

KIC 010028140

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})
010028140-01	OBS	1591.01	19.656394	140.299472	822.3	3.278	20.4	22.9	0.74	5288	2.81	21.55

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010028140-01	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 010028140-01

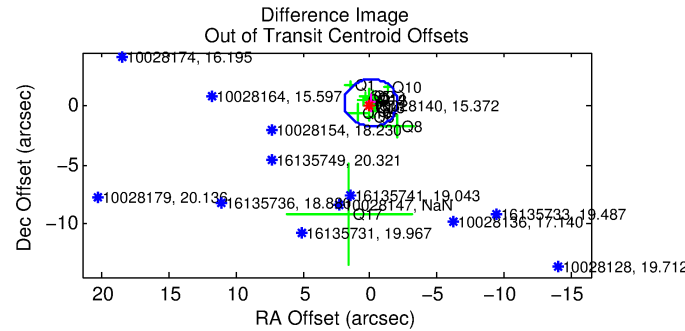
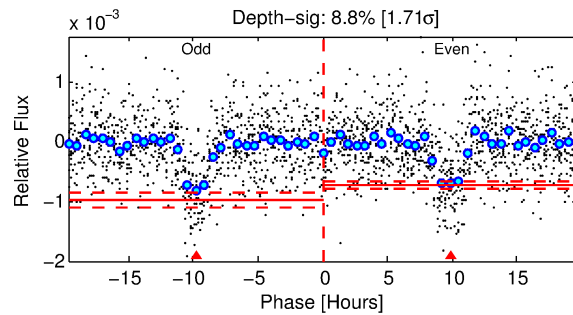
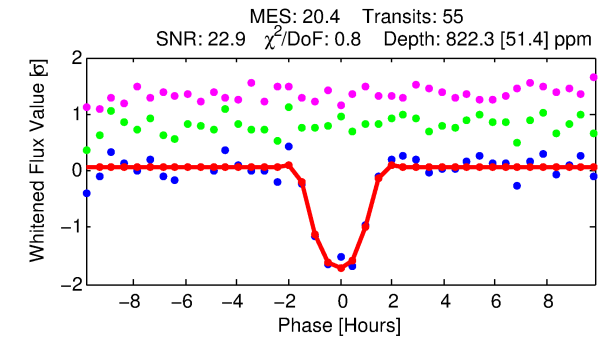
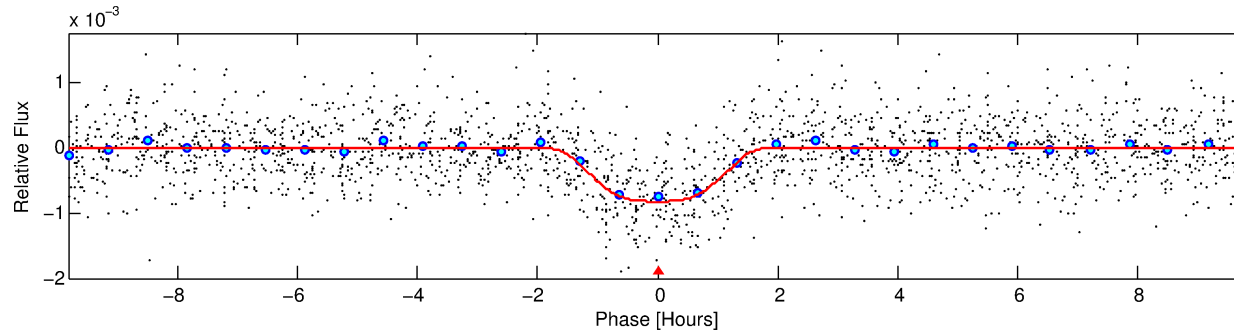
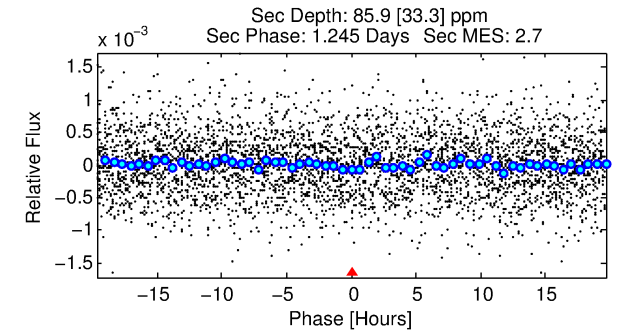
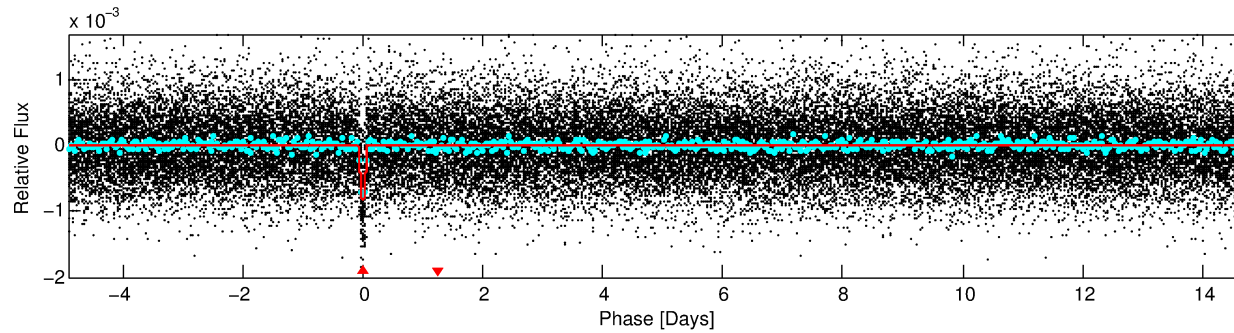
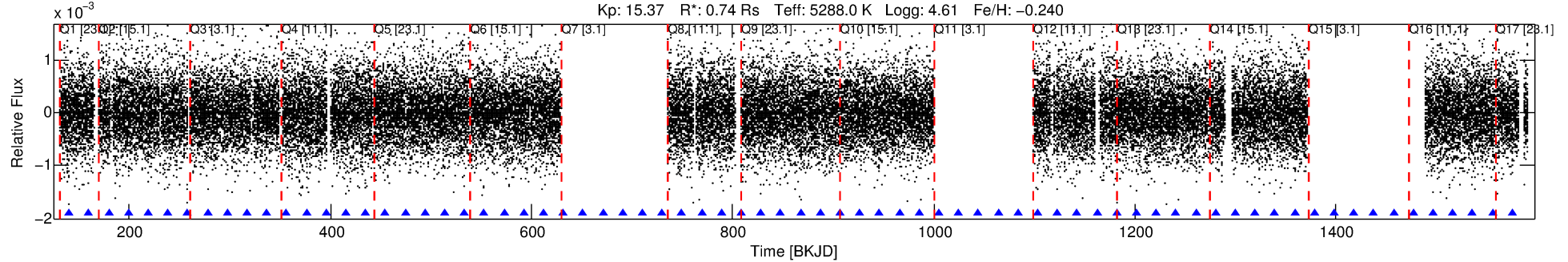
No Significant Match Found

DV One-Page Summary

KIC: 10028140 Candidate: 1 of 1 Period: 19.656 d

KOI: K01591.01 Corr: 0.886

Kp: 15.37 R*: 0.74 Rs Teff: 5288.0 K Logg: 4.61 Fe/H: -0.240



DV Fit Results:

Period = 19.65639 [0.00008] d
Epoch = 140.2995 [0.0032] BKJD
Rp/R* = 0.0348 [0.0019]
a/R* = 17.88 [2.06]
b = 0.96 [0.01]
Seff = 21.55 [4.51]
Teq = 549 [29] K
Rp = 2.81 [0.45] Re
a = 0.1334 [0.0163] AU
Ag = 106.39 [46.56] [2.26σ]
Teffp = 2728 [287] K [7.56σ]

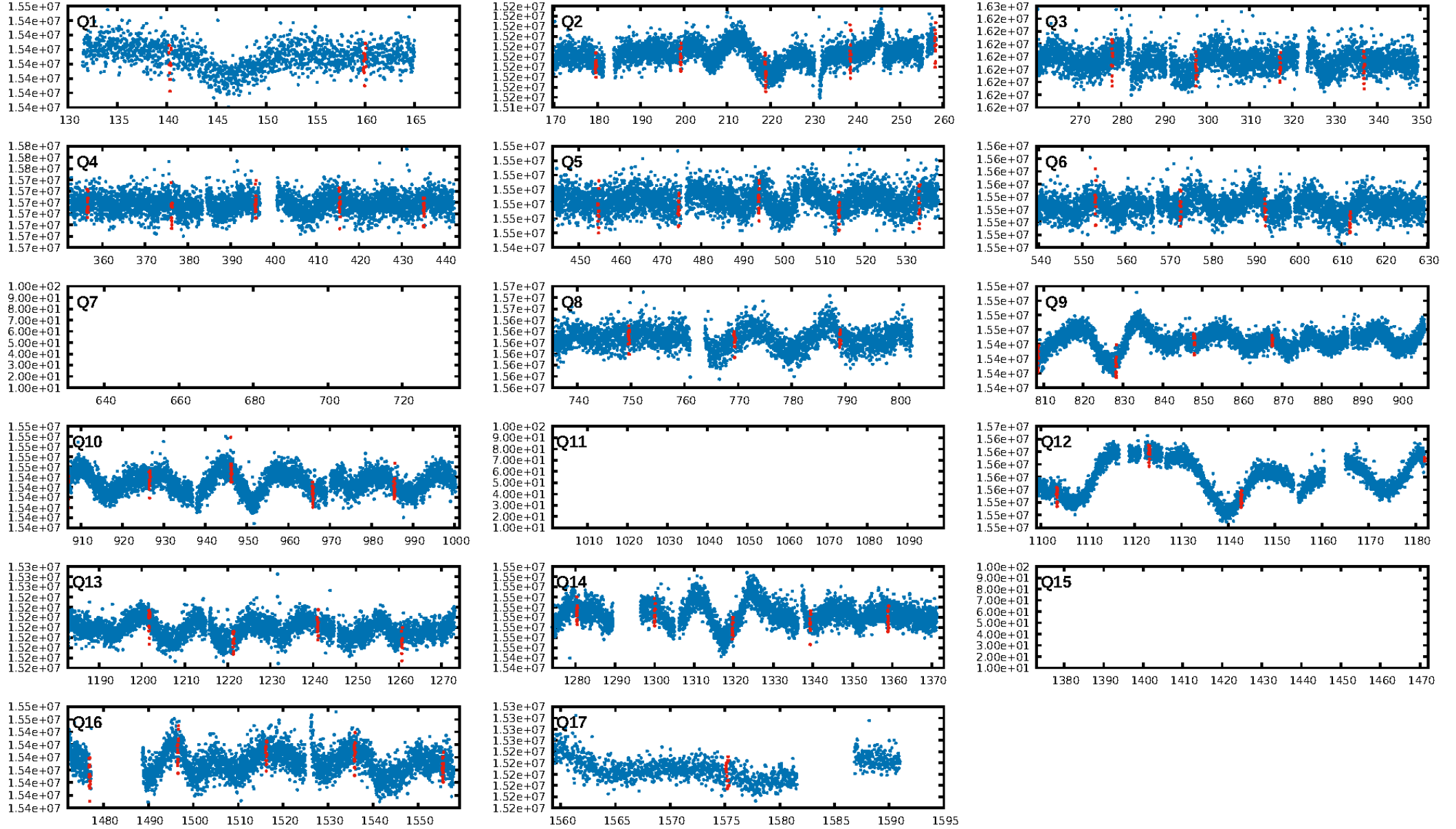
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 76.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.04e-89
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: 6.253
Centroid-sig: N/A
Centroid-so: 0.631 arcsec [1.14σ]
OotOffset-rm: 0.237 arcsec [0.36σ]
KicOffset-rm: 0.193 arcsec [0.28σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [14/14]

