

KIC 002994888

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})
002994888-01	OBS	No	0.743082	132.273385	97.1	4.739	12.6	11.3	1.86	7691	1.91	29428.14
002994888-02	OBS	No	0.536836	131.612400	341.6	6.442	11.1	19.6	1.86	7691	3.99	45396.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002994888-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
002994888-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_FEW_DIFFS

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

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

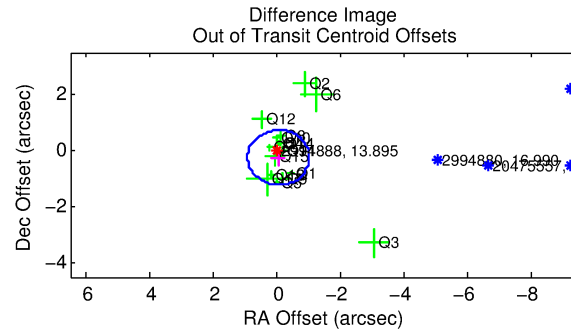
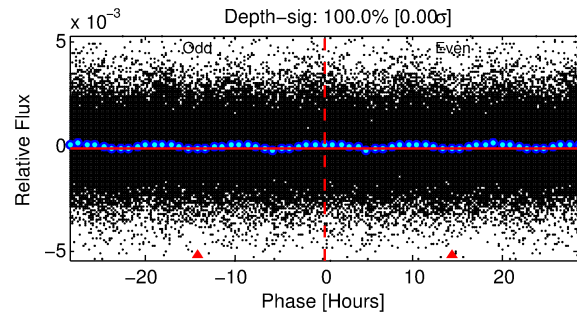
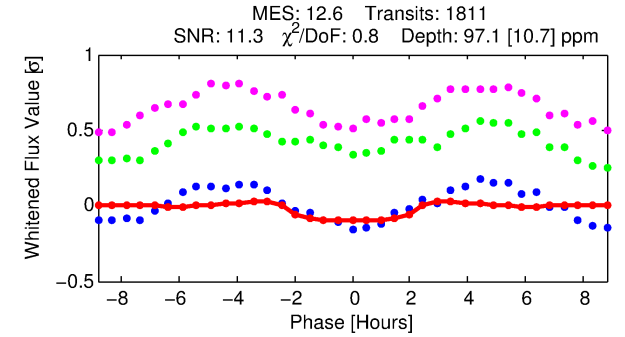
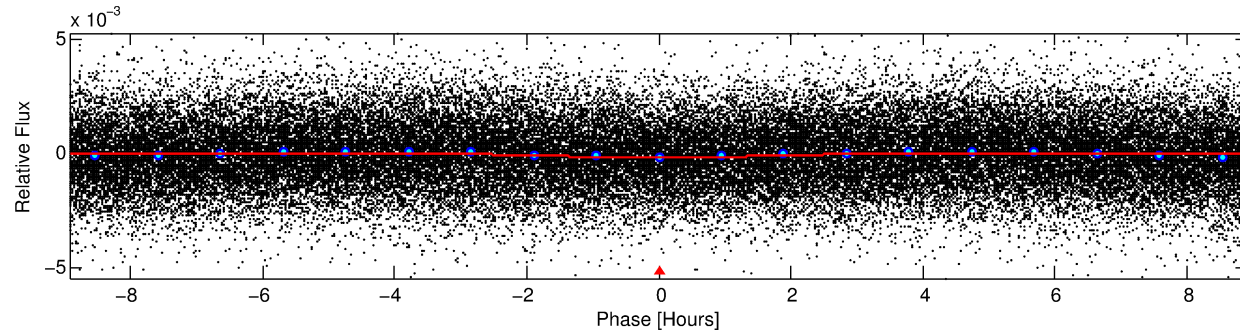
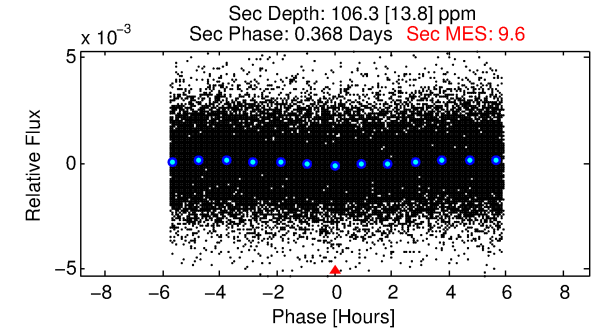
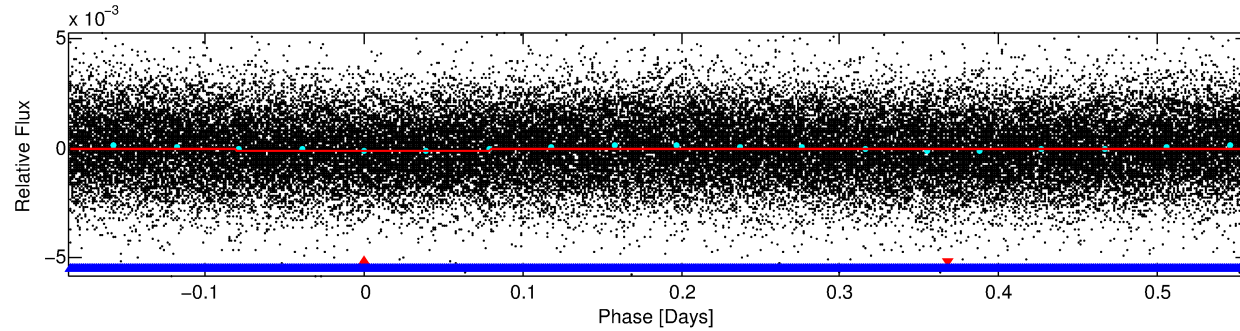
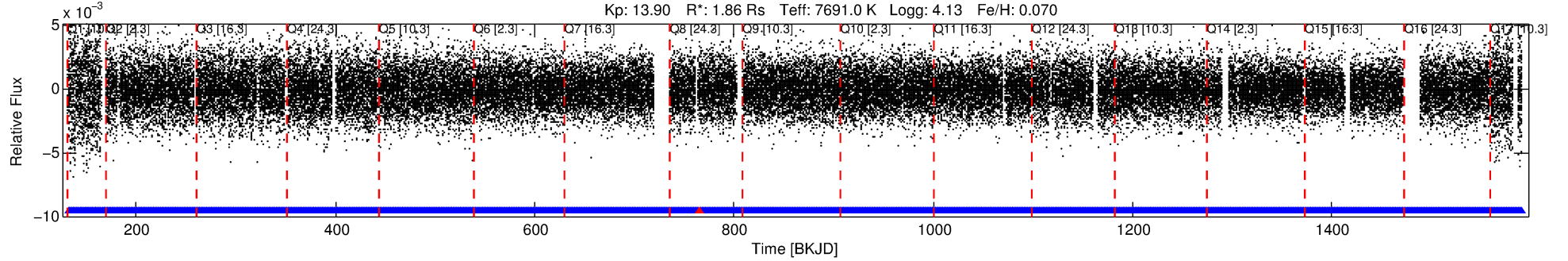
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002994888-01

No Significant Match Found

DV One-Page Summary

KIC: 2994888 Candidate: 1 of 2 Period: 0.743 d



DV Fit Results:

Period = 0.74308 [0.00001] d
Epoch = 132.2734 [0.0045] BKJD
Rp/R* = 0.0094 [0.0114]
a/R* = 1.28 [3.73]
b = 0.50 [11.22]
Seff = 29428.14 [11348.39]
Teq = 3340 [322] K
Rp = 1.91 [2.38] Re
a = 0.0192 [0.0046] AU
Ag = 5.95 [14.63] [0.34σ]
Teffp = 8064 [4920] K [0.96σ]

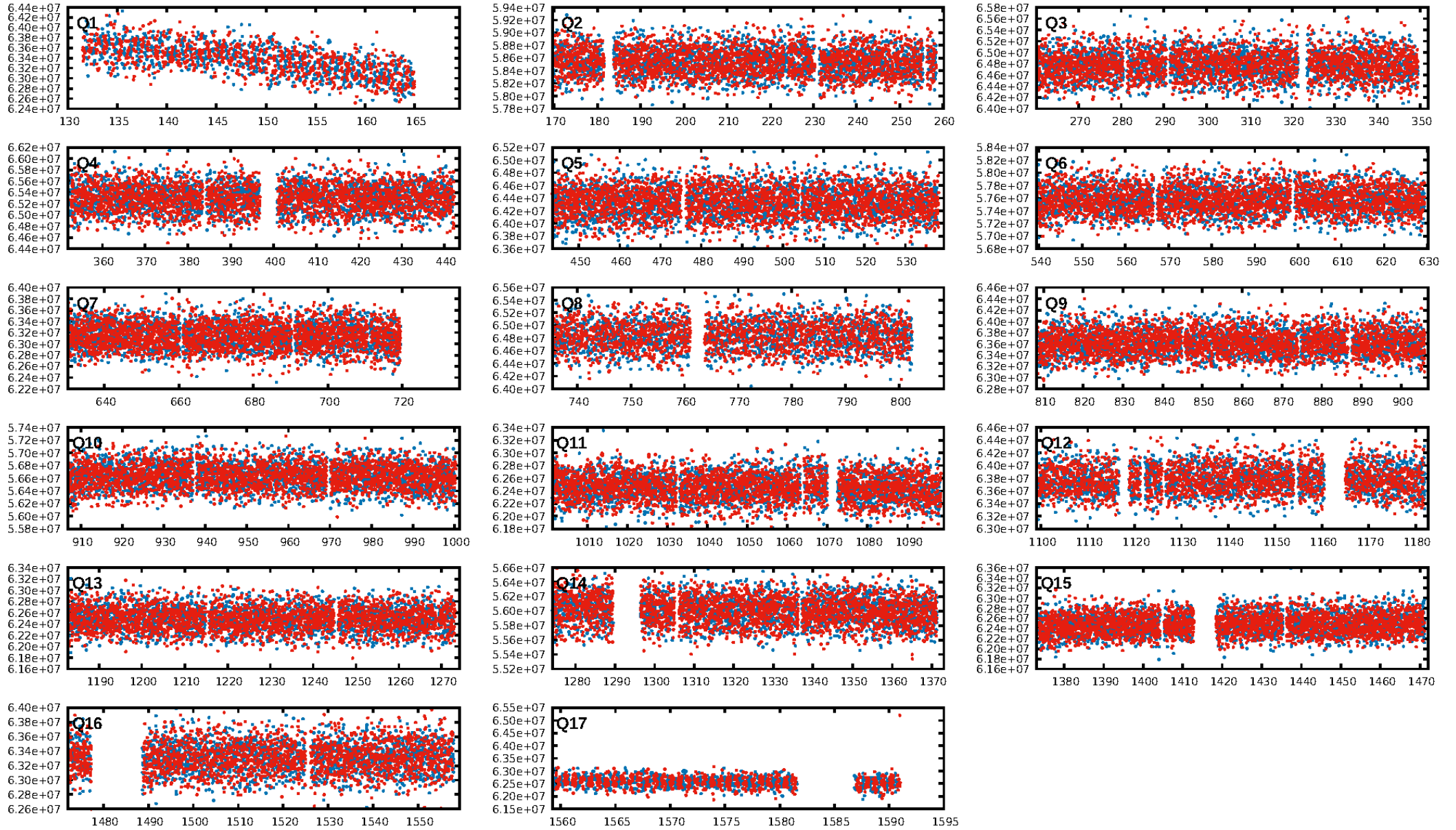
DV Diagnostic Results:

ShortPeriod-sig: 46.4% [0.62σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1728/1729]
GhostDiagnostic-chr: 1.89
Centroid-sig: 0.0%
Centroid-so: 0.698 arcsec [2.36σ]
OotOffset-rm: 0.252 arcsec [0.78σ]
KicOffset-rm: 0.204 arcsec [0.58σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

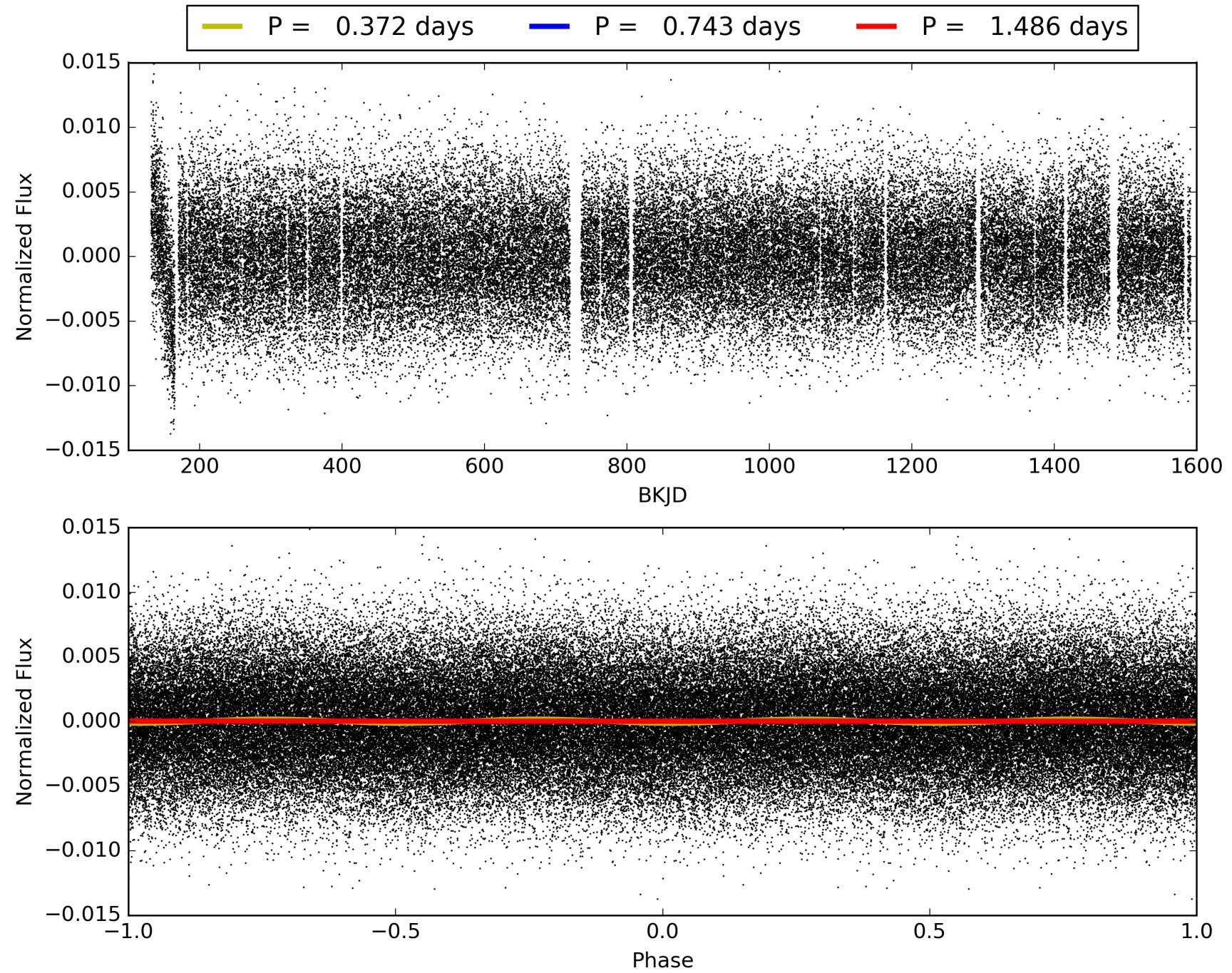
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:39 Z

