

KIC 012021625

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})
012021625-01	OBS	2996.01	15.931564	141.806296	529.3	2.737	11.7	13.3	0.72	5380	1.93	29.90

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012021625-01	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 012021625-01

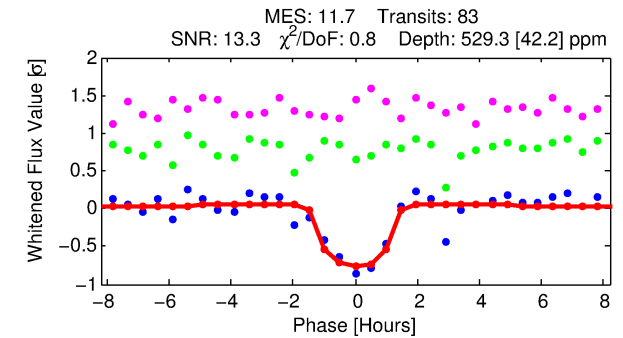
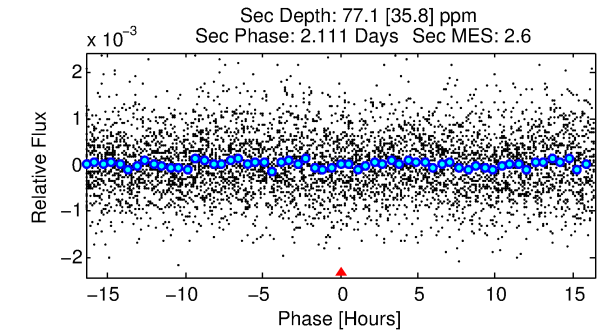
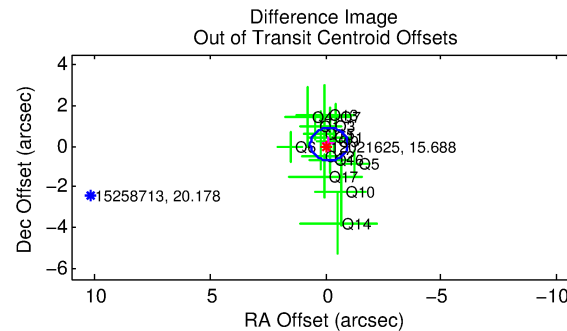
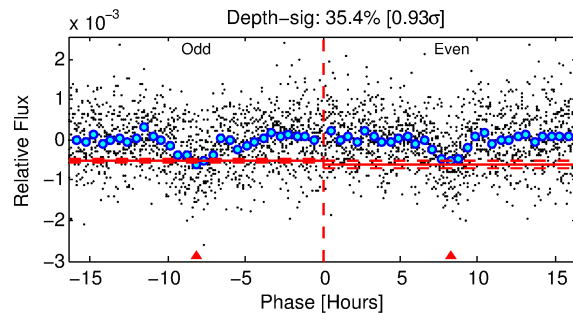
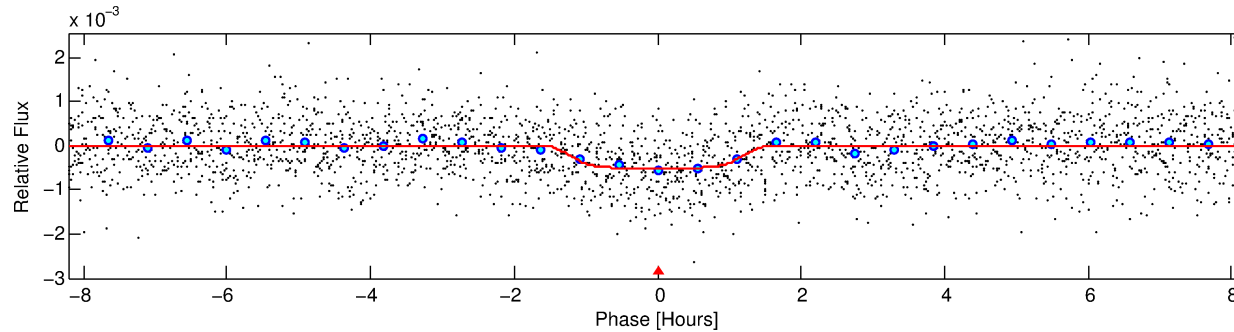
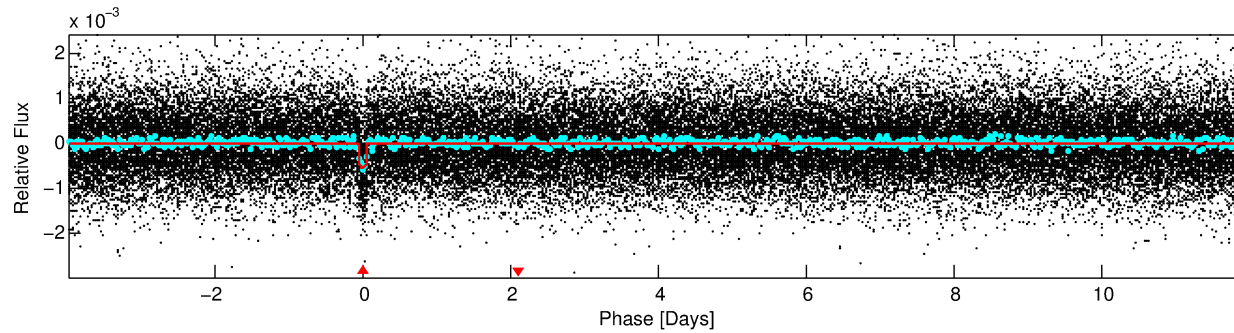
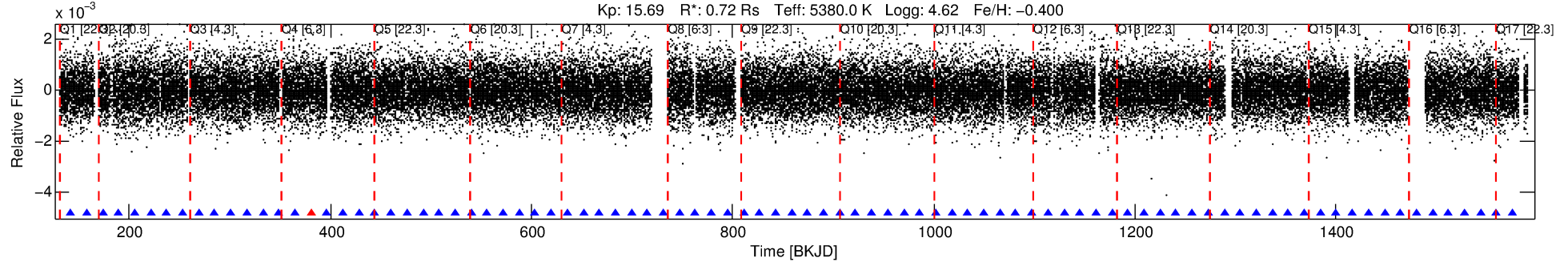
No Significant Match Found

DV One-Page Summary

KIC: 12021625 Candidate: 1 of 1 Period: 15.932 d

KOI: K02996.01 Corr: 0.981

Kp: 15.69 R*: 0.72 Rs Teff: 5380.0 K Logg: 4.62 Fe/H: -0.400



DV Fit Results:

Period = 15.93156 [0.00009] d
Epoch = 141.8063 [0.0047] BKJD
Rp/R* = 0.0246 [0.0102]
a/R* = 24.03 [42.82]
b = 0.87 [0.51]
Seff = 29.90 [6.89]
Teq = 596 [34] K
Rp = 1.93 [0.87] Re
a = 0.1142 [0.0159] AU
Ag = 148.11 [144.36] [1.02σ]
Teffp = 3216 [773] K [3.38σ]

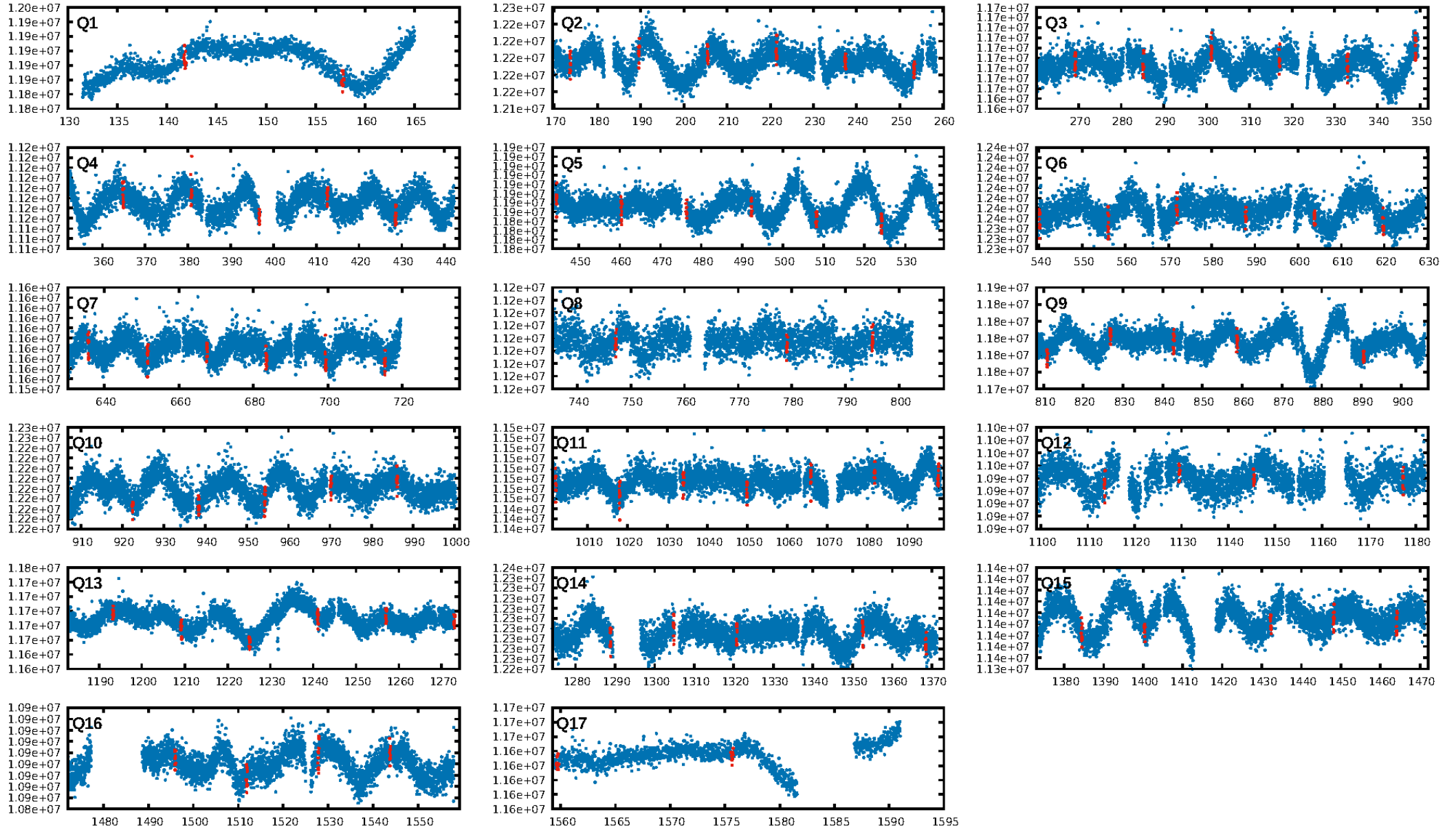
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.19e-31
RollingBand-fgt: 0.99 [78/79]
GhostDiagnostic-chr: 1.274
Centroid-sig: 33.0%
Centroid-so: 1.941 arcsec [1.89σ]
OotOffset-rm: 0.174 arcsec [0.65σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-rm: 0.215 arcsec [0.61σ]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 1.00 [17/17]

