

KIC 007594431

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})
007594431-01	OBS	No	0.612124	131.598772	16.3	1.035	7.5	6.6	1.63	7370	0.69	28157.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007594431-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_POS_ALT

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

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

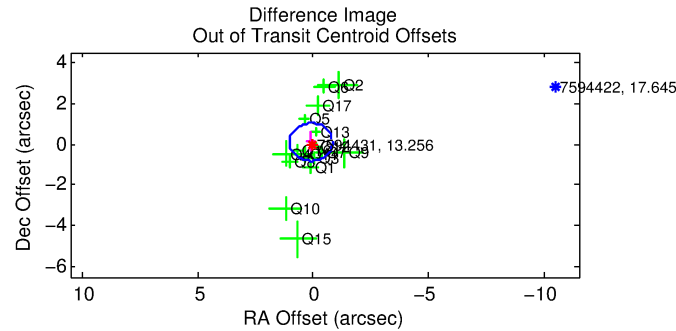
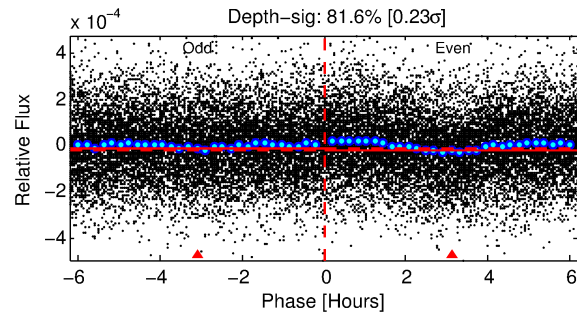
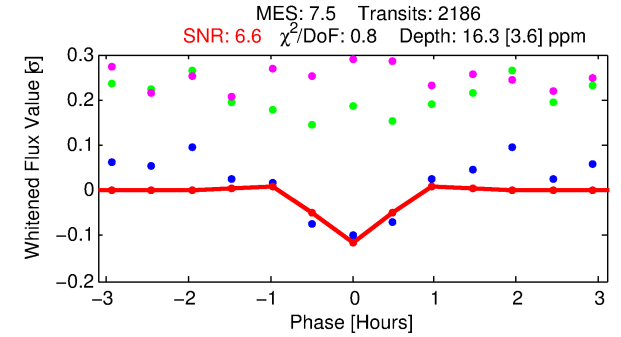
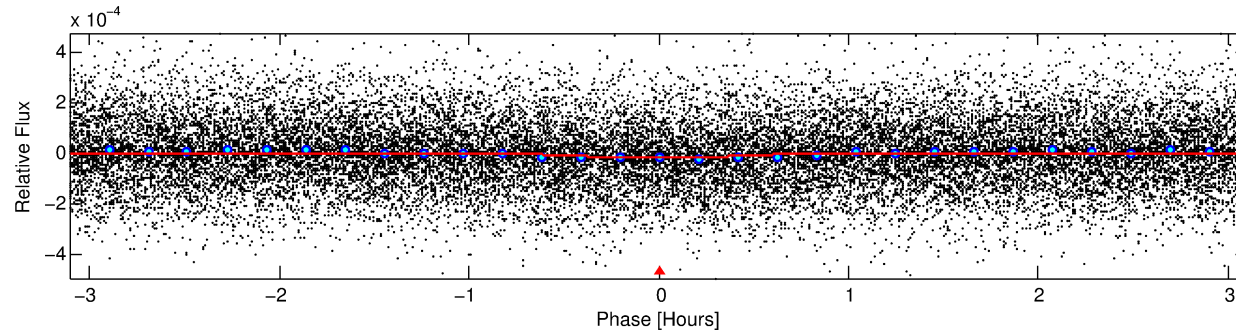
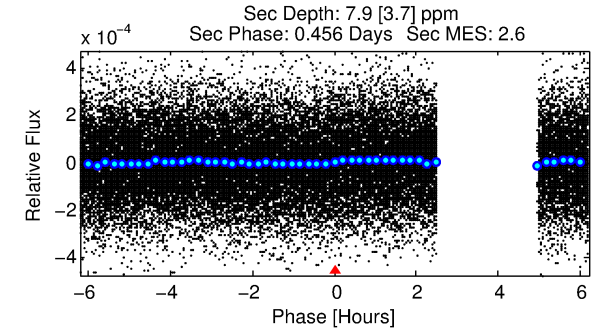
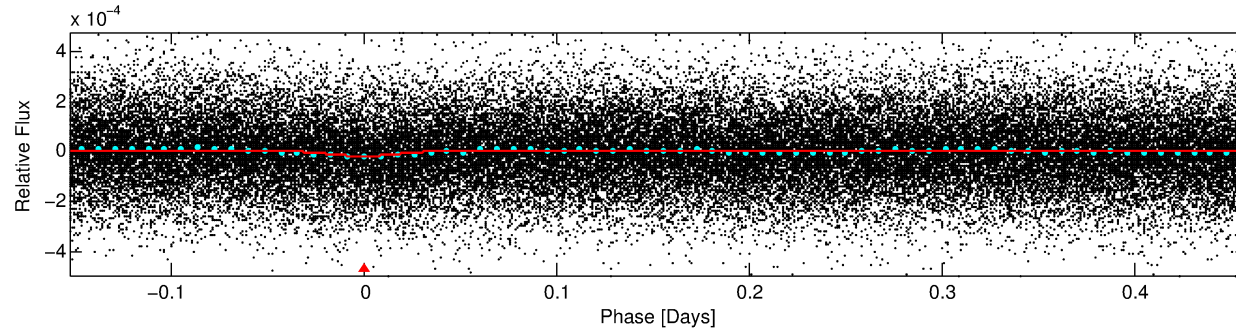
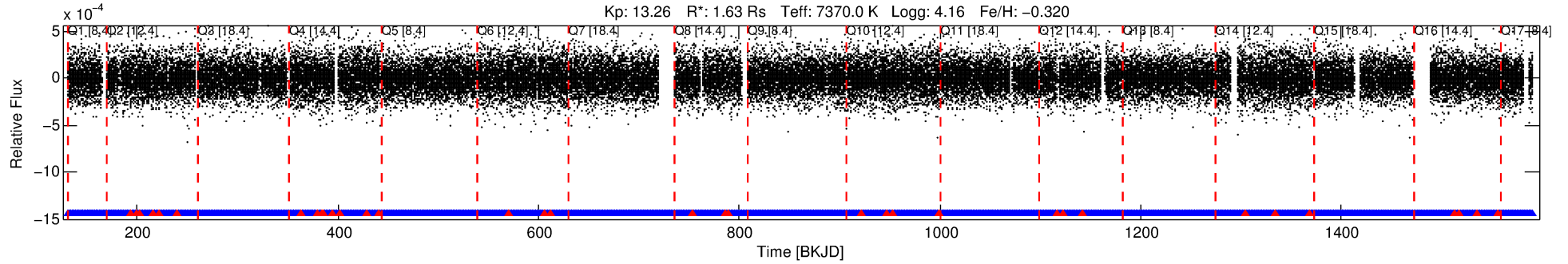
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007594431-01

No Significant Match Found

DV One-Page Summary

KIC: 7594431 Candidate: 1 of 1 Period: 0.612 d



DV Fit Results:

Period = 0.61212 [0.00002] d
Epoch = 131.5988 [0.0026] BKJD
Rp/R* = 0.0039 [0.0011]
a/R* = 4.00 [6.13]
b = 0.50 [2.46]
Seff = 28157.40 [10810.36]
Teq = 3303 [317] K
Rp = 0.69 [0.29] Re
a = 0.0158 [0.0039] AU
Ag = 2.29 [1.87] [0.69σ]
Teffp = 6281 [1193] K [2.41σ]

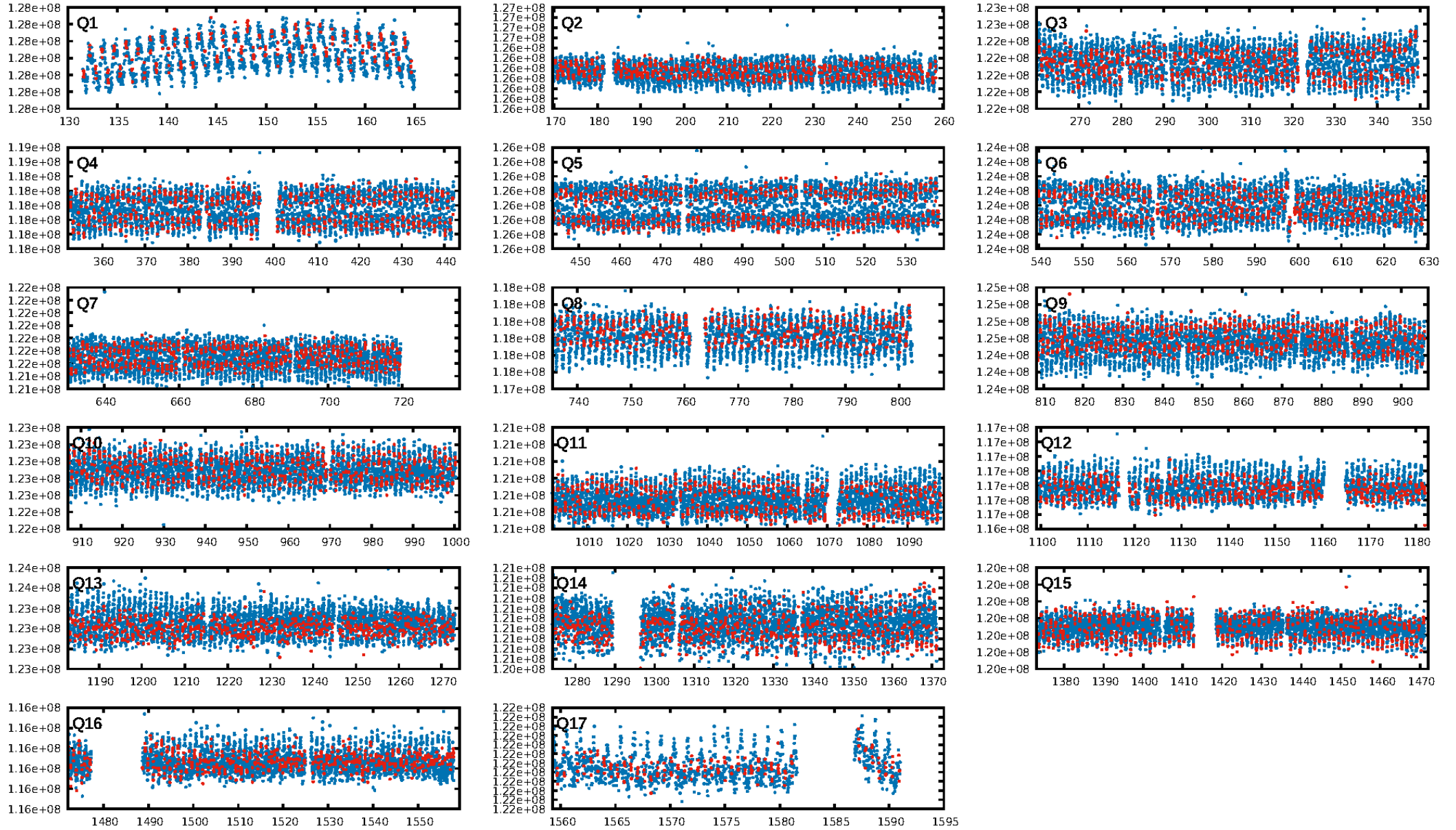
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.34e-13
RollingBand-fgt: 0.98 [2055/2089]
GhostDiagnostic-chr: 3.112
Centroid-sig: 0.1%
Centroid-so: 3.638 arcsec [2.21σ]
OotOffset-rm: 0.140 arcsec [0.45σ]
KicOffset-rm: 0.291 arcsec [0.82σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

