

KIC 010014702

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
010014702-01	OBS	7271.01	1.340602	132.096864	58.2	3.225	10.5	10.7	0.95	6045	0.86	1879.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010014702-01	OBS	FP	0.00	0	0	0	1	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.

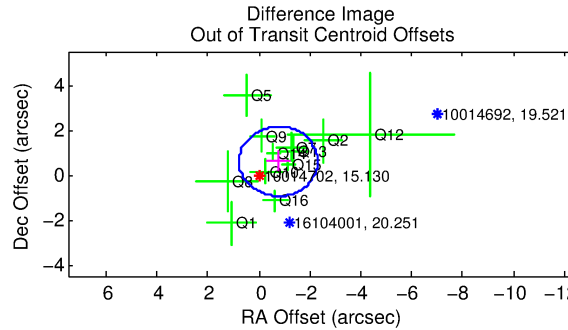
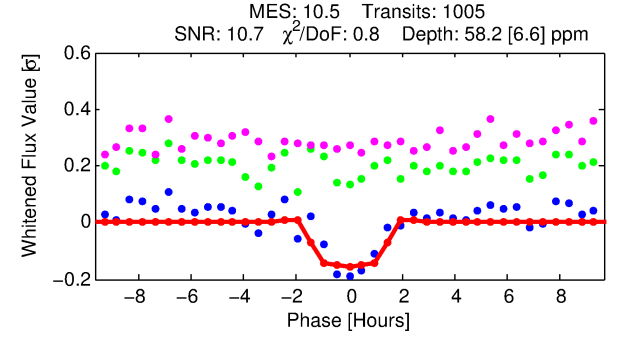
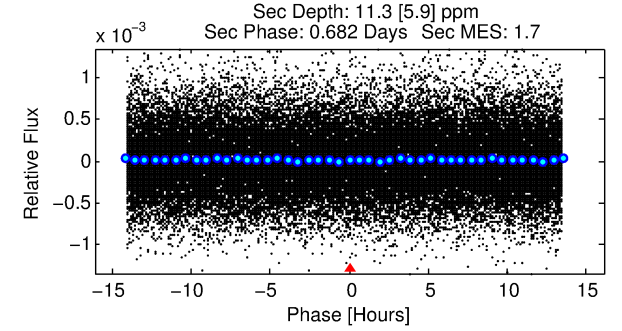
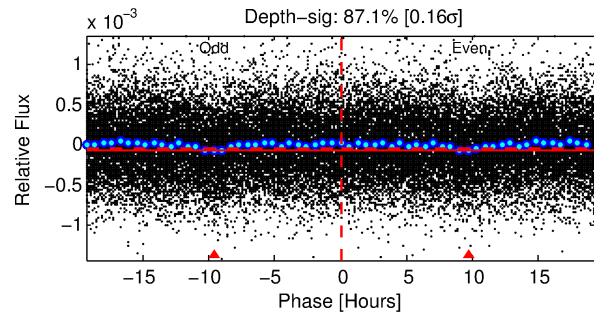
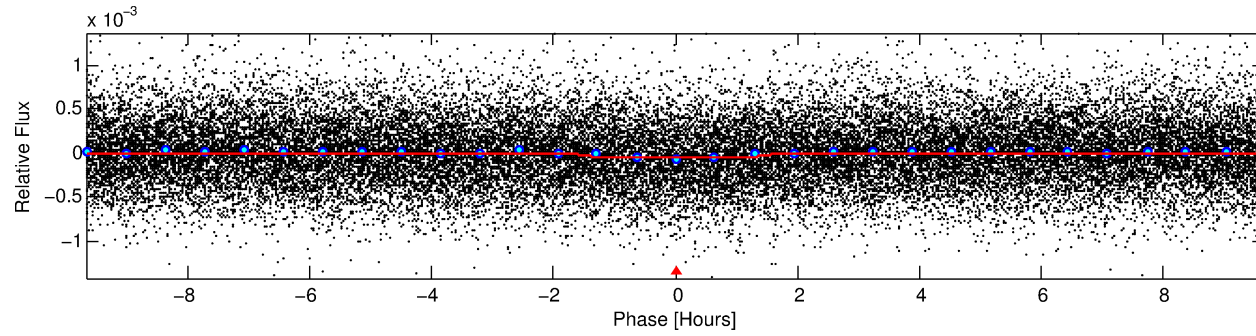
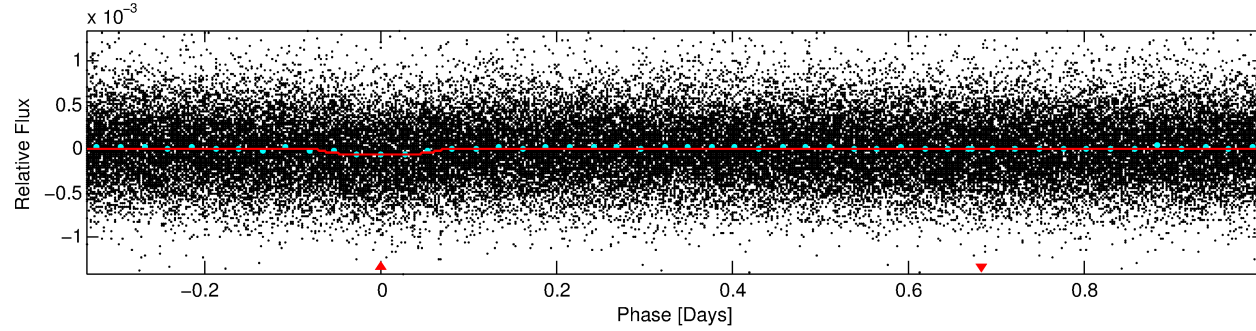
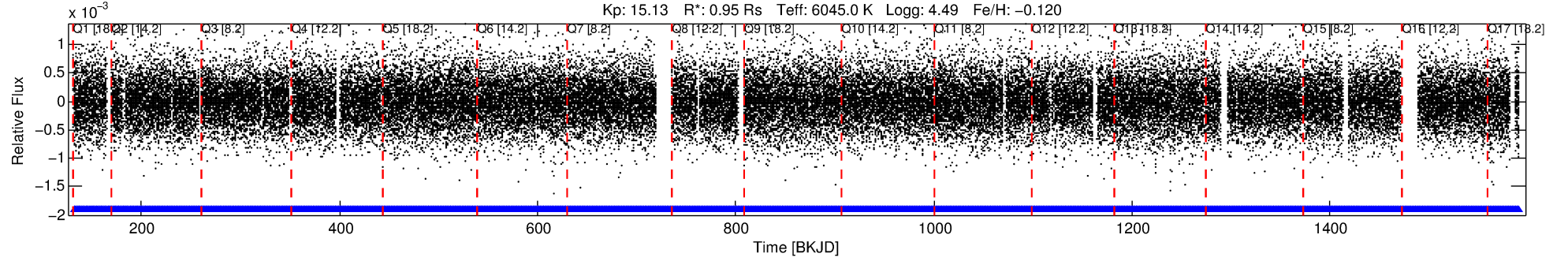
Ephemeris Match Information For 010014702-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
010014702-01	10014702	5742.01	9954225	1:1	157.5	40	1	14.56	15.13	11226.00	Col-Anomaly	0	2.50	2.19

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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 σ_P < 5.0 and σ_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: 10014702 Candidate: 1 of 1 Period: 1.341 d
KOI: K07271.01 Corr: 0.913



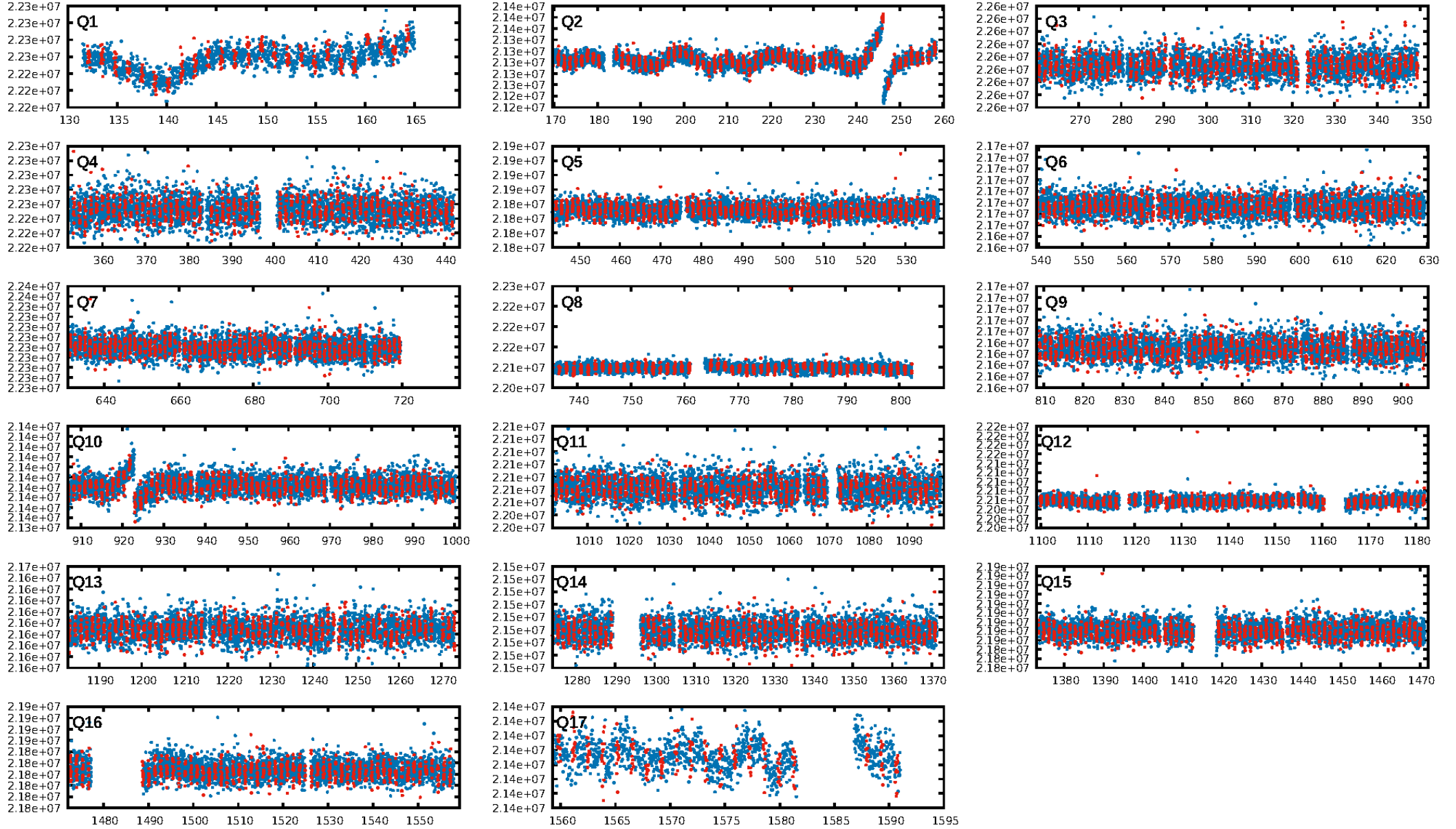
DV Fit Results:

