

KIC 004381649

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})
004381649-01	OBS	No	0.660196	132.001041	63.8	4.267	10.9	12.4	2.66	7780	2.47	67964.99

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004381649-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT

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

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

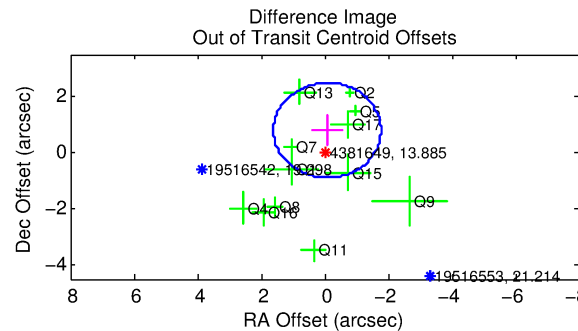
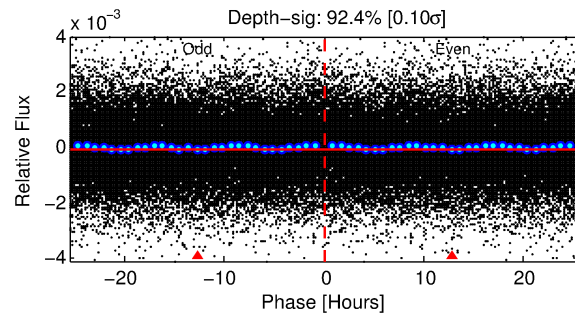
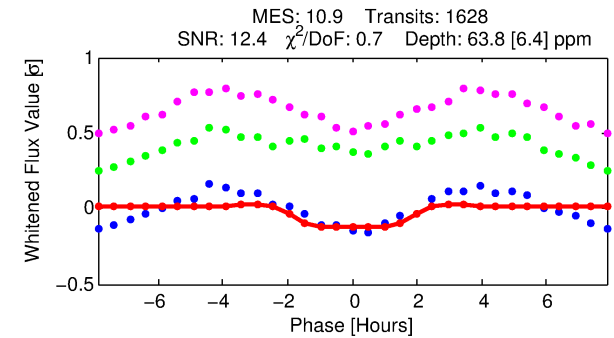
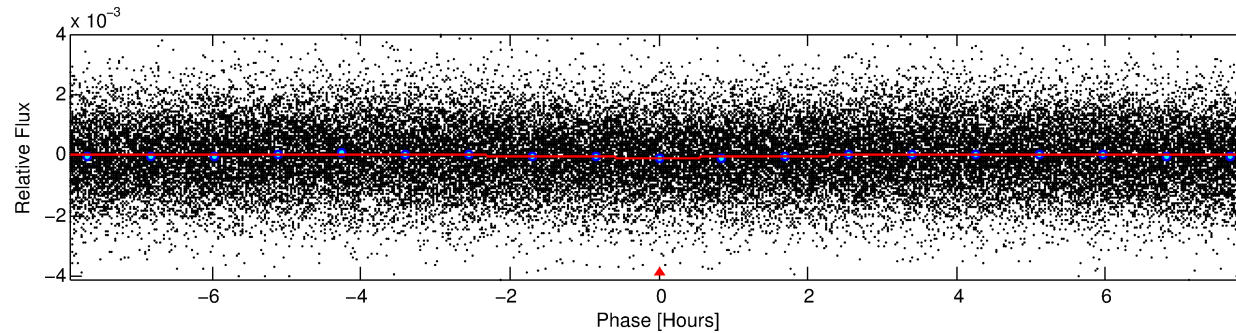
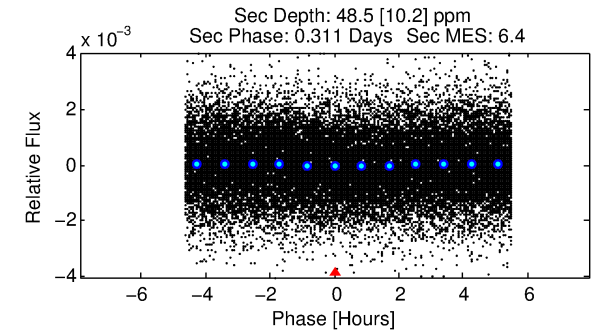
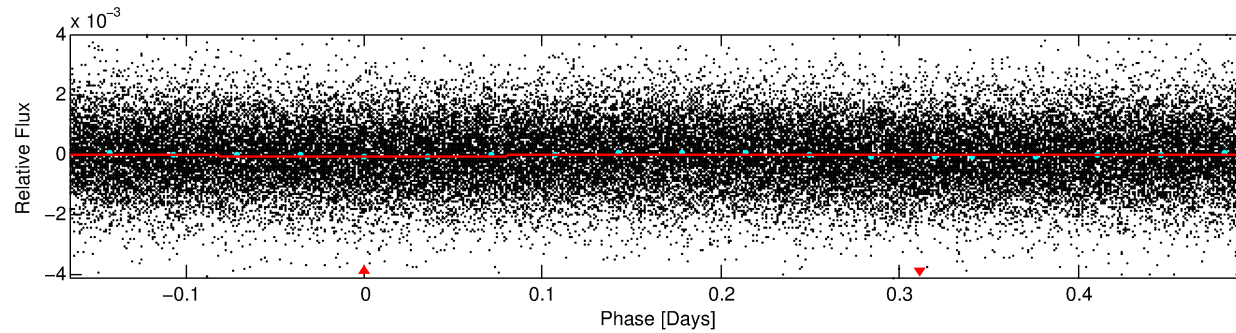
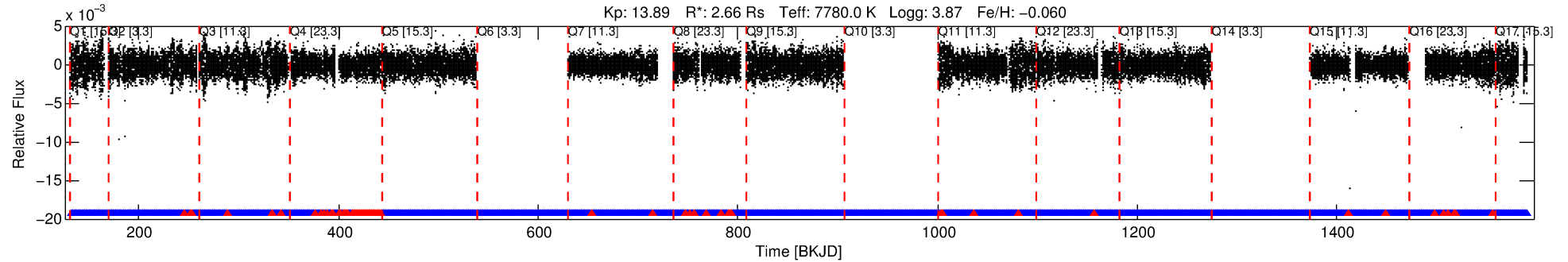
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004381649-01

No Significant Match Found

DV One-Page Summary

KIC: 4381649 Candidate: 1 of 1 Period: 0.660 d



DV Fit Results:

Period = 0.66020 [0.00001] d
Epoch = 132.0010 [0.0042] BKJD
Rp/R* = 0.0085 [0.0058]
a/R* = 1.09 [0.71]
b = 0.90 [0.93]
Seff = 67964.99 [38822.63]
Teq = 4117 [588] K
Rp = 2.47 [1.93] Re
a = 0.0185 [0.0065] AU
Ag = 1.50 [2.23] [0.22σ]
Teffp = 7043 [2452] K [1.16σ]

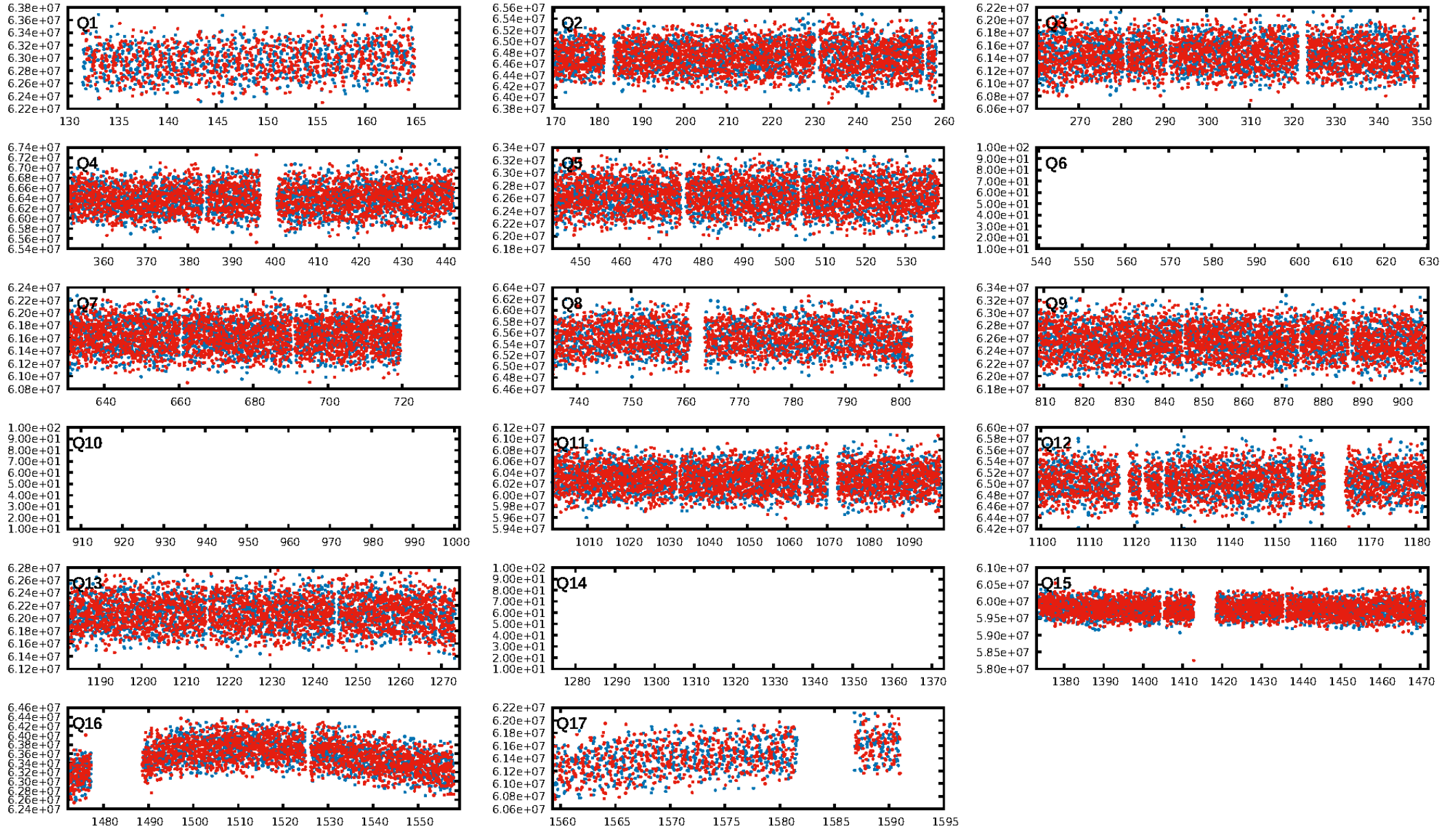
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.52e-20
RollingBand-fgt: 0.95 [1455/1536]
GhostDiagnostic-chr: 1.131
Centroid-sig: 2.6%
Centroid-so: 0.640 arcsec [1.33σ]
OotOffset-rm: 0.799 arcsec [1.42σ]
OotOffset-st: 1/3/3/5 [12]
KicOffset-rm: 0.799 arcsec [1.48σ]
KicOffset-st: 1/3/3/5 [12]
DiffImageQuality-fgm: 0.58 [7/12]
DiffImageOverlap-fno: 1.00 [14/14]

