

KIC 002168333

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})
002168333-01	OBS	No	1.258129	131.758794	66.9	5.102	9.6	10.9	3.15	8363	2.61	47953.92
002168333-02	OBS	No	1.258123	132.381505	73.3	8.001	13.1	16.2	3.15	8363	2.73	47954.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002168333-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
002168333-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

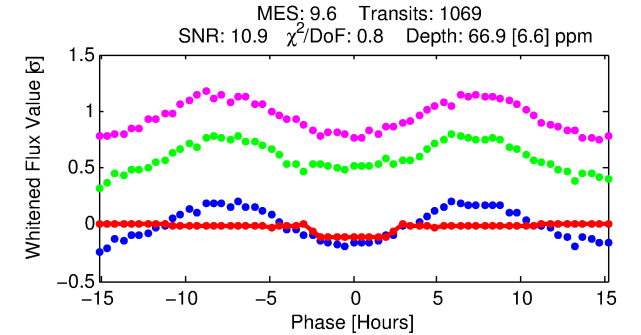
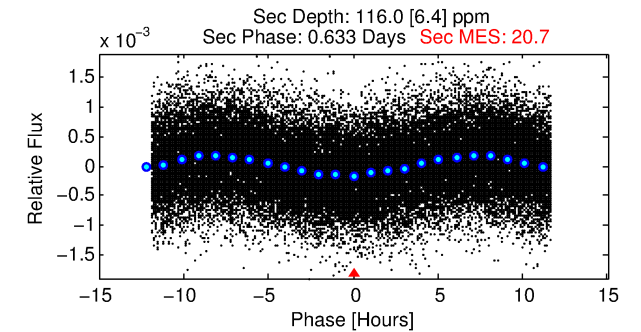
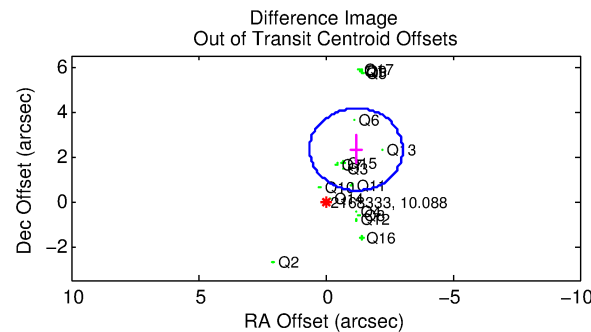
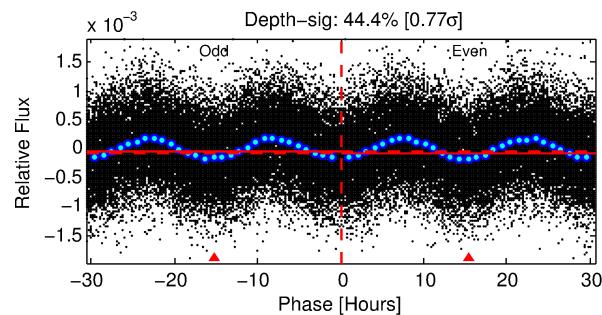
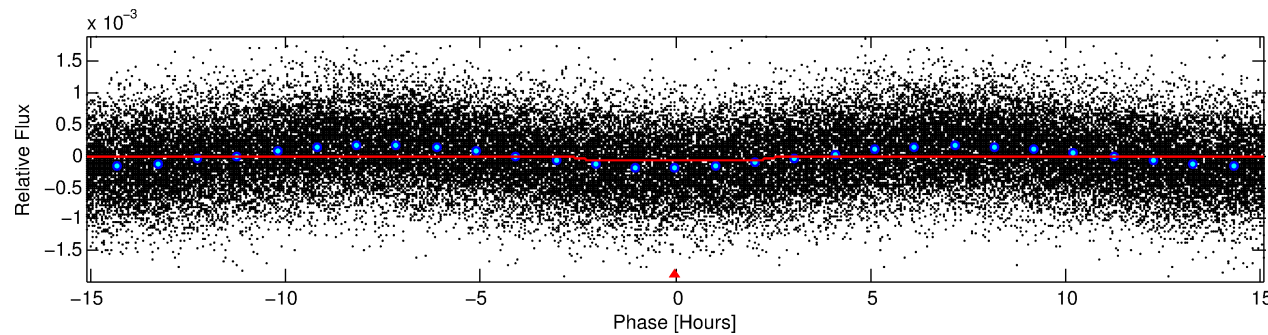
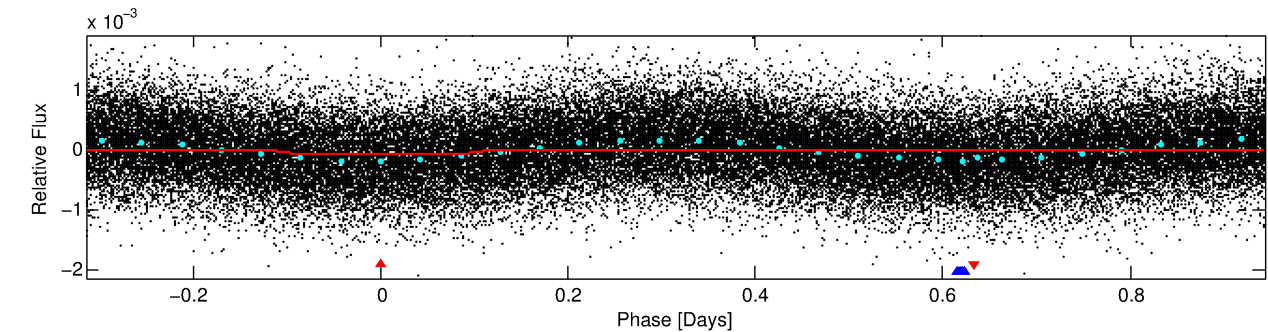
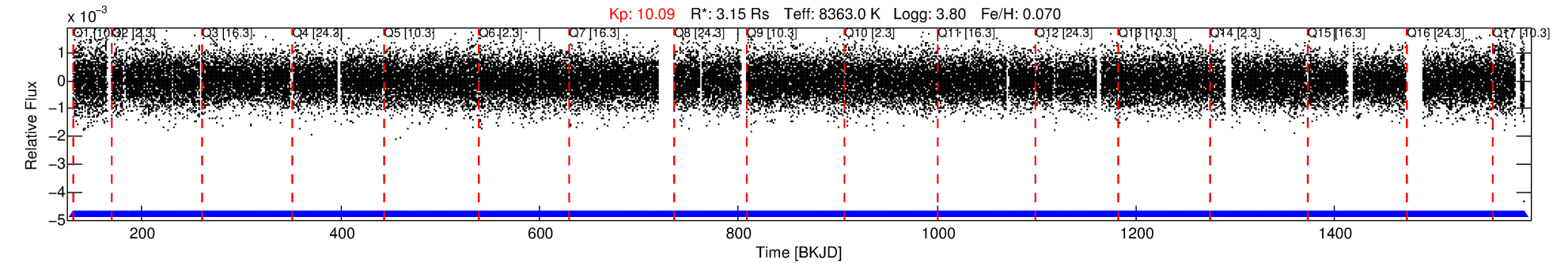
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002168333-01

No Significant Match Found

DV One-Page Summary

KIC: 2168333 Candidate: 1 of 2 Period: 1.258 d



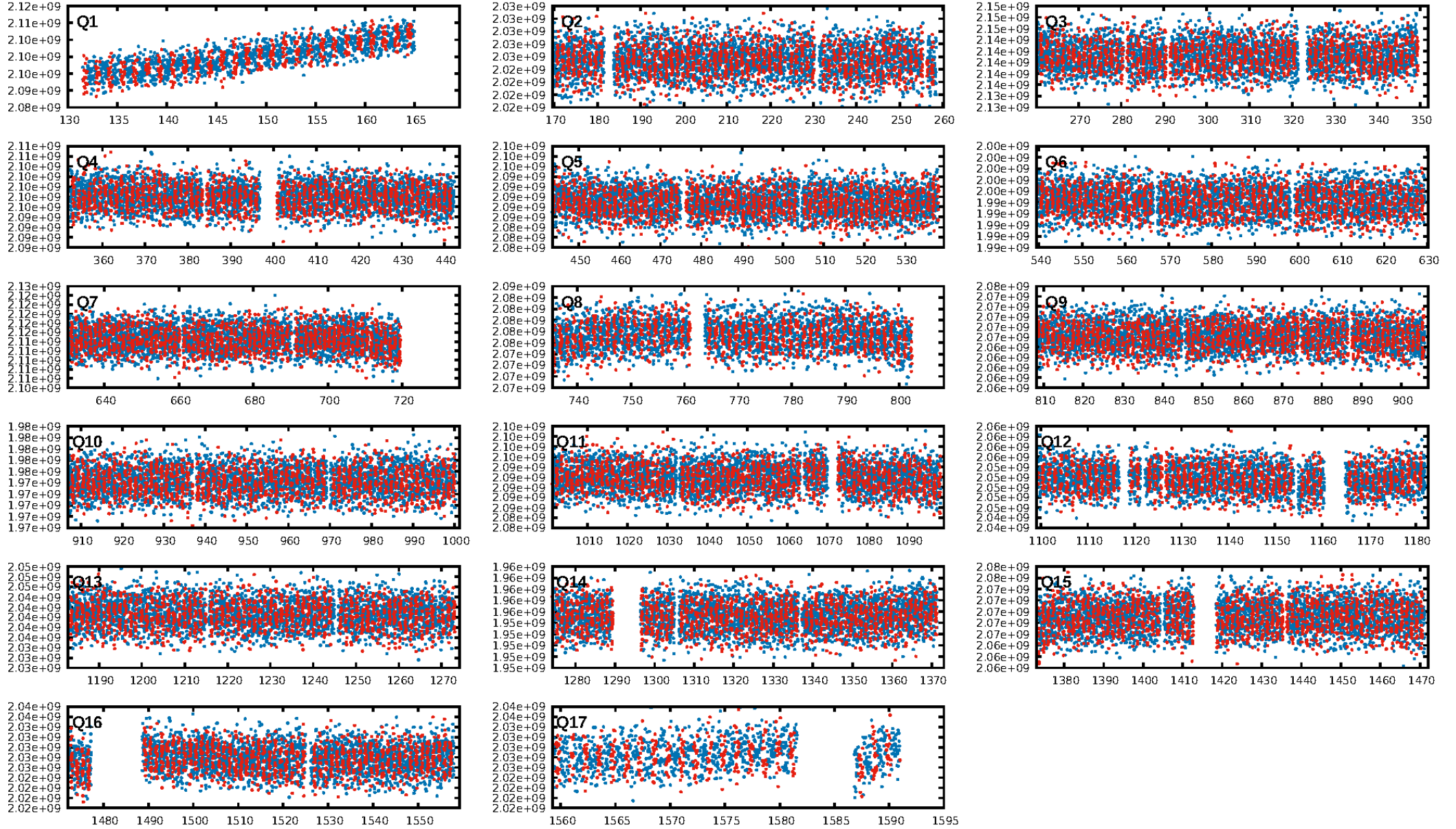
DV Fit Results:

Period = 1.25813 [0.00002] d
Epoch = 131.7588 [0.0043] BKJD
 R_p/R^* = 0.0076 [0.0065]
 a/R^* = 1.97 [7.24]
 b = 0.18 [27.36]
 T_{eff} = 47953.92 [31197.16]
 T_{eq} = 3773 [614] K
 R_p = 2.61 [2.51] R_e
 a = 0.0301 [0.0121] AU
 A_g = 8.47 [15.37] [0.49 σ]
 T_{eff} = 9952 [4267] K [1.43 σ]

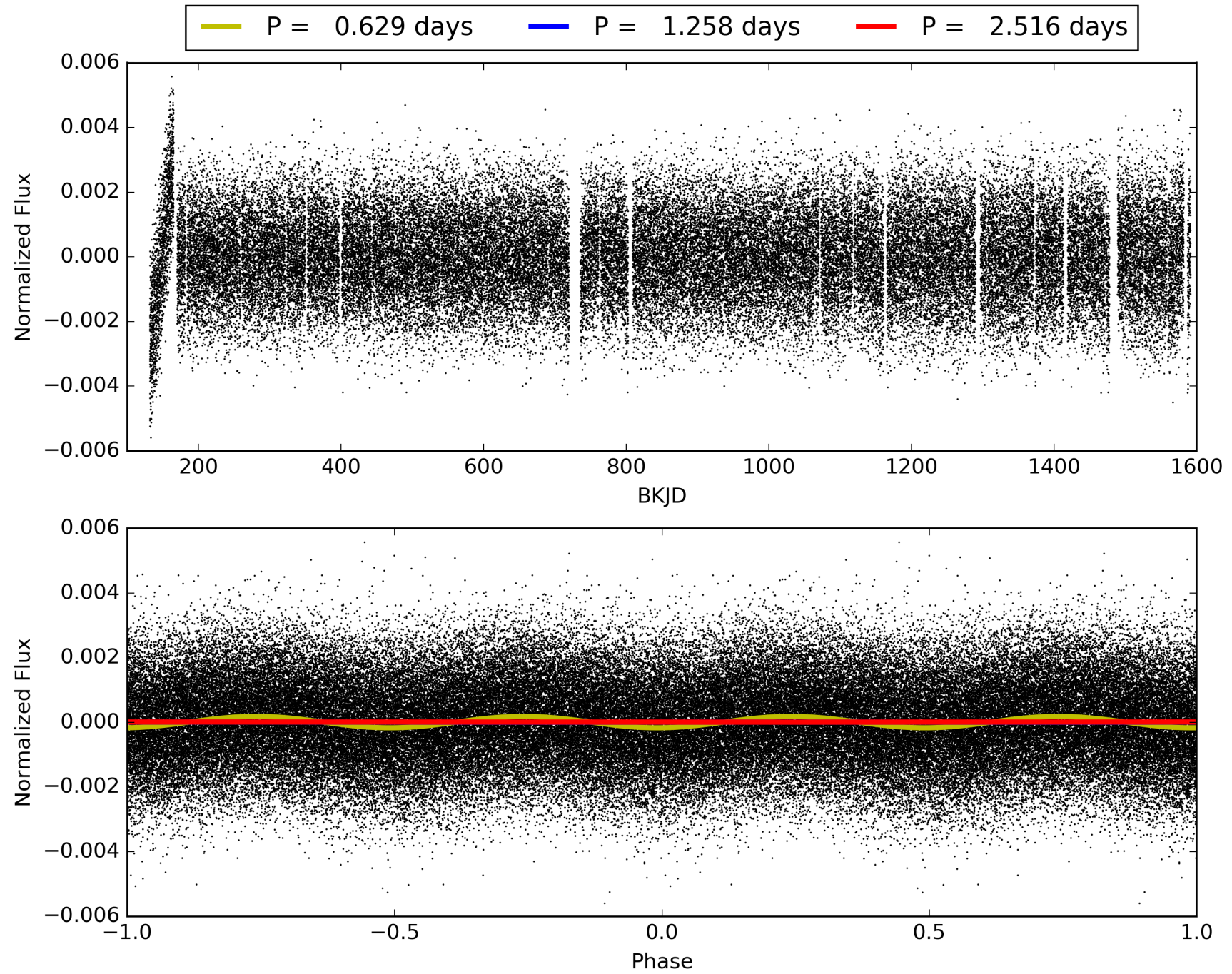
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1021/1021]
GhostDiagnostic-chr: N/A
Centroid-sig: 79.4%
Centroid-so: 0.333 arcsec [0.98 σ]
OotOffset-rm: 2.605 arcsec [4.28 σ]
KicOffset-rm: 2.816 arcsec [4.01 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.29 [5/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002168333-01, PDC Light Curves

