

KIC 012159988

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})
012159988-01	OBS	No	2.004804	131.811289	103.9	17.047	9.4	11.3	0.81	4776	0.79	371.31

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012159988-01	OBS	FP	0.00	1	0	1	0	LPP_DV—HALO_GHOST

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

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

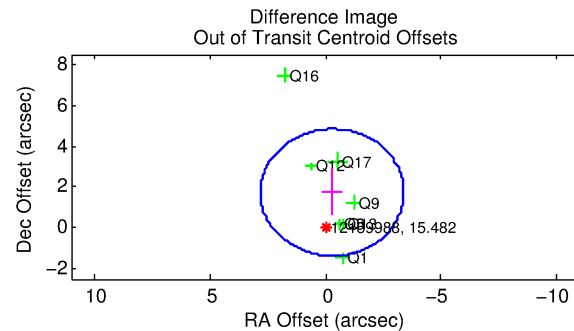
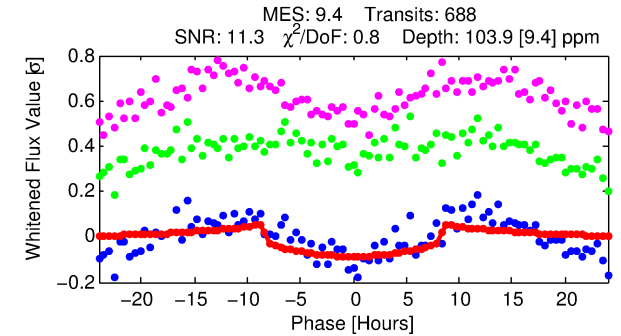
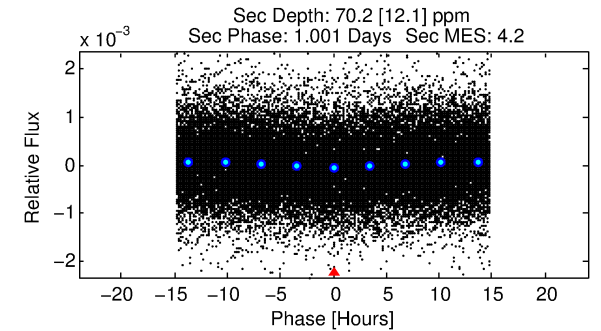
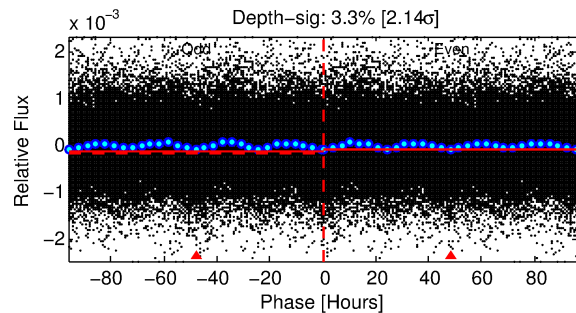
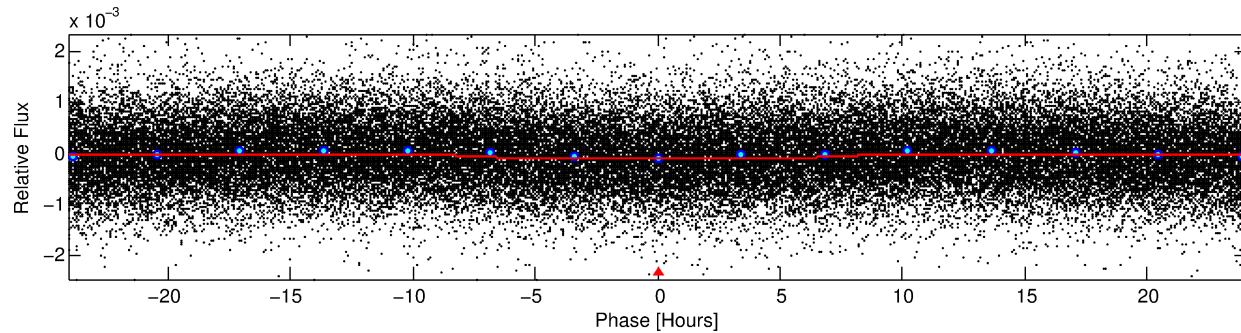
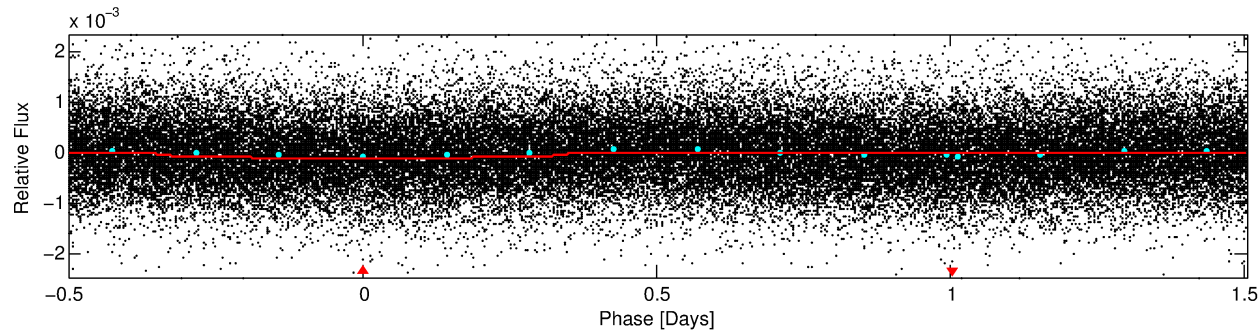
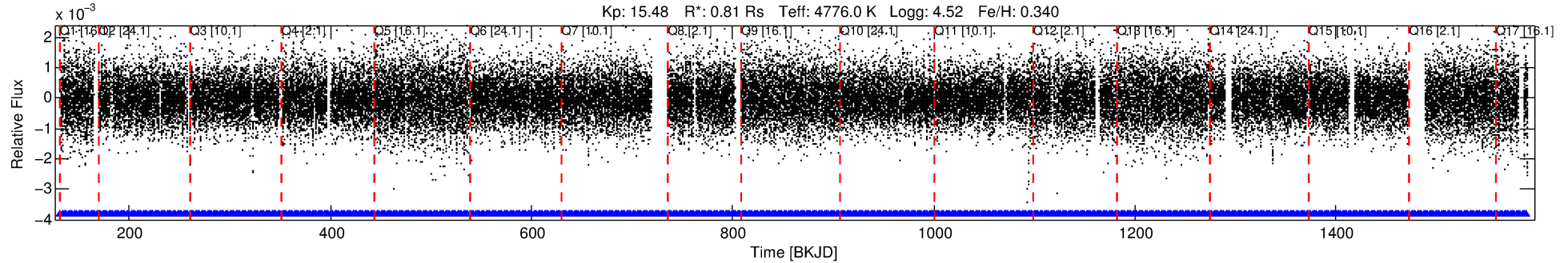
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012159988-01

No Significant Match Found

DV One-Page Summary

KIC: 12159988 Candidate: 1 of 1 Period: 2.005 d



DV Fit Results:

Period = 2.00480 [0.00003] d
Epoch = 131.8113 [0.0093] BKJD
Rp/R* = 0.0089 [0.0036]
a/R* = 1.12 [0.29]
b = 0.00 [661.32]
Seff = 371.31 [66.82]
Teq = 1119 [50] K
Rp = 0.79 [0.33] Re
a = 0.0287 [0.0025] AU
Ag = 51.00 [43.07] [1.16 σ]
Teffp = 4625 [974] K [3.59 σ]

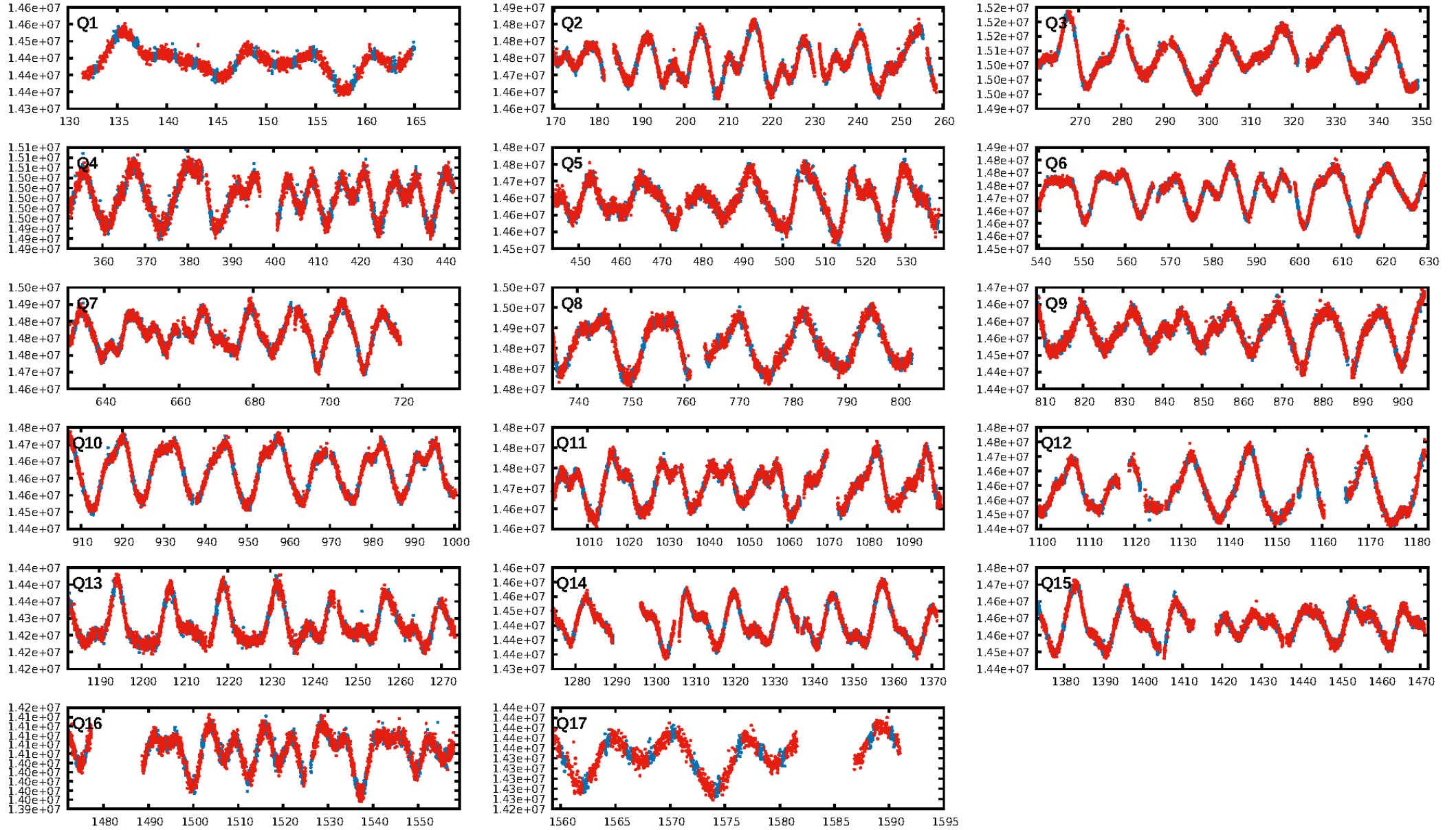
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [656/656]
GhostDiagnostic-chr: -0.002197
Centroid-sig: 58.5%
Centroid-so: 0.559 arcsec [0.82 σ]
OotOffset-rm: 1.757 arcsec [1.70 σ]
OotOffset-st: 0/0/2/5 [7]
KicOffset-rm: 1.853 arcsec [1.83 σ]
KicOffset-st: 0/0/2/5 [7]
DiffImageQuality-fgm: 0.71 [5/7]
DiffImageOverlap-fno: 1.00 [17/17]

