

KIC 008233072

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})
008233072-01	OBS	No	0.769071	132.164668	55.2	1.733	11.0	11.1	2.06	7011	1.78	26165.24
008233072-02	OBS	No	0.512713	131.956111	34.9	4.301	9.3	8.1	2.06	7011	1.34	44927.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233072-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008233072-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

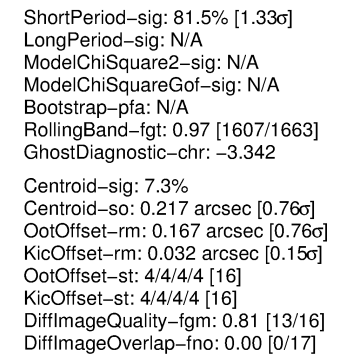
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

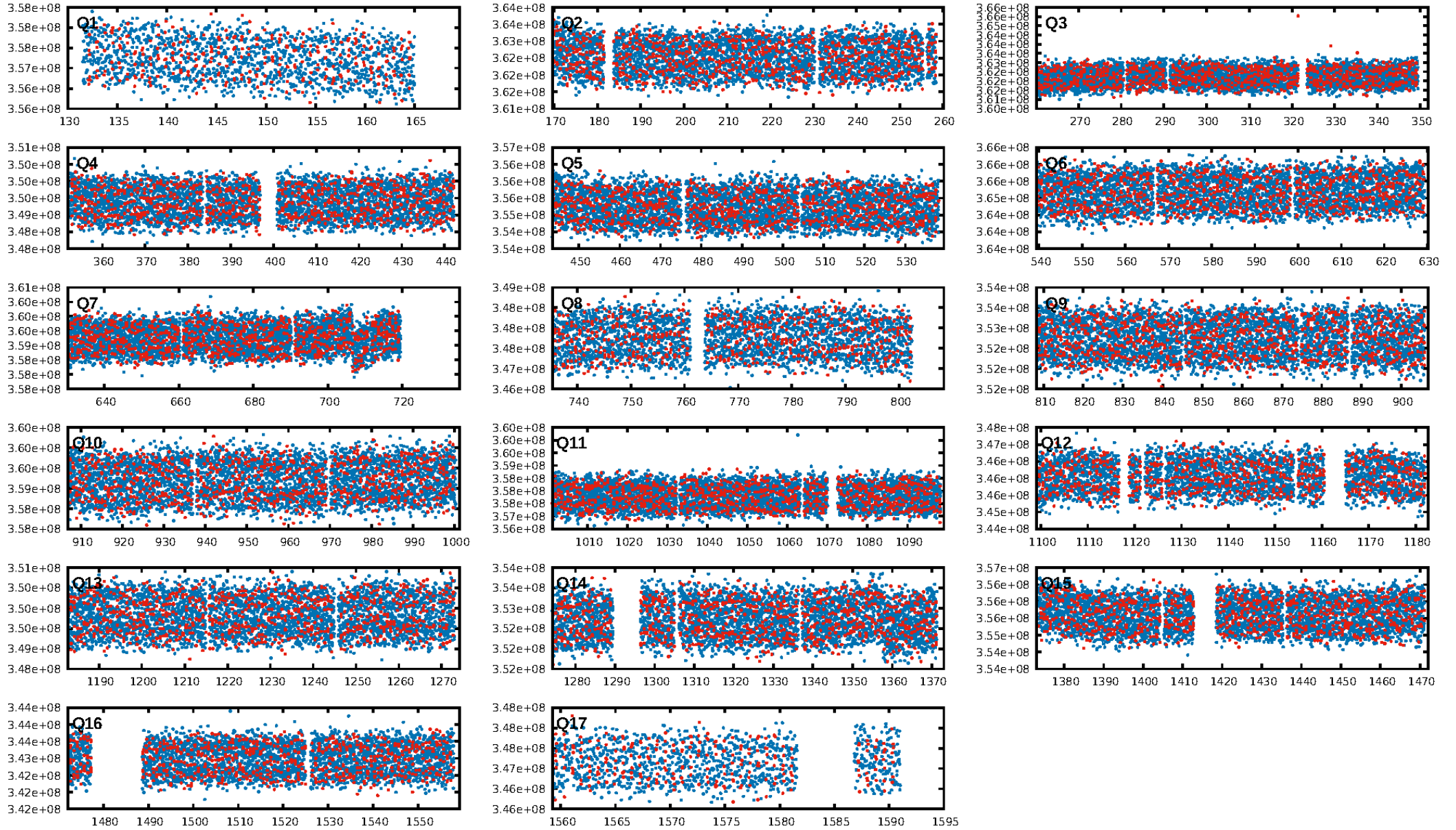
Ephemeris Match Information For 008233072-01

No Significant Match Found

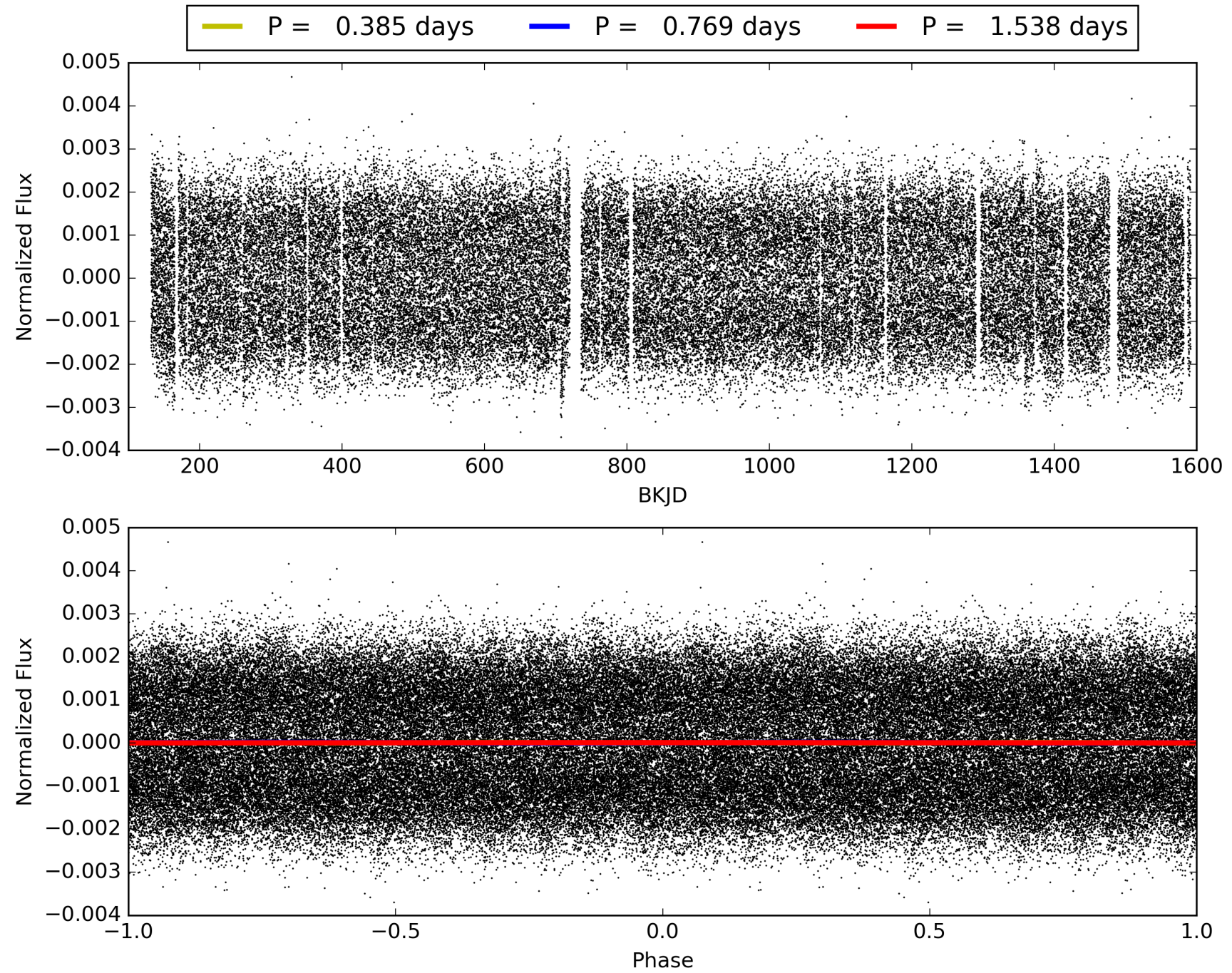
KIC: 8233072 Candidate: 1 of 2 Period: 0.769 d



