

KIC 009777290

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 _⊕)
009777290-01	OBS	4316.01	1.332500	132.101525	190.6	3.786	13.3	13.9	1.06	5926	1.75	2228.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009777290-01	OBS	FP	0.00	0	0	0	1	CENT_FEW_DIFFS—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 009777290-01

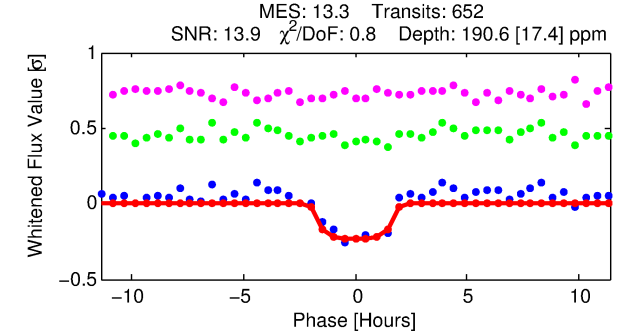
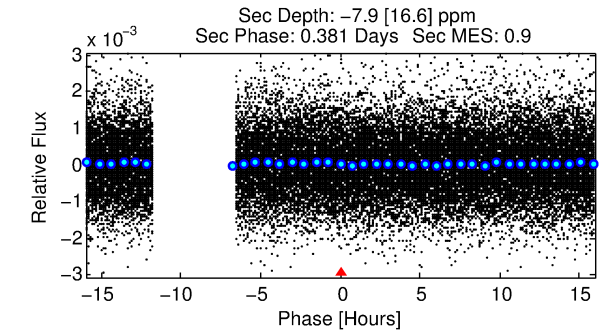
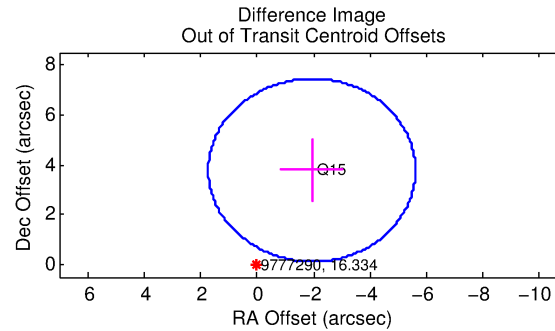
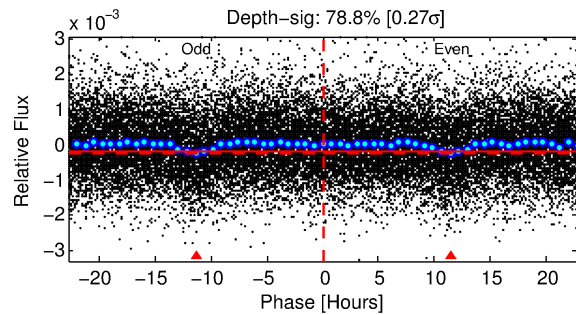
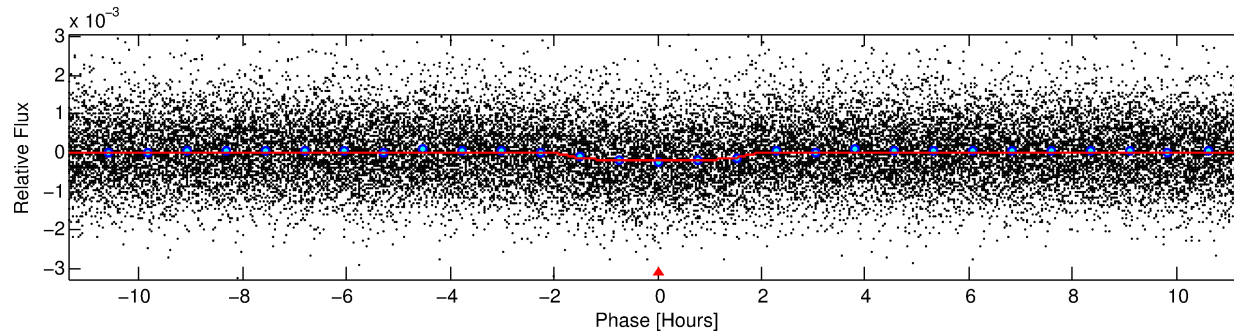
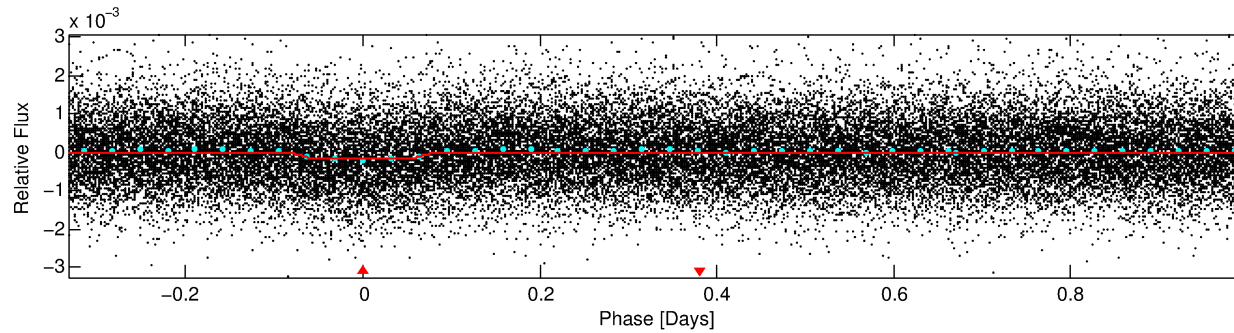
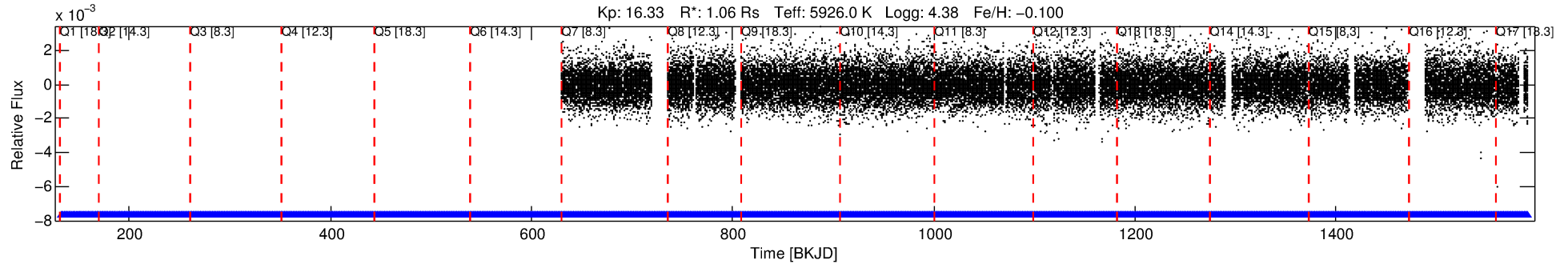
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
009777290-01	9777290	BR-Cyg-pri	9899416	1:1	1957.7	492	5	10.03	16.34	3501.90	Col-Anomaly	0	3.97	3.60

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: 9777290 Candidate: 1 of 1 Period: 1.332 d

KOI: K04316.01 Corr: 0.912



DV Fit Results:

Period = 1.33250 [0.00001] d
Epoch = 132.1015 [0.0036] BKJD
Rp/R* = 0.0151 [0.0042]
a/R* = 1.53 [1.22]
b = 0.91 [0.26]
Seff = 2228.65 [869.63]
Teq = 1752 [171] K
Rp = 1.75 [0.70] Re
a = 0.0236 [0.0059] AU
Ag = N/A
Teffp = N/A

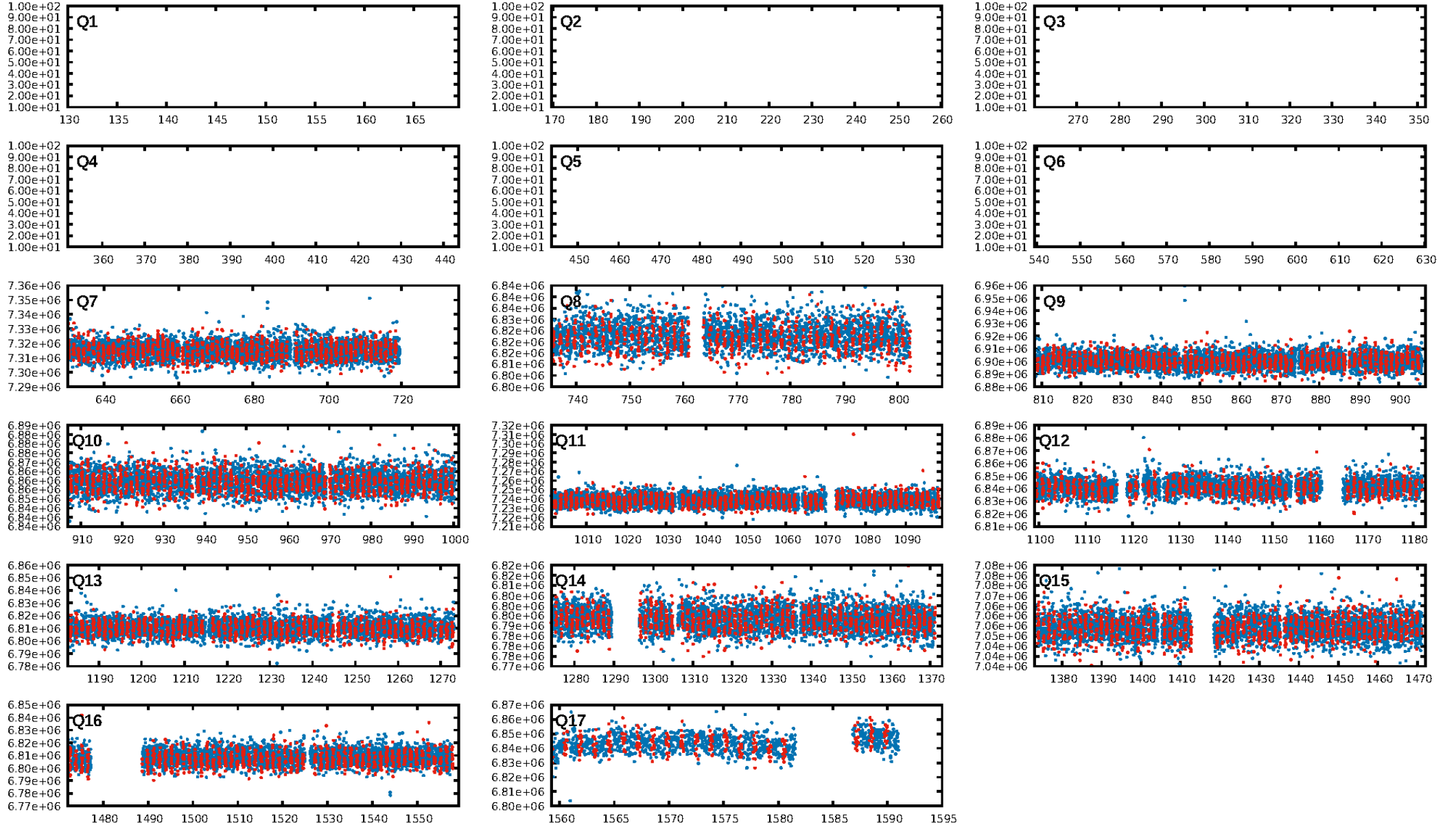
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.92e-41
RollingBand-fgt: 1.00 [632/632]
GhostDiagnostic-chr: -17.08
Centroid-sig: 0.0%
Centroid-so: 6.018 arcsec [5.48 σ]
OotOffset-rm: 4.246 arcsec [3.48 σ]
KicOffset-rm: 4.280 arcsec [3.51 σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [11/11]

