

KIC 009837013

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})
009837013-01	OBS	7236.01	14.461732	137.283631	89.0	6.187	7.9	8.4	1.20	5457	1.35	90.00

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009837013-01	OBS	PC	0.93	0	0	0	0	NO_COMMENT

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.

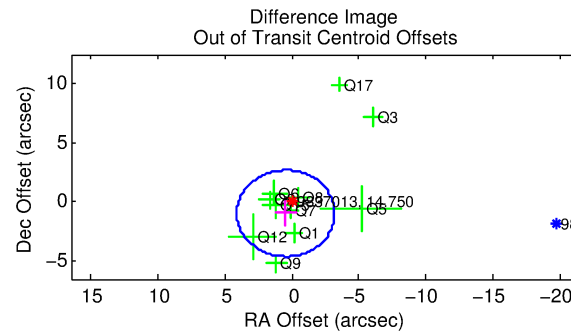
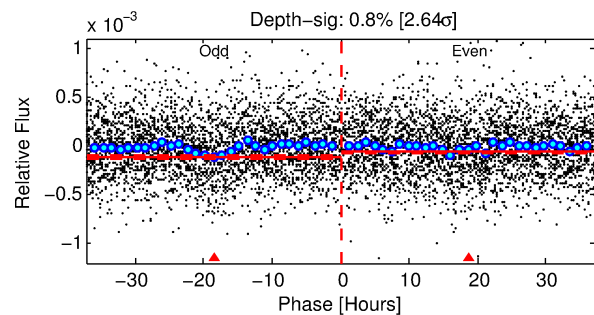
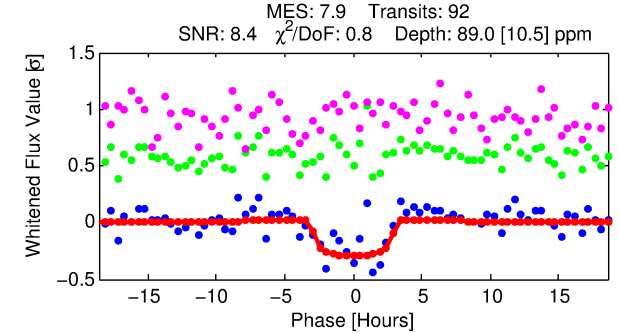
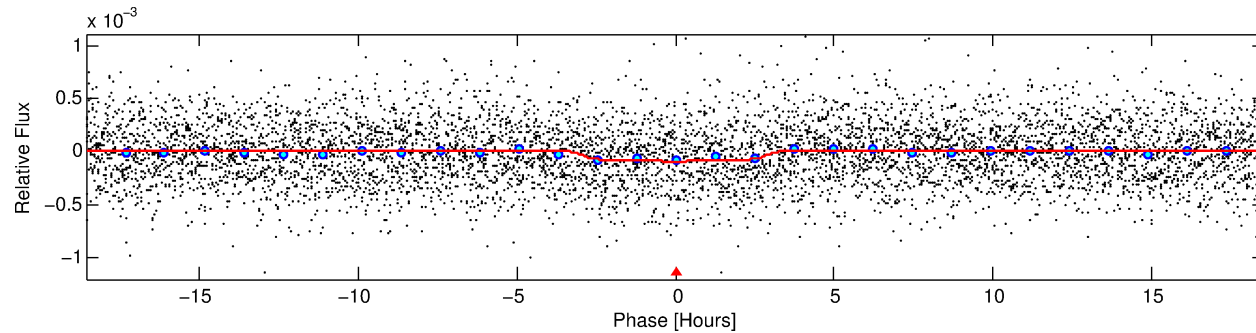
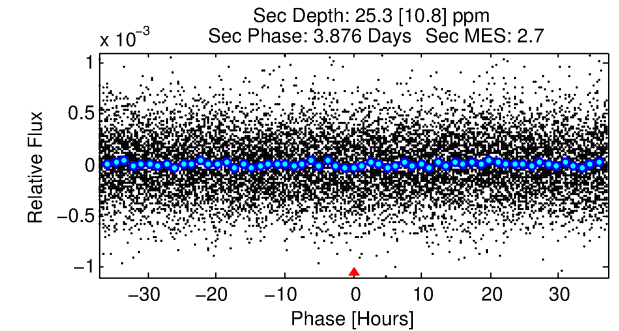
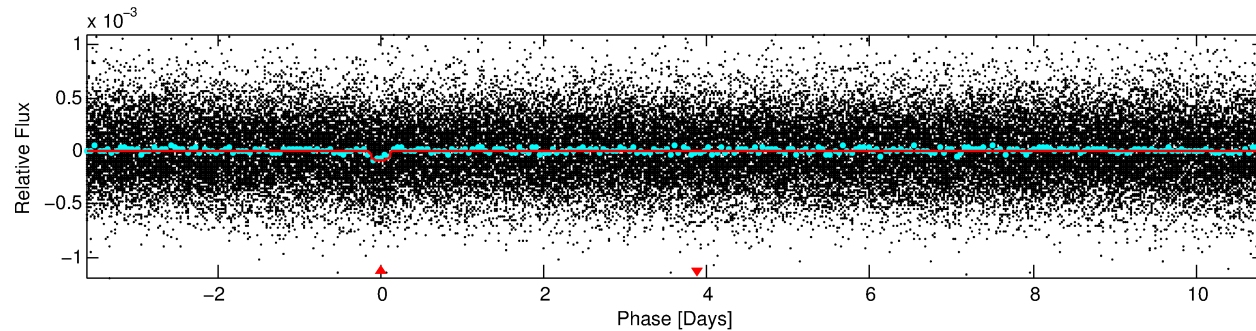
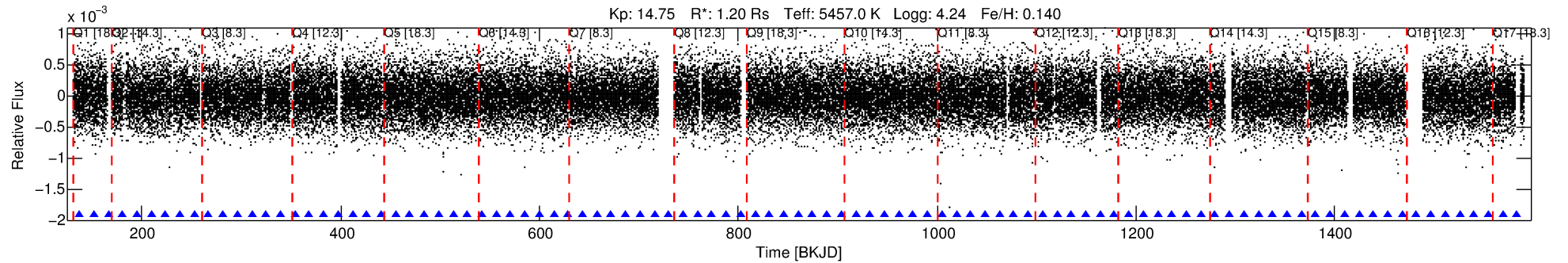
Ephemeris Match Information For 009837013-01

No Significant Match Found

DV One-Page Summary

KIC: 9837013 Candidate: 1 of 1 Period: 14.462 d

KOI: K07236.01 Corr: 0.909



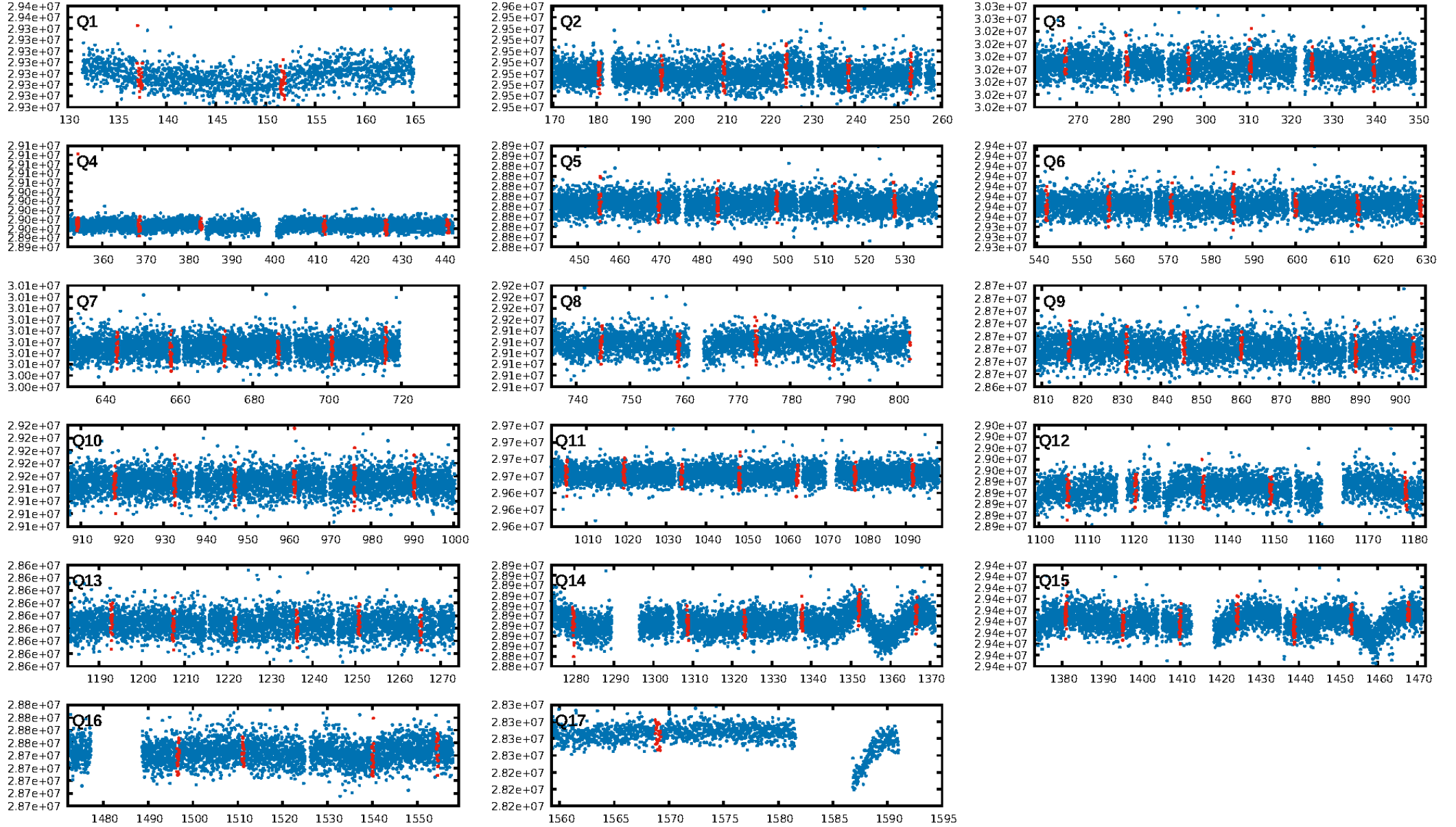
DV Fit Results:

Period = 14.46173 [0.00025] d
Epoch = 137.2836 [0.0140] BKJD
Rp/R* = 0.0104 [0.0051]
a/R* = 8.27 [17.95]
b = 0.90 [0.48]
Seff = 90.00 [28.94]
Teq = 785 [63] K
Rp = 1.35 [0.73] Re
a = 0.1124 [0.0221] AU
Ag = 95.70 [107.67] [0.88σ]
Teffp = 3798 [1027] K [2.93σ]

