

KIC 012168993

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})
012168993-01	OBS	3105.01	4.212230	132.927992	104.3	7.194	10.9	10.9	0.70	5116	0.79	146.78

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012168993-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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 012168993-01

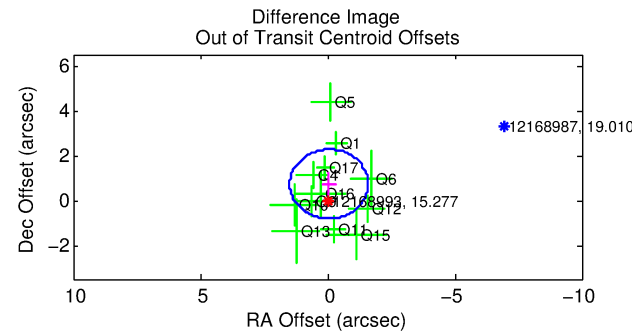
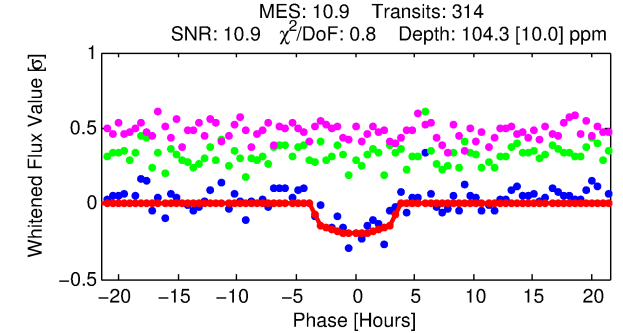
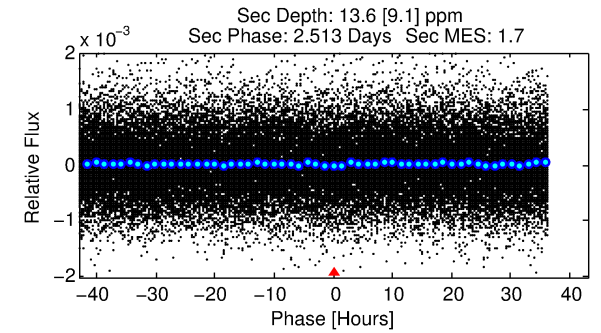
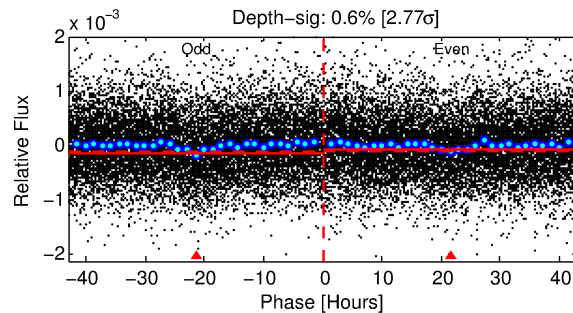
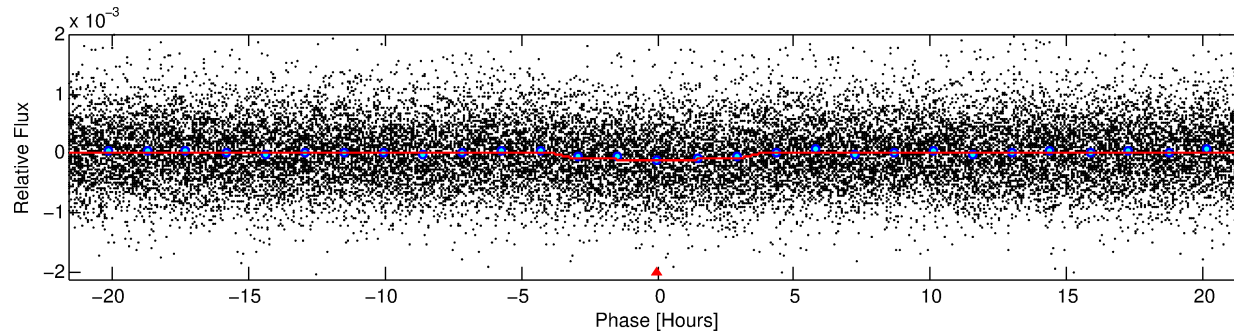
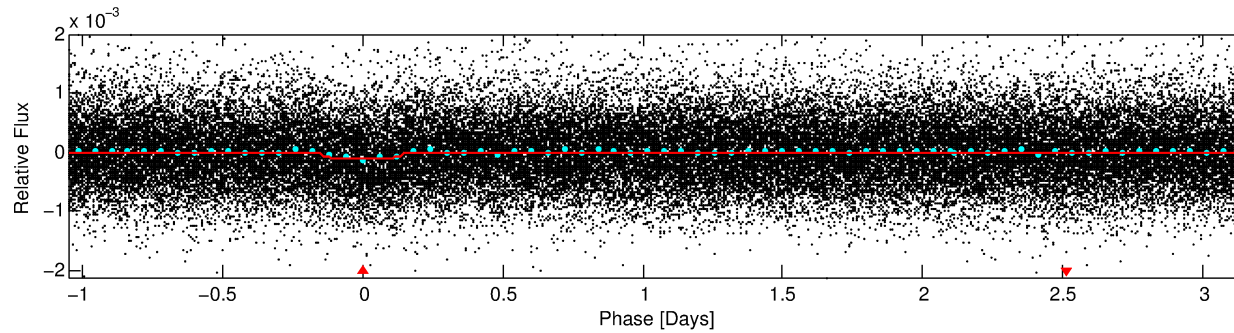
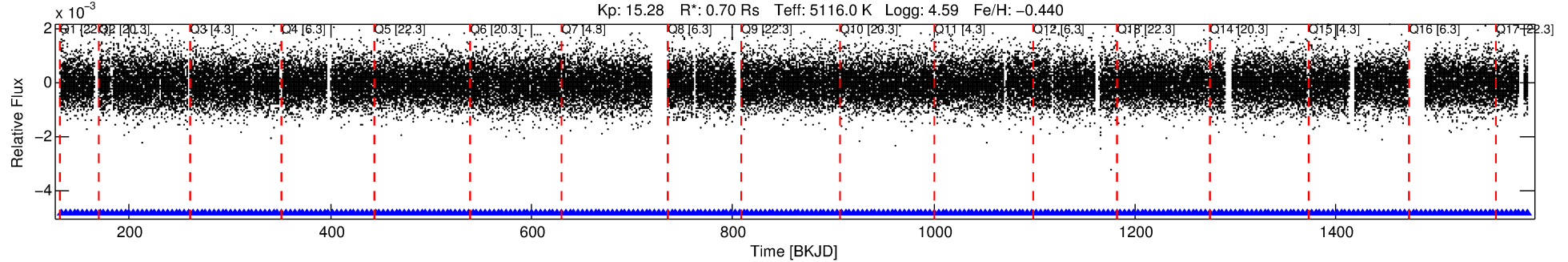
No Significant Match Found

DV One-Page Summary

KIC: 12168993 Candidate: 1 of 1 Period: 4.212 d

KOI: K03105.01 Corr: 0.895

Kp: 15.28 R*: 0.70 Rs Teff: 5116.0 K Logg: 4.59 Fe/H: -0.440



DV Fit Results:

Period = 4.21223 [0.00005] d
Epoch = 132.9280 [0.0092] BKJD
Rp/R* = 0.0103 [0.0075]
a/R* = 3.01 [7.69]
b = 0.78 [1.48]
Seff = 146.78 [24.70]
Teq = 888 [37] K
Rp = 0.79 [0.58] Re
a = 0.0453 [0.0039] AU
Ag = 24.74 [39.80] [0.60σ]
Teffp = 3060 [1231] K [1.76σ]

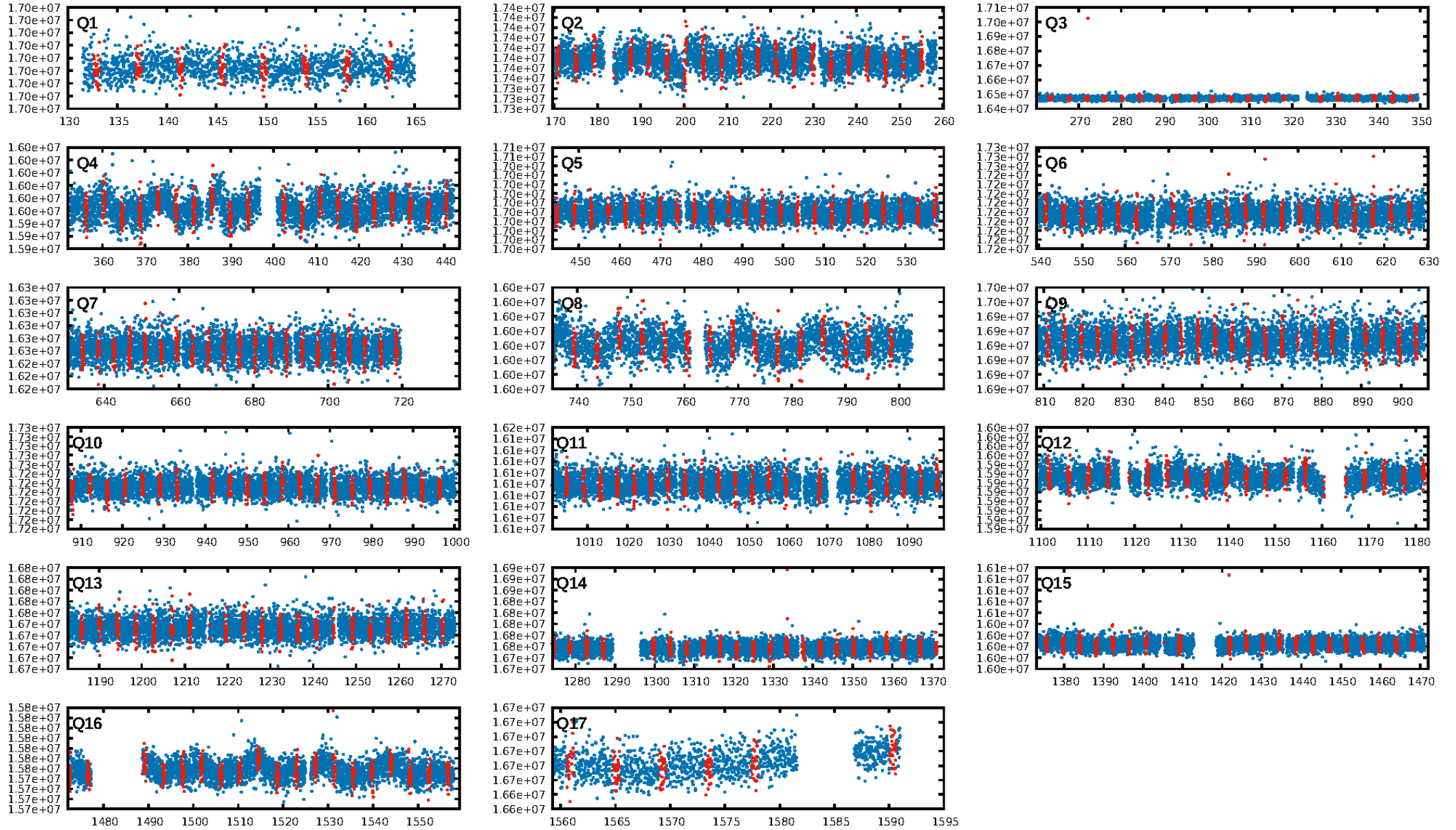
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.06e-27
RollingBand-fgt: 1.00 [300/300]
GhostDiagnostic-chr: 1.509
Centroid-sig: 0.3%
Centroid-so: 1.167 arcsec [1.03σ]
OotOffset-rm: 0.725 arcsec [1.41σ]
KicOffset-rm: 0.579 arcsec [1.13σ]
OotOffset-st: 2/2/3/5 [12]
KicOffset-st: 2/2/3/5 [12]
DiffImageQuality-fgm: 0.42 [5/12]
DiffImageOverlap-fno: 1.00 [17/17]

