

KIC 004390902

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})
004390902-01	OBS	No	612.653296	139.791959	136.5	18.288	11.9	2.6	3.03	7118	4.09	7.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004390902-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_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.

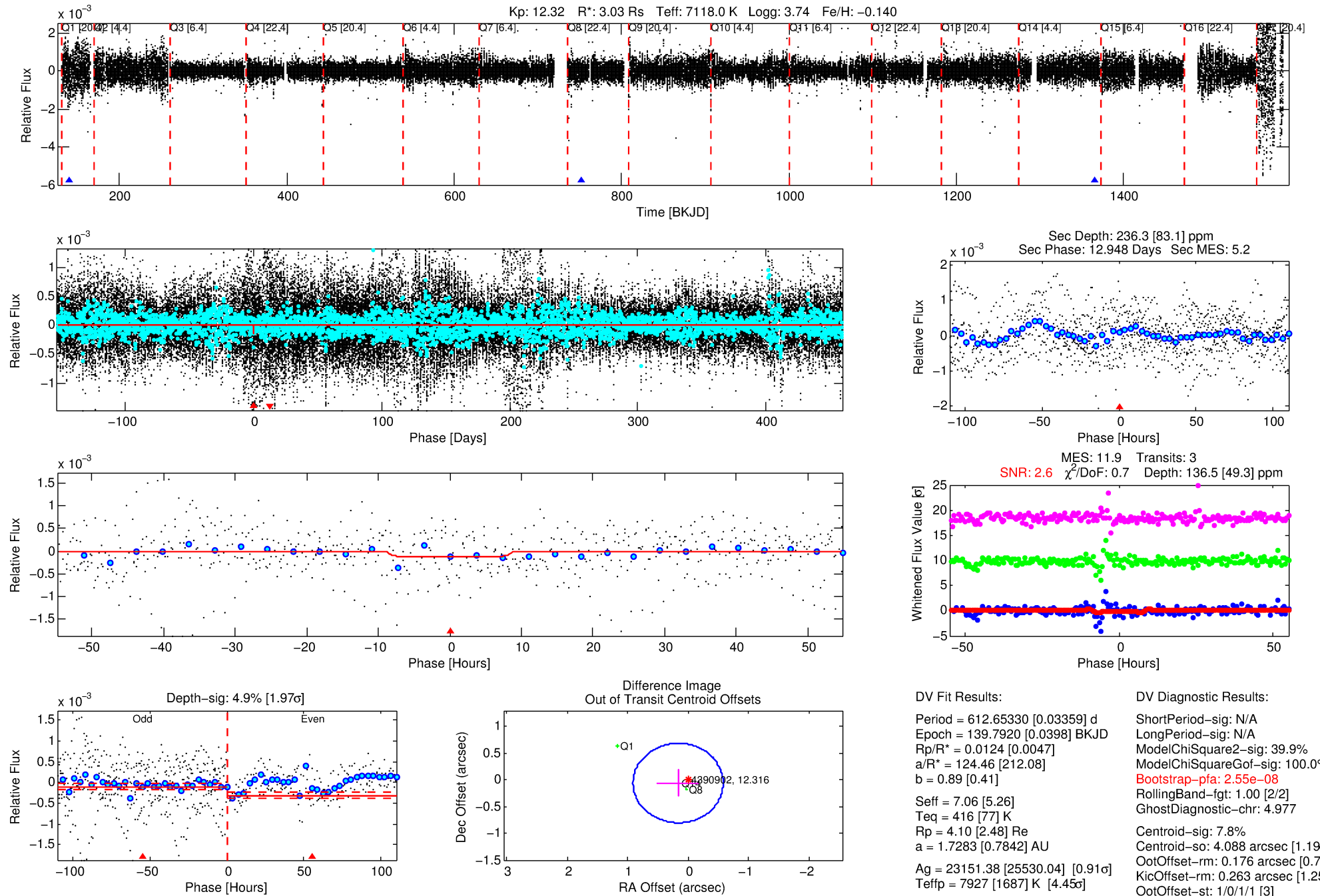
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004390902-01

No Significant Match Found

DV One-Page Summary

KIC: 4390902 Candidate: 1 of 1 Period: 612.653 d



DV Fit Results:

Period = 612.65330 [0.03359] d
Epoch = 139.7920 [0.0398] BKJD
Rp/R* = 0.0124 [0.0047]
a/R* = 124.46 [212.08]
b = 0.89 [0.41]
Seff = 7.06 [5.26]
Teff = 416 [77] K
Rp = 4.10 [2.48] Re
a = 1.7283 [0.7842] AU
Ag = 23151.38 [25530.04] [0.91 σ]
Teffp = 7927 [1687] K [4.45 σ]

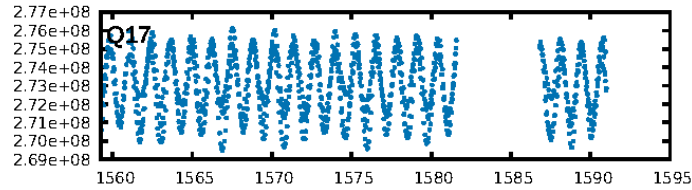
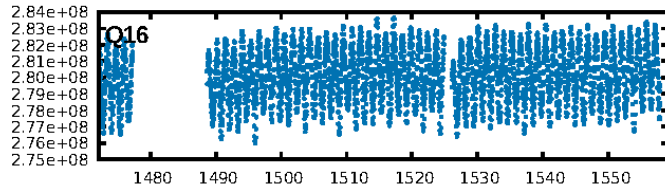
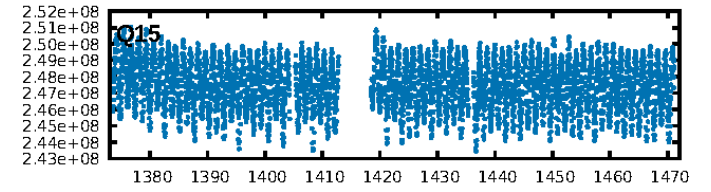
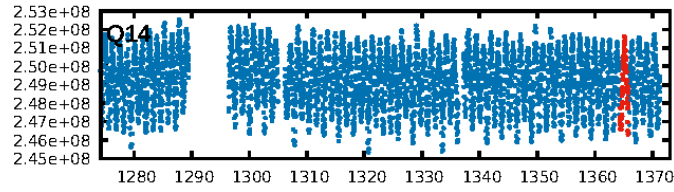
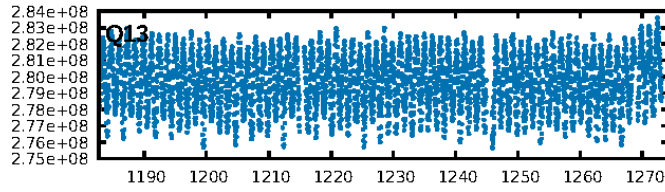
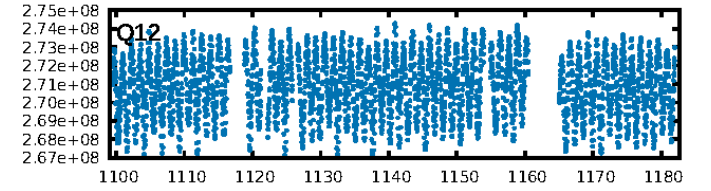
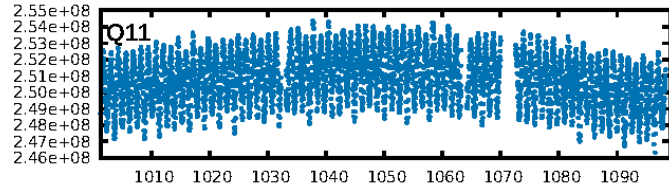
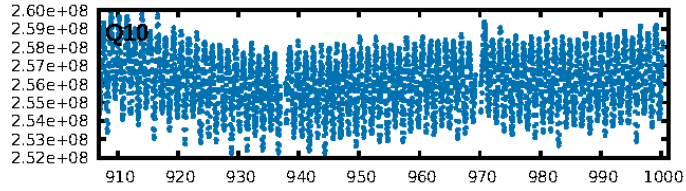
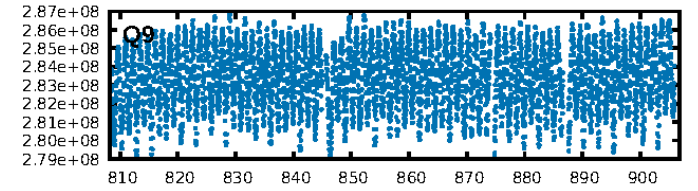
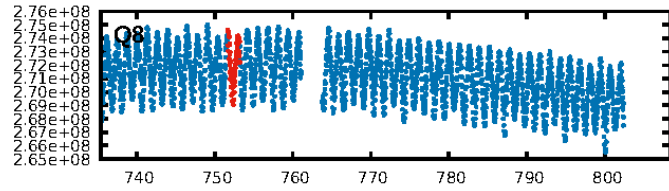
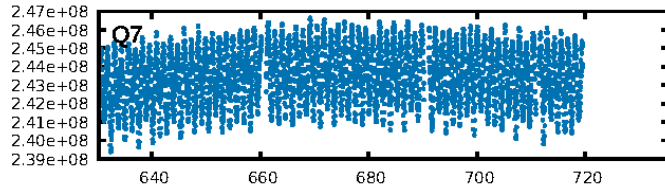
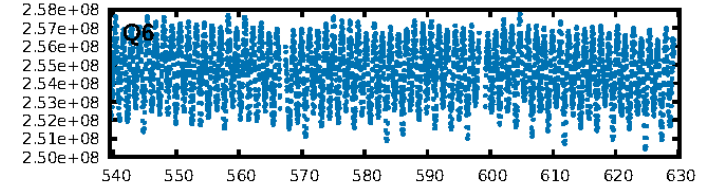
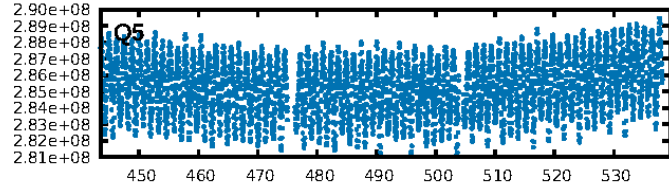
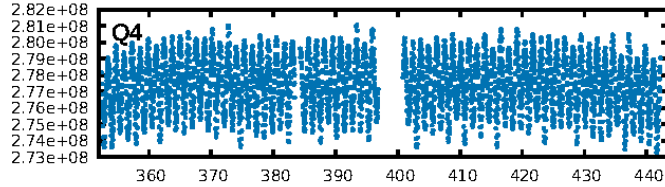
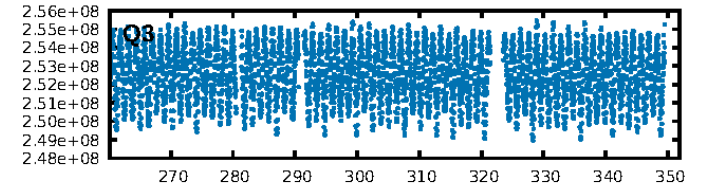
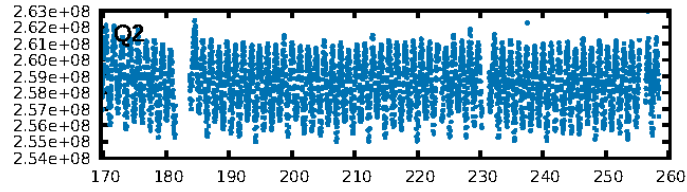
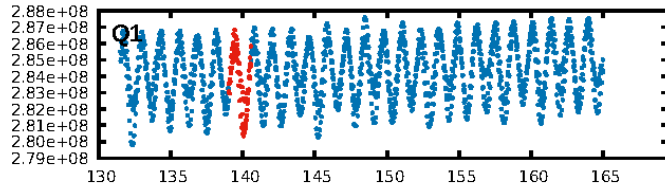
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 39.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.55e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 4.977
Centroid-sig: 7.8%
Centroid-so: 4.088 arcsec [1.19 σ]
OotOffset-rm: 0.176 arcsec [0.71 σ]
KicOffset-rm: 0.263 arcsec [1.25 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

