

KIC 007378020

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})
007378020-01	OBS	No	0.520273	131.838275	142.7	1.316	9.3	10.4	2.88	7526	4.02	94385.15

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007378020-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

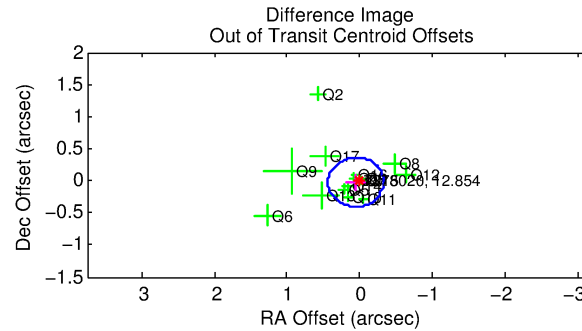
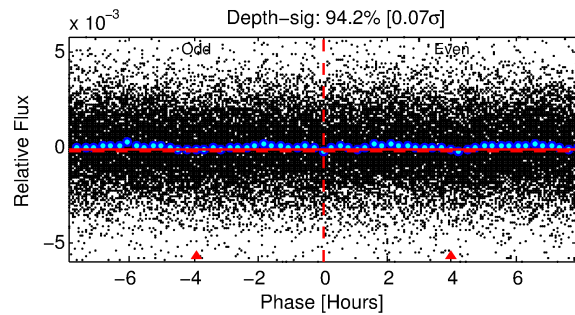
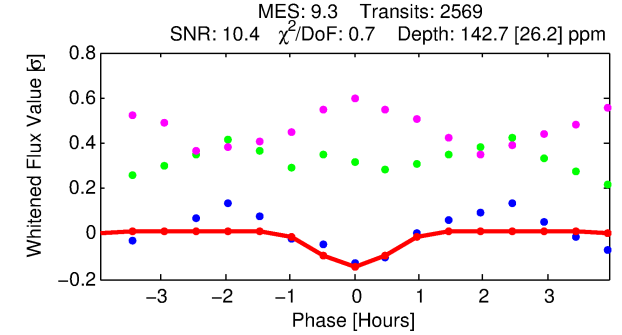
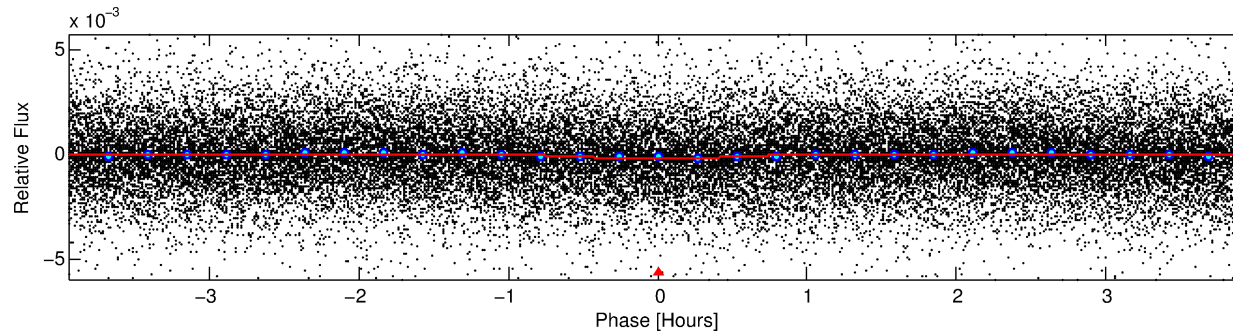
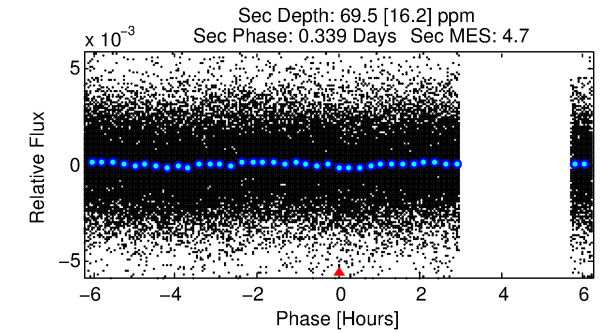
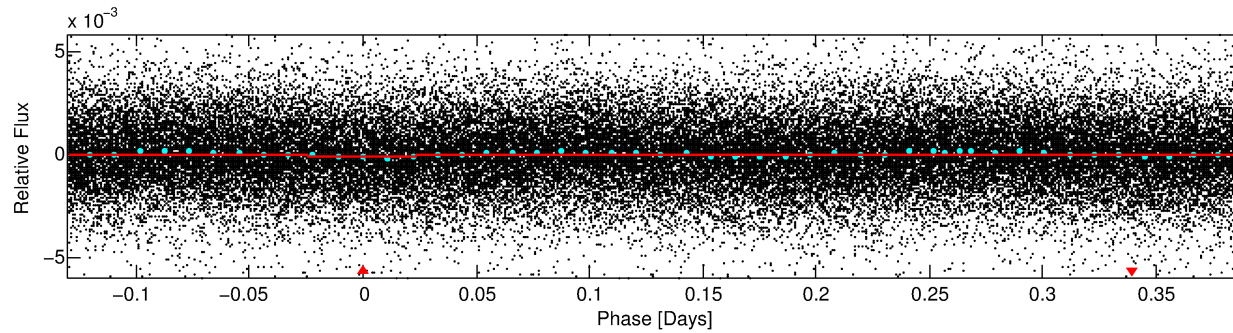
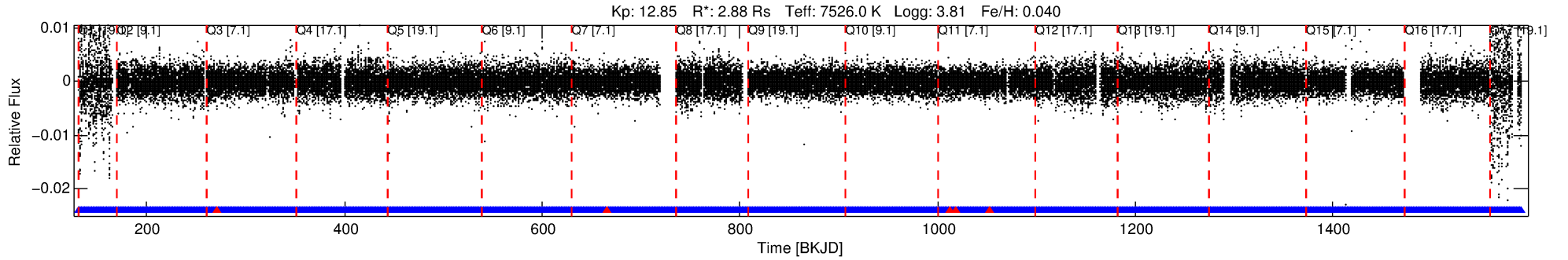
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007378020-01

No Significant Match Found

DV One-Page Summary

KIC: 7378020 Candidate: 1 of 1 Period: 0.520 d



DV Fit Results:

Period = 0.52027 [0.00001] d
Epoch = 131.8383 [0.0024] BKJD
Rp/R* = 0.0128 [0.0082]
a/R* = 1.67 [4.33]
b = 0.91 [0.82]
Seff = 94385.15 [57142.75]
Teff = 4469 [676] K
Rp = 4.02 [3.06] Re
a = 0.0159 [0.0060] AU
Ag = 0.60 [0.85] [-0.47σ]
Teffp = 6077 [1992] K [0.76σ]

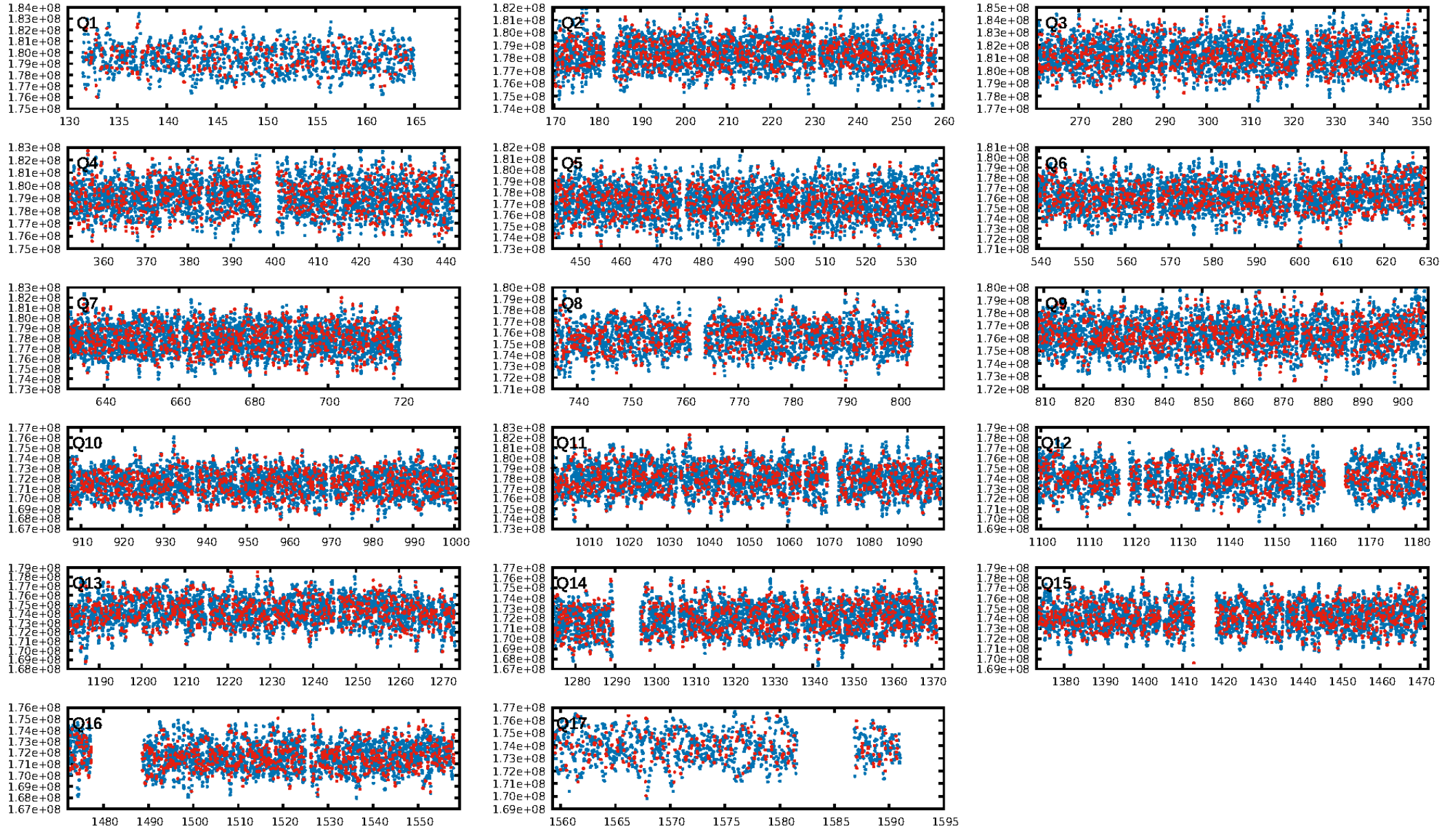
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.51e-26
RollingBand-fgt: 1.00 [2449/2454]
GhostDiagnostic-chr: 2.78
Centroid-sig: 0.3%
Centroid-so: 0.374 arcsec [3.30σ]
OotOffset-rm: 0.060 arcsec [0.47σ]
KicOffset-rm: 0.089 arcsec [0.71σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.76 [13/17]
DiffImageOverlap-fno: 1.00 [17/17]