TCE 008233072-01, PDC Light Curves

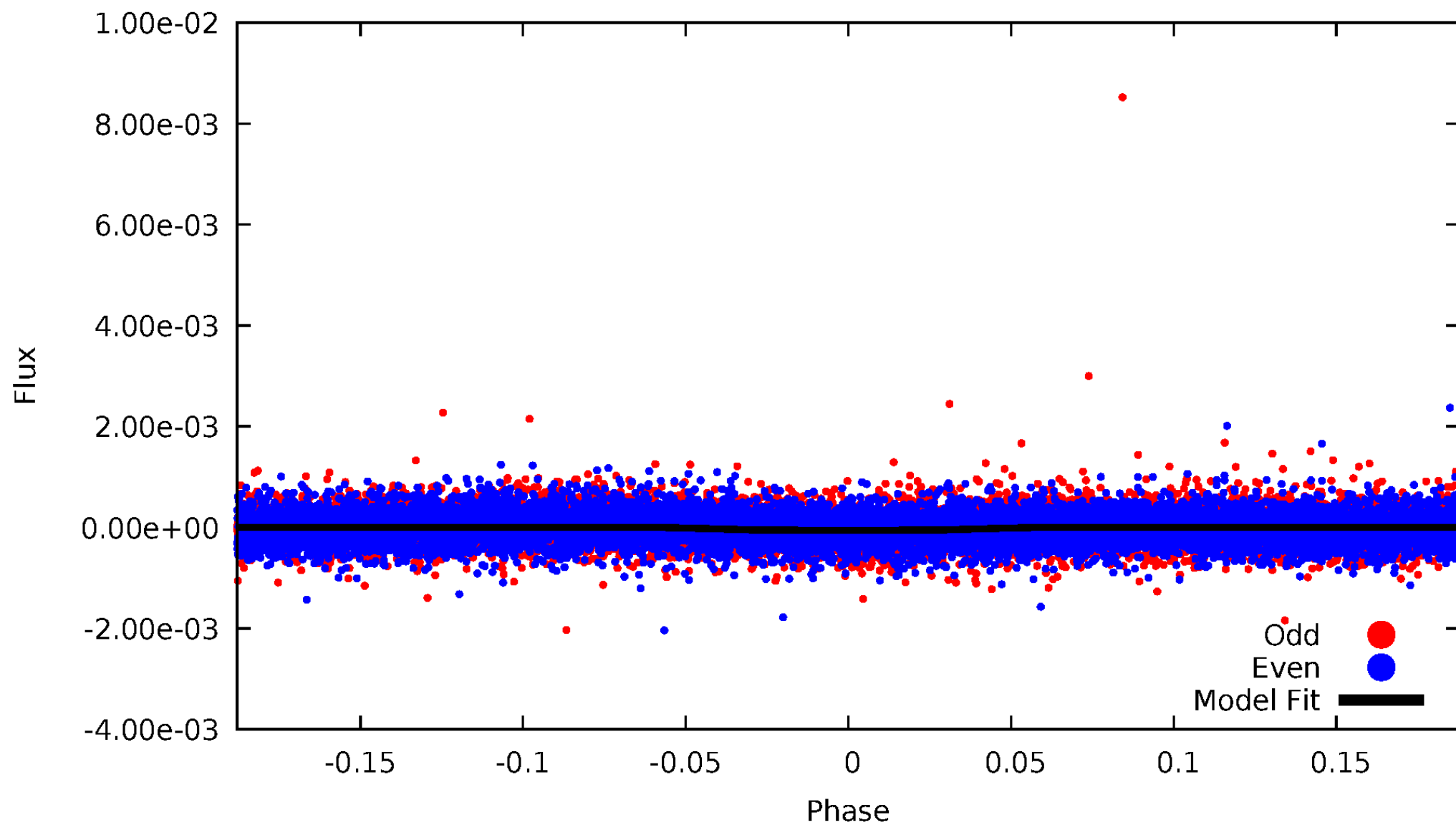


TCE 008233072-01



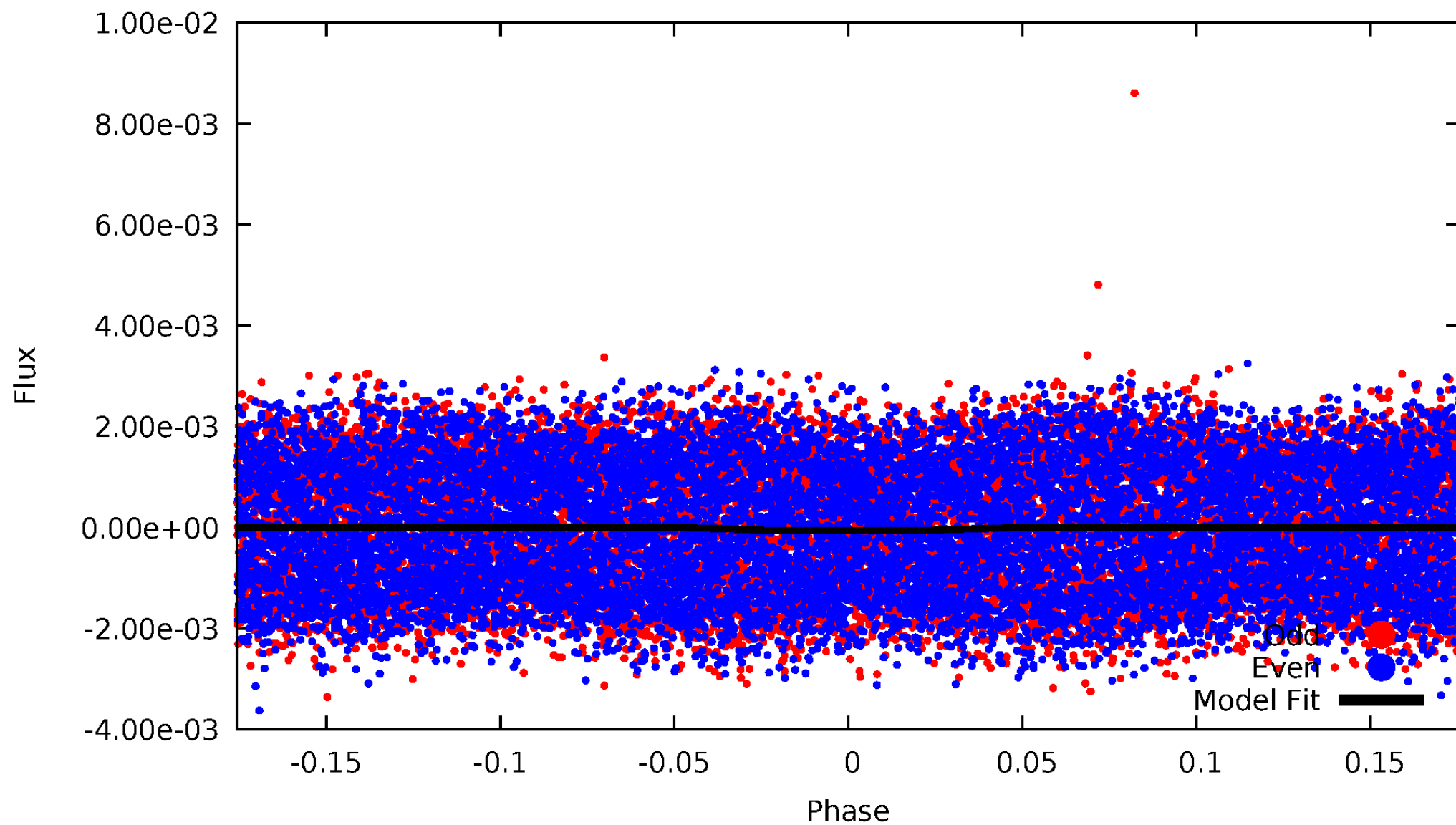
DV Odd/Even

TCE 008233072-01



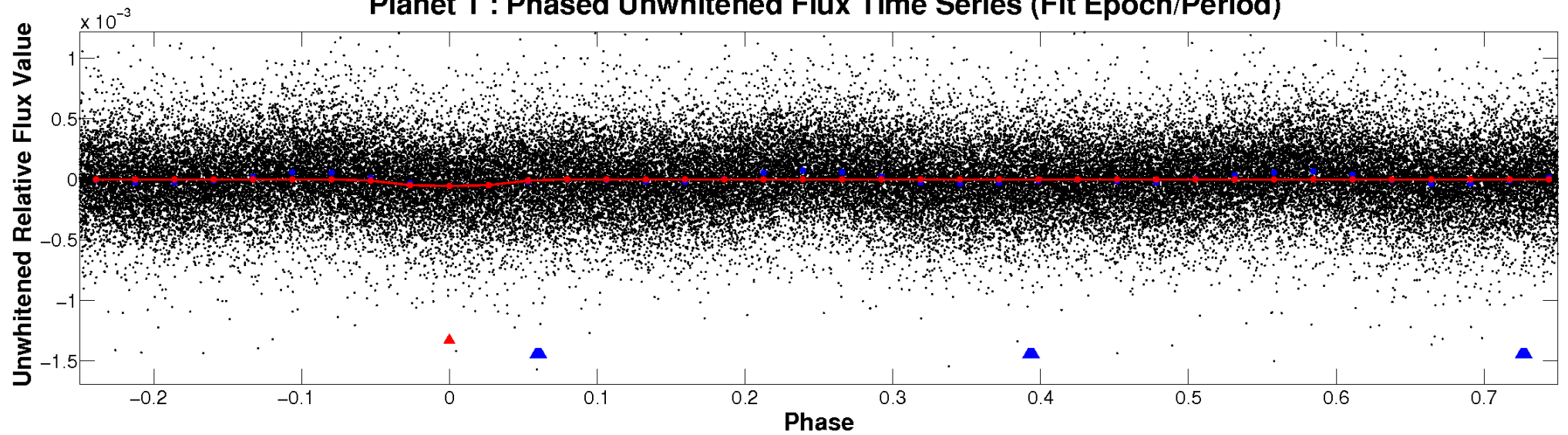
ALT Odd/Even

TCE 008233072-01

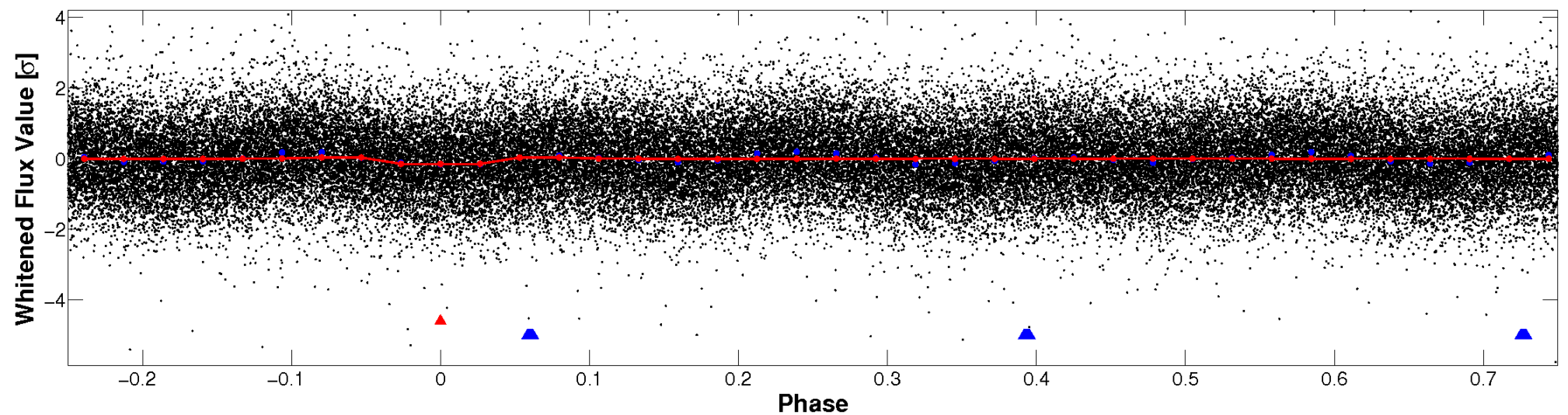


Non-Whitened Vs. Whitened Light Curve

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

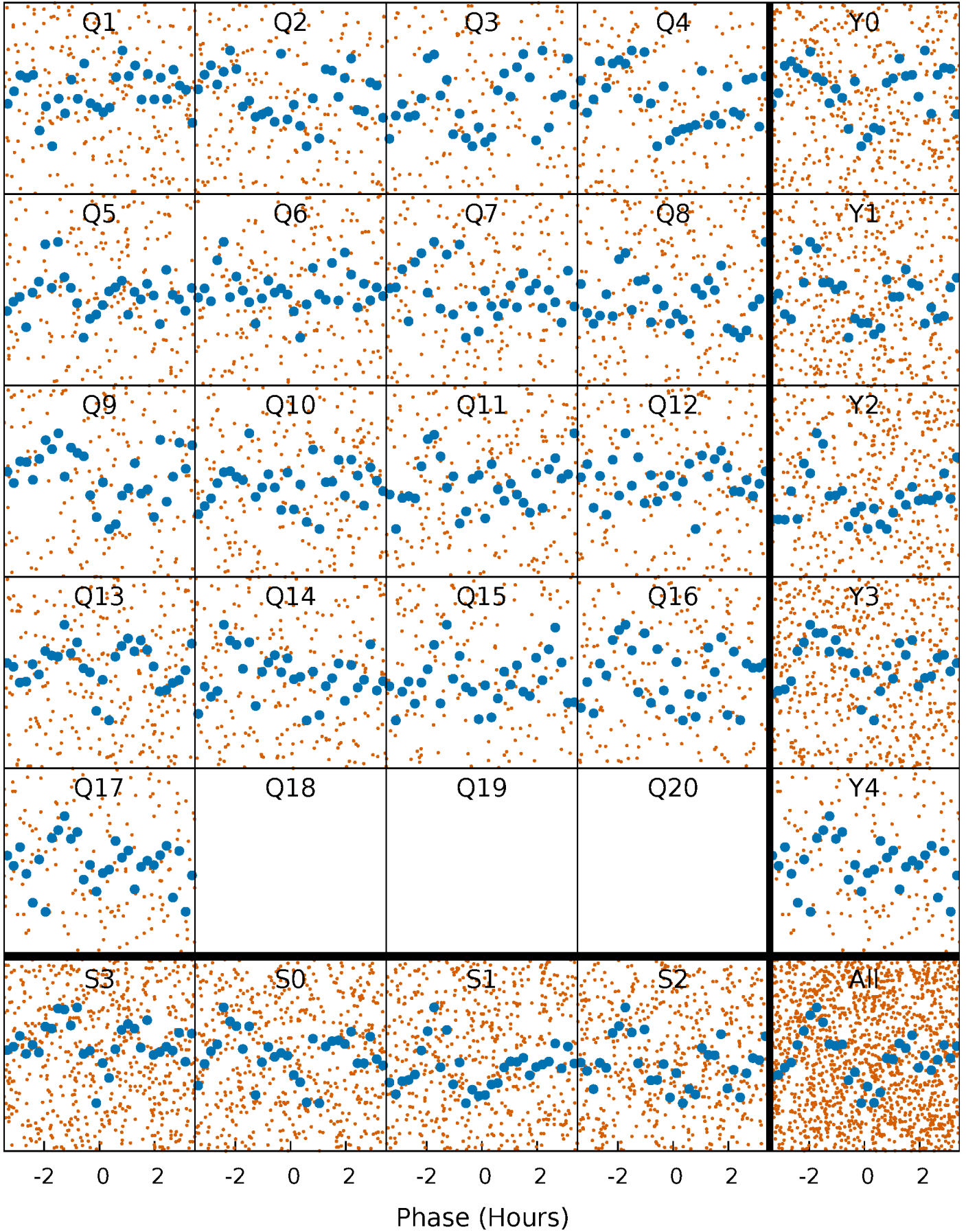


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



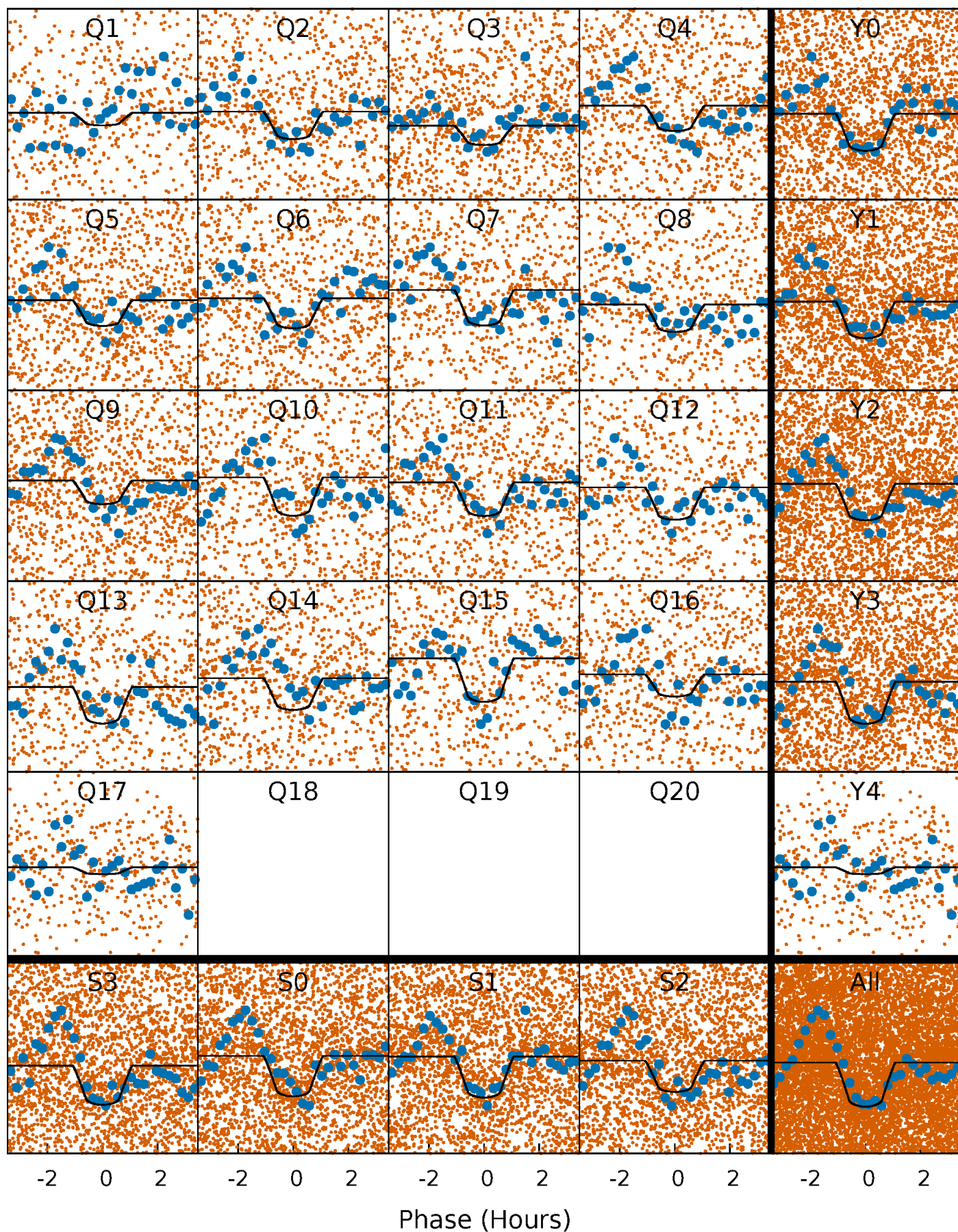
PDC Quarter-Phased Transit Curves

TCE 008233072-01 P= 0.769071 Days $T_0=132.164668$ (BKJD)



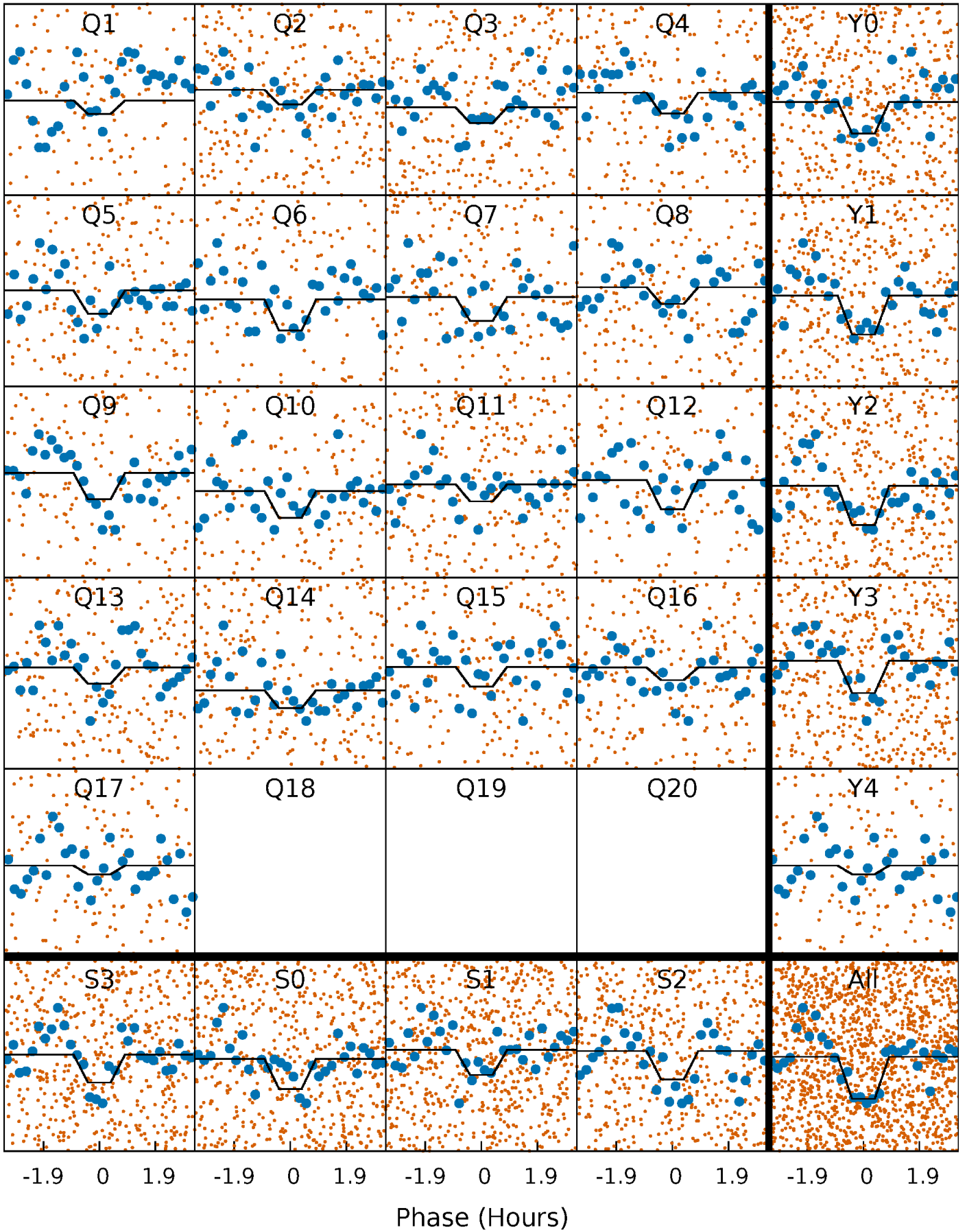
DV Quarter-Phased Transit Curves

TCE 008233072-01 P= 0.769071 Days $T_0=132.164668$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

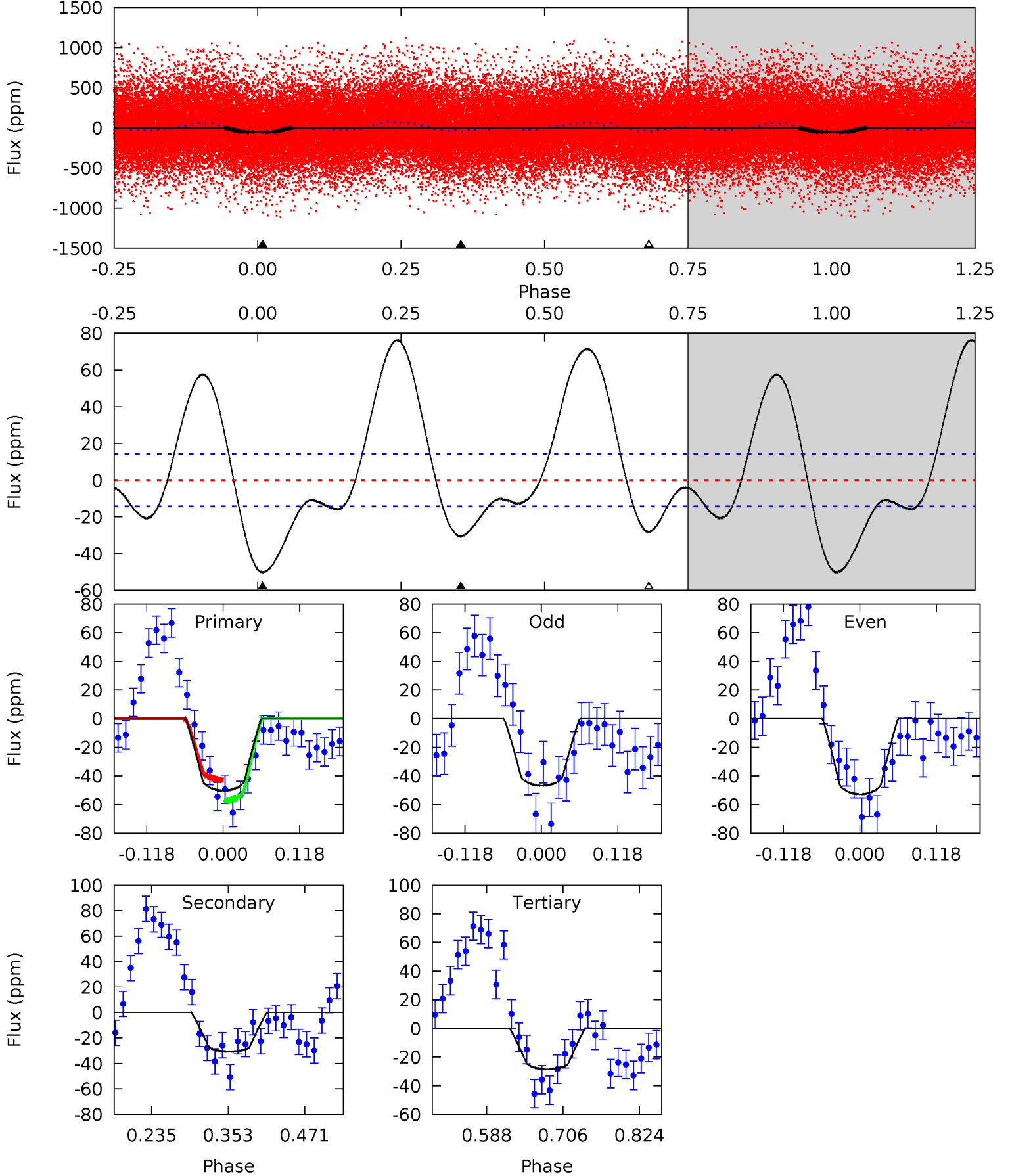
TCE 008233072-01 P= 0.769075 Days $T_0=132.165277$ (BKJD)



DV Model-Shift Uniqueness Test

008233072-01, P = 0.769071 Days, E = 131.395597 Days

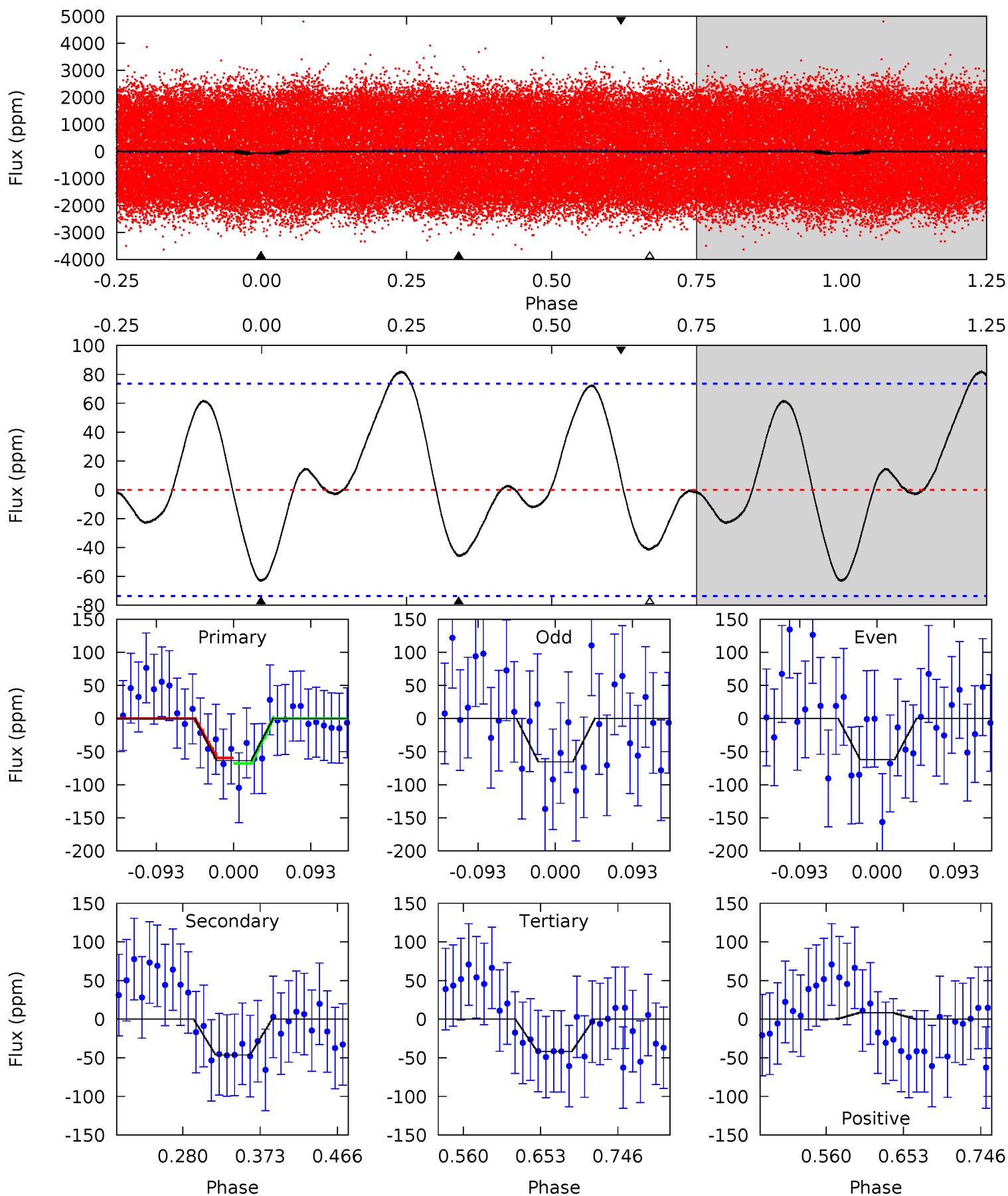
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	9.73	8.97	0	4.53	1.56	9.98	6.92	15.9	0.75	9.73	0.95	1.14	0.60	2.31



