

KIC 010470616

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})
010470616-01	OBS	2112.01	4.157138	132.217692	72.8	1.869	19.0	20.9	1.32	6470	1.33	912.10

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010470616-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET

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 010470616-01

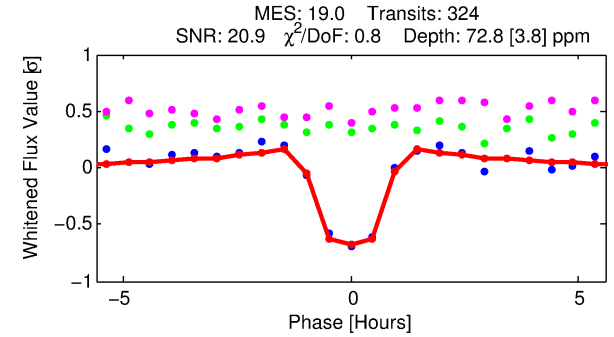
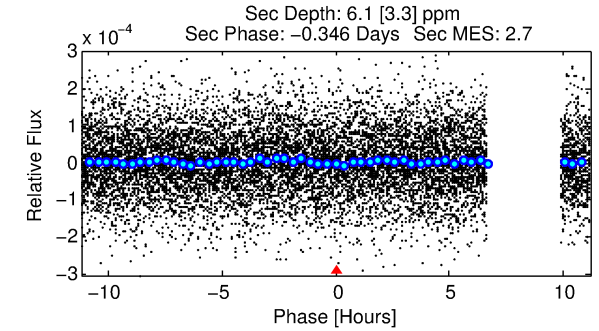
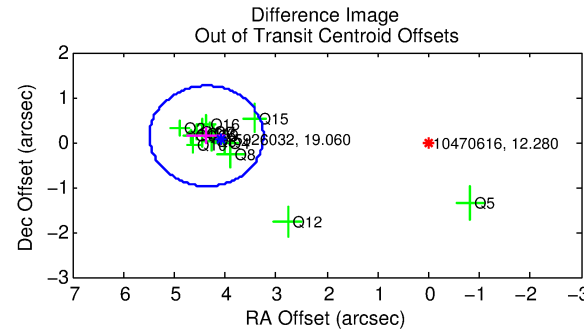
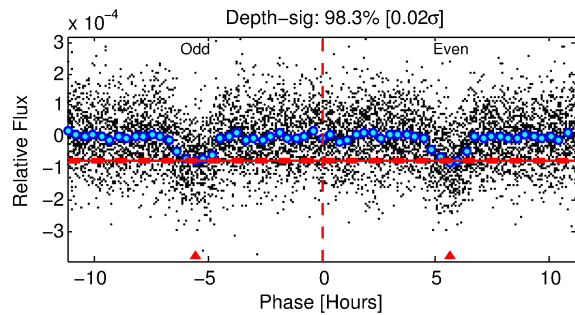
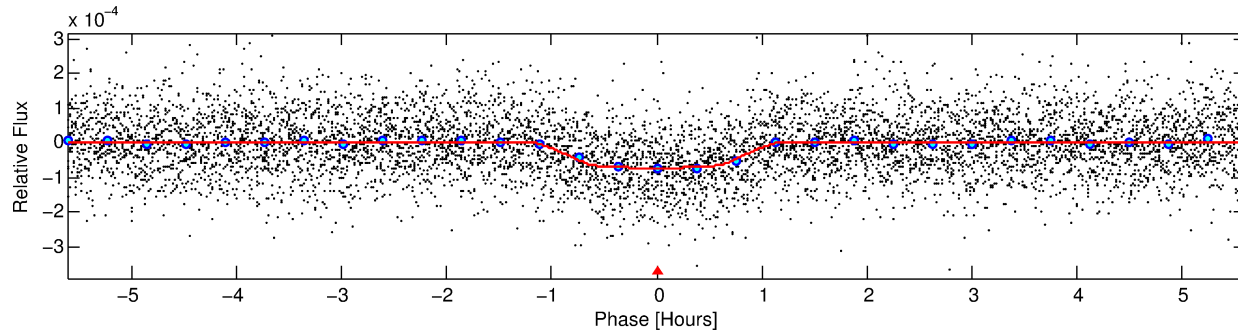
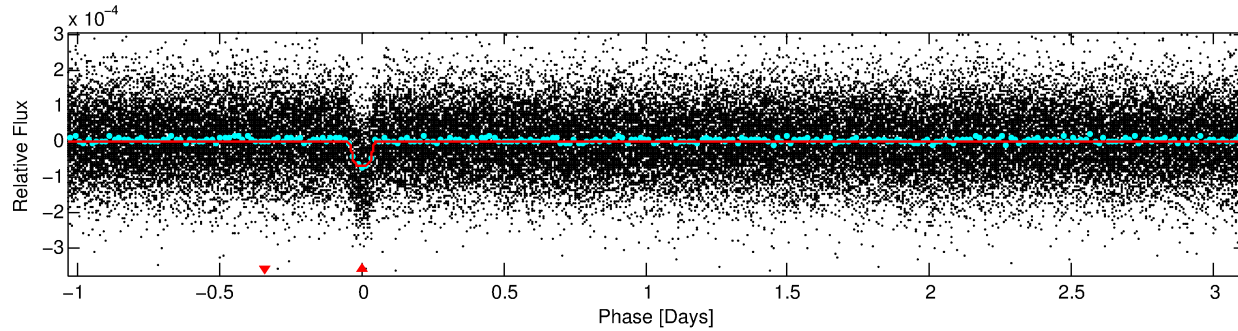
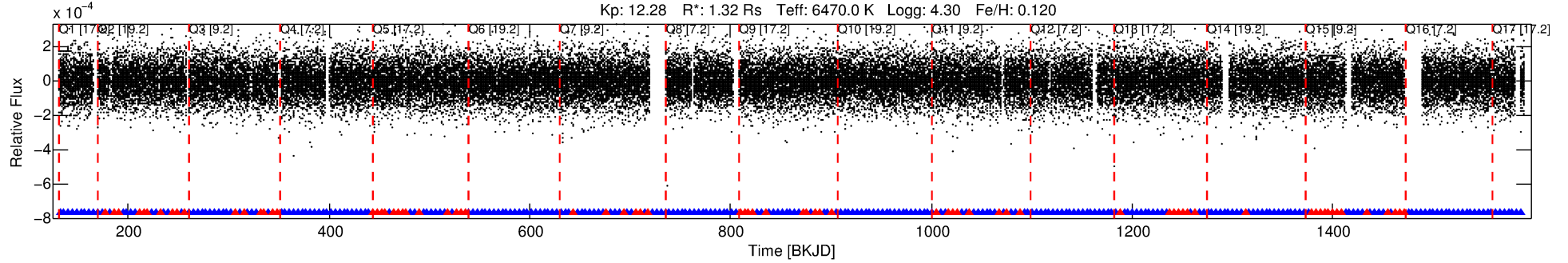
No Significant Match Found

DV One-Page Summary

KIC: 10470616 Candidate: 1 of 1 Period: 4.157 d

KOI: K02112.01 Corr: 0.981

Kp: 12.28 R*: 1.32 Rs Teff: 6470.0 K Logg: 4.30 Fe/H: 0.120



DV Fit Results:

Period = 4.15714 [0.00001] d
Epoch = 132.2177 [0.0014] BKJD
Rp/R* = 0.0092 [0.0018]
a/R* = 7.78 [8.18]
b = 0.90 [0.23]
Seff = 912.10 [387.37]
Teq = 1401 [149] K
Rp = 1.33 [0.53] Re
a = 0.0549 [0.0155] AU
Ag = 5.77 [4.47] [1.07σ]
Teff = 3358 [573] K [3.31σ]

