

KIC 012159463

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})
012159463-01	OBS	No	599.301561	378.048630	309.5	8.298	8.1	7.1	0.62	4497	1.22	0.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012159463-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—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.

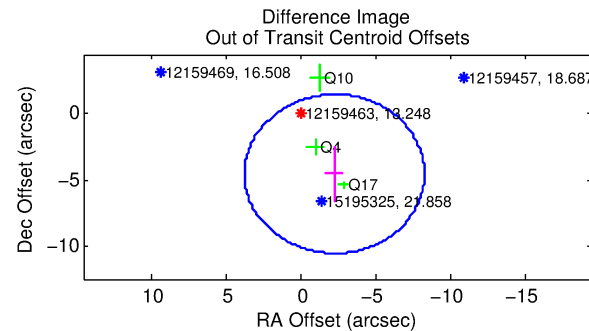
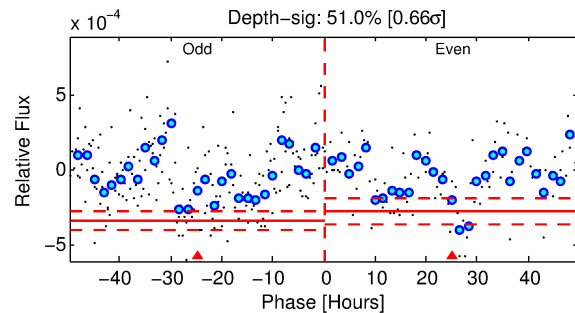
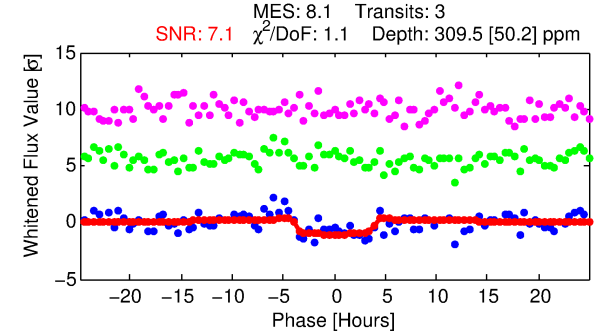
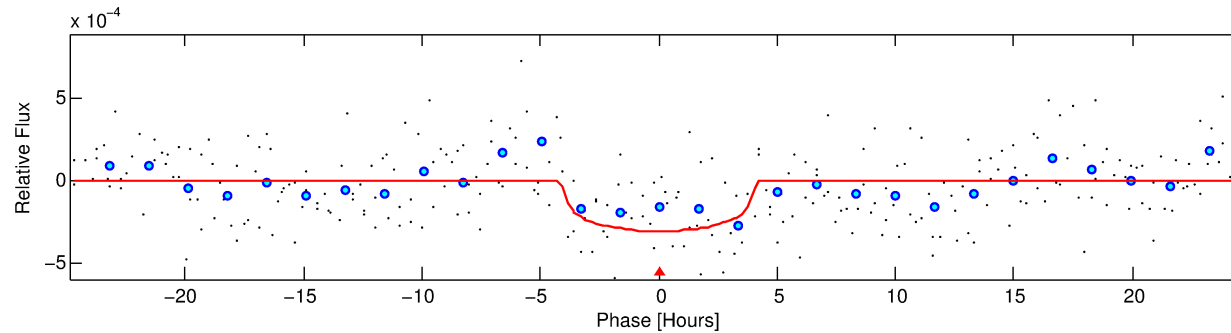
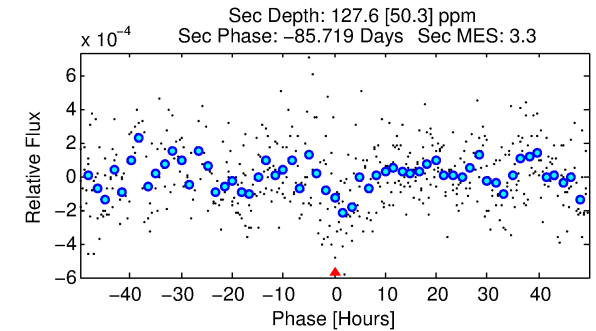
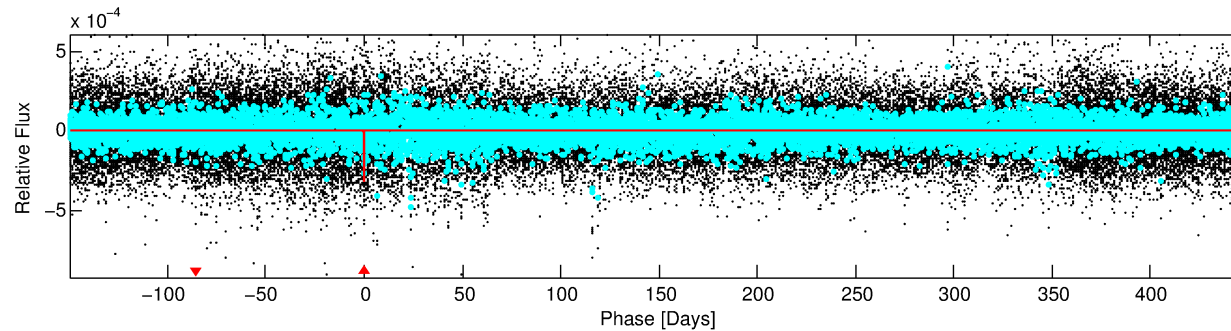
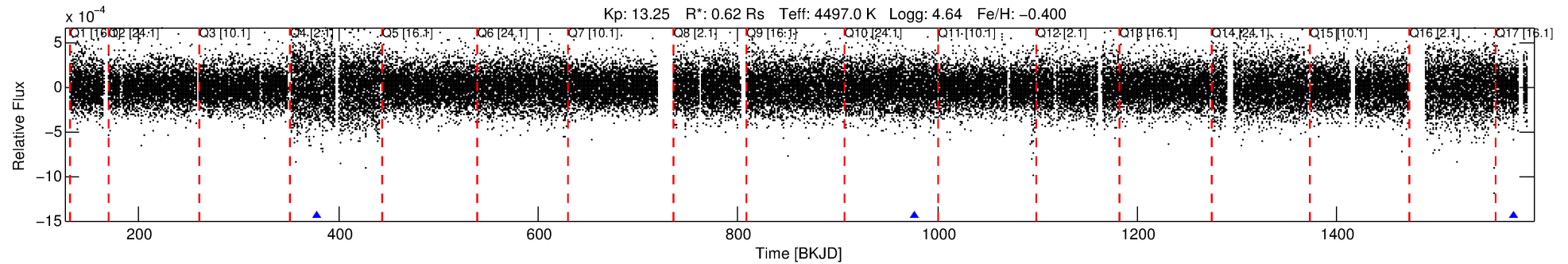
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012159463-01

No Significant Match Found

DV One-Page Summary

KIC: 12159463 Candidate: 1 of 1 Period: 599.302 d



DV Fit Results:

Period = 599.30156 [0.01365] d
Epoch = 378.0486 [0.0205] BKJD
Rp/R* = 0.0181 [0.0110]
a/R* = 346.58 [719.73]
b = 0.80 [0.95]
Seff = 0.10 [0.02]
Teq = 143 [5] K
Rp = 1.22 [0.75] Re
a = 1.1816 [0.0793] AU
Ag = 65616.81 [83664.45] [0.78σ]
Teffp = 3550 [1134] K [3.01σ]