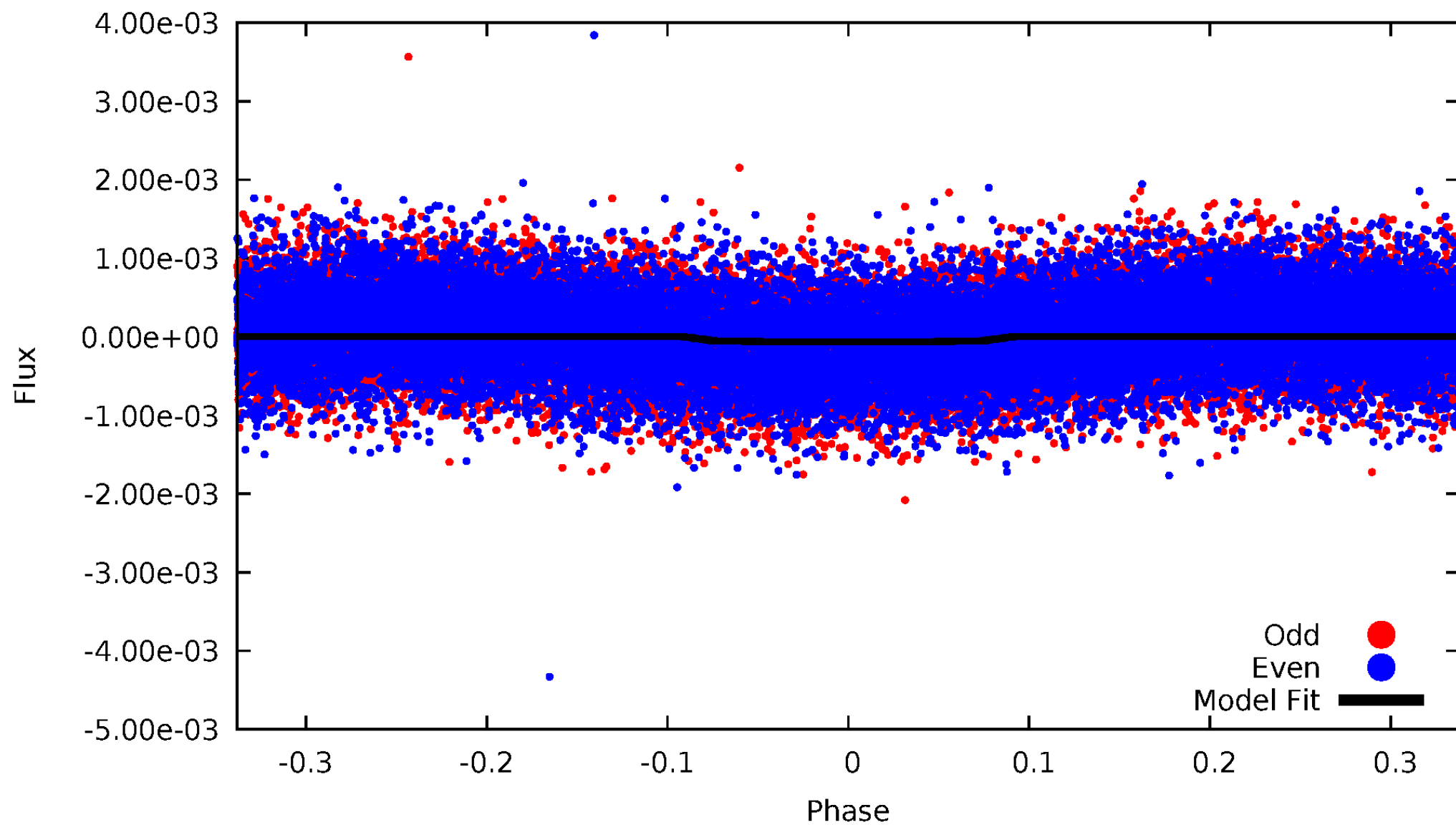


TCE 002168333-01



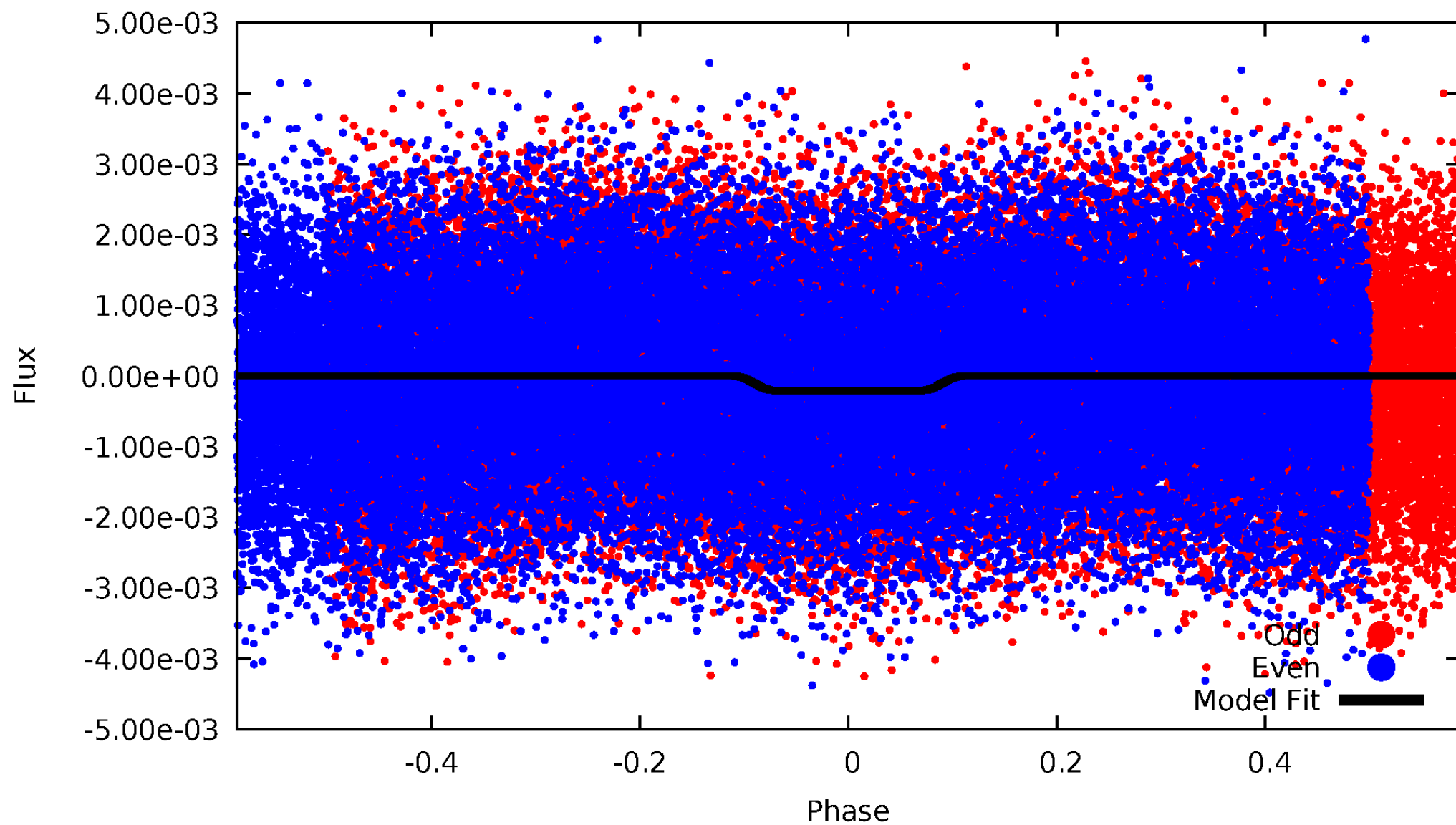
DV Odd/Even

TCE 002168333-01

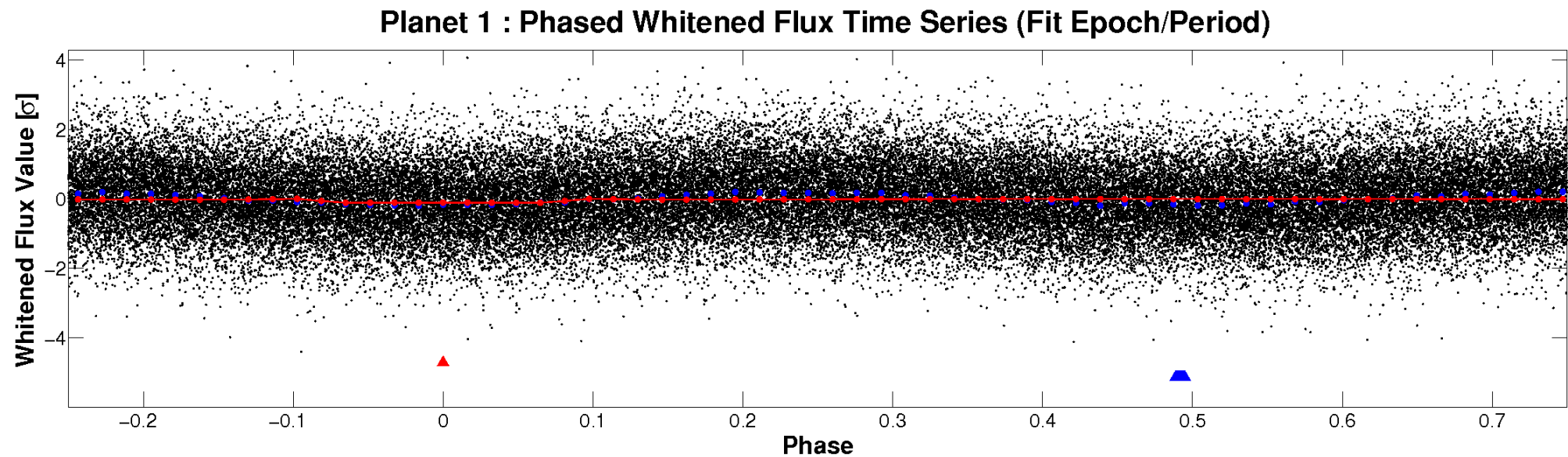
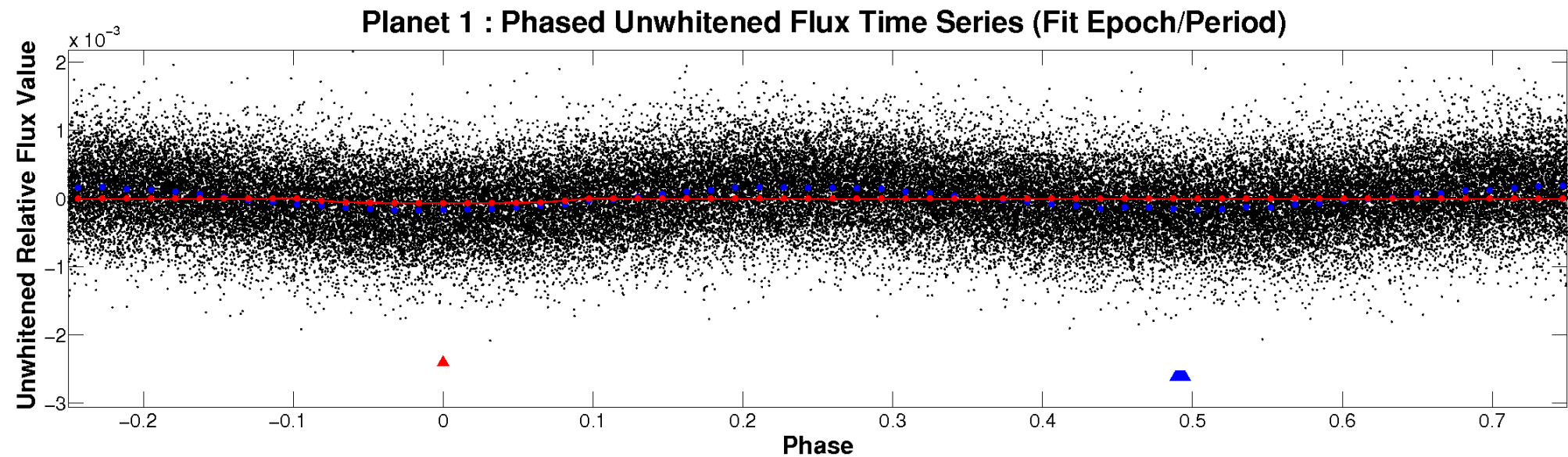


ALT Odd/Even

TCE 002168333-01

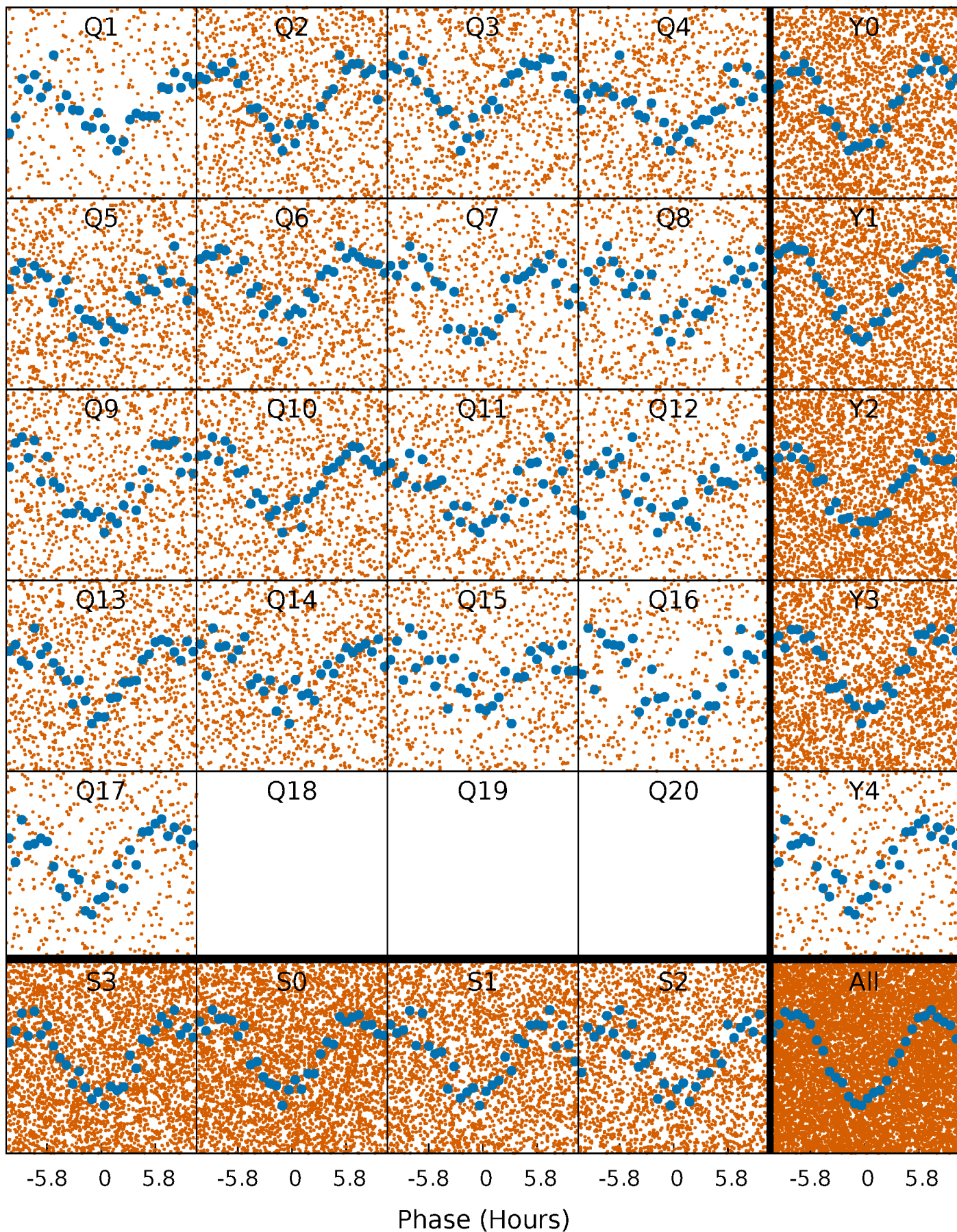


Non-Whitened Vs. Whitened Light Curve



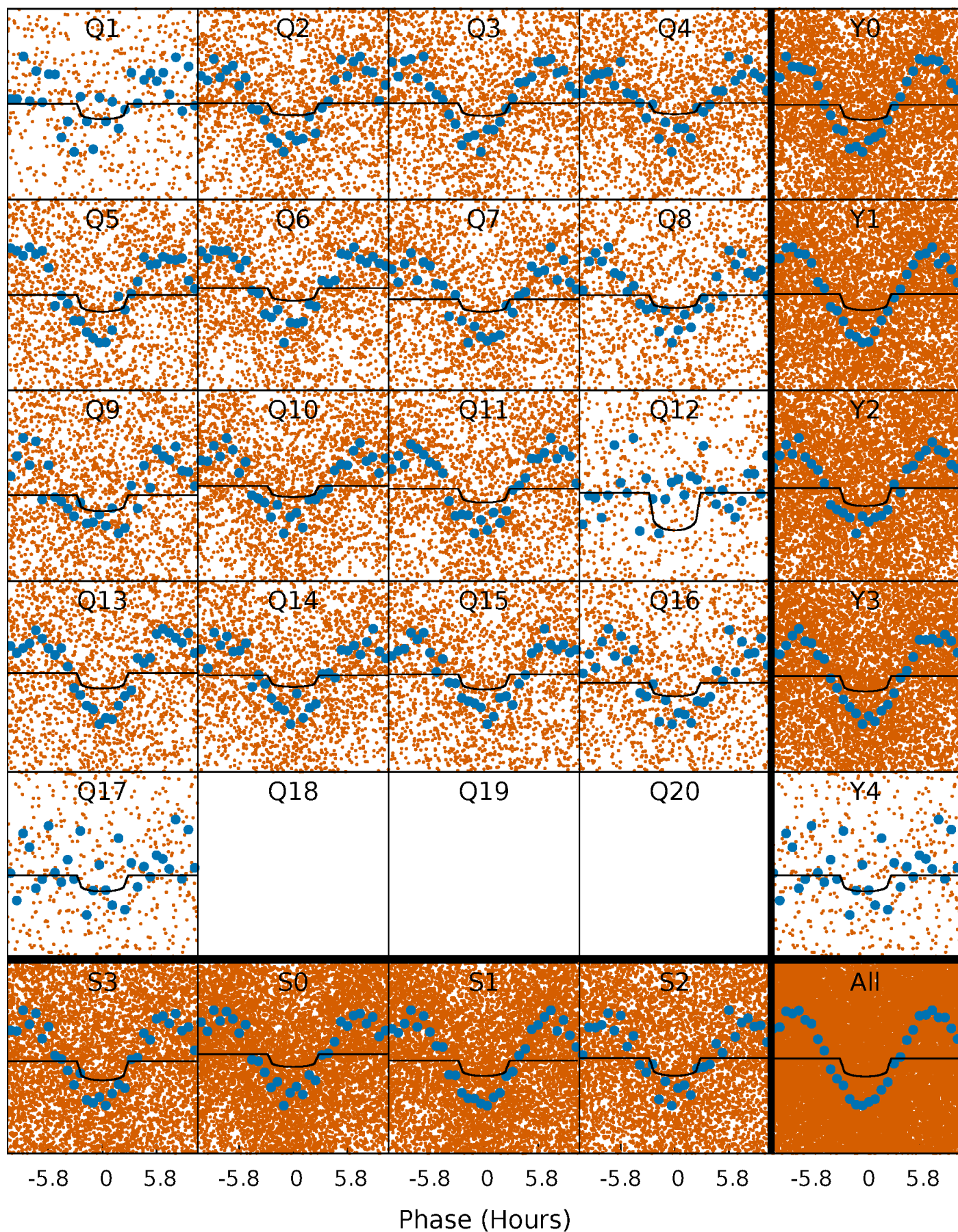
PDC Quarter-Phased Transit Curves

TCE 002168333-01 P= 1.258129 Days $T_0=131.758794$ (BKJD)



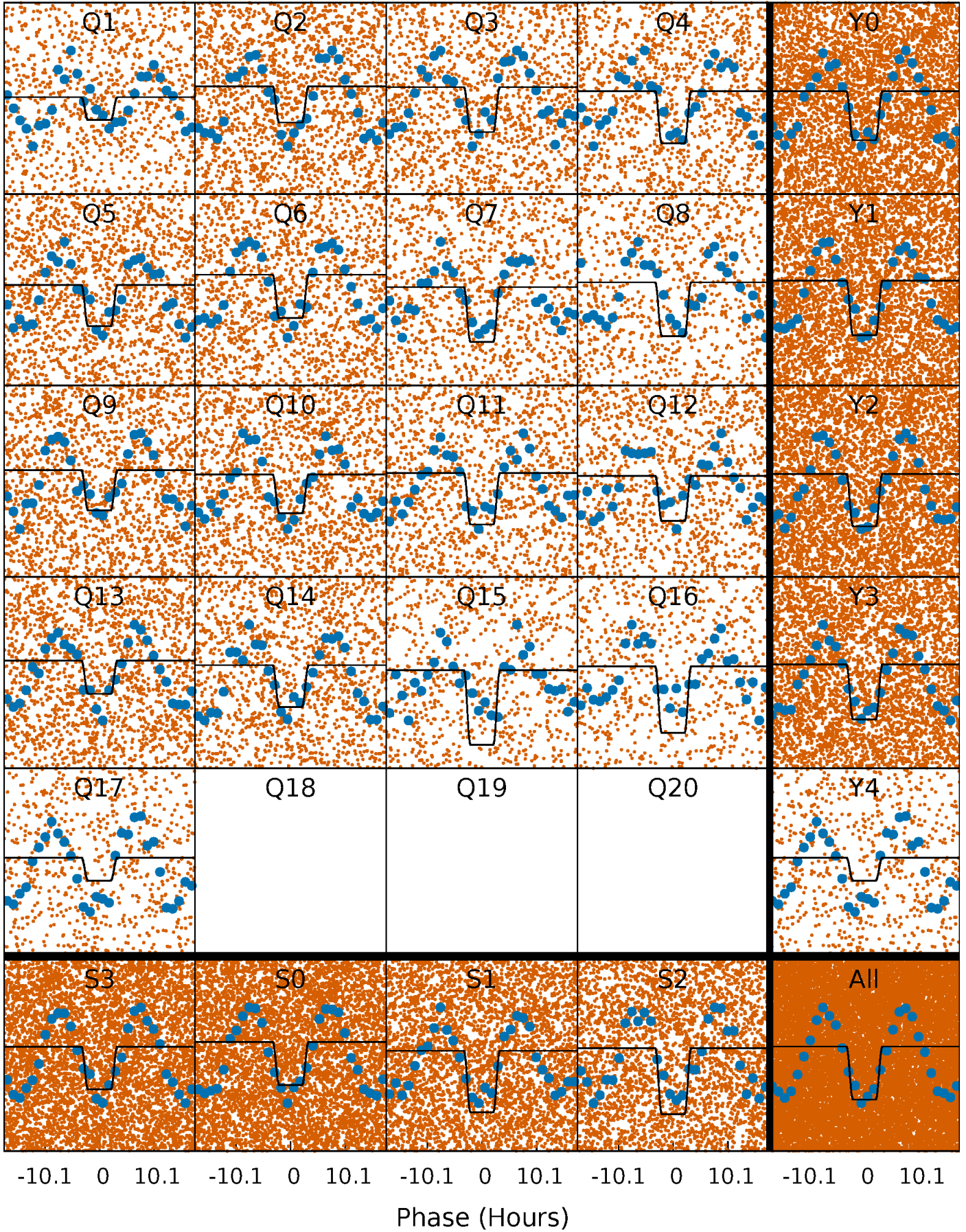
DV Quarter-Phased Transit Curves

TCE 002168333-01 P= 1.258129 Days $T_0=131.758794$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