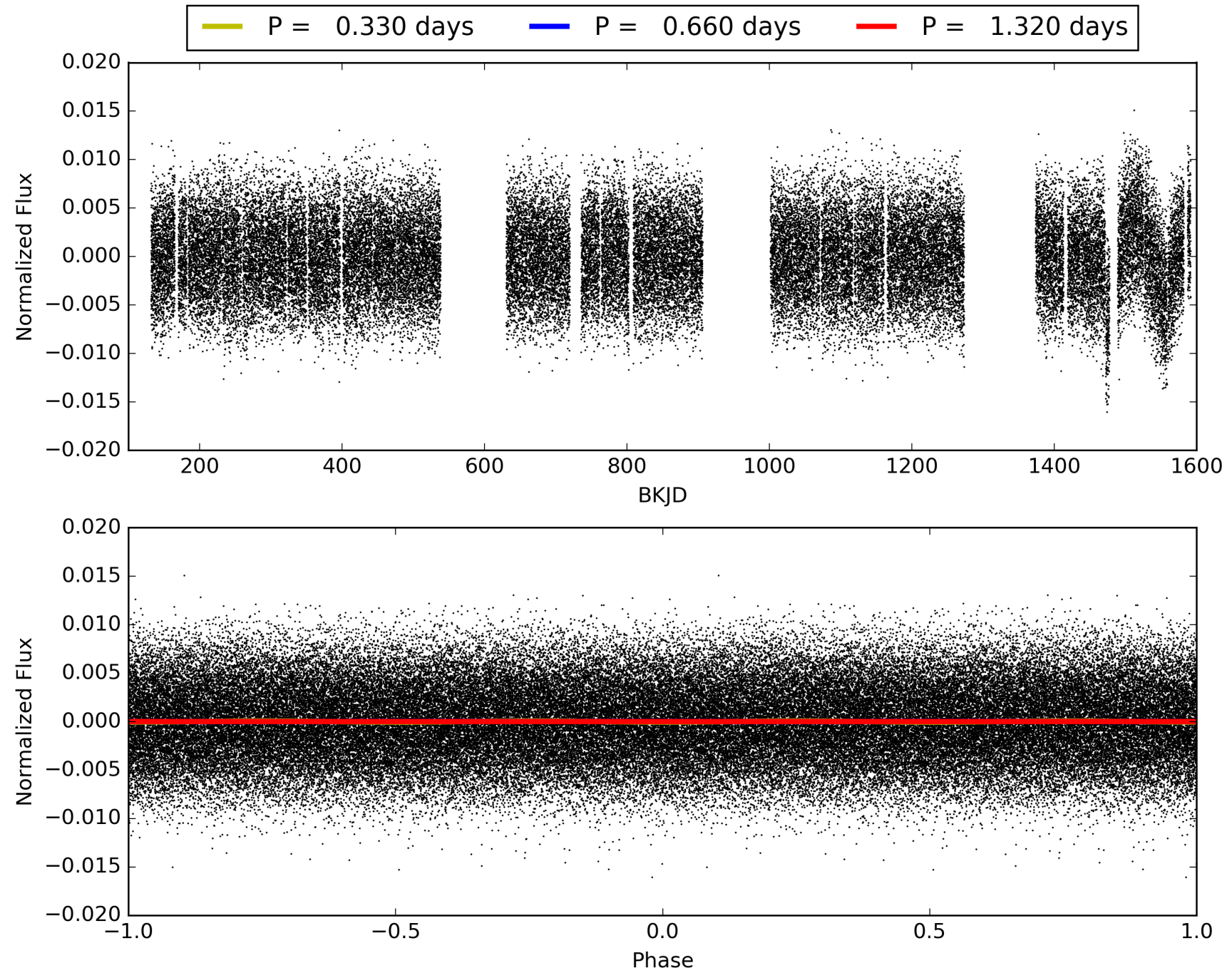
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:54:52 Z