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

TCE 002994888-01, PDC Light Curves

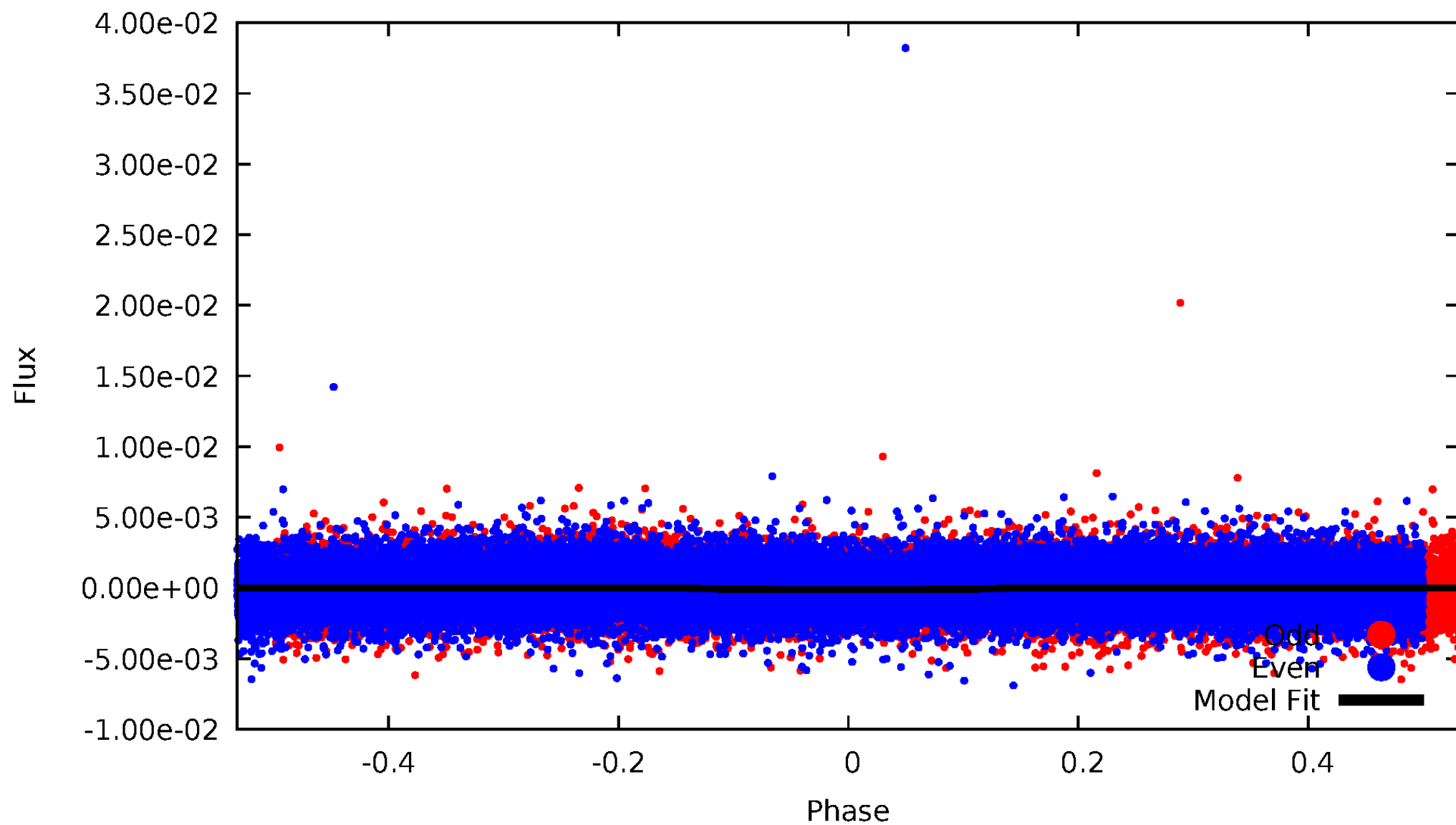


TCE 002994888-01



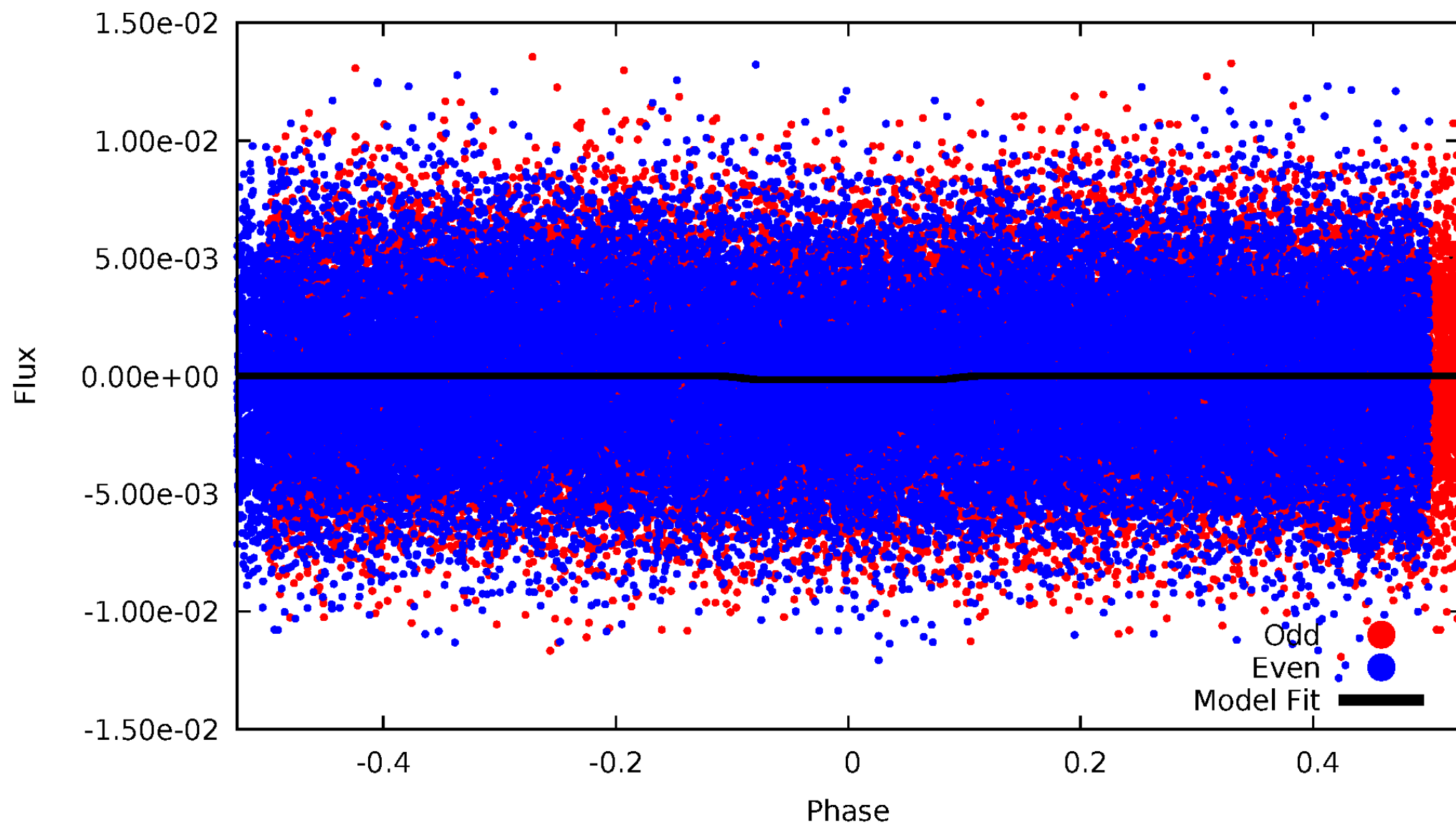
DV Odd/Even

TCE 002994888-01



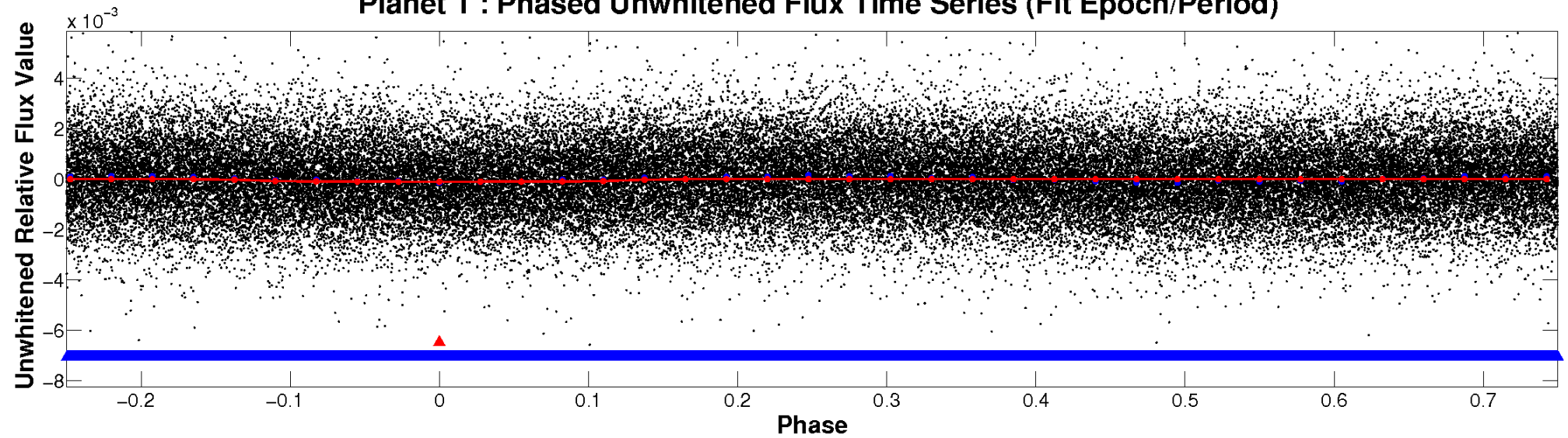
ALT Odd/Even

TCE 002994888-01

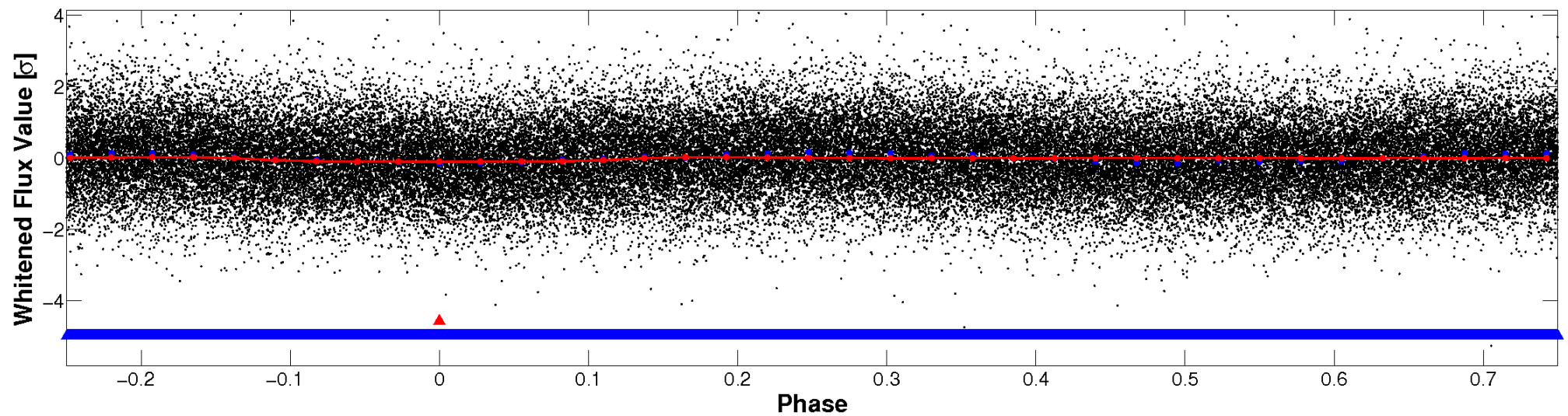


Non-Whitened Vs. Whitened Light Curve

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

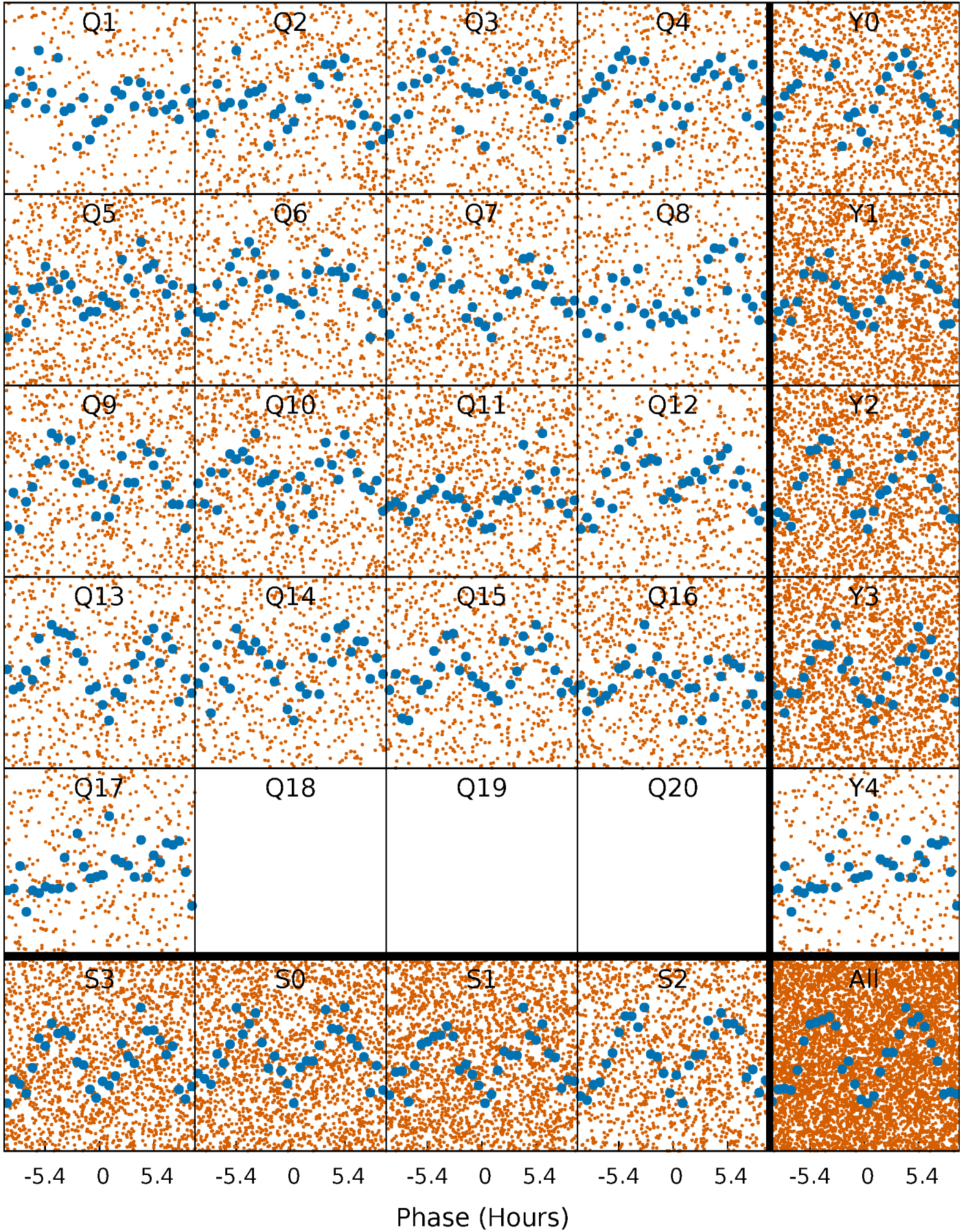


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



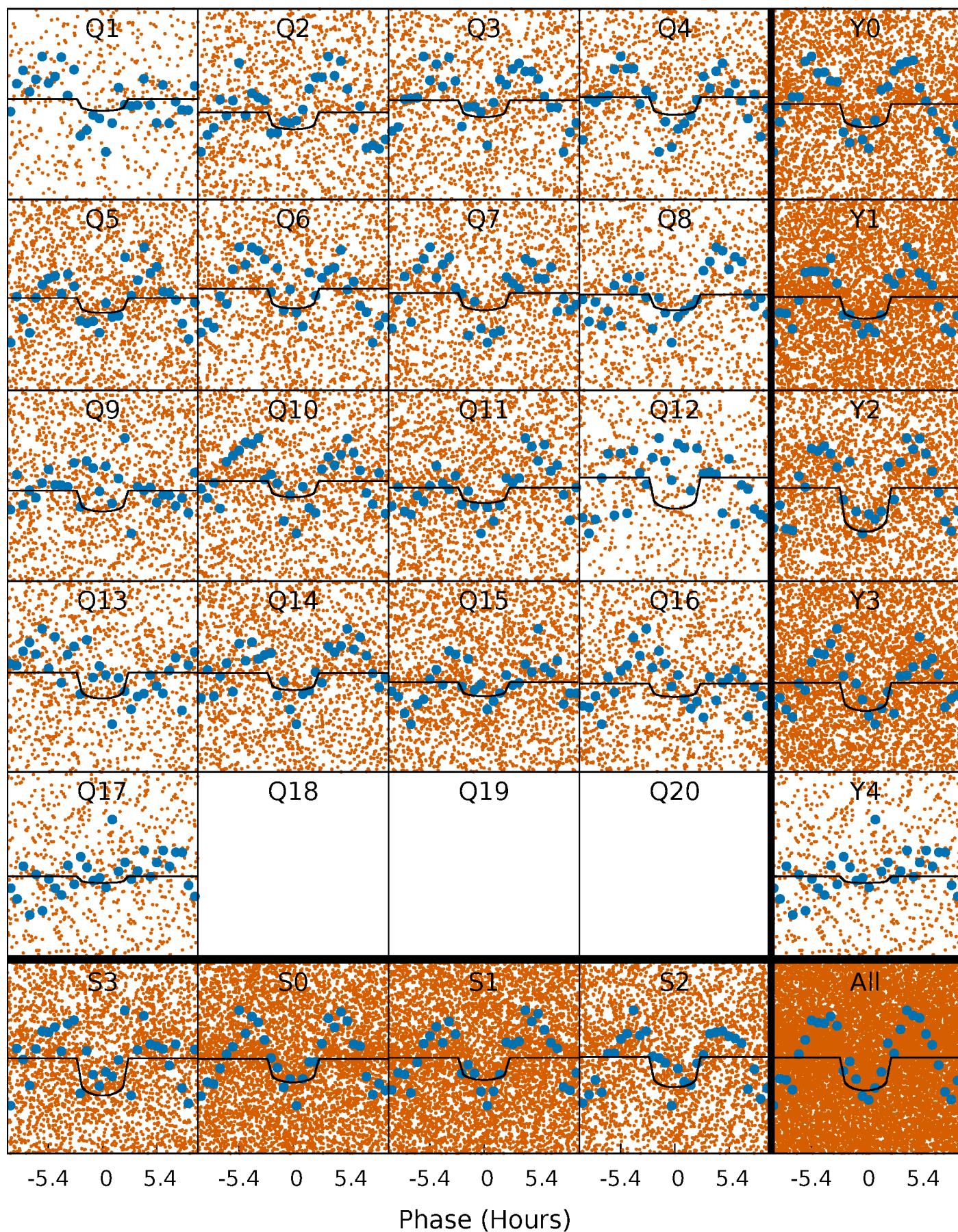
PDC Quarter-Phased Transit Curves

TCE 002994888-01 P= 0.743082 Days $T_0=132.273385$ (BKJD)



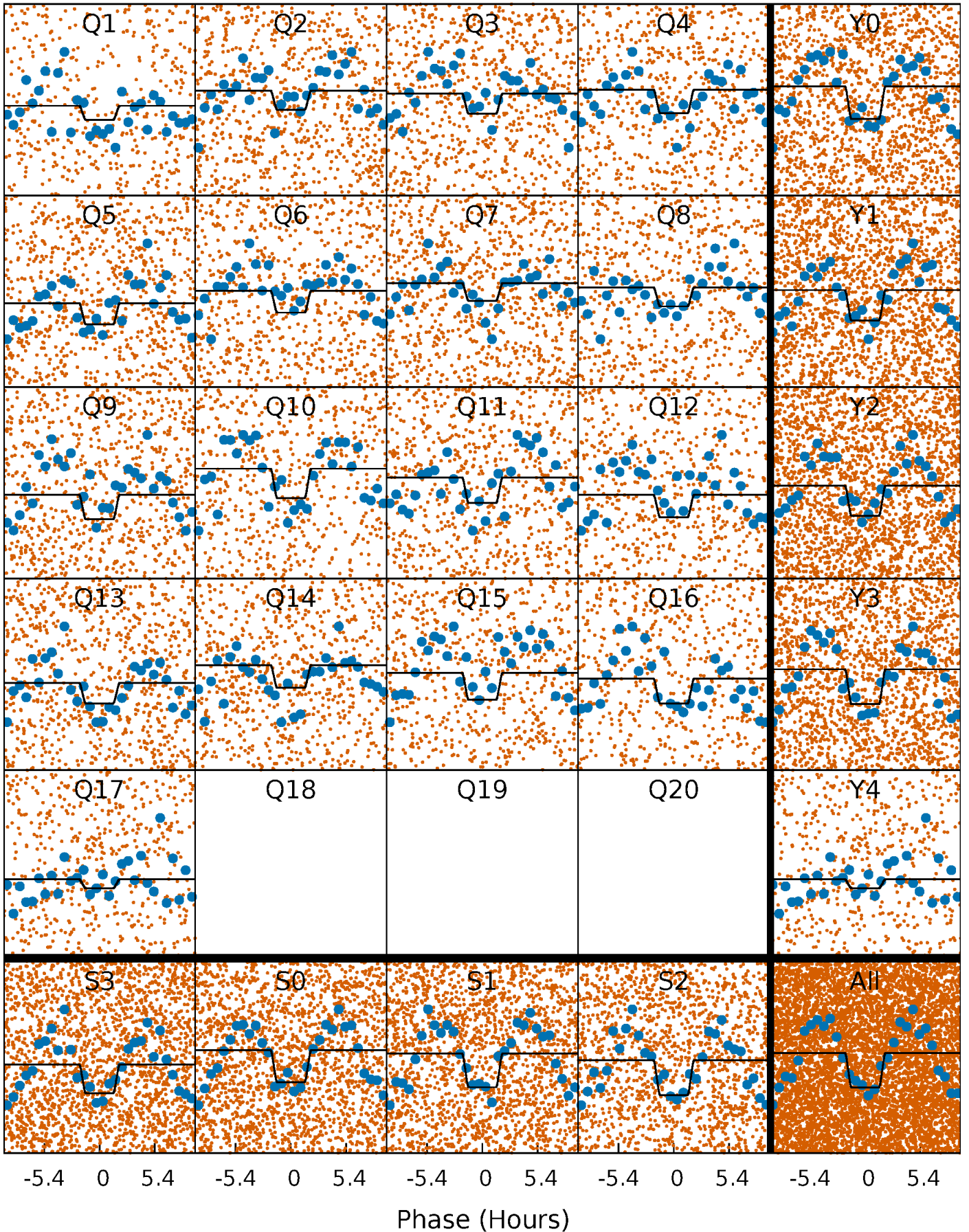
DV Quarter-Phased Transit Curves

TCE 002994888-01 P= 0.743082 Days $T_0=132.273385$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

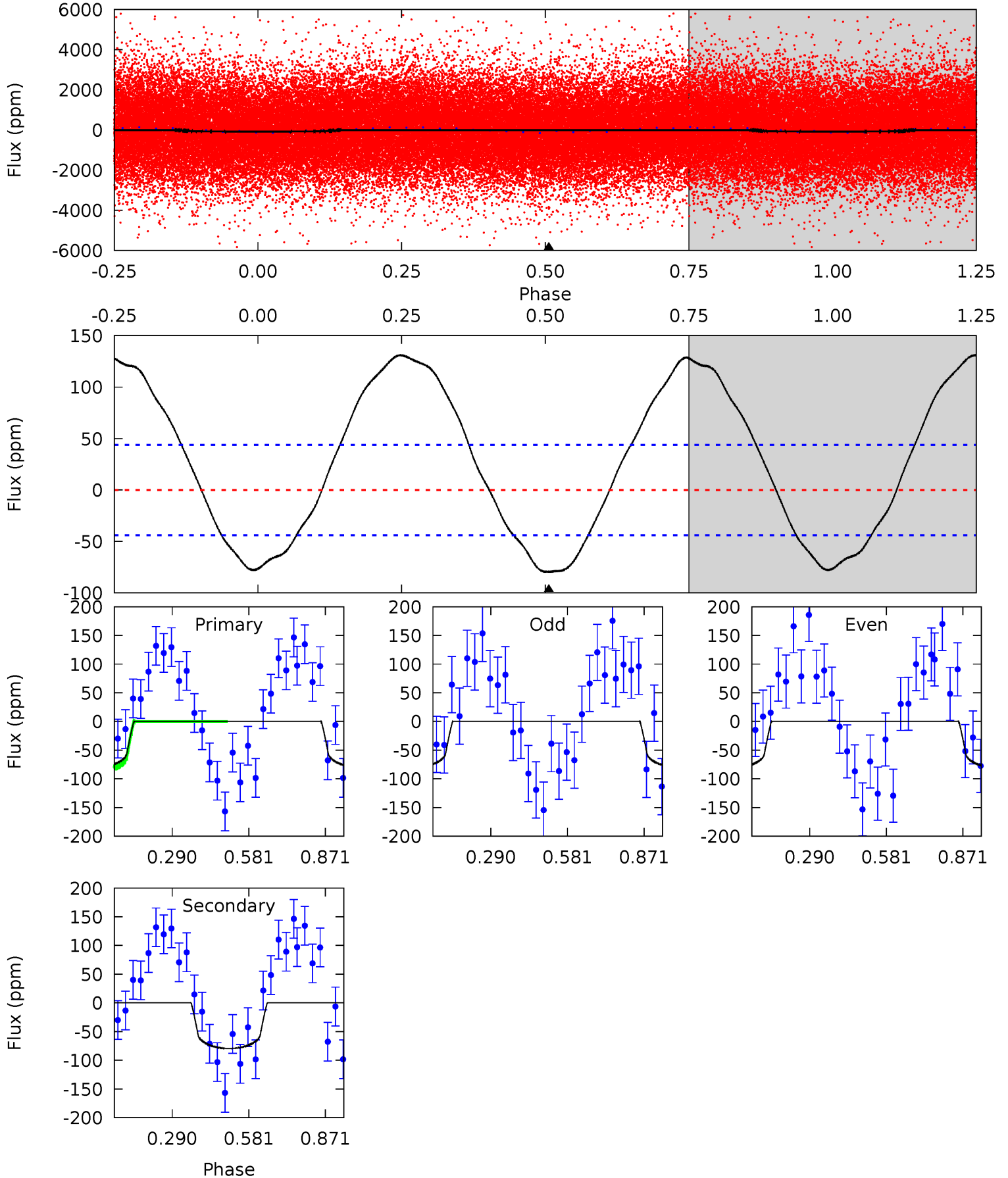
TCE 002994888-01 P= 0.743124 Days $T_0=132.240316$ (BKJD)



