

KIC 007877978

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})
007877978-01	OBS	2760.01	56.573163	146.579619	688.3	4.104	18.8	19.8	0.78	4701	2.61	3.79

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007877978-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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.

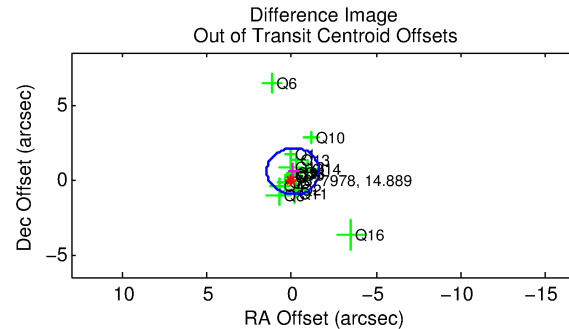
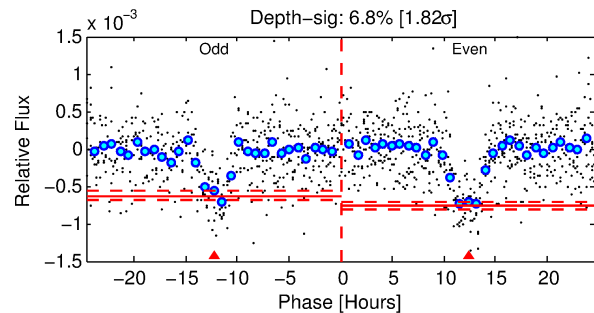
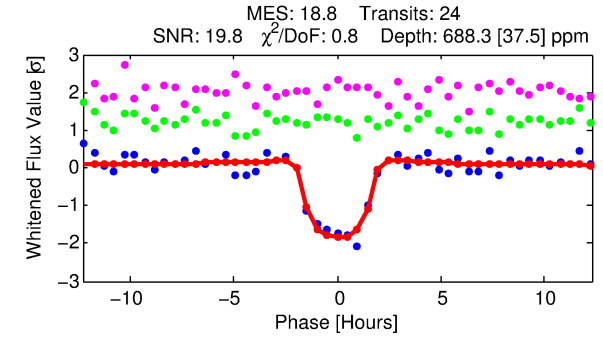
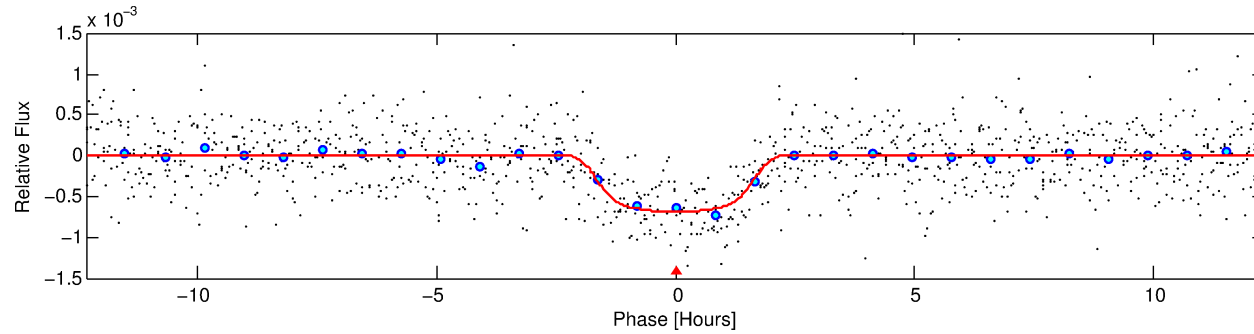
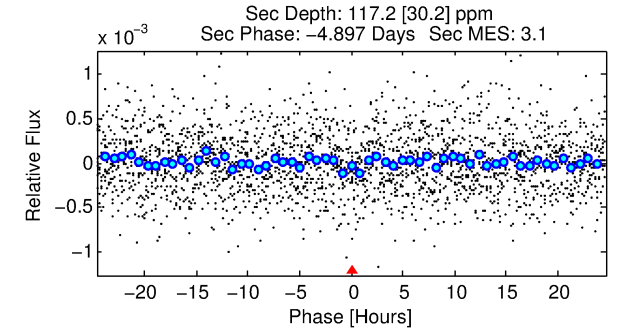
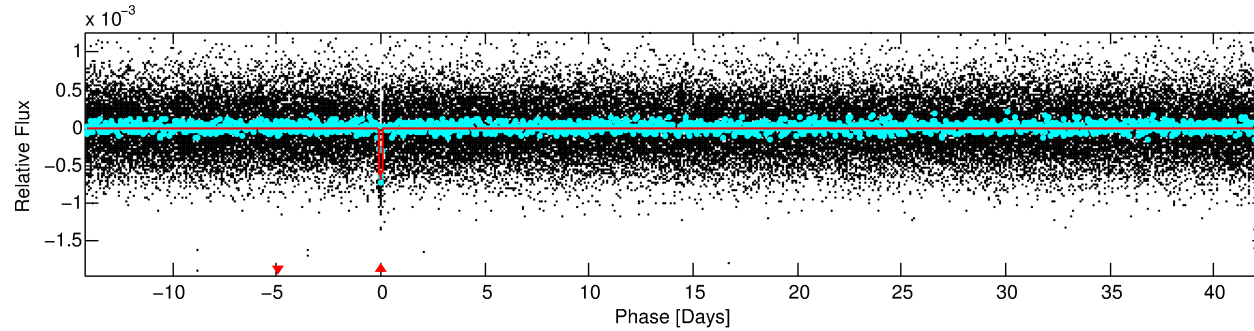
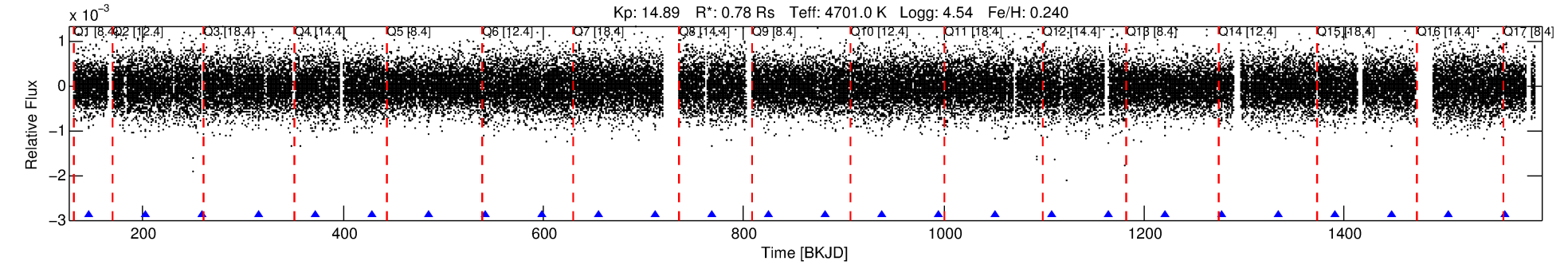
Ephemeris Match Information For 007877978-01

No Significant Match Found

DV One-Page Summary

KIC: 7877978 Candidate: 1 of 1 Period: 56.573 d

KOI: K02760.01 Corr: 0.969



DV Fit Results:

Period = 56.57316 [0.00028] d
Epoch = 146.5796 [0.0042] BKJD
Rp/R* = 0.0308 [0.0024]
a/R* = 47.43 [11.77]
b = 0.93 [0.04]
Seff = 3.79 [0.43]
Teq = 356 [10] K
Rp = 2.61 [0.25] Re
a = 0.2632 [0.0145] AU
Ag = 657.43 [205.63] [3.19σ]
Teffp = 2786 [215] K [11.30σ]

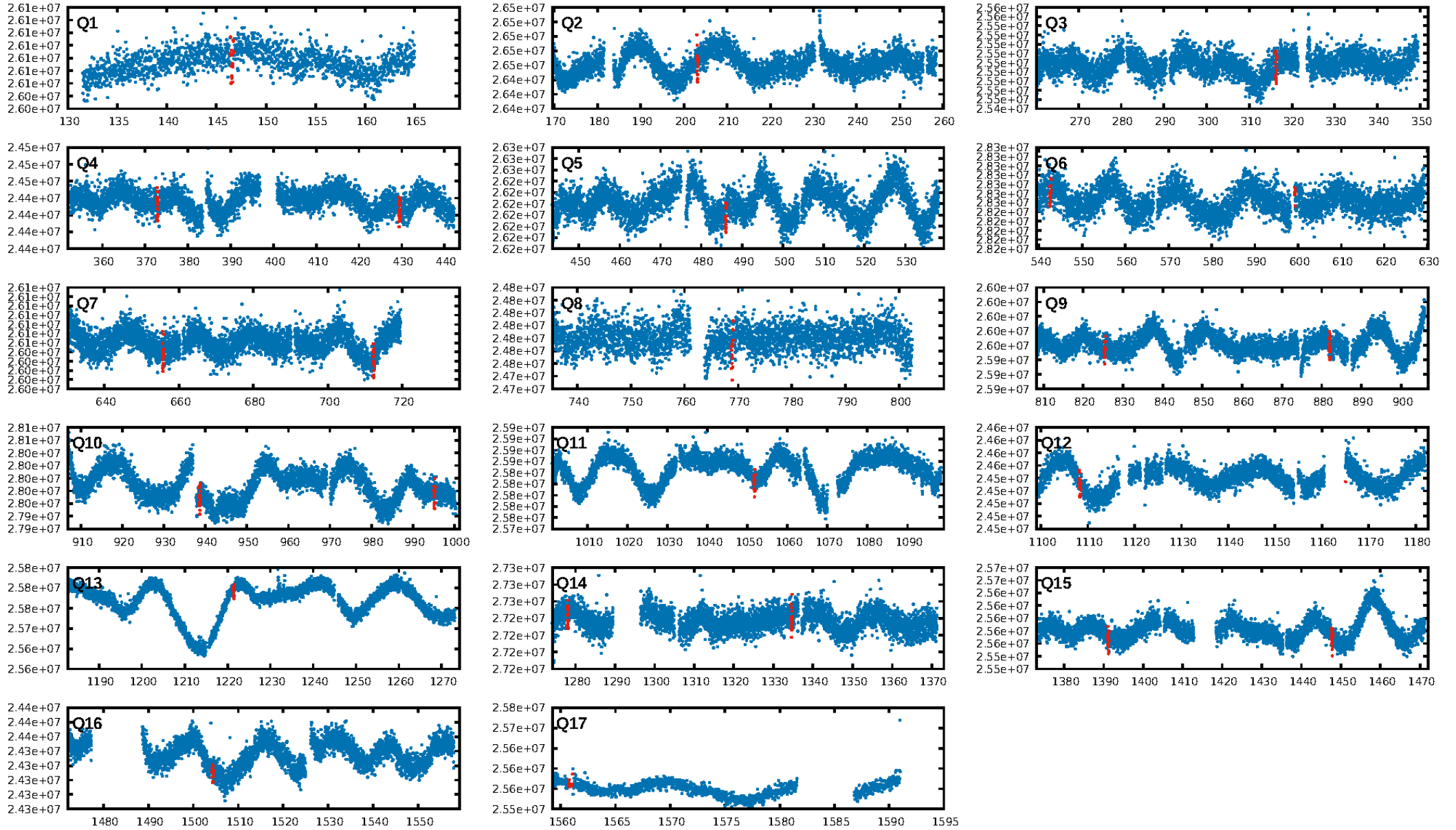
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.24e-77
RollingBand-fgt: 1.00 [22/22]
GhostDiagnostic-chr: 3.366
Centroid-sig: 2.7%
Centroid-so: 1.511 arcsec [2.17σ]
OotOffset-rm: 0.563 arcsec [1.09σ]
KicOffset-rm: 1.046 arcsec [2.15σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [16/16]

