

KIC 004932417

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})
004932417-01	OBS	No	1.503442	131.997990	48.3	2.942	10.4	10.3	1.65	7194	1.33	7550.32
004932417-02	OBS	No	1.503433	132.211388	57.1	4.091	11.0	11.2	1.65	7194	1.38	7550.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004932417-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004932417-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—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.

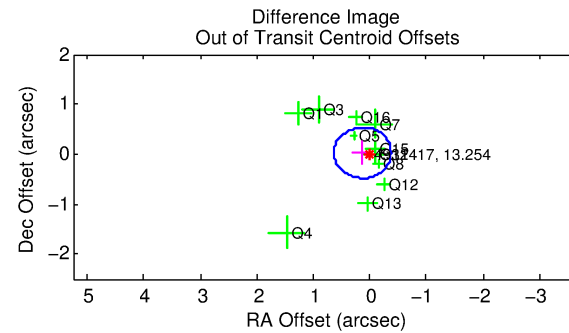
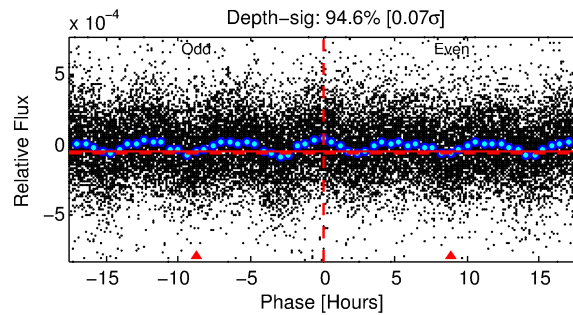
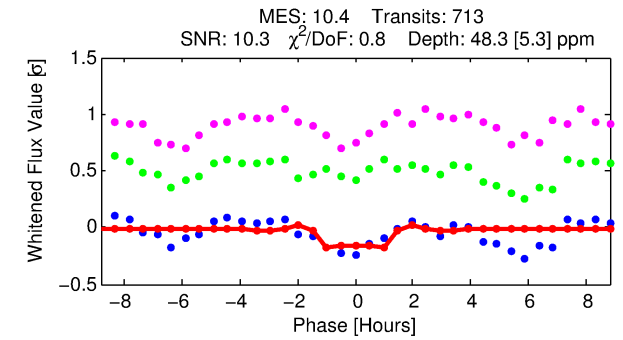
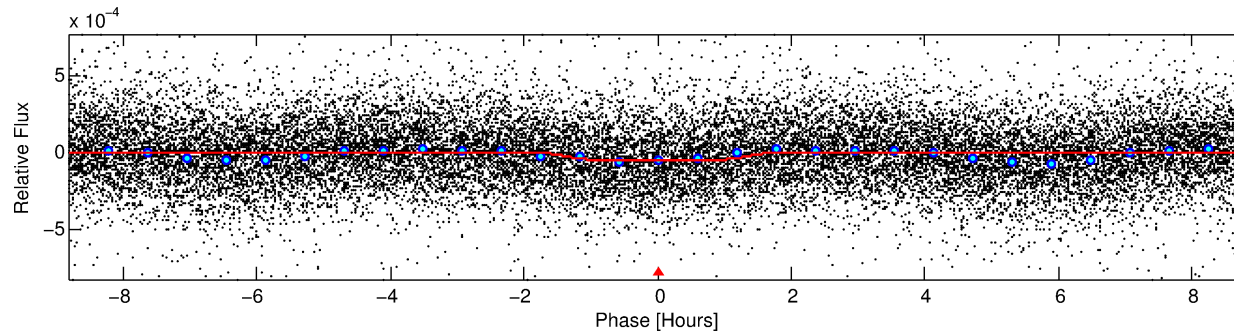
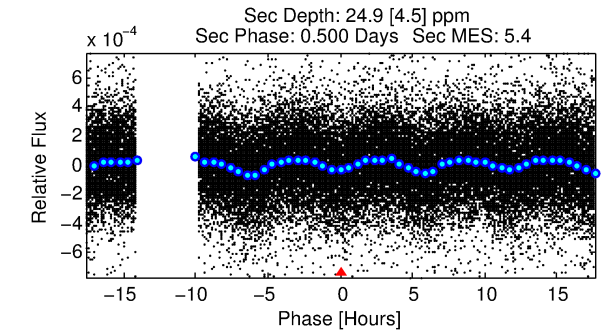
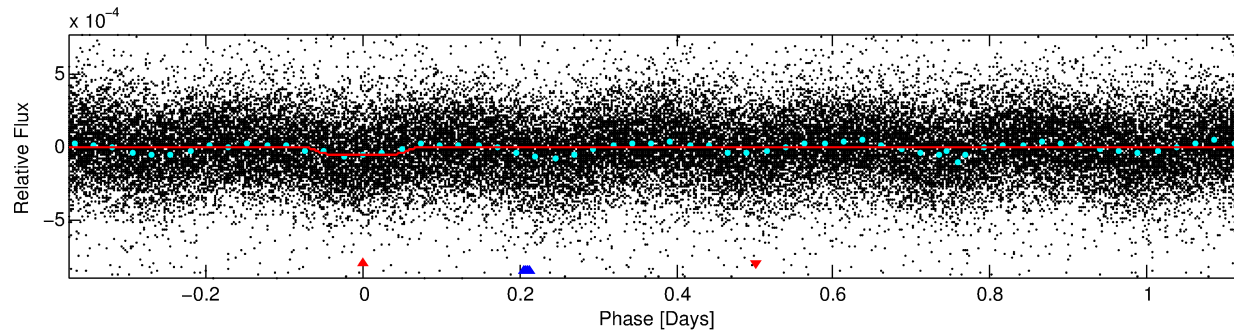
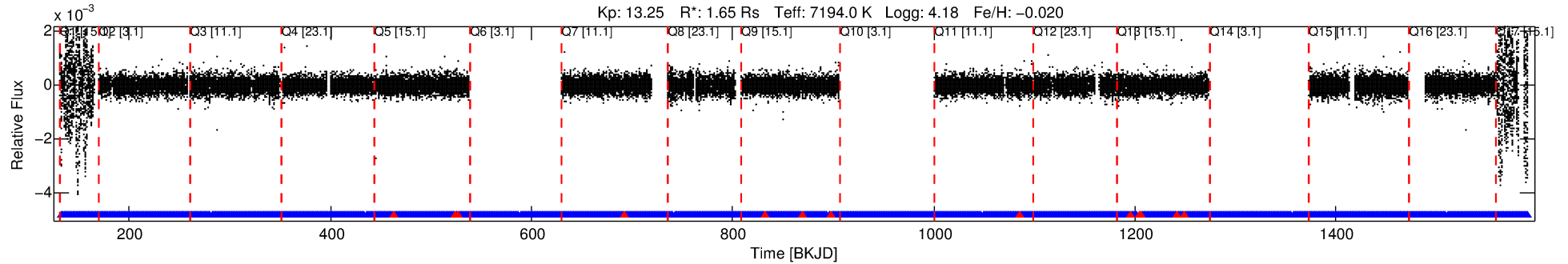
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004932417-01

No Significant Match Found

DV One-Page Summary

KIC: 4932417 Candidate: 1 of 2 Period: 1.503 d



DV Fit Results:

Period = 1.50344 [0.00001] d
Epoch = 131.9980 [0.0025] BKJD
Rp/R* = 0.0074 [0.0021]
a/R* = 2.02 [2.70]
b = 0.90 [0.39]
Seff = 7550.32 [3102.70]
Teq = 2377 [244] K
Rp = 1.33 [0.58] Re
a = 0.0294 [0.0078] AU
Ag = 6.72 [4.73] [1.21σ]
Teffp = 5918 [921] K [3.72σ]

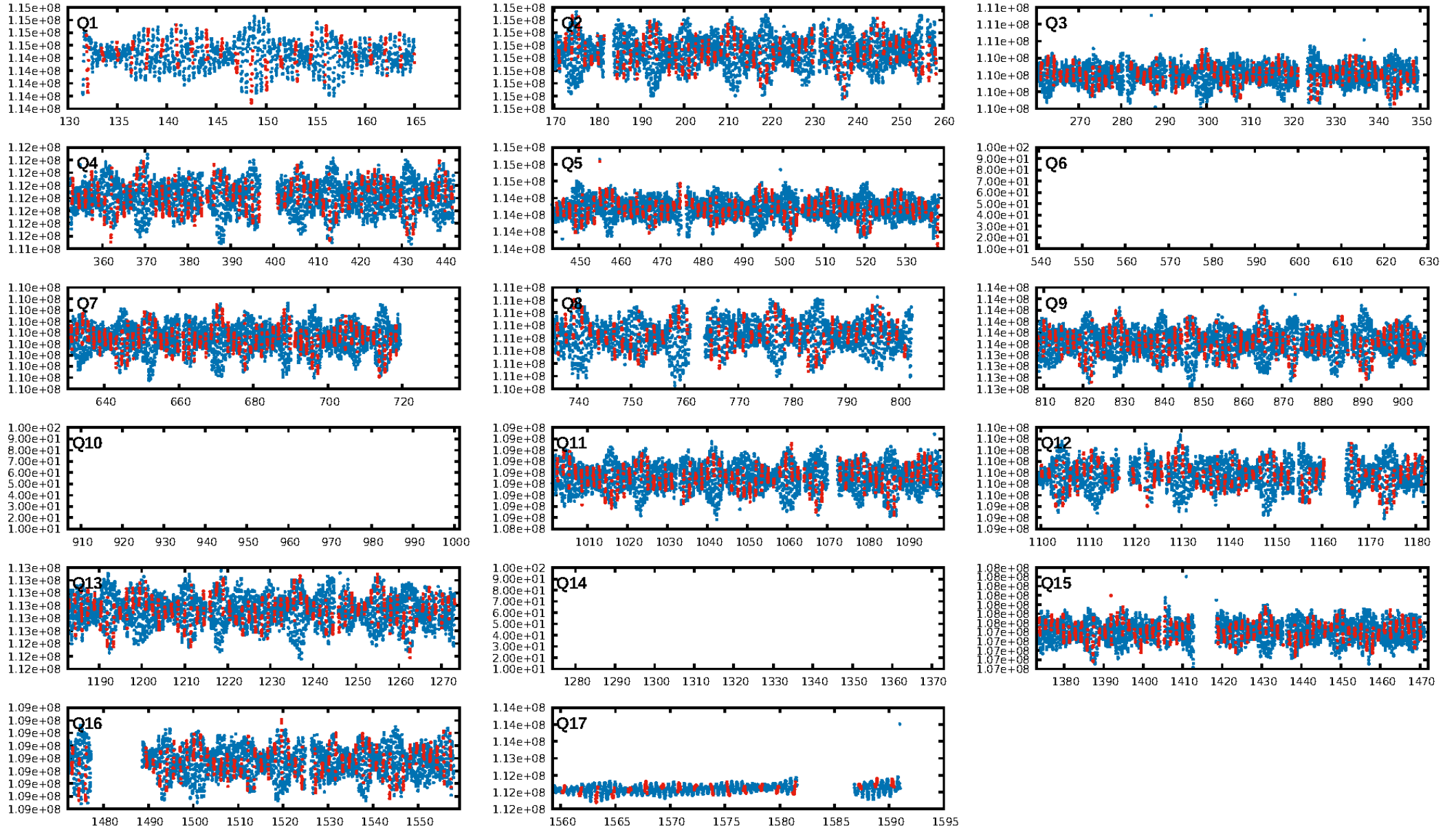
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.22e-18
RollingBand-fgt: 0.98 [660/673]
GhostDiagnostic-chr: 3.487
Centroid-sig: 0.0%
Centroid-so: 1.864 arcsec [2.86σ]
OotOffset-rm: 0.135 arcsec [0.79σ]
KicOffset-rm: 0.210 arcsec [1.05σ]
OotOffset-st: 0/4/4/3 [11]
KicOffset-st: 0/4/4/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/14]

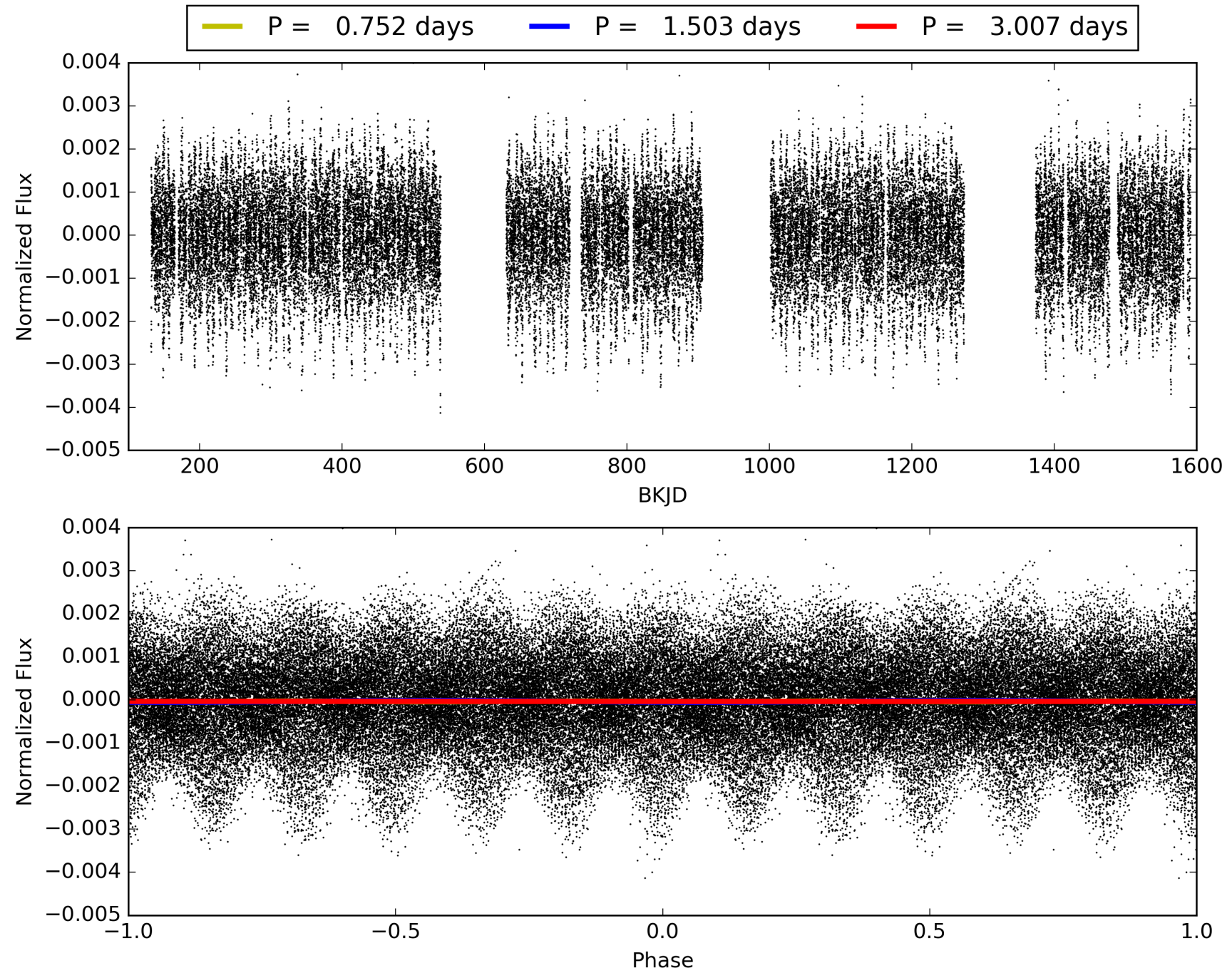
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 20:12:50 Z