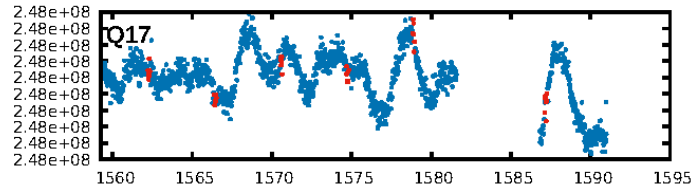
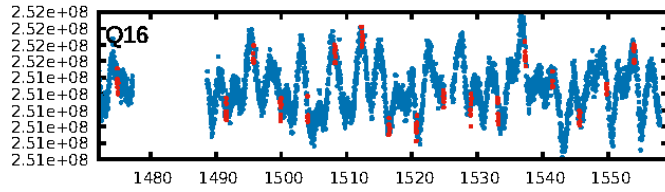
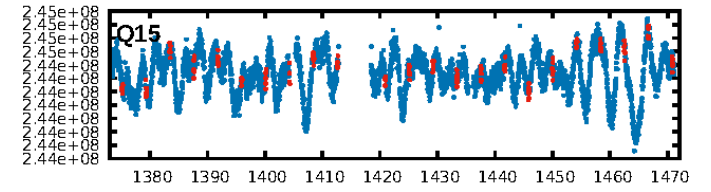
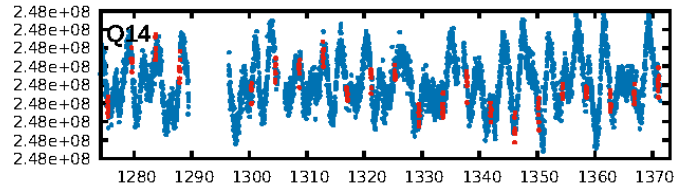
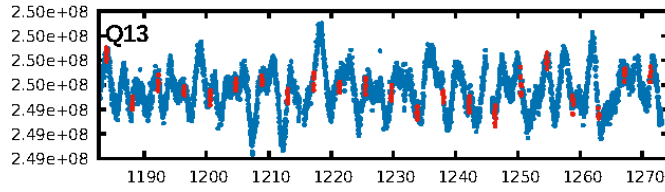
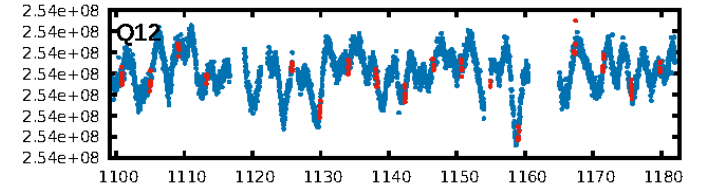
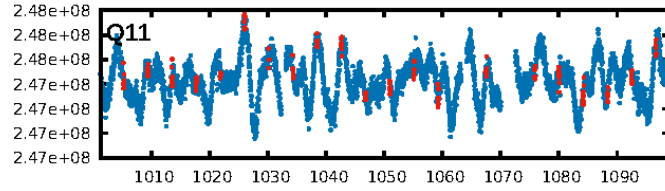
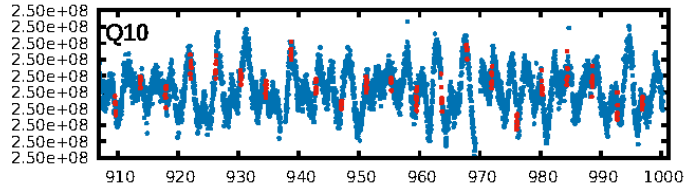
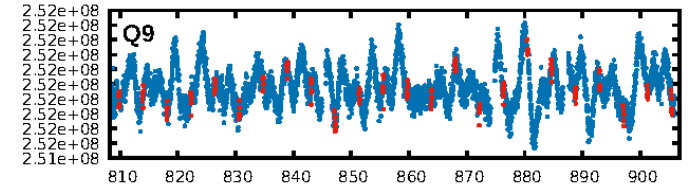
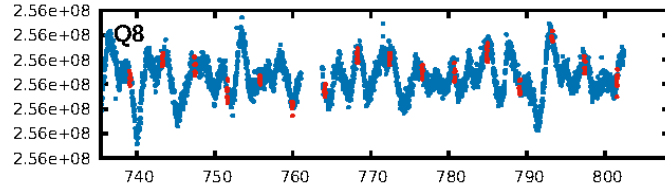
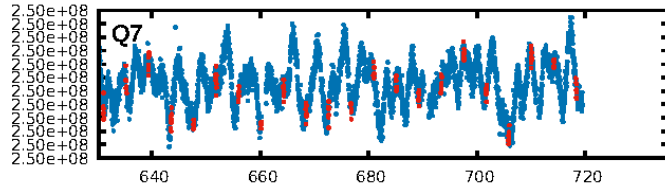
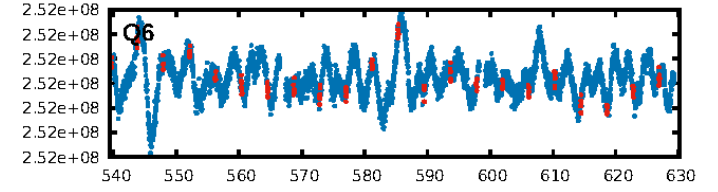
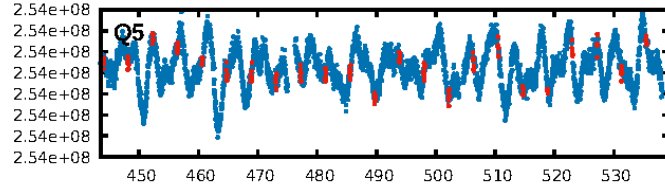
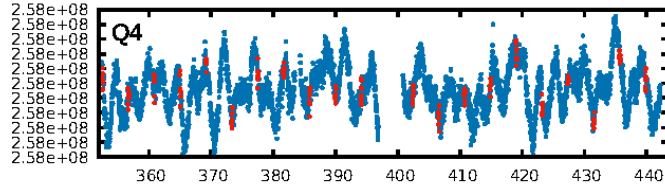
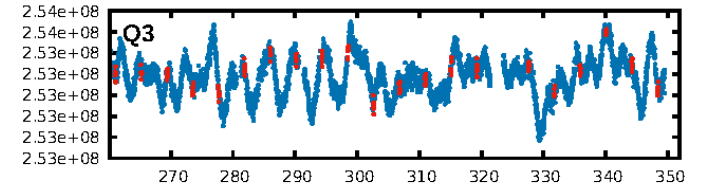
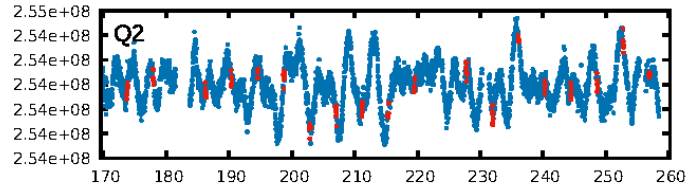
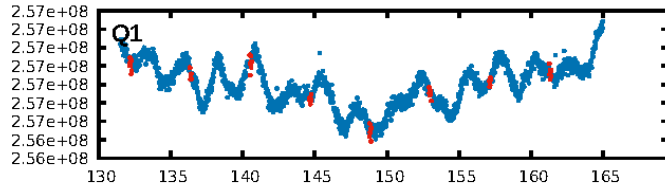
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.08e-76
RollingBand-fgt: 0.76 [236/310]
GhostDiagnostic-chr: 1.095
Centroid-sig: 0.0%
Centroid-so: 4.197 arcsec [9.43σ]
OotOffset-rm: 4.366 arcsec [11.72σ]
KicOffset-rm: 4.347 arcsec [10.69σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.86 [12/14]
DiffImageOverlap-fno: 1.00 [17/17]

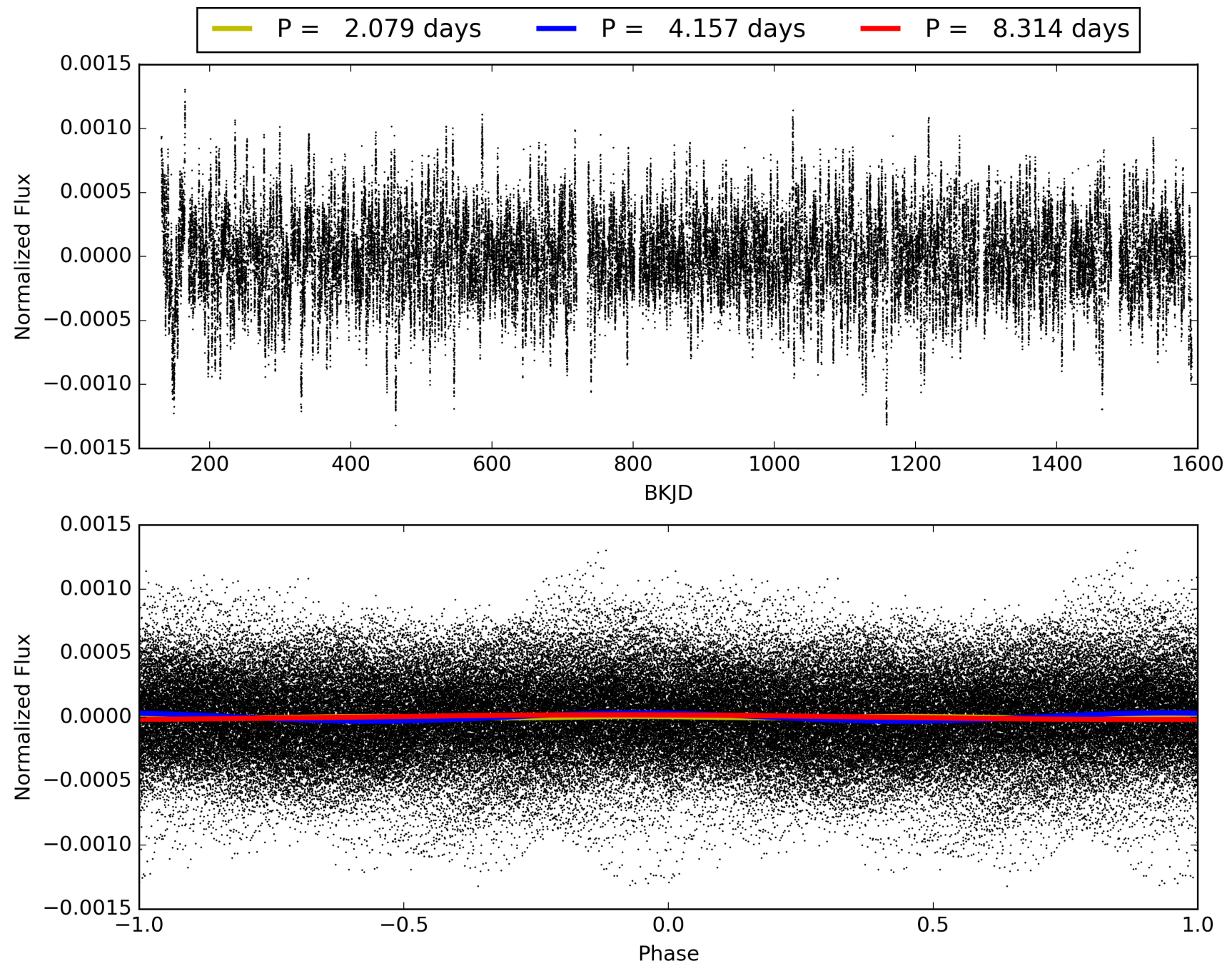
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:58:08 Z