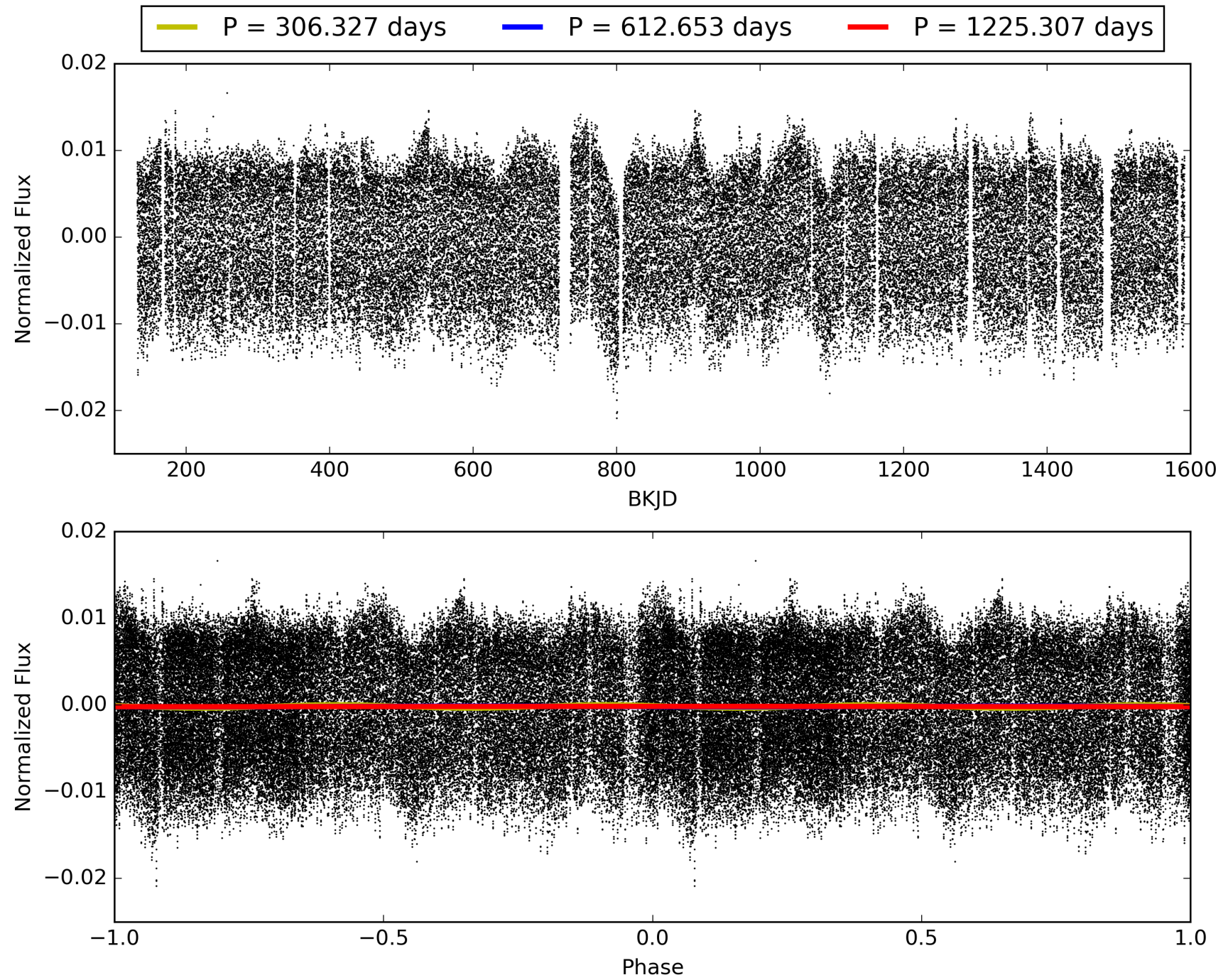
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 11:57:16 Z