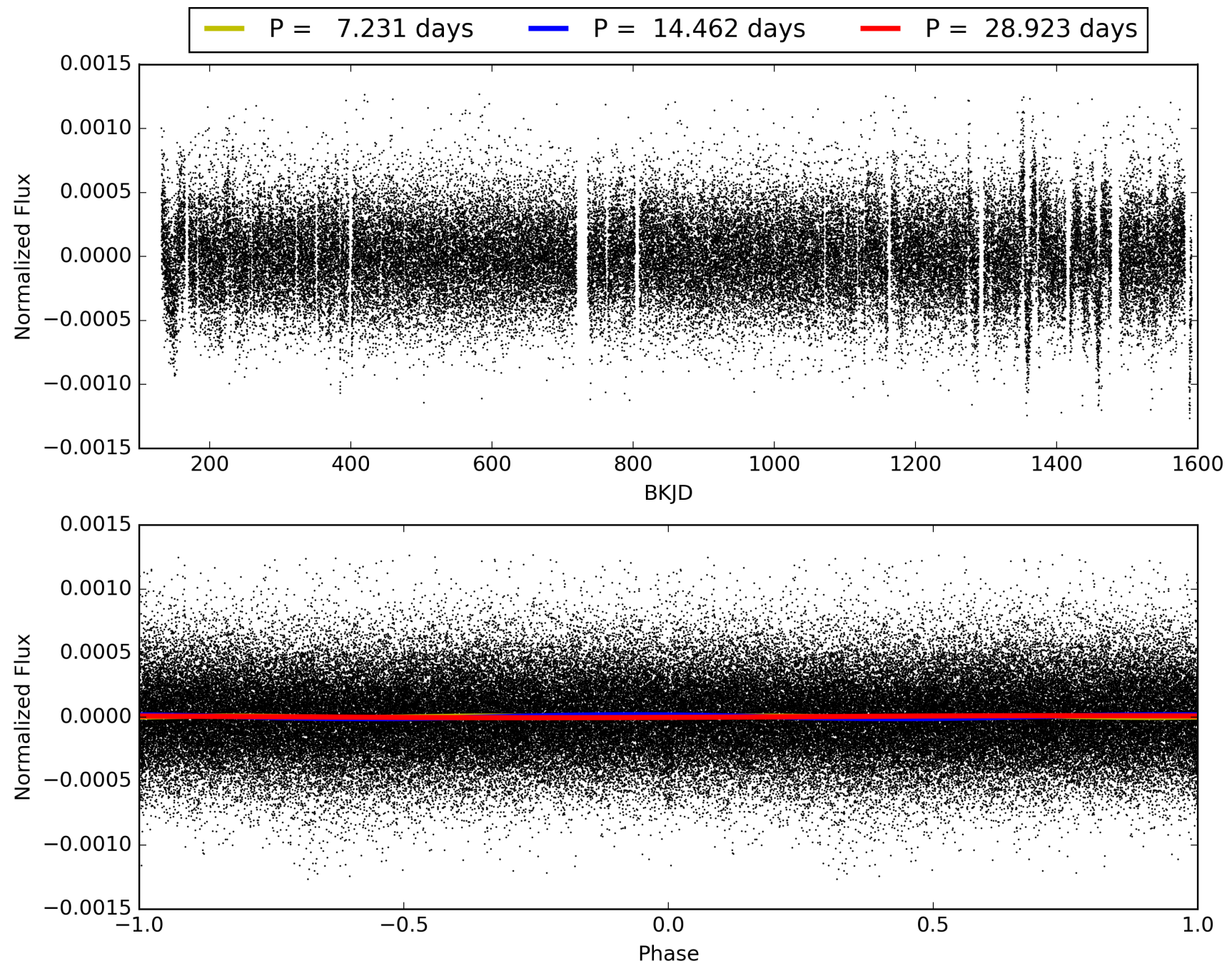
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.58e-15
RollingBand-fgt: 1.00 [89/89]
GhostDiagnostic-chr: 5.317
Centroid-sig: 0.2%
Centroid-so: 3.782 arcsec [2.89σ]
OotOffset-rm: 1.065 arcsec [0.87σ]
KicOffset-rm: 1.121 arcsec [0.83σ]
OotOffset-st: 2/3/2/4 [11]
KicOffset-st: 2/3/2/4 [11]
DiffImageQuality-fgm: 0.45 [5/11]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009837013-01, PDC Light Curves