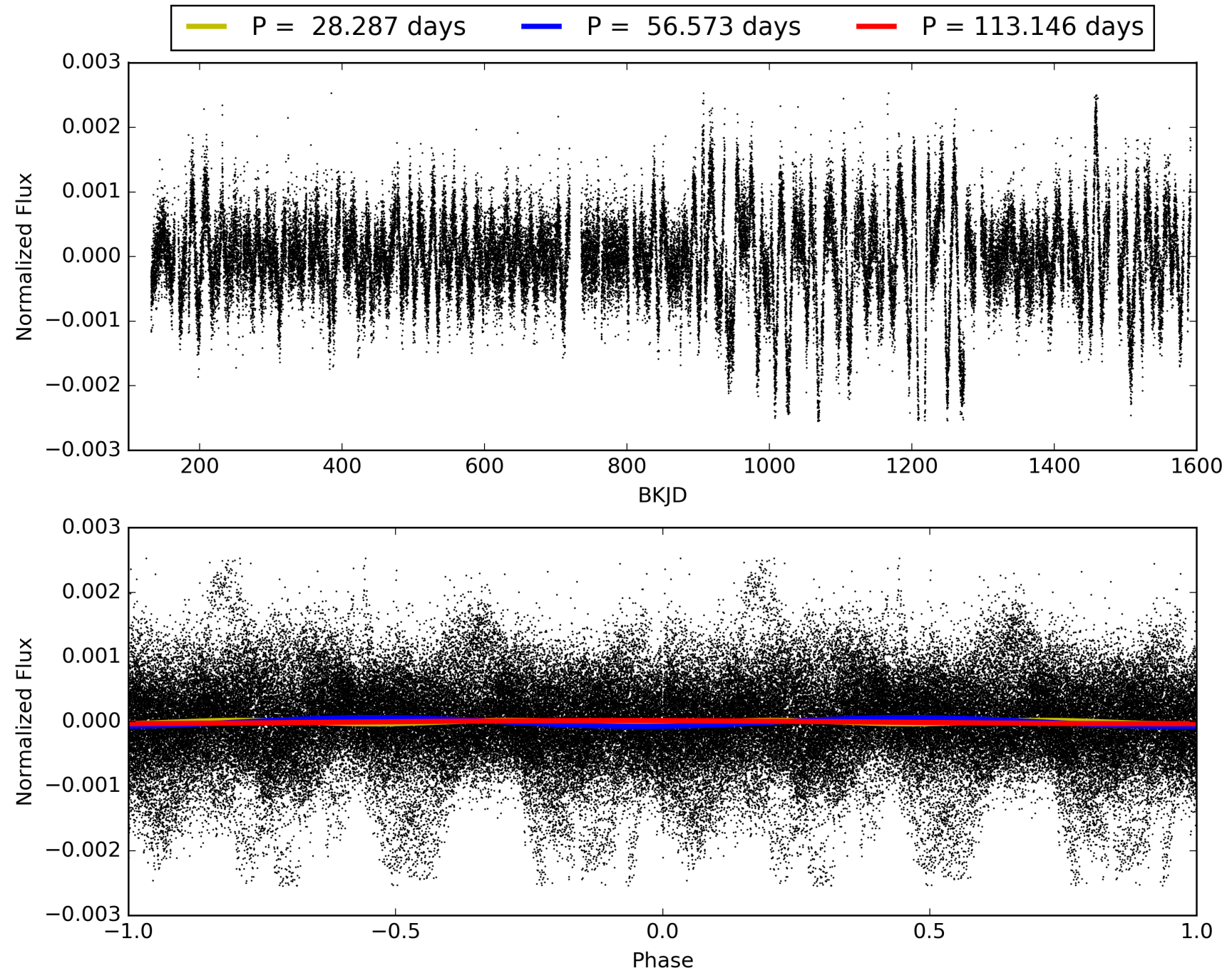
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:24:50 Z

