

KIC 002719928

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})
002719928-01	OBS	No	2.095788	132.511704	87.7	7.300	12.9	15.3	1.68	7201	1.82	5019.99
002719928-02	OBS	No	146.171209	143.189995	1141.0	7.282	7.6	8.1	1.68	7201	10.51	17.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002719928-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

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

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

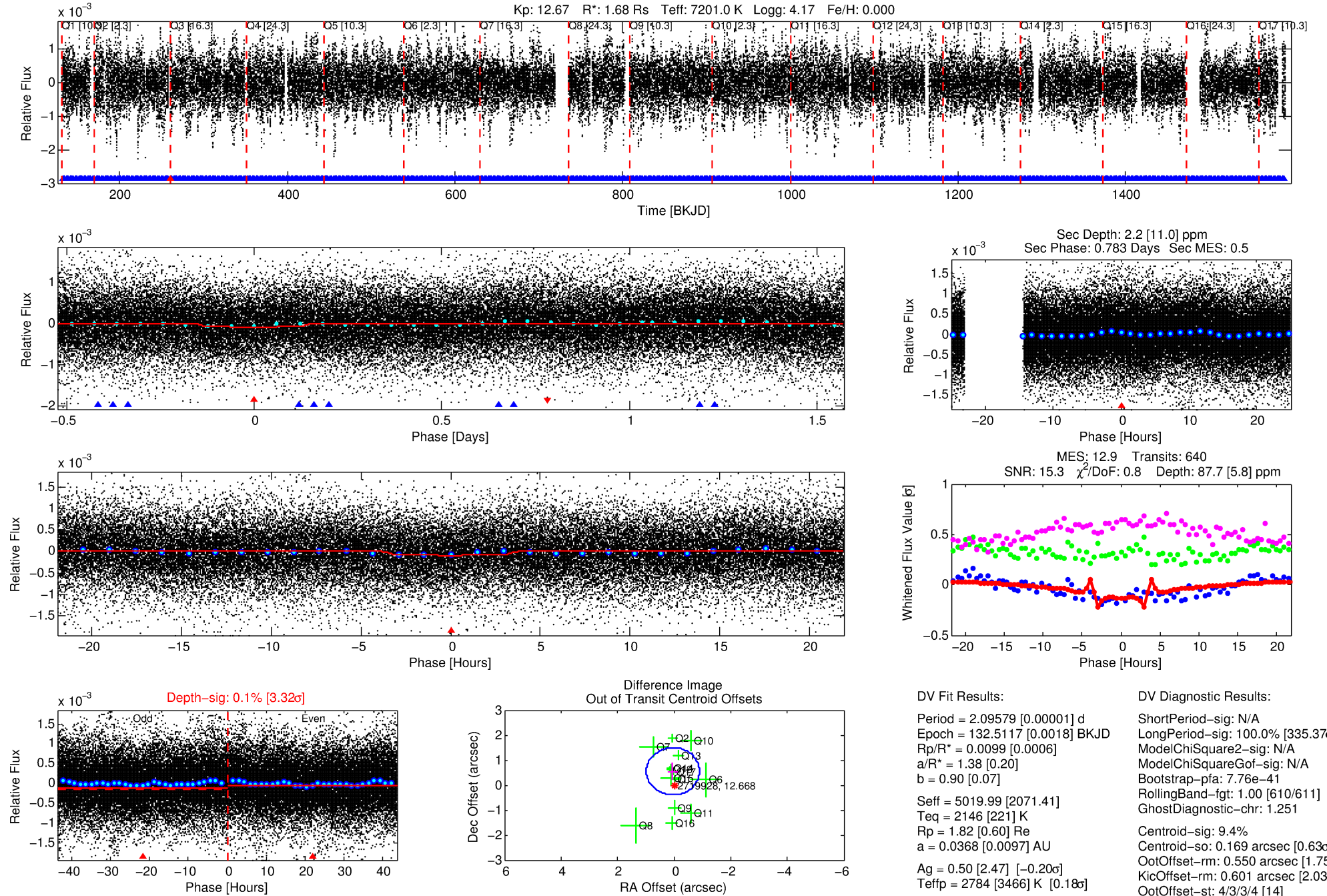
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002719928-01

No Significant Match Found

DV One-Page Summary

KIC: 2719928 Candidate: 1 of 2 Period: 2.096 d



DV Fit Results:

Period = 2.09579 [0.00001] d
Epoch = 132.5117 [0.0018] BKJD
Rp/R* = 0.0099 [0.0006]
a/R* = 1.38 [0.20]
b = 0.90 [0.07]
Seff = 5019.99 [2071.41]
Teff = 2146 [221] K
Rp = 1.82 [0.60] Re
a = 0.0368 [0.0097] AU
Ag = 0.50 [2.47] [-0.20 σ]
Teffp = 2784 [3466] K [0.18 σ]

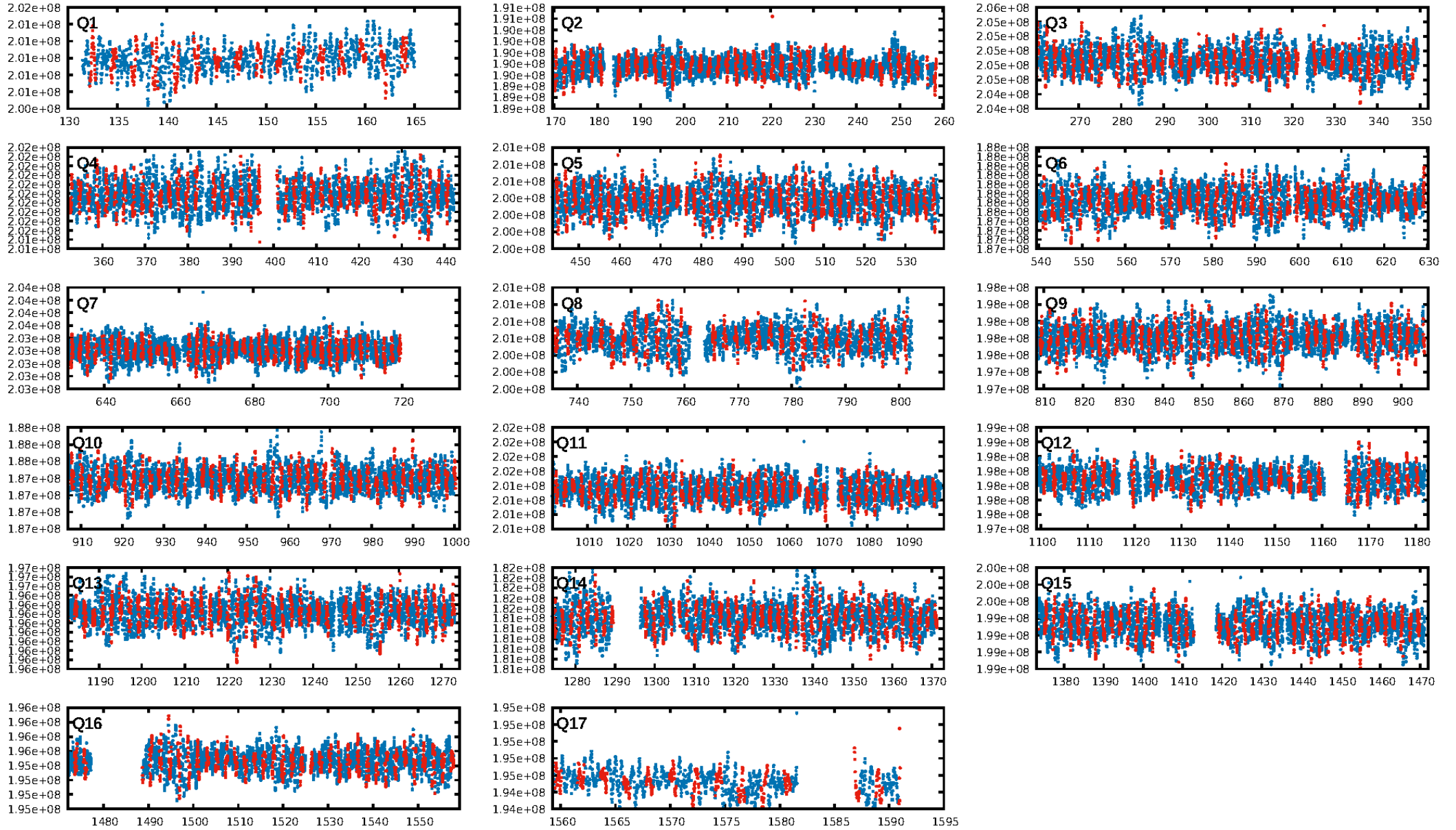
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [335.37 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.76e-41
RollingBand-fgt: 1.00 [610/611]
GhostDiagnostic-chr: 1.251
Centroid-sig: 9.4%
Centroid-so: 0.169 arcsec [0.63 σ]
OotOffset-rm: 0.550 arcsec [1.75 σ]
KicOffset-rm: 0.601 arcsec [2.03 σ]
OotOffset-st: 4/3/3/4 [14]
KicOffset-st: 4/3/3/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [17/17]

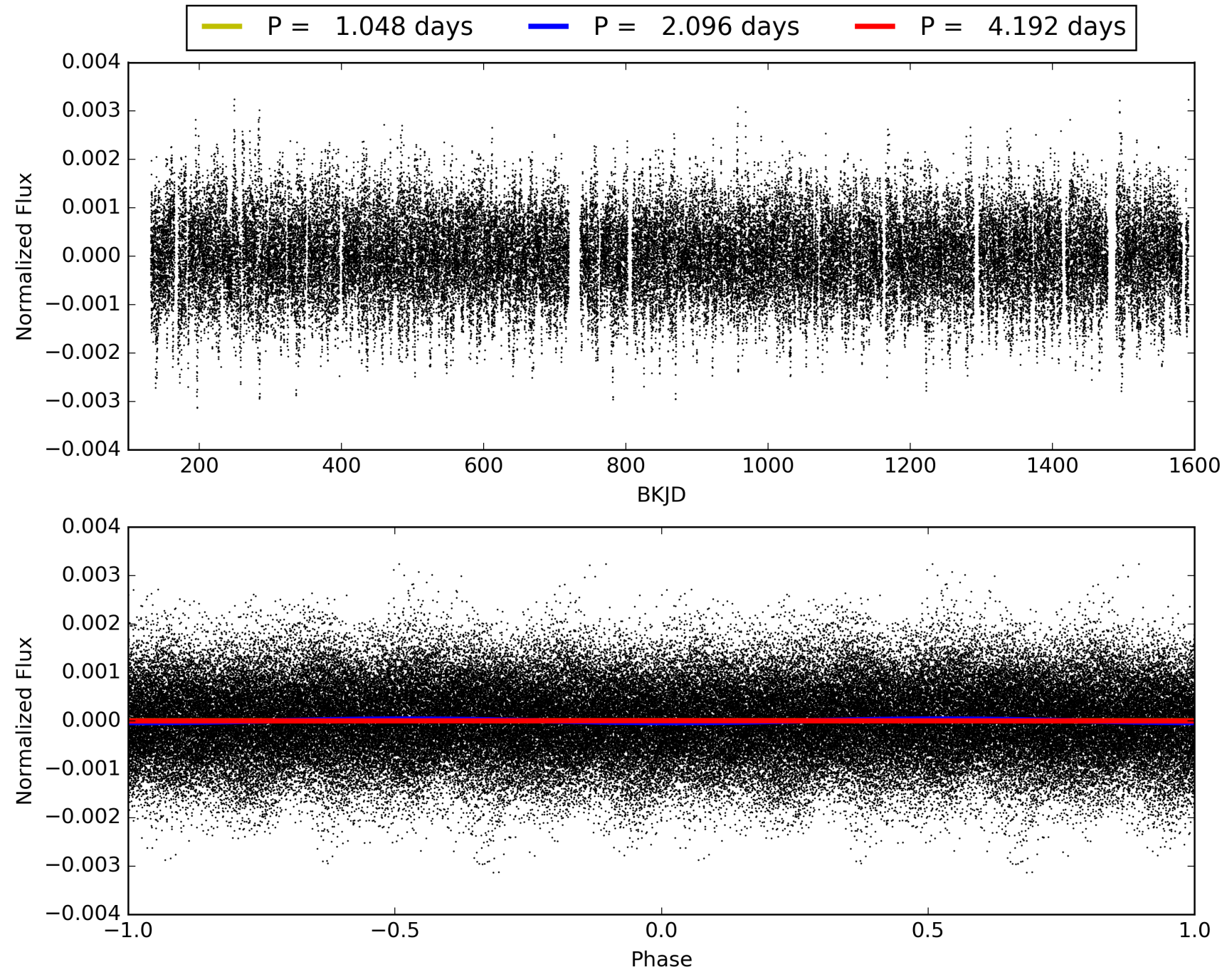
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:18:43 Z