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

TCE 004390902-01, PDC Light Curves

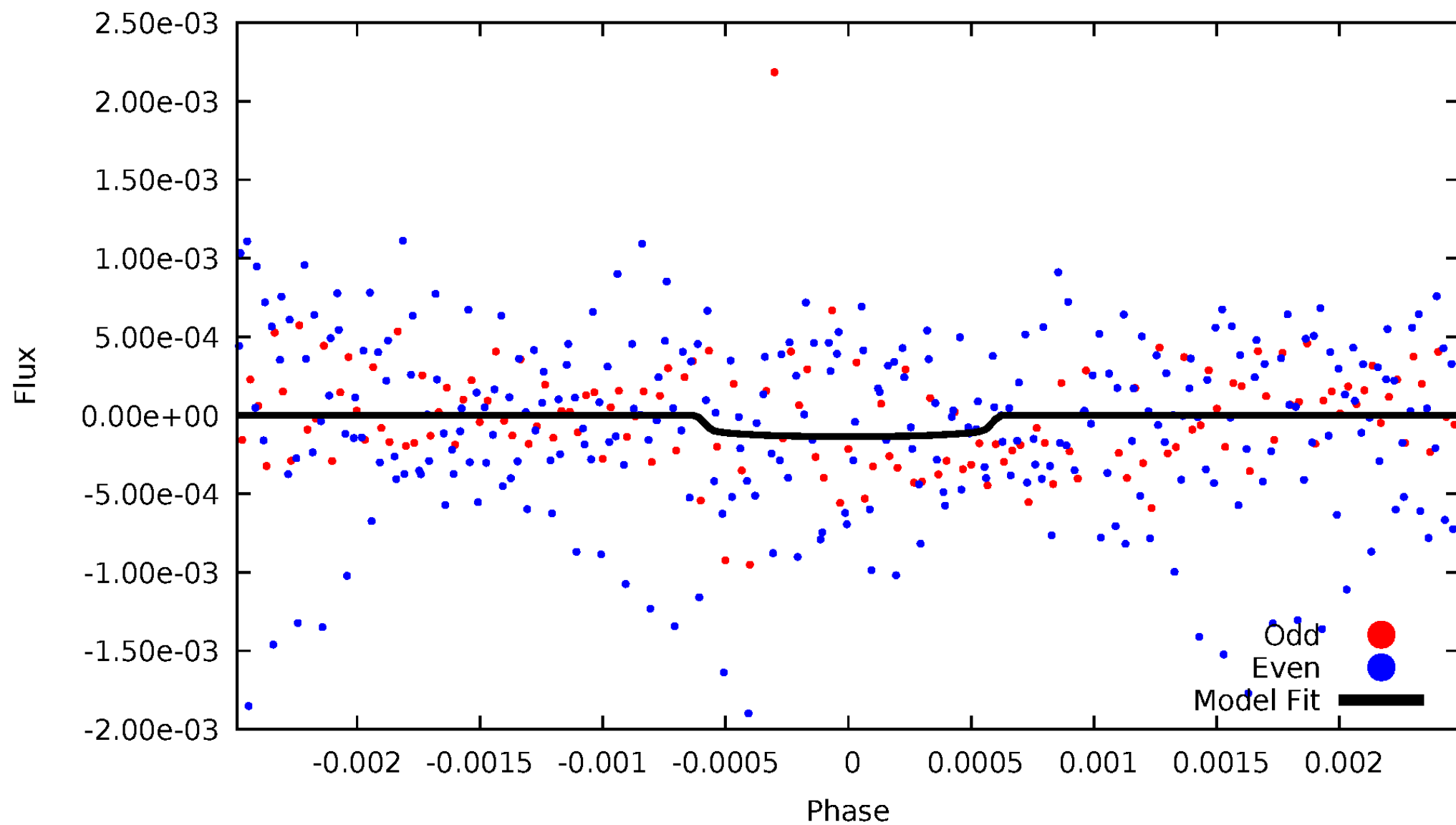


TCE 004390902-01



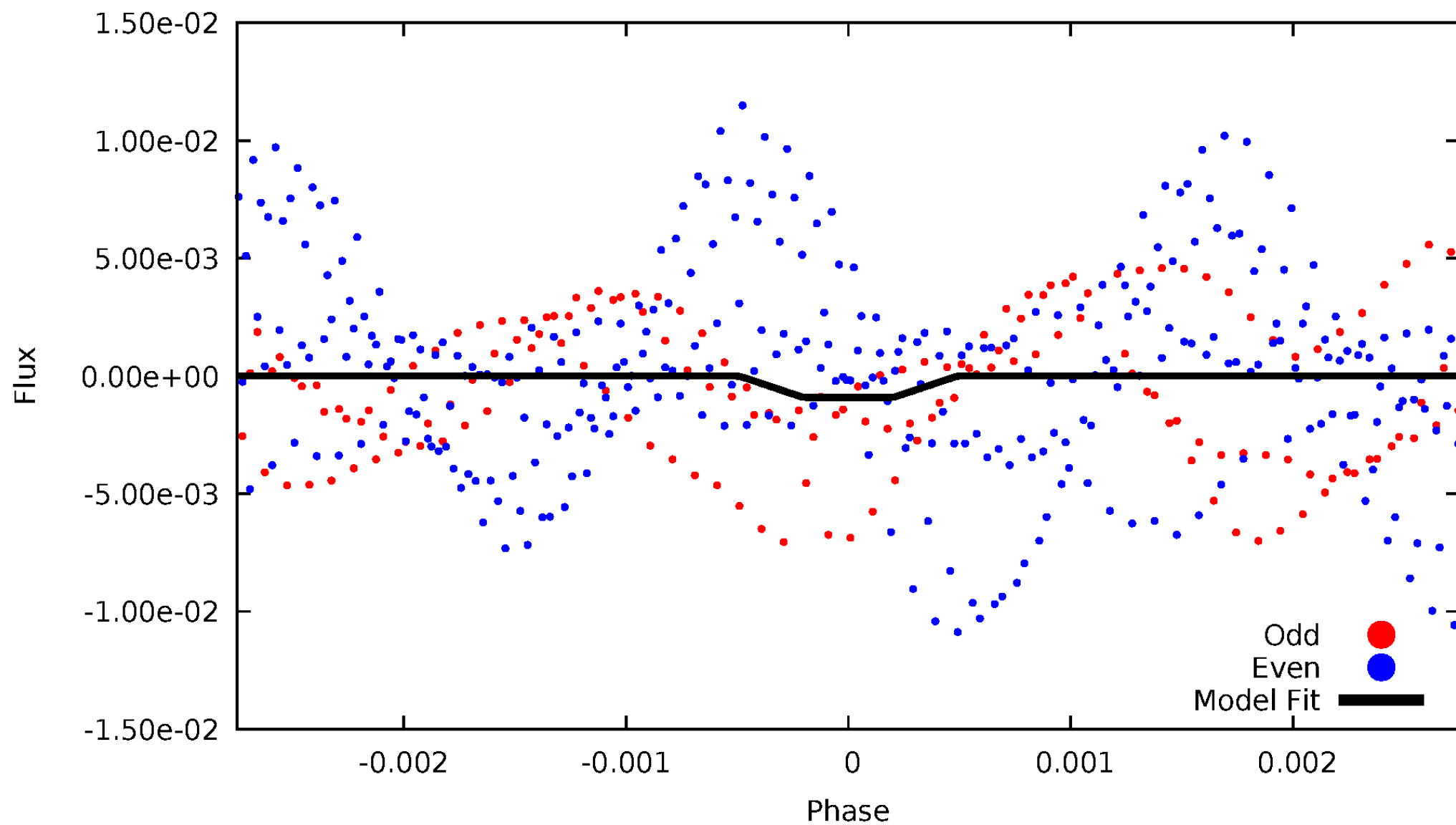
DV Odd/Even

TCE 004390902-01



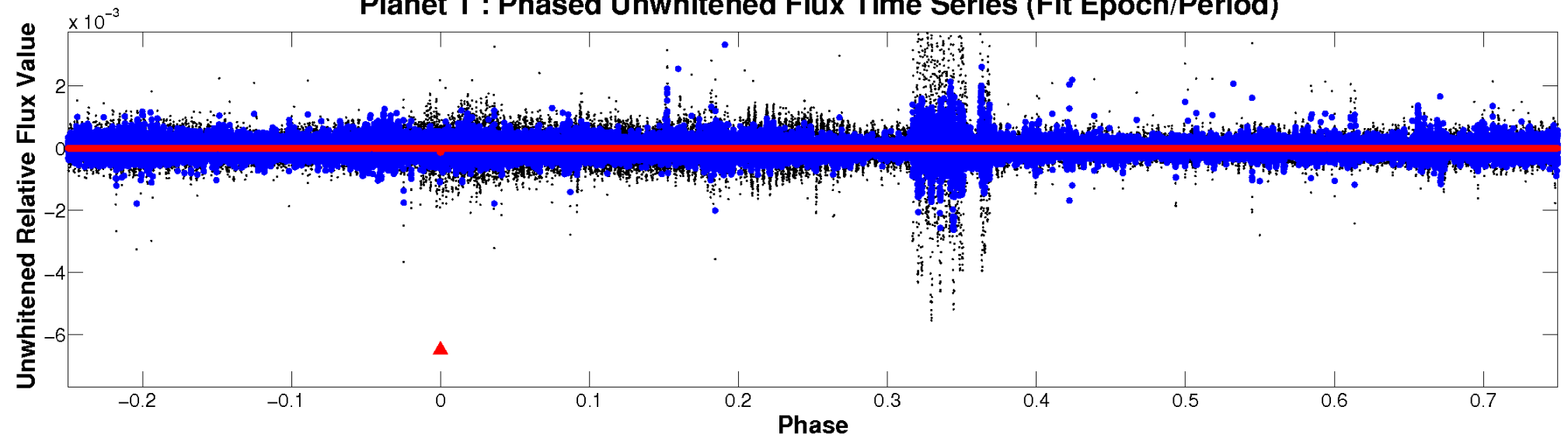
ALT Odd/Even

TCE 004390902-01

