

KIC 012736056

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})
012736056-01	OBS	No	0.721135	132.209308	17.0	1.240	9.9	11.0	2.20	9451	1.05	89152.78
012736056-02	OBS	No	0.566343	131.540691	15.2	6.742	7.8	16.5	2.20	9451	0.88	123041.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012736056-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
012736056-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

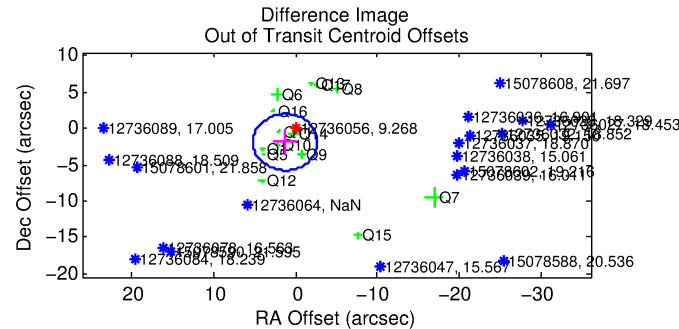
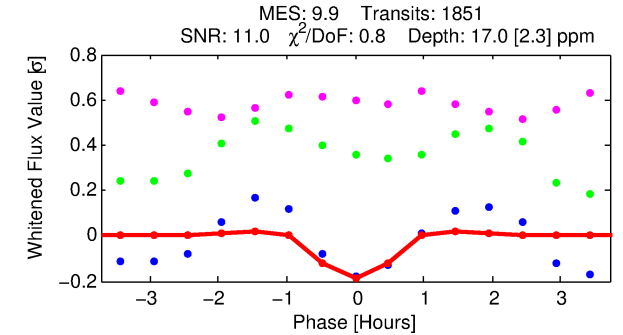
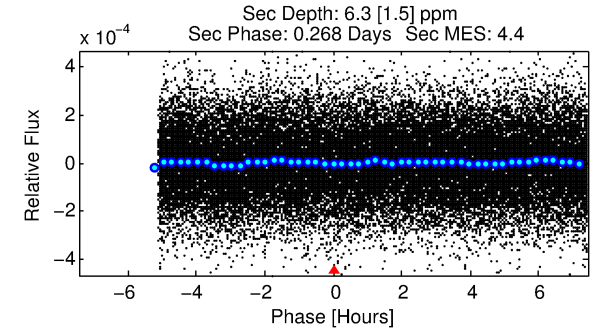
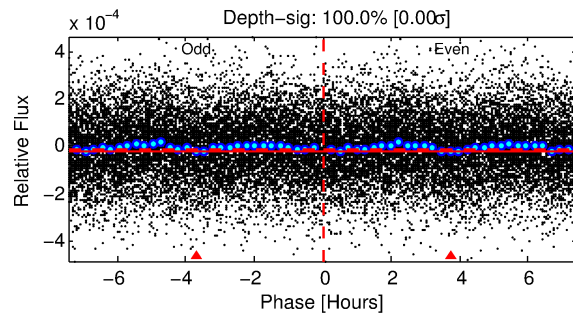
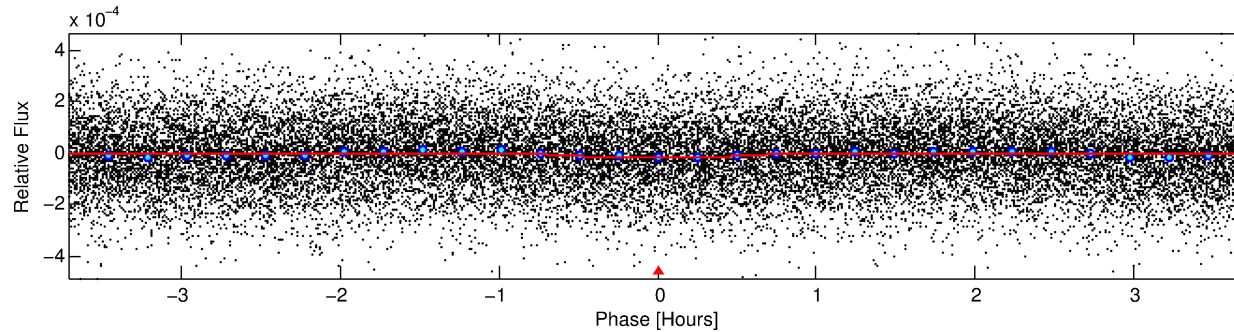
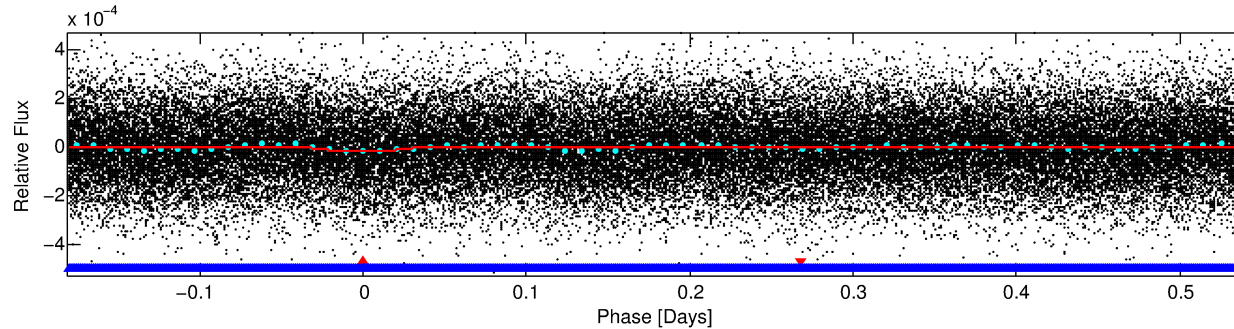
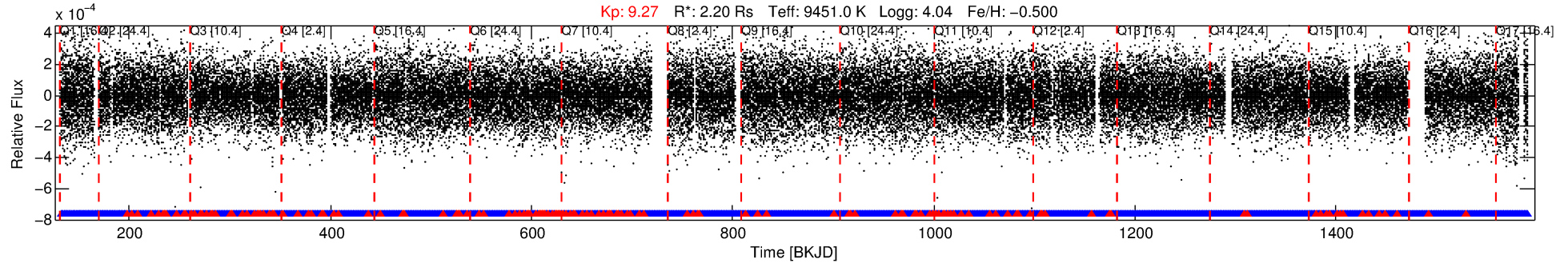
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012736056-01

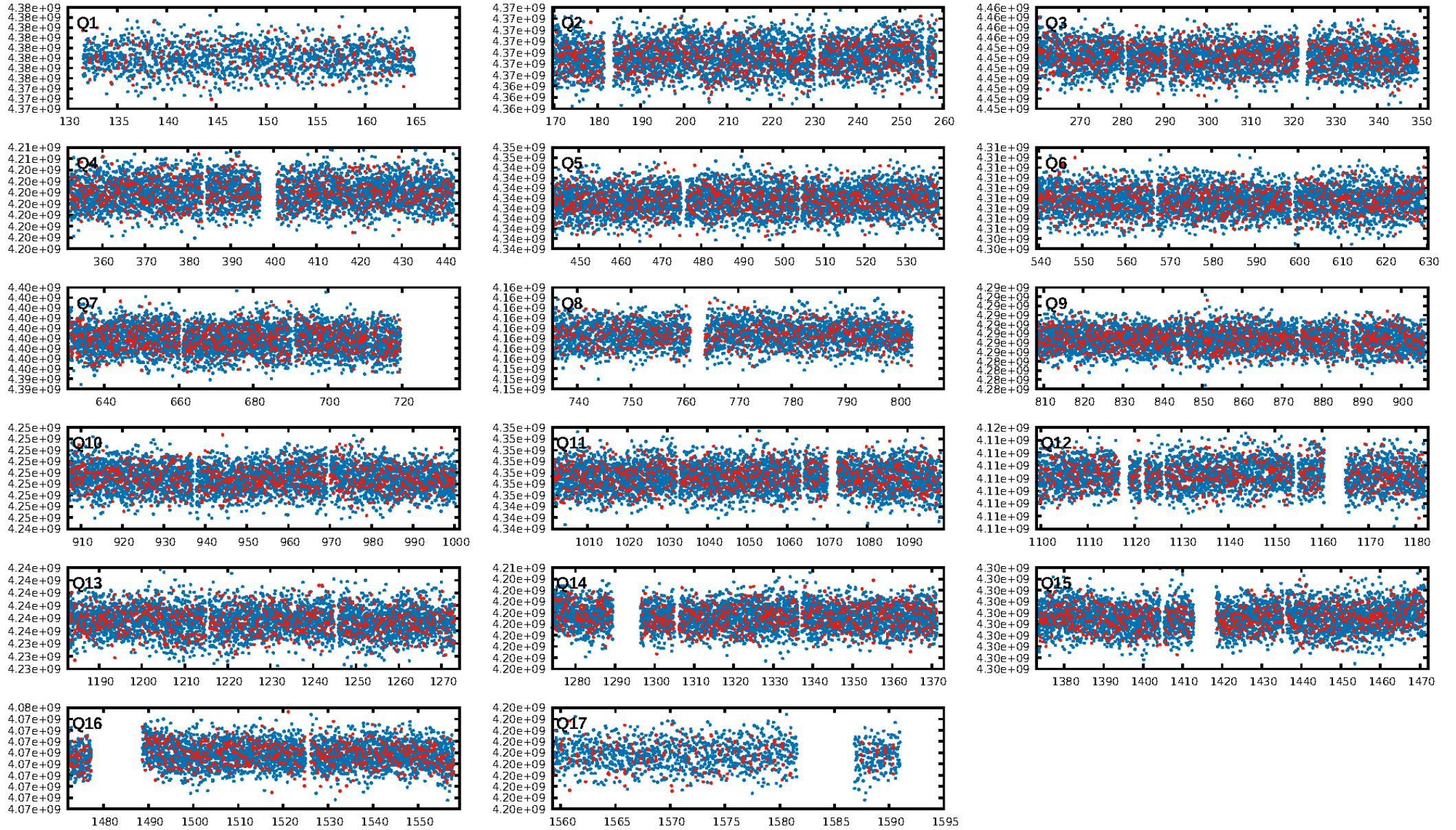
No Significant Match Found

DV One-Page Summary

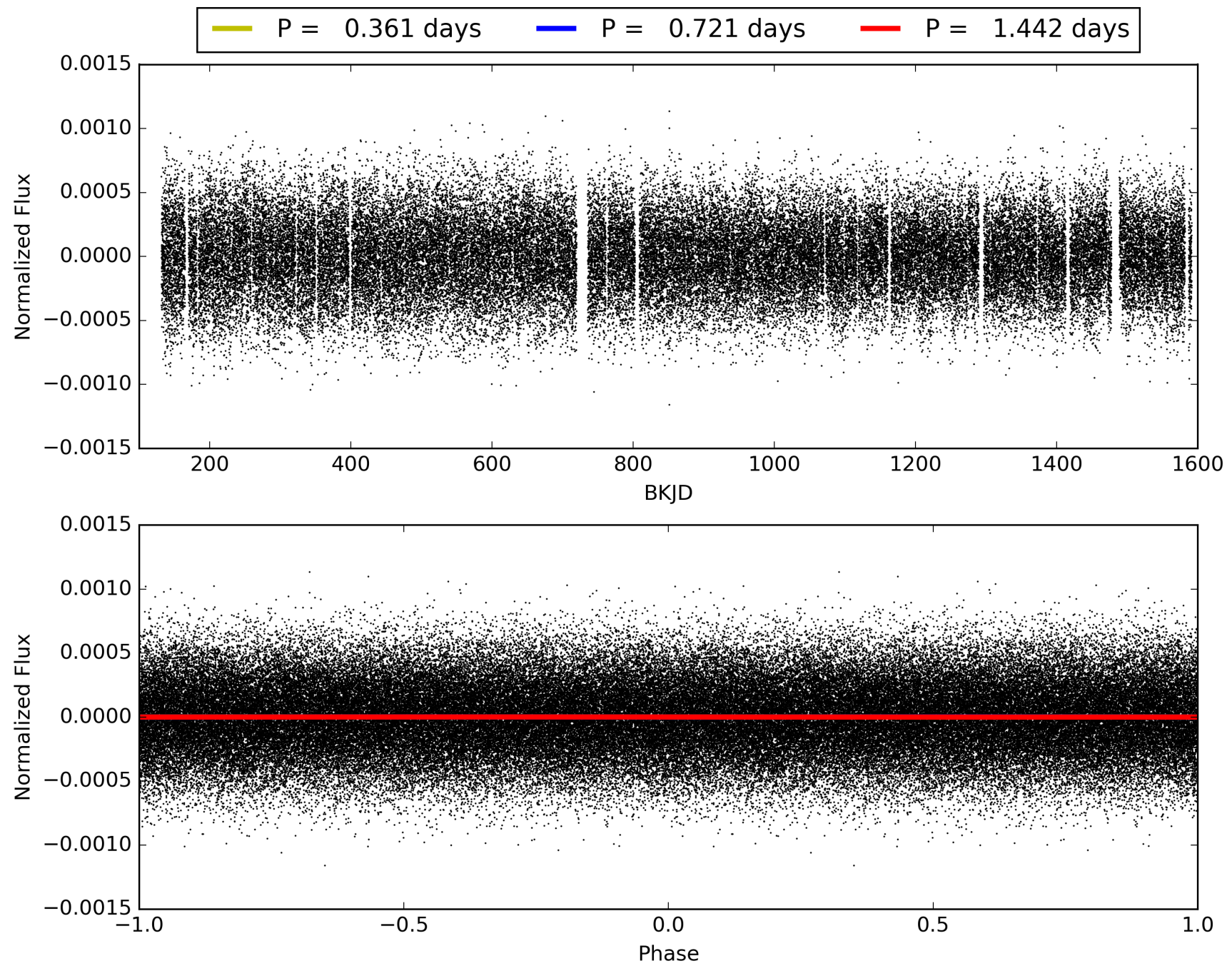
KIC: 12736056 Candidate: 1 of 2 Period: 0.721 d