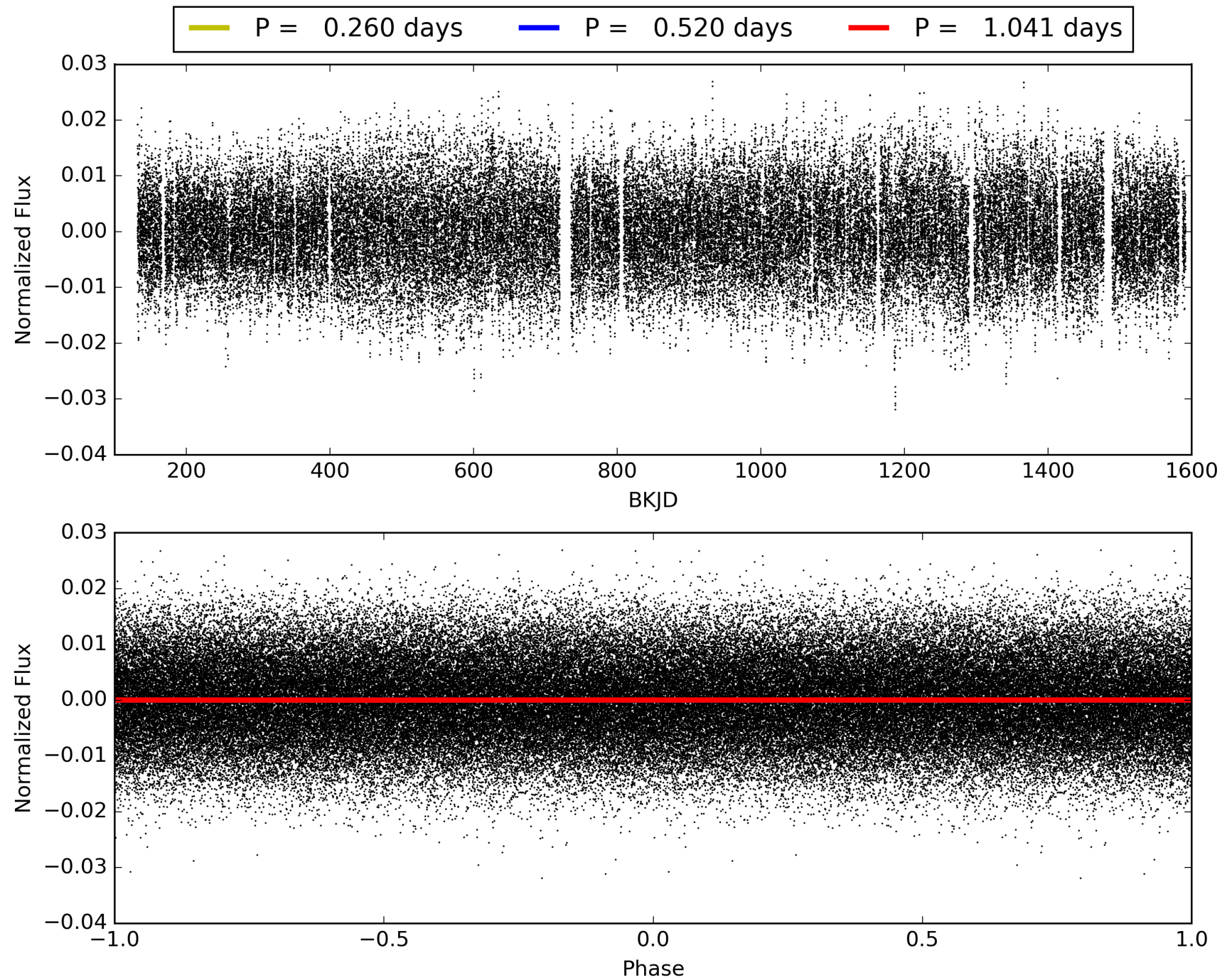
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 22:44:04 Z

