

KIC 006220010

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})
006220010-01	OBS	No	0.523979	131.992865	49.5	1.346	9.8	7.9	1.98	7542	1.42	50201.76

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006220010-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_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.

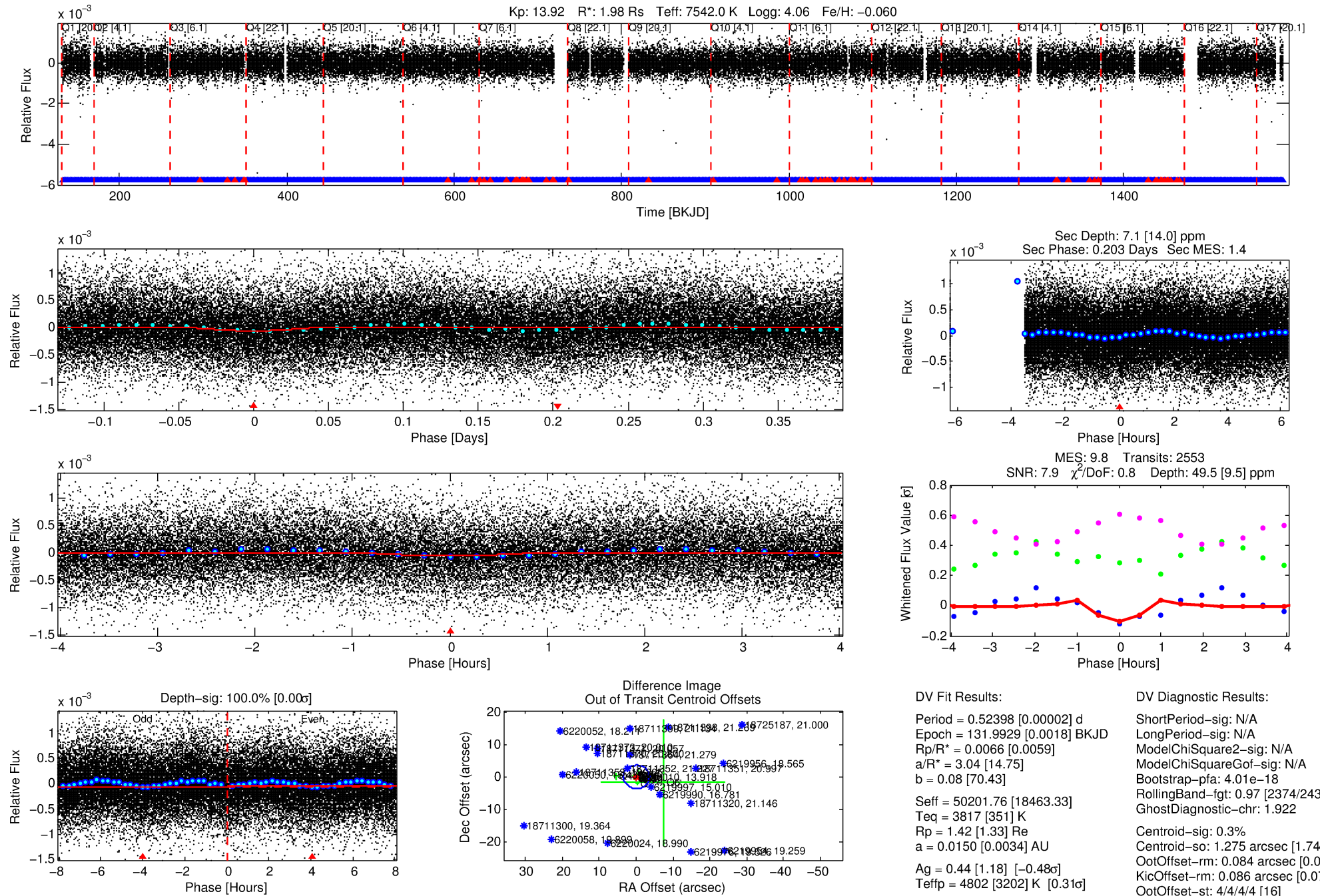
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006220010-01

No Significant Match Found

DV One-Page Summary

KIC: 6220010 Candidate: 1 of 1 Period: 0.524 d



DV Fit Results:

Period = 0.52398 [0.00002] d
Epoch = 131.9929 [0.0018] BKJD
Rp/R* = 0.0066 [0.0059]
a/R* = 3.04 [14.75]
b = 0.08 [70.43]
Seff = 50201.76 [18463.33]
Teff = 3817 [351] K
Rp = 1.42 [1.33] Re
a = 0.0150 [0.0034] AU
Ag = 0.44 [1.18] [-0.48 σ]
Teffp = 4802 [3202] K [0.31 σ]

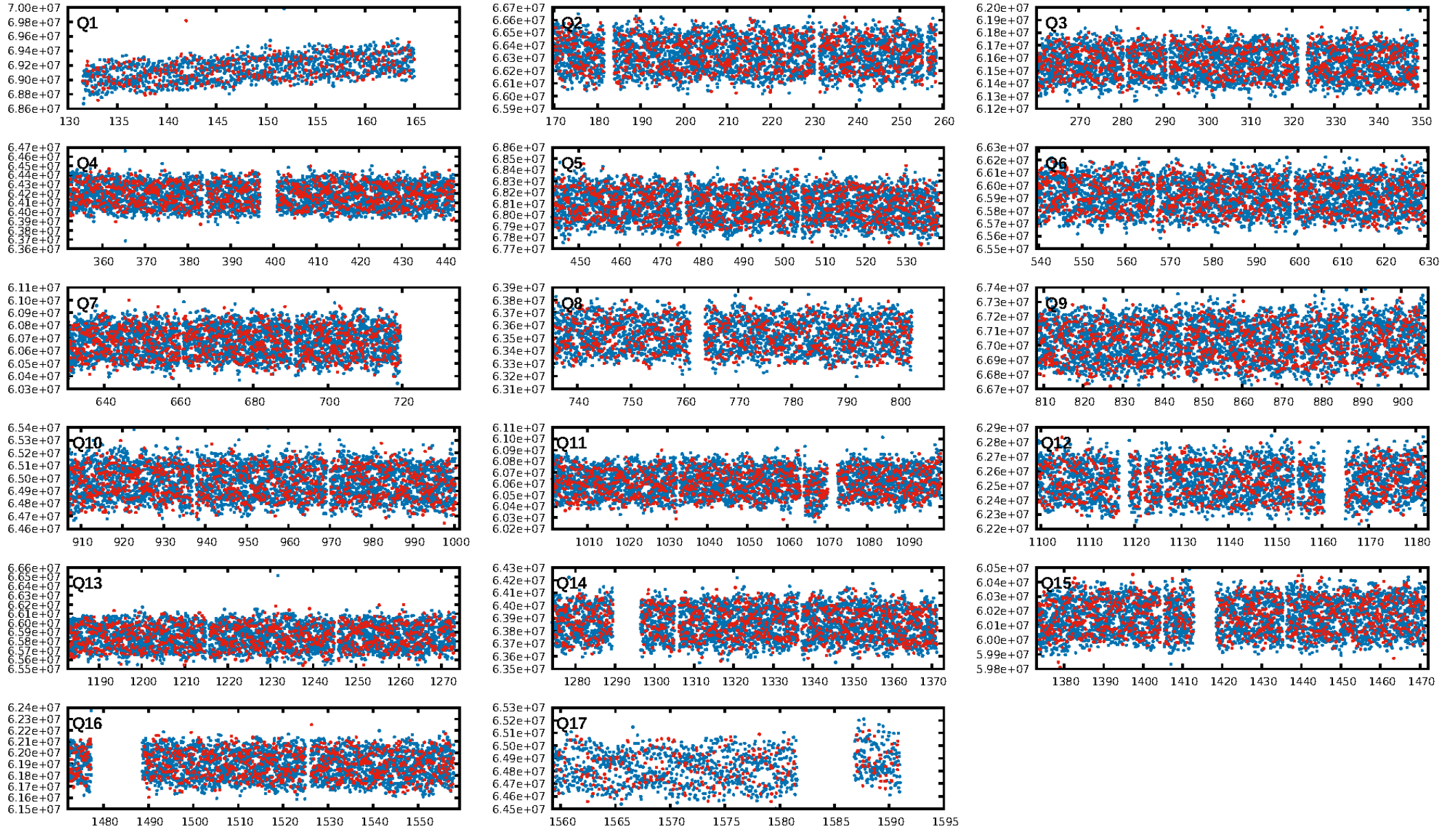
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.01e-18
RollingBand-fgt: 0.97 [2374/2439]
GhostDiagnostic-chr: 1.922
Centroid-sig: 0.3%
Centroid-so: 1.275 arcsec [1.74 σ]
OotOffset-rm: 0.084 arcsec [0.07 σ]
KicOffset-rm: 0.086 arcsec [0.07 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.50 [8/16]
DiffImageOverlap-fno: 1.00 [17/17]

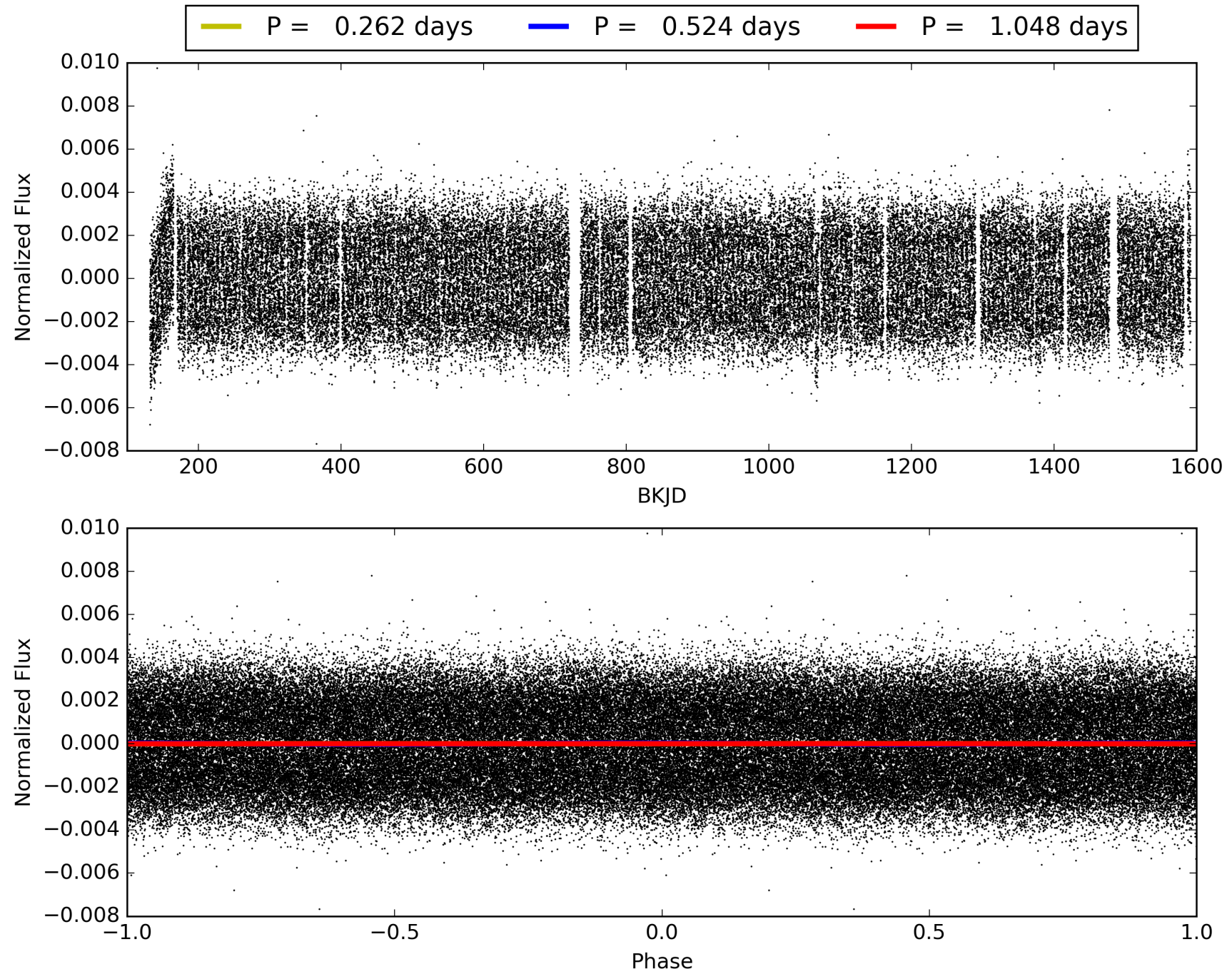
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:10:44 Z