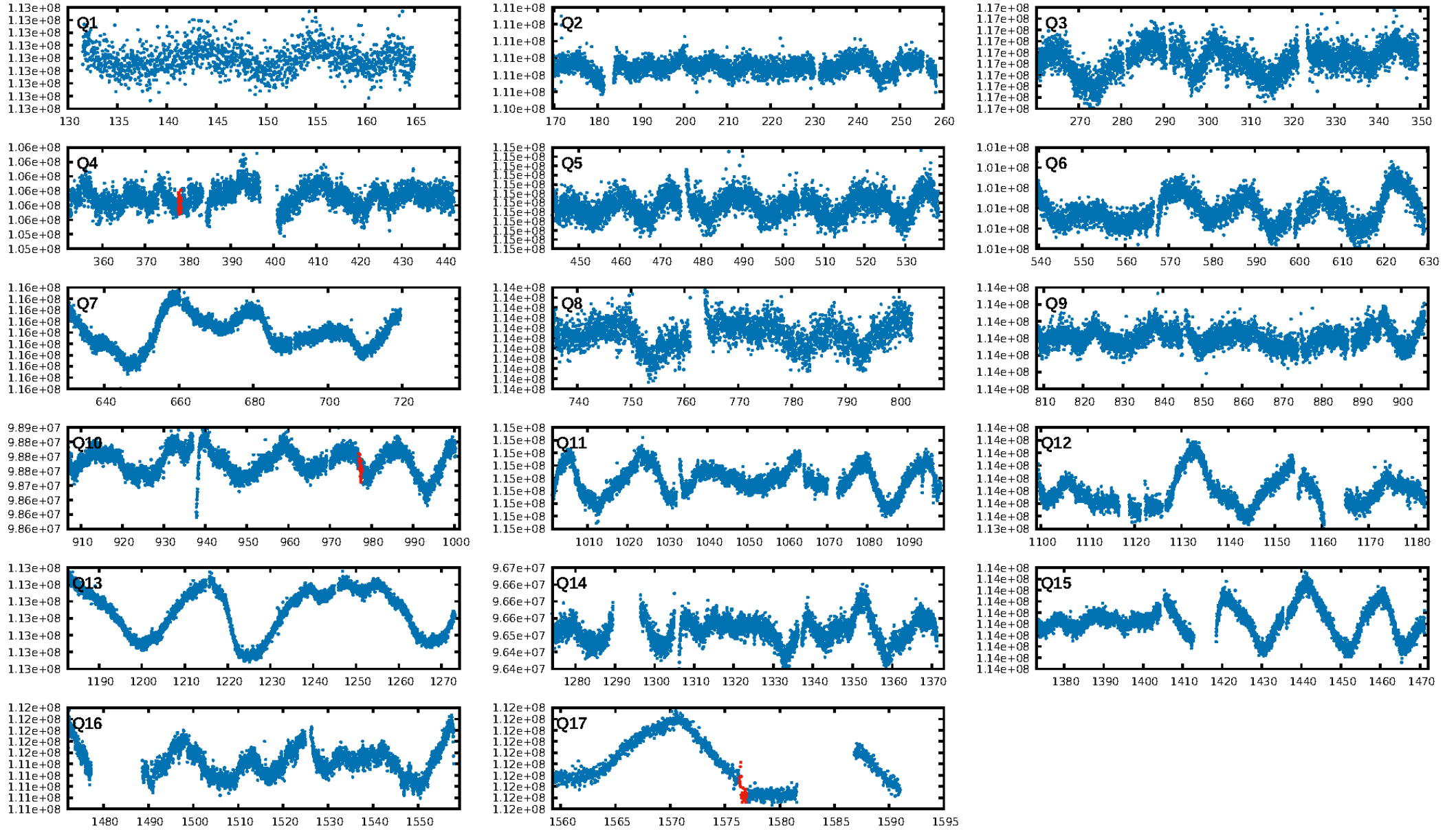
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 10.5%
ModelChiSquareGof-sig: 71.9%
Bootstrap-pfa: 1.04e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -3.869
Centroid-sig: 1.8%
Centroid-so: 1.770 arcsec [1.67σ]
OotOffset-rm: 5.090 arcsec [2.54σ]
KicOffset-rm: 5.790 arcsec [3.35σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.00 [0/3]
DiffImageOverlap-fno: 1.00 [3/3]

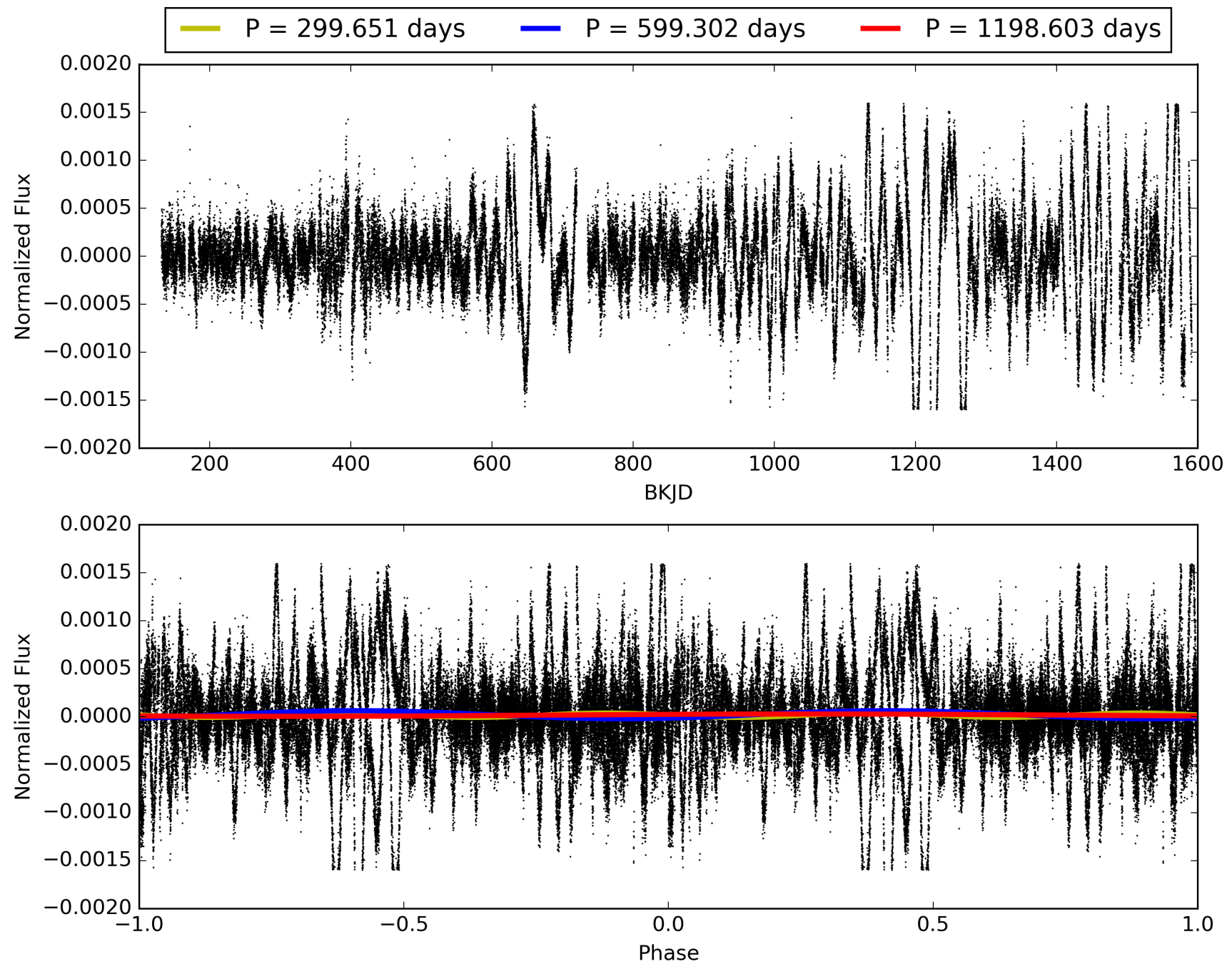
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:08:20 Z

