

KIC 010221013

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})
010221013-01	OBS	0728.01	7.189378	134.171007	8102.5	2.083	297.6	286.3	1.08	6214	12.57	262.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010221013-01	OBS	PC	1.00	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.

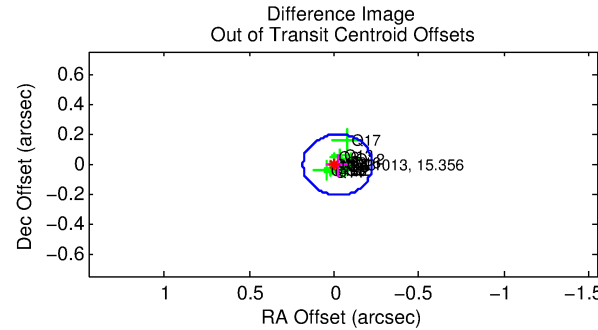
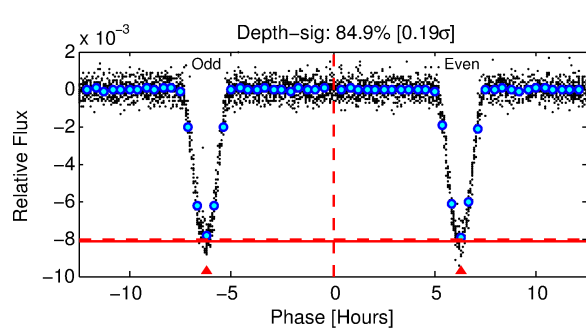
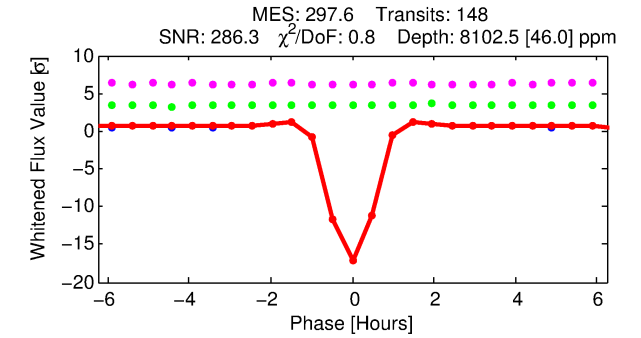
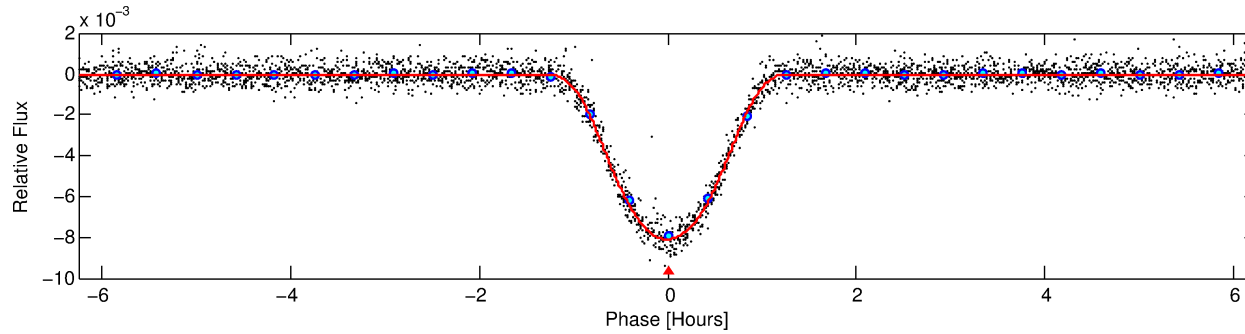
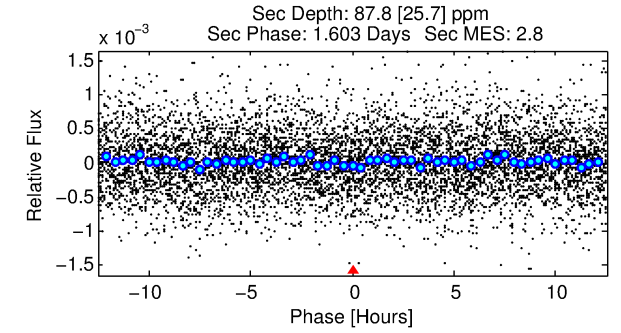
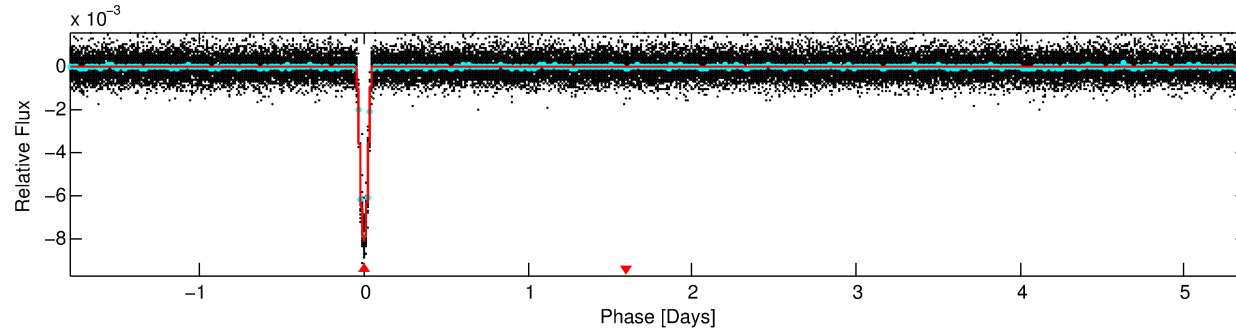
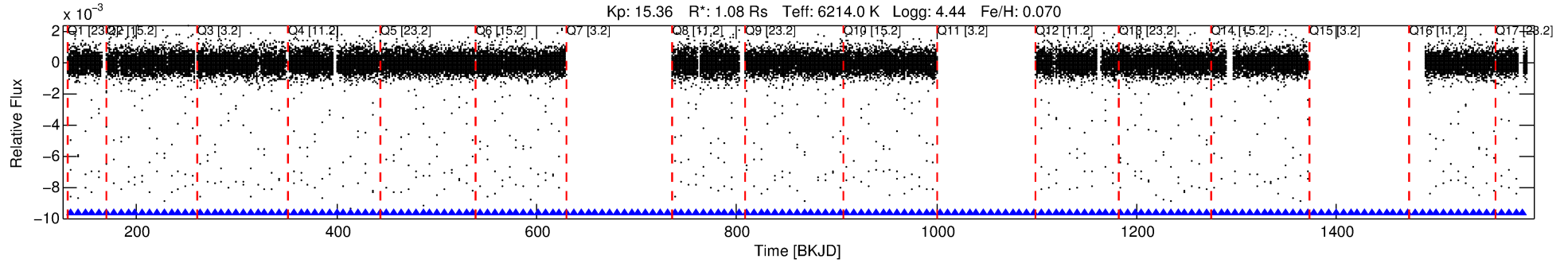
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010221013-01

No Significant Match Found

DV One-Page Summary

KIC: 10221013 Candidate: 1 of 1 Period: 7.189 d
KOI: K00728.01 Corr: 0.991



DV Fit Results:

Period = 7.18938 [0.00000] d
Epoch = 134.1710 [0.0001] BKJD
Rp/R* = 0.1070 [0.0040]
a/R* = 16.03 [0.29]
b = 0.93 [0.01]
Seff = 262.22 [116.51]
Teff = 1026 [114] K
Rp = 12.57 [4.08] Re
a = 0.0768 [0.0211] AU
Ag = 1.80 [0.91] [0.88 σ]
Teffp = 1838 [162] K [4.10 σ]

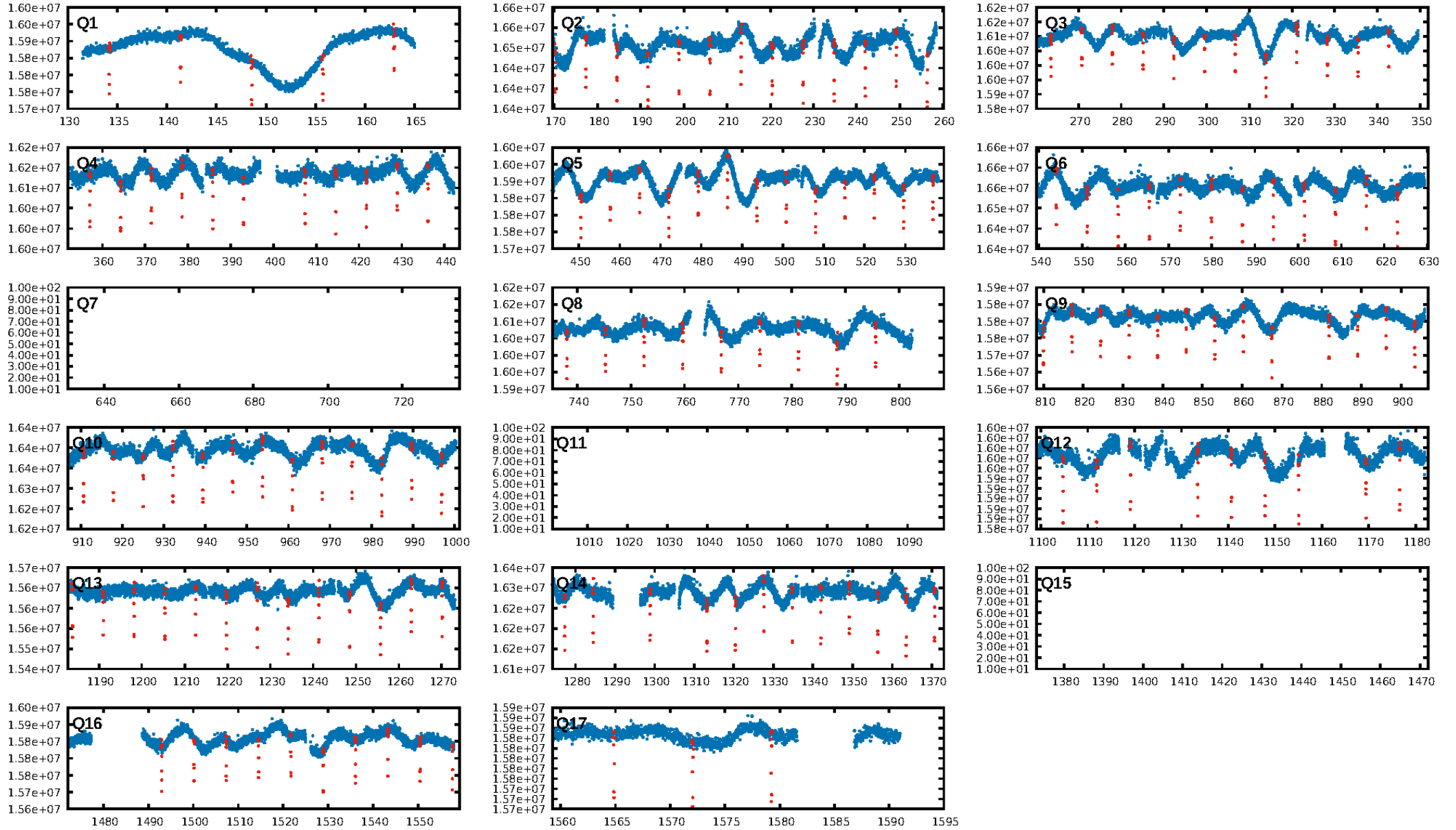
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [140/140]
GhostDiagnostic-chr: 4.747
Centroid-sig: 0.0%
Centroid-so: 0.094 arcsec [1.97 σ]
OotOffset-rm: 0.022 arcsec [0.33 σ]
KicOffset-rm: 0.111 arcsec [1.60 σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

