

KIC 009531971

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})
009531971-01	OBS	No	8.631142	137.767743	19.9	31.522	8.3	8.8	2.17	6553	1.02	929.40

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009531971-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

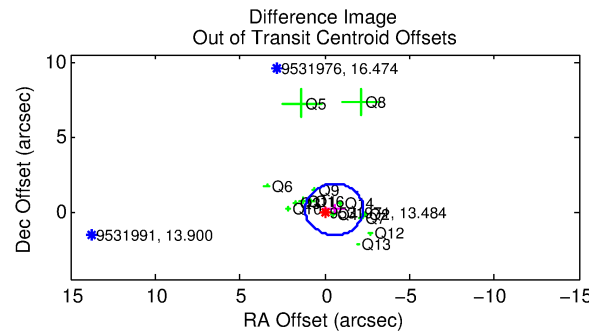
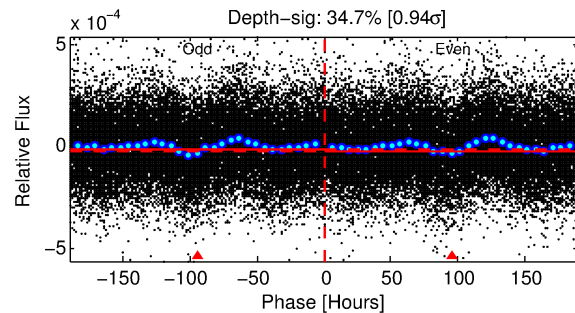
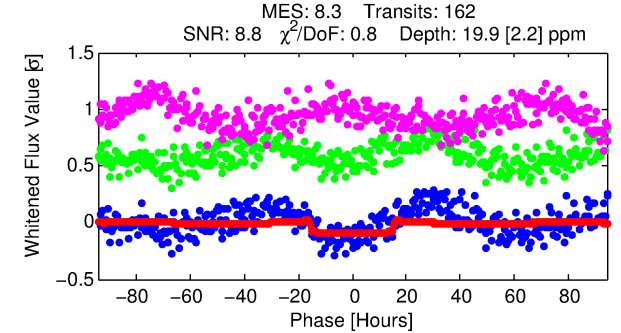
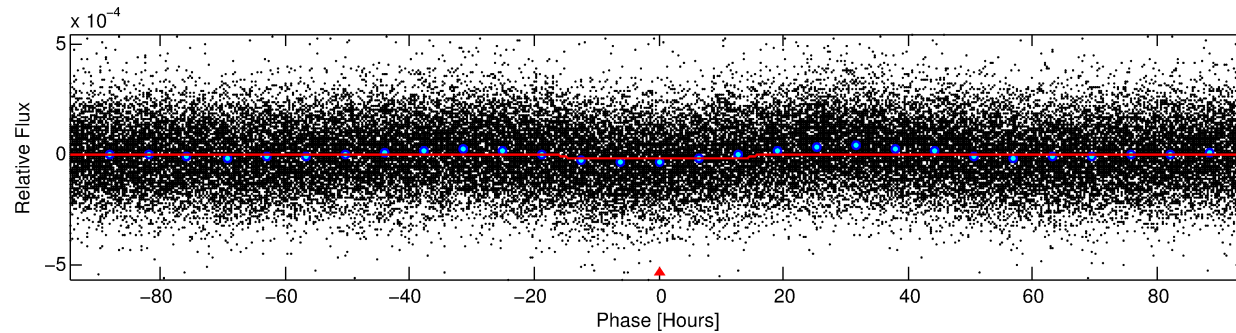
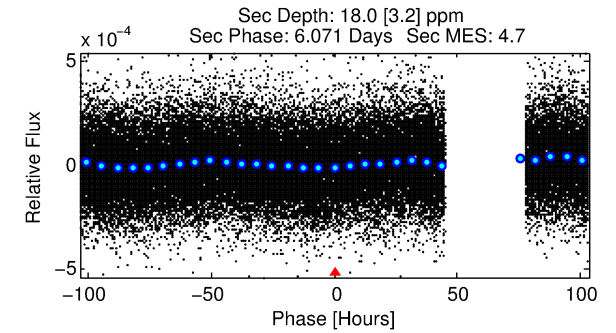
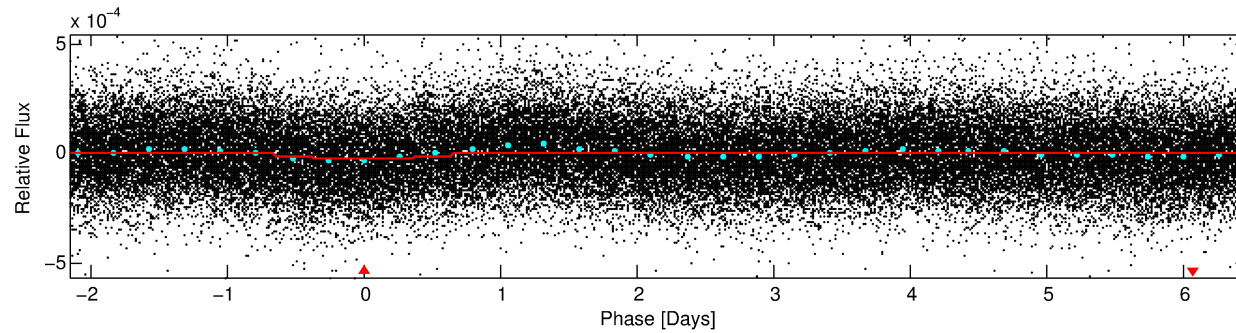
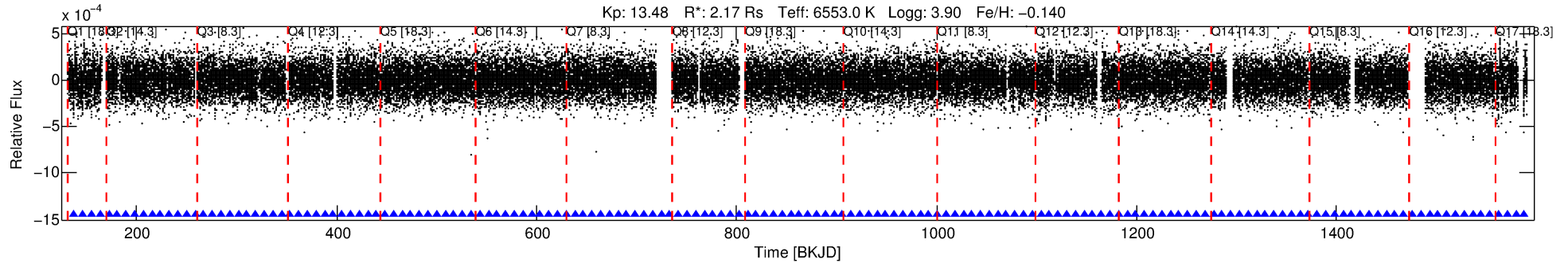
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009531971-01

No Significant Match Found

DV One-Page Summary

KIC: 9531971 Candidate: 1 of 1 Period: 8.631 d



DV Fit Results:

Period = 8.63114 [0.00030] d
Epoch = 137.7677 [0.0267] BKJD
Rp/R* = 0.0043 [0.0012]
a/R* = 1.81 [1.84]
b = 0.63 [1.39]
Seff = 929.40 [448.85]
Teq = 1408 [170] K
Rp = 1.02 [0.42] Re
a = 0.0917 [0.0271] AU
Ag = 79.40 [58.50] [1.34σ]
Teffp = 6498 [944] K [5.31σ]

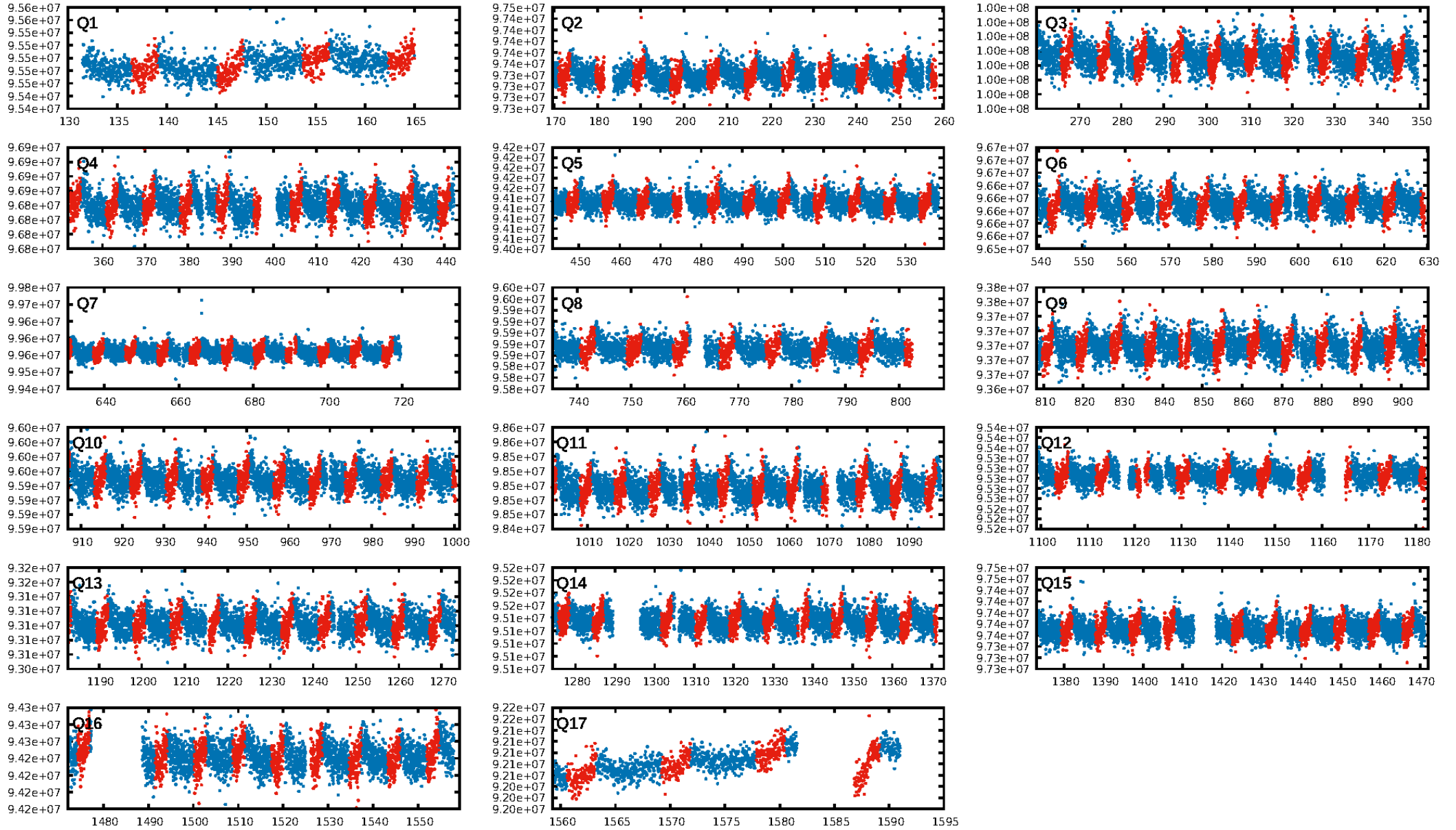
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.59e-18
RollingBand-fgt: 1.00 [154/154]
GhostDiagnostic-chr: -6.304
Centroid-sig: 0.0%
Centroid-so: 11.068 arcsec [6.44σ]
OotOffset-rm: 0.583 arcsec [1.02σ]
KicOffset-rm: 0.636 arcsec [1.09σ]
OotOffset-st: 4/3/4/3 [14]
KicOffset-st: 4/3/4/3 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