TCE 012736056-01, PDC Light Curves

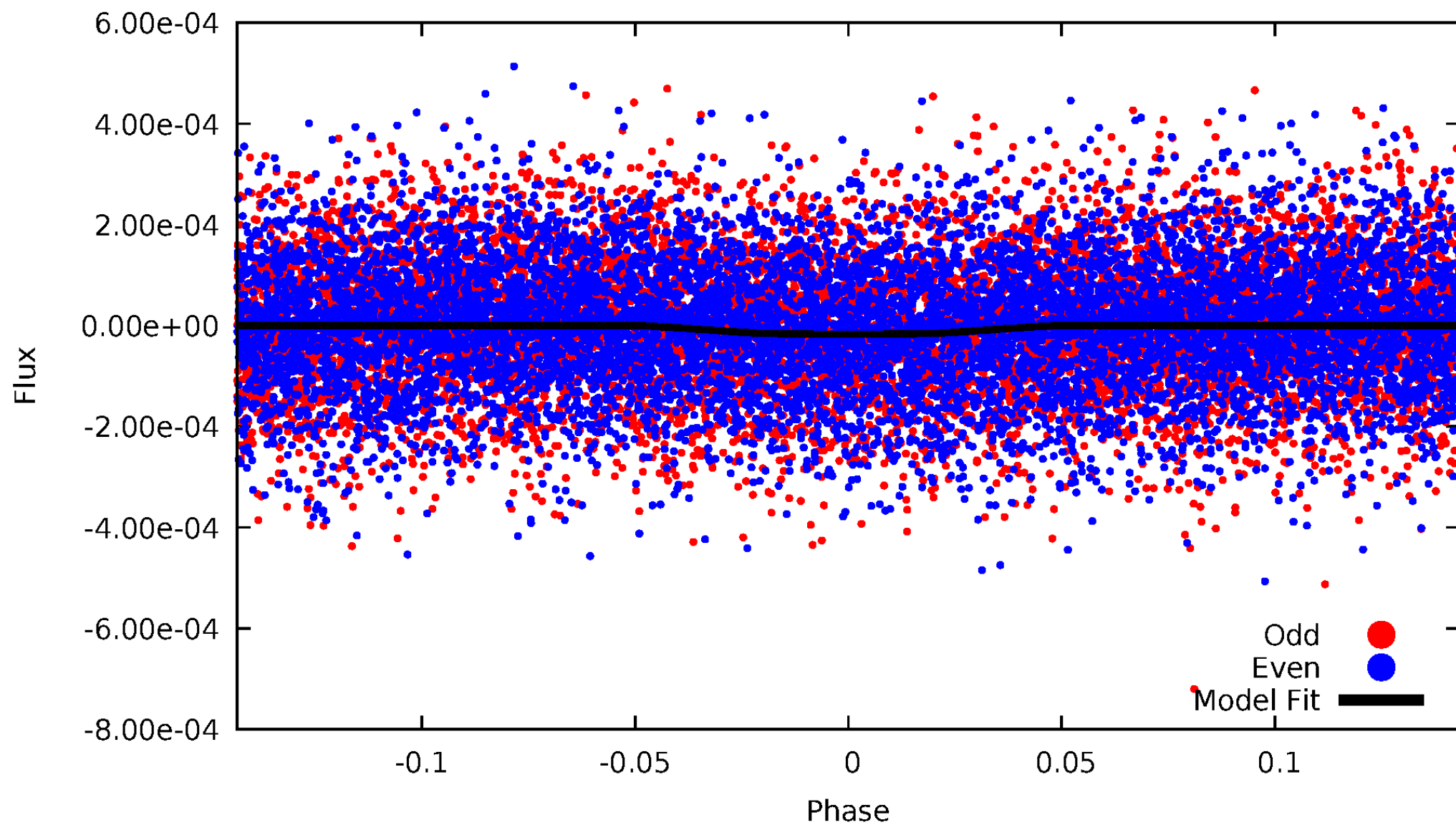


TCE 012736056-01



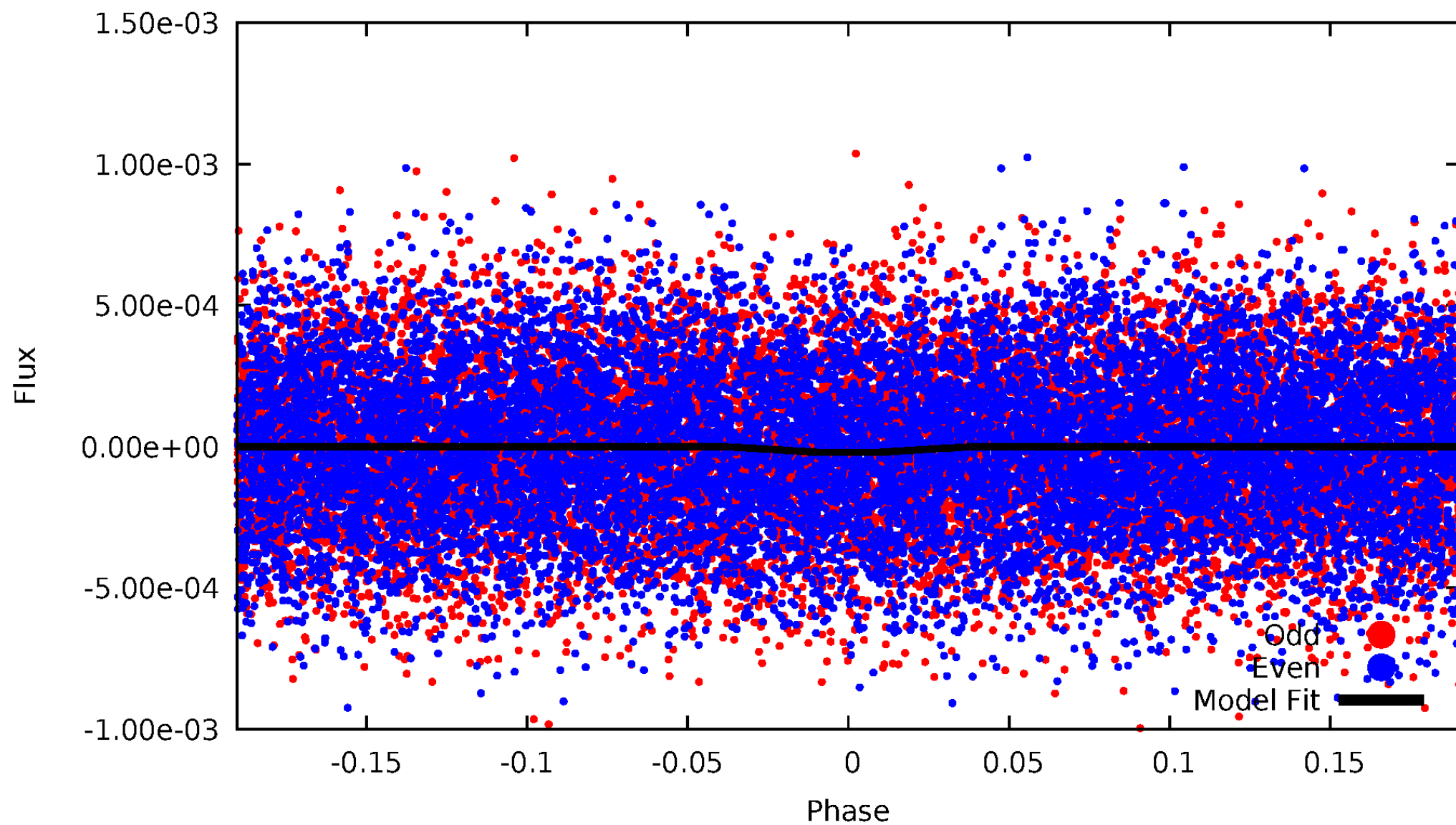
DV Odd/Even

TCE 012736056-01

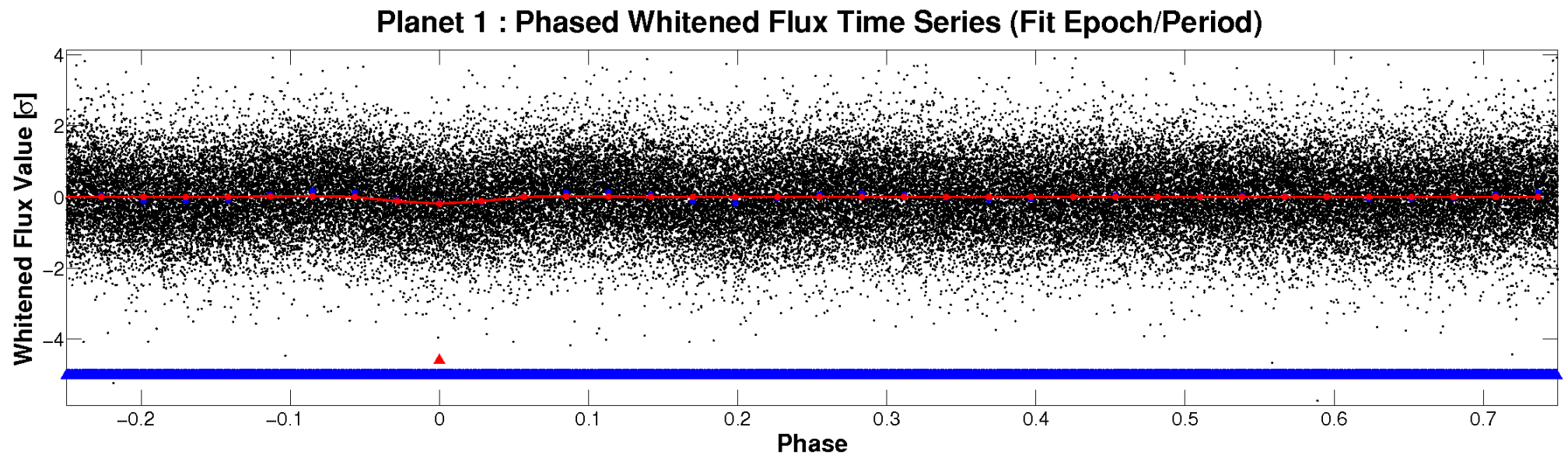
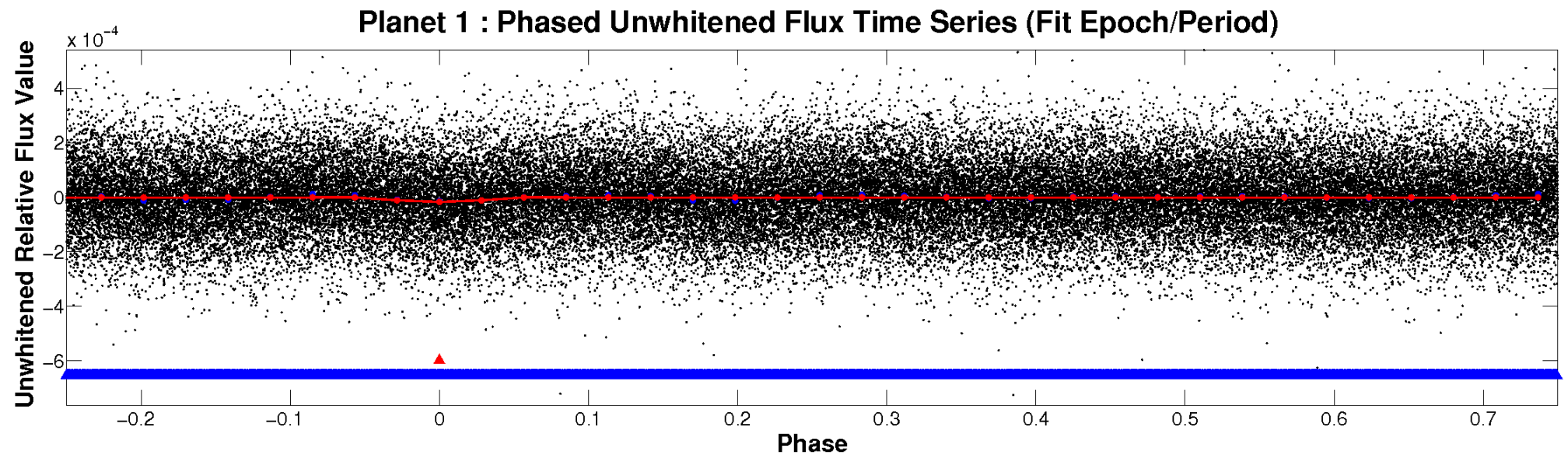


ALT Odd/Even

TCE 012736056-01

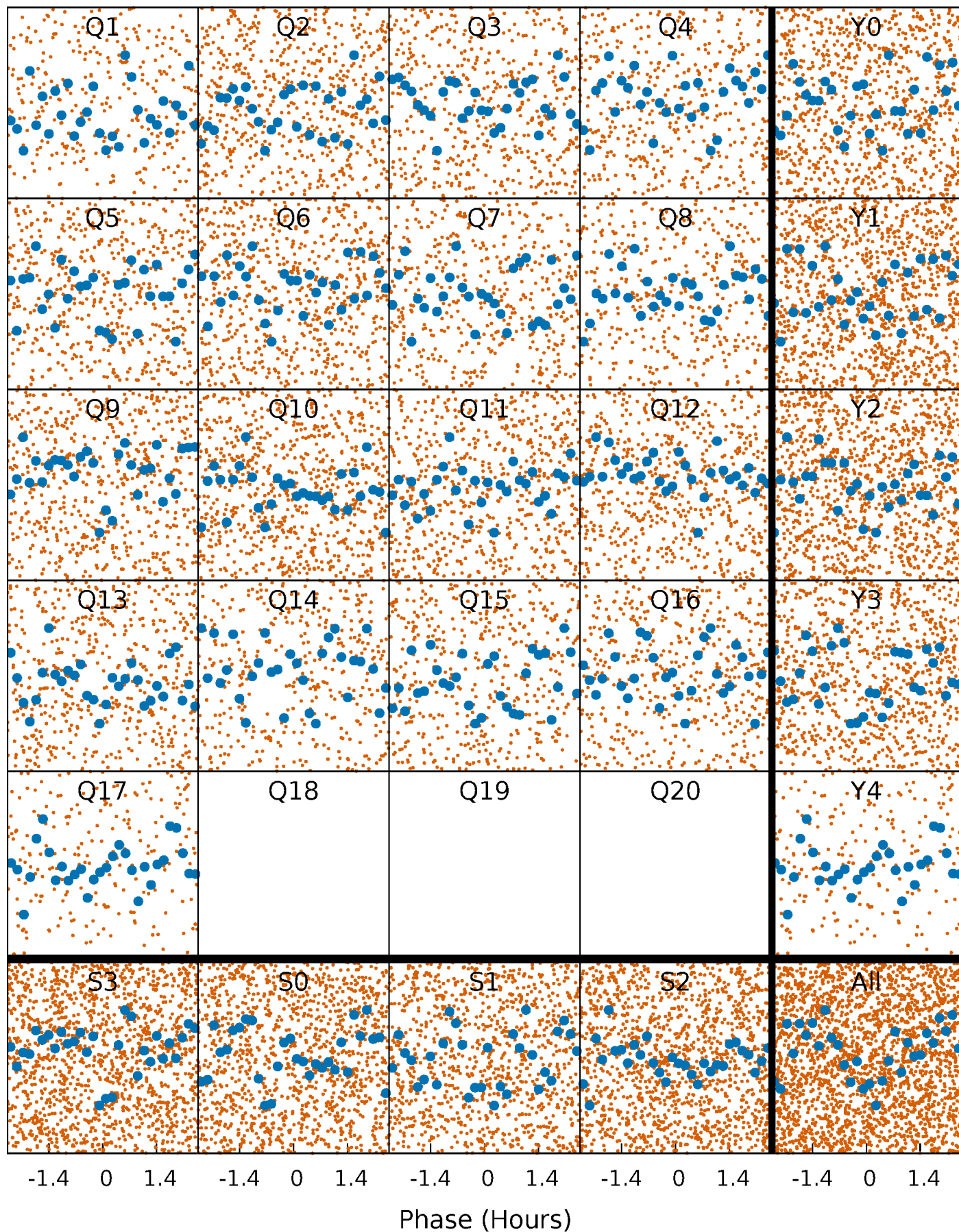


Non-Whitened Vs. Whitened Light Curve



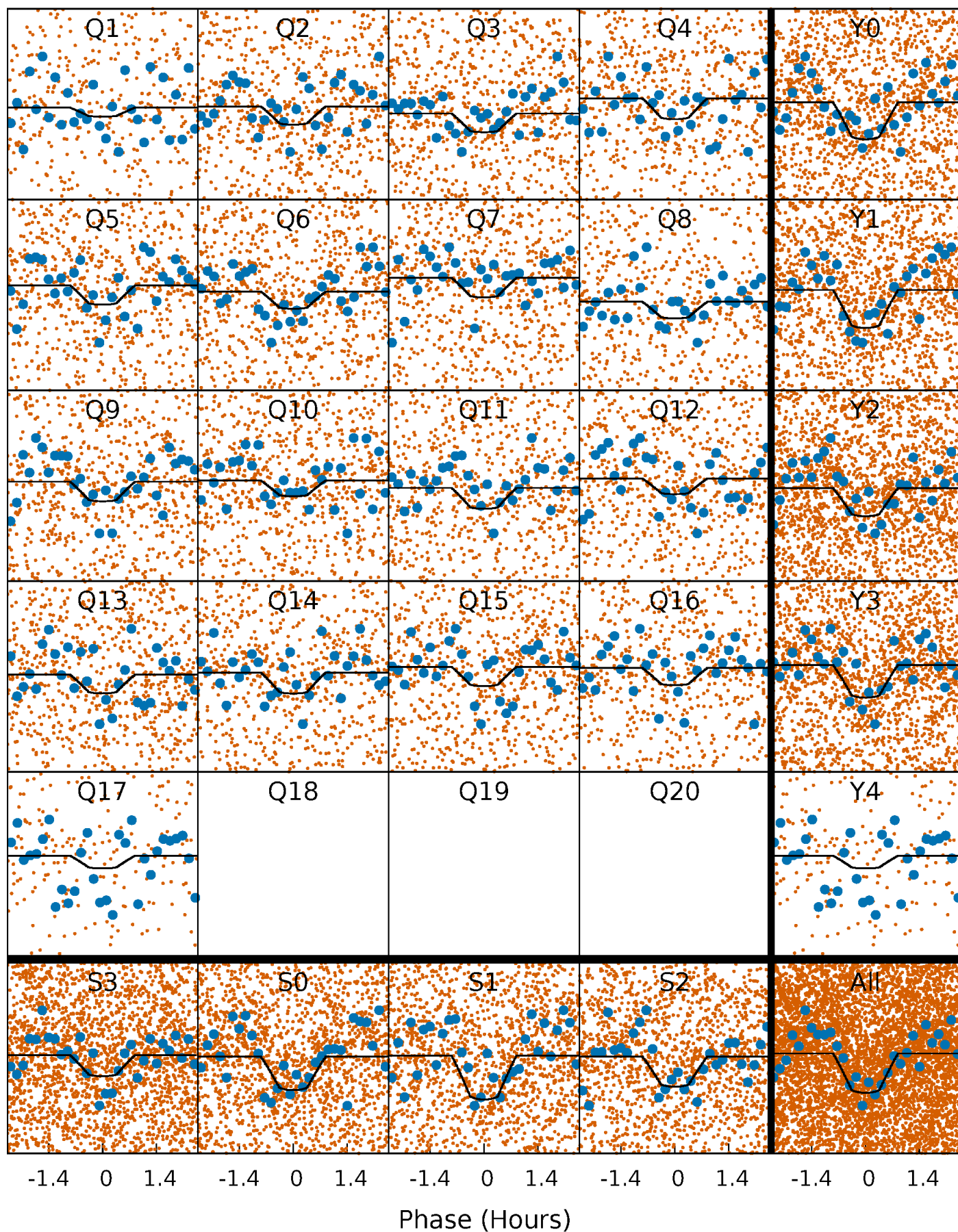
PDC Quarter-Phased Transit Curves

TCE 012736056-01 P= 0.721135 Days $T_0=132.209308$ (BKJD)



