

KIC 010221505

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})
010221505-01	OBS	4768.01	3.436318	132.429022	373.2	0.762	9.7	12.2	0.65	5201	1.51	188.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010221505-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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.

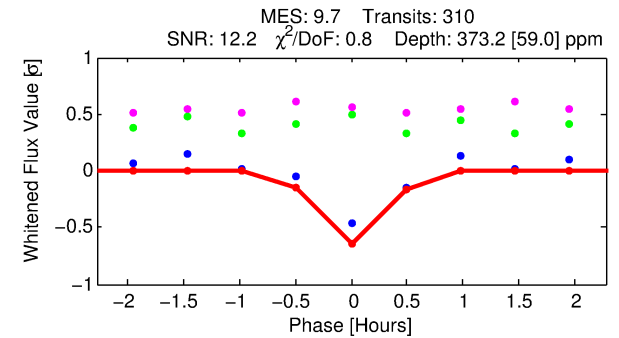
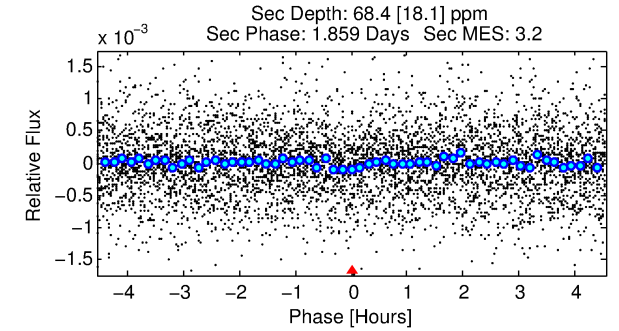
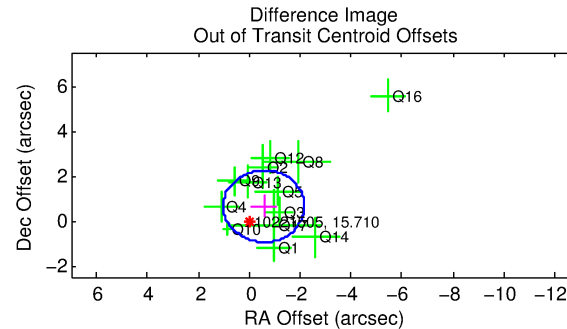
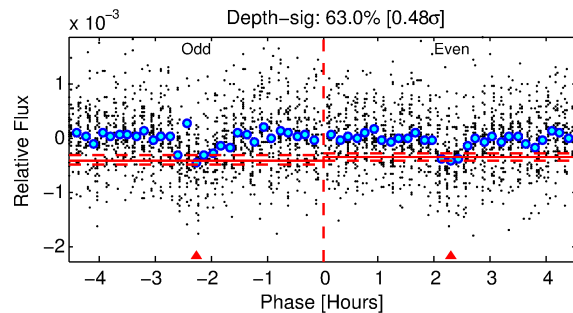
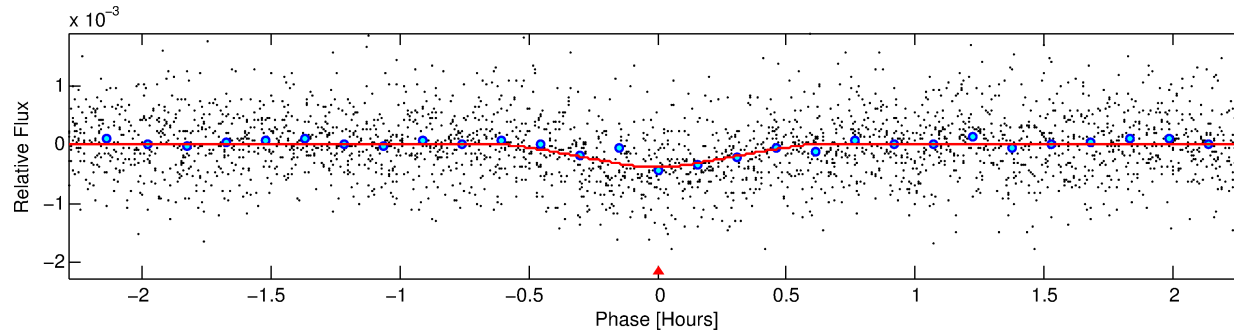
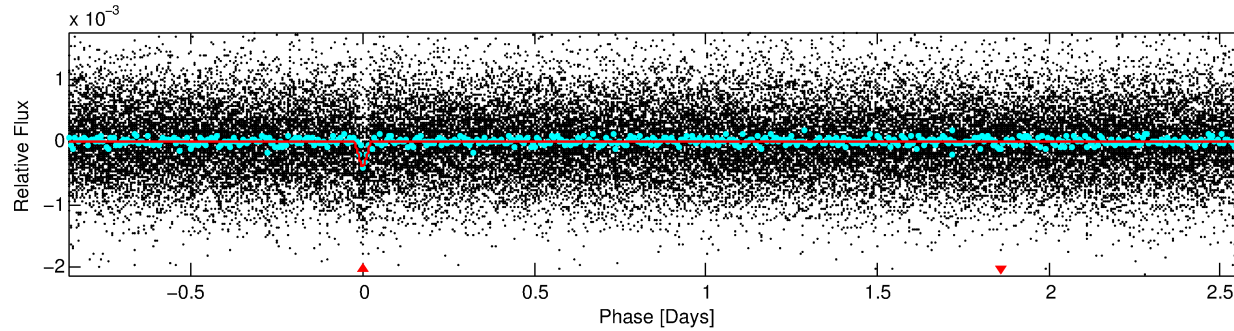
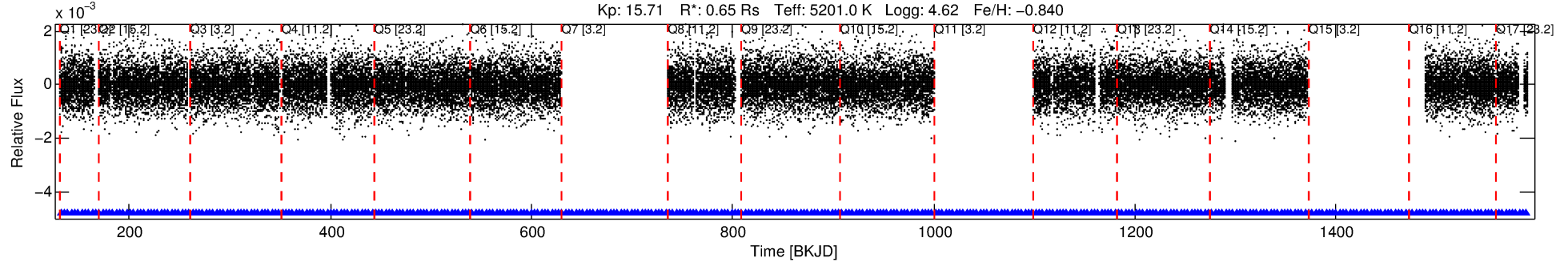
Ephemeris Match Information For 010221505-01

No Significant Match Found

DV One-Page Summary

KIC: 10221505 Candidate: 1 of 1 Period: 3.436 d
KOI: K04768.01 Corr: 0.876

Kp: 15.71 R*: 0.65 Rs Teff: 5201.0 K Logg: 4.62 Fe/H: -0.840



DV Fit Results:

Period = 3.43632 [0.00001] d
Epoch = 132.4290 [0.0013] BKJD
Rp/R* = 0.0213 [0.0193]
a/R* = 17.38 [68.55]
b = 0.89 [0.96]
Seff = 188.58 [32.67]
Teq = 945 [41] K
Rp = 1.52 [1.38] Re
a = 0.0384 [0.0031] AU
Ag = 24.13 [44.15] [0.52σ]
Teffp = 3238 [1481] K [1.55σ]

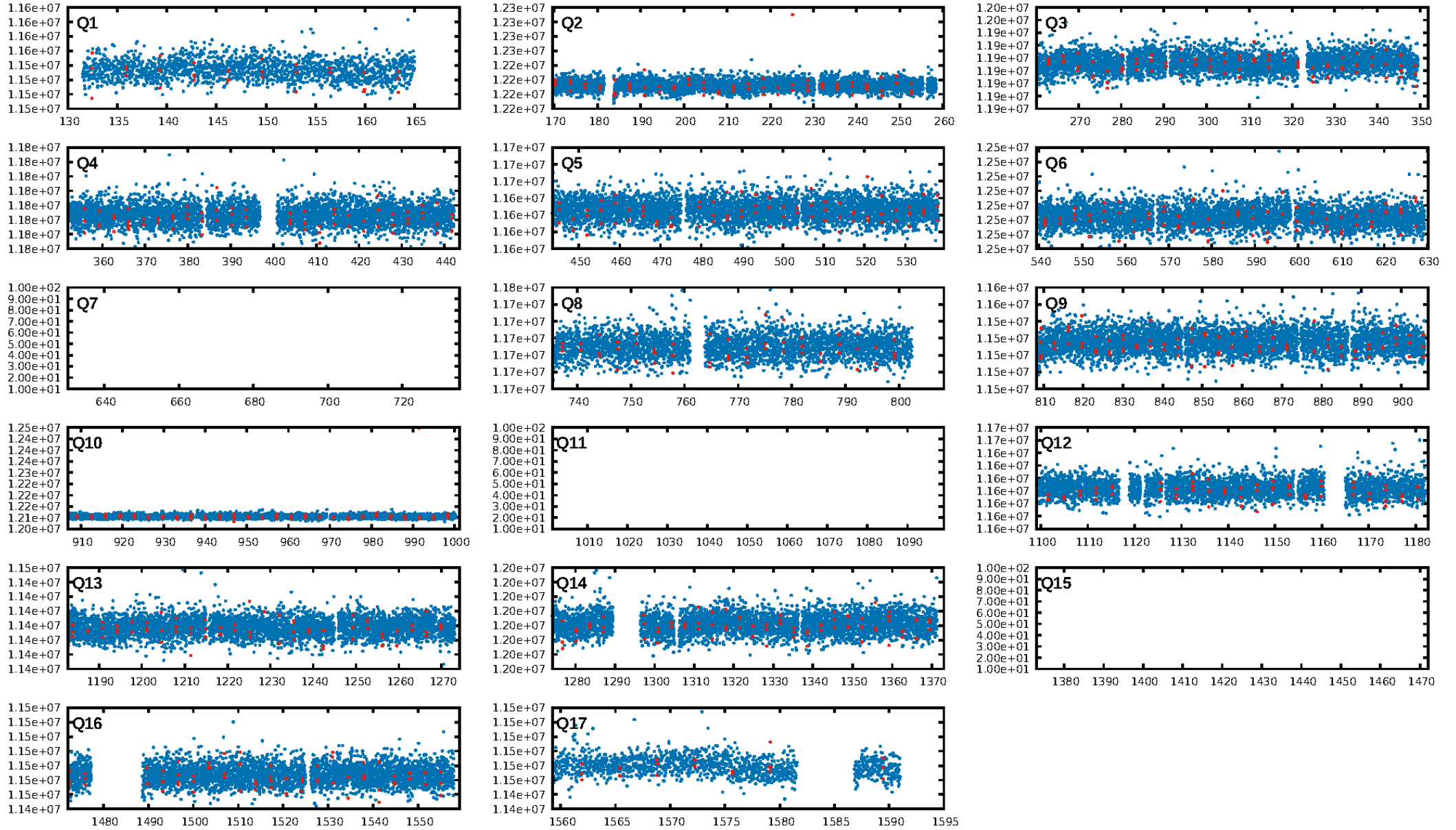
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.65e-22
RollingBand-fgt: 1.00 [293/293]
GhostDiagnostic-chr: 5.129
Centroid-sig: 9.1%
Centroid-so: 1.808 arcsec [1.62σ]
OotOffset-rm: 0.866 arcsec [1.63σ]
KicOffset-rm: 0.863 arcsec [1.57σ]
OotOffset-st: 3/1/4/5 [13]
KicOffset-st: 3/1/4/5 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [14/14]

