

KIC 004641506

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})
004641506-01	OBS	No	383.059076	422.919035	195.4	16.626	8.4	8.5	1.59	6061	2.47	2.64

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004641506-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—CENT_FEW_DIFFS

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

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

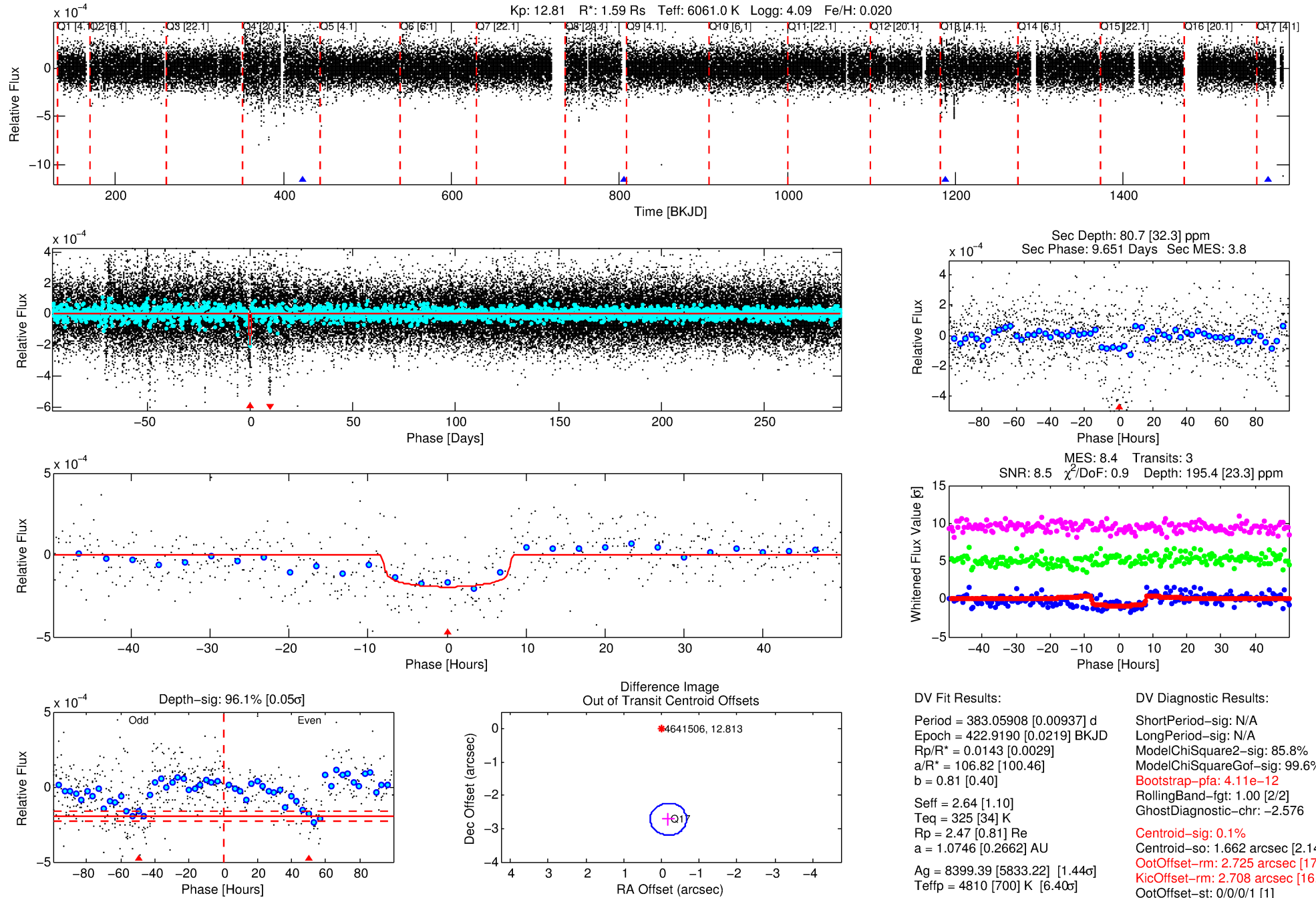
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004641506-01

No Significant Match Found

DV One-Page Summary

KIC: 4641506 Candidate: 1 of 1 Period: 383.059 d



DV Fit Results:

Period = 383.05908 [0.00937] d
Epoch = 422.9190 [0.0219] BKJD
Rp/R* = 0.0143 [0.0029]
a/R* = 106.82 [100.46]
b = 0.81 [0.40]
Seff = 2.64 [1.10]
Teq = 325 [34] K
Rp = 2.47 [0.81] Re
a = 1.0746 [0.2662] AU
Ag = 8399.39 [5833.22] [1.44σ]
Teffp = 4810 [700] K [6.40σ]