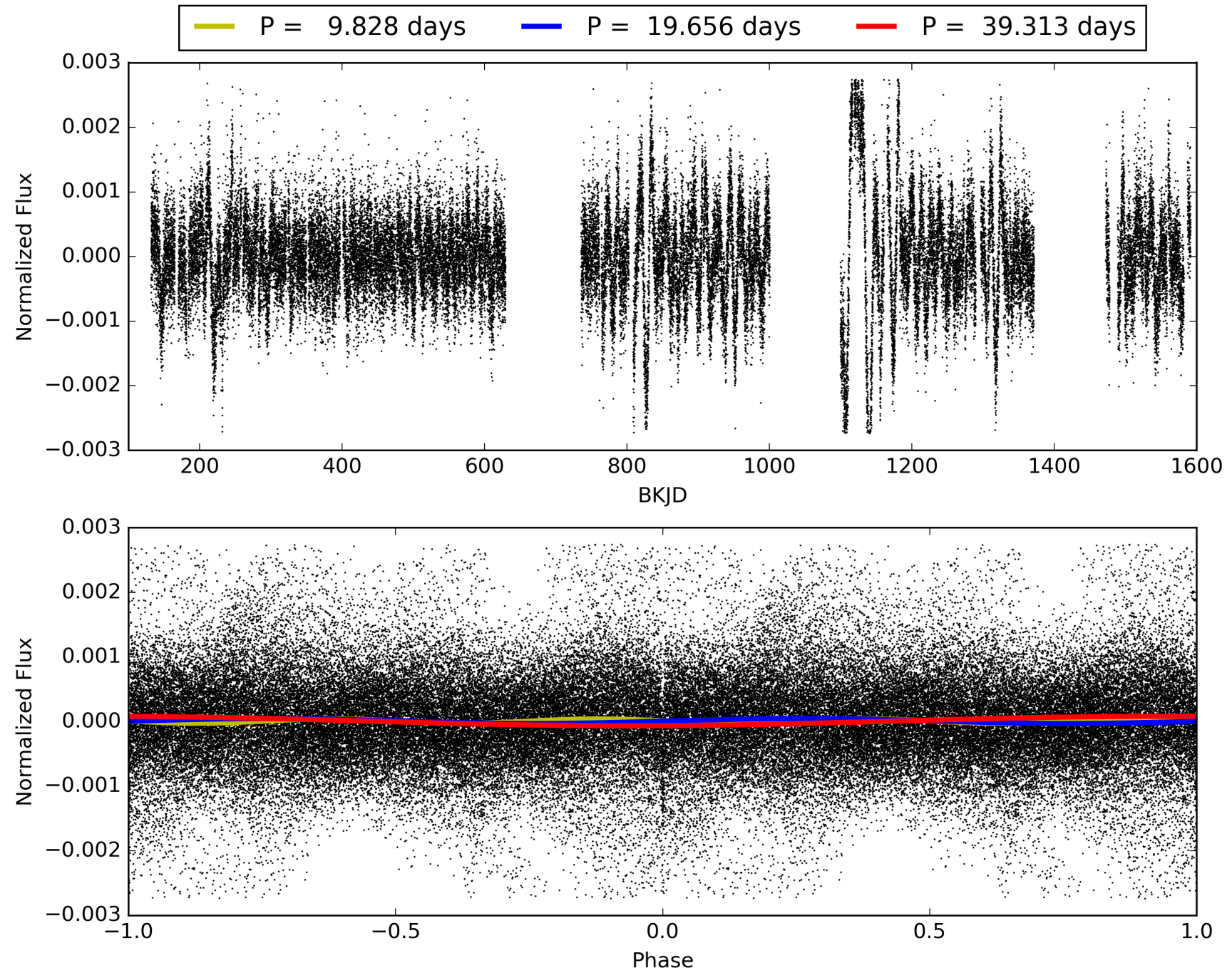
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:54:14 Z