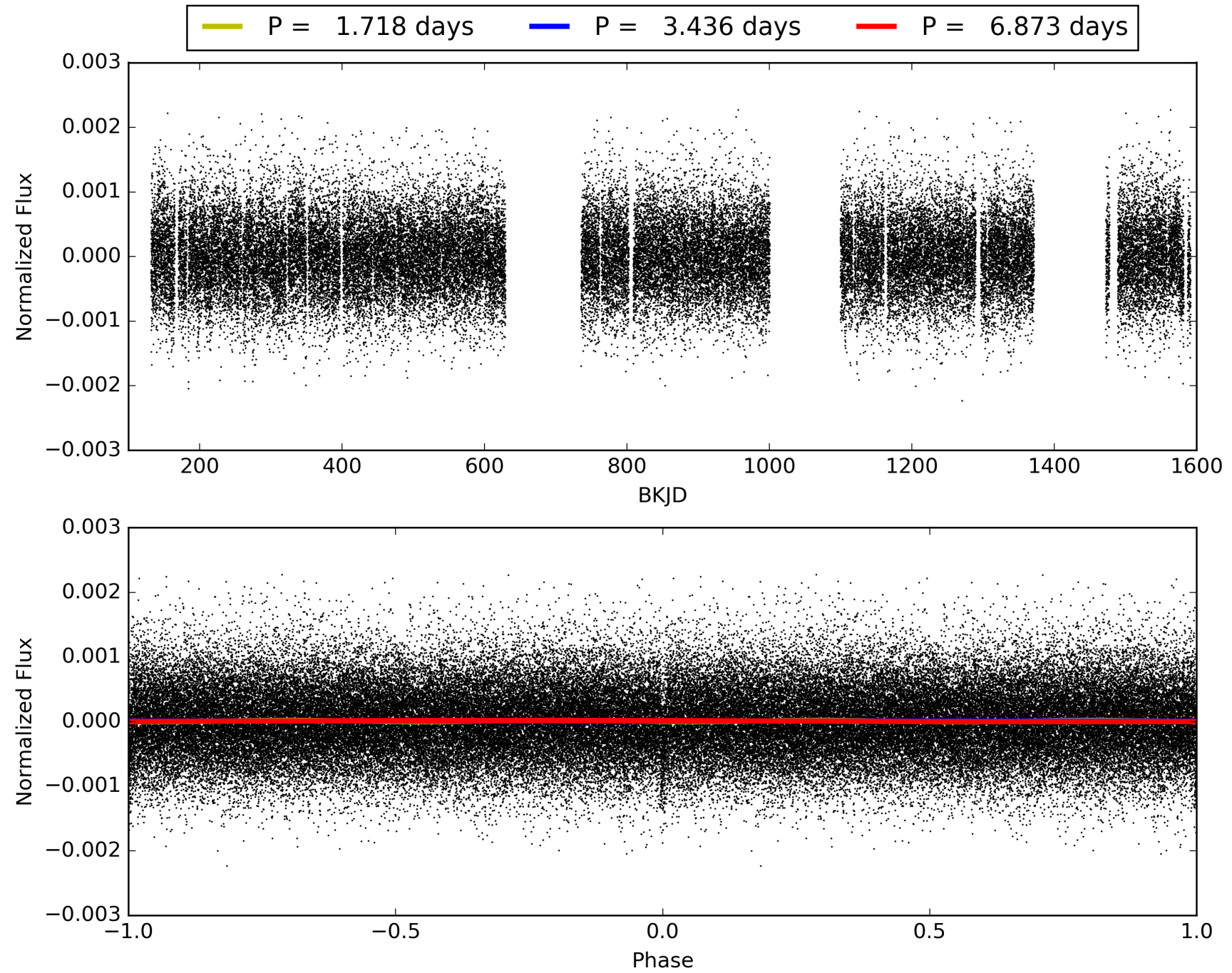
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:40:25 Z

