

KIC 009107510

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})
009107510-01	OBS	No	375.359610	377.362114	893.5	10.878	7.2	7.1	0.67	4984	2.04	0.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009107510-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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.

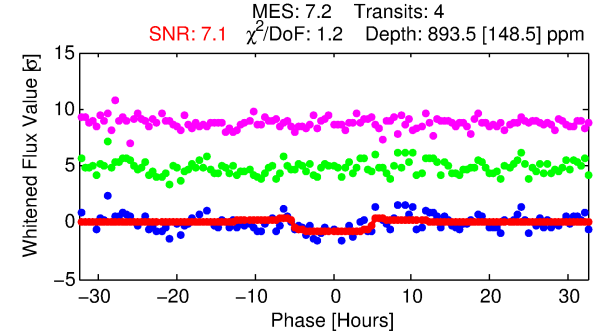
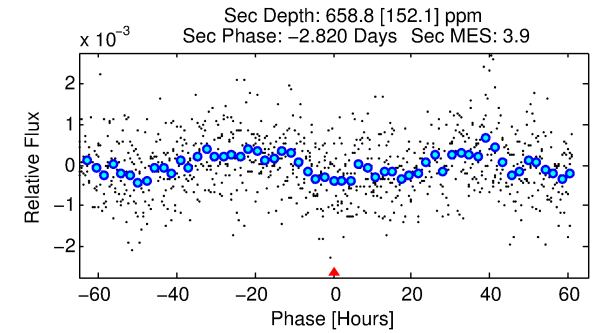
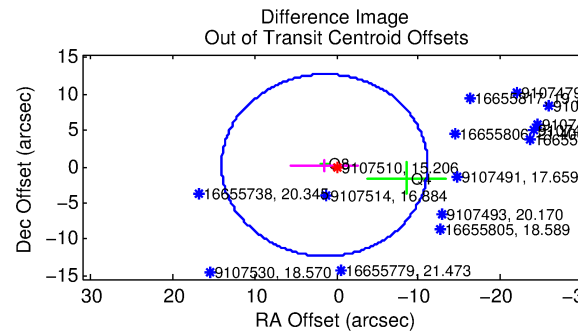
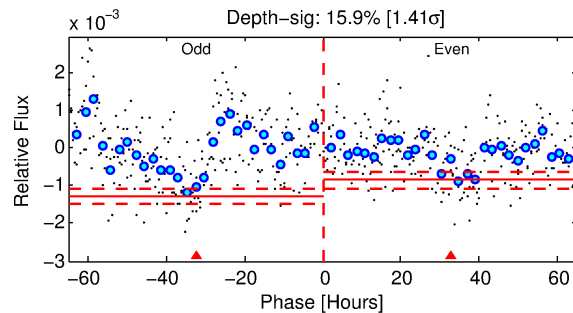
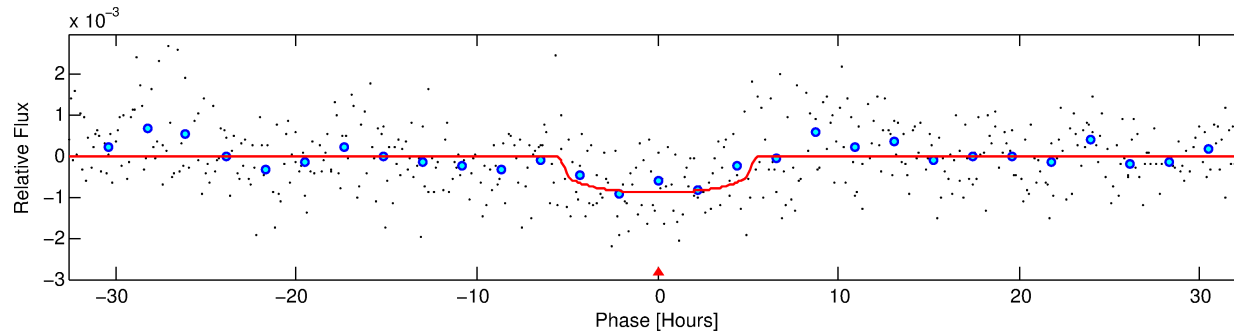
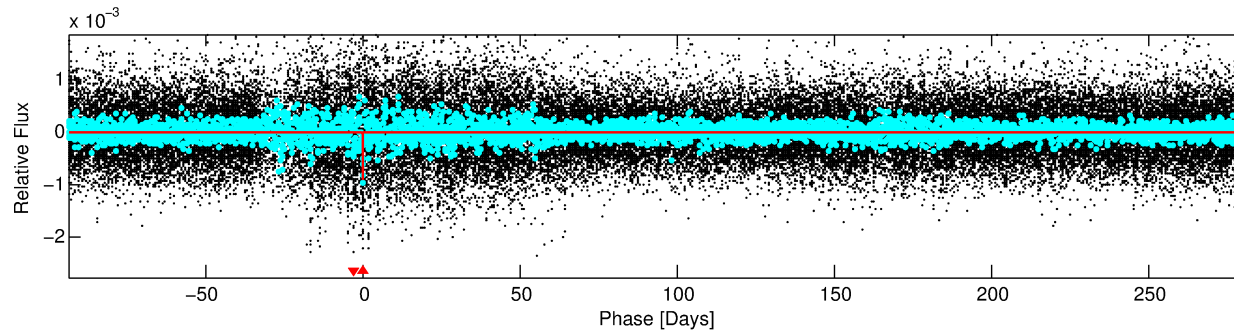
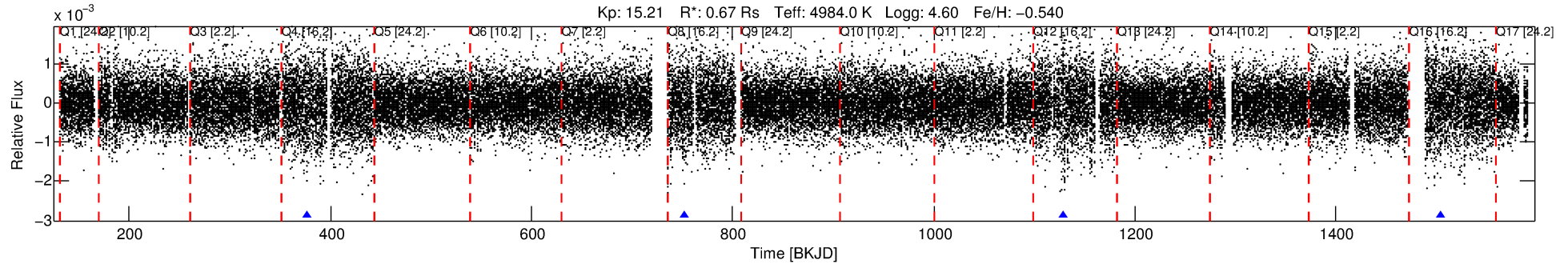
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009107510-01