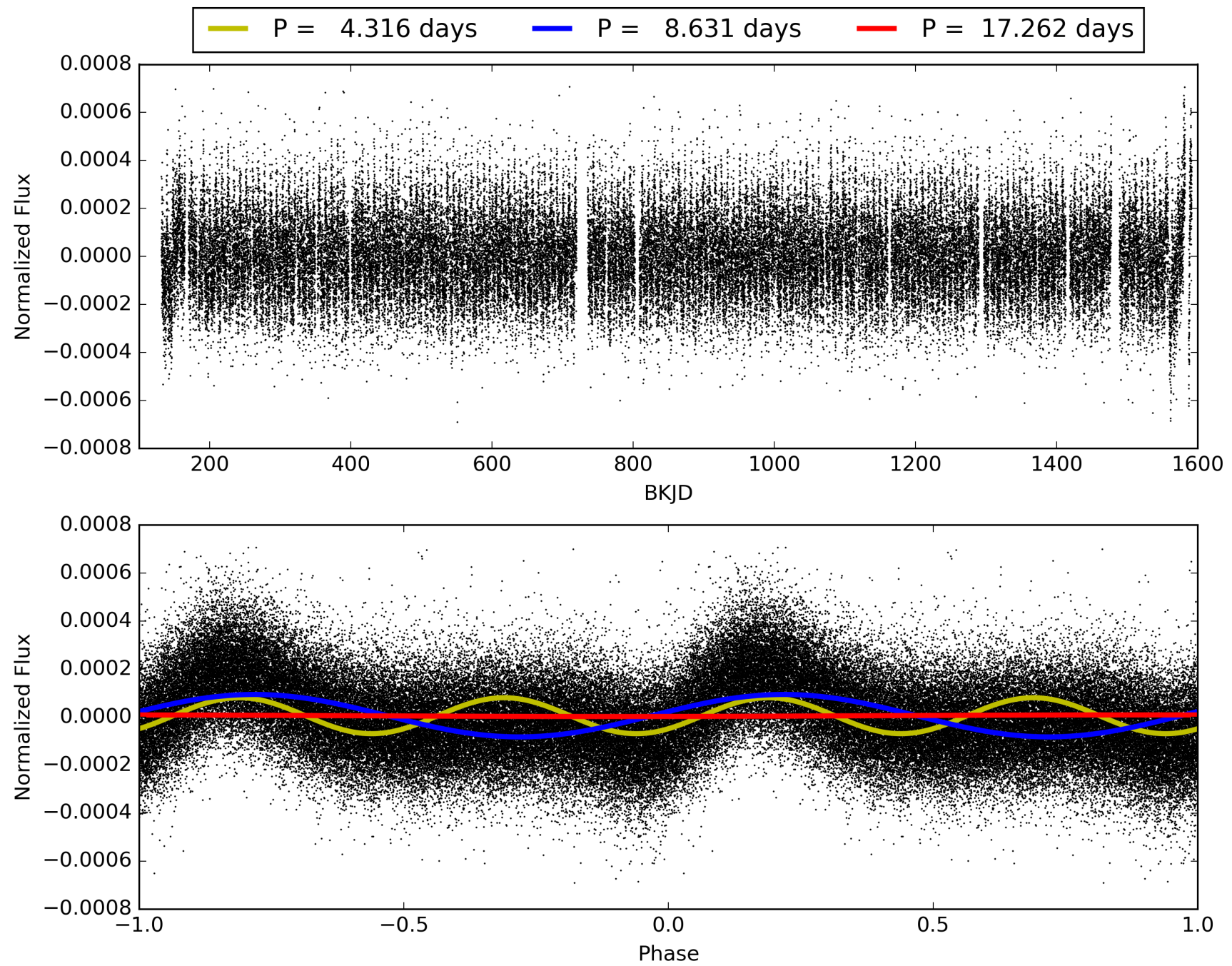
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 16:13:31 Z

