

KIC 010662021

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 _⊕)
010662021-01	OBS	7357.01	1.231379	131.776644	38.5	3.615	7.7	8.0	1.12	5600	0.82	2249.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010662021-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_UNRESOLVED_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 010662021-01

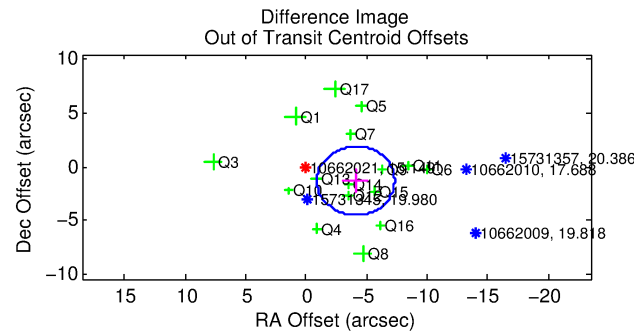
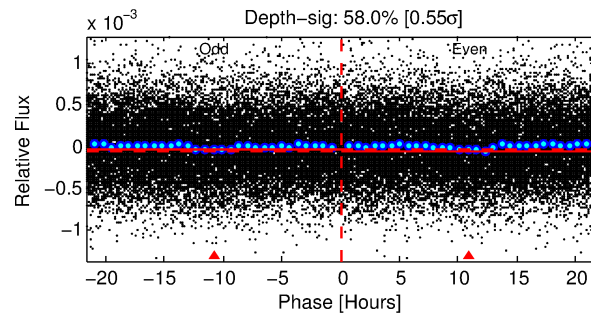
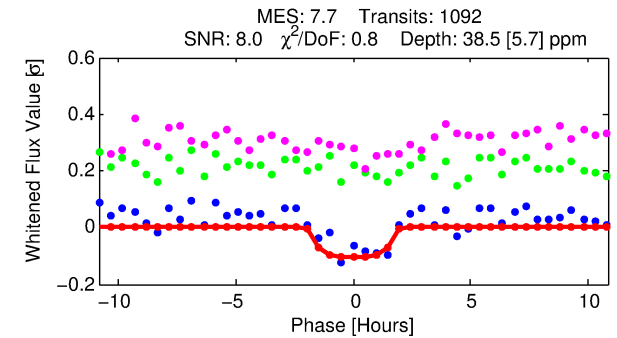
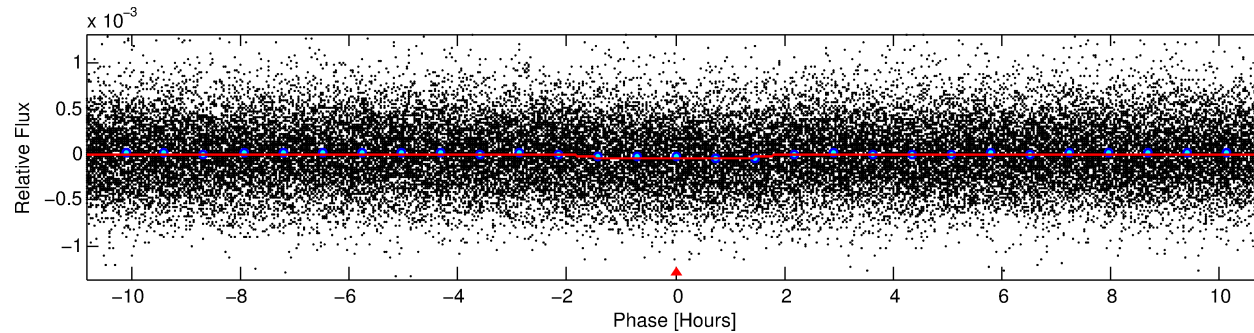
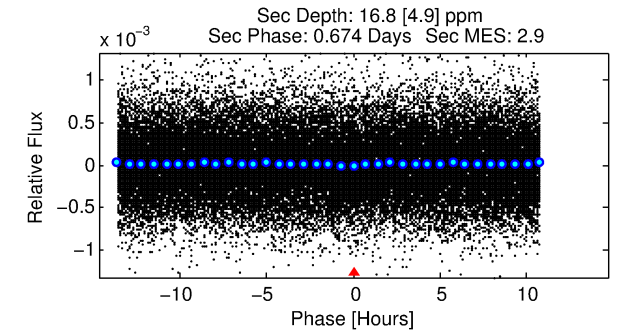
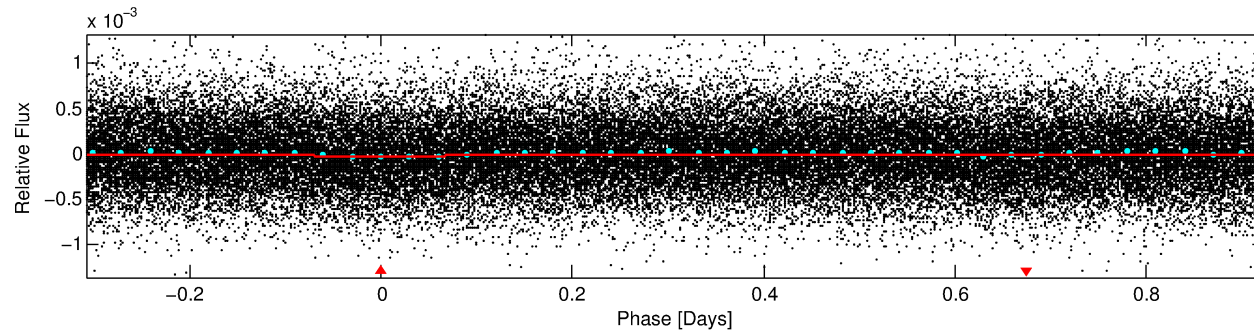
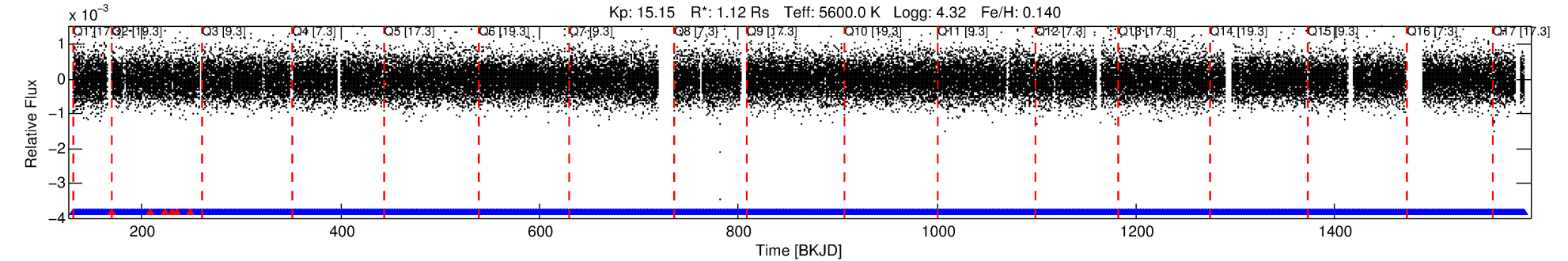
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	ΔRow	ΔCol	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ _P	σ _T
010662021-01	10662021	010661783-pri	10661783	1:1	237.3	17	57	9.59	15.15	5584.60	Direct-PRF	0	1.10	1.93

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: 10662021 Candidate: 1 of 1 Period: 1.231 d

KOI: K07357.01 Corr: 0.872



DV Fit Results:

Period = 1.23138 [0.00002] d
Epoch = 131.7766 [0.0058] BKJD
Rp/R* = 0.0068 [0.0052]
a/R* = 1.53 [3.07]
b = 0.89 [0.81]
Seff = 2249.50 [800.36]
Teff = 1756 [156] K
Rp = 0.83 [0.68] Re
a = 0.0221 [0.0052] AU
Ag = 6.66 [10.68] [0.53σ]
Teffp = 4362 [1714] K [1.51σ]

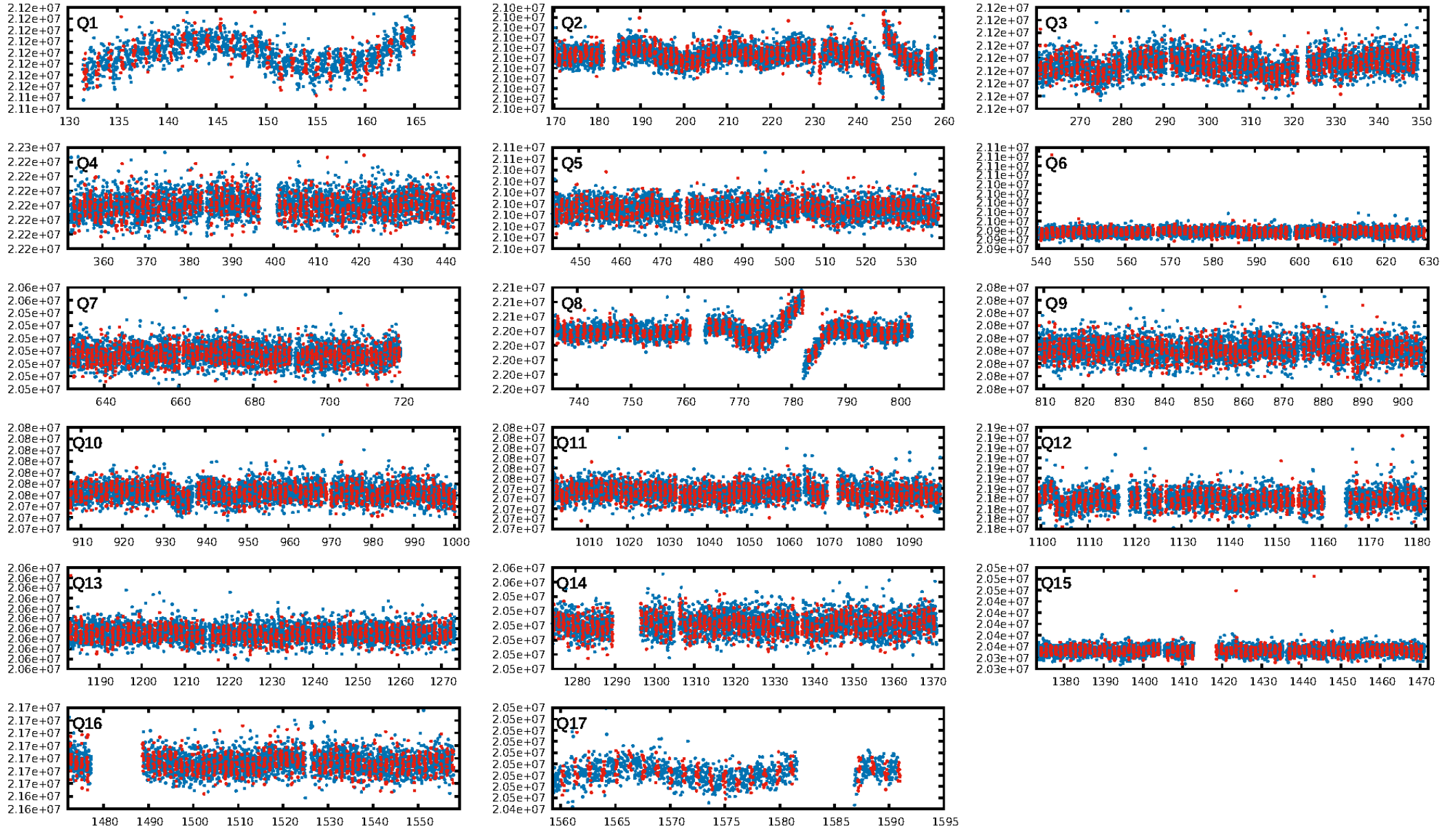
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.05e-13
RollingBand-fgt: 0.99 [1036/1042]
GhostDiagnostic-chr: -0.03318
Centroid-sig: 16.4%
Centroid-so: 1.534 arcsec [0.83σ]
OotOffset-rm: 4.299 arcsec [4.01σ]
KicOffset-rm: 4.352 arcsec [4.34σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.00 [0/16]
DiffImageOverlap-fno: 1.00 [17/17]

