

KIC 009110610

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})
009110610-01	OBS	4839.01	21.841978	150.824202	77.8	3.885	7.8	9.0	2.24	6194	2.20	251.97

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009110610-01	OBS	PC	0.75	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.

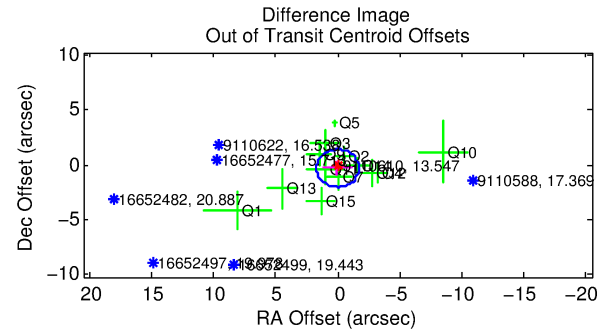
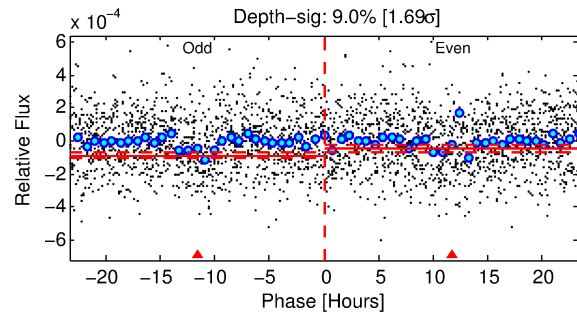
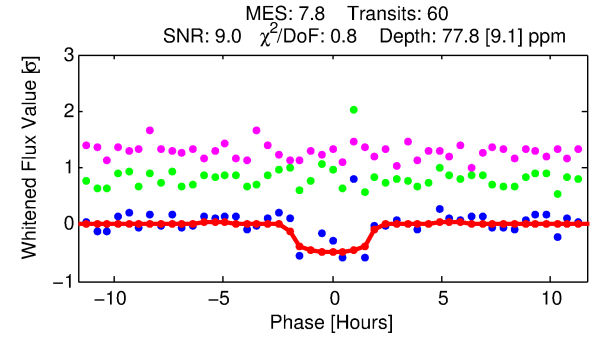
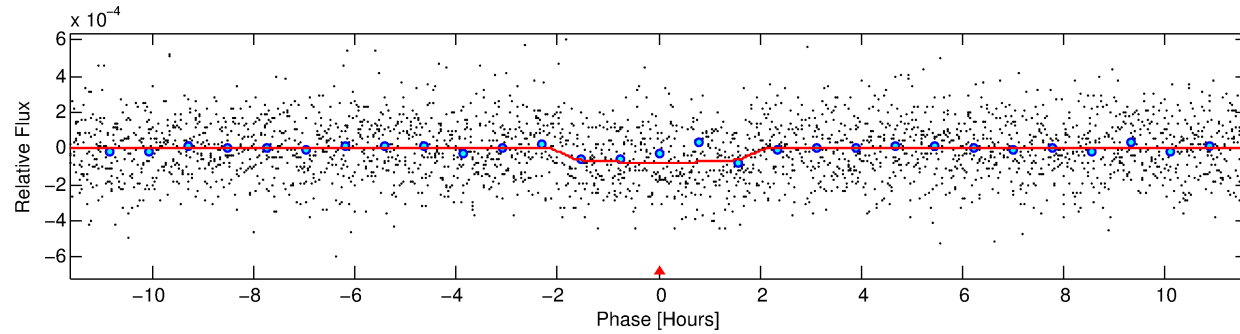
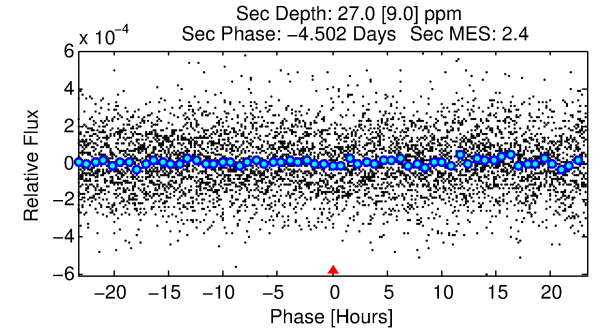
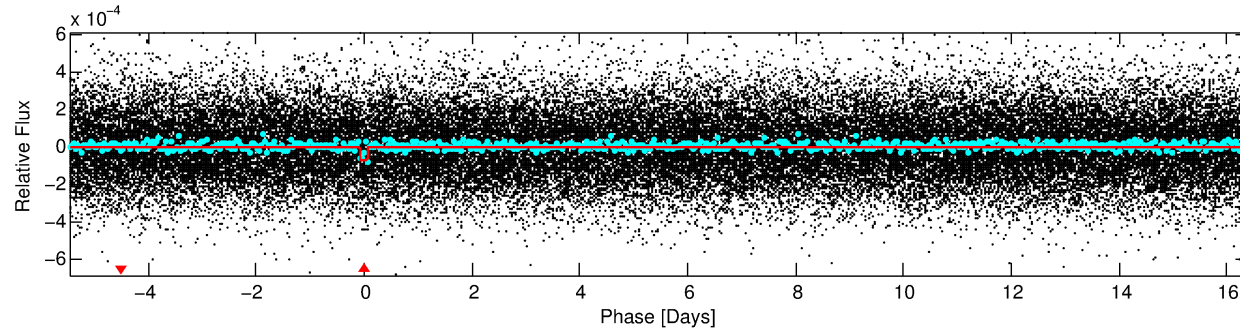
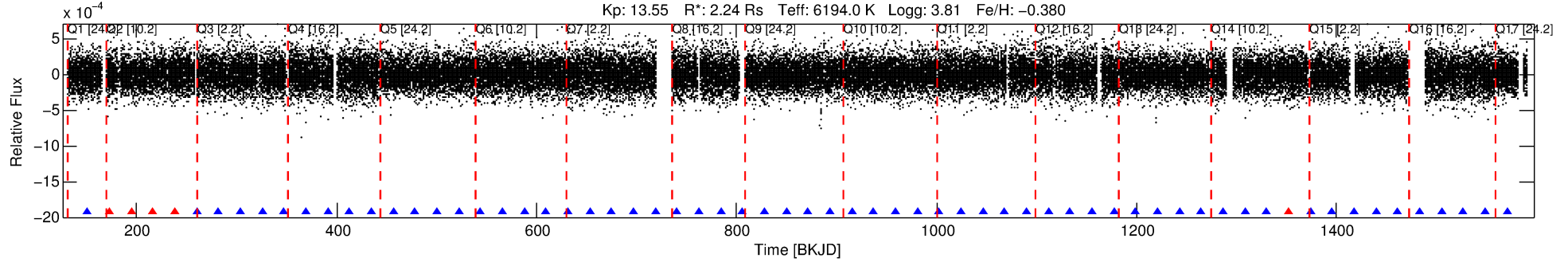
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009110610-01

No Significant Match Found

DV One-Page Summary

KIC: 9110610 Candidate: 1 of 1 Period: 21.842 d
KOI: K04839.01 Corr: 0.992



DV Fit Results:

Period = 21.84198 [0.00027] d
Epoch = 150.8242 [0.0102] BKJD
Rp/R* = 0.0090 [0.0069]
a/R* = 25.41 [105.06]
b = 0.82 [1.70]
Seff = 251.97 [226.27]
Teq = 1016 [228] K
Rp = 2.20 [2.07] Re
a = 0.1621 [0.0881] AU
Ag = 80.48 [145.36] [0.55σ]
Teffp = 4705 [1857] K [1.97σ]

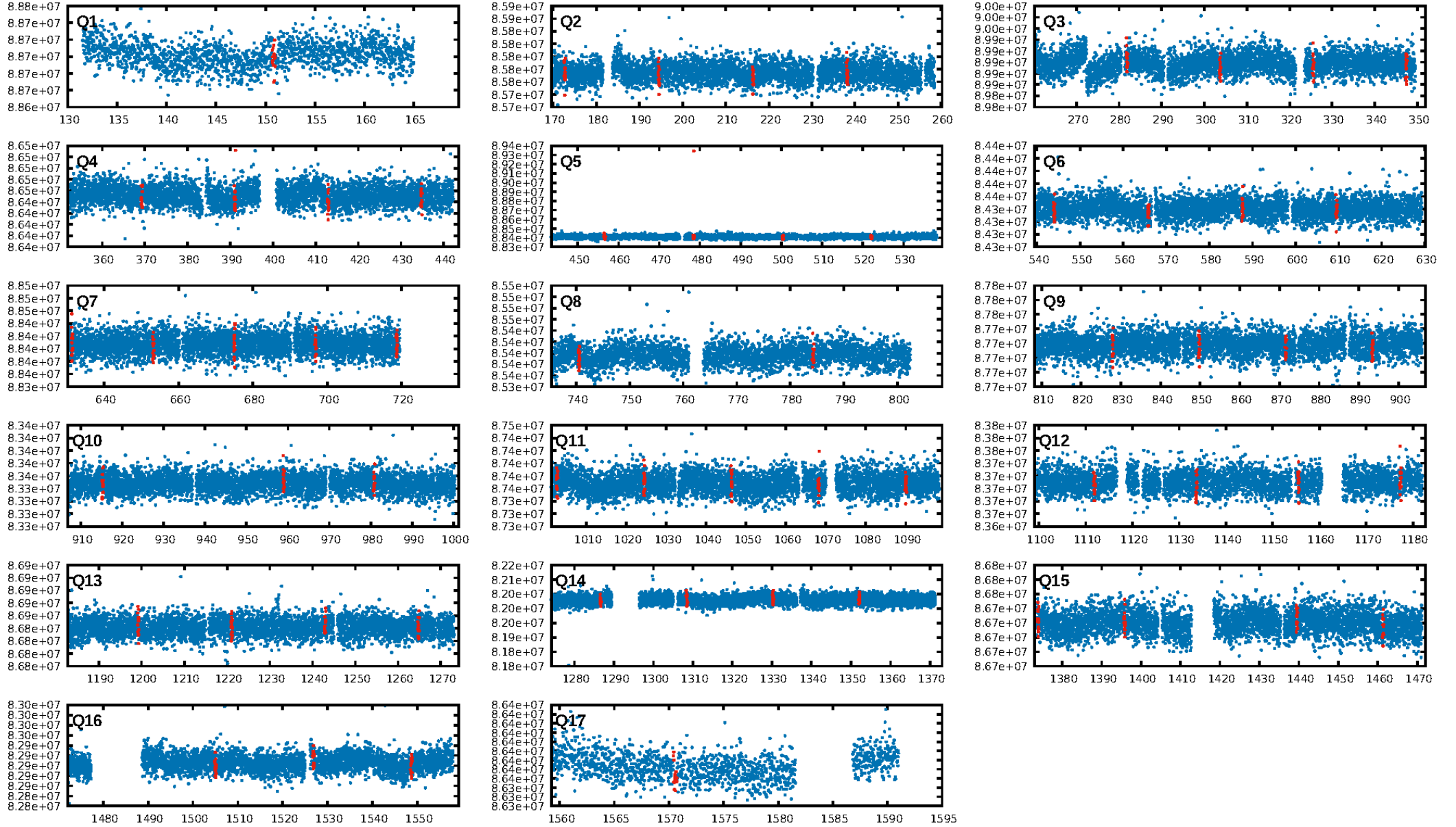
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 85.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.33e-15
RollingBand-fgt: 0.91 [53/58]
GhostDiagnostic-chr: 607
Centroid-sig: 1.3%
Centroid-so: 2.662 arcsec [1.56σ]
OotOffset-rm: 0.334 arcsec [0.58σ]
KicOffset-rm: 0.288 arcsec [0.52σ]
OotOffset-st: 3/4/2/4 [13]
KicOffset-st: 3/4/2/4 [13]
DiffImageQuality-fgm: 0.31 [4/13]
DiffImageOverlap-fno: 1.00 [17/17]

