

KIC 008868686

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})
008868686-01	OBS	7598.01	4.446955	133.937158	25.6	13.265	12.4	12.1	1.08	6137	0.62	539.32

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008868686-01	OBS	FP	0.00	1	0	1	1	LPP_DV—HALO_GHOST—EPHEM_MATCH

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.

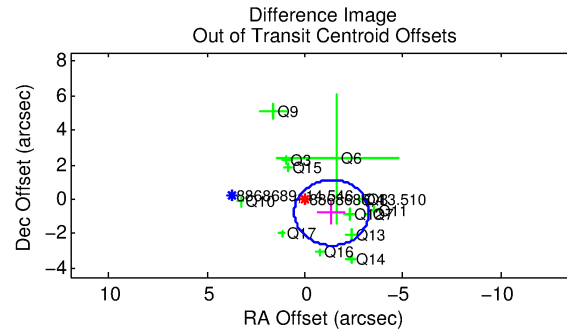
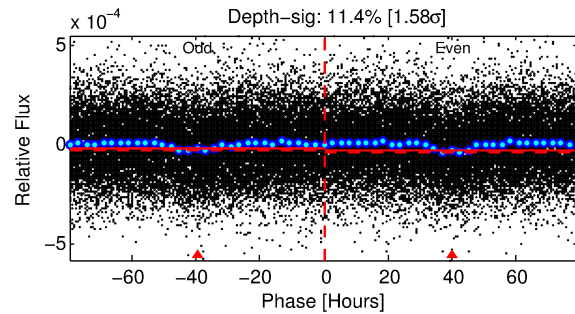
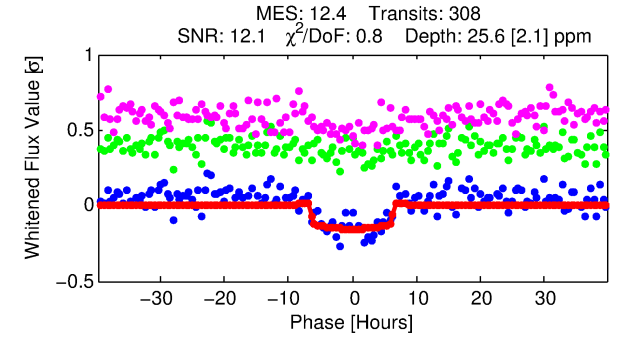
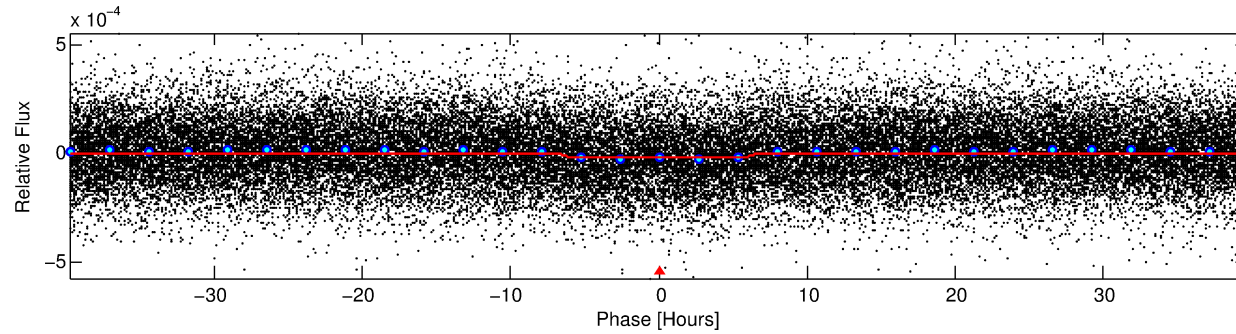
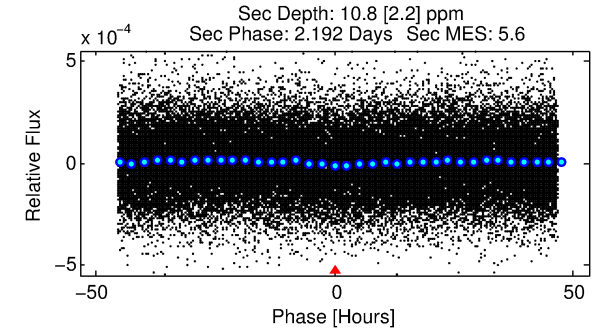
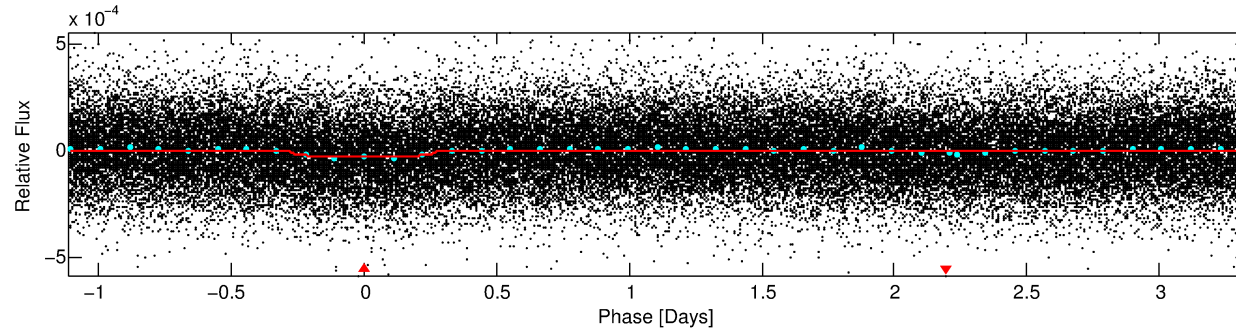
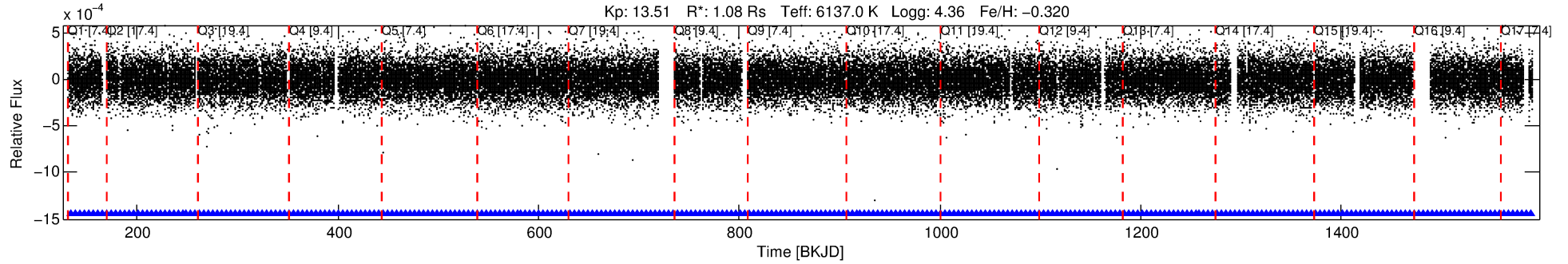
Ephemeris Match Information For 008868686-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	ΔRow	ΔCol	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
008868686-01	8868686	7102.01	8868657	1:1	54.5	2	14	15.99	13.51	7.04	Direct-PRF	1	4.11	3.45

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 8868686 Candidate: 1 of 1 Period: 4.447 d
KOI: K07598.01 Corr: 0.986



DV Fit Results:

Period = 4.44695 [0.00007] d
Epoch = 133.9372 [0.0108] BKJD
Rp/R* = 0.0053 [0.0012]
a/R* = 1.61 [1.22]
b = 0.86 [0.37]
Seff = 539.32 [203.96]
Teq = 1229 [116] K
Rp = 0.62 [0.23] Re
a = 0.0522 [0.0129] AU
Ag = 42.14 [25.92] [1.59σ]
Teffp = 4840 [629] K [5.65σ]