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

TCE 006220010-01, PDC Light Curves

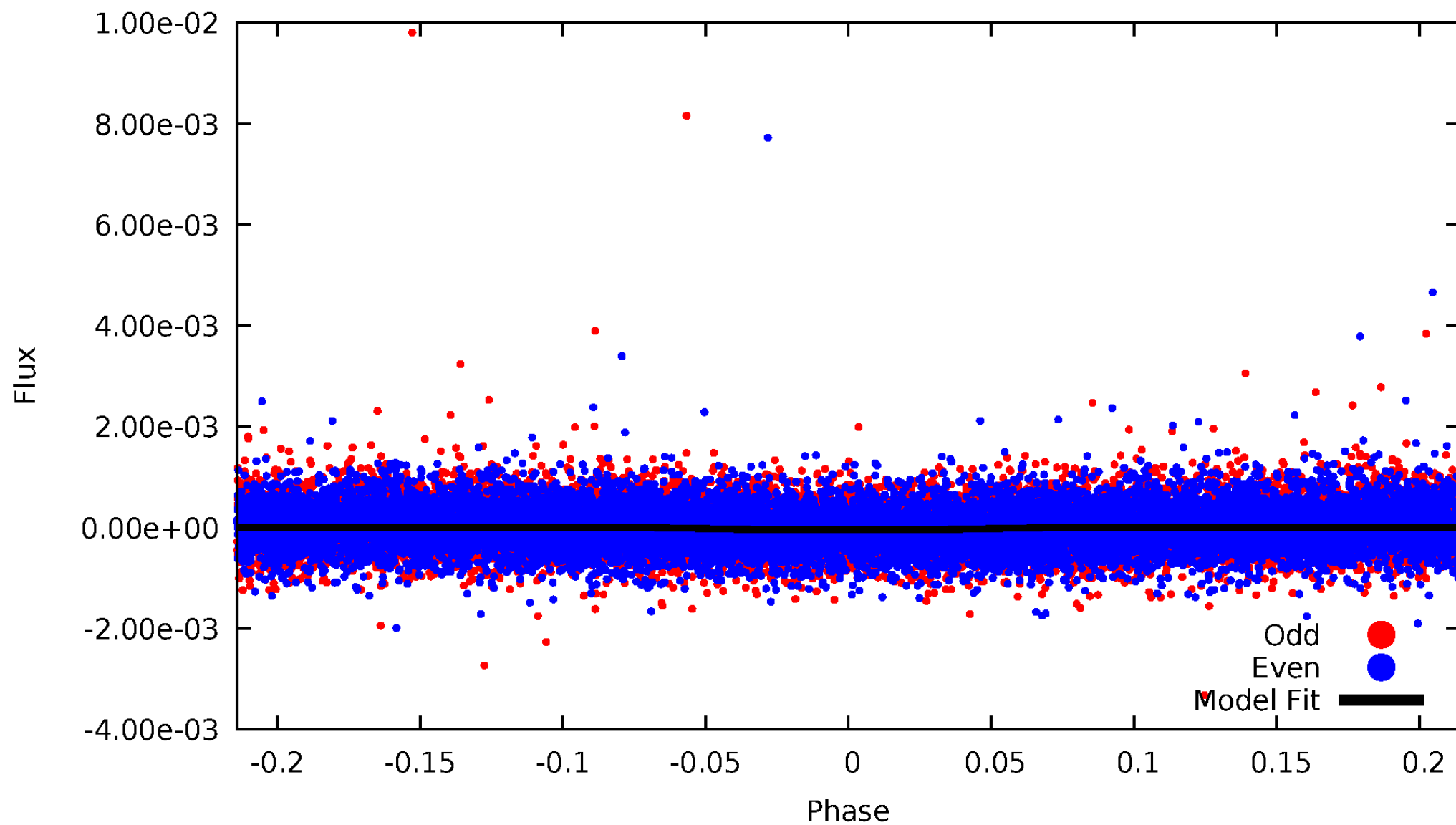


TCE 006220010-01



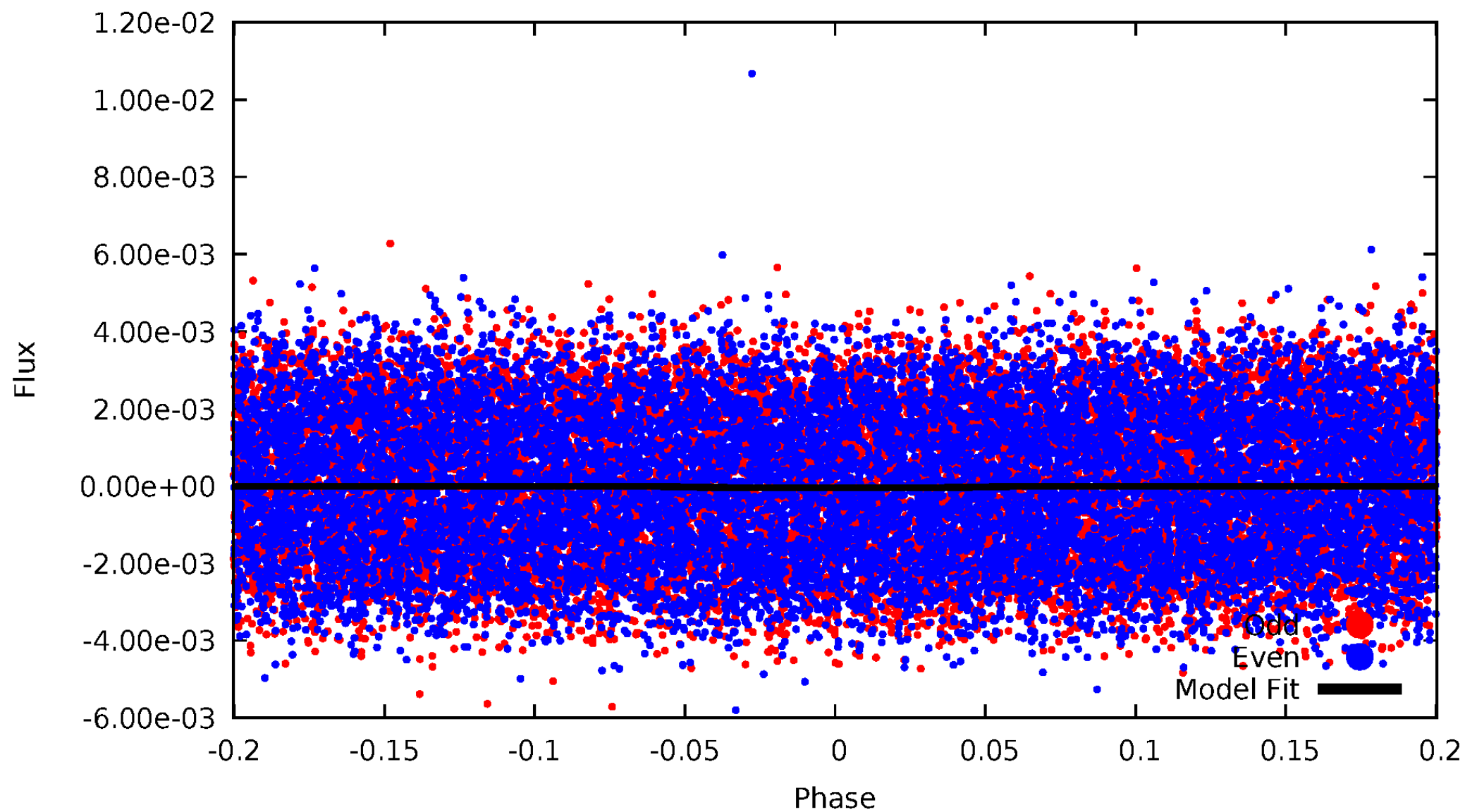
DV Odd/Even

TCE 006220010-01



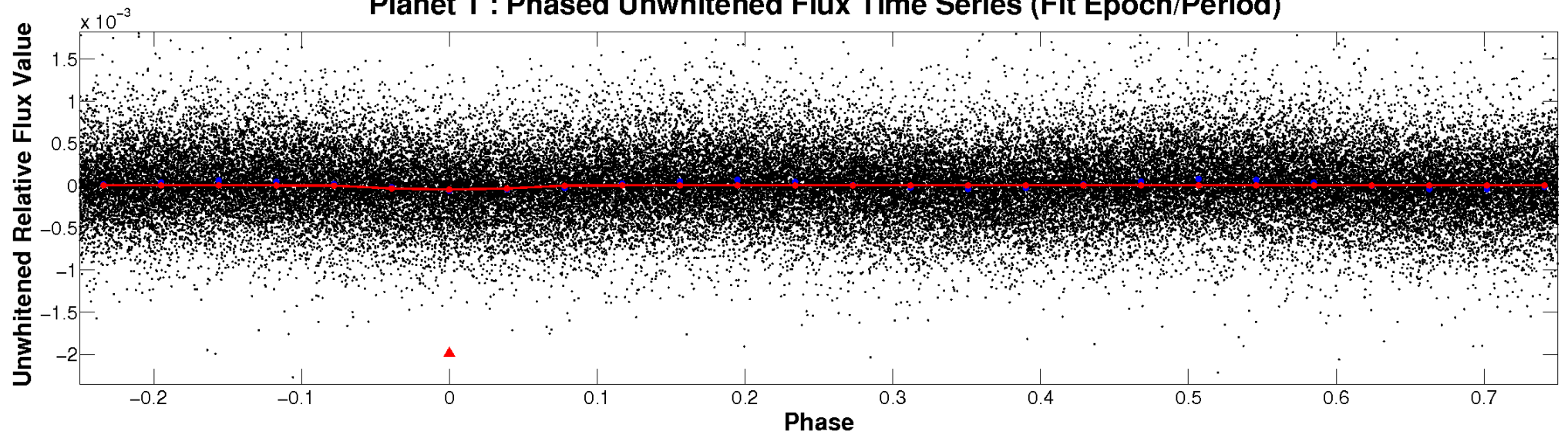
ALT Odd/Even

TCE 006220010-01

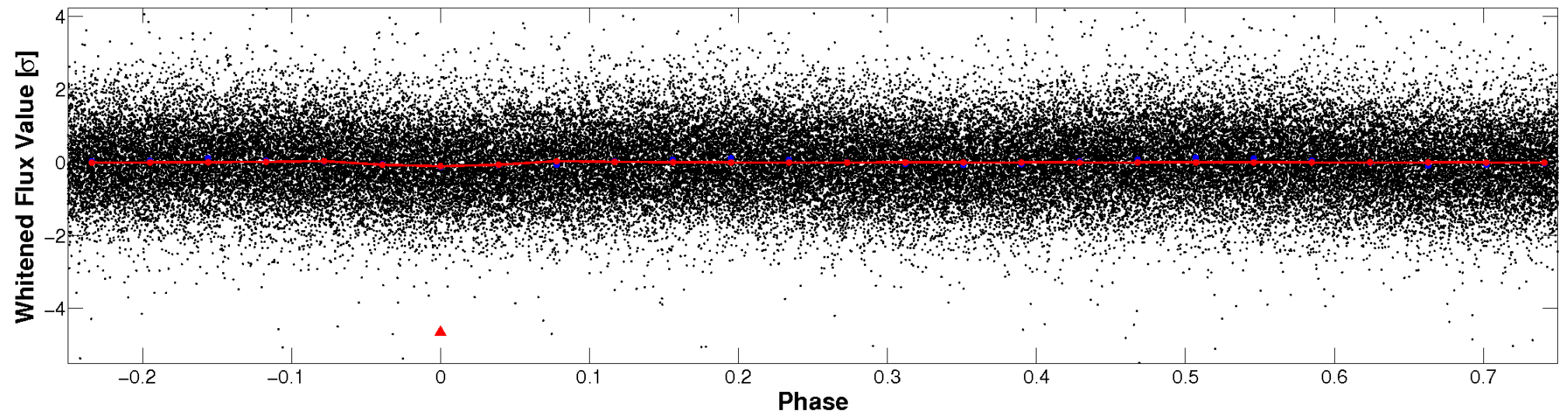