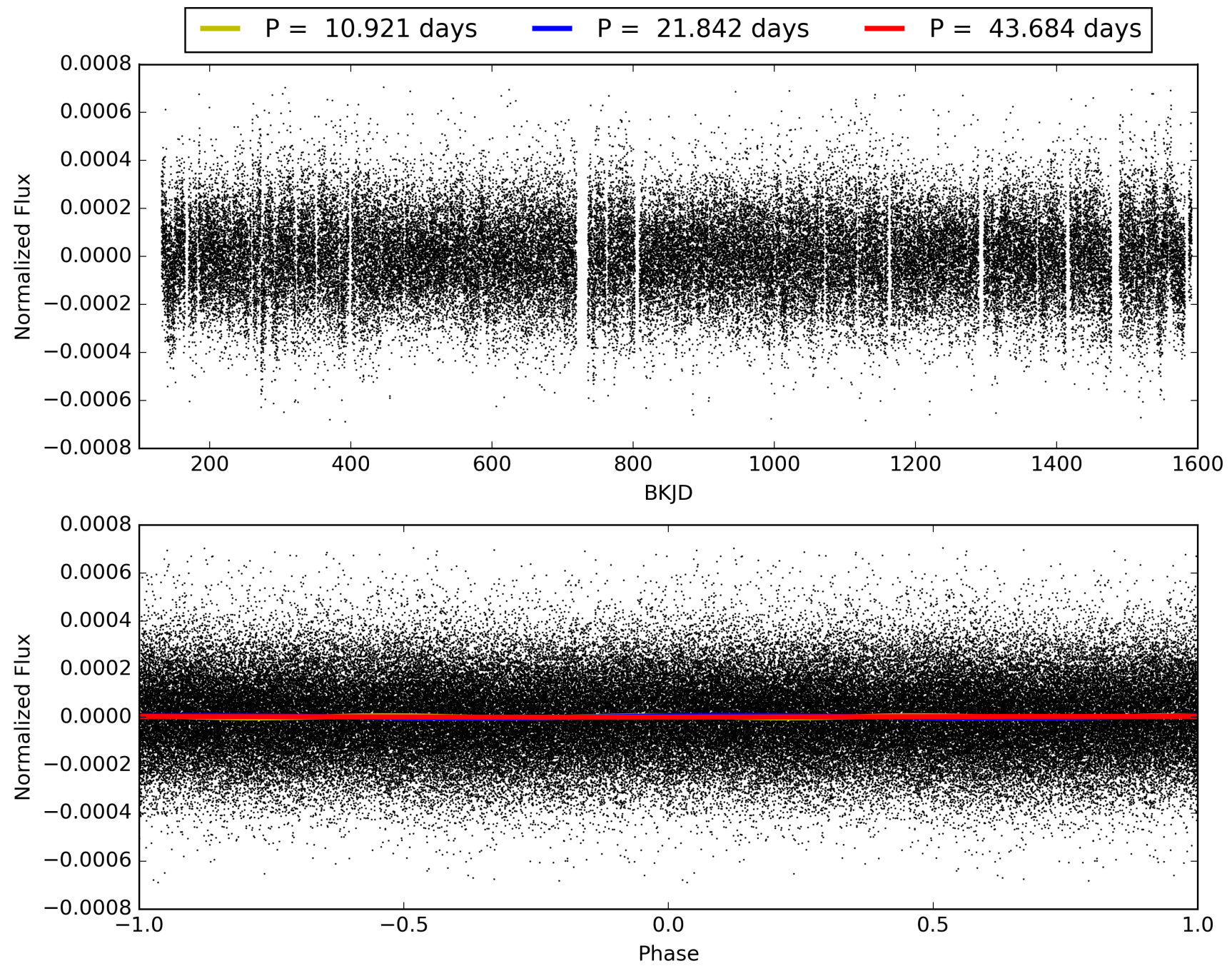
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:12:20 Z