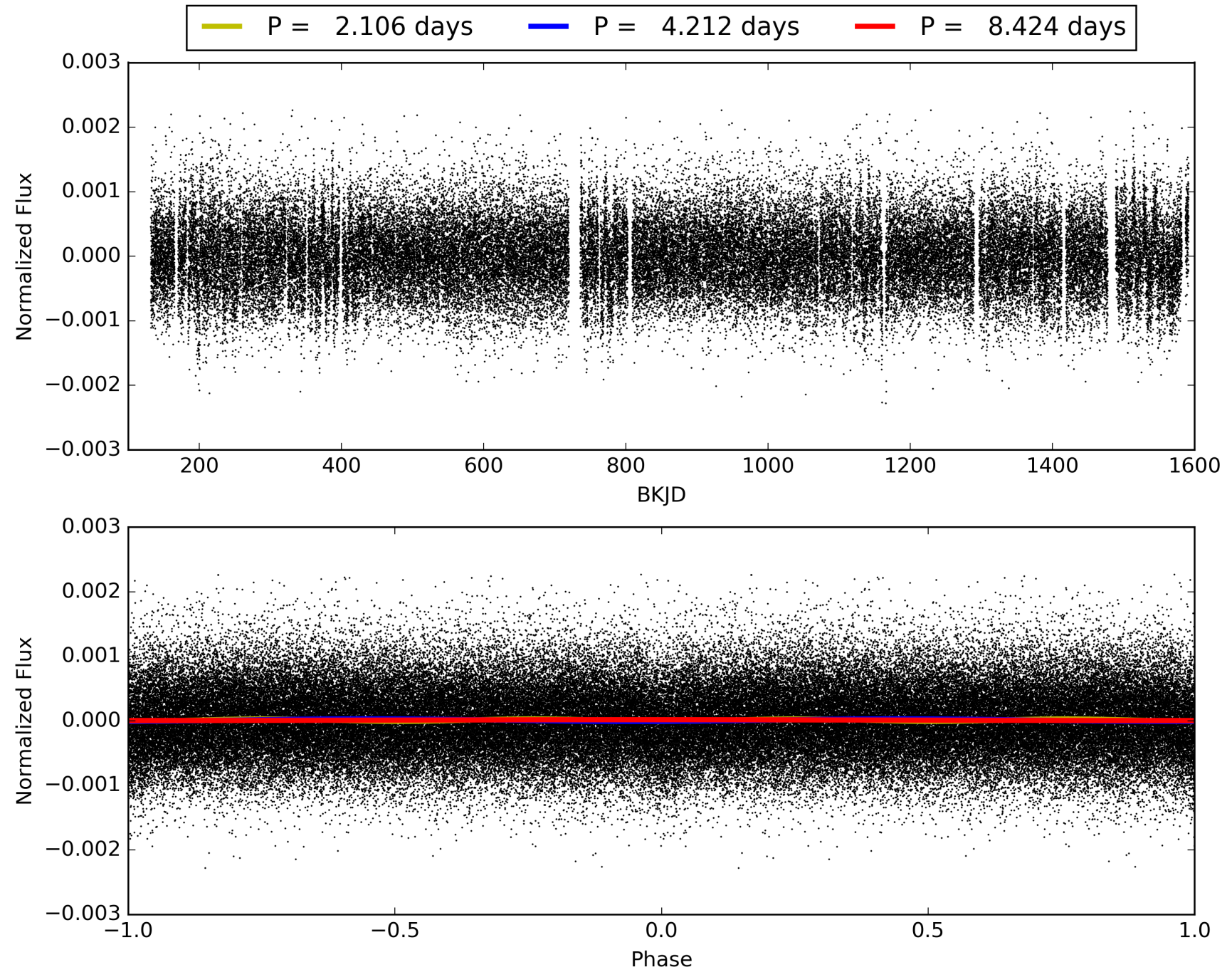
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:26:27 Z