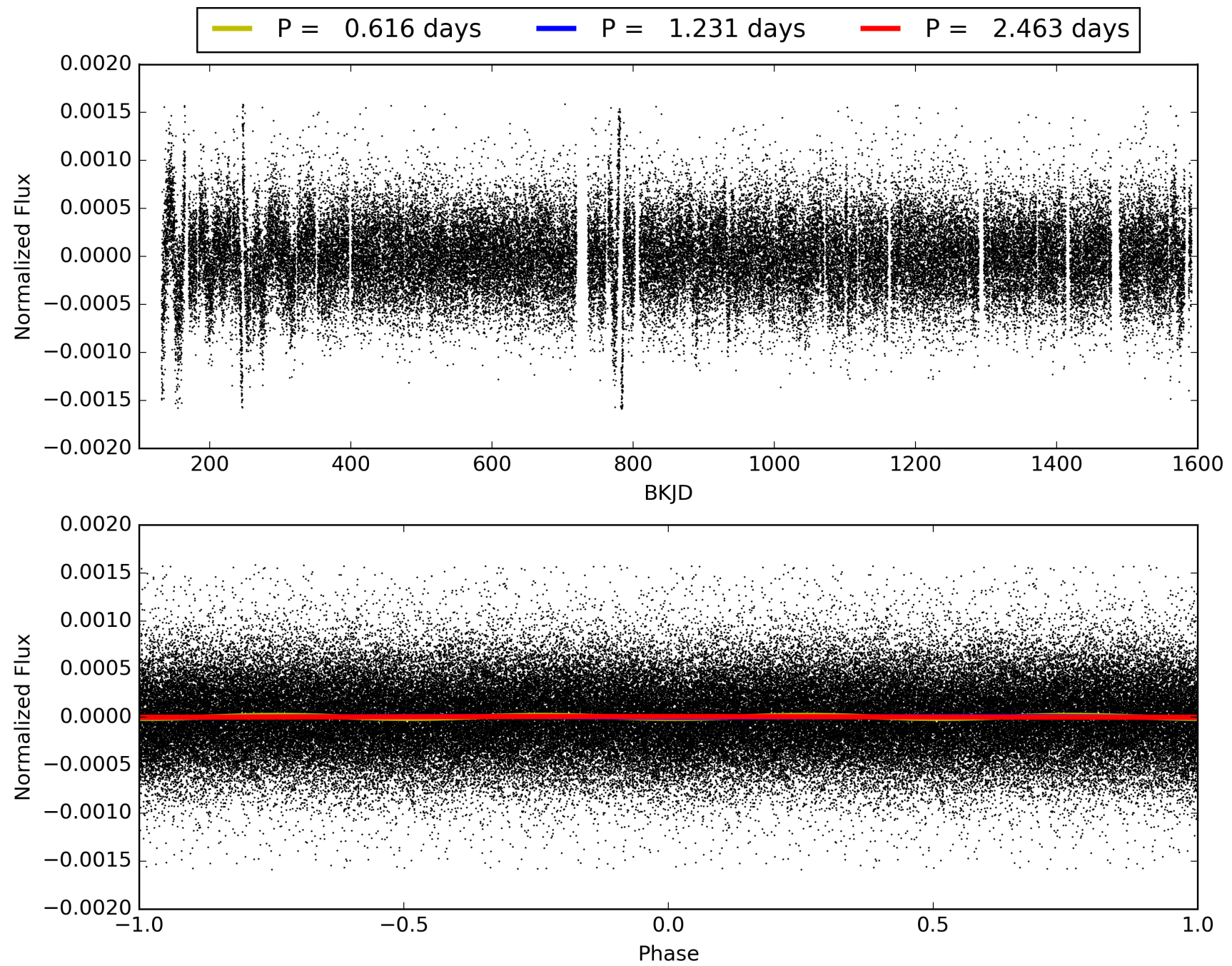
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:19:29 Z

