

KIC 004135912

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})
004135912-01	OBS	5040.01	29.609476	141.248614	239.5	3.160	10.0	10.7	1.78	6079	3.58	91.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004135912-01	OBS	PC	0.97	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.

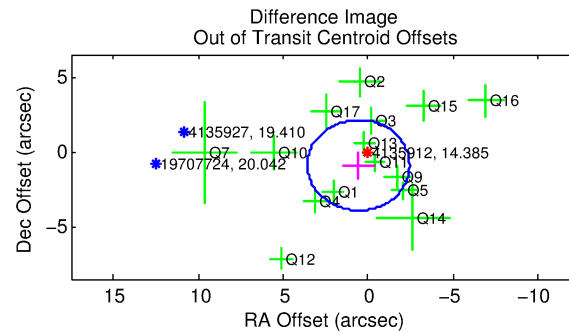
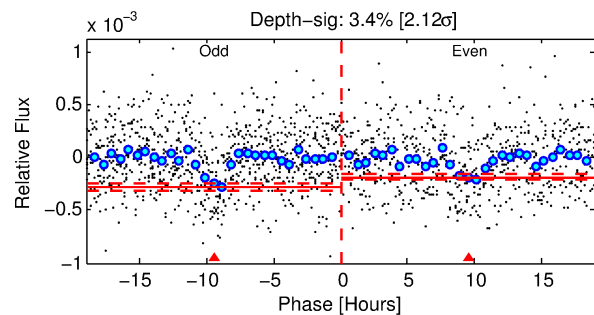
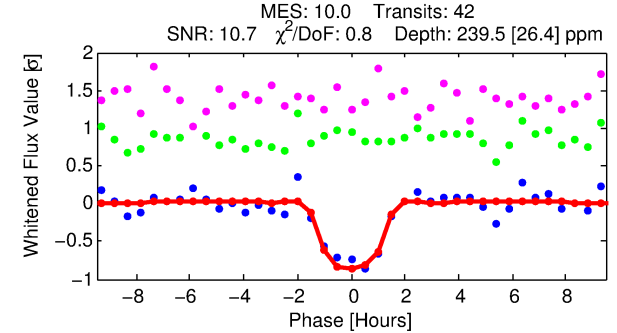
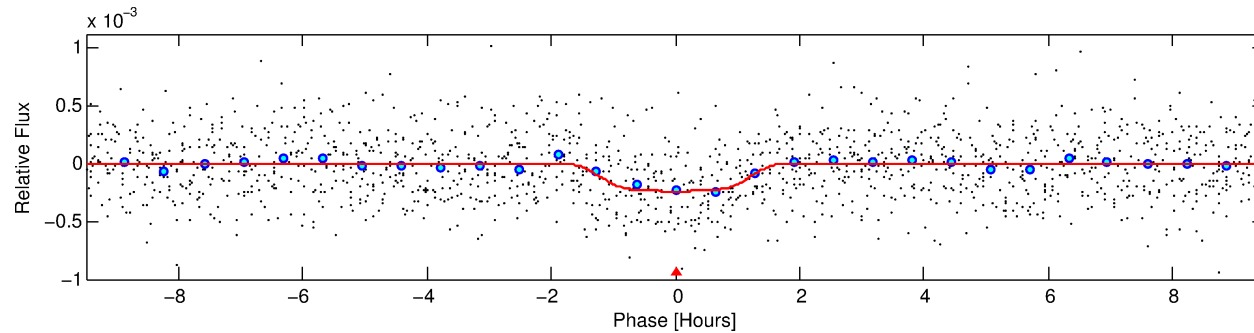
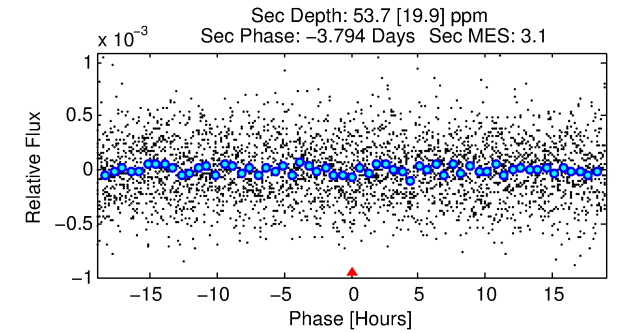
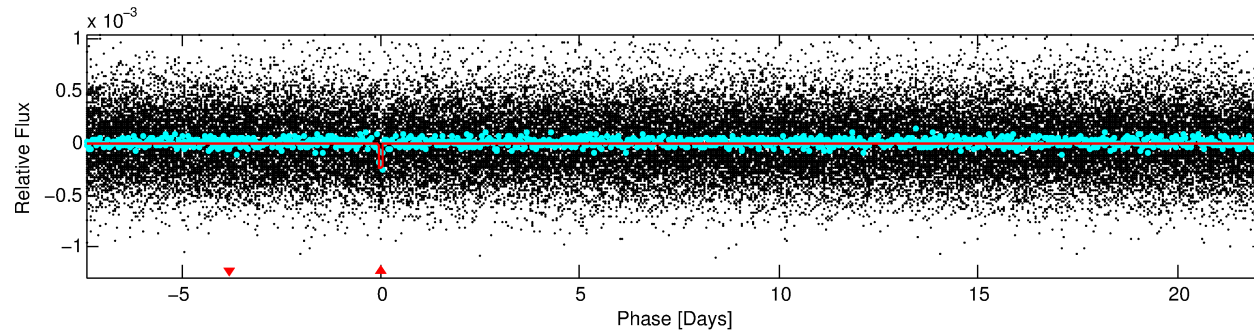
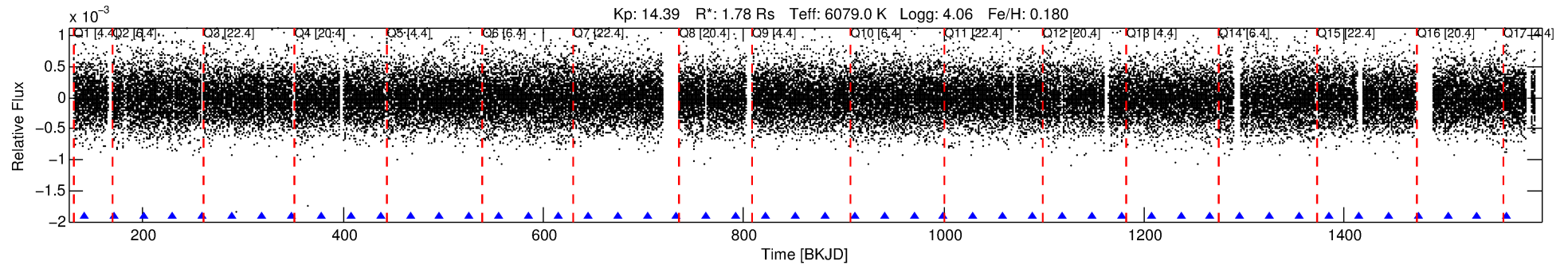
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004135912-01