Period = 1.34060 [0.00001] d
Epoch = 132.0969 [0.0040] BKJD
Rp/R* = 0.0083 [0.0047]
a/R* = 1.71 [3.33]
b = 0.90 [0.62]
Seff = 1879.67 [730.43]
T_{eq} = 1679 [163] K
Rp = 0.86 [0.55] R_e
a = 0.0241 [0.0061] AU
Ag = 4.88 [6.31] [0.61 σ]
T_{eff} = 3858 [1204] K [1.79 σ]

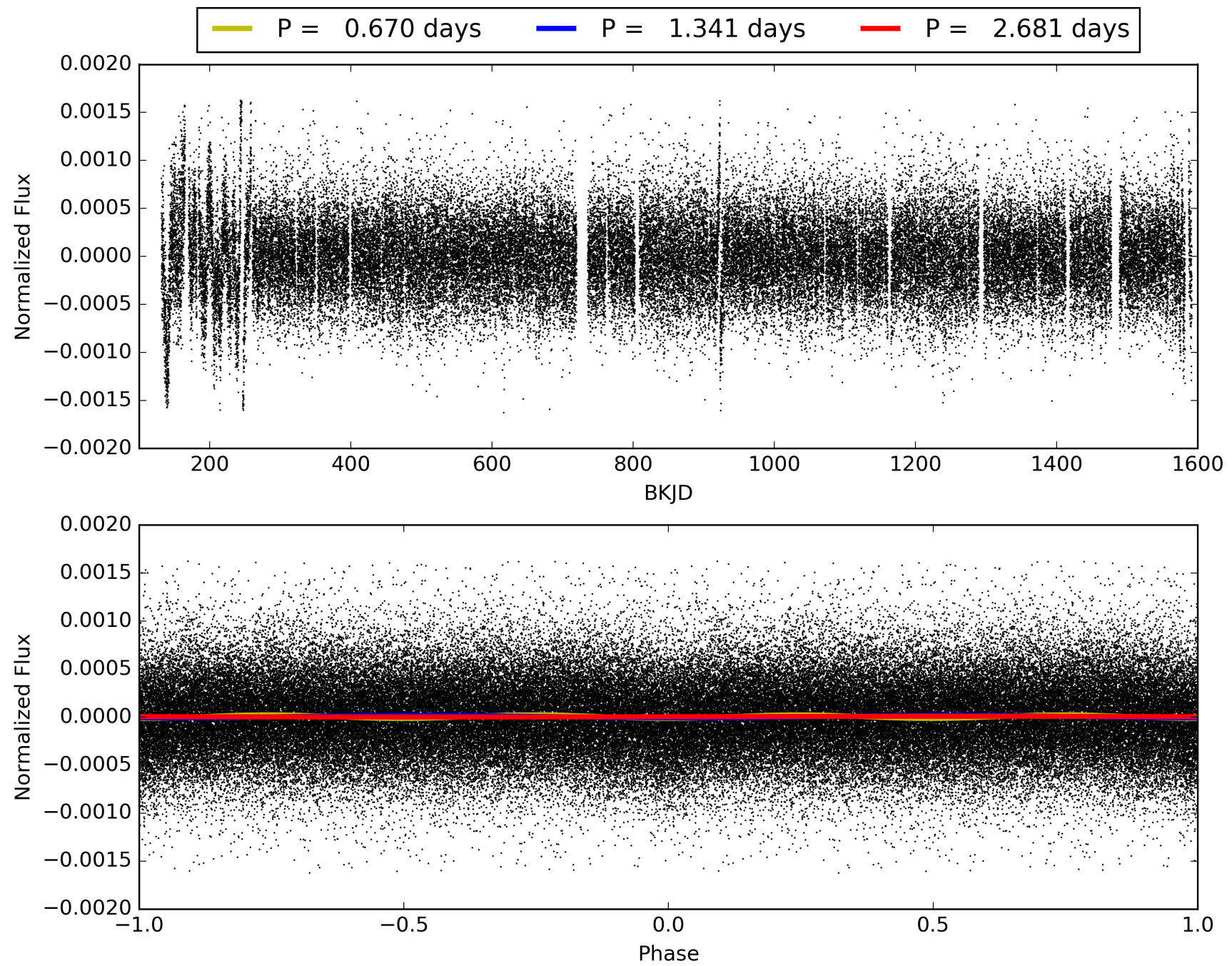
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.22e-25
RollingBand-fgt: 1.00 [960/960]
GhostDiagnostic-chr: 7.244
Centroid-sig: 52.8%
Centroid-so: 0.992 arcsec [0.74 σ]
OotOffset-rm: 0.973 arcsec [1.89 σ]
KicOffset-rm: 0.968 arcsec [2.02 σ]
OotOffset-st: 3/2/3/4 [12]
KicOffset-st: 3/2/3/4 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 010014702-01, PDC Light Curves