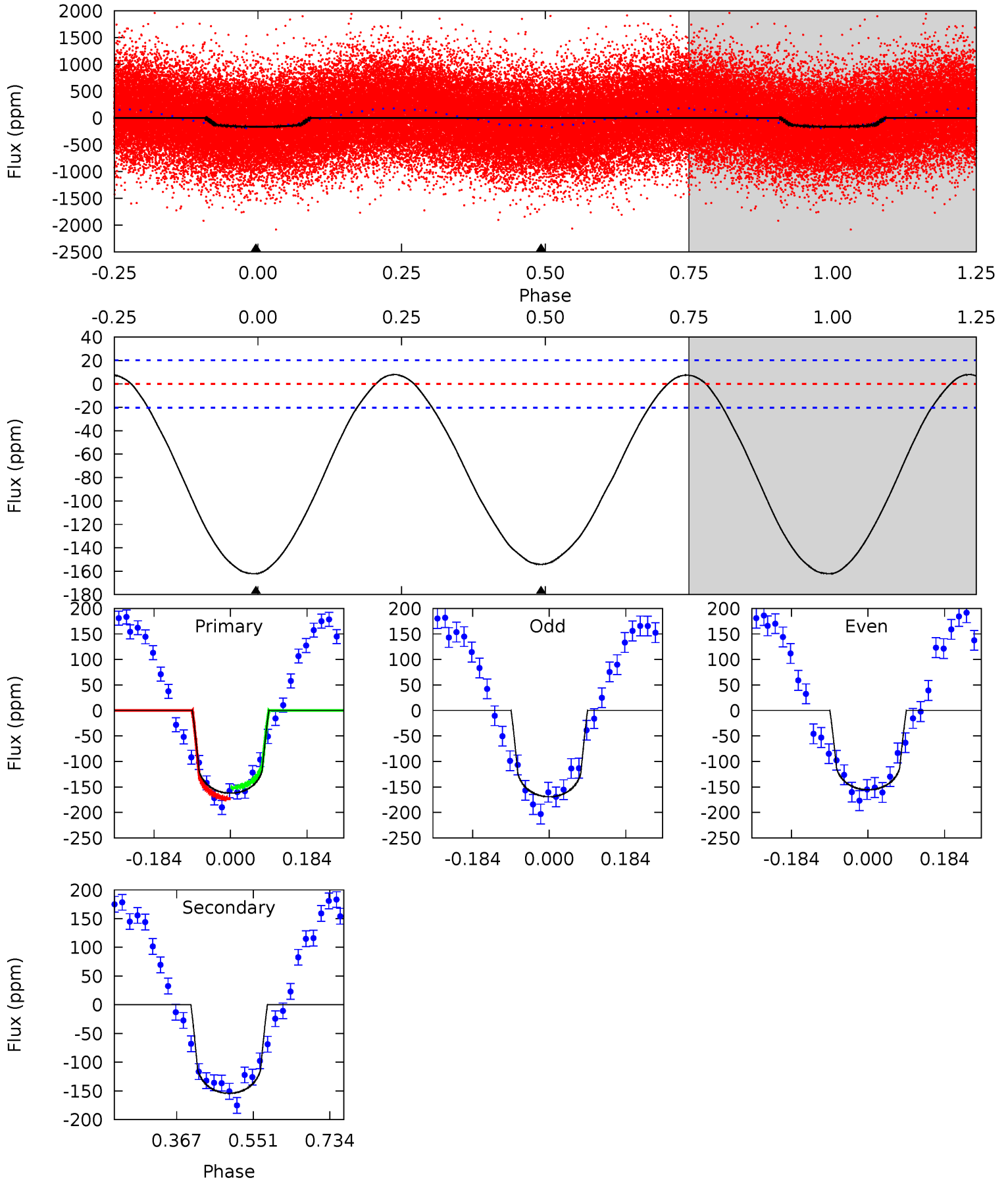
TCE 002168333-01 P= 1.258151 Days $T_0=131.732164$ (BKJD)



DV Model-Shift Uniqueness Test

002168333-01, P = 1.258129 Days, E = 130.500665 Days

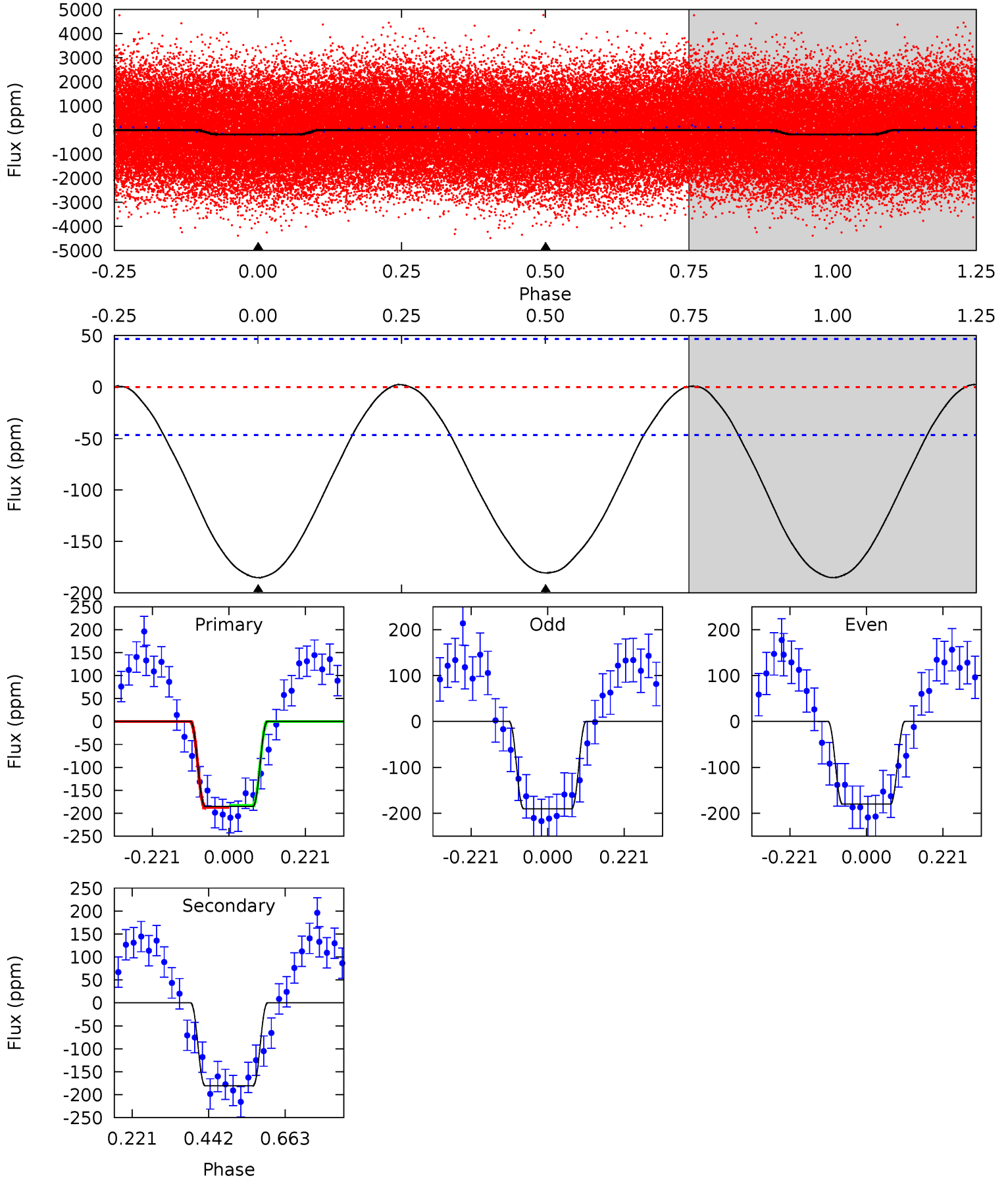
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	33.7	0	0	4.44	1.33	2.03	35.4	35.4	33.7	33.7	1.49	1.02	0.05	2.31



Alt Model-Shift Uniqueness Test

002168333-01, P = 1.258151 Days, E = 130.474013 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	17.0	0	0	4.40	1.22	0.22	17.4	17.4	17.0	17.0	0.47	1.01	0.01	0.20



Stellar Parameters For KIC 002168333

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8363^{+197}_{-395}	$3.803^{+0.357}_{-0.153}$	$0.070^{+0.250}_{-0.500}$	$3.149^{+0.930}_{-1.395}$	$2.297^{+0.299}_{-0.698}$	$0.104^{+0.314}_{-0.047}$
	+2%/-5%	+9%/-4%	+357%/-714%	+30%/-44%	+13%/-30%	+303%/-45%
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 002168333-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-154 ± 5	$2.86^{+2.15}_{-1.77}$	5157^{+440}_{-572}	10347^{+15331}_{-3243}	$9.731^{+54.051}_{-6.699}$
Alt.	-181 ± 11	$4.56^{+2.35}_{-2.05}$	5171^{+415}_{-568}	7767^{+4122}_{-1596}	$4.229^{+9.582}_{-2.382}$

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

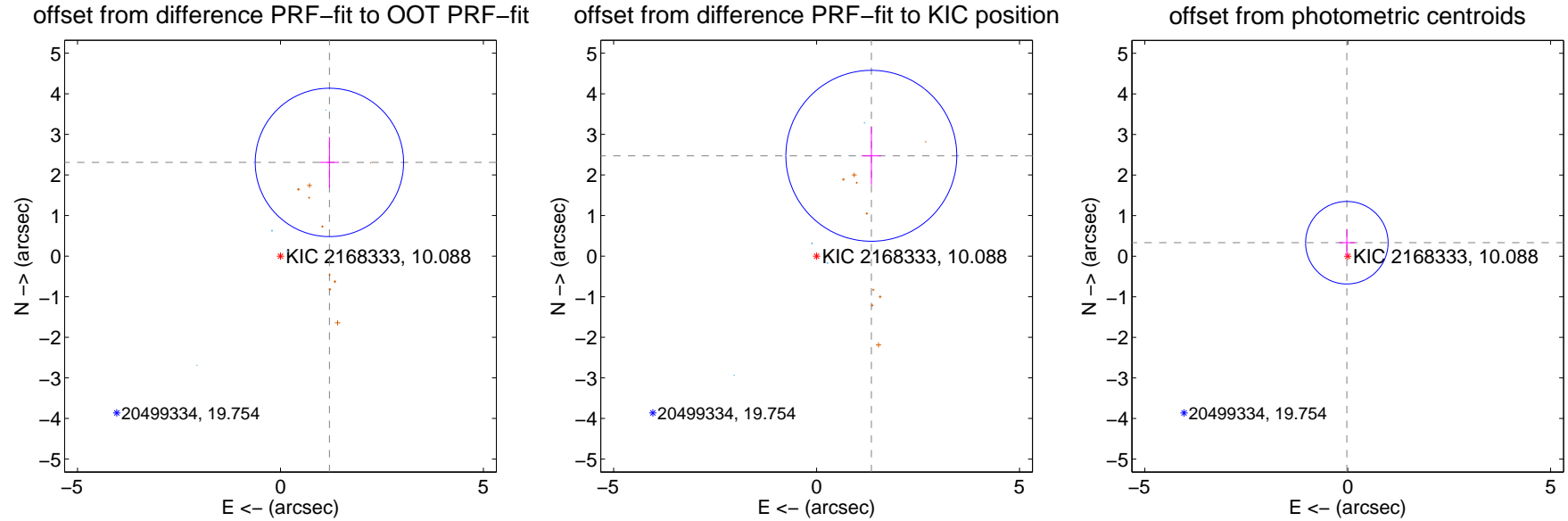
DV Centroid Data

Supplemental centroid analysis for 002168333-01. **Kepler magnitude: 10.09.** Transit SNR 10.87

There are 5 quarters with good PRF difference image offsets

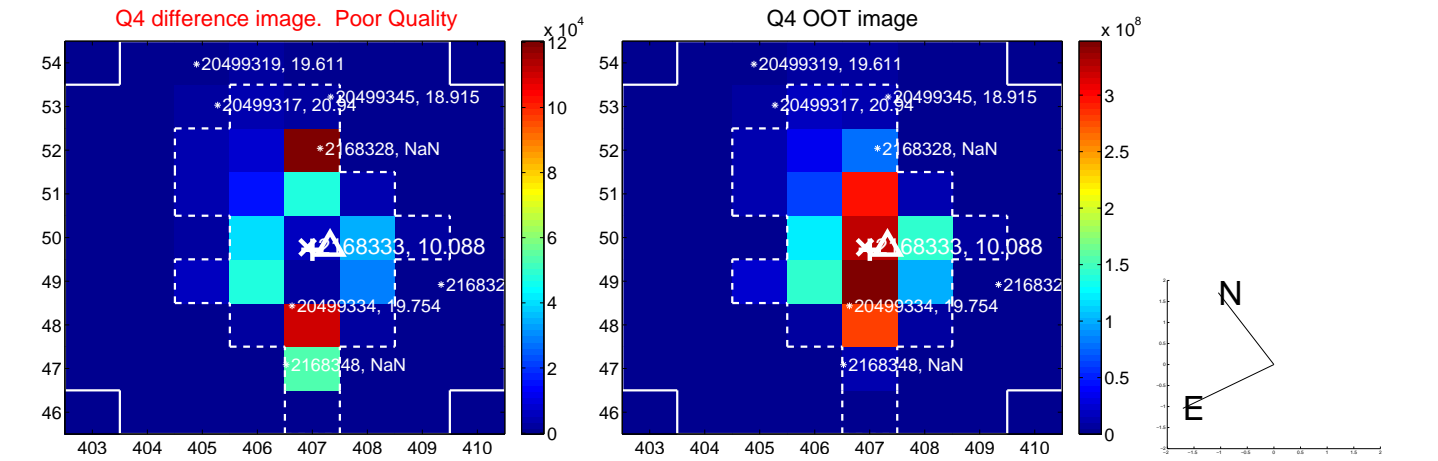
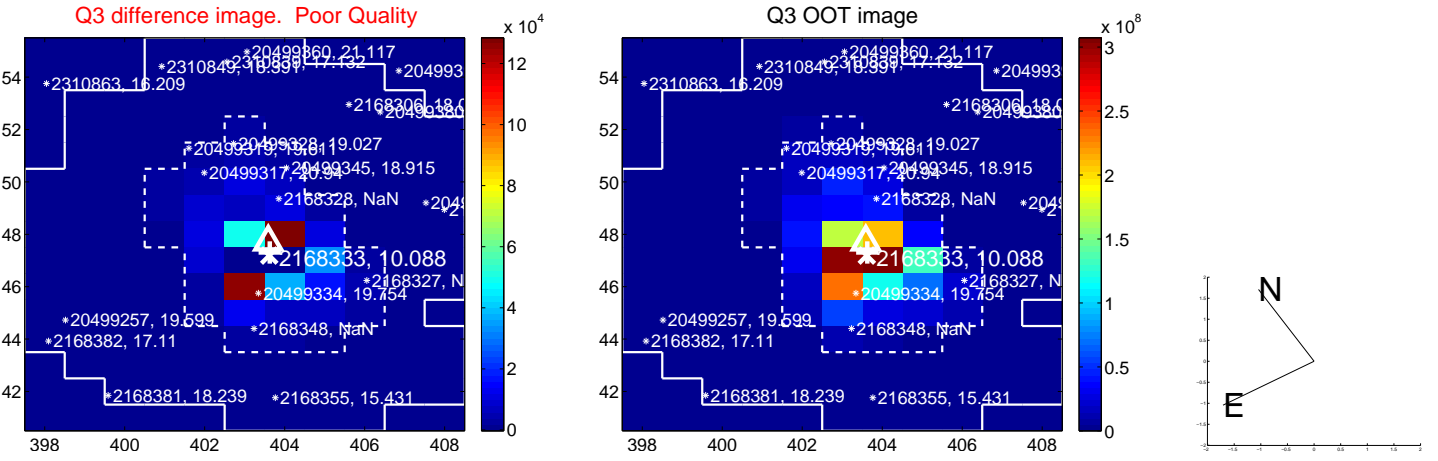
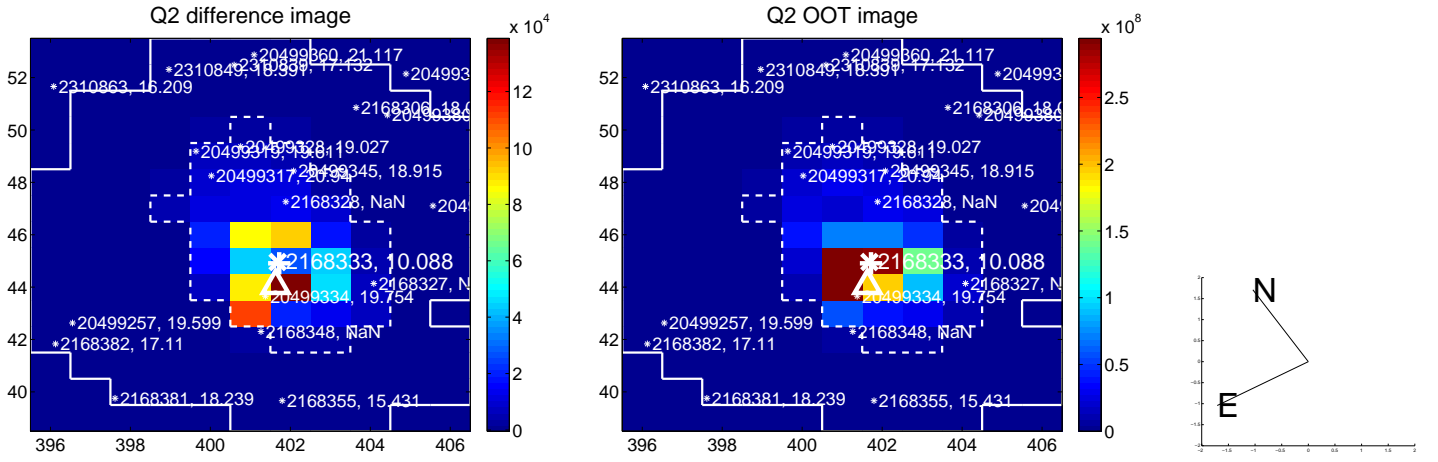
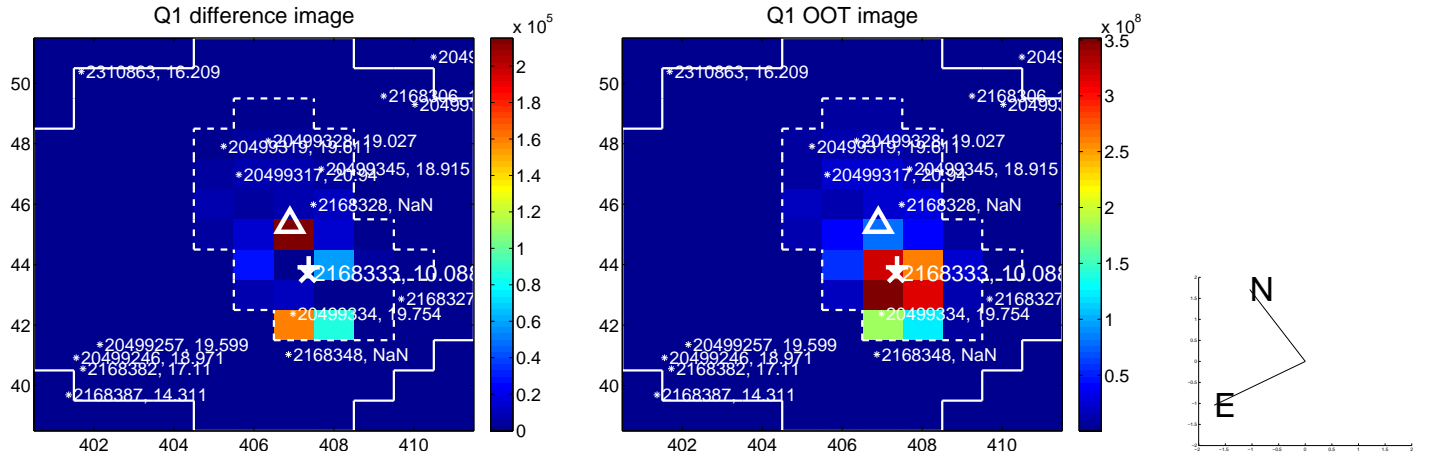
The direct PRF centroid is offset from the target star catalog position by about 0.64 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.605 ± 0.609	4.28	-1.206 ± 0.236	2.309 ± 0.625
PRF-fit source offset from KIC position	2.816 ± 0.702	4.01	-1.349 ± 0.244	2.472 ± 0.713
photometric centroid source offset	0.33 ± 0.34	0.98	0.02 ± 0.19	0.33 ± 0.34