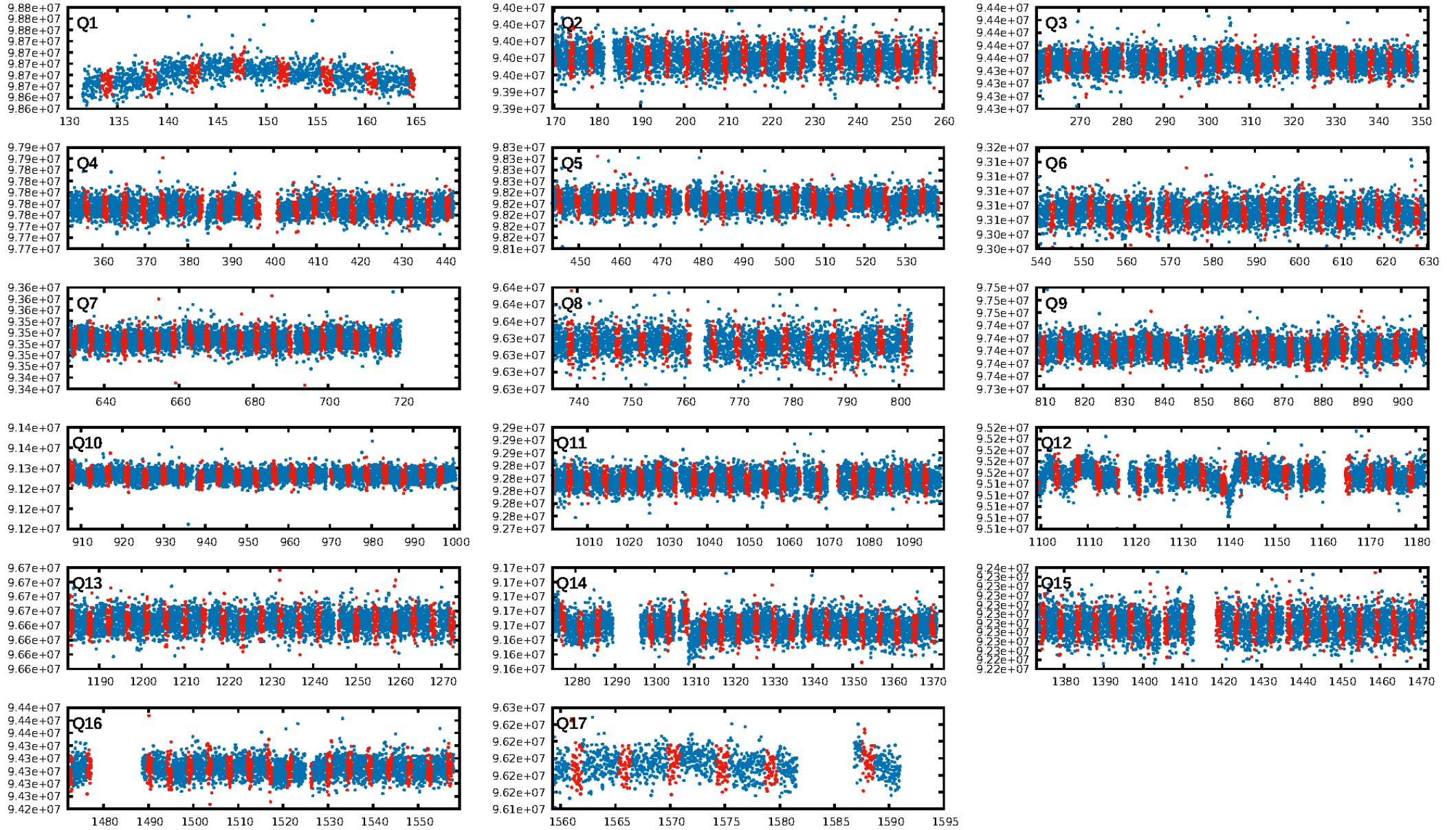
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.43e-31
RollingBand-fgt: 1.00 [294/294]
GhostDiagnostic-chr: 0.009899
Centroid-sig: 0.0%
Centroid-so: 3.167 arcsec [3.33σ]
OotOffset-rm: 1.555 arcsec [2.46σ]
KicOffset-rm: 1.657 arcsec [2.50σ]
OotOffset-st: 3/4/4/3 [14]
KicOffset-st: 3/4/4/3 [14]
DiffImageQuality-fgm: 0.50 [7/14]
DiffImageOverlap-fno: 1.00 [17/17]

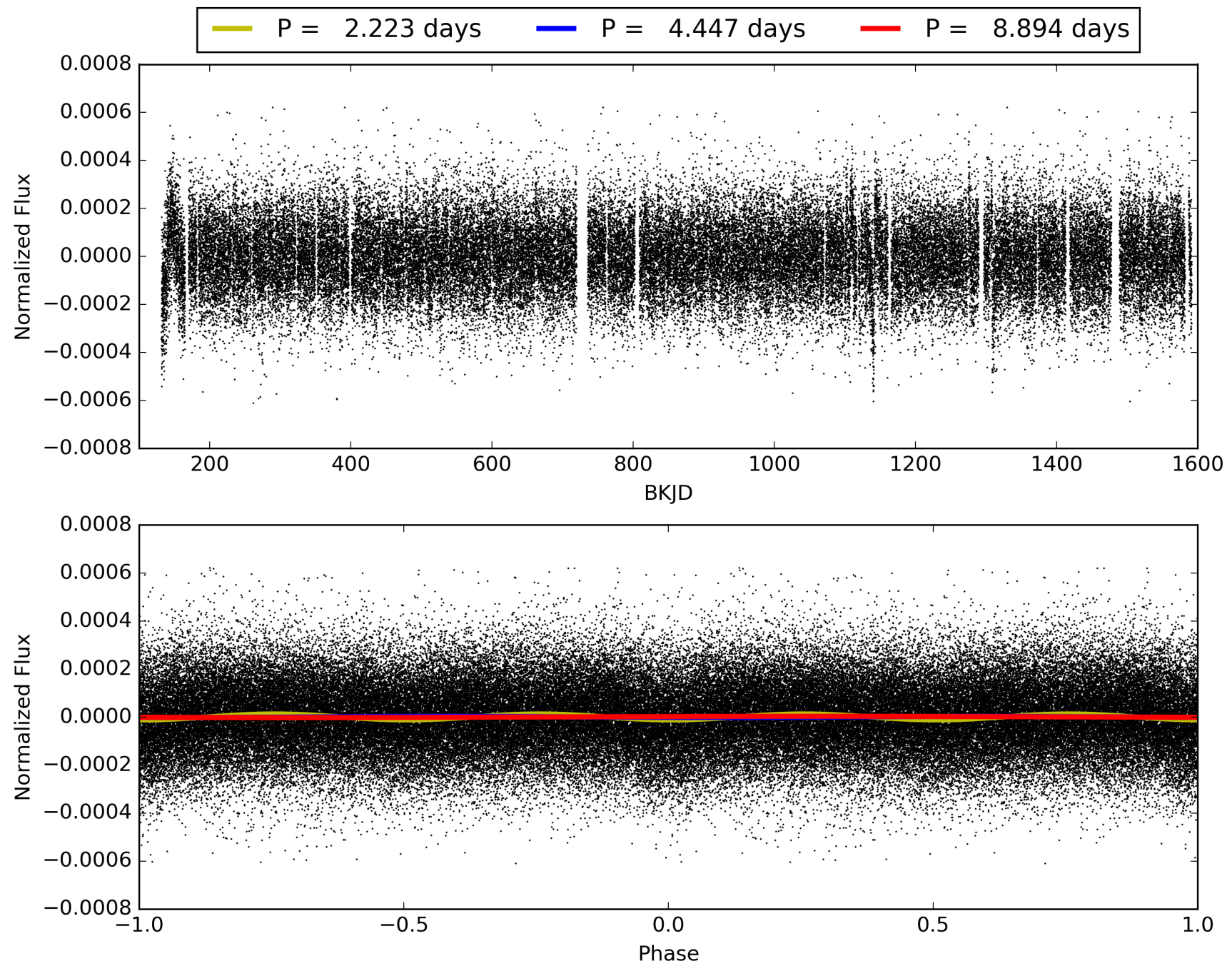
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:25:27 Z