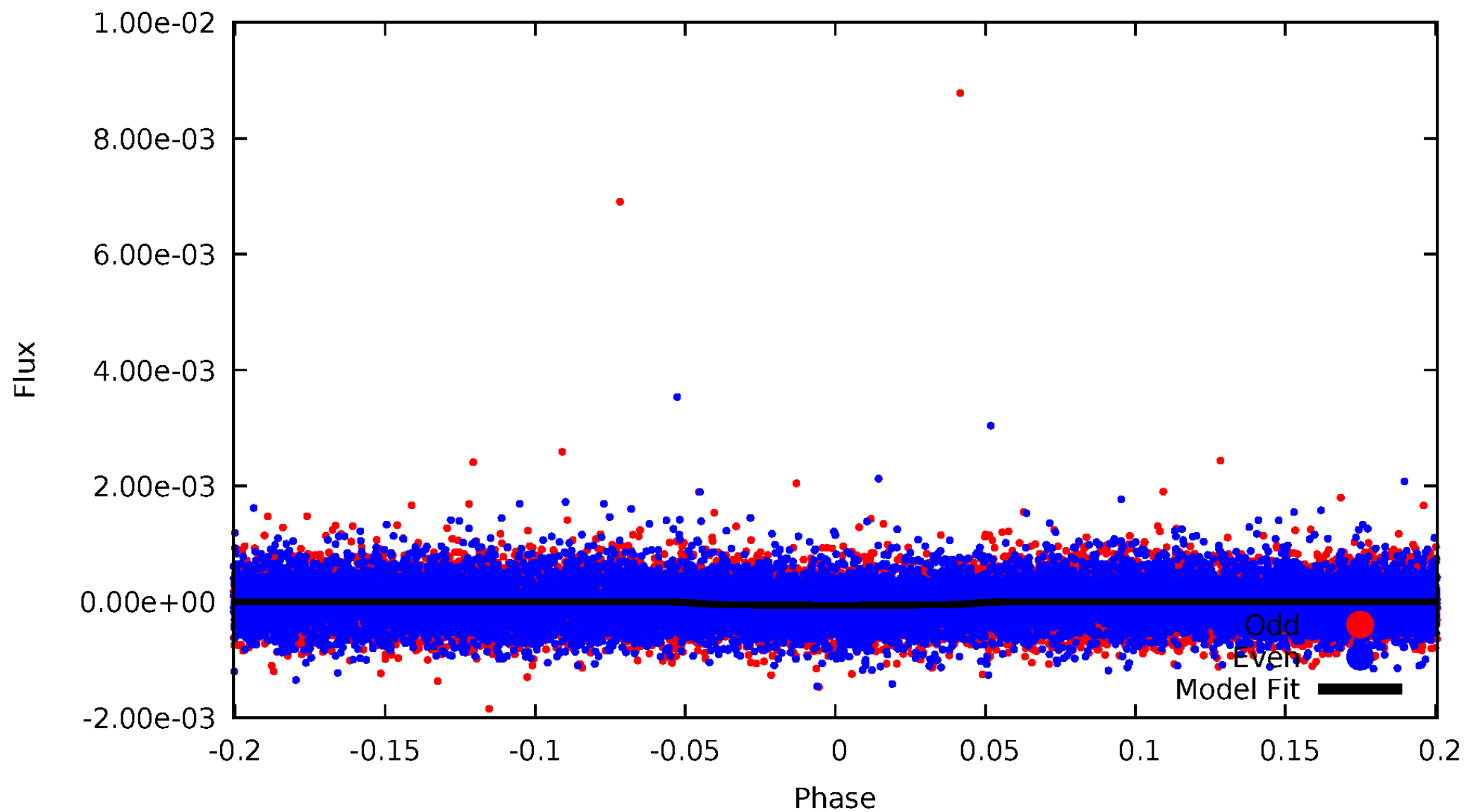


TCE 010014702-01



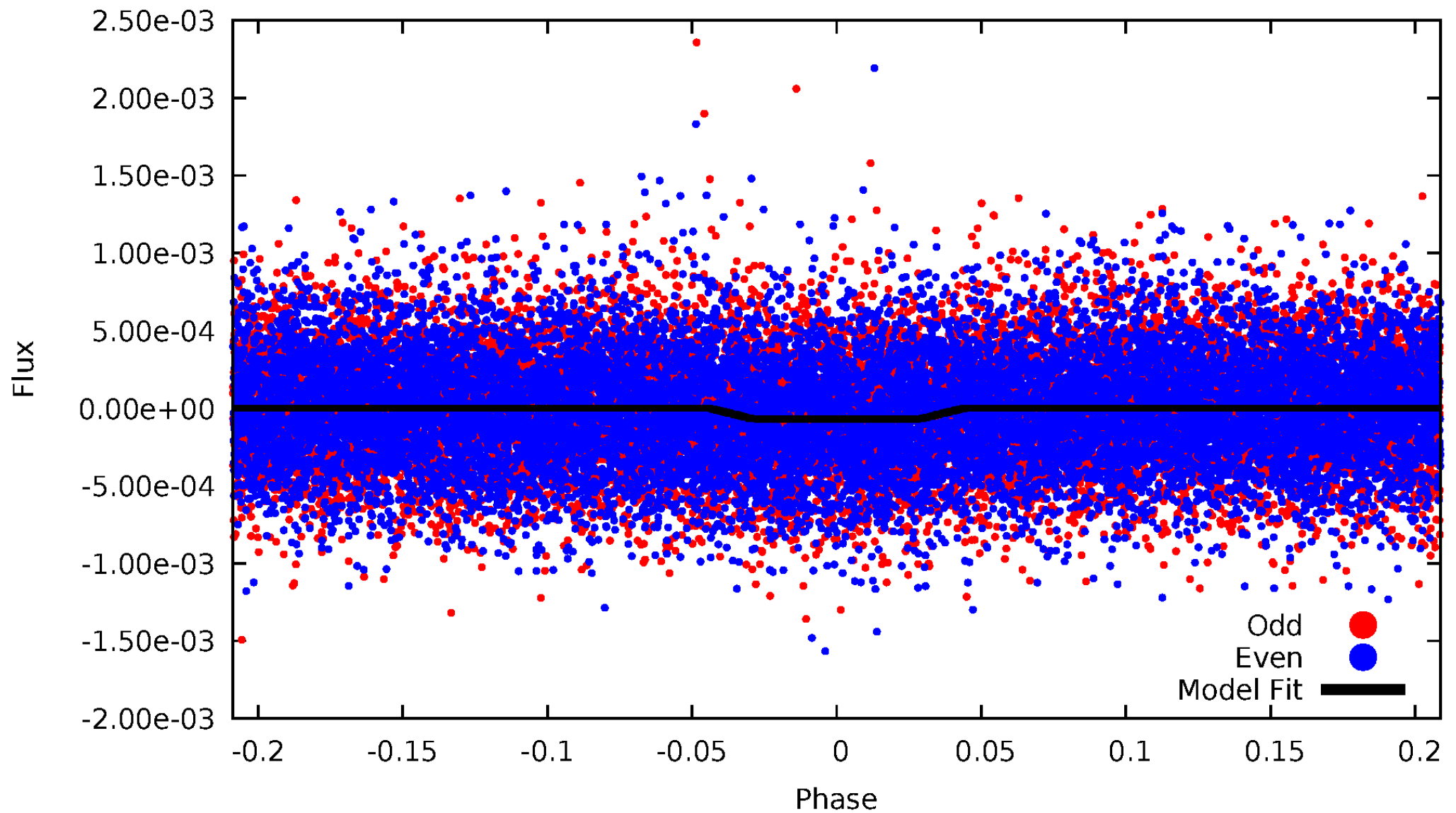
DV Odd/Even

TCE 010014702-01



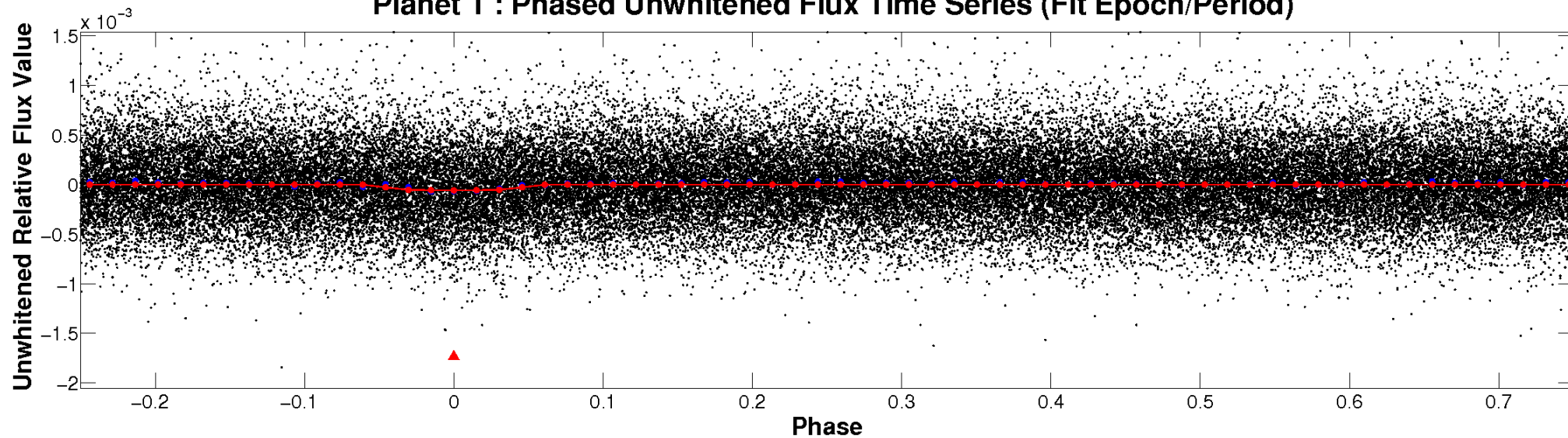
ALT Odd/Even

TCE 010014702-01

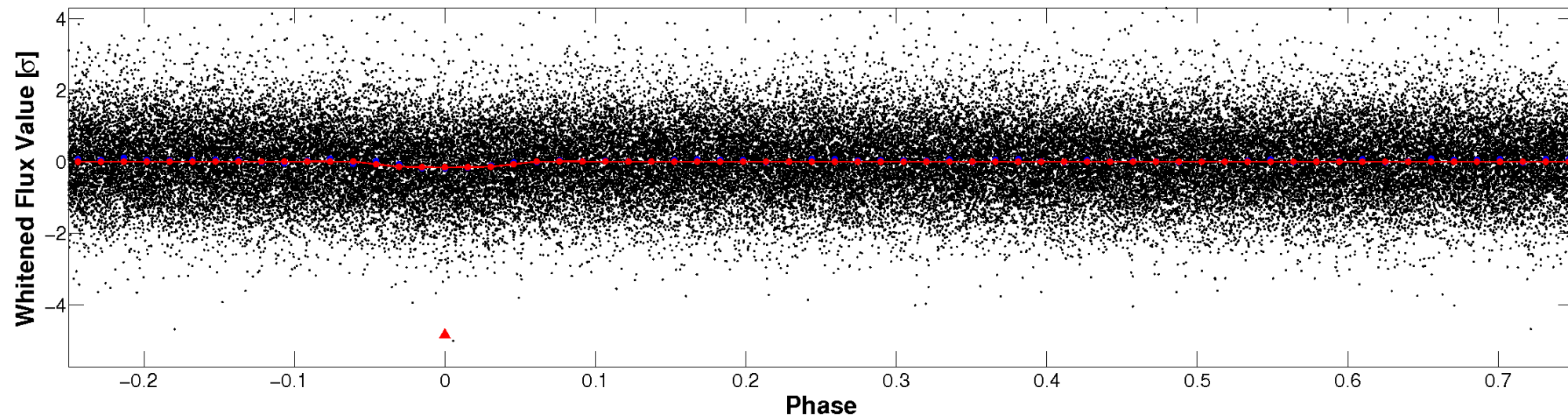


Non-Whitened Vs. Whitened Light Curve

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

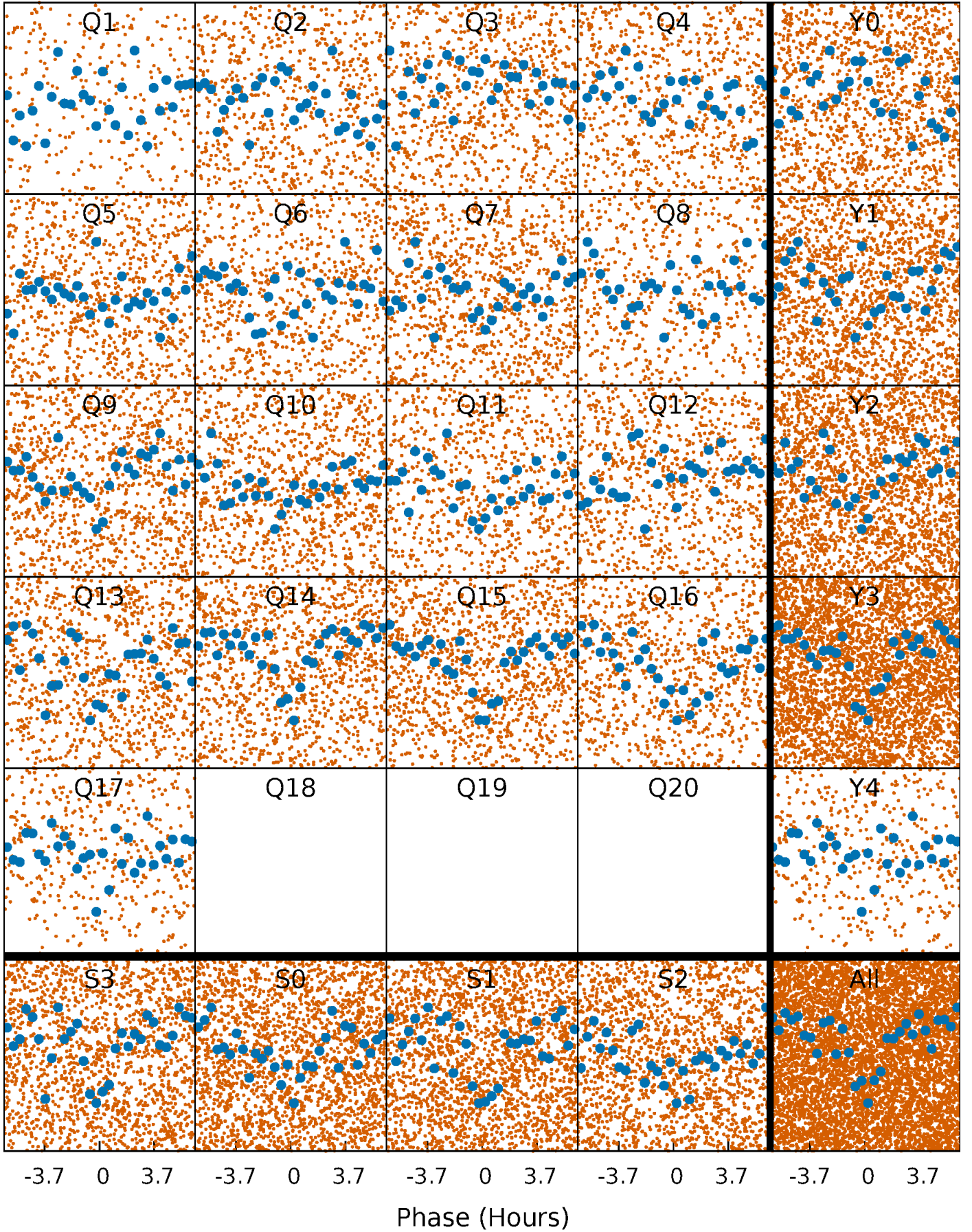


