

KIC 012102551

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})
012102551-01	OBS	No	398.193053	134.709140	253.9	7.766	7.2	7.2	2.37	5254	4.37	3.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012102551-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

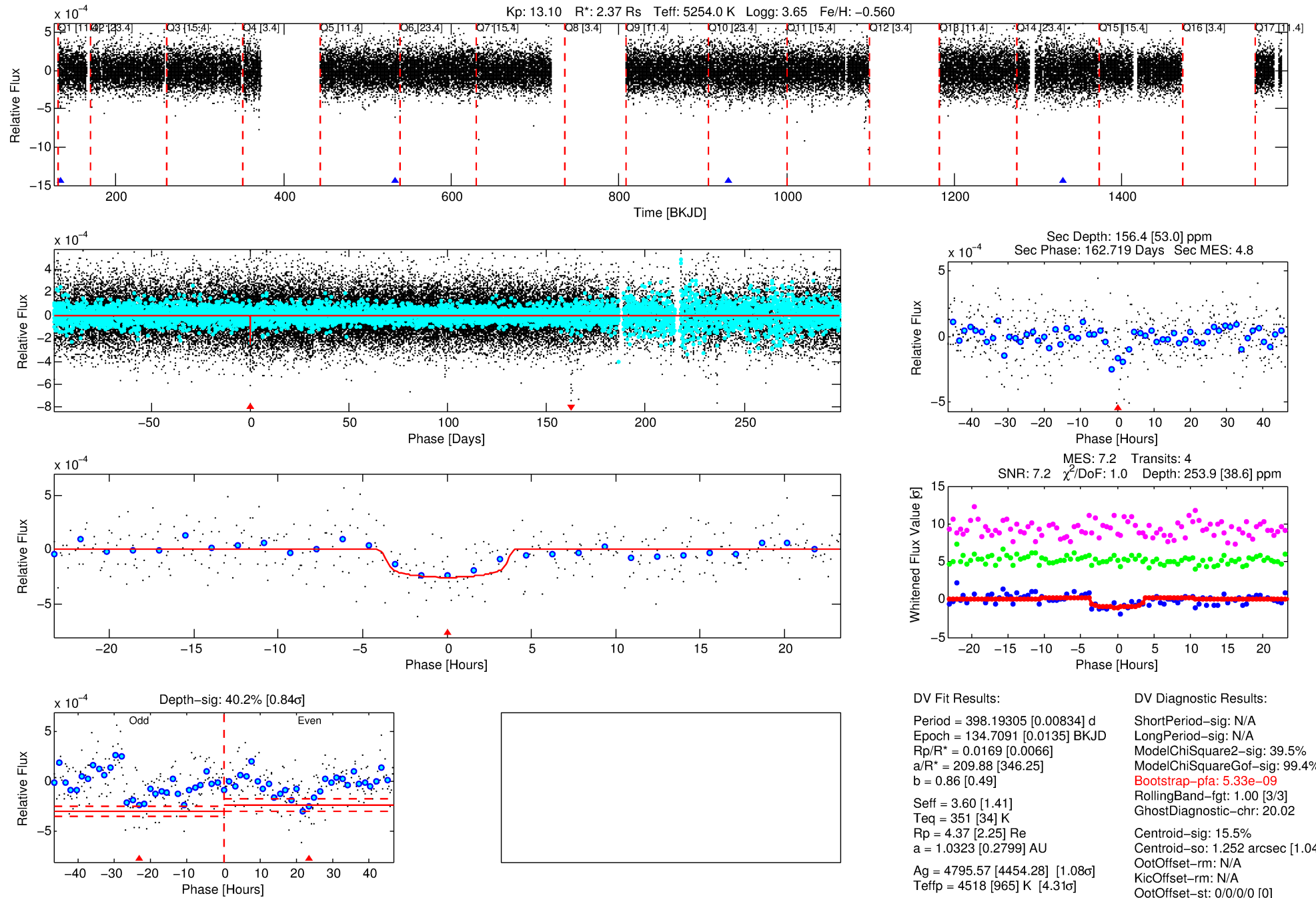
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012102551-01

No Significant Match Found

DV One-Page Summary

KIC: 12102551 Candidate: 1 of 1 Period: 398.193 d



DV Fit Results:

Period = 398.19305 [0.00834] d
Epoch = 134.7091 [0.0135] BKJD
Rp/R* = 0.0169 [0.0066]
a/R* = 209.88 [346.25]
b = 0.86 [0.49]
Seff = 3.60 [1.41]
Teq = 351 [34] K
Rp = 4.37 [2.25] Re
a = 1.0323 [0.2799] AU
Ag = 4795.57 [4454.28] [1.08 σ]
Teffp = 4518 [965] K [4.31 σ]

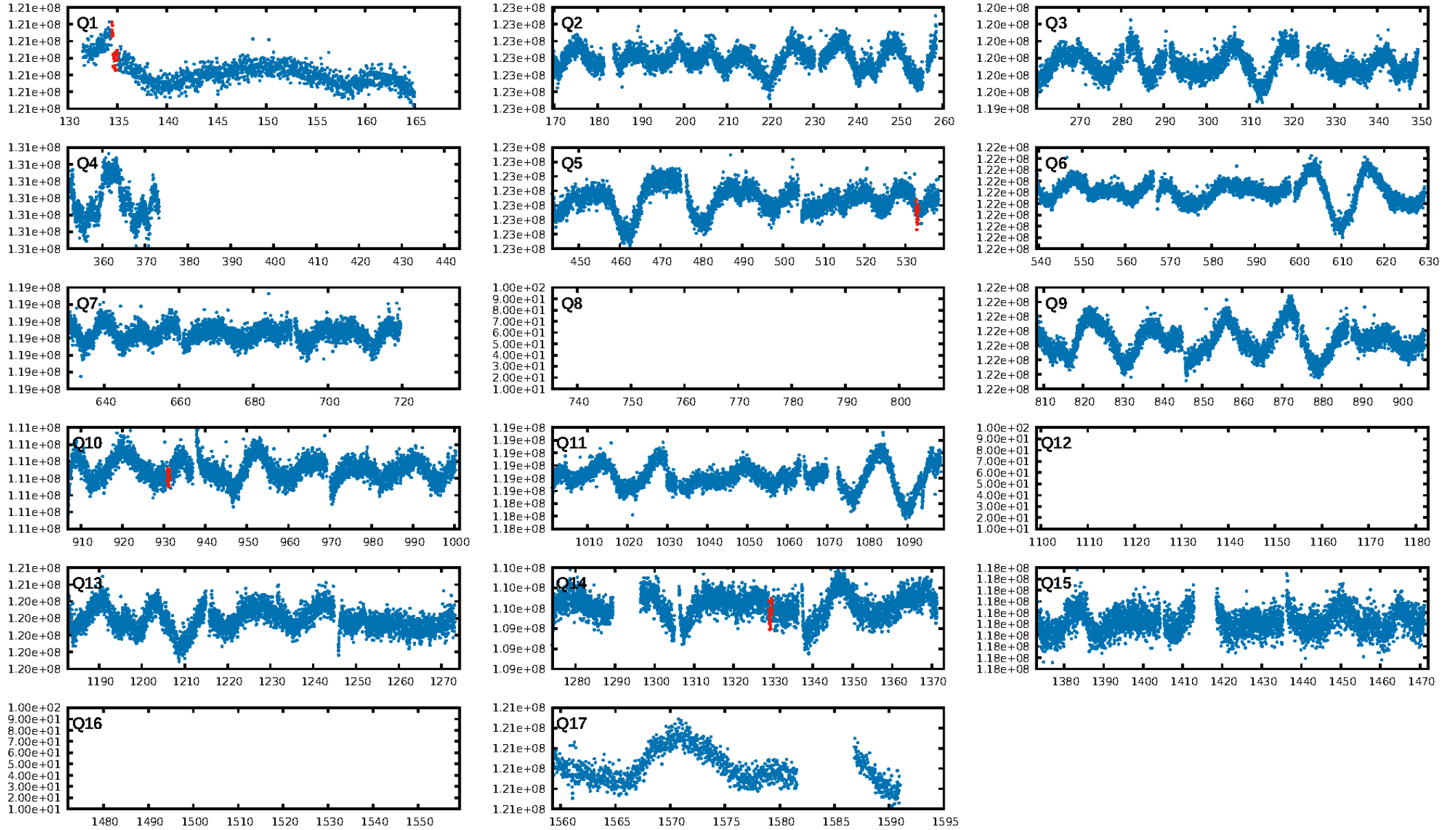
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 39.5%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: 5.33e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 20.02
Centroid-sig: 15.5%
Centroid-so: 1.252 arcsec [1.04 σ]
OotOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-rm: N/A
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [4/4]