No Significant Match Found

DV One-Page Summary

KIC: 9107510 Candidate: 1 of 1 Period: 375.360 d



DV Fit Results:

Period = 375.35961 [0.01103] d
Epoch = 377.3621 [0.0202] BKJD
Rp/R* = 0.0279 [0.0259]
a/R* = 231.32 [776.46]
b = 0.54 [4.53]
Seff = 0.32 [0.05]
Teq = 192 [8] K
Rp = 2.04 [1.90] Re
a = 0.8816 [0.0725] AU
Ag = 67924.96 [127137.74] [0.53 σ]
Teffp = 4781 [2237] K [2.05 σ]

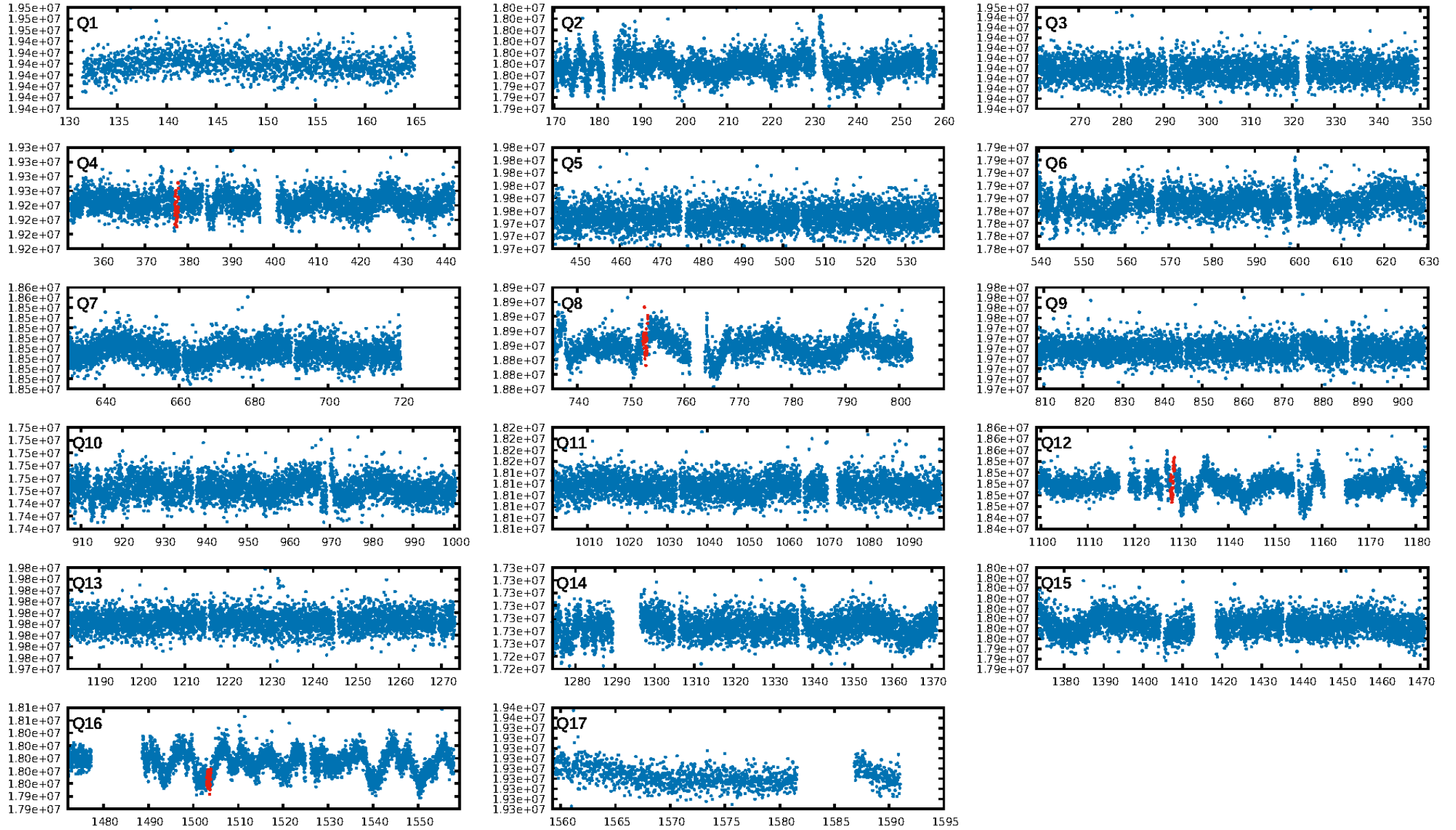
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.0%
ModelChiSquareGof-sig: 86.9%
Bootstrap-pfa: 1.16e-08
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -12.2
Centroid-sig: 31.1%
Centroid-so: 1.713 arcsec [1.24 σ]
OotOffset-rm: 1.448 arcsec [0.35 σ]
KicOffset-rm: 1.686 arcsec [0.70 σ]
OotOffset-st: 0/0/2/0 [2]
KicOffset-st: 0/0/2/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [3/3]