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

TCE 010662021-01, PDC Light Curves

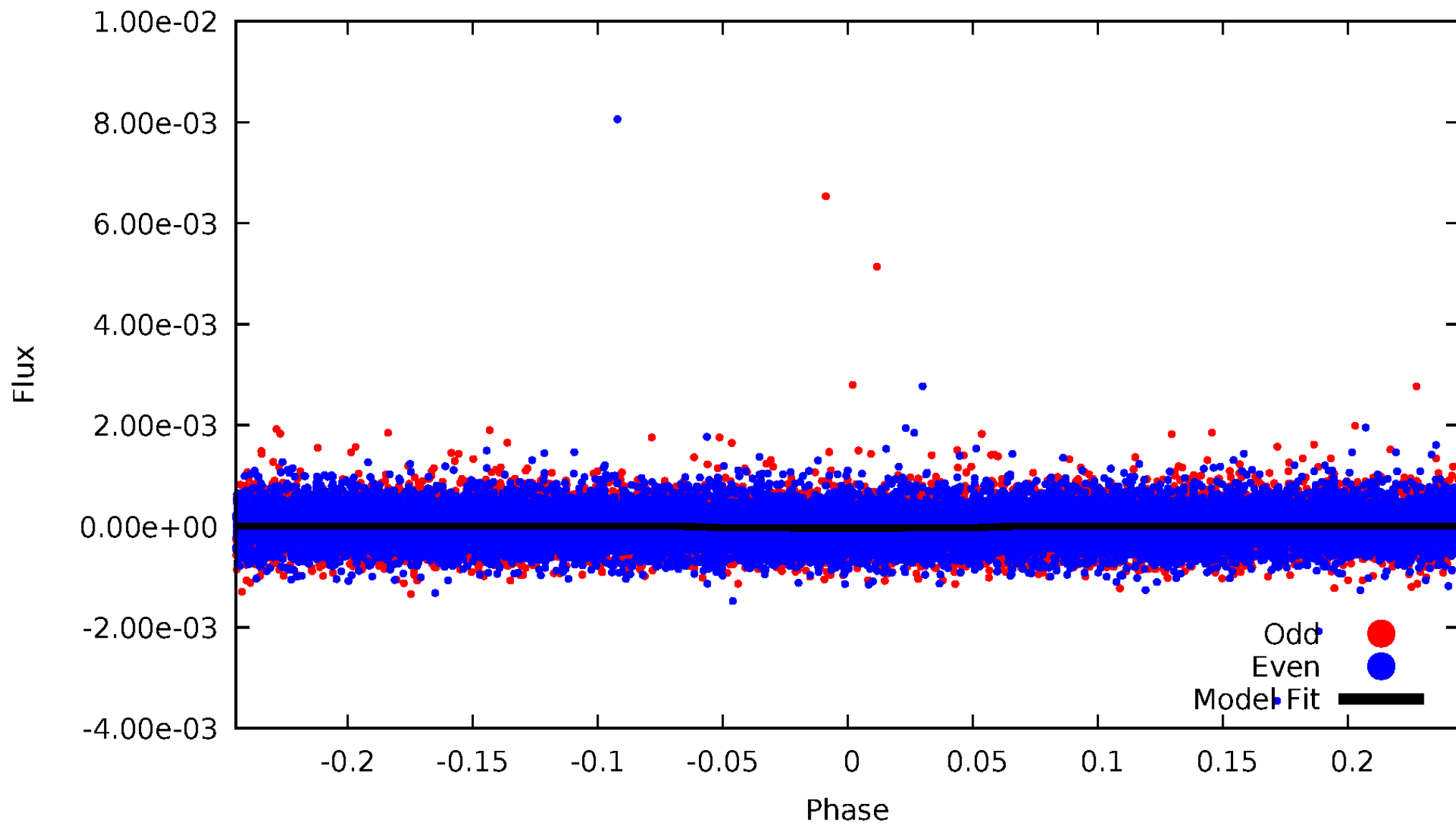


TCE 010662021-01



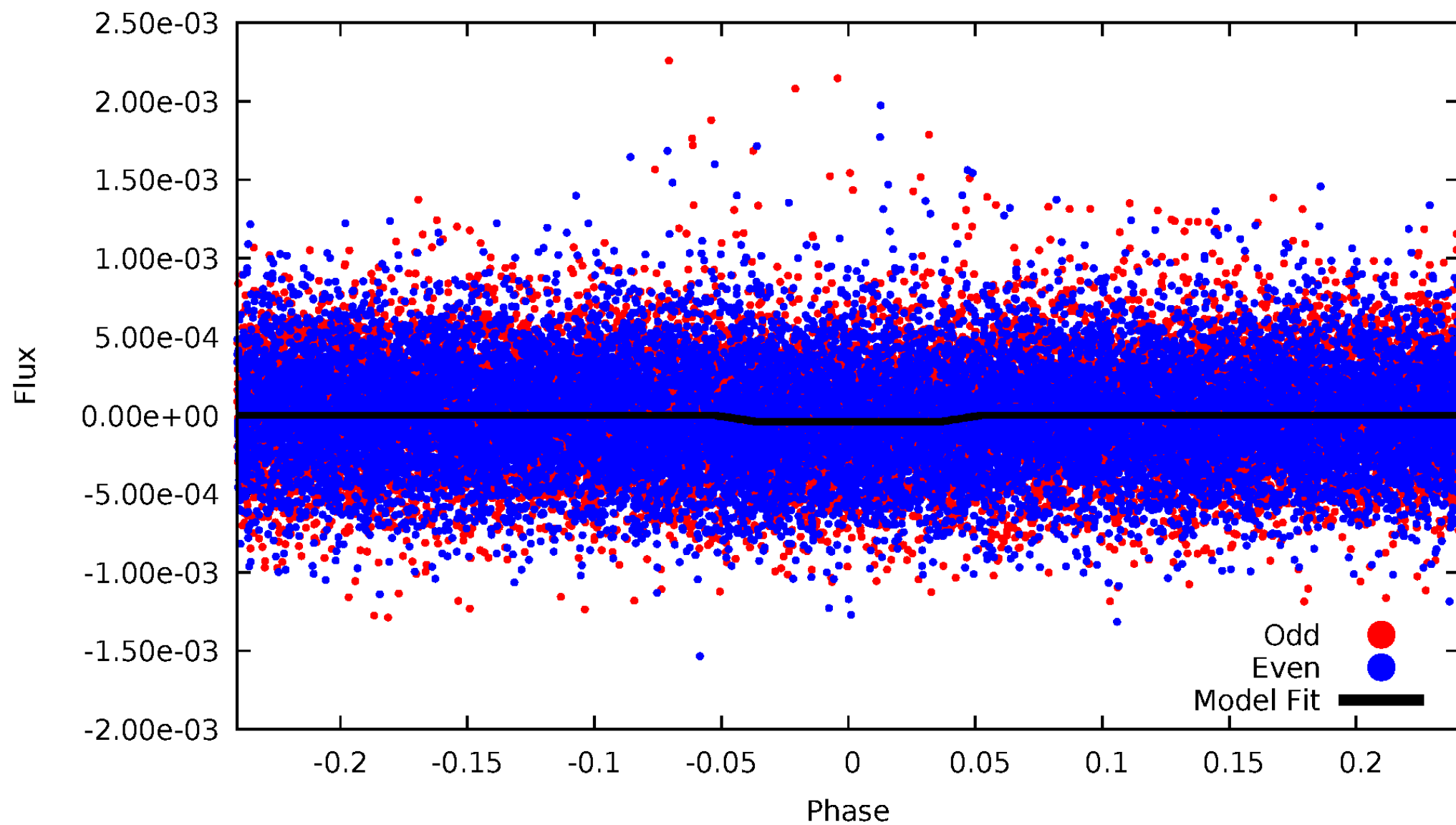
DV Odd/Even

TCE 010662021-01



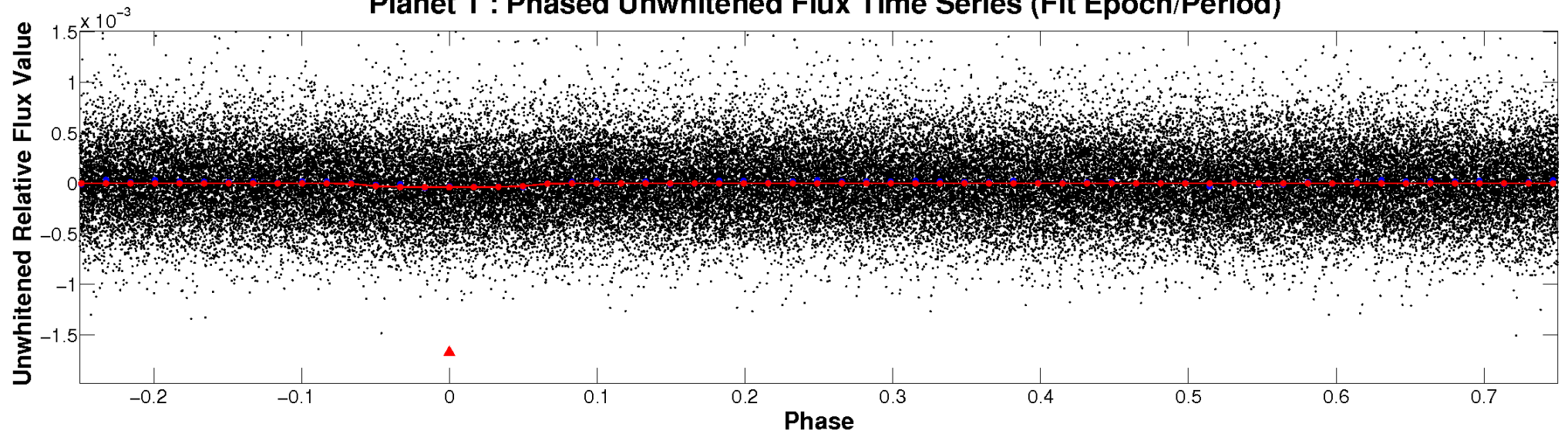
ALT Odd/Even

TCE 010662021-01

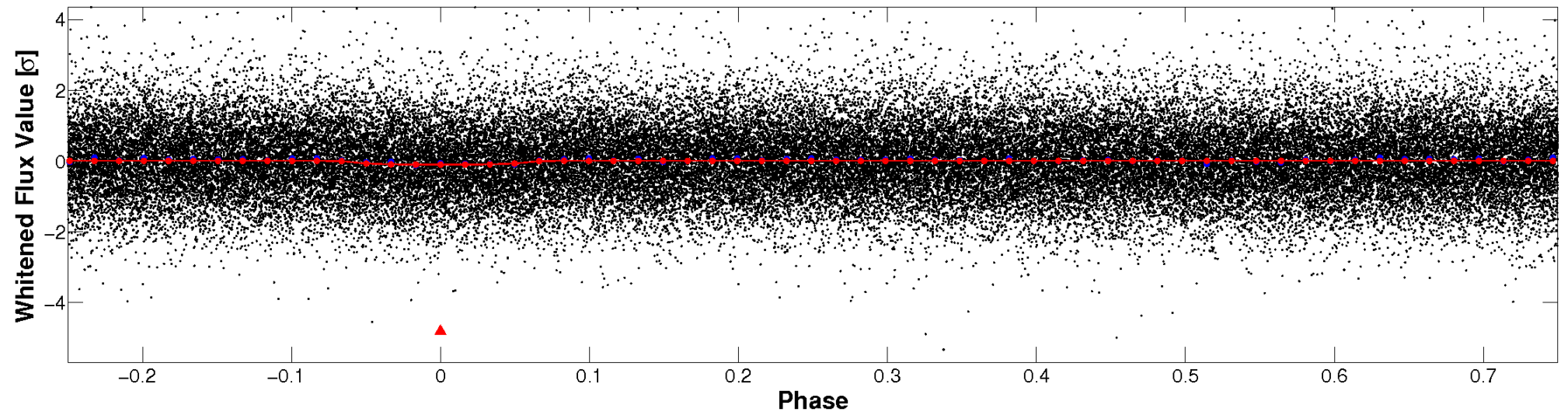


Non-Whitened Vs. Whitened Light Curve

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

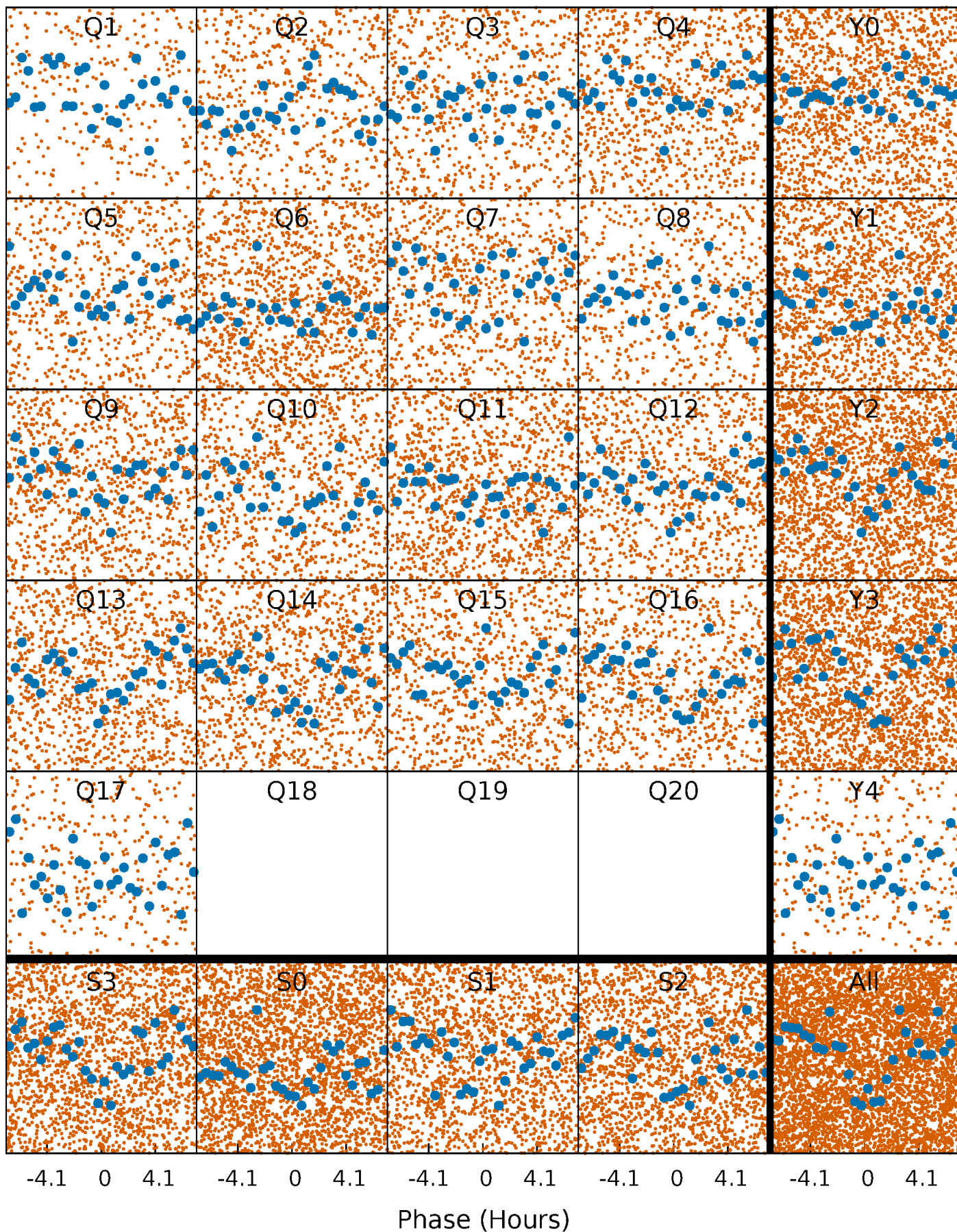


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



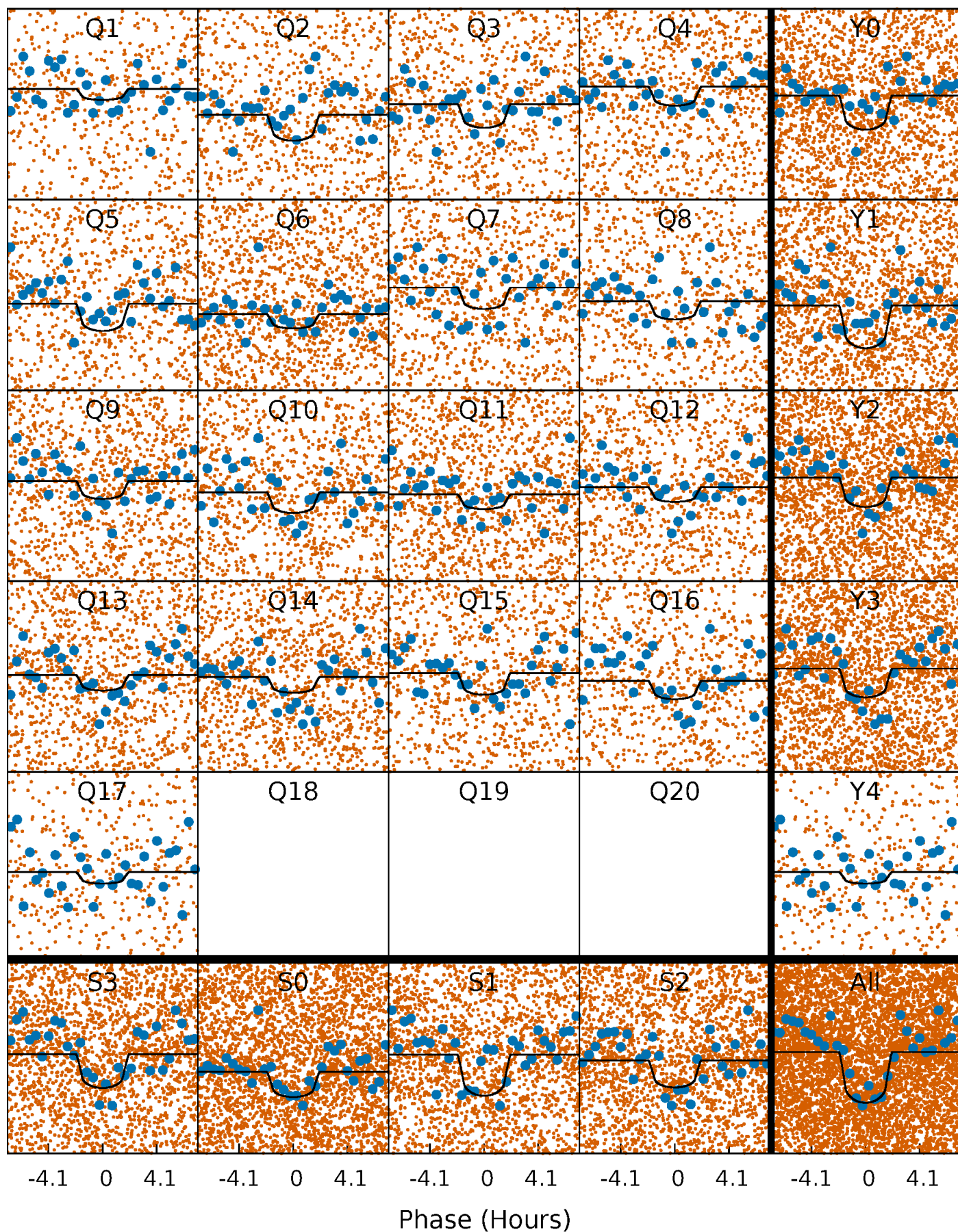
PDC Quarter-Phased Transit Curves

TCE 010662021-01 P= 1.231379 Days $T_0=131.776644$ (BKJD)