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

TCE 002719928-01, PDC Light Curves

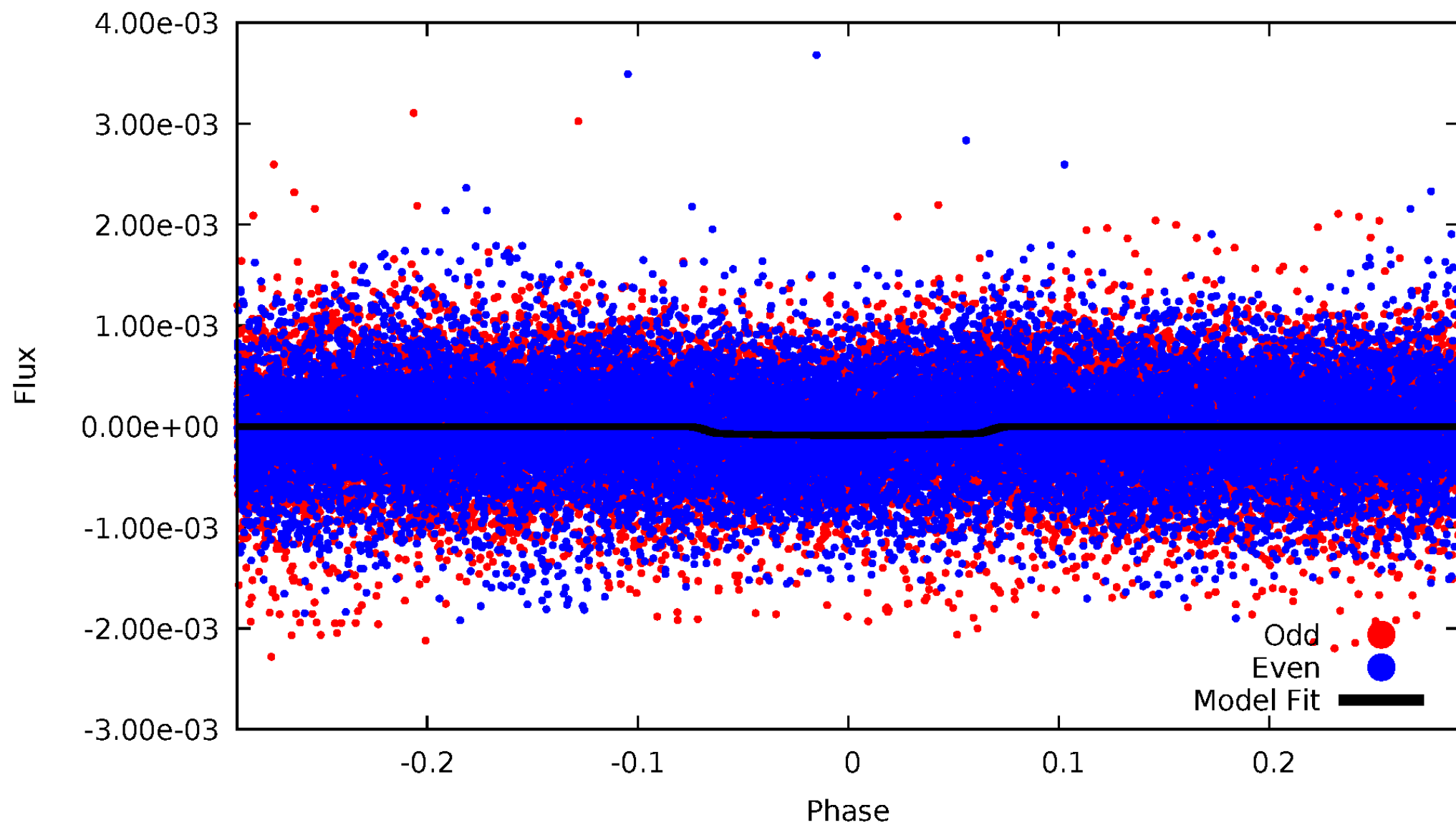


TCE 002719928-01



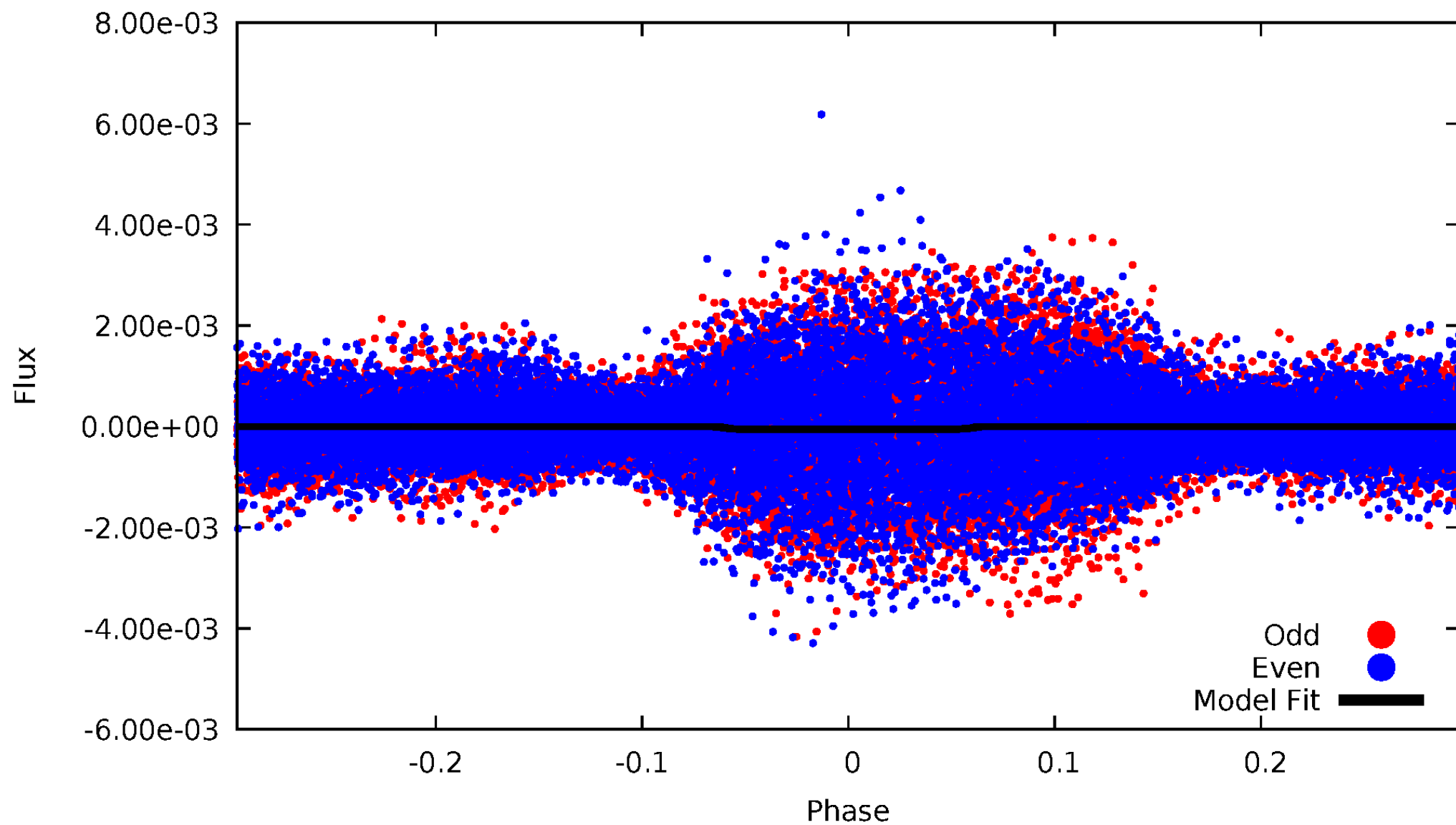
DV Odd/Even

TCE 002719928-01



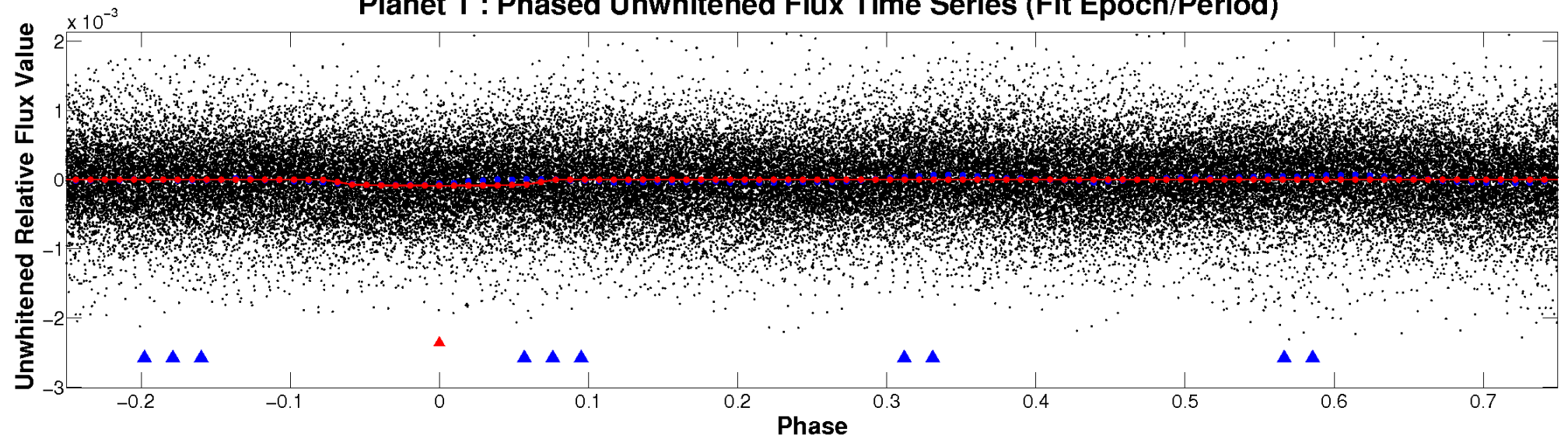
ALT Odd/Even

TCE 002719928-01

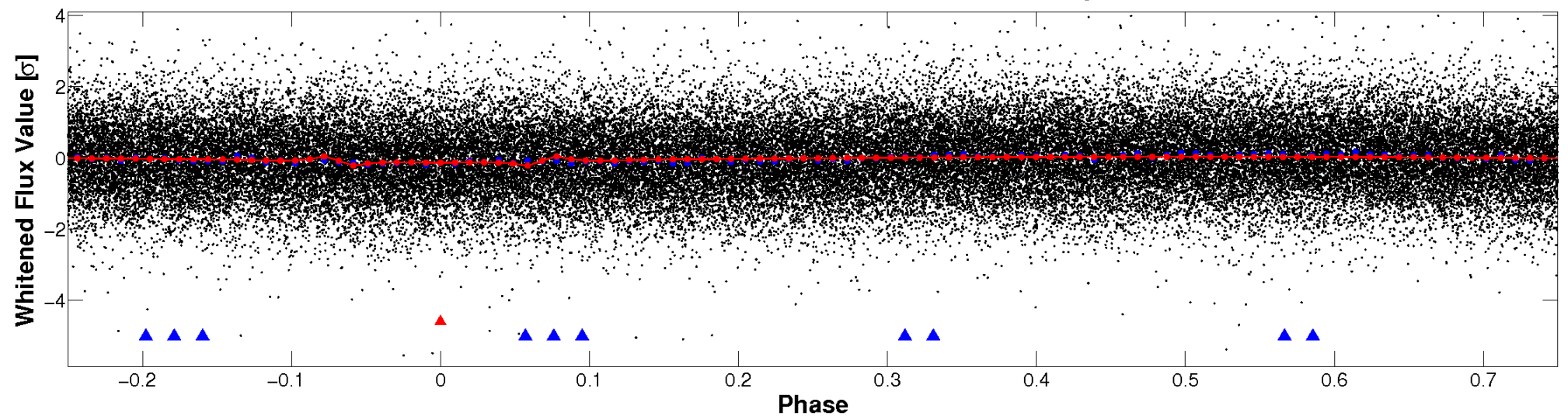


Non-Whitened Vs. Whitened Light Curve

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

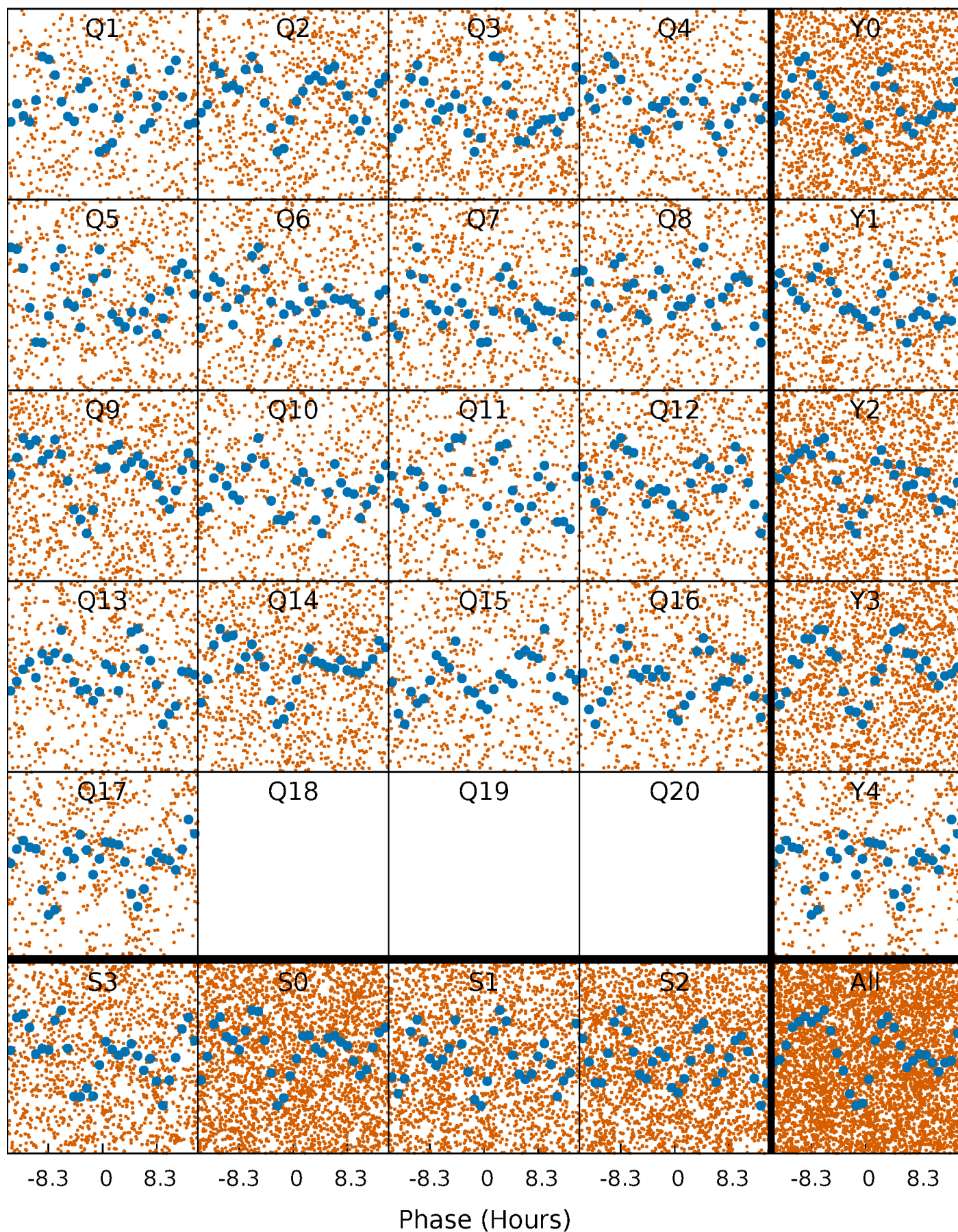


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



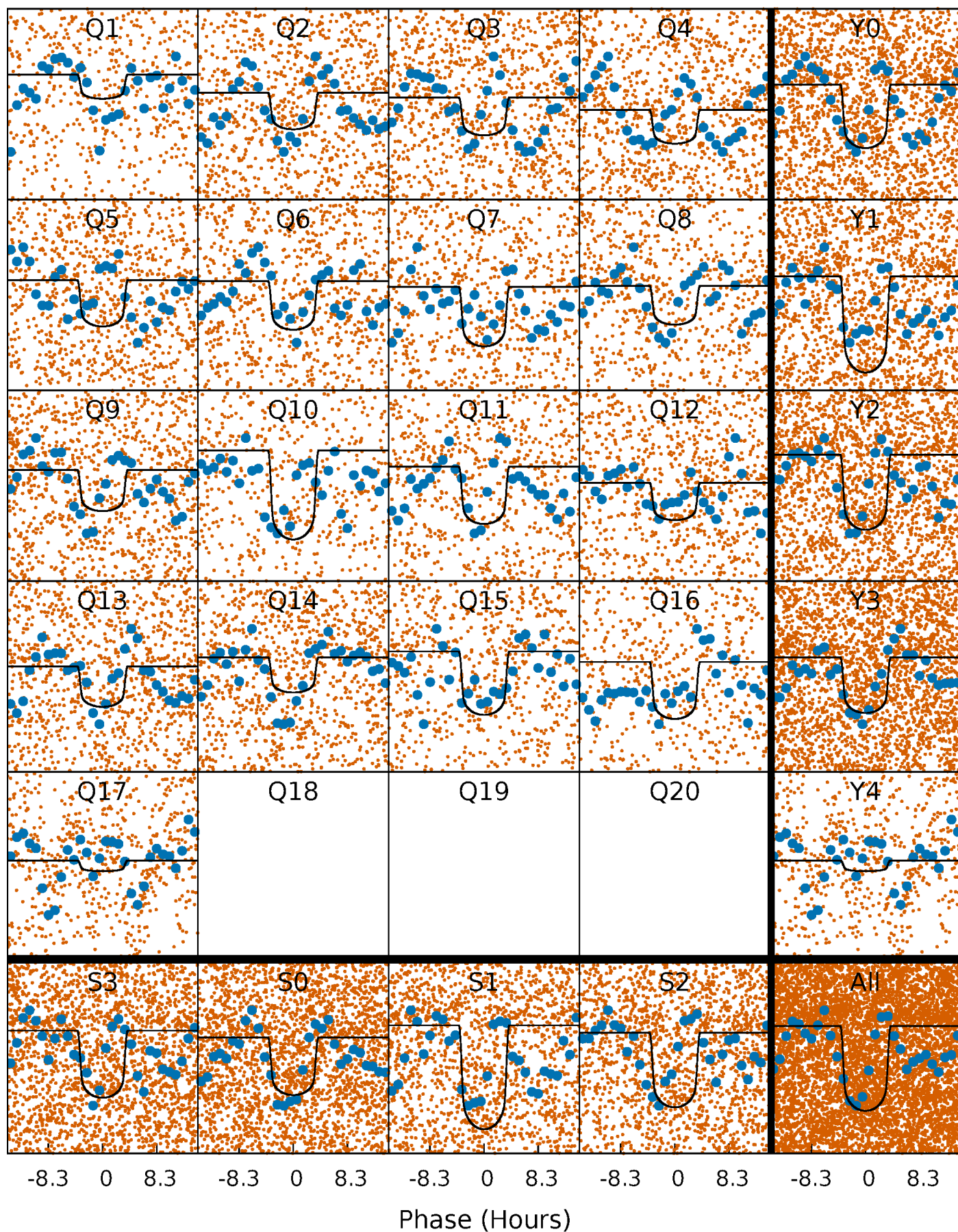
PDC Quarter-Phased Transit Curves

TCE 002719928-01 P= 2.095788 Days $T_0=132.511704$ (BKJD)



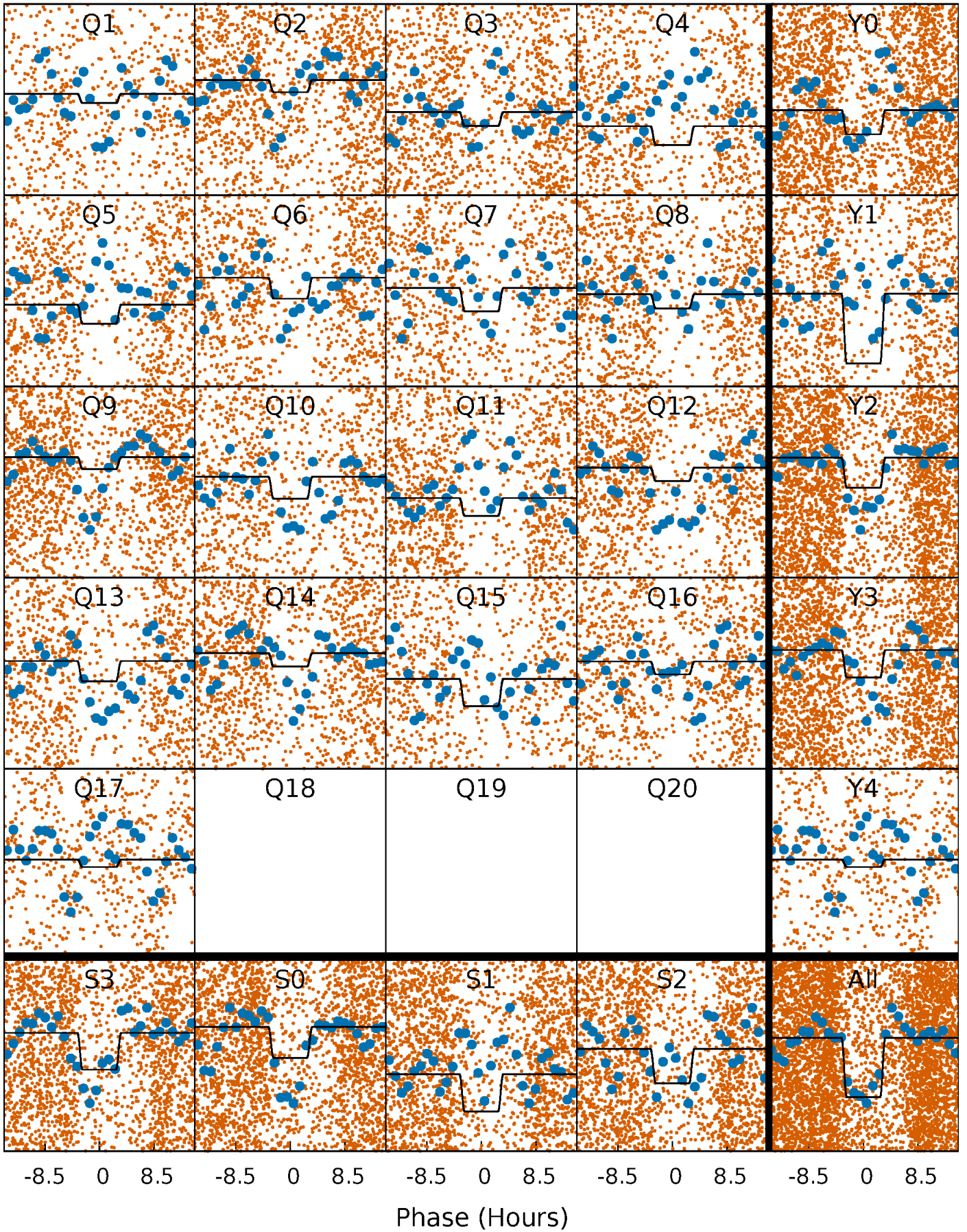
DV Quarter-Phased Transit Curves

TCE 002719928-01 P= 2.095788 Days $T_0=132.511704$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