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

TCE 010221505-01, PDC Light Curves

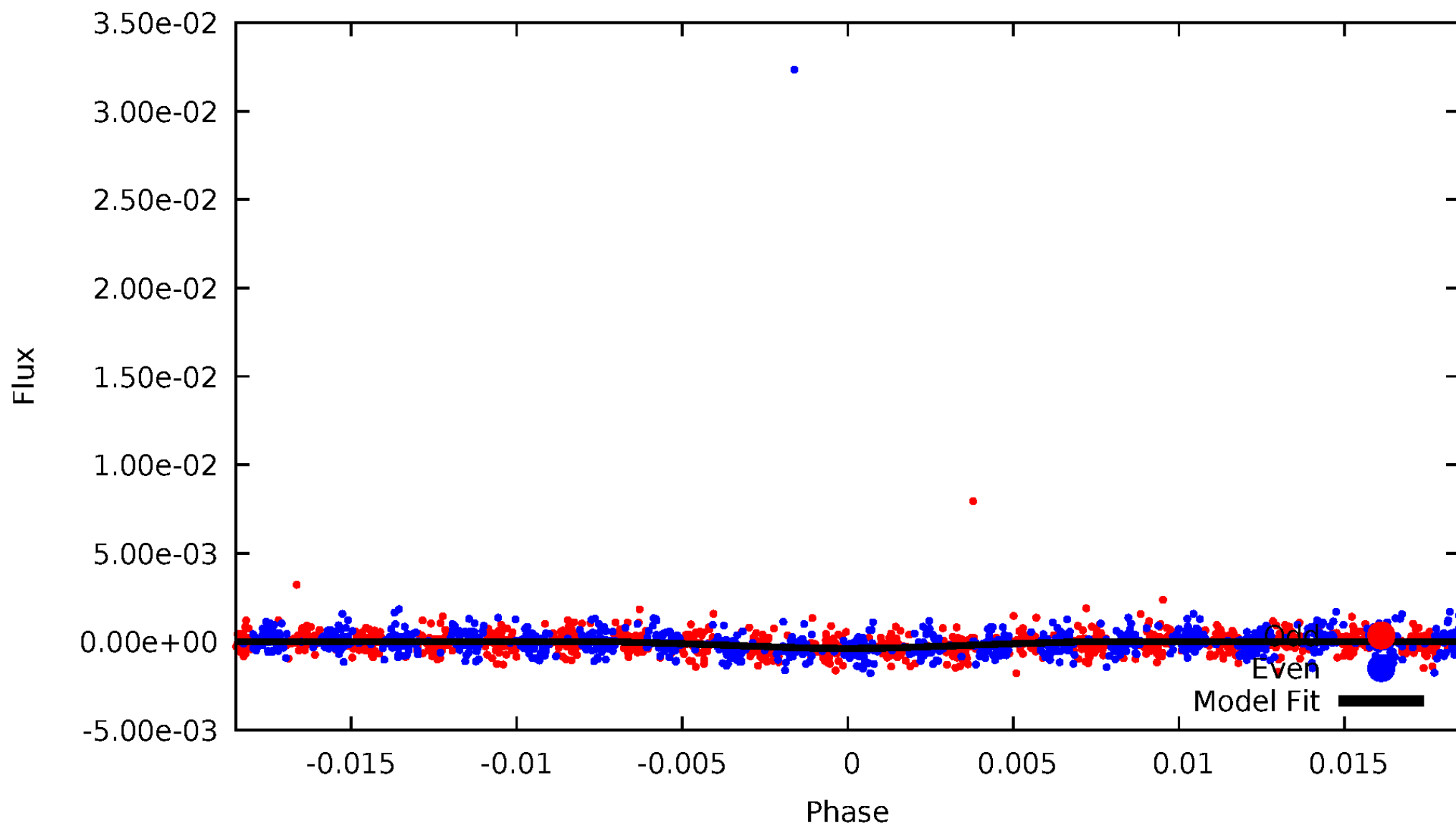


TCE 010221505-01



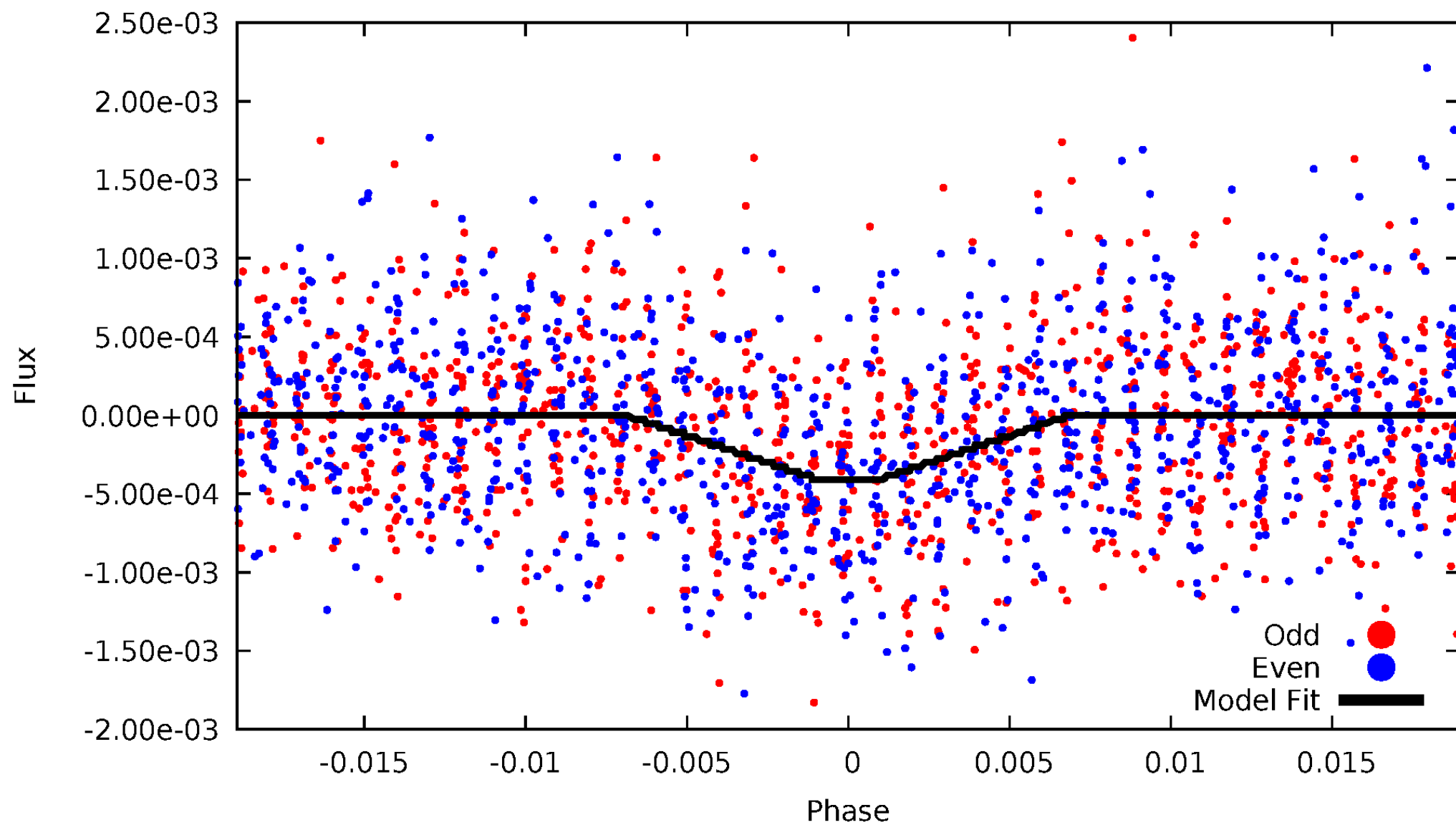
DV Odd/Even

TCE 010221505-01

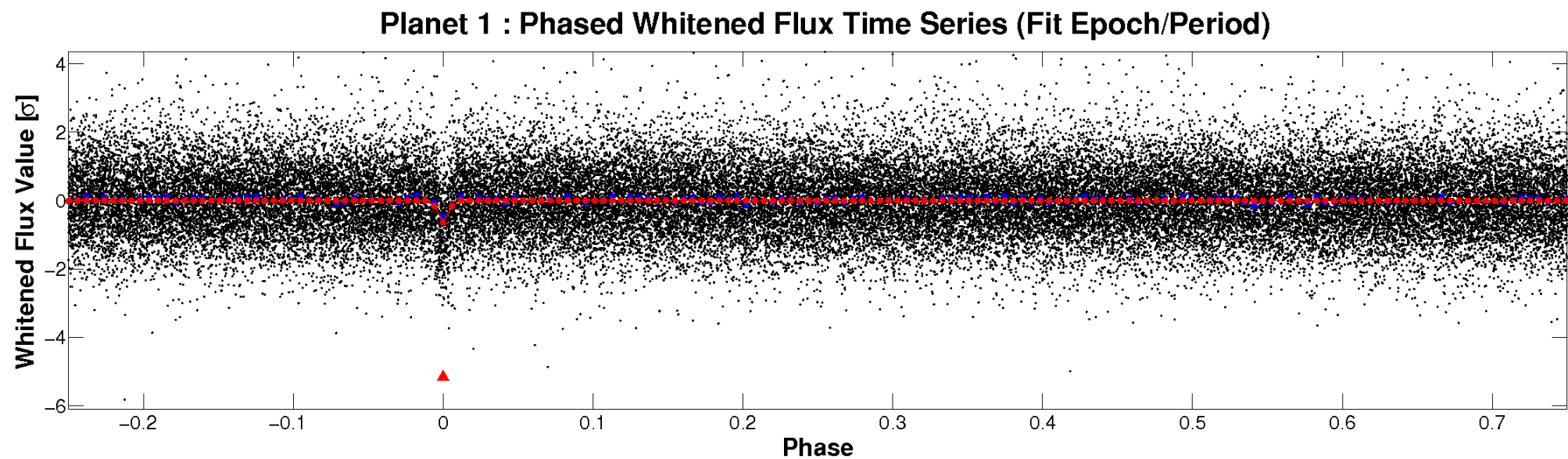
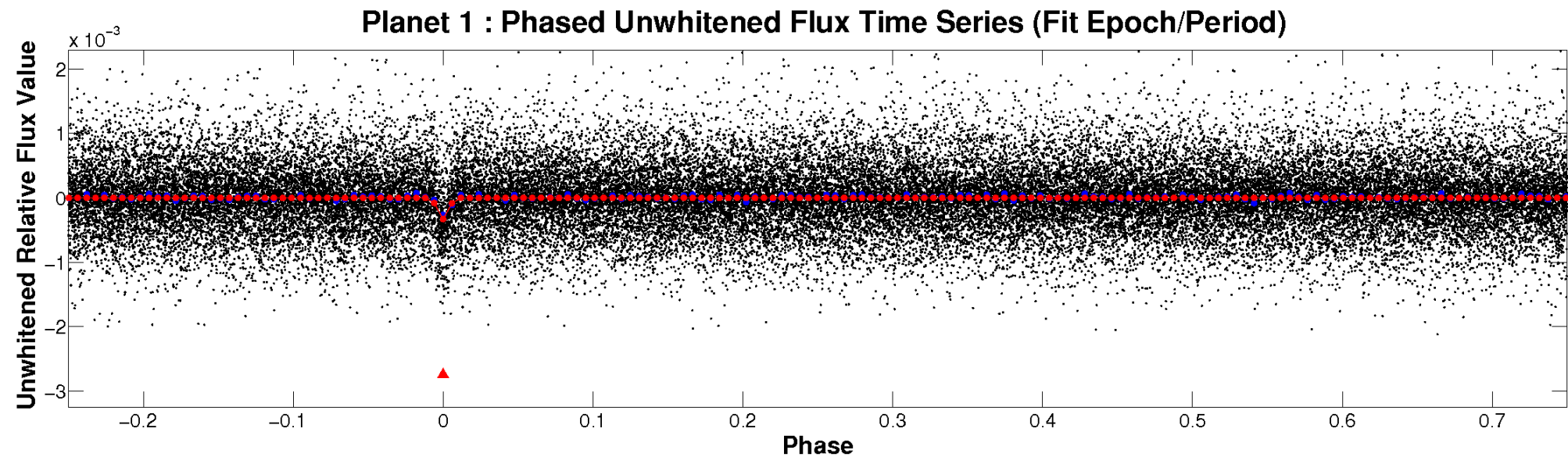