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

TCE 010028140-01, PDC Light Curves

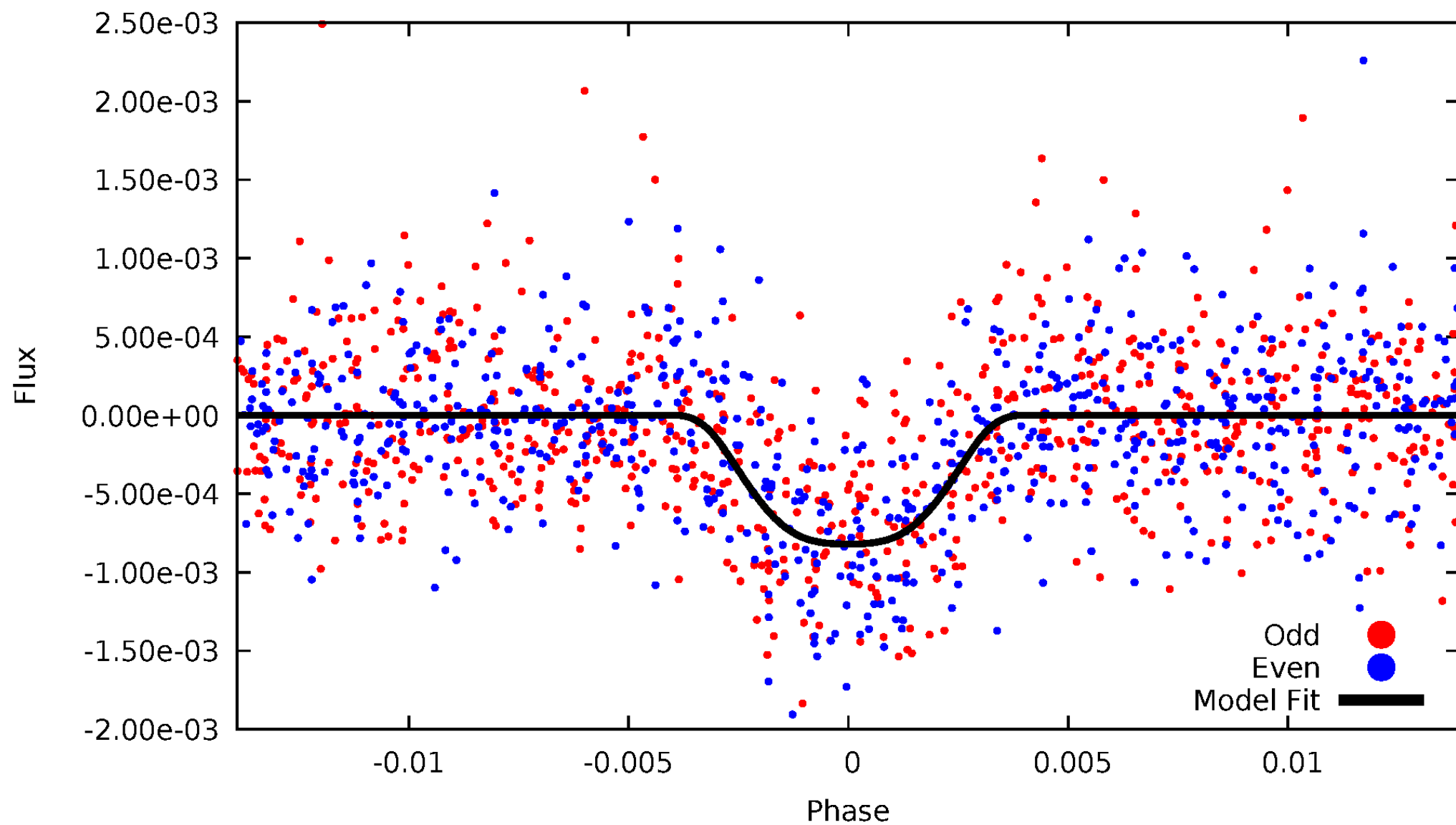


TCE 010028140-01



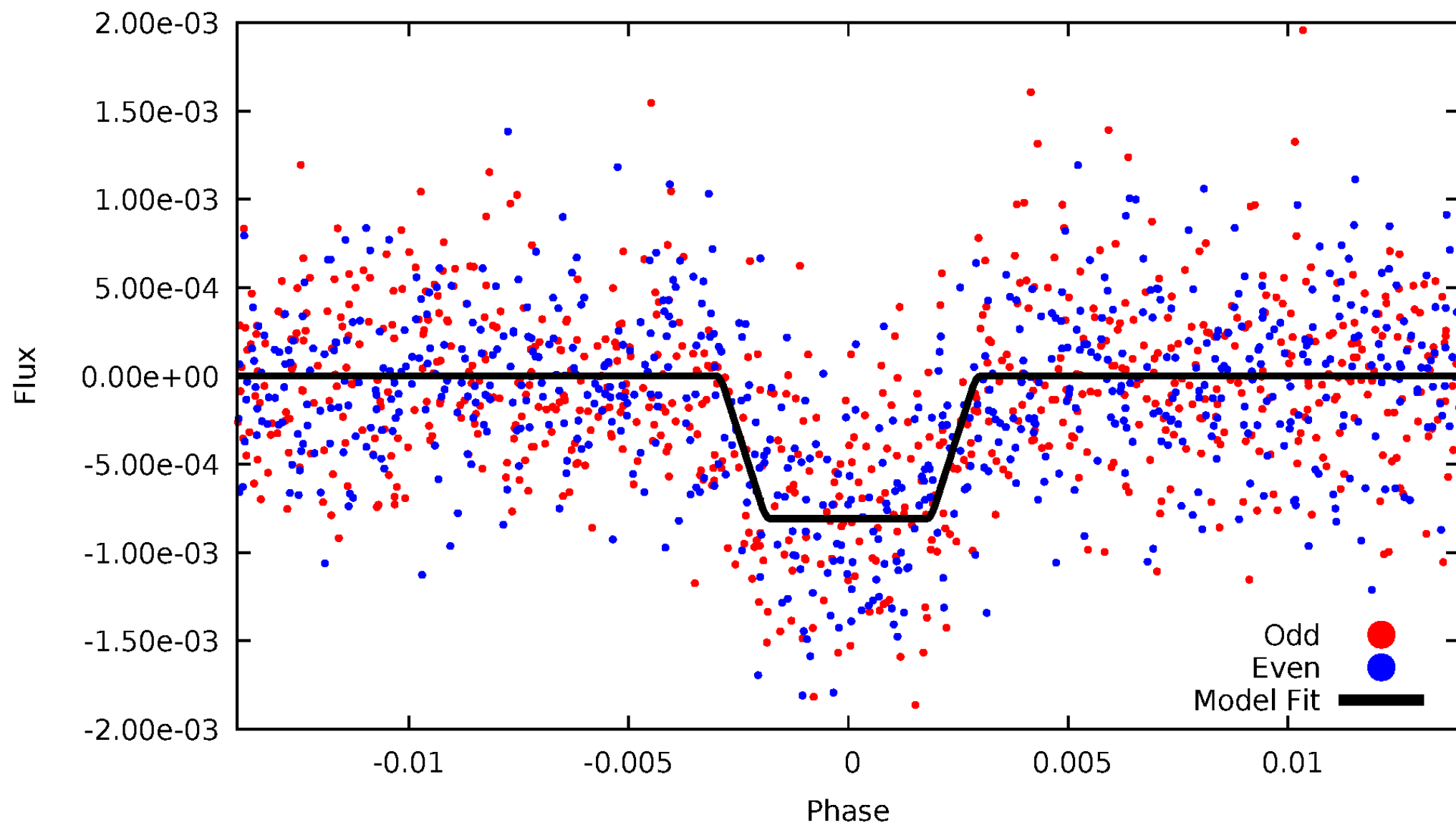
DV Odd/Even

TCE 010028140-01

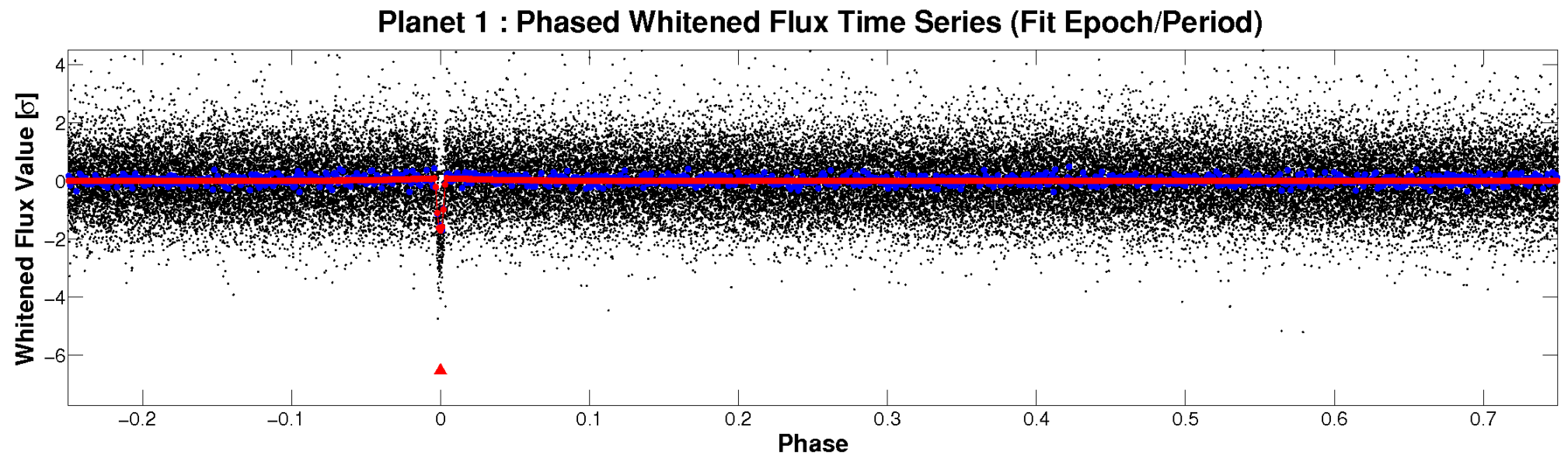
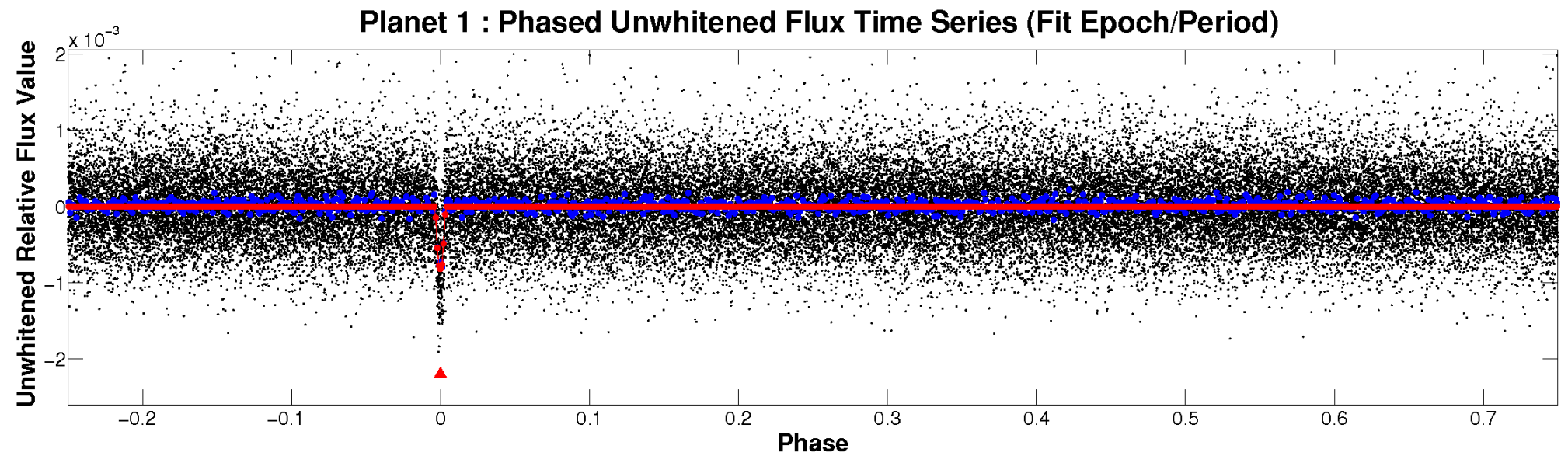