DV Model-Shift Uniqueness Test

002994888-01, P = 0.743082 Days, E = 130.787221 Days

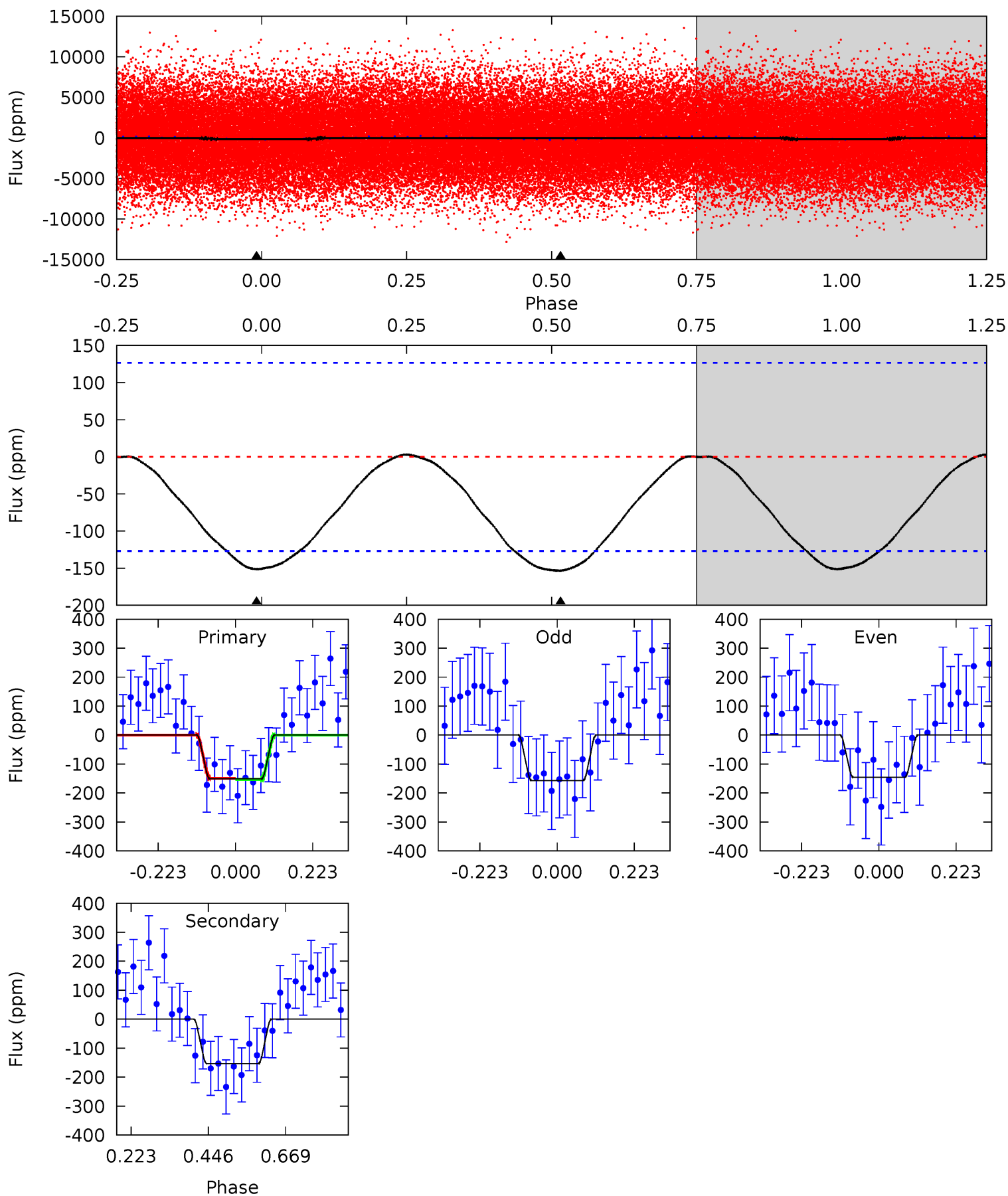
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.84	7.84	0	0	4.34	1.06	6.27	7.84	7.84	7.84	7.84	0.05	0.98	0.62	0.68



Alt Model-Shift Uniqueness Test

002994888-01, P = 0.743124 Days, E = 131.497192 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.25	5.32	0	0	4.39	1.22	0.09	5.25	5.25	5.32	5.32	0.20	1.03	0.02	0.06



Stellar Parameters For KIC 002994888

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7691^{+214}_{-322}	$4.132^{+0.101}_{-0.188}$	$0.070^{+0.200}_{-0.350}$	$1.862^{+0.540}_{-0.332}$	$1.712^{+0.204}_{-0.249}$	$0.374^{+0.212}_{-0.185}$
	+3%/-4%	+2%/-5%	+286%/-500%	+29%/-18%	+12%/-15%	+57%/-50%
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 002994888-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-80 ± 10	$2.48^{+2.23}_{-1.63}$	4708^{+332}_{-292}	6241^{+7903}_{-1899}	$2.571^{+19.471}_{-1.871}$
Alt.	-153 ± 29	$3.04^{+2.16}_{-1.82}$	4725^{+353}_{-296}	6735^{+6803}_{-1811}	$3.282^{+18.735}_{-2.195}$

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 $A_{obs} \gg 1.0$

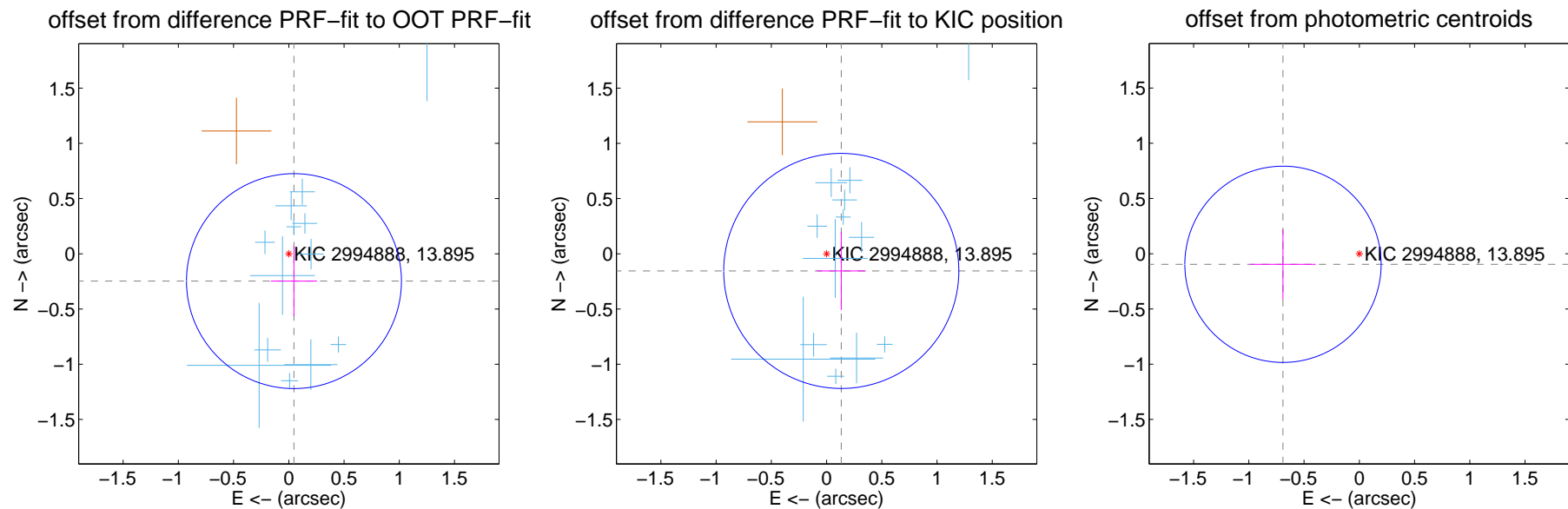
DV Centroid Data

Supplemental centroid analysis for 002994888-01. Kepler magnitude: 13.89. Transit SNR 11.30

There are 14 quarters with good PRF difference image offsets

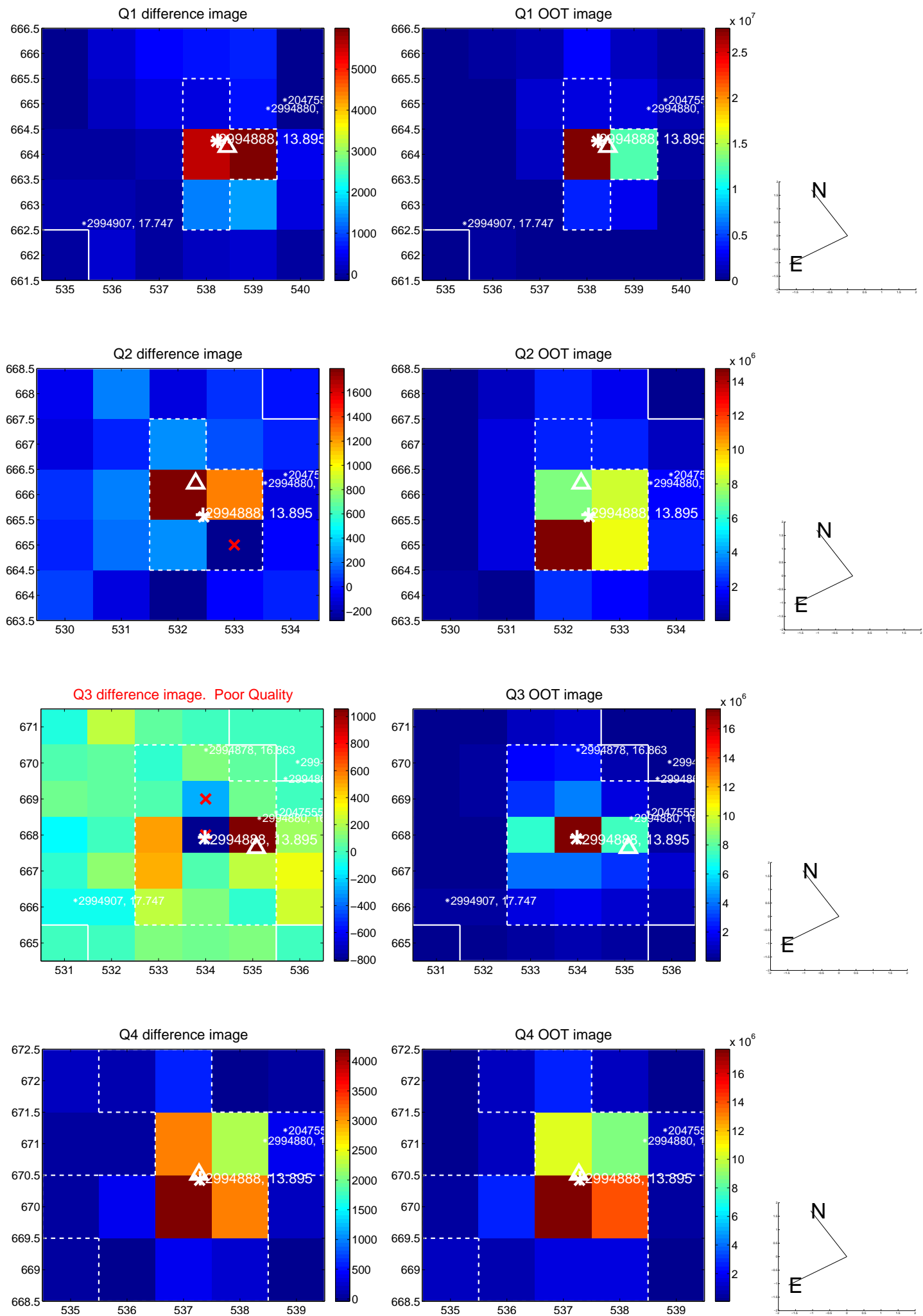
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.252 ± 0.324	0.78	-0.047 ± 0.210	-0.248 ± 0.316
PRF-fit source offset from KIC position	0.204 ± 0.355	0.58	-0.133 ± 0.221	-0.155 ± 0.355
photometric centroid source offset	0.70 ± 0.30	2.36	0.69 ± 0.30	-0.10 ± 0.32

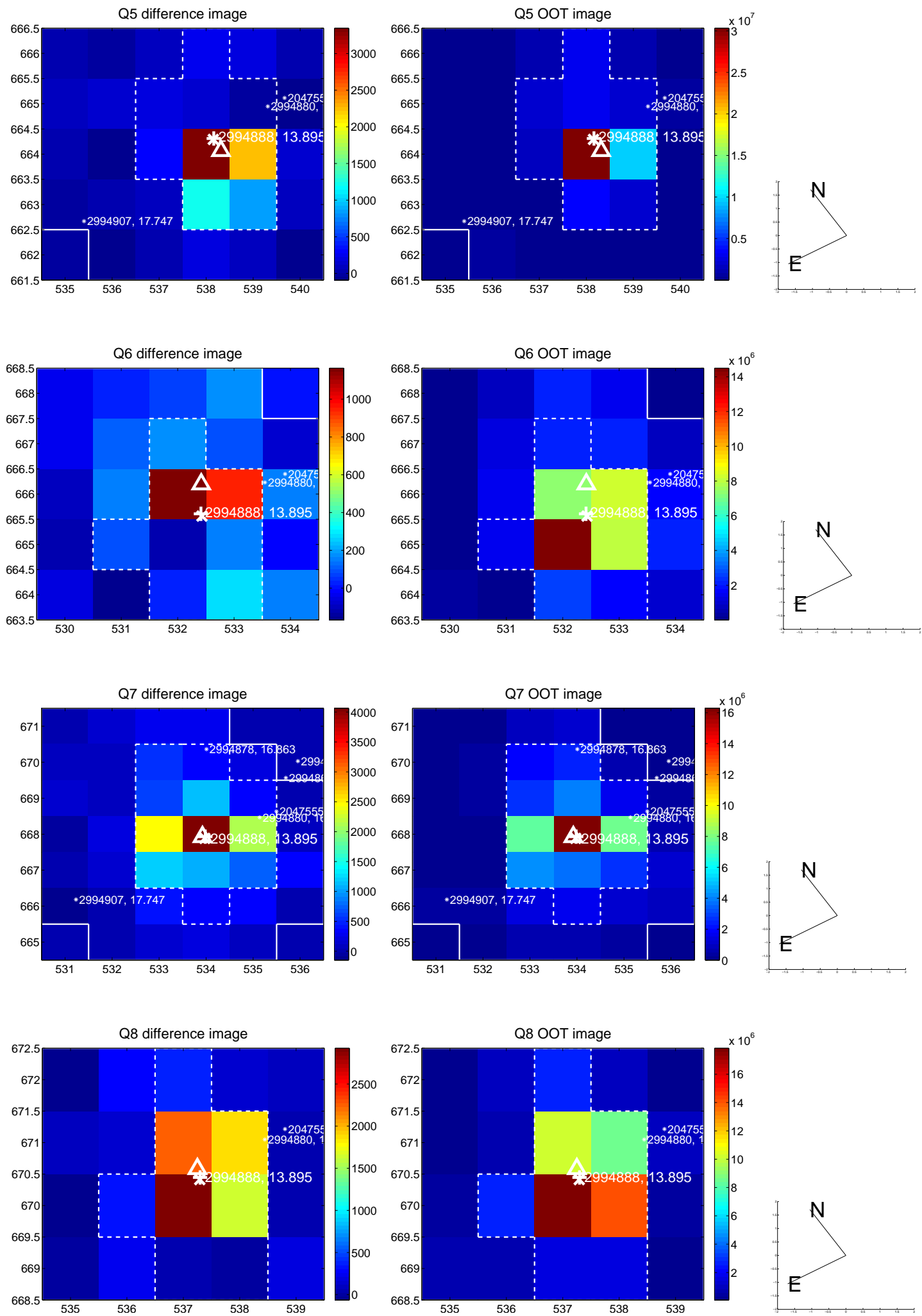


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

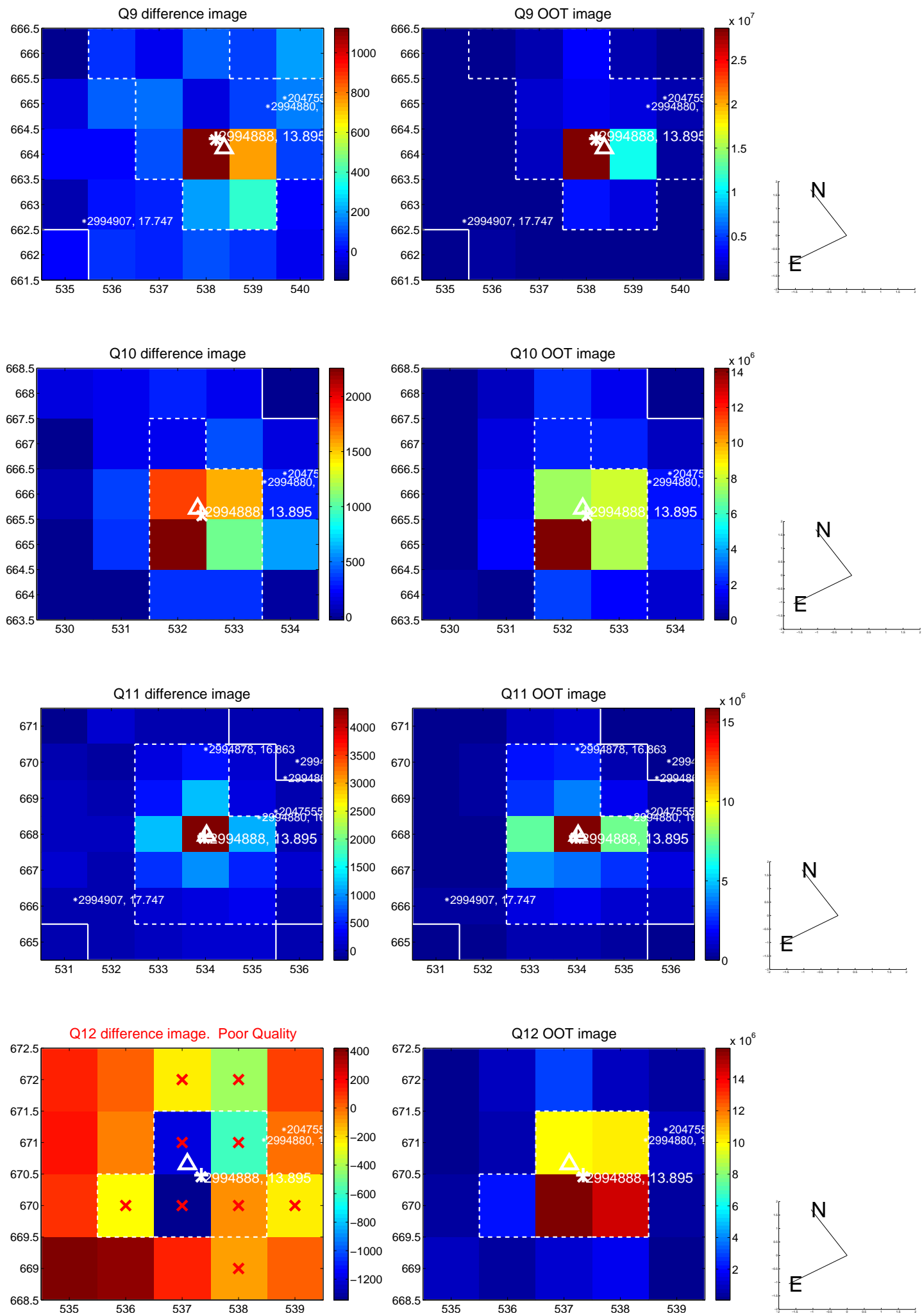
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