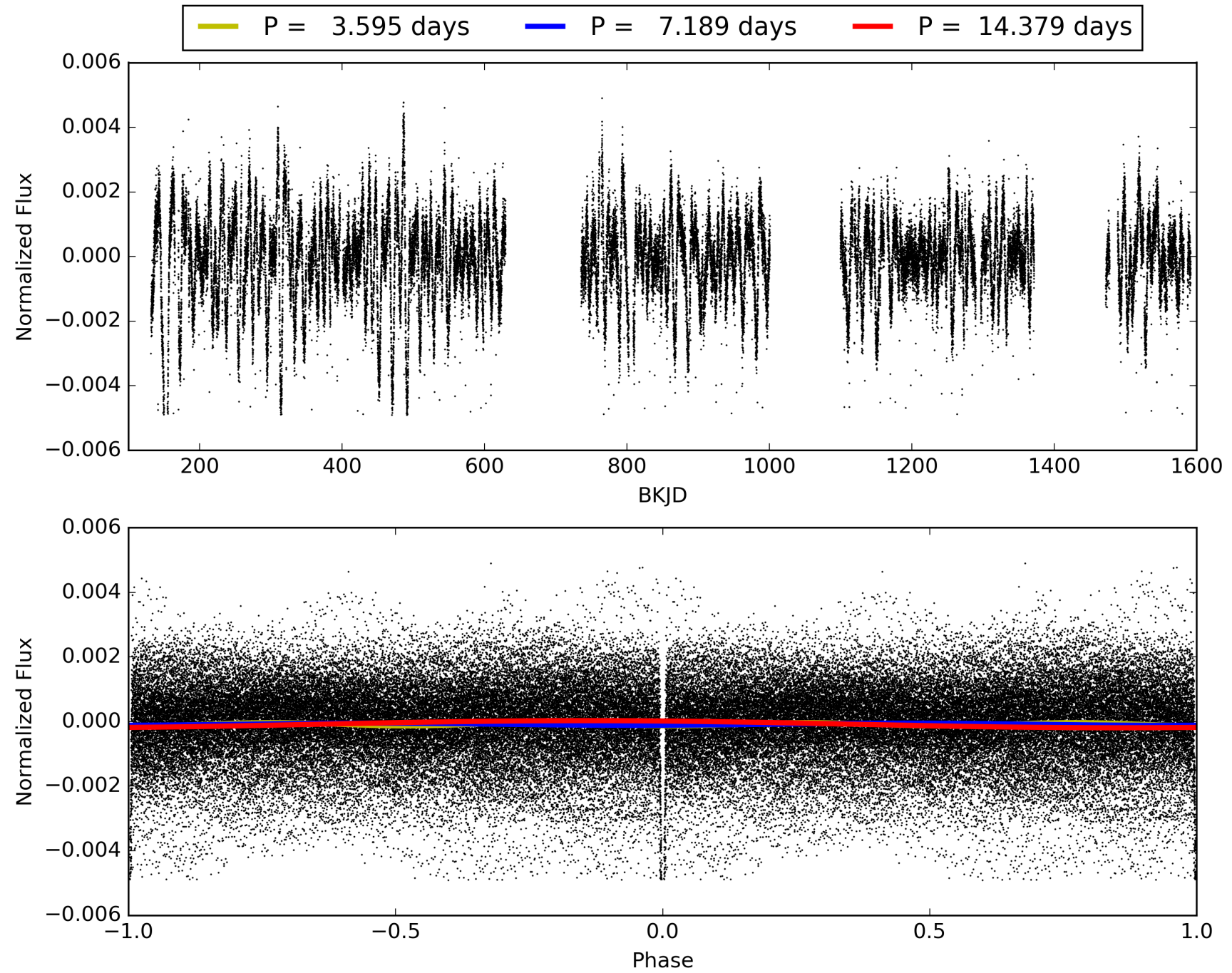
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:44:02 Z

