

KIC 010213987

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})
010213987-01	OBS	No	566.743512	185.975572	824.8	23.710	12.7	9.8	2.35	8051	7.74	7.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010213987-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

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

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

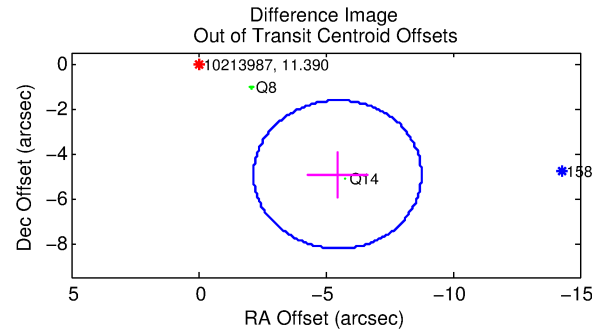
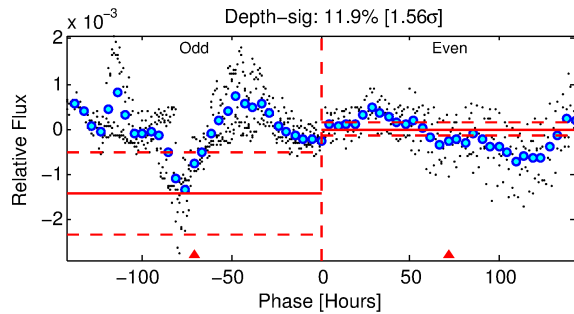
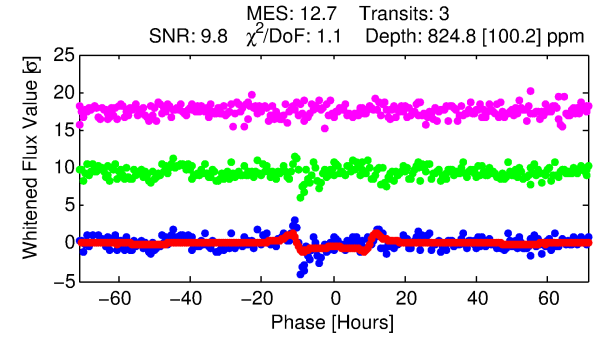
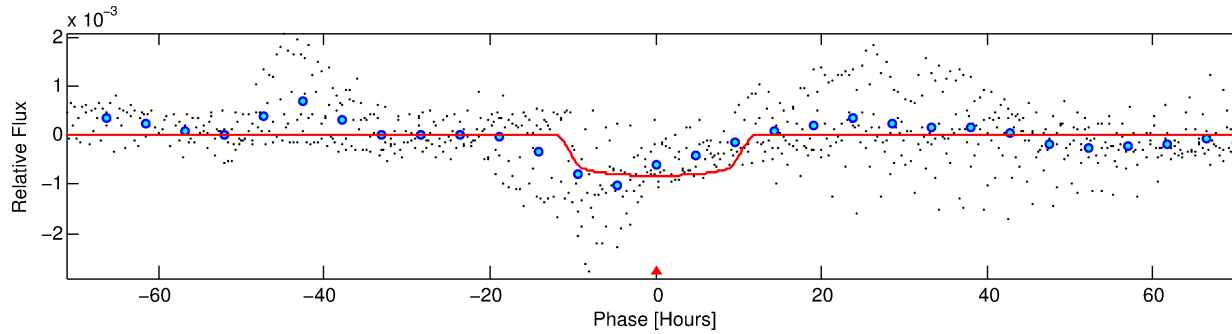
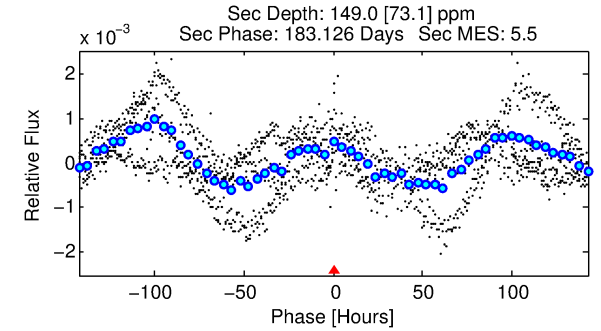
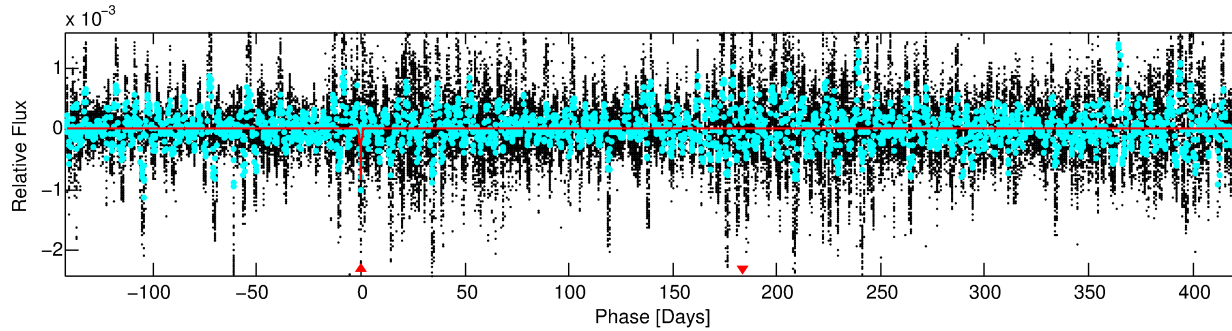
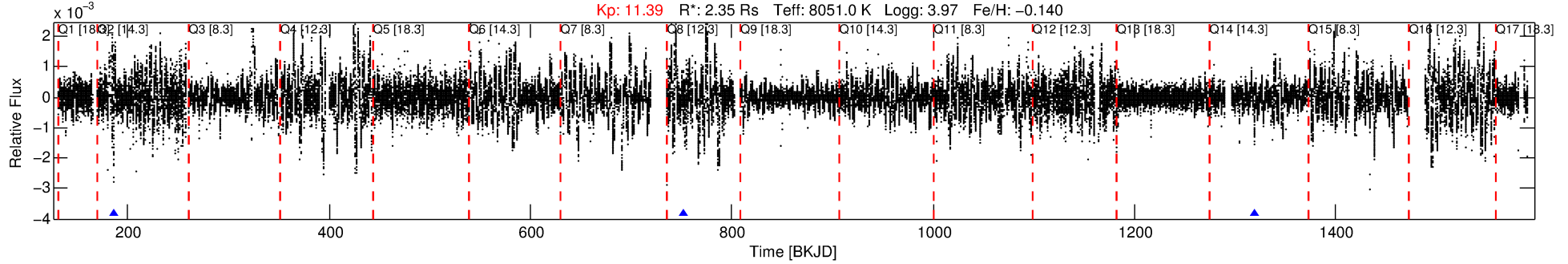
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010213987-01

No Significant Match Found

DV One-Page Summary

KIC: 10213987 Candidate: 1 of 1 Period: 566.744 d



DV Fit Results:

Period = 566.74351 [0.01161] d
Epoch = 185.9756 [0.0167] BKJD
Rp/R* = 0.0302 [0.0021]
a/R* = 97.63 [12.37]
b = 0.88 [0.03]
Seff = 7.63 [3.45]
Teq = 424 [48] K
Rp = 7.74 [2.56] Re
a = 1.6480 [0.4628] AU
Ag = 3715.59 [2451.20] [1.52σ]
Teffp = 5116 [686] K [6.82σ]

