

KIC 007700033

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})
007700033-01	OBS	No	0.782971	131.864164	14.0	2.319	12.2	11.5	1.75	7359	0.76	21144.85
007700033-02	OBS	No	0.782972	132.159251	13.0	2.215	11.7	11.5	1.75	7359	0.73	21144.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007700033-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007700033-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

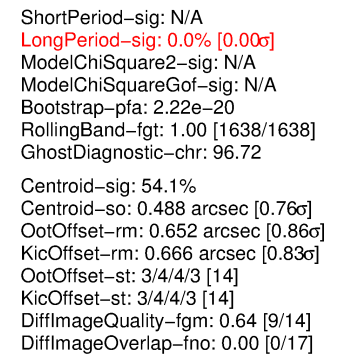
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

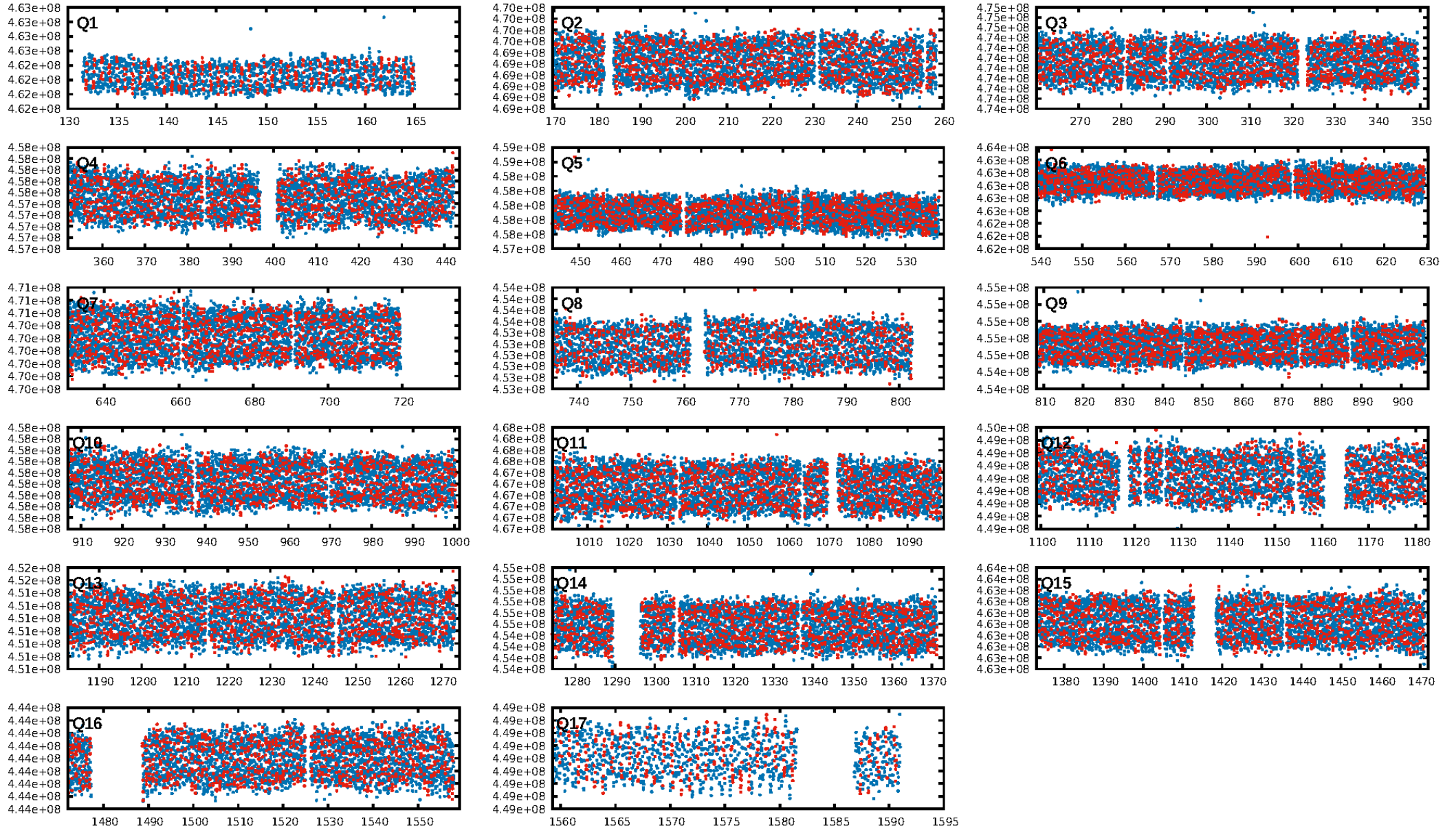
Ephemeris Match Information For 007700033-01

No Significant Match Found

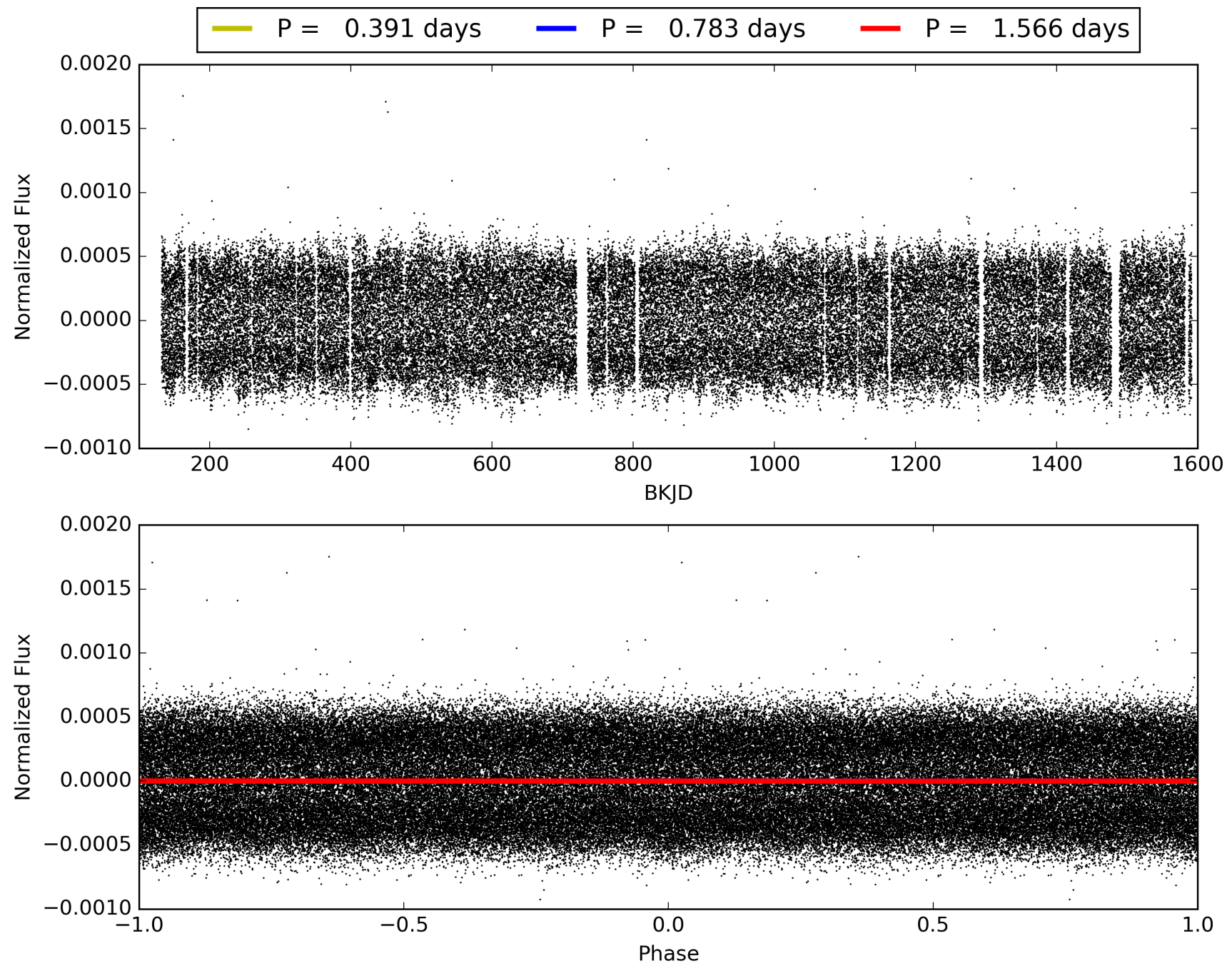
KIC: 7700033 Candidate: 1 of 2 Period: 0.783 d