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

TCE 012168993-01, PDC Light Curves

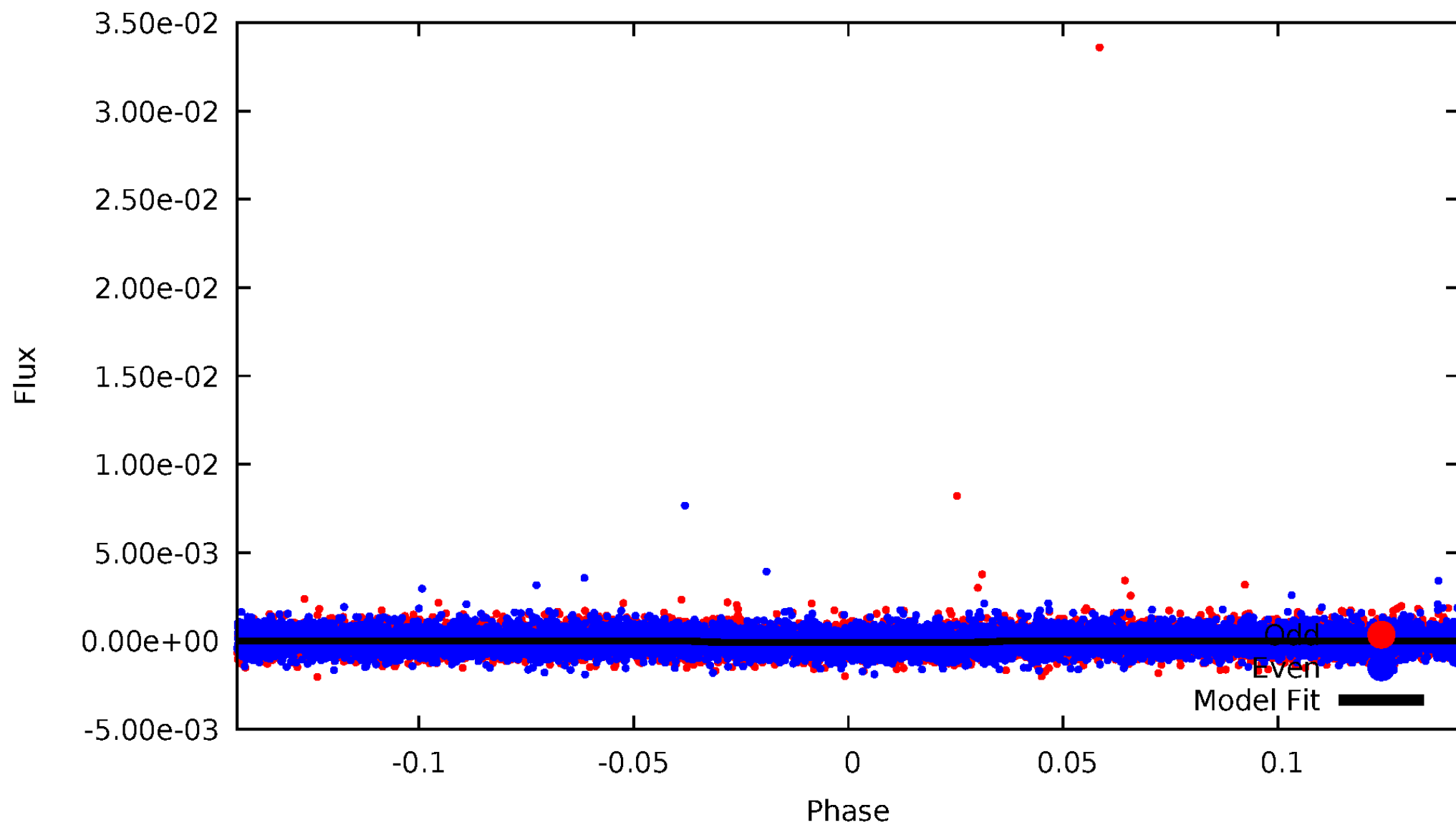


TCE 012168993-01



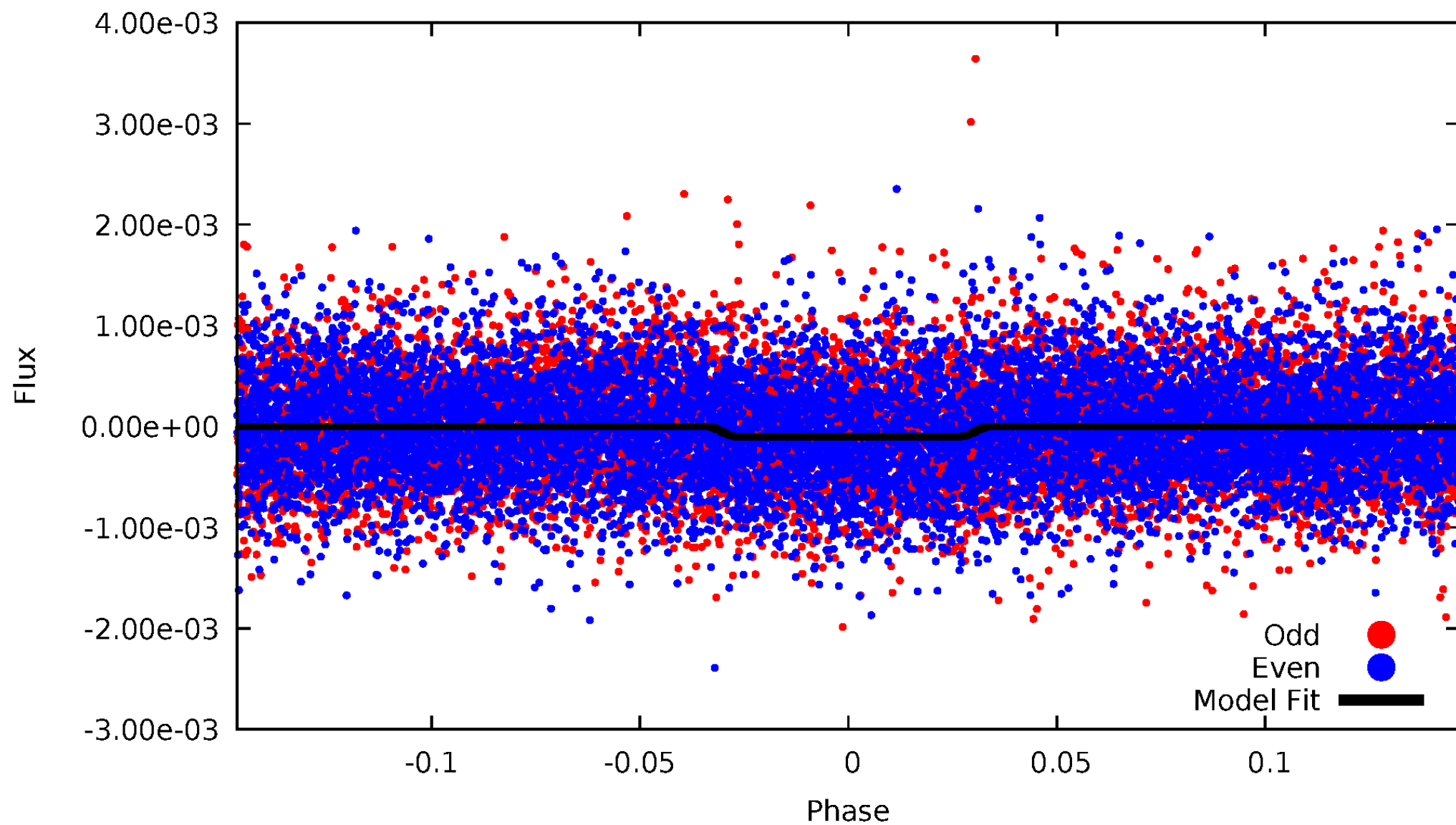
DV Odd/Even

TCE 012168993-01

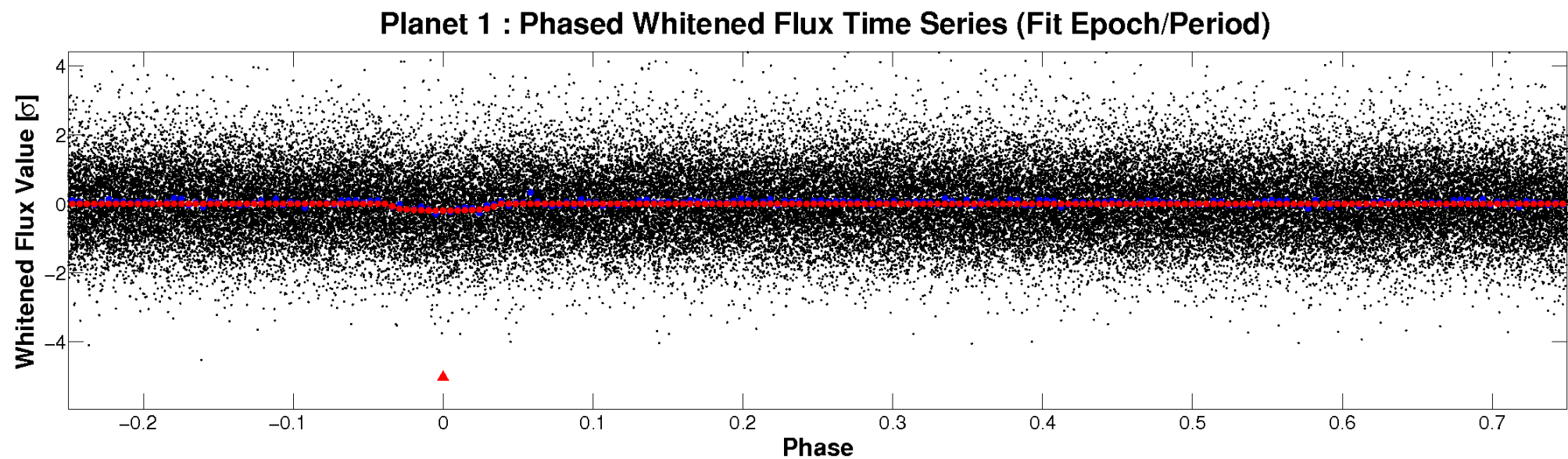
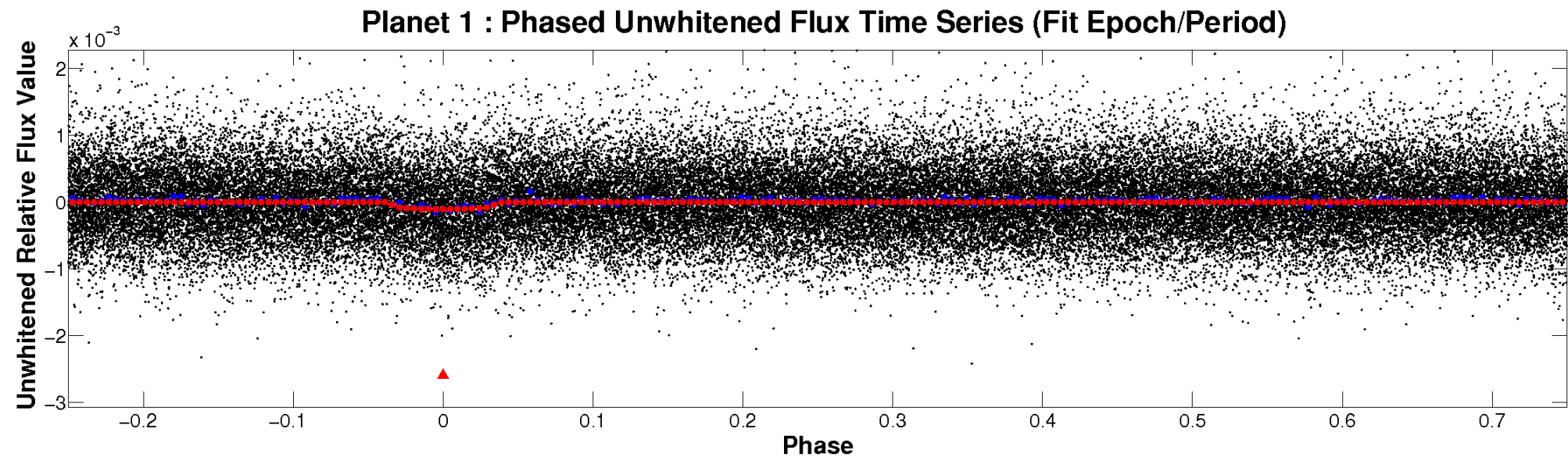


ALT Odd/Even

TCE 012168993-01

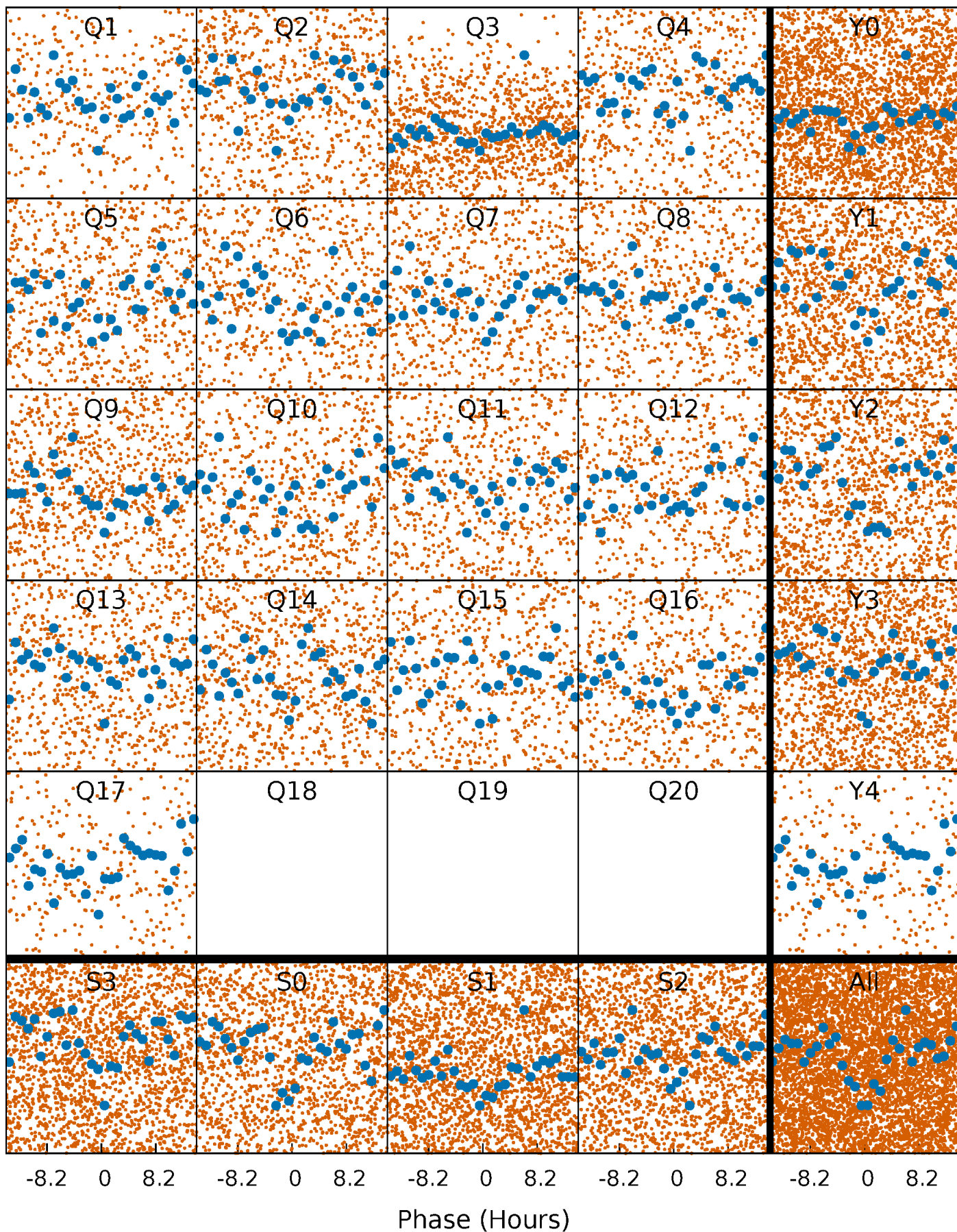


Non-Whitened Vs. Whitened Light Curve



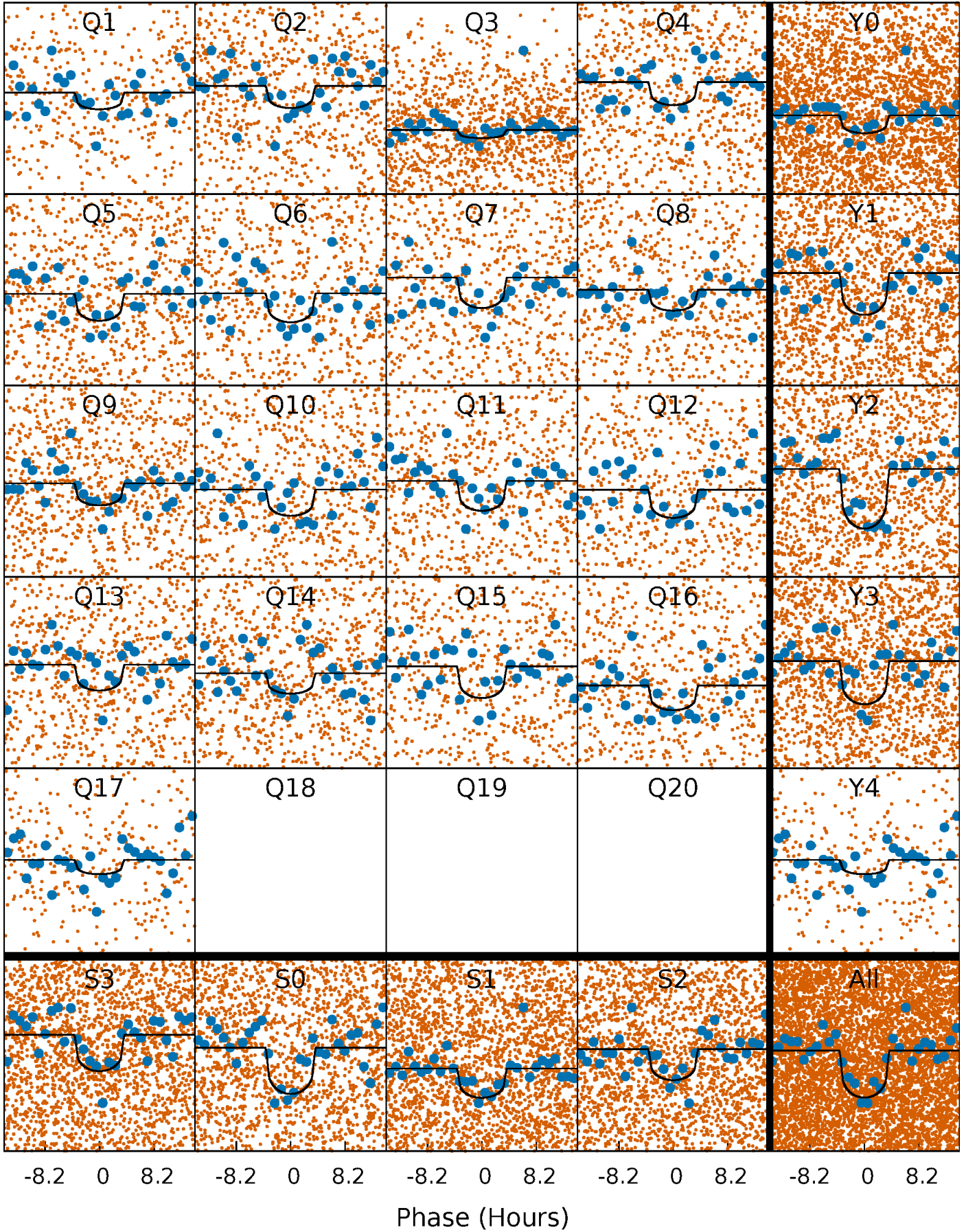
PDC Quarter-Phased Transit Curves

TCE 012168993-01 P= 4.212230 Days $T_0=132.927992$ (BKJD)