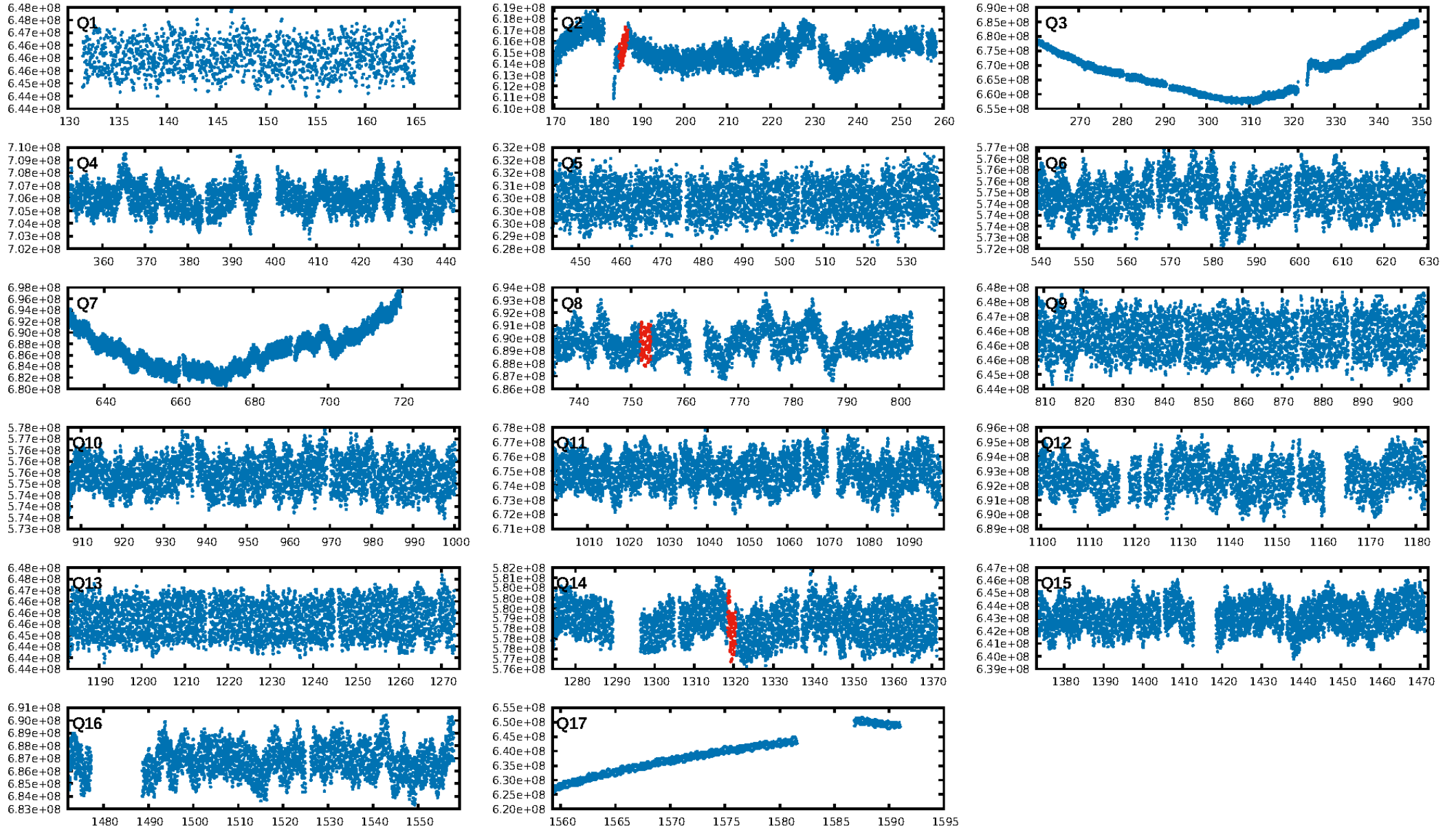
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.1%
ModelChiSquareGof-sig: 77.7%
Bootstrap-pfa: 1.79e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.07
Centroid-sig: 6.3%
Centroid-so: 0.234 arcsec [0.41σ]
OotOffset-rm: 7.374 arcsec [6.70σ]
KicOffset-rm: 5.445 arcsec [3.52σ]
OotOffset-st: 1/0/1/0 [2]
KicOffset-st: 1/0/1/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

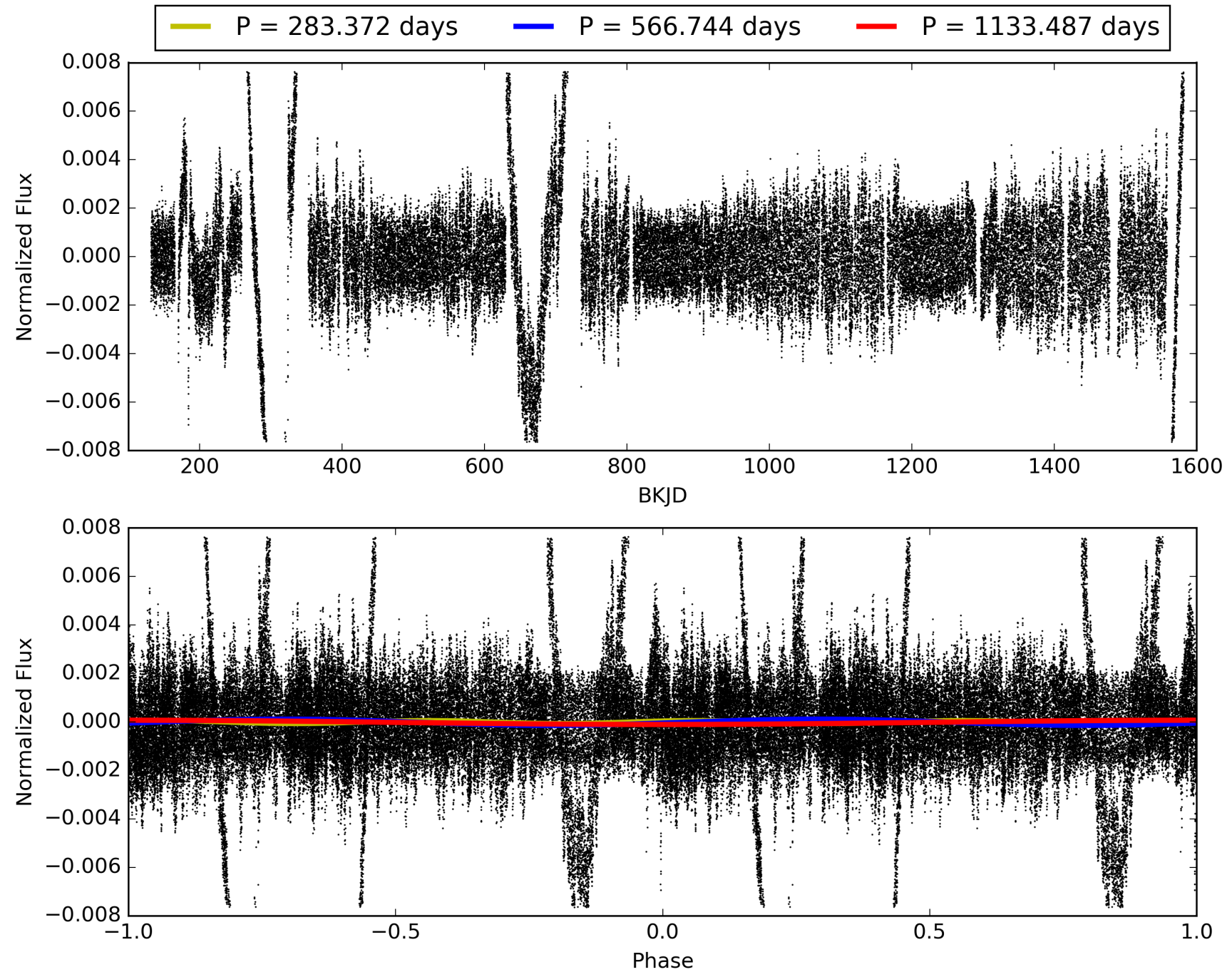
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:50:25 Z