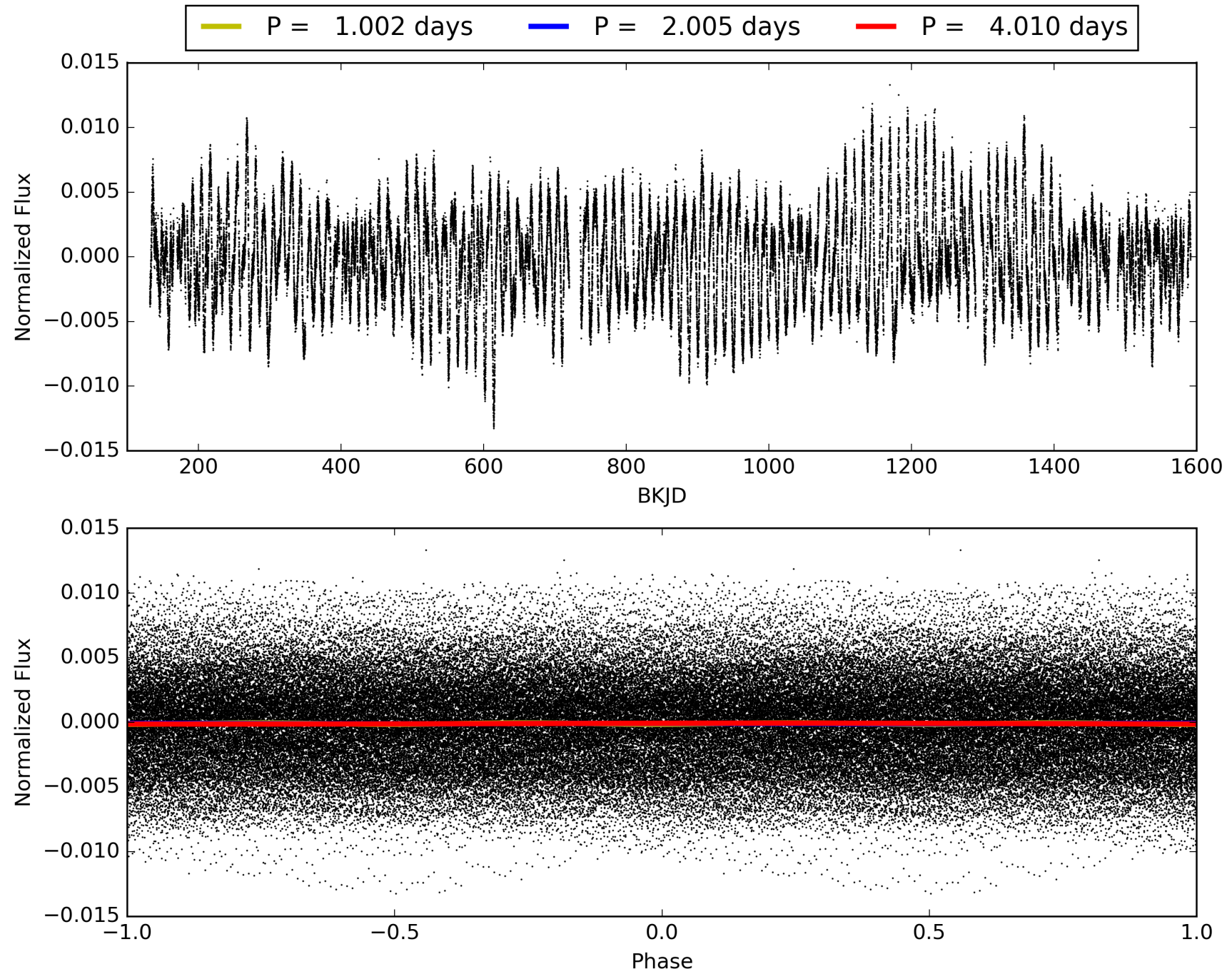
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:31:11 Z