Alt Model-Shift Uniqueness Test

008233072-01, P = 0.769075 Days, E = 131.396202 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.96	2.88	2.61	0.51	4.58	1.68	2.11	1.36	3.45	0.28	2.37	0.11	0.73	0.56	0.25



Stellar Parameters For KIC 008233072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7011^{+74}_{-84}	$3.982^{+0.159}_{-0.116}$	$-0.200^{+0.150}_{-0.150}$	$2.063^{+0.413}_{-0.454}$	$1.487^{+0.130}_{-0.145}$	$0.239^{+0.204}_{-0.087}$
	+1%/-1%	+4%/-3%	+75%/-75%	+20%/-22%	+9%/-10%	+86%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008233072-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-31 ± 3	$1.75^{+0.53}_{-0.48}$	4524^{+211}_{-226}	5578^{+1099}_{-666}	$1.939^{+1.732}_{-0.798}$
Alt.	-46 ± 16	$1.80^{+0.51}_{-0.52}$	4520^{+207}_{-236}	6173^{+1430}_{-974}	$2.715^{+3.019}_{-1.330}$

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

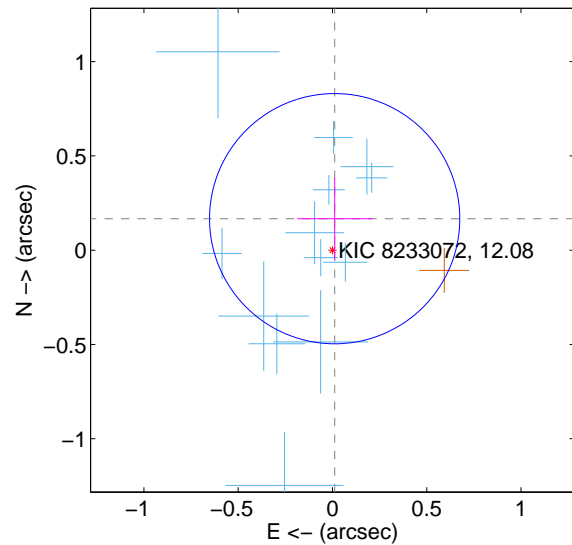
Supplemental centroid analysis for 008233072-01. Kepler magnitude: 12.08. Transit SNR 11.15

There are 13 quarters with good PRF difference image offsets

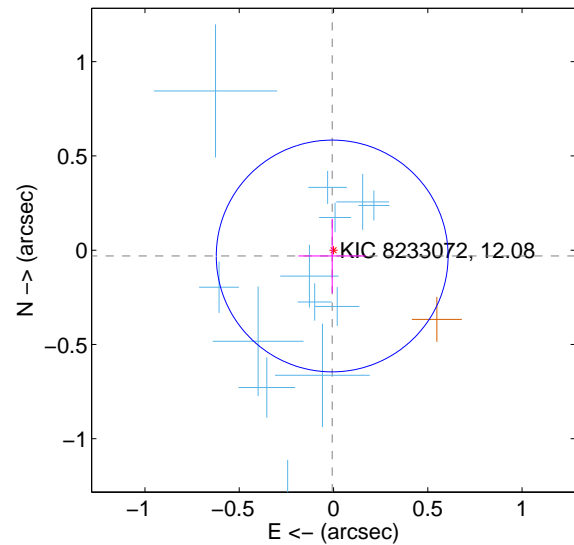
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.167 ± 0.221	0.76	-0.012 ± 0.199	0.167 ± 0.218
PRF-fit source offset from KIC position	0.032 ± 0.205	0.15	0.007 ± 0.180	-0.031 ± 0.198
photometric centroid source offset	0.22 ± 0.28	0.76	-0.21 ± 0.28	0.05 ± 0.27

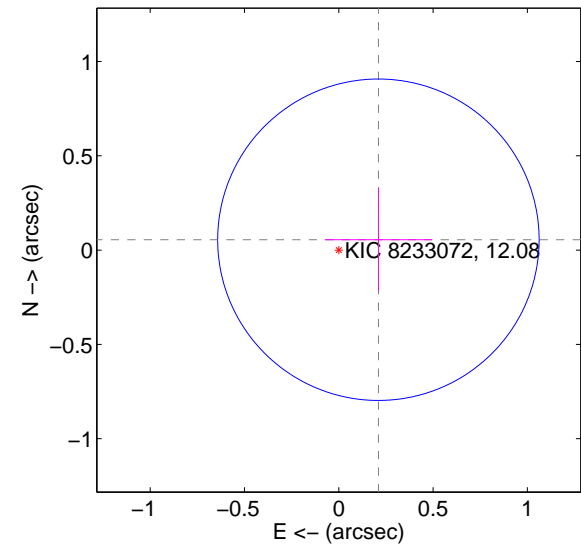
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

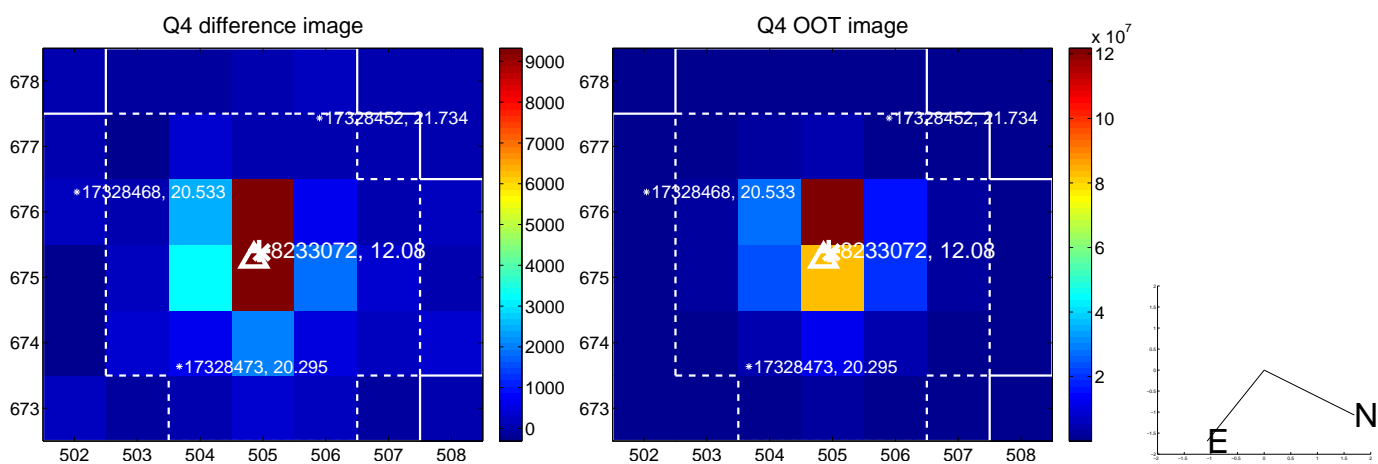
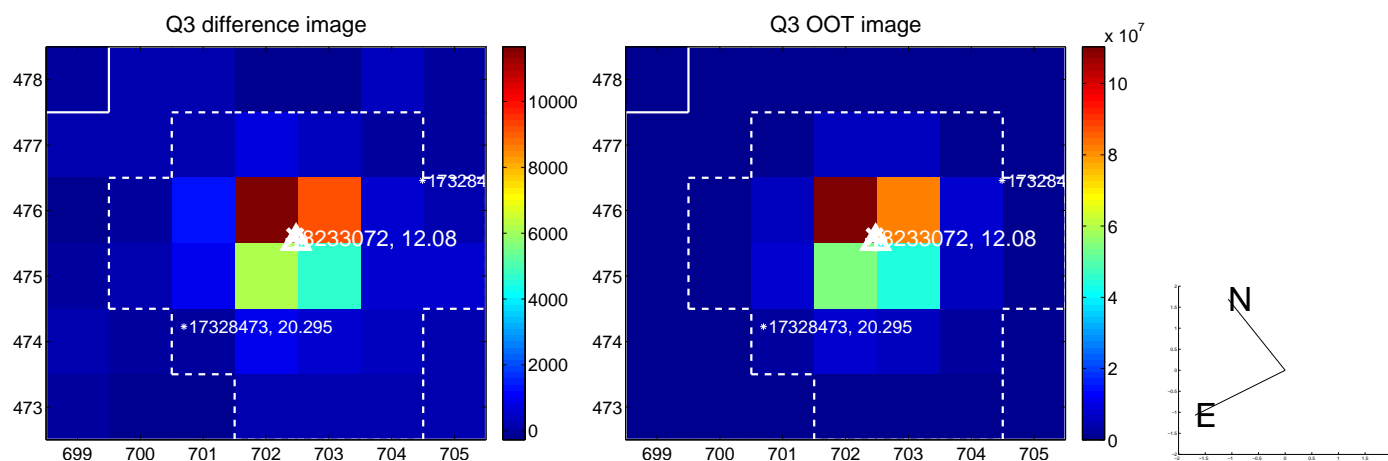
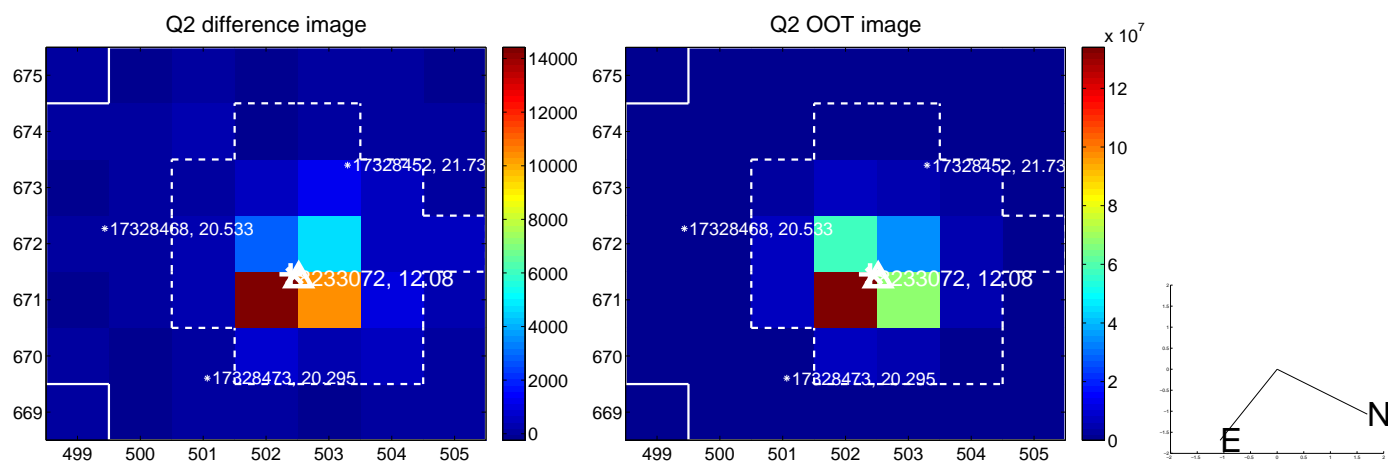
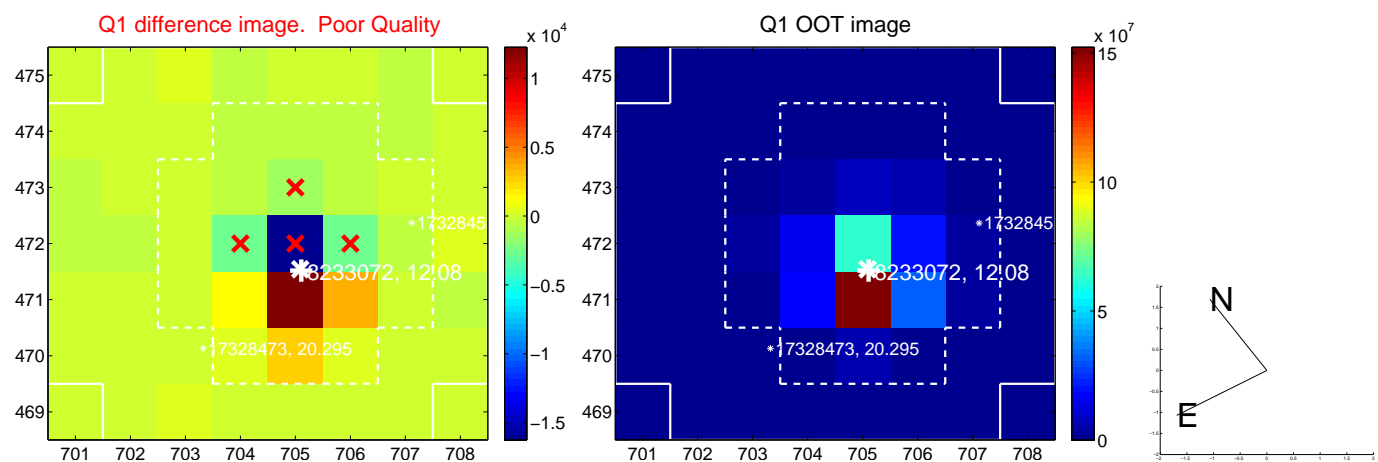


offset from photometric centroids

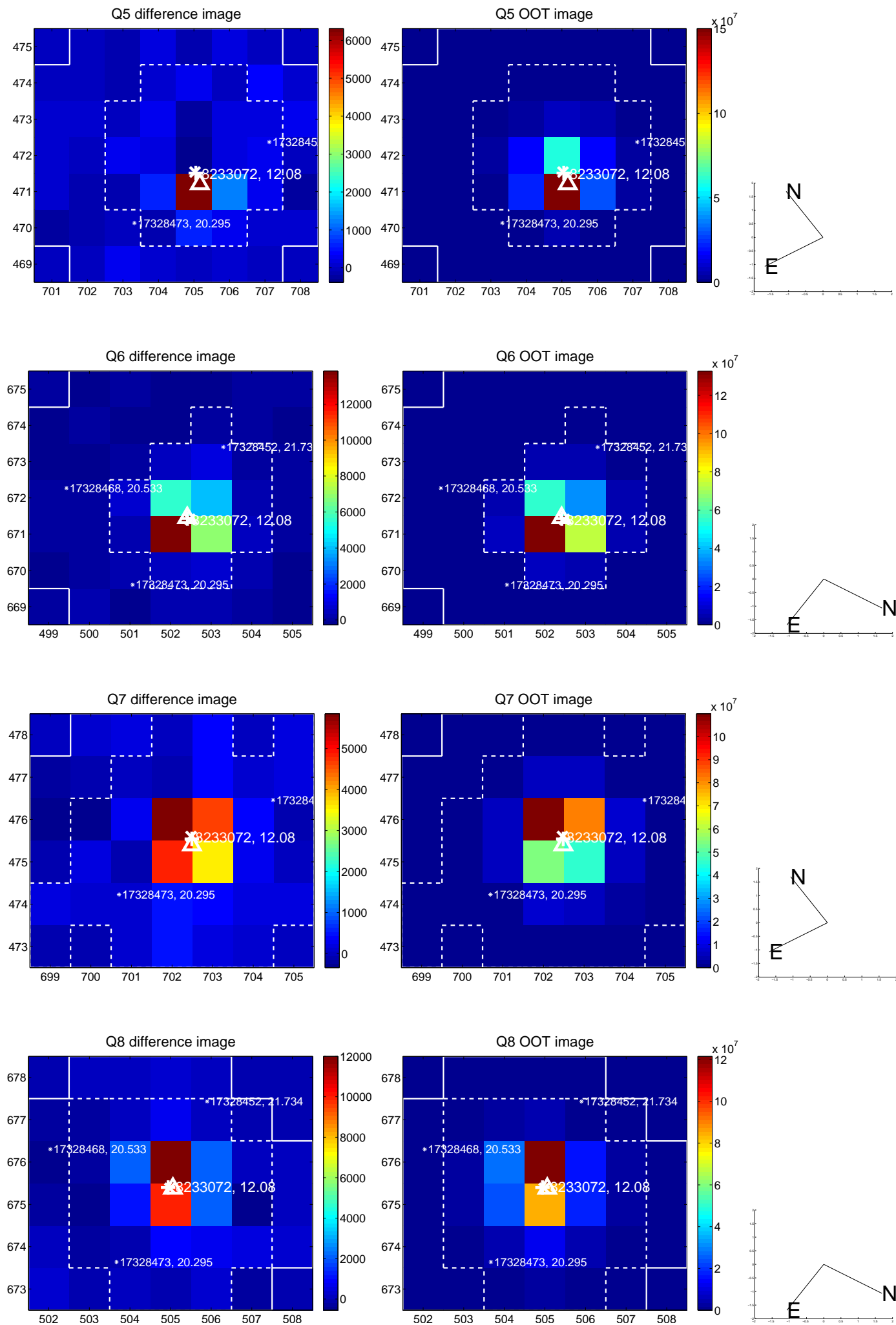


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

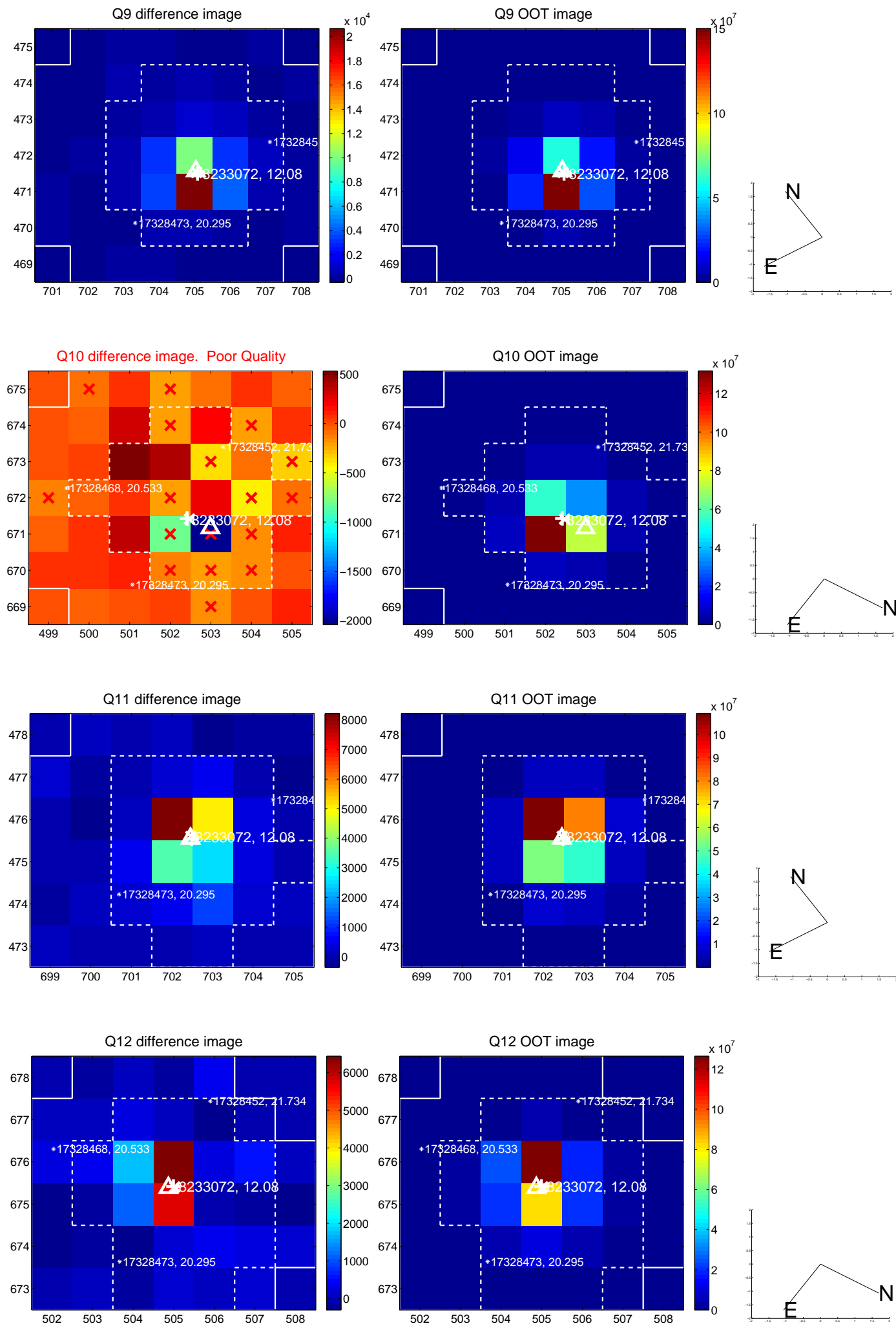
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