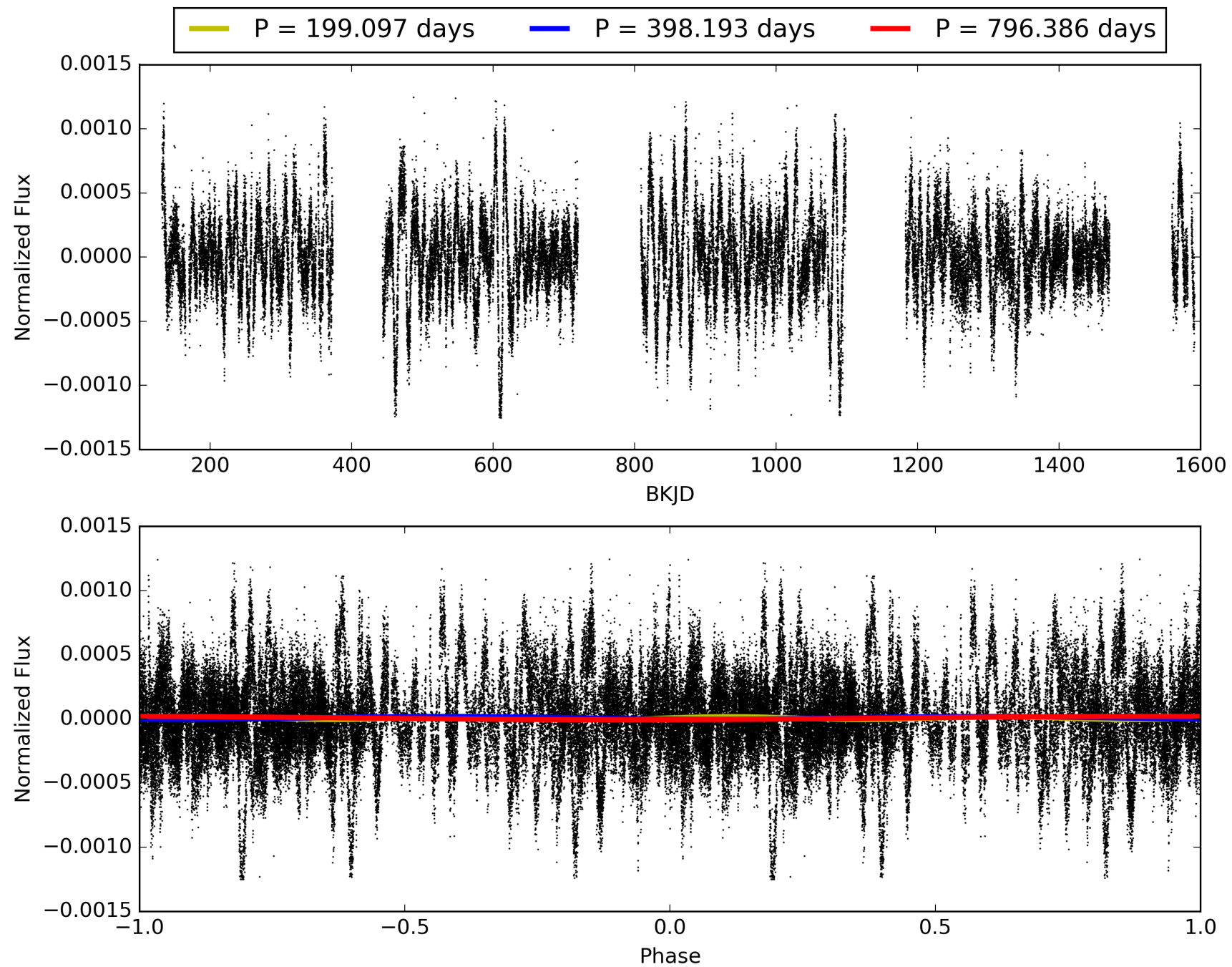
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:16:41 Z