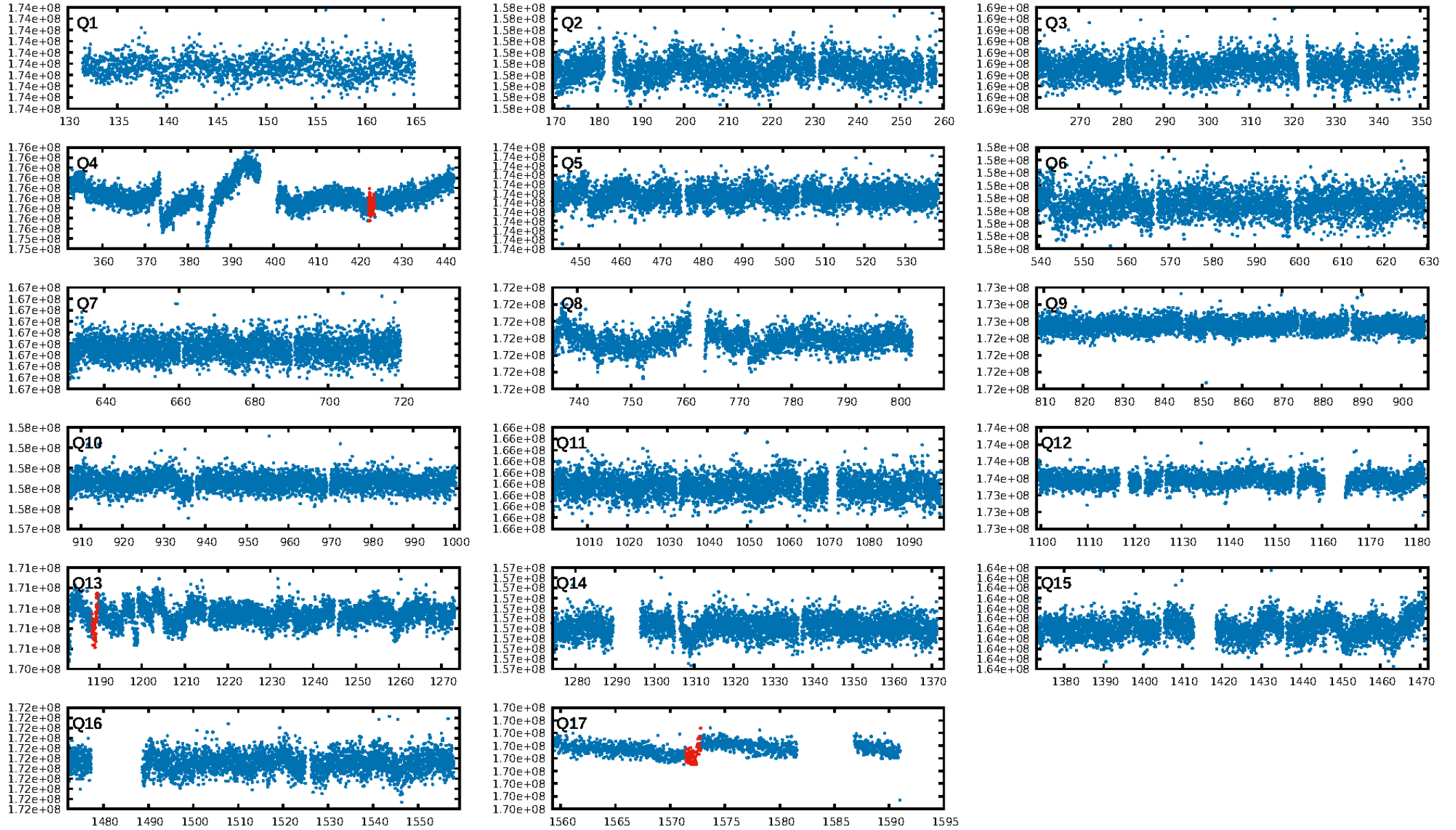
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 85.8%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 4.11e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -2.576
Centroid-sig: 0.1%
Centroid-so: 1.662 arcsec [2.14σ]
OotOffset-rm: 2.725 arcsec [17.00σ]
KicOffset-rm: 2.708 arcsec [16.88σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

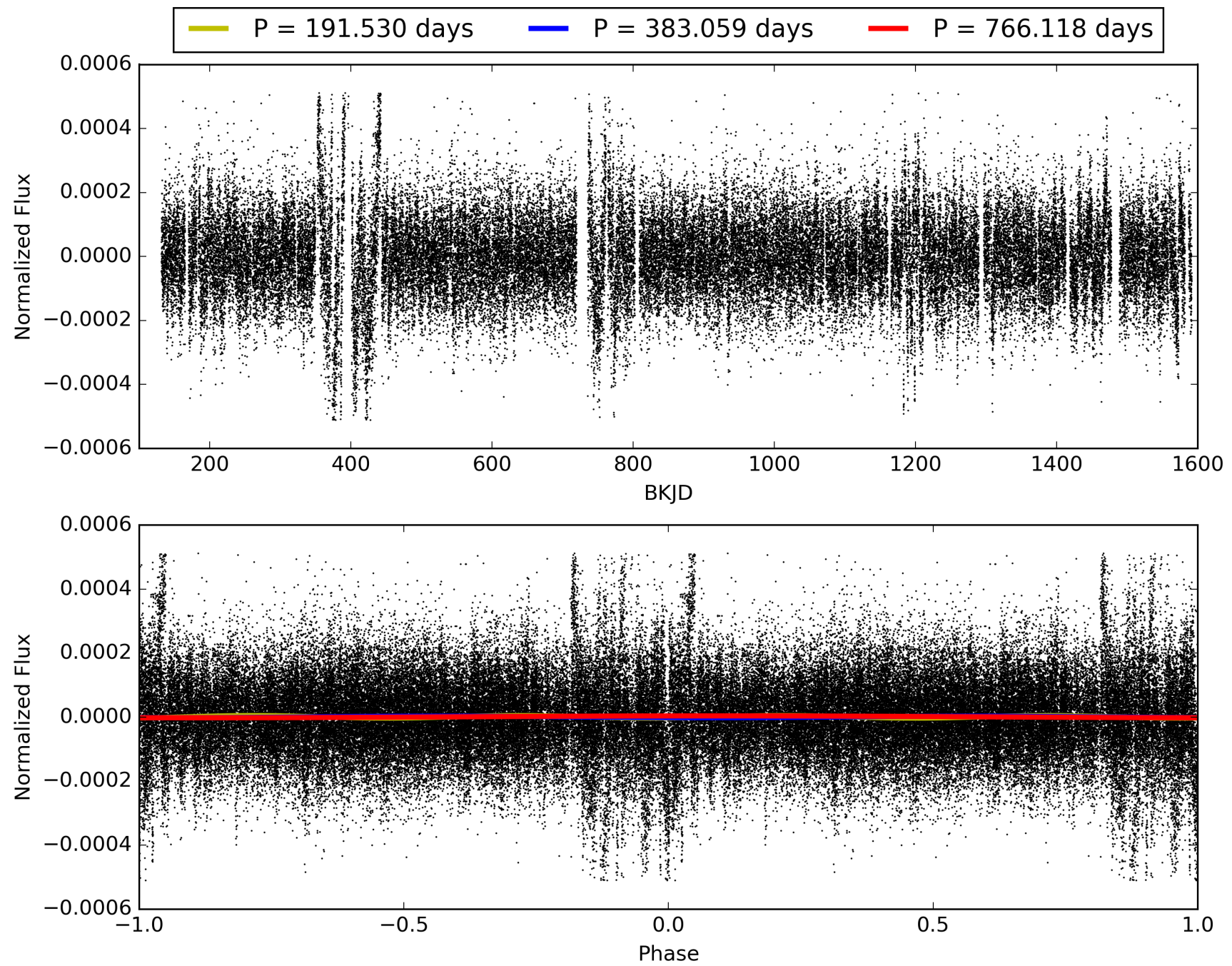
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:21:20 Z

