

KIC 004842166

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})
004842166-01	OBS	No	0.512300	131.543913	80.9	1.197	11.0	9.9	1.74	7503	1.82	39872.03

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004842166-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

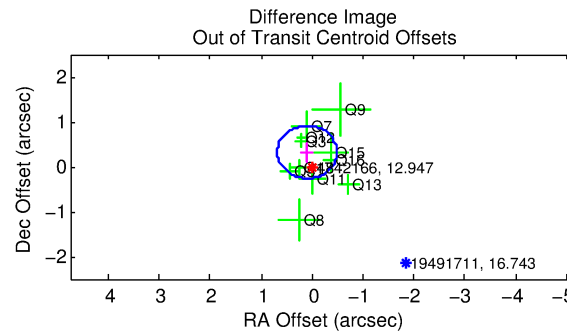
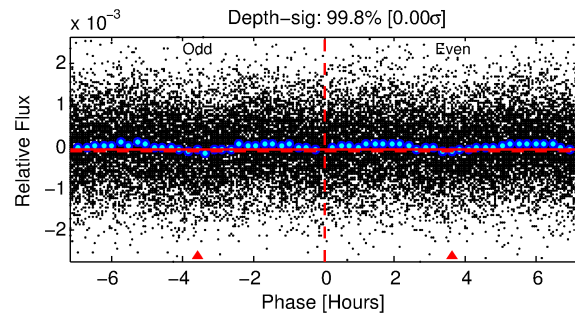
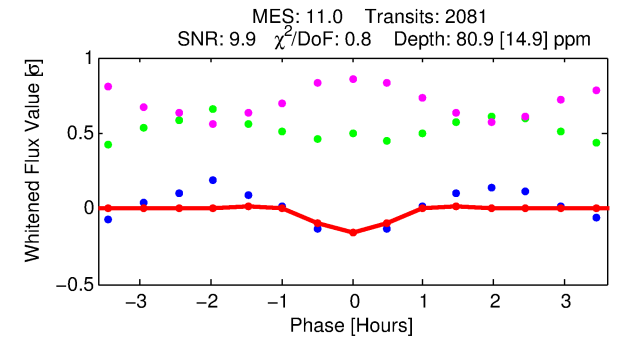
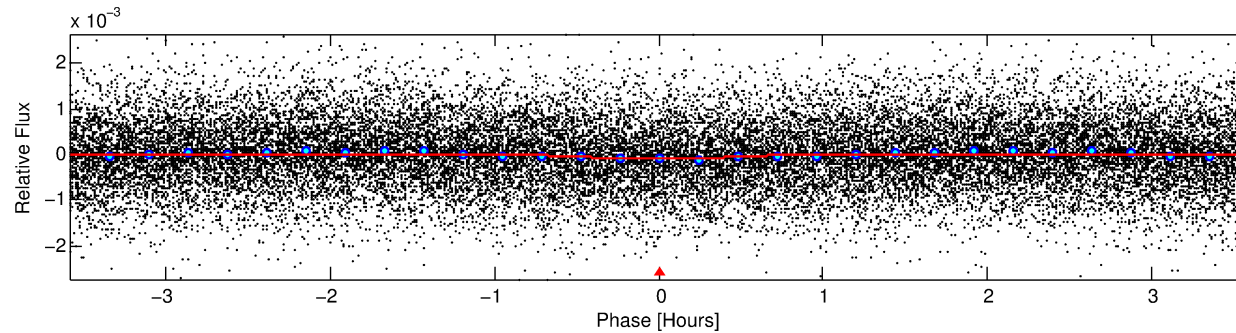
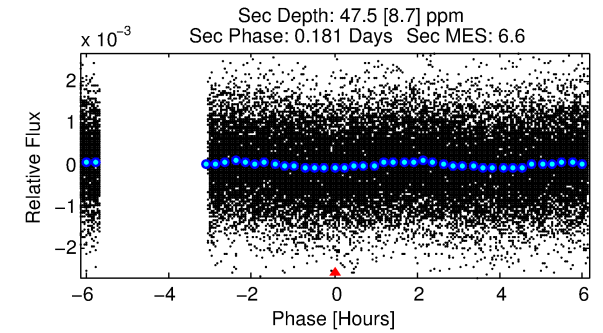
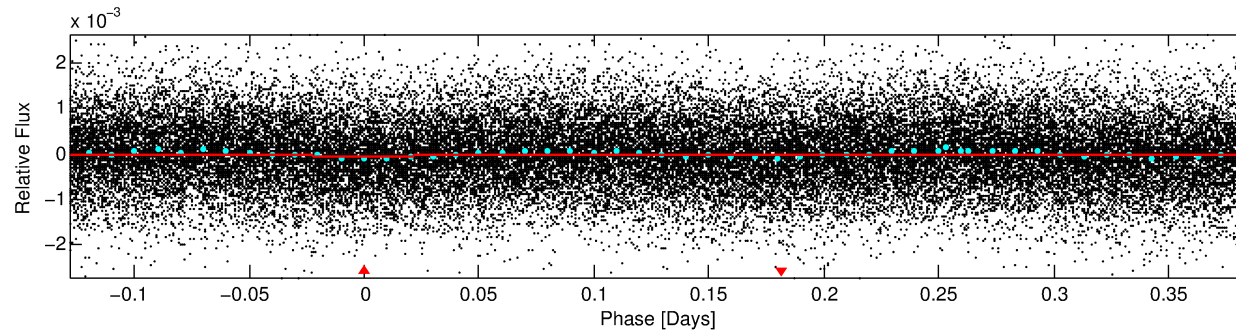
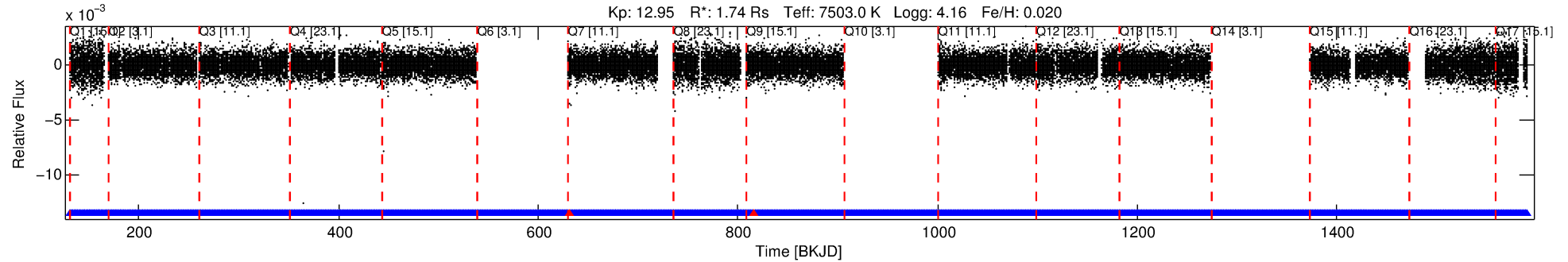
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004842166-01

No Significant Match Found

DV One-Page Summary

KIC: 4842166 Candidate: 1 of 1 Period: 0.512 d



DV Fit Results:

Period = 0.51230 [0.00001] d
Epoch = 131.5439 [0.0022] BKJD
Rp/R* = 0.0096 [0.0062]
a/R* = 1.77 [5.10]
b = 0.90 [0.91]
Seff = 39872.03 [16157.21]
Teq = 3603 [365] K
Rp = 1.82 [1.32] Re
a = 0.0147 [0.0039] AU
Ag = 1.71 [2.33] [0.30σ]
Teffp = 6368 [2110] K [1.29σ]

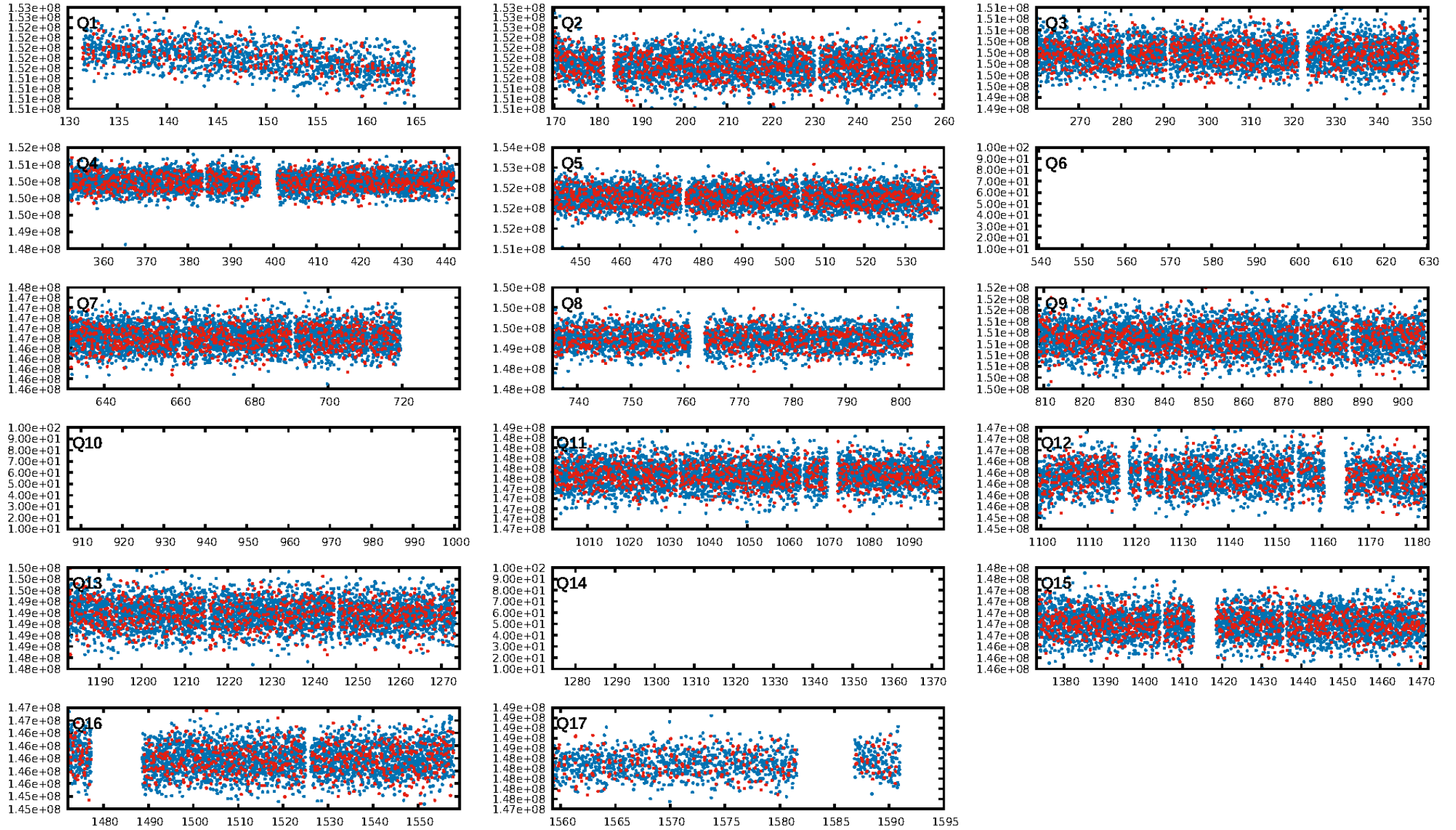
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.01e-31
RollingBand-fgt: 1.00 [1961/1963]
GhostDiagnostic-chr: 0.6309
Centroid-sig: 88.2%
Centroid-so: 0.054 arcsec [0.21σ]
OotOffset-rm: 0.338 arcsec [1.73σ]
OotOffset-st: 0/4/3/4 [11]
KicOffset-rm: 0.496 arcsec [2.31σ]
KicOffset-st: 0/4/3/4 [11]
DiffImageQuality-fgm: 0.91 [10/11]
DiffImageOverlap-fno: 1.00 [14/14]