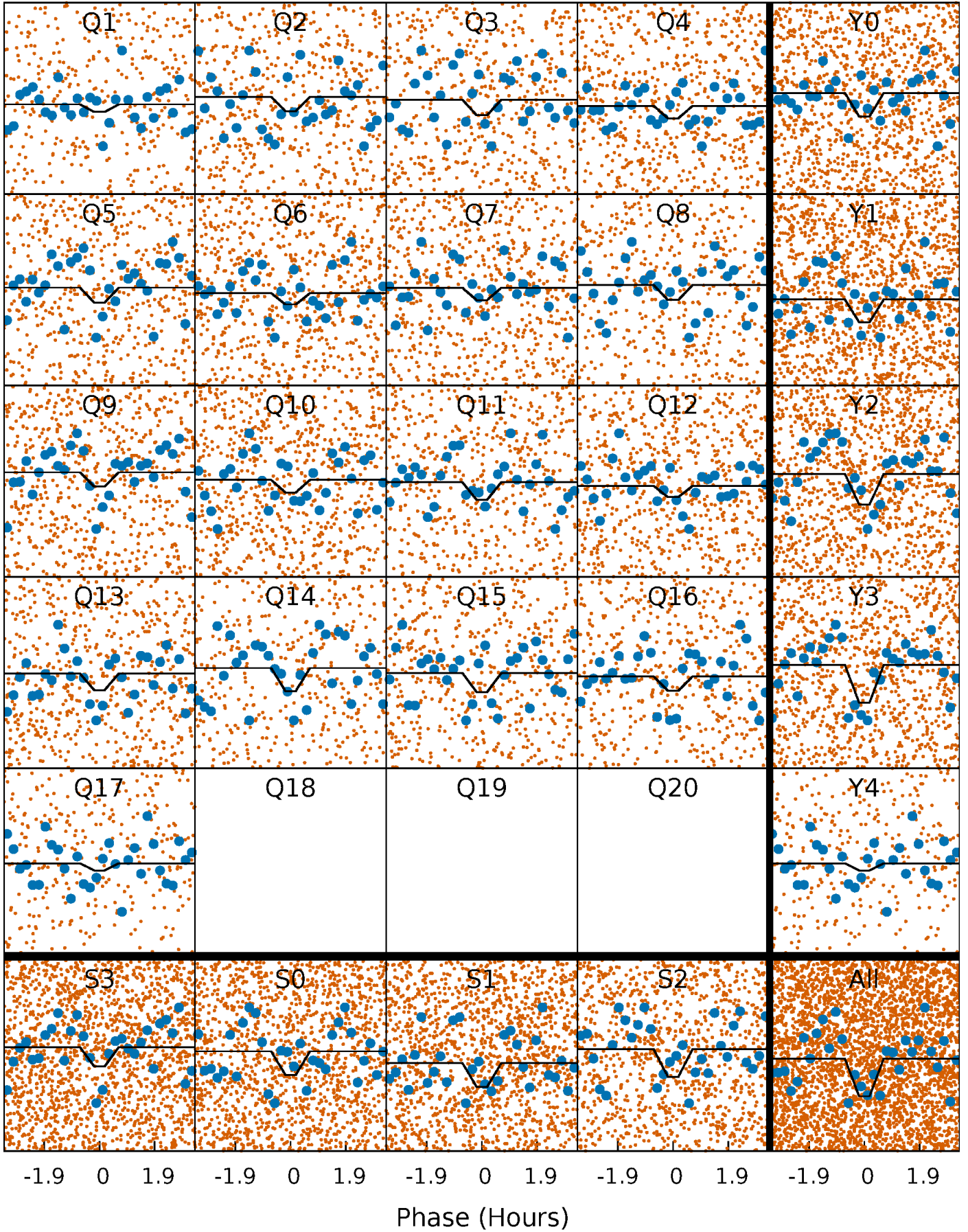
DV Quarter-Phased Transit Curves

TCE 012736056-01 P= 0.721135 Days $T_0=132.209308$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

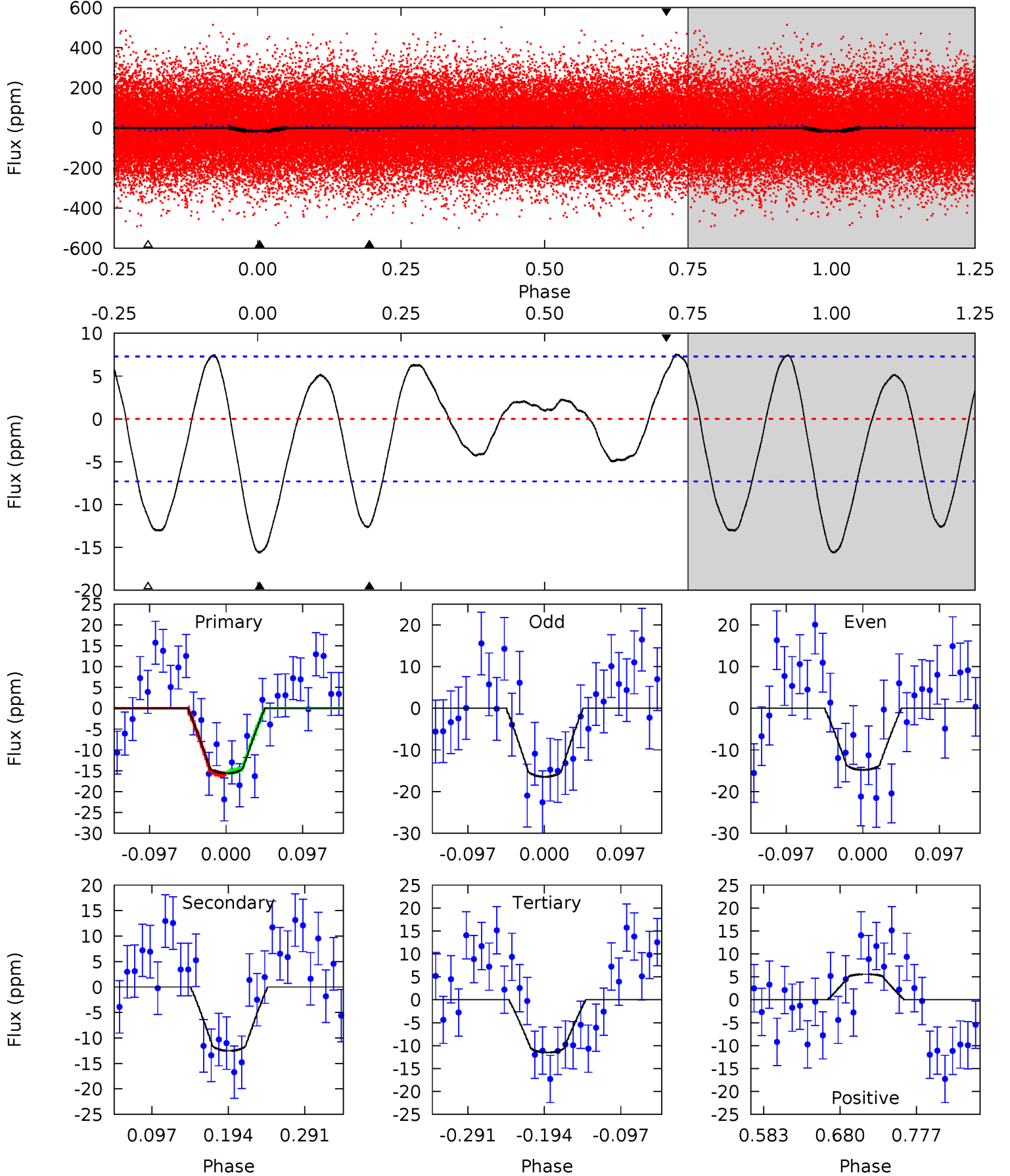
TCE 012736056-01 P= 0.721142 Days $T_0=132.204938$ (BKJD)



DV Model-Shift Uniqueness Test

012736056-01, P = 0.721135 Days, E = 131.488173 Days

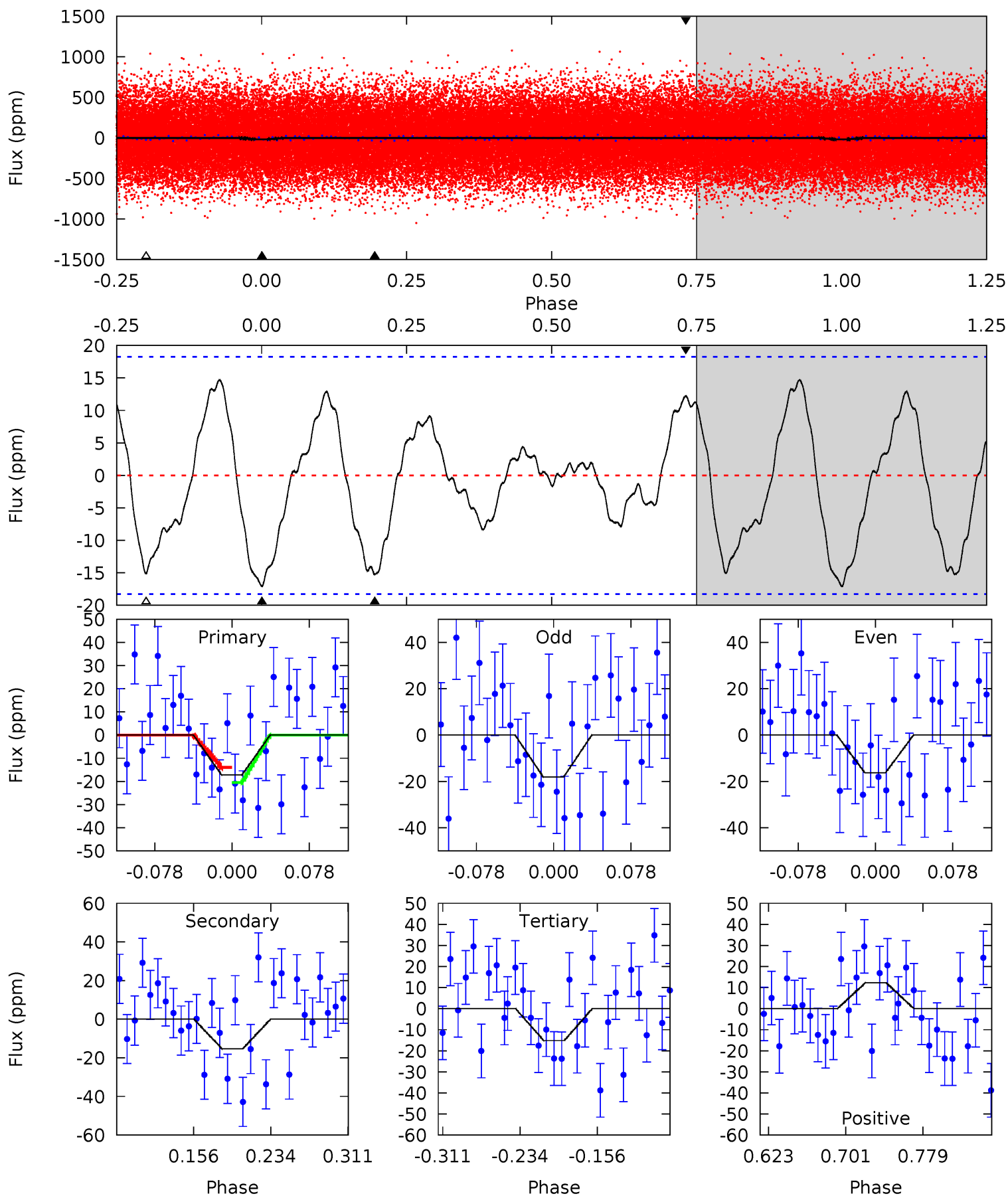
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.78	7.85	7.20	3.49	4.57	1.66	3.04	2.58	6.29	0.65	4.36	0.52	1.12	0.33	0.19



Alt Model-Shift Uniqueness Test

012736056-01, P = 0.721142 Days, E = 131.483796 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.34	3.88	3.83	3.11	4.62	1.76	1.68	0.51	1.23	0.05	0.77	0.22	1.26	0.46	0.83



Stellar Parameters For KIC 012736056

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9451^{+259}_{-444}	$4.045^{+0.222}_{-0.148}$	$-0.500^{+0.550}_{-0.350}$	$2.198^{+0.746}_{-0.678}$	$1.953^{+0.534}_{-0.356}$	$0.259^{+0.389}_{-0.119}$
	+3%/-5%	+5%/-4%	+110%/-70%	+34%/-31%	+27%/-18%	+150%/-46%
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 012736056-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 2	$1.03^{+0.24}_{-0.20}$	6040^{+499}_{-478}	7794^{+1058}_{-825}	$2.507^{+1.447}_{-0.866}$
Alt.	-15 ± 4	$1.03^{+0.26}_{-0.22}$	6066^{+427}_{-537}	8319^{+1499}_{-1182}	$3.038^{+1.985}_{-1.238}$

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 $A_{obs} \gg 1.0$

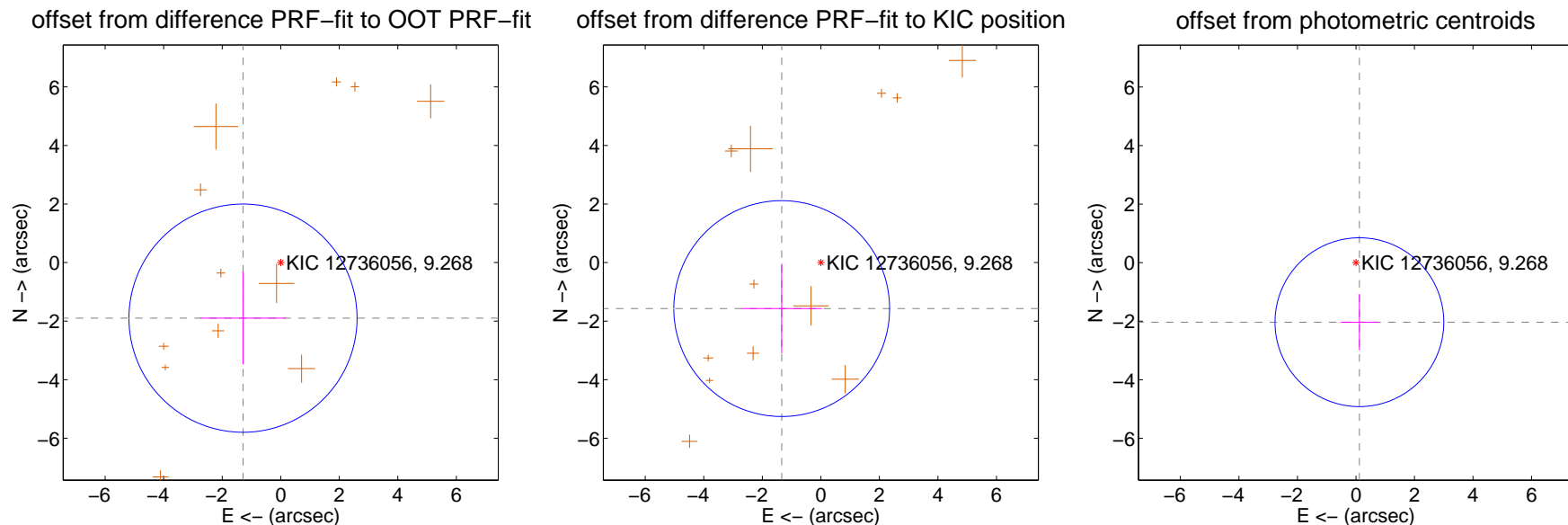
DV Centroid Data

Supplemental centroid analysis for 012736056-01. **Kepler magnitude: 9.27.** Transit SNR 10.98

There are 0 quarters with good PRF difference image offsets

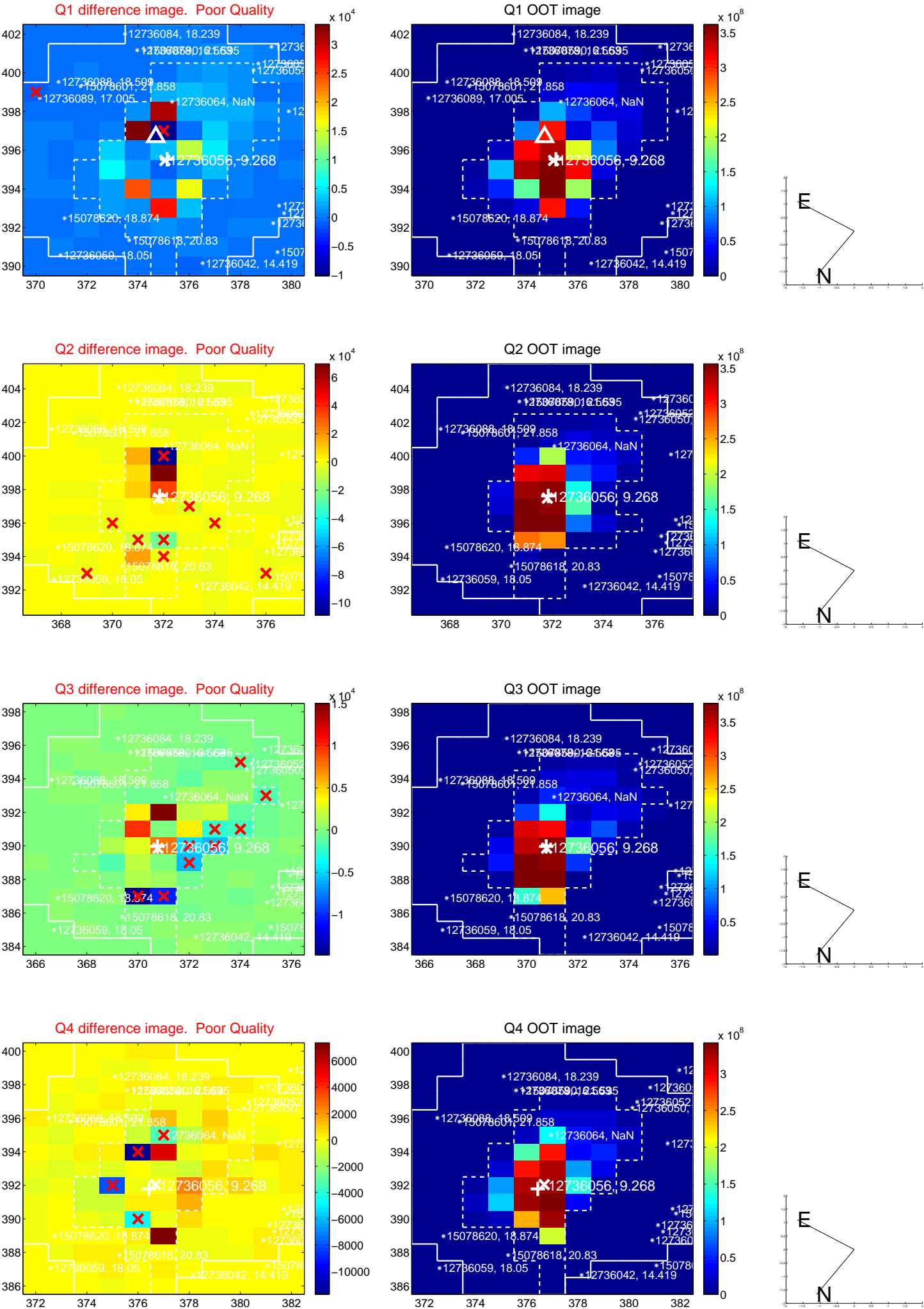
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.295 ± 1.299	1.77	1.290 ± 1.455	-1.898 ± 1.577
PRF-fit source offset from KIC position	2.063 ± 1.229	1.68	1.338 ± 1.376	-1.571 ± 1.533
photometric centroid source offset	2.04 ± 0.96	2.12	-0.12 ± 0.65	-2.03 ± 0.96