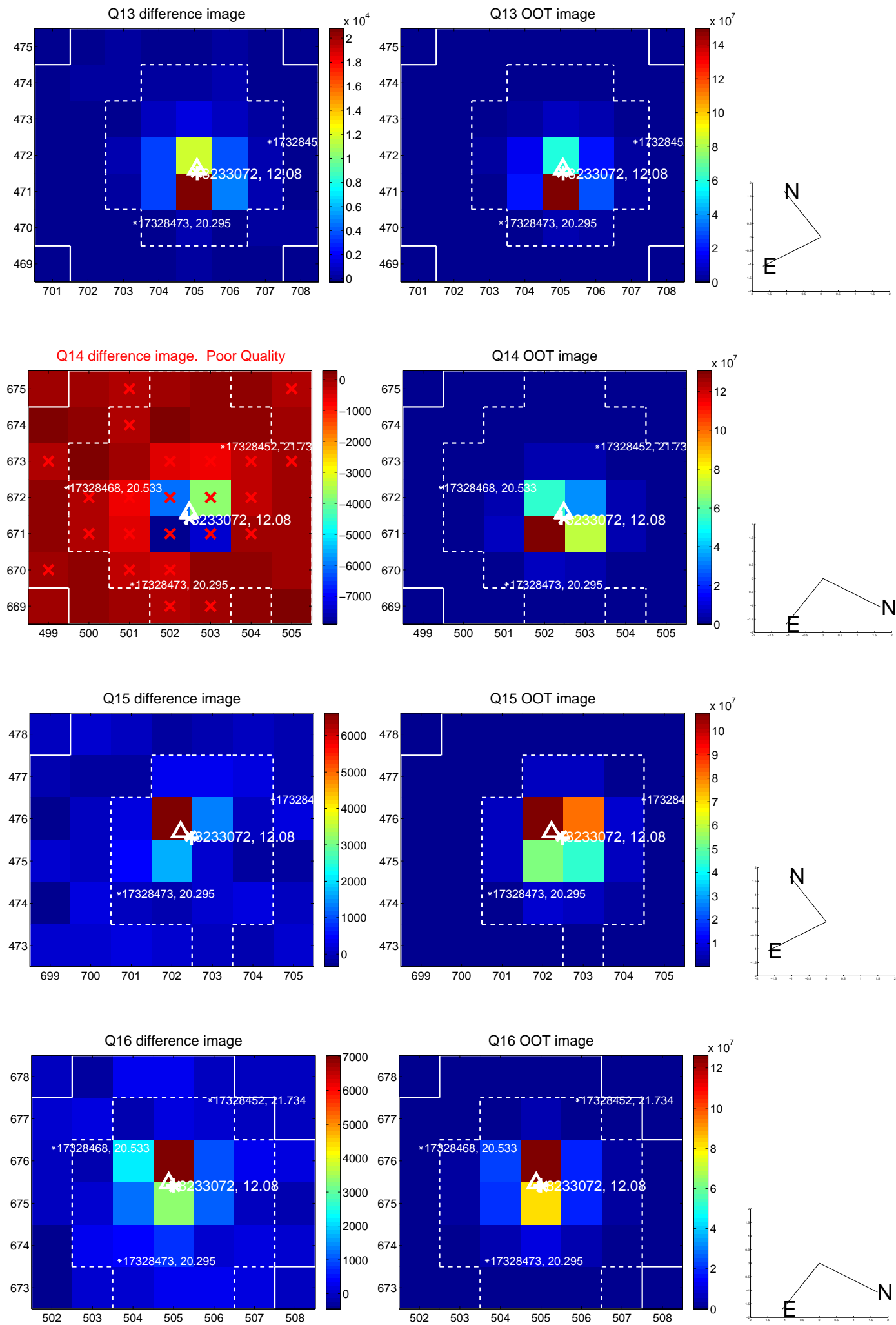
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

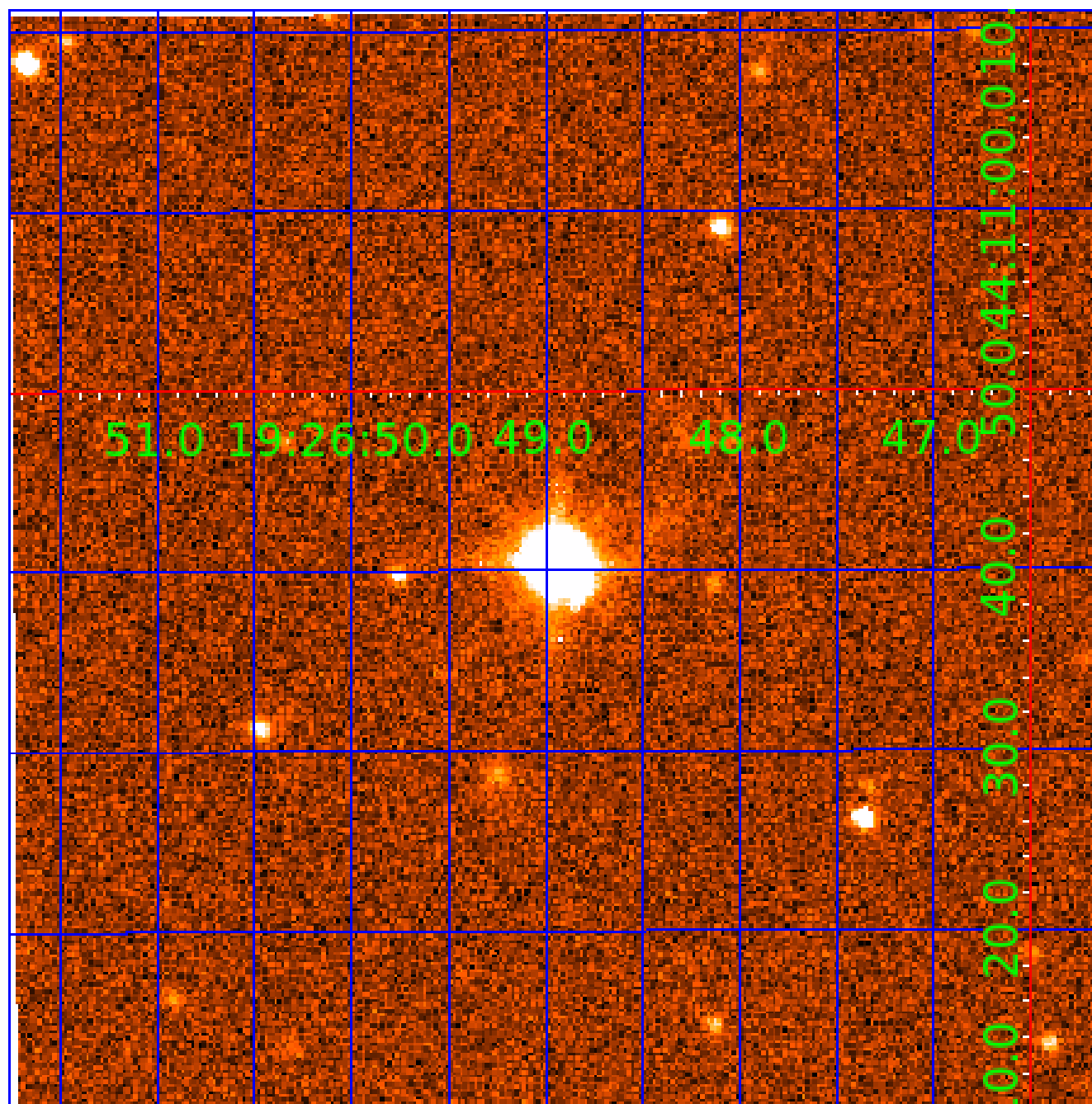


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008233072

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})
008233072-01	OBS	No	0.769071	132.164668	55.2	1.733	11.0	11.1	2.06	7011	1.78	26165.24
008233072-02	OBS	No	0.512713	131.956111	34.9	4.301	9.3	8.1	2.06	7011	1.34	44927.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008233072-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008233072-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

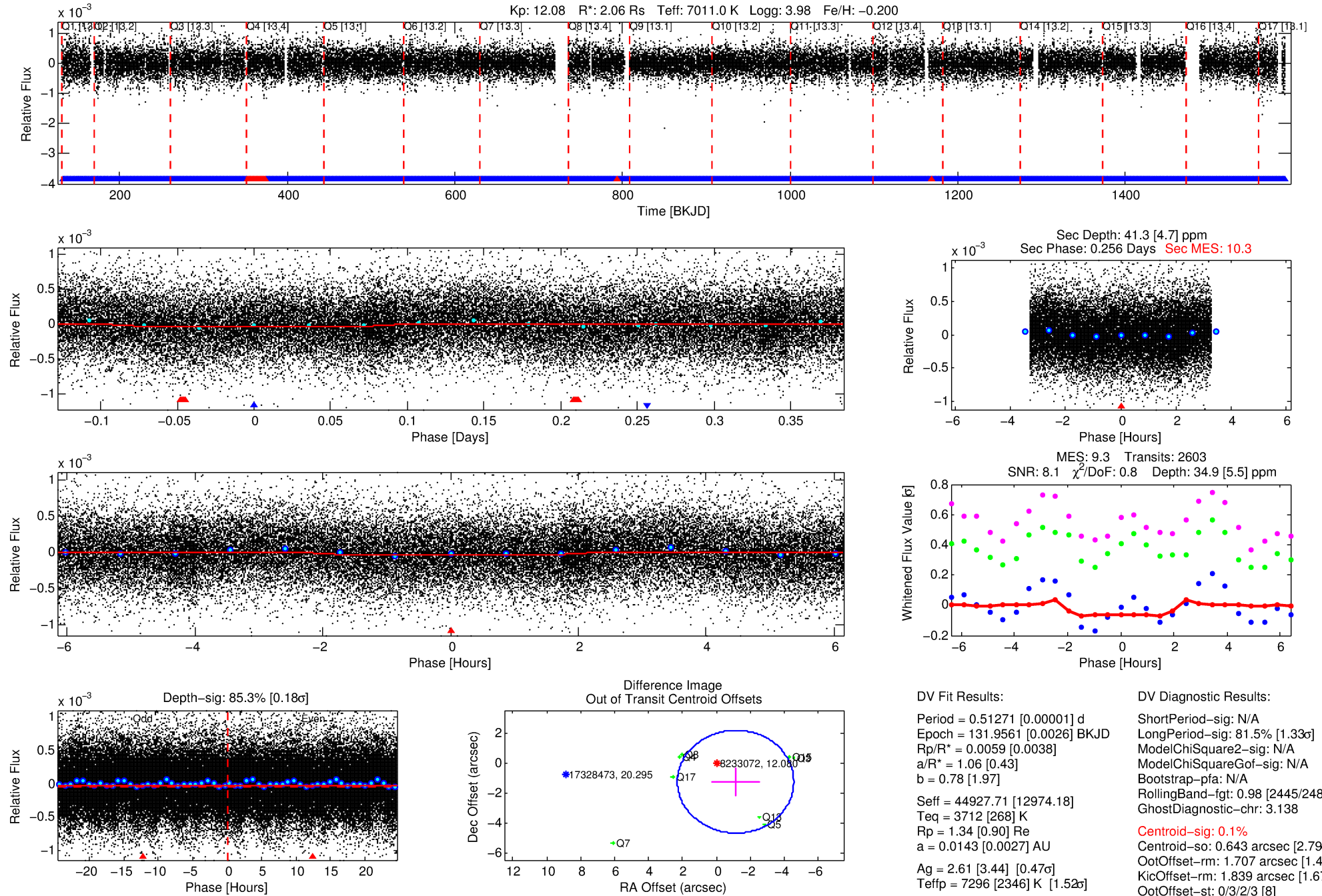
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008233072-02

No Significant Match Found

DV One-Page Summary

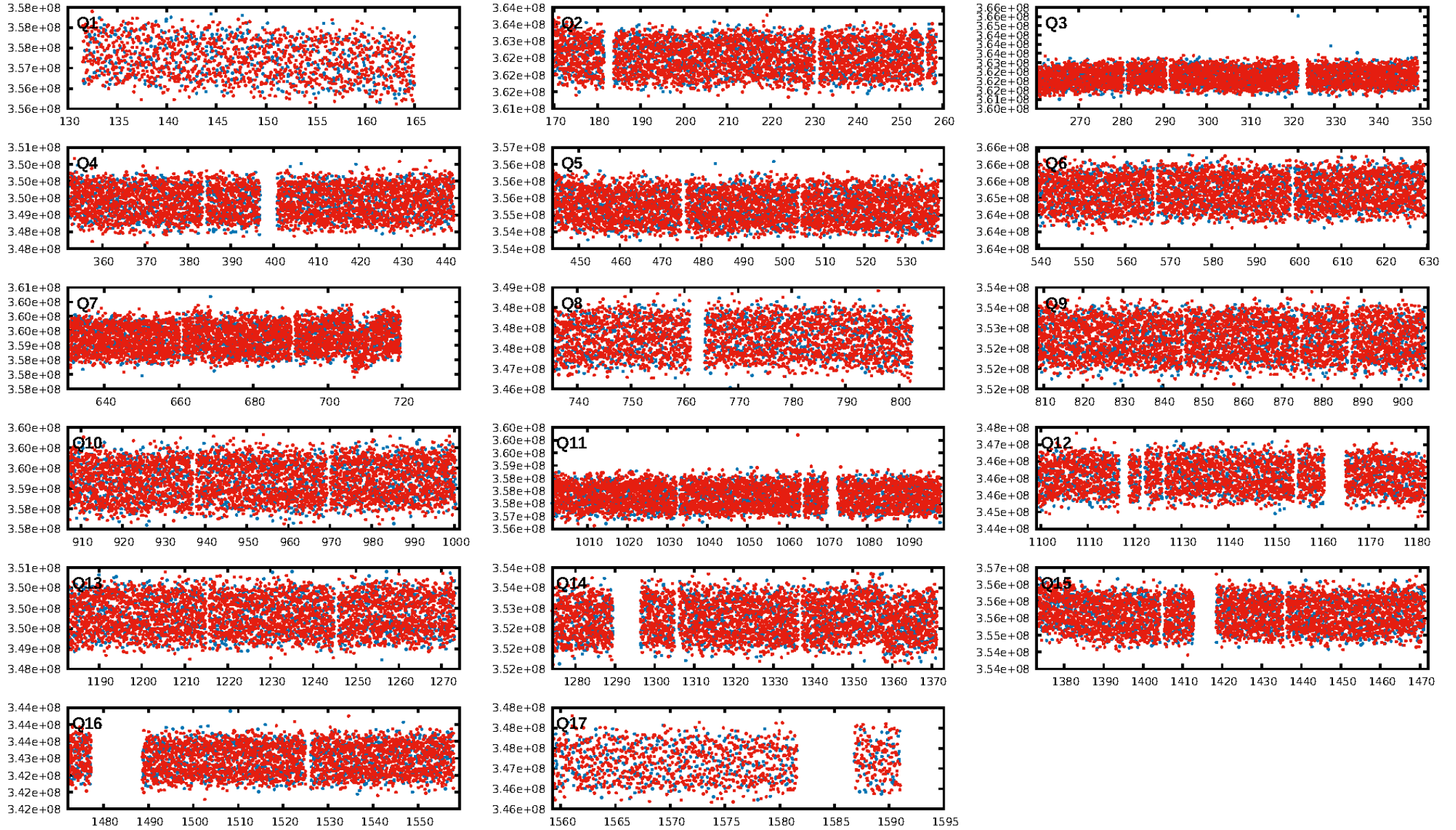
KIC: 8233072 Candidate: 2 of 2 Period: 0.513 d



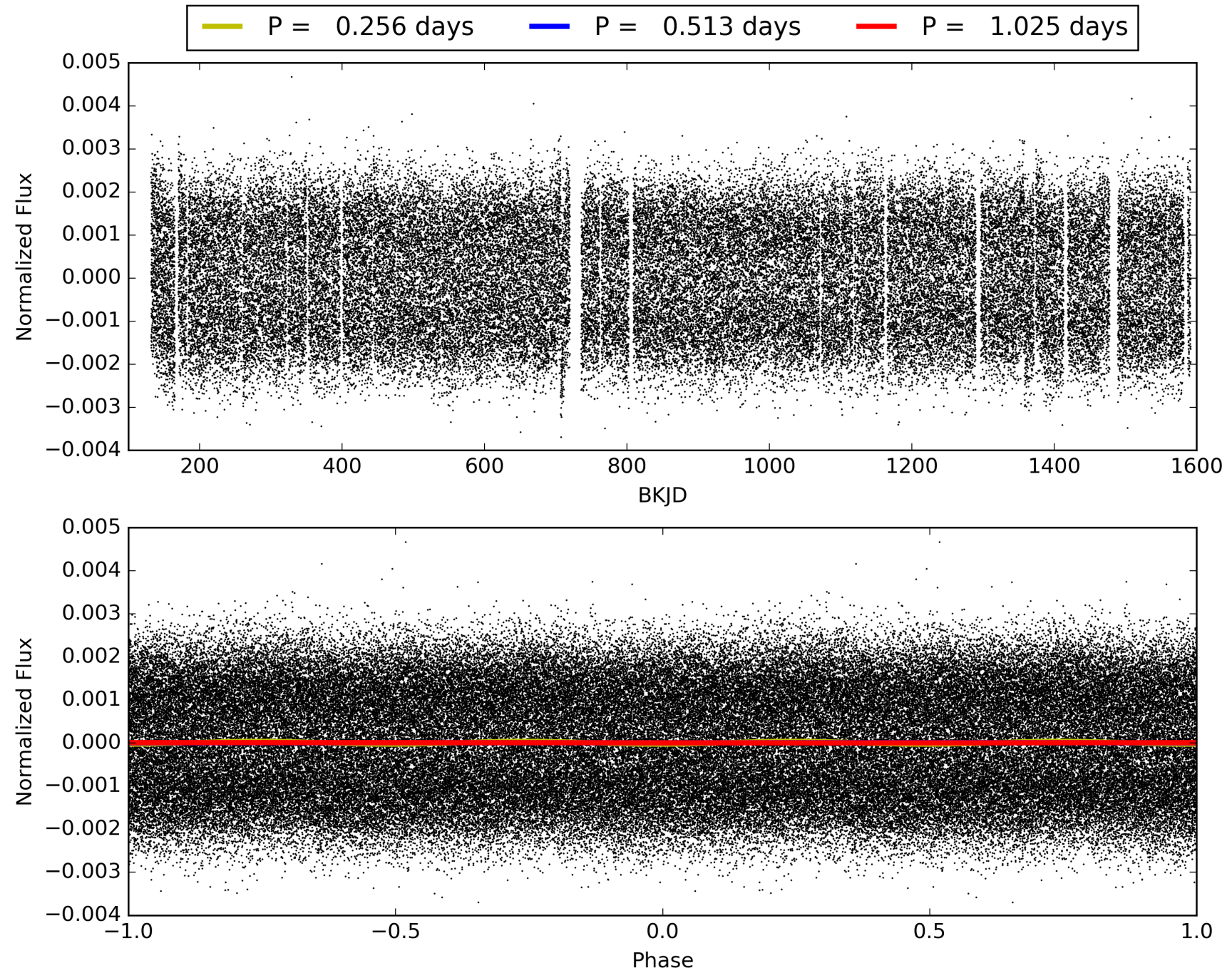
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:48:51 Z