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

TCE 004932417-01, PDC Light Curves

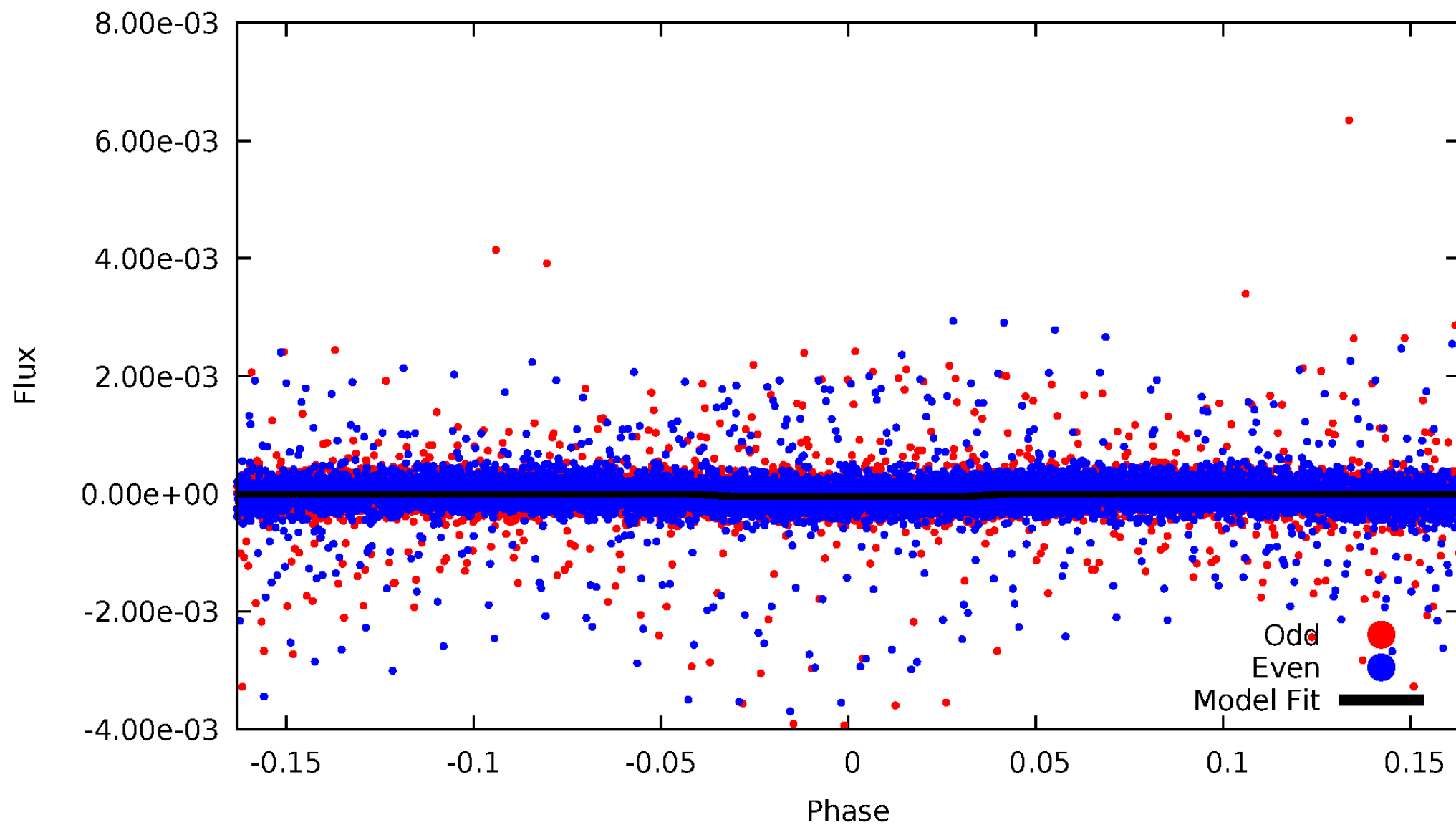


TCE 004932417-01



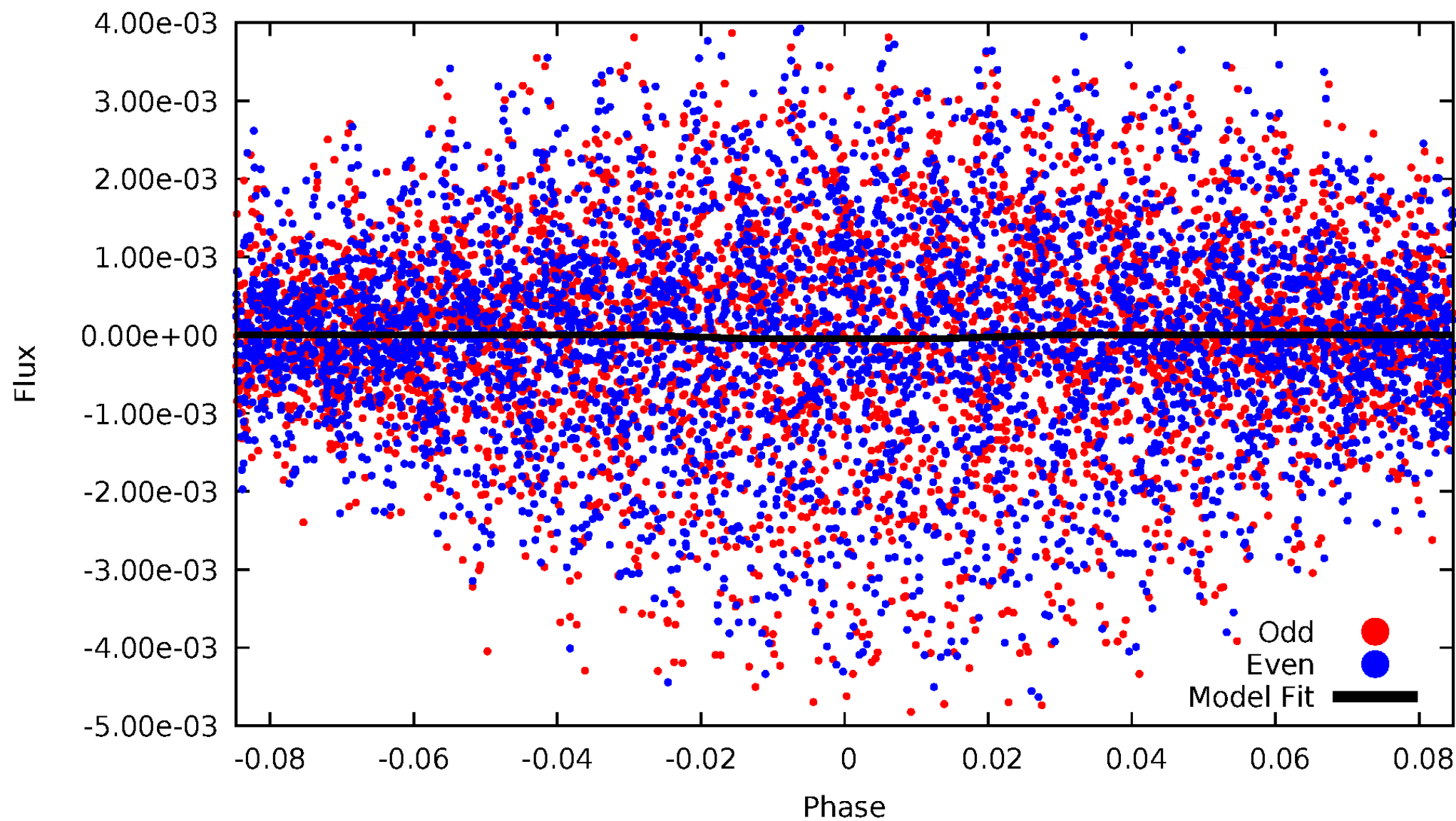
DV Odd/Even

TCE 004932417-01

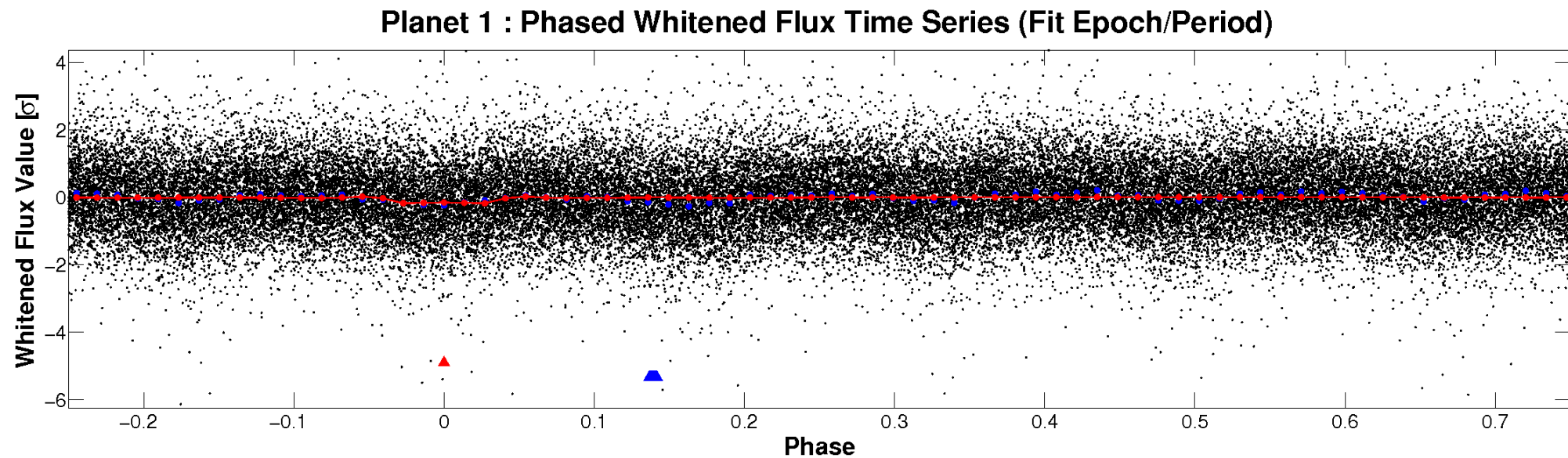
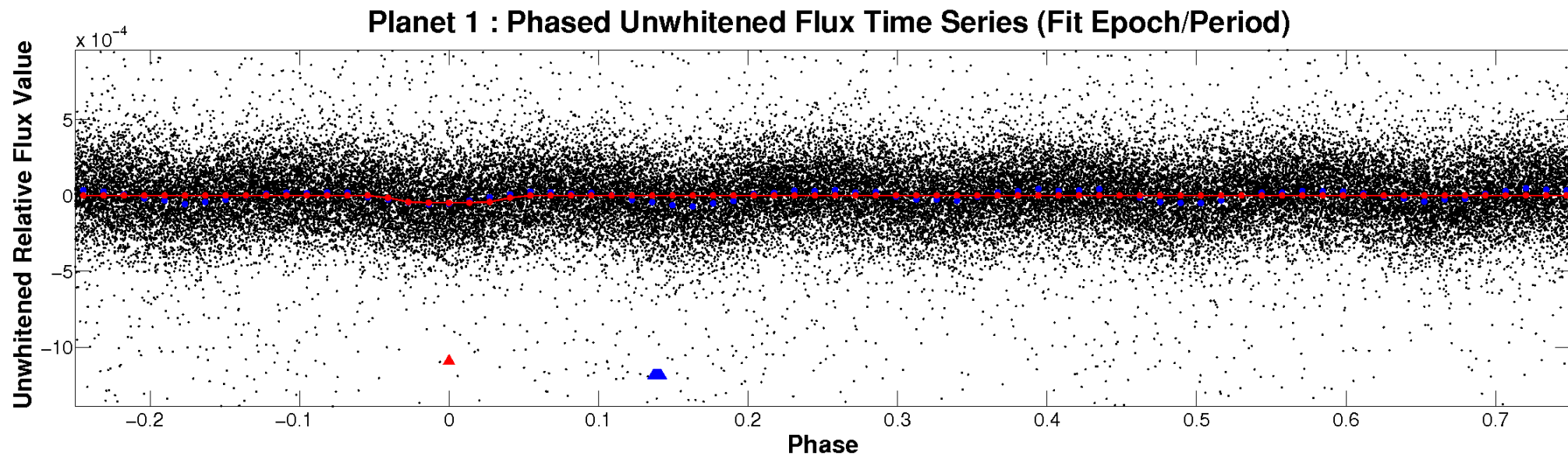


ALT Odd/Even

TCE 004932417-01

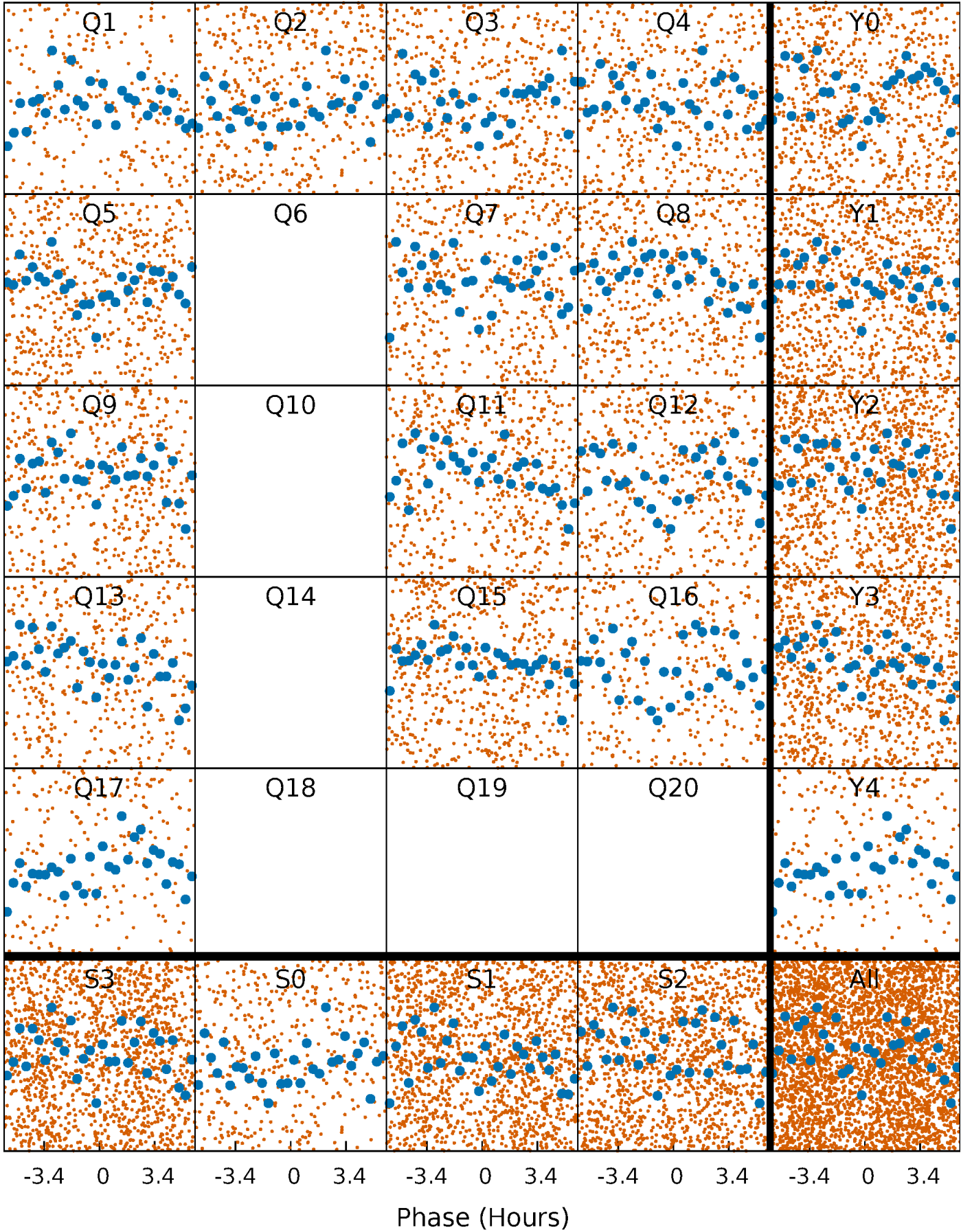


Non-Whitened Vs. Whitened Light Curve



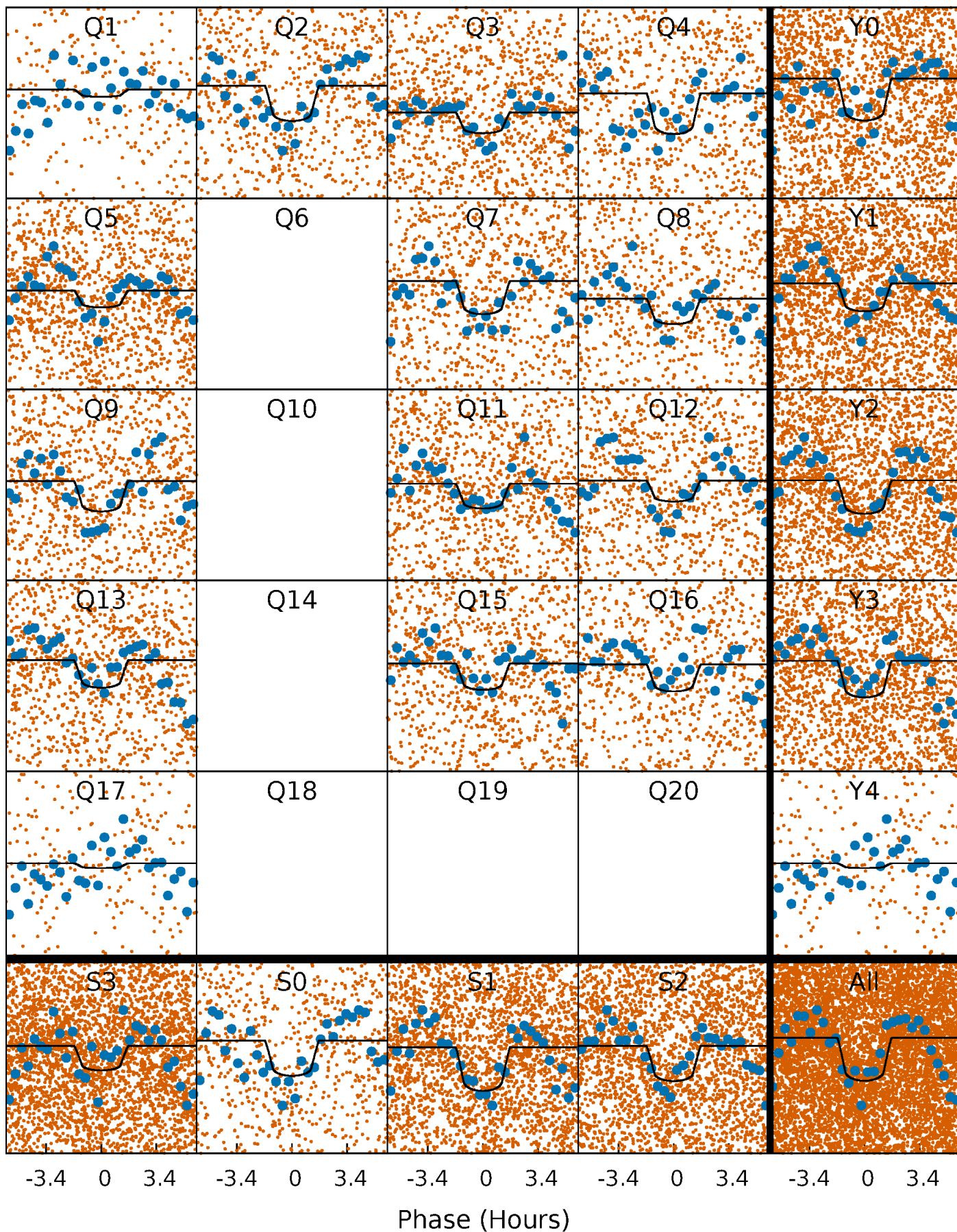
PDC Quarter-Phased Transit Curves

TCE 004932417-01 P= 1.503442 Days $T_0=131.997990$ (BKJD)



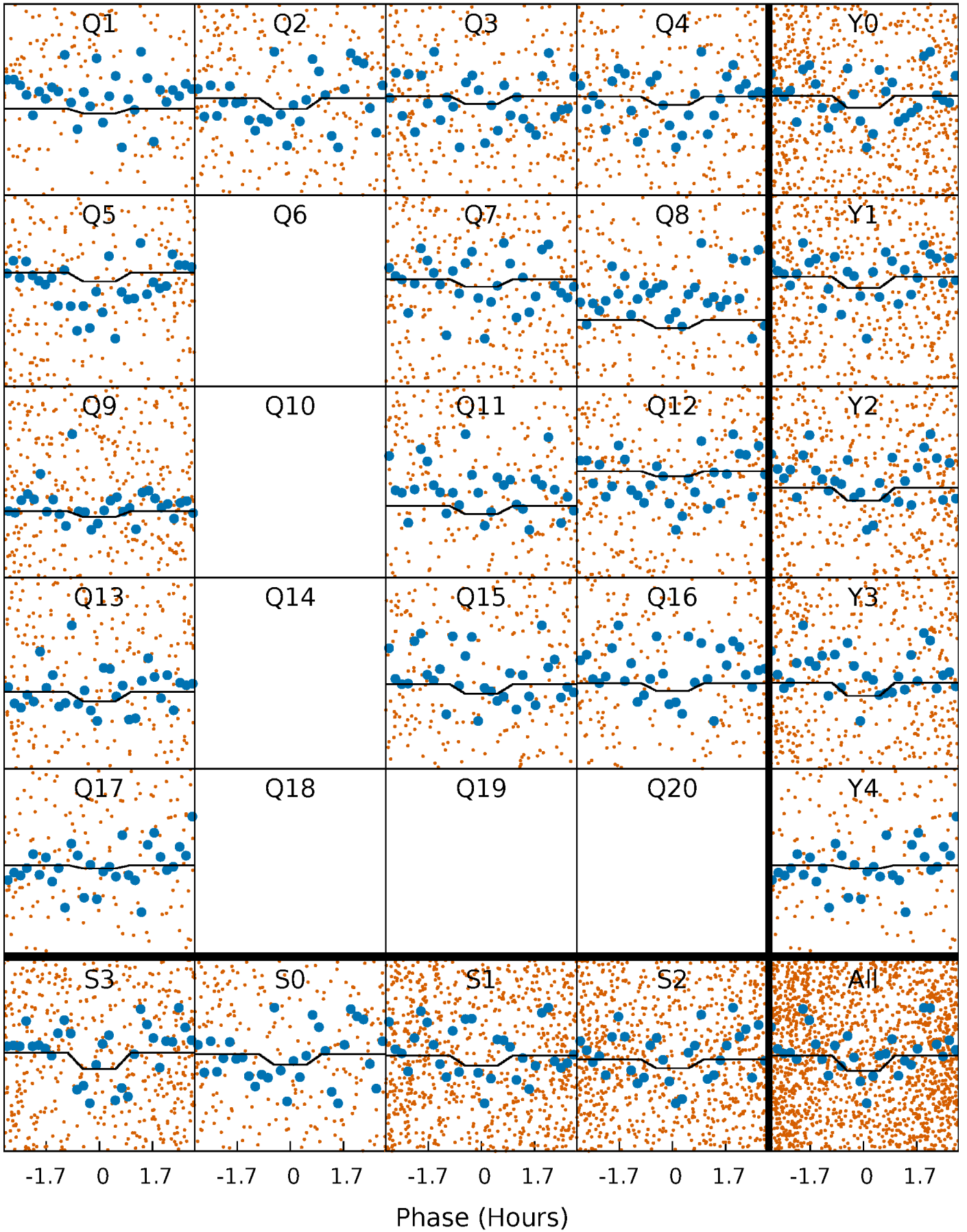
DV Quarter-Phased Transit Curves

TCE 004932417-01 P= 1.503442 Days $T_0=131.997990$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

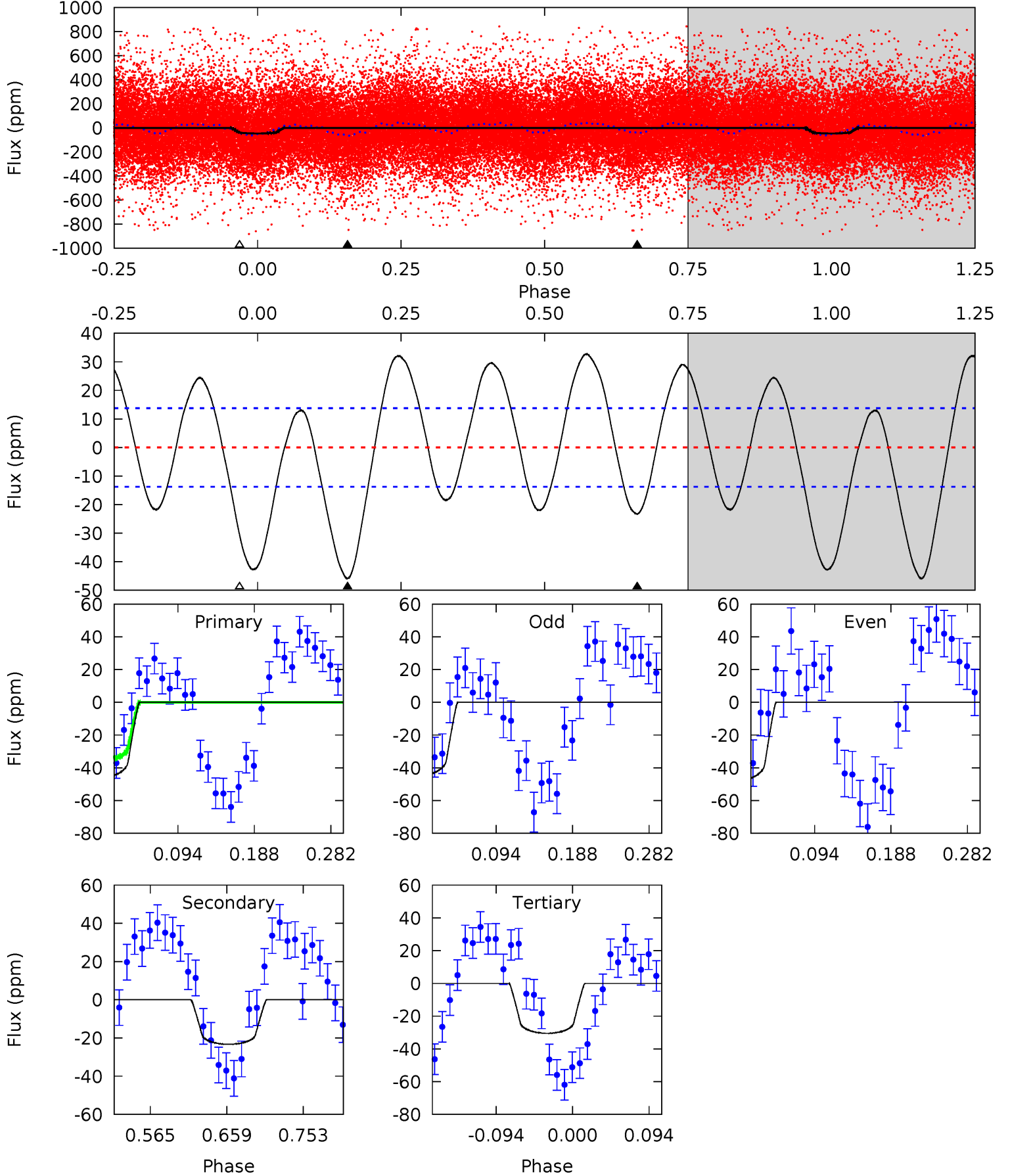
TCE 004932417-01 P= 1.503403 Days $T_0=131.995088$ (BKJD)