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

TCE 007877978-01, PDC Light Curves

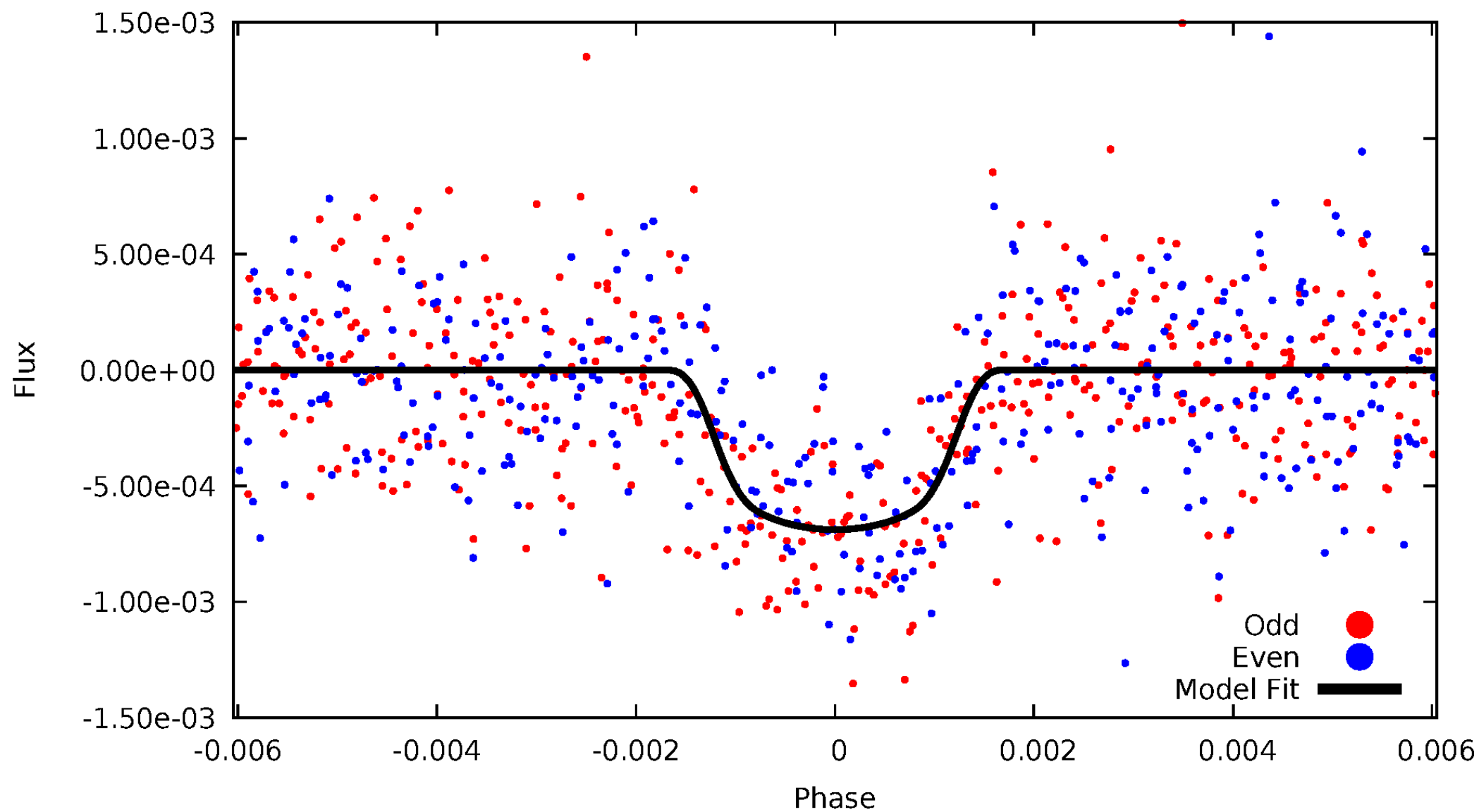


TCE 007877978-01



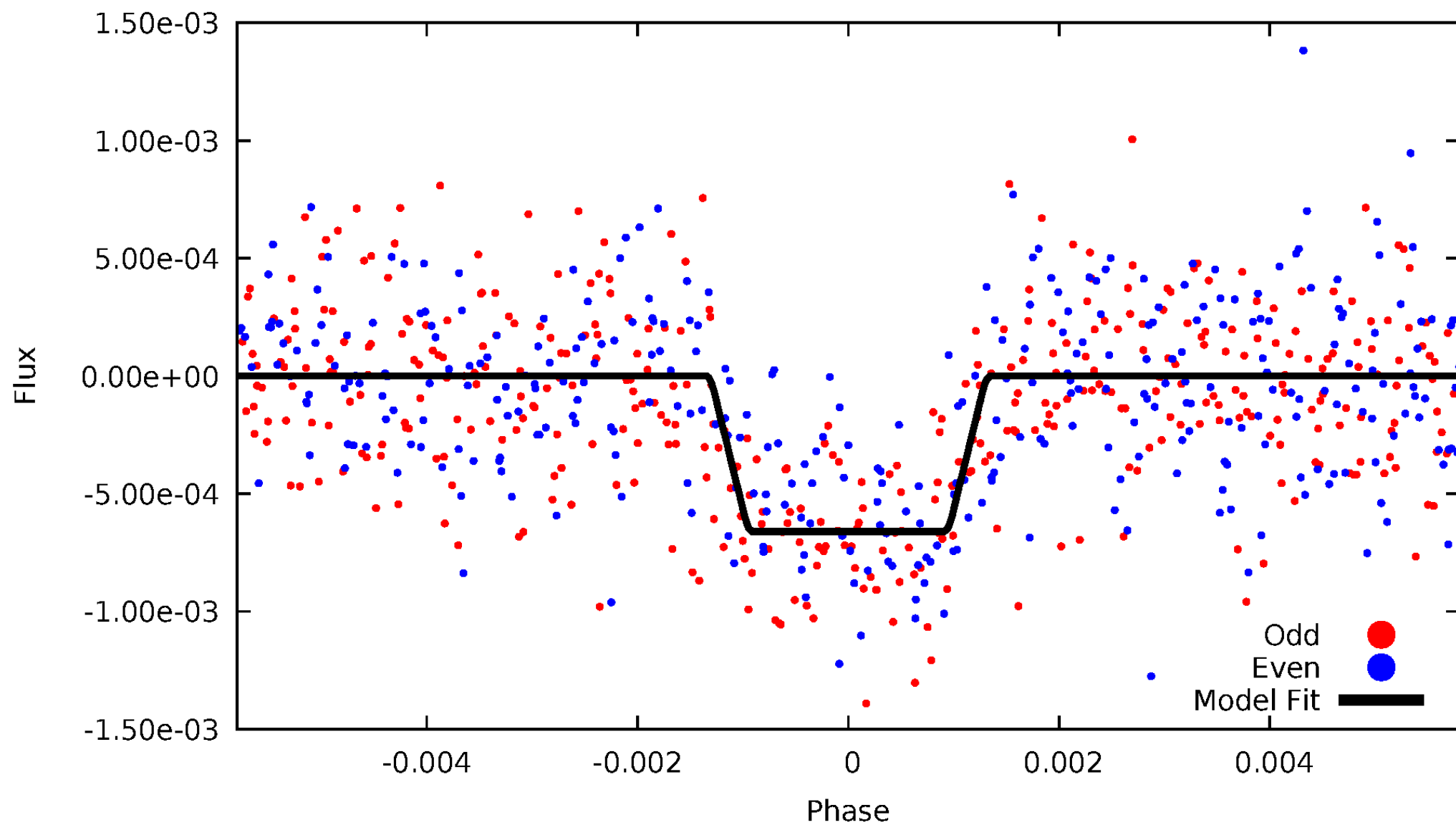
DV Odd/Even

TCE 007877978-01



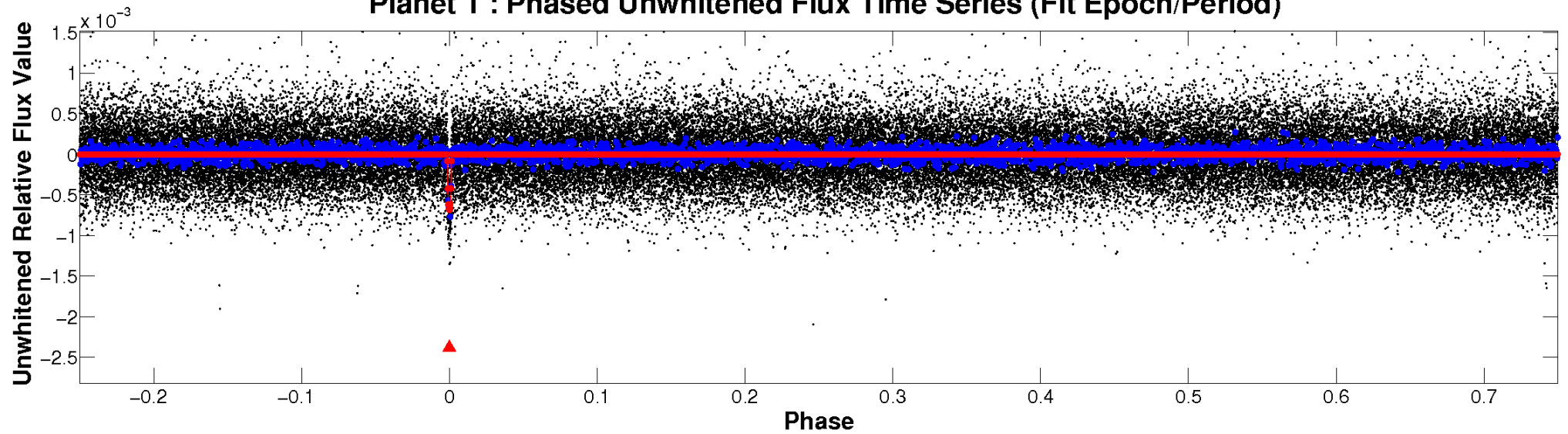
ALT Odd/Even

TCE 007877978-01

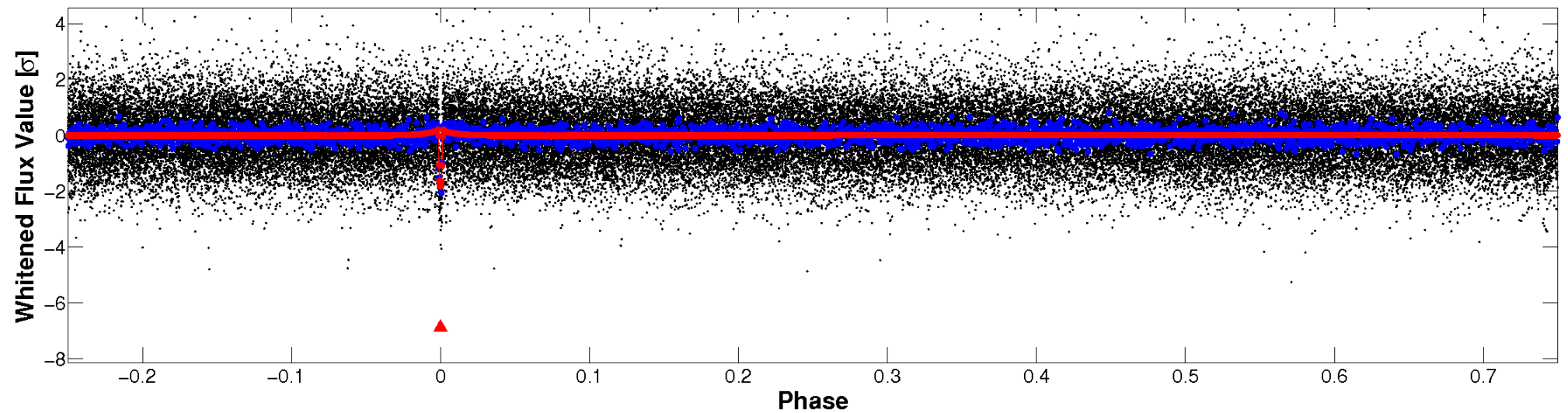


Non-Whitened Vs. Whitened Light Curve

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