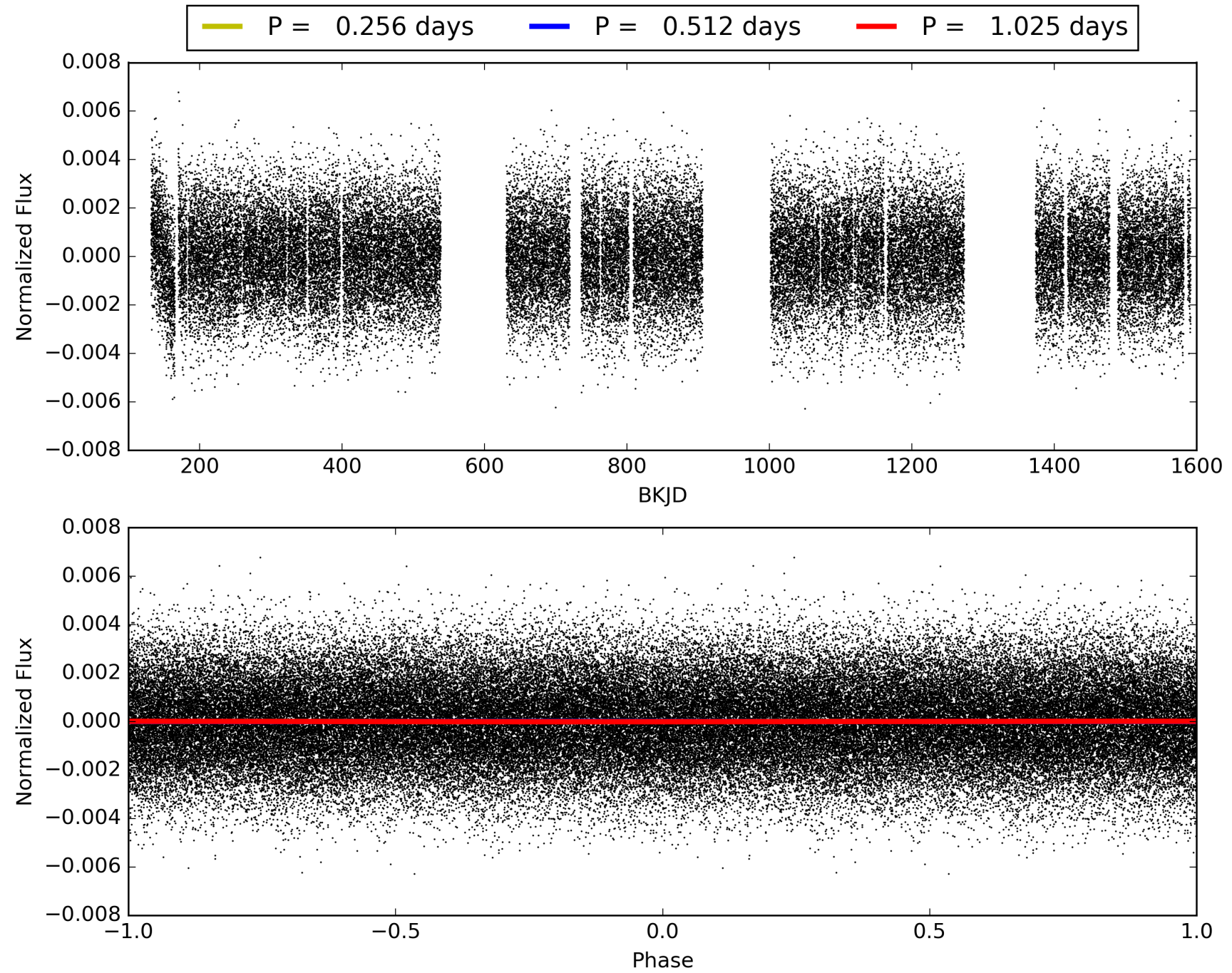
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 11:14:59 Z