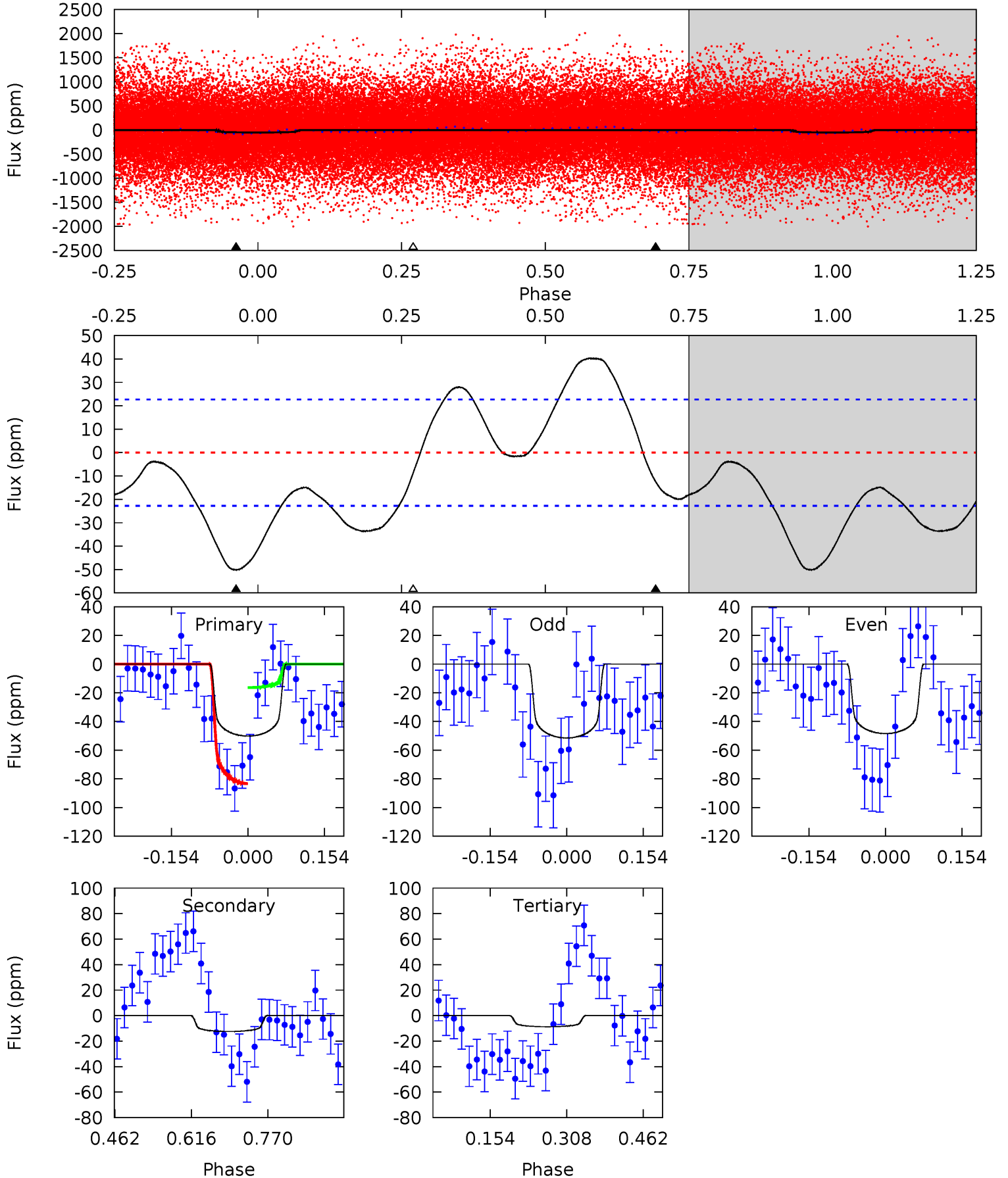
TCE 002719928-01 P= 2.095566 Days $T_0=132.516647$ (BKJD)



DV Model-Shift Uniqueness Test

002719928-01, $P = 2.095788$ Days, $E = 130.415916$ Days

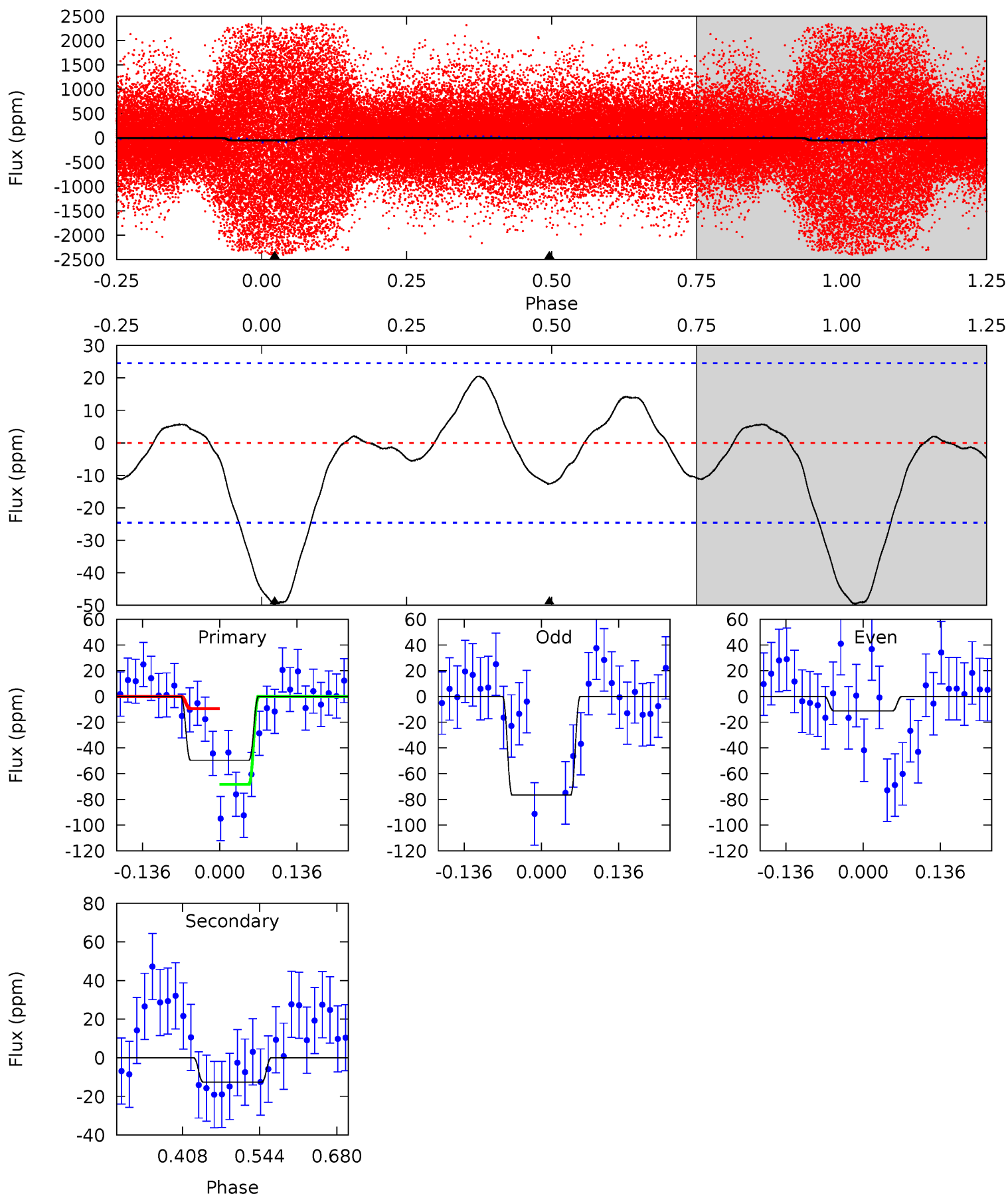
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	2.45	1.71	0	4.47	1.43	4.16	8.16	9.87	0.74	2.45	0.30	1.37	0.45	6.67



Alt Model-Shift Uniqueness Test

002719928-01, P = 2.095566 Days, E = 130.421081 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.08	2.31	0	0	4.50	1.49	1.29	9.08	9.08	2.31	2.31	5.96	0.84	0.29	3.84



Stellar Parameters For KIC 002719928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7201^{+201}_{-302}	$4.167^{+0.109}_{-0.202}$	$0.000^{+0.200}_{-0.350}$	$1.679^{+0.540}_{-0.291}$	$1.511^{+0.221}_{-0.221}$	$0.449^{+0.262}_{-0.221}$
	+3%/-4%	+3%/-5%	+inf%/-inf%	+32%/-17%	+15%/-15%	+58%/-49%
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 002719928-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-12 ± 5	$1.86^{+0.34}_{-0.24}$	3032^{+237}_{-191}	4318^{+378}_{-507}	$2.502^{+1.470}_{-1.107}$
Alt.	-13 ± 5	$1.39^{+0.24}_{-0.20}$	3030^{+251}_{-191}	4907^{+488}_{-645}	$4.597^{+2.646}_{-2.277}$

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

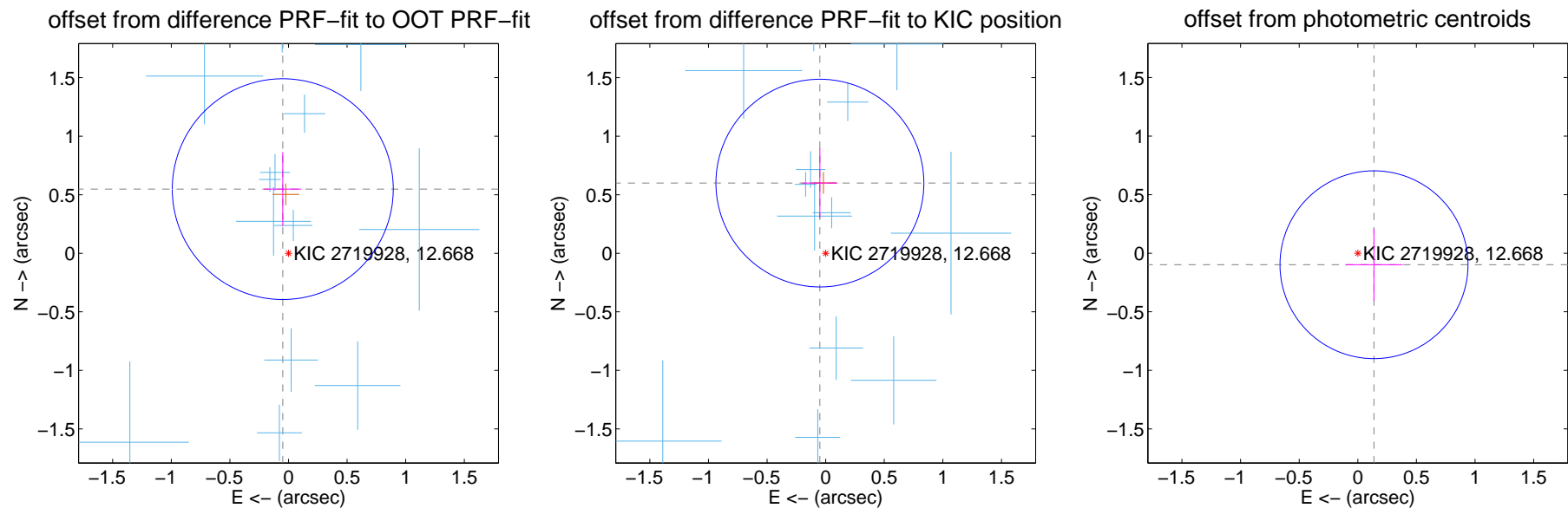
DV Centroid Data

Supplemental centroid analysis for 002719928-01. Kepler magnitude: 12.67. Transit SNR 15.25

There are 13 quarters with good PRF difference image offsets

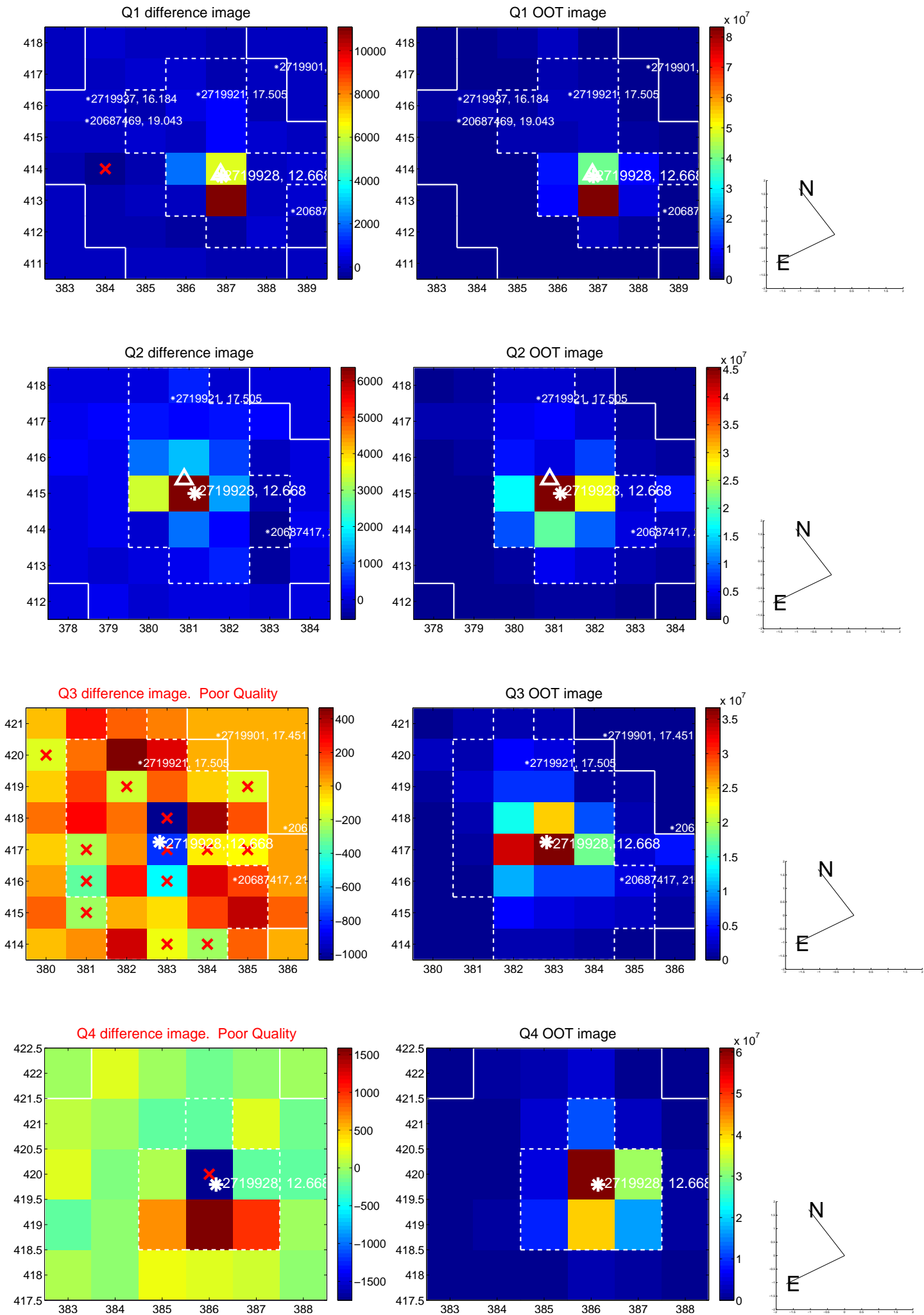
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.550 ± 0.314	1.75	0.049 ± 0.160	0.548 ± 0.317
PRF-fit source offset from KIC position	0.601 ± 0.296	2.03	0.049 ± 0.150	0.599 ± 0.298
photometric centroid source offset	0.17 ± 0.27	0.63	-0.14 ± 0.24	-0.10 ± 0.31