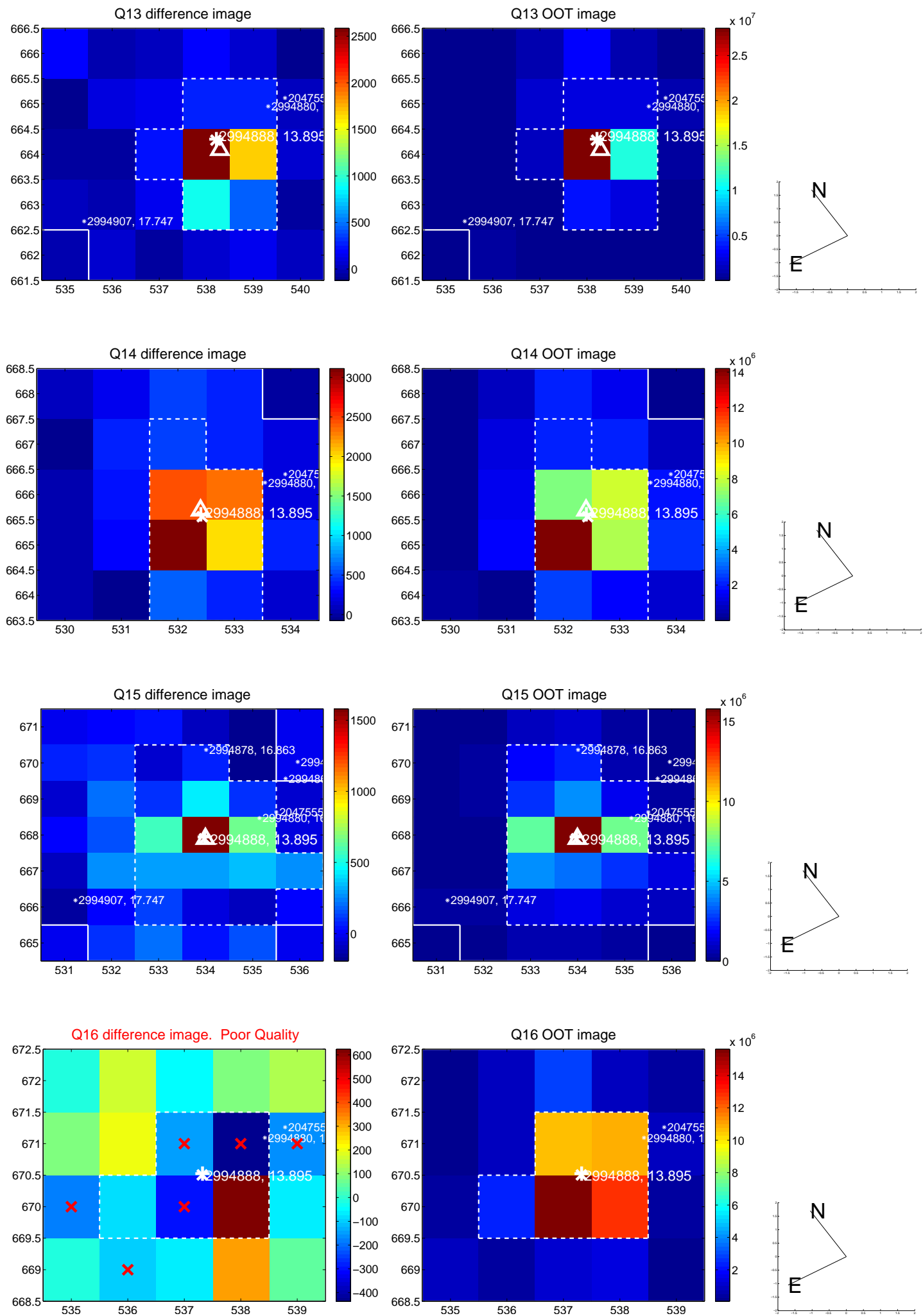
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



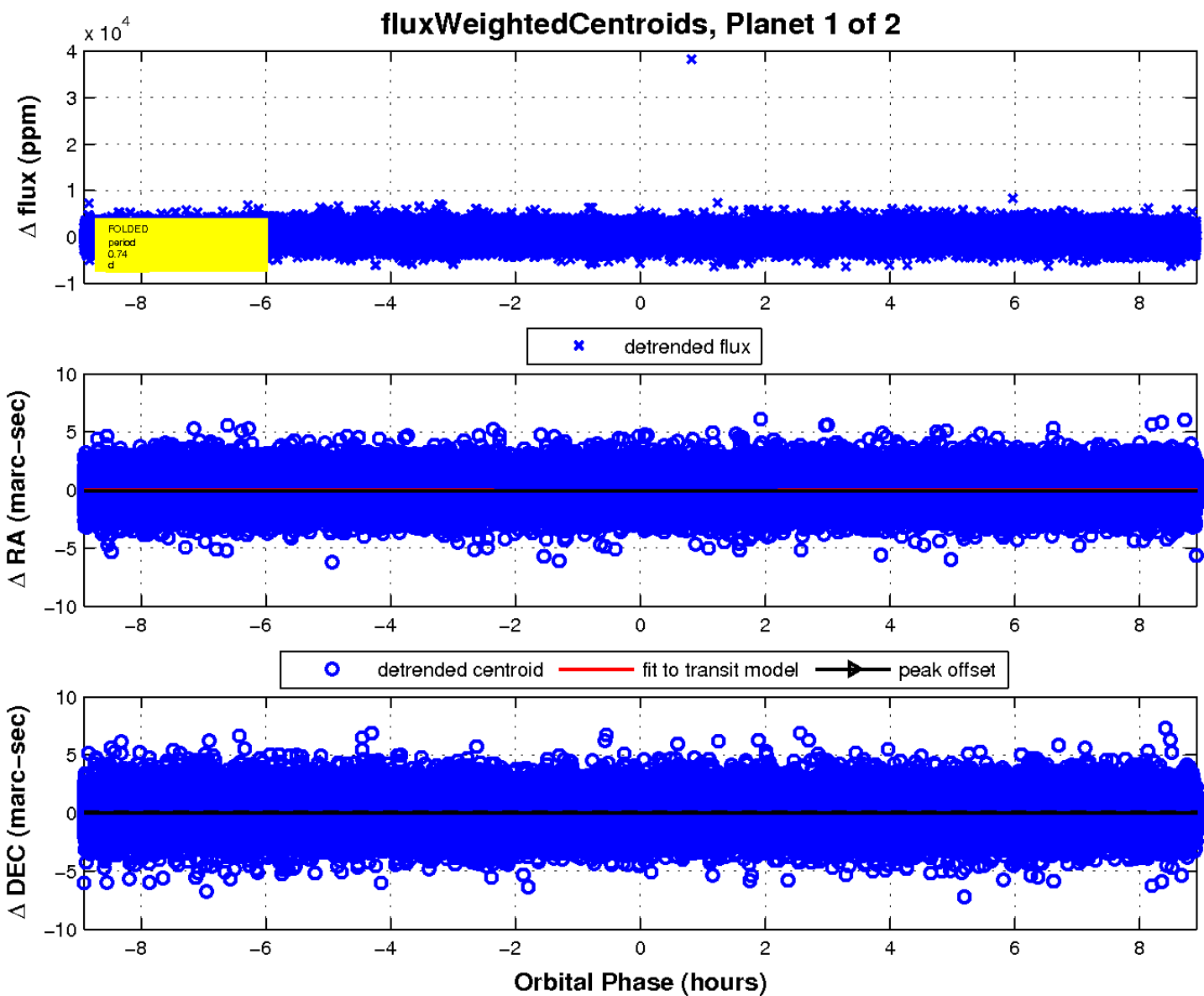
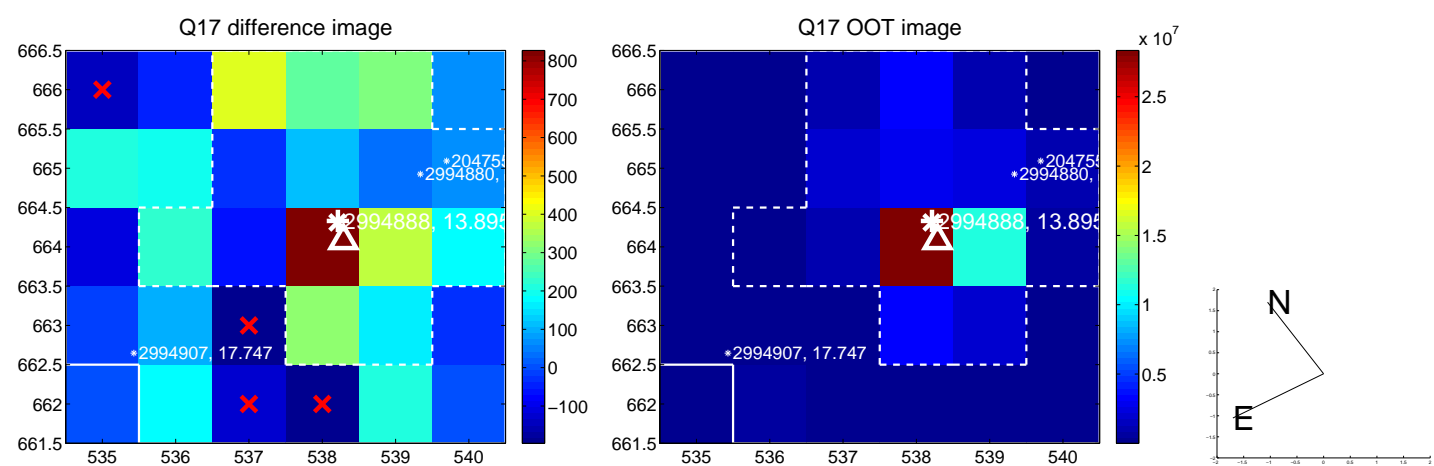
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

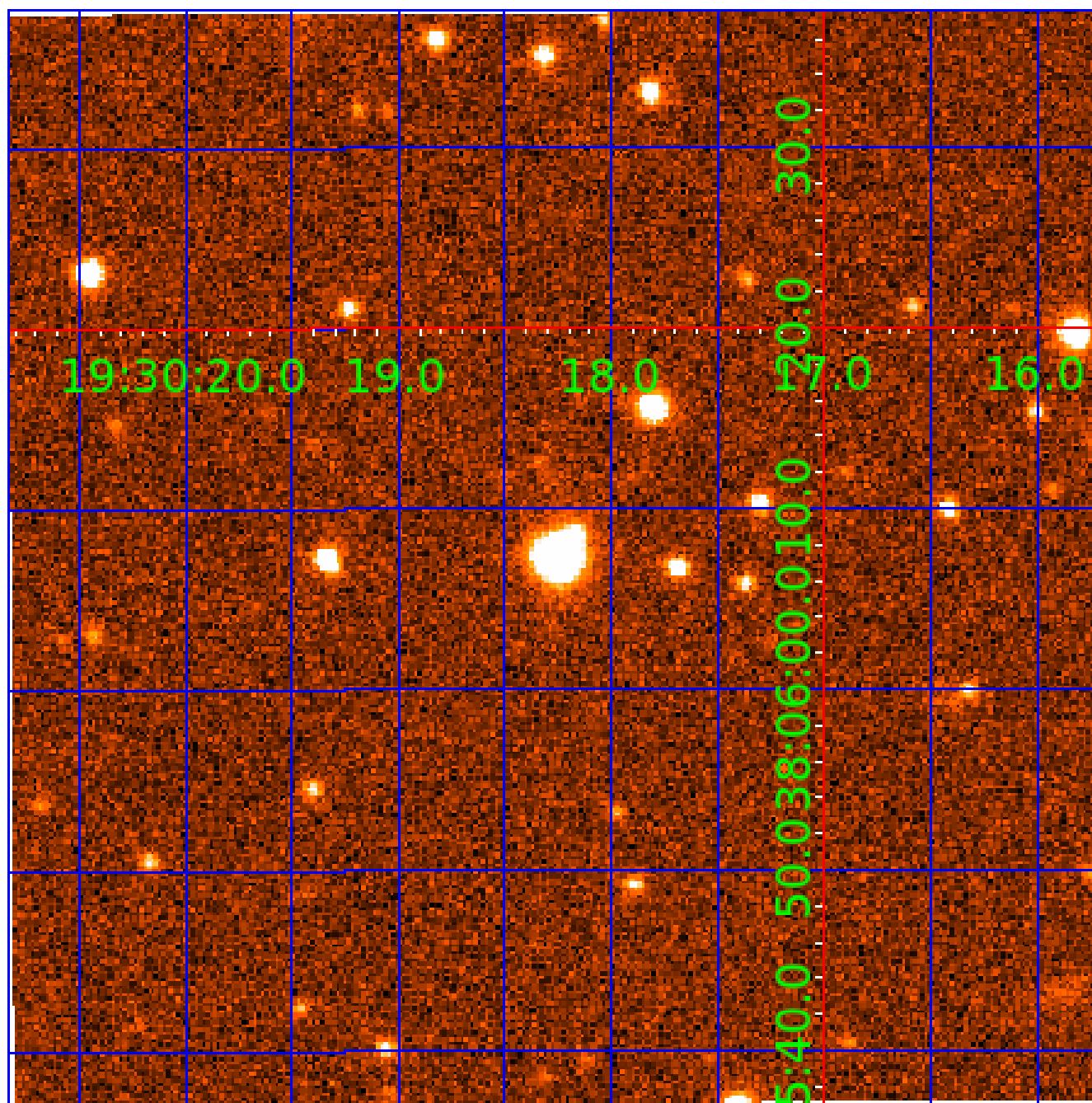


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002994888

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})
002994888-01	OBS	No	0.743082	132.273385	97.1	4.739	12.6	11.3	1.86	7691	1.91	29428.14
002994888-02	OBS	No	0.536836	131.612400	341.6	6.442	11.1	19.6	1.86	7691	3.99	45396.54

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002994888-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV
002994888-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—CENT_FEW_DIFFS

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

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

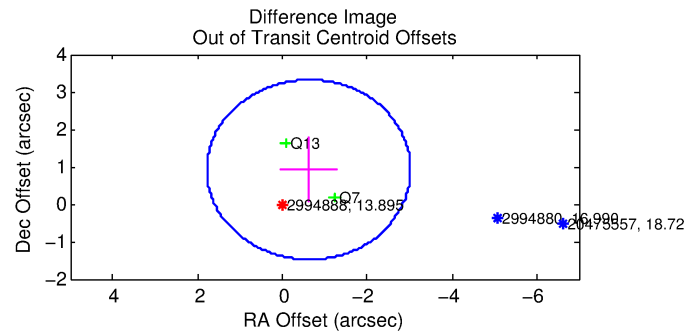
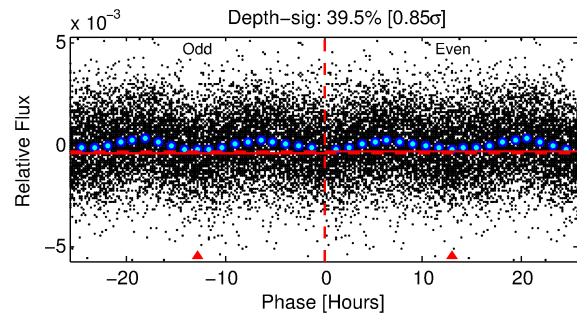
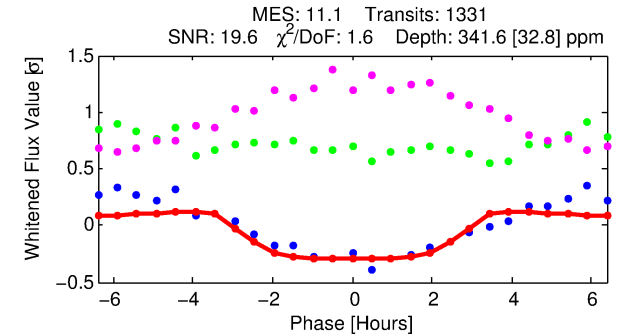
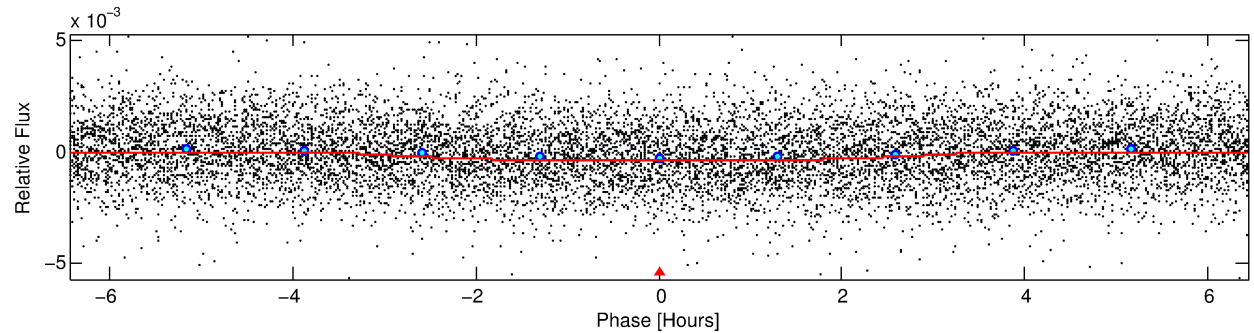
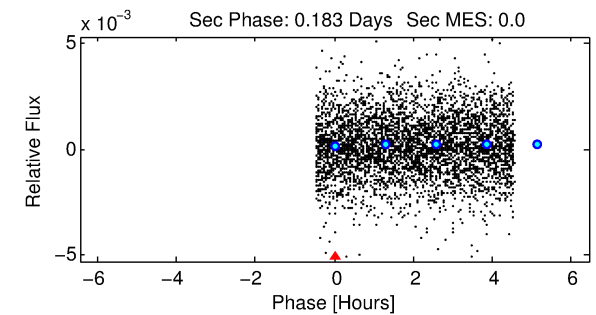
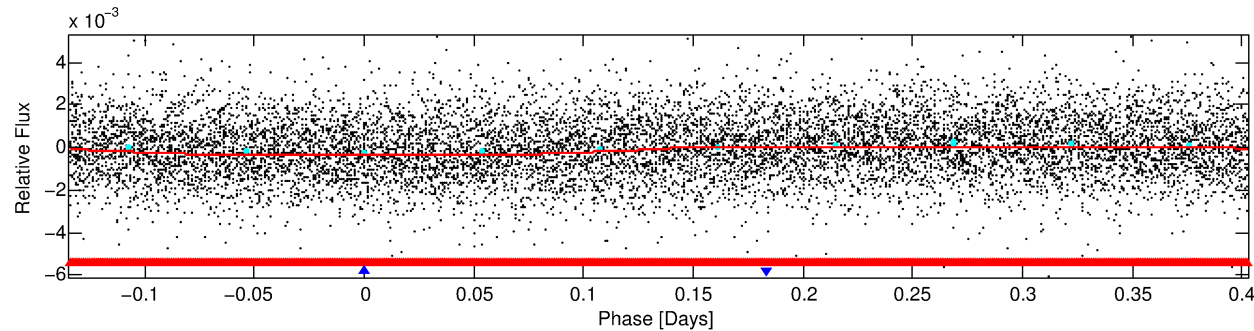
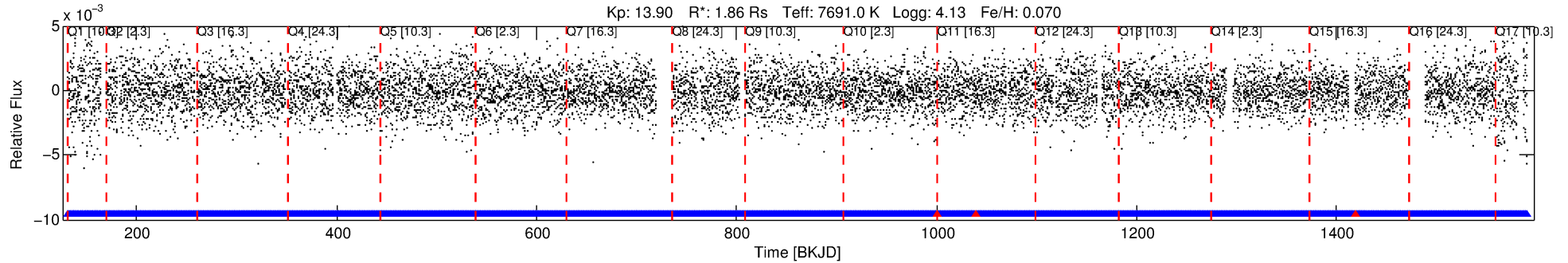
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002994888-02

No Significant Match Found

DV One-Page Summary

KIC: 2994888 Candidate: 2 of 2 Period: 0.537 d



DV Fit Results:

Period = 0.53684 [0.00001] d
Epoch = 131.6124 [0.0048] BKJD
Rp/R* = 0.0196 [0.0018]
a/R* = 1.00 [0.01]
b = 0.90 [0.10]
Seff = 45396.54 [17506.28]
Teff = 3722 [359] K
Rp = 3.99 [1.21] Re
a = 0.0155 [0.0037] AU
Ag = N/A
Teffp = N/A