ALT Odd/Even

TCE 010221505-01

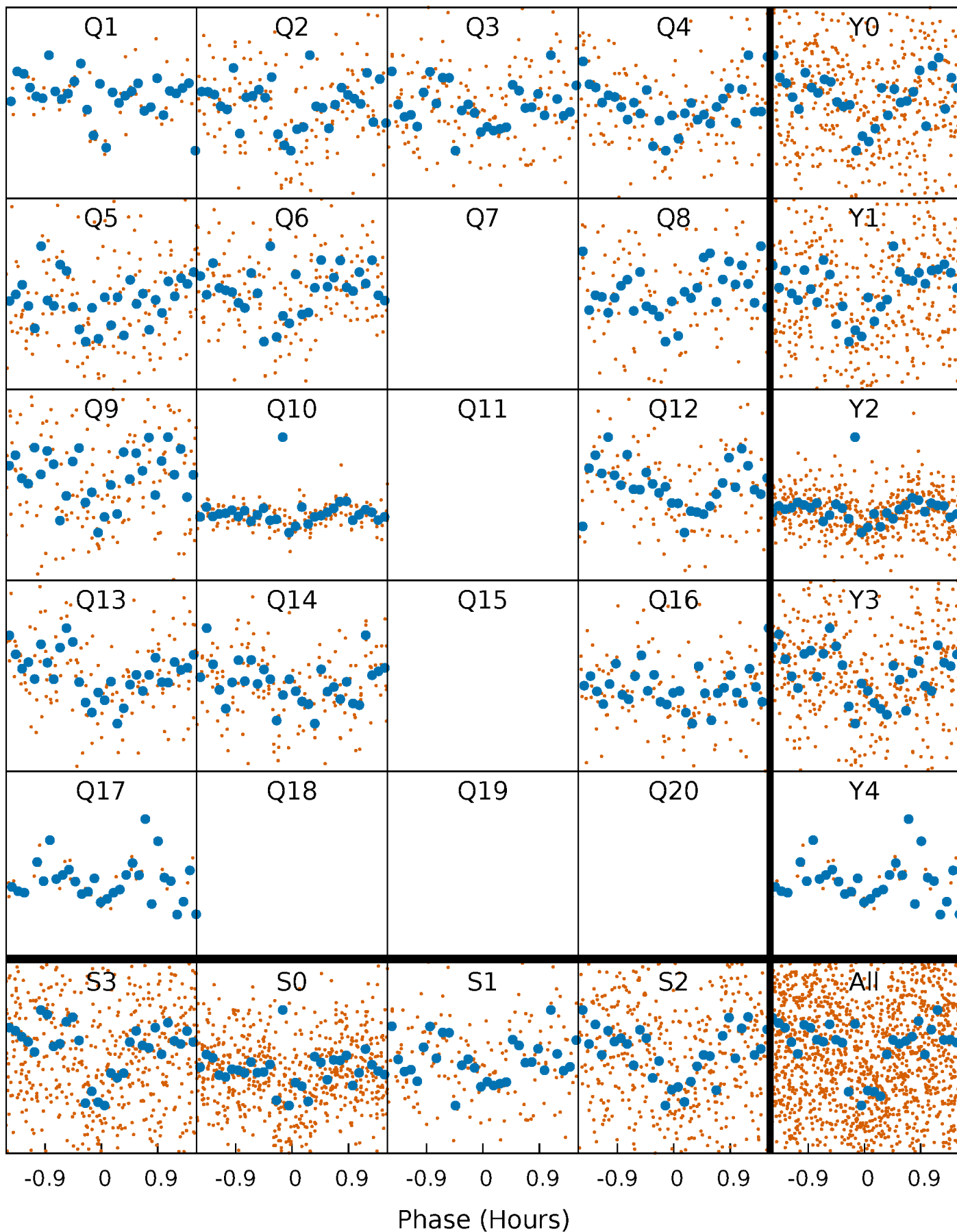


Non-Whitened Vs. Whitened Light Curve



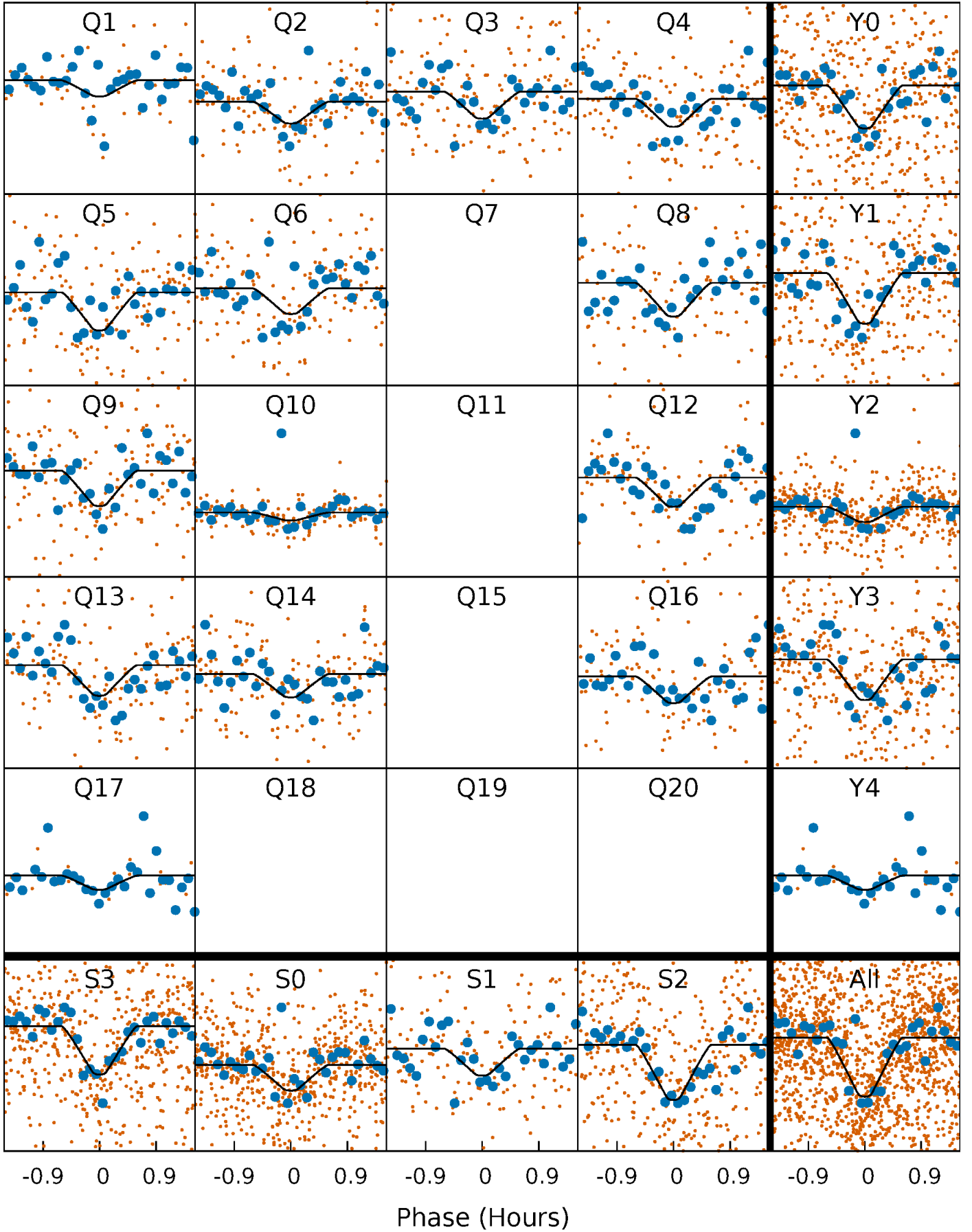
PDC Quarter-Phased Transit Curves

TCE 010221505-01 P= 3.436318 Days $T_0=132.429023$ (BKJD)



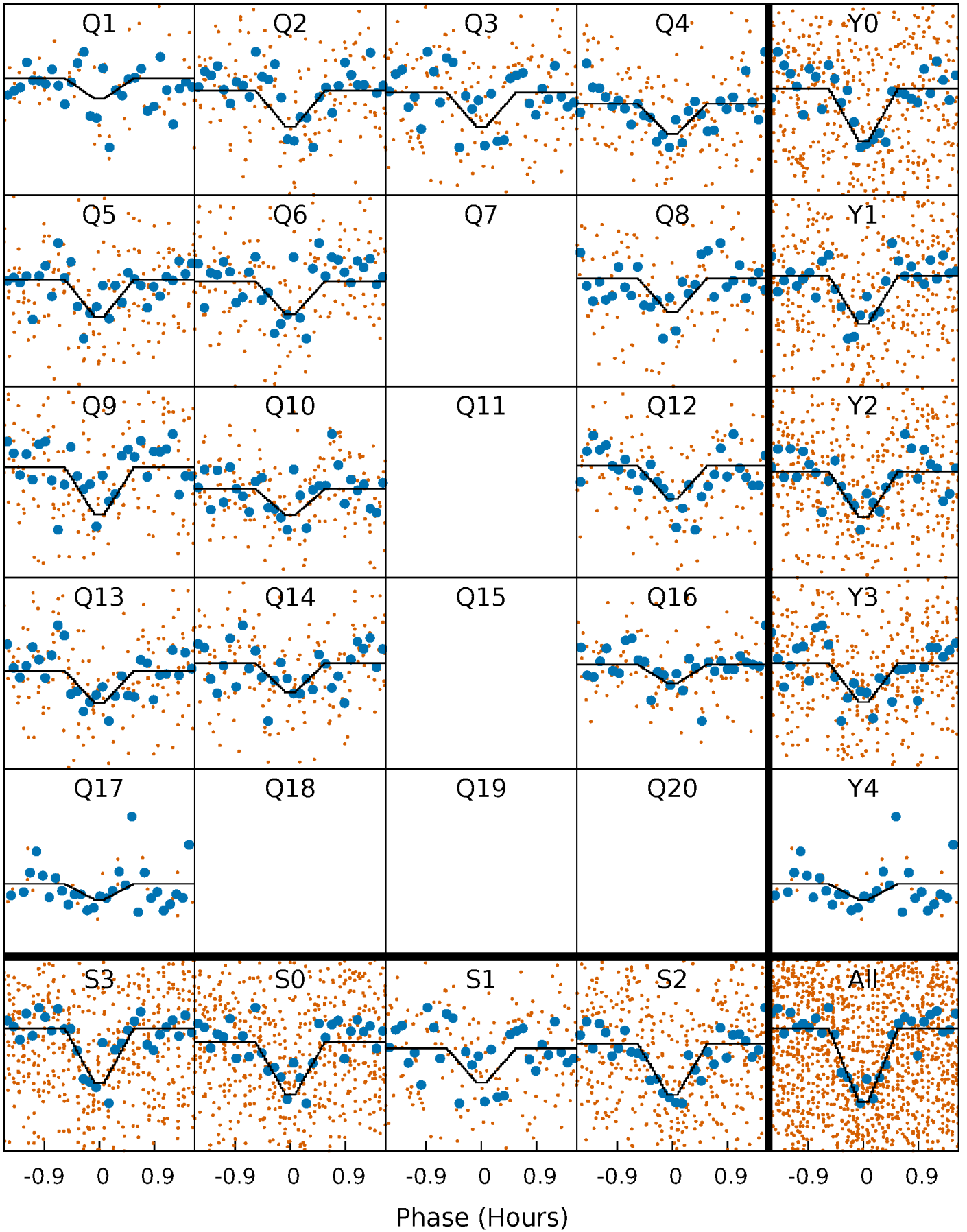
DV Quarter-Phased Transit Curves

TCE 010221505-01 P= 3.436318 Days $T_0=132.429023$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

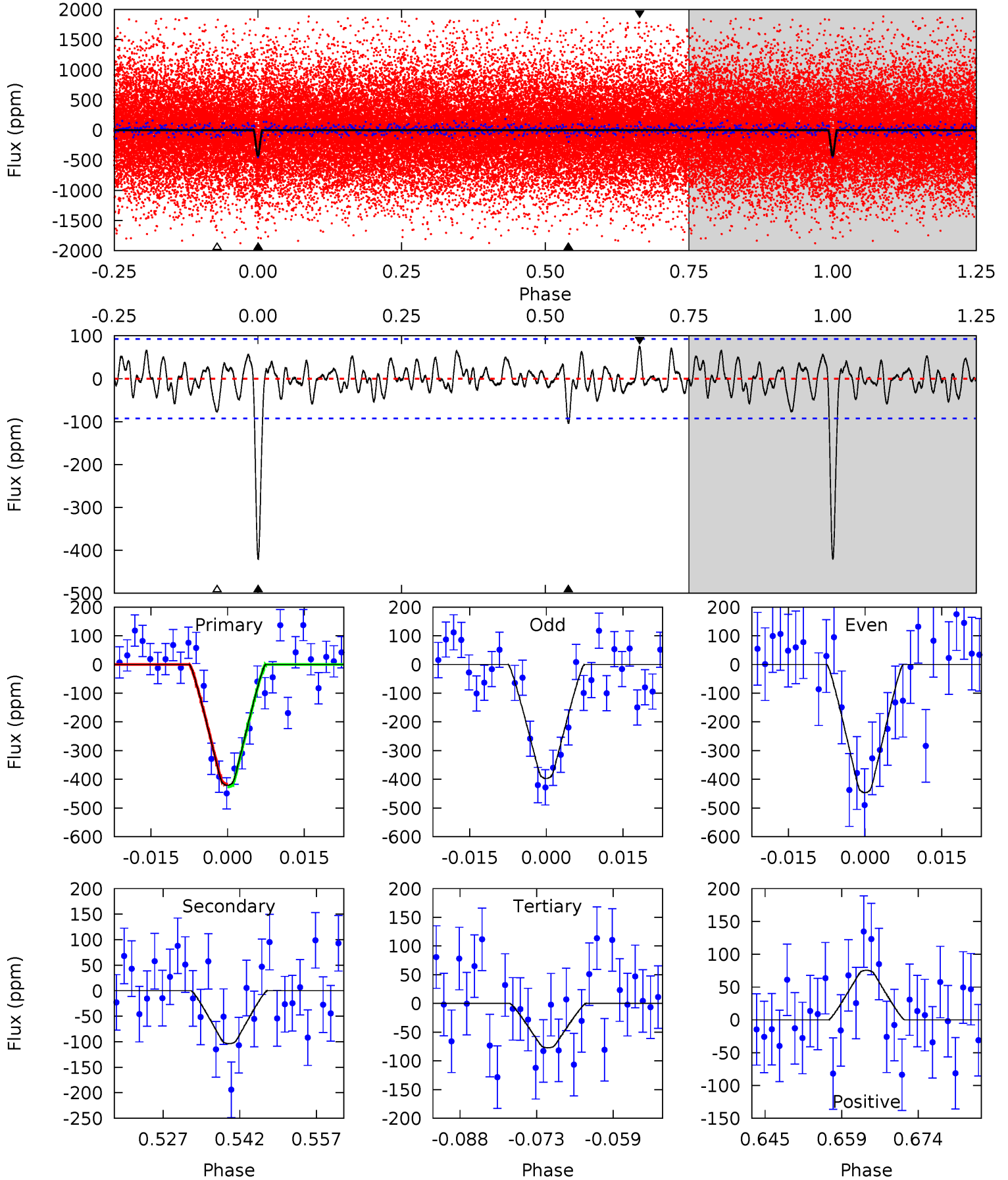
TCE 010221505-01 P= 3.436346 Days $T_0=132.424654$ (BKJD)