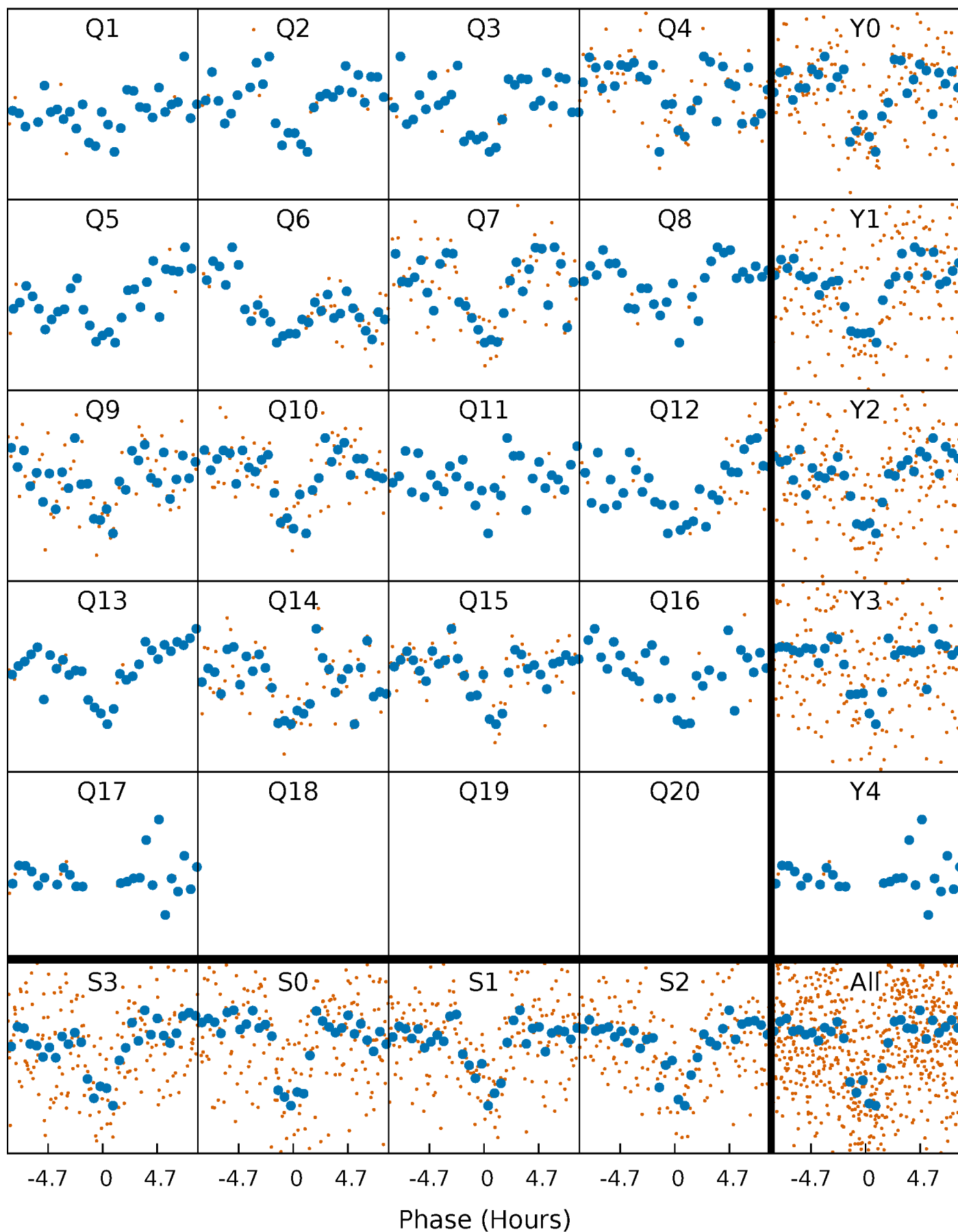


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



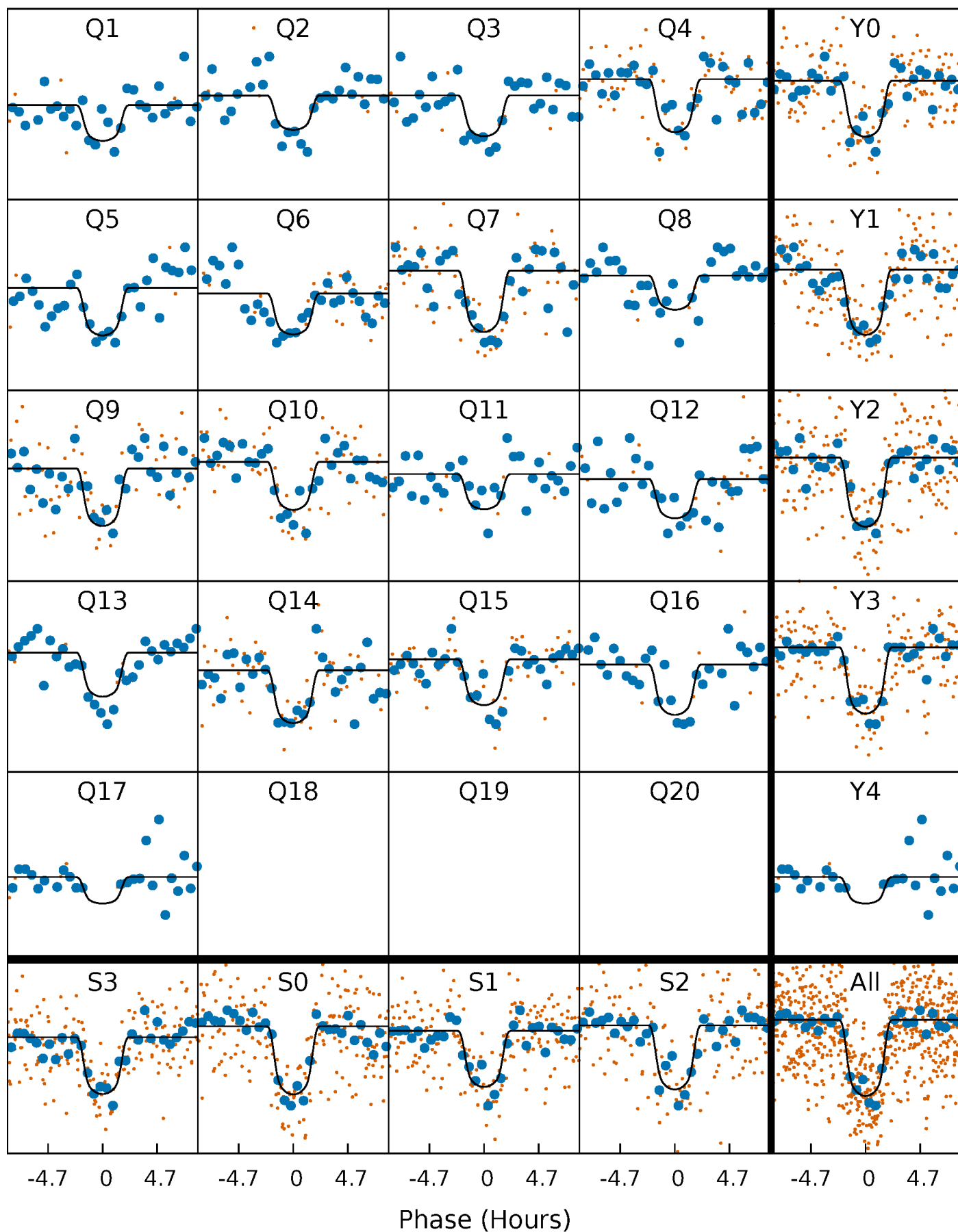
PDC Quarter-Phased Transit Curves

TCE 007877978-01 P= 56.573163 Days $T_0=146.579619$ (BKJD)



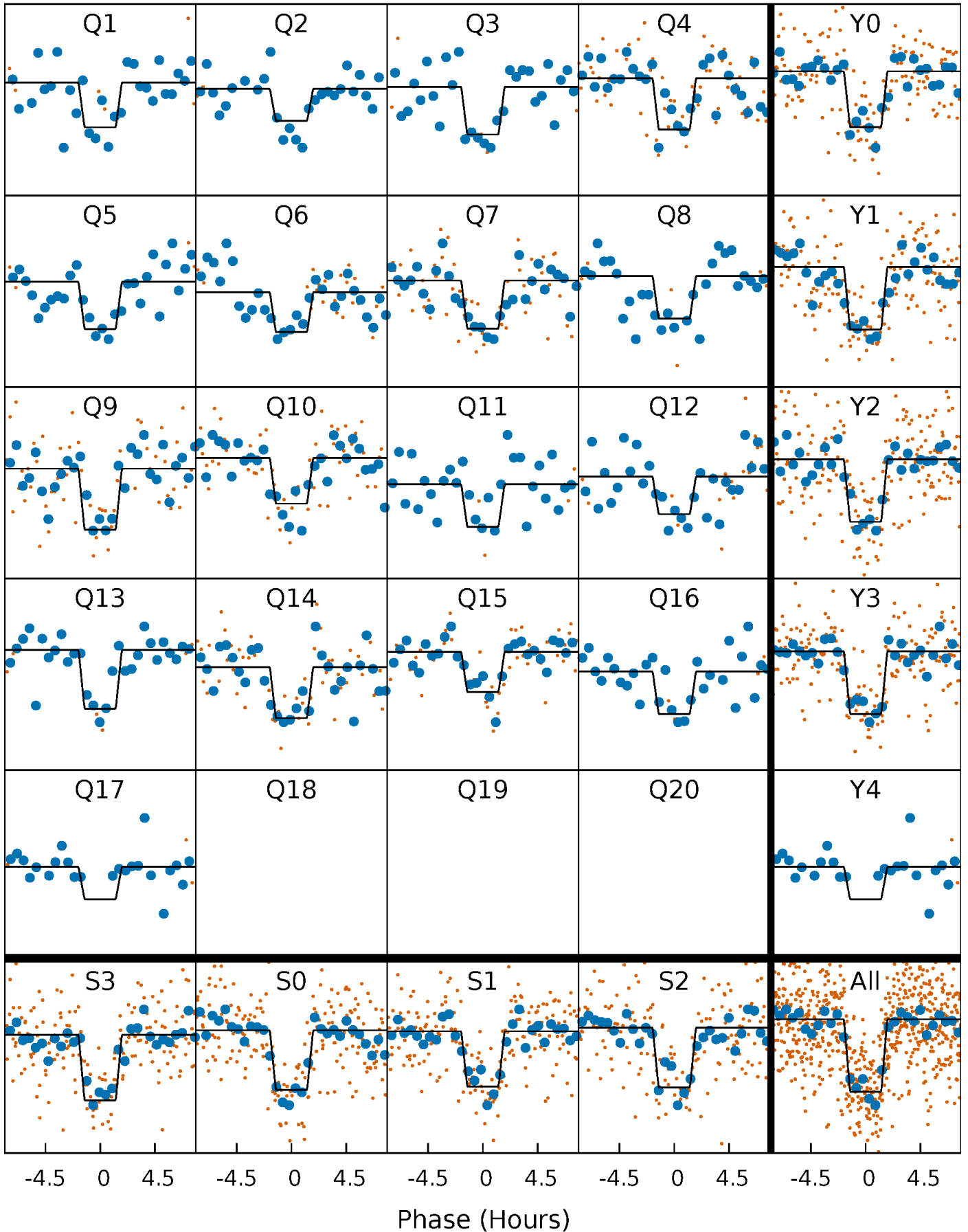
DV Quarter-Phased Transit Curves

TCE 007877978-01 P= 56.573163 Days $T_0=146.579619$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