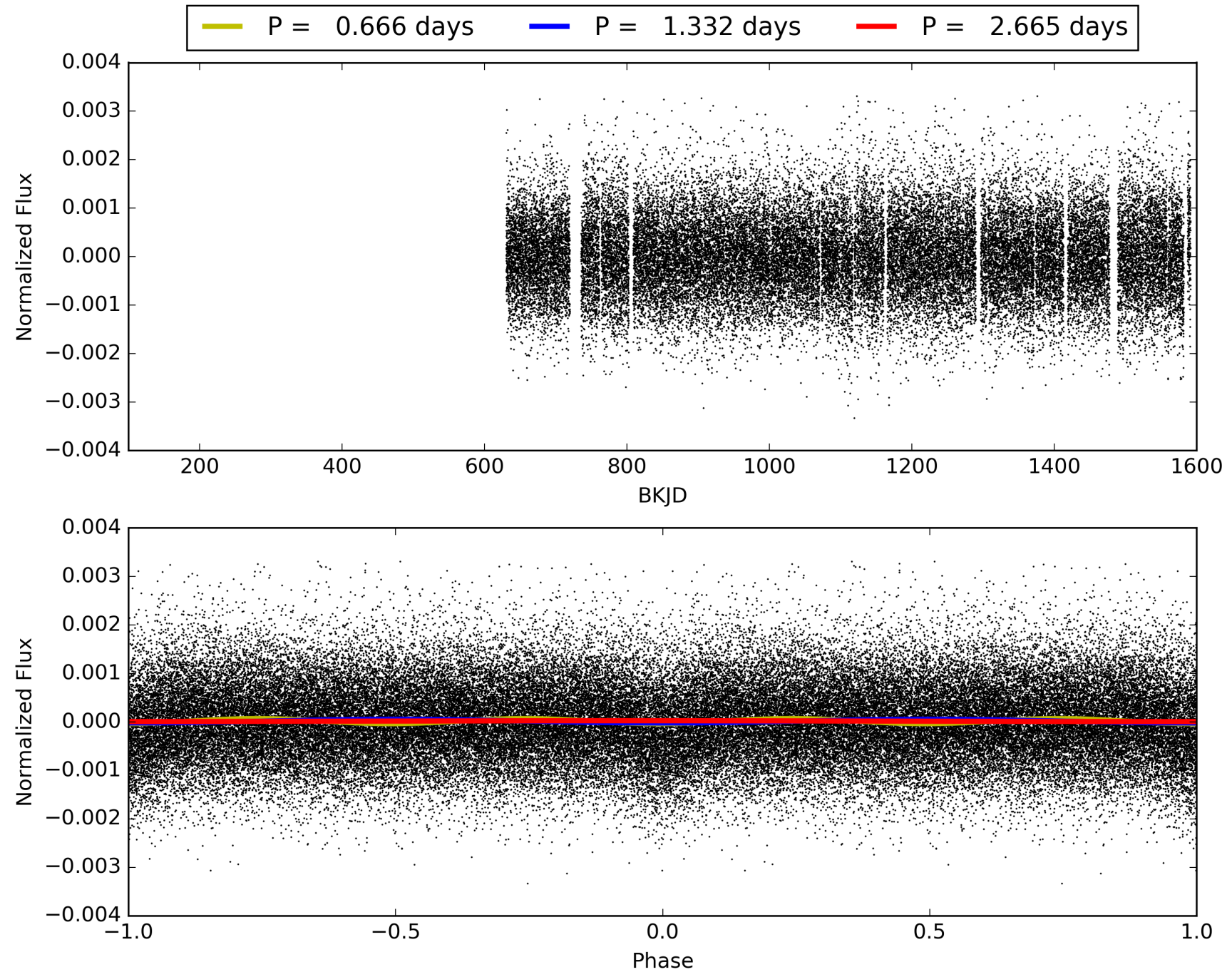
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 01:11:01 Z