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

TCE 009110610-01, PDC Light Curves

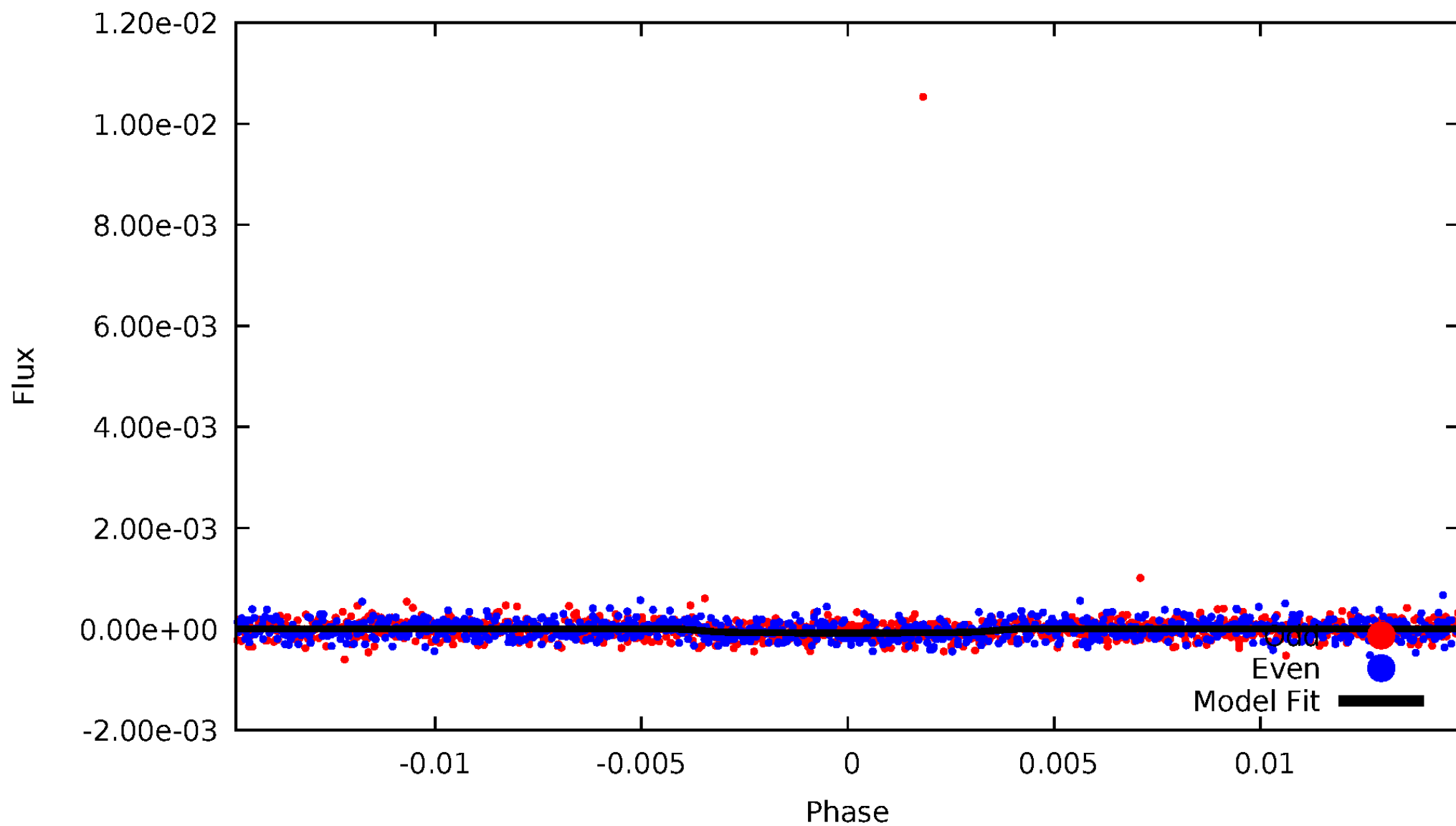


TCE 009110610-01



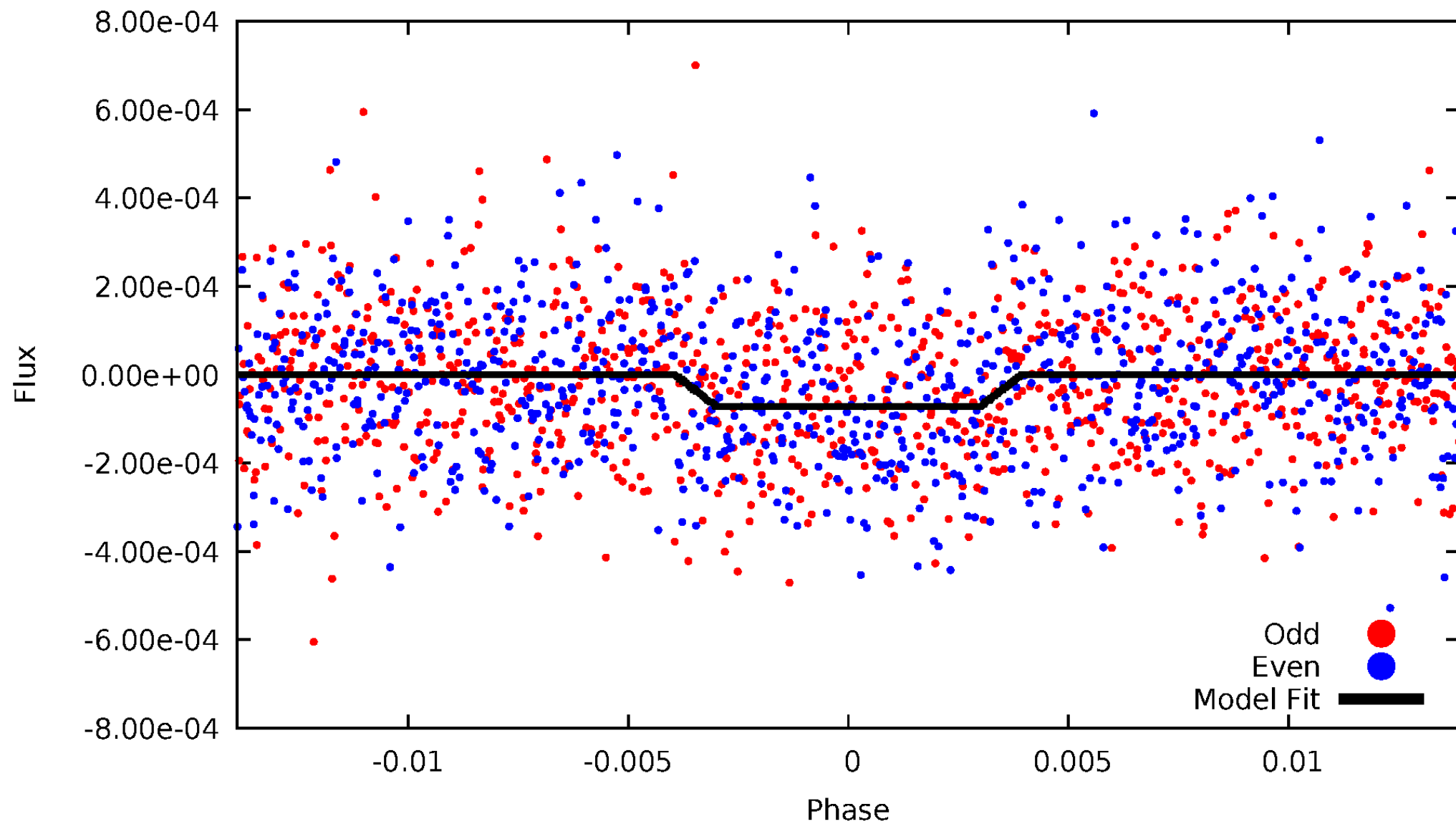
DV Odd/Even

TCE 009110610-01



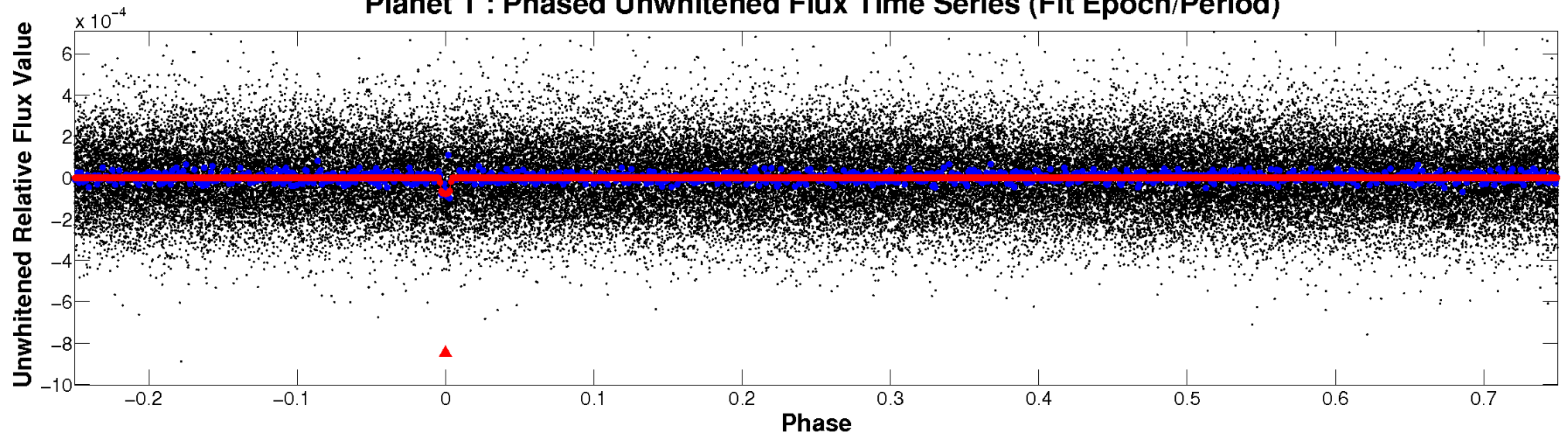
ALT Odd/Even

TCE 009110610-01

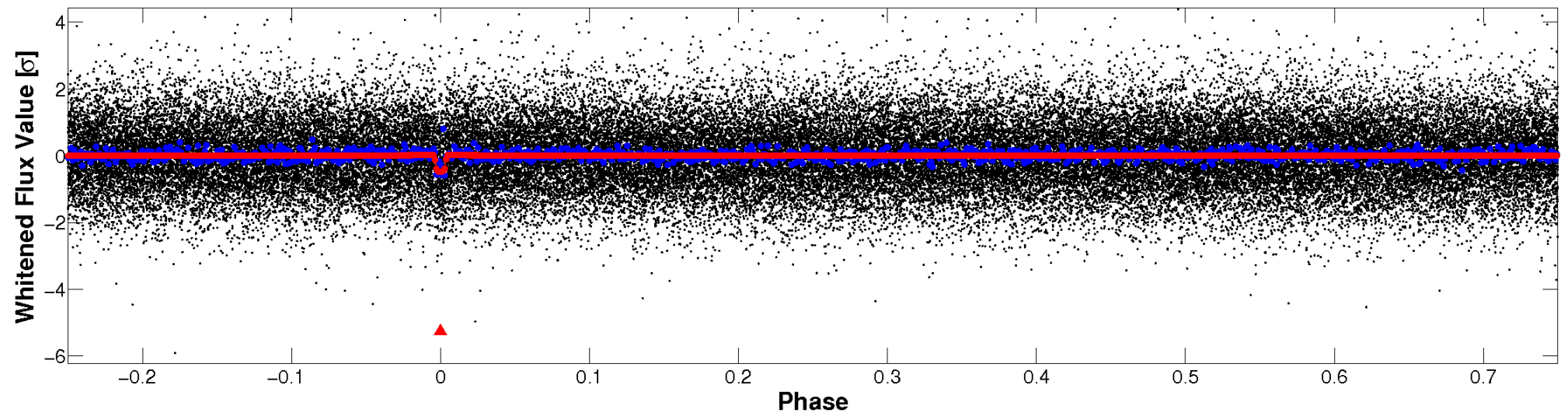


Non-Whitened Vs. Whitened Light Curve

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

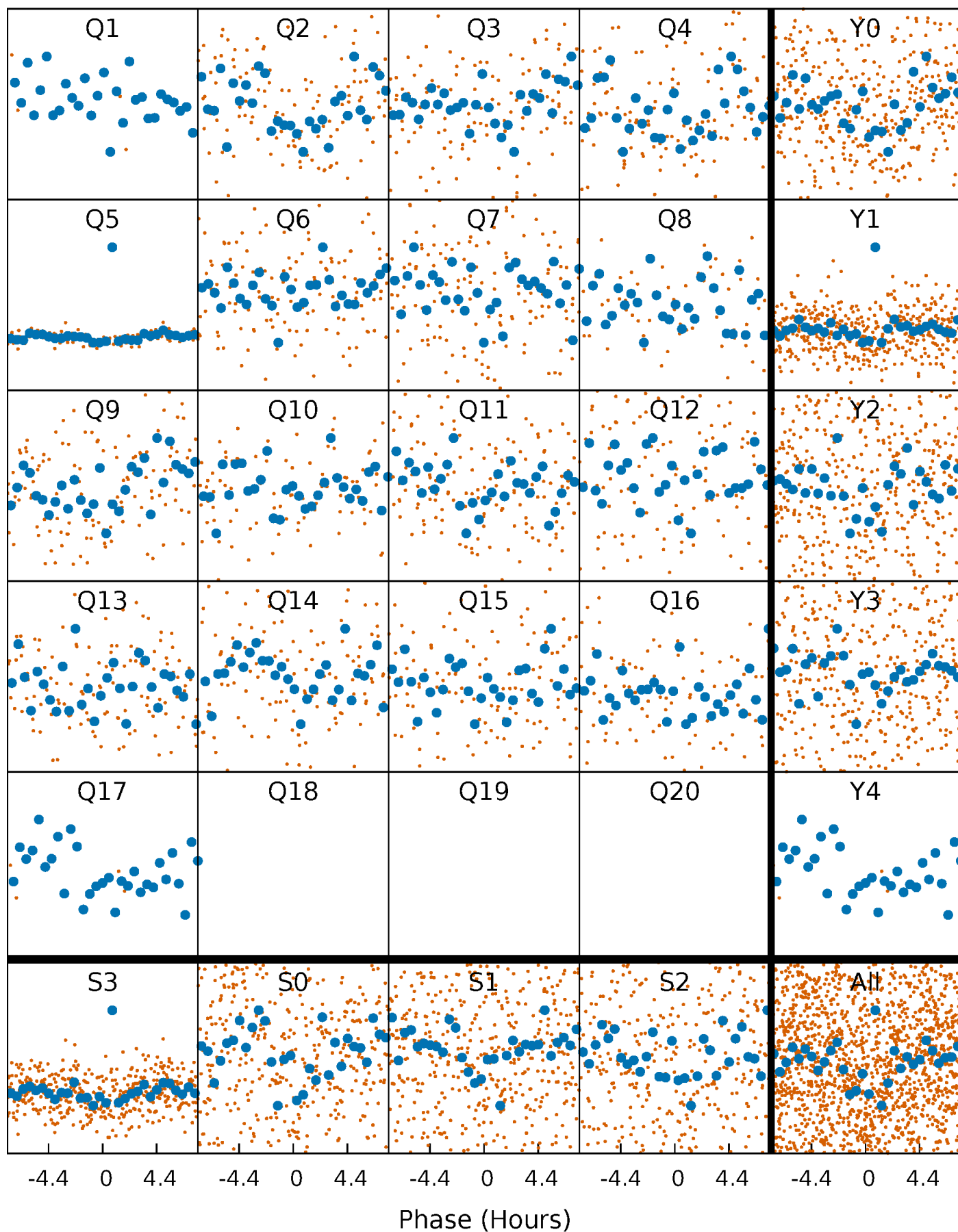