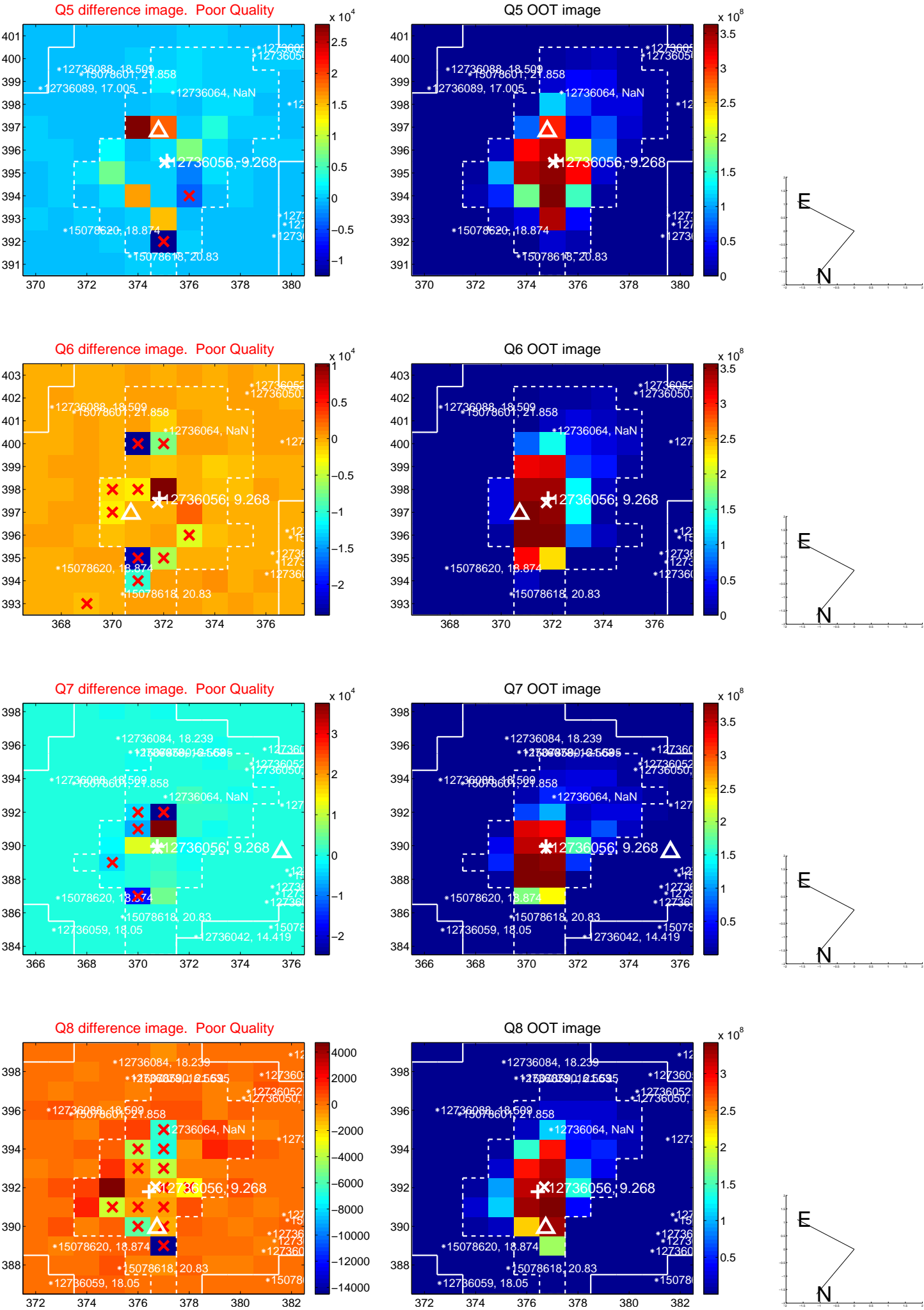


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

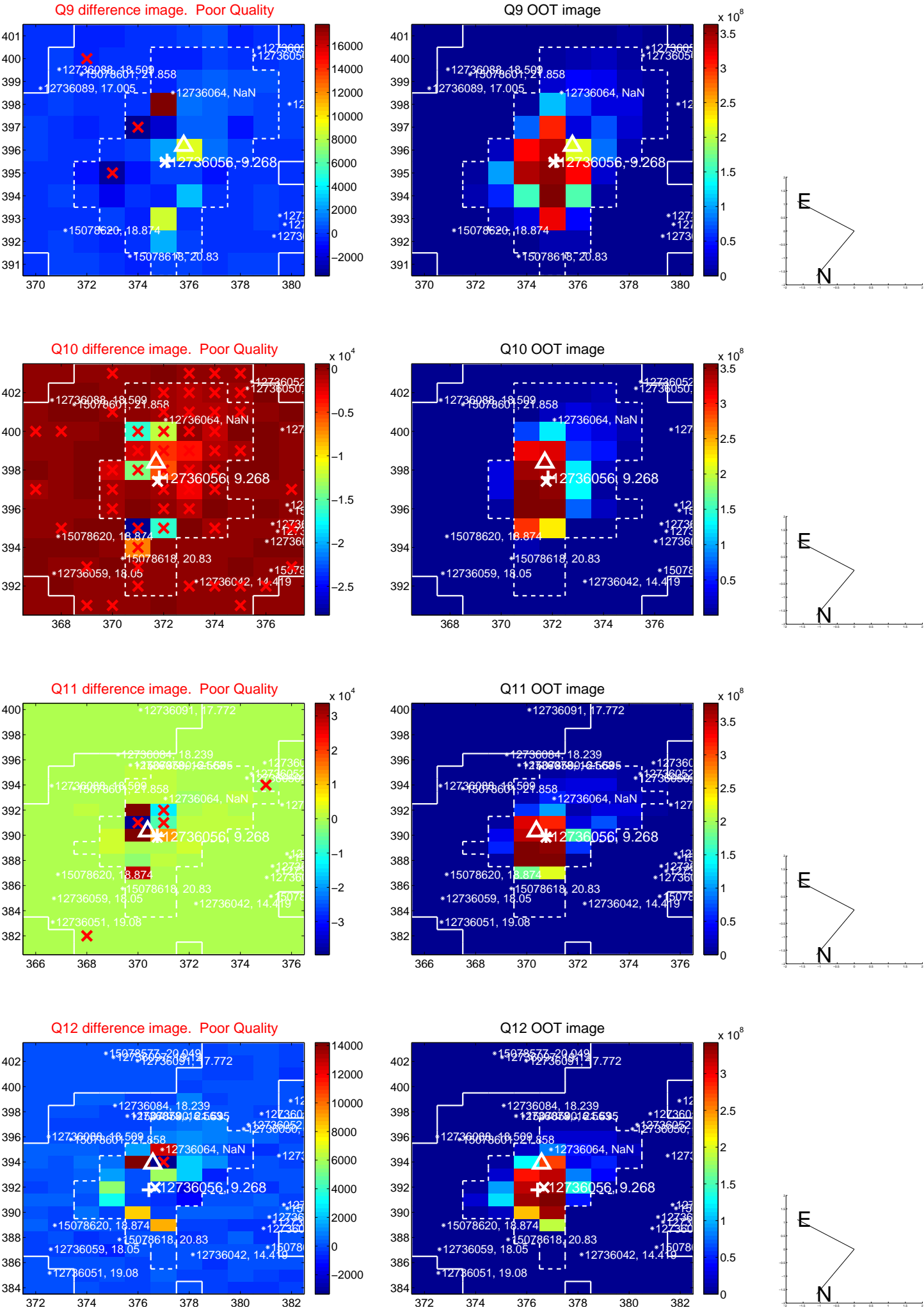
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



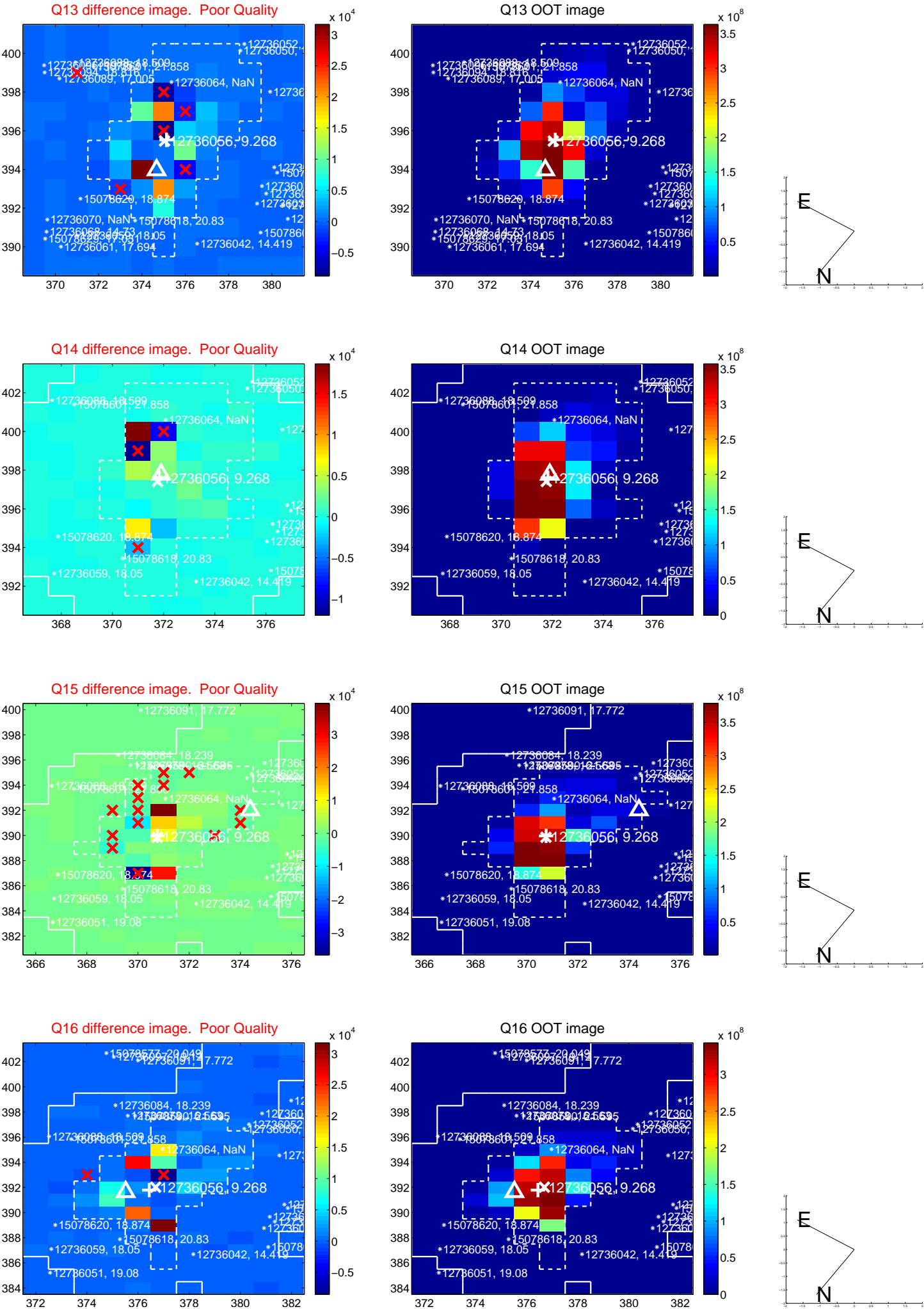
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



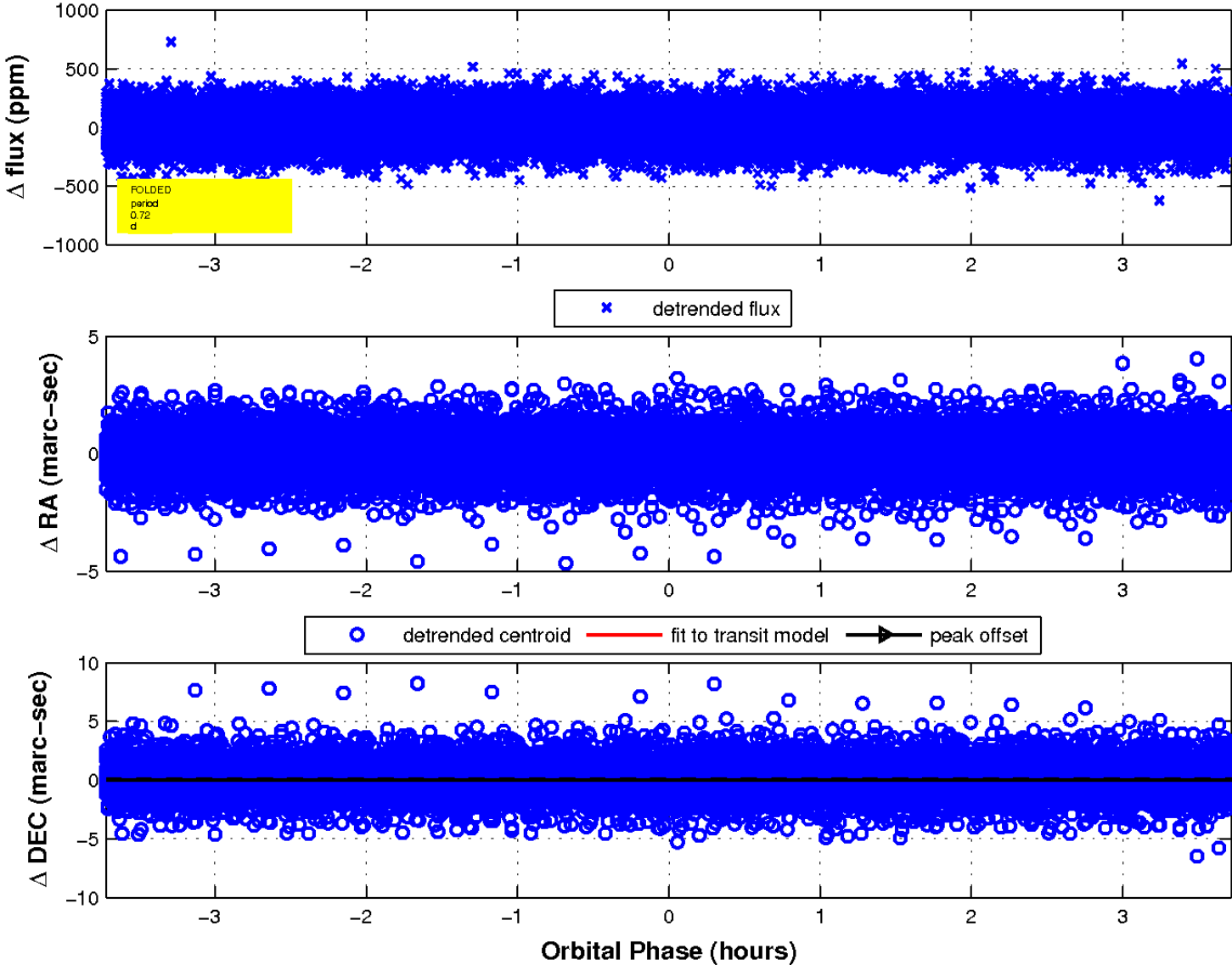
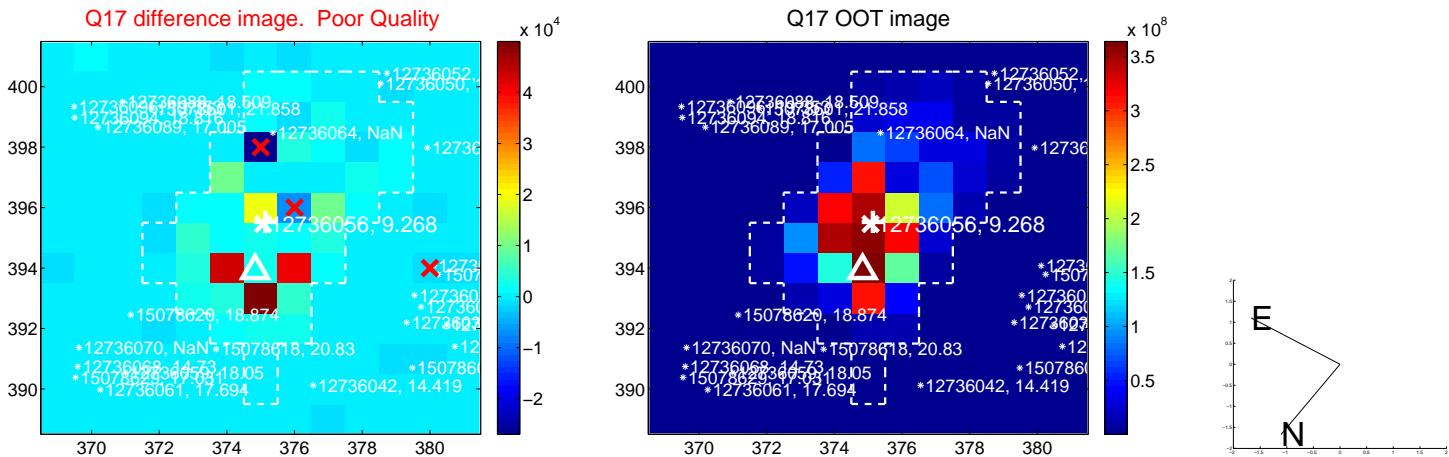
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