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

TCE 009777290-01, PDC Light Curves

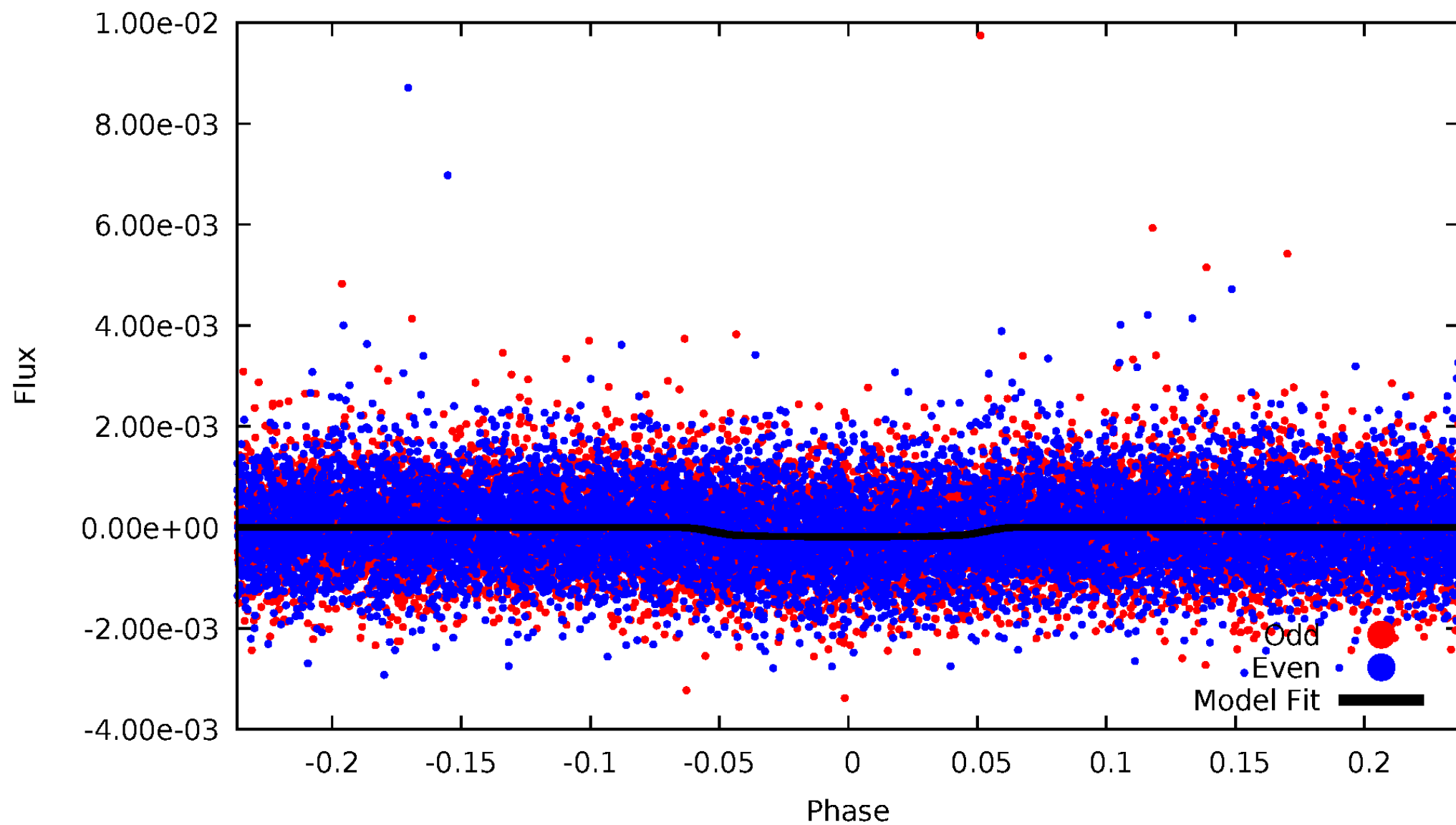


TCE 009777290-01



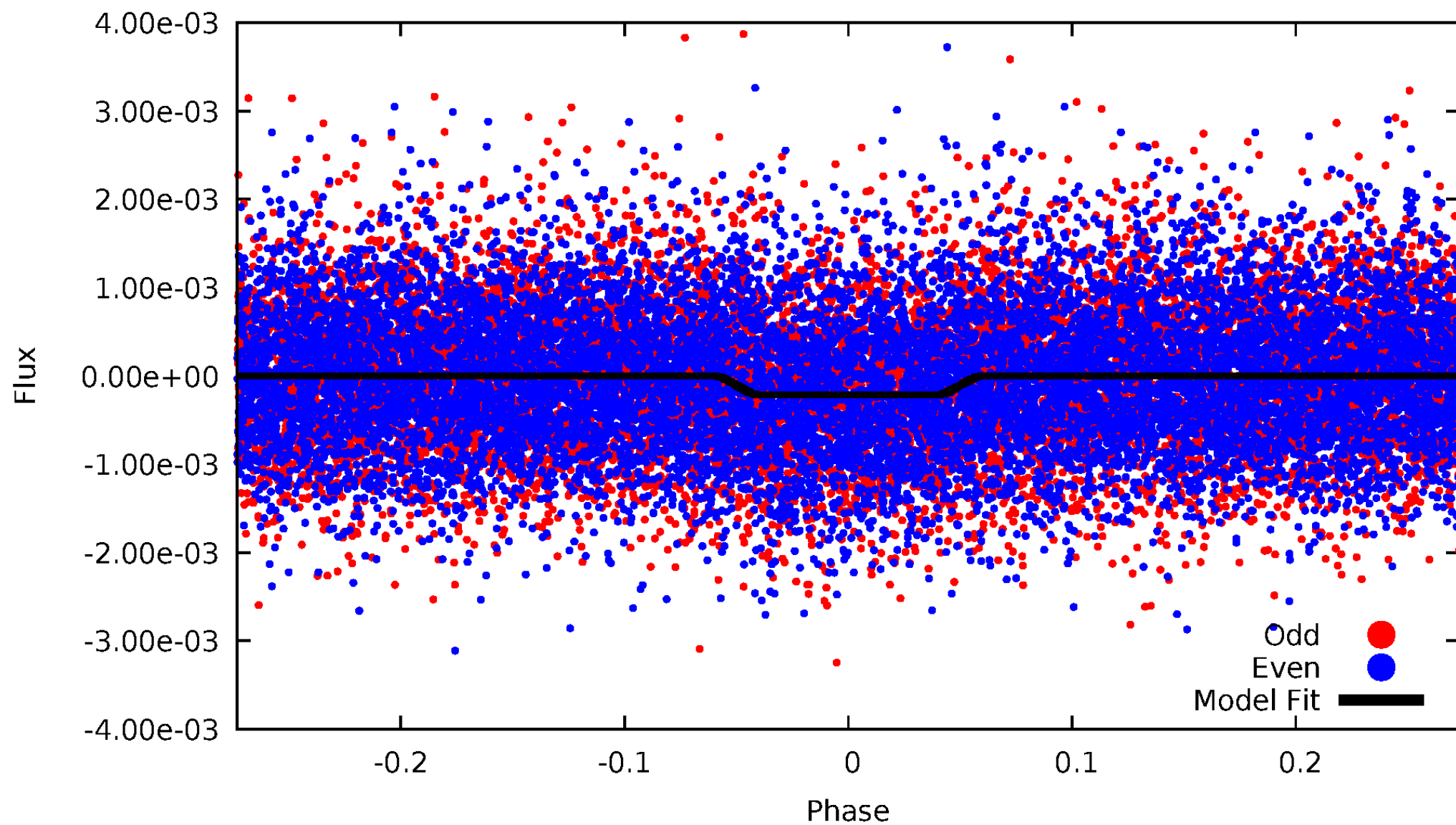
DV Odd/Even

TCE 009777290-01



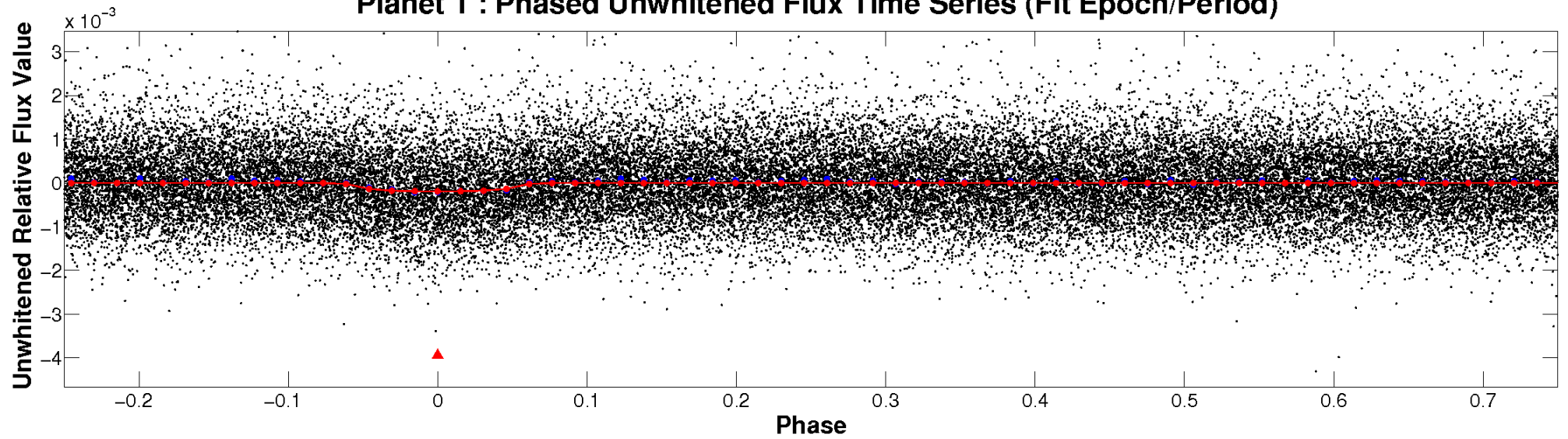
ALT Odd/Even

TCE 009777290-01

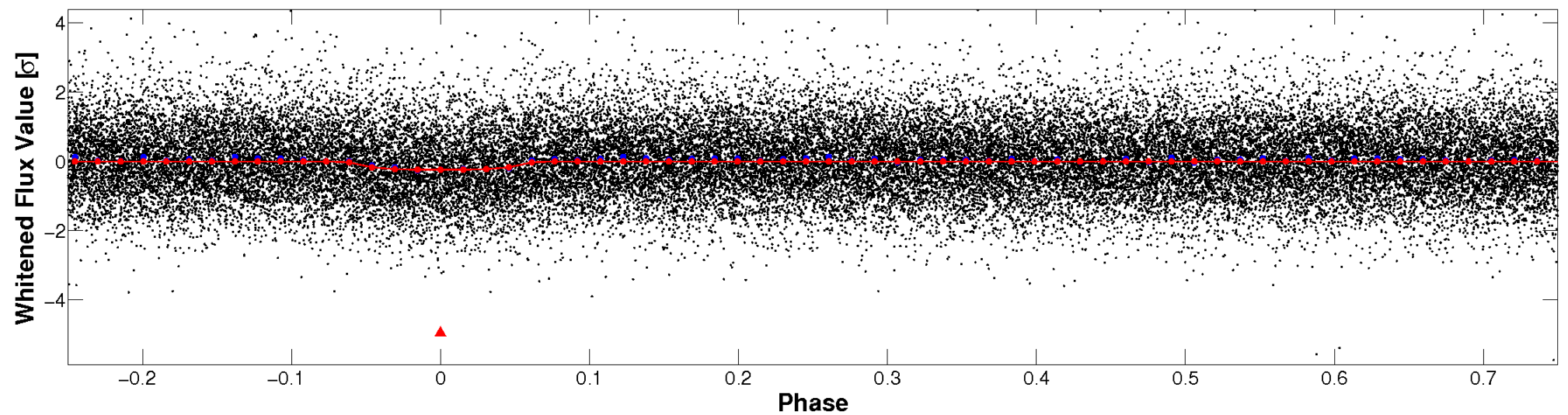


Non-Whitened Vs. Whitened Light Curve

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