DV Model-Shift Uniqueness Test

004932417-01, P = 1.503442 Days, E = 130.494548 Days

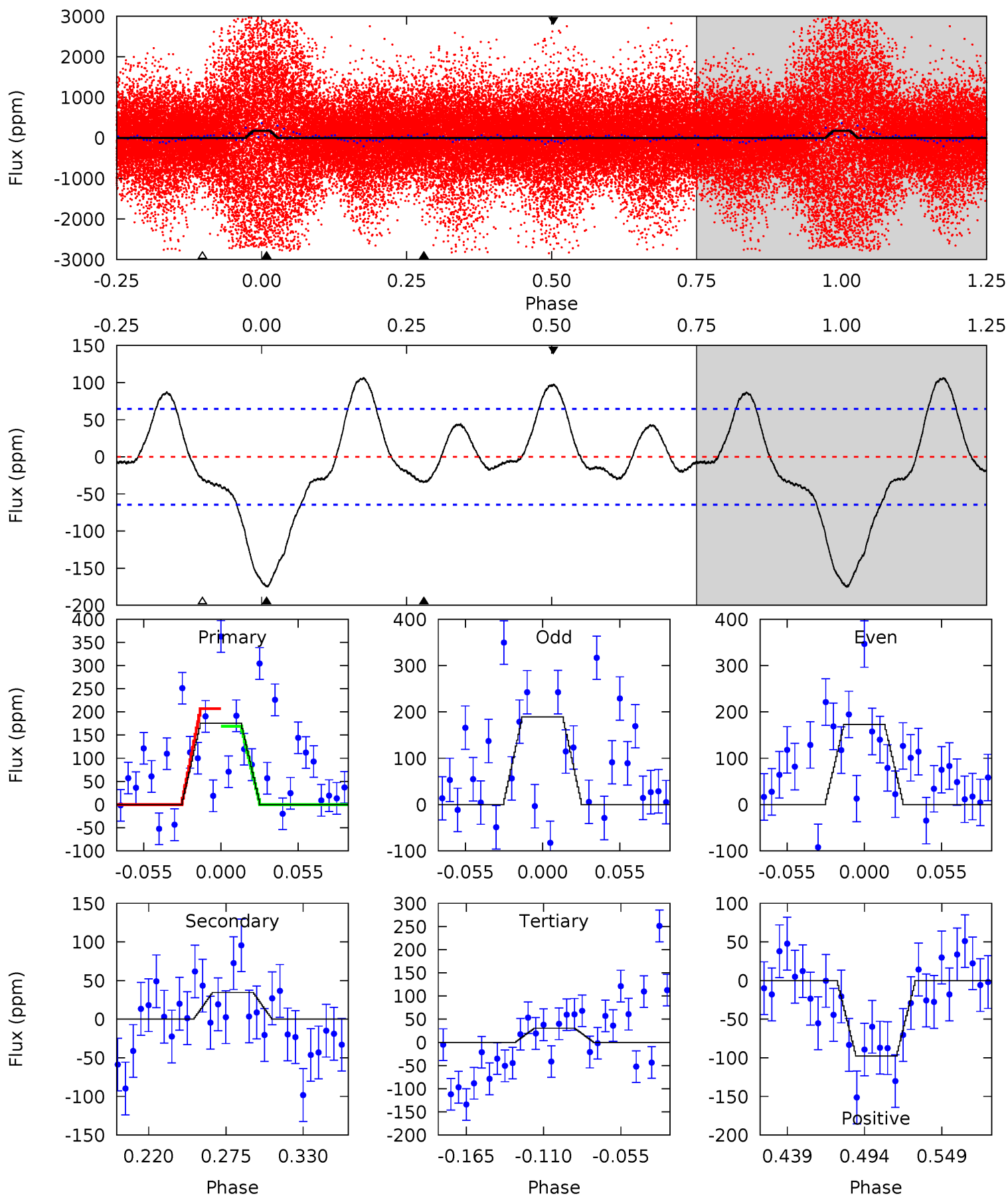
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	7.75	10.2	0	4.58	1.67	6.62	5.12	15.3	-2.40	7.75	0.51	0.81	0.42	3.59



Alt Model-Shift Uniqueness Test

004932417-01, P = 1.503403 Days, E = 130.491685 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.8	2.52	2.22	7.11	4.69	1.92	3.03	10.5	5.65	0.30	-4.59	0.59	-0.36	0.38	1.41



Stellar Parameters For KIC 004932417

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7194^{+228}_{-314}	$4.179^{+0.105}_{-0.195}$	$-0.020^{+0.200}_{-0.350}$	$1.648^{+0.546}_{-0.294}$	$1.494^{+0.232}_{-0.209}$	$0.470^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+1000%/-1750%	+33%/-18%	+16%/-14%	+59%/-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 004932417-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-23 ± 3	$1.36^{+0.48}_{-0.39}$	3358^{+277}_{-196}	5712^{+1145}_{-728}	$5.931^{+5.800}_{-2.689}$
Alt.	-35 ± 14	$1.20^{+0.44}_{-0.37}$	3359^{+257}_{-201}	6664^{+1916}_{-1134}	11^{+15}_{-5}

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 $A_{obs} \gg 1.0$

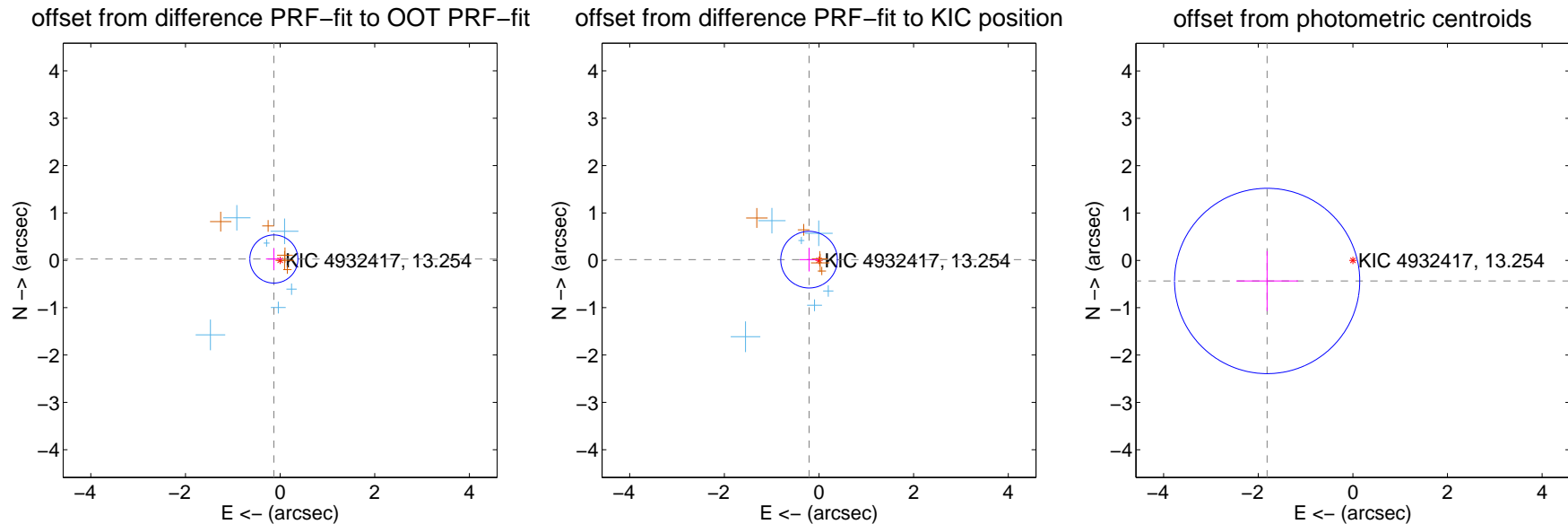
DV Centroid Data

Supplemental centroid analysis for 004932417-01. Kepler magnitude: 13.25. Transit SNR 10.31

There are 6 quarters with good PRF difference image offsets

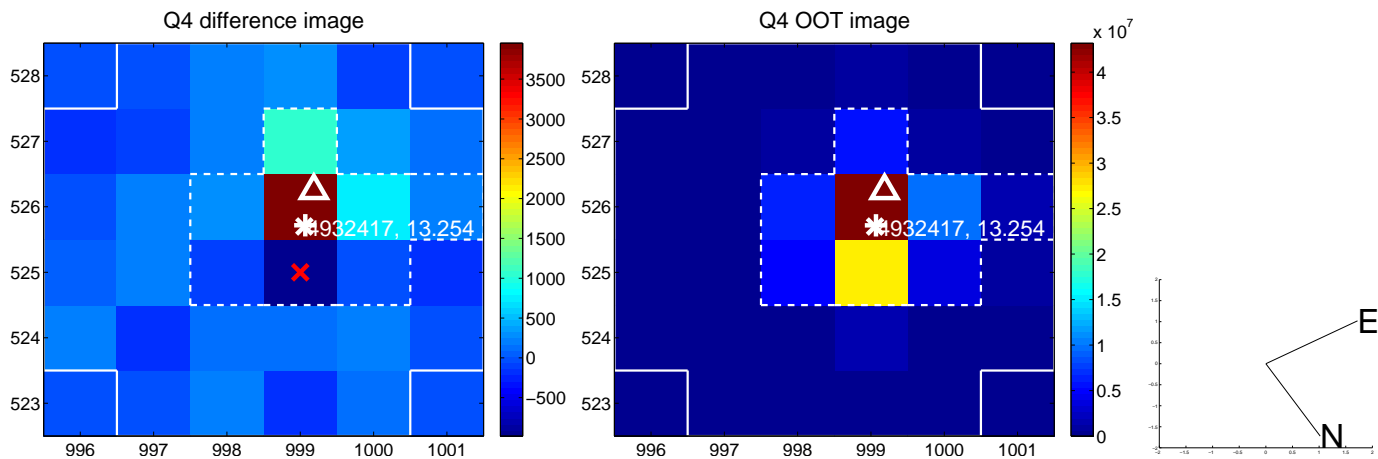
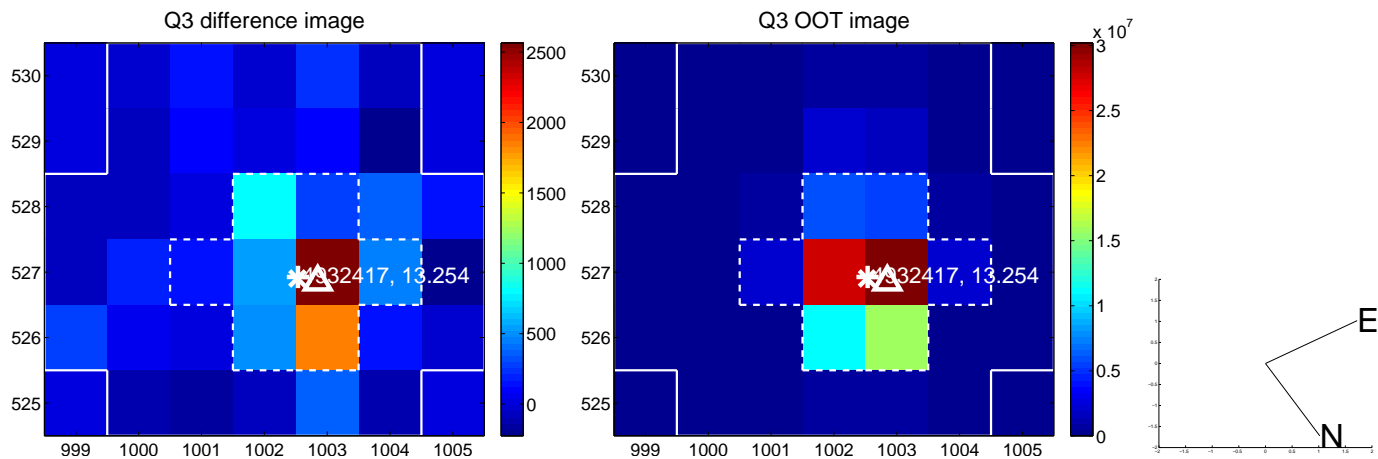
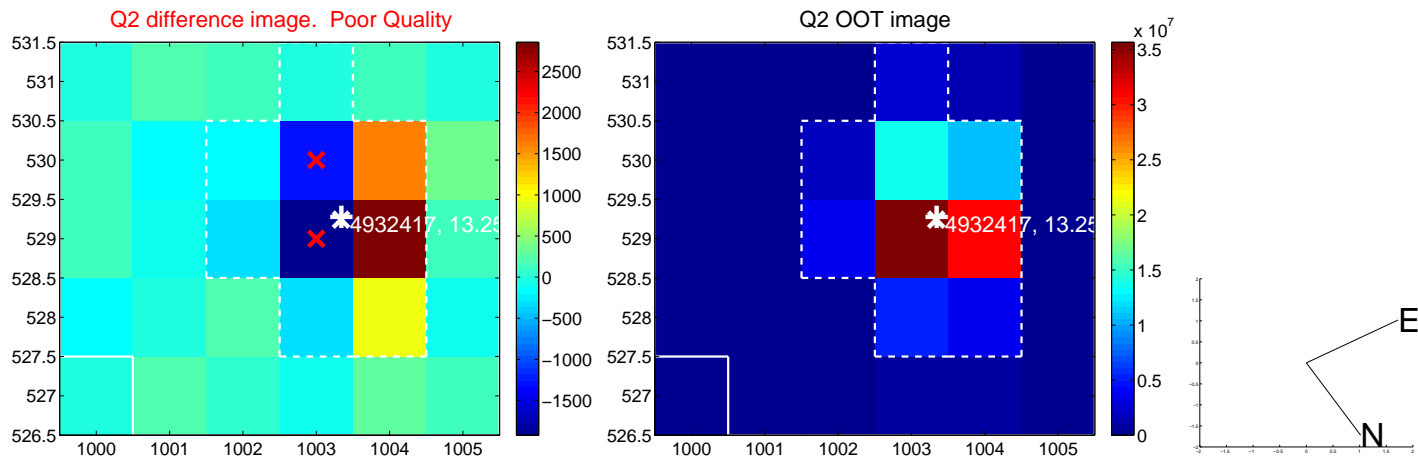
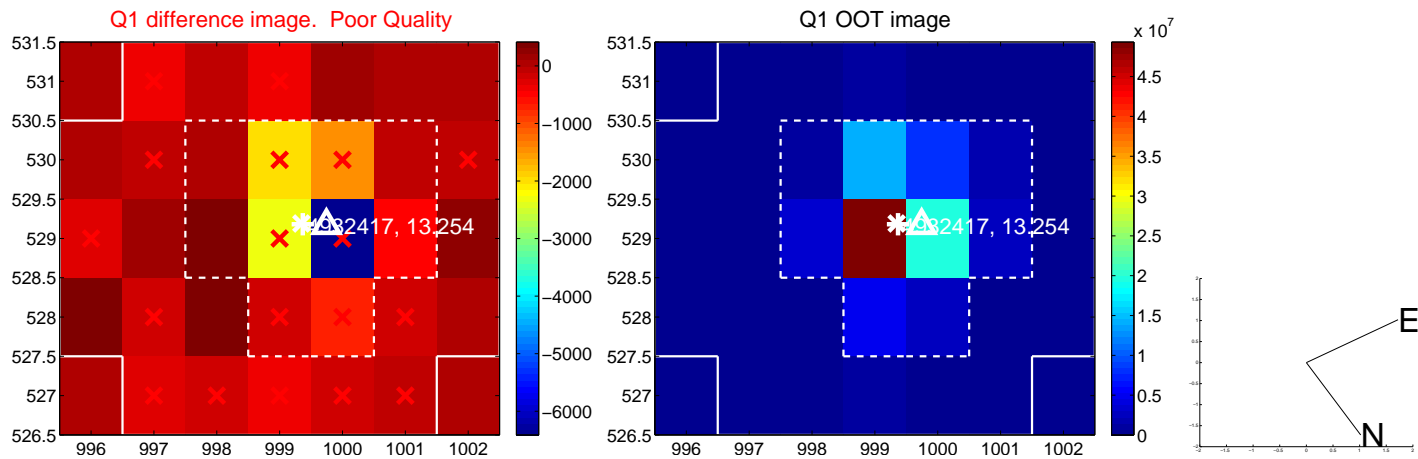
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.135 ± 0.169	0.79	0.132 ± 0.167	0.027 ± 0.227
PRF-fit source offset from KIC position	0.210 ± 0.199	1.05	0.210 ± 0.199	0.013 ± 0.249
photometric centroid source offset	1.86 ± 0.65	2.86	1.81 ± 0.65	-0.43 ± 0.63

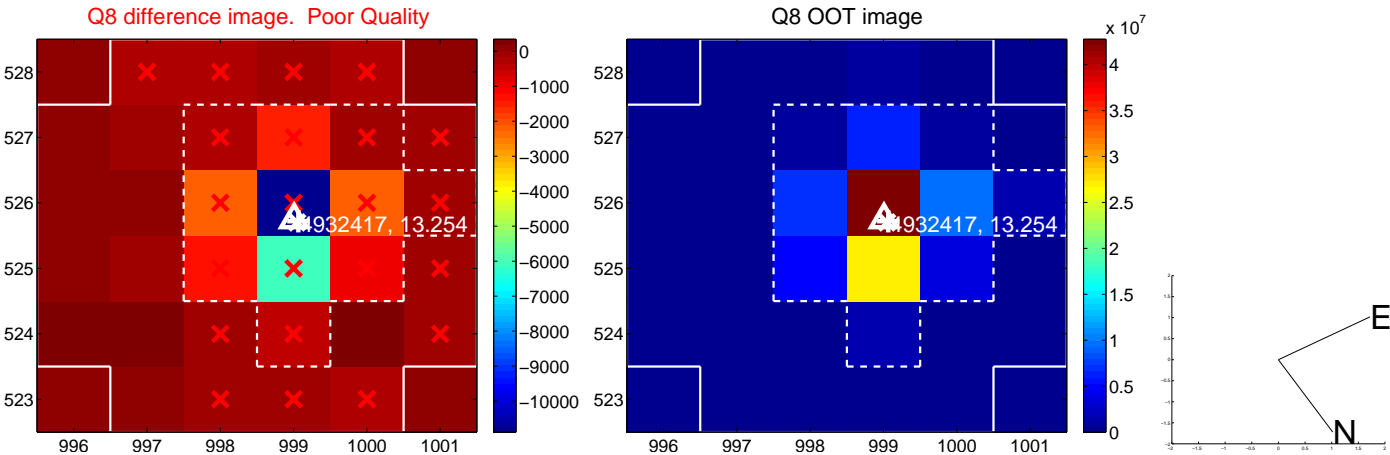
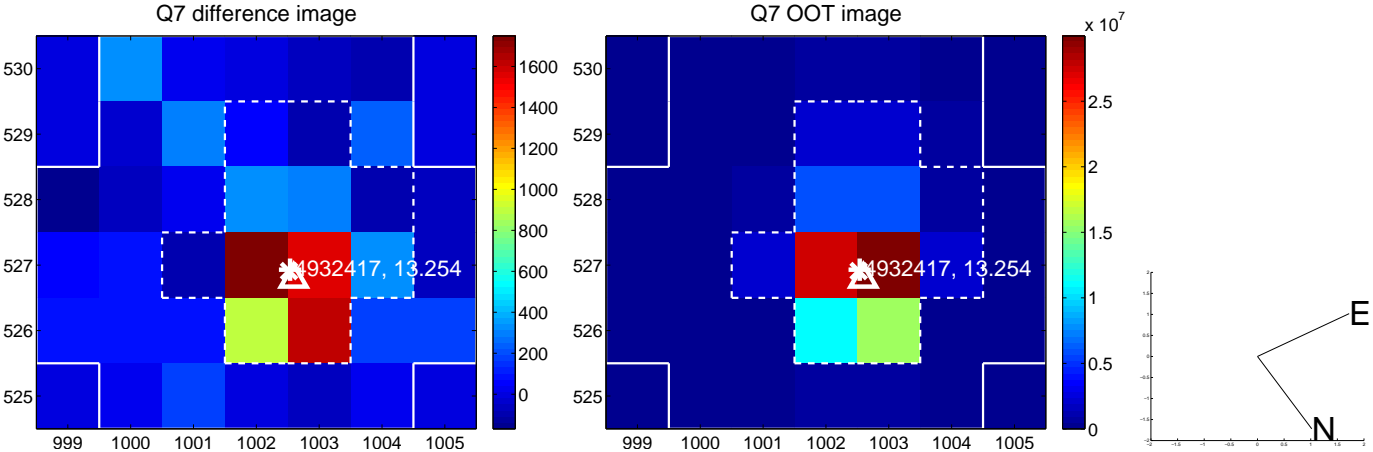
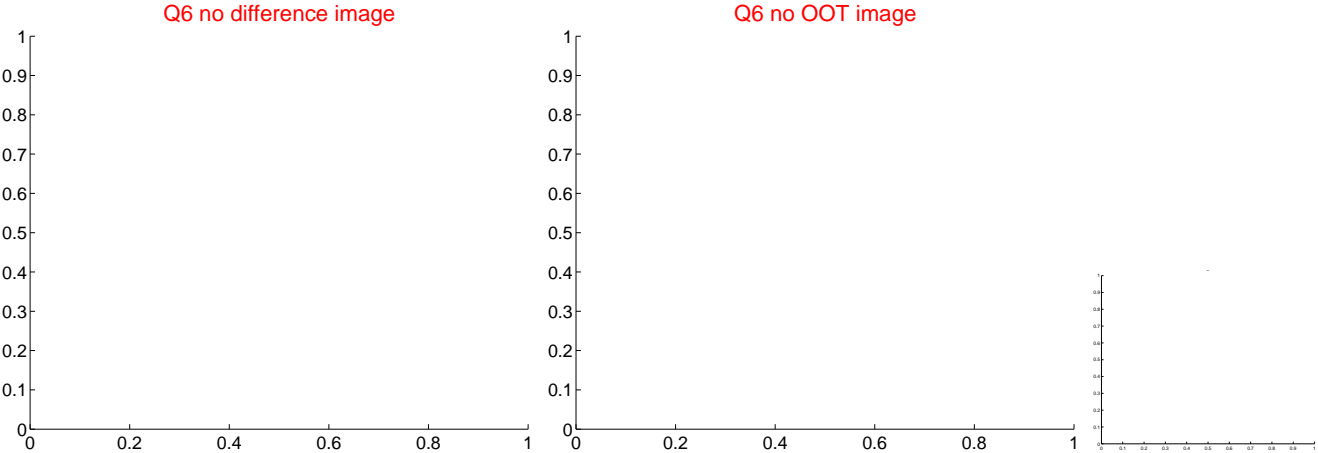
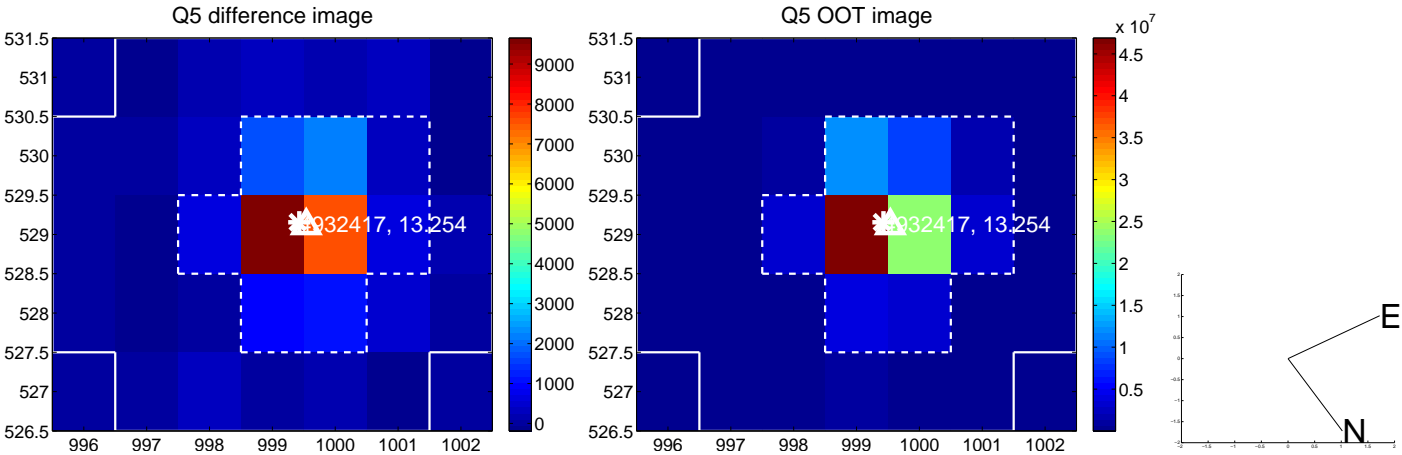