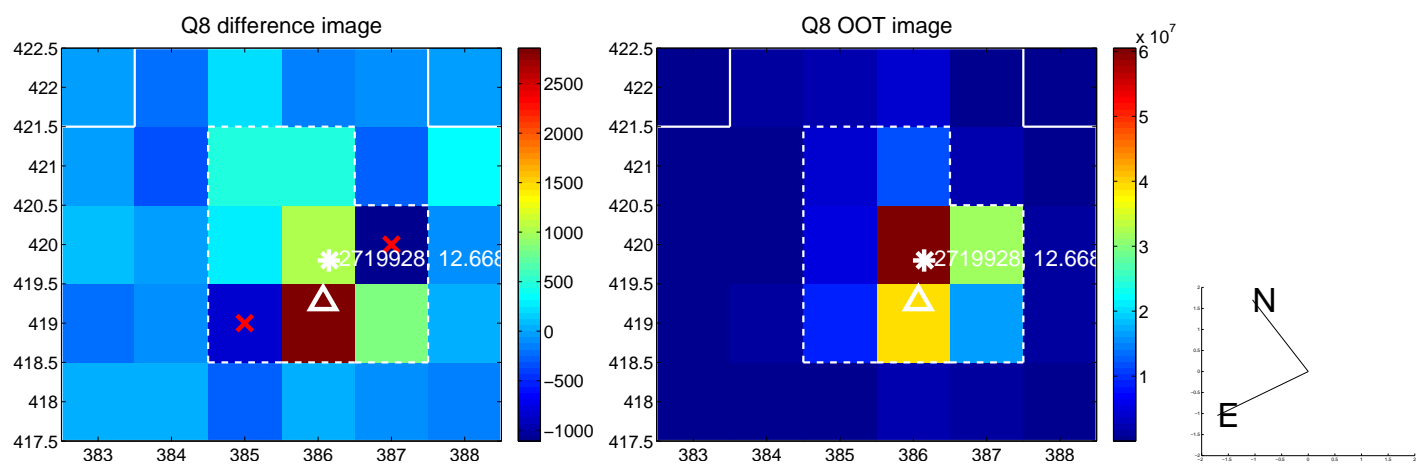
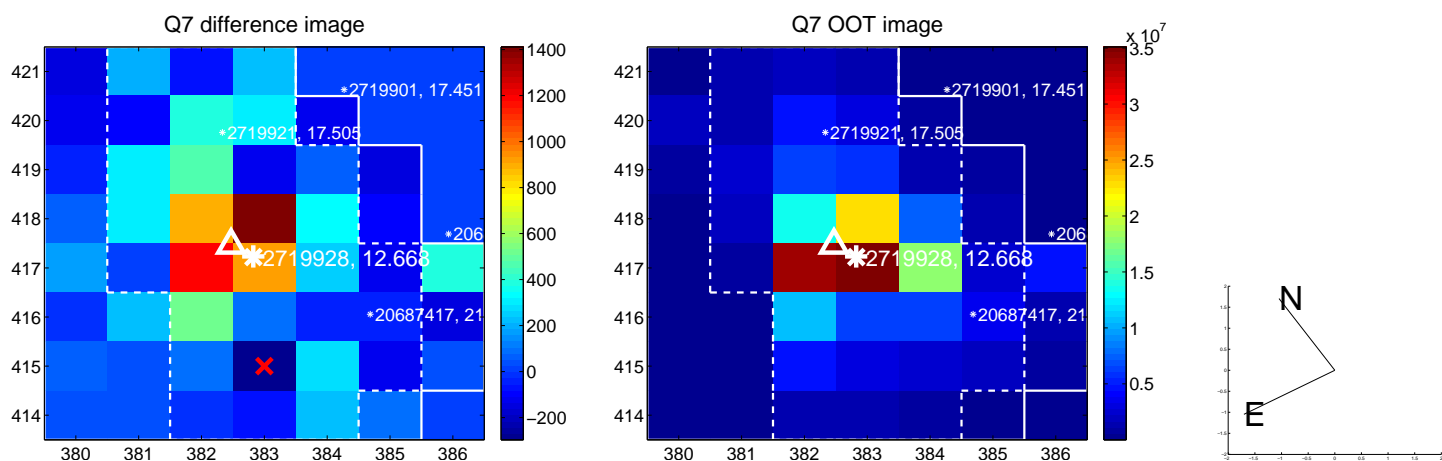
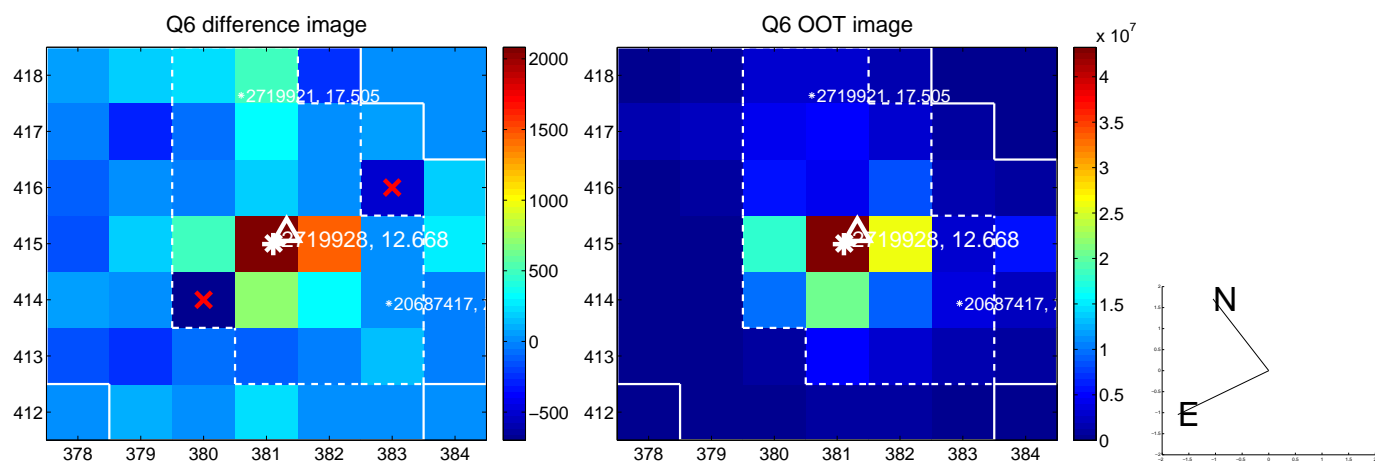
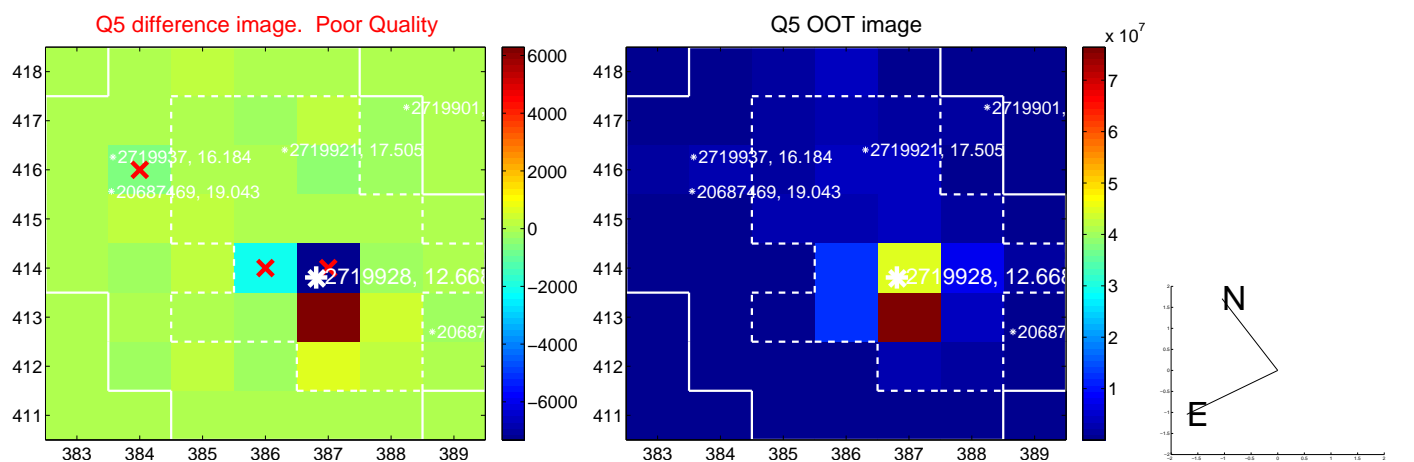


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

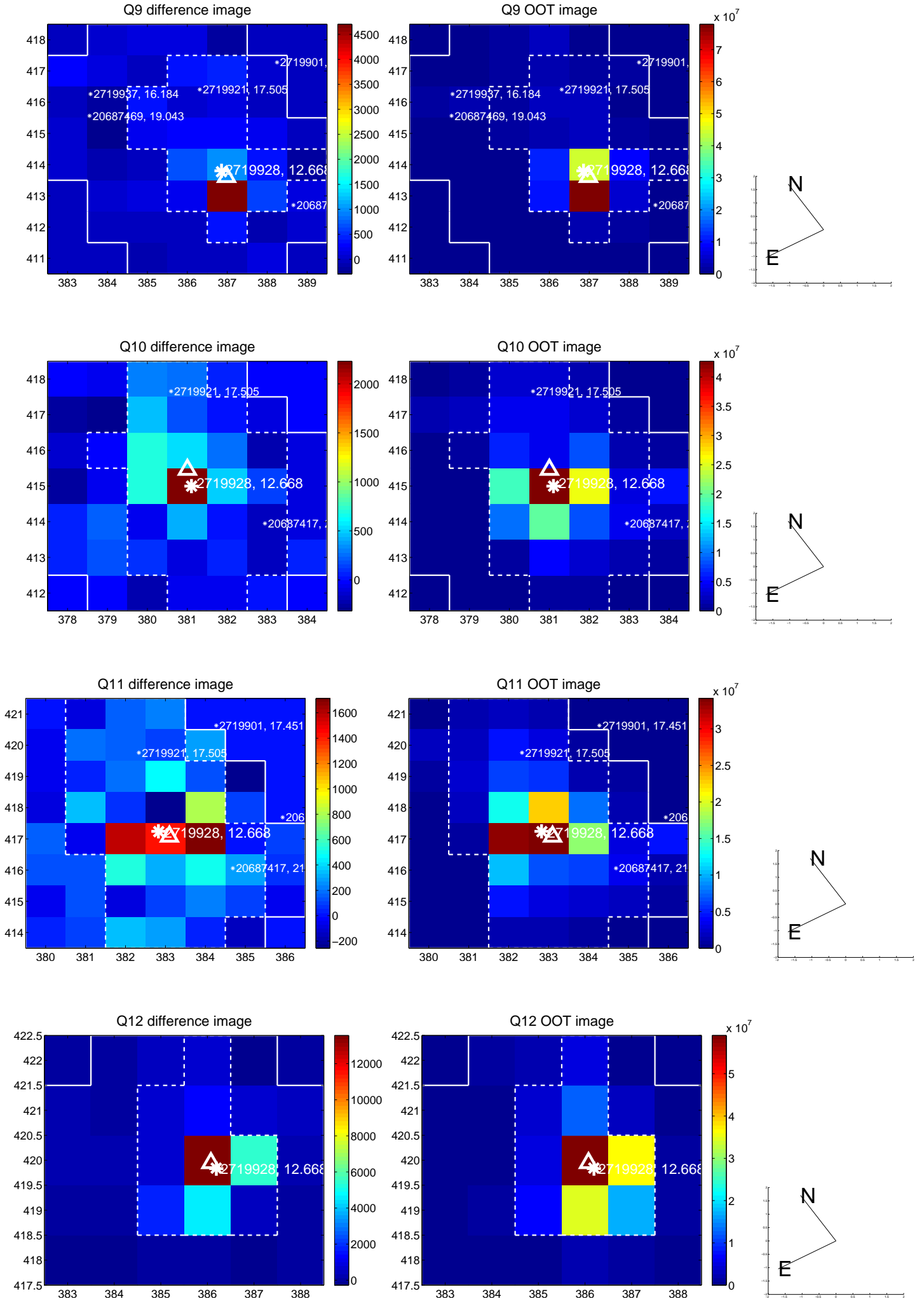
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



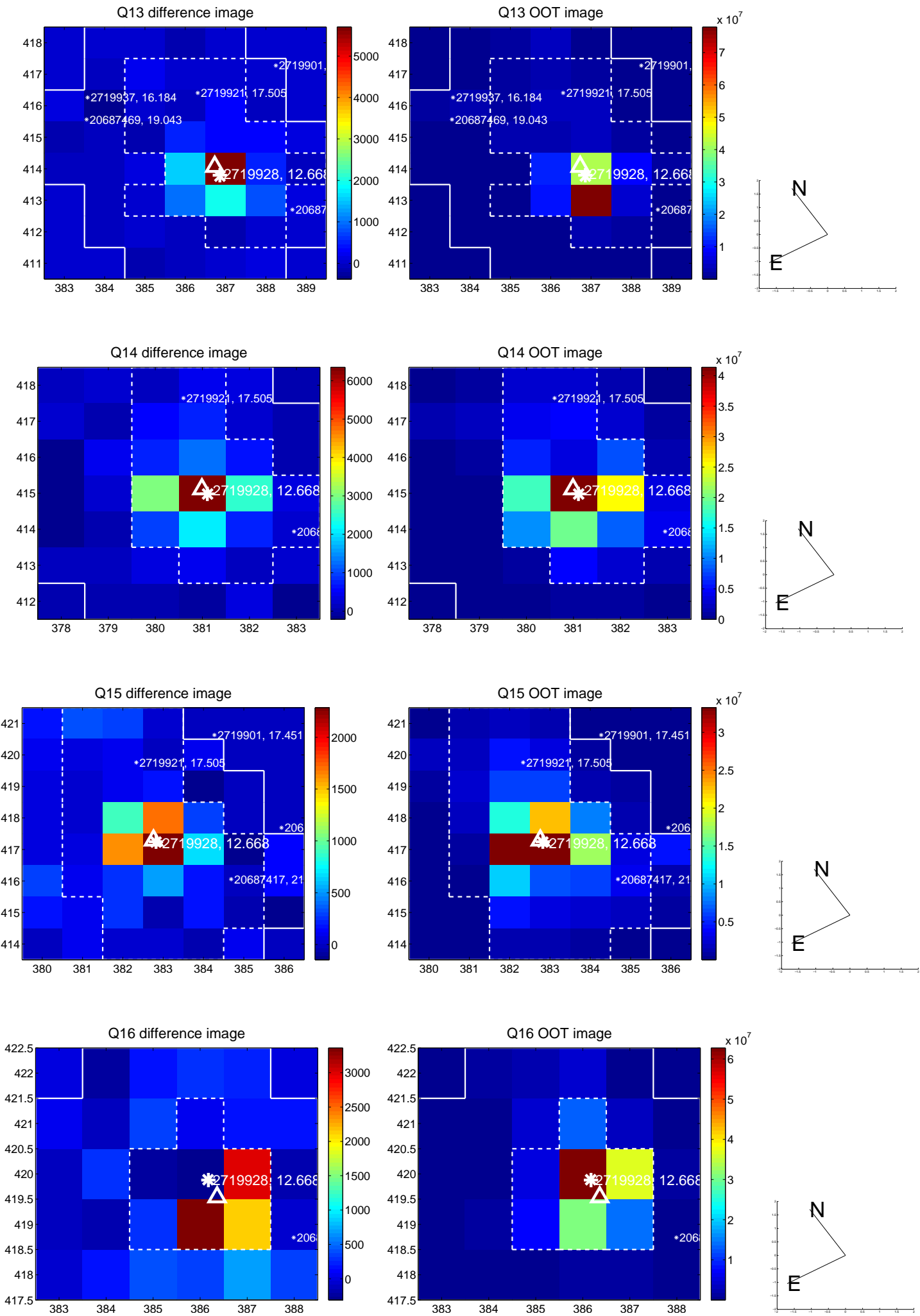
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



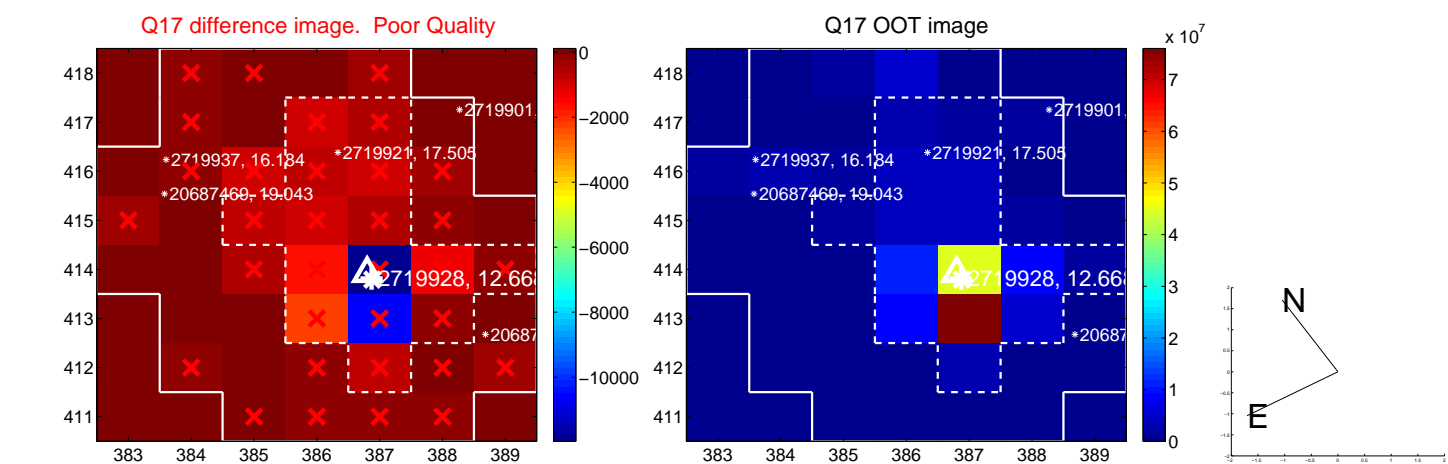
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



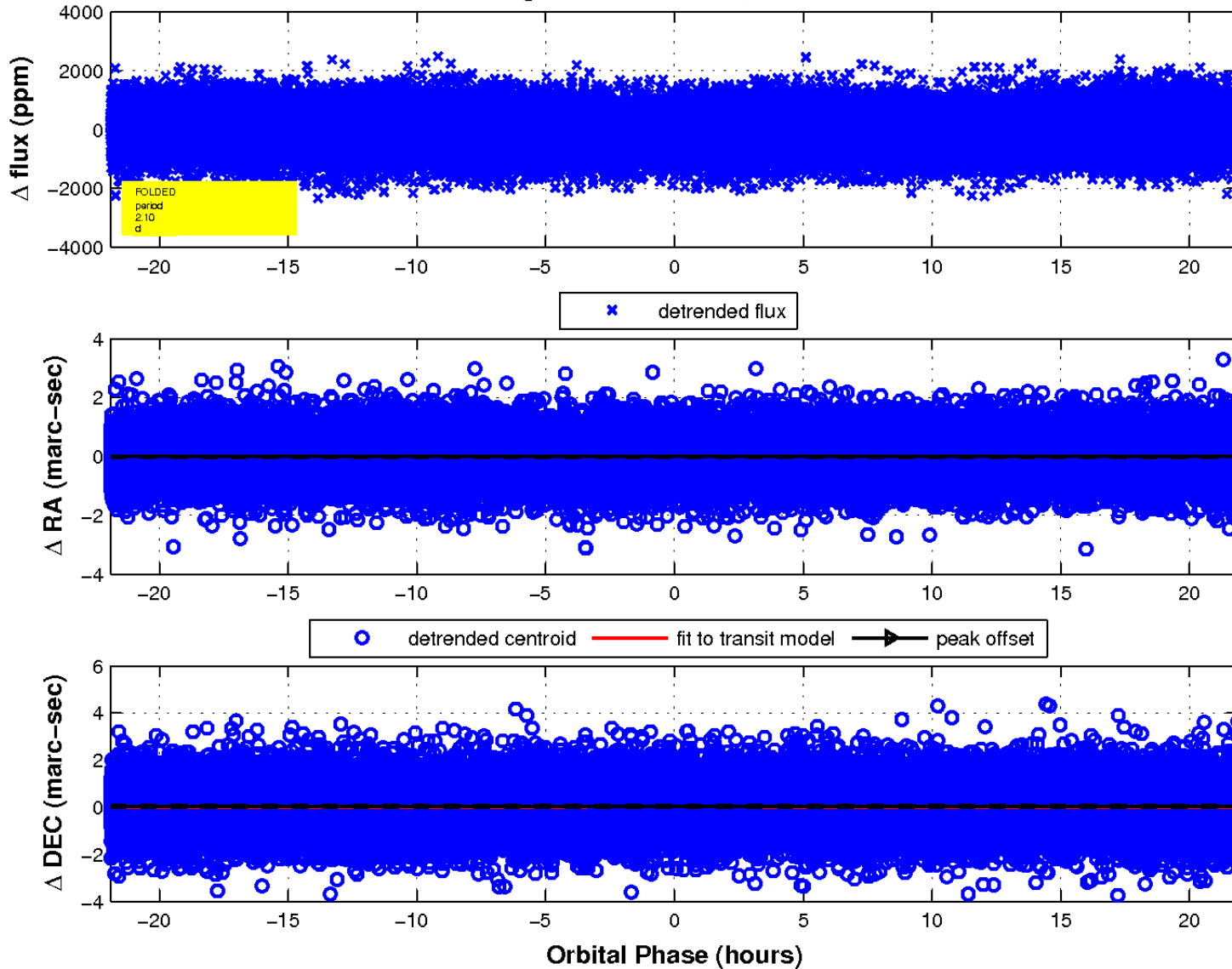
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