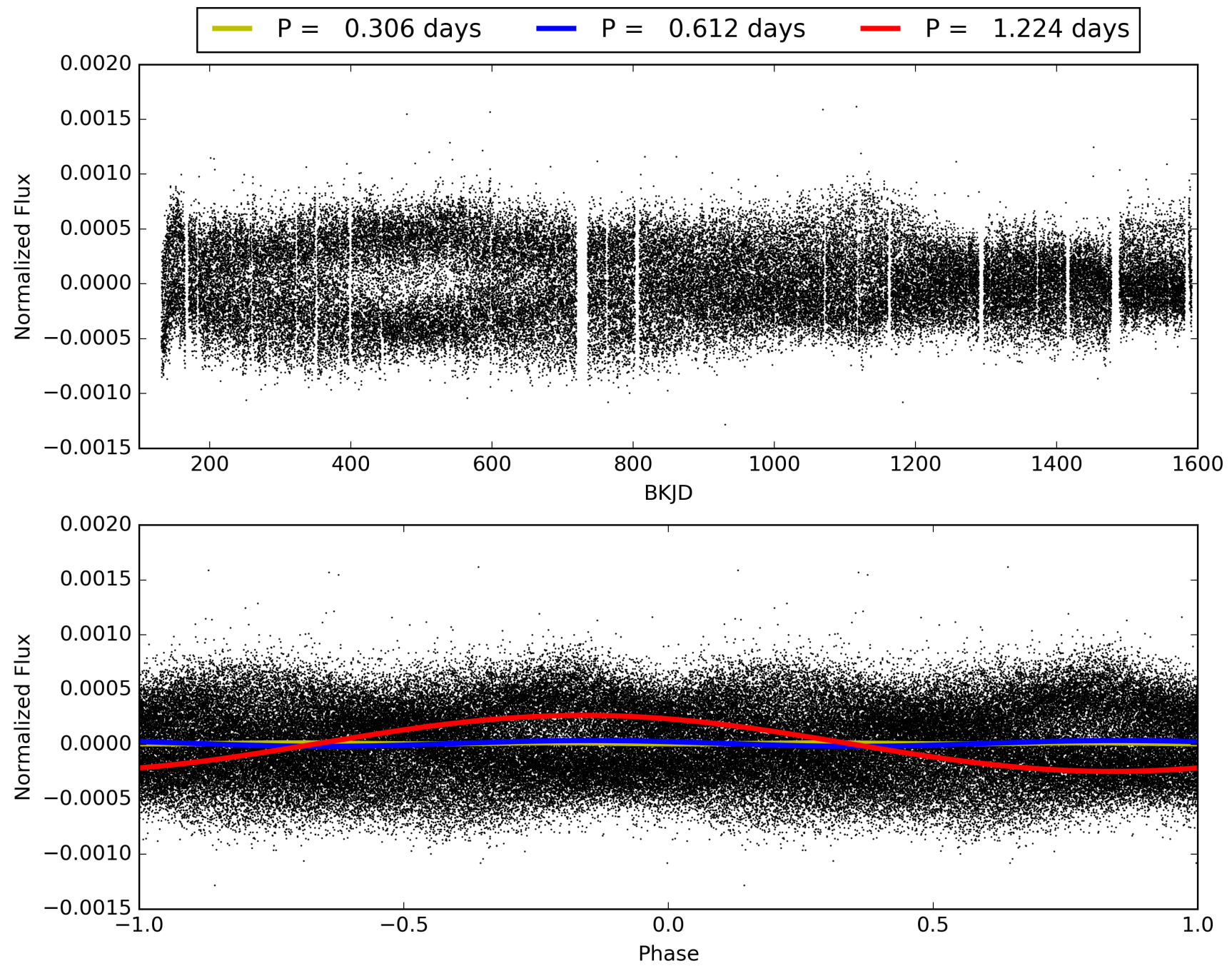
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:22:38 Z