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

TCE 007378020-01, PDC Light Curves

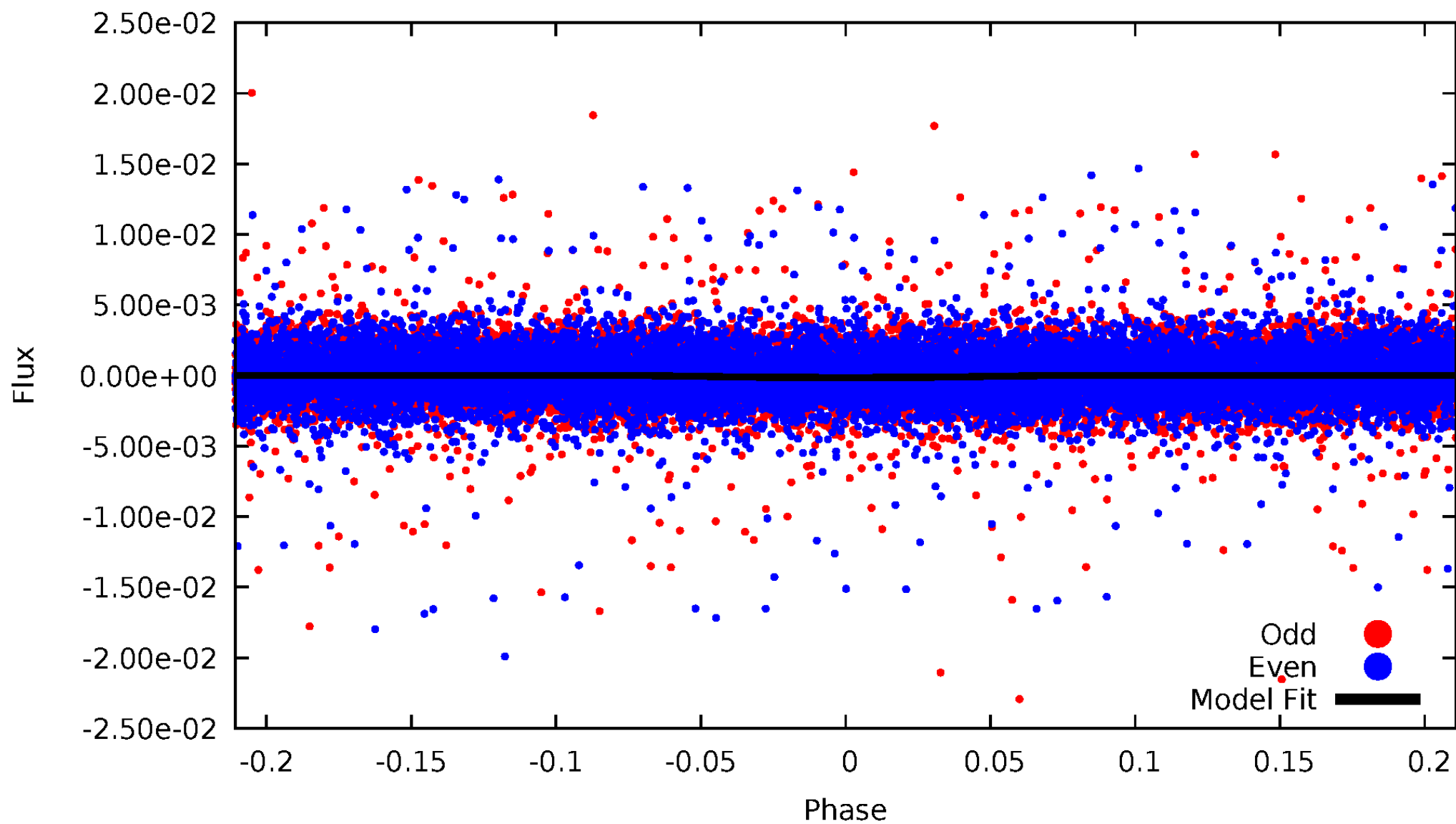


TCE 007378020-01



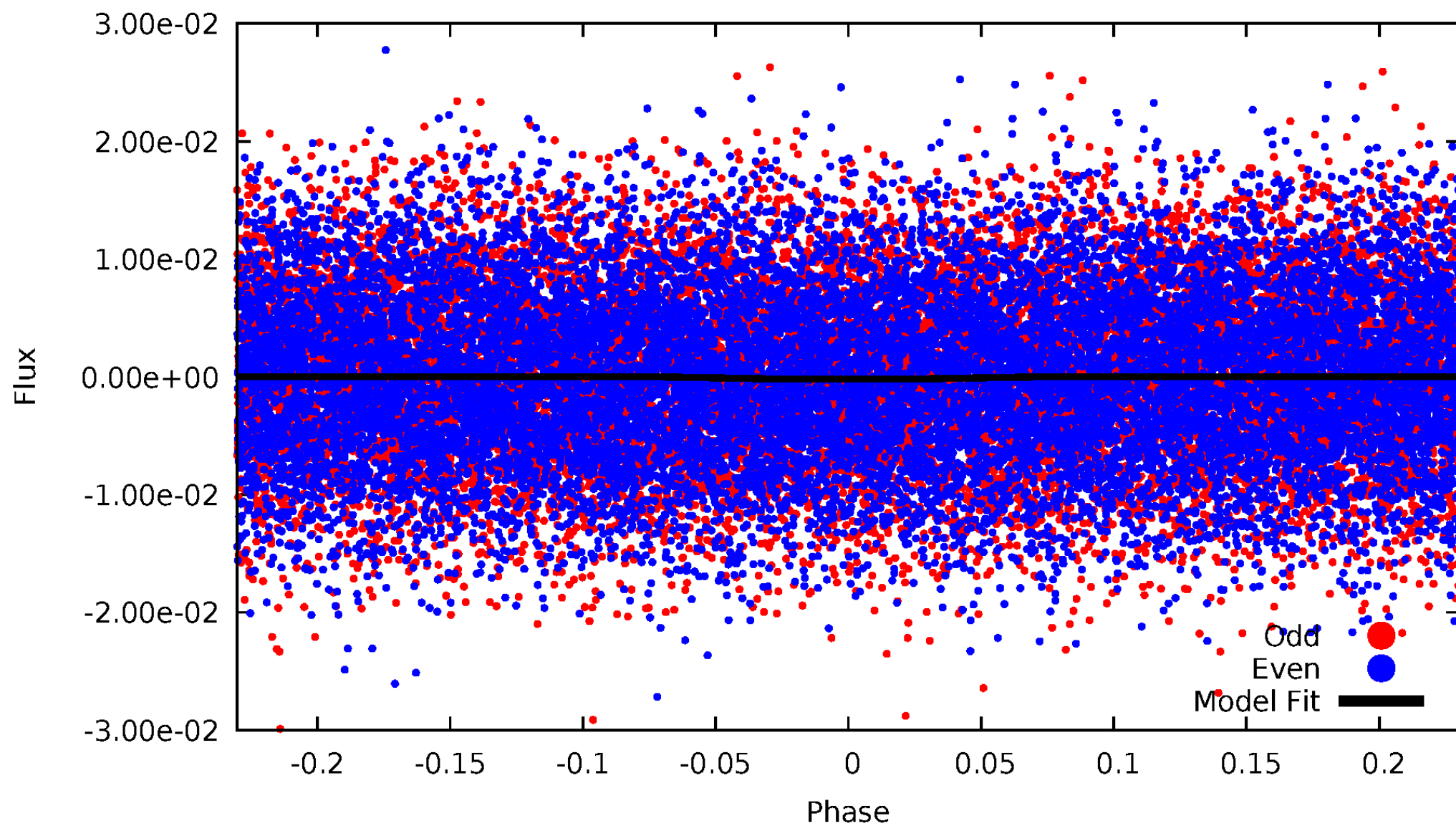
DV Odd/Even

TCE 007378020-01



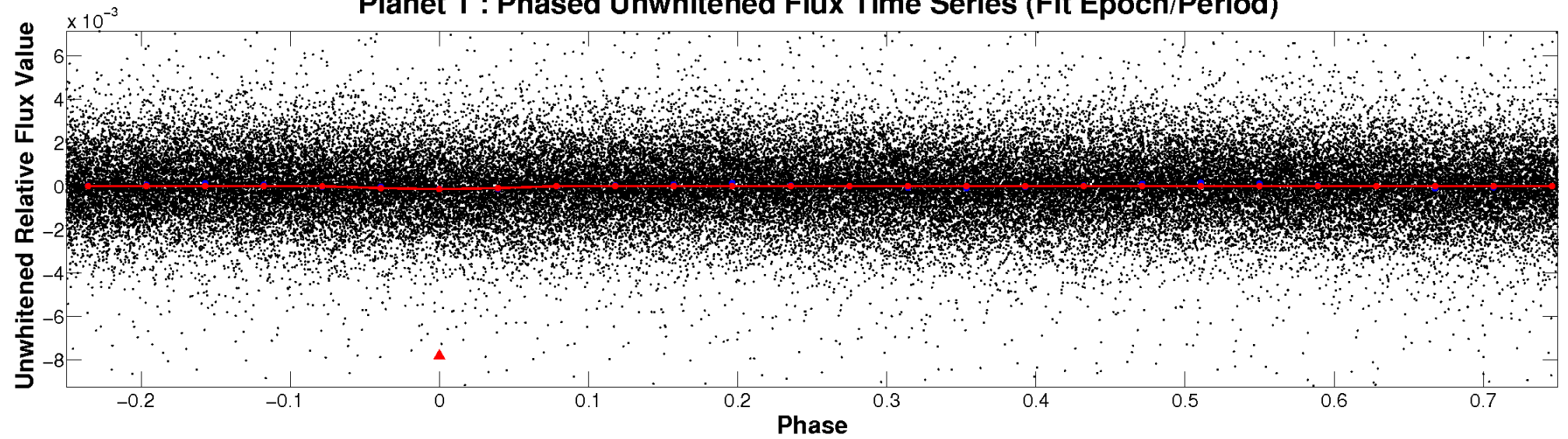
ALT Odd/Even

TCE 007378020-01

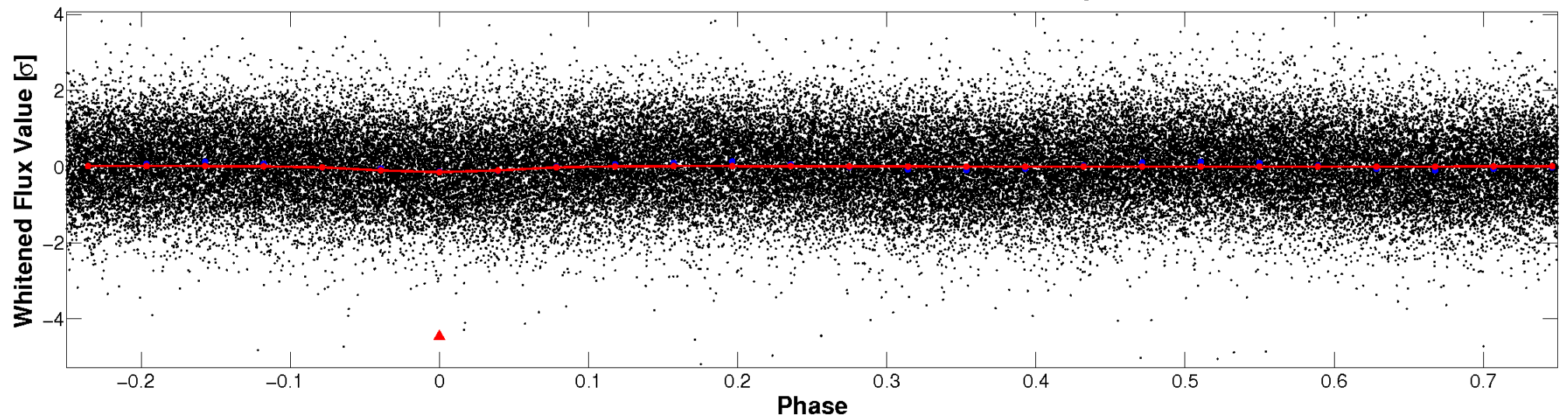


Non-Whitened Vs. Whitened Light Curve

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

