

KIC 010156110

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})
010156110-01	OBS	7989.01	4.856016	135.988626	77.3	3.459	7.2	8.0	1.19	6469	1.24	607.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010156110-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

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.

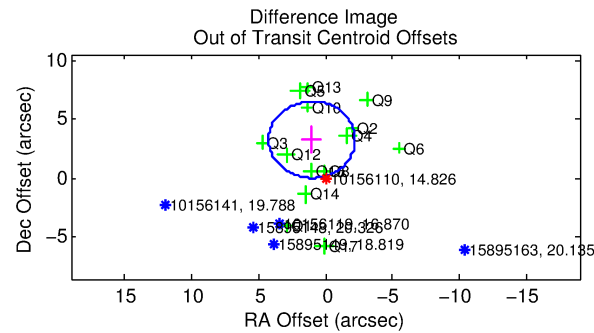
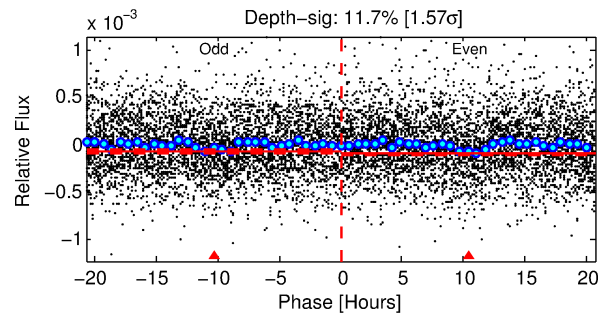
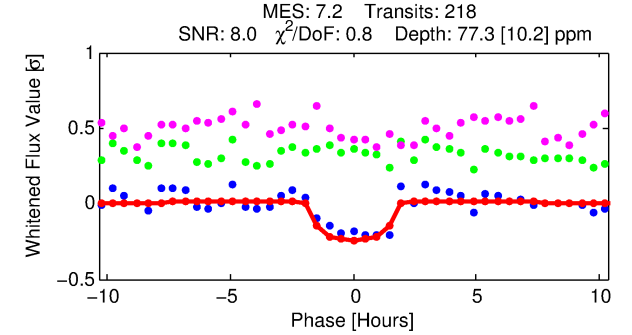
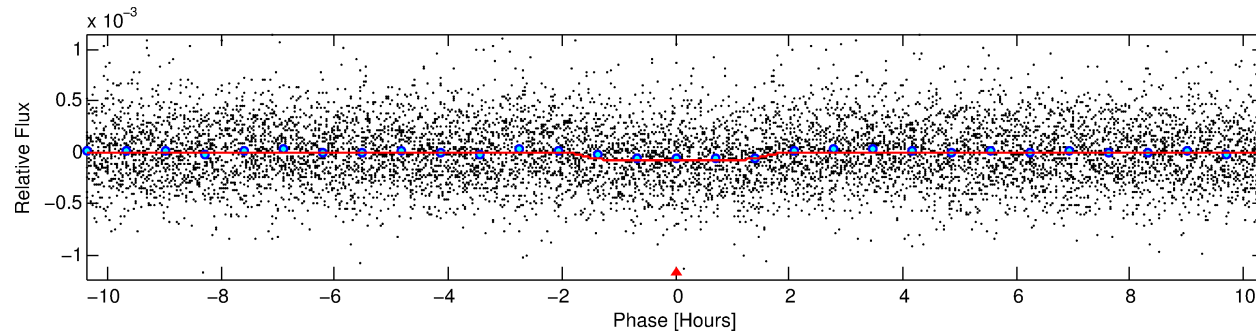
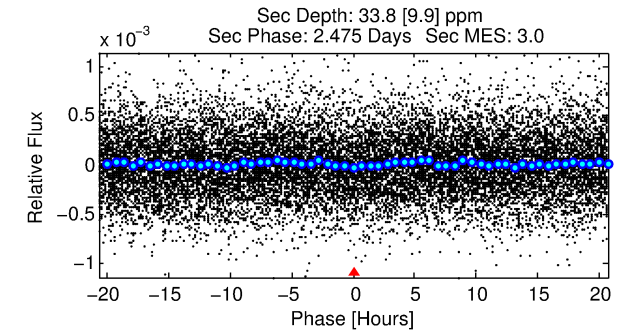
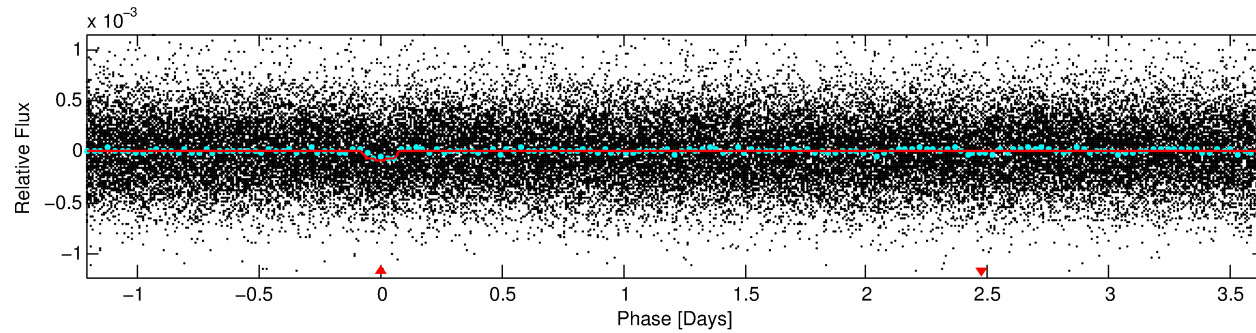
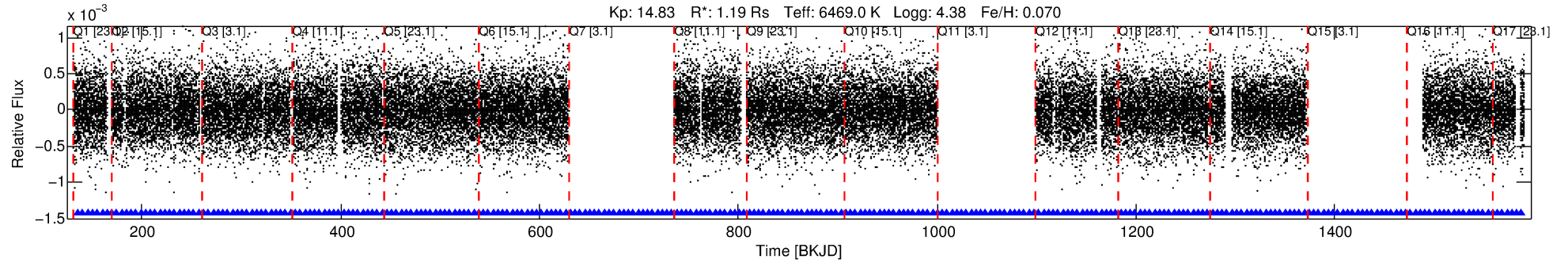
Ephemeris Match Information For 010156110-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
010156110-01	10156110	010156064-pri	10156064	1:1	100.6	-2	9	10.37	14.83	1641.60	Direct-PRF	0	0.83	1.53

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 10156110 Candidate: 1 of 1 Period: 4.856 d



DV Fit Results:

Period = 4.85602 [0.00005] d
Epoch = 135.9886 [0.0069] BKJD
Rp/R* = 0.0095 [0.0055]
a/R* = 4.88 [15.17]
b = 0.91 [0.65]
Seff = 607.62 [259.07]
Teff = 1266 [135] K
Rp = 1.23 [0.83] Re
a = 0.0606 [0.0171] AU
Ag = 44.88 [56.40] [0.78σ]
Teffp = 5066 [1518] K [2.49σ]

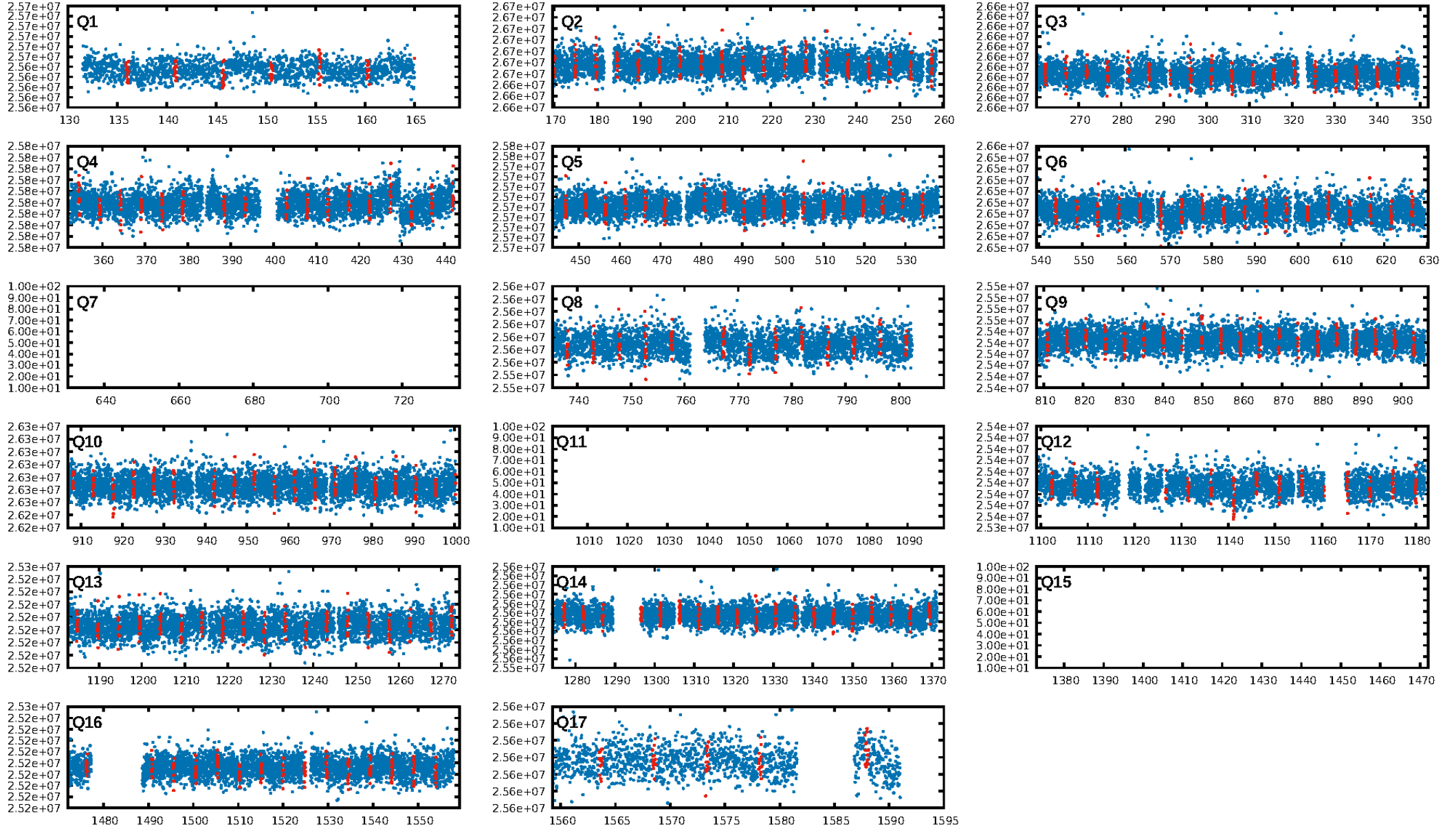
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.87e-13
RollingBand-fgt: 1.00 [207/207]
GhostDiagnostic-chr: 0.1483
Centroid-sig: 0.0%
Centroid-so: 9.345 arcsec [5.82σ]
OotOffset-rm: 3.434 arcsec [3.18σ]
KicOffset-rm: 3.511 arcsec [3.26σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

