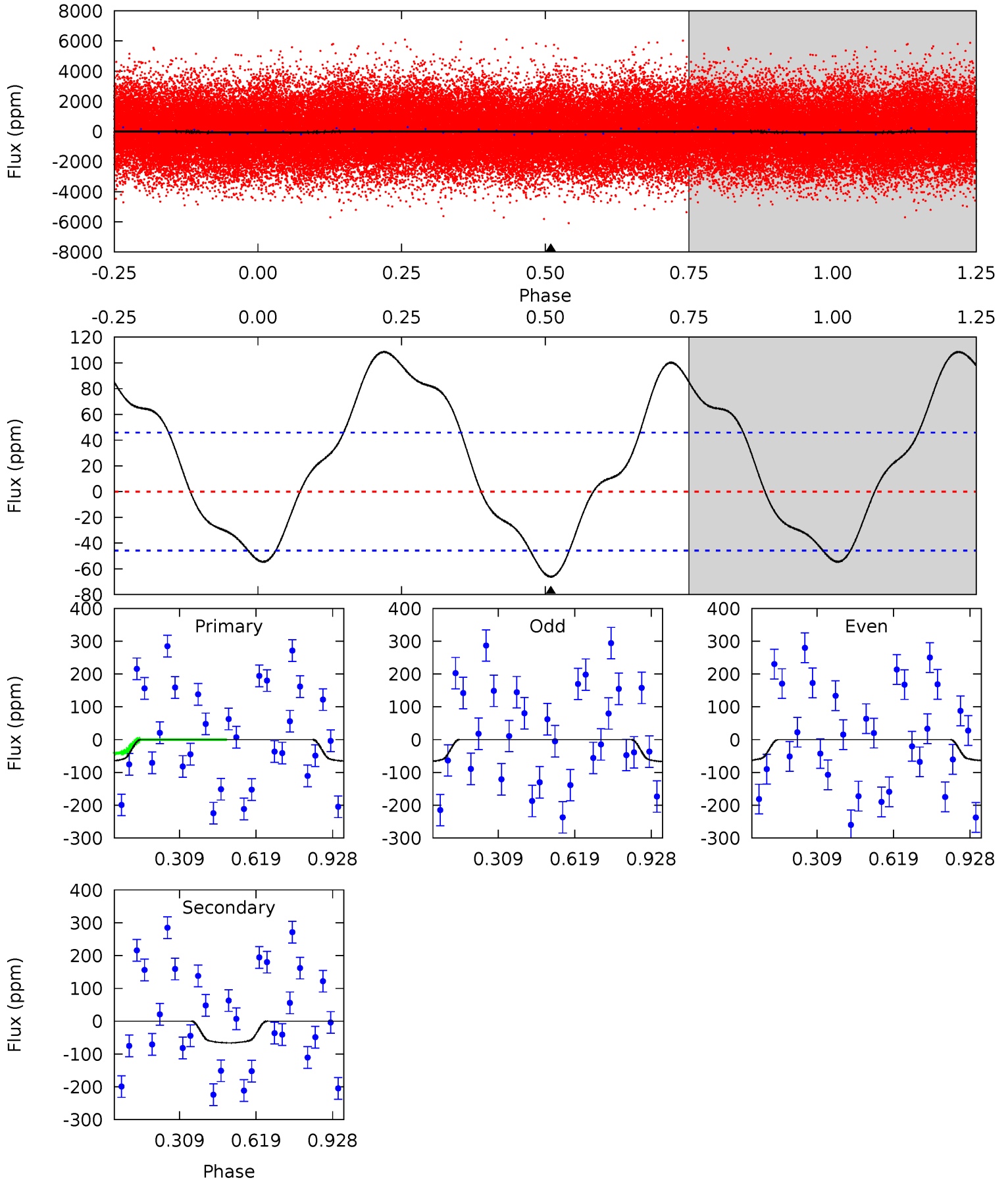
TCE 001431794-01 P= 1.251255 Days $T_0=131.738099$ (BKJD)



DV Model-Shift Uniqueness Test

001431794-01, P = 1.251191 Days, E = 130.505135 Days

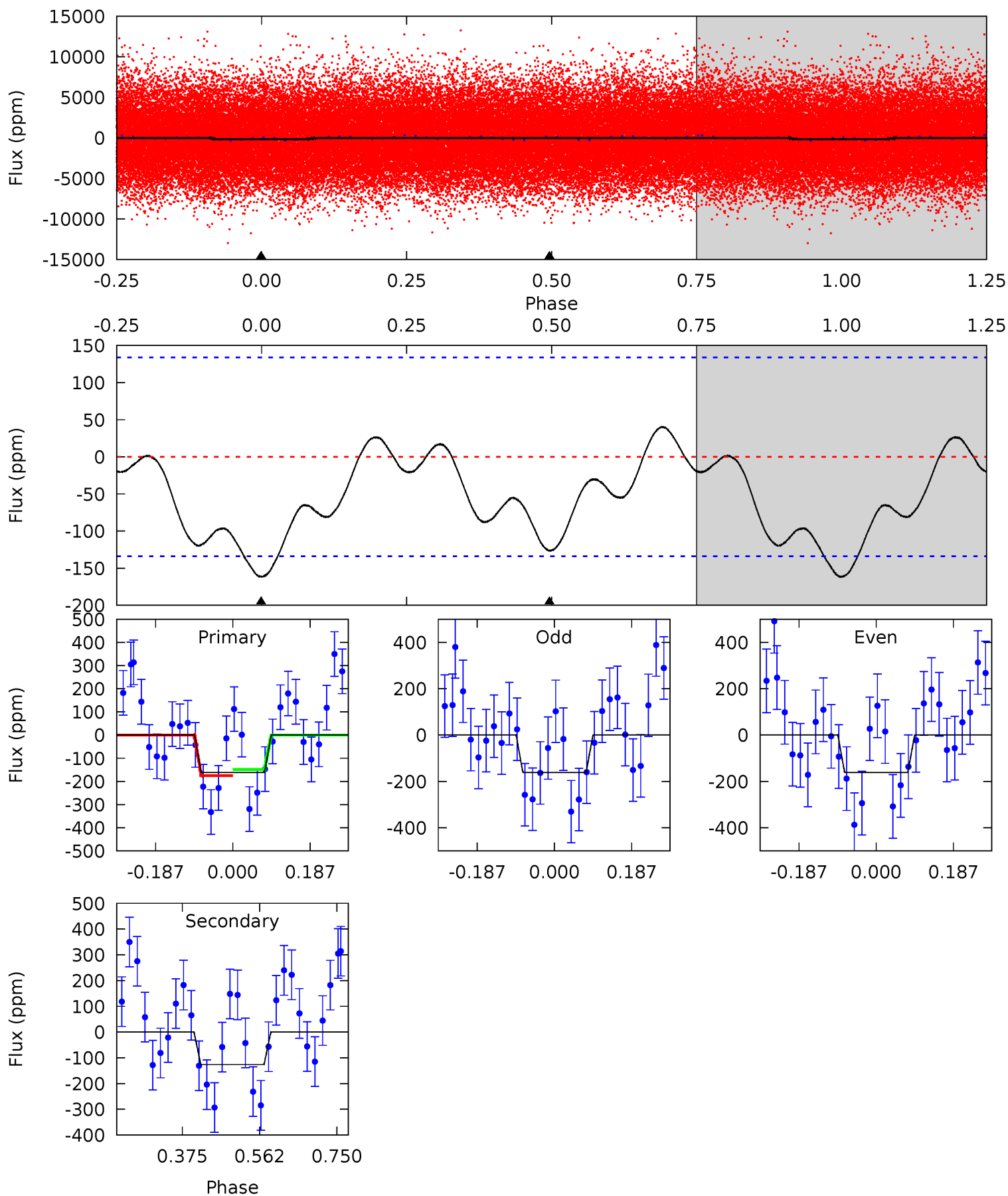
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.23	6.23	0	0	4.32	1.02	4.04	6.23	6.23	6.23	6.23	0.16	0.67	0.62	2.16



Alt Model-Shift Uniqueness Test

001431794-01, P = 1.251255 Days, E = 130.486844 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.35	4.18	0	0	4.43	1.32	0.61	5.35	5.35	4.18	4.18	0.01	1.29	0.20	0.43



Stellar Parameters For KIC 001431794

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7329^{+230}_{-307}	$3.915^{+0.301}_{-0.129}$	$-0.200^{+0.250}_{-0.350}$	$2.349^{+0.490}_{-0.839}$	$1.651^{+0.183}_{-0.366}$	$0.179^{+0.394}_{-0.070}$
	+3%/-4%	+8%/-3%	+125%/-175%	+21%/-36%	+11%/-22%	+220%/-39%
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 001431794-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-66 ± 11	$3.50^{+0.51}_{-0.70}$	4151^{+307}_{-386}	5340^{+300}_{-298}	$2.168^{+1.048}_{-0.611}$
Alt.	-126 ± 30	$3.15^{+0.47}_{-0.62}$	4161^{+293}_{-401}	6741^{+566}_{-531}	$5.245^{+2.458}_{-1.722}$

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

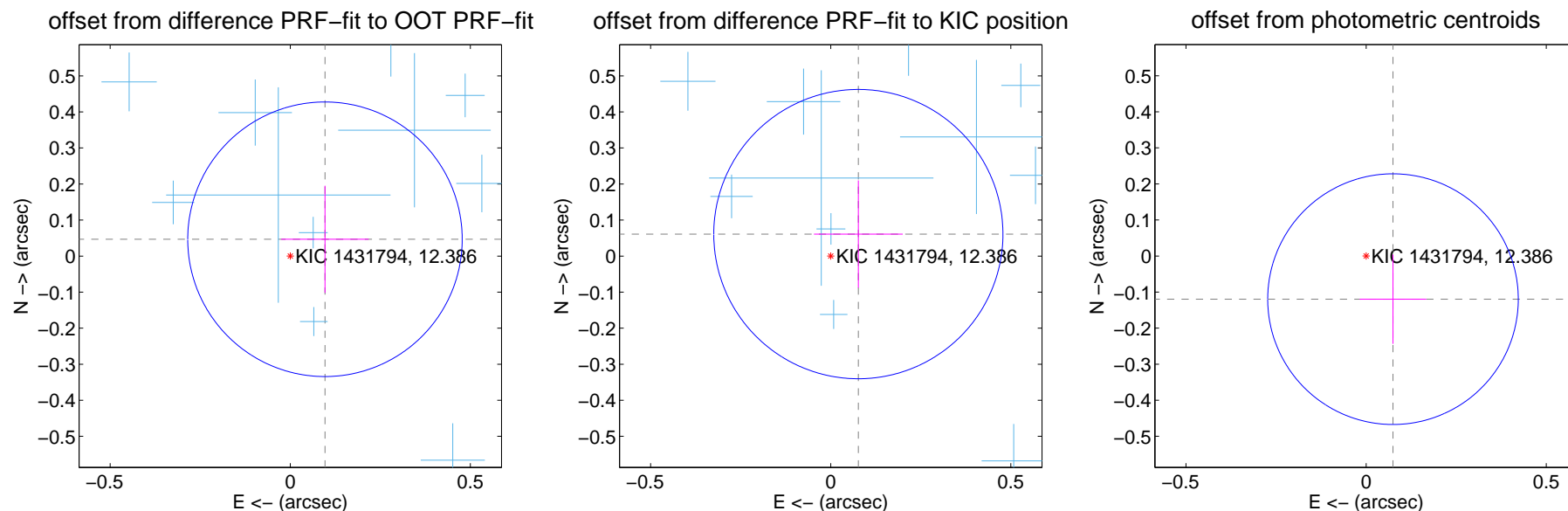
DV Centroid Data

Supplemental centroid analysis for 001431794-01. Kepler magnitude: 12.39. Transit SNR 17.13