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



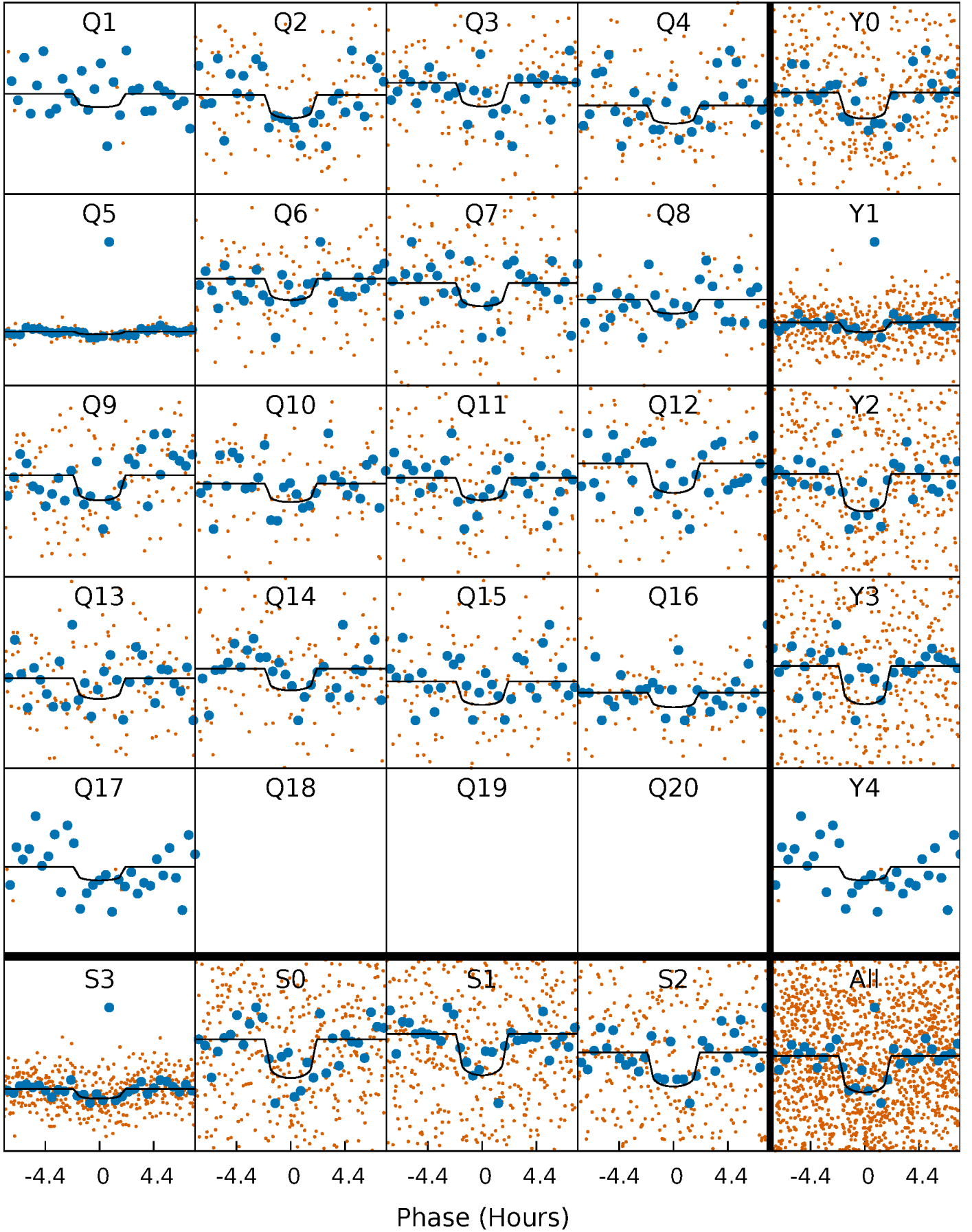
PDC Quarter-Phased Transit Curves

TCE 009110610-01 P= 21.841978 Days $T_0=150.824202$ (BKJD)



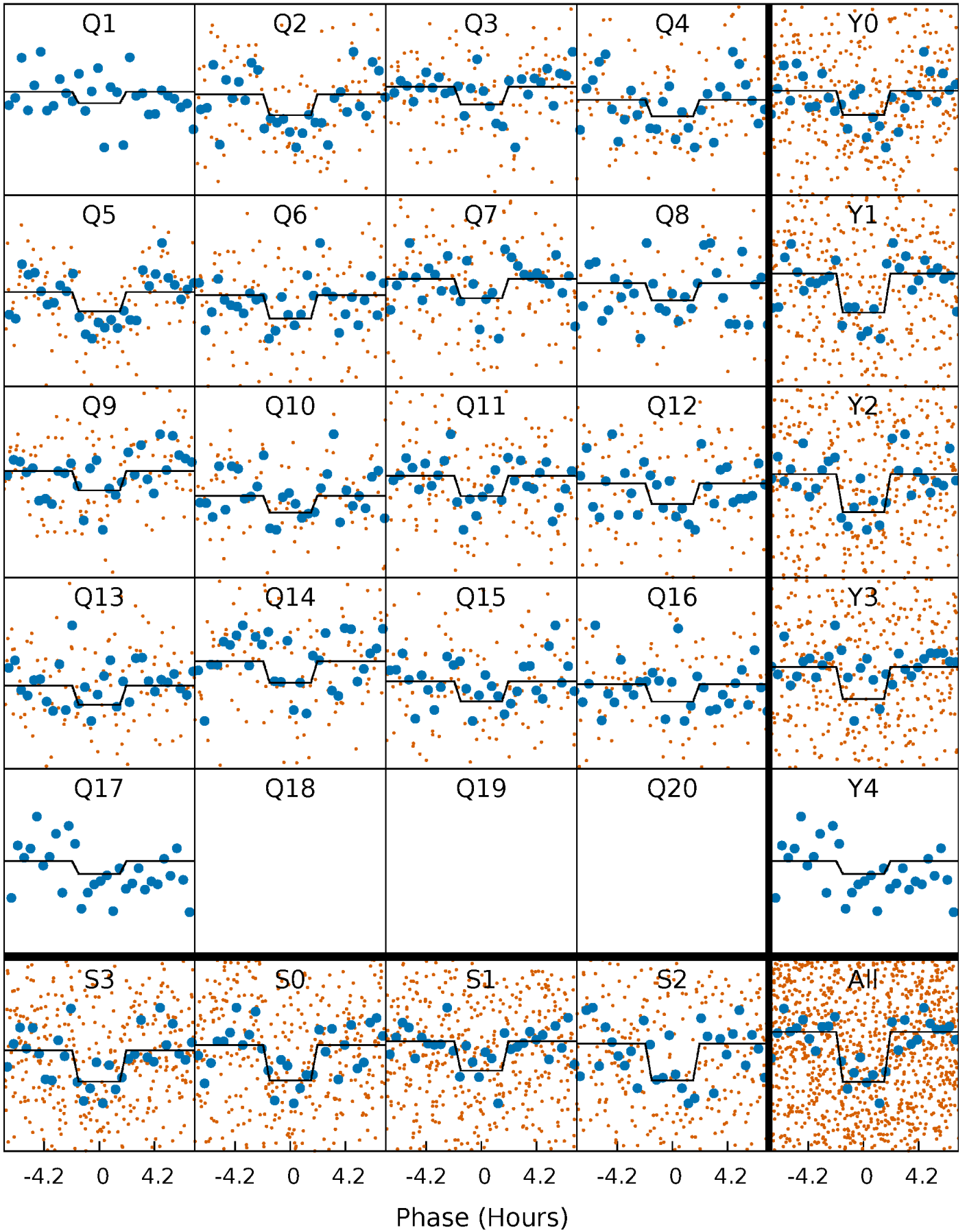
DV Quarter-Phased Transit Curves

TCE 009110610-01 P= 21.841978 Days $T_0=150.824202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

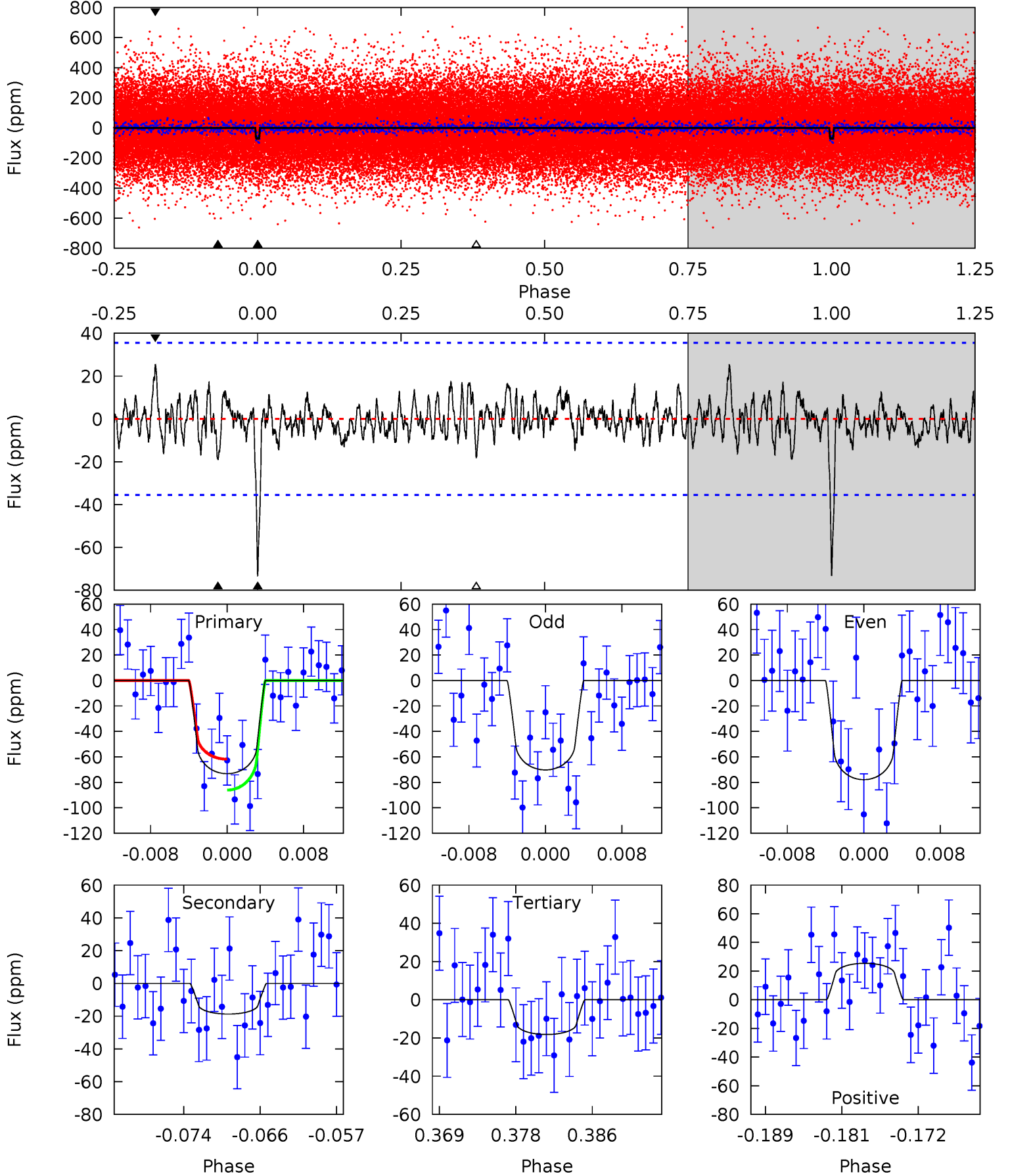
TCE 009110610-01 P= 21.841781 Days $T_0=150.833607$ (BKJD)