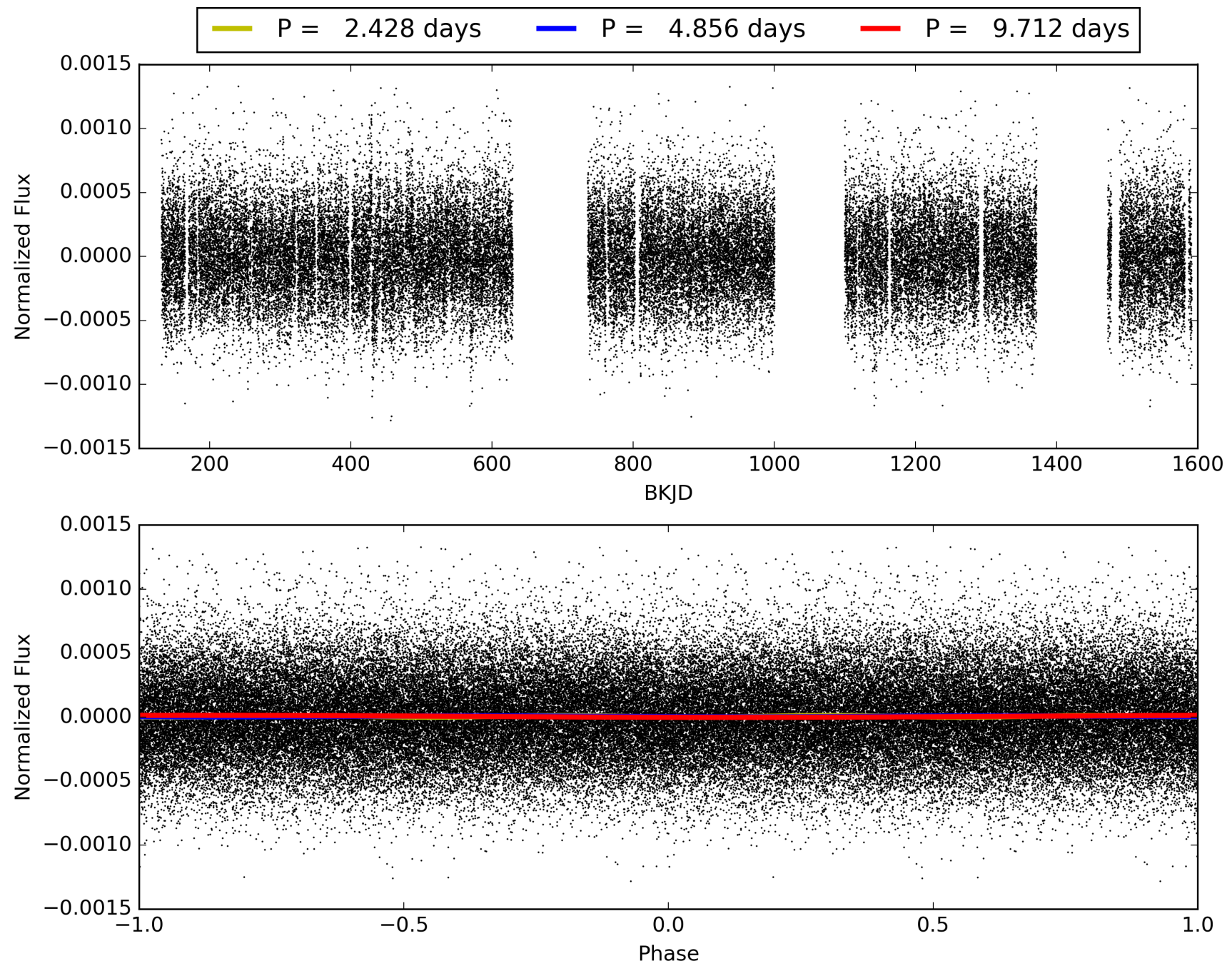
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:08:32 Z