There are 17 quarters with good PRF difference image offsets

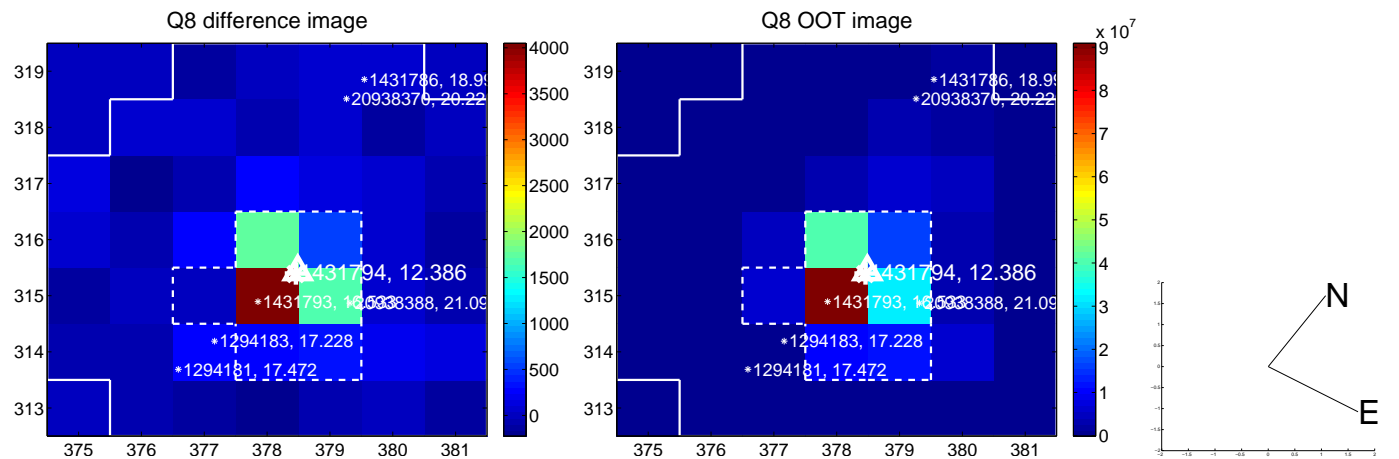
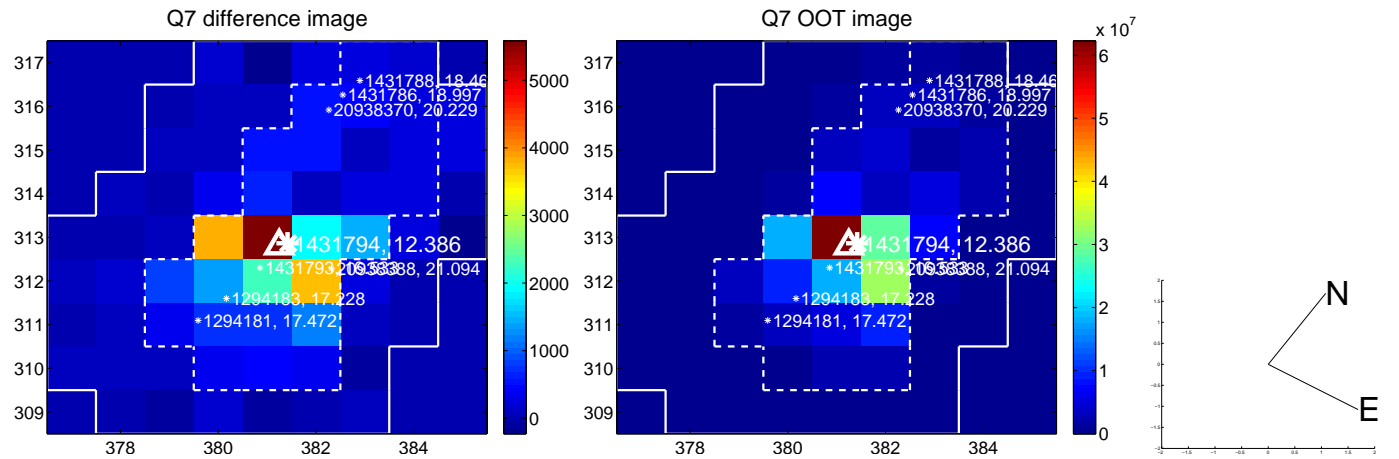
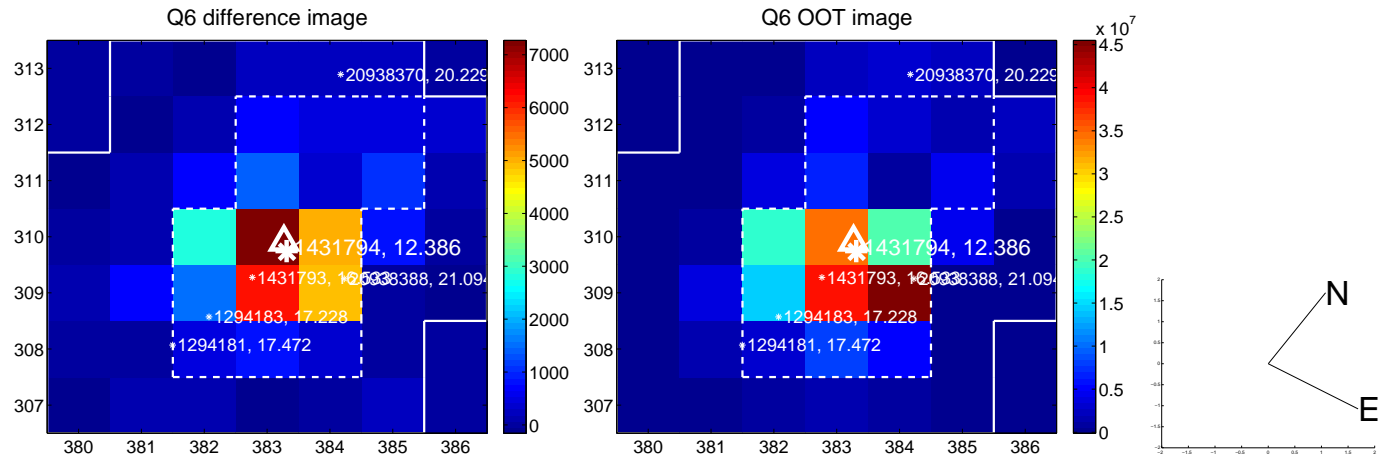
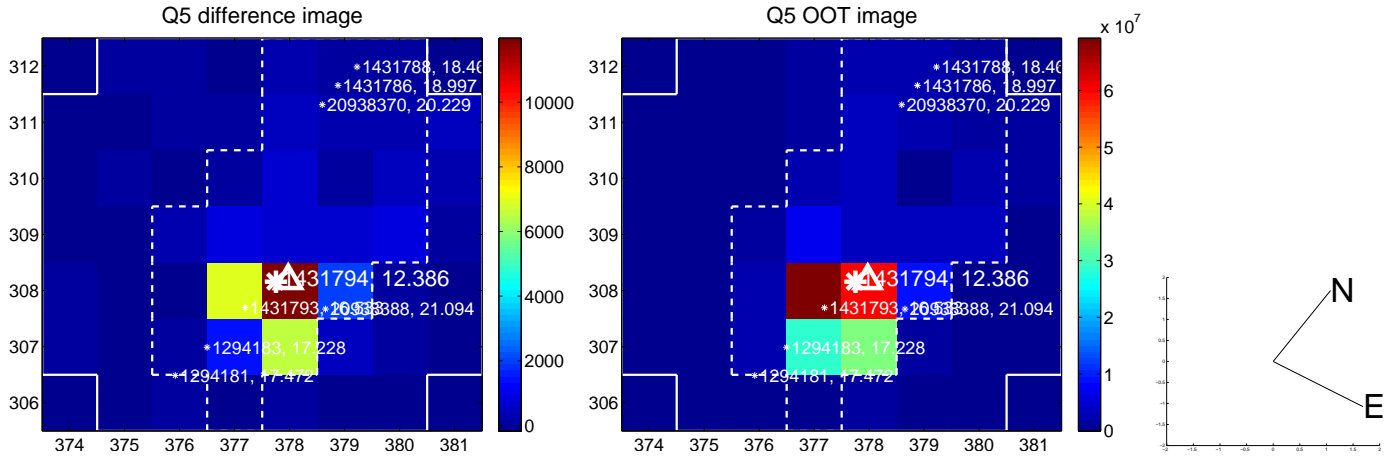
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.107 ± 0.127	0.84	-0.096 ± 0.121	0.047 ± 0.149
PRF-fit source offset from KIC position	0.098 ± 0.134	0.73	-0.077 ± 0.123	0.061 ± 0.149
photometric centroid source offset	0.14 ± 0.12	1.22	-0.07 ± 0.09	-0.12 ± 0.12

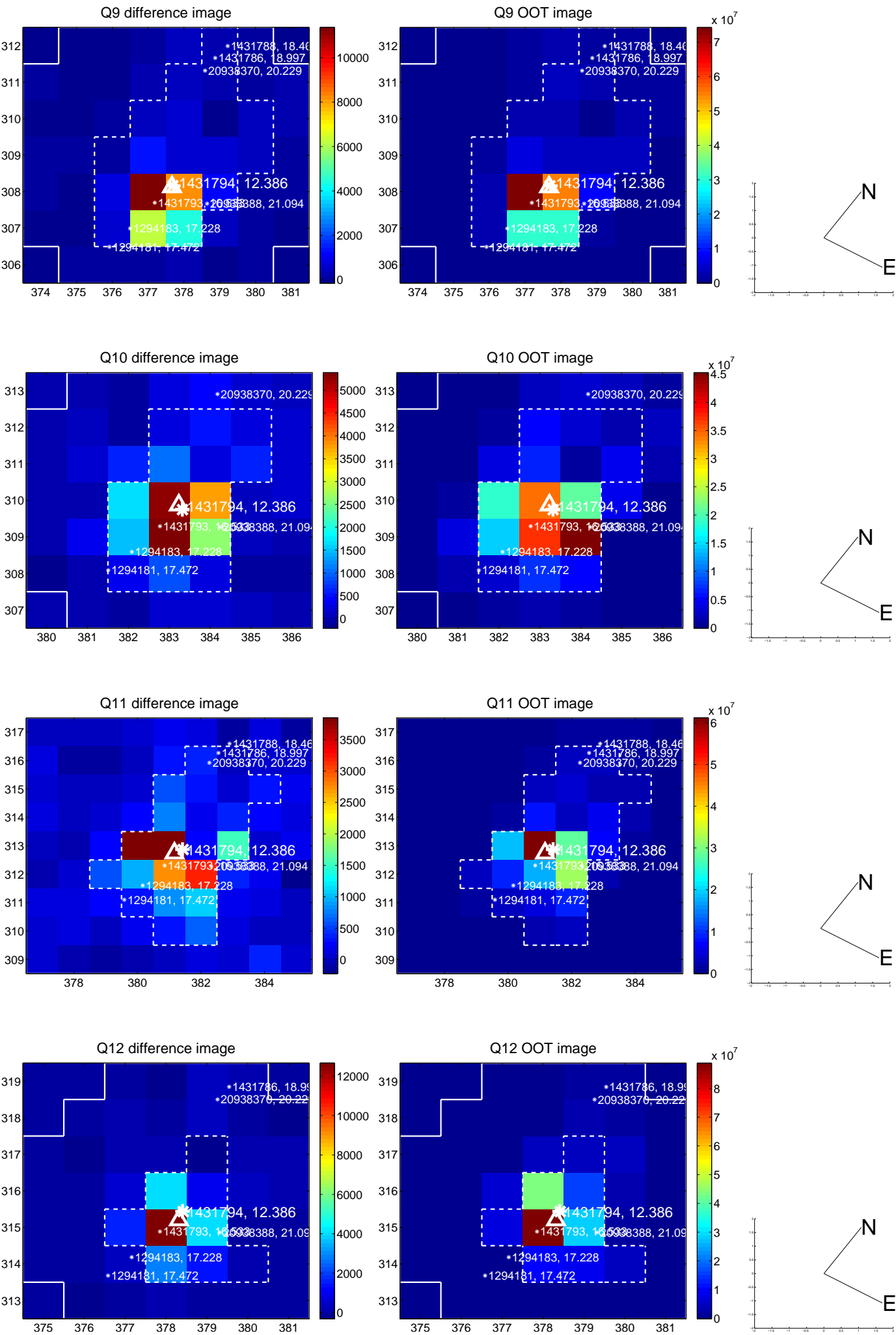


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

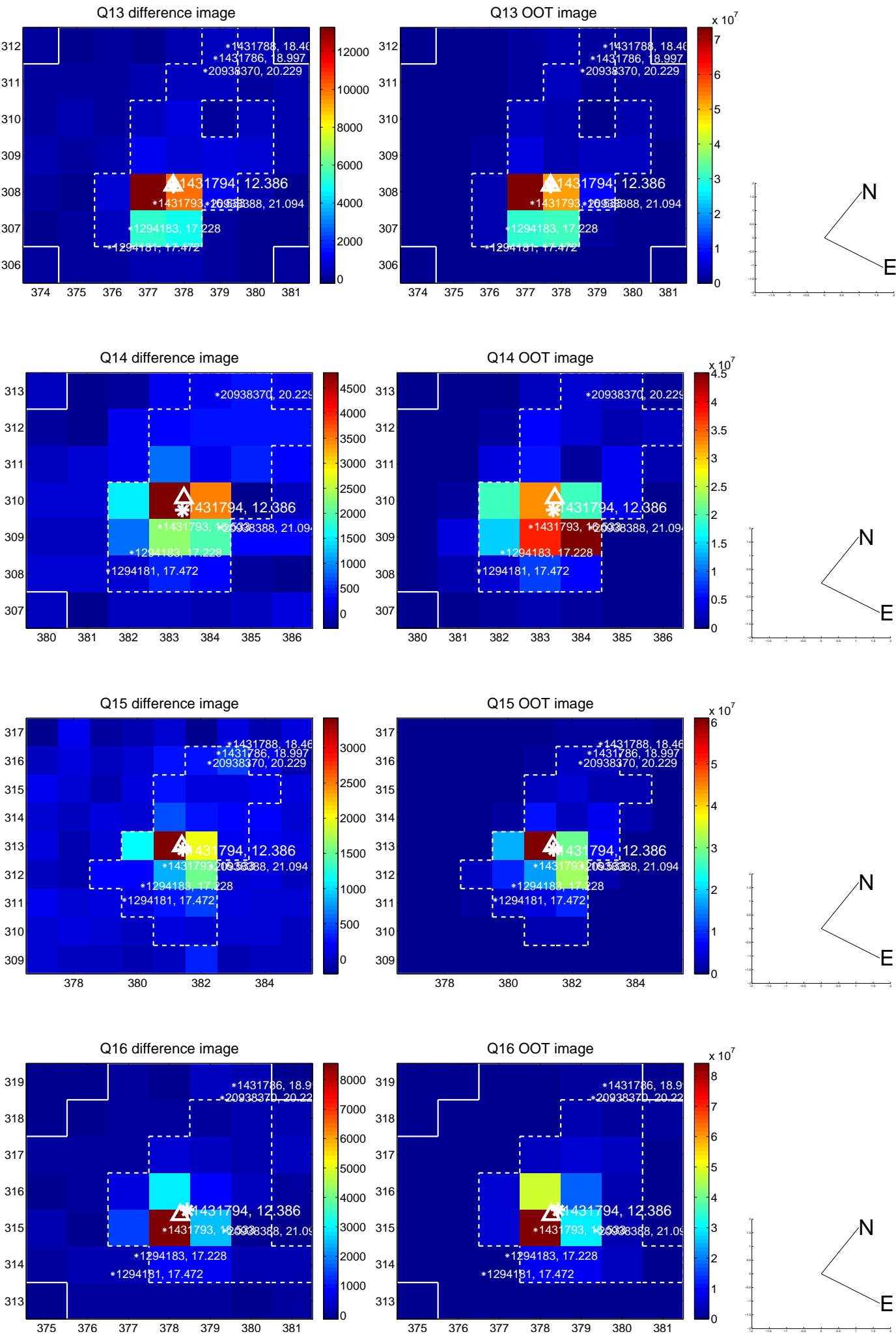
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