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

TCE 010213987-01, PDC Light Curves

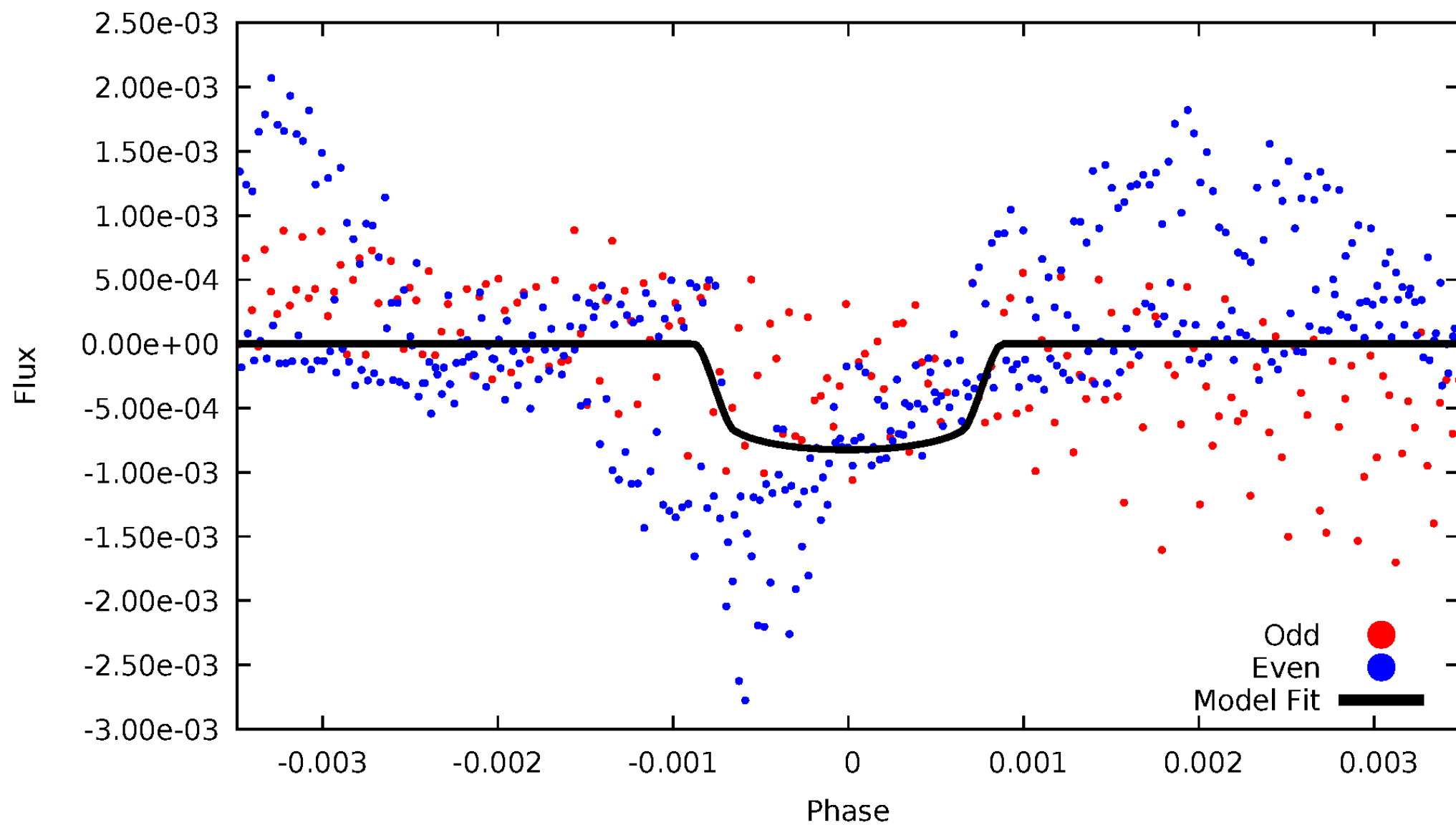


TCE 010213987-01



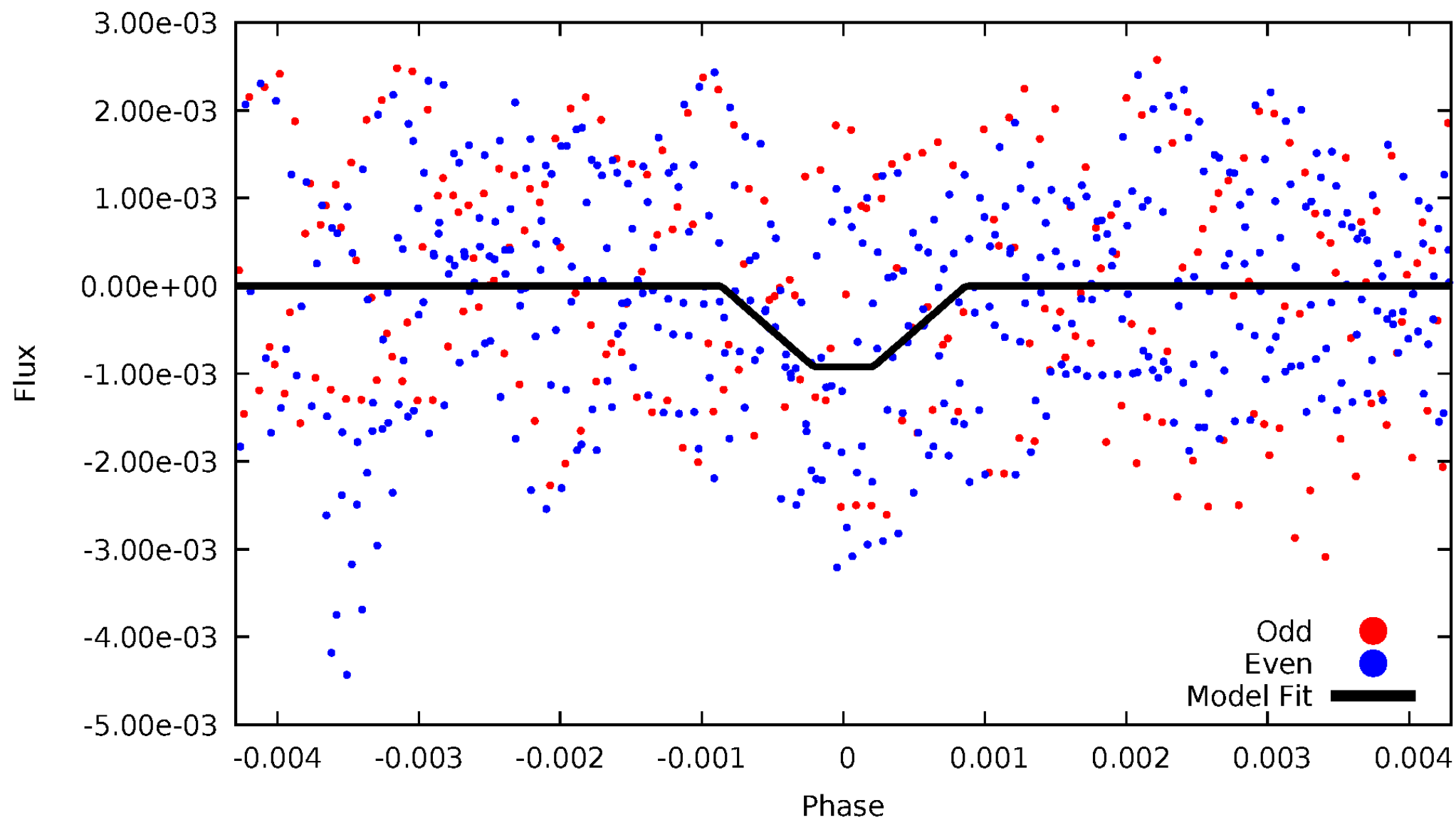
DV Odd/Even

TCE 010213987-01



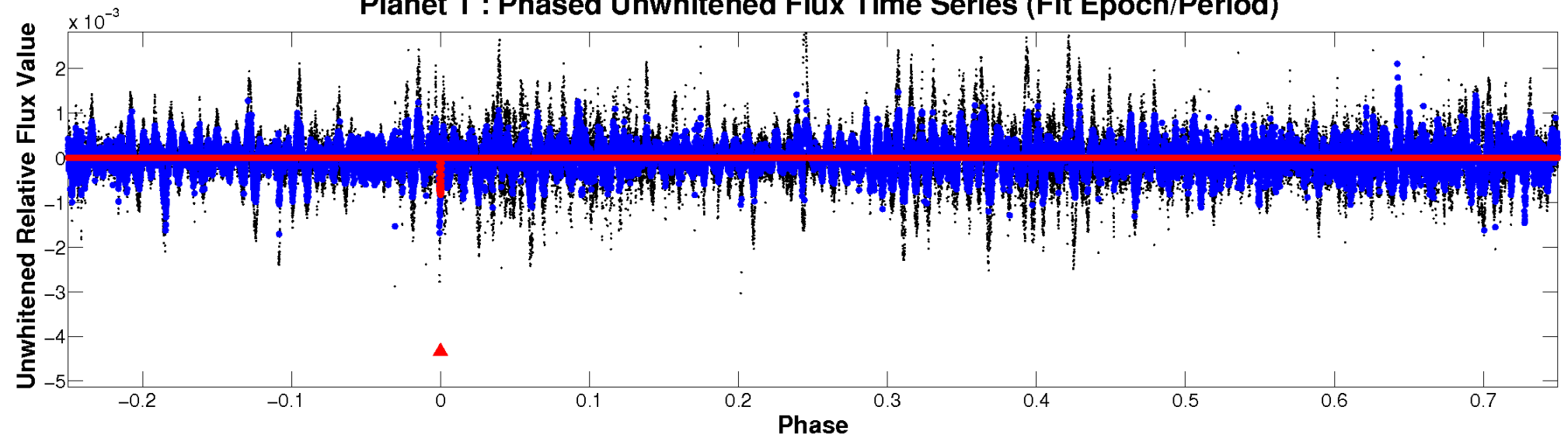