TCE 007700033-01, PDC Light Curves

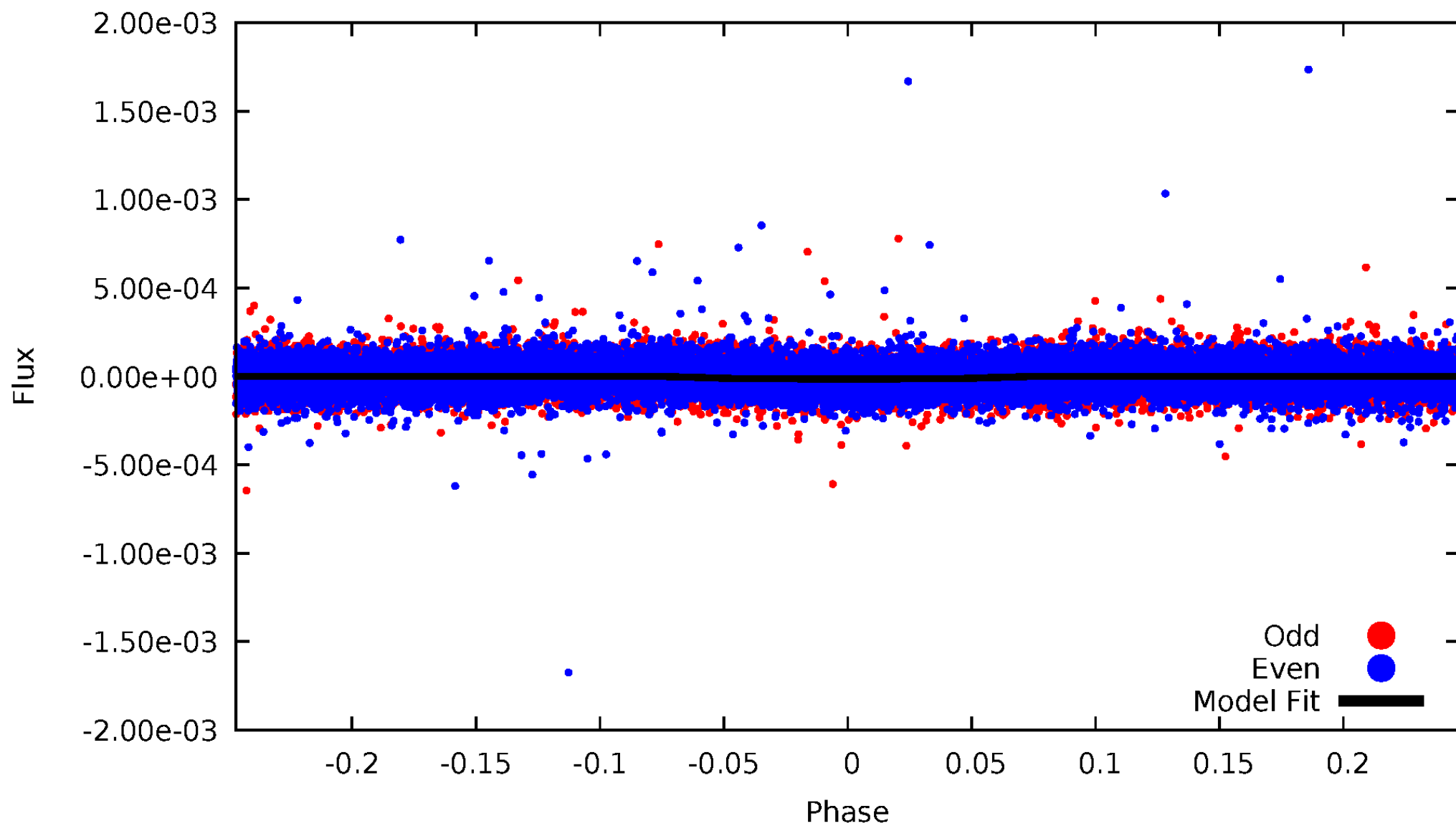


TCE 007700033-01



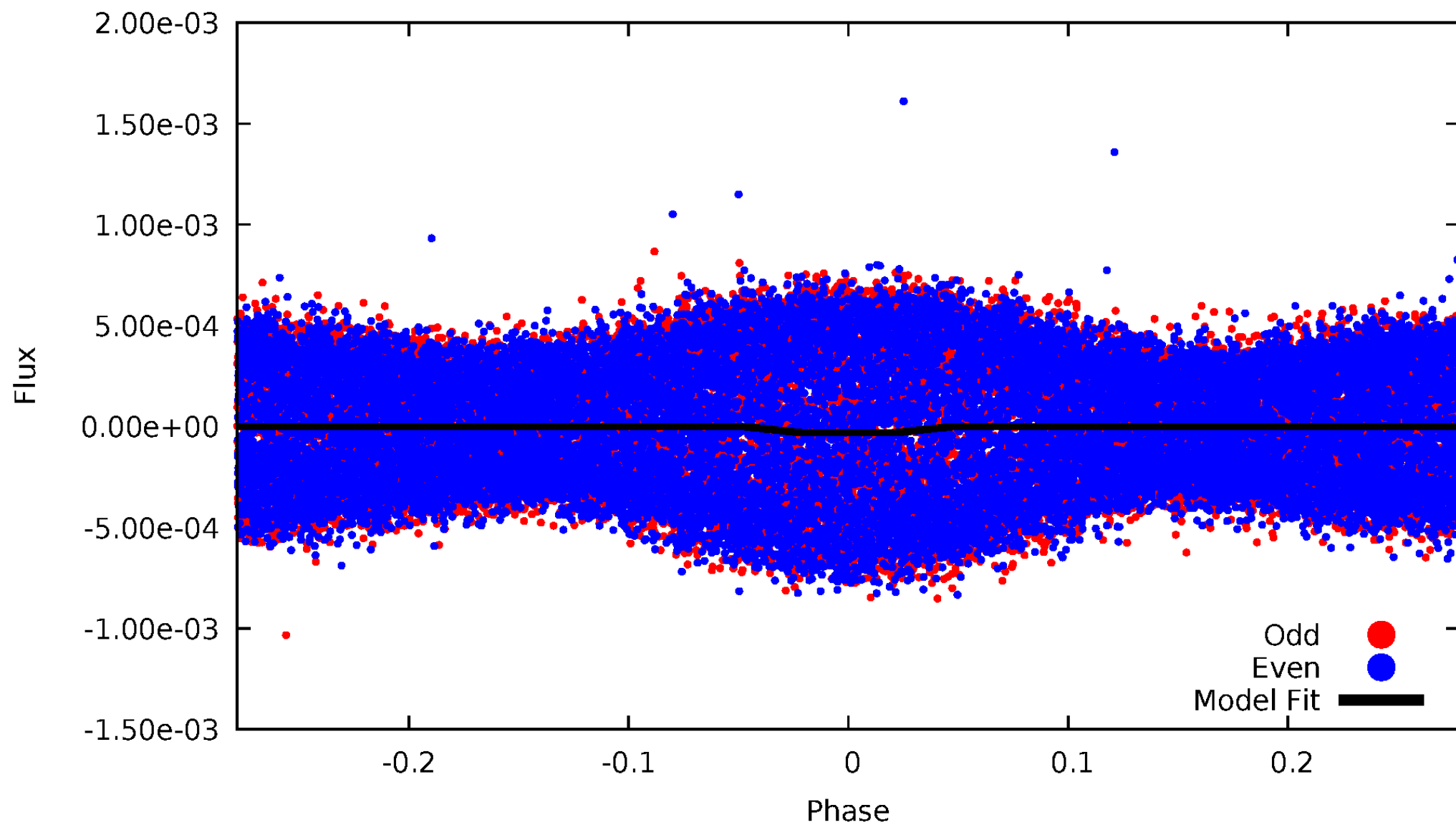
DV Odd/Even

TCE 007700033-01



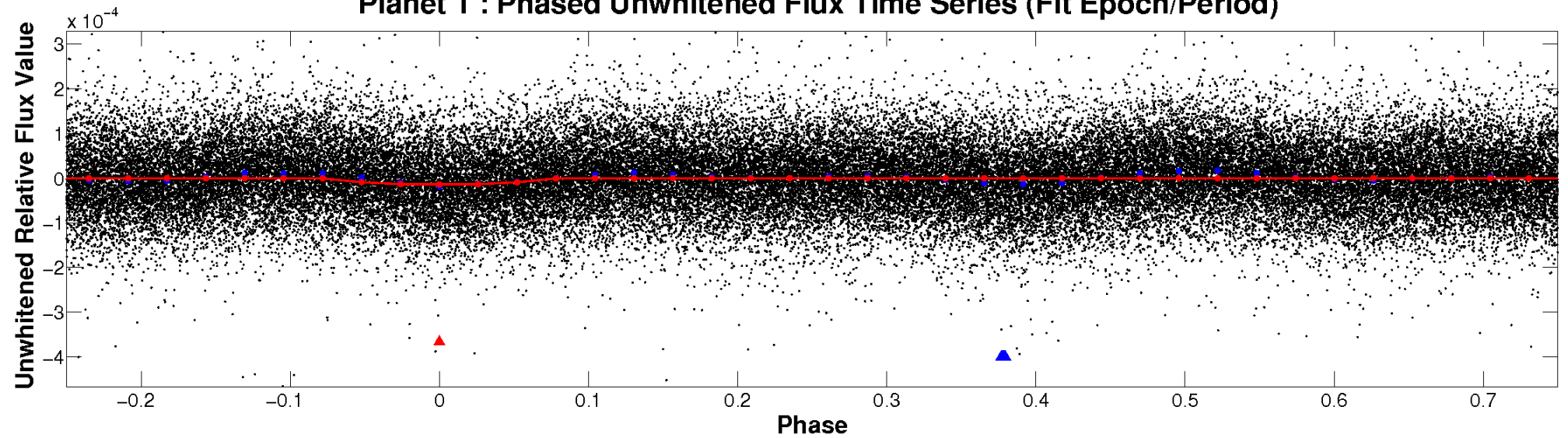
ALT Odd/Even

TCE 007700033-01

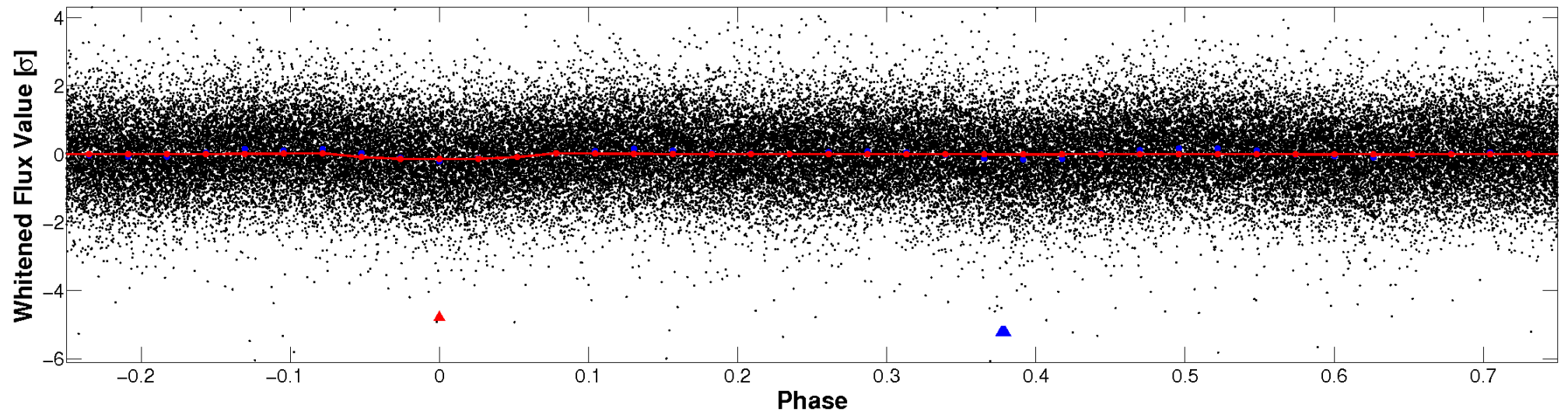


Non-Whitened Vs. Whitened Light Curve

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

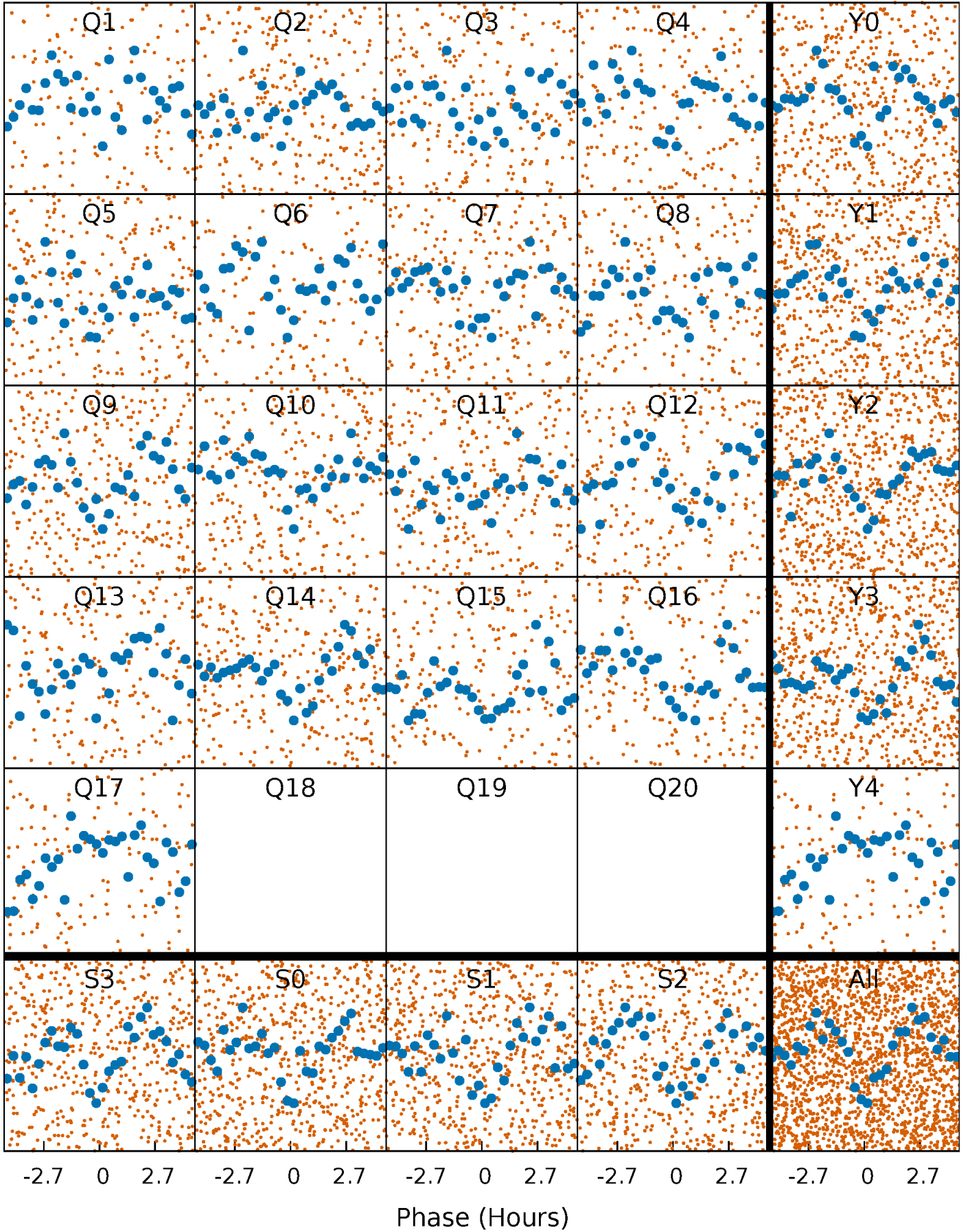


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



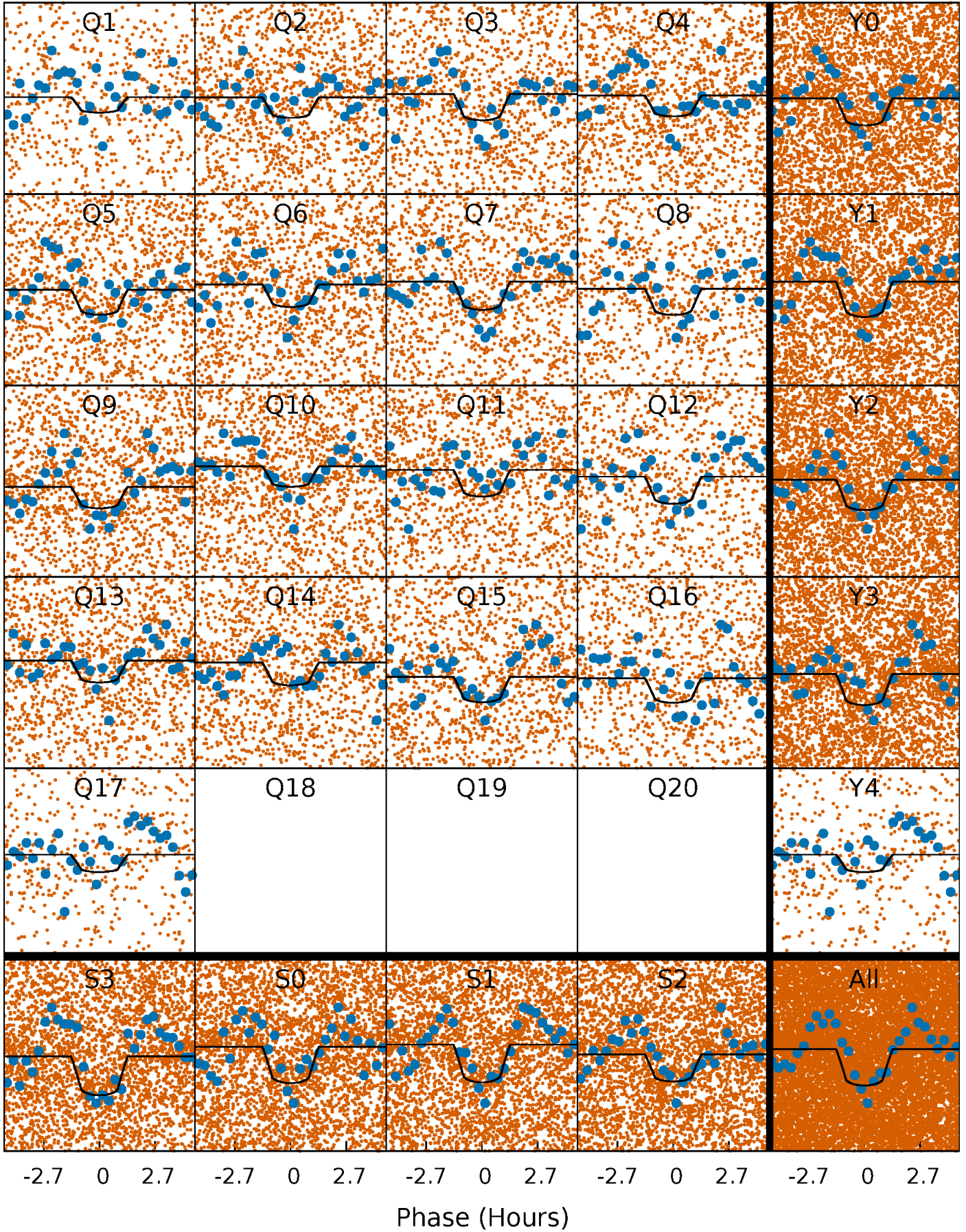
PDC Quarter-Phased Transit Curves

TCE 007700033-01 P= 0.782971 Days $T_0=131.864164$ (BKJD)



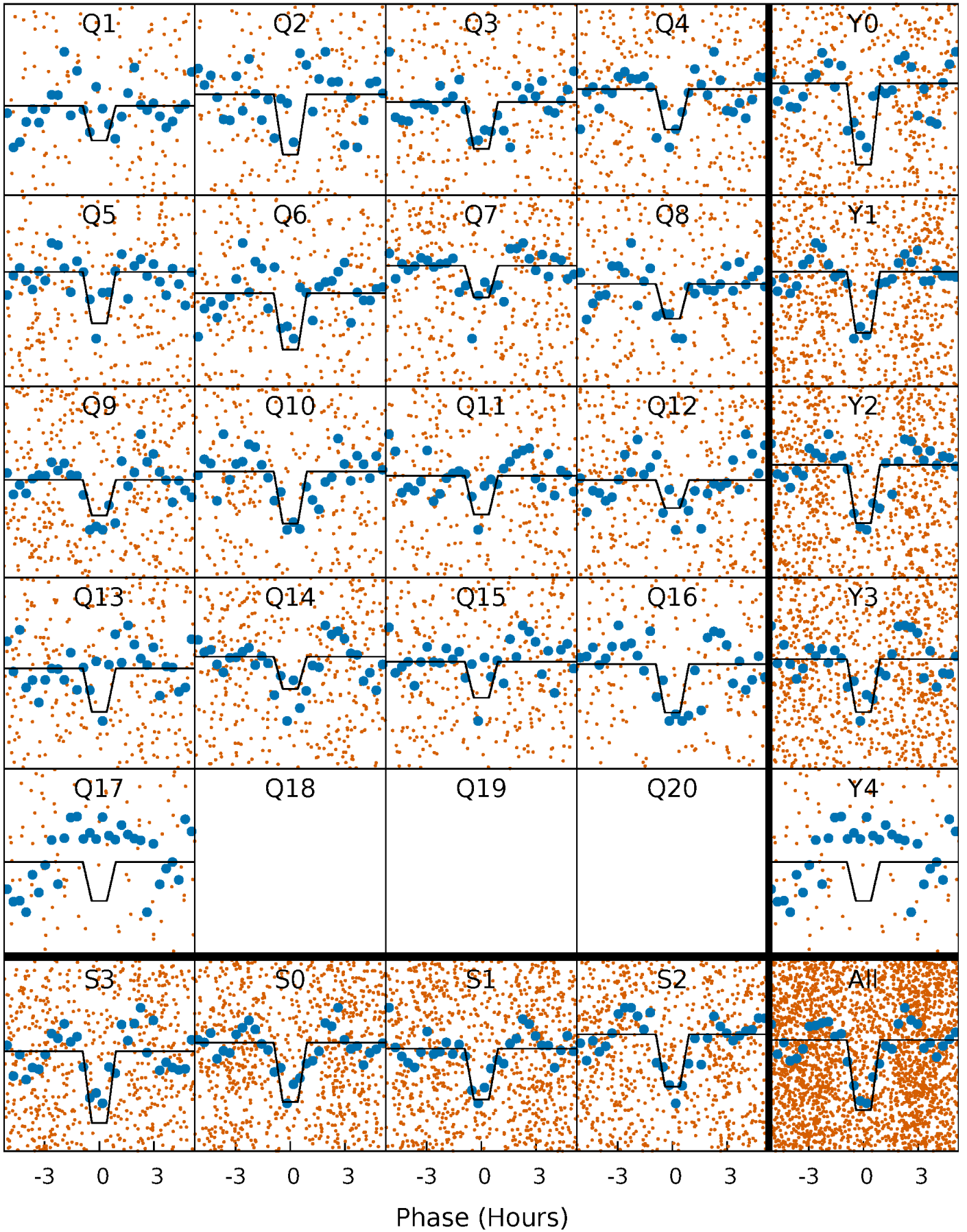
DV Quarter-Phased Transit Curves

TCE 007700033-01 P= 0.782971 Days $T_0=131.864164$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