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

TCE 004842166-01, PDC Light Curves

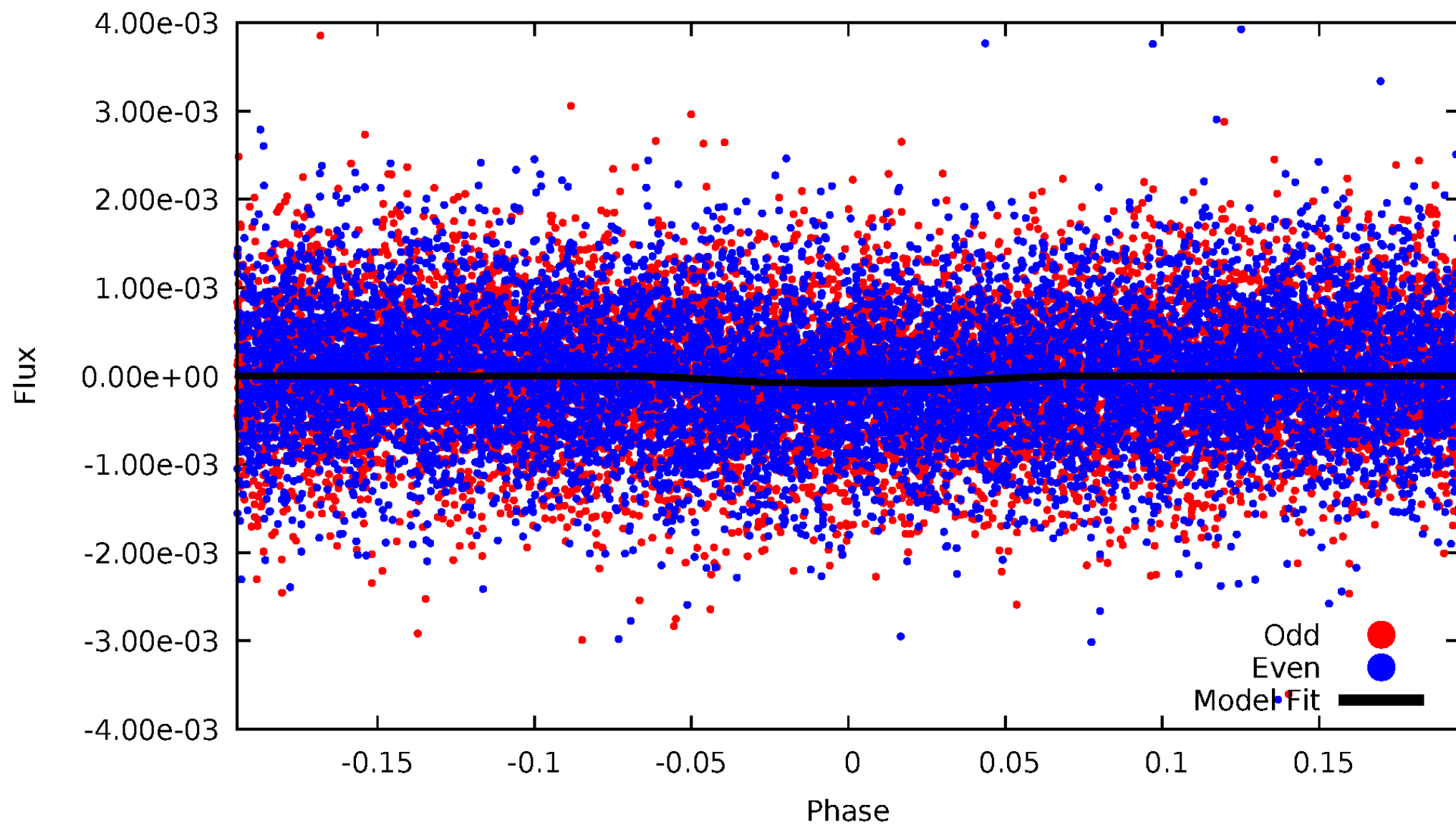


TCE 004842166-01



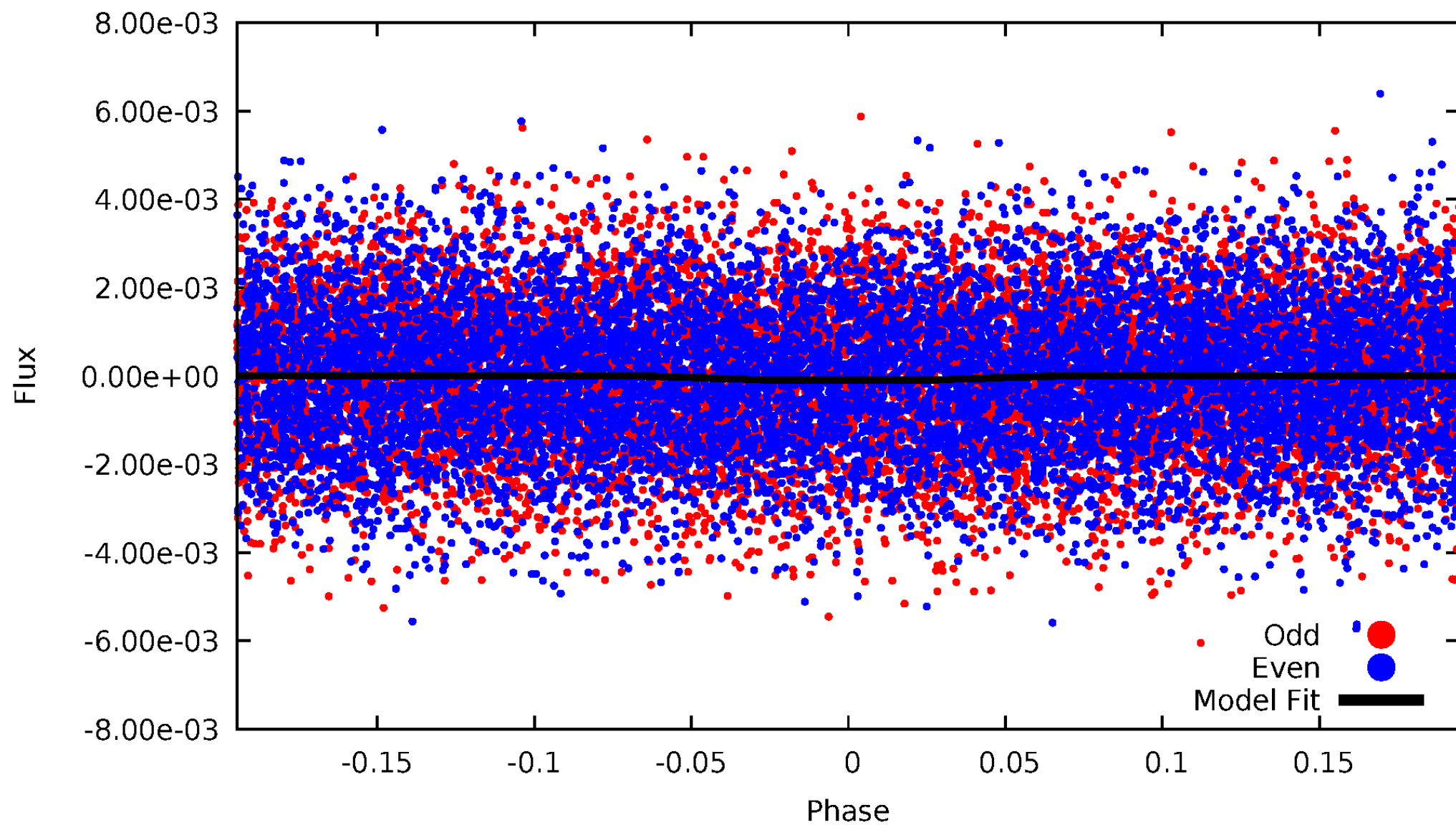
DV Odd/Even

TCE 004842166-01



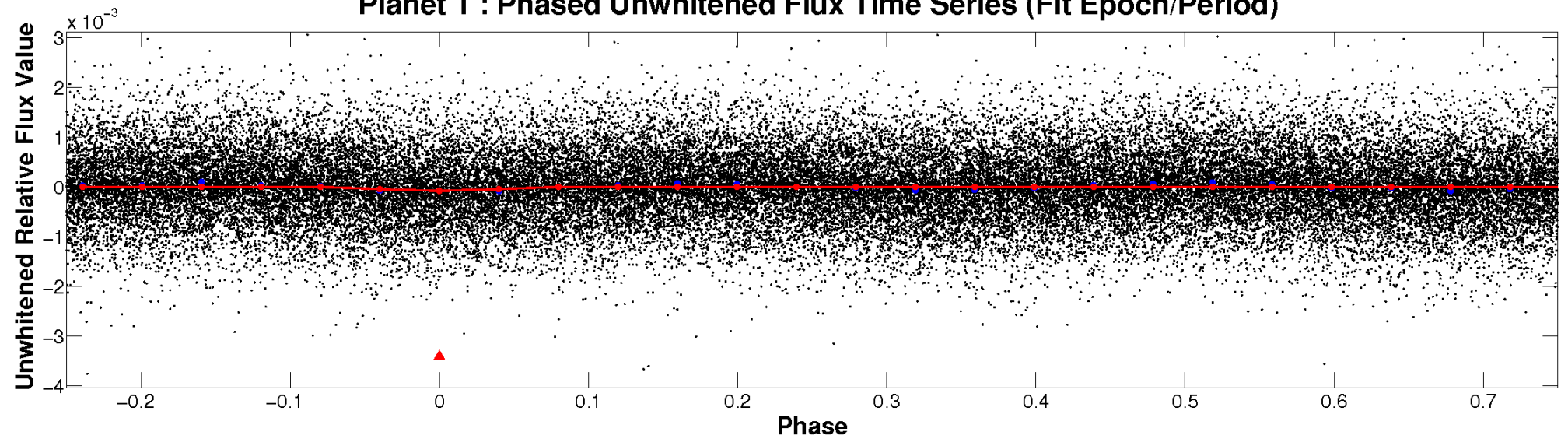
ALT Odd/Even

TCE 004842166-01

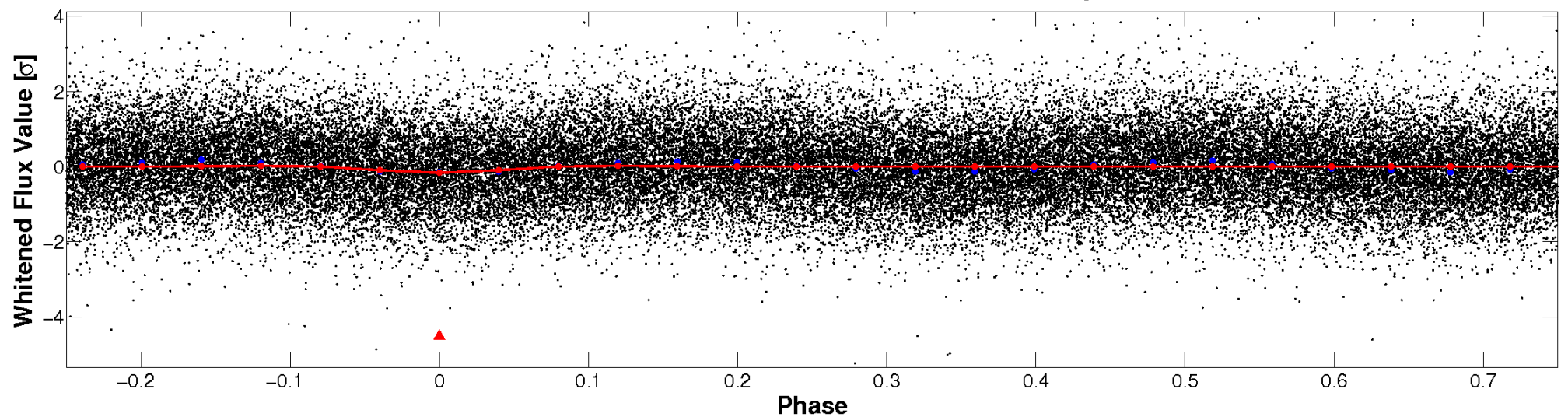


Non-Whitened Vs. Whitened Light Curve

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

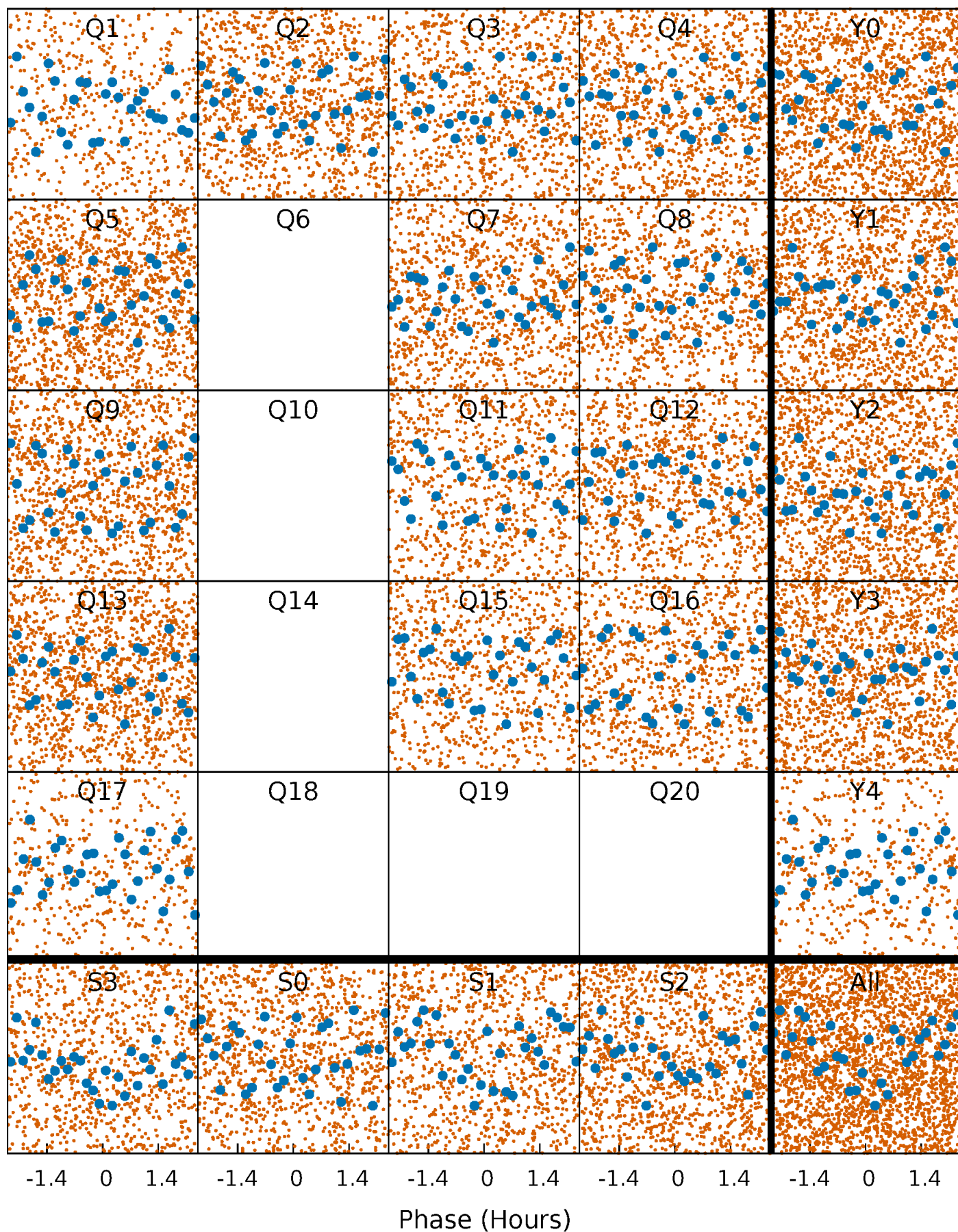