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

TCE 009531971-01, PDC Light Curves

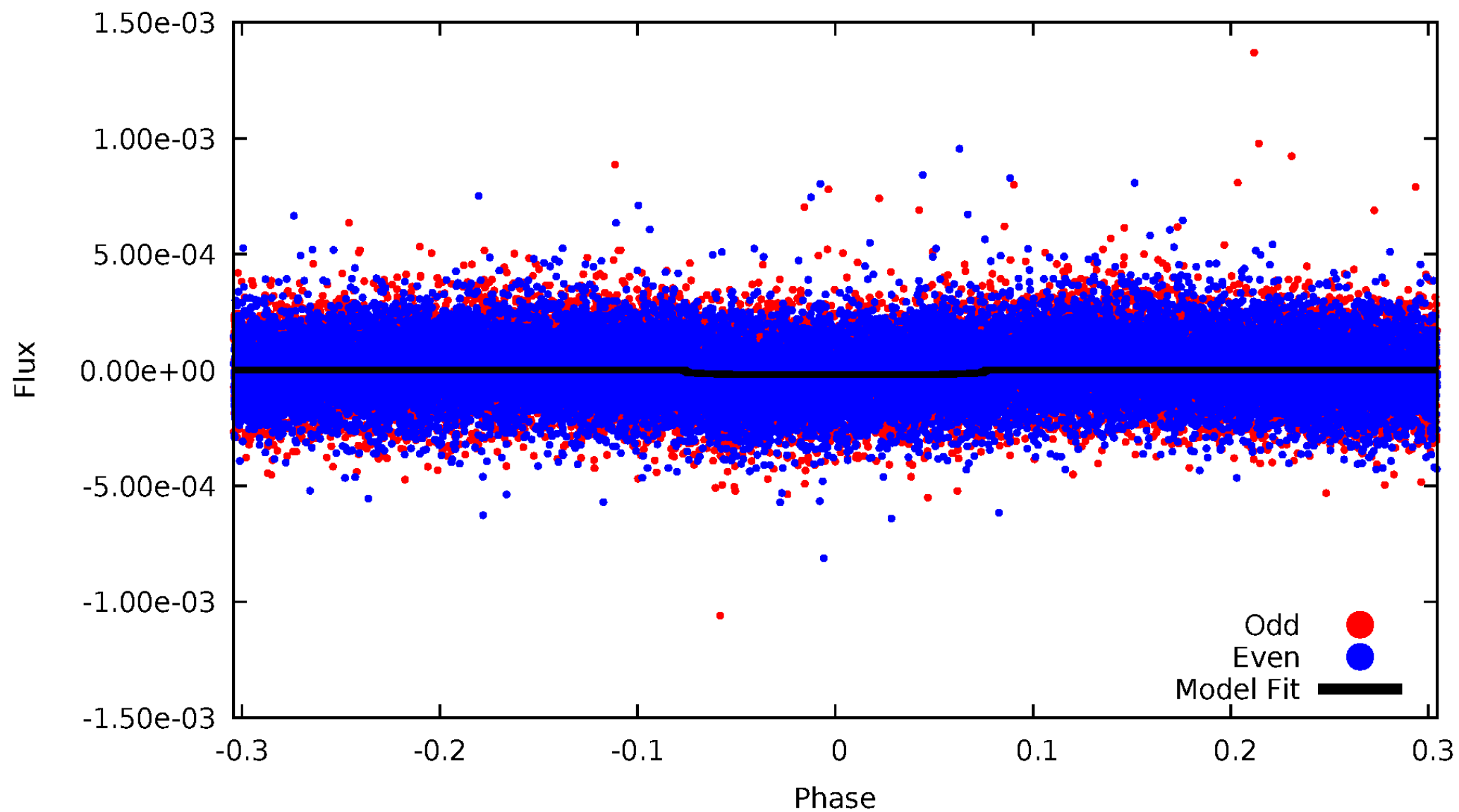


TCE 009531971-01



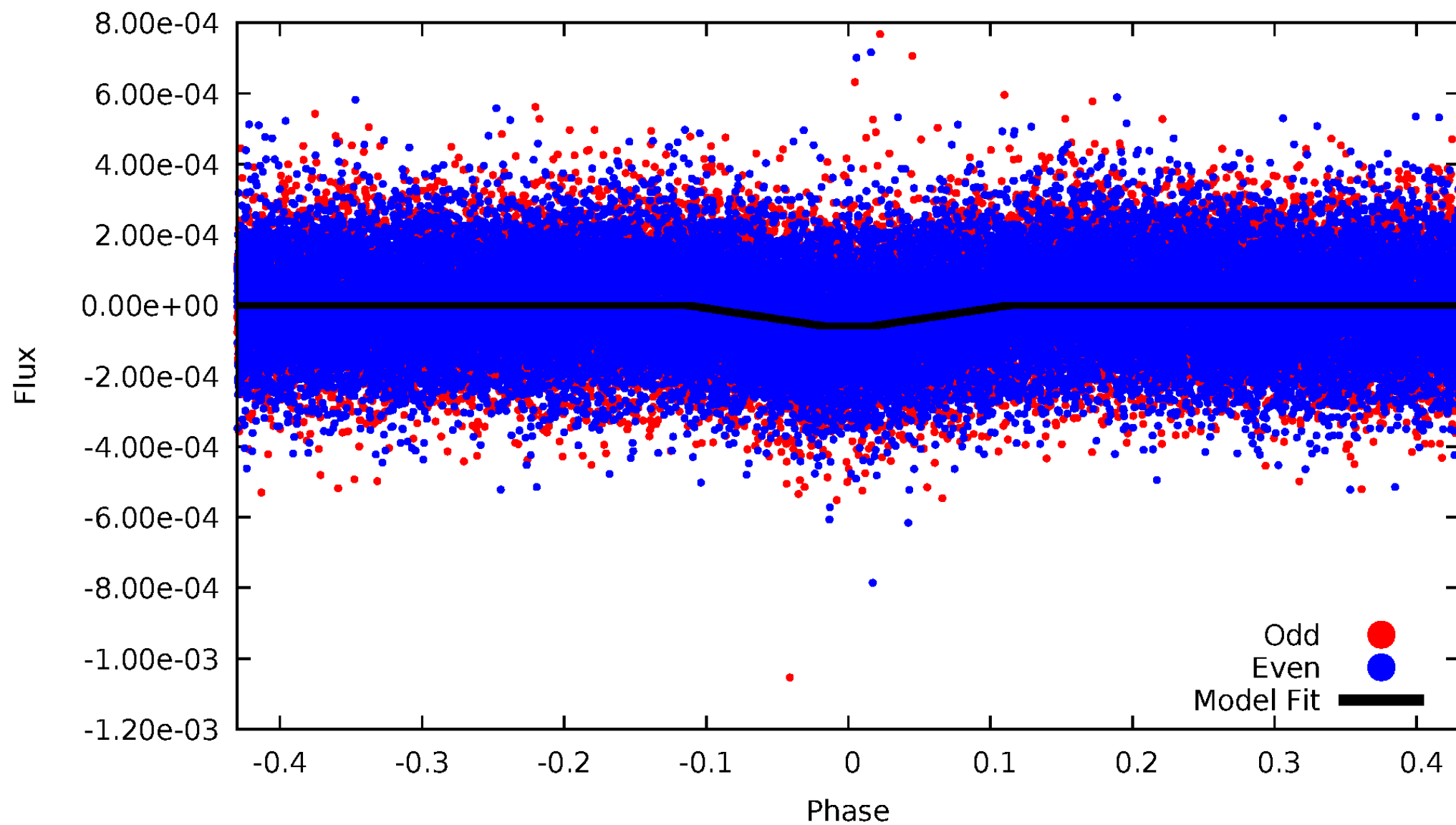
DV Odd/Even

TCE 009531971-01



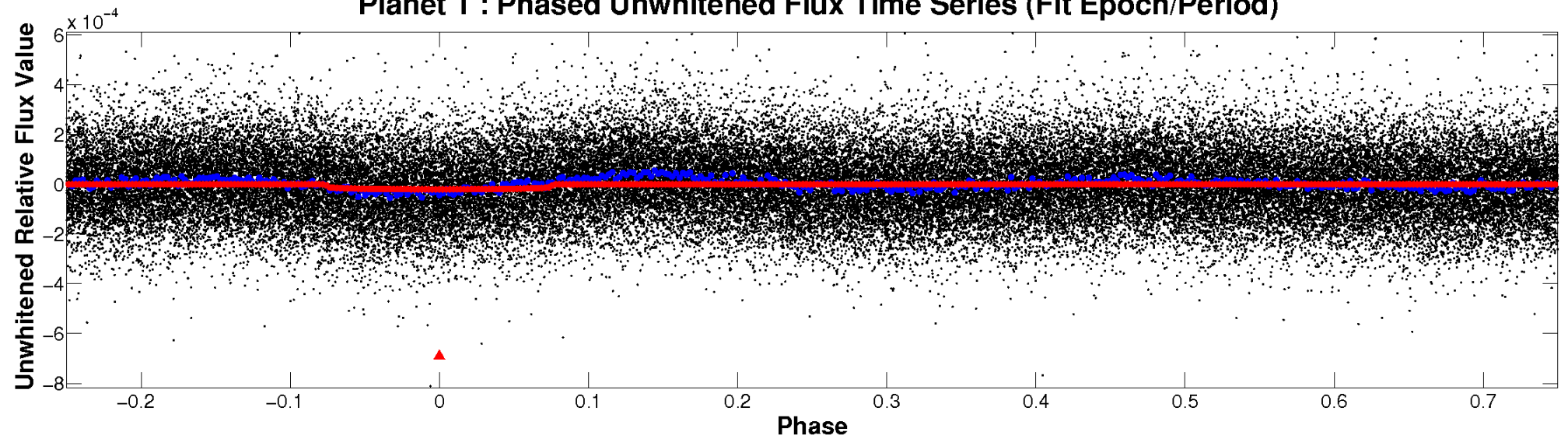
ALT Odd/Even

TCE 009531971-01

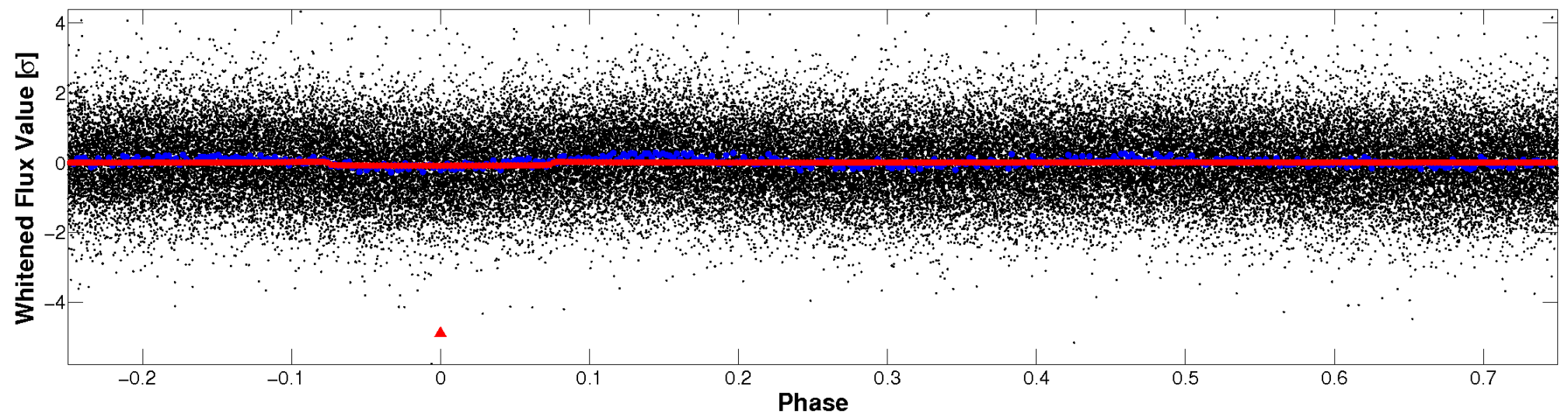


Non-Whitened Vs. Whitened Light Curve

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

