

KIC 003228988

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R _★ (R _☉)	T _★ (K)	R _p (R _⊕)	S _p (S _⊕)
003228988-01	OBS	3992.01	0.730907	132.250766	61.2	3.213	15.0	10.0	0.84	5767	0.68	2897.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003228988-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_ALT—CENT_UNRESOLVED_OFFSET—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 003228988-01

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
003228988-01	3228988	003228945-01	3228945	1:1	60.1	15	-1	15.02	15.31	1.38	Direct-PRF	1	1.63	1.60

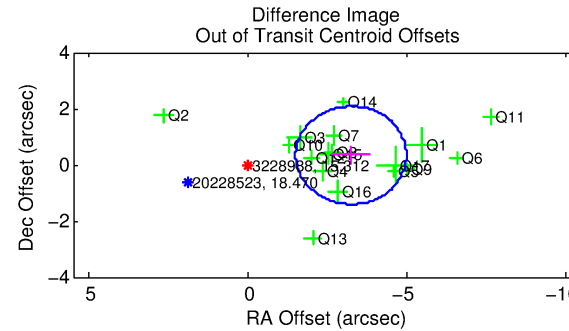
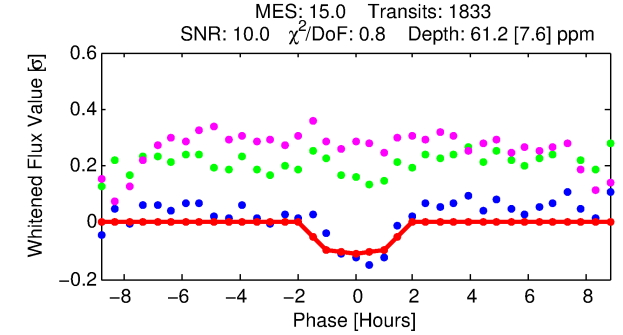
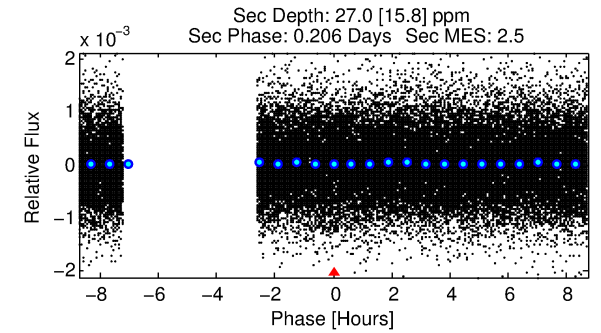
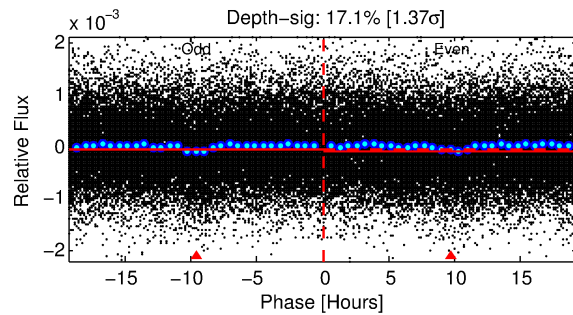
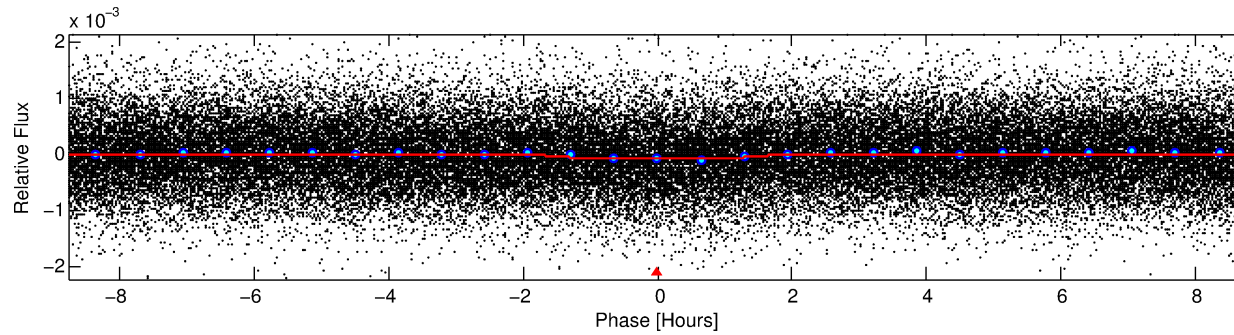
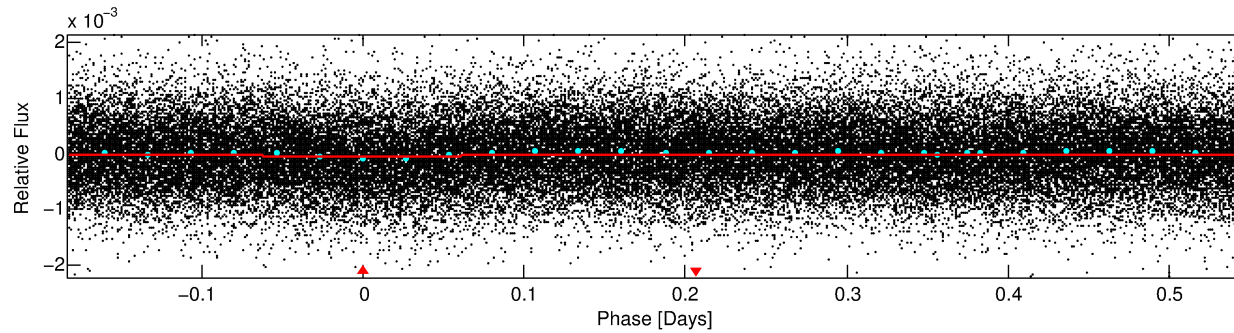
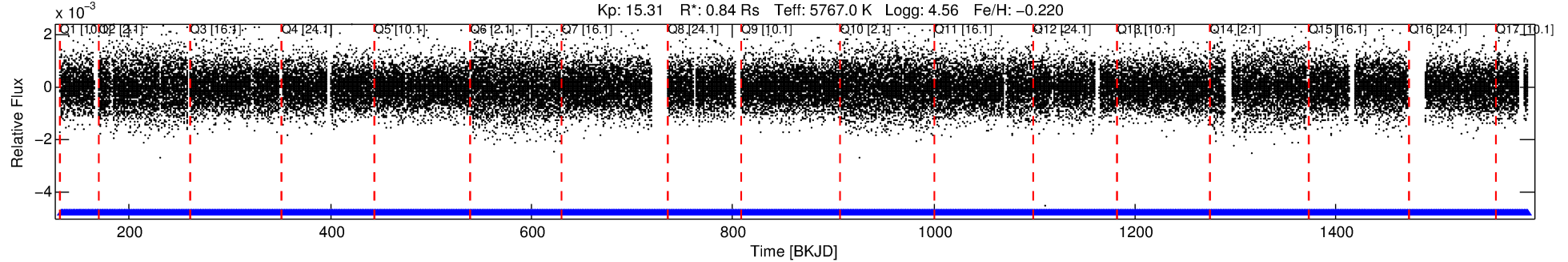
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant σ_P < 5.0 and σ_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: 3228988 Candidate: 1 of 1 Period: 0.731 d

KOI: K03992.01 Corr: 0.837

Kp: 15.31 R*: 0.84 Rs Teff: 5767.0 K Logg: 4.56 Fe/H: -0.220



DV Fit Results:

Period = 0.73091 [0.00001] d
Epoch = 132.2508 [0.0040] BKJD
Rp/R* = 0.0075 [0.0051]
a/R* = 1.60 [3.00]
b = 0.60 [3.28]
Seff = 2897.53 [902.22]
Teq = 1871 [146] K
Rp = 0.68 [0.49] Re
a = 0.0155 [0.0031] AU
Ag = 7.65 [11.58] [0.57σ]
Teffp = 4810 [1792] K [1.64σ]

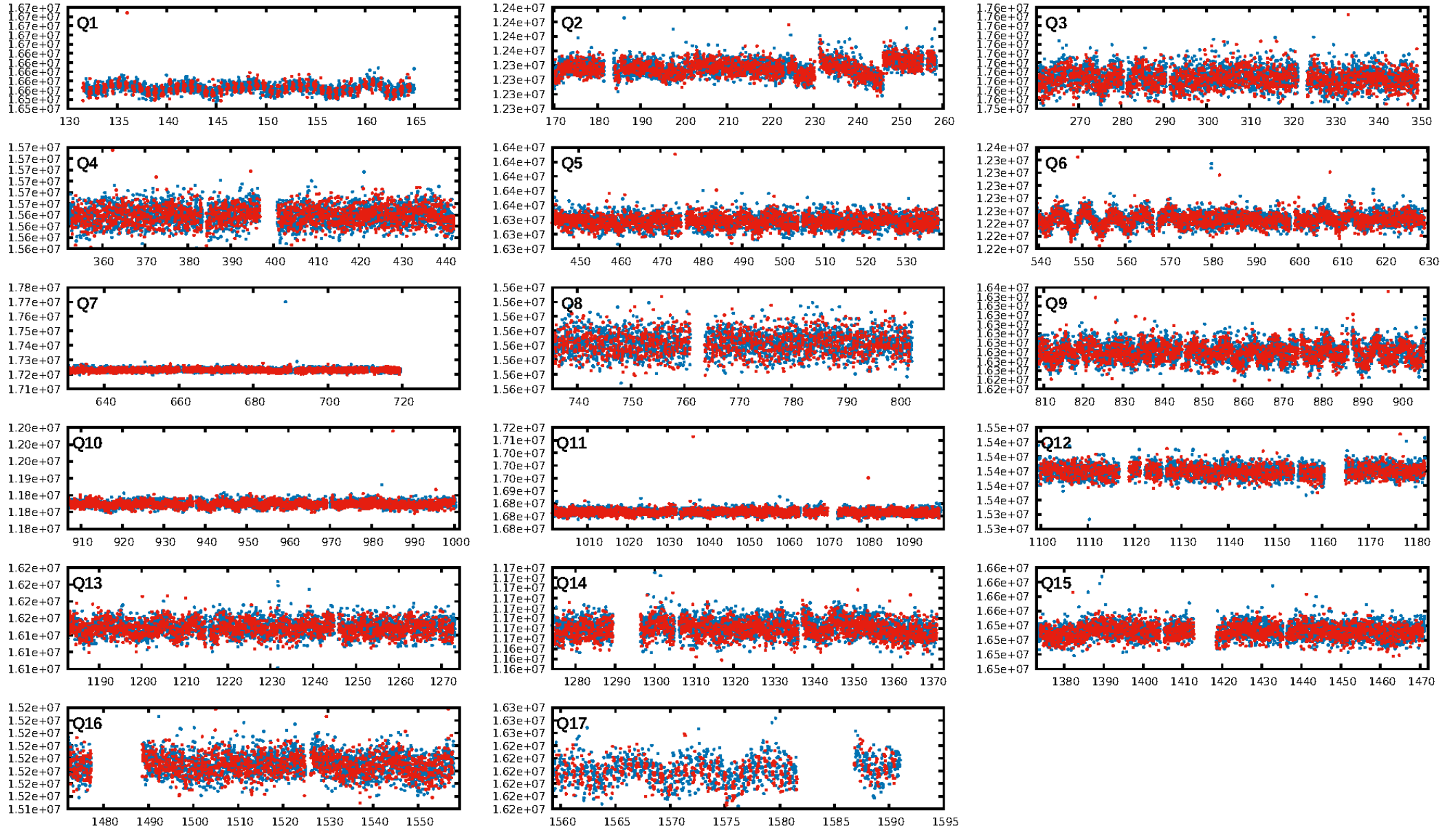
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.11e-42
RollingBand-fgt: 1.00 [1751/1751]
GhostDiagnostic-chr: 0.3093
Centroid-sig: 0.0%
Centroid-so: 3.028 arcsec [3.31σ]
OotOffset-rm: 3.255 arcsec [5.60σ]
KicOffset-rm: 3.176 arcsec [5.84σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.00 [0/17]
DiffImageOverlap-fno: 1.00 [17/17]