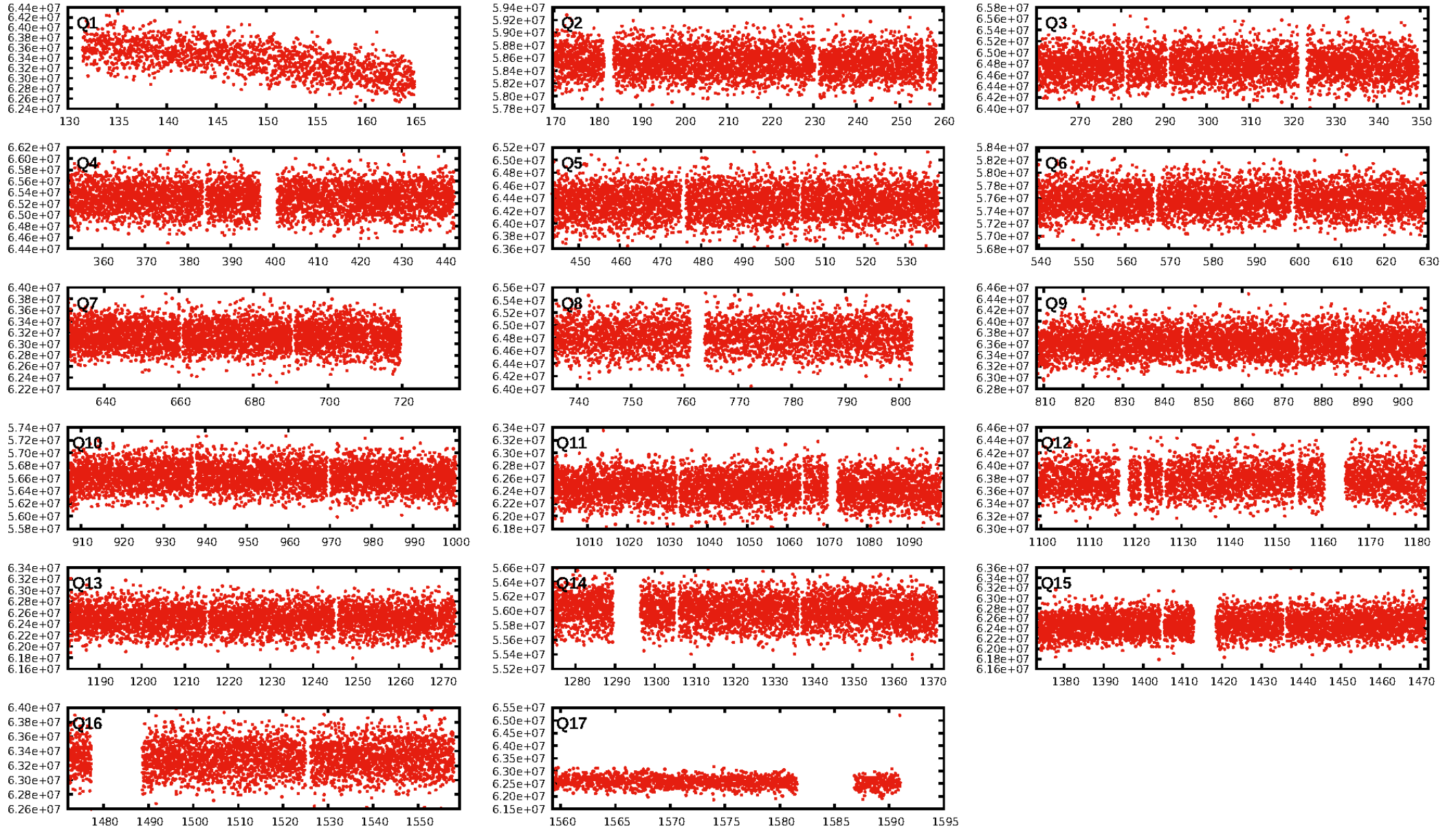
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 46.4% [0.62σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1269/1272]
GhostDiagnostic-chr: 3.444
Centroid-sig: 0.4%
Centroid-so: 0.061 arcsec [0.86σ]
OotOffset-rm: 1.110 arcsec [1.39σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-rm: 1.247 arcsec [1.63σ]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 0.00 [0/17]

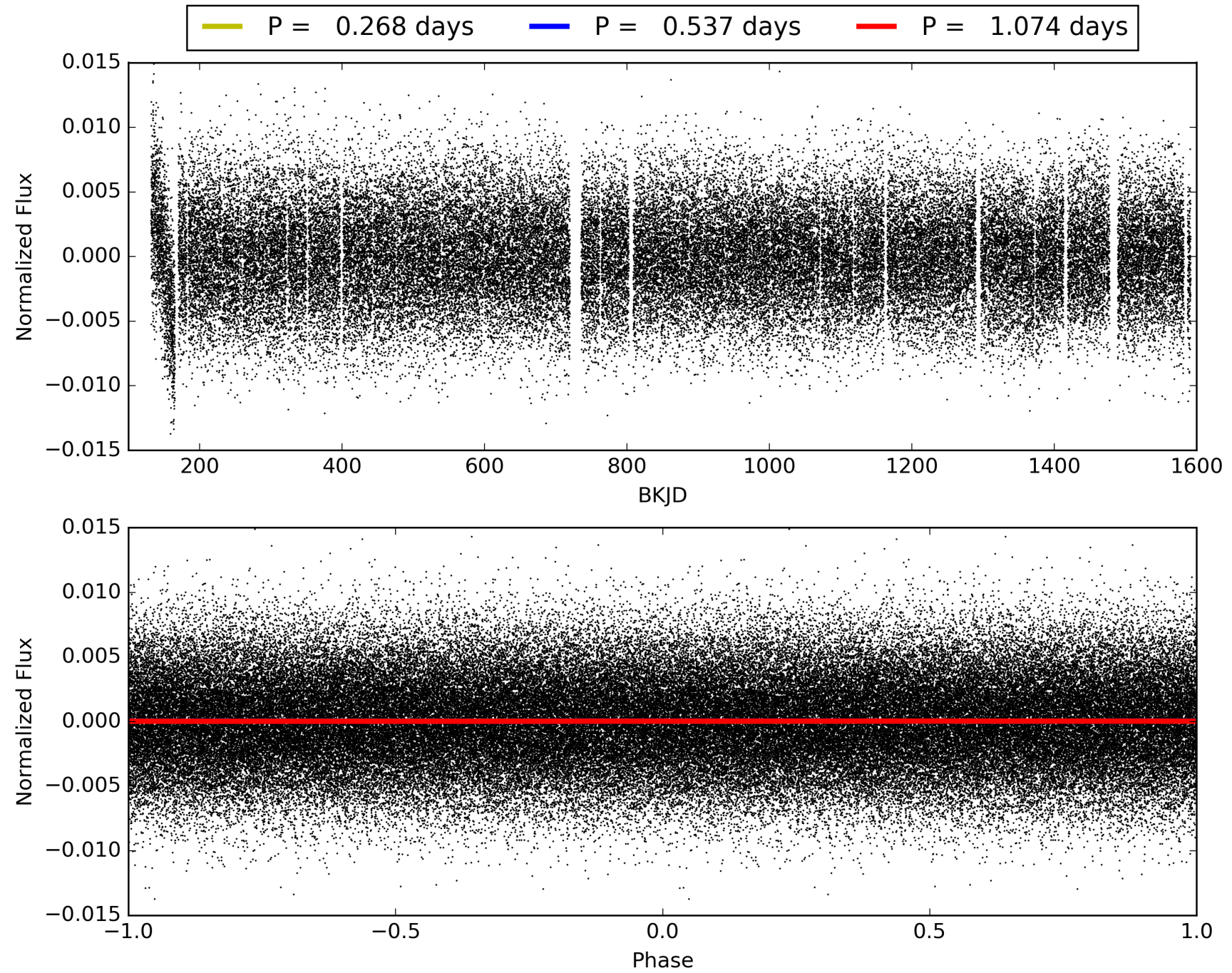
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:36:57 Z