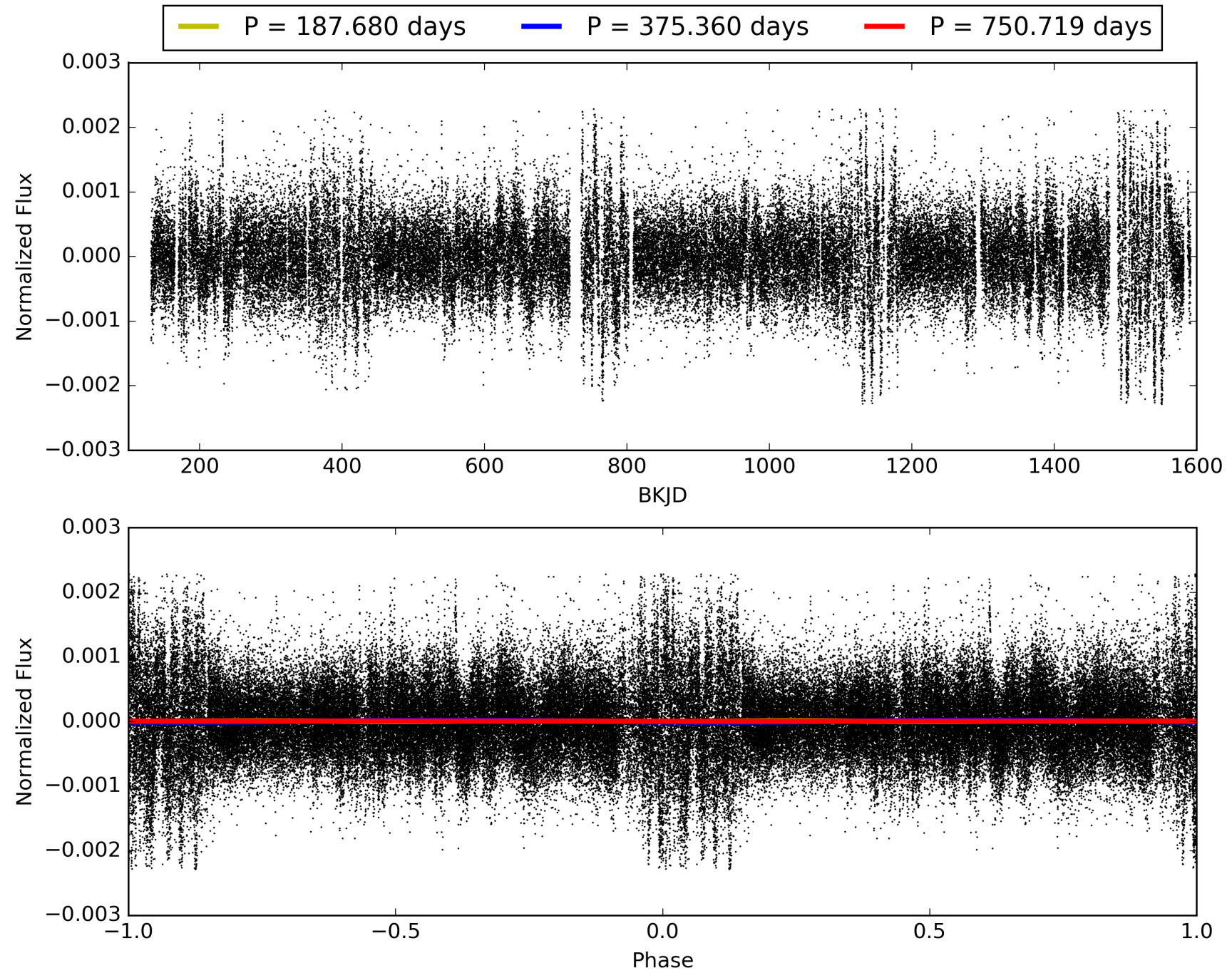
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:46:36 Z