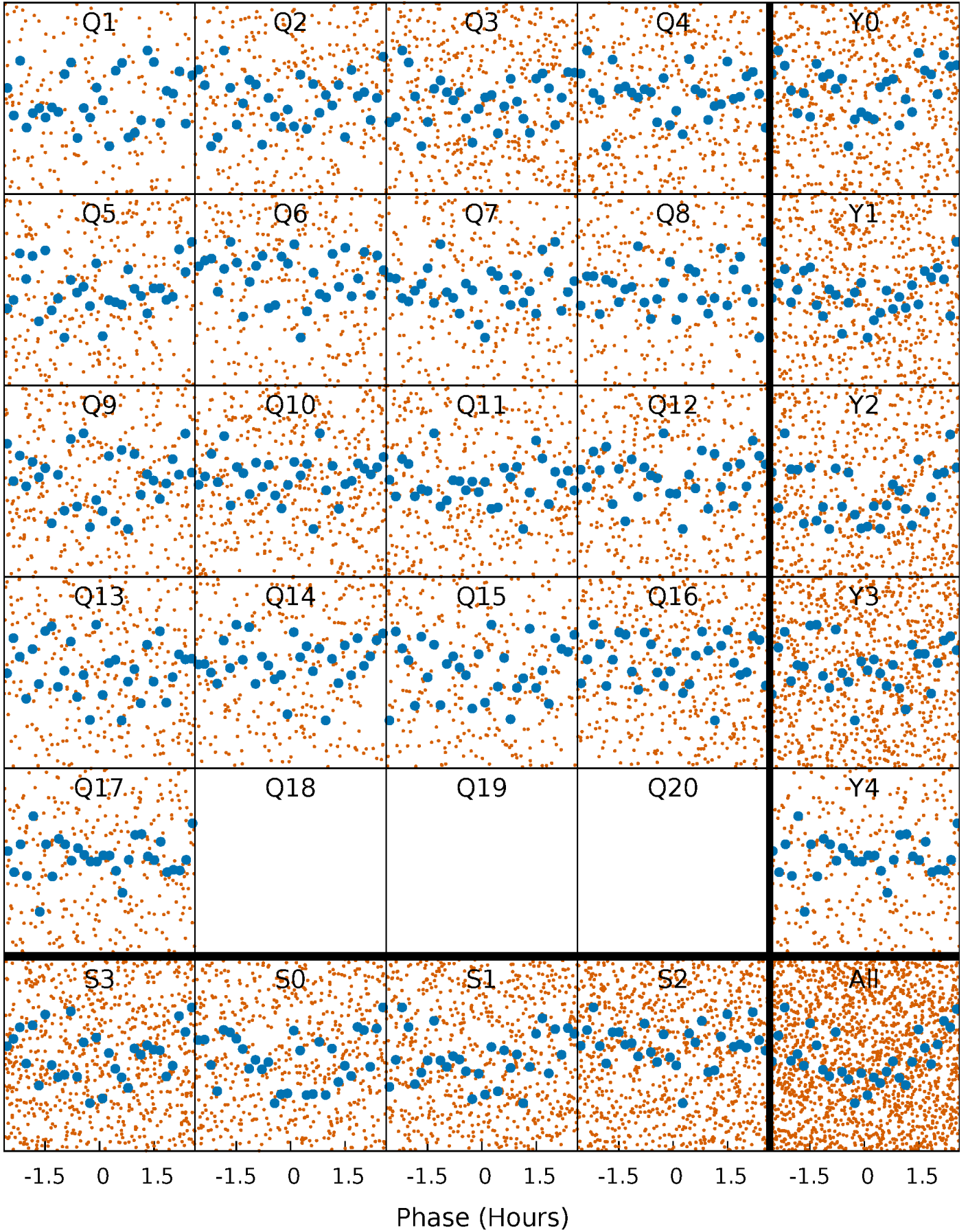


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



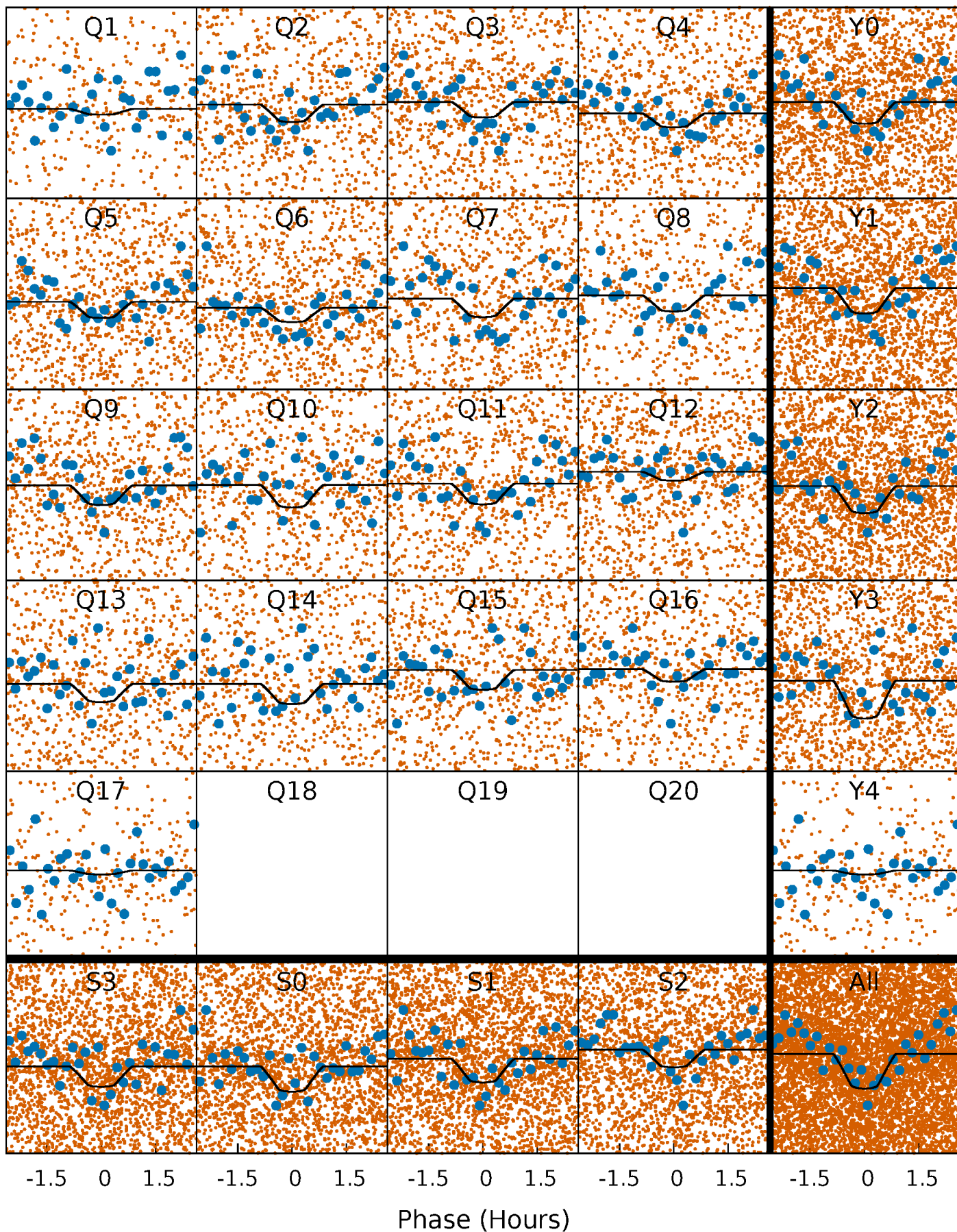
PDC Quarter-Phased Transit Curves

TCE 007378020-01 P= 0.520273 Days $T_0=131.838275$ (BKJD)



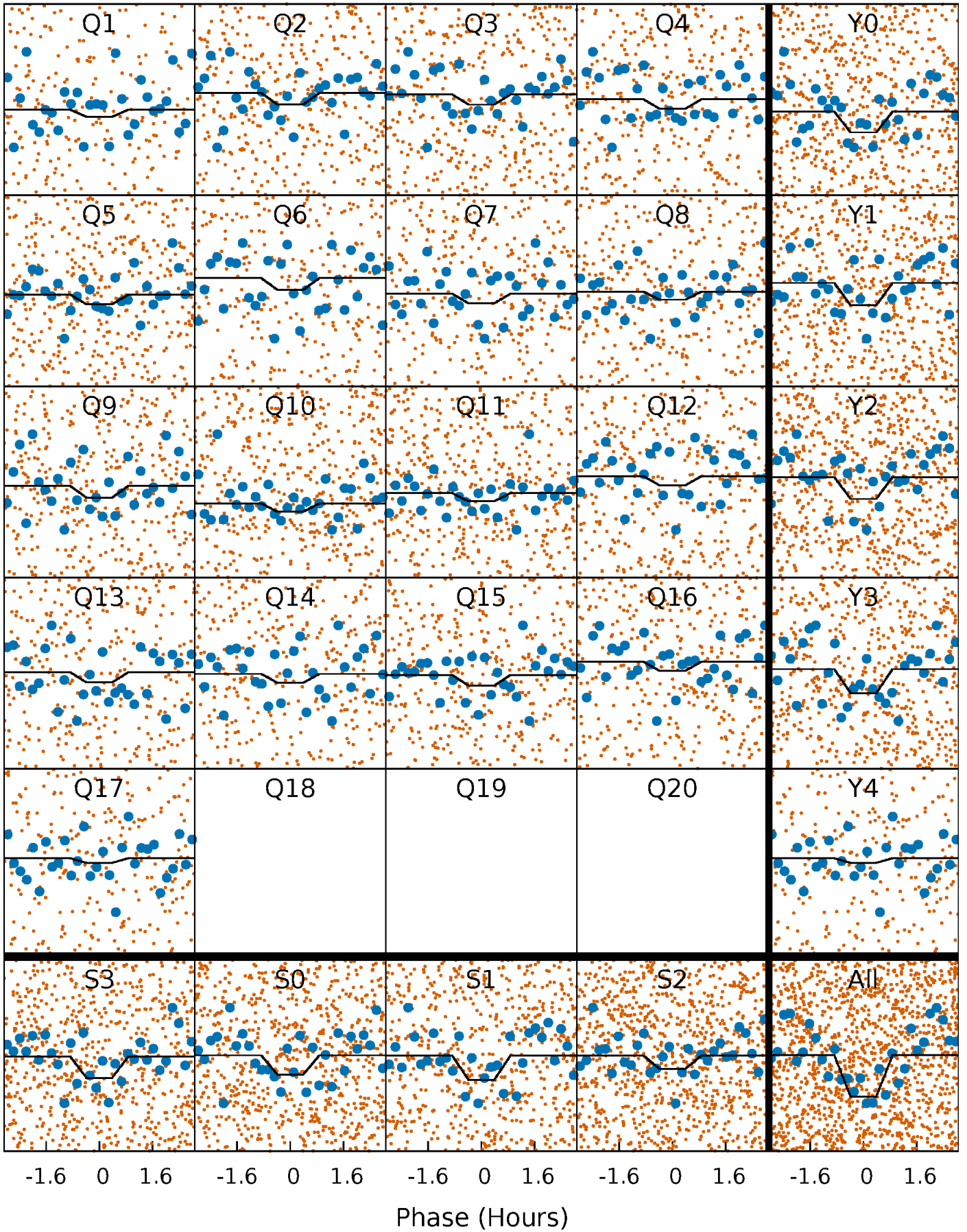
DV Quarter-Phased Transit Curves

TCE 007378020-01 P= 0.520273 Days $T_0=131.838275$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