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

TCE 012102551-01, PDC Light Curves

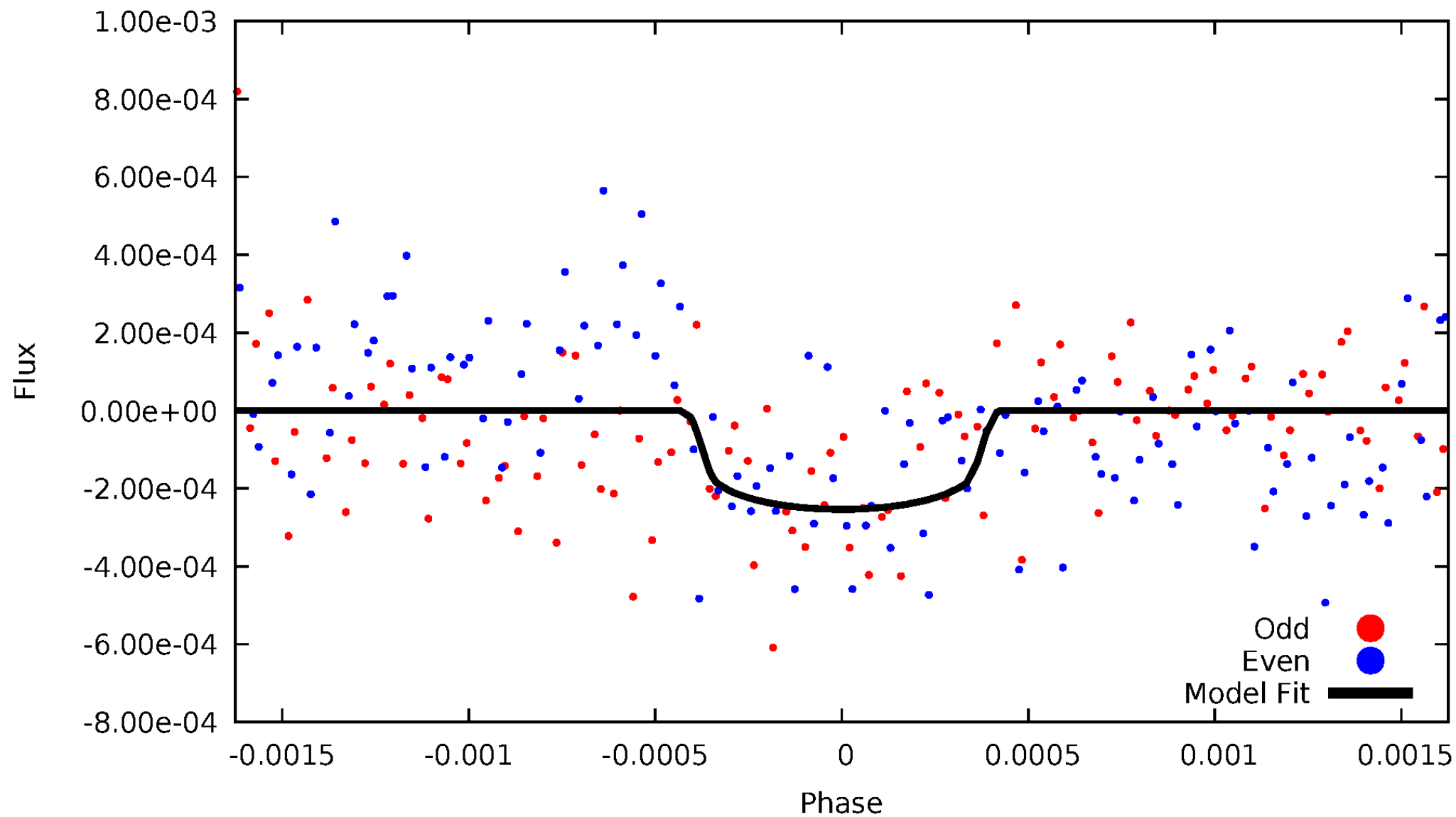


TCE 012102551-01



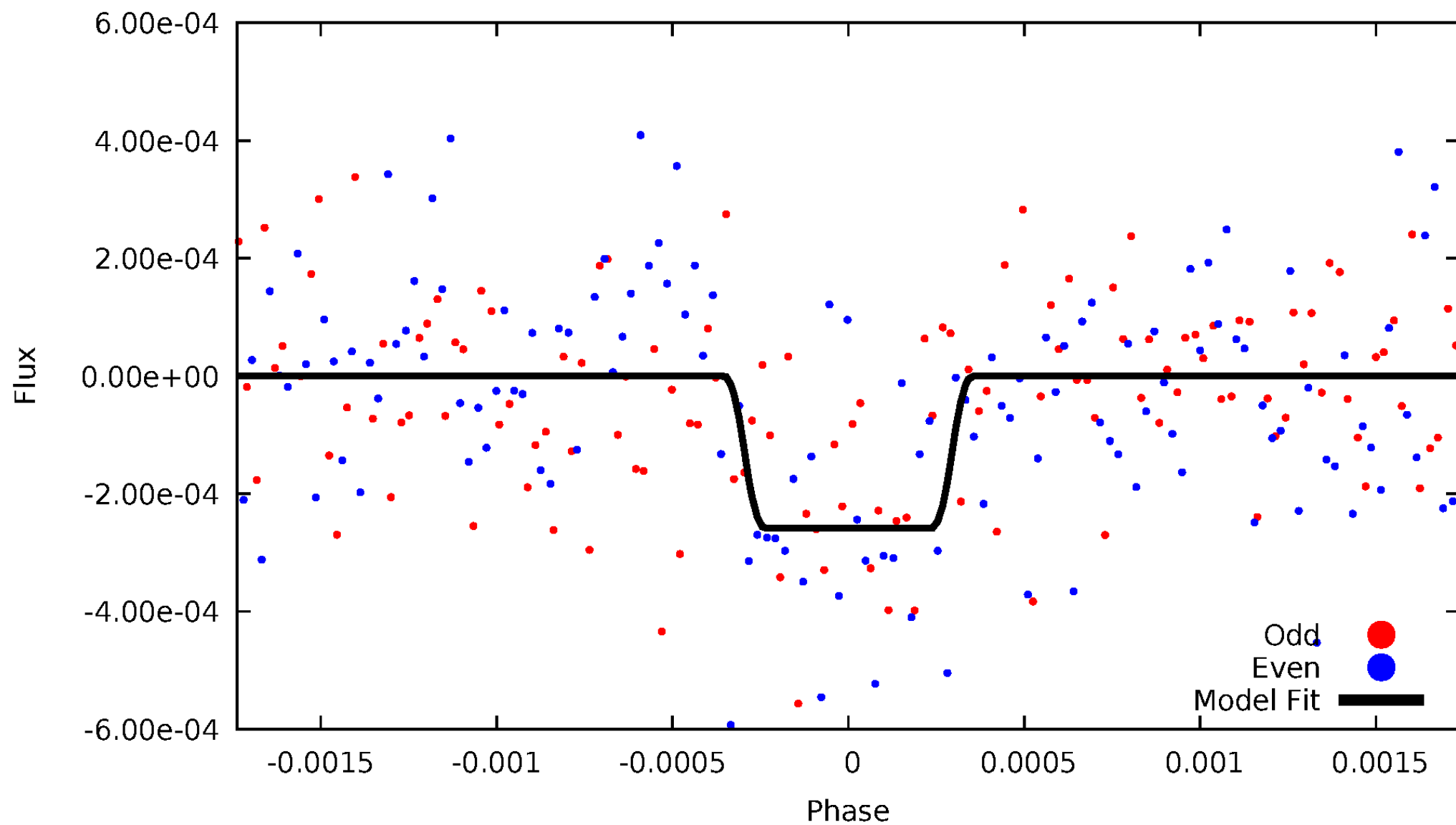
DV Odd/Even

TCE 012102551-01



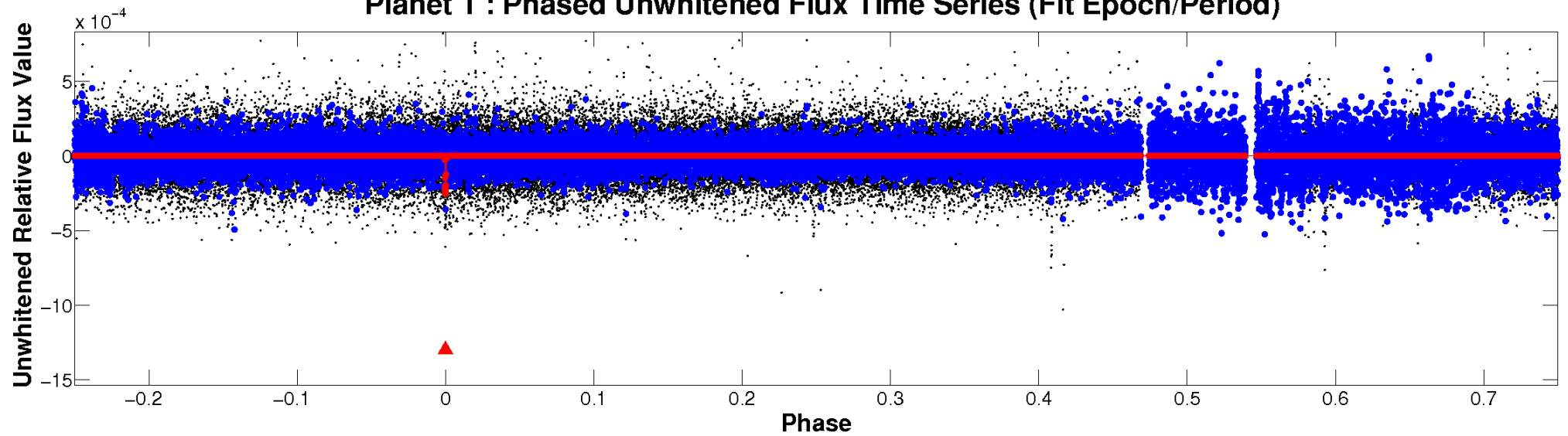
ALT Odd/Even

TCE 012102551-01

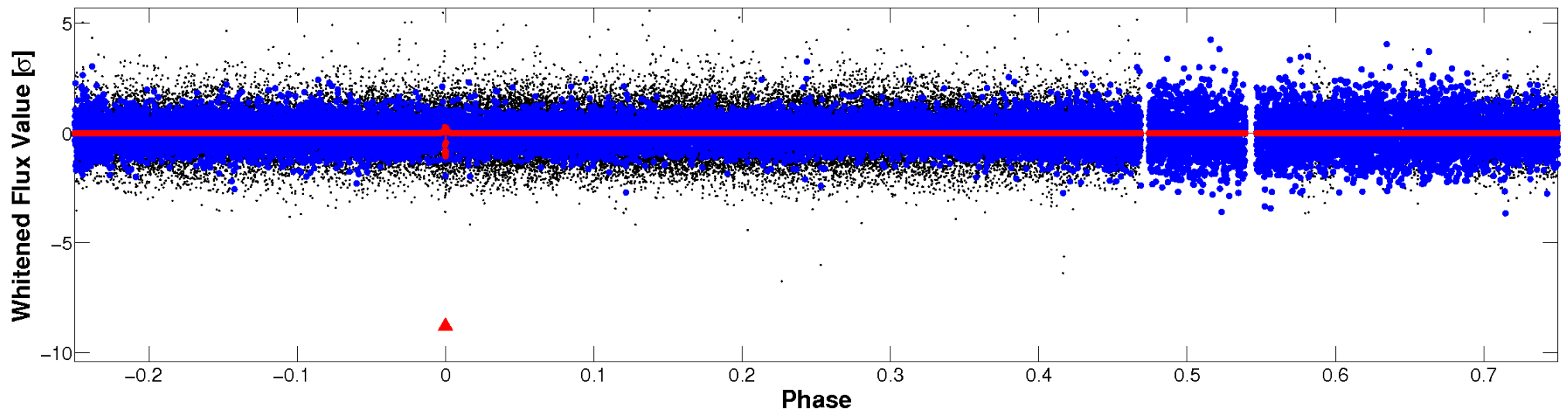


Non-Whitened Vs. Whitened Light Curve

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

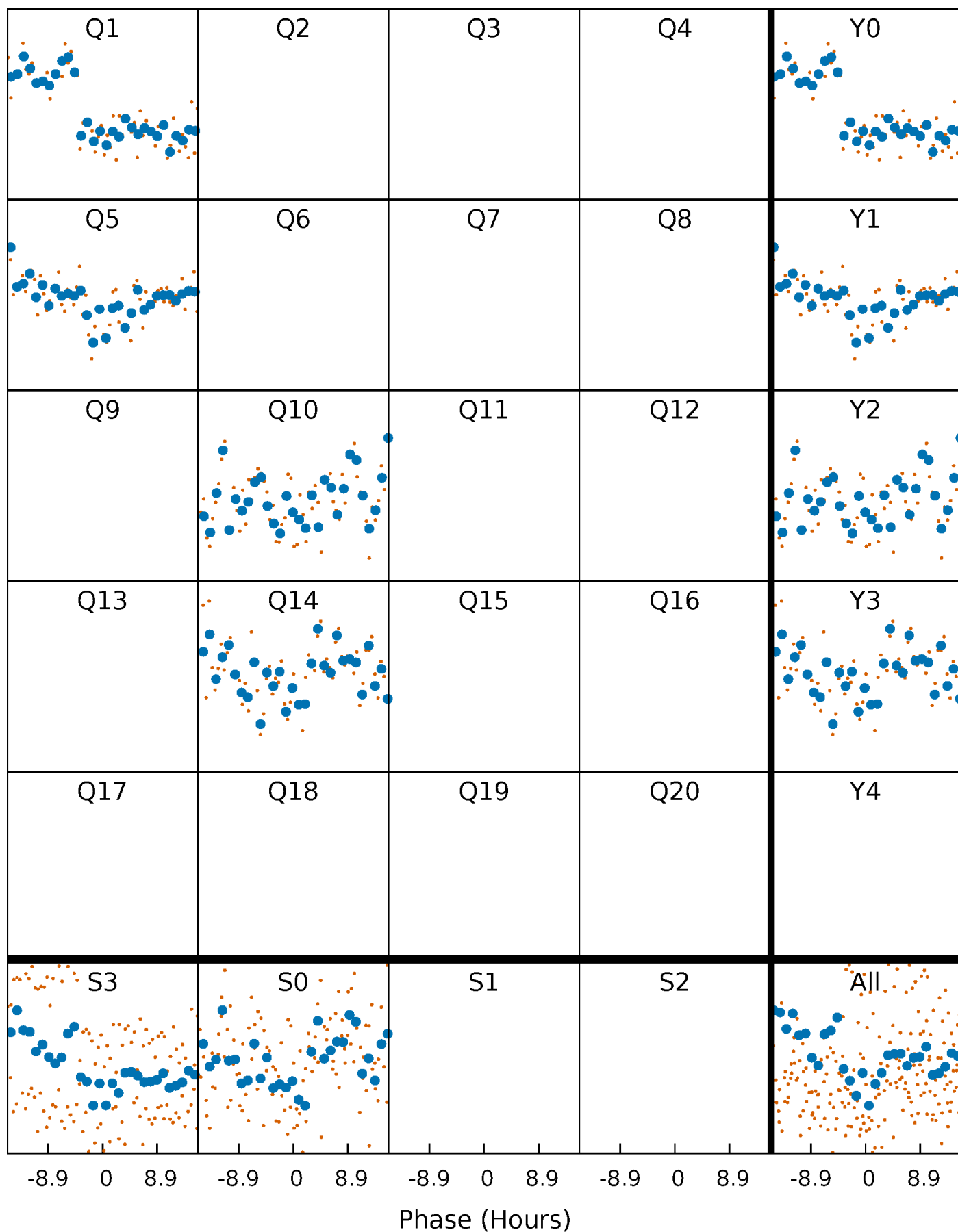