ALT Odd/Even

TCE 010213987-01

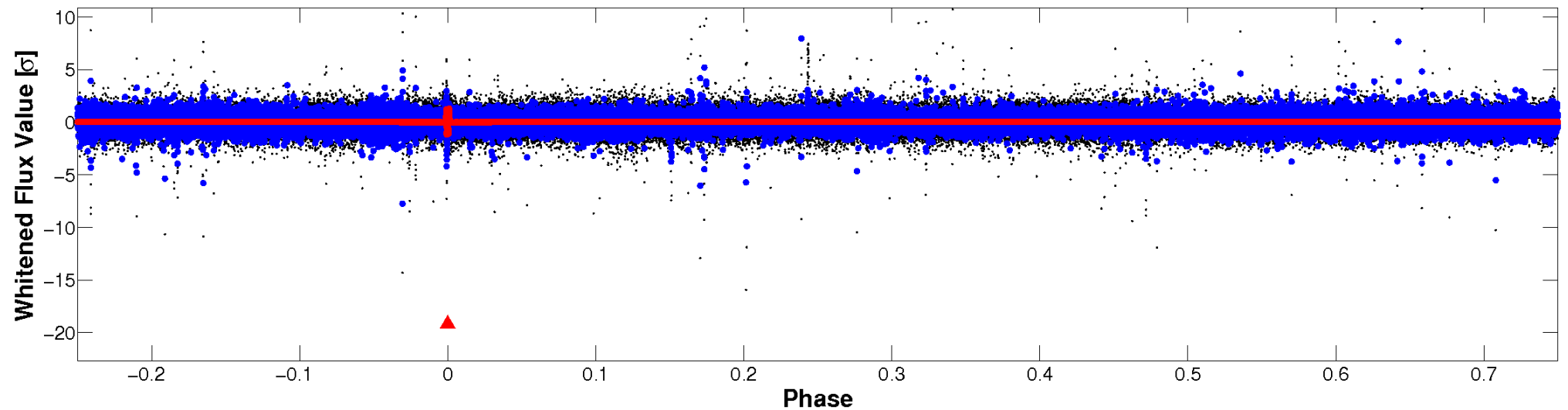


Non-Whitened Vs. Whitened Light Curve

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

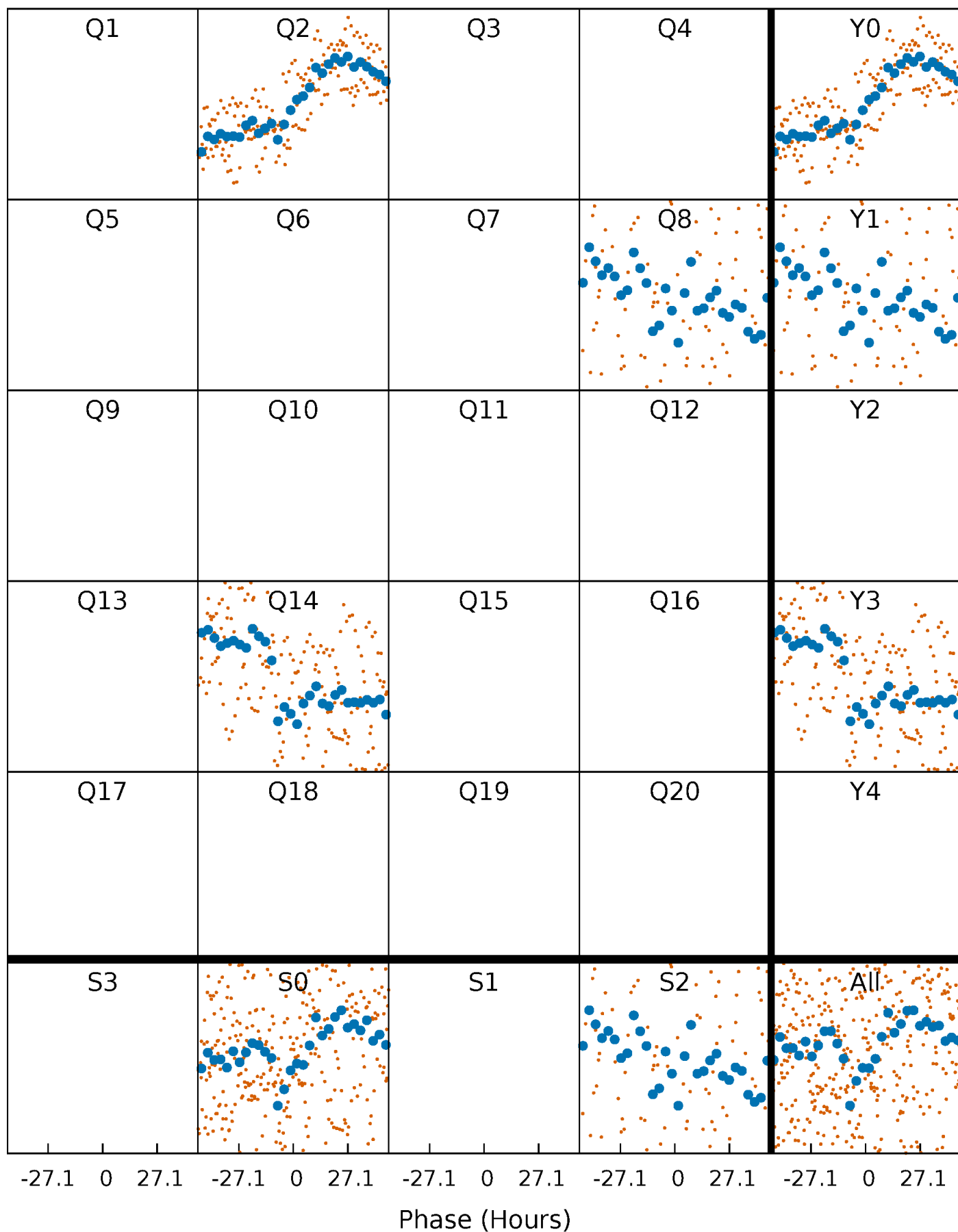


