

KIC 005473171

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})
005473171-01	OBS	No	0.657382	131.619902	239.8	1.649	13.0	13.1	3.75	7693	6.83	127531.70
005473171-02	OBS	No	0.657395	132.000747	345.6	1.292	12.7	20.5	3.75	7693	8.22	127528.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005473171-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
005473171-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—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.

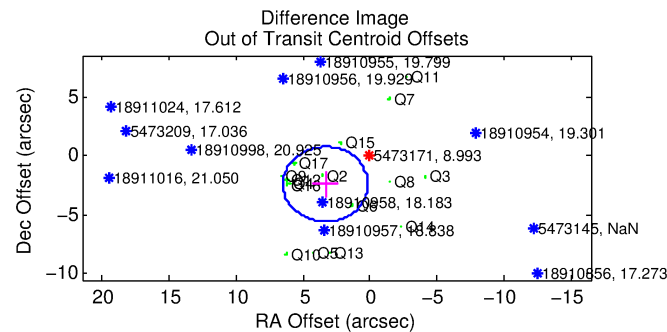
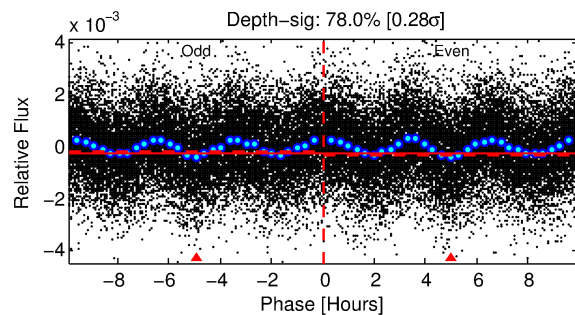
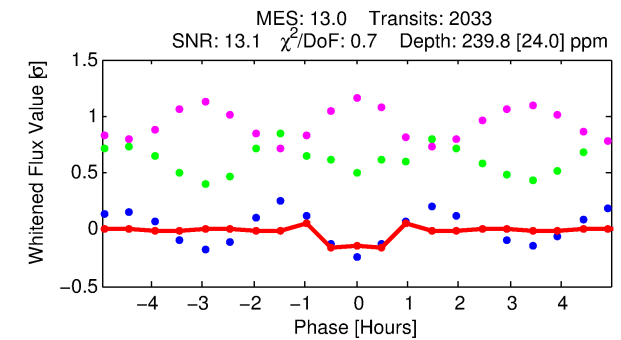
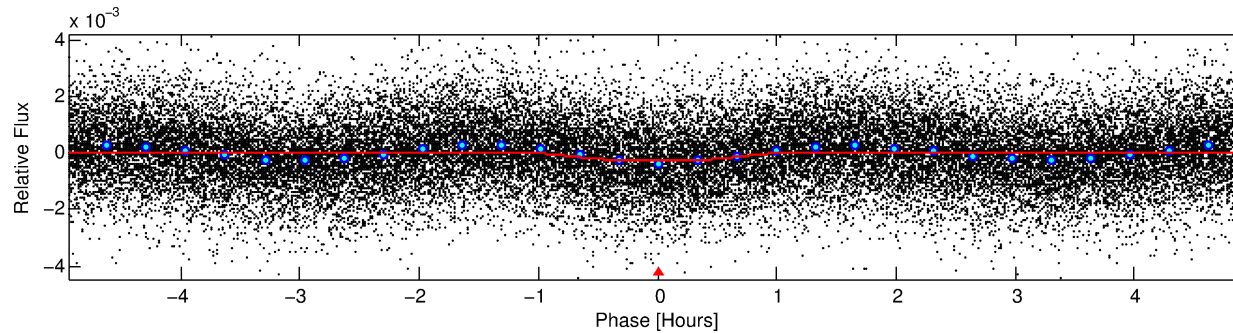
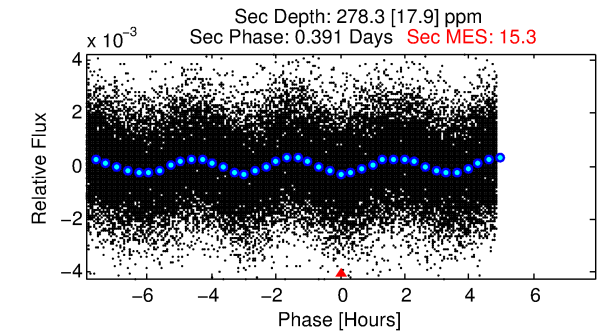
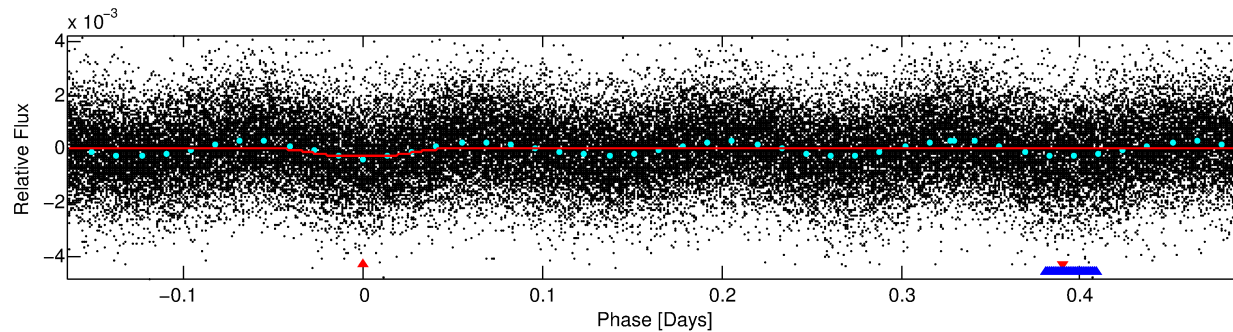
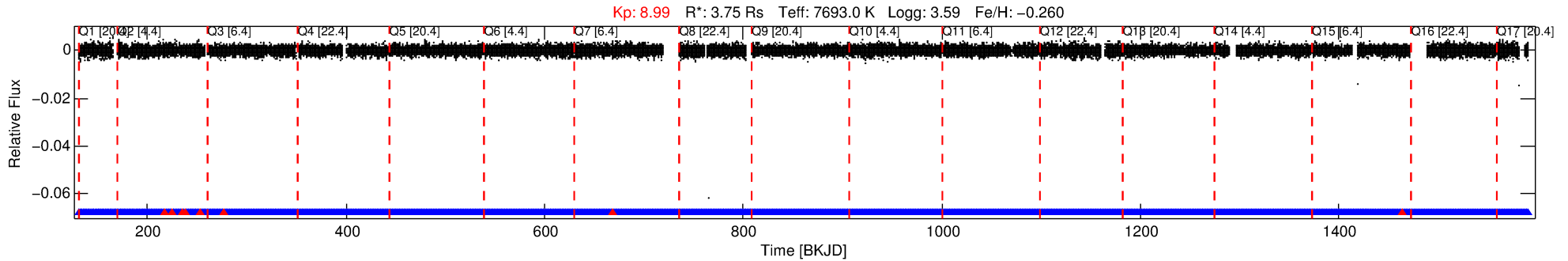
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005473171-01

No Significant Match Found

DV One-Page Summary

KIC: 5473171 Candidate: 1 of 2 Period: 0.657 d



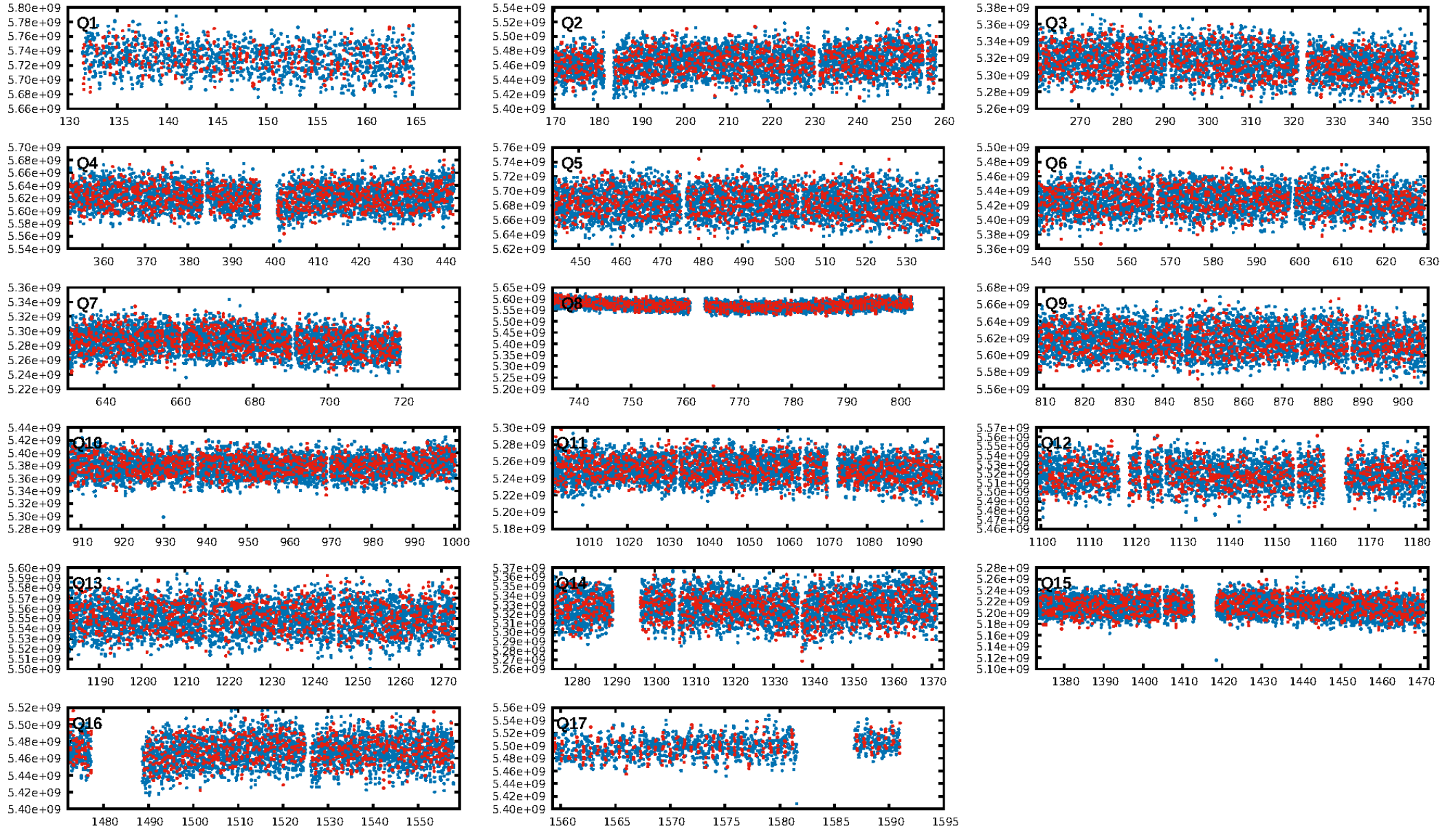
DV Fit Results:

Period = 0.65738 [0.00001] d
Epoch = 131.6199 [0.0009] BKJD
Rp/R* = 0.0167 [0.0029]
a/R* = 1.72 [1.05]
b = 0.90 [0.20]
Seff = 127531.70 [122196.12]
Teq = 4819 [1154] K
Rp = 6.83 [3.93] Re
a = 0.0186 [0.0106] AU
Ag = 1.13 [1.15] [0.12 σ]
Teffp = 7690 [758] K [2.08 σ]

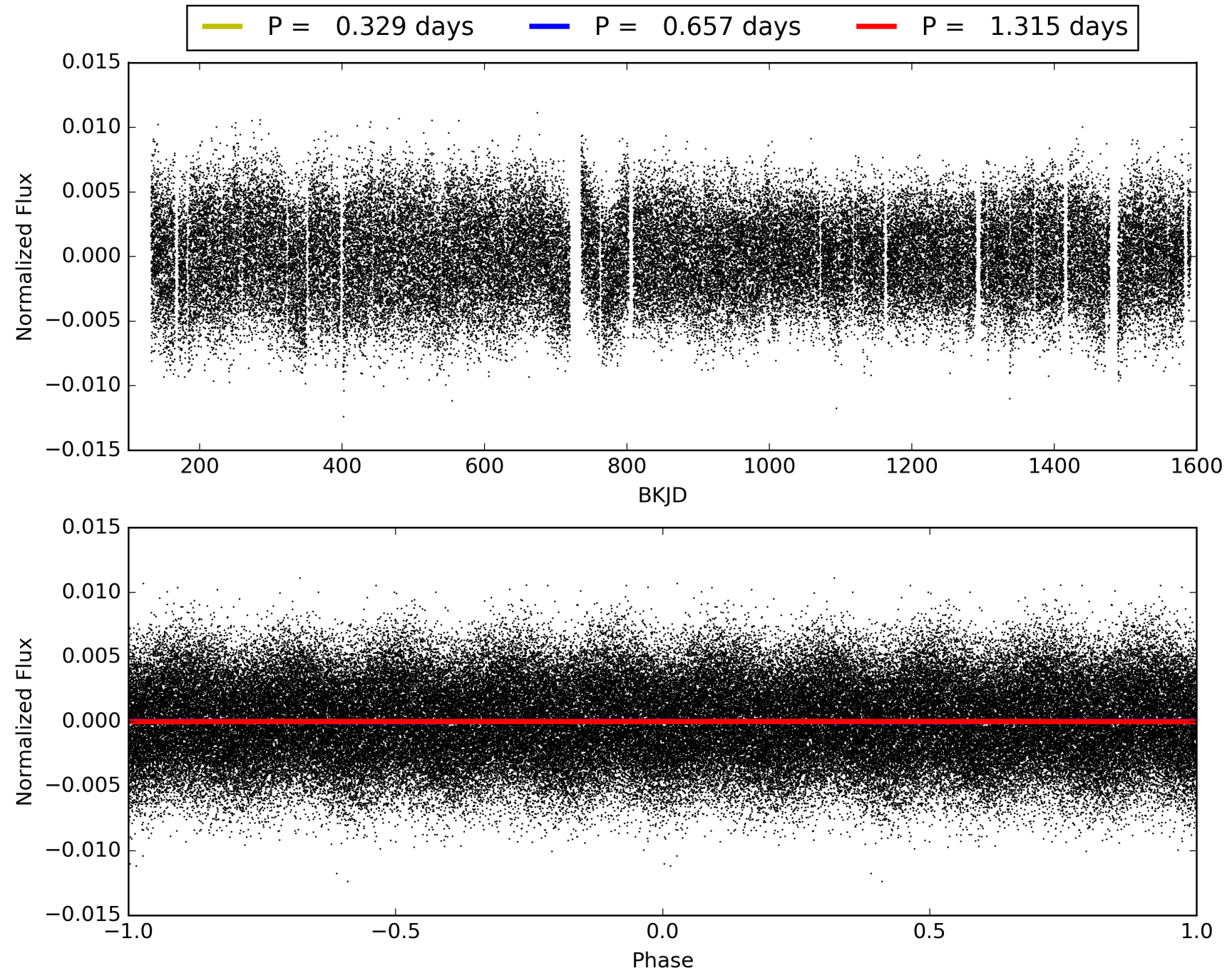
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.50e-21
RollingBand-fgt: 1.00 [1933/1941]
GhostDiagnostic-chr: N/A
Centroid-sig: 0.0%
Centroid-so: 0.142 arcsec [0.57 σ]
OotOffset-rm: 4.111 arcsec [3.89 σ]
KicOffset-rm: 2.167 arcsec [1.92 σ]
OotOffset-st: 4/4/4 [16]
KicOffset-st: 4/4/4 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 0.71 [12/17]