No Significant Match Found

DV One-Page Summary

KIC: 4135912 Candidate: 1 of 1 Period: 29.609 d
KOI: K05040.01 Corr: 0.961



DV Fit Results:

Period = 29.60948 [0.00026] d
Epoch = 141.2486 [0.0071] BKJD
Rp/R* = 0.0184 [0.0020]
a/R* = 23.32 [9.98]
b = 0.96 [0.03]
Seff = 91.71 [28.64]
Teff = 789 [62] K
Rp = 3.58 [0.91] Re
a = 0.2059 [0.0416] AU
Ag = 97.57 [51.56] [1.87σ]
Teffp = 3834 [416] K [7.25σ]

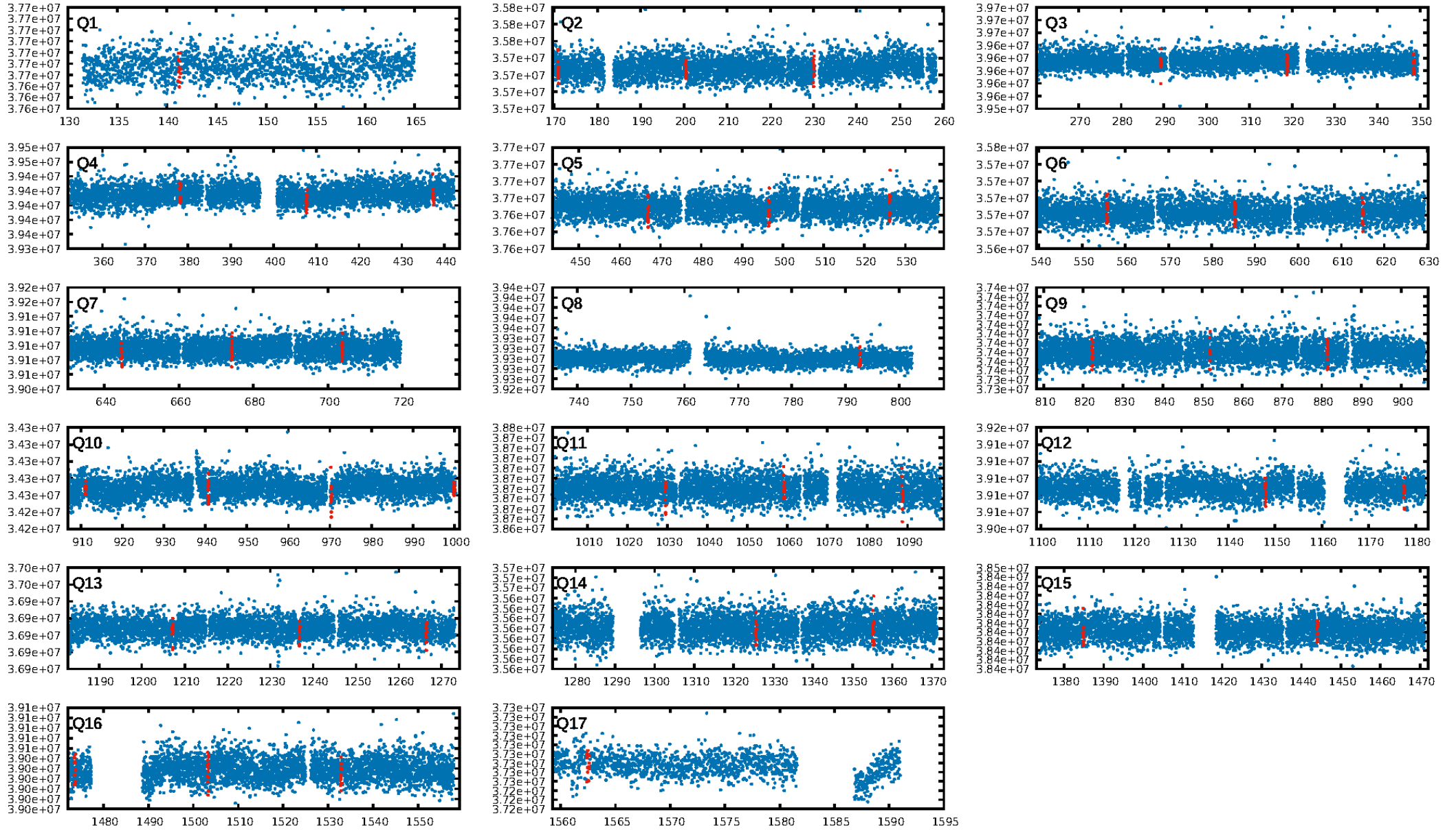
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 92.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.07e-23
RollingBand-fgt: 1.00 [40/40]
GhostDiagnostic-chr: 2.718
Centroid-sig: 72.0%
Centroid-so: 0.977 arcsec [0.76σ]
OotOffset-rm: 1.060 arcsec [1.05σ]
KicOffset-rm: 1.112 arcsec [1.17σ]
OotOffset-st: 3/4/3/5 [15]
KicOffset-st: 3/4/3/5 [15]
DiffImageQuality-fgm: 0.20 [3/15]
DiffImageOverlap-fno: 1.00 [17/17]