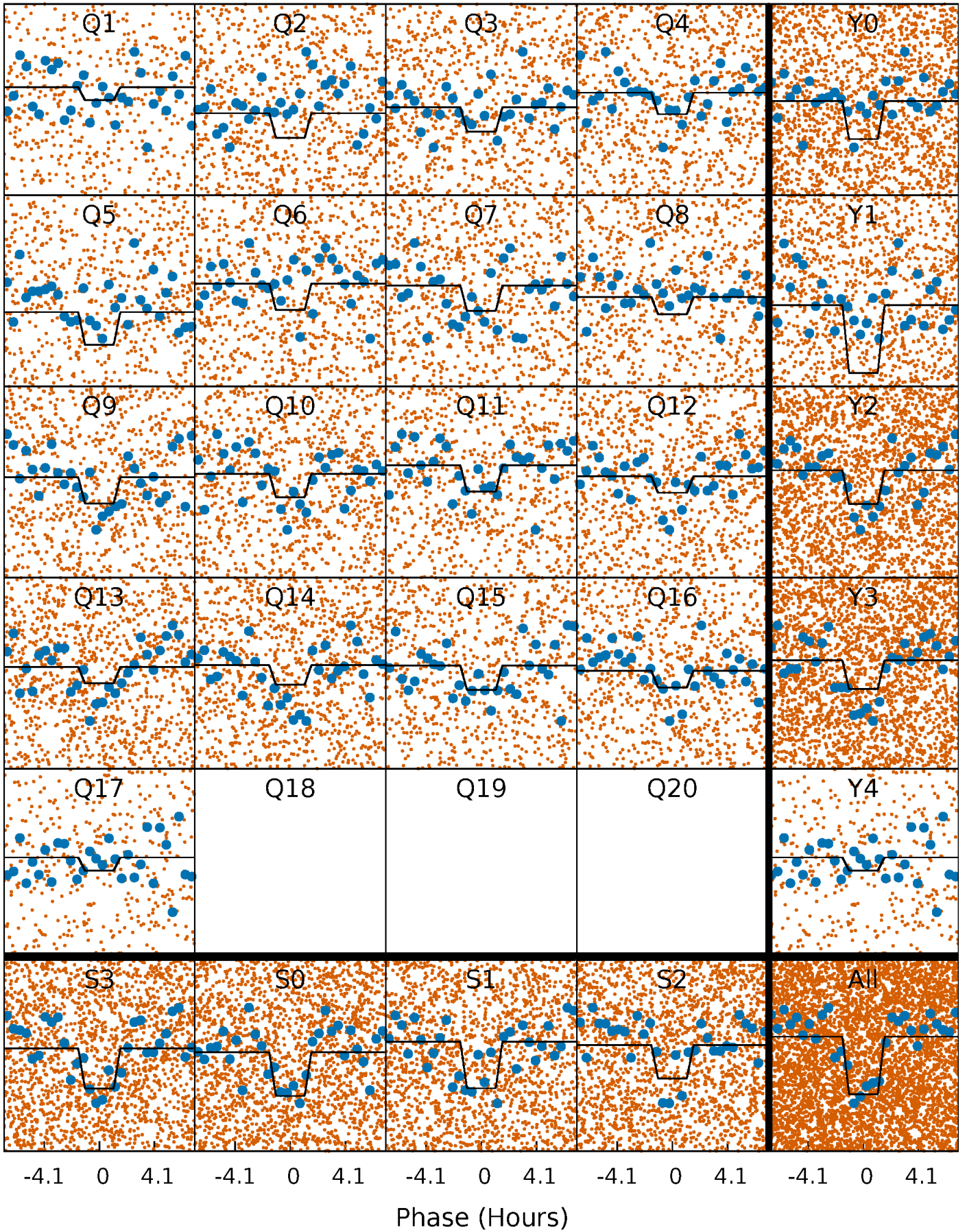
DV Quarter-Phased Transit Curves

TCE 010662021-01 P= 1.231379 Days $T_0=131.776644$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

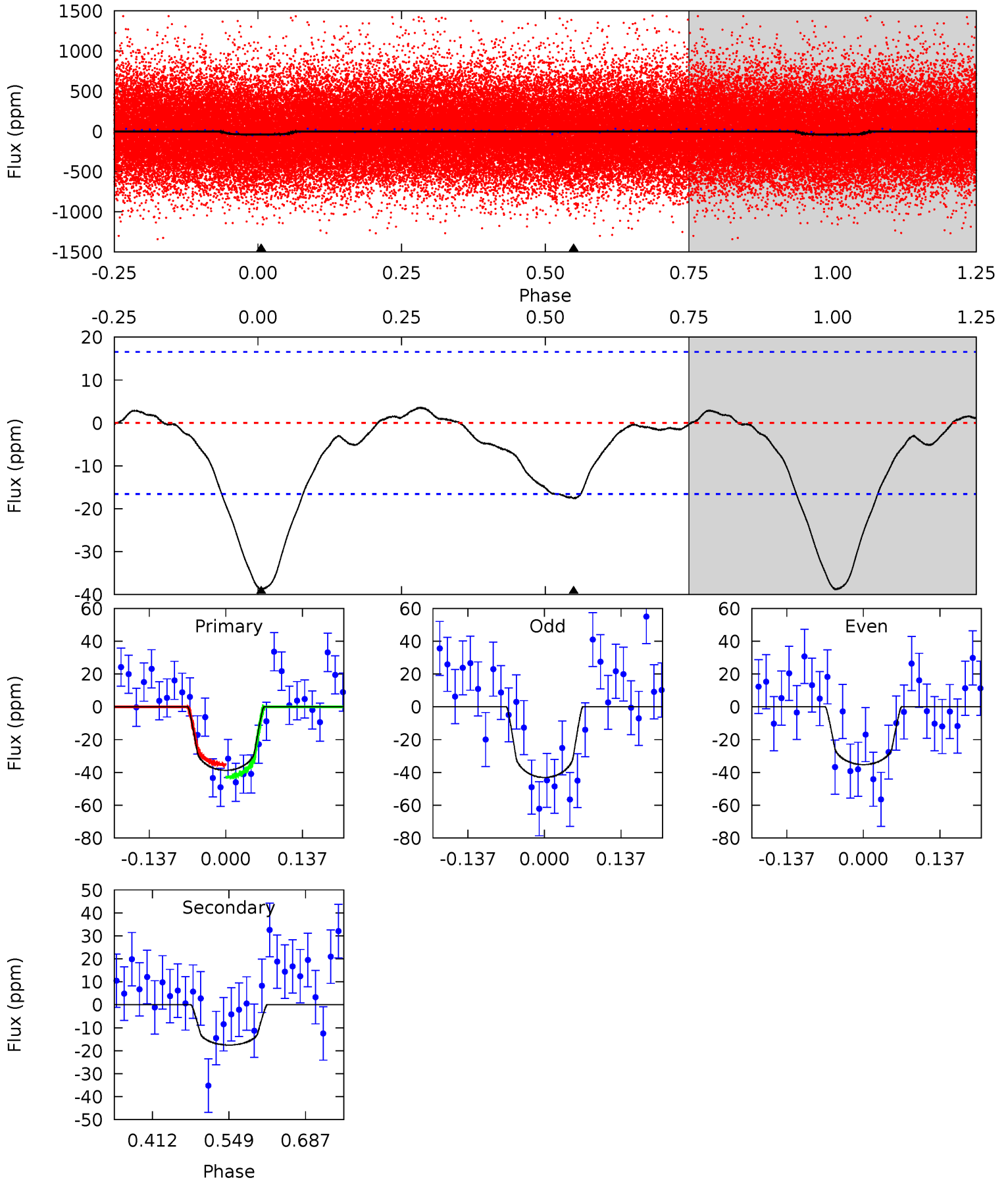
TCE 010662021-01 P= 1.231405 Days $T_0=131.773712$ (BKJD)



DV Model-Shift Uniqueness Test

010662021-01, P = 1.231379 Days, E = 130.545265 Days

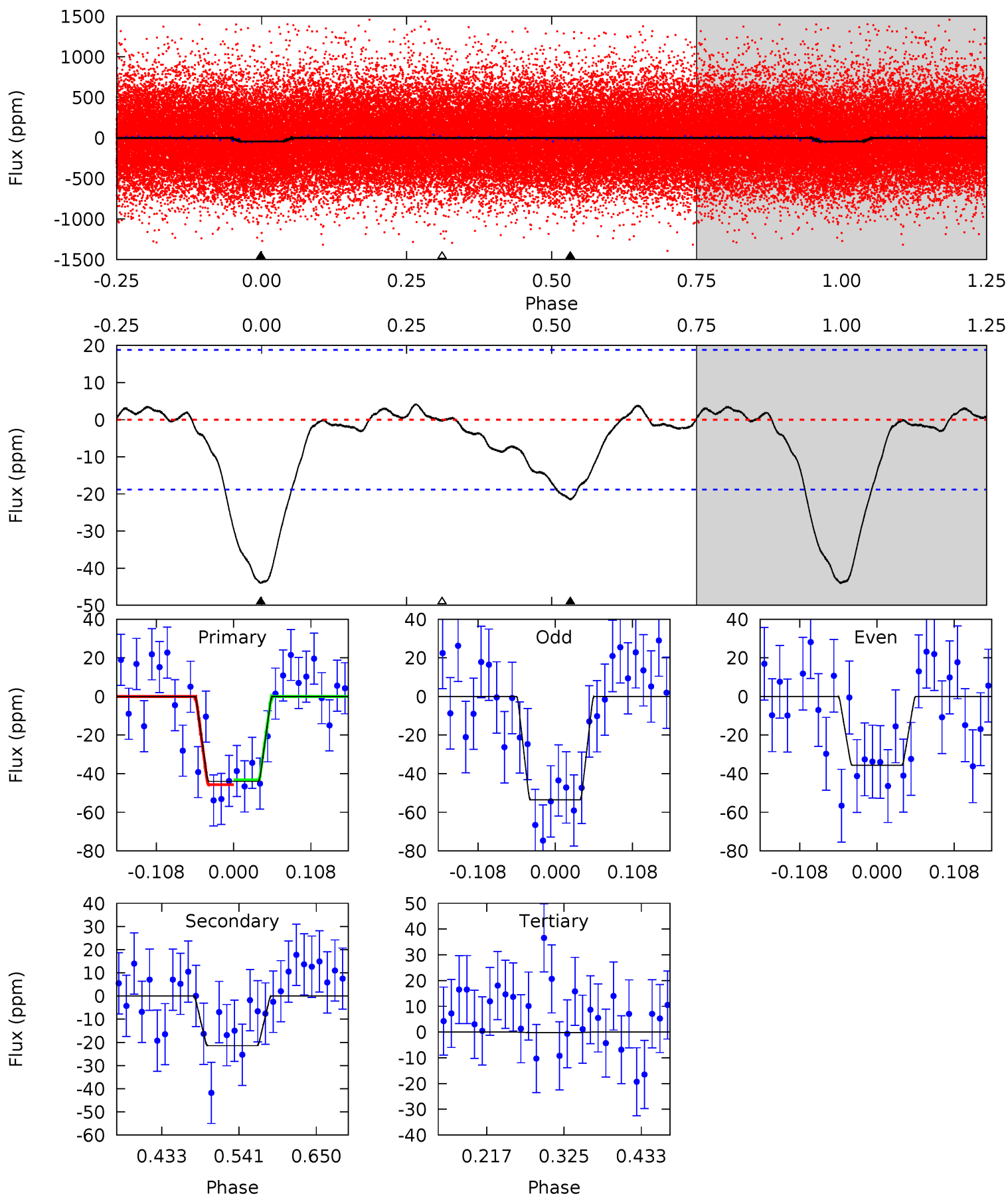
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	4.76	0	0	4.50	1.49	0.66	10.5	10.5	4.76	4.76	1.06	0.82	0.08	1.03