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

TCE 009107510-01, PDC Light Curves

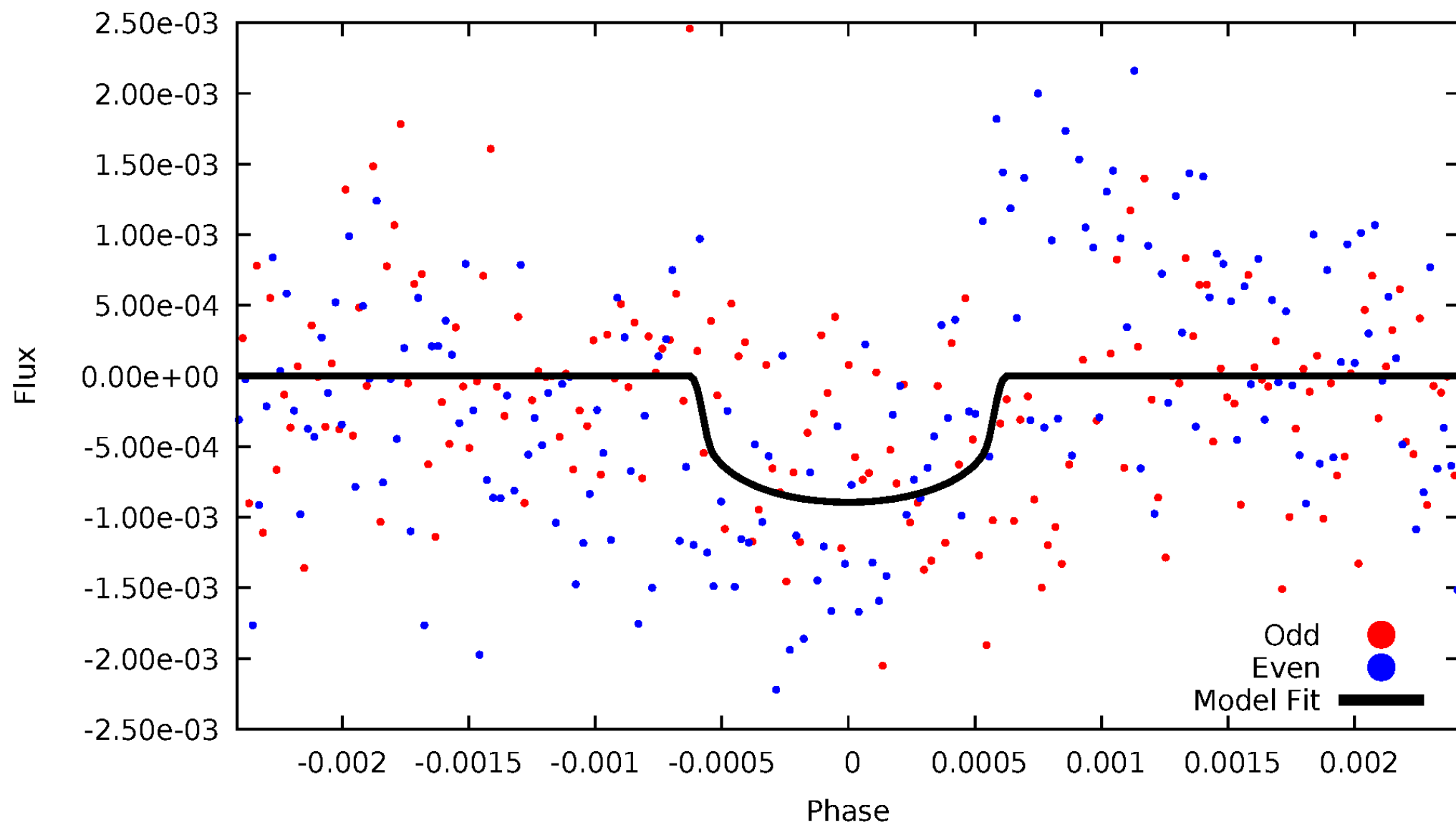


TCE 009107510-01



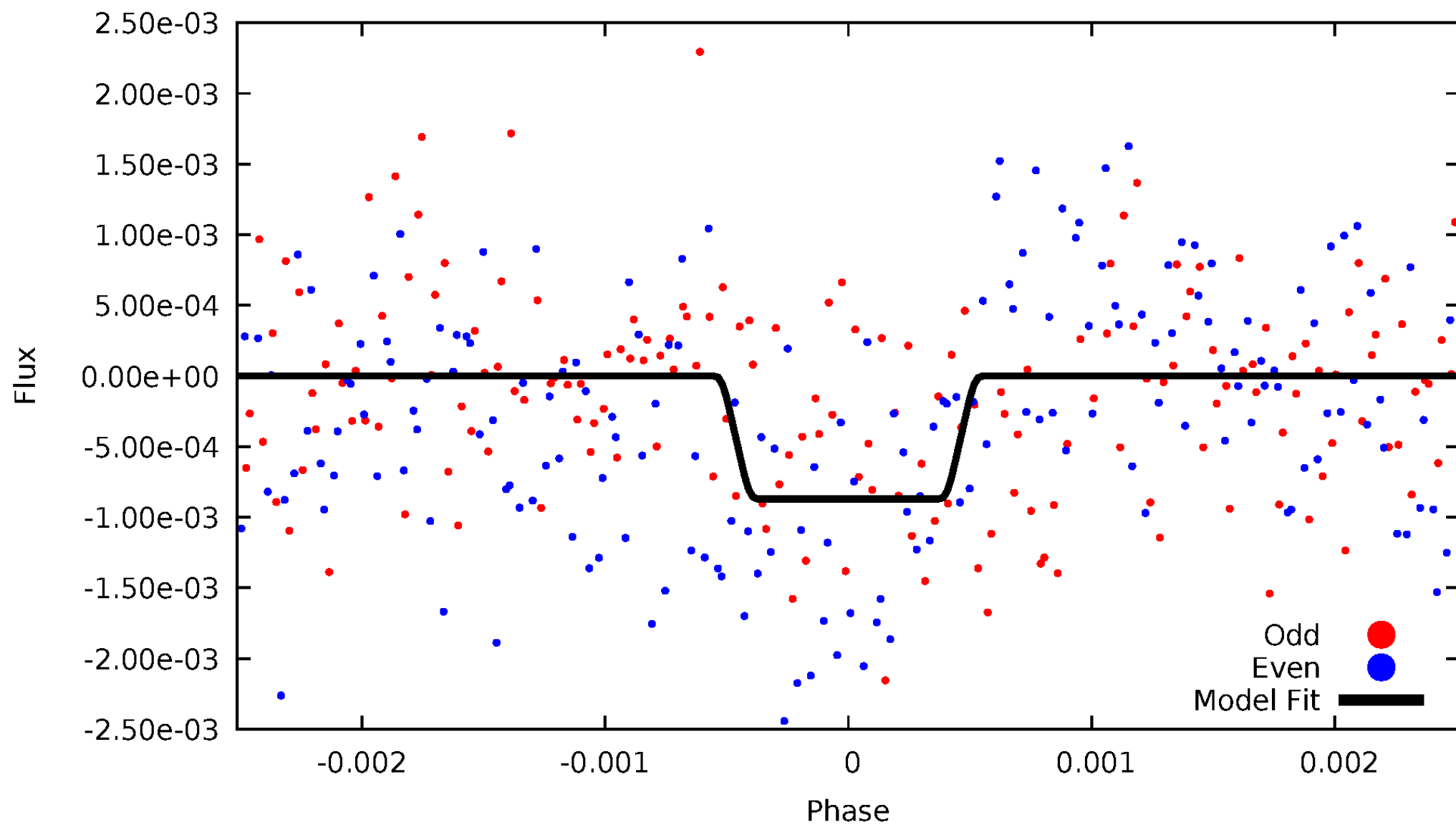
DV Odd/Even

TCE 009107510-01



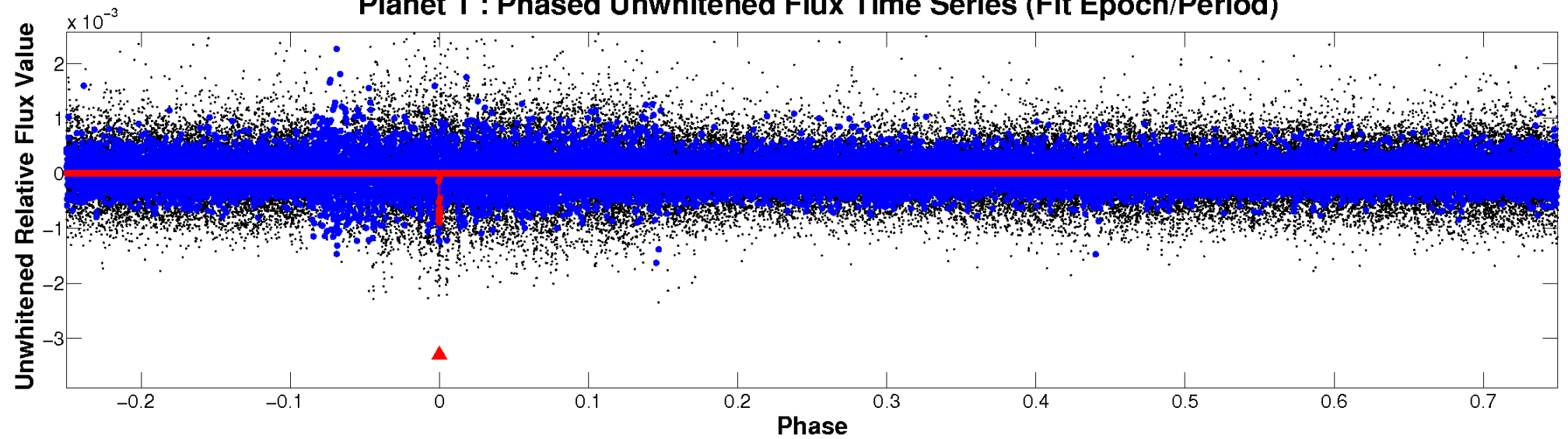
ALT Odd/Even

TCE 009107510-01

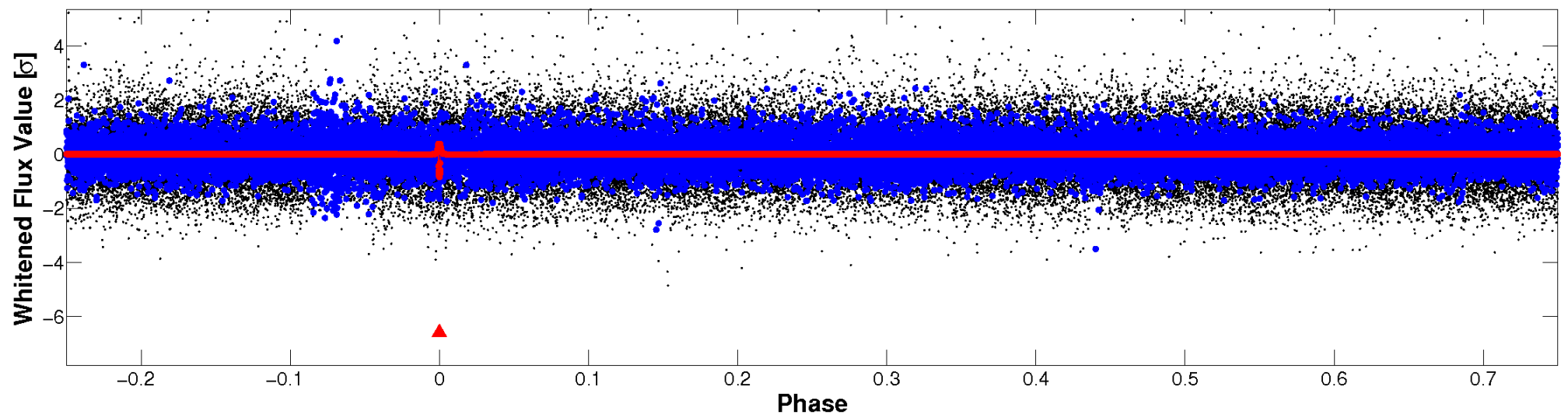


Non-Whitened Vs. Whitened Light Curve