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

TCE 012159988-01, PDC Light Curves

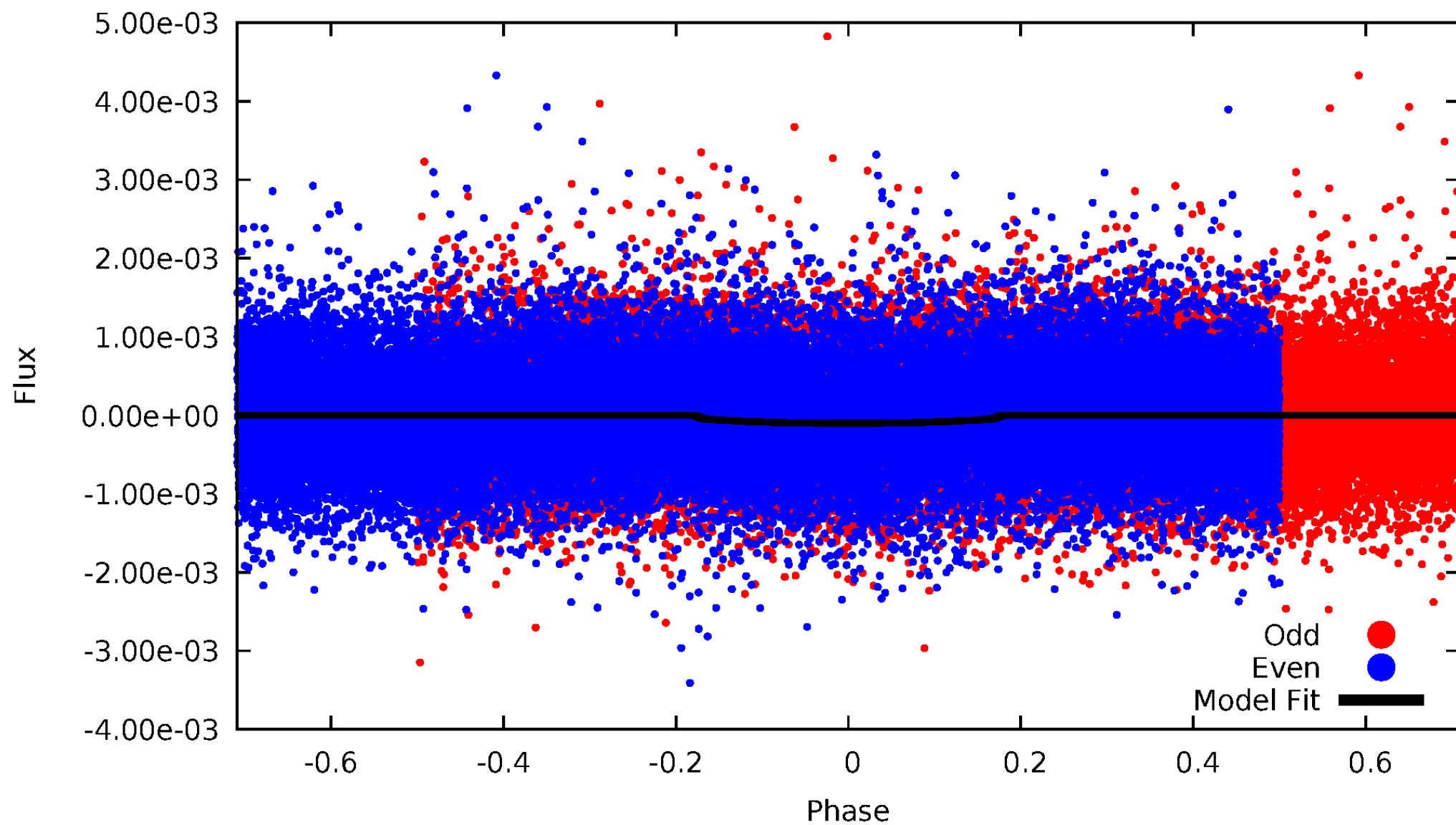


TCE 012159988-01



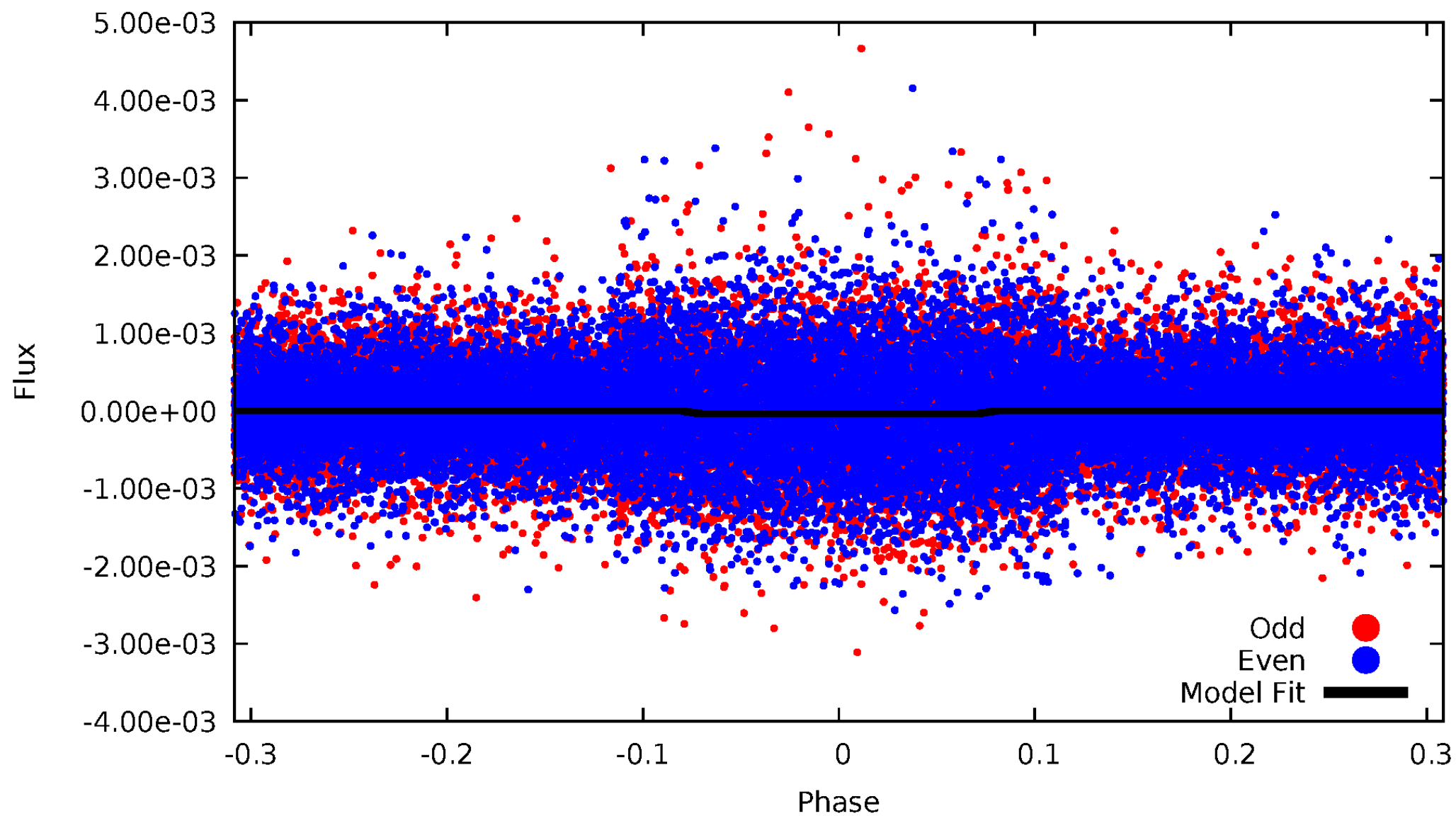
DV Odd/Even

TCE 012159988-01



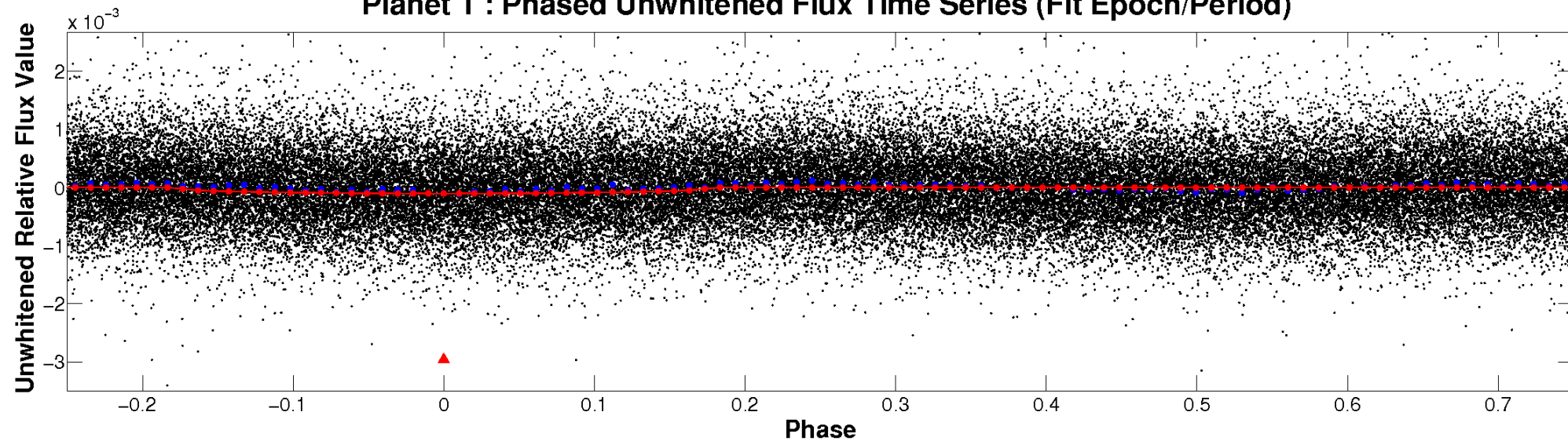
ALT Odd/Even

TCE 012159988-01

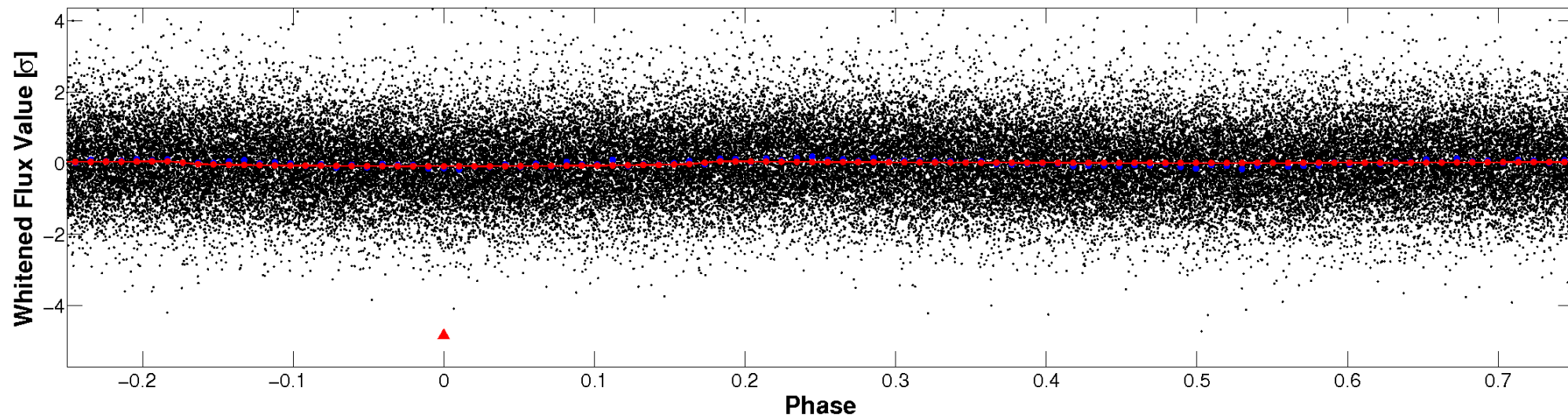


Non-Whitened Vs. Whitened Light Curve

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

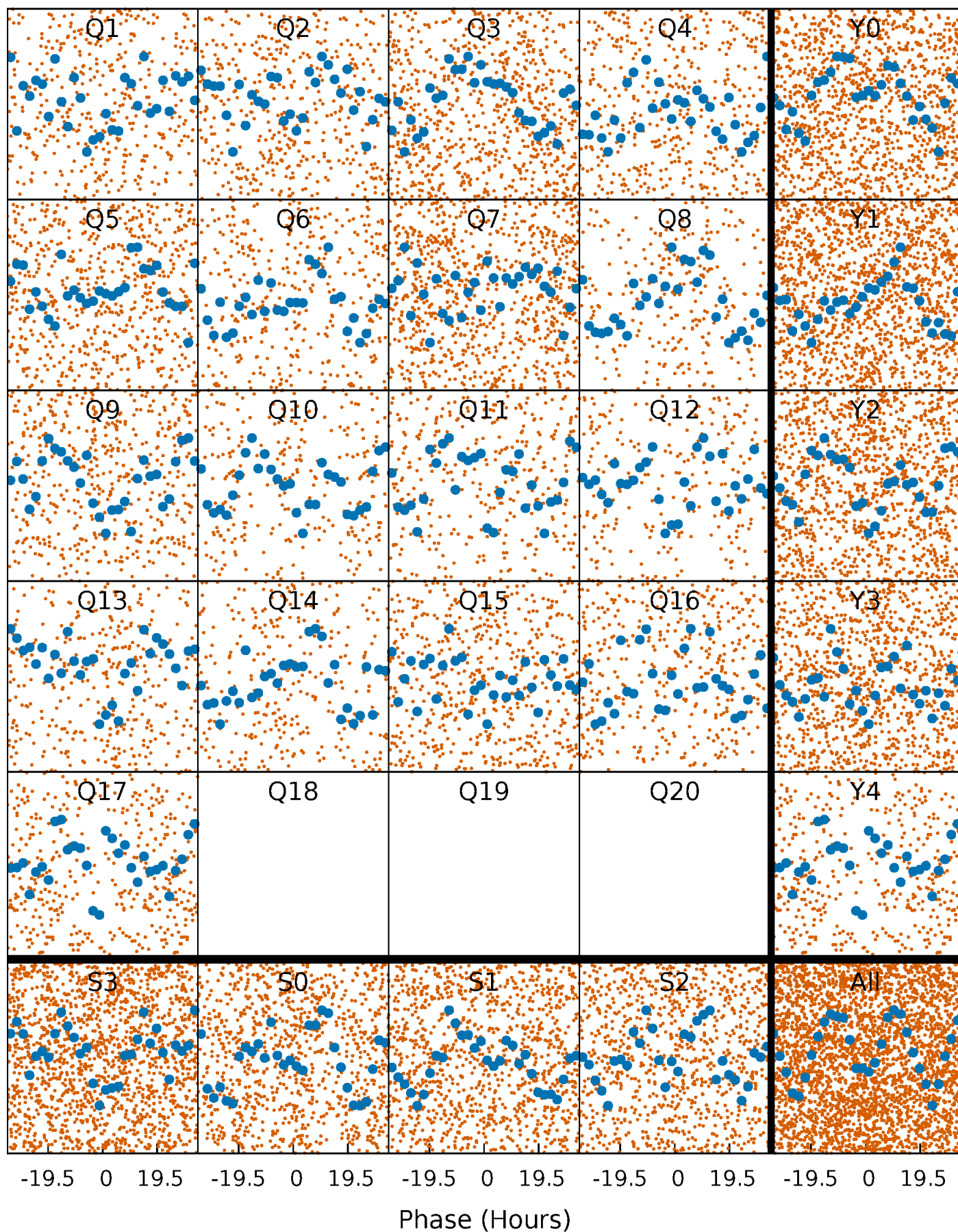


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



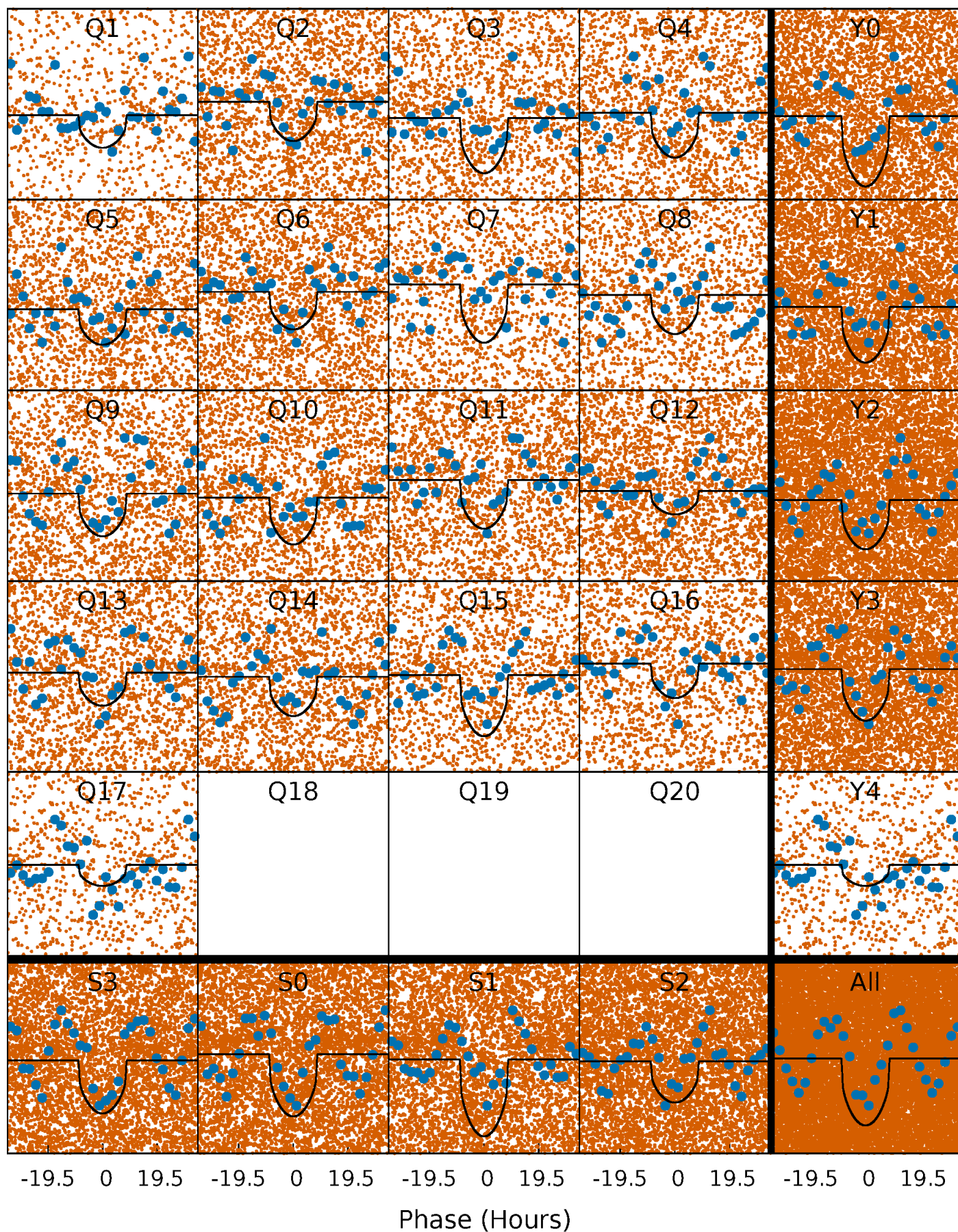
PDC Quarter-Phased Transit Curves

TCE 012159988-01 P= 2.004804 Days $T_0=131.811289$ (BKJD)