DV Model-Shift Uniqueness Test

010221505-01, P = 3.436318 Days, E = 128.992705 Days

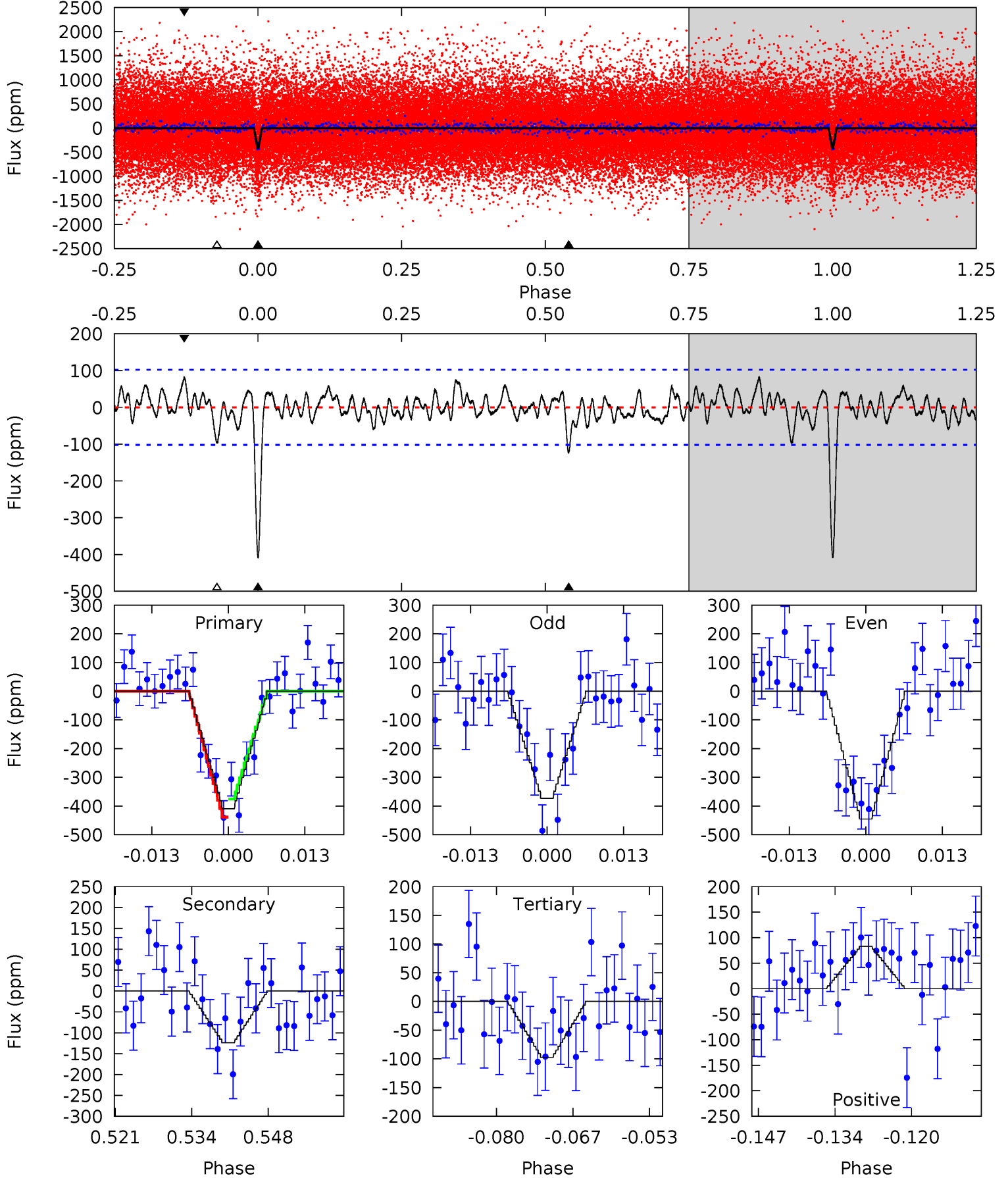
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.5	5.55	4.13	4.04	4.95	2.44	1.38	18.4	18.5	1.42	1.51	1.32	0.72	0.15	0.24



Alt Model-Shift Uniqueness Test

010221505-01, P = 3.436346 Days, E = 128.988308 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.9	6.01	4.74	4.03	4.97	2.47	1.36	15.2	15.9	1.27	1.98	1.77	0.95	0.17	1.52



Stellar Parameters For KIC 010221505

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5201^{+156}_{-156}	$4.616^{+0.072}_{-0.044}$	$-0.840^{+0.300}_{-0.300}$	$0.651^{+0.057}_{-0.057}$	$0.638^{+0.066}_{-0.028}$	$3.263^{+0.896}_{-0.529}$
	+3%/-3%	+2%/-1%	+36%/-36%	+9%/-9%	+10%/-4%	+27%/-16%
Source	PHO1	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 010221505-01 / KOI 4768.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-104 ± 19	$1.67^{+1.40}_{-1.04}$	1314^{+50}_{-48}	3768^{+1778}_{-674}	31^{+194}_{-22}
Alt.	-124 ± 21	$1.81^{+1.24}_{-1.11}$	1313^{+49}_{-46}	3775^{+1657}_{-597}	31^{+165}_{-20}

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

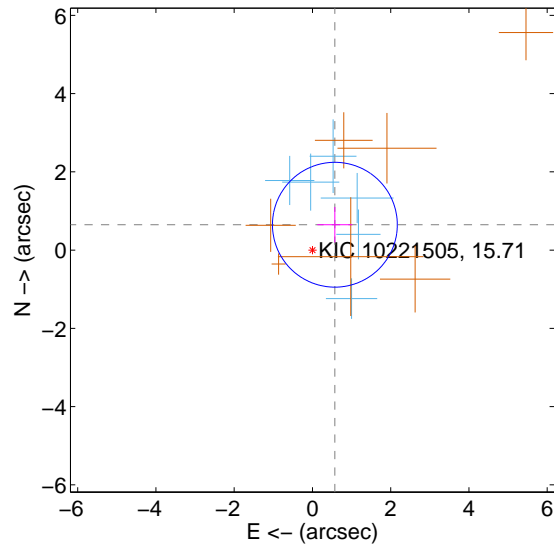
Supplemental centroid analysis for 010221505-01. Kepler magnitude: 15.71. Transit SNR 12.18

There are 6 quarters with good PRF difference image offsets

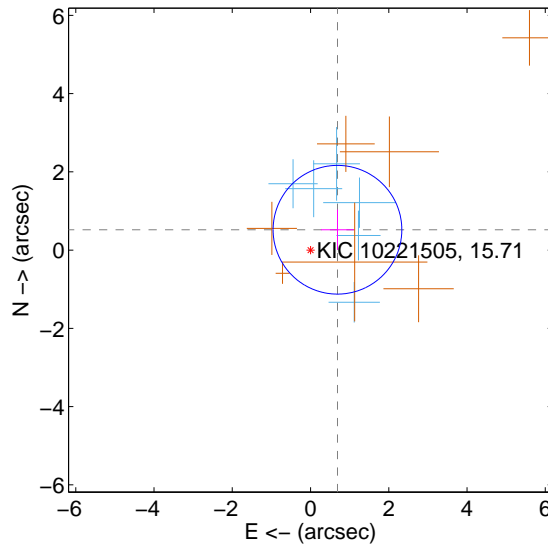
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.866 ± 0.532	1.63	-0.574 ± 0.448	0.648 ± 0.454
PRF-fit source offset from KIC position	0.863 ± 0.548	1.57	-0.689 ± 0.420	0.520 ± 0.516
photometric centroid source offset	1.81 ± 1.12	1.62	-0.93 ± 1.18	-1.55 ± 1.09

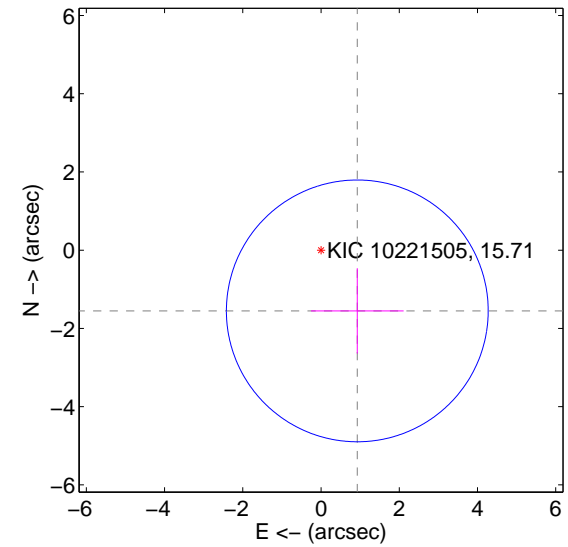
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