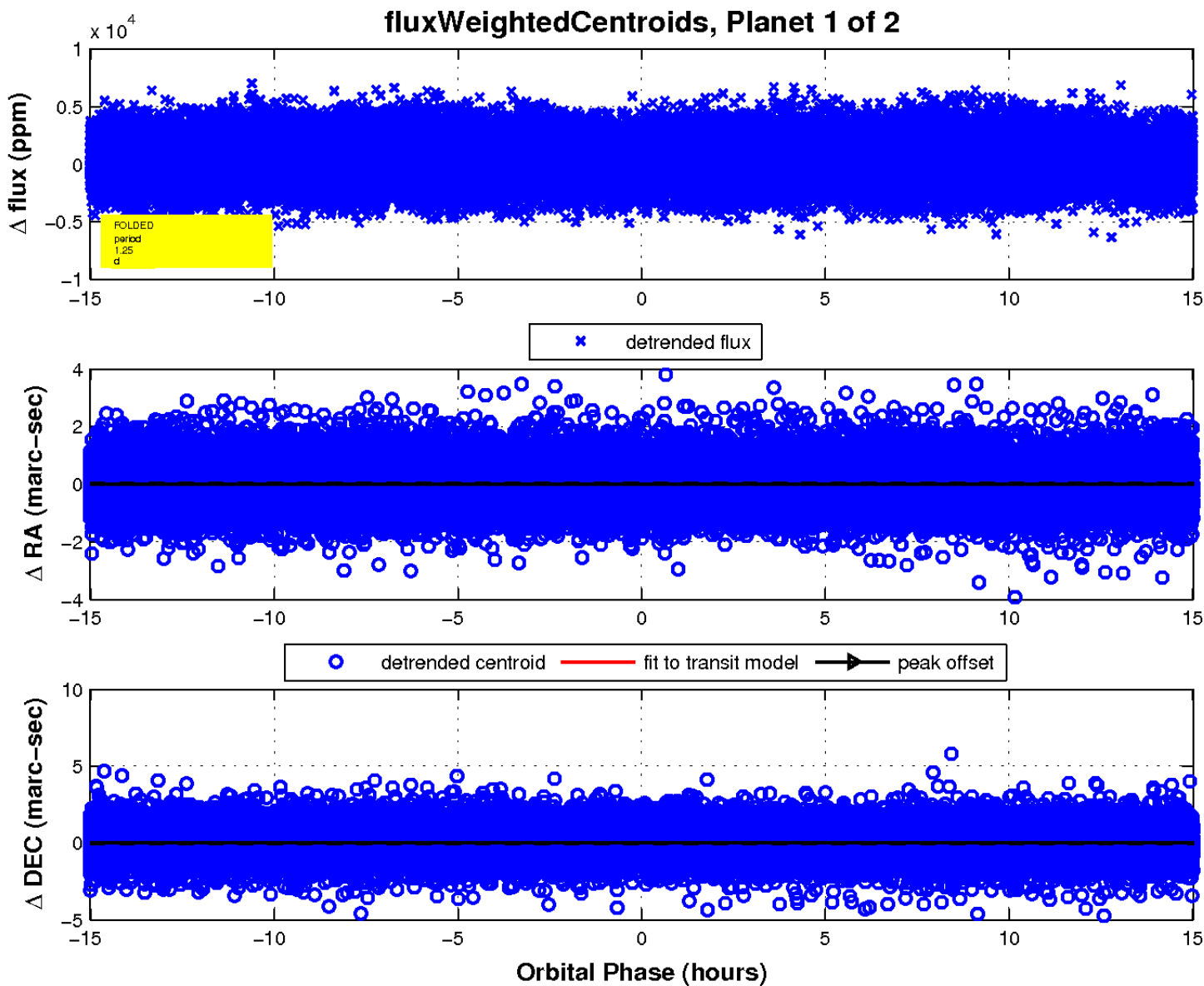
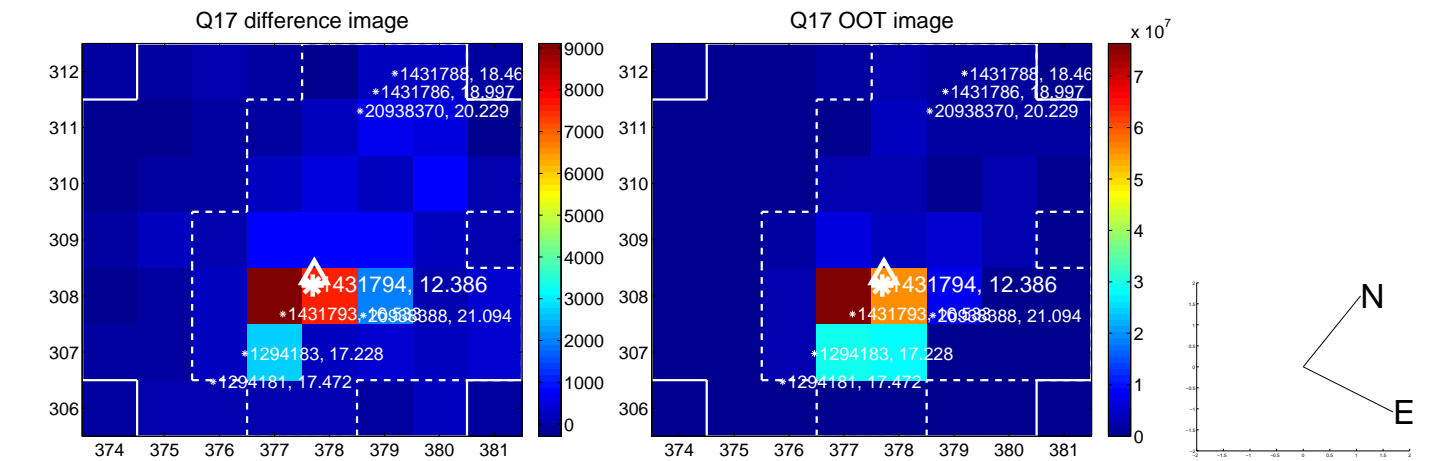
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

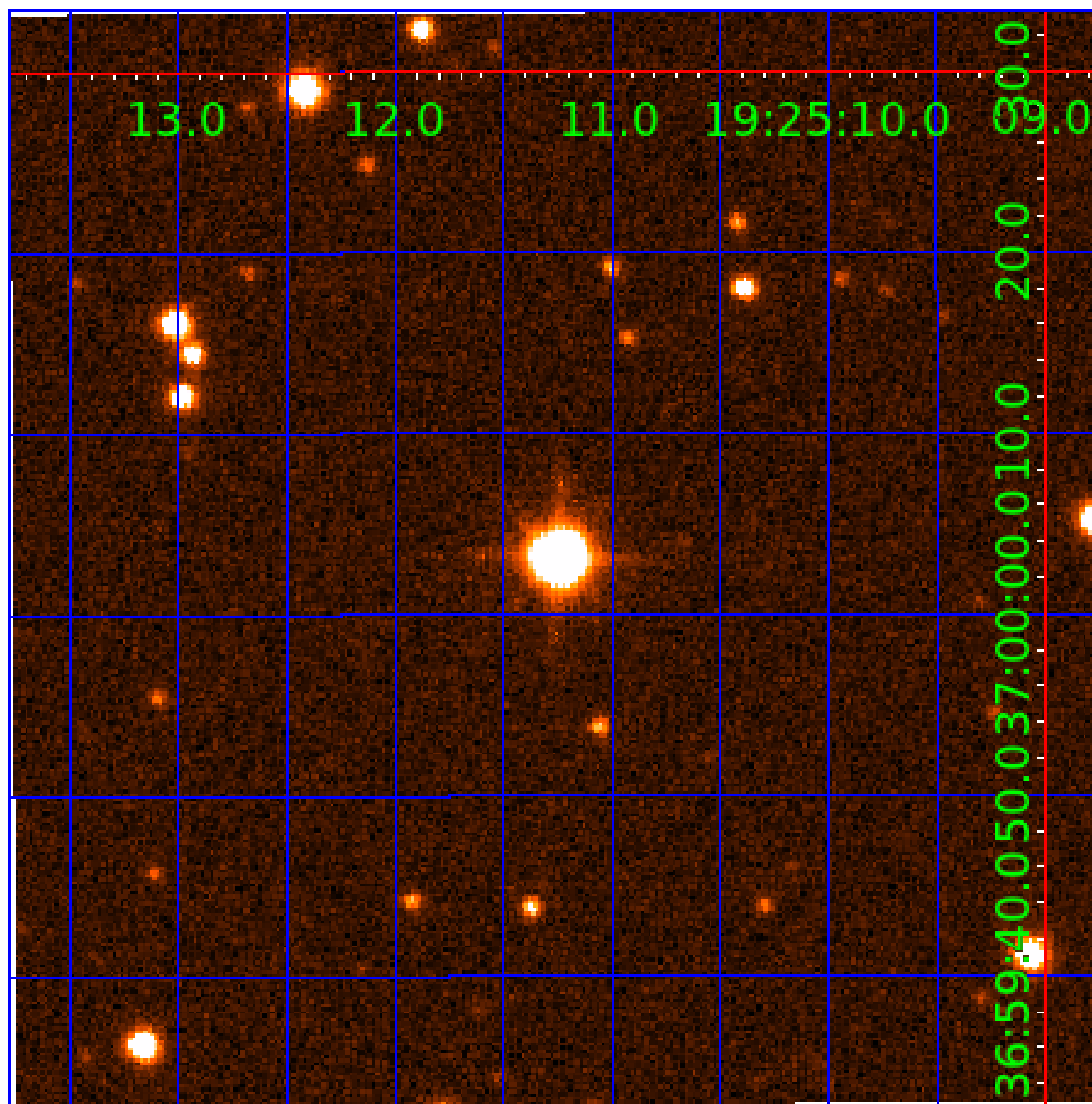


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 001431794

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})
001431794-01	OBS	No	1.251191	131.756326	148.7	8.854	15.1	17.1	2.35	7329	3.60	19734.69
001431794-02	OBS	No	0.515958	131.614119	399.1	1.500	17.4	-1.0	2.35	7329	4.74	64294.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001431794-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
001431794-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_NOFITS

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

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

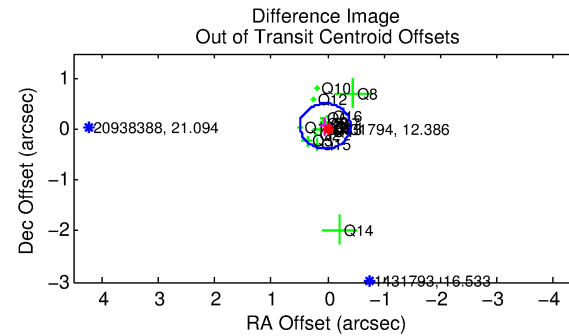
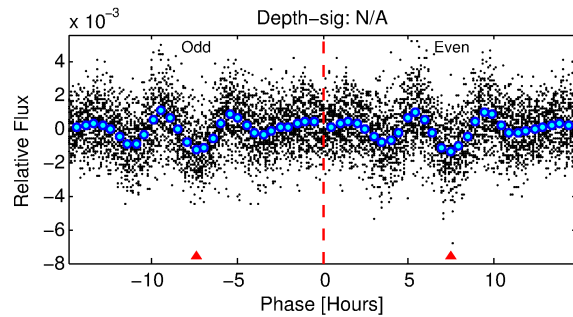
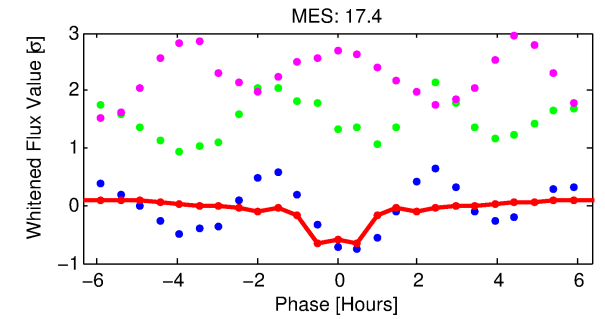
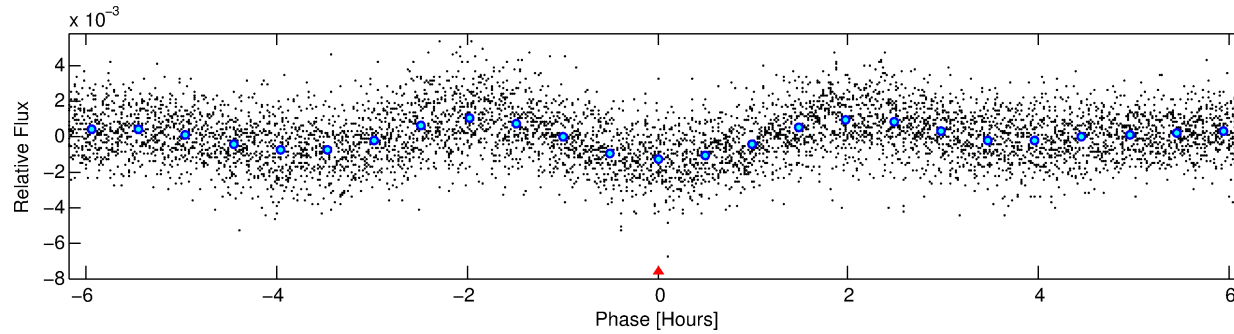
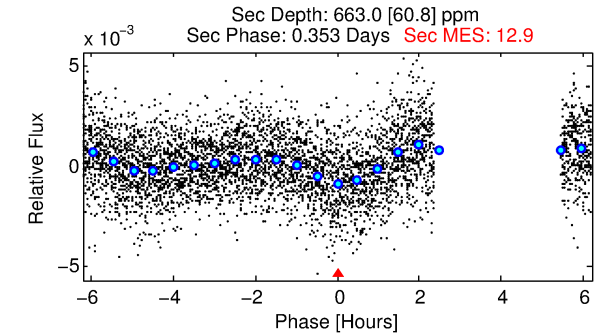
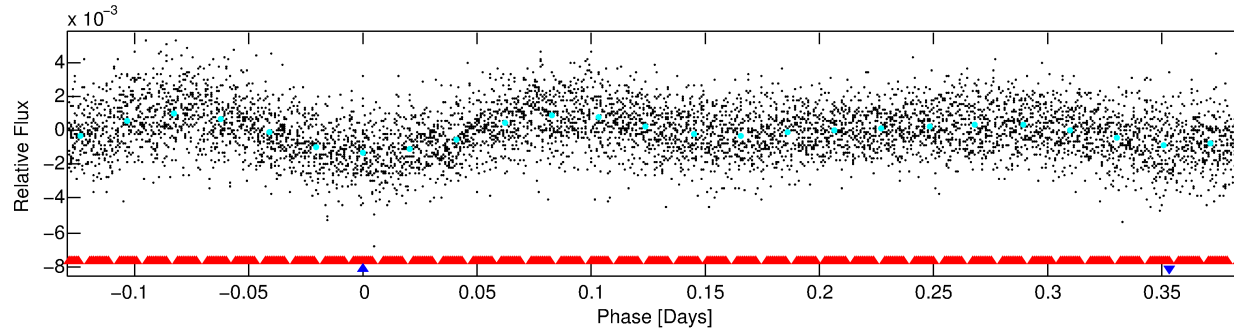
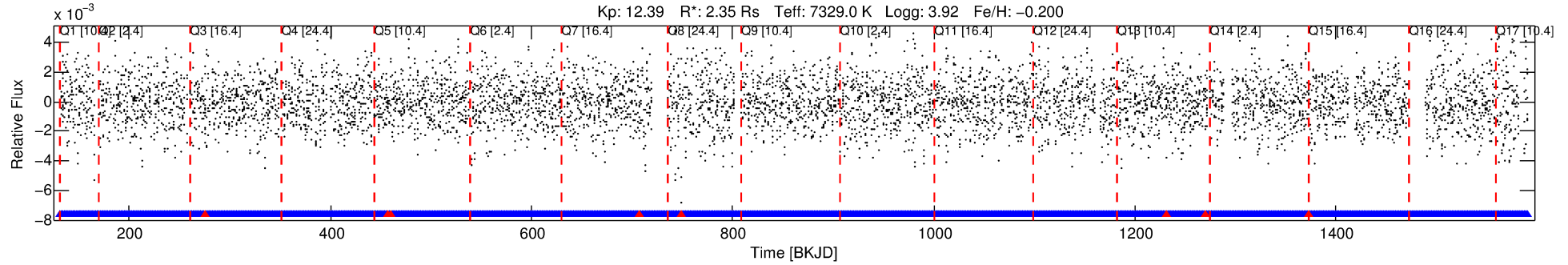
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 001431794-02