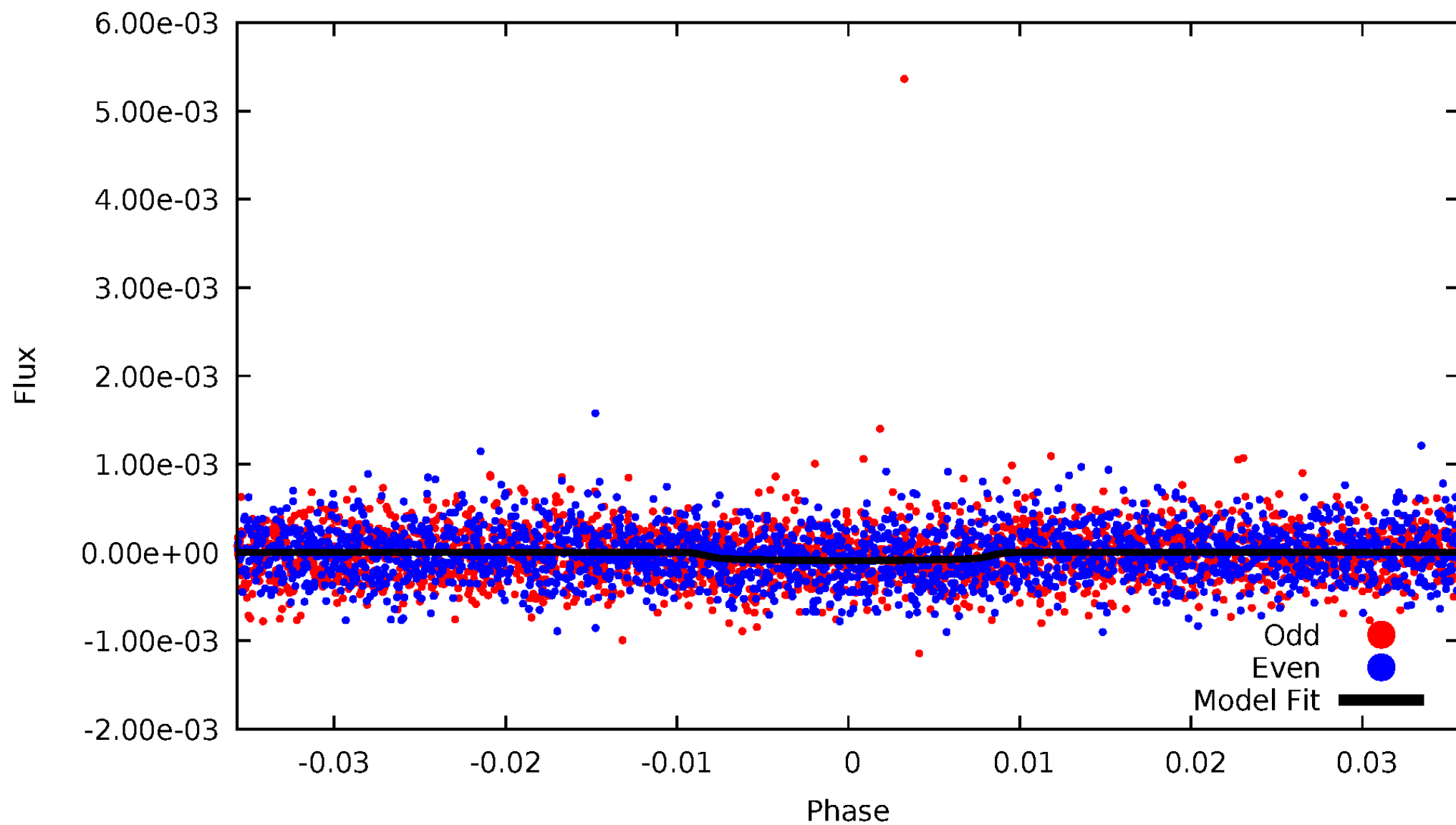


TCE 009837013-01



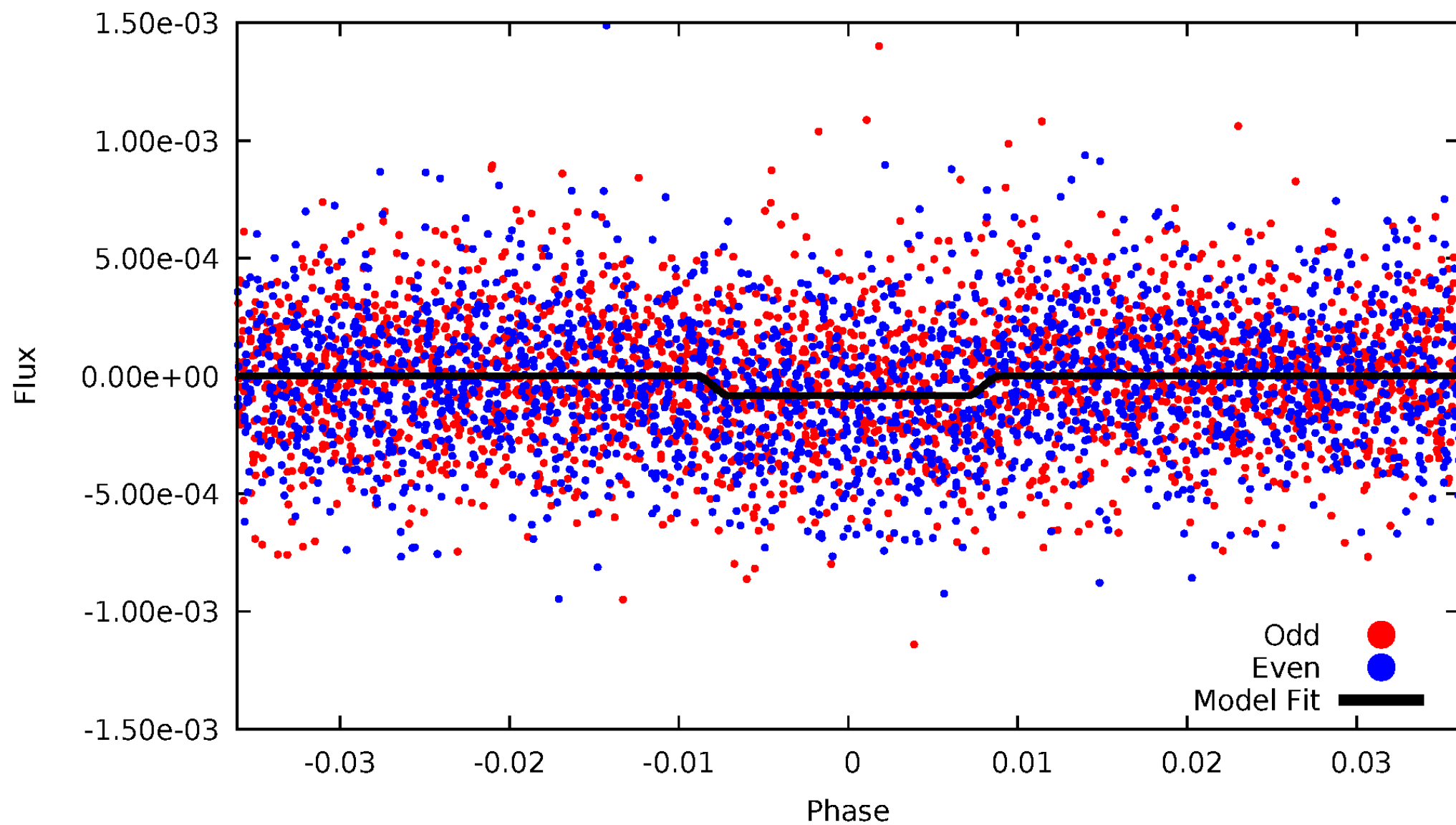
DV Odd/Even

TCE 009837013-01

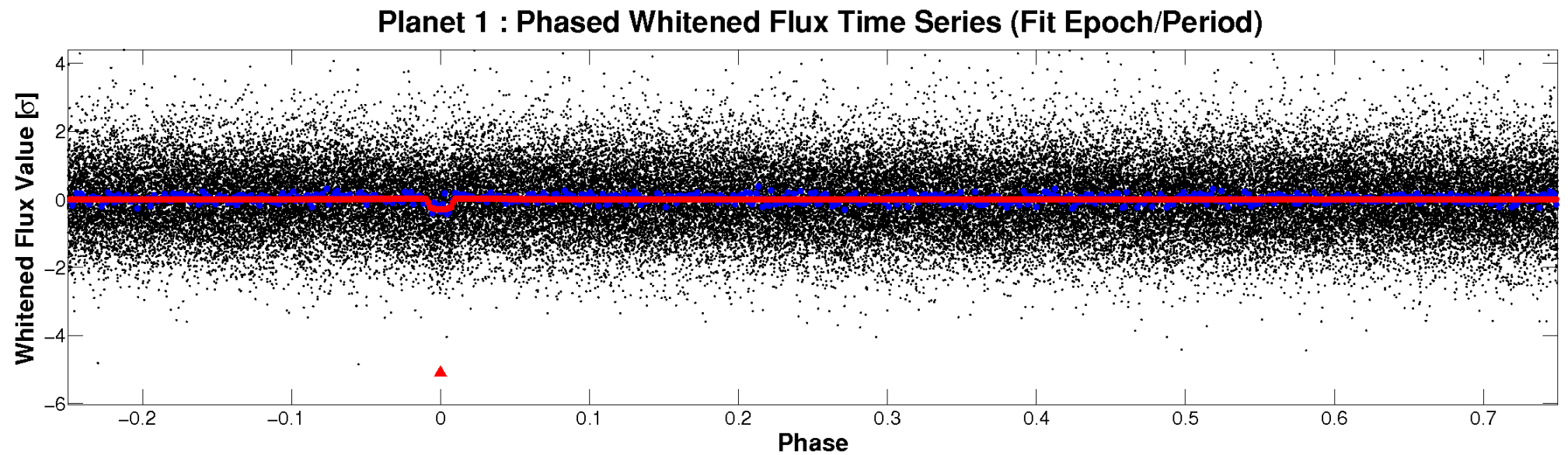
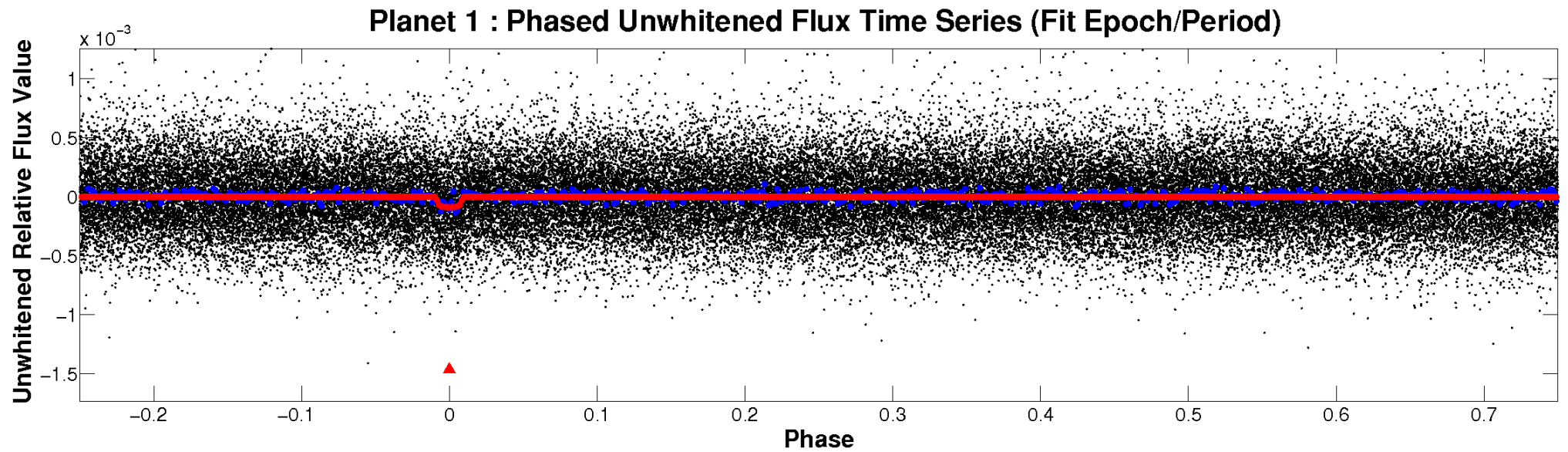


ALT Odd/Even

TCE 009837013-01

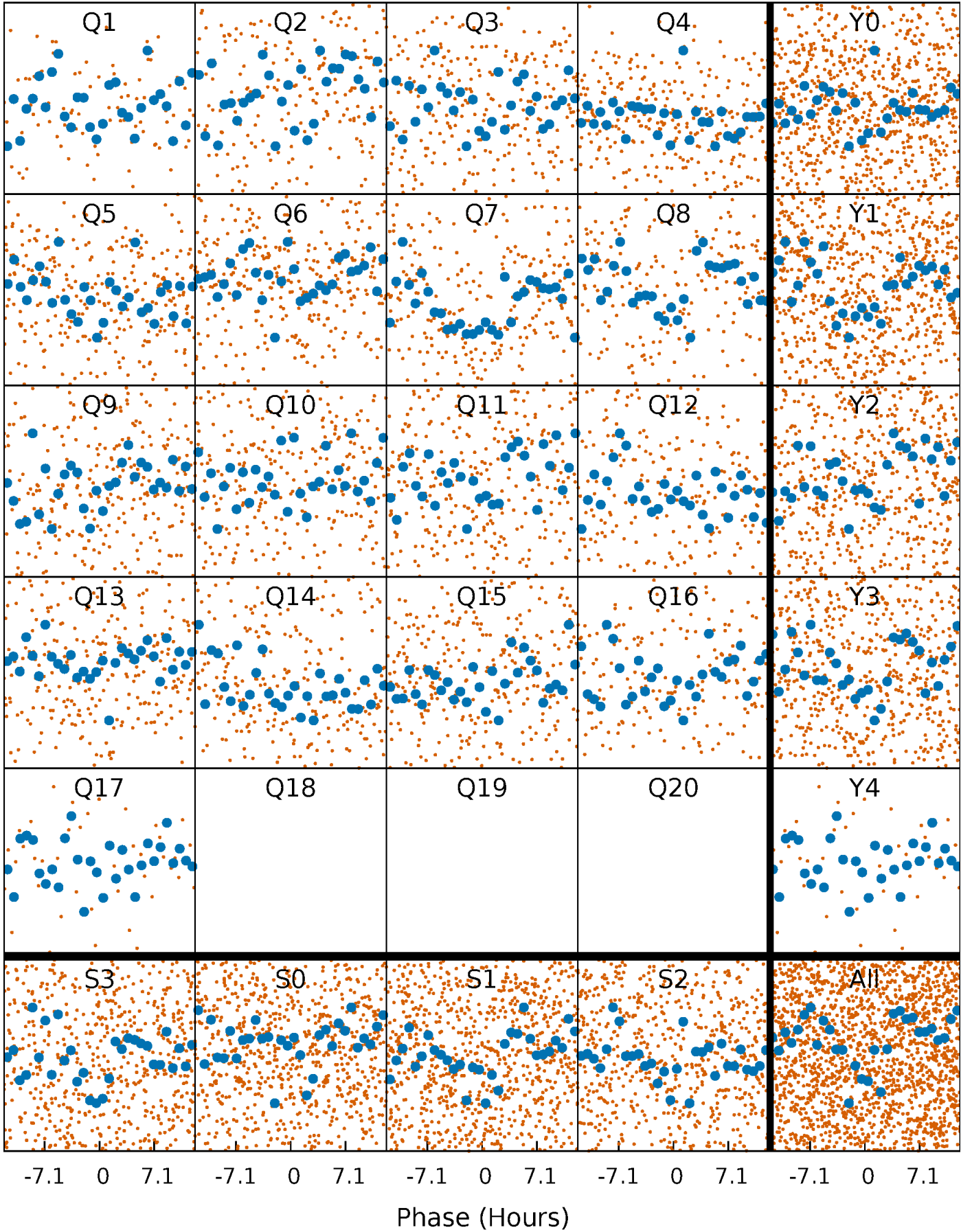


Non-Whitened Vs. Whitened Light Curve



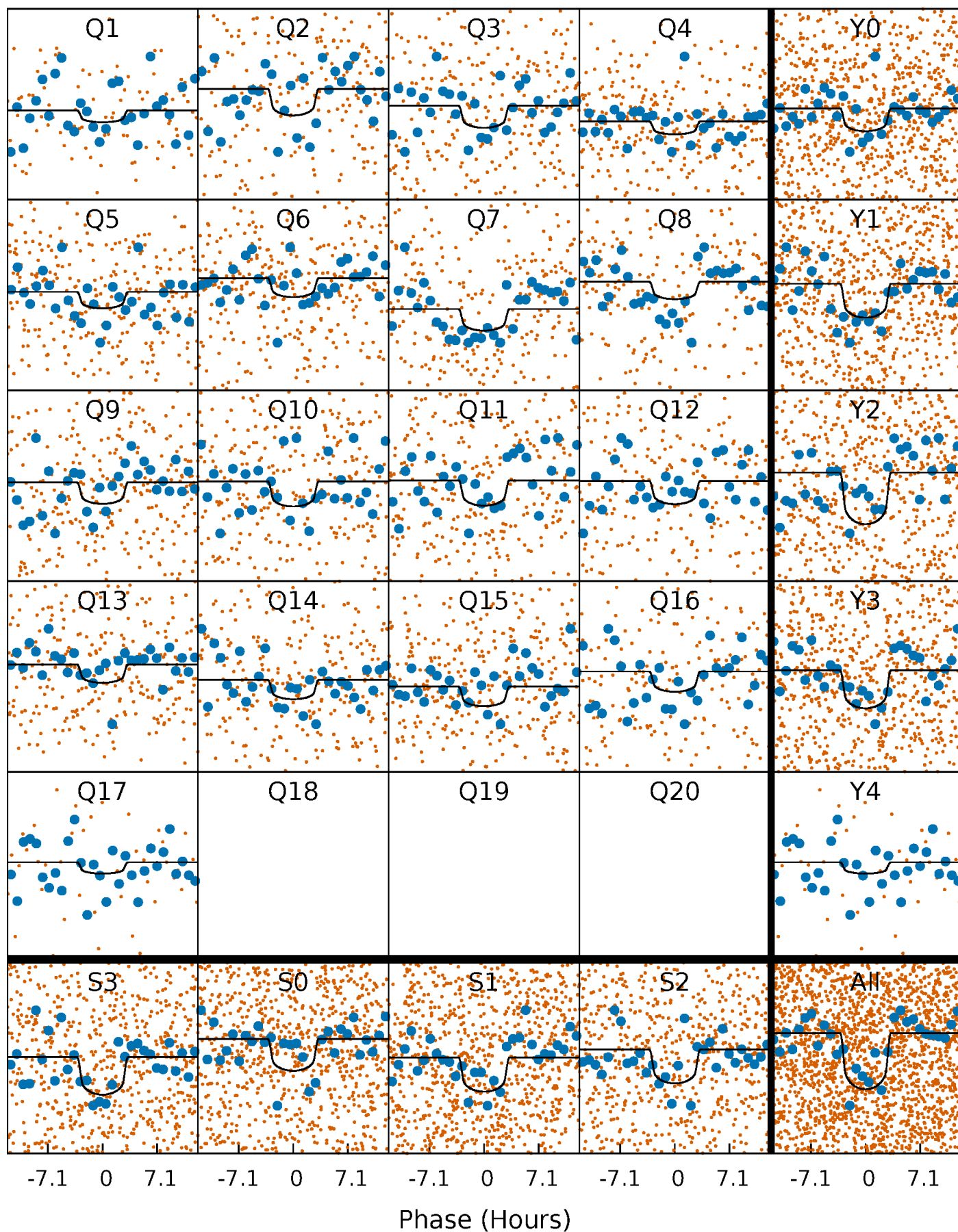
PDC Quarter-Phased Transit Curves

TCE 009837013-01 P= 14.461732 Days $T_0=137.283631$ (BKJD)