Non-Whitened Vs. Whitened Light Curve

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

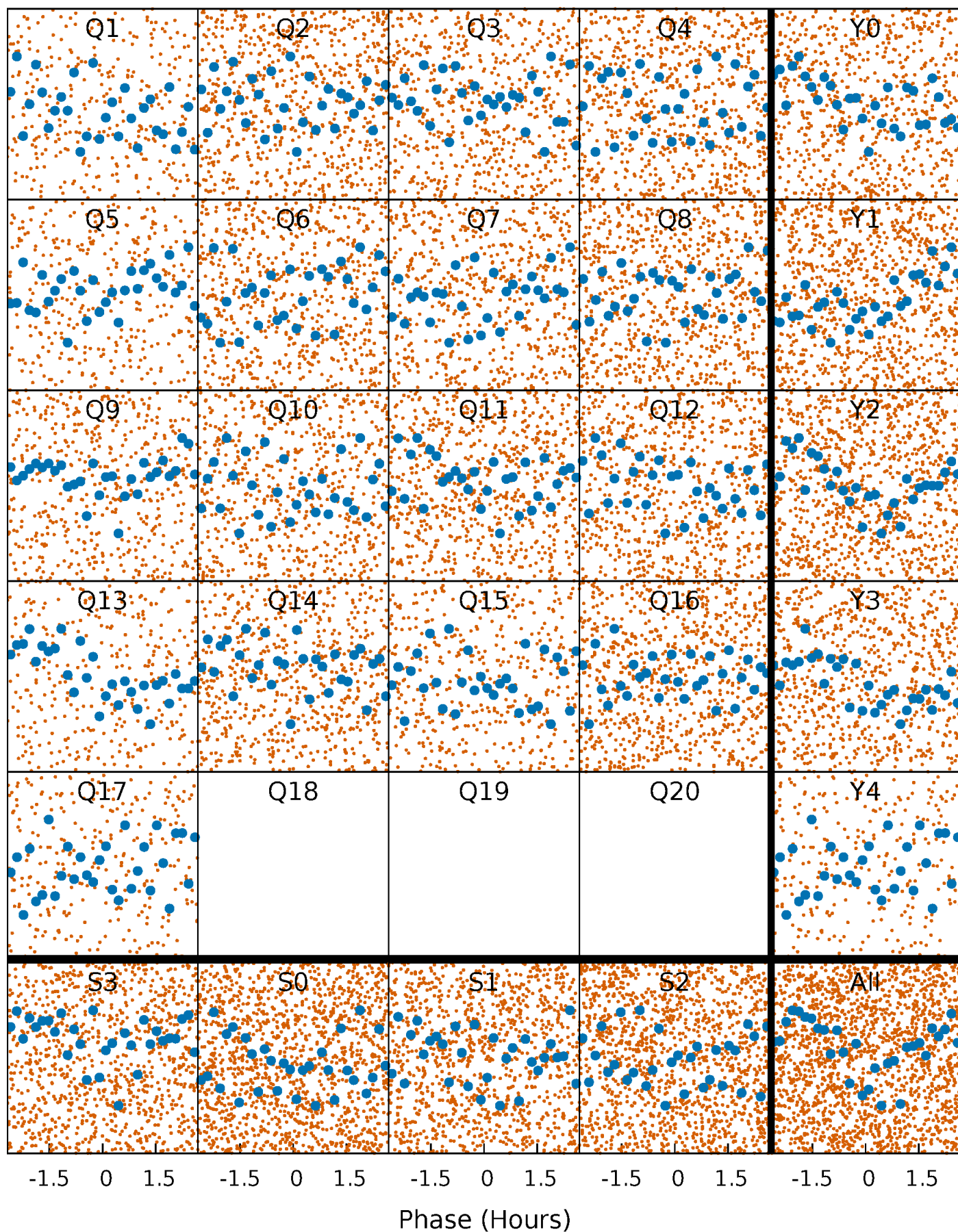


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



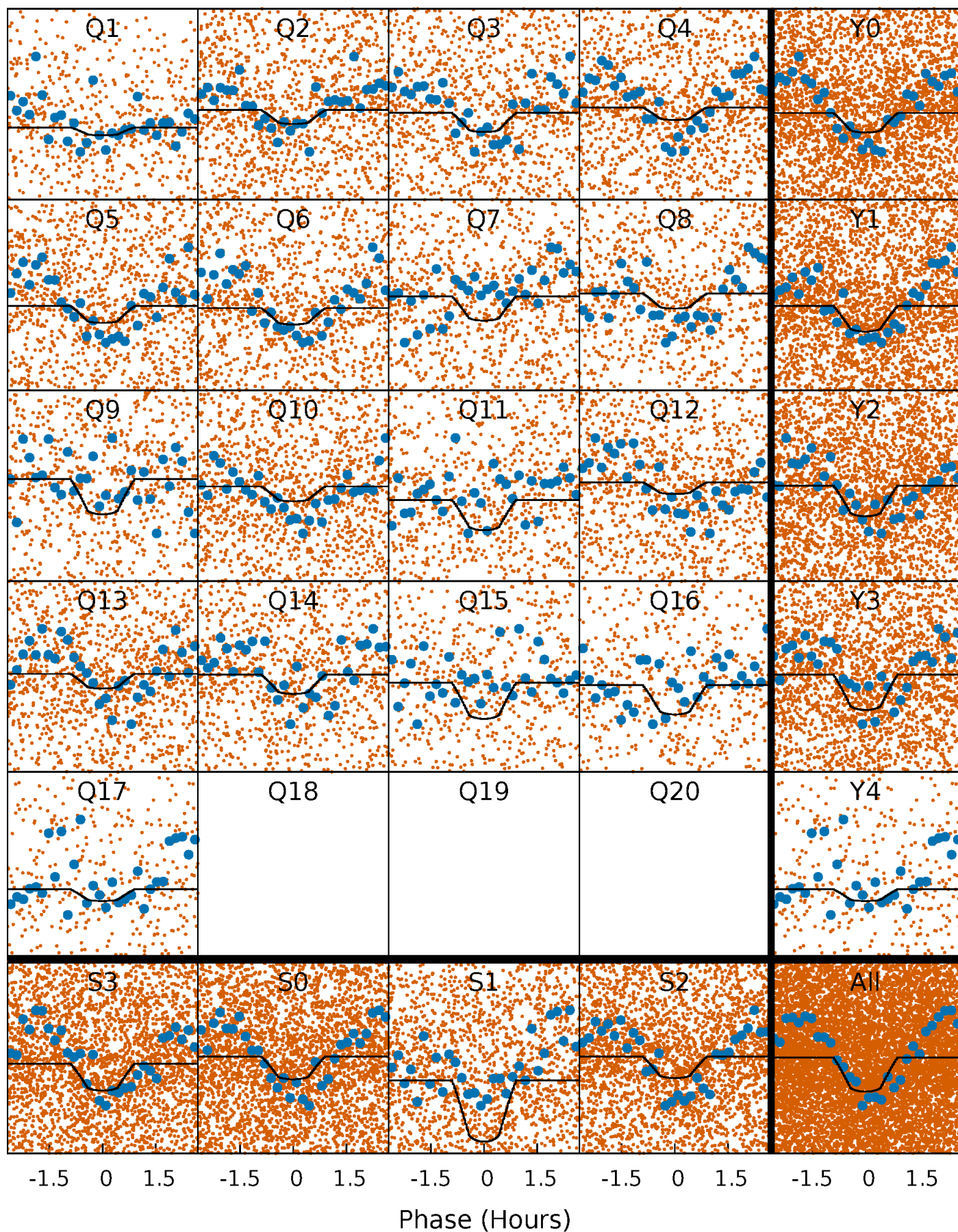
PDC Quarter-Phased Transit Curves

TCE 006220010-01 P= 0.523979 Days $T_0=131.992865$ (BKJD)