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

TCE 012159463-01, PDC Light Curves

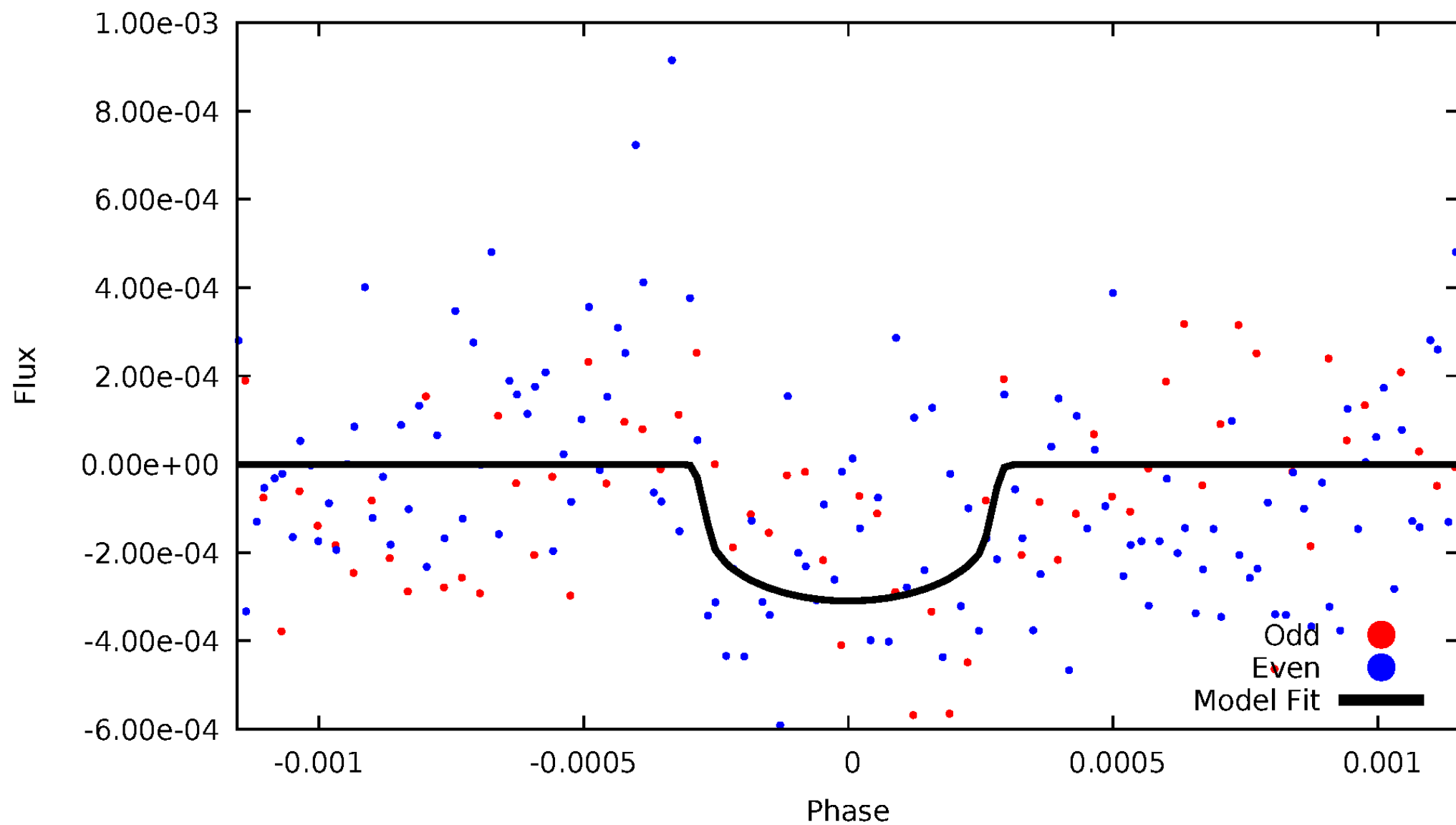


TCE 012159463-01



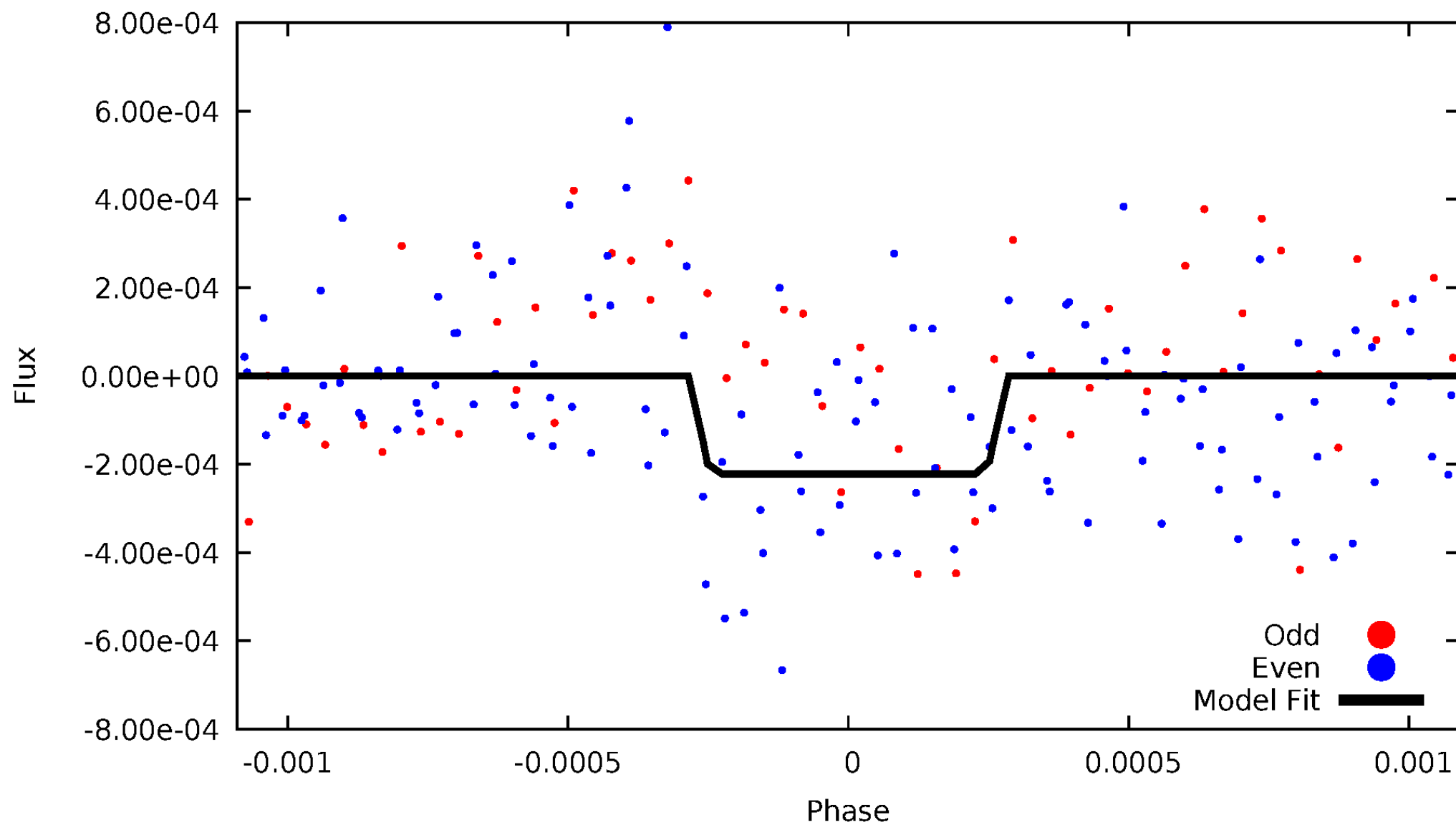
DV Odd/Even

TCE 012159463-01

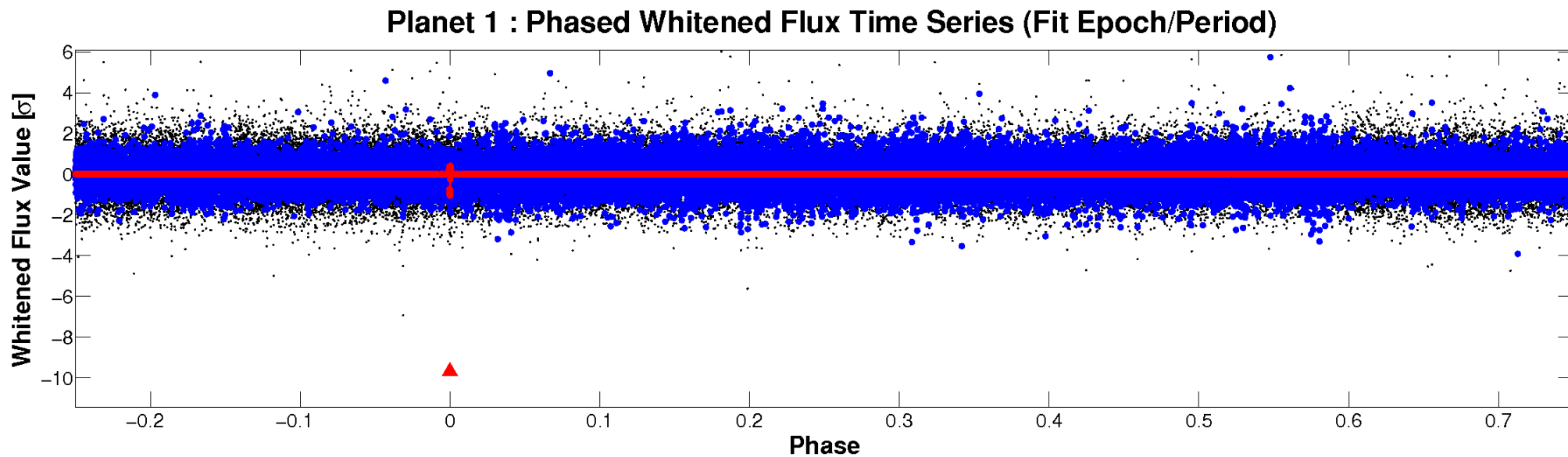
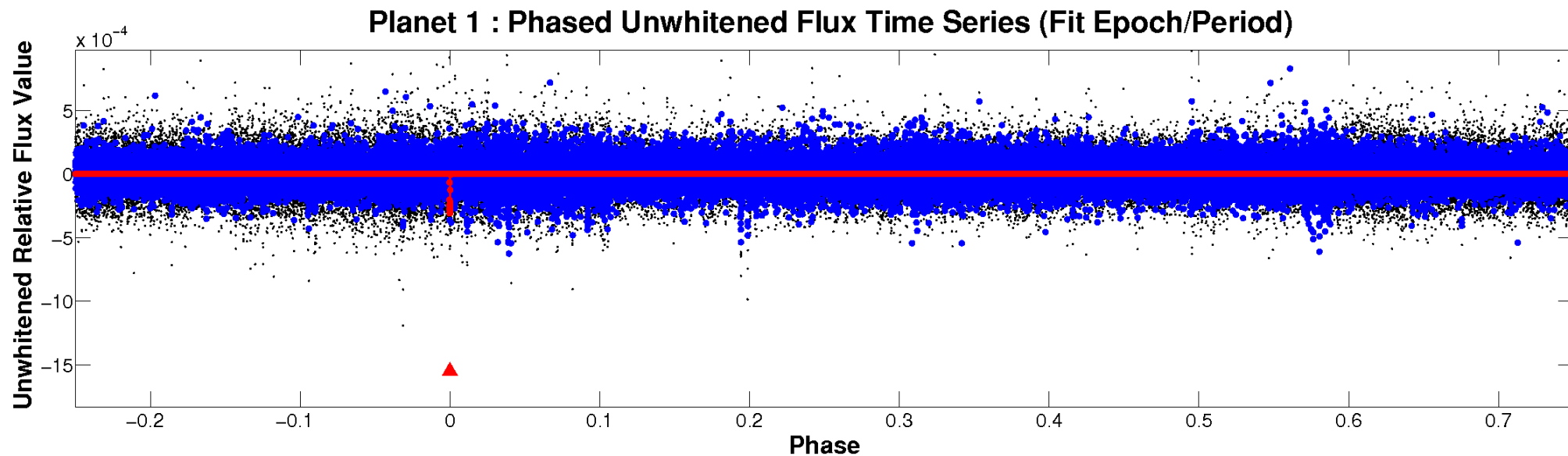


ALT Odd/Even