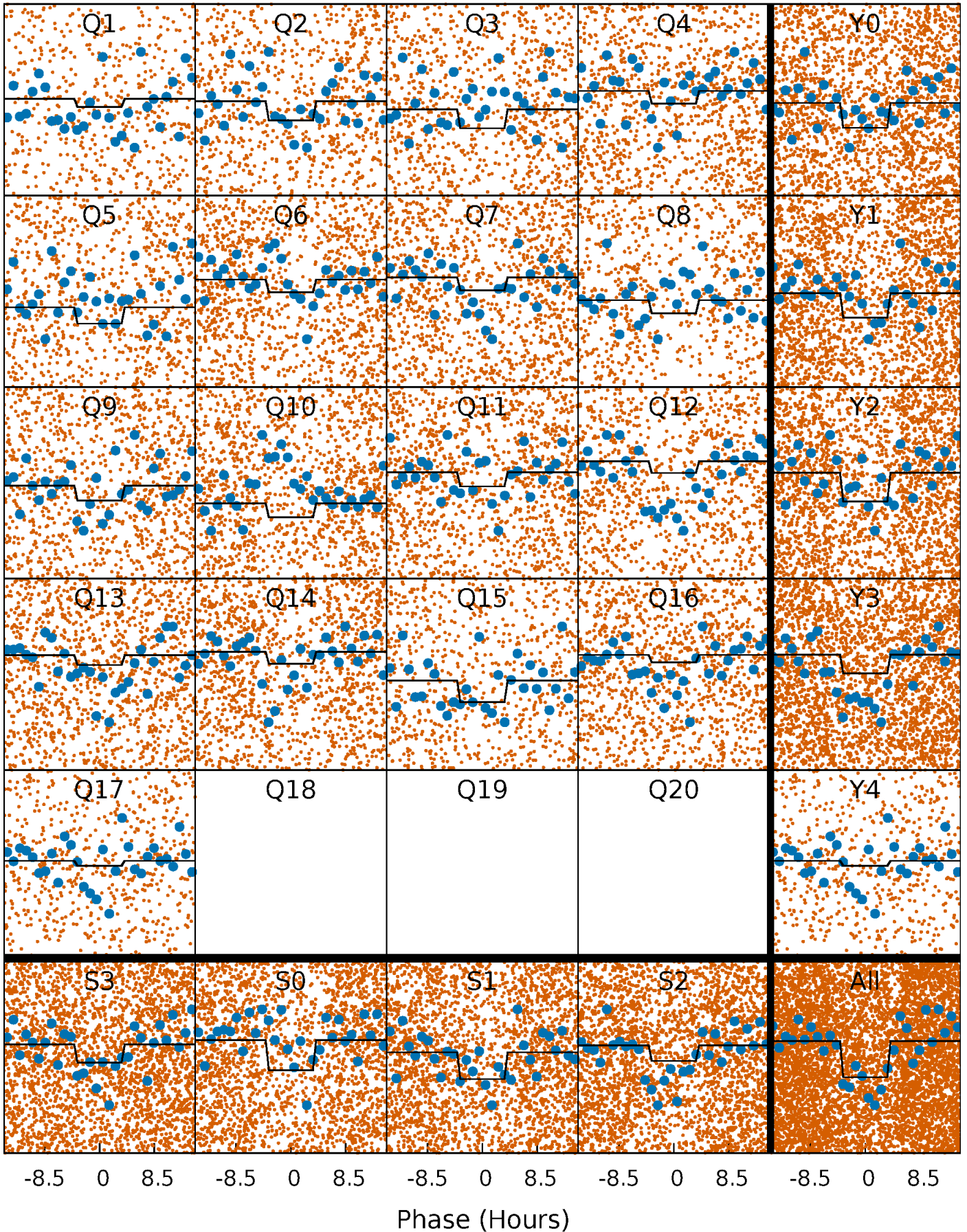
DV Quarter-Phased Transit Curves

TCE 012159988-01 P= 2.004804 Days $T_0=131.811289$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

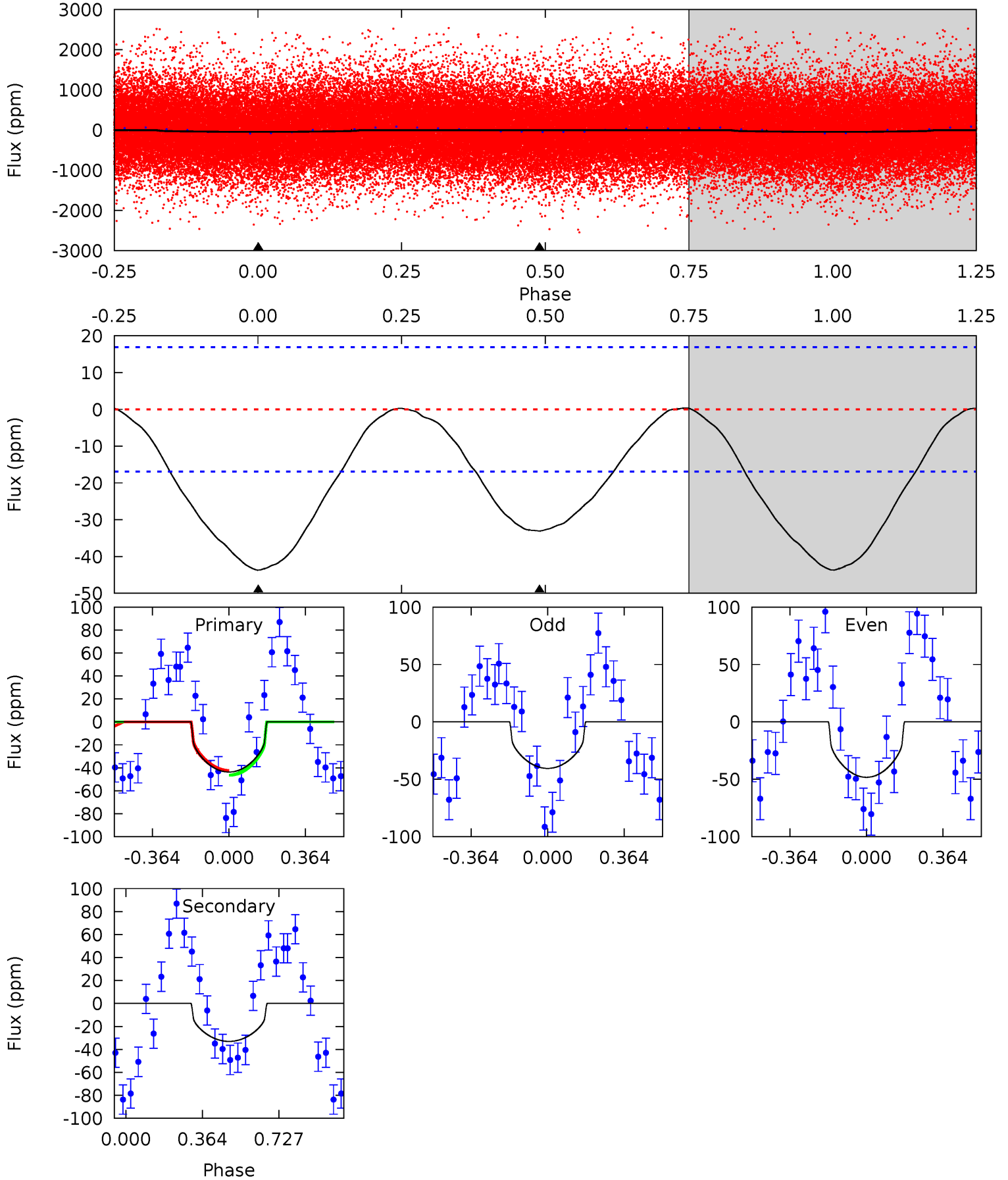
TCE 012159988-01 P= 2.004694 Days $T_0=131.818413$ (BKJD)



DV Model-Shift Uniqueness Test

012159988-01, P = 2.004804 Days, E = 129.806485 Days

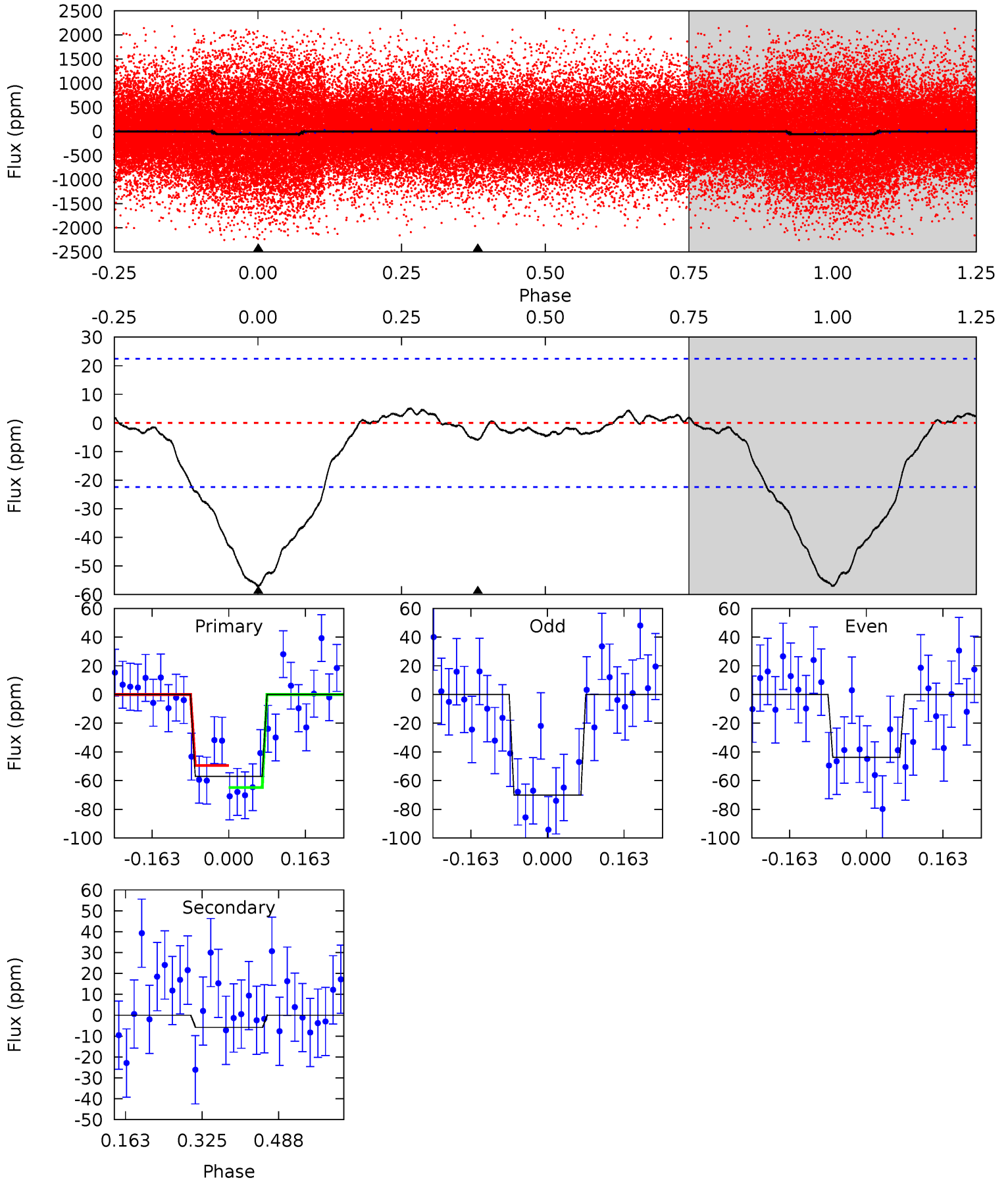
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	8.37	0	0	4.29	0.91	0.15	11.1	11.1	8.37	8.37	0.98	0.82	0.01	0.51