DV Model-Shift Uniqueness Test

009110610-01, $P = 21.841978$ Days, $E = 128.982224$ Days

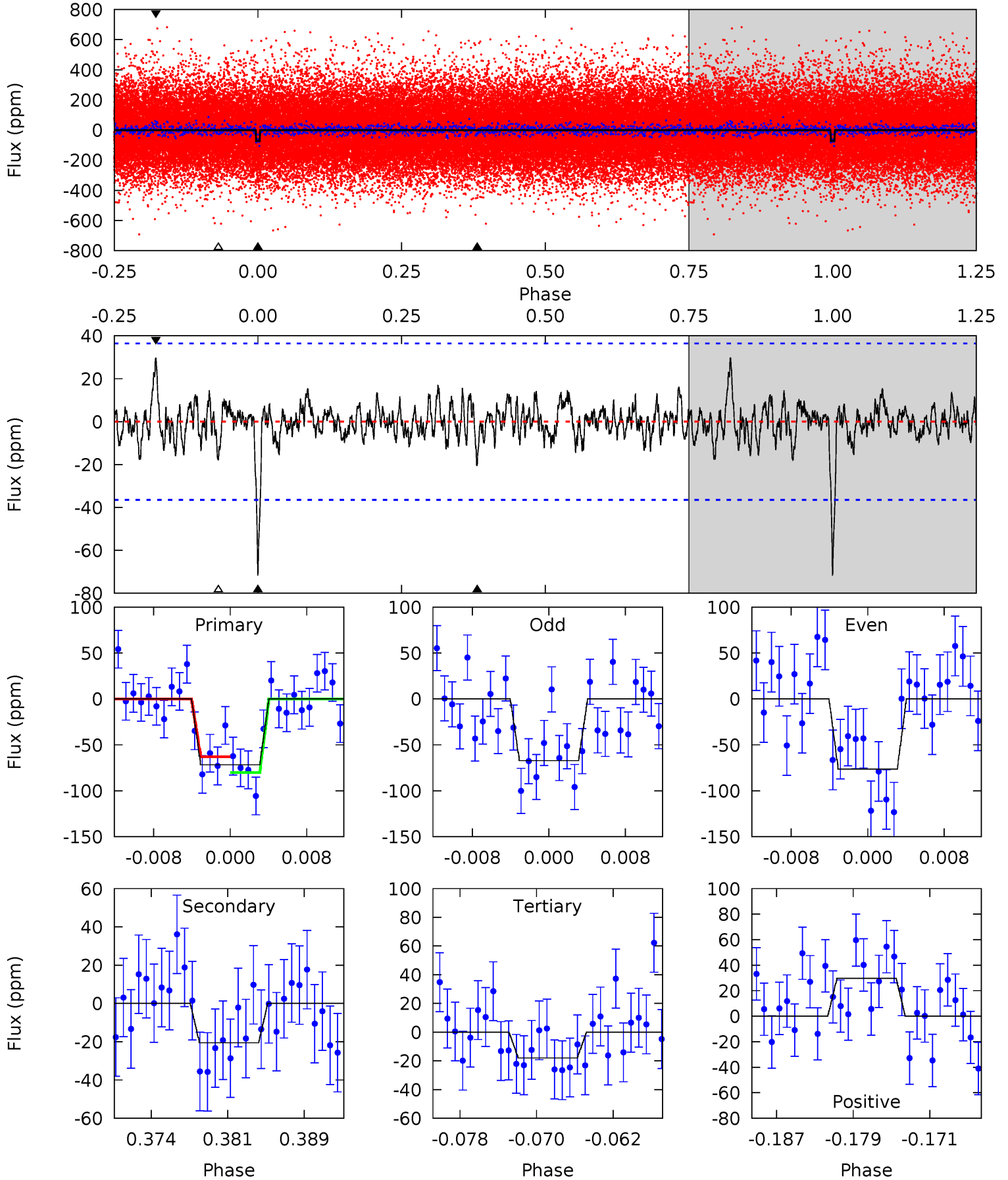
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	2.67	2.59	3.63	5.06	2.64	0.95	7.84	6.81	0.08	-0.96	0.55	0.53	0.26	1.73



Alt Model-Shift Uniqueness Test

009110610-01, $P = 21.841781$ Days, $E = 128.991826$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.97	2.86	2.50	4.14	5.07	2.66	0.92	7.47	5.83	0.36	-1.28	0.64	0.86	0.29	1.20



Stellar Parameters For KIC 009110610

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6194^{+191}_{-210}	$3.813^{+0.528}_{-0.132}$	$-0.380^{+0.300}_{-0.300}$	$2.241^{+0.487}_{-1.217}$	$1.189^{+0.184}_{-0.276}$	$0.149^{+0.950}_{-0.061}$
	+3%/-3%	+14%/-3%	+79%/-79%	+22%/-54%	+15%/-23%	+639%/-41%
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 009110610-01 / KOI 4839.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-19 ± 7	$2.01^{+1.70}_{-1.16}$	1386^{+113}_{-185}	4387^{+2090}_{-841}	63^{+299}_{-46}
Alt.	-21 ± 7	$2.02^{+1.56}_{-1.17}$	1385^{+109}_{-191}	4476^{+2130}_{-851}	70^{+322}_{-49}

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 $A_{obs} \gg 1.0$

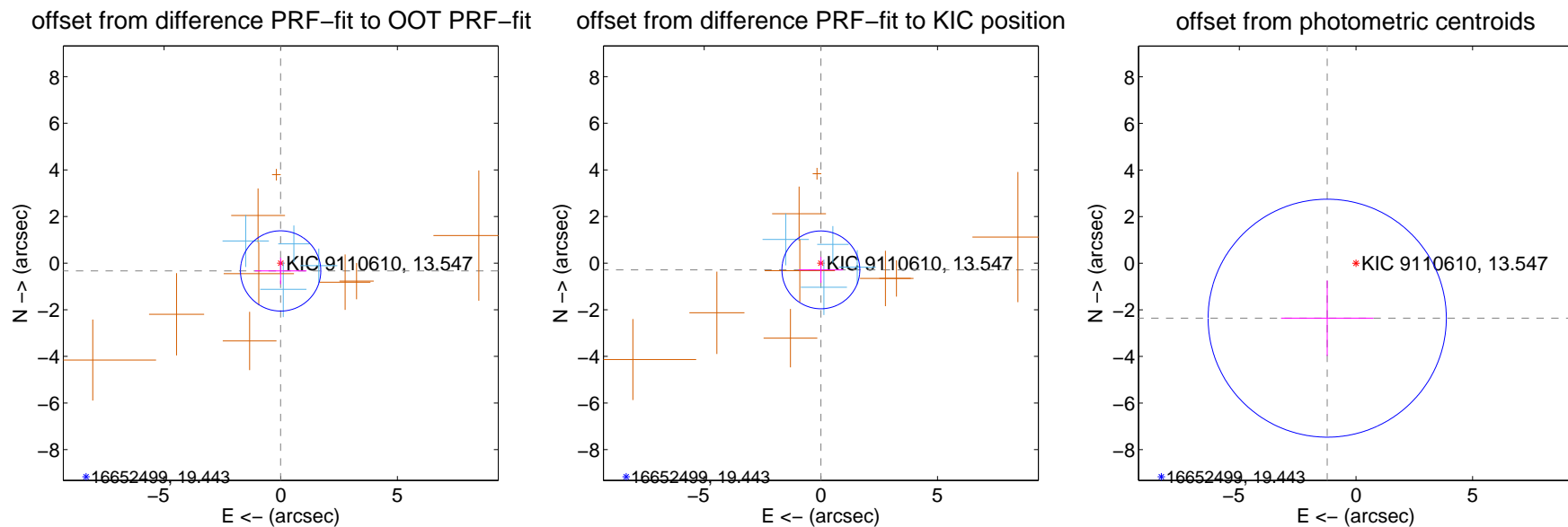
DV Centroid Data

Supplemental centroid analysis for 009110610-01. Kepler magnitude: 13.55. Transit SNR 8.97