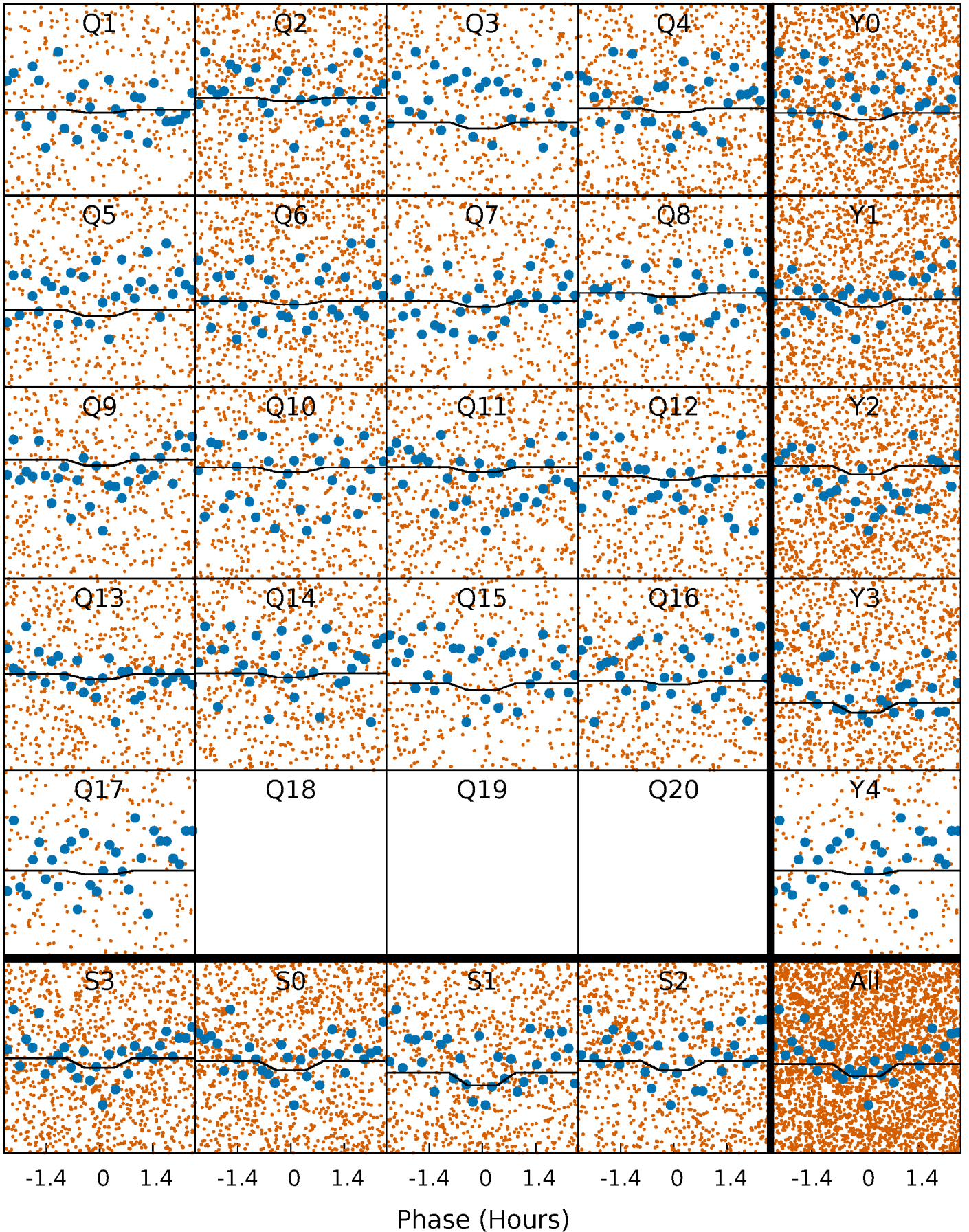
DV Quarter-Phased Transit Curves

TCE 006220010-01 P= 0.523979 Days $T_0=131.992865$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

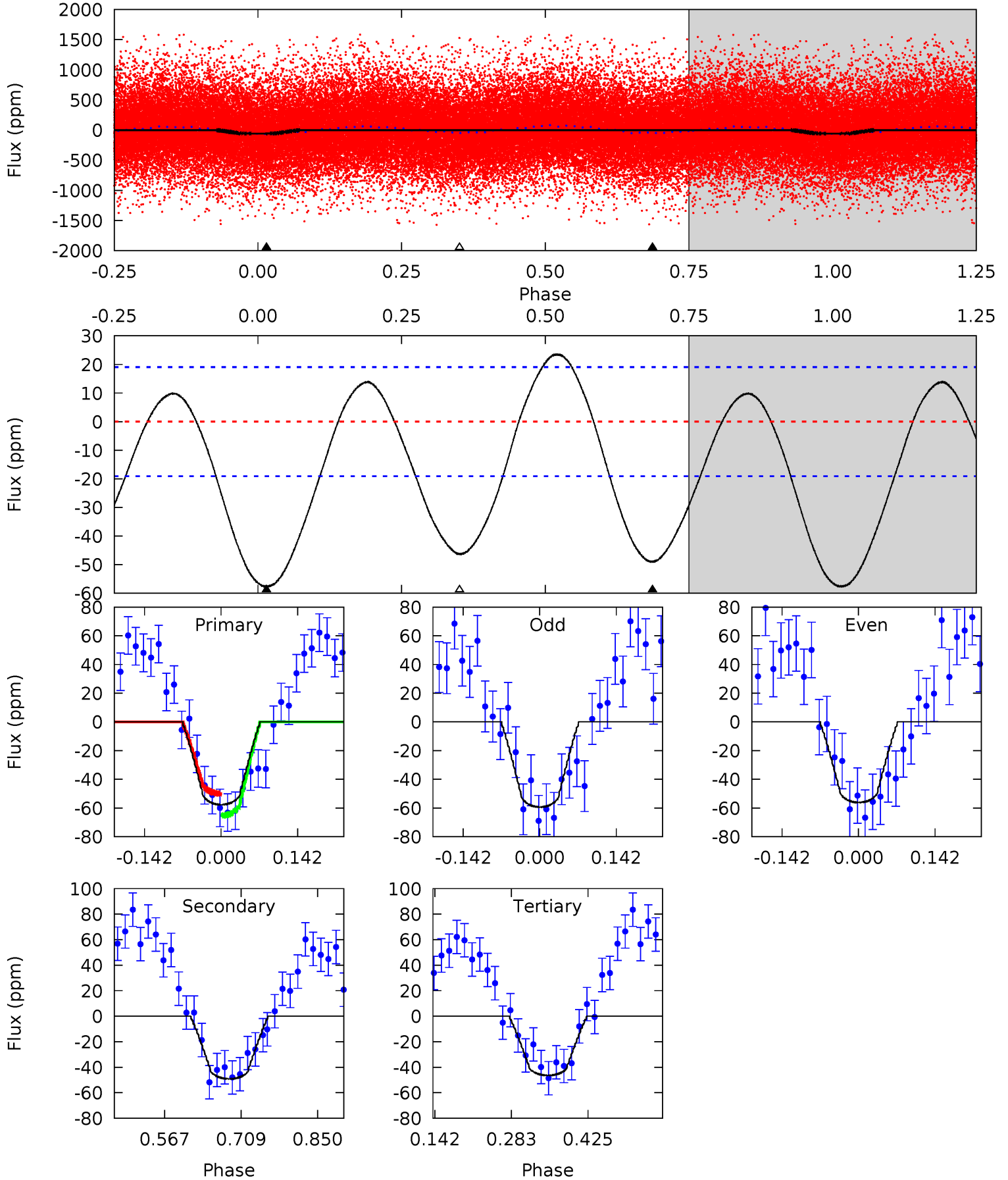
TCE 006220010-01 P= 0.523989 Days $T_0=131.992489$ (BKJD)



DV Model-Shift Uniqueness Test

006220010-01, P = 0.523979 Days, E = 131.468886 Days

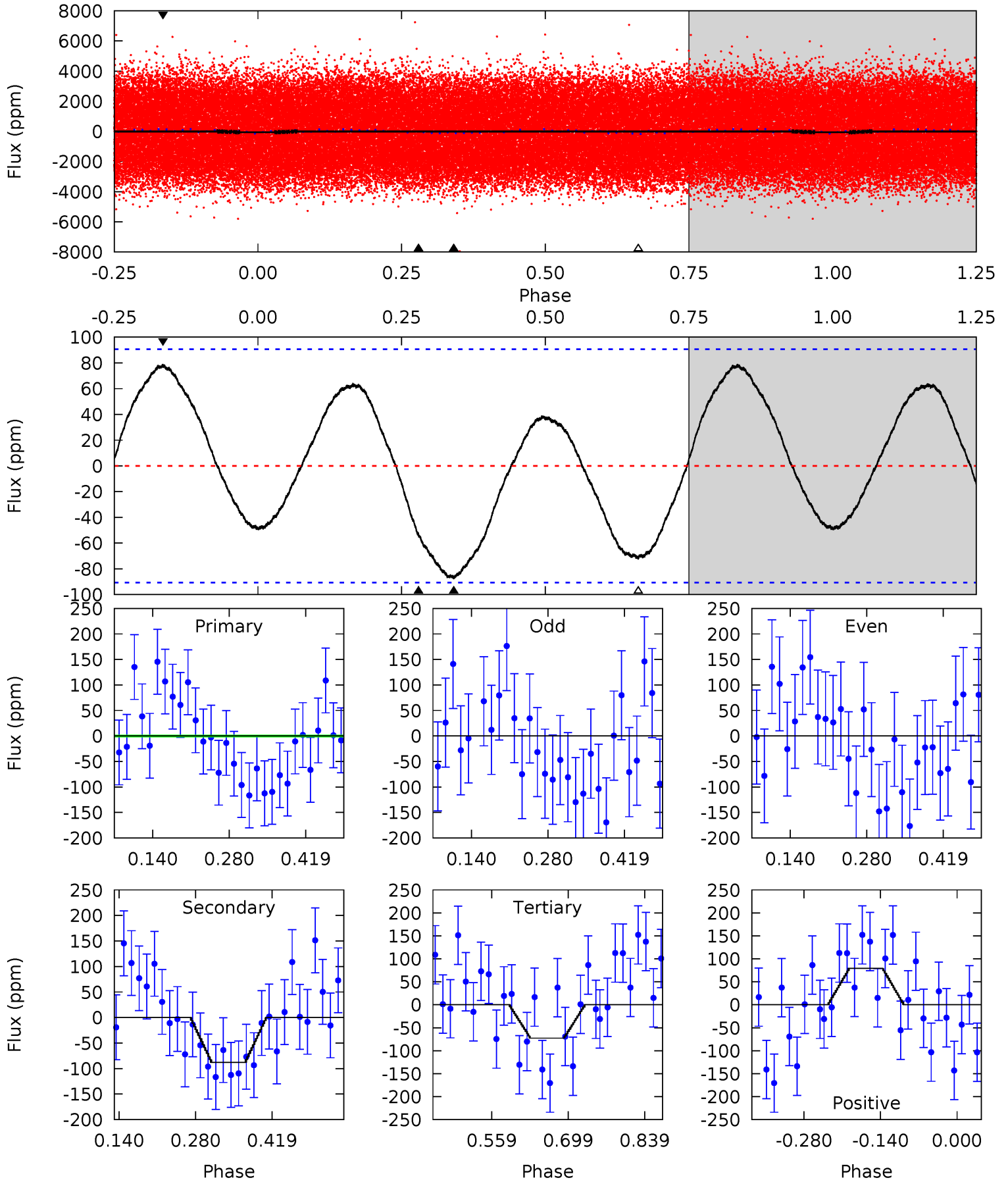
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	11.6	10.9	0	4.49	1.47	5.48	2.67	13.6	0.64	11.6	0.37	1.07	0.29	1.80