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



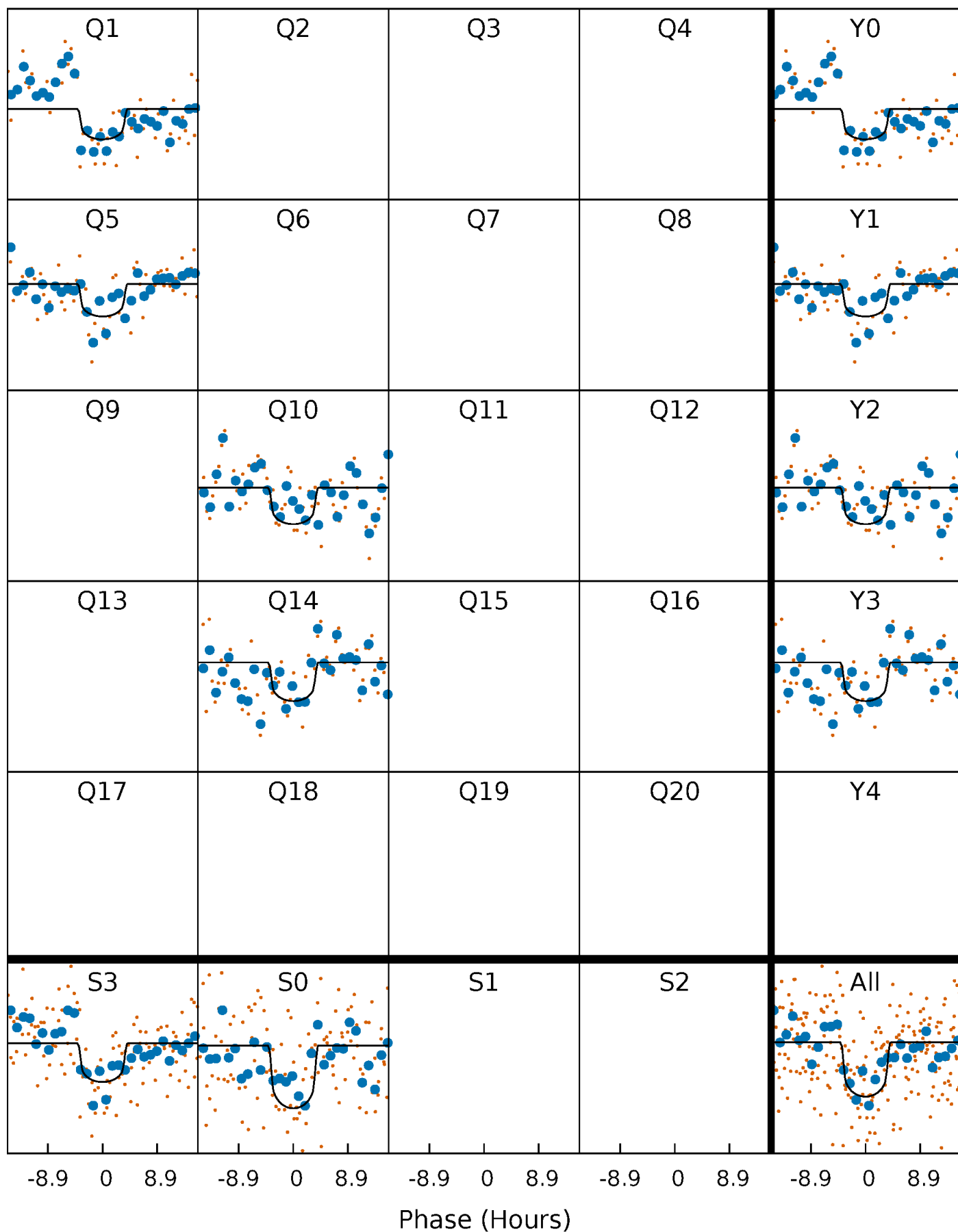
PDC Quarter-Phased Transit Curves

TCE 012102551-01 P=398.193053 Days $T_0=134.709140$ (BKJD)



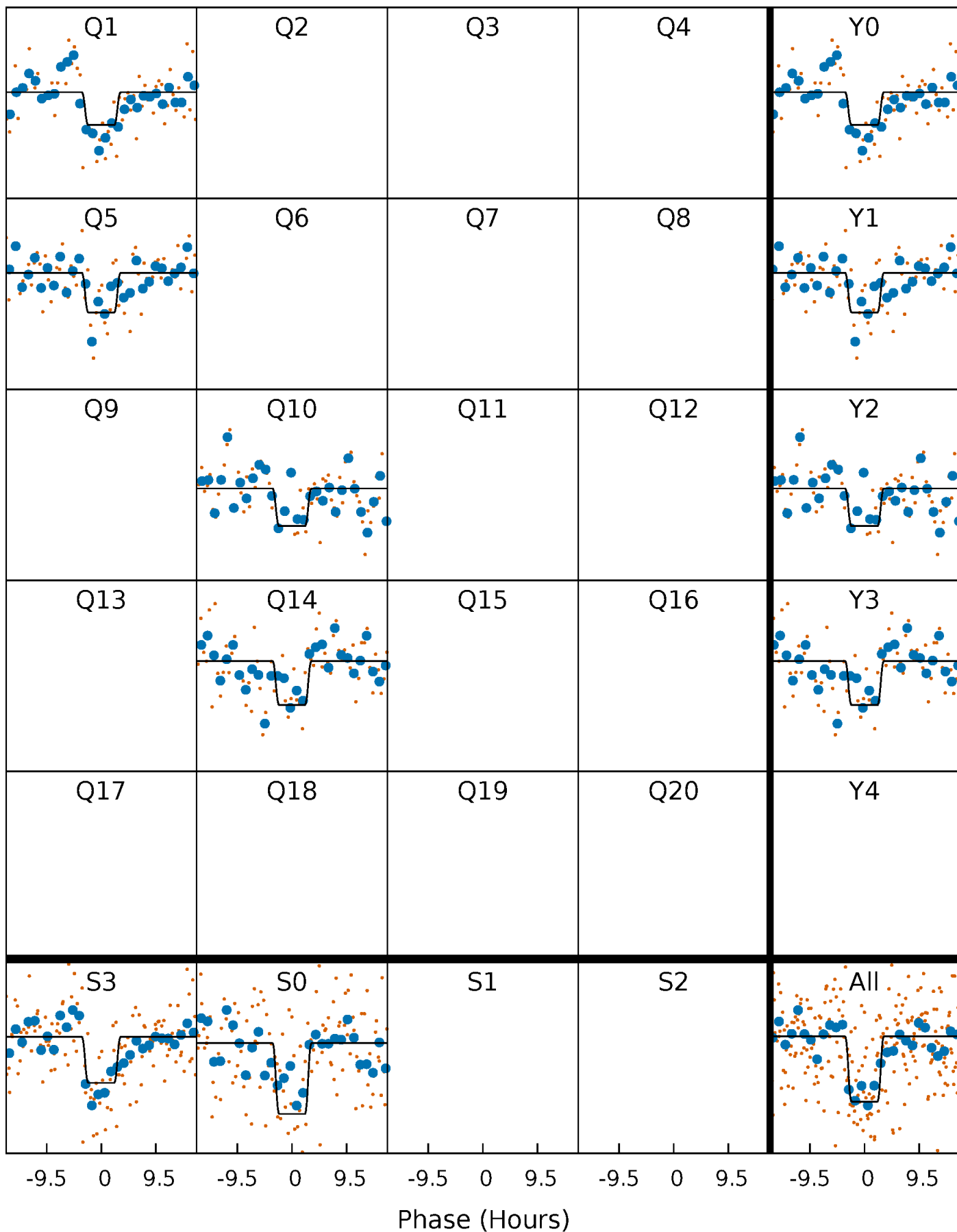
DV Quarter-Phased Transit Curves

TCE 012102551-01 P=398.193053 Days $T_0=134.709140$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

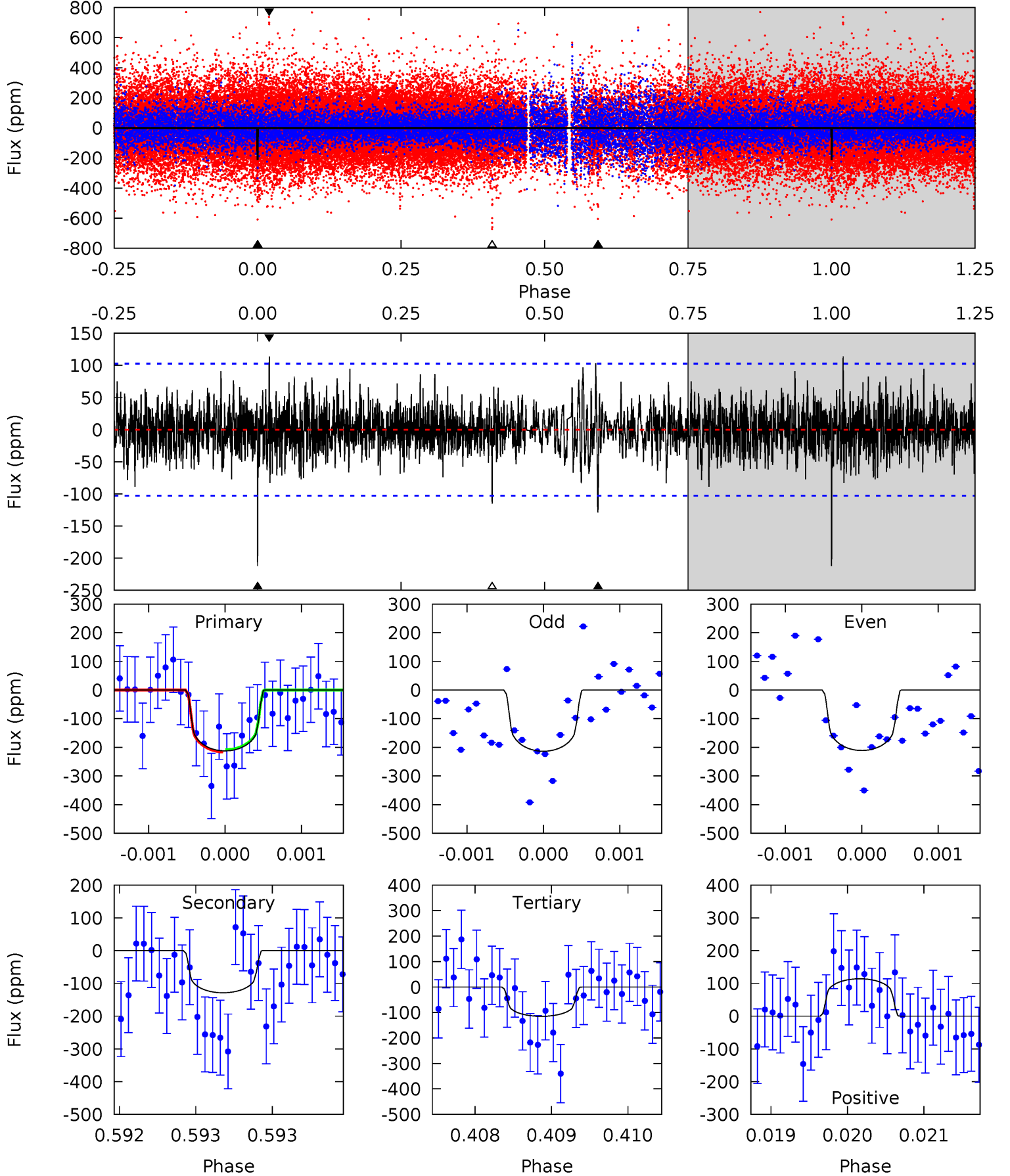
TCE 012102551-01 P=398.195595 Days $T_0=134.689932$ (BKJD)