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

TCE 004641506-01, PDC Light Curves

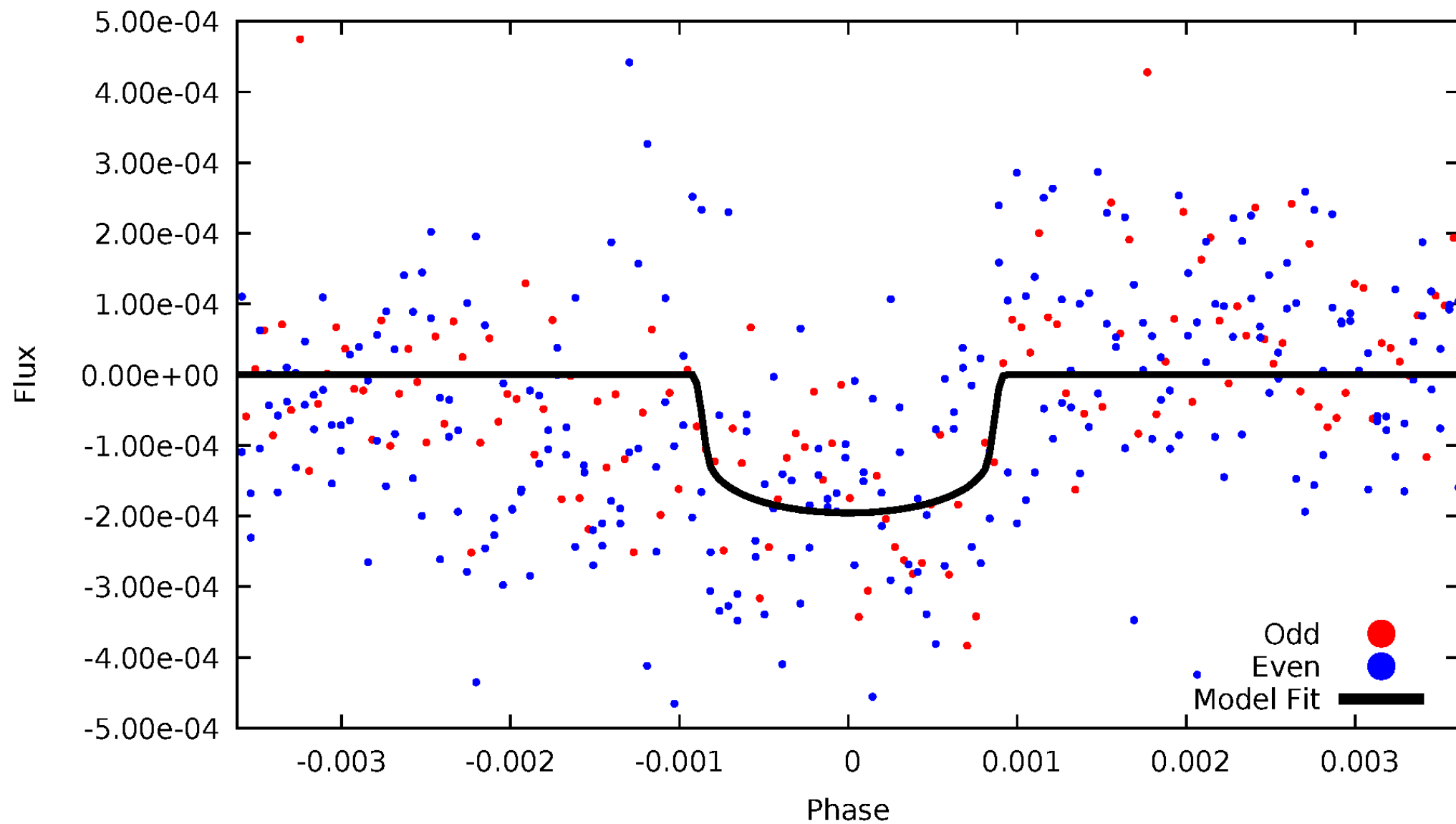


TCE 004641506-01