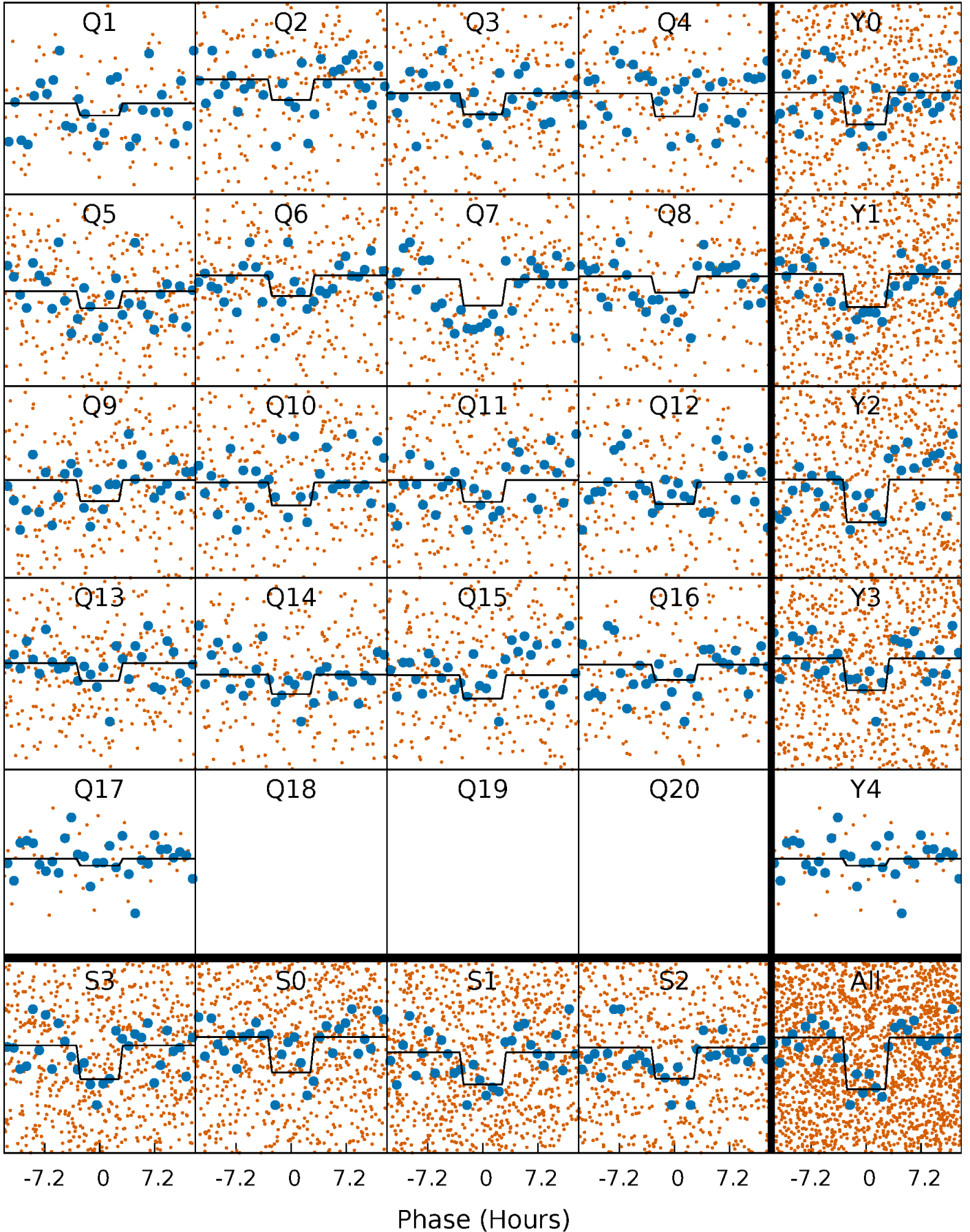
DV Quarter-Phased Transit Curves

TCE 009837013-01 P= 14.461732 Days $T_0=137.283631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

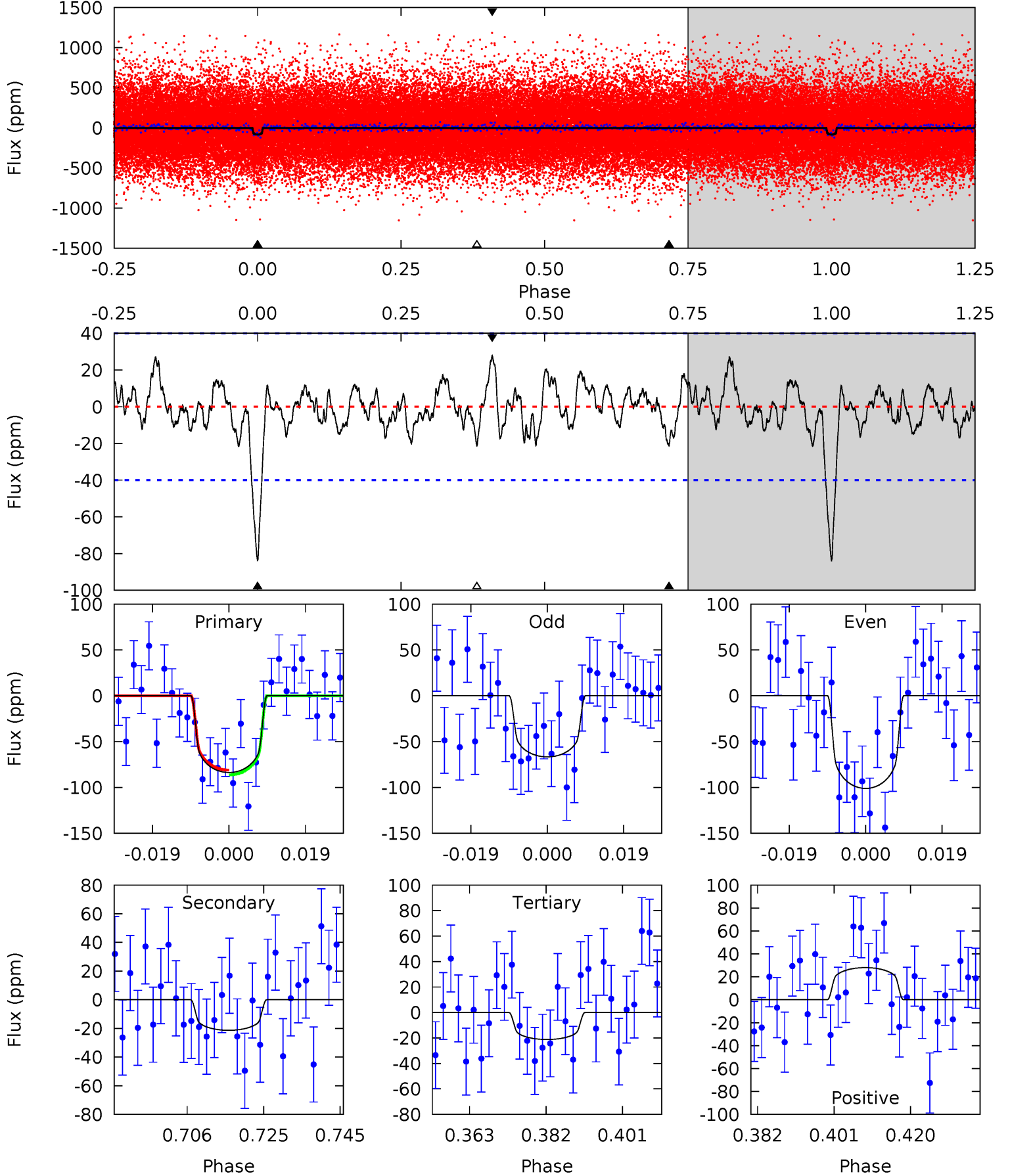
TCE 009837013-01 P= 14.461866 Days $T_0=137.276623$ (BKJD)