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

TCE 007594431-01, PDC Light Curves

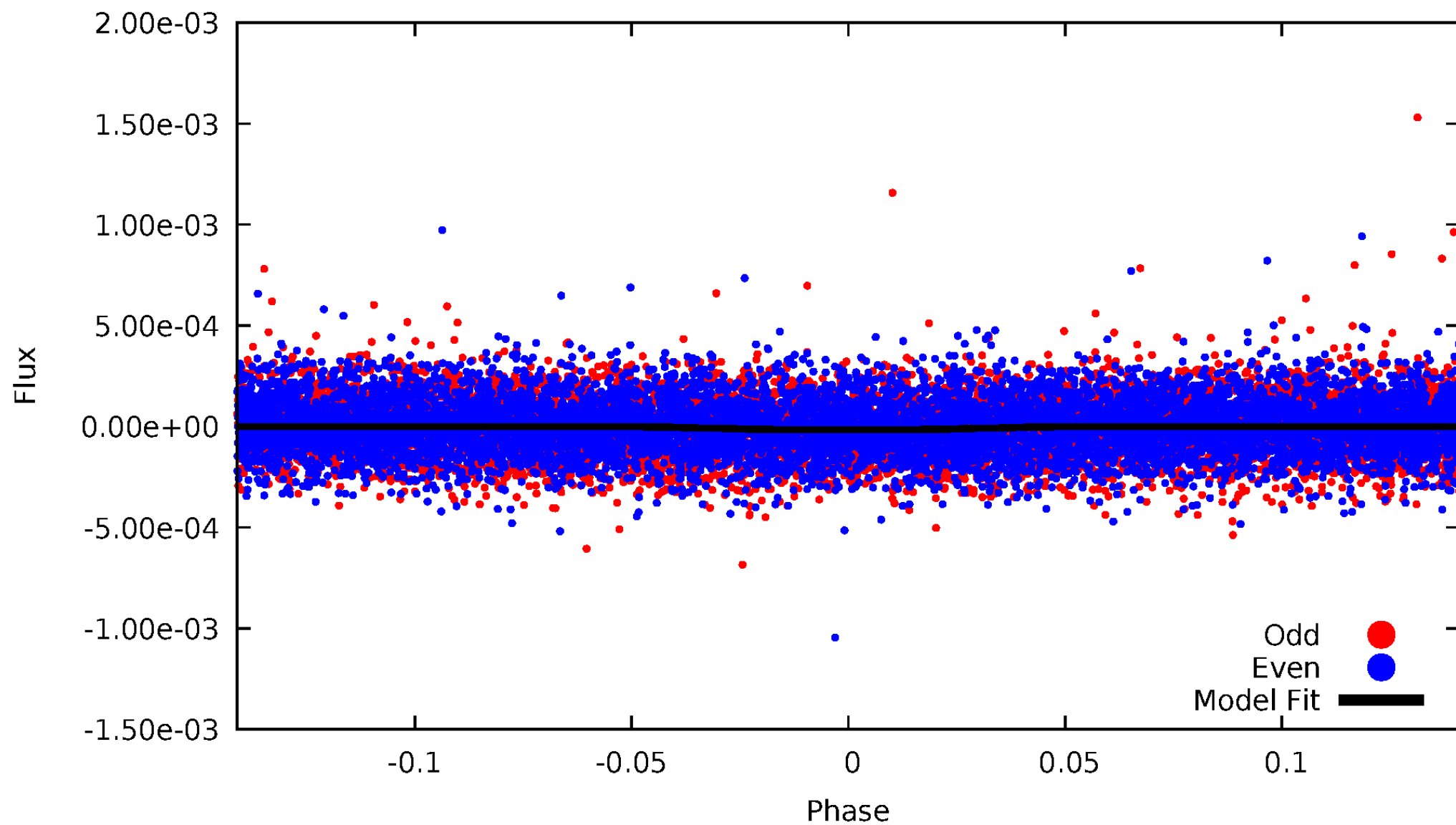


TCE 007594431-01



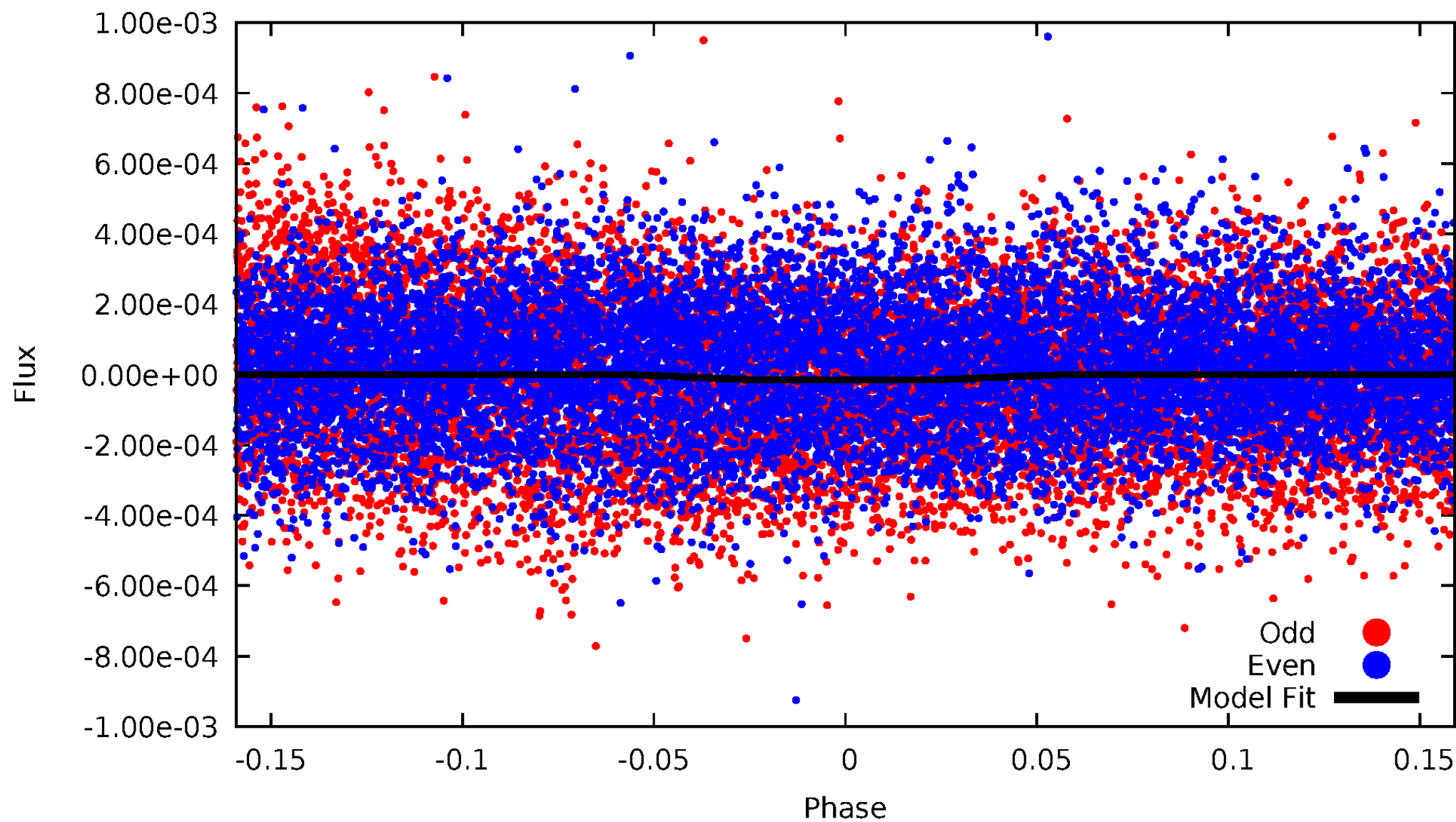
DV Odd/Even

TCE 007594431-01



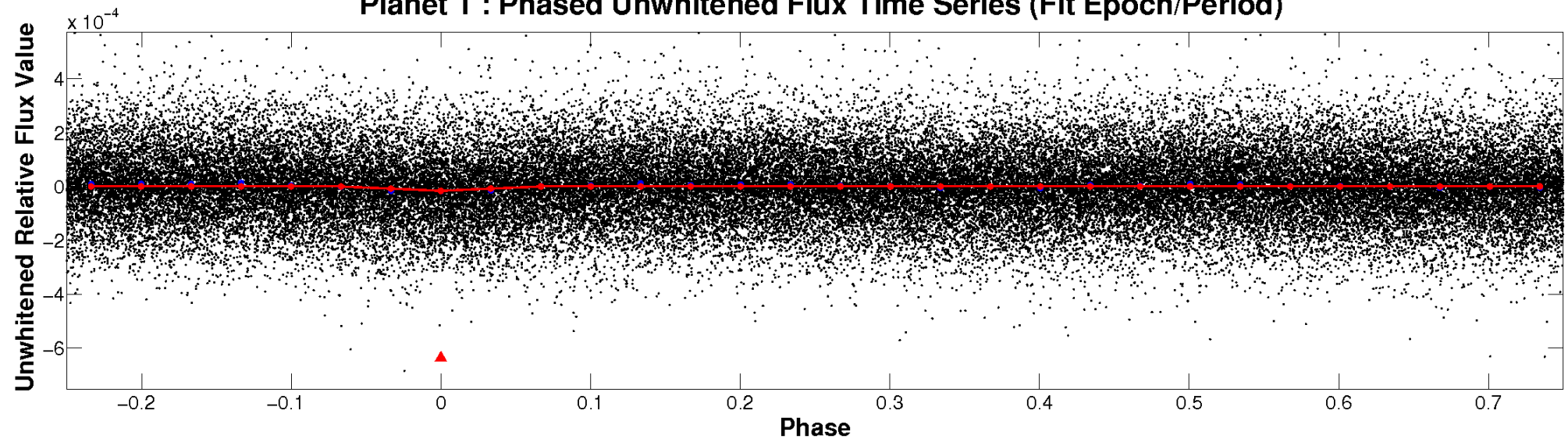
ALT Odd/Even

TCE 007594431-01

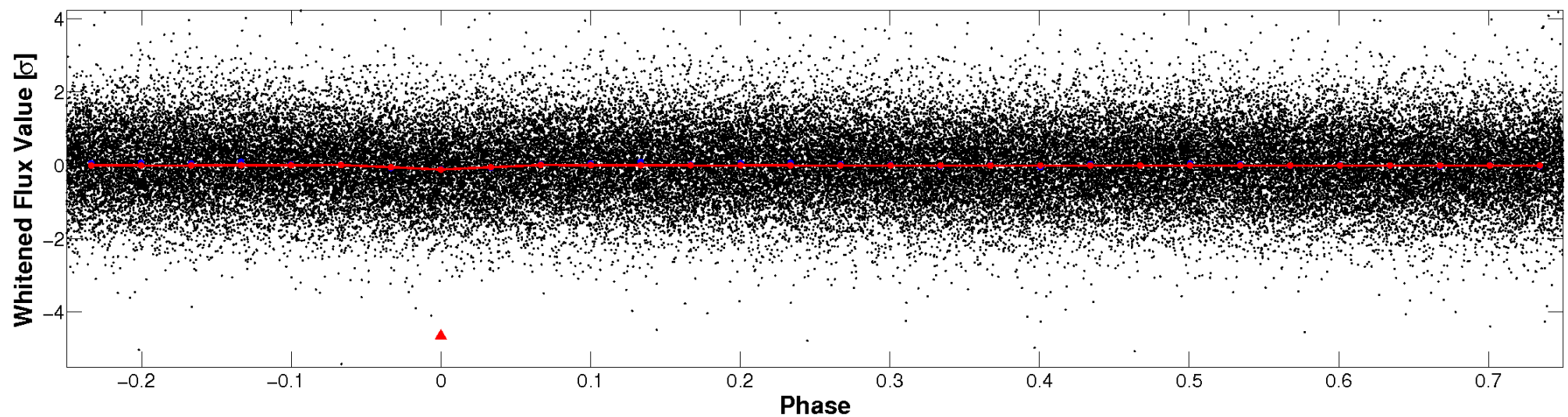


Non-Whitened Vs. Whitened Light Curve

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

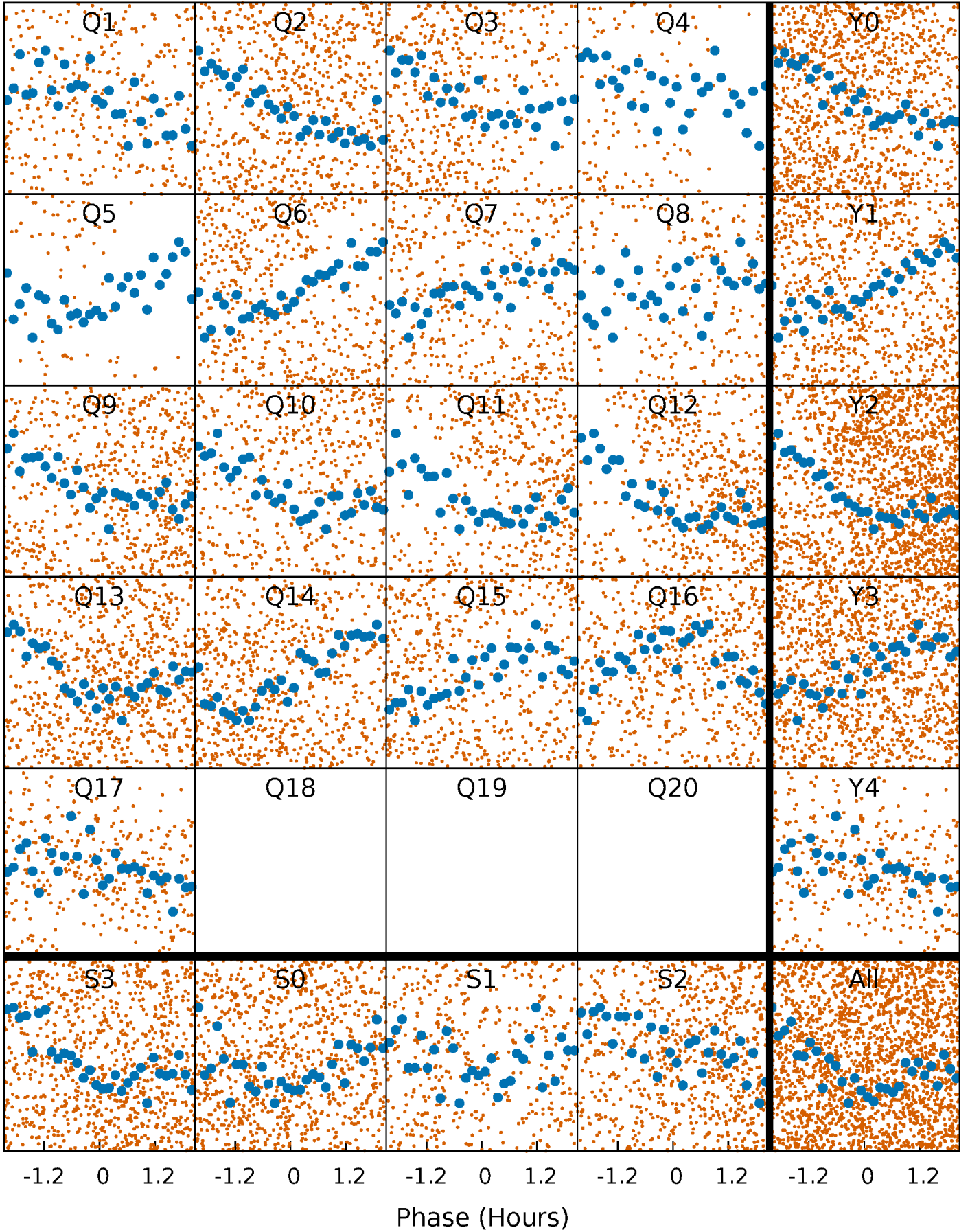