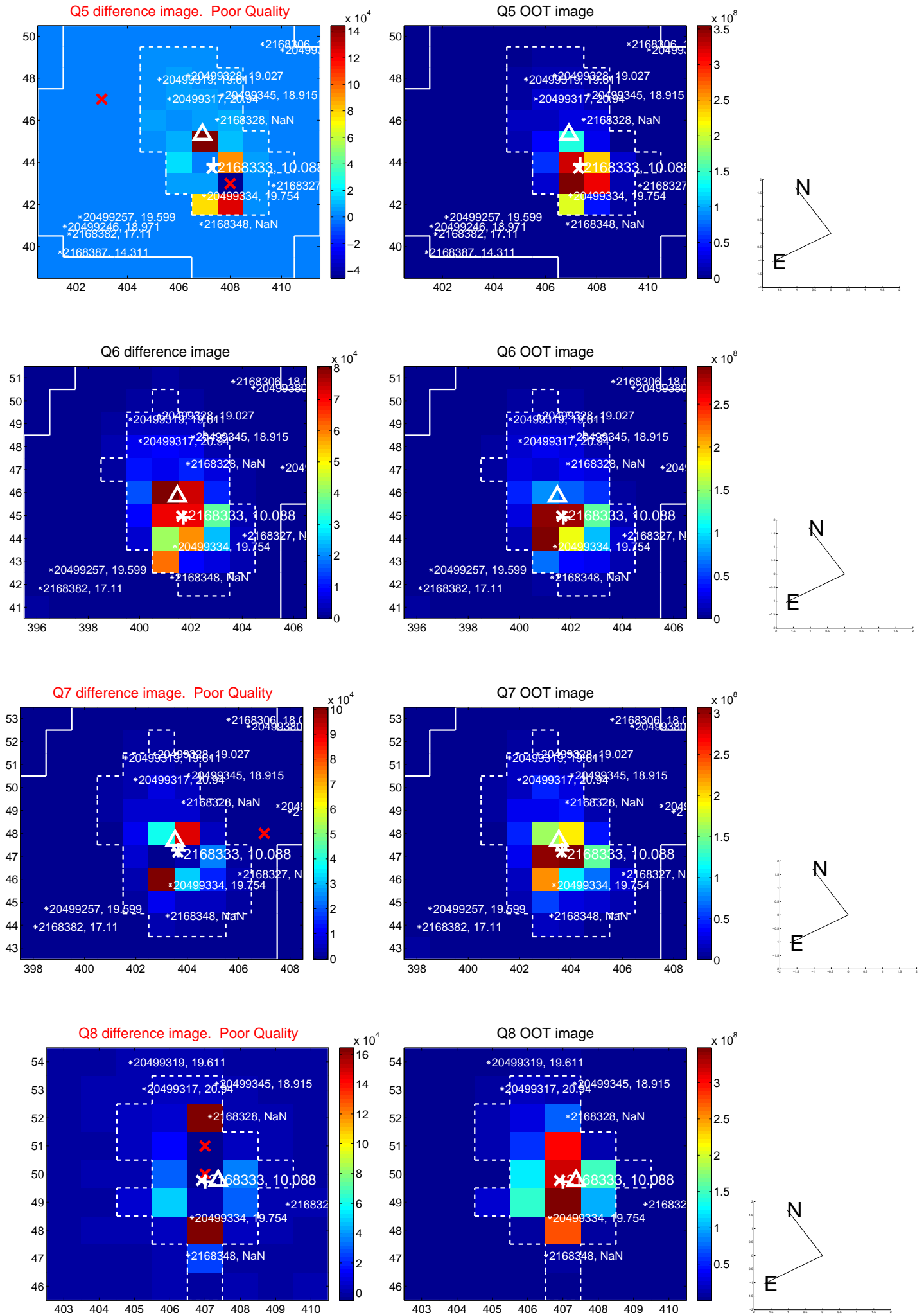


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

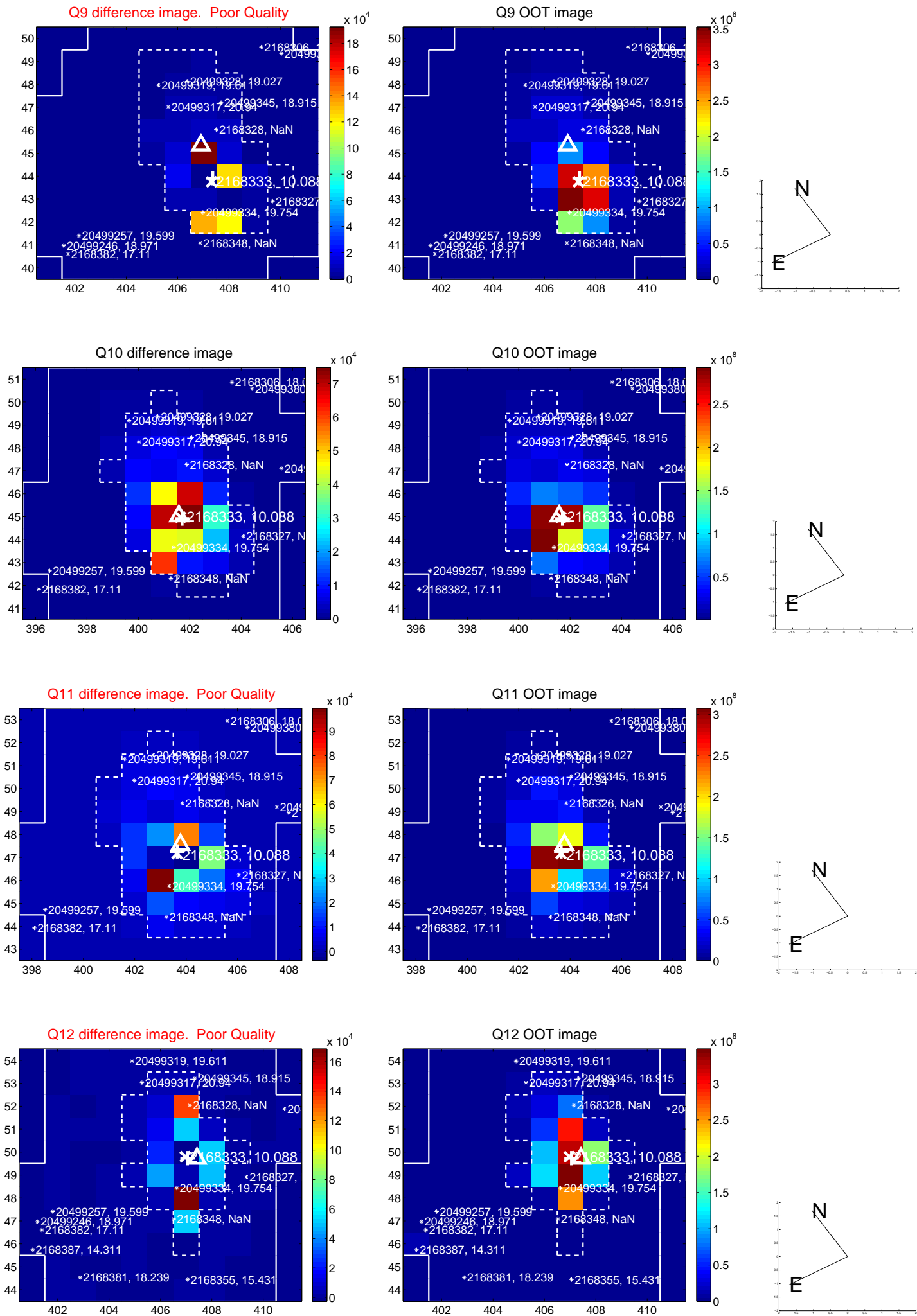
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



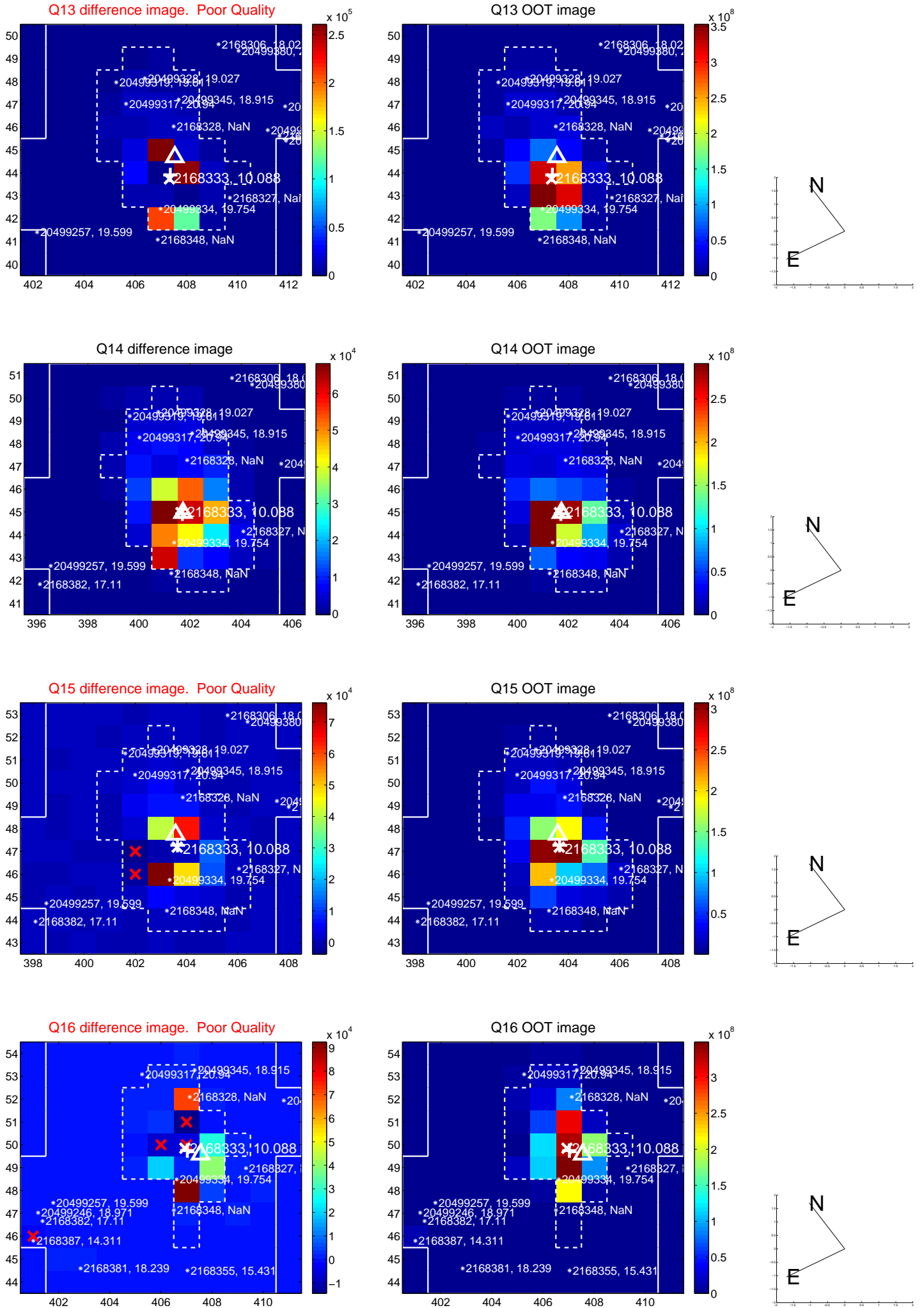
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



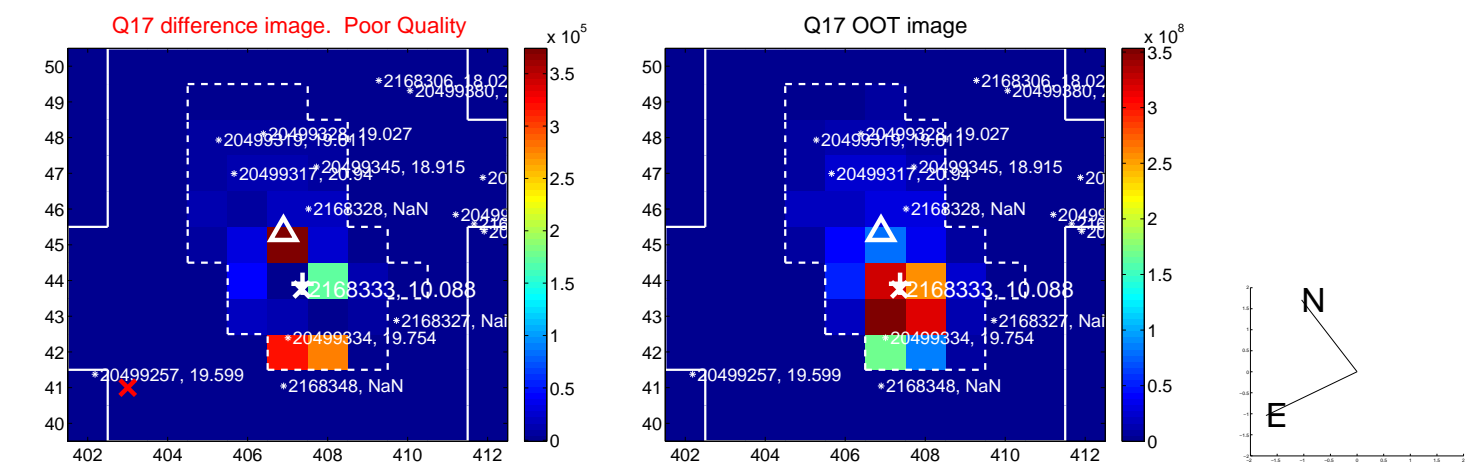
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



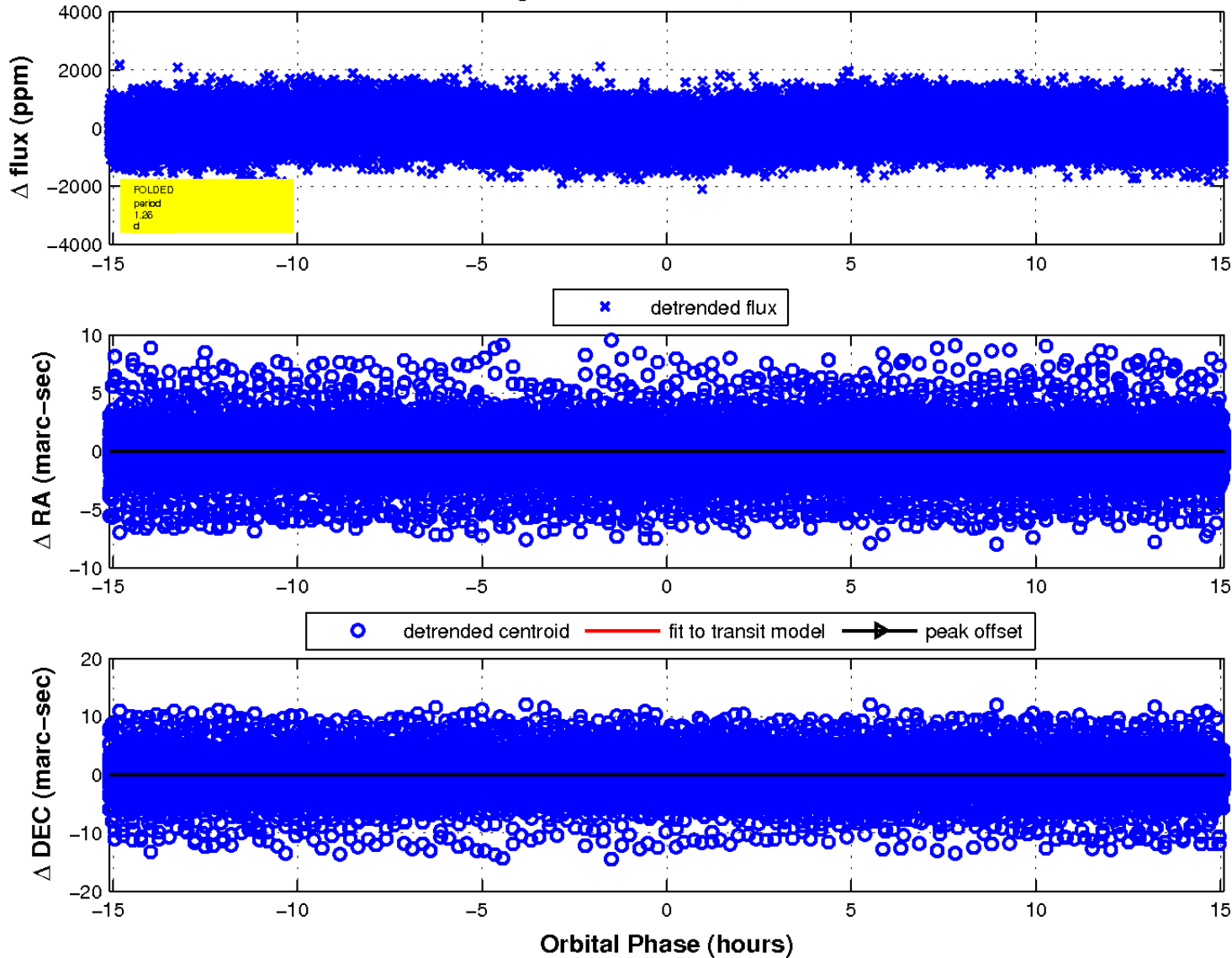
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