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

TCE 008868686-01, PDC Light Curves

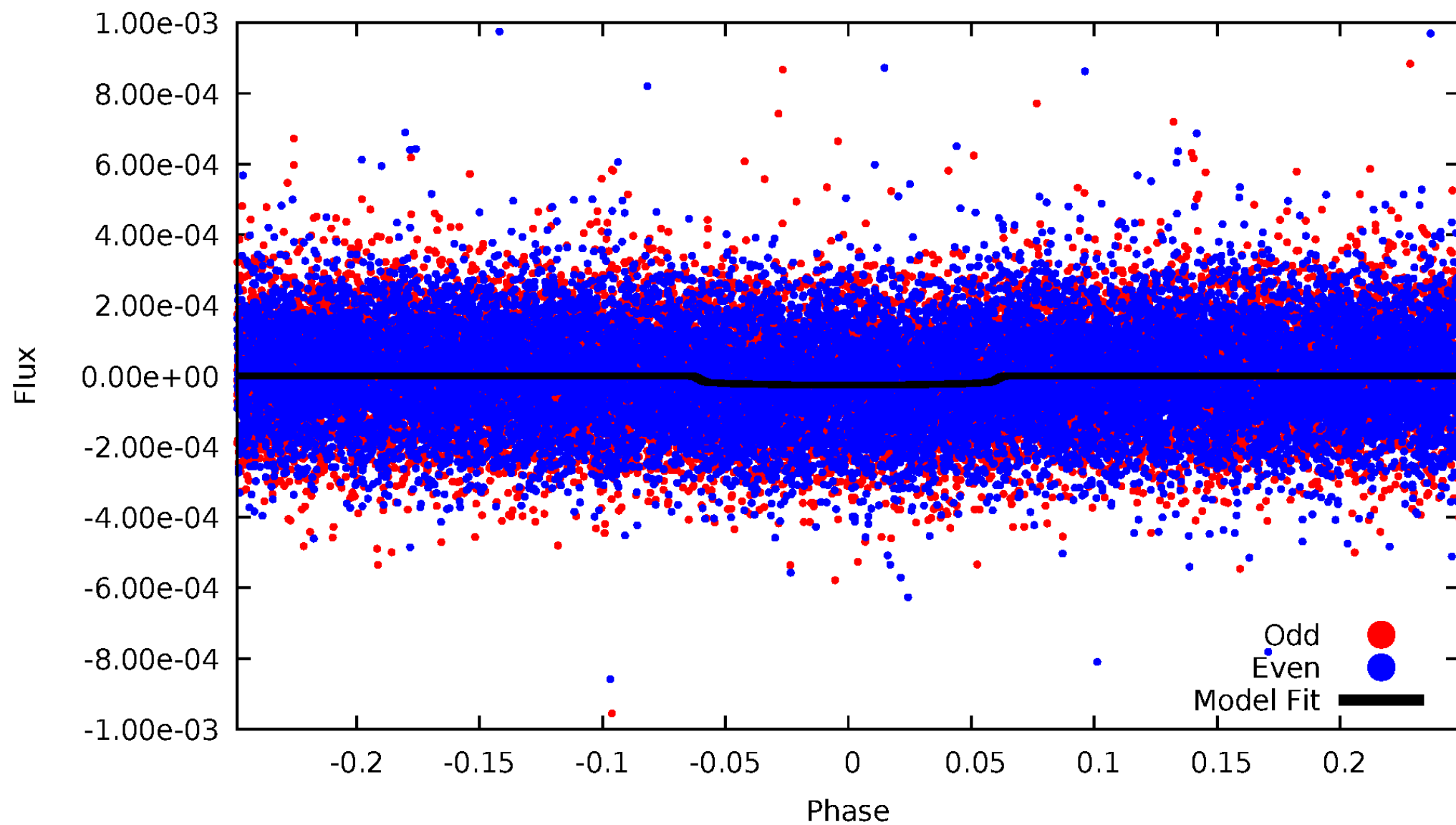


TCE 008868686-01



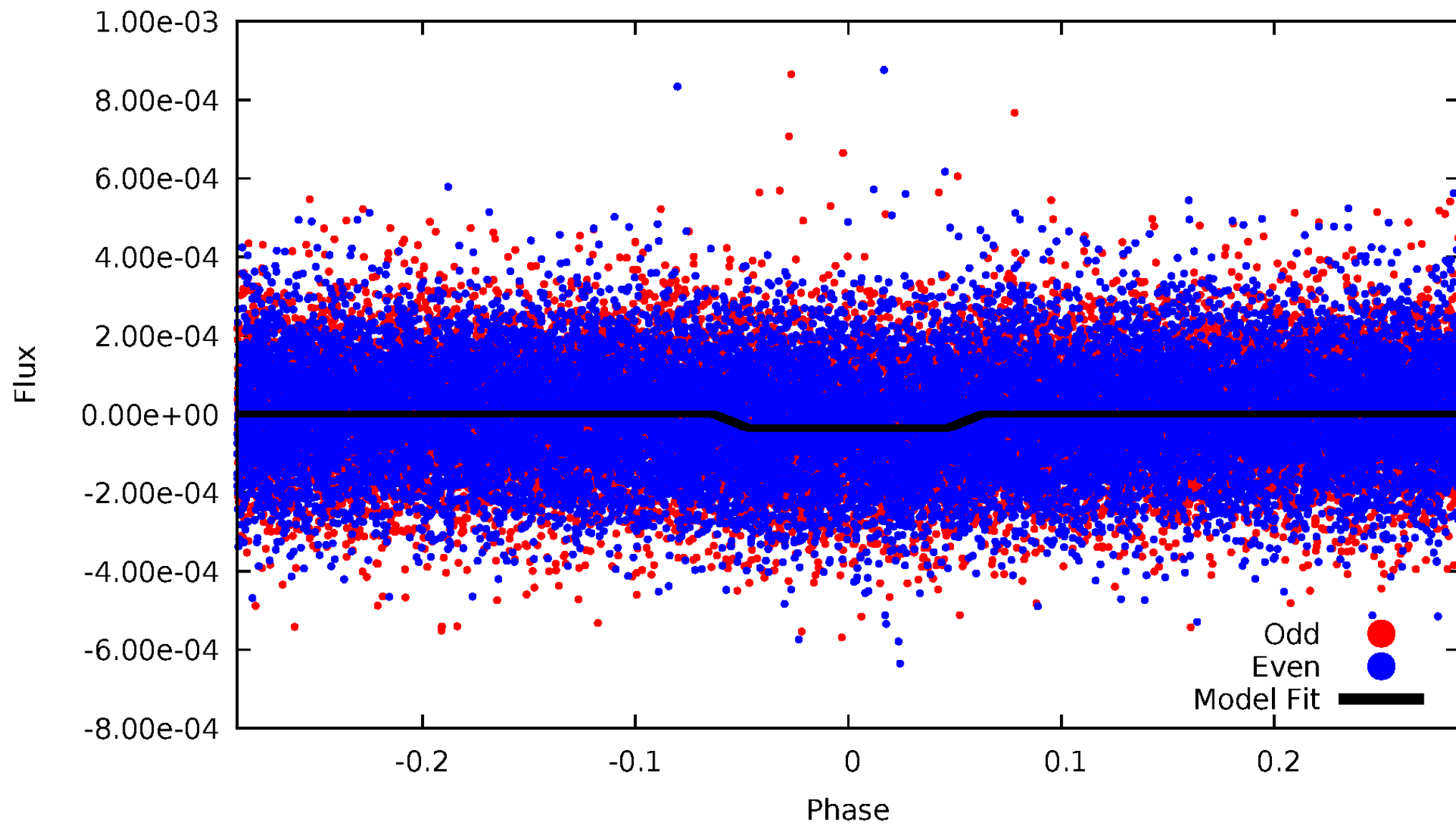
DV Odd/Even

TCE 008868686-01



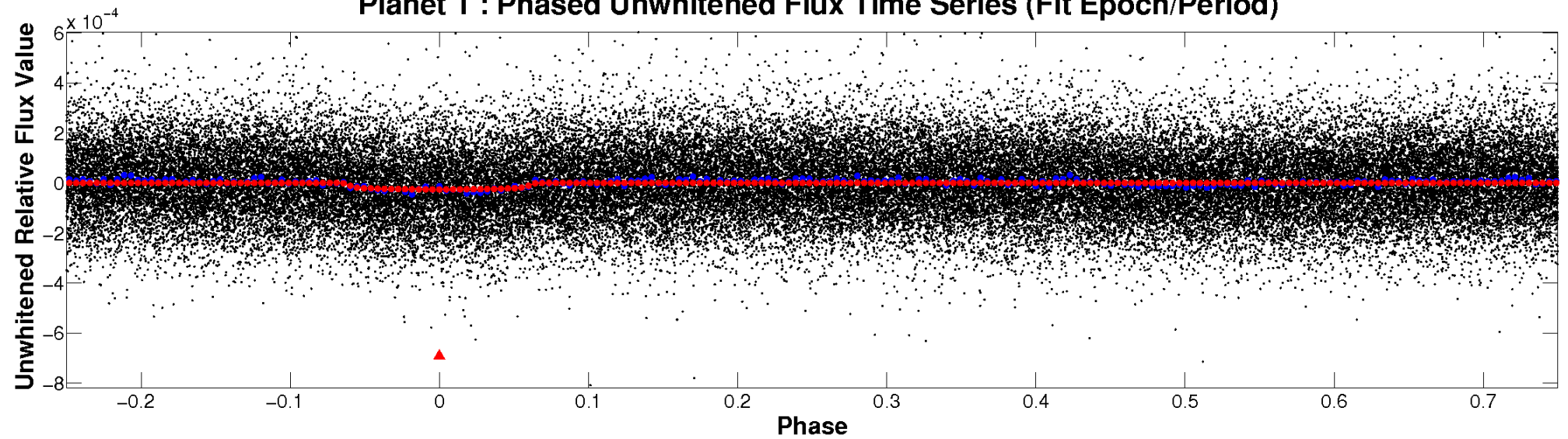
ALT Odd/Even

TCE 008868686-01

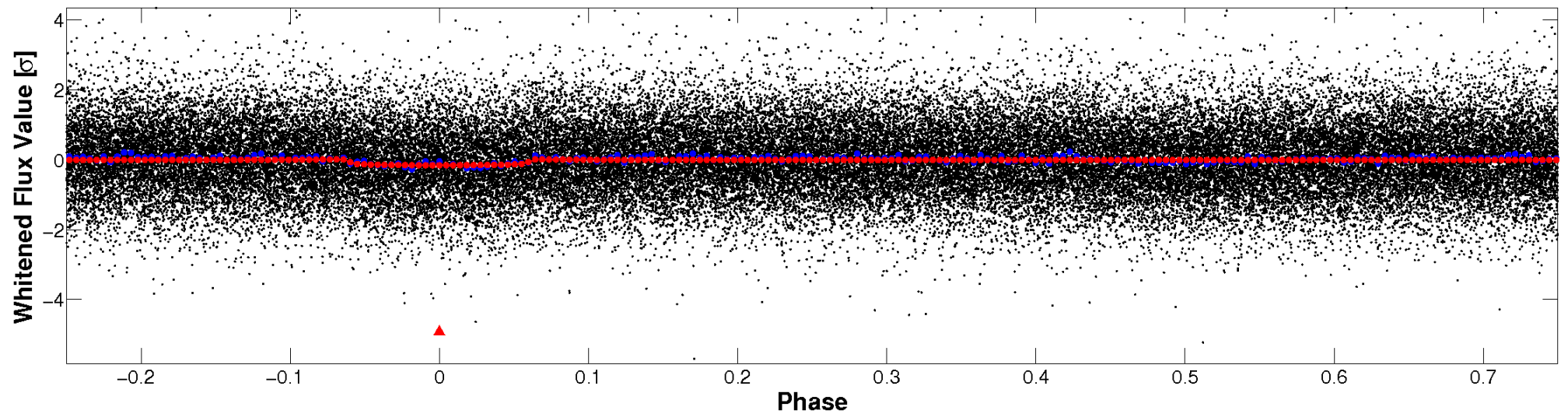


Non-Whitened Vs. Whitened Light Curve

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