TCE 005473171-01, PDC Light Curves

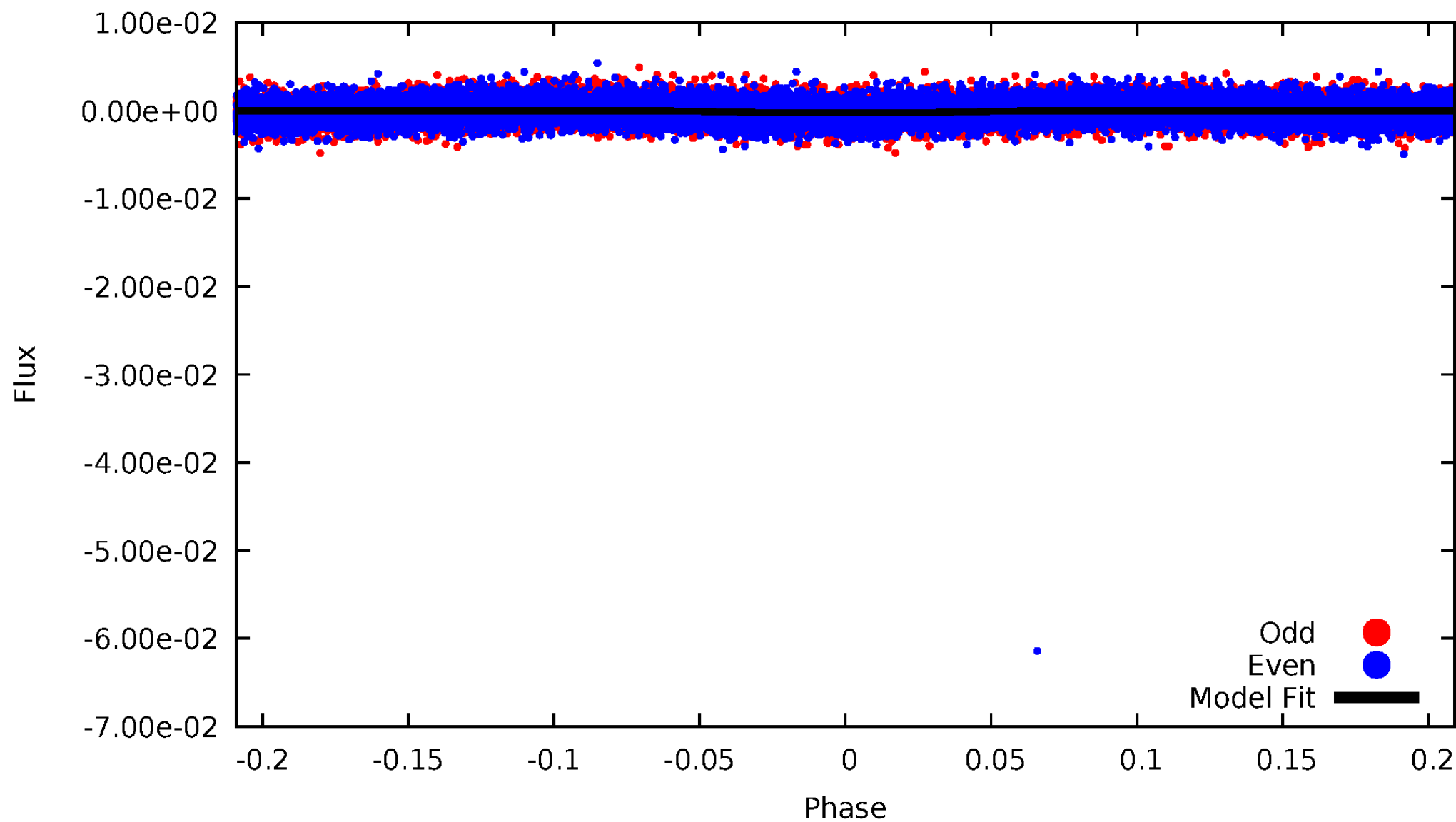


TCE 005473171-01



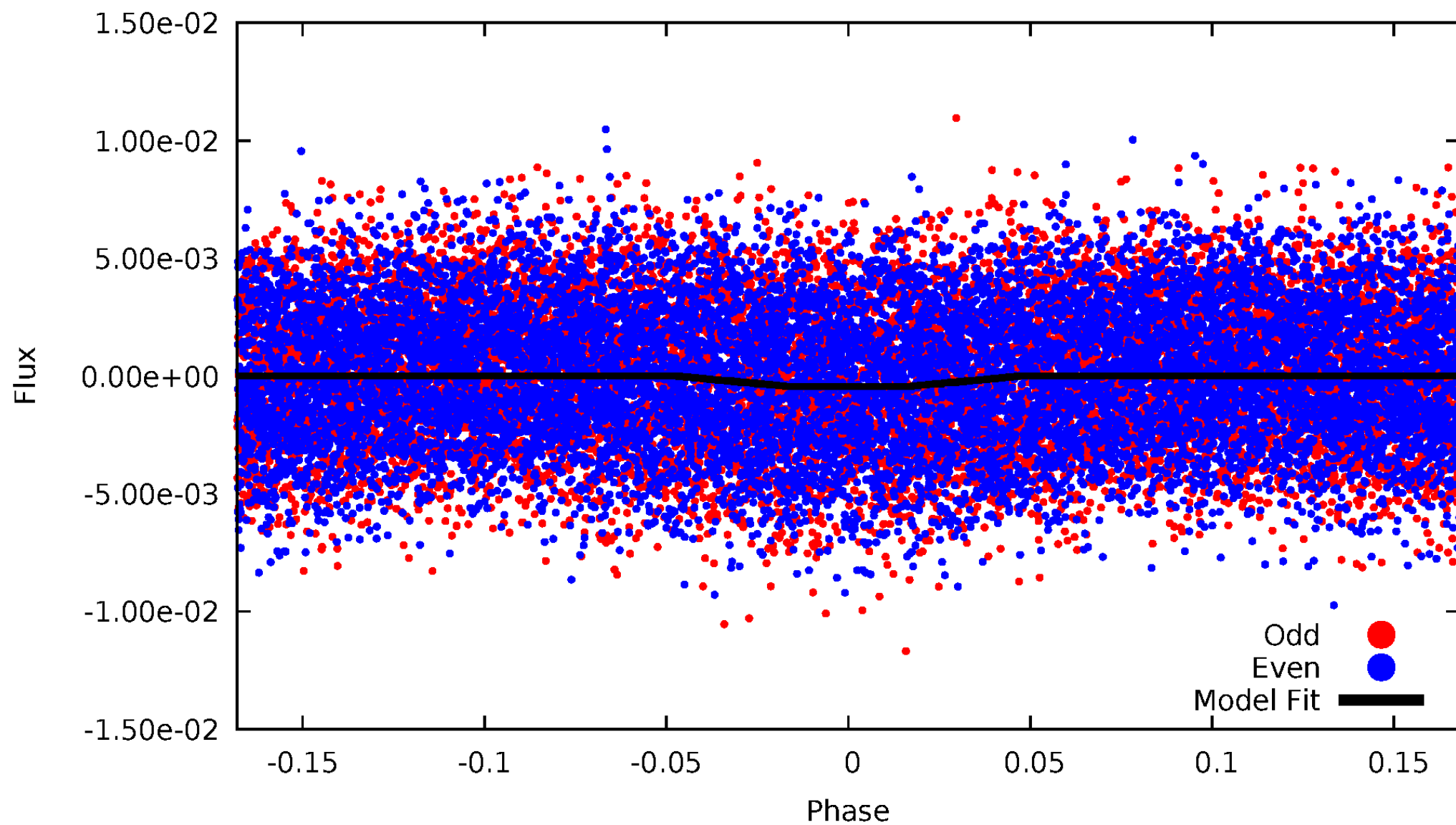
DV Odd/Even

TCE 005473171-01



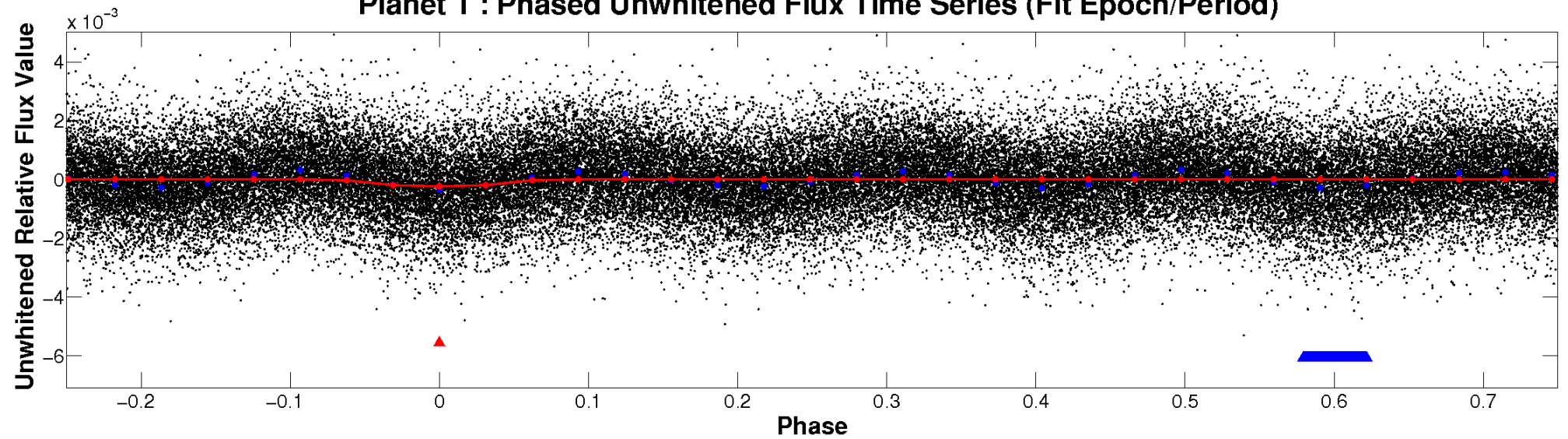
ALT Odd/Even

TCE 005473171-01

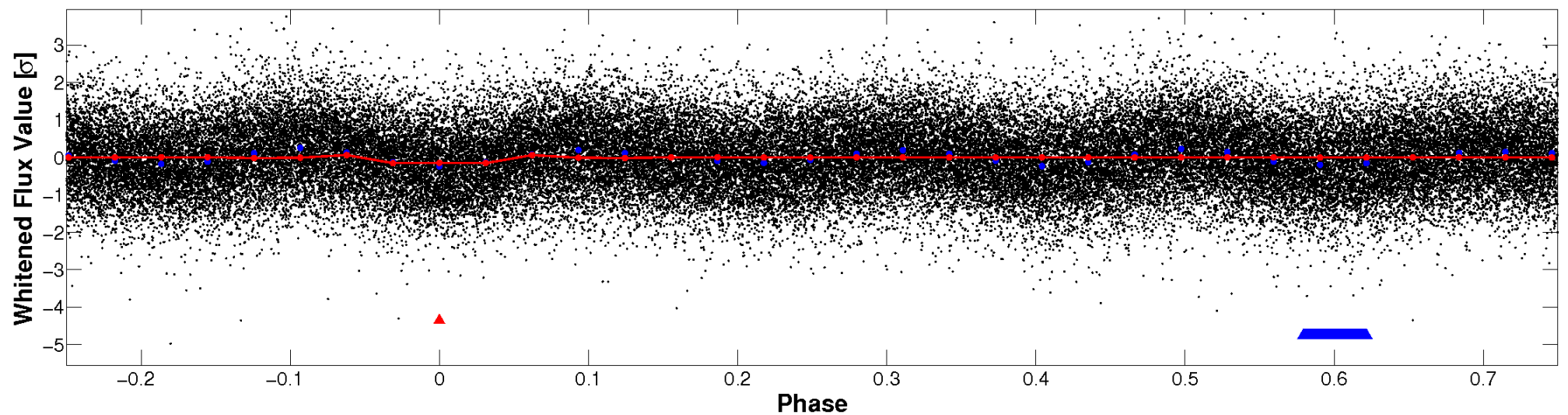


Non-Whitened Vs. Whitened Light Curve

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

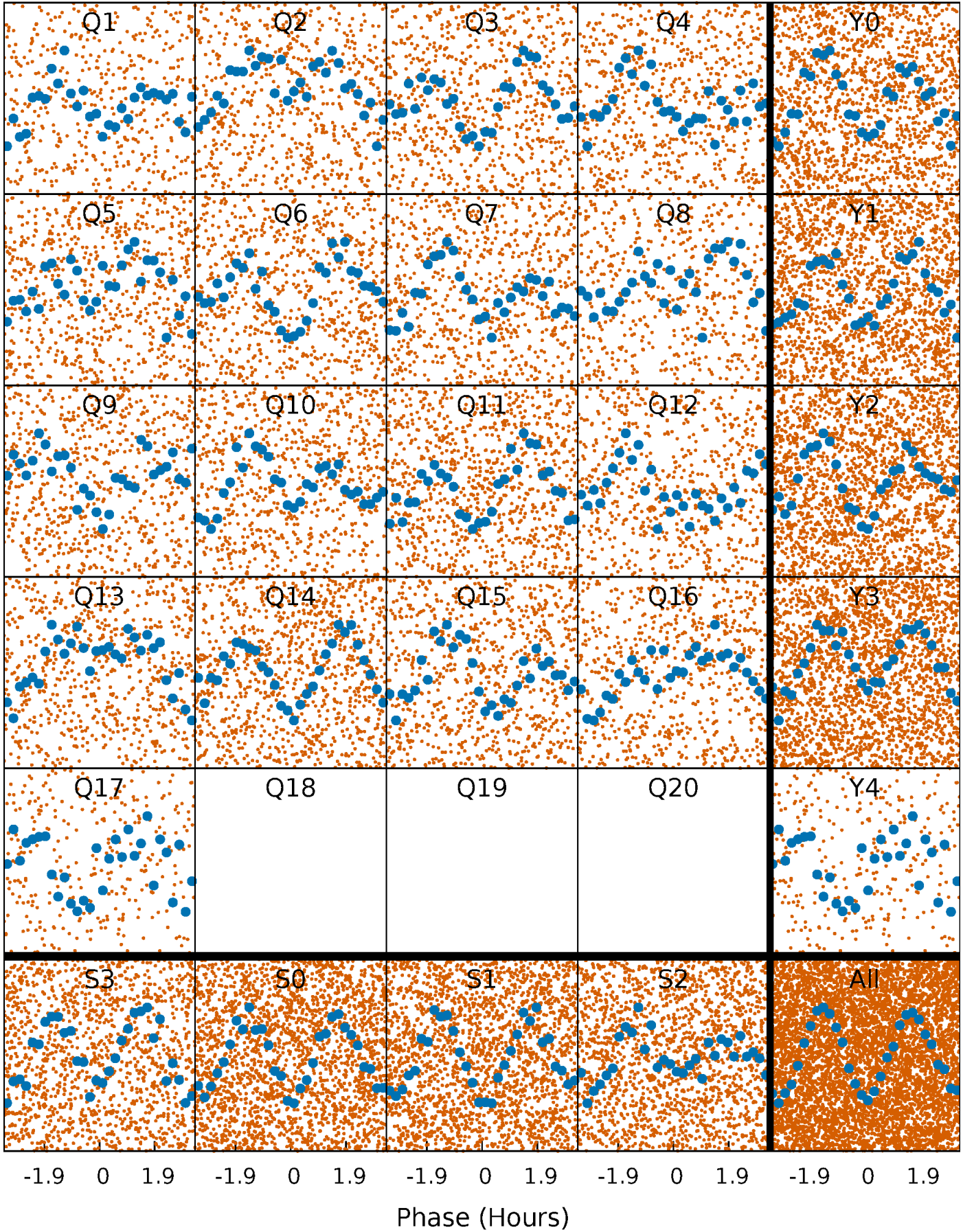


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



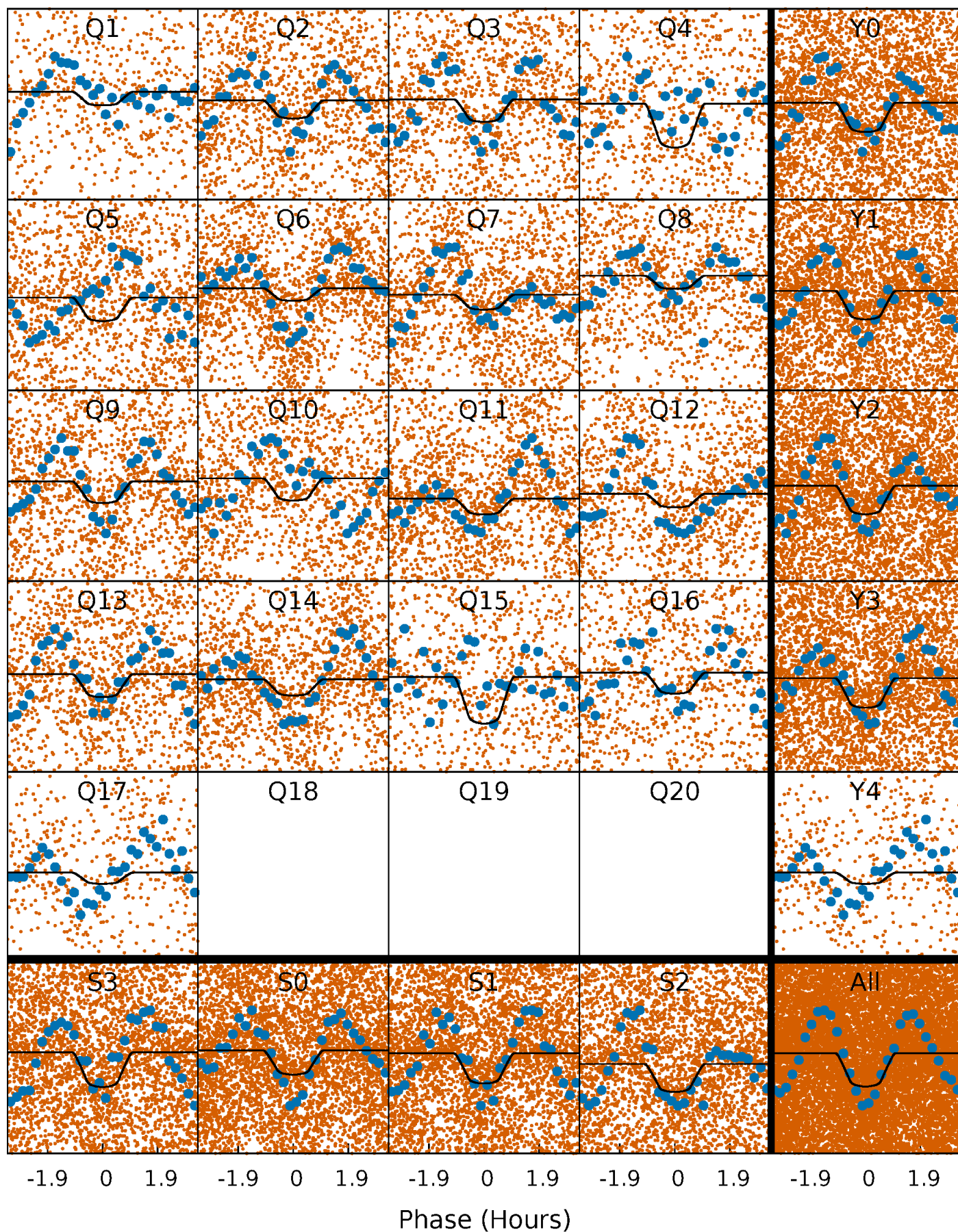
PDC Quarter-Phased Transit Curves

TCE 005473171-01 P= 0.657382 Days $T_0=131.619902$ (BKJD)