There are 4 quarters with good PRF difference image offsets

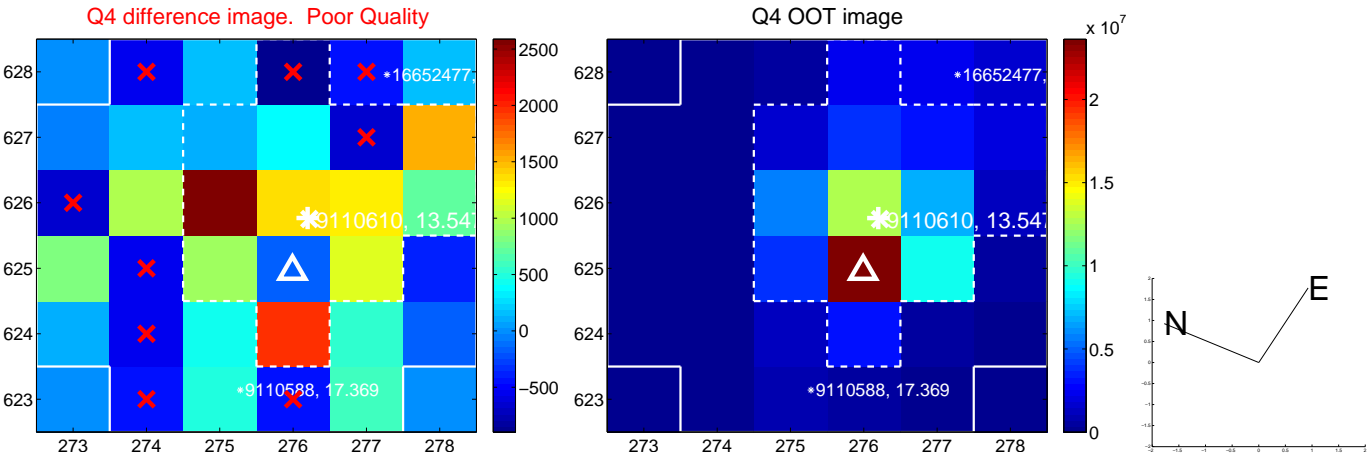
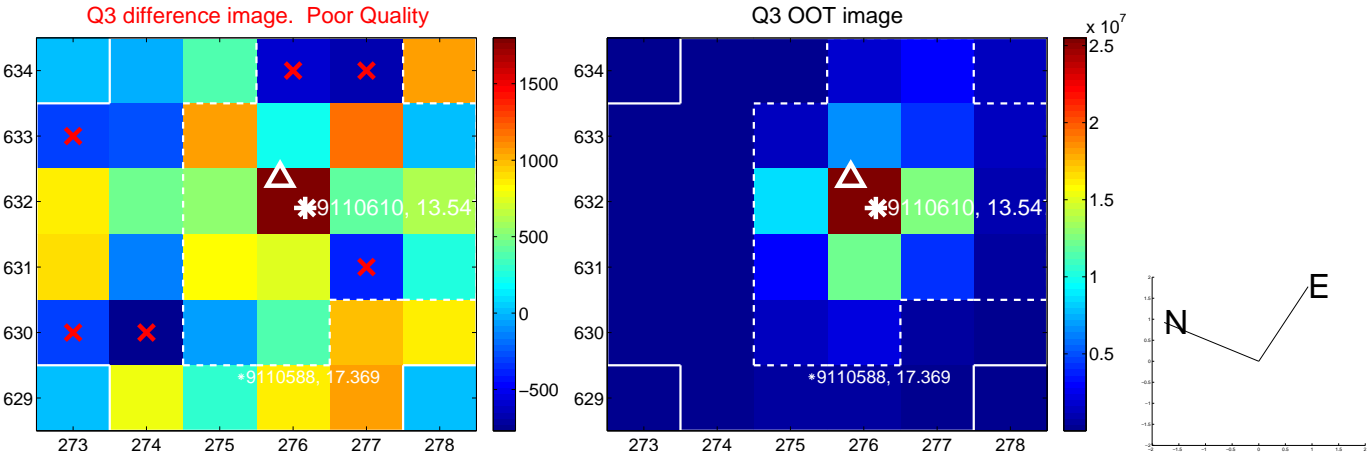
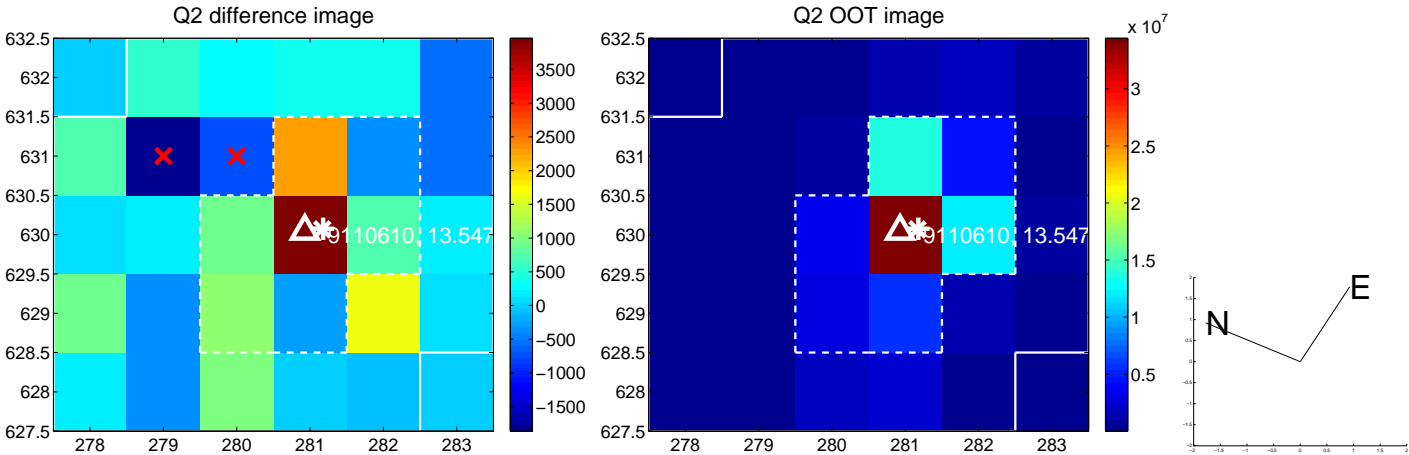
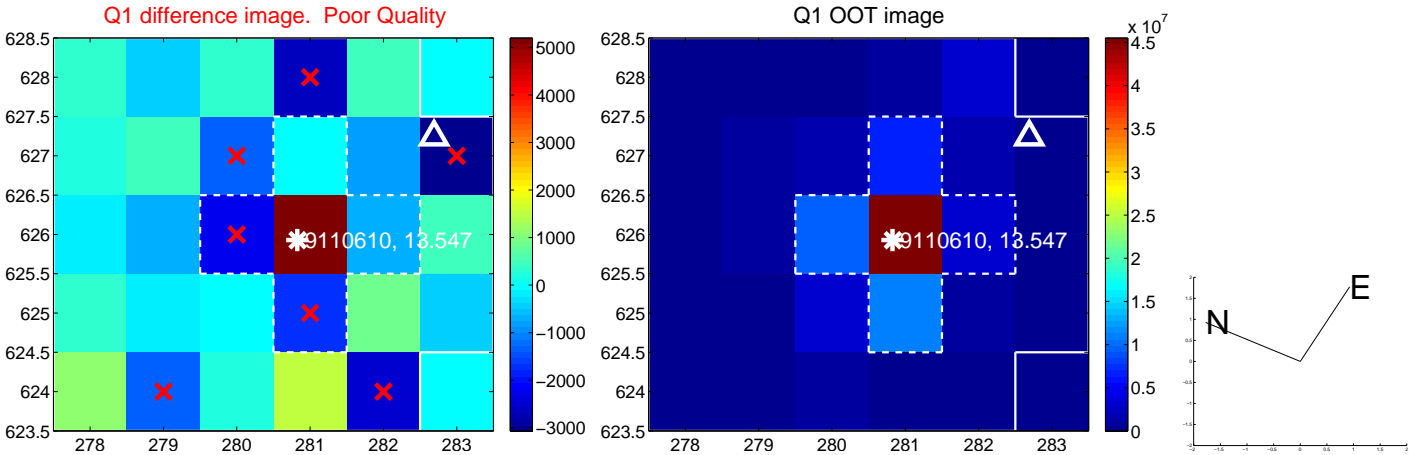
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.334 ± 0.574	0.58	0.005 ± 1.110	-0.334 ± 0.566
PRF-fit source offset from KIC position	0.288 ± 0.556	0.52	-0.000 ± 0.948	-0.288 ± 0.557
photometric centroid source offset	2.66 ± 1.70	1.56	1.23 ± 1.98	-2.36 ± 1.62