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 009107510-01 P=375.359610 Days $T_0=377.362114$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 009107510-01 P=375.359610 Days $T_0=377.362114$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

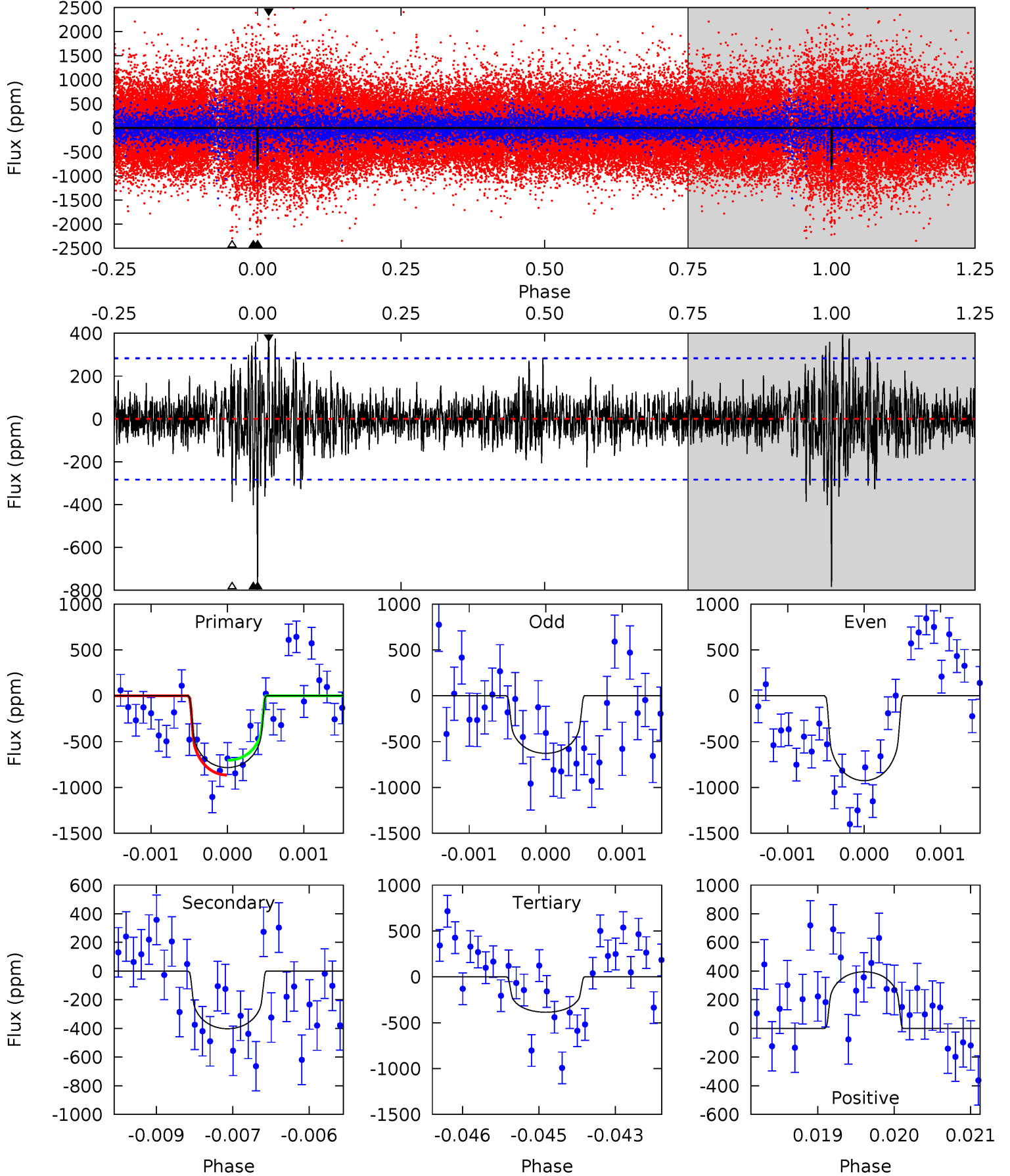
TCE 009107510-01 P=375.357686 Days $T_0=377.357748$ (BKJD)