Alt Model-Shift Uniqueness Test

012159988-01, P = 2.004694 Days, E = 129.813719 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	1.17	0	0	4.46	1.40	0.44	11.3	11.3	1.17	1.17	2.63	0.94	0.08	1.54



Stellar Parameters For KIC 012159988

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4776^{+129}_{-143}	$4.516^{+0.078}_{-0.052}$	$0.340^{+0.100}_{-0.300}$	$0.811^{+0.043}_{-0.074}$	$0.788^{+0.046}_{-0.051}$	$2.078^{+0.680}_{-0.332}$
	+3%/-3%	+2%/-1%	+29%/-88%	+5%/-9%	+6%/-6%	+33%/-16%
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 012159988-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-33 ± 4	$0.81^{+0.34}_{-0.33}$	1559^{+54}_{-55}	4002^{+879}_{-488}	23^{+40}_{-12}
Alt.	-6 ± 5	$0.54^{+0.30}_{-0.28}$	1557^{+55}_{-58}	3346^{+1207}_{-997}	$8.046^{+38.020}_{-7.158}$

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 $A_{\text{obs}} \gg 1.0$

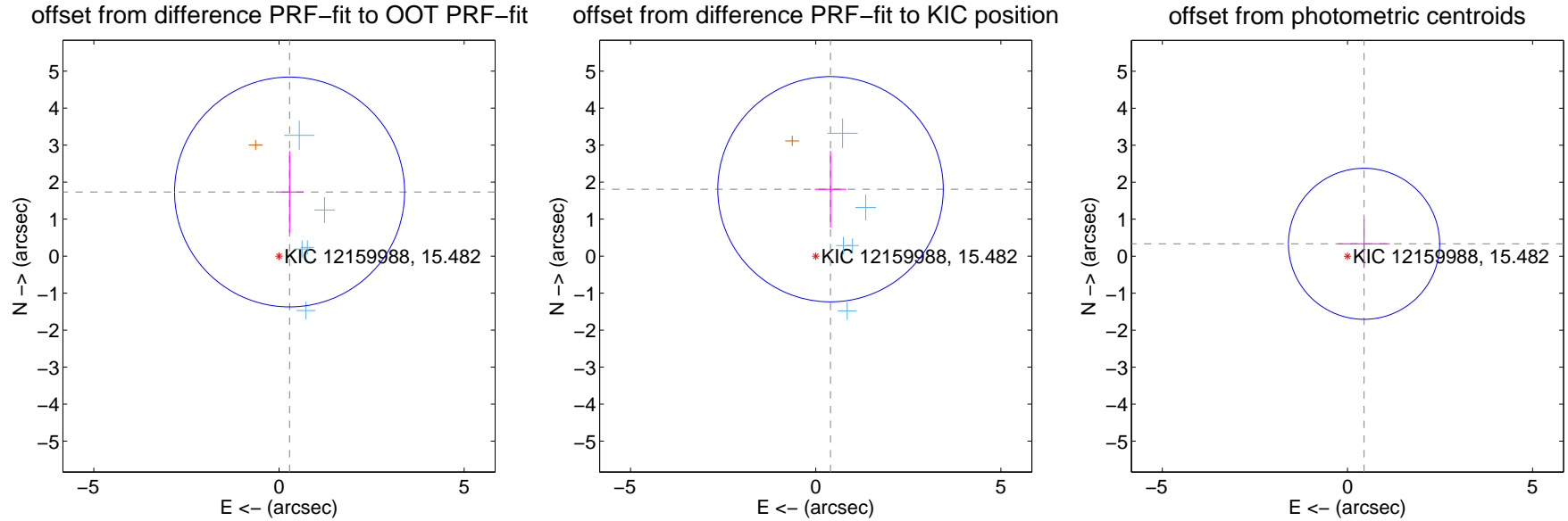
DV Centroid Data

Supplemental centroid analysis for 012159988-01. Kepler magnitude: 15.48. Transit SNR 11.29

There are 5 quarters with good PRF difference image offsets

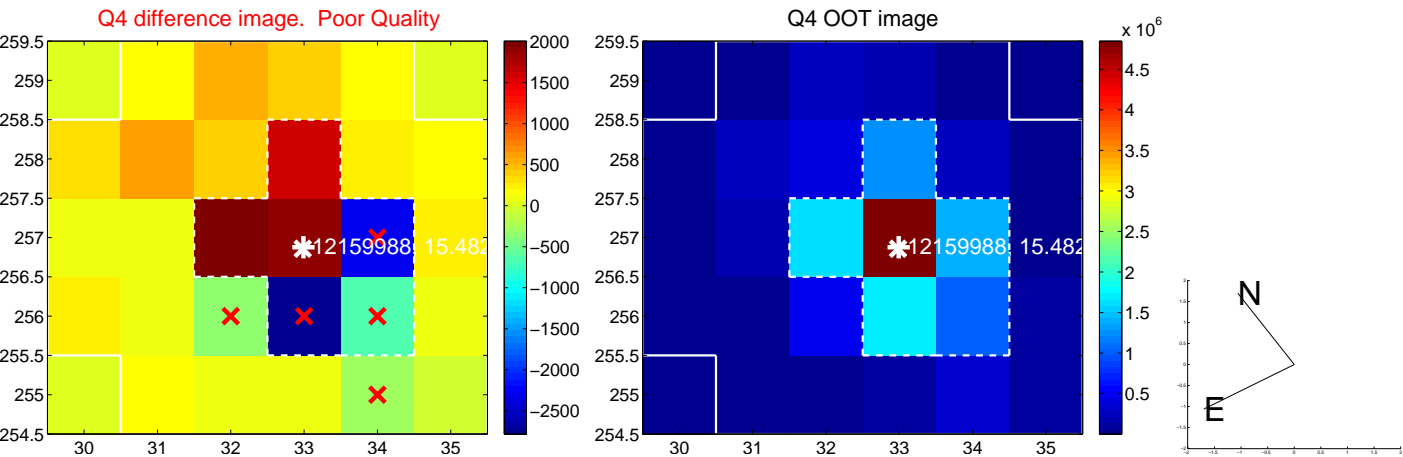
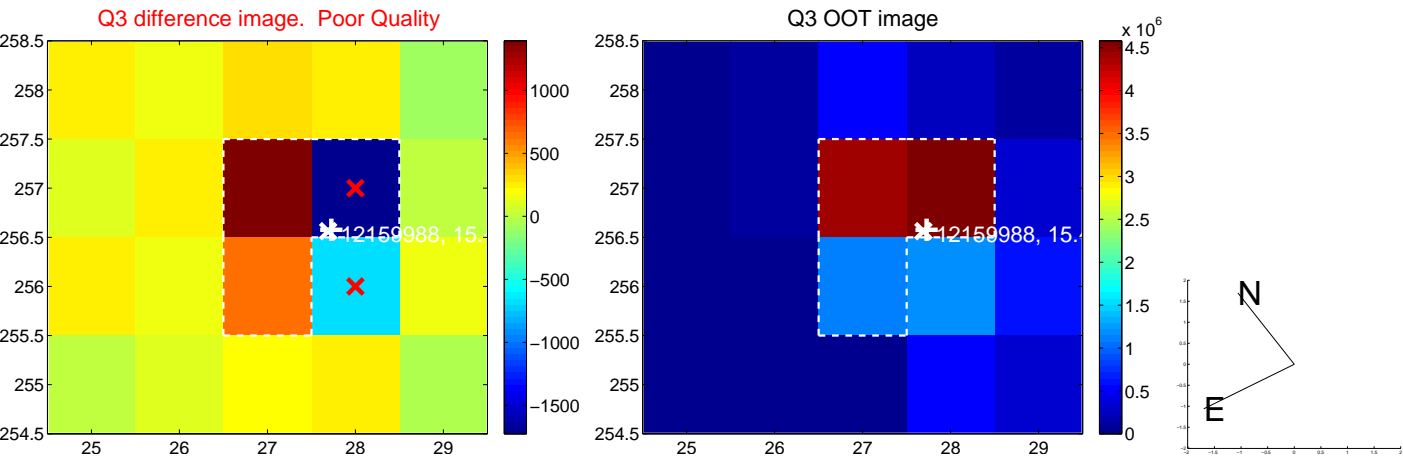
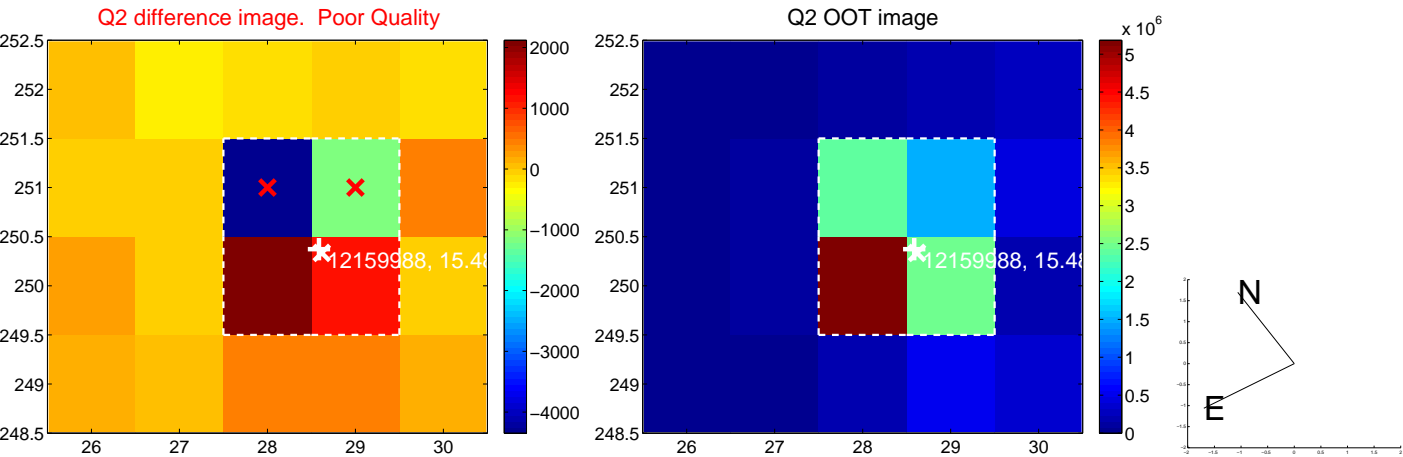
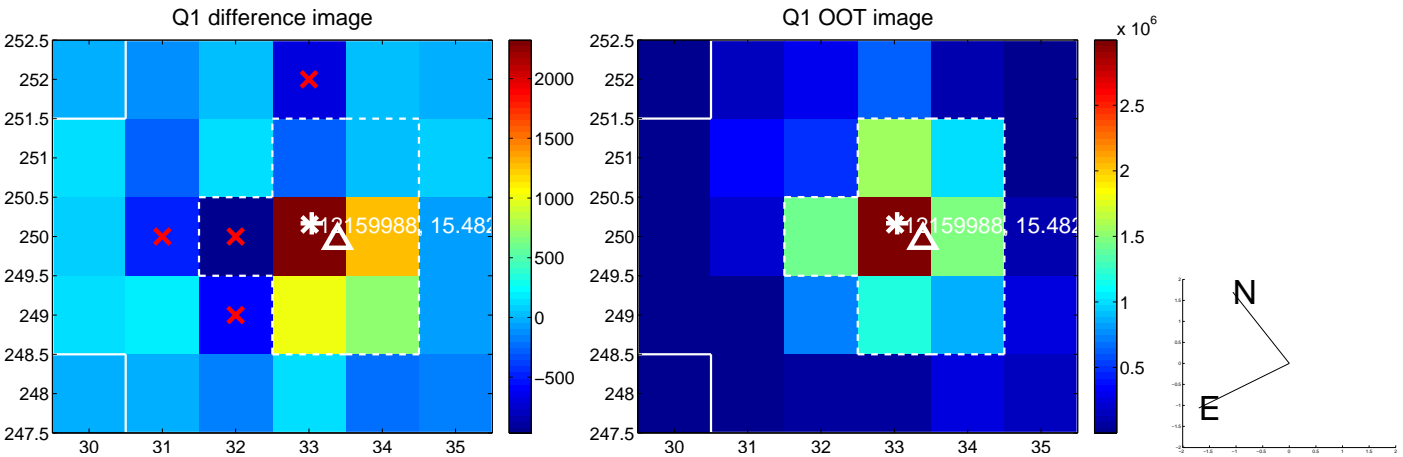
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.757 ± 1.035	1.70	-0.286 ± 0.384	1.734 ± 1.103
PRF-fit source offset from KIC position	1.853 ± 1.015	1.83	-0.400 ± 0.424	1.809 ± 1.035
photometric centroid source offset	0.56 ± 0.68	0.82	-0.45 ± 0.69	0.34 ± 0.66