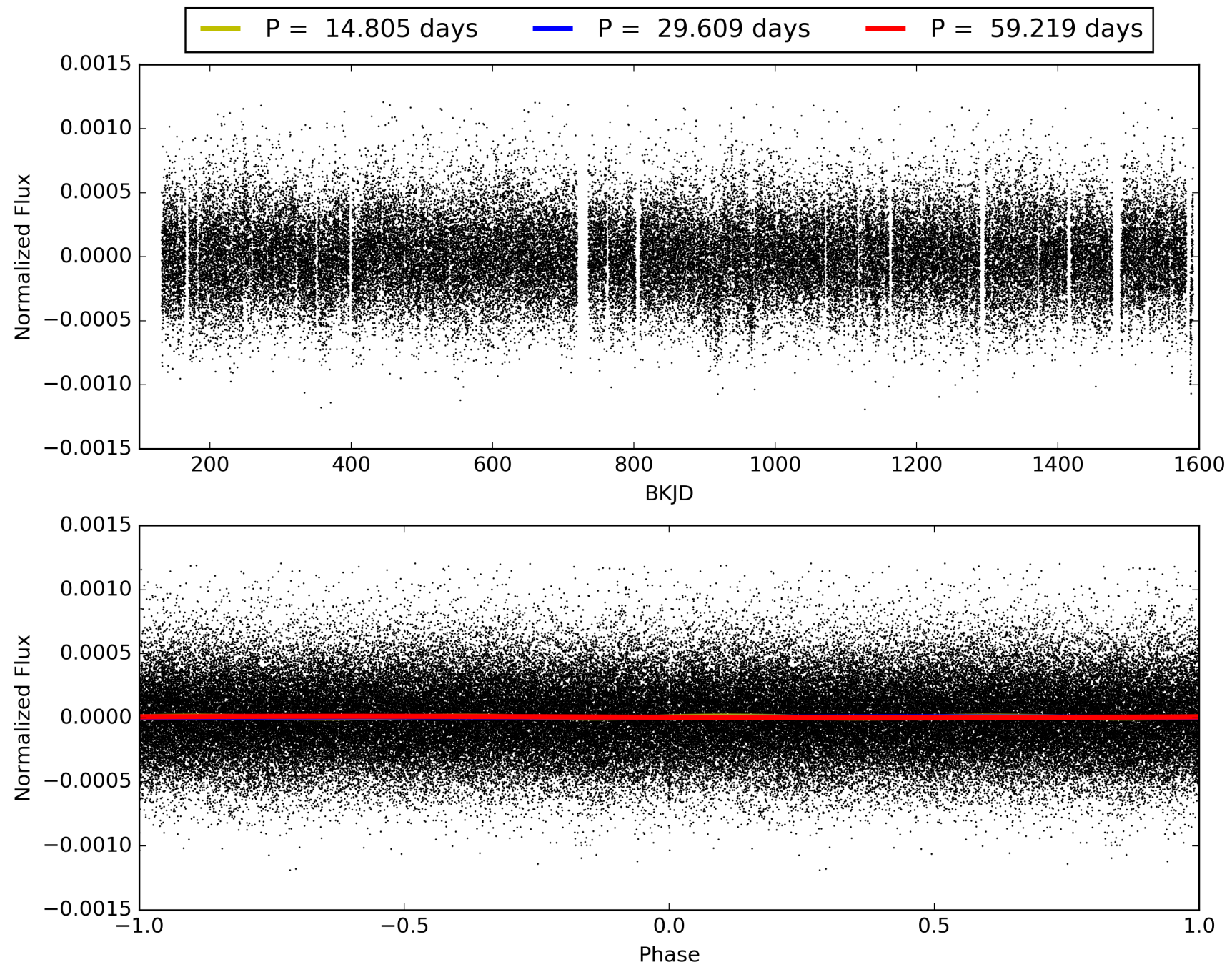
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:12:35 Z