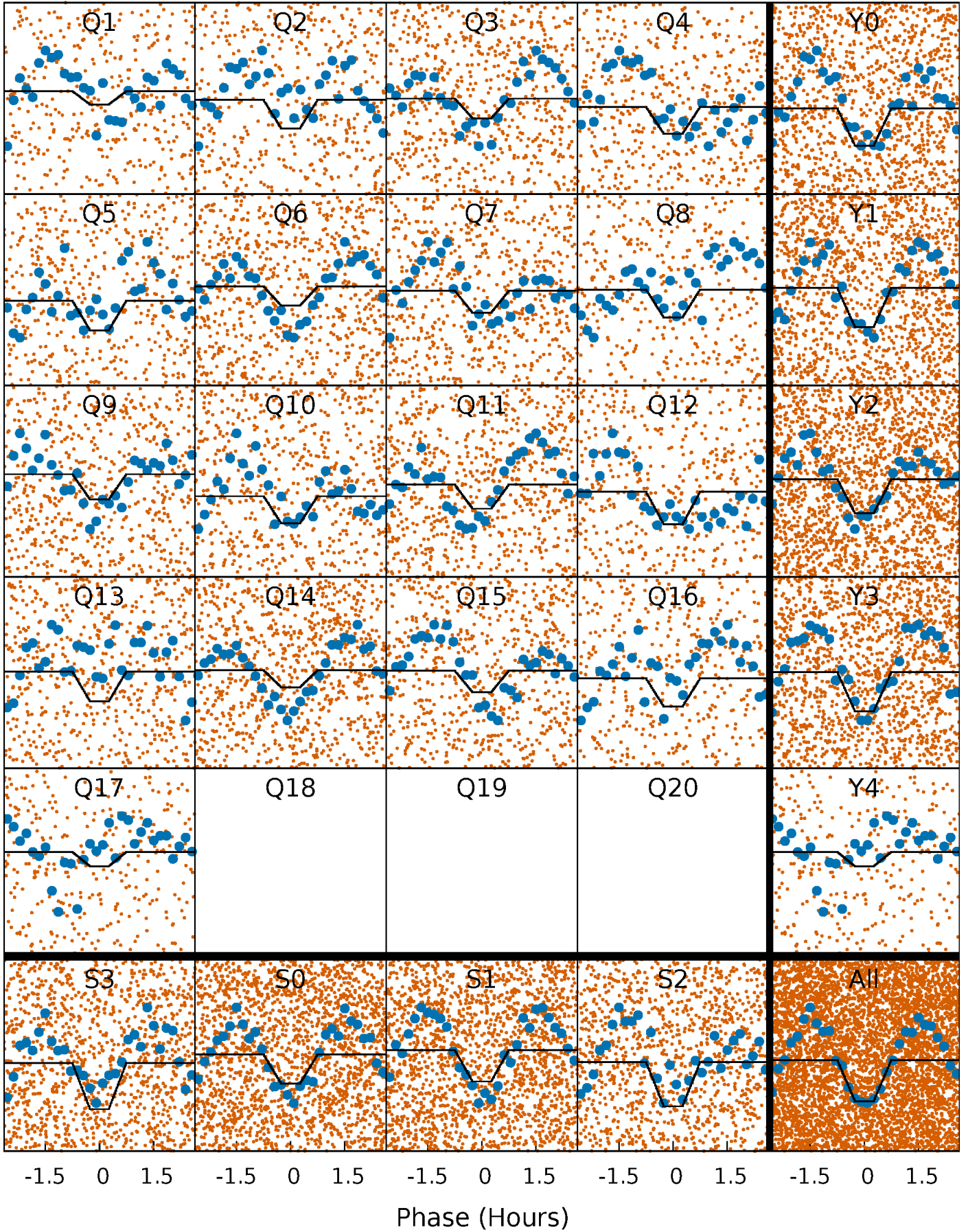
DV Quarter-Phased Transit Curves

TCE 005473171-01 P= 0.657382 Days $T_0=131.619902$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

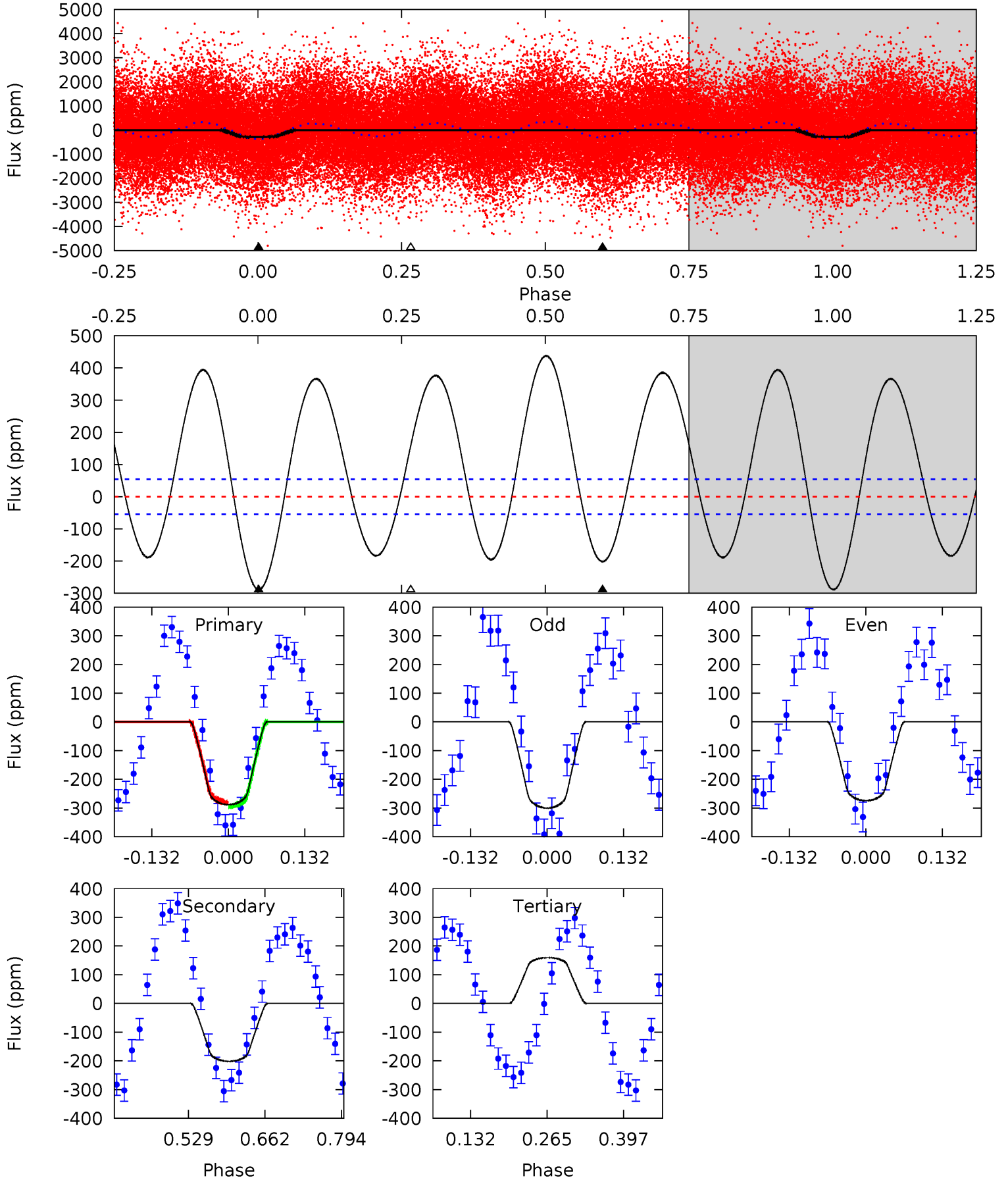
TCE 005473171-01 P= 0.657389 Days $T_0=131.614806$ (BKJD)



DV Model-Shift Uniqueness Test

005473171-01, P = 0.657382 Days, E = 130.962520 Days

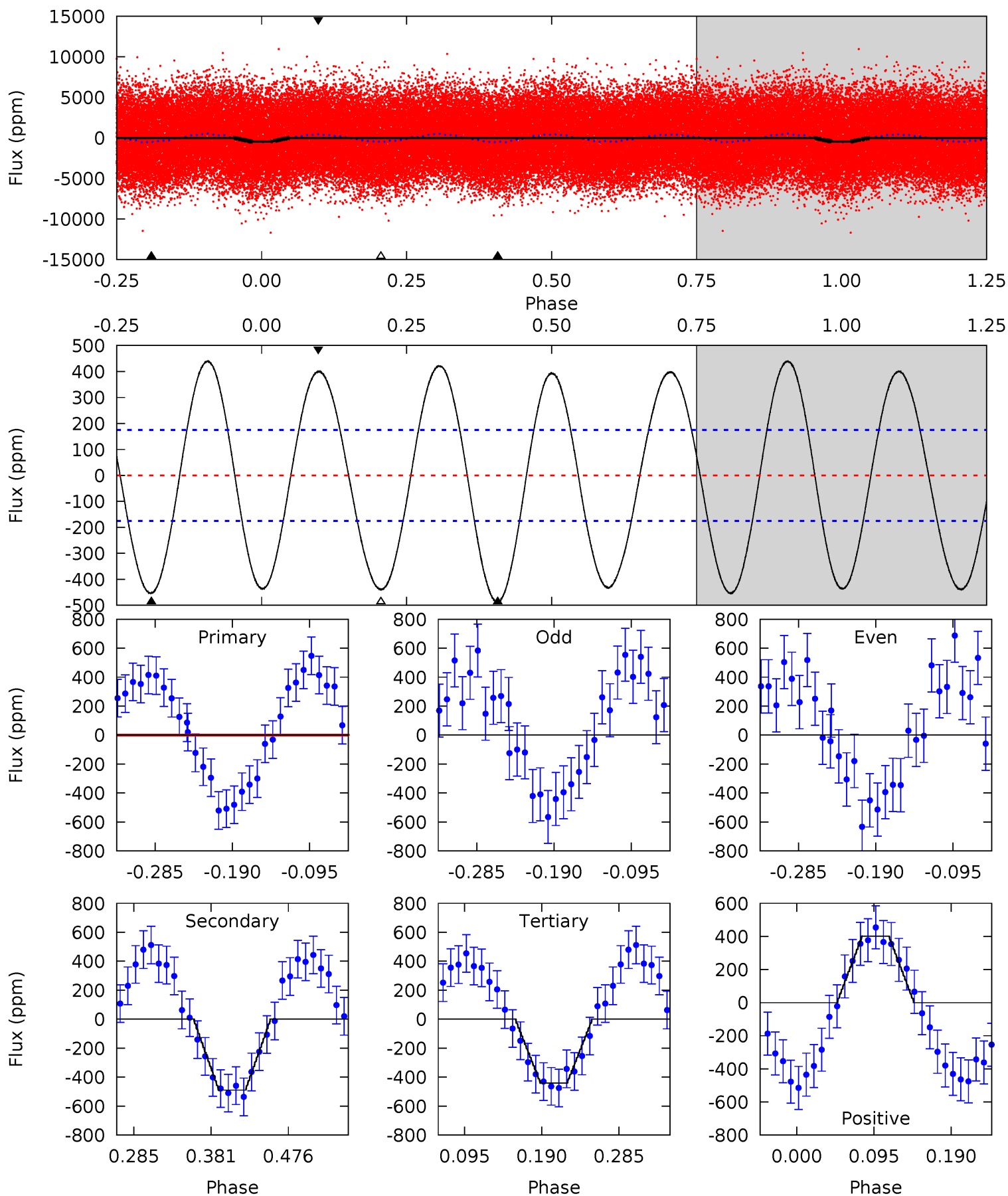
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.8	16.6	-13.2	0	4.51	1.50	14.6	37.0	23.8	29.8	16.6	1.05	1.10	0.60	0.54



Alt Model-Shift Uniqueness Test

005473171-01, P = 0.657389 Days, E = 130.957417 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	12.8	11.5	10.5	4.58	1.67	7.90	0.36	1.37	1.28	2.29	0.58	1.32	0.47	0.29



Stellar Parameters For KIC 005473171

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+212}_{-319}	$3.588^{+0.567}_{-0.063}$	$-0.260^{+0.250}_{-0.300}$	$3.751^{+0.513}_{-2.052}$	$1.987^{+0.102}_{-0.578}$	$0.053^{+0.364}_{-0.012}$
	+3%/-4%	+16%/-2%	+96%/-115%	+14%/-55%	+5%/-29%	+686%/-22%
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 005473171-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-202 ± 12	$5.96^{+1.59}_{-1.70}$	6374^{+511}_{-839}	6362^{+1008}_{-791}	$1.066^{+0.918}_{-0.388}$
Alt.	-489 ± 38	$7.59^{+1.97}_{-2.40}$	6373^{+526}_{-876}	7345^{+977}_{-733}	$1.564^{+1.449}_{-0.550}$

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 $A_{obs} \gg 1.0$

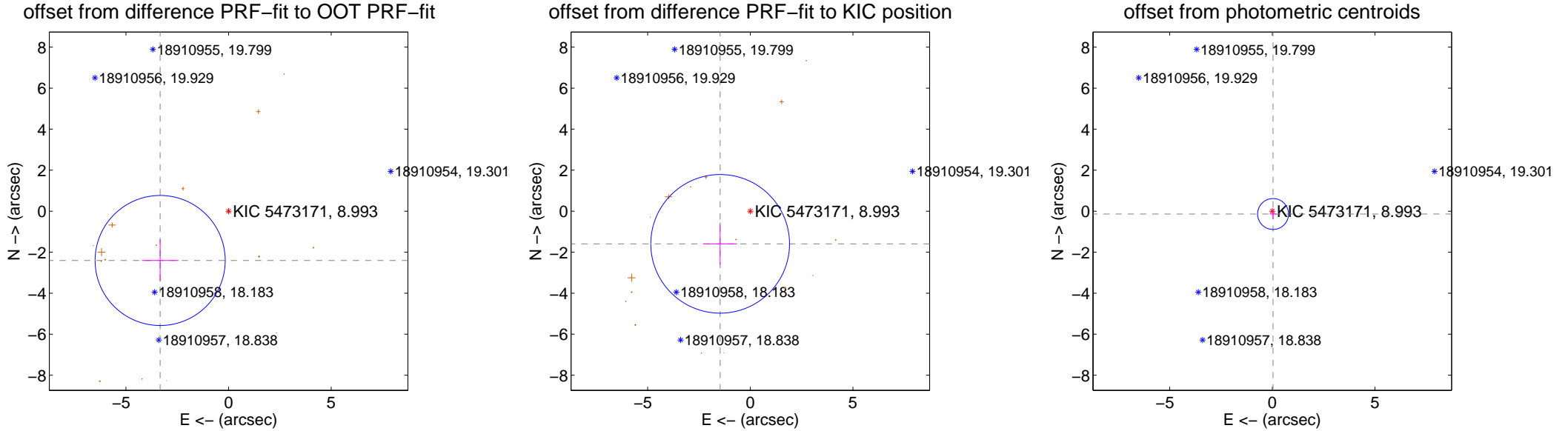
DV Centroid Data

Supplemental centroid analysis for 005473171-01. **Kepler magnitude: 8.99.** Transit SNR 13.10

There are 0 quarters with good PRF difference image offsets

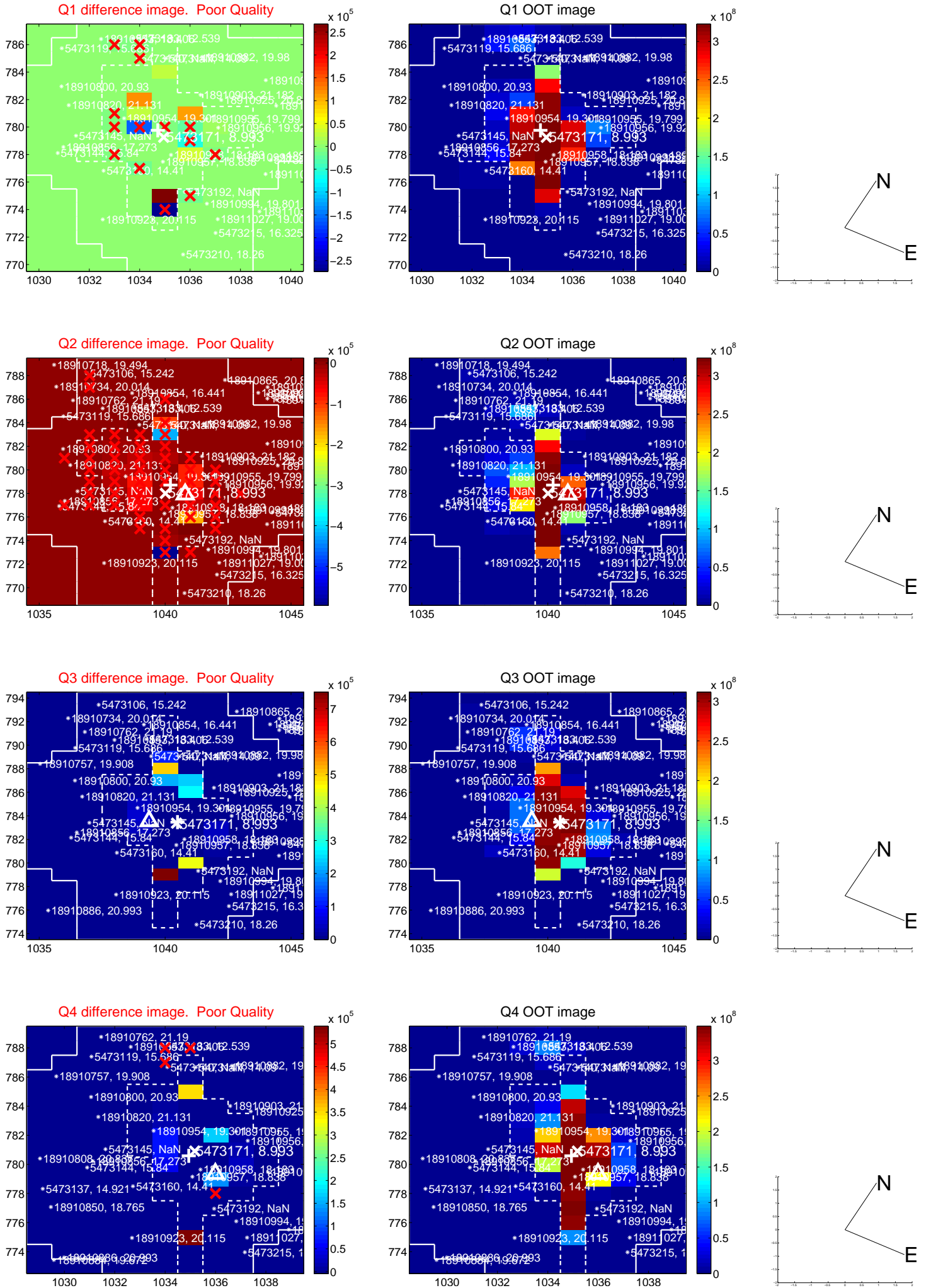
The OOT PRF centroid is offset from the target star catalog position by about 2.18 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.111 ± 1.057	3.89	3.334 ± 0.894	-2.404 ± 1.028
PRF-fit source offset from KIC position	2.167 ± 1.127	1.92	1.469 ± 0.822	-1.593 ± 1.025
photometric centroid source offset	0.14 ± 0.25	0.57	-0.04 ± 0.16	-0.14 ± 0.26