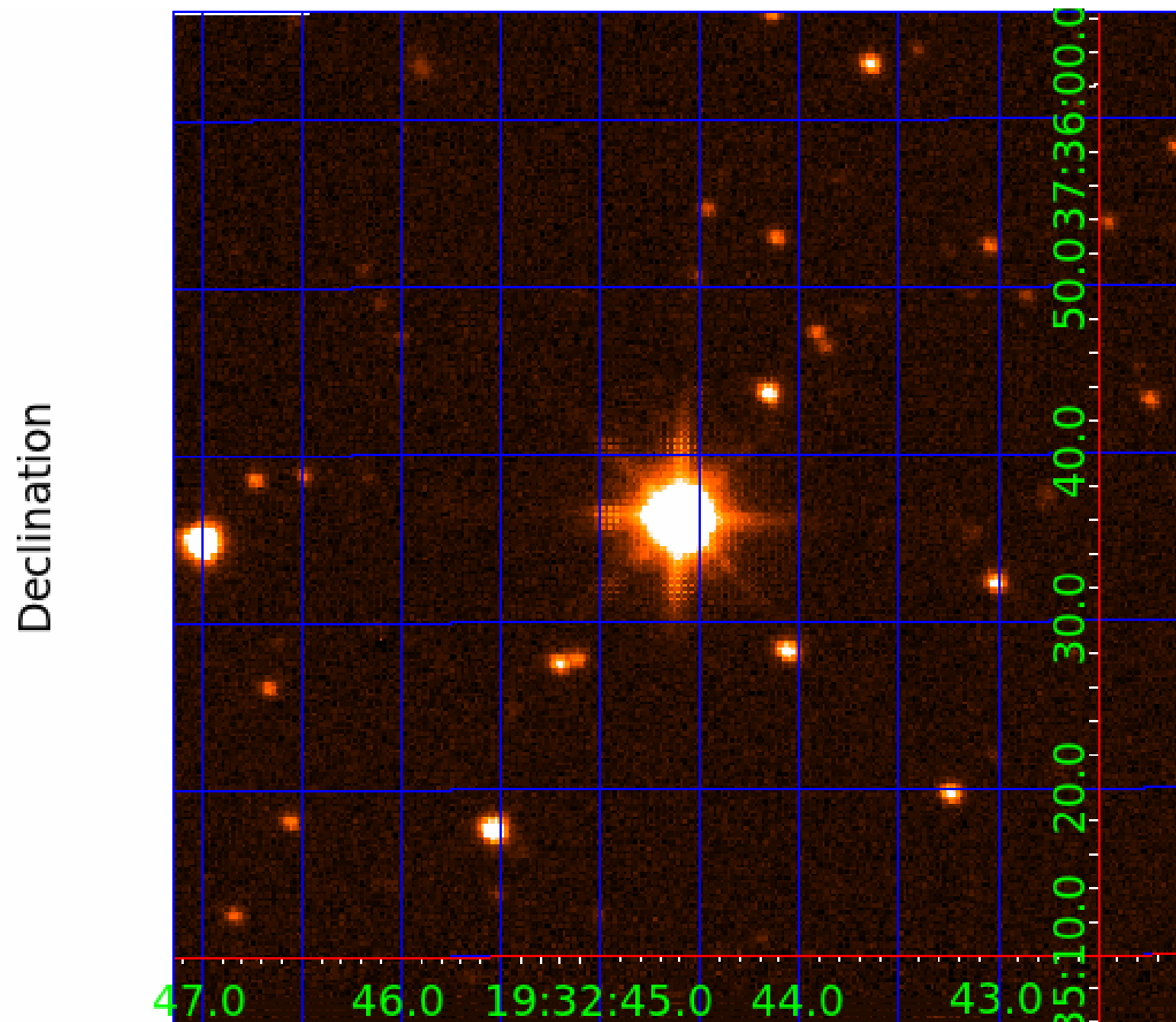
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 002168333

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})
002168333-01	OBS	No	1.258129	131.758794	66.9	5.102	9.6	10.9	3.15	8363	2.61	47953.92
002168333-02	OBS	No	1.258123	132.381505	73.3	8.001	13.1	16.2	3.15	8363	2.73	47954.27

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002168333-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_SATURATED
002168333-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

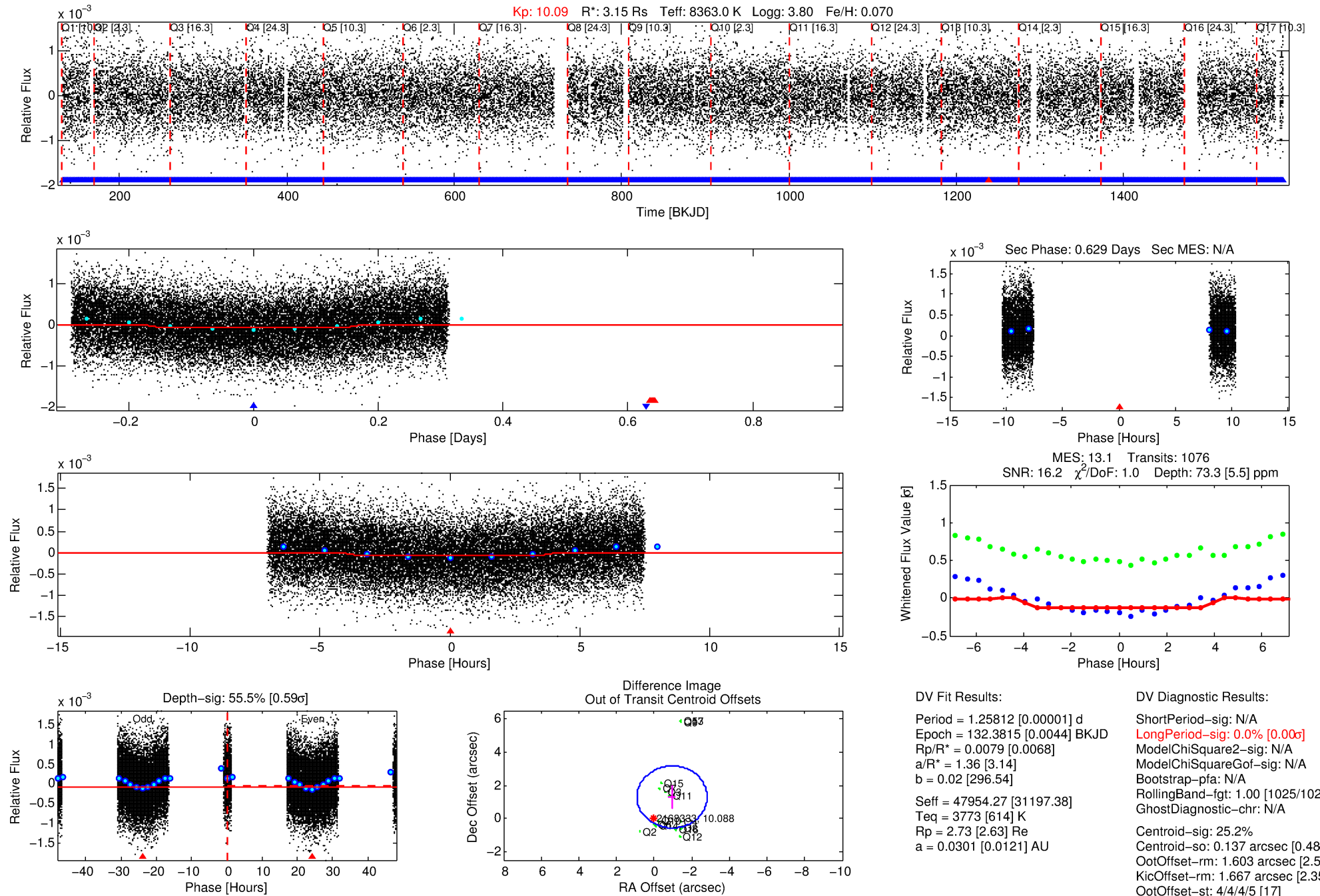
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002168333-02

No Significant Match Found

DV One-Page Summary

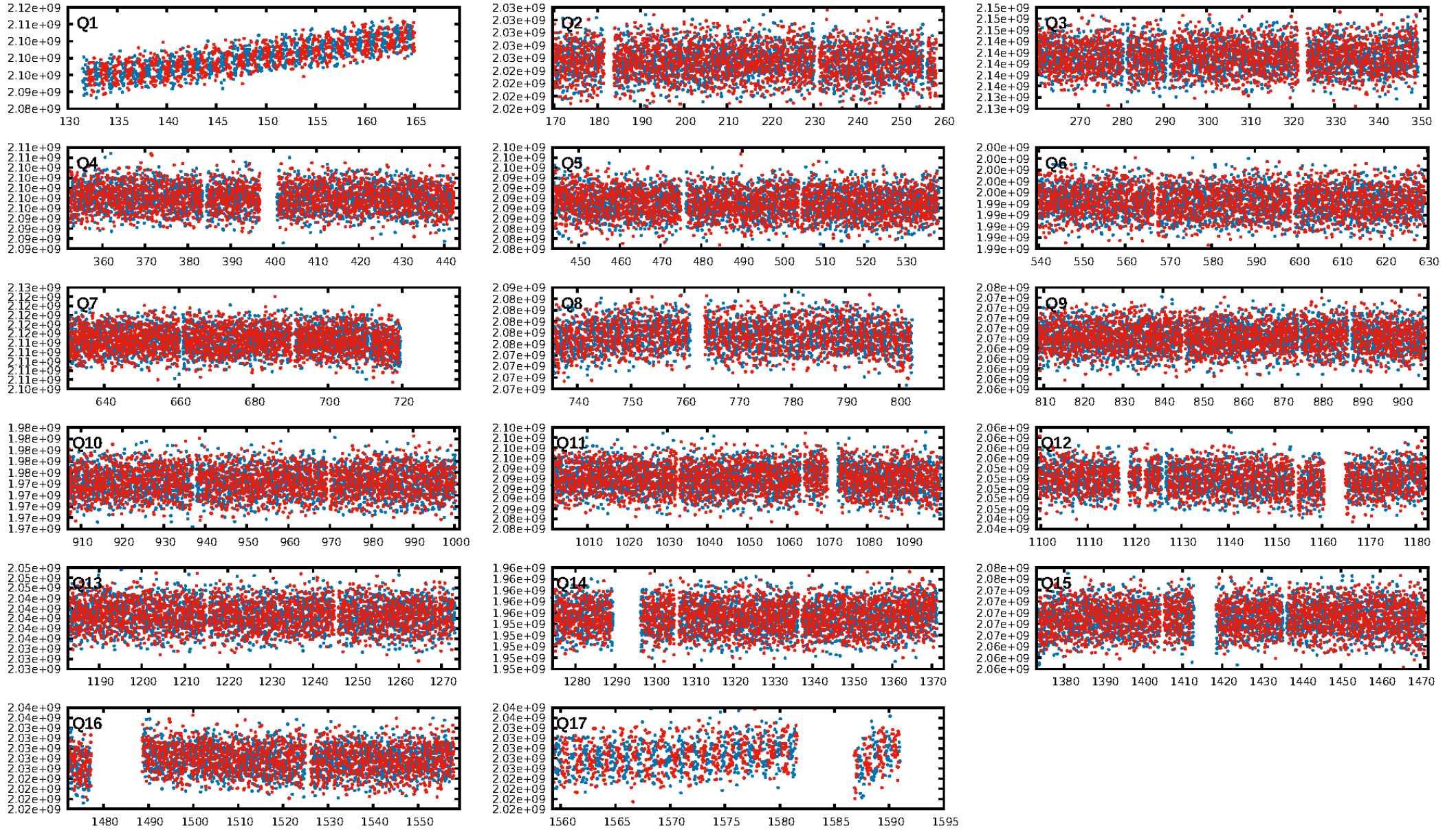
KIC: 2168333 Candidate: 2 of 2 Period: 1.258 d



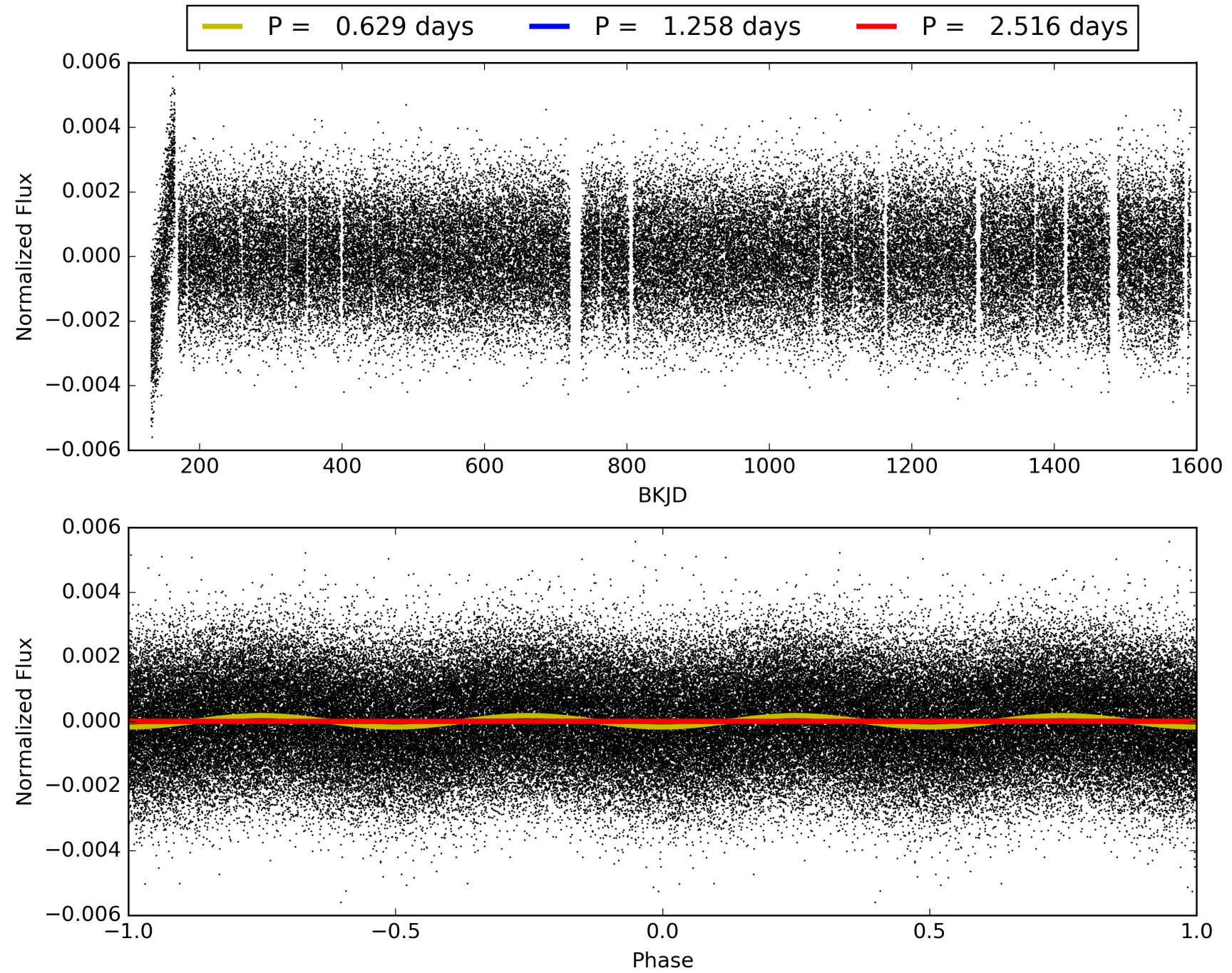
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 08:22:46 Z