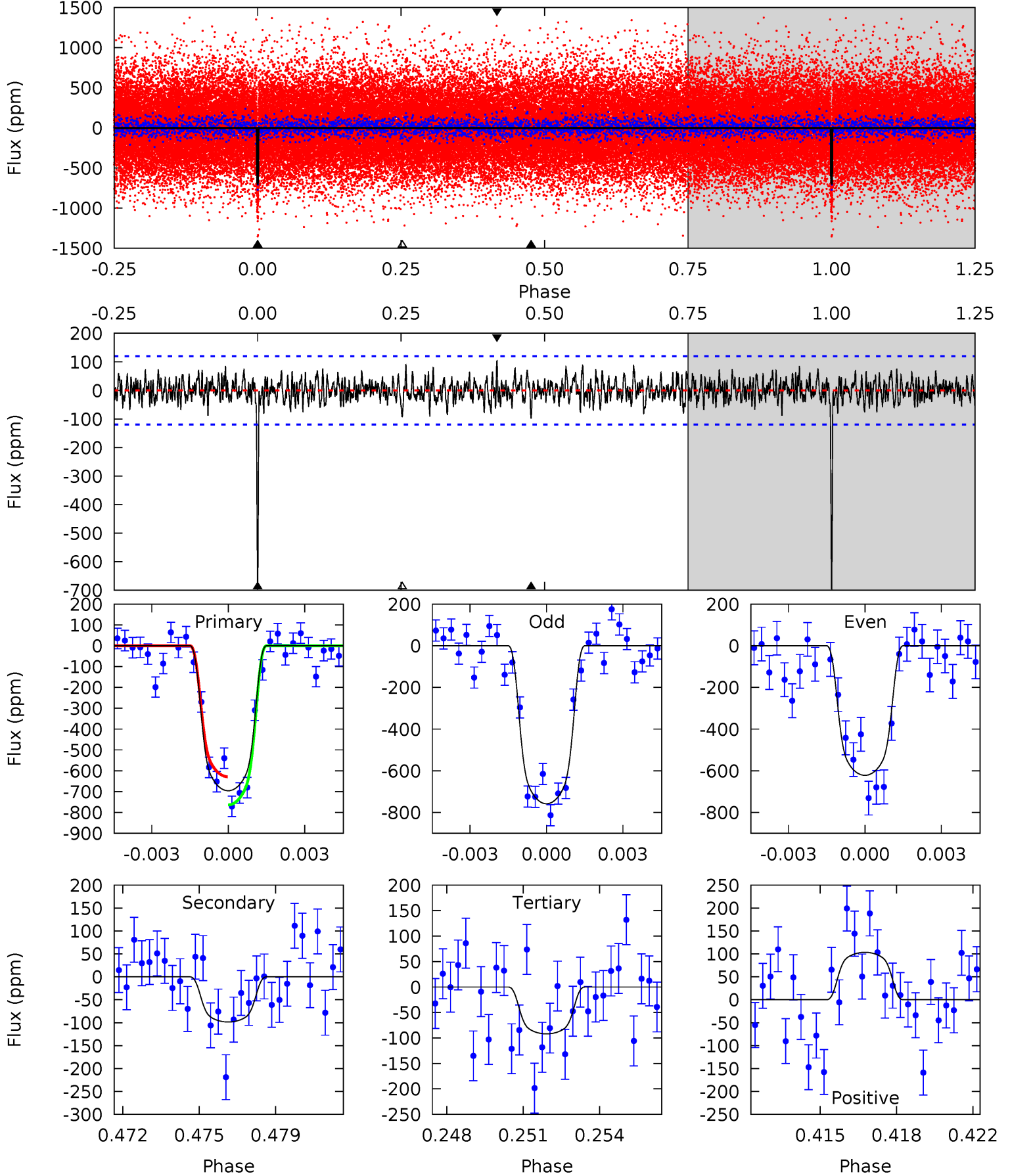
TCE 007877978-01 P= 56.573426 Days $T_0=146.577382$ (BKJD)



DV Model-Shift Uniqueness Test

007877978-01, P = 56.573163 Days, E = 90.006456 Days

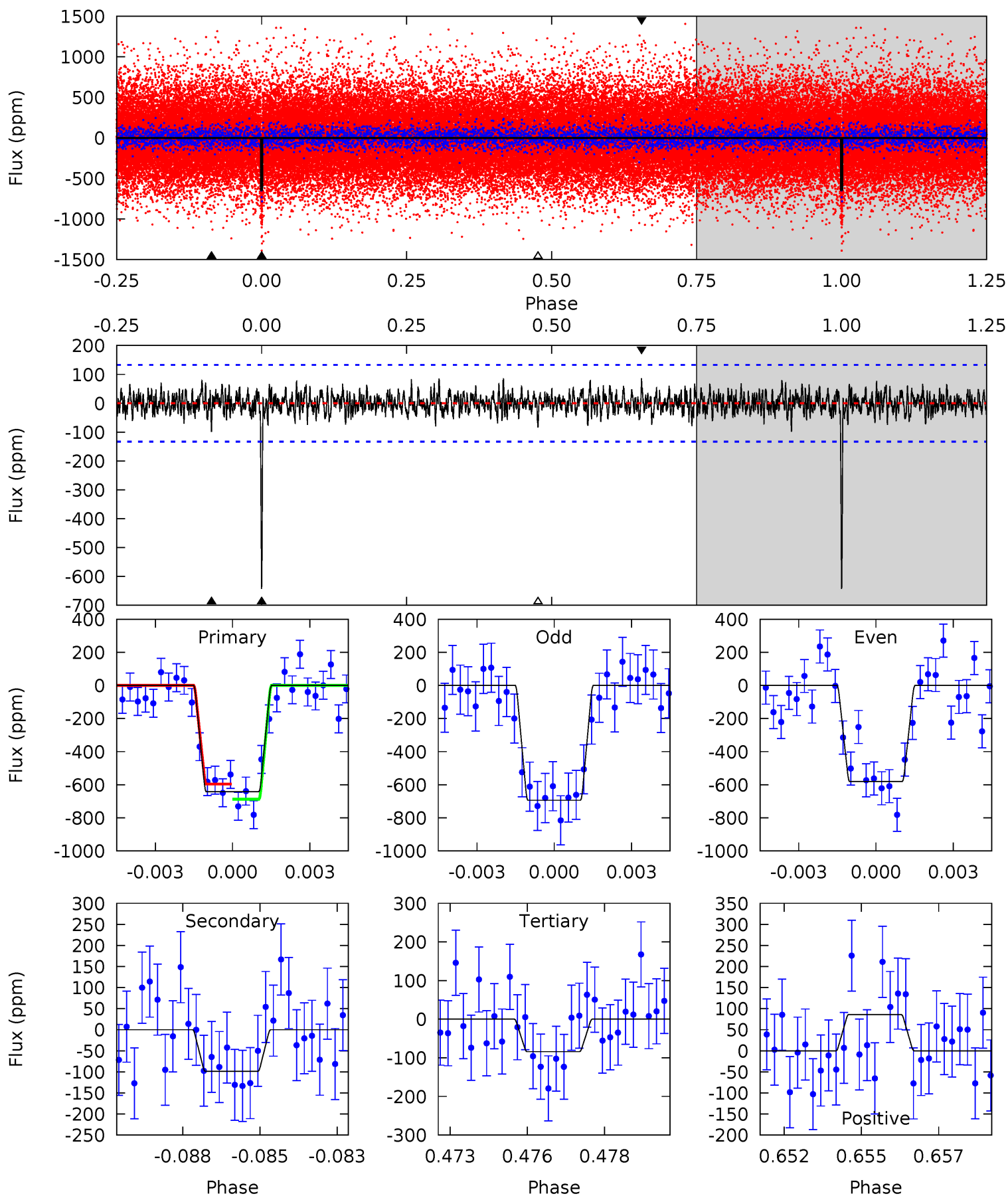
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.5	4.31	4.03	4.52	5.23	2.93	1.35	26.4	25.9	0.28	-0.21	2.97	0.95	0.13	2.95



Alt Model-Shift Uniqueness Test

007877978-01, P = 56.573426 Days, E = 90.003956 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.5	3.93	3.33	3.42	5.27	3.00	1.07	22.2	22.1	0.60	0.51	2.23	0.99	0.12	1.83



Stellar Parameters For KIC 007877978

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4701^{+74}_{-84}	$4.540^{+0.052}_{-0.016}$	$0.240^{+0.150}_{-0.150}$	$0.775^{+0.022}_{-0.044}$	$0.758^{+0.040}_{-0.028}$	$2.299^{+0.480}_{-0.141}$
	+2%/-2%	+1%/-0%	+62%/-62%	+3%/-6%	+5%/-4%	+21%/-6%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007877978-01 / KOI 2760.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-99 ± 23	$2.58^{+0.21}_{-0.21}$	494^{+9}_{-10}	3190^{+134}_{-143}	574^{+176}_{-151}
Alt.	-99 ± 25	$2.15^{+0.19}_{-0.20}$	494^{+10}_{-11}	3364^{+174}_{-171}	816^{+292}_{-231}

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 $A_{obs} \gg 1.0$

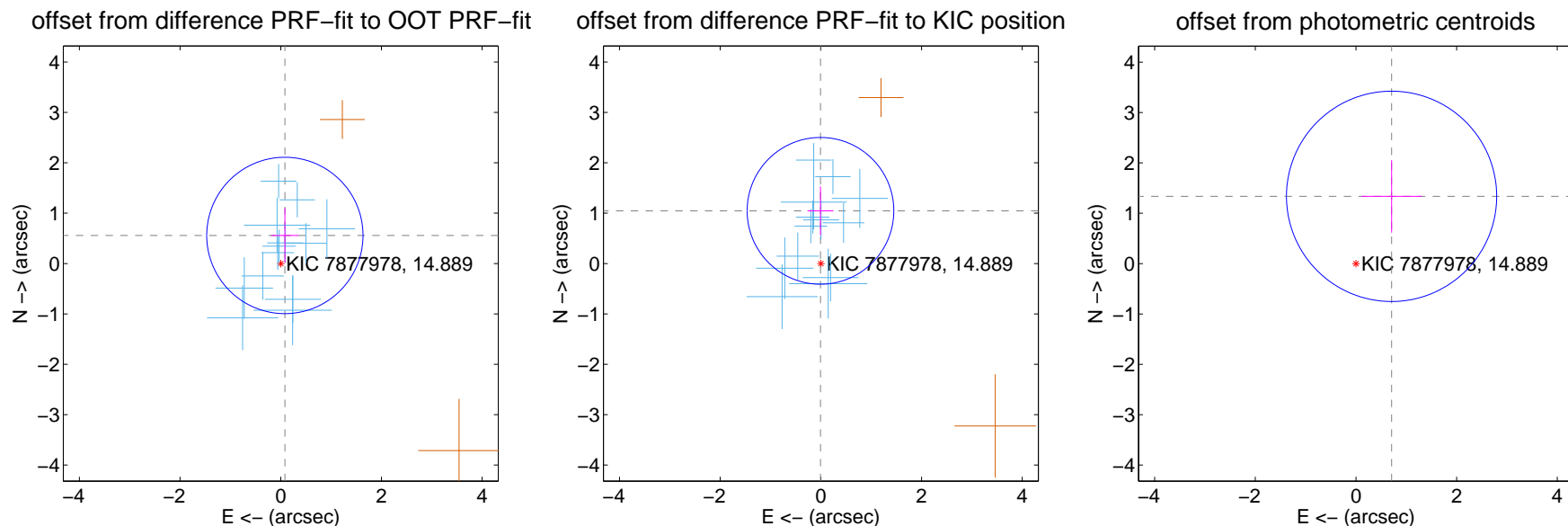
DV Centroid Data

Supplemental centroid analysis for 007877978-01. Kepler magnitude: 14.89. Transit SNR 19.79