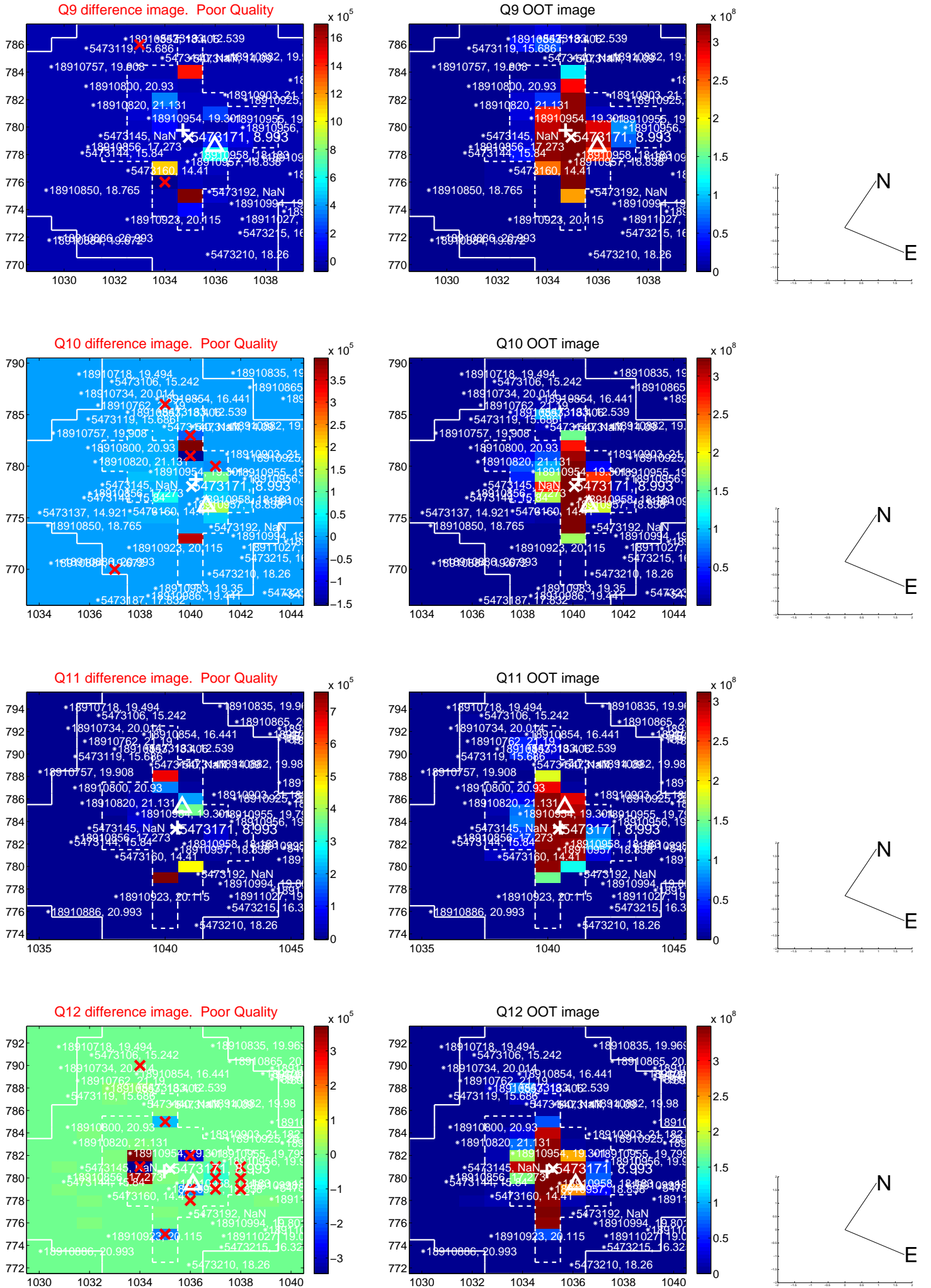


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

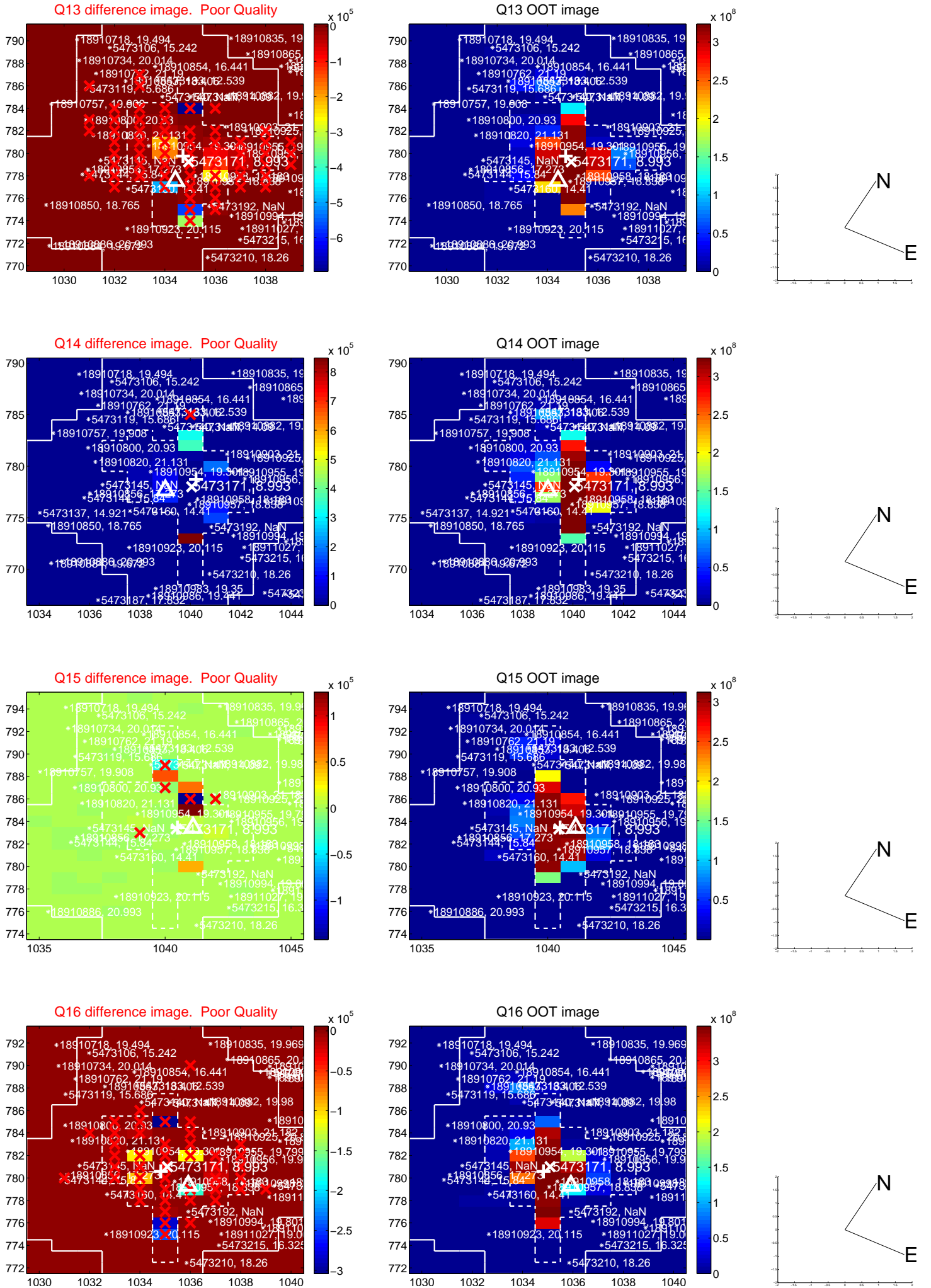
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



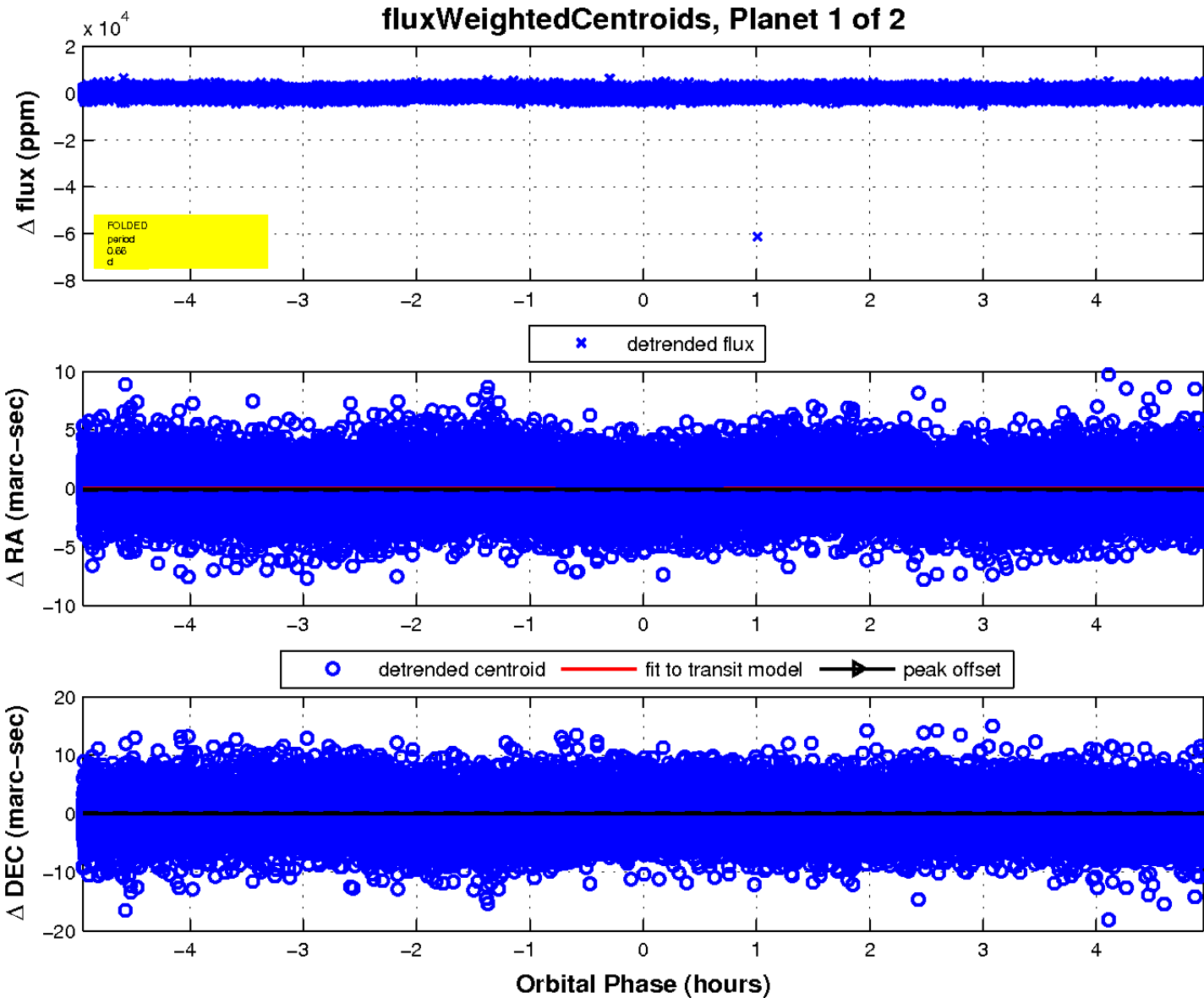
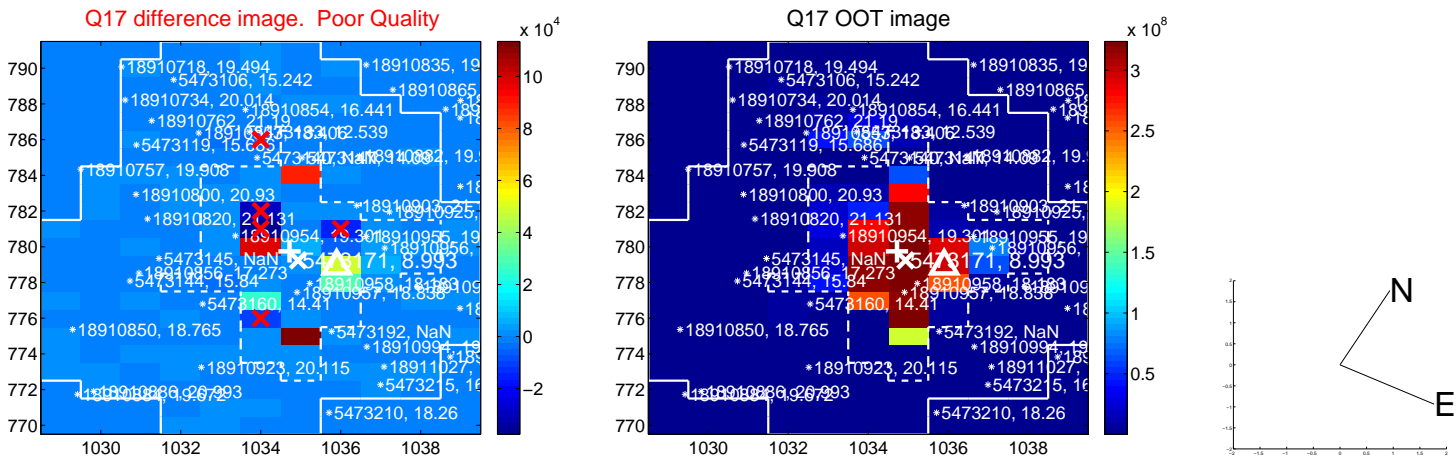
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



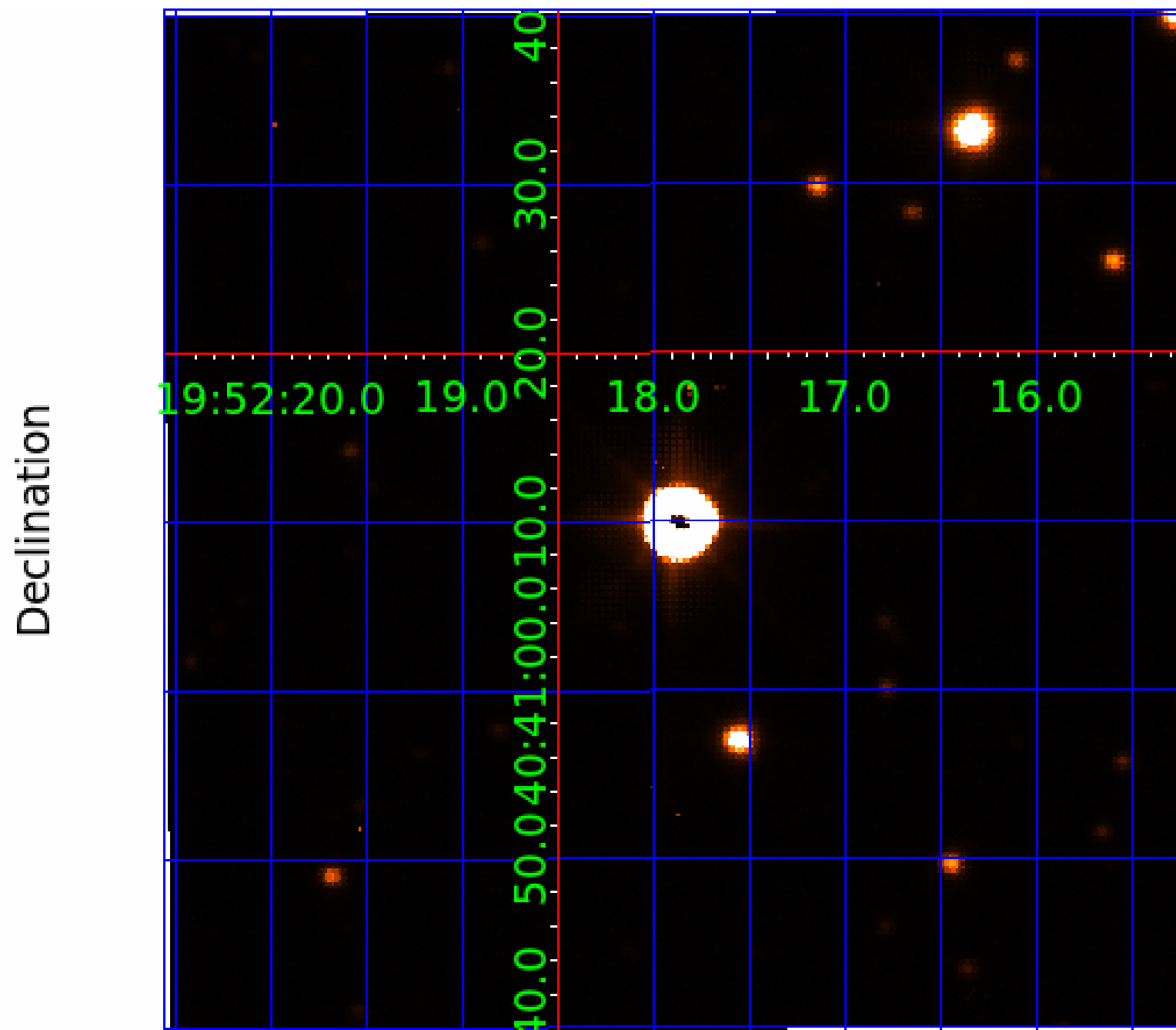
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 005473171

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})
005473171-01	OBS	No	0.657382	131.619902	239.8	1.649	13.0	13.1	3.75	7693	6.83	127531.70
005473171-02	OBS	No	0.657395	132.000747	345.6	1.292	12.7	20.5	3.75	7693	8.22	127528.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005473171-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
005473171-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—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.