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

TCE 002168333-02, PDC Light Curves

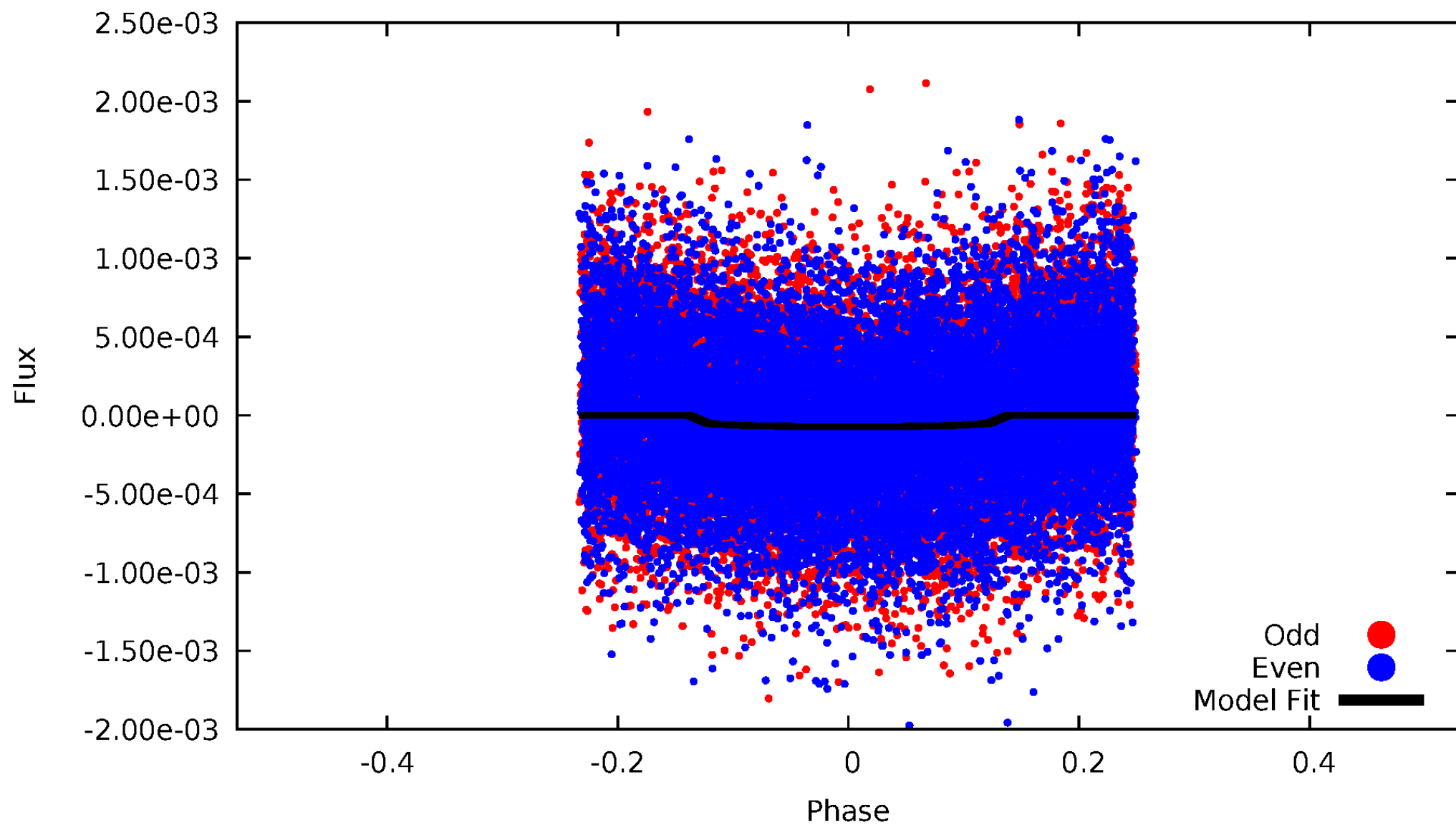


TCE 002168333-02



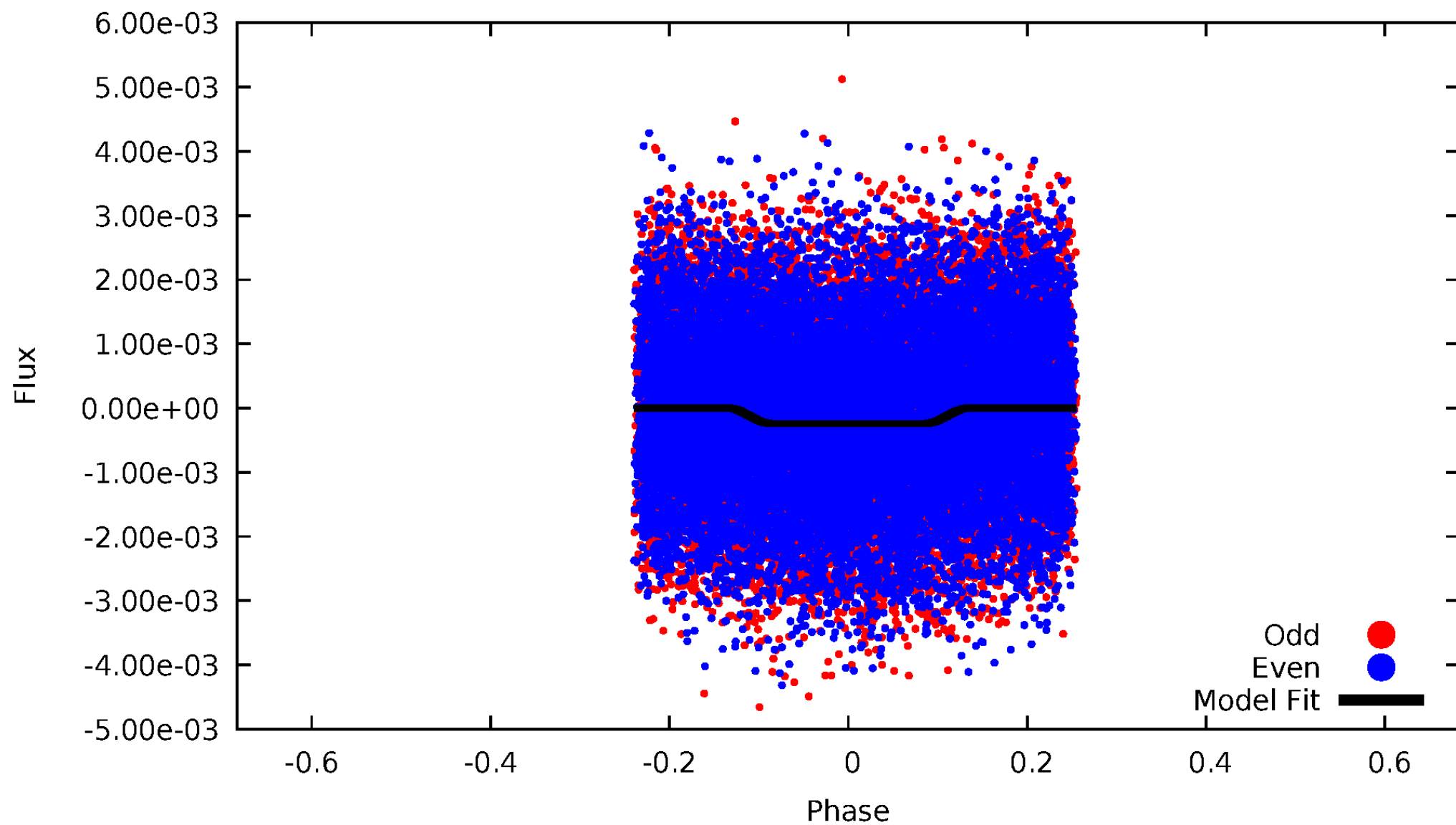
DV Odd/Even

TCE 002168333-02



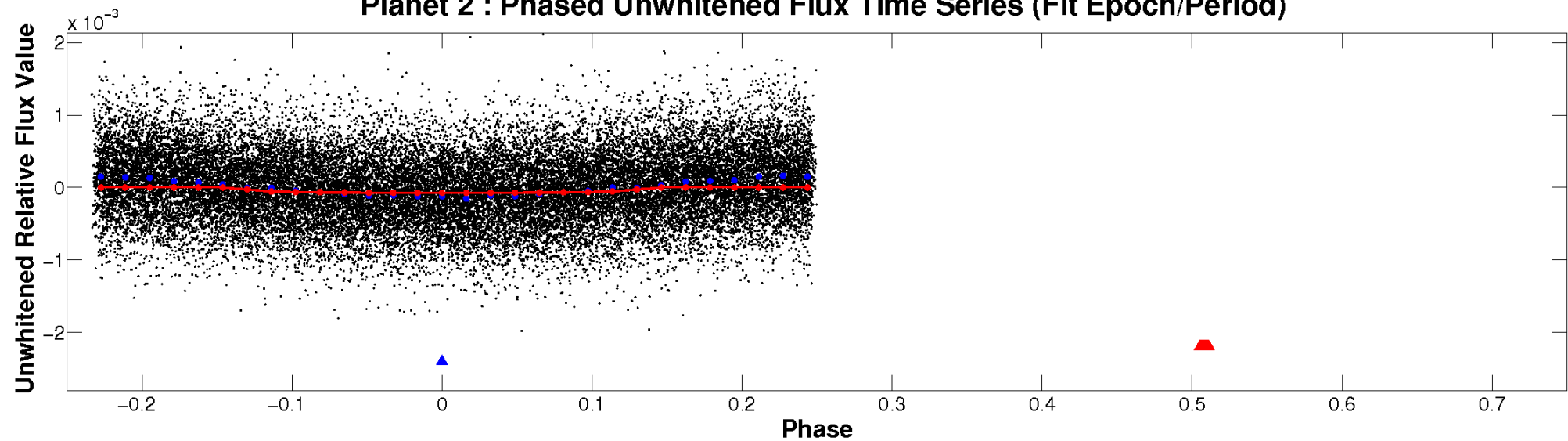
ALT Odd/Even

TCE 002168333-02

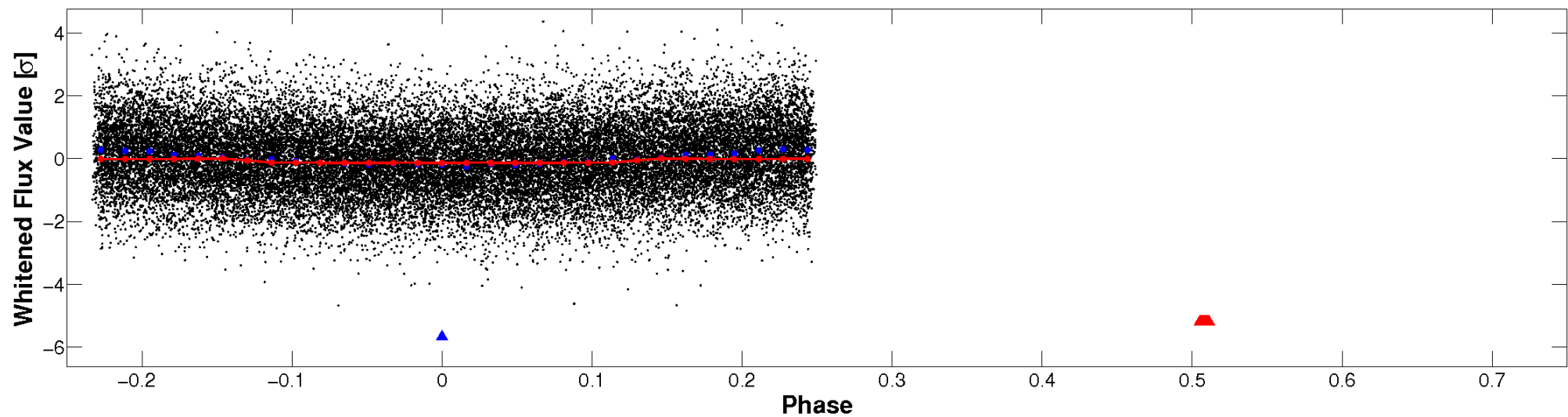


Non-Whitened Vs. Whitened Light Curve

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

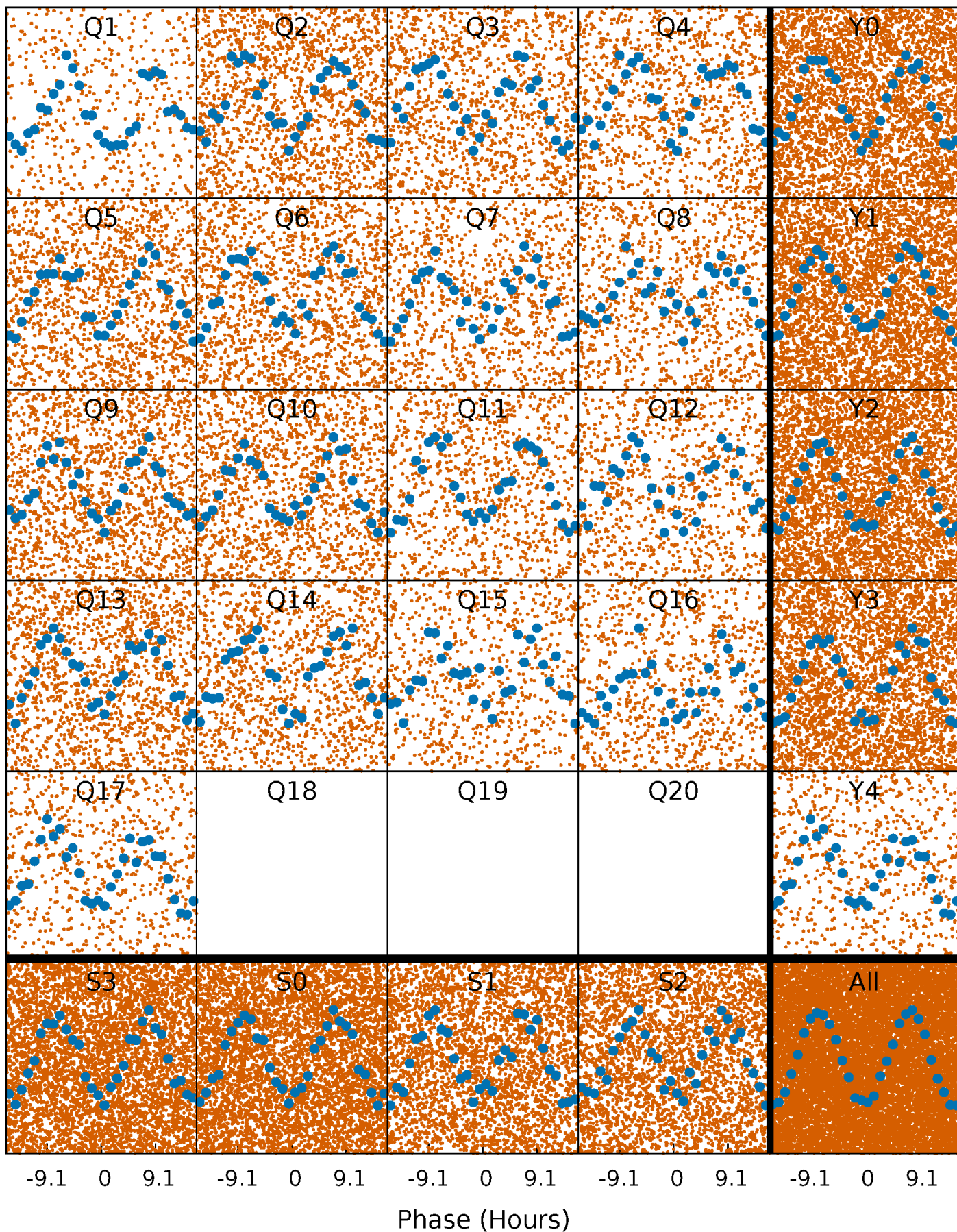


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



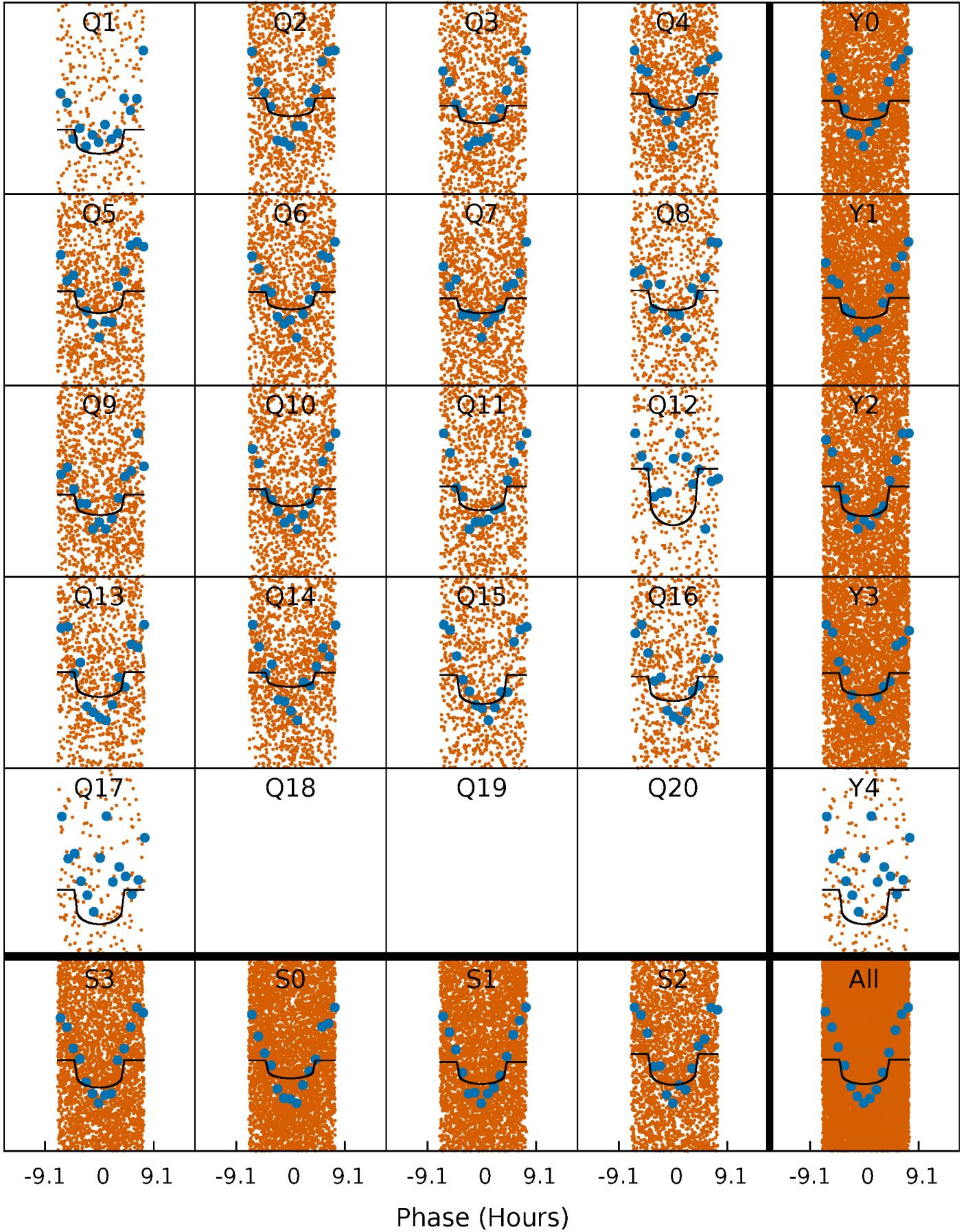
PDC Quarter-Phased Transit Curves

TCE 002168333-02 P= 1.258123 Days $T_0=132.381505$ (BKJD)



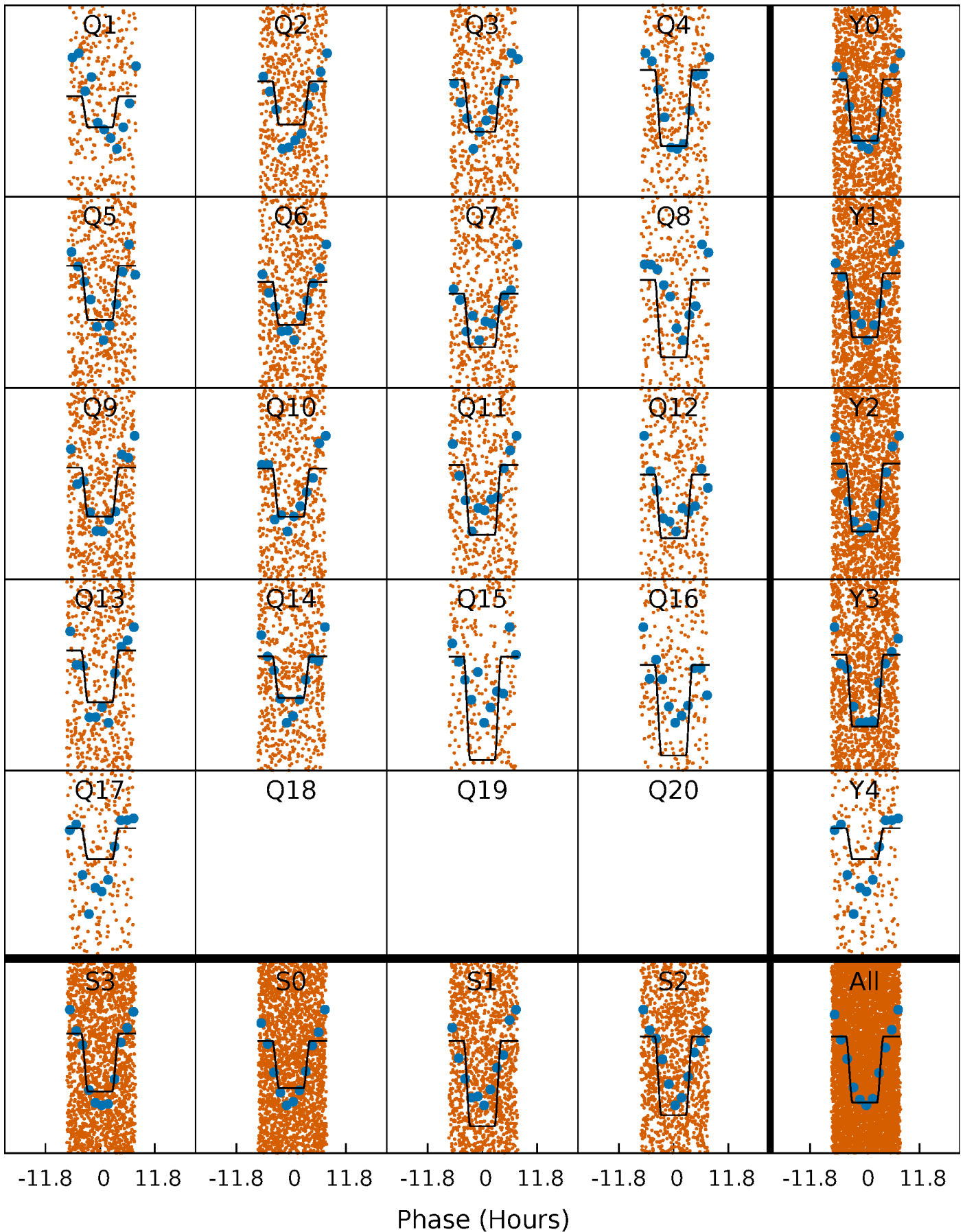
DV Quarter-Phased Transit Curves

TCE 002168333-02 $P = 1.258123$ Days $T_0 = 132.381505$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