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

TCE 004381649-01, PDC Light Curves

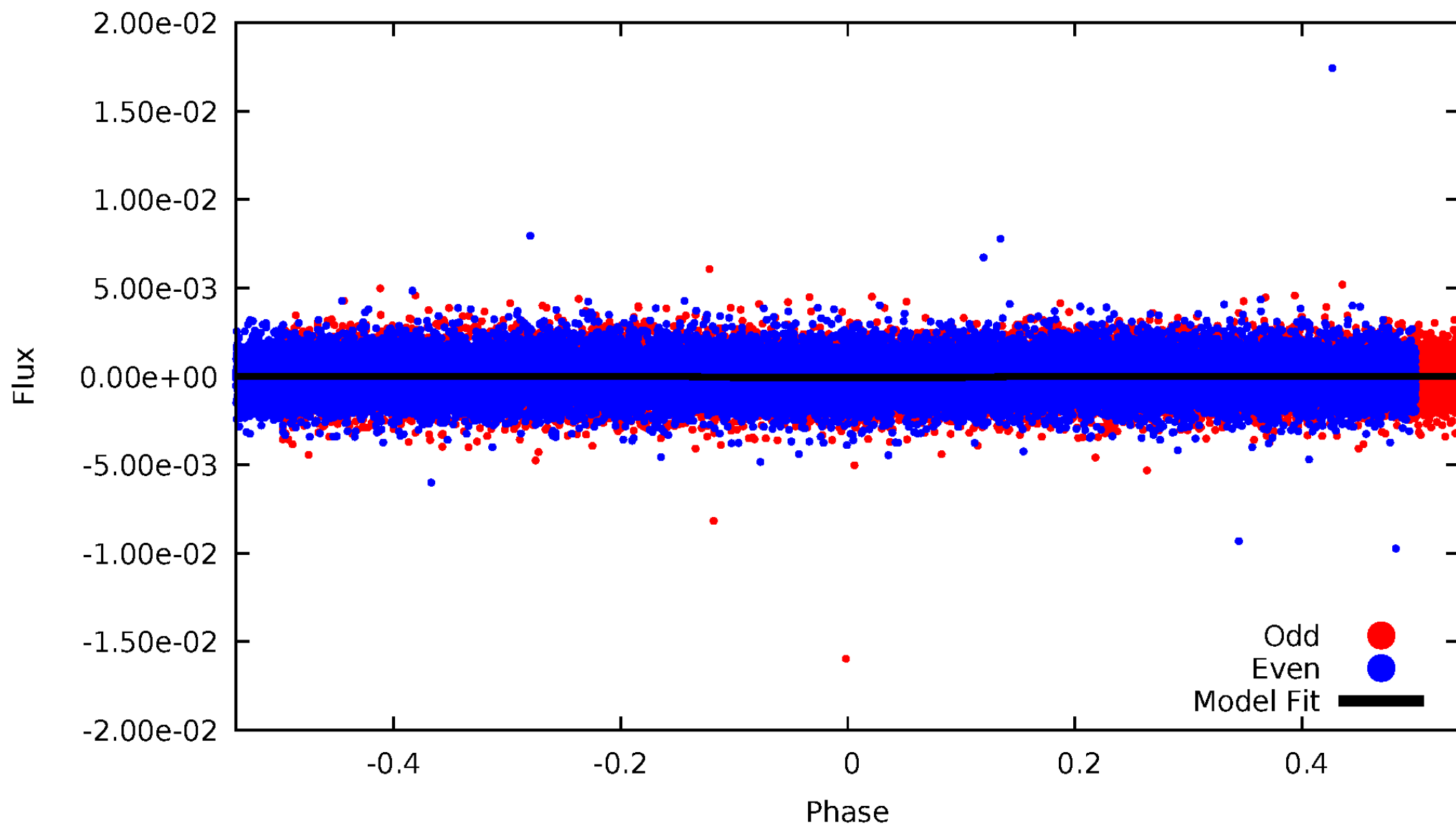


TCE 004381649-01



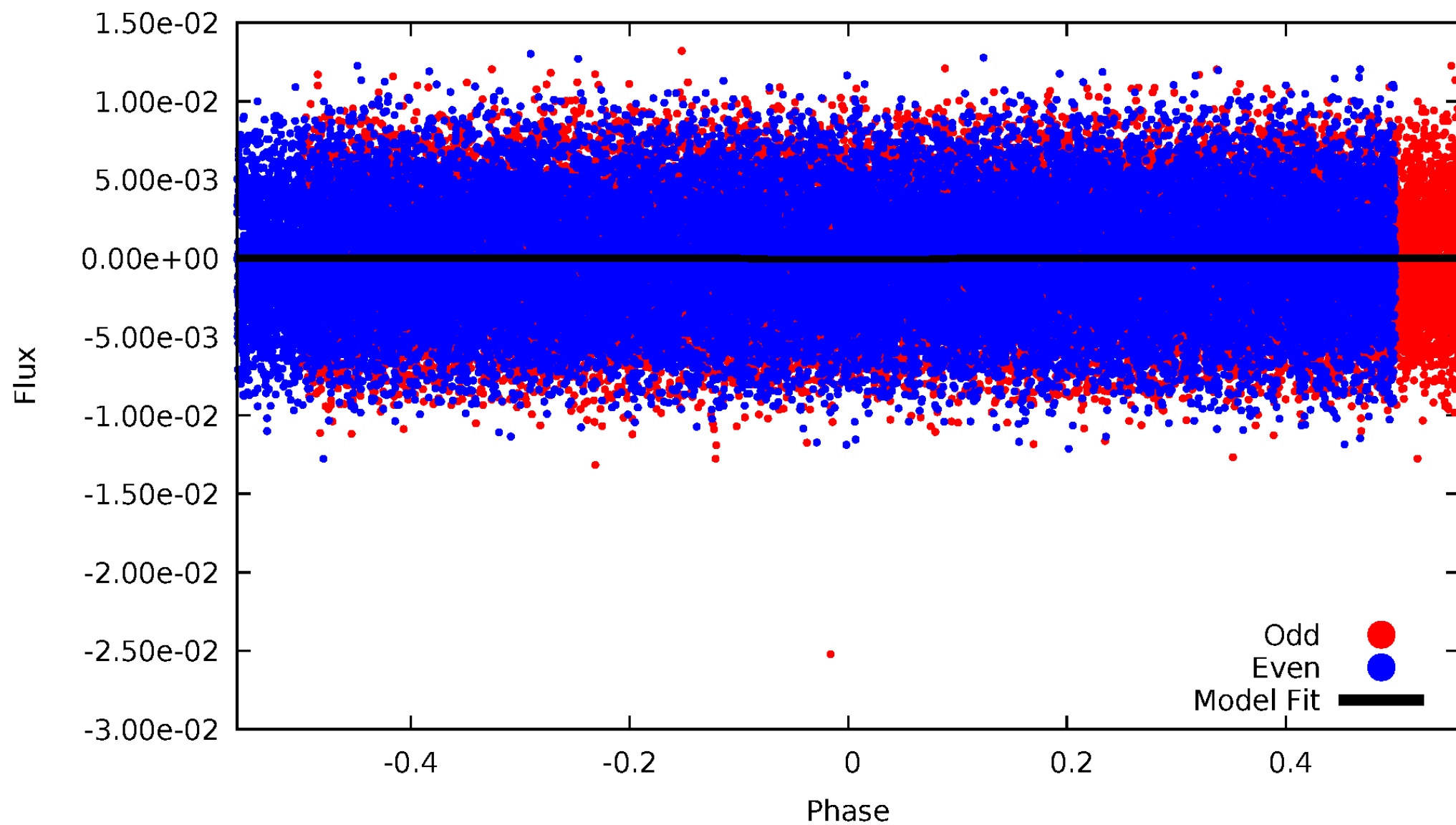
DV Odd/Even

TCE 004381649-01

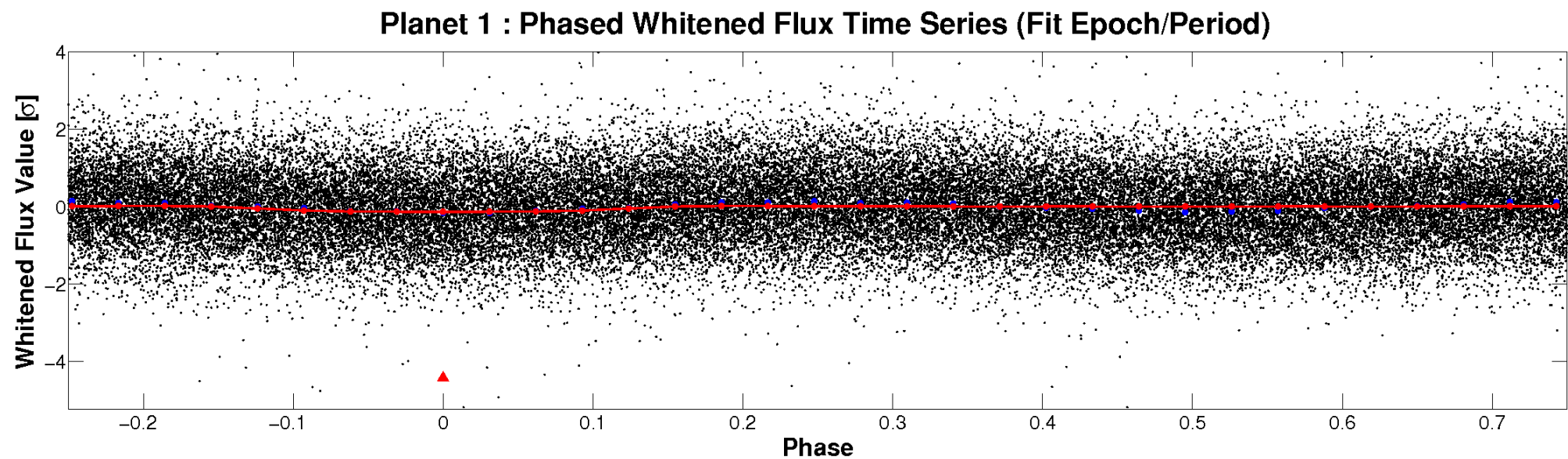
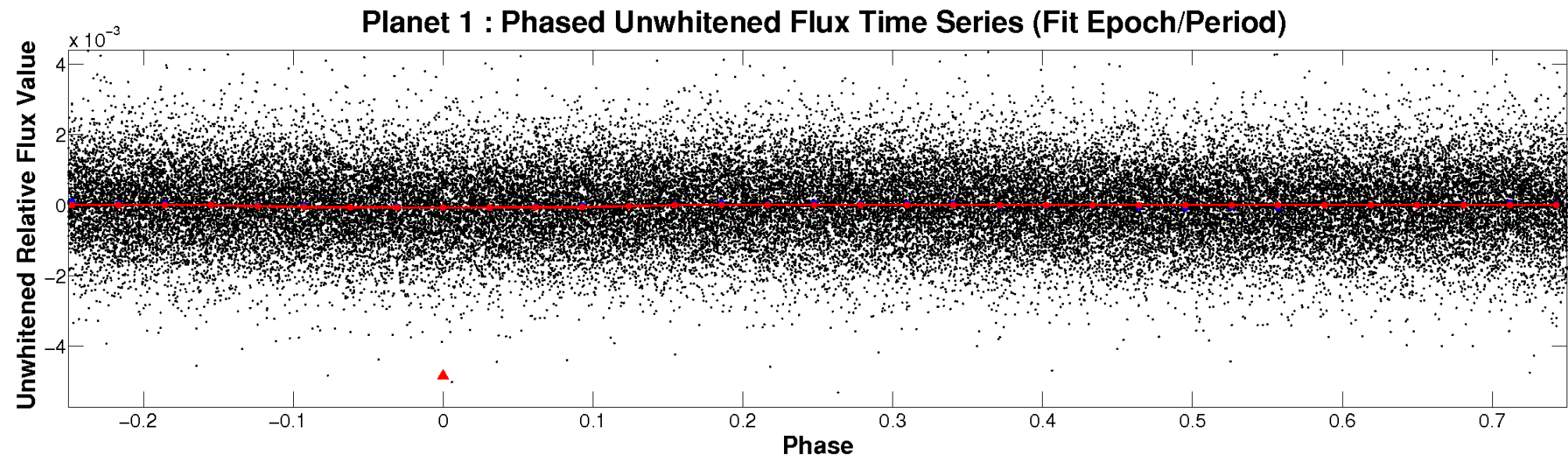