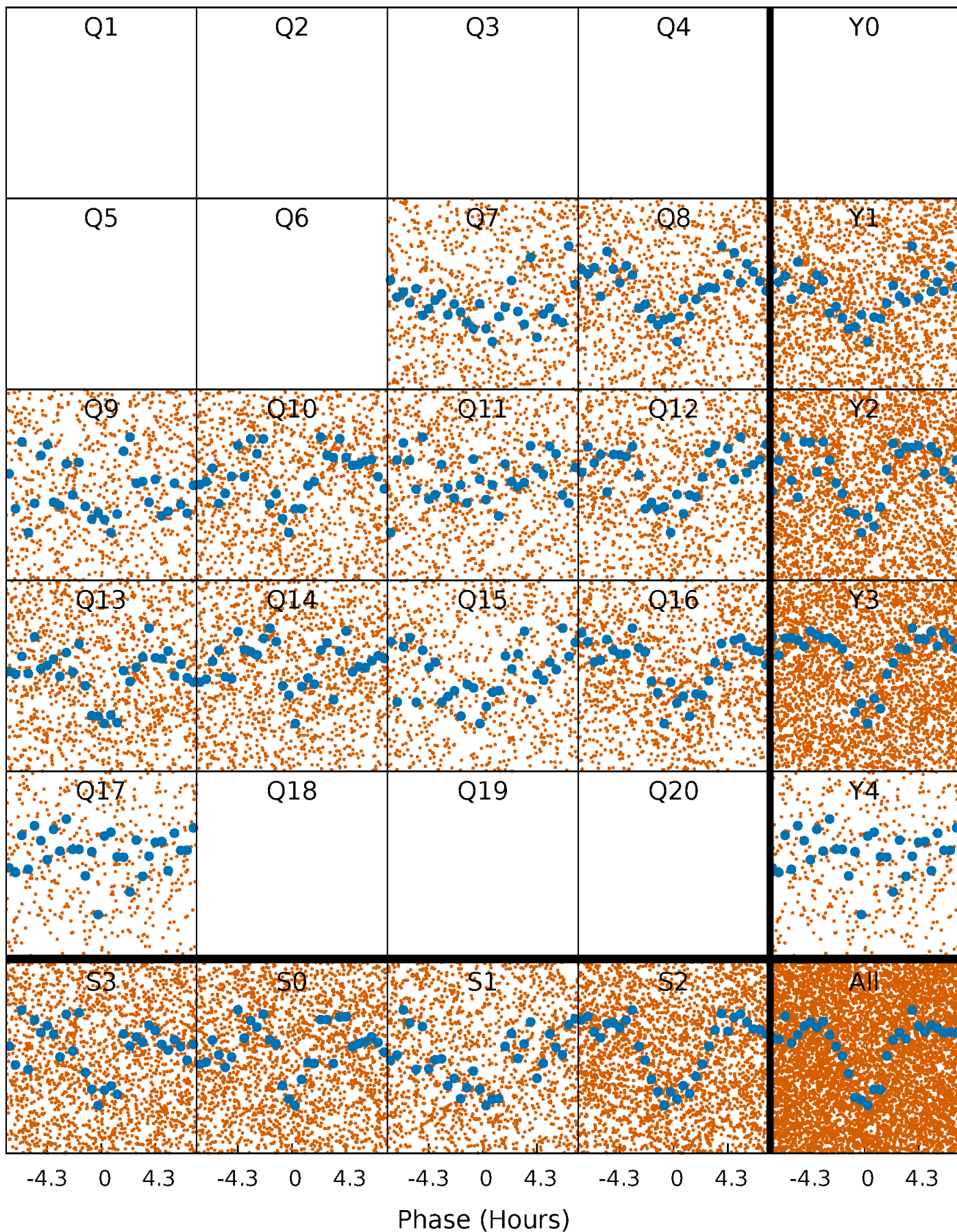


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



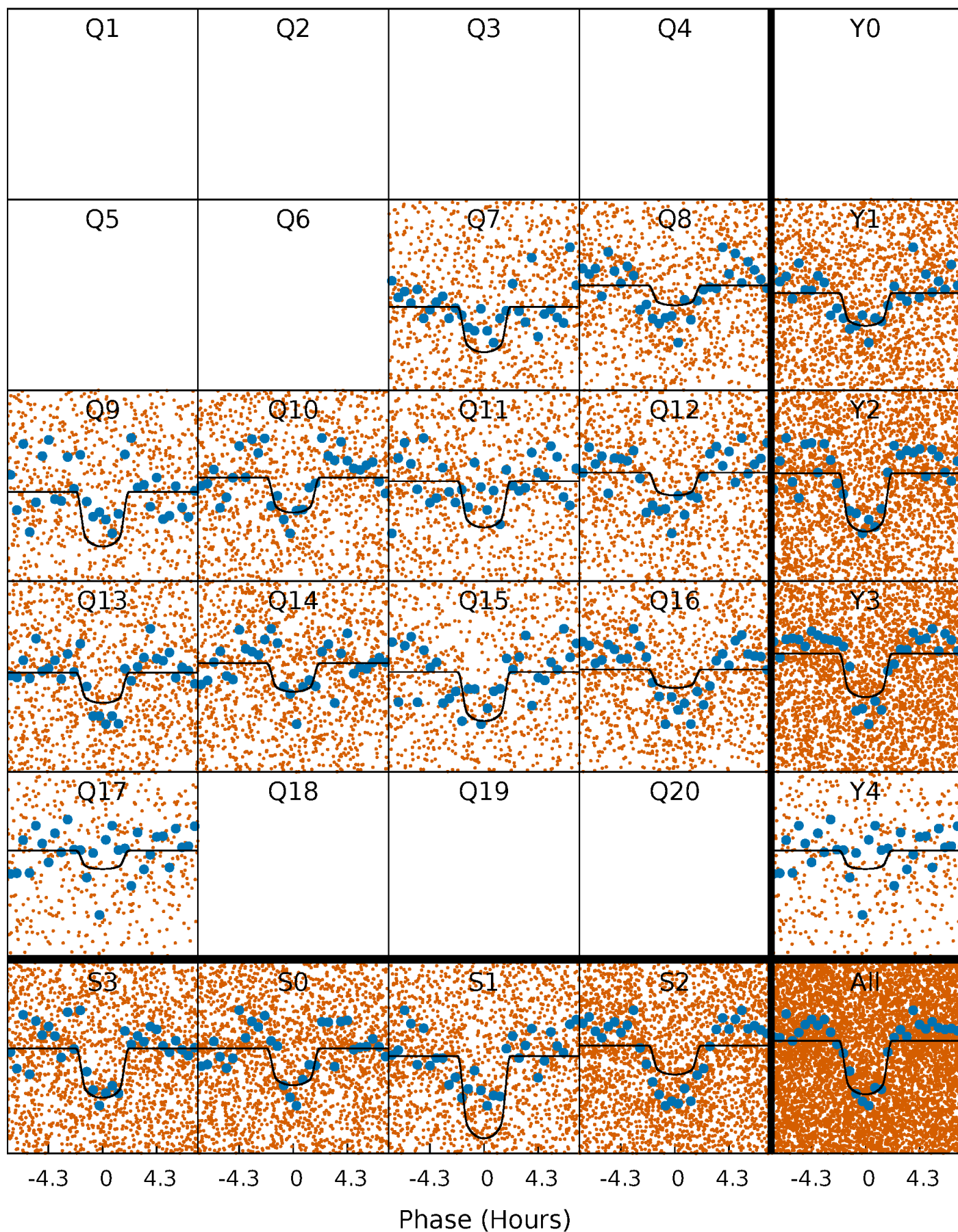
PDC Quarter-Phased Transit Curves

TCE 009777290-01 P= 1.332500 Days $T_0=132.101525$ (BKJD)



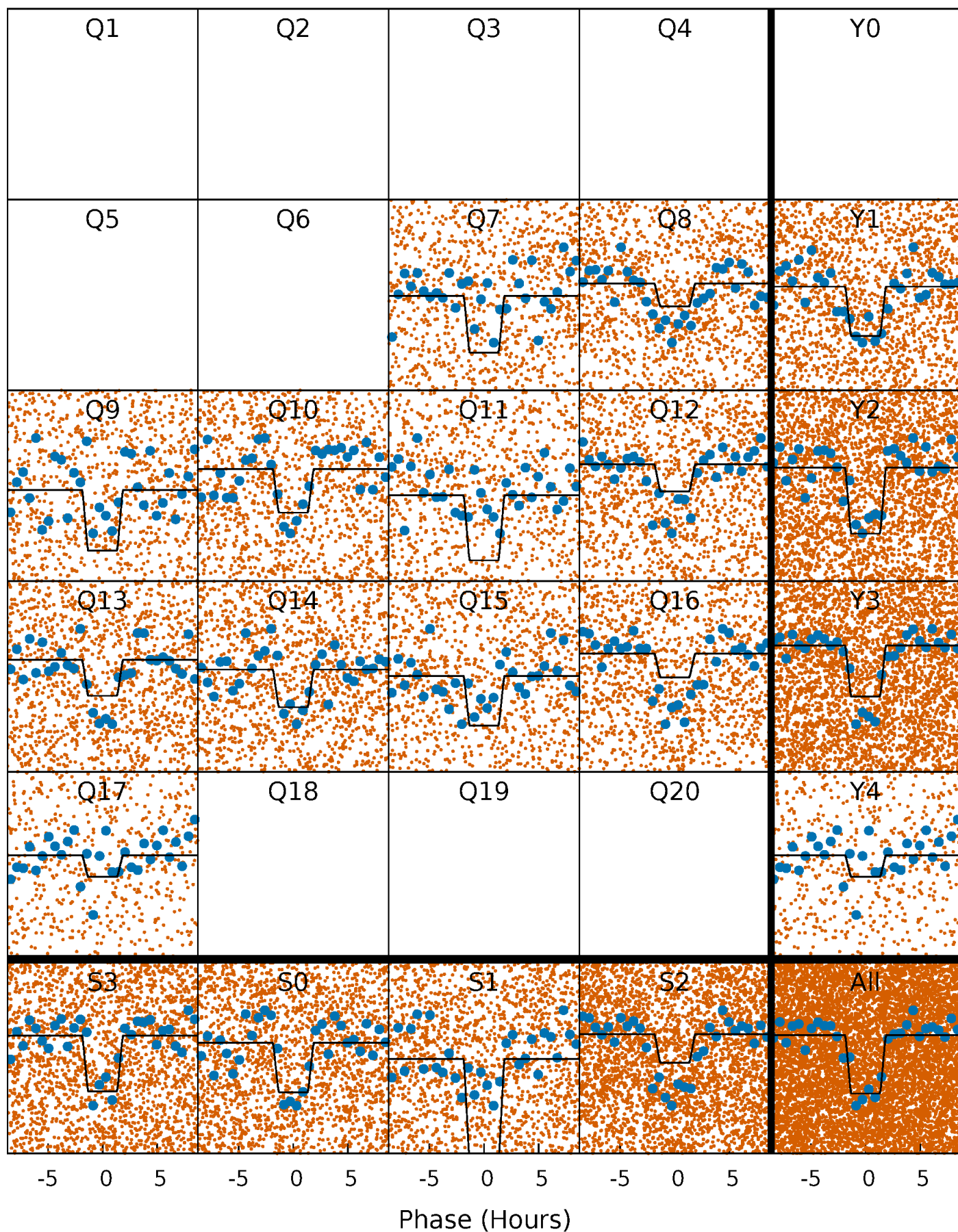
DV Quarter-Phased Transit Curves

TCE 009777290-01 P= 1.332500 Days $T_0=132.101525$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