TCE 012159463-01



Non-Whitened Vs. Whitened Light Curve



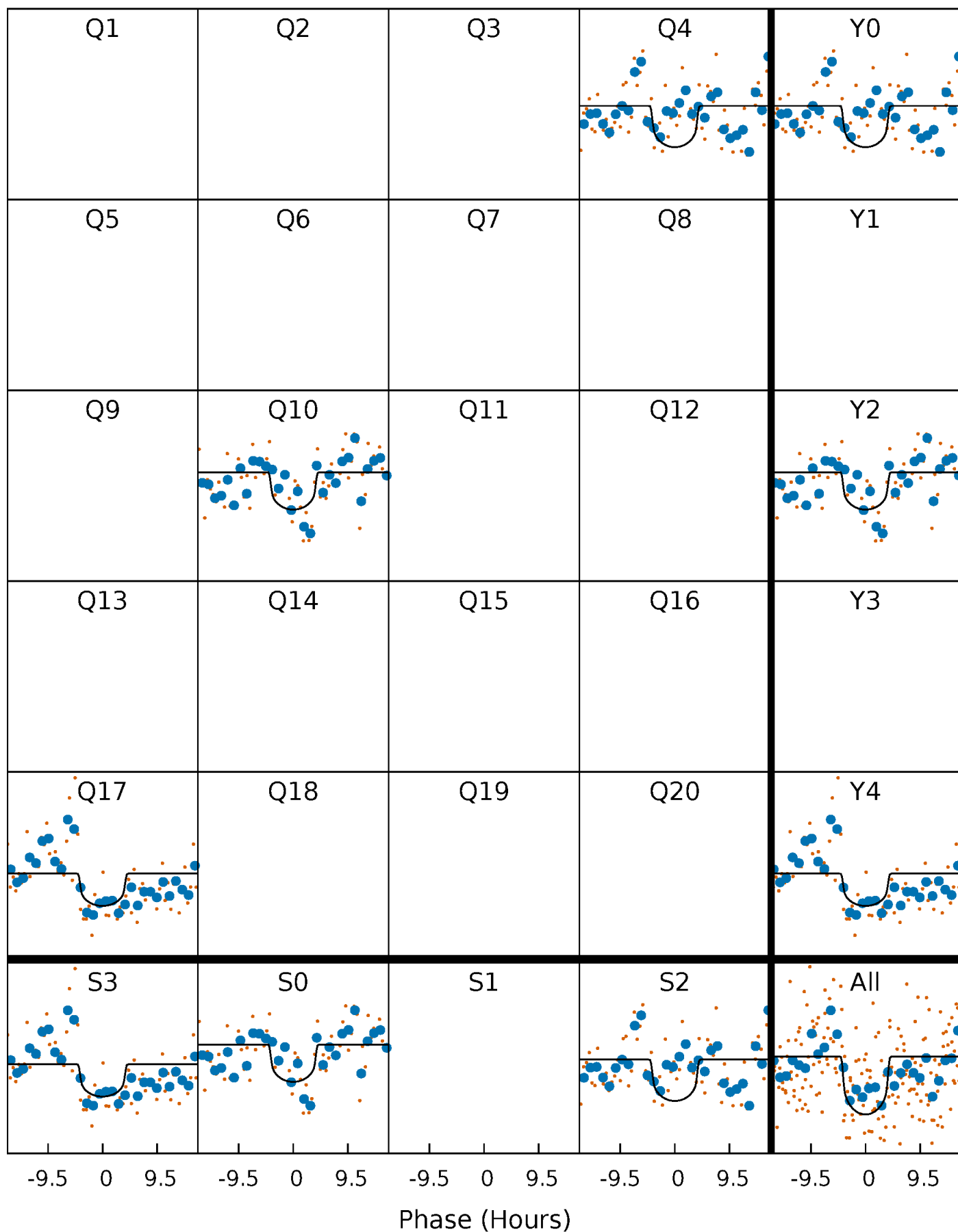
PDC Quarter-Phased Transit Curves

TCE 012159463-01 P=599.301561 Days $T_0=378.048631$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 012159463-01 P=599.301561 Days $T_0=378.048631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