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

TCE 008233072-02, PDC Light Curves

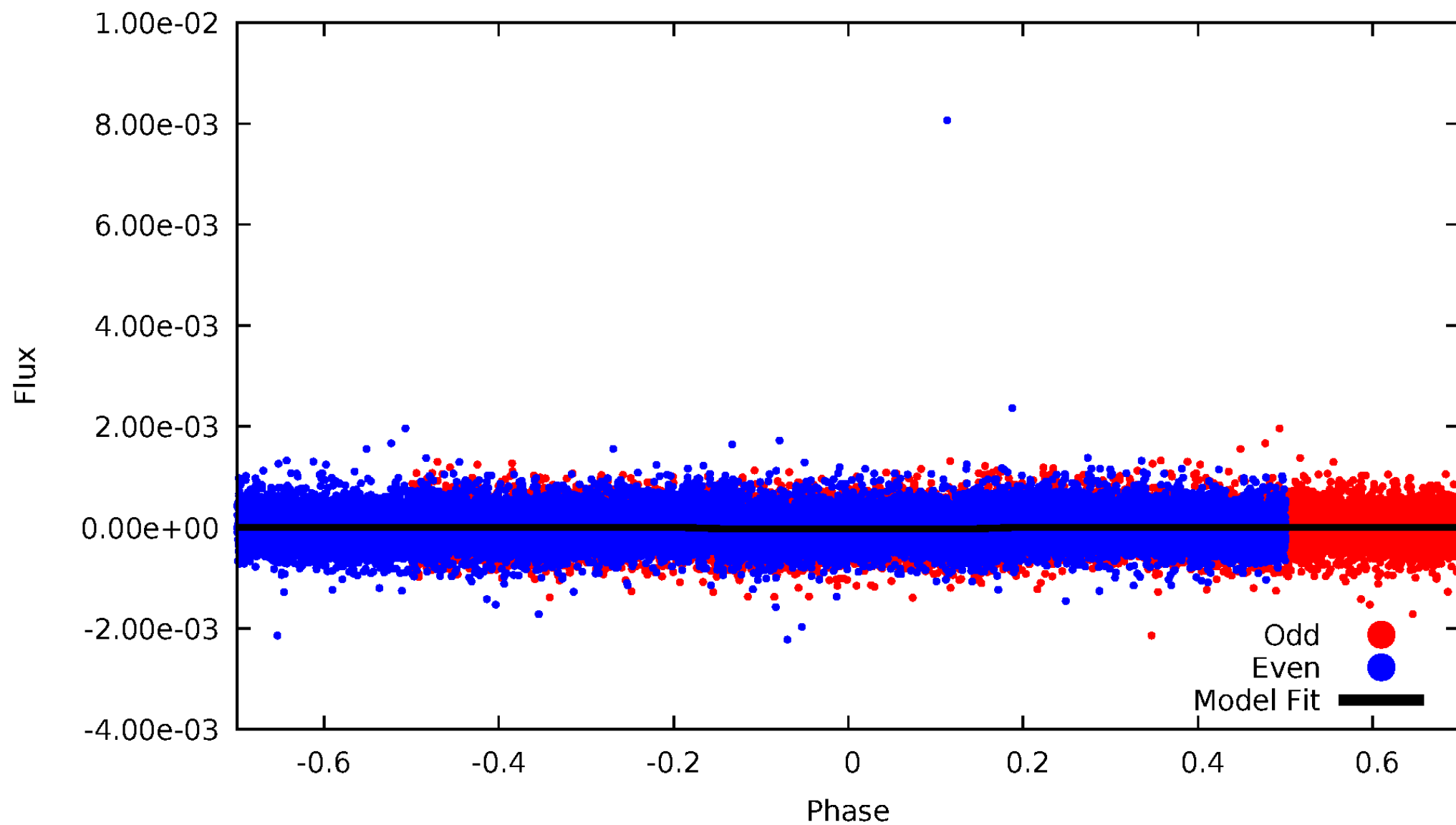


TCE 008233072-02



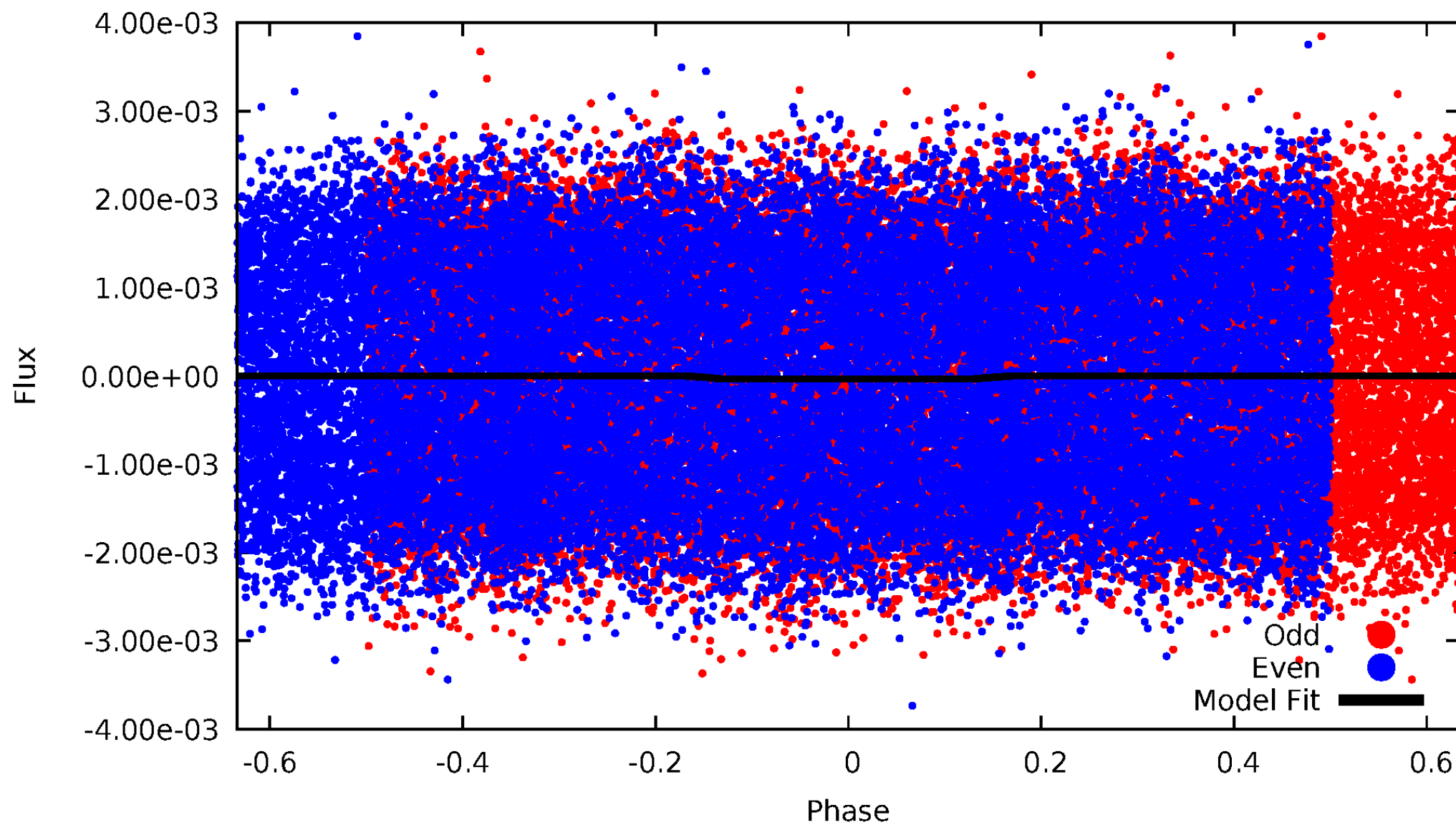
DV Odd/Even

TCE 008233072-02



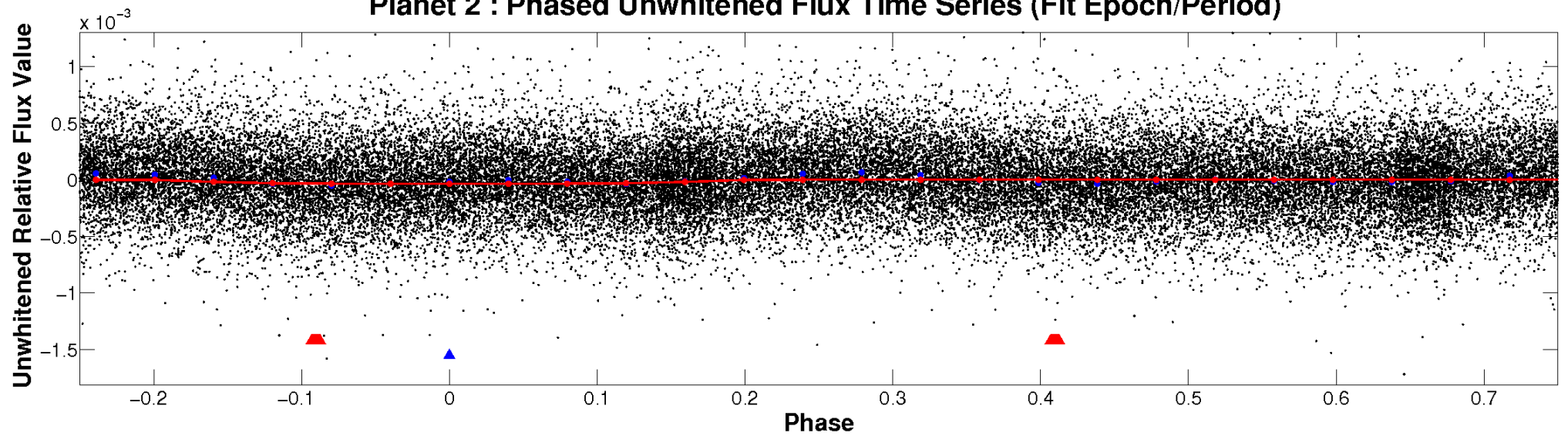
ALT Odd/Even

TCE 008233072-02

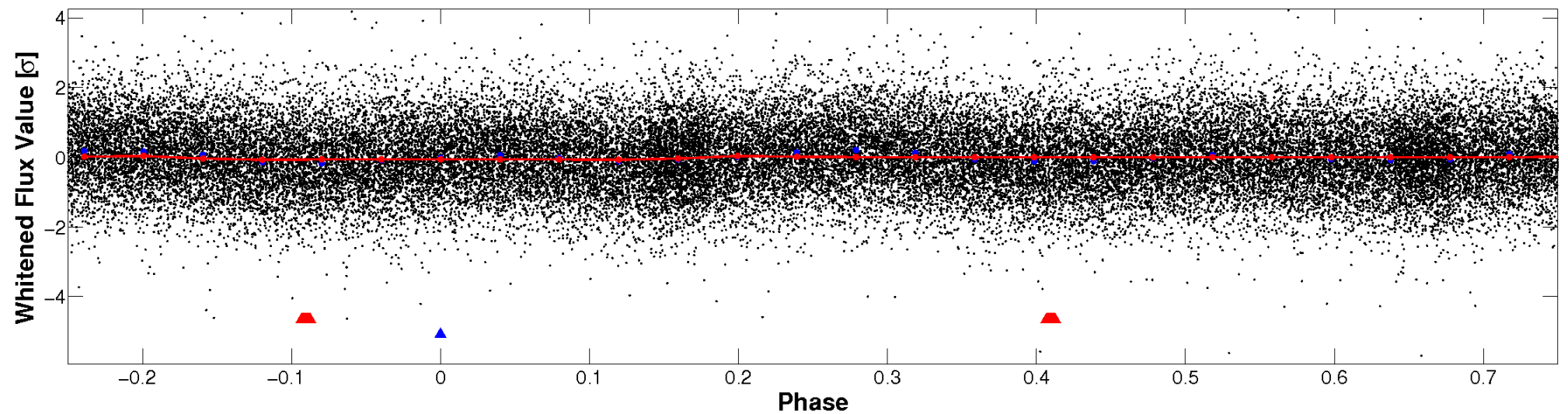


Non-Whitened Vs. Whitened Light Curve

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

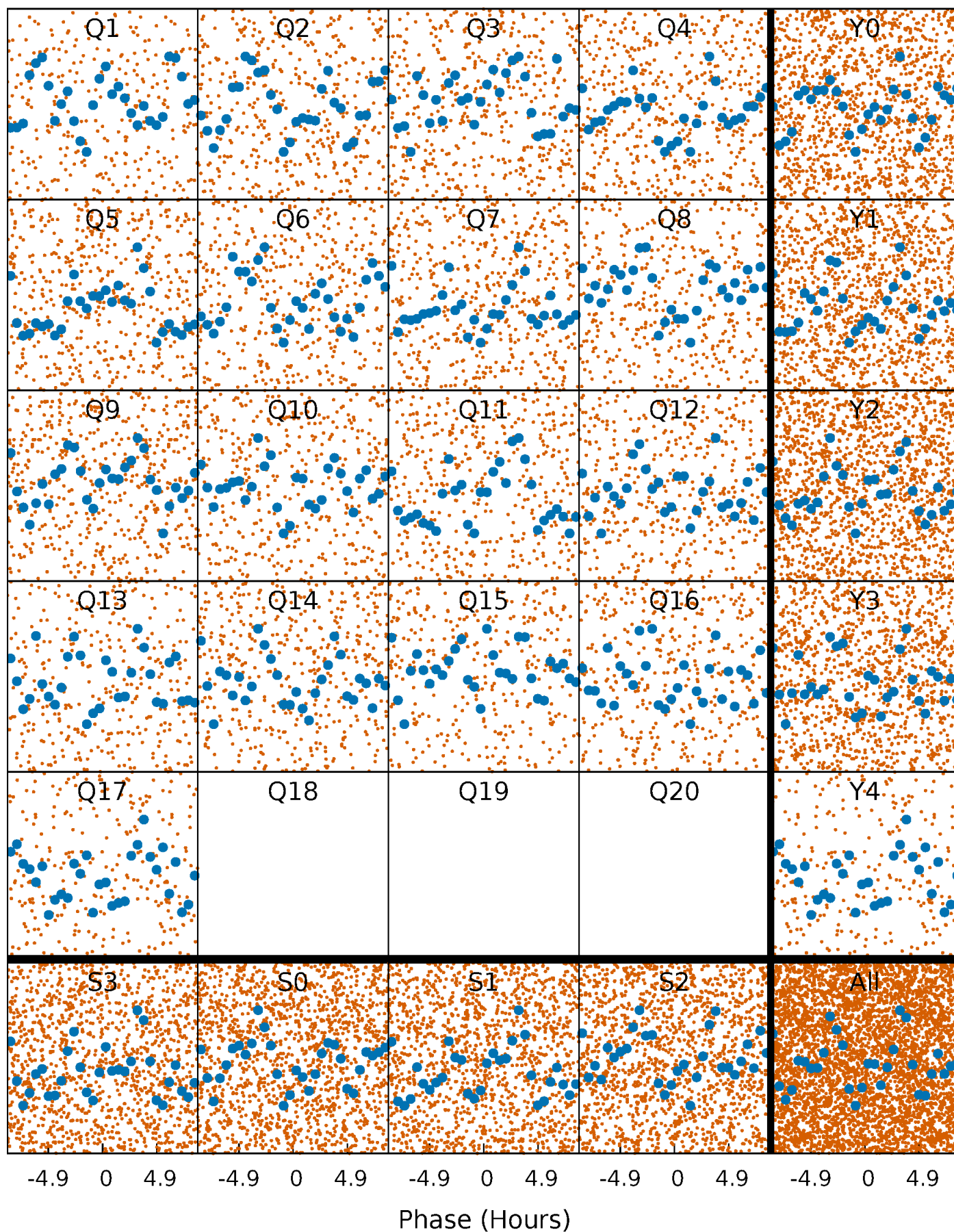


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



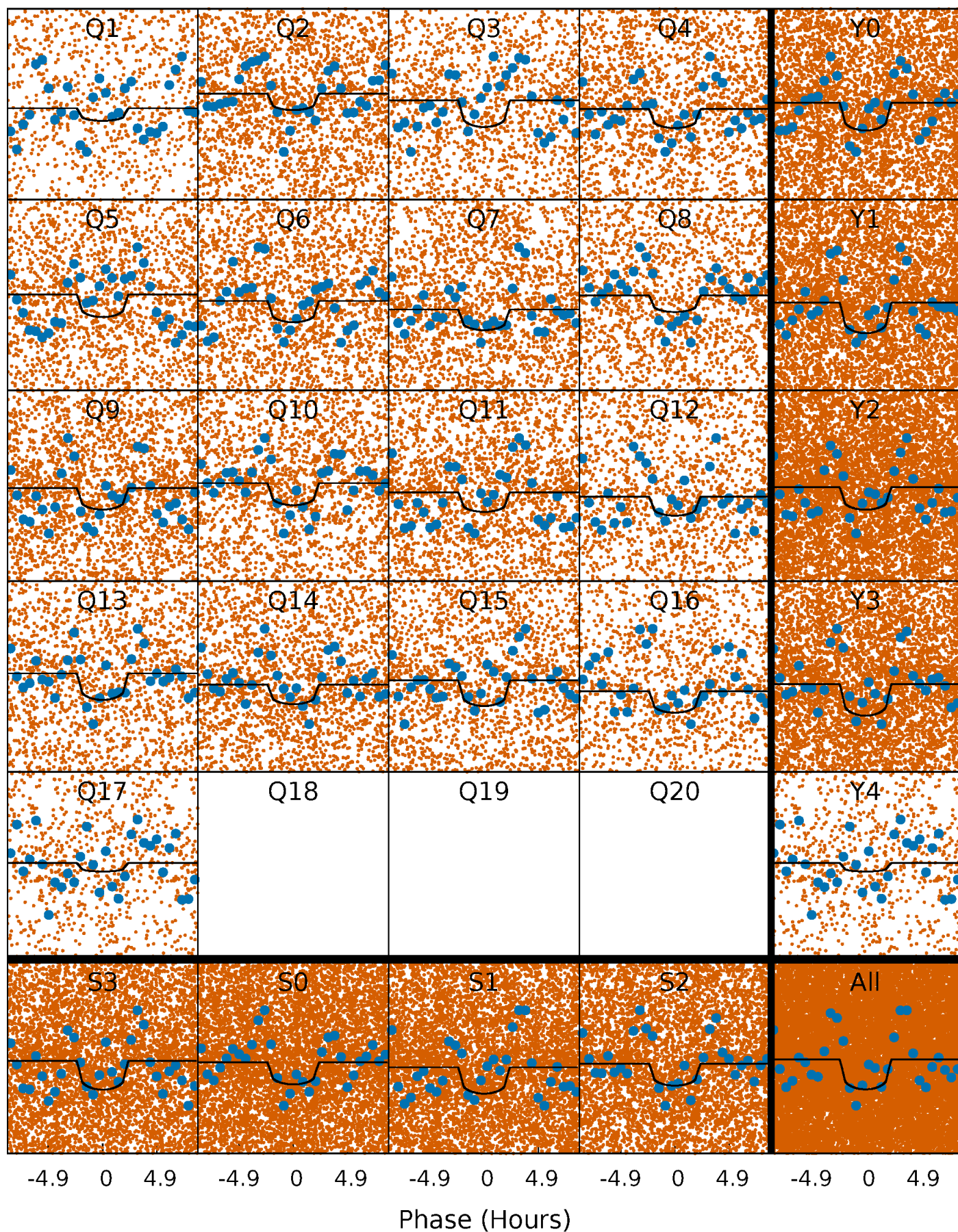
PDC Quarter-Phased Transit Curves

TCE 008233072-02 P= 0.512713 Days $T_0=131.956111$ (BKJD)