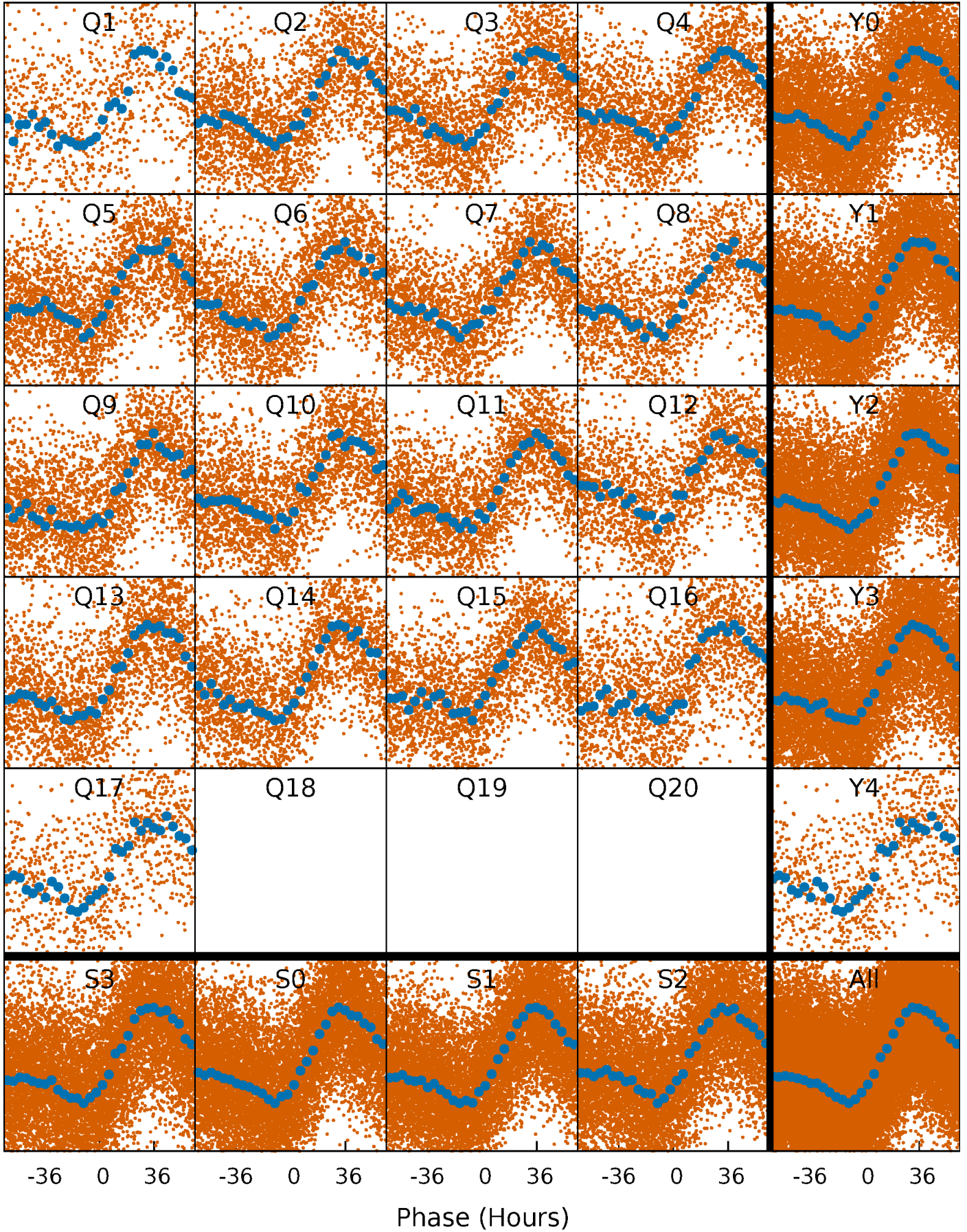


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



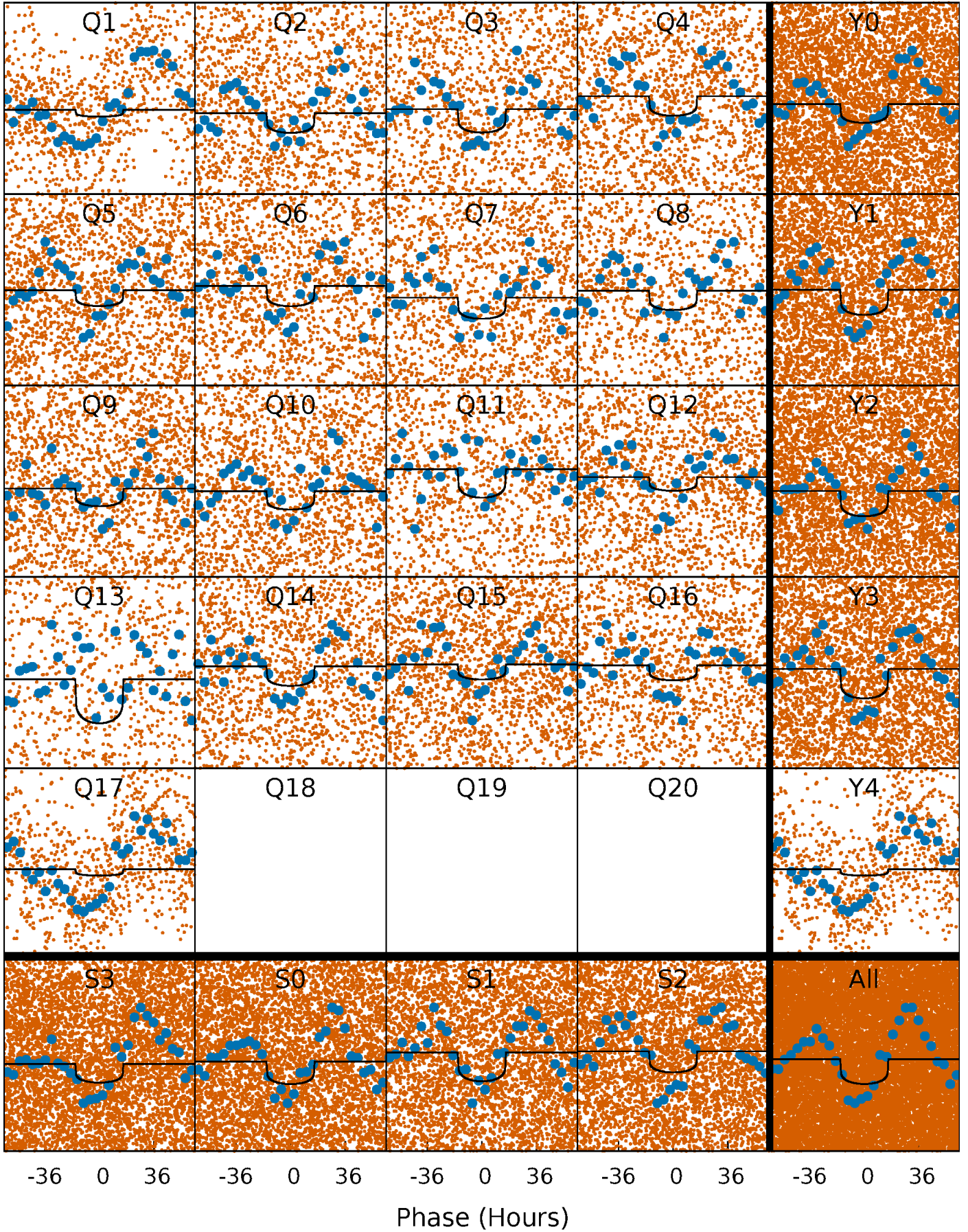
PDC Quarter-Phased Transit Curves

TCE 009531971-01 P= 8.631142 Days $T_0=137.767743$ (BKJD)



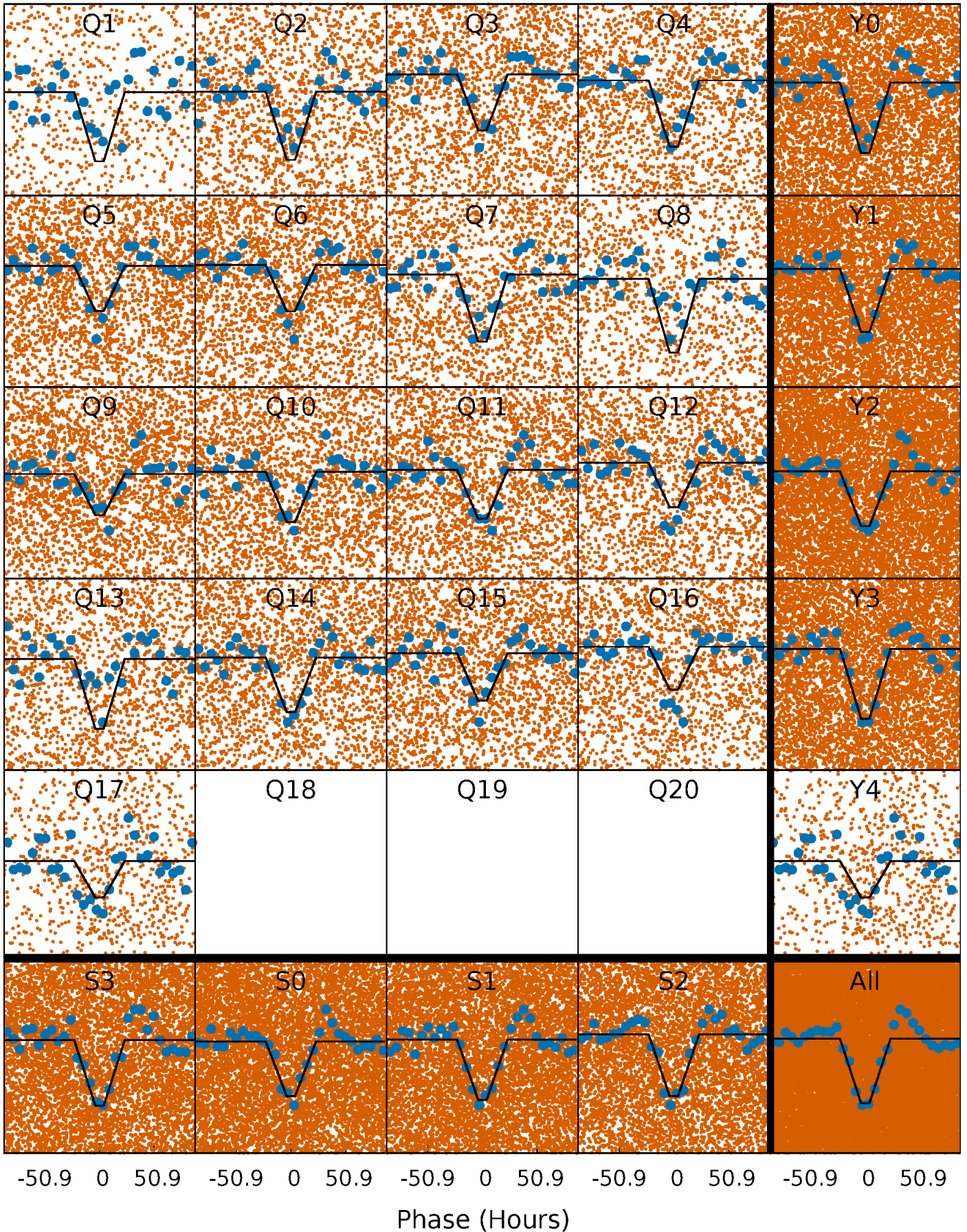
DV Quarter-Phased Transit Curves

TCE 009531971-01 P= 8.631142 Days $T_0=137.767743$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