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

TCE 004135912-01, PDC Light Curves

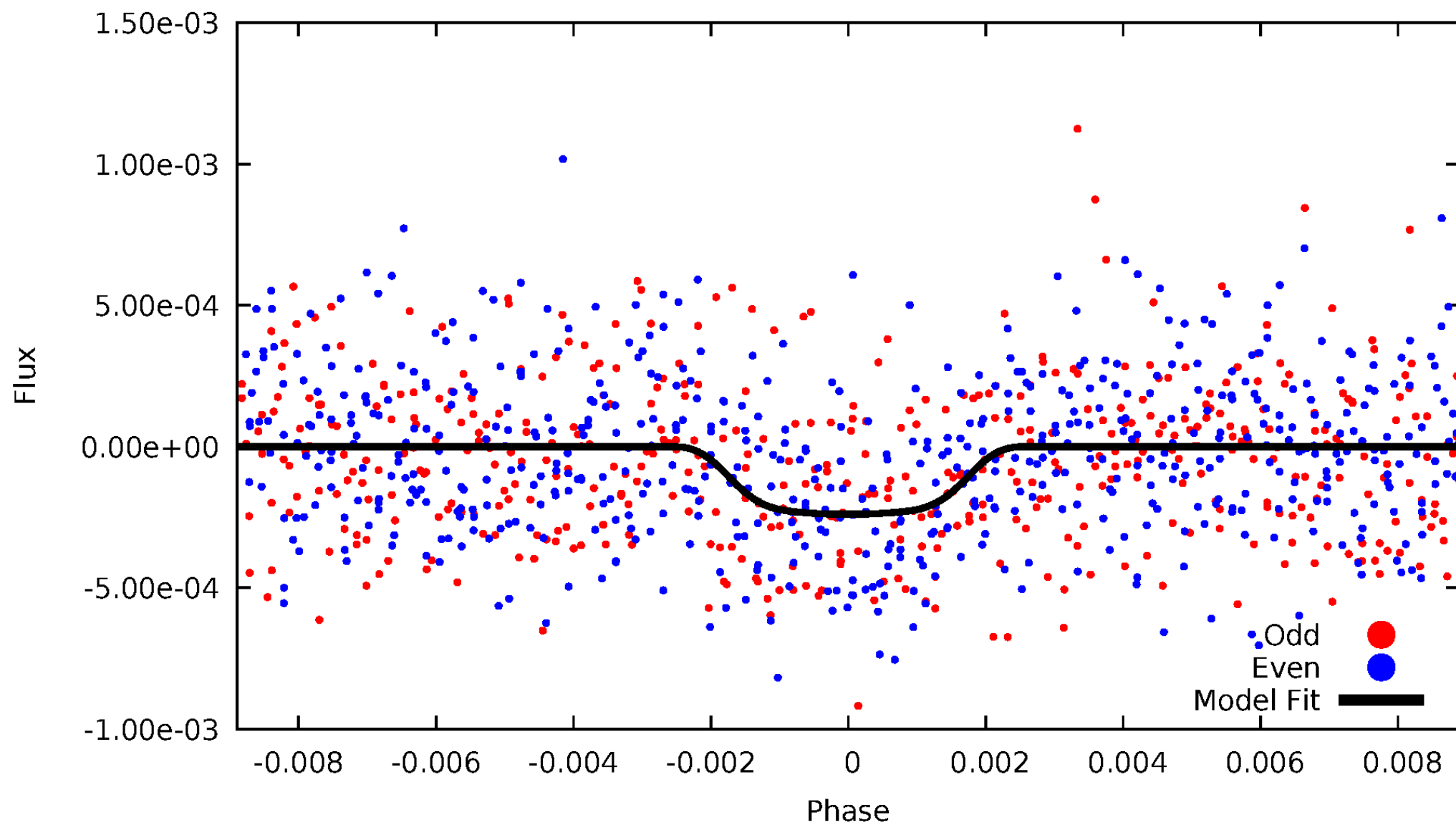


TCE 004135912-01