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



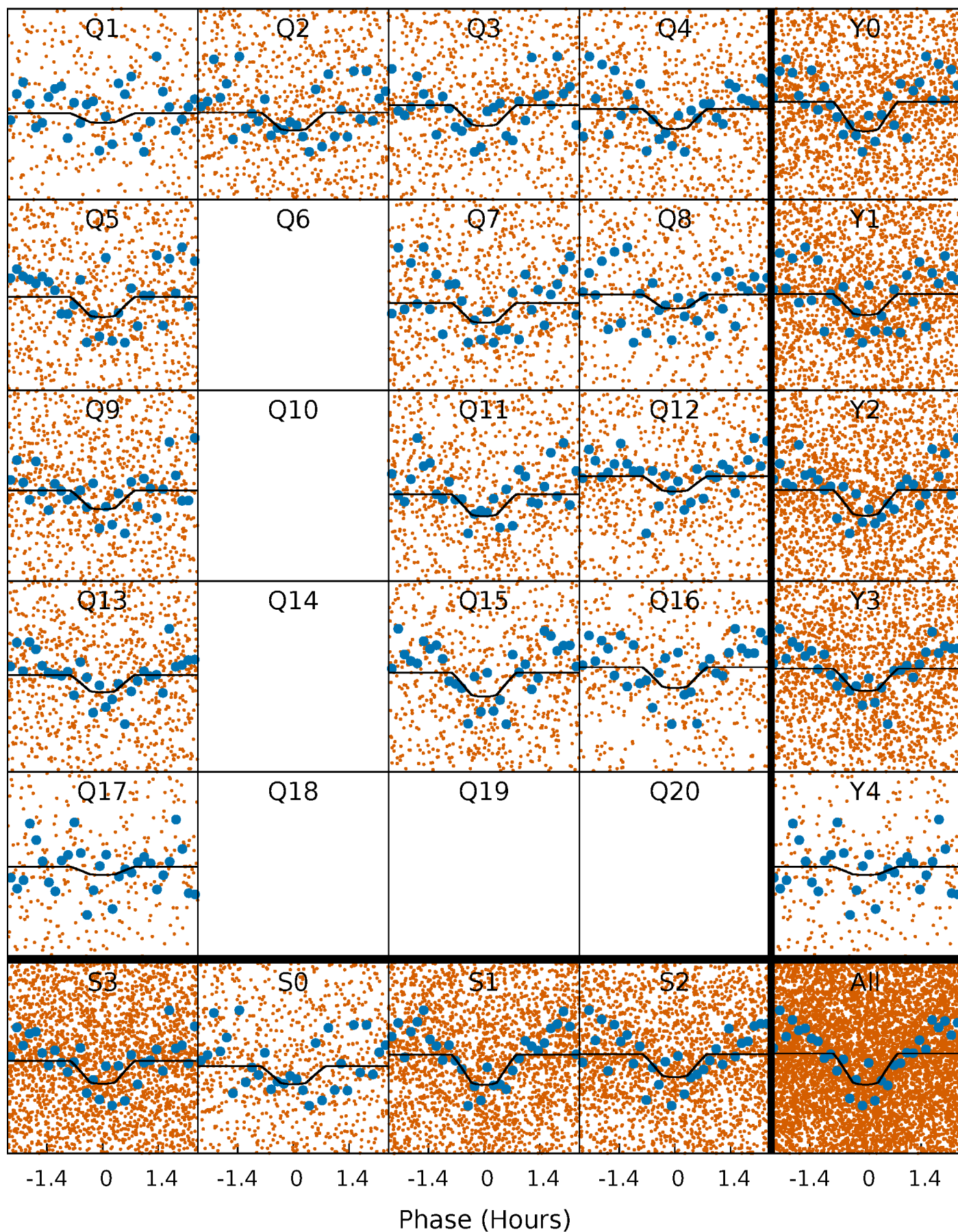
PDC Quarter-Phased Transit Curves

TCE 004842166-01 P= 0.512300 Days $T_0=131.543914$ (BKJD)



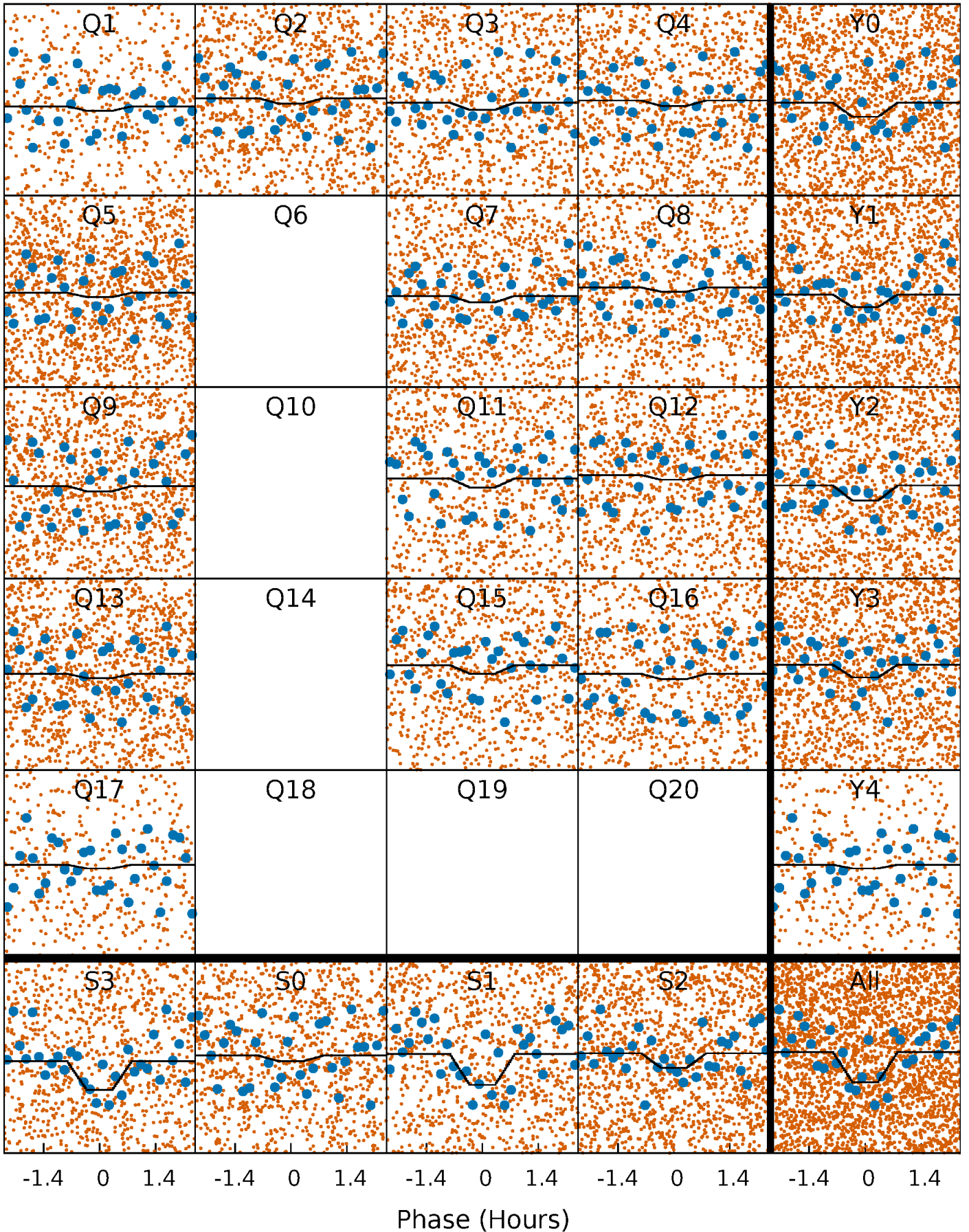
DV Quarter-Phased Transit Curves

TCE 004842166-01 P= 0.512300 Days $T_0=131.543914$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

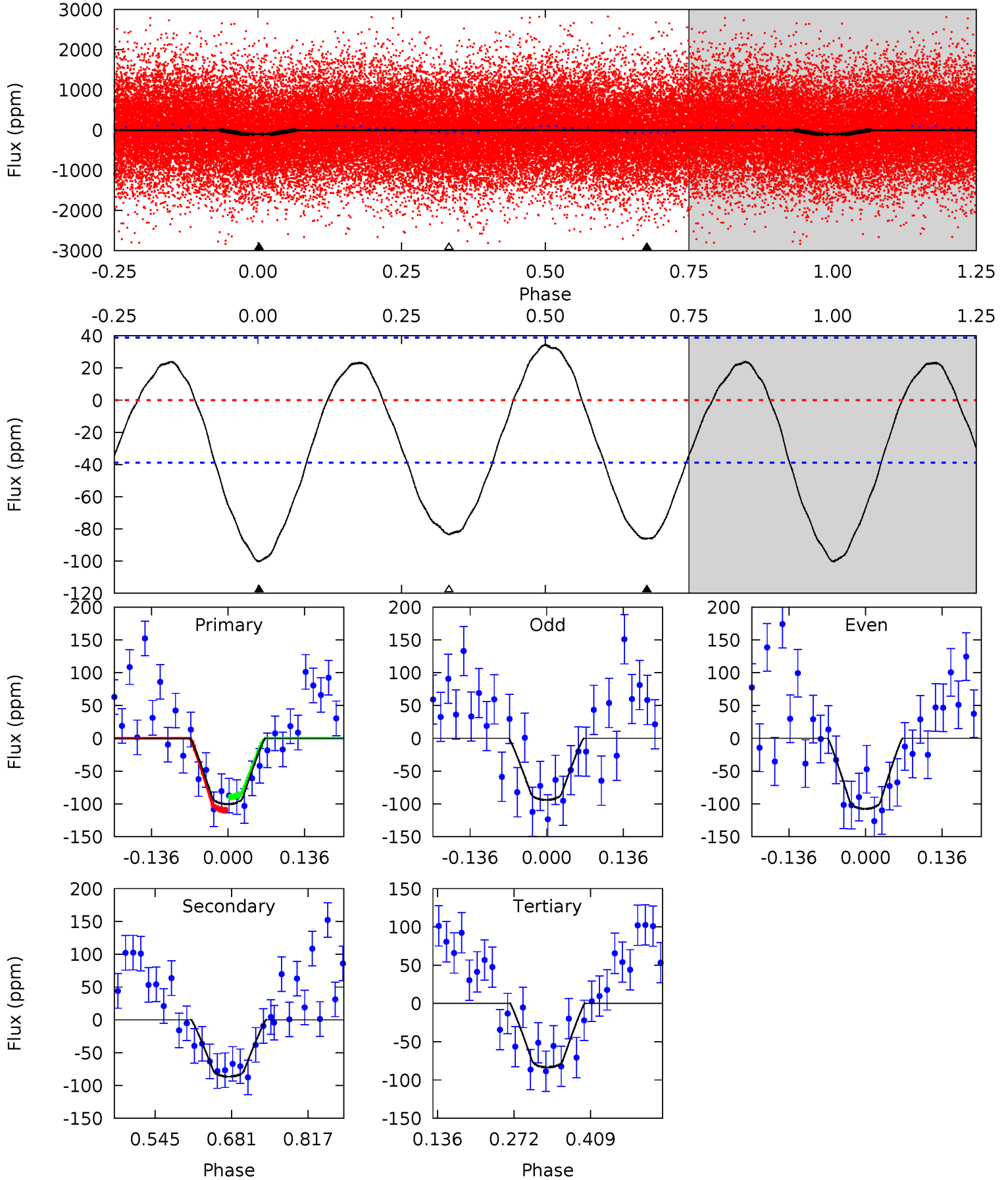
TCE 004842166-01 P= 0.512300 Days $T_0=131.543913$ (BKJD)