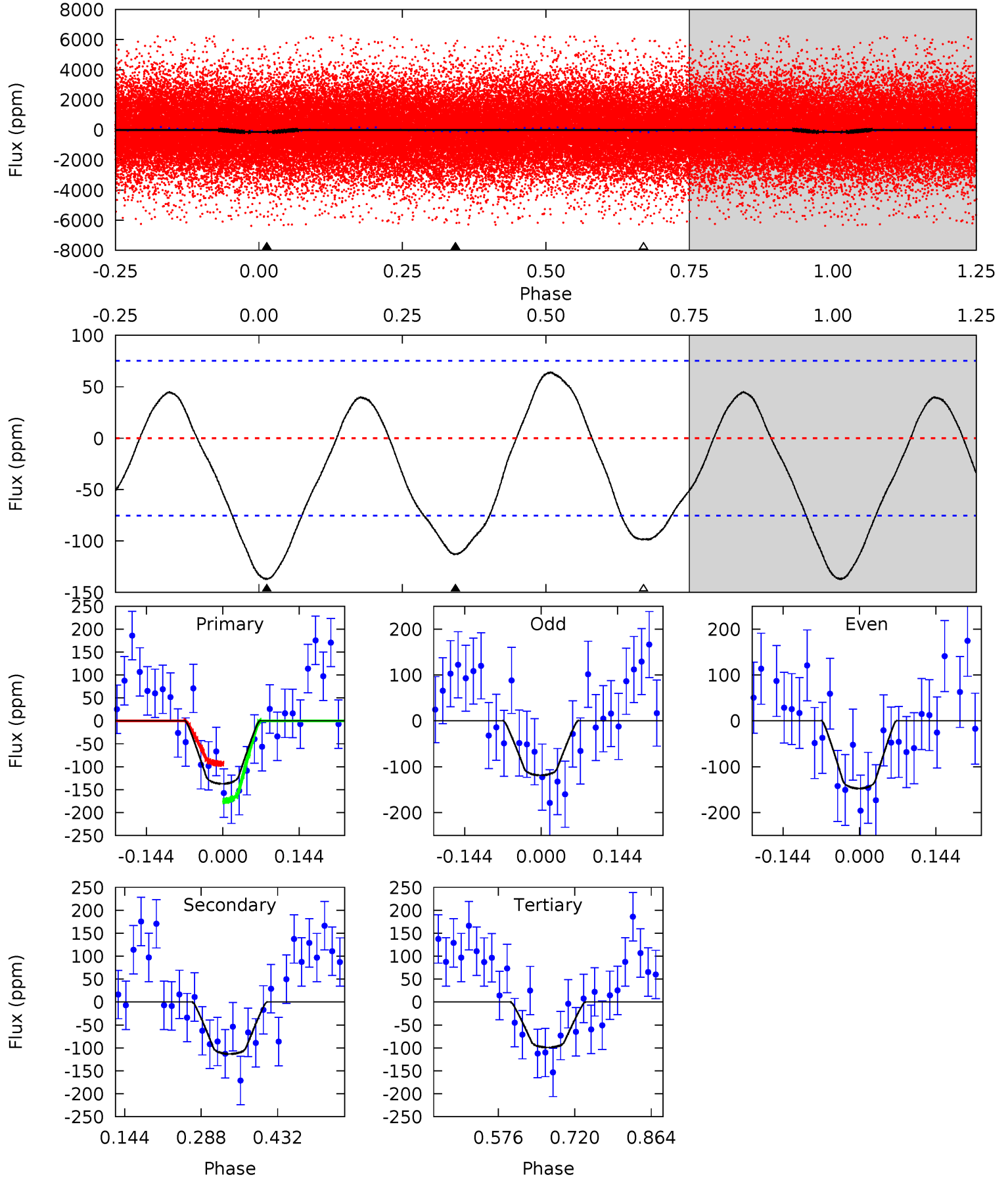
TCE 007378020-01 P= 0.520275 Days $T_0=131.837330$ (BKJD)



DV Model-Shift Uniqueness Test

007378020-01, P = 0.520273 Days, E = 131.318002 Days

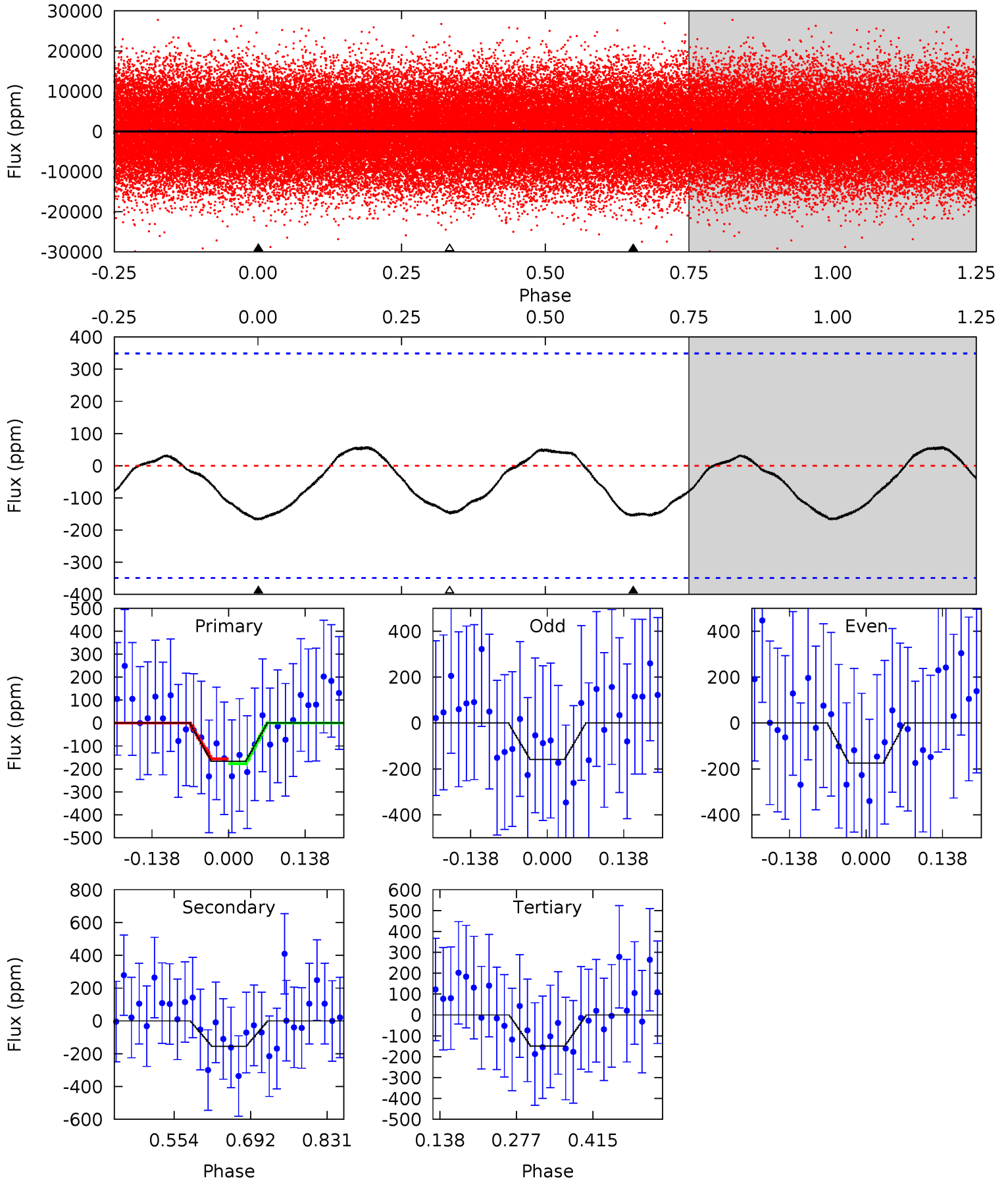
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.17	6.75	5.90	0	4.49	1.46	3.31	2.28	8.17	0.85	6.75	0.86	0.89	0.32	2.44



Alt Model-Shift Uniqueness Test

007378020-01, P = 0.520275 Days, E = 131.317055 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.15	2.00	1.92	0	4.50	1.48	0.87	0.23	2.15	0.08	2.00	0.10	1.19	0.26	0.13



Stellar Parameters For KIC 007378020

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7526^{+209}_{-340}	$3.815^{+0.330}_{-0.110}$	$0.040^{+0.200}_{-0.350}$	$2.878^{+0.480}_{-1.200}$	$1.973^{+0.088}_{-0.500}$	$0.117^{+0.303}_{-0.041}$
	+3%/-5%	+9%/-3%	+500%/-875%	+17%/-42%	+4%/-25%	+260%/-35%
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 007378020-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-113 ± 17	$3.86^{+2.62}_{-2.03}$	6114^{+443}_{-605}	5839^{+4487}_{-2226}	$0.971^{+3.433}_{-0.625}$
Alt.	-155 ± 78	$3.97^{+2.62}_{-2.12}$	6102^{+439}_{-673}	6379^{+4708}_{-2647}	$1.276^{+5.113}_{-0.915}$

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 $A_{obs} \gg 1.0$

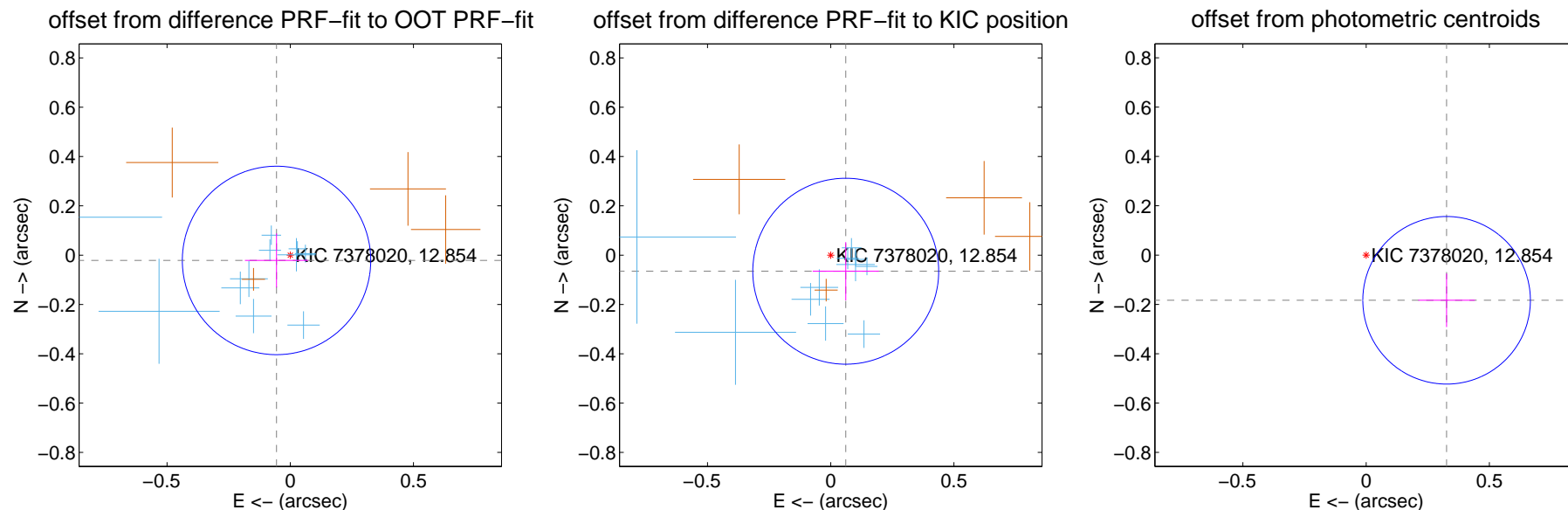
DV Centroid Data

Supplemental centroid analysis for 007378020-01. Kepler magnitude: 12.85. Transit SNR 10.42