DV Model-Shift Uniqueness Test

012102551-01, P = 398.193053 Days, E = 134.709140 Days

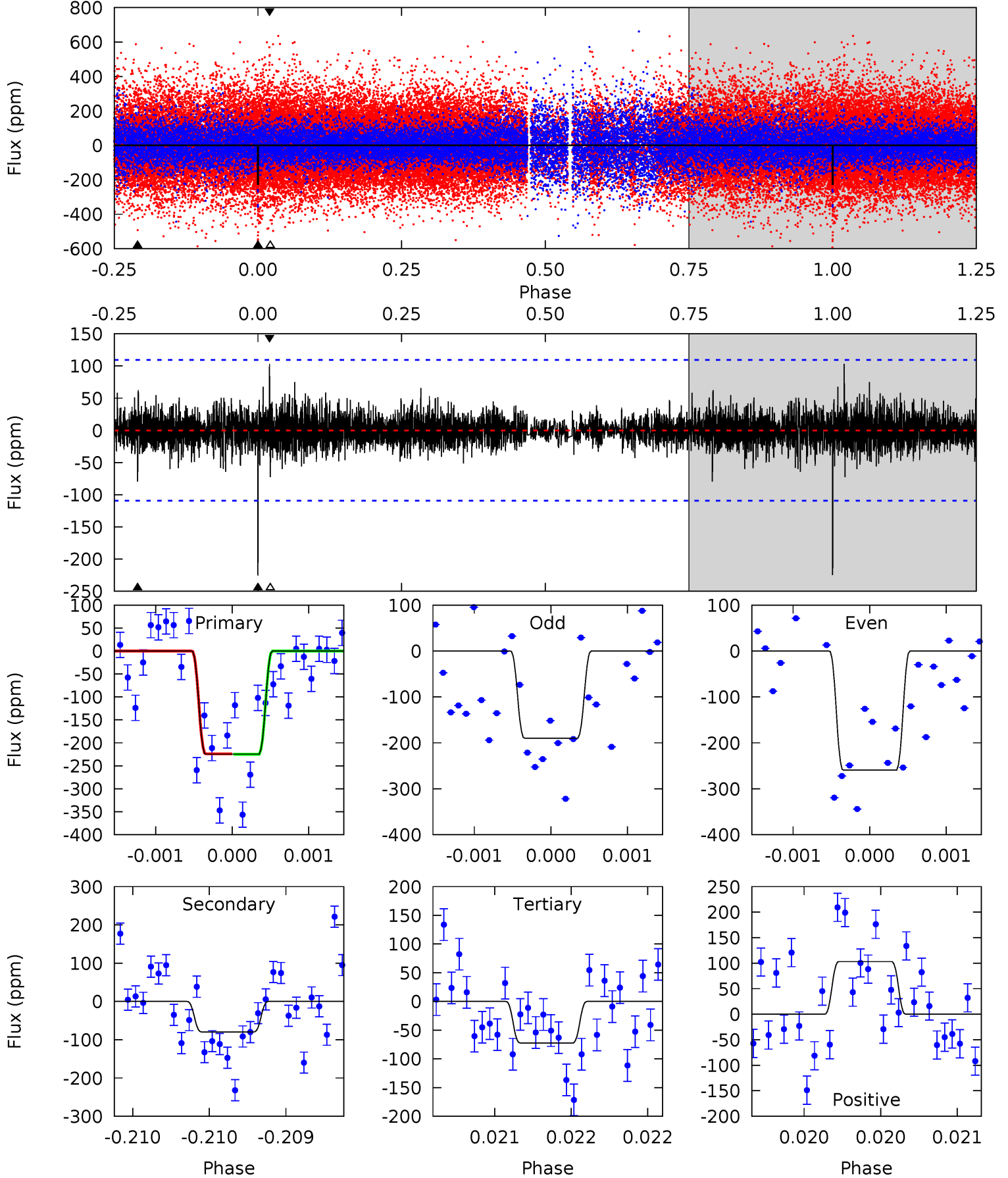
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	6.86	6.14	6.08	5.48	3.34	1.41	5.19	5.25	0.73	0.78	0.07	0.99	0.35	0.21



Alt Model-Shift Uniqueness Test

012102551-01, P = 398.195595 Days, E = 134.689932 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	4.01	3.65	5.21	5.52	3.40	0.89	7.69	6.13	0.36	-1.20	1.78	1.18	0.31	0.02



Stellar Parameters For KIC 012102551

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5254^{+132}_{-119}	$3.655^{+0.132}_{-0.198}$	$-0.560^{+0.300}_{-0.200}$	$2.369^{+0.798}_{-0.342}$	$0.923^{+0.235}_{-0.078}$	$0.098^{+0.062}_{-0.051}$
	+3%/-2%	+4%/-5%	+54%/-36%	+34%/-14%	+25%/-8%	+63%/-52%
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 012102551-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-129 ± 19	$4.50^{+2.03}_{-1.83}$	493^{+40}_{-26}	4435^{+1082}_{-525}	3768^{+7144}_{-2027}
Alt.	-79 ± 20	$4.17^{+1.99}_{-1.77}$	494^{+38}_{-27}	4167^{+1048}_{-524}	2619^{+5563}_{-1445}

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

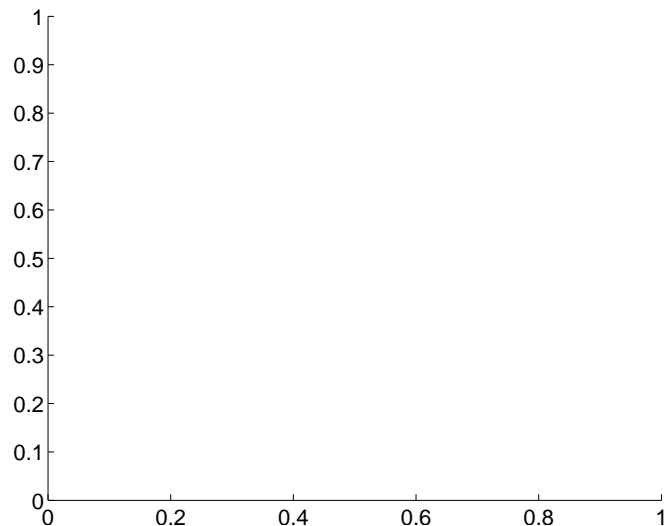
Supplemental centroid analysis for 012102551-01. Kepler magnitude: 13.10. Transit SNR 7.25

There are 0 quarters with good PRF difference image offsets

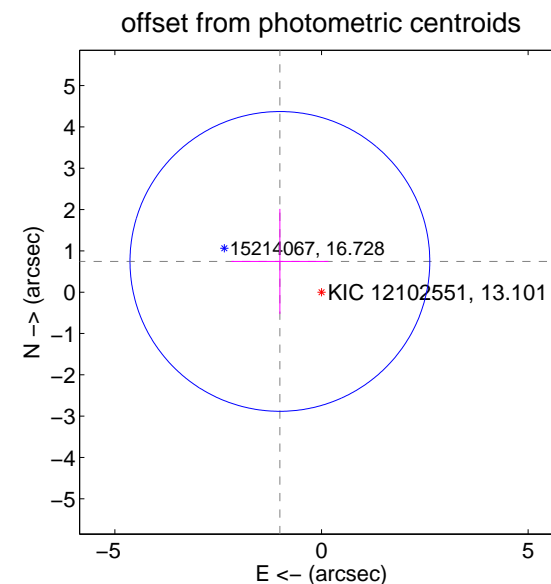
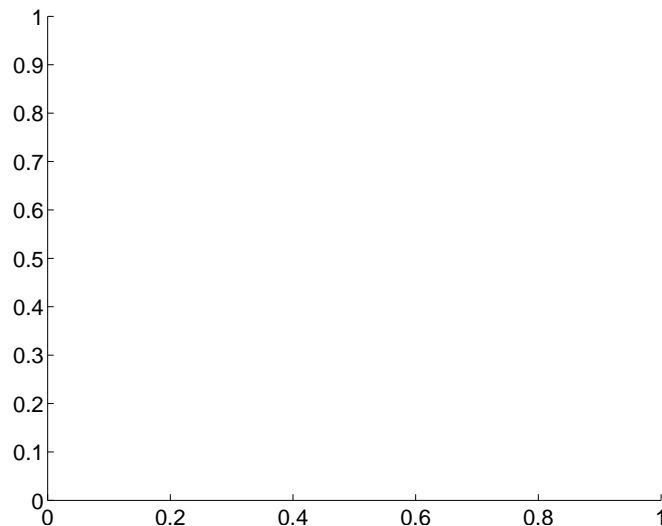
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	1.25 ± 1.21	1.04	1.01 ± 1.17	0.74 ± 1.27