No Significant Match Found

DV One-Page Summary

KIC: 1431794 Candidate: 2 of 2 Period: 0.516 d



TPS TCE Results:

Period = 0.51596 d
Epoch = 131.6141 BKJD

DV fit results are unavailable

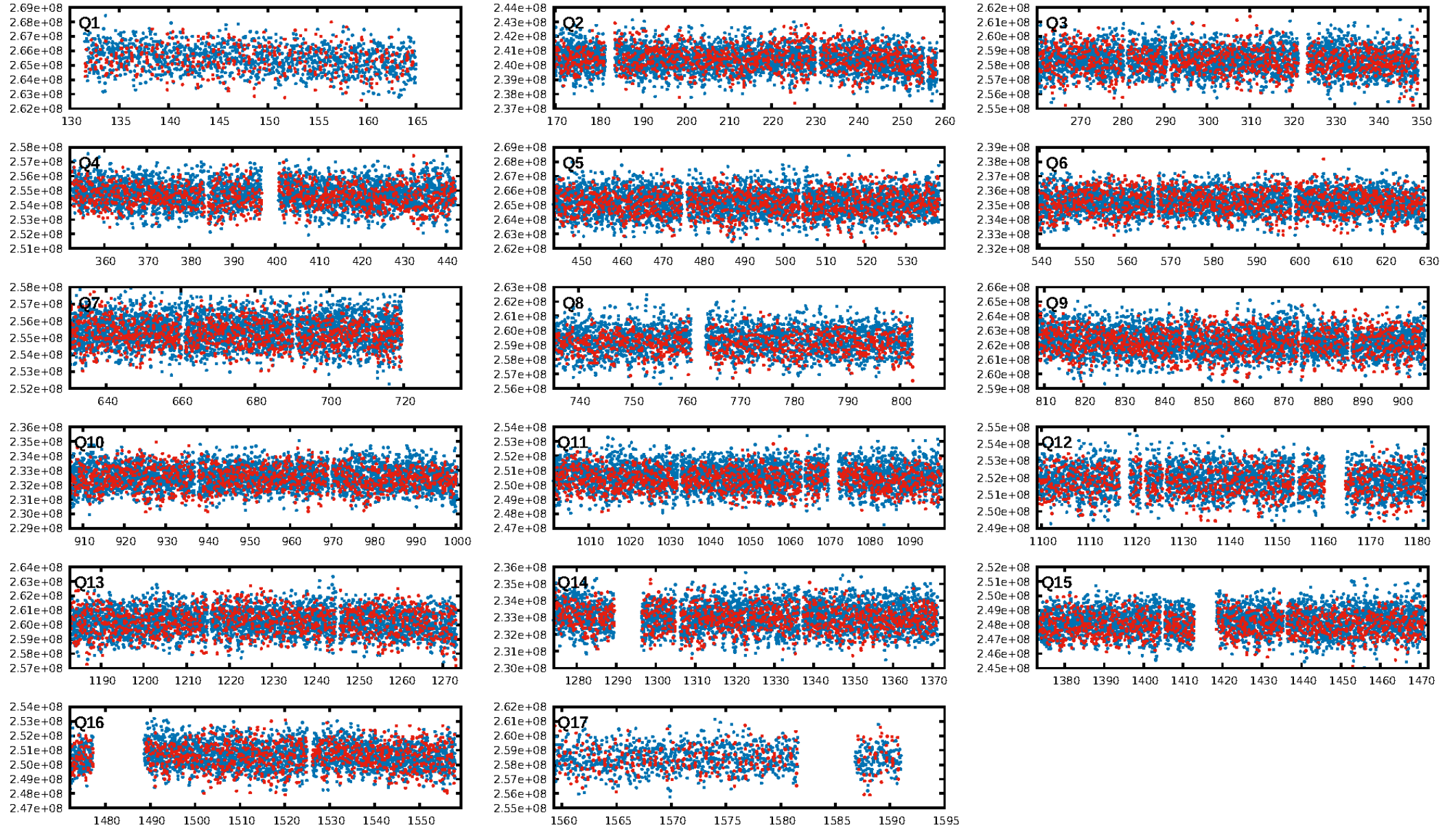
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 95.1% [1.96 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.98 [437/445]
GhostDiagnostic-chr: 2.442
Centroid-sig: 0.7%
Centroid-so: 0.178 arcsec [20.45 σ]
OotOffset-rm: 0.080 arcsec [0.54 σ]
KicOffset-rm: 0.109 arcsec [0.77 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.71 [12/17]
DiffImageOverlap-fno: 1.00 [17/17]

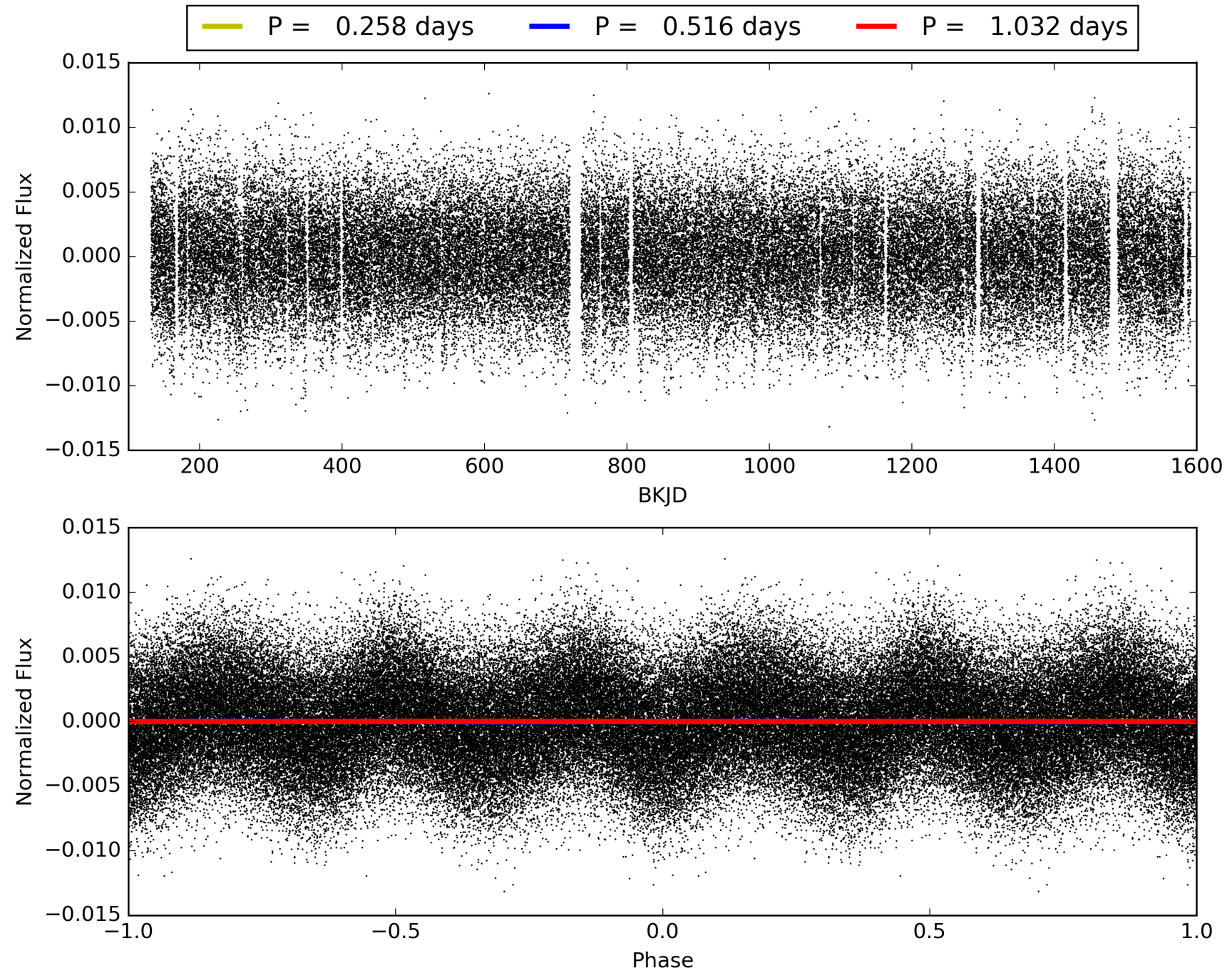
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 00:25:34 Z