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

TCE 010156110-01, PDC Light Curves

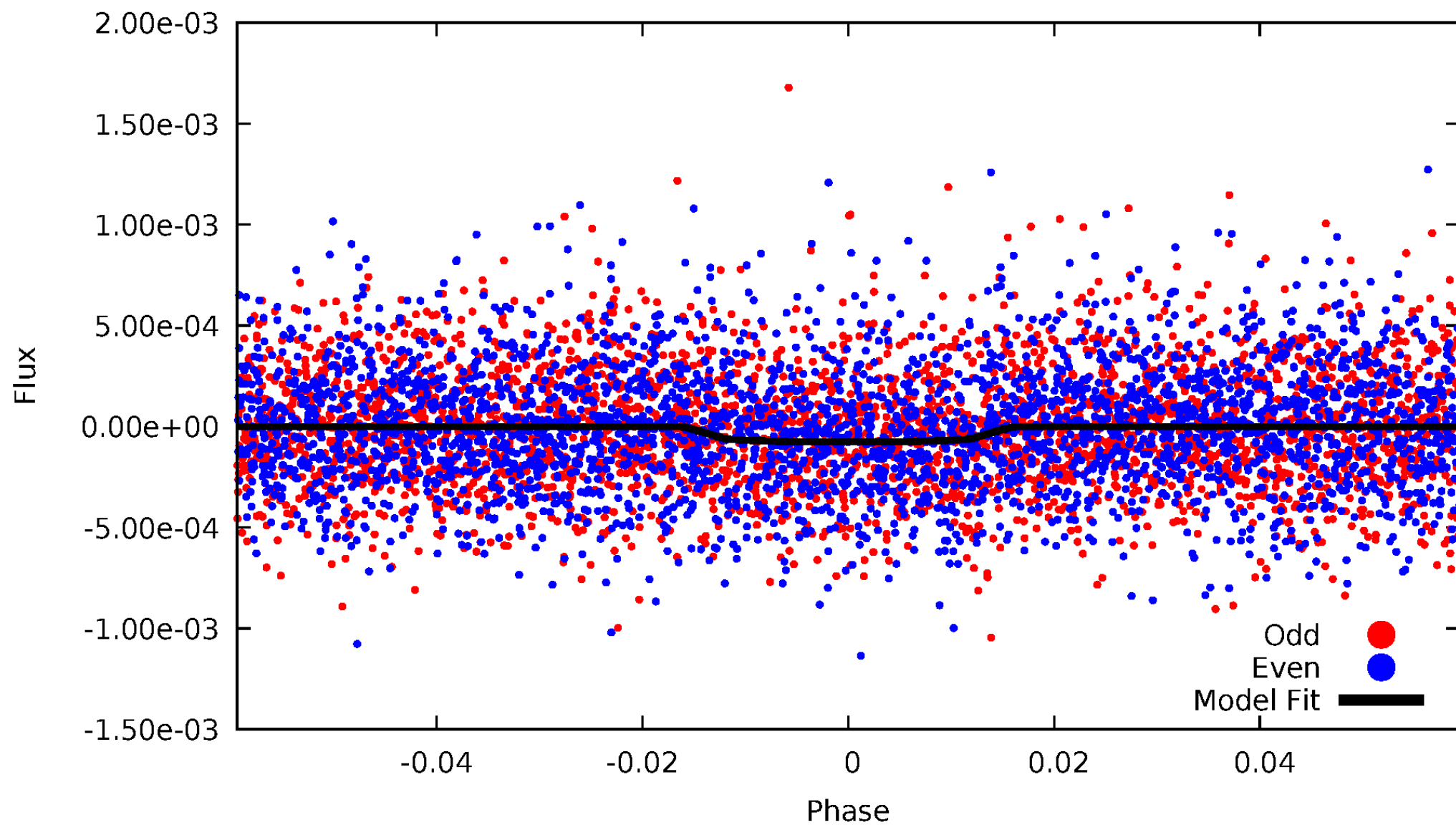


TCE 010156110-01



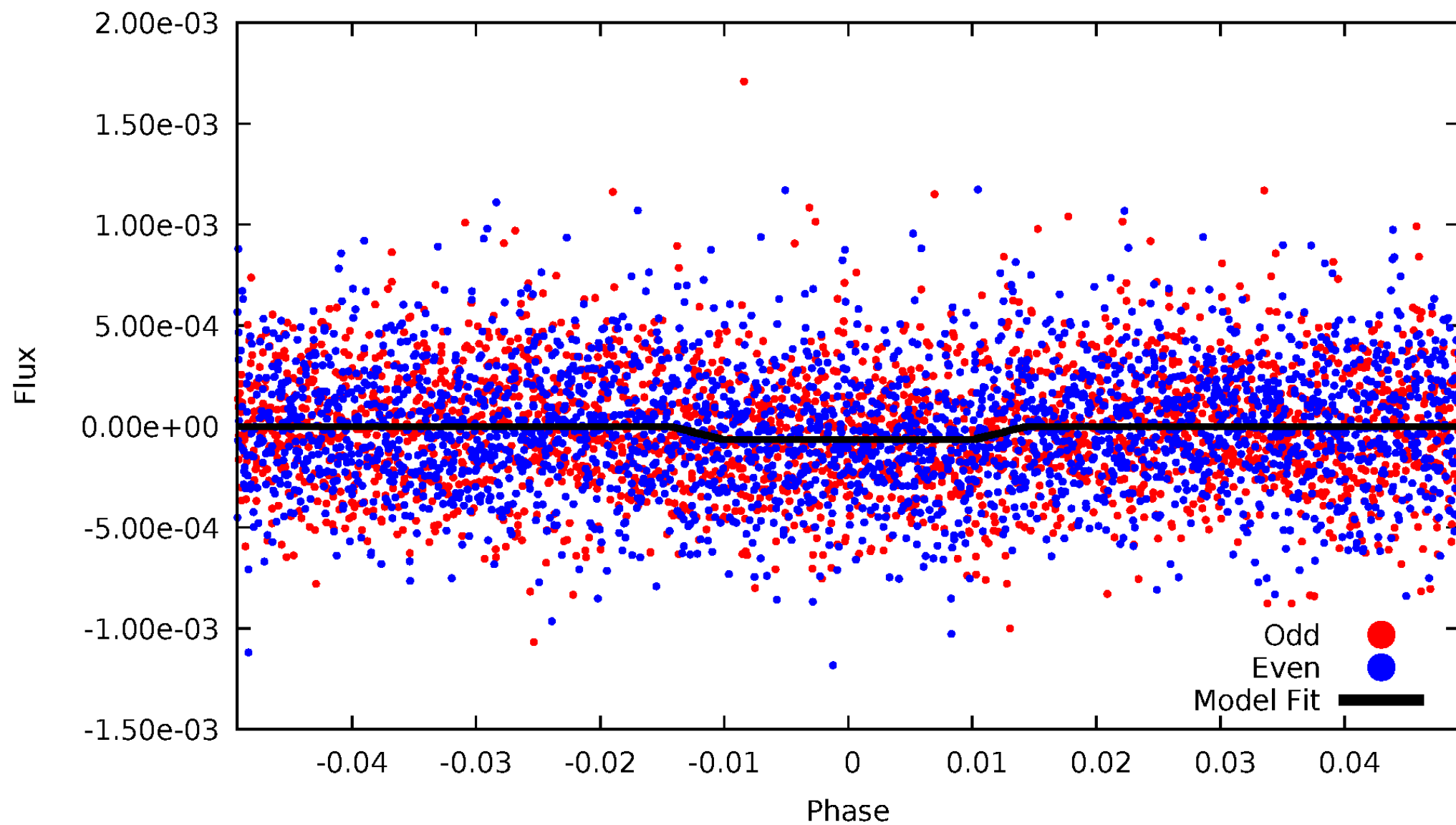
DV Odd/Even

TCE 010156110-01

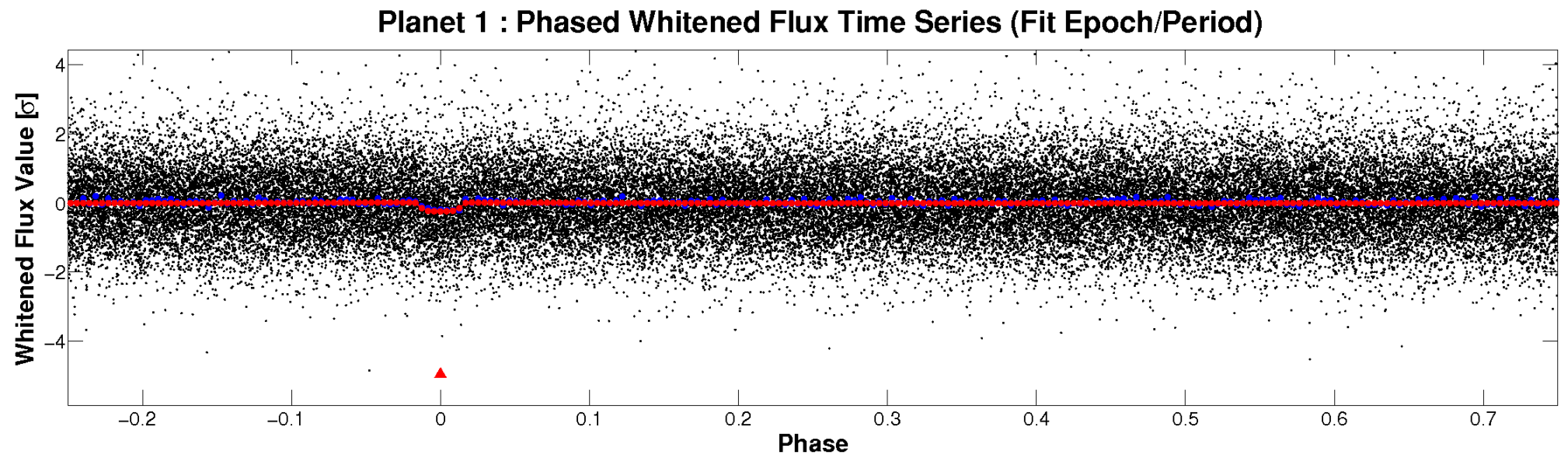
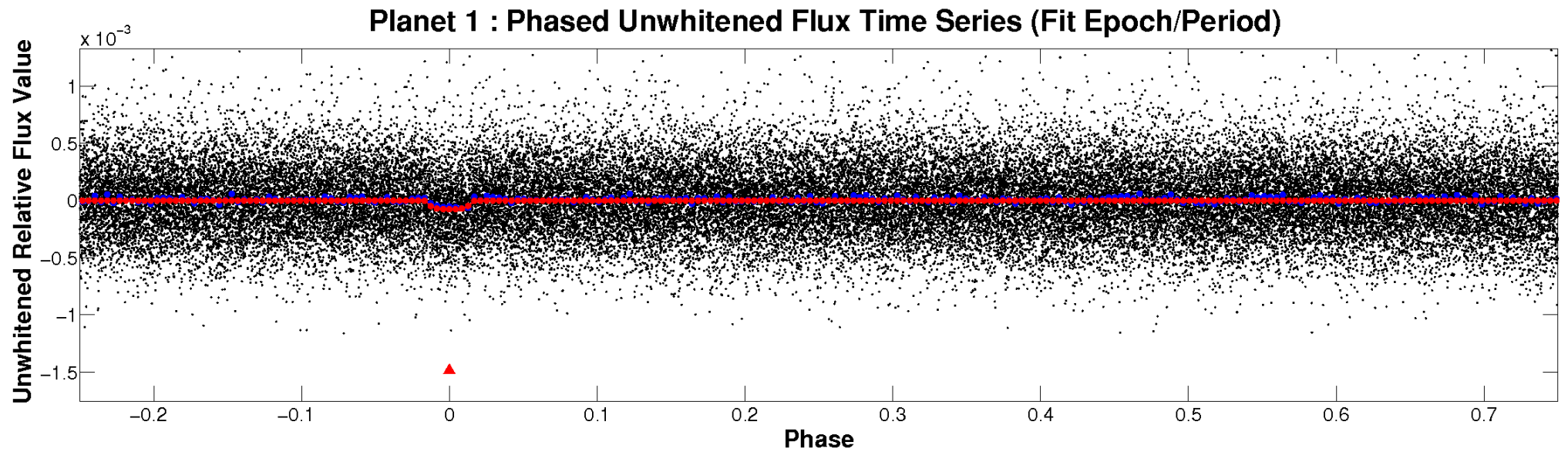