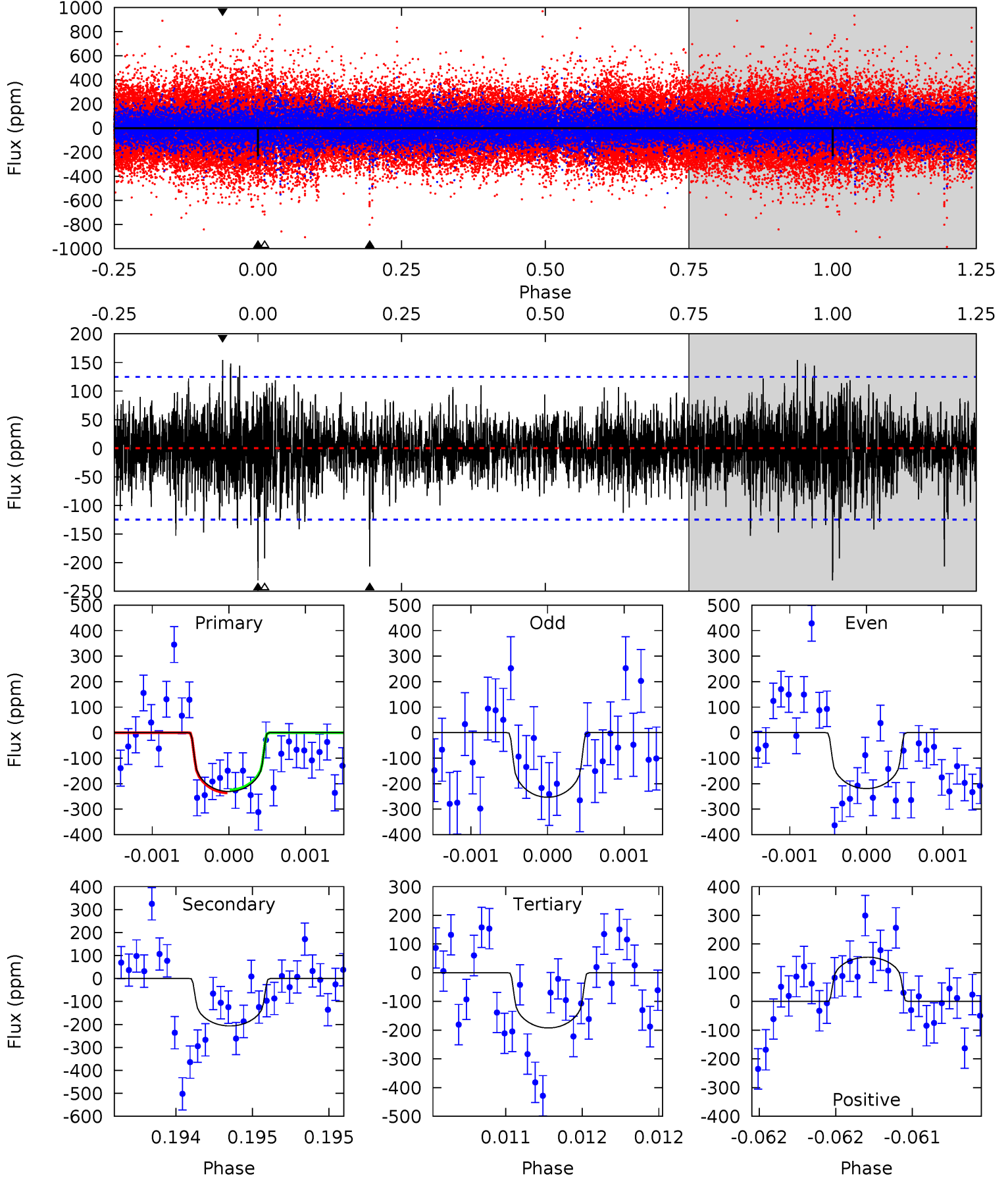
TCE 012159463-01 P=599.295881 Days $T_0=378.053698$ (BKJD)



DV Model-Shift Uniqueness Test

012159463-01, P = 599.301561 Days, E = 378.048631 Days

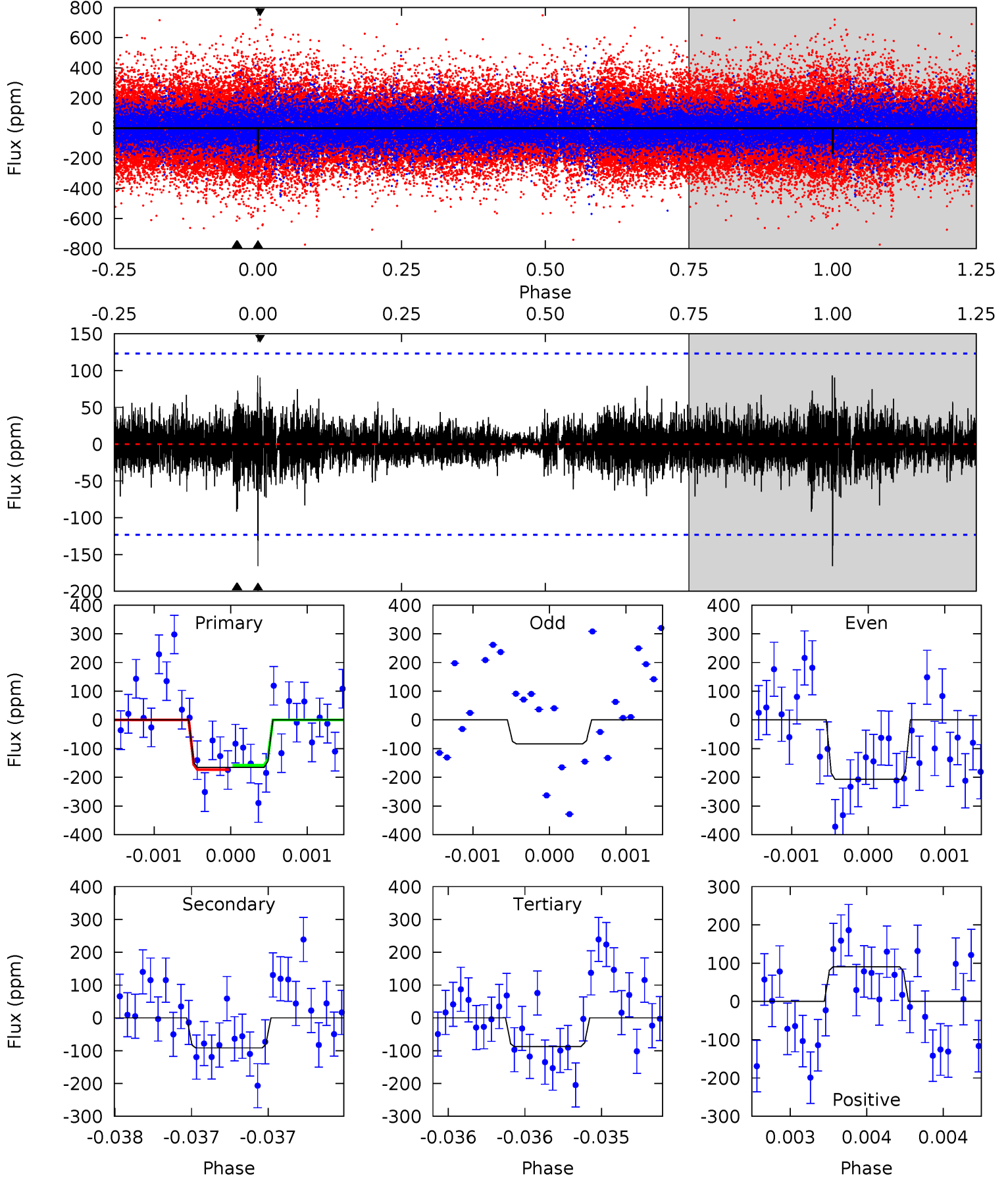
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	9.18	8.54	6.85	5.54	3.43	1.66	1.70	3.39	0.63	2.32	0.73	0.91	0.40	0.24