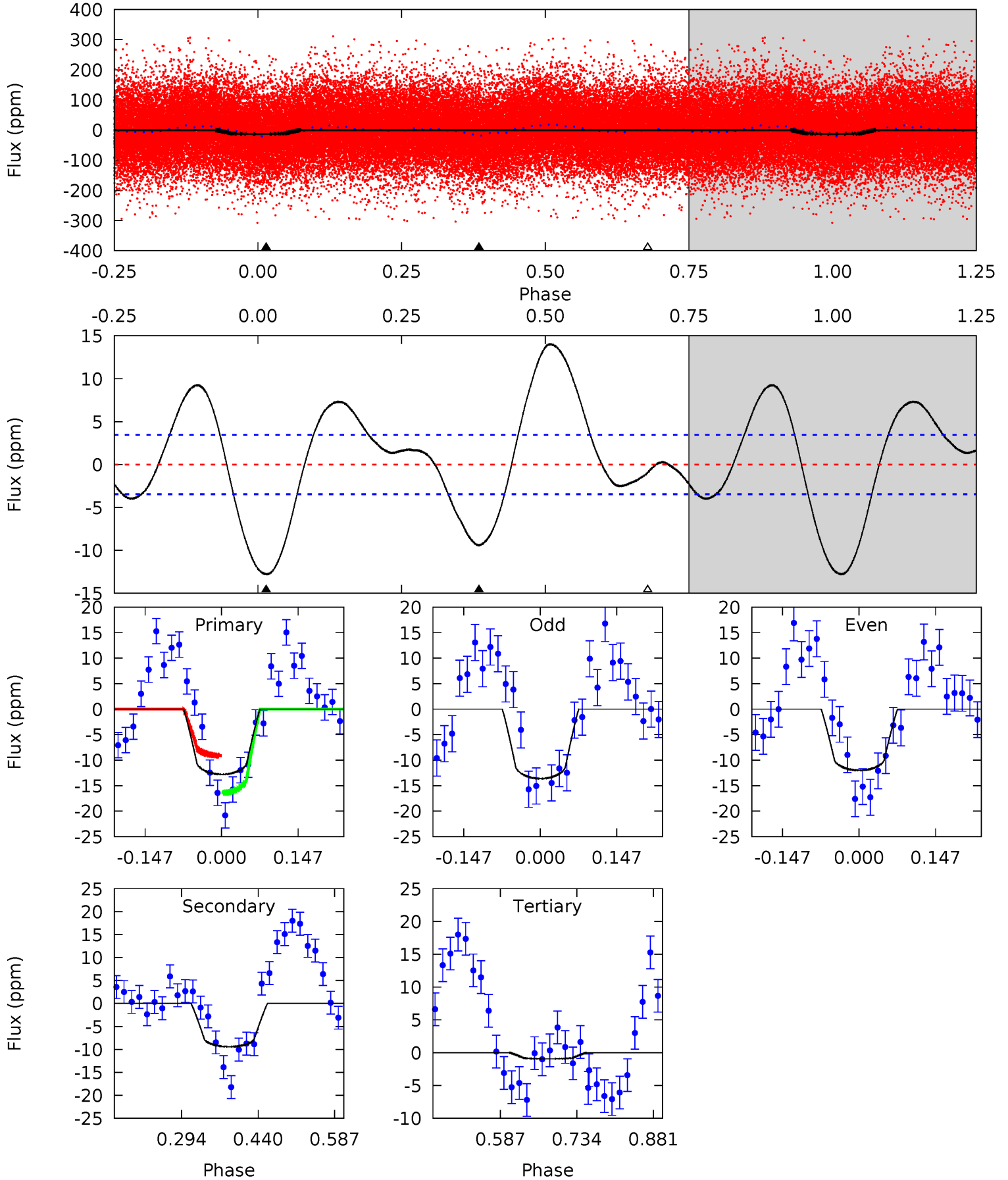
TCE 007700033-01 P= 0.782984 Days $T_0=131.858275$ (BKJD)



DV Model-Shift Uniqueness Test

007700033-01, P = 0.782971 Days, E = 131.081193 Days

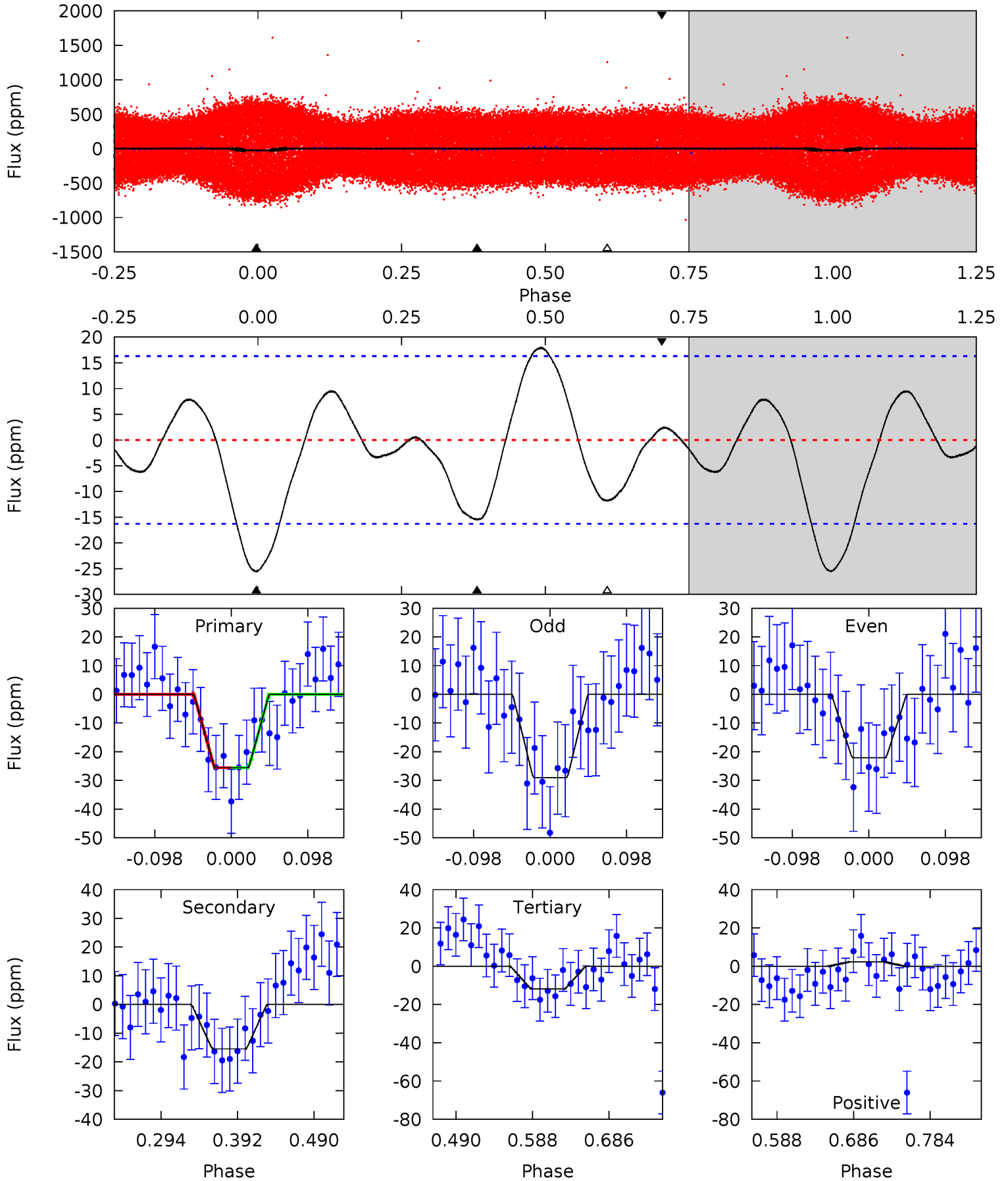
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	12.2	1.22	0	4.48	1.45	5.01	15.3	16.6	11.0	12.2	1.05	0.93	0.52	4.76



Alt Model-Shift Uniqueness Test

007700033-01, P = 0.782984 Days, E = 131.075291 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.17	4.34	3.32	0.65	4.57	1.65	1.99	3.85	6.52	1.02	3.69	0.98	0.76	0.41	0.00



Stellar Parameters For KIC 007700033

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7359^{+203}_{-348}	$4.159^{+0.105}_{-0.195}$	$0.080^{+0.200}_{-0.350}$	$1.746^{+0.562}_{-0.302}$	$1.603^{+0.203}_{-0.226}$	$0.424^{+0.205}_{-0.218}$
	+3%/-5%	+3%/-5%	+250%/-438%	+32%/-17%	+13%/-14%	+48%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007700033-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-9 ± 1	$0.76^{+0.19}_{-0.16}$	4328^{+340}_{-284}	6226^{+892}_{-617}	$3.341^{+1.978}_{-1.205}$
Alt.	-15 ± 4	$1.08^{+0.21}_{-0.20}$	4311^{+337}_{-255}	5868^{+637}_{-569}	$2.631^{+1.560}_{-0.945}$

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

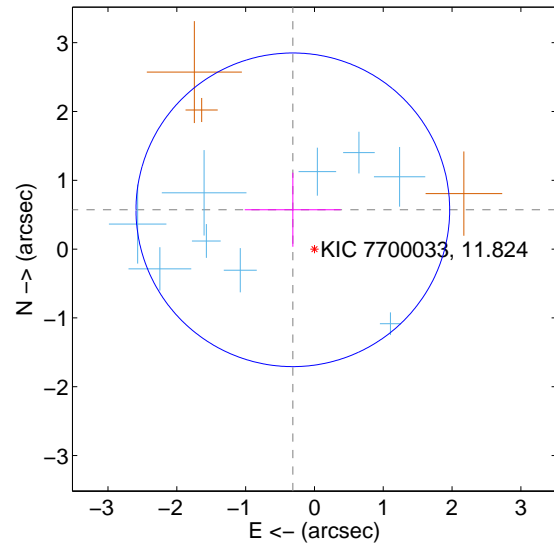
Supplemental centroid analysis for 007700033-01. **Kepler magnitude: 11.82.** Transit SNR 11.45

There are 9 quarters with good PRF difference image offsets

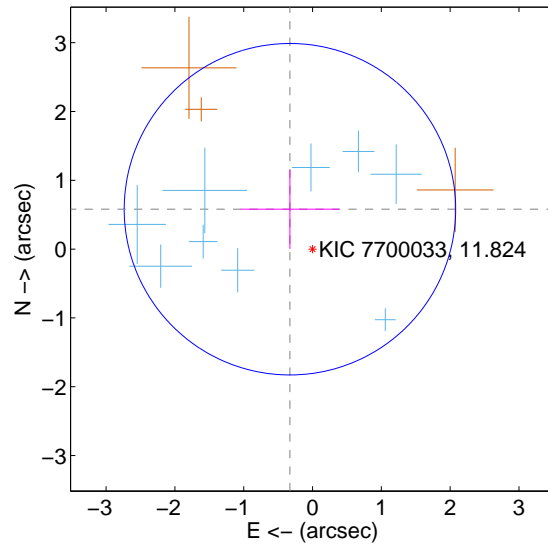
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.652 ± 0.760	0.86	0.314 ± 0.698	0.571 ± 0.538
PRF-fit source offset from KIC position	0.666 ± 0.803	0.83	0.328 ± 0.716	0.579 ± 0.577
photometric centroid source offset	0.49 ± 0.64	0.76	0.44 ± 0.65	0.20 ± 0.60

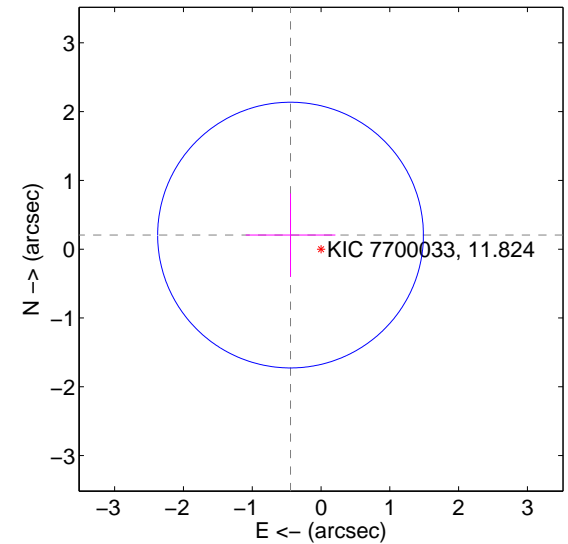
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