ALT Odd/Even

TCE 004381649-01

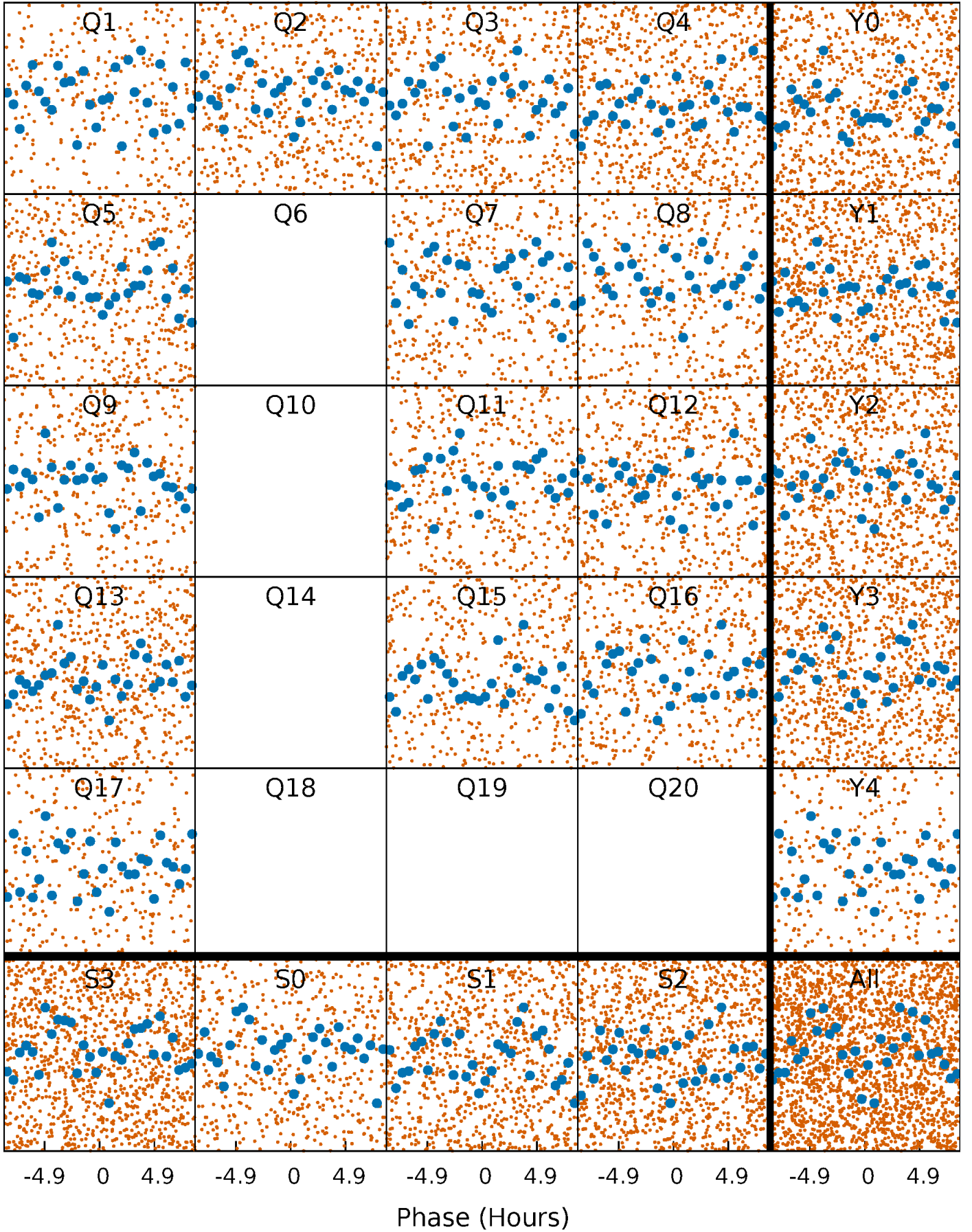


Non-Whitened Vs. Whitened Light Curve



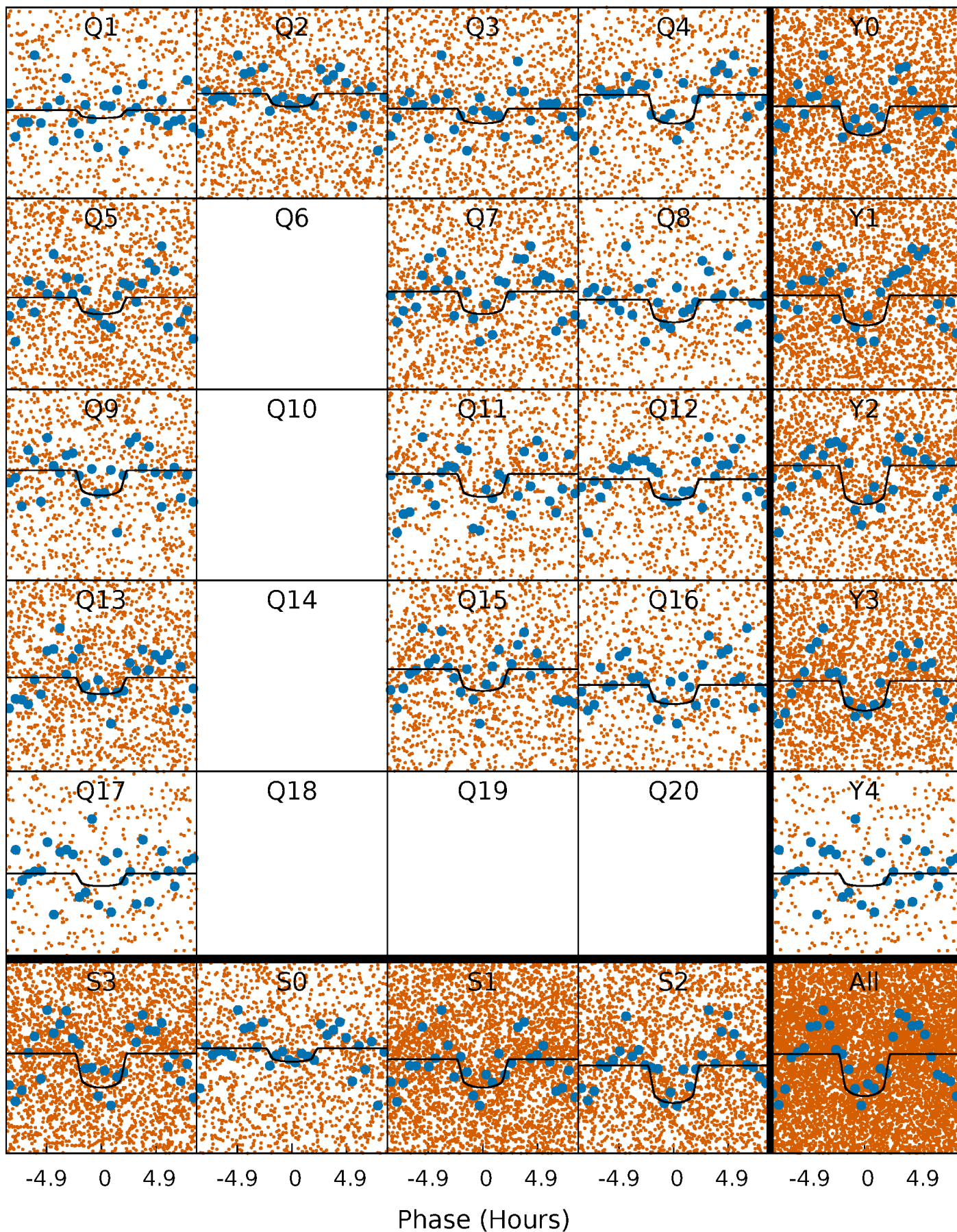
PDC Quarter-Phased Transit Curves

TCE 004381649-01 P= 0.660196 Days $T_0=132.001041$ (BKJD)



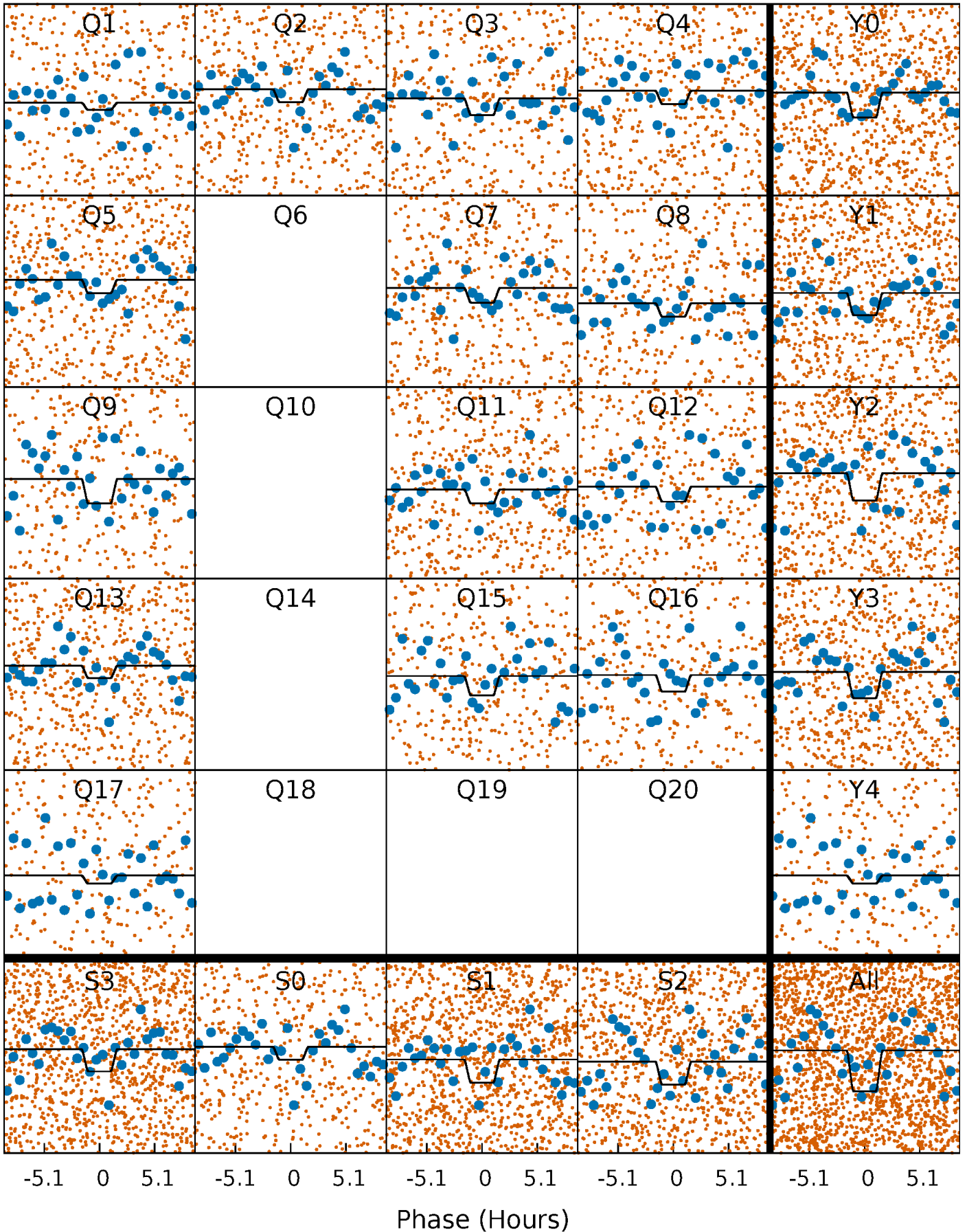
DV Quarter-Phased Transit Curves

TCE 004381649-01 P= 0.660196 Days $T_0=132.001041$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