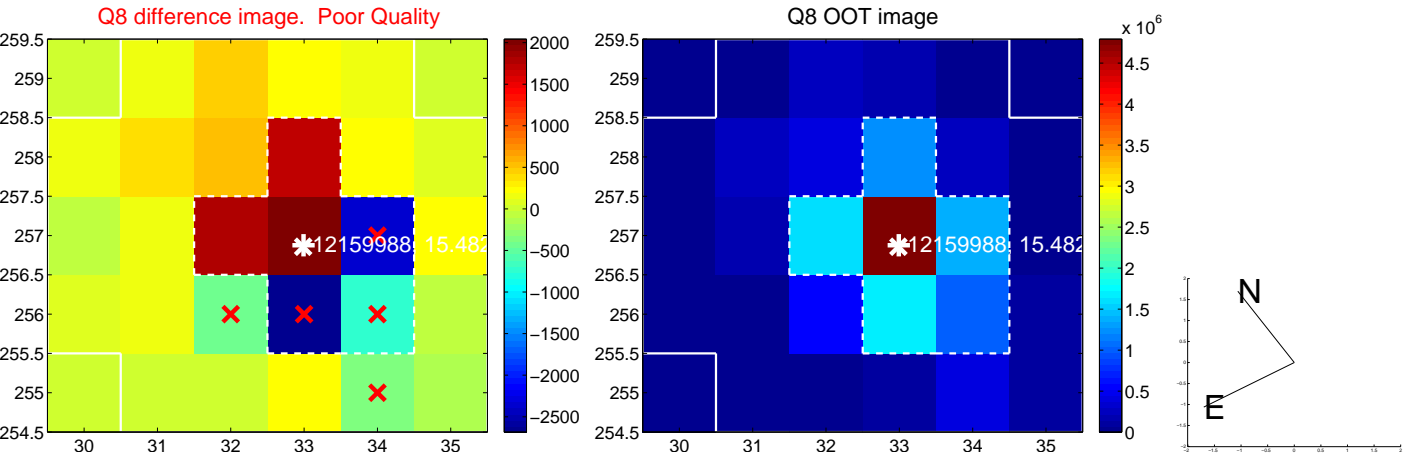
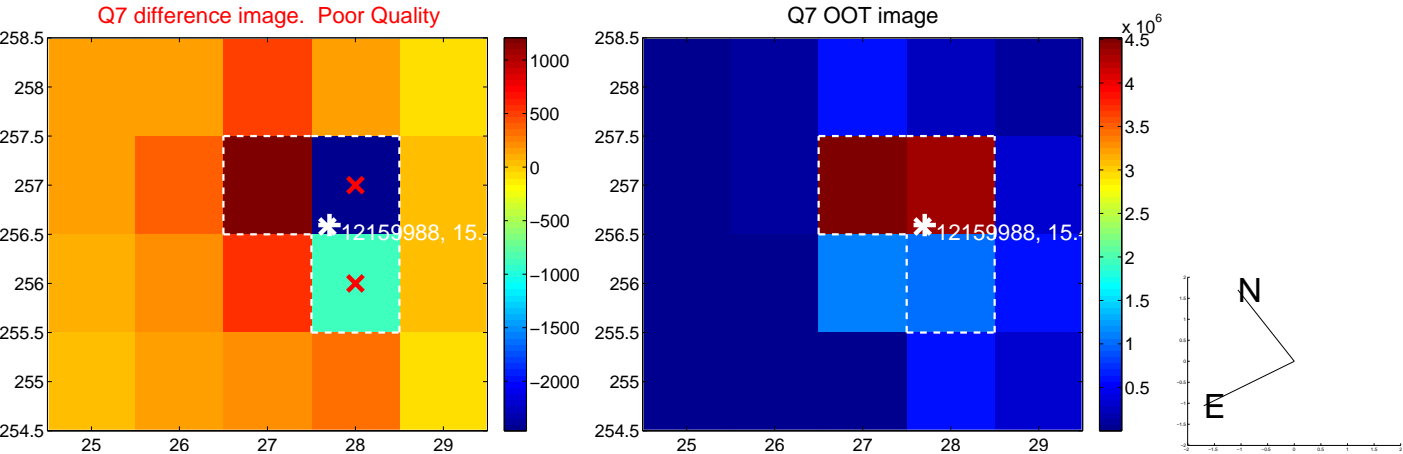
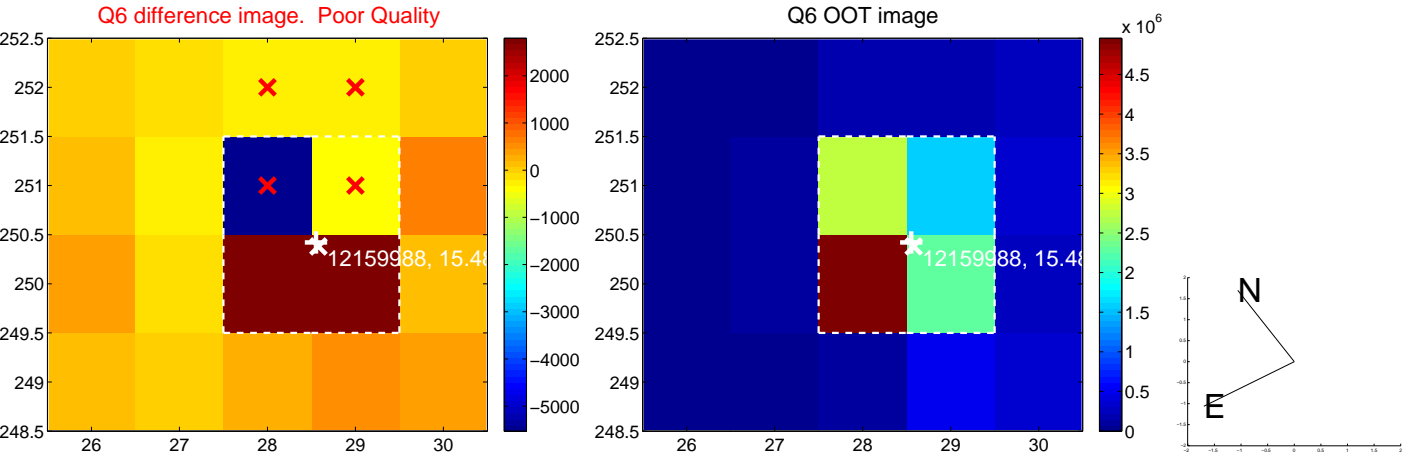
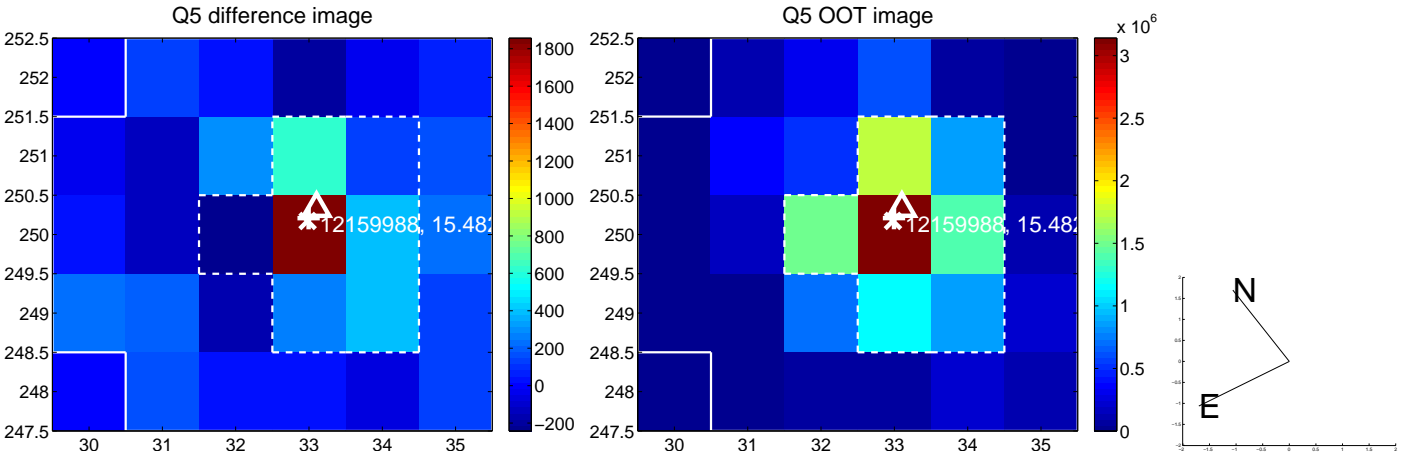