ALT Odd/Even

TCE 010028140-01

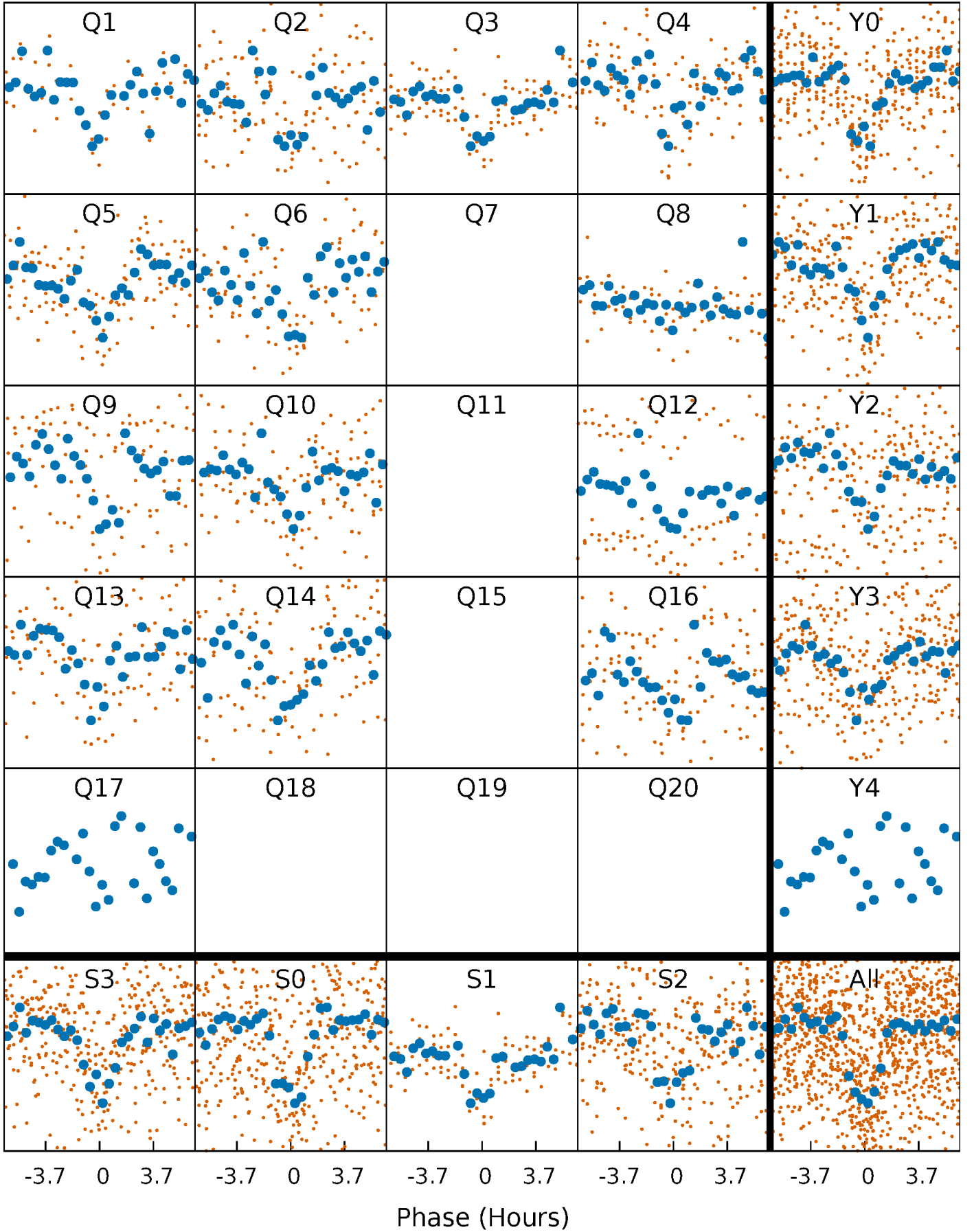


Non-Whitened Vs. Whitened Light Curve



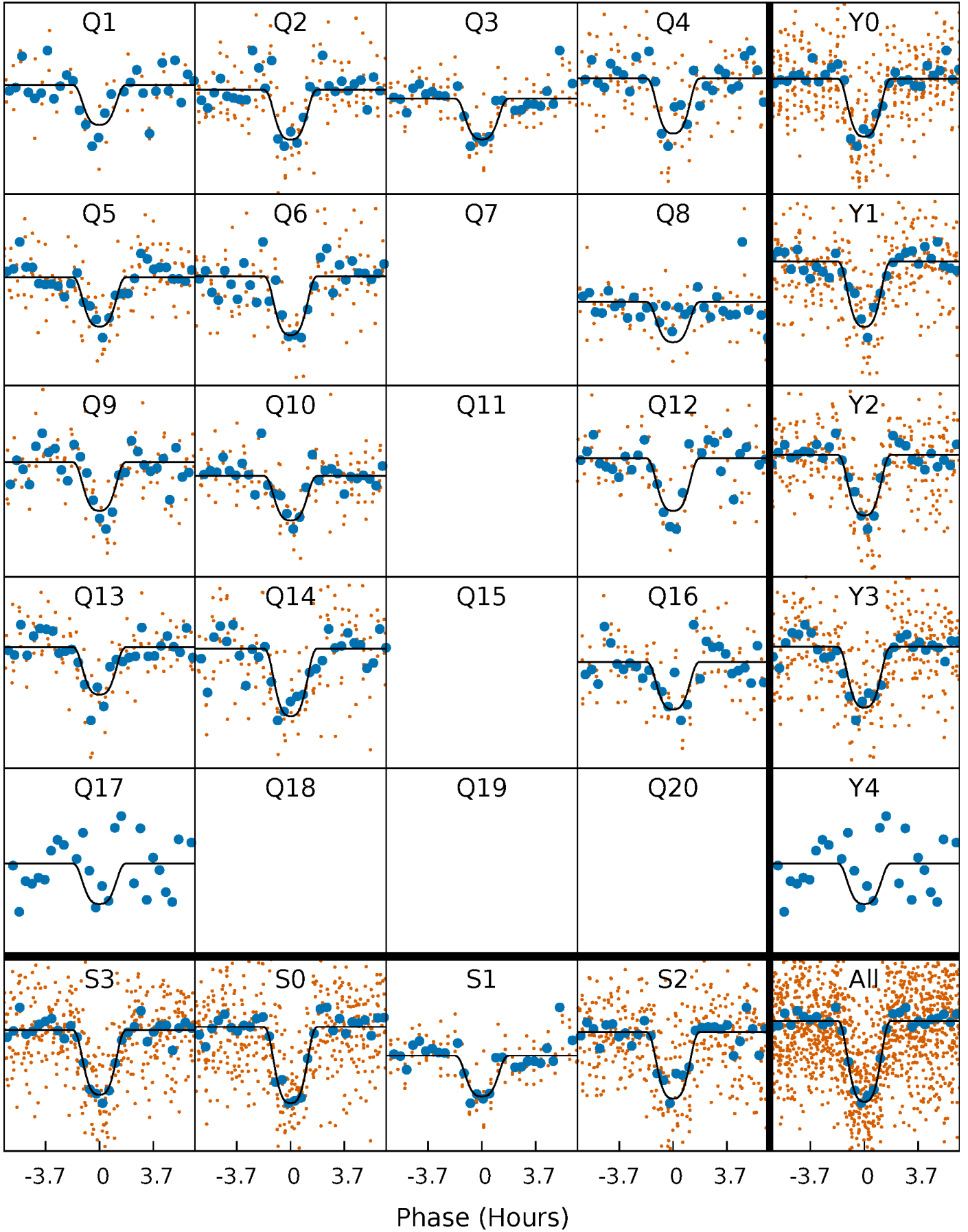
PDC Quarter-Phased Transit Curves

TCE 010028140-01 P= 19.656394 Days $T_0=140.299472$ (BKJD)



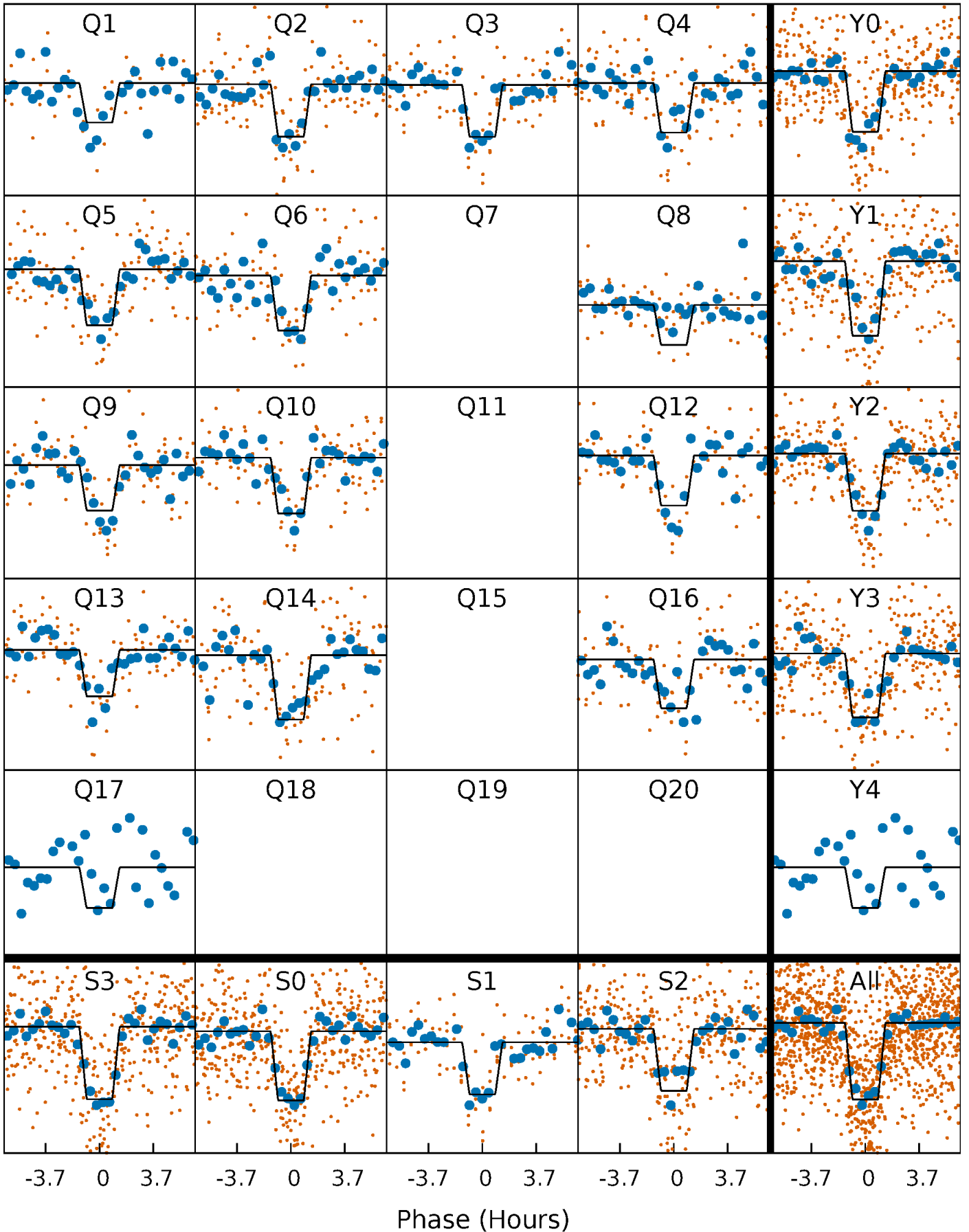
DV Quarter-Phased Transit Curves

TCE 010028140-01 P= 19.656394 Days $T_0=140.299472$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

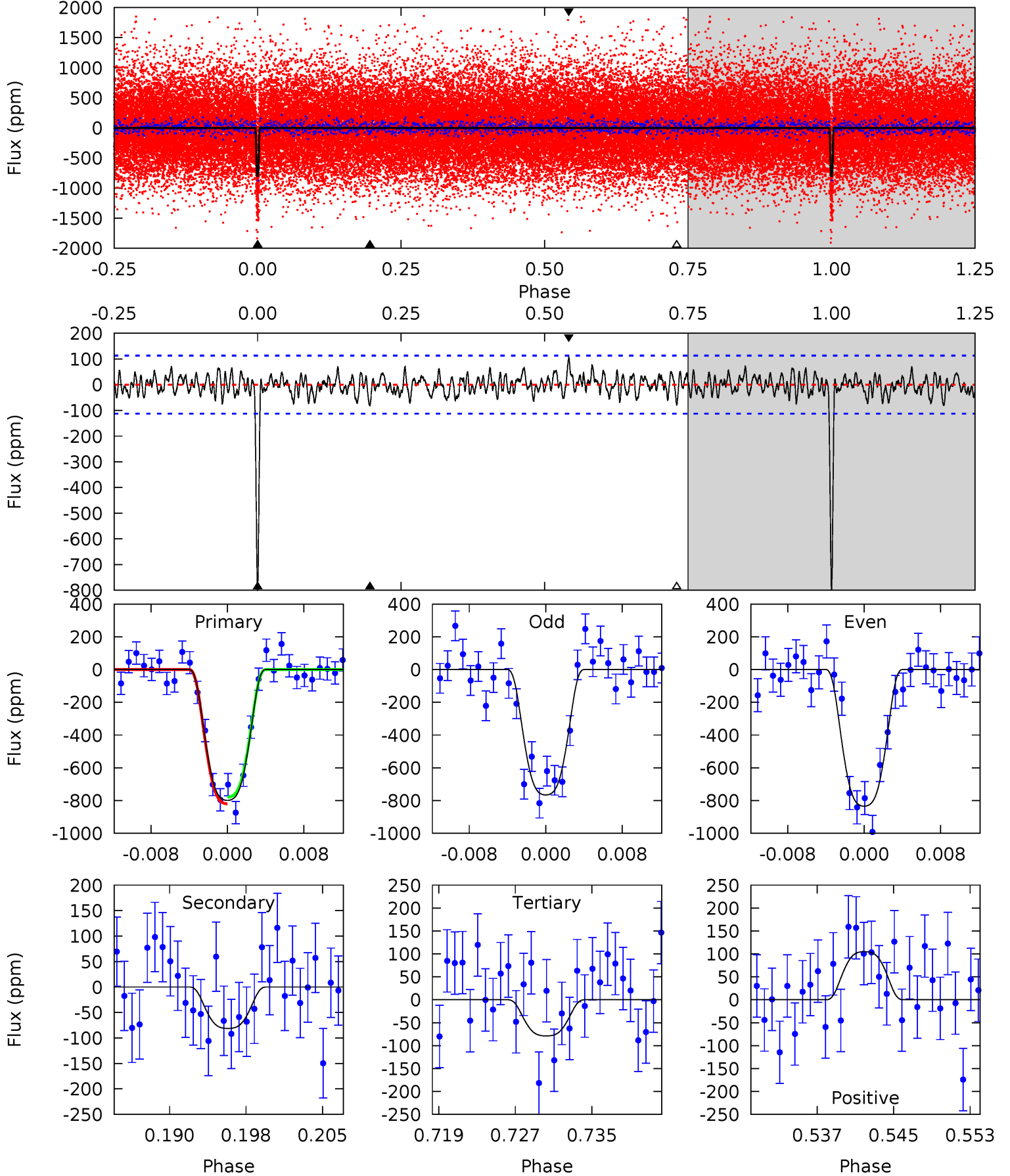
TCE 010028140-01 P= 19.656206 Days $T_0=140.305254$ (BKJD)