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

TCE 001431794-02, PDC Light Curves

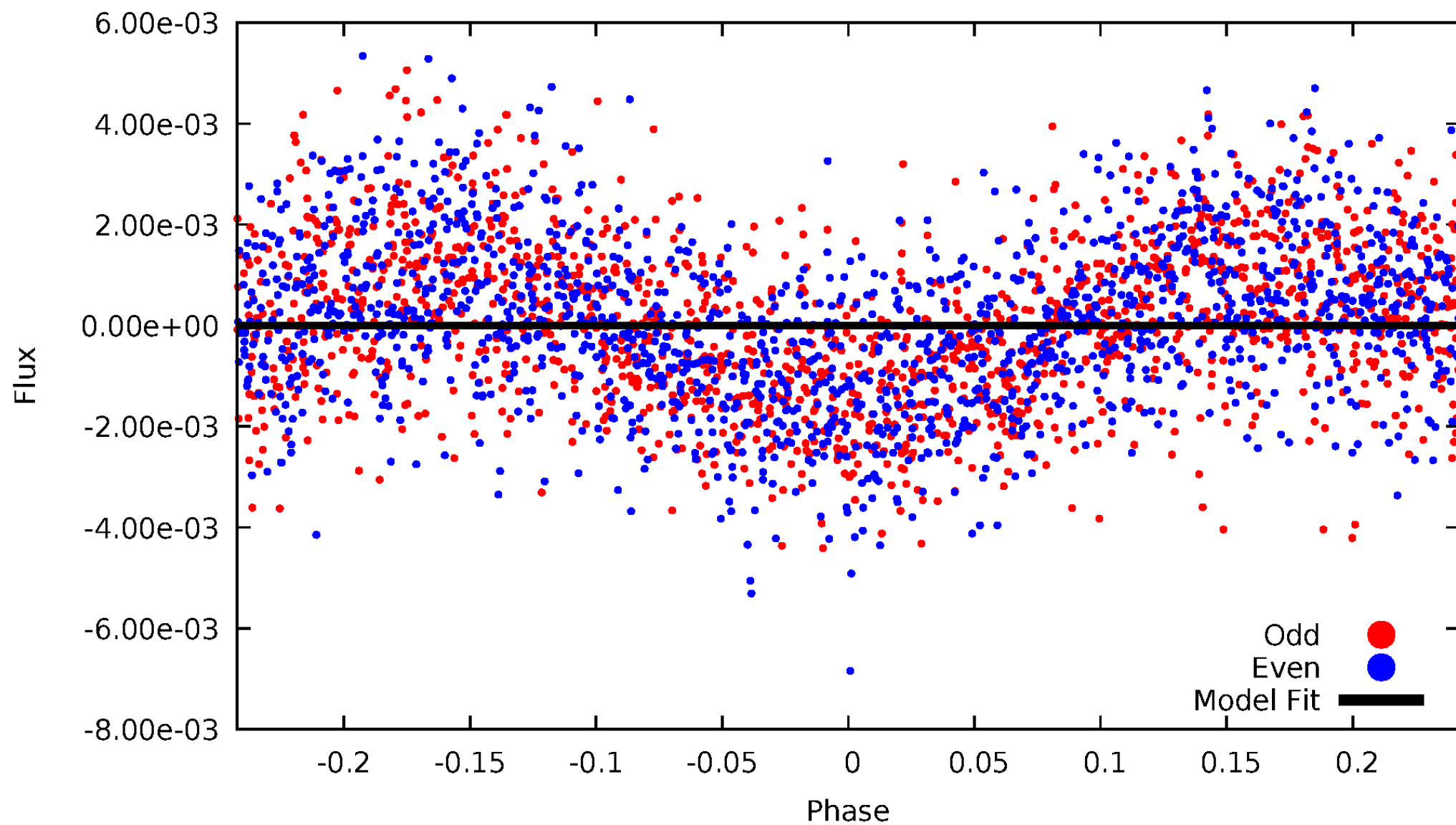


TCE 001431794-02



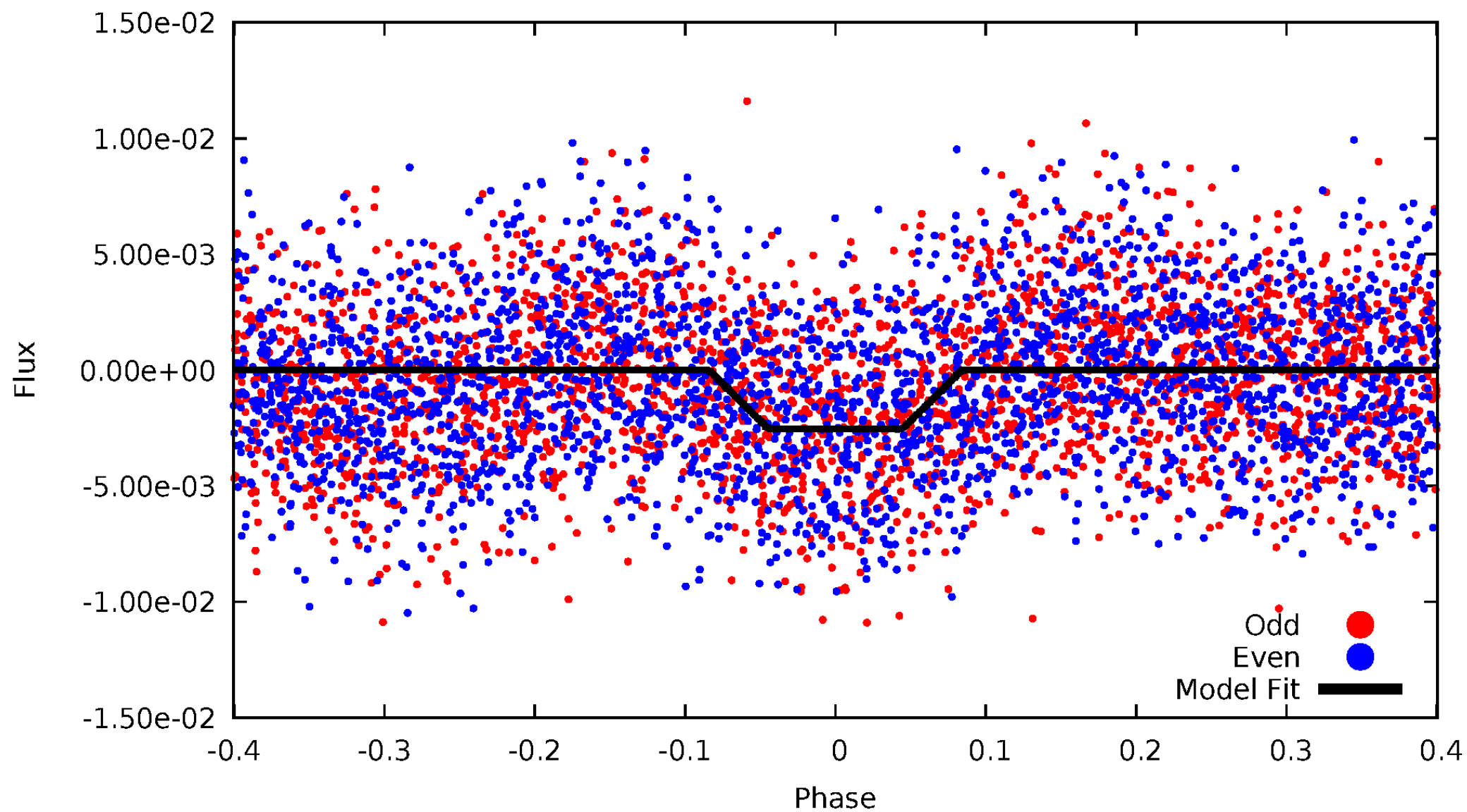
DV Odd/Even

TCE 001431794-02



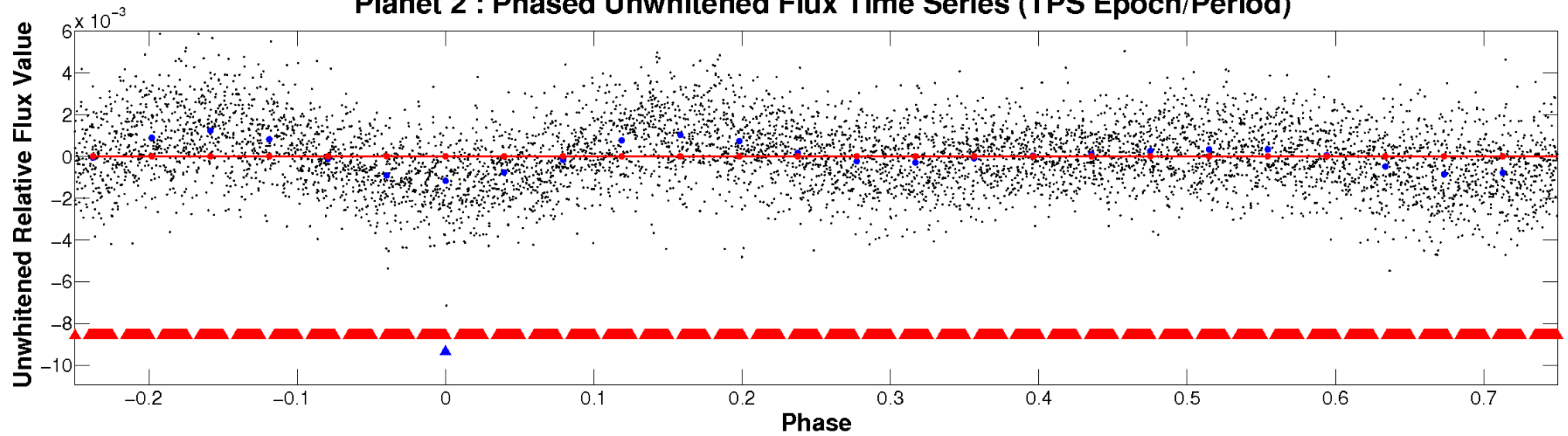
ALT Odd/Even

TCE 001431794-02

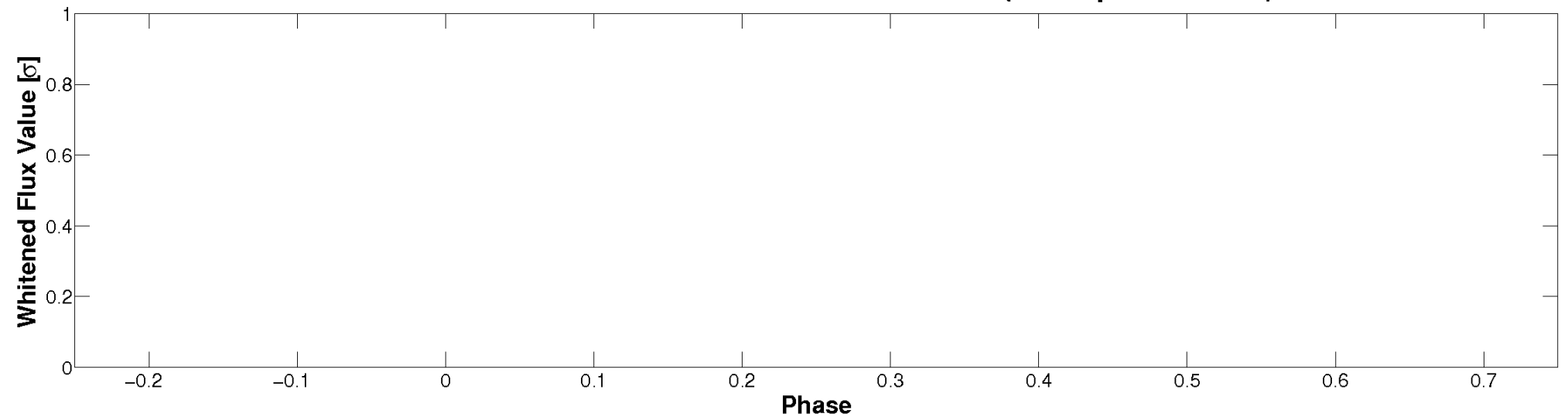


Non-Whitened Vs. Whitened Light Curve

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

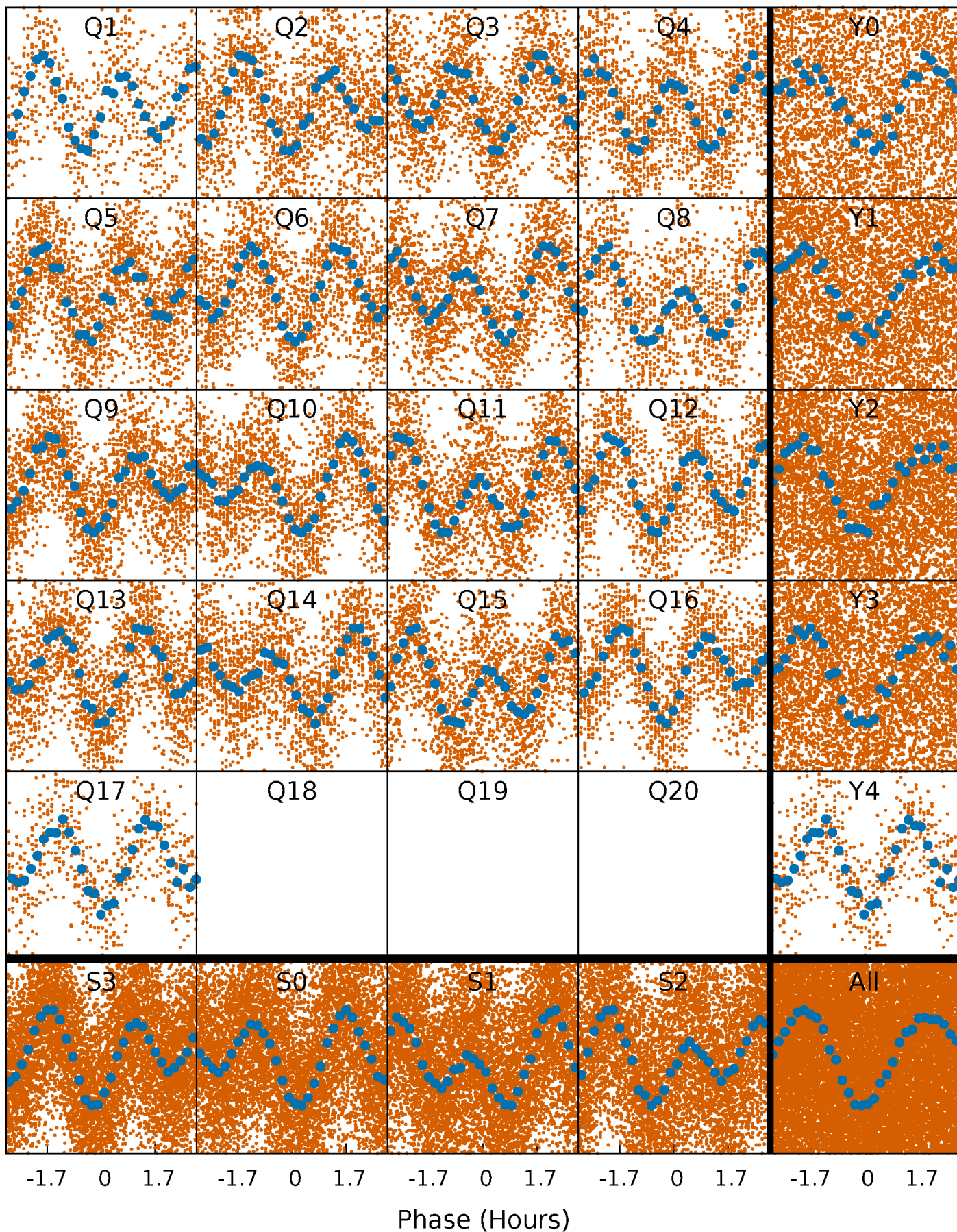


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



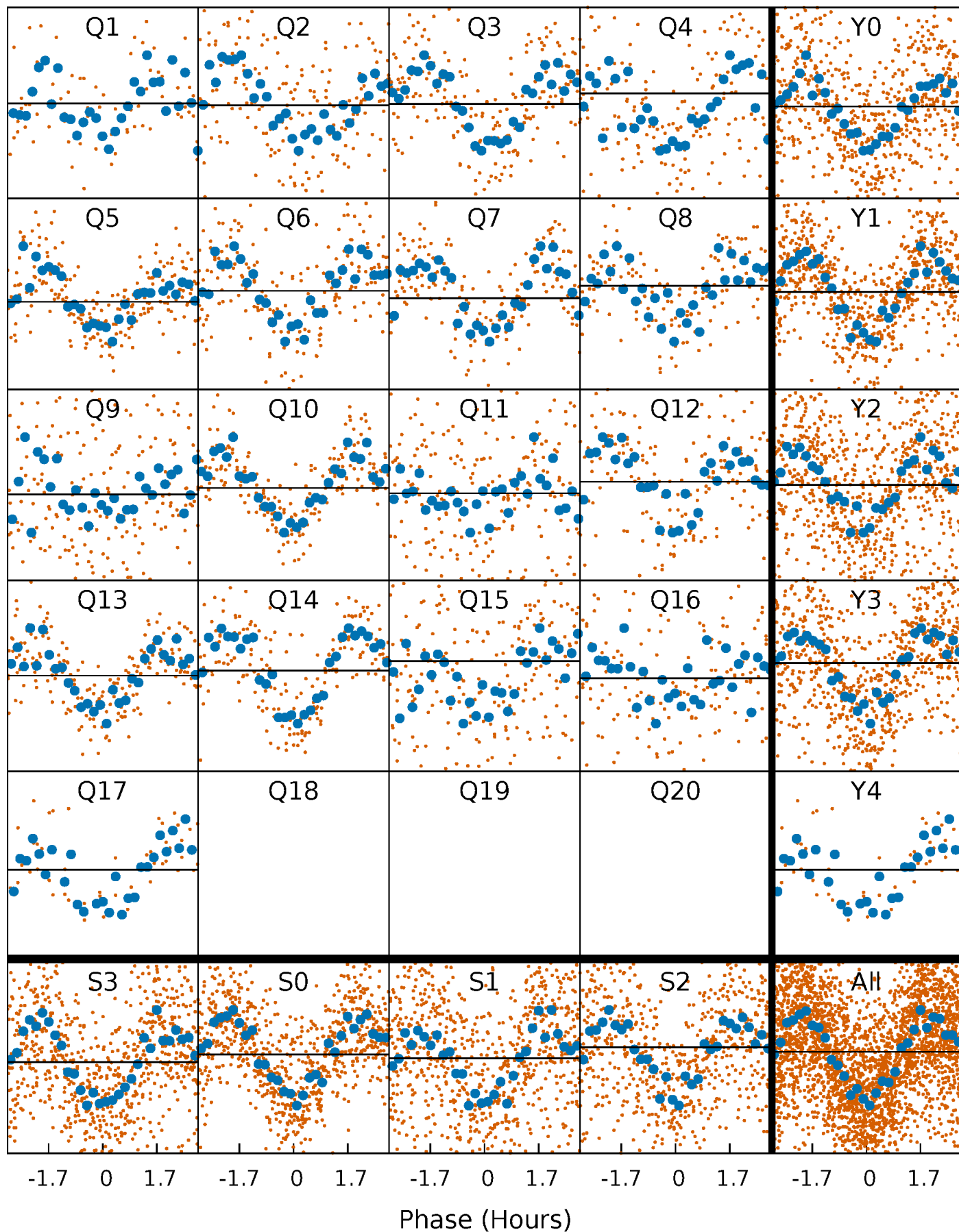
PDC Quarter-Phased Transit Curves

TCE 001431794-02 P= 0.515958 Days $T_0=131.614119$ (BKJD)