There are 13 quarters with good PRF difference image offsets

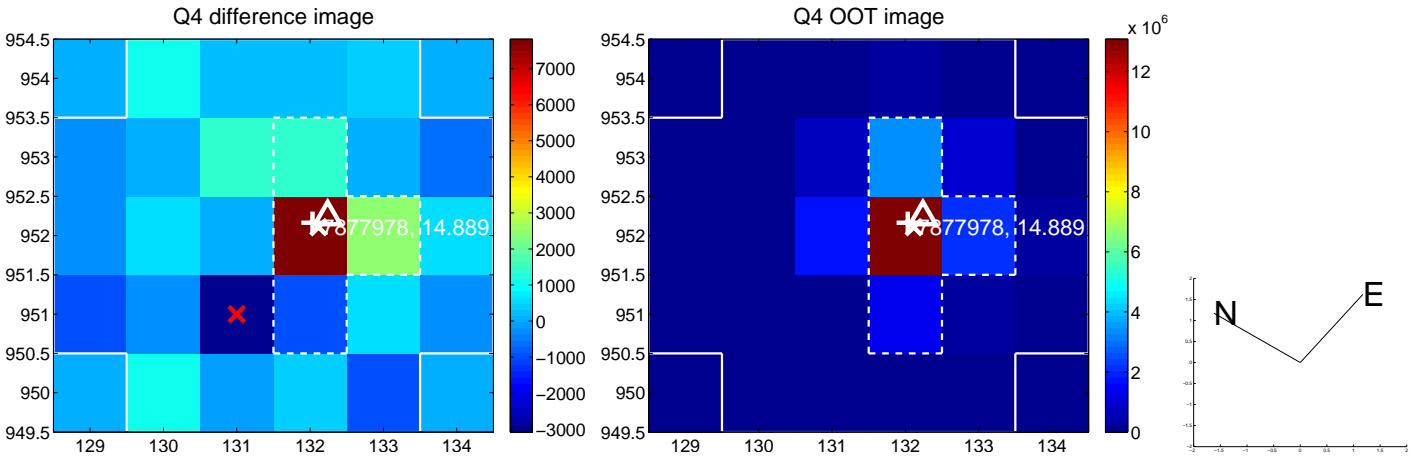
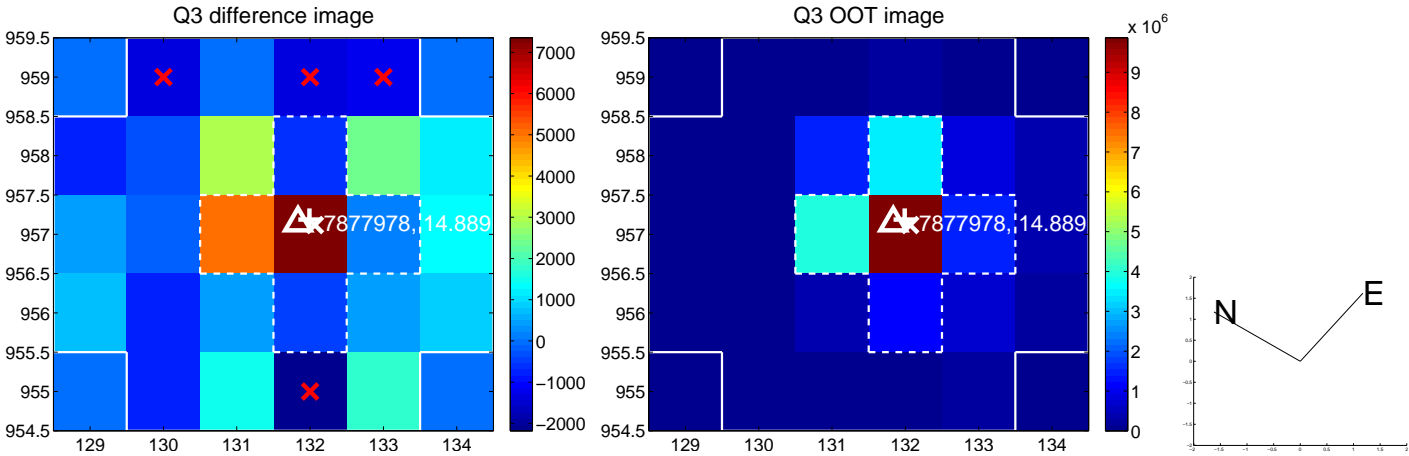
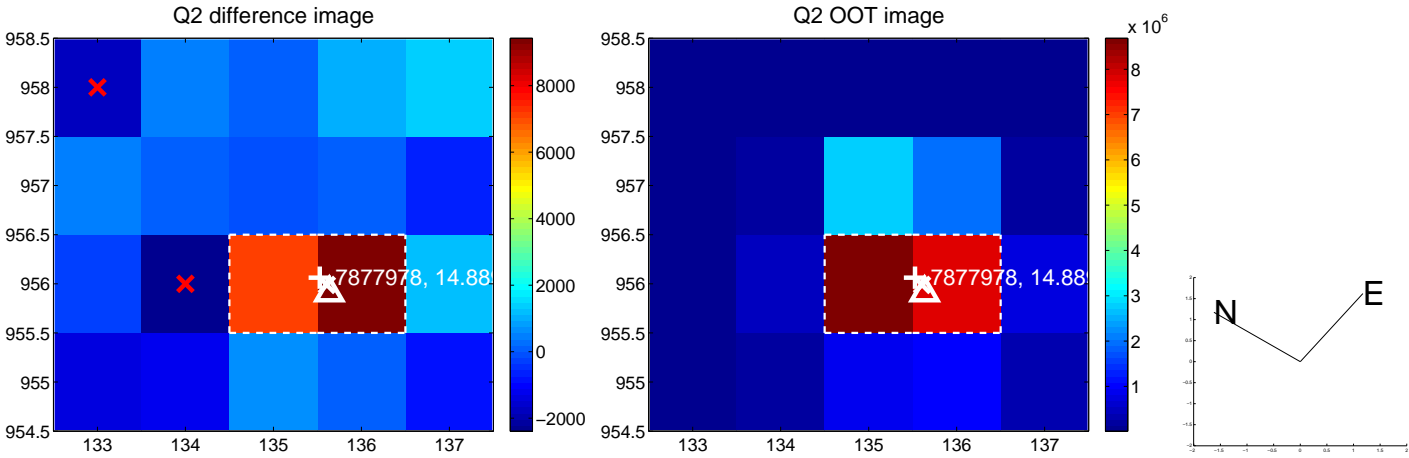
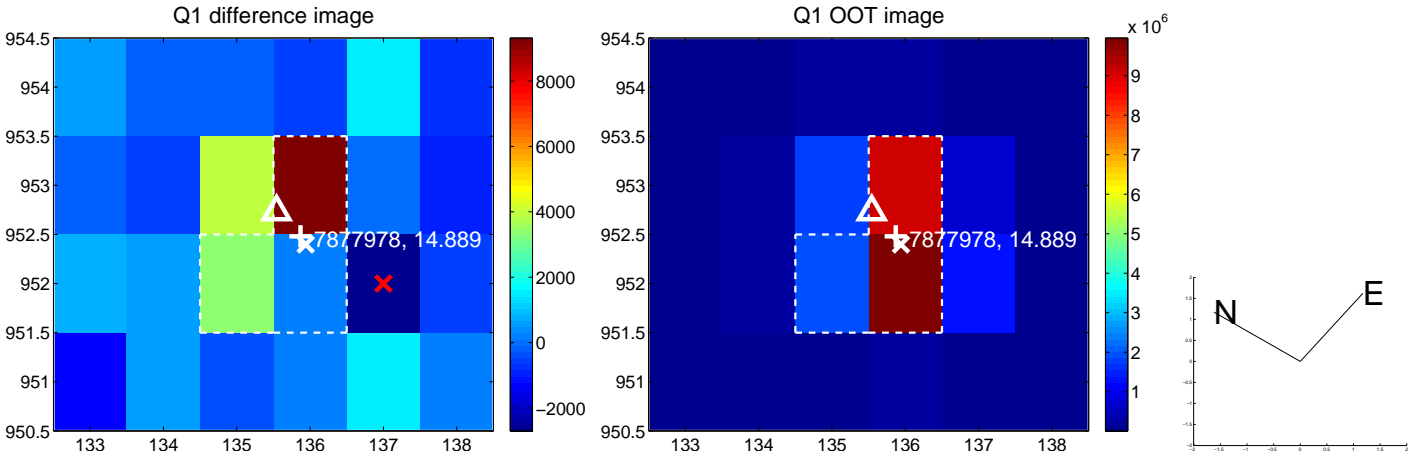
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.563 ± 0.517	1.09	-0.082 ± 0.274	0.557 ± 0.543
PRF-fit source offset from KIC position	1.046 ± 0.485	2.15	0.008 ± 0.256	1.046 ± 0.485
photometric centroid source offset	1.51 ± 0.70	2.17	-0.71 ± 0.60	1.34 ± 0.72