DV Model-Shift Uniqueness Test

010028140-01, $P = 19.656394$ Days, $E = 120.643078$ Days

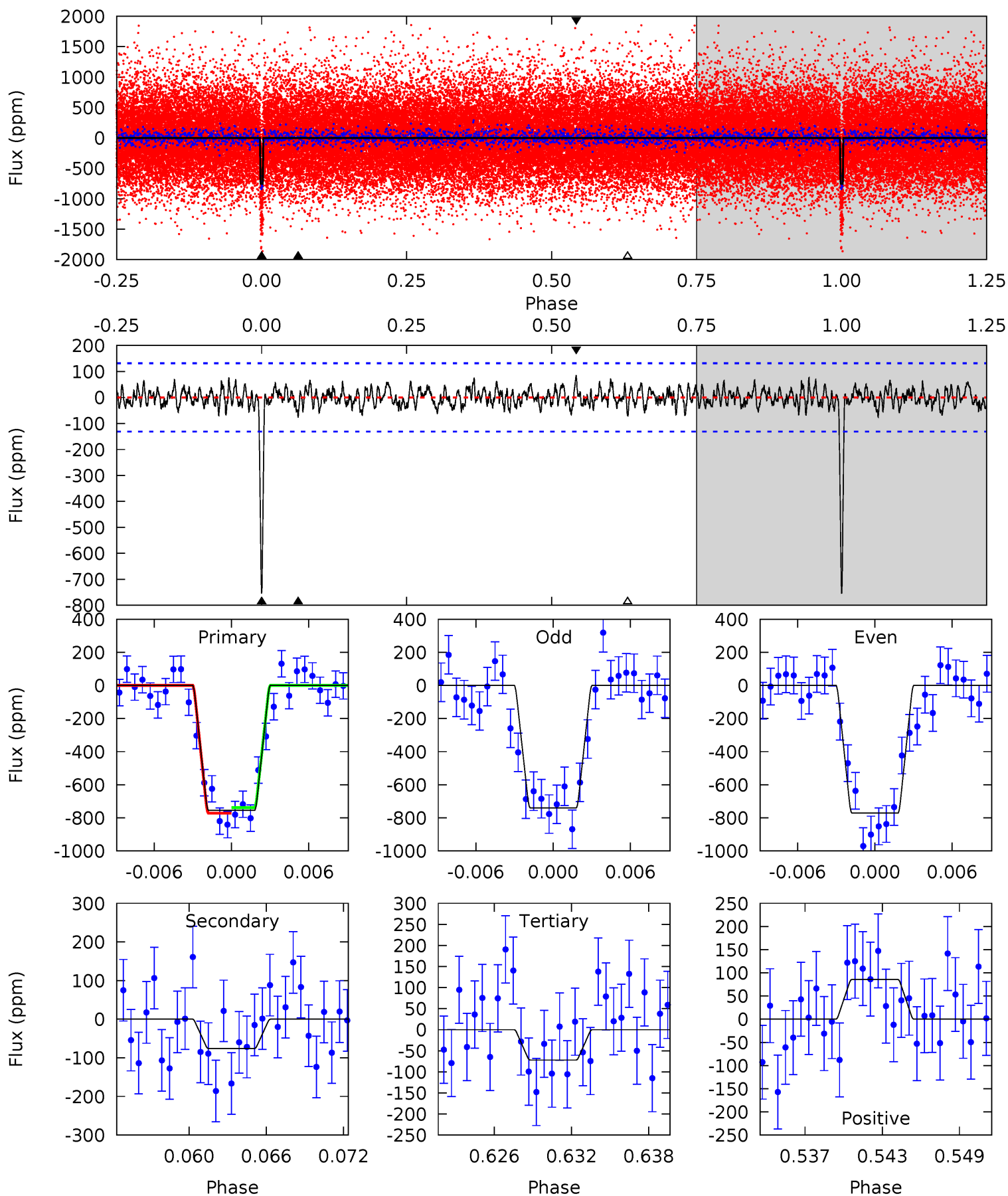
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.8	3.64	3.54	4.71	5.07	2.66	1.35	32.3	31.1	0.11	-1.06	1.54	1.00	0.12	0.92



Alt Model-Shift Uniqueness Test

010028140-01, $P = 19.656206$ Days, $E = 120.649048$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.4	2.96	2.80	3.34	5.12	2.75	1.08	26.6	26.1	0.16	-0.38	0.62	0.97	0.10	0.66



Stellar Parameters For KIC 010028140

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5288^{+159}_{-143}	$4.613^{+0.036}_{-0.090}$	$-0.240^{+0.300}_{-0.300}$	$0.740^{+0.112}_{-0.060}$	$0.828^{+0.070}_{-0.096}$	$2.883^{+0.470}_{-0.855}$
	+3%/-3%	+1%/-2%	+125%/-125%	+15%/-8%	+8%/-12%	+16%/-30%
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 010028140-01 / KOI 1591.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-81 ± 22	$2.86^{+0.25}_{-0.23}$	777^{+31}_{-29}	3242^{+150}_{-154}	96^{+32}_{-27}
Alt.	-76 ± 26	$2.33^{+0.24}_{-0.20}$	775^{+34}_{-27}	3424^{+177}_{-245}	135^{+51}_{-50}

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

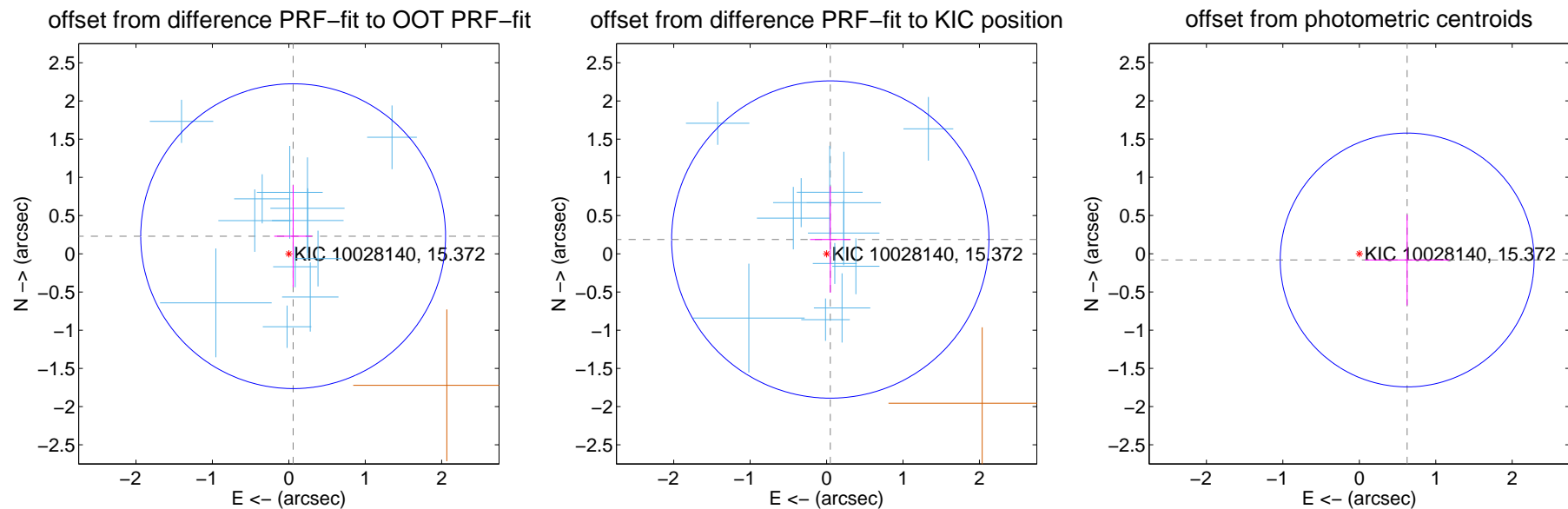
DV Centroid Data

Supplemental centroid analysis for 010028140-01. Kepler magnitude: 15.37. Transit SNR 22.90