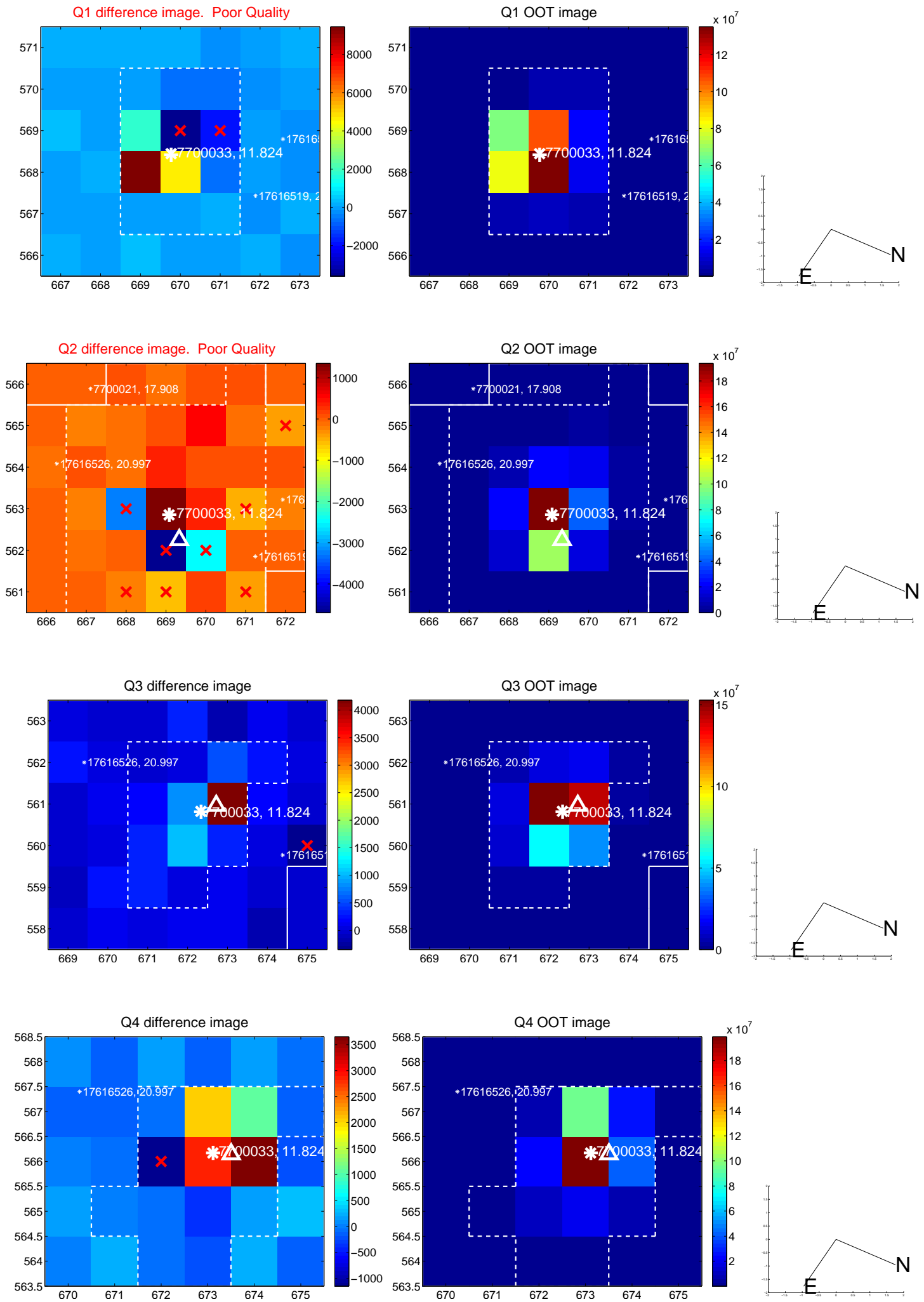


offset from photometric centroids

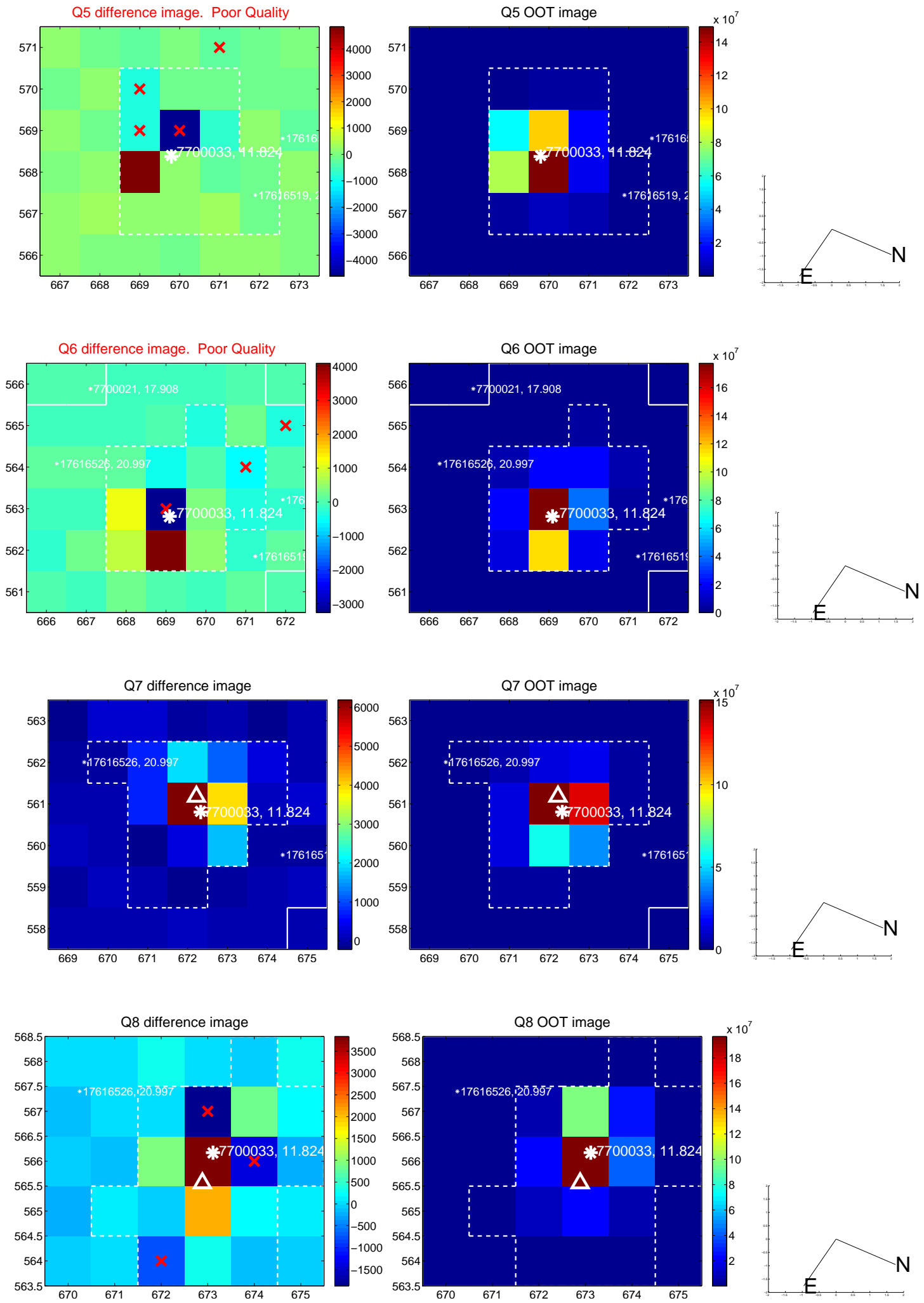


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

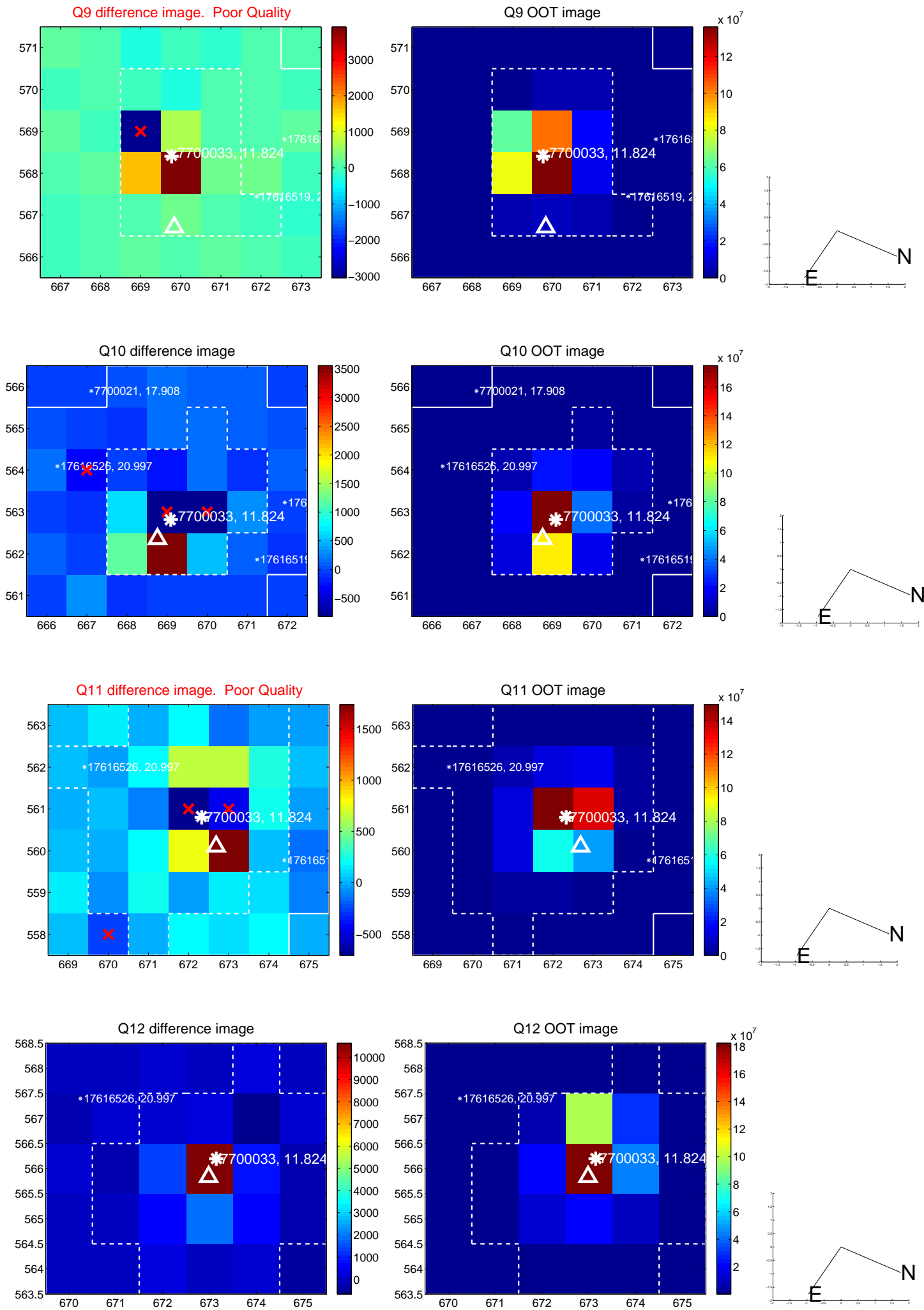
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



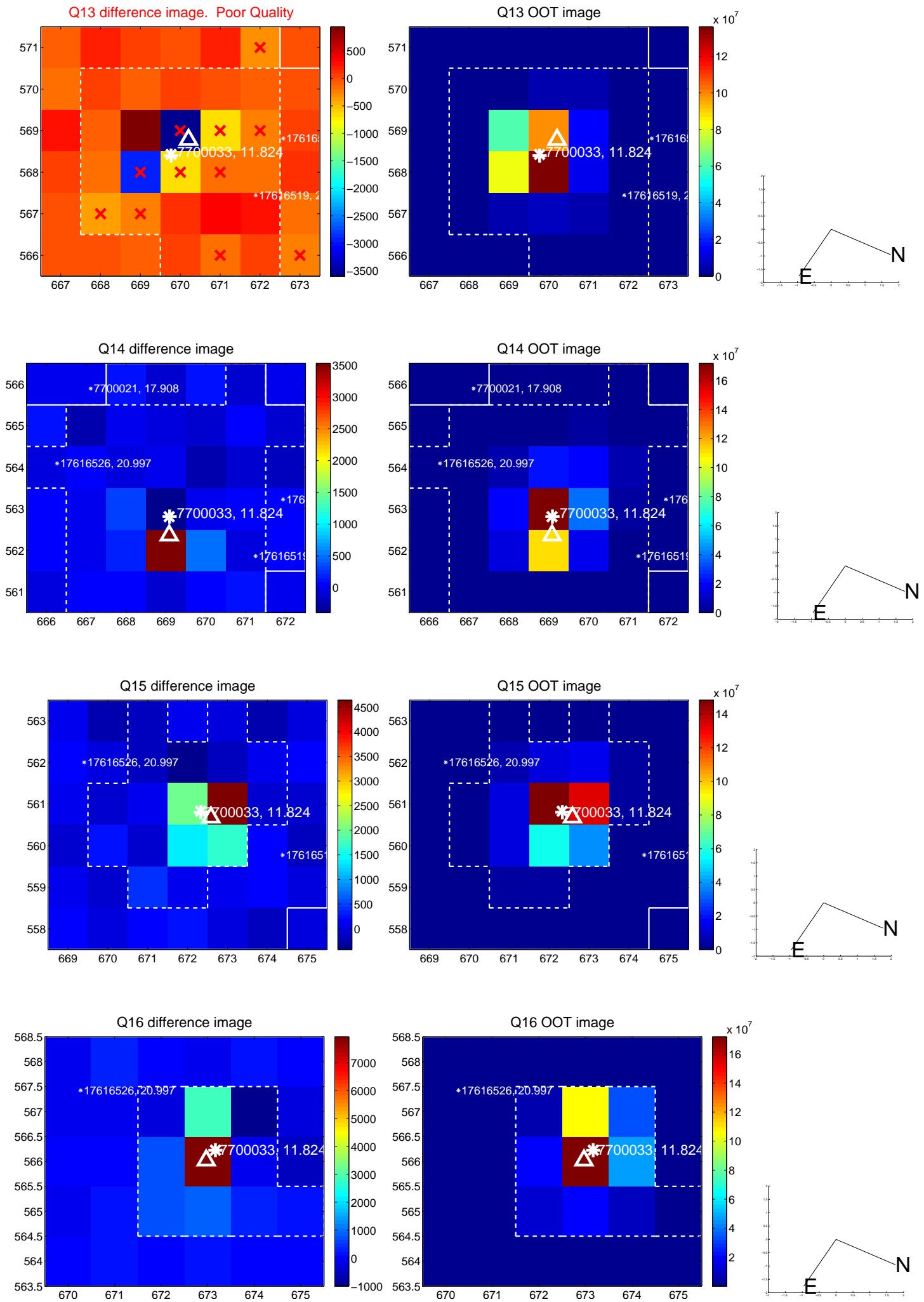
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

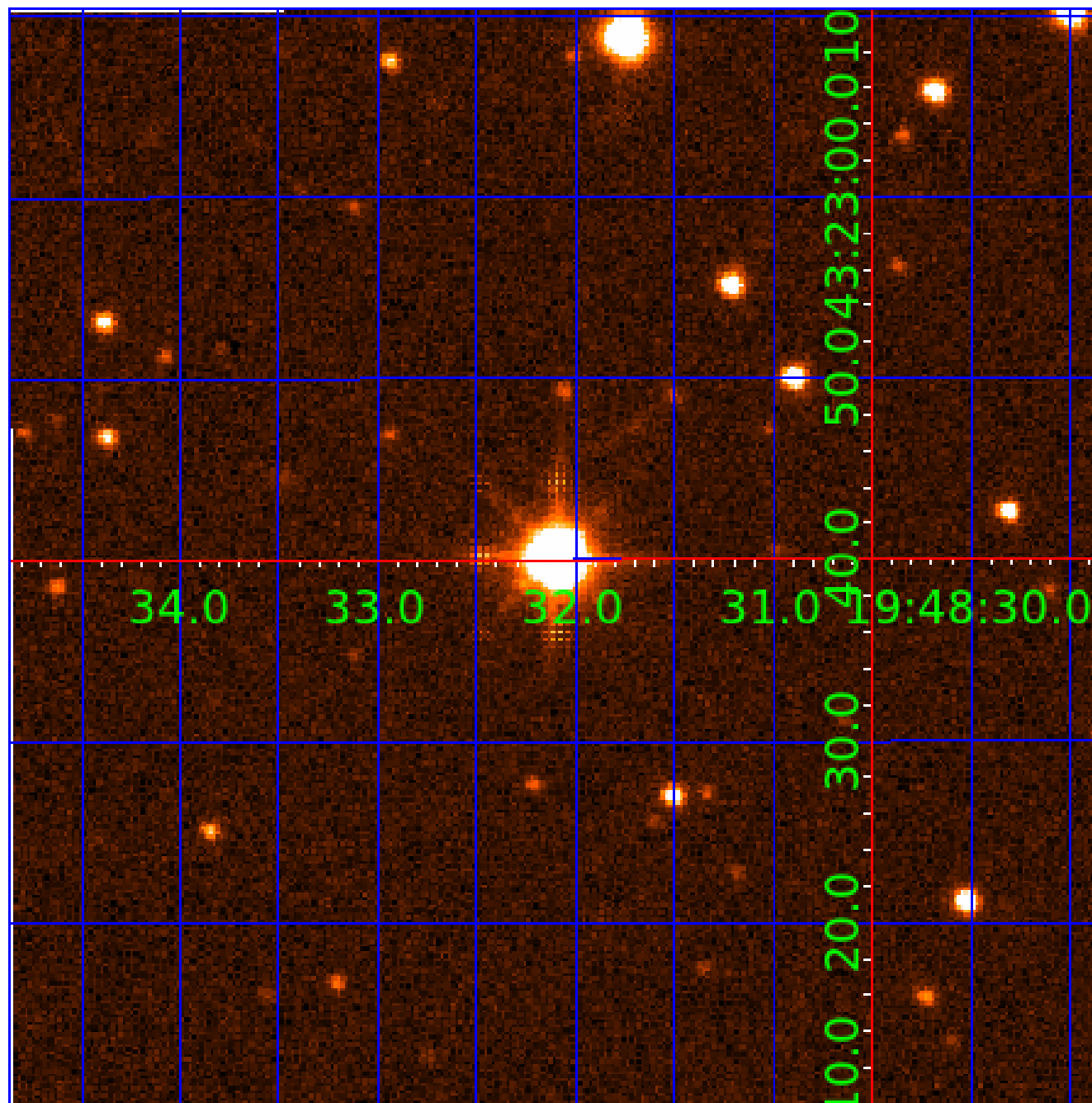


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007700033

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})
007700033-01	OBS	No	0.782971	131.864164	14.0	2.319	12.2	11.5	1.75	7359	0.76	21144.85
007700033-02	OBS	No	0.782972	132.159251	13.0	2.215	11.7	11.5	1.75	7359	0.73	21144.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007700033-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007700033-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

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

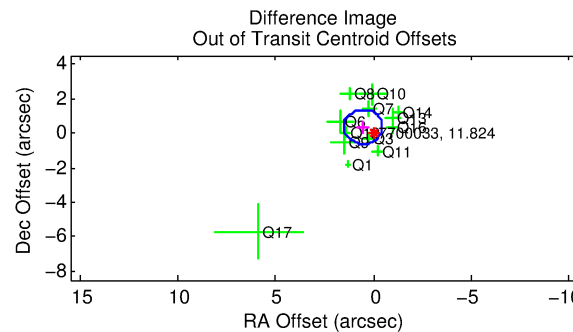
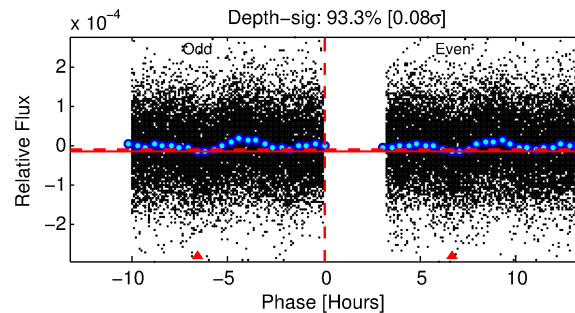
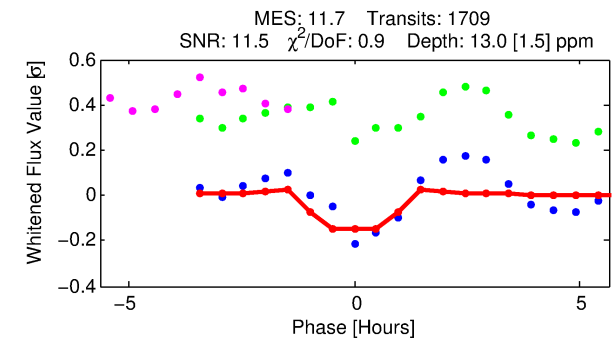
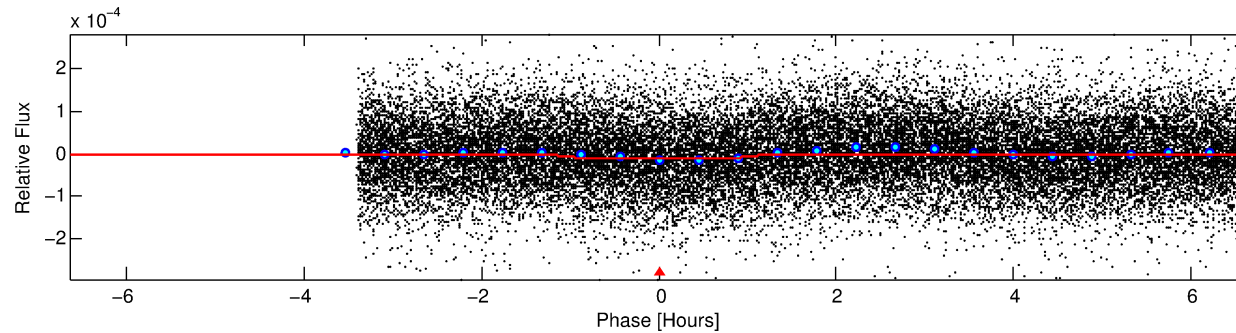
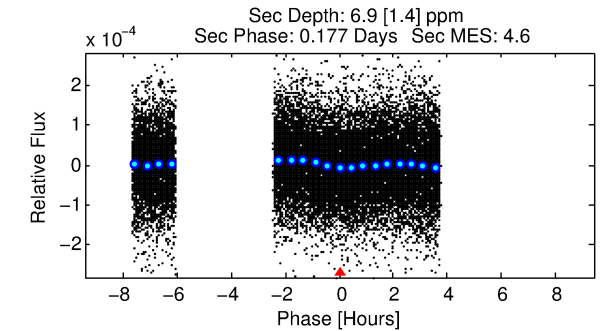
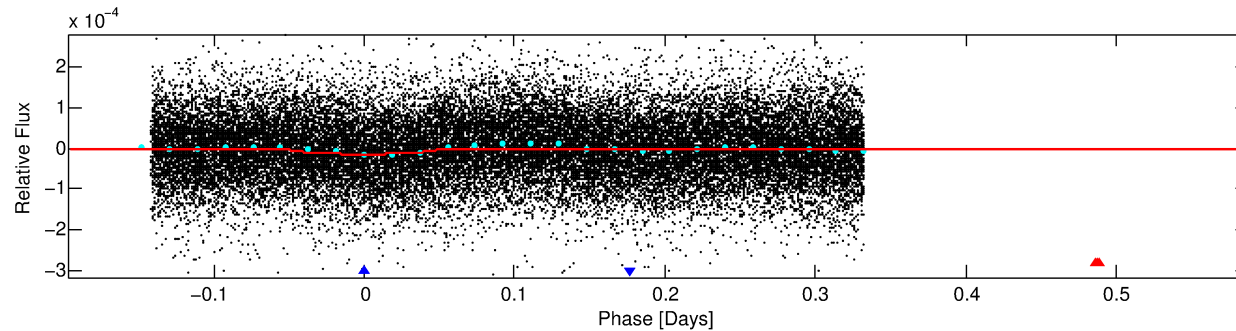
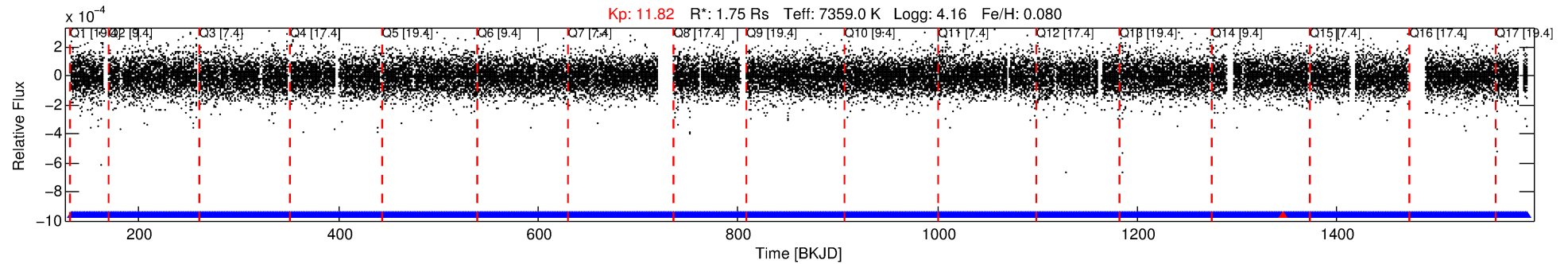
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007700033-02