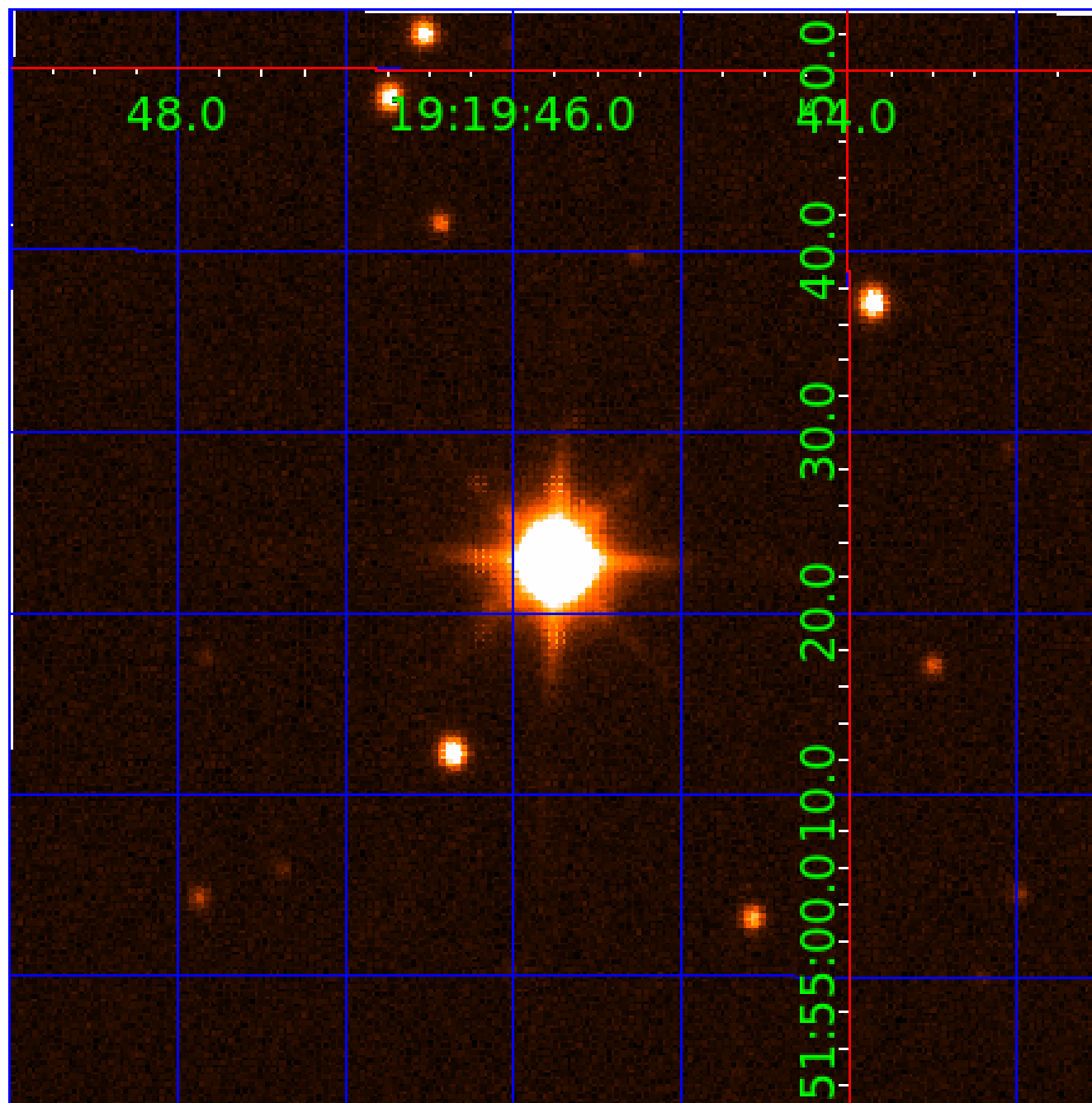


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 012736056

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})
012736056-01	OBS	No	0.721135	132.209308	17.0	1.240	9.9	11.0	2.20	9451	1.05	89152.78
012736056-02	OBS	No	0.566343	131.540691	15.2	6.742	7.8	16.5	2.20	9451	0.88	123041.44

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012736056-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
012736056-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

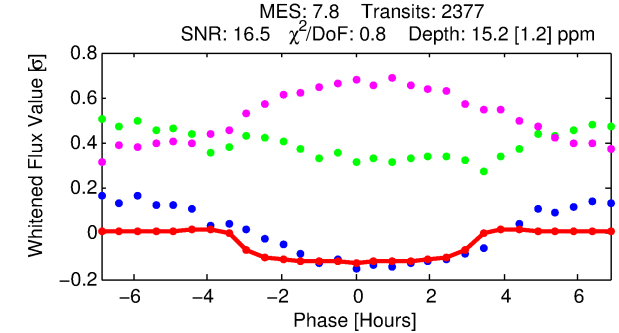
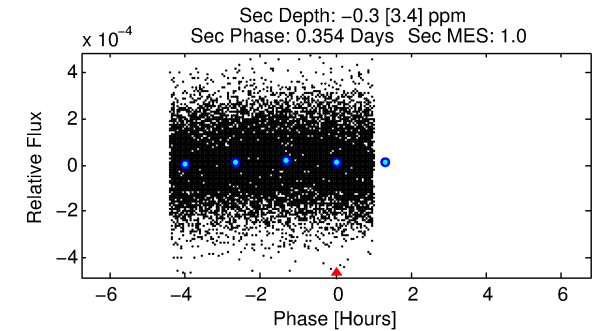
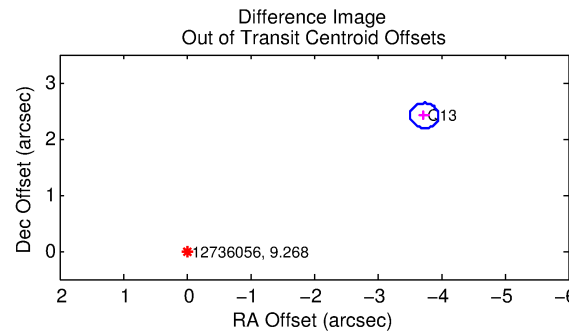
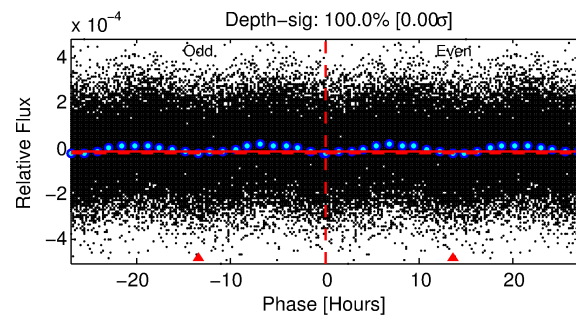
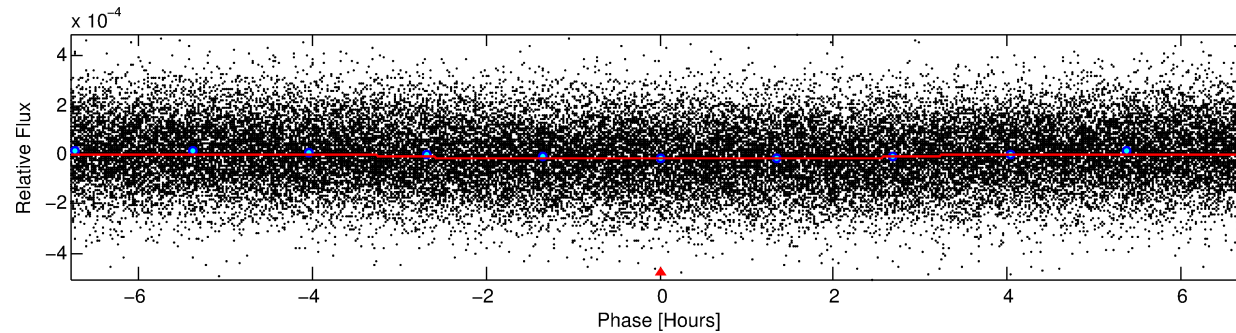
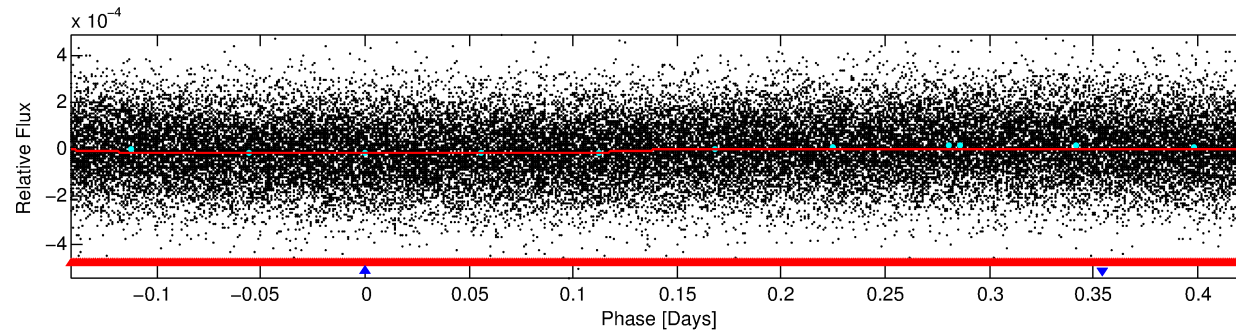
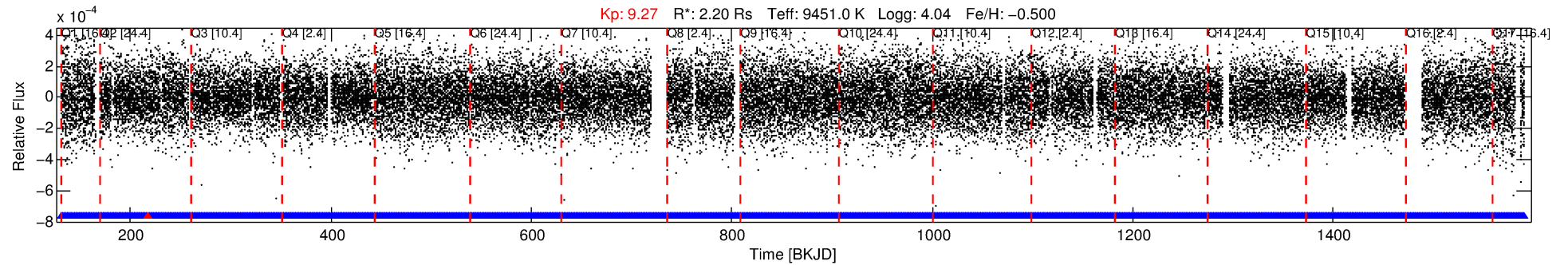
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012736056-02

No Significant Match Found

DV One-Page Summary

KIC: 12736056 Candidate: 2 of 2 Period: 0.566 d



DV Fit Results:

Period = 0.56634 [0.00001] d
Epoch = 131.5407 [0.0040] BKJD
Rp/R* = 0.0037 [0.0014]
a/R* = 1.00 [0.01]
b = 0.10 [26.09]
Seff = 123041.44 [55388.04]
Teq = 4776 [537] K
Rp = 0.88 [0.45] Re
a = 0.0168 [0.0047] AU
Ag = N/A
Teffp = N/A

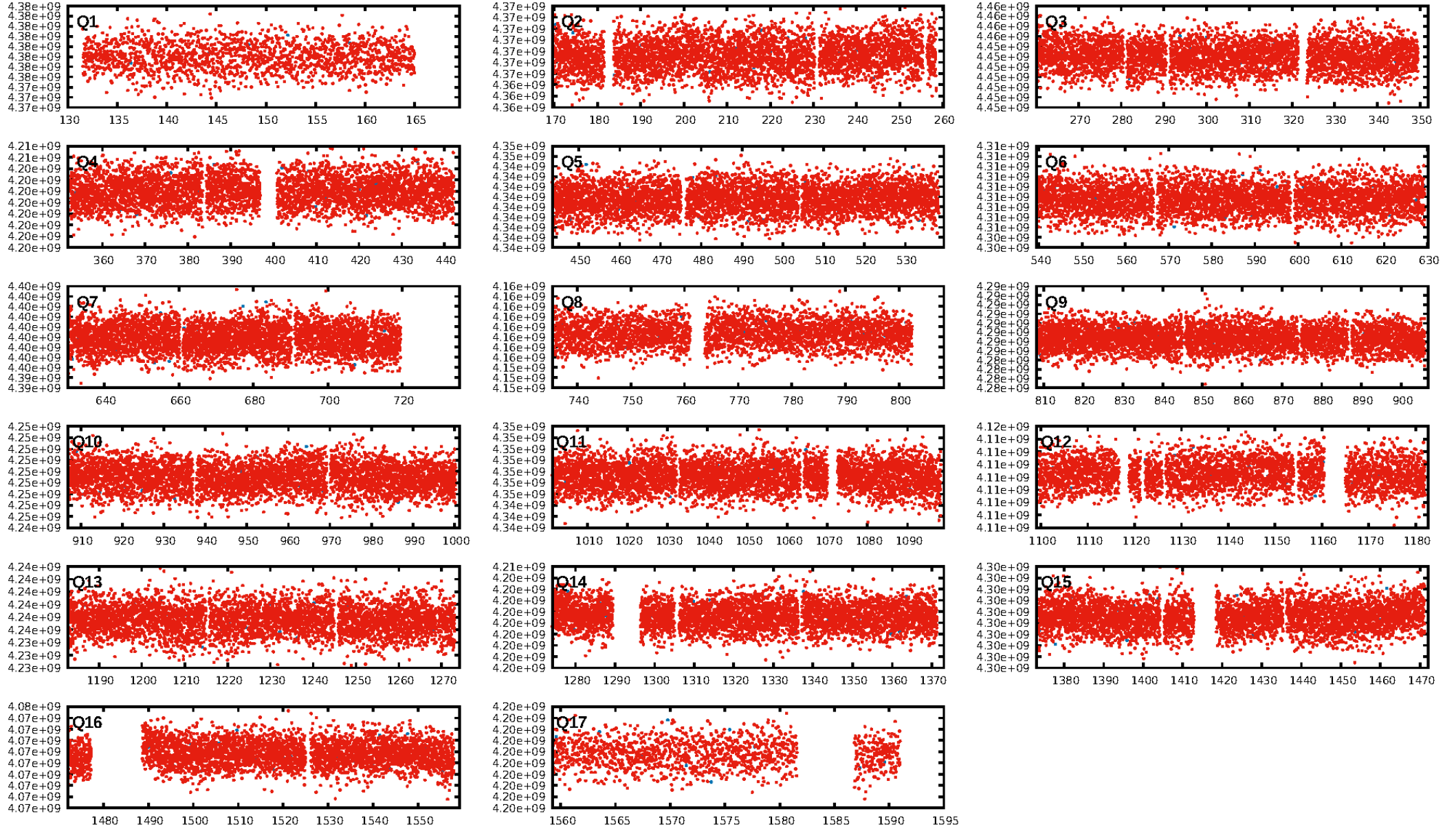
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 41.2% [0.54 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2269/2270]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: 0.746 arcsec [1.60 σ]
OotOffset-rm: 4.443 arcsec [59.77 σ]
KicOffset-rm: 4.395 arcsec [58.92 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 0.00 [0/17]