Alt Model-Shift Uniqueness Test

006220010-01, P = 0.523989 Days, E = 131.468500 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.73	4.37	3.61	3.93	4.49	1.48	2.19	-0.88	-1.20	0.76	0.44	0.05	1.16	0.47	0.02



Stellar Parameters For KIC 006220010

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7542^{+235}_{-314}	$4.063^{+0.181}_{-0.165}$	$-0.060^{+0.200}_{-0.350}$	$1.979^{+0.517}_{-0.465}$	$1.652^{+0.200}_{-0.275}$	$0.300^{+0.268}_{-0.142}$
	+3%/-4%	+4%/-4%	+333%/-583%	+26%/-23%	+12%/-17%	+89%/-47%
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 006220010-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-49 ± 4	$1.60^{+1.25}_{-1.01}$	5308^{+390}_{-388}	6876^{+8177}_{-2055}	$2.294^{+14.895}_{-1.549}$
Alt.	-88 ± 20	$1.63^{+1.21}_{-1.03}$	5294^{+397}_{-355}	8200^{+11587}_{-2412}	$3.879^{+25.257}_{-2.562}$

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 $A_{\text{obs}} \gg 1.0$

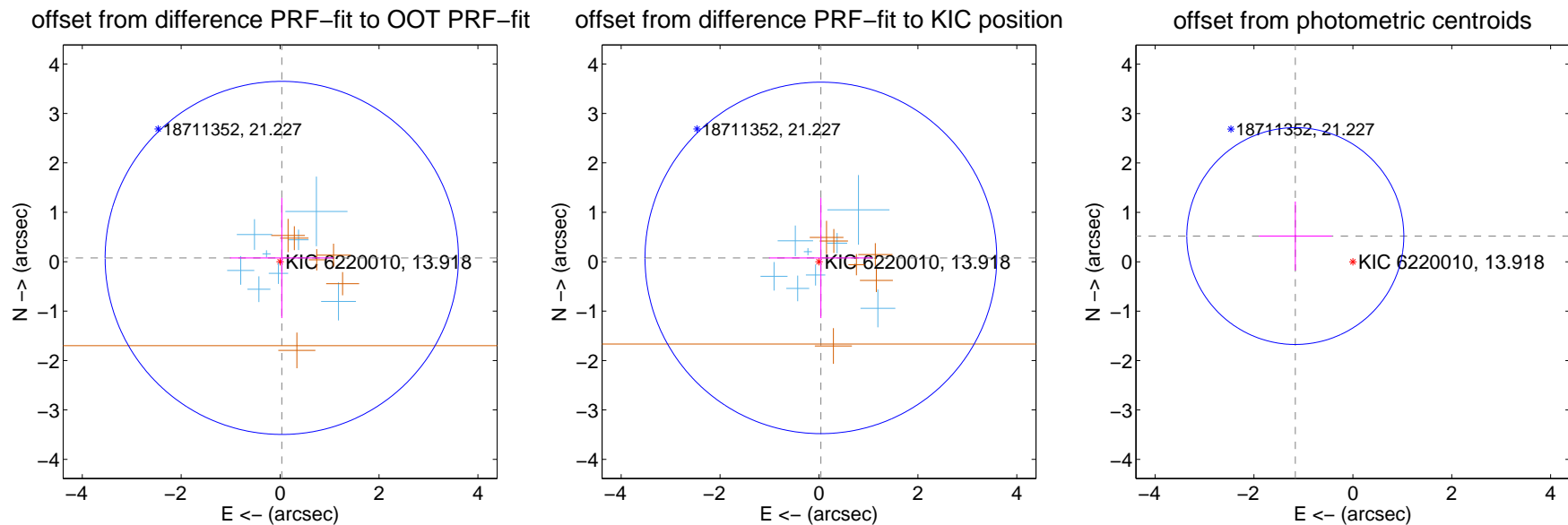
DV Centroid Data

Supplemental centroid analysis for 006220010-01. Kepler magnitude: 13.92. Transit SNR 7.90

There are 8 quarters with good PRF difference image offsets

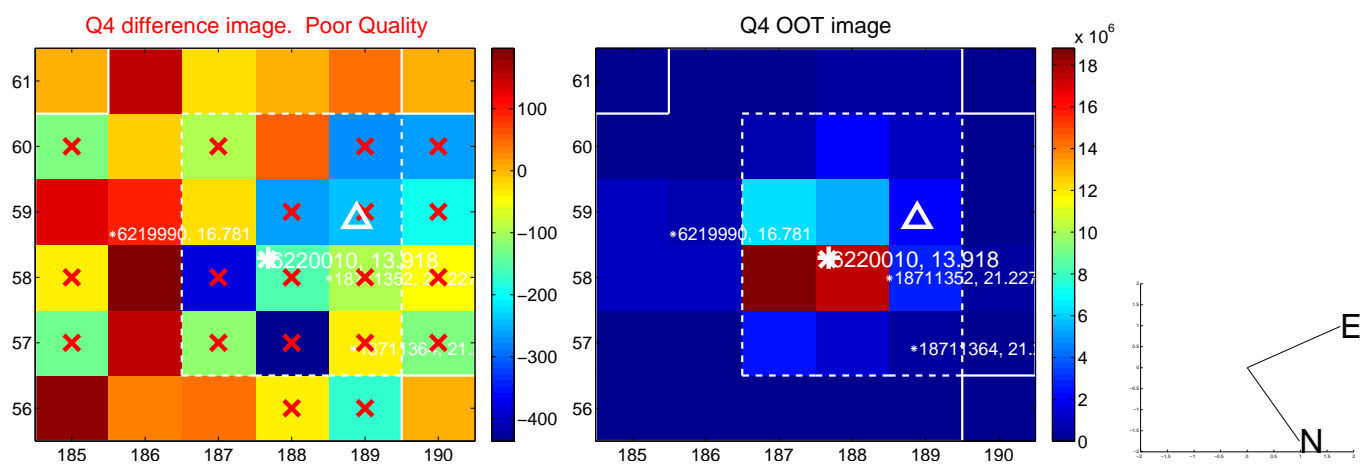
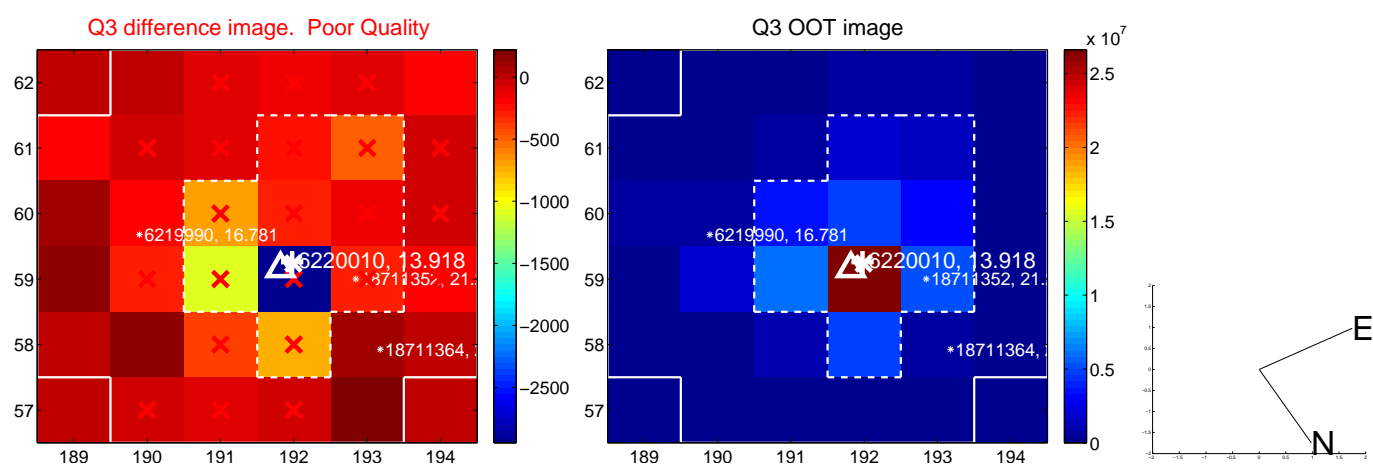
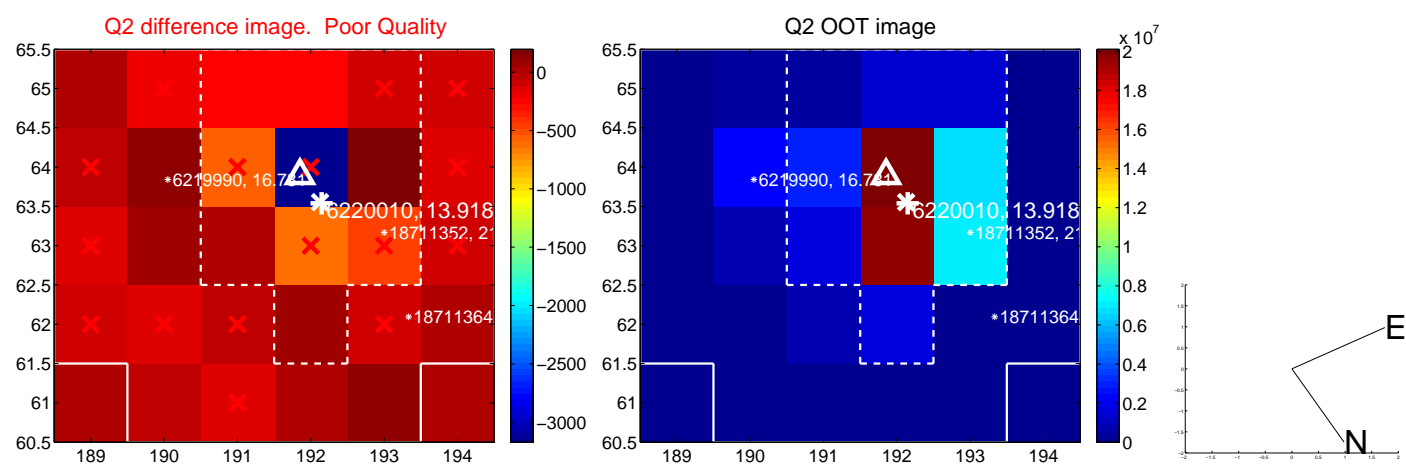
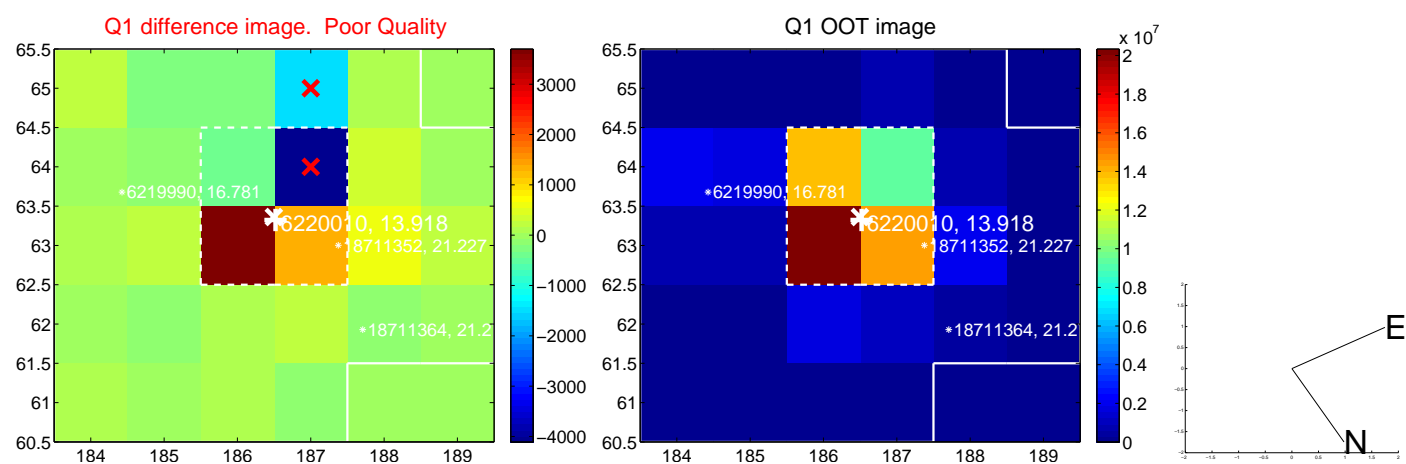
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.084 ± 1.191	0.07	-0.034 ± 1.049	0.077 ± 1.217
PRF-fit source offset from KIC position	0.086 ± 1.185	0.07	-0.038 ± 1.049	0.077 ± 1.217
photometric centroid source offset	1.28 ± 0.73	1.74	1.16 ± 0.74	0.52 ± 0.70