There is no PRF-fit offset from OOT-fit

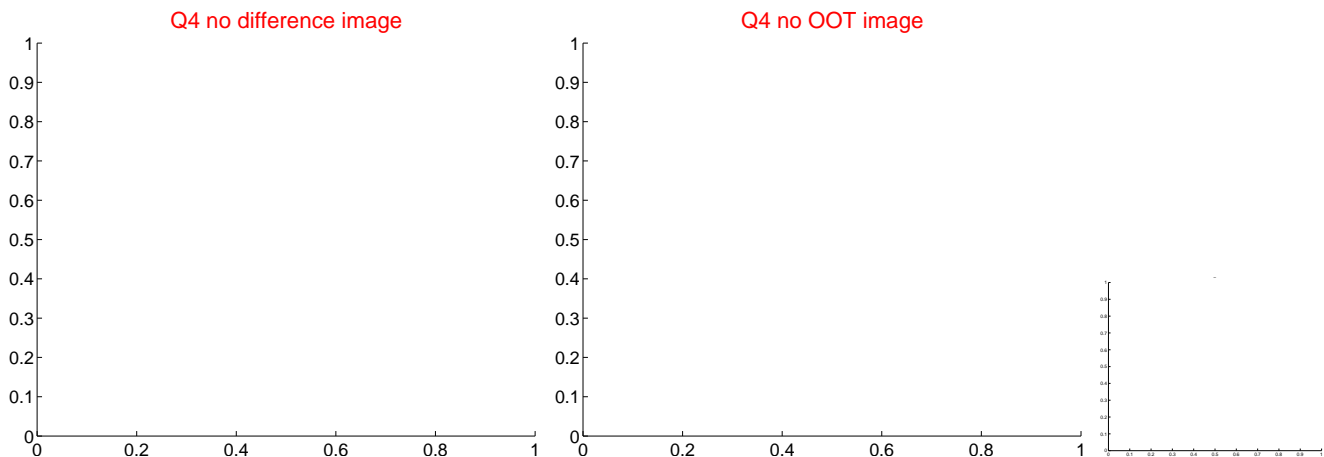
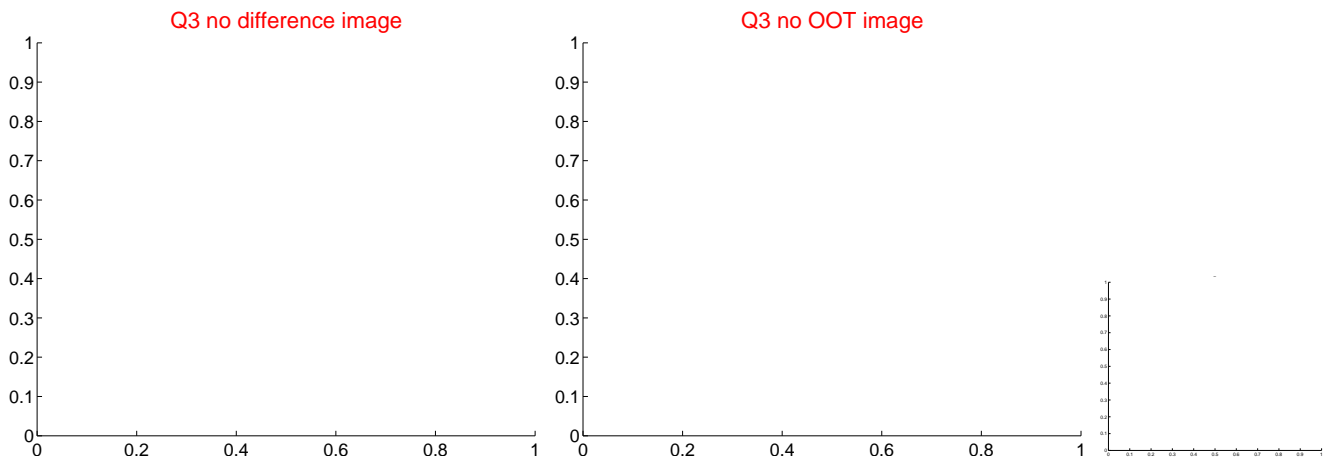
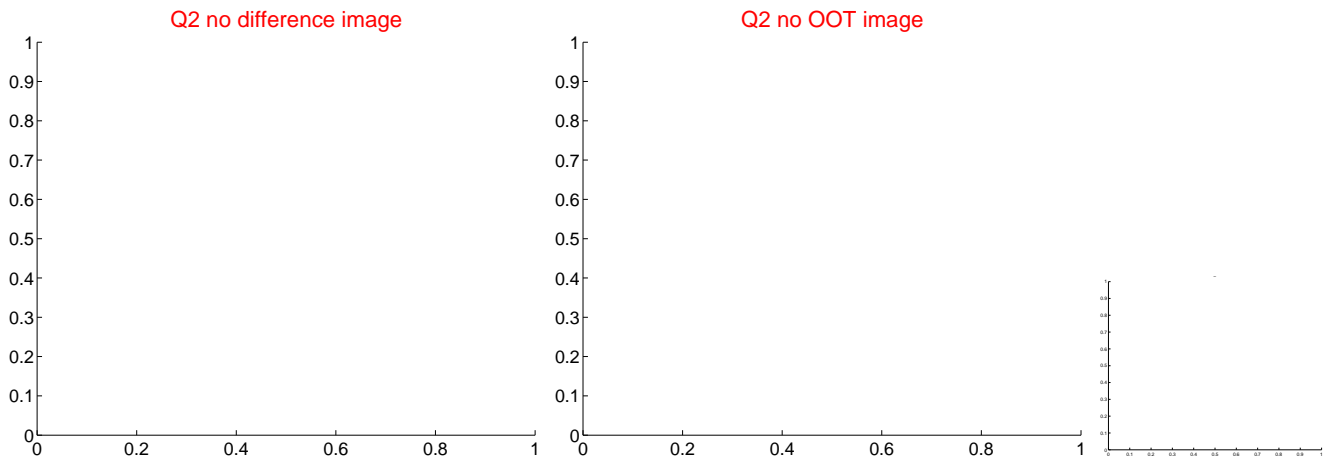
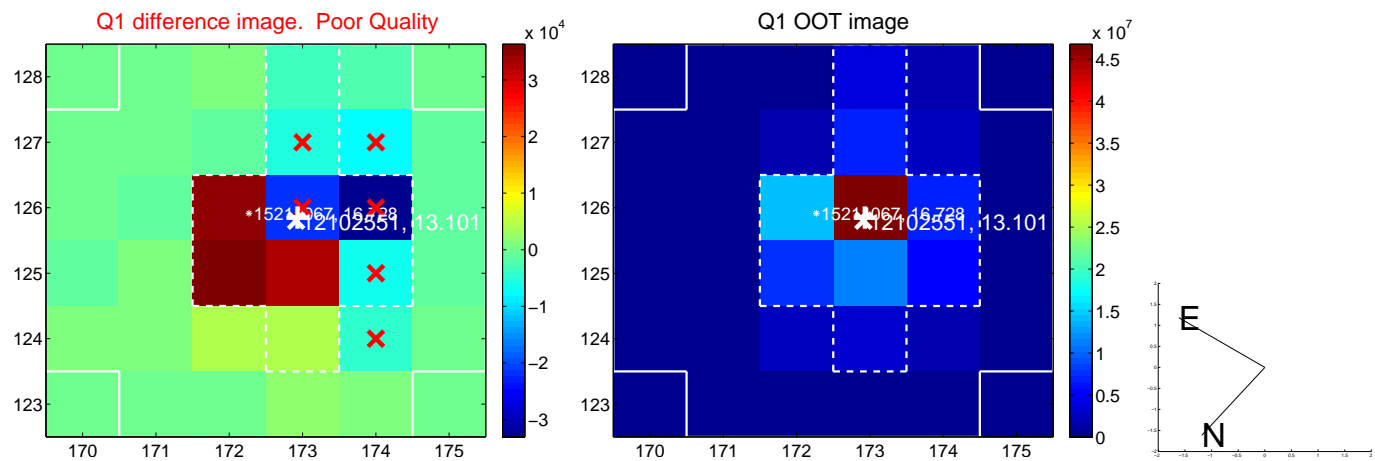