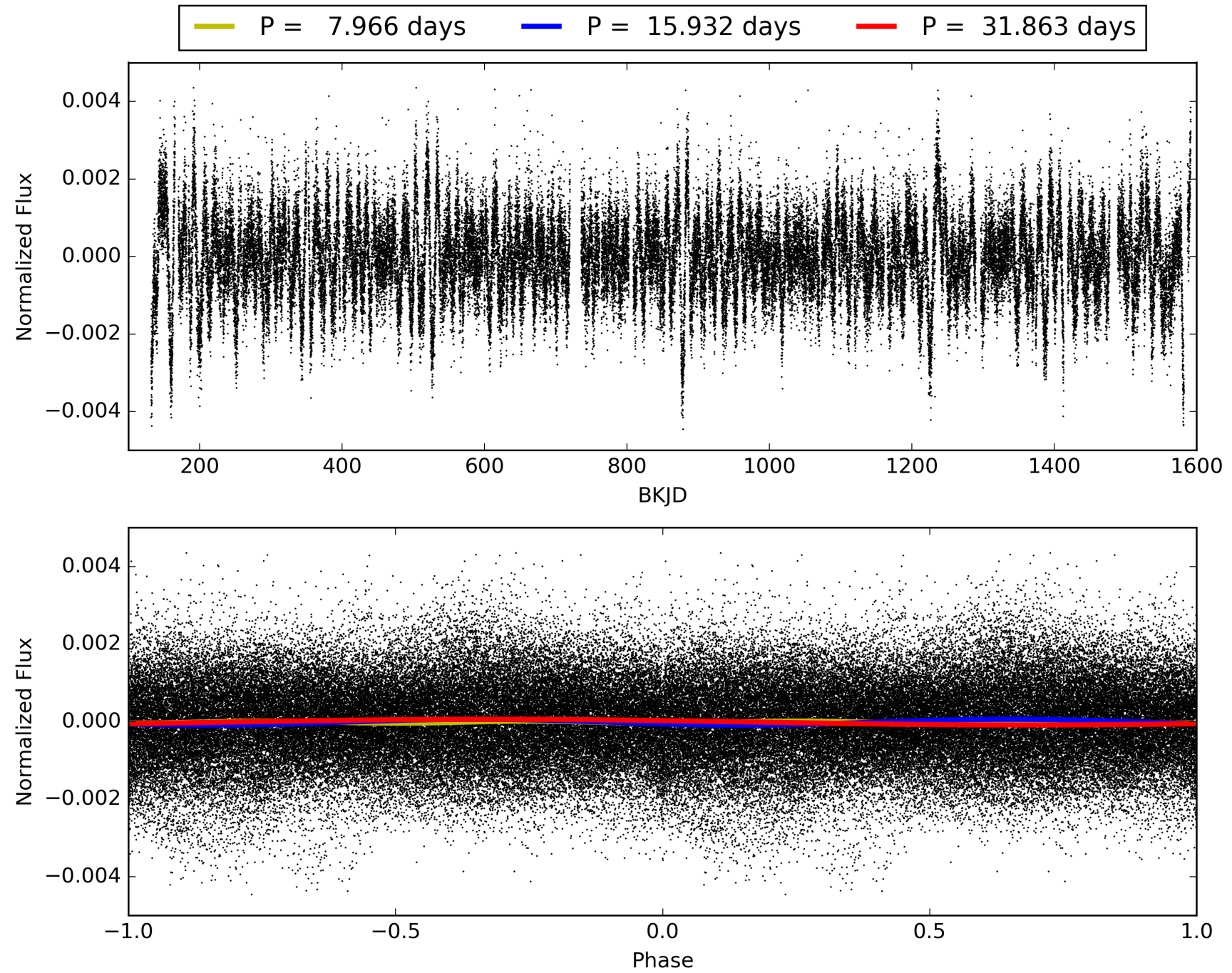
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:20:36 Z