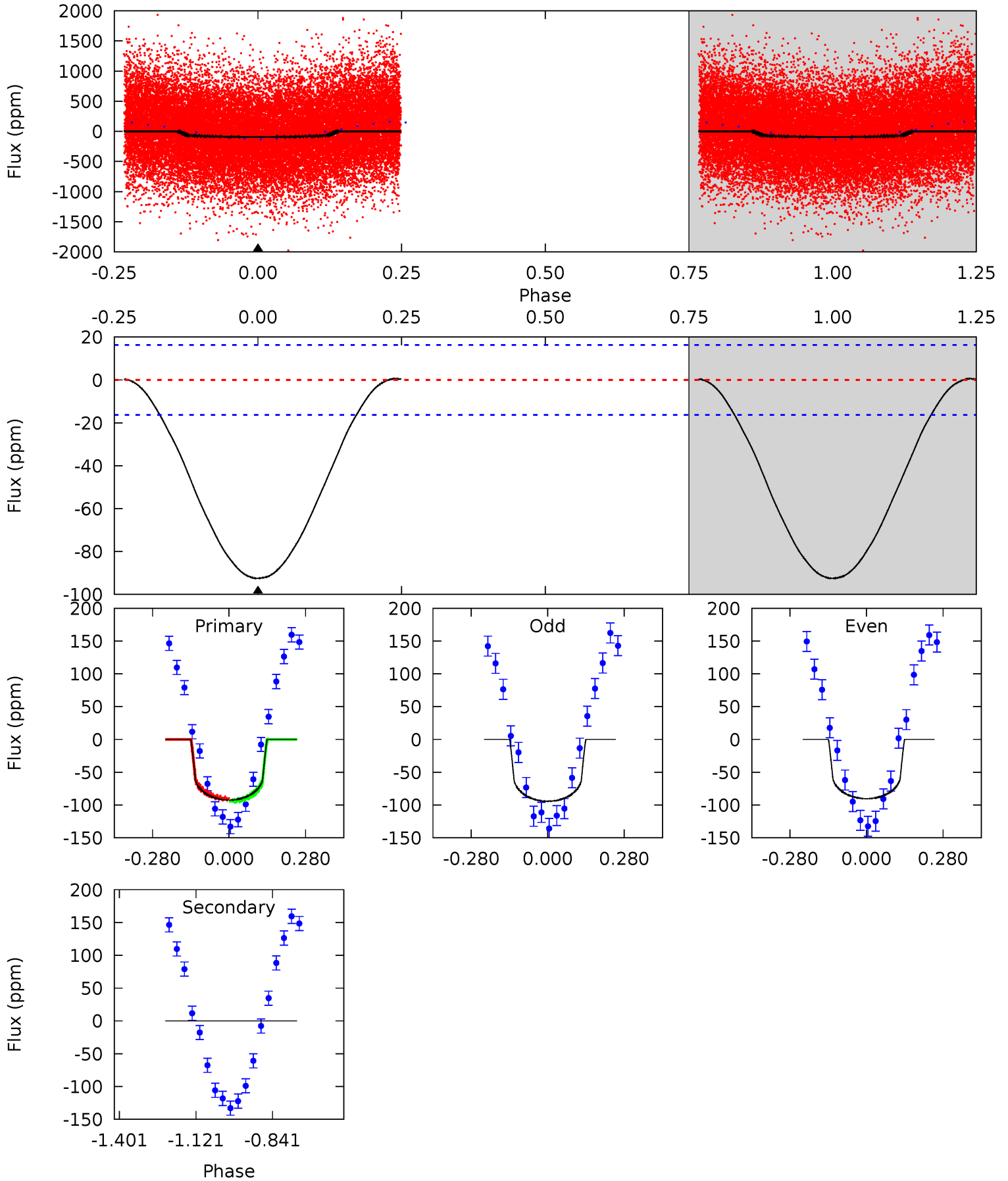
TCE 002168333-02 $P = 1.258151$ Days $T_0 = 132.365886$ (BKJD)



DV Model-Shift Uniqueness Test

002168333-02, P = 1.258123 Days, E = 131.123382 Days

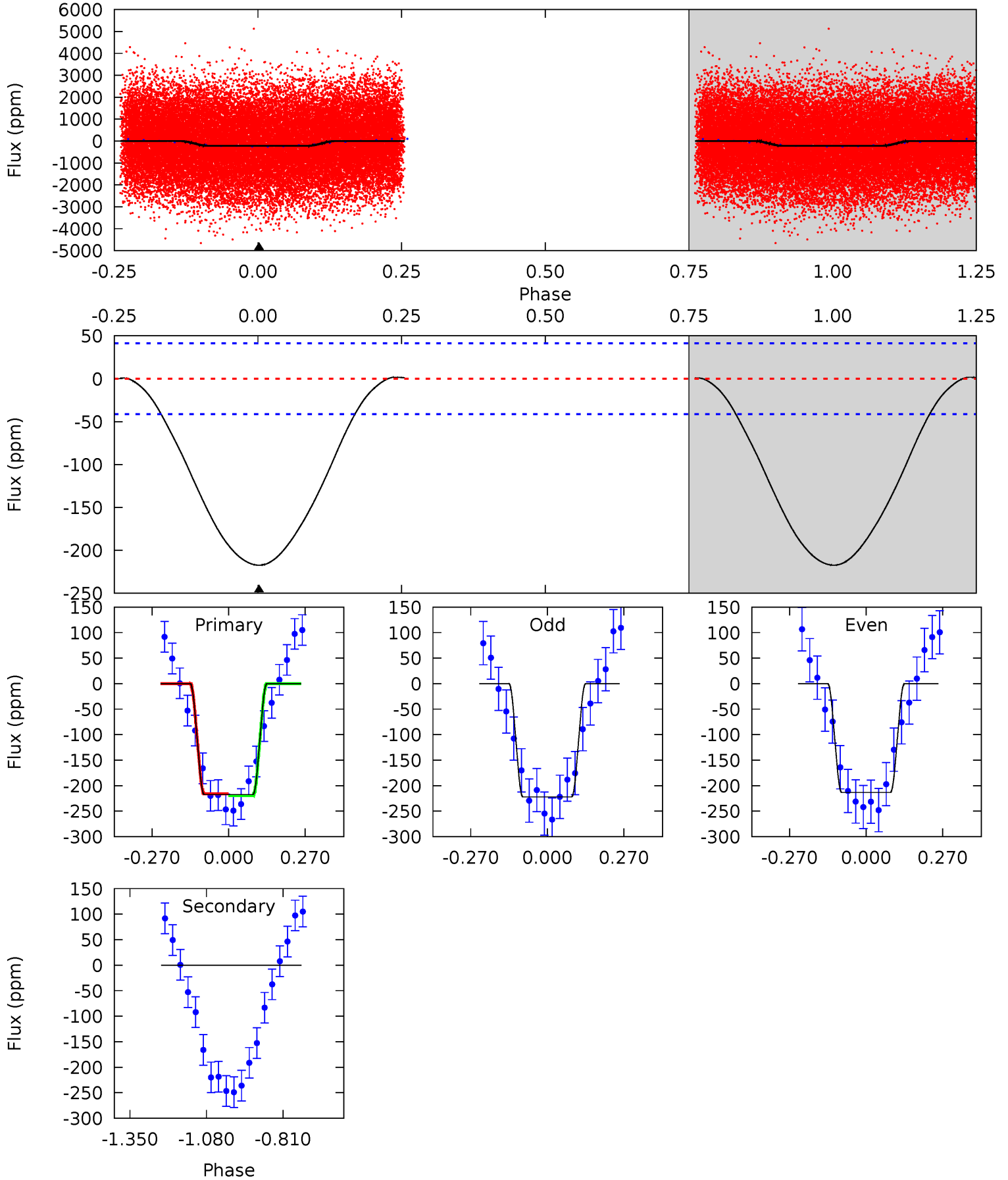
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	0	0	0	4.34	1.08	0.17	24.7	24.7	0	0	0.53	1.04	0.01	0.57



Alt Model-Shift Uniqueness Test

002168333-02, P = 1.258151 Days, E = 131.107735 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.9	0	0	0	4.35	1.10	0.21	22.9	22.9	0	0	0.46	1.00	0.01	0.18



Stellar Parameters For KIC 002168333

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8363^{+197}_{-395}	$3.803^{+0.357}_{-0.153}$	$0.070^{+0.250}_{-0.500}$	$3.149^{+0.930}_{-1.395}$	$2.297^{+0.299}_{-0.698}$	$0.104^{+0.314}_{-0.047}$
	+2%/-5%	+9%/-4%	+357%/-714%	+30%/-44%	+13%/-30%	+303%/-45%
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 002168333-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 4	$2.96^{+2.37}_{-1.82}$	5154^{+465}_{-579}	-4316^{+7461}_{-697}	$0.003^{+0.356}_{-0.258}$
Alt.	0 ± 9	$4.76^{+2.78}_{-2.15}$	5153^{+459}_{-587}	-4305^{+1258}_{-562}	$0.001^{+0.254}_{-0.224}$

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 $A_{obs} \gg 1.0$

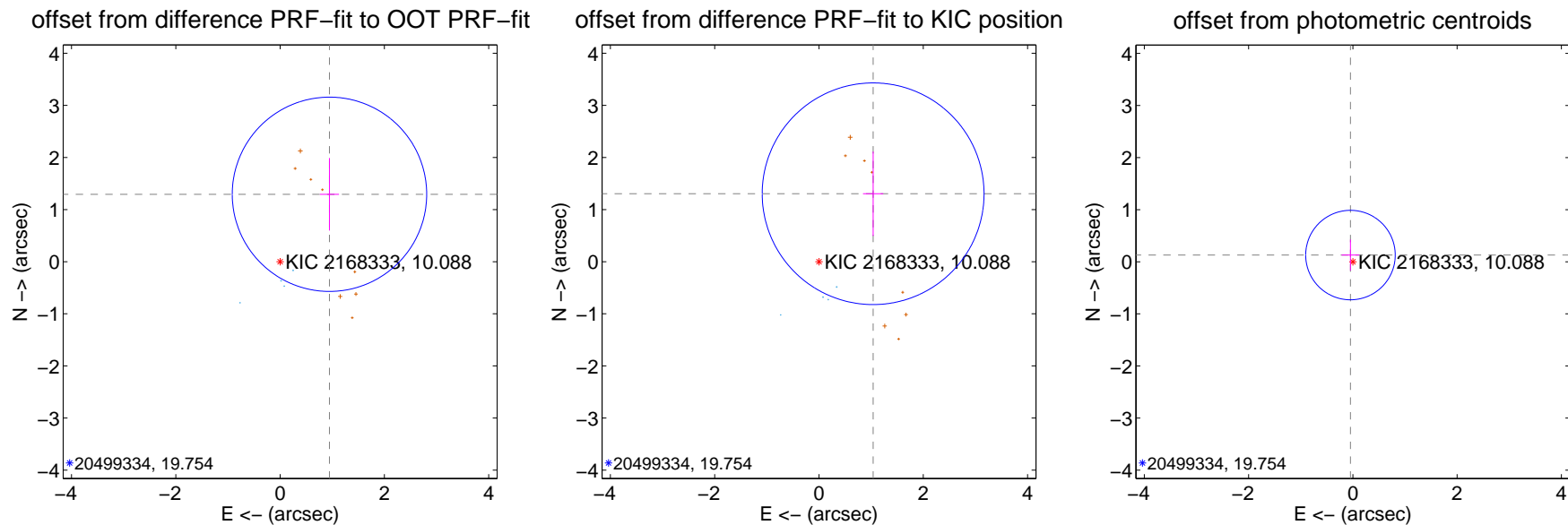
DV Centroid Data

Supplemental centroid analysis for 002168333-02. **Kepler magnitude: 10.09.** Transit SNR 16.16

There are 5 quarters with good PRF difference image offsets

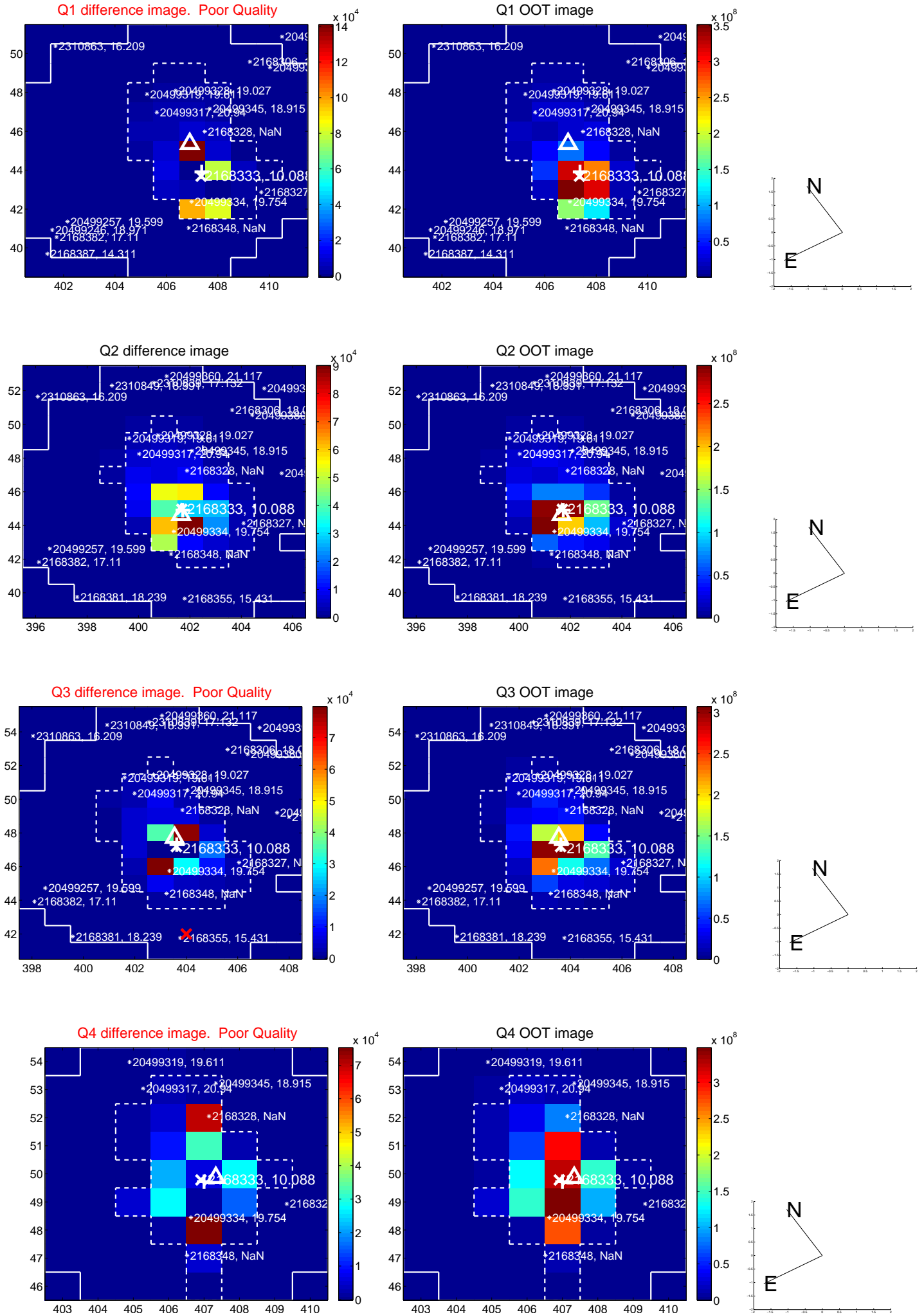
The direct PRF centroid is offset from the target star catalog position by about 0.65 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.603 ± 0.621	2.58	-0.947 ± 0.183	1.294 ± 0.696
PRF-fit source offset from KIC position	1.667 ± 0.709	2.35	-1.038 ± 0.194	1.304 ± 0.809
photometric centroid source offset	0.14 ± 0.29	0.48	0.05 ± 0.17	0.13 ± 0.30