There is no PRF-fit offset from KIC

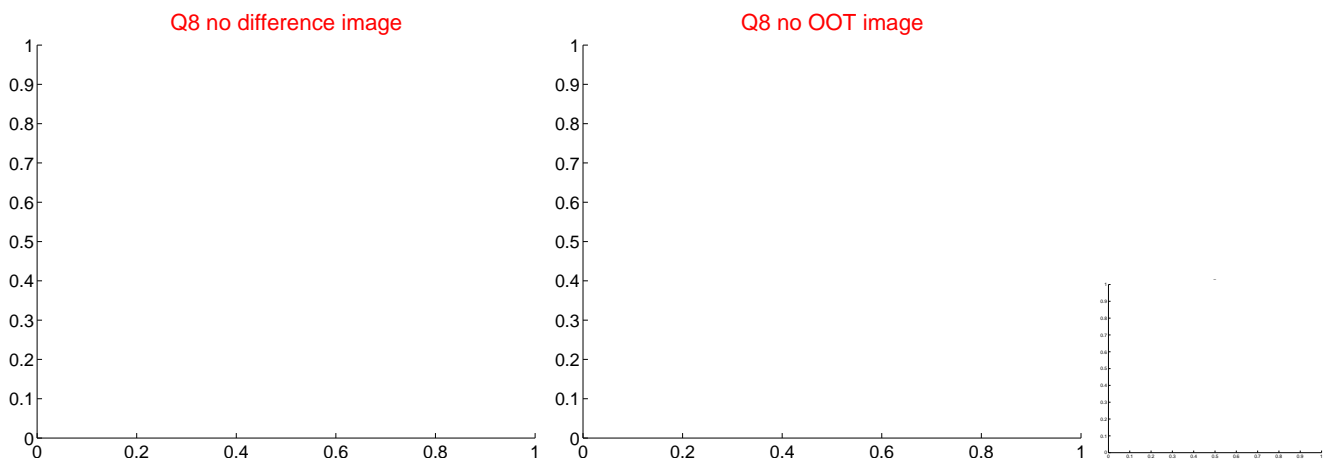
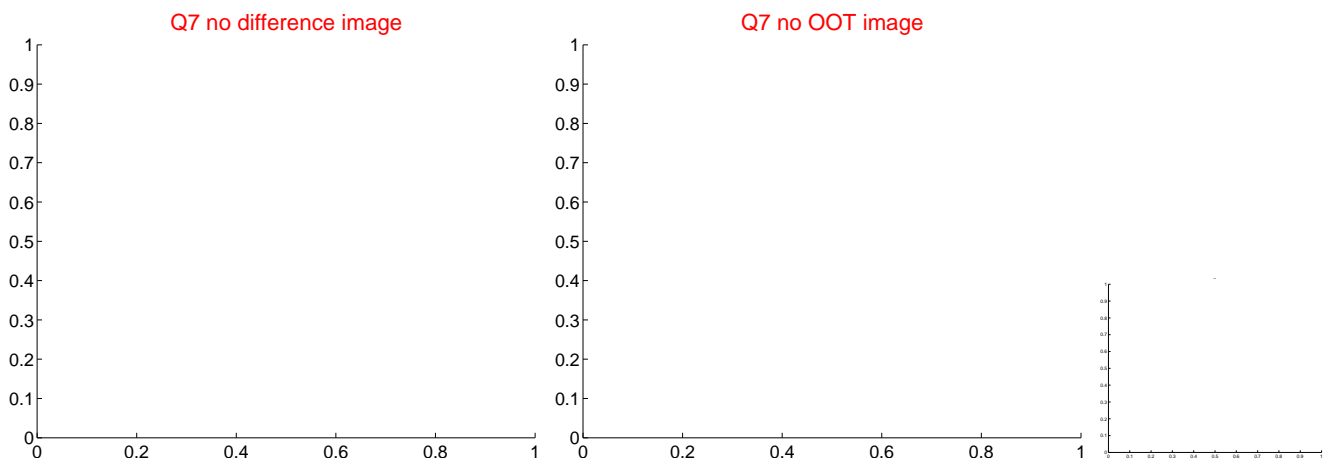
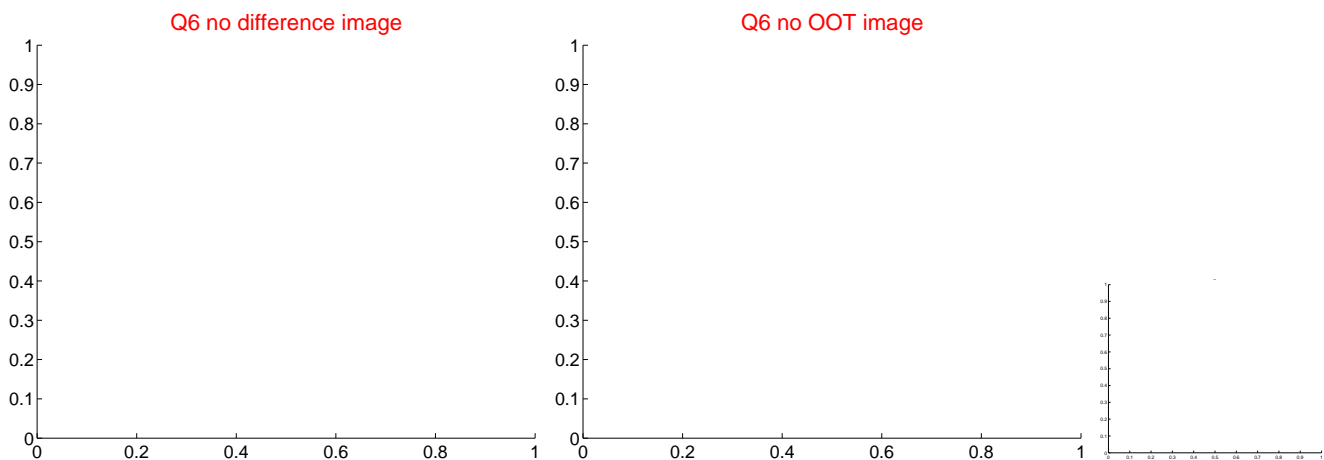
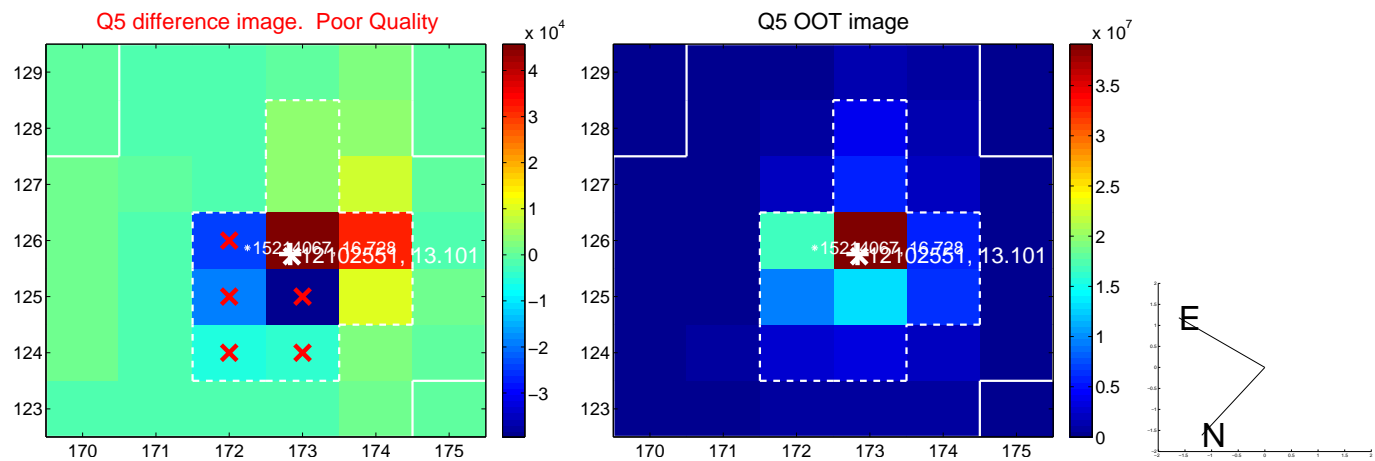


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

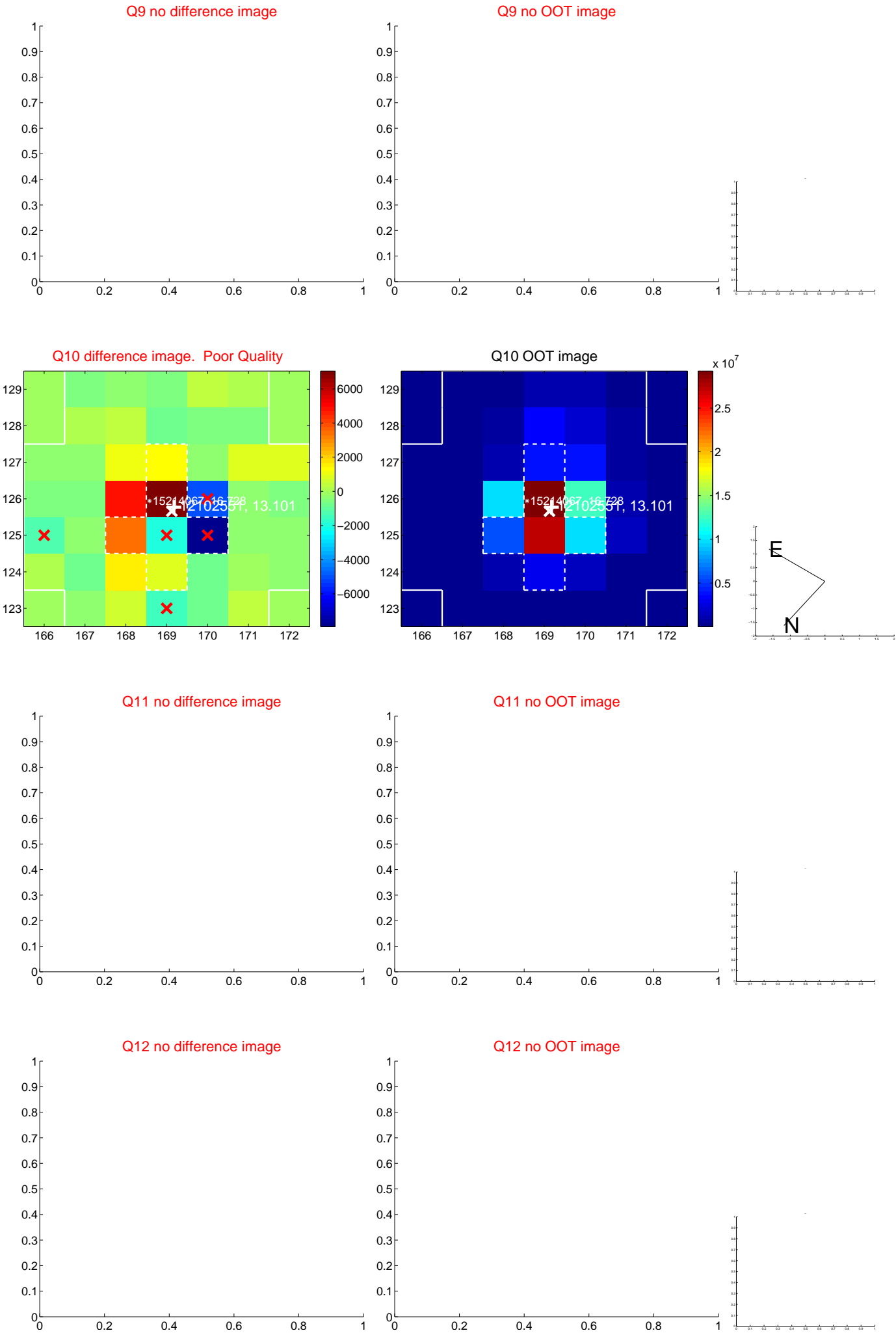
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