There are 13 quarters with good PRF difference image offsets

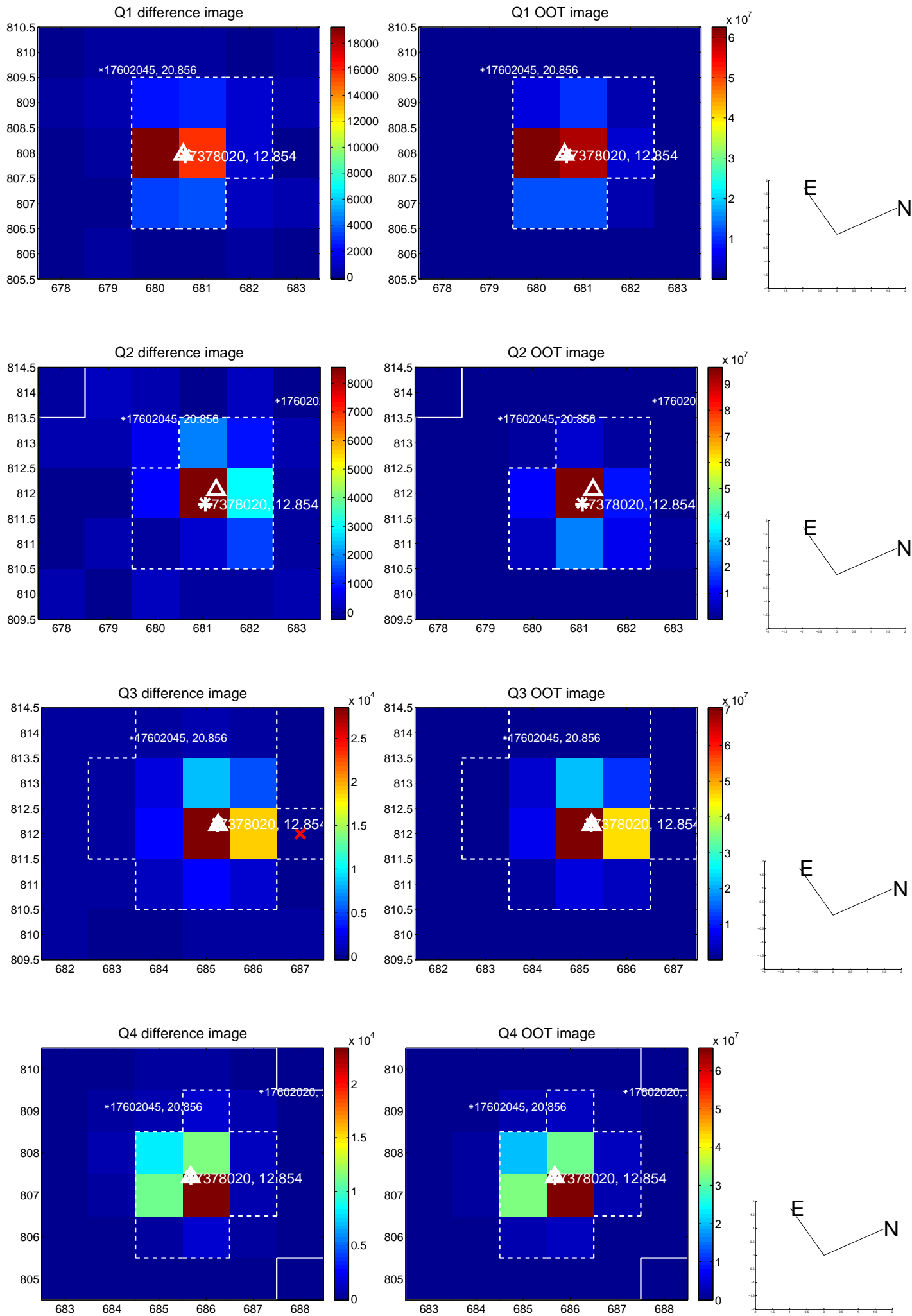
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.060 ± 0.127	0.47	0.056 ± 0.128	-0.021 ± 0.110
PRF-fit source offset from KIC position	0.089 ± 0.126	0.71	-0.061 ± 0.134	-0.065 ± 0.118
photometric centroid source offset	0.37 ± 0.11	3.30	-0.33 ± 0.11	-0.18 ± 0.11

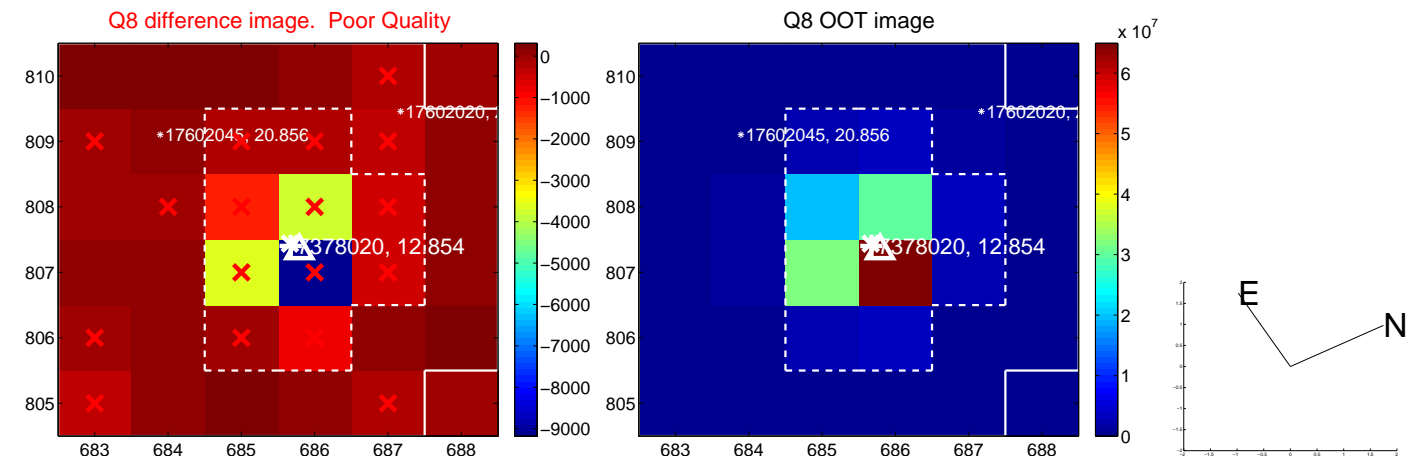
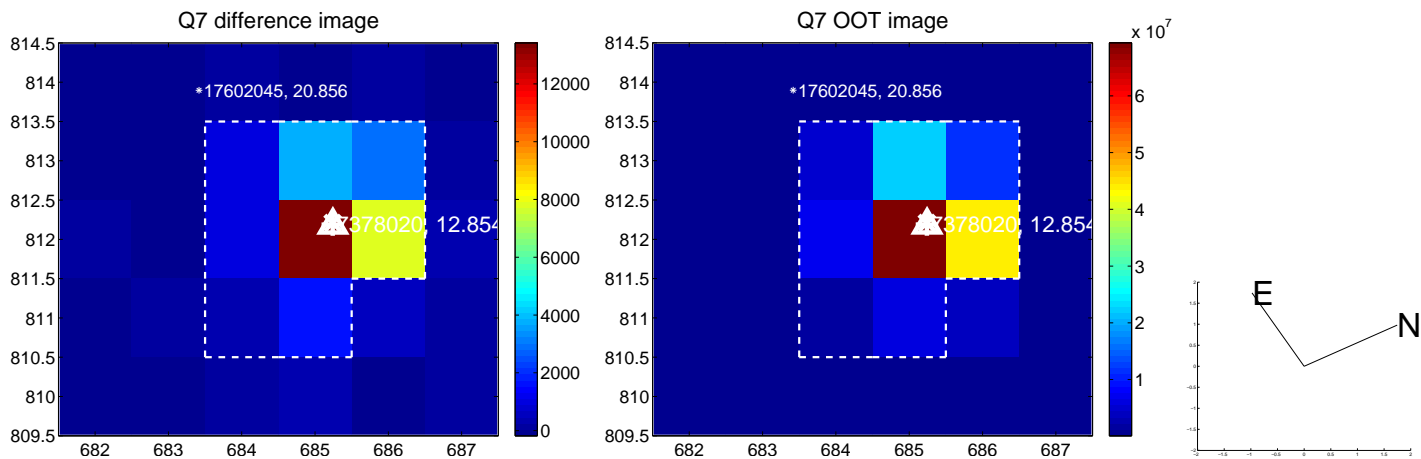
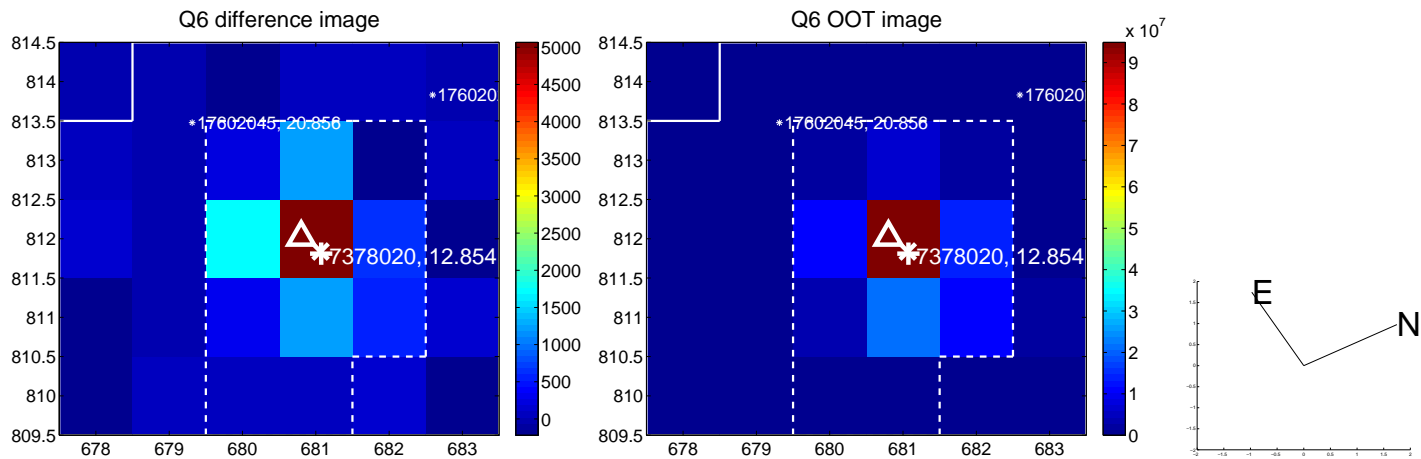
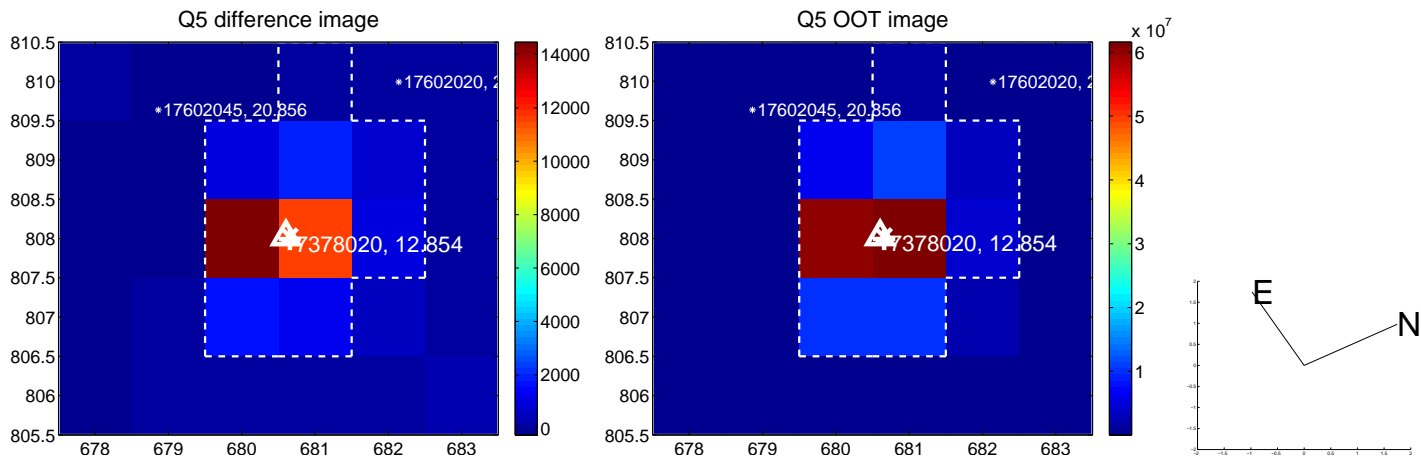