There are 12 quarters with good PRF difference image offsets

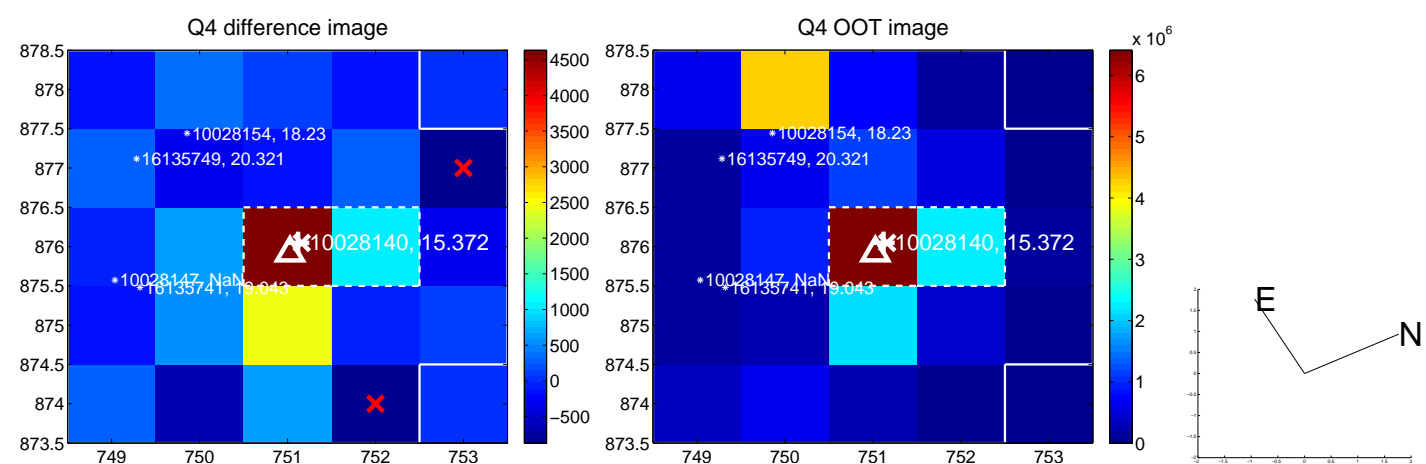
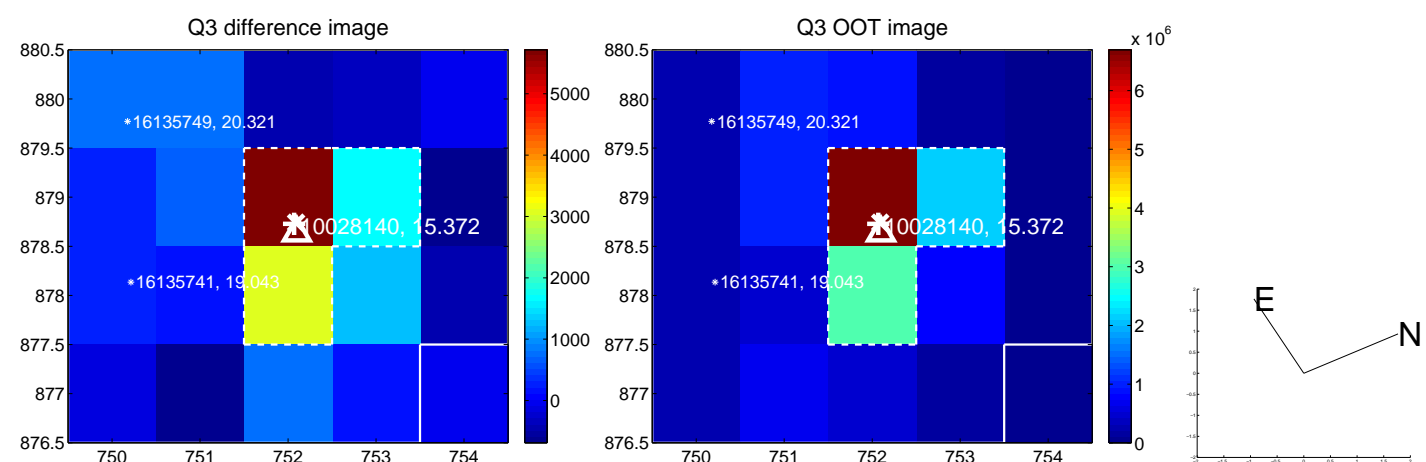
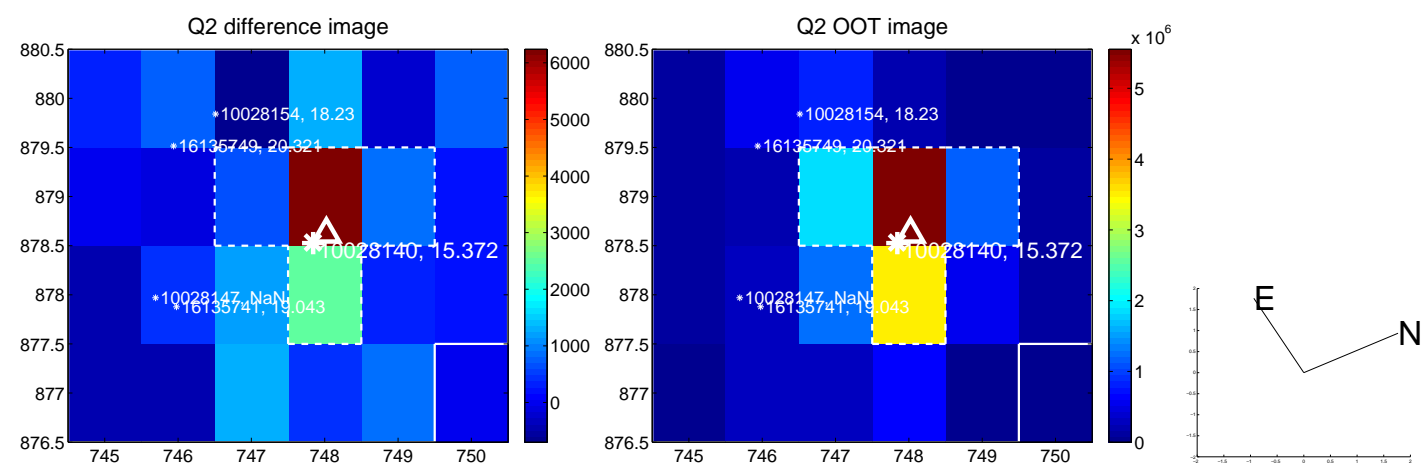
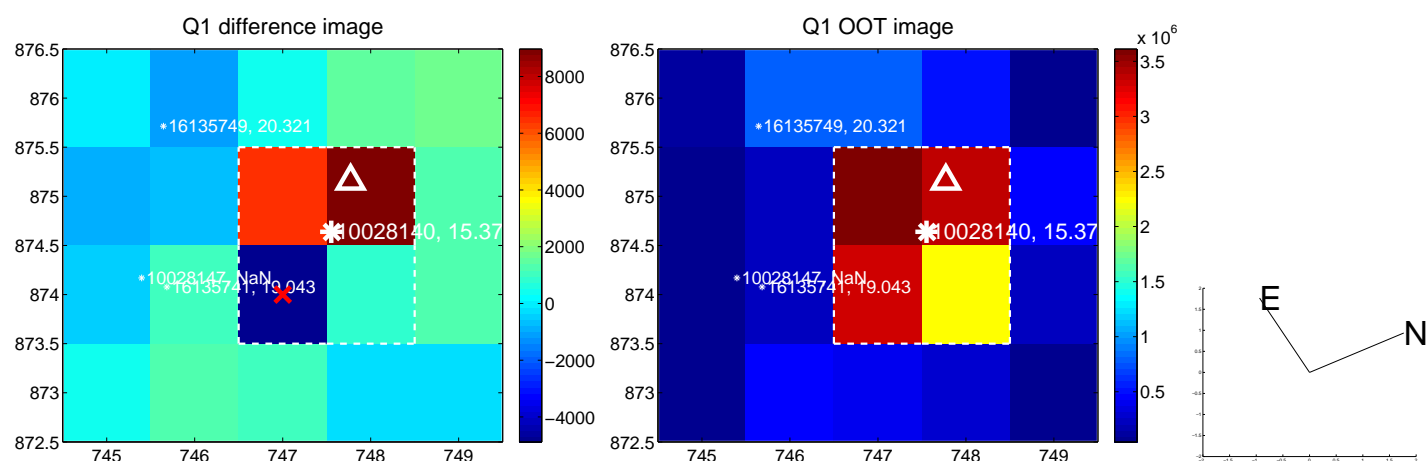
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.237 ± 0.665	0.36	-0.057 ± 0.248	0.230 ± 0.666
PRF-fit source offset from KIC position	0.193 ± 0.692	0.28	-0.049 ± 0.264	0.187 ± 0.696
photometric centroid source offset	0.63 ± 0.55	1.14	-0.63 ± 0.55	-0.08 ± 0.59

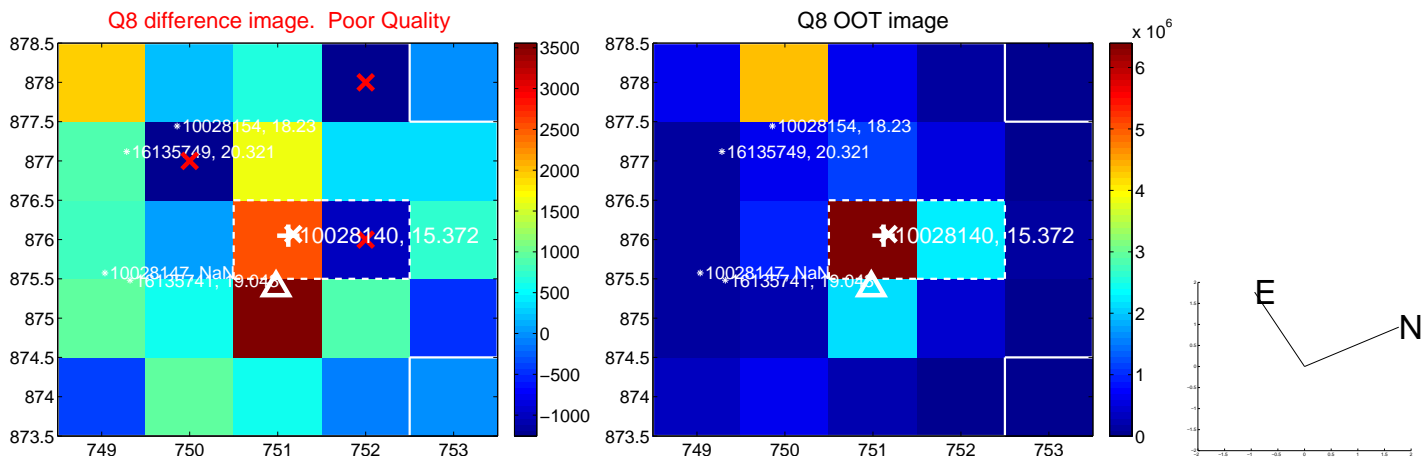
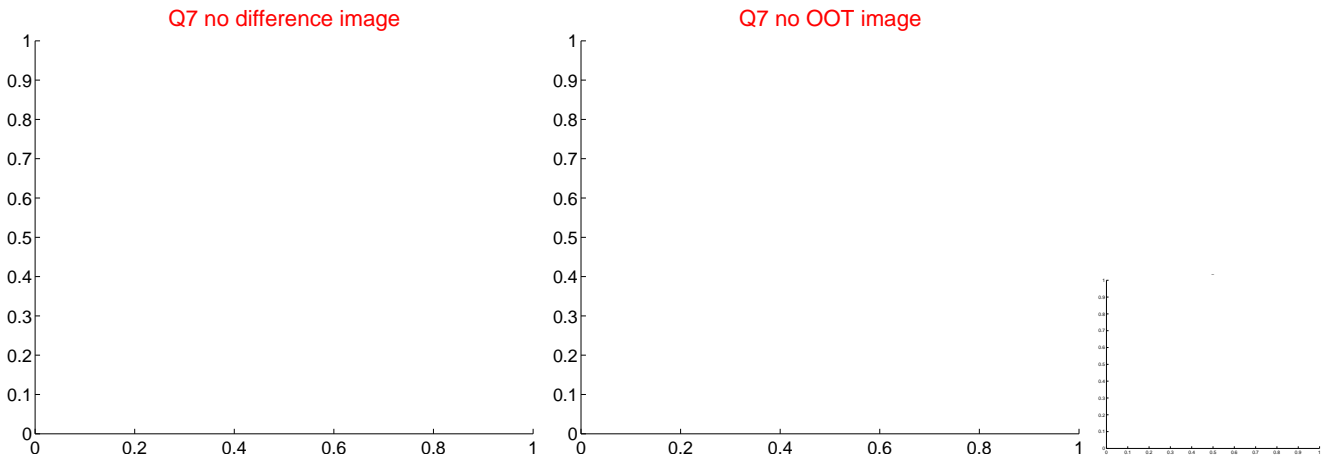
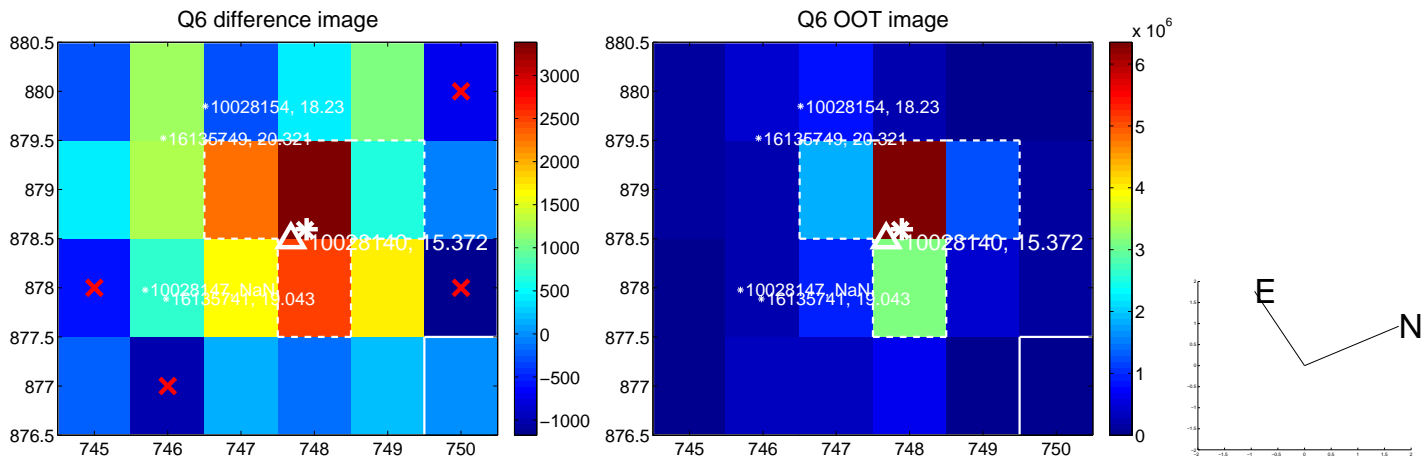
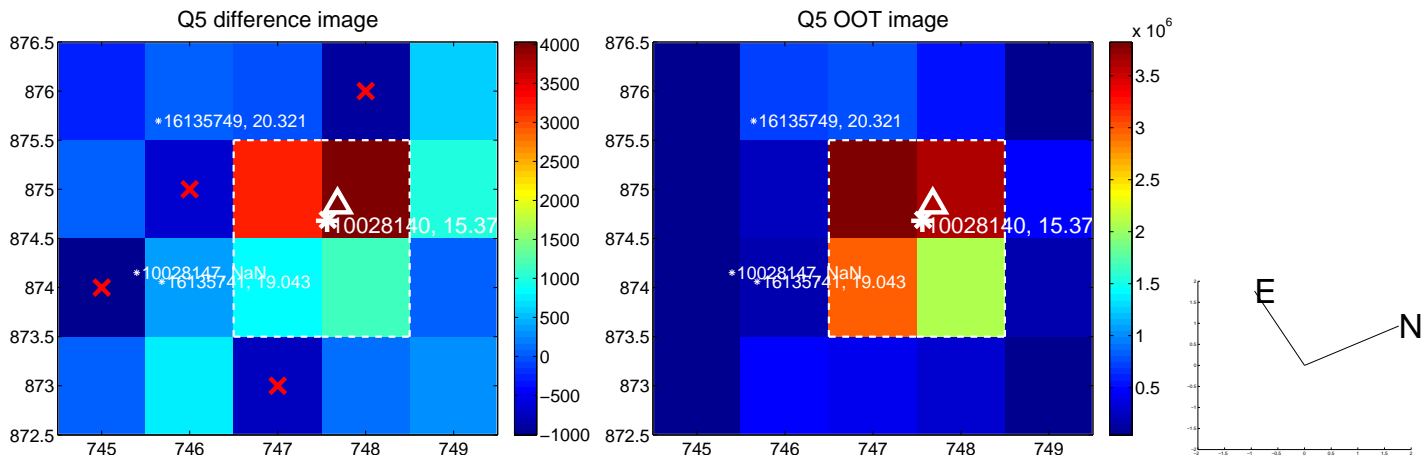