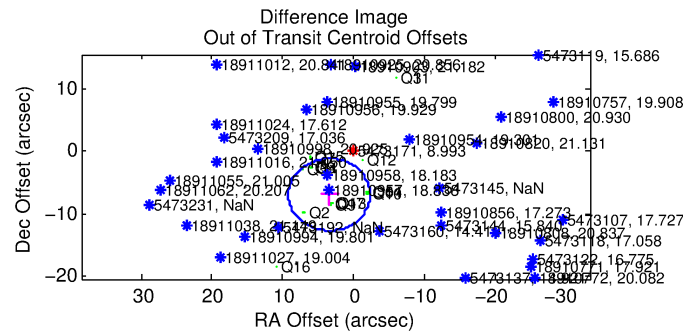
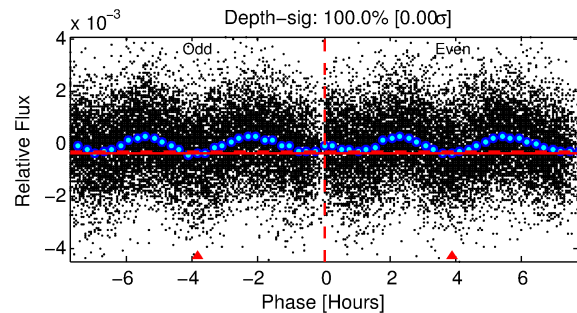
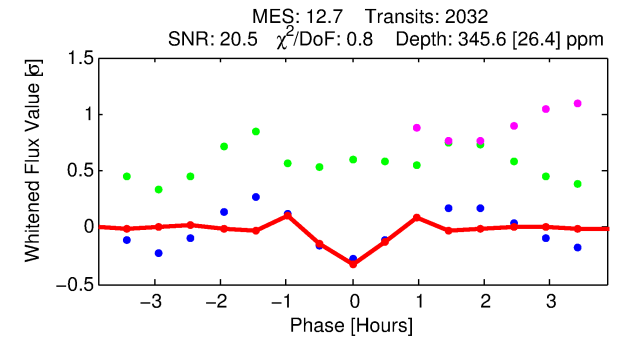
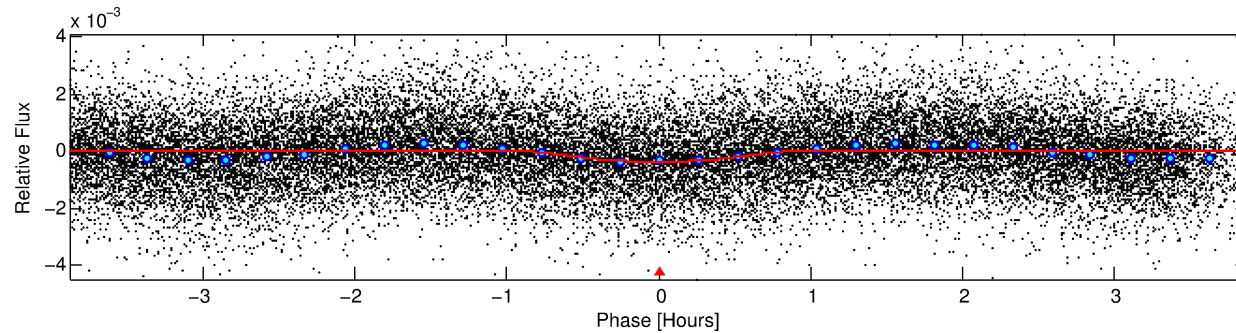
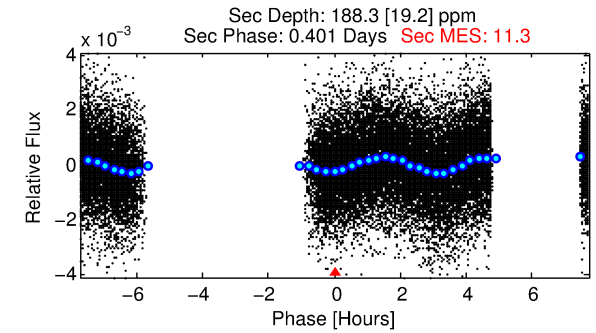
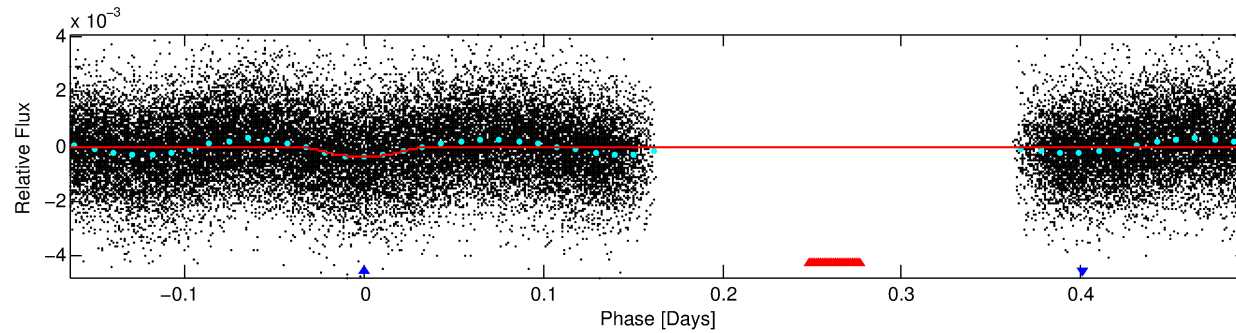
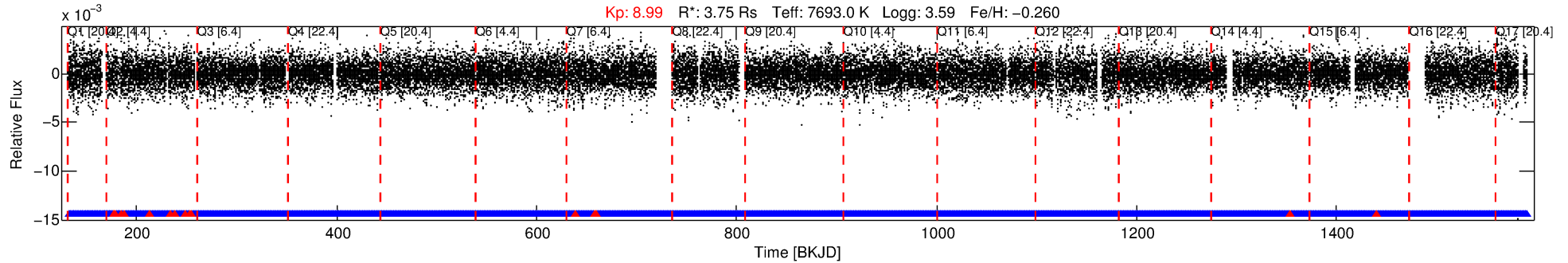
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005473171-02

No Significant Match Found

DV One-Page Summary

KIC: 5473171 Candidate: 2 of 2 Period: 0.657 d



DV Fit Results:

Period = 0.65739 [0.00001] d
Epoch = 132.0007 [0.0006] BKJD
Rp/R* = 0.0201 [0.0032]
a/R* = 2.09 [1.36]
b = 0.90 [0.18]
Seff = 127528.45 [122193.01]
Teff = 4819 [1154] K
Rp = 8.22 [4.68] Re
a = 0.0186 [0.0106] AU
Ag = 0.53 [0.53] [-0.88σ]
Teffp = 6360 [594] K [1.19σ]

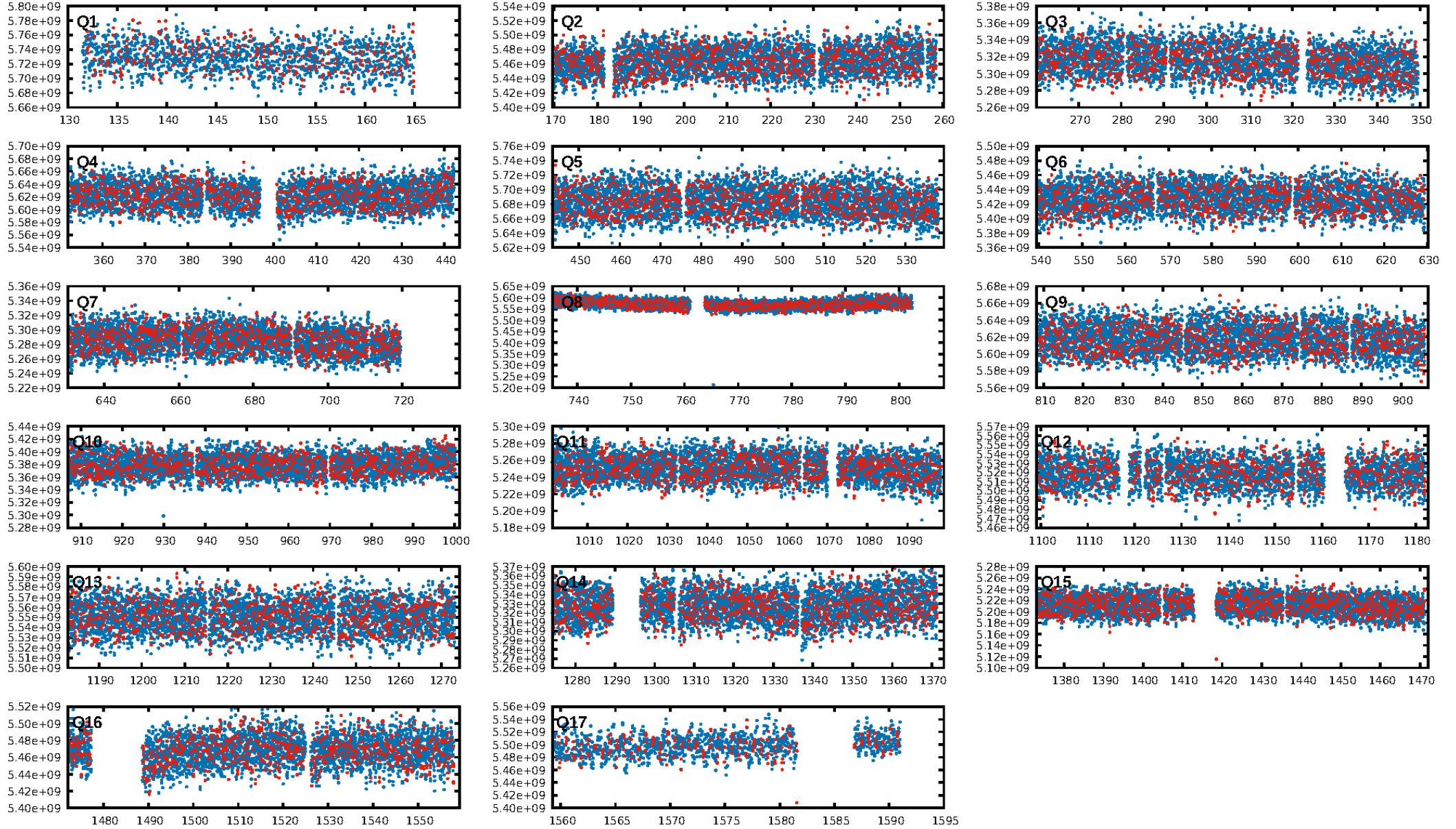
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.22e-20
RollingBand-fgt: 0.99 [1923/1939]
GhostDiagnostic-chr: N/A
Centroid-sig: 76.2%
Centroid-so: 0.419 arcsec [3.63σ]
OotOffset-rm: 7.774 arcsec [4.04σ]
KicOffset-rm: 6.186 arcsec [3.42σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 0.88 [15/17]

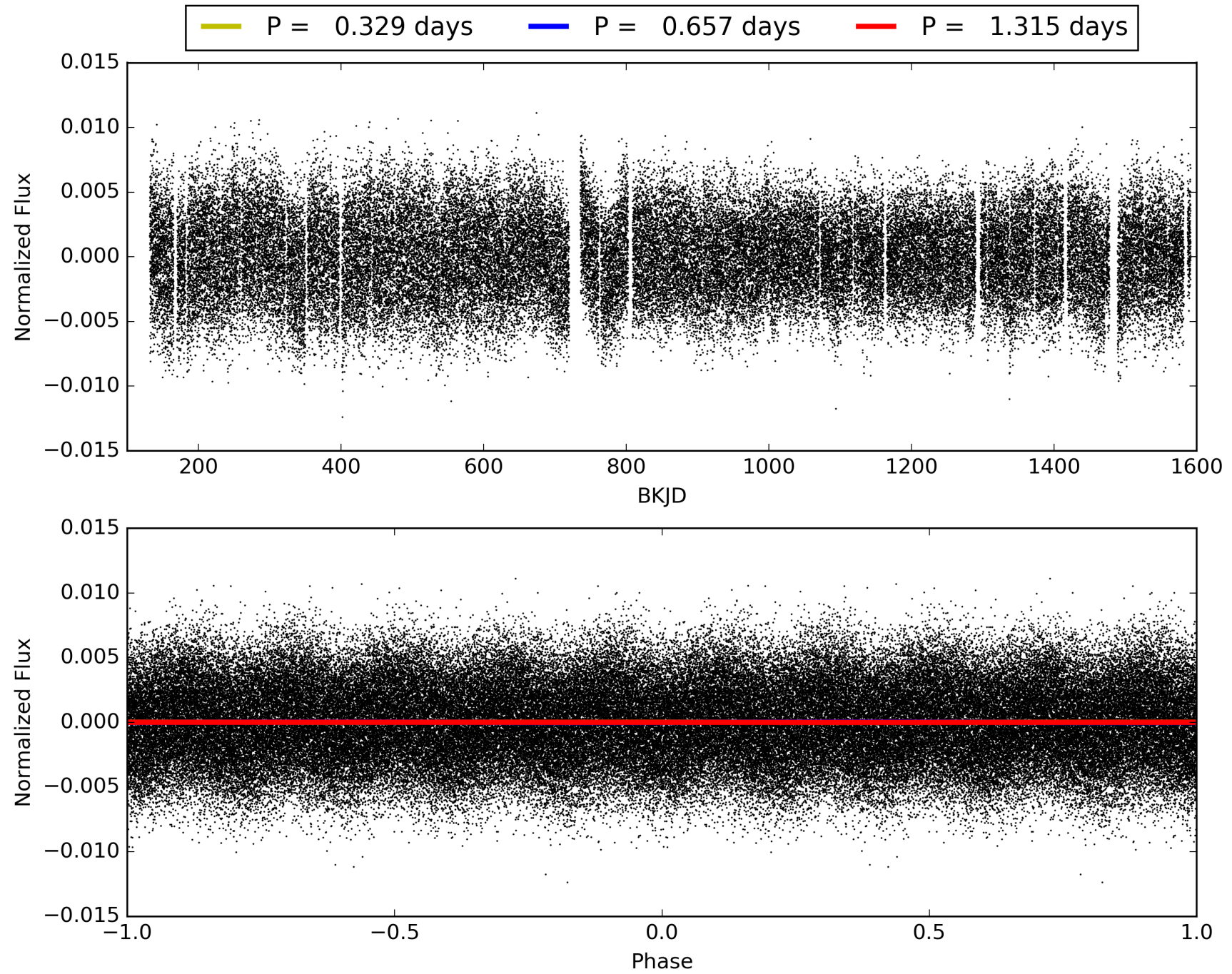
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:15:54 Z