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

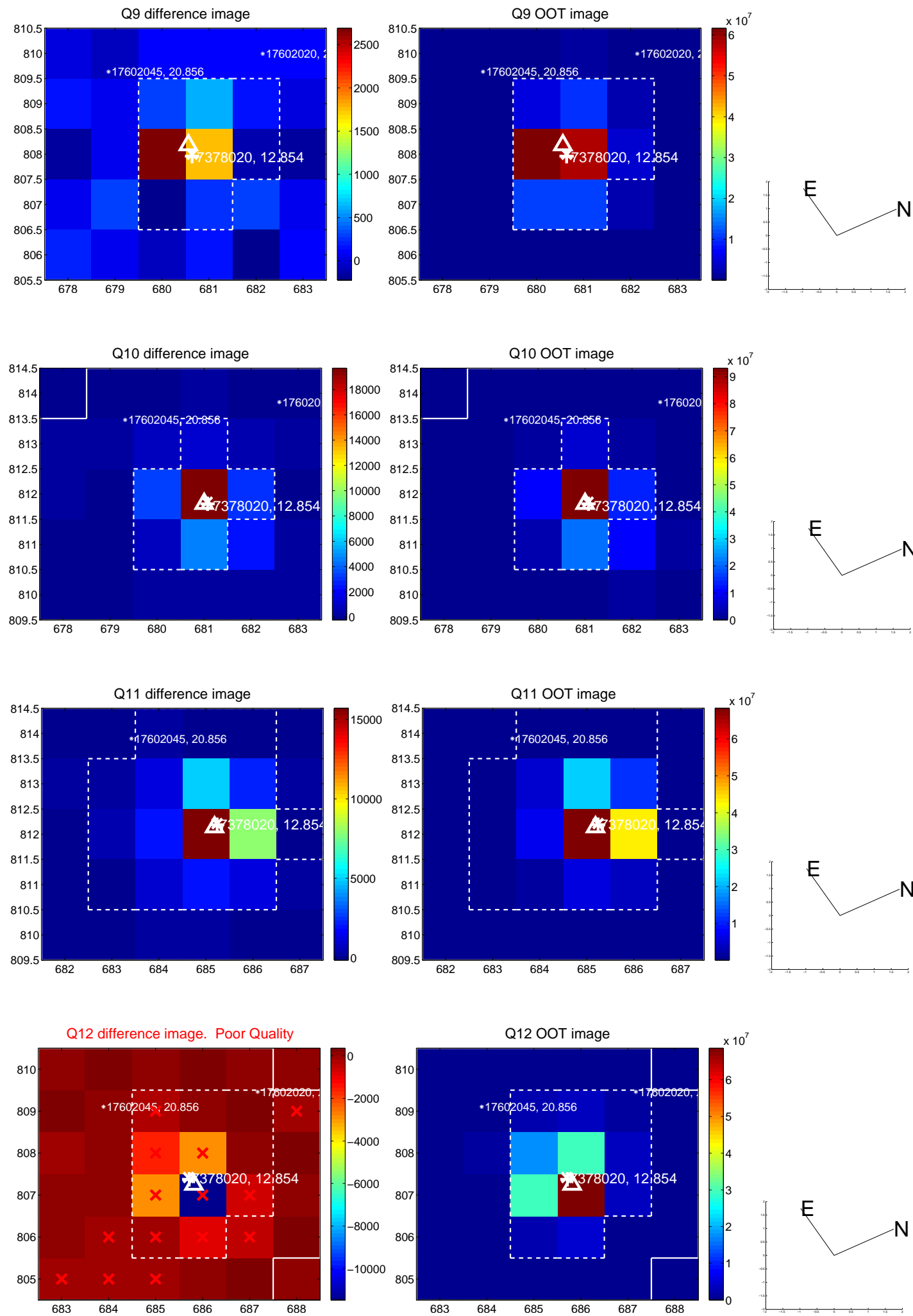
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



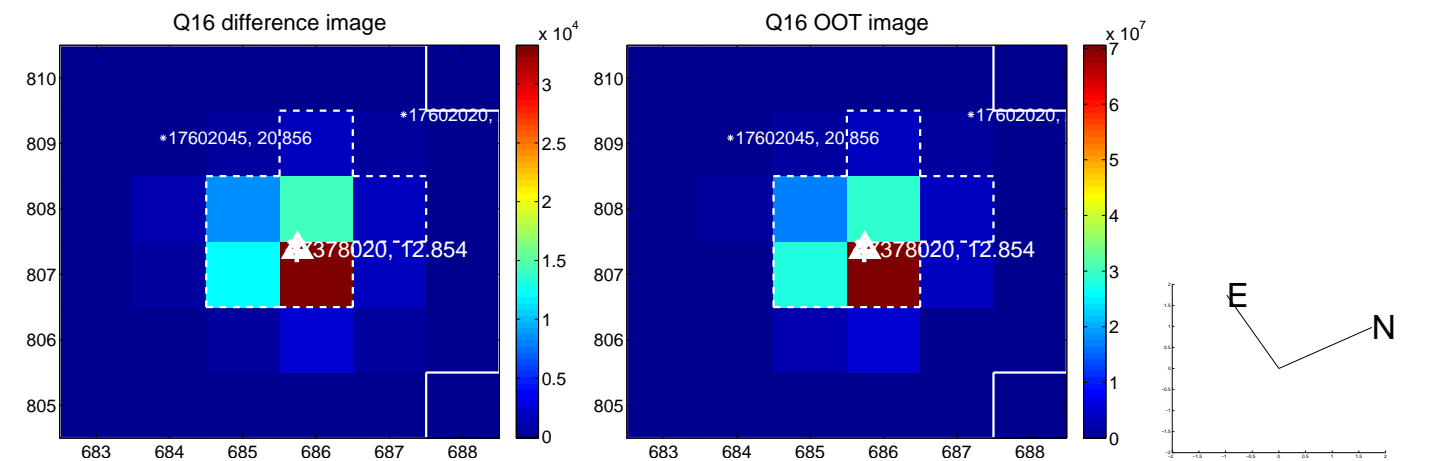
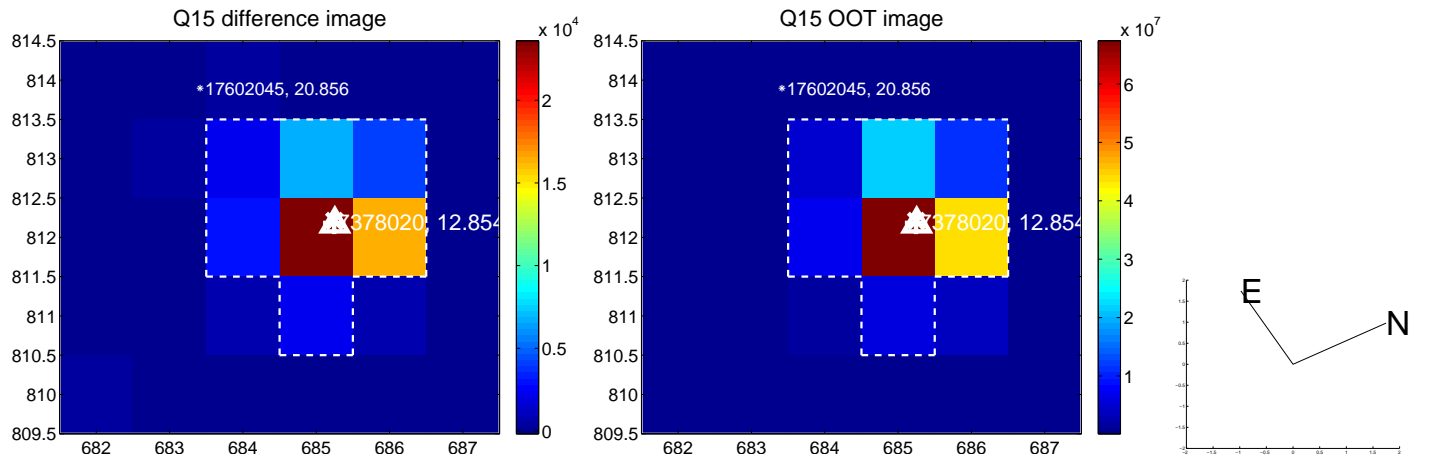
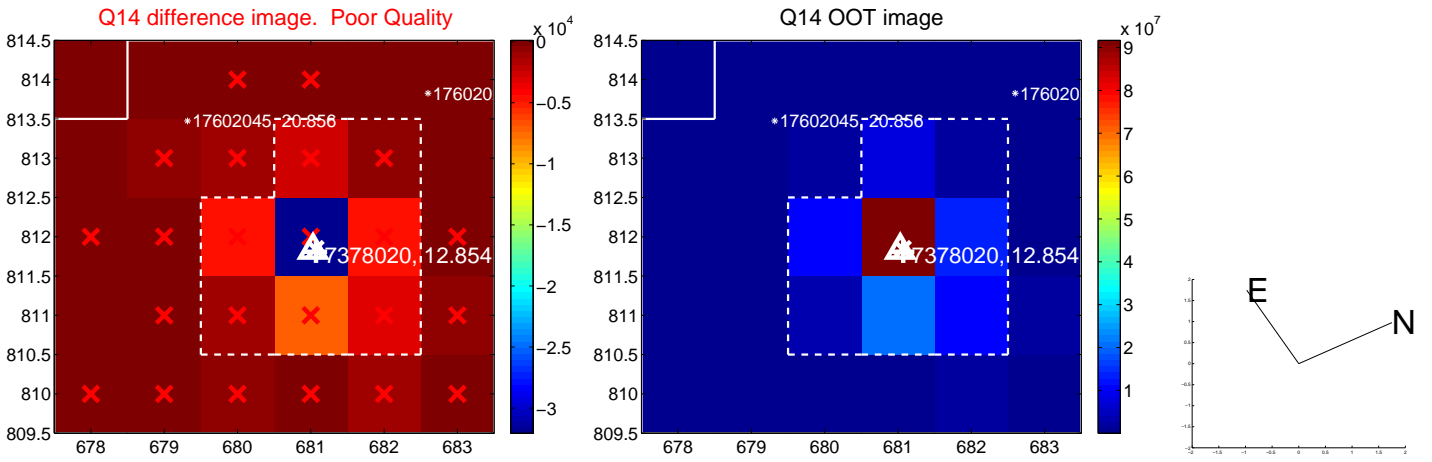
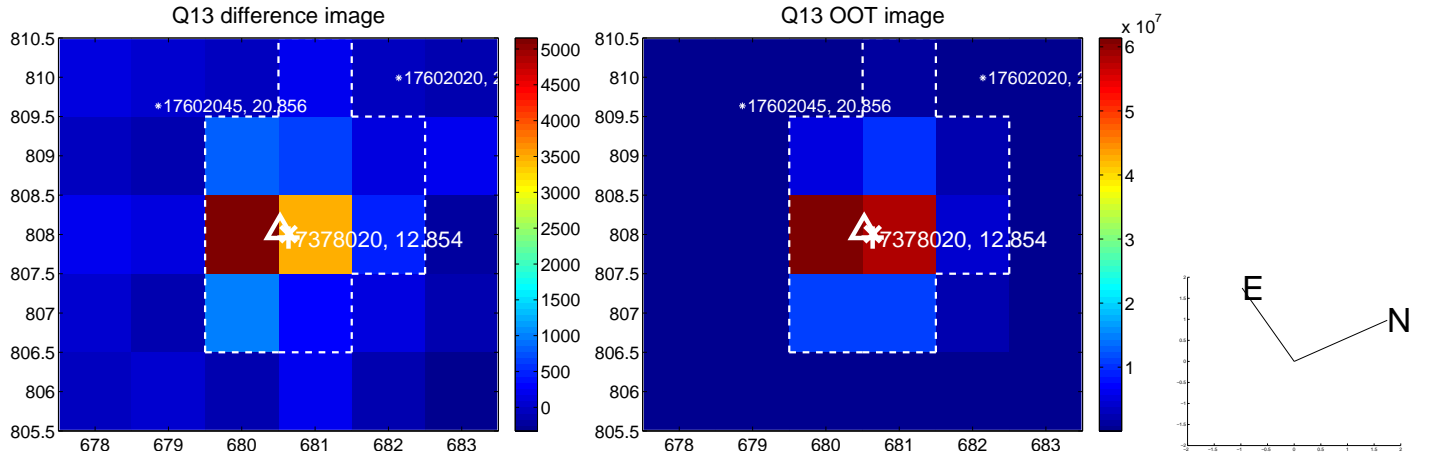
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