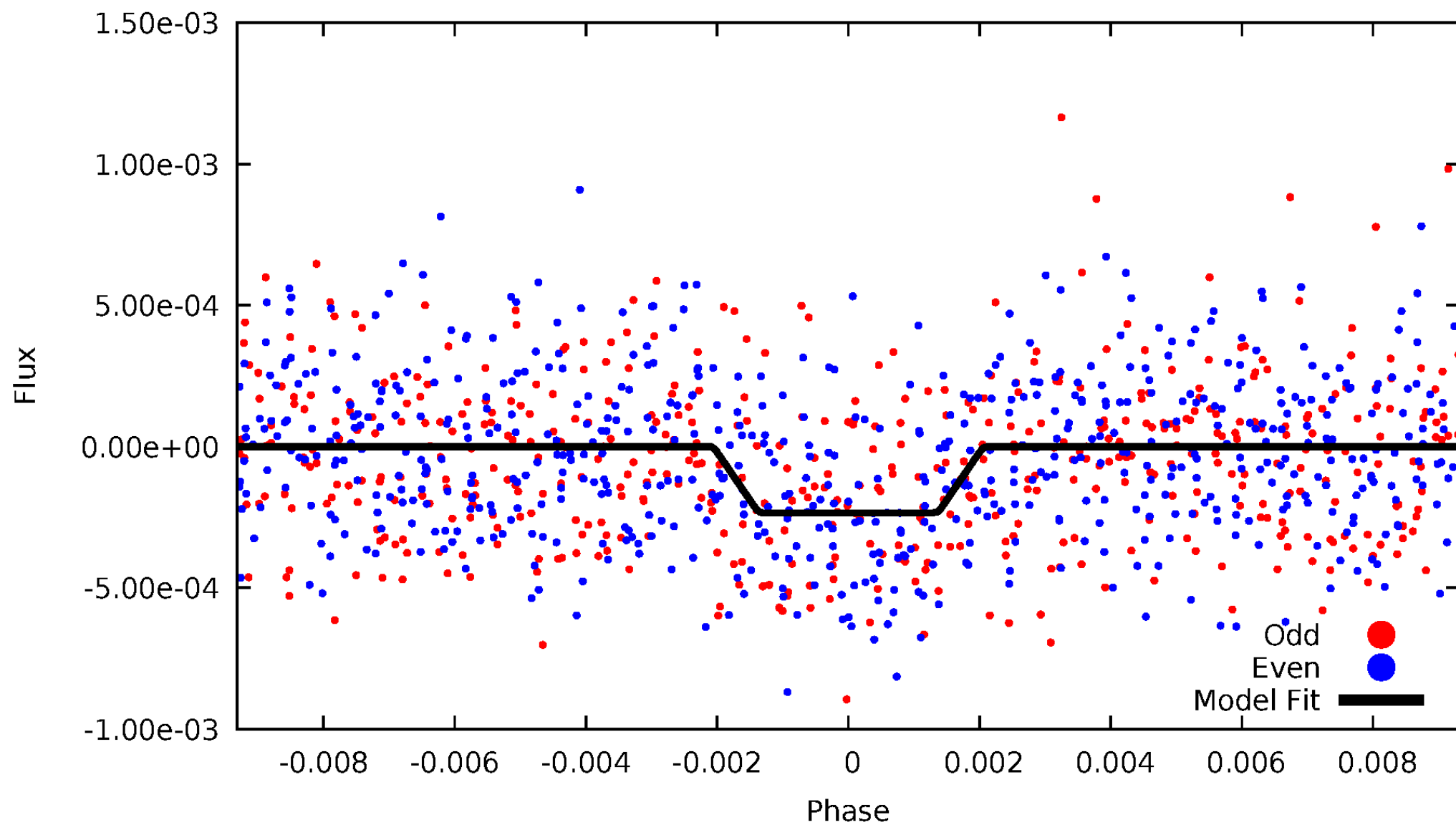
DV Odd/Even

TCE 004135912-01

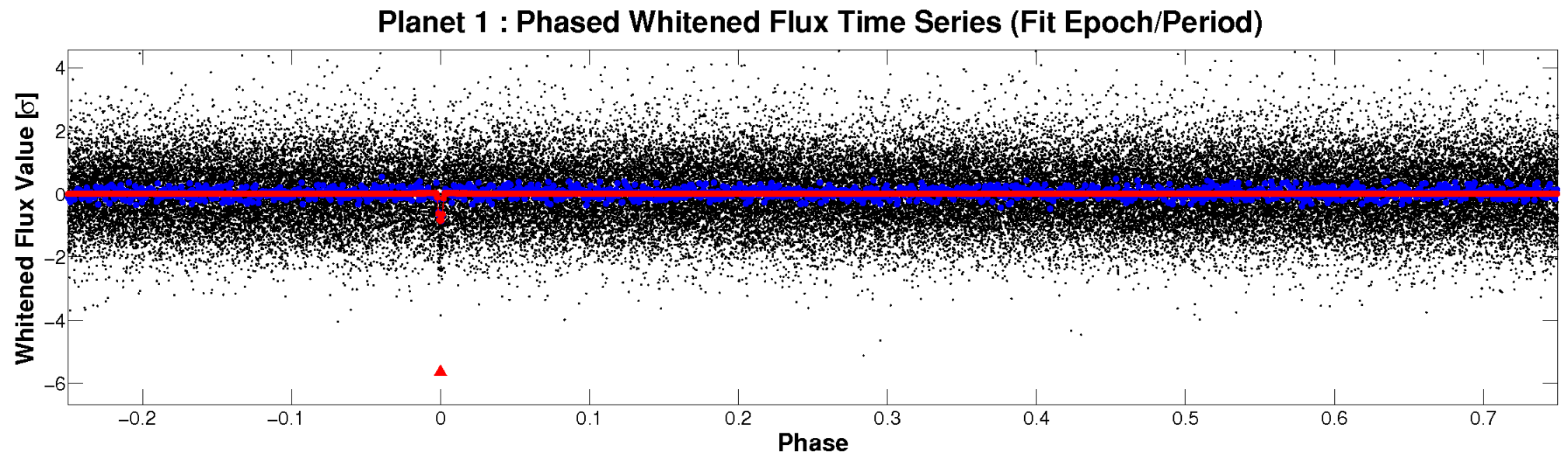
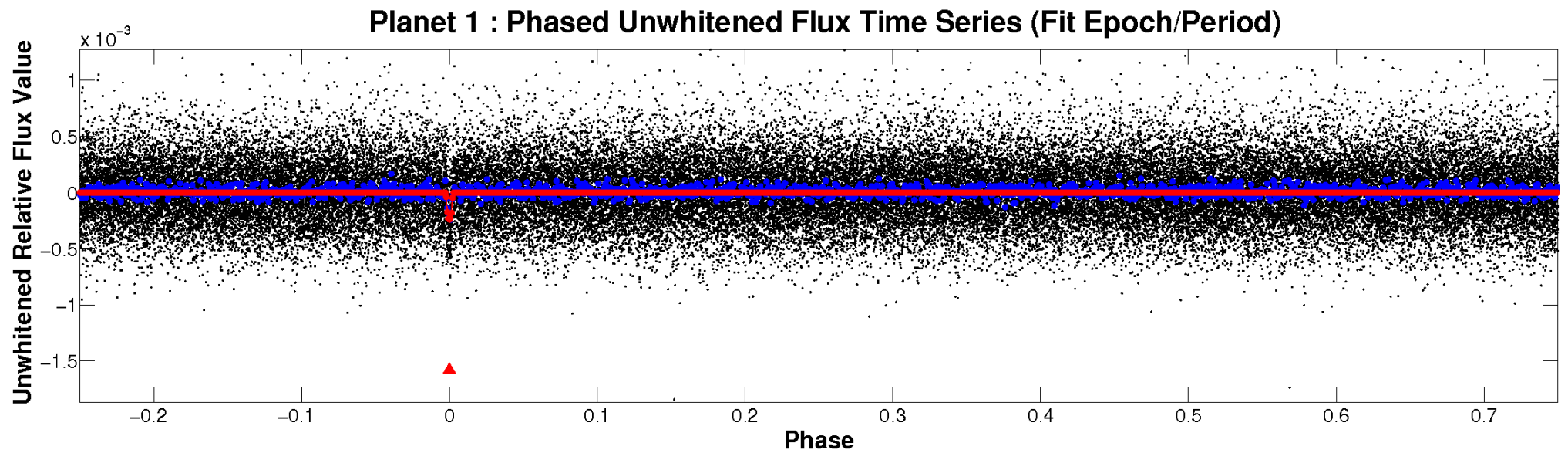