Alt Model-Shift Uniqueness Test

012159463-01, P = 599.295881 Days, E = 378.053698 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.49	4.15	3.97	4.10	5.57	3.47	0.80	3.52	3.39	0.18	0.05	2.67	1.99	0.36	0.34



Stellar Parameters For KIC 012159463

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4497^{+134}_{-134}	$4.643^{+0.048}_{-0.028}$	$-0.400^{+0.300}_{-0.300}$	$0.618^{+0.052}_{-0.052}$	$0.612^{+0.071}_{-0.044}$	$3.655^{+0.780}_{-0.494}$
	+3%/-3%	+1%/-1%	+75%/-75%	+8%/-8%	+12%/-7%	+21%/-14%
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 012159463-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-207 ± 23	$1.28^{+0.65}_{-0.71}$	199^{+7}_{-6}	4063^{+1631}_{-545}	$98037^{+422654}_{-55680}$
Alt.	-92 ± 22	$1.08^{+0.65}_{-0.62}$	200^{+7}_{-7}	3737^{+1430}_{-568}	$58275^{+295828}_{-36383}$

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 $A_{obs} \gg 1.0$

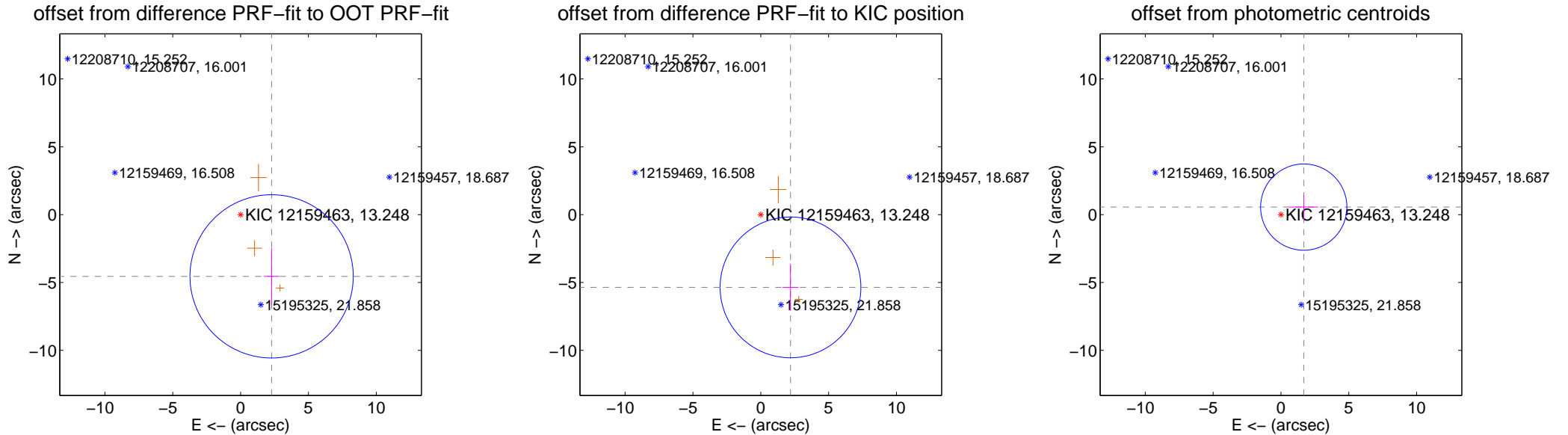
DV Centroid Data

Supplemental centroid analysis for 012159463-01. Kepler magnitude: 13.25. Transit SNR 7.06

There are 0 quarters with good PRF difference image offsets

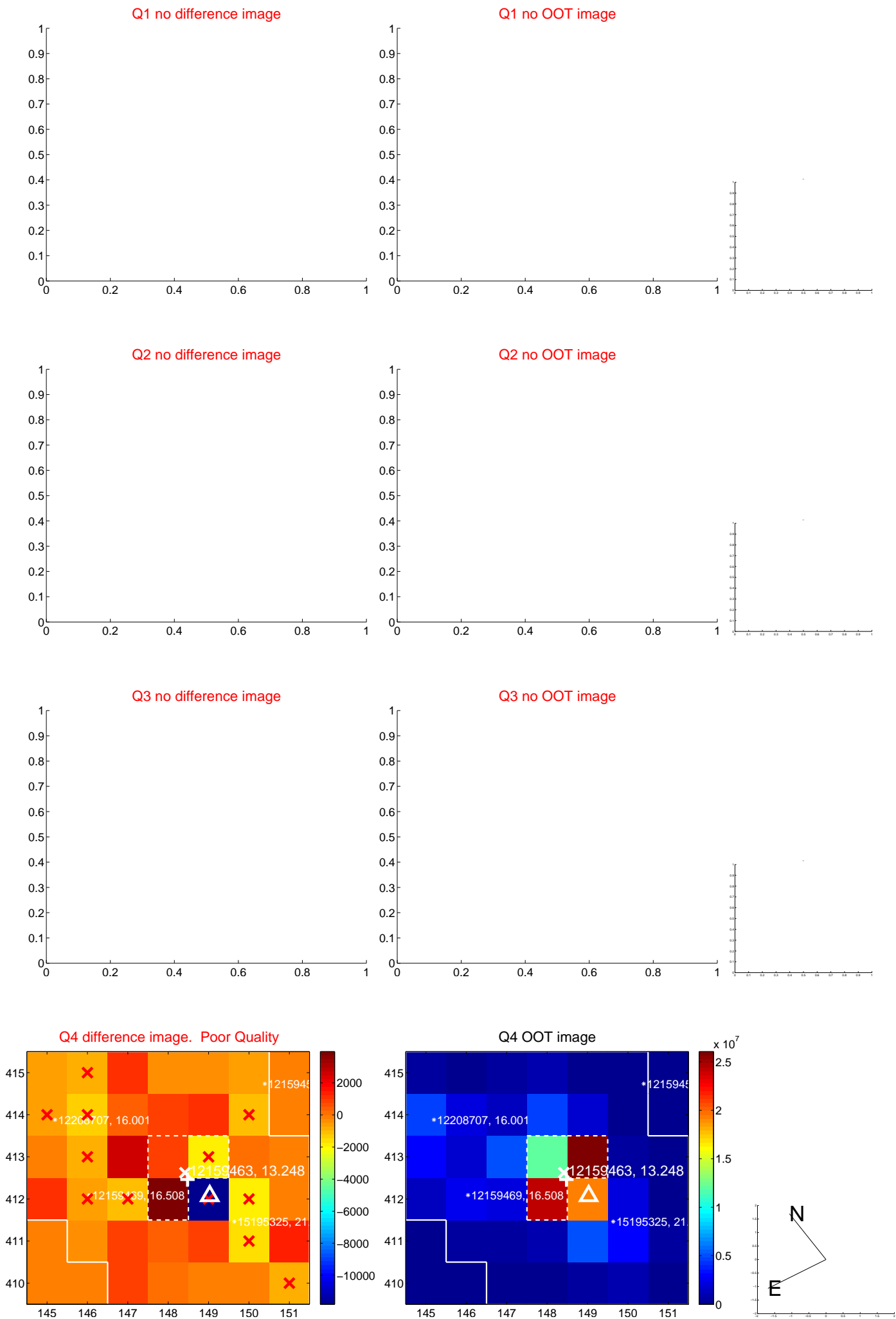
The direct PRF centroid is offset from the target star catalog position by about 0.84 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.090 ± 2.005	2.54	-2.286 ± 0.563	-4.548 ± 2.076
PRF-fit source offset from KIC position	5.790 ± 1.729	3.35	-2.191 ± 0.586	-5.360 ± 1.731
photometric centroid source offset	1.77 ± 1.06	1.67	-1.68 ± 1.07	0.56 ± 0.93