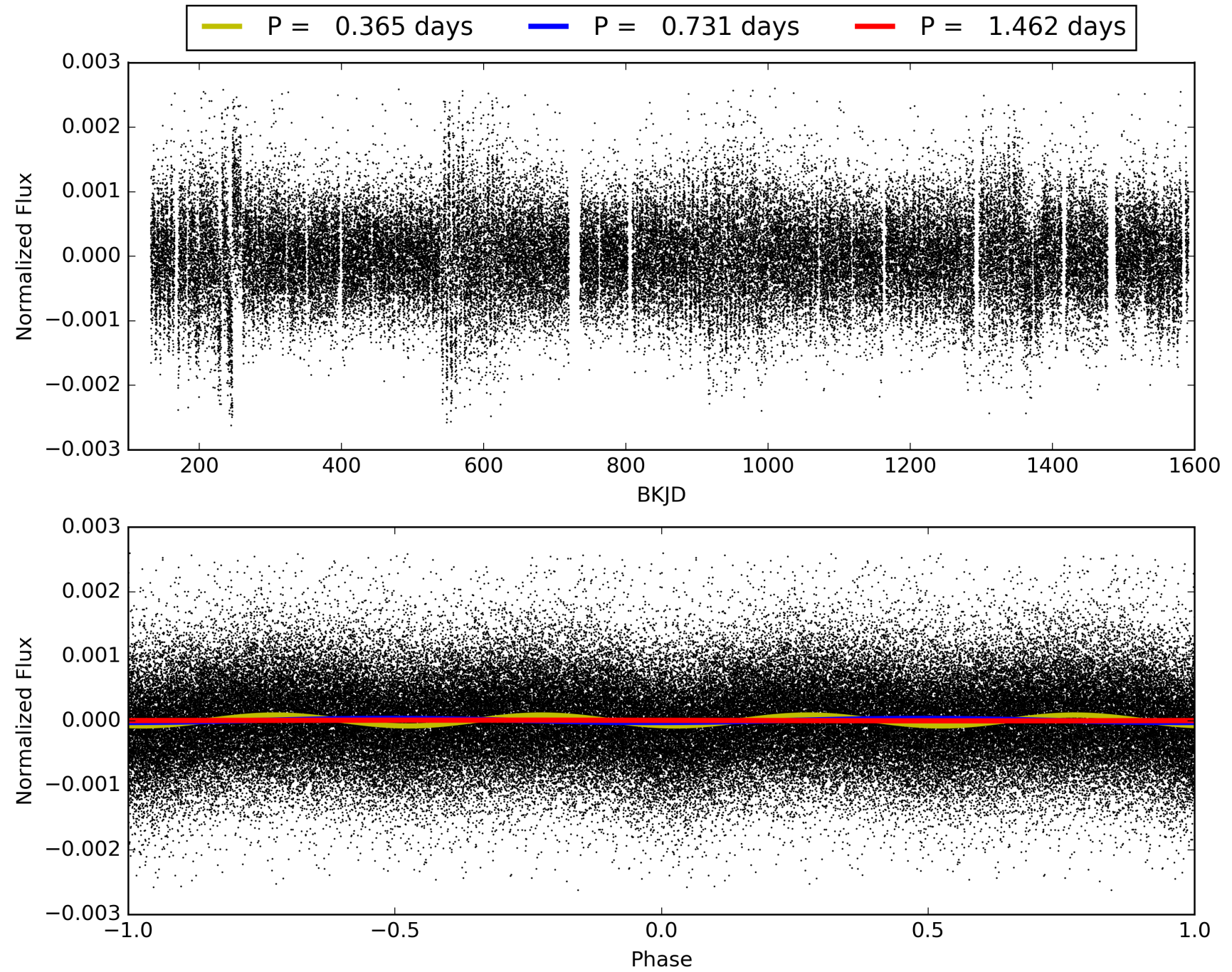
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:01:29 Z