ALT Odd/Even

TCE 004135912-01

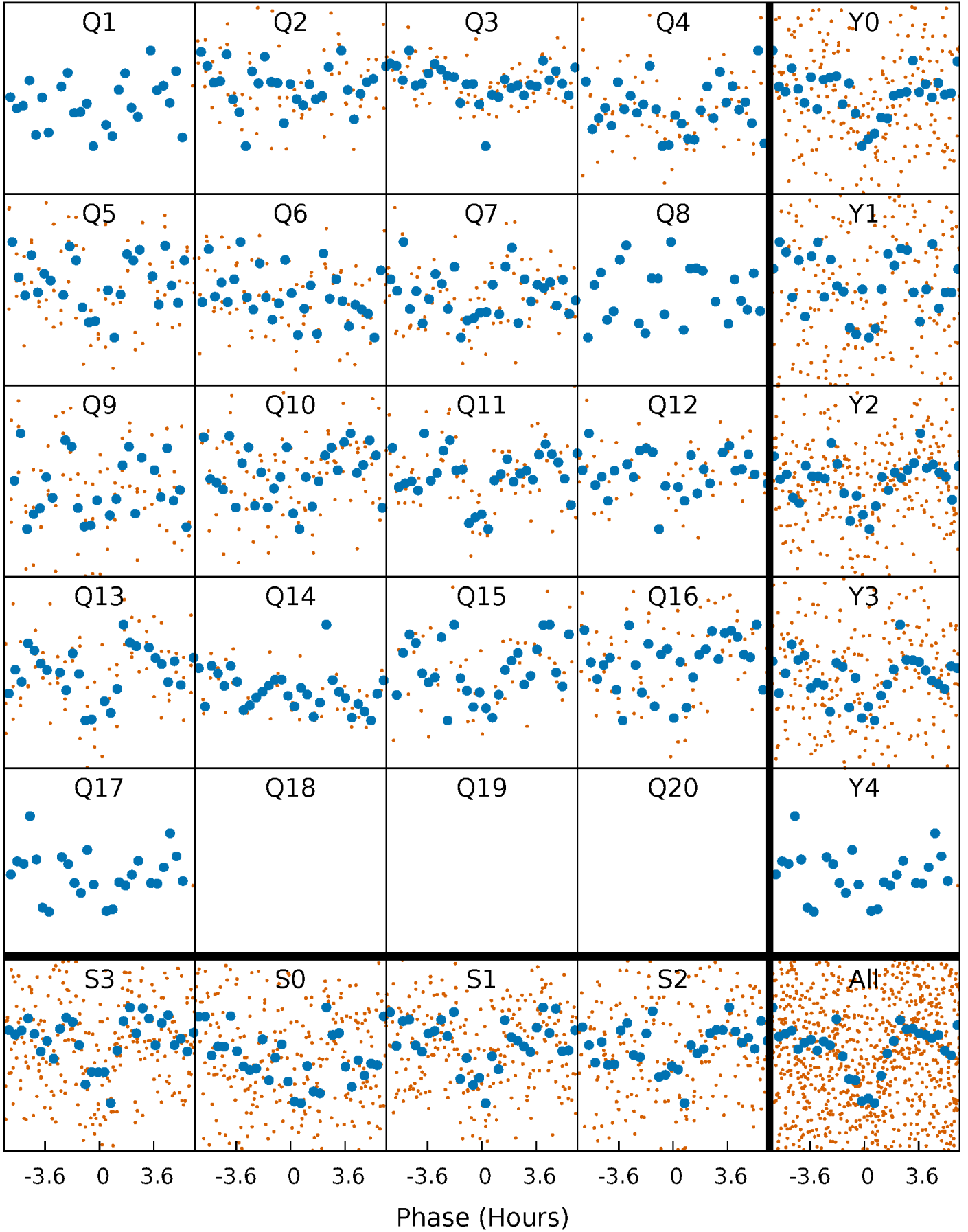


Non-Whitened Vs. Whitened Light Curve



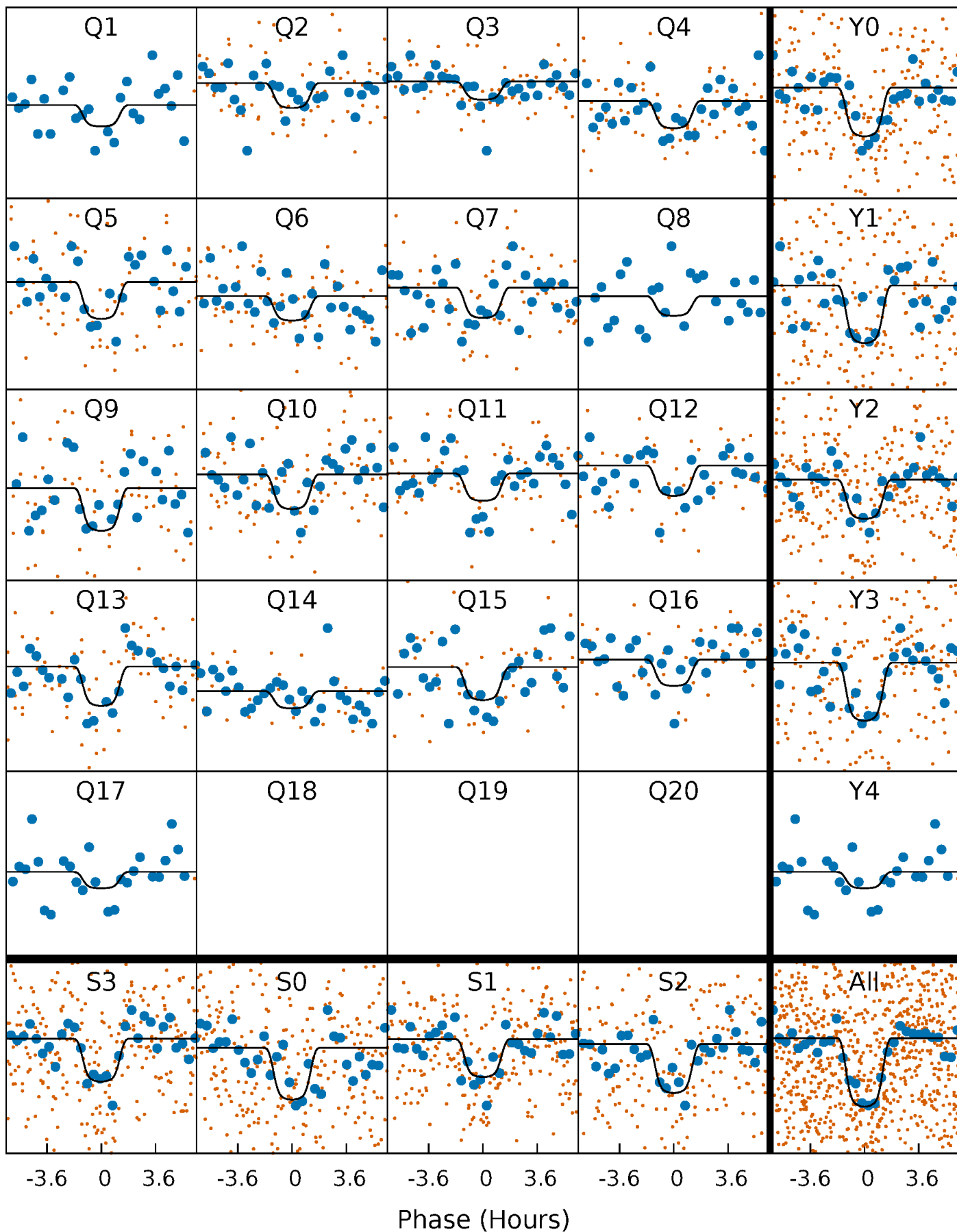
PDC Quarter-Phased Transit Curves

TCE 004135912-01 P= 29.609476 Days $T_0=141.248615$ (BKJD)