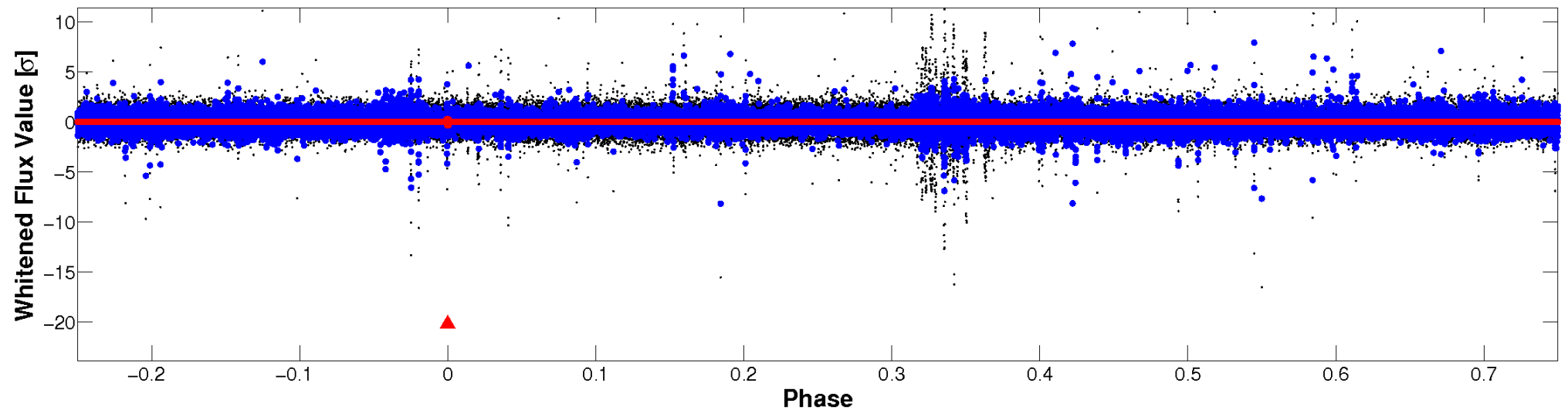


Non-Whitened Vs. Whitened Light Curve

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

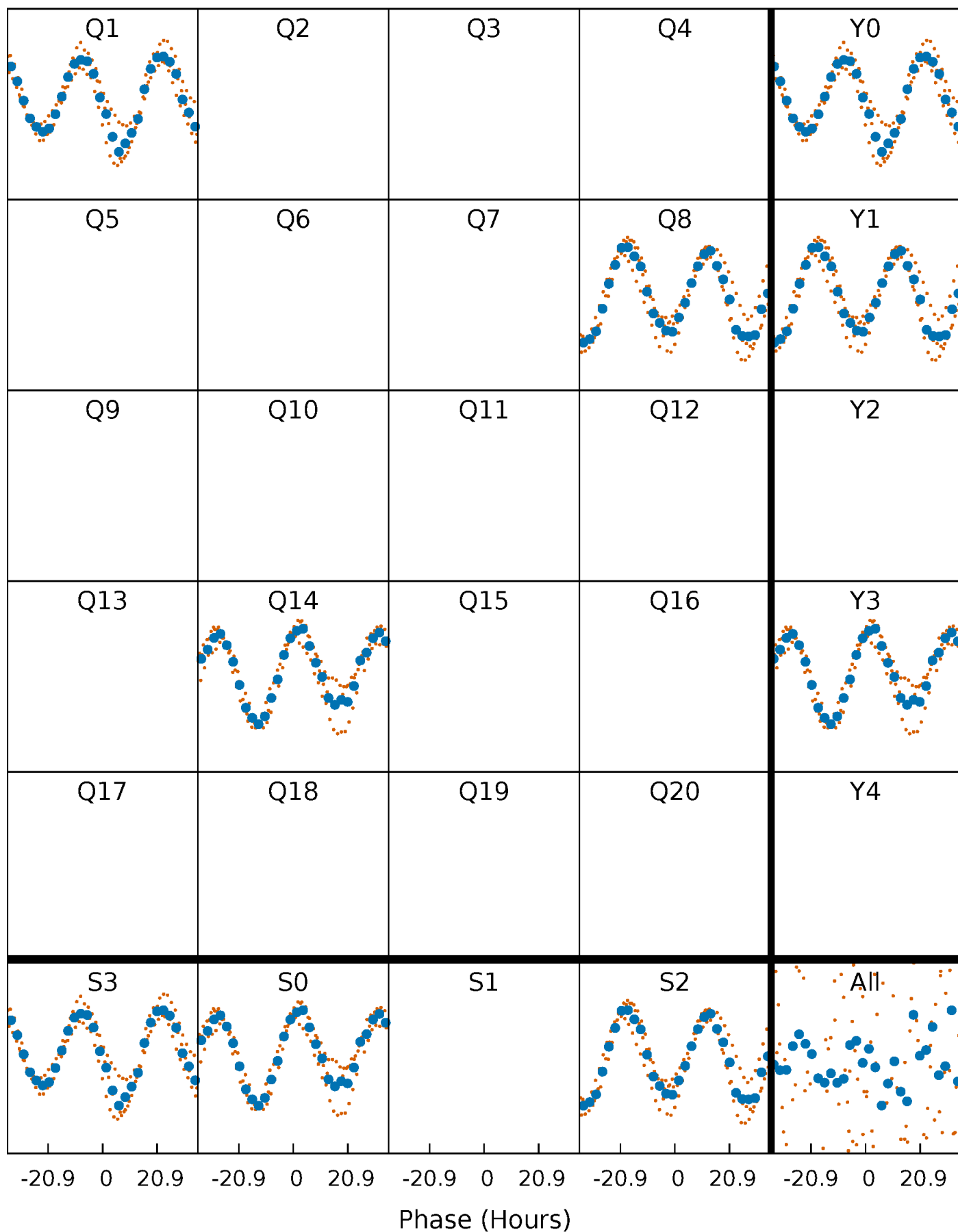


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 004390902-01 P=612.653296 Days $T_0=139.791959$ (BKJD)