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

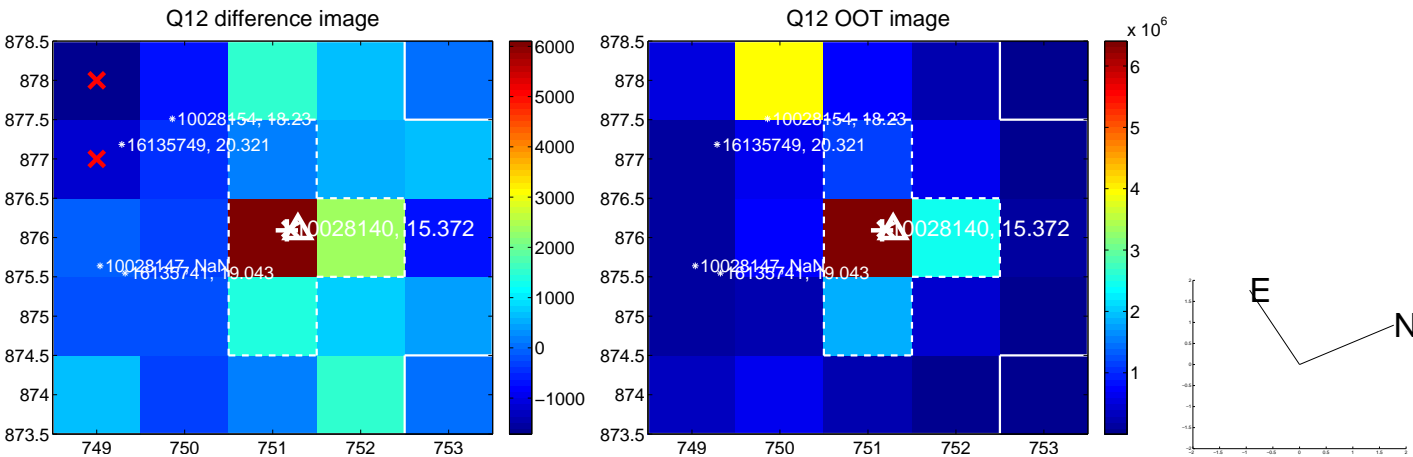
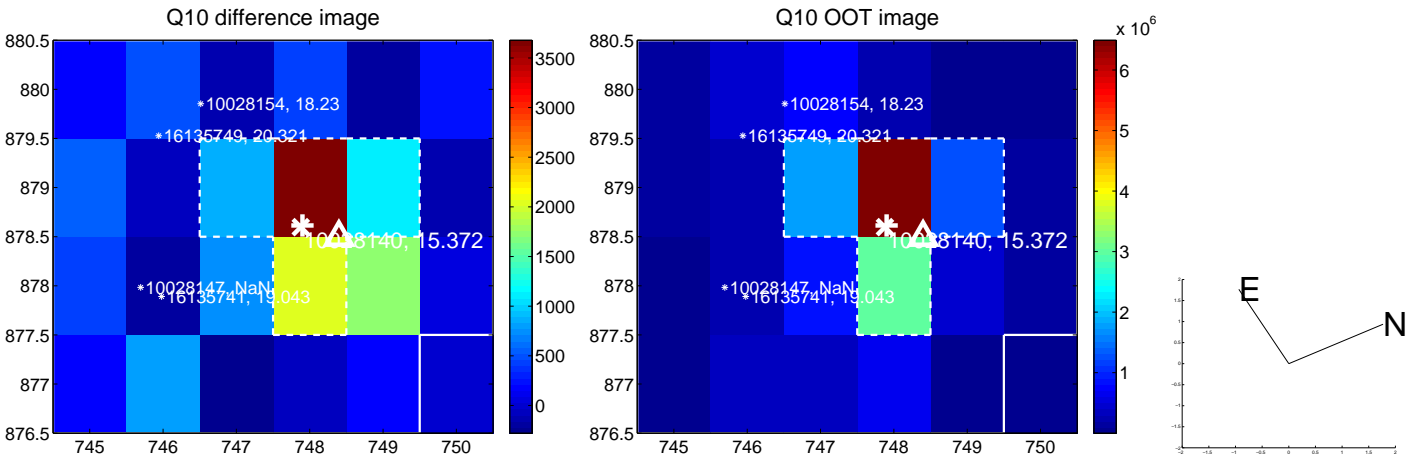
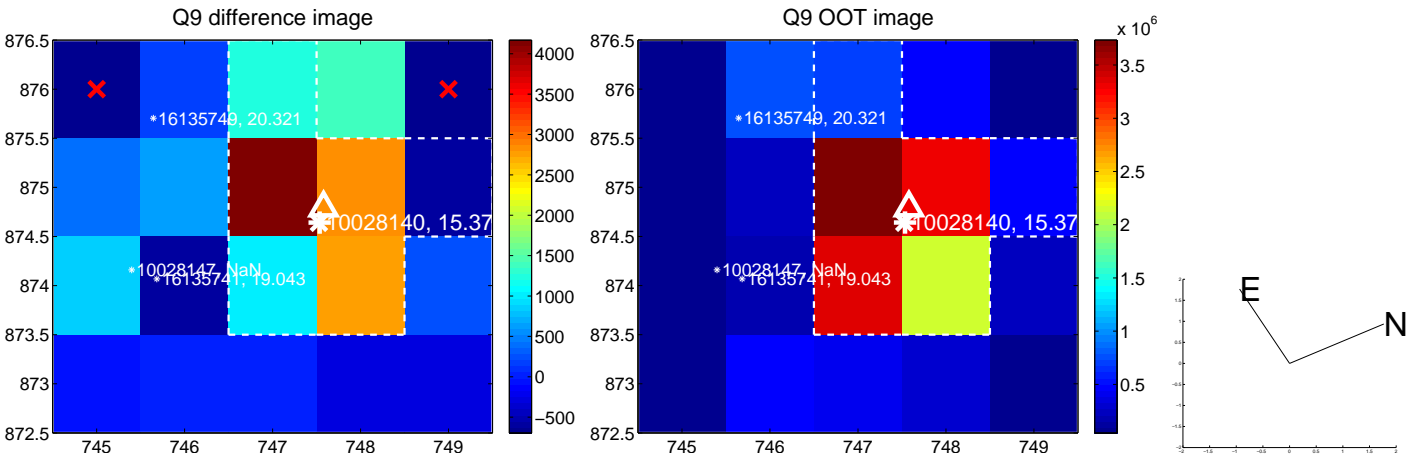
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