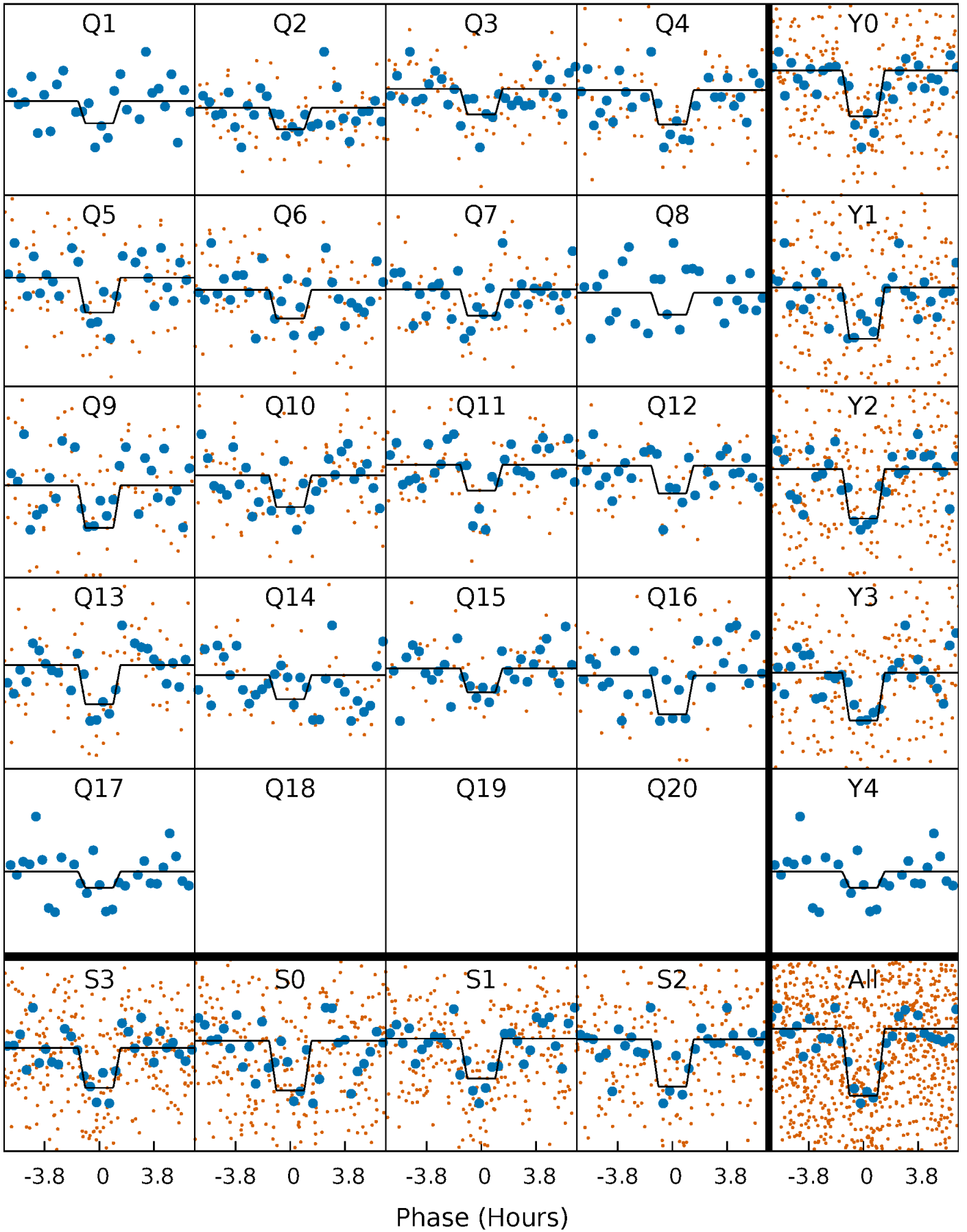
DV Quarter-Phased Transit Curves

TCE 004135912-01 P= 29.609476 Days $T_0=141.248615$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

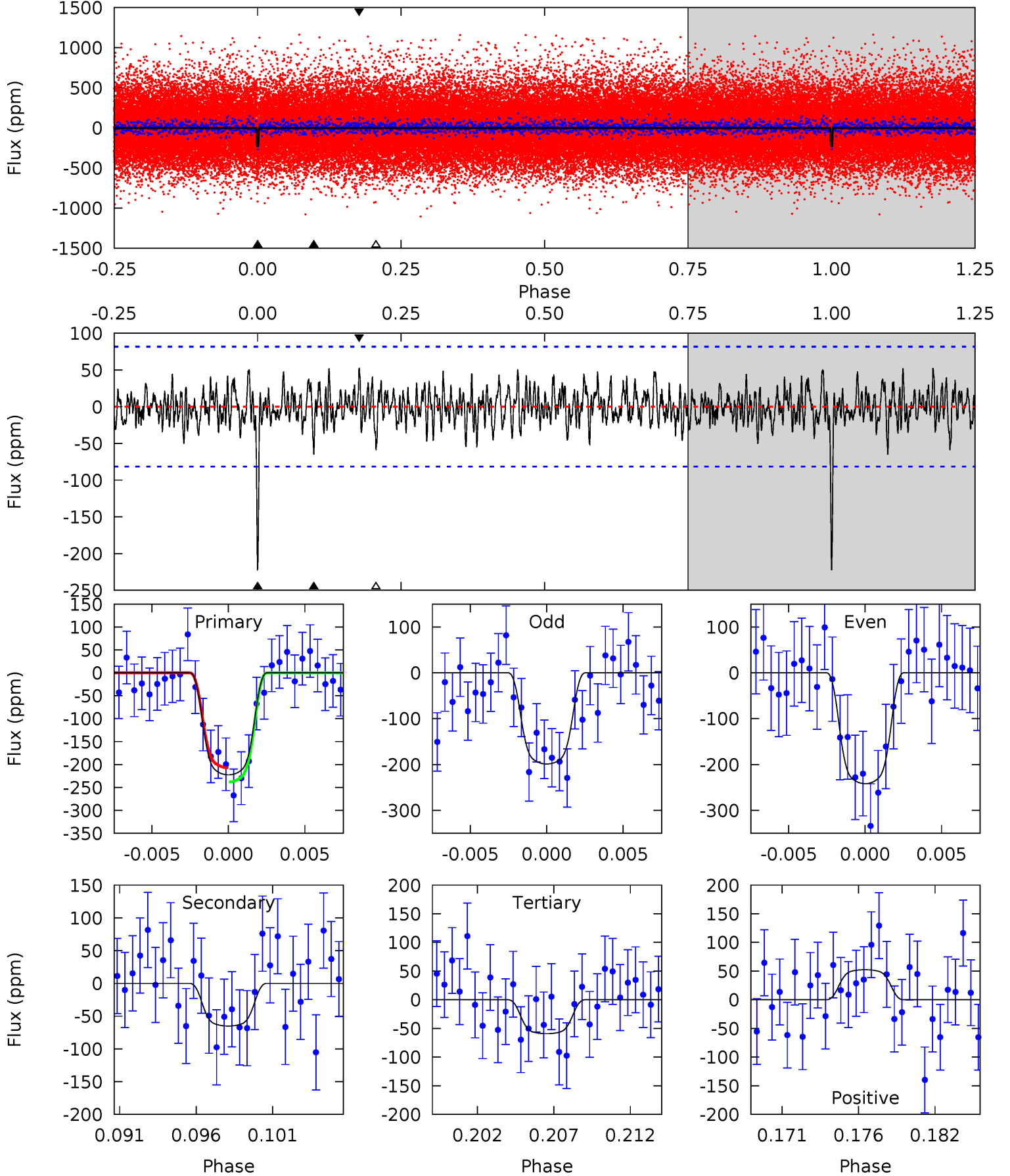
TCE 004135912-01 P= 29.609183 Days $T_0=141.255077$ (BKJD)