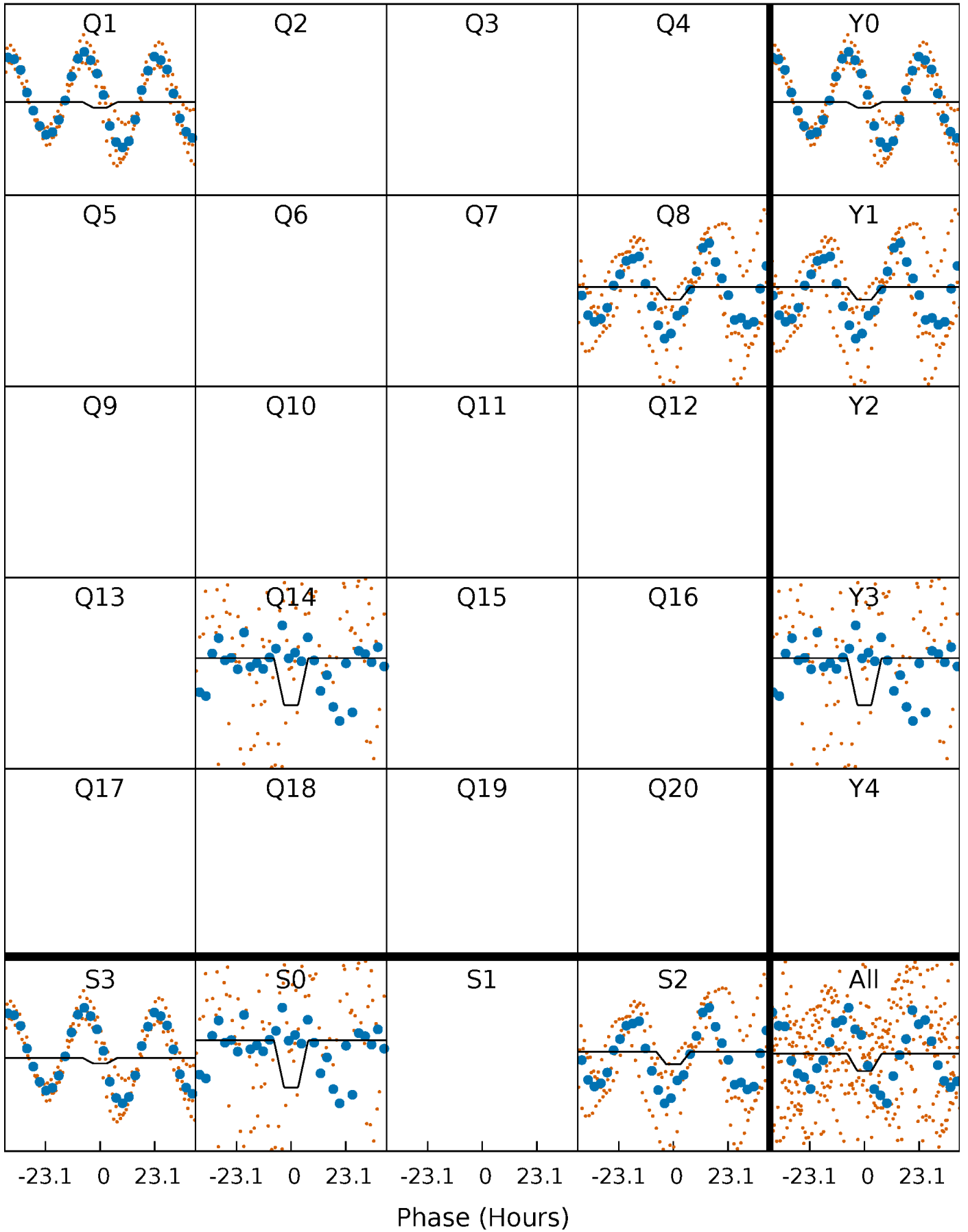
DV Quarter-Phased Transit Curves

TCE 004390902-01 P=612.653296 Days $T_0=139.791959$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

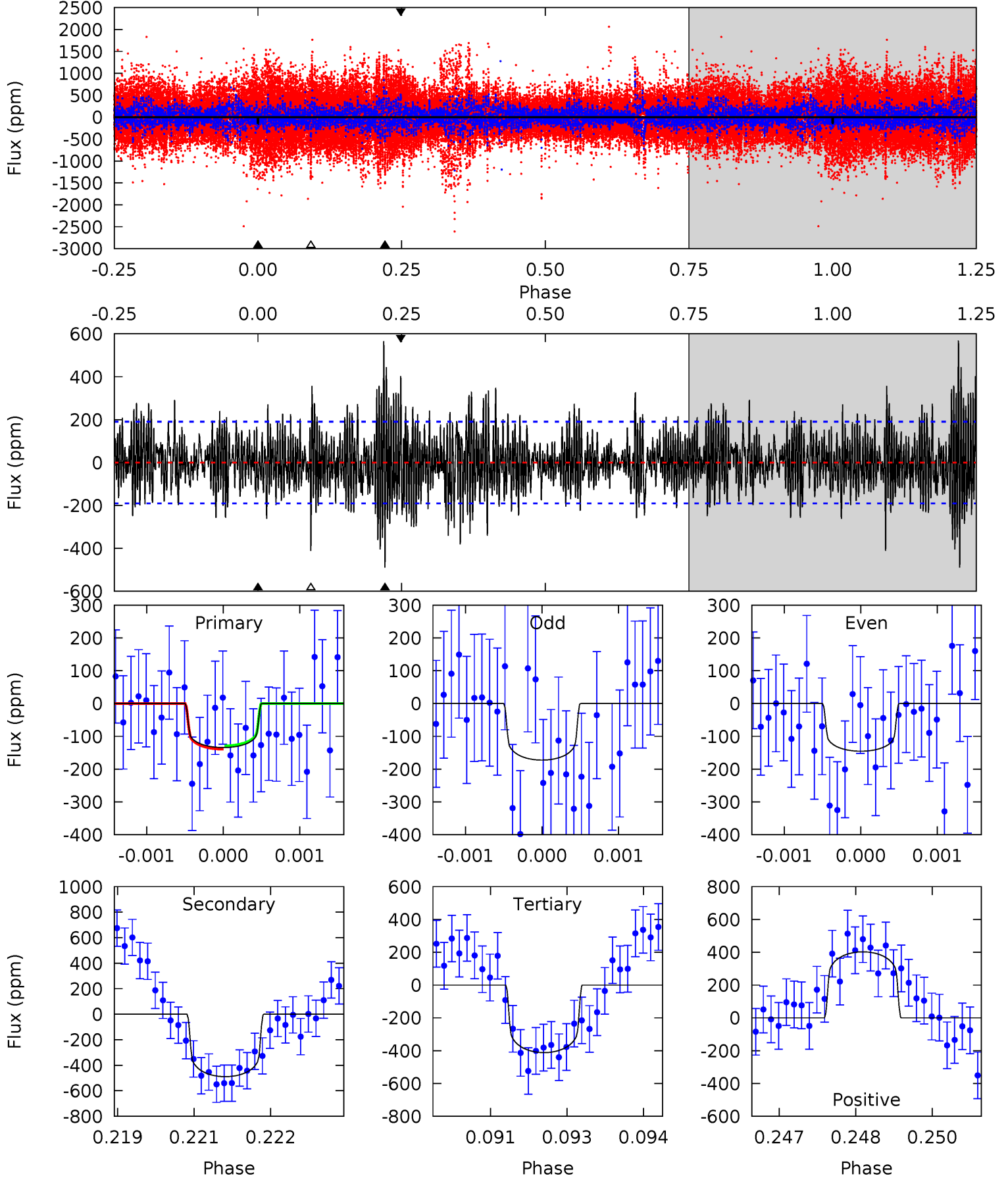
TCE 004390902-01 P=612.645807 Days $T_0=139.731997$ (BKJD)



DV Model-Shift Uniqueness Test

004390902-01, P = 612.653296 Days, E = 139.791959 Days

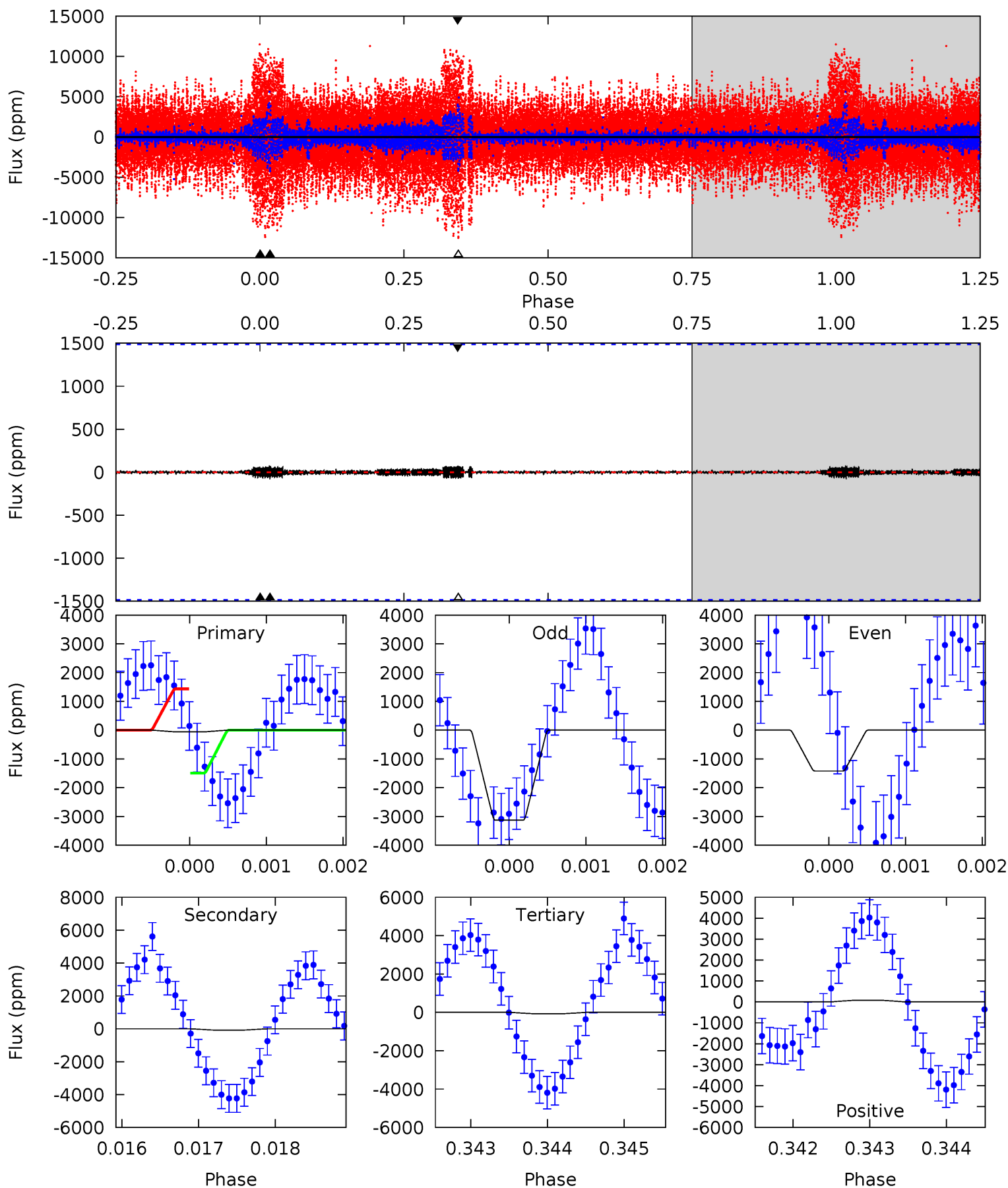
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.82	13.9	11.7	11.4	5.41	3.22	3.44	-7.89	-7.62	2.21	2.47	0.38	1.35	0.54	0.14