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

TCE 010470616-01, PDC Light Curves

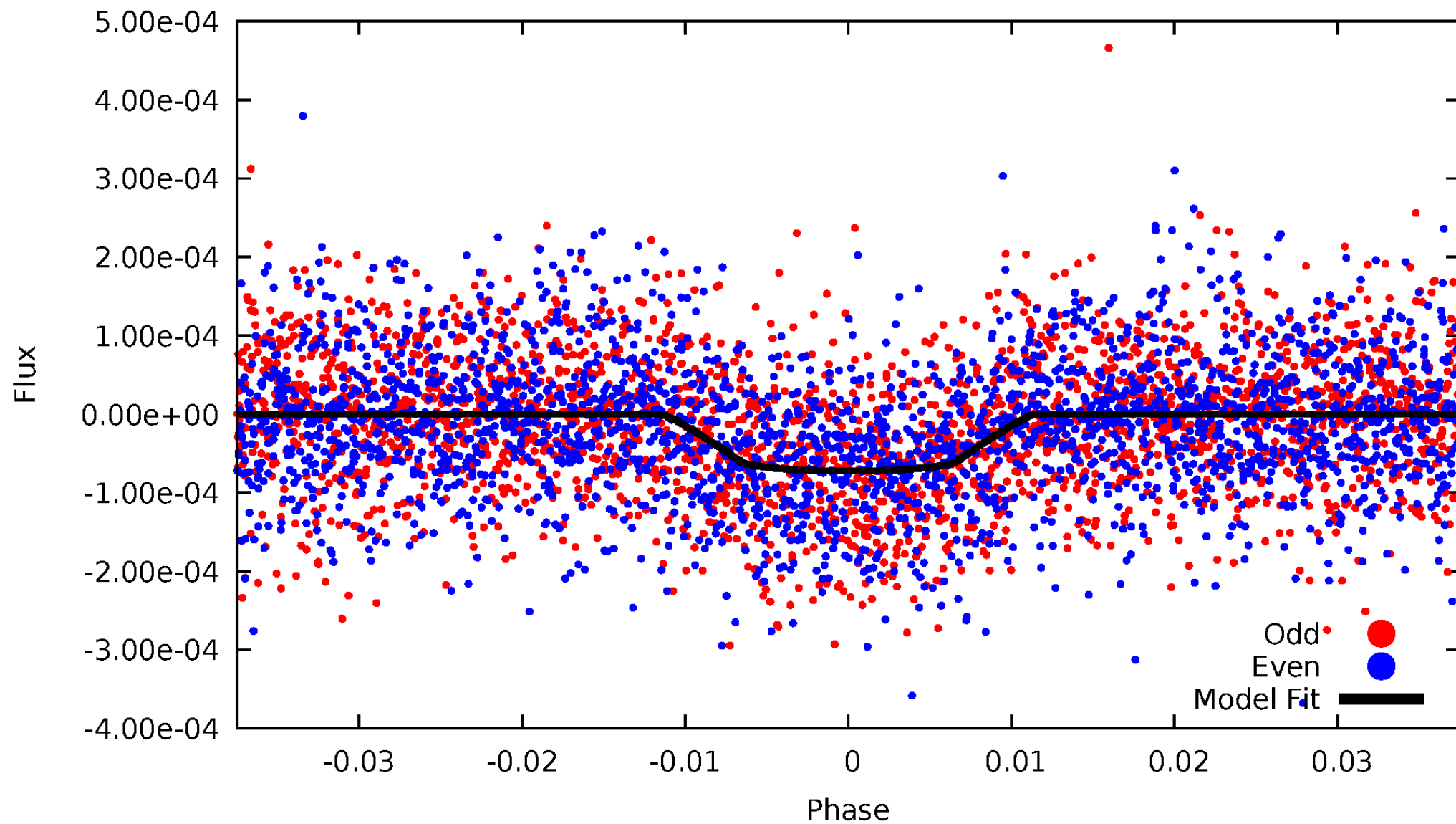


TCE 010470616-01



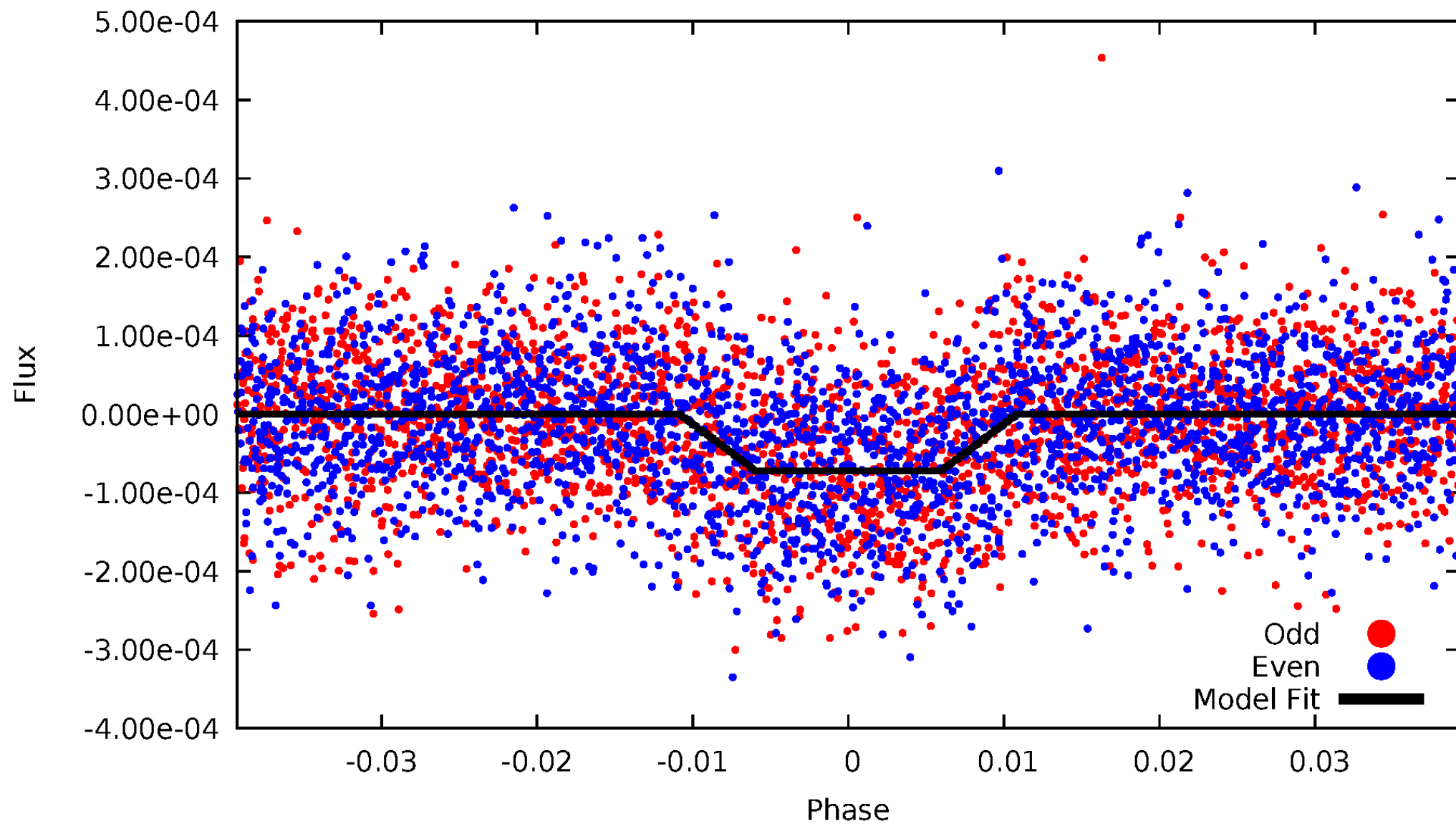
DV Odd/Even

TCE 010470616-01



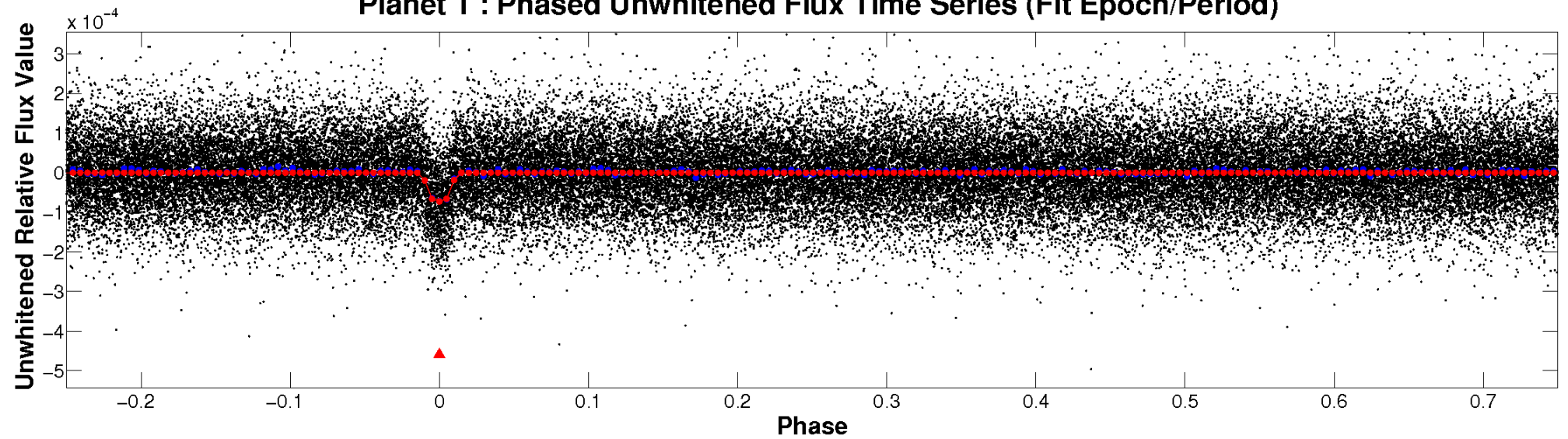
ALT Odd/Even

TCE 010470616-01

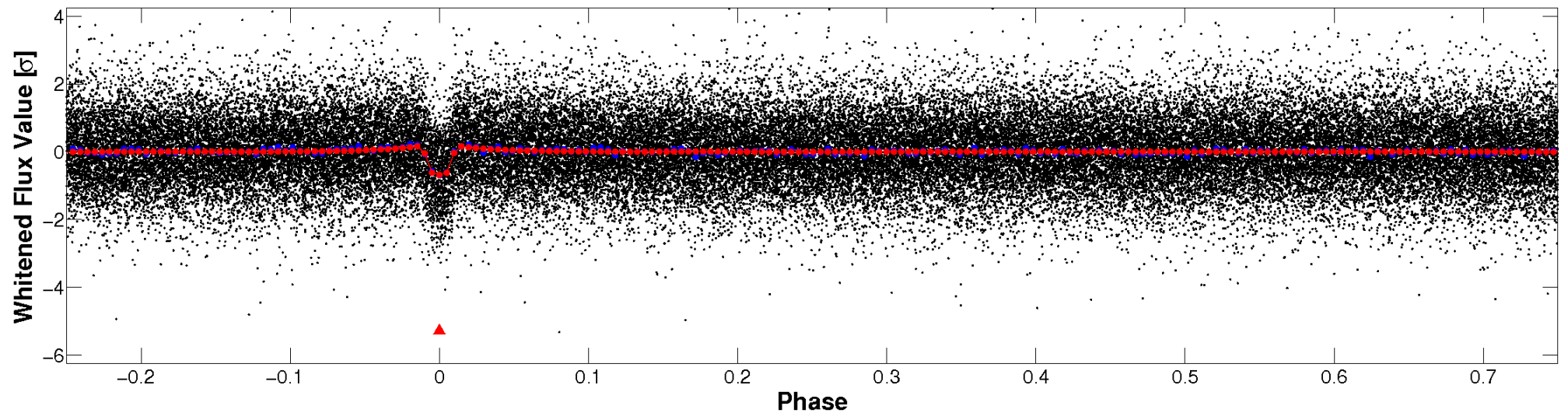


Non-Whitened Vs. Whitened Light Curve

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

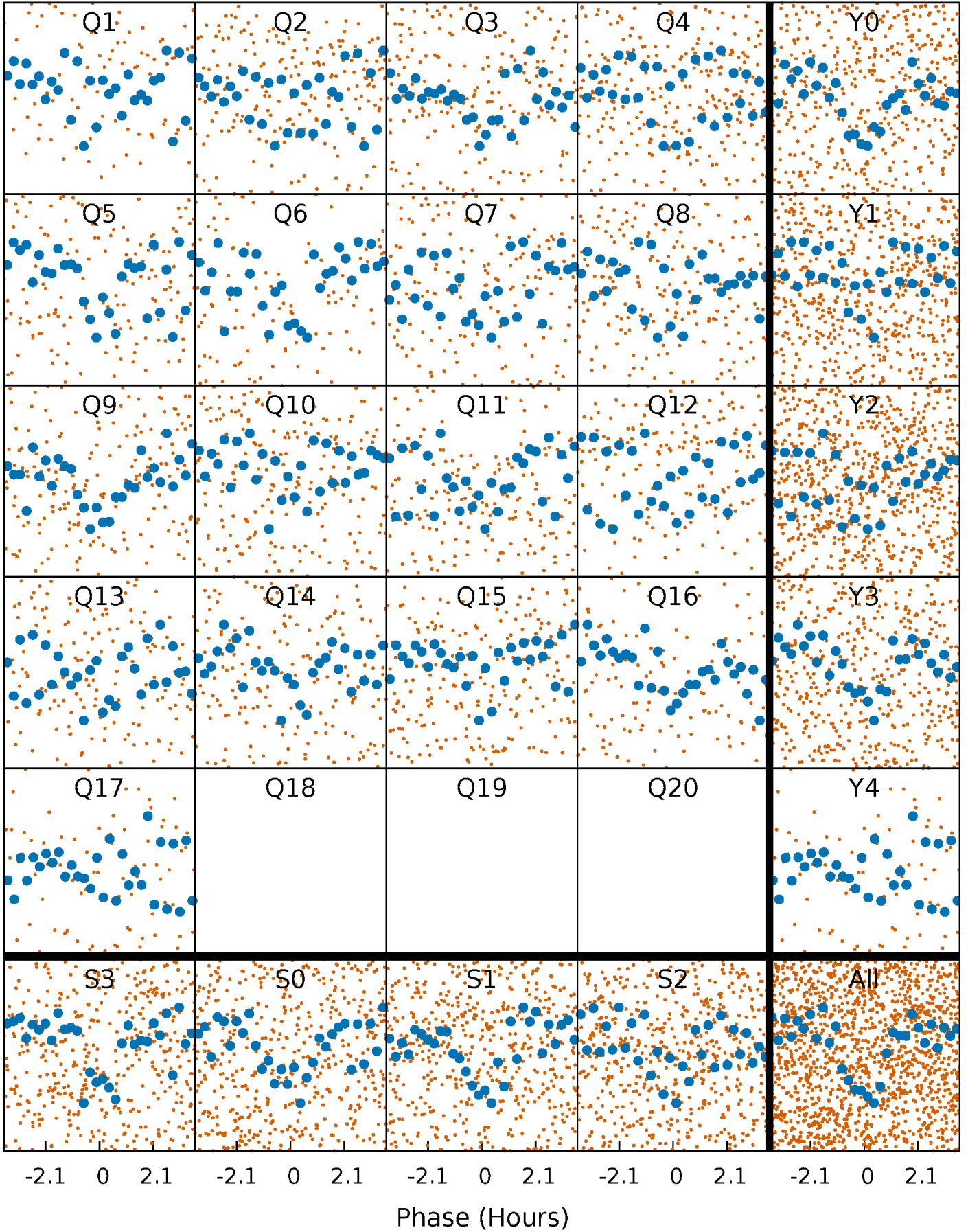