No Significant Match Found

DV One-Page Summary

KIC: 7700033 Candidate: 2 of 2 Period: 0.783 d



DV Fit Results:

Period = 0.78297 [0.00001] d
Epoch = 132.1593 [0.0022] BKJD
Rp/R* = 0.0038 [0.0007]
a/R* = 1.52 [0.92]
b = 0.90 [0.22]
Seff = 21144.81 [8754.80]
Teq = 3075 [318] K
Rp = 0.73 [0.27] Re
a = 0.0195 [0.0051] AU
Ag = 2.69 [1.48] [1.15σ]
Teffp = 6090 [683] K [4.00σ]

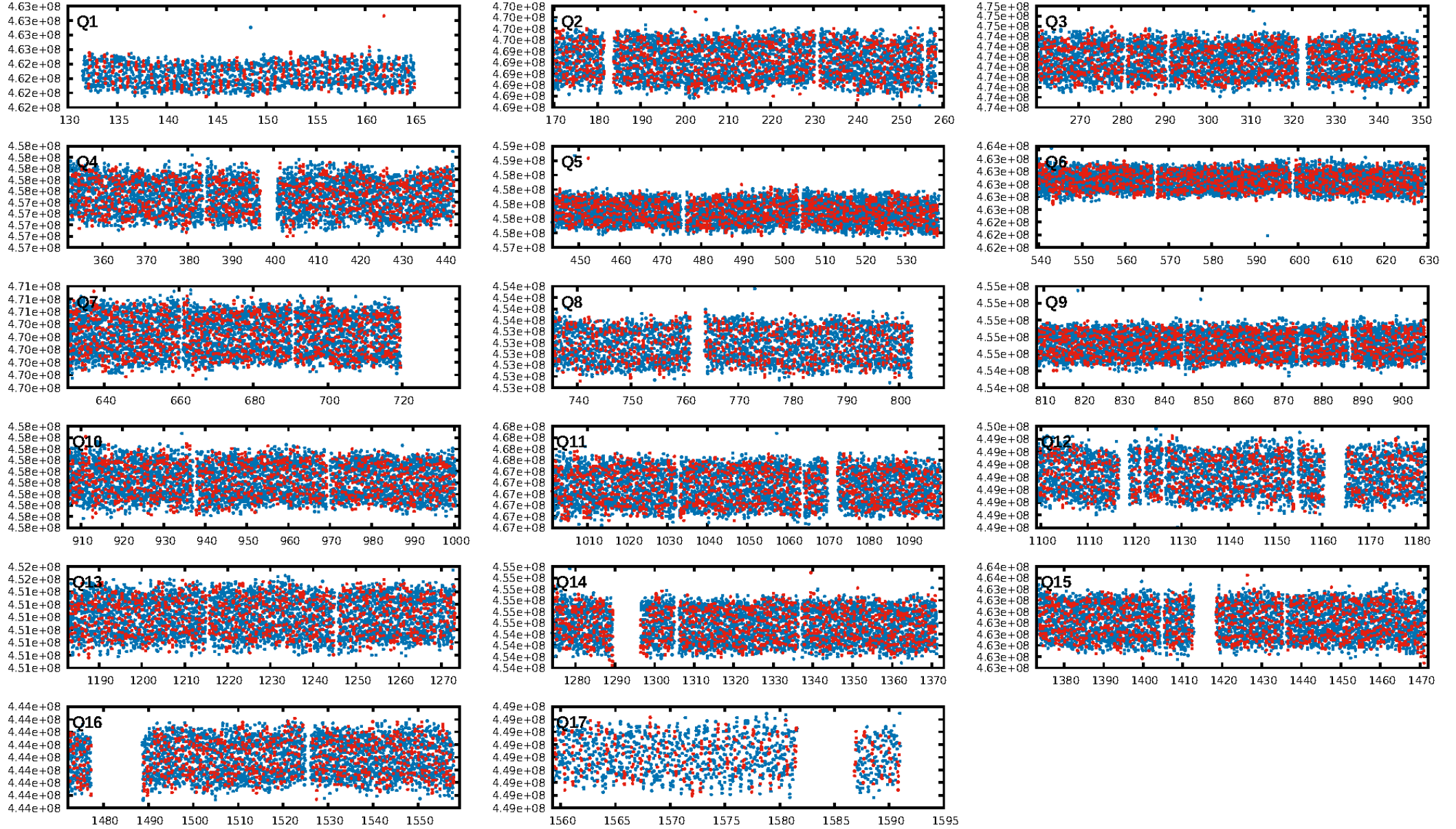
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.73e-18
RollingBand-fgt: 1.00 [1631/1632]
GhostDiagnostic-chr: 4.489
Centroid-sig: 6.9%
Centroid-so: 1.043 arcsec [1.47σ]
OotOffset-rm: 0.650 arcsec [1.97σ]
KicOffset-rm: 0.563 arcsec [1.18σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.77 [10/13]
DiffImageOverlap-fno: 0.00 [0/17]

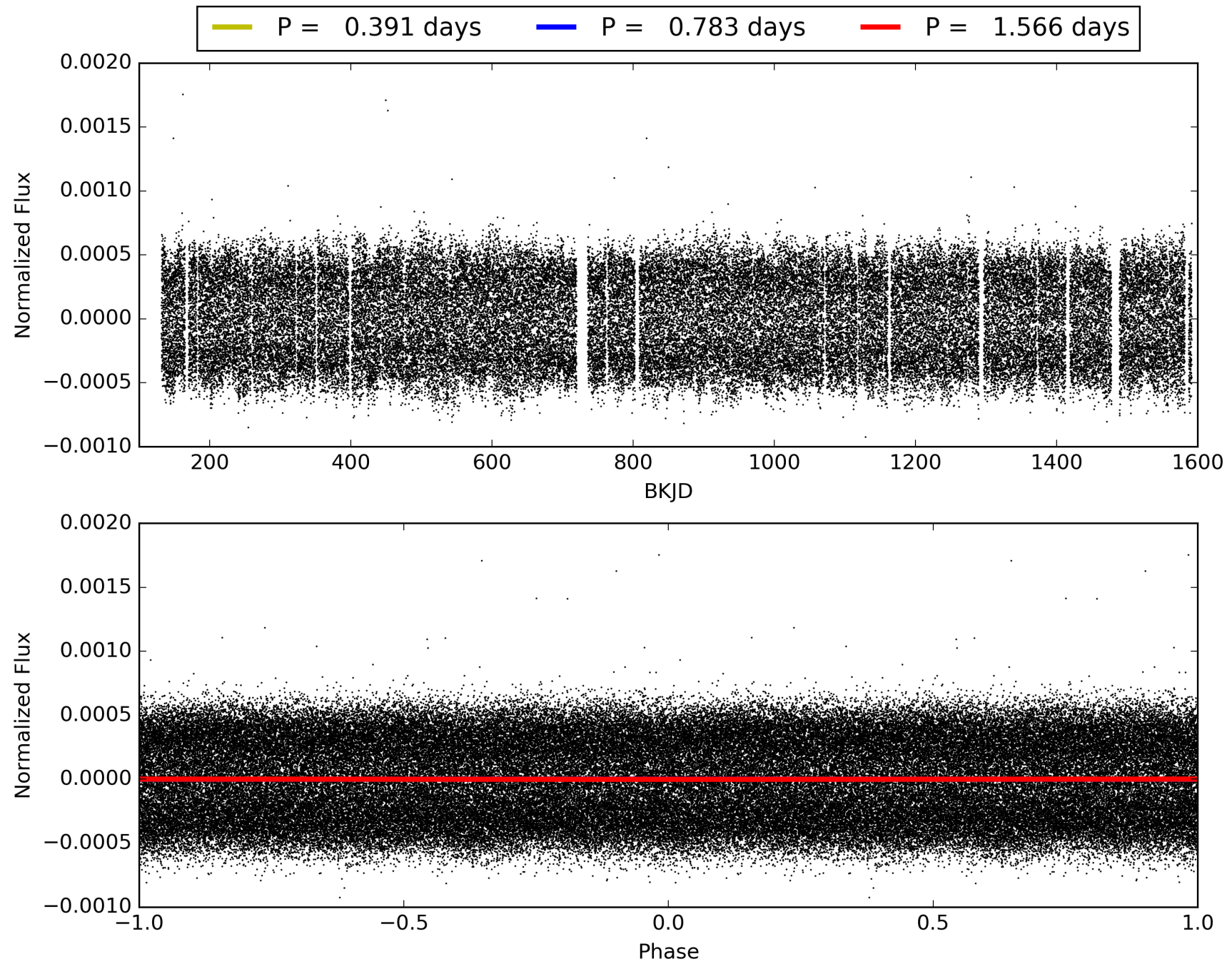
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:33:27 Z