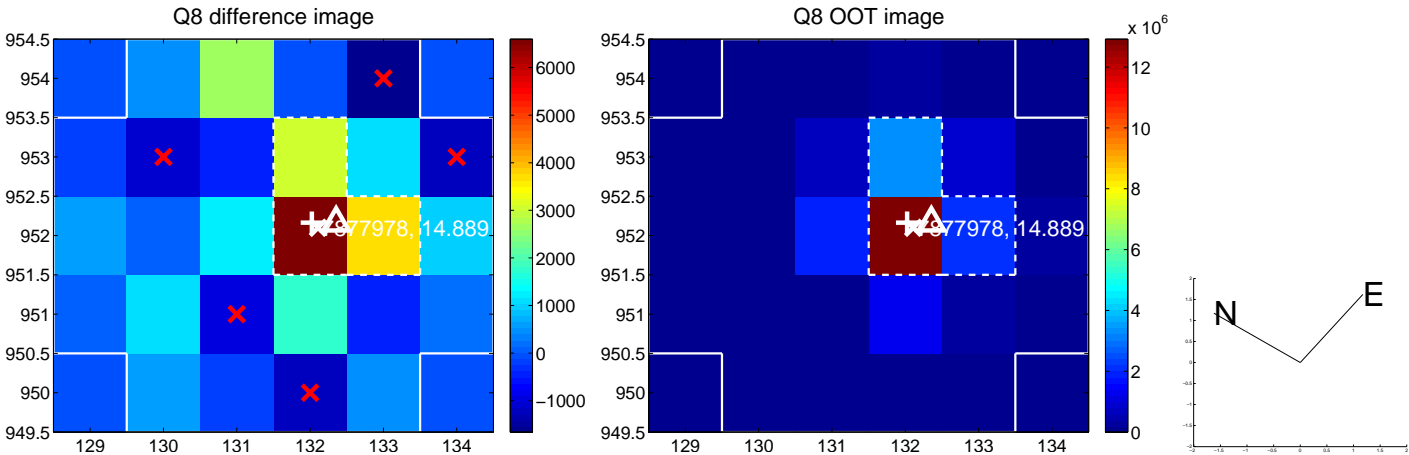
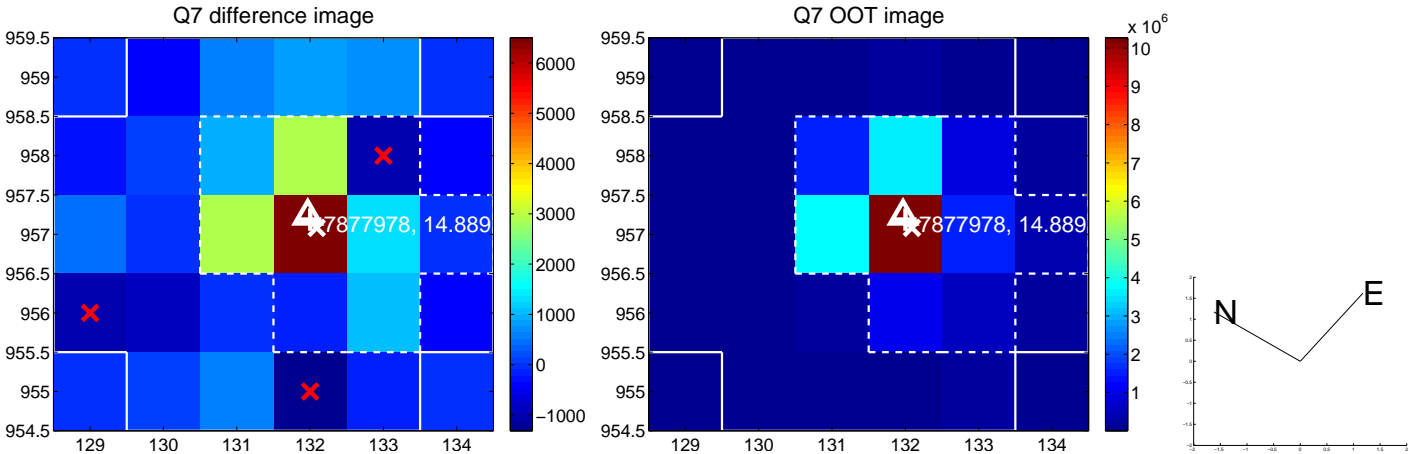
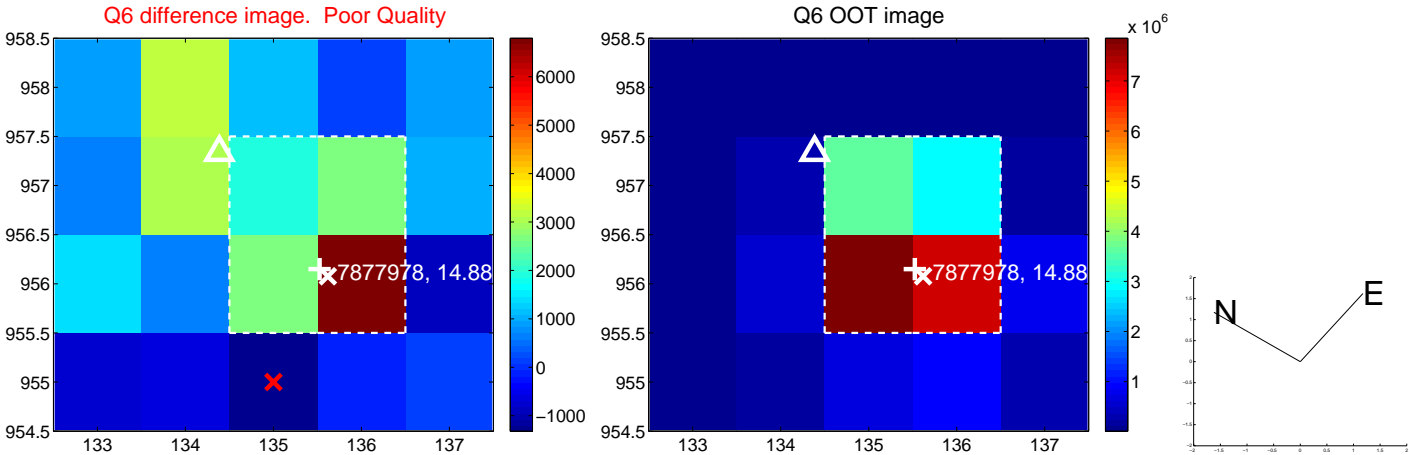
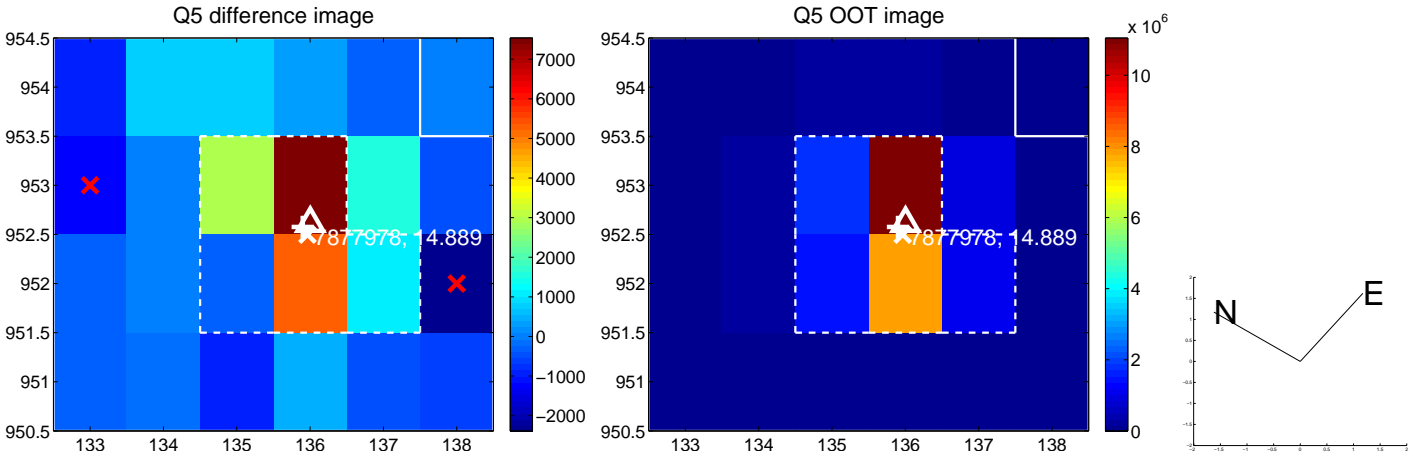