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

TCE 005473171-02, PDC Light Curves

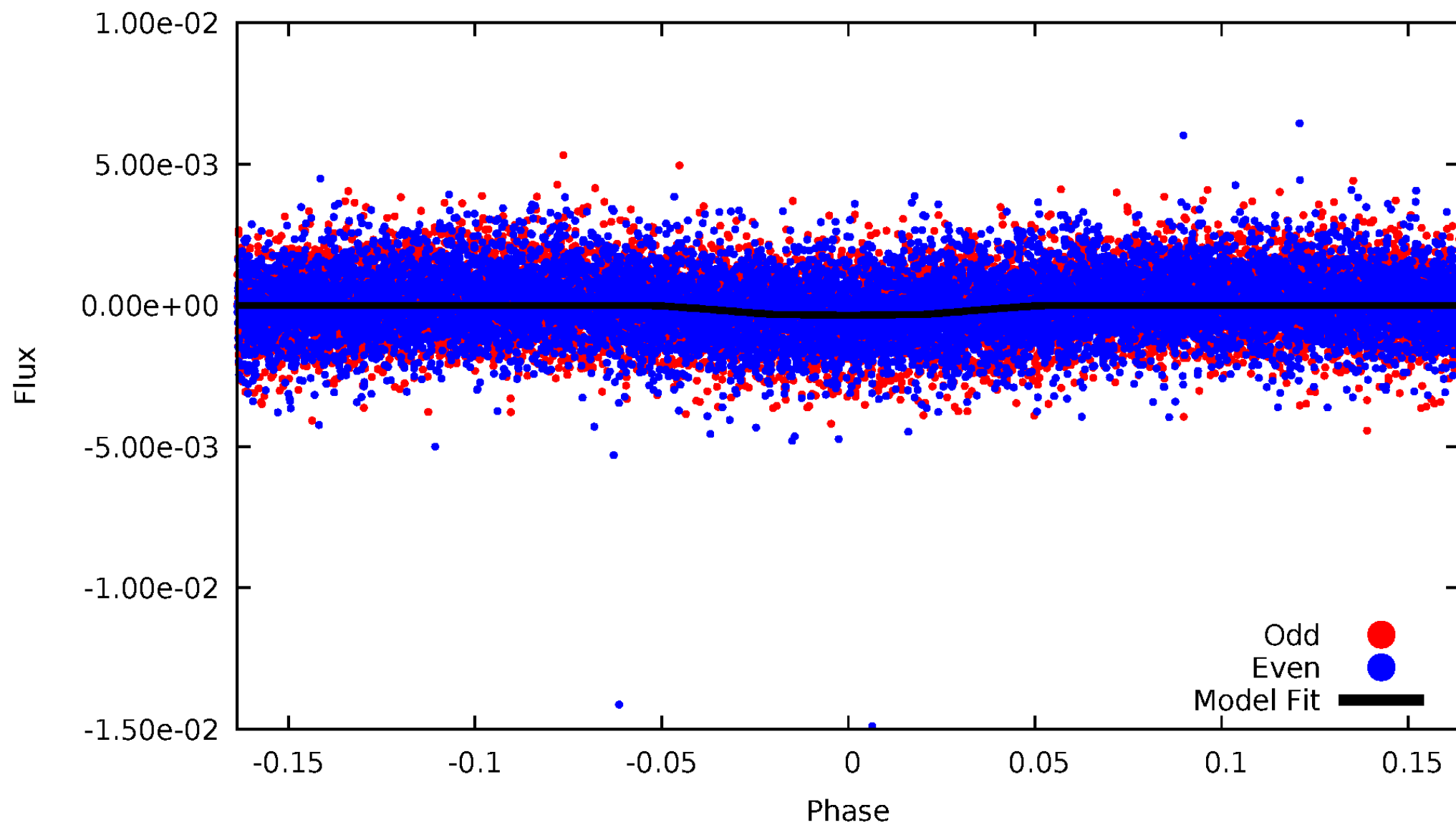


TCE 005473171-02



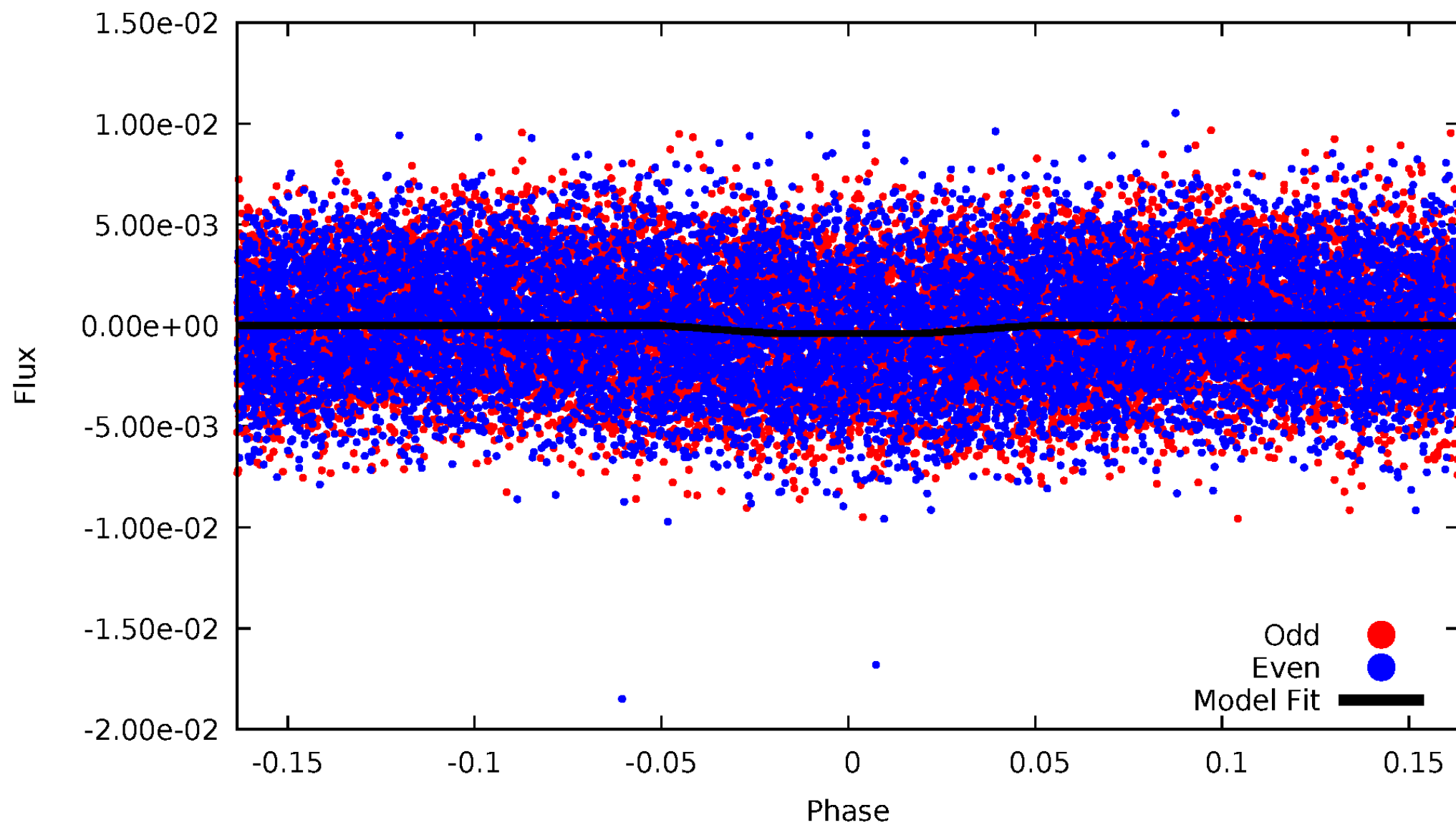
DV Odd/Even

TCE 005473171-02



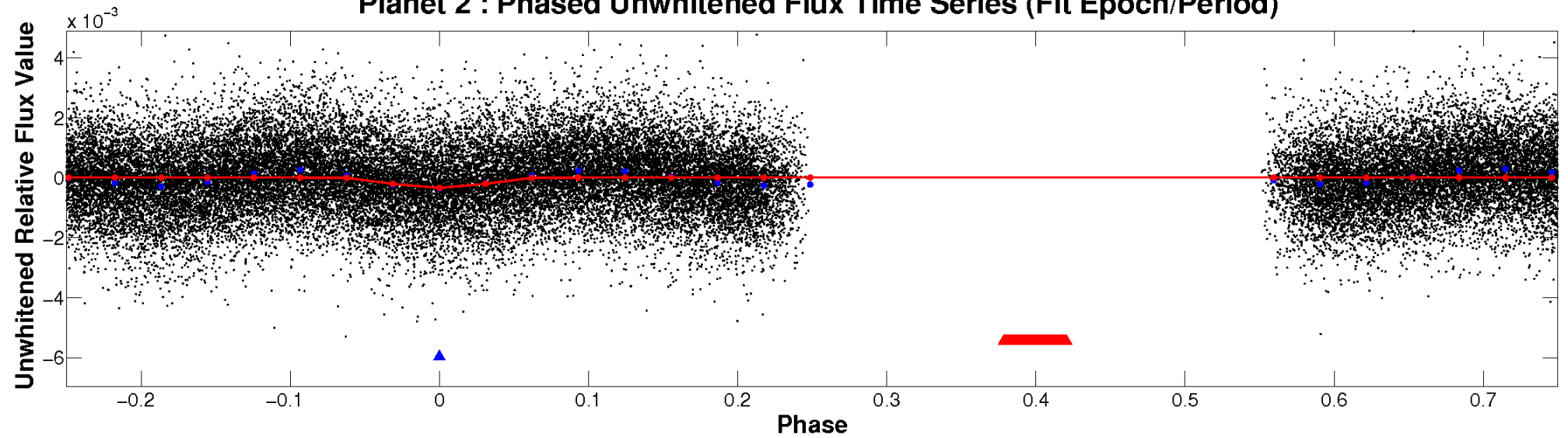
ALT Odd/Even

TCE 005473171-02

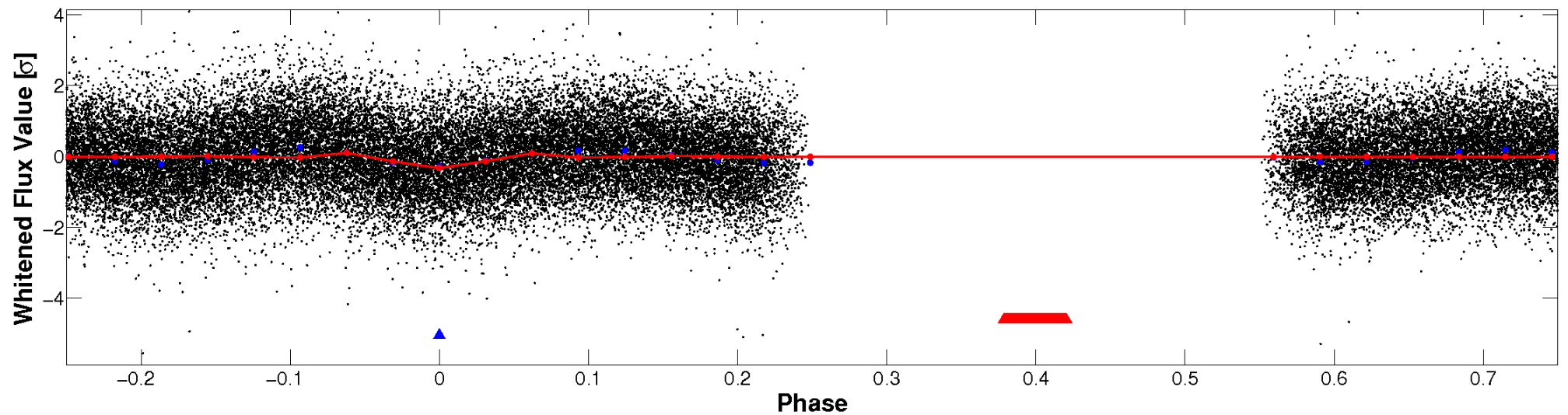


Non-Whitened Vs. Whitened Light Curve

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

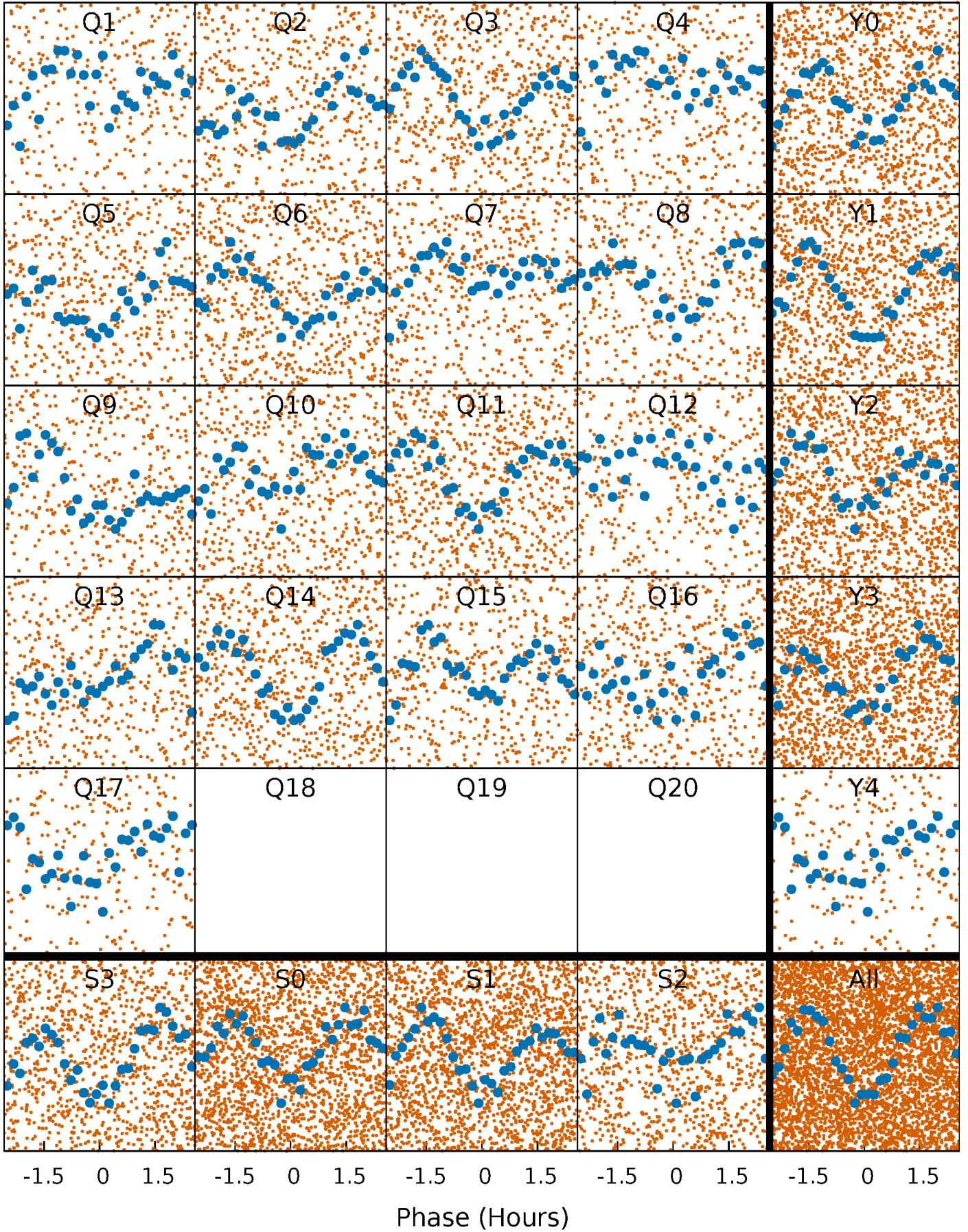


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



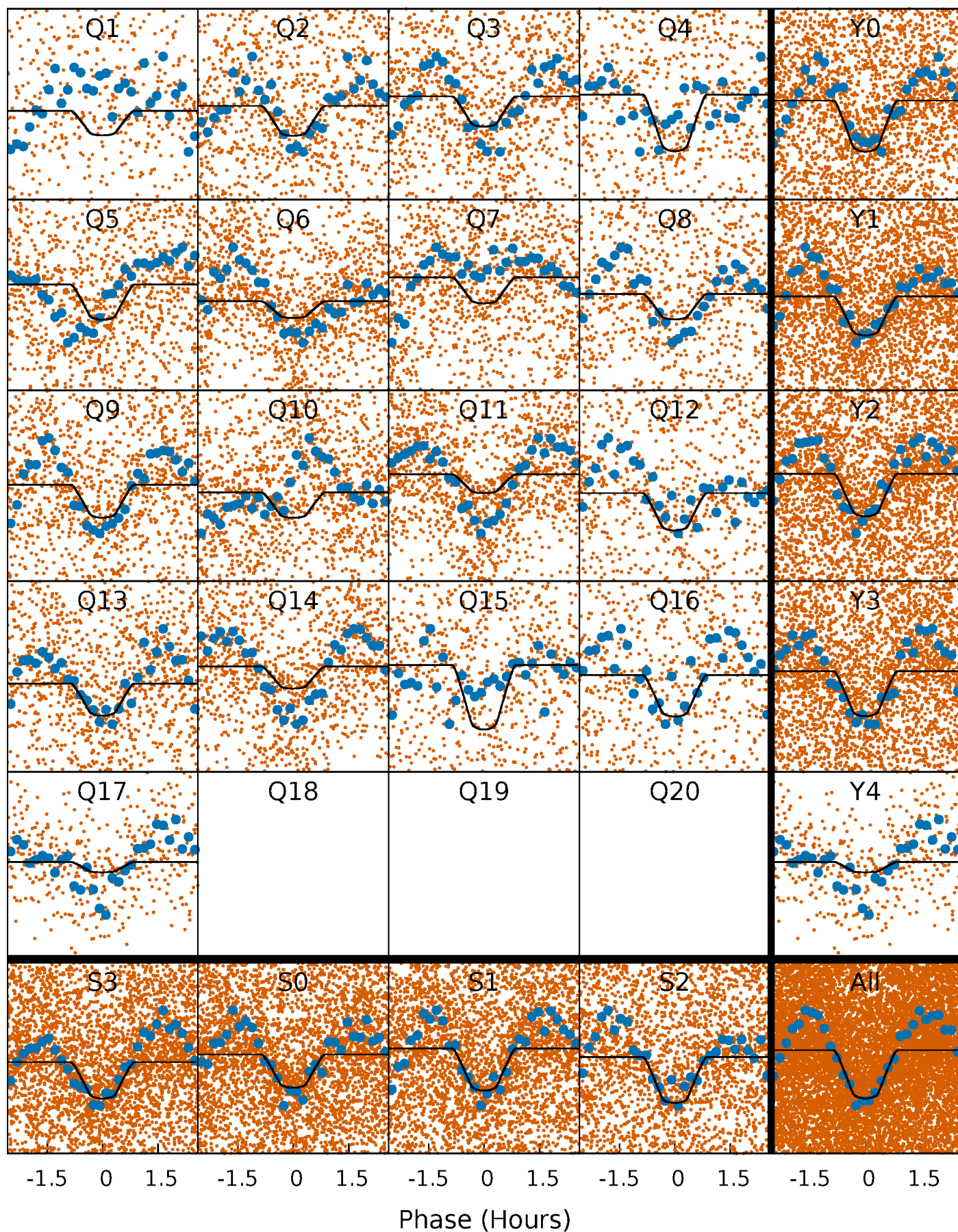
PDC Quarter-Phased Transit Curves

TCE 005473171-02 P= 0.657395 Days $T_0=132.000747$ (BKJD)