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

TCE 007700033-02, PDC Light Curves

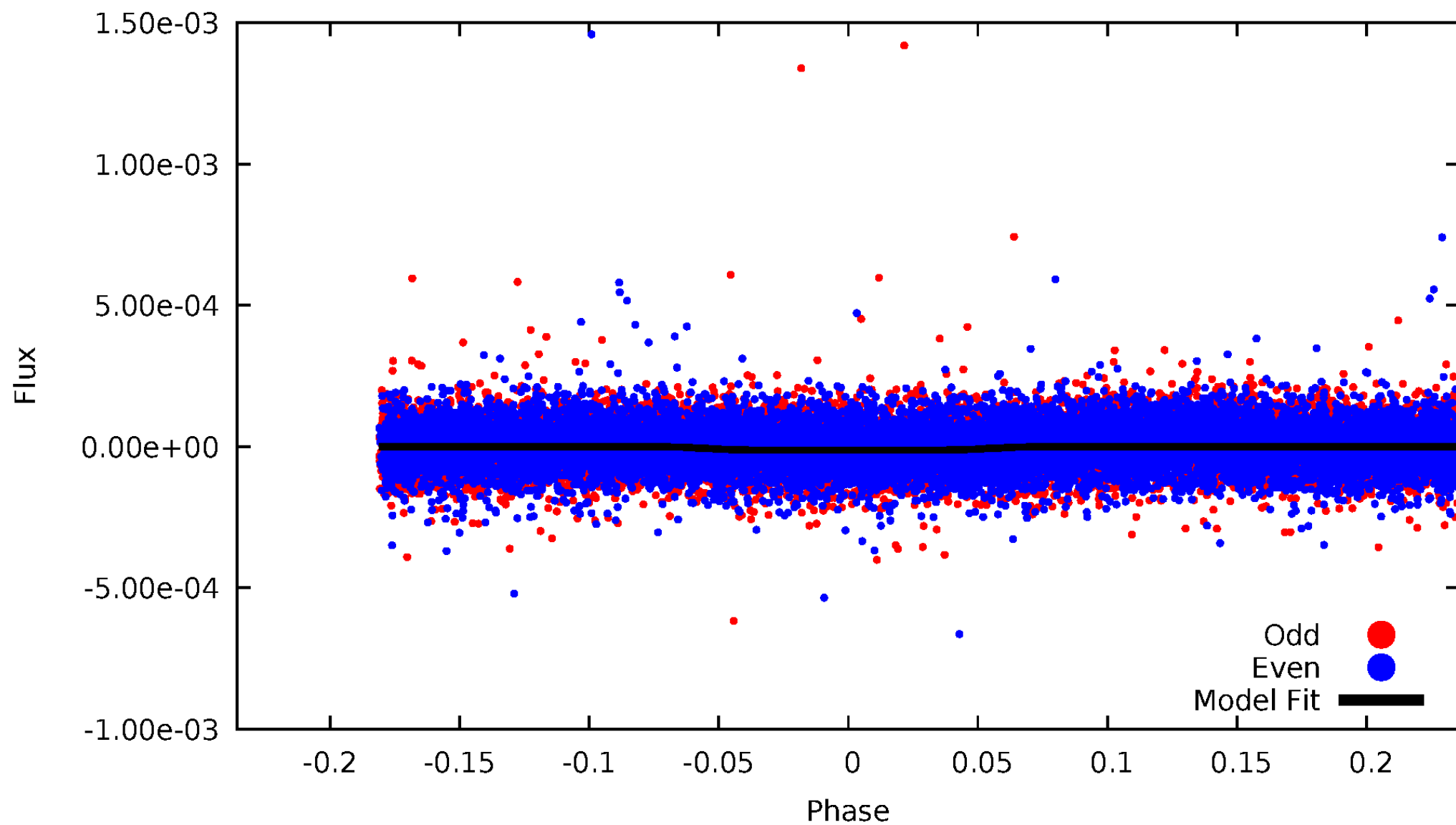


TCE 007700033-02



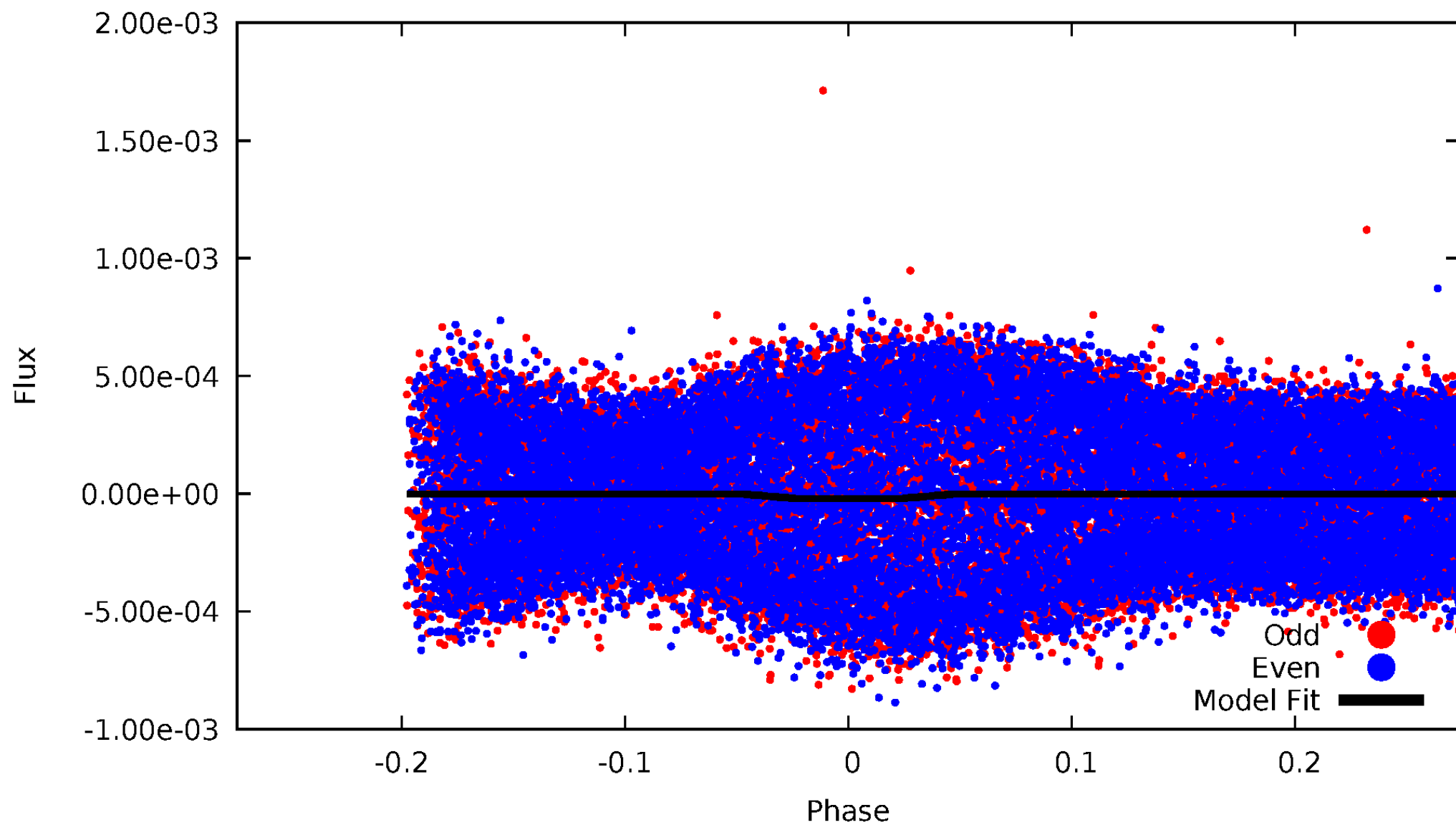
DV Odd/Even

TCE 007700033-02



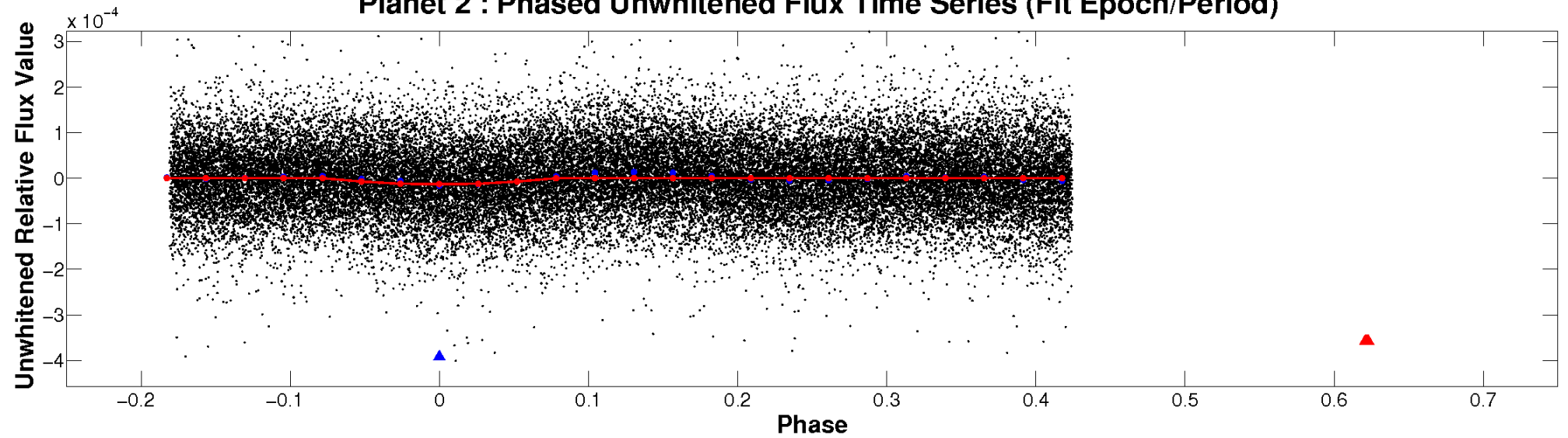
ALT Odd/Even

TCE 007700033-02

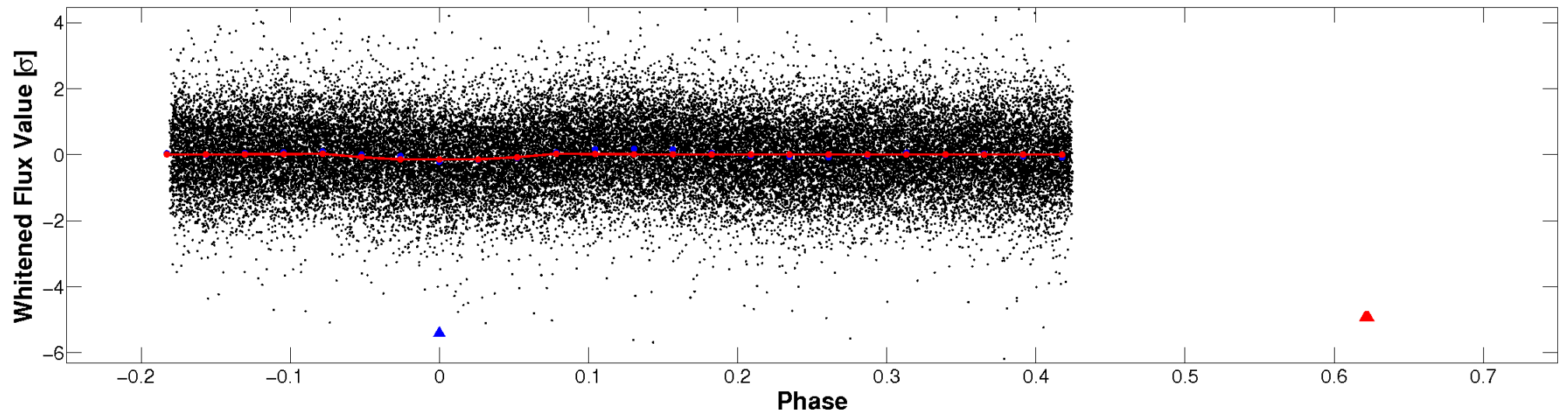


Non-Whitened Vs. Whitened Light Curve

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

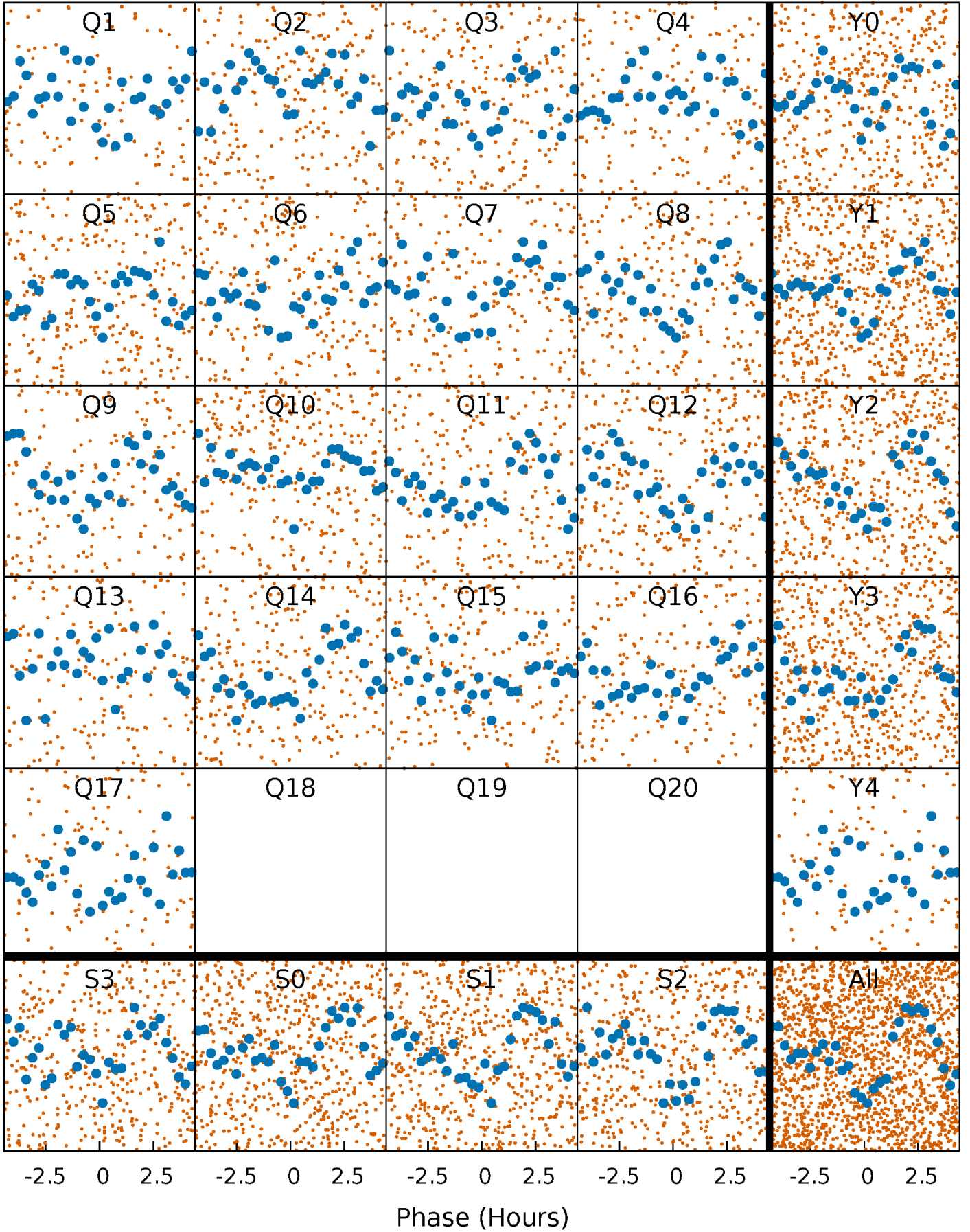


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



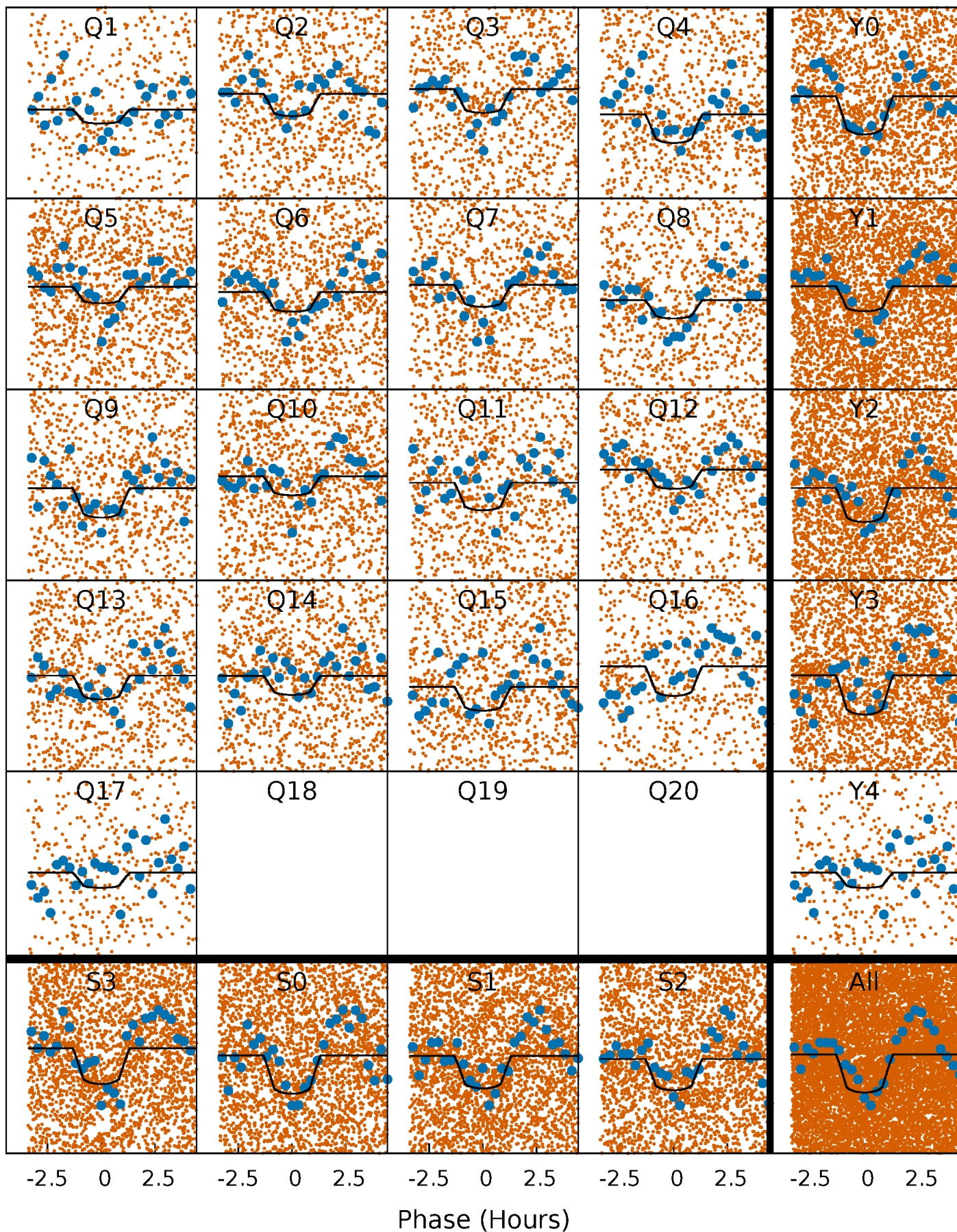
PDC Quarter-Phased Transit Curves

TCE 007700033-02 P= 0.782972 Days $T_0=132.159251$ (BKJD)



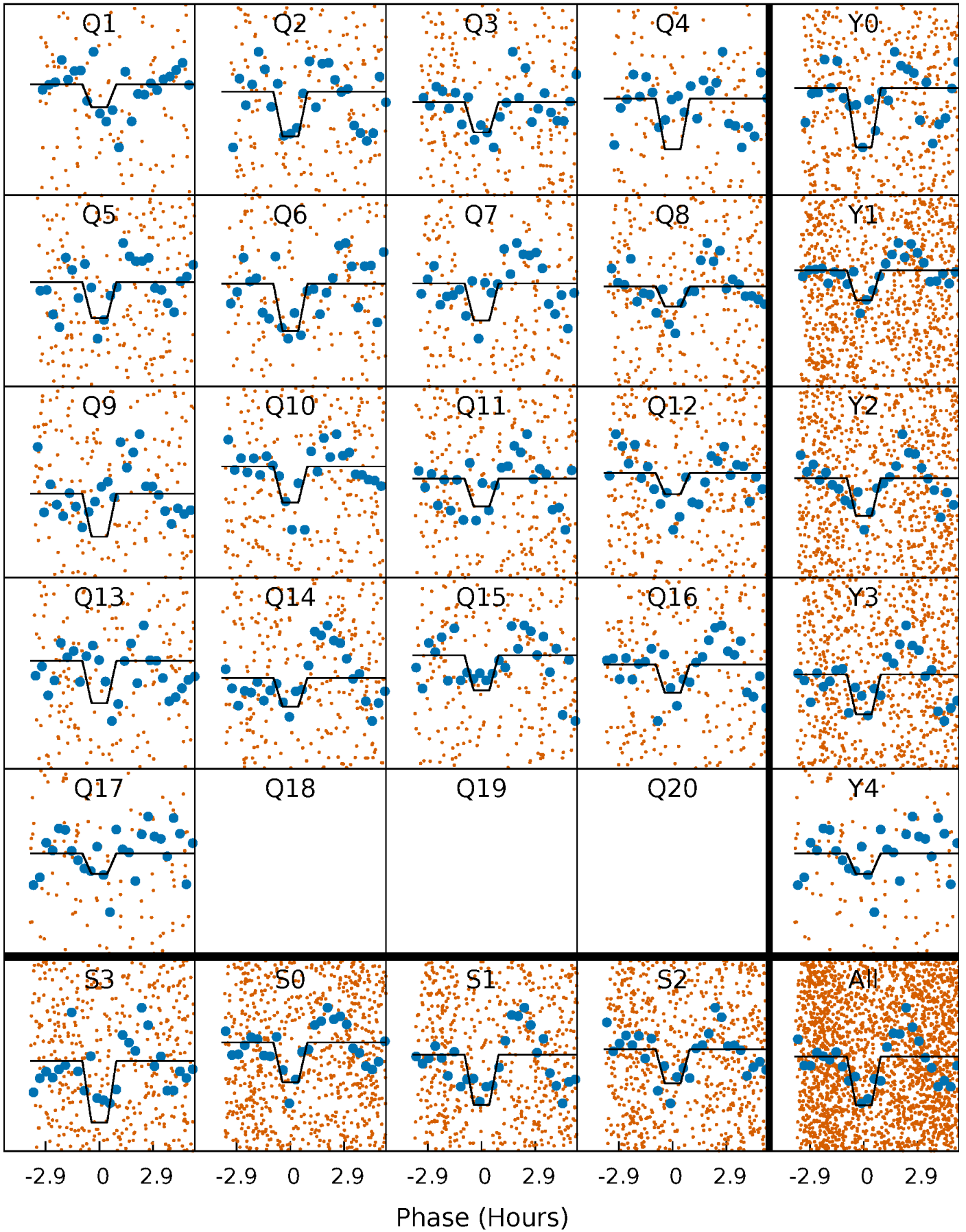
DV Quarter-Phased Transit Curves

TCE 007700033-02 $P = 0.782972$ Days $T_0 = 132.159251$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