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

TCE 010221013-01, PDC Light Curves

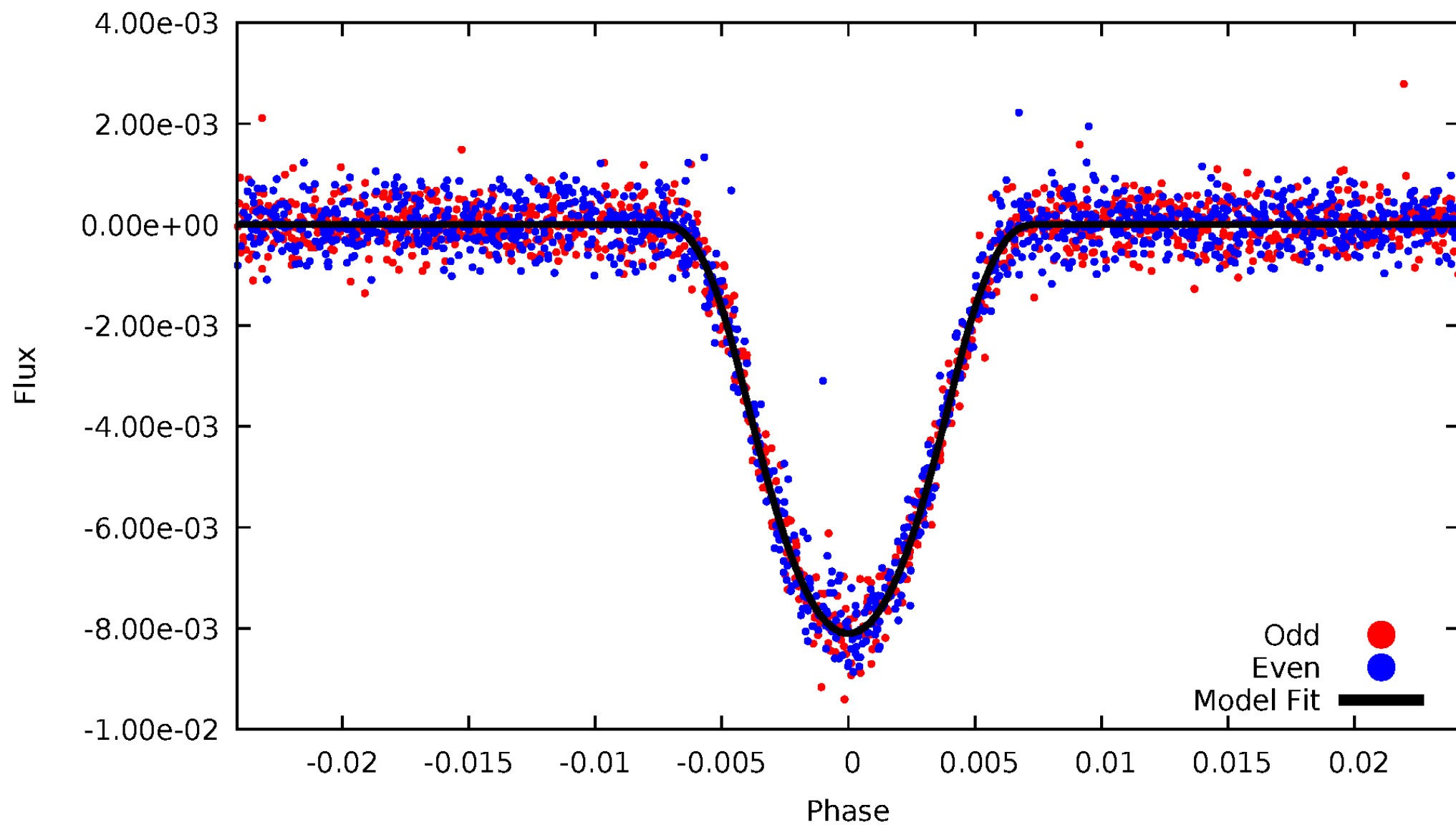


TCE 010221013-01



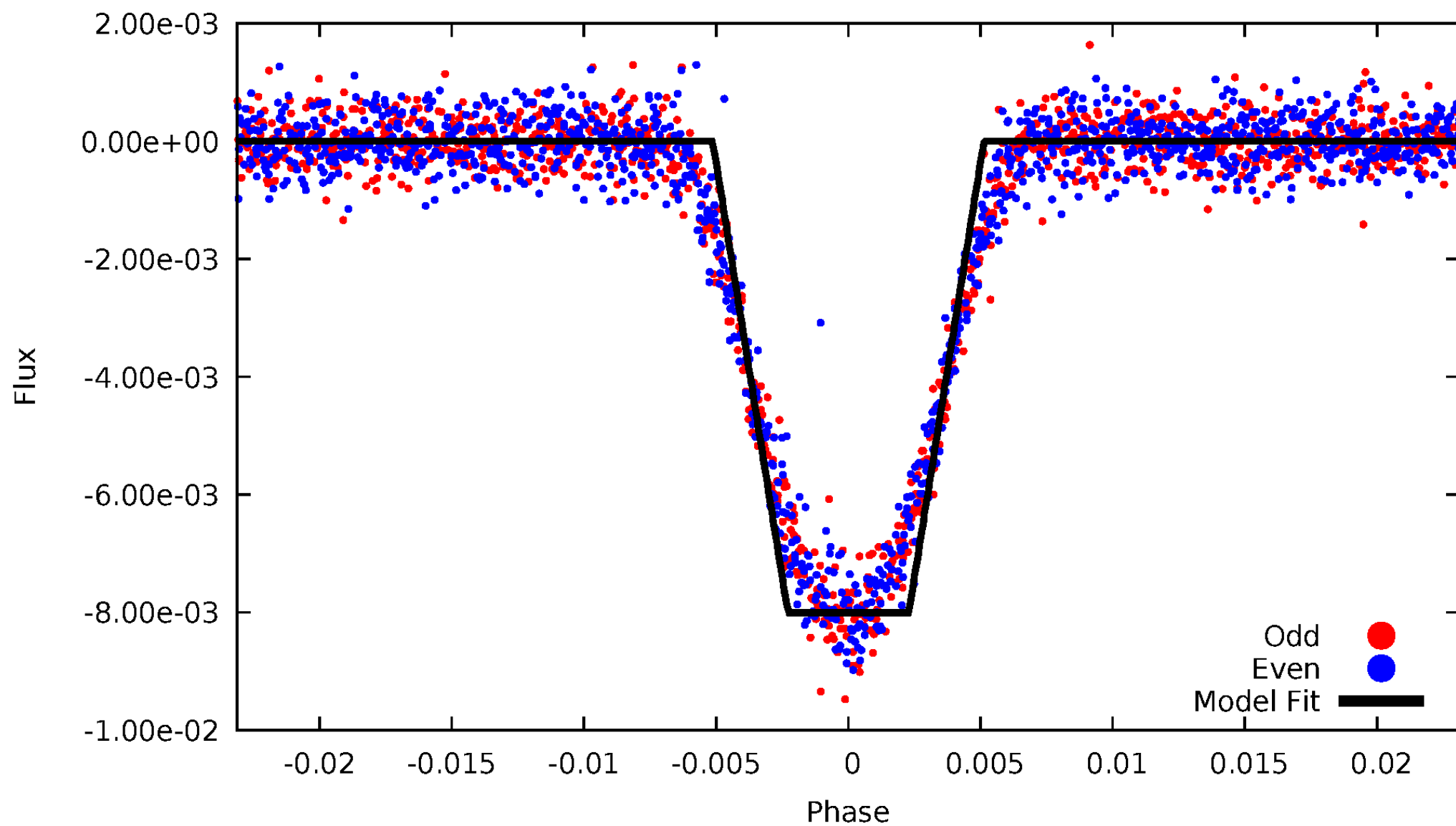
DV Odd/Even

TCE 010221013-01



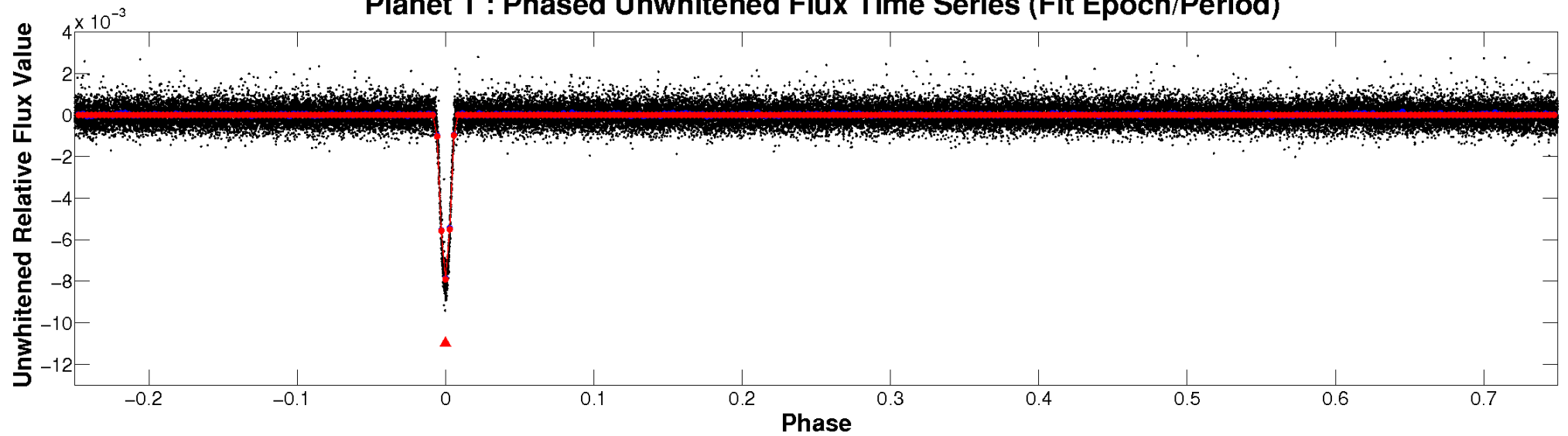
ALT Odd/Even

TCE 010221013-01

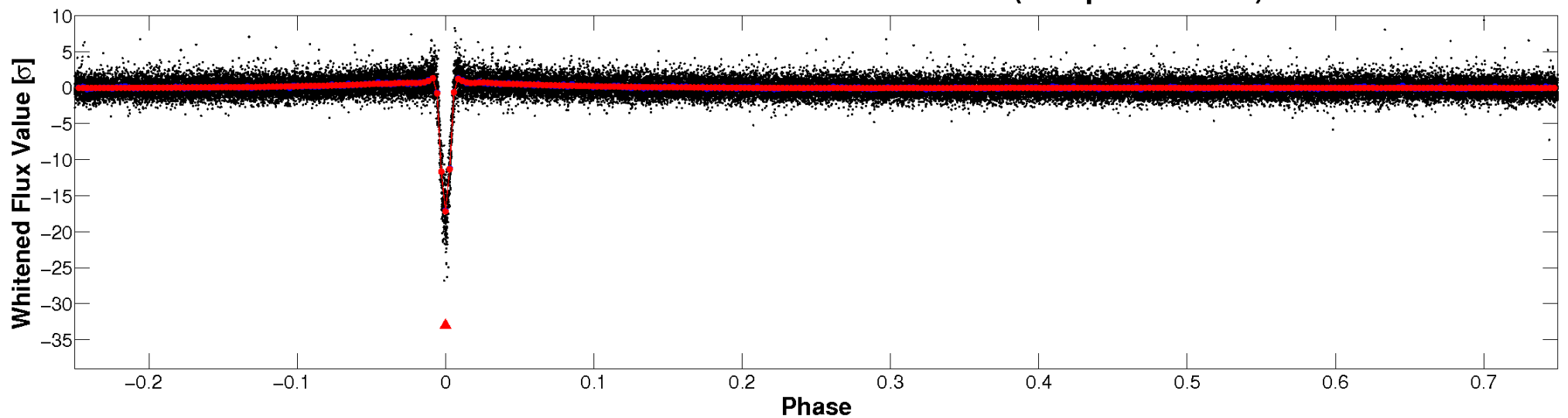


Non-Whitened Vs. Whitened Light Curve

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