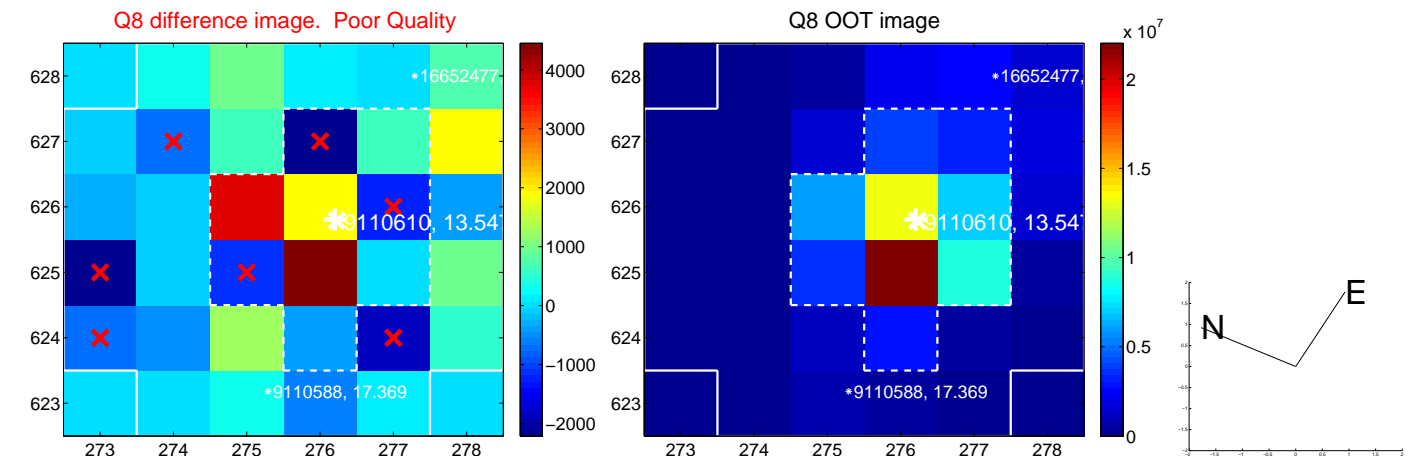
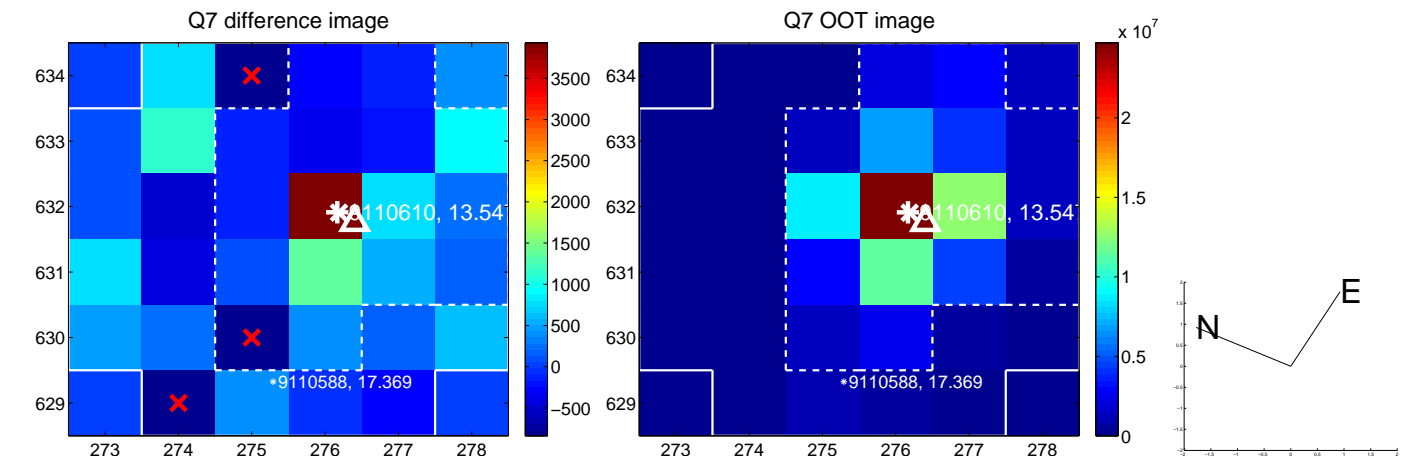
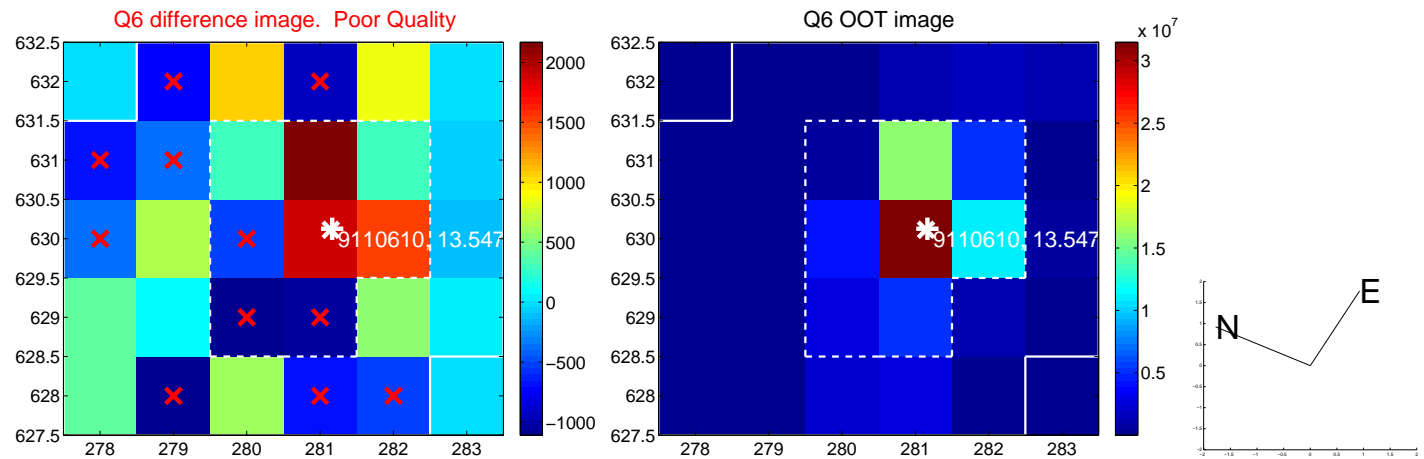
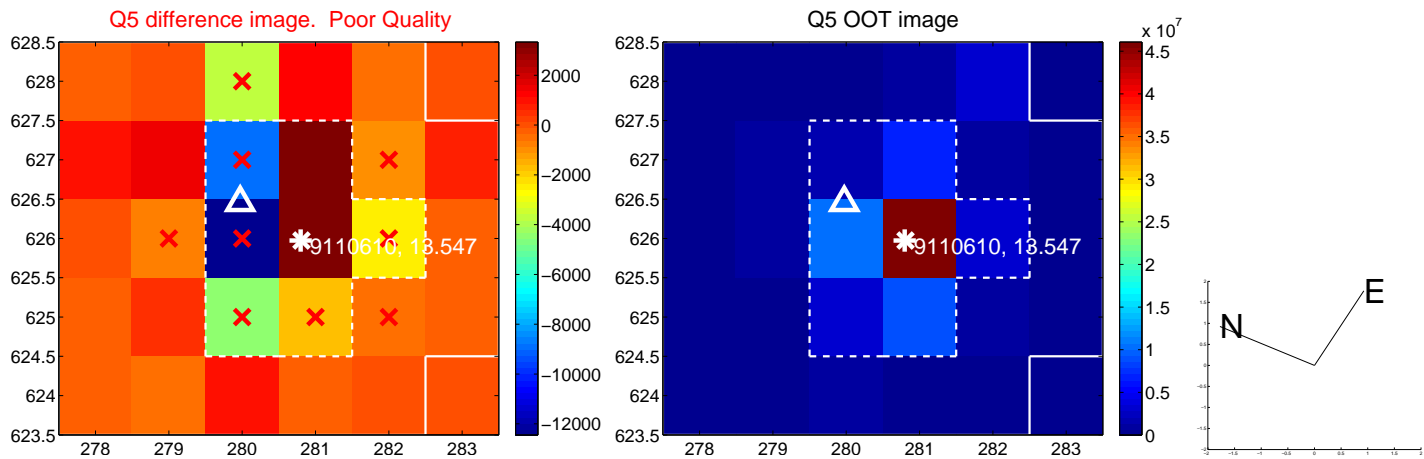


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

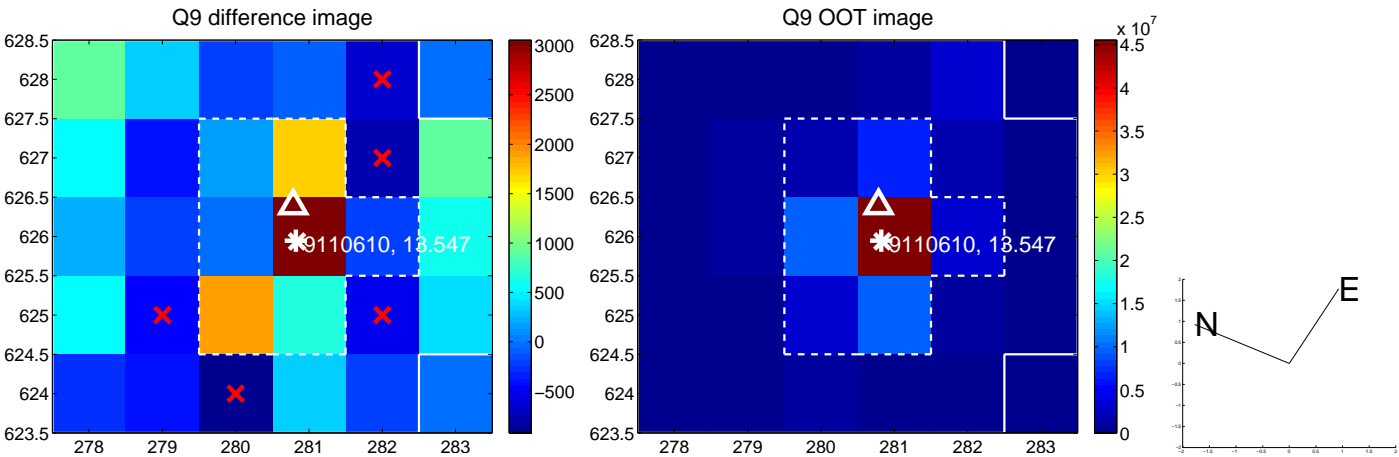
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