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

TCE 012021625-01, PDC Light Curves

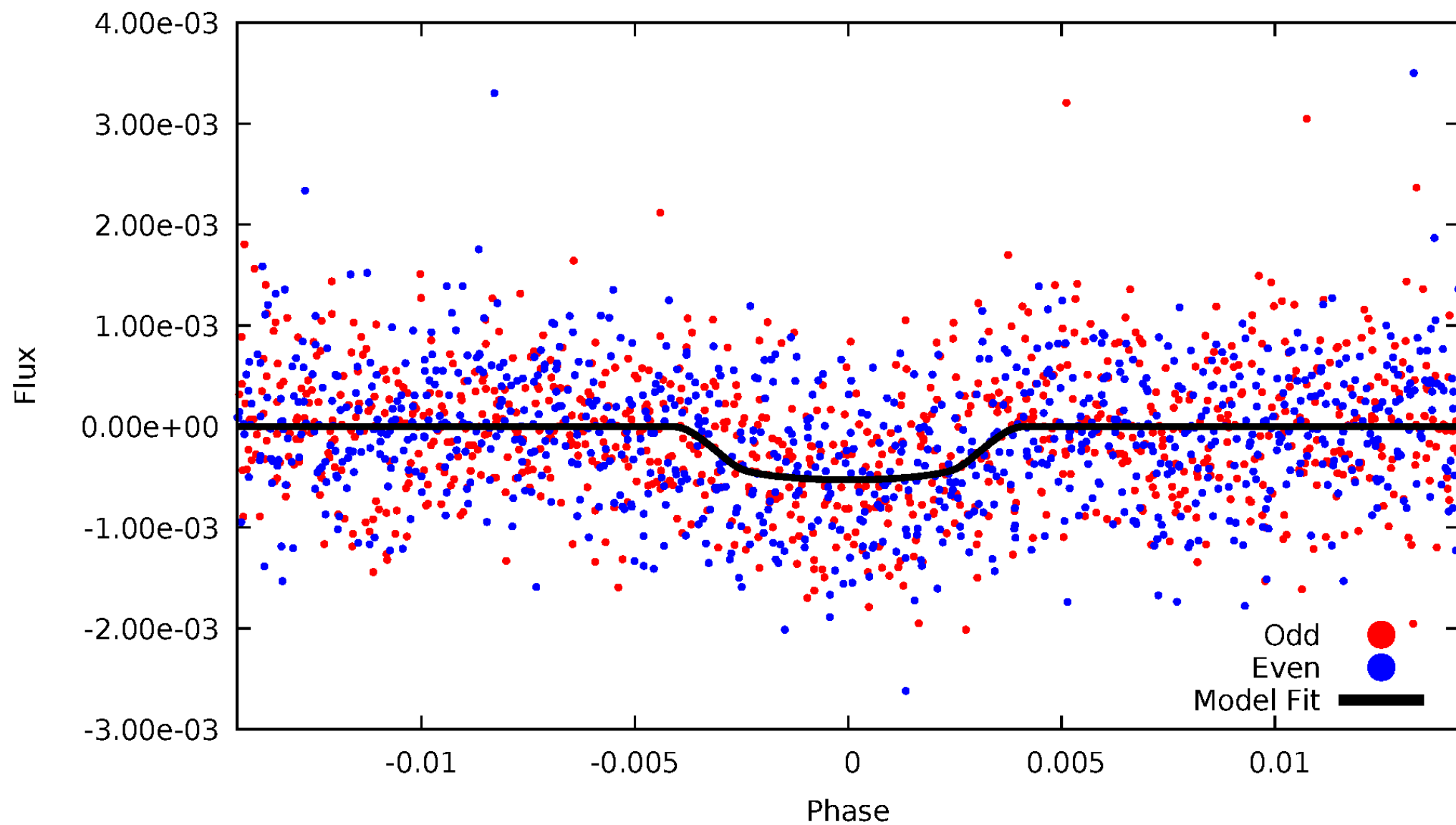


TCE 012021625-01



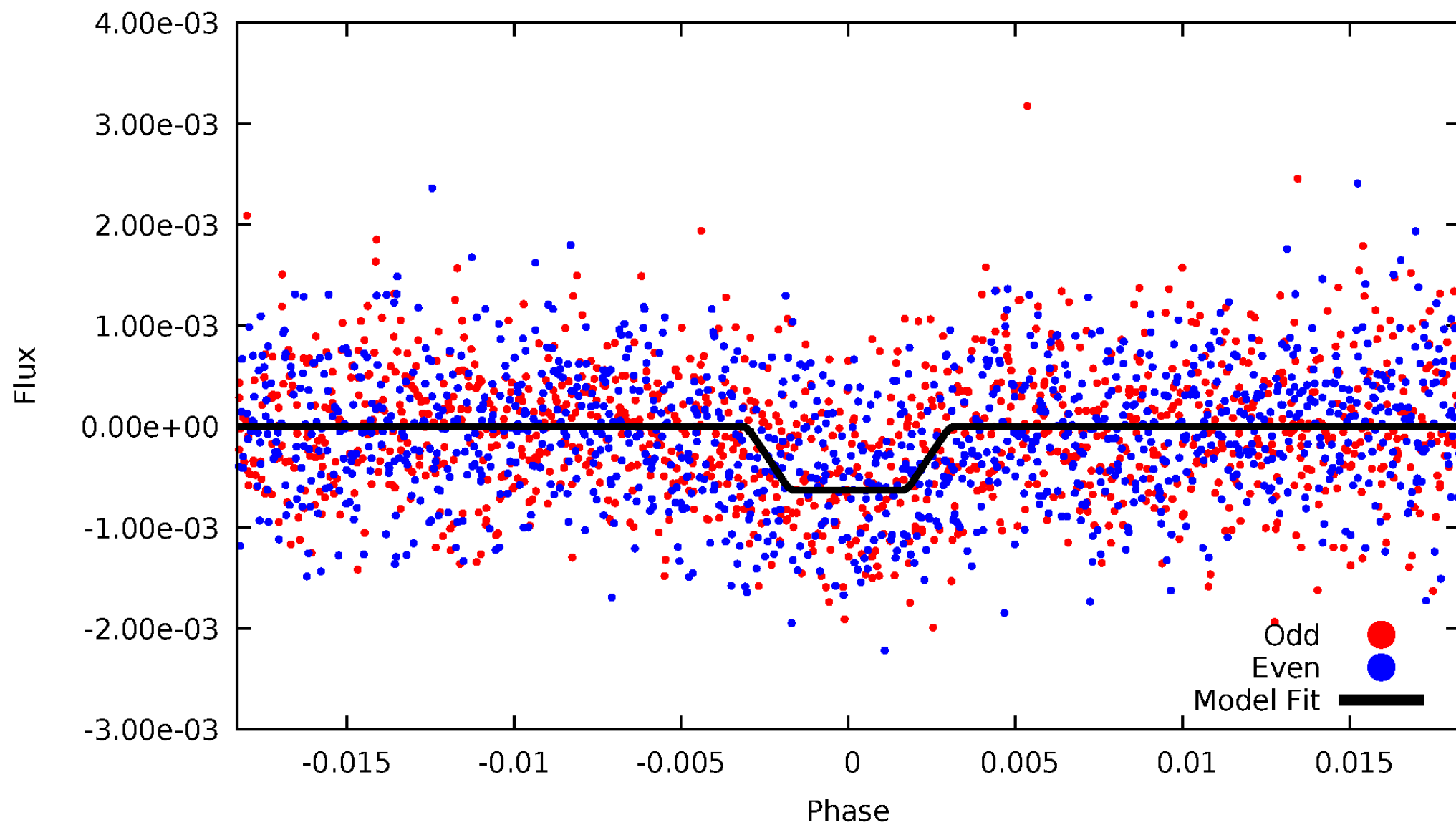
DV Odd/Even

TCE 012021625-01



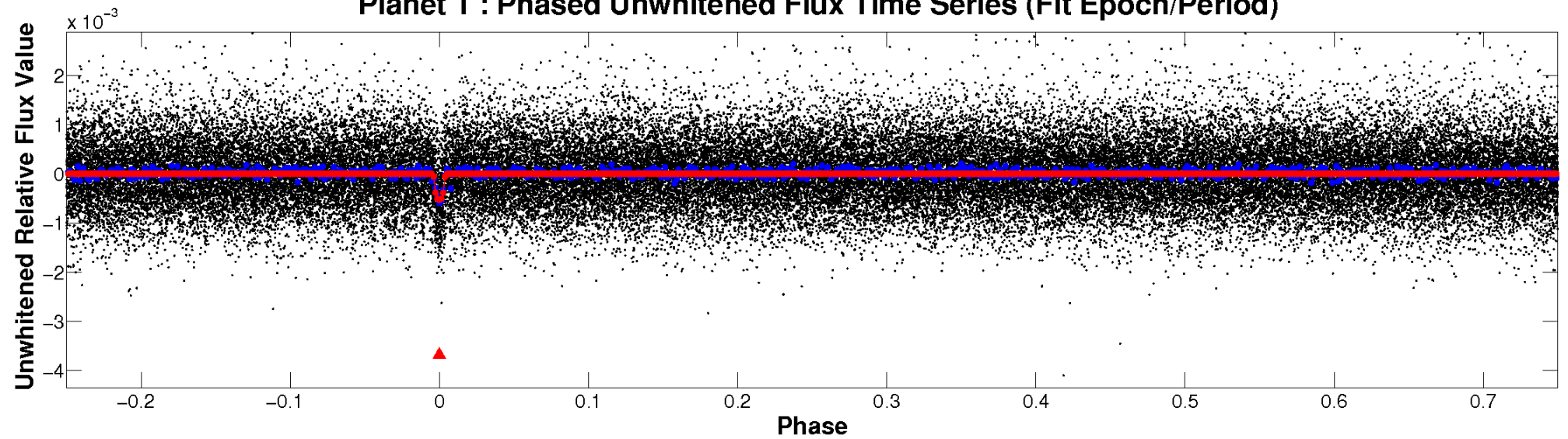
ALT Odd/Even

TCE 012021625-01

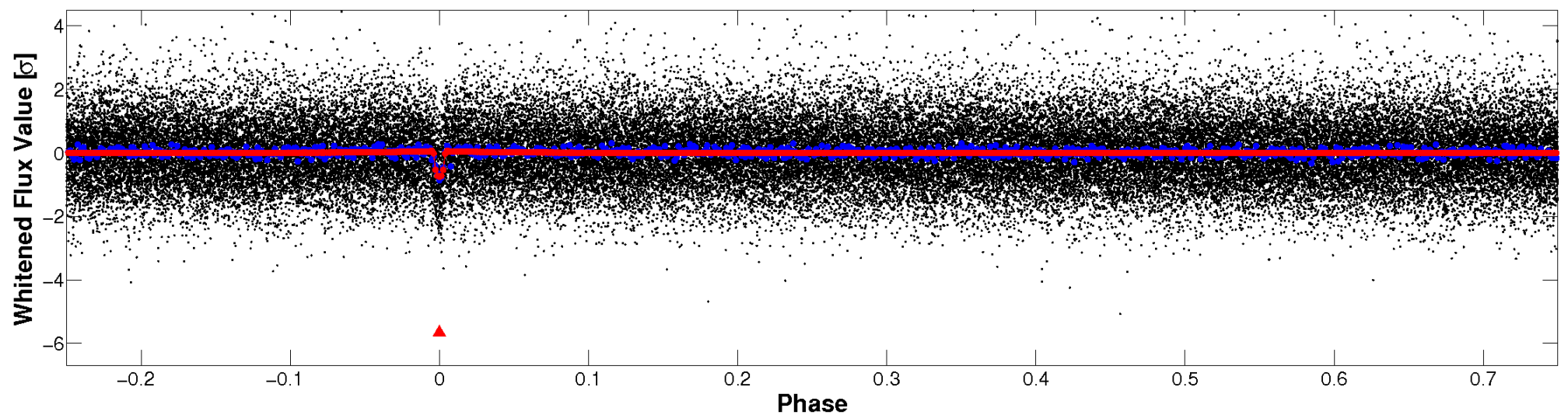


Non-Whitened Vs. Whitened Light Curve

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

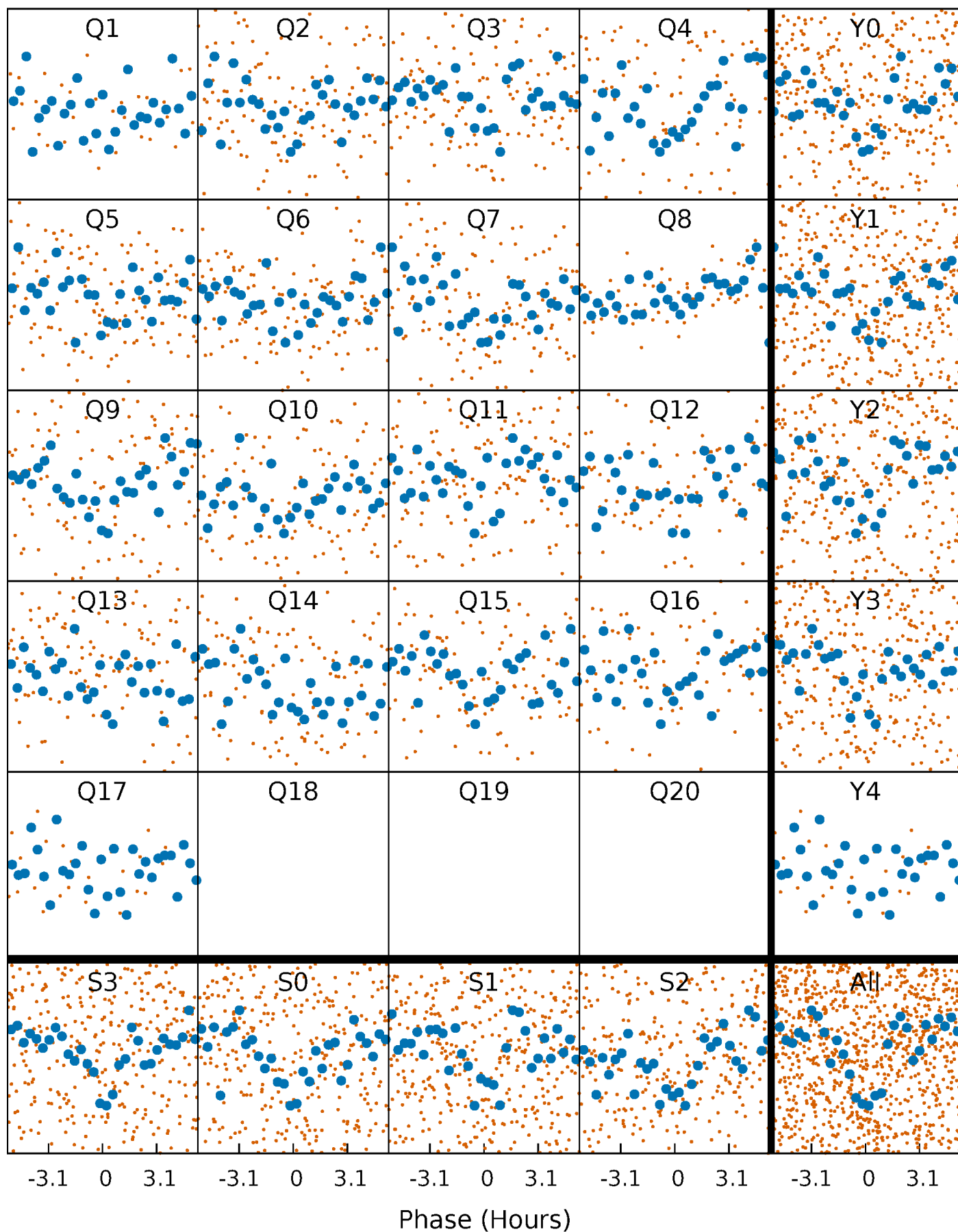


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



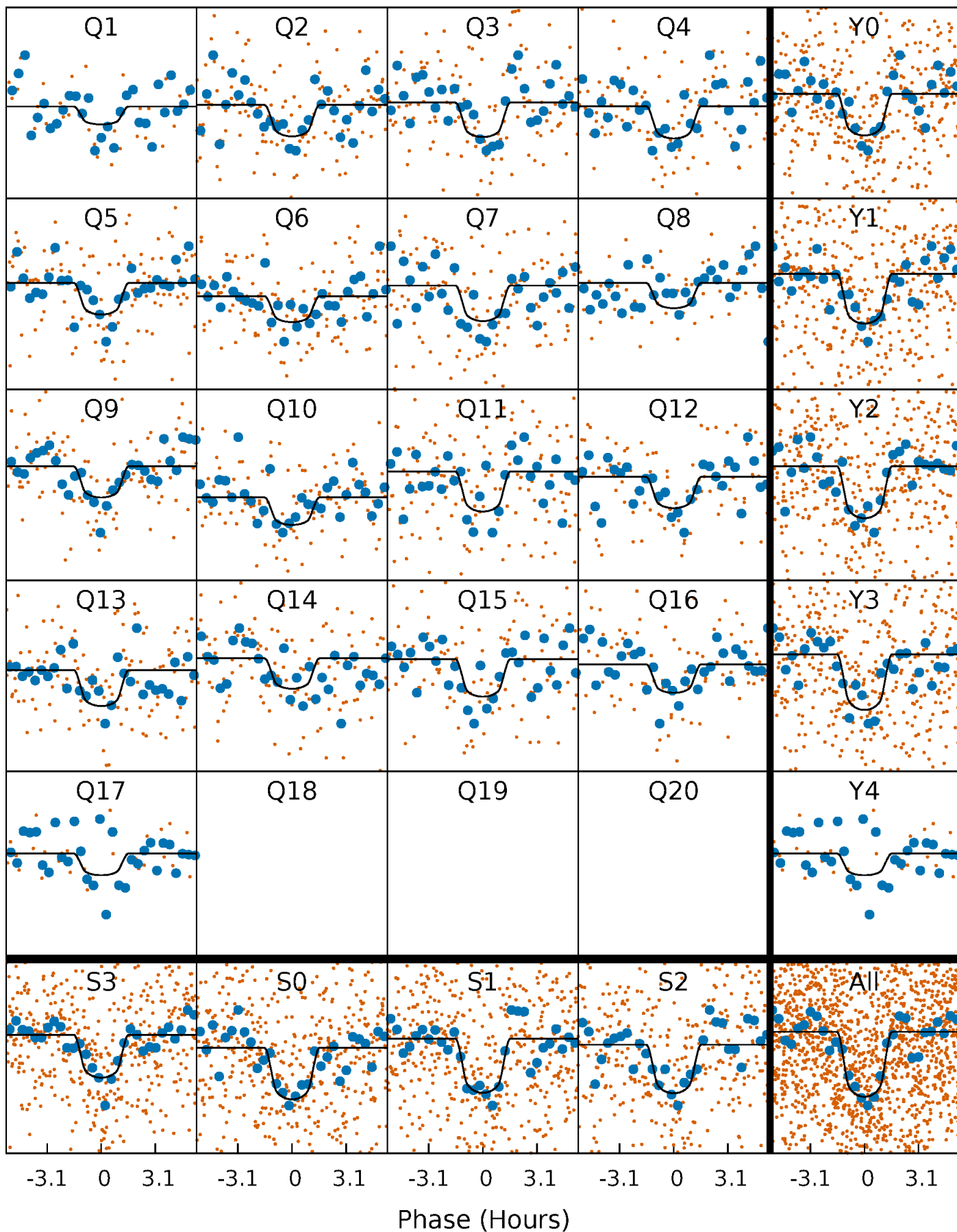
PDC Quarter-Phased Transit Curves

TCE 012021625-01 P= 15.931564 Days $T_0=141.806296$ (BKJD)