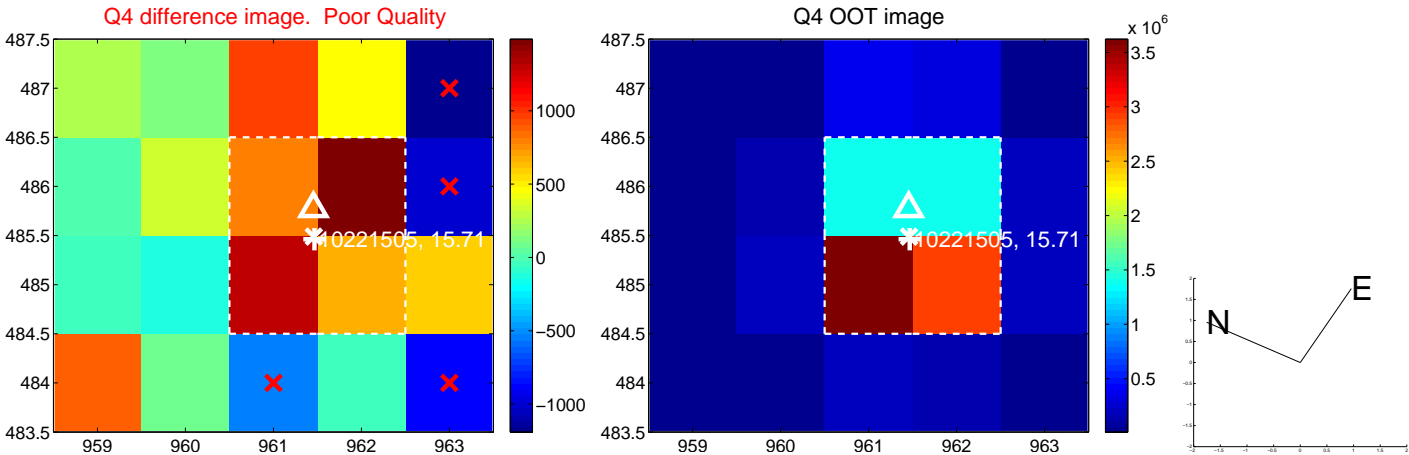
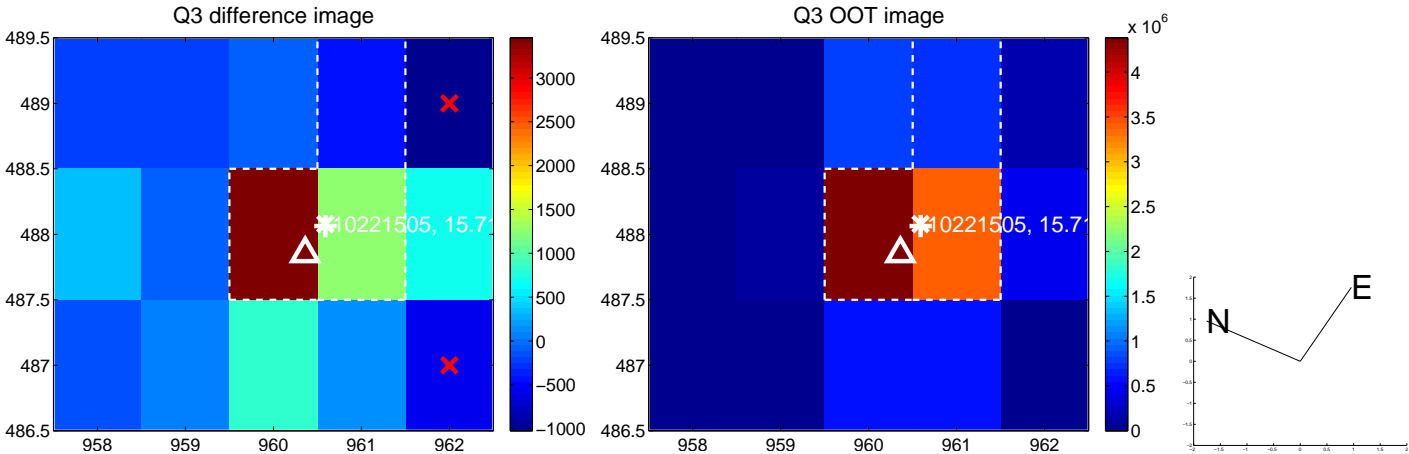
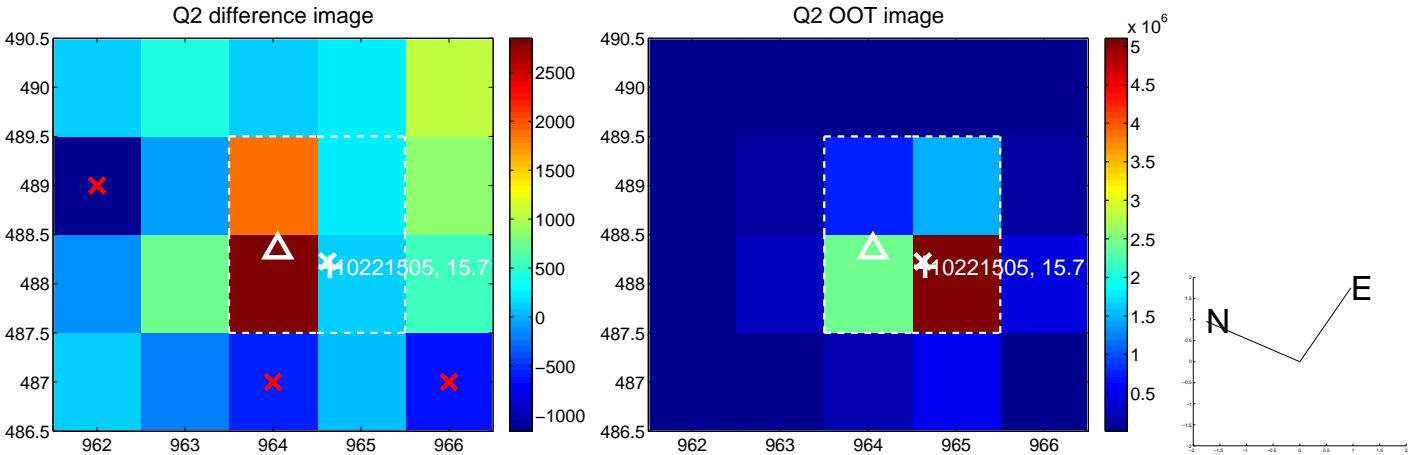
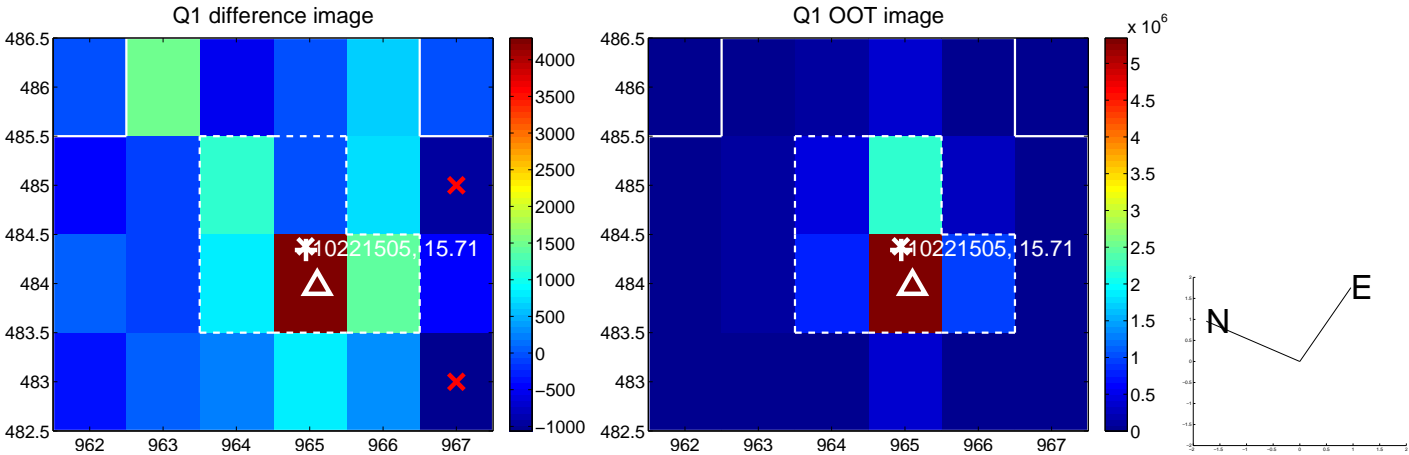


offset from photometric centroids

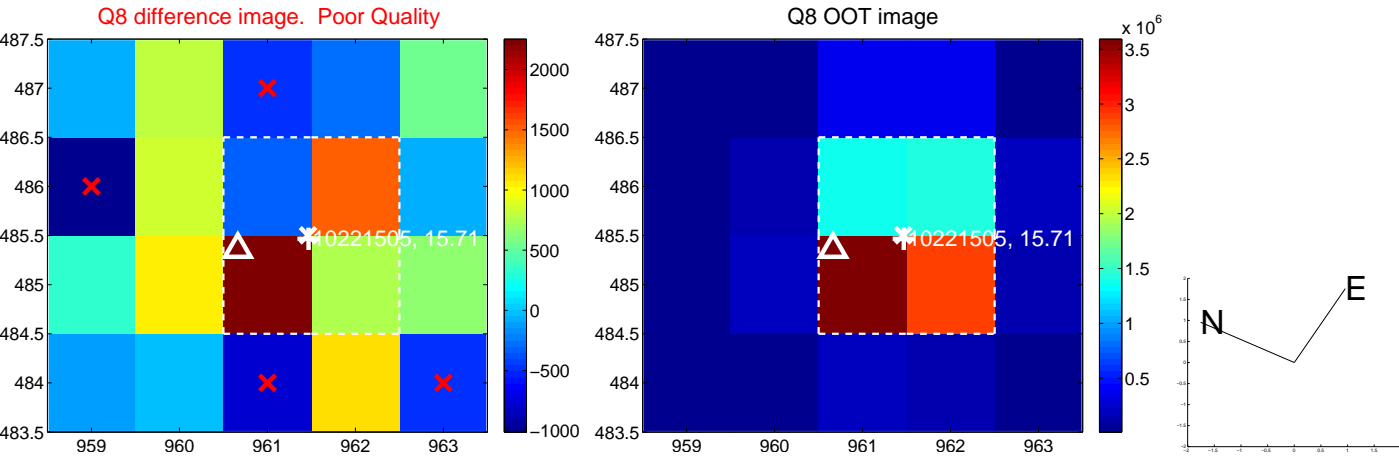
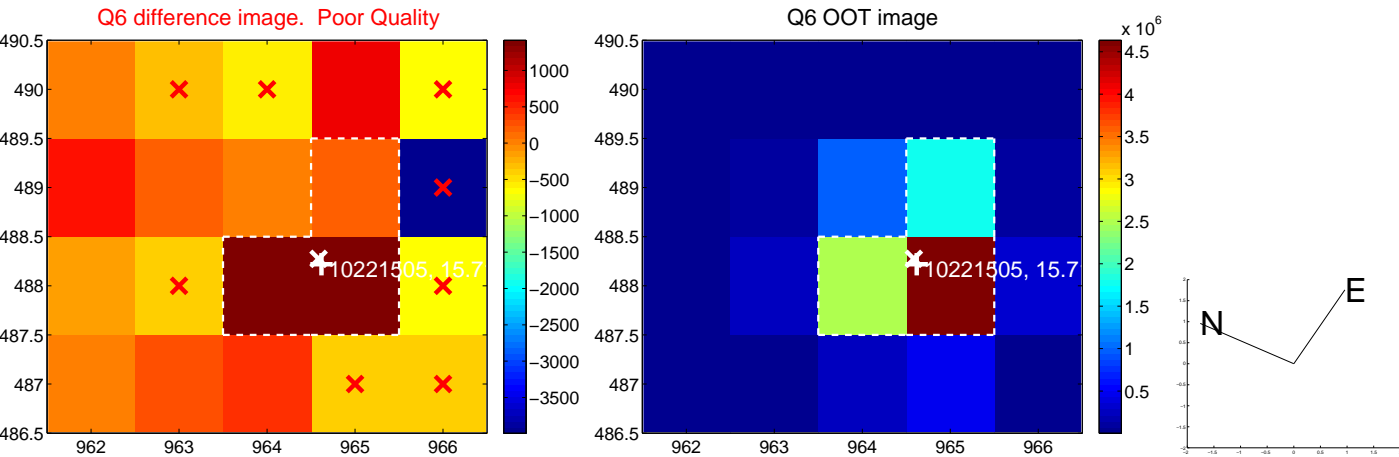
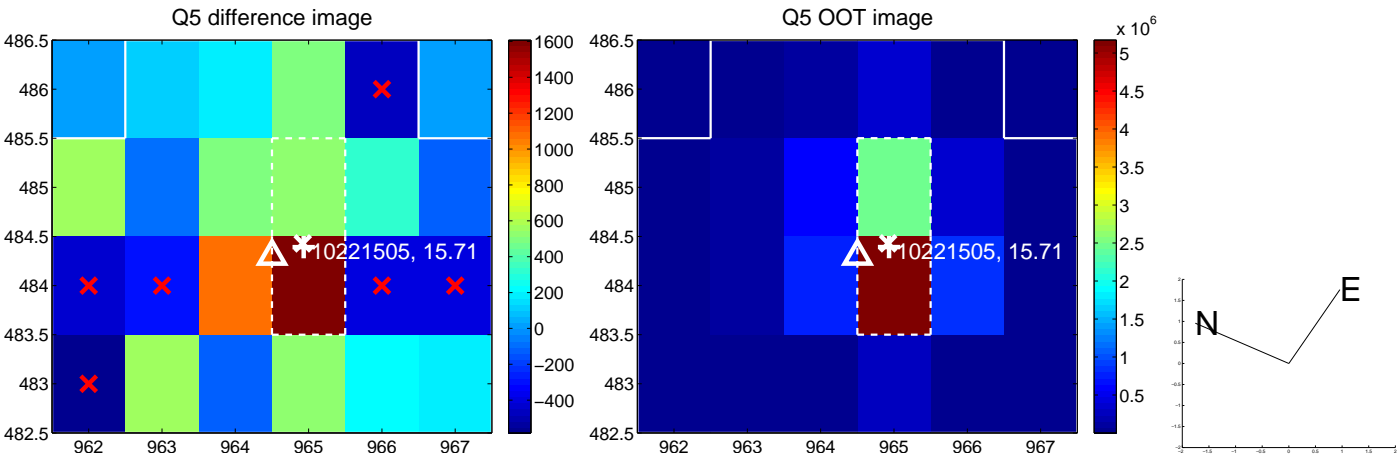