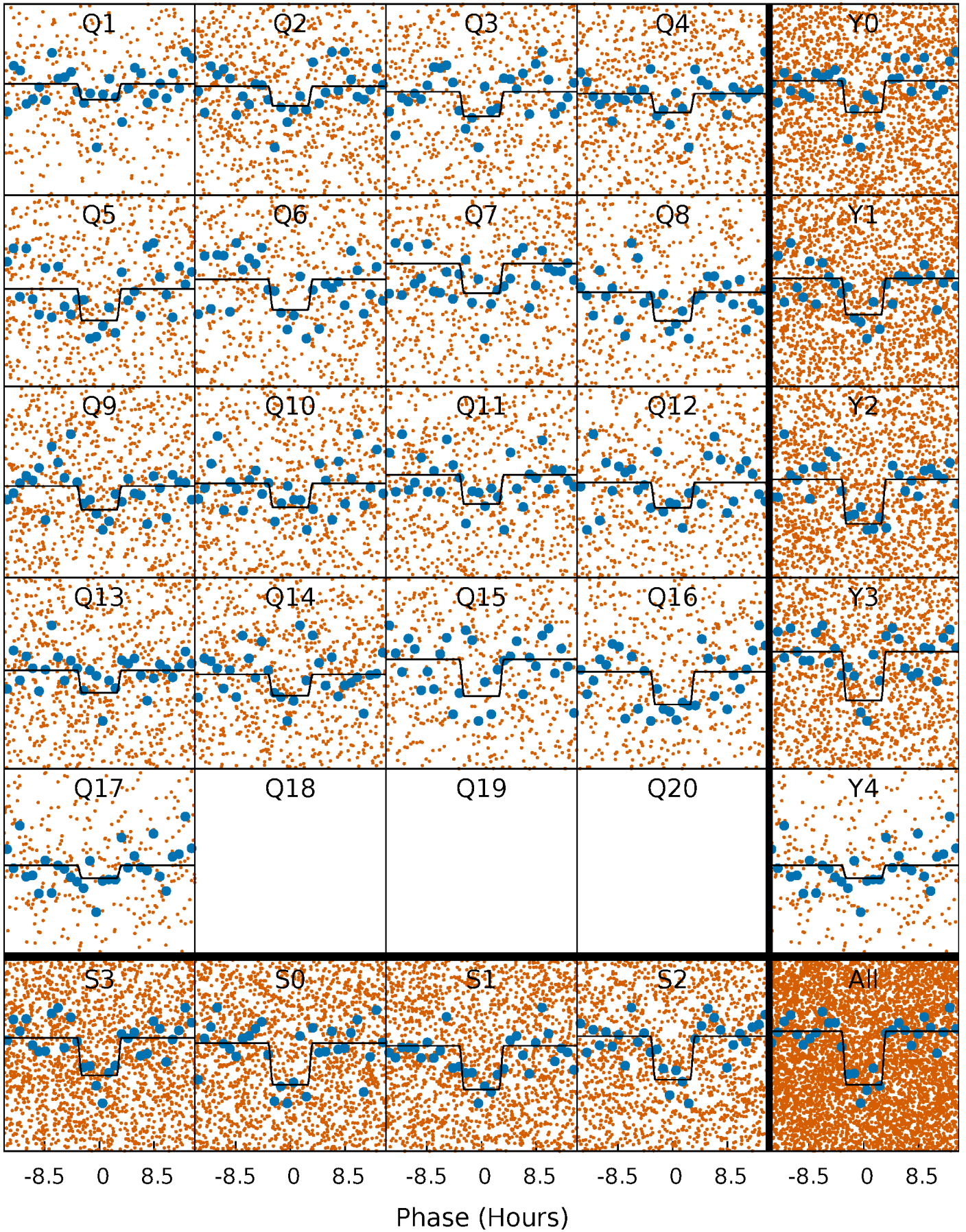
DV Quarter-Phased Transit Curves

TCE 012168993-01 P= 4.212230 Days $T_0=132.927992$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

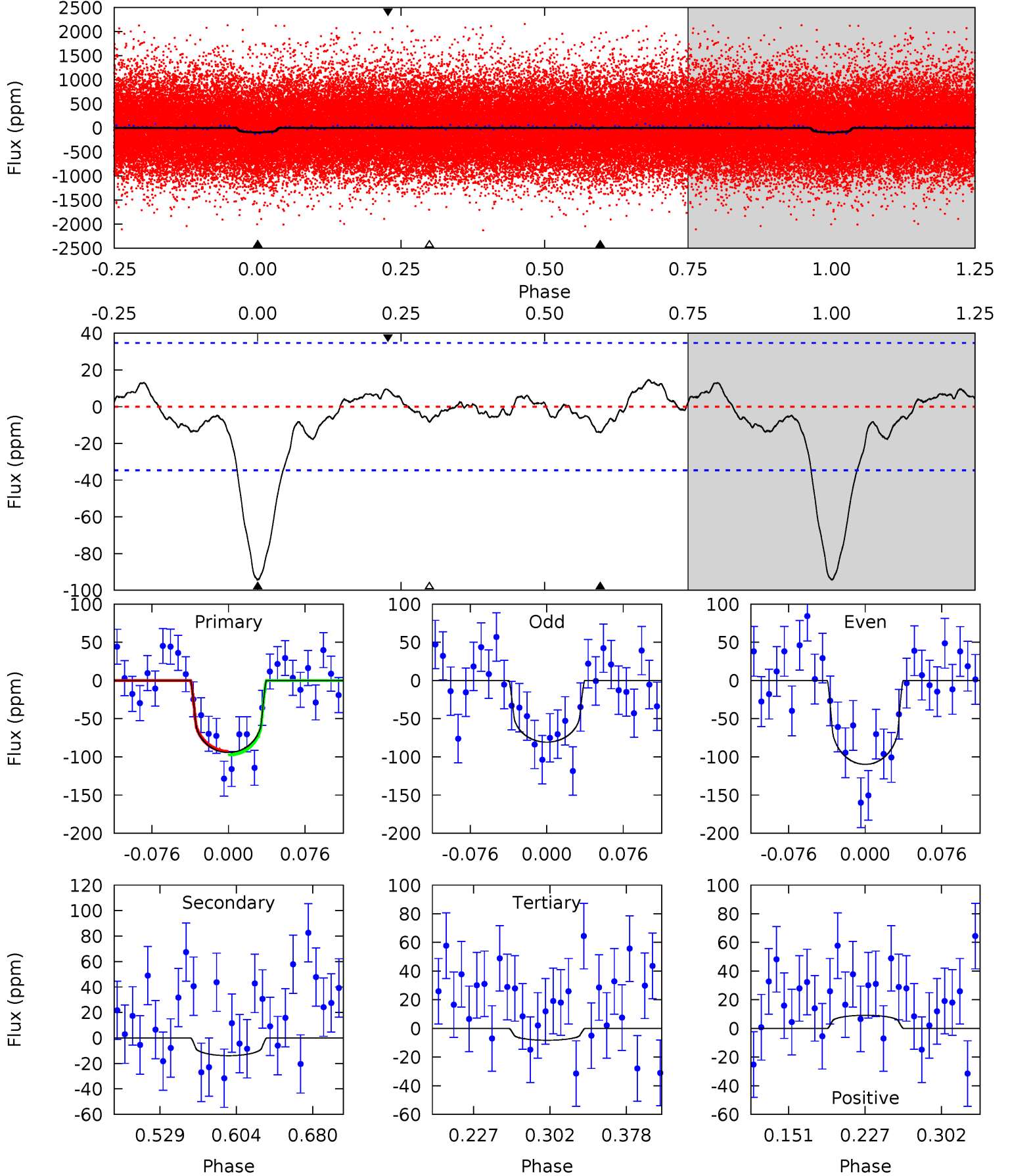
TCE 012168993-01 P= 4.212233 Days $T_0=132.930129$ (BKJD)