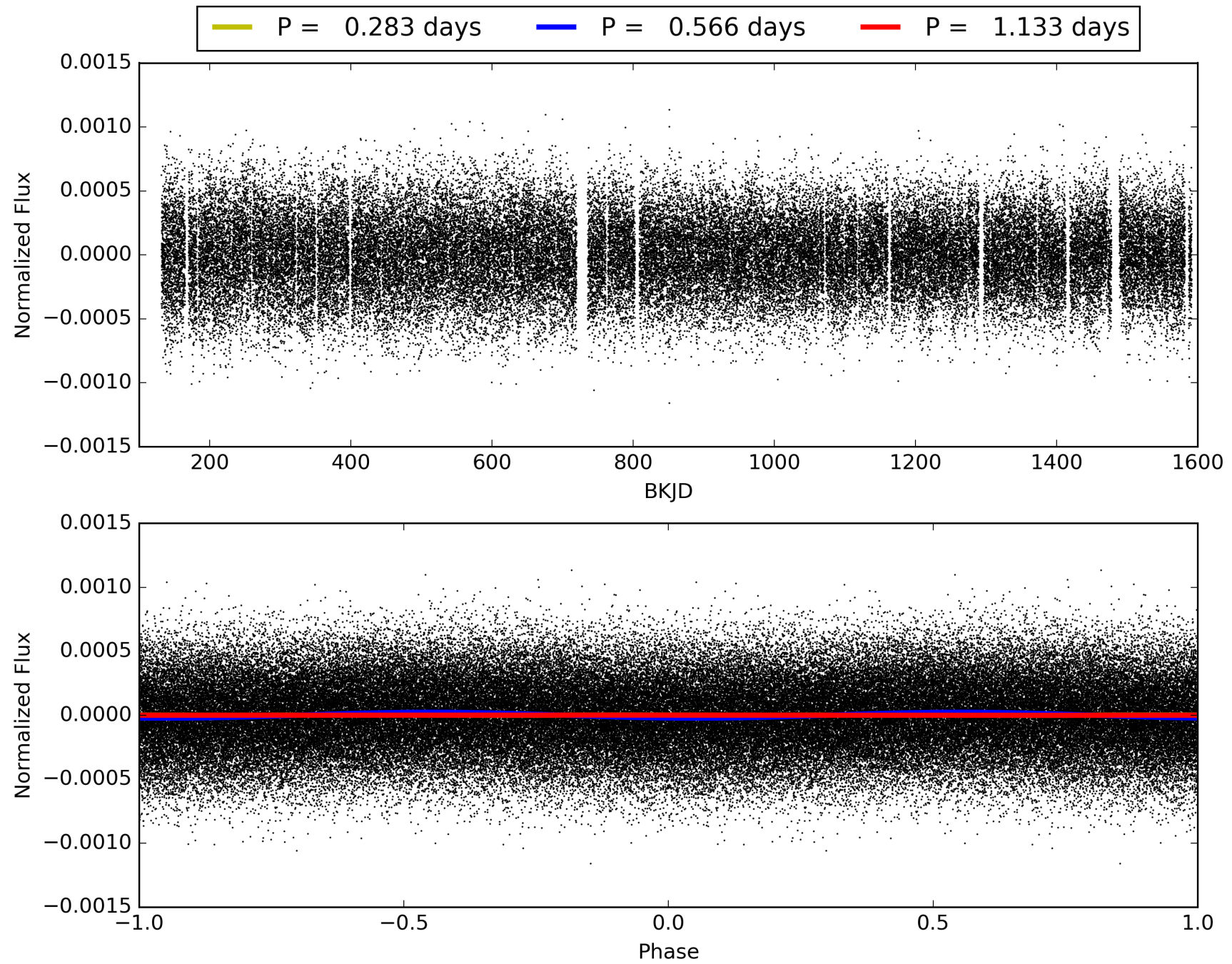
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 10:17:59 Z