DV Model-Shift Uniqueness Test

009837013-01, P = 14.461732 Days, E = 122.821899 Days

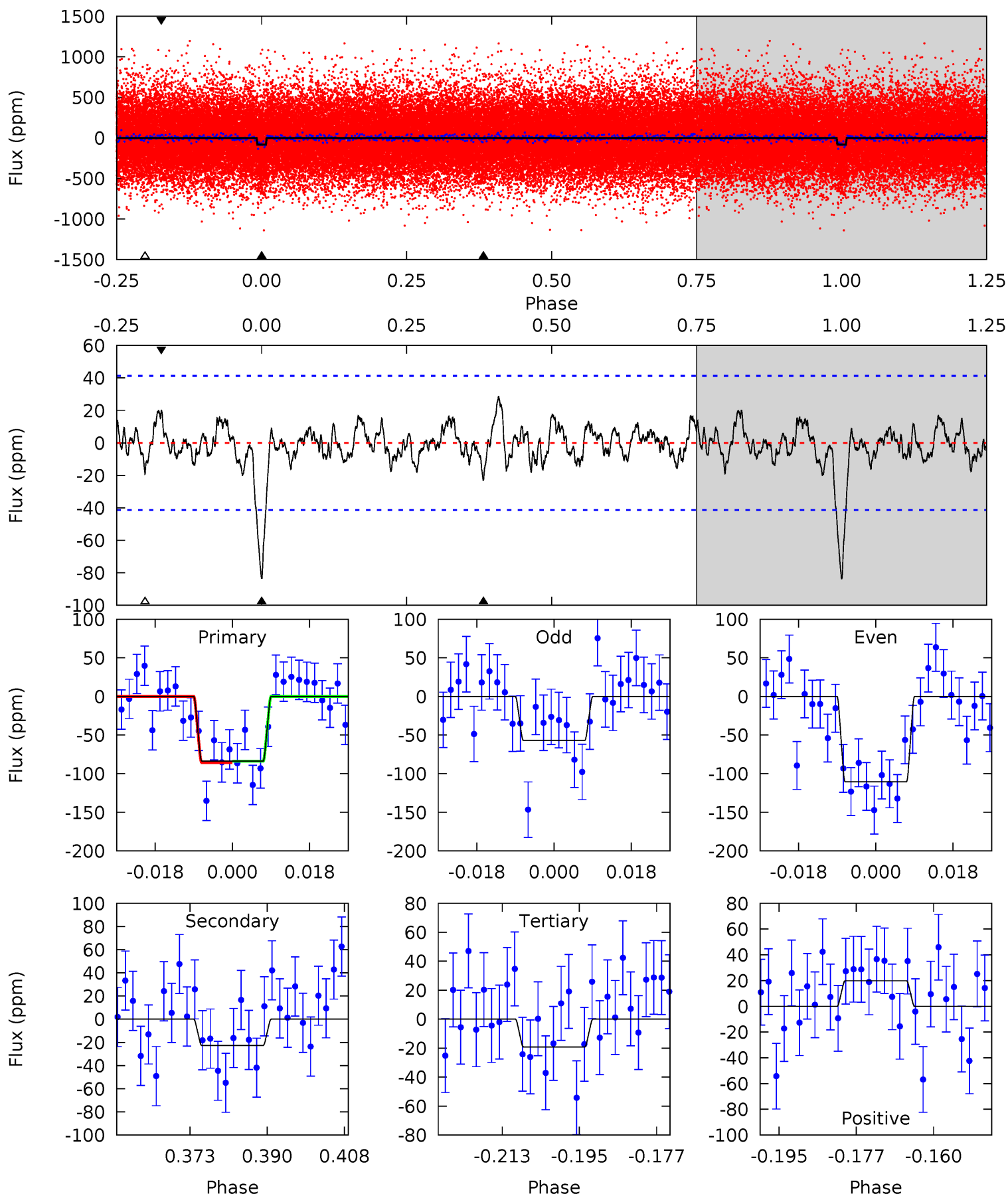
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	2.62	2.60	3.44	4.90	2.34	1.17	7.67	6.83	0.01	-0.82	2.11	0.82	0.25	0.32



Alt Model-Shift Uniqueness Test

009837013-01, P = 14.461866 Days, E = 122.814757 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.94	2.70	2.28	2.36	4.92	2.37	1.01	7.67	7.58	0.43	0.34	3.19	0.93	0.26	0.10



Stellar Parameters For KIC 009837013

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5457^{+81}_{-65}	$4.239^{+0.186}_{-0.124}$	$0.140^{+0.150}_{-0.100}$	$1.196^{+0.199}_{-0.243}$	$0.903^{+0.070}_{-0.032}$	$0.744^{+0.717}_{-0.272}$
	+1%/-1%	+4%/-3%	+107%/-71%	+17%/-20%	+8%/-4%	+96%/-37%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 009837013-01 / KOI 7236.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-21 ± 8	$1.35^{+0.68}_{-0.57}$	1097^{+50}_{-65}	3930^{+1014}_{-562}	81^{+196}_{-51}
Alt.	-23 ± 8	$1.19^{+0.67}_{-0.59}$	1095^{+55}_{-59}	4138^{+1348}_{-632}	105^{+343}_{-69}

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

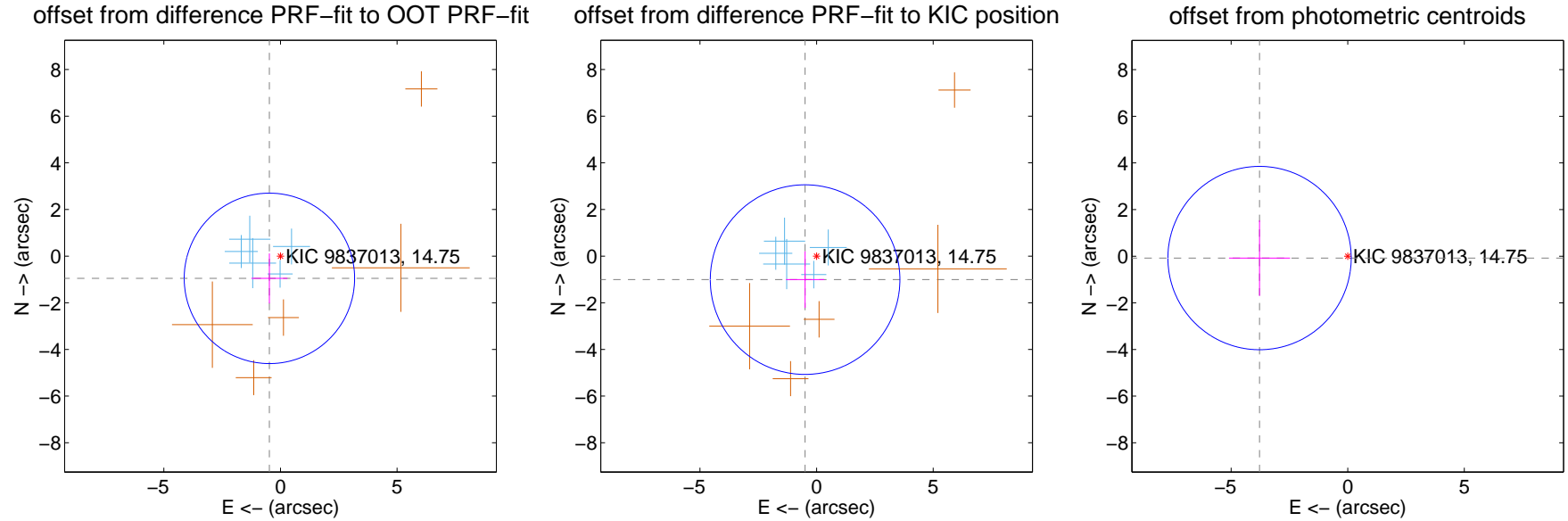
DV Centroid Data

Supplemental centroid analysis for 009837013-01. Kepler magnitude: 14.75. Transit SNR 8.36

There are 5 quarters with good PRF difference image offsets

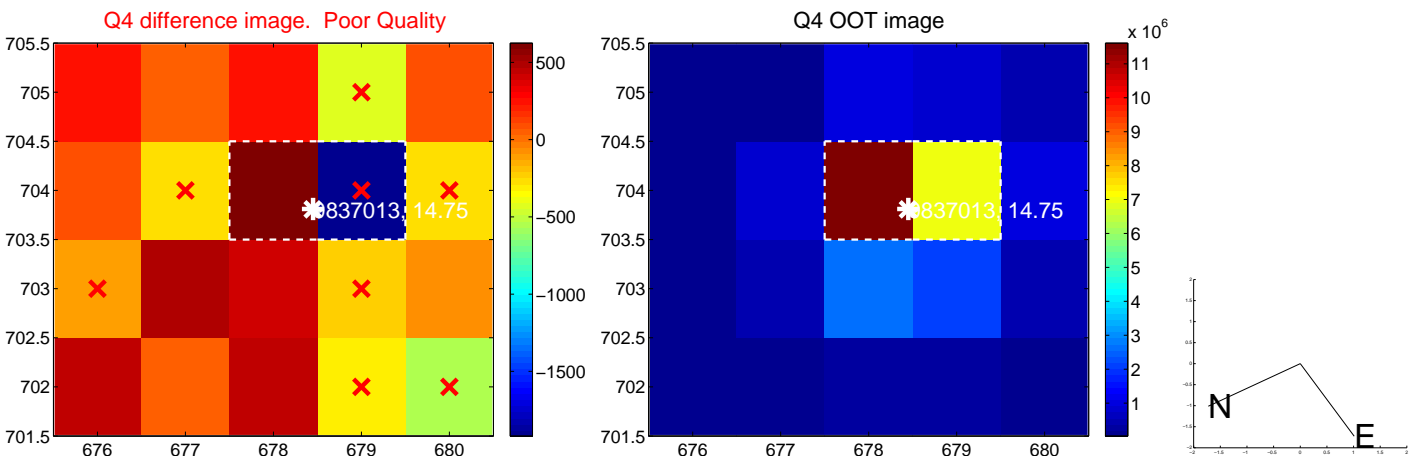
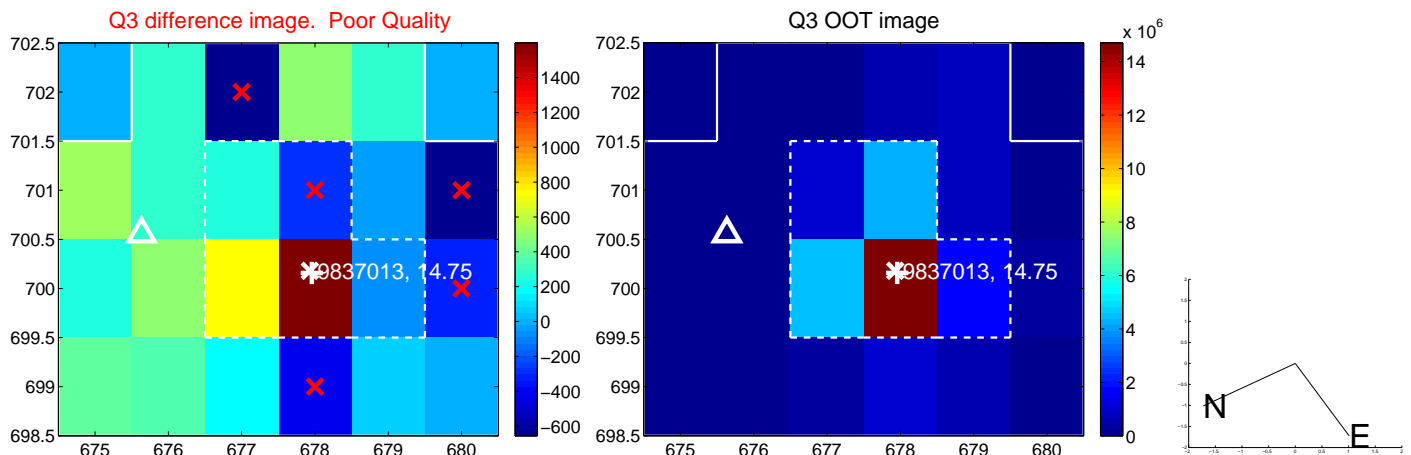
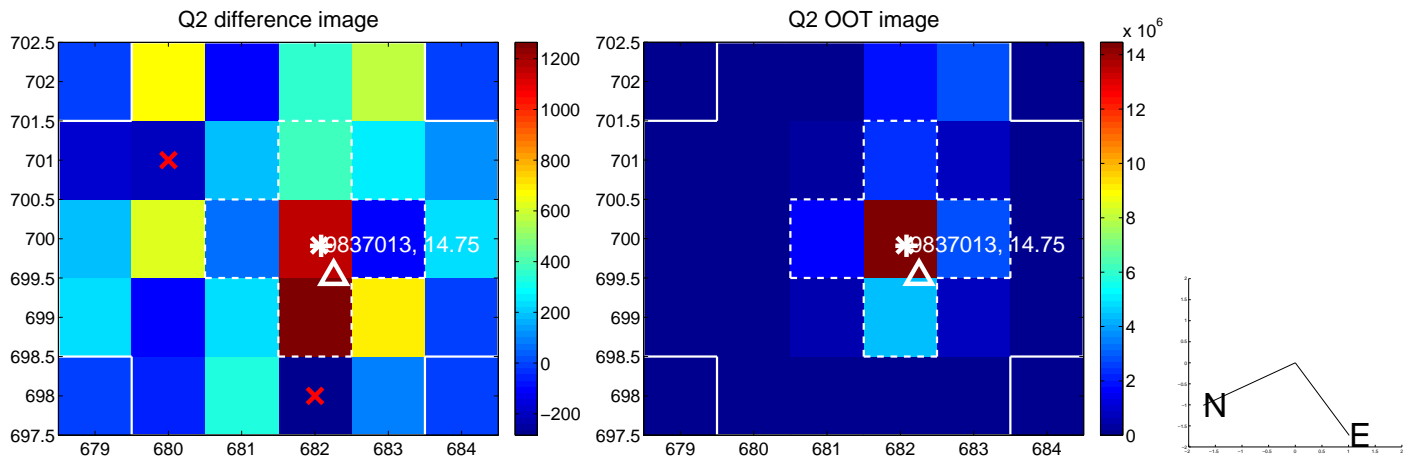
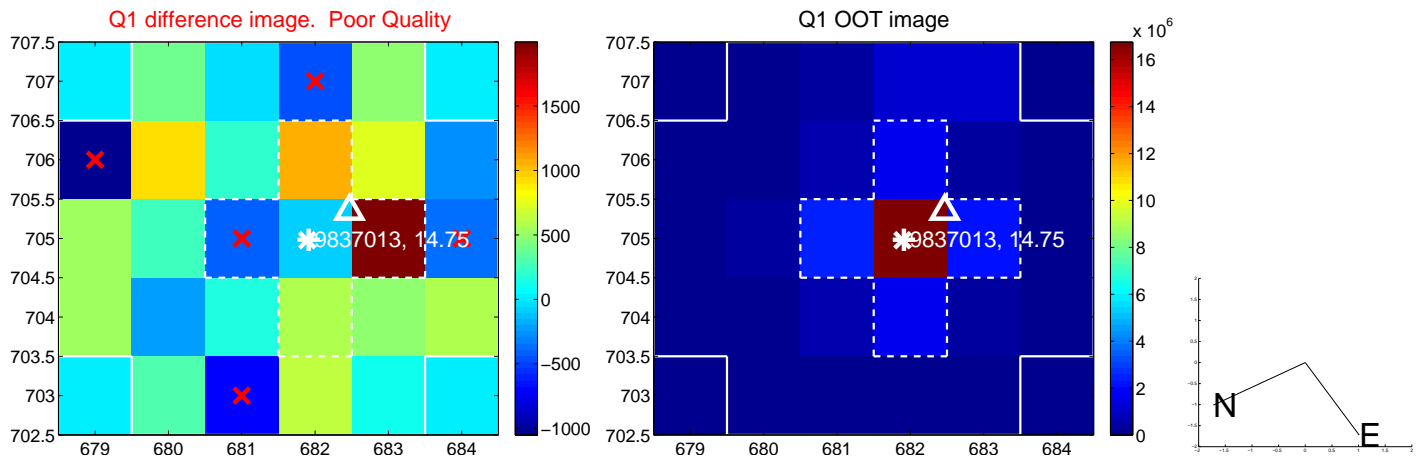
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.065 ± 1.218	0.87	0.474 ± 0.773	-0.953 ± 1.071
PRF-fit source offset from KIC position	1.121 ± 1.355	0.83	0.492 ± 0.819	-1.007 ± 1.210
photometric centroid source offset	3.78 ± 1.31	2.89	3.78 ± 1.31	-0.08 ± 1.62