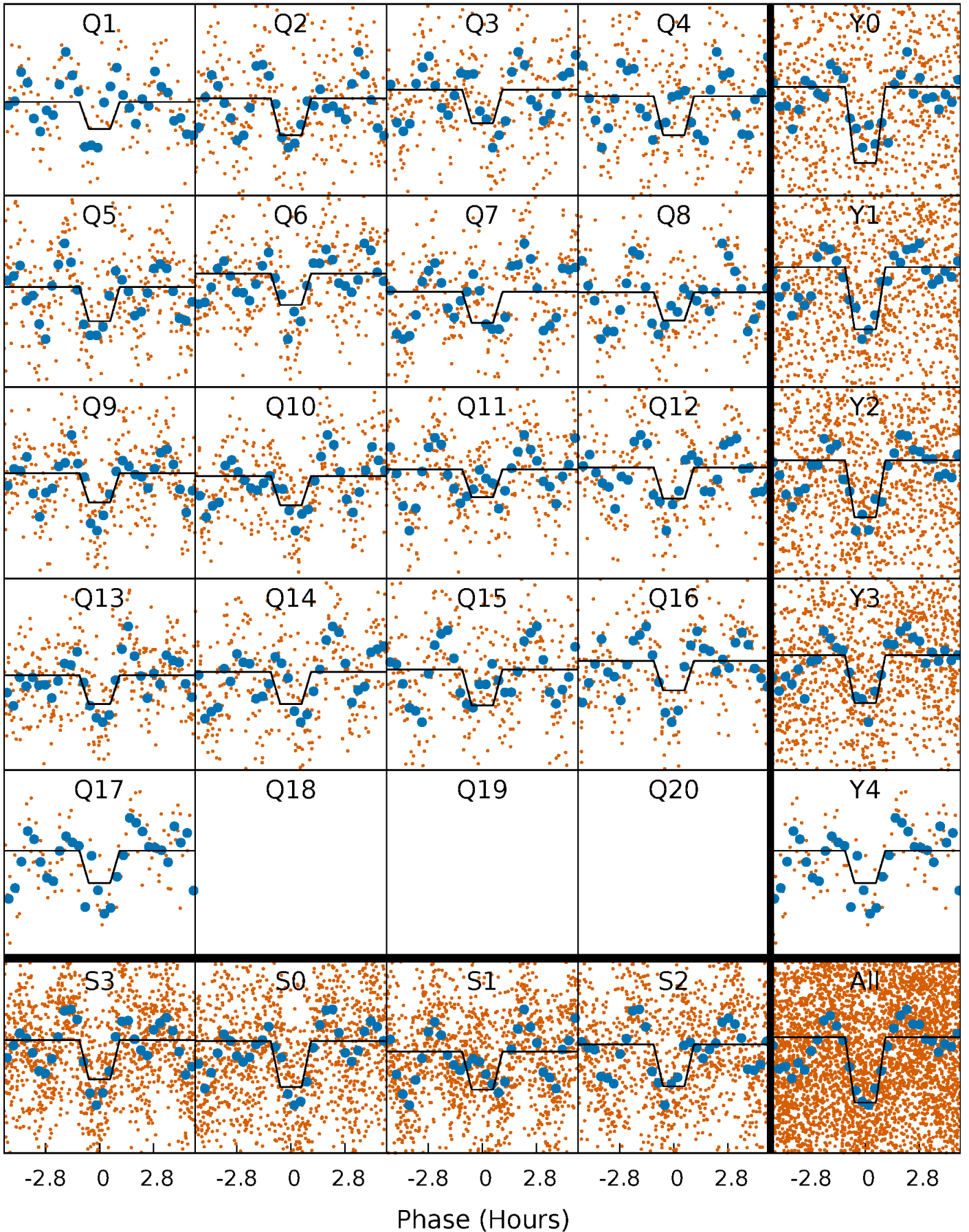
DV Quarter-Phased Transit Curves

TCE 001431794-02 P= 0.515958 Days $T_0=131.614119$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

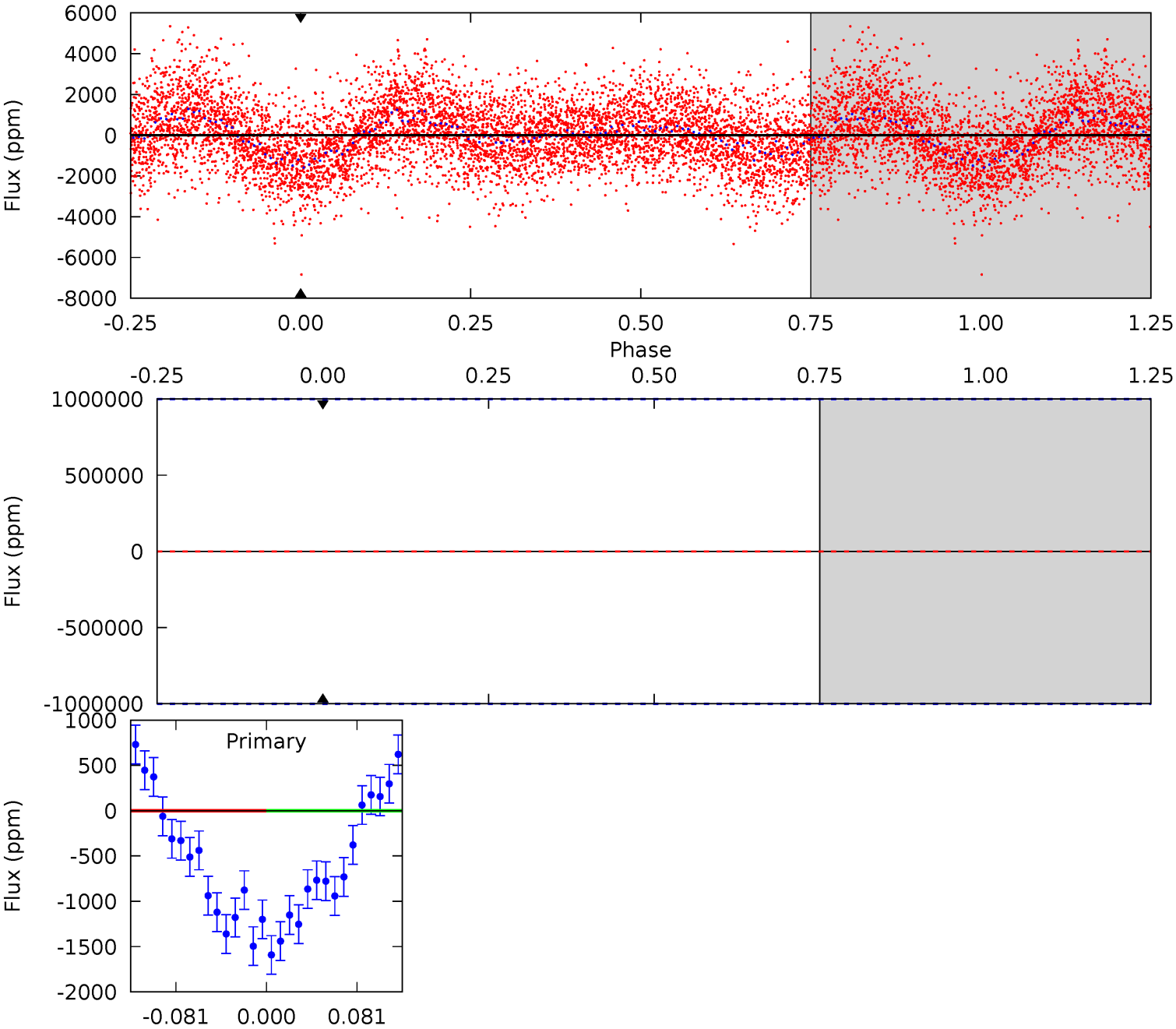
TCE 001431794-02 P= 0.515958 Days $T_0=131.609851$ (BKJD)



DV Model-Shift Uniqueness Test

001431794-02, P = 0.515958 Days, E = 131.614119 Days

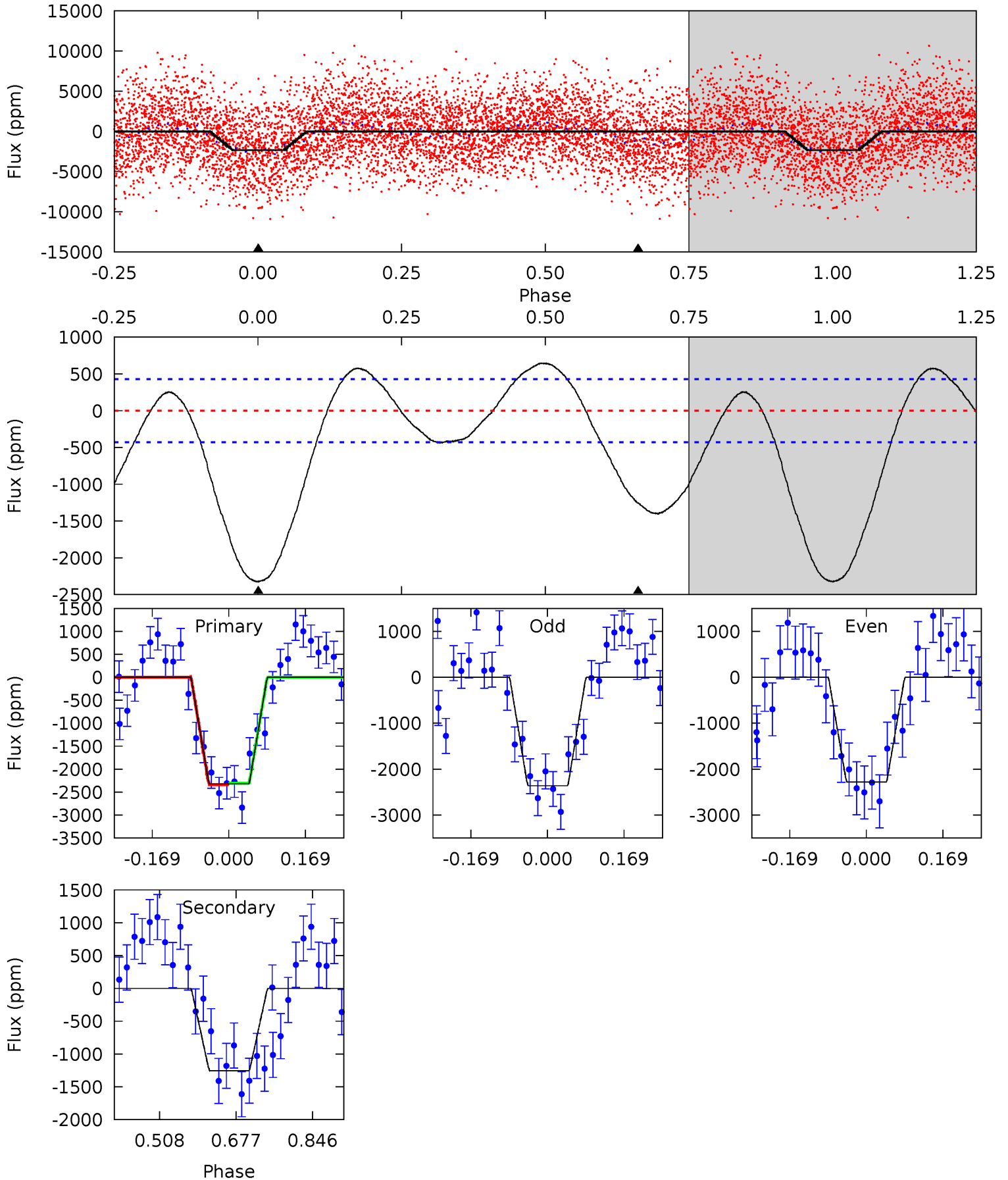
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

001431794-02, P = 0.515958 Days, E = 131.609851 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.1	13.0	0	0	4.45	1.37	3.81	24.1	24.1	13.0	13.0	0.42	0.98	0.22	0.15



Stellar Parameters For KIC 001431794

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7329^{+230}_{-307}	$3.915^{+0.301}_{-0.129}$	$-0.200^{+0.250}_{-0.350}$	$2.349^{+0.490}_{-0.839}$	$1.651^{+0.183}_{-0.366}$	$0.179^{+0.394}_{-0.070}$
	+3%/-4%	+8%/-3%	+125%/-175%	+21%/-36%	+11%/-22%	+220%/-39%
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 001431794-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$17.95^{+18.38}_{-12.15}$	5550^{+405}_{-446}	-2925^{+37588}_{-34210}	$0.280^{+57.713}_{-63.703}$
Alt.	-1256 ± 96	$21.12^{+19.62}_{-14.24}$	5576^{+396}_{-485}	3306^{+4736}_{-7674}	$0.344^{+2.750}_{-0.254}$

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

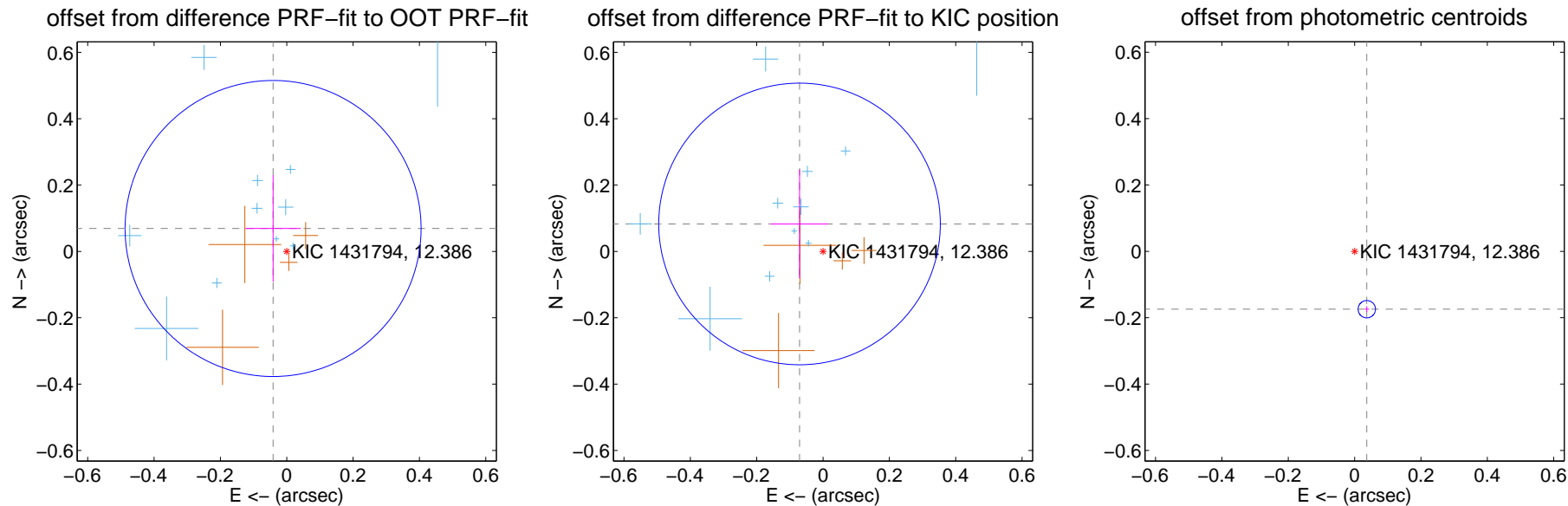
DV Centroid Data

Supplemental centroid analysis for 001431794-02. Kepler magnitude: 12.39. Transit SNR -1.00