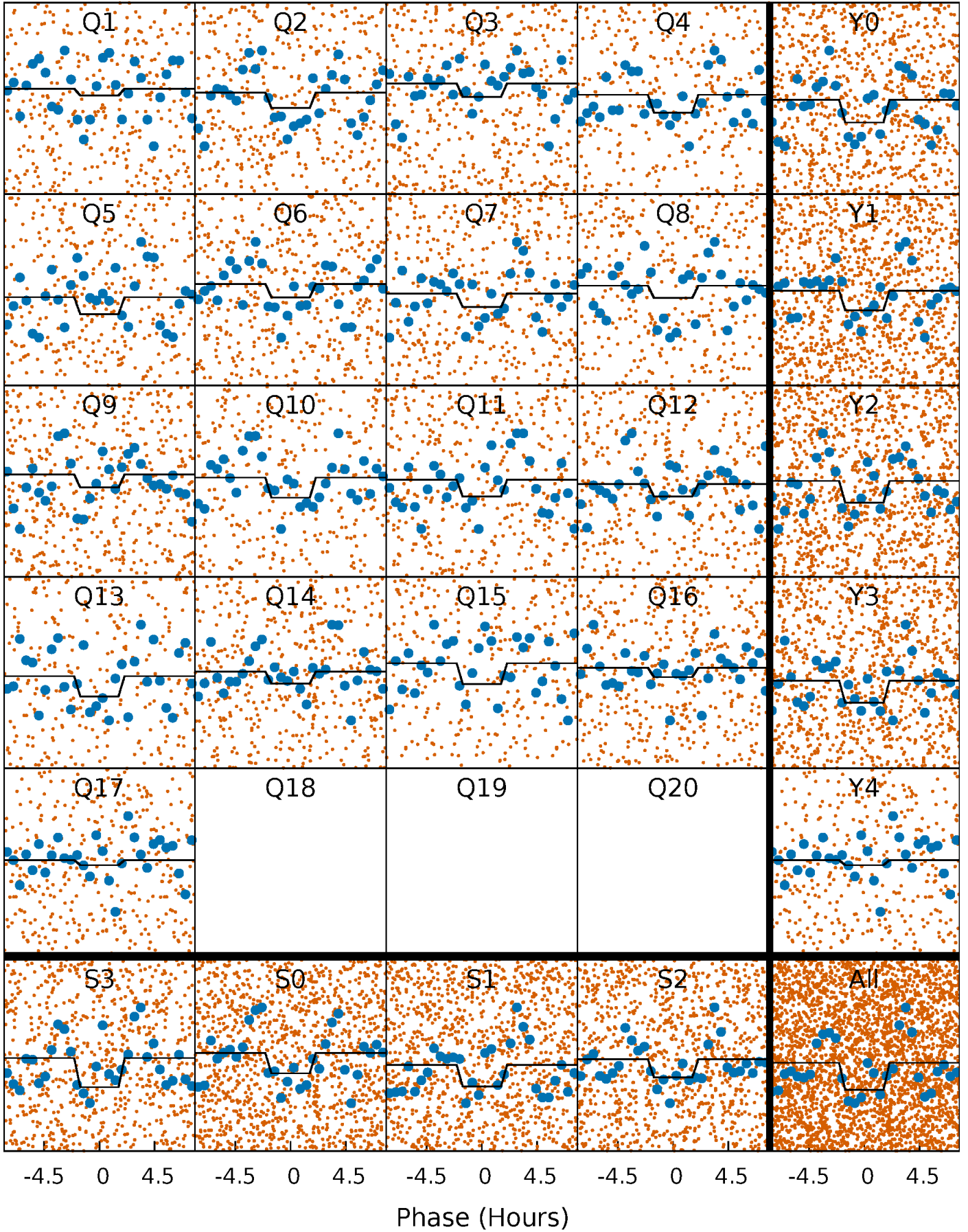
DV Quarter-Phased Transit Curves

TCE 008233072-02 P= 0.512713 Days $T_0=131.956111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

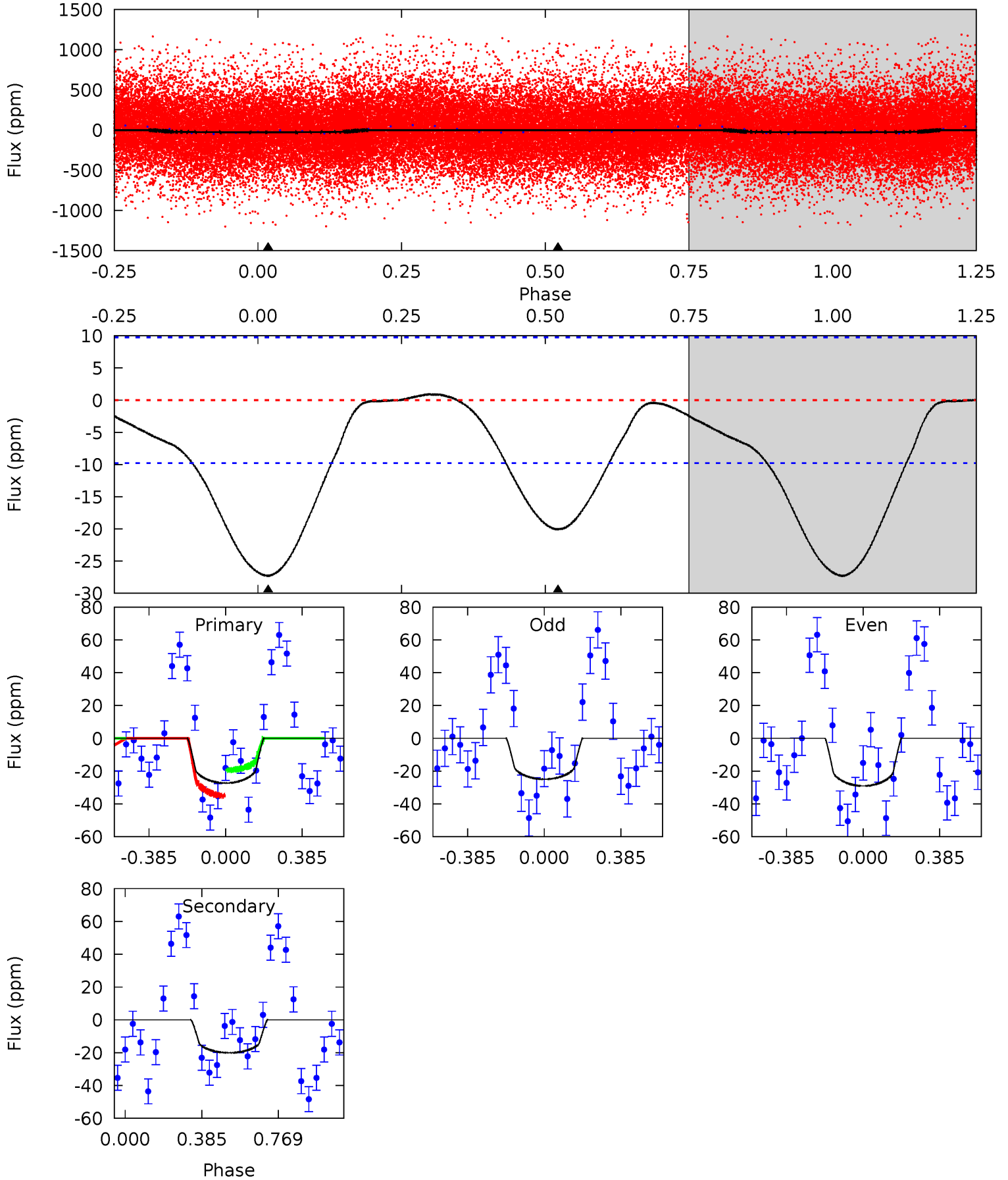
TCE 008233072-02 P= 0.512721 Days $T_0=131.949310$ (BKJD)



DV Model-Shift Uniqueness Test

008233072-02, P = 0.512713 Days, E = 131.443398 Days

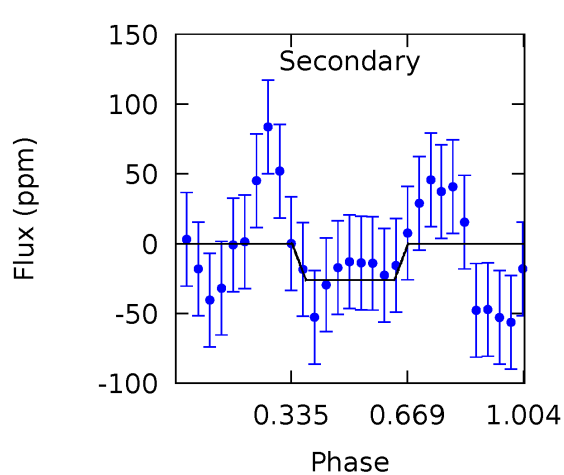
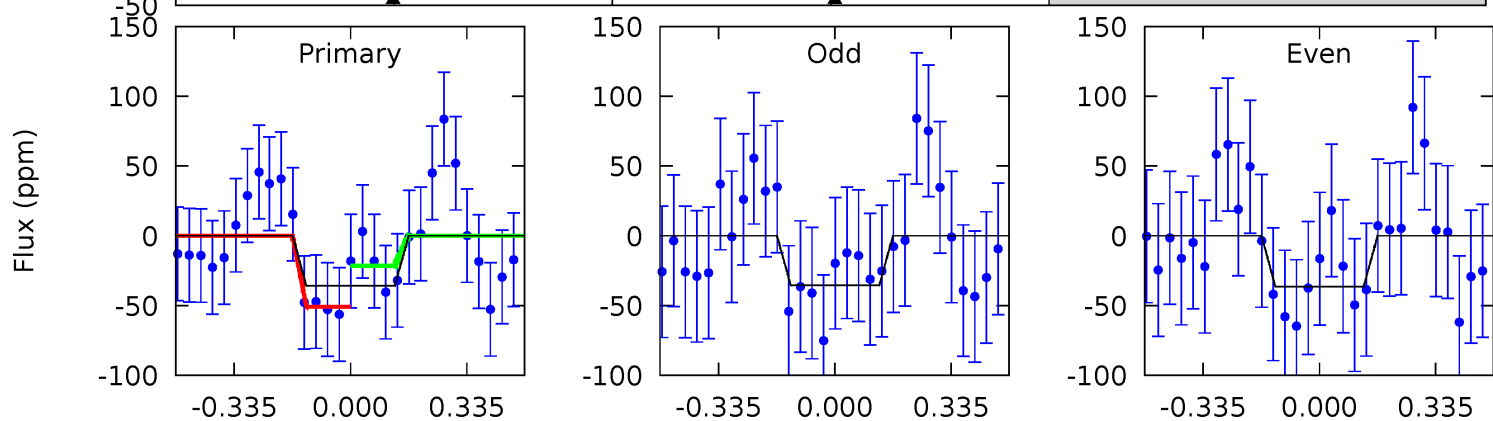
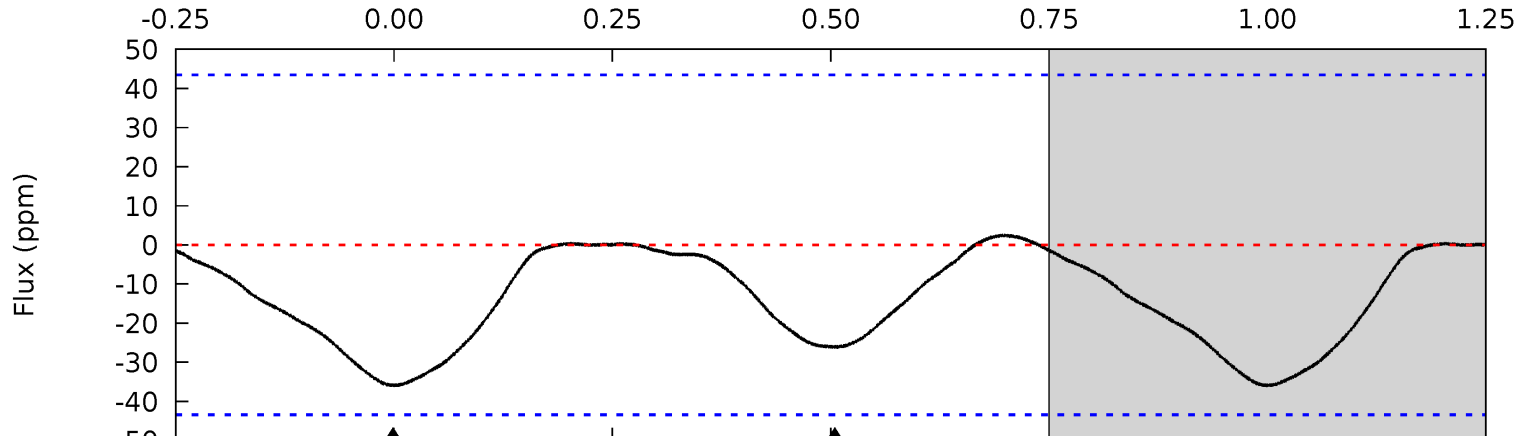
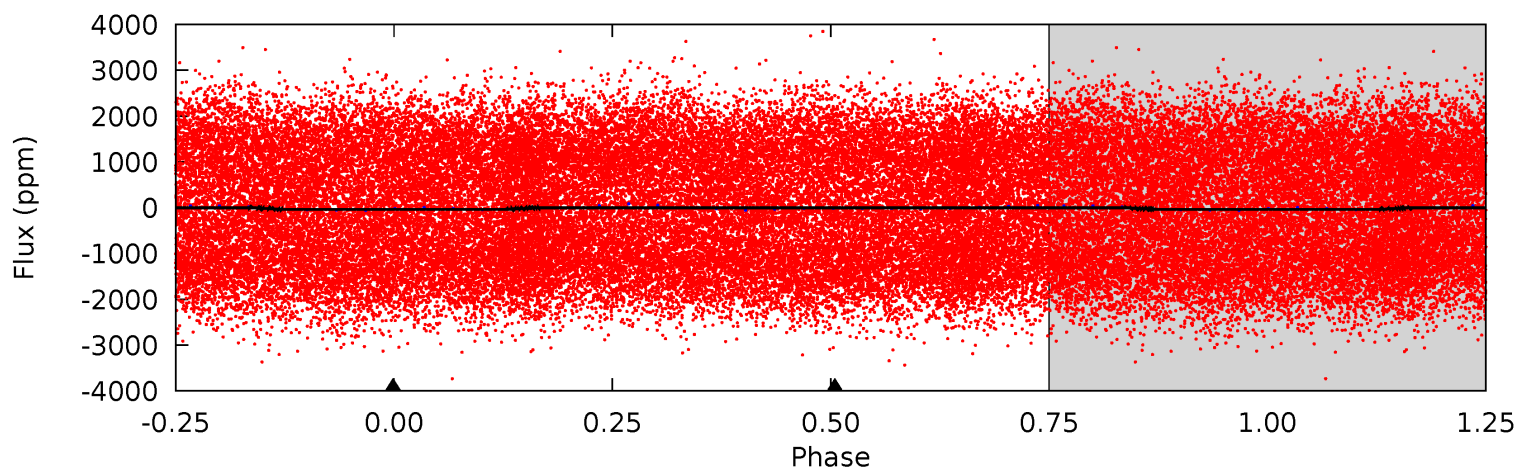
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	8.78	0	0	4.27	0.87	0.87	11.9	11.9	8.78	8.78	0.90	1.12	0.03	3.51



Alt Model-Shift Uniqueness Test

008233072-02, P = 0.512721 Days, E = 131.436589 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.56	2.59	0	0	4.30	0.97	0.13	3.56	3.56	2.59	2.59	0.04	1.04	0.06	1.44



Stellar Parameters For KIC 008233072

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7011^{+74}_{-84}	$3.982^{+0.159}_{-0.116}$	$-0.200^{+0.150}_{-0.150}$	$2.063^{+0.413}_{-0.454}$	$1.487^{+0.130}_{-0.145}$	$0.239^{+0.204}_{-0.087}$
	+1%/-1%	+4%/-3%	+75%/-75%	+20%/-22%	+9%/-10%	+86%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 008233072-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-20 ± 2	$1.38^{+0.80}_{-0.73}$	5174^{+235}_{-265}	5525^{+3350}_{-1616}	$1.229^{+4.147}_{-0.782}$
Alt.	-26 ± 10	$1.41^{+0.83}_{-0.77}$	5170^{+258}_{-284}	5802^{+4060}_{-1679}	$1.407^{+6.051}_{-0.907}$

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

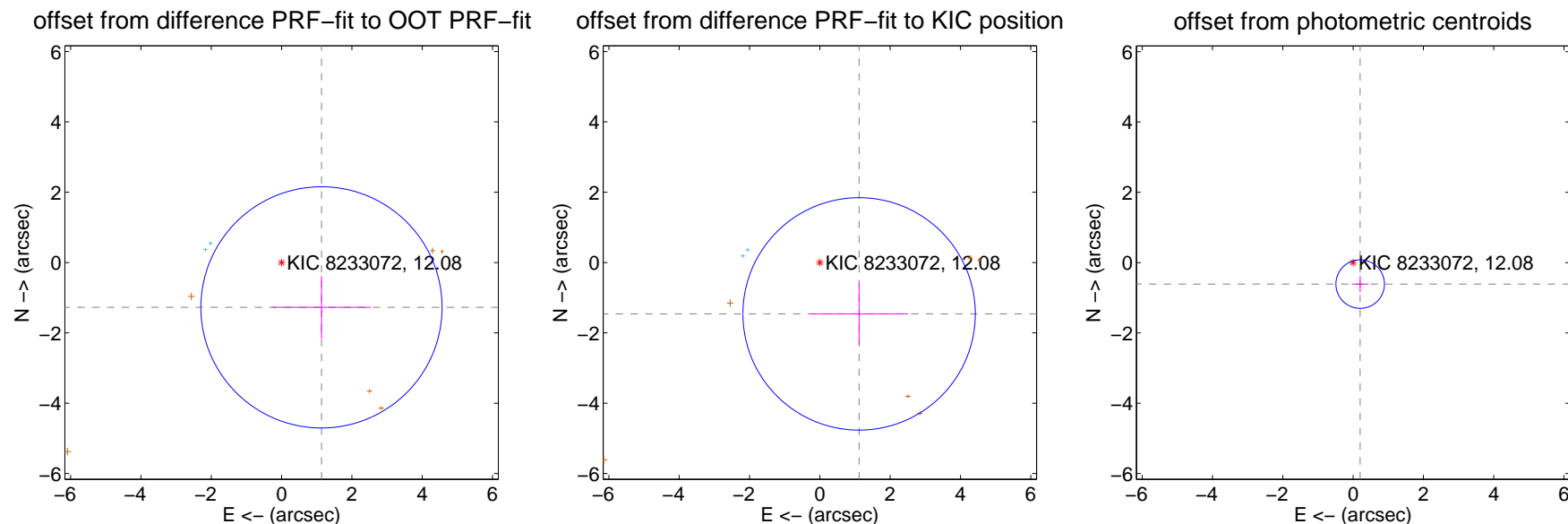
DV Centroid Data

Supplemental centroid analysis for 008233072-02. Kepler magnitude: 12.08. Transit SNR 8.10