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



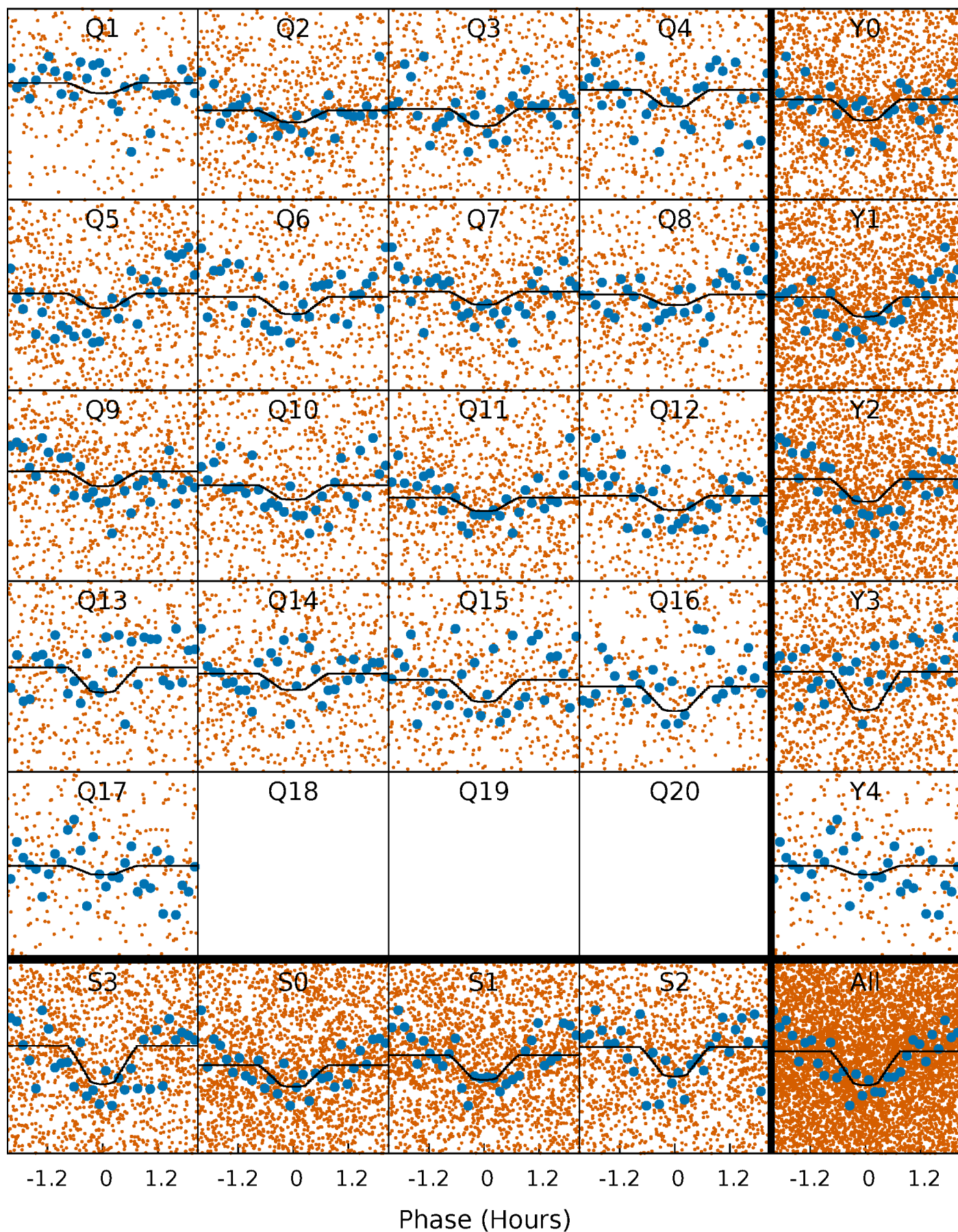
PDC Quarter-Phased Transit Curves

TCE 007594431-01 P= 0.612124 Days $T_0=131.598772$ (BKJD)



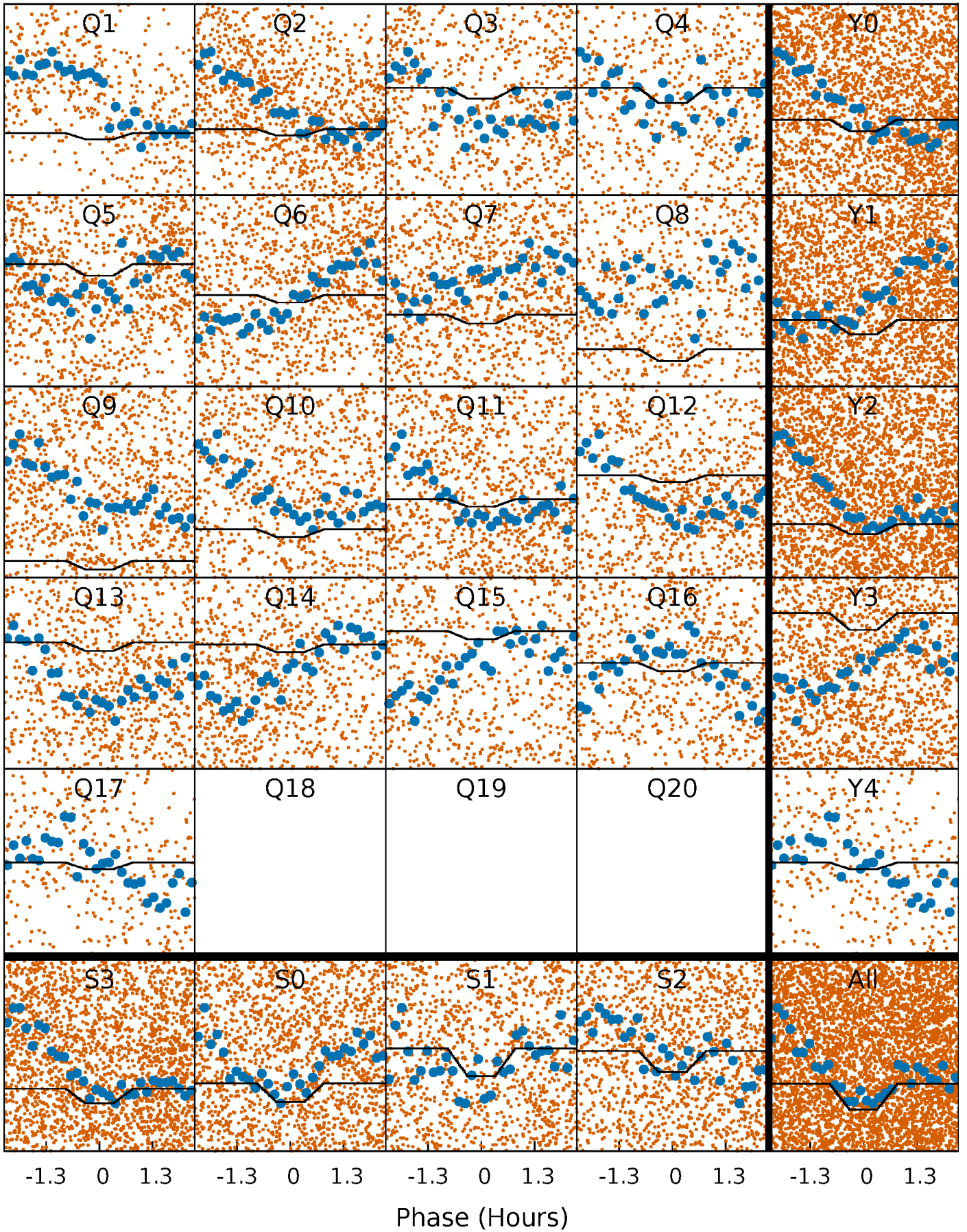
DV Quarter-Phased Transit Curves

TCE 007594431-01 P= 0.612124 Days $T_0=131.598772$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

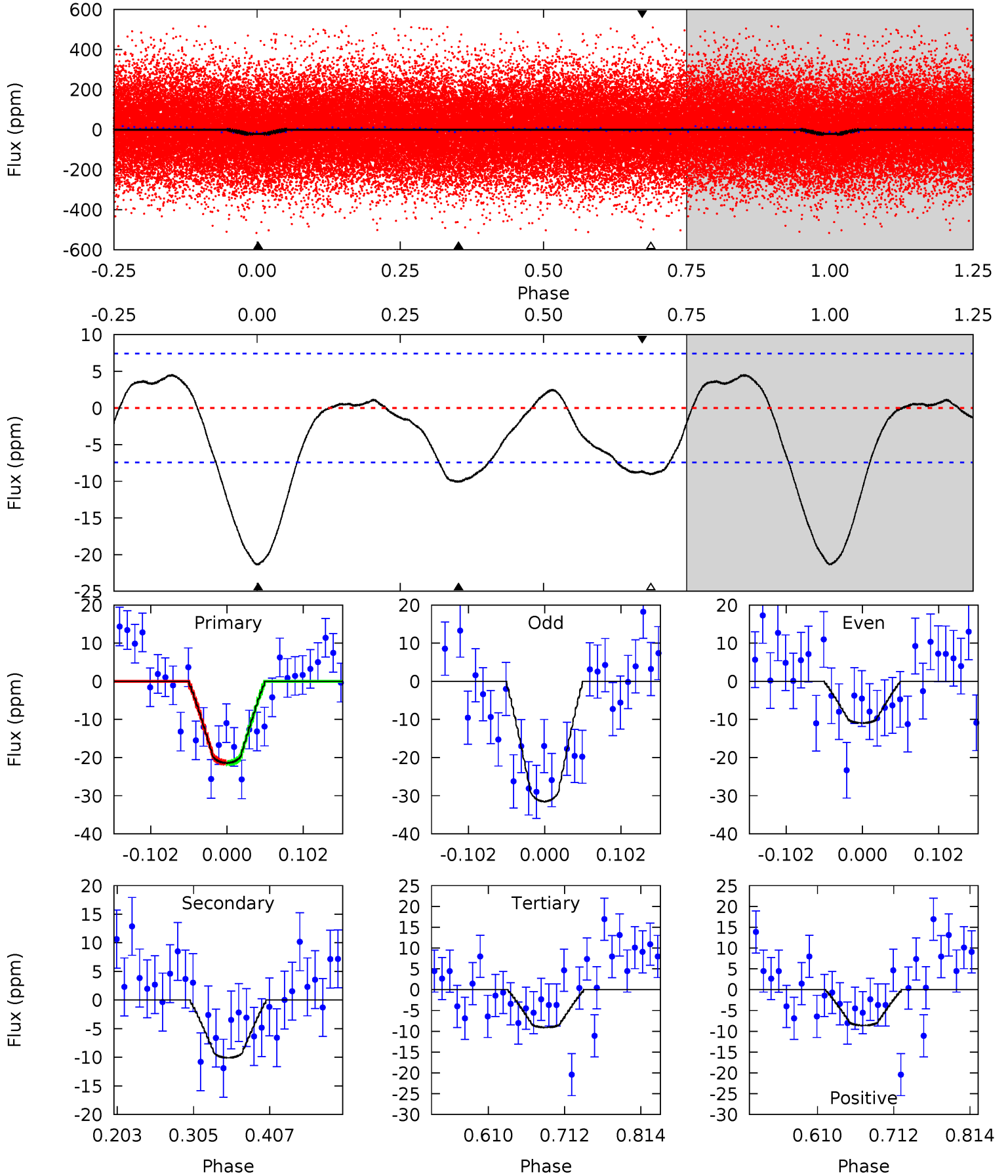
TCE 007594431-01 P= 0.612127 Days $T_0=131.599015$ (BKJD)