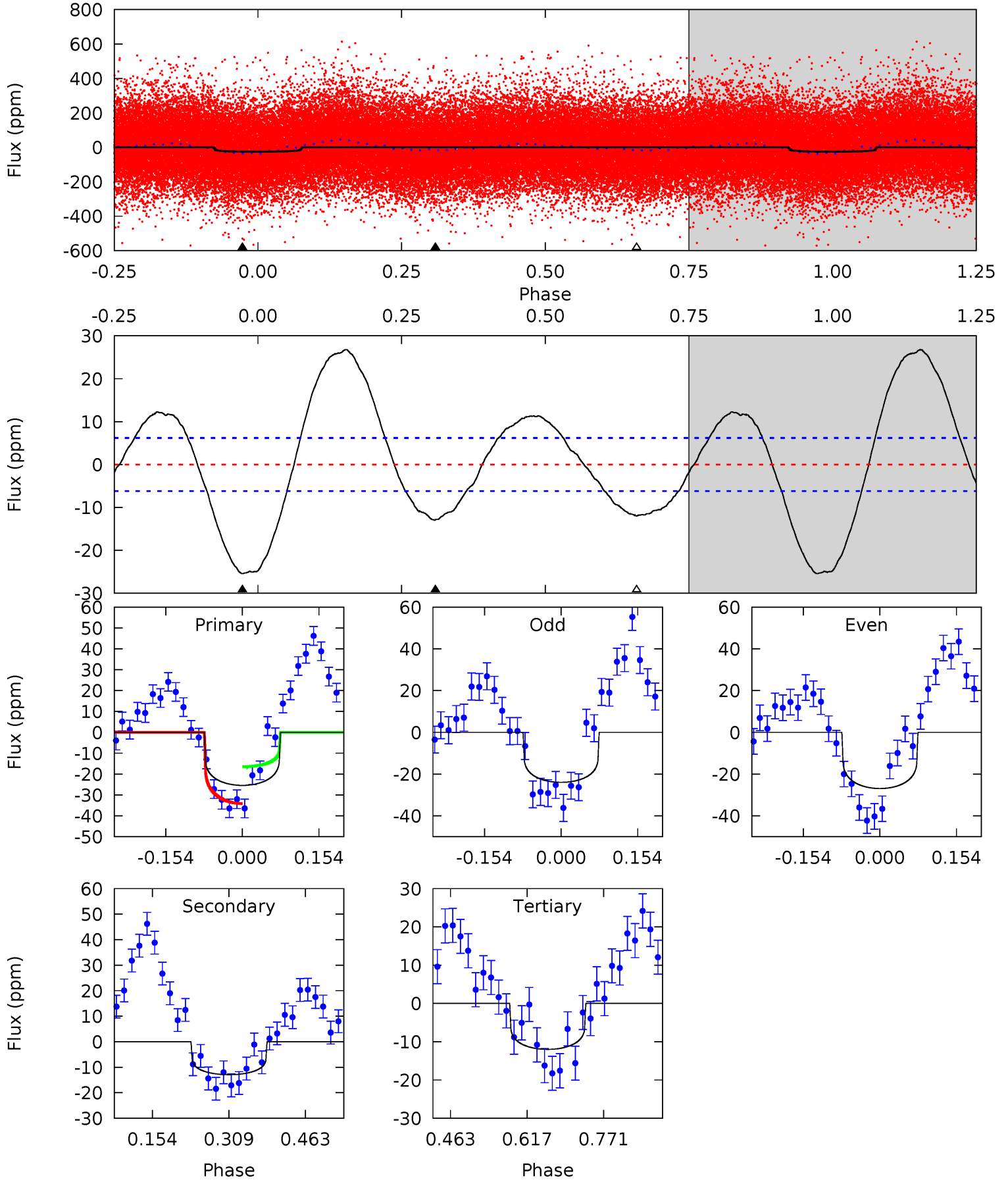
TCE 009531971-01 P= 8.631824 Days $T_0=137.537994$ (BKJD)



DV Model-Shift Uniqueness Test

009531971-01, P = 8.631142 Days, E = 129.136601 Days

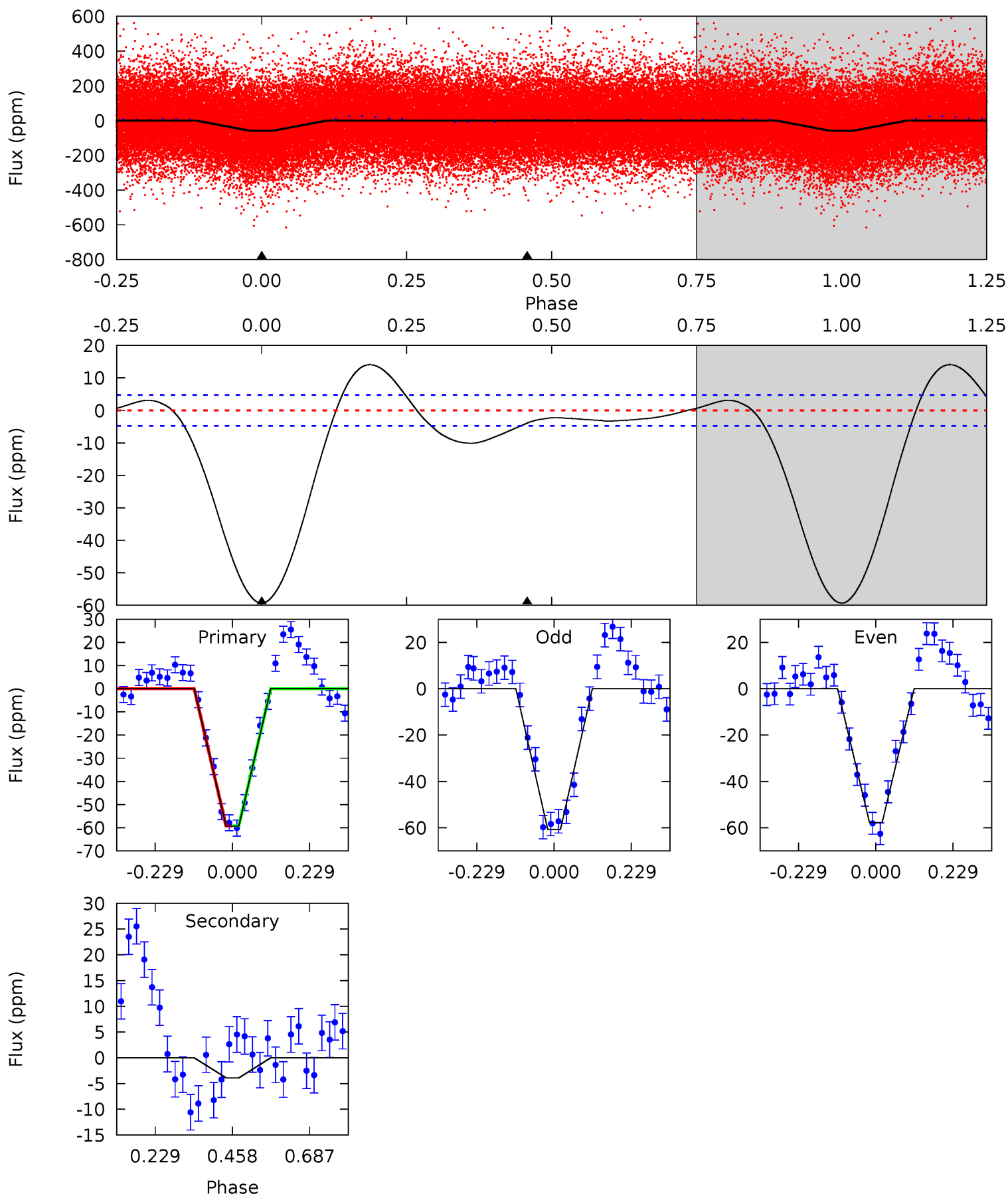
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	9.35	8.69	0	4.47	1.42	7.65	9.72	18.4	0.67	9.35	1.07	1.20	0.51	6.43



Alt Model-Shift Uniqueness Test

009531971-01, P = 8.631824 Days, E = 128.906170 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
54.6	3.59	0	0	4.39	1.20	2.65	54.6	54.6	3.59	3.59	1.39	1.00	0.19	0.05



Stellar Parameters For KIC 009531971

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6553^{+176}_{-195}	$3.903^{+0.273}_{-0.117}$	$-0.140^{+0.300}_{-0.250}$	$2.175^{+0.453}_{-0.680}$	$1.381^{+0.210}_{-0.233}$	$0.189^{+0.321}_{-0.064}$
	+3%/-3%	+7%/-3%	+214%/-179%	+21%/-31%	+15%/-17%	+170%/-34%
Source	PHO1	FLK73	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 009531971-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-13 ± 1	$0.98^{+0.31}_{-0.30}$	1941^{+119}_{-154}	6008^{+1118}_{-671}	63^{+67}_{-27}
Alt.	-4 ± 1	$1.75^{+0.36}_{-0.38}$	1937^{+127}_{-176}	3678^{+304}_{-259}	$5.825^{+4.088}_{-2.240}$

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 $A_{obs} \gg 1.0$

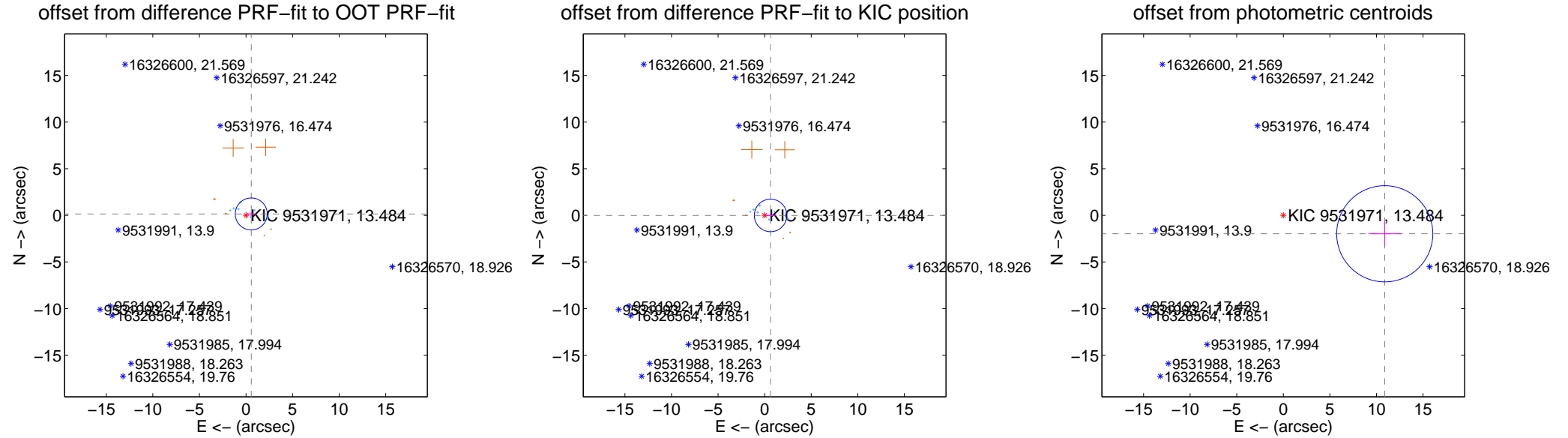
DV Centroid Data

Supplemental centroid analysis for 009531971-01. Kepler magnitude: 13.48. Transit SNR 8.84