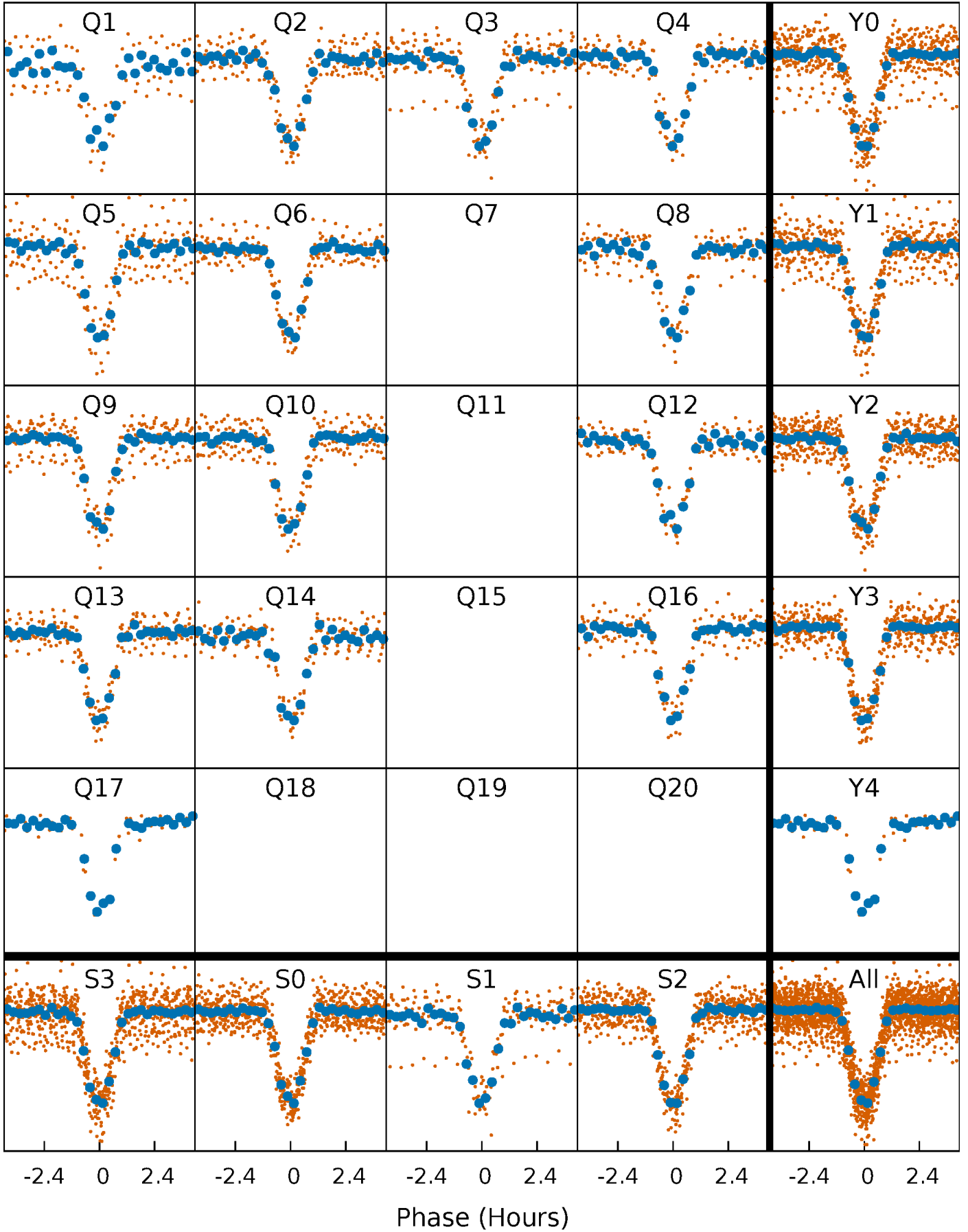


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



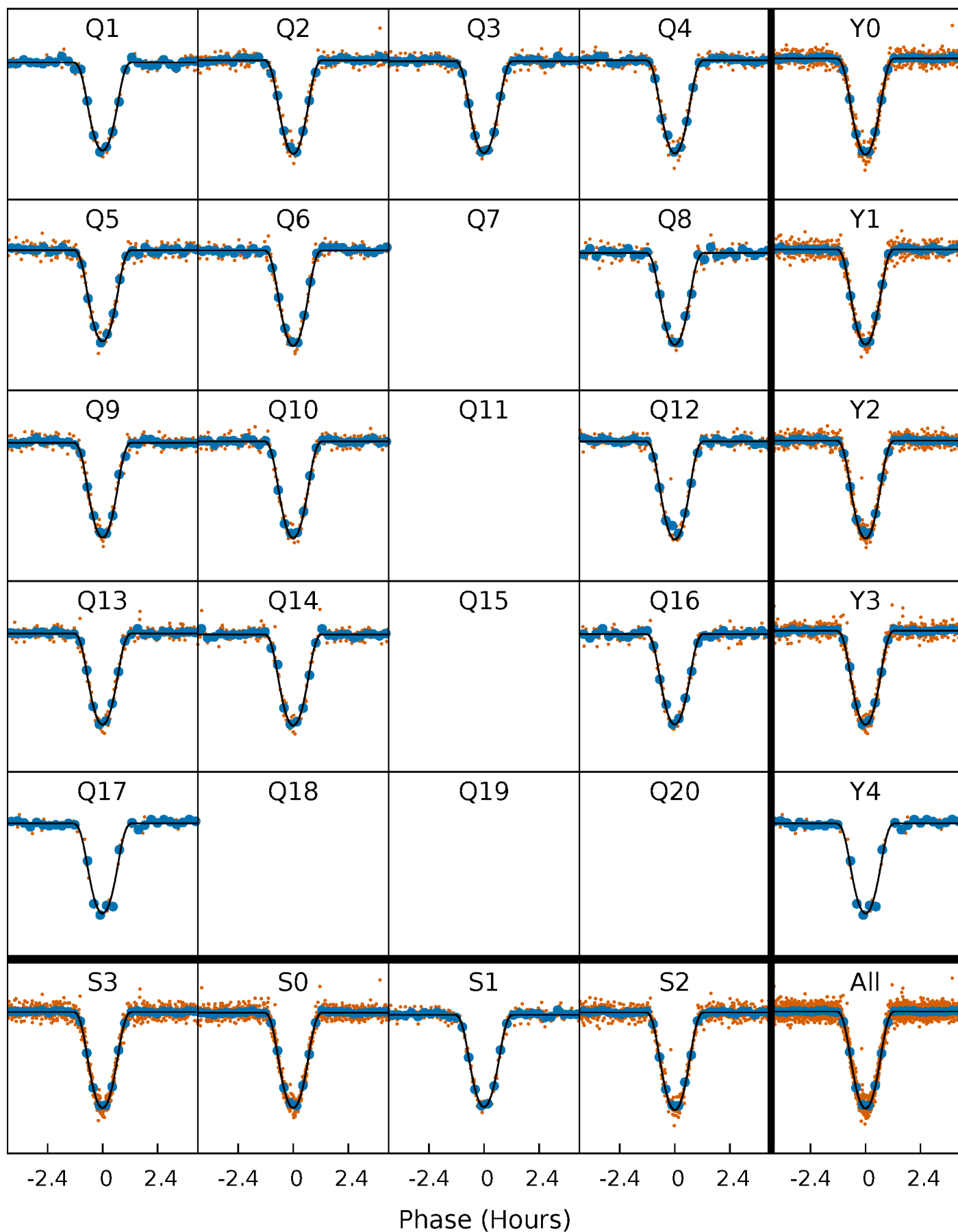
PDC Quarter-Phased Transit Curves

TCE 010221013-01 P= 7.189378 Days $T_0=134.171007$ (BKJD)



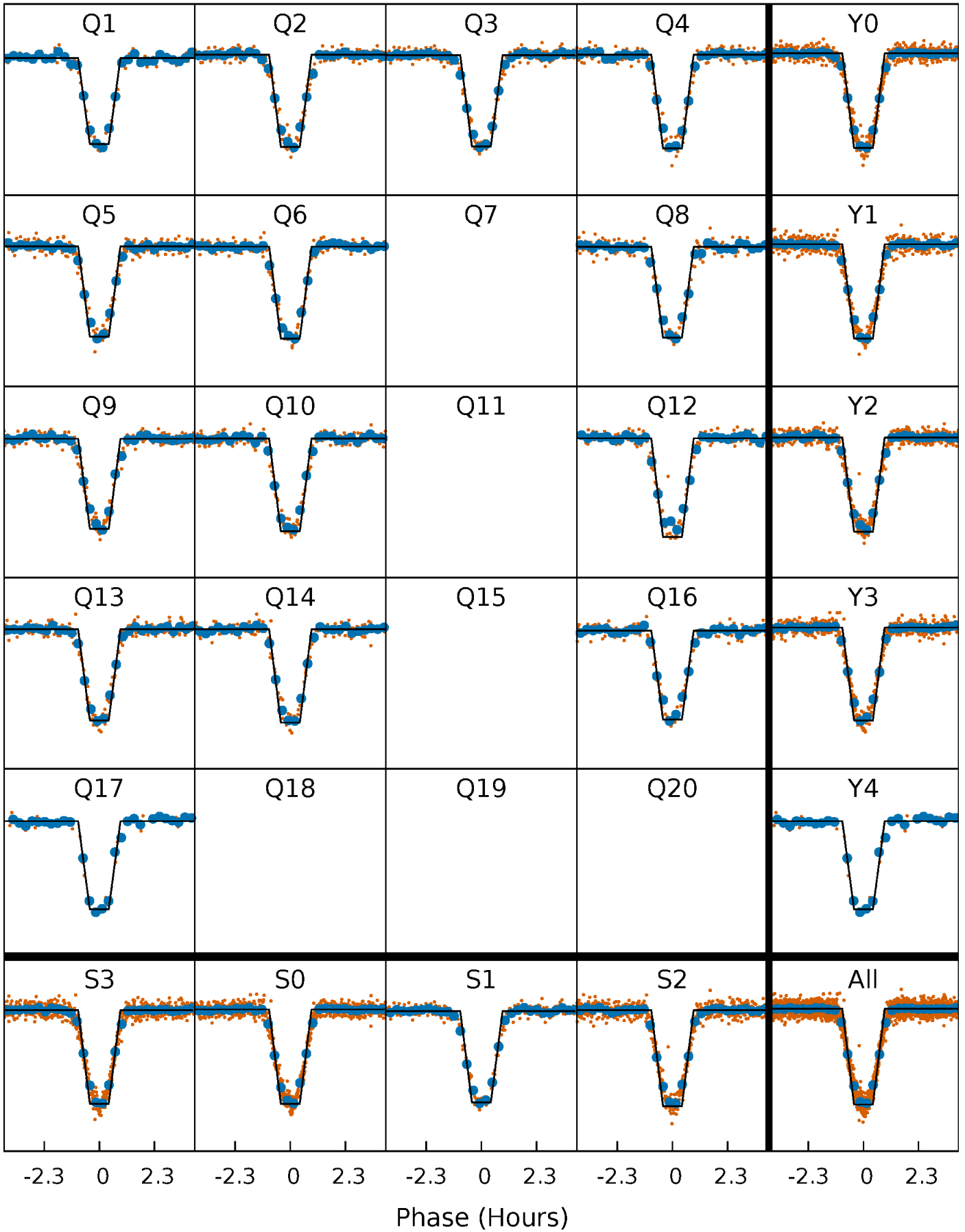
DV Quarter-Phased Transit Curves

TCE 010221013-01 P= 7.189378 Days $T_0=134.171007$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