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

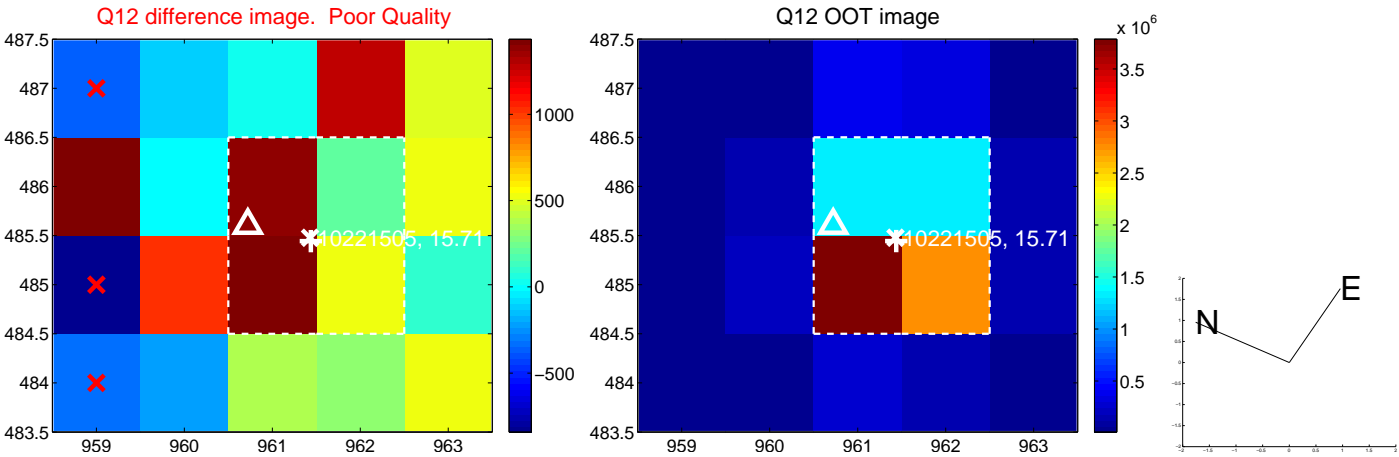
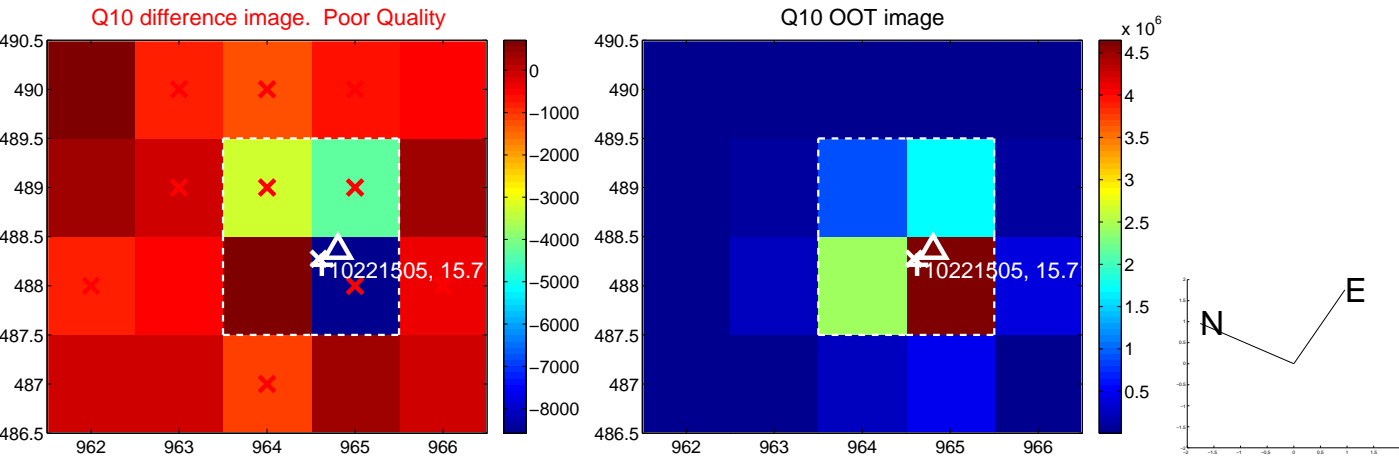
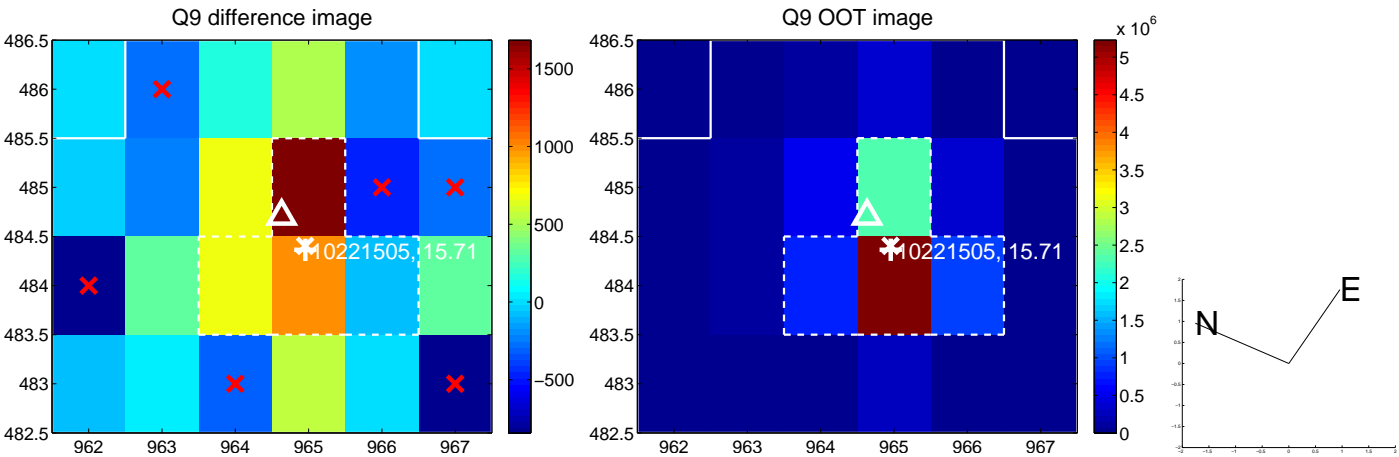
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