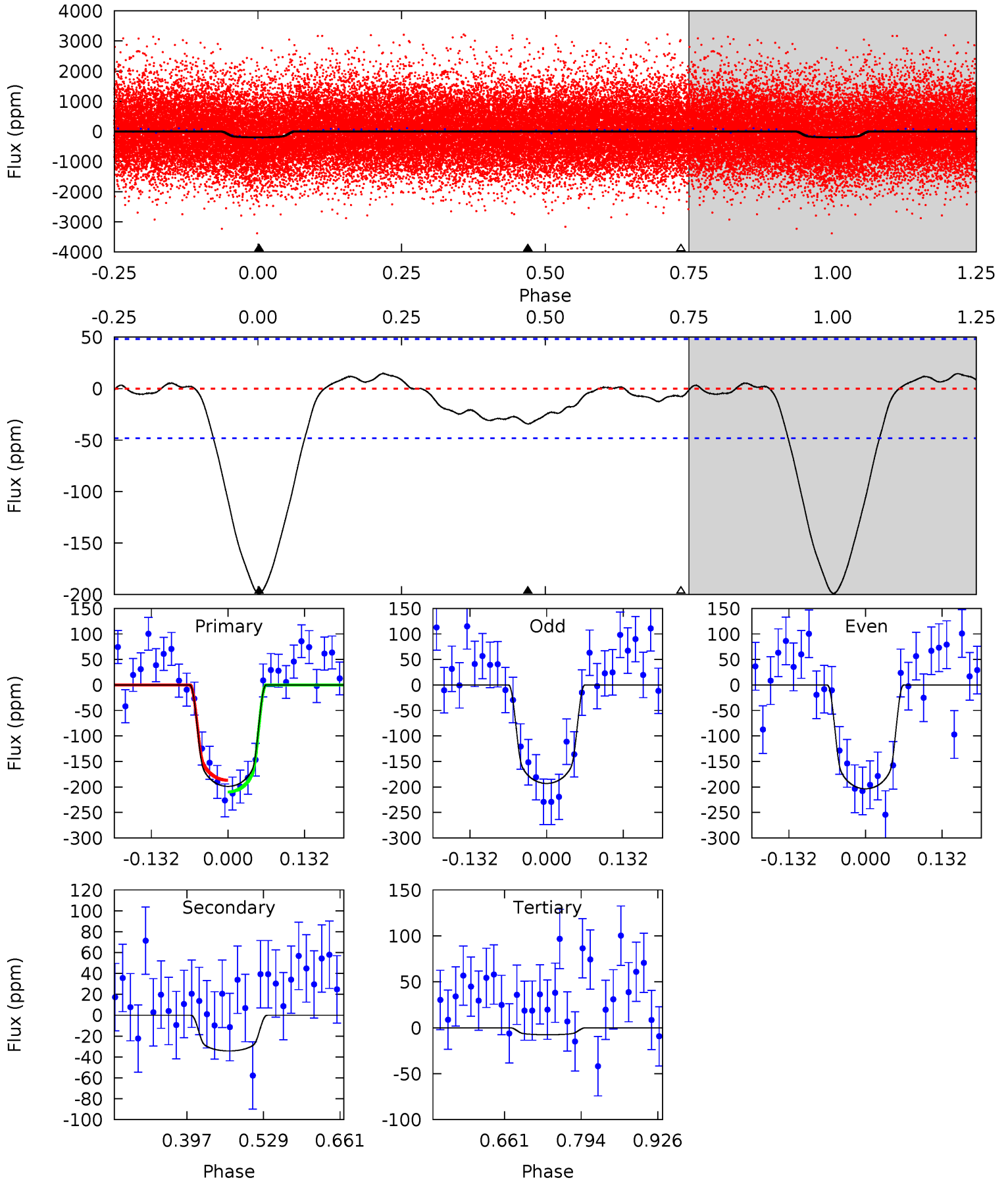
TCE 009777290-01 P= 1.332553 Days $T_0=132.065387$ (BKJD)



DV Model-Shift Uniqueness Test

009777290-01, P = 1.332500 Days, E = 132.101525 Days

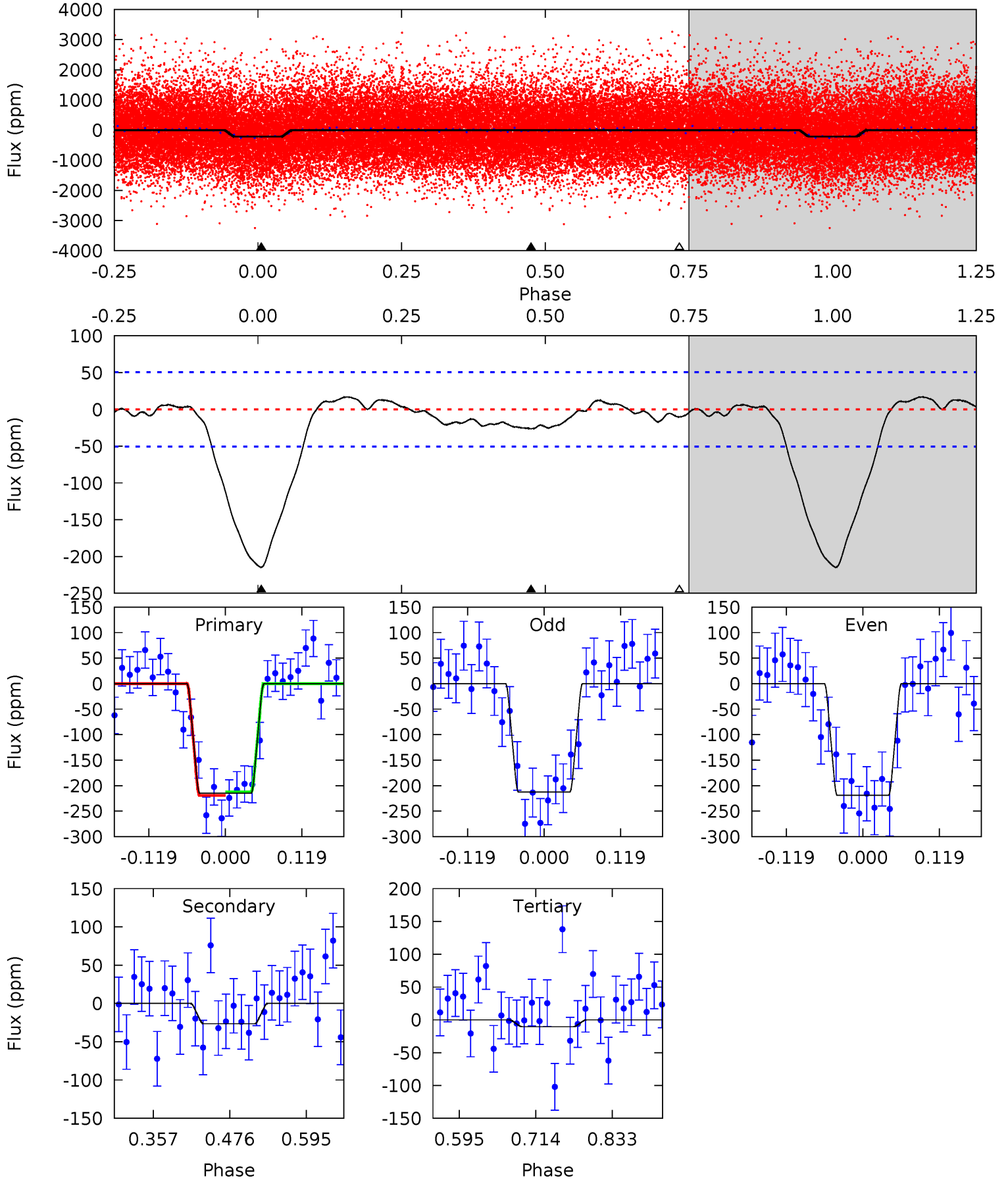
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	3.20	0.72	0	4.51	1.51	0.77	17.9	18.6	2.48	3.20	0.49	0.89	0.07	1.08



Alt Model-Shift Uniqueness Test

009777290-01, P = 1.332553 Days, E = 132.065387 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.2	2.36	0.93	0	4.53	1.56	0.85	18.3	19.2	1.44	2.36	0.29	0.93	0.07	0.32



Stellar Parameters For KIC 009777290

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5926^{+184}_{-205}	$4.381^{+0.108}_{-0.201}$	$-0.100^{+0.300}_{-0.300}$	$1.058^{+0.309}_{-0.166}$	$0.982^{+0.138}_{-0.124}$	$1.168^{+0.675}_{-0.582}$
	+3%/-3%	+2%/-5%	+300%/-300%	+29%/-16%	+14%/-13%	+58%/-50%
Source	KIC0	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 009777290-01 / KOI 4316.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-34 ± 11	$1.80^{+0.55}_{-0.53}$	2484^{+176}_{-152}	3891^{+631}_{-412}	$3.089^{+3.367}_{-1.418}$
Alt.	-26 ± 11	$1.75^{+0.60}_{-0.53}$	2474^{+191}_{-137}	3741^{+608}_{-497}	$2.657^{+2.614}_{-1.513}$

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

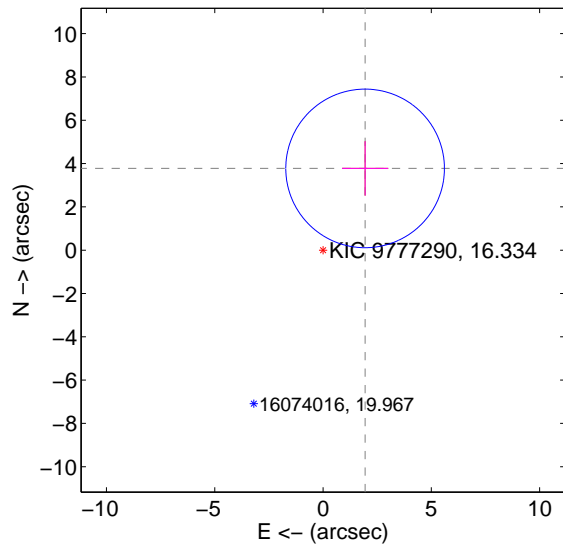
Supplemental centroid analysis for 009777290-01. Kepler magnitude: 16.33. Transit SNR 13.90