There are 8 quarters with good PRF difference image offsets

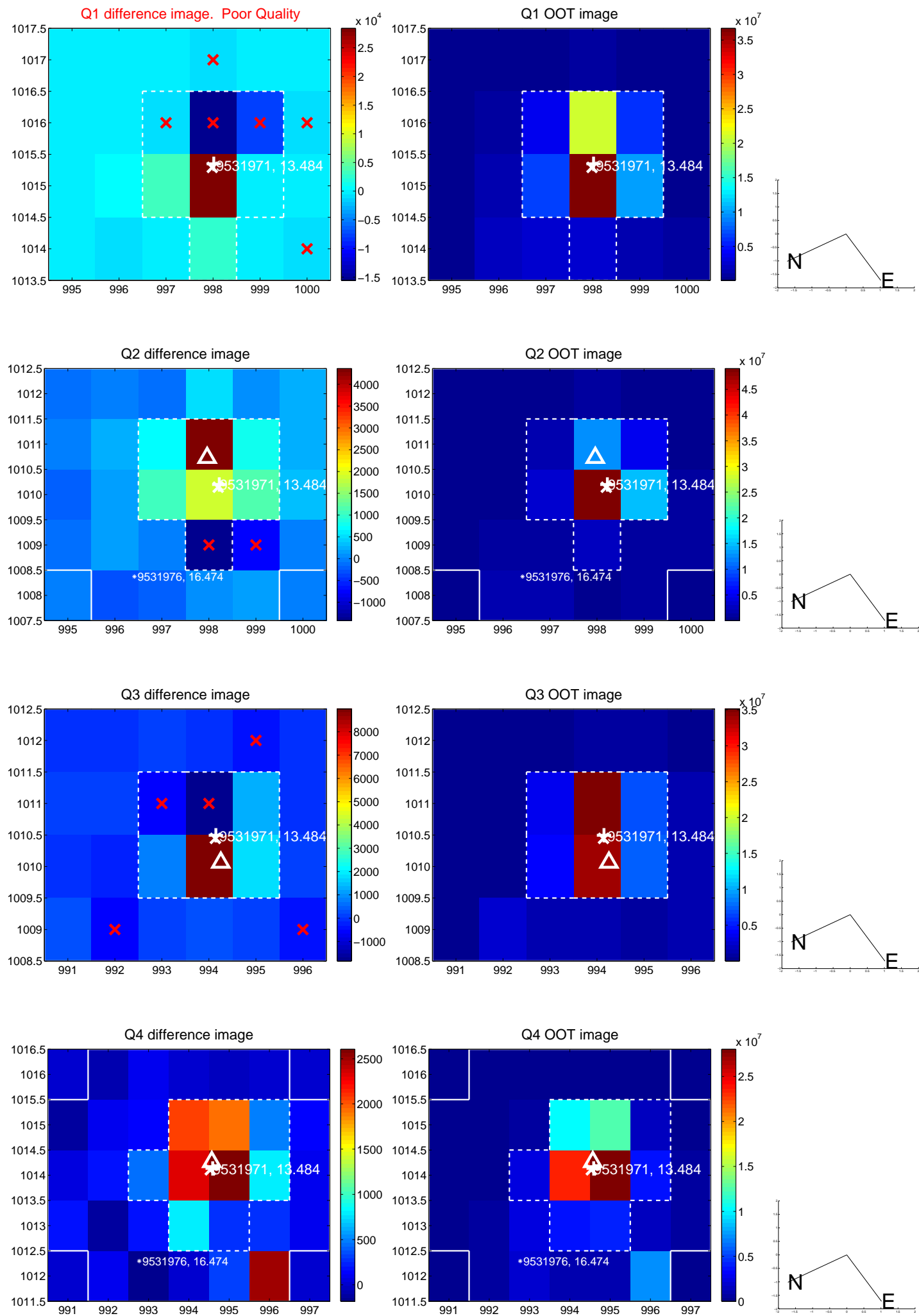
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.583 ± 0.572	1.02	-0.564 ± 0.587	0.146 ± 0.266
PRF-fit source offset from KIC position	0.636 ± 0.582	1.09	-0.636 ± 0.582	-0.009 ± 0.256
photometric centroid source offset	11.07 ± 1.72	6.44	-10.89 ± 1.73	-1.98 ± 1.33

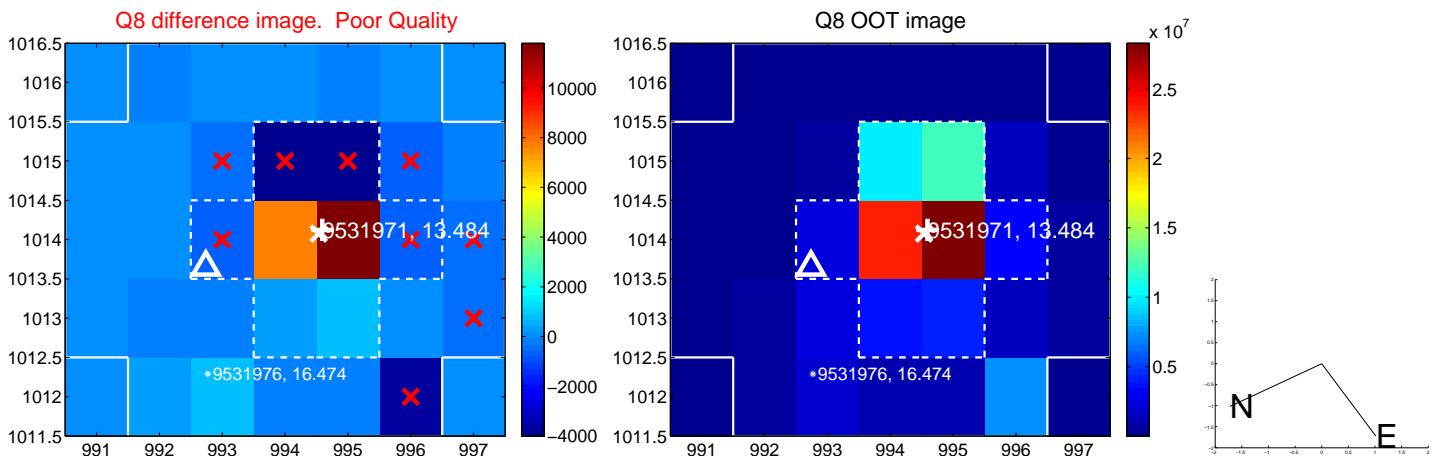
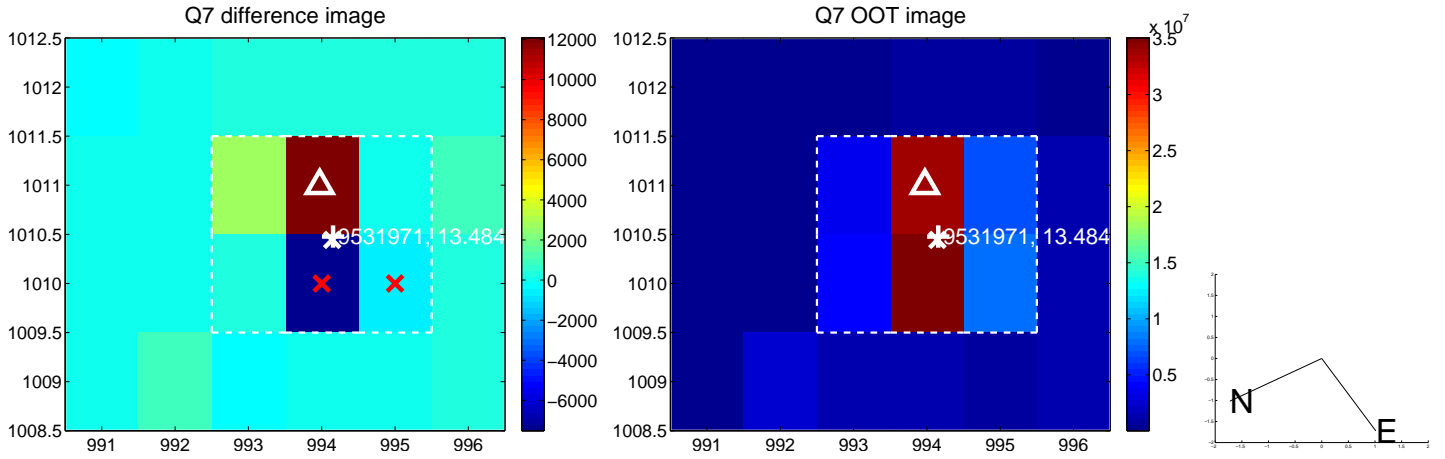
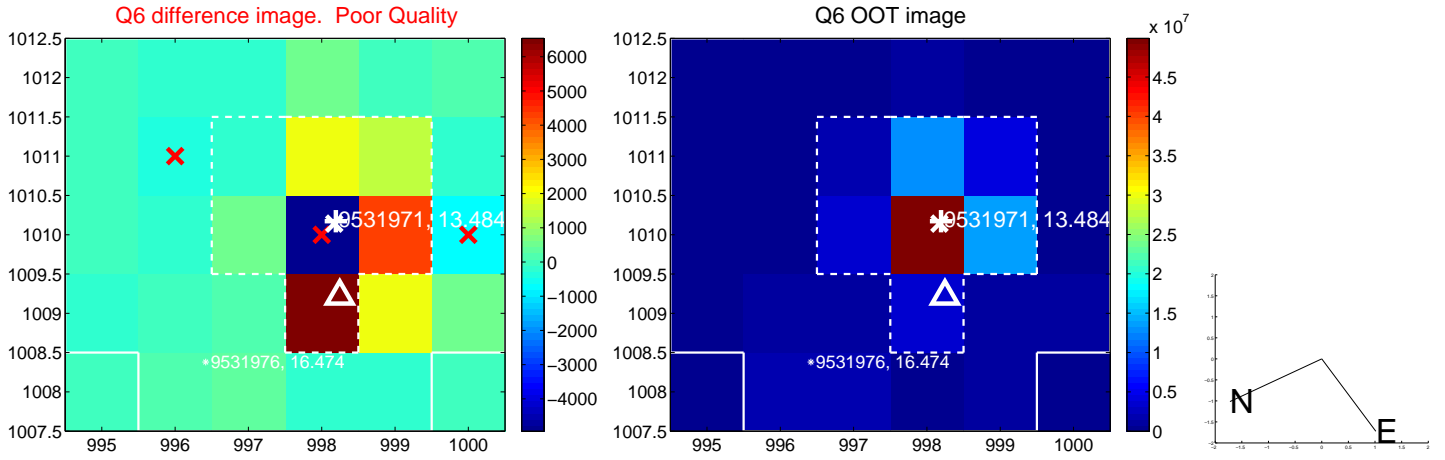
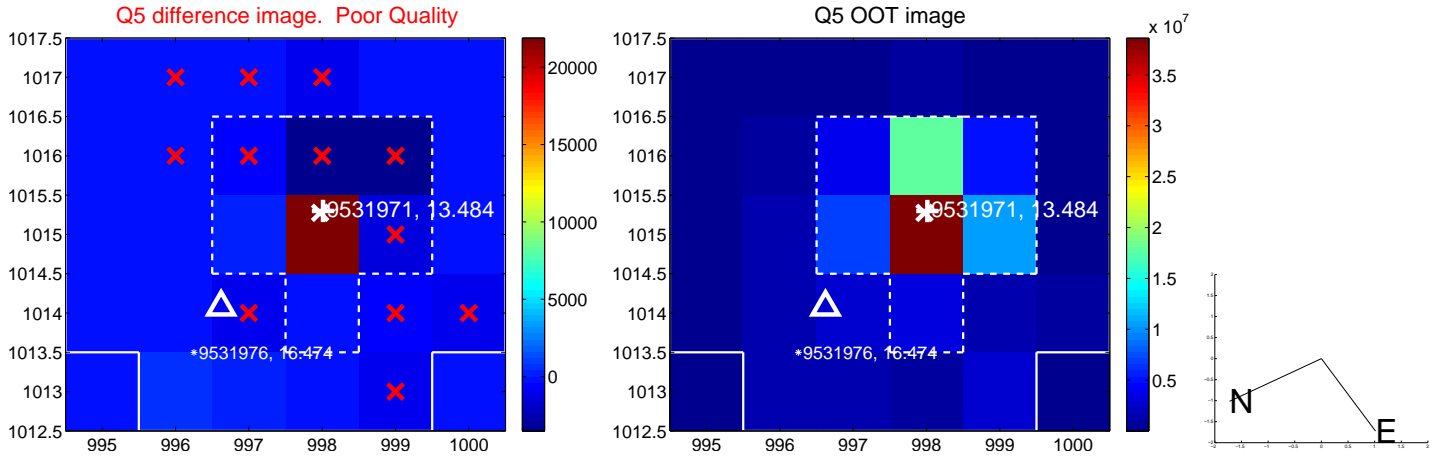