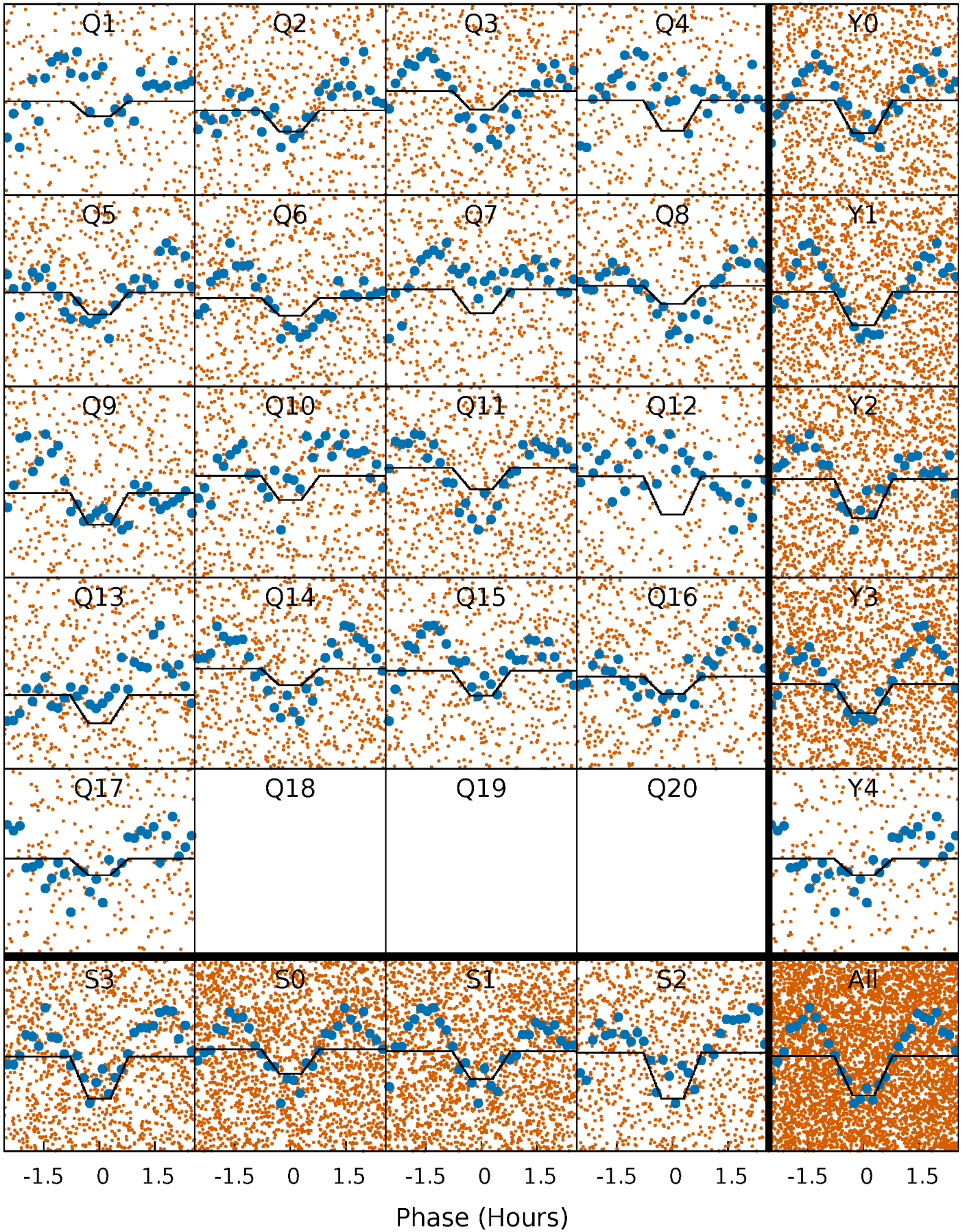
DV Quarter-Phased Transit Curves

TCE 005473171-02 P= 0.657395 Days $T_0=132.000747$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

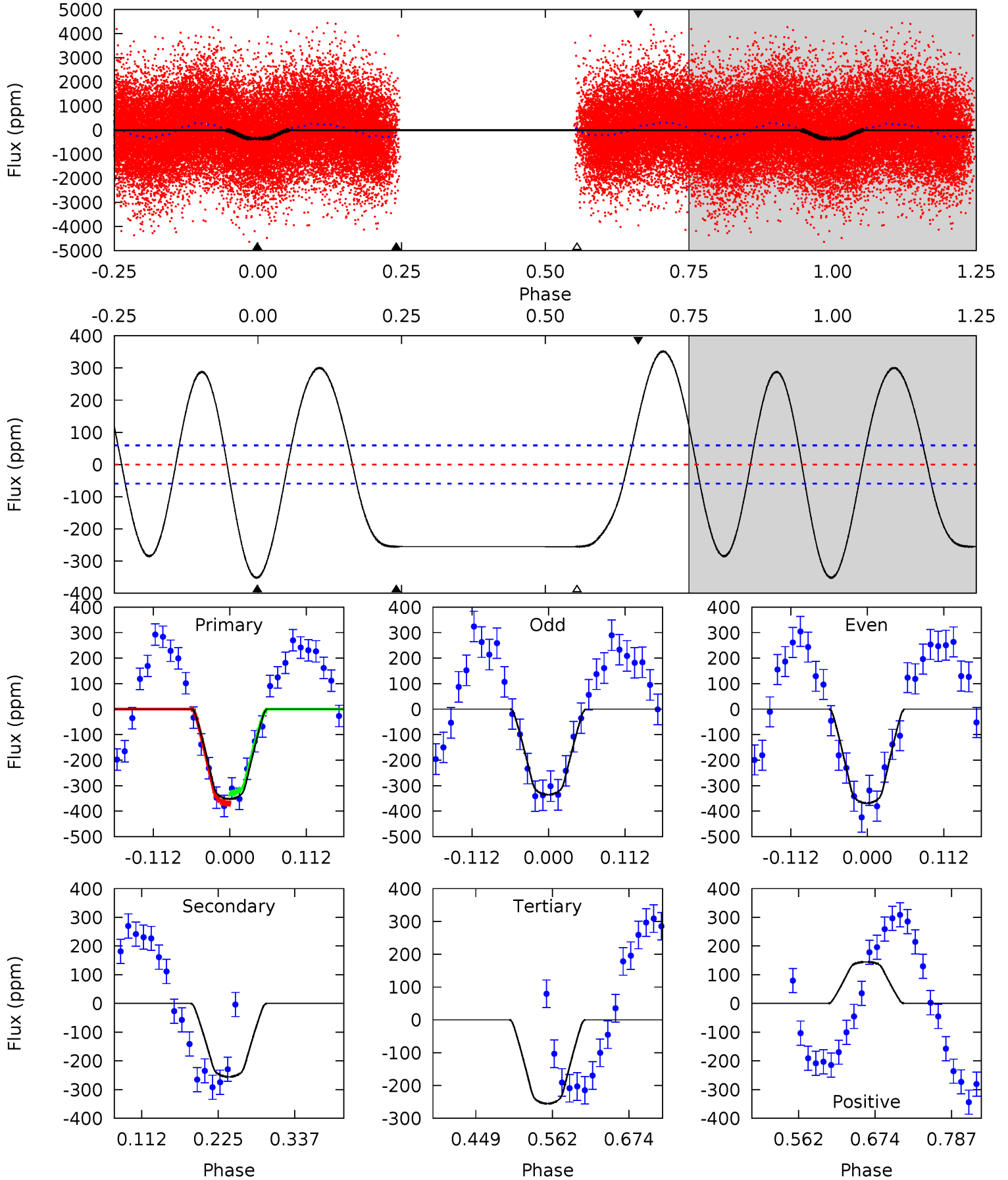
TCE 005473171-02 P= 0.657394 Days $T_0=132.000742$ (BKJD)



DV Model-Shift Uniqueness Test

005473171-02, P = 0.657395 Days, E = 131.343352 Days

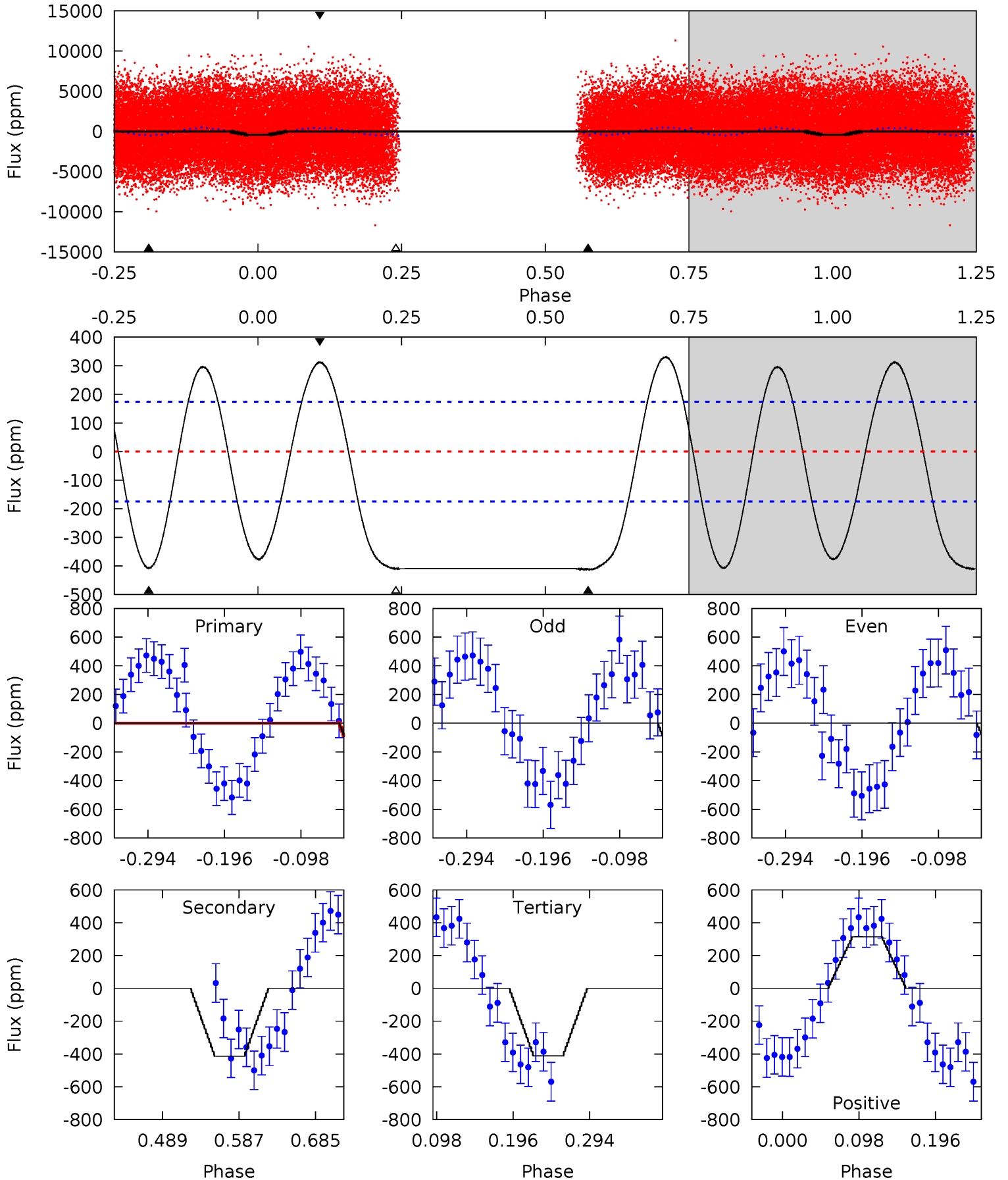
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	19.6	19.6	11.1	4.54	1.59	16.5	7.41	15.9	0.01	8.48	1.28	1.07	0.50	1.52



Alt Model-Shift Uniqueness Test

005473171-02, P = 0.657394 Days, E = 131.343348 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	10.9	10.8	8.23	4.57	1.66	6.68	-0.05	2.49	0.08	2.63	0.49	0.89	0.44	0.58



Stellar Parameters For KIC 005473171

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7693^{+212}_{-319}	$3.588^{+0.567}_{-0.063}$	$-0.260^{+0.250}_{-0.300}$	$3.751^{+0.513}_{-2.052}$	$1.987^{+0.102}_{-0.578}$	$0.053^{+0.364}_{-0.012}$
	+3%/-4%	+16%/-2%	+96%/-115%	+14%/-55%	+5%/-29%	+686%/-22%
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 005473171-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-256 ± 13	$7.09^{+2.09}_{-2.03}$	6374^{+498}_{-882}	6062^{+938}_{-775}	$0.941^{+0.814}_{-0.361}$
Alt.	-414 ± 38	$7.14^{+1.99}_{-2.24}$	6358^{+543}_{-916}	7173^{+1050}_{-780}	$1.504^{+1.523}_{-0.558}$

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 $A_{obs} \gg 1.0$

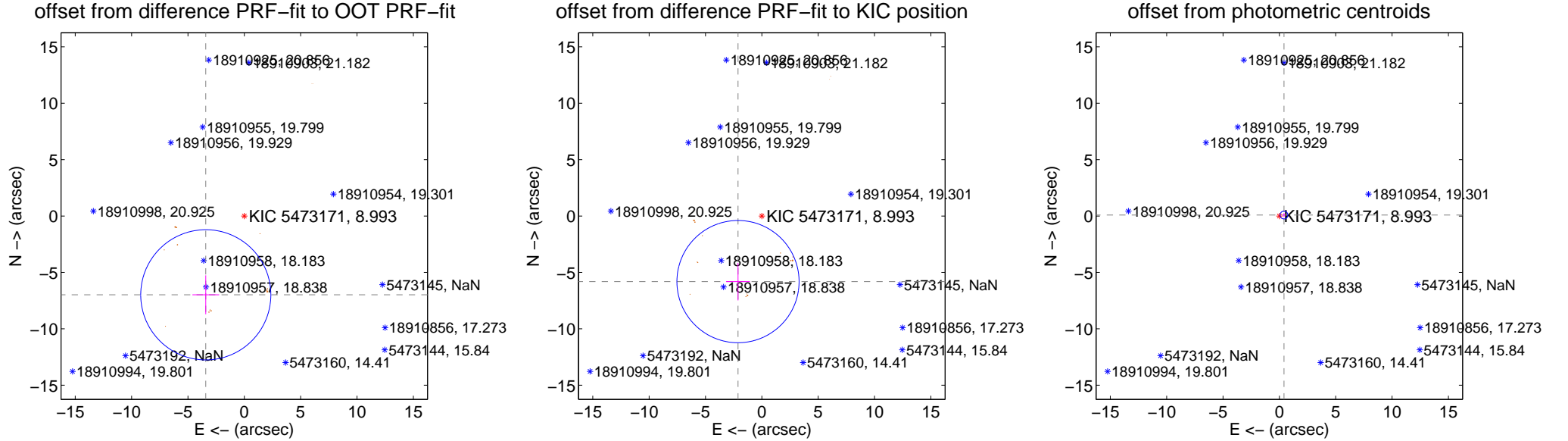
DV Centroid Data

Supplemental centroid analysis for 005473171-02. **Kepler magnitude: 8.99.** Transit SNR 20.49

There are 0 quarters with good PRF difference image offsets

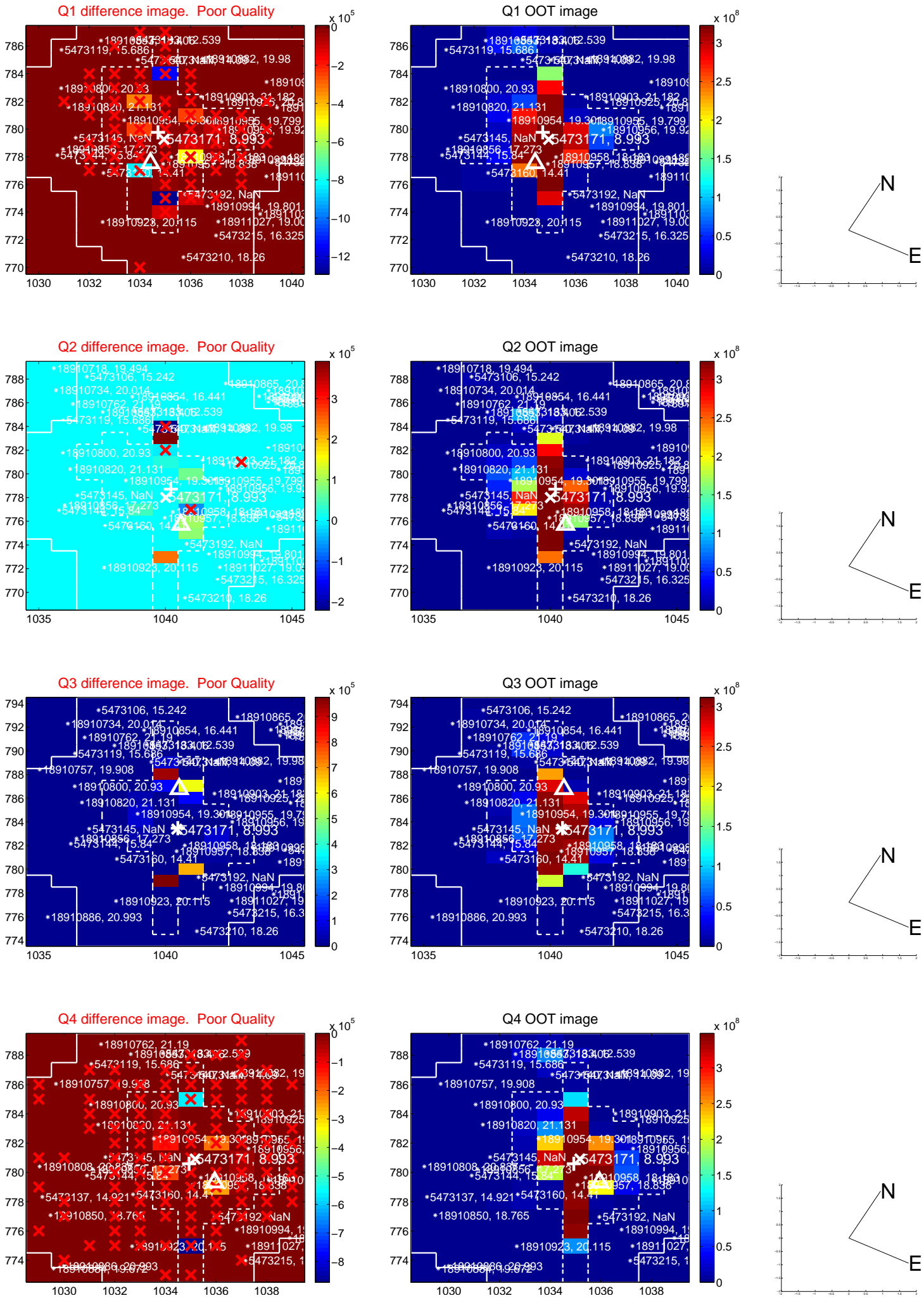
The OOT PRF centroid is offset from the target star catalog position by about 2.18 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.774 ± 1.924	4.04	3.416 ± 1.189	-6.984 ± 1.727
PRF-fit source offset from KIC position	6.186 ± 1.806	3.42	2.114 ± 1.055	-5.813 ± 1.665
photometric centroid source offset	0.42 ± 0.12	3.63	-0.41 ± 0.11	0.09 ± 0.18