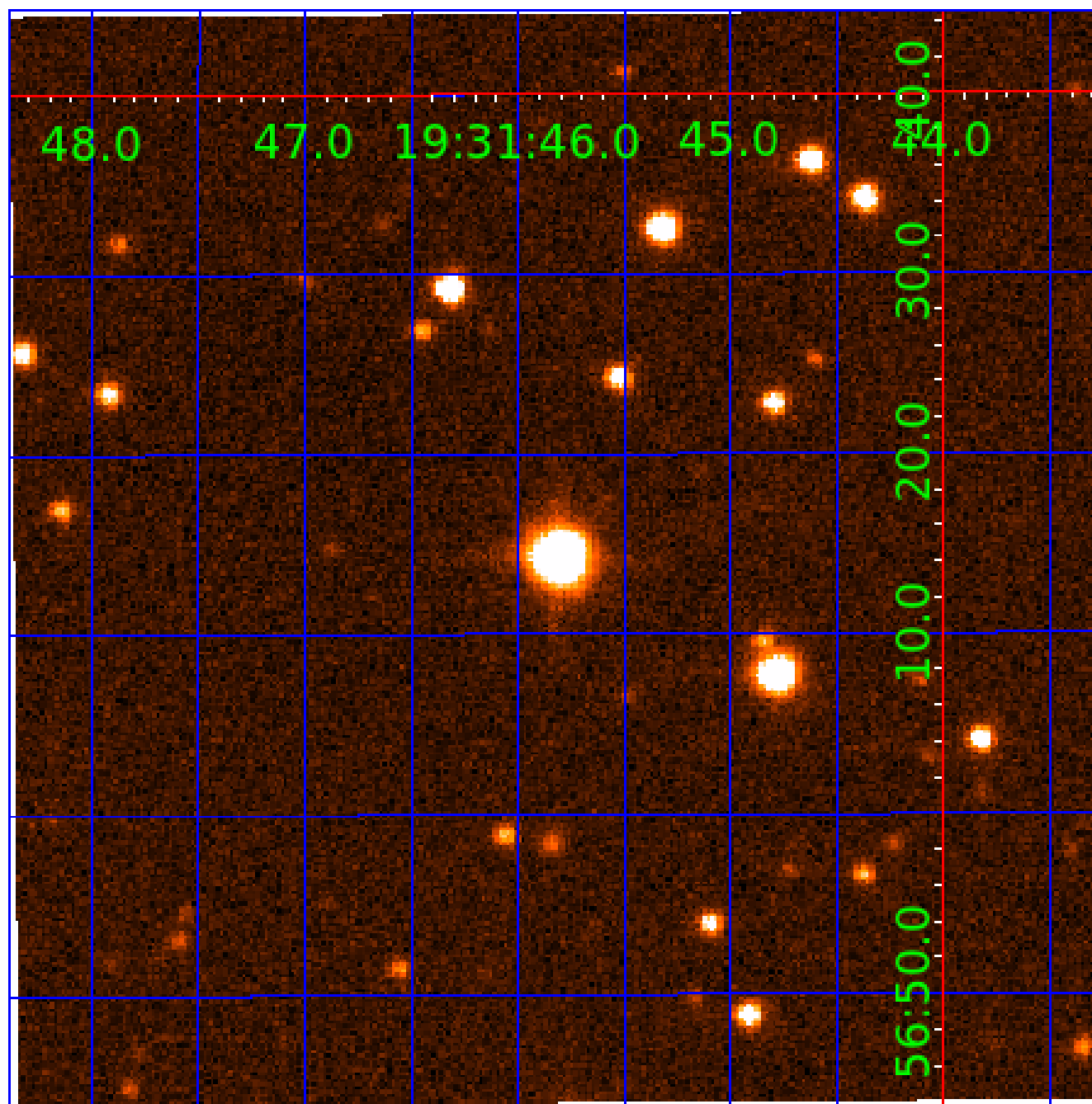


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 002719928

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})
002719928-01	OBS	No	2.095788	132.511704	87.7	7.300	12.9	15.3	1.68	7201	1.82	5019.99
002719928-02	OBS	No	146.171209	143.189995	1141.0	7.282	7.6	8.1	1.68	7201	10.51	17.49

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002719928-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
002719928-02	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT

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

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

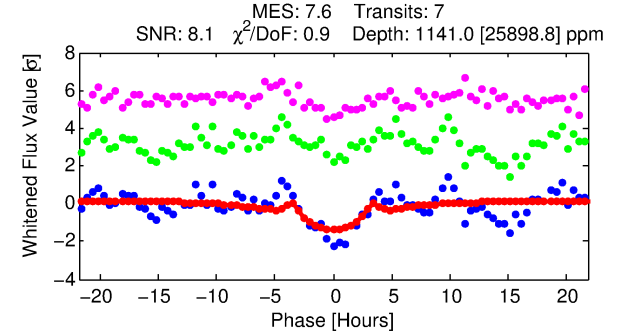
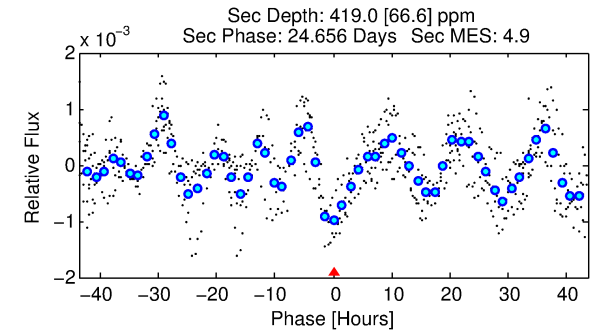
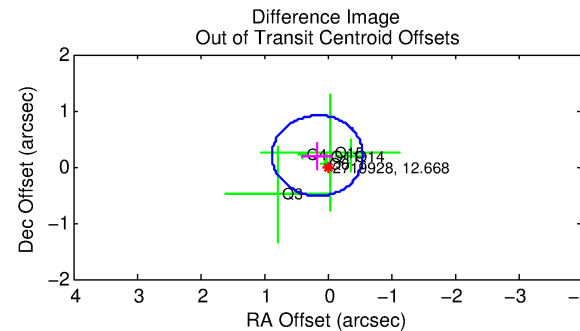
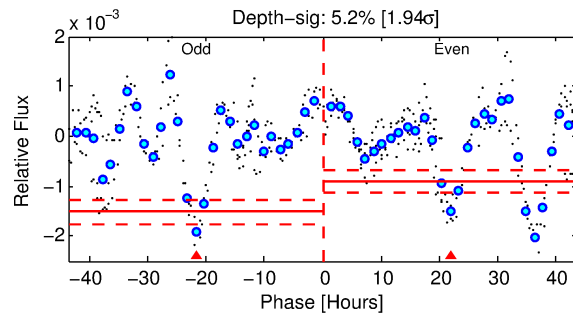
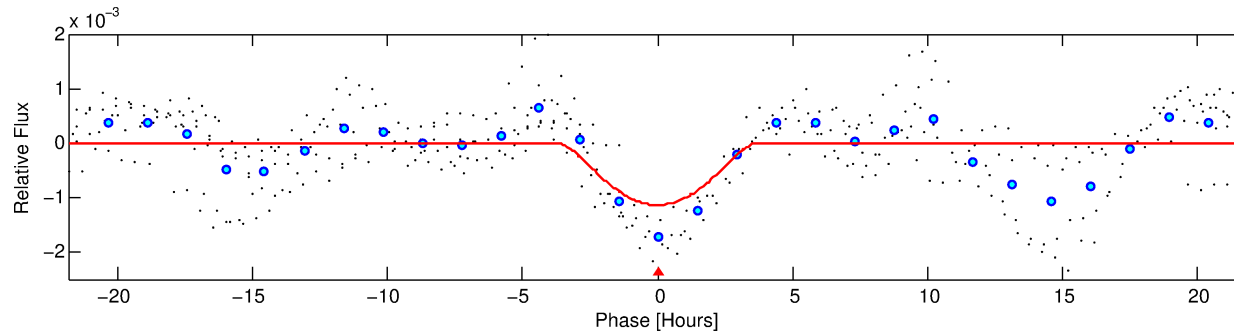
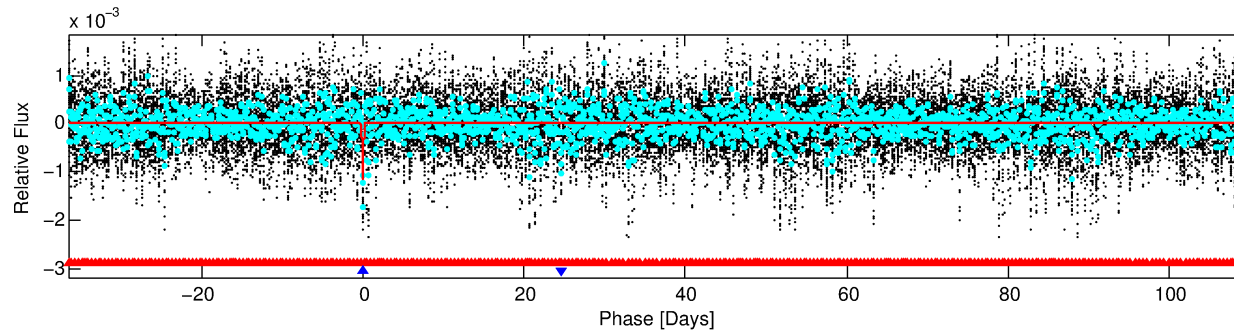
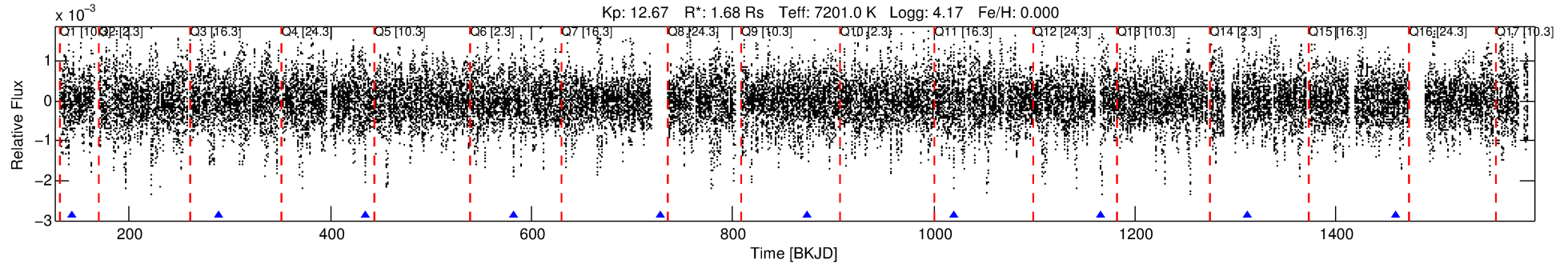
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002719928-02

No Significant Match Found

DV One-Page Summary

KIC: 2719928 Candidate: 2 of 2 Period: 146.171 d



DV Fit Results:

Period = 146.17121 [0.00385] d
Epoch = 143.1900 [0.0207] BKJD
Rp/R* = 0.0573 [0.1052]
a/R* = 52.68 [21.07]
b = 1.00 [1.05]
Seff = 17.49 [7.22]
Teq = 521 [54] K
Rp = 10.51 [19.58] Re
a = 0.6232 [0.1649] AU
Ag = 811.17 [2995.88] [0.27 σ]
Teffp = 4302 [3956] K [0.96 σ]

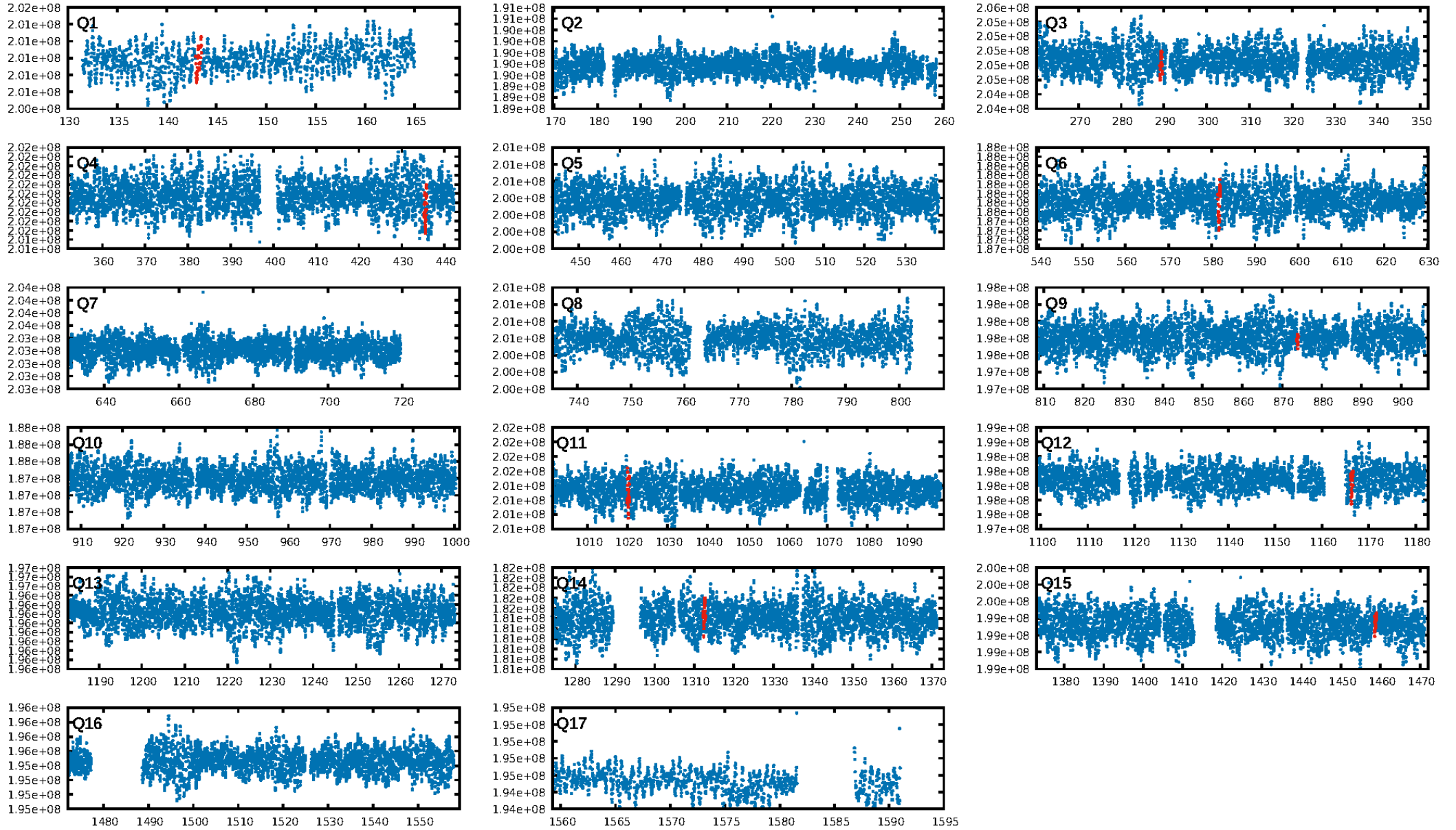
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [335.37 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 11.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.25e-11
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: 3.089
Centroid-sig: 17.8%
Centroid-so: 0.534 arcsec [2.34 σ]
OotOffset-rm: 0.250 arcsec [1.05 σ]
KicOffset-rm: 0.241 arcsec [1.01 σ]
OotOffset-st: 2/3/1/0 [6]
KicOffset-st: 2/3/1/0 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.29 [2/7]