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



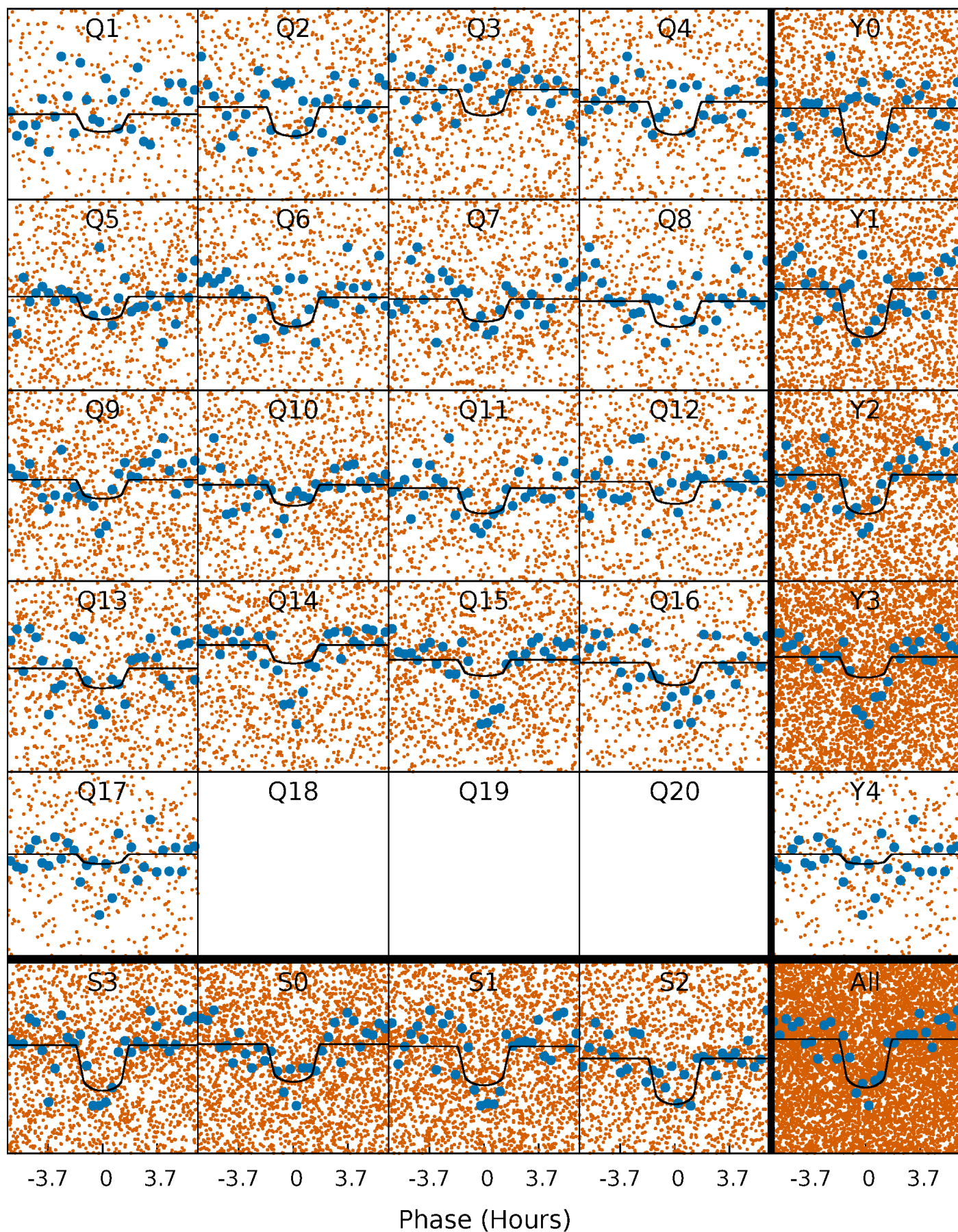
PDC Quarter-Phased Transit Curves

TCE 010014702-01 P= 1.340602 Days $T_0=132.096864$ (BKJD)



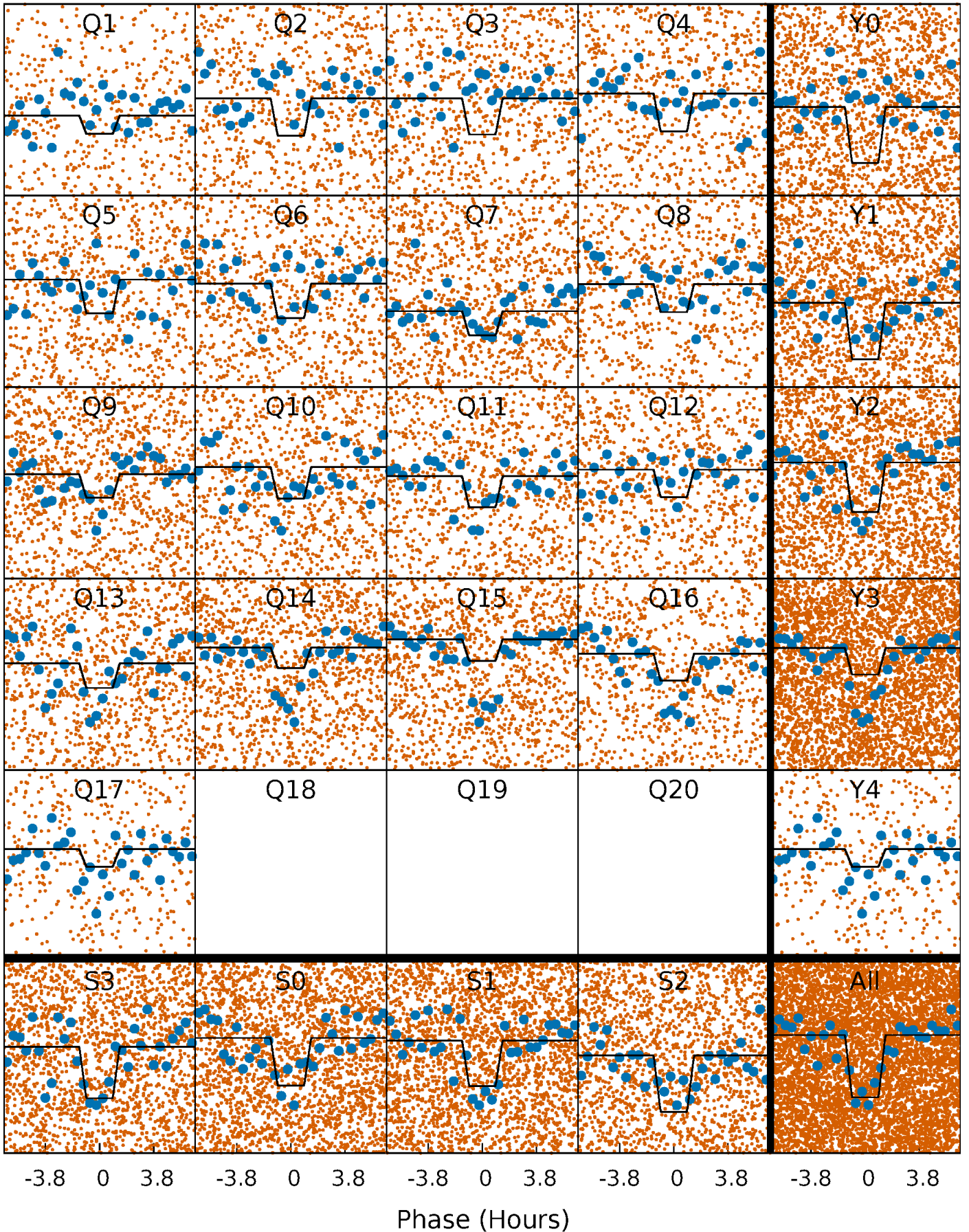
DV Quarter-Phased Transit Curves

TCE 010014702-01 P= 1.340602 Days $T_0=132.096864$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