ALT Odd/Even

TCE 010156110-01

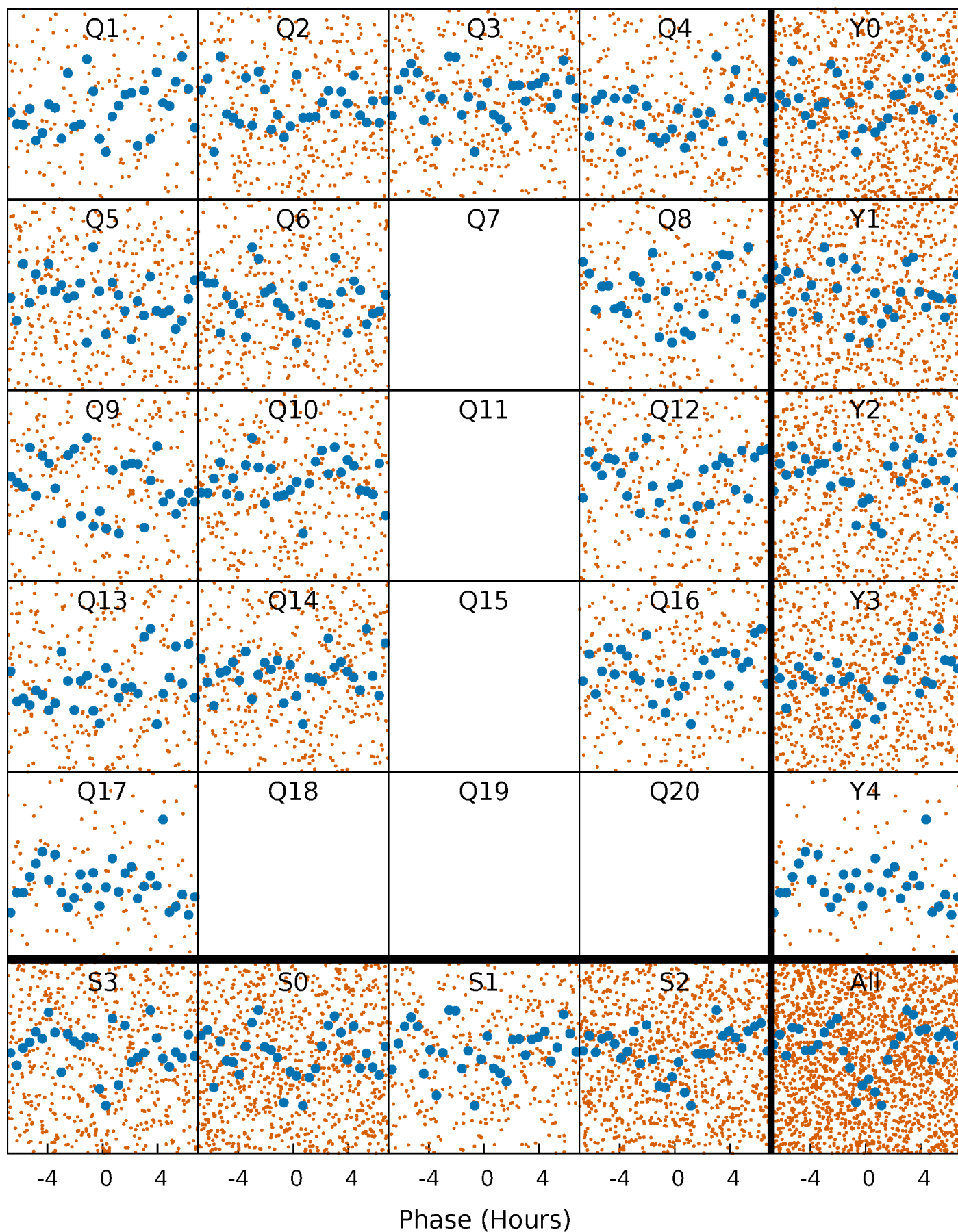


Non-Whitened Vs. Whitened Light Curve



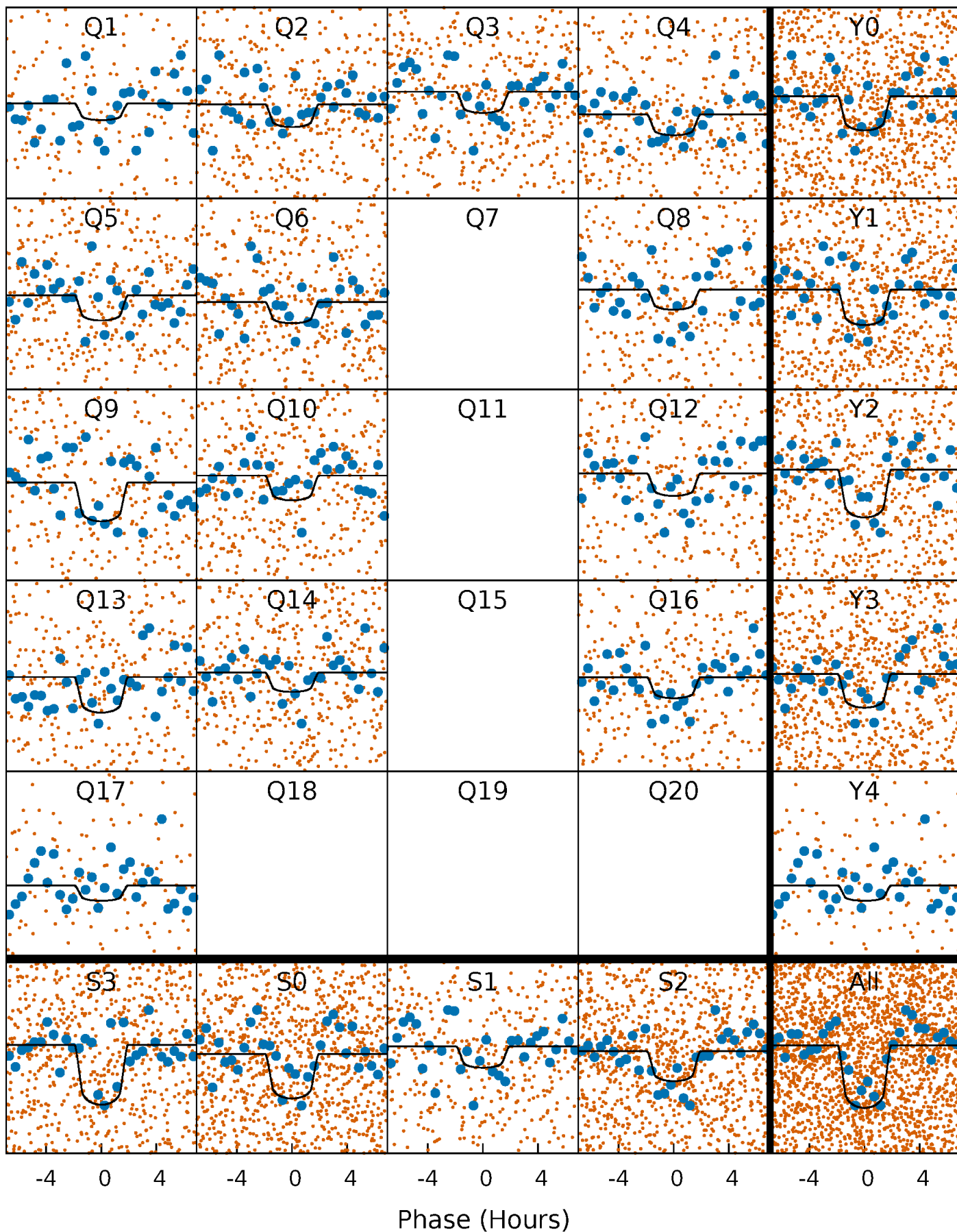
PDC Quarter-Phased Transit Curves

TCE 010156110-01 P= 4.856016 Days $T_0=135.988626$ (BKJD)



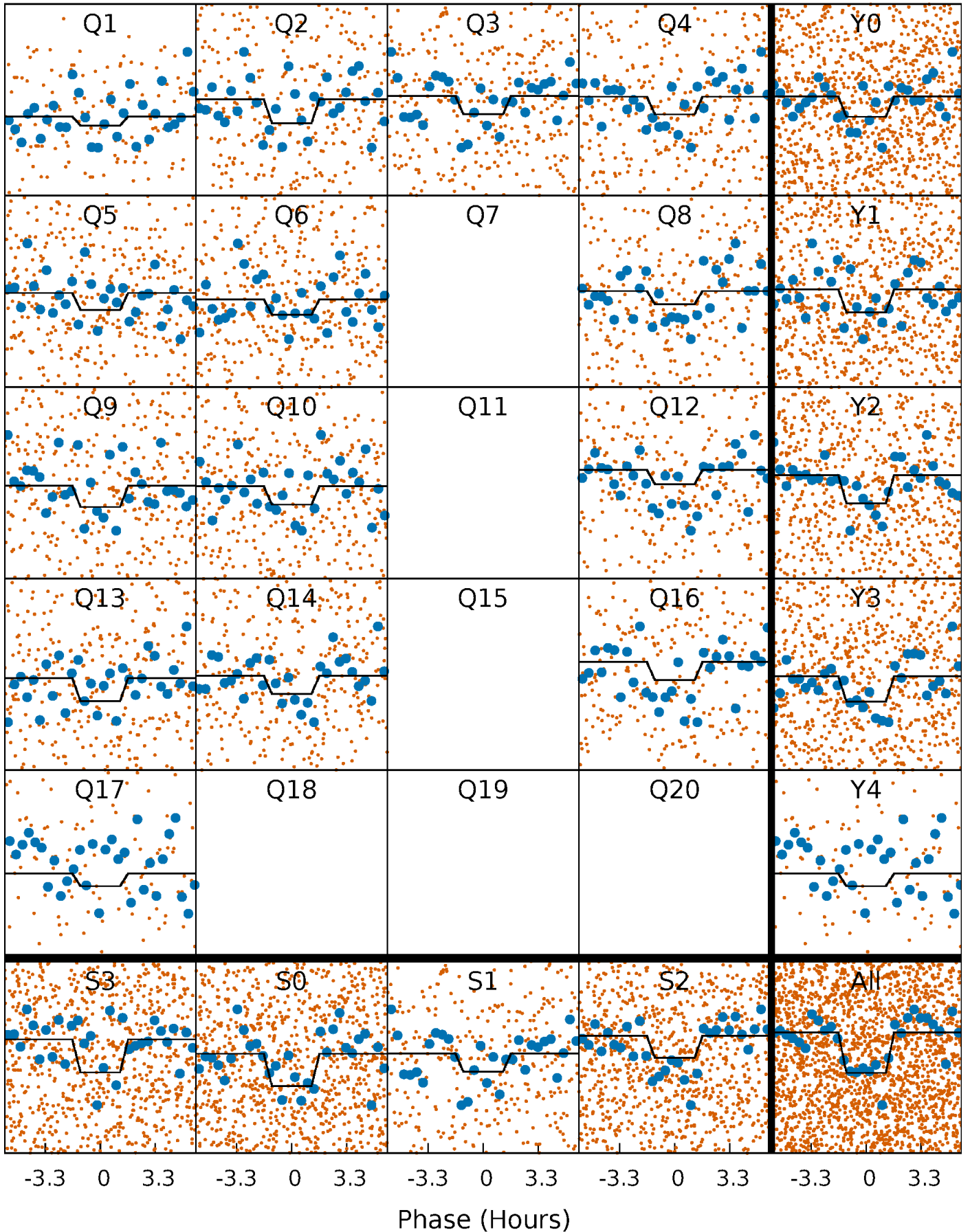
DV Quarter-Phased Transit Curves

TCE 010156110-01 P= 4.856016 Days $T_0=135.988626$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

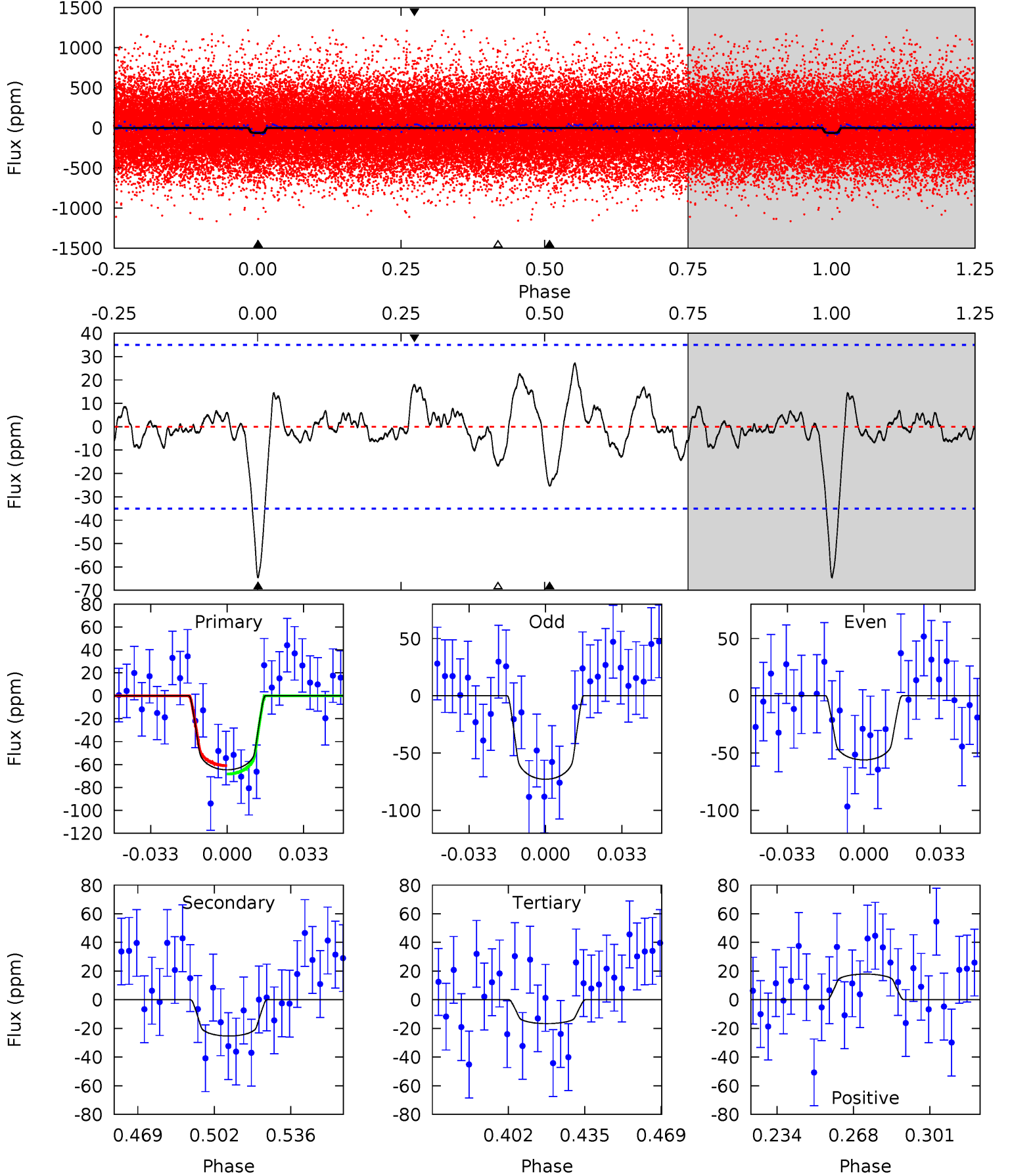
TCE 010156110-01 P= 4.855953 Days $T_0=136.006106$ (BKJD)