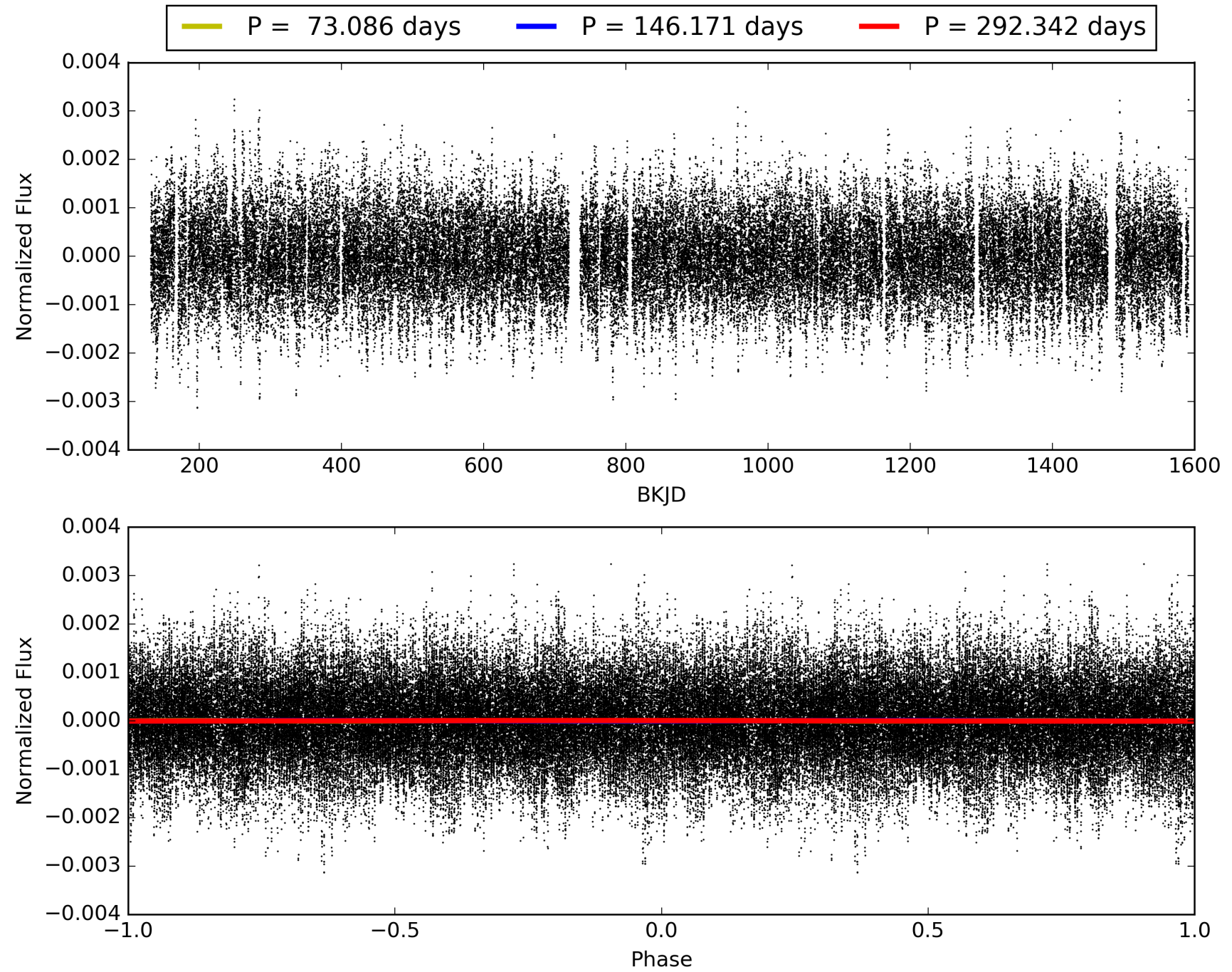
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:18:55 Z