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 010213987-01 P=566.743512 Days $T_0=185.975572$ (BKJD)



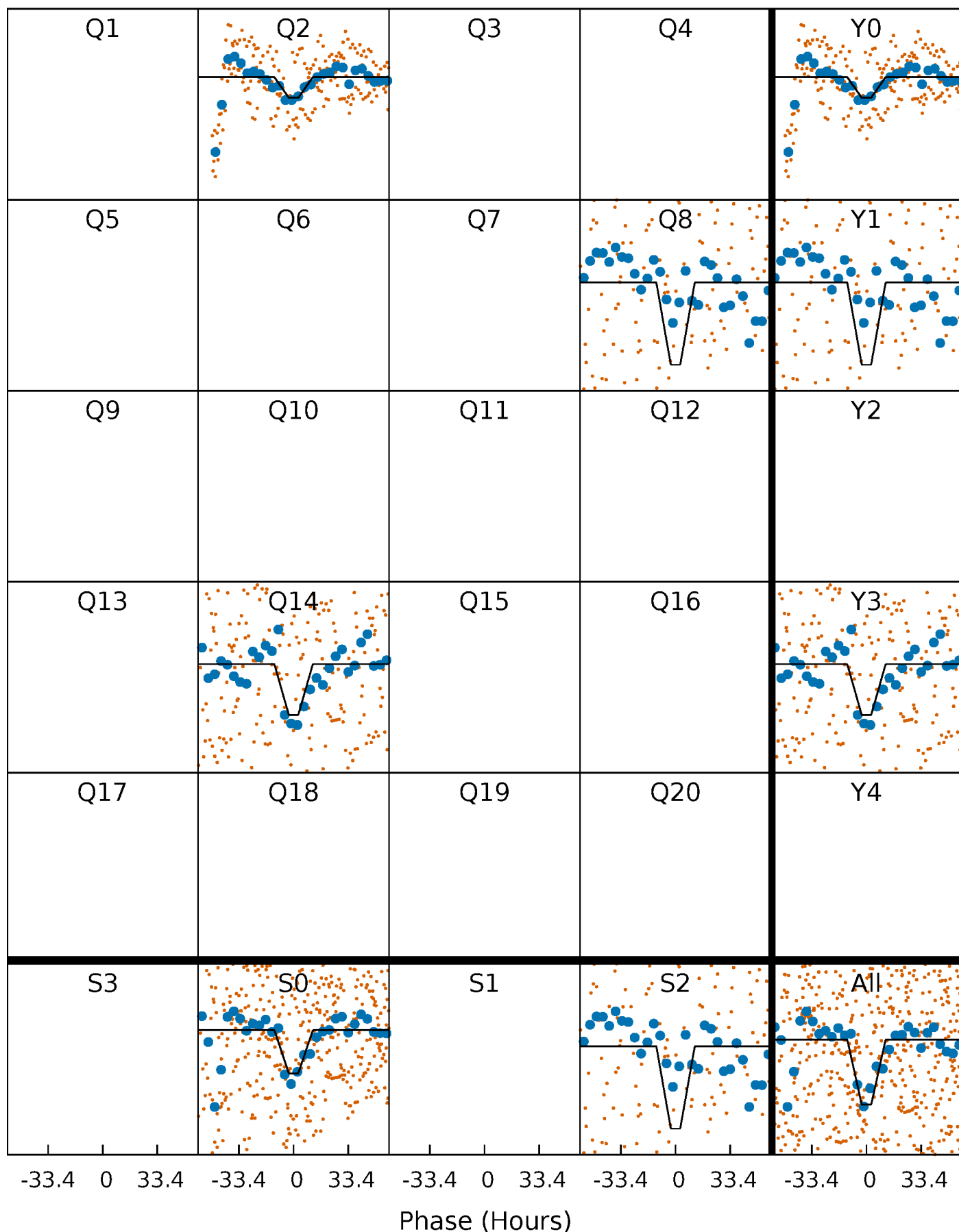
DV Quarter-Phased Transit Curves

TCE 010213987-01 P=566.743512 Days $T_0=185.975572$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