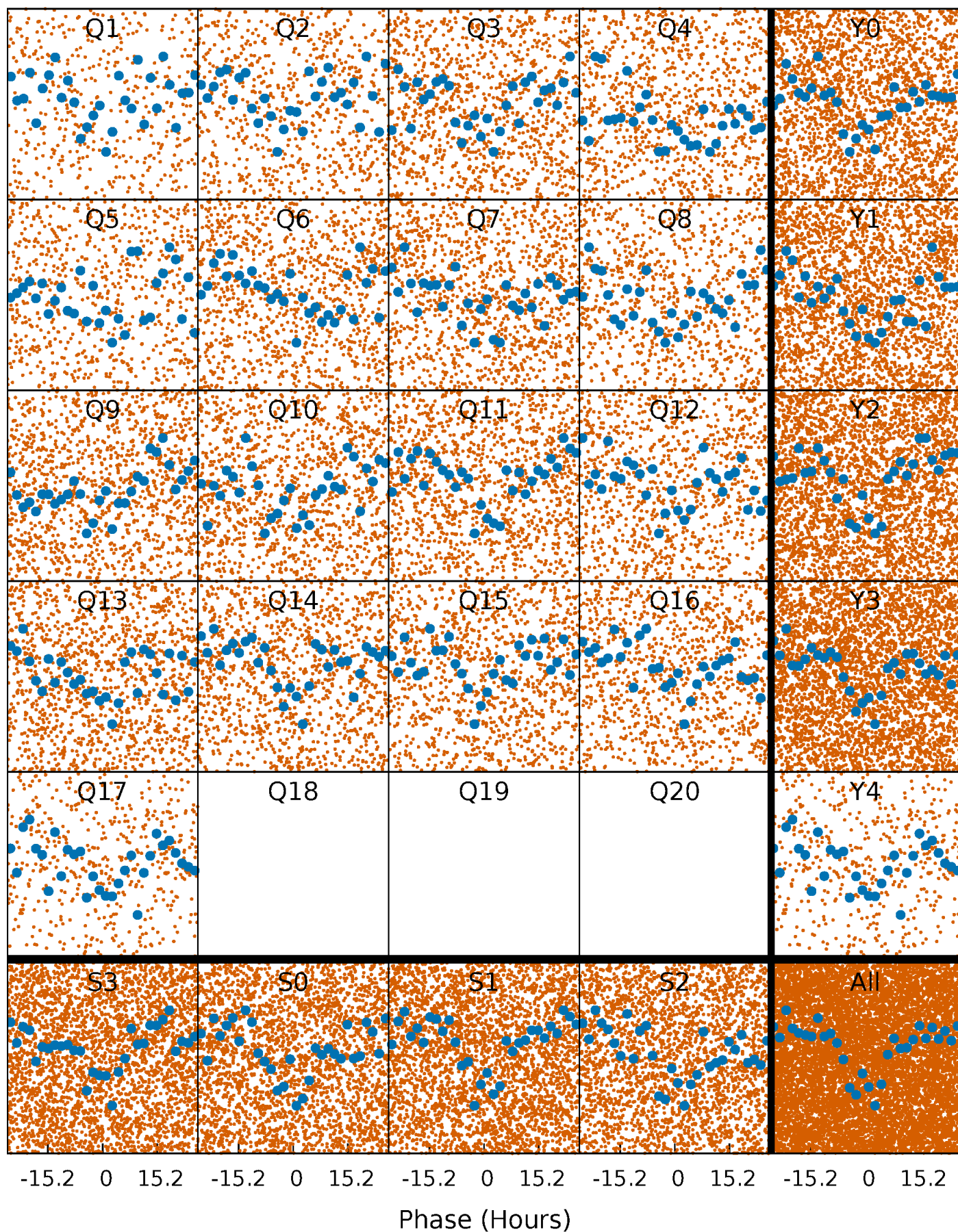


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



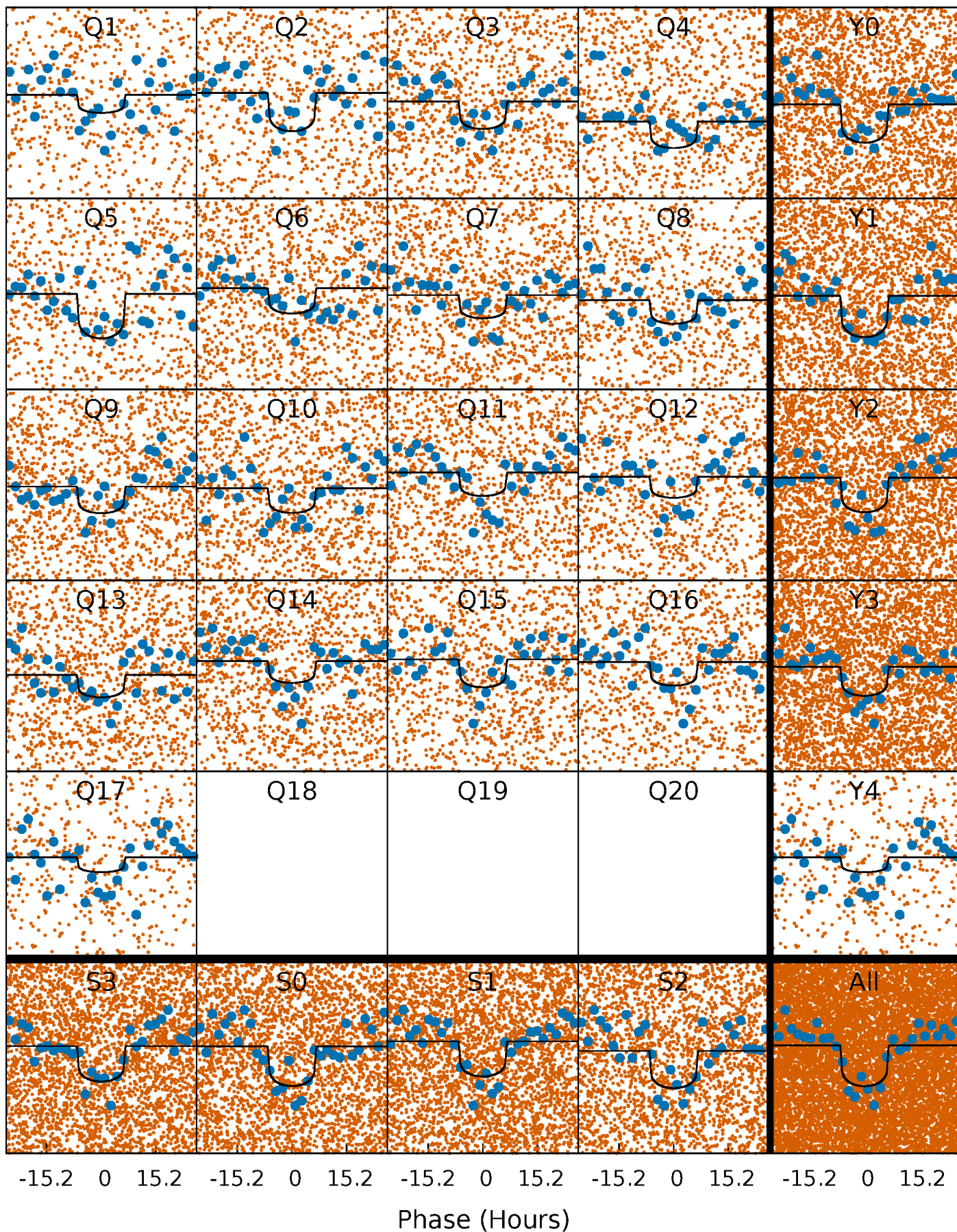
PDC Quarter-Phased Transit Curves

TCE 008868686-01 P= 4.446955 Days $T_0=133.937158$ (BKJD)



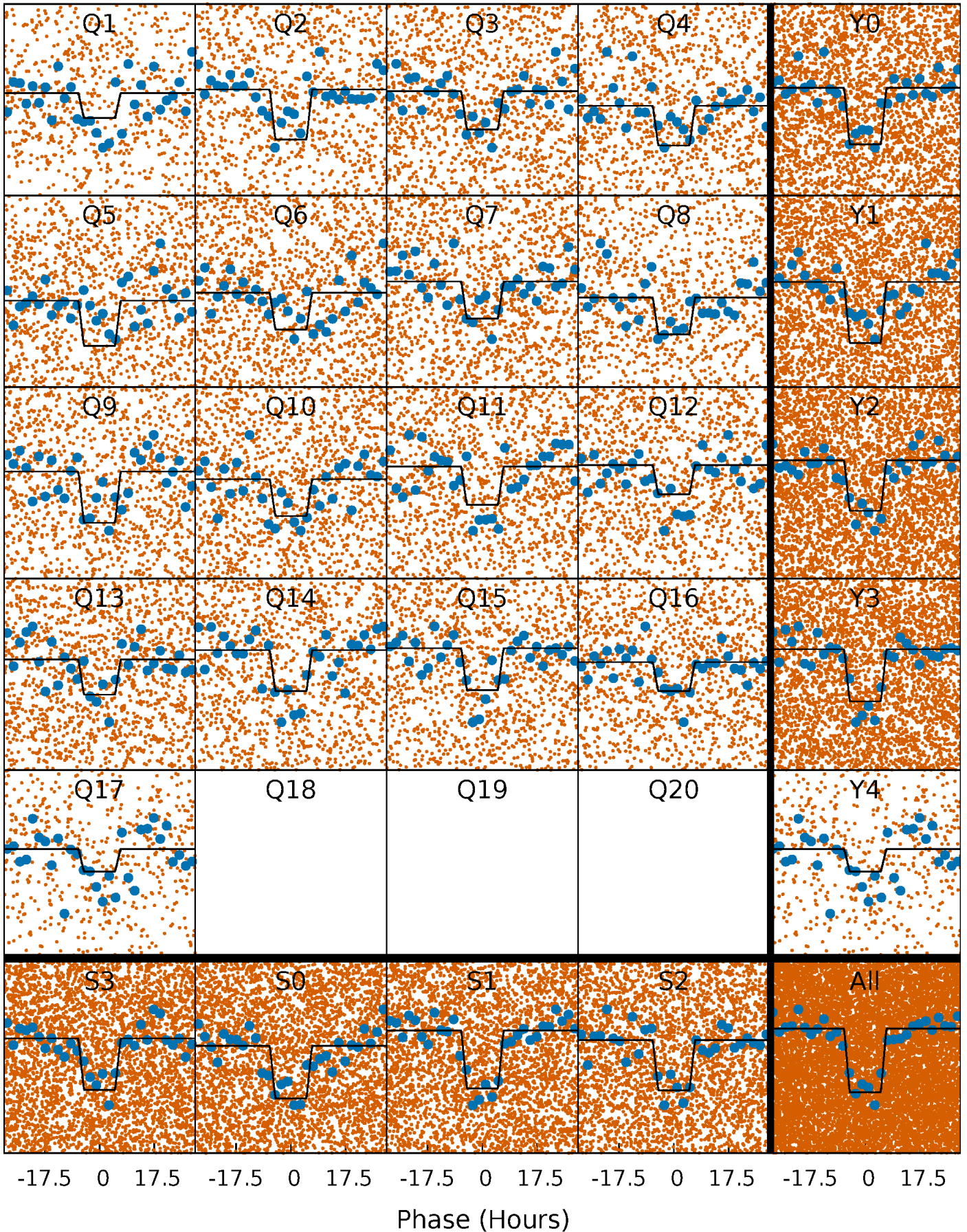
DV Quarter-Phased Transit Curves

TCE 008868686-01 P= 4.446955 Days $T_0=133.937158$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