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

TCE 003228988-01, PDC Light Curves

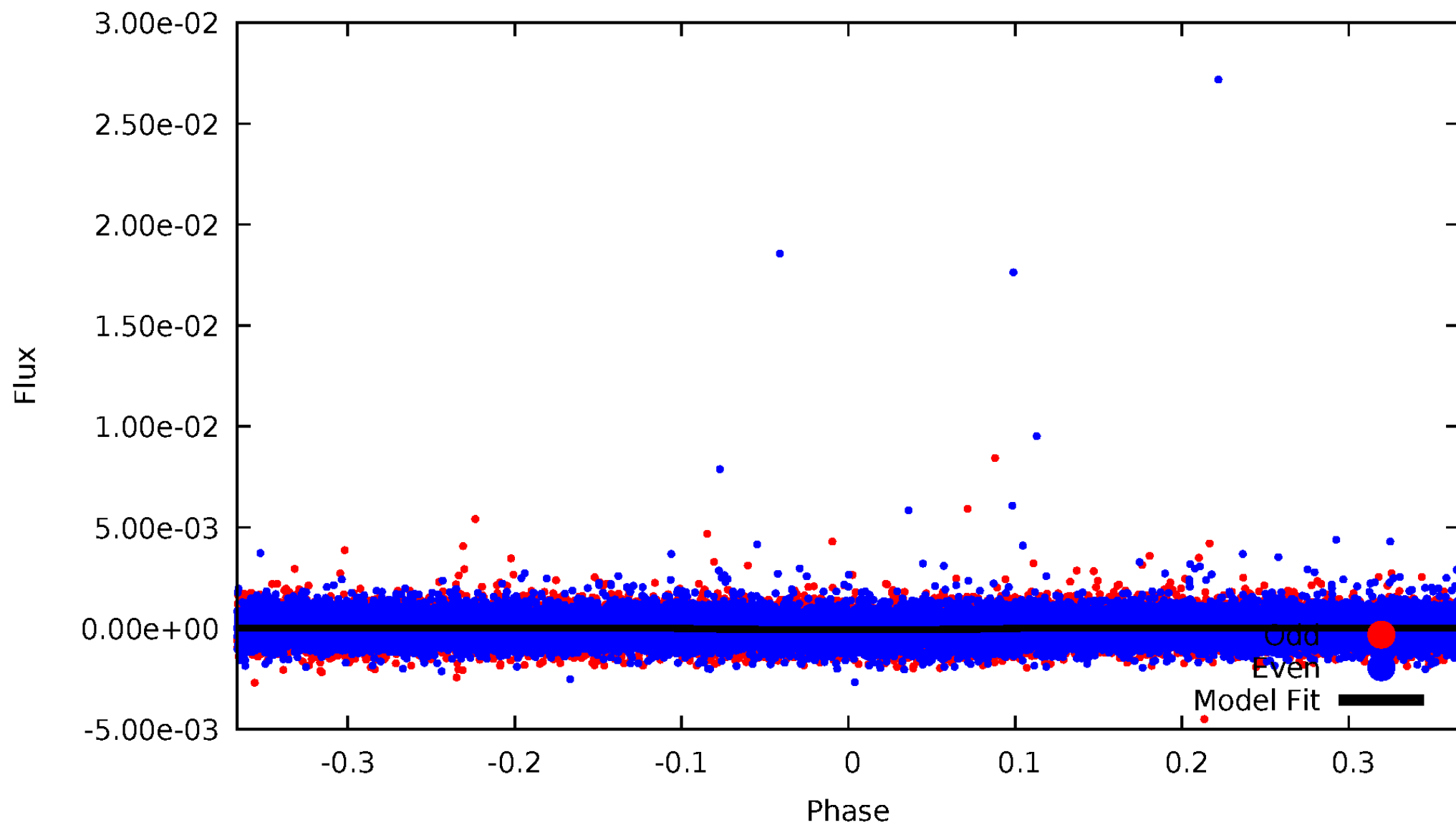


TCE 003228988-01



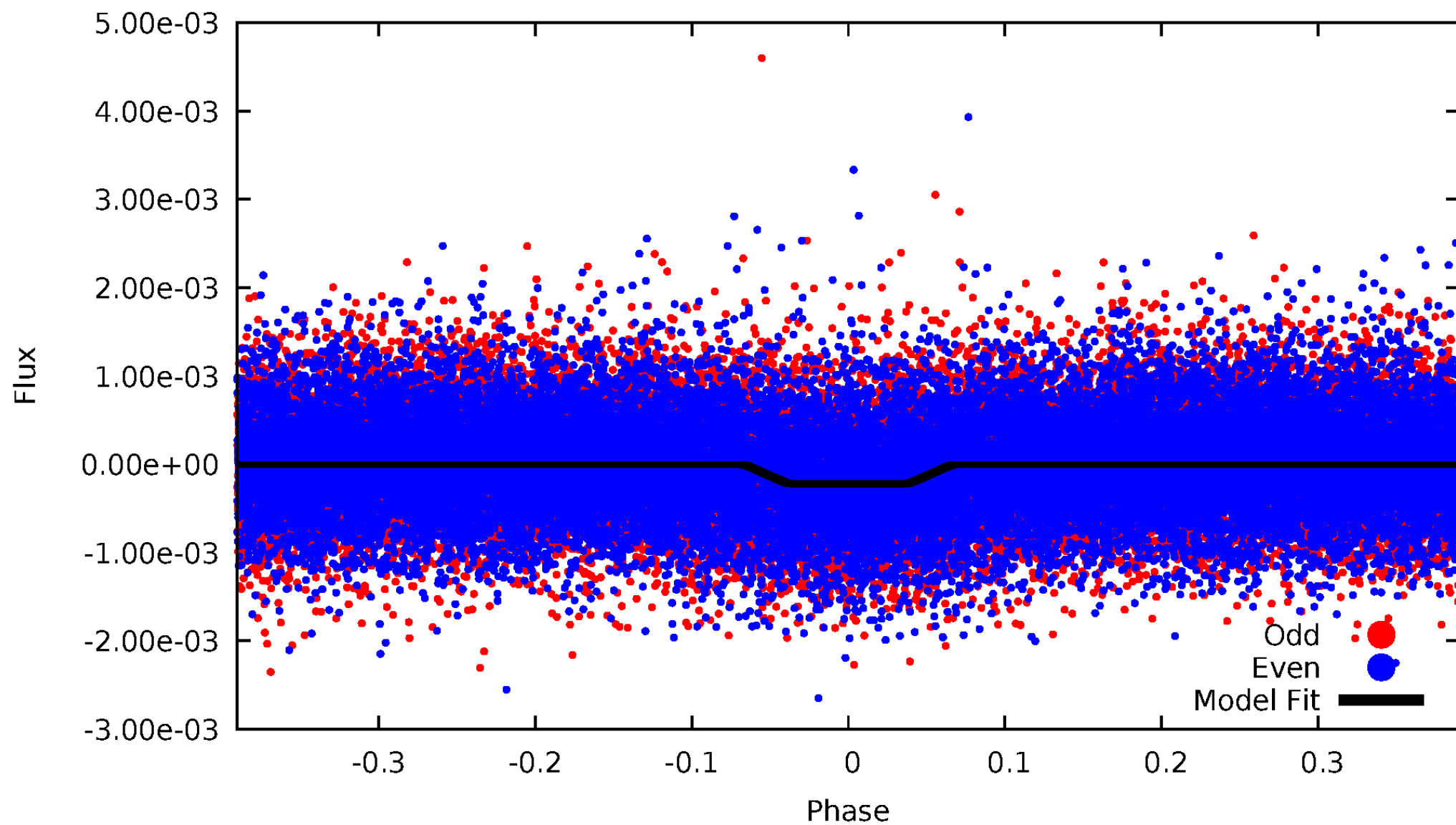
DV Odd/Even

TCE 003228988-01



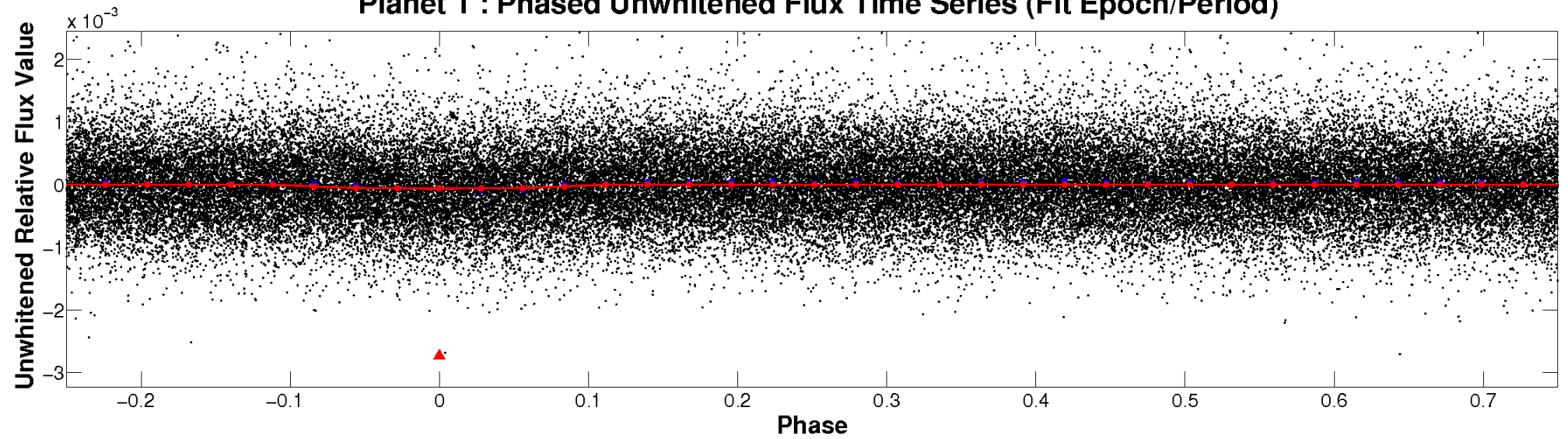
ALT Odd/Even

TCE 003228988-01

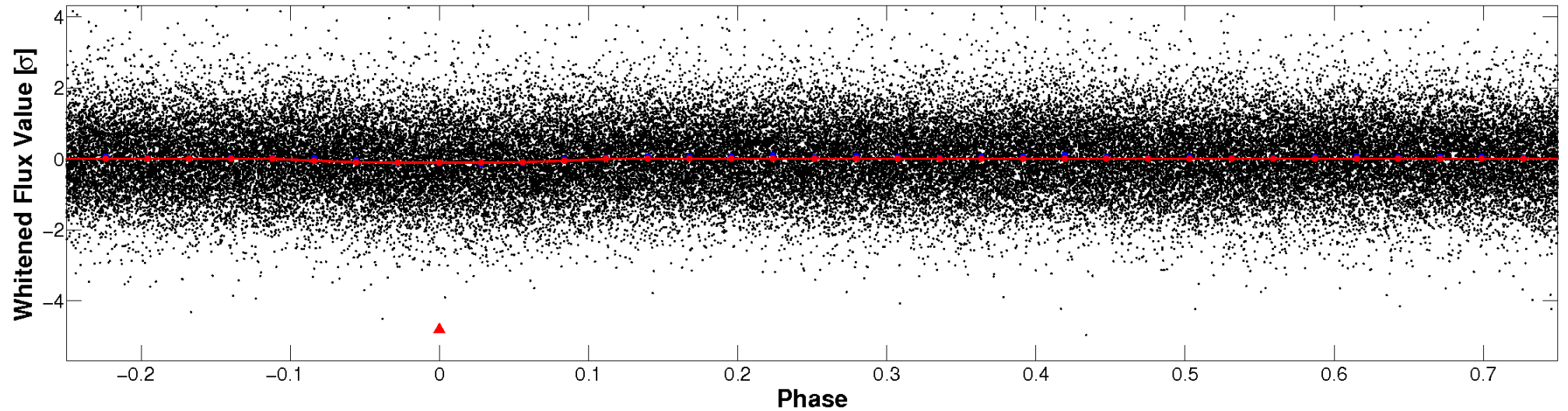


Non-Whitened Vs. Whitened Light Curve

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

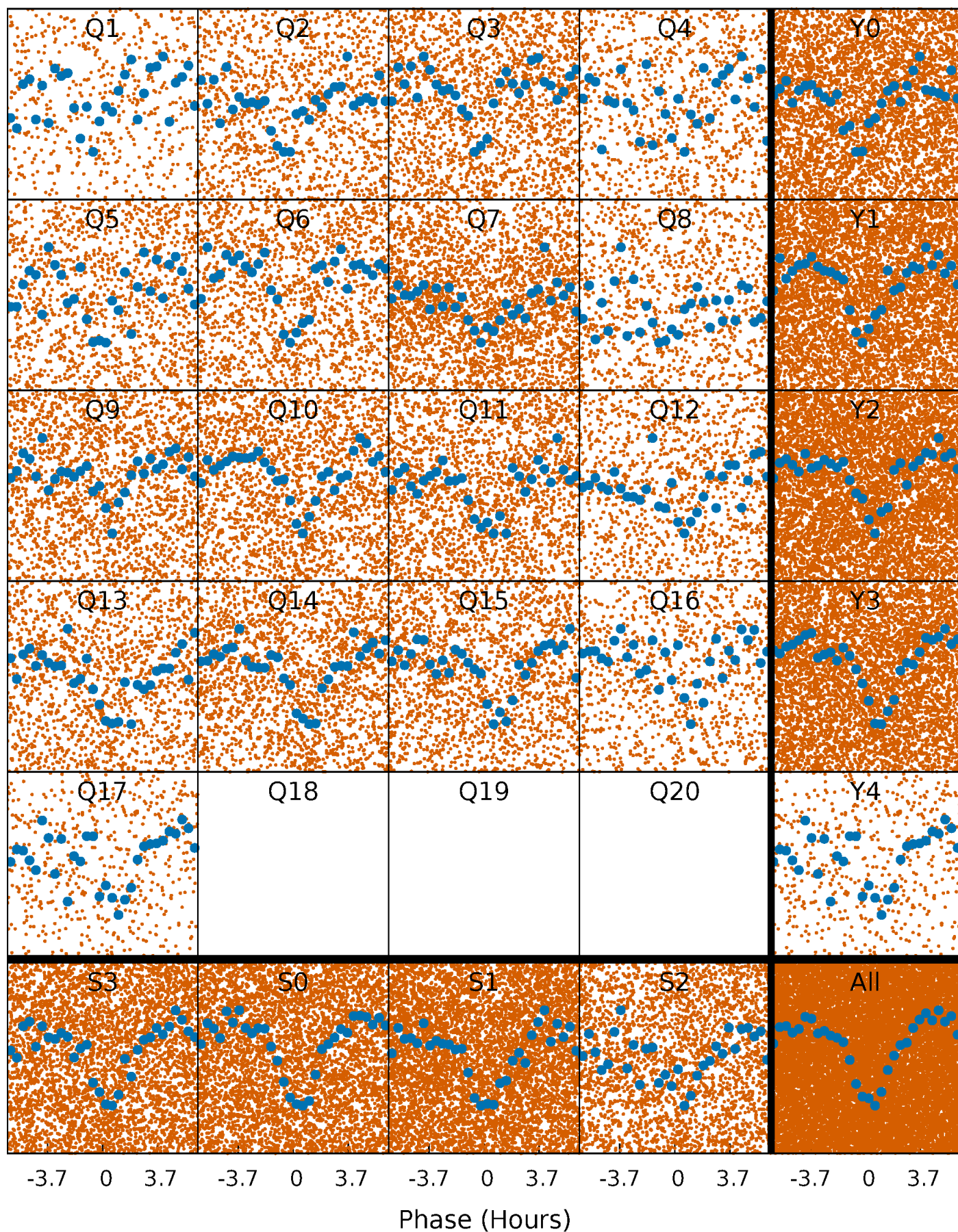