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

TCE 002994888-02, PDC Light Curves

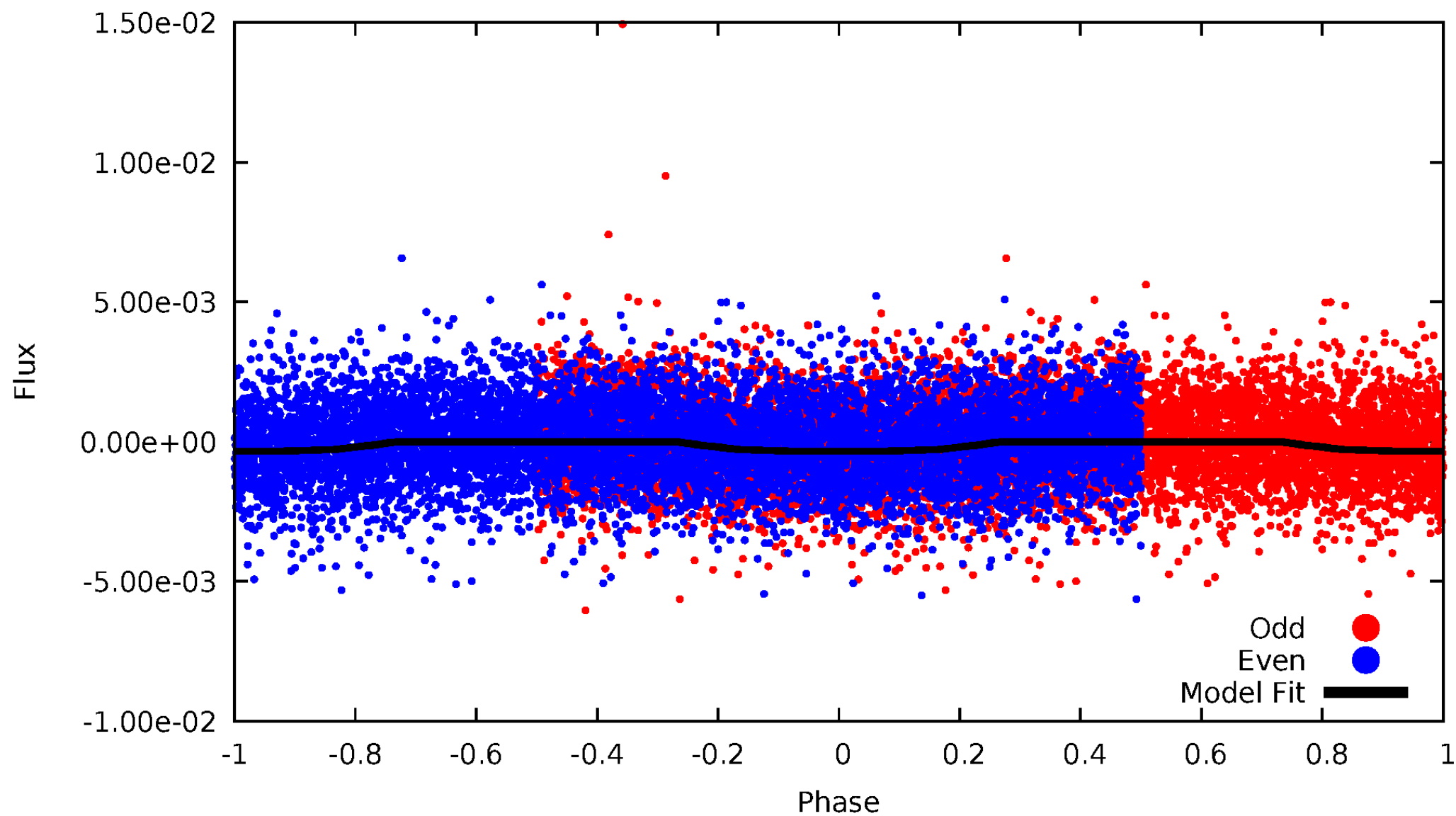


TCE 002994888-02



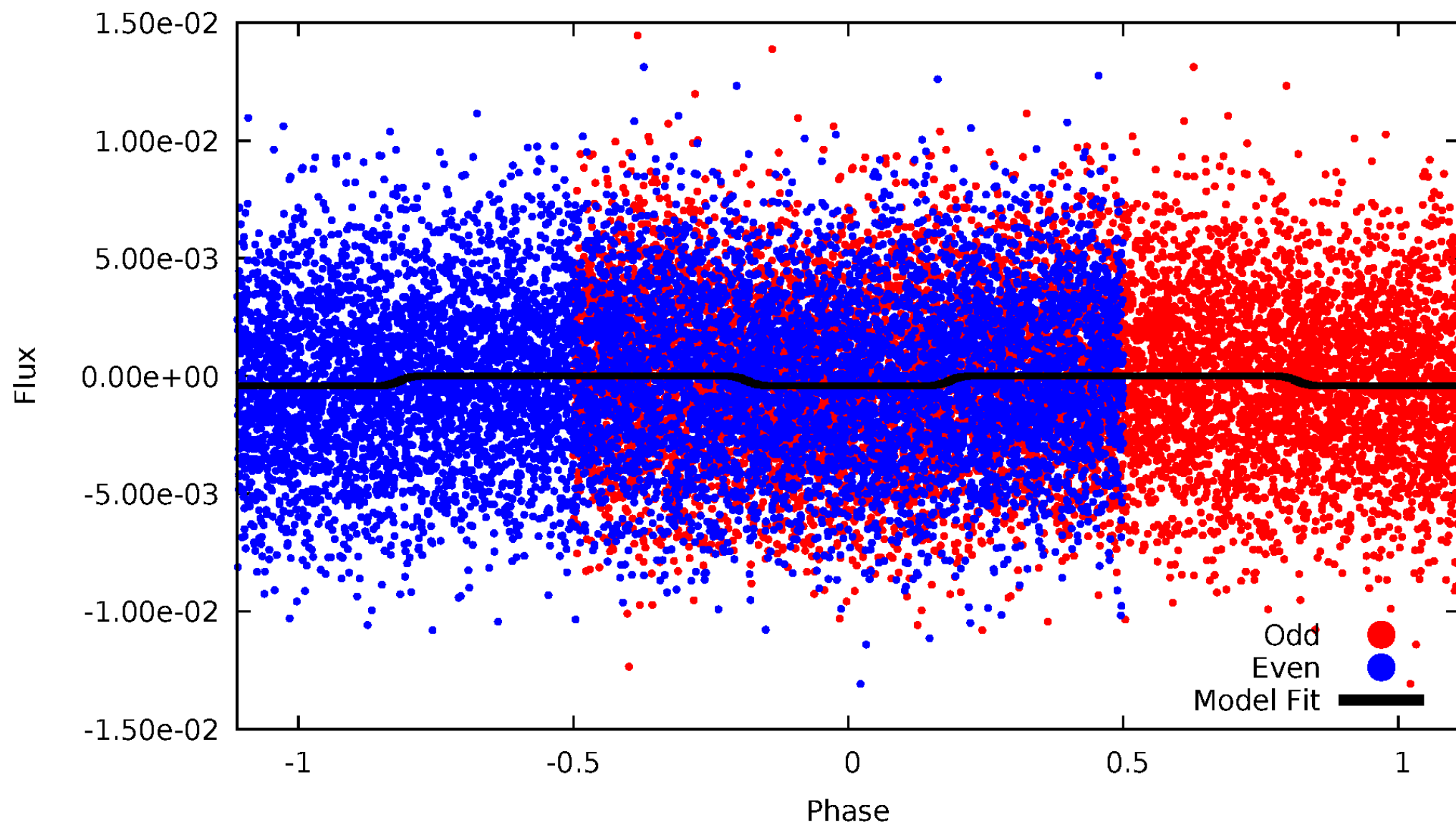
DV Odd/Even

TCE 002994888-02



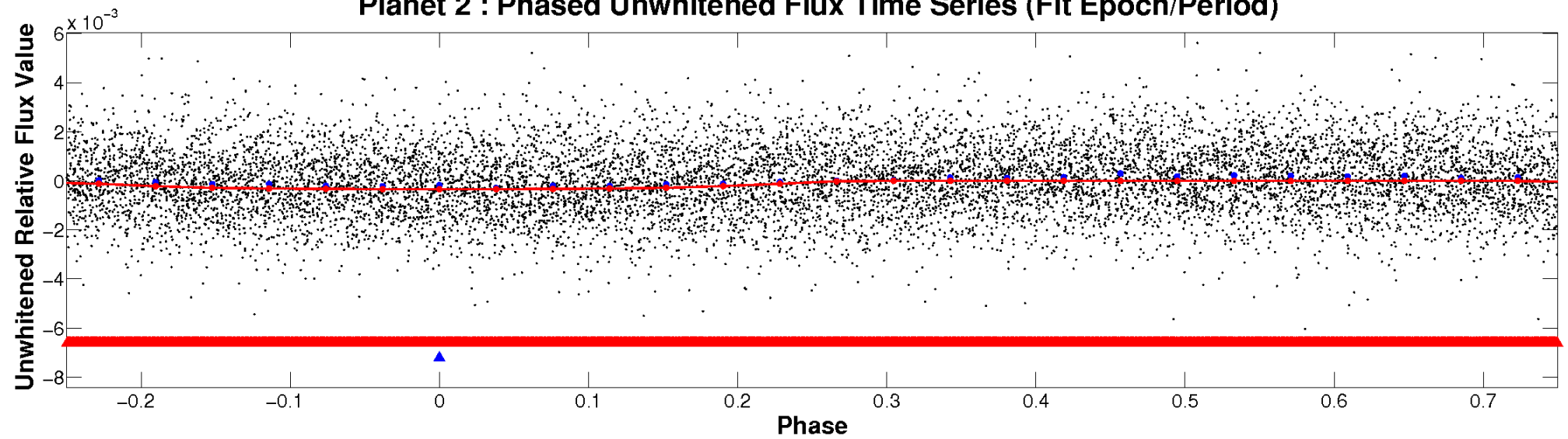
ALT Odd/Even

TCE 002994888-02

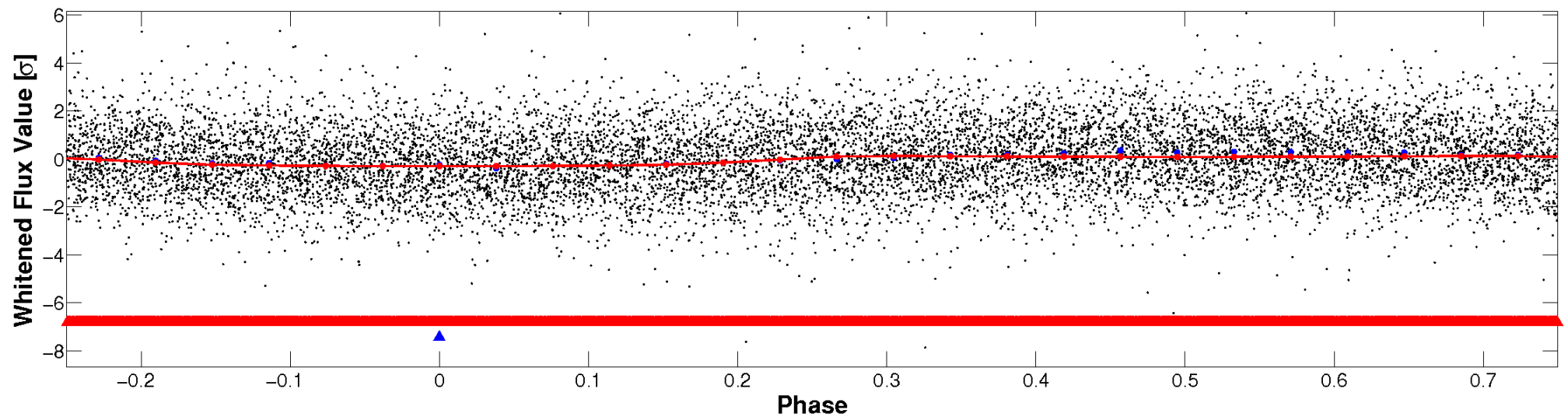


Non-Whitened Vs. Whitened Light Curve

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

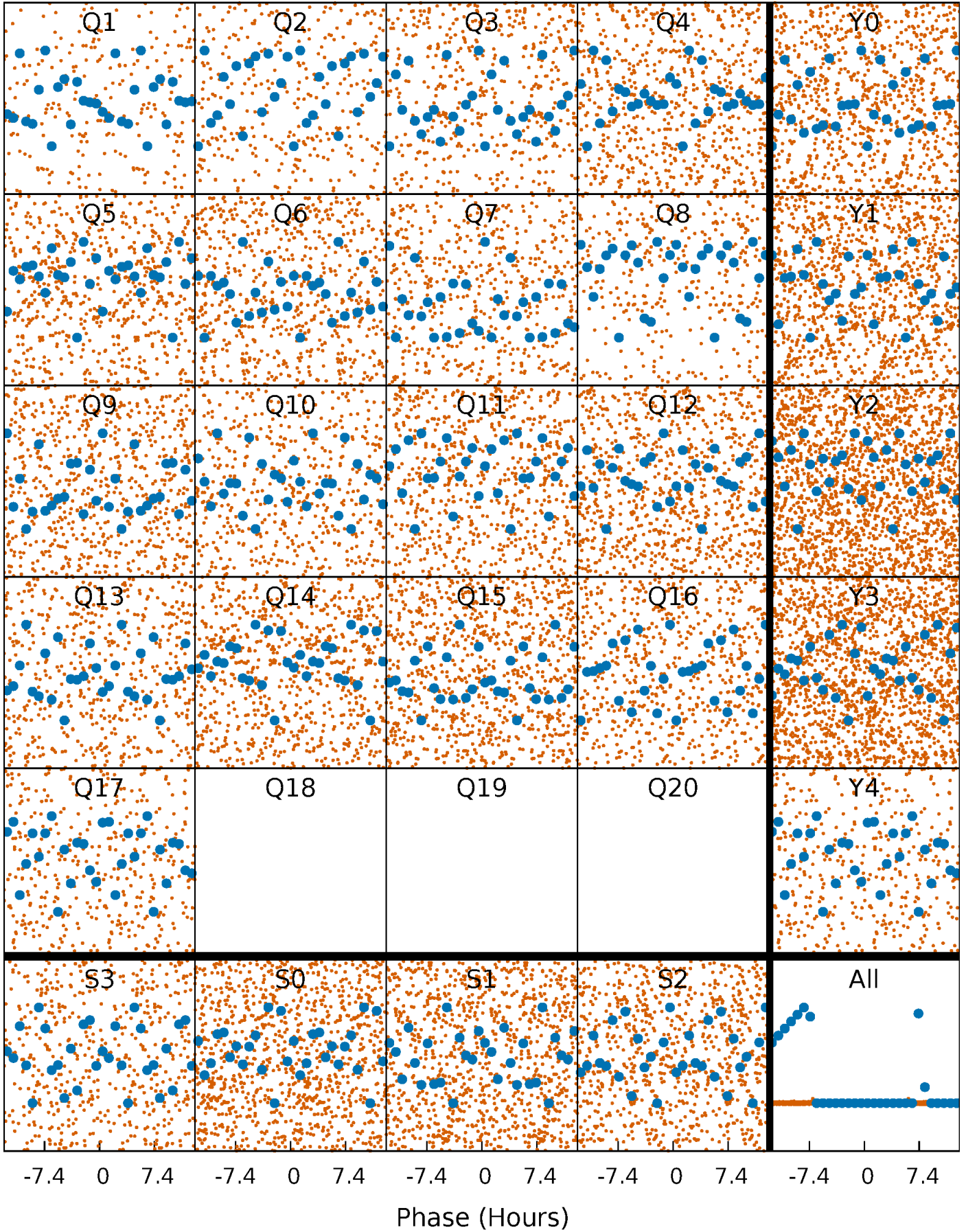


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



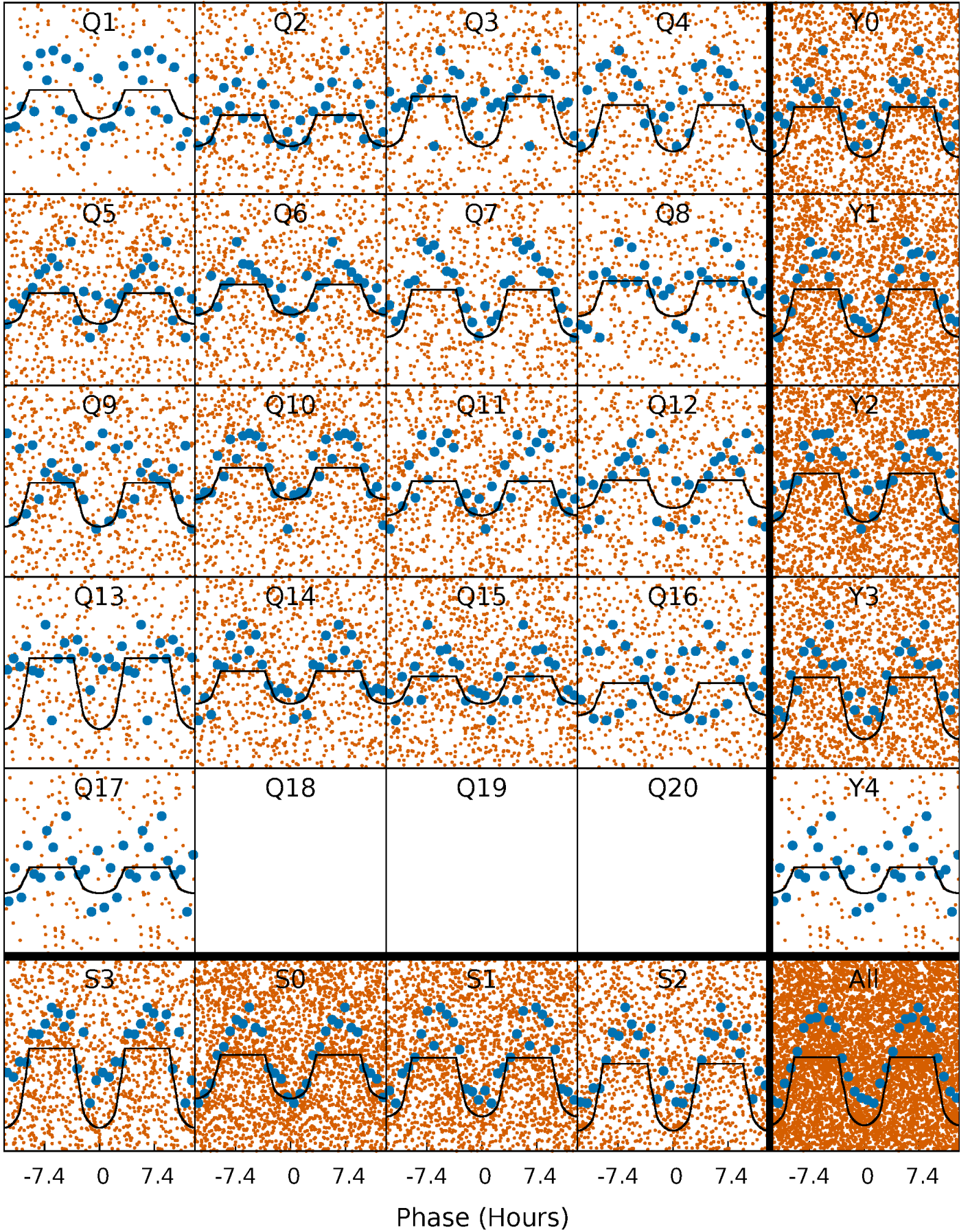
PDC Quarter-Phased Transit Curves

TCE 002994888-02 P= 0.536836 Days $T_0=131.612401$ (BKJD)



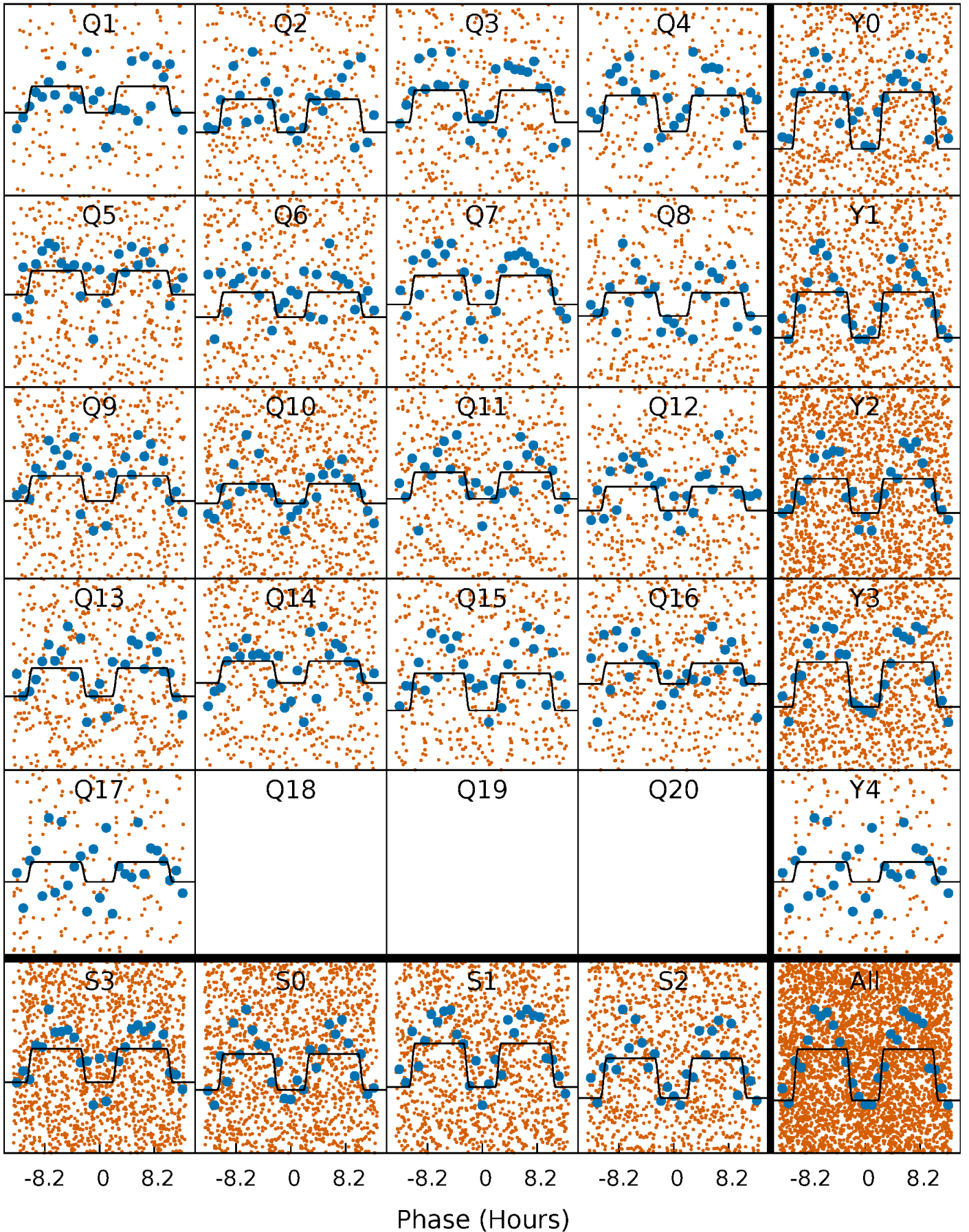
DV Quarter-Phased Transit Curves

TCE 002994888-02 $P = 0.536836$ Days $T_0 = 131.612401$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

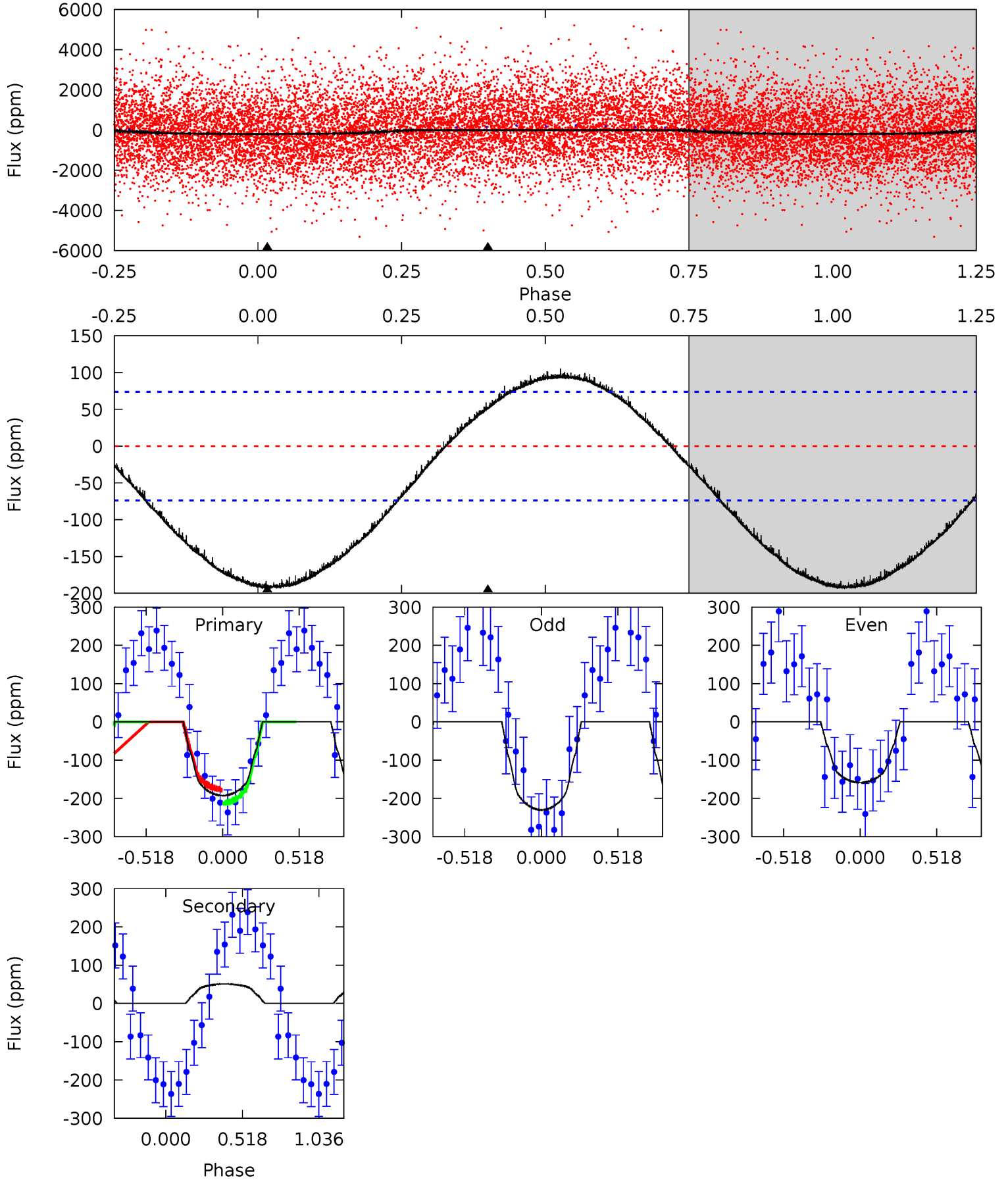
TCE 002994888-02 $P = 0.536851$ Days $T_0 = 131.602570$ (BKJD)



DV Model-Shift Uniqueness Test

002994888-02, P = 0.536836 Days, E = 131.612401 Days

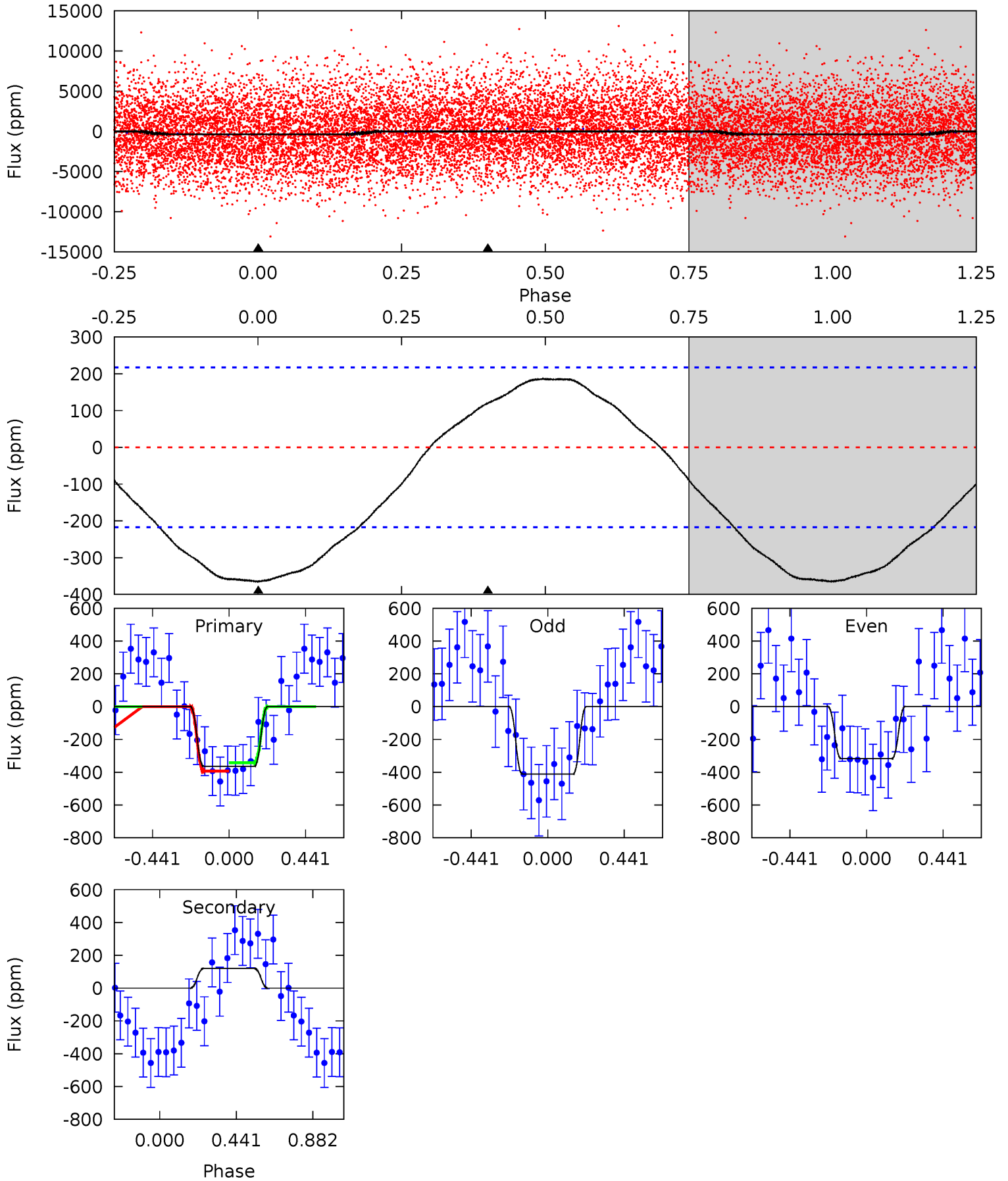
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	-2.90	0	0	4.21	0.65	1.39	11.0	11.0	-2.90	-2.90	2.04	0.61	0.35	1.03



Alt Model-Shift Uniqueness Test

002994888-02, P = 0.536851 Days, E = 131.602570 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.13	-2.34	0	0	4.24	0.77	0.90	7.13	7.13	-2.34	-2.34	0.96	0.84	0.34	0.53



Stellar Parameters For KIC 002994888

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7691^{+214}_{-322}	$4.132^{+0.101}_{-0.188}$	$0.070^{+0.200}_{-0.350}$	$1.862^{+0.540}_{-0.332}$	$1.712^{+0.204}_{-0.249}$	$0.374^{+0.212}_{-0.185}$
	+3%/-4%	+2%/-5%	+286%/-500%	+29%/-18%	+12%/-15%	+57%/-50%
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 002994888-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	51 ± 18	$4.12^{+0.73}_{-0.59}$	5245^{+401}_{-315}	-5269^{+316}_{-313}	$-0.377^{+0.152}_{-0.208}$
Alt.	120 ± 51	$4.17^{+0.73}_{-0.55}$	5234^{+343}_{-306}	-5906^{+582}_{-536}	$-0.831^{+0.396}_{-0.505}$

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

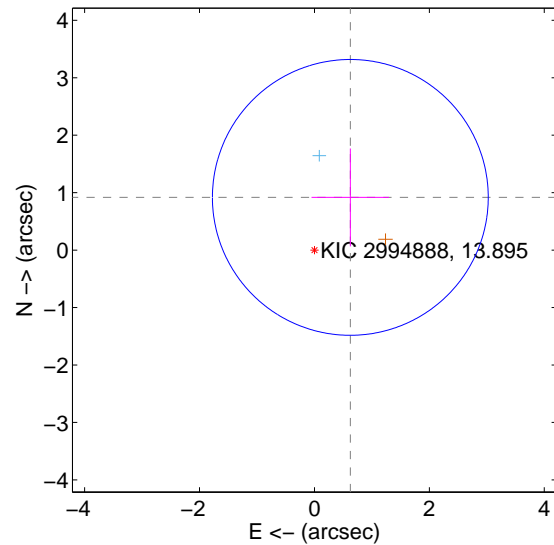
Supplemental centroid analysis for 002994888-02. Kepler magnitude: 13.89. Transit SNR 19.59