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

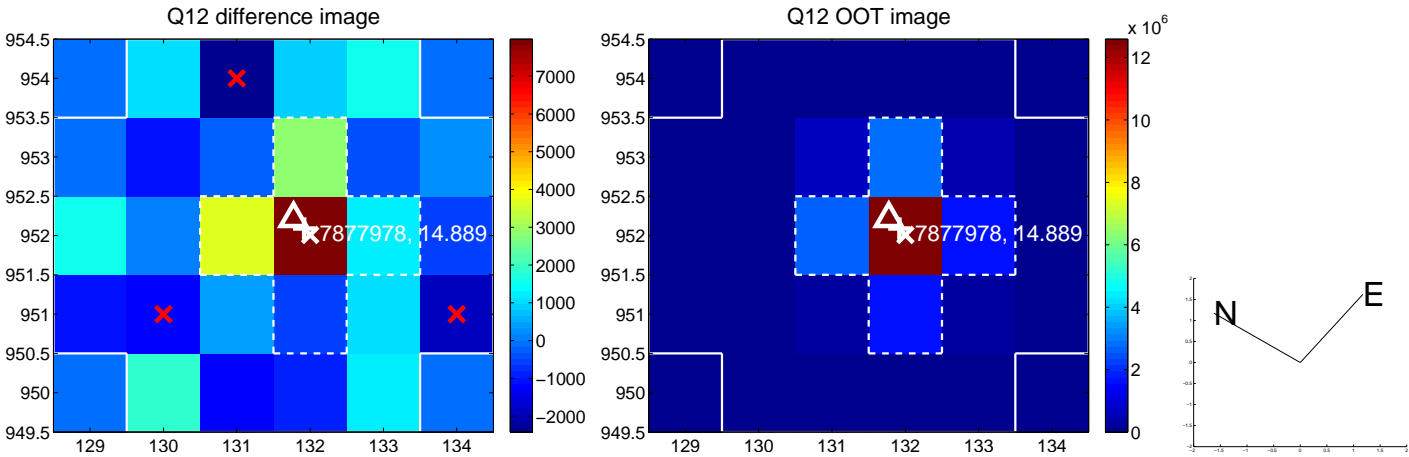
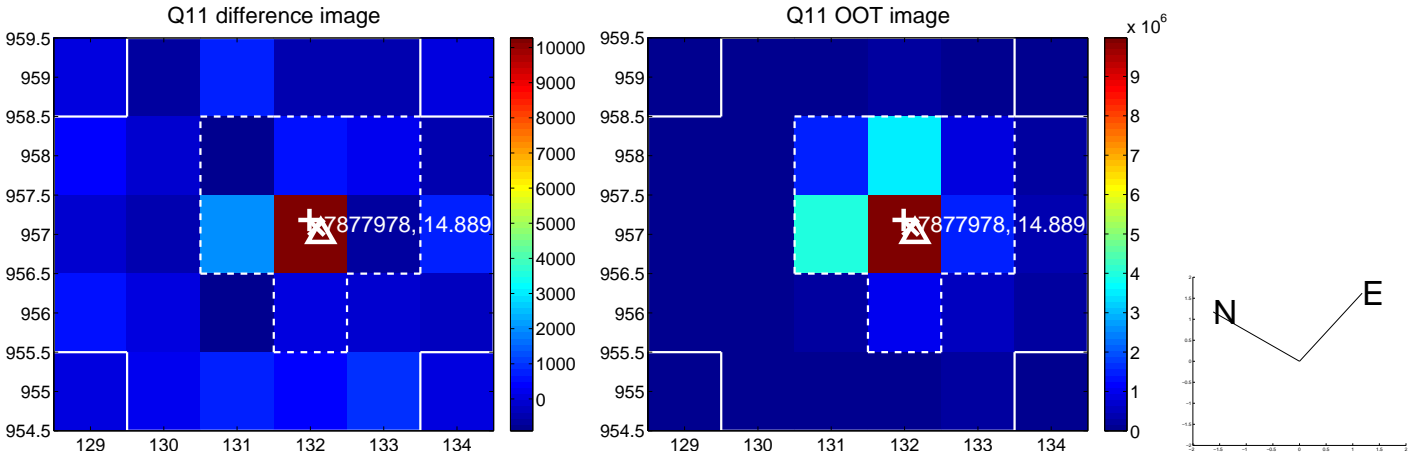
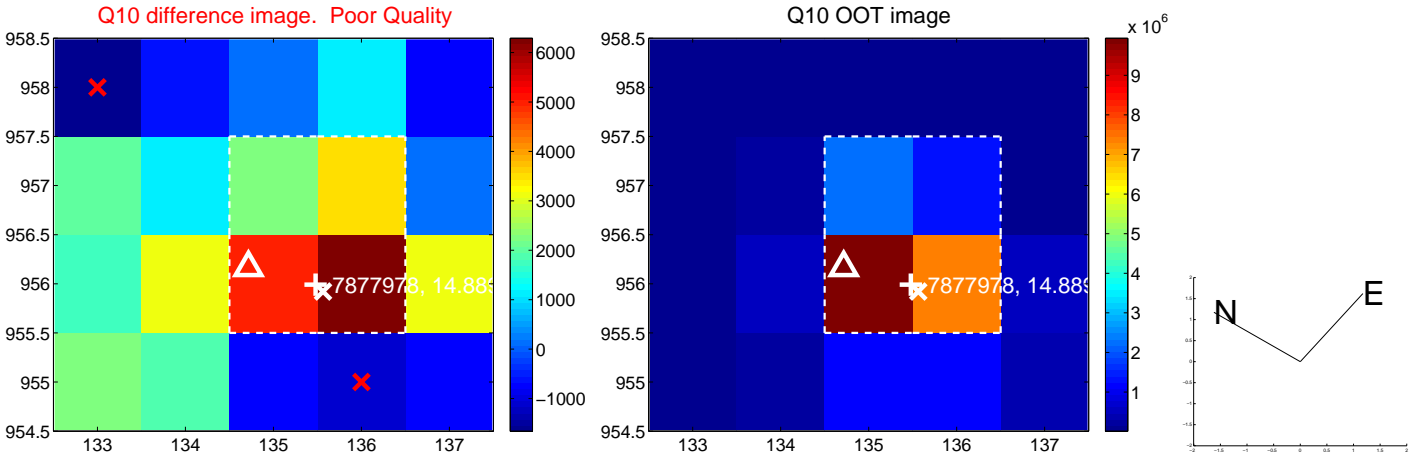
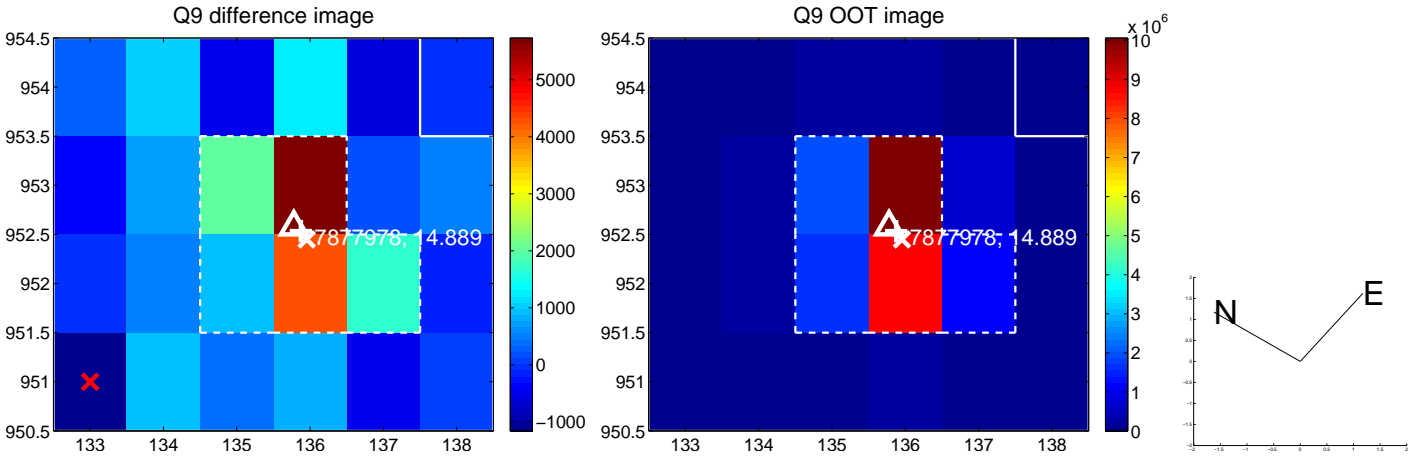
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



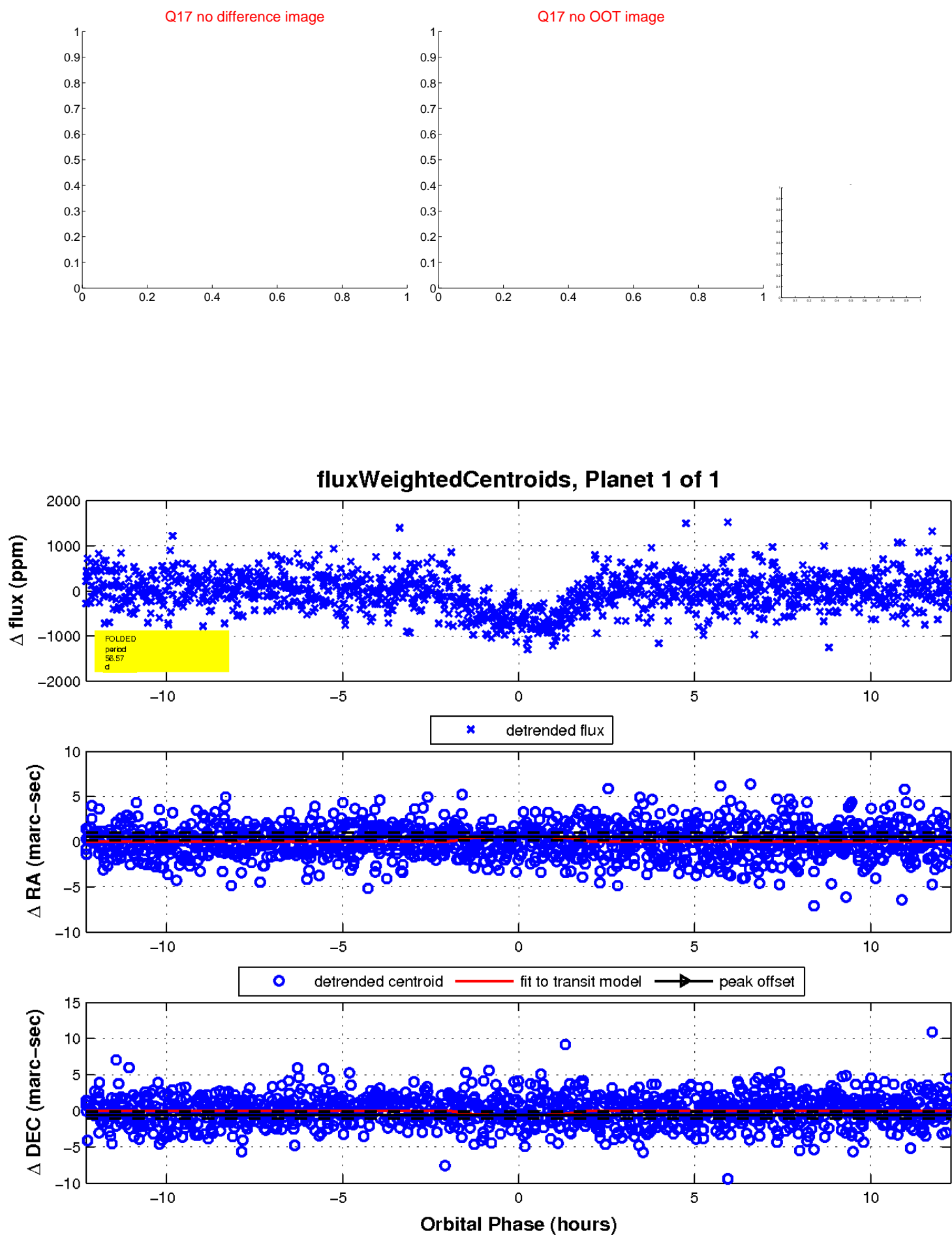
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