DV Model-Shift Uniqueness Test

012168993-01, P = 4.212230 Days, E = 128.715762 Days

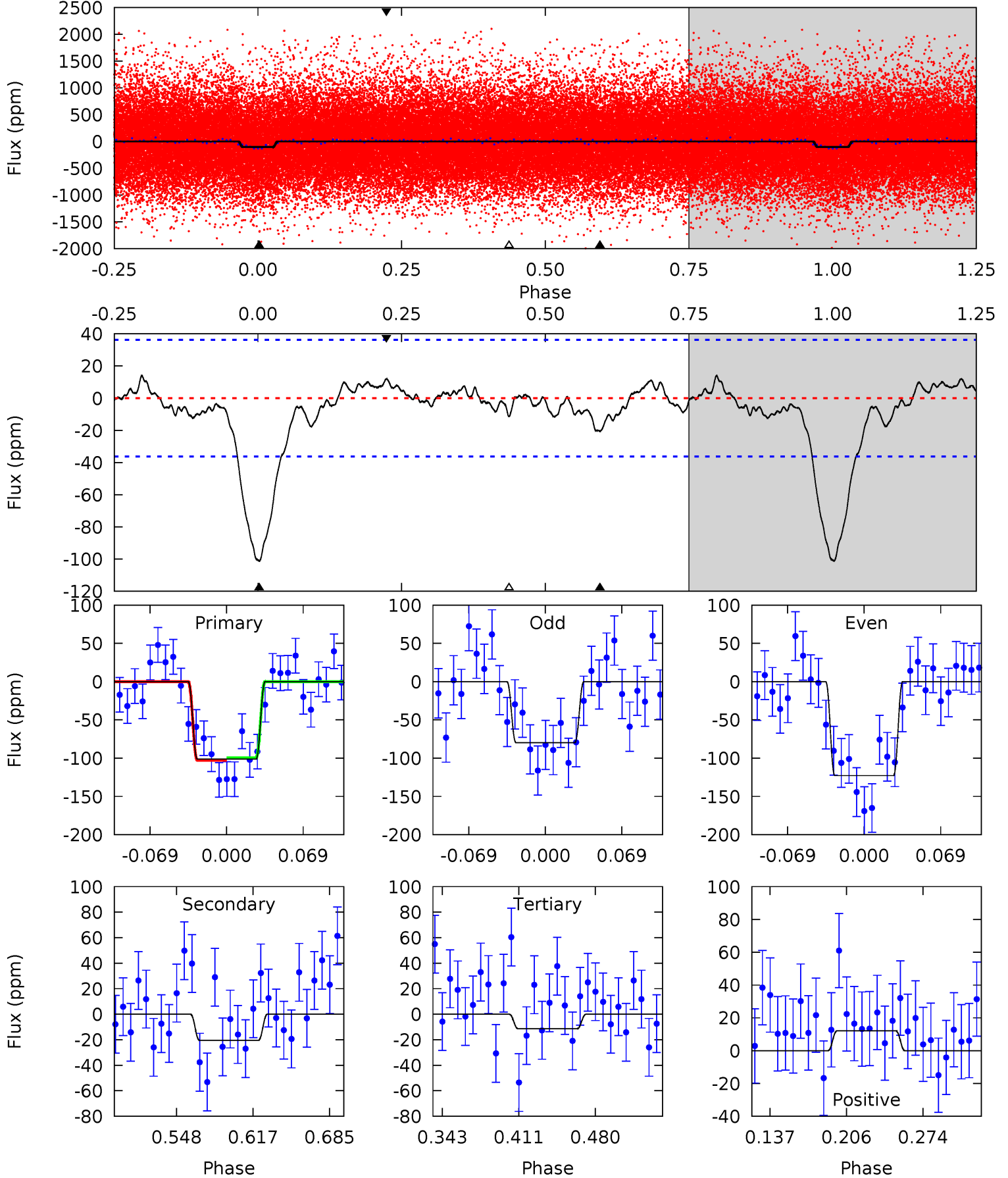
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	1.85	1.10	1.22	4.62	1.78	0.95	11.5	11.3	0.75	0.63	1.94	0.93	0.13	0.31



Alt Model-Shift Uniqueness Test

012168993-01, P = 4.212233 Days, E = 128.717896 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	2.63	1.47	1.55	4.64	1.82	0.83	11.5	11.4	1.16	1.08	2.75	0.97	0.12	0.21



Stellar Parameters For KIC 012168993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5116^{+153}_{-138}	$4.591^{+0.061}_{-0.050}$	$-0.440^{+0.350}_{-0.300}$	$0.700^{+0.076}_{-0.069}$	$0.698^{+0.084}_{-0.052}$	$2.860^{+0.774}_{-0.559}$
	+3%/-3%	+1%/-1%	+80%/-68%	+11%/-10%	+12%/-7%	+27%/-20%
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 012168993-01 / KOI 3105.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-14 ± 8	$0.86^{+0.55}_{-0.50}$	1238^{+50}_{-42}	3387^{+1132}_{-571}	20^{+90}_{-15}
Alt.	-21 ± 8	$0.85^{+0.56}_{-0.50}$	1236^{+50}_{-43}	3635^{+1560}_{-599}	32^{+181}_{-23}

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 $A_{obs} \gg 1.0$

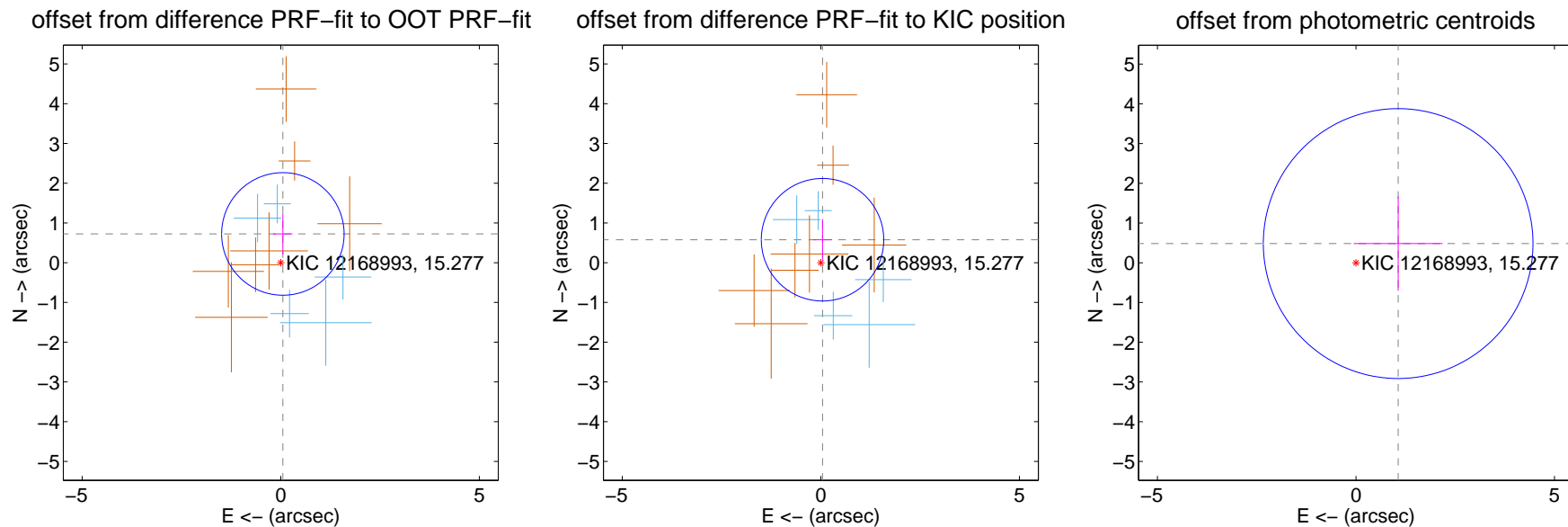
DV Centroid Data

Supplemental centroid analysis for 012168993-01. Kepler magnitude: 15.28. Transit SNR 10.94

There are 5 quarters with good PRF difference image offsets

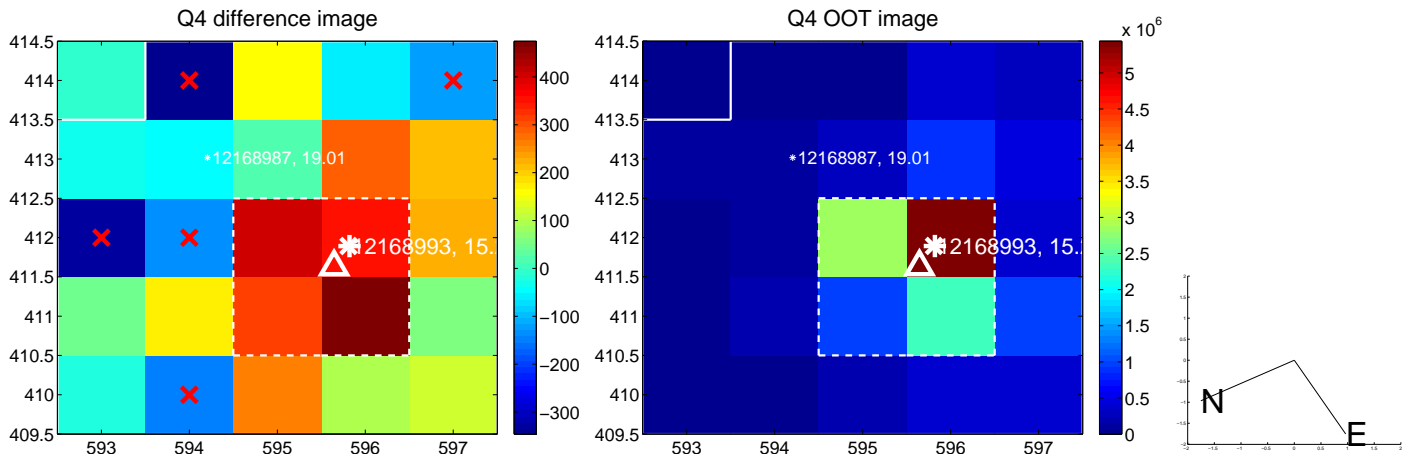
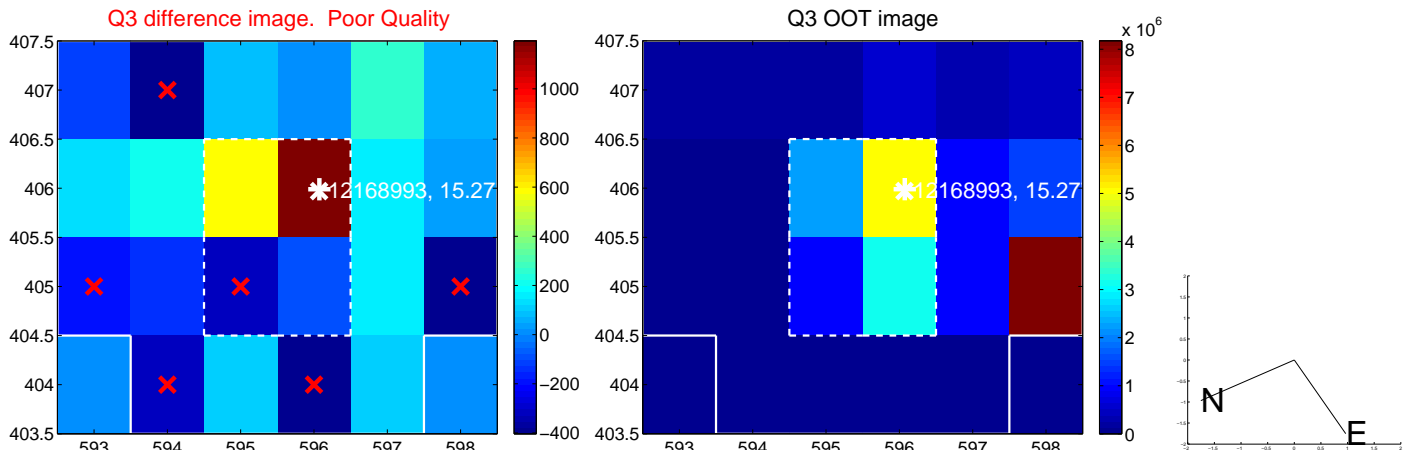
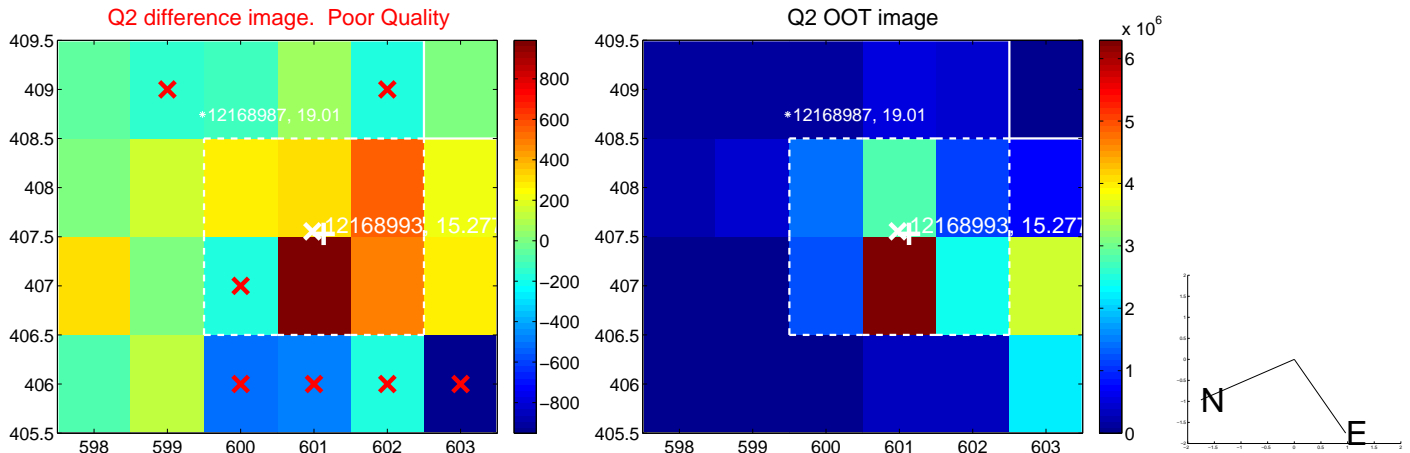
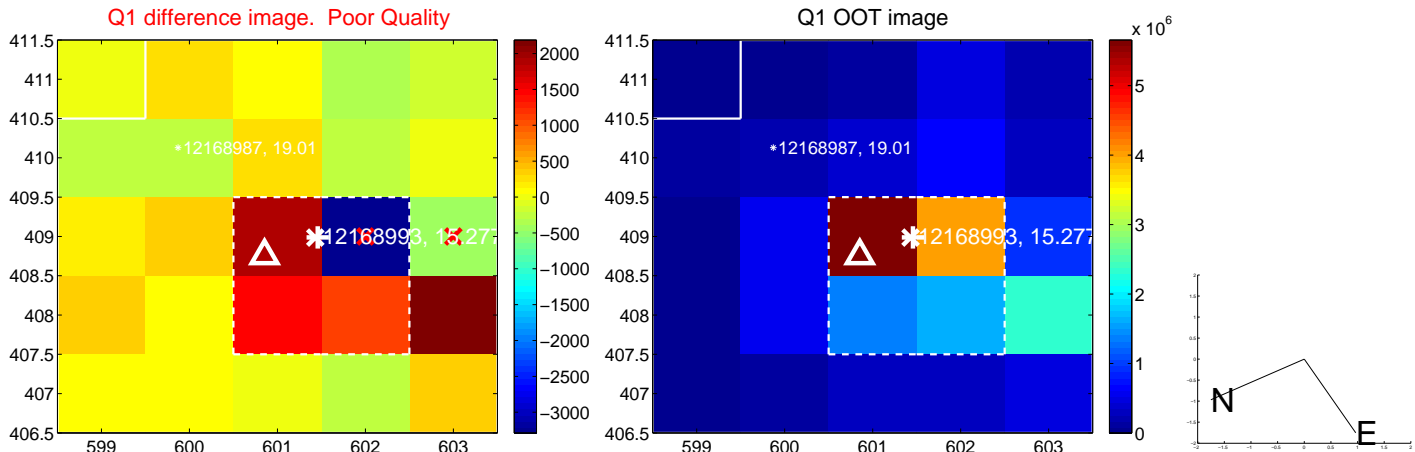
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.725 ± 0.514	1.41	-0.053 ± 0.243	0.723 ± 0.515
PRF-fit source offset from KIC position	0.579 ± 0.514	1.13	-0.042 ± 0.242	0.577 ± 0.515
photometric centroid source offset	1.17 ± 1.13	1.03	-1.06 ± 1.12	0.48 ± 1.19