DV Model-Shift Uniqueness Test

007594431-01, P = 0.612124 Days, E = 130.986648 Days

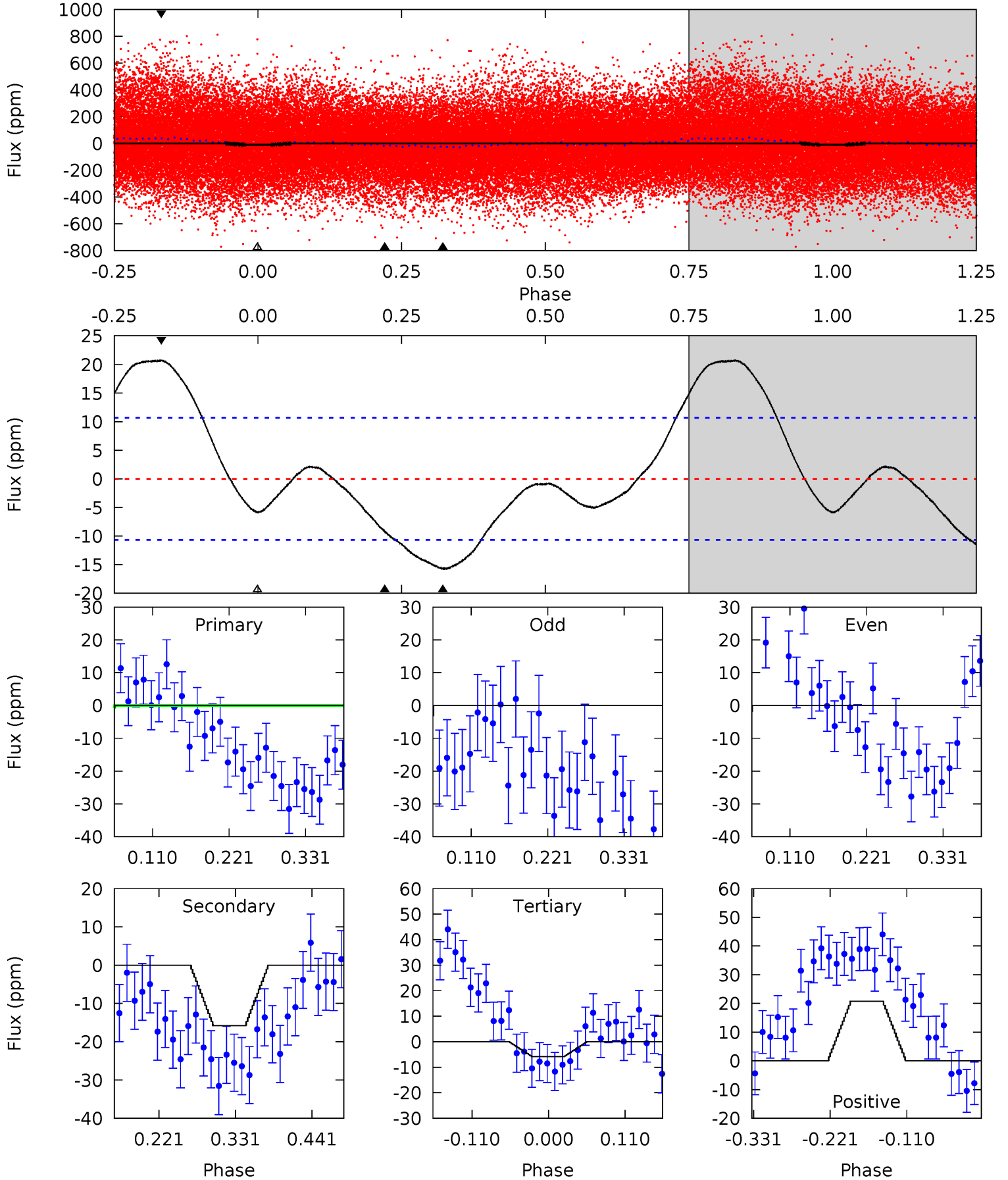
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.20	5.58	-5.28	4.56	1.64	2.55	7.57	18.4	0.62	11.5	6.32	1.04	0.17	0.06



Alt Model-Shift Uniqueness Test

007594431-01, P = 0.612127 Days, E = 130.986888 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.93	6.73	2.50	8.85	4.54	1.60	3.75	1.43	-4.92	4.23	-2.12	4.08	2.32	0.57	0.03



Stellar Parameters For KIC 007594431

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7370^{+232}_{-310}	$4.160^{+0.149}_{-0.182}$	$-0.320^{+0.250}_{-0.350}$	$1.629^{+0.495}_{-0.371}$	$1.399^{+0.207}_{-0.230}$	$0.456^{+0.356}_{-0.233}$
	+3%/-4%	+4%/-4%	+78%/-109%	+30%/-23%	+15%/-16%	+78%/-51%
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 007594431-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-10 ± 2	$0.69^{+0.24}_{-0.23}$	4620^{+348}_{-303}	6371^{+1609}_{-970}	$2.770^{+3.653}_{-1.261}$
Alt.	-16 ± 2	$0.70^{+0.24}_{-0.22}$	4644^{+358}_{-323}	7254^{+1892}_{-1149}	$4.247^{+4.918}_{-1.877}$

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 $A_{obs} \gg 1.0$

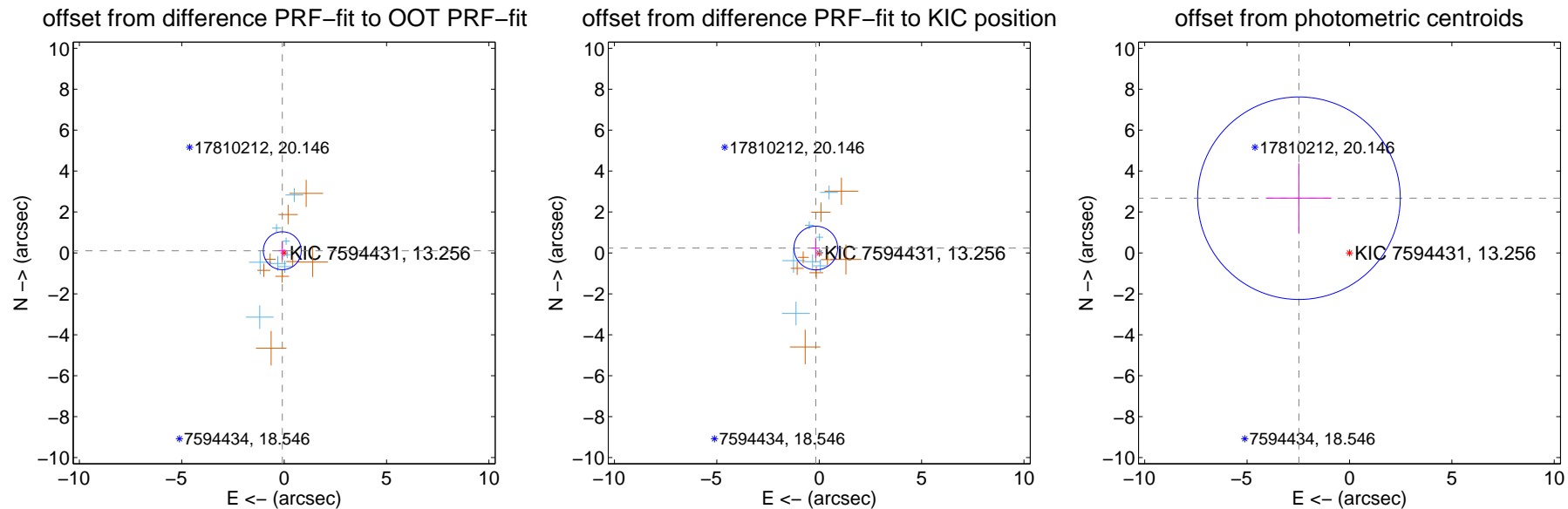
DV Centroid Data

Supplemental centroid analysis for 007594431-01. Kepler magnitude: 13.26. Transit SNR 6.60