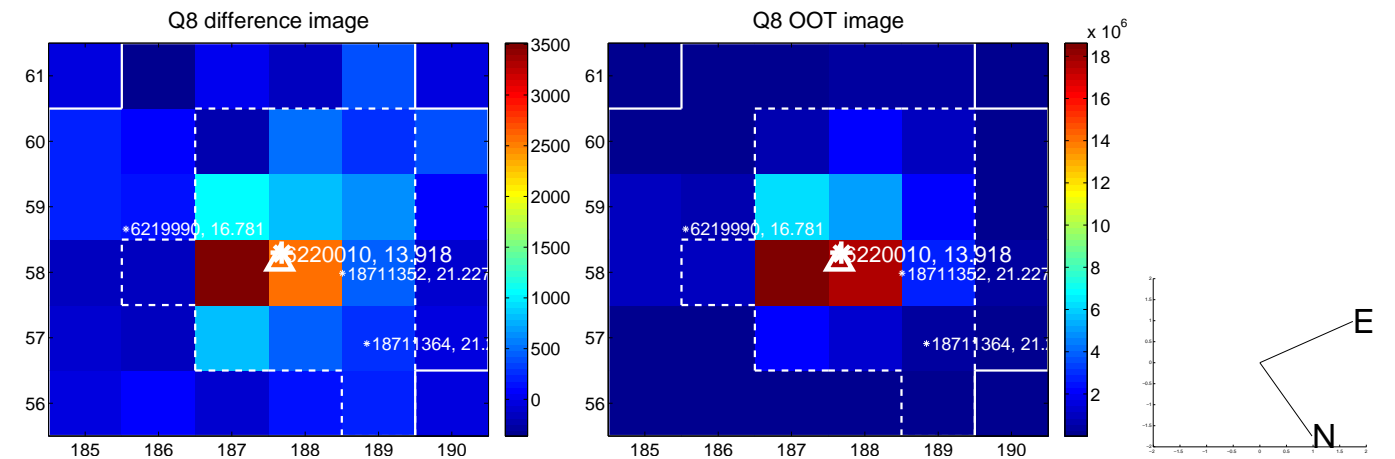
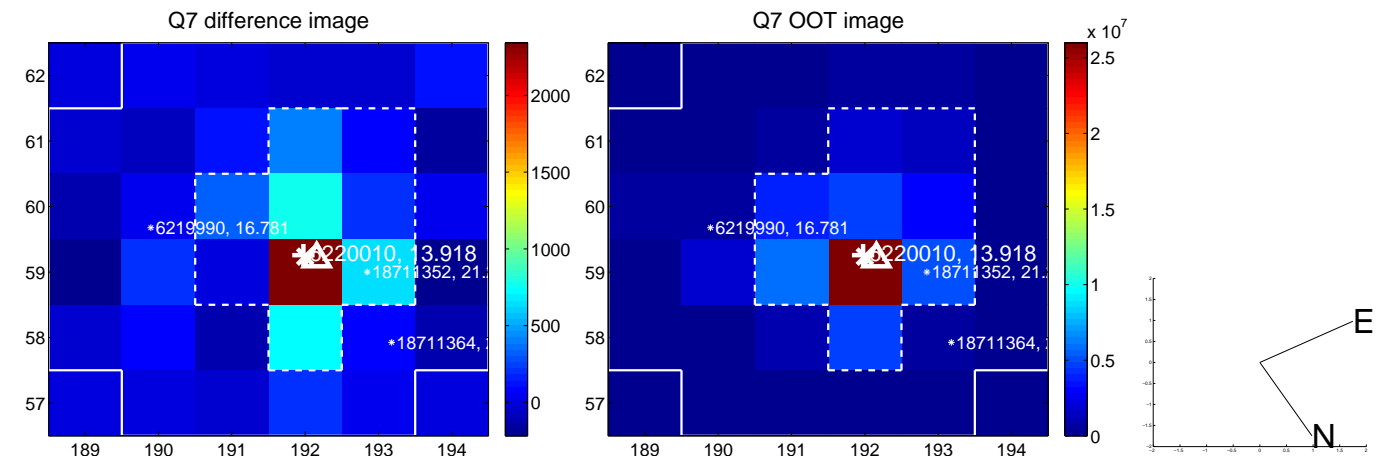
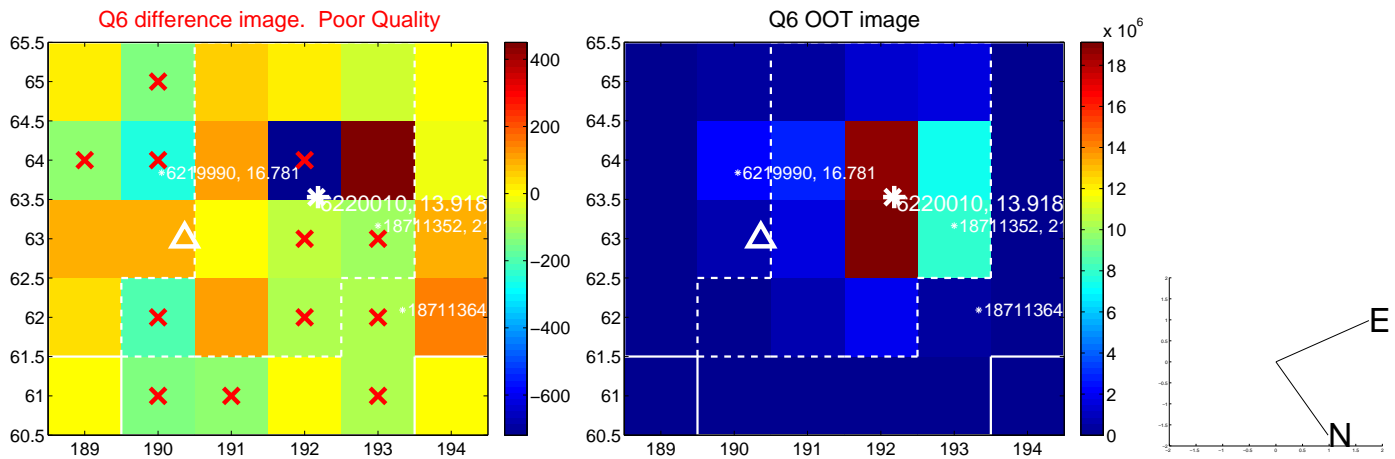
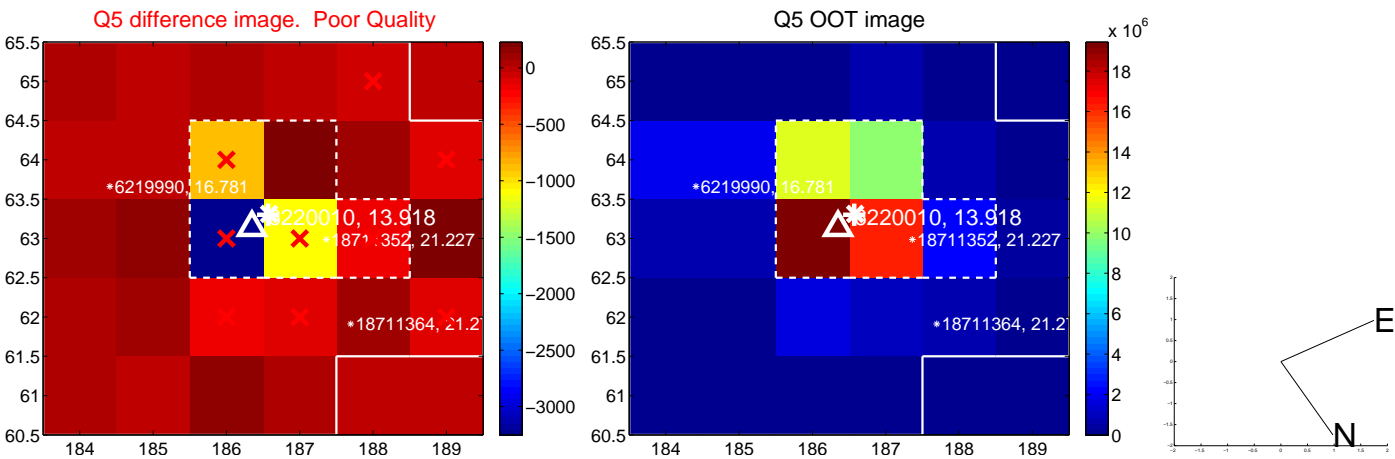