There are 0 quarters with good PRF difference image offsets

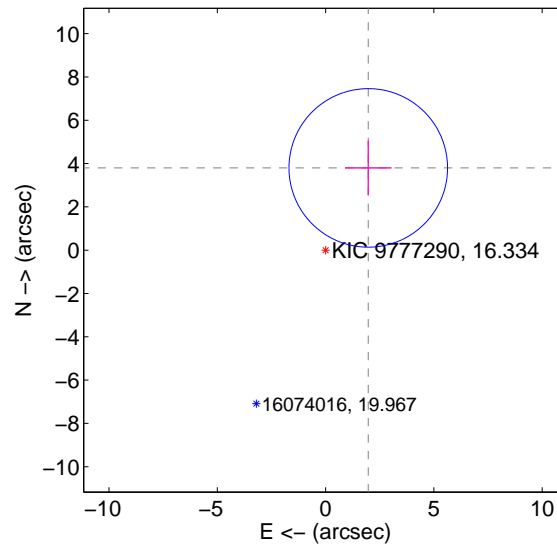
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.246 ± 1.221	3.48	-1.943 ± 1.070	3.776 ± 1.258
PRF-fit source offset from KIC position	4.280 ± 1.220	3.51	-1.971 ± 1.070	3.799 ± 1.258
photometric centroid source offset	6.02 ± 1.10	5.48	-2.60 ± 0.99	5.43 ± 1.12

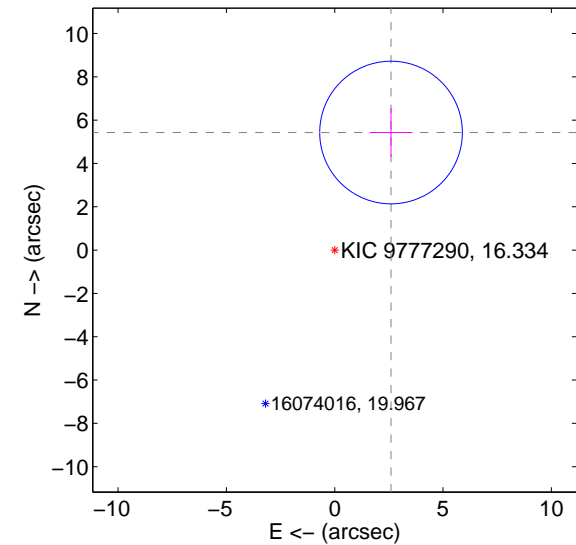
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