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



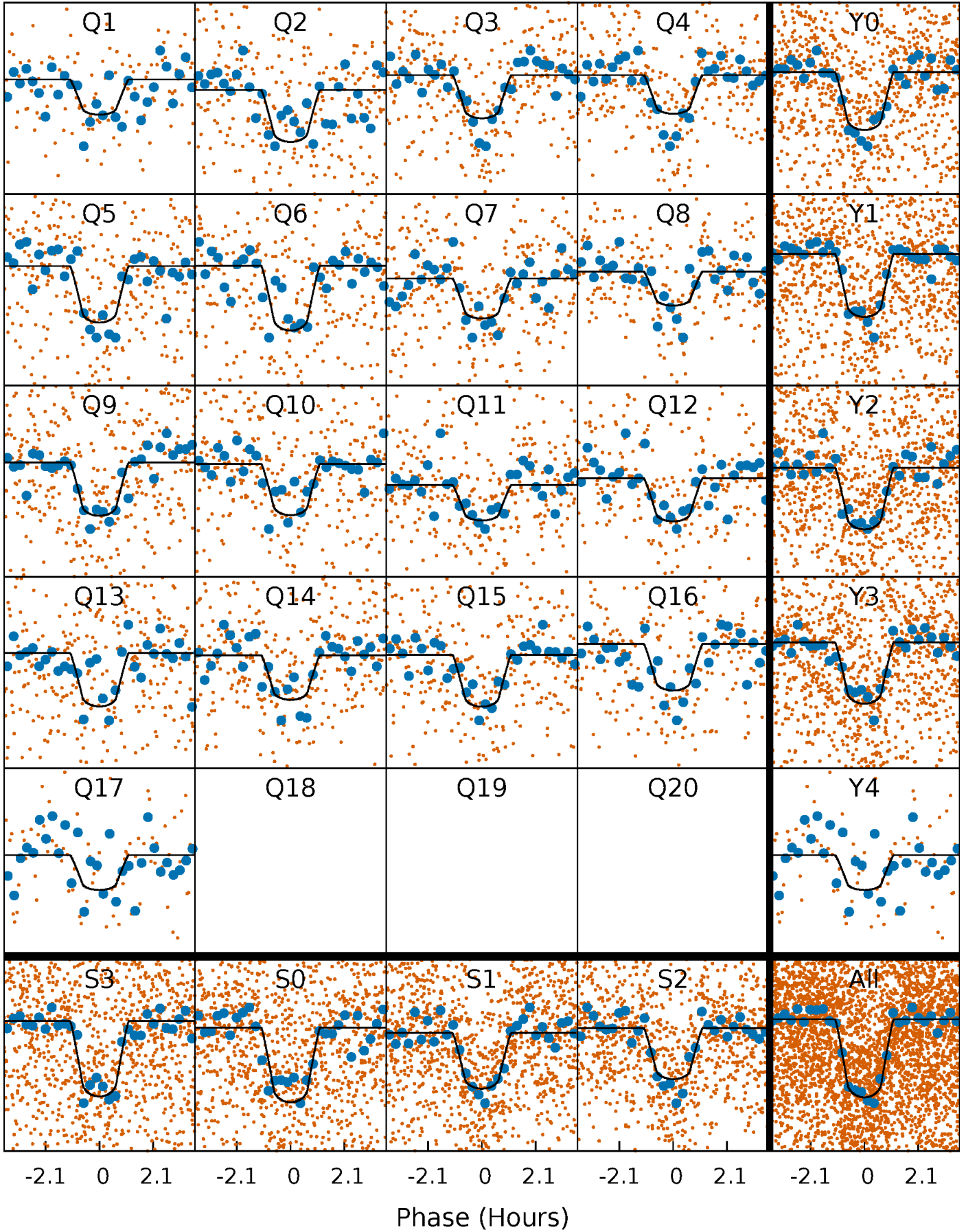
PDC Quarter-Phased Transit Curves

TCE 010470616-01 P= 4.157138 Days $T_0=132.217692$ (BKJD)



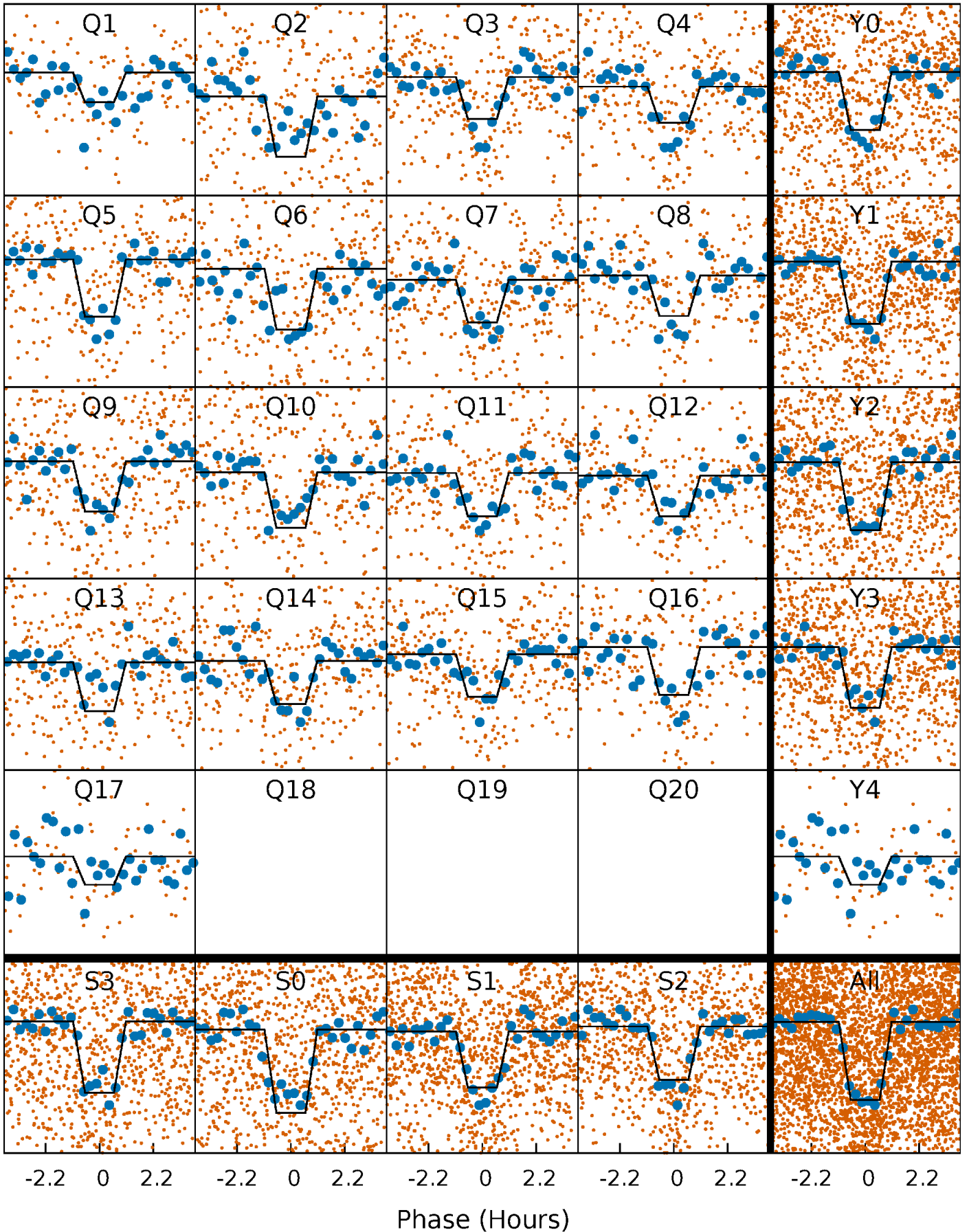
DV Quarter-Phased Transit Curves

TCE 010470616-01 P= 4.157138 Days $T_0=132.217692$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

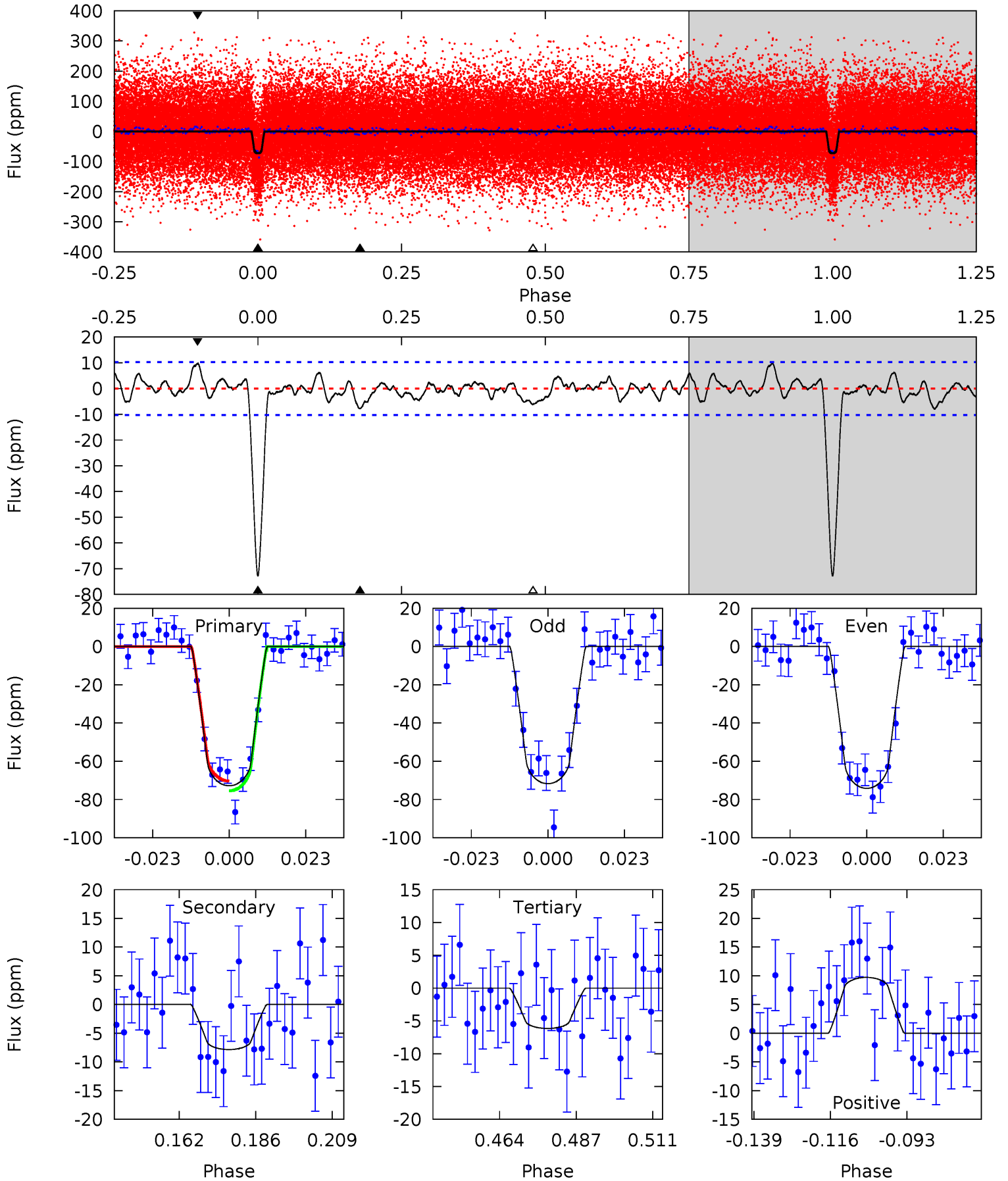
TCE 010470616-01 P= 4.157124 Days $T_0=132.219855$ (BKJD)