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

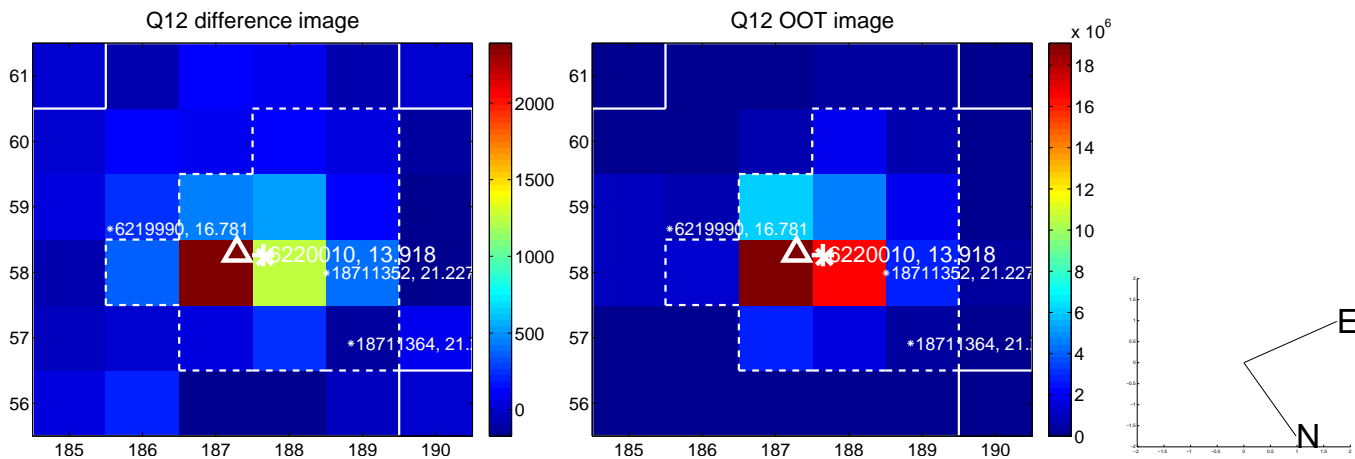
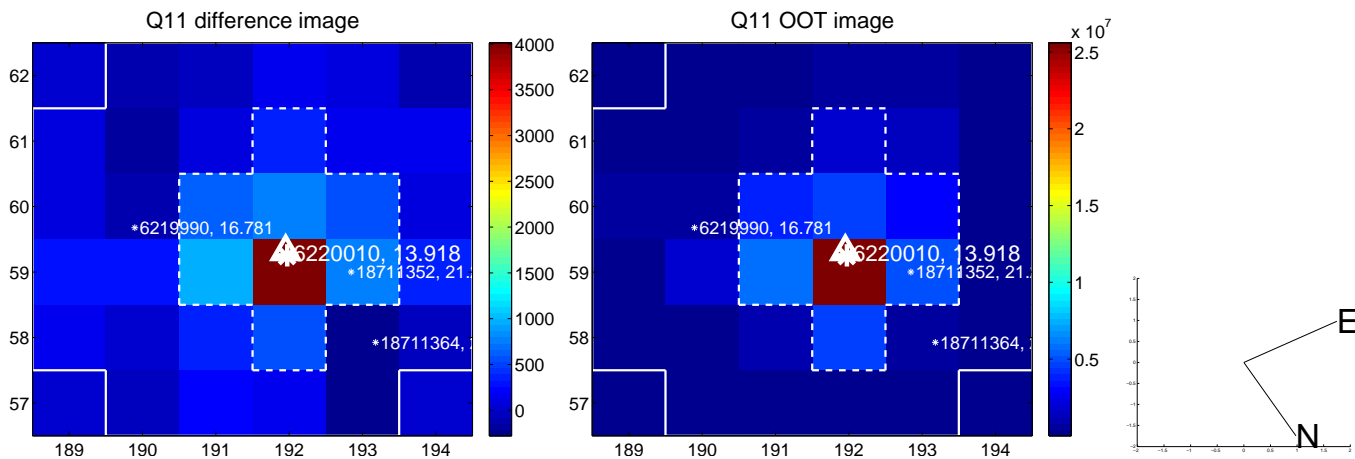
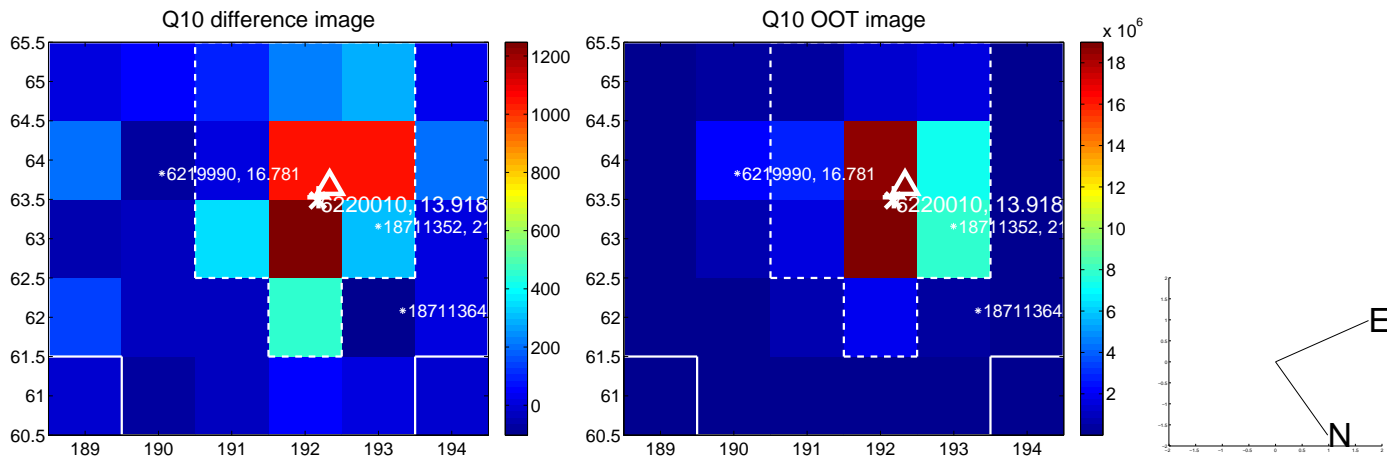
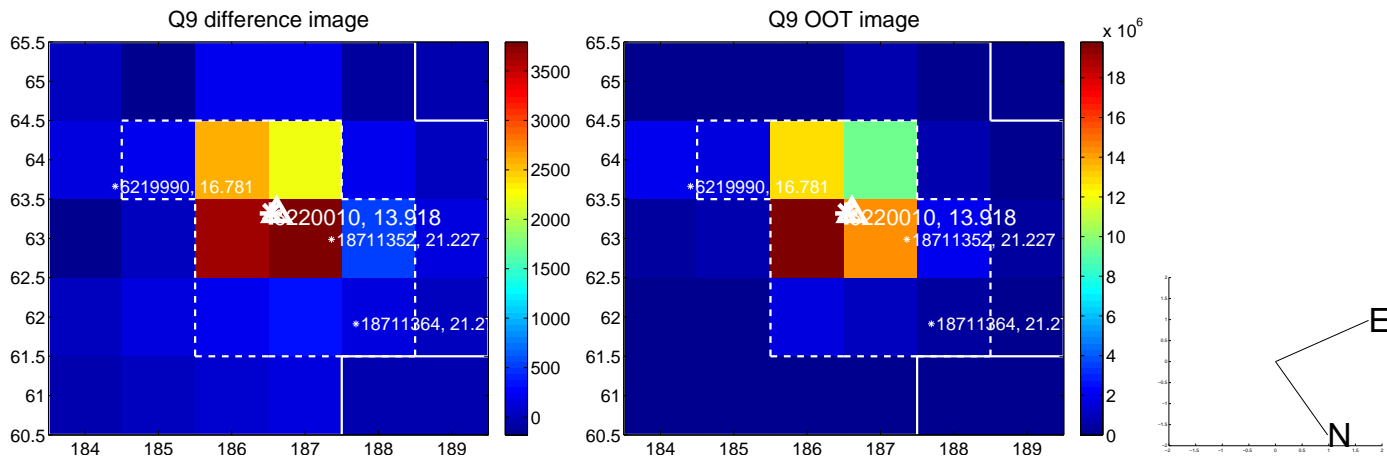
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