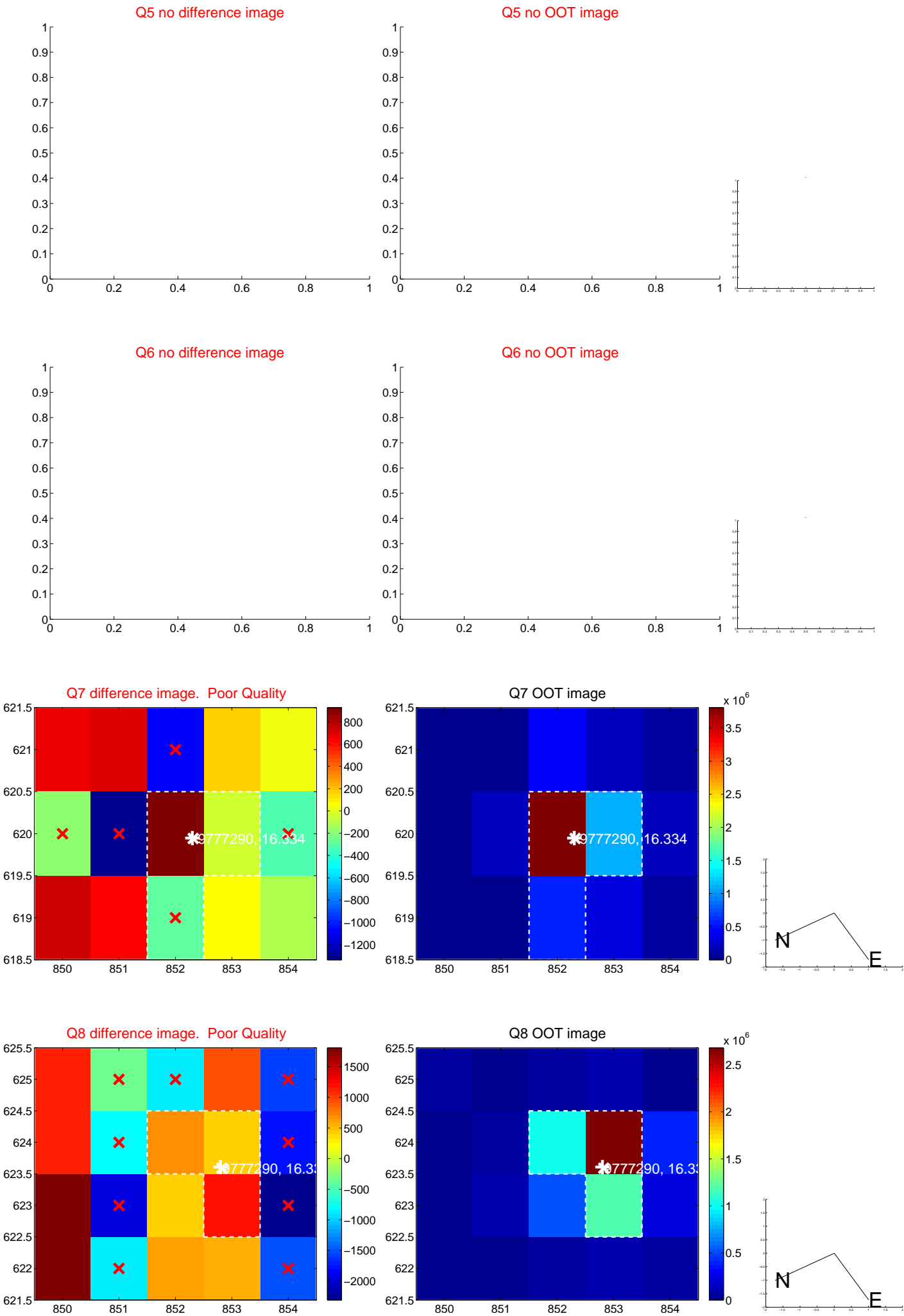


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

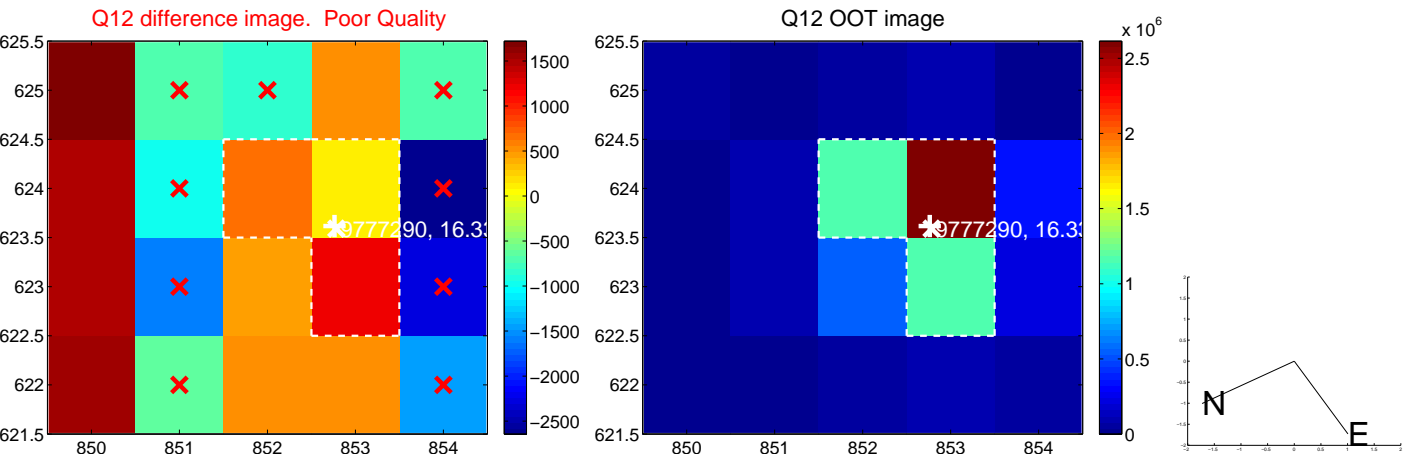
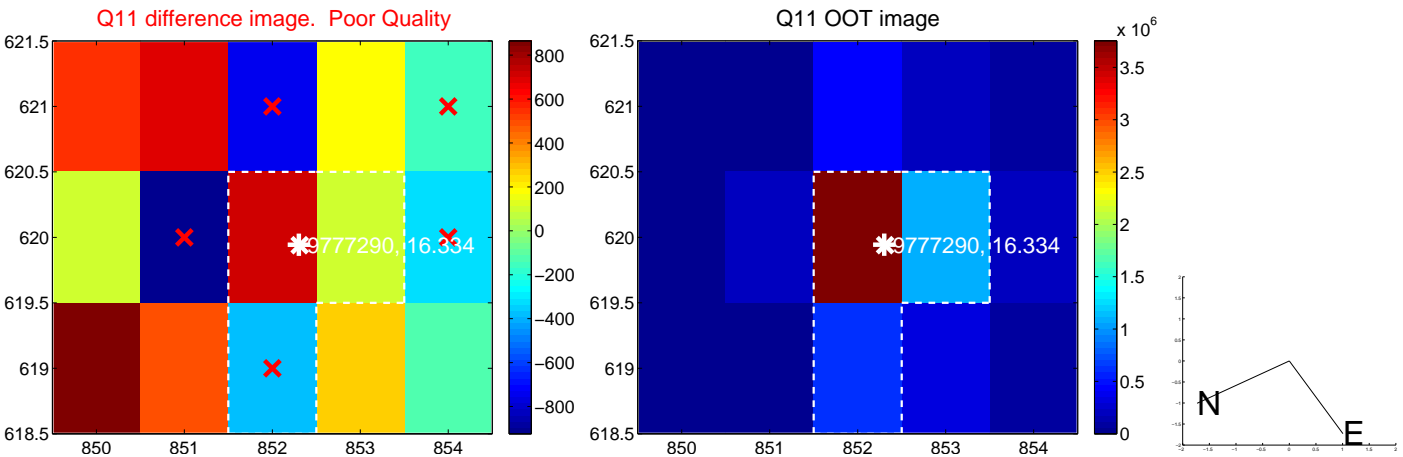
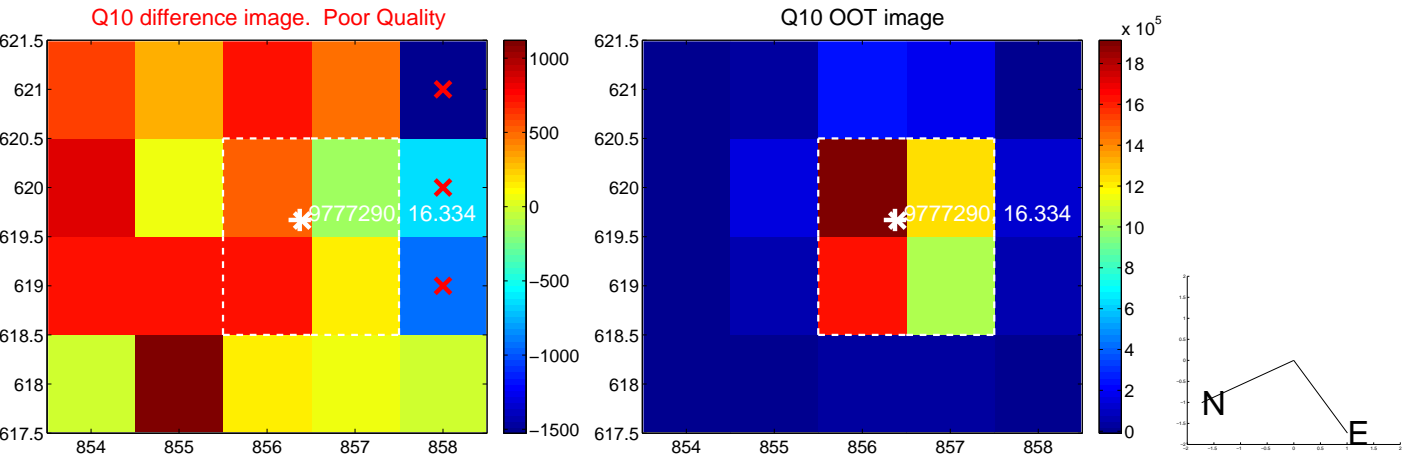
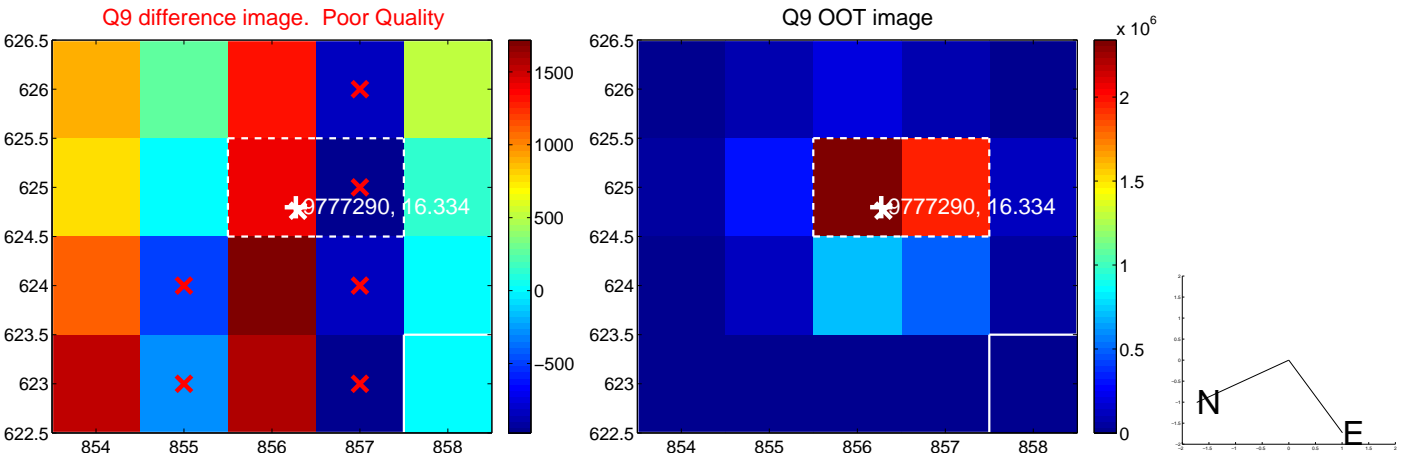
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



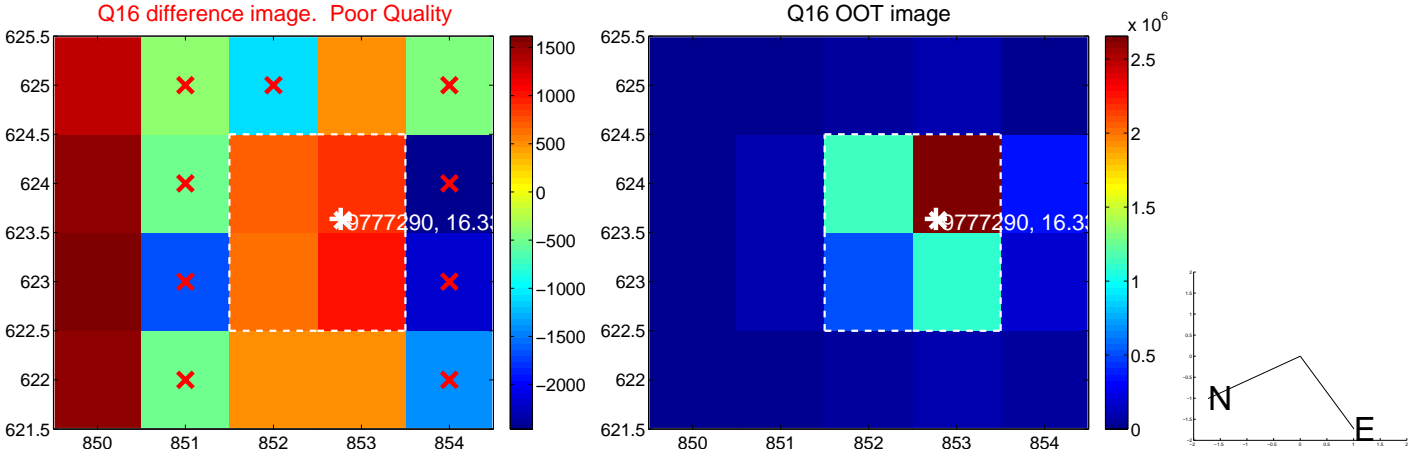
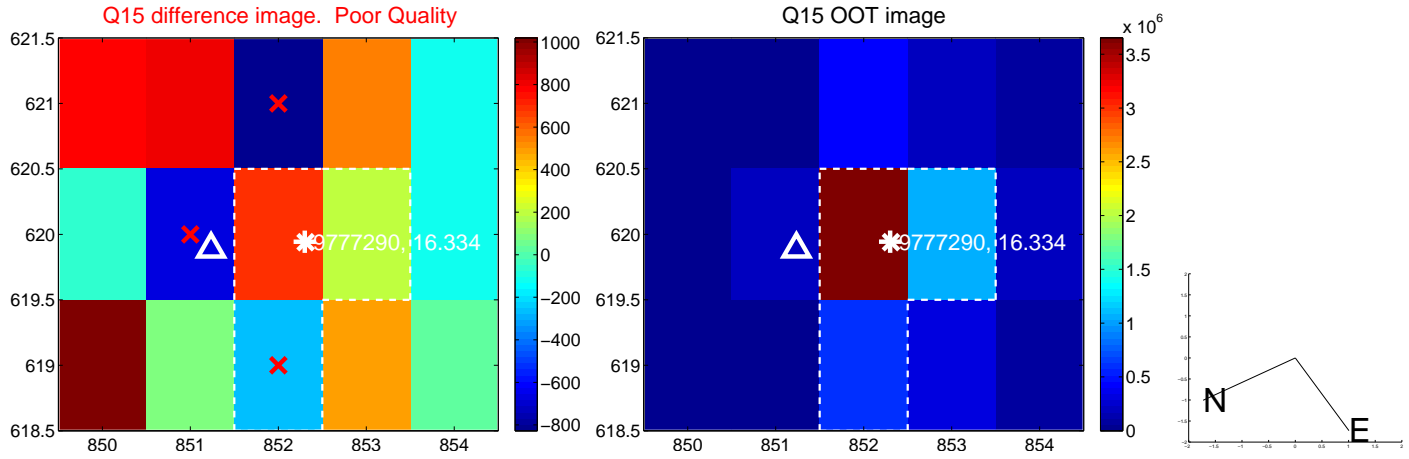
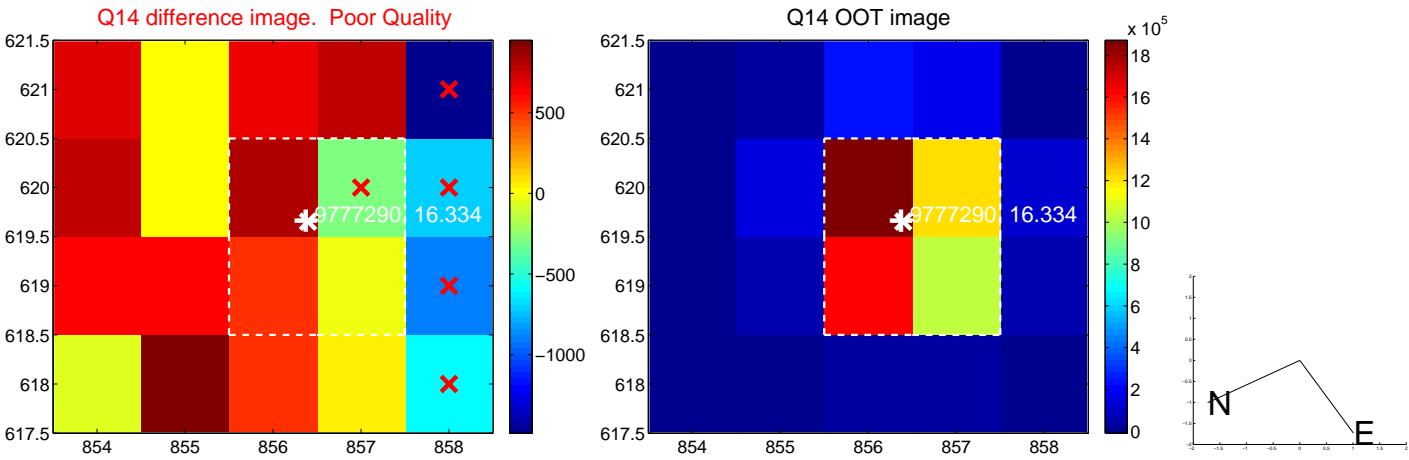
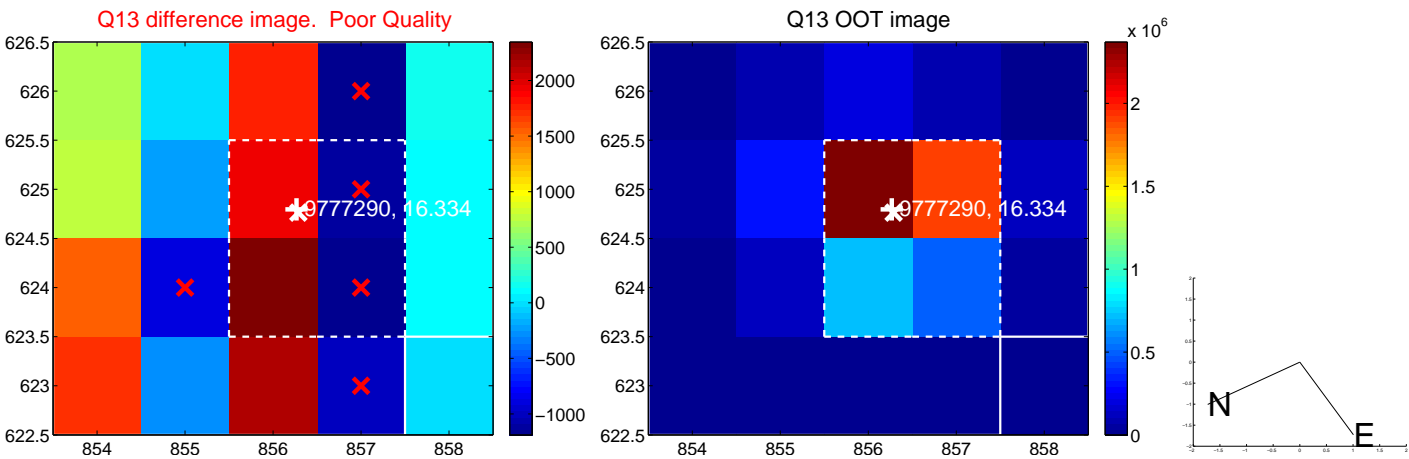
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