There are 12 quarters with good PRF difference image offsets

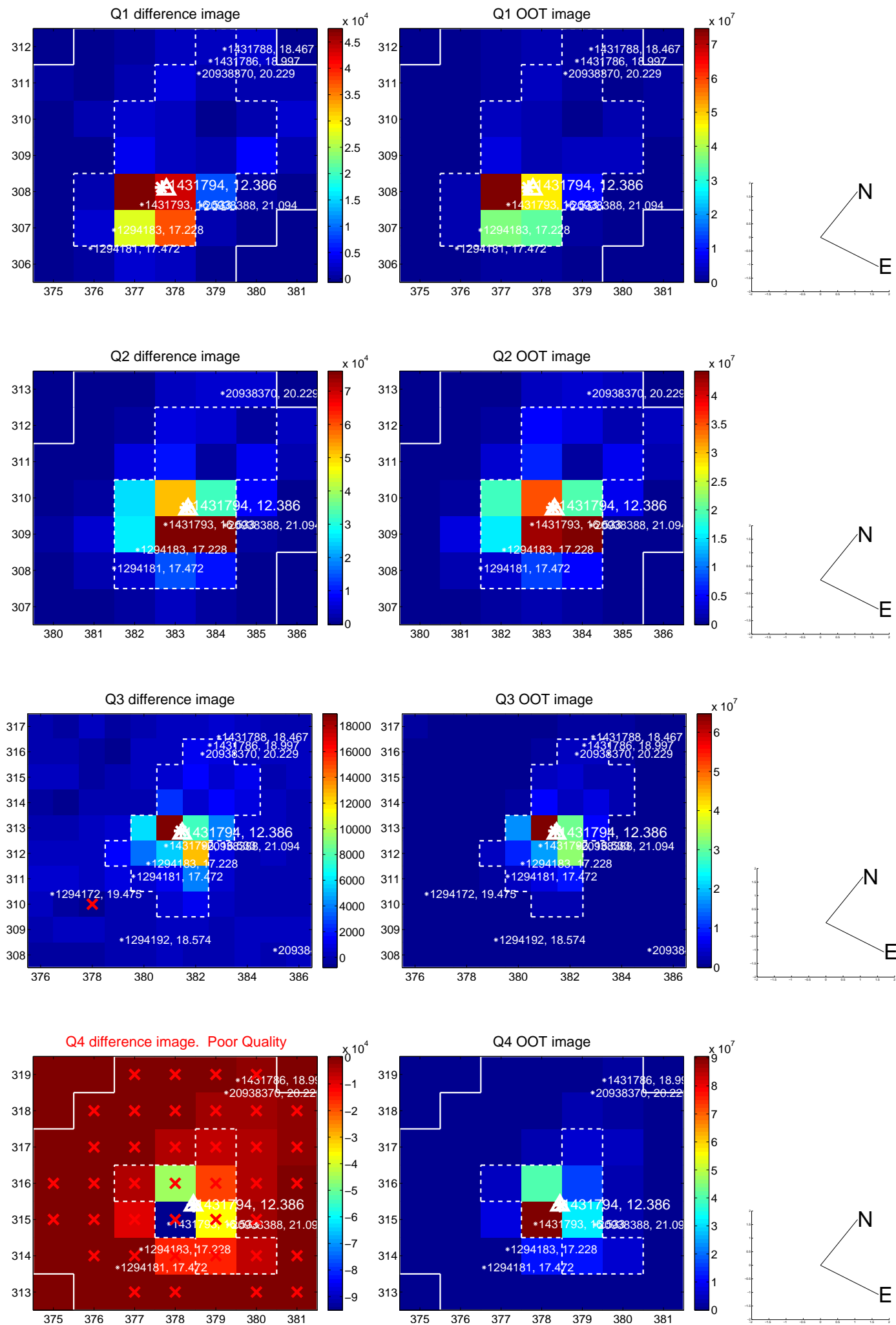
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.149	0.54	0.041 ± 0.084	0.069 ± 0.161
PRF-fit source offset from KIC position	0.109 ± 0.141	0.77	0.071 ± 0.086	0.083 ± 0.164
photometric centroid source offset	0.18 ± 0.01	20.45	-0.04 ± 0.01	-0.17 ± 0.01

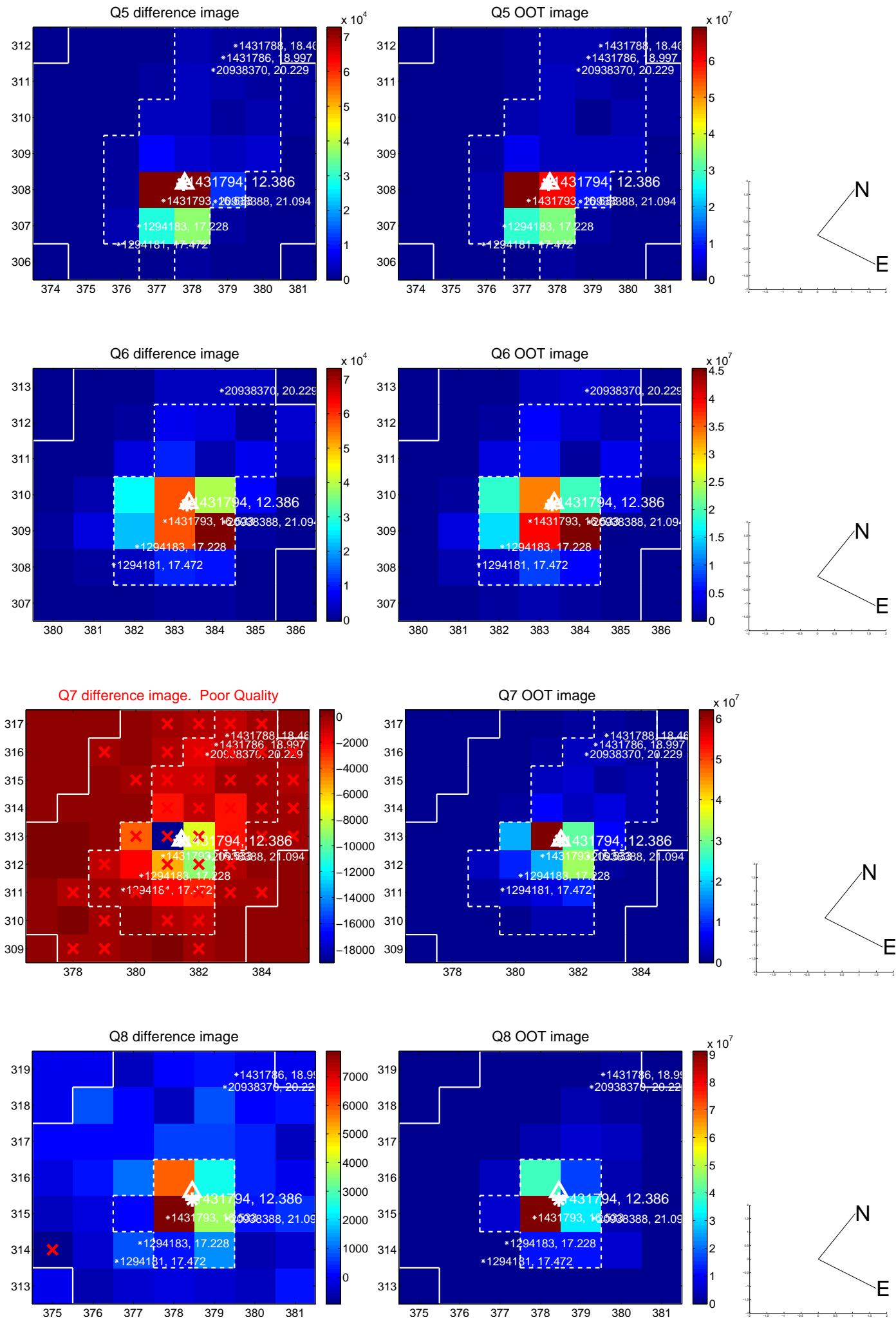


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

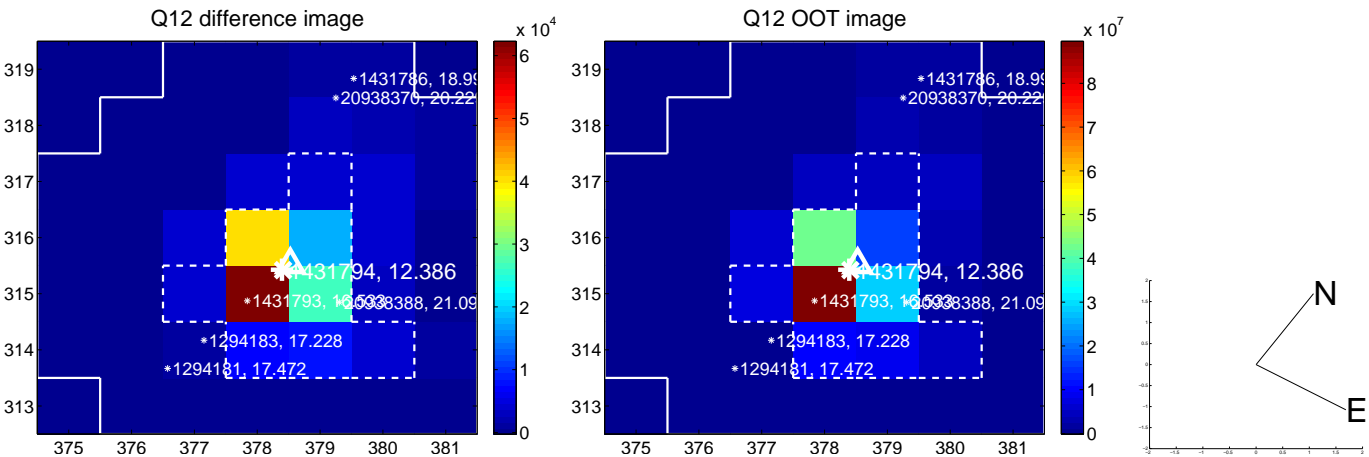
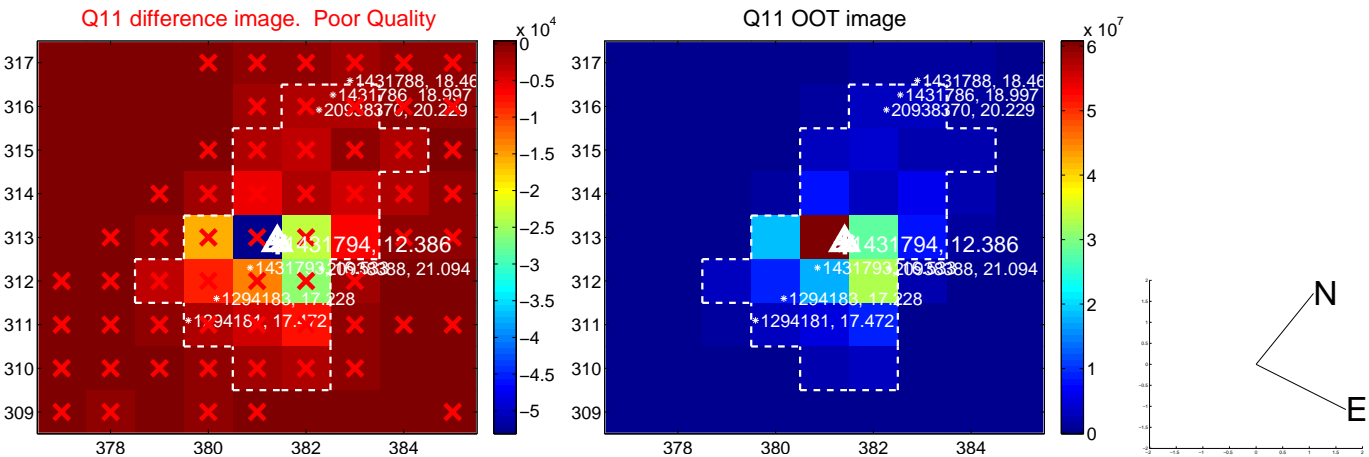
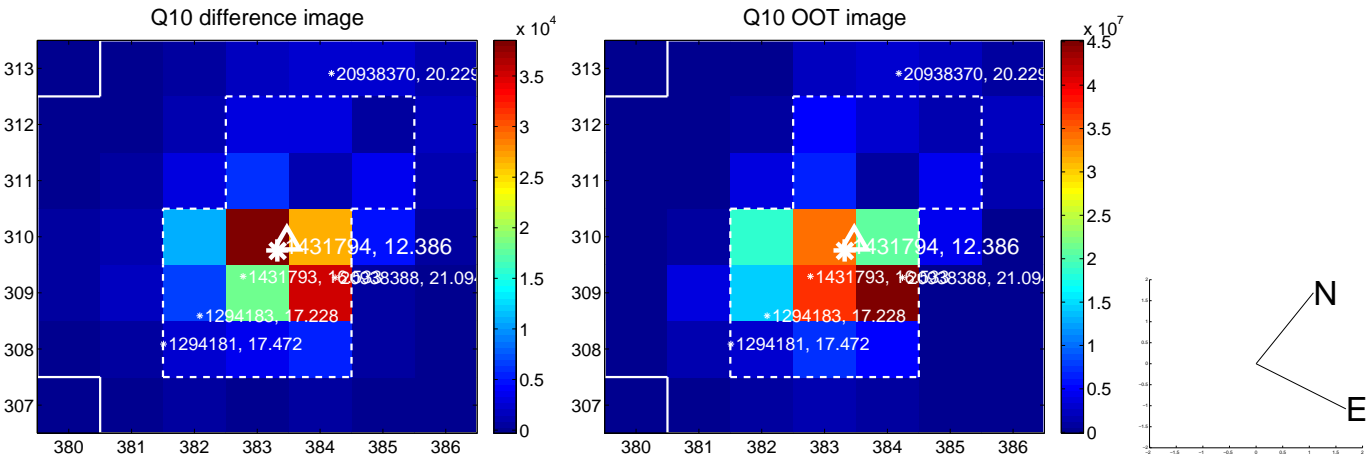
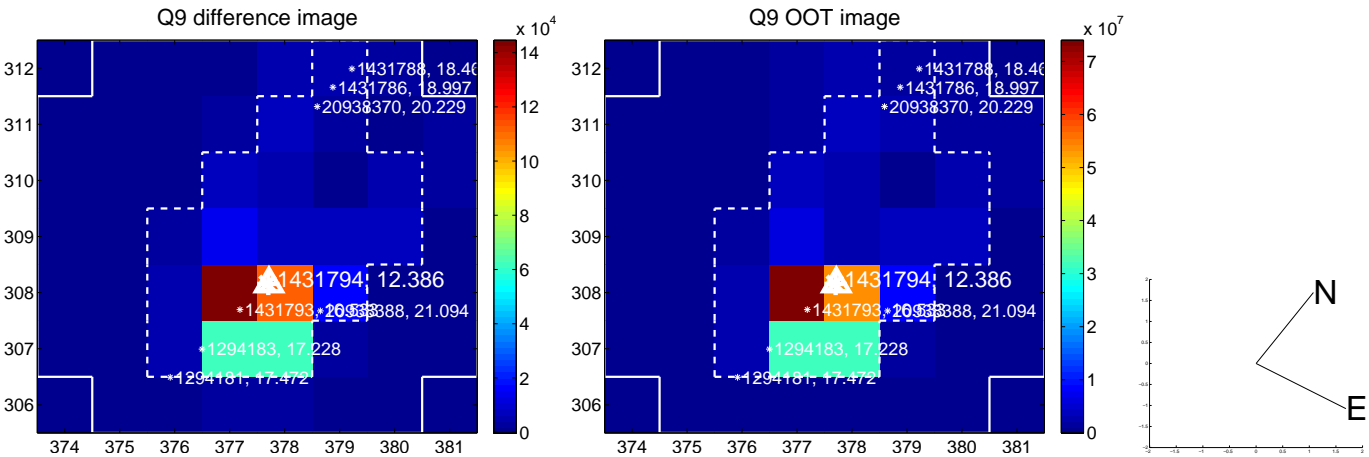
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