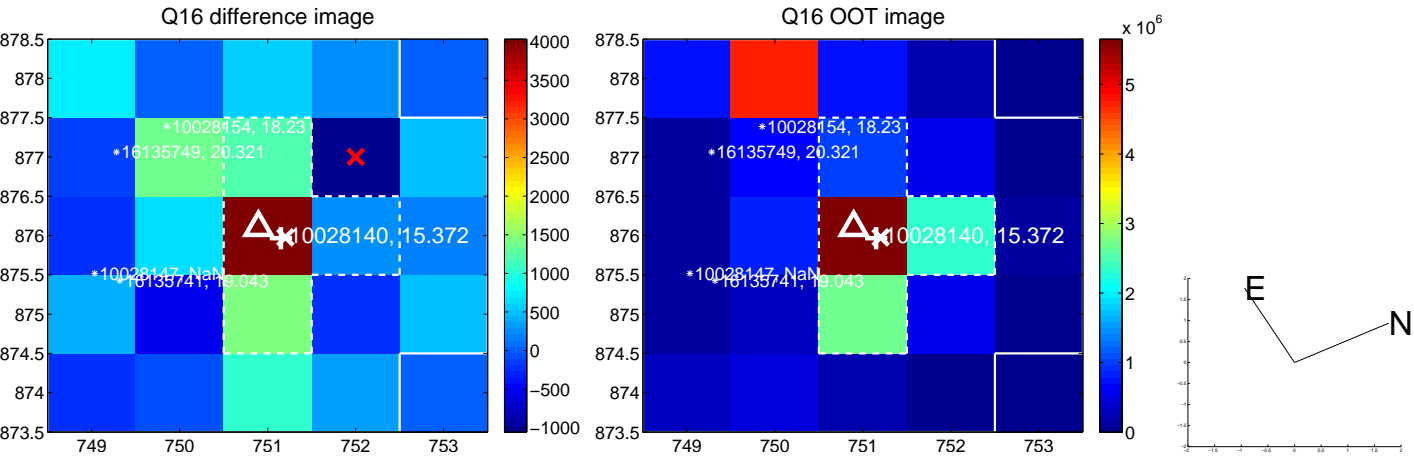
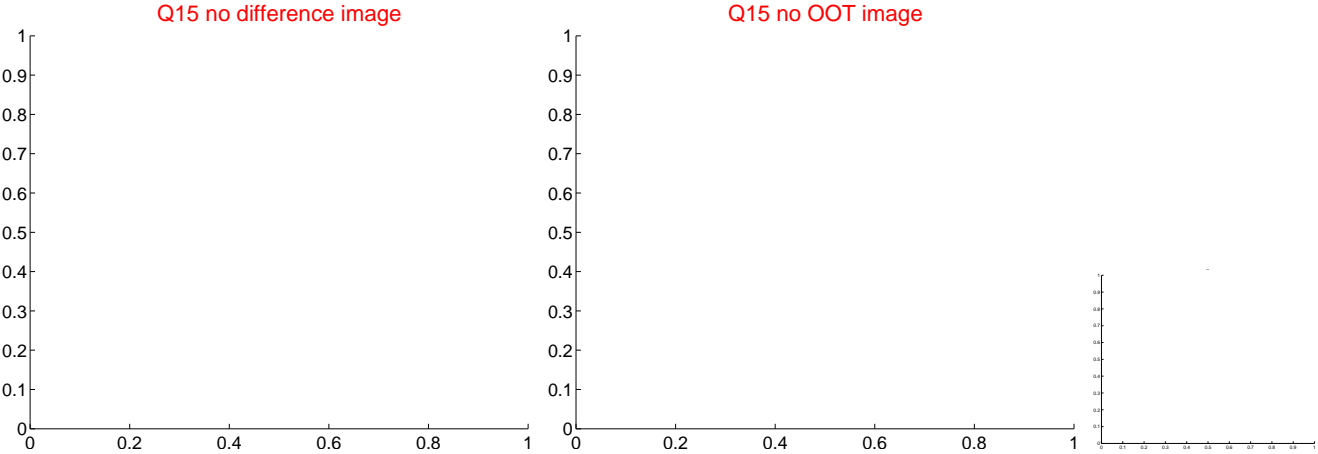
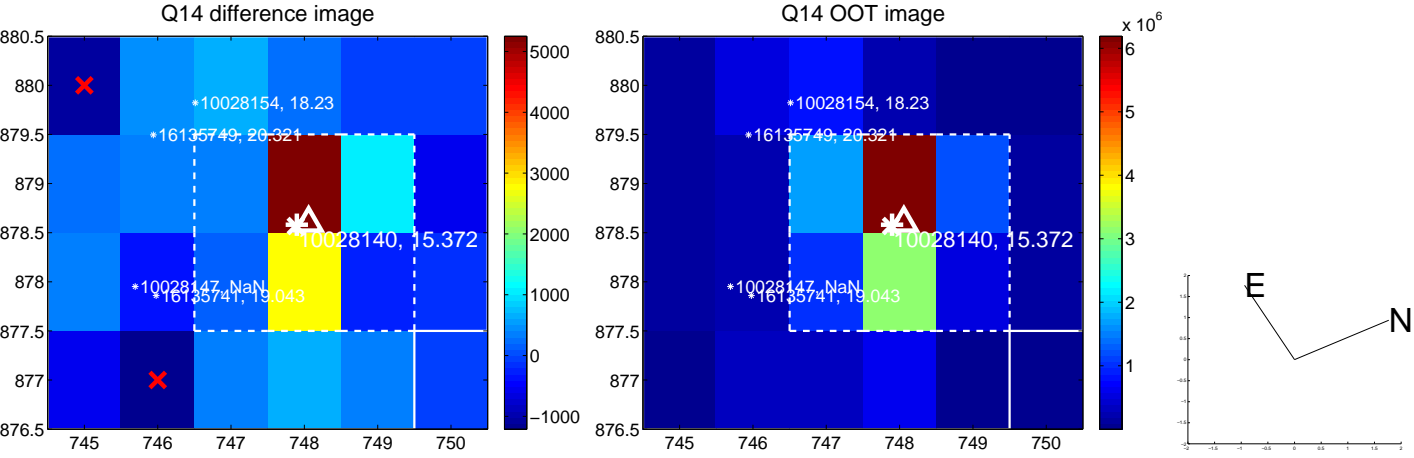
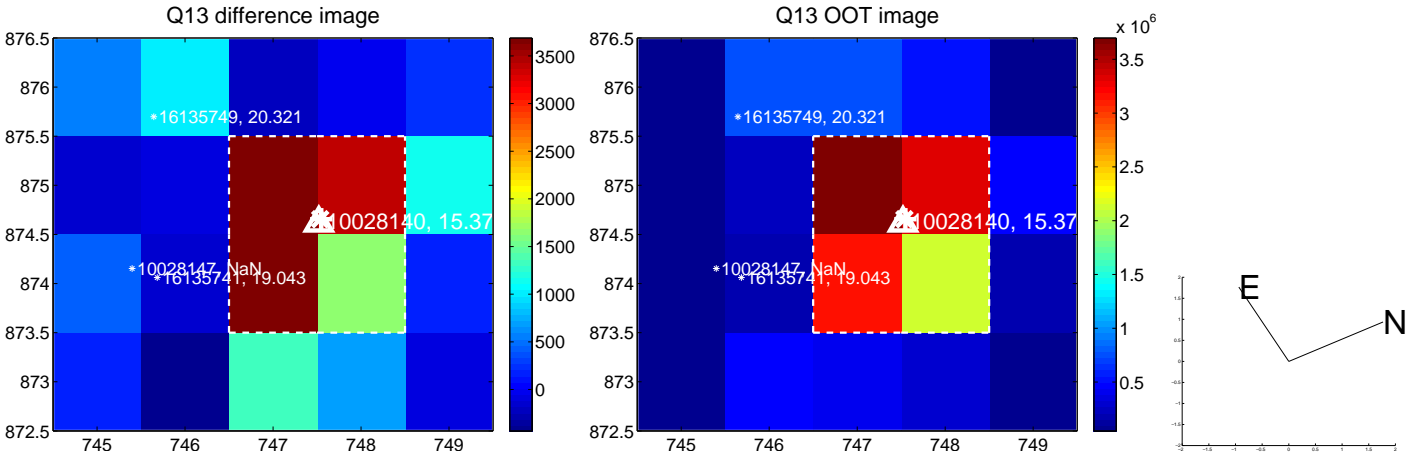
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



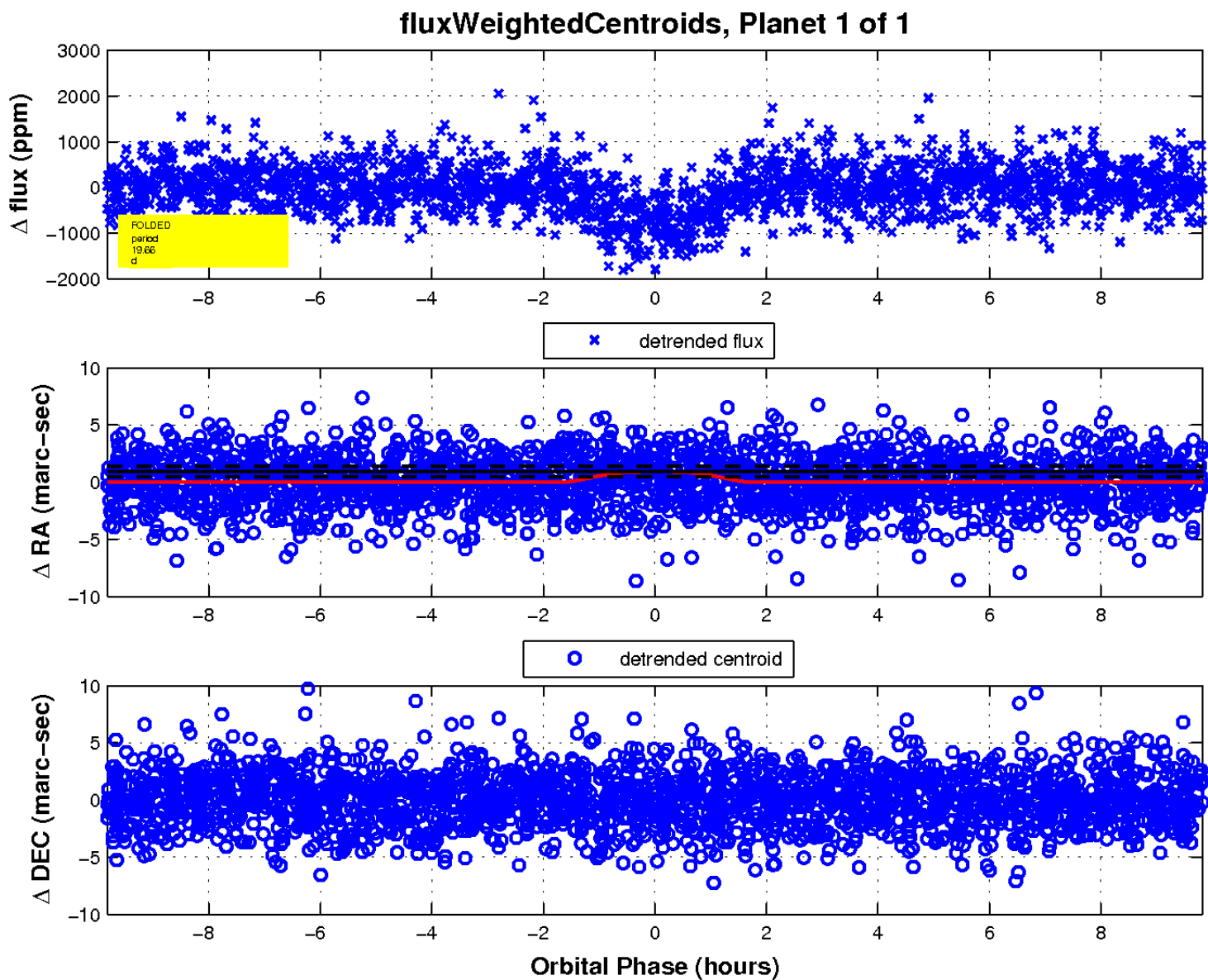
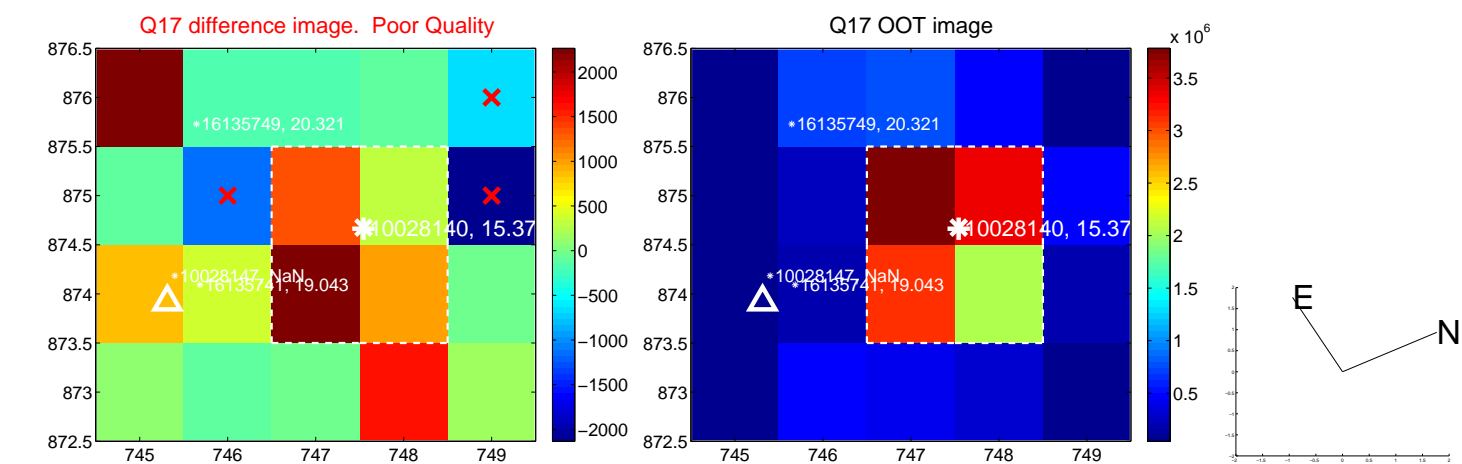
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



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



UKIRT Image

Declination