Alt Model-Shift Uniqueness Test

010662021-01, P = 1.231405 Days, E = 130.542307 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.6	5.18	0.05	0	4.55	1.61	0.69	10.6	10.6	5.13	5.18	2.17	0.83	0.09	0.30



Stellar Parameters For KIC 010662021

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5600^{+166}_{-166}	$4.320^{+0.162}_{-0.180}$	$0.140^{+0.250}_{-0.300}$	$1.118^{+0.319}_{-0.213}$	$0.951^{+0.113}_{-0.085}$	$0.959^{+0.864}_{-0.453}$
	+3%/-3%	+4%/-4%	+179%/-214%	+29%/-19%	+12%/-9%	+90%/-47%
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 010662021-01 / KOI 7357.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-18 ± 4	$0.90^{+0.66}_{-0.50}$	2446^{+176}_{-142}	4378^{+1901}_{-835}	$5.905^{+23.856}_{-4.044}$
Alt.	-21 ± 4	$0.85^{+0.66}_{-0.52}$	2452^{+184}_{-152}	4666^{+2722}_{-928}	$8.431^{+44.668}_{-5.933}$

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 $A_{obs} \gg 1.0$

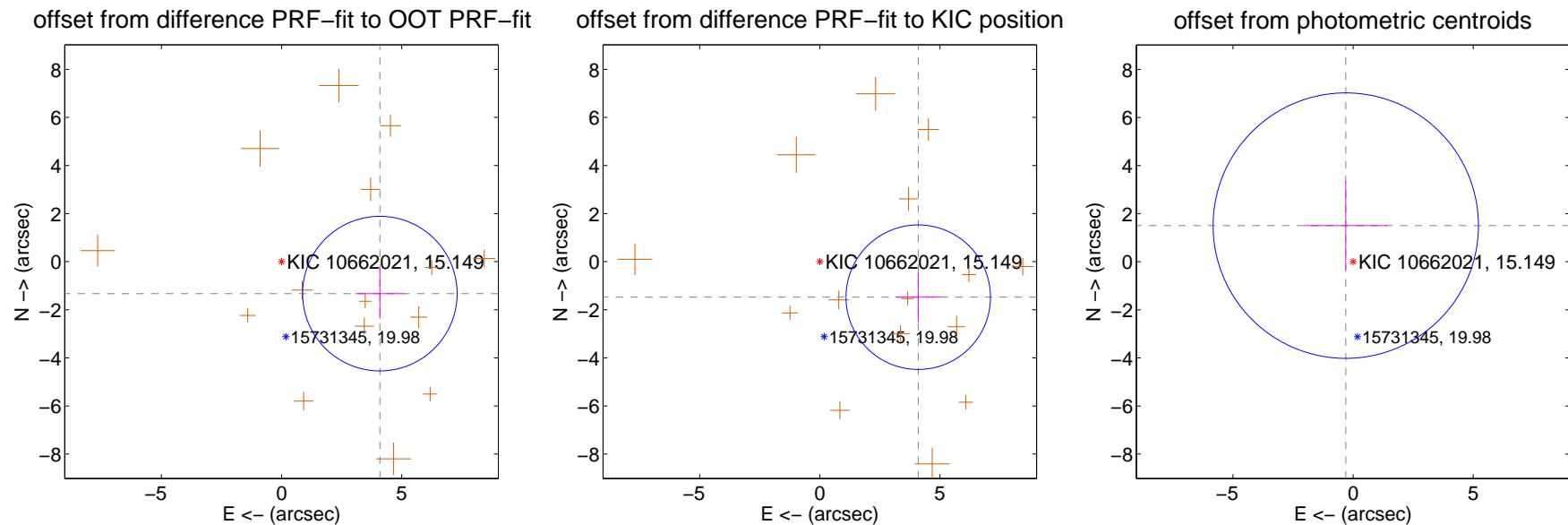
DV Centroid Data

Supplemental centroid analysis for 010662021-01. Kepler magnitude: 15.15. Transit SNR 7.96

There are 0 quarters with good PRF difference image offsets

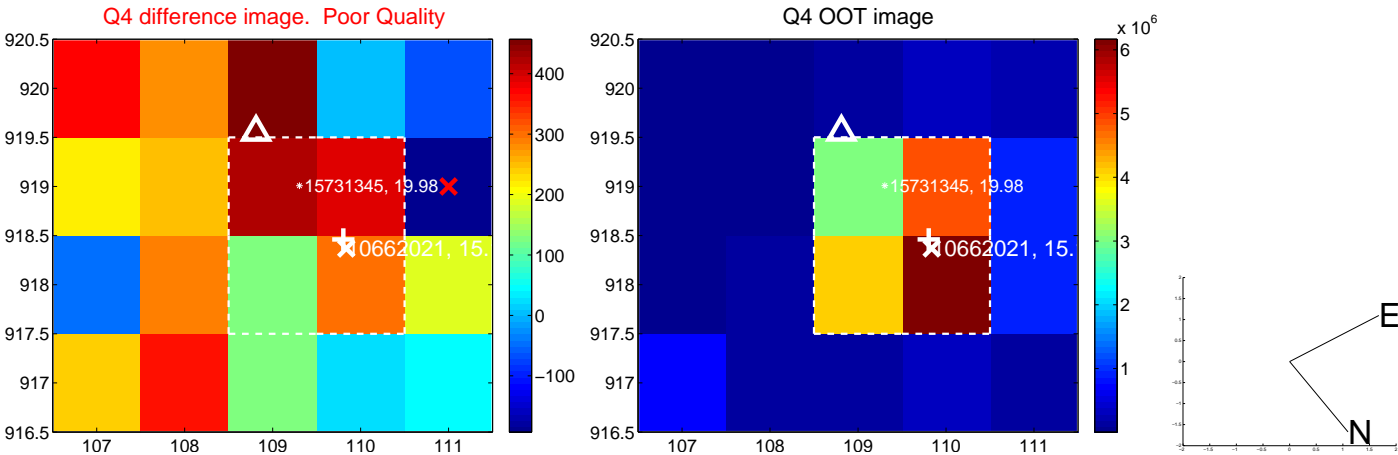
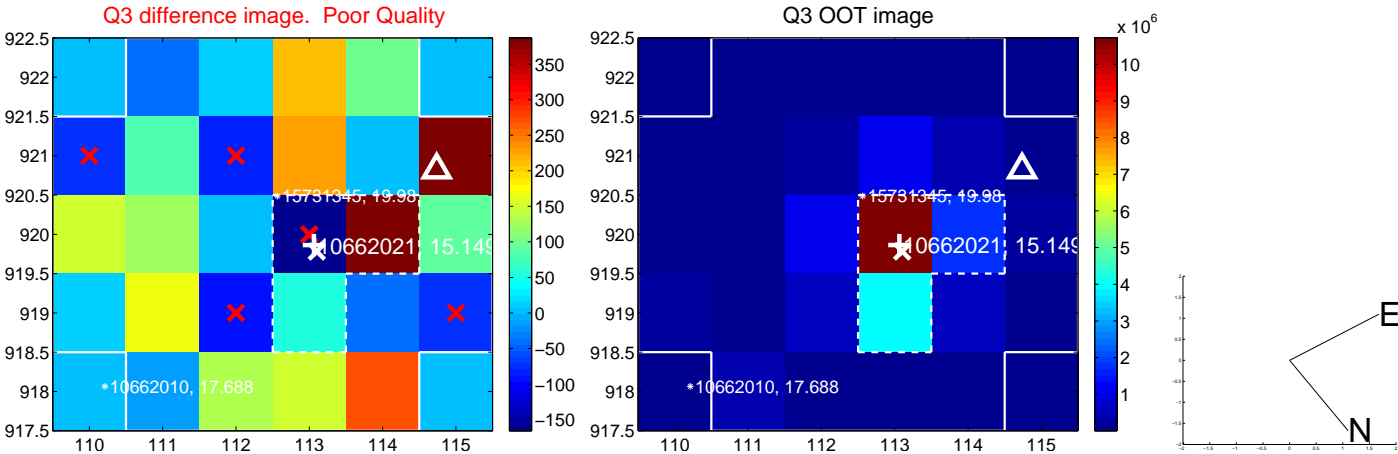
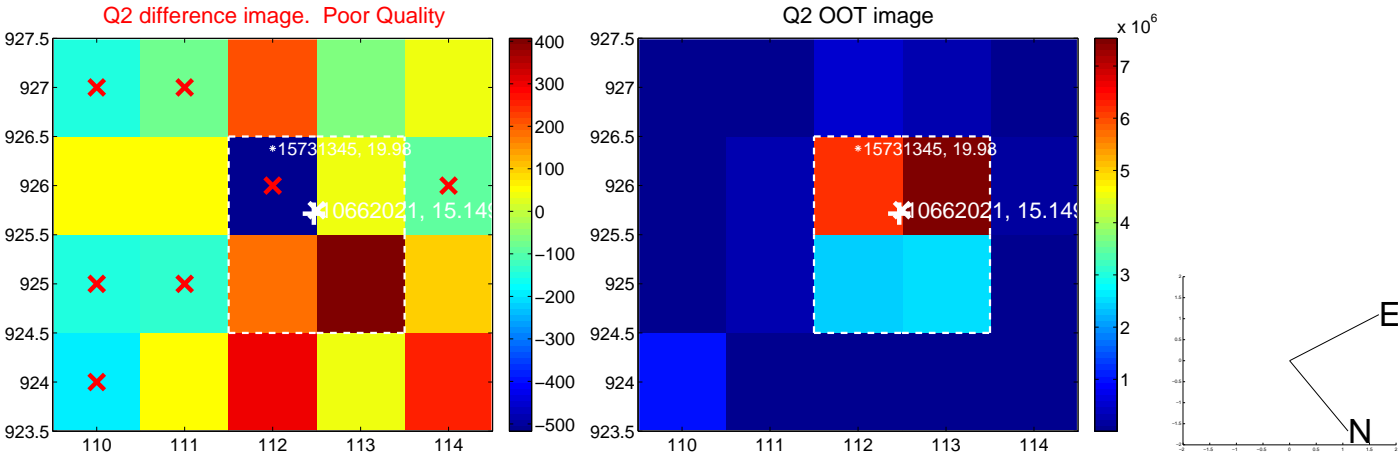
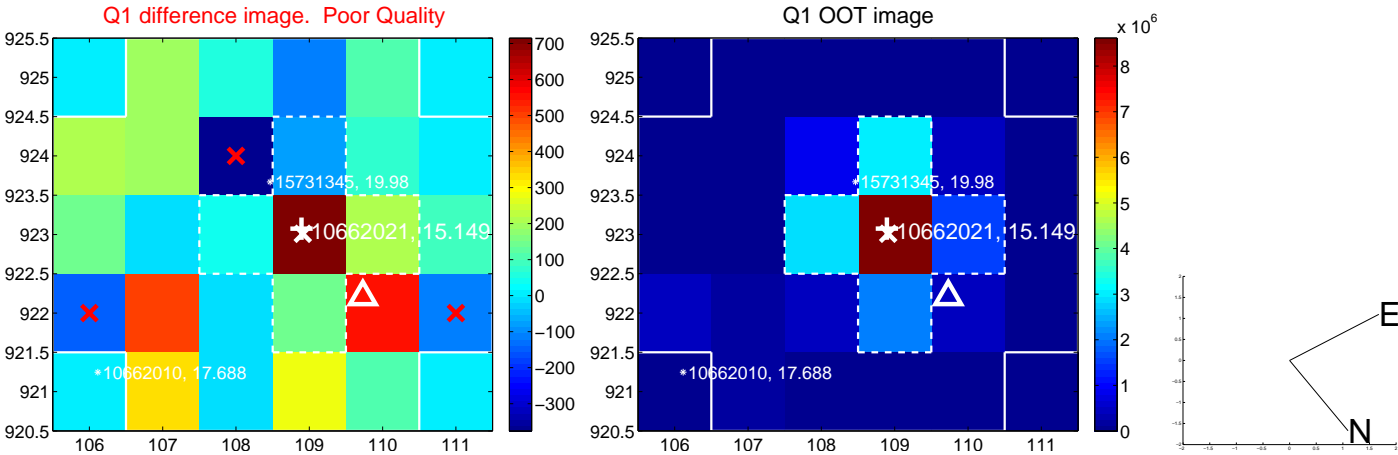
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.299 ± 1.071	4.01	-4.089 ± 1.024	-1.328 ± 1.042
PRF-fit source offset from KIC position	4.352 ± 1.002	4.34	-4.093 ± 0.948	-1.476 ± 1.046
photometric centroid source offset	1.53 ± 1.84	0.83	0.31 ± 1.74	1.50 ± 1.84