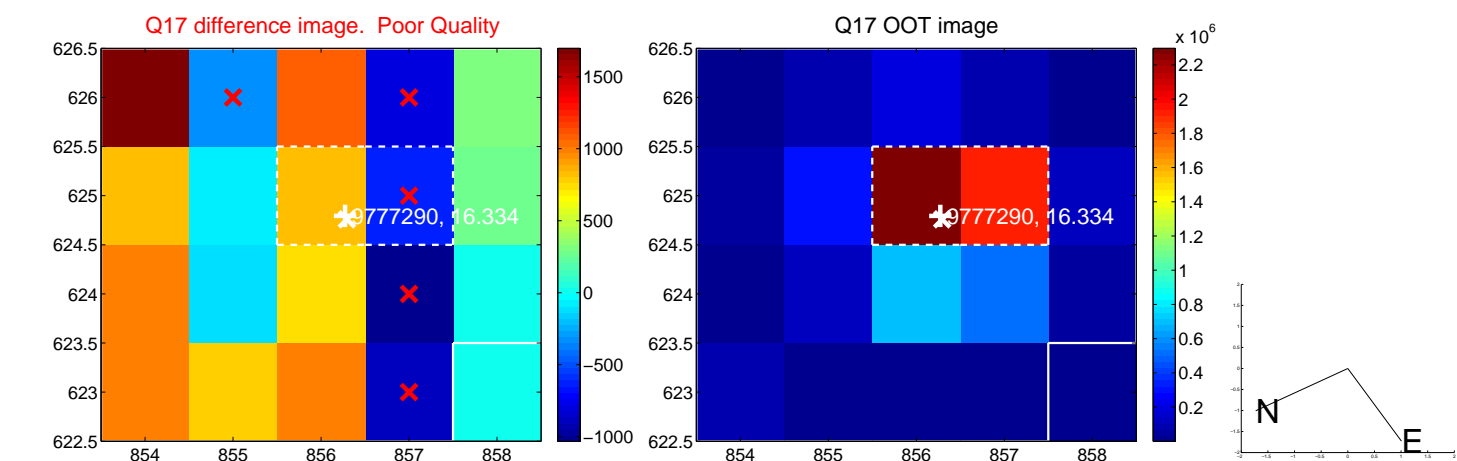
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



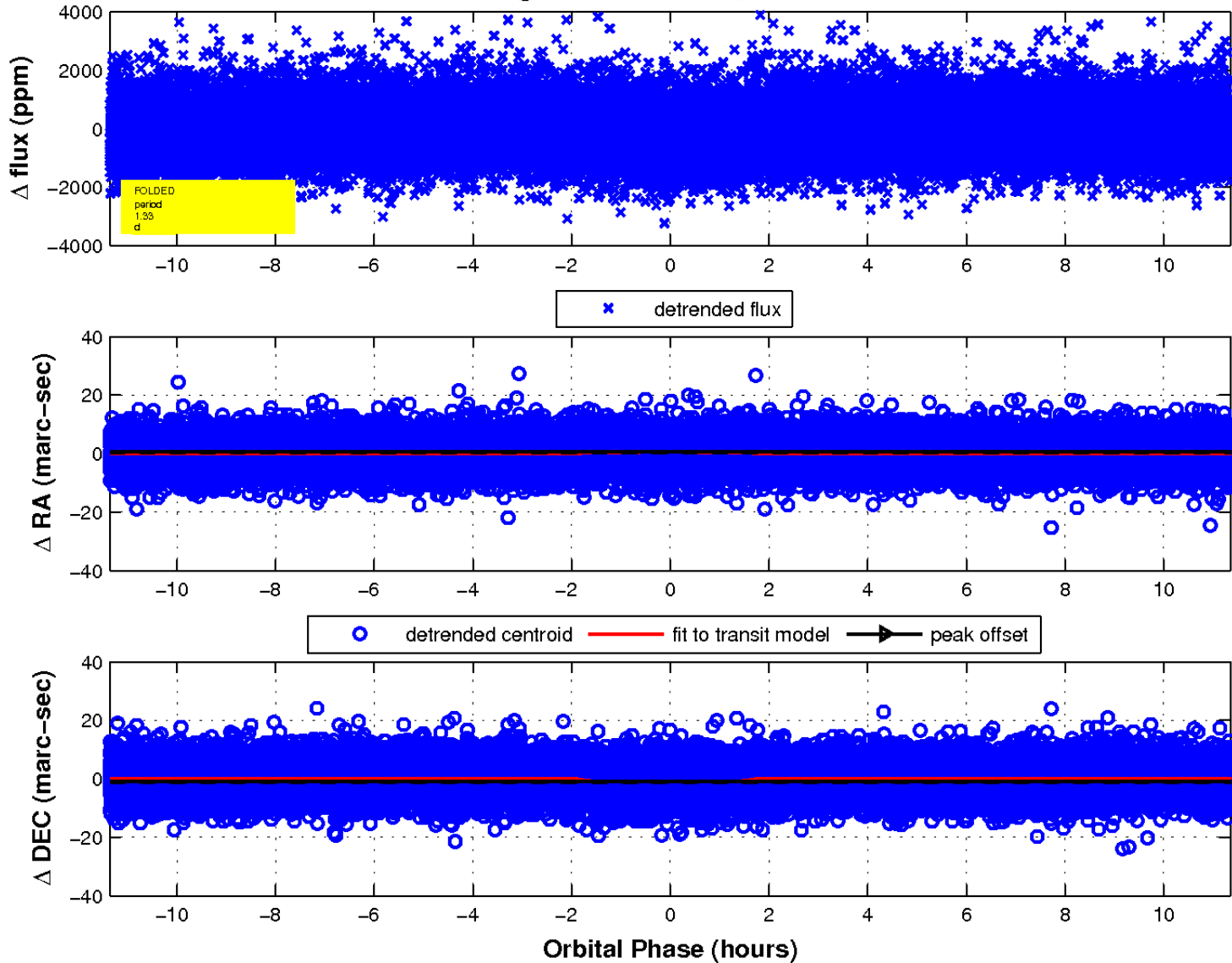
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