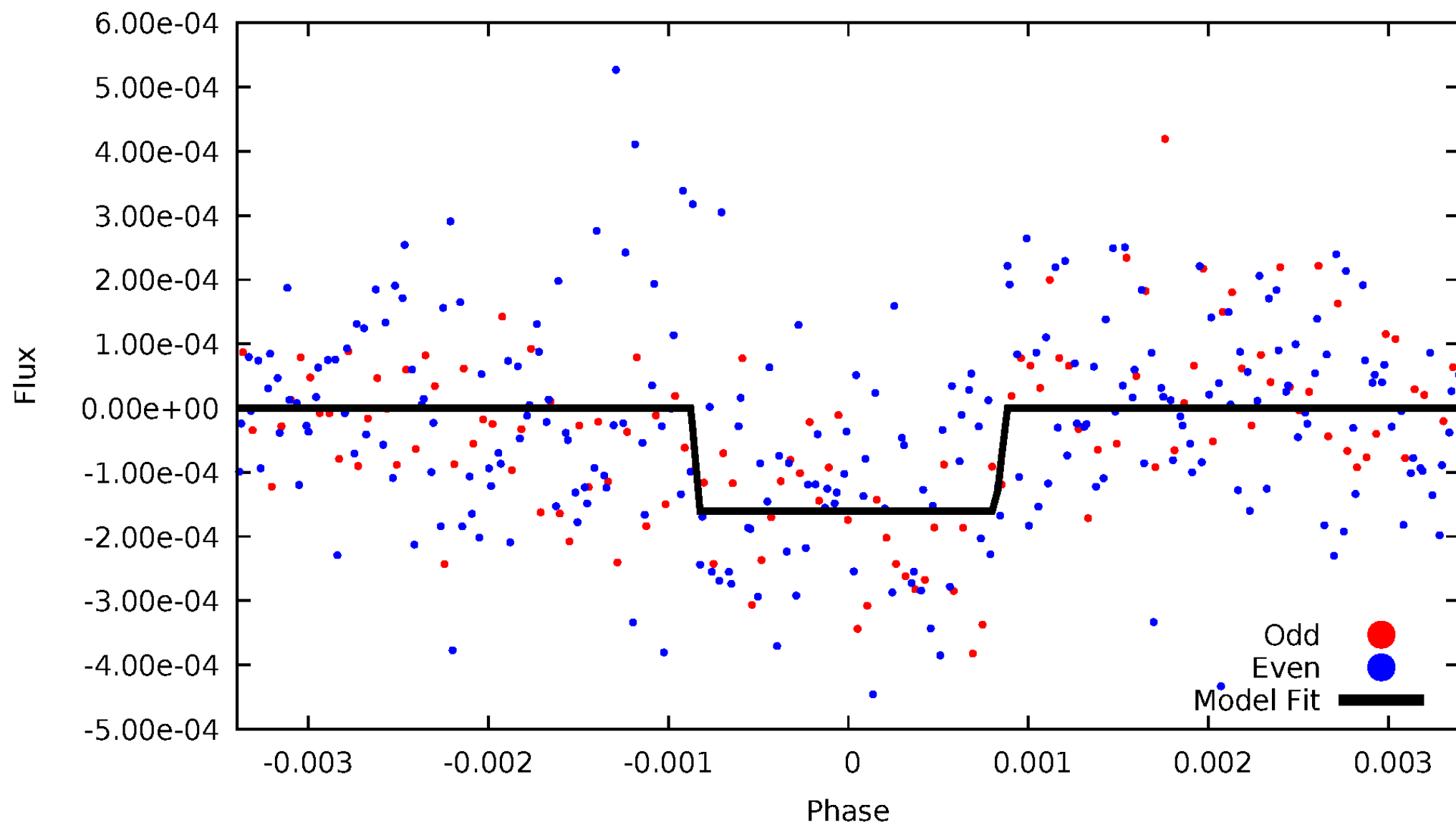
DV Odd/Even

TCE 004641506-01

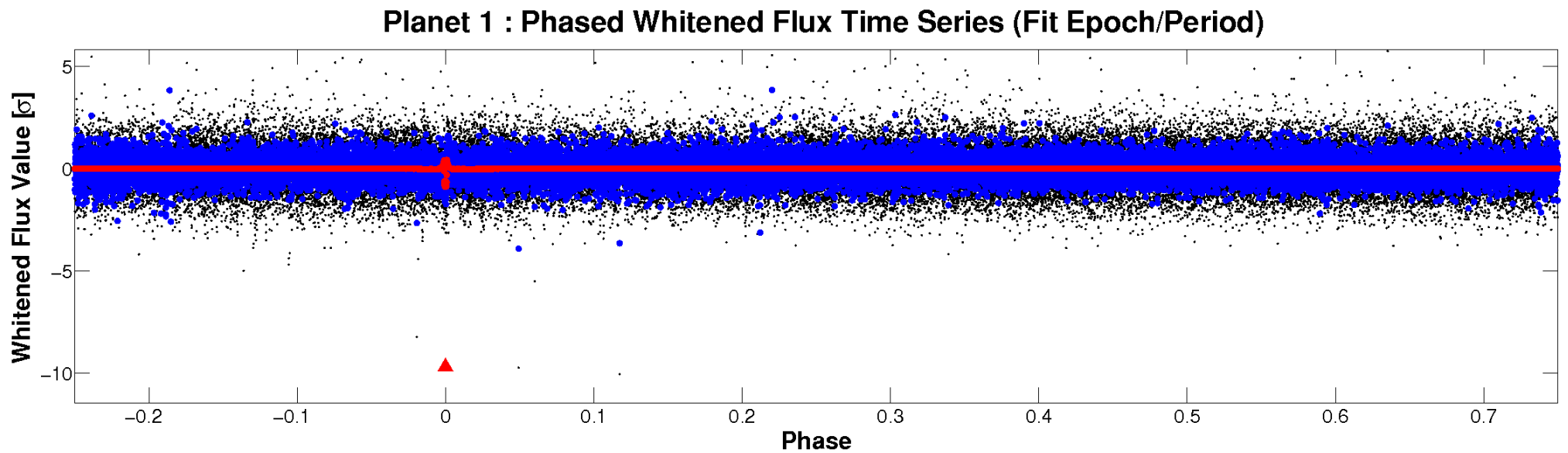
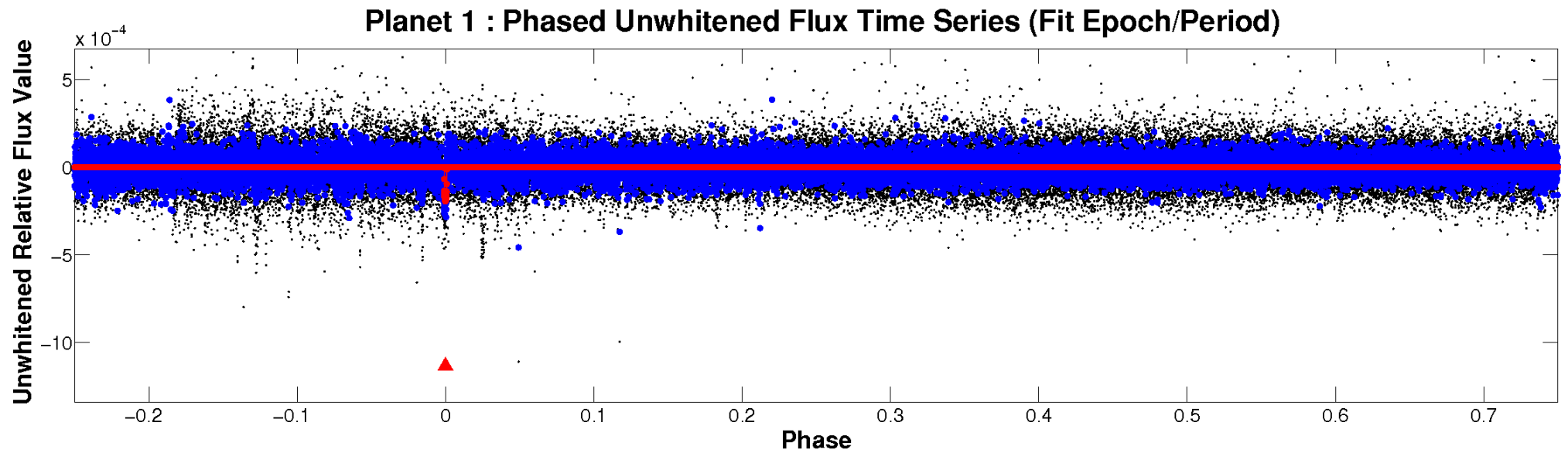