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



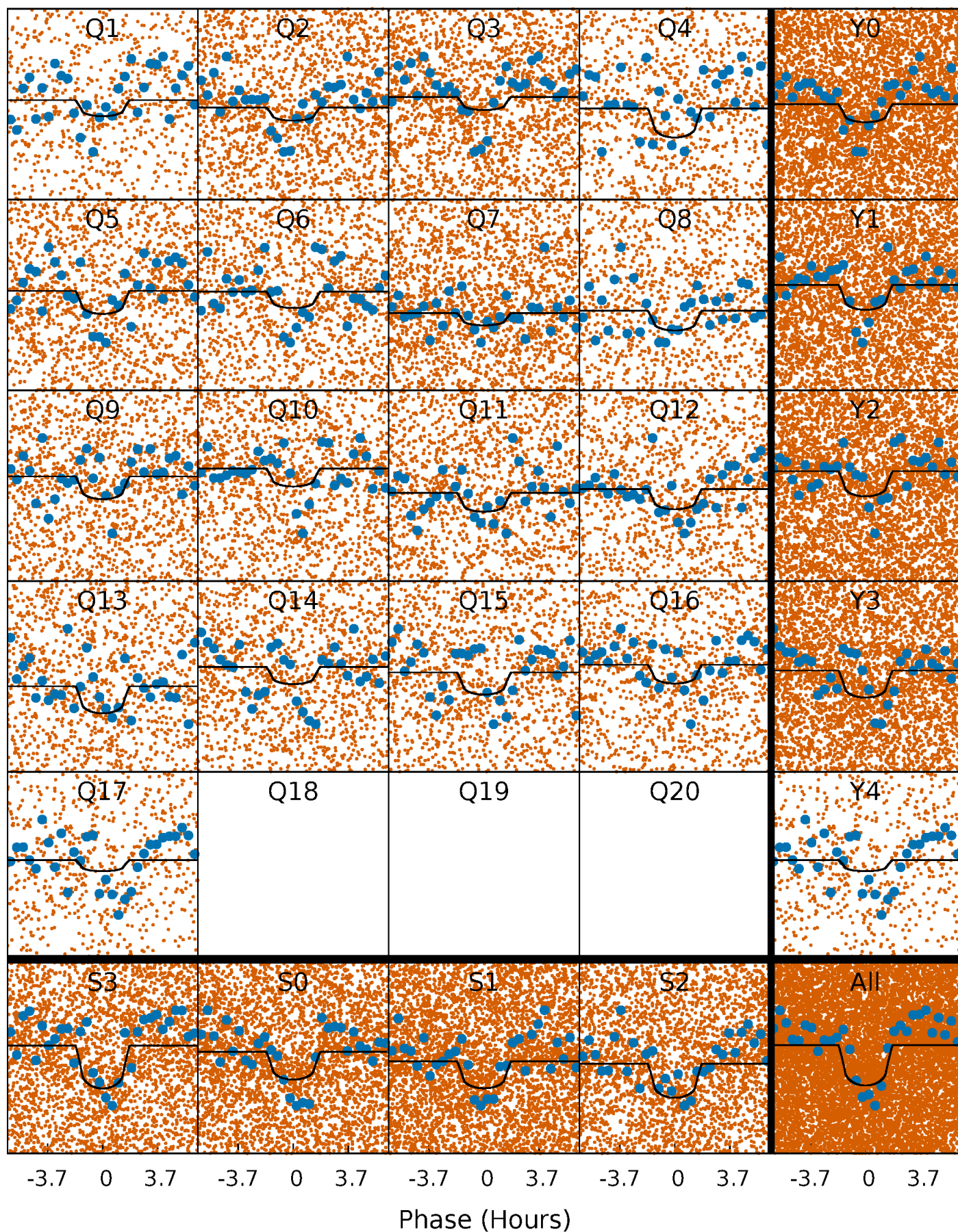
PDC Quarter-Phased Transit Curves

TCE 003228988-01 P= 0.730907 Days $T_0=132.250766$ (BKJD)



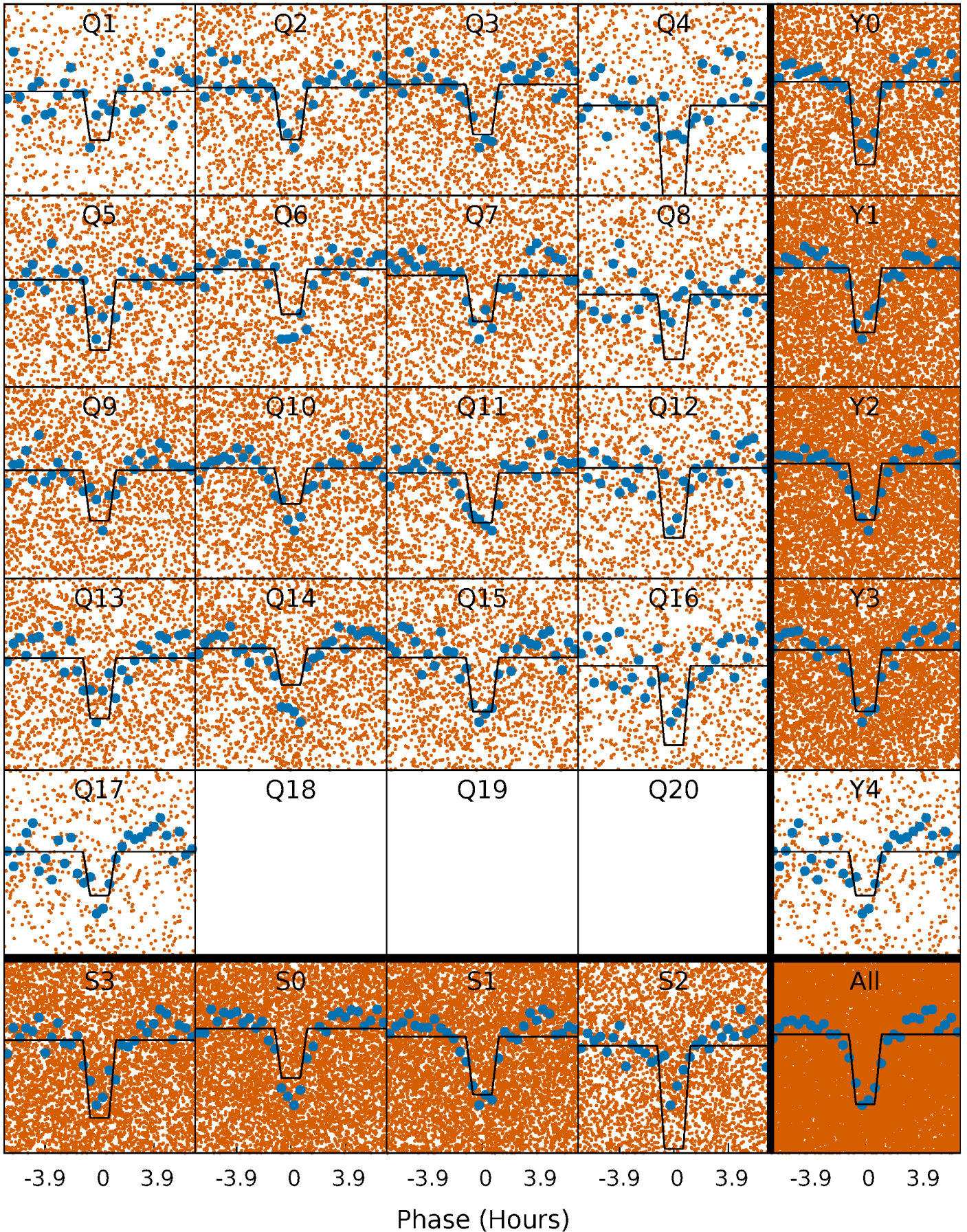
DV Quarter-Phased Transit Curves

TCE 003228988-01 P= 0.730907 Days $T_0=132.250766$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

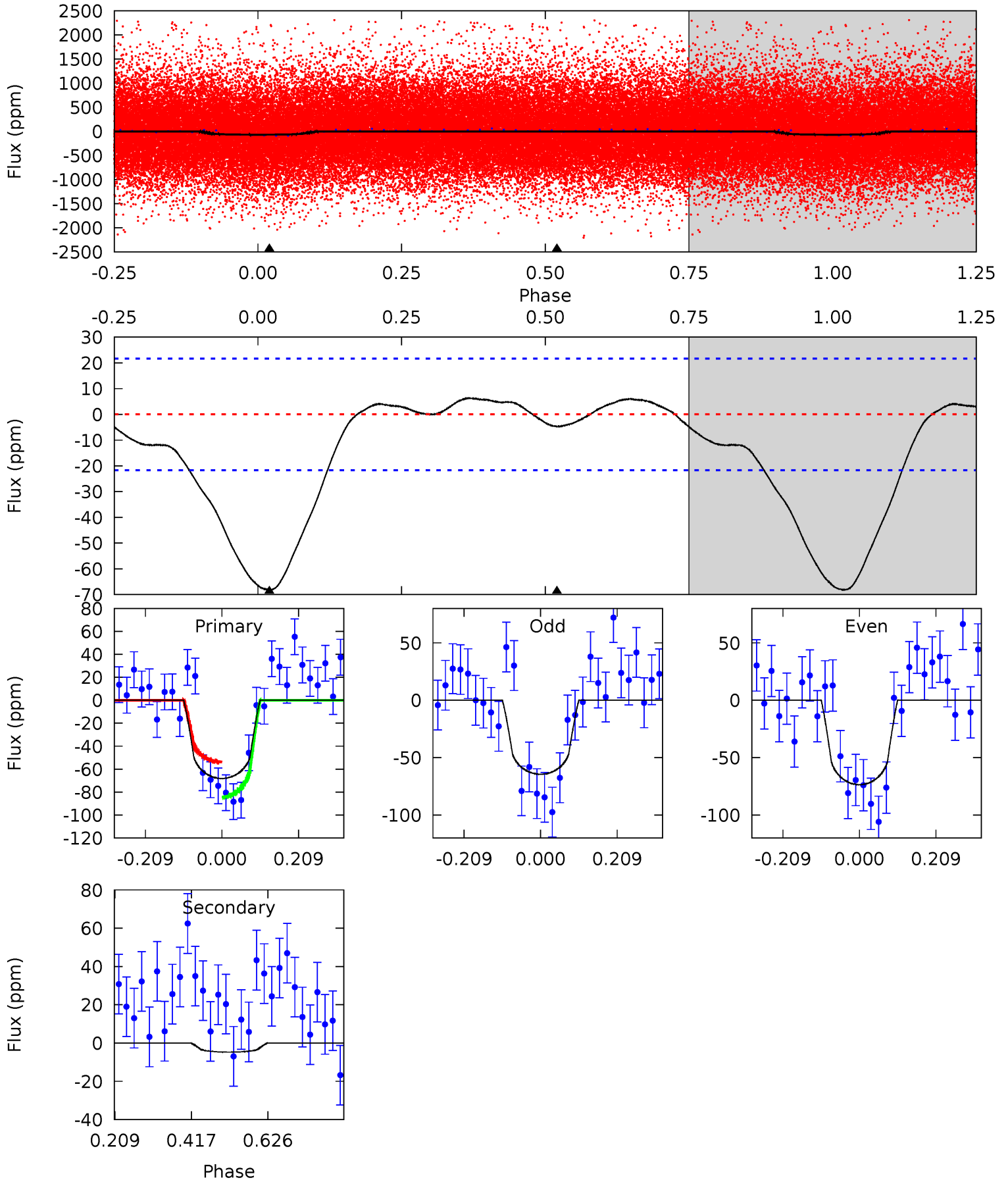
TCE 003228988-01 P= 0.730947 Days $T_0=132.224323$ (BKJD)