Alt Model-Shift Uniqueness Test

004390902-01, P = 612.645807 Days, E = 139.731997 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.21	0.28	0.26	0.27	5.45	3.29	0.06	-0.05	-0.05	0.02	0.02	3.11	-0.47	0.49	0.11



Stellar Parameters For KIC 004390902

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7118^{+197}_{-320}	$3.739^{+0.424}_{-0.080}$	$-0.140^{+0.250}_{-0.350}$	$3.028^{+0.479}_{-1.436}$	$1.831^{+0.174}_{-0.521}$	$0.093^{+0.384}_{-0.025}$
	+3%/-4%	+11%/-2%	+179%/-250%	+16%/-47%	+10%/-28%	+414%/-27%
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 004390902-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-489 ± 35	$3.65^{+1.65}_{-1.50}$	559^{+41}_{-65}	10243^{+5365}_{-2080}	$58708^{+108410}_{-30903}$
Alt.	-78 ± 273	$9.19^{+2.09}_{-2.71}$	561^{+40}_{-68}	4088^{+1544}_{-8930}	1444^{+6705}_{-5262}

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

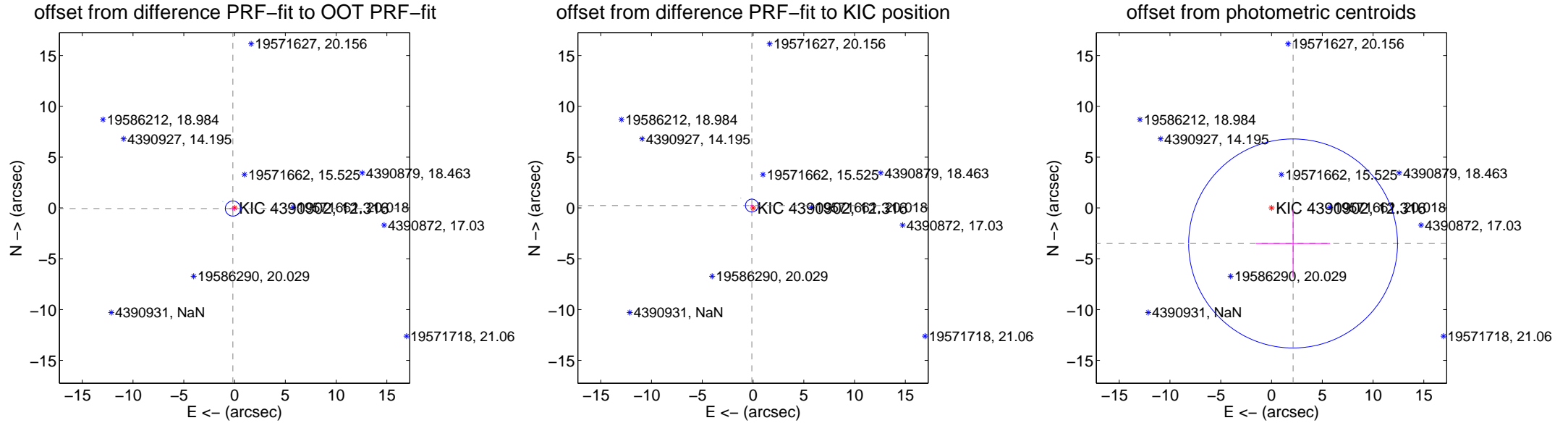
DV Centroid Data

Supplemental centroid analysis for 004390902-01. Kepler magnitude: 12.32. Transit SNR 2.56