ALT Odd/Even

TCE 004641506-01



Non-Whitened Vs. Whitened Light Curve



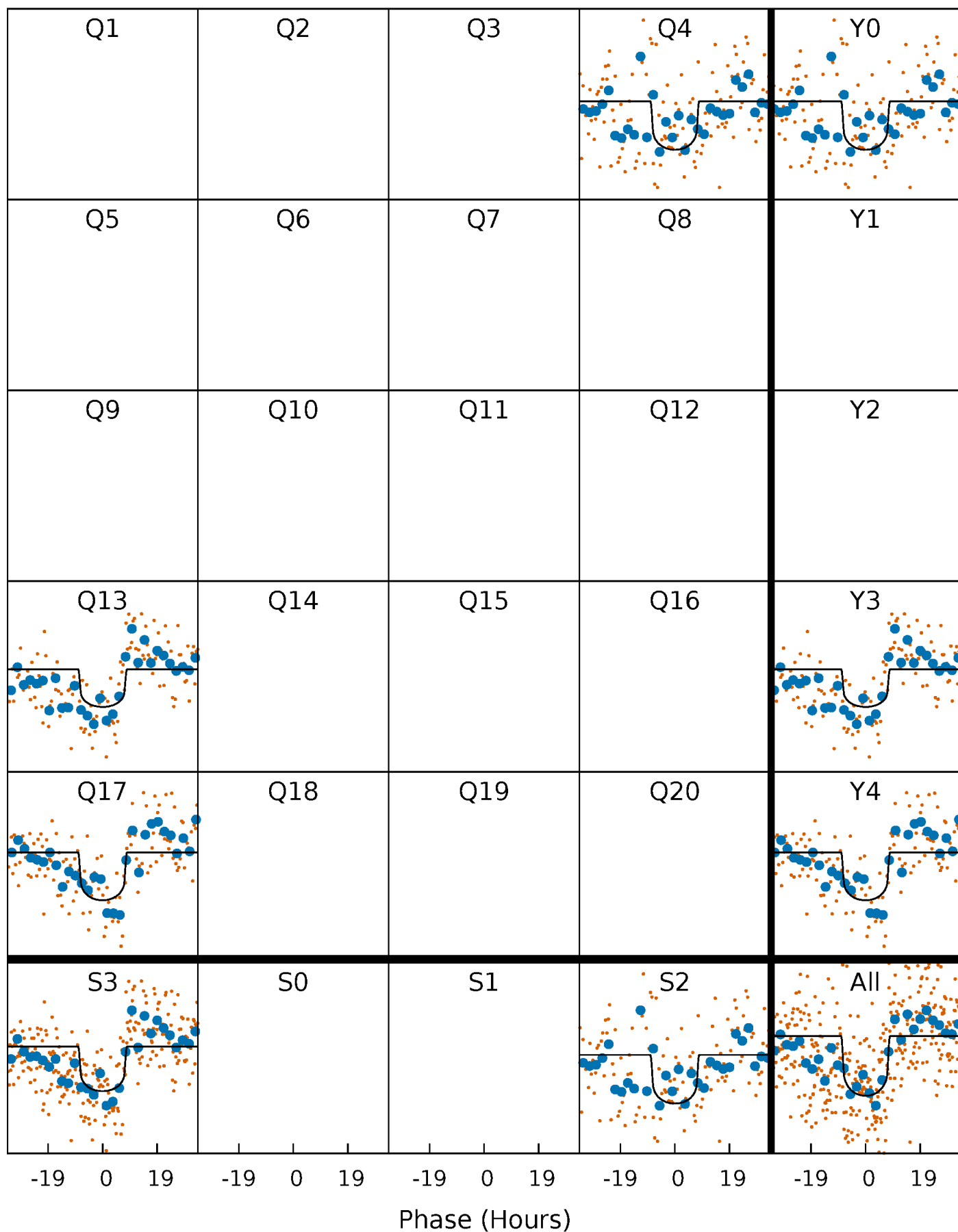
PDC Quarter-Phased Transit Curves

TCE 004641506-01 $P=383.059076$ Days $T_0=422.919035$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 004641506-01 $P=383.059076$ Days $T_0=422.919035$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