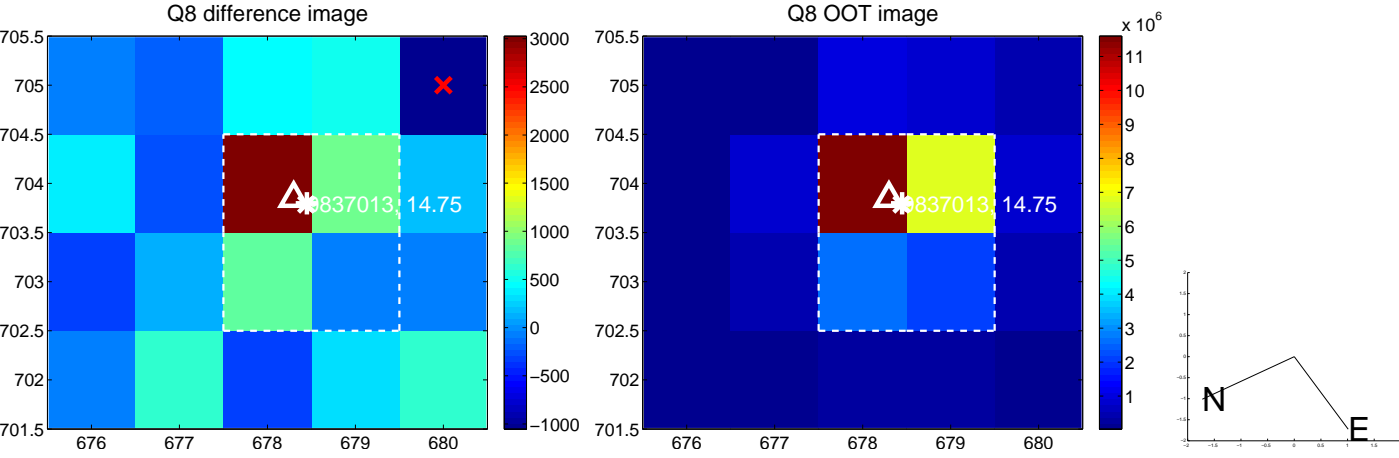
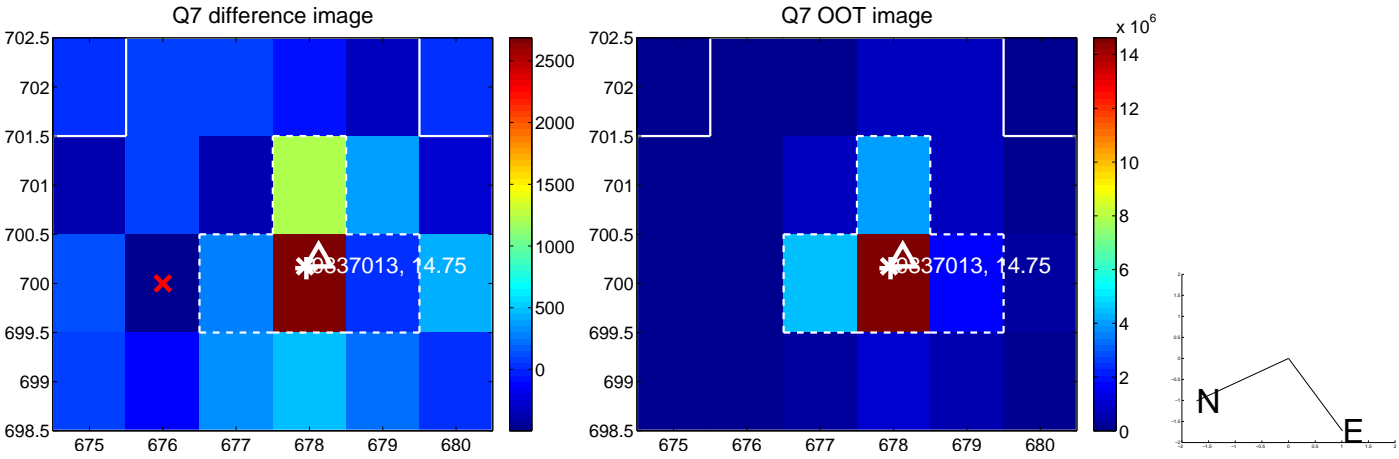
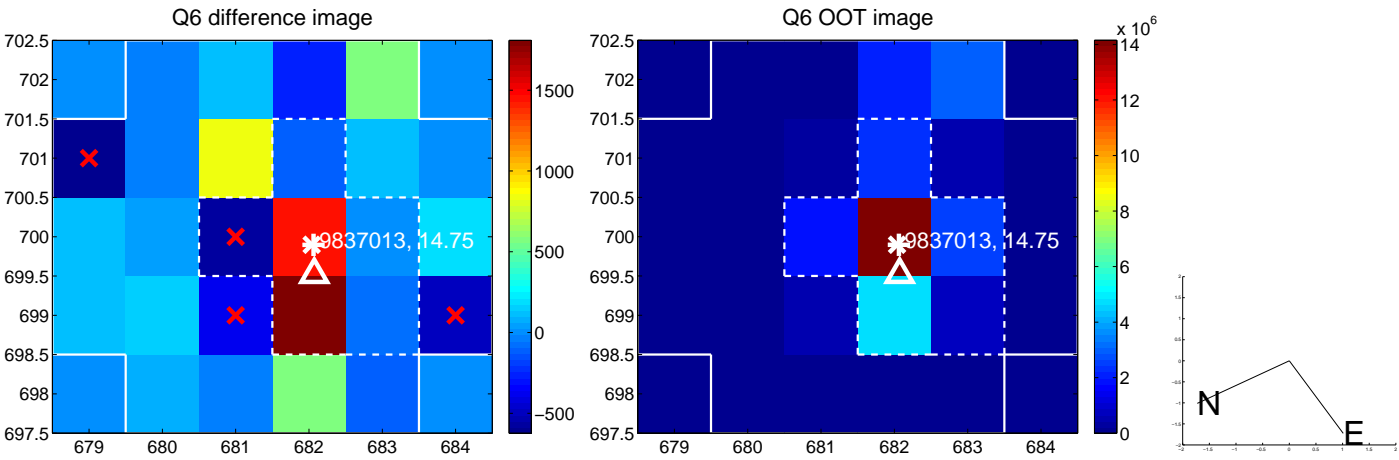
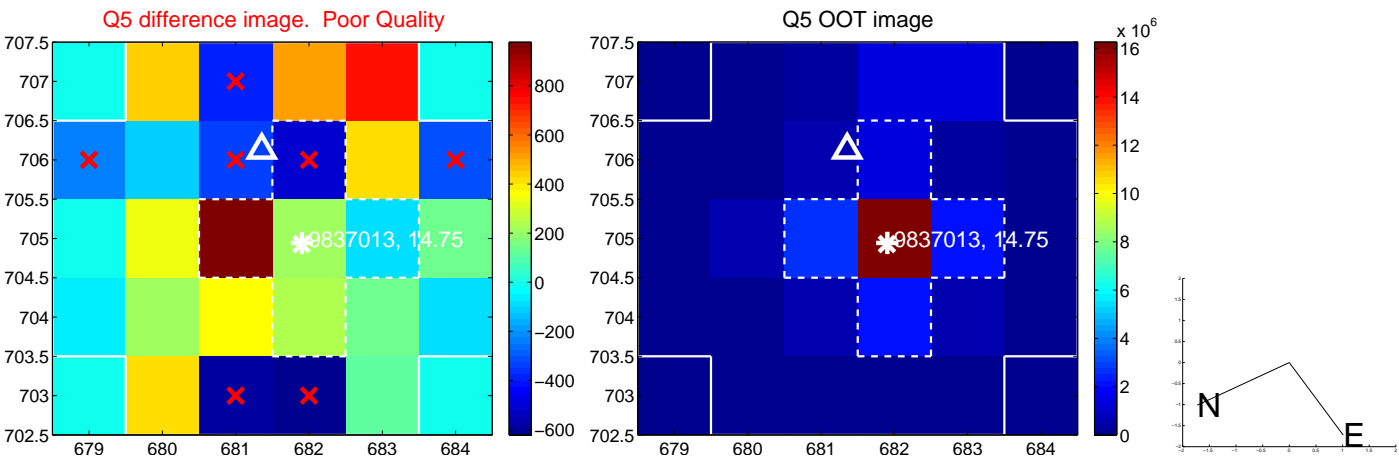