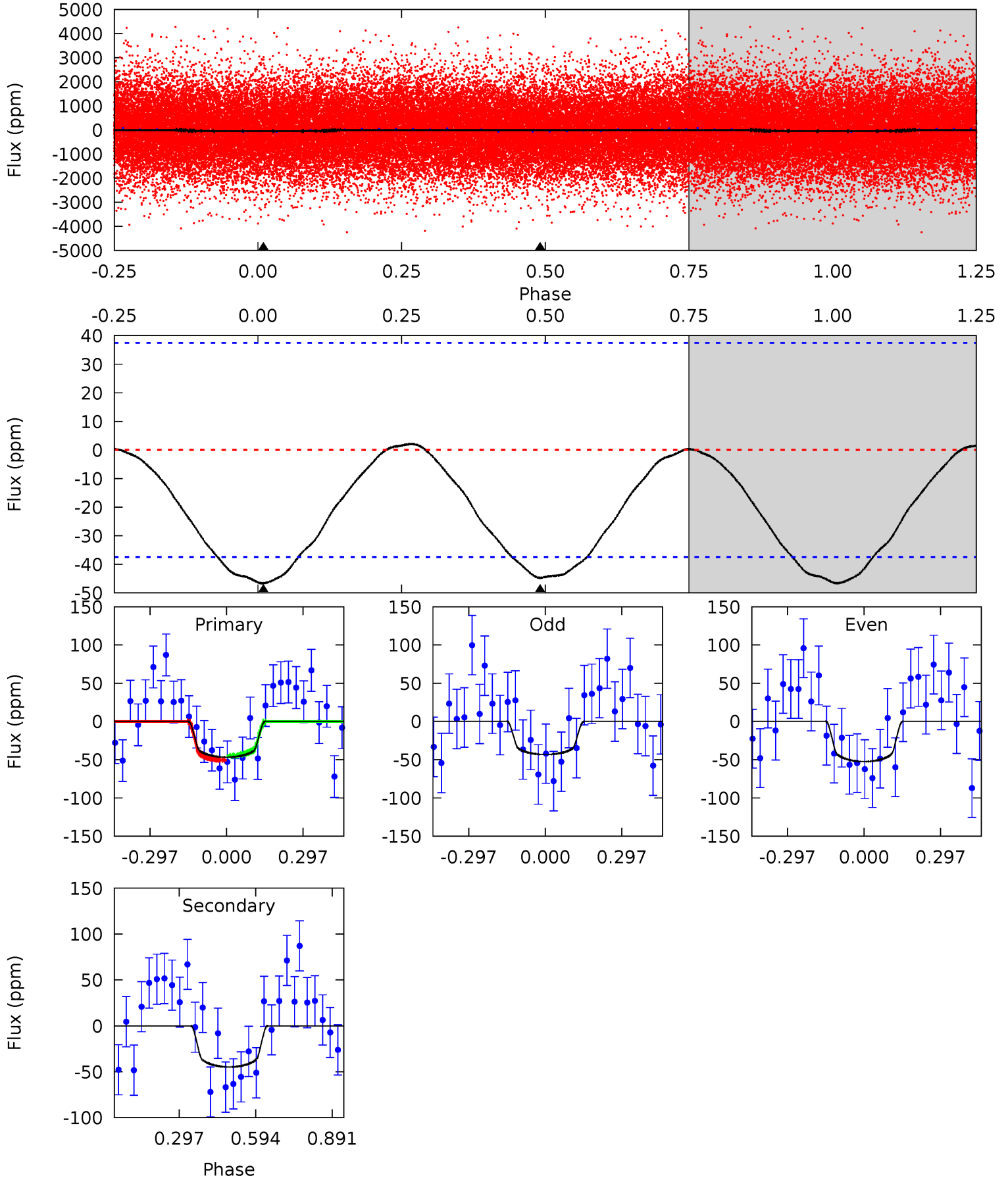
TCE 004381649-01 P= 0.660201 Days $T_0=132.000852$ (BKJD)



DV Model-Shift Uniqueness Test

004381649-01, P = 0.660196 Days, E = 131.340845 Days

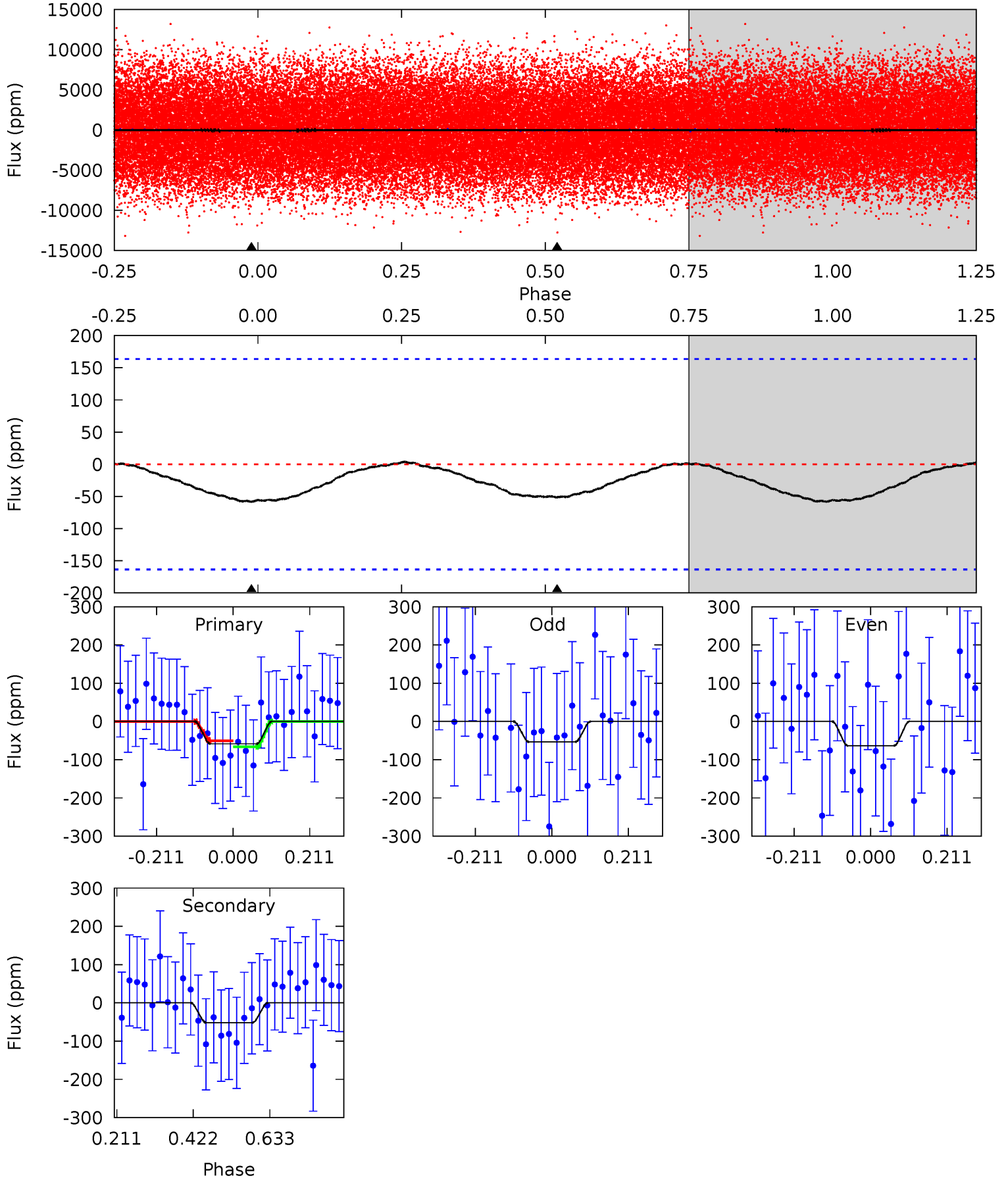
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.40	5.18	0	0	4.33	1.04	0.15	5.40	5.40	5.18	5.18	0.54	1.17	0.04	0.32



Alt Model-Shift Uniqueness Test

004381649-01, P = 0.660201 Days, E = 131.340651 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.57	1.39	0	0	4.41	1.25	0.07	1.57	1.57	1.39	1.39	0.13	1.07	0.07	0.20



Stellar Parameters For KIC 004381649

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7780^{+214}_{-322}	$3.874^{+0.315}_{-0.105}$	$-0.060^{+0.200}_{-0.350}$	$2.658^{+0.436}_{-1.017}$	$1.926^{+0.082}_{-0.467}$	$0.144^{+0.322}_{-0.047}$
	+3%/-4%	+8%/-3%	+333%/-583%	+16%/-38%	+4%/-24%	+223%/-32%
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 004381649-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45 ± 9	$2.41^{+1.63}_{-1.33}$	5615^{+387}_{-539}	6155^{+3999}_{-1921}	$1.378^{+5.223}_{-0.895}$
Alt.	-52 ± 37	$2.37^{+1.51}_{-1.45}$	5622^{+391}_{-520}	6282^{+5701}_{-8898}	$1.411^{+8.376}_{-1.121}$

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

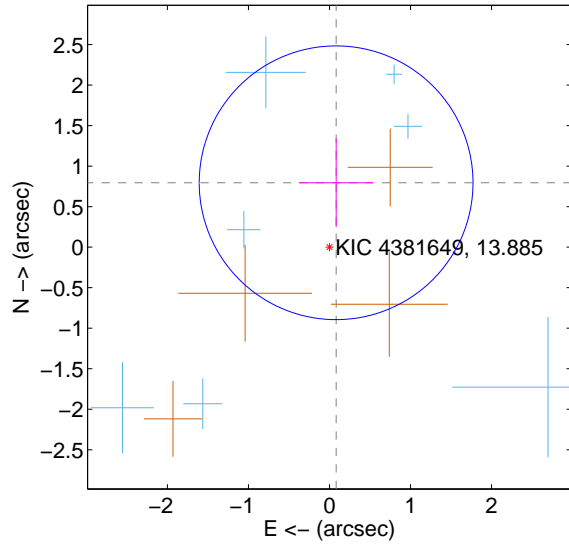
Supplemental centroid analysis for 004381649-01. Kepler magnitude: 13.88. Transit SNR 12.41

There are 7 quarters with good PRF difference image offsets

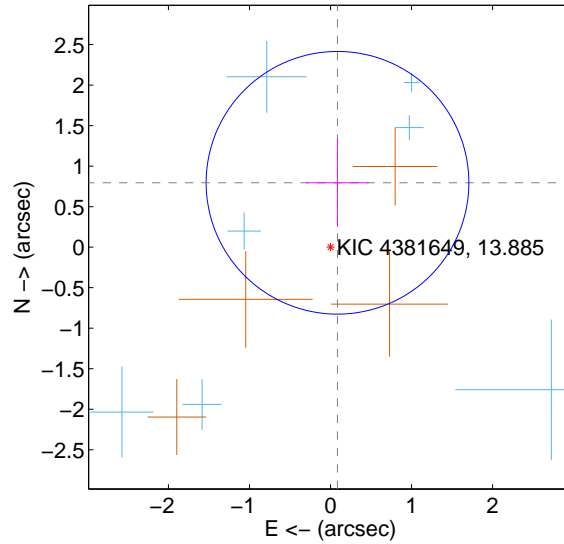
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.799 ± 0.563	1.42	-0.082 ± 0.458	0.795 ± 0.547
PRF-fit source offset from KIC position	0.799 ± 0.540	1.48	-0.086 ± 0.386	0.794 ± 0.542
photometric centroid source offset	0.64 ± 0.48	1.33	-0.60 ± 0.48	0.23 ± 0.47