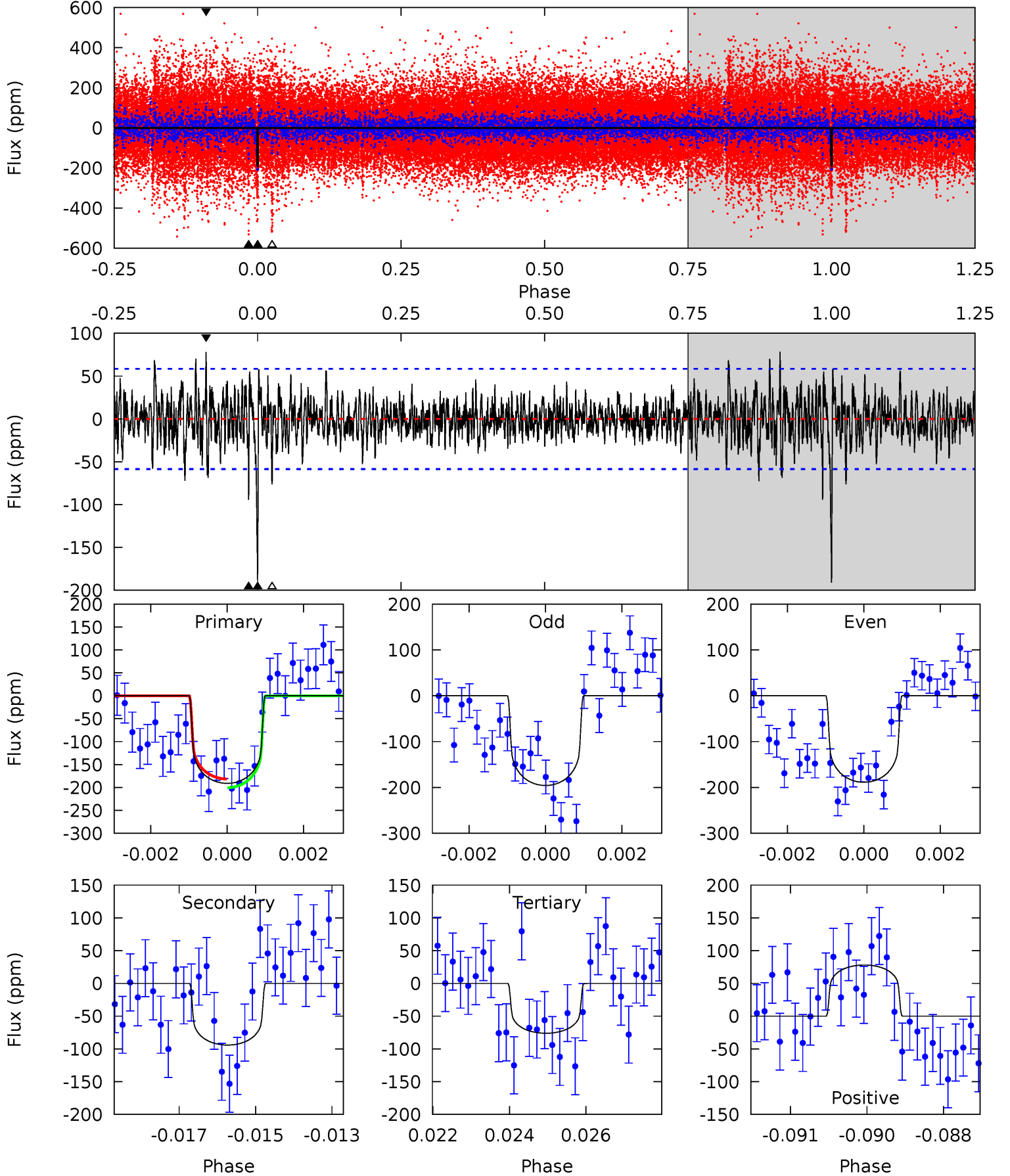
TCE 004641506-01 P=383.061138 Days $T_0=422.917117$ (BKJD)



DV Model-Shift Uniqueness Test

004641506-01, $P = 383.059076$ Days, $E = 39.859959$ Days

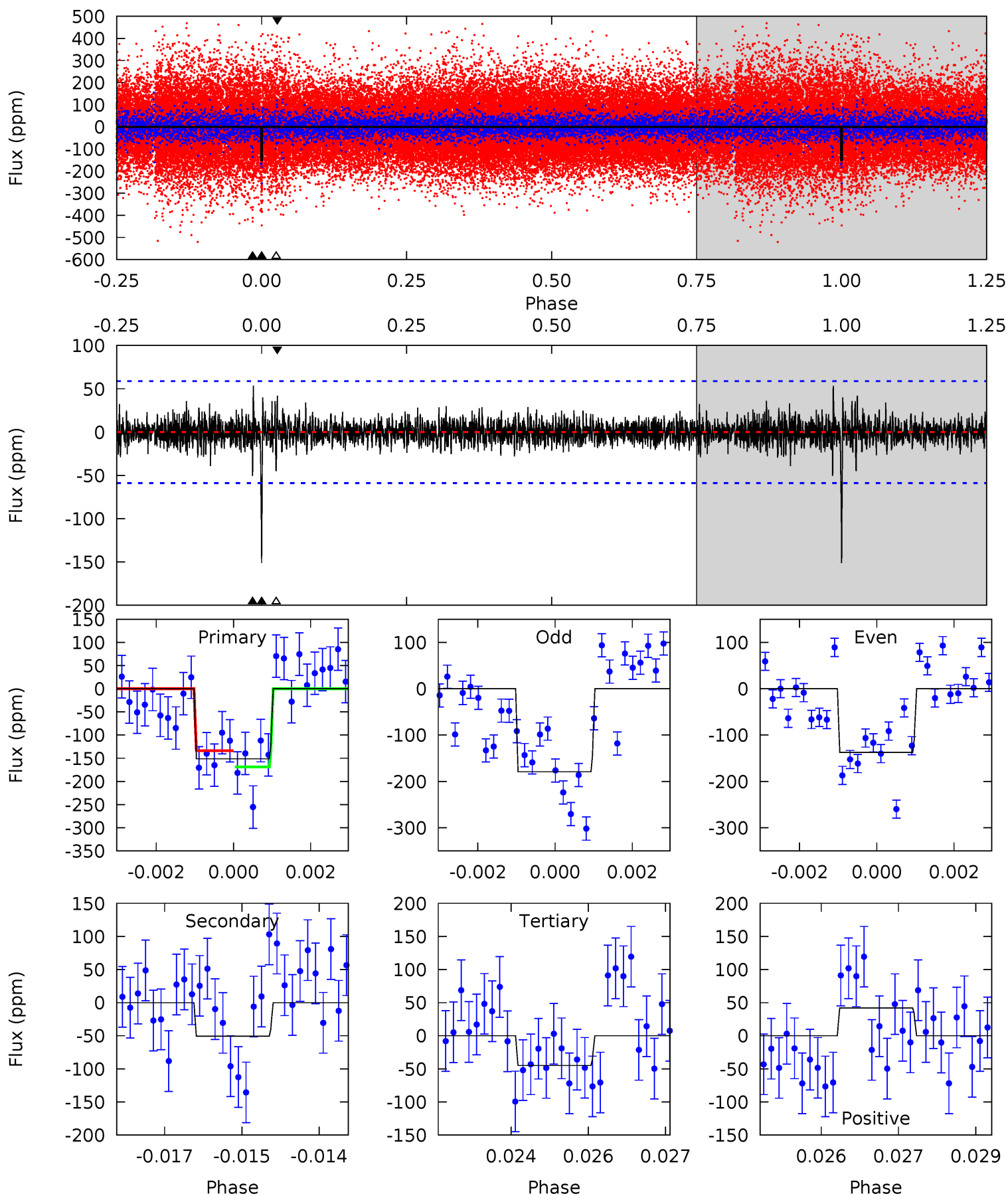
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	8.59	6.95	7.12	5.34	3.11	1.66	10.5	10.3	1.64	1.47	0.31	0.96	0.29	0.87