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

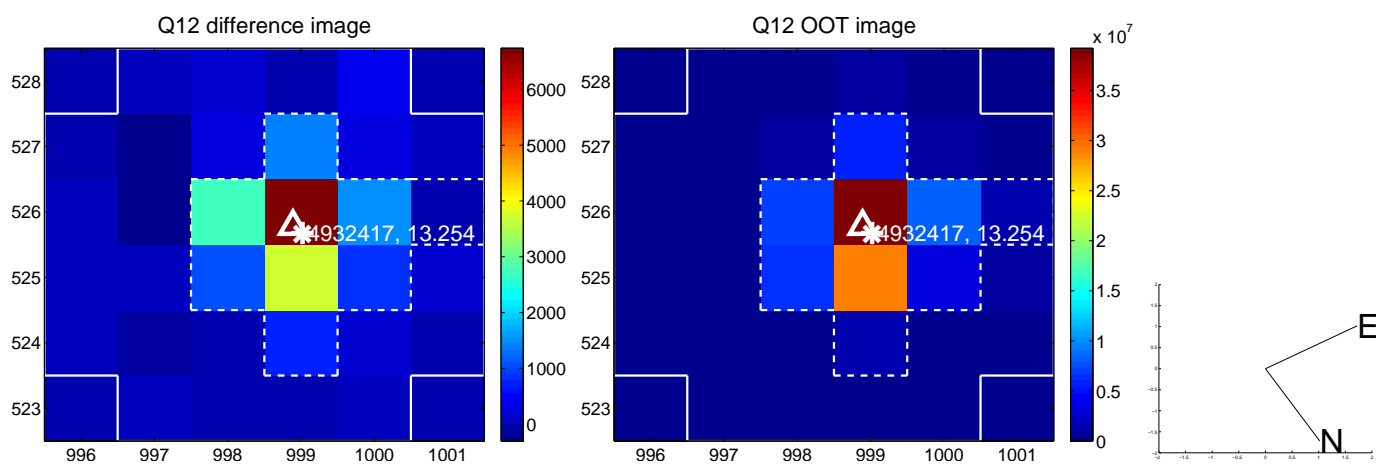
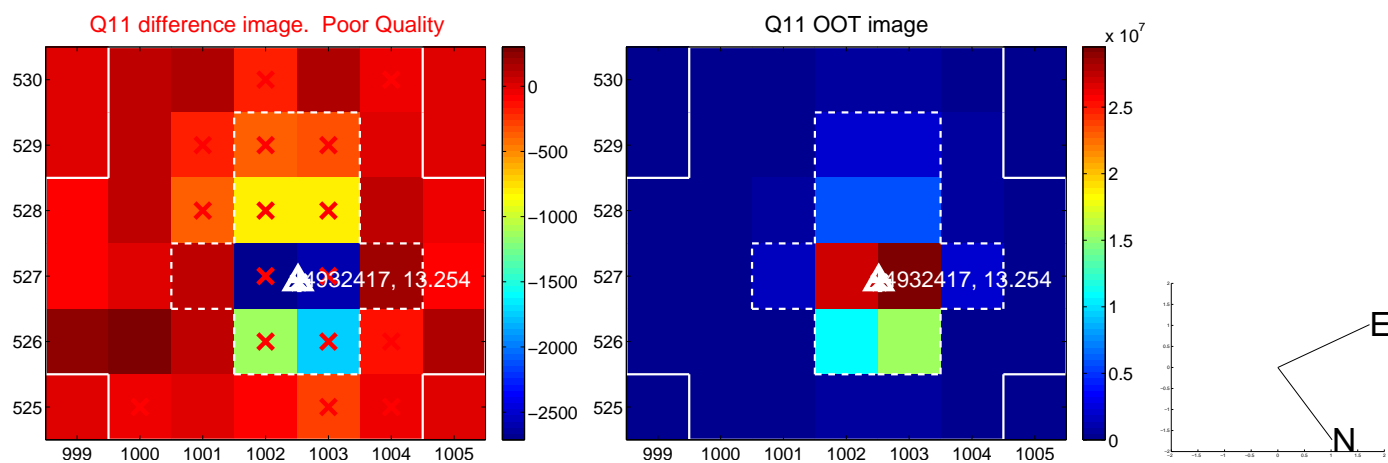
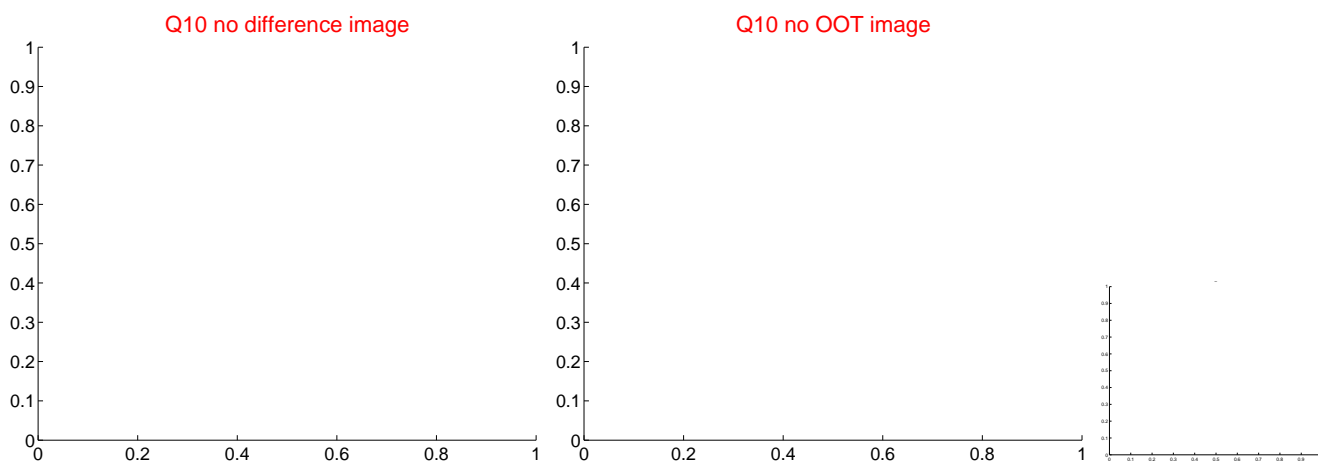
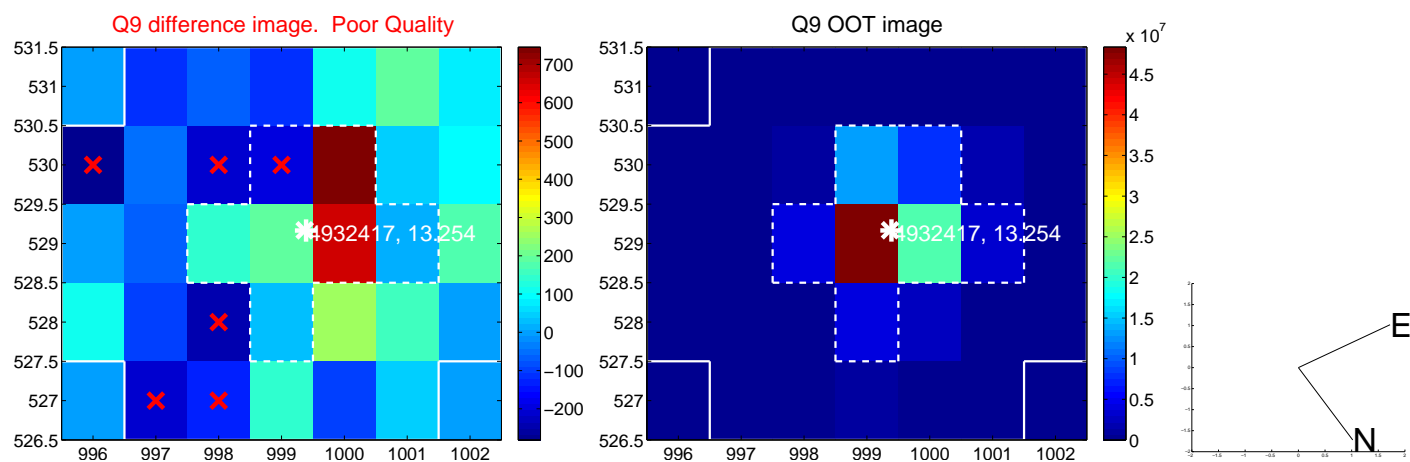
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



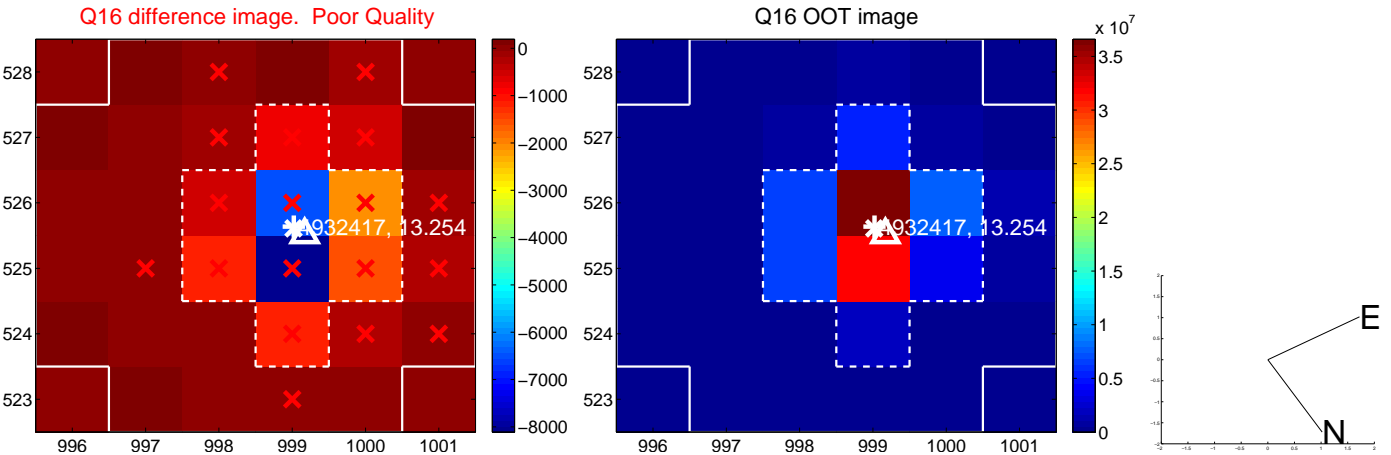
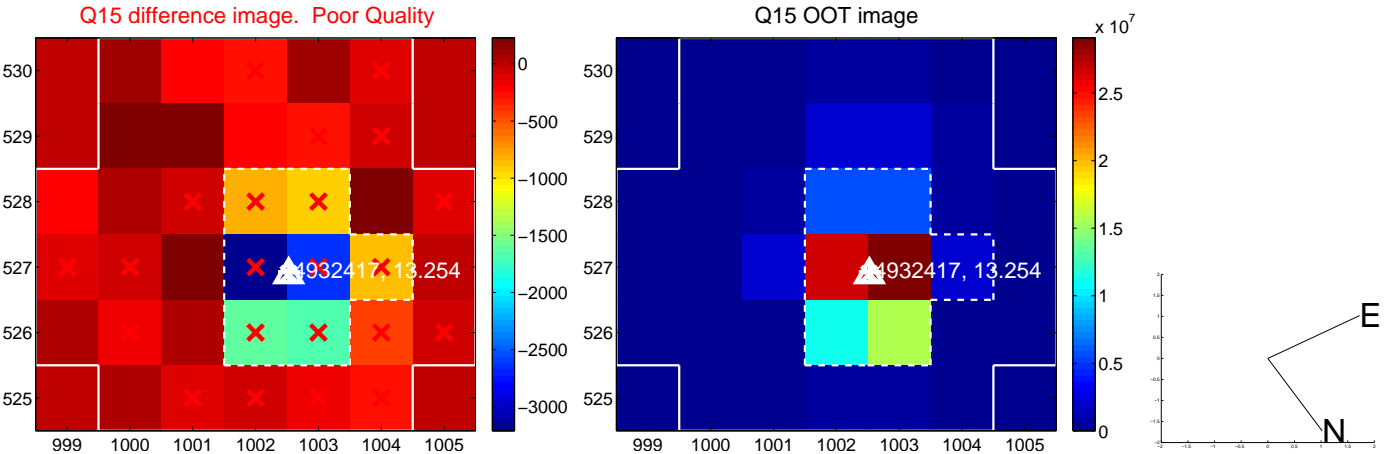
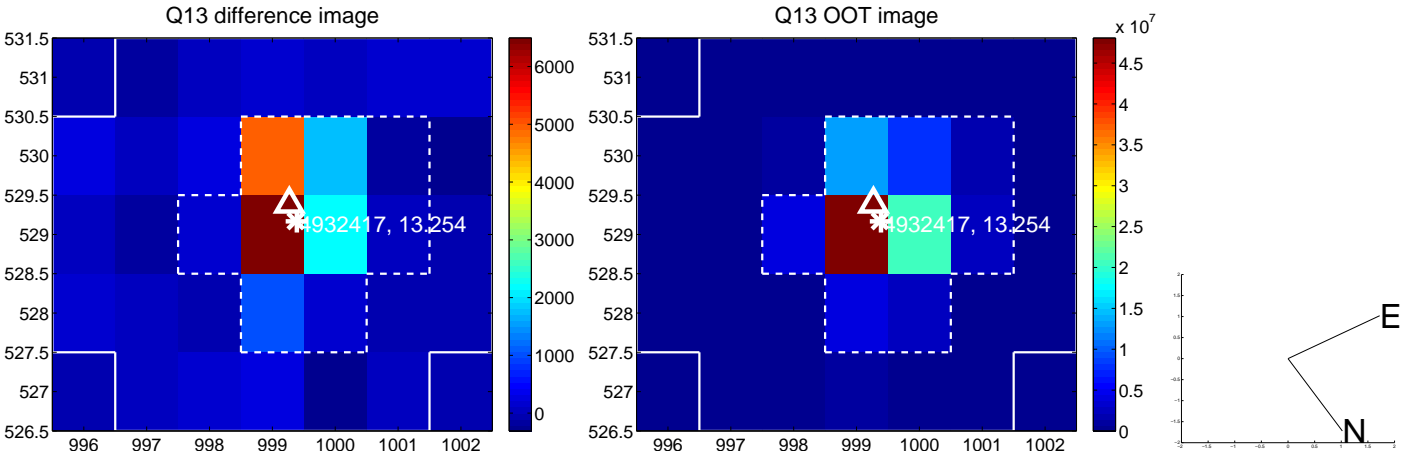
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



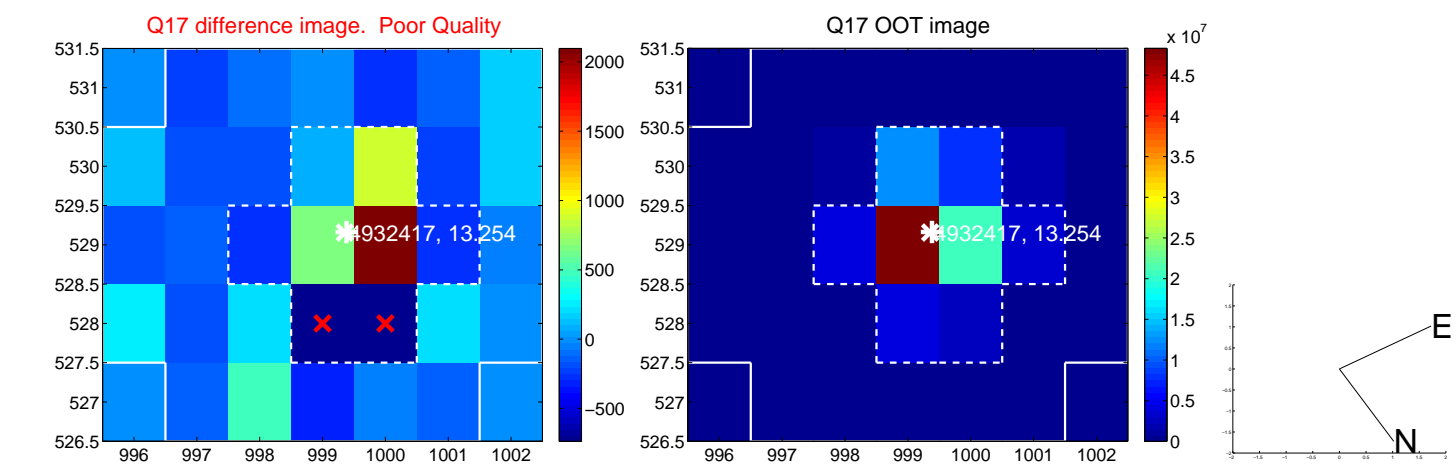
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



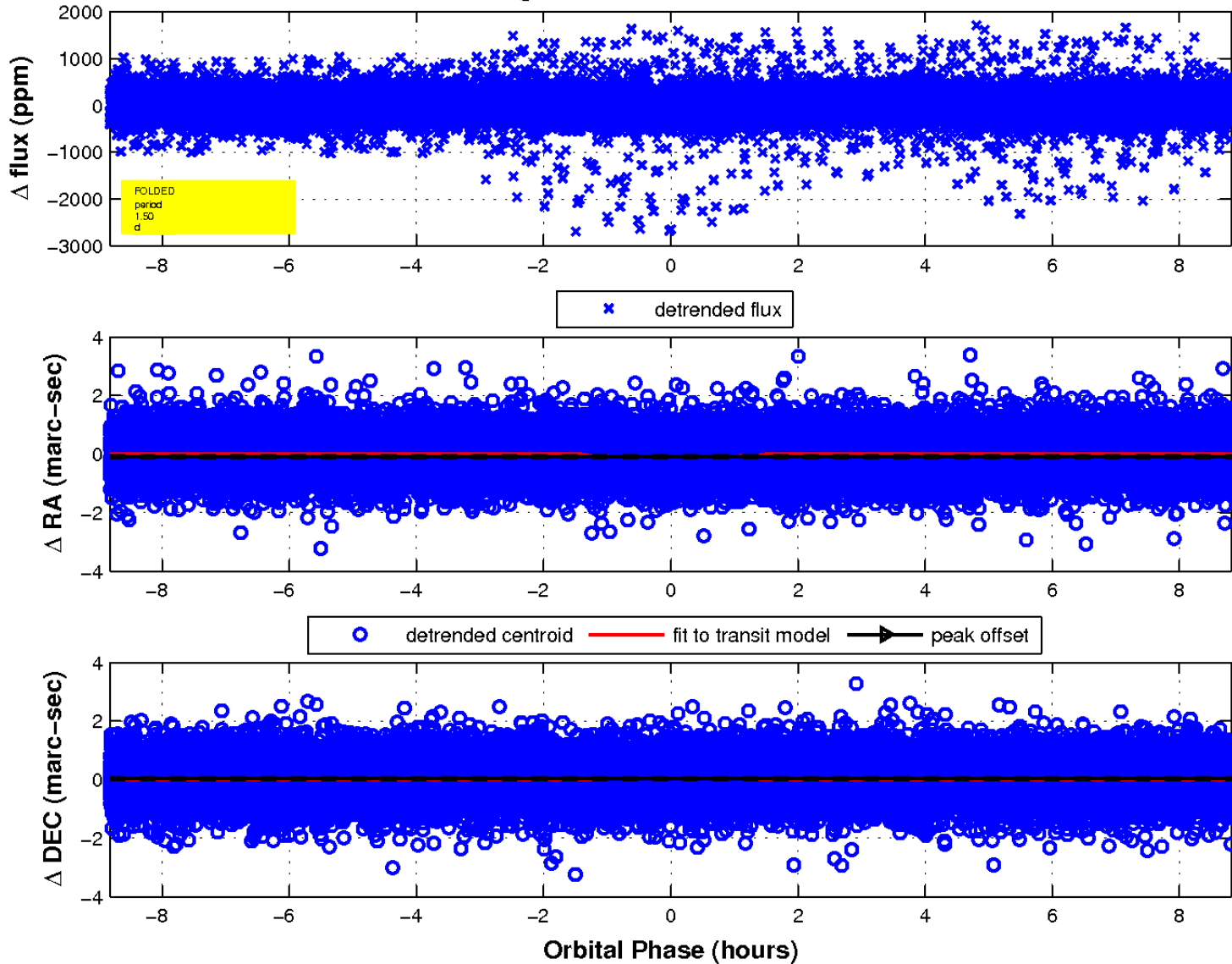
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