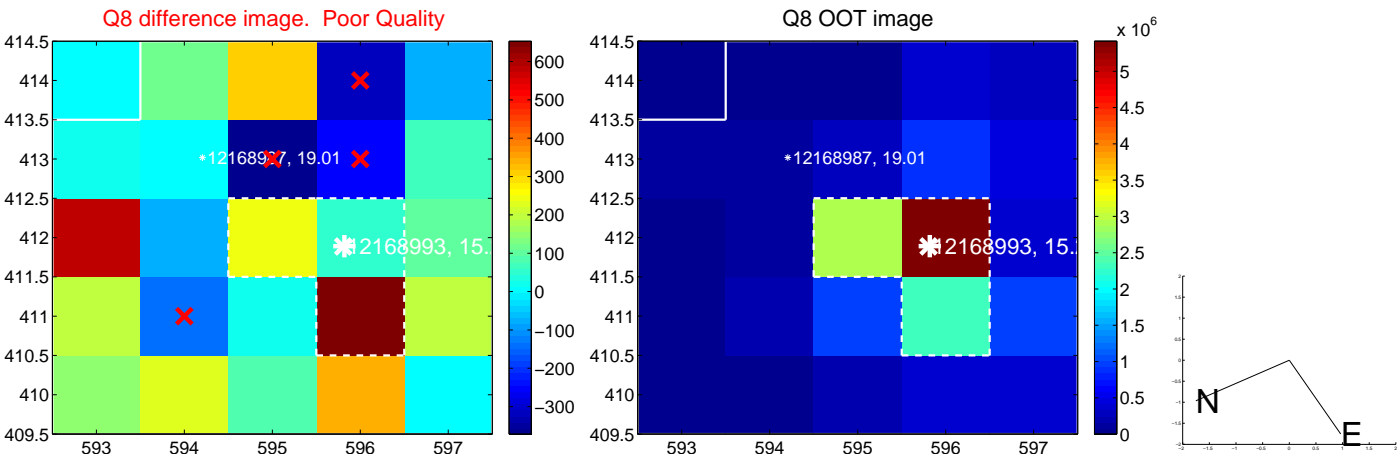
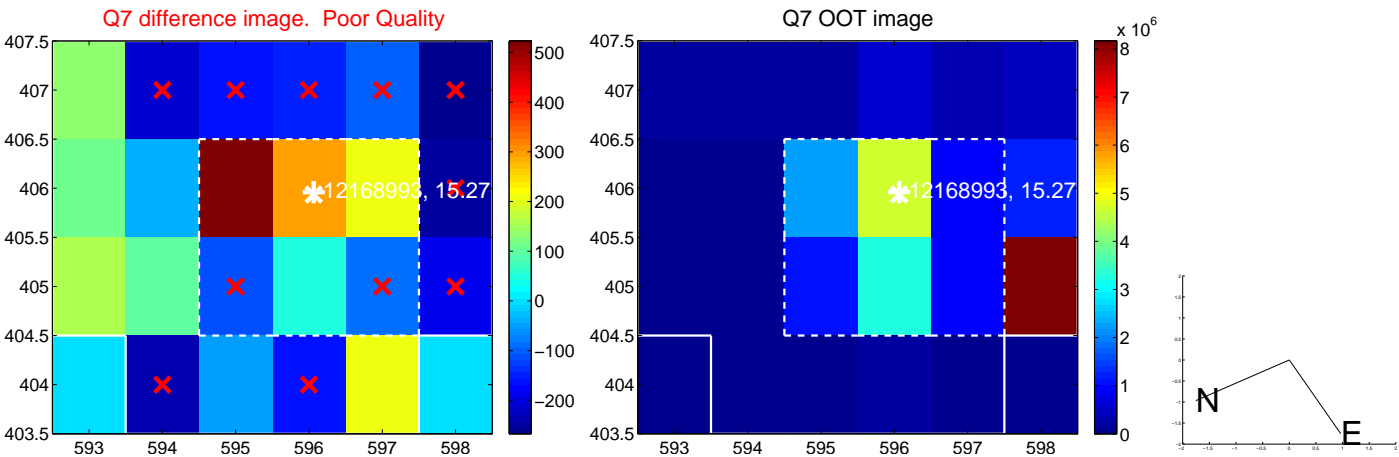
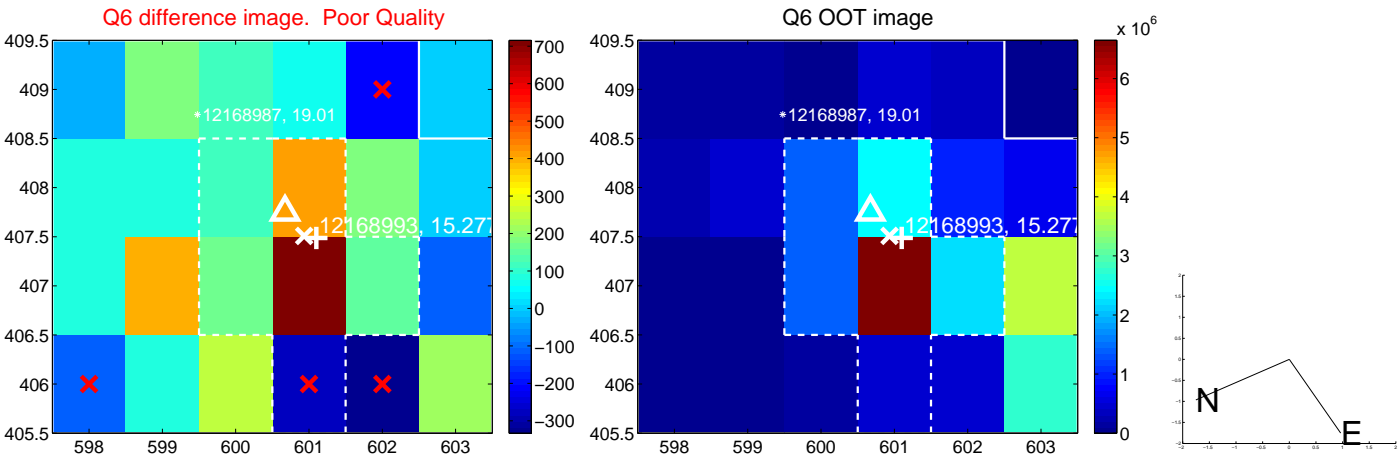
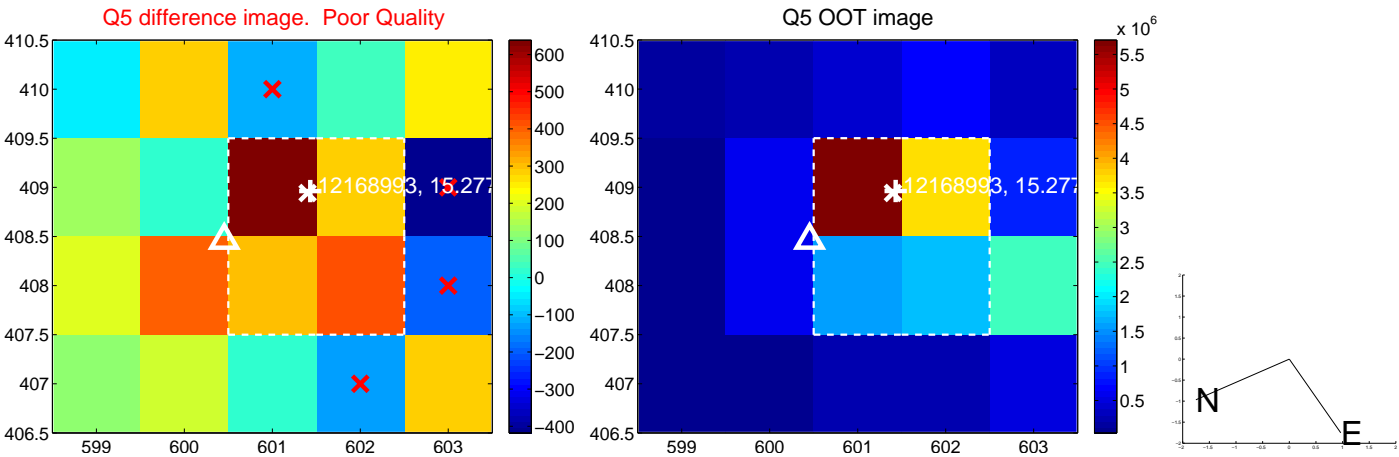