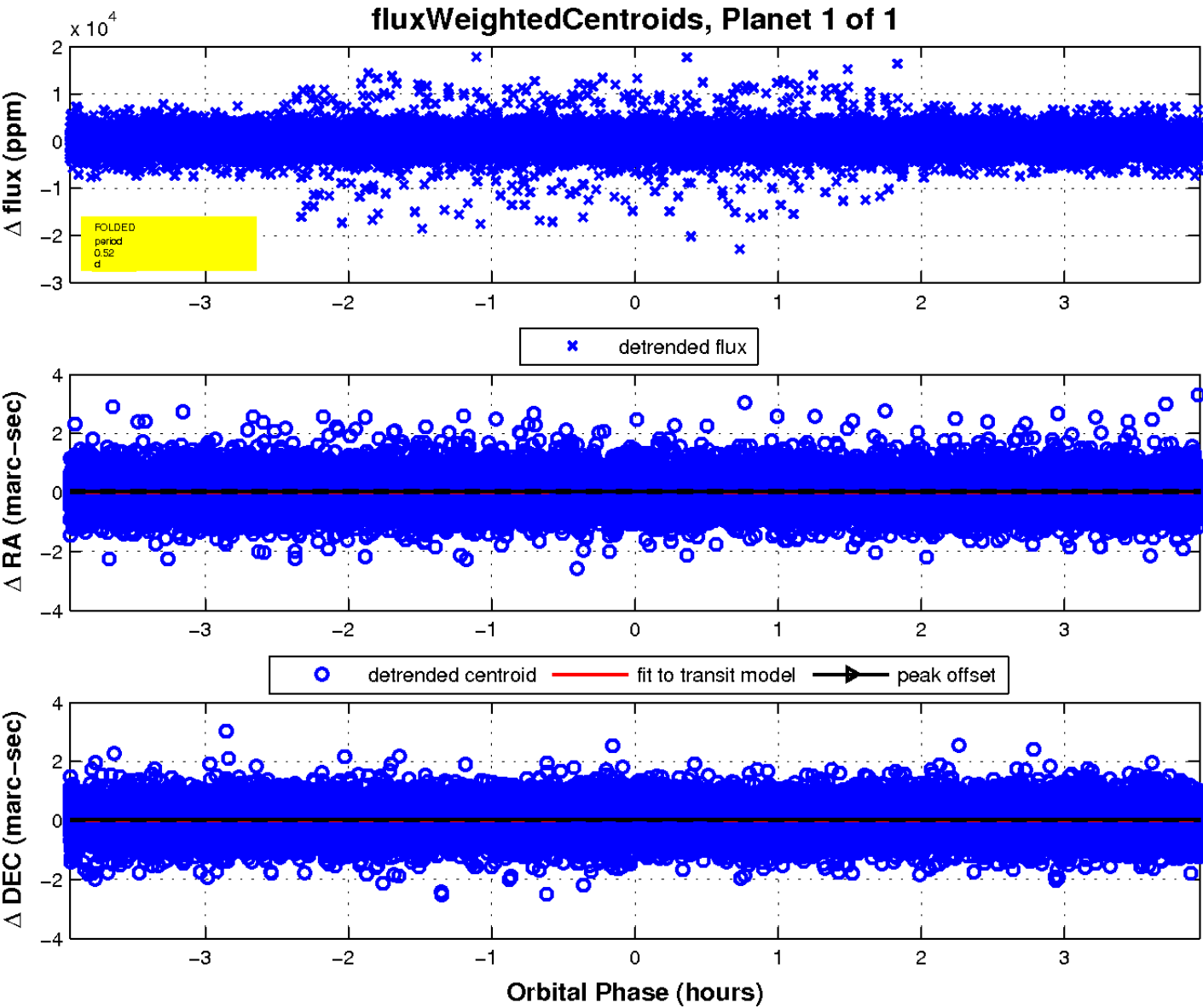
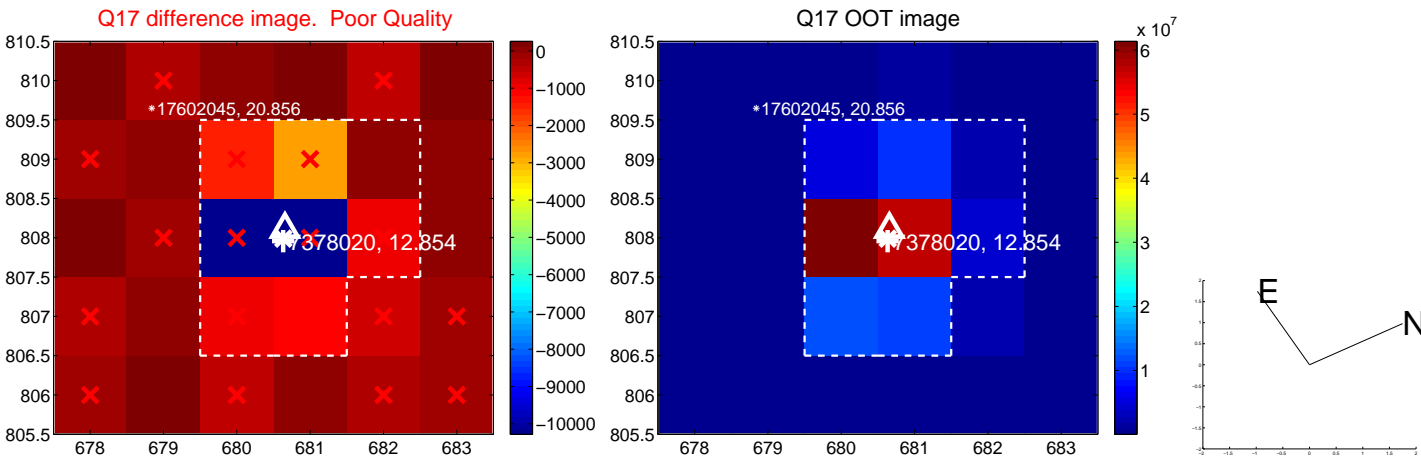
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UKIRT Image

Declination