There are 8 quarters with good PRF difference image offsets

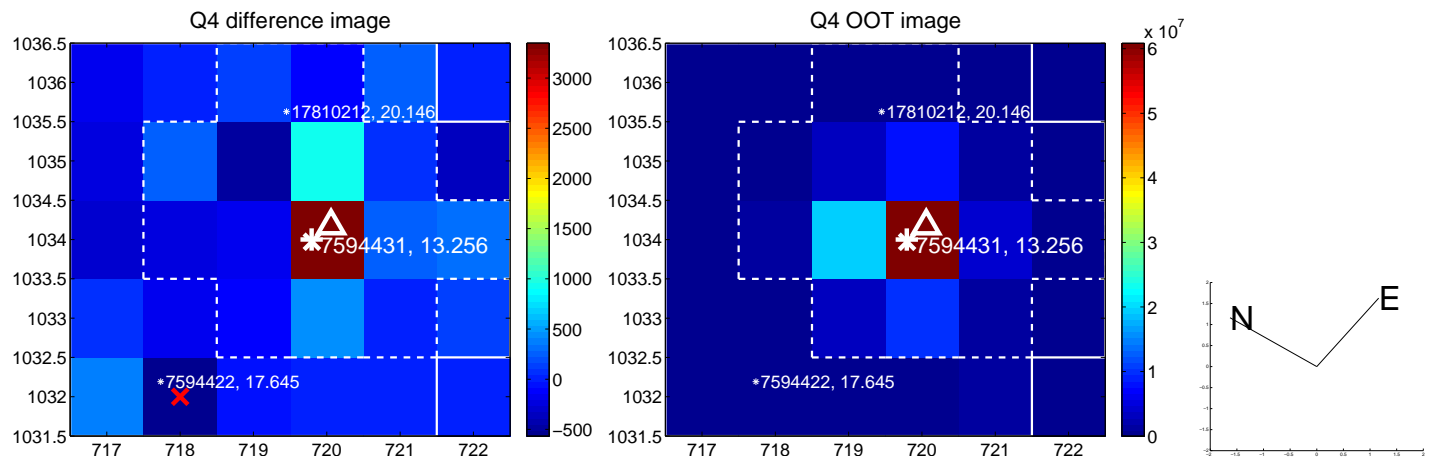
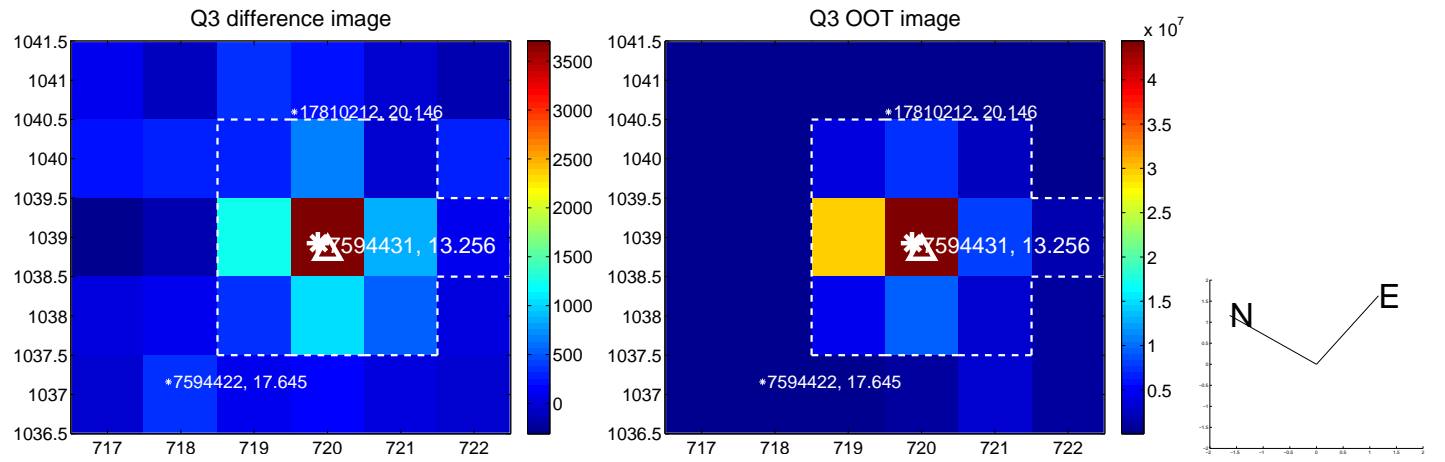
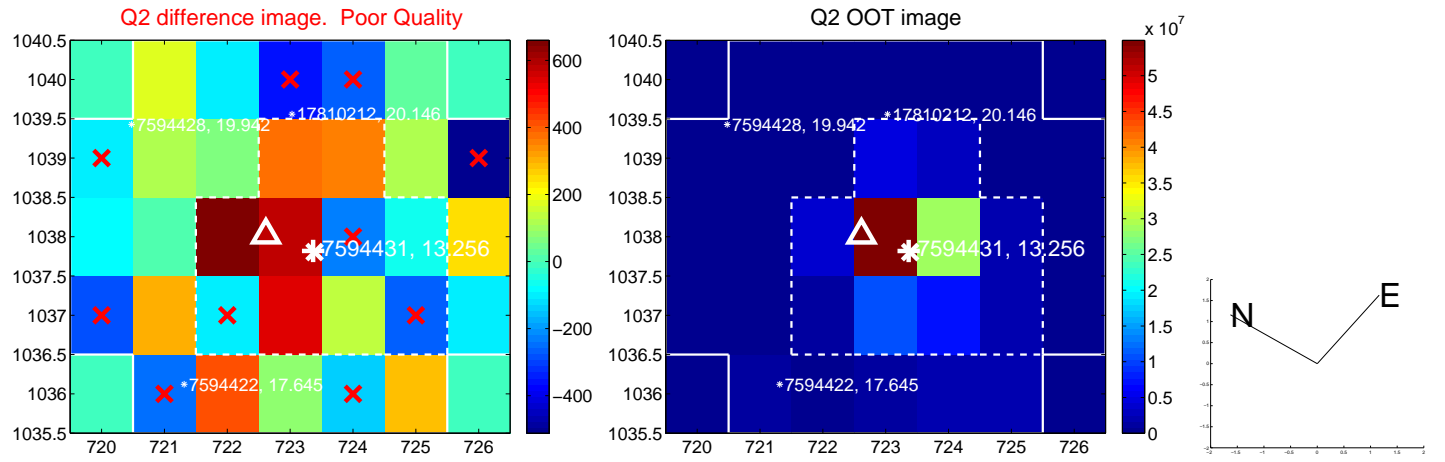
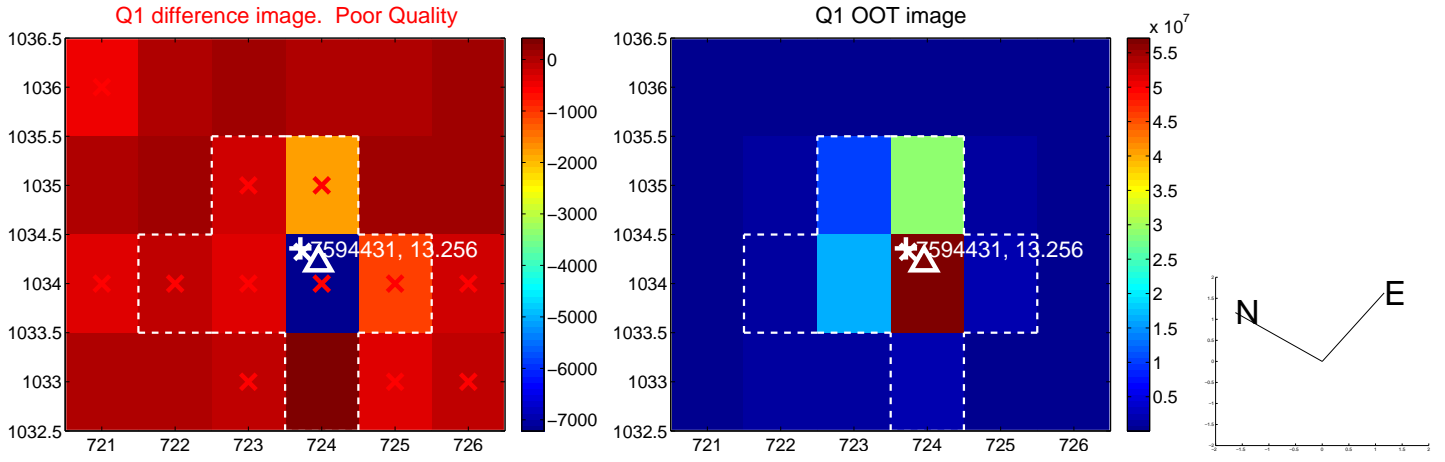
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.140 ± 0.309	0.45	0.091 ± 0.180	0.106 ± 0.456
PRF-fit source offset from KIC position	0.291 ± 0.356	0.82	0.167 ± 0.200	0.238 ± 0.488
photometric centroid source offset	3.64 ± 1.65	2.21	2.47 ± 1.58	2.67 ± 1.70