DV Model-Shift Uniqueness Test

003228988-01, P = 0.730907 Days, E = 130.788952 Days

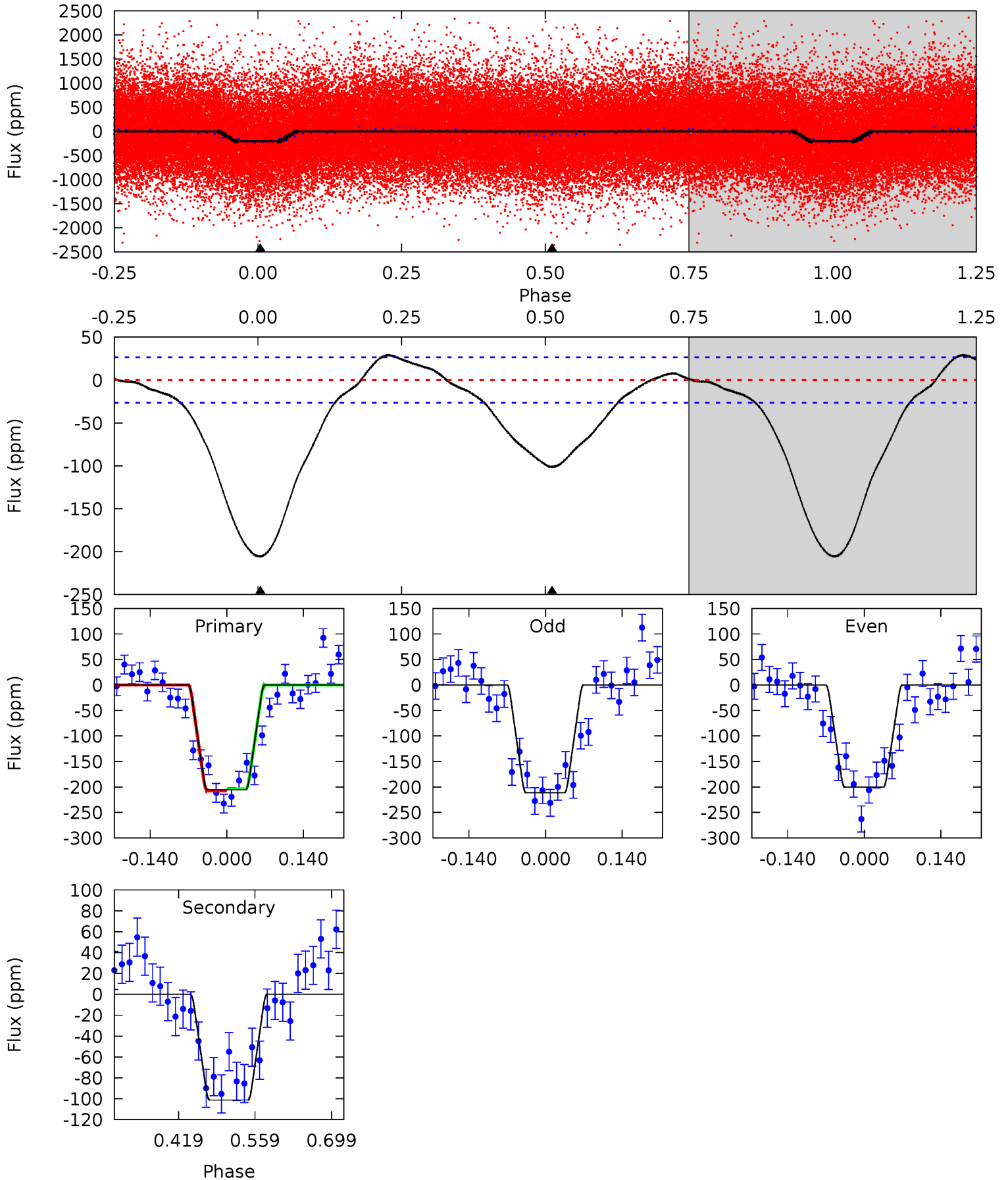
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	0.96	0	0	4.41	1.26	1.07	13.8	13.8	0.96	0.96	0.93	0.83	0.08	3.12



Alt Model-Shift Uniqueness Test

003228988-01, P = 0.730947 Days, E = 131.493376 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.7	17.1	0	0	4.49	1.48	2.30	34.7	34.7	17.1	17.1	0.92	0.96	0.12	0.34



Stellar Parameters For KIC 003228988

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5767^{+158}_{-158}	$4.559^{+0.040}_{-0.160}$	$-0.220^{+0.300}_{-0.300}$	$0.837^{+0.197}_{-0.071}$	$0.927^{+0.090}_{-0.110}$	$2.227^{+0.481}_{-0.988}$
	+3%/-3%	+1%/-4%	+136%/-136%	+24%/-8%	+10%/-12%	+22%/-44%
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 003228988-01 / KOI 3992.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-5 ± 5	$0.74^{+0.48}_{-0.41}$	2663^{+144}_{-107}	3161^{+1449}_{-6124}	$0.901^{+4.635}_{-0.946}$
Alt.	-101 ± 6	$1.40^{+0.50}_{-0.47}$	2661^{+152}_{-111}	4844^{+995}_{-582}	$6.756^{+9.057}_{-3.105}$

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 $A_{obs} \gg 1.0$

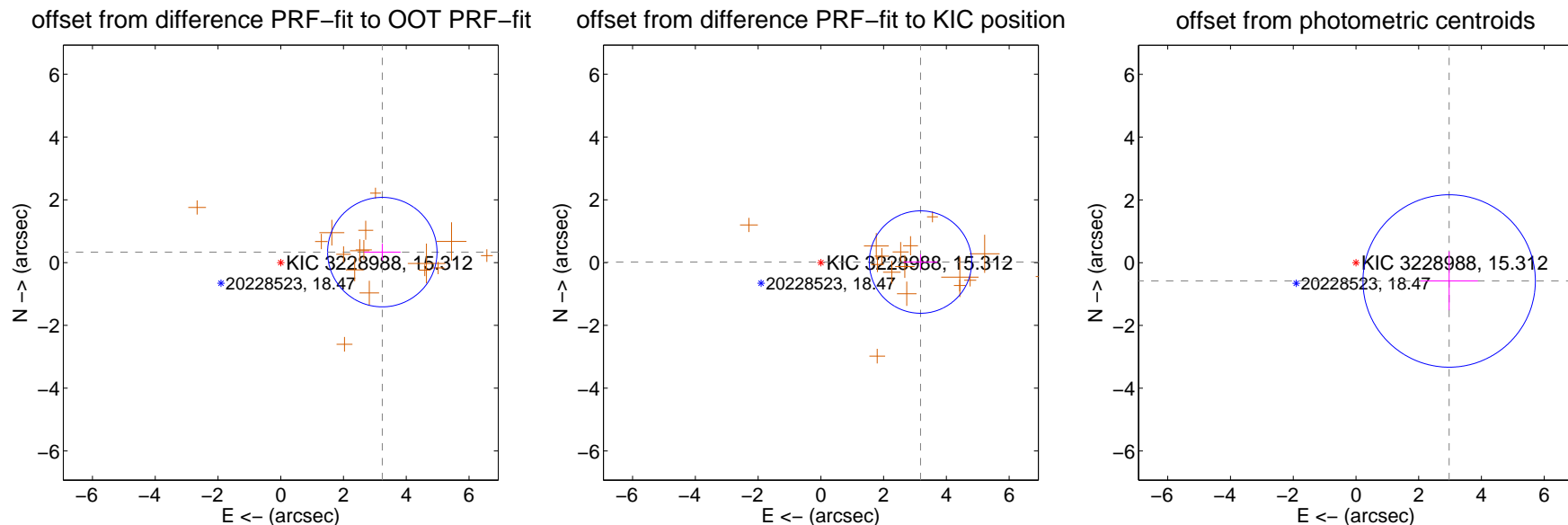
DV Centroid Data

Supplemental centroid analysis for 003228988-01. Kepler magnitude: 15.31. Transit SNR 10.03