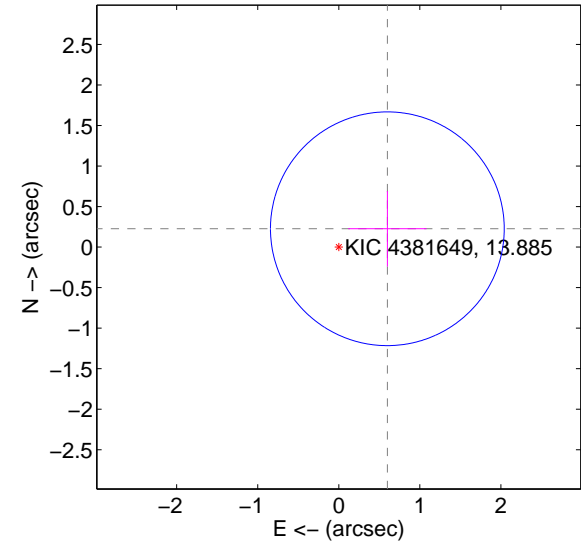
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

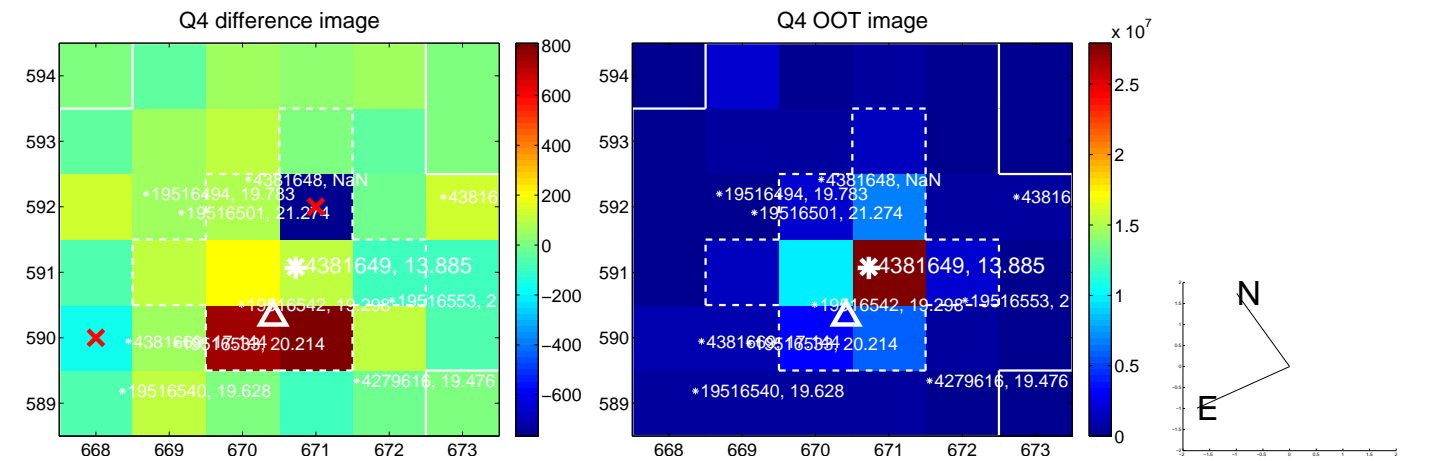
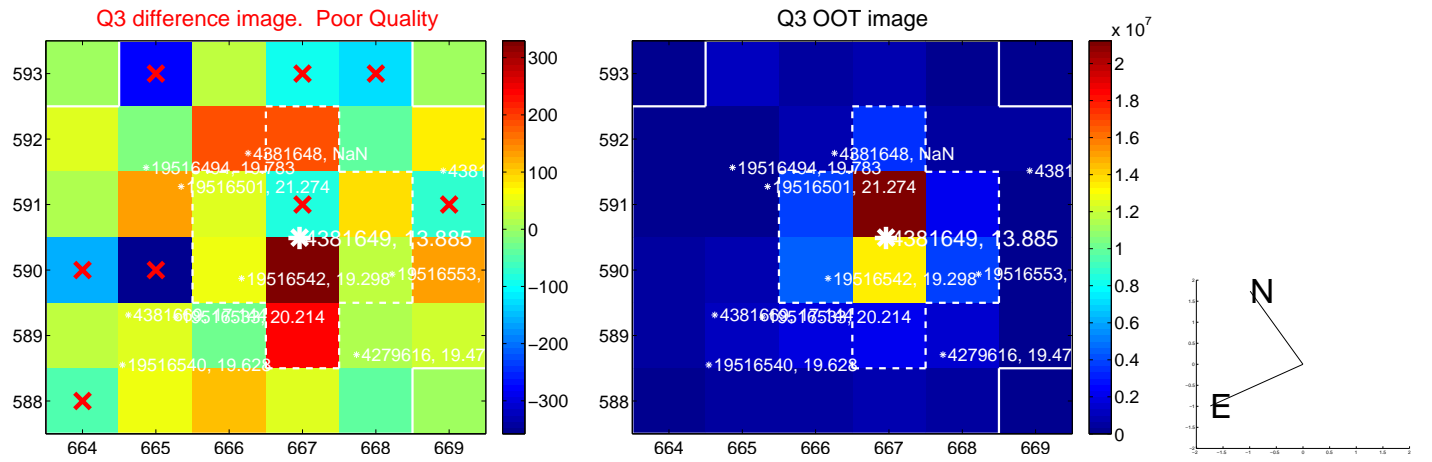
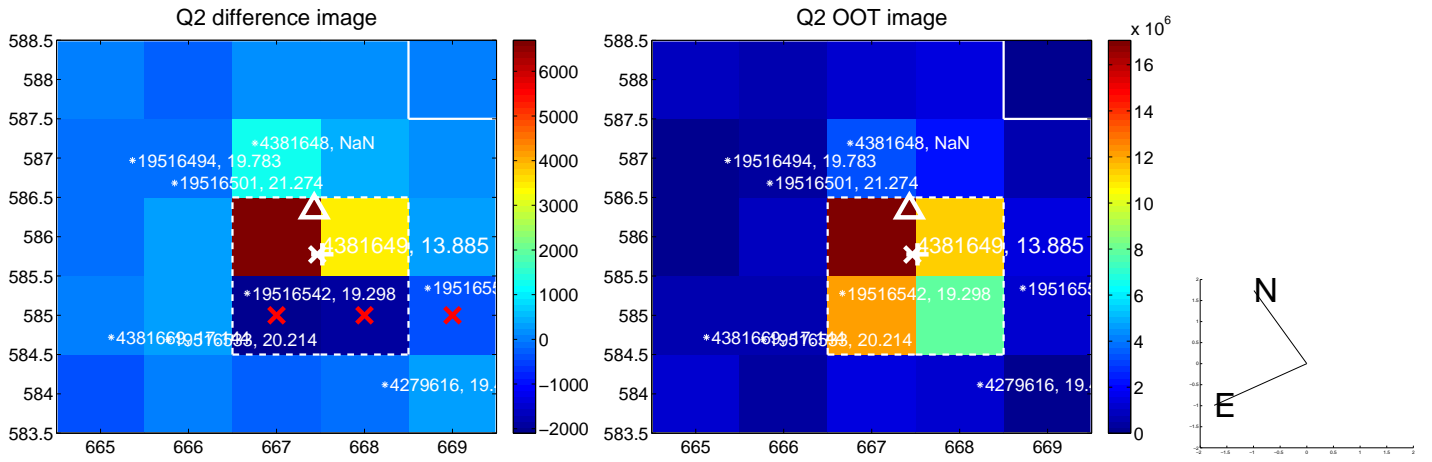
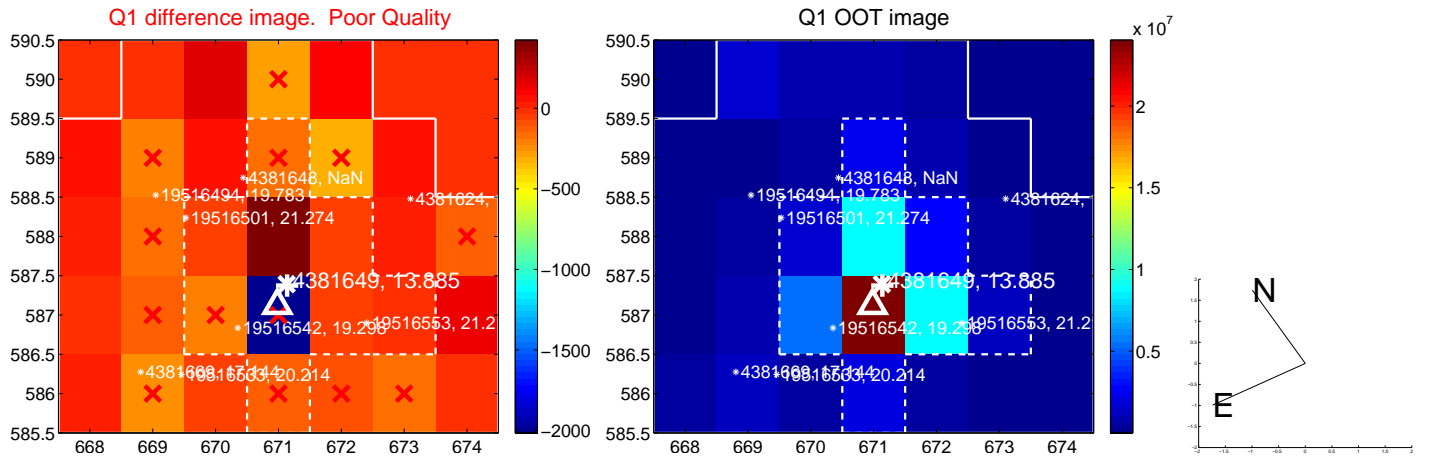