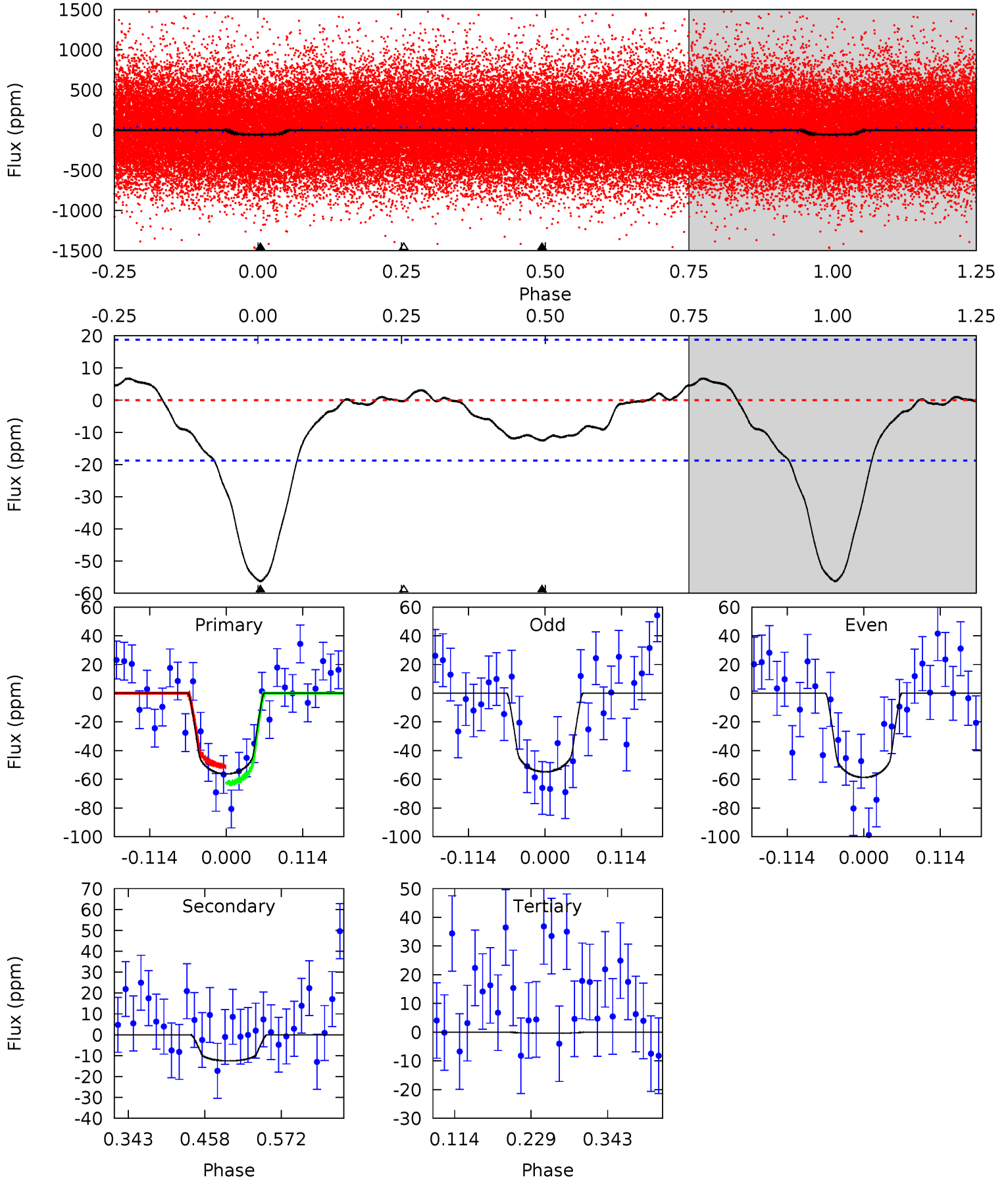
TCE 010014702-01 P= 1.340609 Days $T_0=132.096041$ (BKJD)



DV Model-Shift Uniqueness Test

010014702-01, P = 1.340602 Days, E = 130.756262 Days

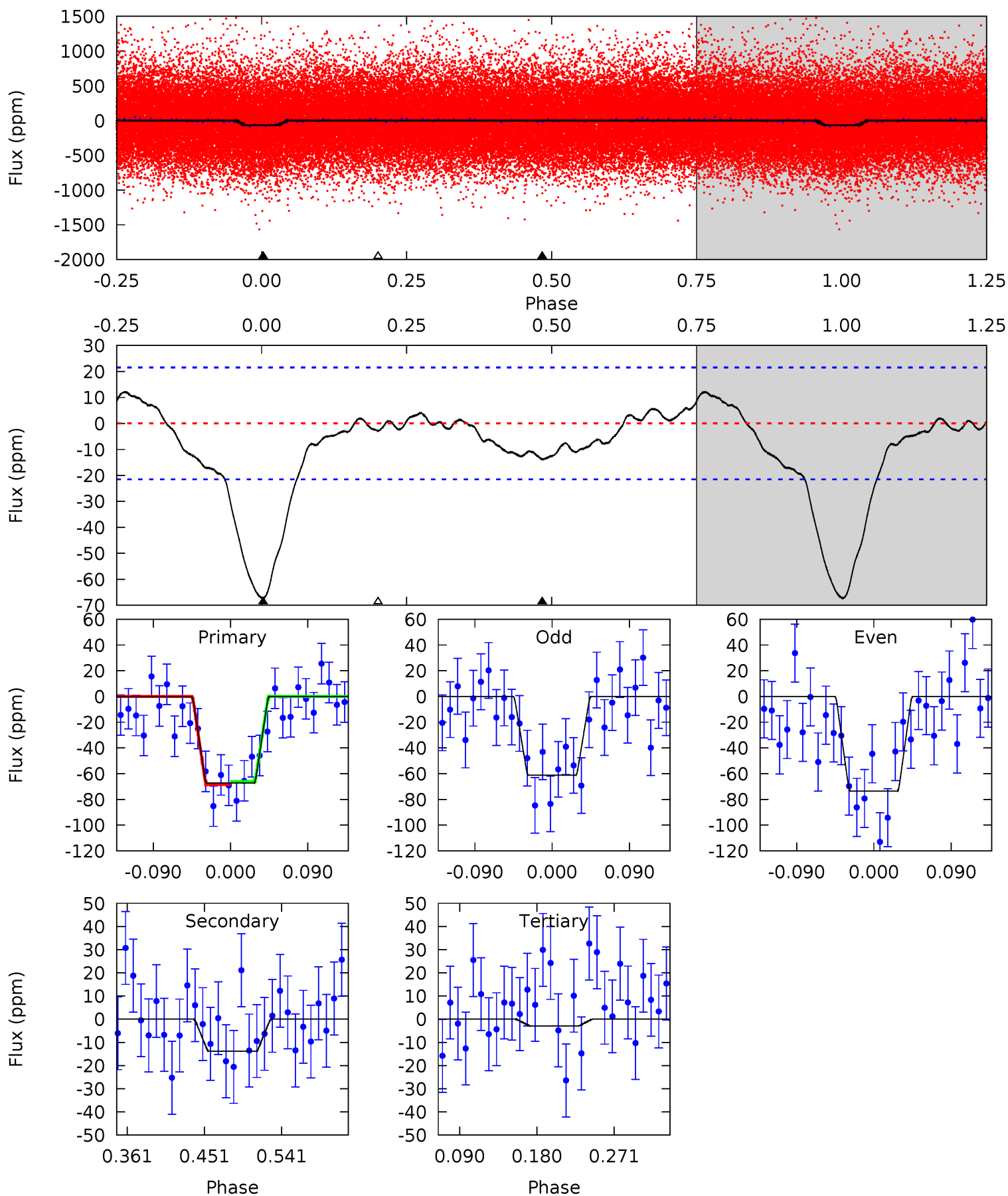
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	3.02	0.08	0	4.54	1.58	0.88	13.5	13.6	2.93	3.02	0.48	0.92	0.11	1.46



Alt Model-Shift Uniqueness Test

010014702-01, P = 1.340609 Days, E = 130.755432 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	2.95	0.62	0	4.59	1.69	1.29	13.7	14.3	2.33	2.95	1.31	0.94	0.15	0.28