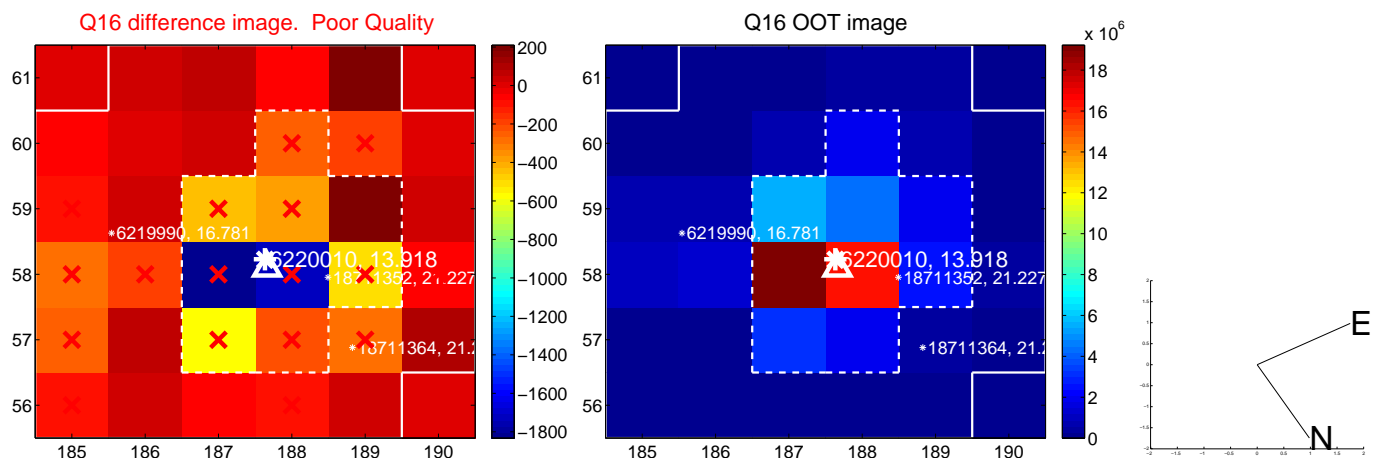
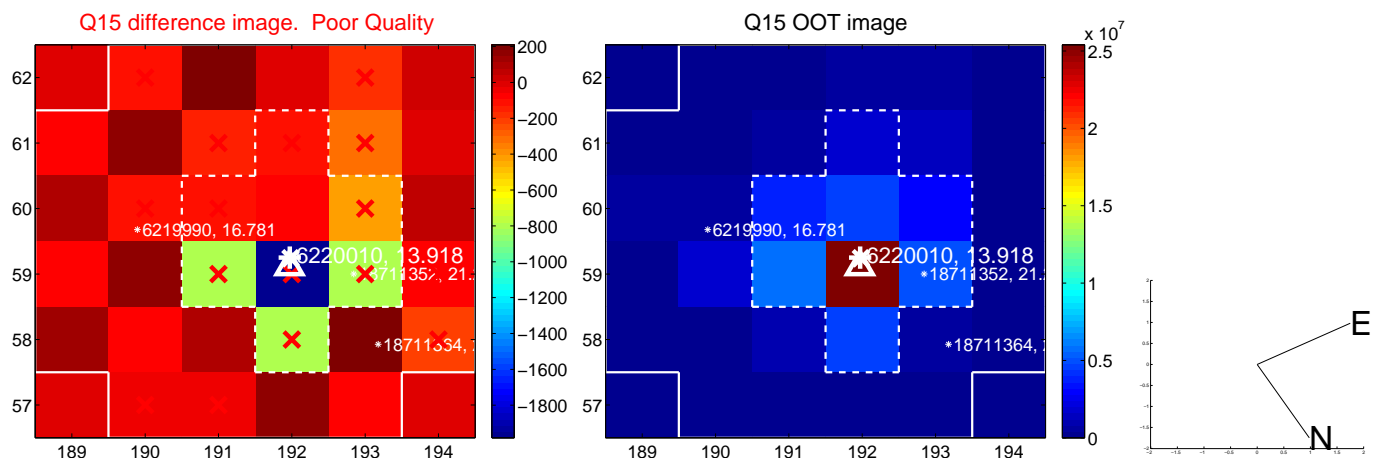
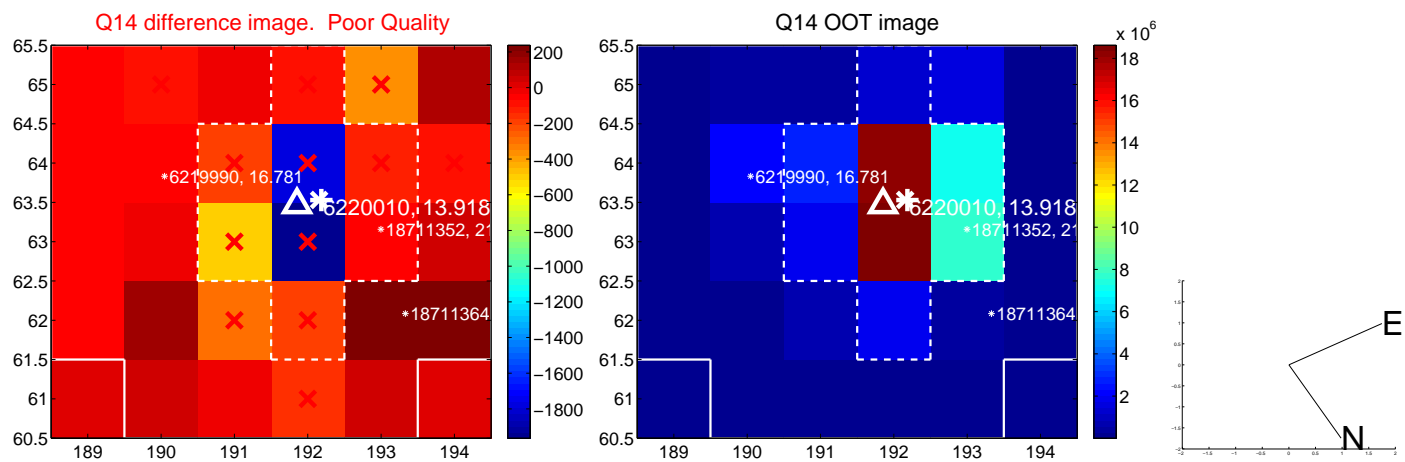
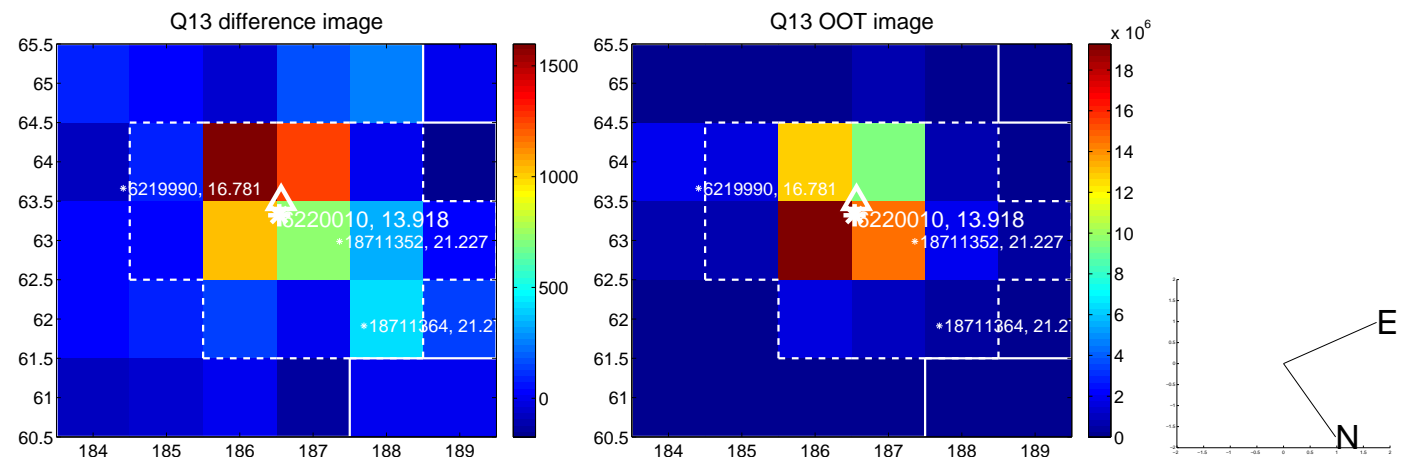
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



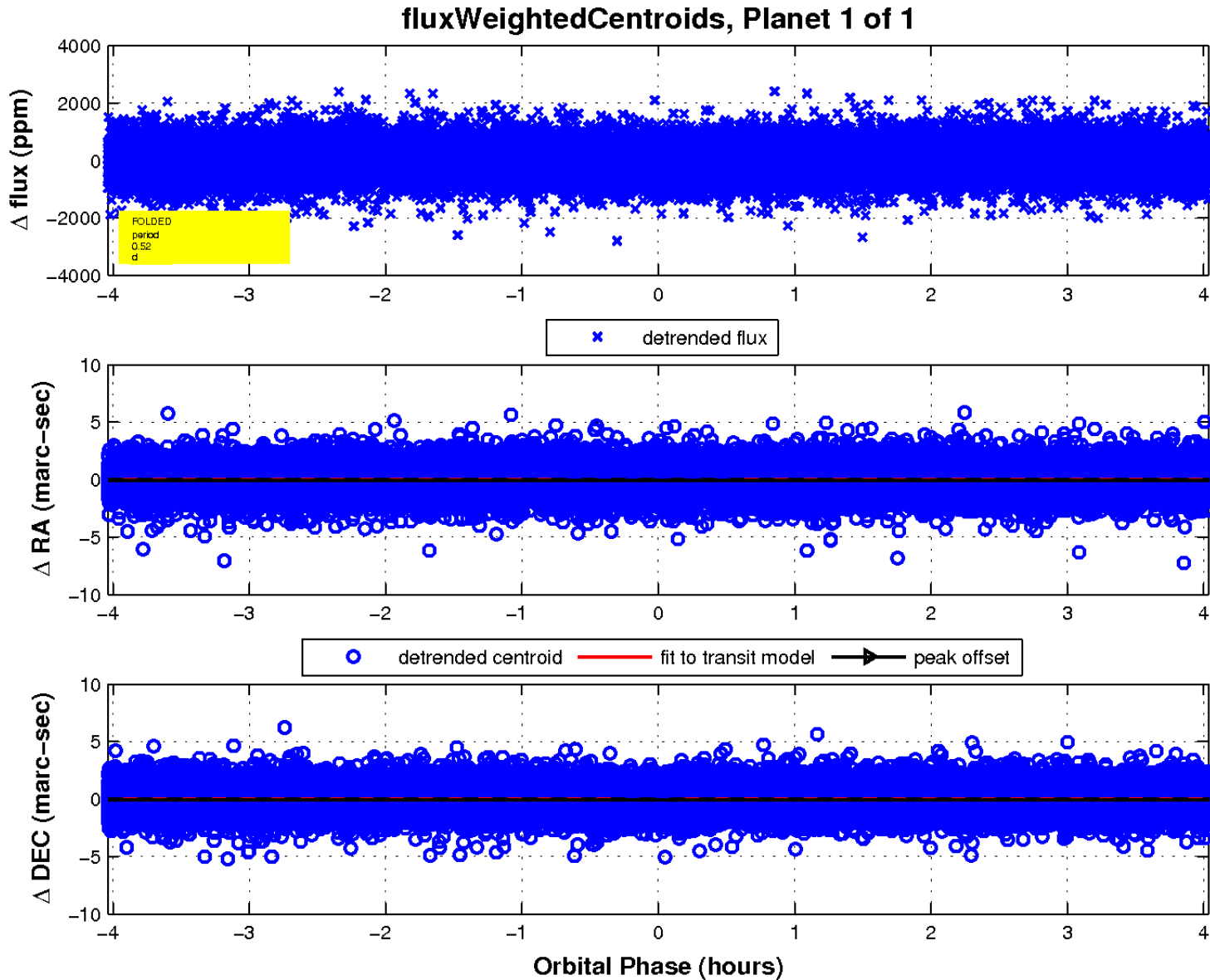
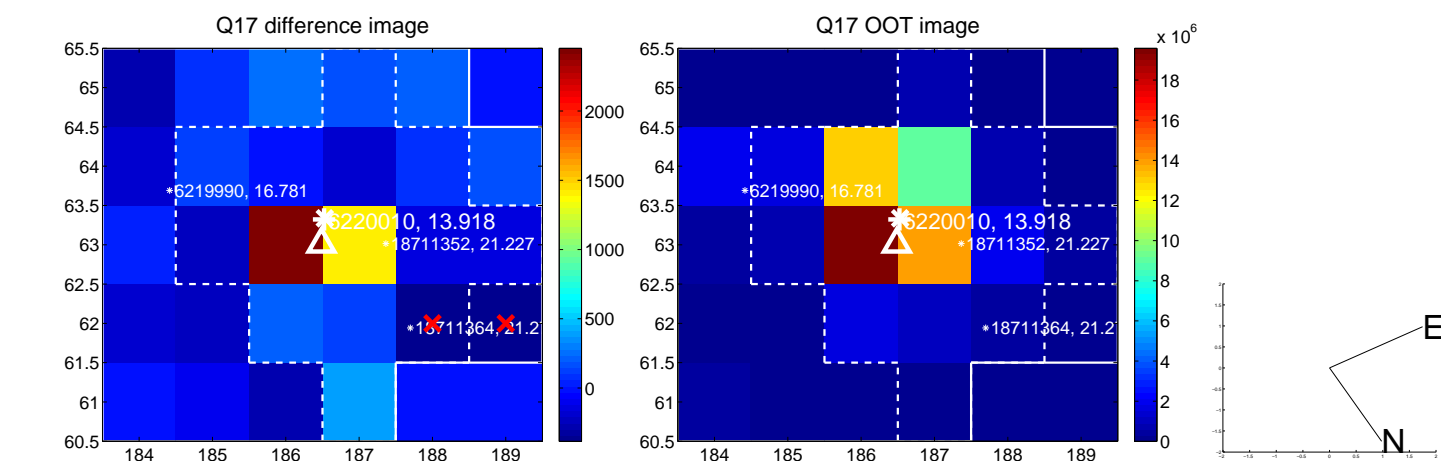
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UKIRT Image

Declination