DV Model-Shift Uniqueness Test

009107510-01, P = 375.359610 Days, E = 2.002504 Days

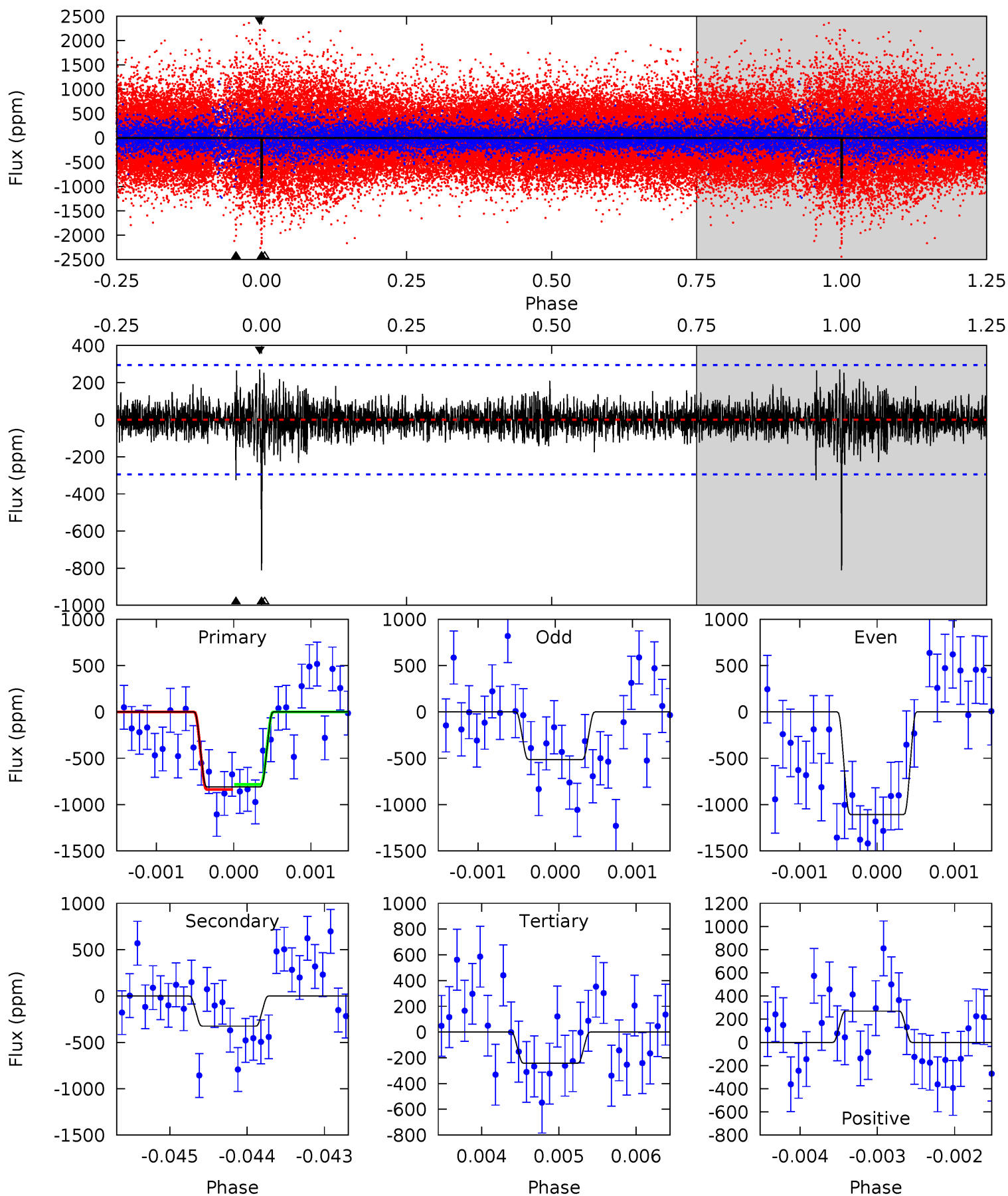
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	7.68	7.38	7.55	5.41	3.23	1.58	7.58	7.41	0.30	0.13	2.86	1.07	0.34	1.54



Alt Model-Shift Uniqueness Test

009107510-01, P = 375.357686 Days, E = 2.000062 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	6.00	4.49	4.99	5.44	3.27	1.06	10.5	9.98	1.51	1.01	5.50	1.10	0.25	0.49



Stellar Parameters For KIC 009107510

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4984^{+148}_{-148}	$4.599^{+0.066}_{-0.039}$	$-0.540^{+0.350}_{-0.300}$	$0.669^{+0.065}_{-0.065}$	$0.649^{+0.084}_{-0.036}$	$3.048^{+0.859}_{-0.465}$
	+3%/-3%	+1%/-1%	+65%/-56%	+10%/-10%	+13%/-6%	+28%/-15%
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 009107510-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-402 ± 52	$2.34^{+1.79}_{-1.44}$	266^{+10}_{-10}	4128^{+2111}_{-723}	$31981^{+183852}_{-21864}$
Alt.	-325 ± 54	$2.48^{+1.85}_{-1.51}$	267^{+8}_{-9}	3934^{+1860}_{-666}	$22537^{+130925}_{-15239}$

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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

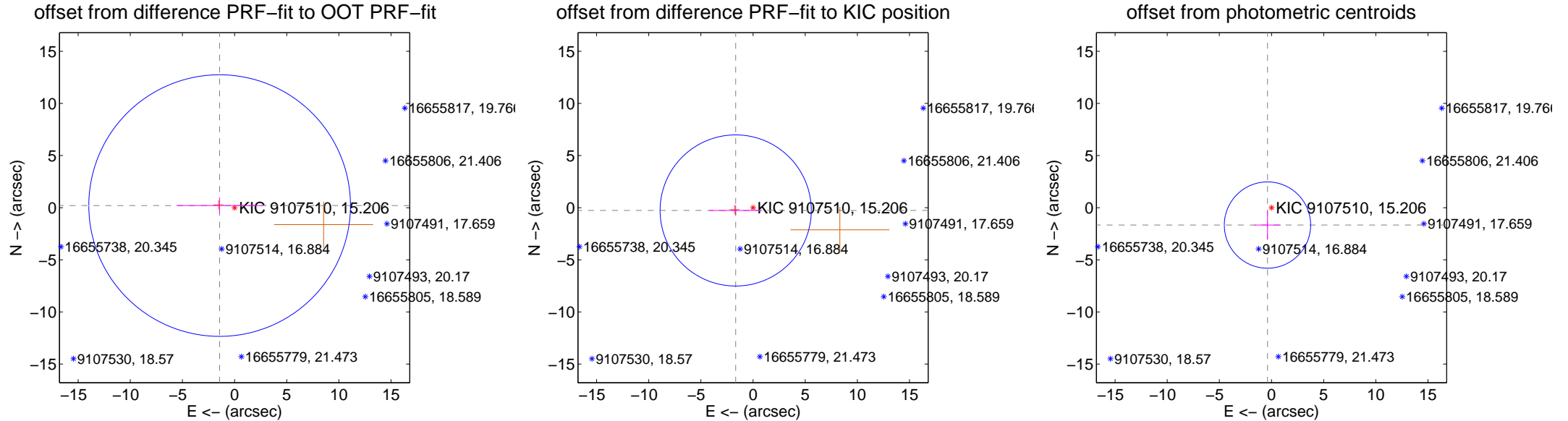
DV Centroid Data

Supplemental centroid analysis for 009107510-01. Kepler magnitude: 15.21. Transit SNR 7.06