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.

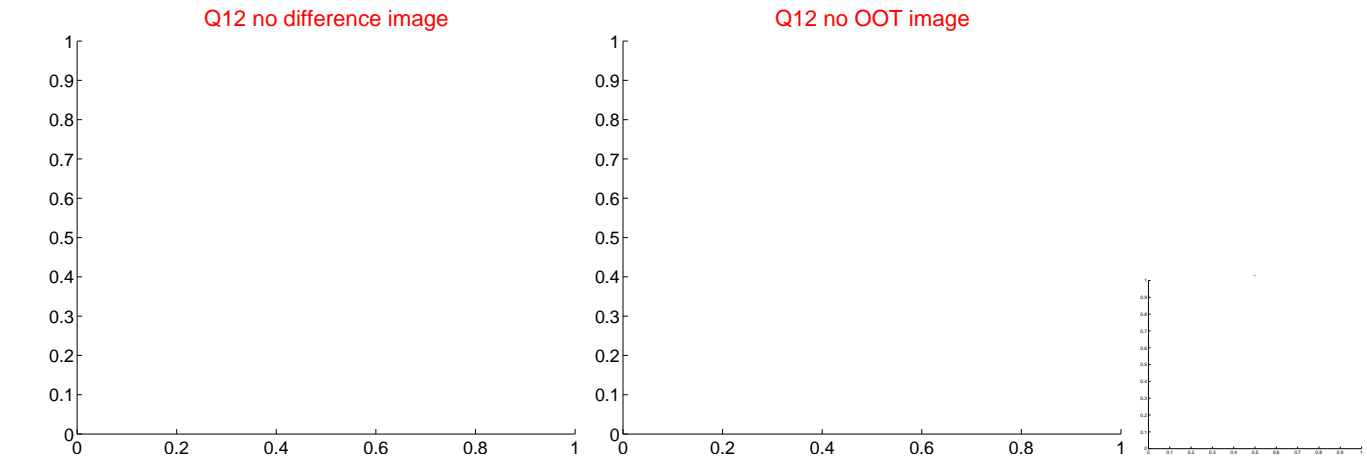
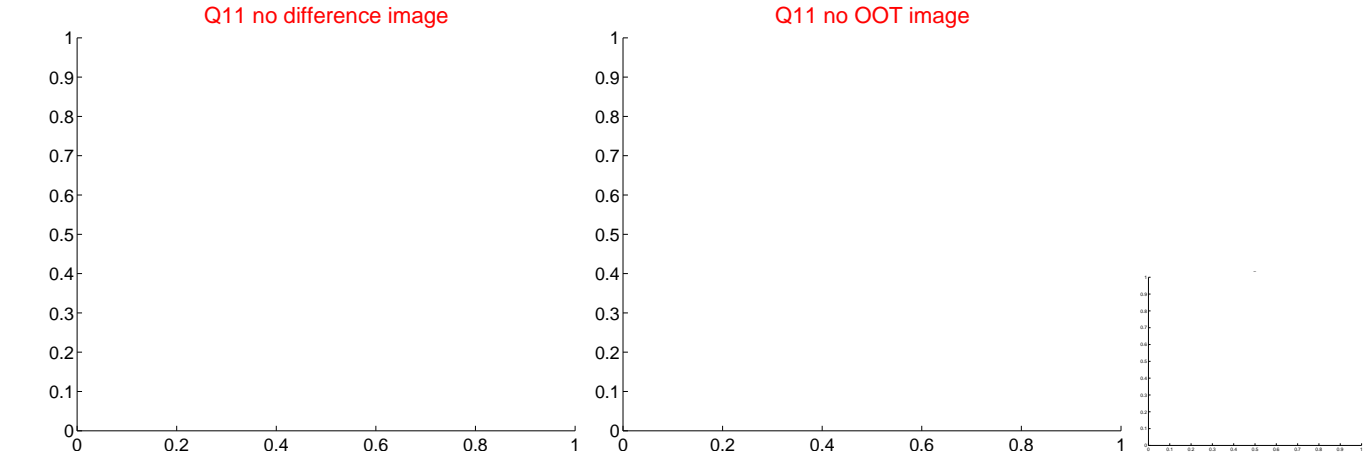
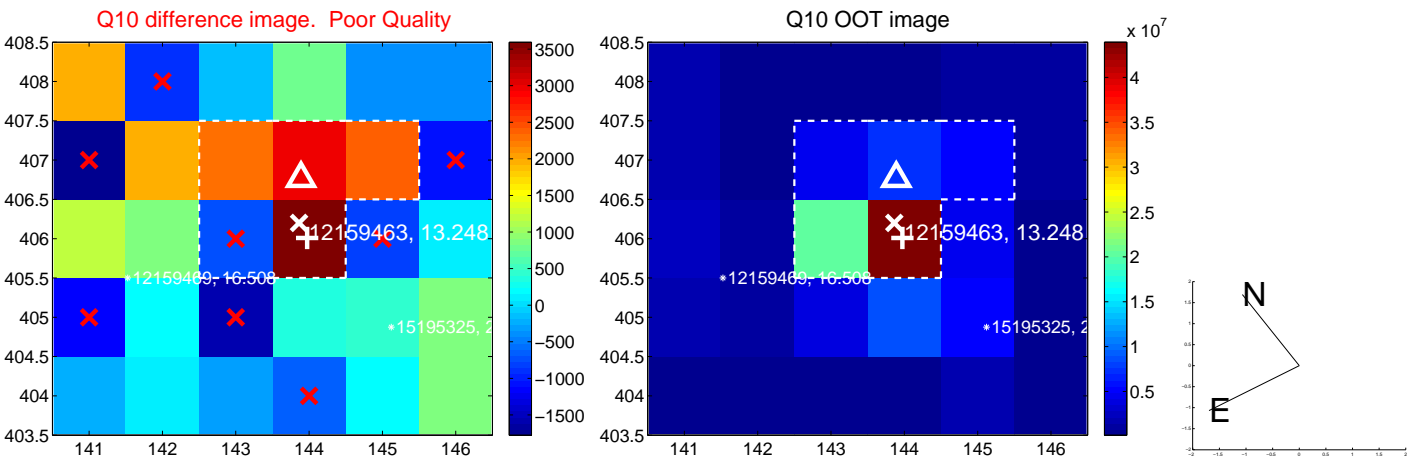
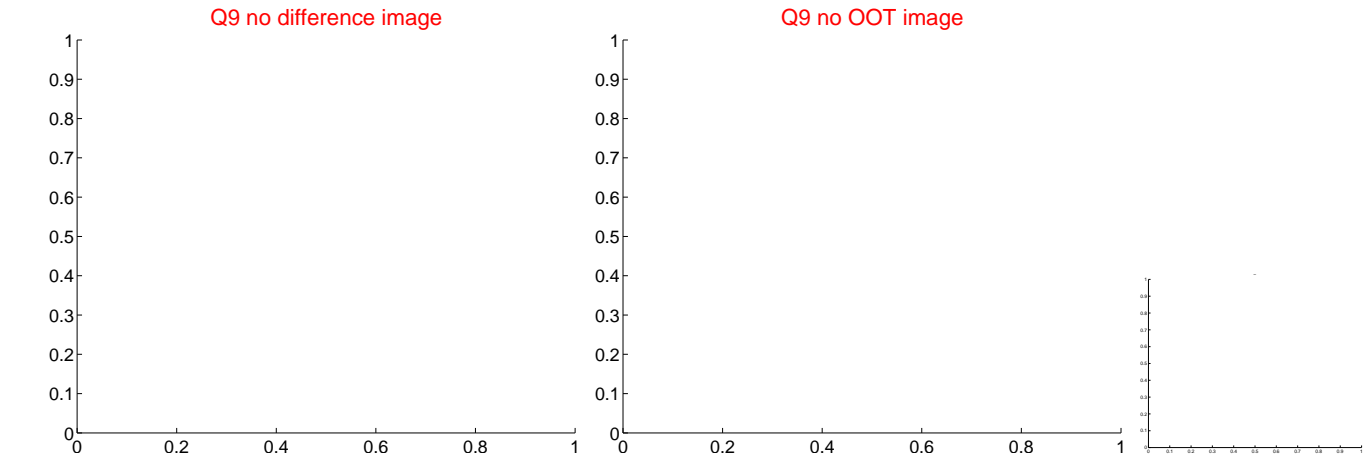
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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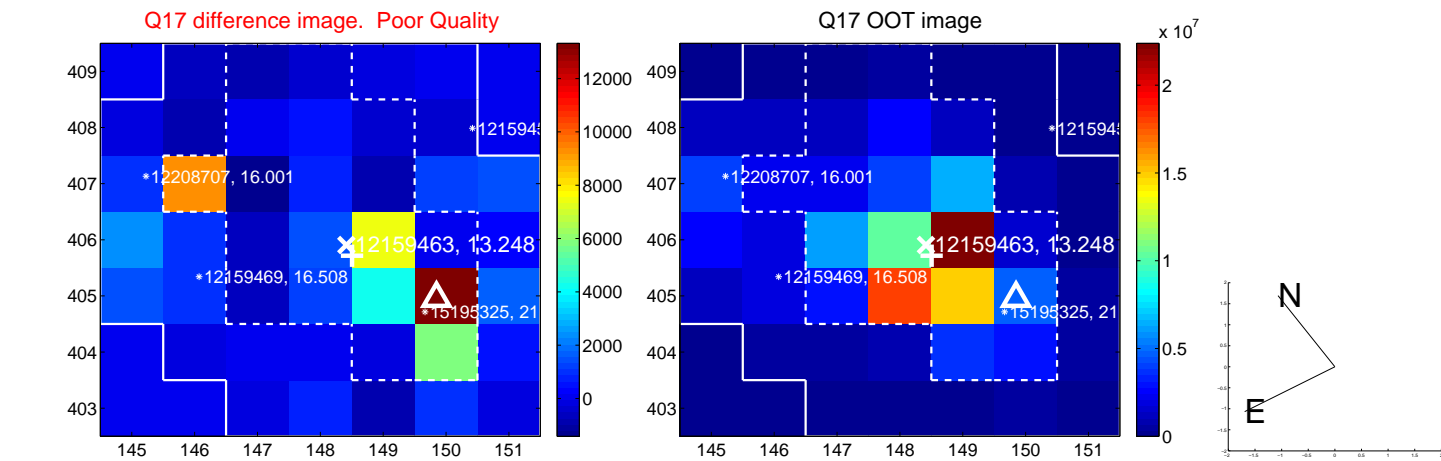
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