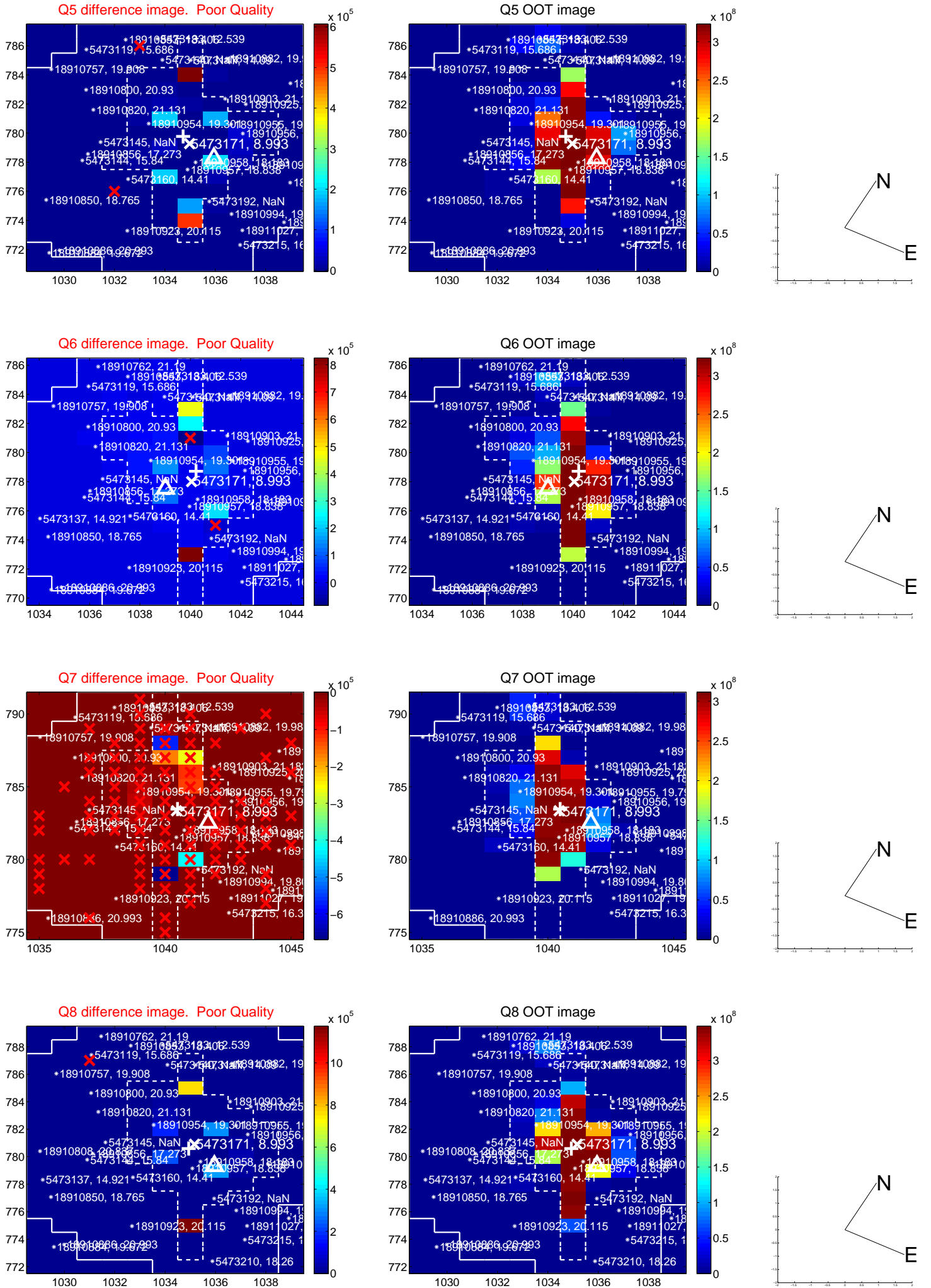


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

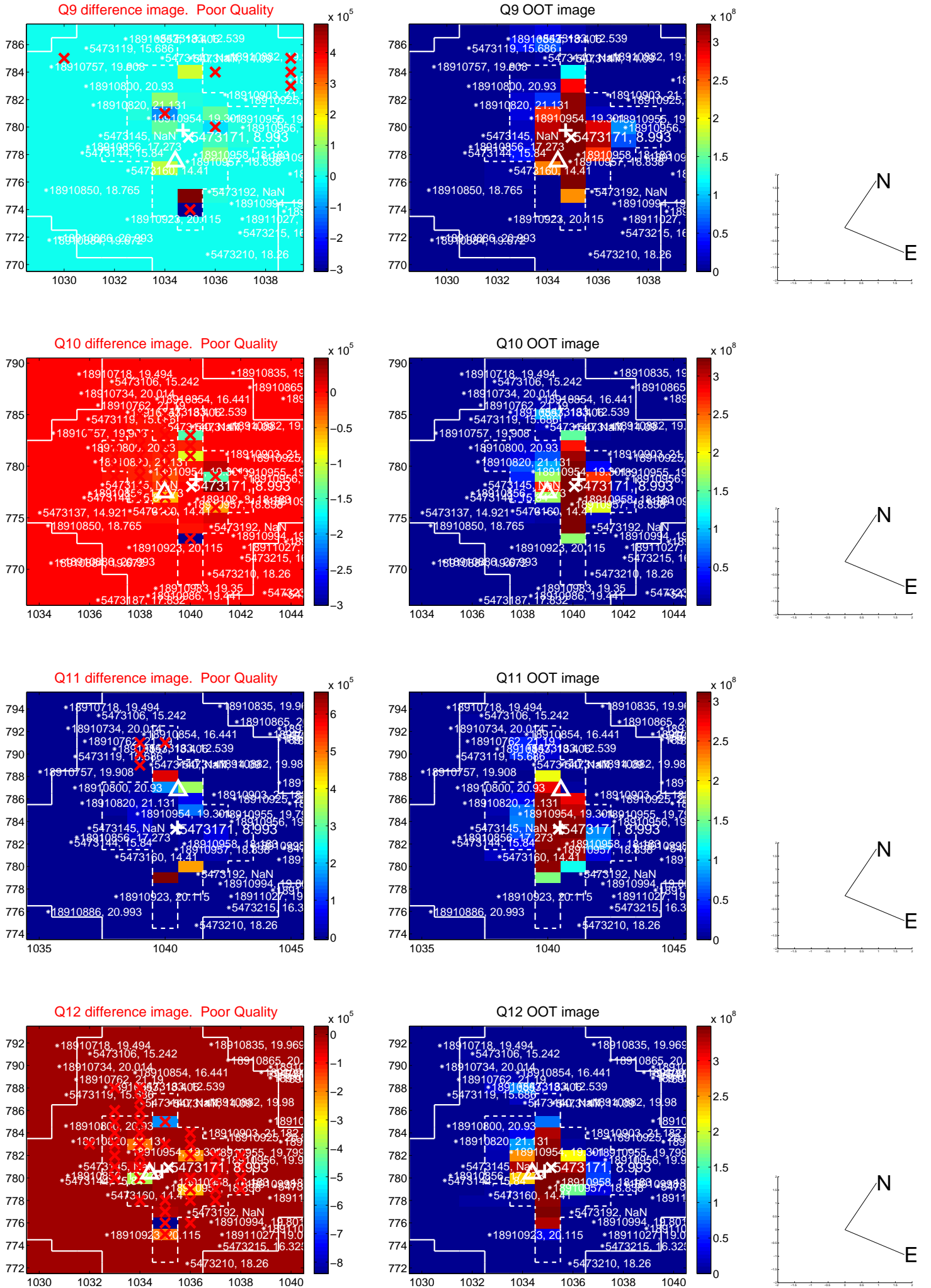
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



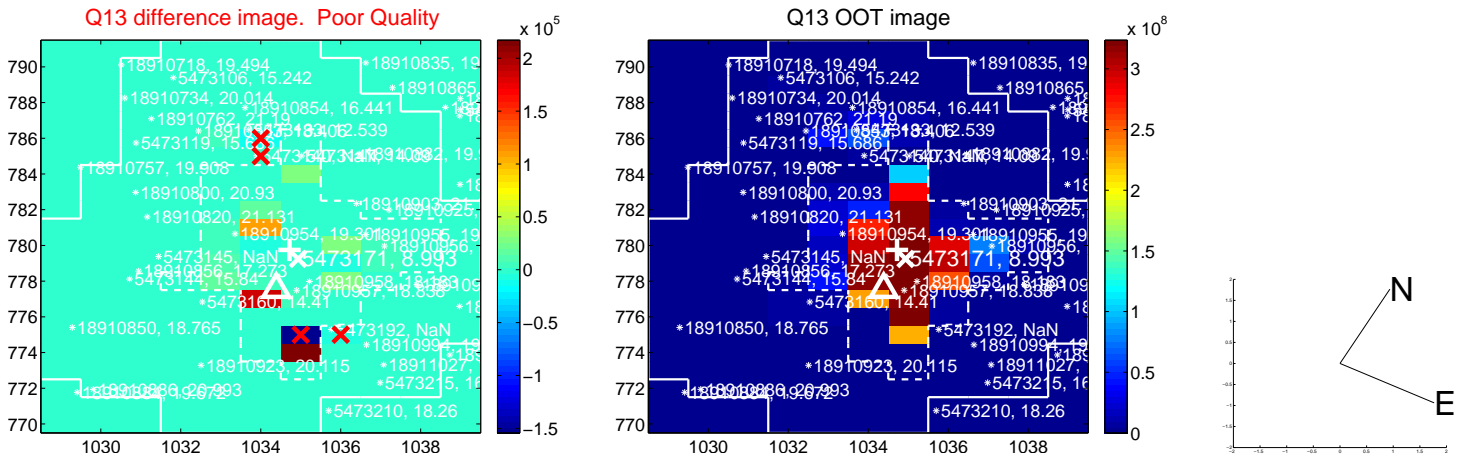
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



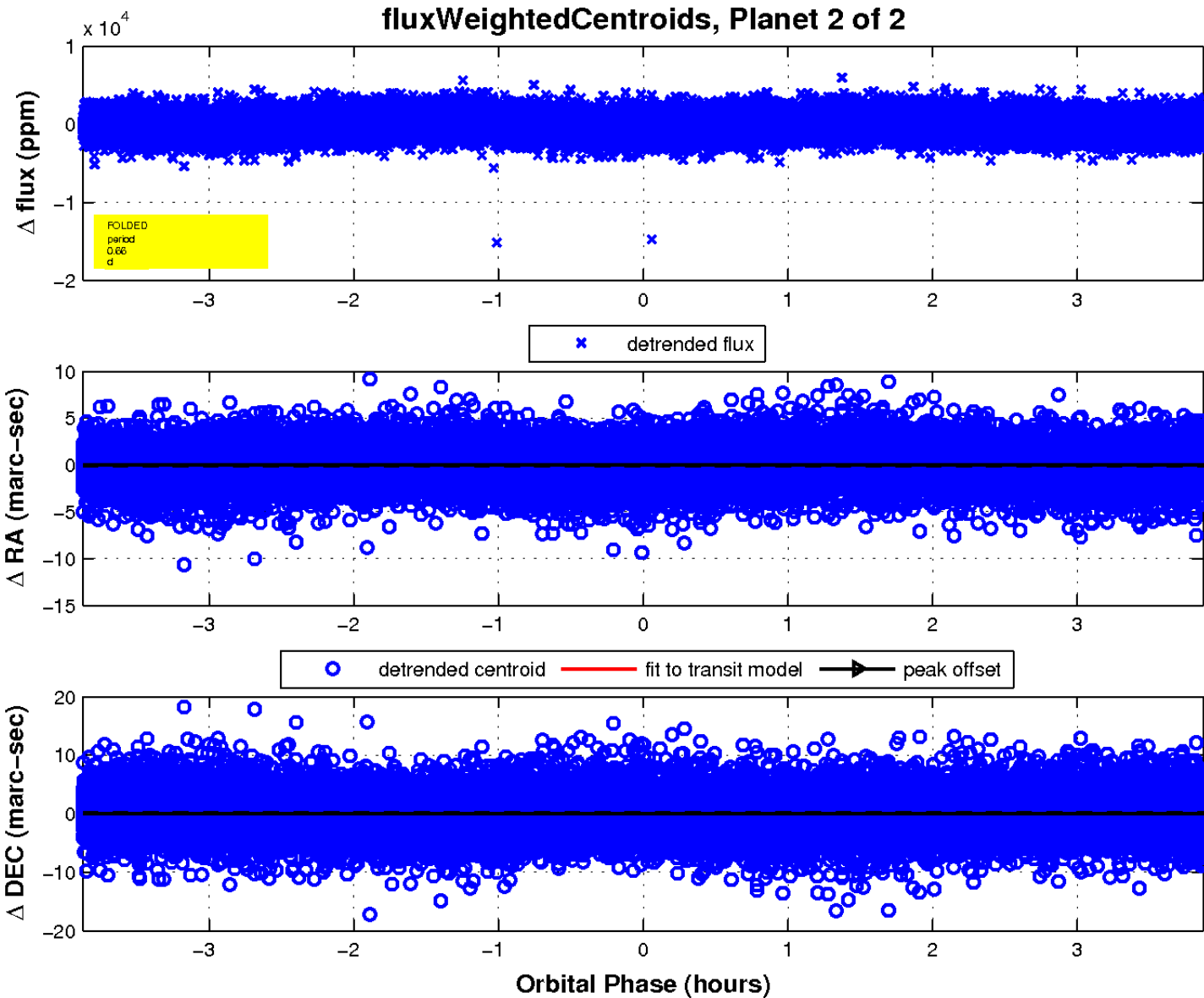
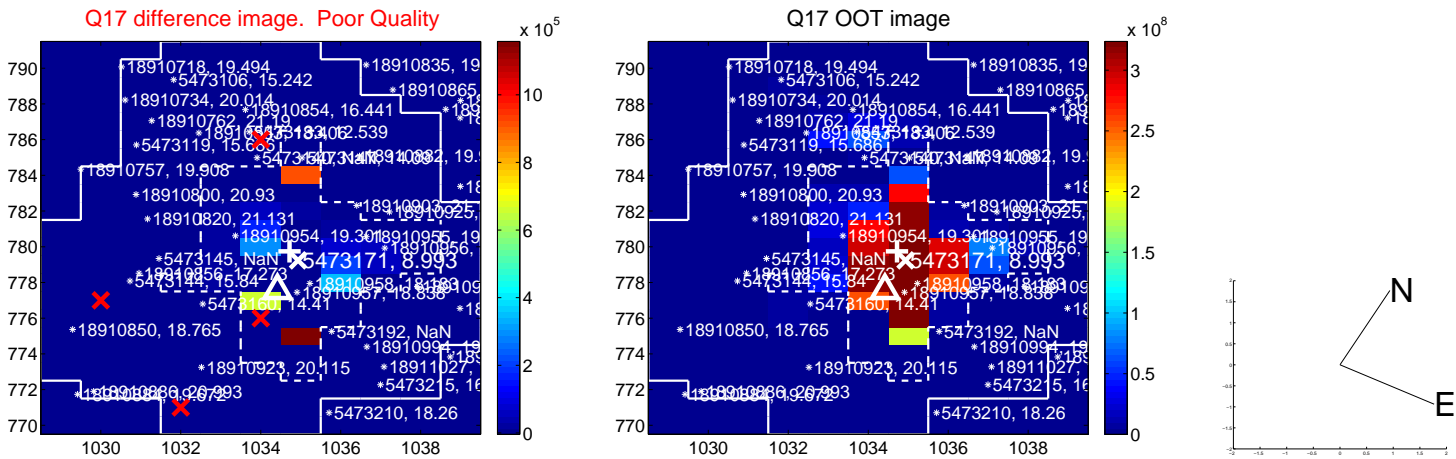
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