Stellar Parameters For KIC 010014702

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6045^{+180}_{-198}	$4.494^{+0.050}_{-0.200}$	$-0.120^{+0.250}_{-0.350}$	$0.955^{+0.285}_{-0.095}$	$1.038^{+0.126}_{-0.139}$	$1.679^{+0.437}_{-0.842}$
	+3%/-3%	+1%/-4%	+208%/-292%	+30%/-10%	+12%/-13%	+26%/-50%
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 010014702-01 / KOI 7271.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 4	$0.91^{+0.53}_{-0.50}$	2394^{+170}_{-110}	4106^{+1539}_{-677}	$4.423^{+18.031}_{-2.689}$
Alt.	-14 ± 5	$0.94^{+0.50}_{-0.48}$	2399^{+163}_{-110}	4238^{+1367}_{-727}	$4.994^{+14.307}_{-3.044}$

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 $A_{obs} \gg 1.0$

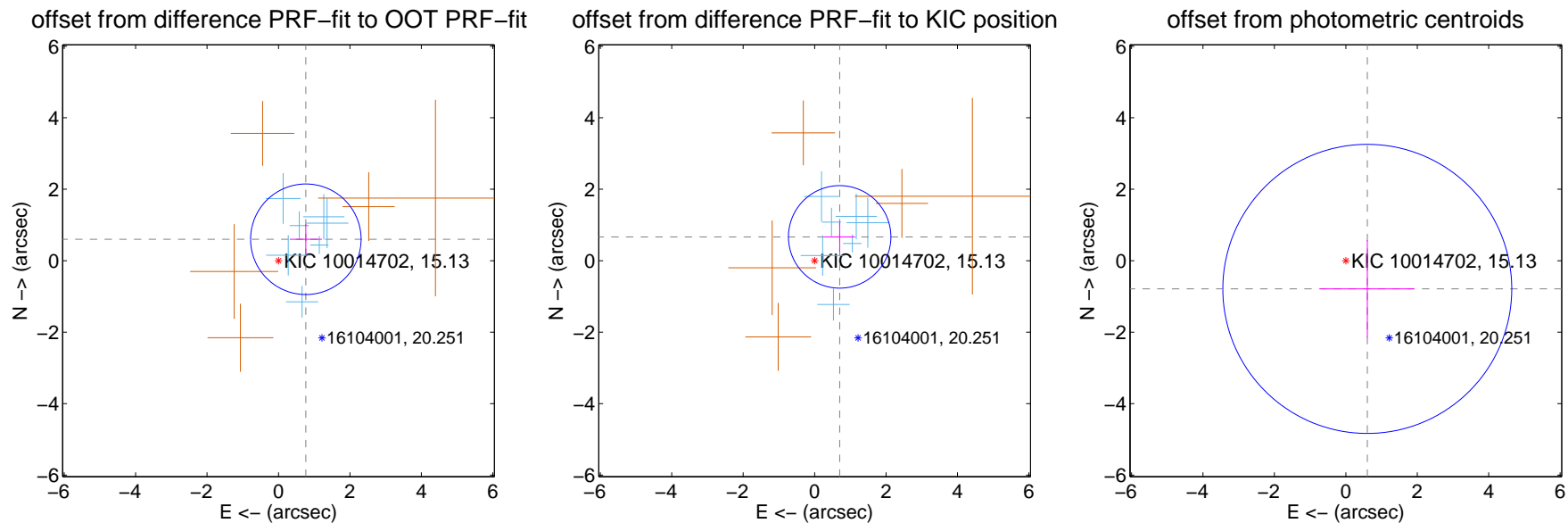
DV Centroid Data

Supplemental centroid analysis for 010014702-01. Kepler magnitude: 15.13. Transit SNR 10.70

There are 7 quarters with good PRF difference image offsets

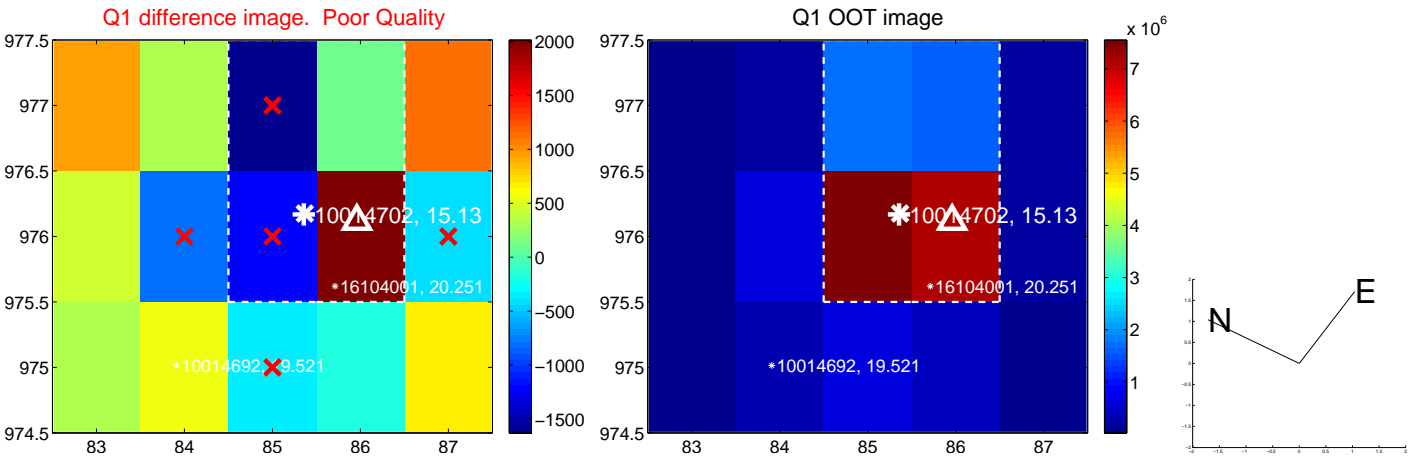
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.973 ± 0.516	1.89	-0.766 ± 0.450	0.600 ± 0.422
PRF-fit source offset from KIC position	0.968 ± 0.478	2.02	-0.702 ± 0.433	0.666 ± 0.417
photometric centroid source offset	0.99 ± 1.35	0.74	-0.60 ± 1.32	-0.79 ± 1.37