DV Model-Shift Uniqueness Test

004842166-01, P = 0.512300 Days, E = 131.031614 Days

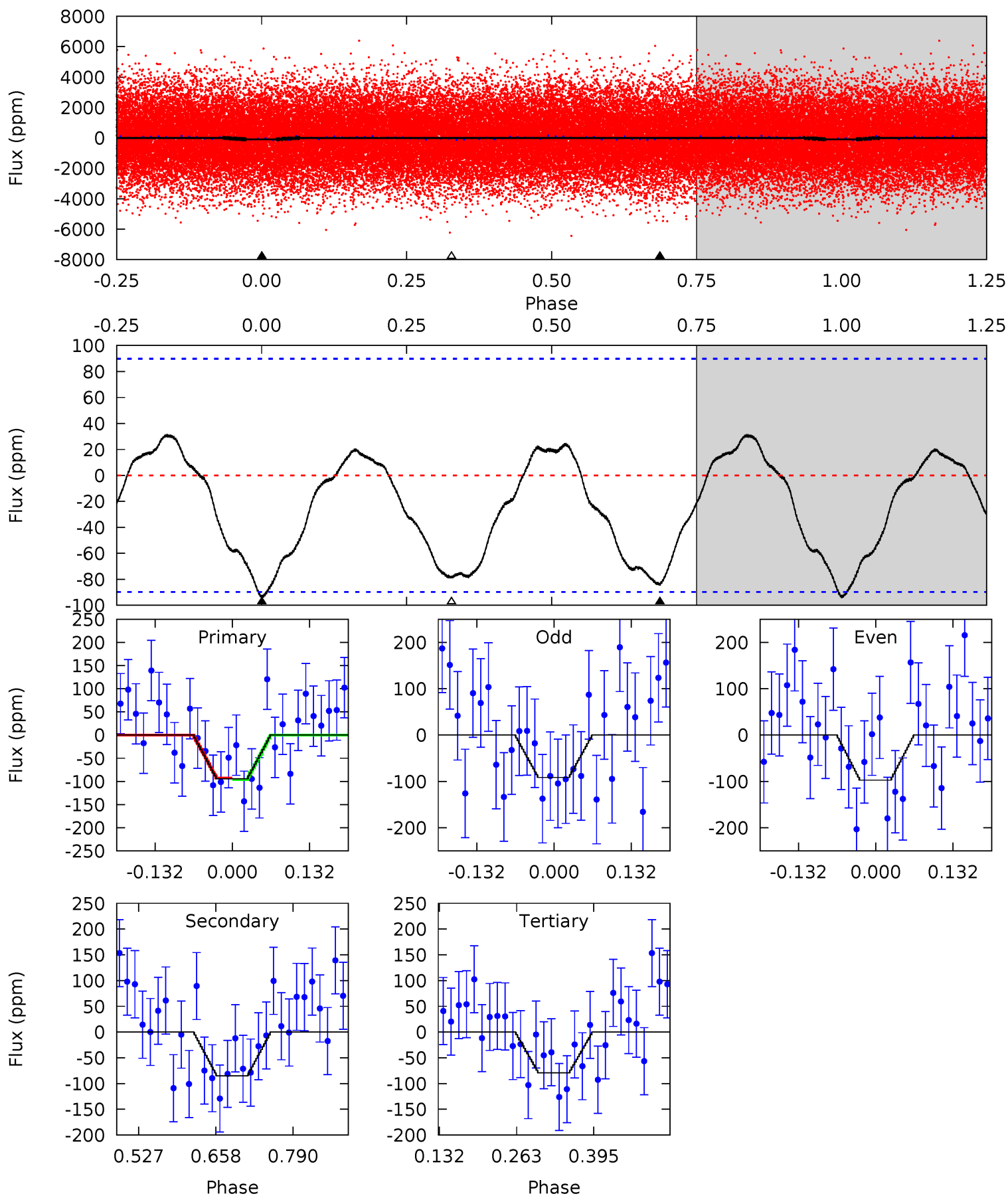
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.6	10.0	9.67	0	4.50	1.49	4.73	1.96	11.6	0.34	10.0	0.79	1.08	0.26	1.18



Alt Model-Shift Uniqueness Test

004842166-01, P = 0.512300 Days, E = 131.031613 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.74	4.25	3.98	0	4.51	1.51	1.83	0.76	4.74	0.27	4.25	0.15	0.87	0.25	0.08



Stellar Parameters For KIC 004842166

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7503^{+209}_{-314}	$4.163^{+0.105}_{-0.195}$	$0.020^{+0.200}_{-0.350}$	$1.739^{+0.563}_{-0.303}$	$1.608^{+0.220}_{-0.242}$	$0.430^{+0.211}_{-0.224}$
	+3%/-4%	+3%/-5%	+1000%/-1750%	+32%/-17%	+14%/-15%	+49%/-52%
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 004842166-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-86 ± 9	$1.93^{+1.33}_{-1.03}$	5077^{+403}_{-319}	6990^{+4846}_{-1936}	$2.649^{+9.197}_{-1.701}$
Alt.	-85 ± 20	$2.05^{+1.18}_{-1.12}$	5071^{+360}_{-302}	6637^{+5227}_{-1662}	$2.354^{+9.564}_{-1.439}$

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 $A_{obs} \gg 1.0$

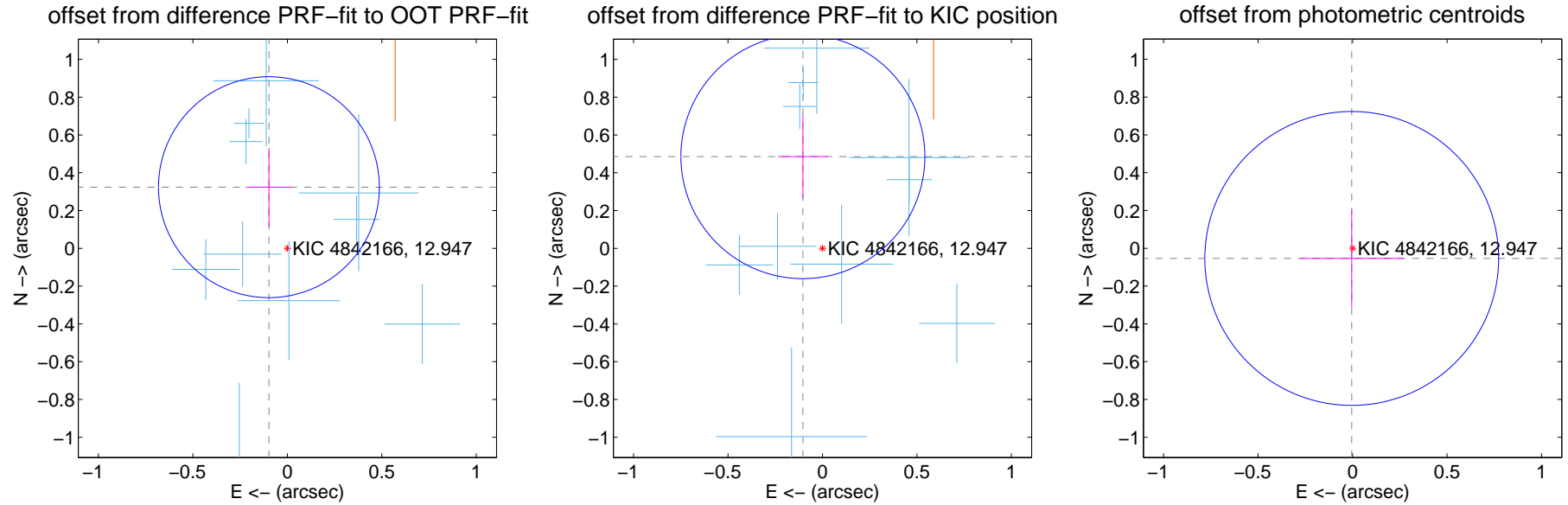
DV Centroid Data

Supplemental centroid analysis for 004842166-01. Kepler magnitude: 12.95. Transit SNR 9.93