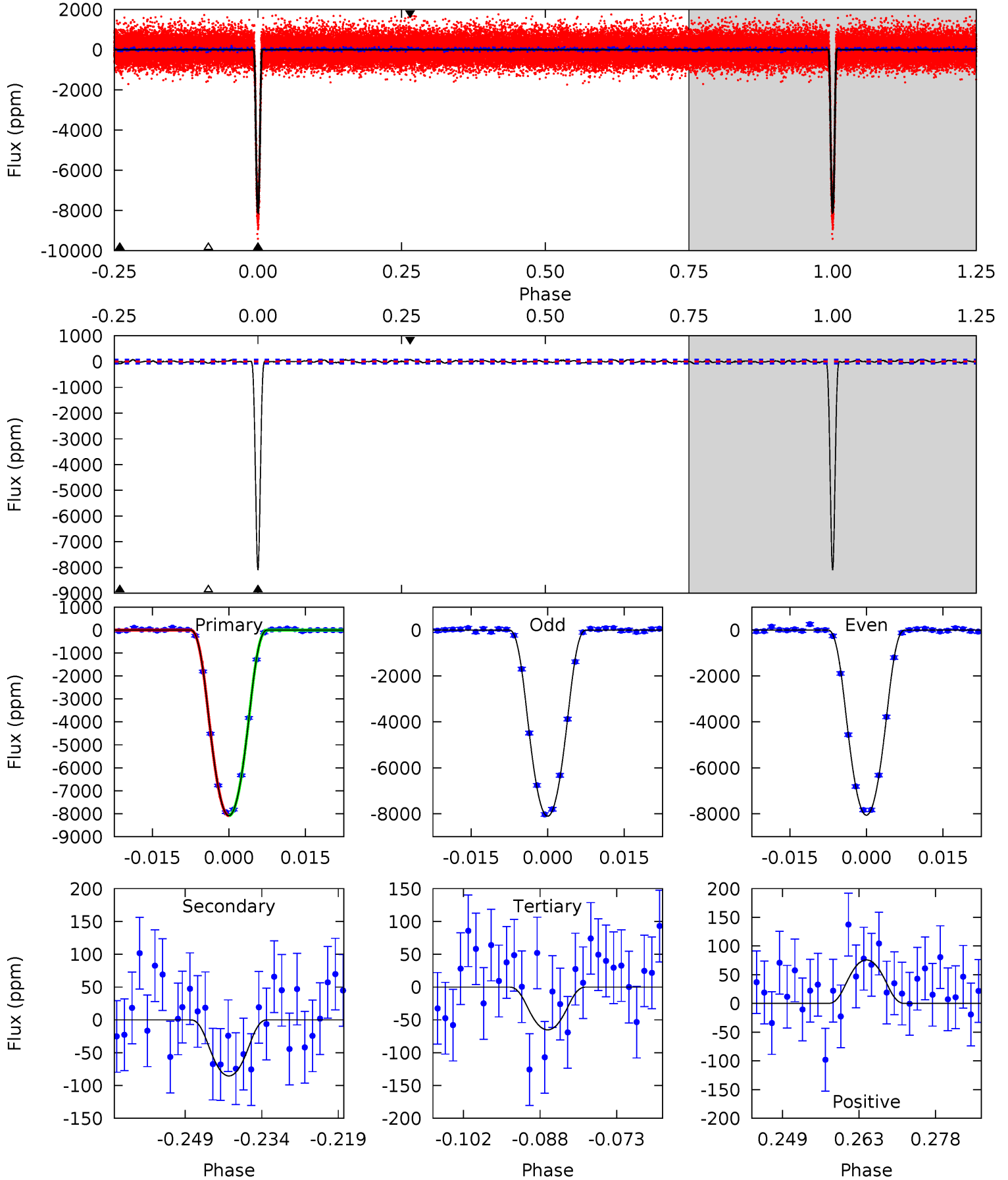
TCE 010221013-01 P= 7.189383 Days $T_0=134.170566$ (BKJD)



DV Model-Shift Uniqueness Test

010221013-01, P = 7.189378 Days, E = 126.981629 Days

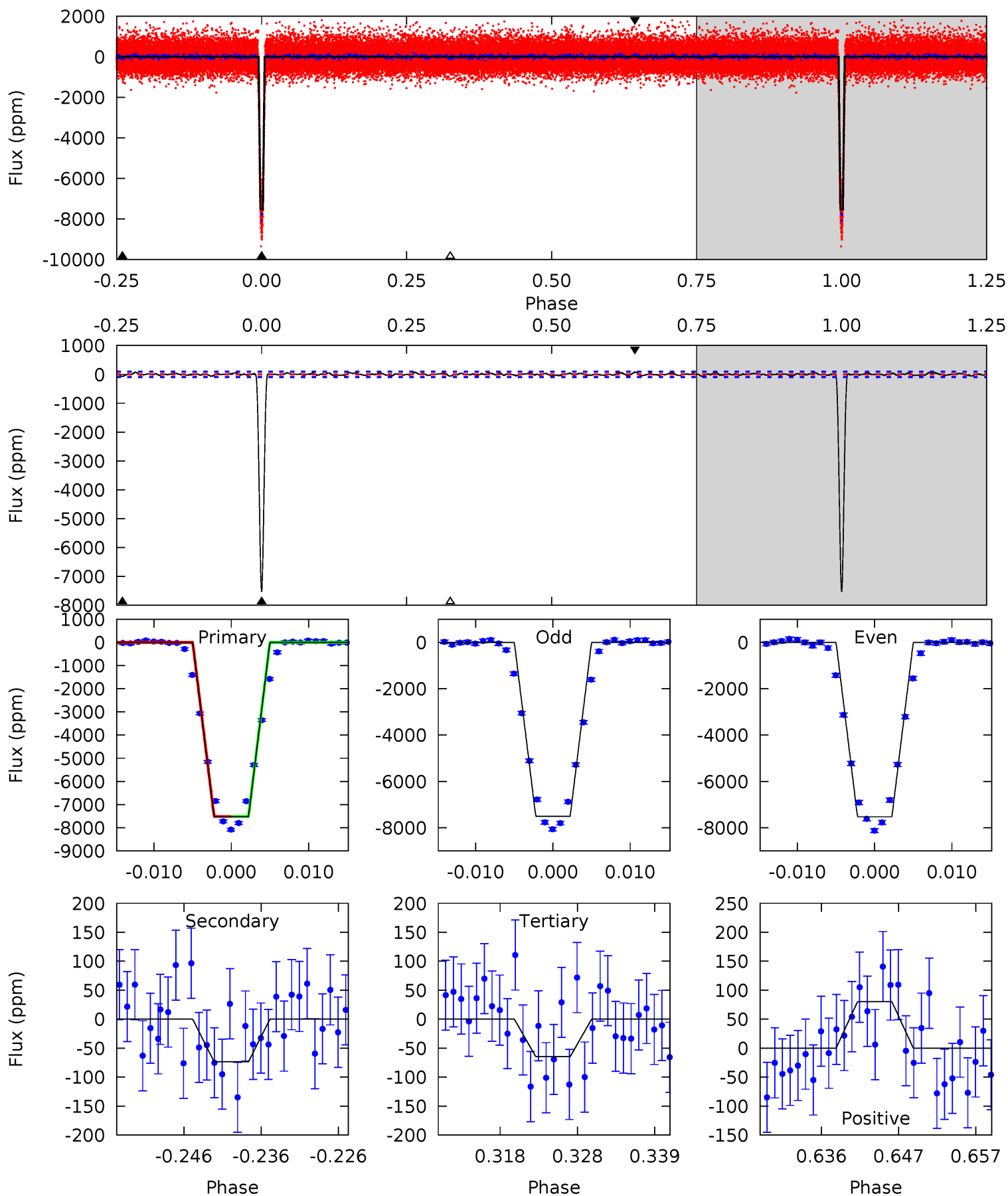
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
512.2	5.41	4.13	4.80	4.95	2.44	1.78	508.0	507.3	1.28	0.61	1.48	1.00	0.01	0.14



Alt Model-Shift Uniqueness Test

010221013-01, P = 7.189383 Days, E = 126.981183 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
401.8	3.93	3.46	4.28	5.02	2.57	1.34	398.4	397.5	0.47	-0.35	0.61	1.00	0.01	0.03



Stellar Parameters For KIC 010221013

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6214^{+195}_{-282}	$4.442^{+0.056}_{-0.224}$	$0.070^{+0.250}_{-0.350}$	$1.076^{+0.347}_{-0.139}$	$1.169^{+0.153}_{-0.187}$	$1.321^{+0.387}_{-0.708}$
	+3%/-5%	+1%/-5%	+357%/-500%	+32%/-13%	+13%/-16%	+29%/-54%
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 010221013-01 / KOI 0728.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-85 ± 16	$13.16^{+2.36}_{-1.37}$	1472^{+116}_{-89}	2551^{+95}_{-105}	$1.527^{+0.493}_{-0.457}$
Alt.	-74 ± 19	$10.89^{+1.99}_{-1.19}$	1458^{+120}_{-86}	2632^{+125}_{-140}	$1.897^{+0.756}_{-0.670}$

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

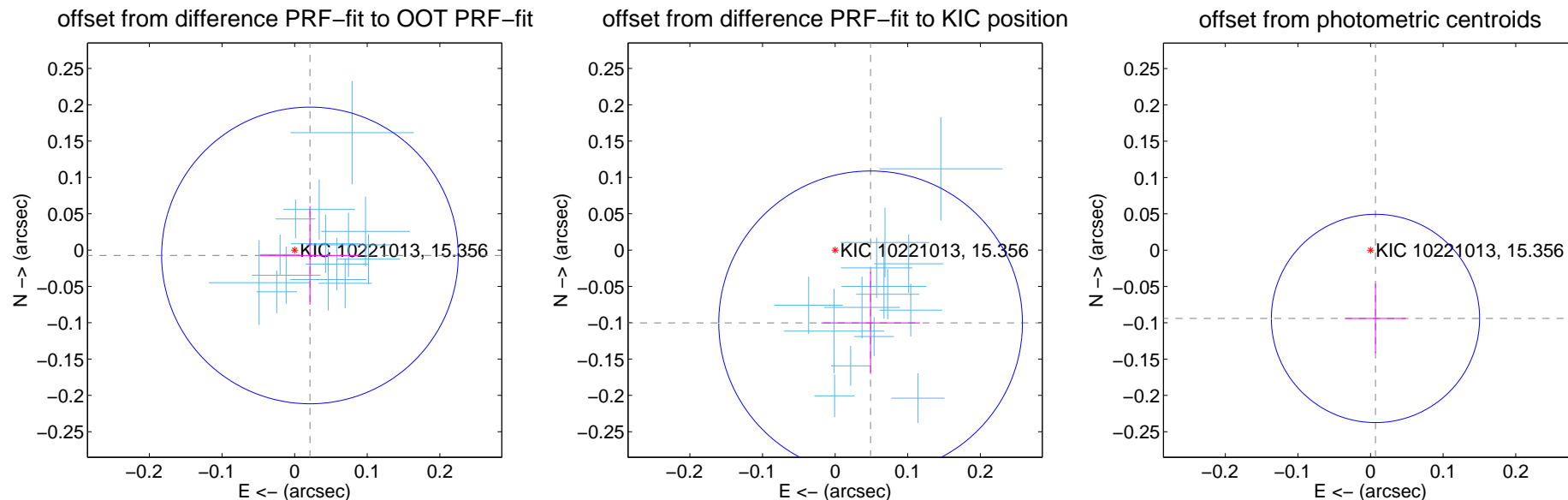
DV Centroid Data

Supplemental centroid analysis for 010221013-01. Kepler magnitude: 15.36. Transit SNR 286.30