There are 0 quarters with good PRF difference image offsets

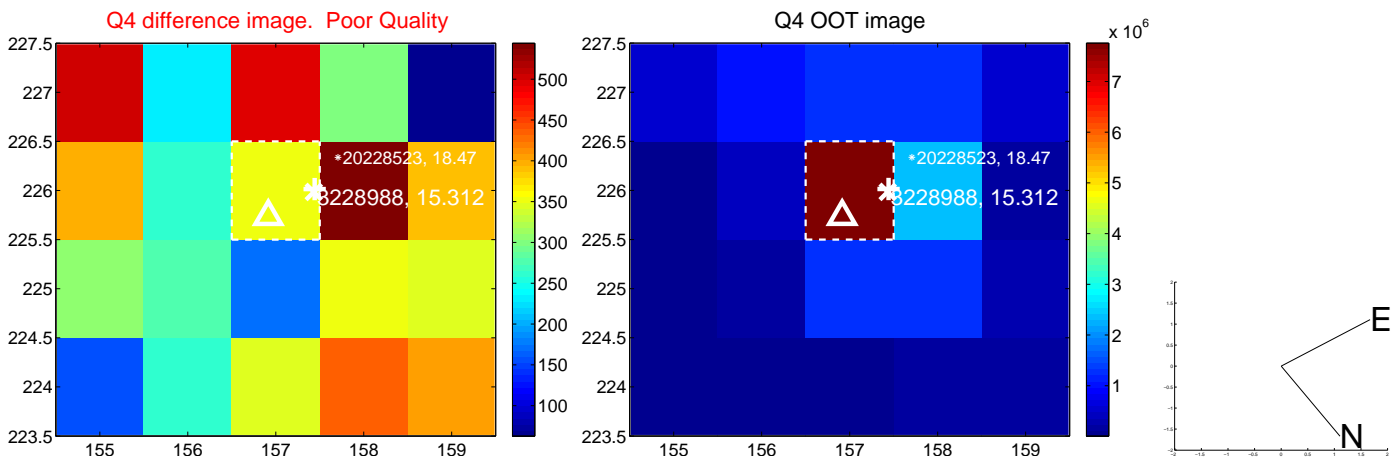
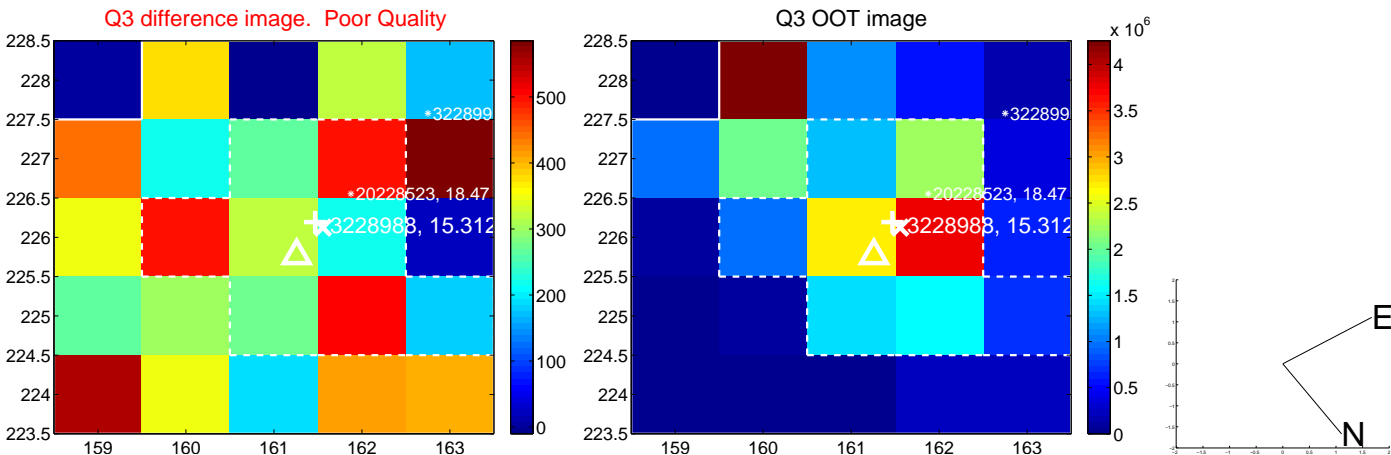
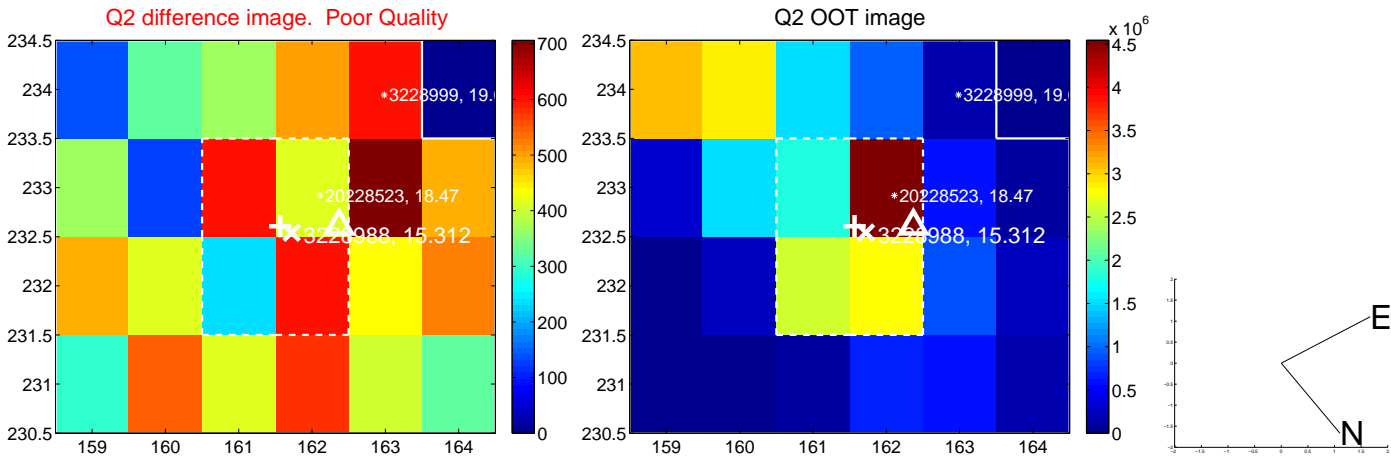
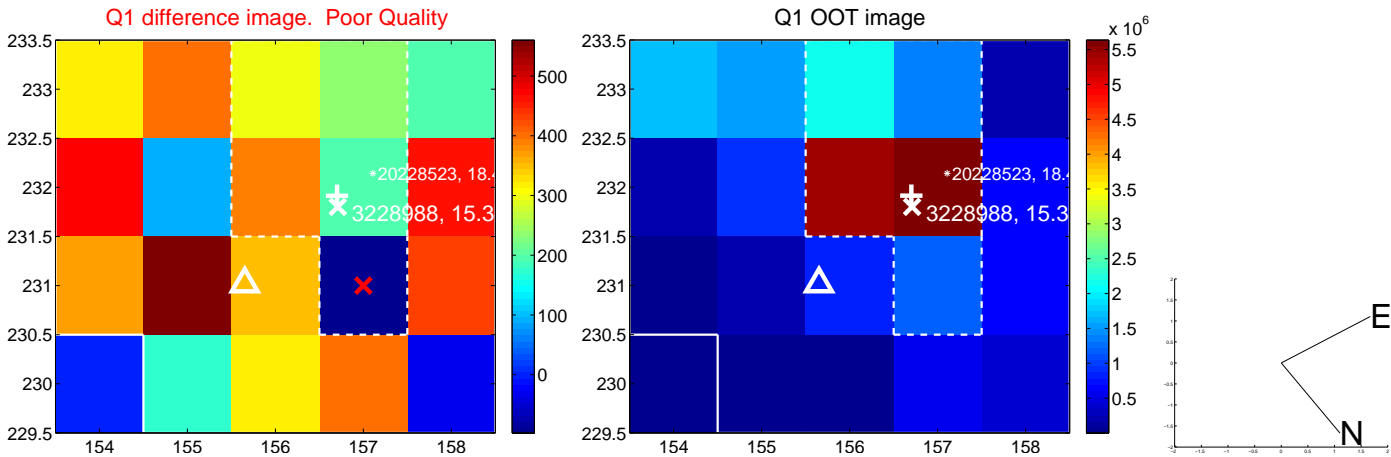
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.255 ± 0.581	5.60	-3.238 ± 0.583	0.333 ± 0.267
PRF-fit source offset from KIC position	3.176 ± 0.544	5.84	-3.175 ± 0.544	0.017 ± 0.246
photometric centroid source offset	3.03 ± 0.92	3.31	-2.97 ± 0.92	-0.58 ± 0.93

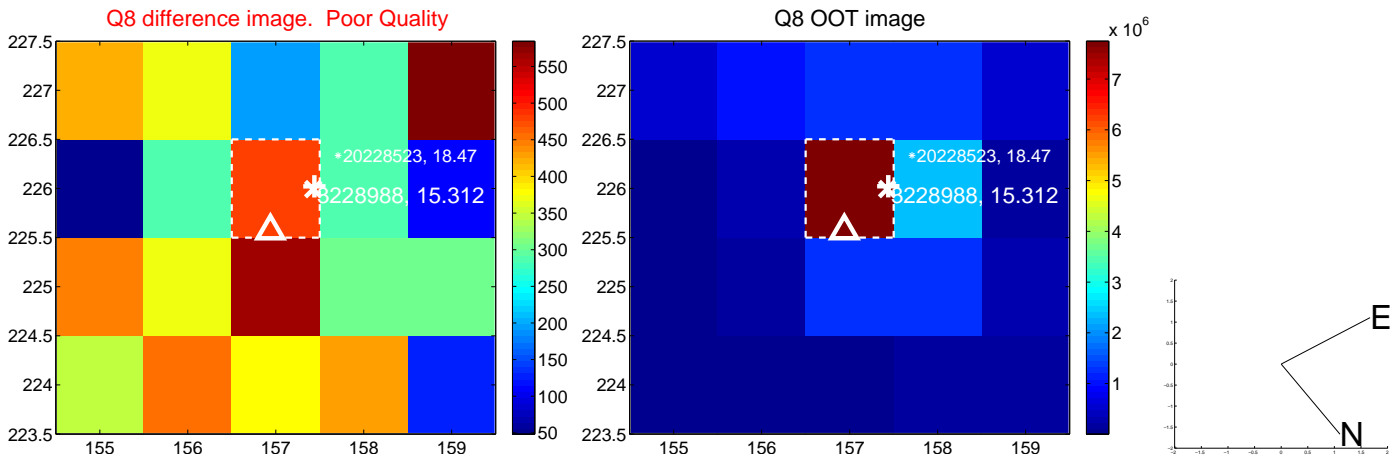
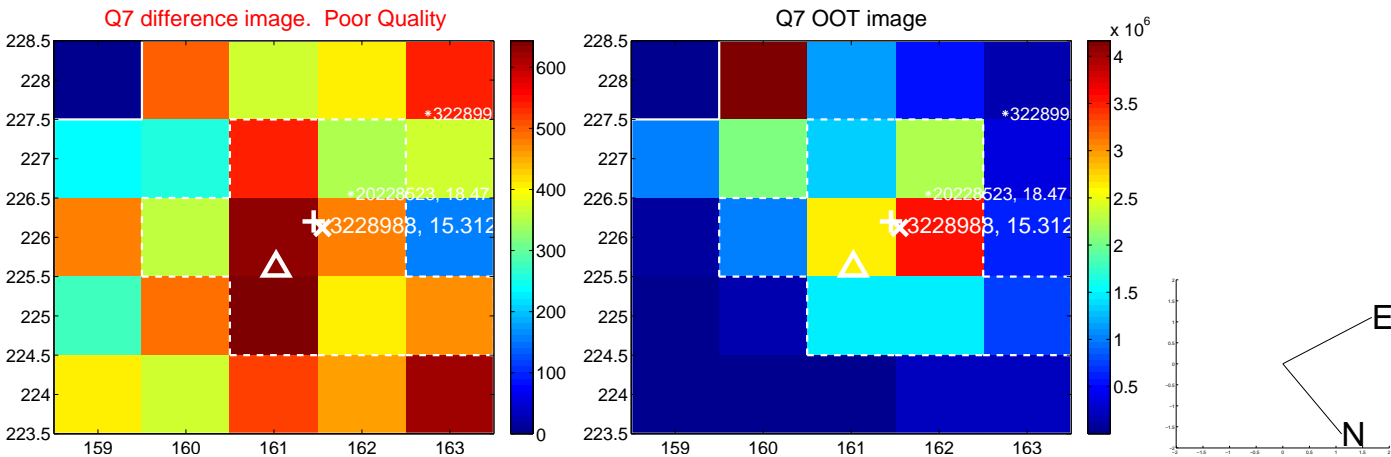
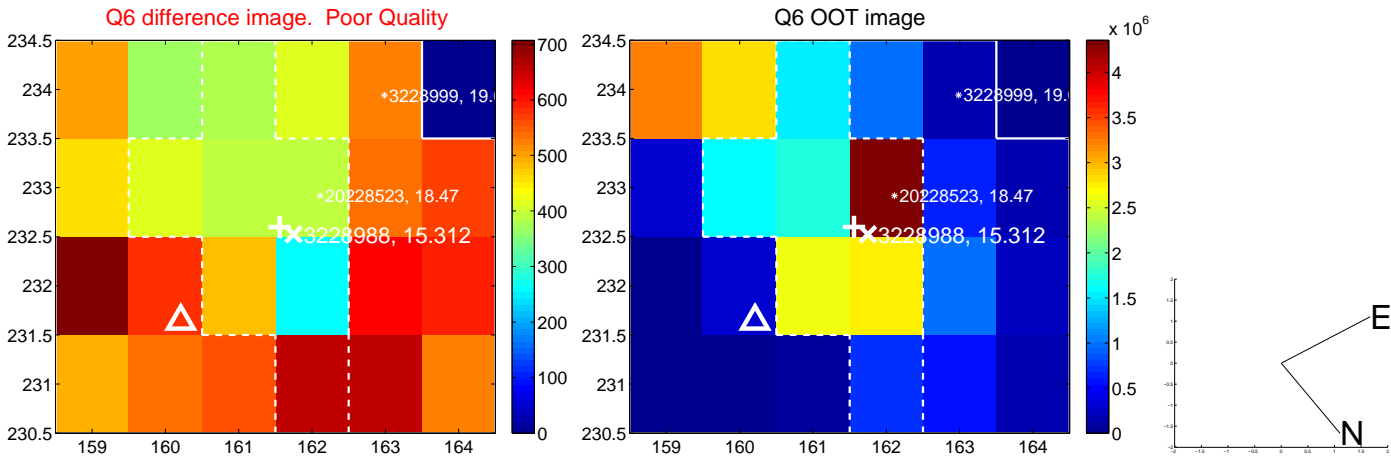
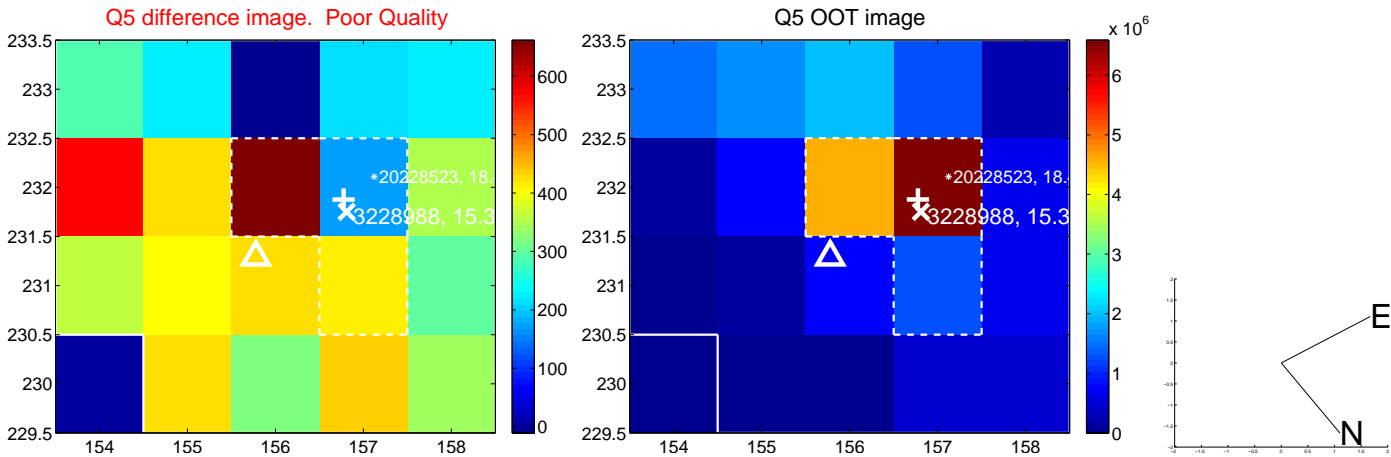