There are 10 quarters with good PRF difference image offsets

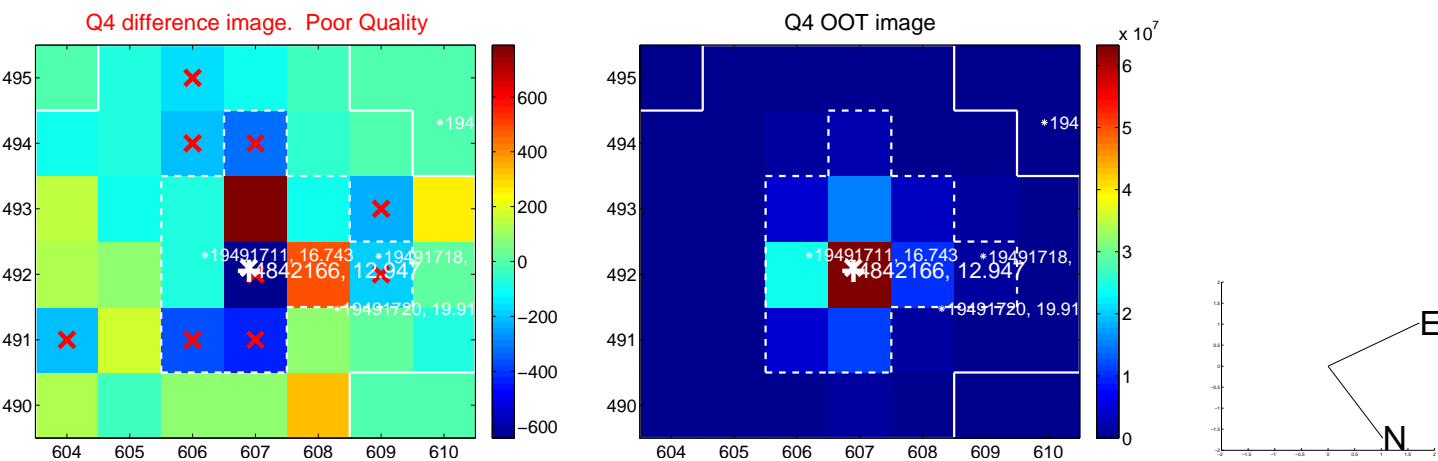
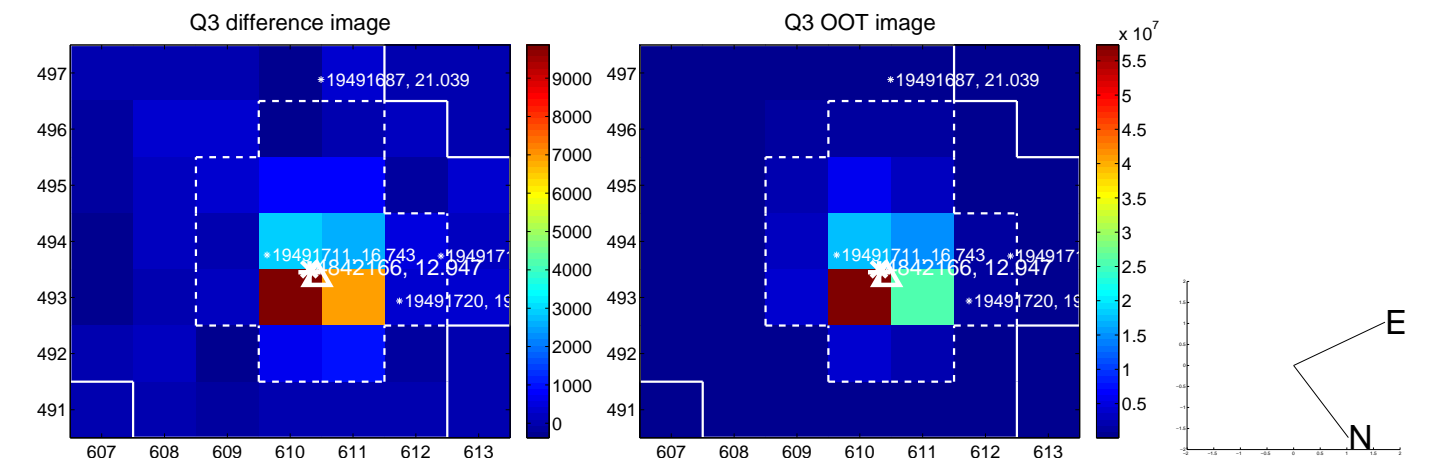
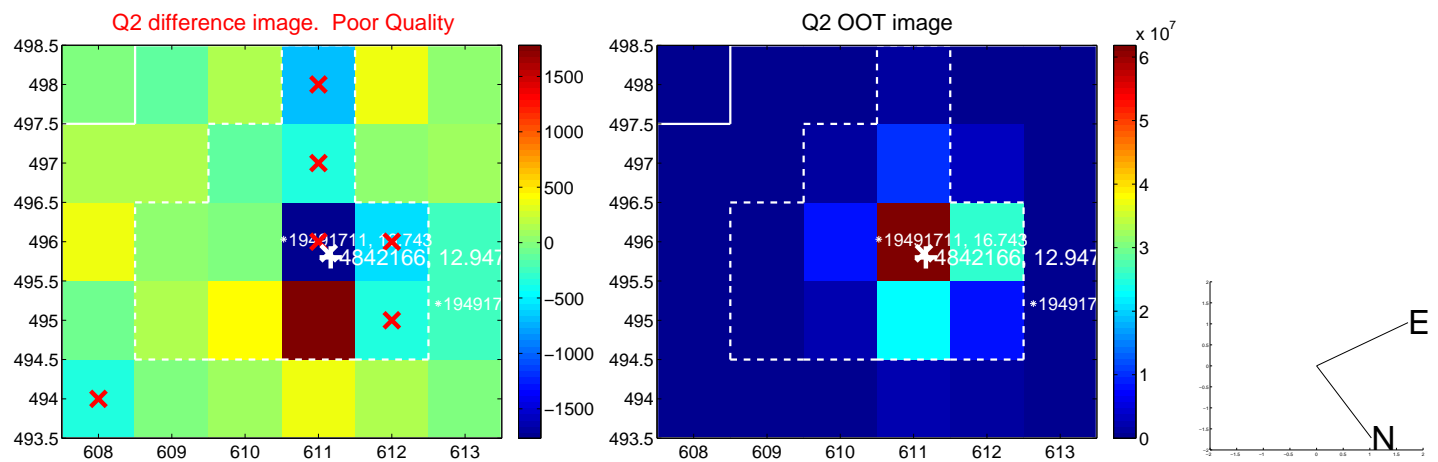
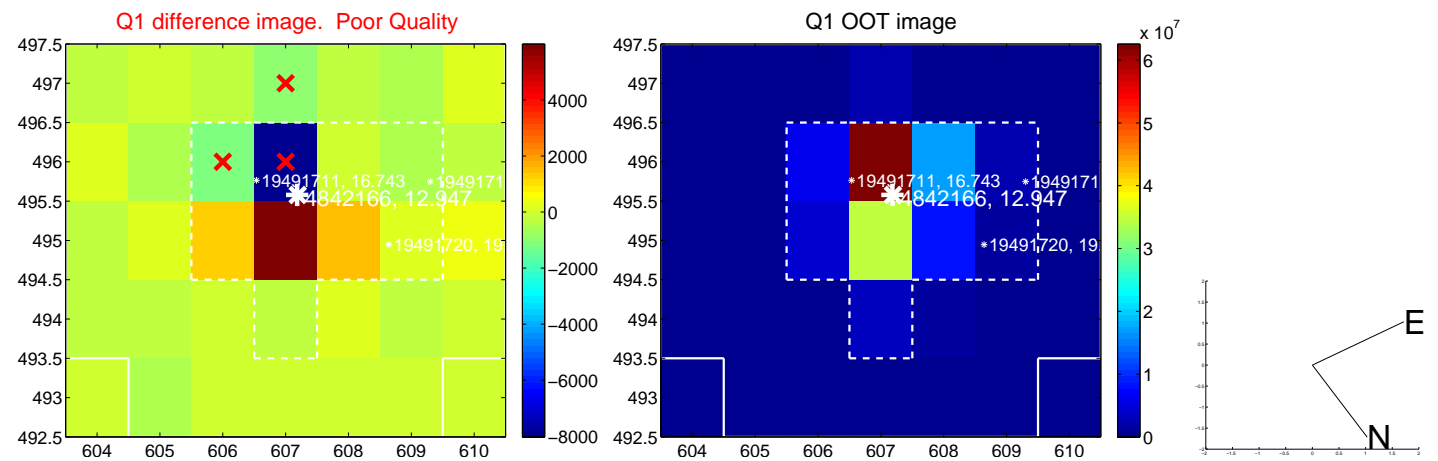
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.338 ± 0.195	1.73	0.098 ± 0.122	0.324 ± 0.208
PRF-fit source offset from KIC position	0.496 ± 0.215	2.31	0.104 ± 0.131	0.485 ± 0.221
photometric centroid source offset	0.05 ± 0.26	0.21	0.00 ± 0.28	-0.05 ± 0.26