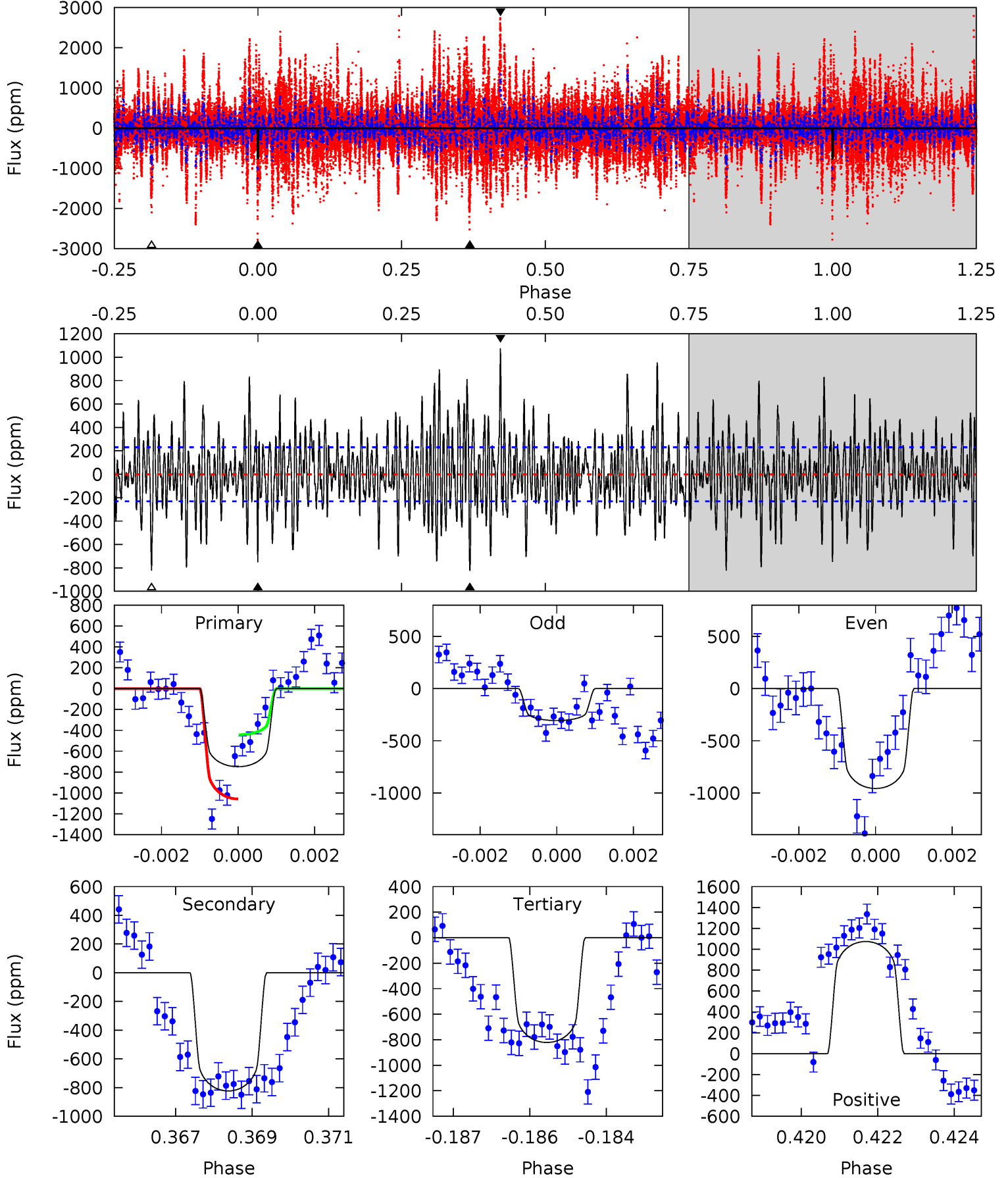
TCE 010213987-01 P=566.765654 Days $T_0=185.792396$ (BKJD)



DV Model-Shift Uniqueness Test

010213987-01, P = 566.743512 Days, E = 185.975572 Days

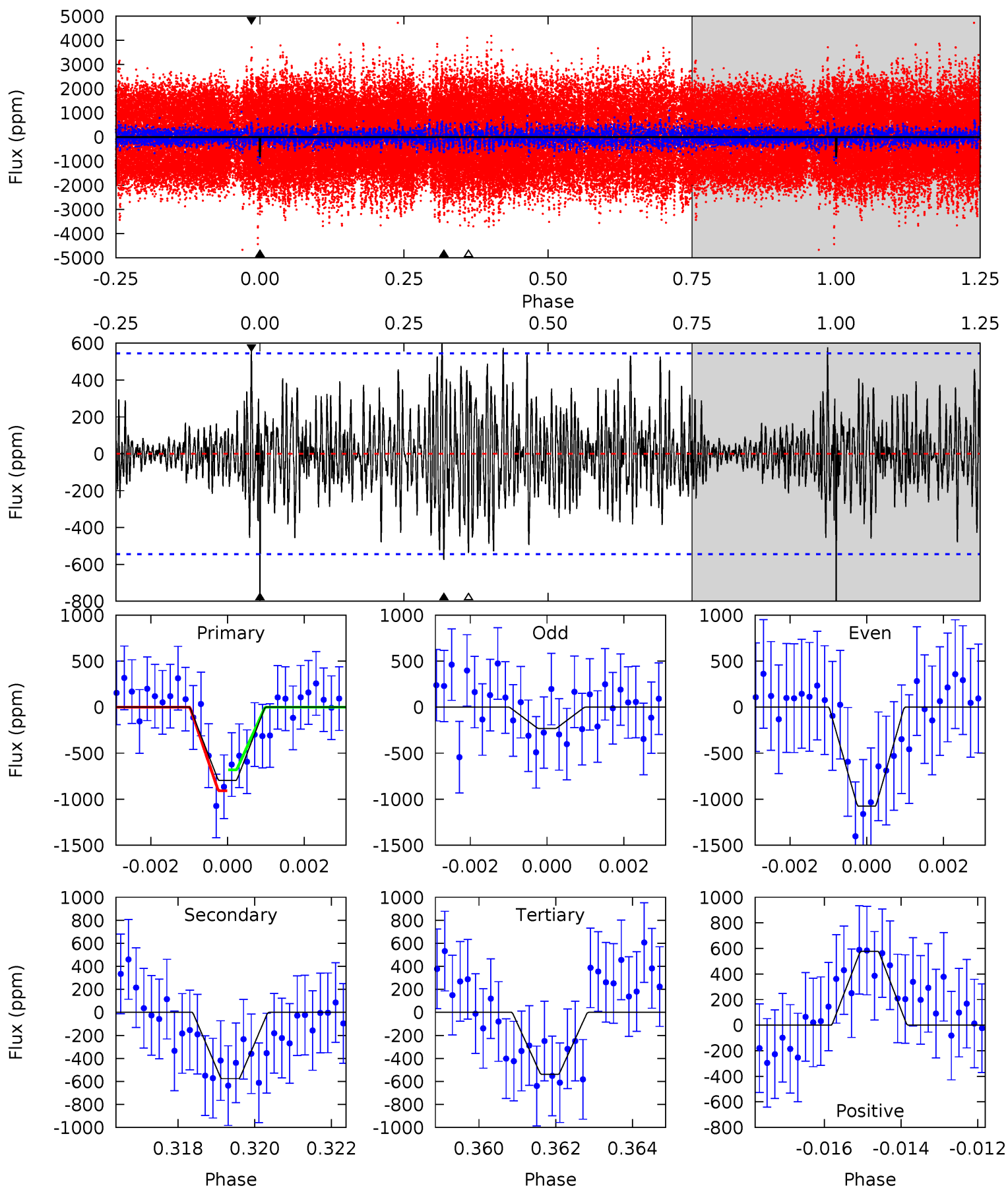
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	19.1	19.1	24.9	5.35	3.13	6.28	-1.70	-7.56	0.05	-5.82	6.98	0.84	0.57	7.15



Alt Model-Shift Uniqueness Test

010213987-01, P = 566.765654 Days, E = 185.792396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.82	5.66	5.28	5.67	5.35	3.13	1.75	2.53	2.15	0.38	-0.01	4.02	0.76	0.43	1.12



Stellar Parameters For KIC 010213987

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8051^{+225}_{-338}	$3.966^{+0.234}_{-0.126}$	$-0.140^{+0.200}_{-0.350}$	$2.347^{+0.409}_{-0.760}$	$1.856^{+0.095}_{-0.380}$	$0.202^{+0.319}_{-0.066}$
	+3%/-4%	+6%/-3%	+143%/-250%	+17%/-32%	+5%/-20%	+157%/-33%
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 010213987-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-824 ± 43	$7.61^{+1.07}_{-1.31}$	587^{+38}_{-45}	7762^{+441}_{-414}	20621^{+8917}_{-4665}
Alt.	-576 ± 102	$7.58^{+1.16}_{-1.38}$	584^{+41}_{-52}	6974^{+486}_{-502}	14807^{+6632}_{-4504}