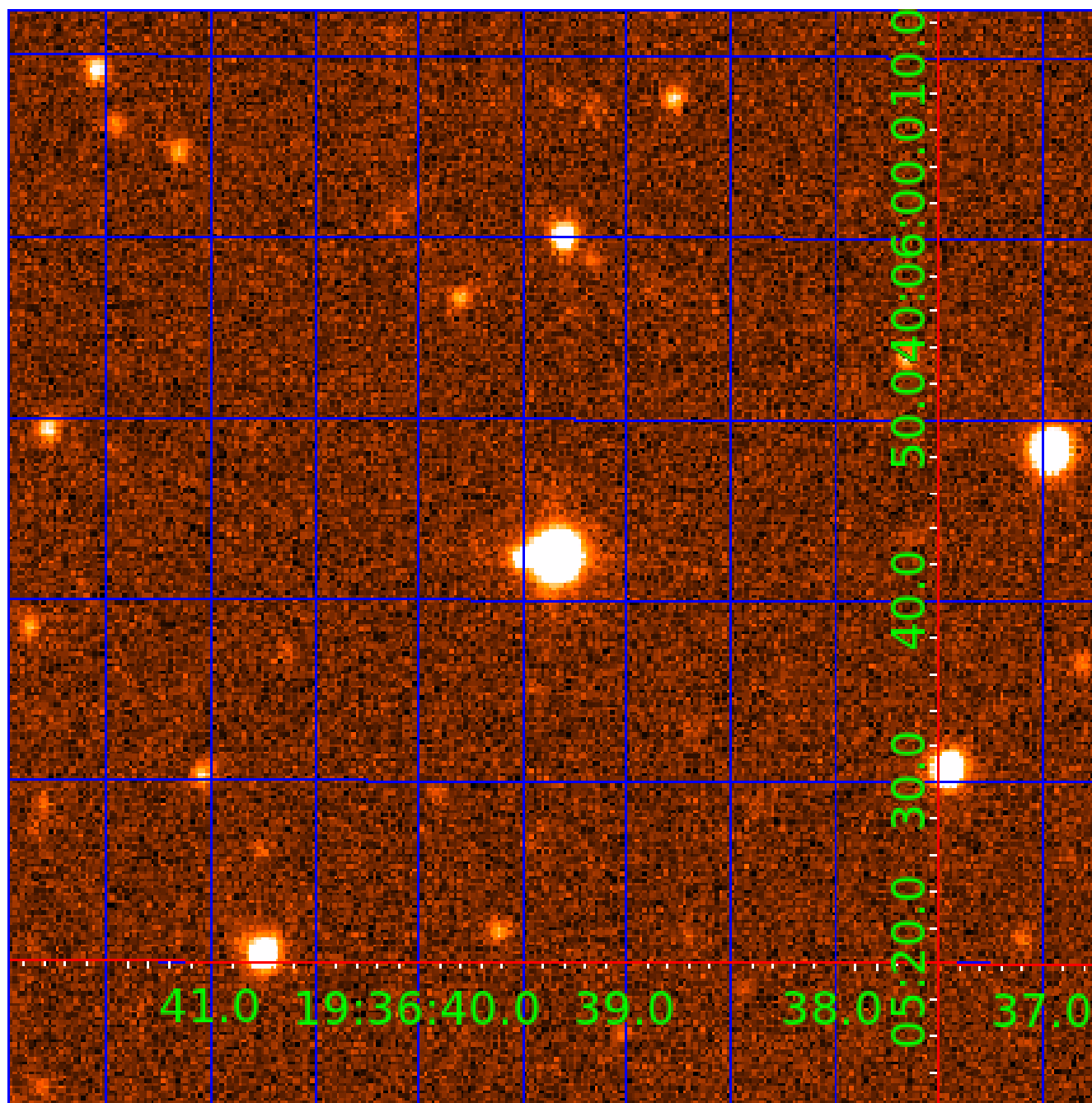


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 004932417

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})
004932417-01	OBS	No	1.503442	131.997990	48.3	2.942	10.4	10.3	1.65	7194	1.33	7550.32
004932417-02	OBS	No	1.503433	132.211388	57.1	4.091	11.0	11.2	1.65	7194	1.38	7550.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004932417-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
004932417-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD

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

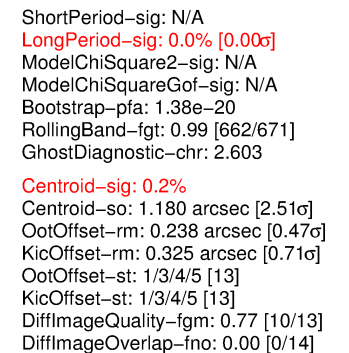
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

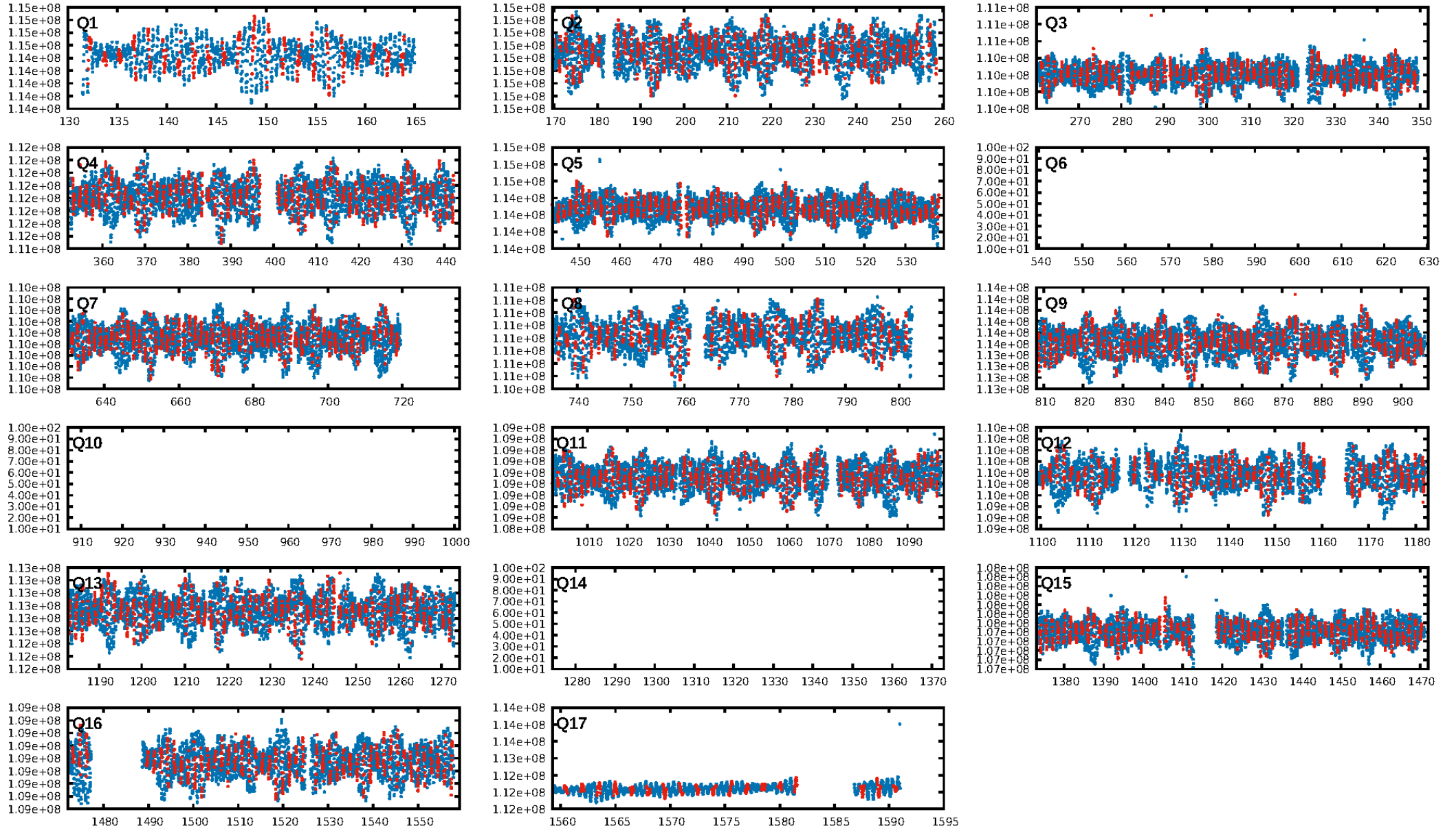
Ephemeris Match Information For 004932417-02

No Significant Match Found

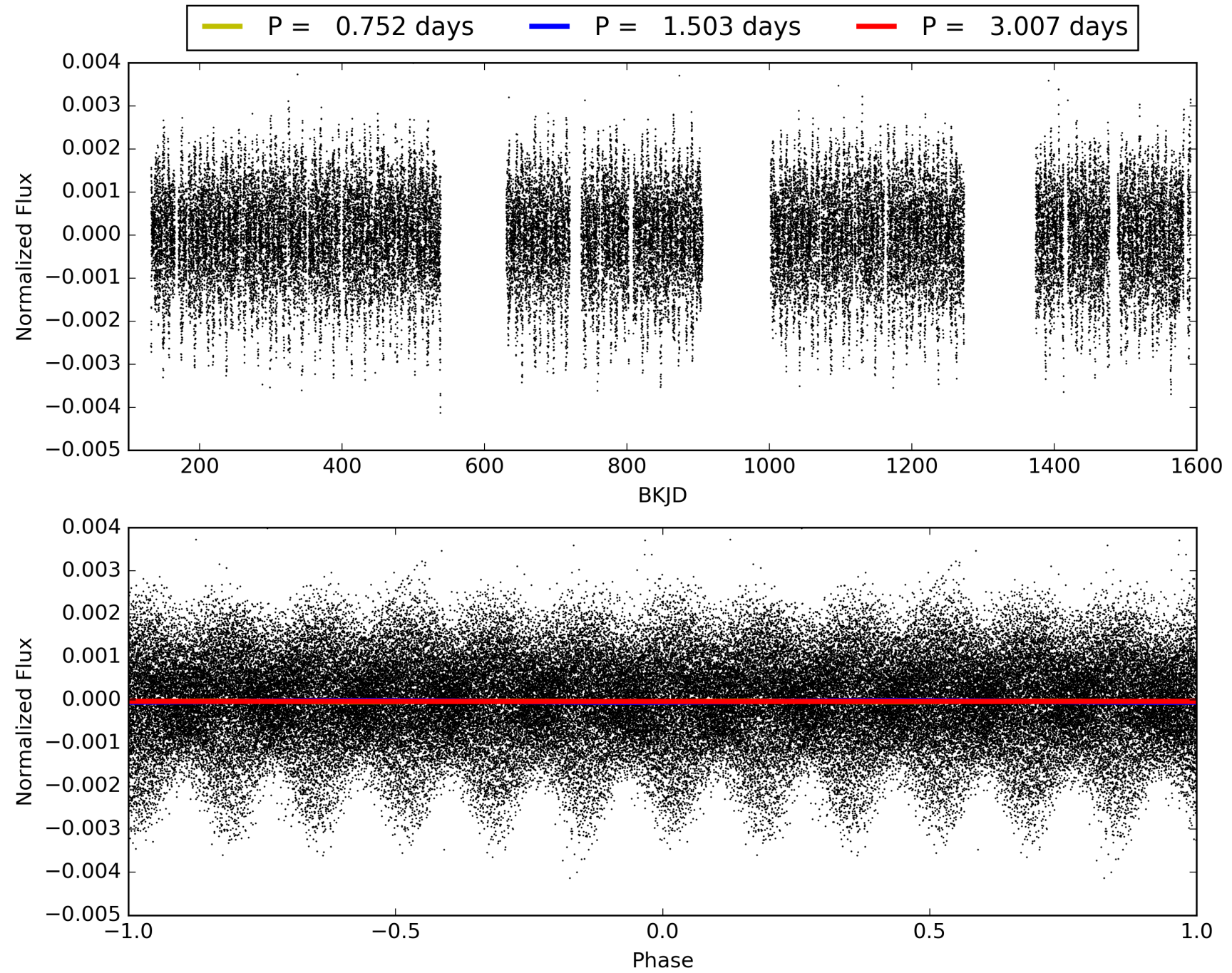
KIC: 4932417 Candidate: 2 of 2 Period: 1.503 d