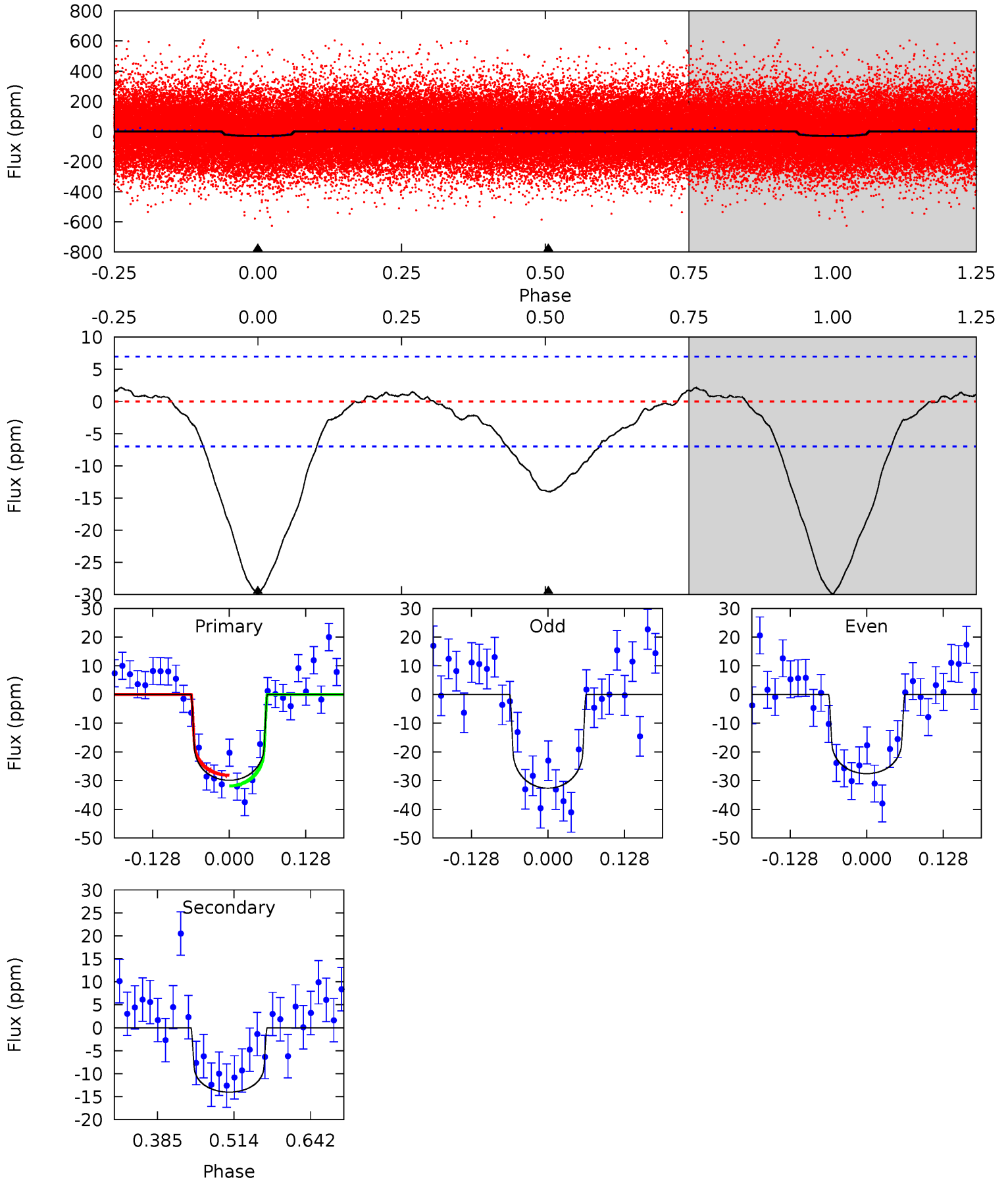
TCE 008868686-01 P= 4.446992 Days $T_0=133.925941$ (BKJD)



DV Model-Shift Uniqueness Test

008868686-01, P = 4.446955 Days, E = 129.490203 Days

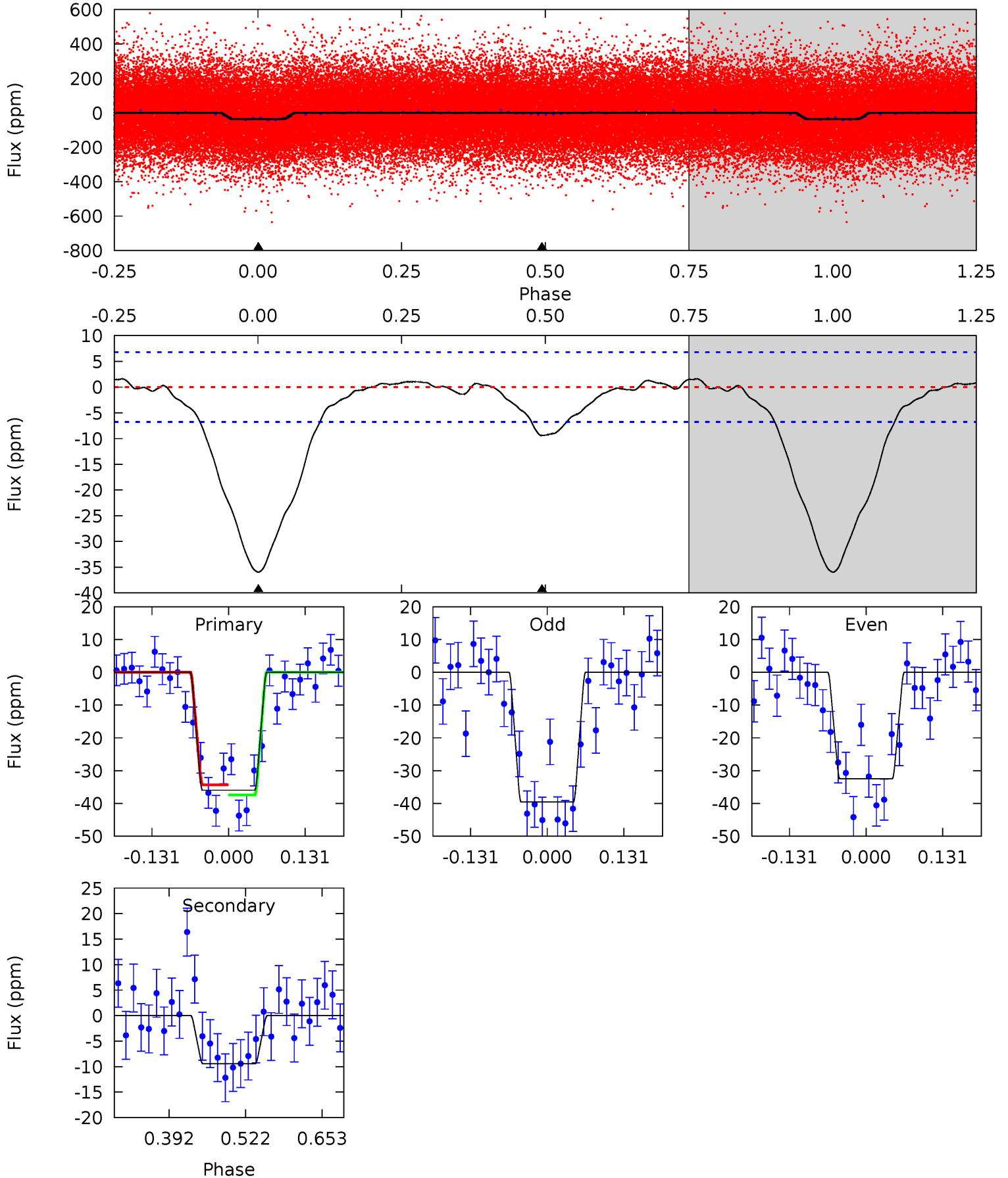
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	9.07	0	0	4.51	1.52	0.98	19.3	19.3	9.07	9.07	1.64	1.15	0.07	1.20



Alt Model-Shift Uniqueness Test

008868686-01, P = 4.446992 Days, E = 129.478949 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.0	6.28	0	0	4.51	1.51	0.71	24.0	24.0	6.28	6.28	2.34	0.98	0.04	1.04



Stellar Parameters For KIC 008868686

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6137^{+165}_{-202}	$4.357^{+0.128}_{-0.192}$	$-0.320^{+0.300}_{-0.300}$	$1.076^{+0.318}_{-0.171}$	$0.960^{+0.140}_{-0.102}$	$1.086^{+0.645}_{-0.544}$
	+3%/-3%	+3%/-4%	+94%/-94%	+30%/-16%	+15%/-11%	+59%/-50%
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 008868686-01 / KOI 7598.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-14 ± 2	$0.63^{+0.17}_{-0.15}$	1719^{+131}_{-110}	5160^{+683}_{-462}	52^{+39}_{-20}
Alt.	-9 ± 2	$0.72^{+0.19}_{-0.15}$	1720^{+127}_{-93}	4541^{+436}_{-351}	27^{+18}_{-10}

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

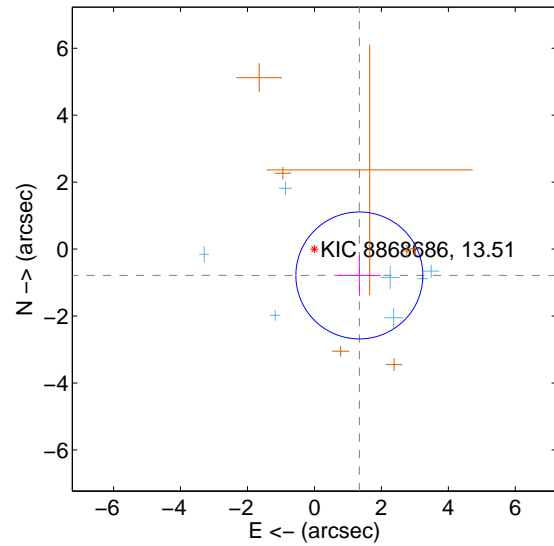
Supplemental centroid analysis for 008868686-01. Kepler magnitude: 13.51. Transit SNR 12.06