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

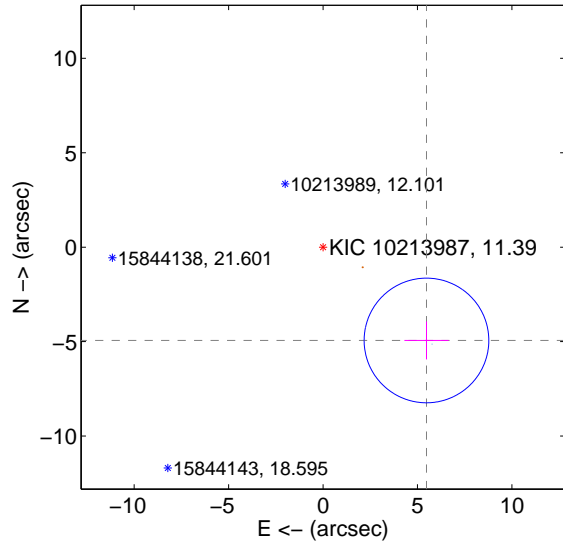
Supplemental centroid analysis for 010213987-01. **Kepler magnitude: 11.39.** Transit SNR 9.78

There are 1 quarters with good PRF difference image offsets

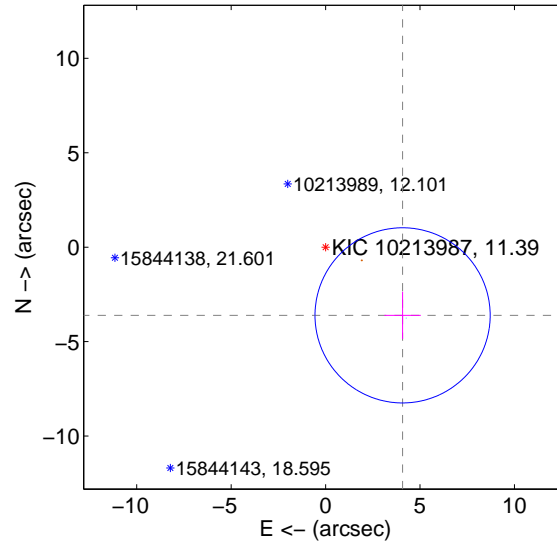
The OOT PRF centroid is offset from the target star catalog position by about 2.04 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.374 ± 1.100	6.70	-5.476 ± 1.170	-4.939 ± 1.007
PRF-fit source offset from KIC position	5.445 ± 1.546	3.52	-4.077 ± 0.962	-3.610 ± 1.248
photometric centroid source offset	0.23 ± 0.57	0.41	-0.12 ± 0.50	0.20 ± 0.60

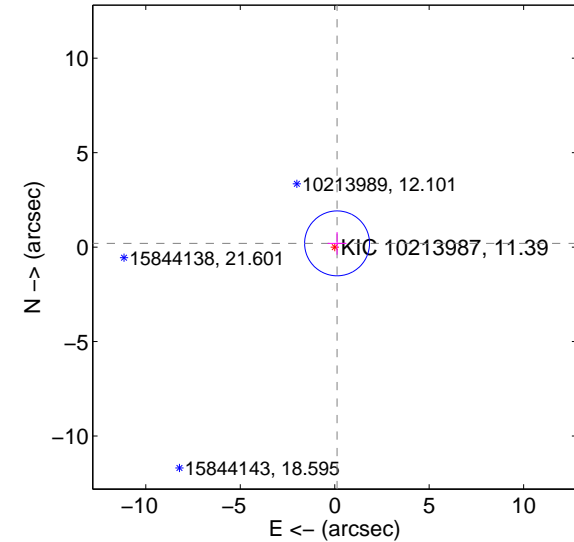
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

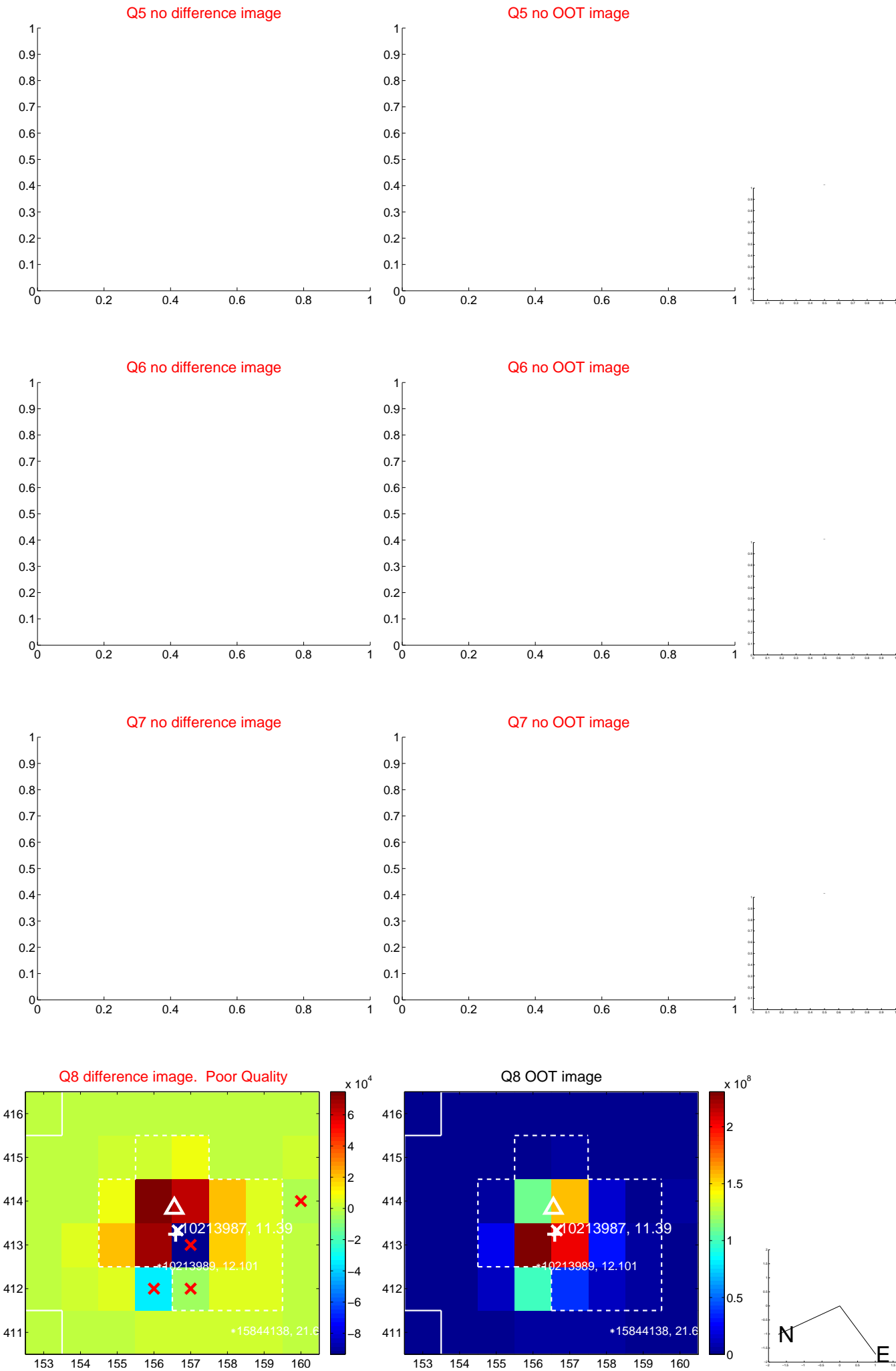


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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