There are 1 quarters with good PRF difference image offsets

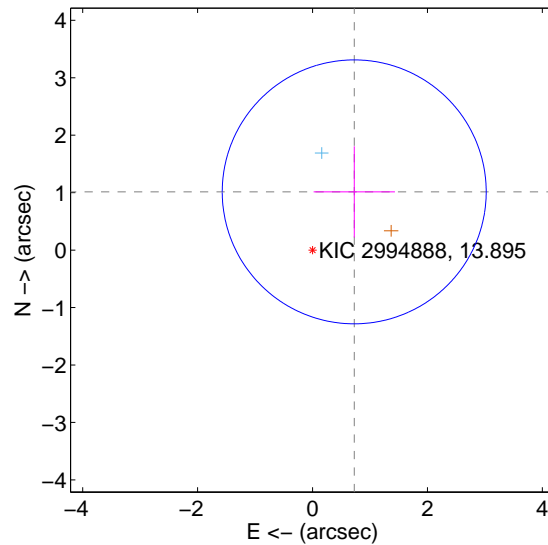
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.110 ± 0.800	1.39	-0.625 ± 0.675	0.917 ± 0.852
PRF-fit source offset from KIC position	1.247 ± 0.766	1.63	-0.726 ± 0.708	1.014 ± 0.794
photometric centroid source offset	0.06 ± 0.07	0.86	0.04 ± 0.07	-0.05 ± 0.07

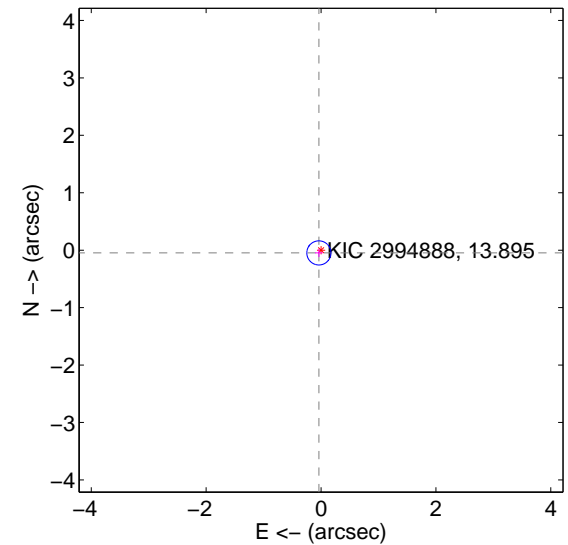
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

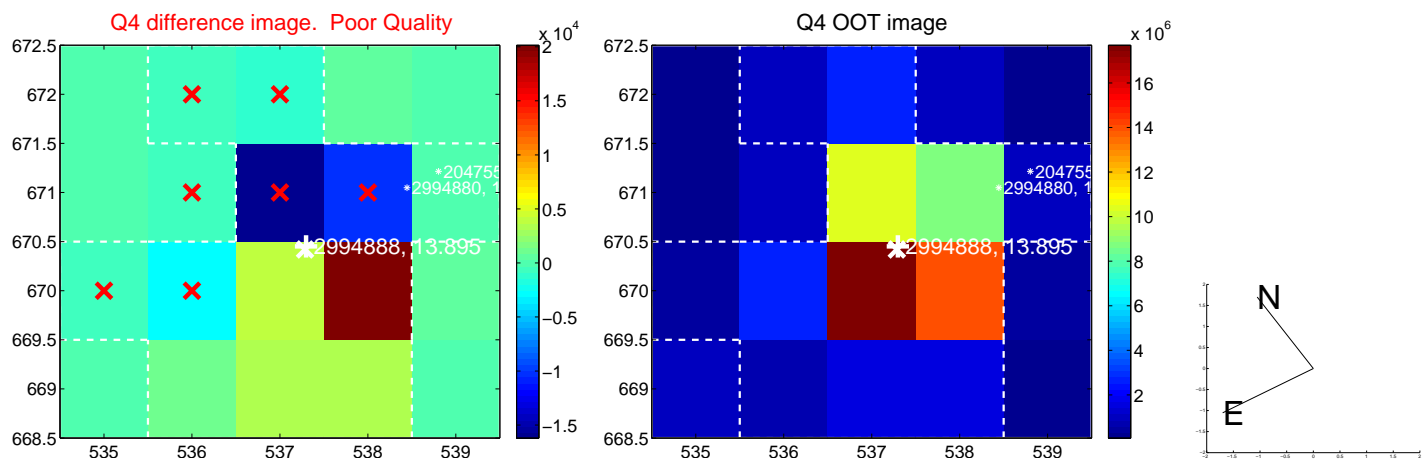
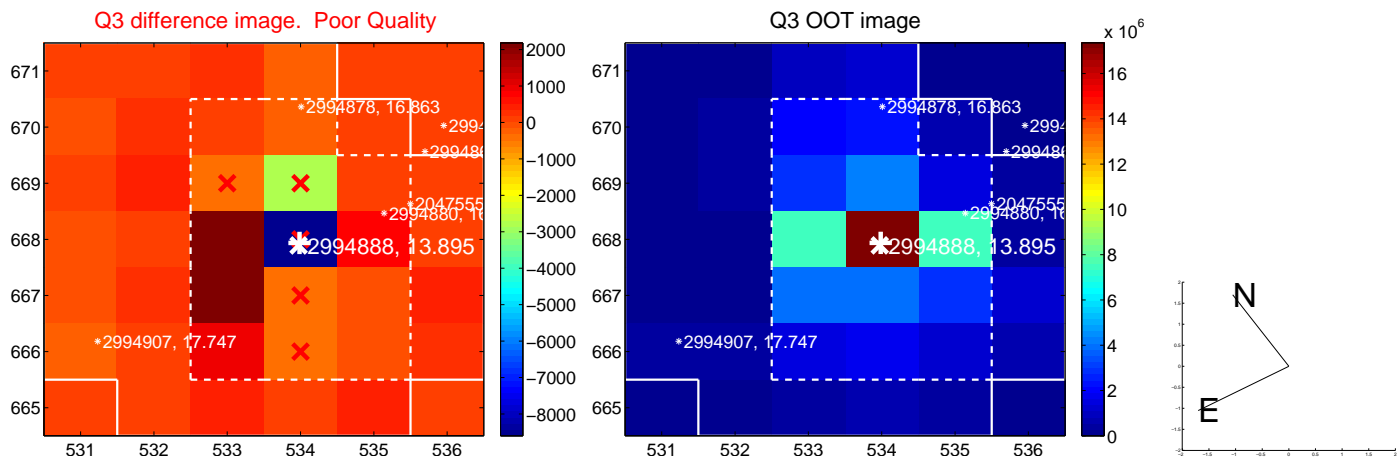
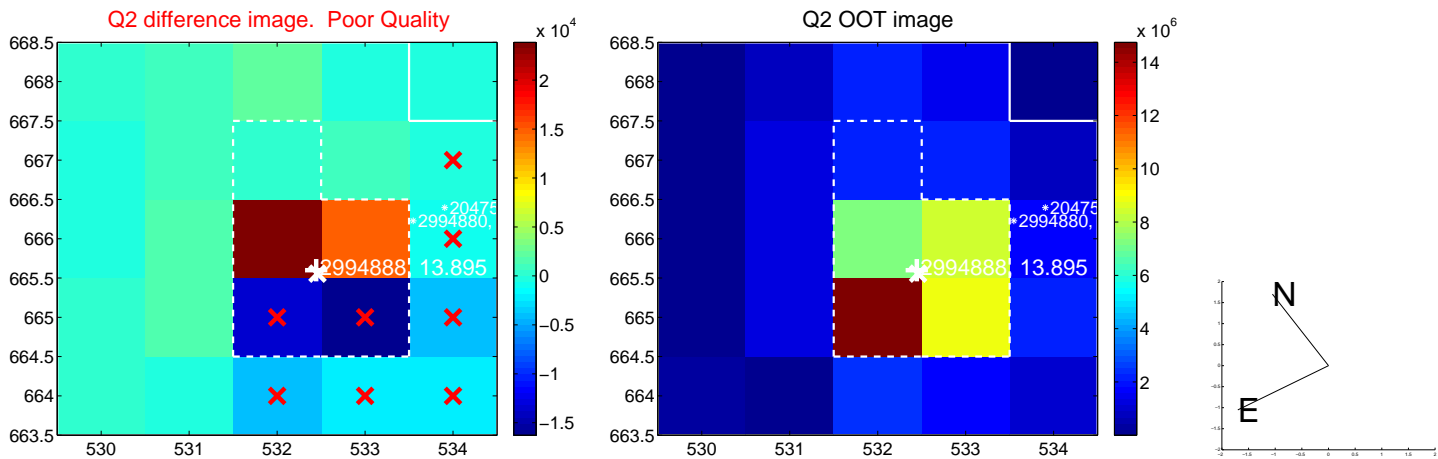
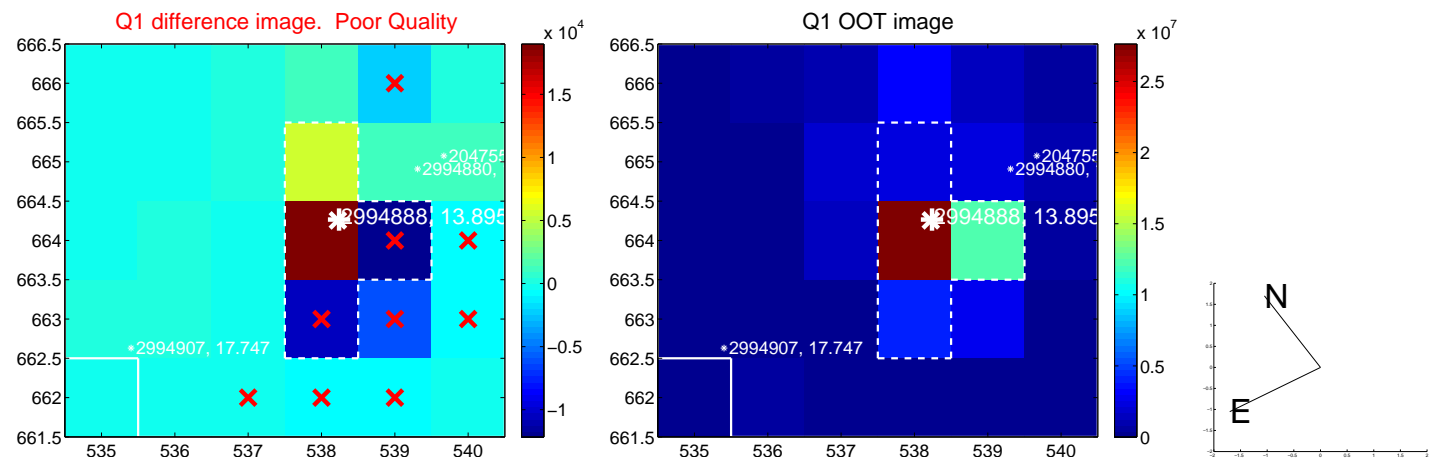


offset from photometric centroids

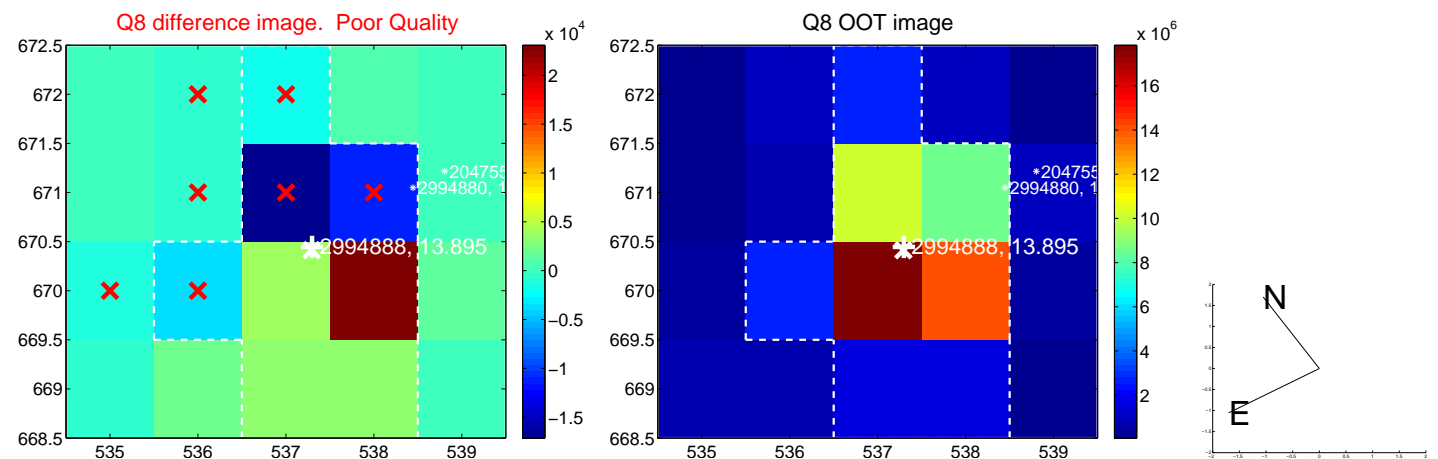
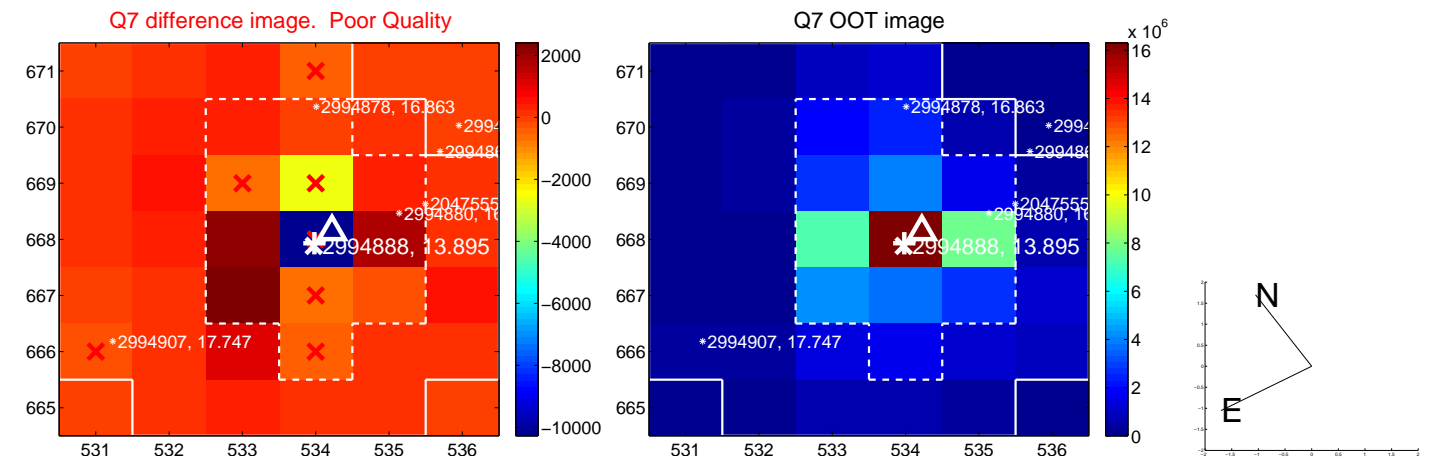
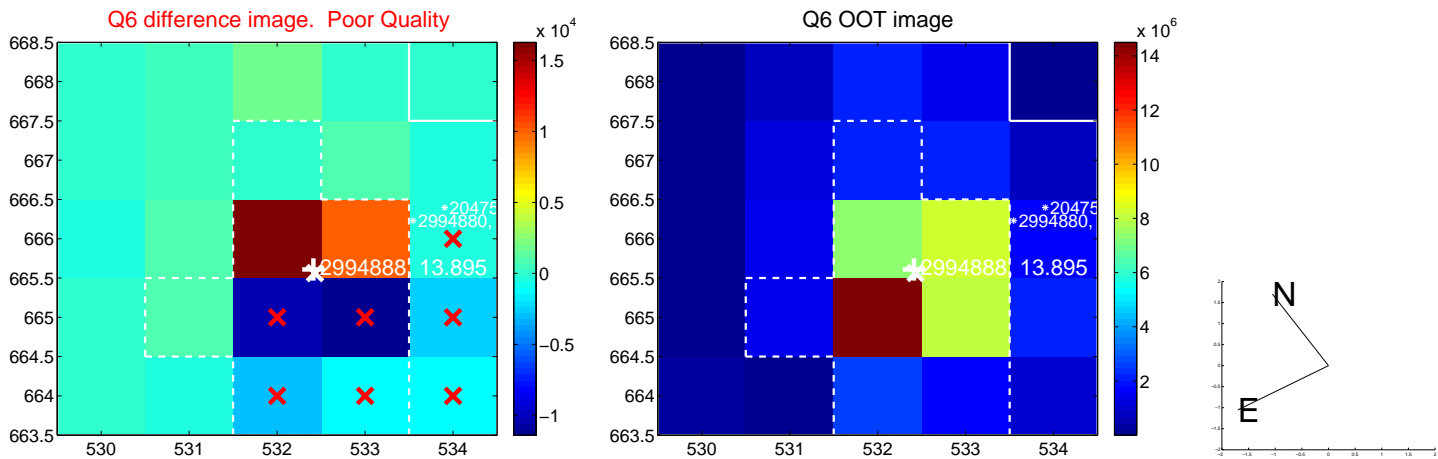
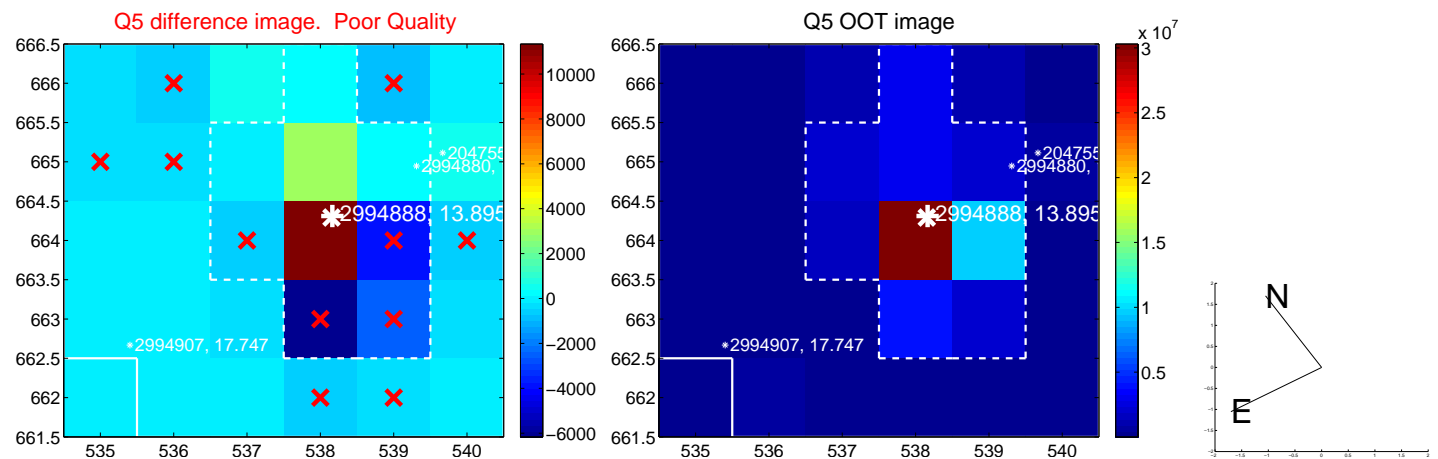