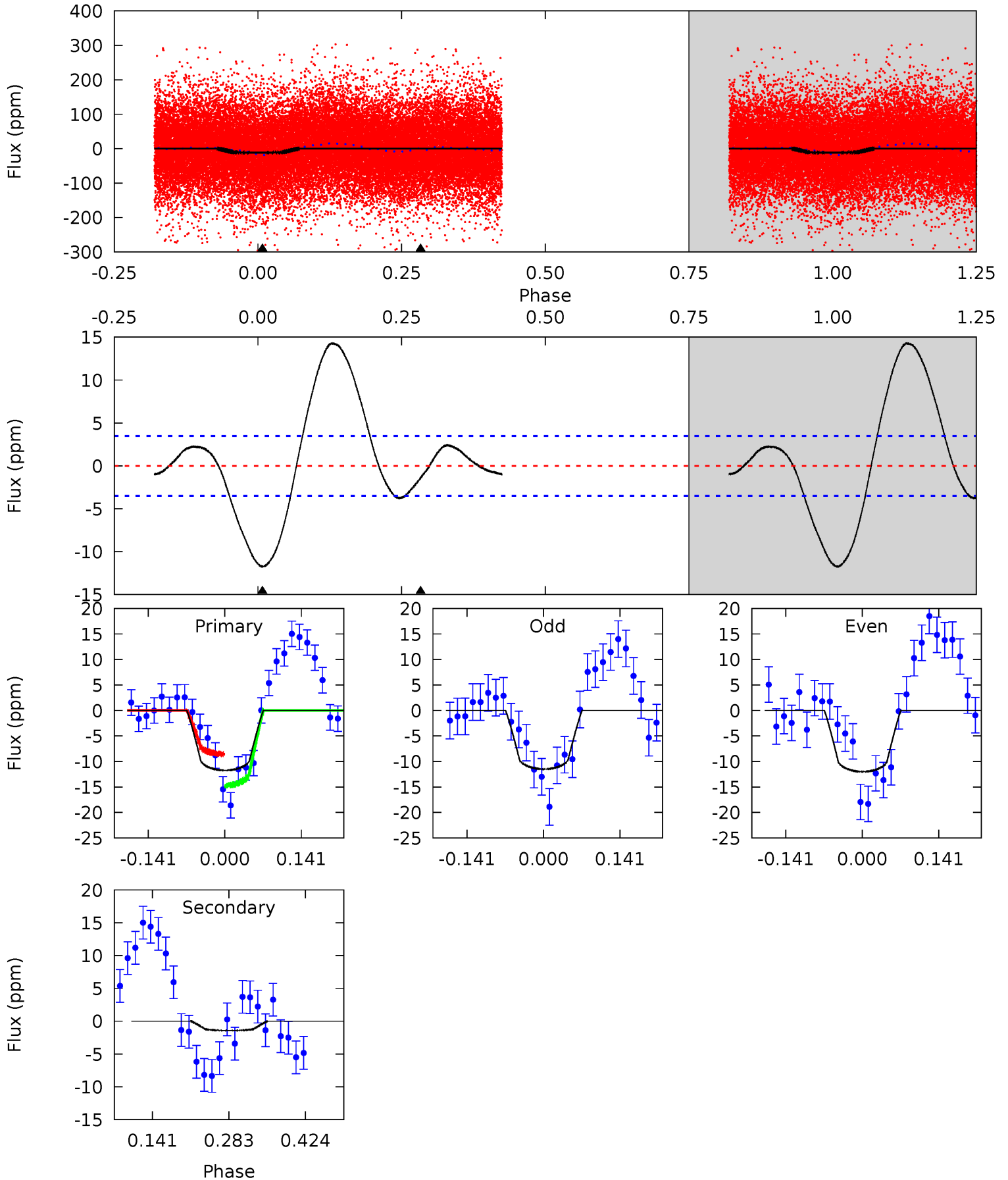
TCE 007700033-02 P= 0.782983 Days $T_0=132.153480$ (BKJD)



DV Model-Shift Uniqueness Test

007700033-02, P = 0.782972 Days, E = 131.376279 Days

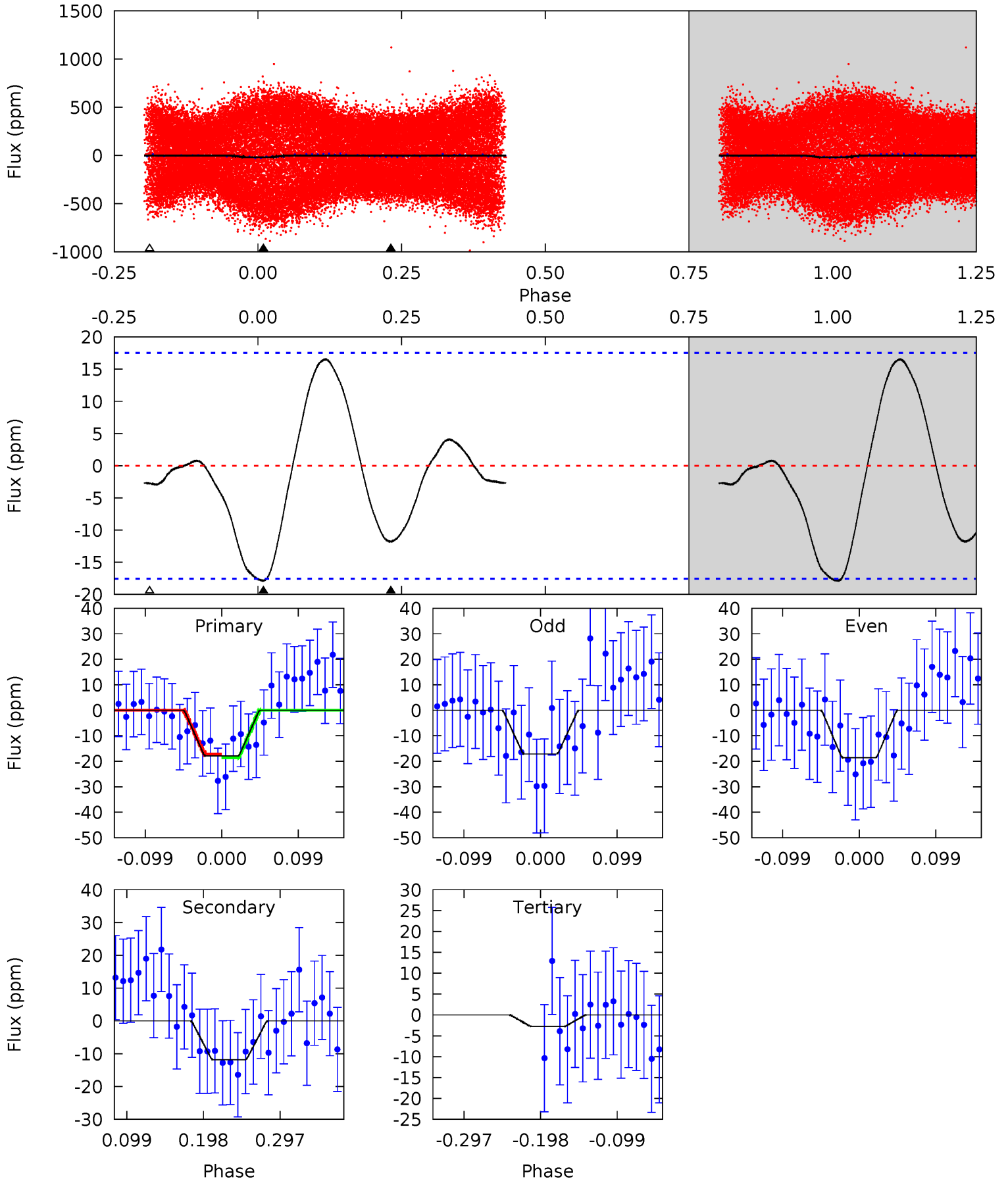
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.1	1.84	0	0	4.49	1.47	4.26	15.1	15.1	1.84	1.84	0.33	1.01	0.55	3.93



Alt Model-Shift Uniqueness Test

007700033-02, P = 0.782983 Days, E = 131.370497 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.65	3.07	0.72	0	4.57	1.65	1.43	3.94	4.65	2.36	3.07	0.19	1.48	0.48	0.20



Stellar Parameters For KIC 007700033

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7359^{+203}_{-348}	$4.159^{+0.105}_{-0.195}$	$0.080^{+0.200}_{-0.350}$	$1.746^{+0.562}_{-0.302}$	$1.603^{+0.203}_{-0.226}$	$0.424^{+0.205}_{-0.218}$
	+3%/-5%	+3%/-5%	+250%/-438%	+32%/-17%	+13%/-14%	+48%/-51%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 007700033-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 1	$0.75^{+0.17}_{-0.14}$	4329^{+337}_{-273}	3657^{+792}_{-6915}	$0.516^{+0.443}_{-0.315}$
Alt.	-12 ± 4	$0.92^{+0.18}_{-0.17}$	4322^{+332}_{-248}	6020^{+778}_{-755}	$2.878^{+1.676}_{-1.194}$

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 $A_{obs} \gg 1.0$

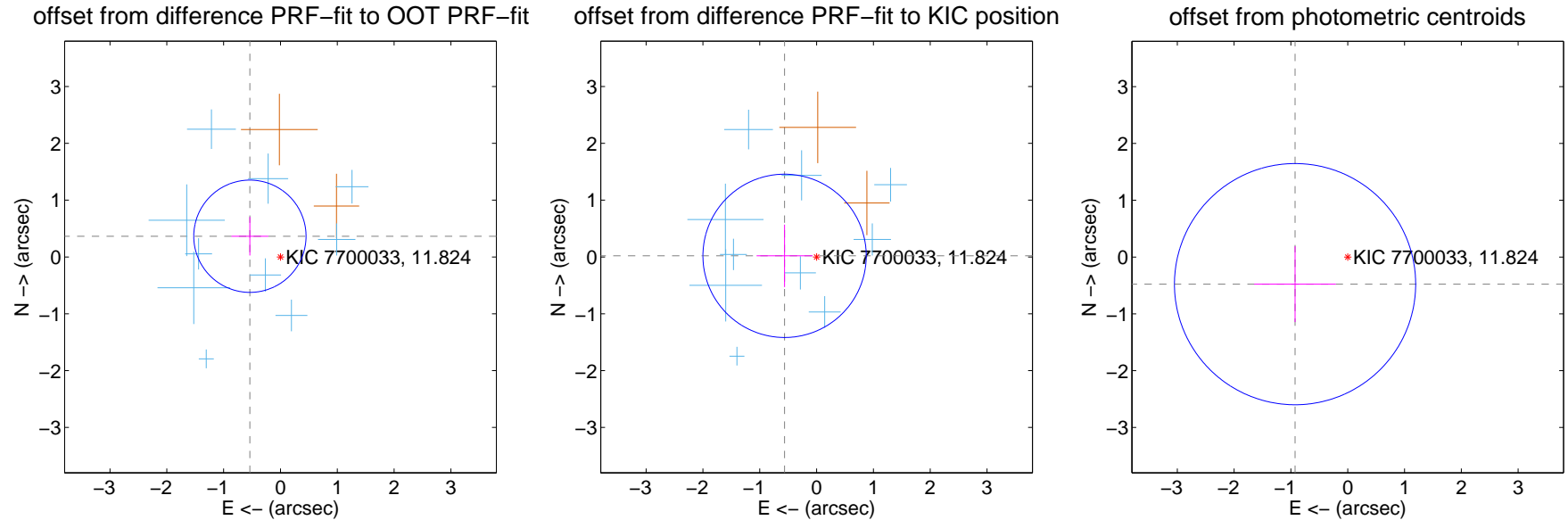
DV Centroid Data

Supplemental centroid analysis for 007700033-02. **Kepler magnitude: 11.82.** Transit SNR 11.54

There are 10 quarters with good PRF difference image offsets

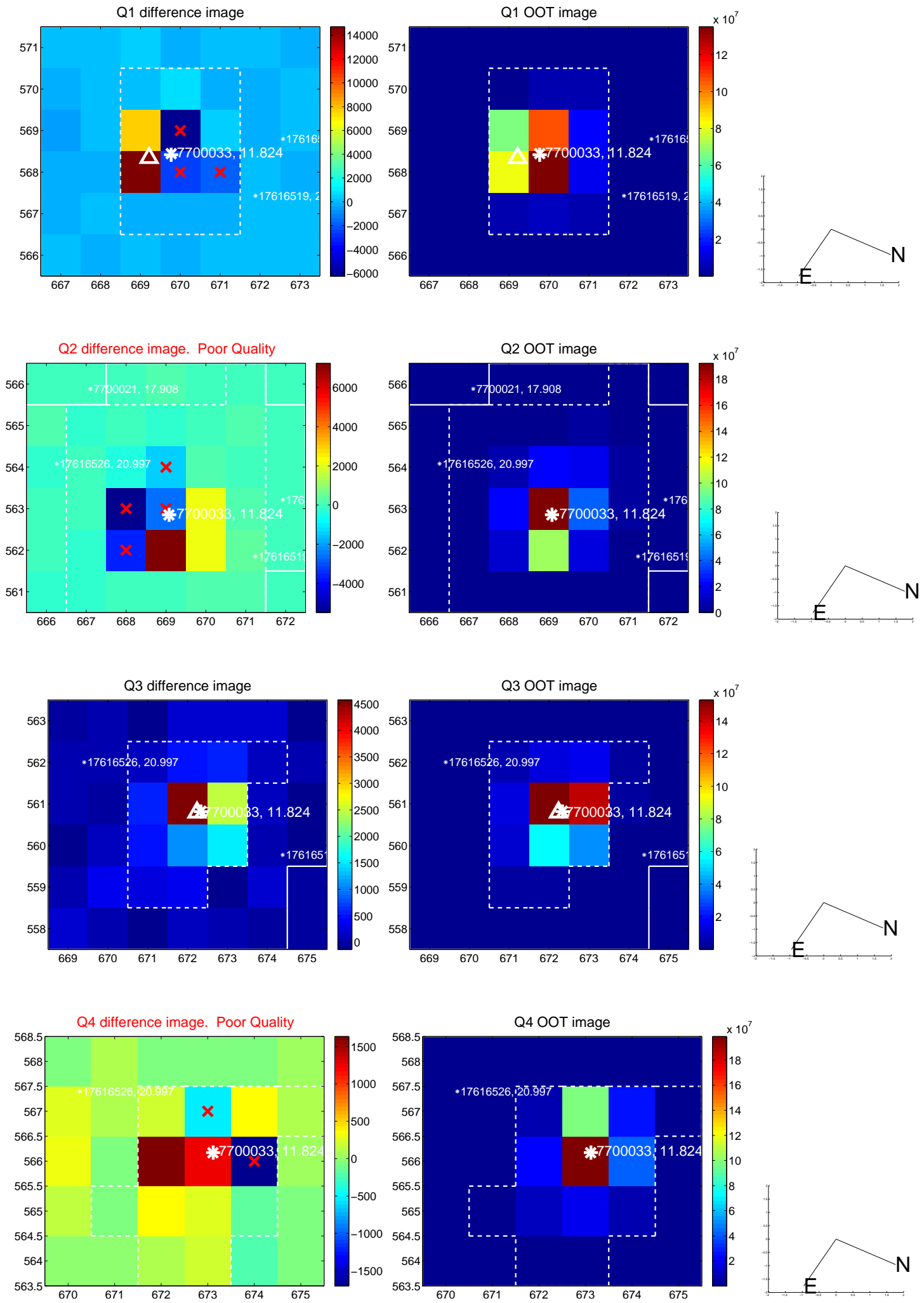
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.650 ± 0.329	1.97	0.538 ± 0.325	0.365 ± 0.339
PRF-fit source offset from KIC position	0.563 ± 0.479	1.18	0.563 ± 0.493	0.020 ± 0.549
photometric centroid source offset	1.04 ± 0.71	1.47	0.93 ± 0.72	-0.48 ± 0.67