There are 0 quarters with good PRF difference image offsets

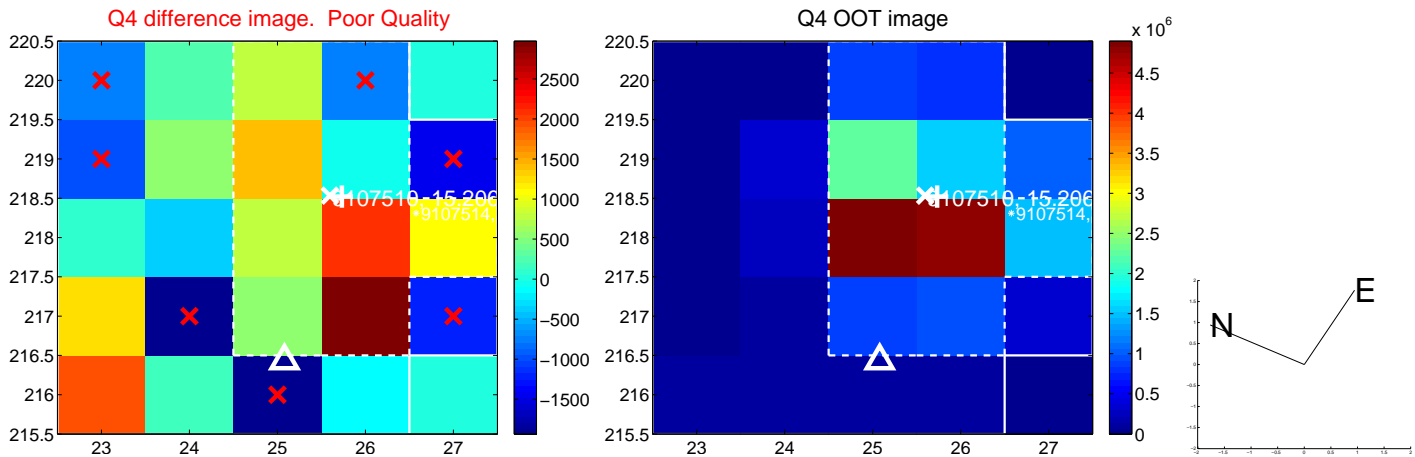
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.448 ± 4.182	0.35	1.434 ± 4.114	0.202 ± 0.780
PRF-fit source offset from KIC position	1.686 ± 2.416	0.70	1.665 ± 2.525	-0.267 ± 0.488
photometric centroid source offset	1.71 ± 1.38	1.24	0.39 ± 1.27	-1.67 ± 1.39