DV Model-Shift Uniqueness Test

010156110-01, P = 4.856016 Days, E = 131.132610 Days

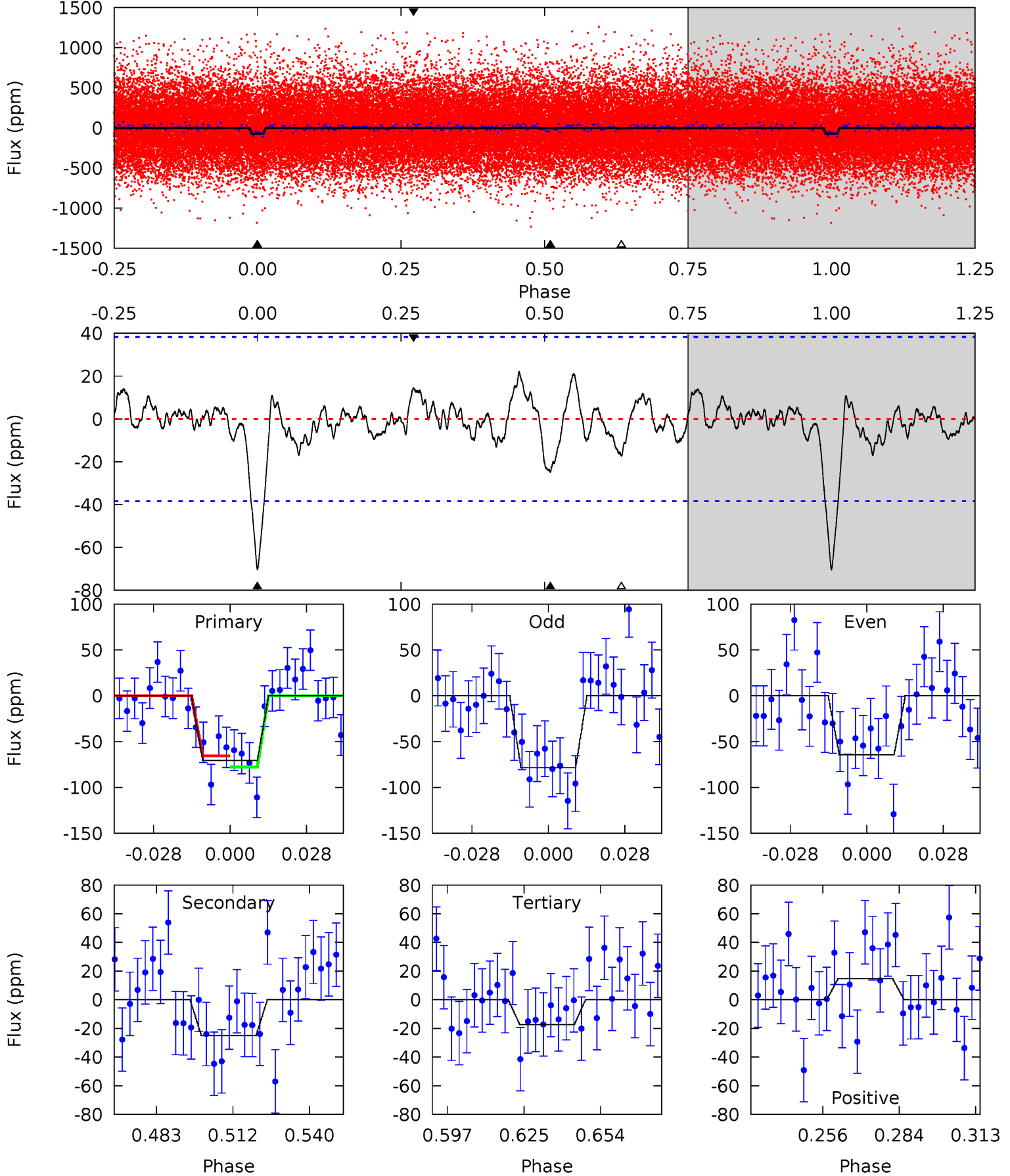
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.83	3.46	2.27	2.45	4.79	2.13	1.07	6.56	6.39	1.19	1.01	1.16	0.94	0.30	0.50



Alt Model-Shift Uniqueness Test

010156110-01, P = 4.855953 Days, E = 131.150153 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.87	3.15	2.17	1.85	4.82	2.19	0.92	6.70	7.02	0.97	1.30	0.89	0.84	0.24	0.76



Stellar Parameters For KIC 010156110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6469^{+158}_{-225}	$4.385^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.300}$	$1.193^{+0.410}_{-0.137}$	$1.260^{+0.171}_{-0.188}$	$1.047^{+0.306}_{-0.565}$
	+2%/-3%	+1%/-5%	+357%/-429%	+34%/-11%	+14%/-15%	+29%/-54%
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 010156110-01 / KOI 7989.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-25 ± 7	$1.33^{+0.75}_{-0.73}$	1812^{+134}_{-88}	4721^{+1943}_{-768}	26^{+94}_{-15}
Alt.	-25 ± 8	$1.19^{+0.70}_{-0.66}$	1806^{+138}_{-97}	4941^{+2430}_{-945}	34^{+133}_{-22}

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

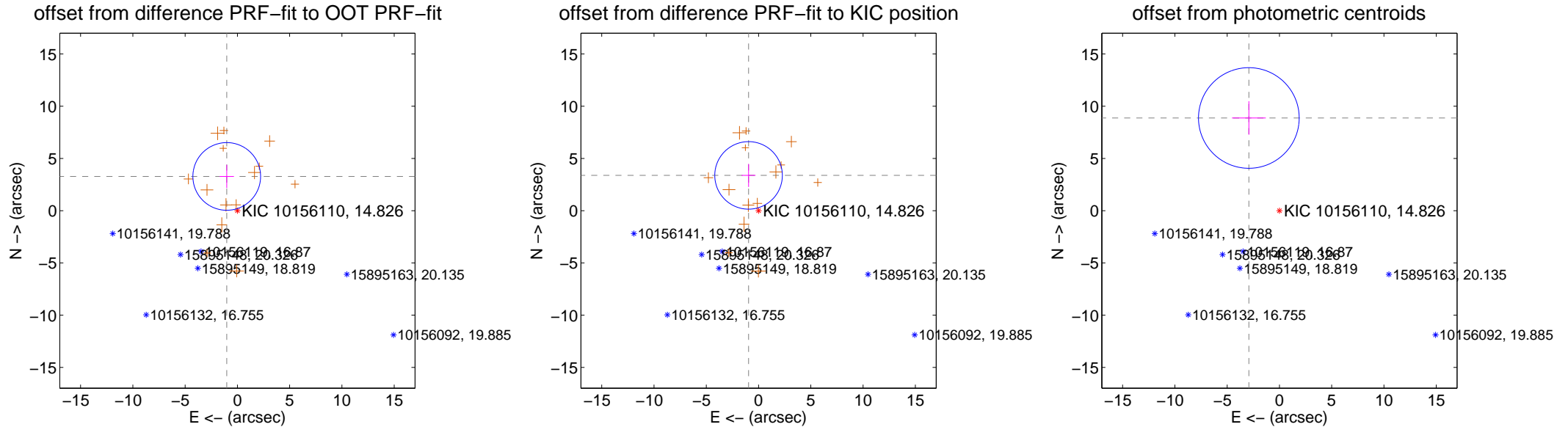
DV Centroid Data

Supplemental centroid analysis for 010156110-01. Kepler magnitude: 14.83. Transit SNR 8.02