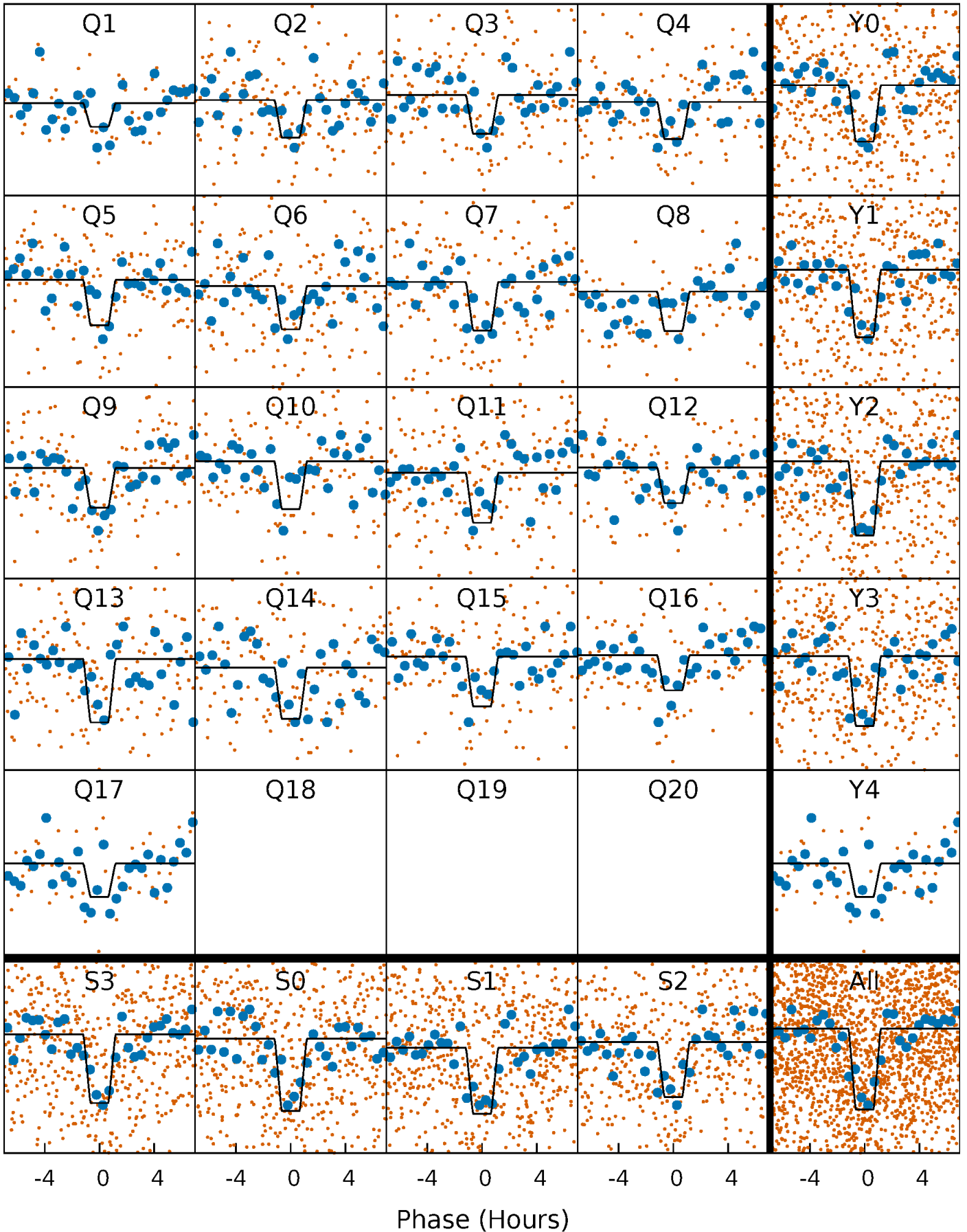
DV Quarter-Phased Transit Curves

TCE 012021625-01 P= 15.931564 Days $T_0=141.806296$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

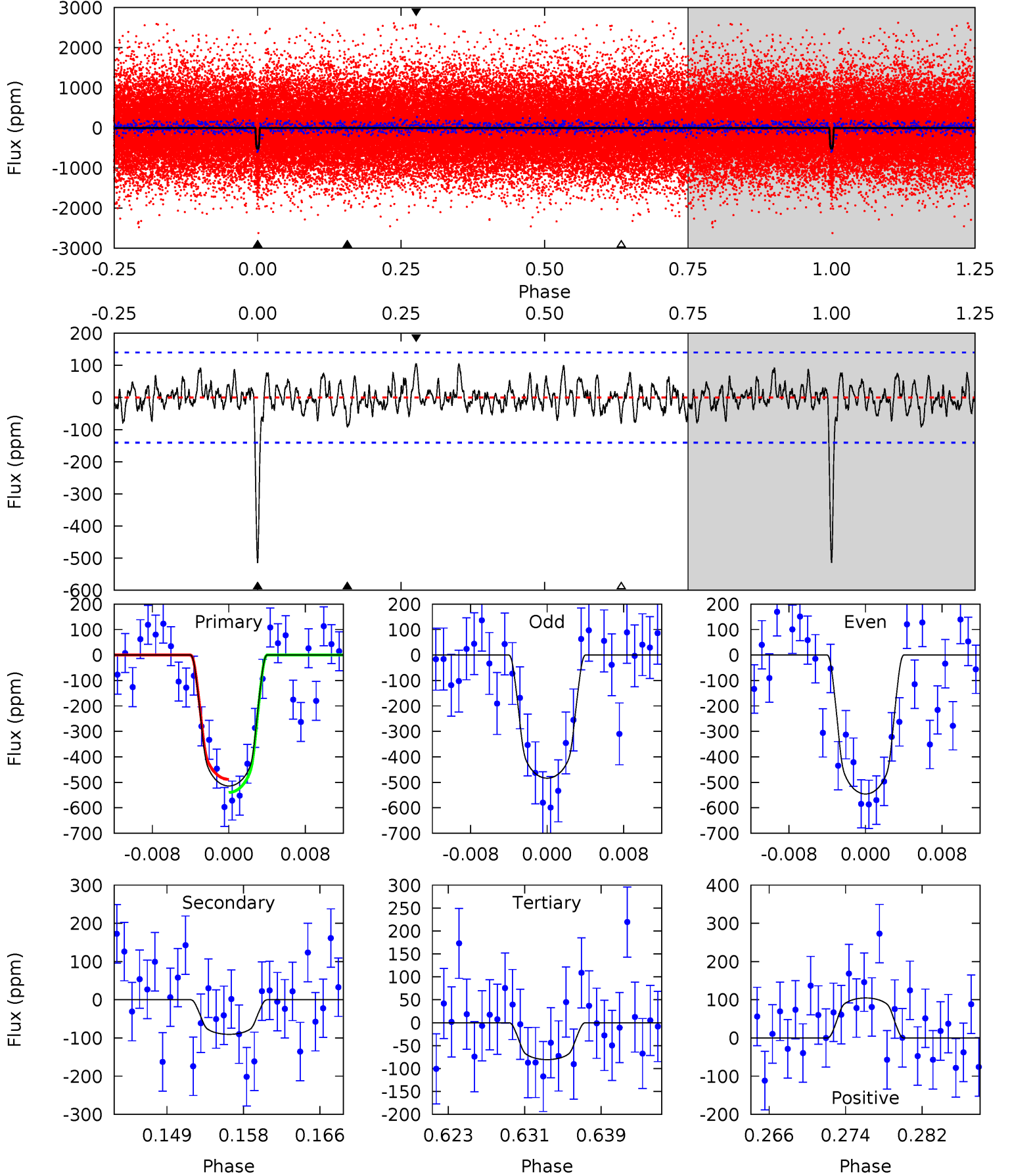
TCE 012021625-01 P= 15.931751 Days $T_0=141.799571$ (BKJD)



DV Model-Shift Uniqueness Test

012021625-01, $P = 15.931564$ Days, $E = 125.874732$ Days

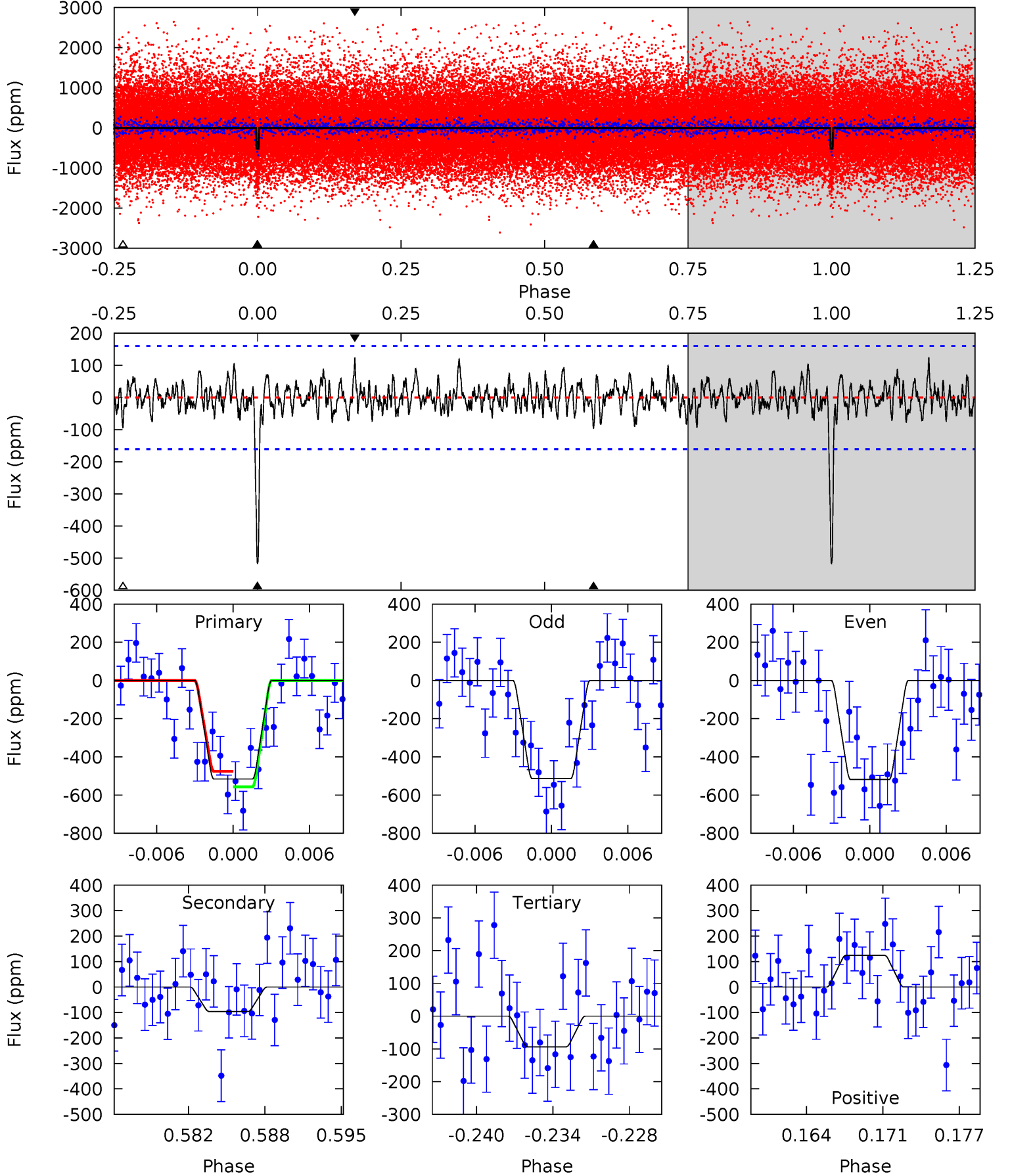
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	3.26	2.90	3.77	5.06	2.64	1.20	15.6	14.8	0.36	-0.51	1.12	1.06	0.17	0.93