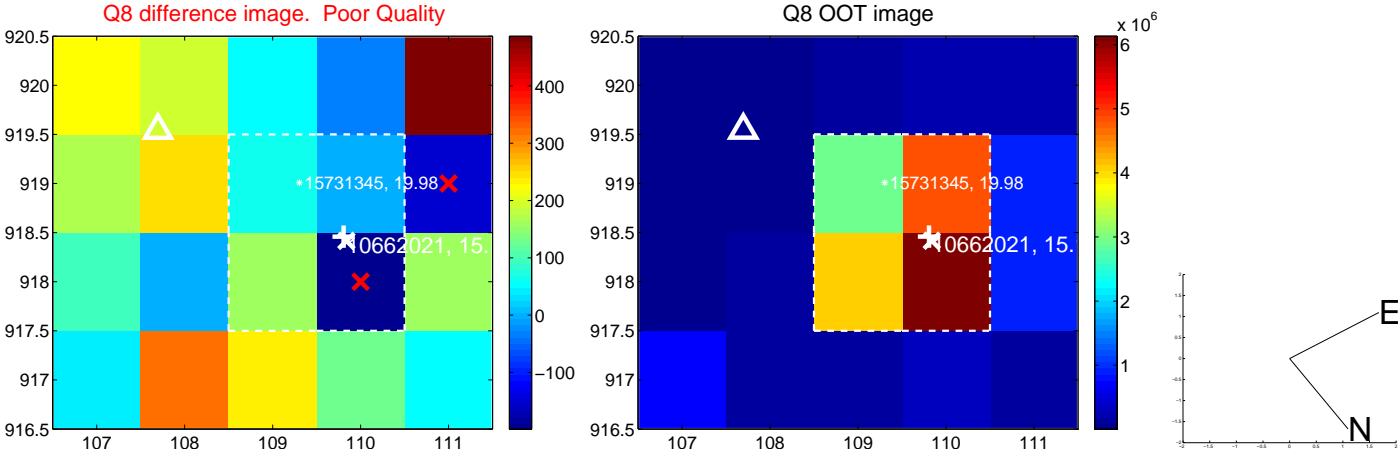
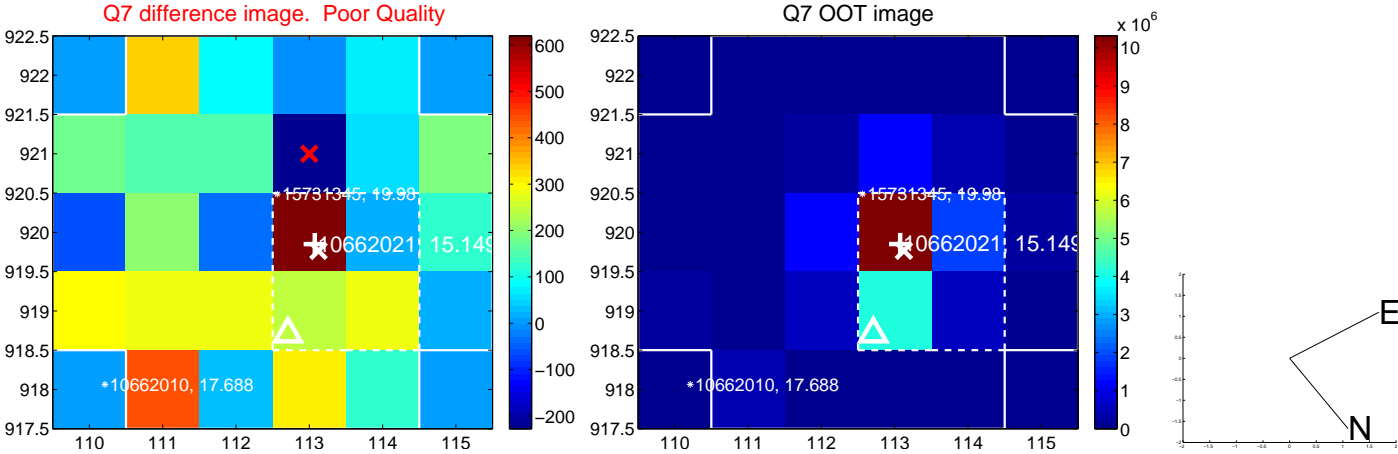
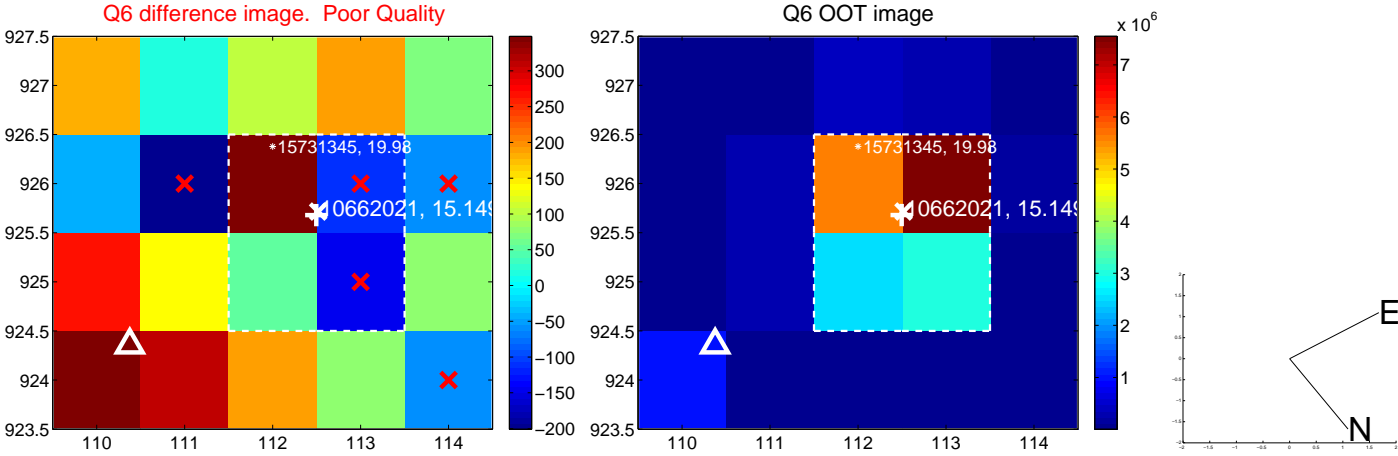
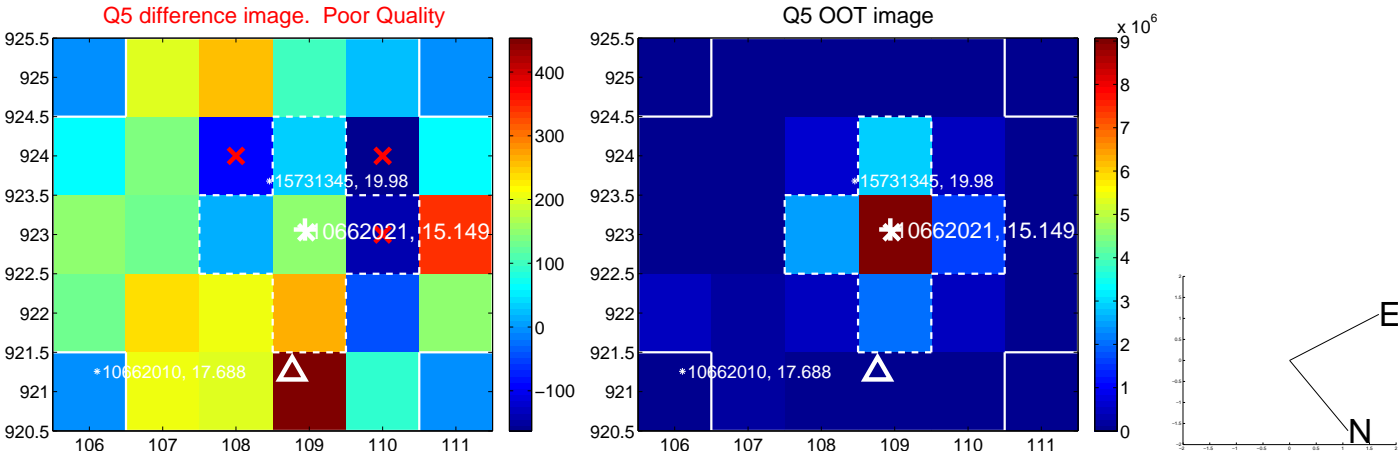