TCE 004932417-02, PDC Light Curves

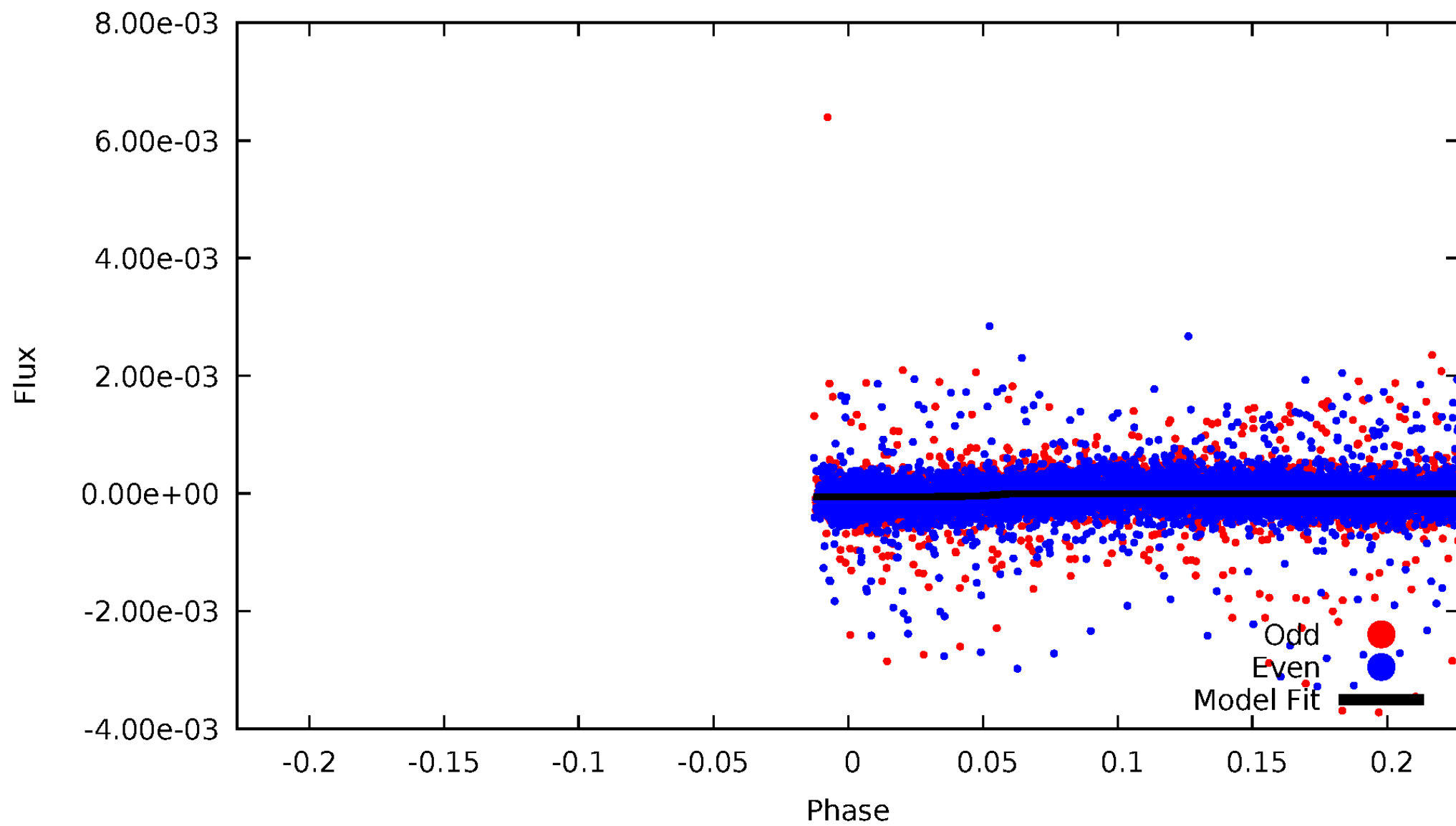


TCE 004932417-02



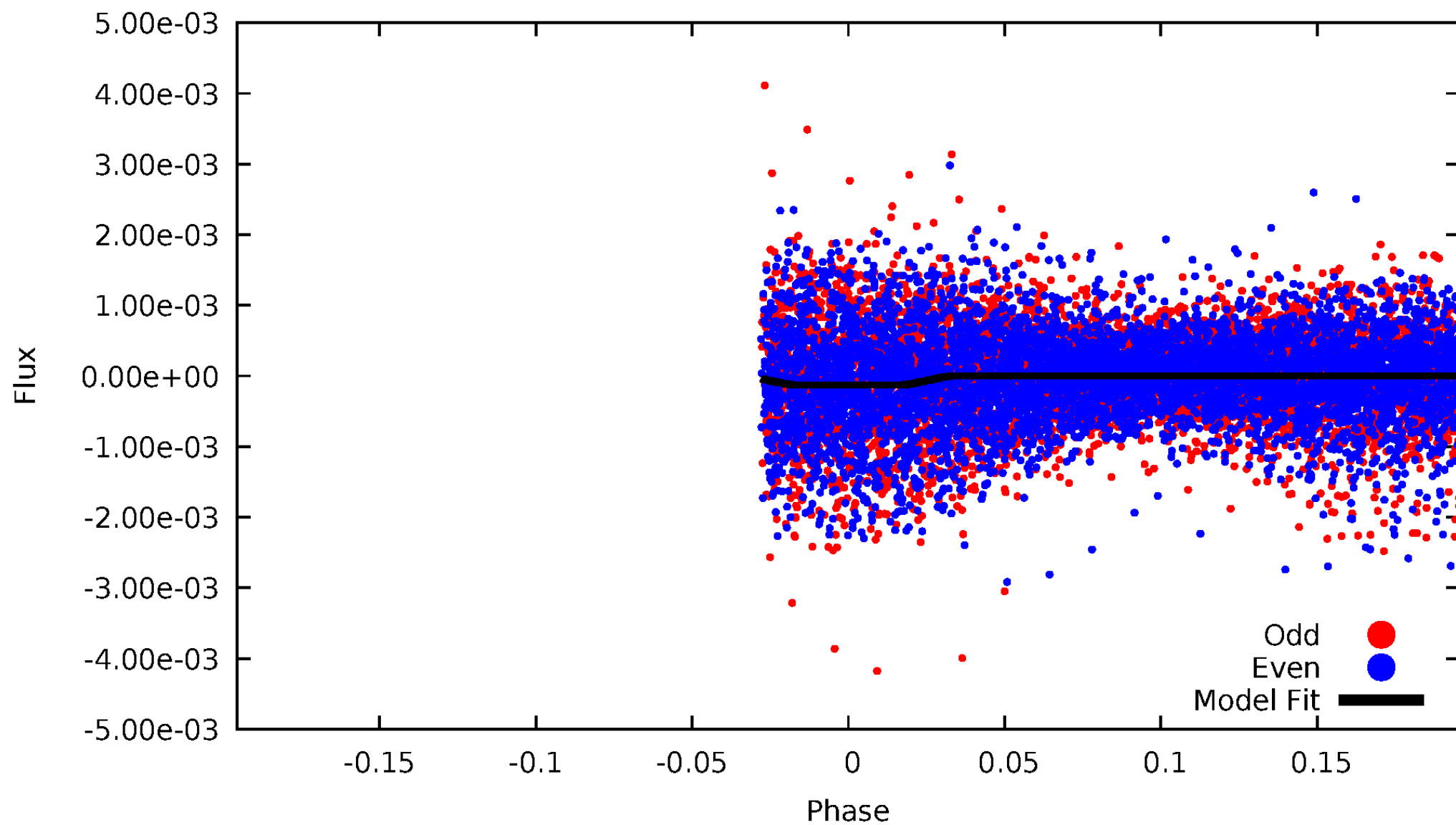
DV Odd/Even

TCE 004932417-02



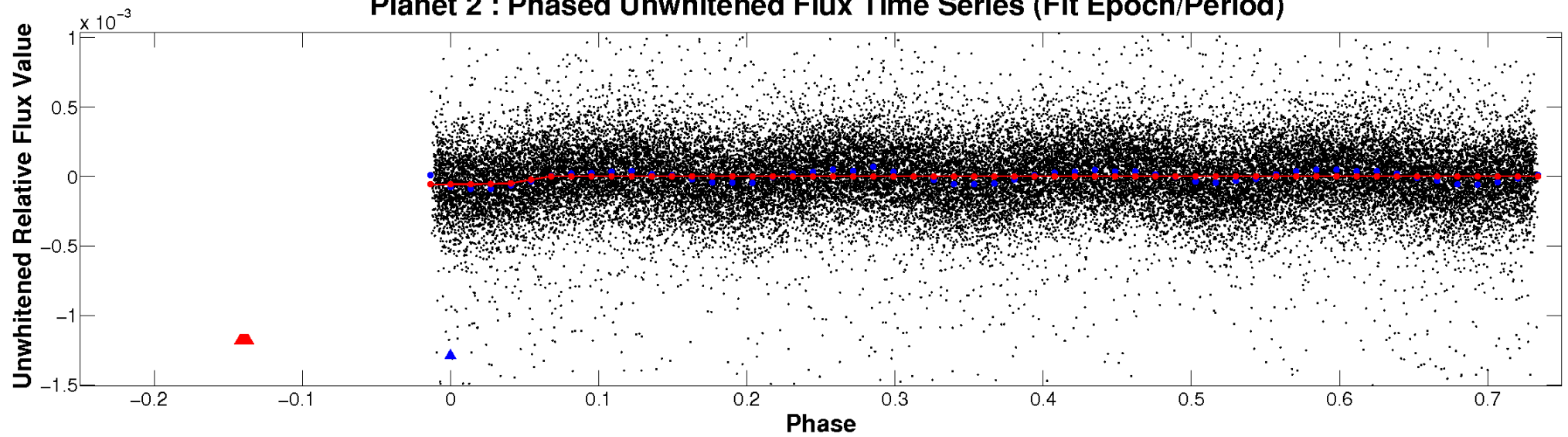
ALT Odd/Even

TCE 004932417-02

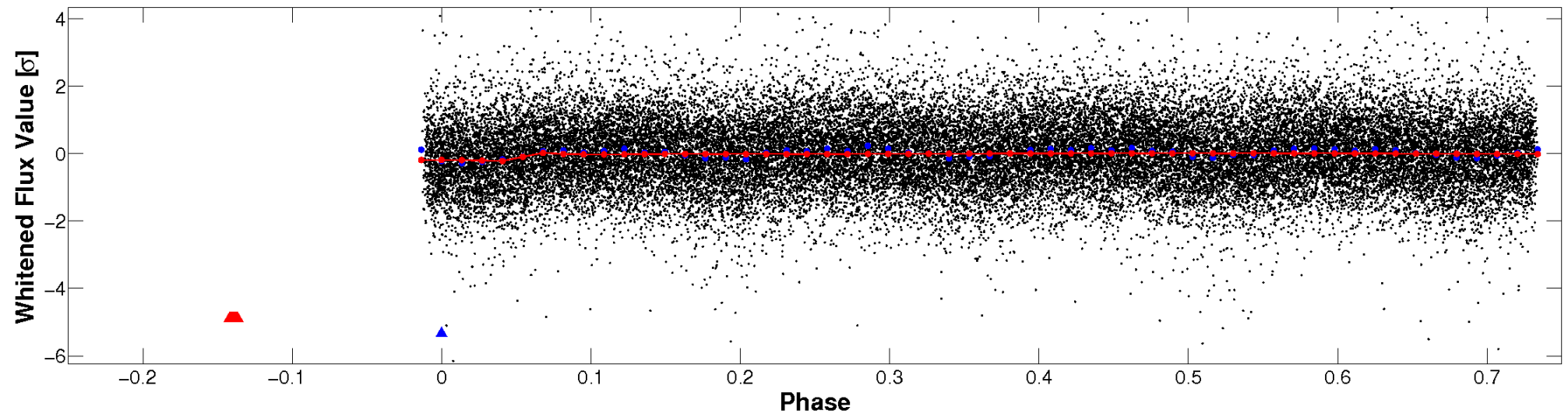


Non-Whitened Vs. Whitened Light Curve

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

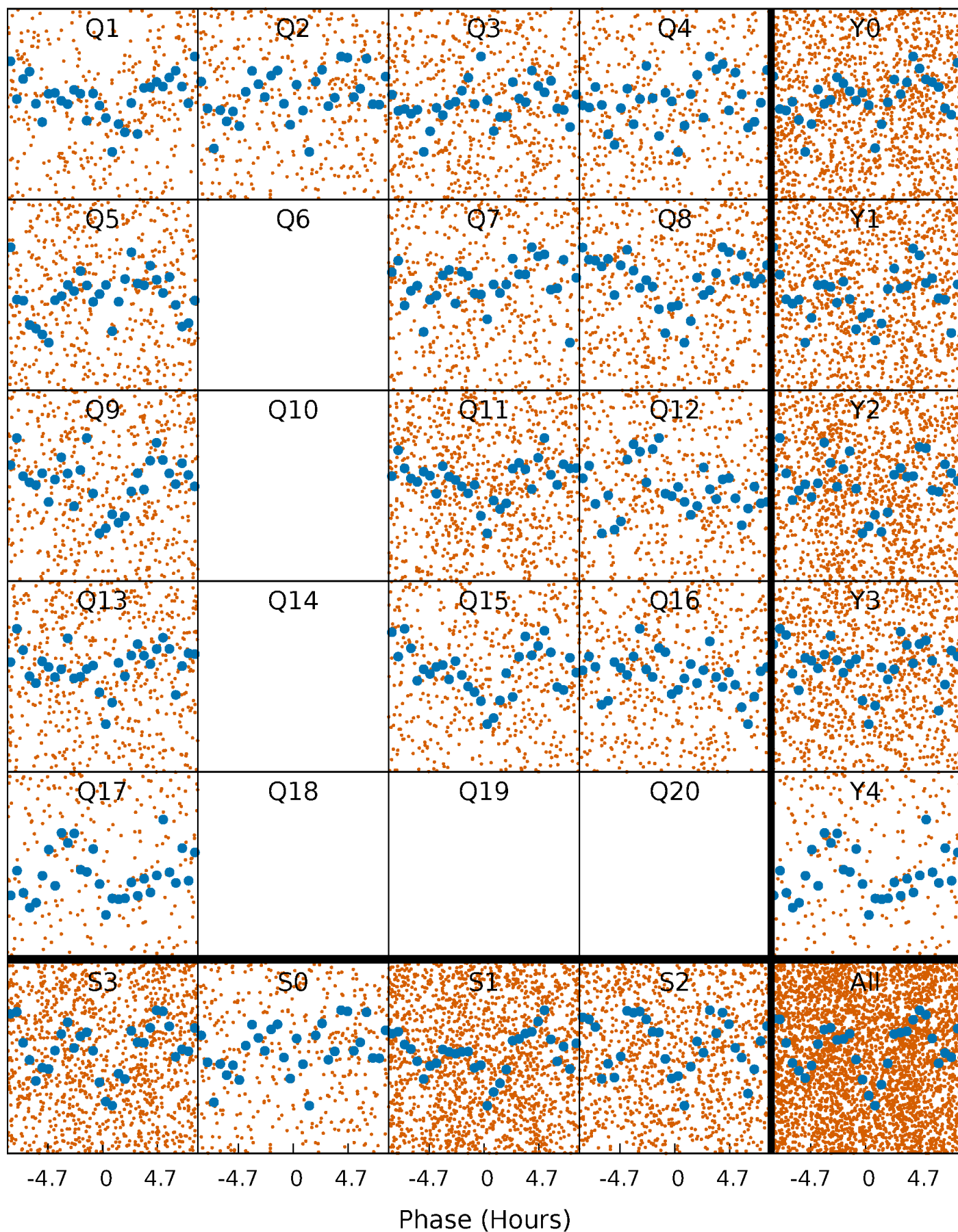


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



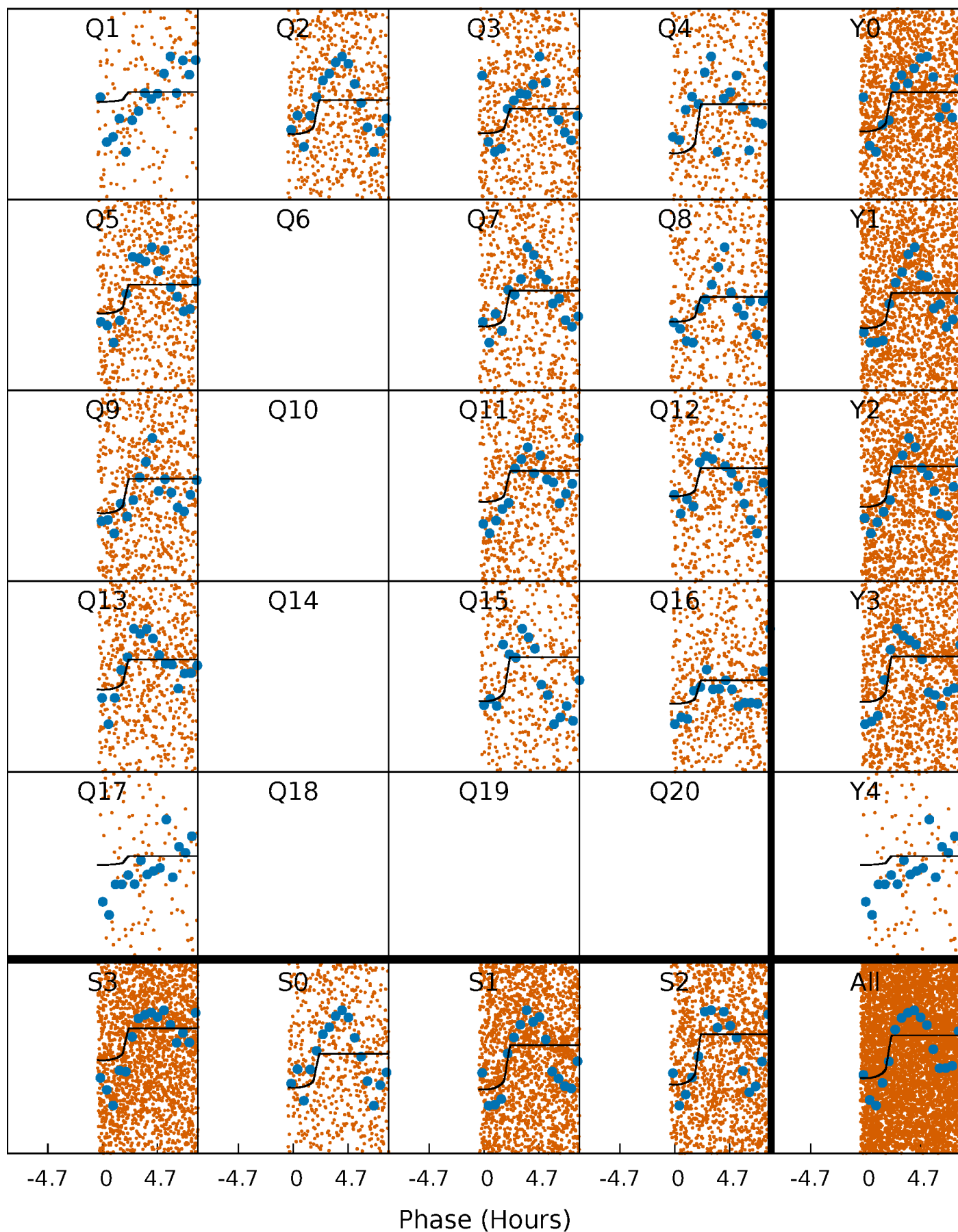
PDC Quarter-Phased Transit Curves

TCE 004932417-02 P= 1.503433 Days $T_0=132.211388$ (BKJD)



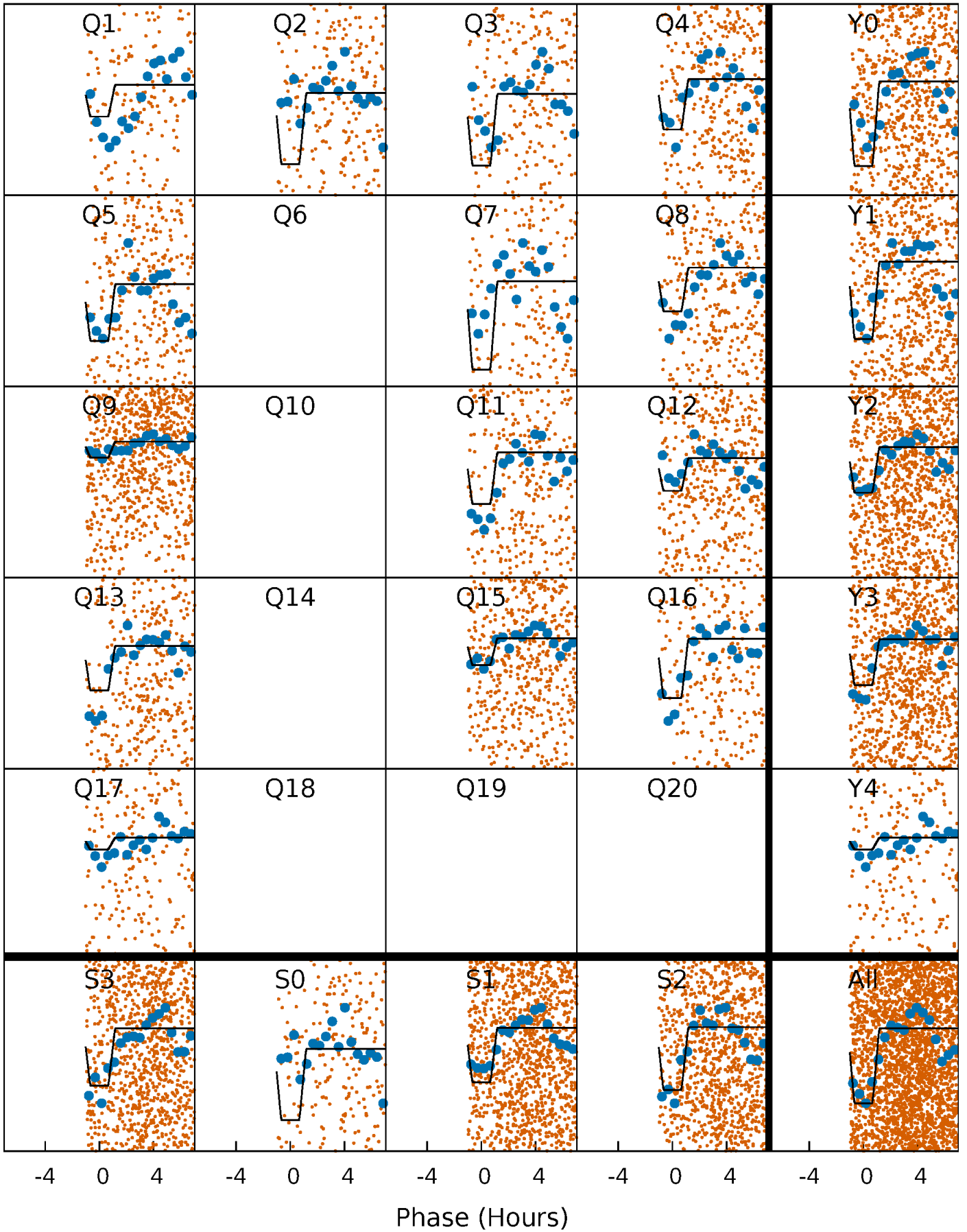
DV Quarter-Phased Transit Curves

TCE 004932417-02 P= 1.503433 Days $T_0=132.211388$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

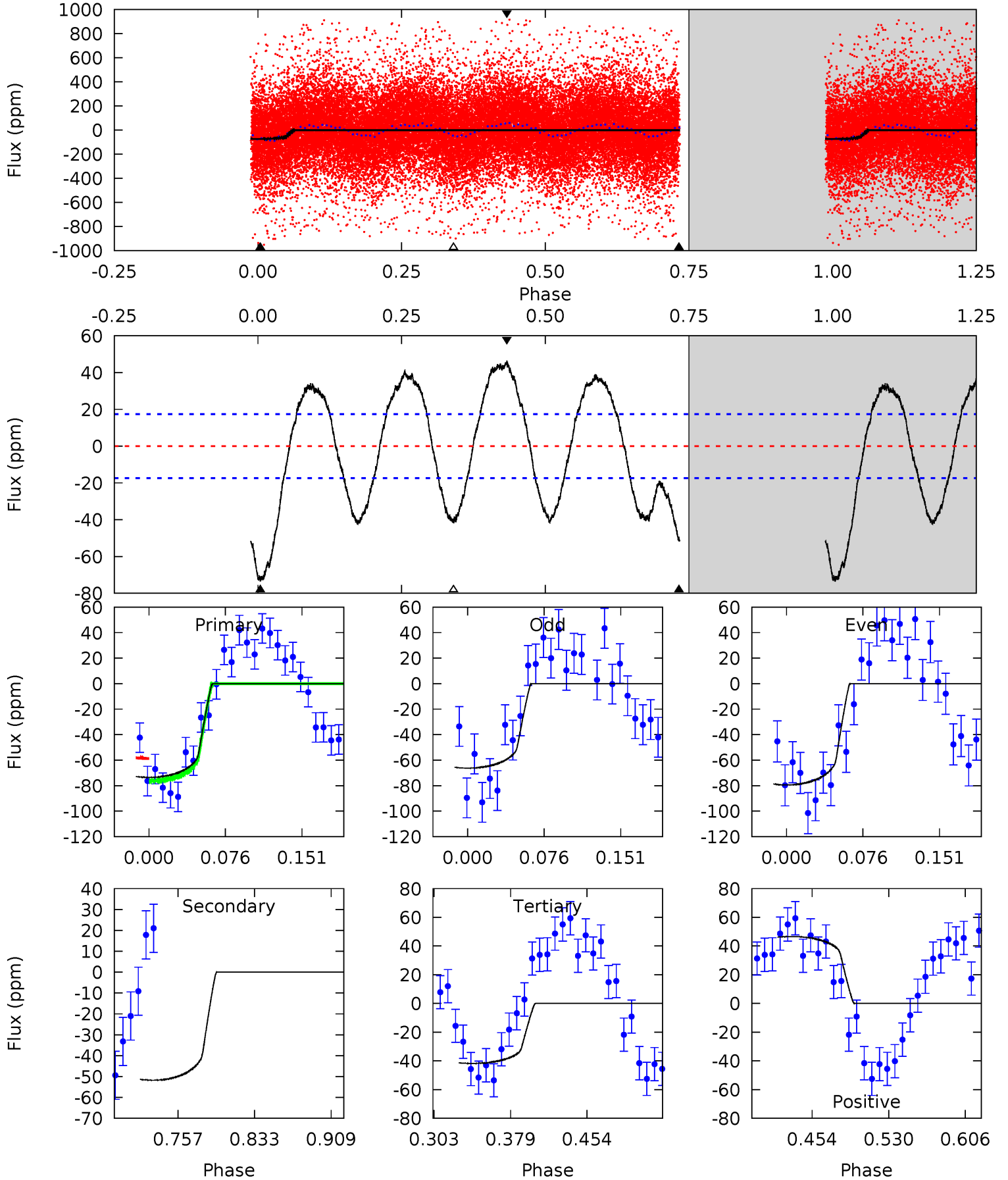
TCE 004932417-02 $P = 1.503447$ Days $T_0 = 132.229184$ (BKJD)



DV Model-Shift Uniqueness Test

004932417-02, P = 1.503433 Days, E = 130.707955 Days

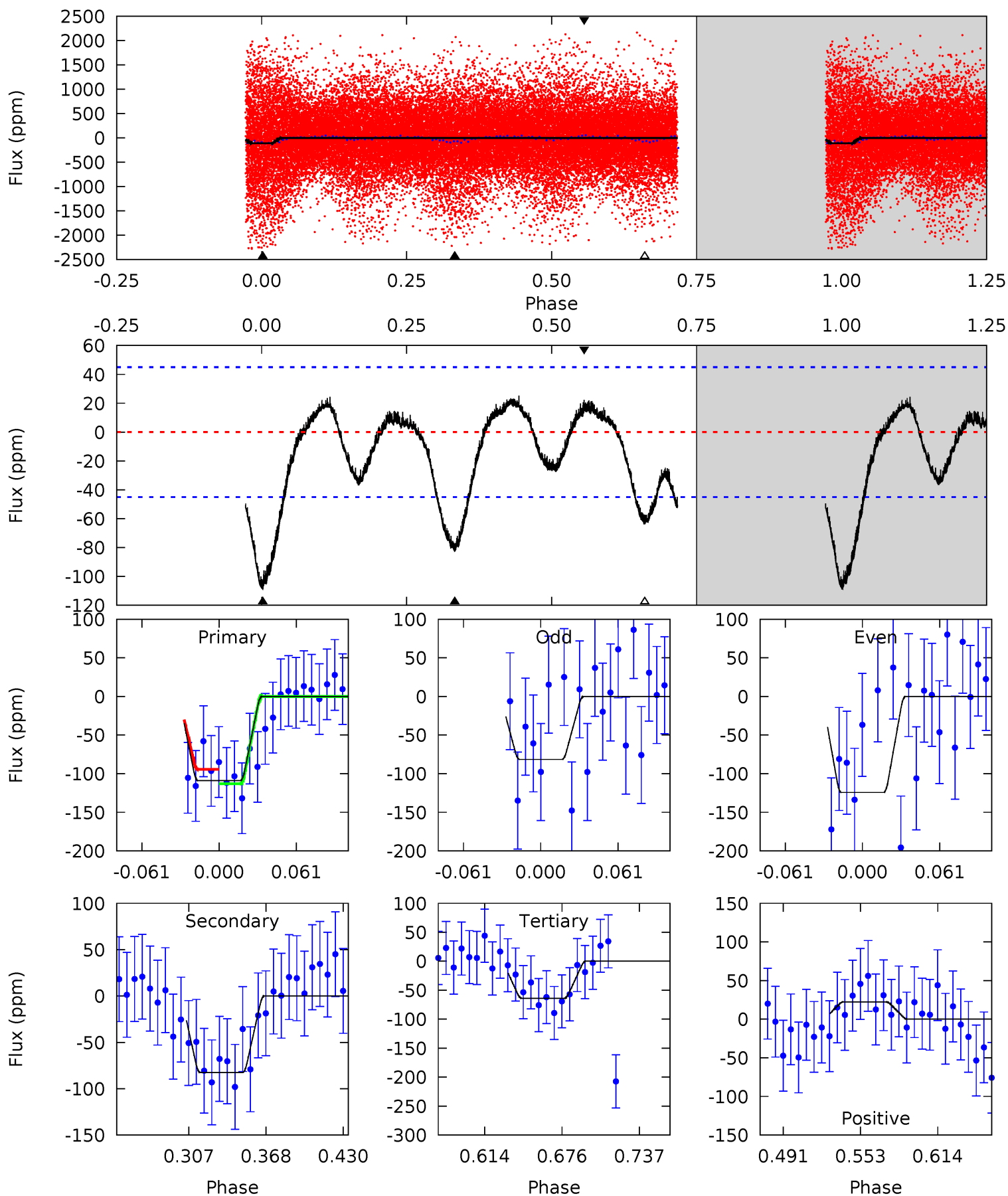
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.5	13.7	11.1	12.4	4.62	1.78	7.60	8.41	7.13	2.65	1.37	1.76	1.09	0.39	1.62