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

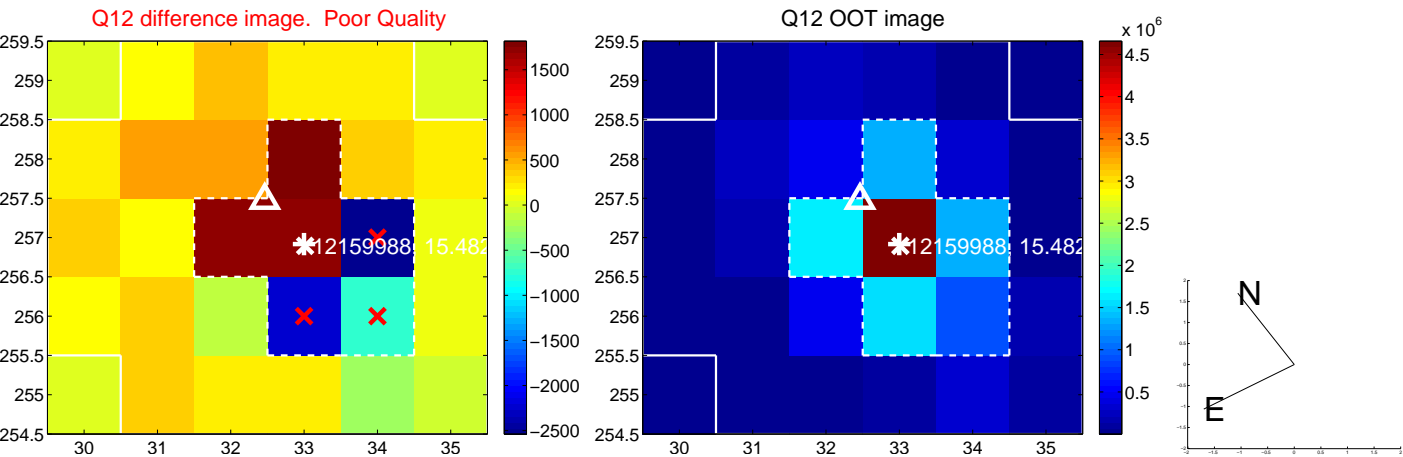
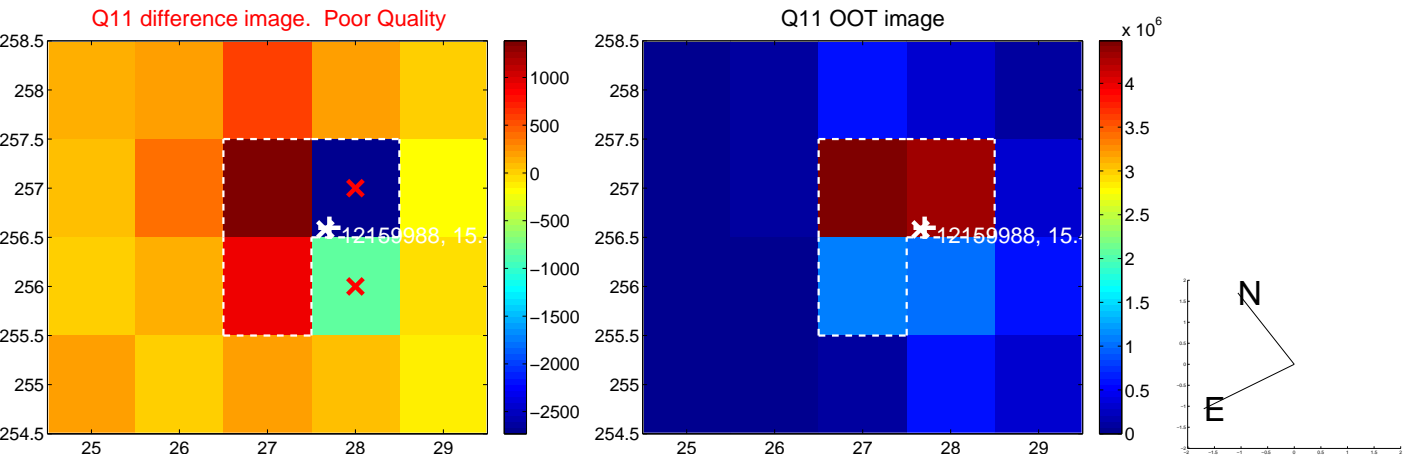
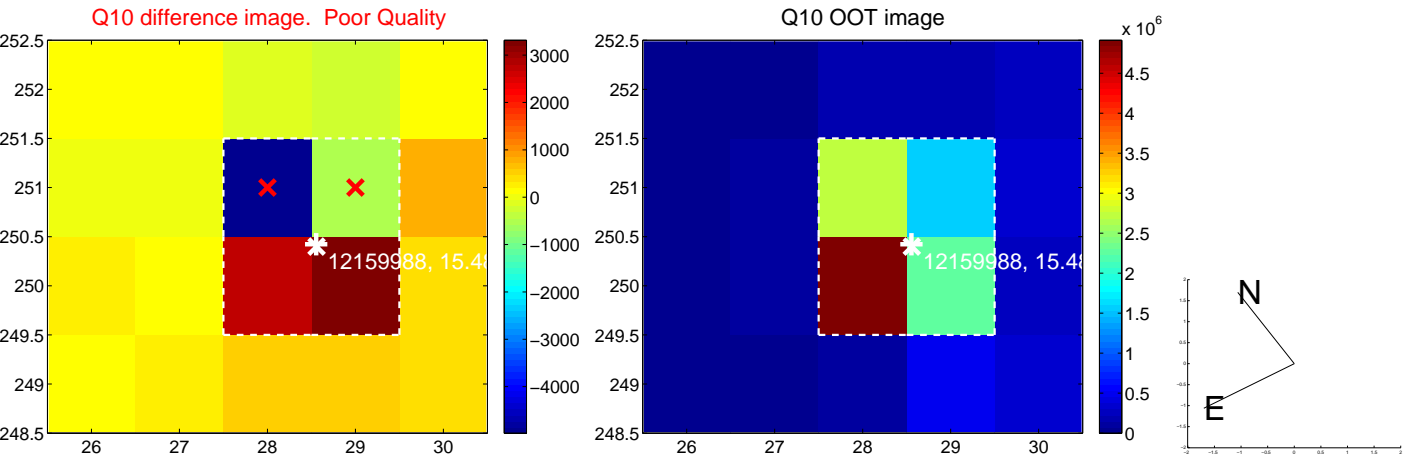
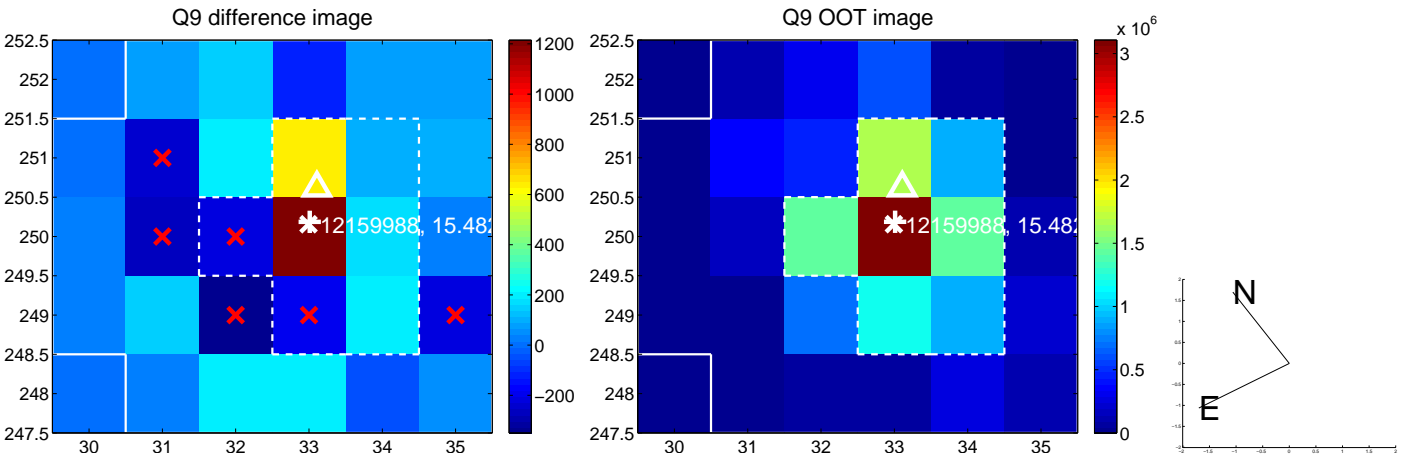
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