Alt Model-Shift Uniqueness Test

012021625-01, $P = 15.931751$ Days, $E = 125.867820$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.4	3.06	2.98	3.95	5.11	2.73	1.13	13.5	12.5	0.09	-0.89	0.08	1.12	0.19	1.30



Stellar Parameters For KIC 012021625

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5380^{+160}_{-160}	$4.616^{+0.035}_{-0.105}$	$-0.400^{+0.350}_{-0.300}$	$0.721^{+0.123}_{-0.057}$	$0.786^{+0.084}_{-0.076}$	$2.951^{+0.528}_{-0.940}$
	+3%/-3%	+1%/-2%	+87%/-75%	+17%/-8%	+11%/-10%	+18%/-32%
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 012021625-01 / KOI 2996.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-91 ± 28	$2.00^{+0.82}_{-0.78}$	844^{+37}_{-32}	3704^{+752}_{-437}	159^{+300}_{-86}
Alt.	-96 ± 31	$2.03^{+0.90}_{-0.81}$	844^{+37}_{-33}	3681^{+809}_{-399}	153^{+295}_{-78}

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

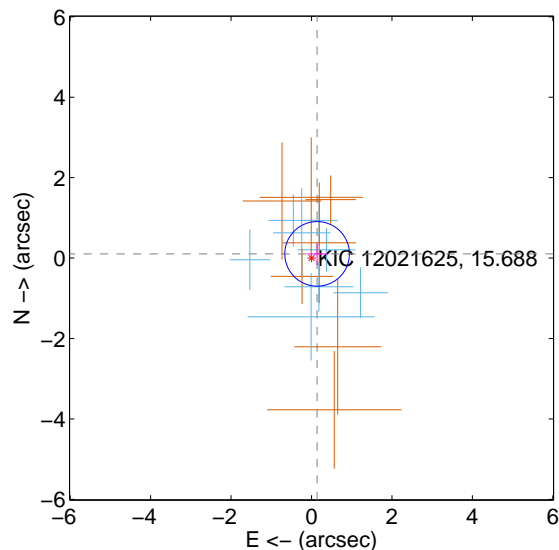
Supplemental centroid analysis for 012021625-01. Kepler magnitude: 15.69. Transit SNR 13.26

There are 8 quarters with good PRF difference image offsets

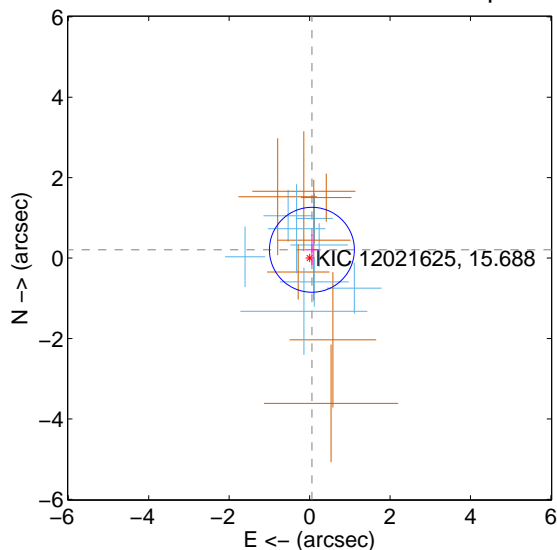
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.174 ± 0.268	0.65	-0.139 ± 0.258	0.105 ± 0.285
PRF-fit source offset from KIC position	0.215 ± 0.352	0.61	-0.057 ± 0.178	0.207 ± 0.378
photometric centroid source offset	1.94 ± 1.02	1.89	1.89 ± 1.02	0.44 ± 1.08

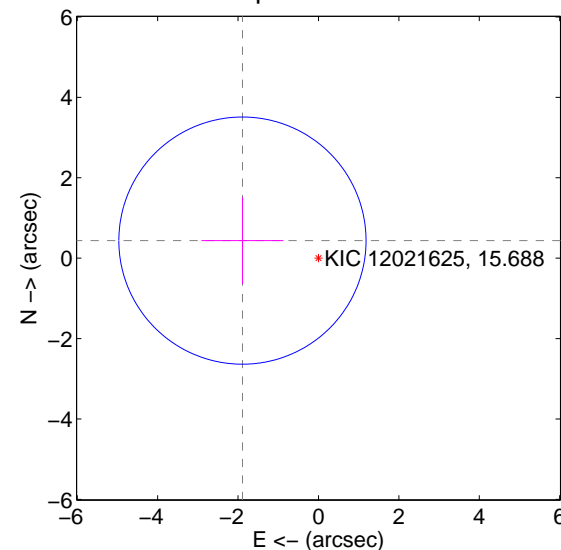
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

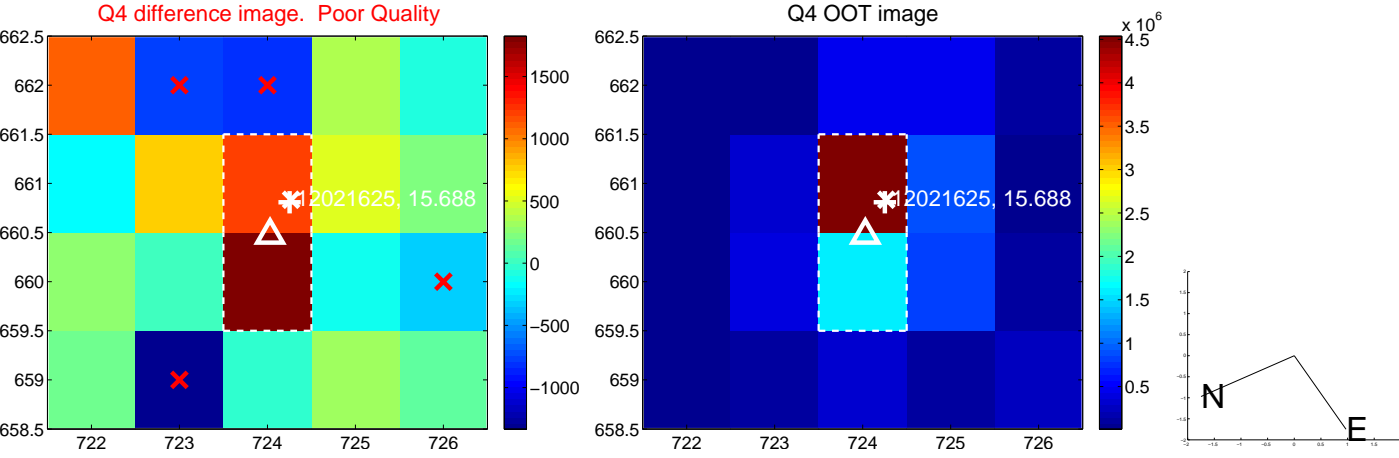
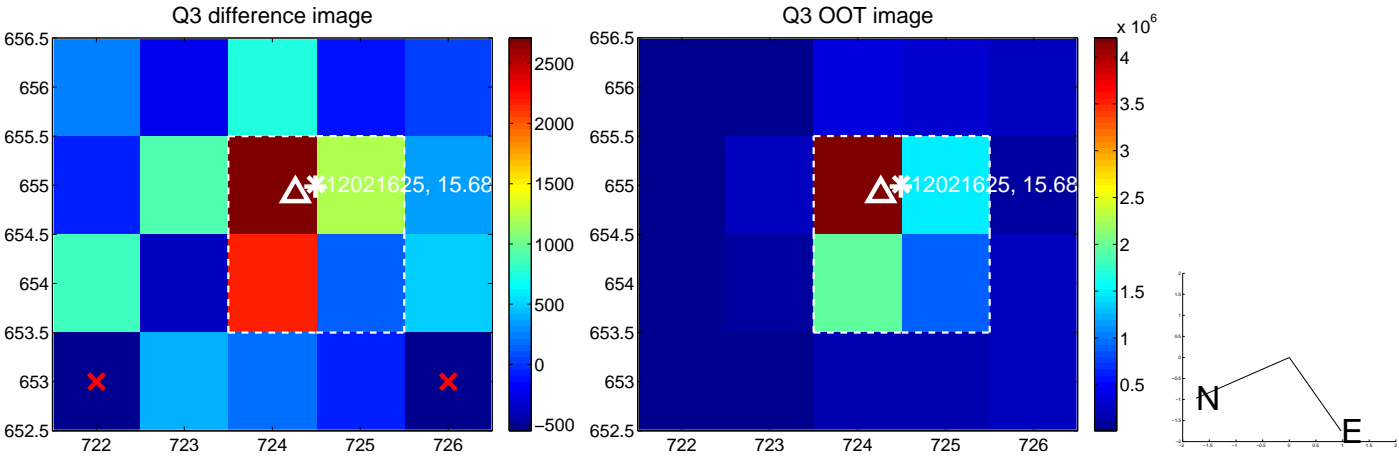
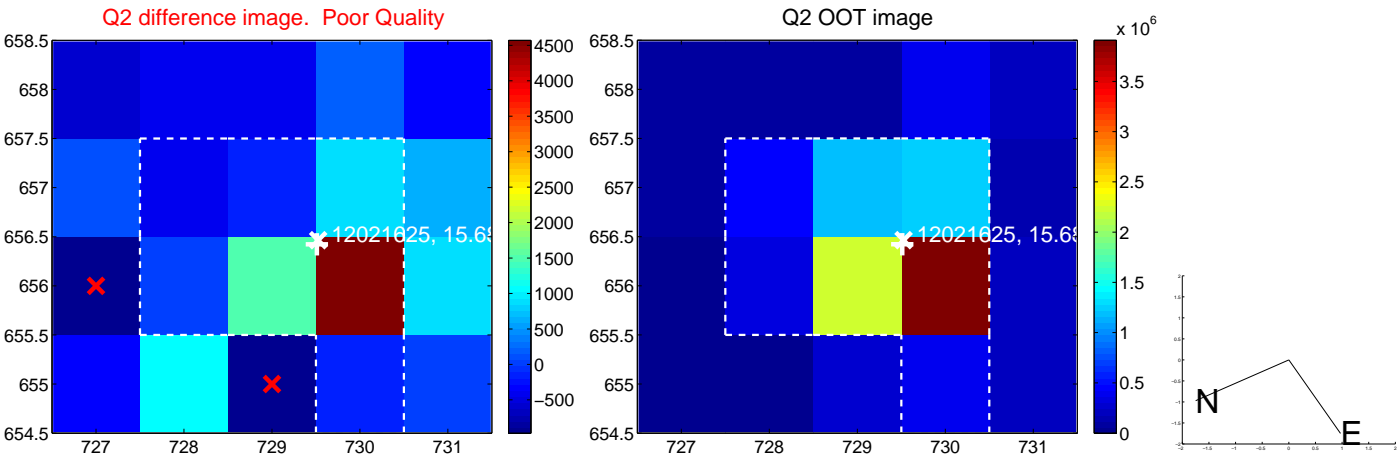
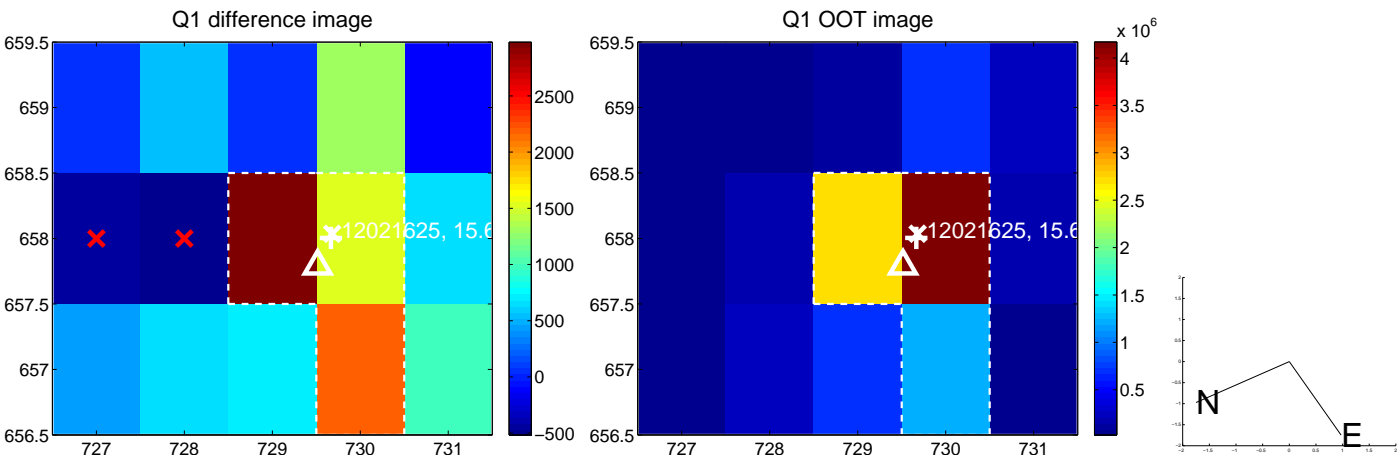