DV Model-Shift Uniqueness Test

010470616-01, P = 4.157138 Days, E = 128.060554 Days

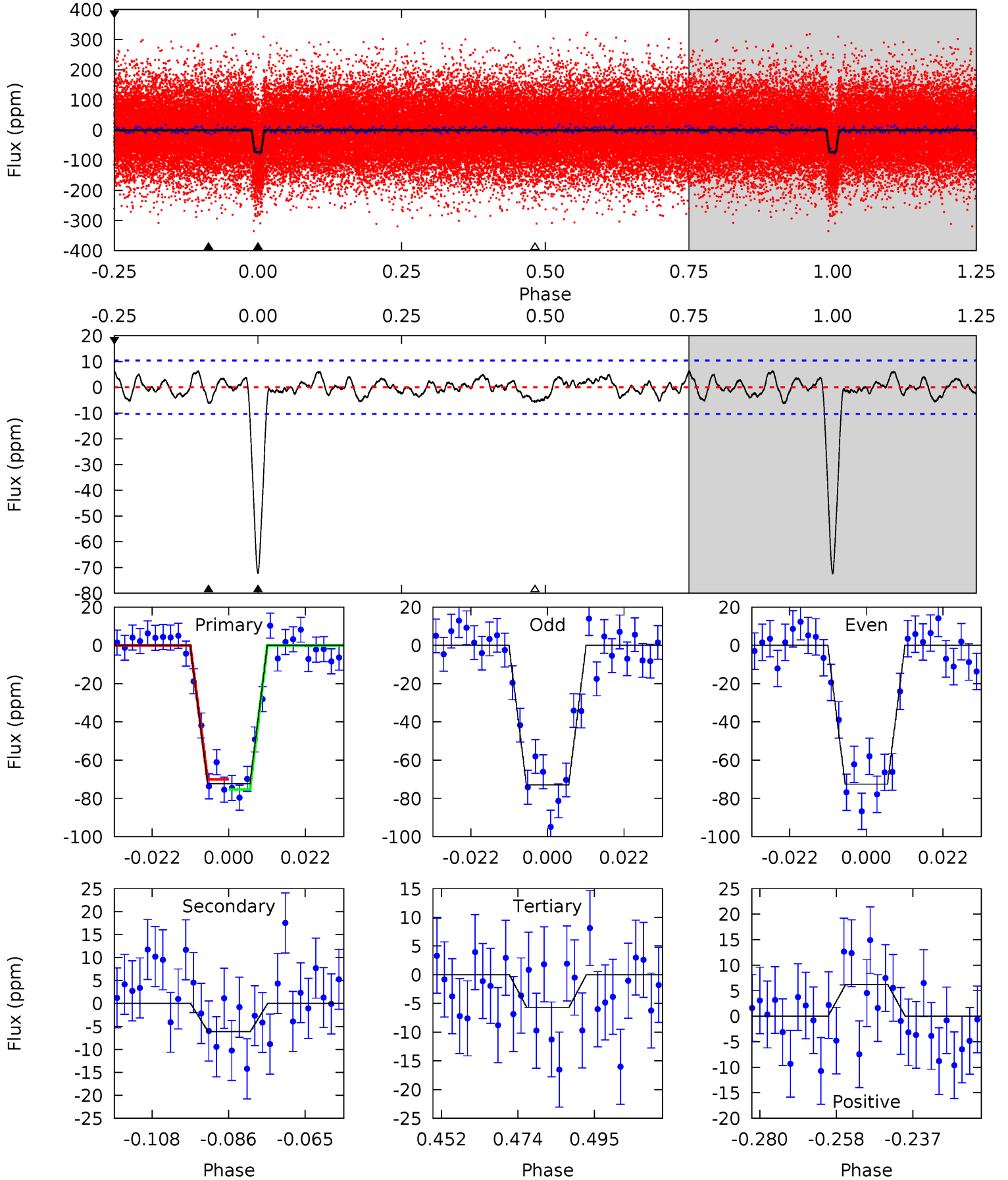
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.4	3.70	2.90	4.59	4.86	2.27	1.30	31.4	29.8	0.80	-0.88	0.58	1.04	0.12	1.21



Alt Model-Shift Uniqueness Test

010470616-01, P = 4.157124 Days, E = 128.062731 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.0	2.88	2.67	2.90	4.88	2.30	1.19	31.4	31.1	0.21	-0.03	0.09	0.98	0.08	1.24



Stellar Parameters For KIC 010470616

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6470^{+177}_{-243}	$4.301^{+0.090}_{-0.210}$	$0.120^{+0.200}_{-0.350}$	$1.324^{+0.461}_{-0.197}$	$1.281^{+0.196}_{-0.196}$	$0.777^{+0.369}_{-0.416}$
	+3%/-4%	+2%/-5%	+167%/-292%	+35%/-15%	+15%/-15%	+48%/-54%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 010470616-01 / KOI 2112.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-8 ± 2	$1.36^{+0.36}_{-0.29}$	1975^{+147}_{-103}	3848^{+393}_{-298}	$6.619^{+4.823}_{-2.685}$
Alt.	-6 ± 2	$1.26^{+0.33}_{-0.28}$	1981^{+158}_{-111}	3814^{+401}_{-386}	$5.935^{+5.678}_{-2.665}$

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 $A_{obs} \gg 1.0$

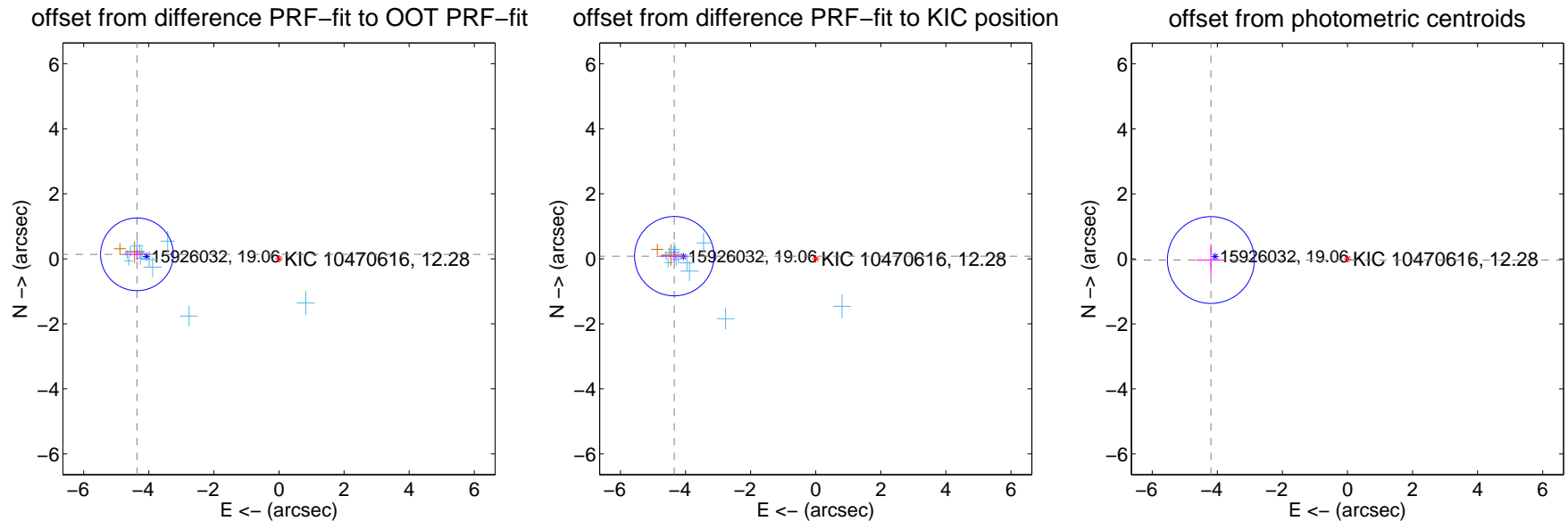
DV Centroid Data

Supplemental centroid analysis for 010470616-01. Kepler magnitude: 12.28. Transit SNR 20.94