There are 2 quarters with good PRF difference image offsets

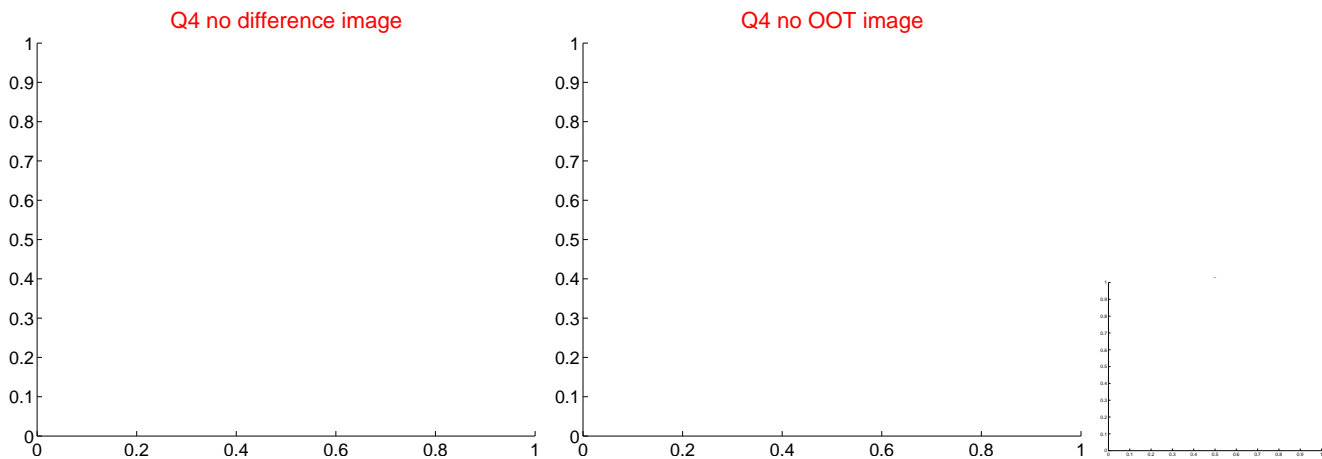
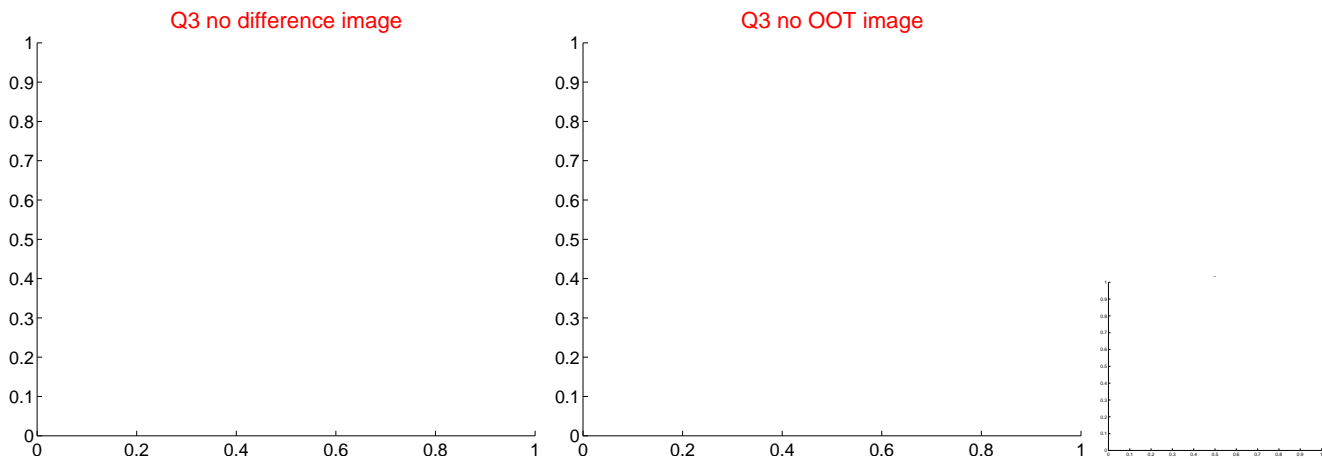
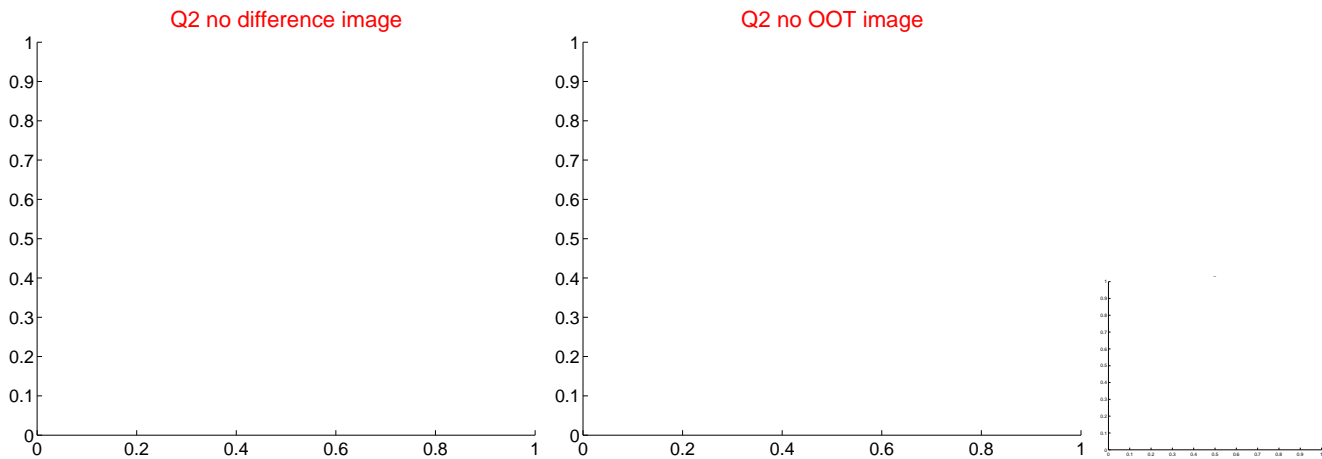
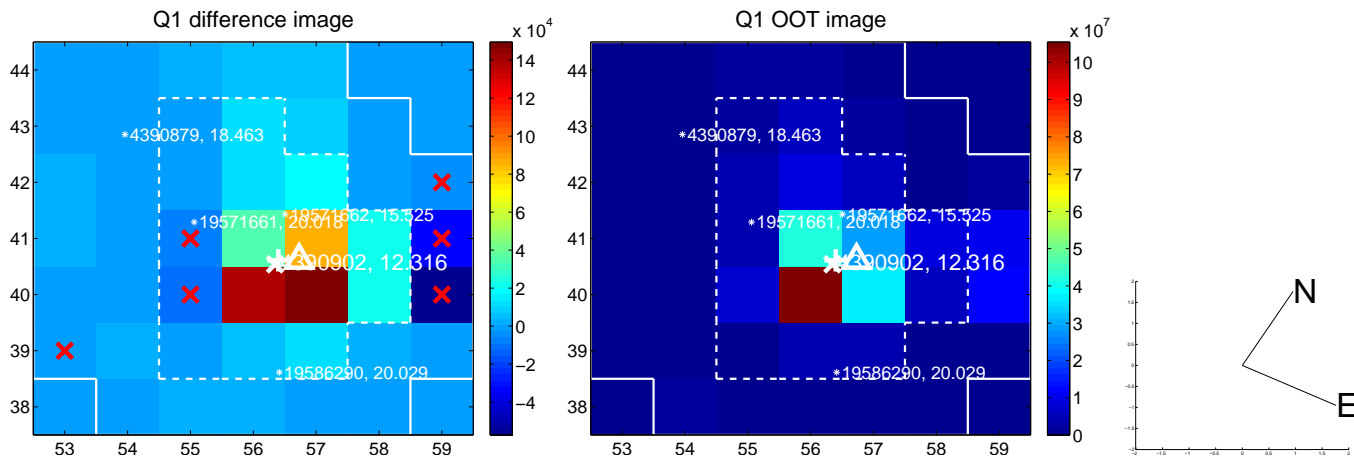
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.176 ± 0.248	0.71	0.166 ± 0.344	-0.059 ± 0.246
PRF-fit source offset from KIC position	0.263 ± 0.210	1.25	0.118 ± 0.194	0.235 ± 0.148
photometric centroid source offset	4.09 ± 3.43	1.19	-2.12 ± 3.65	-3.49 ± 3.34