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

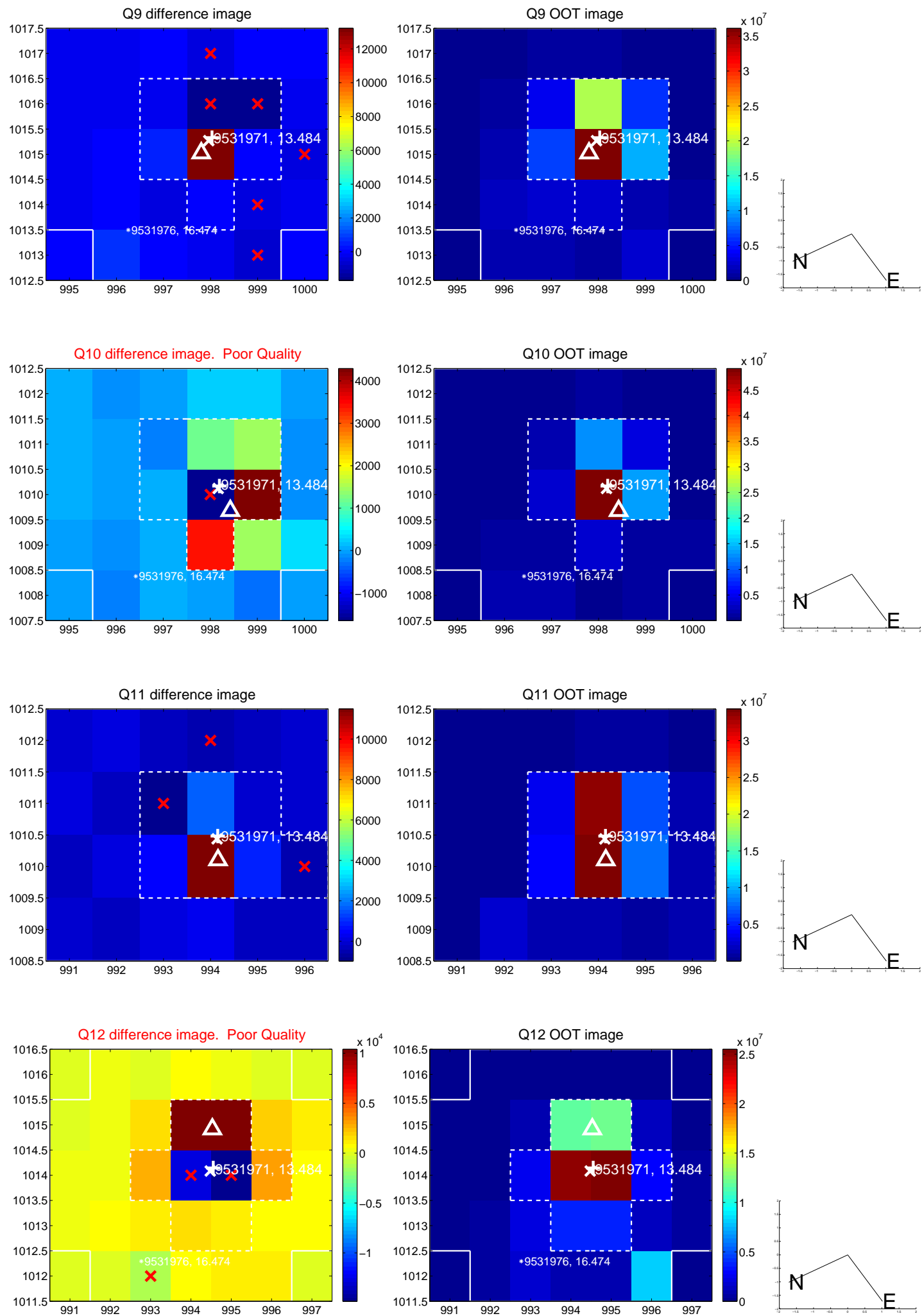
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



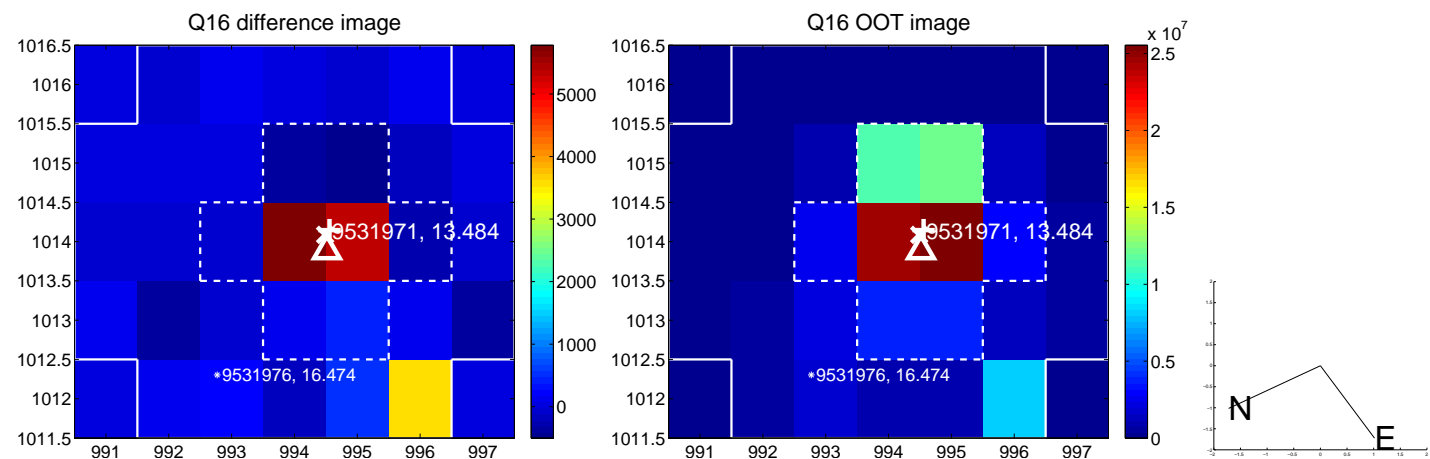
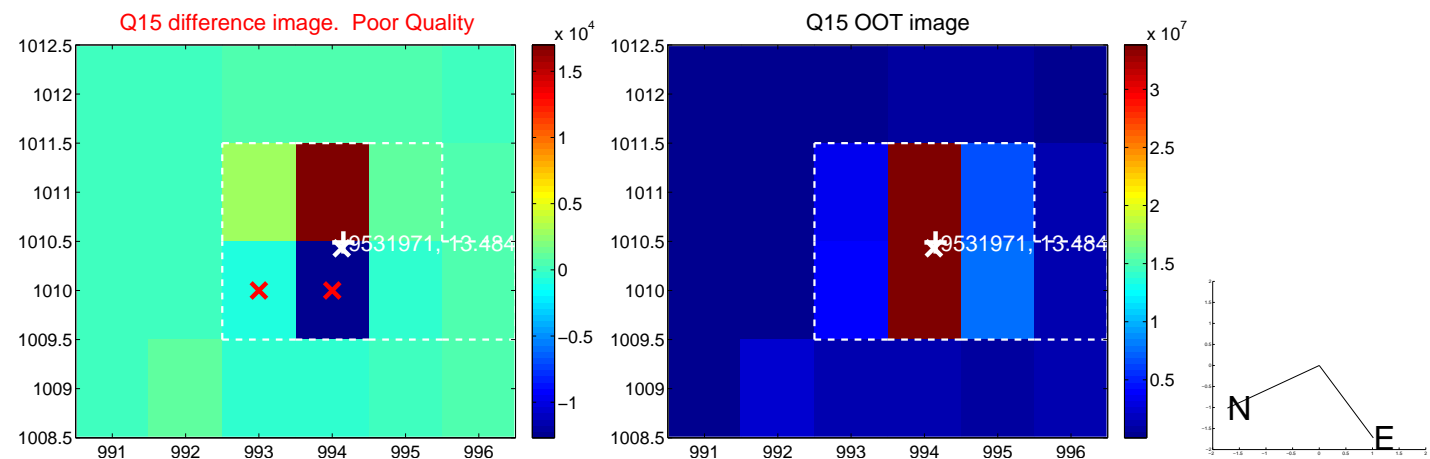
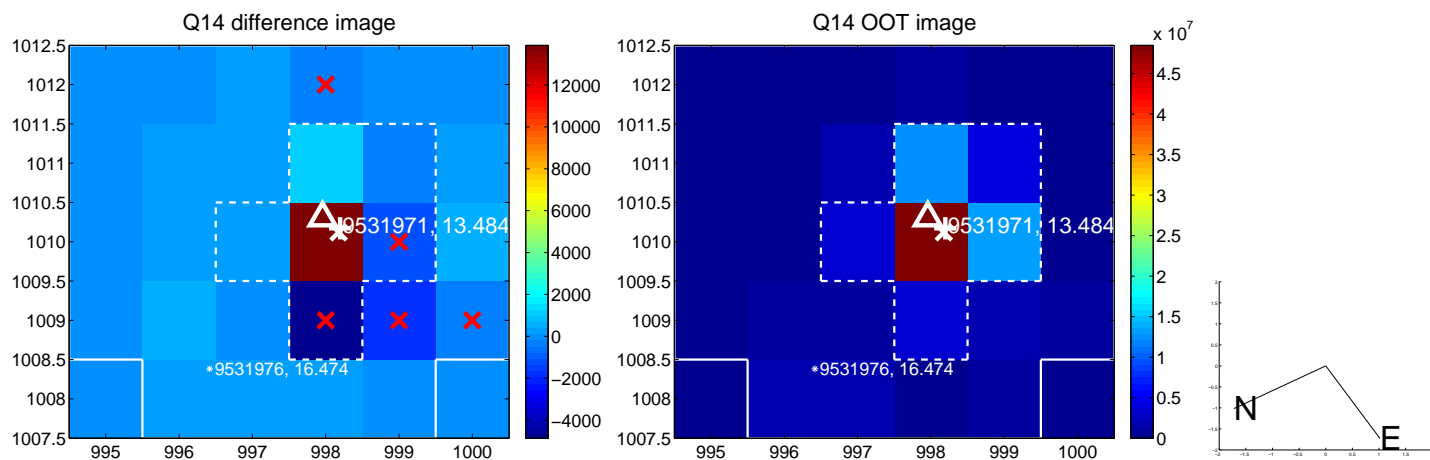
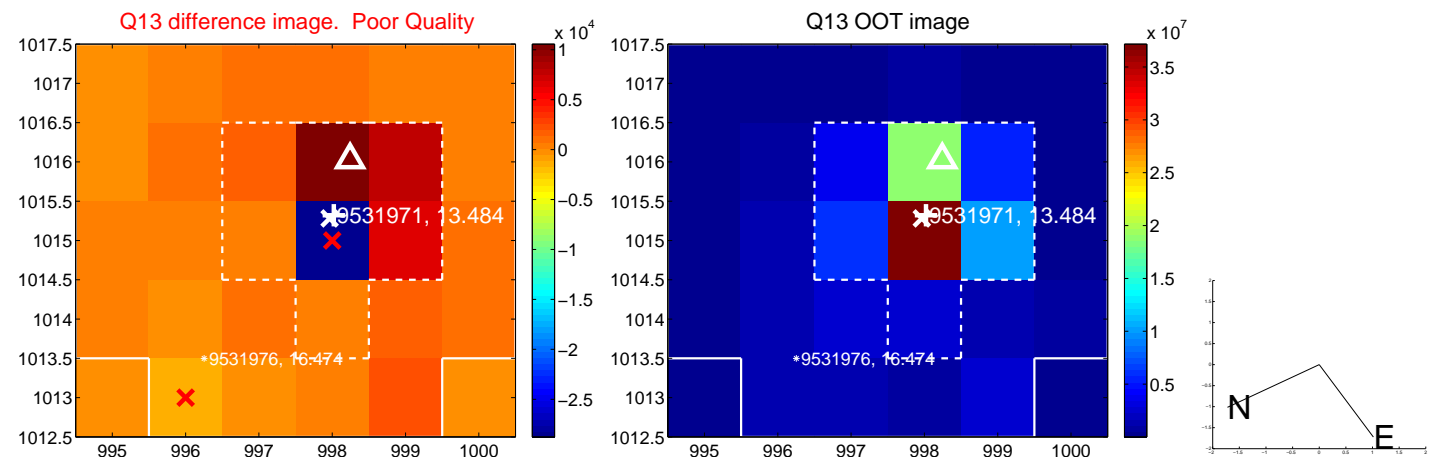
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