There are 0 quarters with good PRF difference image offsets

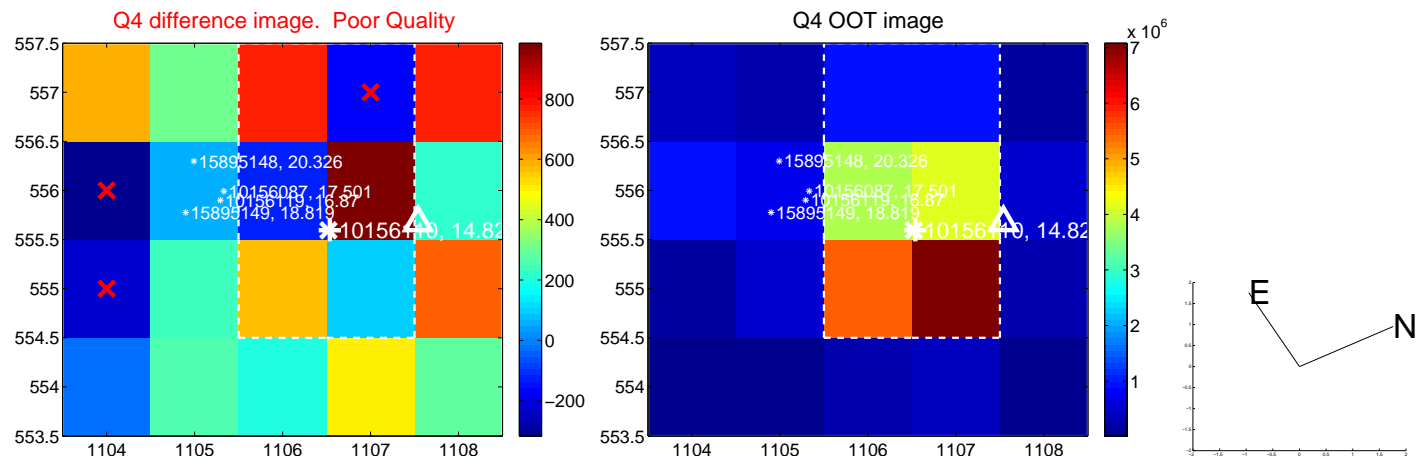
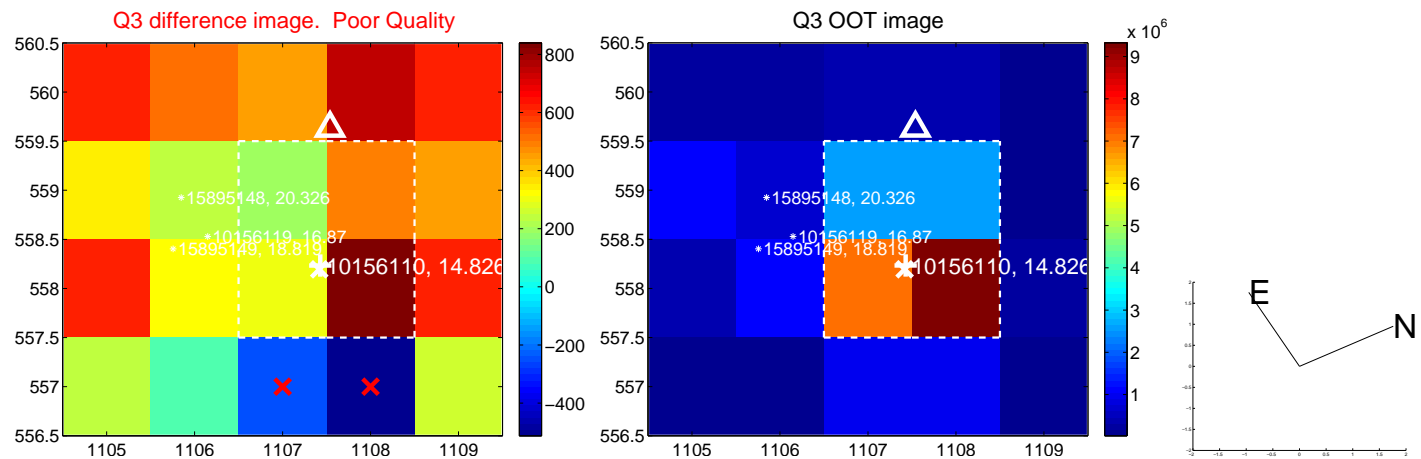
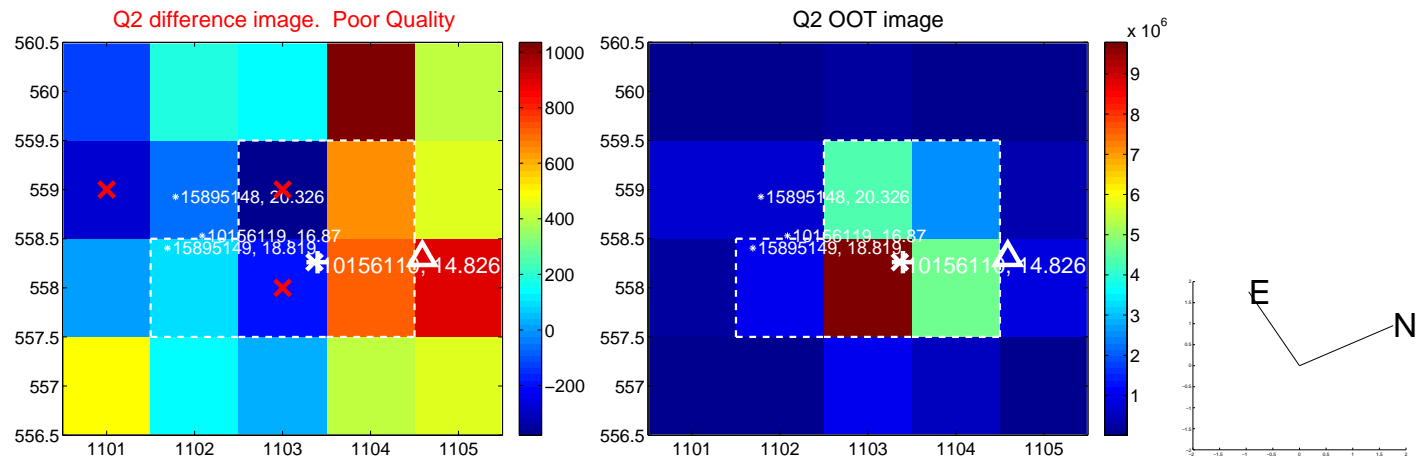
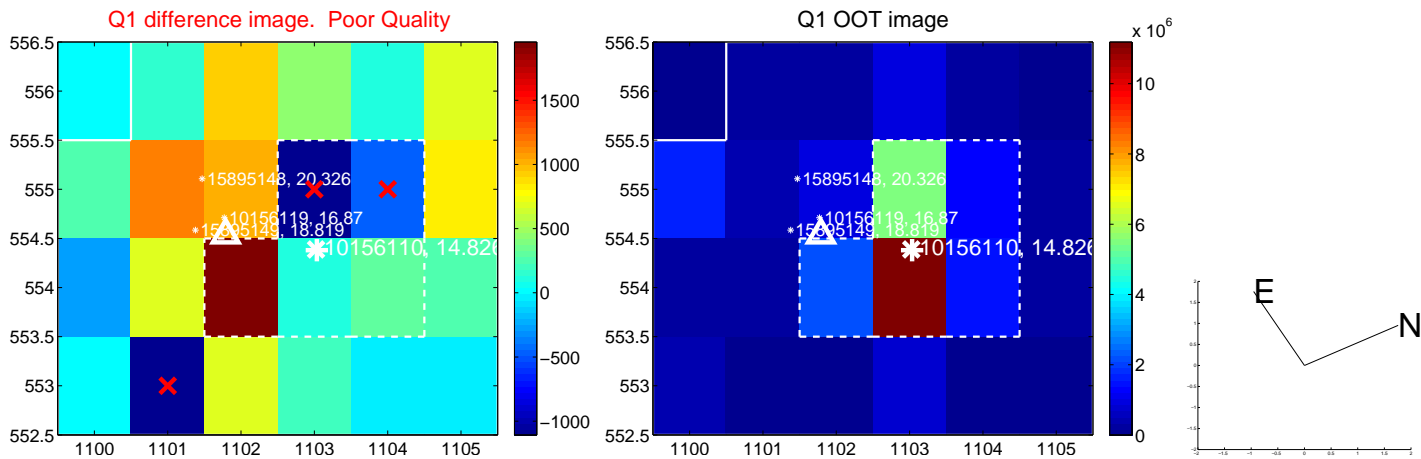
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.434 ± 1.080	3.18	1.019 ± 0.682	3.279 ± 1.111
PRF-fit source offset from KIC position	3.511 ± 1.077	3.26	0.955 ± 0.668	3.378 ± 1.104
photometric centroid source offset	9.35 ± 1.61	5.82	2.93 ± 1.62	8.88 ± 1.60

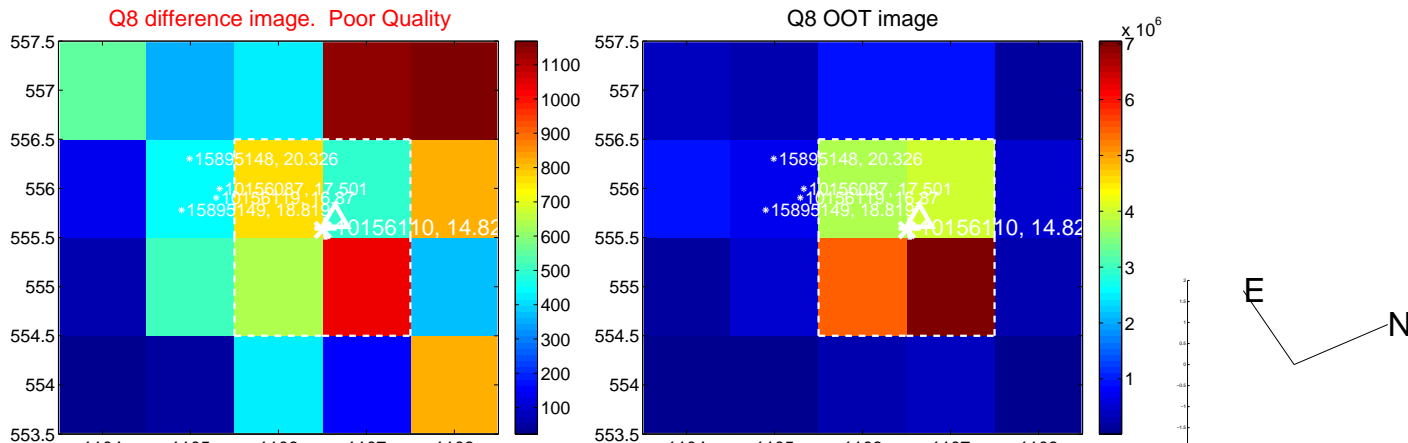
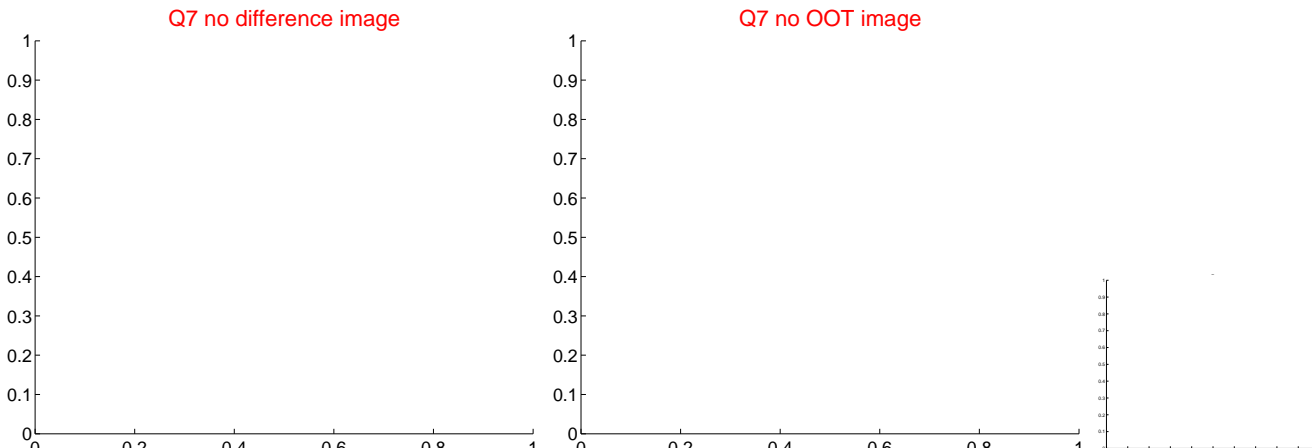
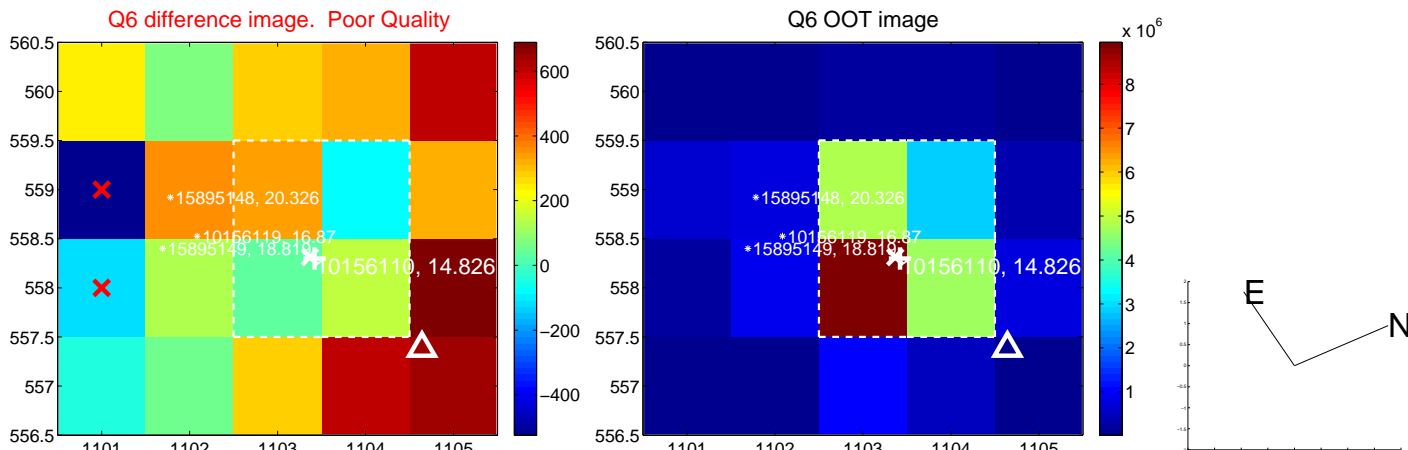
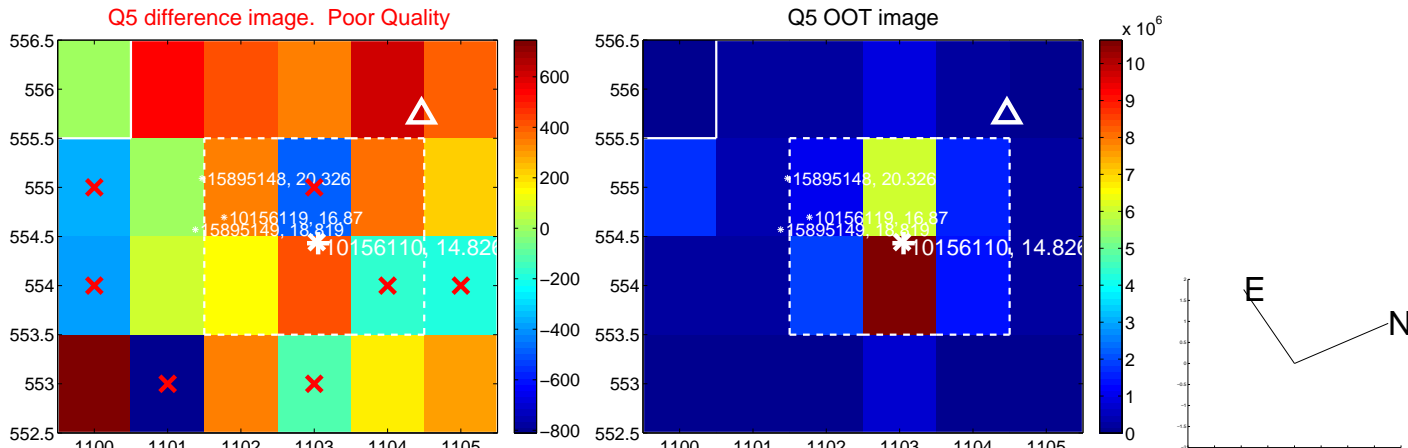