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

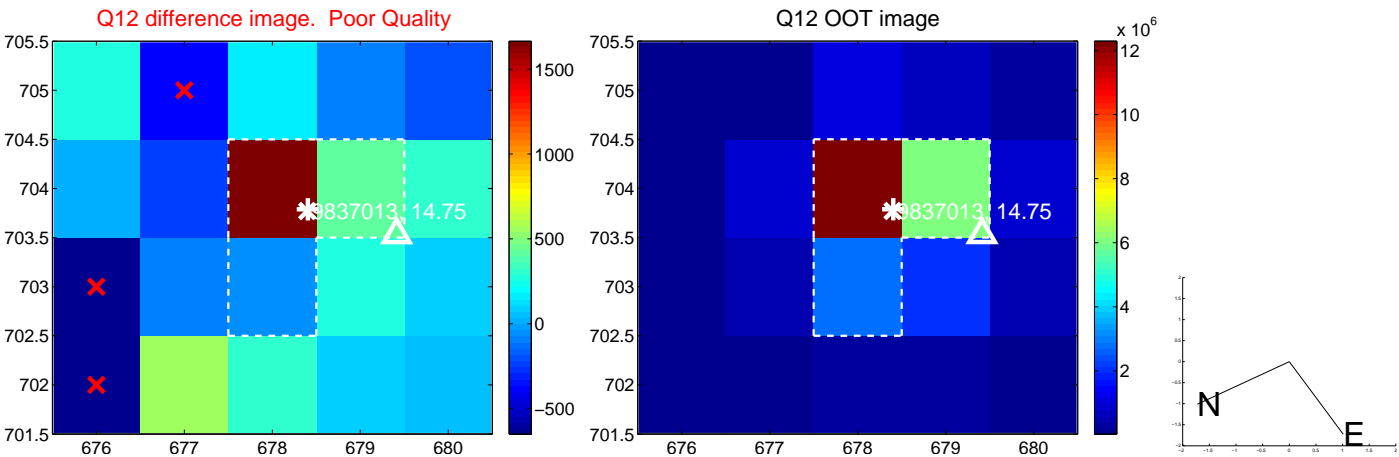
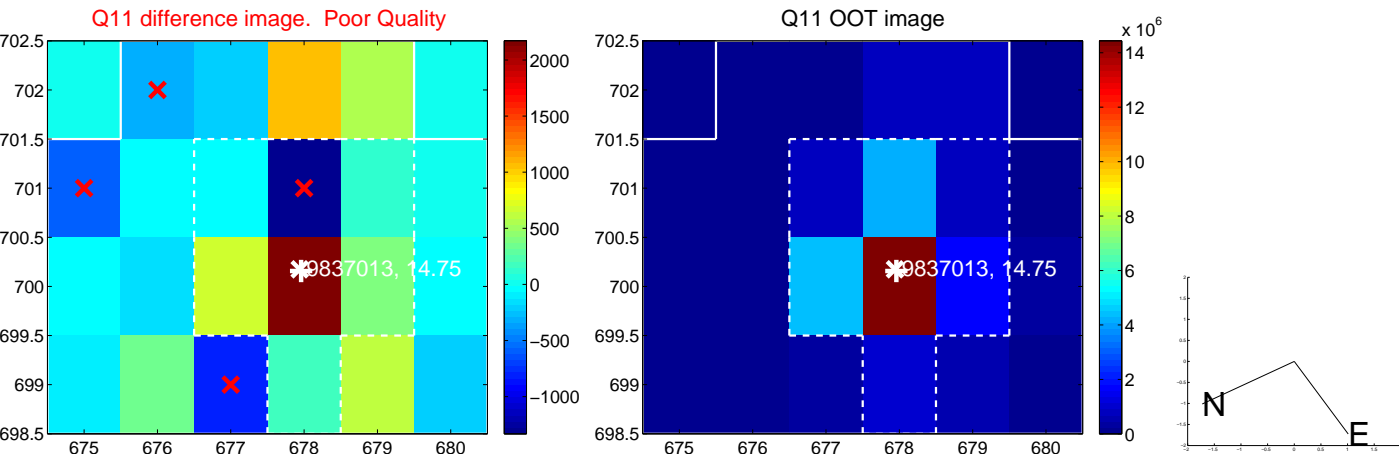
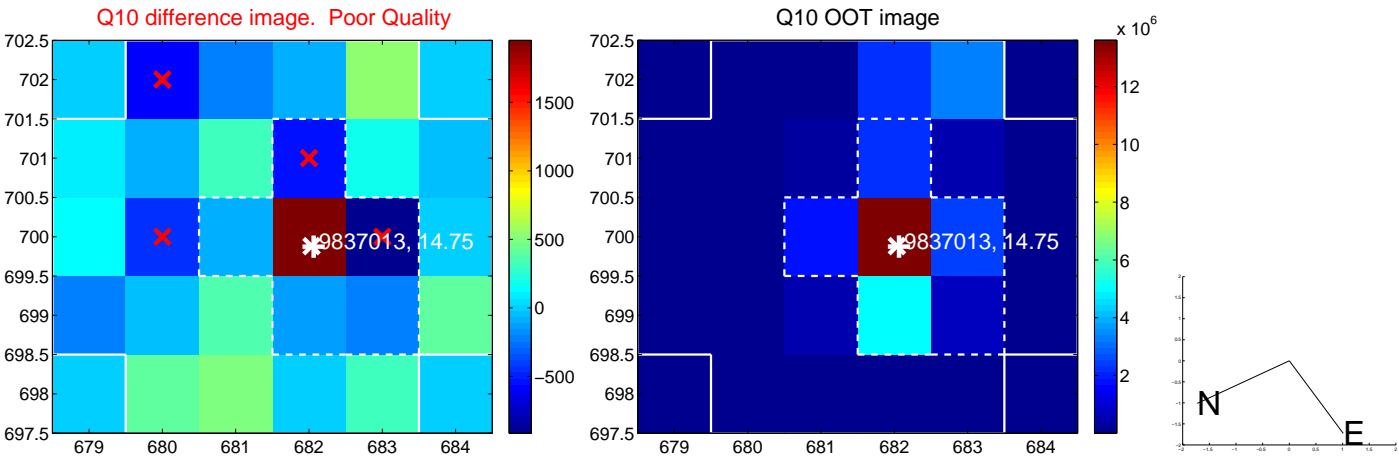
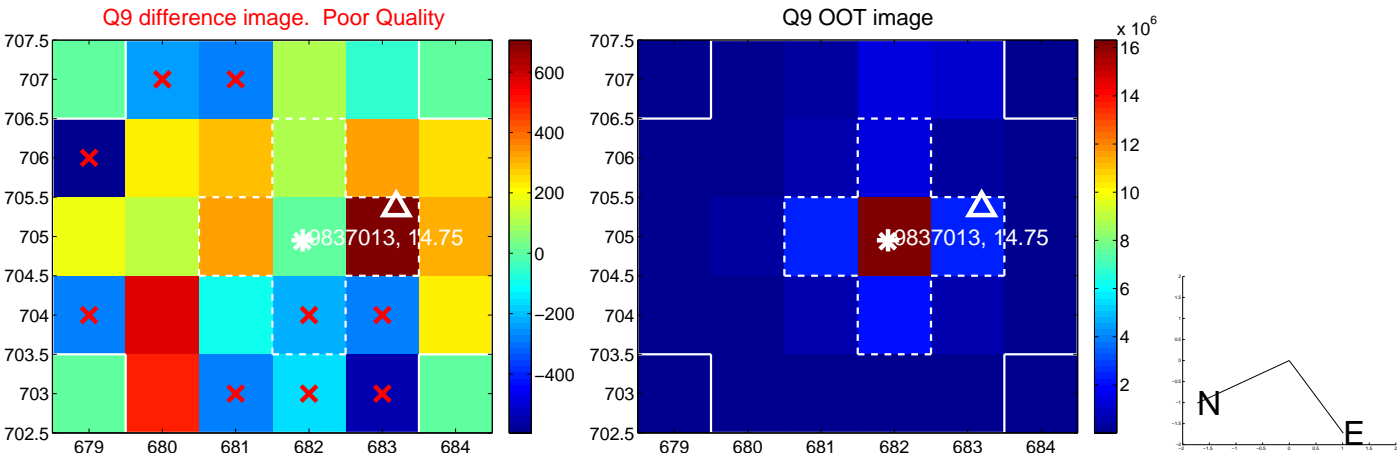
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