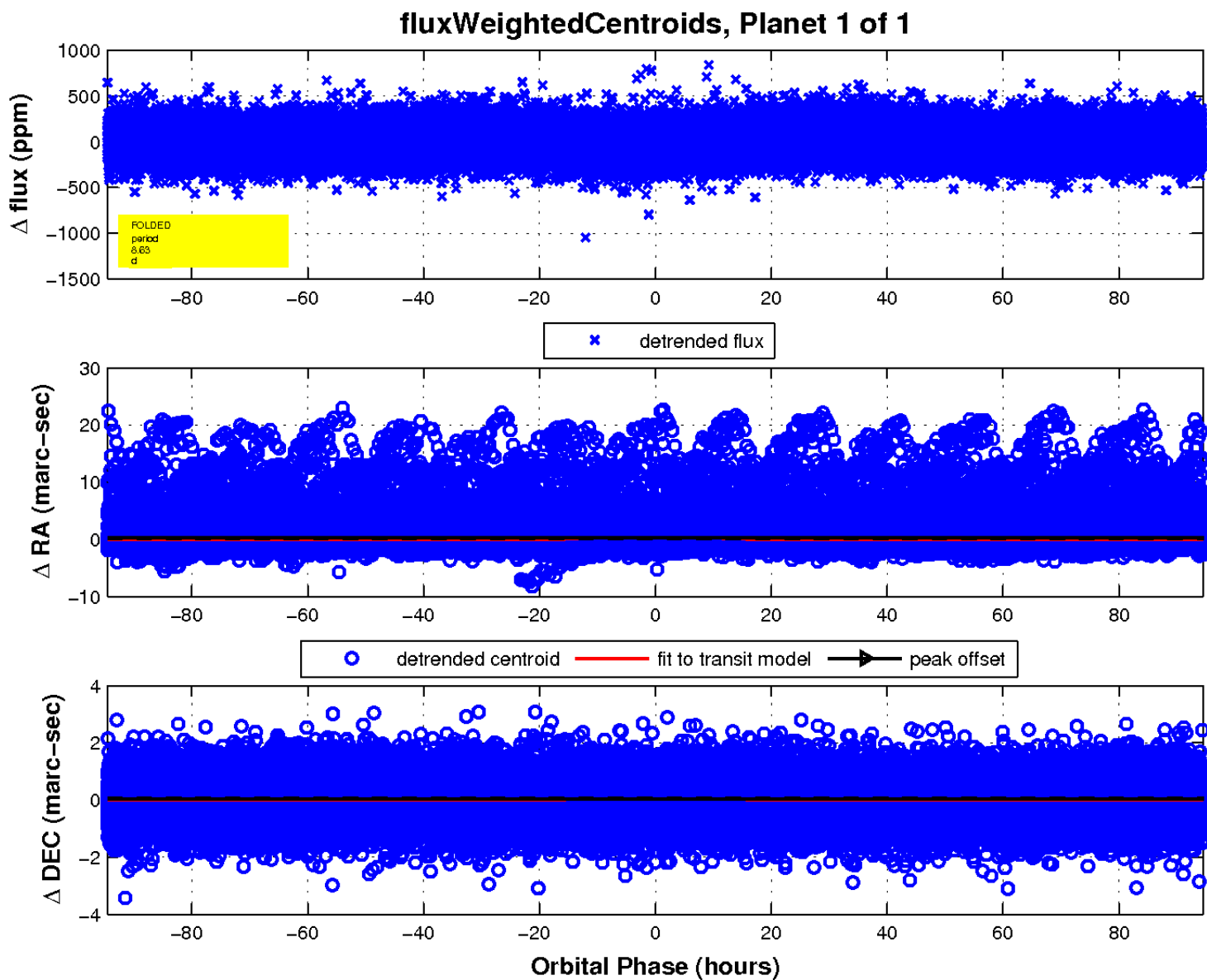
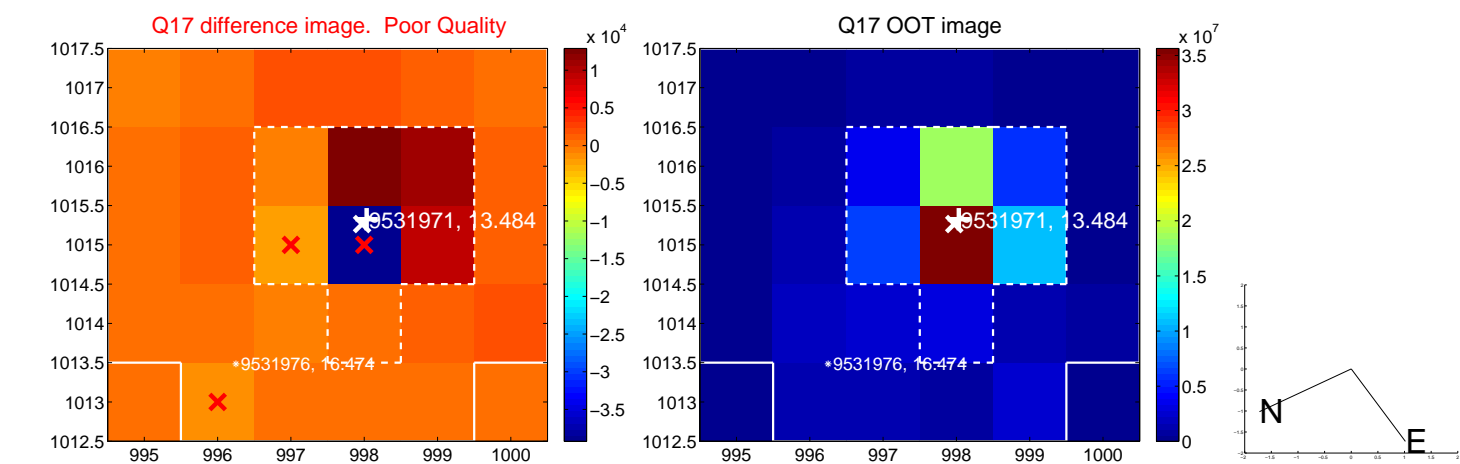
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UKIRT Image

Declination