There are 12 quarters with good PRF difference image offsets

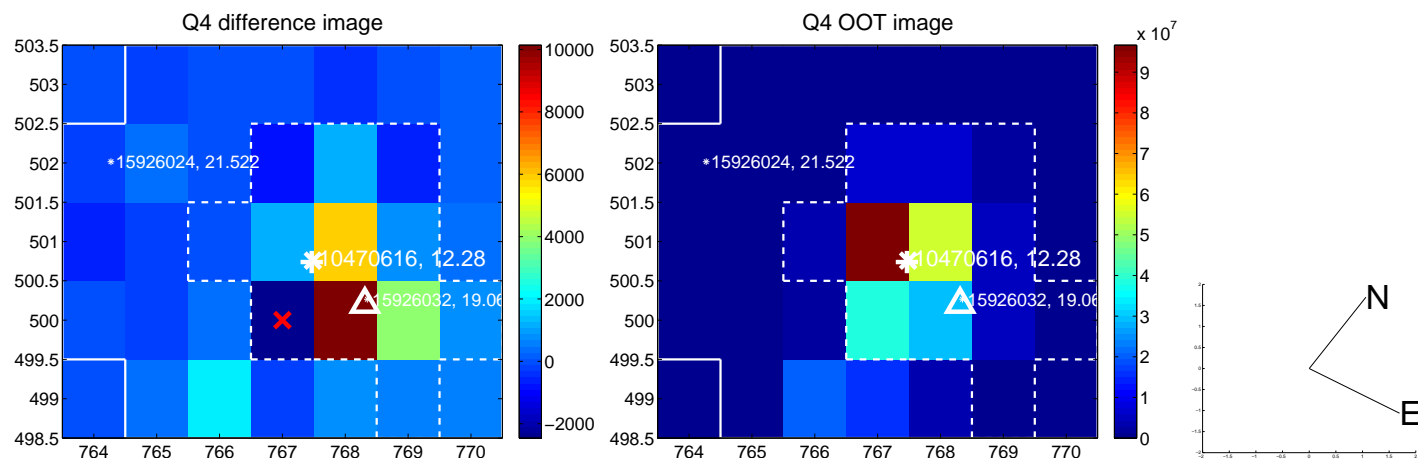
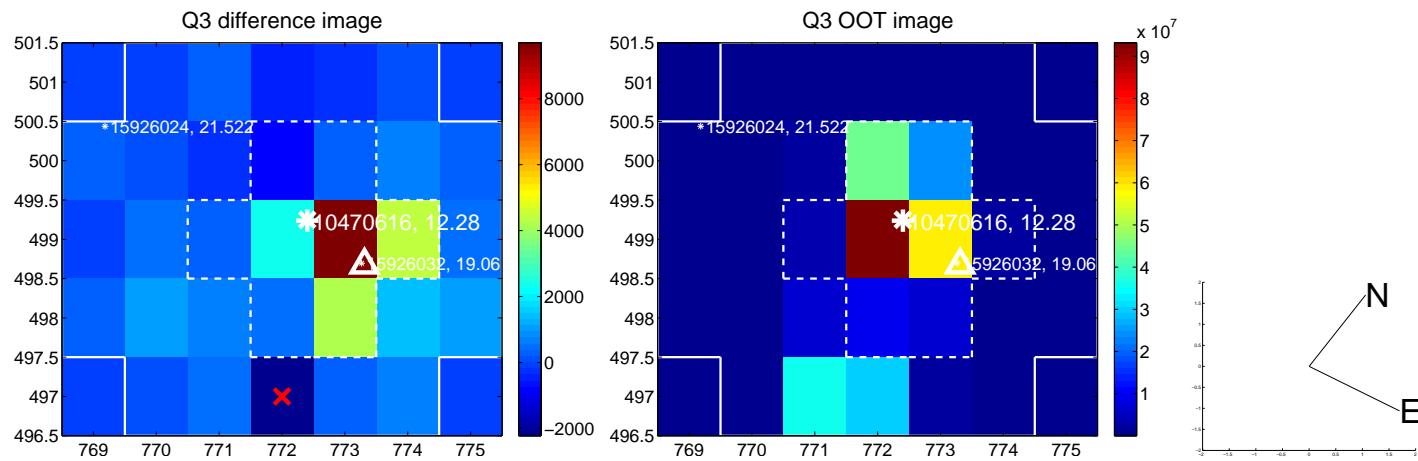
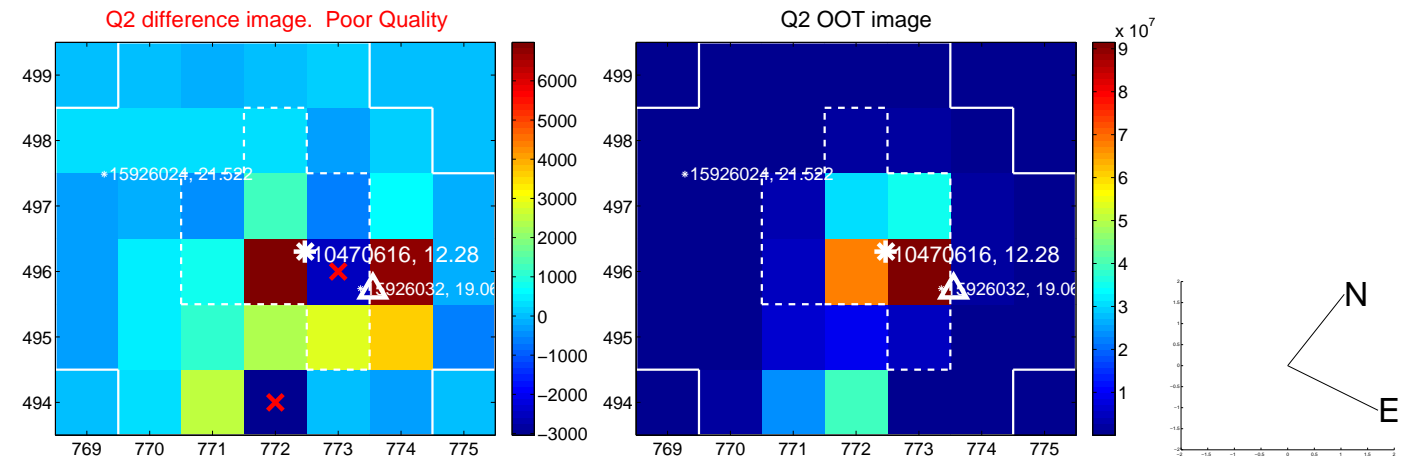
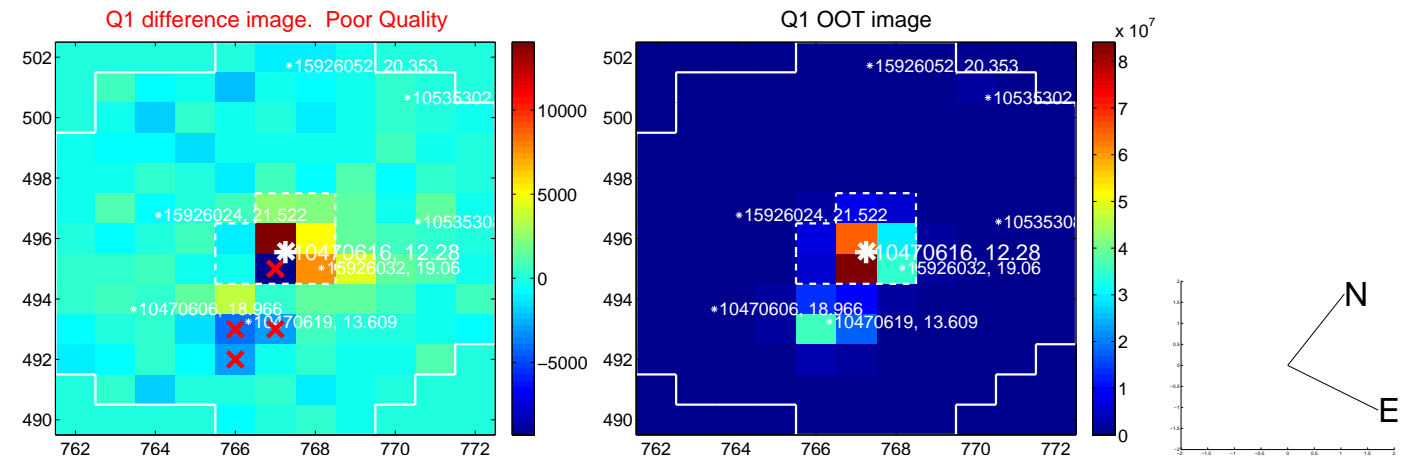
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.366 ± 0.372	11.72	4.364 ± 0.369	0.138 ± 0.177
PRF-fit source offset from KIC position	4.347 ± 0.407	10.69	4.346 ± 0.404	0.081 ± 0.181
photometric centroid source offset	4.20 ± 0.45	9.43	4.20 ± 0.45	-0.04 ± 0.49