There are 2 quarters with good PRF difference image offsets

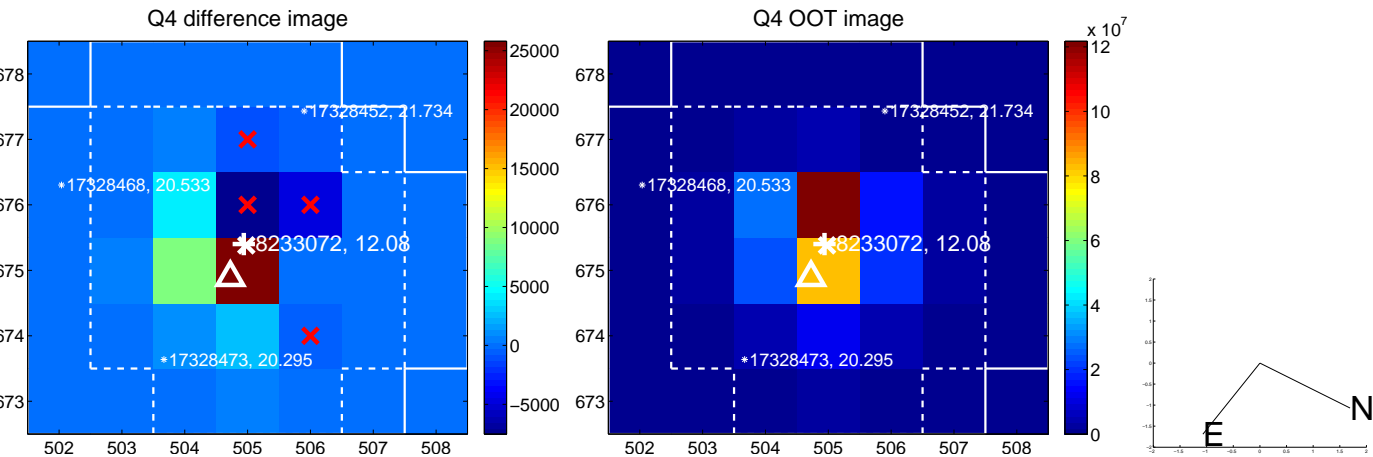
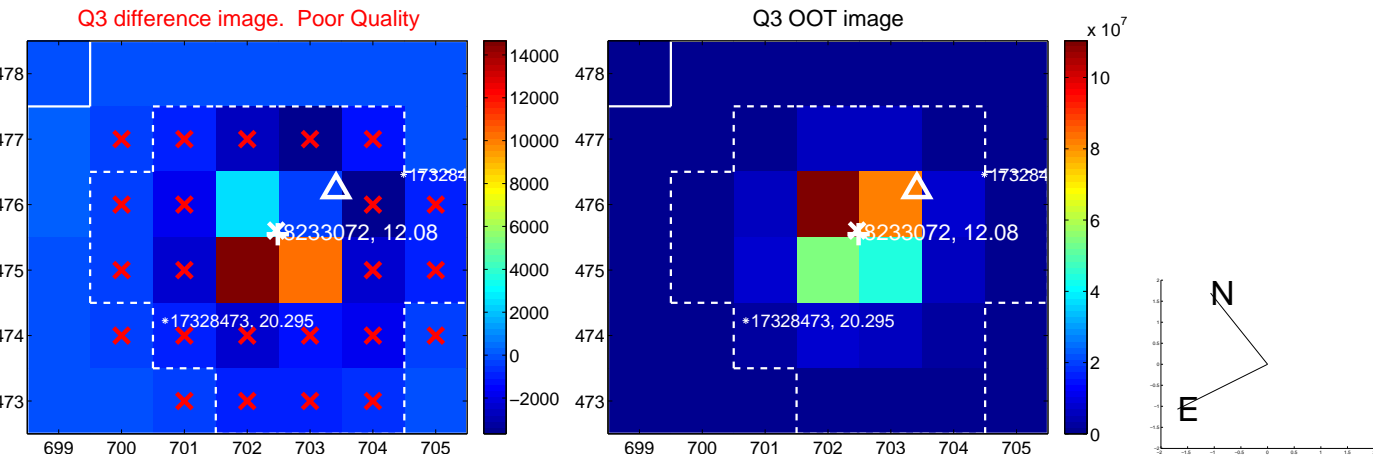
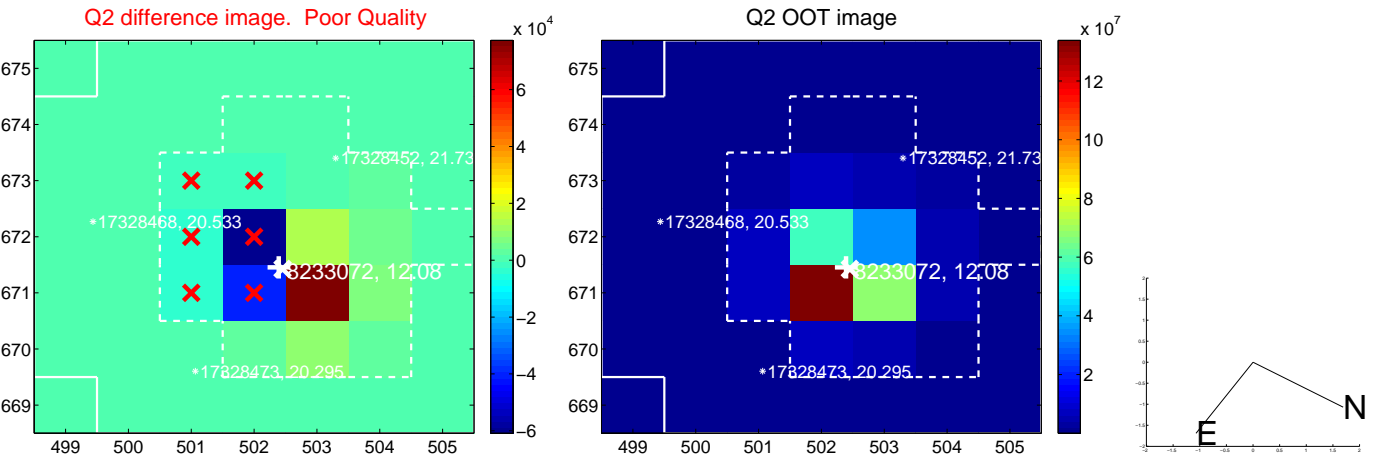
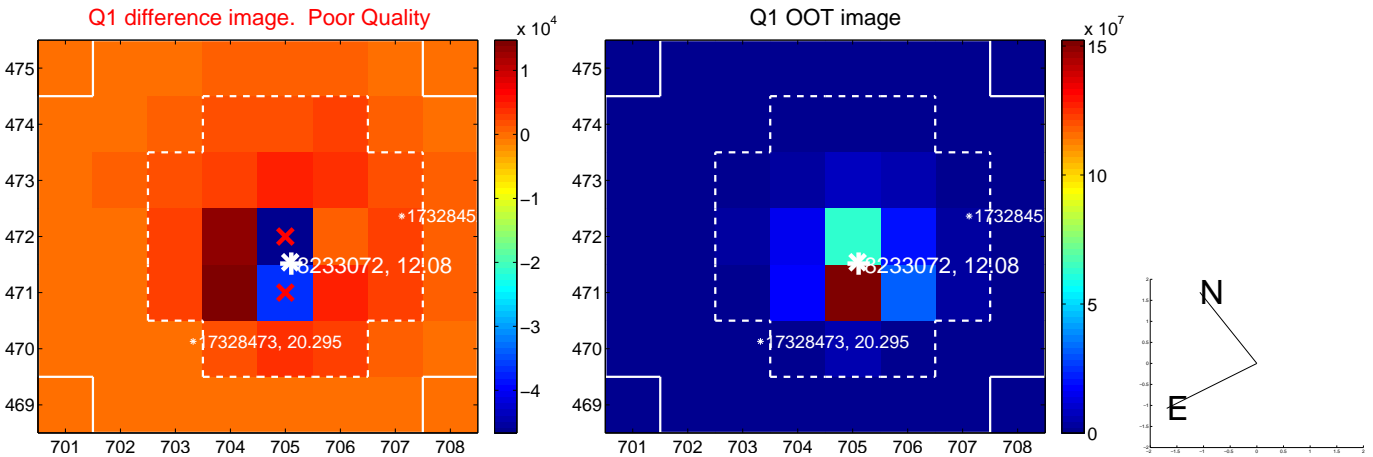
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.707 ± 1.143	1.49	-1.135 ± 1.397	-1.275 ± 0.892
PRF-fit source offset from KIC position	1.839 ± 1.102	1.67	-1.117 ± 1.398	-1.461 ± 0.884
photometric centroid source offset	0.64 ± 0.23	2.79	-0.20 ± 0.23	-0.61 ± 0.23

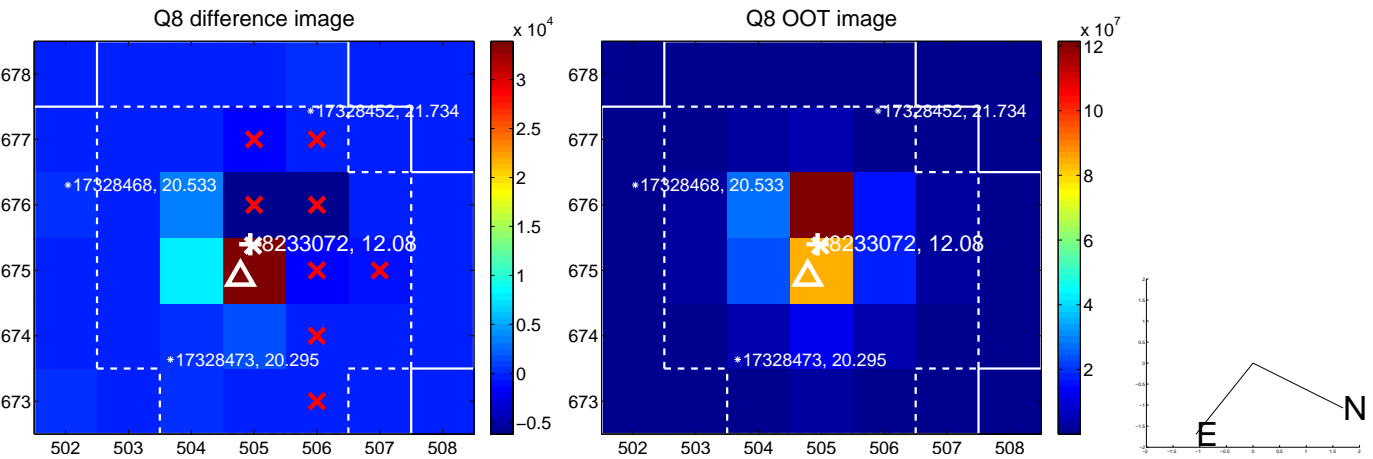
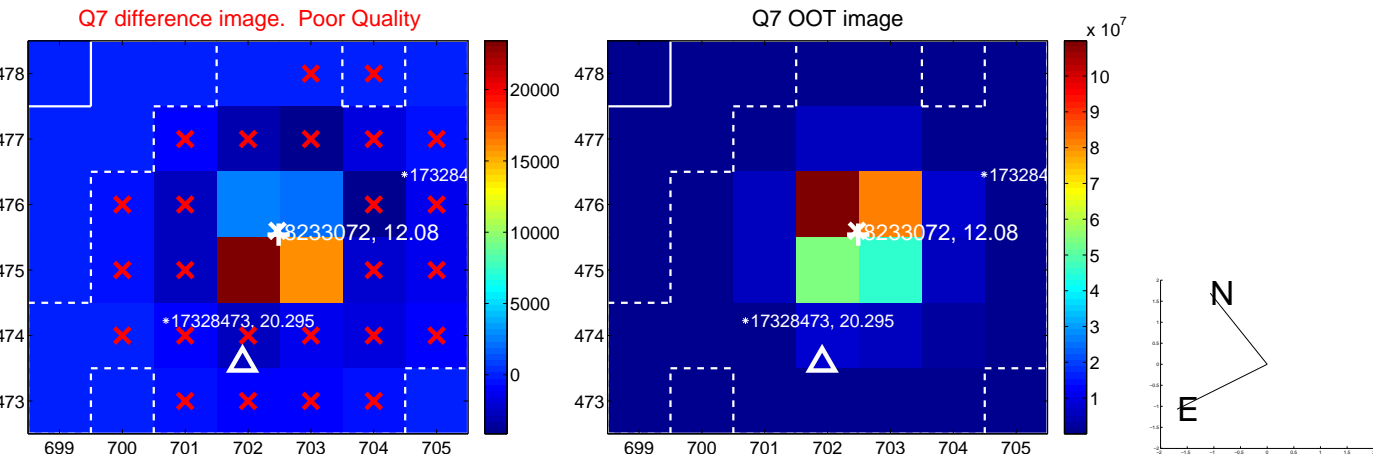
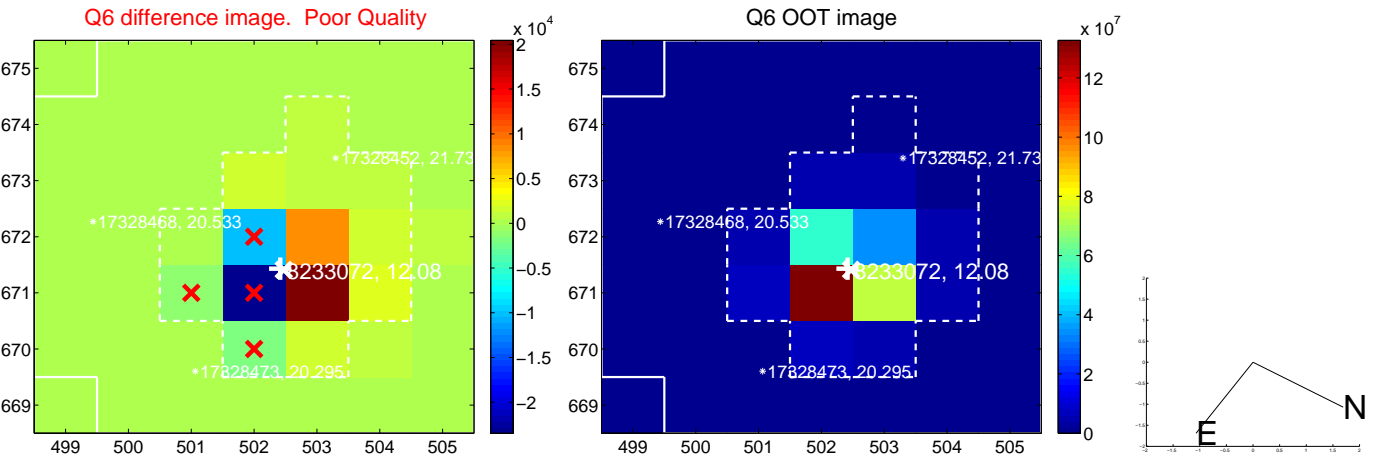
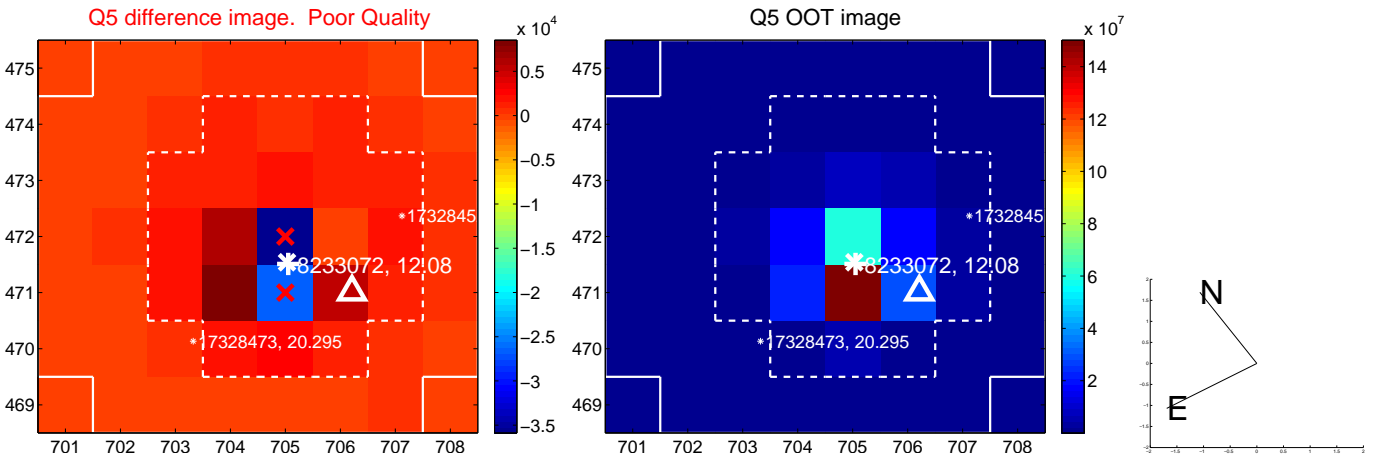