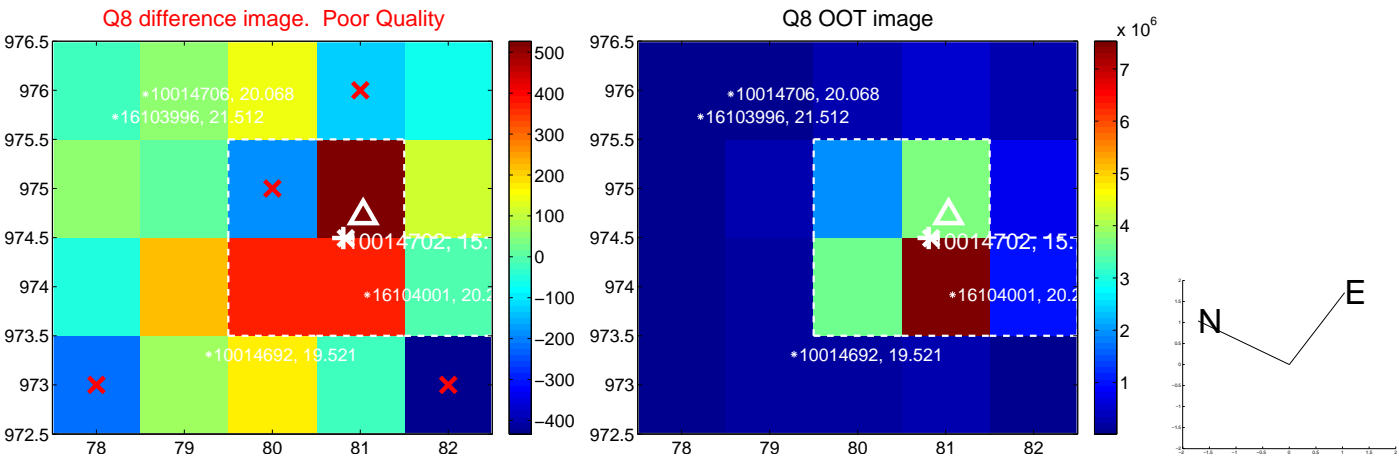
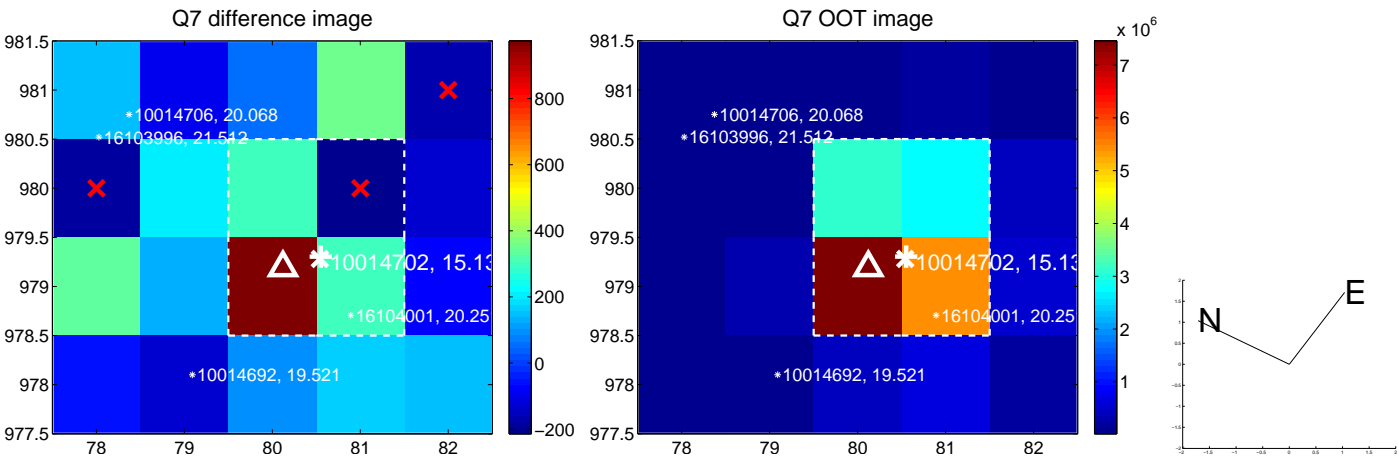
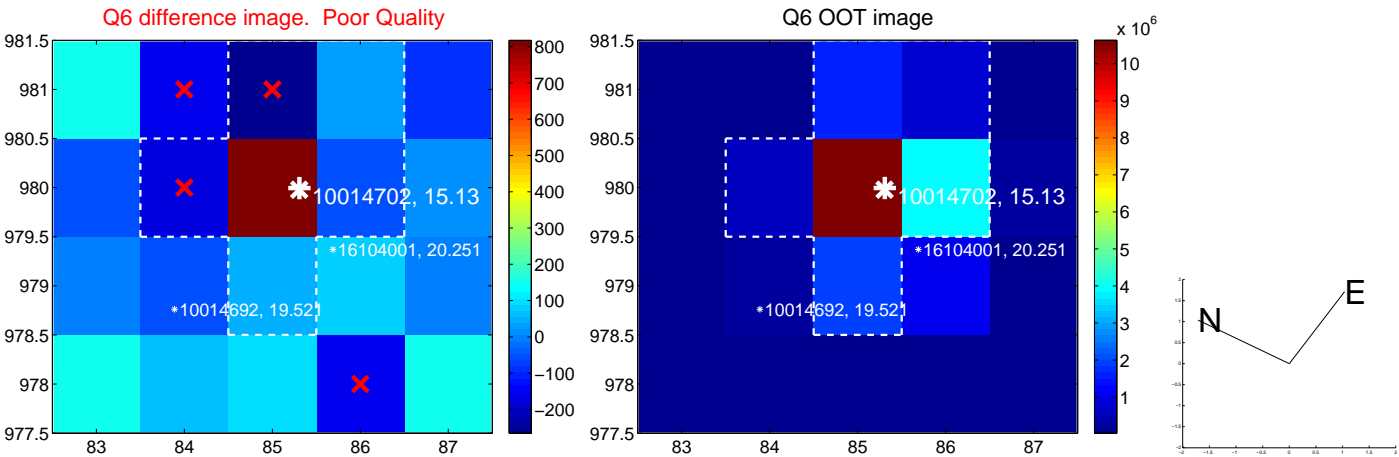
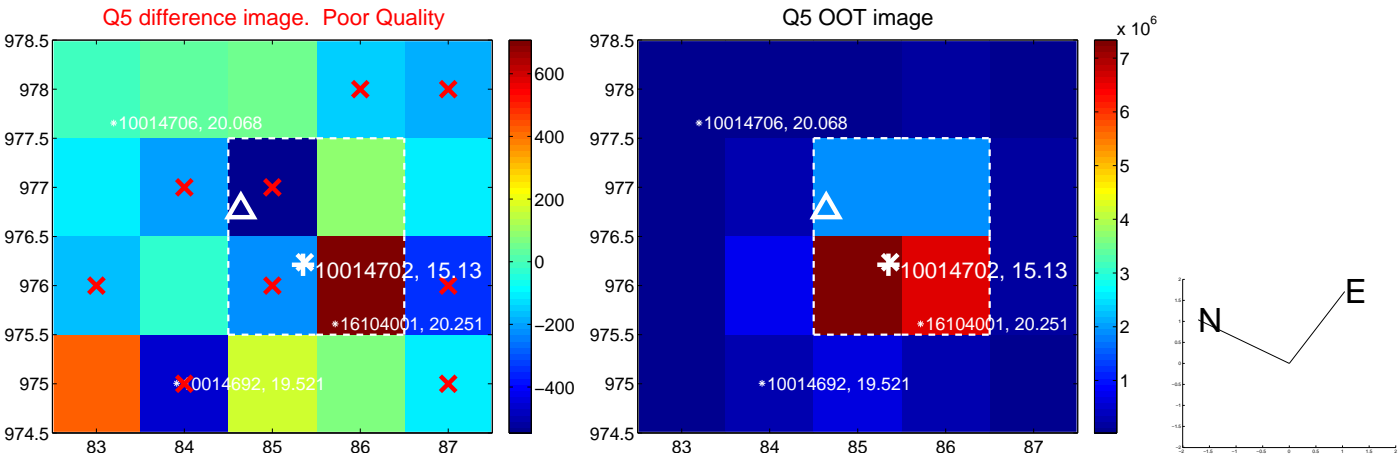


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

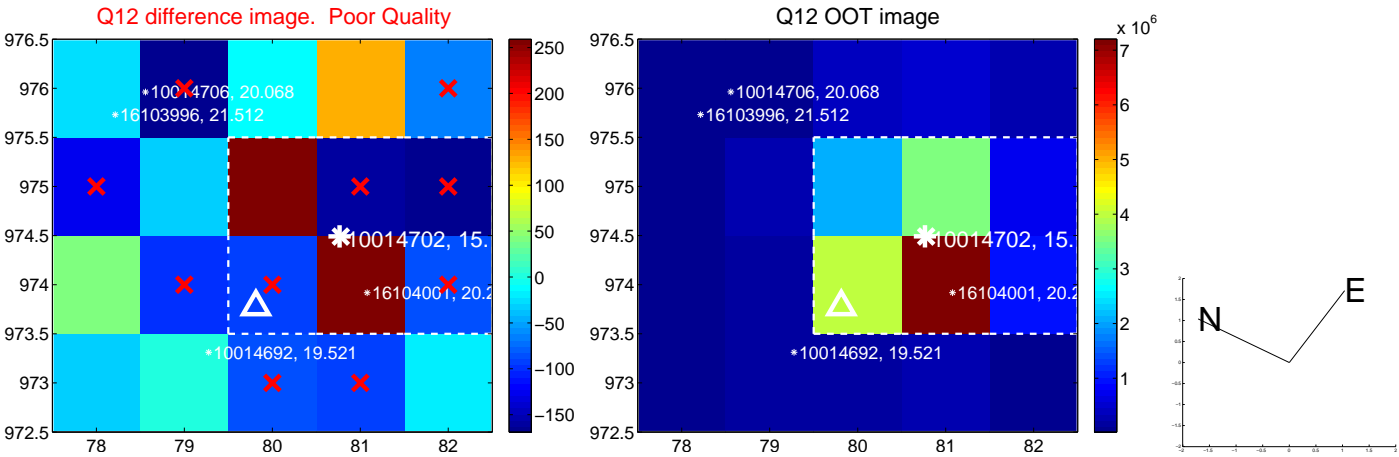
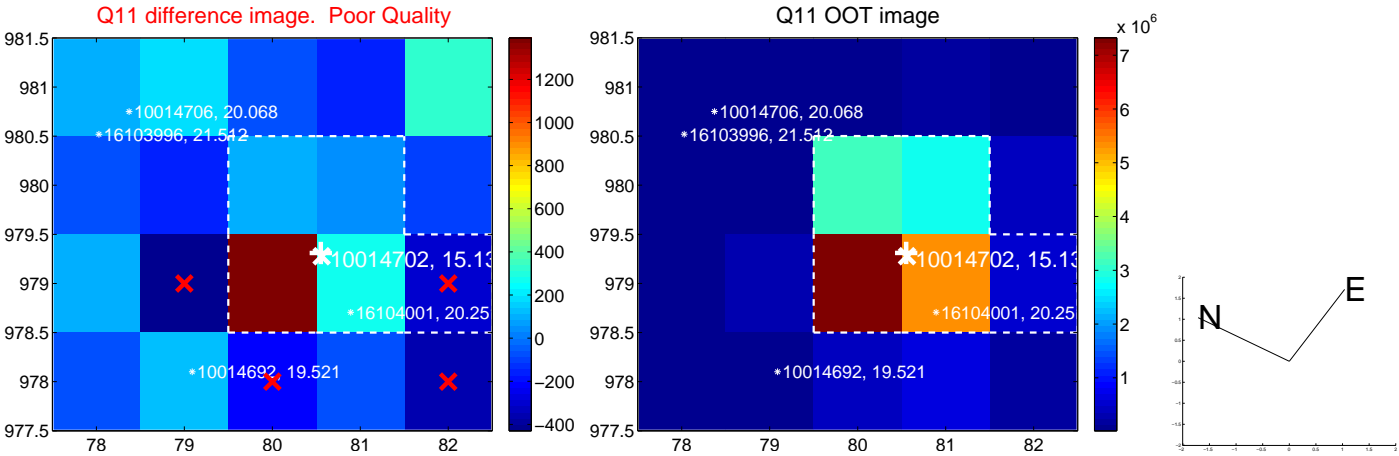
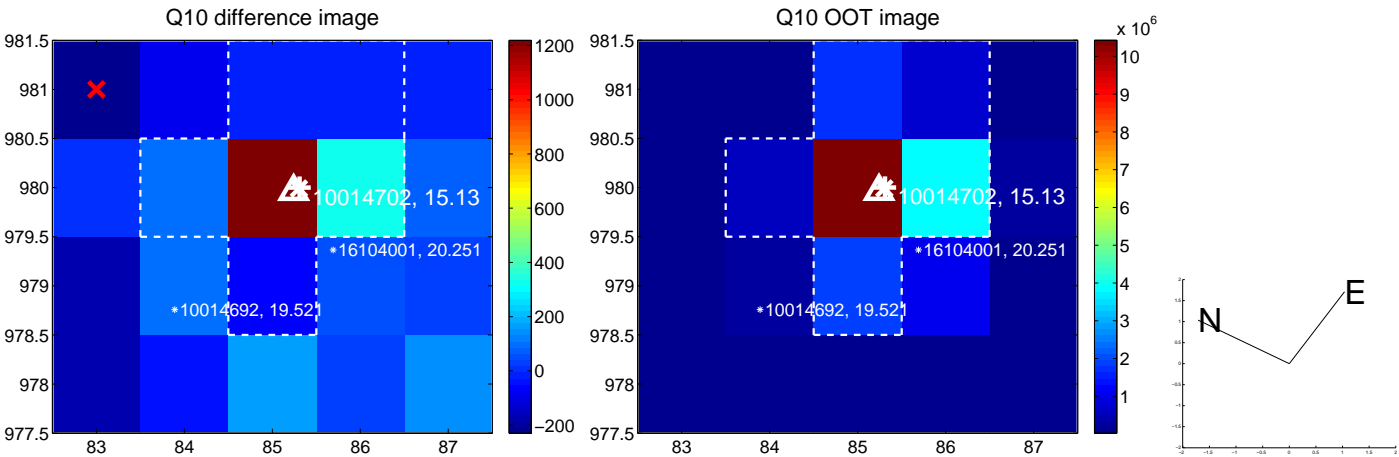
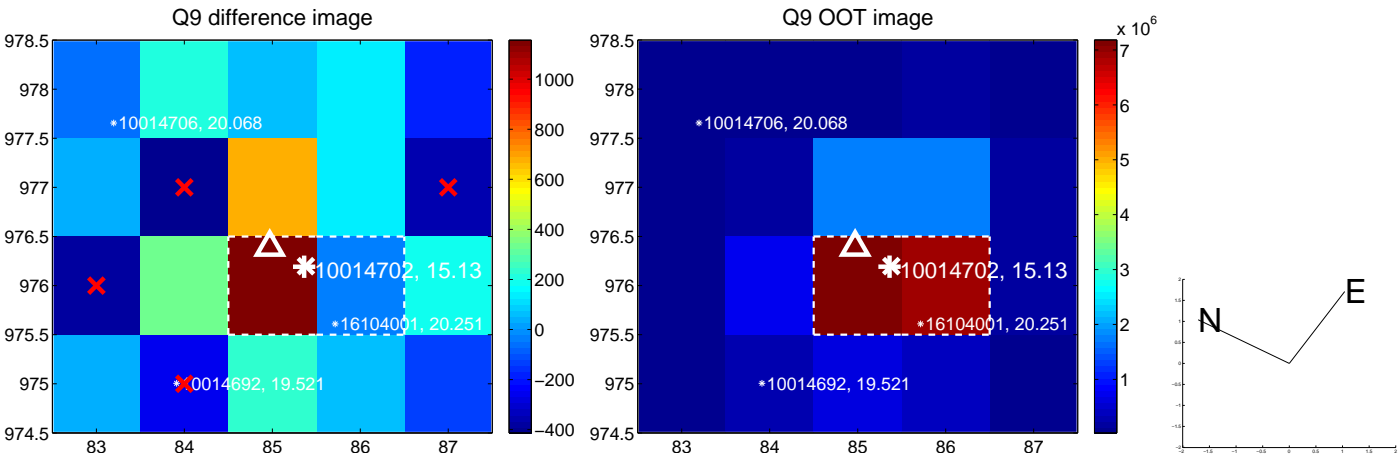
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