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

TCE 012736056-02, PDC Light Curves

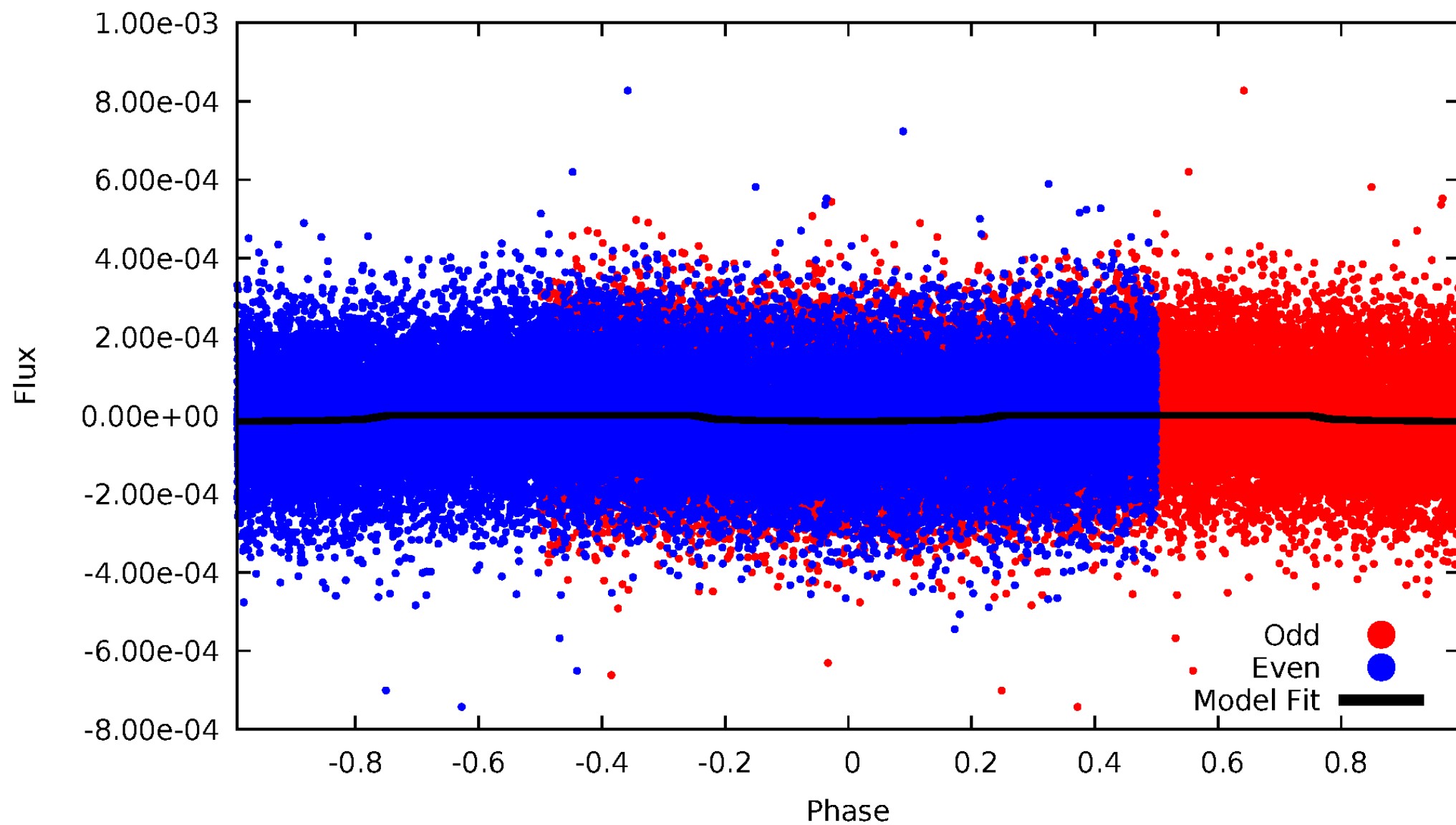


TCE 012736056-02



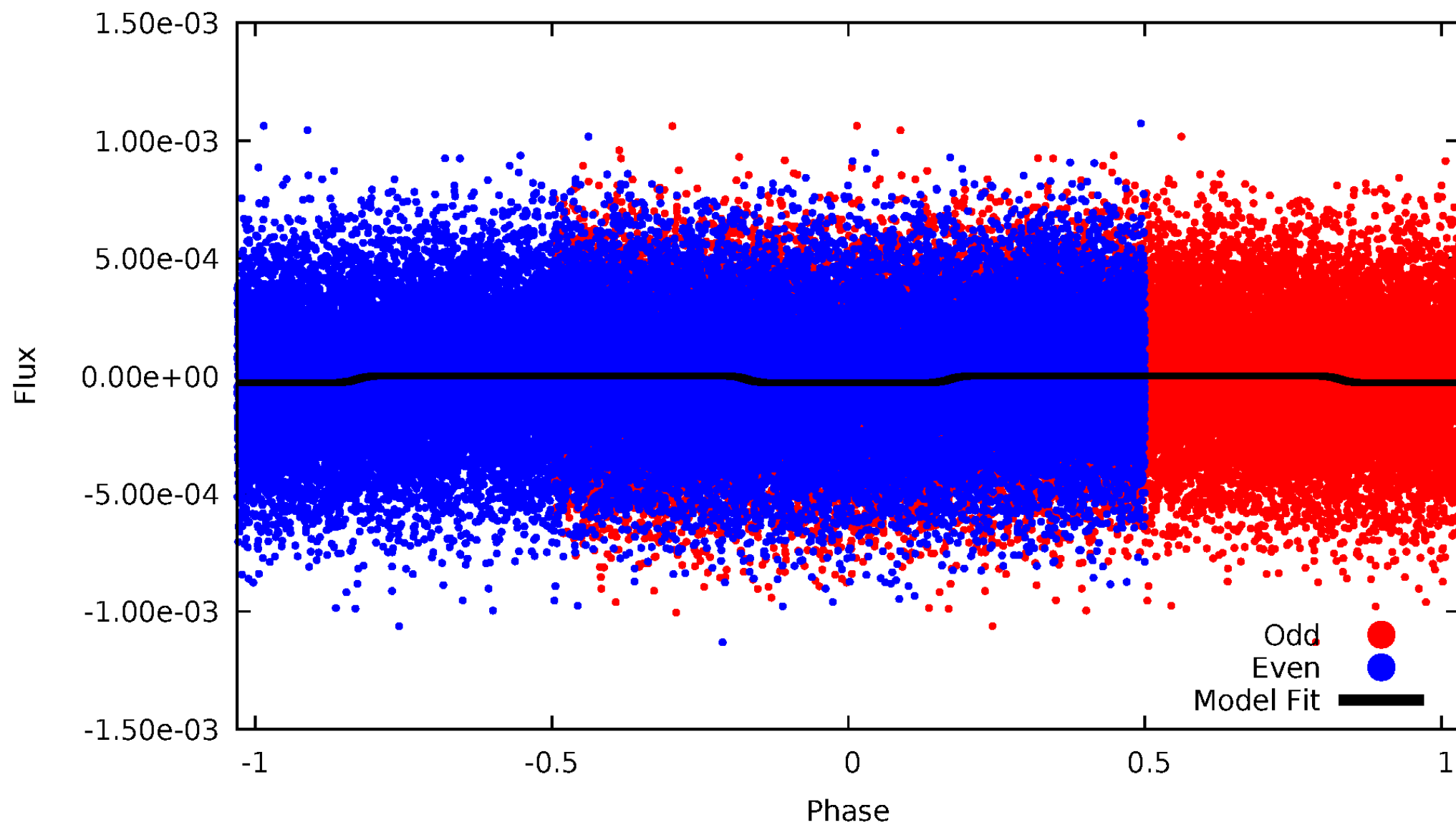
DV Odd/Even

TCE 012736056-02



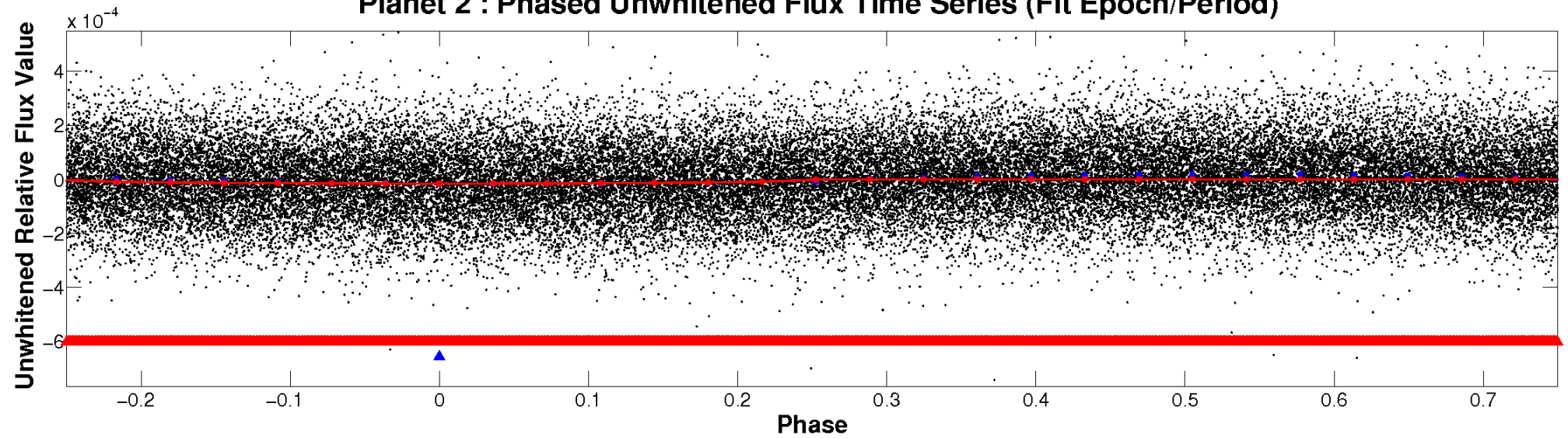
ALT Odd/Even

TCE 012736056-02

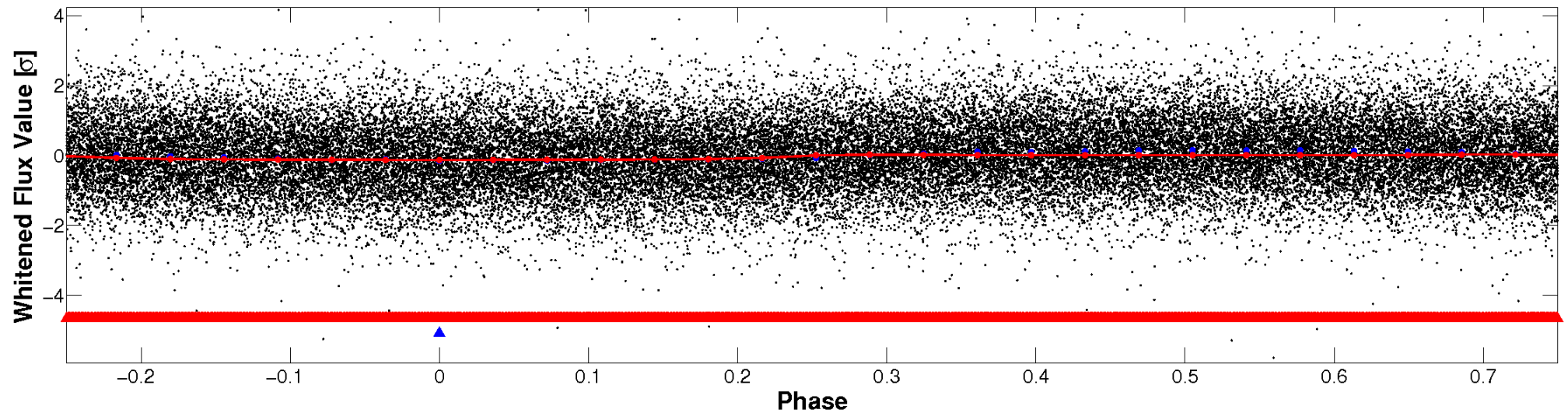


Non-Whitened Vs. Whitened Light Curve

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

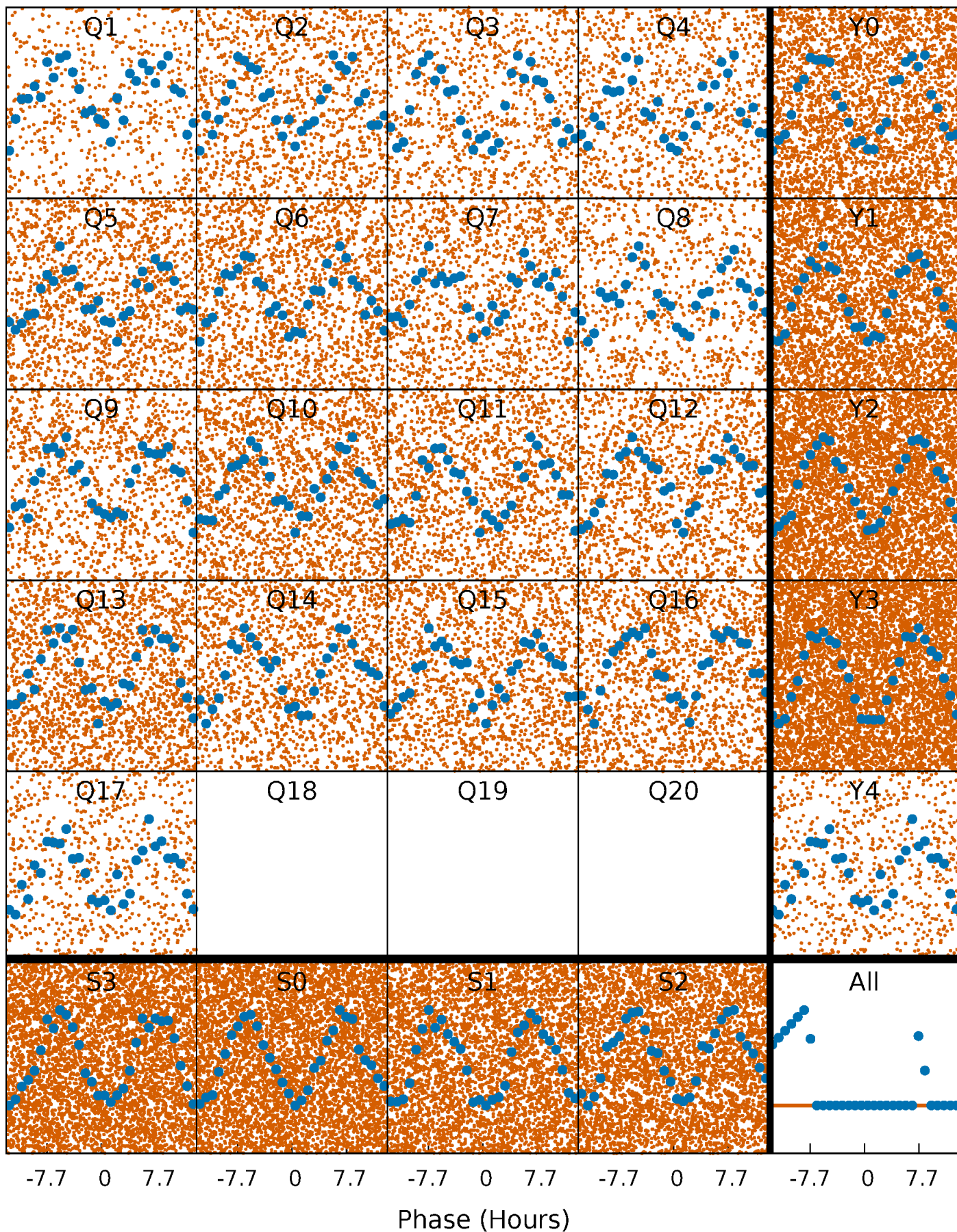


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



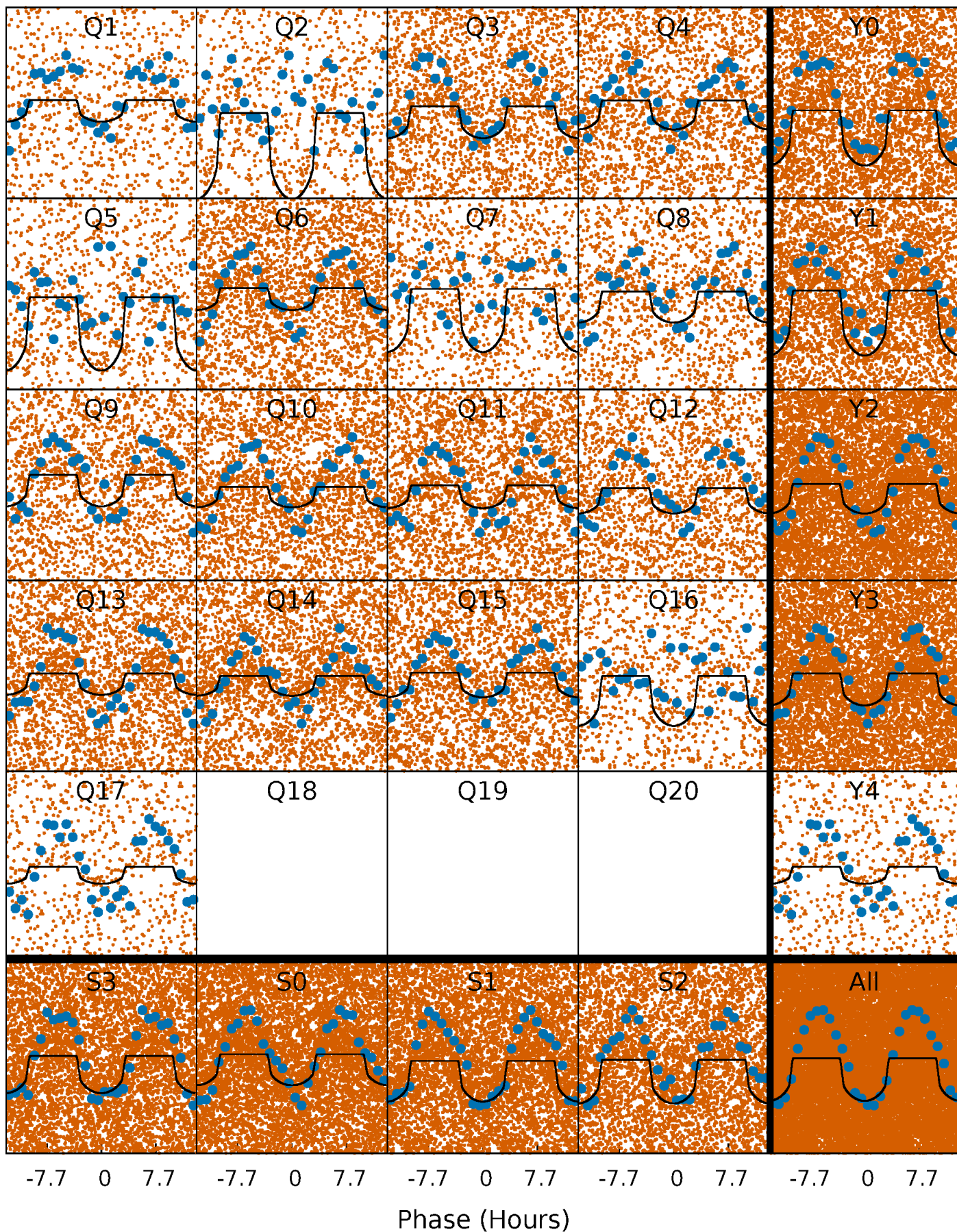
PDC Quarter-Phased Transit Curves

TCE 012736056-02 P= 0.566343 Days $T_0=131.540691$ (BKJD)



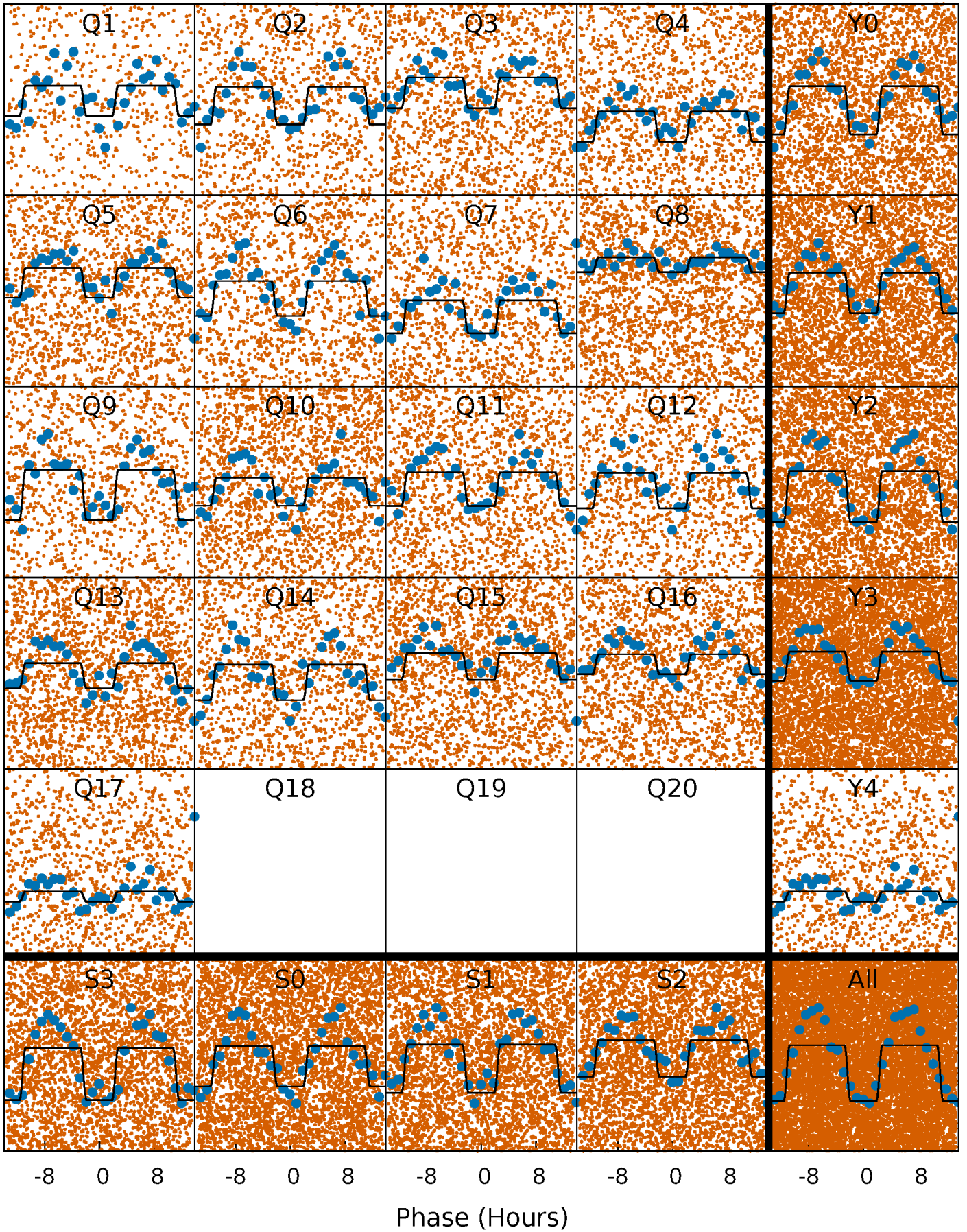
DV Quarter-Phased Transit Curves

TCE 012736056-02 P= 0.566343 Days $T_0=131.540691$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

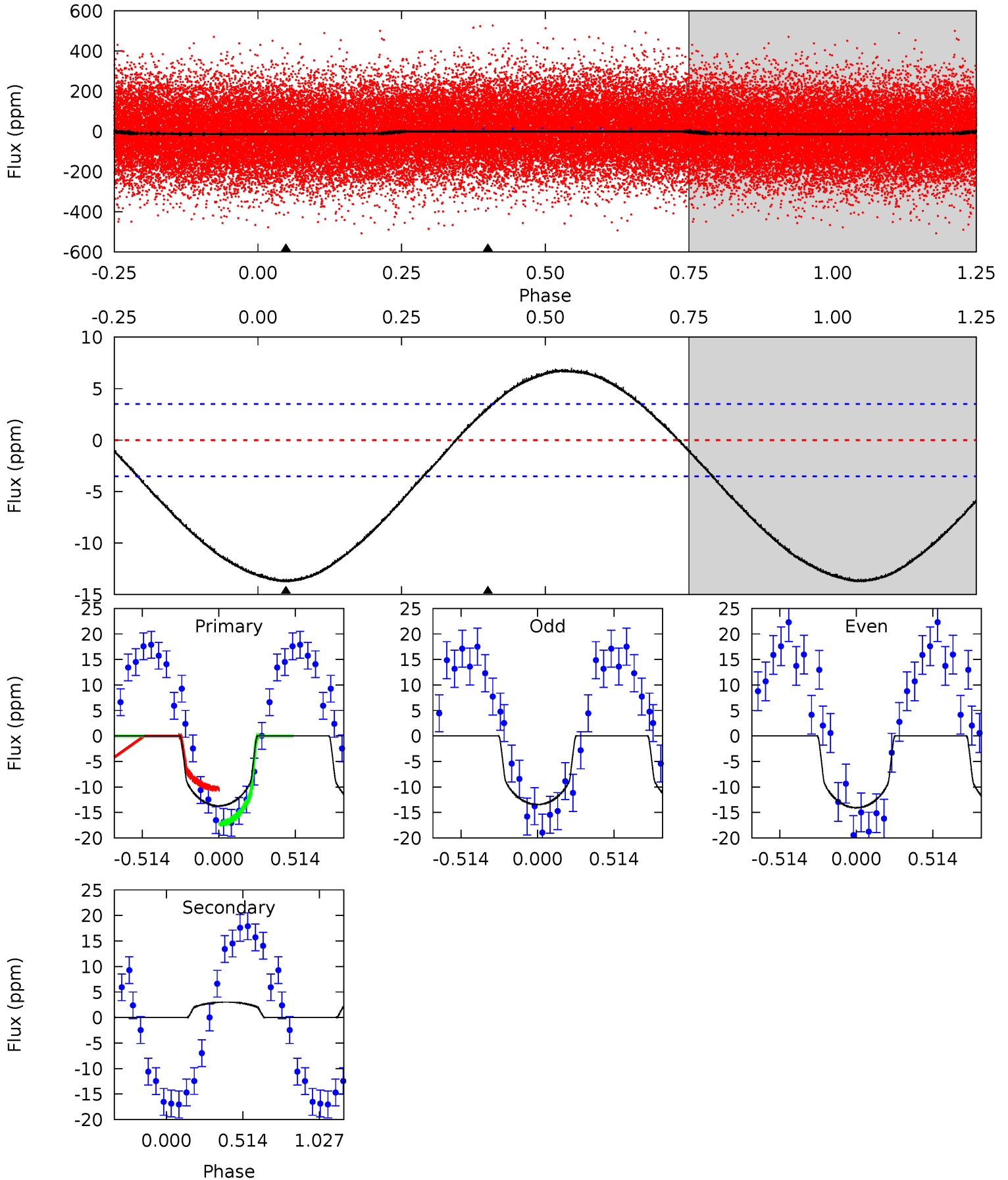
TCE 012736056-02 P= 0.566374 Days $T_0=131.537478$ (BKJD)



DV Model-Shift Uniqueness Test

012736056-02, P = 0.566343 Days, E = 131.540691 Days

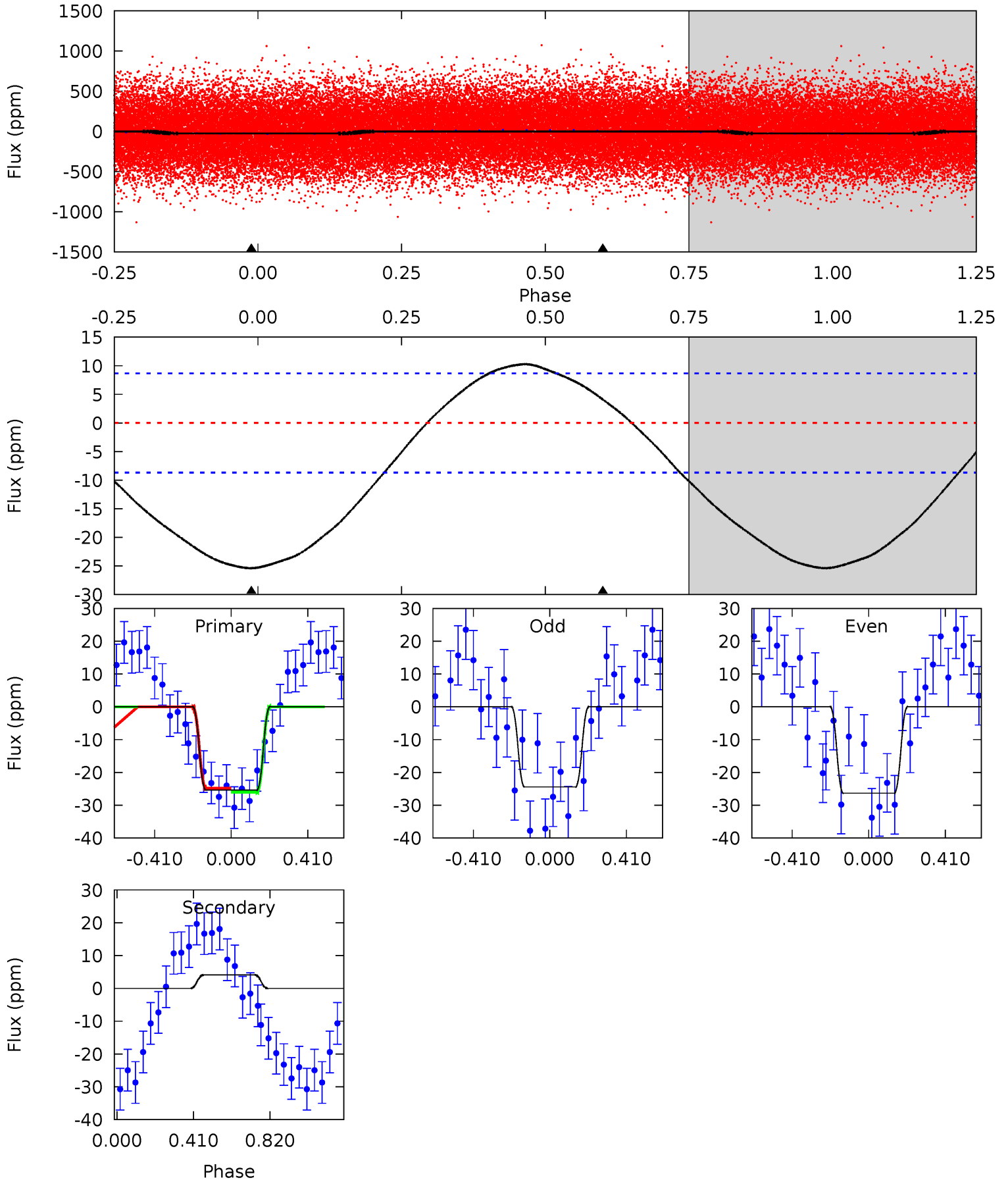
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	-3.62	0	0	4.21	0.65	2.06	16.4	16.4	-3.62	-3.62	0.38	1.00	0.34	4.14



Alt Model-Shift Uniqueness Test

012736056-02, P = 0.566374 Days, E = 131.537478 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	-2.01	0	0	4.26	0.82	1.53	12.5	12.5	-2.01	-2.01	0.47	0.83	0.29	0.30