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

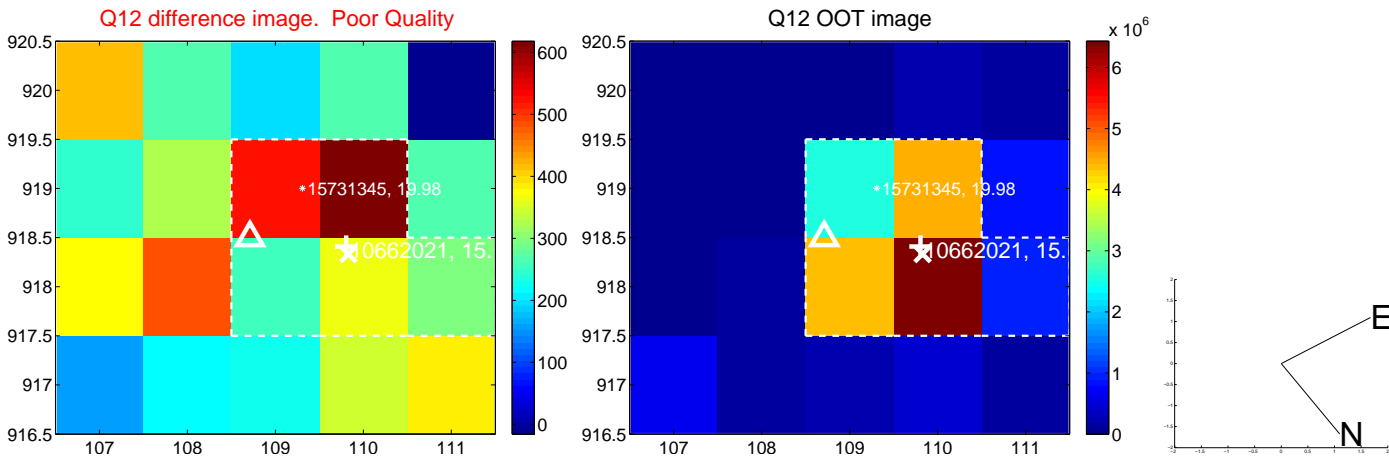
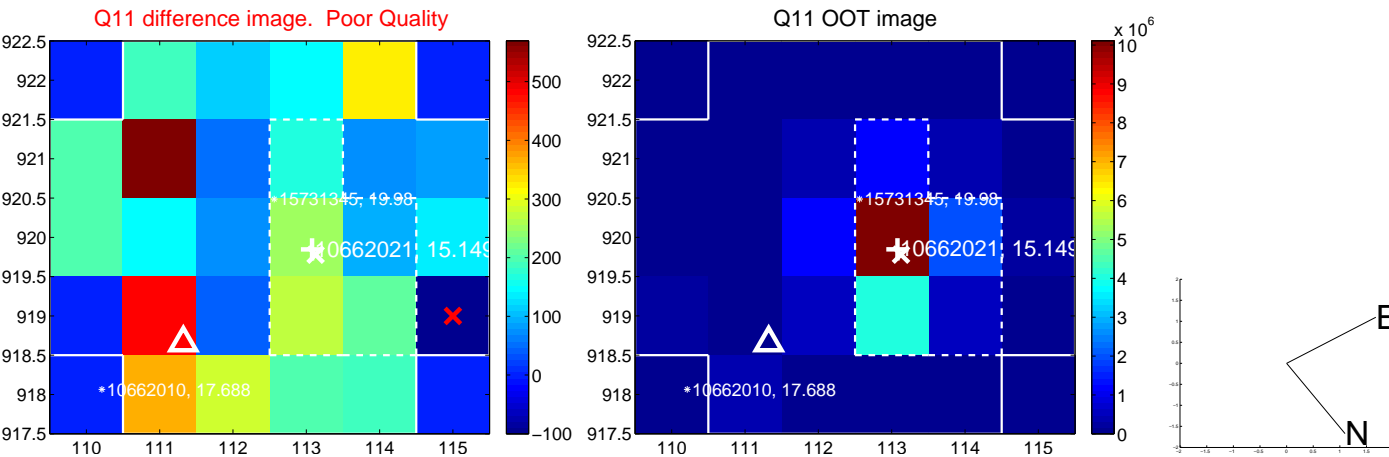
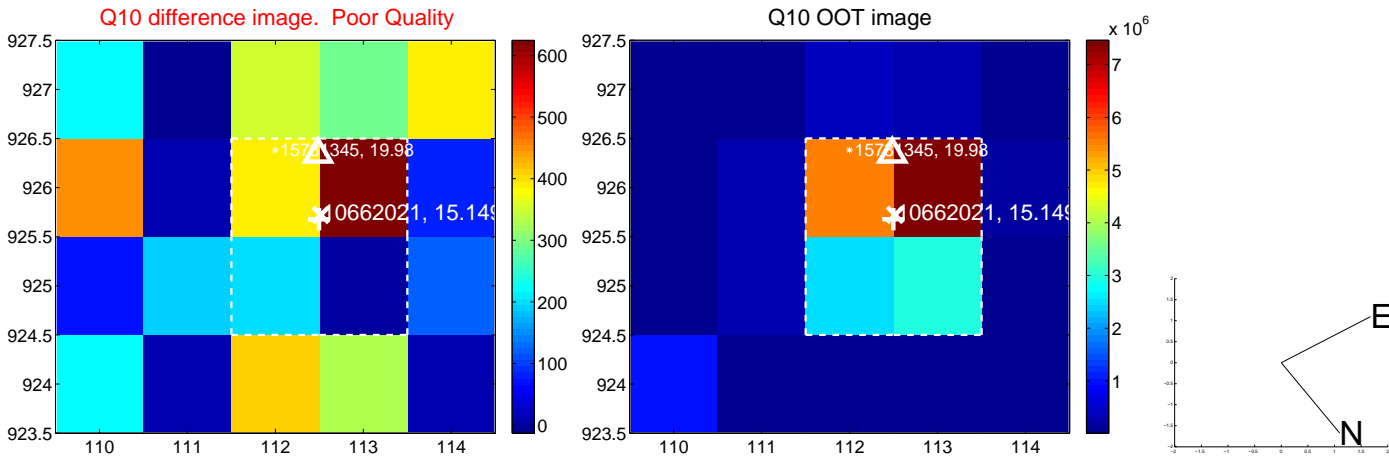
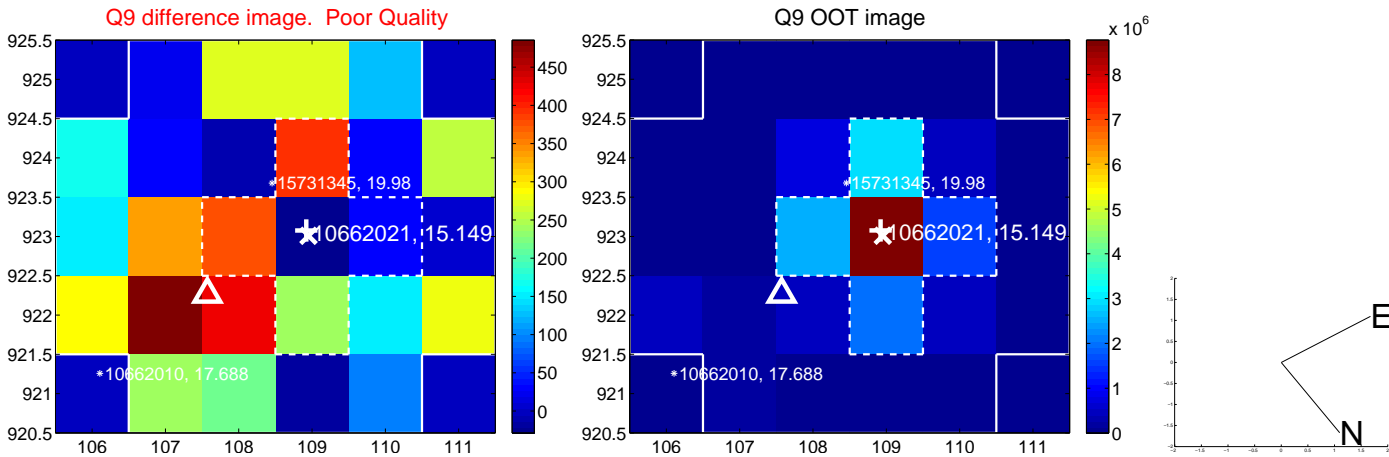
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