offset from photometric centroids

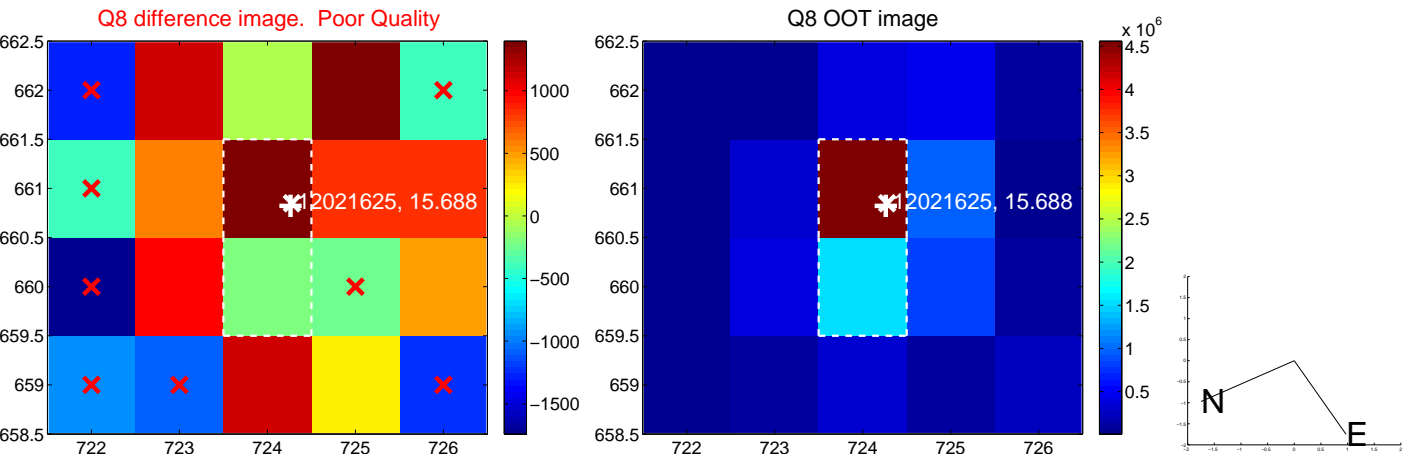
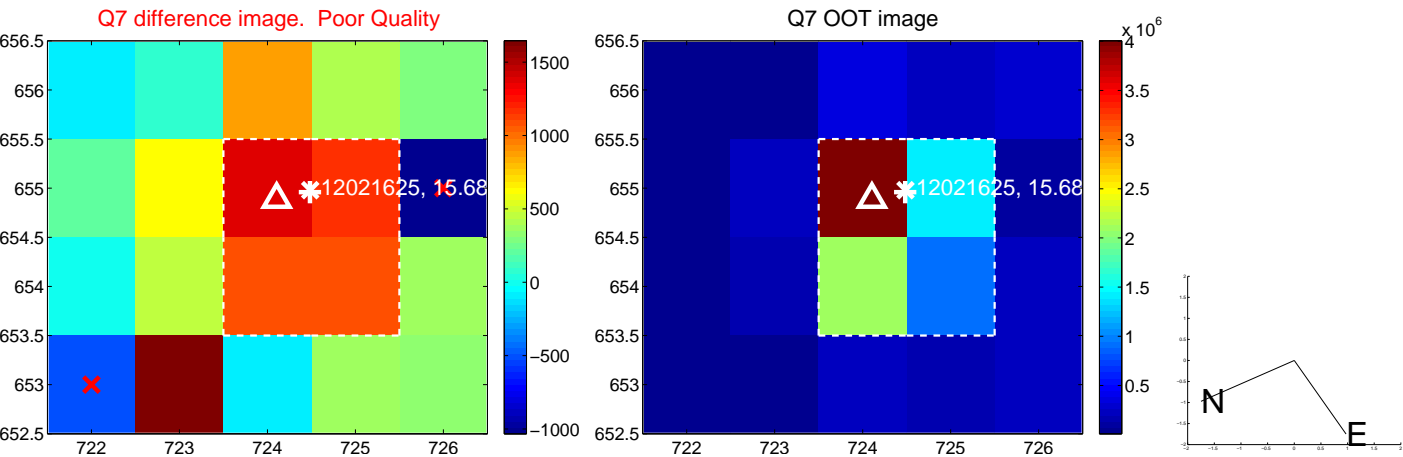
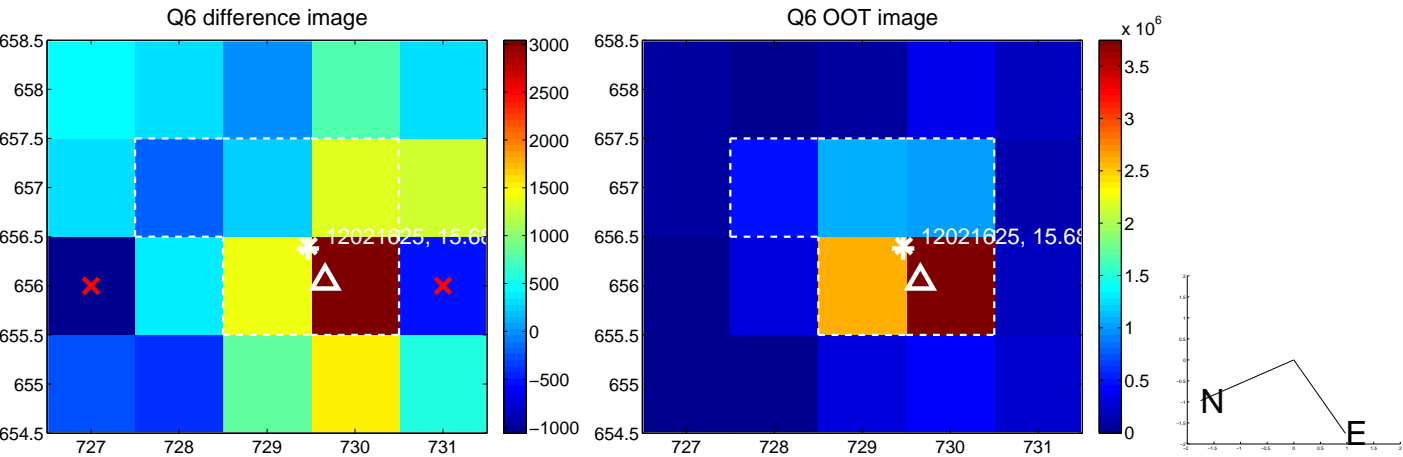
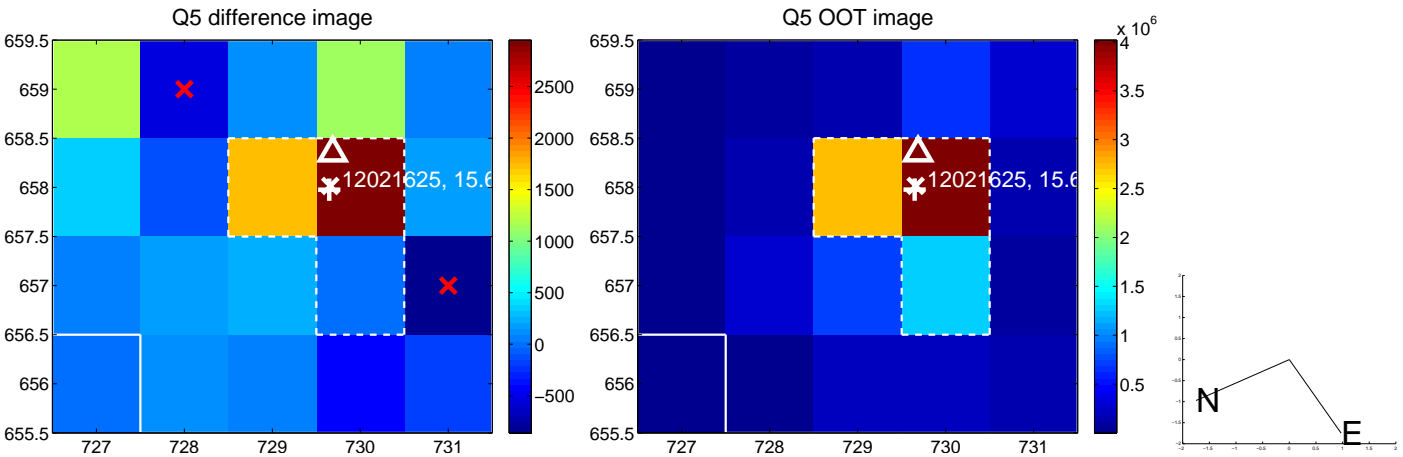