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

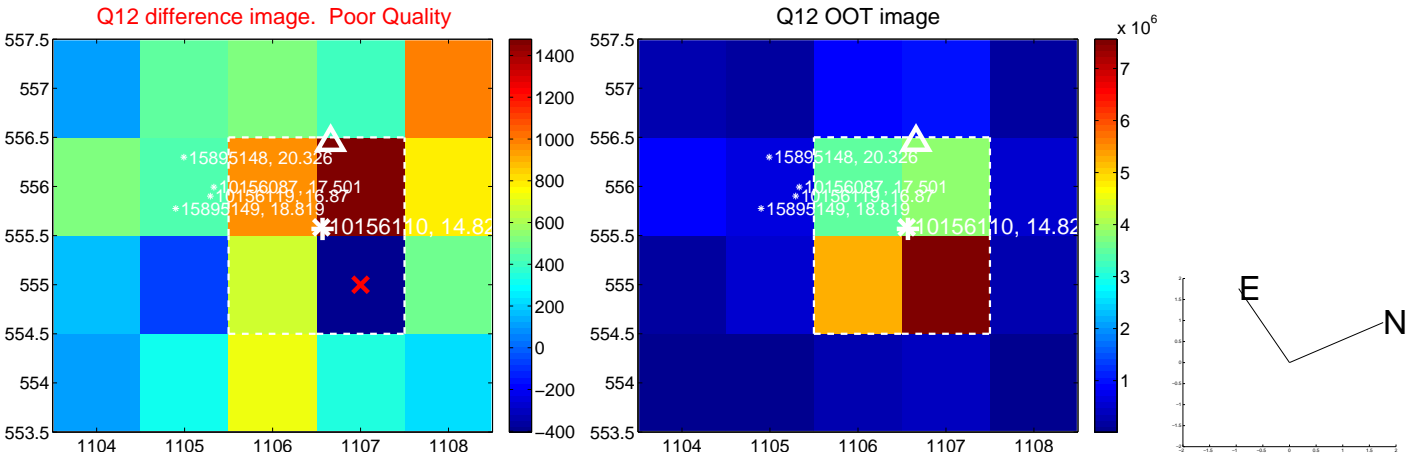
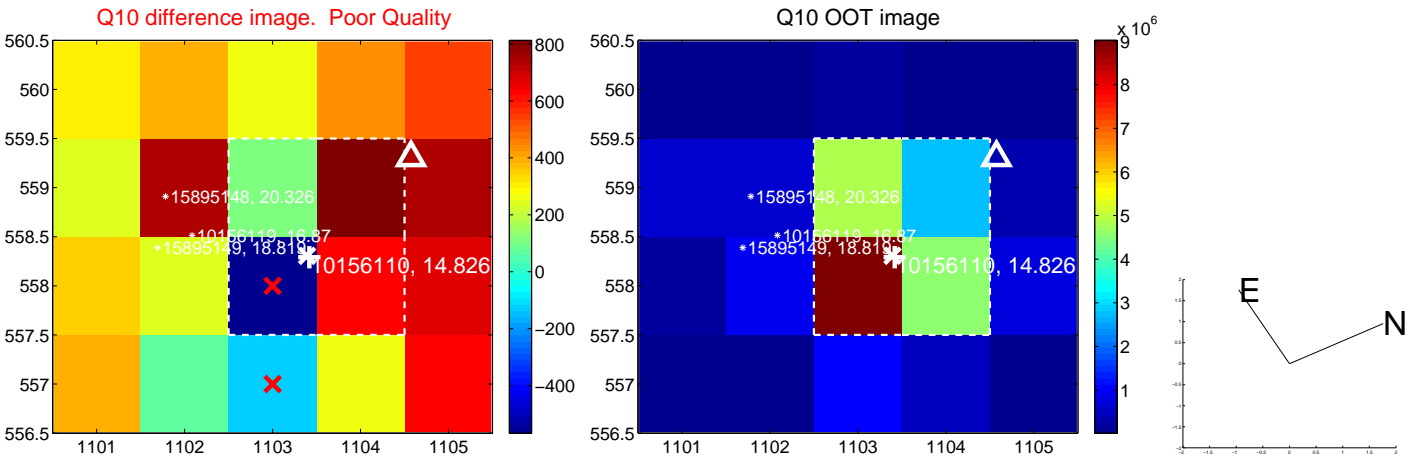
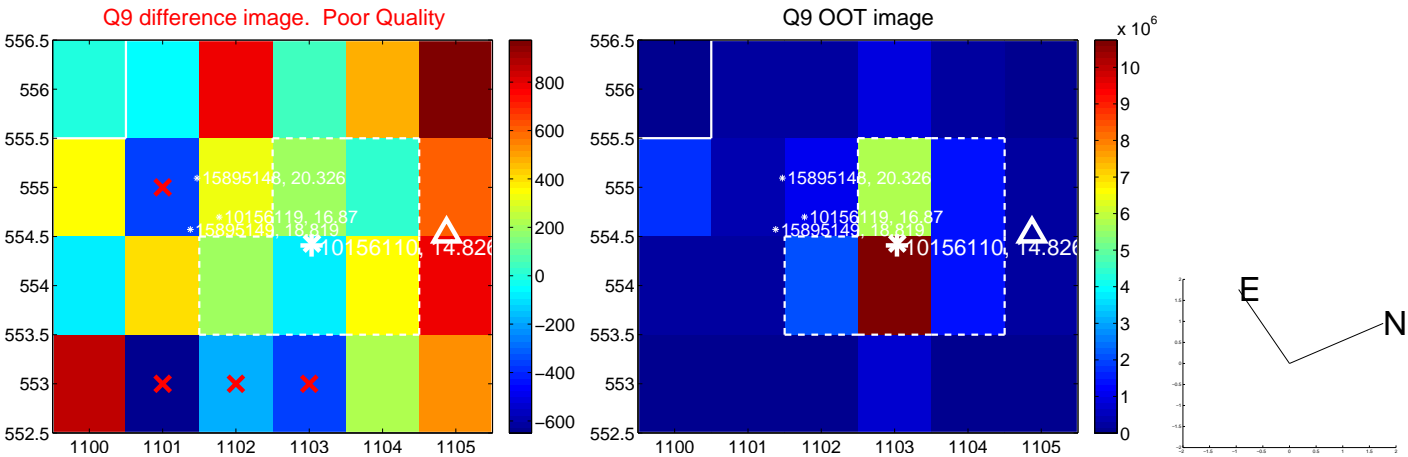
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