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

TCE 002719928-02, PDC Light Curves

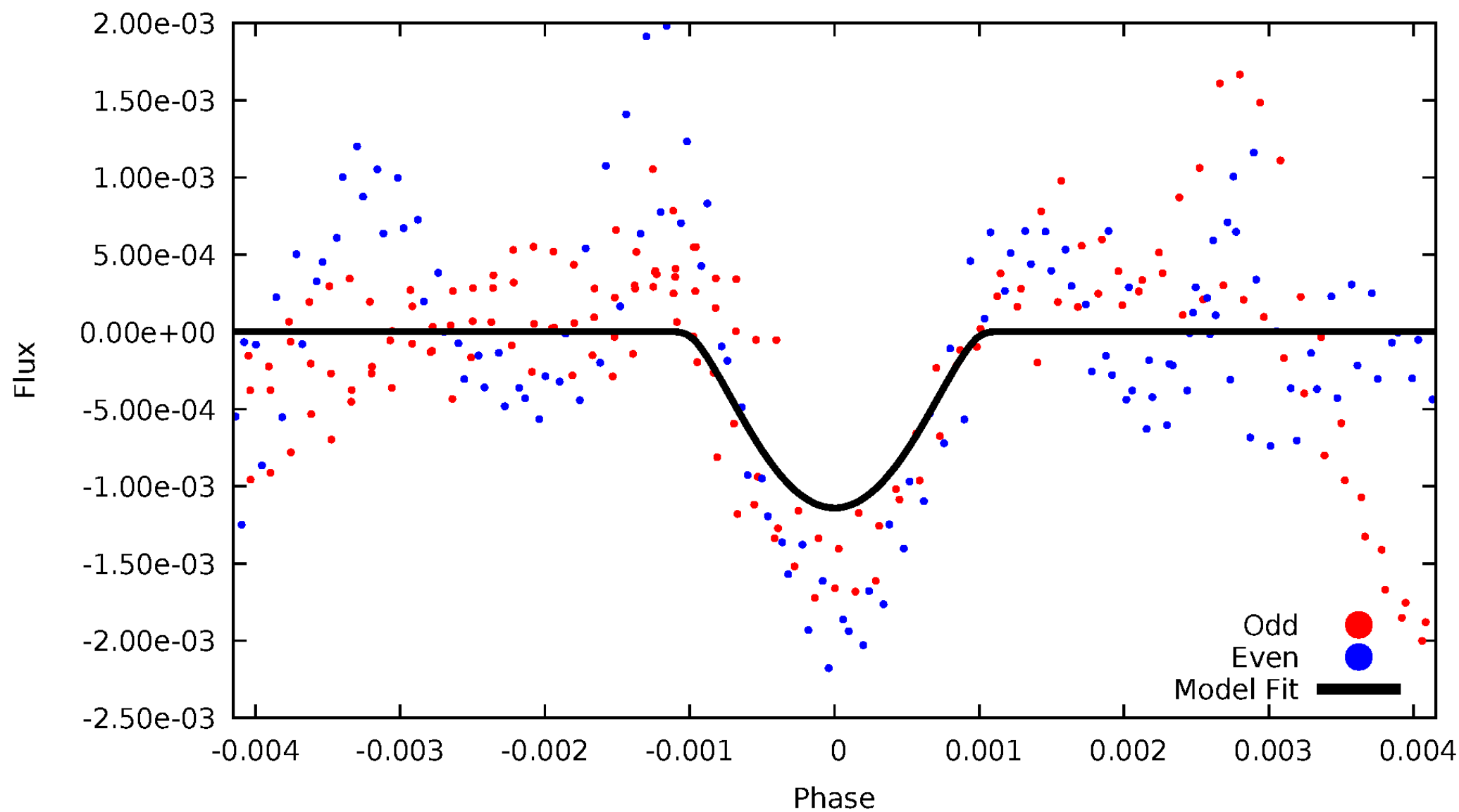


TCE 002719928-02



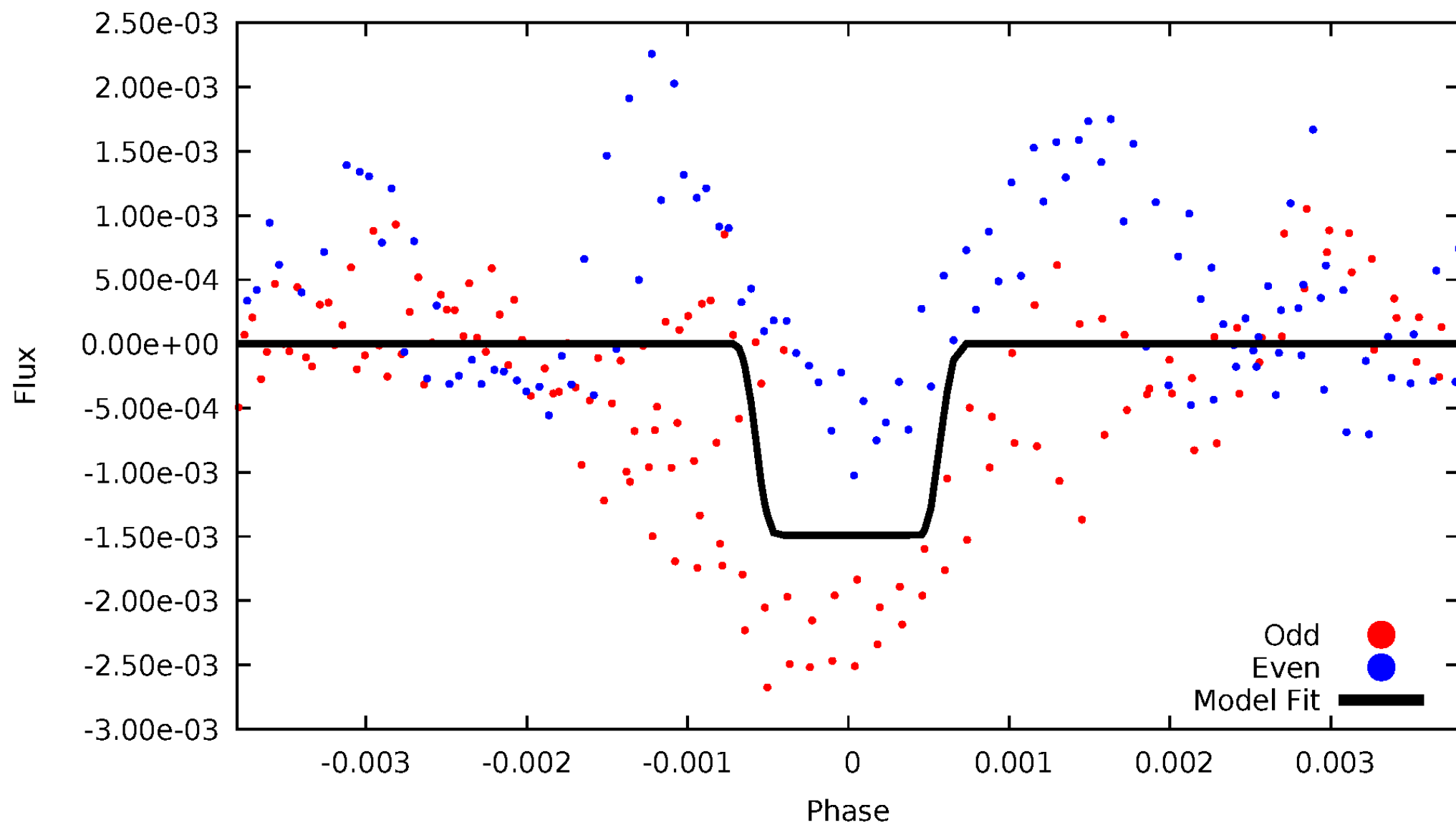
DV Odd/Even

TCE 002719928-02



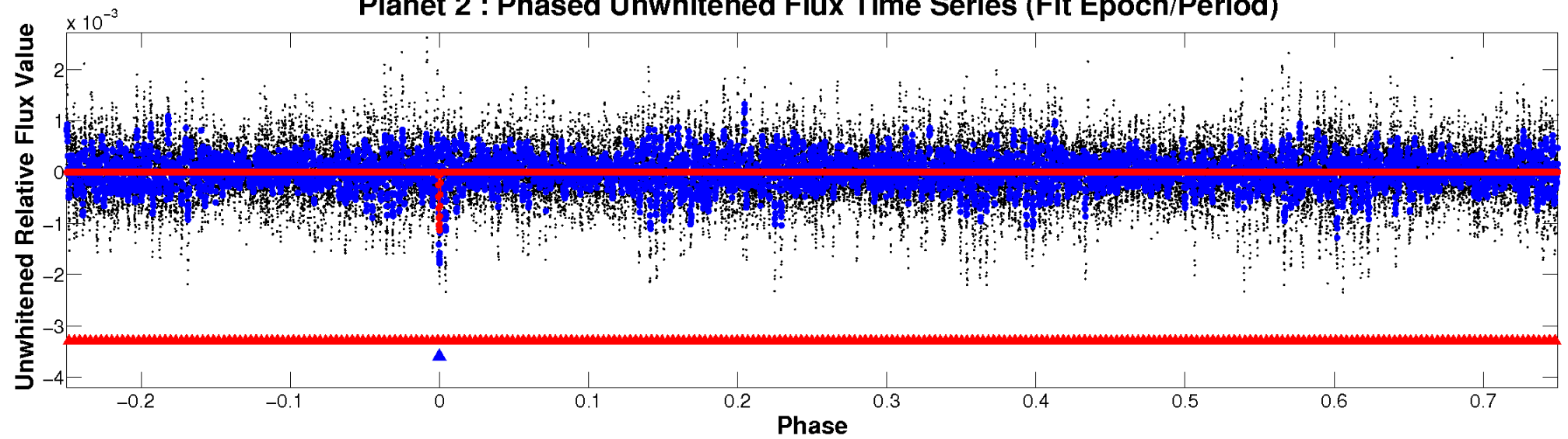
ALT Odd/Even

TCE 002719928-02

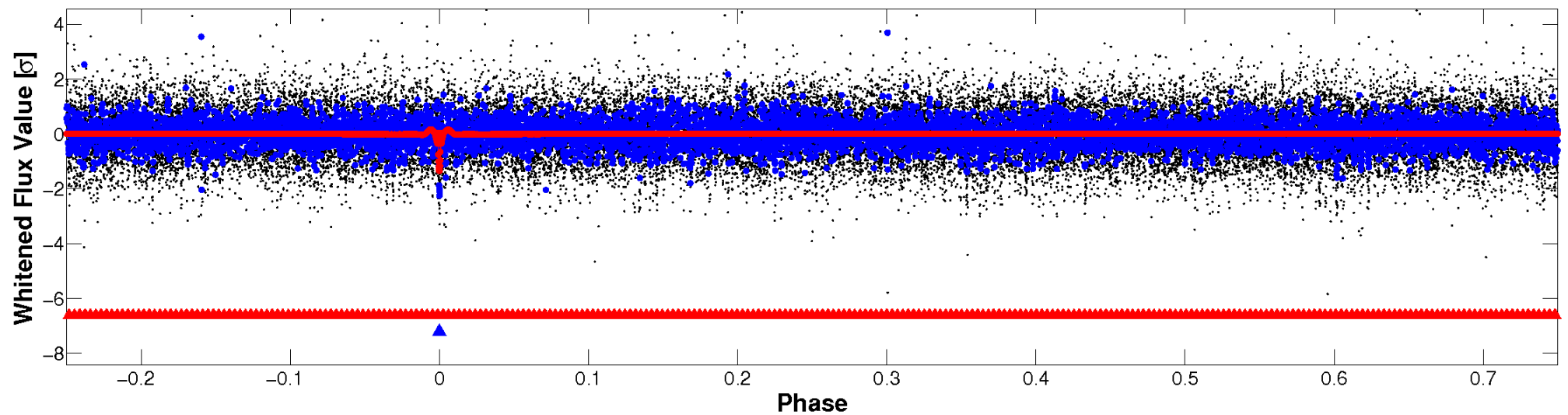


Non-Whitened Vs. Whitened Light Curve

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

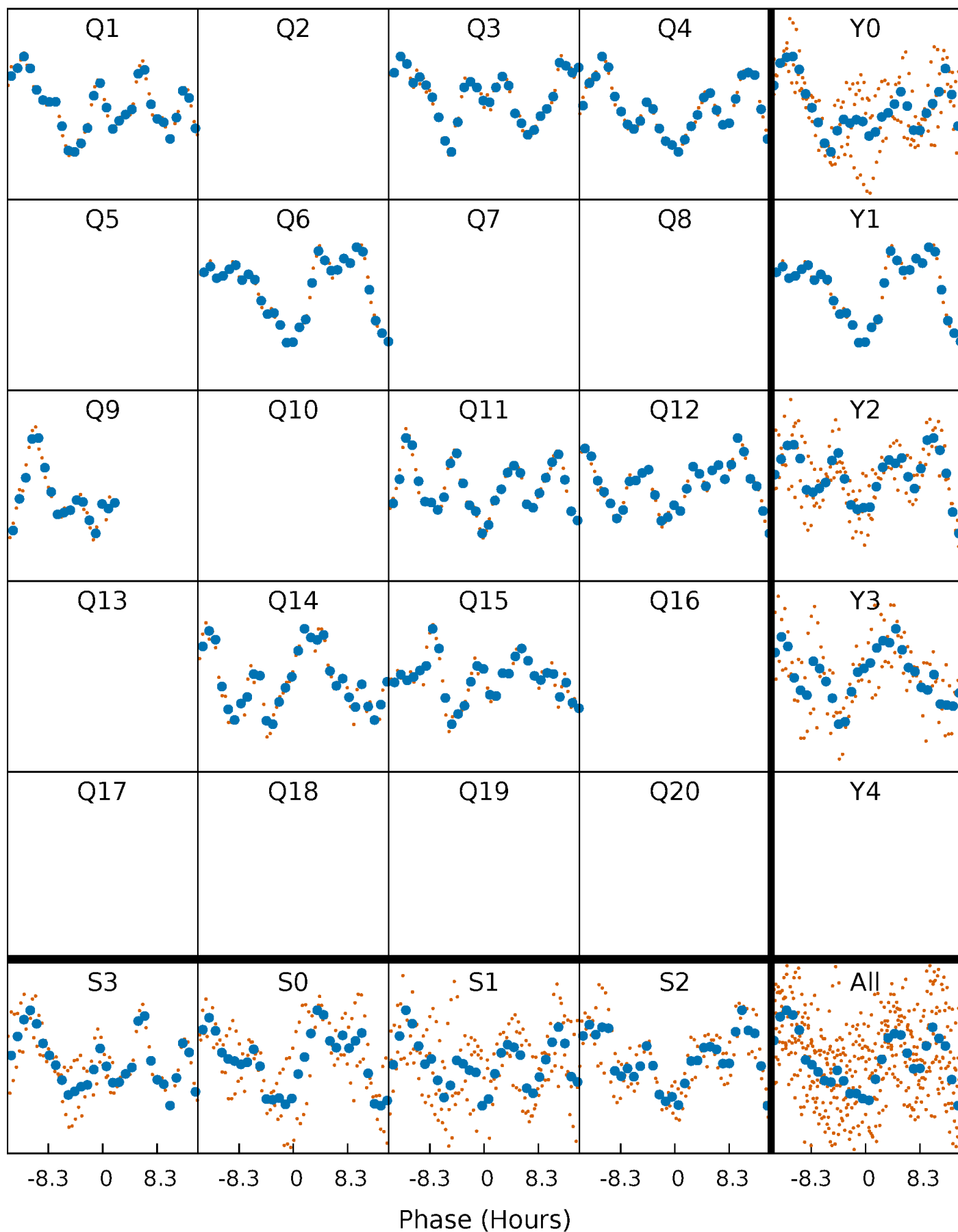


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



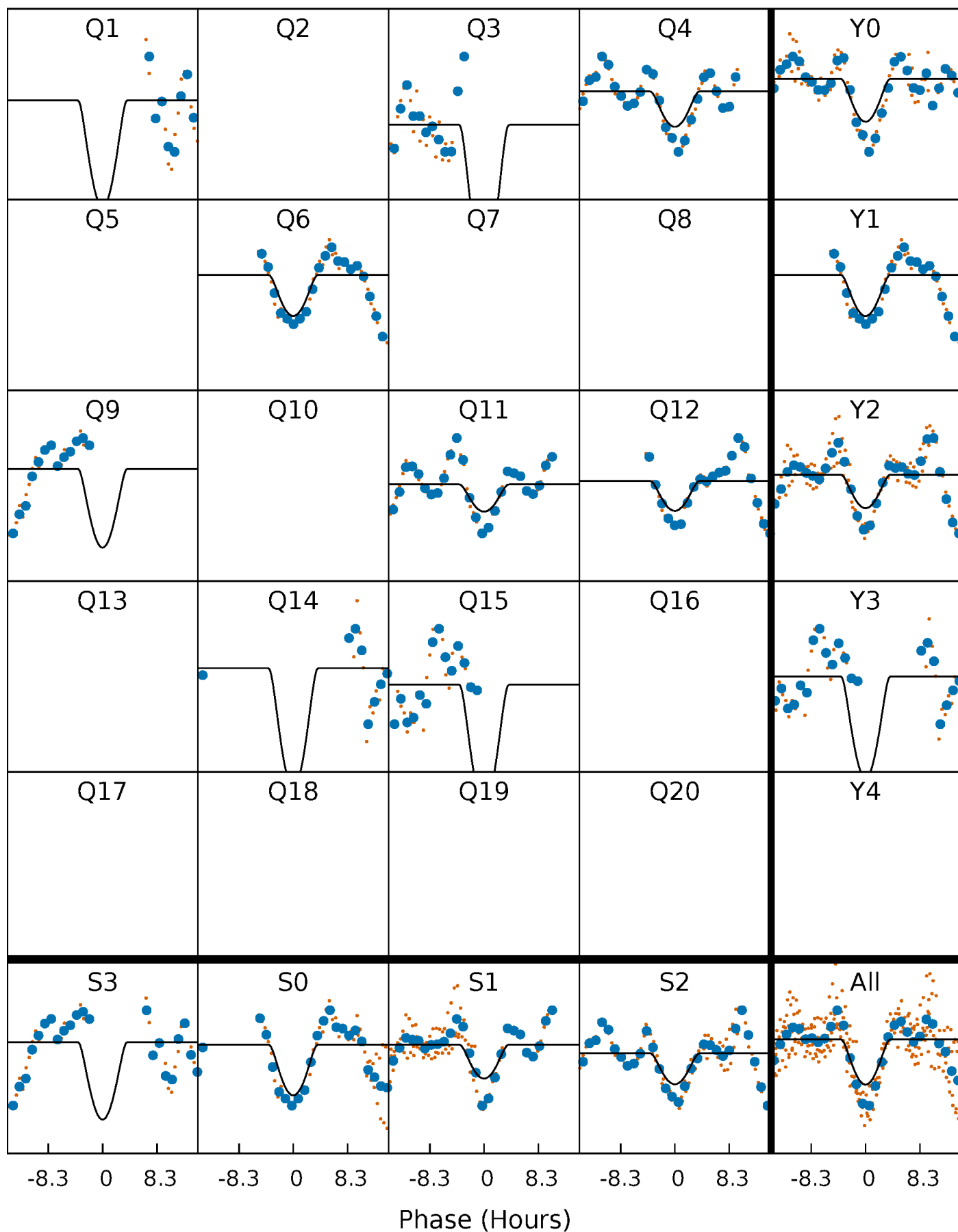
PDC Quarter-Phased Transit Curves

TCE 002719928-02 P=146.171209 Days $T_0=143.189995$ (BKJD)



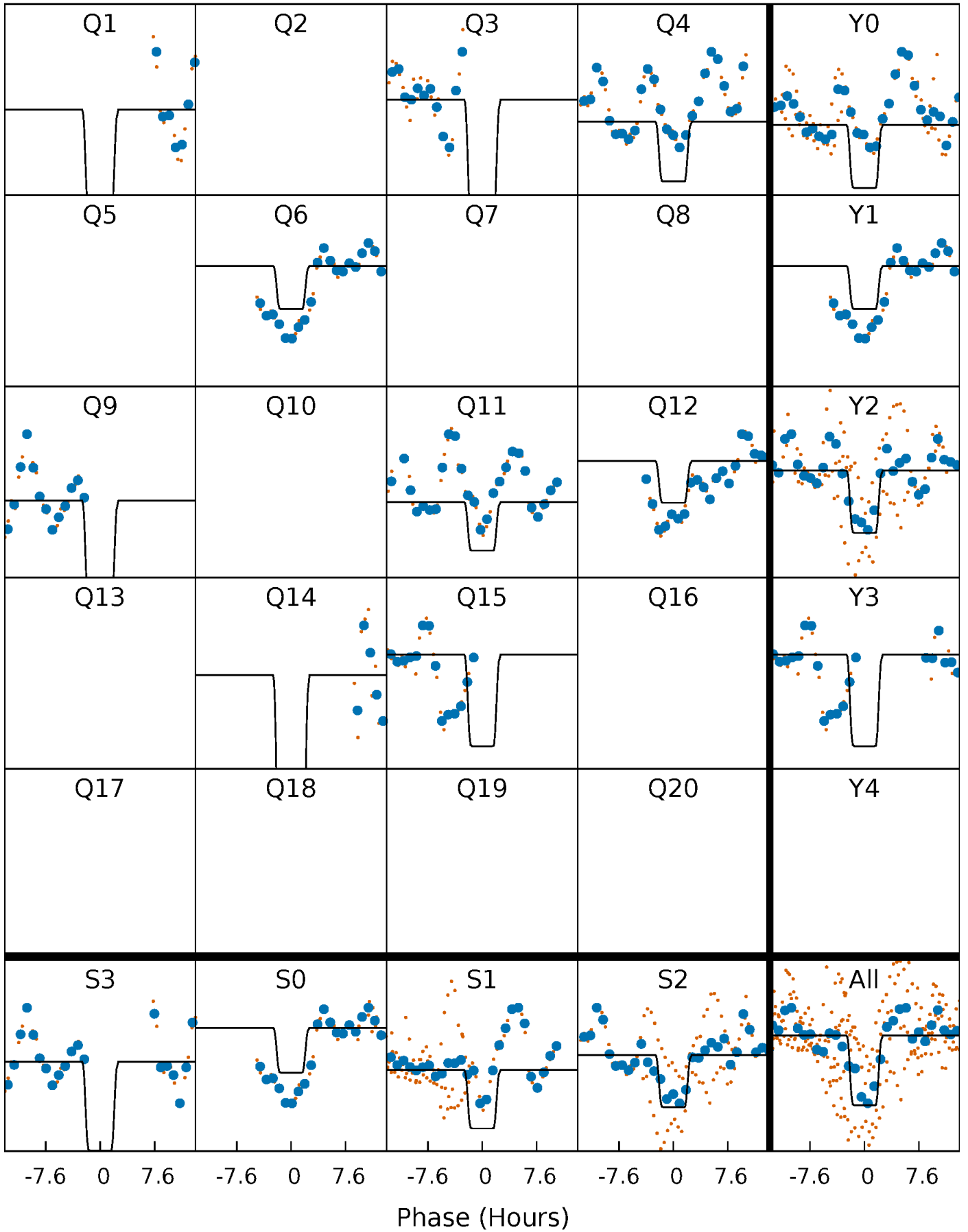
DV Quarter-Phased Transit Curves

TCE 002719928-02 P=146.171209 Days $T_0=143.189995$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

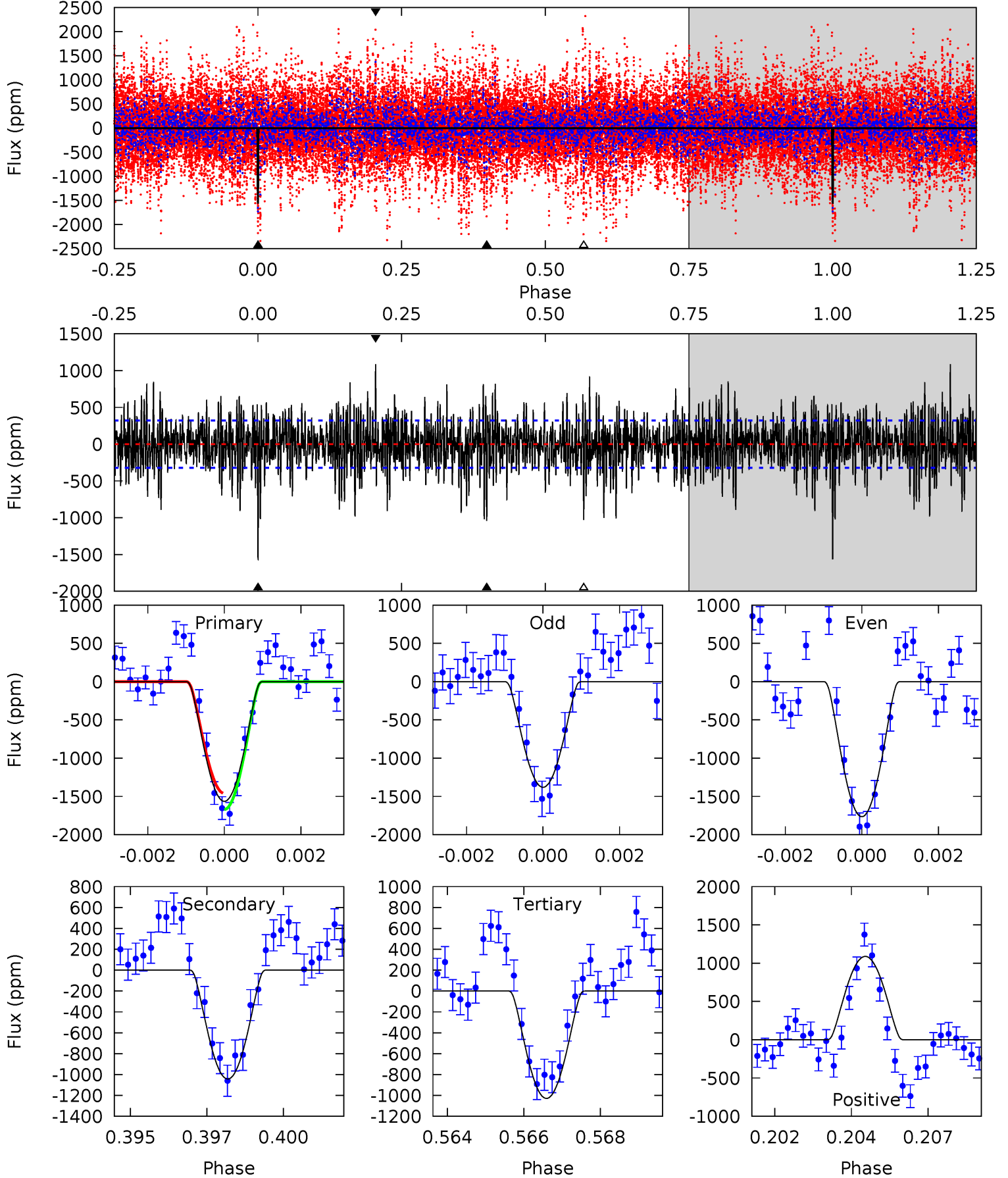
TCE 002719928-02 P=146.174877 Days $T_0=143.156926$ (BKJD)



DV Model-Shift Uniqueness Test

002719928-02, P = 146.171209 Days, E = 143.189995 Days

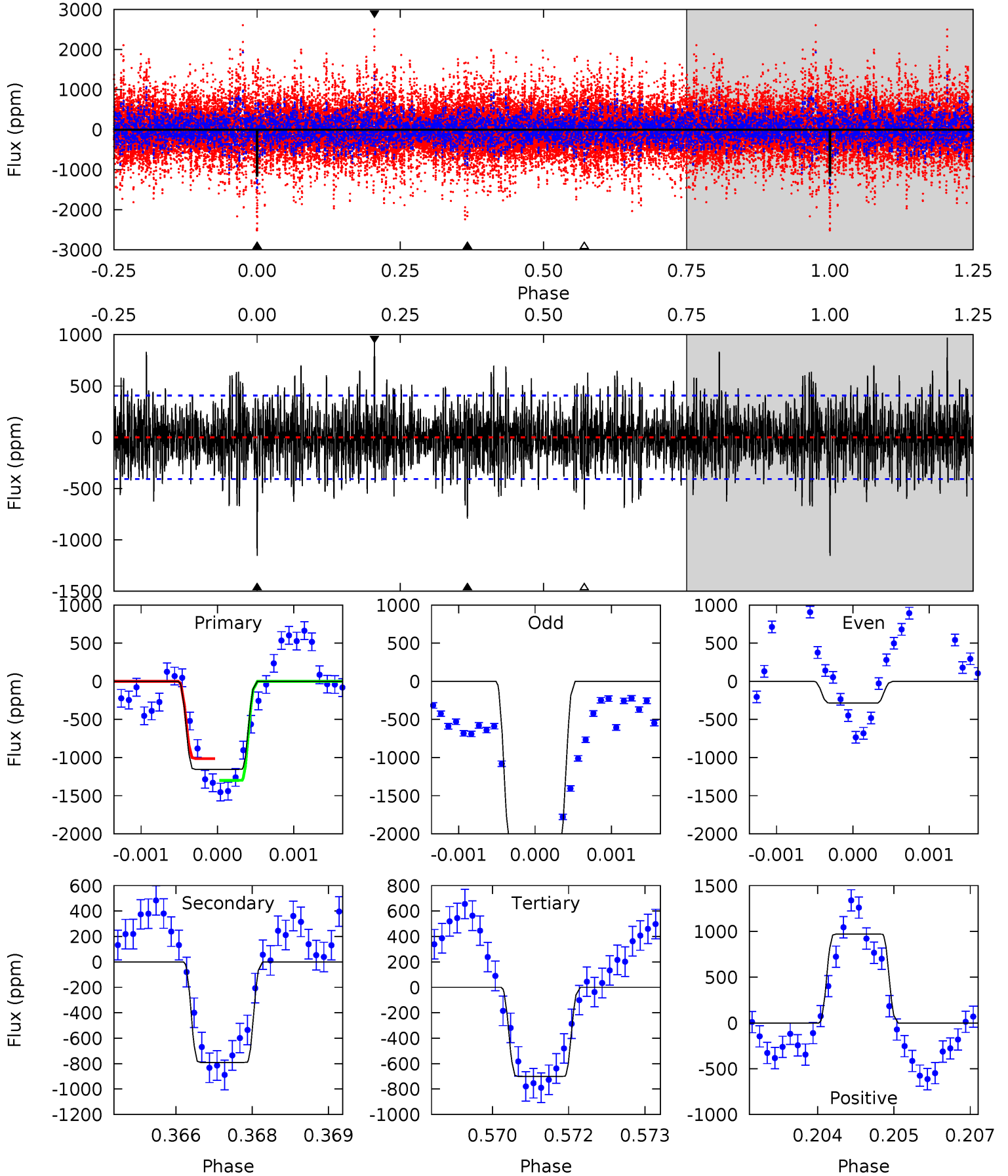
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	17.2	17.0	18.0	5.31	3.06	4.60	8.84	7.85	0.23	-0.76	3.16	0.60	0.41	1.75



Alt Model-Shift Uniqueness Test

002719928-02, P = 146.174877 Days, E = 143.156926 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	10.5	9.30	12.9	5.39	3.20	2.98	6.02	2.44	1.19	-2.39	12.7	3.60	0.46	1.91



Stellar Parameters For KIC 002719928

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7201^{+201}_{-302}	$4.167^{+0.109}_{-0.202}$	$0.000^{+0.200}_{-0.350}$	$1.679^{+0.540}_{-0.291}$	$1.511^{+0.221}_{-0.221}$	$0.449^{+0.262}_{-0.221}$
	+3%/-4%	+3%/-5%	+inf%/-inf%	+32%/-17%	+15%/-15%	+58%/-49%
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 002719928-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1043 ± 61	$18.20^{+18.28}_{-12.07}$	736^{+58}_{-49}	4266^{+2752}_{-845}	654^{+5086}_{-483}
Alt.	-791 ± 75	$16.45^{+15.28}_{-11.07}$	733^{+60}_{-46}	4294^{+2775}_{-910}	633^{+4793}_{-470}

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 $A_{obs} \gg 1.0$

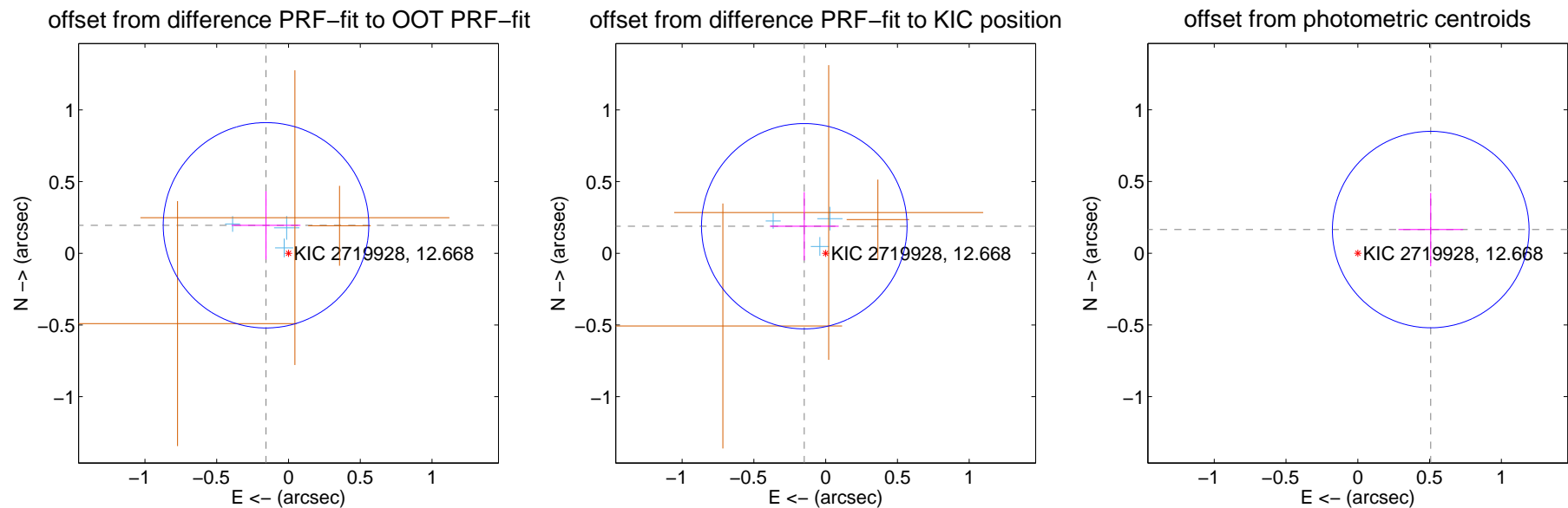
DV Centroid Data

Supplemental centroid analysis for 002719928-02. Kepler magnitude: 12.67. Transit SNR 8.15