There are 14 quarters with good PRF difference image offsets

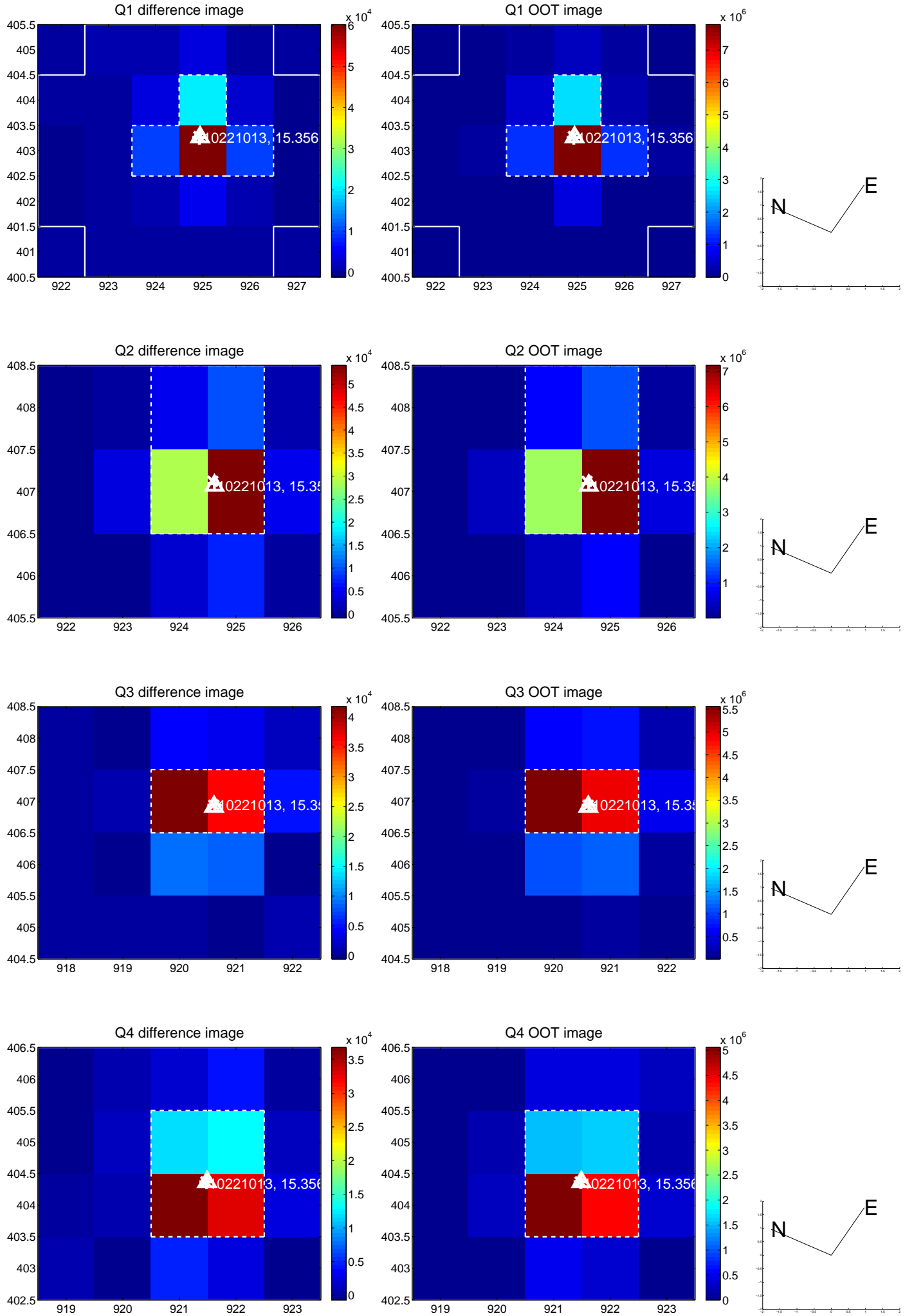
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.022 ± 0.068	0.33	-0.021 ± 0.068	-0.007 ± 0.068
PRF-fit source offset from KIC position	0.111 ± 0.070	1.60	-0.049 ± 0.068	-0.100 ± 0.070
photometric centroid source offset	0.09 ± 0.05	1.97	-0.01 ± 0.04	-0.09 ± 0.05

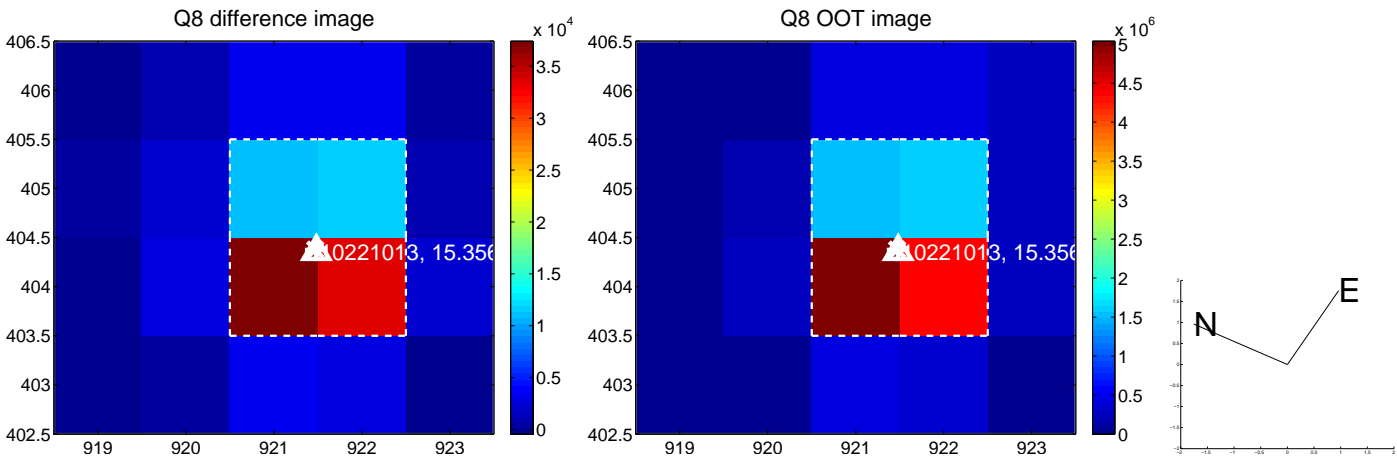
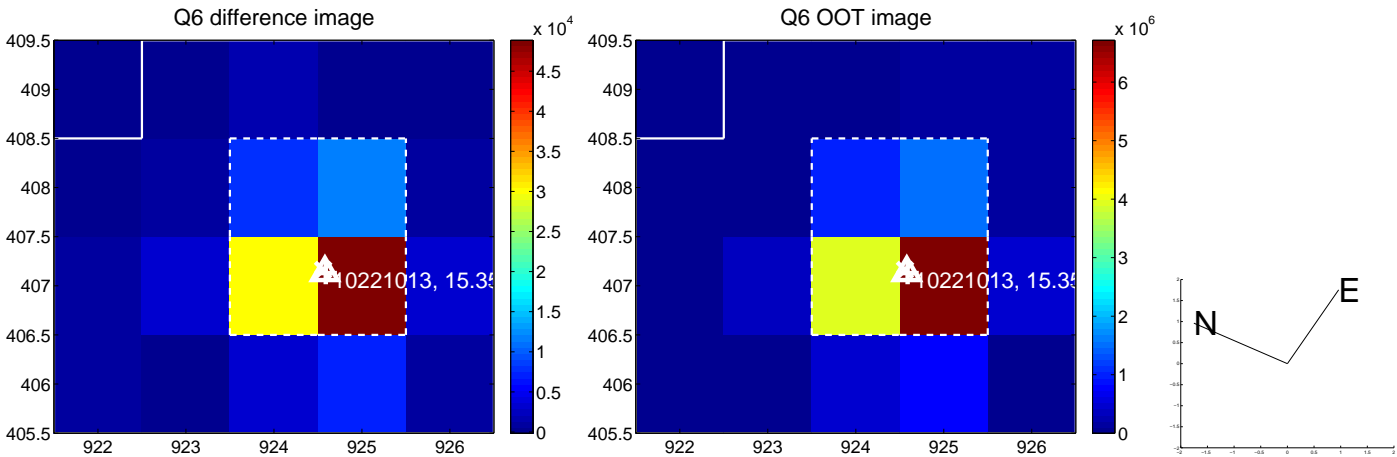
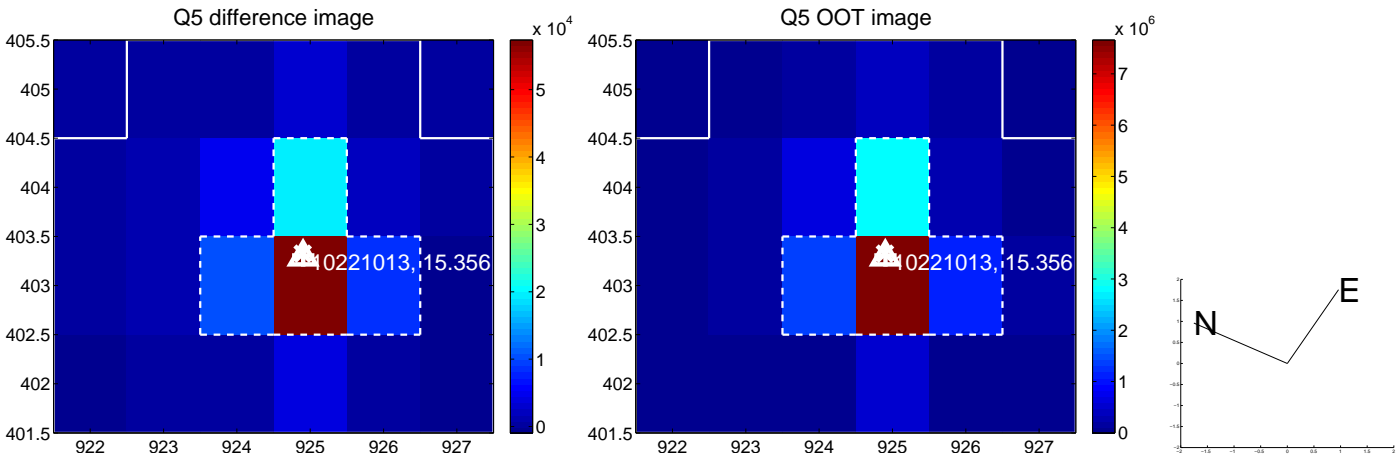