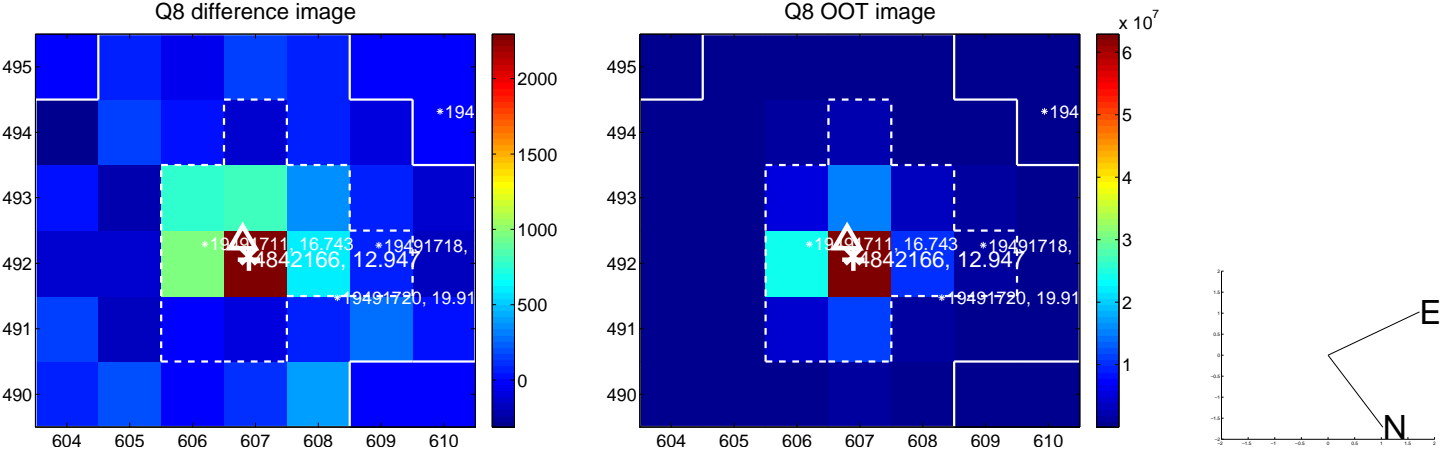
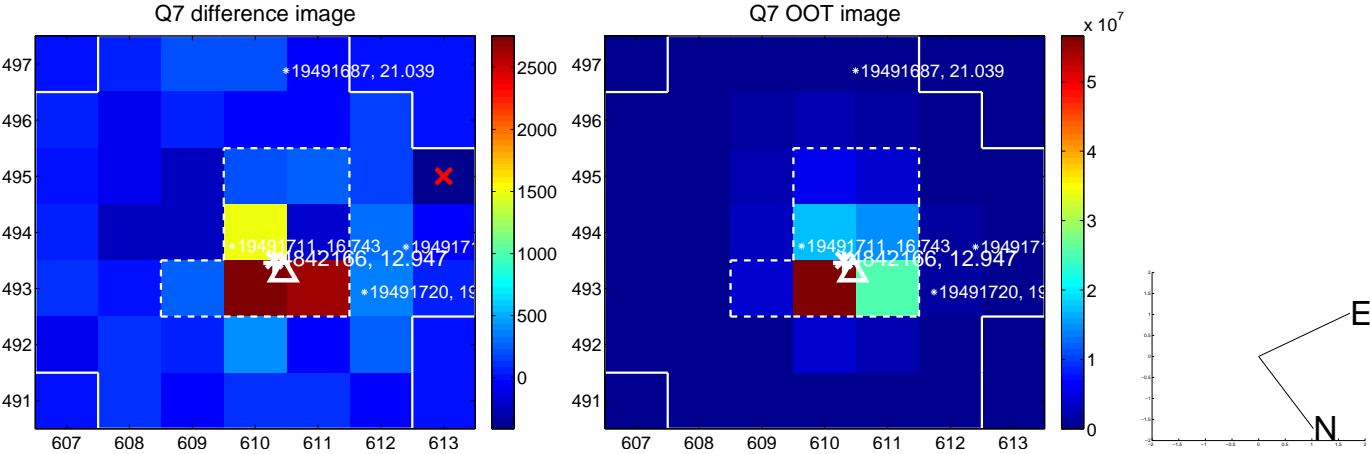
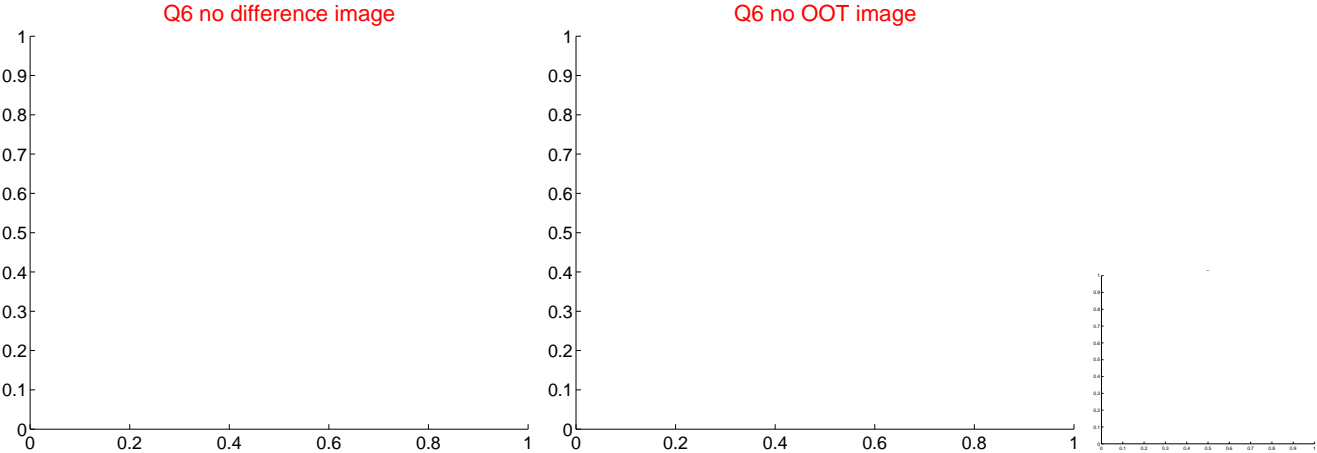
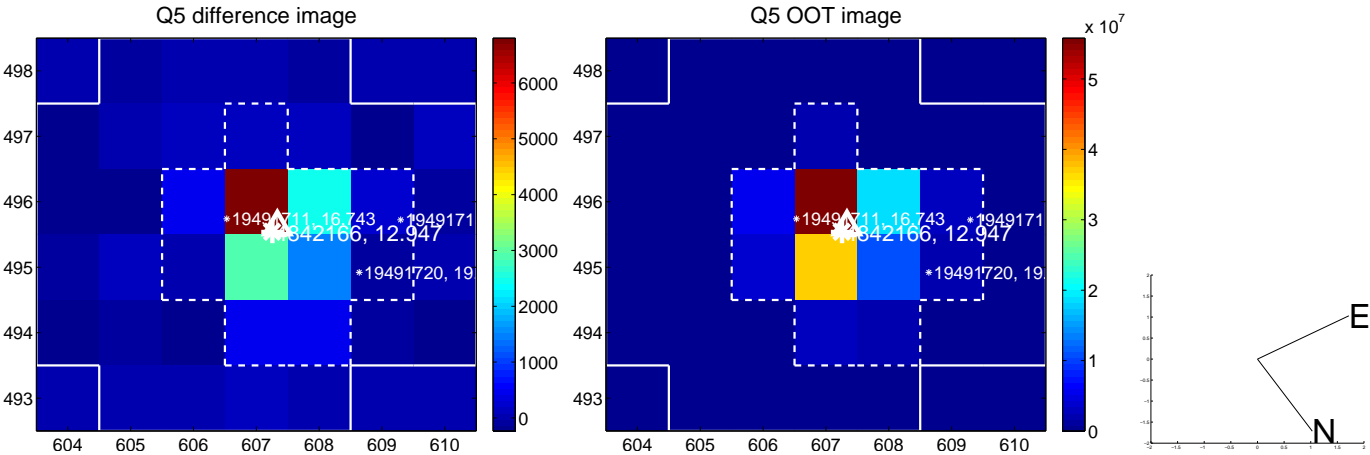


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

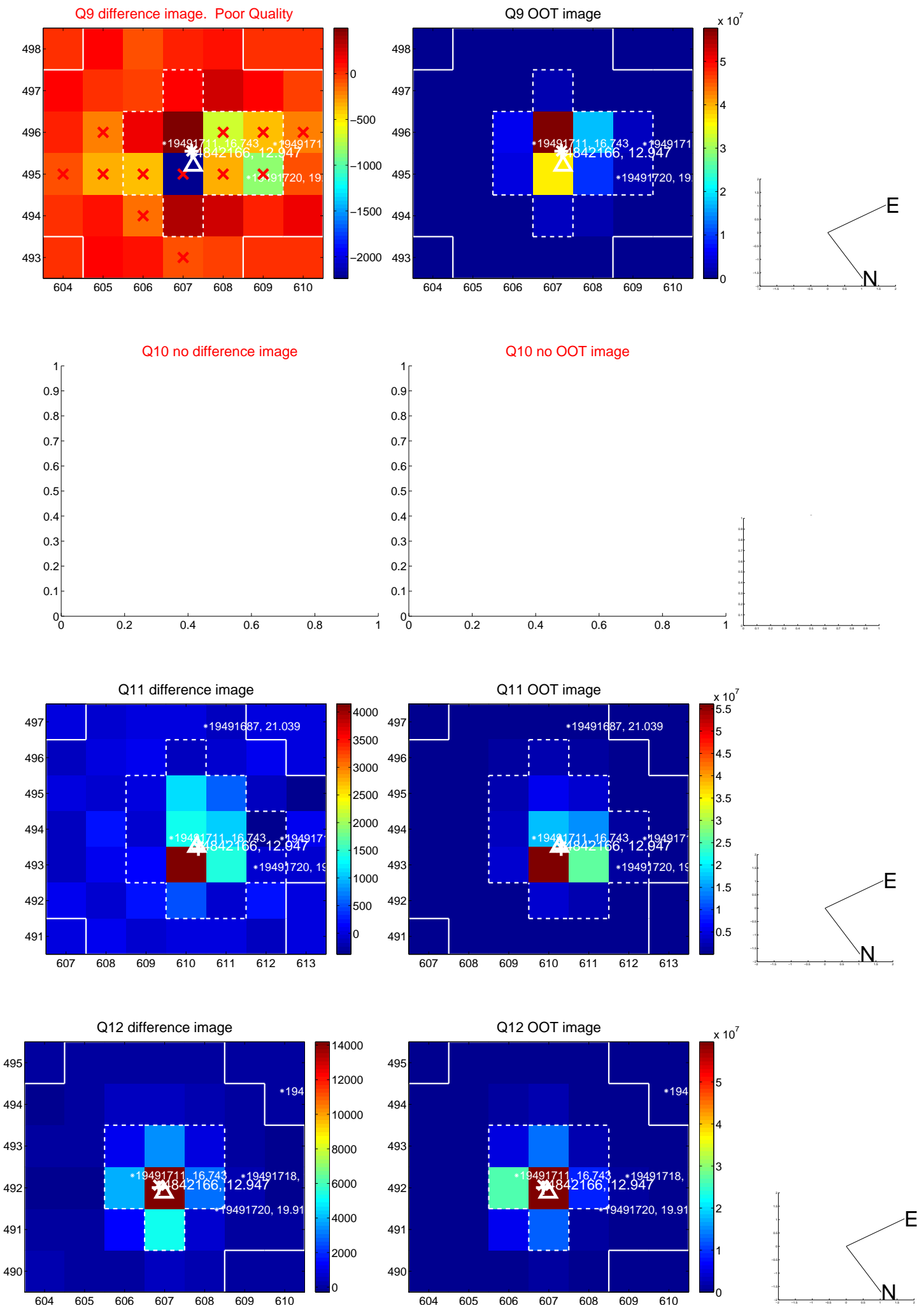
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