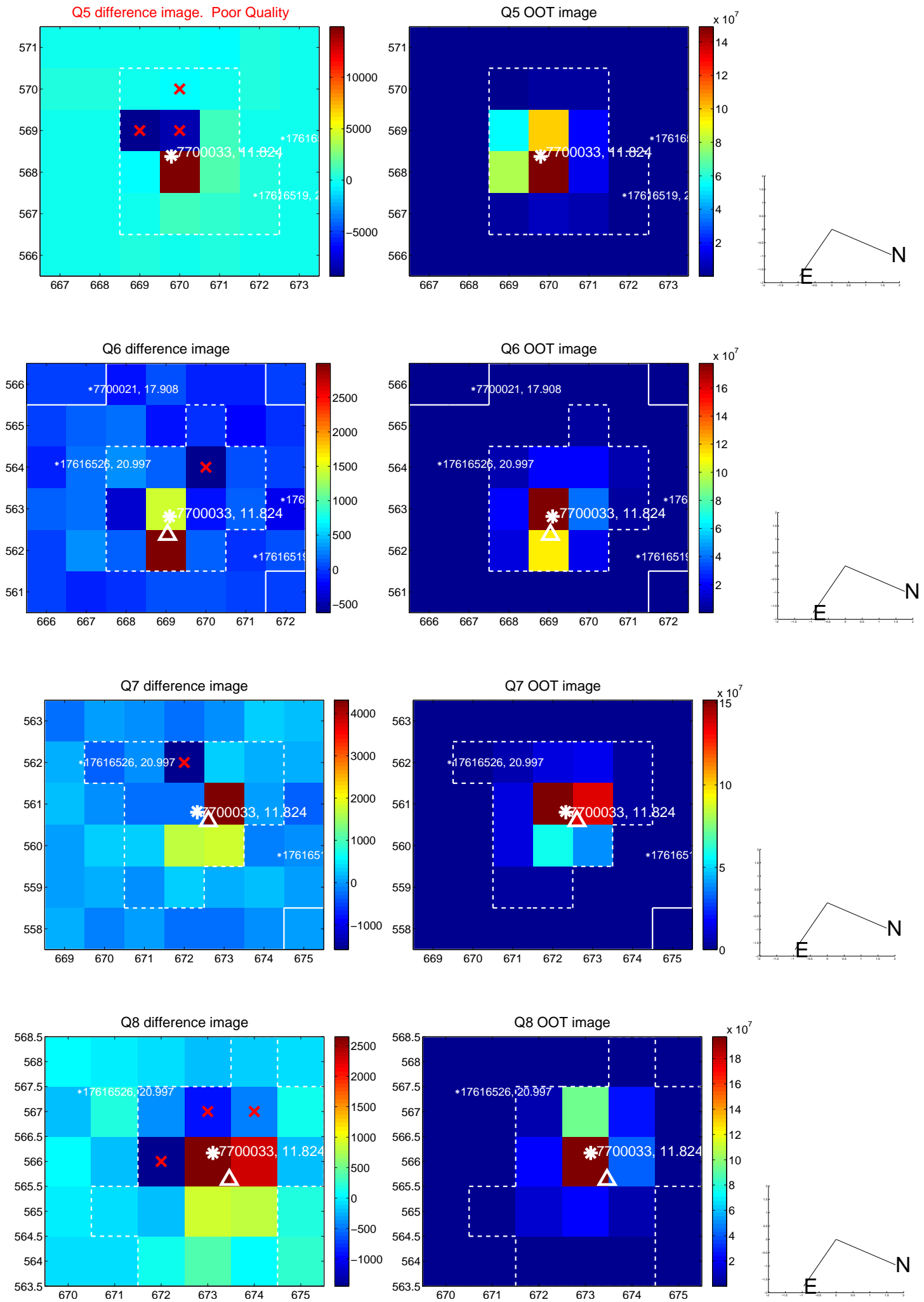


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

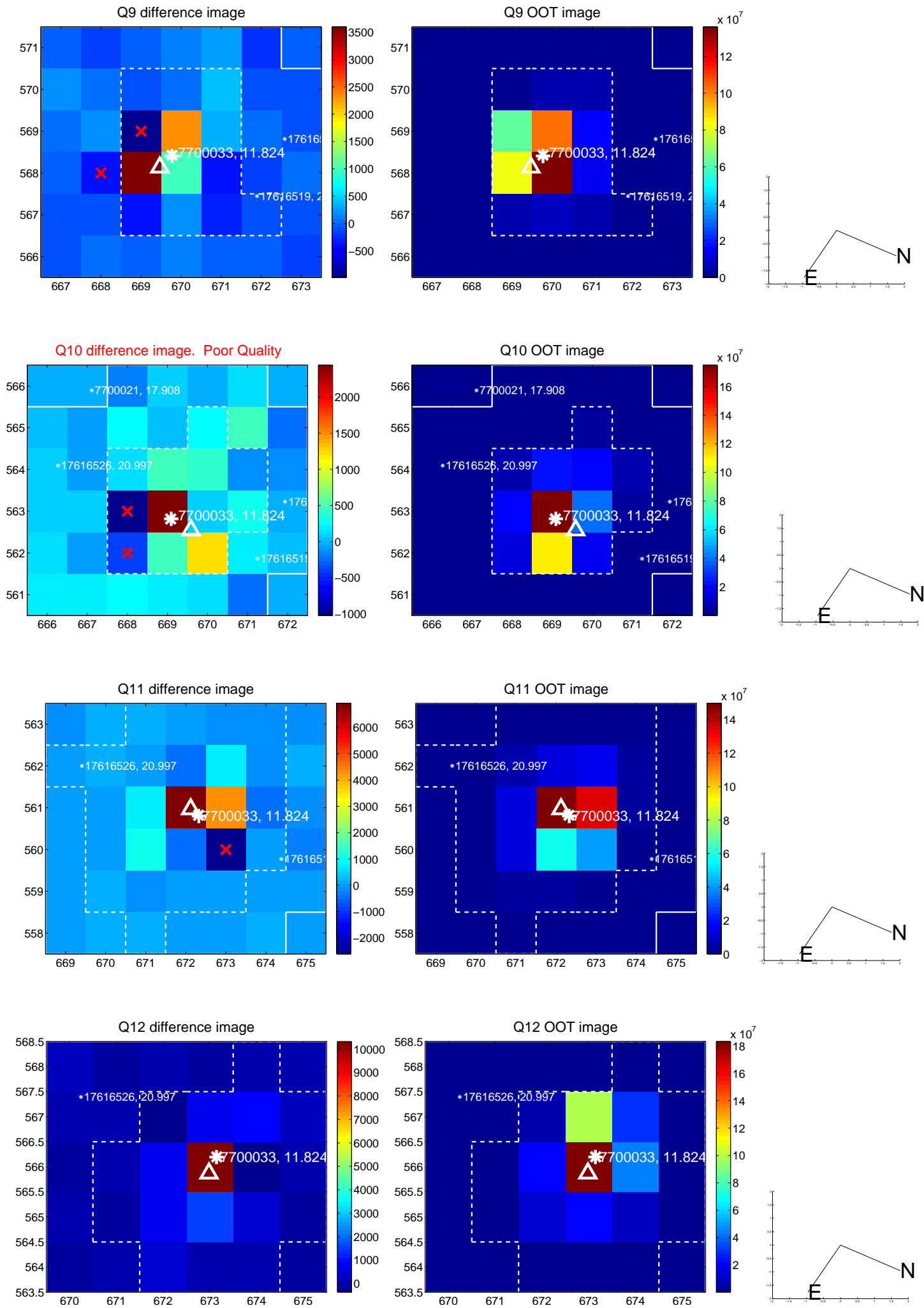
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



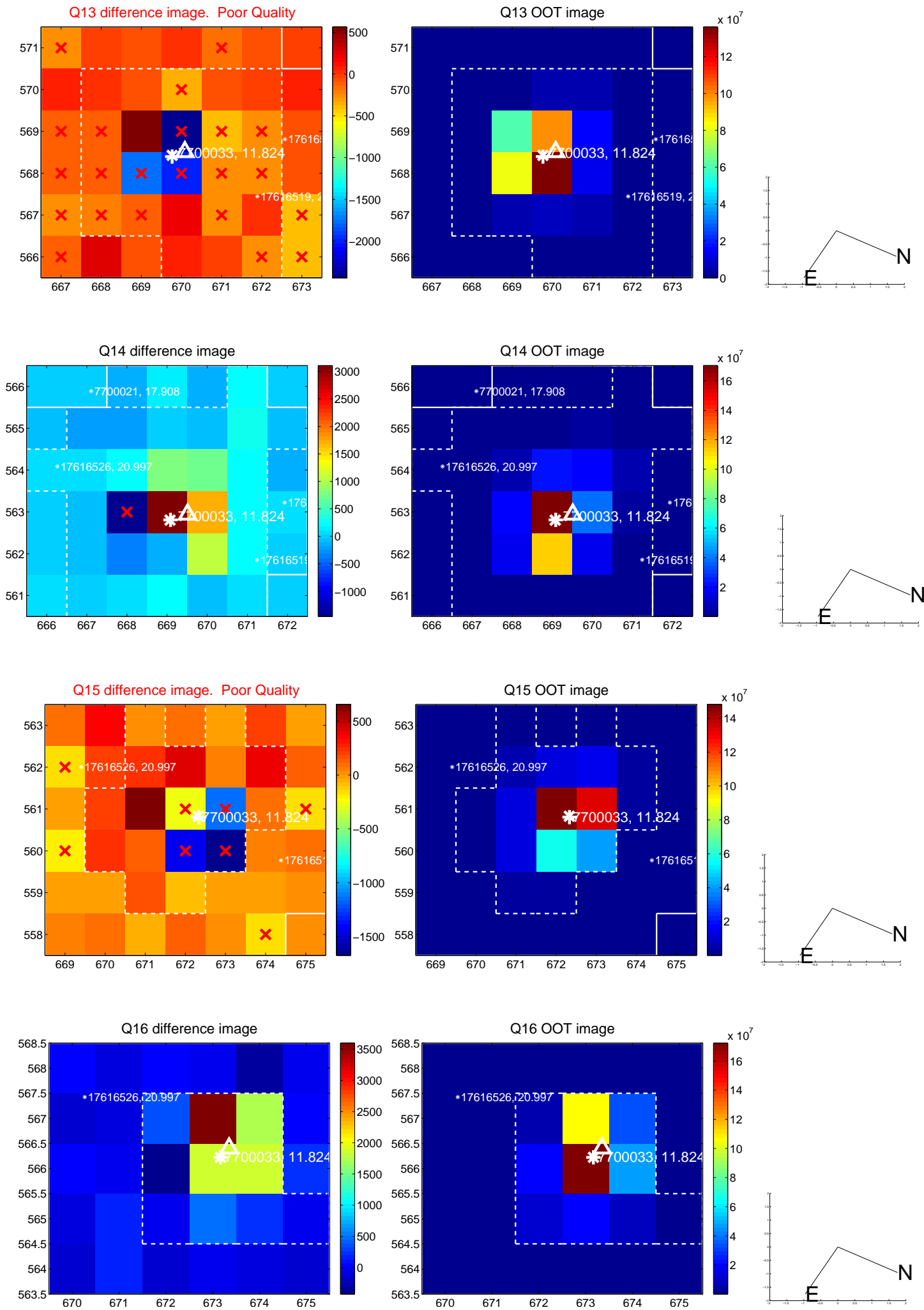
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



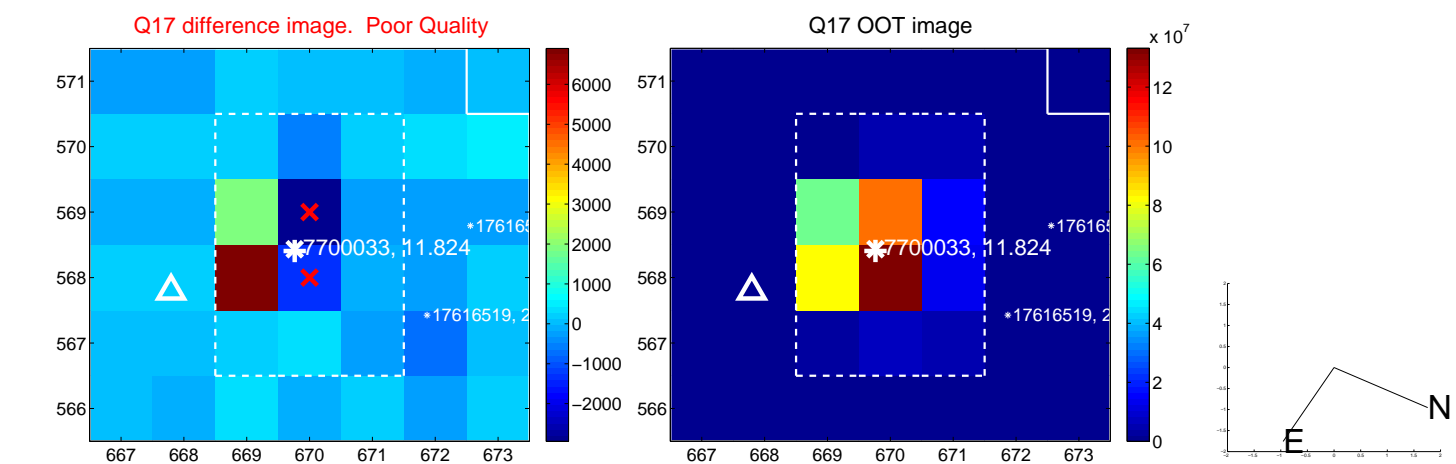
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



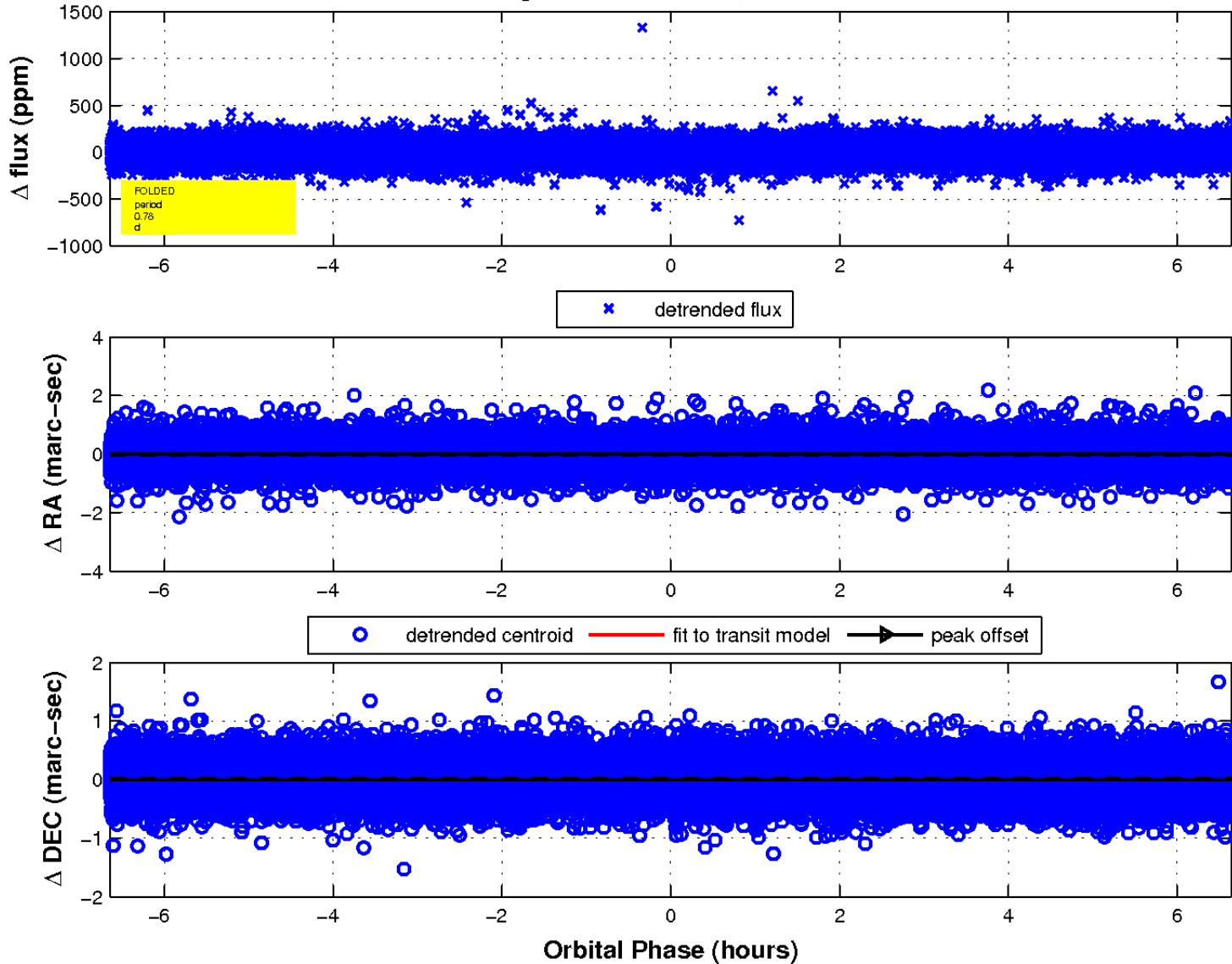
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