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

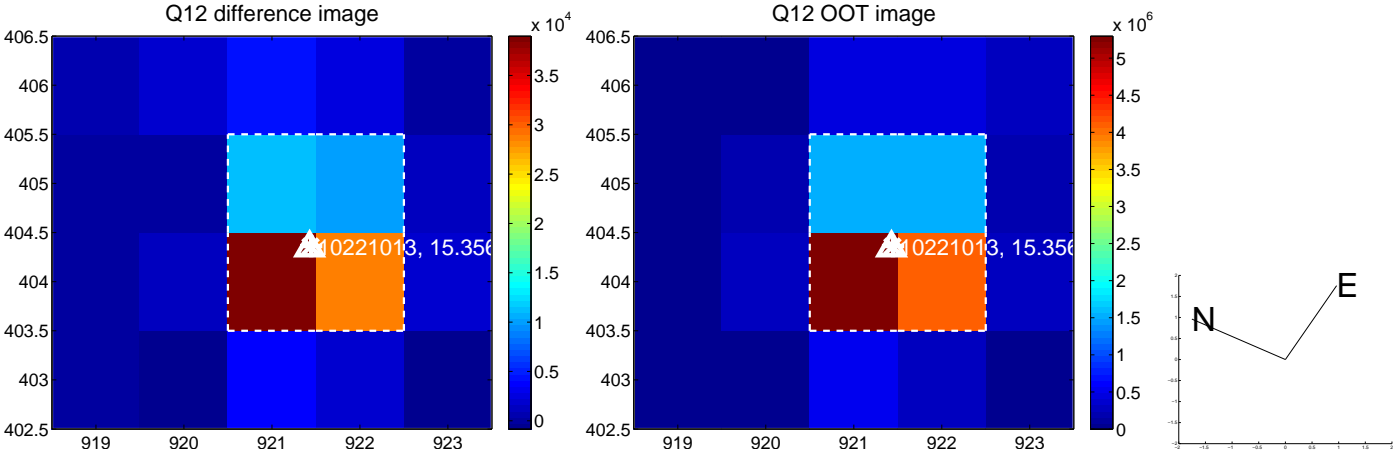
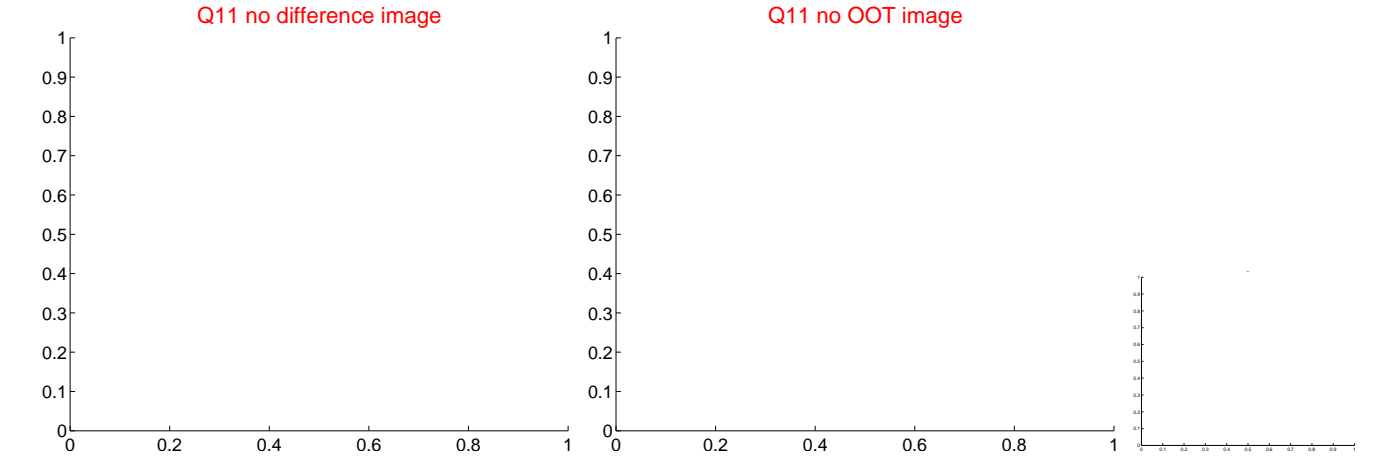
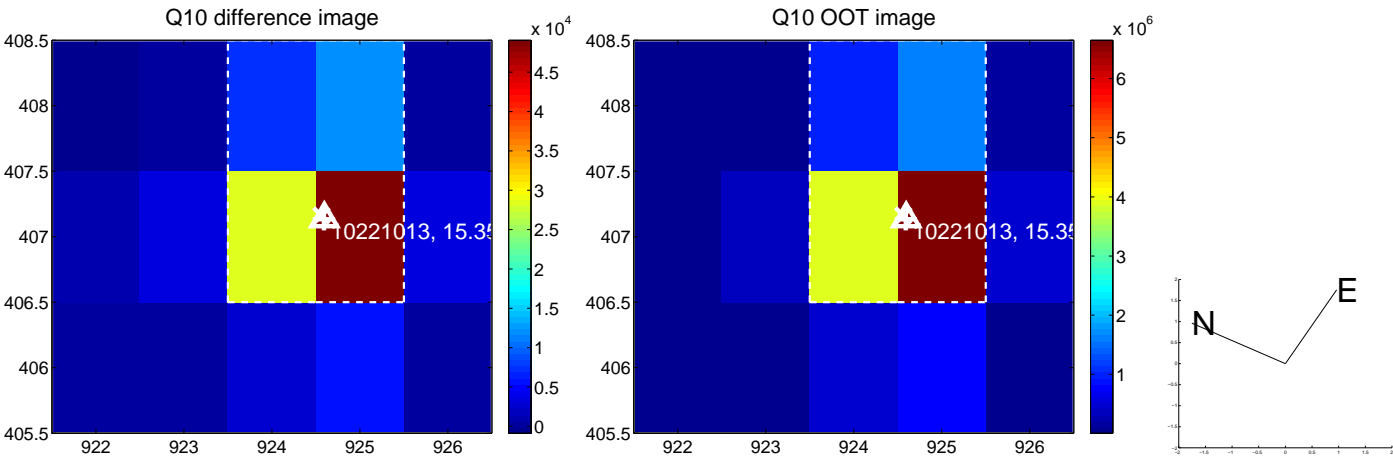
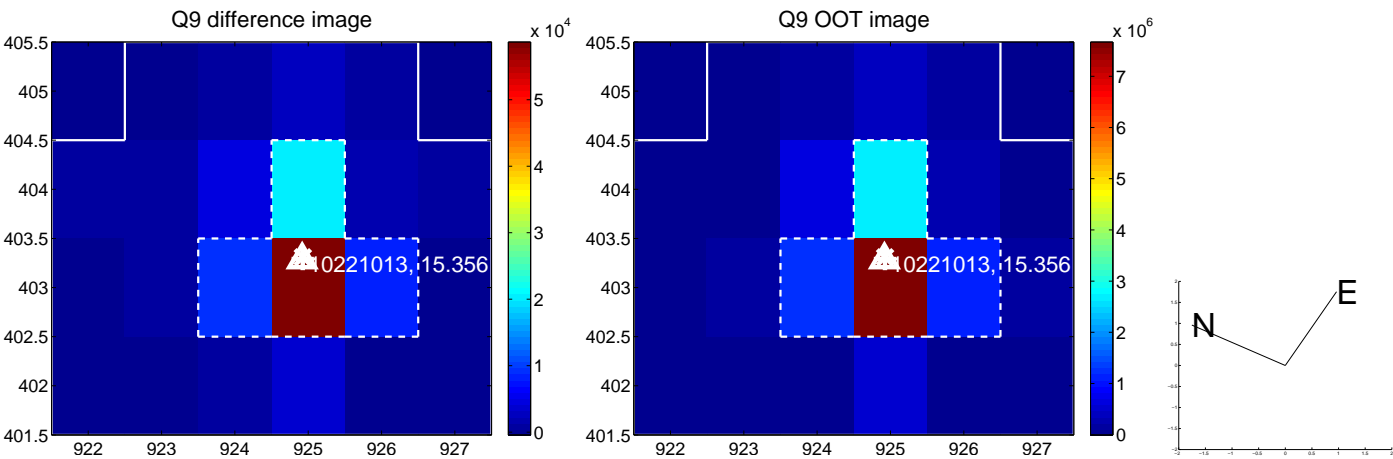
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