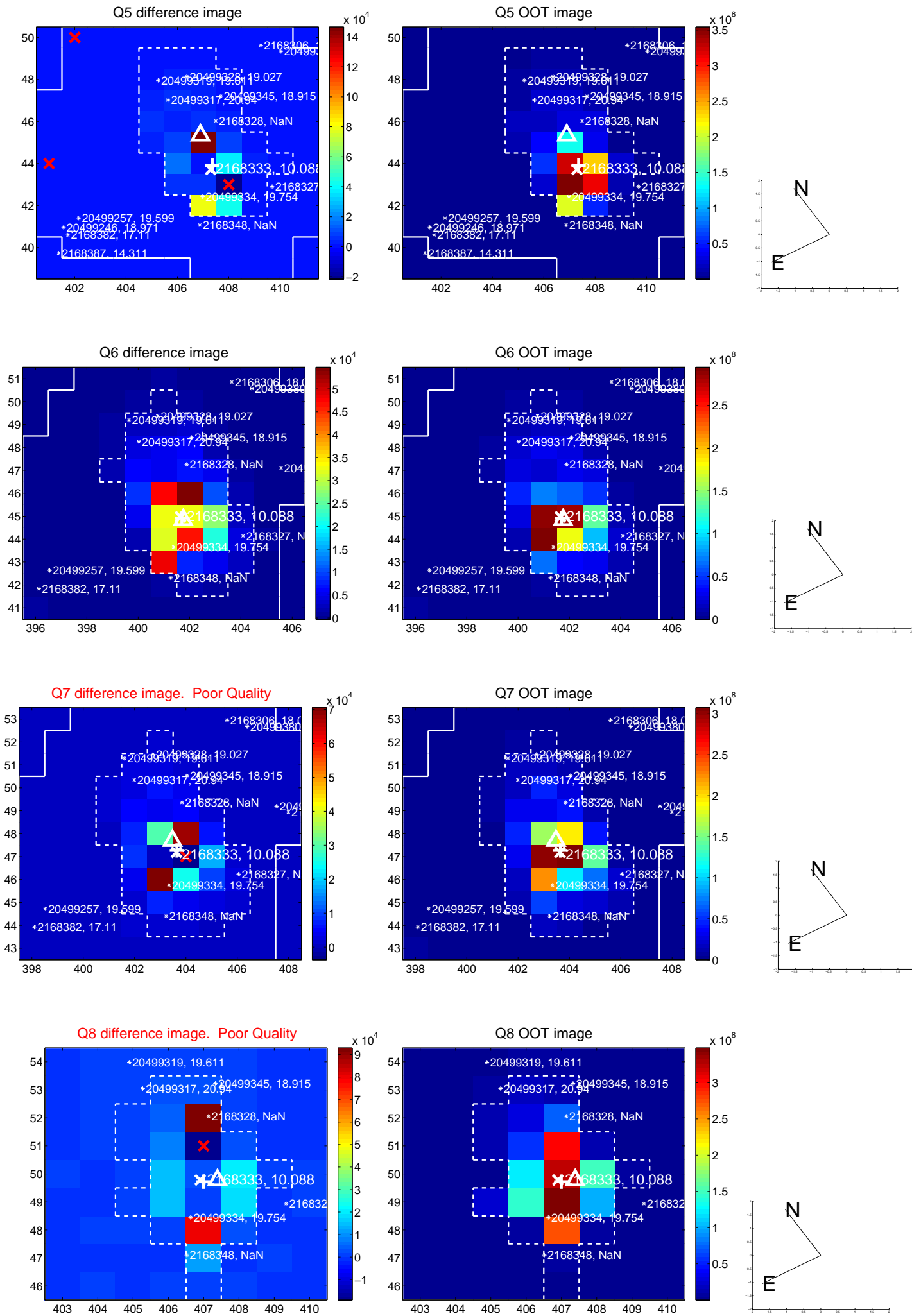


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

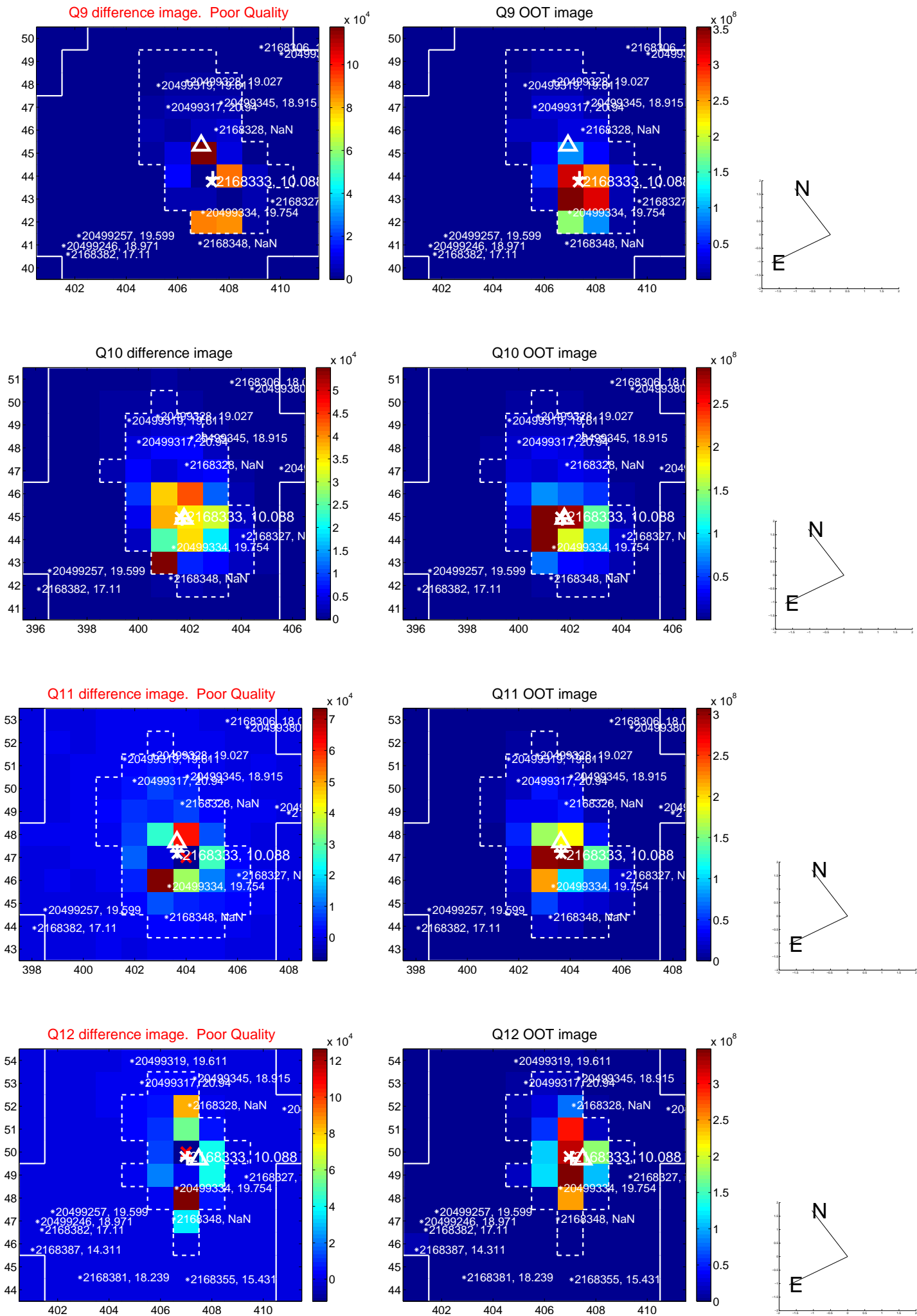
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



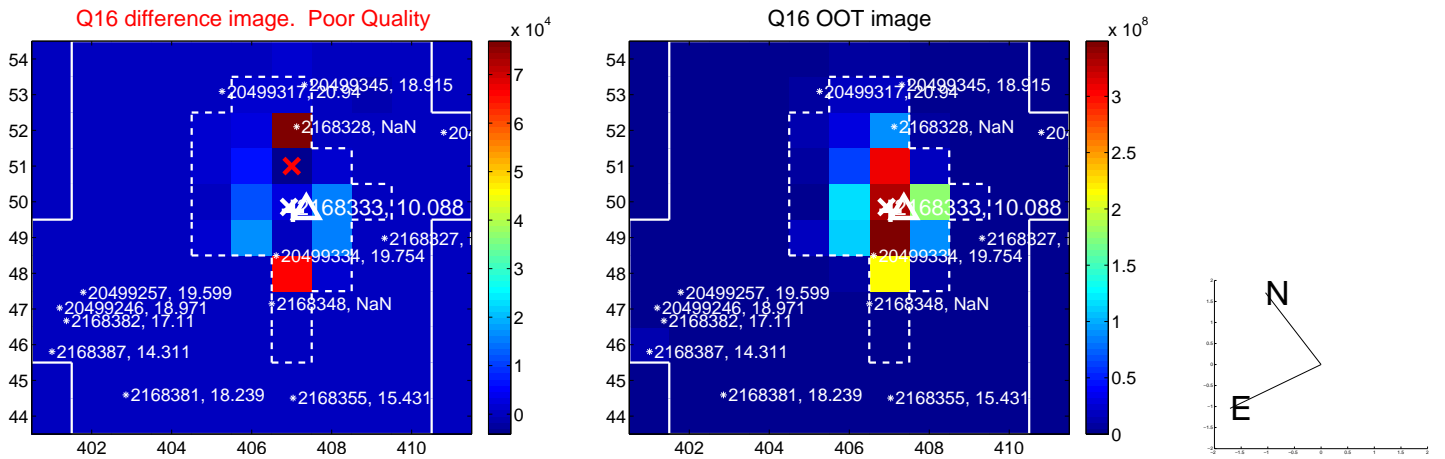
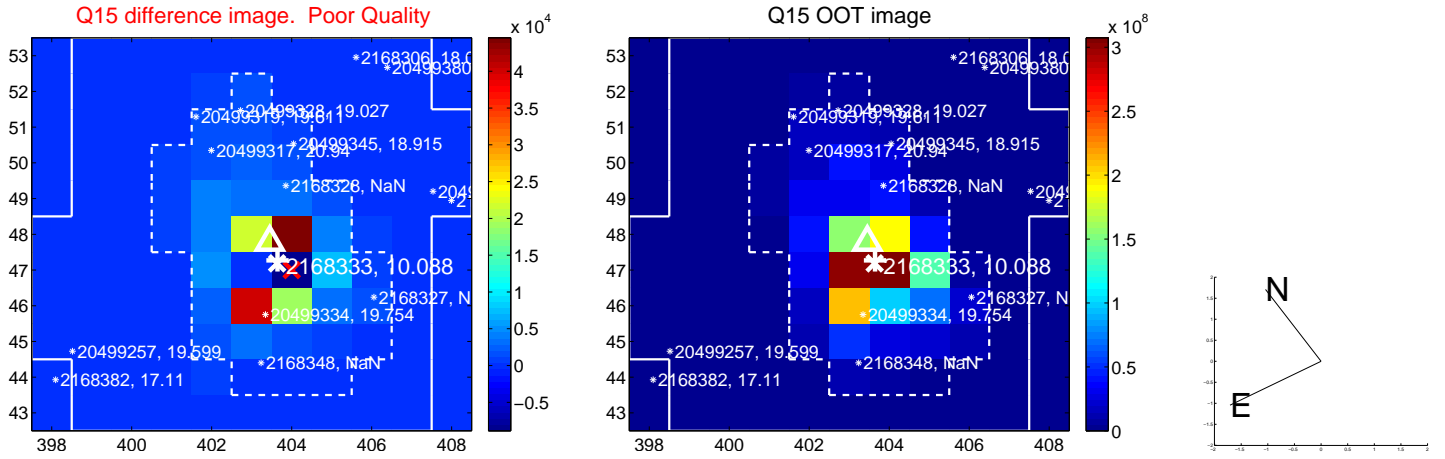
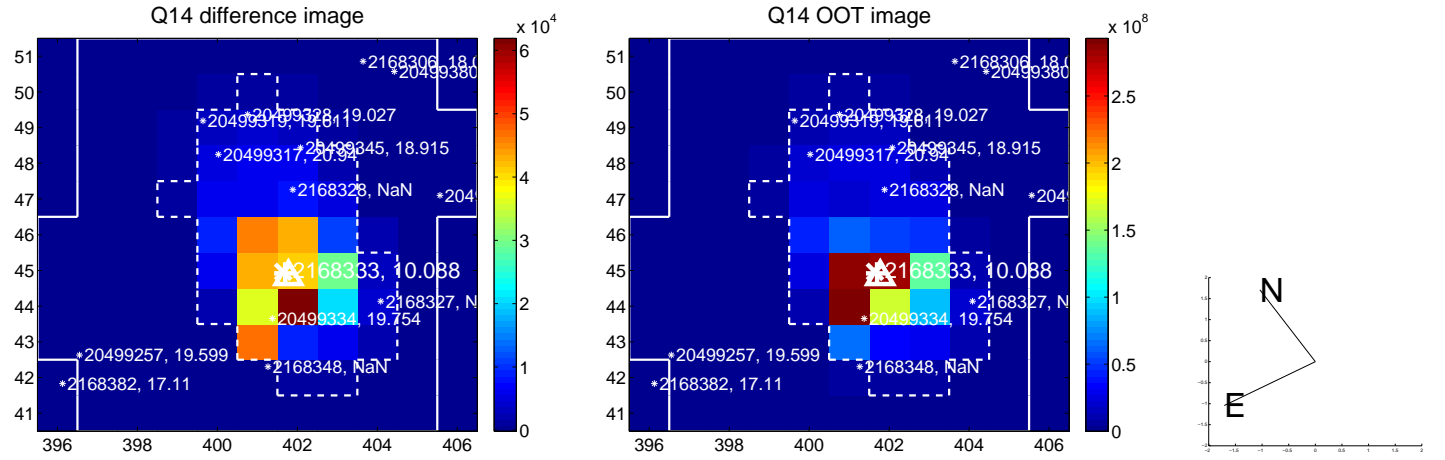
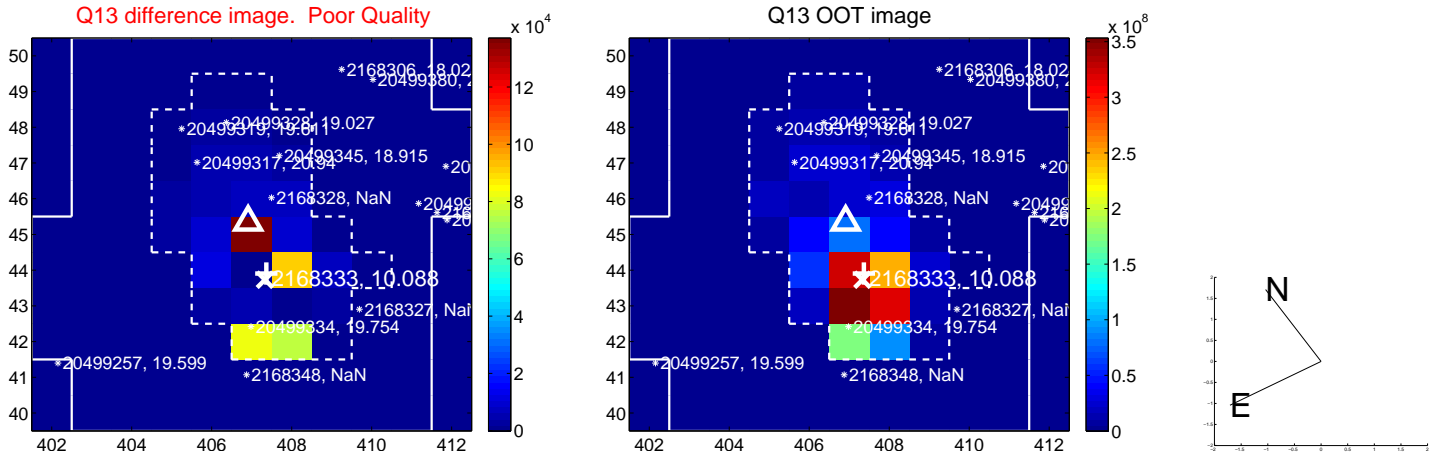
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



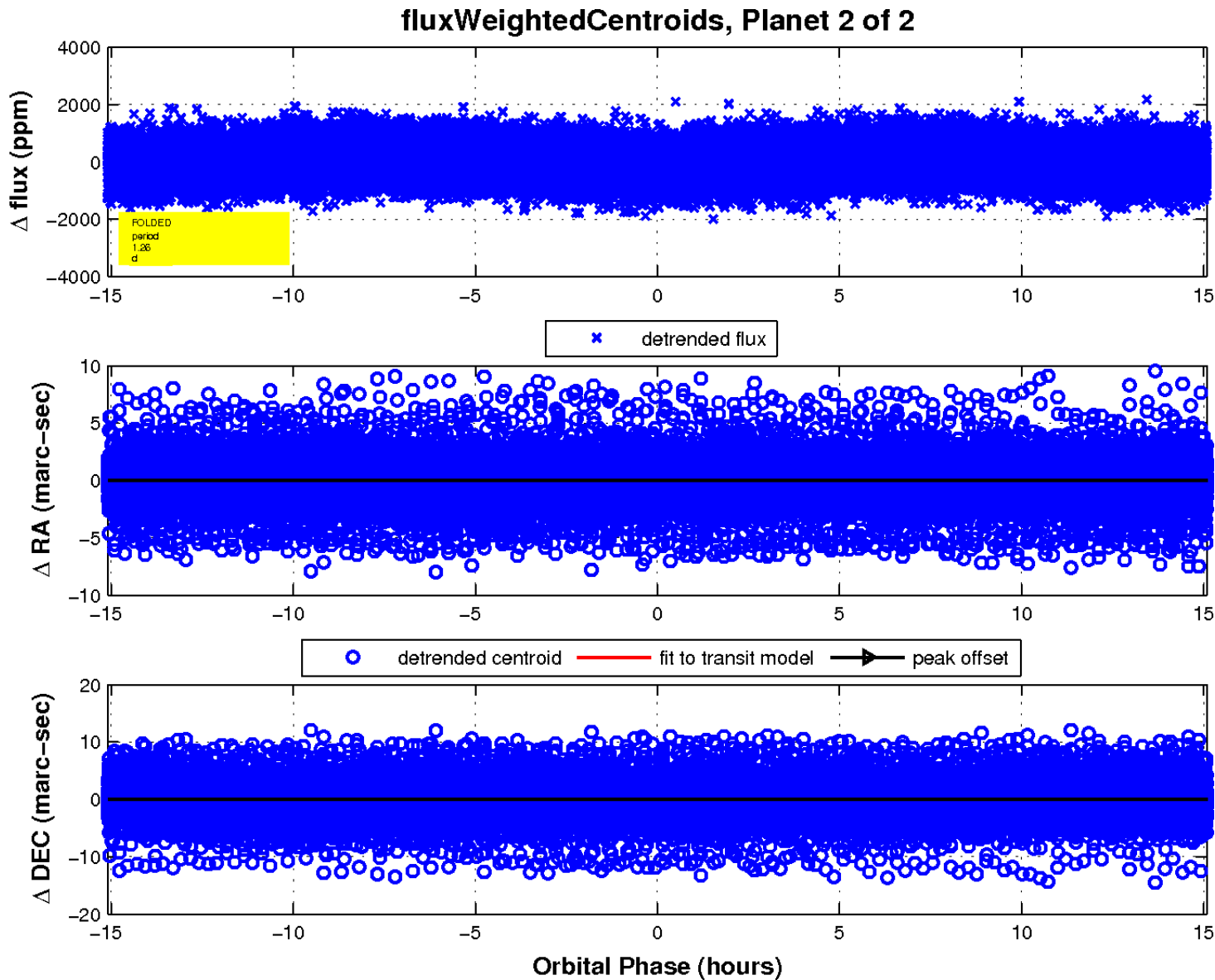
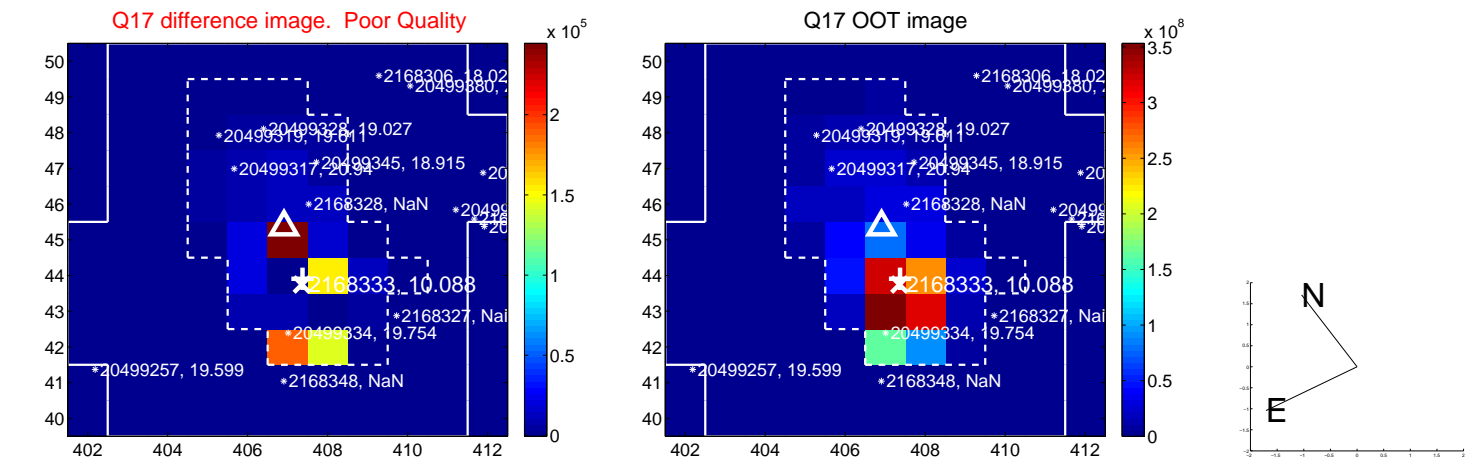
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