There are 7 quarters with good PRF difference image offsets

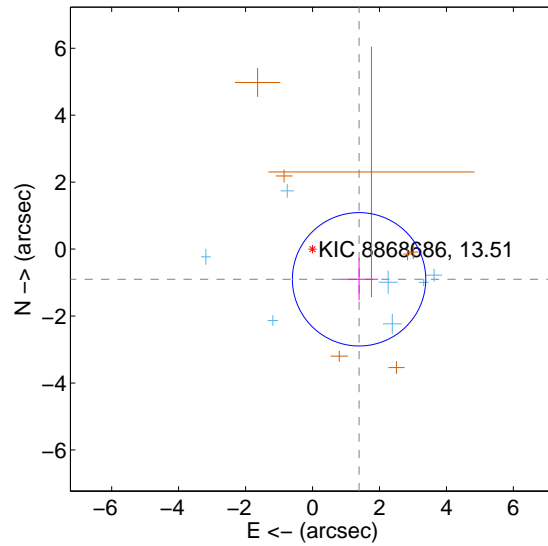
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.555 ± 0.632	2.46	-1.341 ± 0.638	-0.787 ± 0.612
PRF-fit source offset from KIC position	1.657 ± 0.664	2.50	-1.390 ± 0.563	-0.902 ± 0.627
photometric centroid source offset	3.17 ± 0.95	3.33	-2.98 ± 0.96	-1.08 ± 0.93

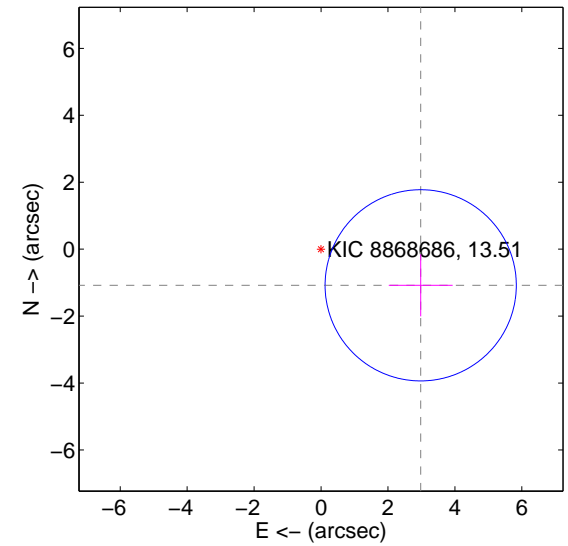
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

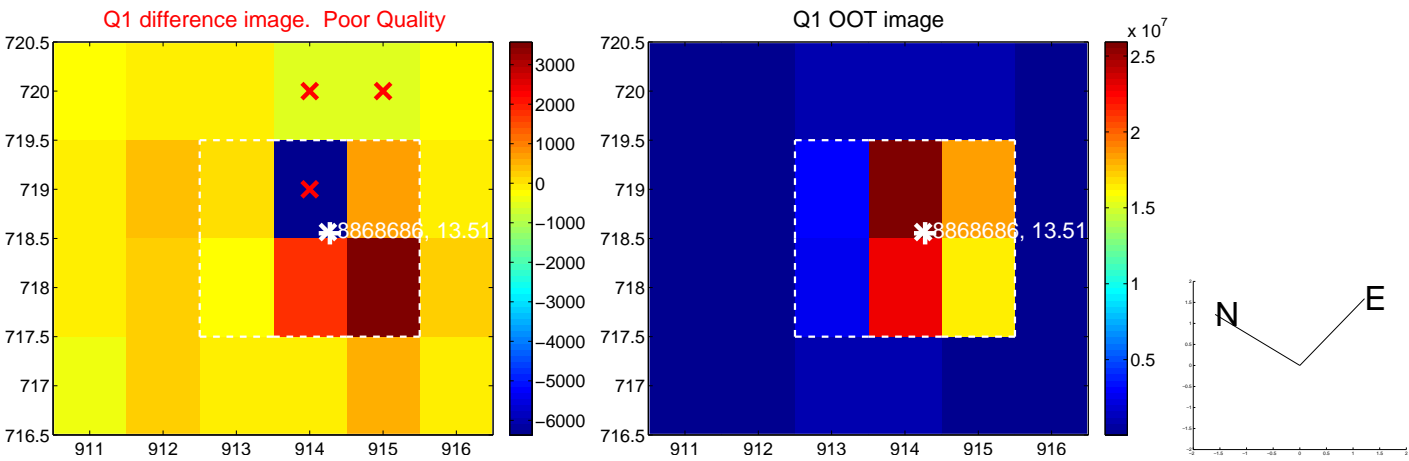


offset from photometric centroids

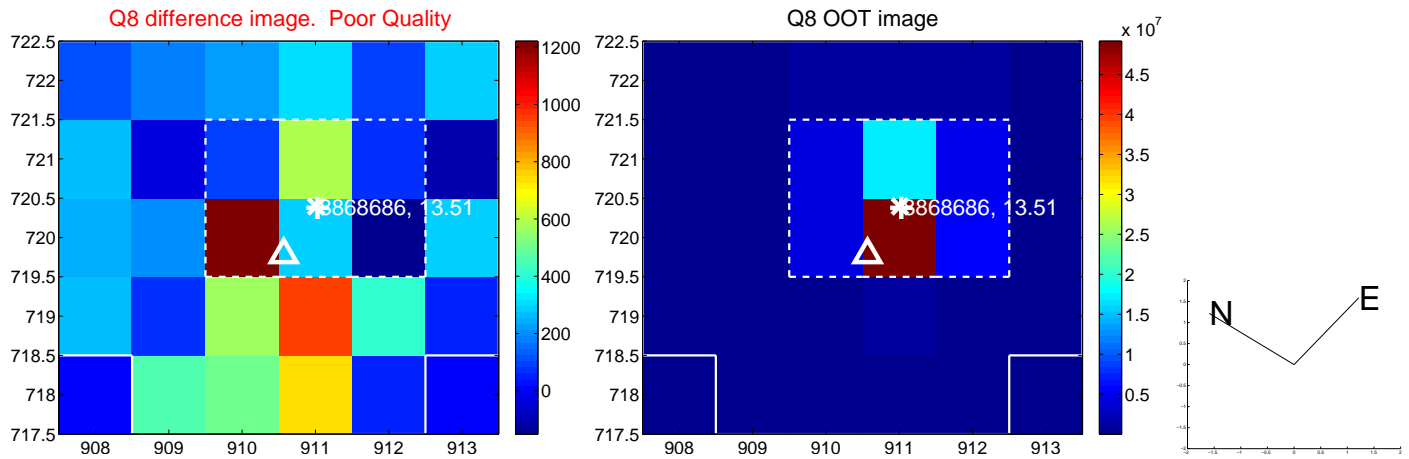
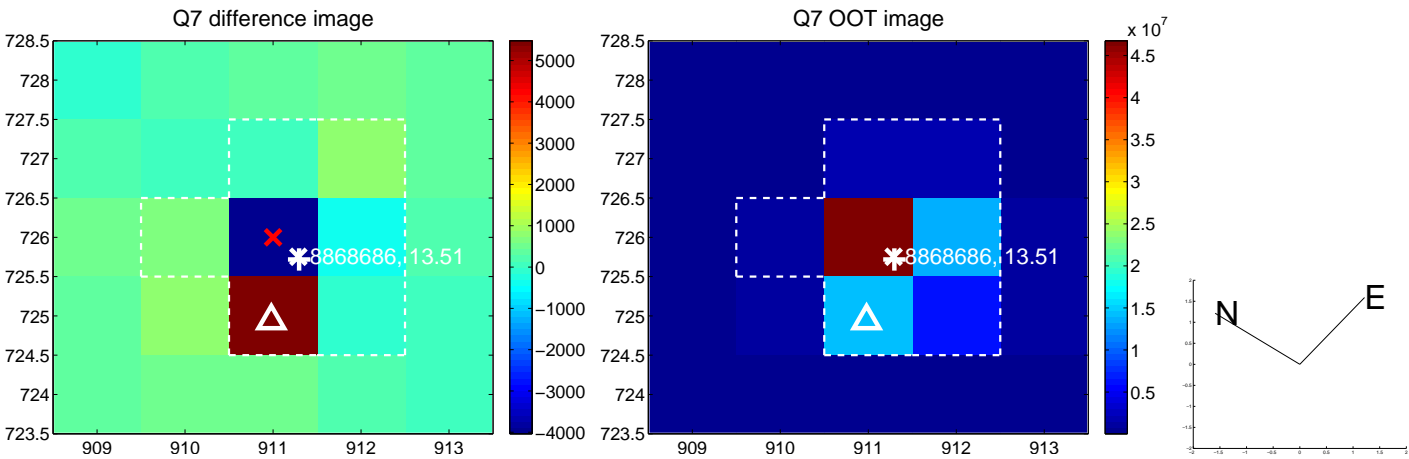
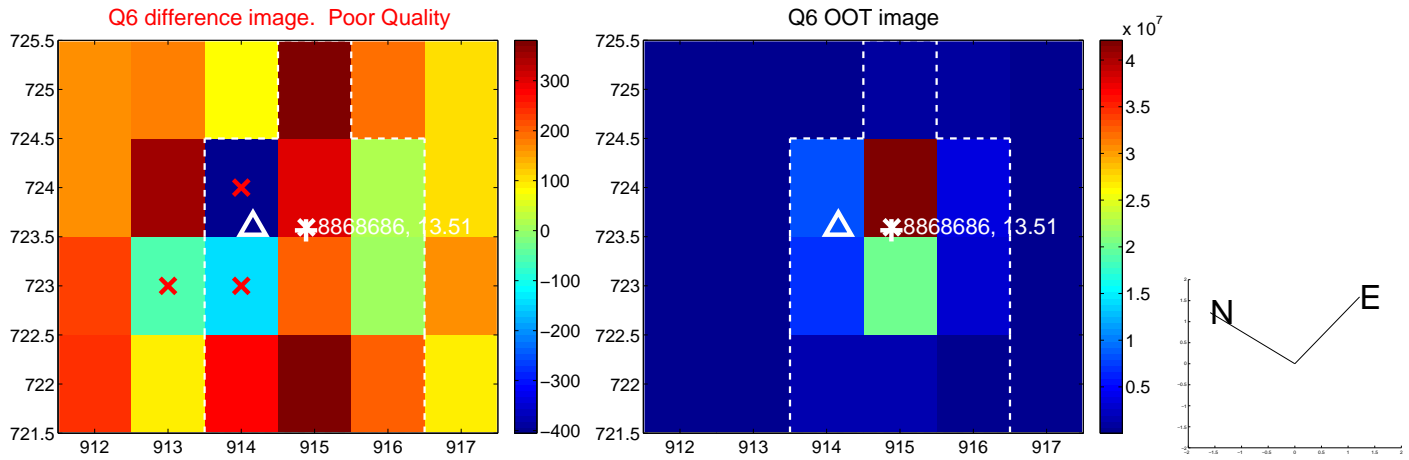
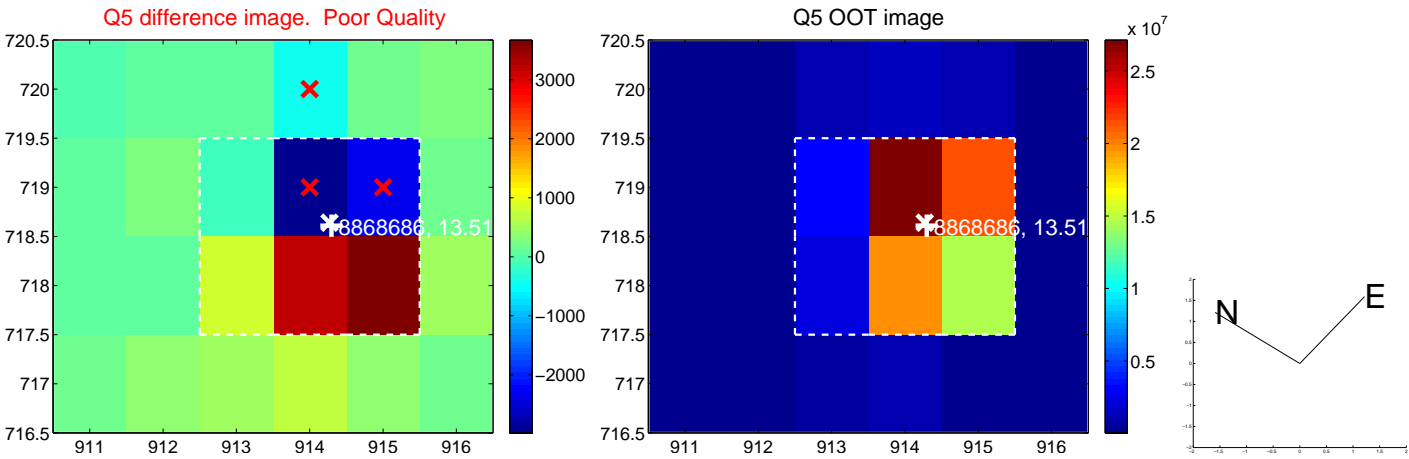