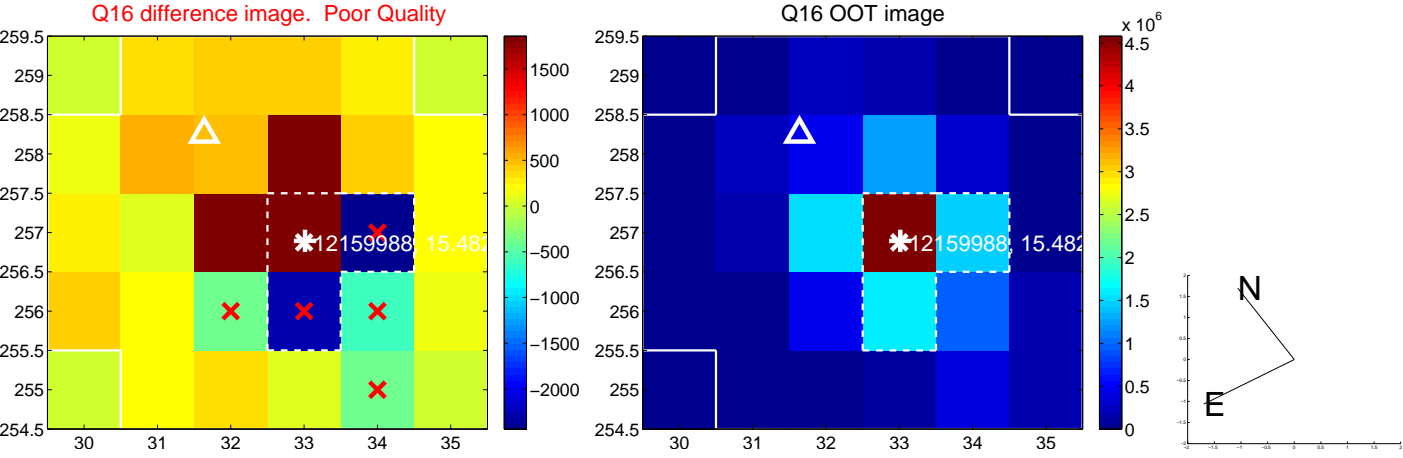
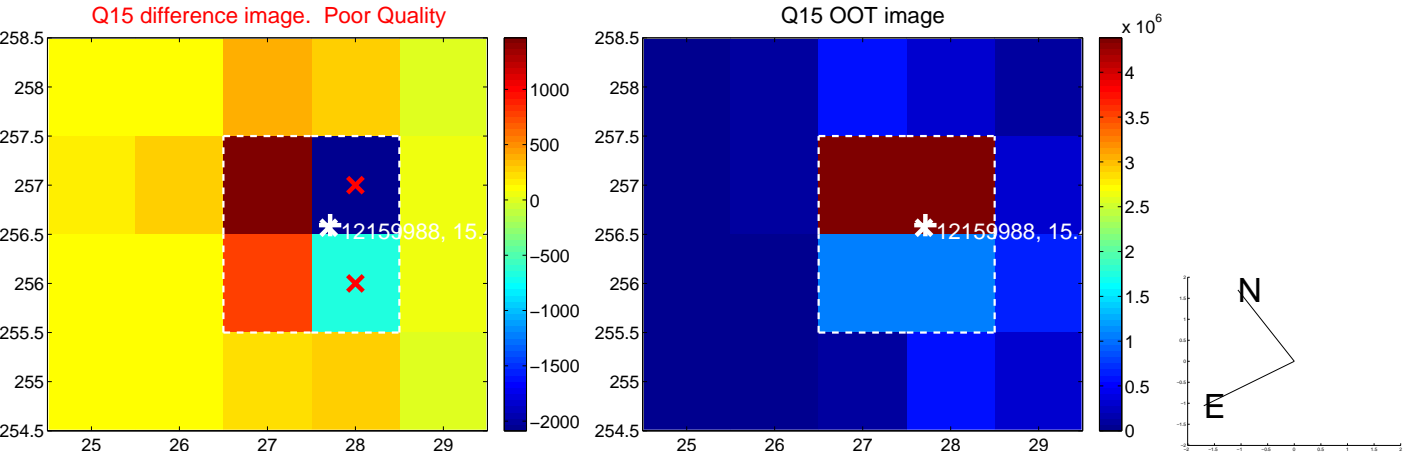
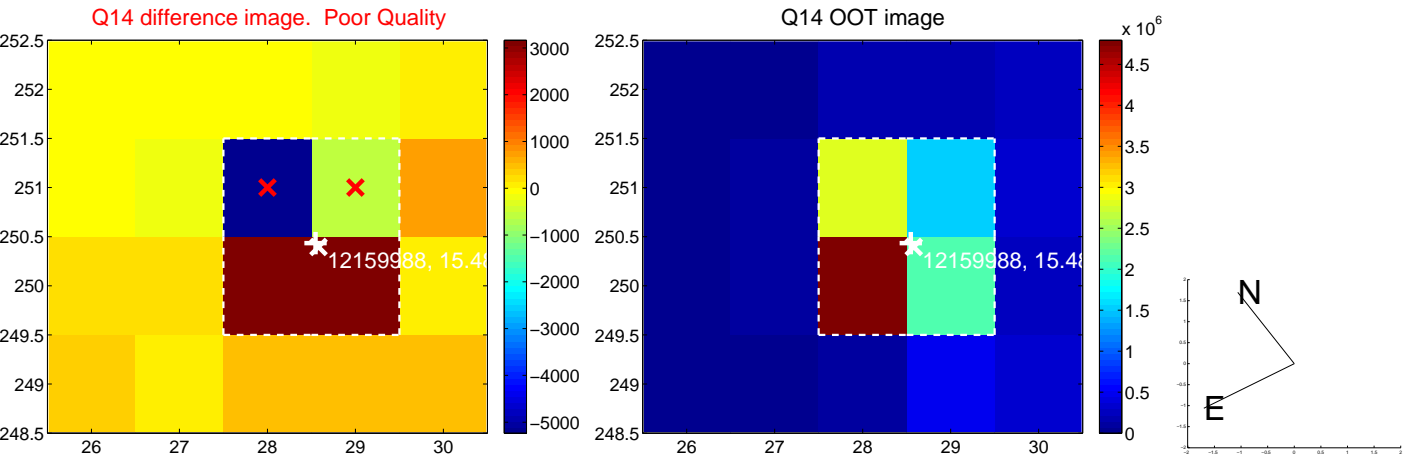
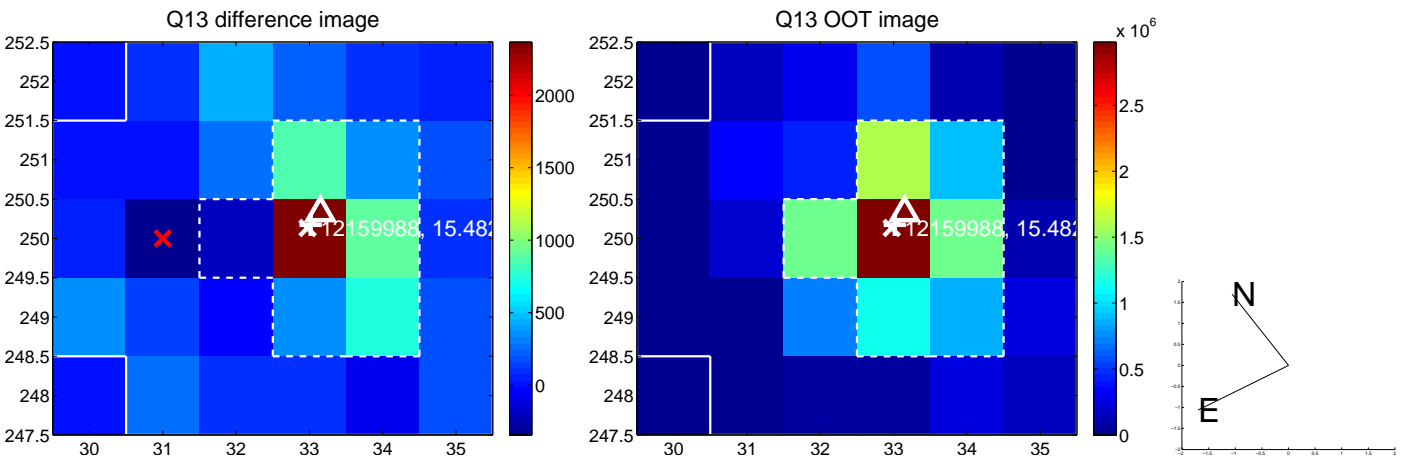
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



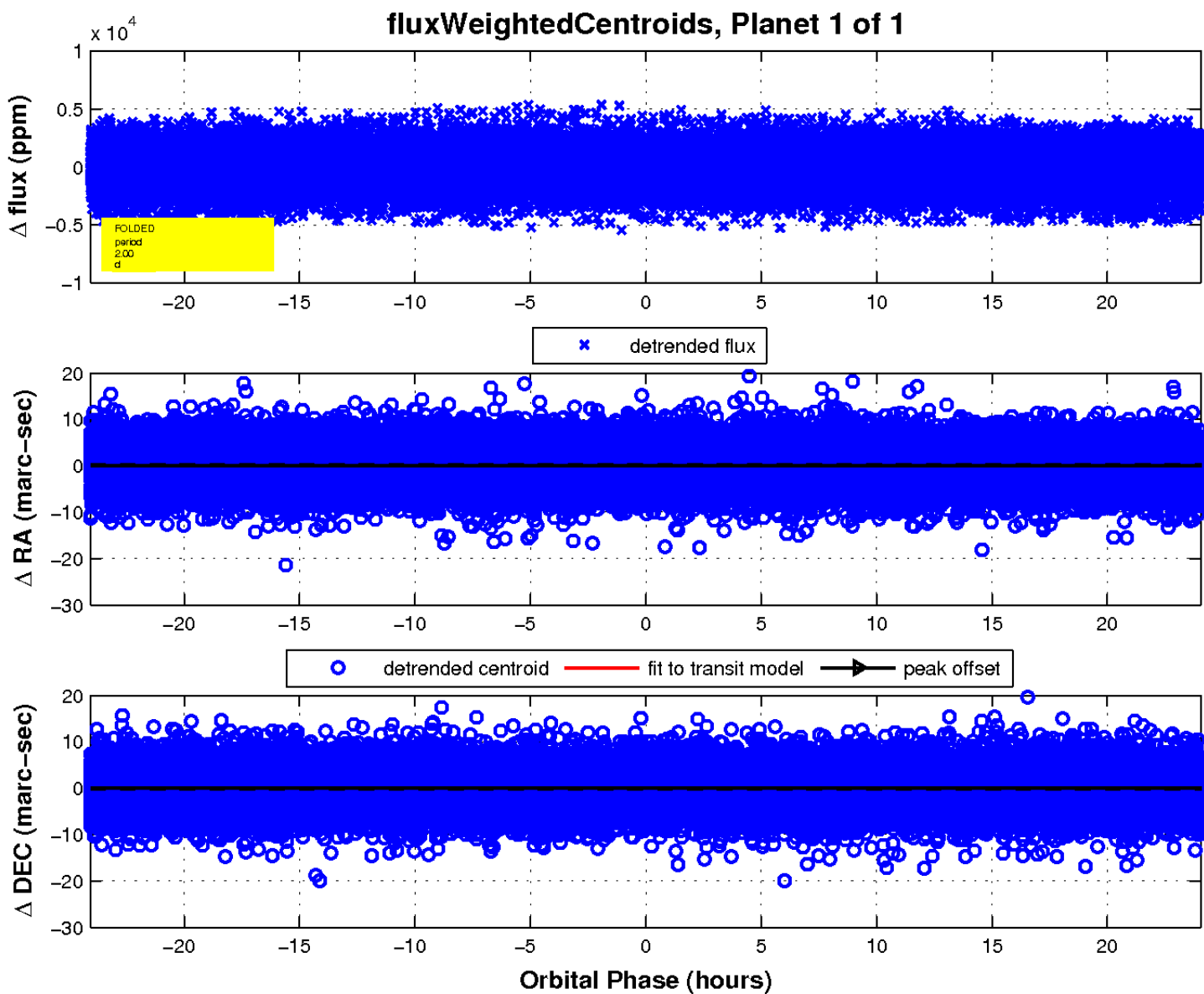
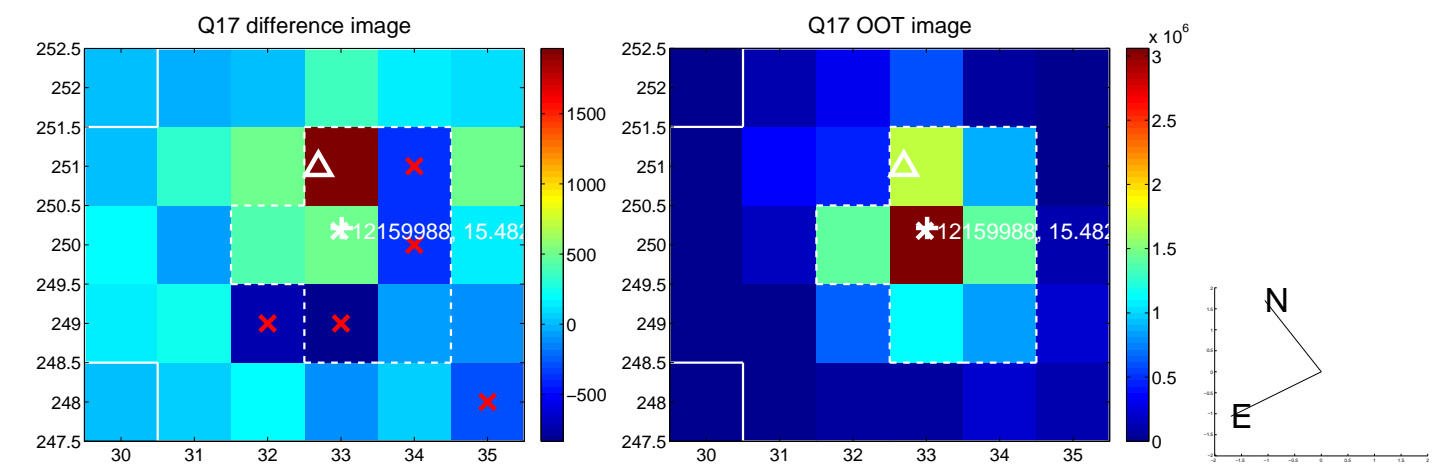
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