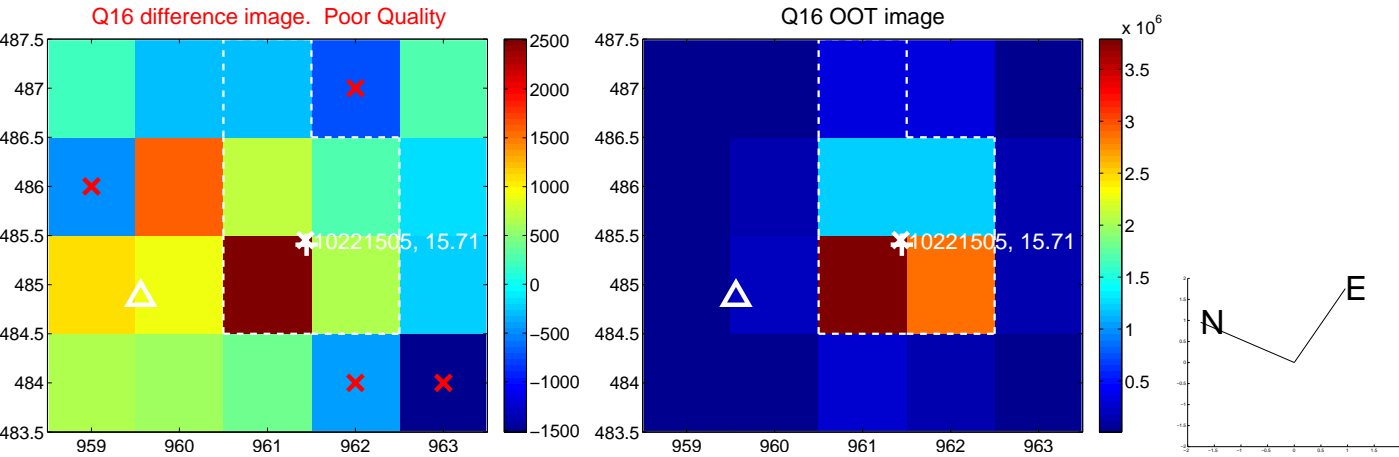
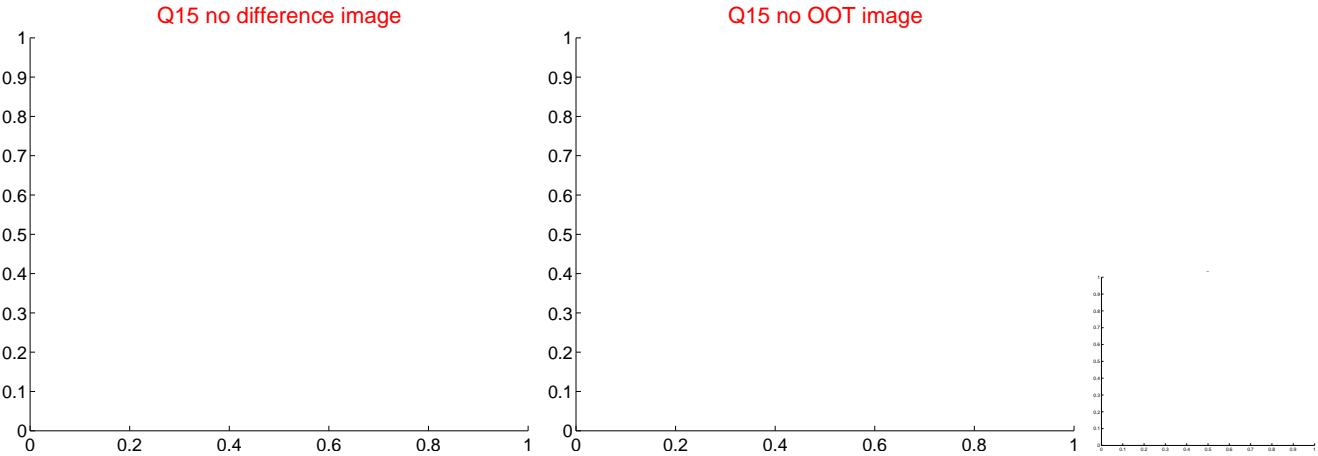
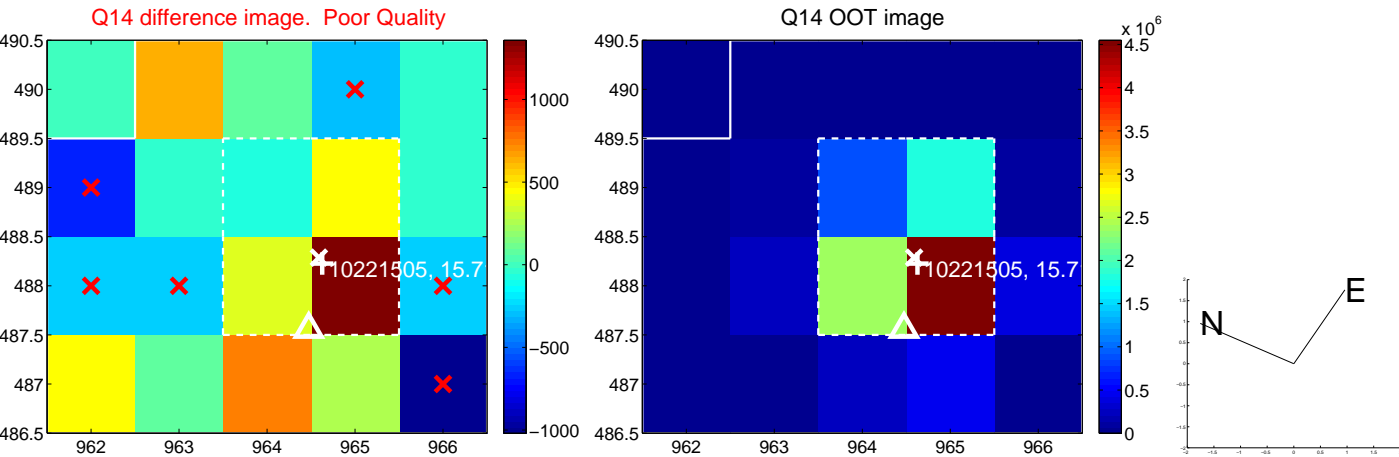
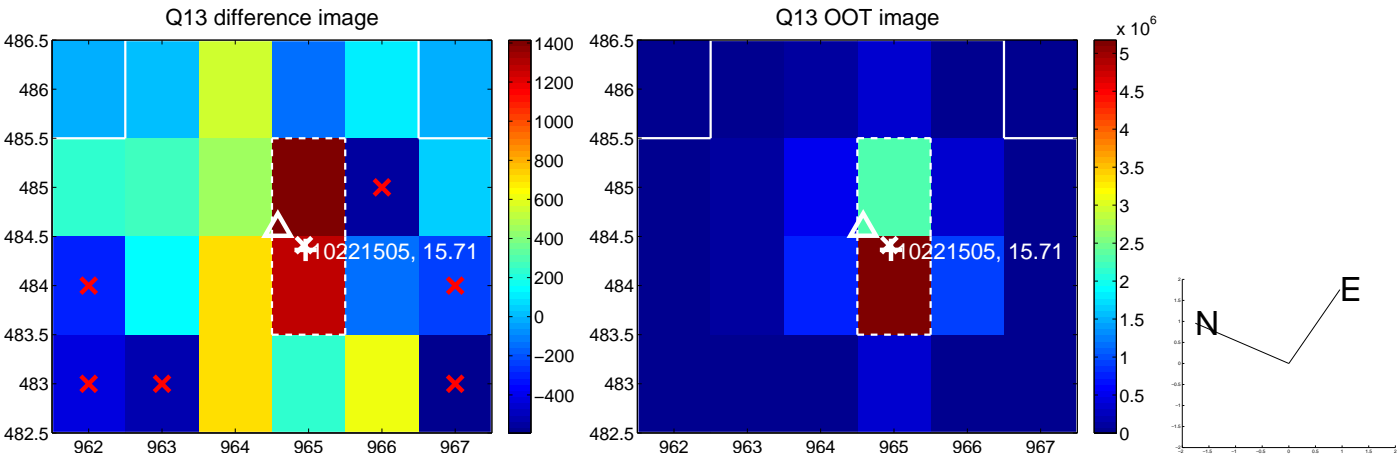
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



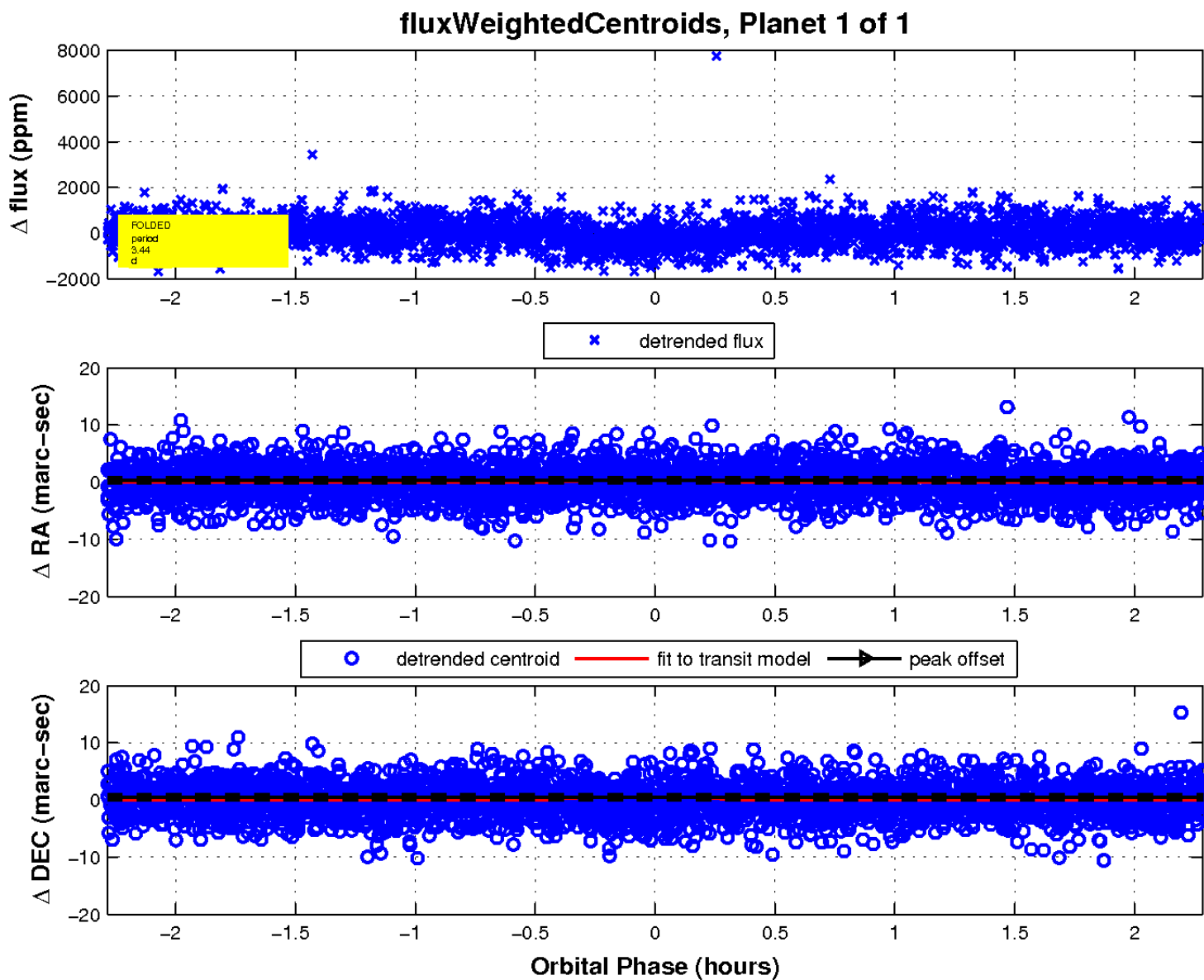
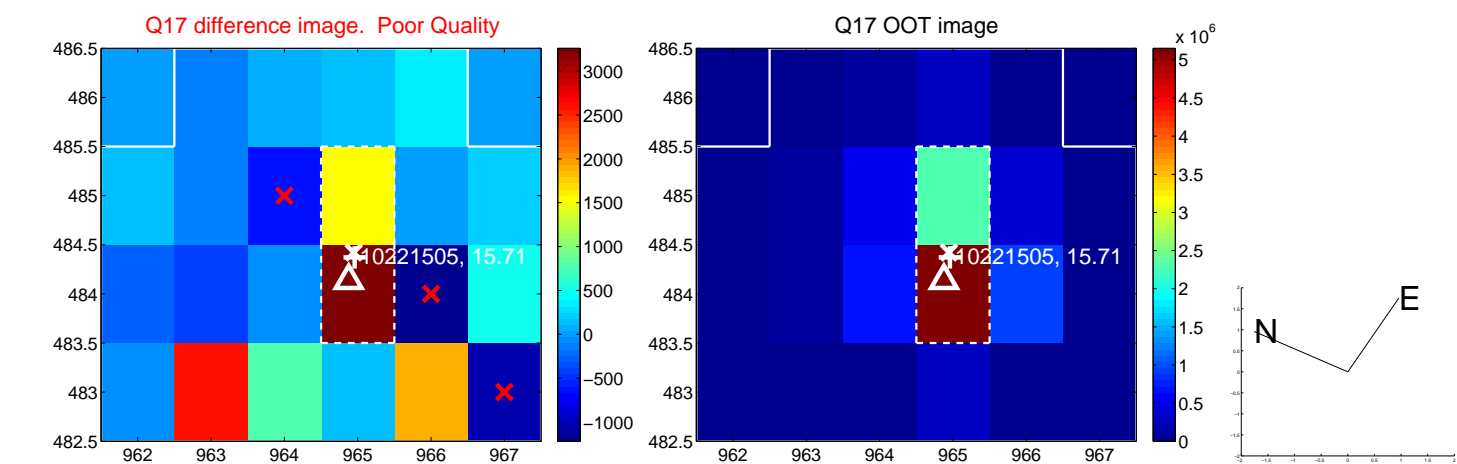
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