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

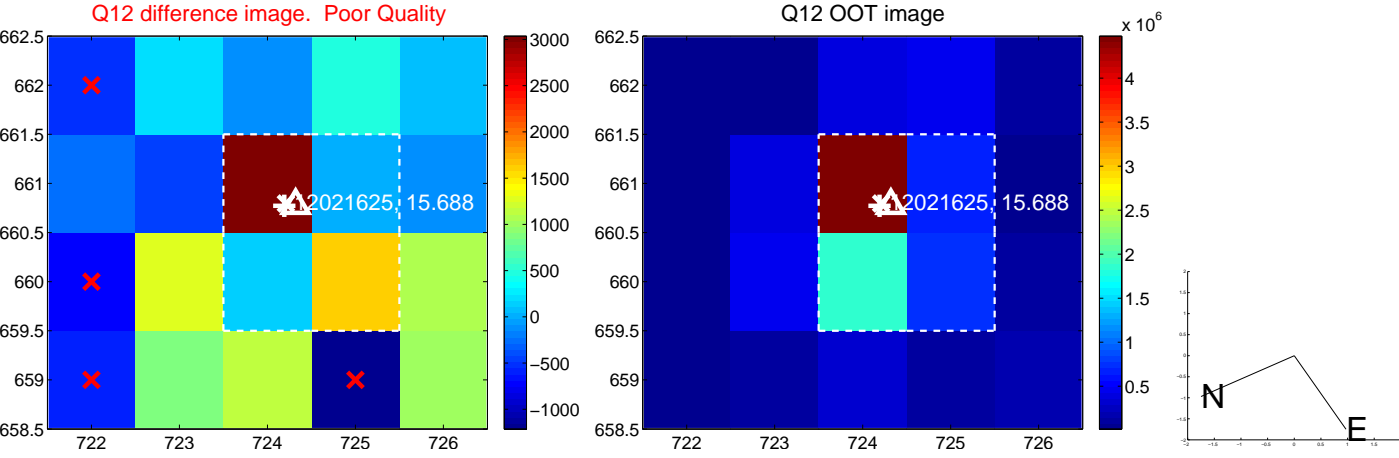
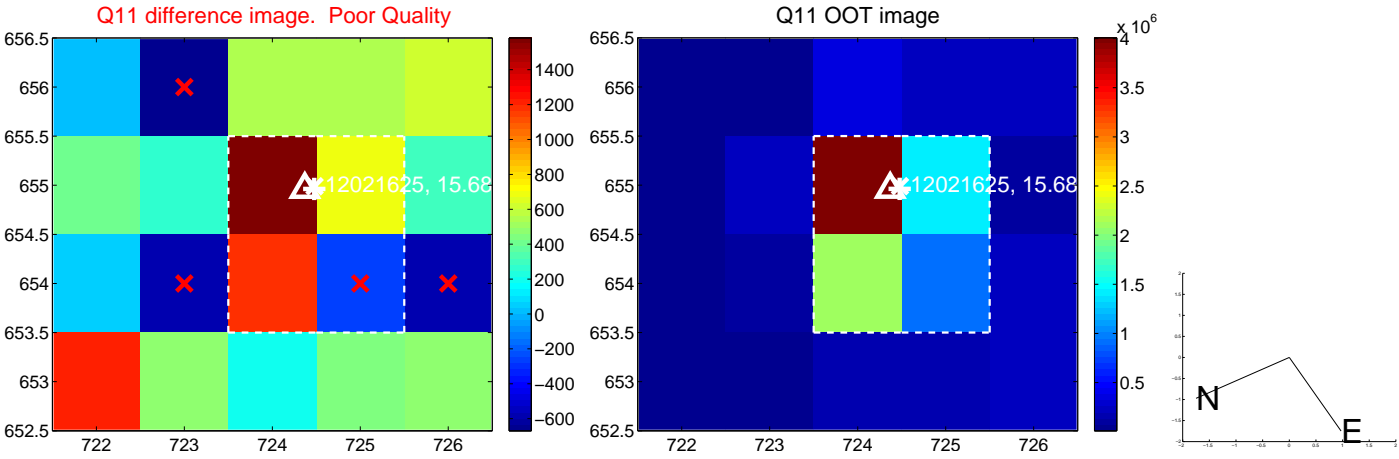
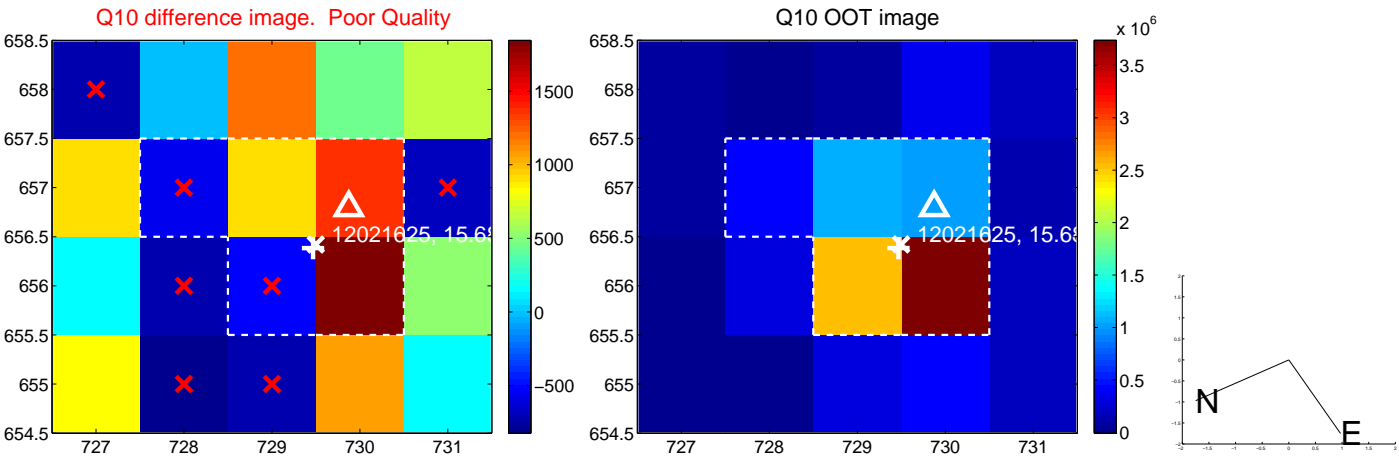
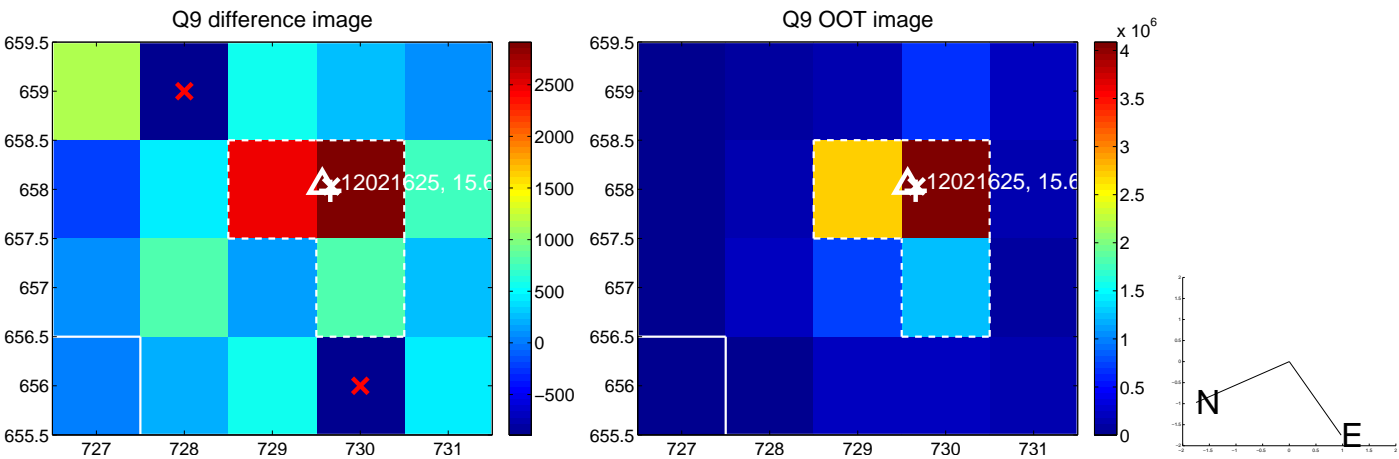
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