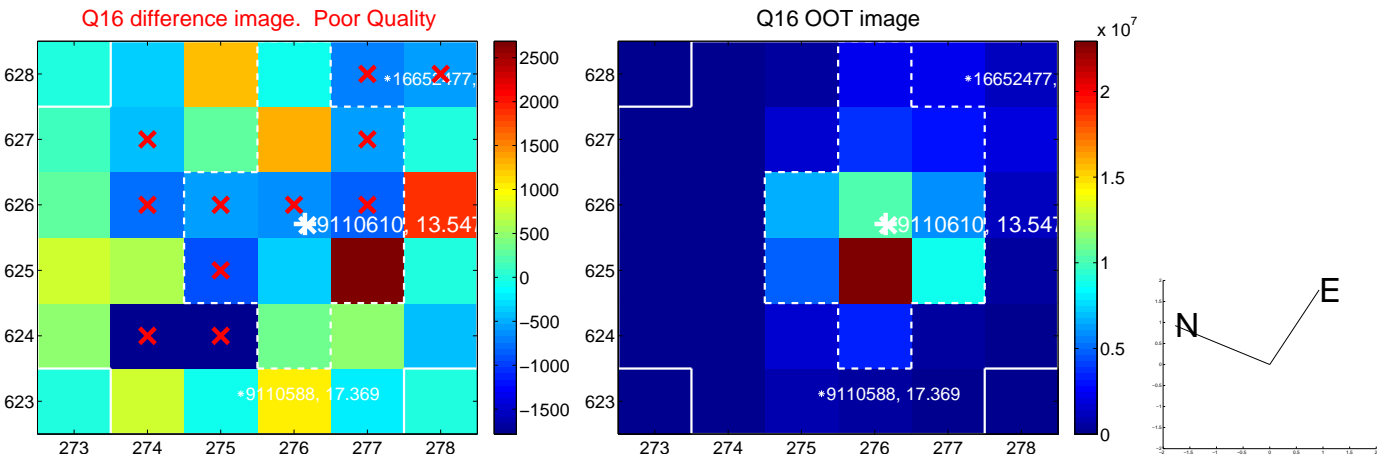
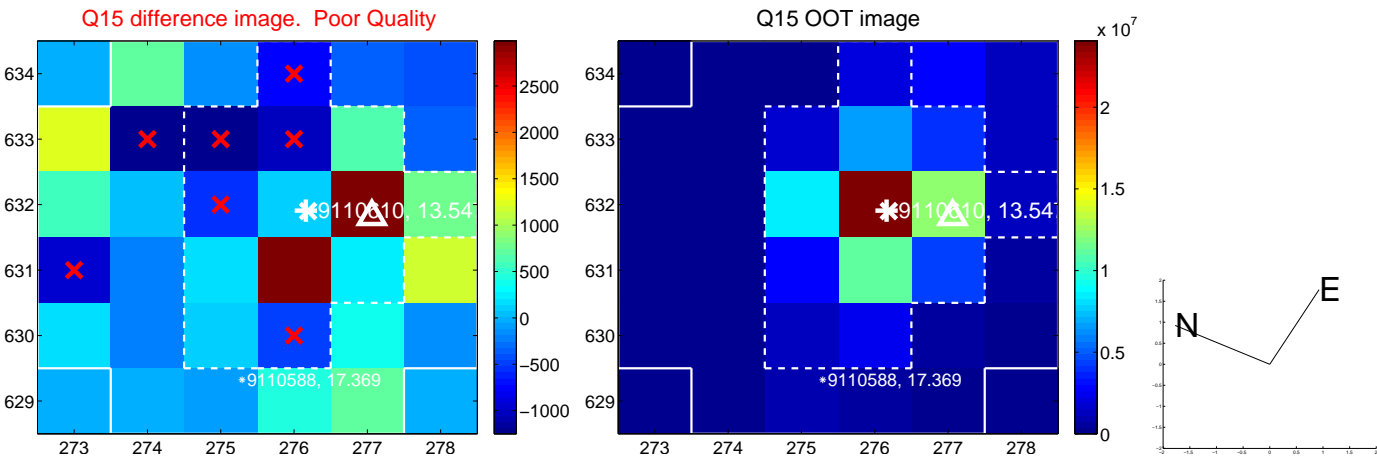
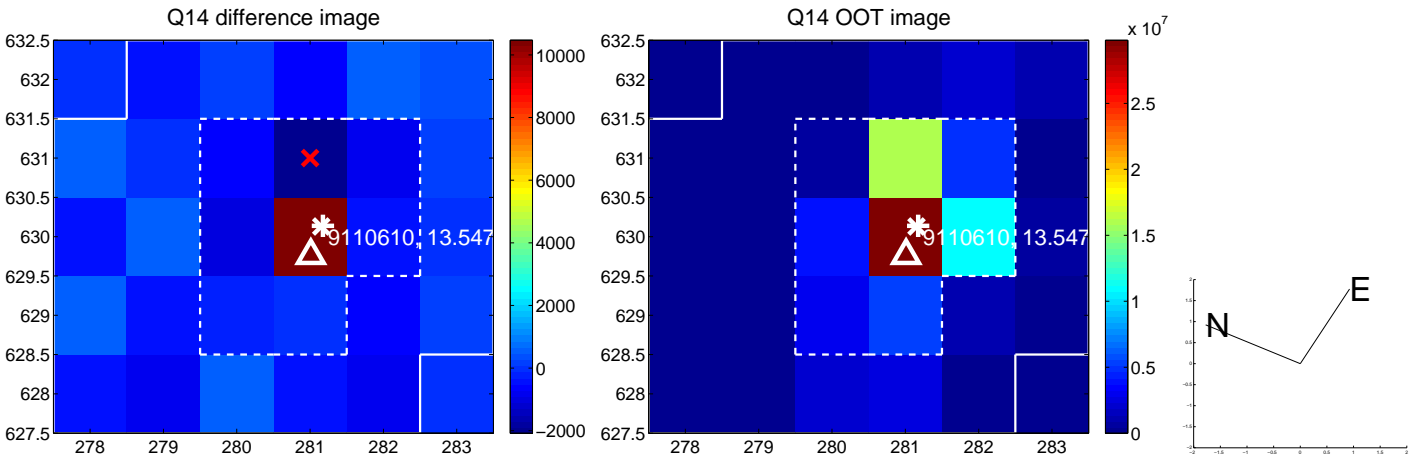
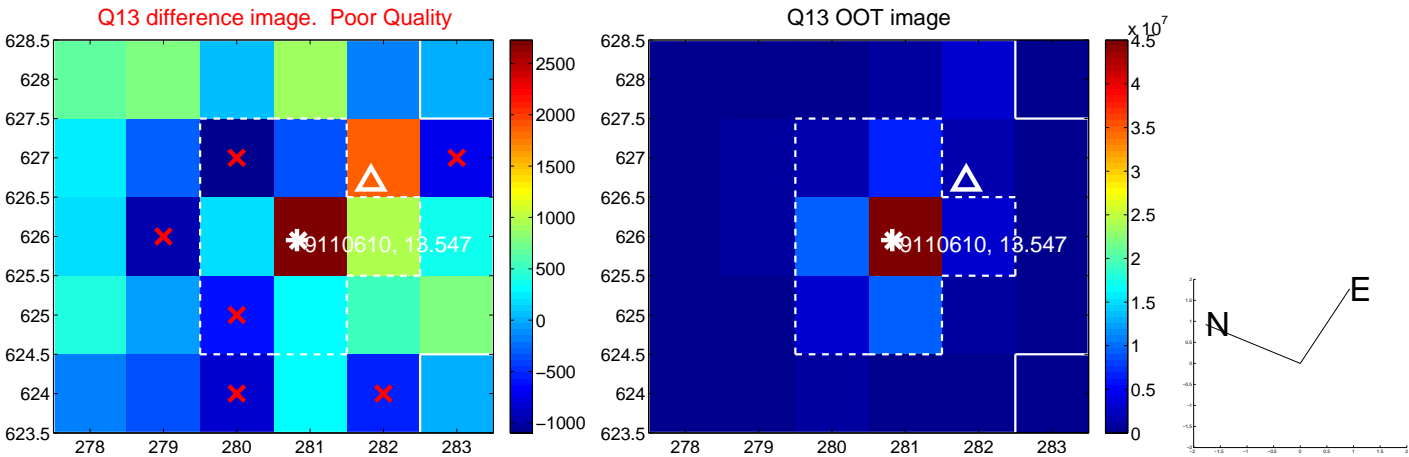
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



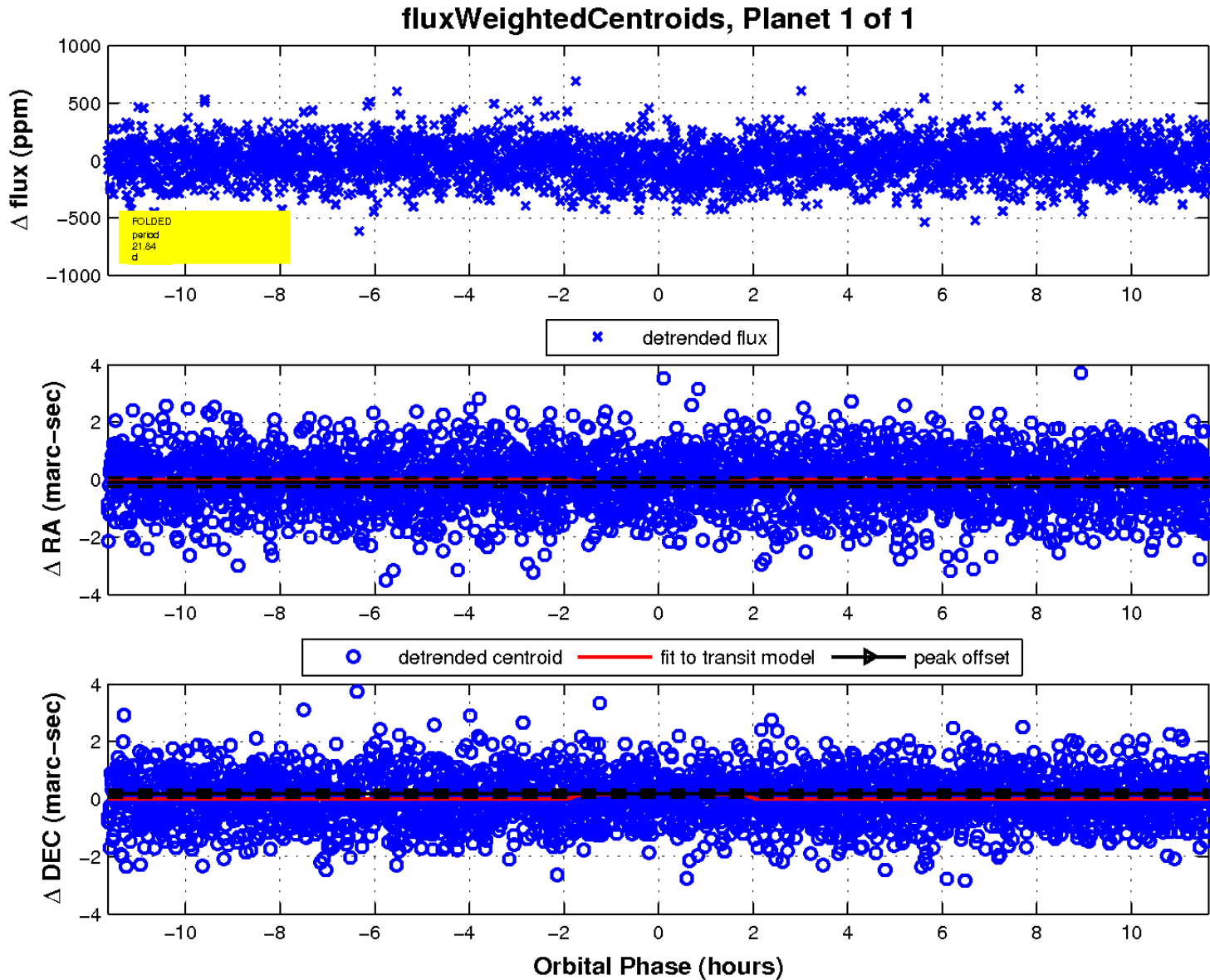
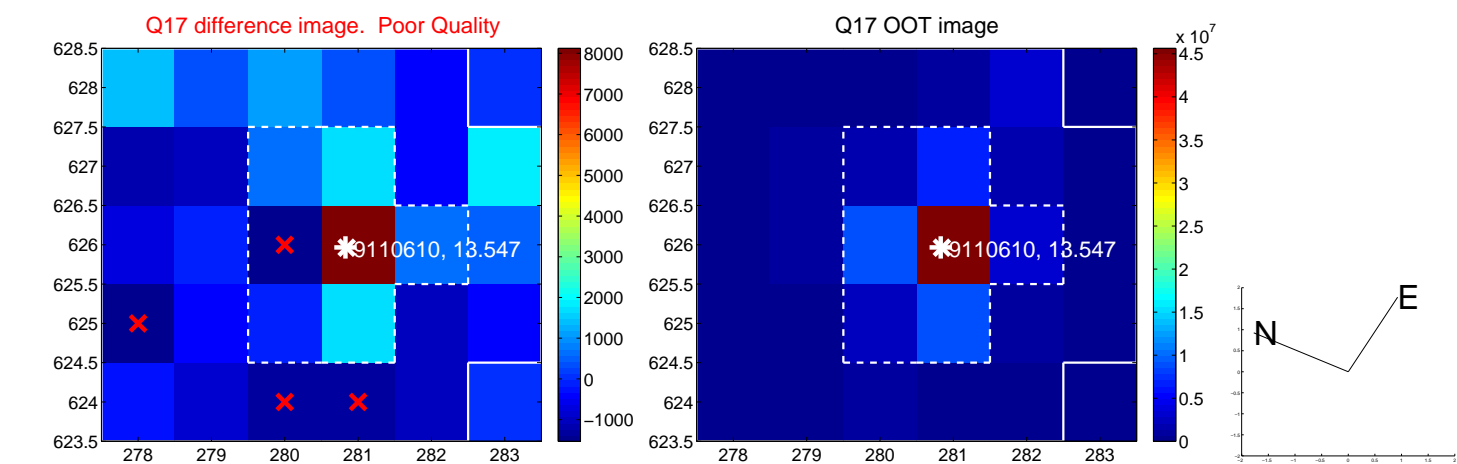
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