There are 3 quarters with good PRF difference image offsets

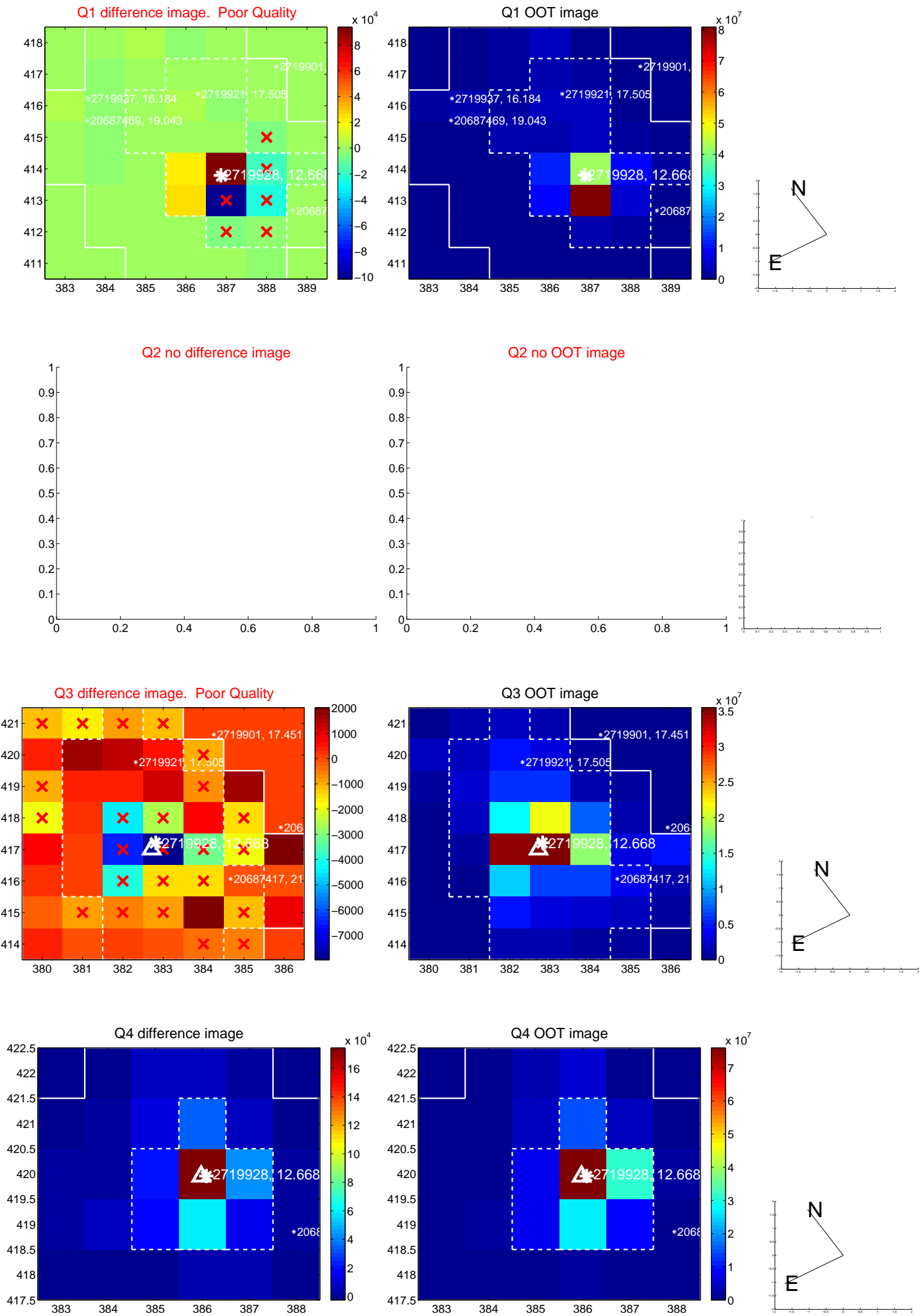
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.250 ± 0.239	1.05	0.157 ± 0.240	0.195 ± 0.238
PRF-fit source offset from KIC position	0.241 ± 0.239	1.01	0.149 ± 0.240	0.189 ± 0.238
photometric centroid source offset	0.53 ± 0.23	2.34	-0.51 ± 0.23	0.17 ± 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.

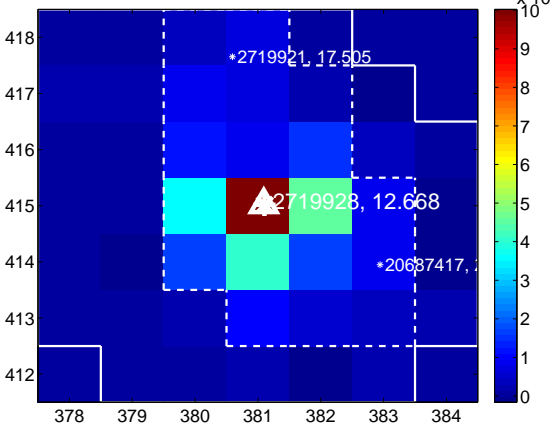
Q5 no difference image



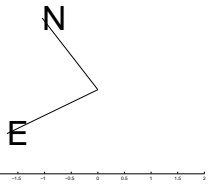
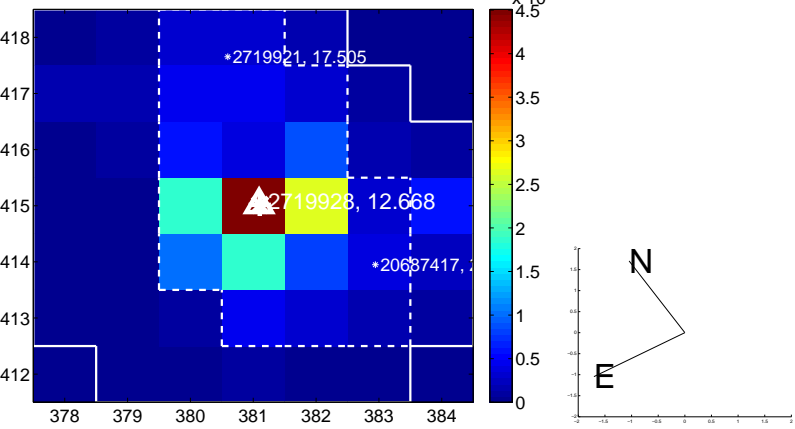
Q5 no OOT image



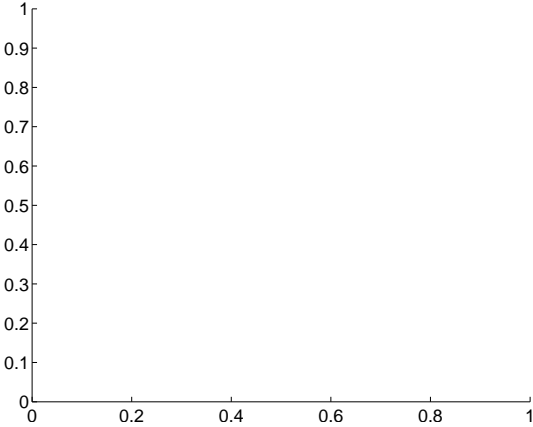
Q6 difference image



Q6 OOT image



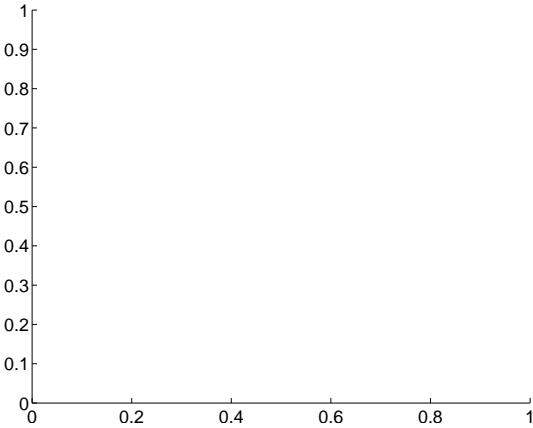
Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



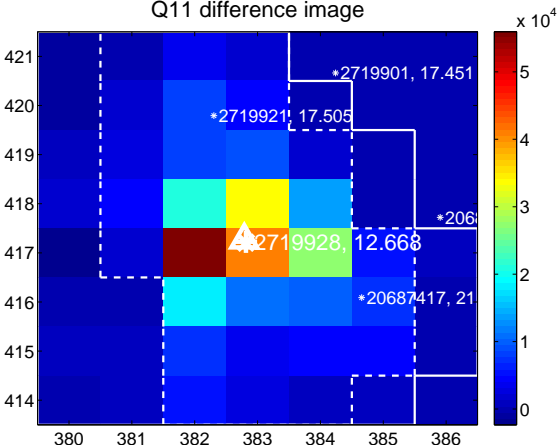
Q10 no difference image



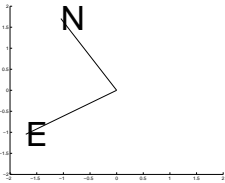
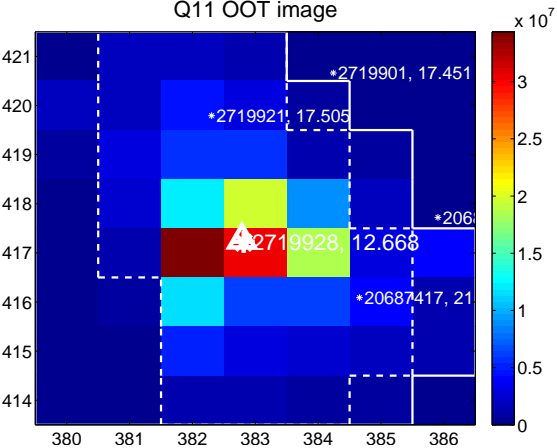
Q10 no OOT image



Q11 difference image



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

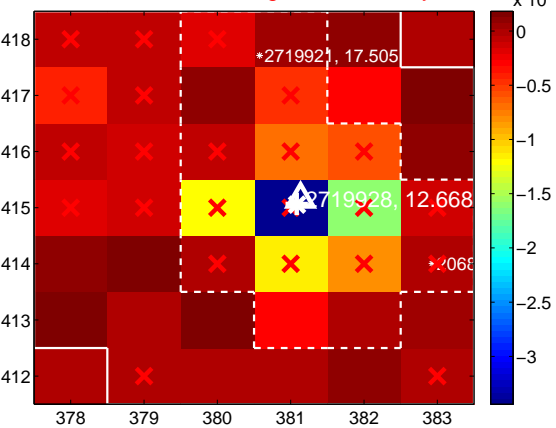
Q13 no difference image



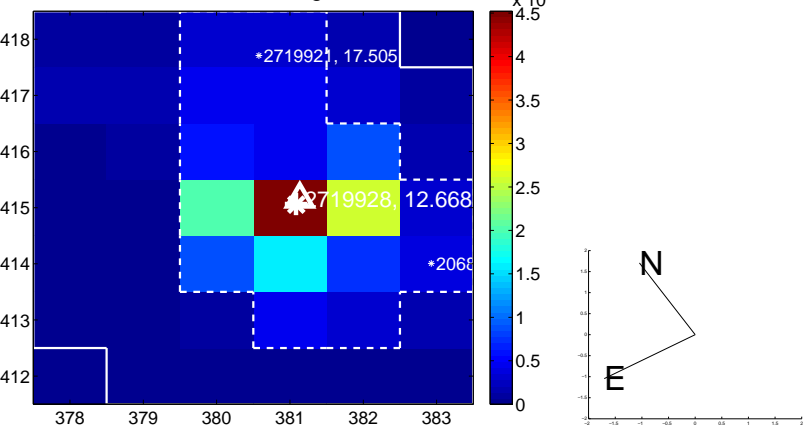
Q13 no OOT image



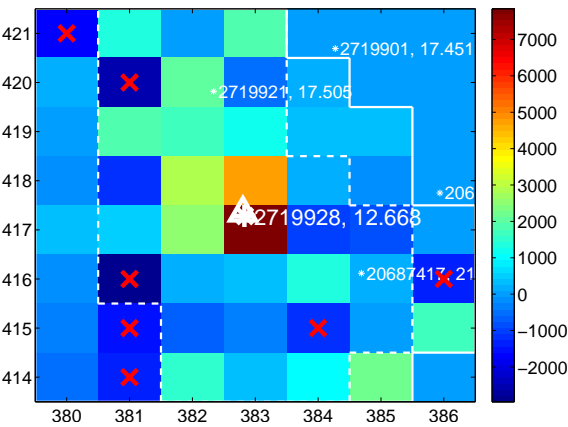
Q14 difference image. Poor Quality



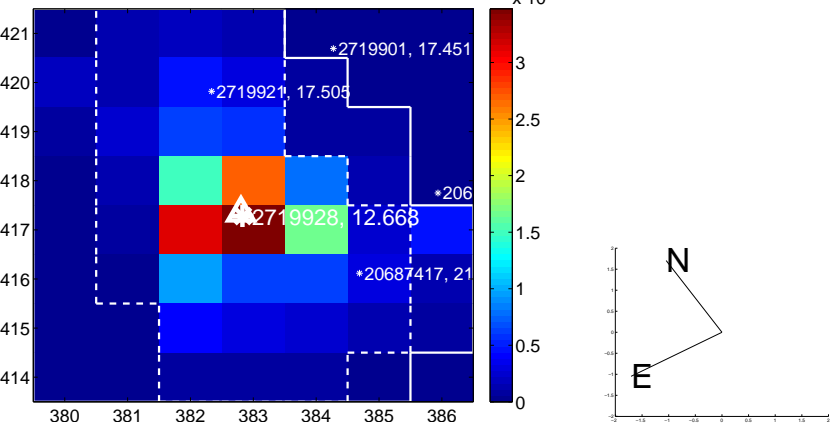
Q14 OOT image



Q15 difference image. Poor Quality



Q15 OOT image



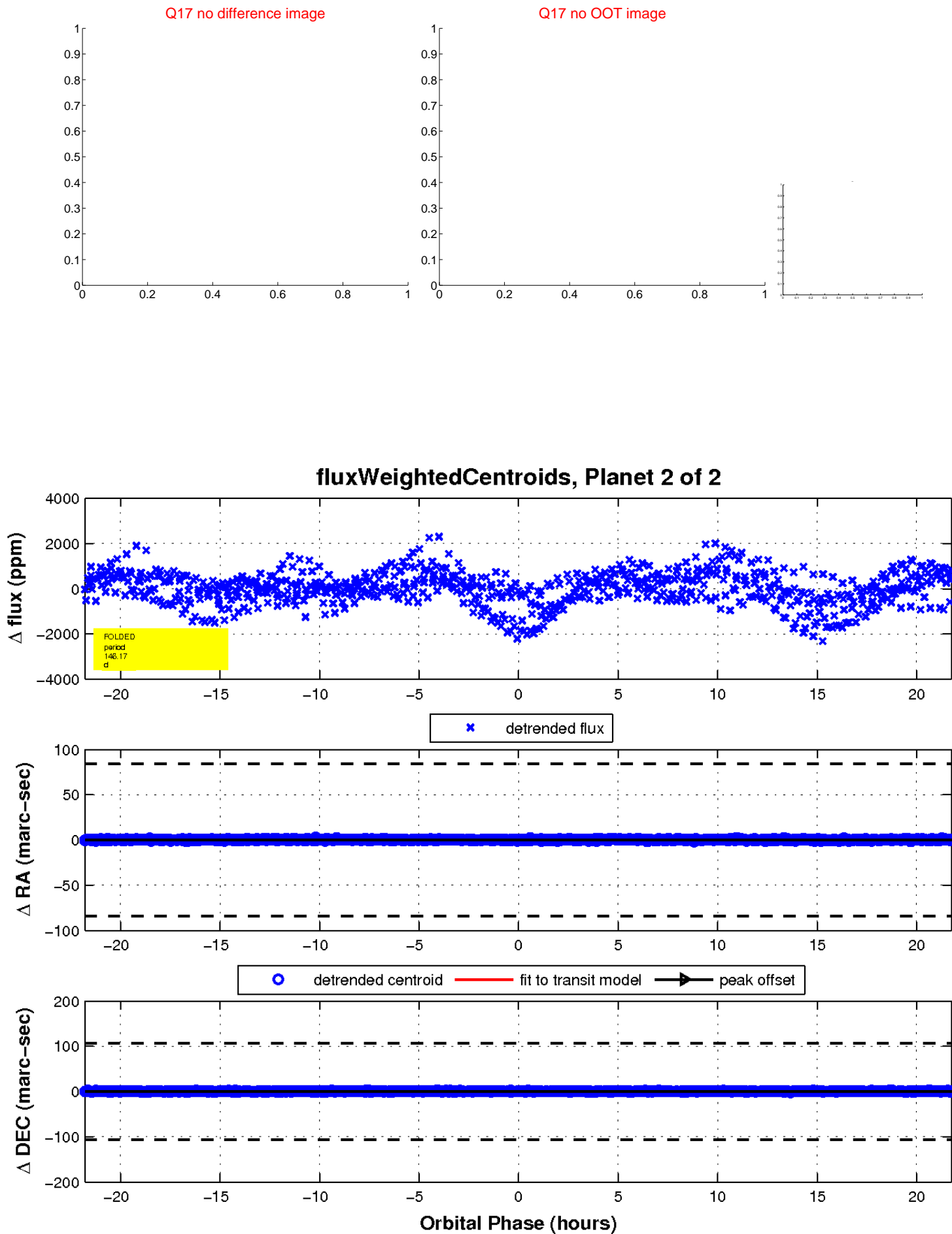
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