Stellar Parameters For KIC 012736056

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	9451^{+259}_{-444}	$4.045^{+0.222}_{-0.148}$	$-0.500^{+0.550}_{-0.350}$	$2.198^{+0.746}_{-0.678}$	$1.953^{+0.534}_{-0.356}$	$0.259^{+0.389}_{-0.119}$
	+3%/-5%	+5%/-4%	+110%/-70%	+34%/-31%	+27%/-18%	+150%/-46%
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 012736056-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	3 ± 1	$0.84^{+0.39}_{-0.34}$	6573^{+501}_{-515}	-6793^{+770}_{-1799}	$-0.685^{+0.385}_{-1.291}$
Alt.	4 ± 2	$1.24^{+0.44}_{-0.36}$	6577^{+538}_{-529}	-6248^{+626}_{-925}	$-0.401^{+0.245}_{-0.503}$

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 $A_{obs} \gg 1.0$

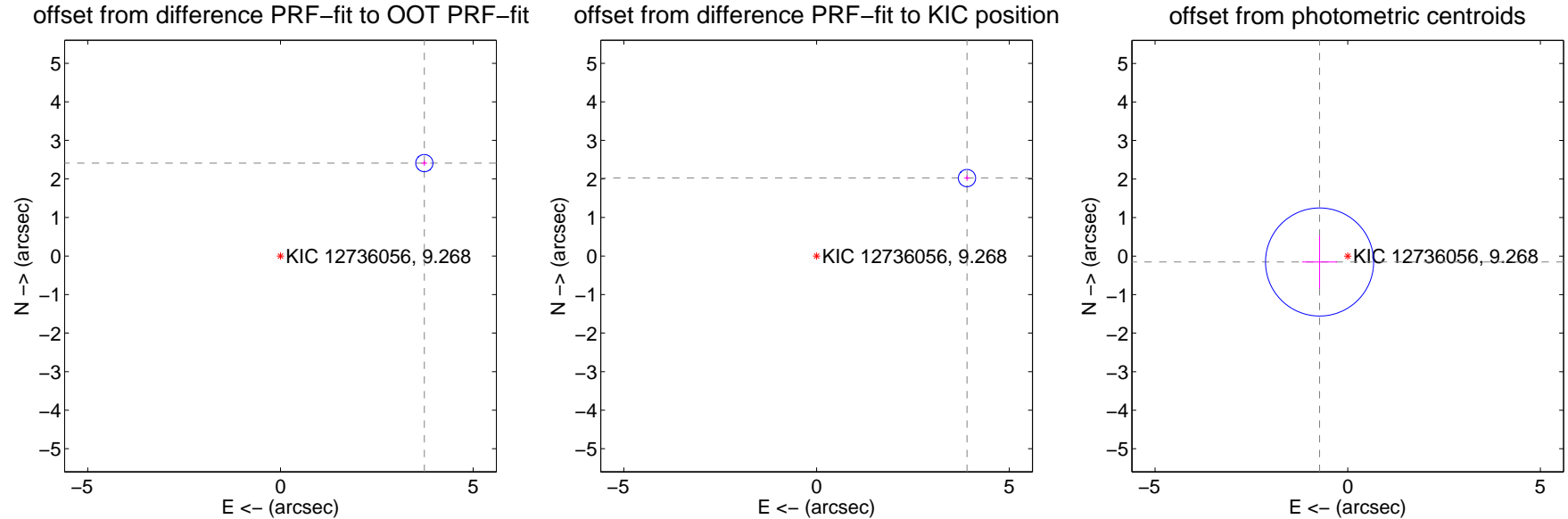
DV Centroid Data

Supplemental centroid analysis for 012736056-02. **Kepler magnitude: 9.27.** Transit SNR 16.48

There are 0 quarters with good PRF difference image offsets

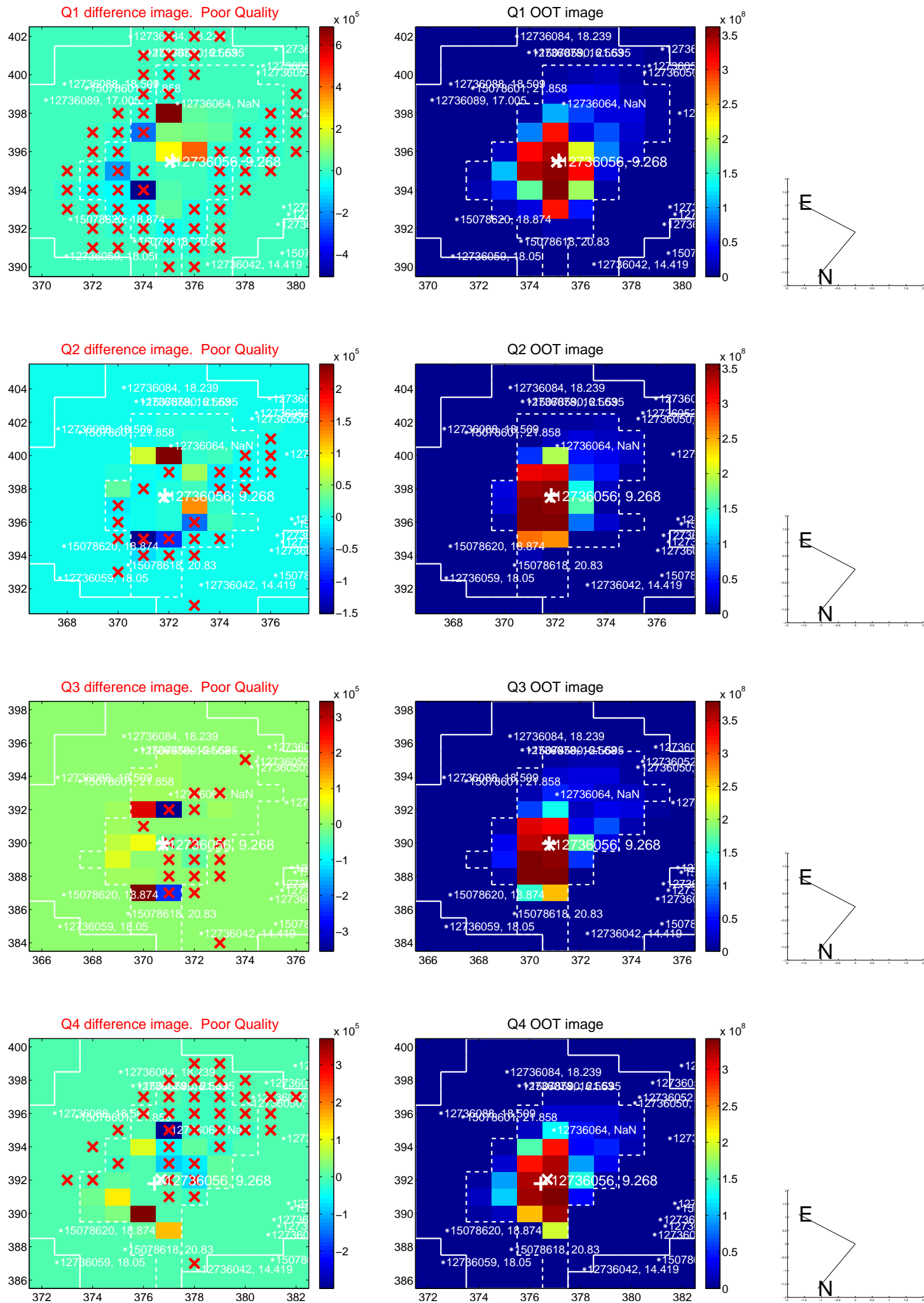
The direct PRF centroid is offset from the target star catalog position by about 0.42 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.443 \pm 0.074	59.77	-3.733 \pm 0.075	2.411 \pm 0.072
PRF-fit source offset from KIC position	4.395 \pm 0.075	58.92	-3.902 \pm 0.075	2.023 \pm 0.072
photometric centroid source offset	0.75 \pm 0.47	1.60	0.73 \pm 0.46	-0.15 \pm 0.69

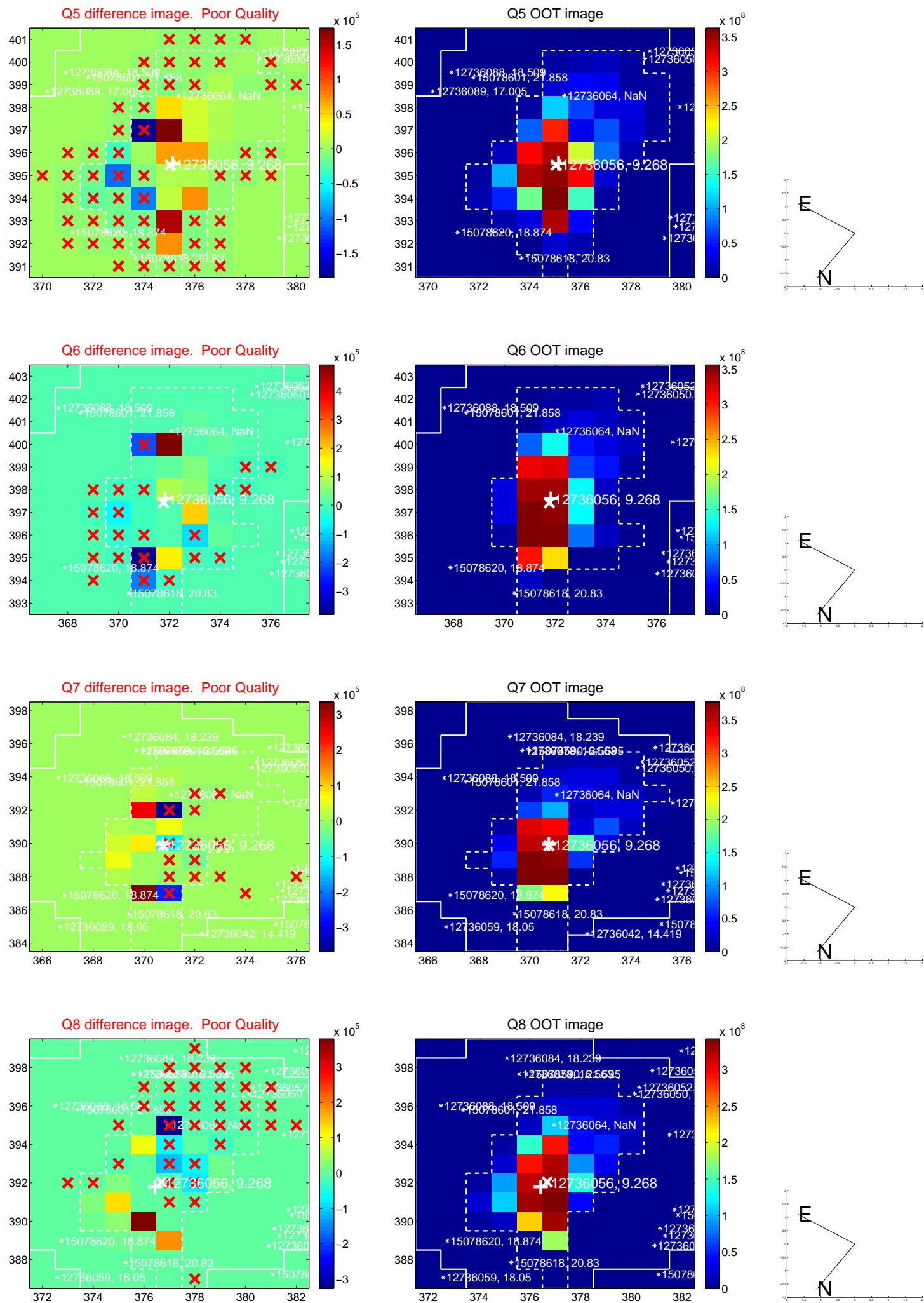


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

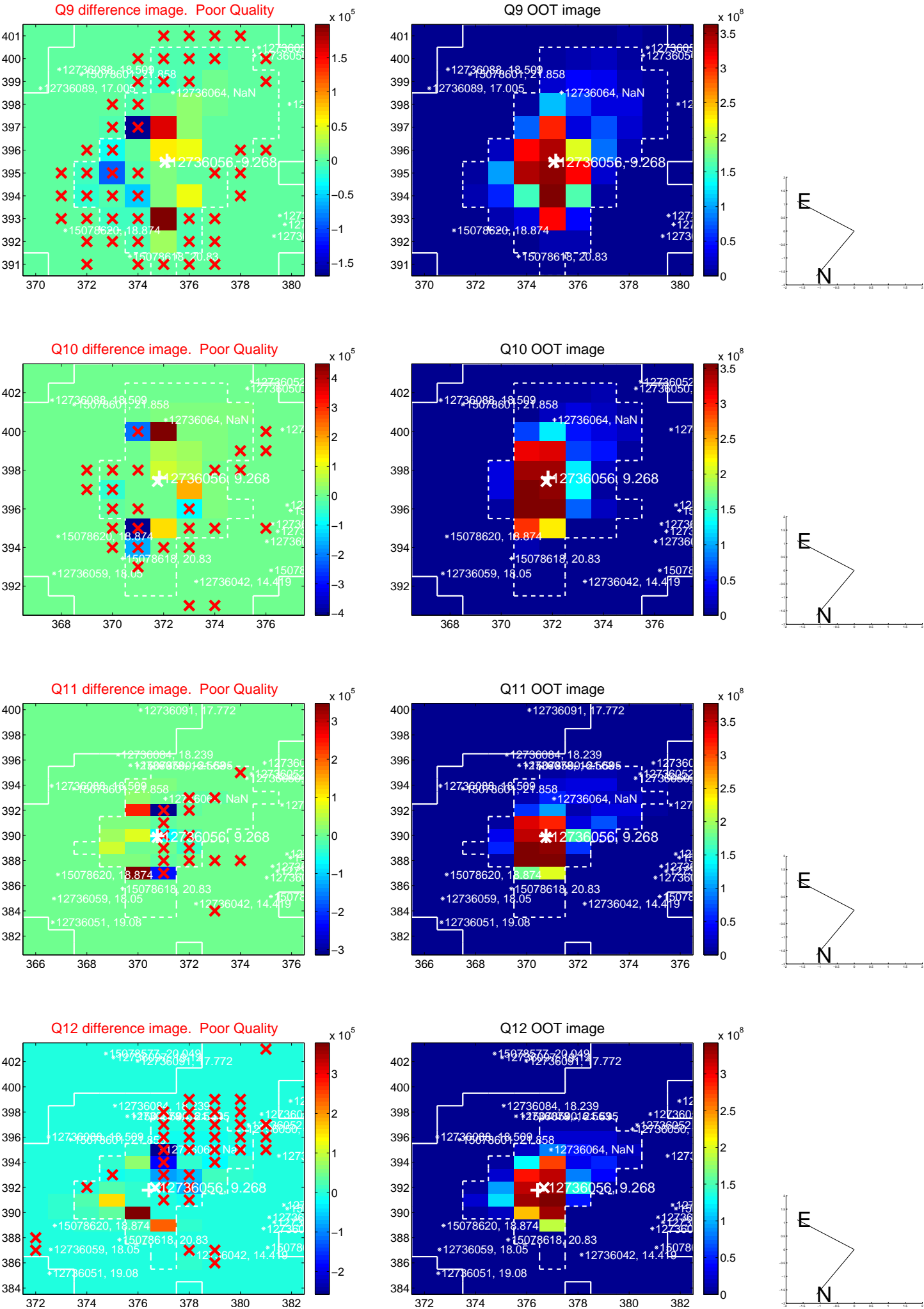
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



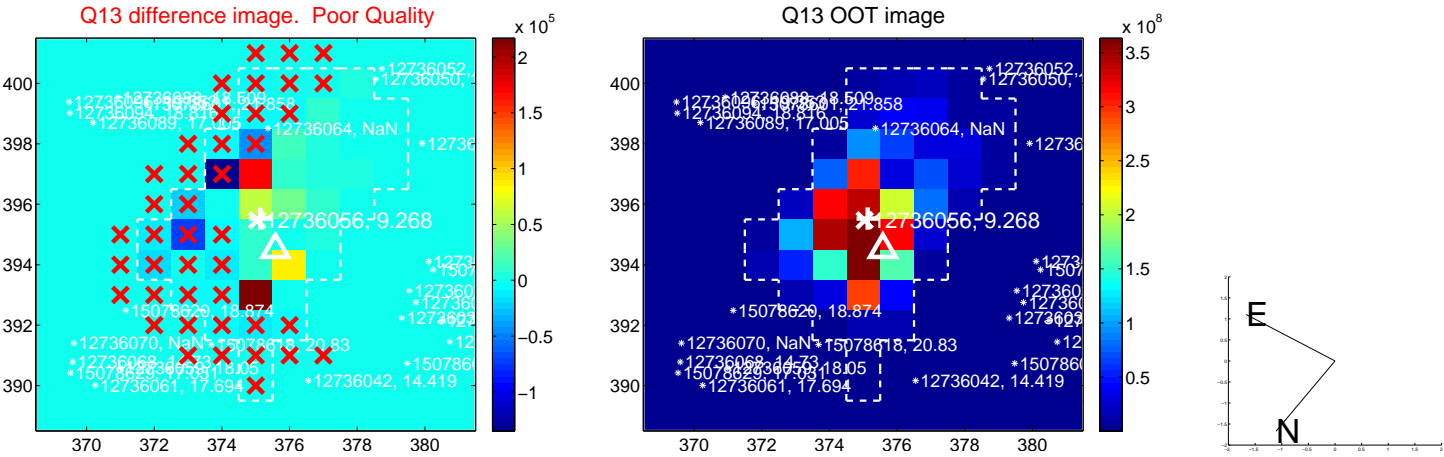
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