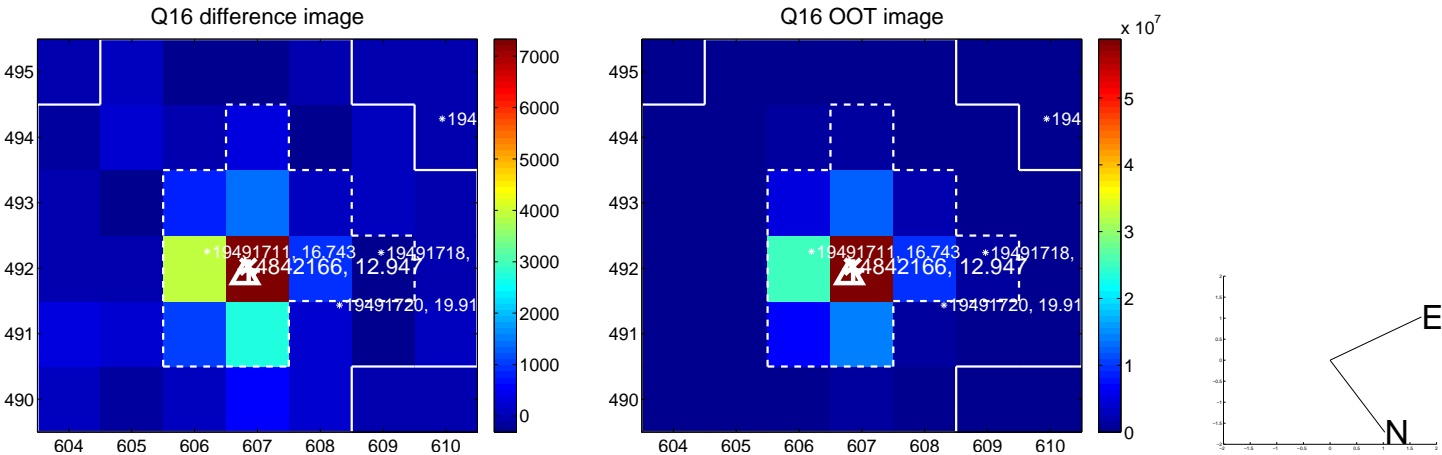
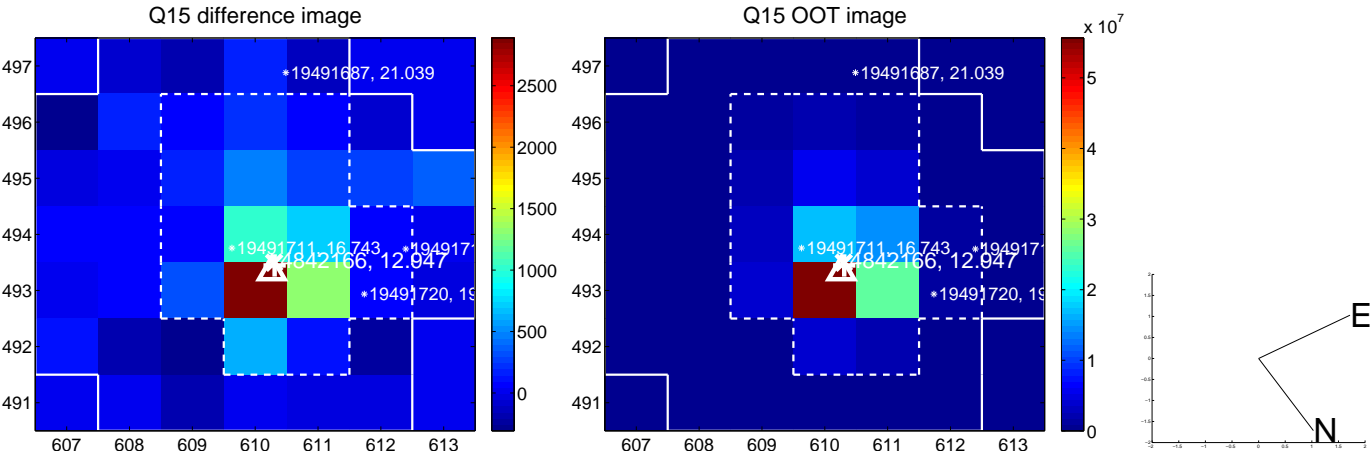
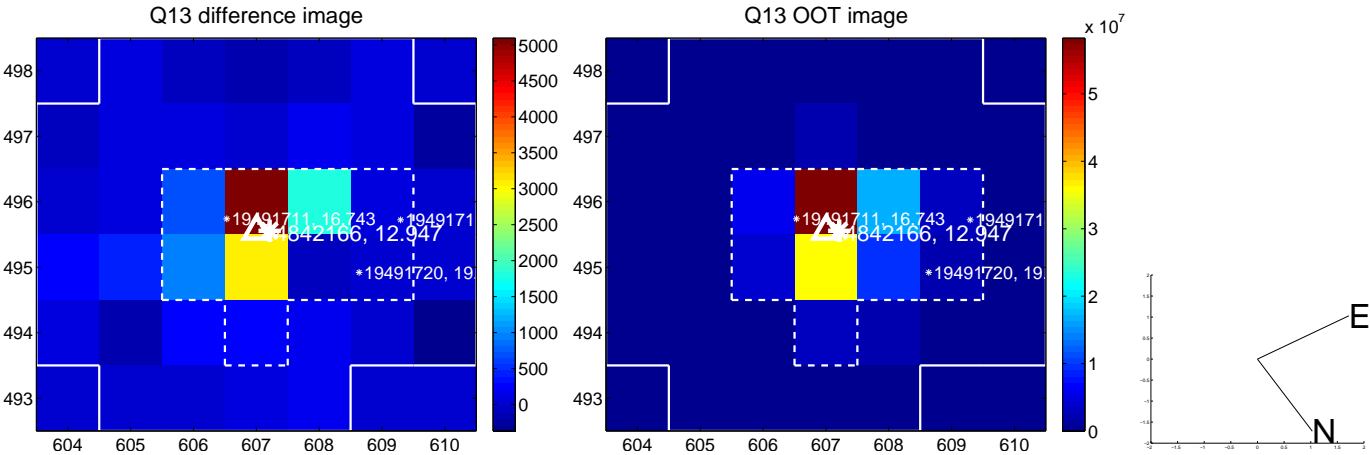
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



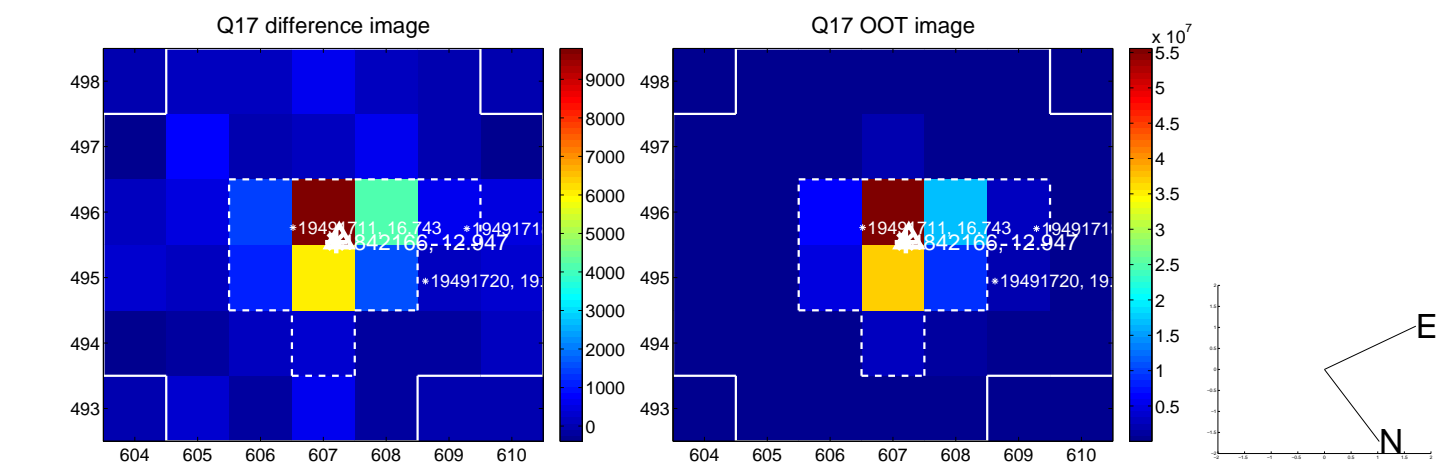
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



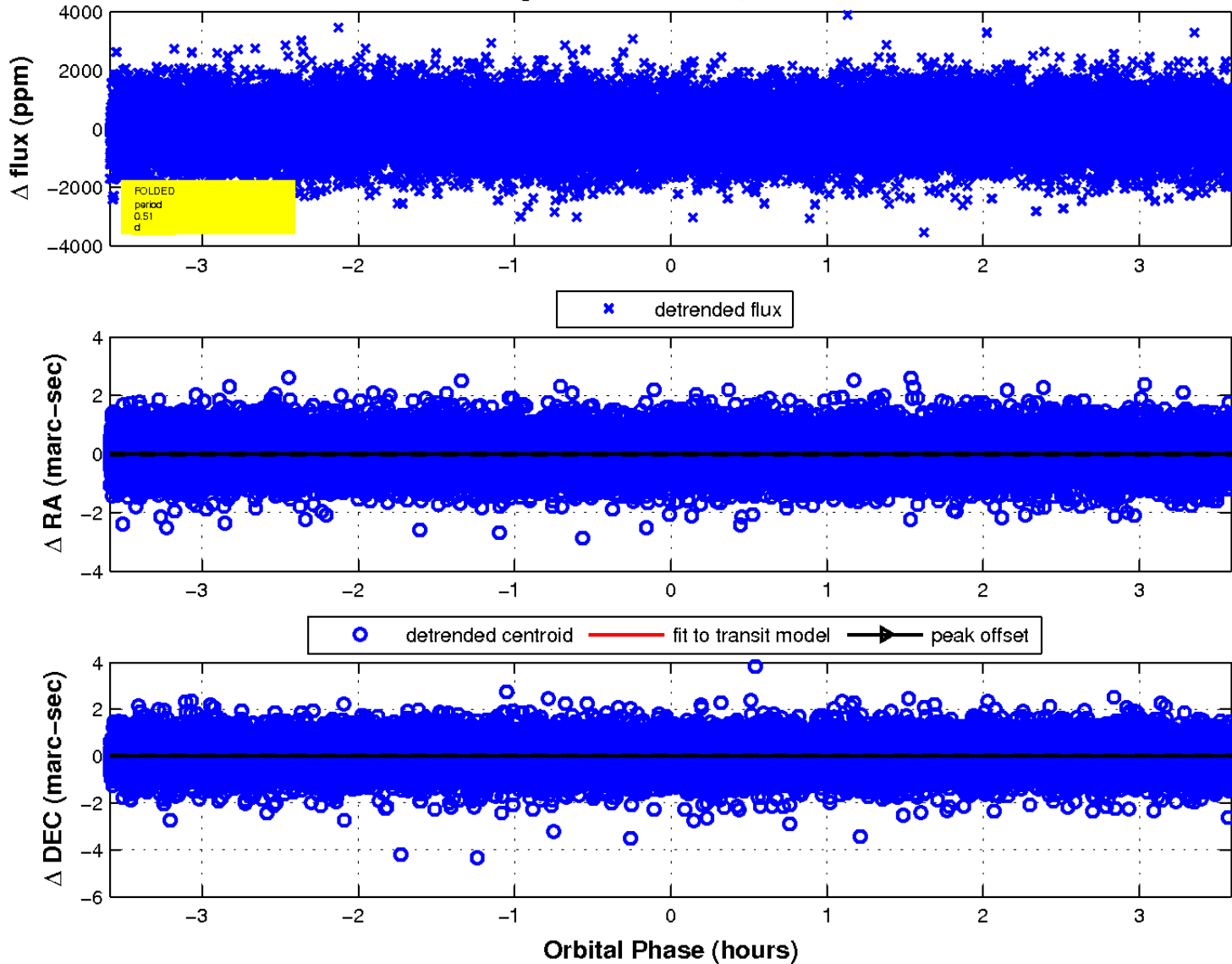
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