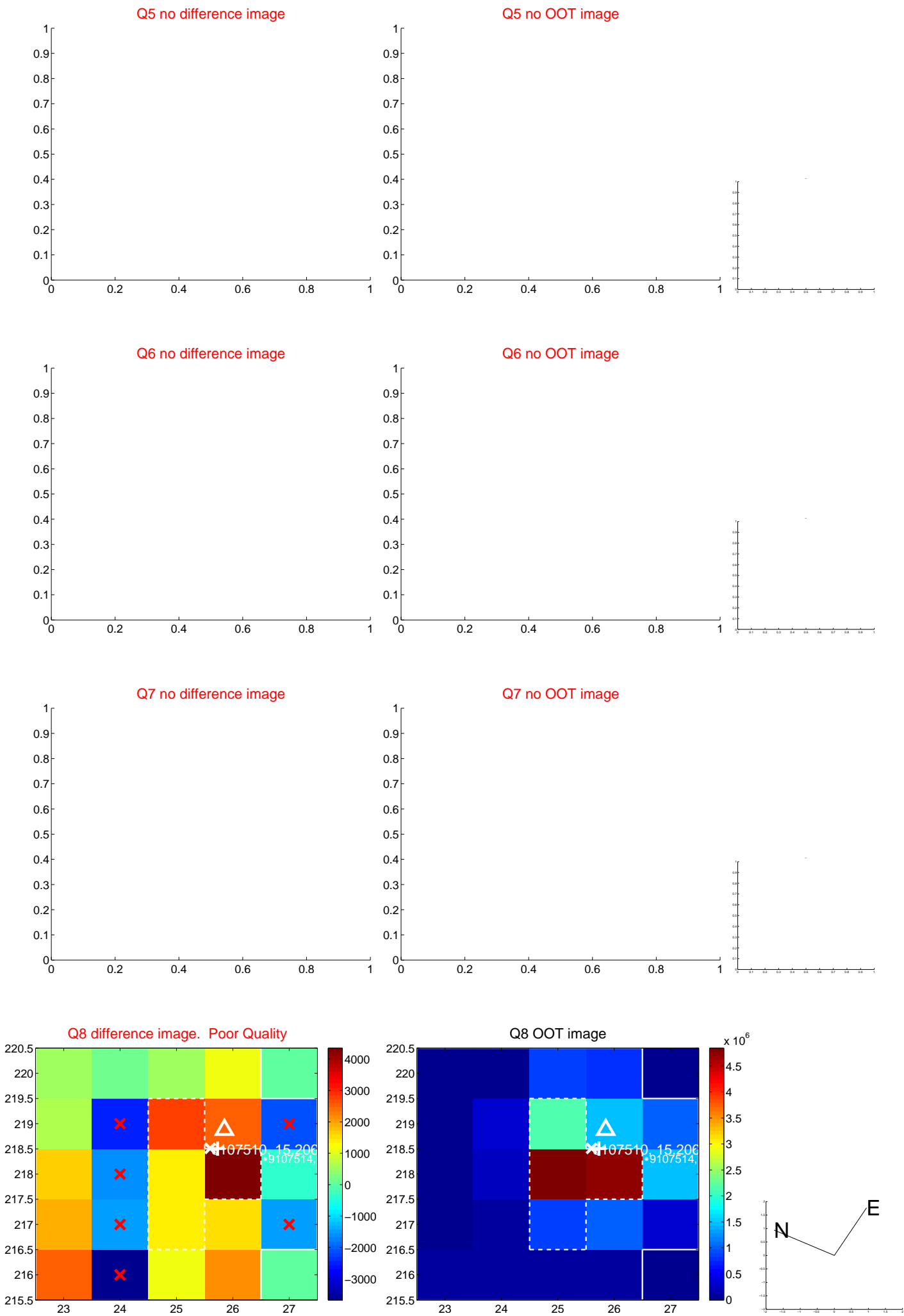


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

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



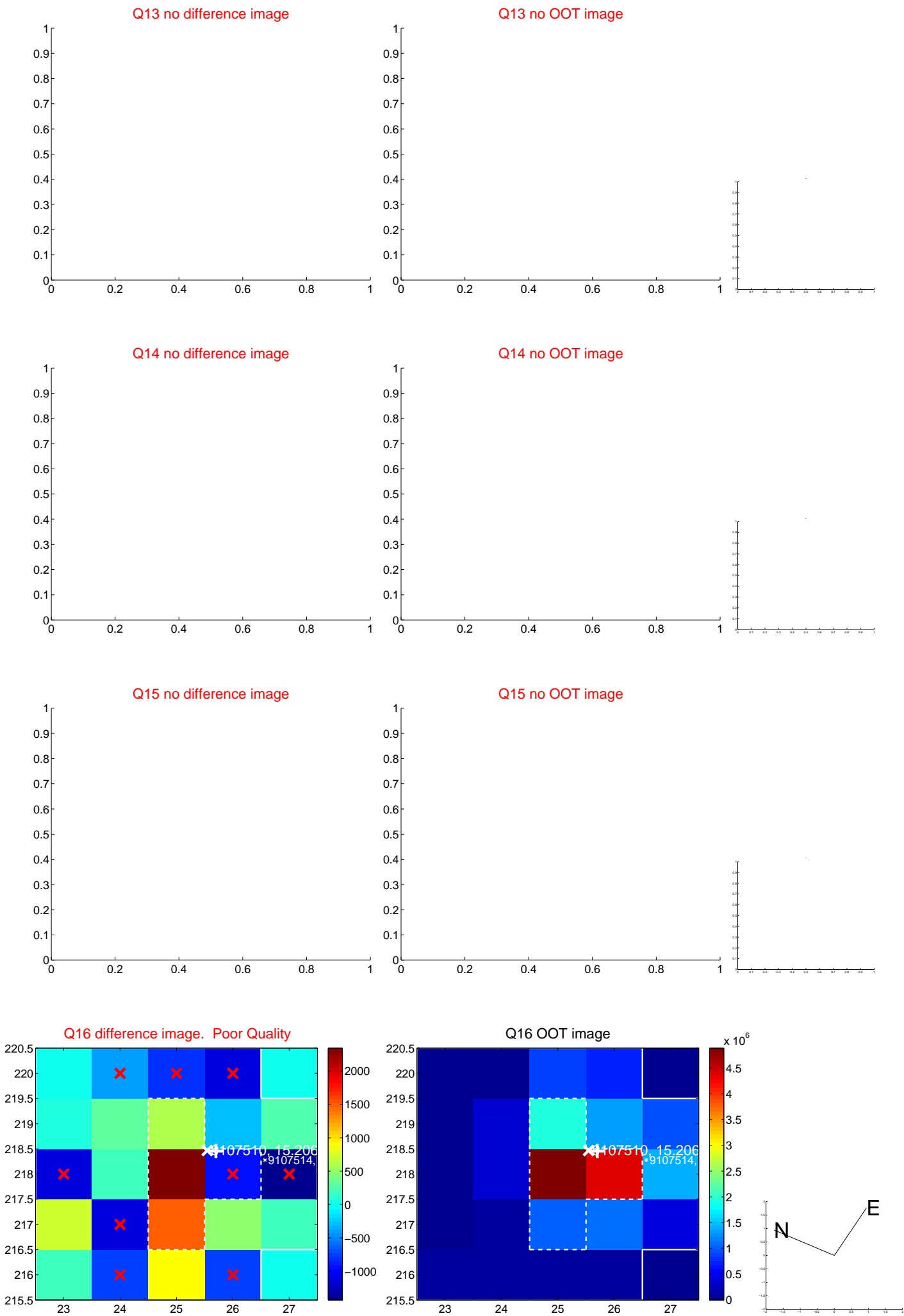
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



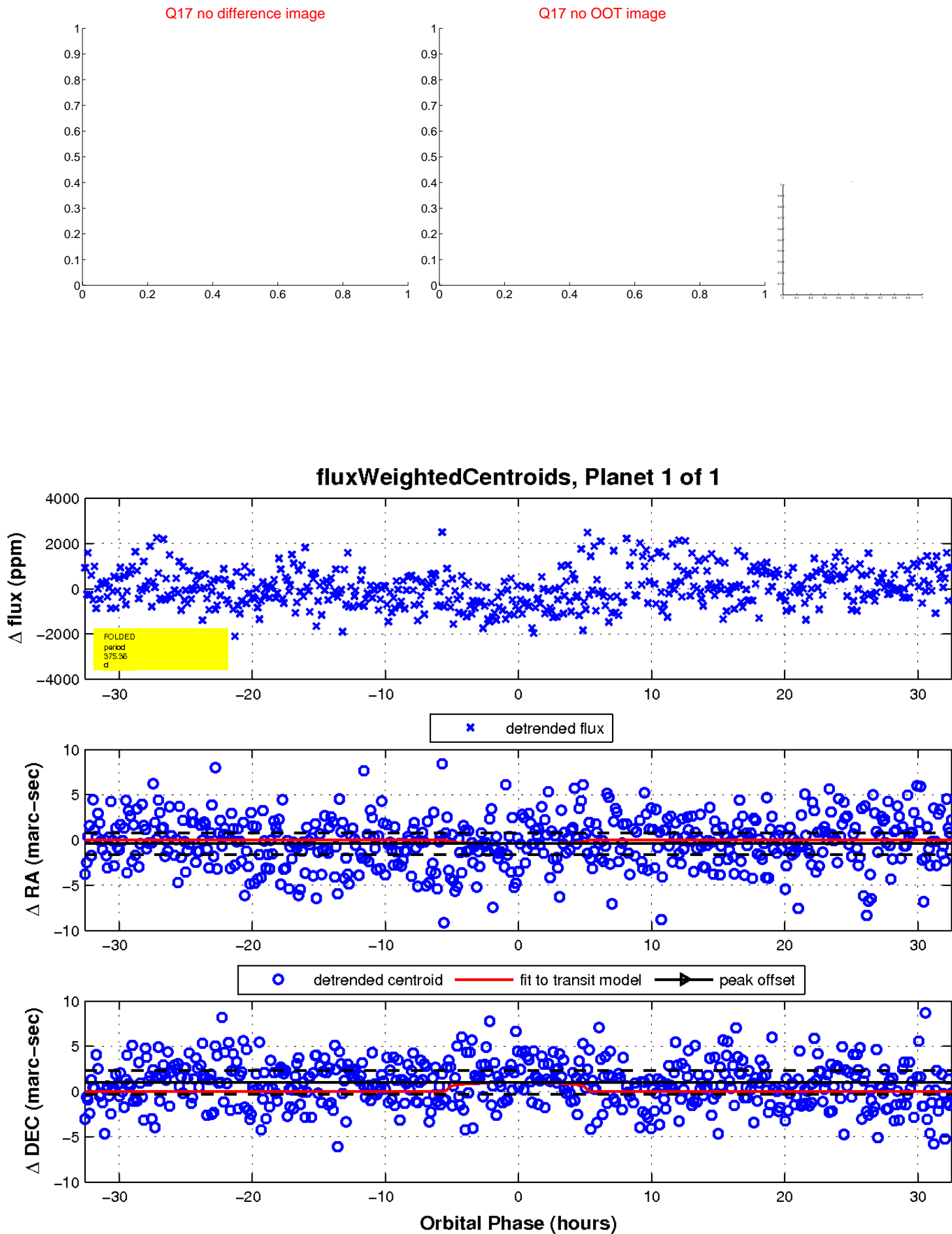
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UKIRT Image

Declination