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

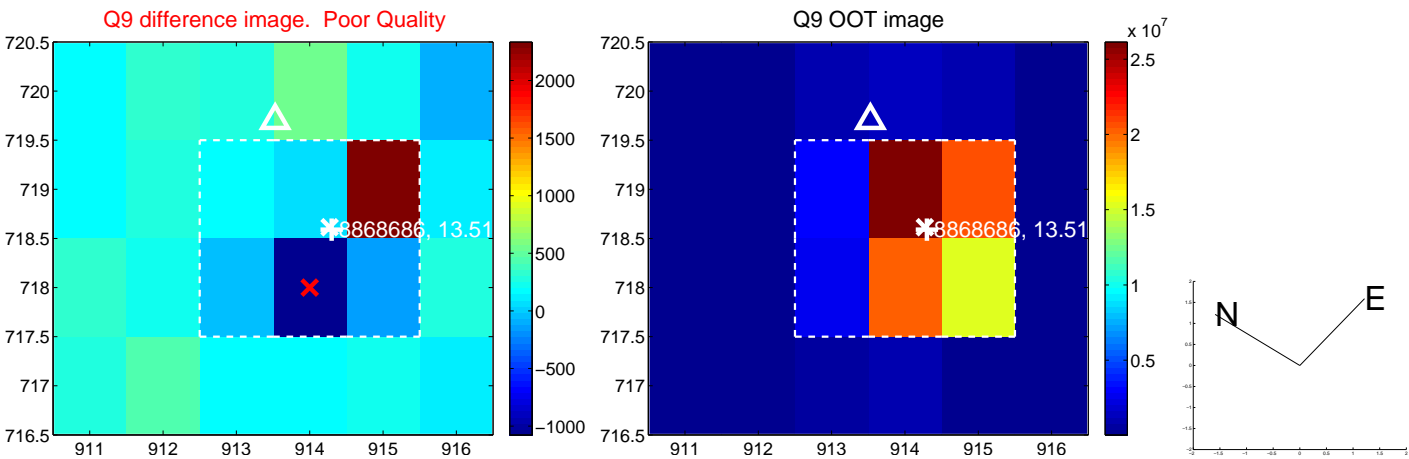
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



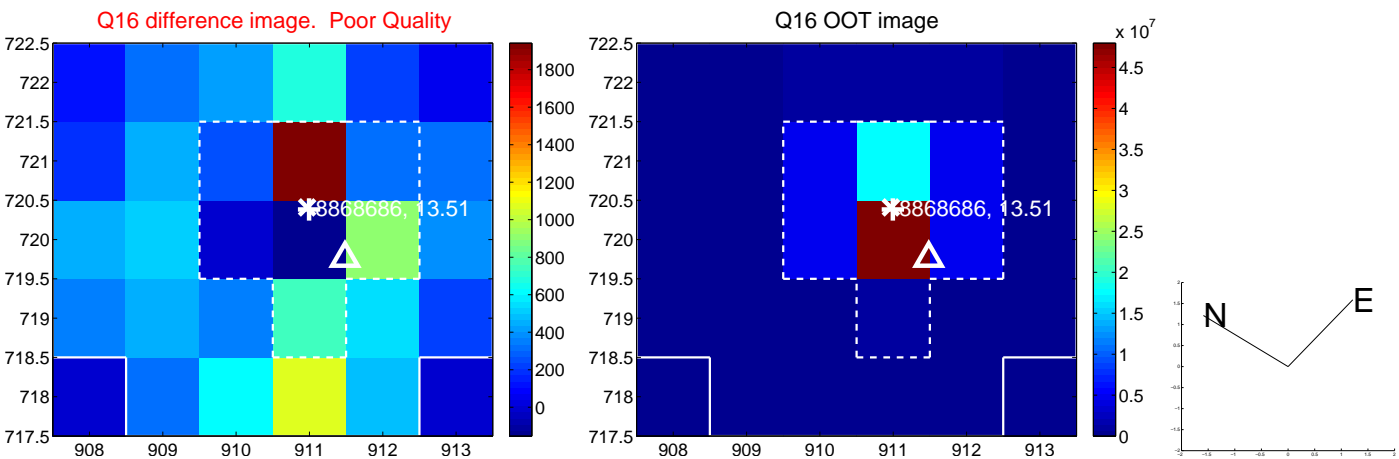
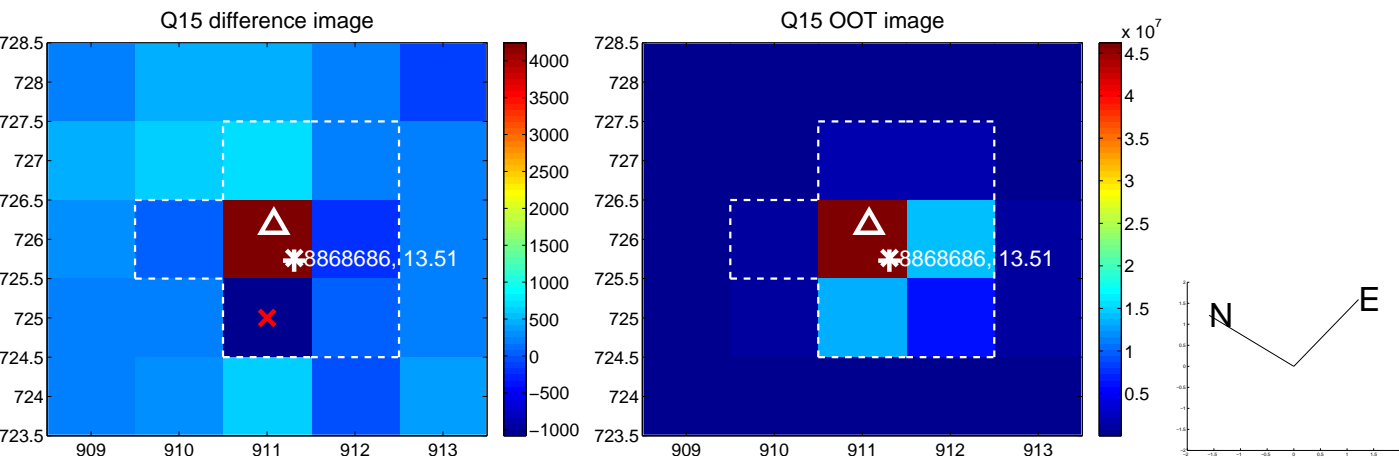
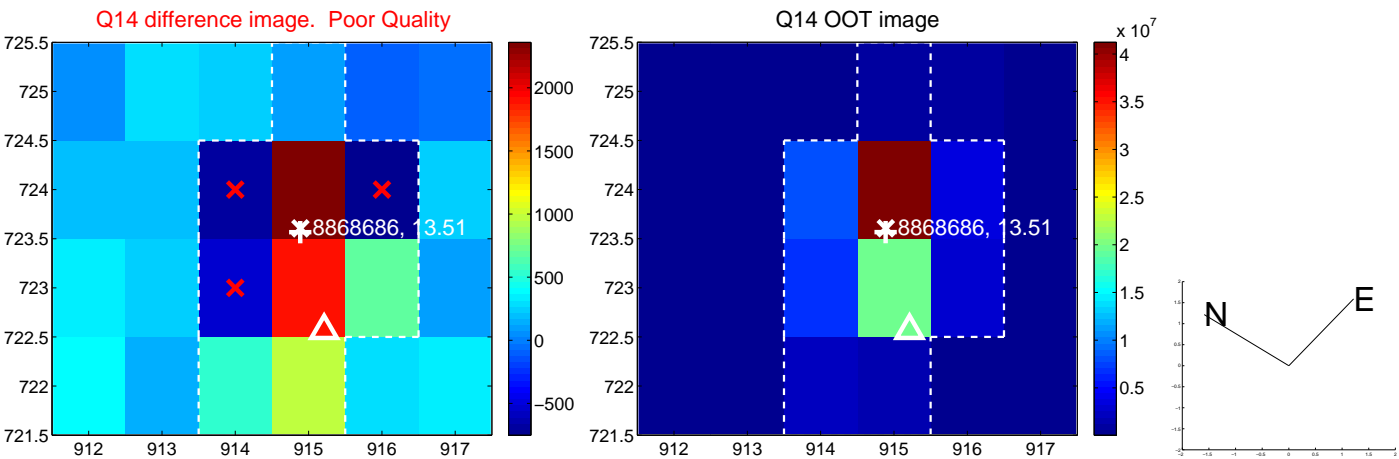
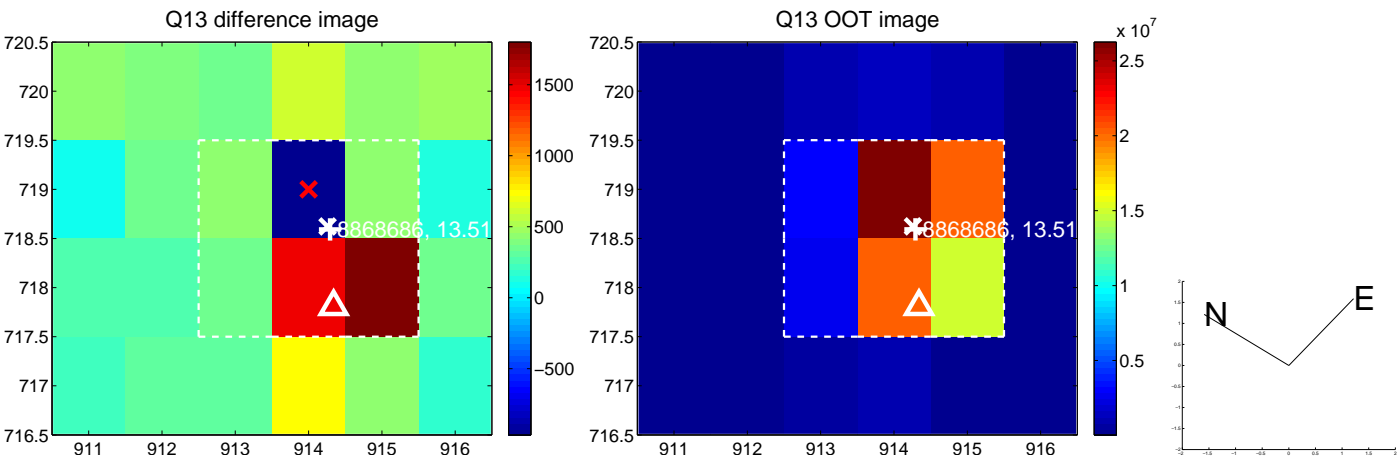
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