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

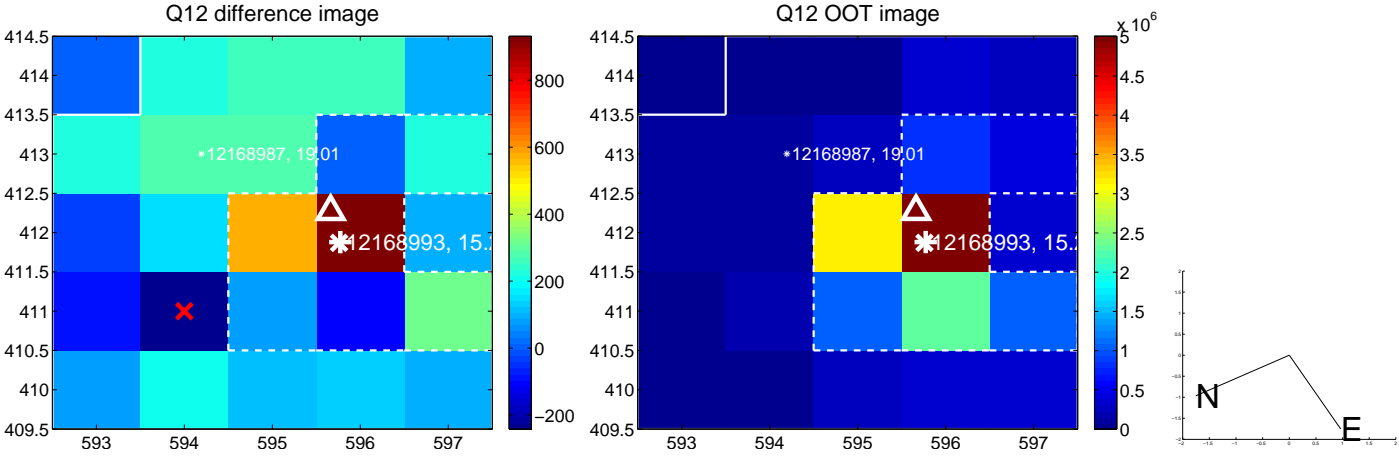
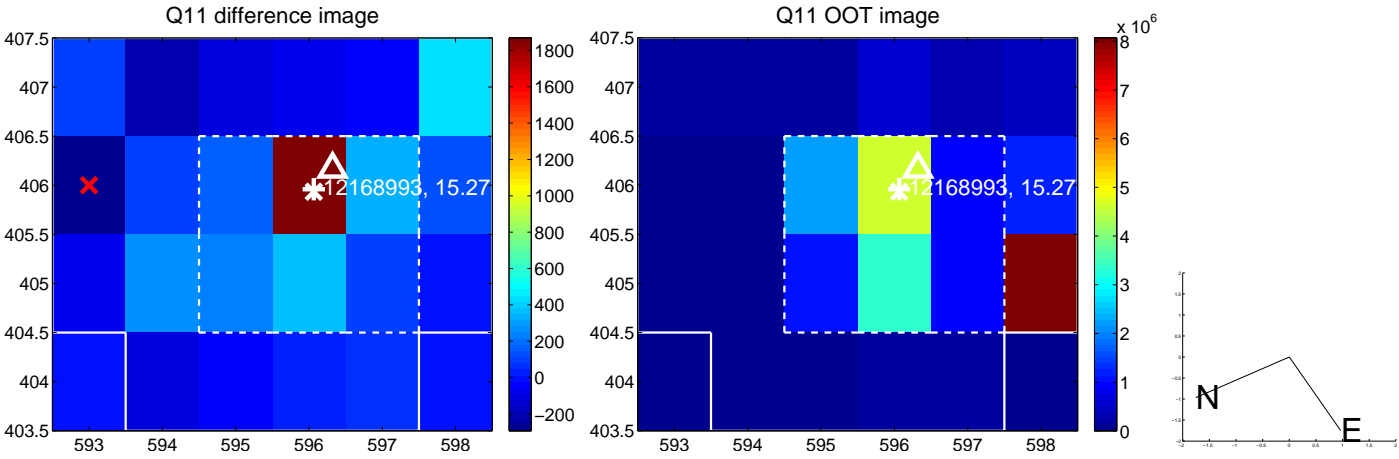
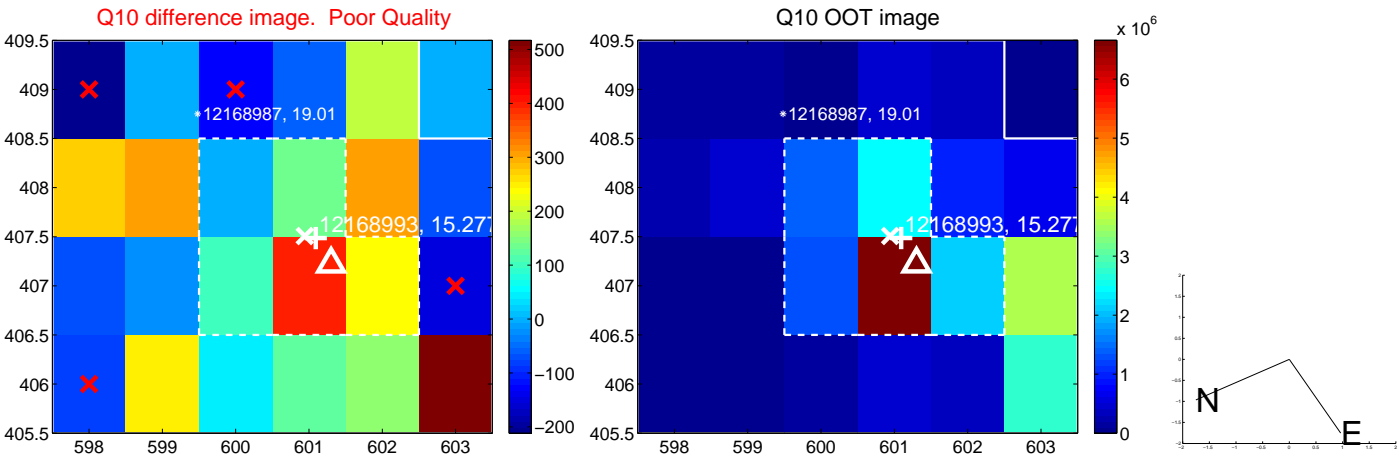
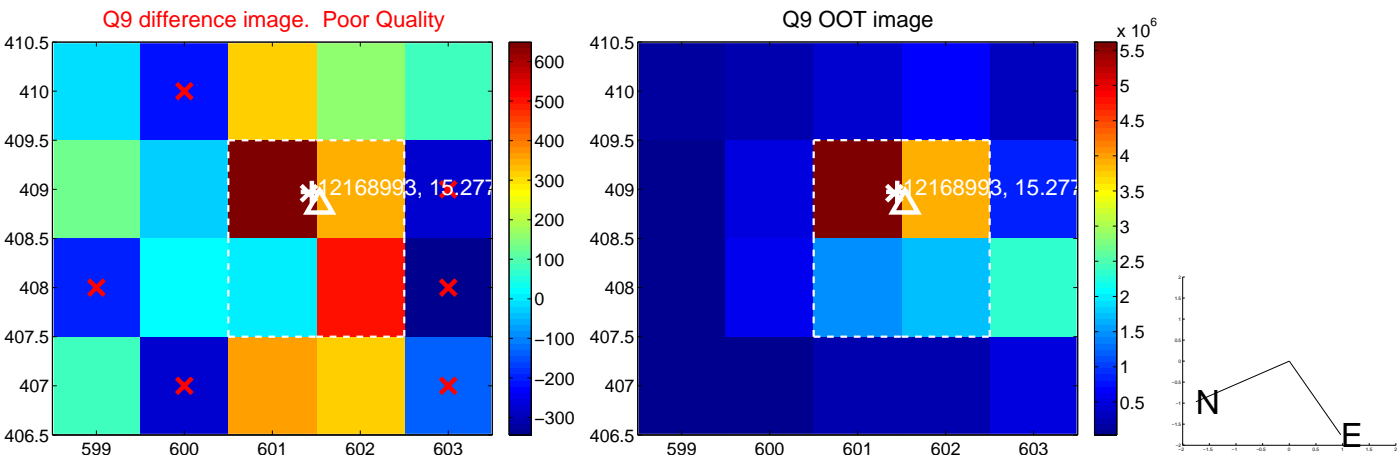
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