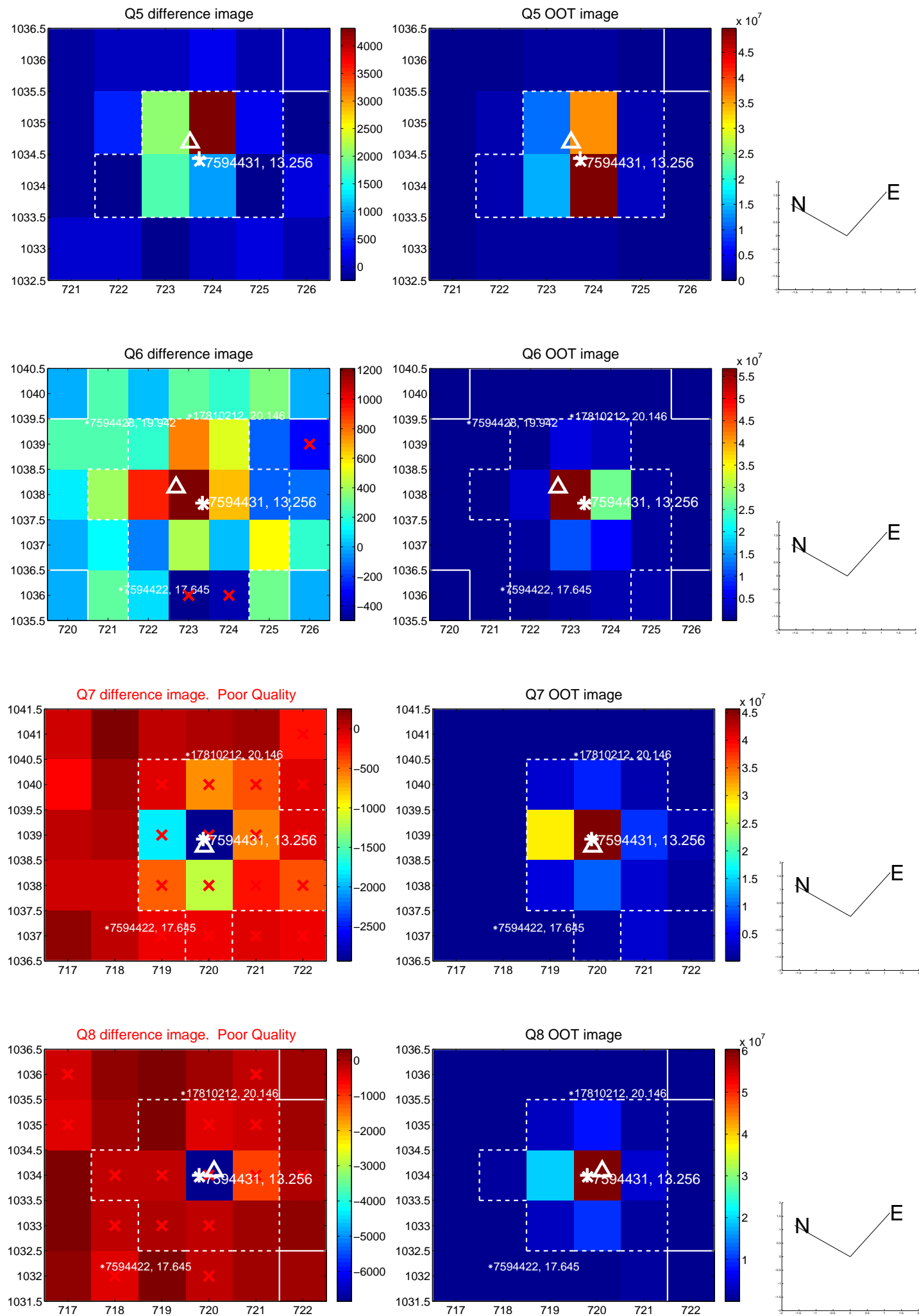


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

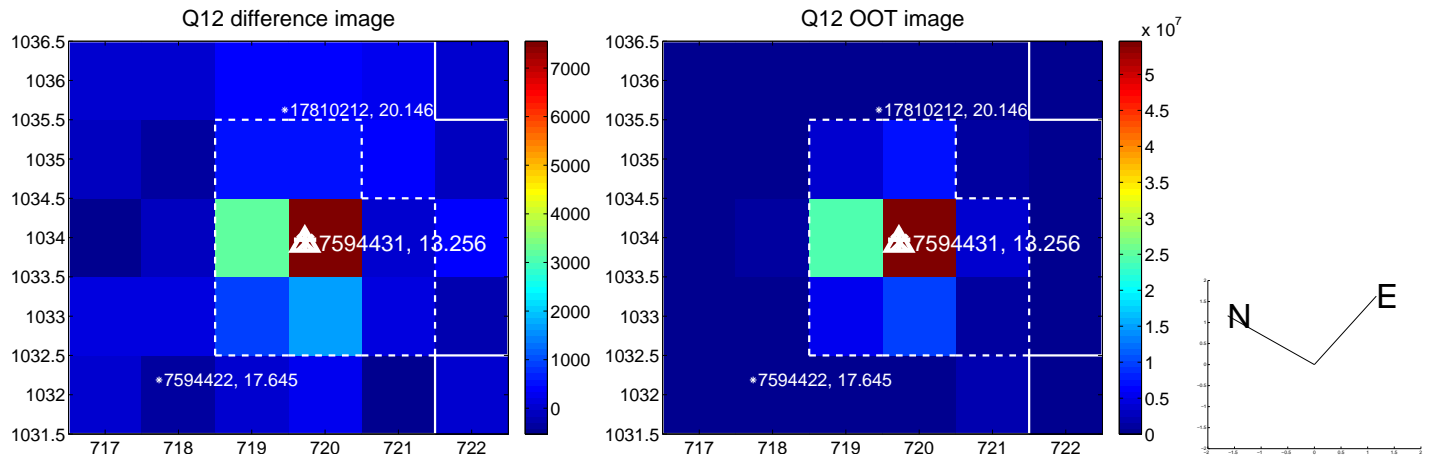
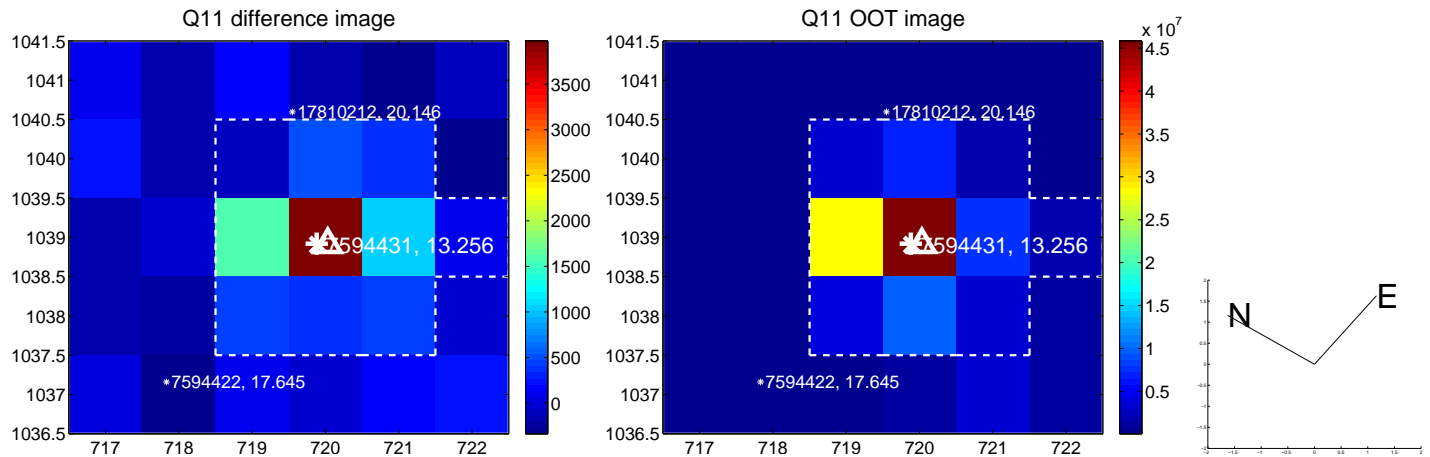
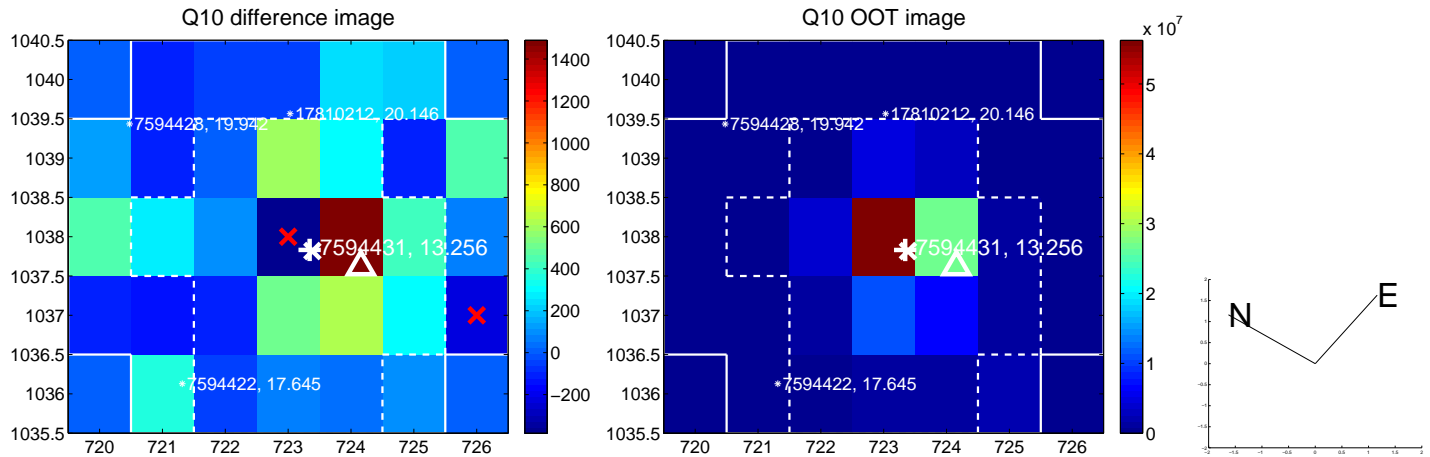
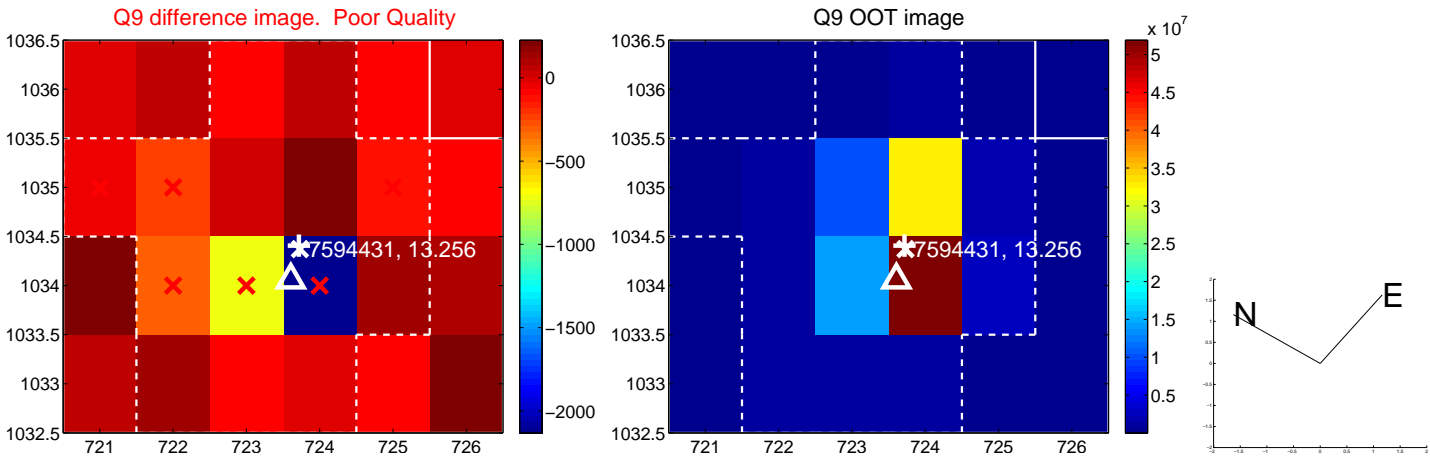
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