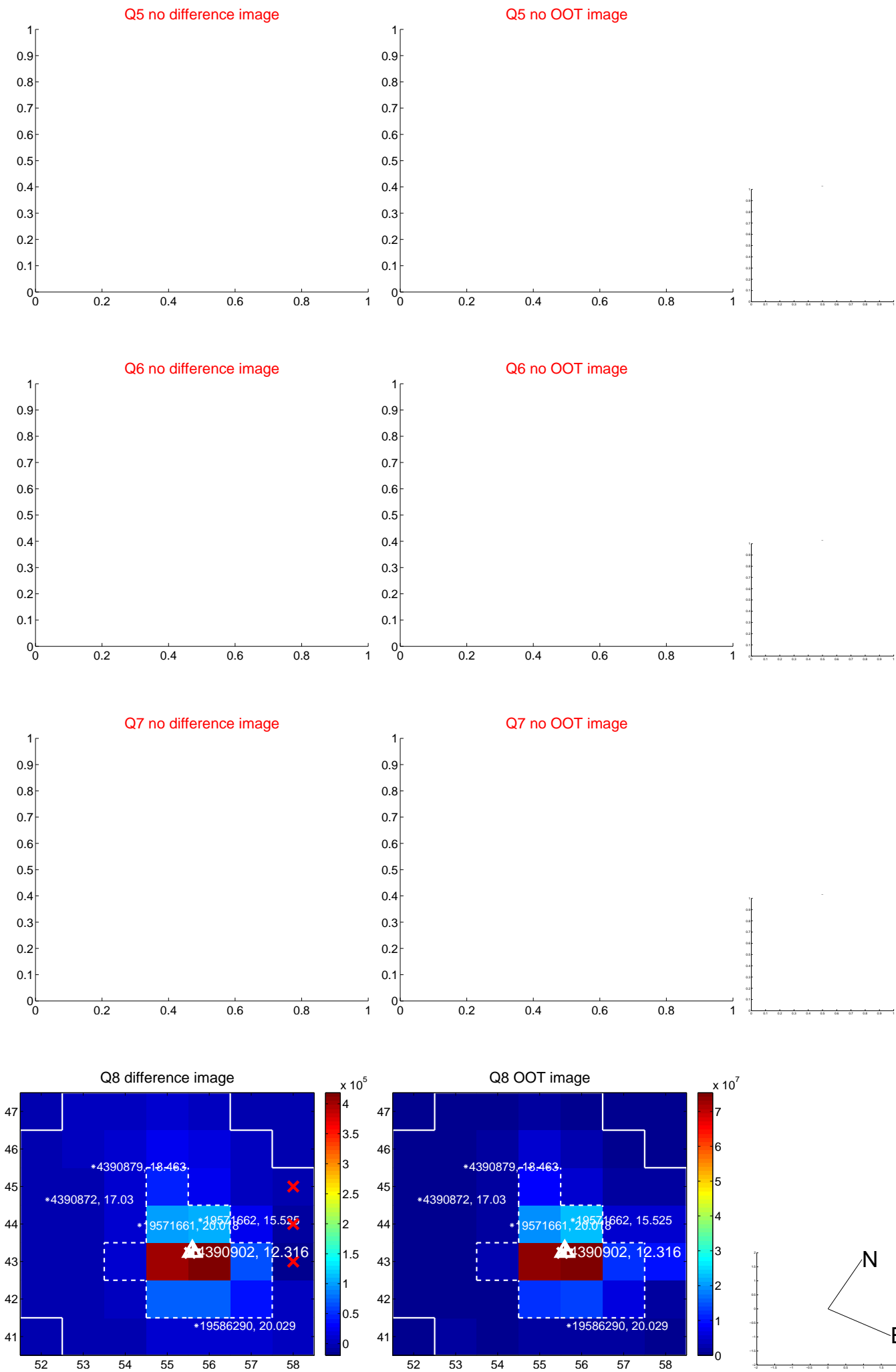


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



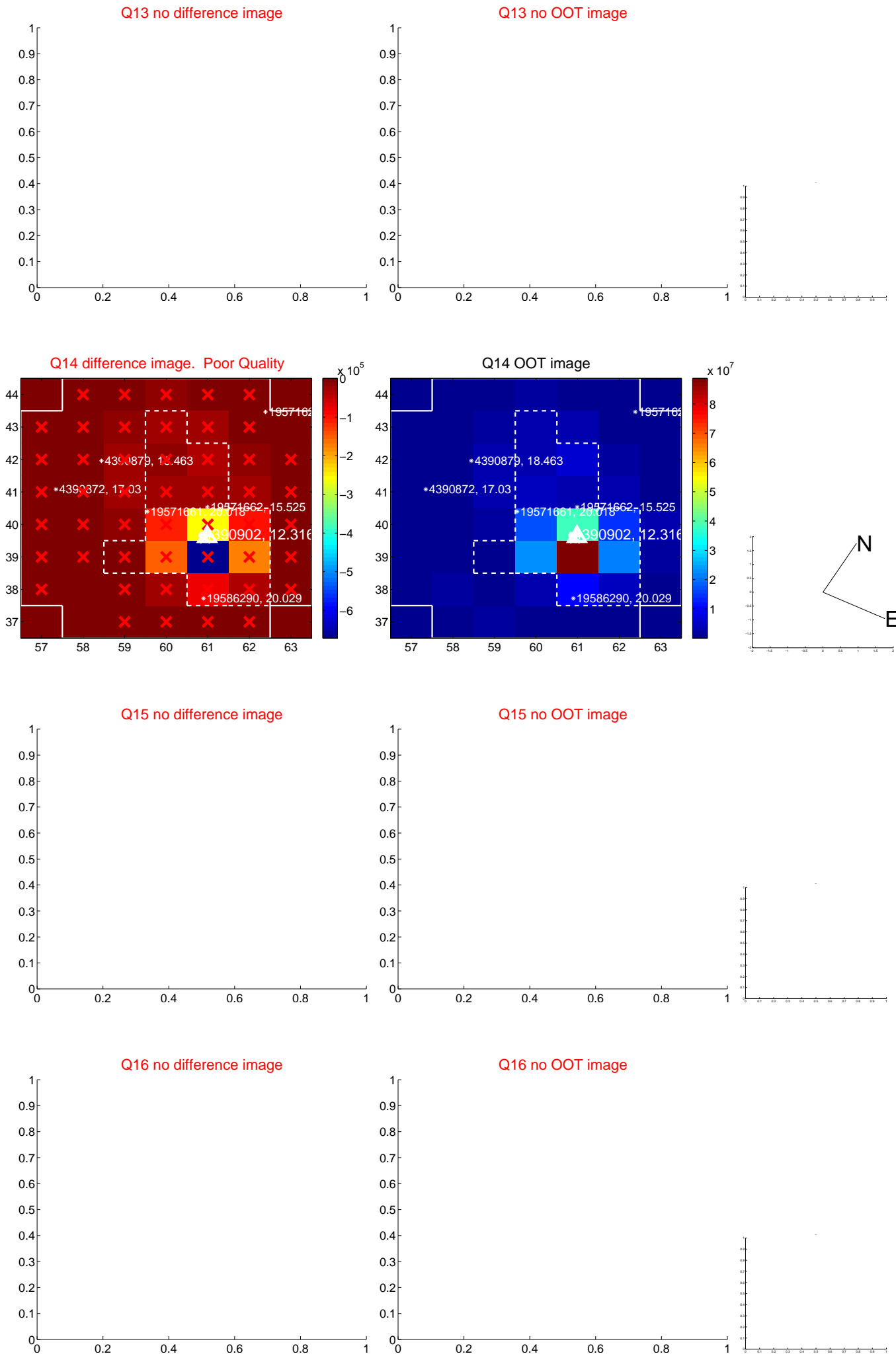
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



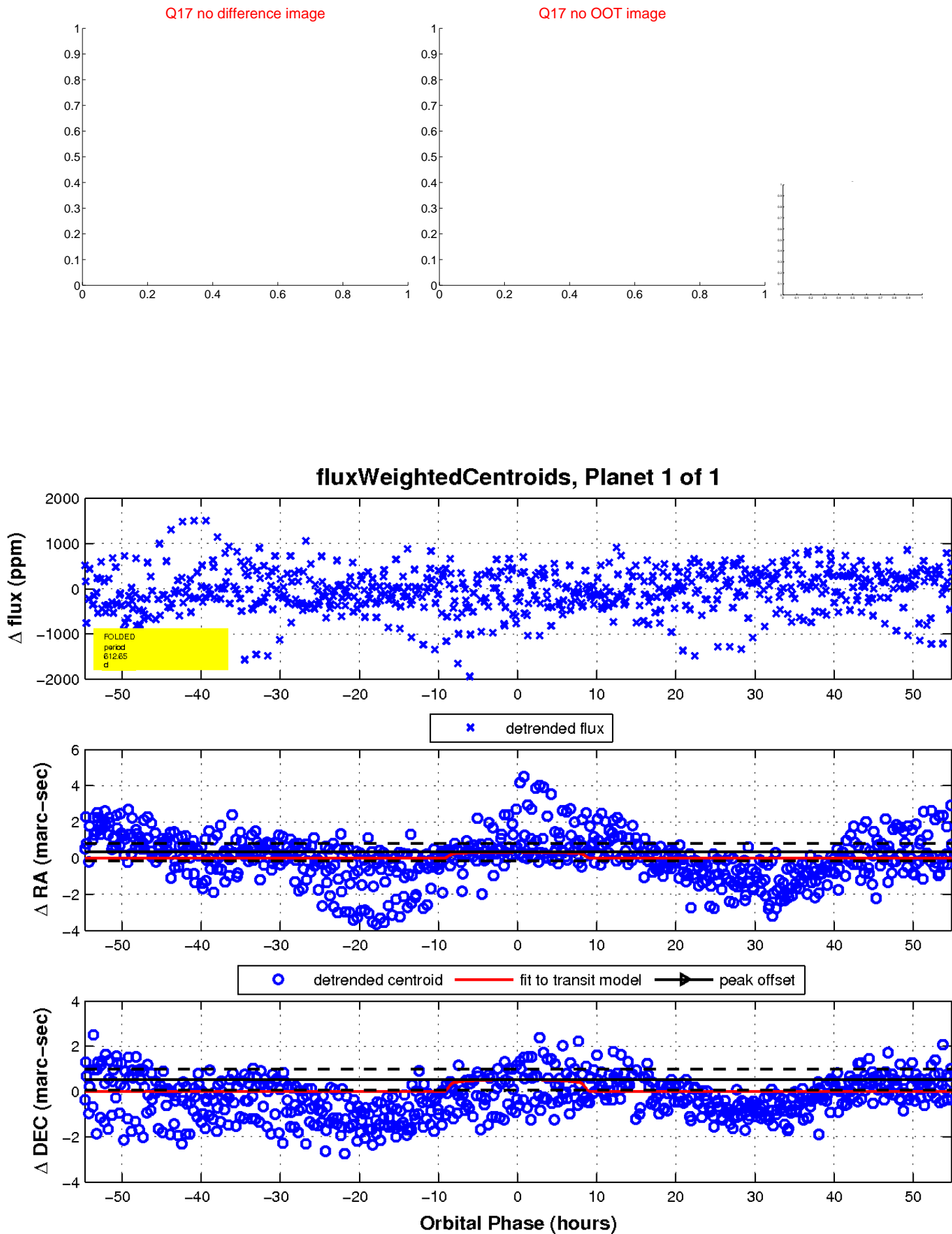
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UKIRT Image

Declination