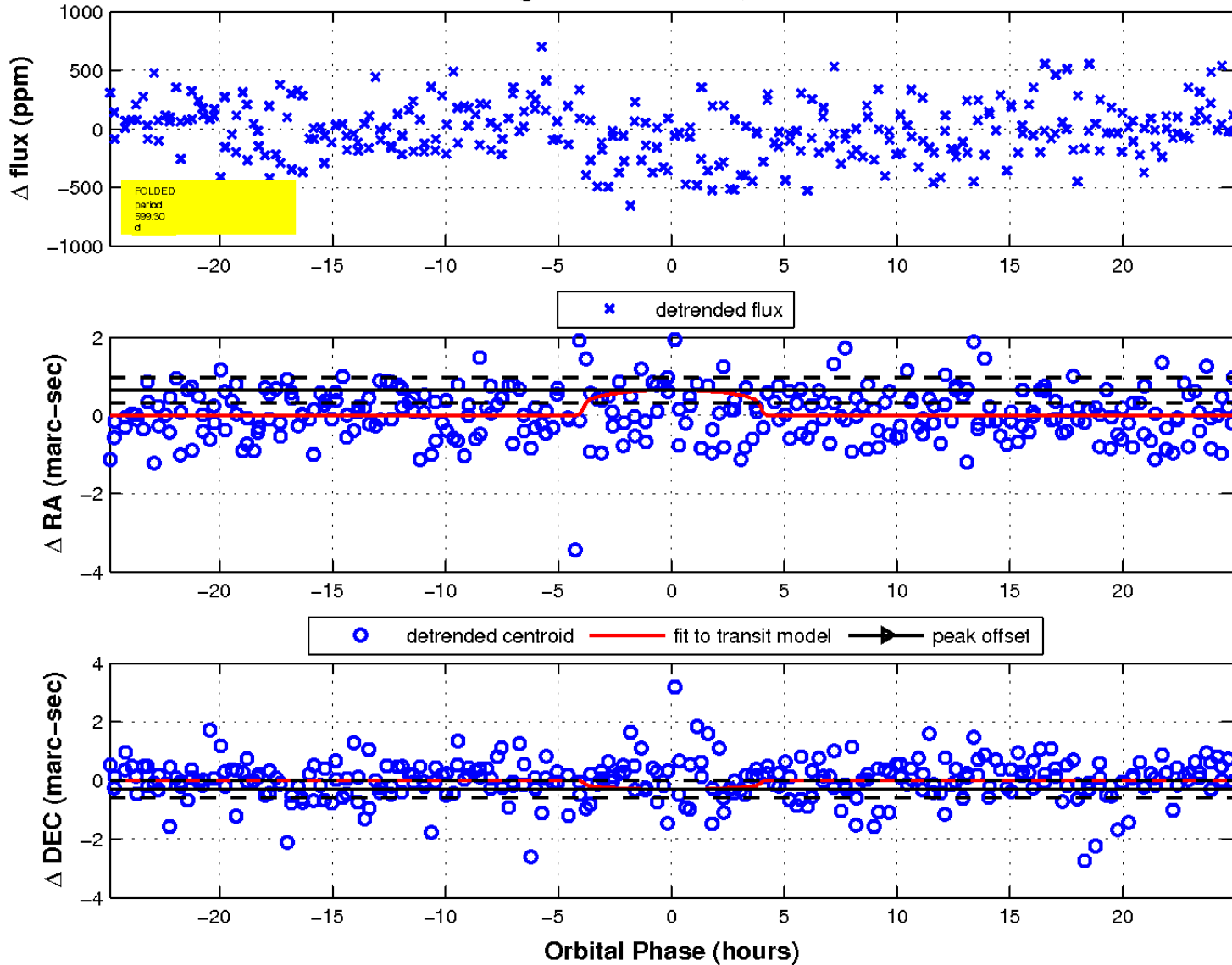
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