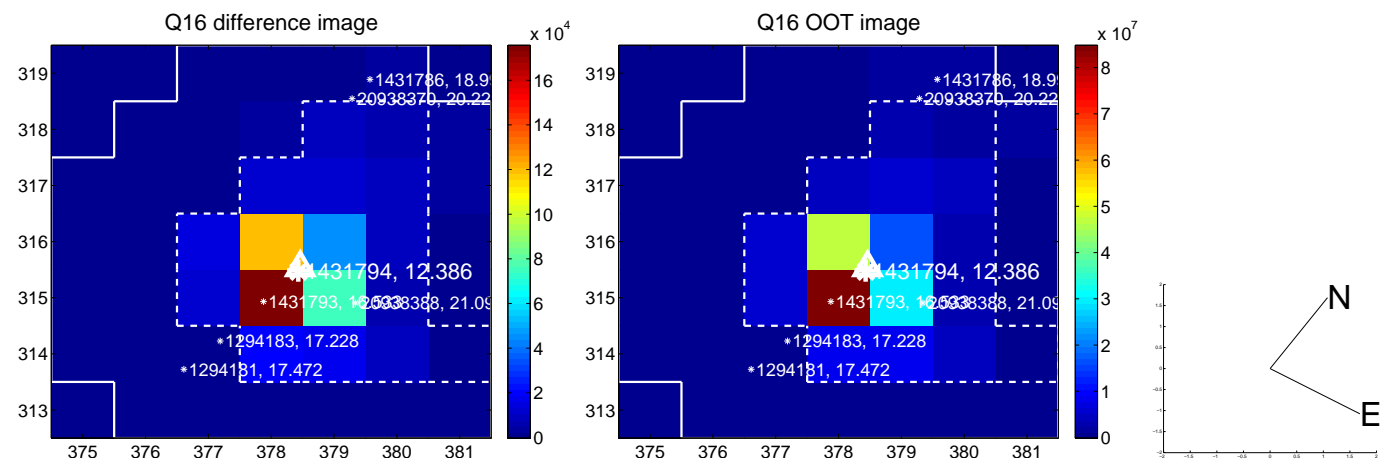
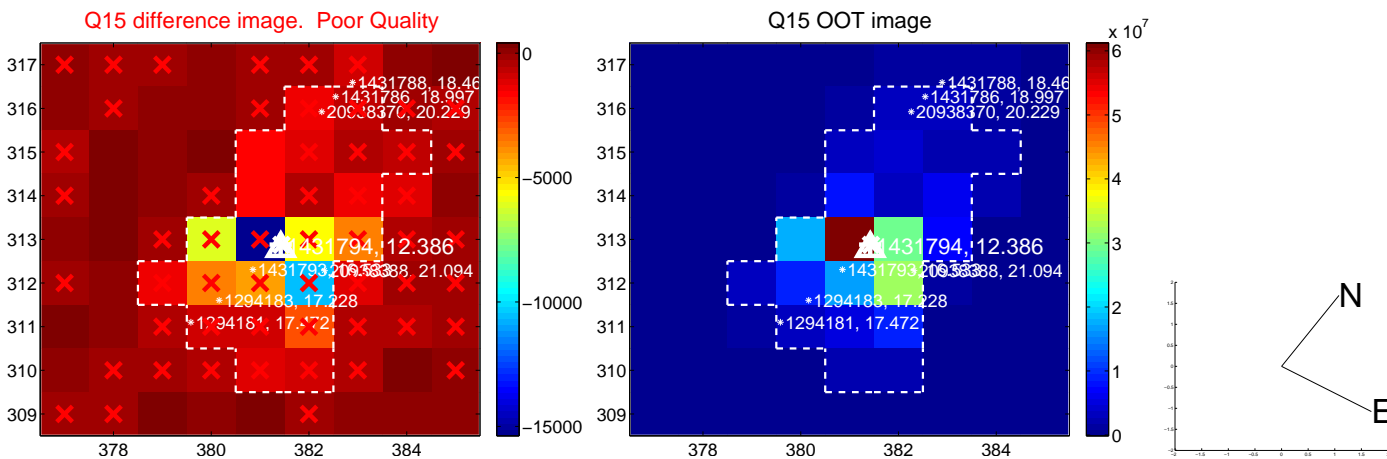
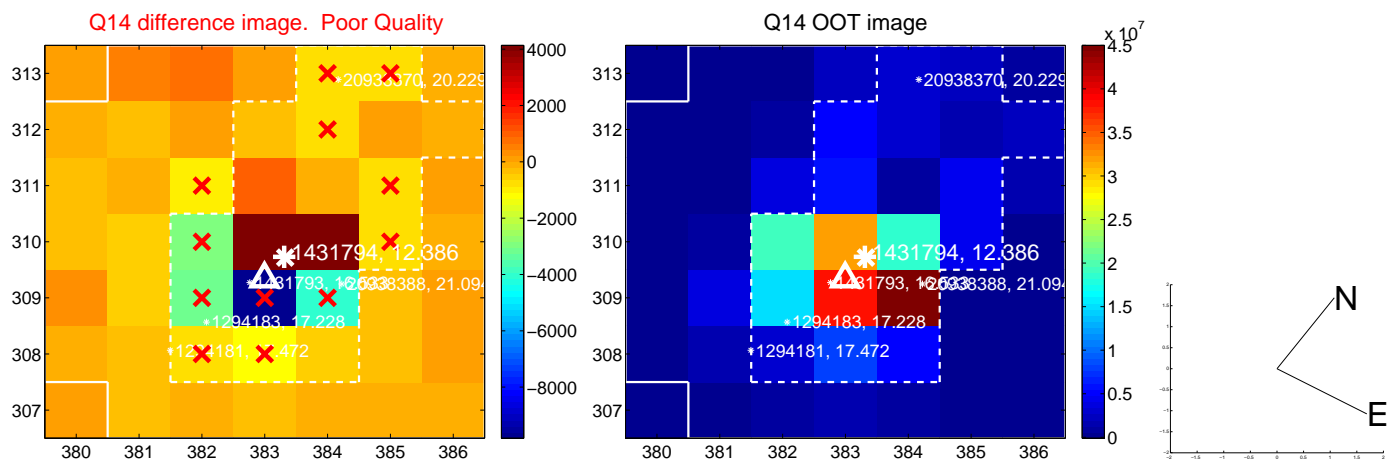
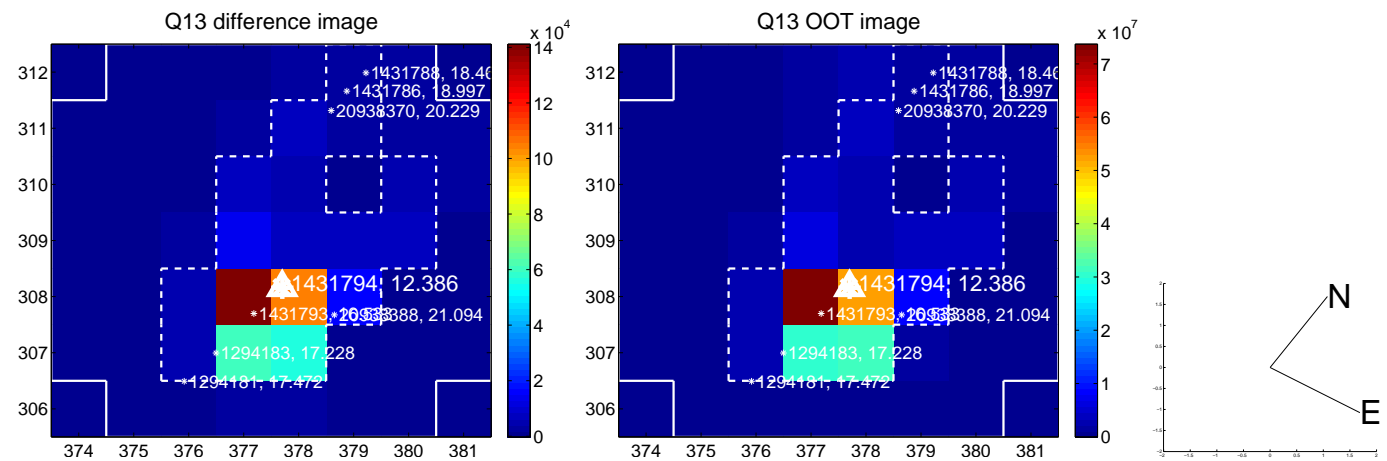
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



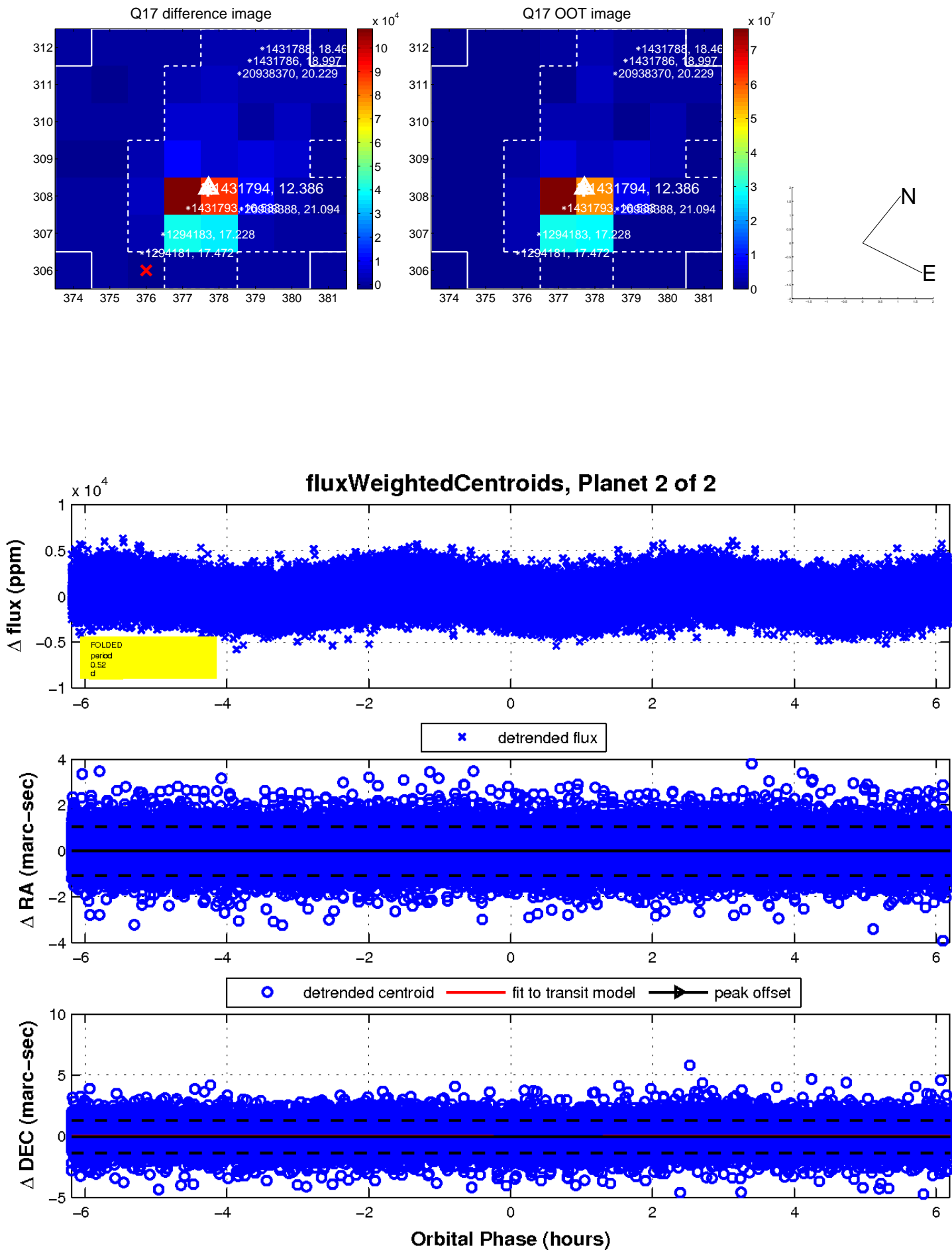
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