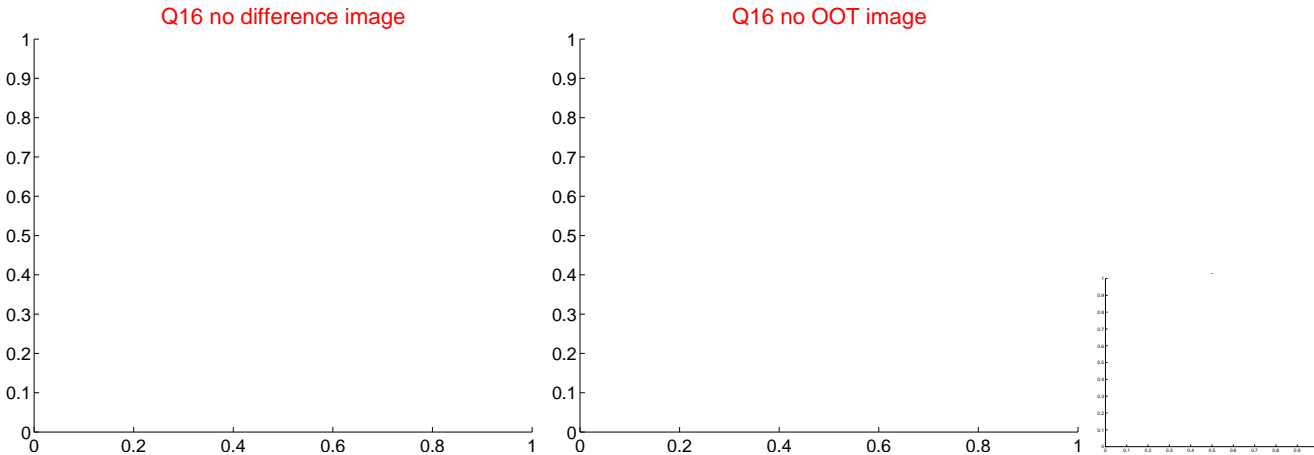
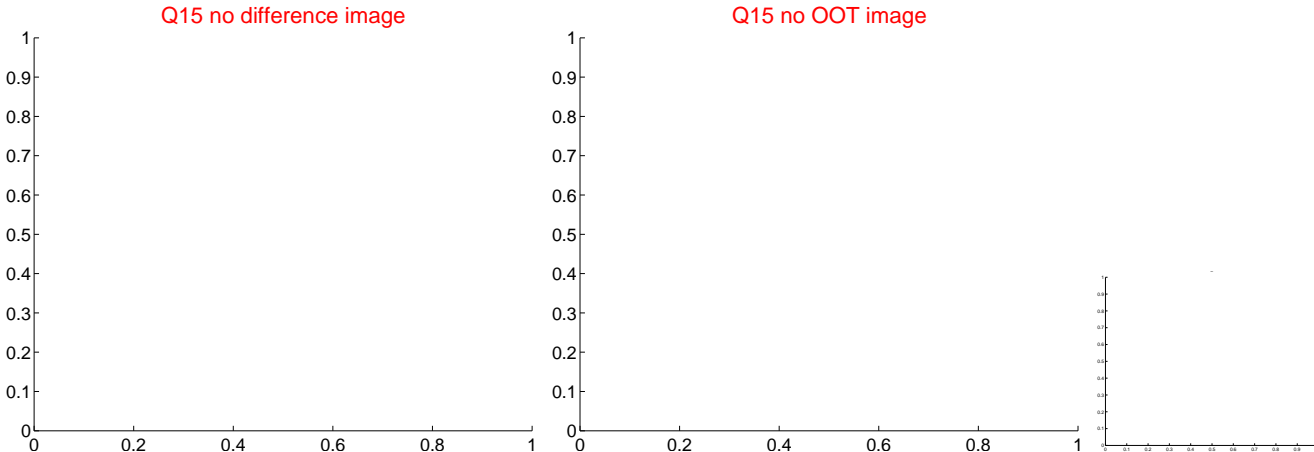
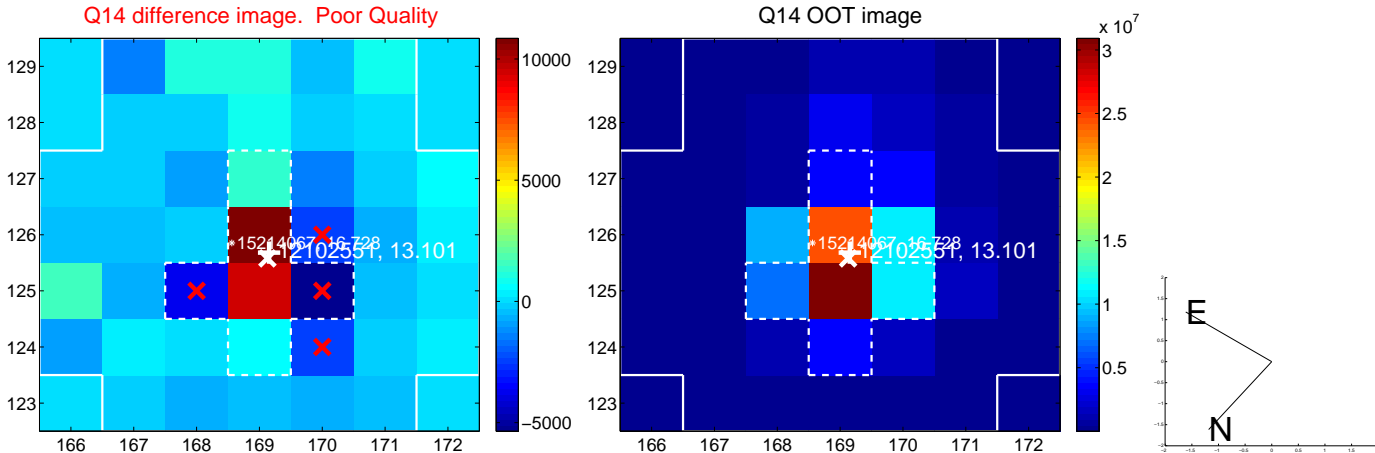
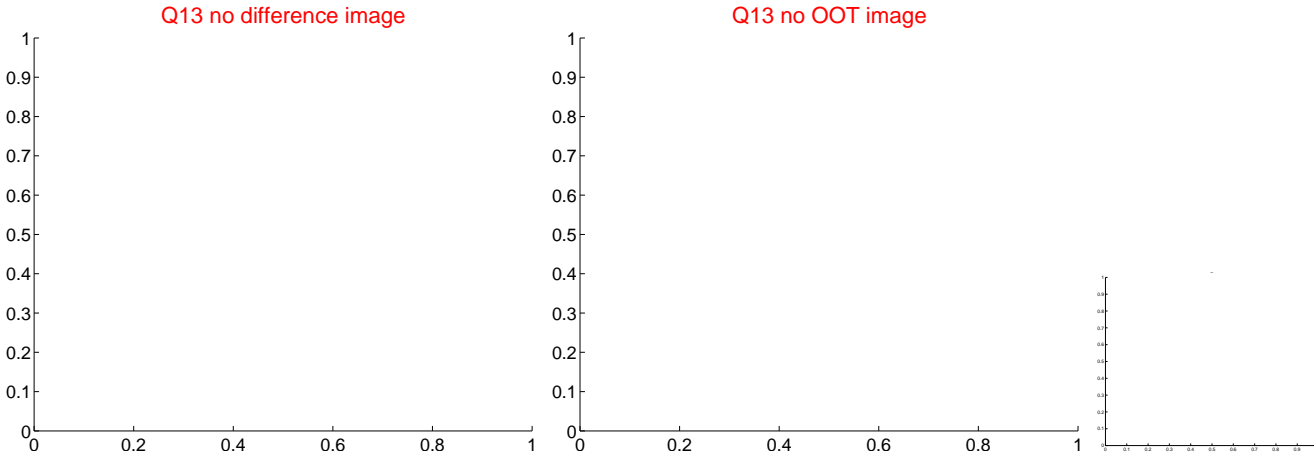
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



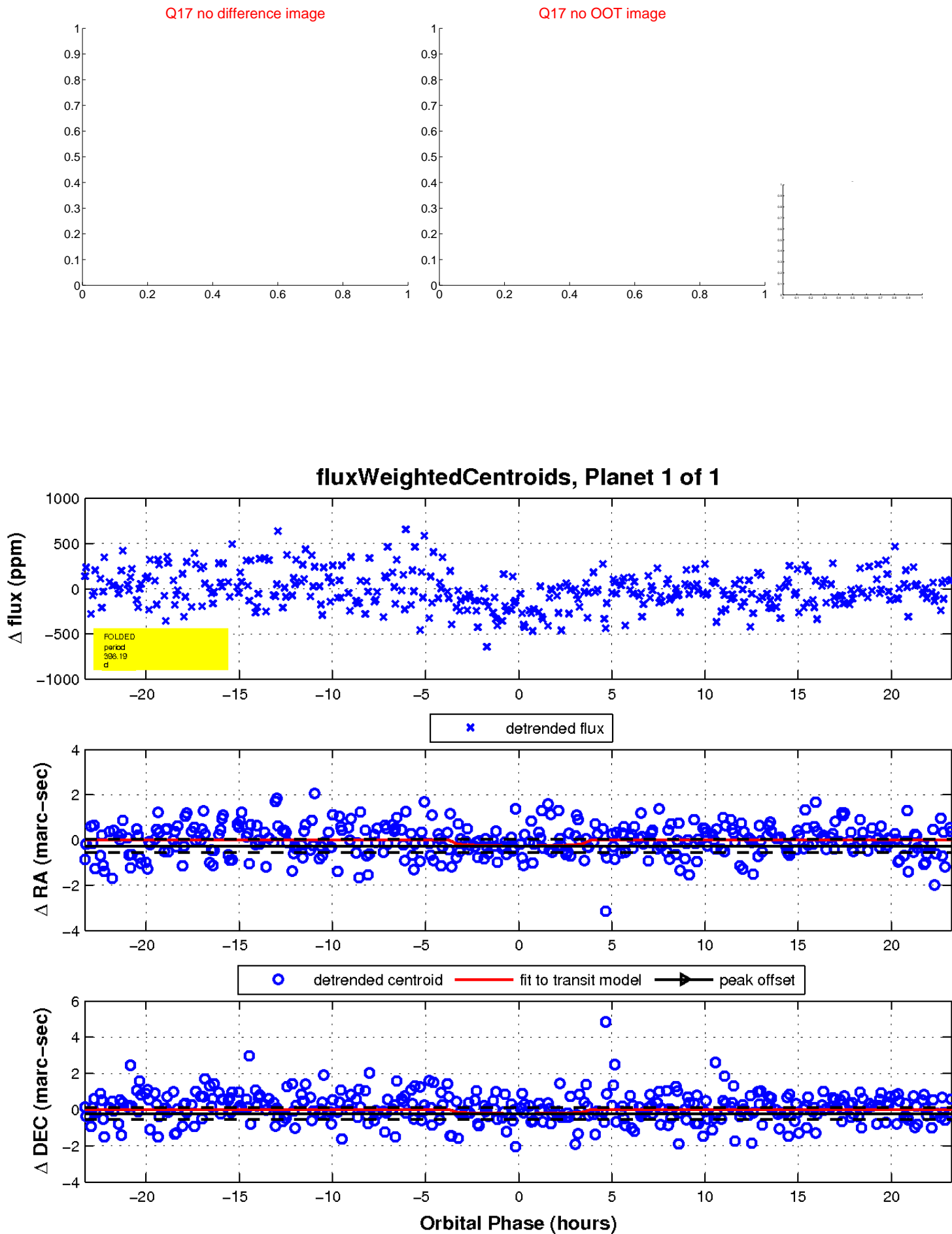
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