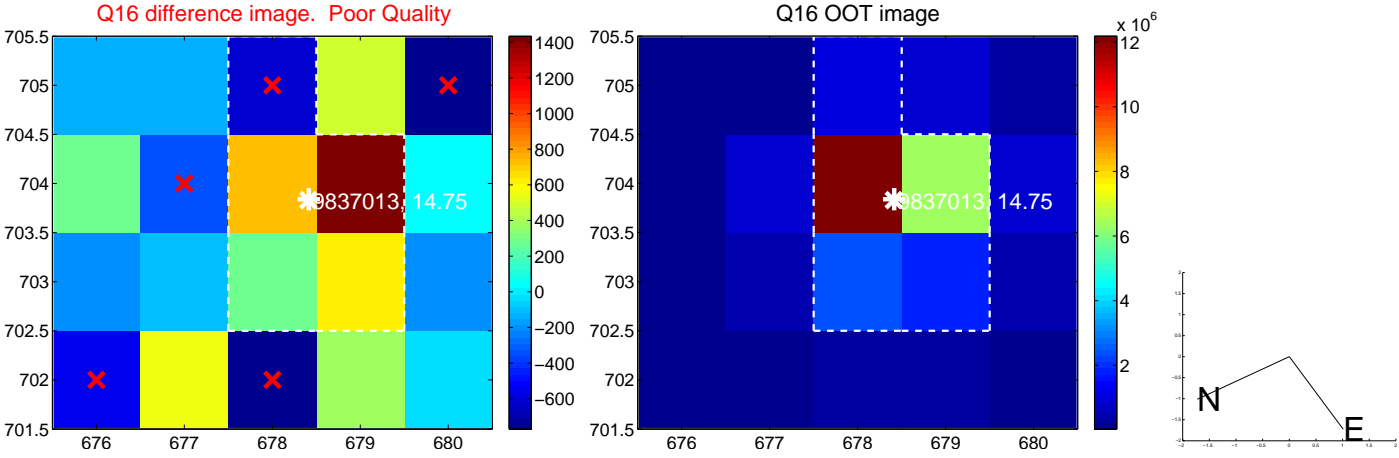
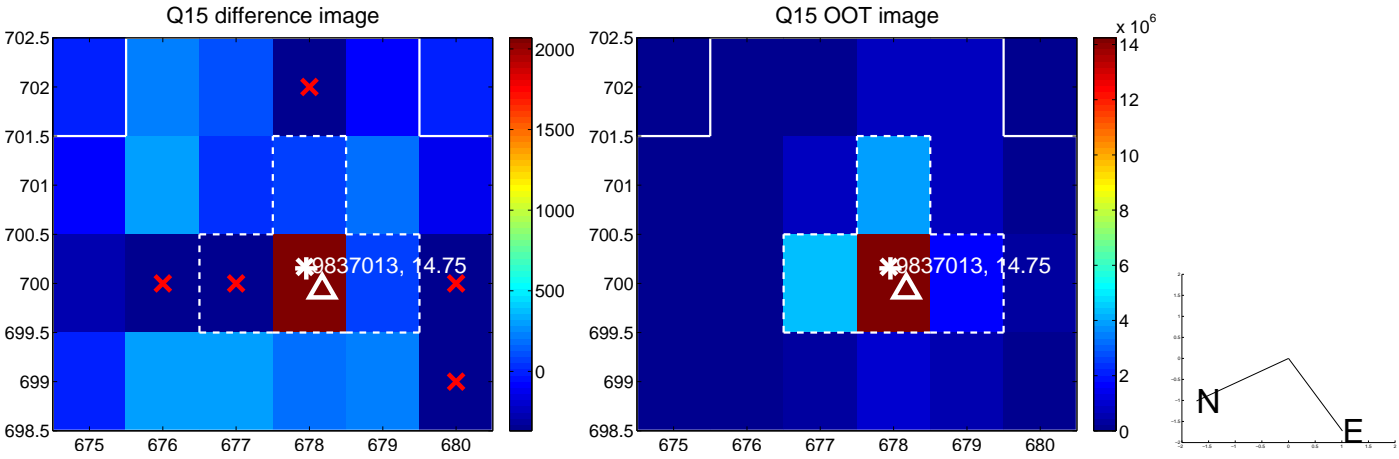
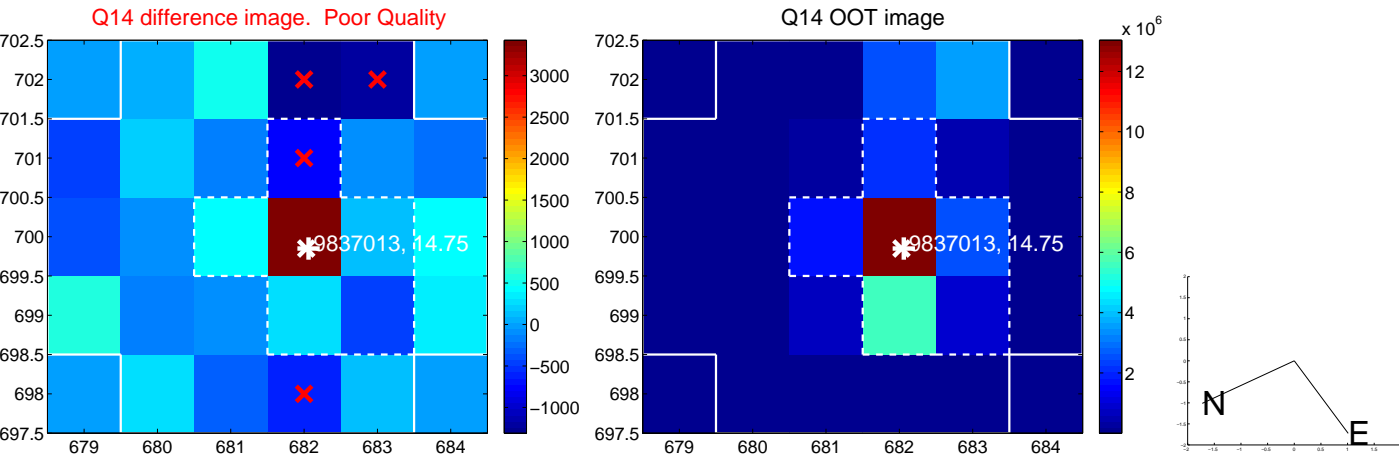
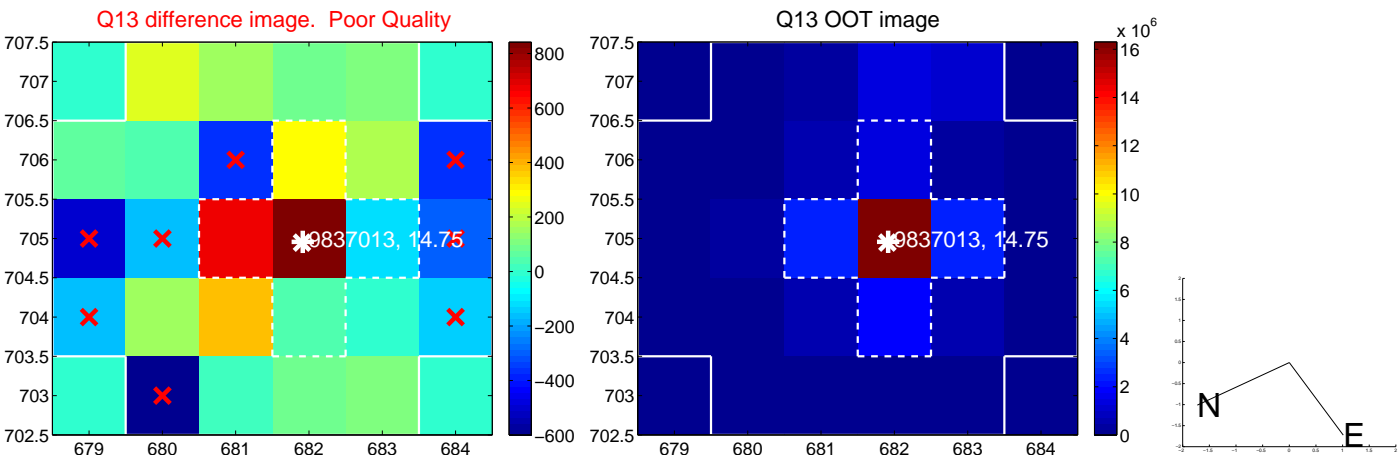
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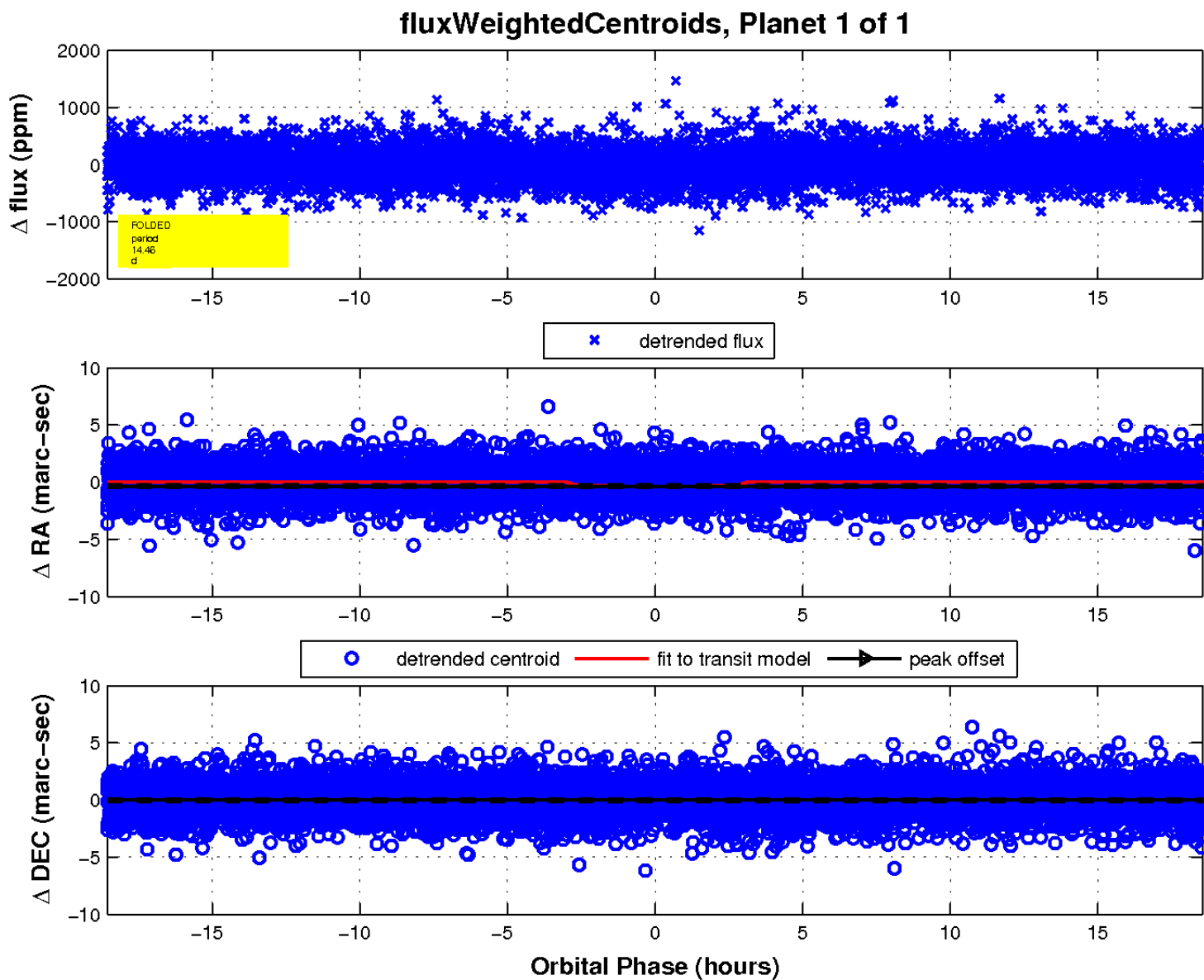
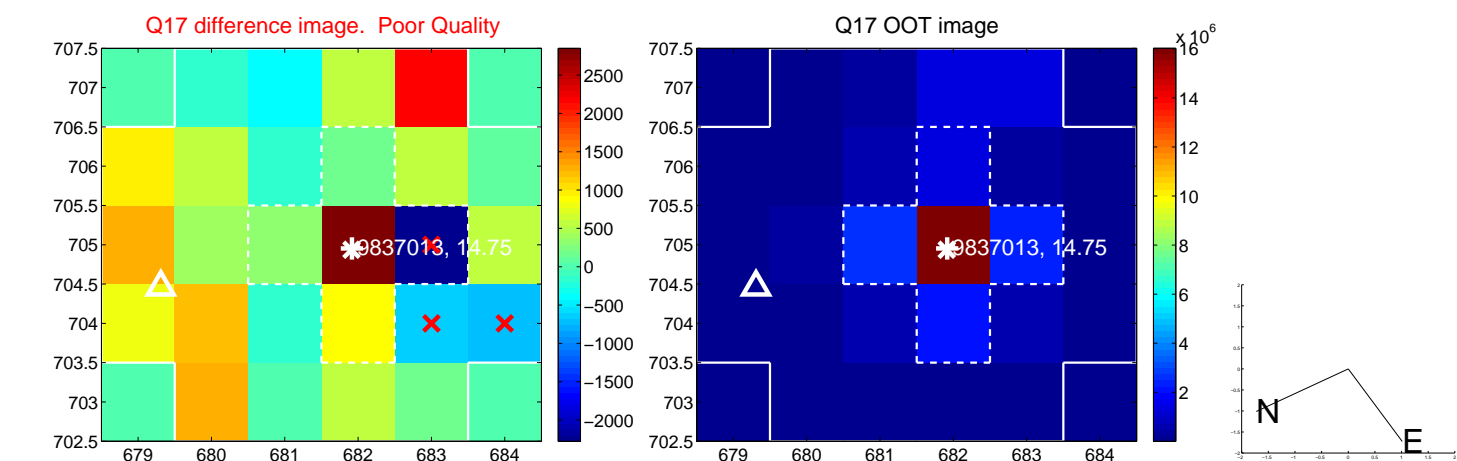
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UKIRT Image

Declination