Alt Model-Shift Uniqueness Test

004932417-02, P = 1.503447 Days, E = 130.725737 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	8.54	6.62	2.31	4.67	1.87	2.28	4.67	8.98	1.92	6.23	2.22	0.99	0.19	0.97



Stellar Parameters For KIC 004932417

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7194^{+228}_{-314}	$4.179^{+0.105}_{-0.195}$	$-0.020^{+0.200}_{-0.350}$	$1.648^{+0.546}_{-0.294}$	$1.494^{+0.232}_{-0.209}$	$0.470^{+0.278}_{-0.234}$
	+3%/-4%	+3%/-5%	+1000%/-1750%	+33%/-18%	+16%/-14%	+59%/-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 004932417-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-52 ± 4	$1.42^{+0.54}_{-0.48}$	3371^{+243}_{-203}	6886^{+1948}_{-1027}	12^{+16}_{-6}
Alt.	-82 ± 10	$2.07^{+0.55}_{-0.51}$	3349^{+251}_{-187}	6295^{+1043}_{-647}	$8.902^{+6.631}_{-3.525}$

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 $A_{obs} \gg 1.0$

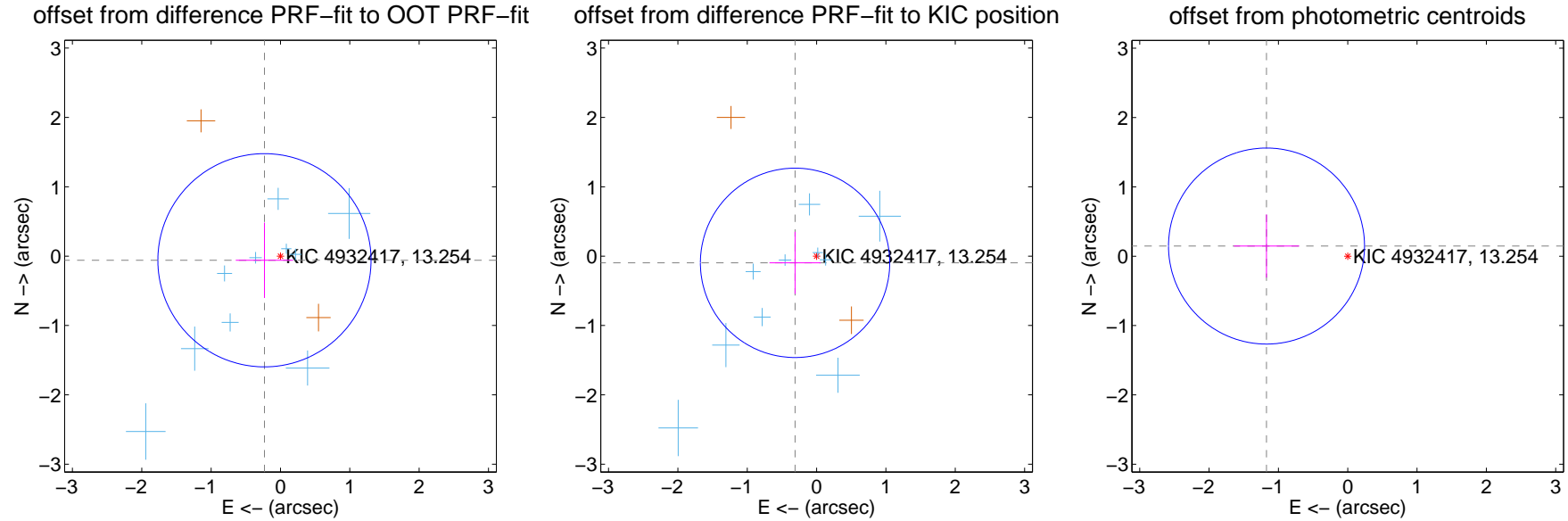
DV Centroid Data

Supplemental centroid analysis for 004932417-02. Kepler magnitude: 13.25. Transit SNR 11.25

There are 10 quarters with good PRF difference image offsets

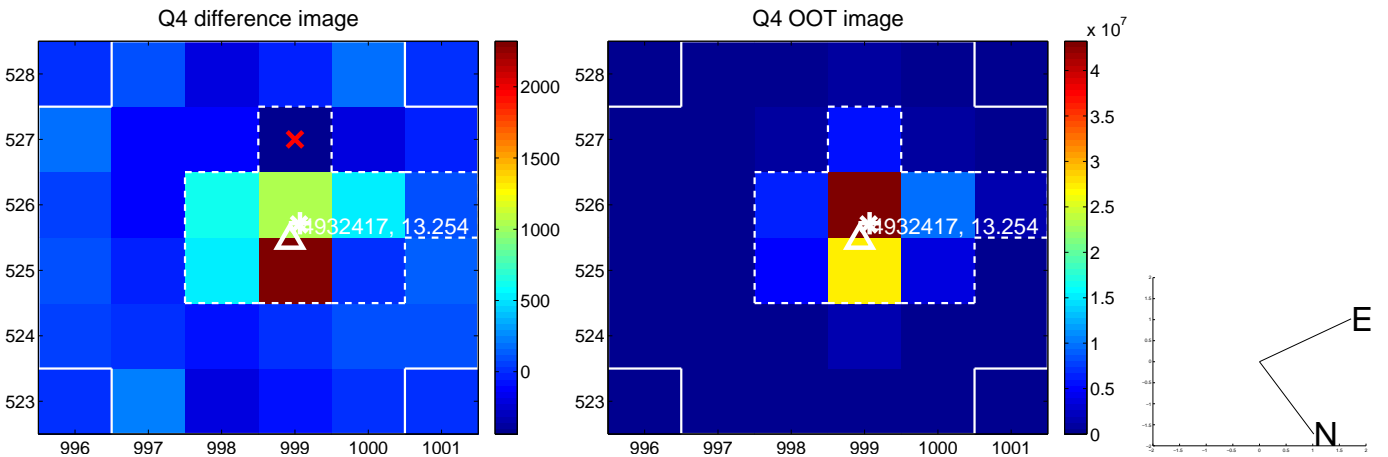
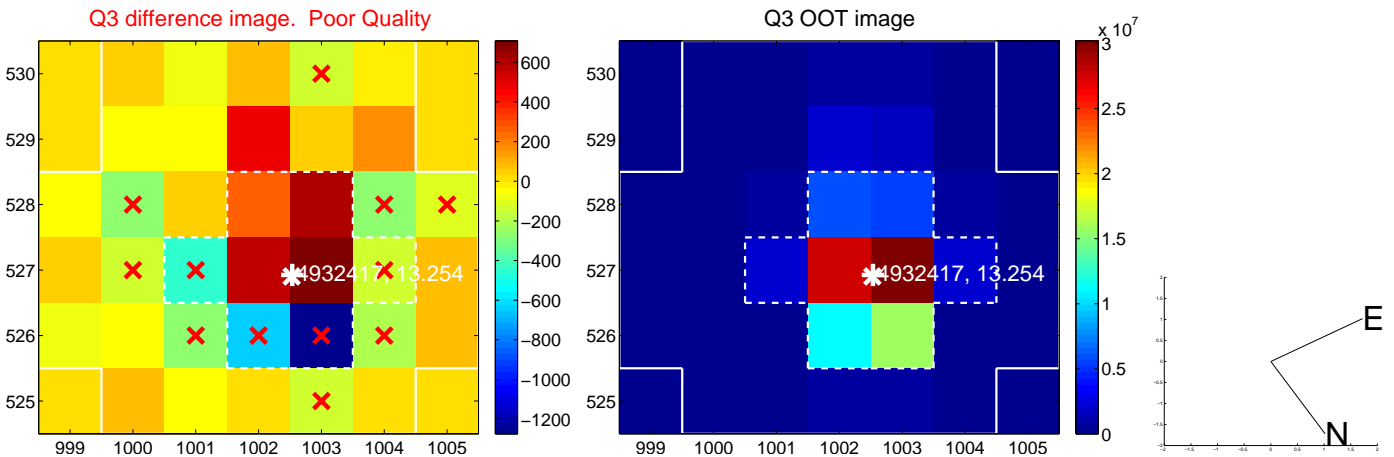
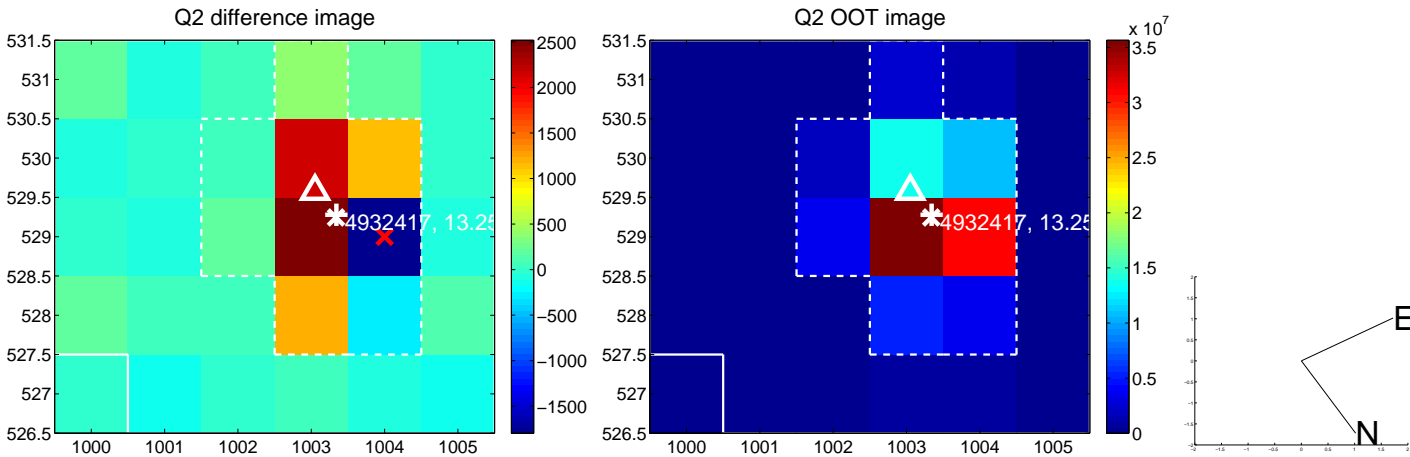
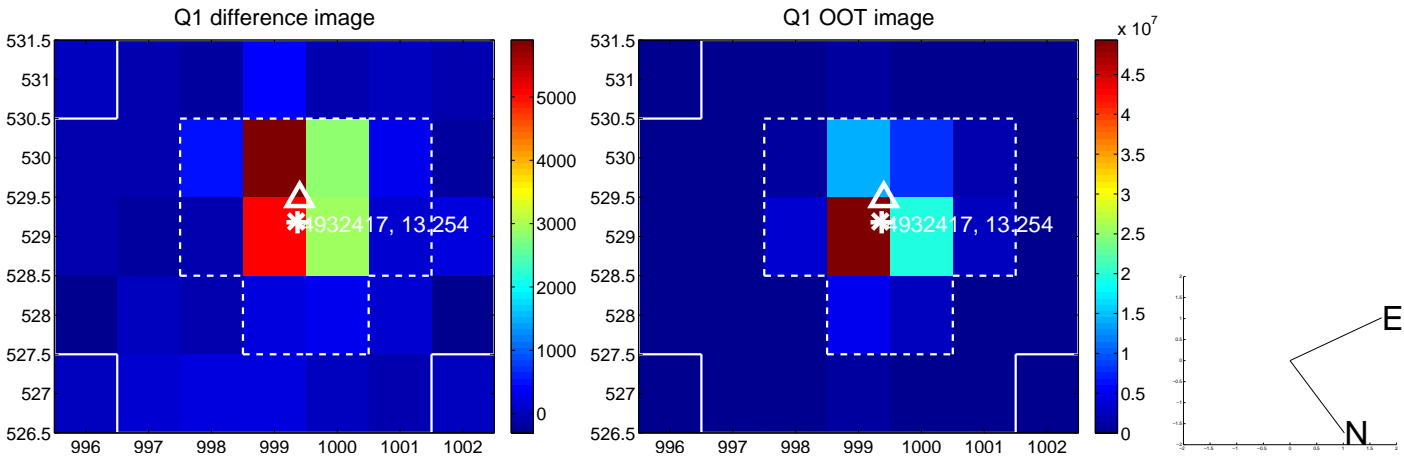
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.238 ± 0.512	0.47	0.231 ± 0.414	-0.060 ± 0.544
PRF-fit source offset from KIC position	0.325 ± 0.455	0.71	0.310 ± 0.369	-0.097 ± 0.447
photometric centroid source offset	1.18 ± 0.47	2.51	1.17 ± 0.47	0.15 ± 0.46

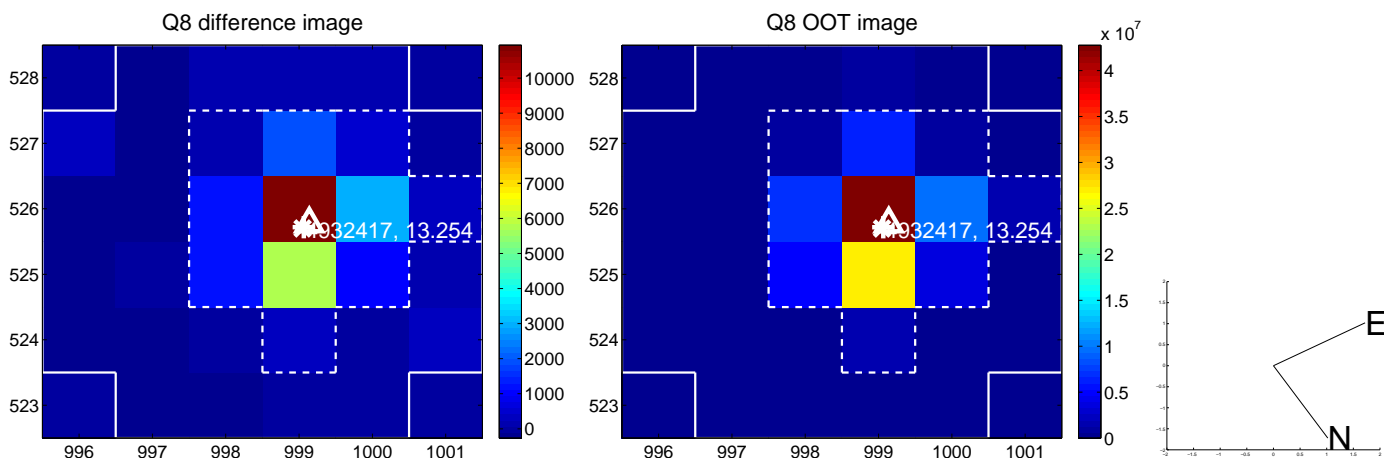
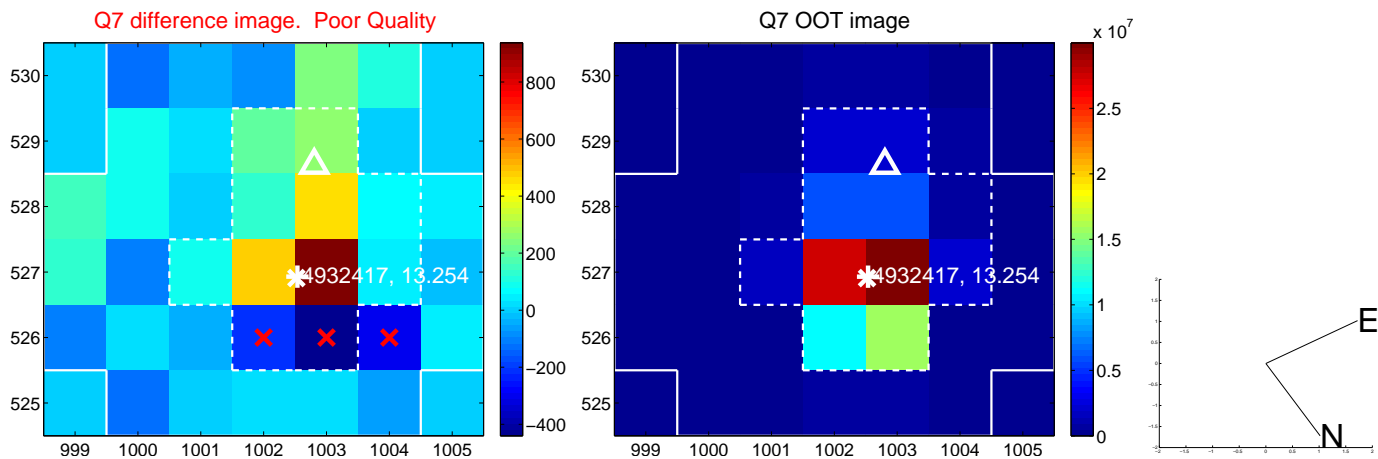
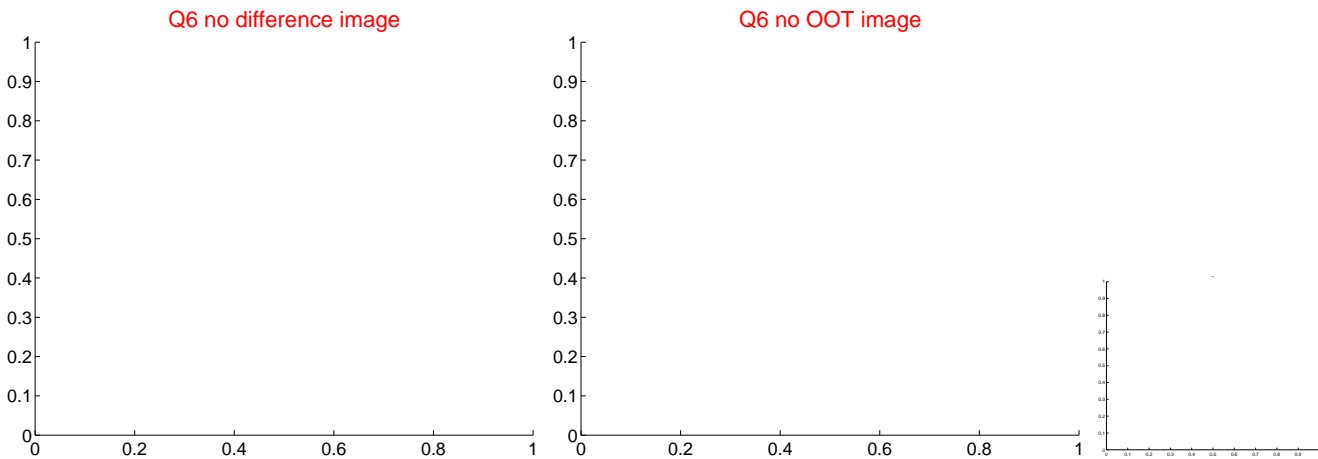
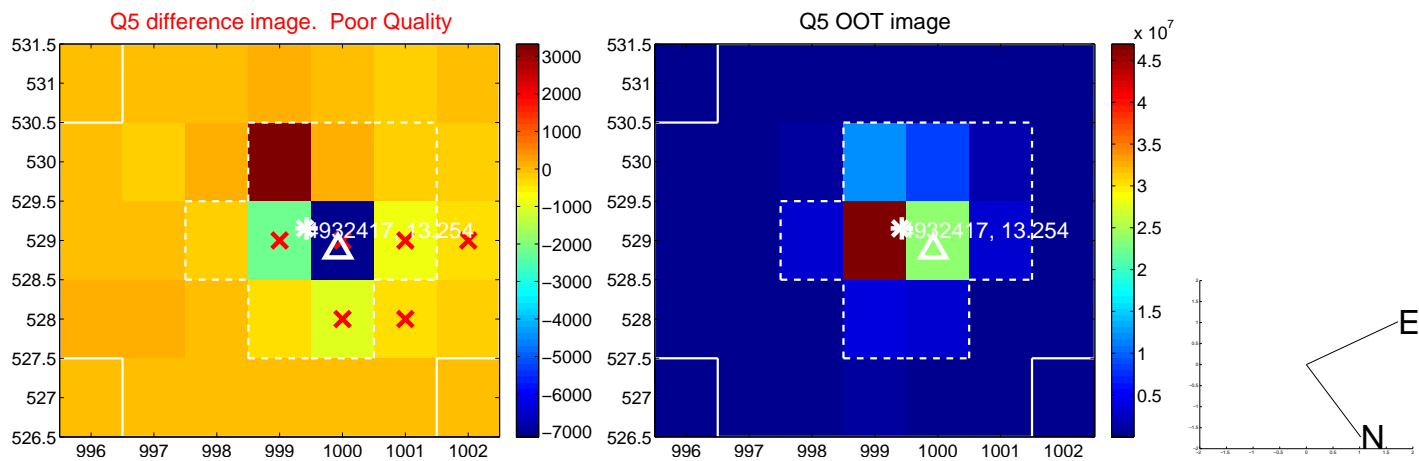