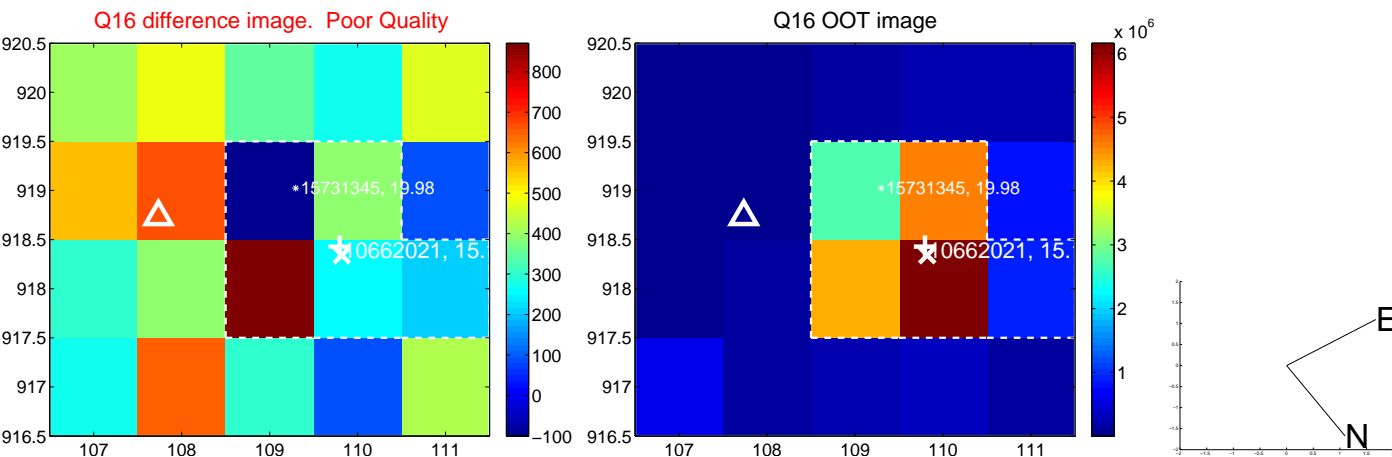
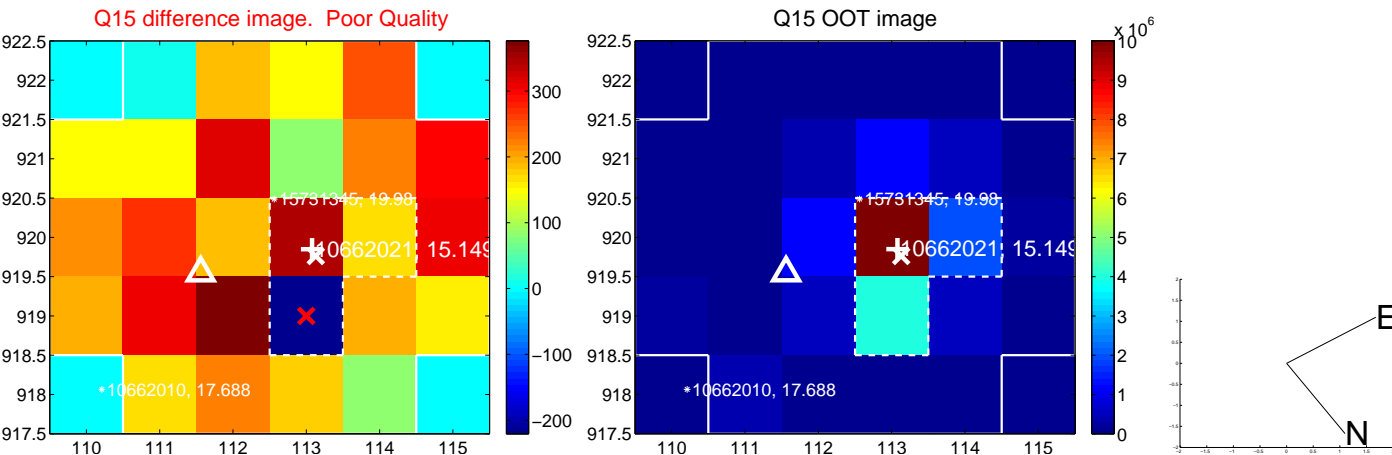
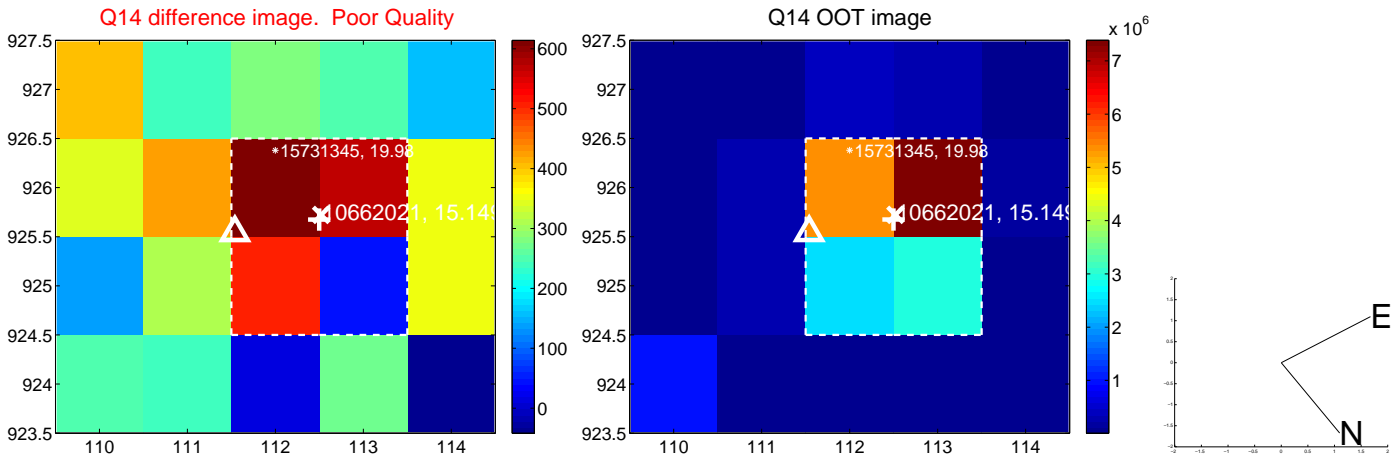
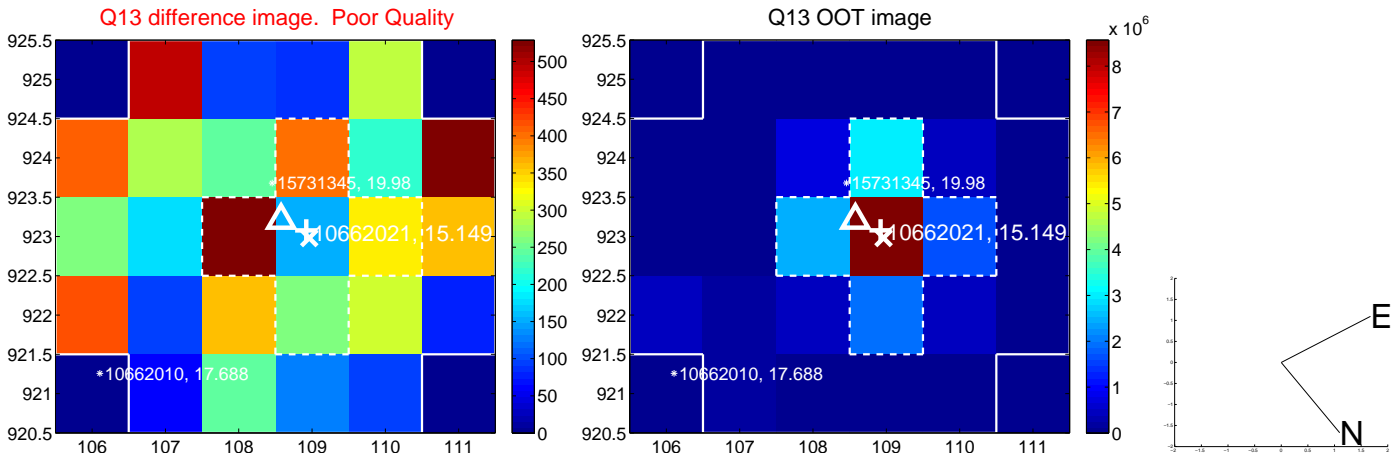
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



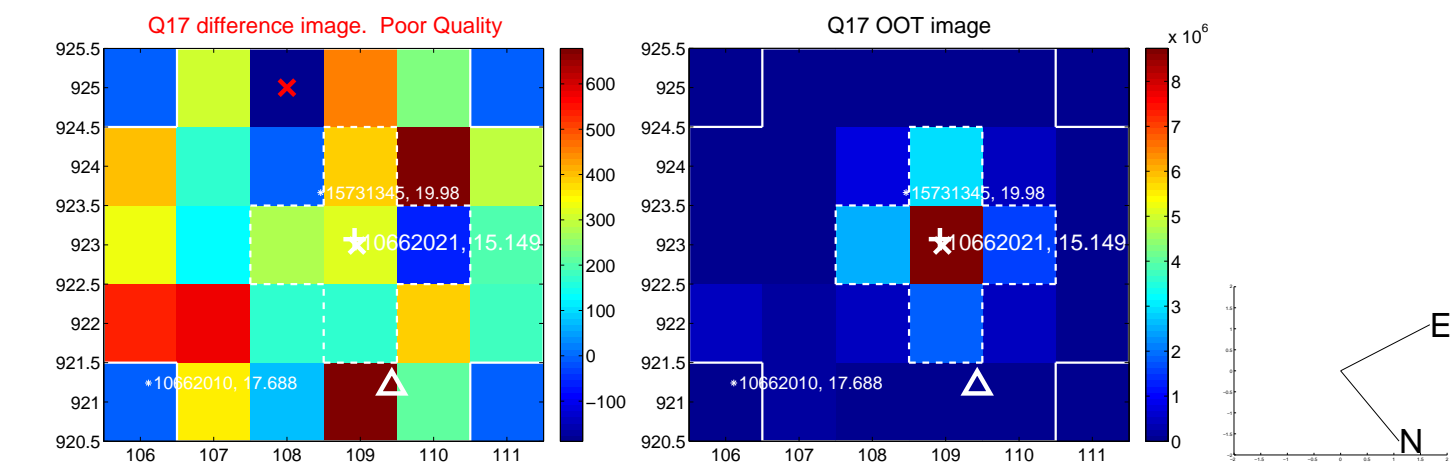
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



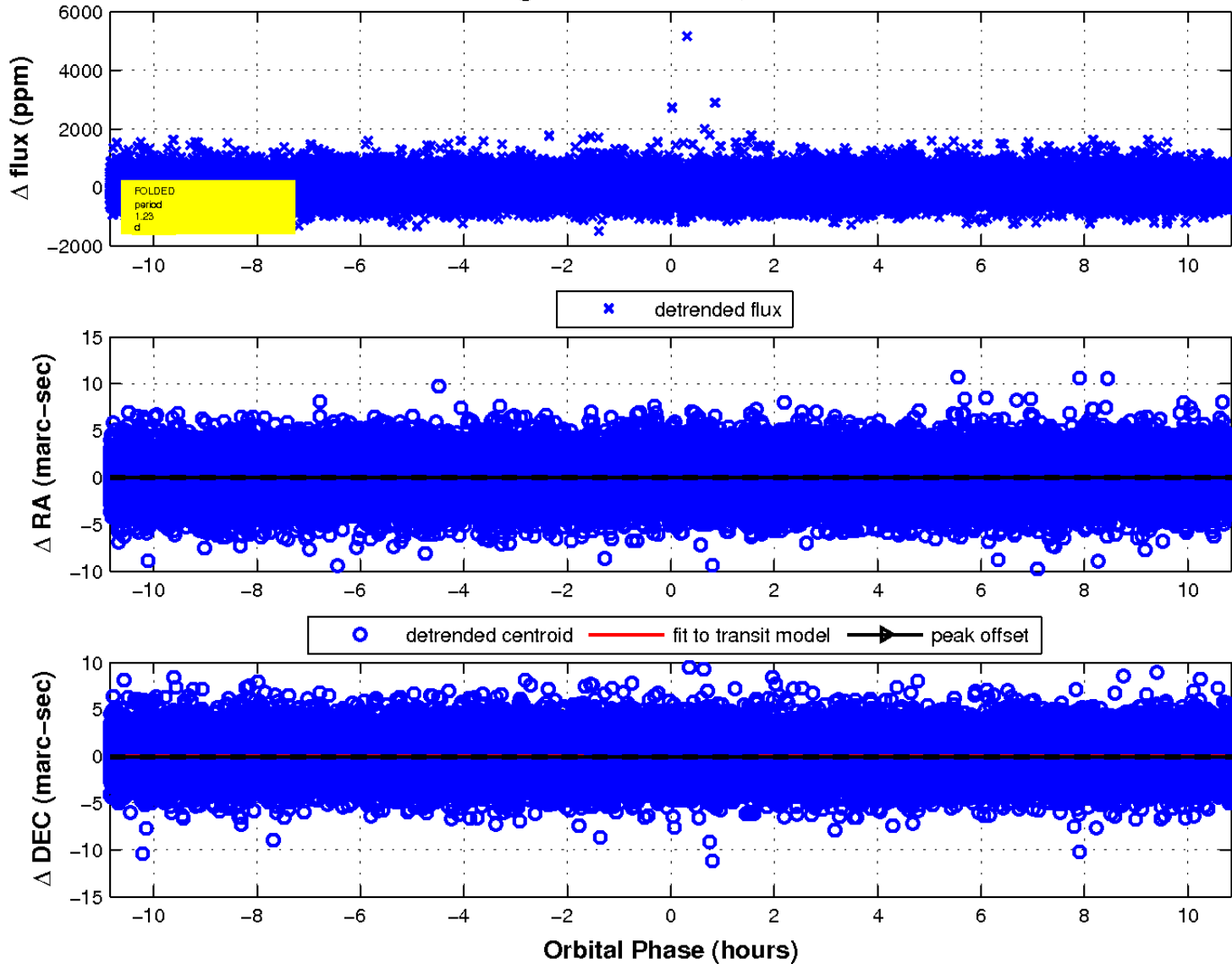
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