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

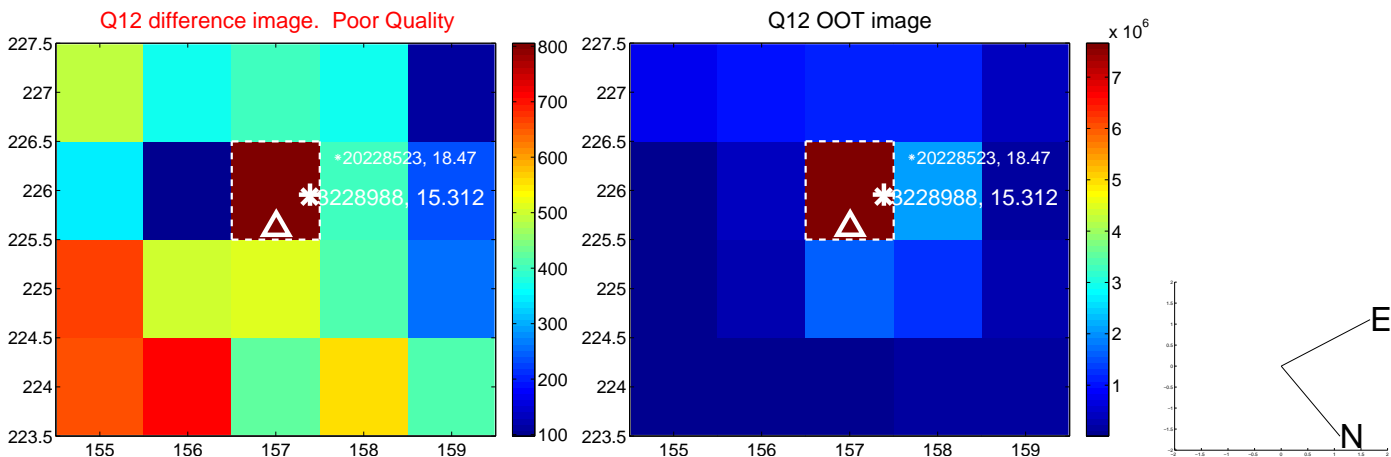
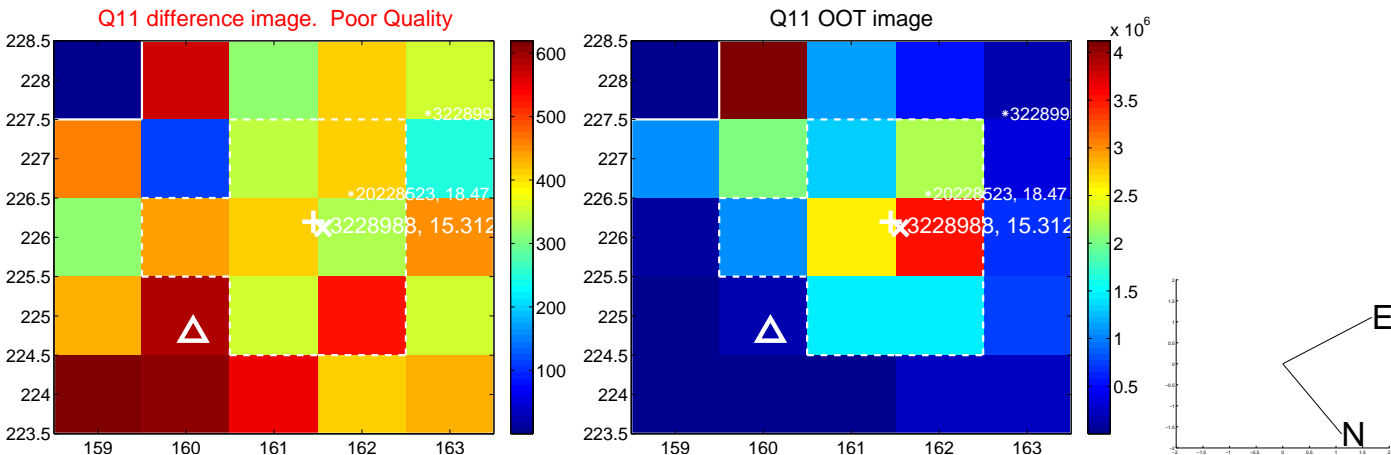
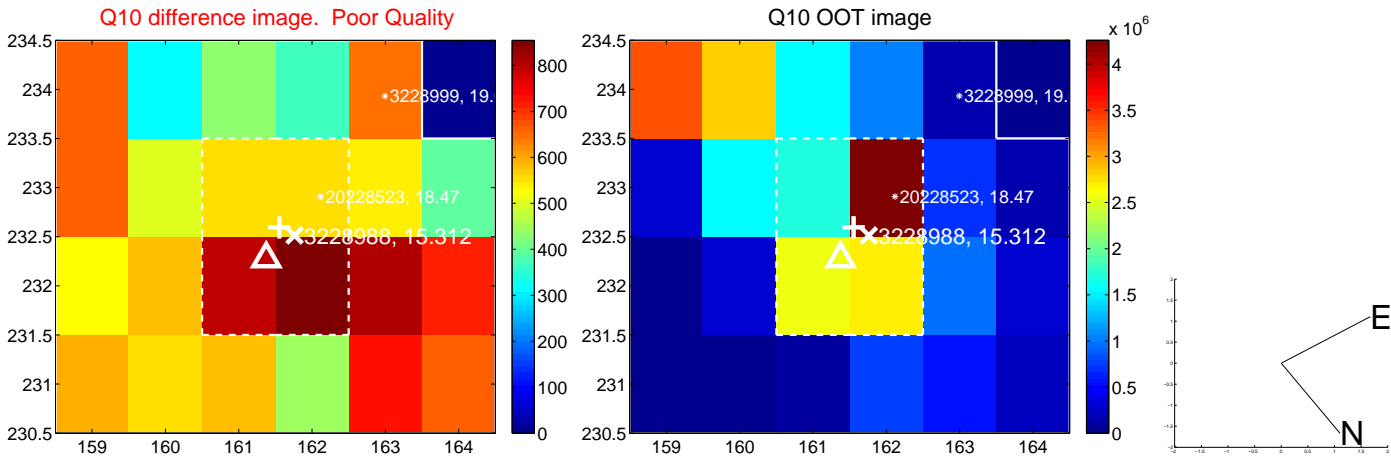
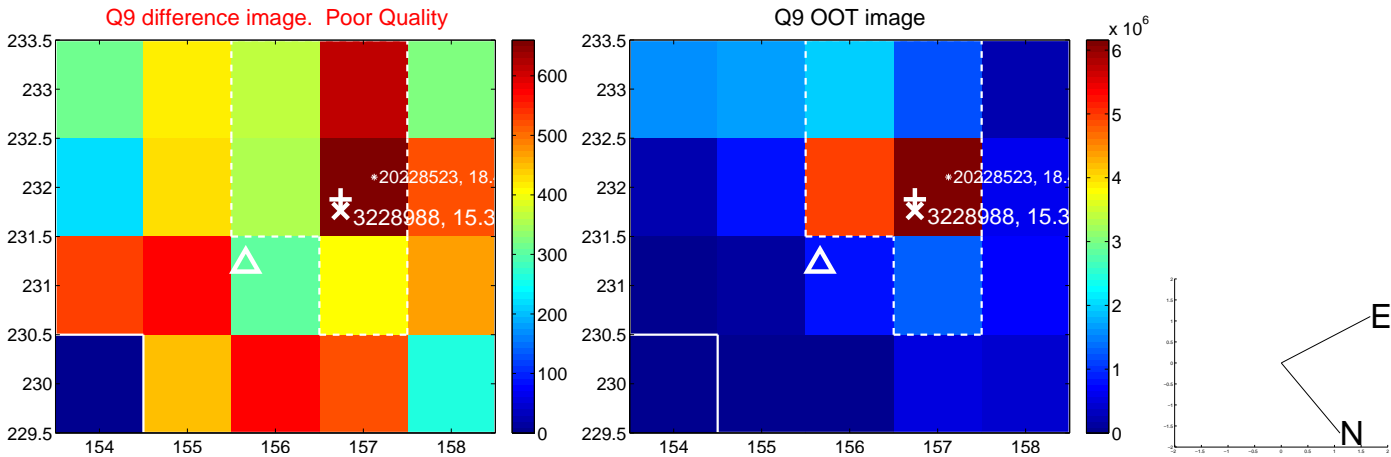
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