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

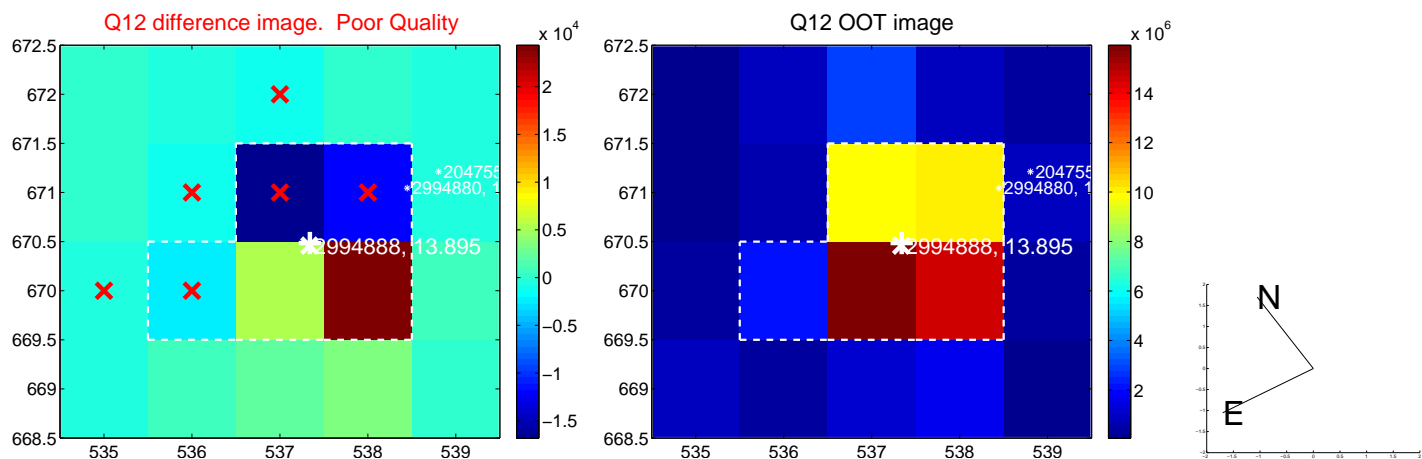
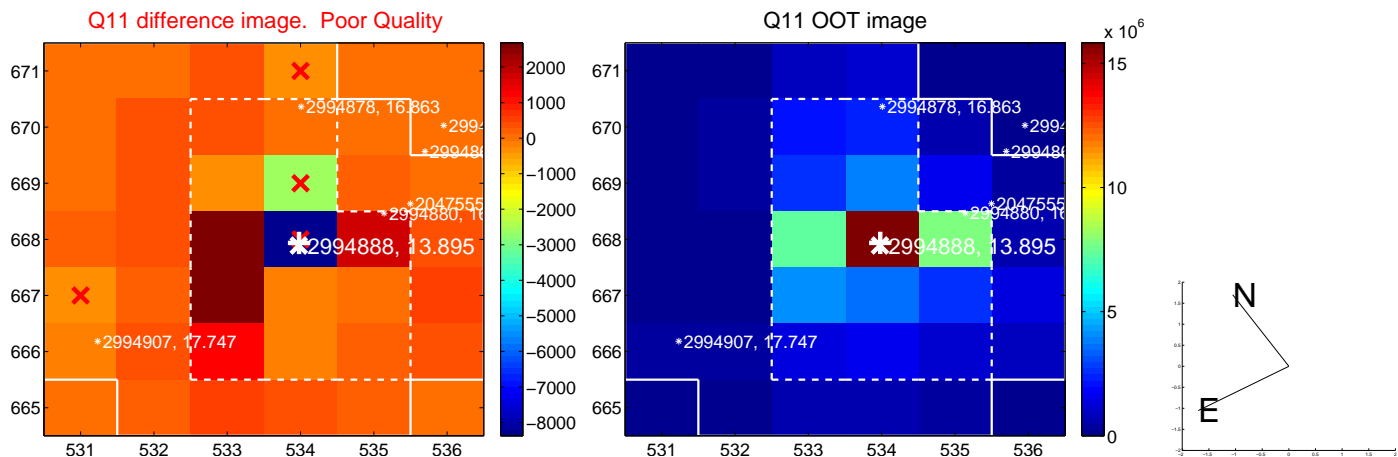
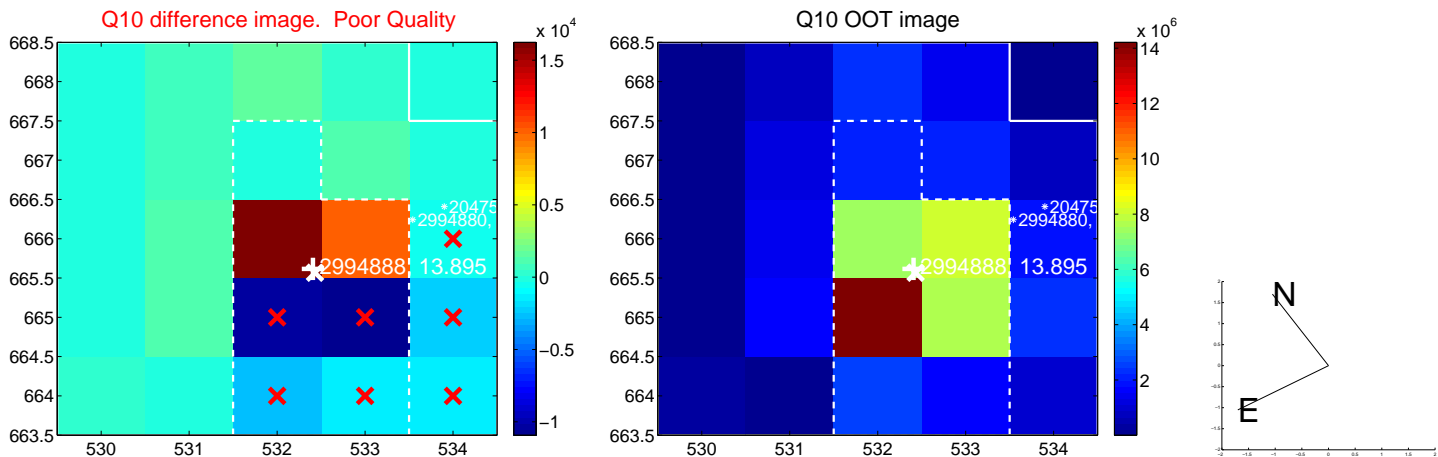
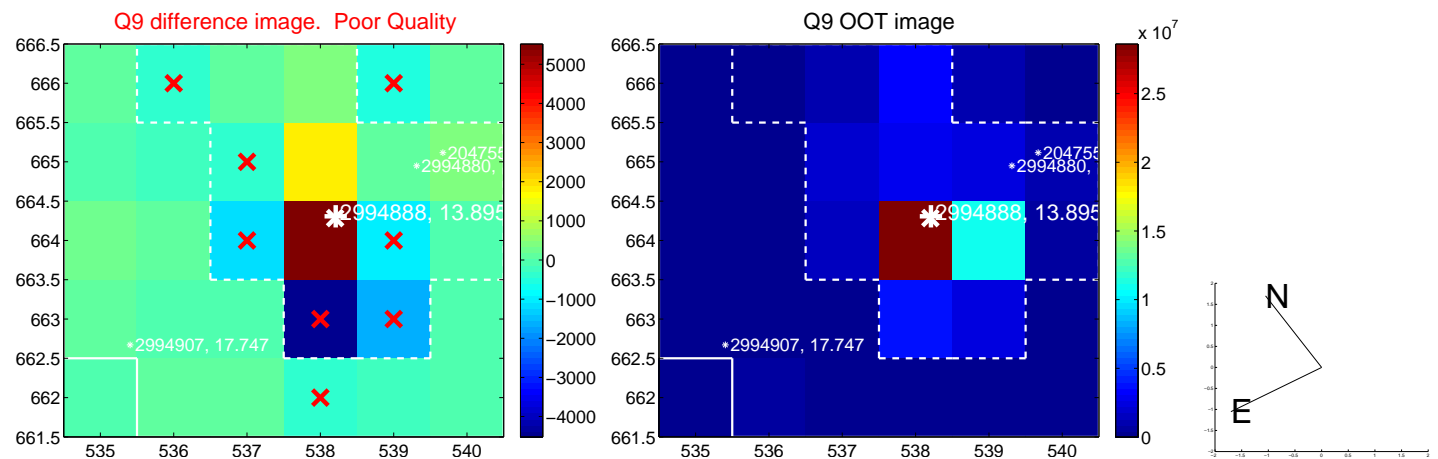
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



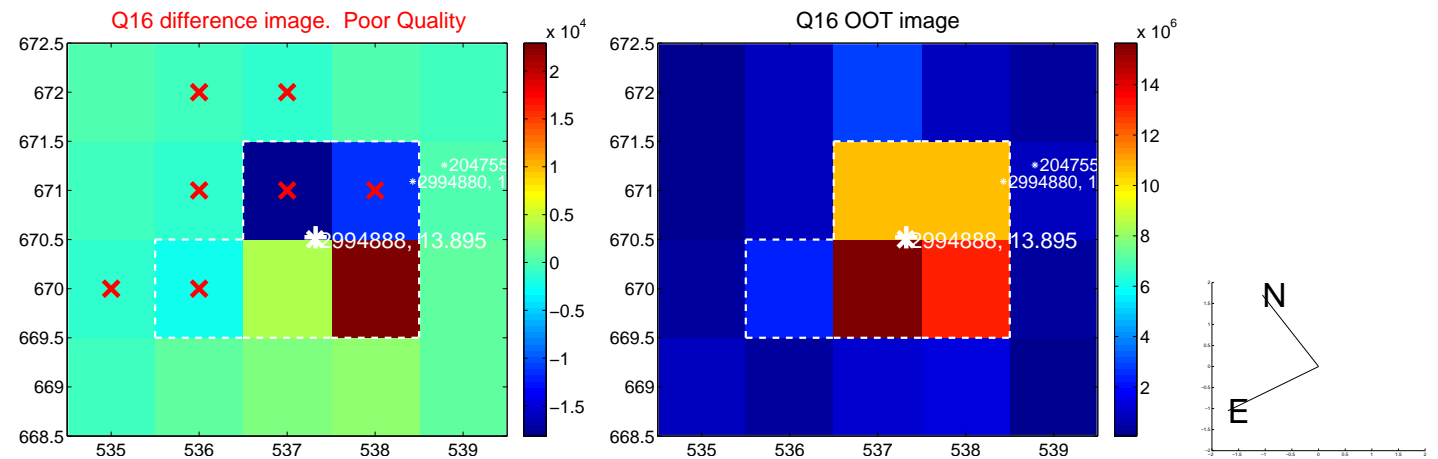
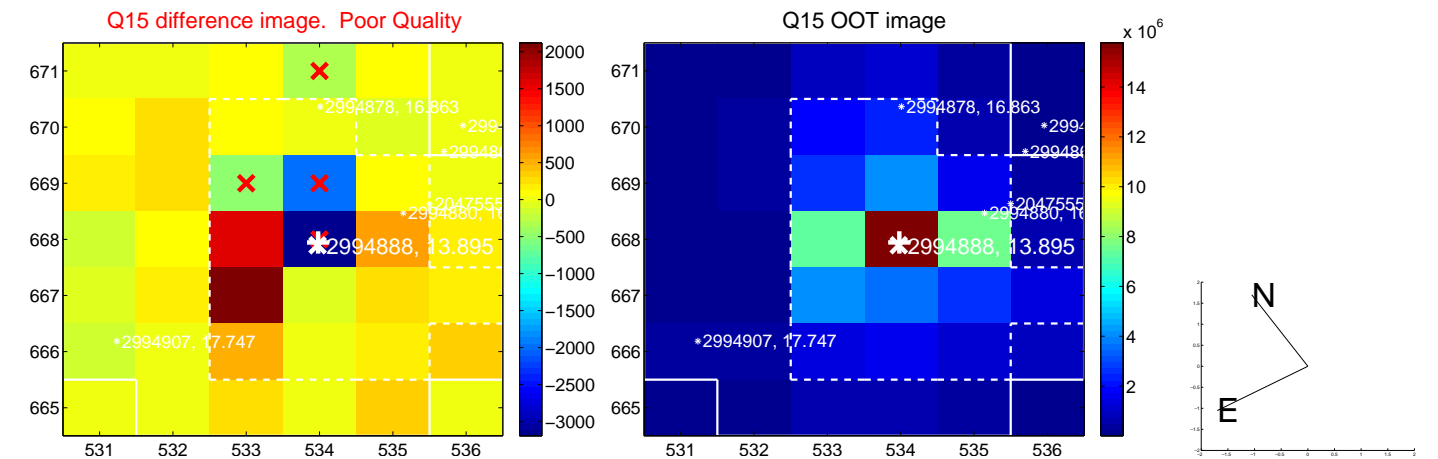
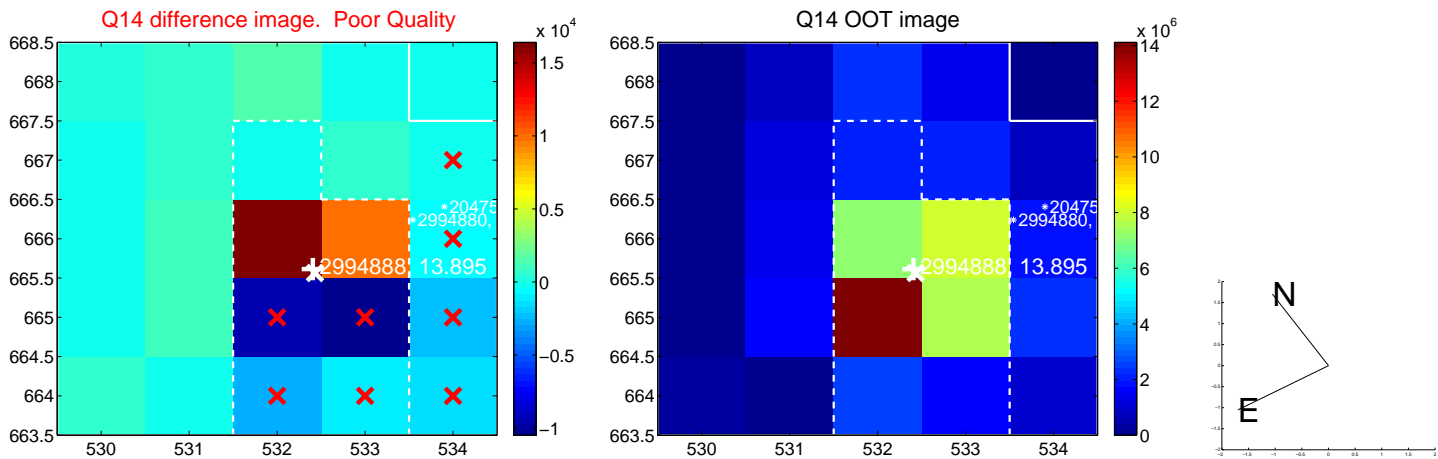
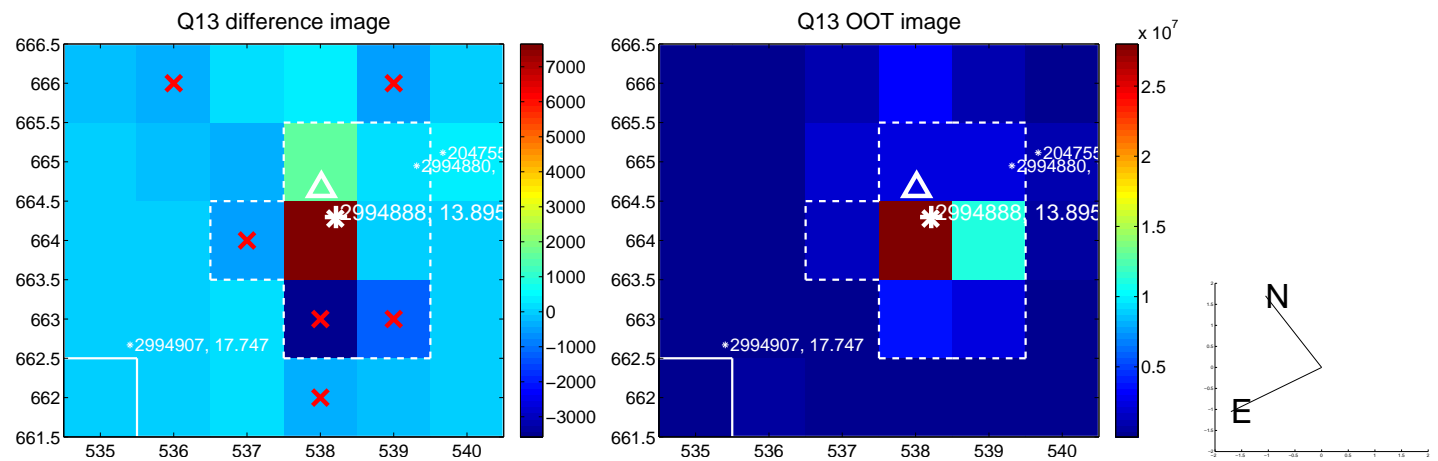
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



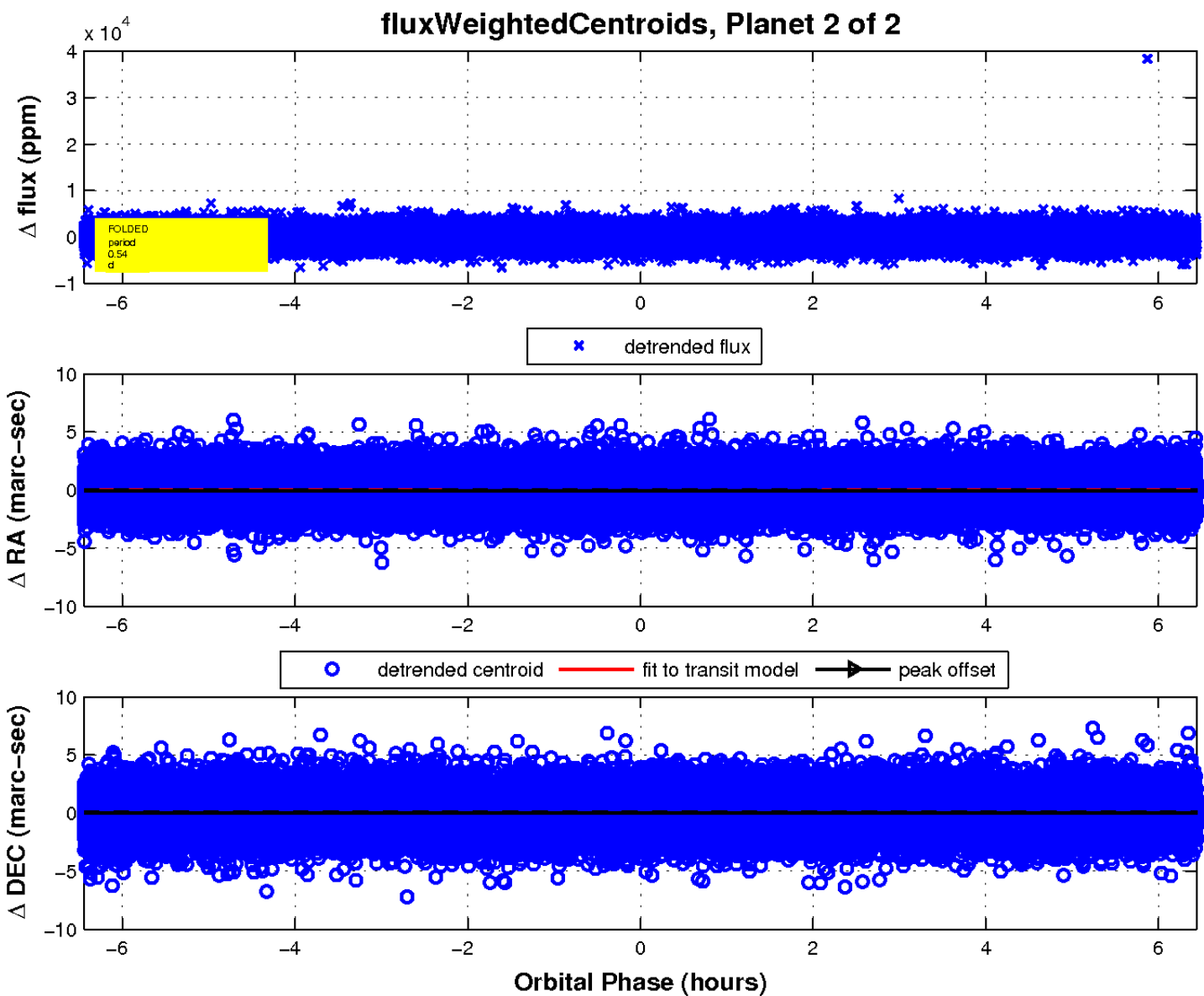
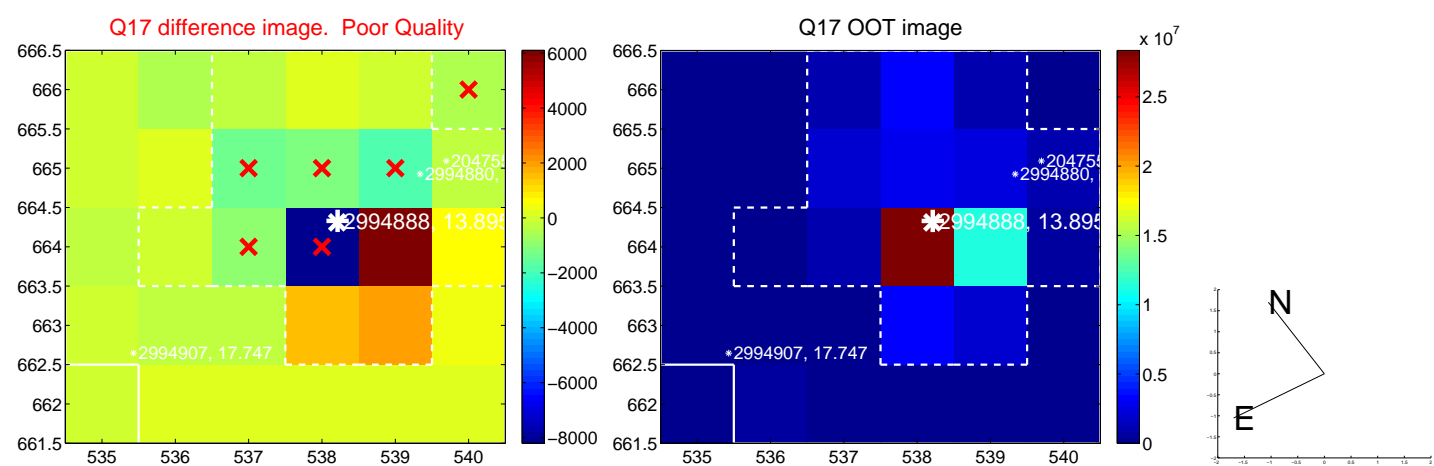
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