Alt Model-Shift Uniqueness Test

004641506-01, $P = 383.061138$ Days, $E = 39.855979$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	4.60	4.09	3.82	5.35	3.14	0.86	9.68	9.94	0.52	0.78	1.82	0.82	0.26	1.59



Stellar Parameters For KIC 004641506

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6061^{+183}_{-183}	$4.089^{+0.234}_{-0.126}$	$0.020^{+0.250}_{-0.300}$	$1.587^{+0.369}_{-0.406}$	$1.129^{+0.189}_{-0.154}$	$0.397^{+0.518}_{-0.142}$
	+3%/-3%	+6%/-3%	+1250%/-1500%	+23%/-26%	+17%/-14%	+130%/-36%
Source	PHO1	FLK73	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 004641506-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-94±11	$2.40^{+0.61}_{-0.58}$	450^{+30}_{-33}	5081^{+588}_{-412}	10521^{+7632}_{-3836}
Alt.	-51±11	$2.13^{+0.58}_{-0.59}$	448^{+28}_{-35}	4678^{+583}_{-415}	6938^{+6235}_{-2749}

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

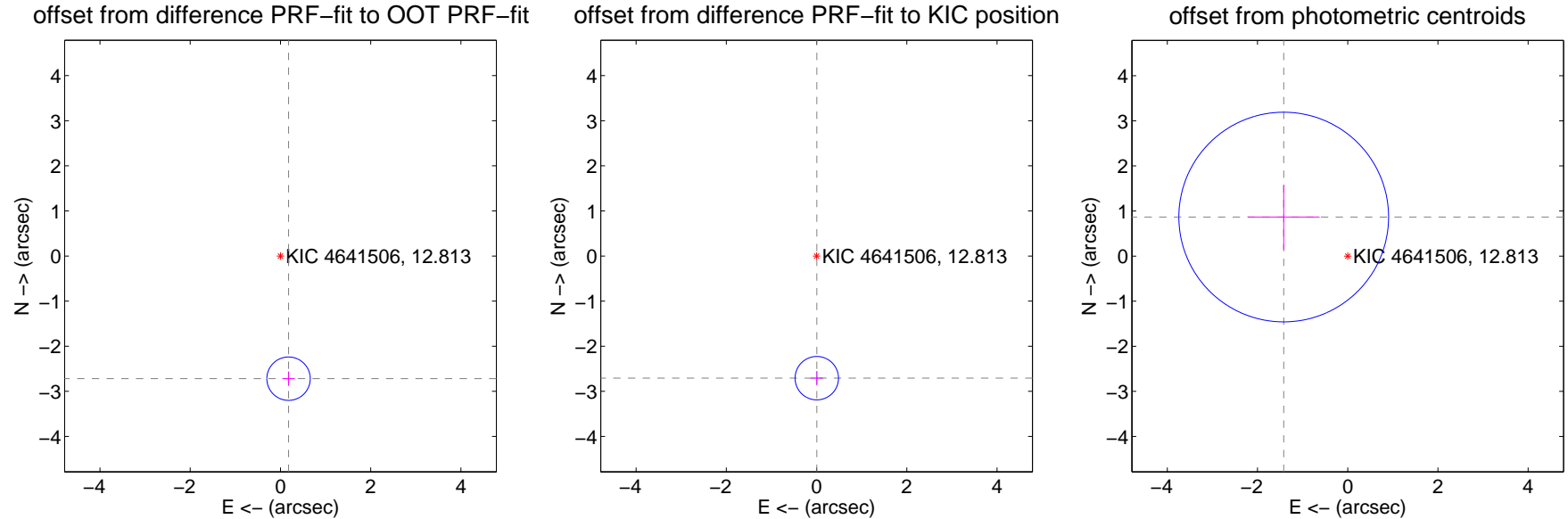
DV Centroid Data

Supplemental centroid analysis for 004641506-01. Kepler magnitude: 12.81. Transit SNR 8.50

There are 1 quarters with good PRF difference image offsets

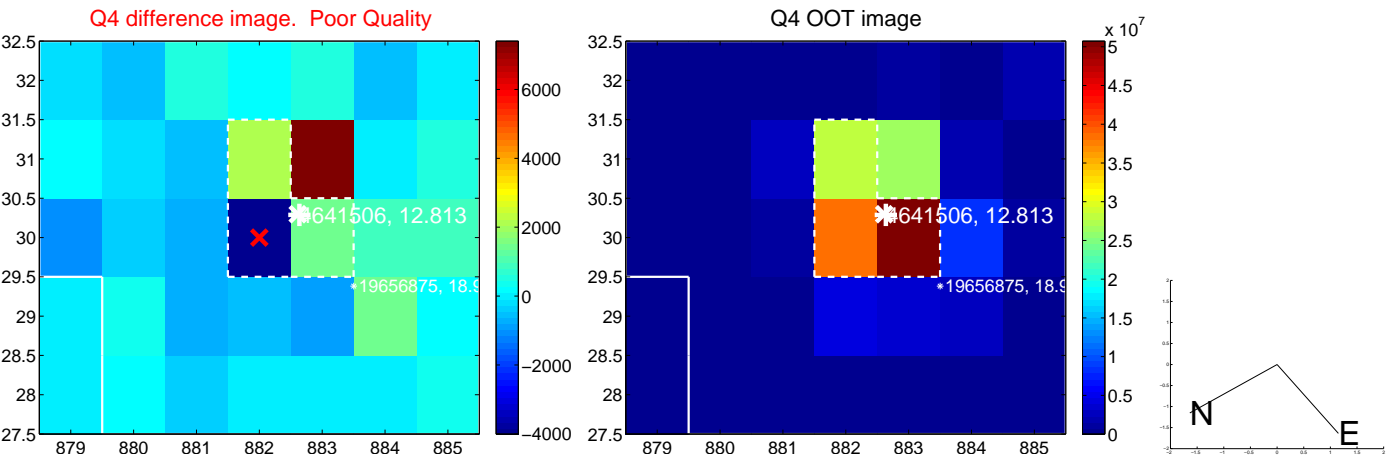
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.725 ± 0.160	17.00	-0.179 ± 0.137	-2.719 ± 0.160
PRF-fit source offset from KIC position	2.708 ± 0.160	16.88	-0.005 ± 0.137	-2.708 ± 0.160
photometric centroid source offset	1.66 ± 0.77	2.14	1.42 ± 0.80	0.87 ± 0.72