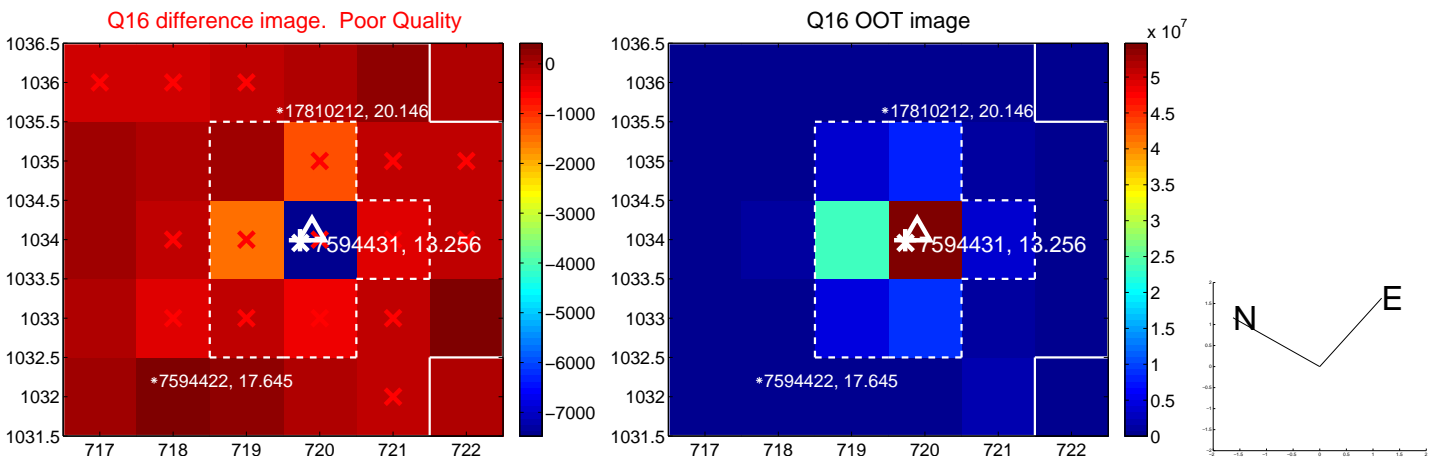
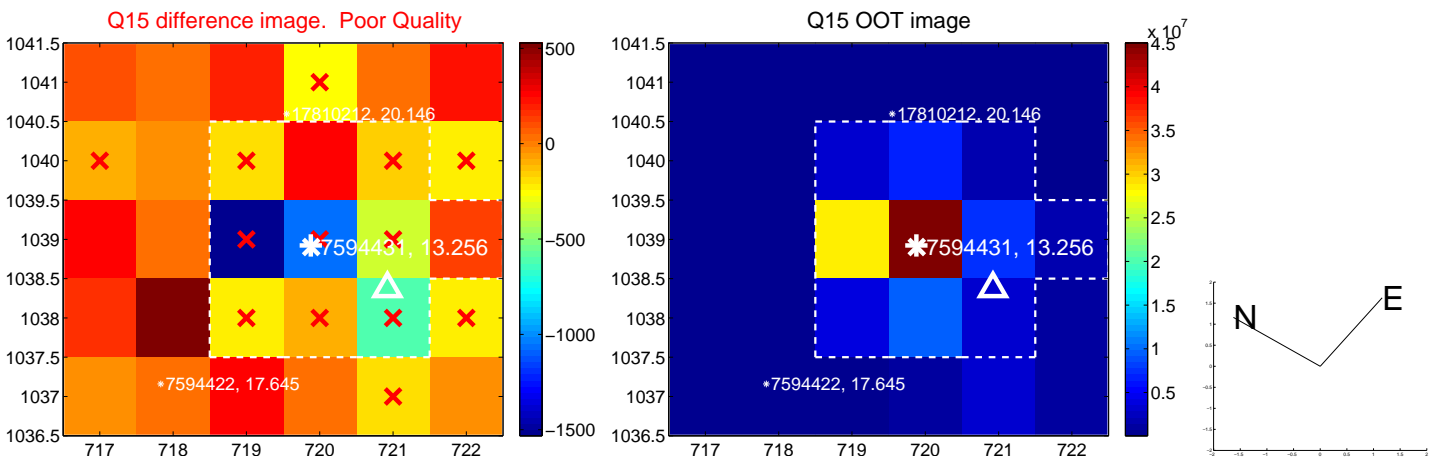
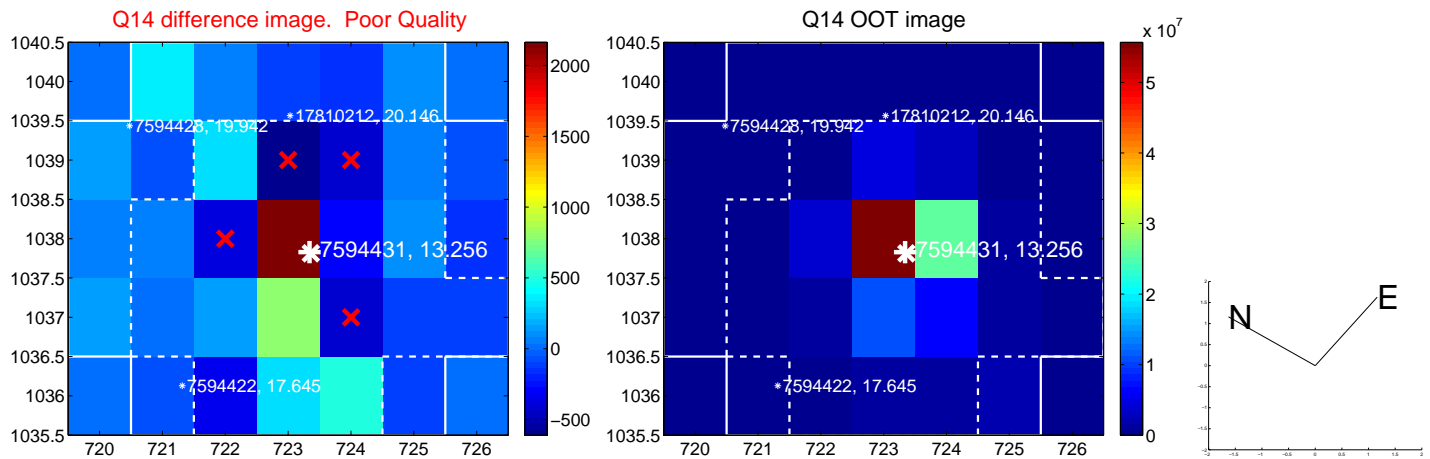
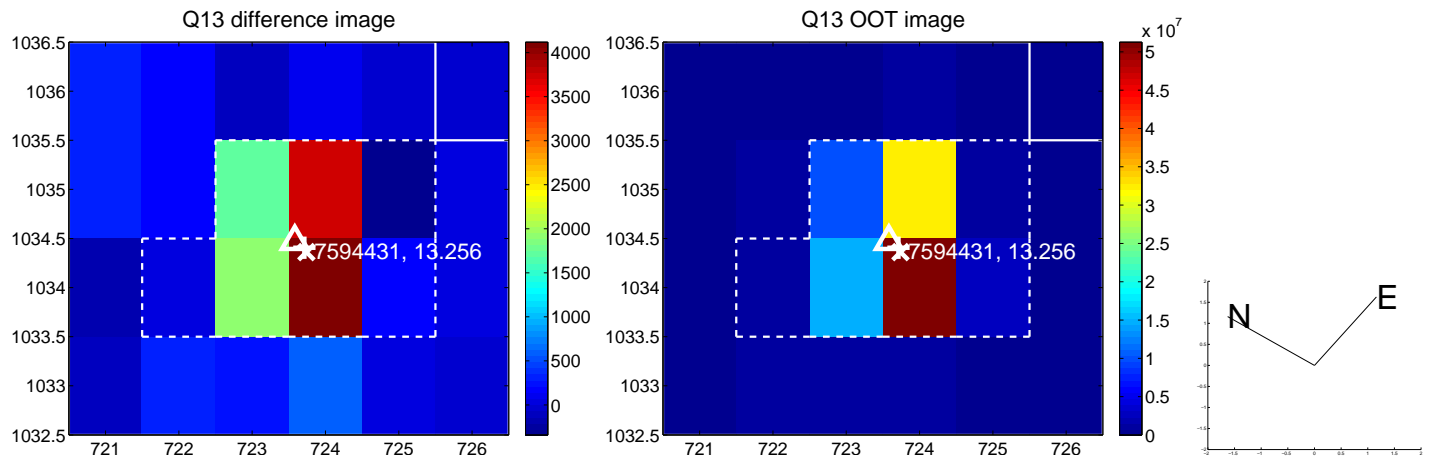
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



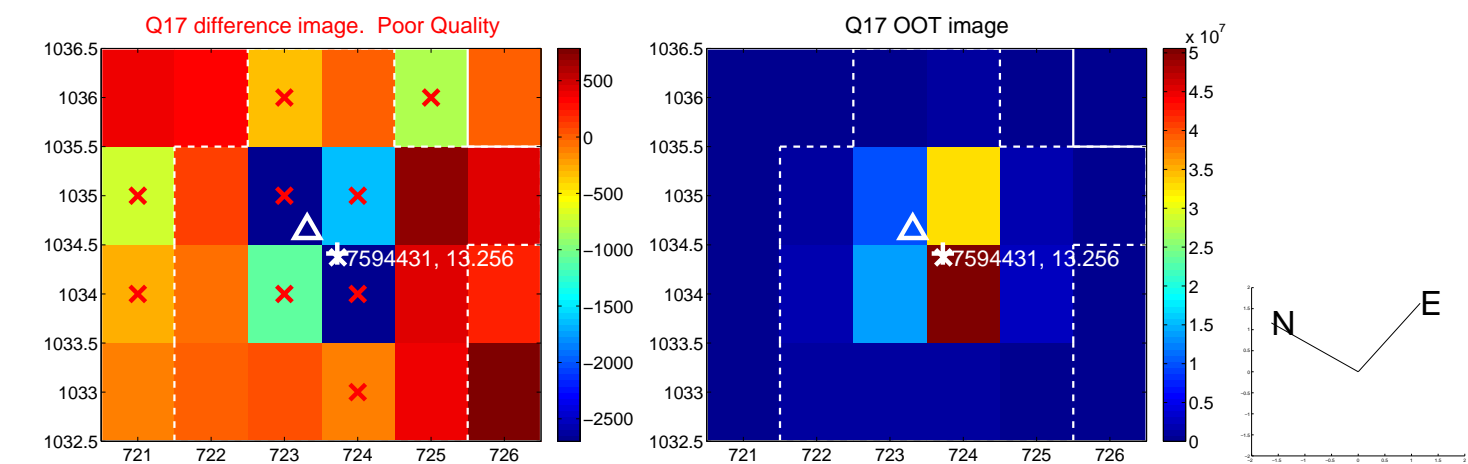
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



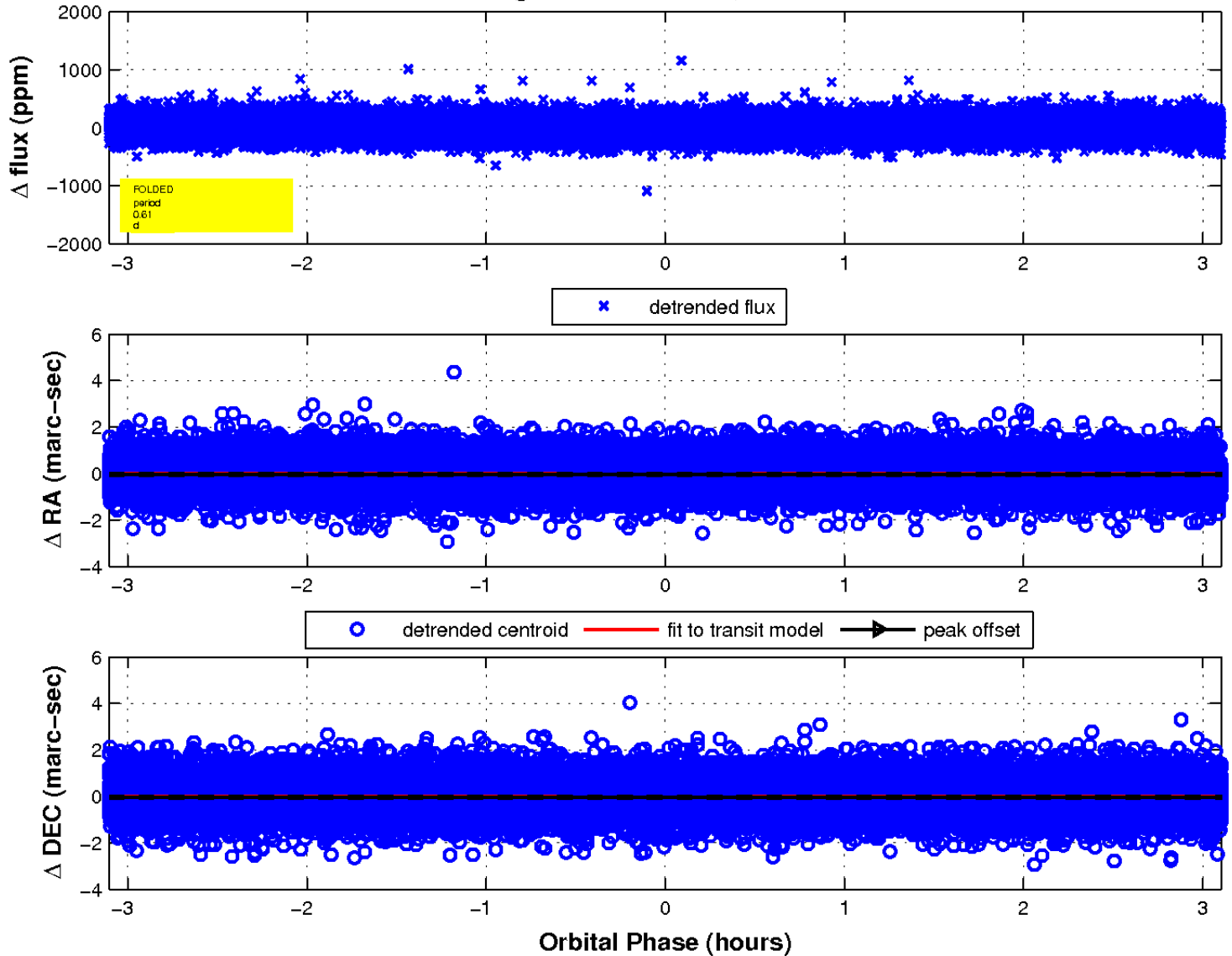
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