offset from photometric centroids

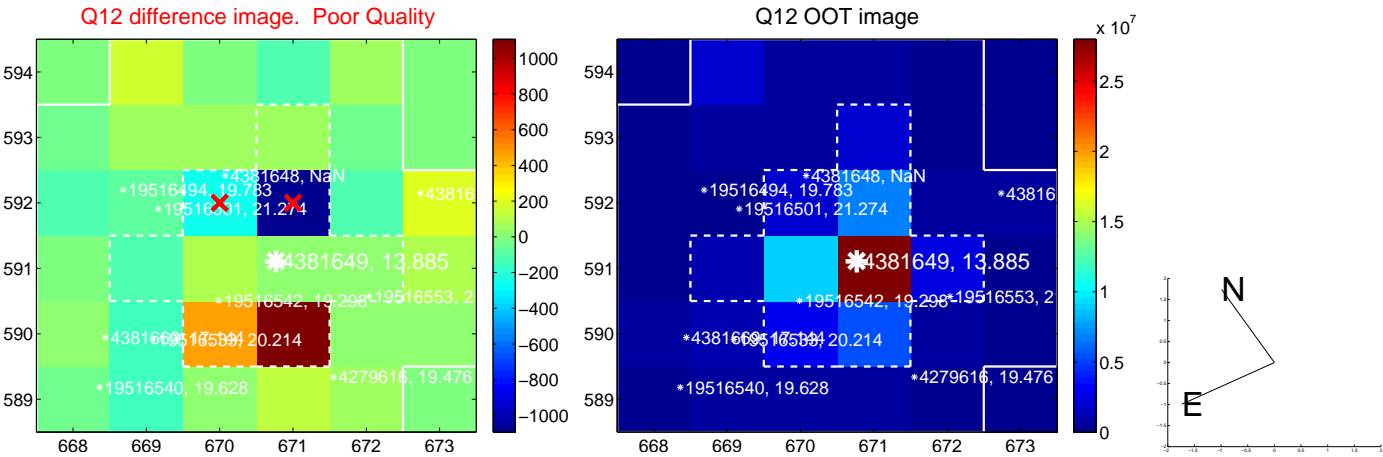
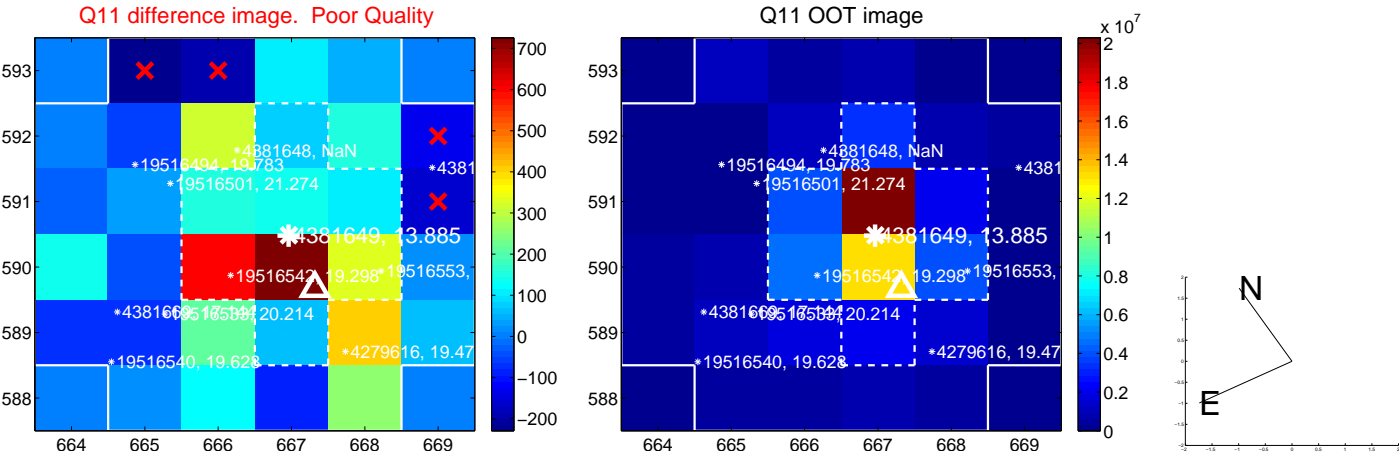
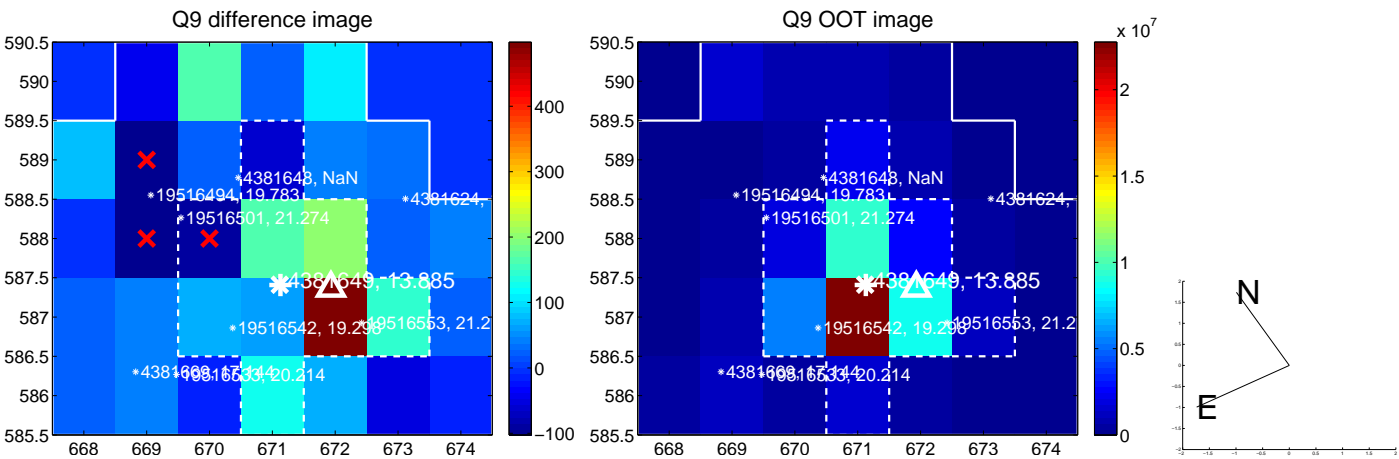