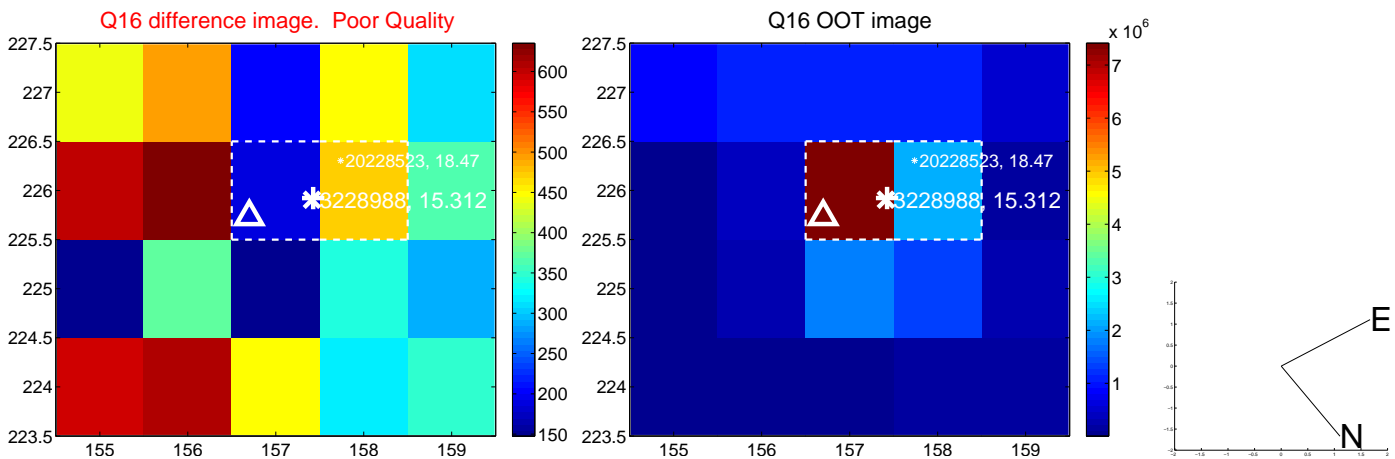
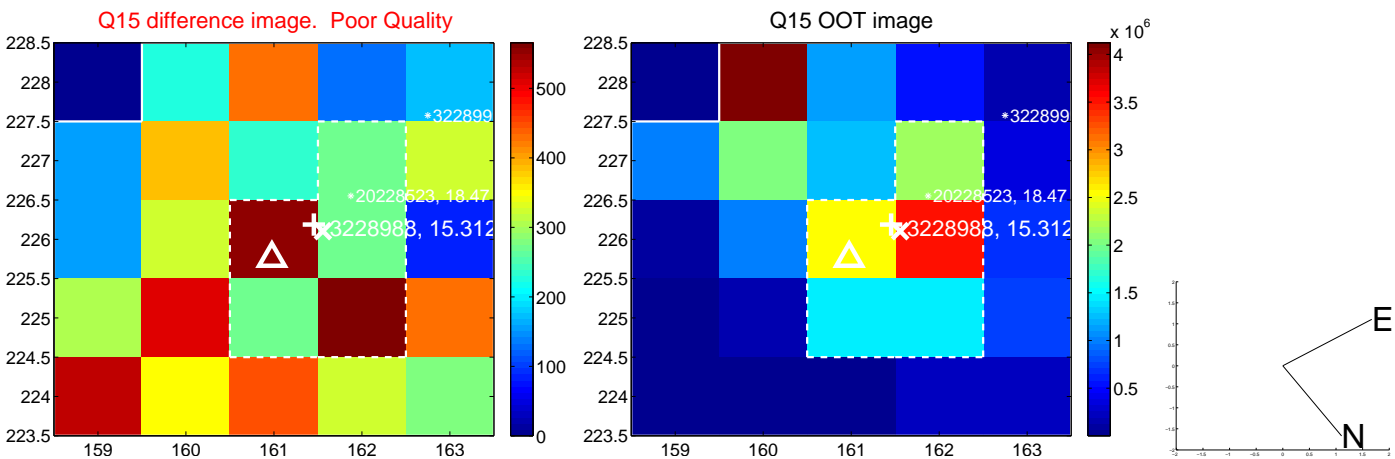
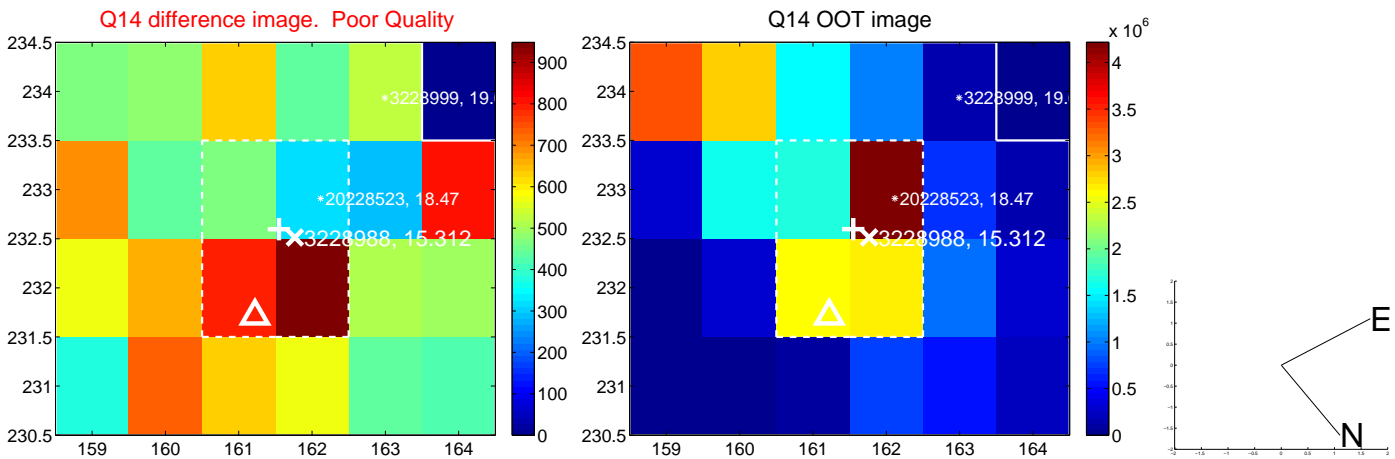
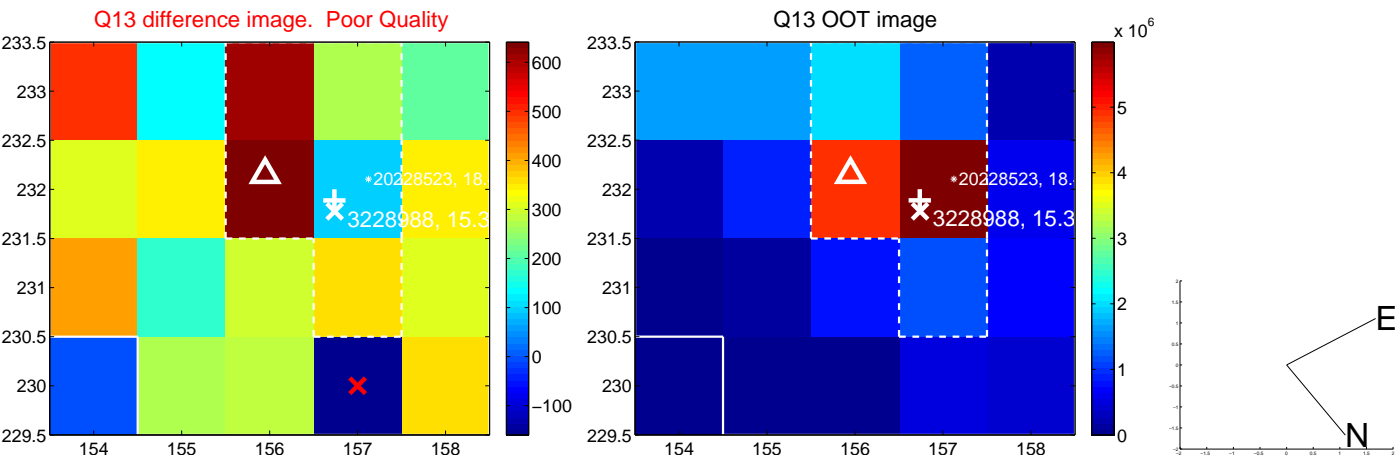
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



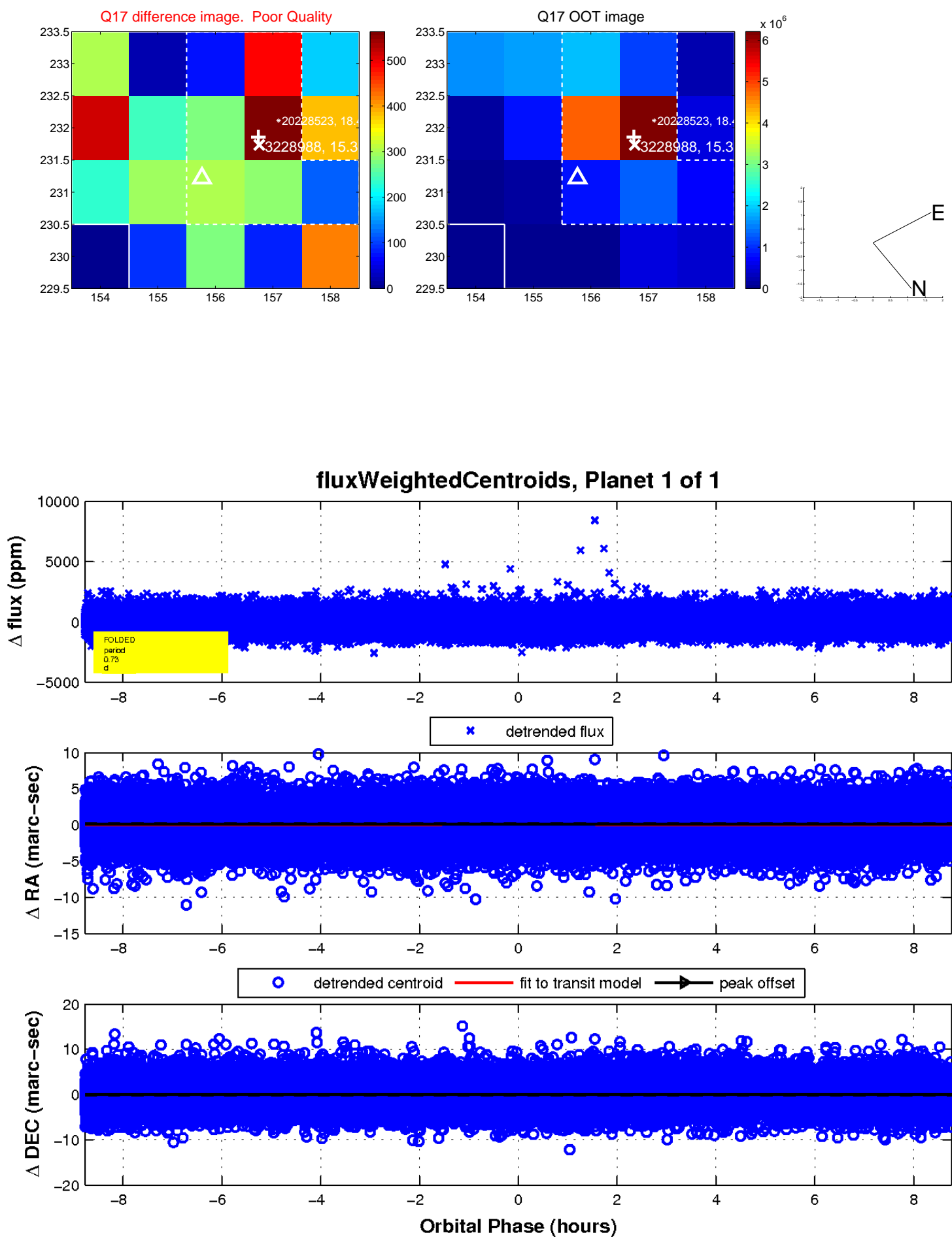
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UKIRT Image

Declination