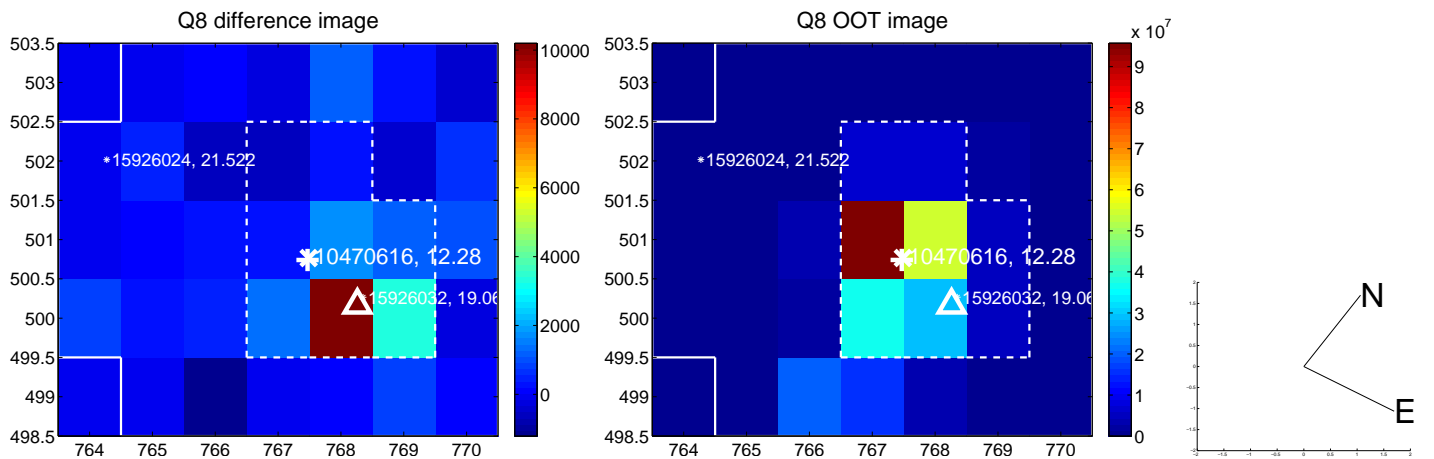
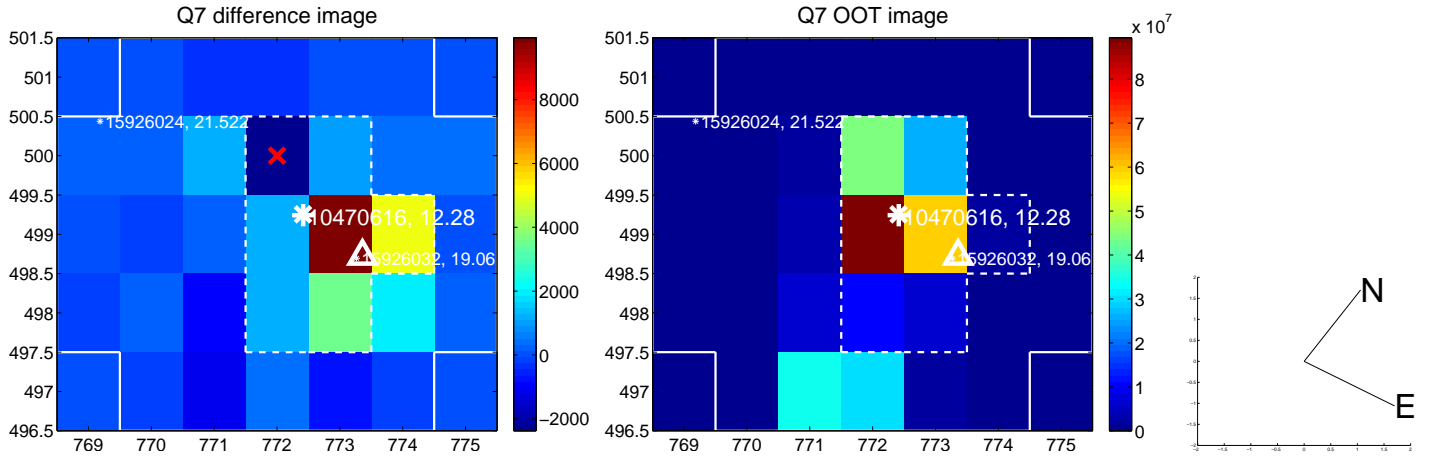
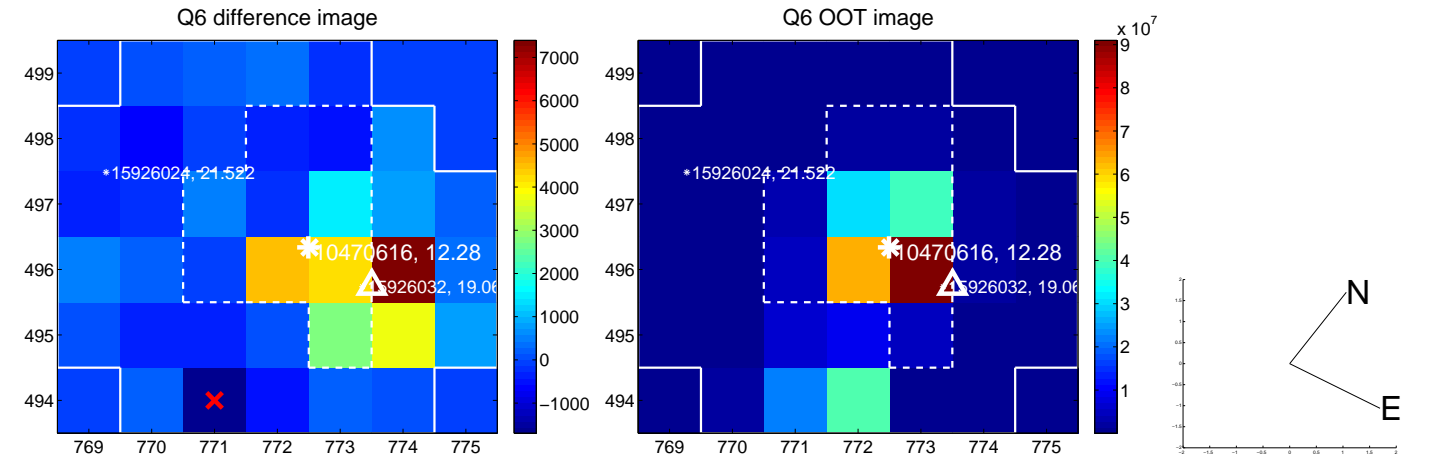
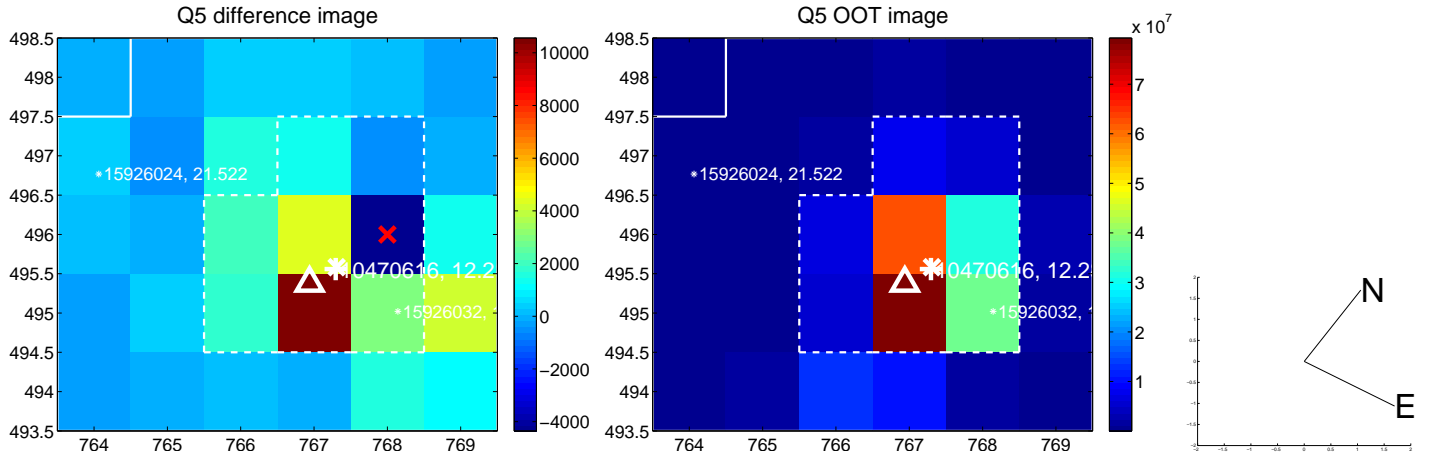


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

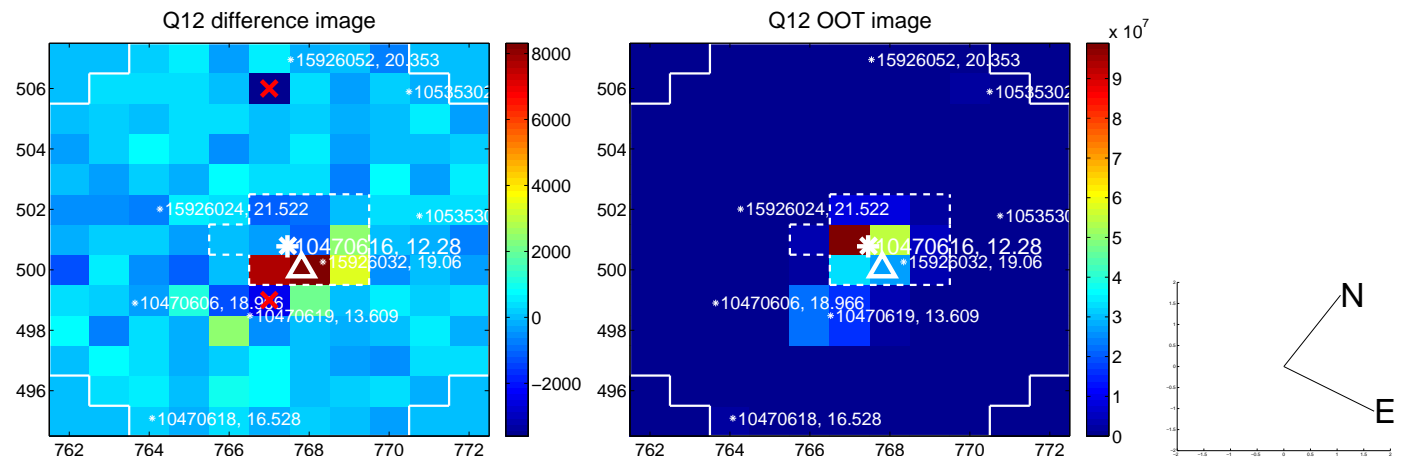
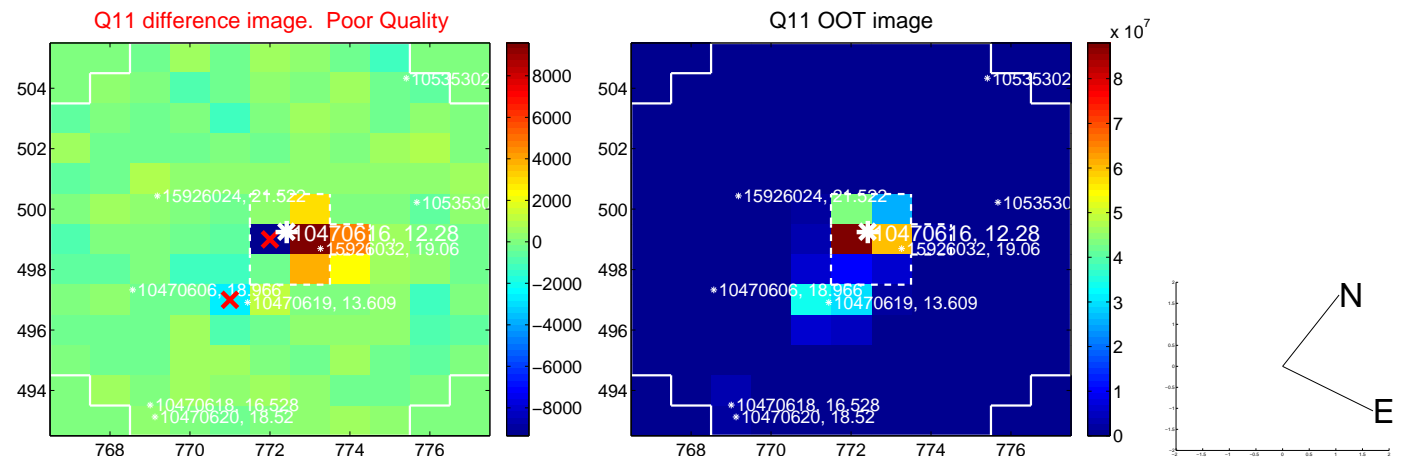
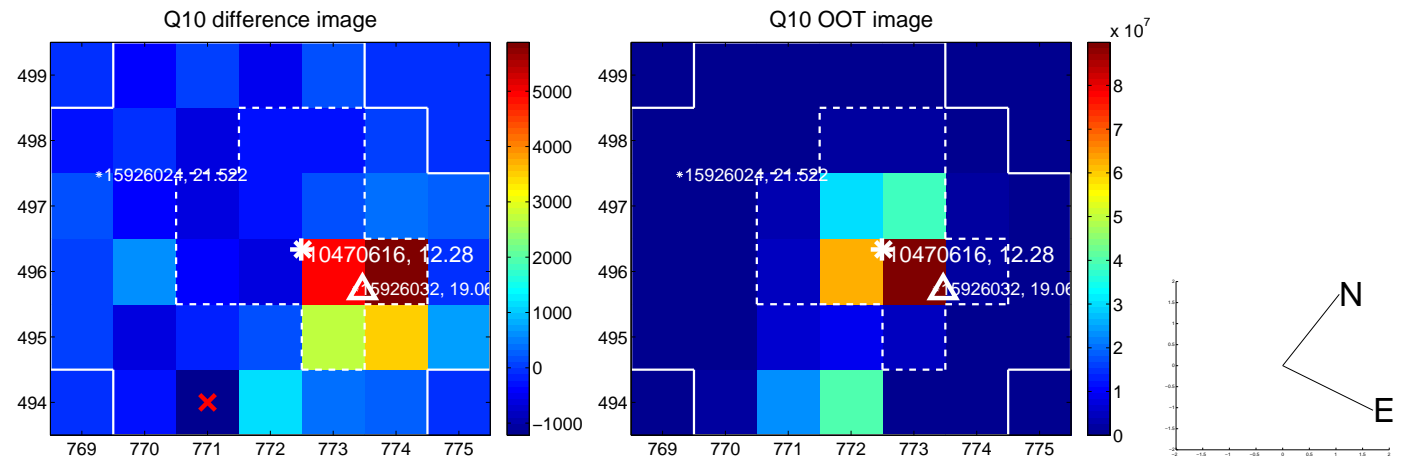
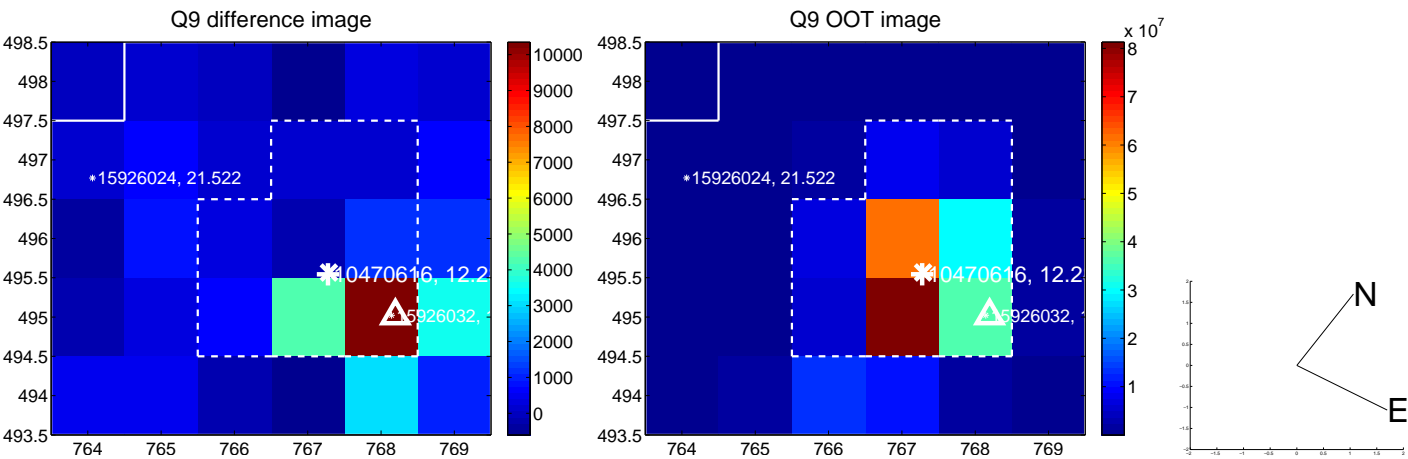
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