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

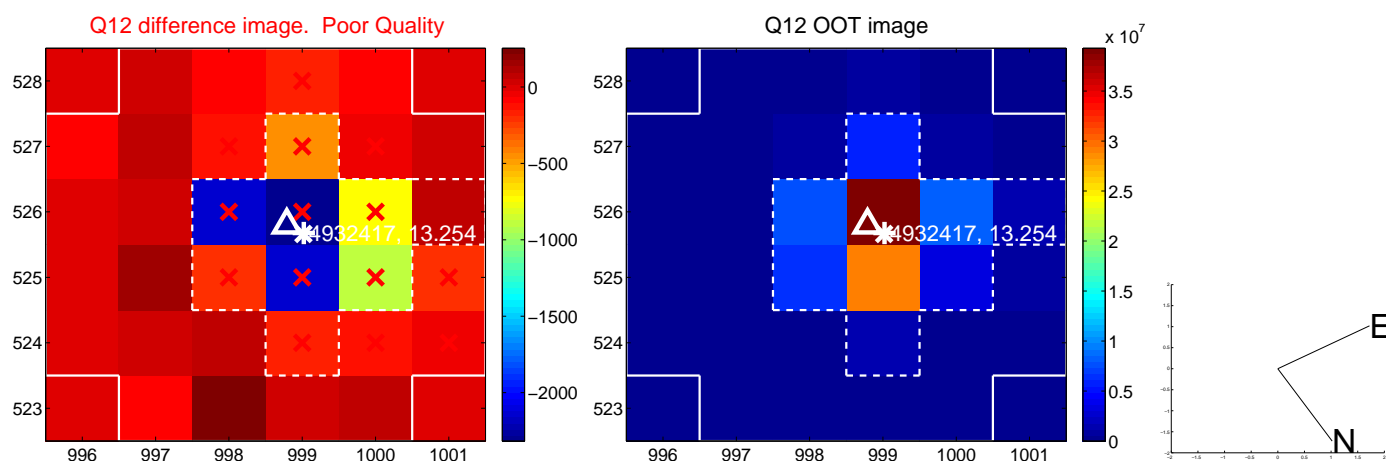
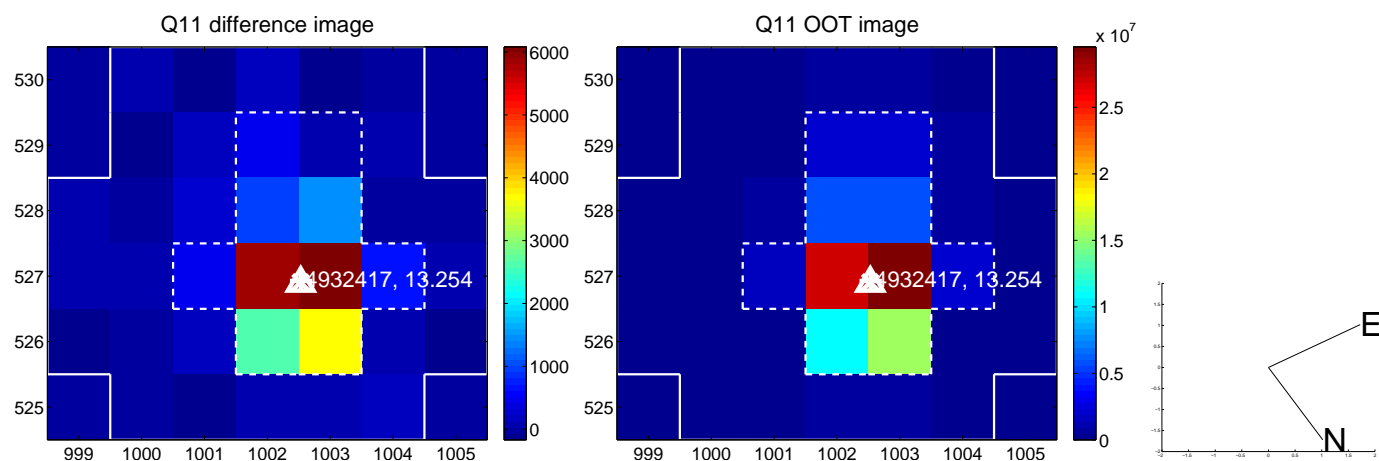
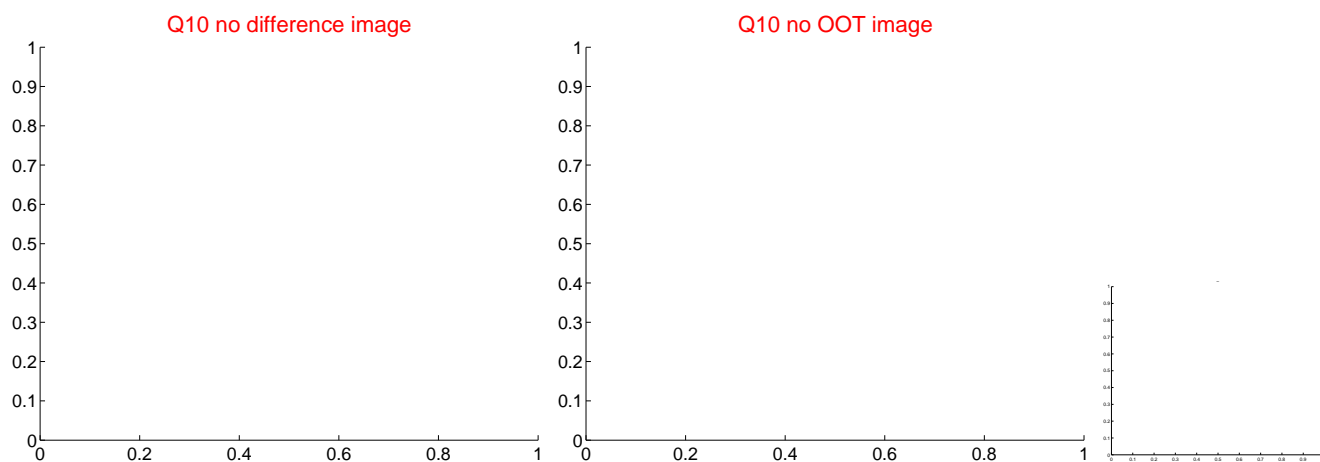
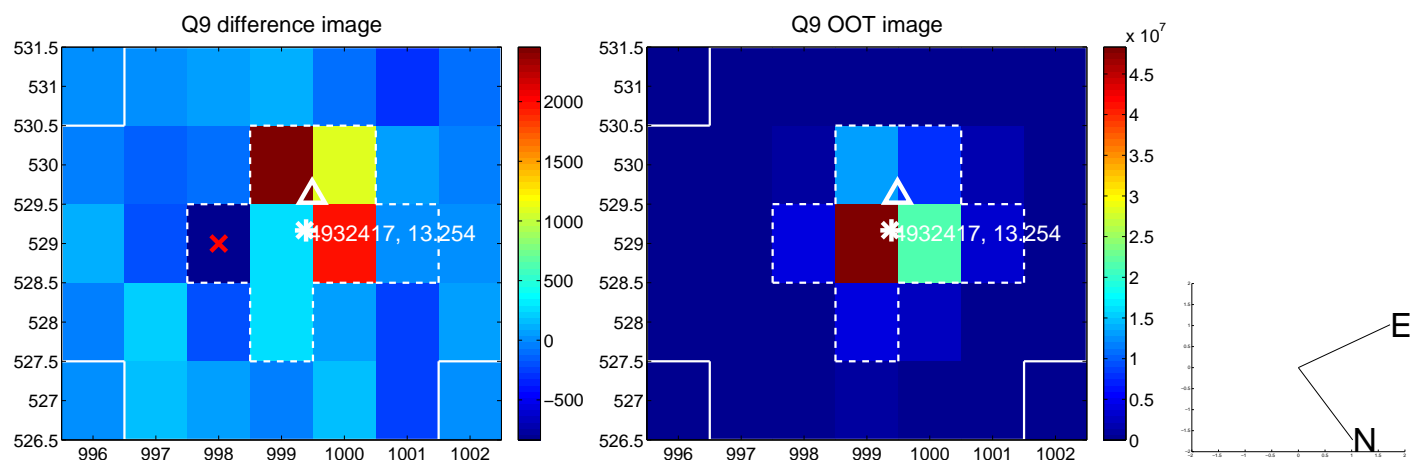
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



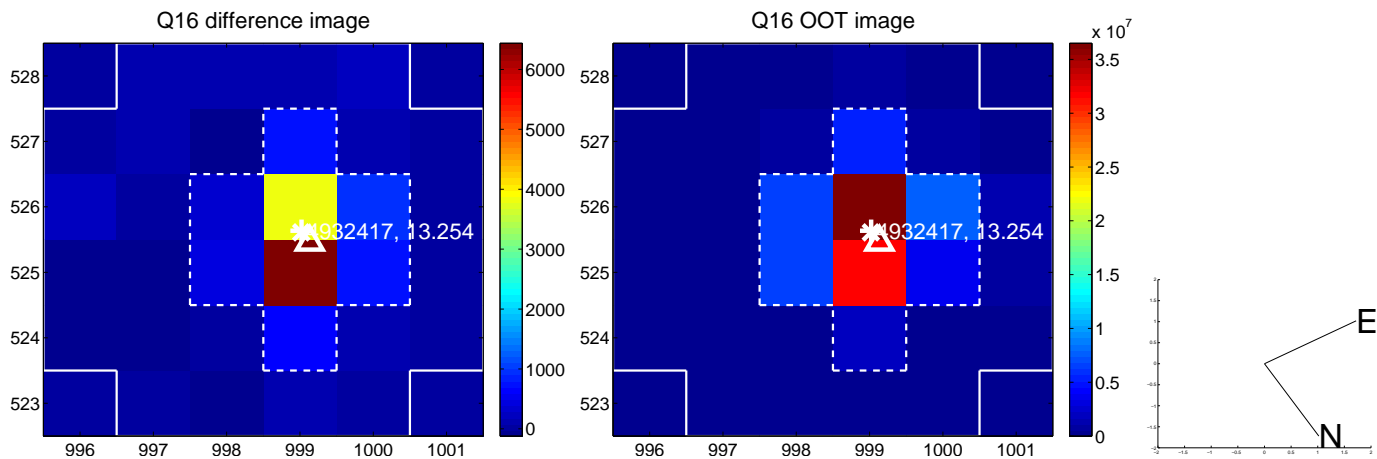
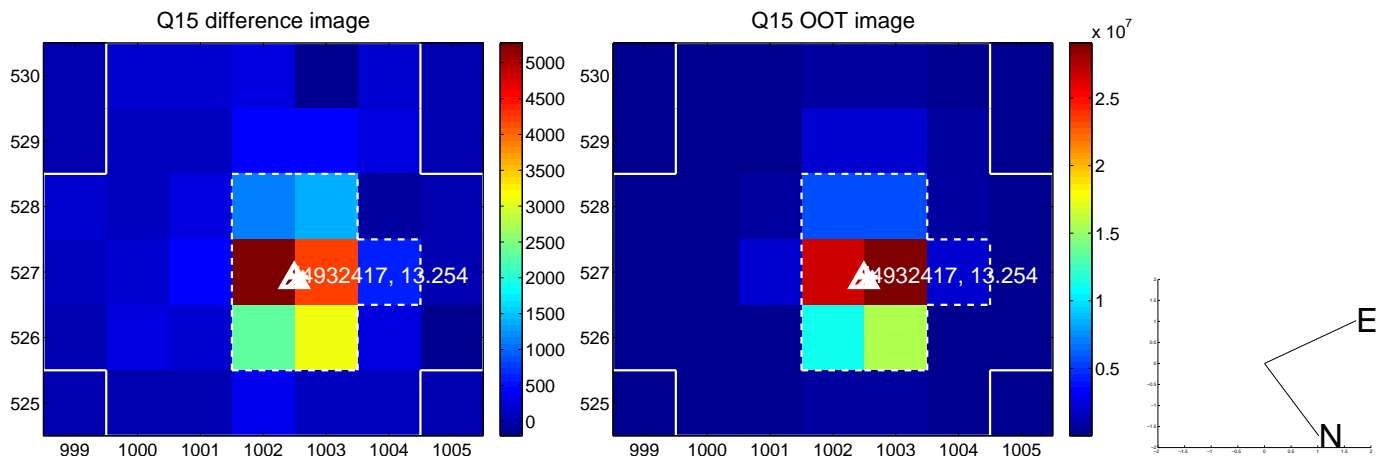
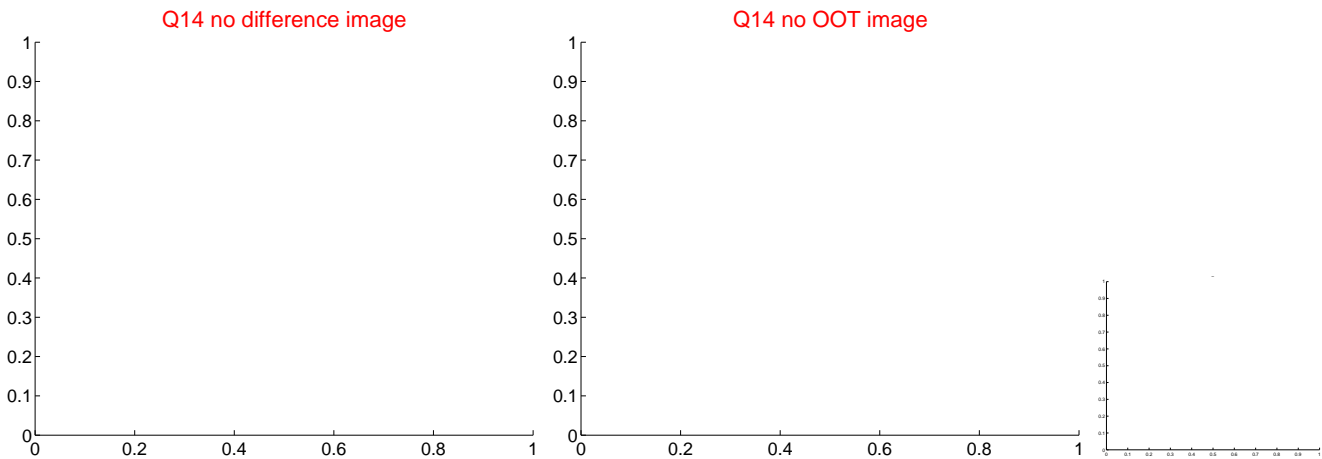
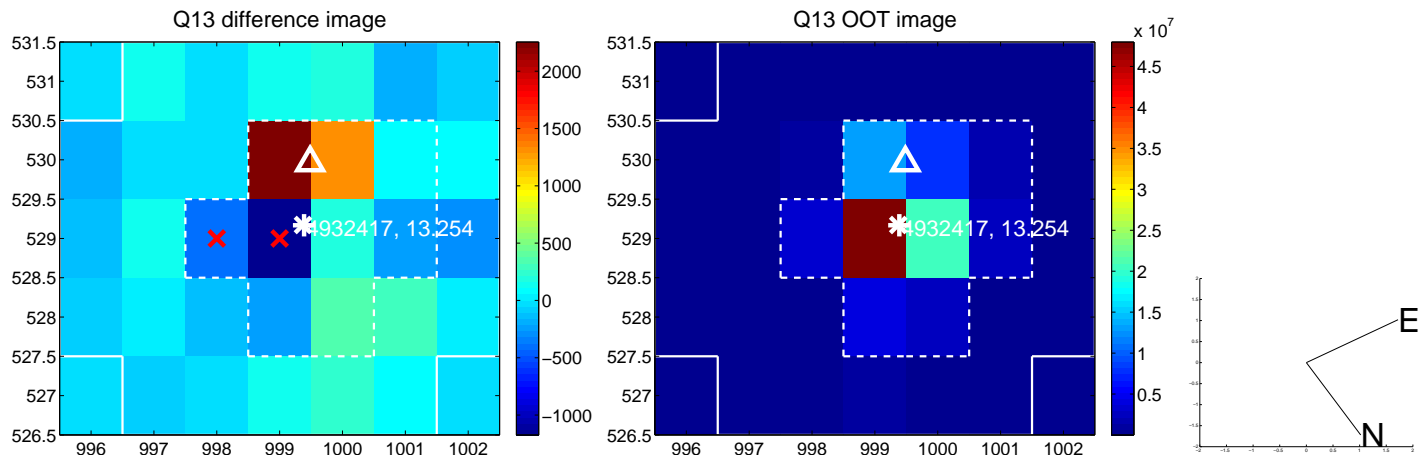
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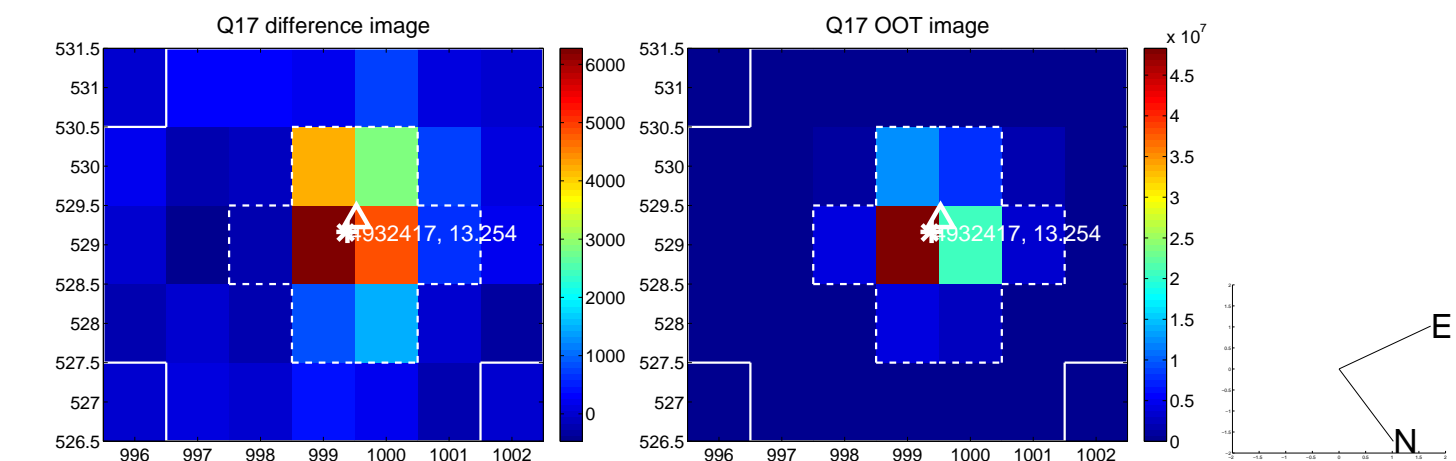
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



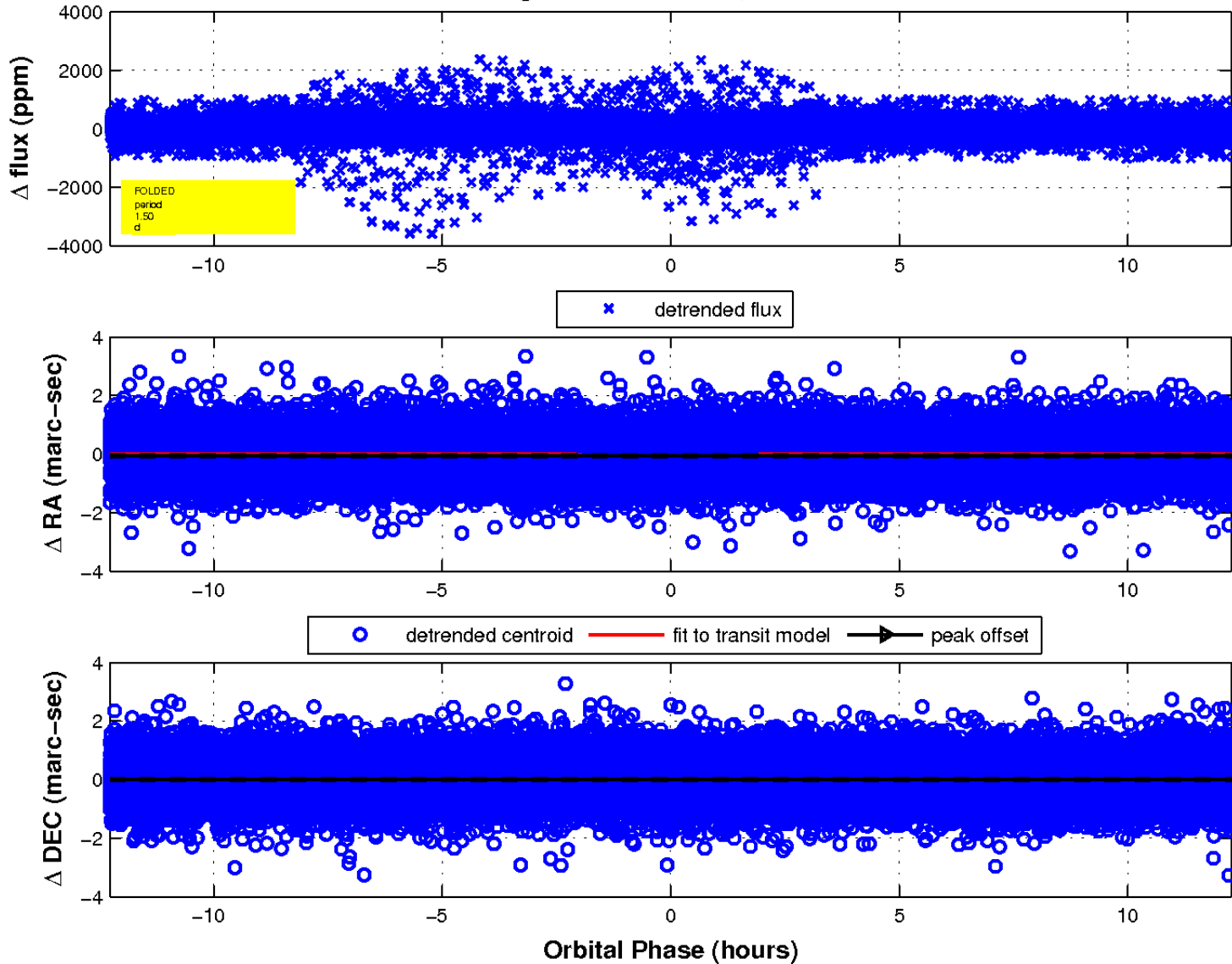
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fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