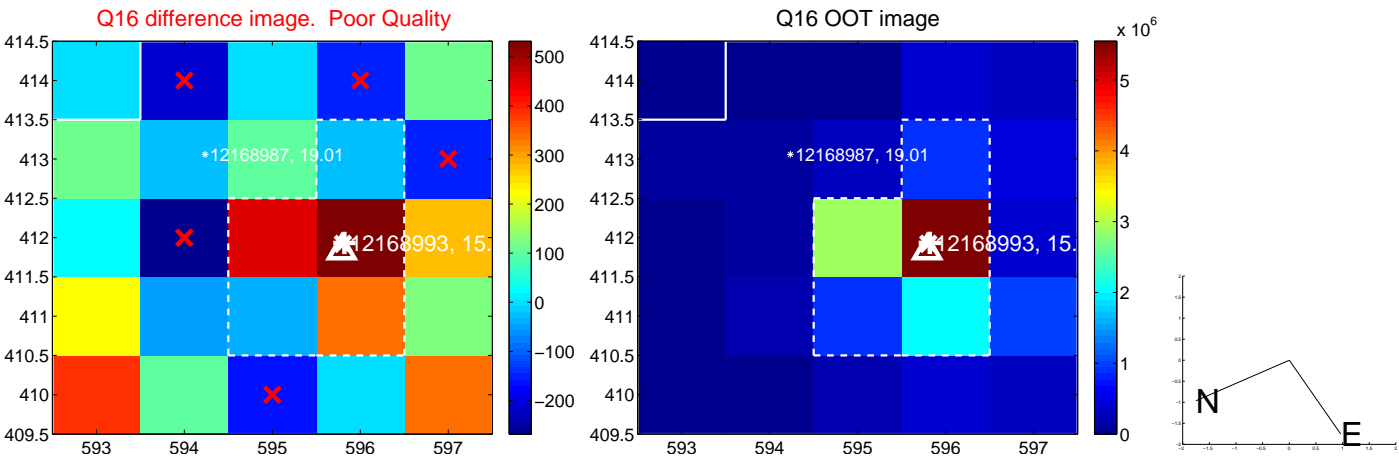
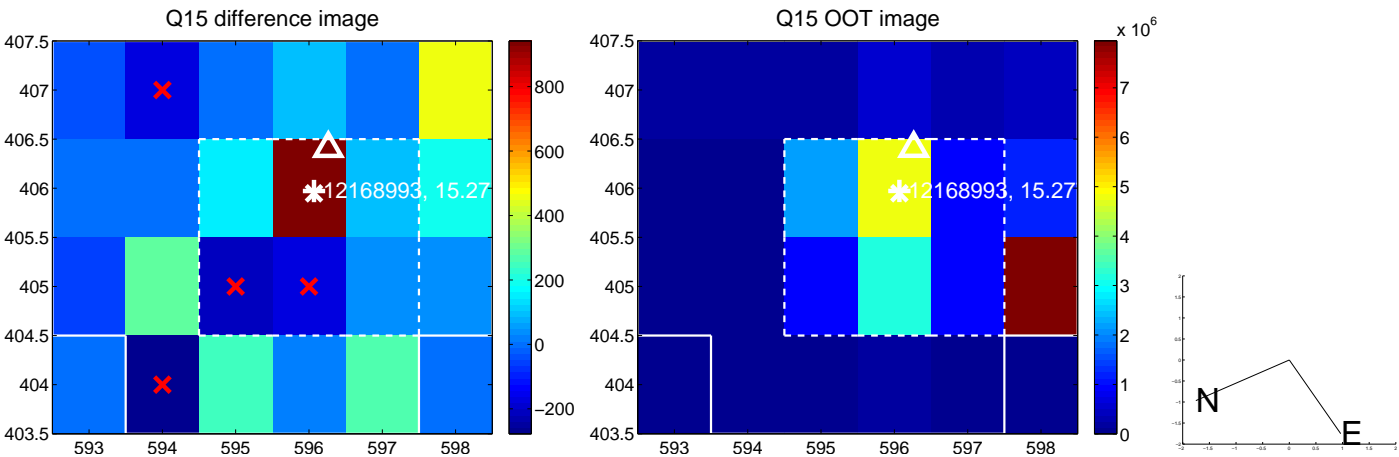
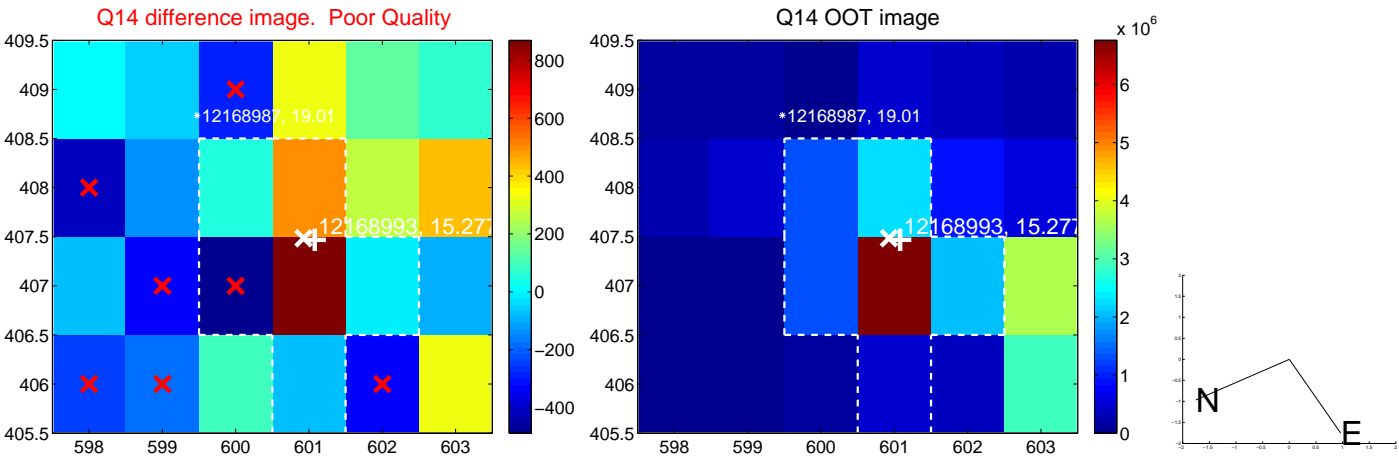
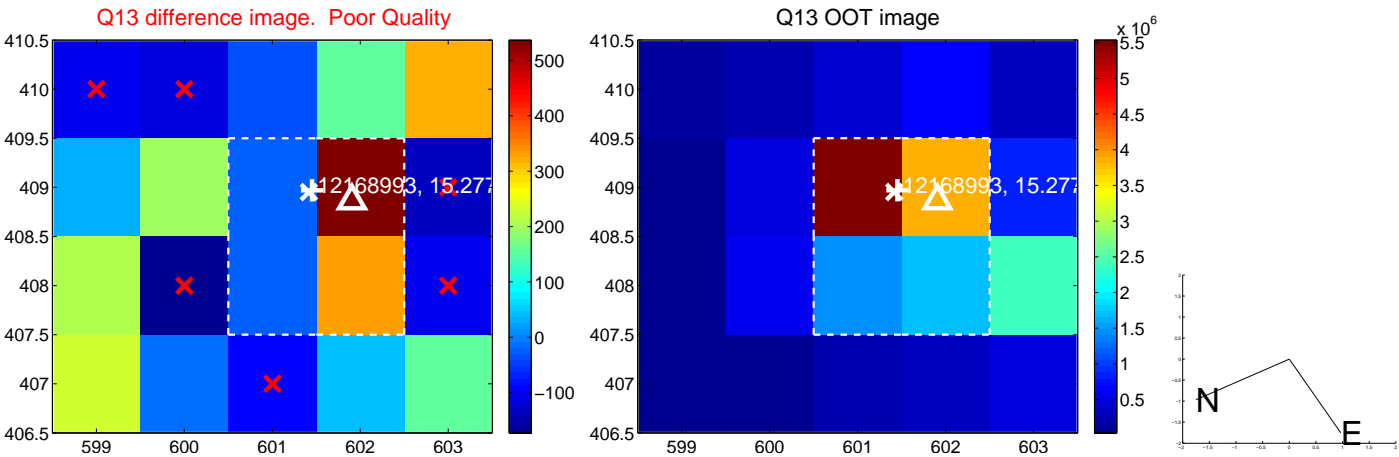
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



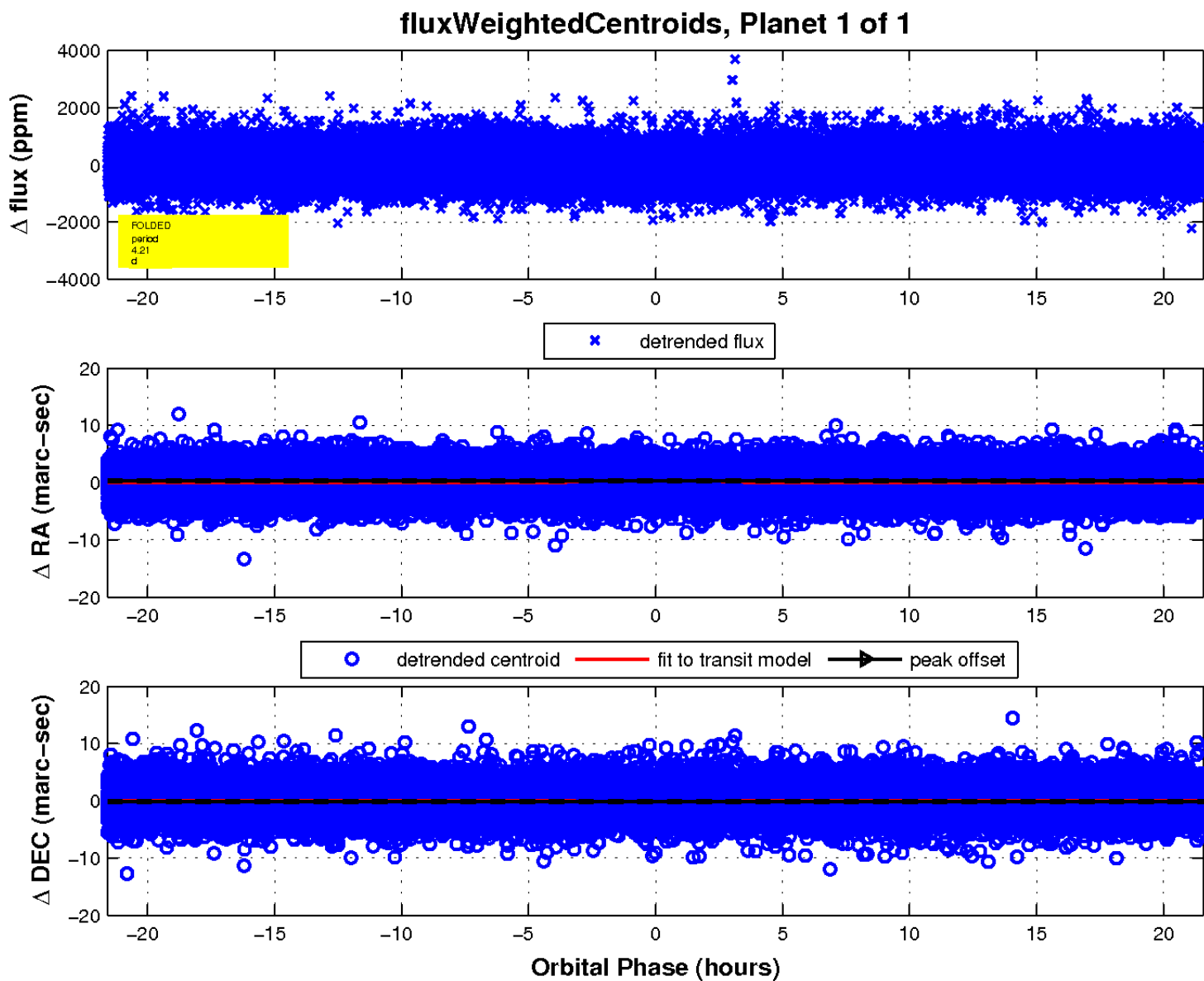
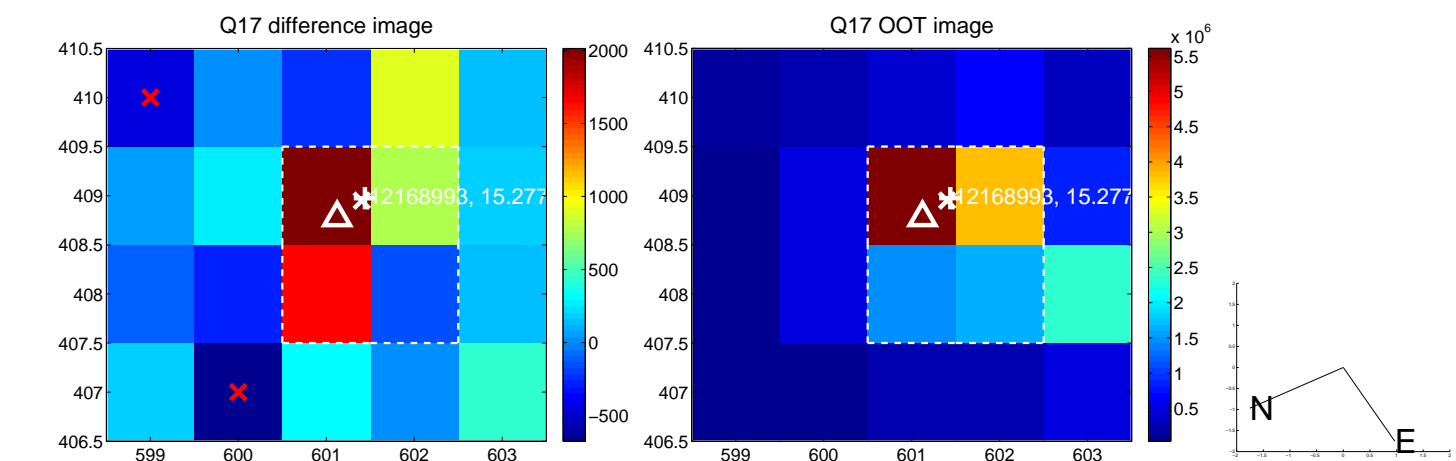
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