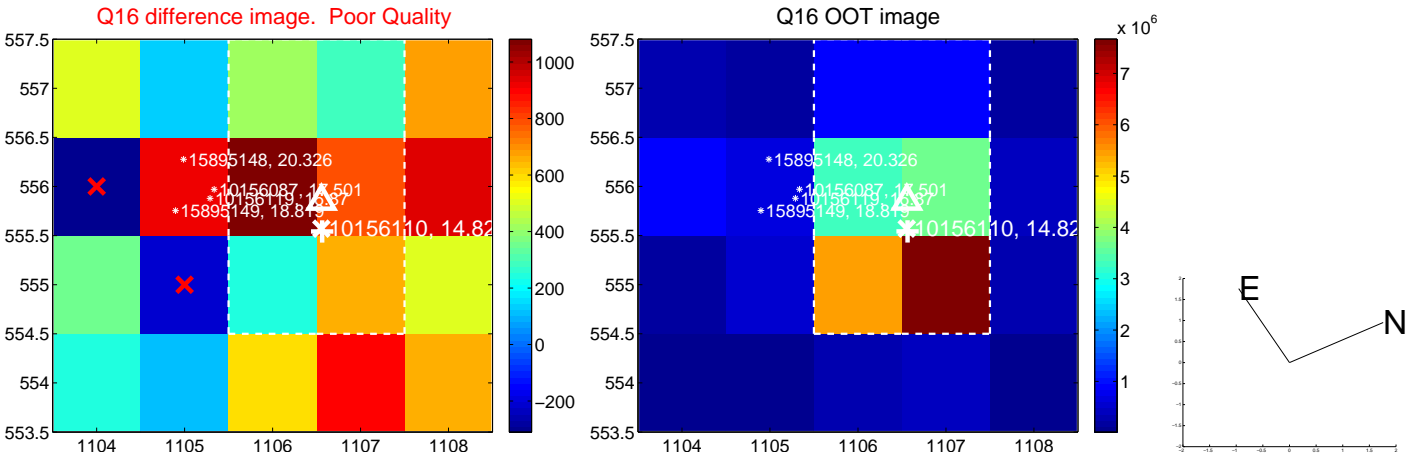
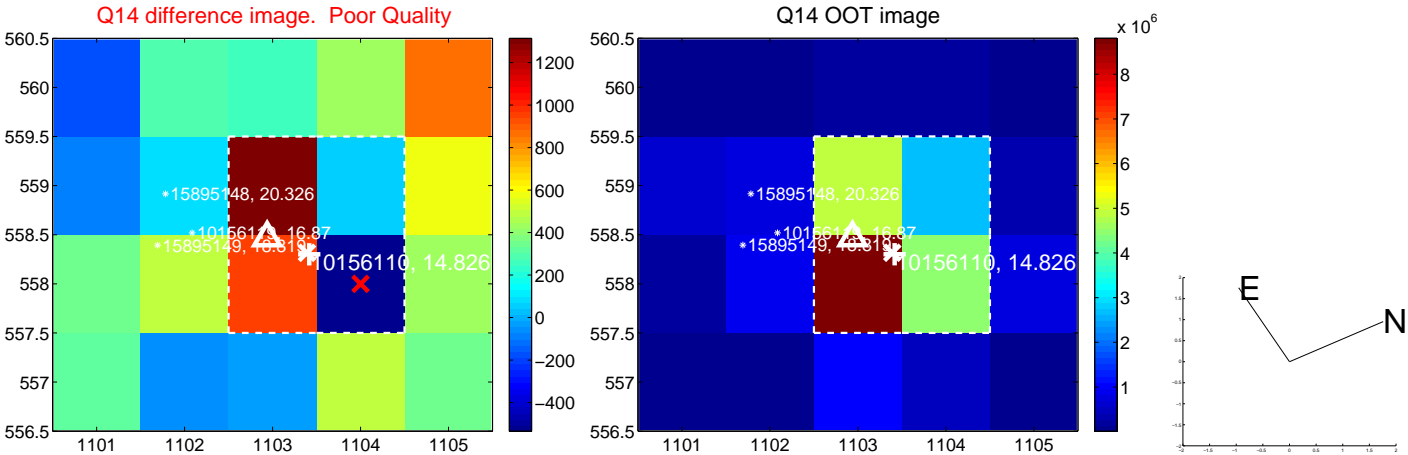
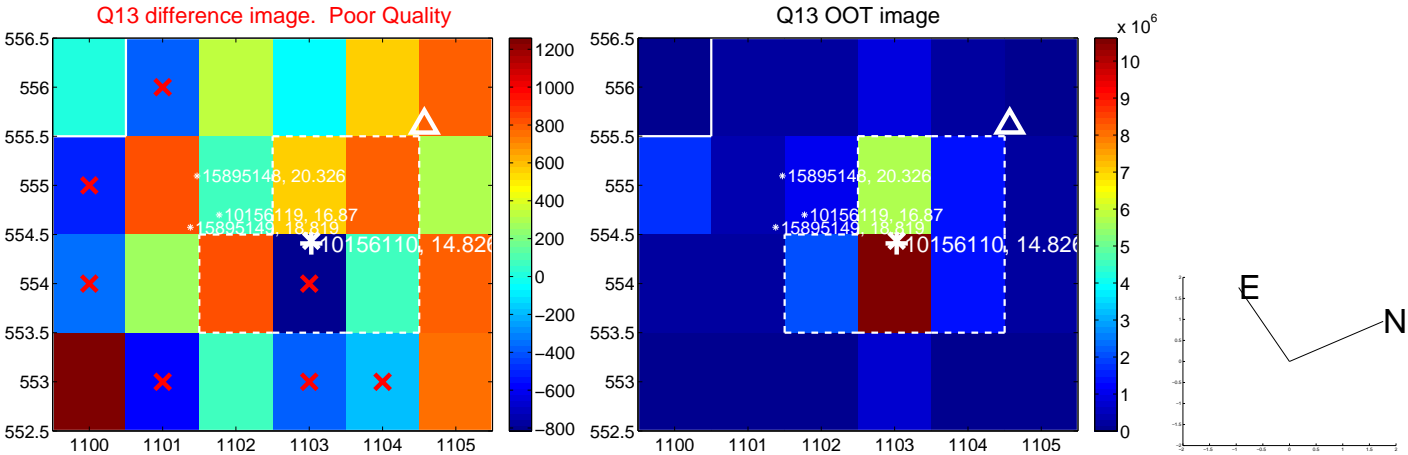
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



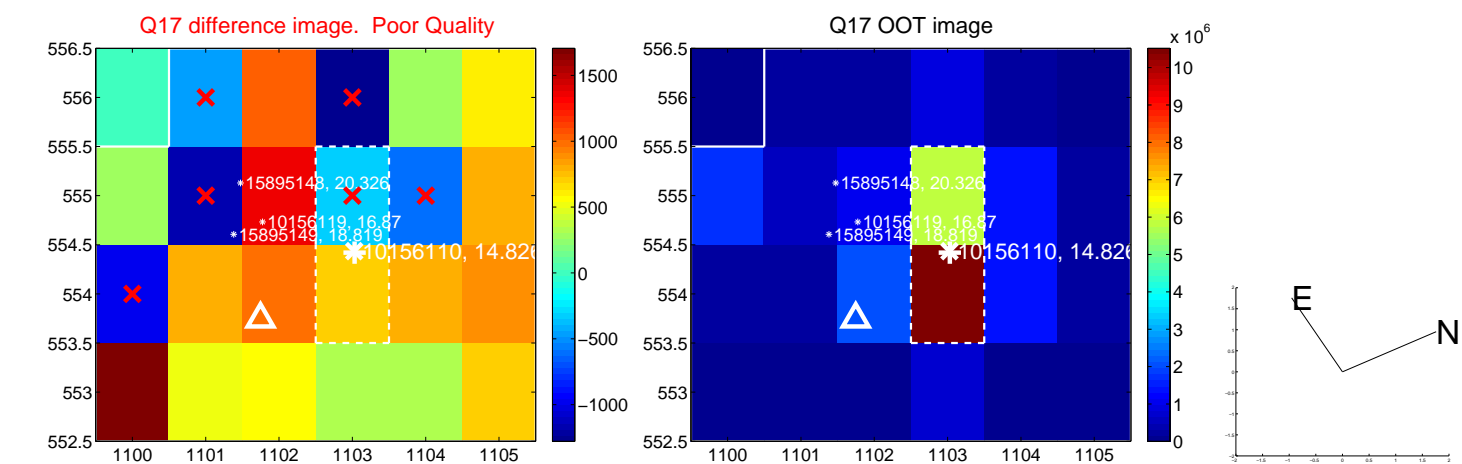
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



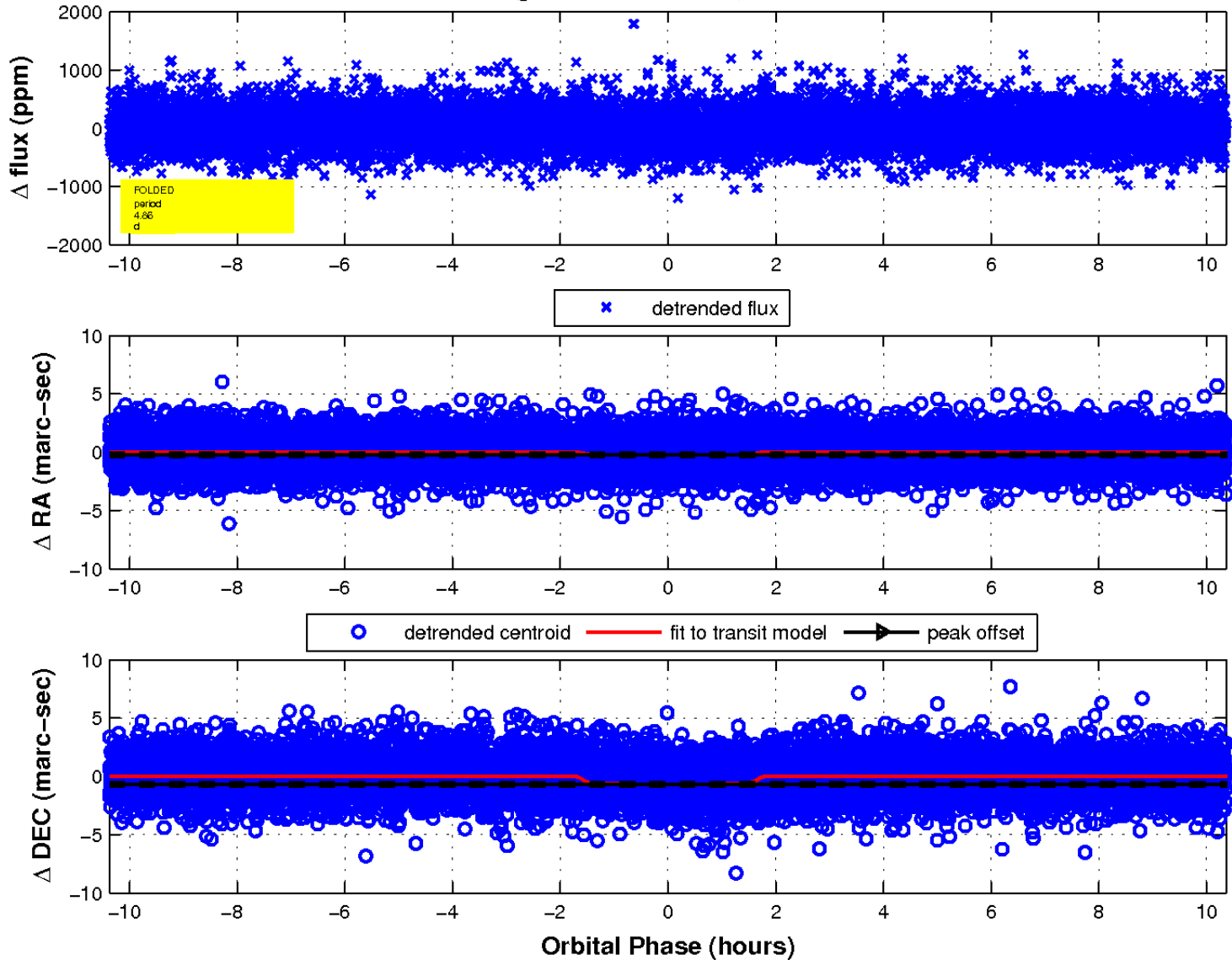
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