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

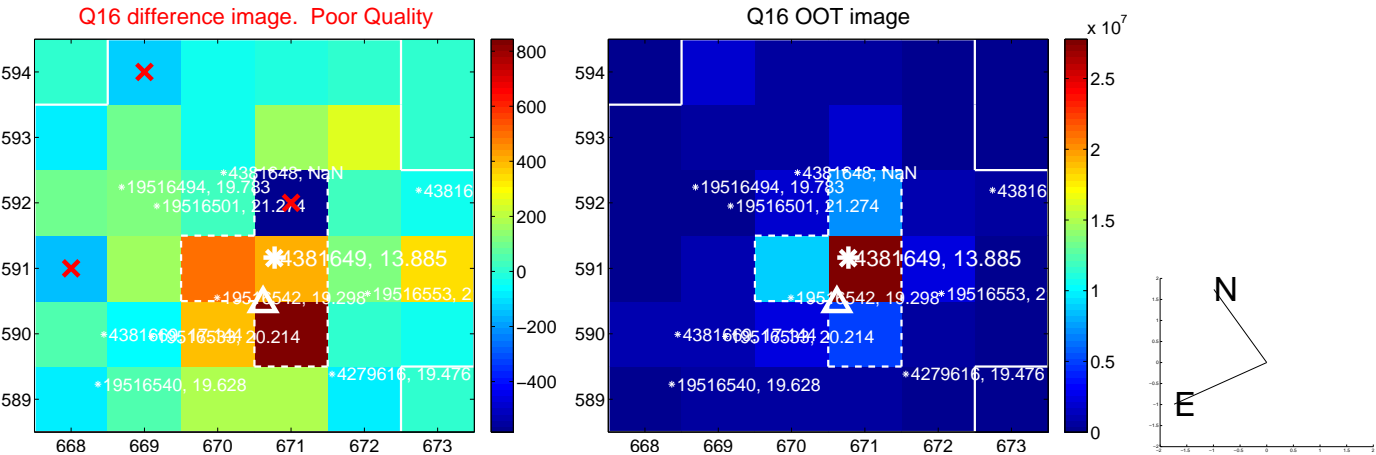
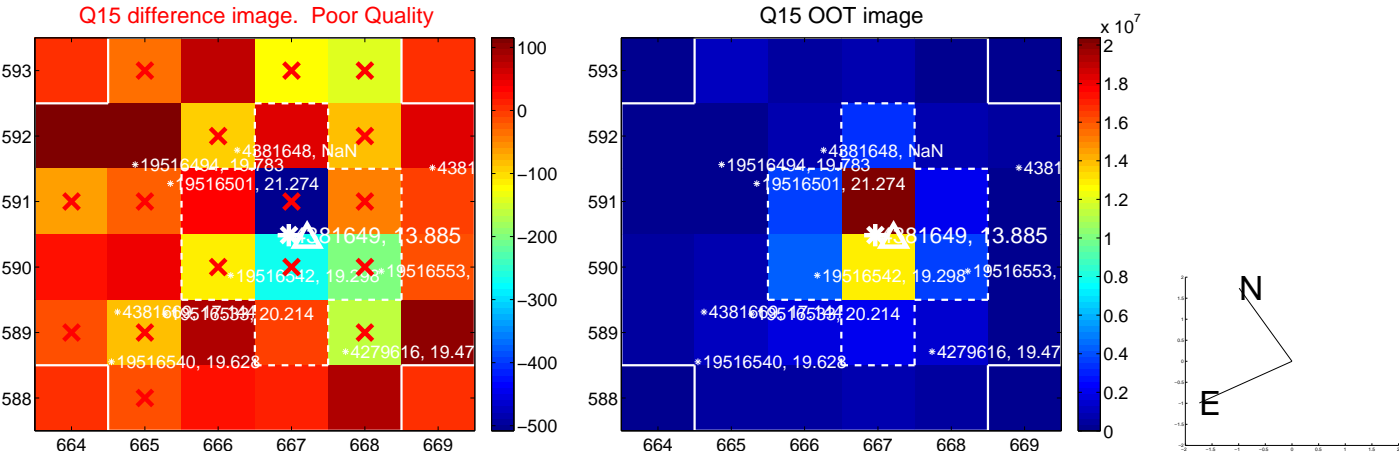
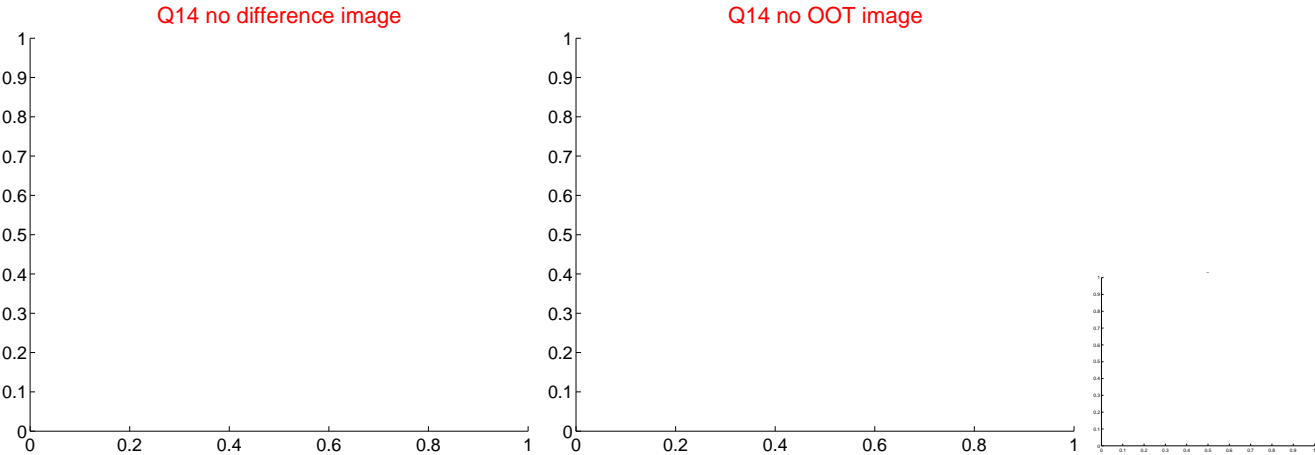
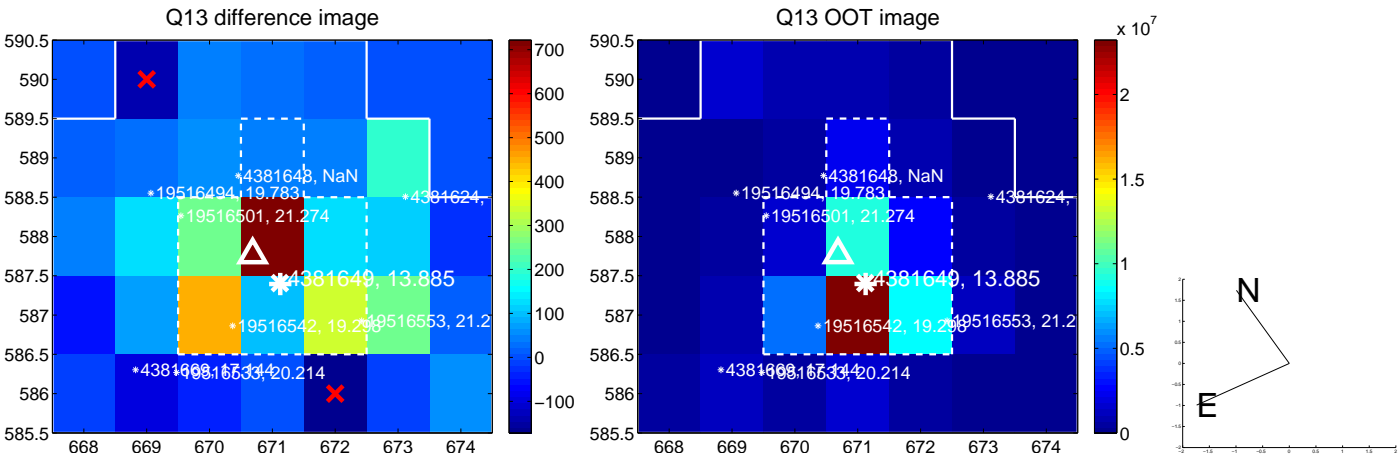
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



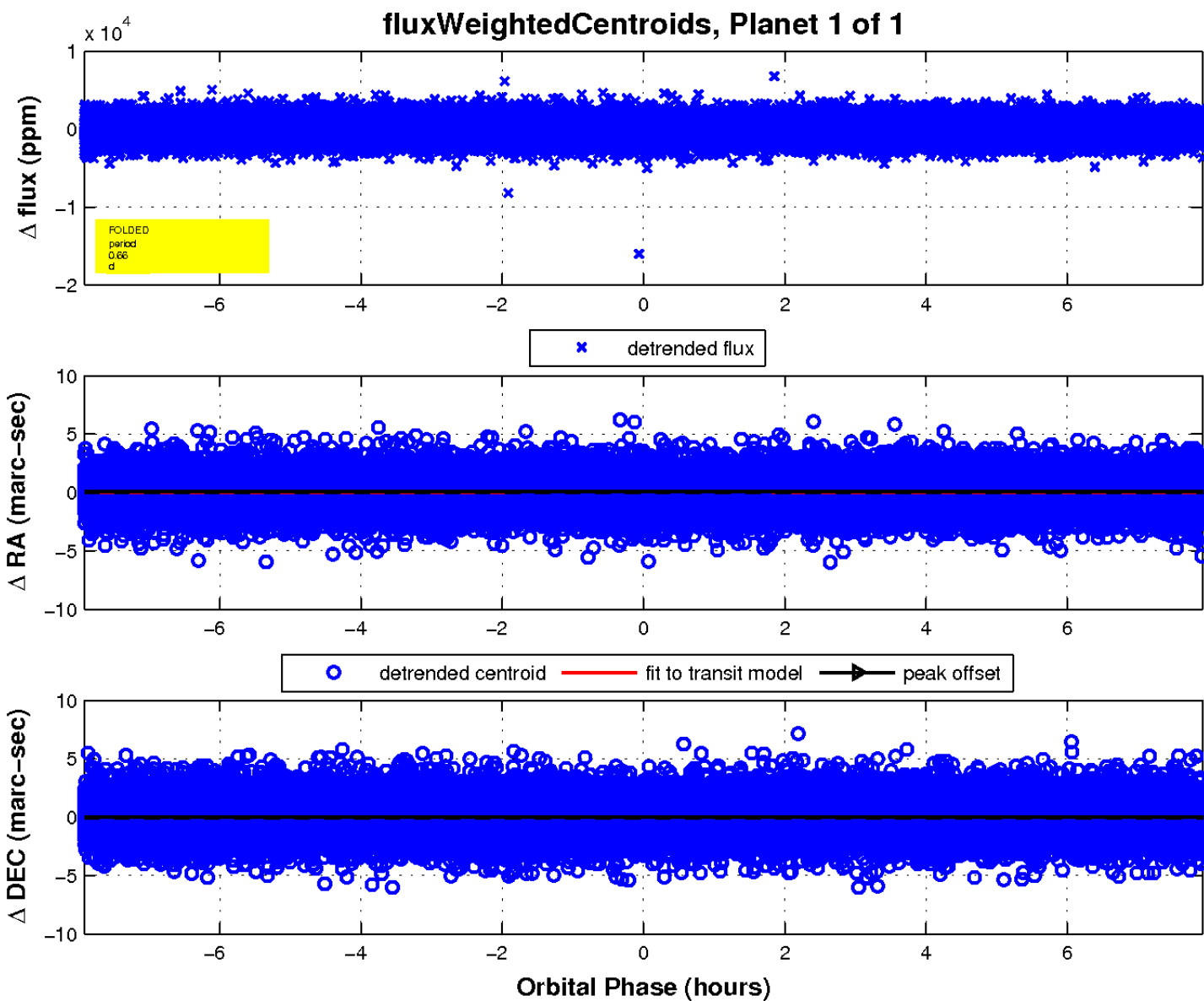
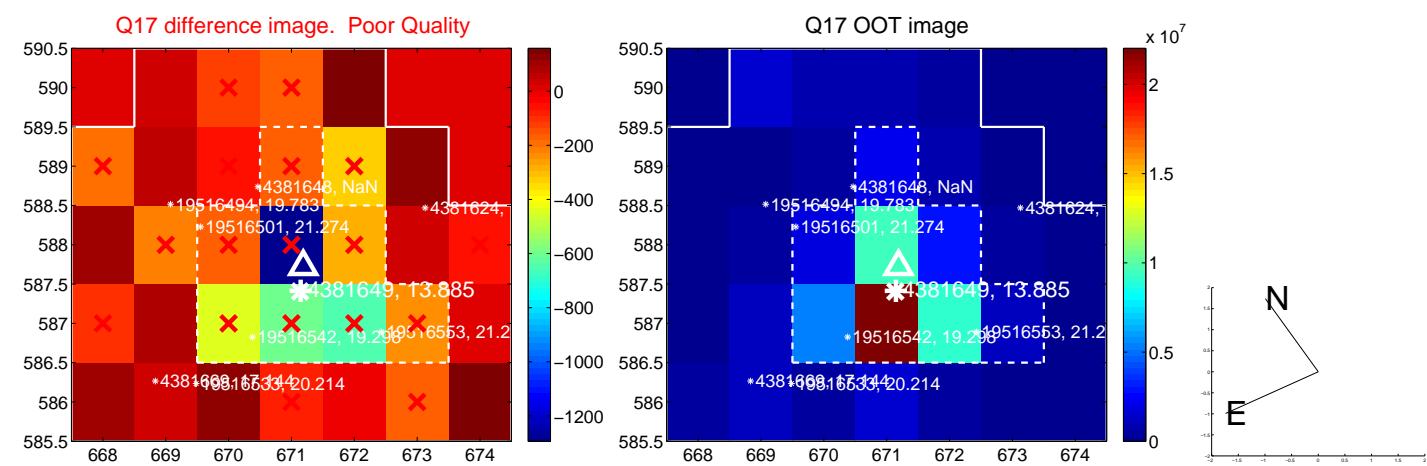
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