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

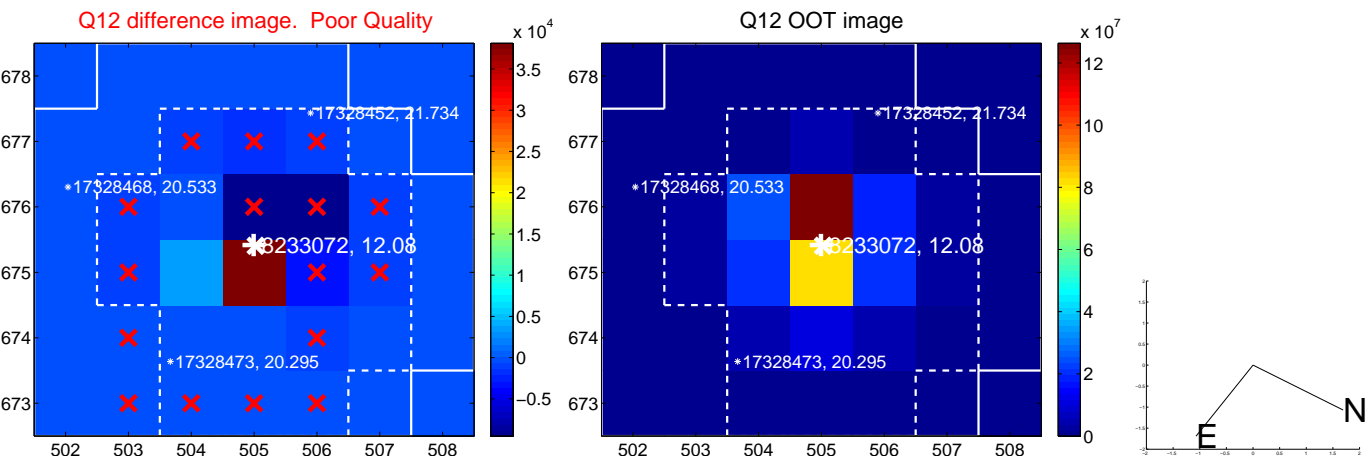
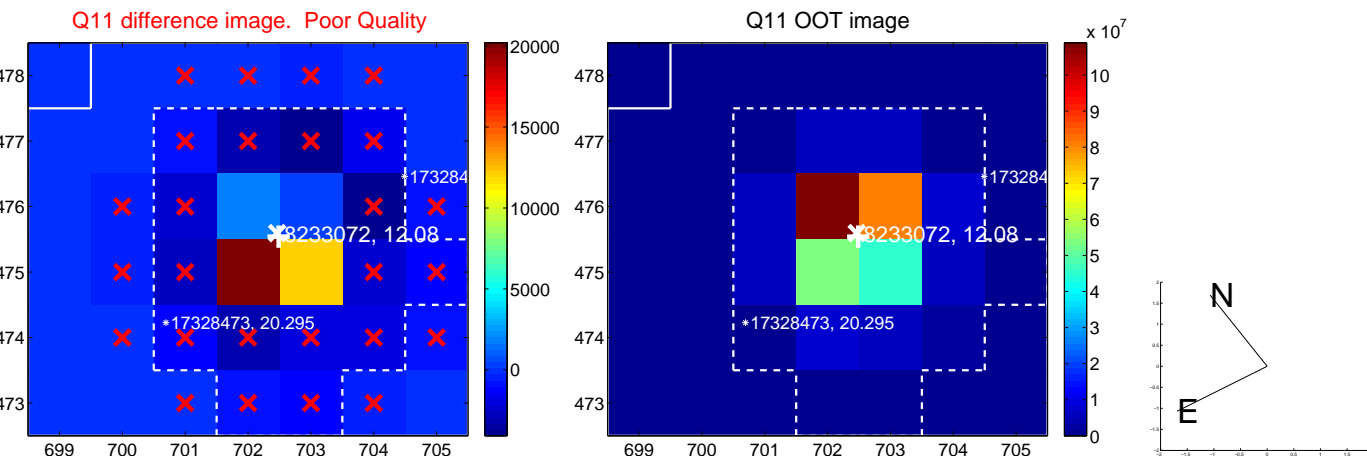
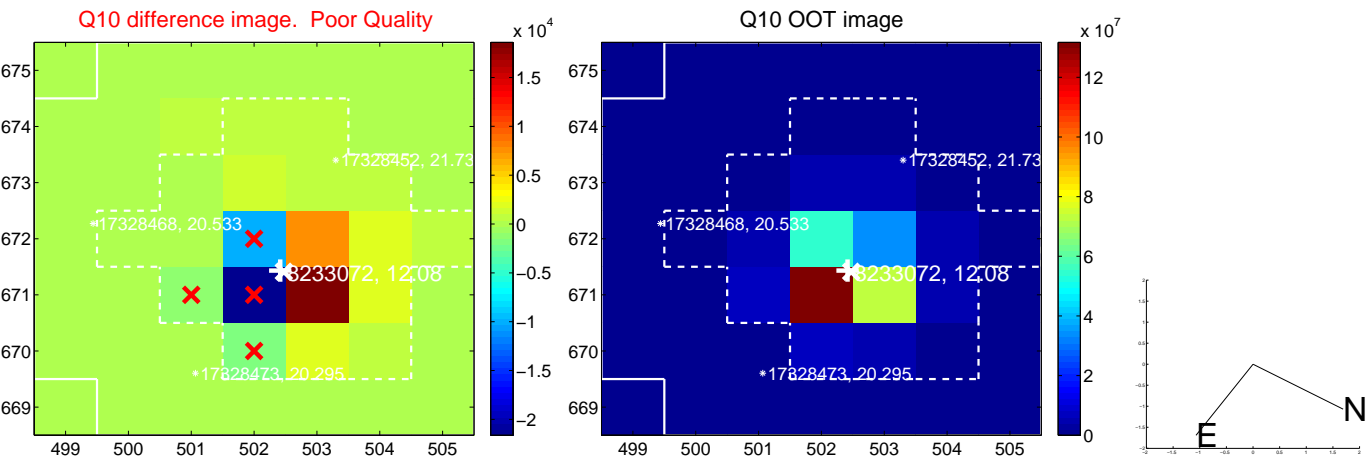
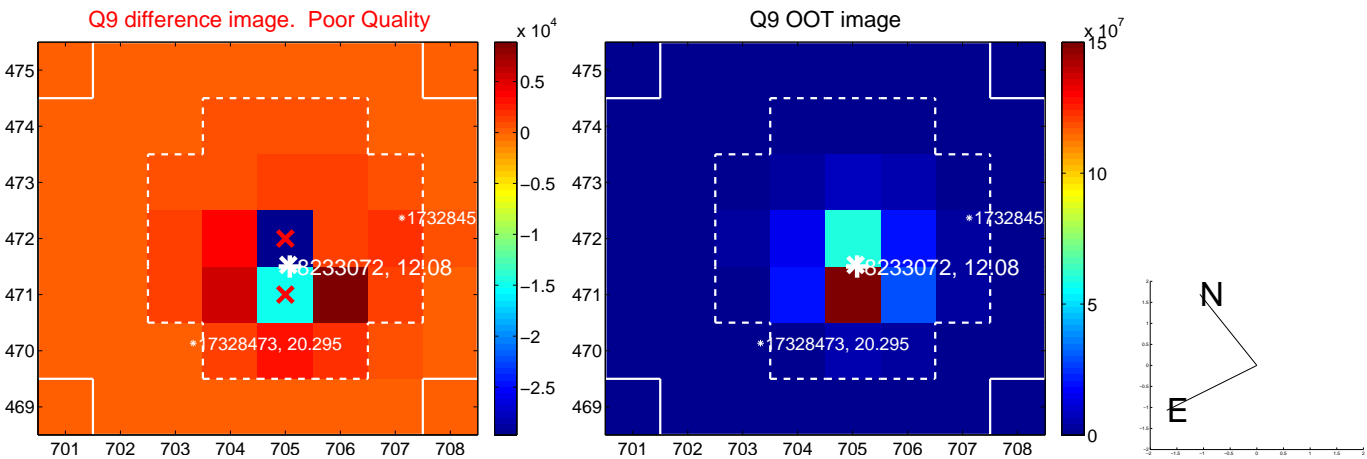
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



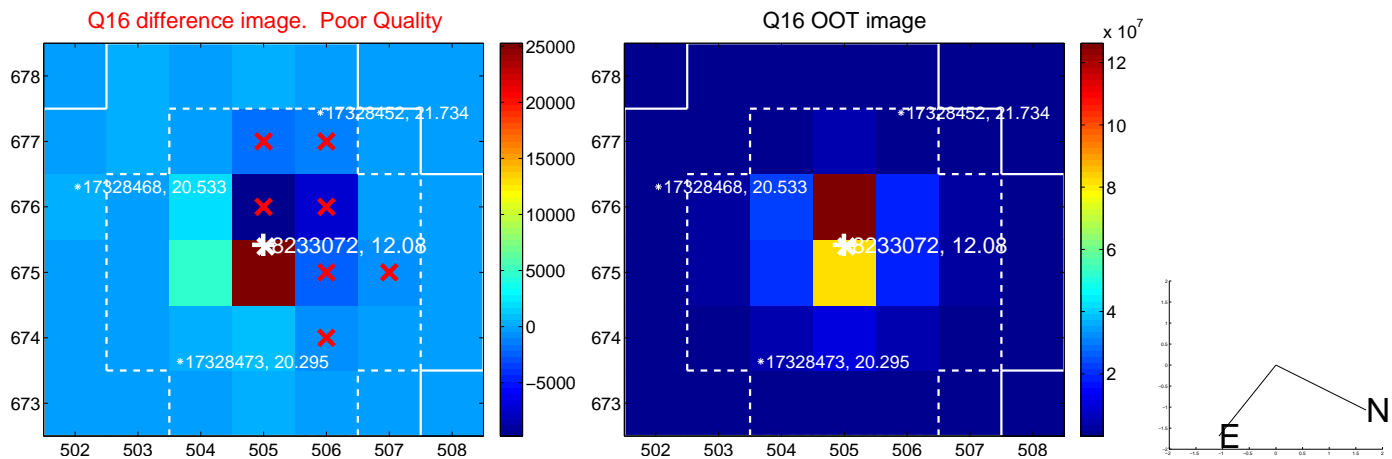
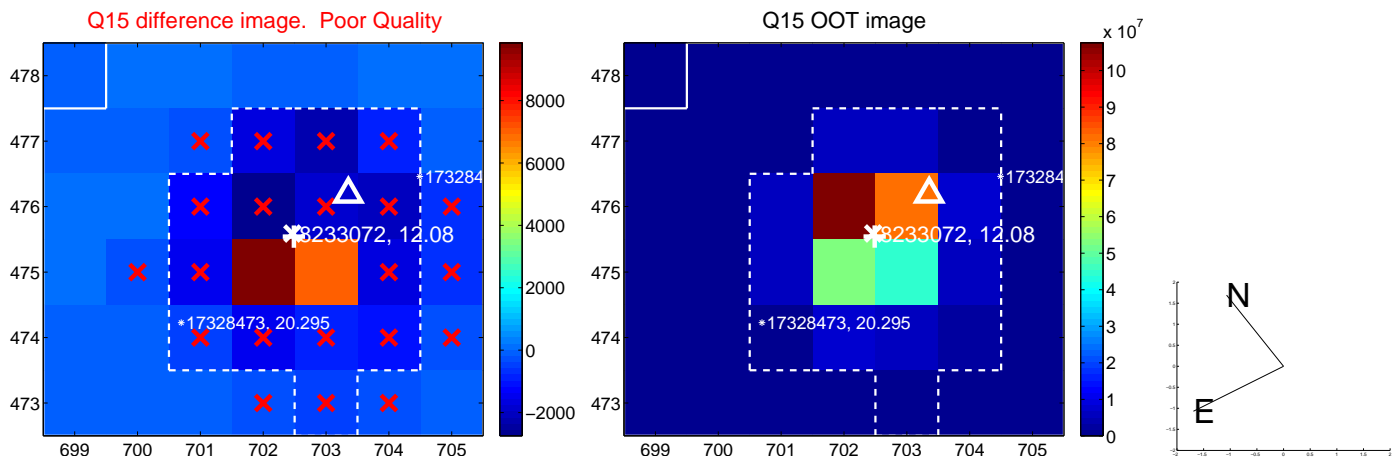
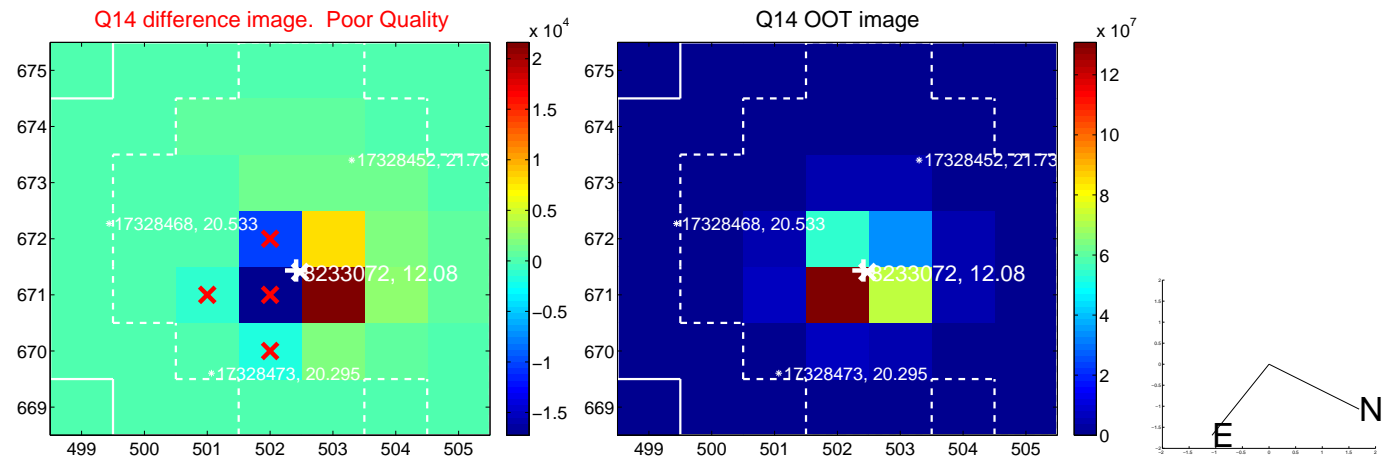
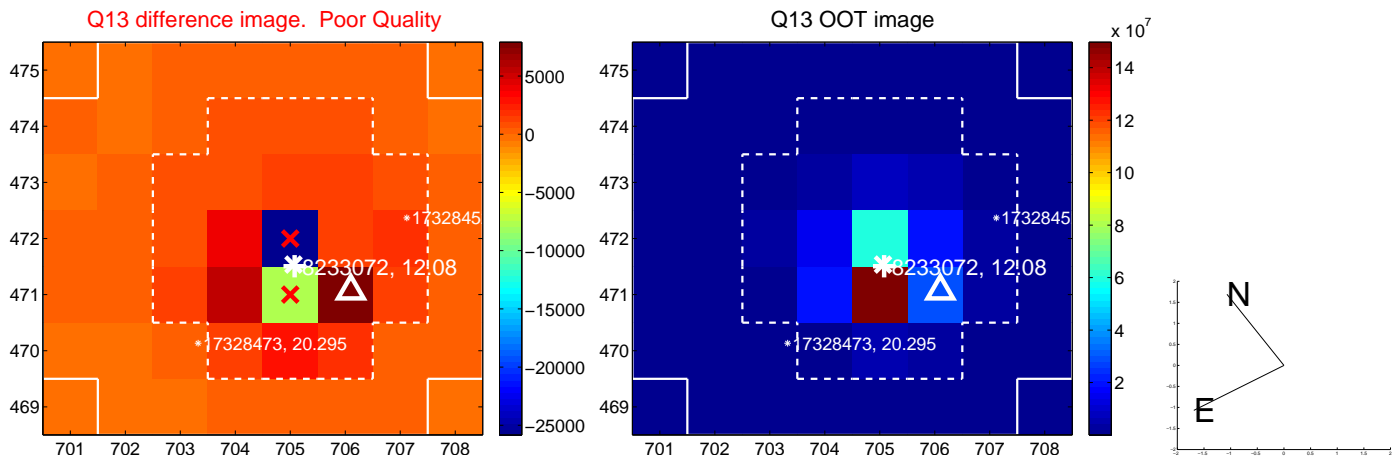
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



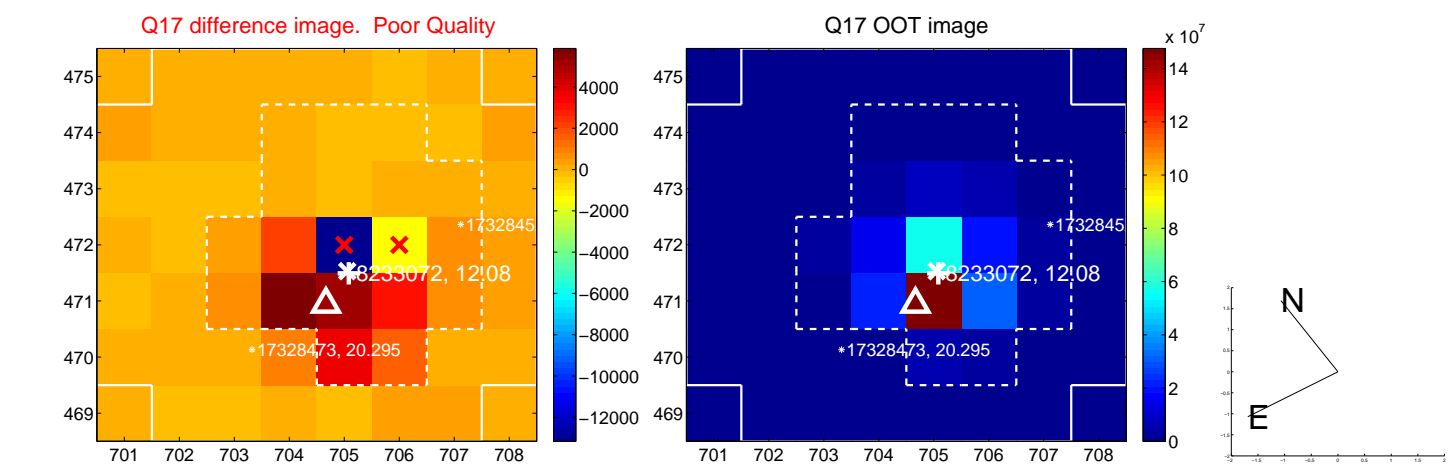
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



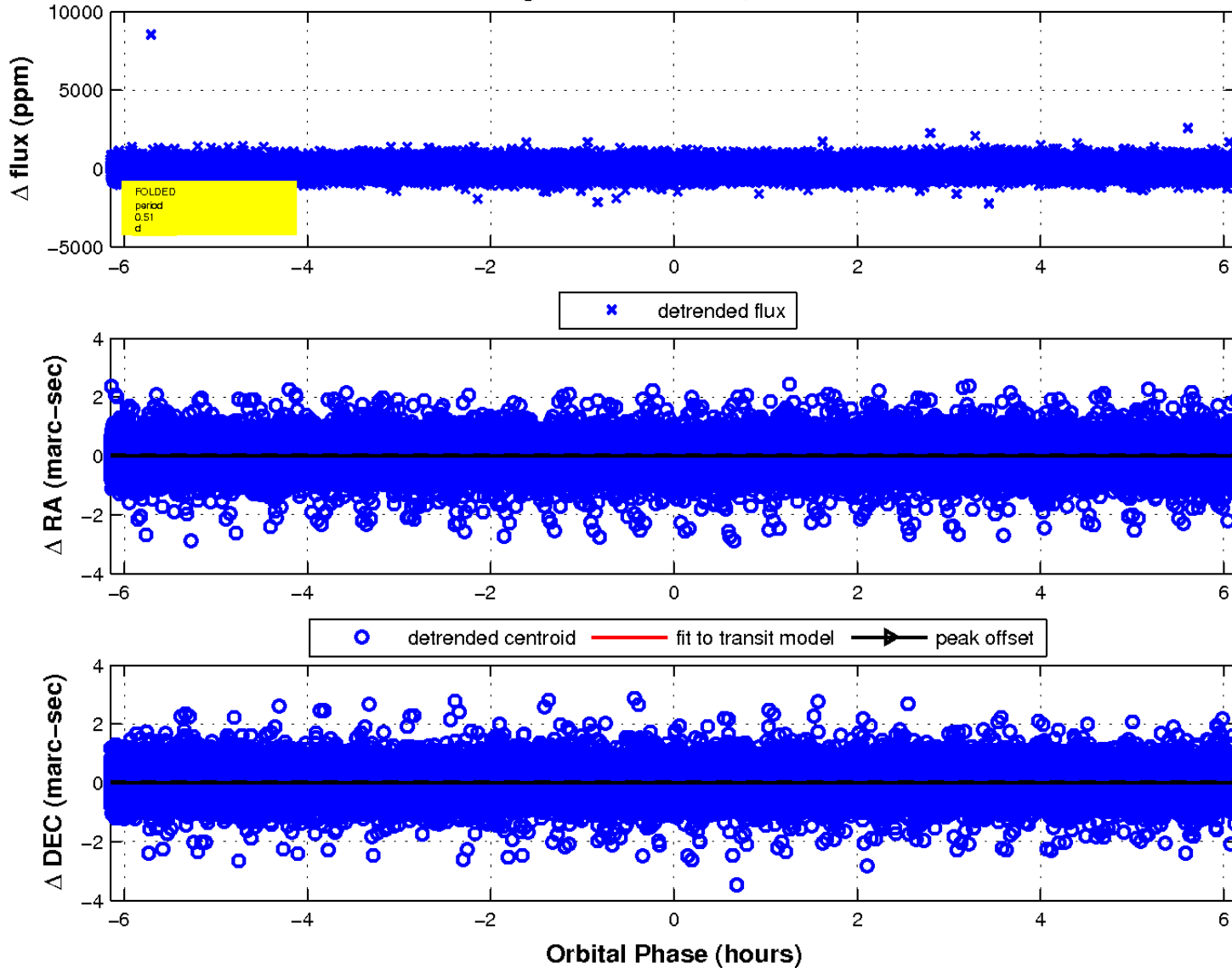
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