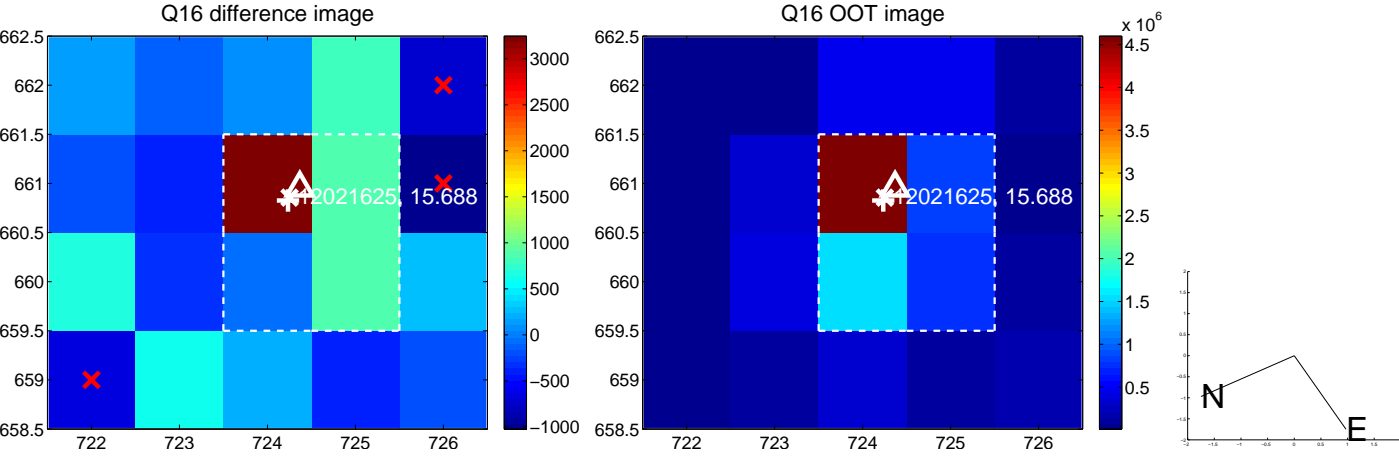
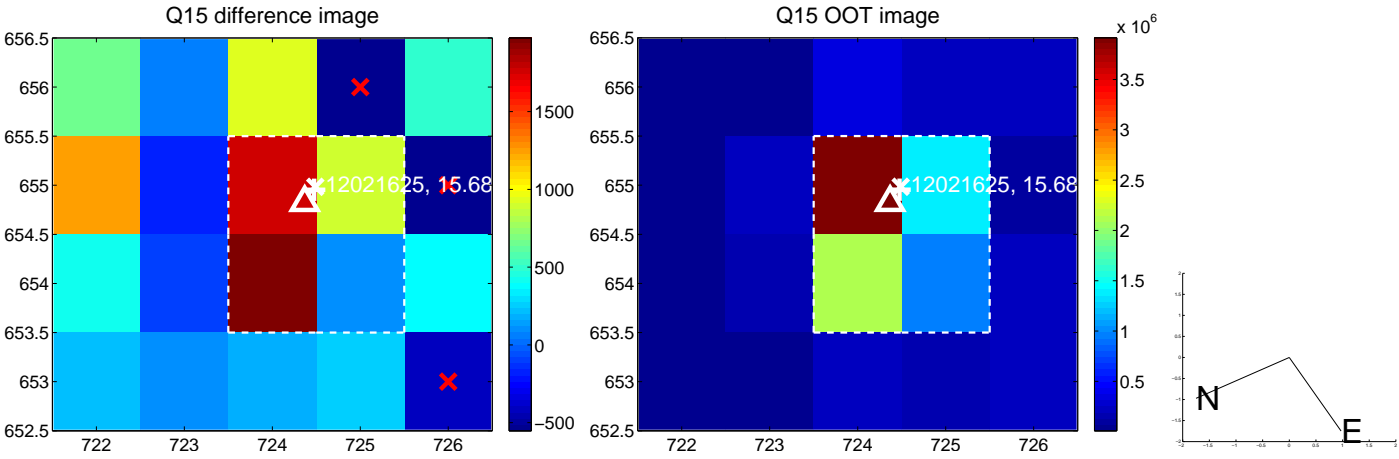
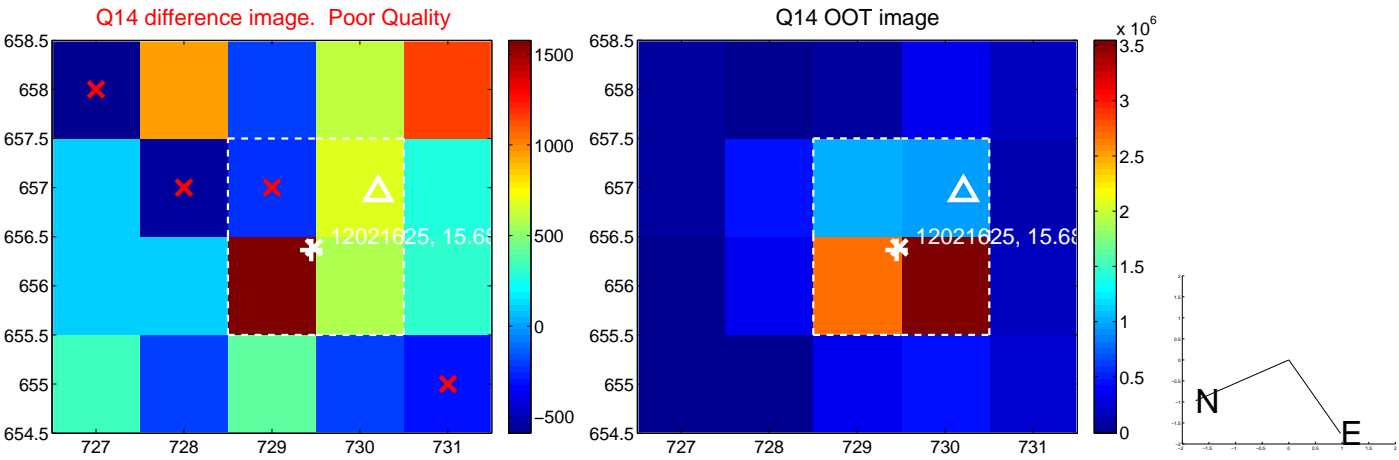
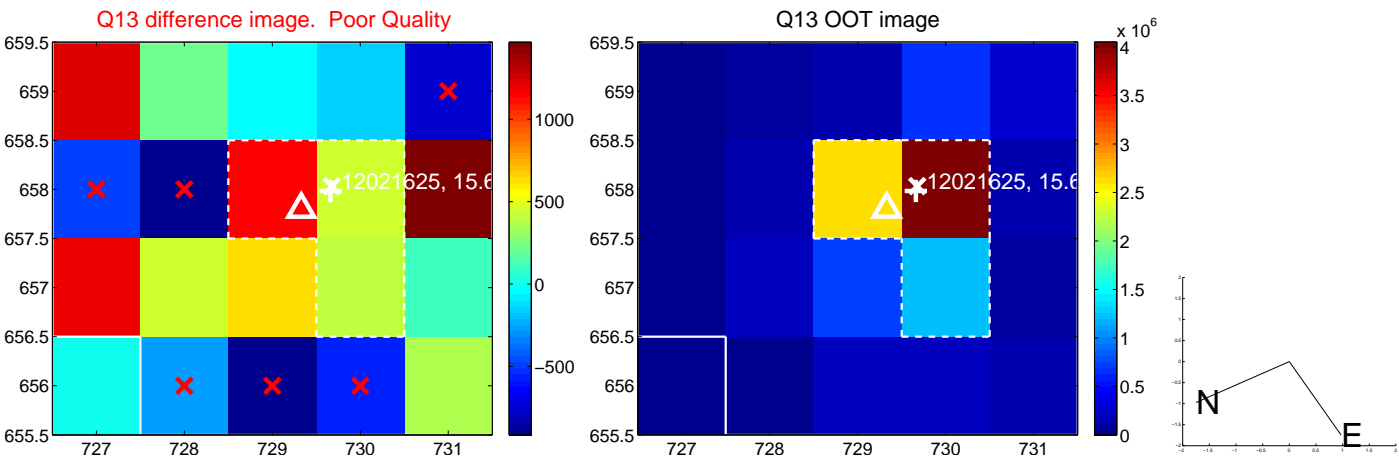
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



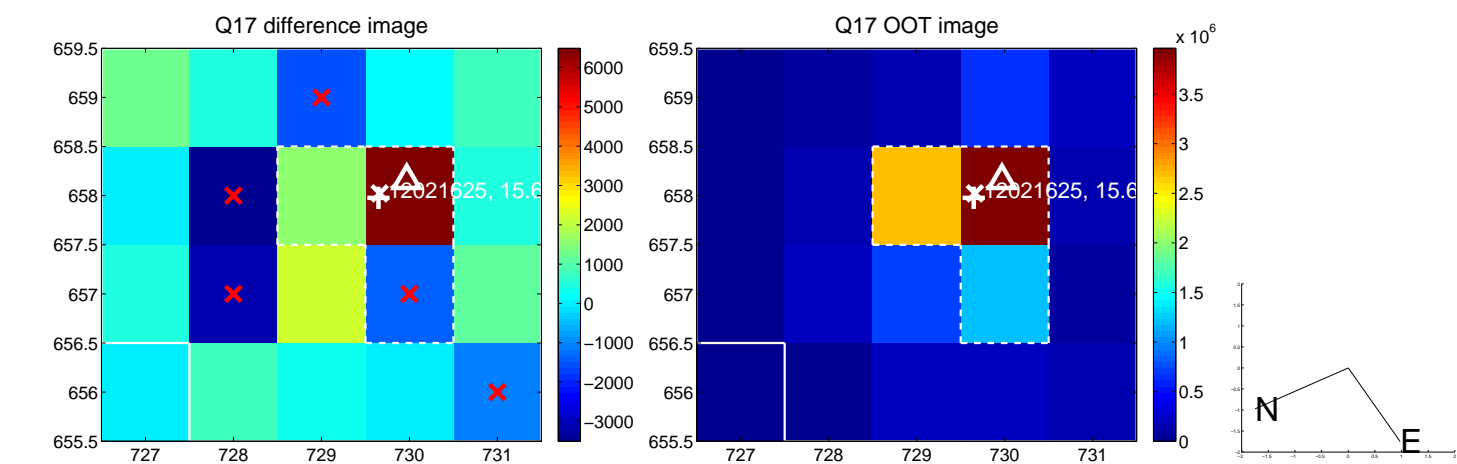
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



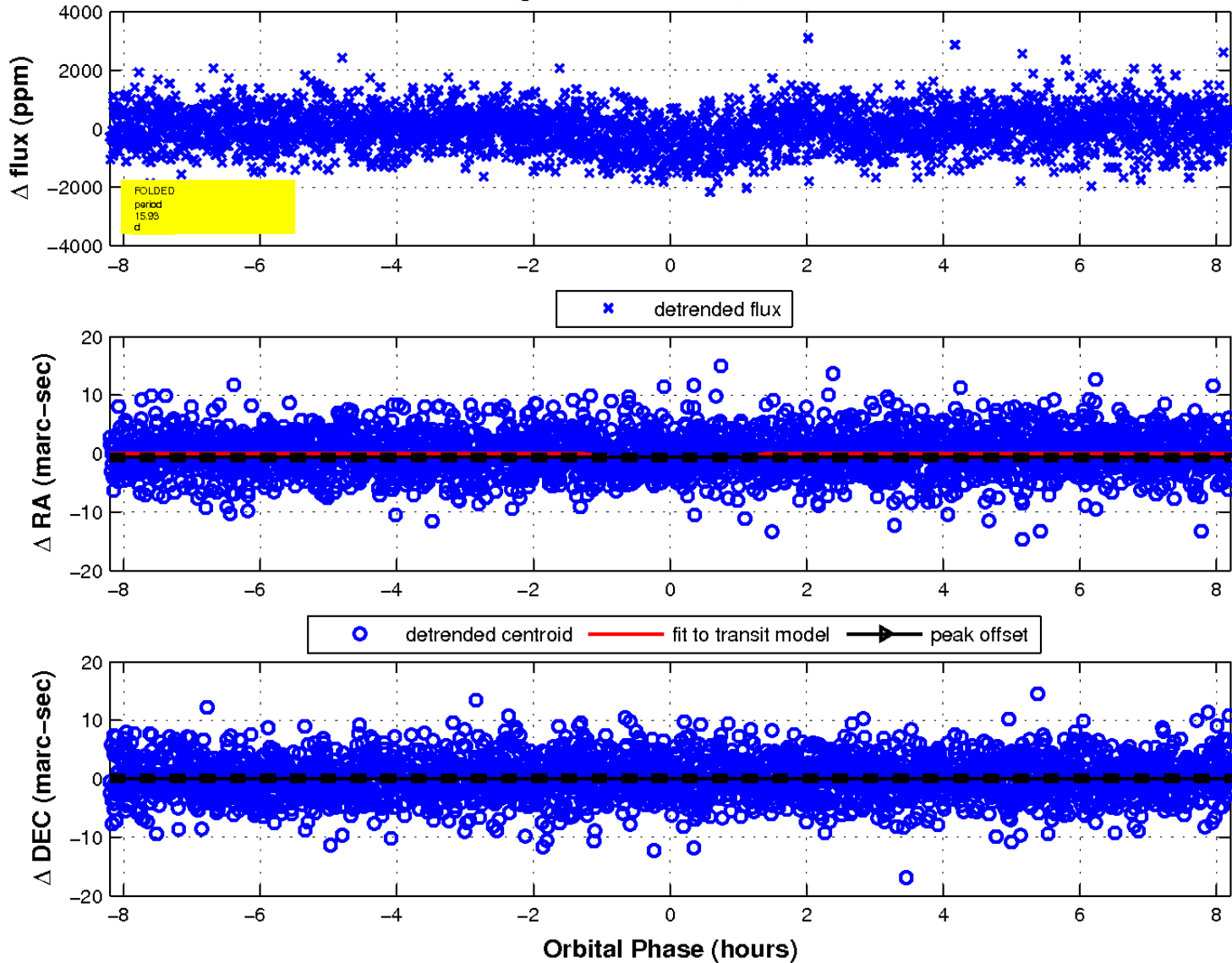
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