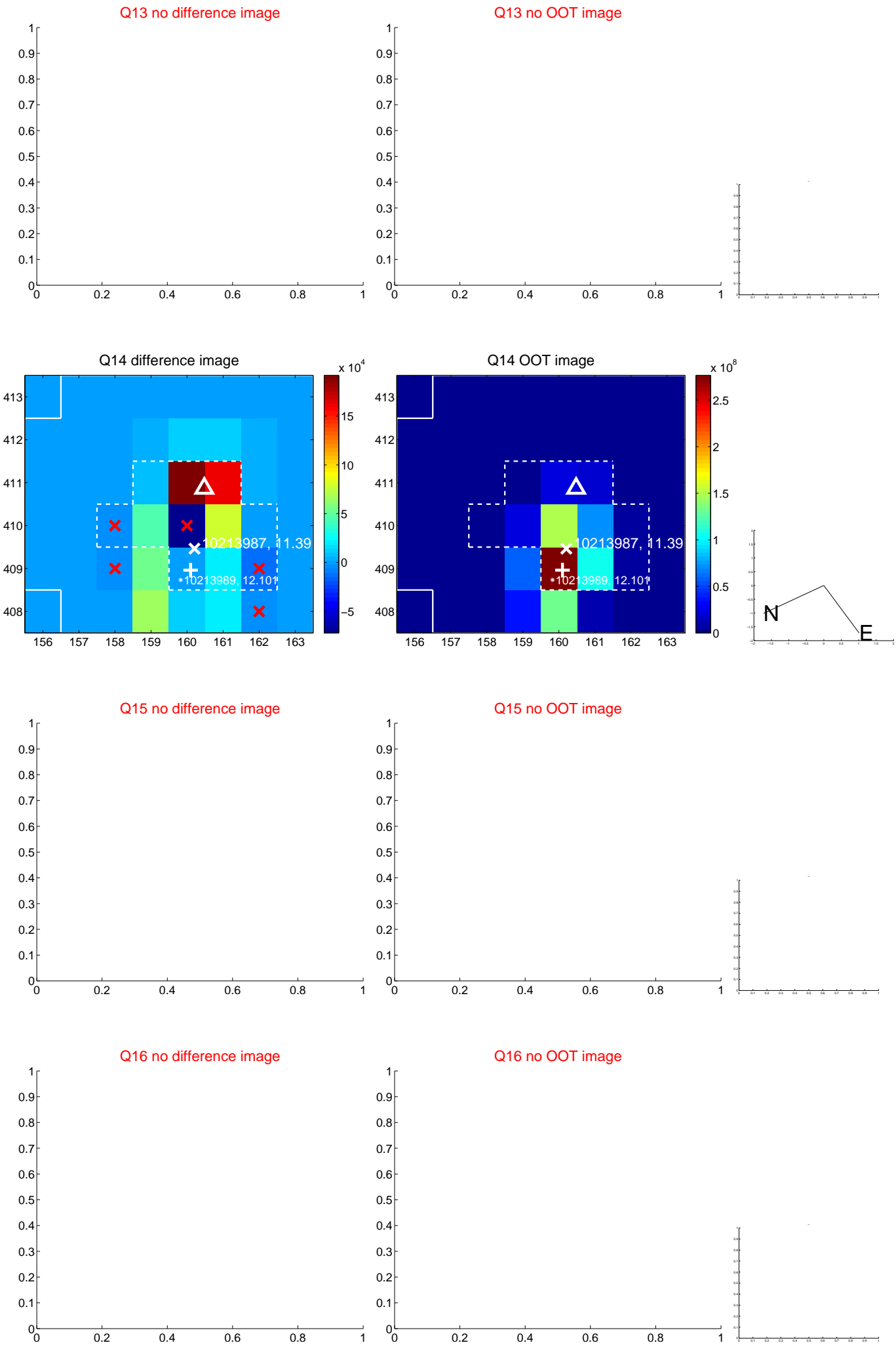
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



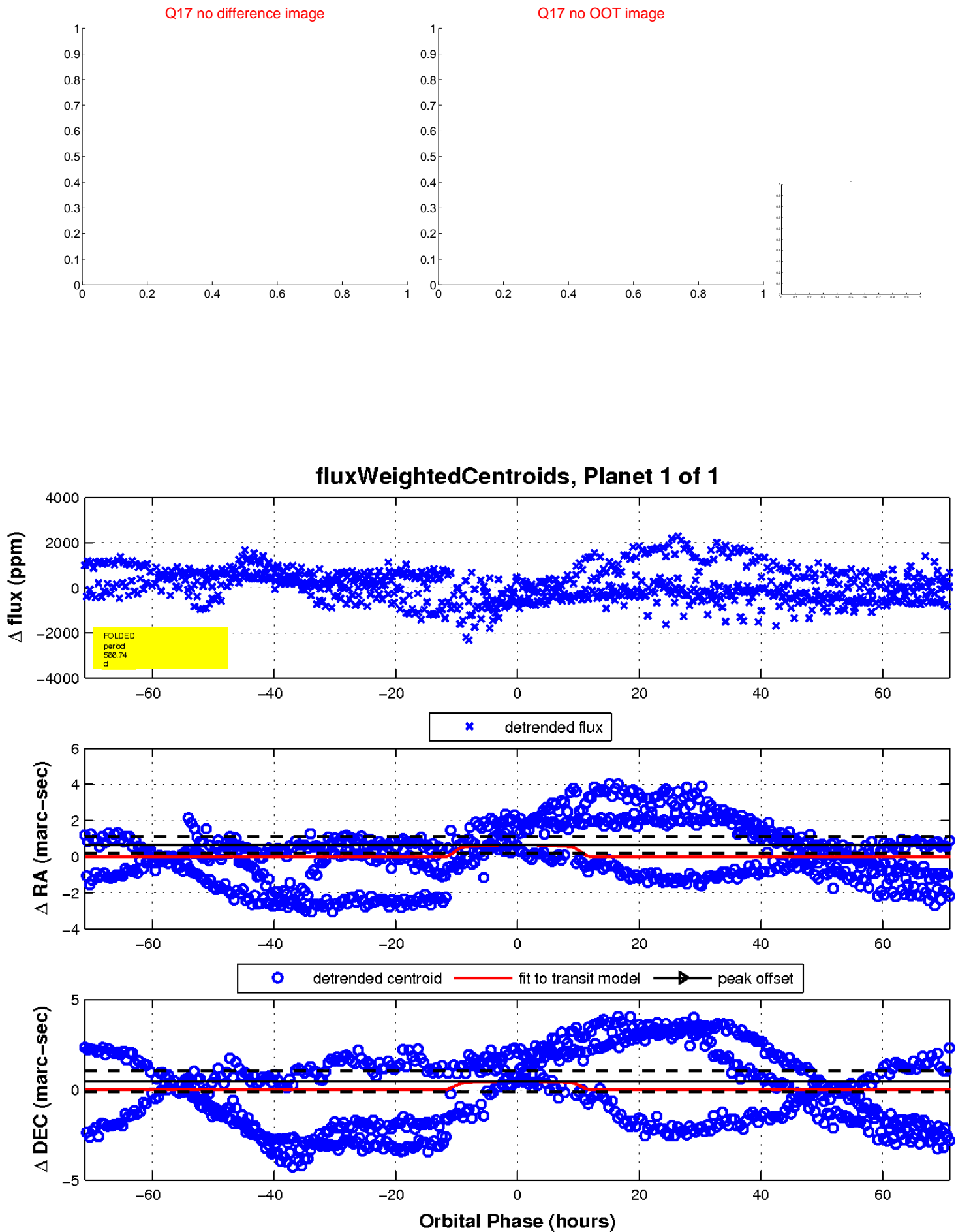
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