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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



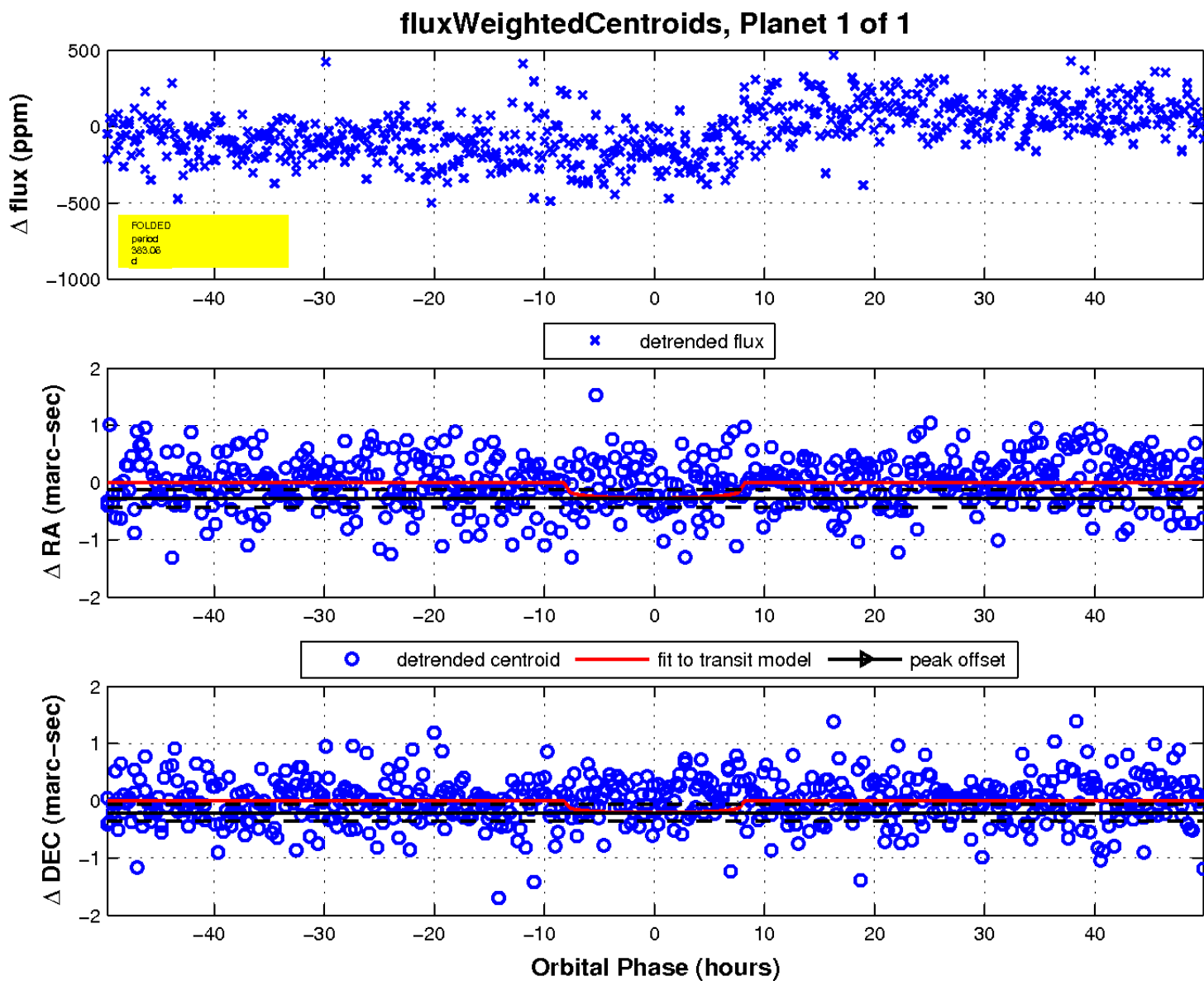
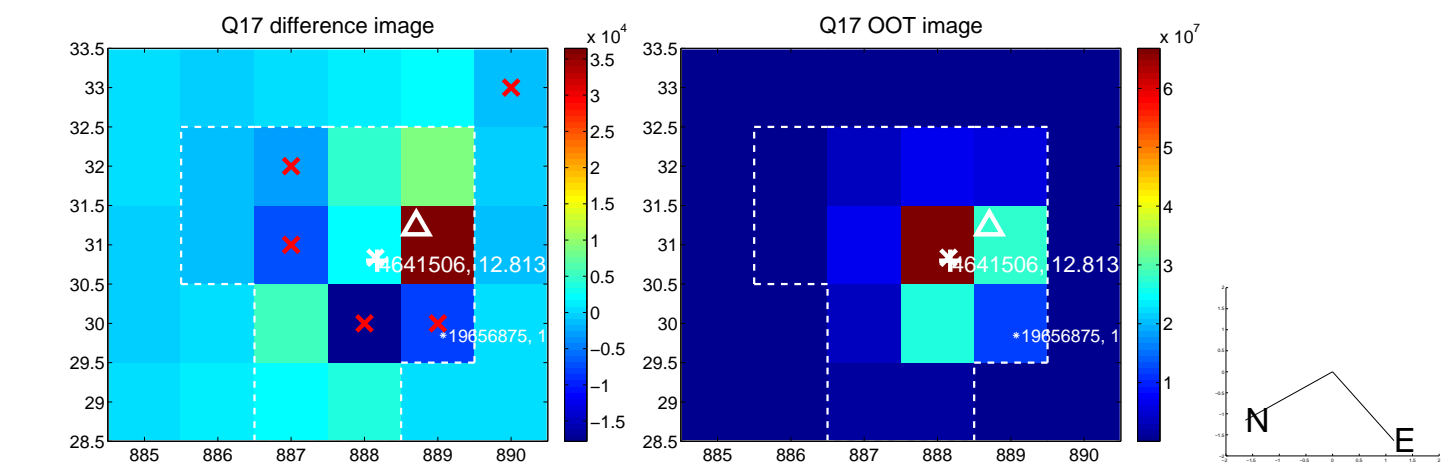
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