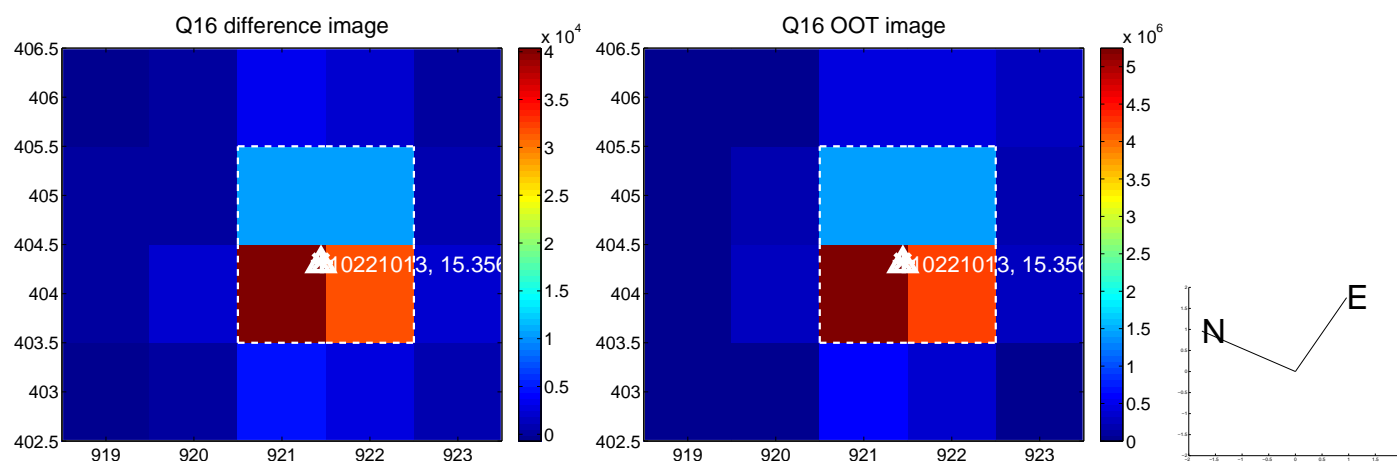
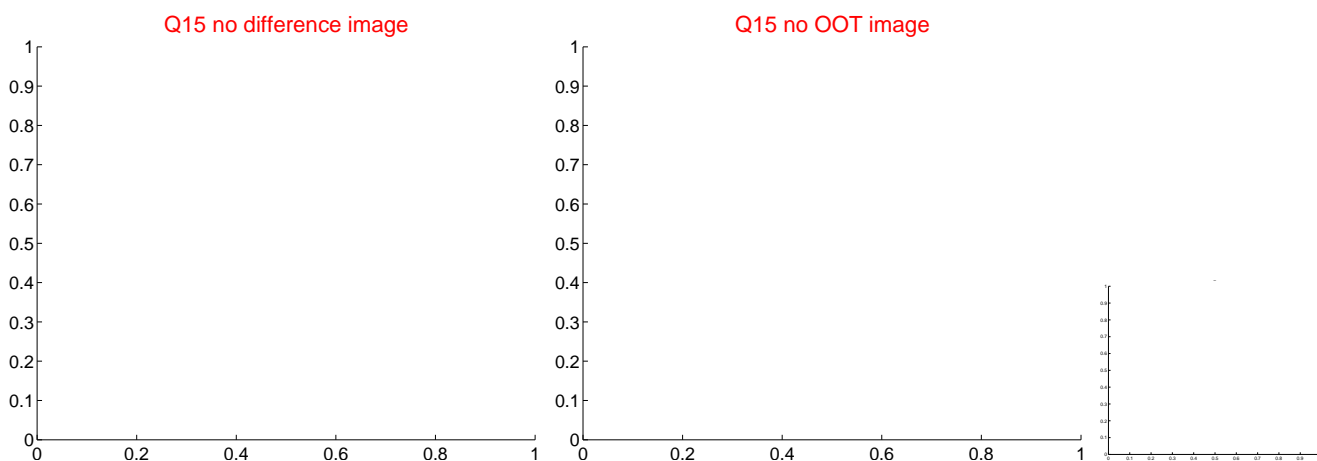
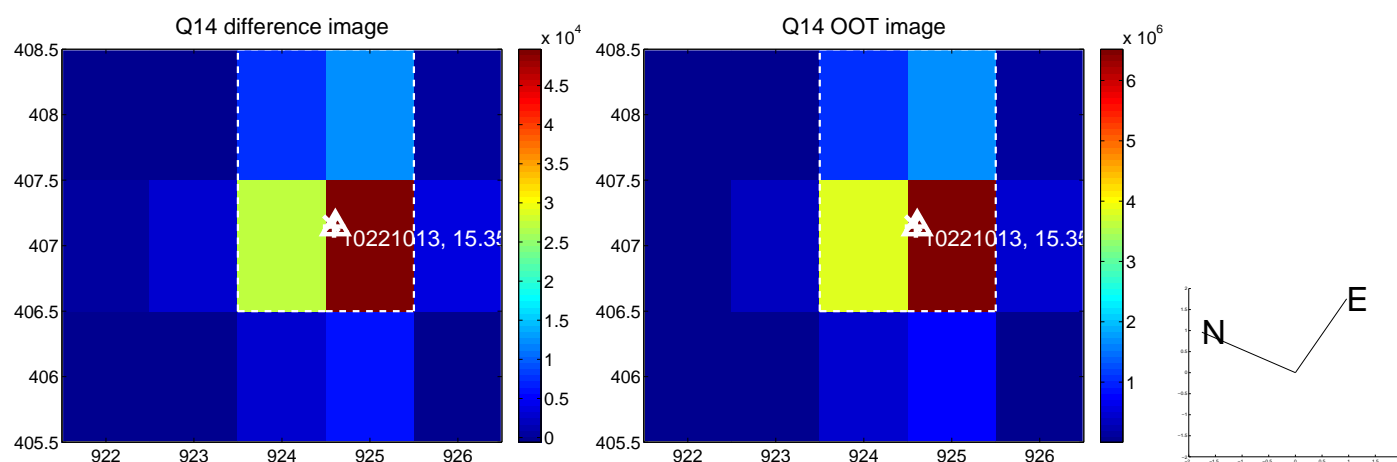
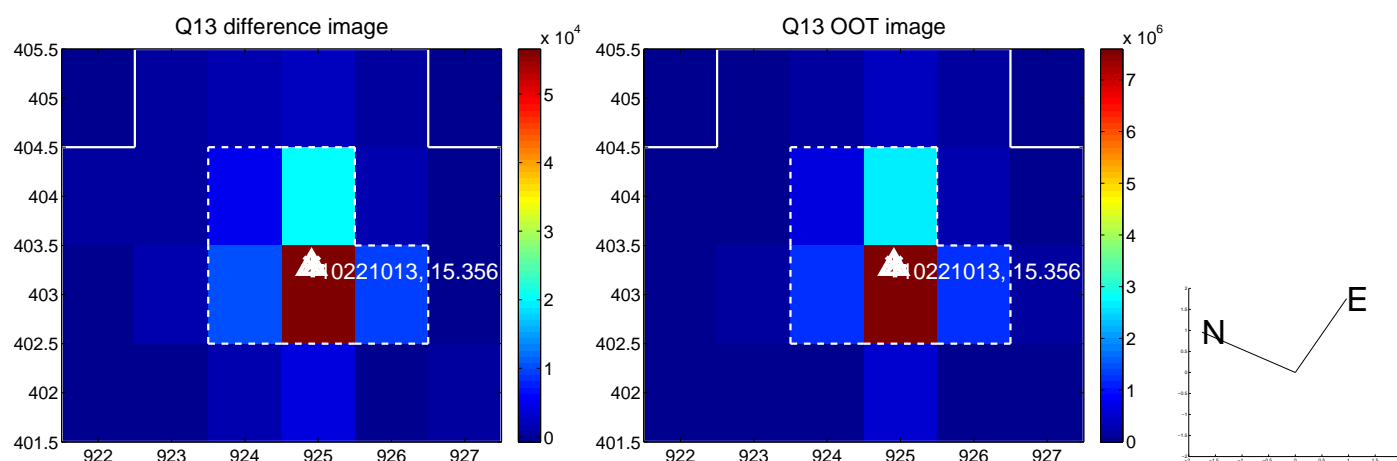
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



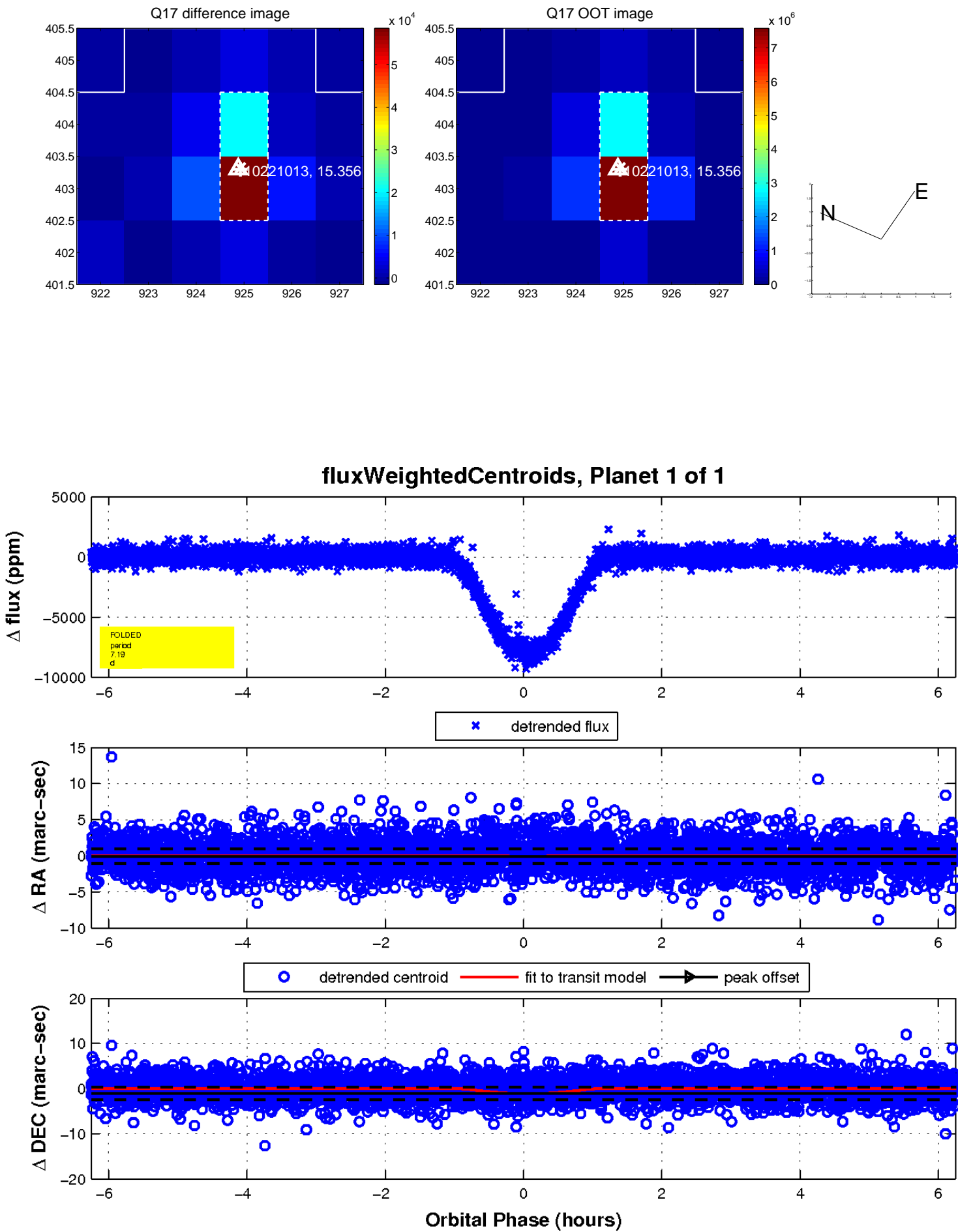
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