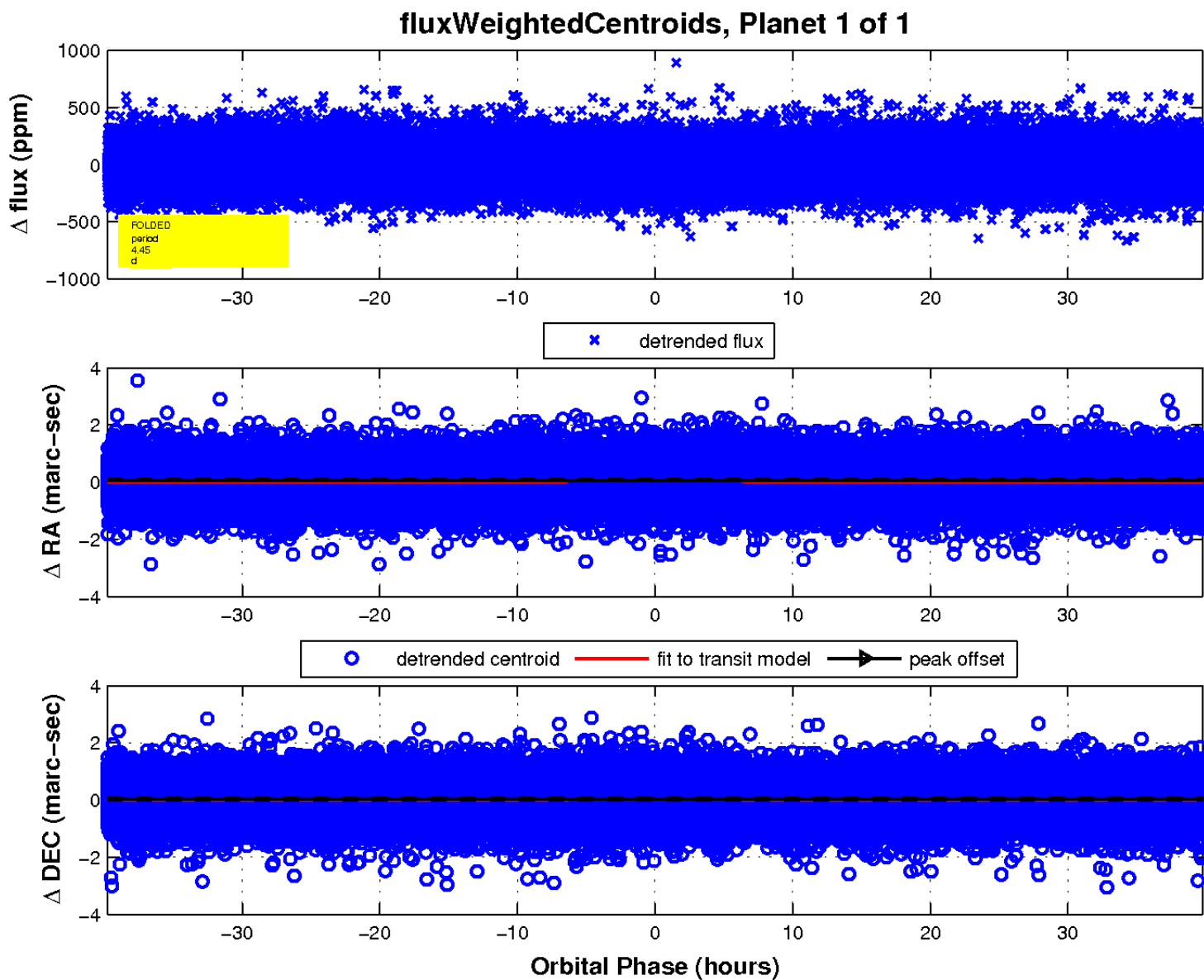
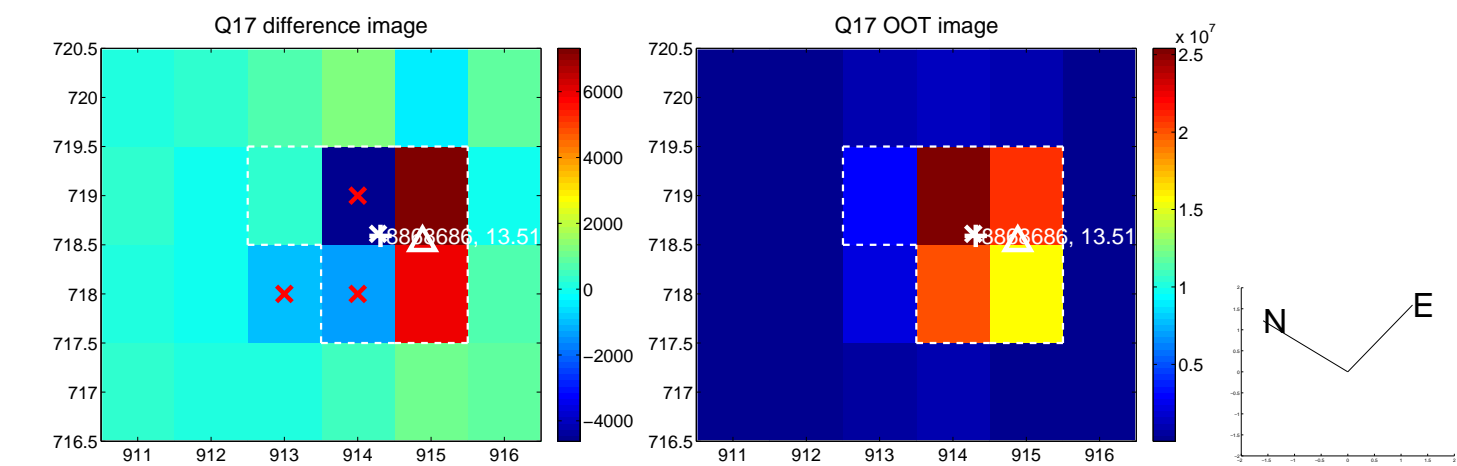
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UKIRT Image

Declination