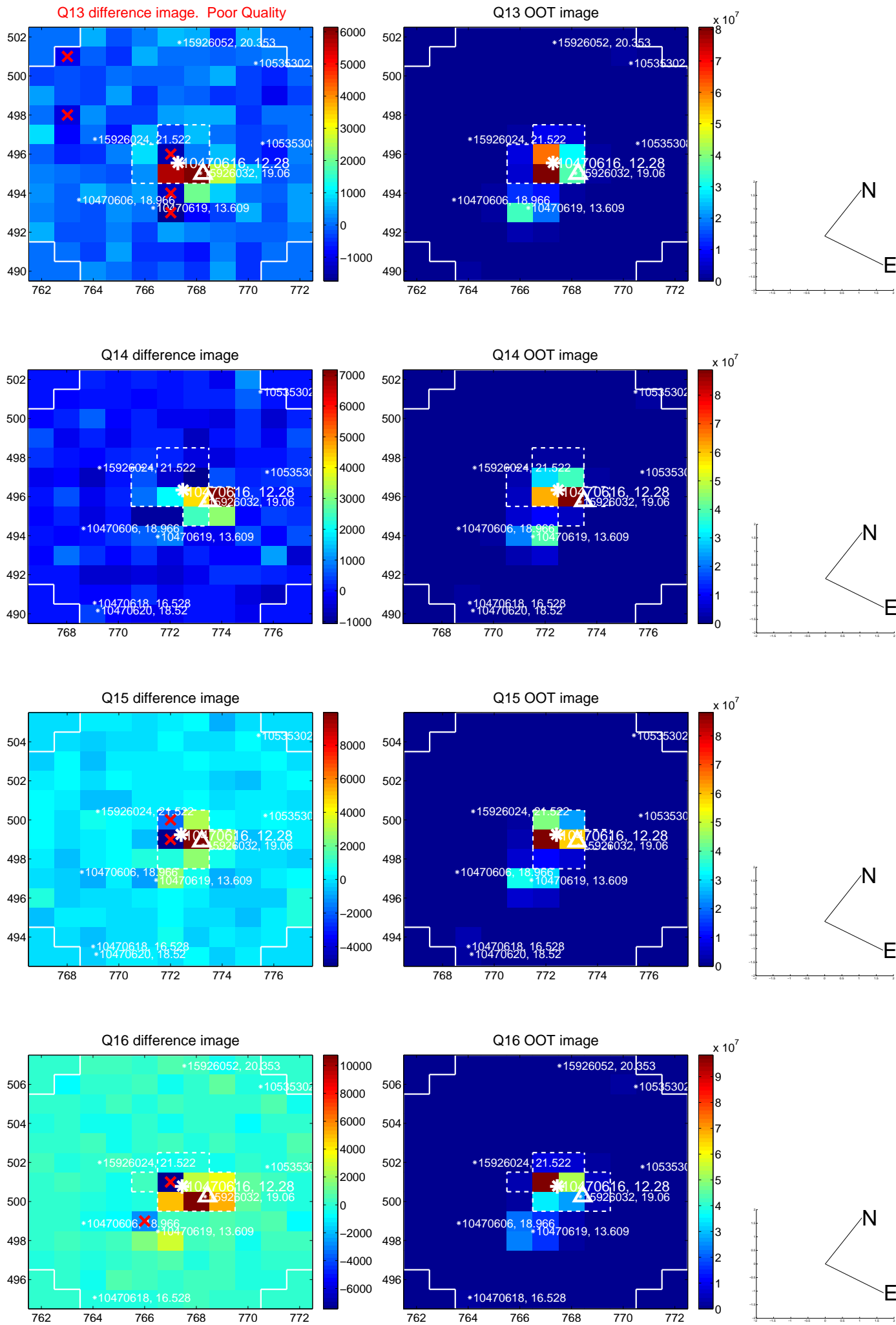
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



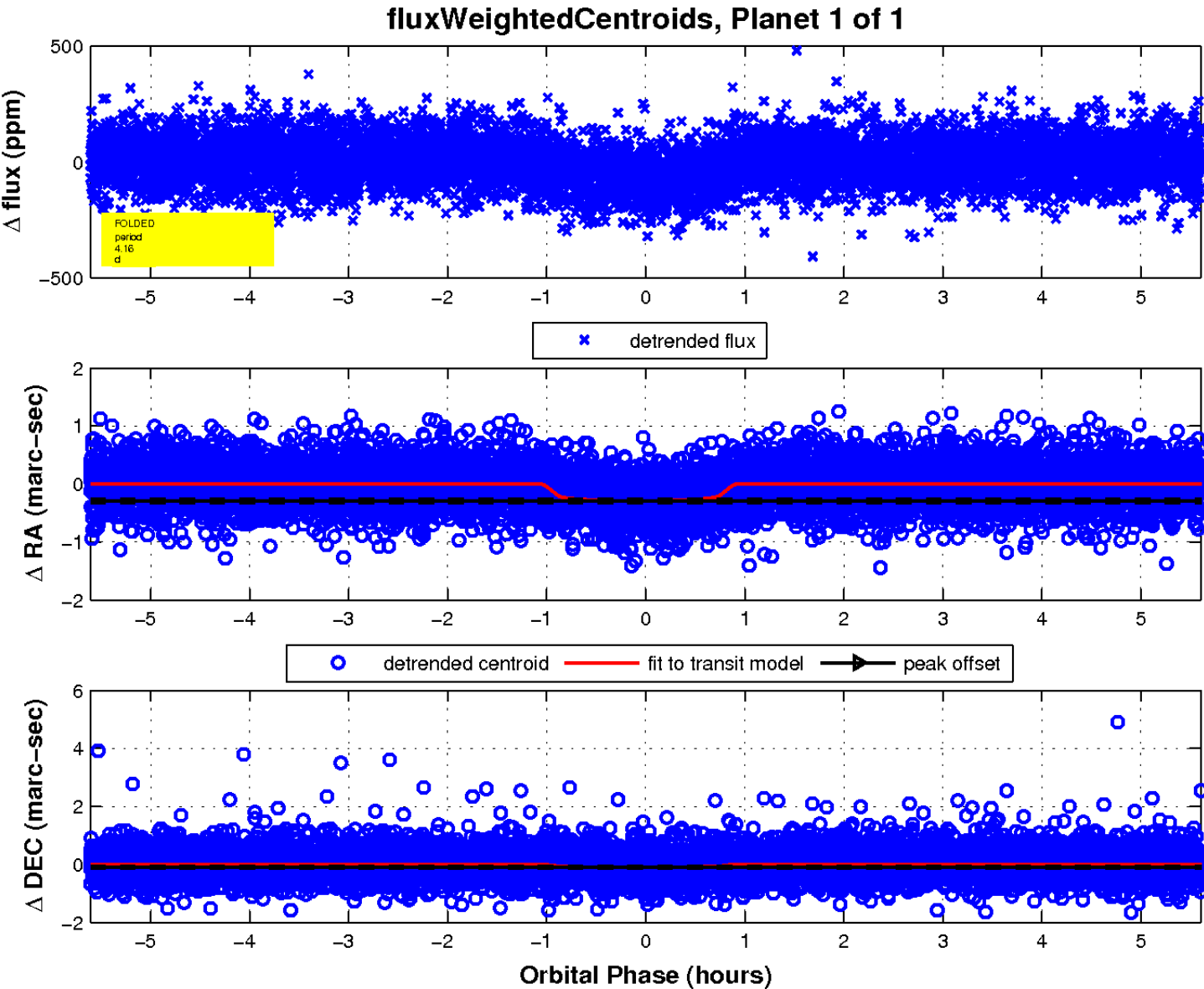
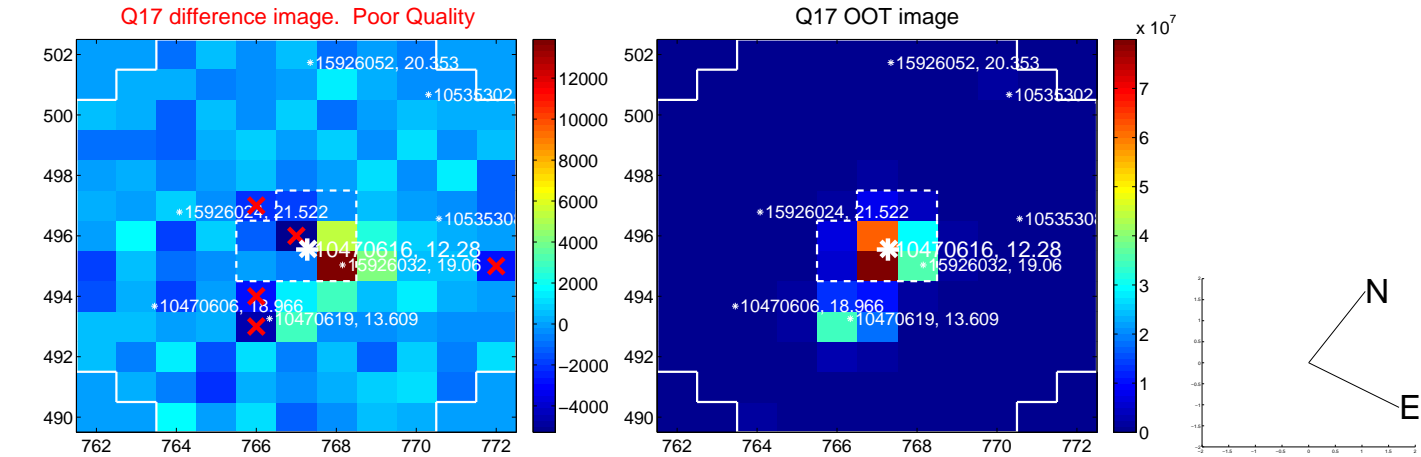
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