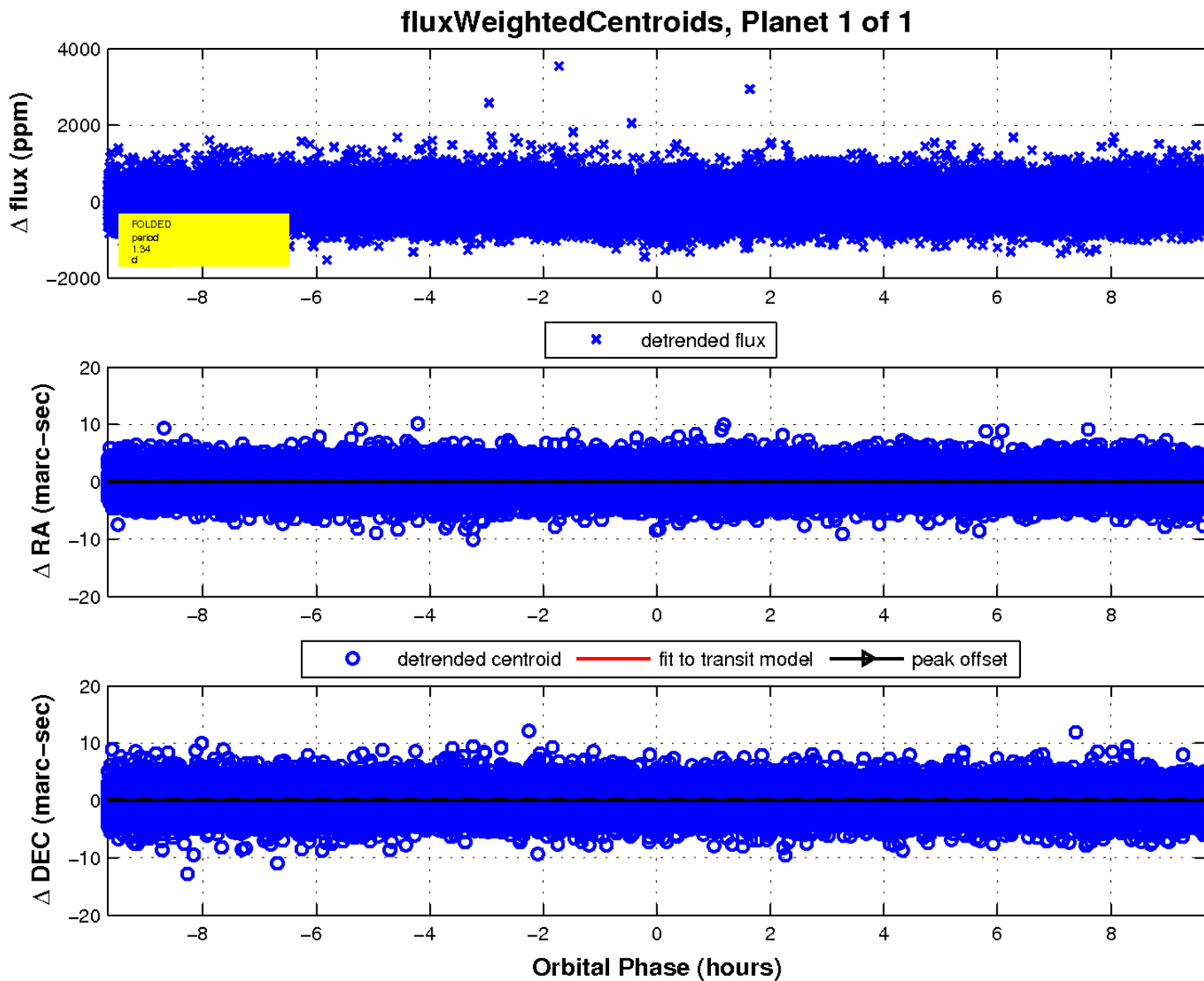
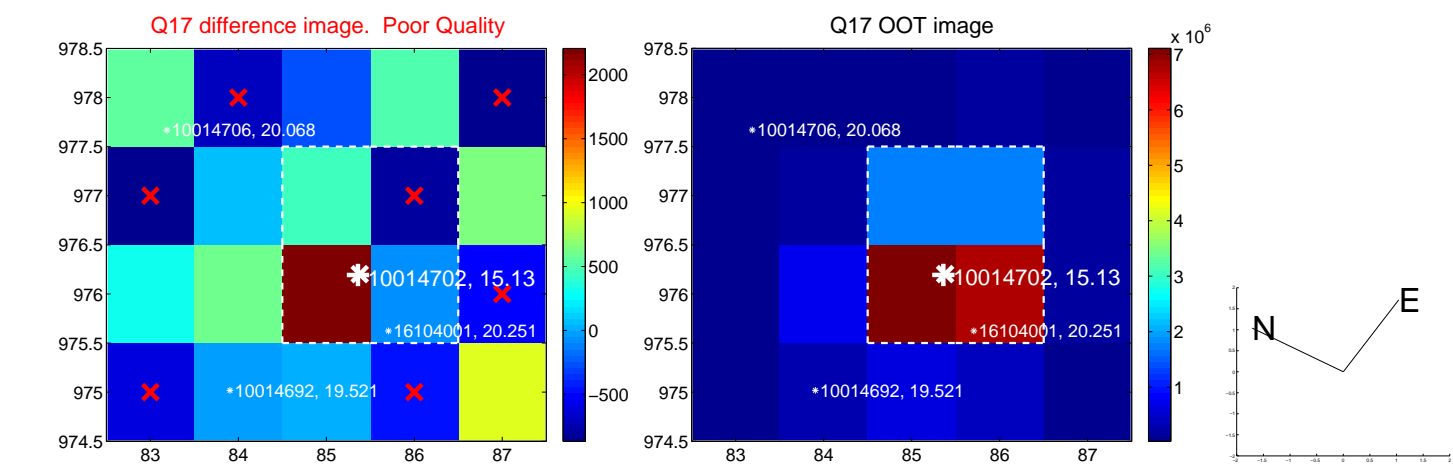
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UKIRT Image

Declination