DV Model-Shift Uniqueness Test

004135912-01, $P = 29.609476$ Days, $E = 111.639139$ Days

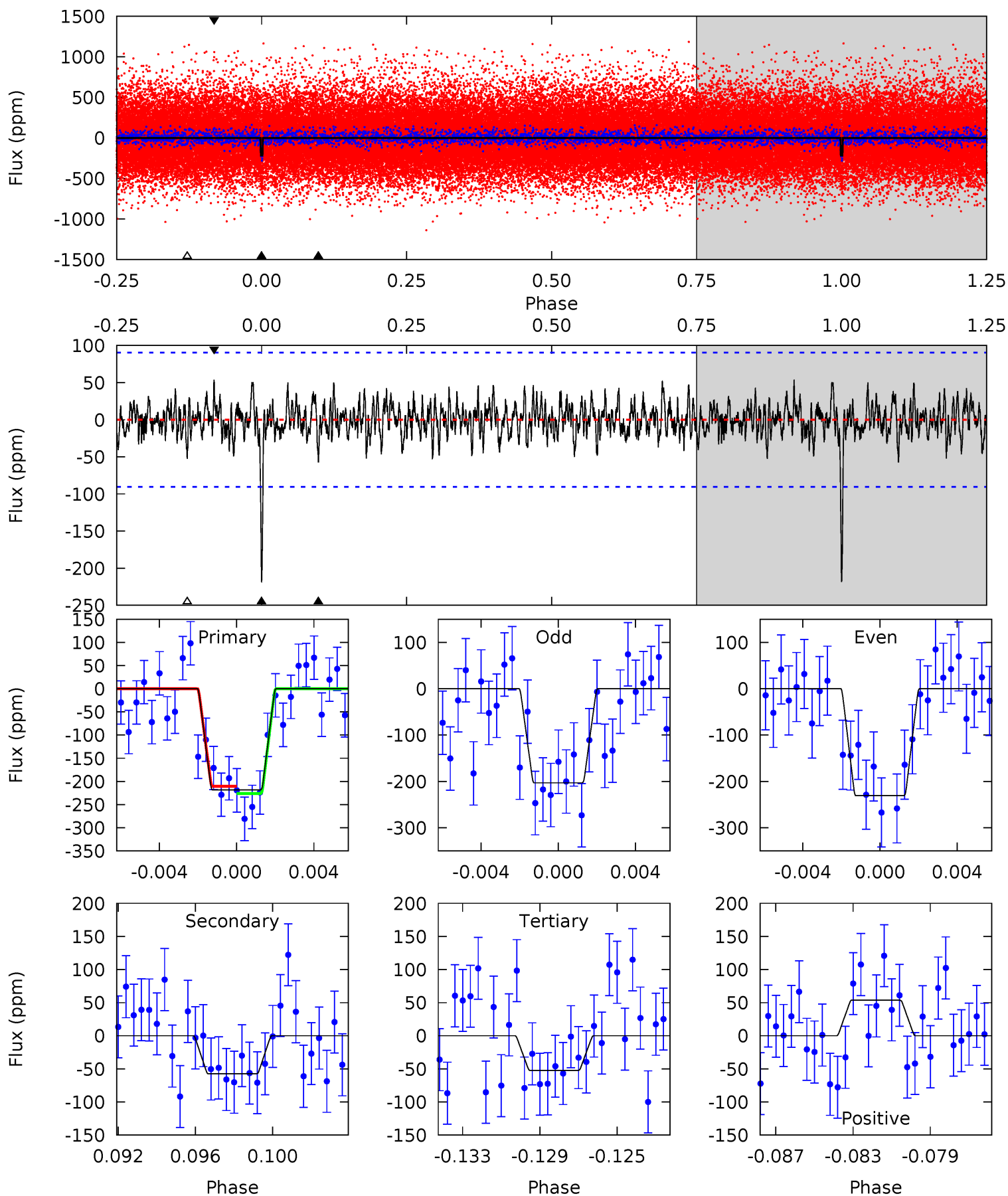
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	4.11	3.74	3.31	5.16	2.80	1.20	10.3	10.7	0.37	0.80	1.35	1.00	0.19	0.98



Alt Model-Shift Uniqueness Test

004135912-01, P = 29.609183 Days, E = 111.645894 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	3.30	3.01	3.08	5.19	2.87	1.04	9.52	9.45	0.29	0.22	0.79	0.91	0.20	0.45



Stellar Parameters For KIC 004135912

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6079^{+79}_{-85}	$4.059^{+0.174}_{-0.116}$	$0.180^{+0.150}_{-0.150}$	$1.783^{+0.332}_{-0.406}$	$1.329^{+0.116}_{-0.160}$	$0.330^{+0.298}_{-0.114}$
	+1%/-1%	+4%/-3%	+83%/-83%	+19%/-23%	+9%/-12%	+90%/-35%
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 004135912-01 / KOI 5040.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-65 ± 16	$3.53^{+0.57}_{-0.53}$	1100^{+54}_{-66}	4250^{+294}_{-262}	120^{+60}_{-40}
Alt.	-58 ± 17	$2.93^{+0.51}_{-0.49}$	1100^{+54}_{-68}	4476^{+374}_{-349}	156^{+89}_{-56}

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 $A_{obs} \gg 1.0$

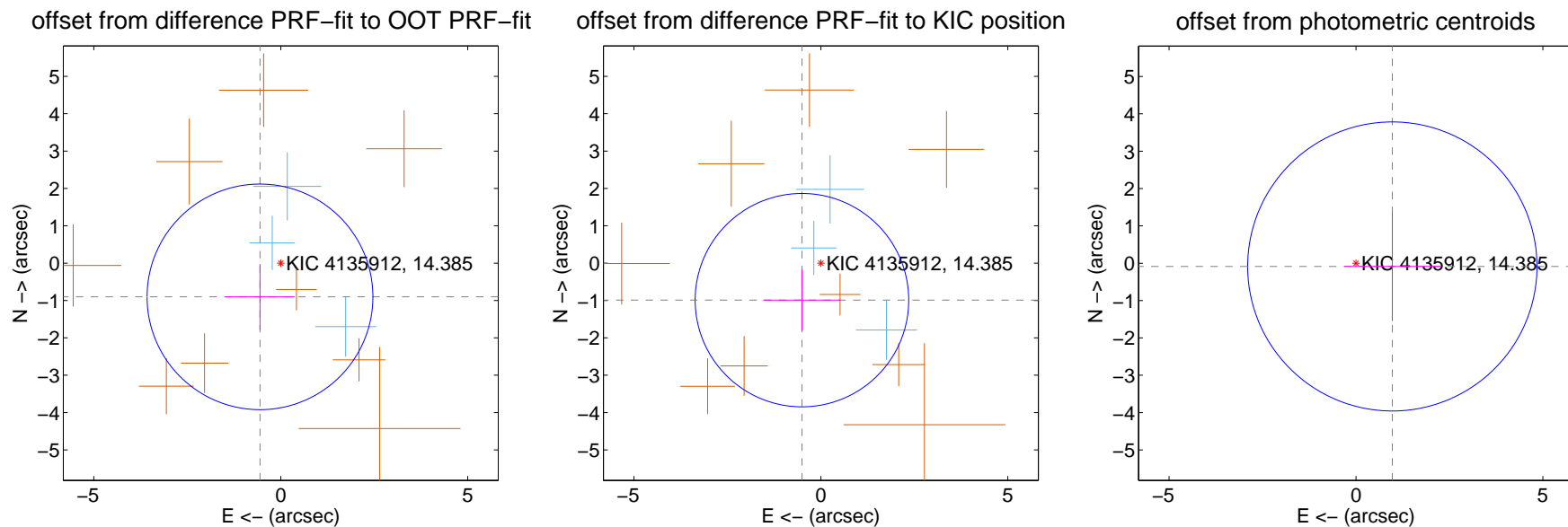
DV Centroid Data

Supplemental centroid analysis for 004135912-01. Kepler magnitude: 14.38. Transit SNR 10.74

There are 3 quarters with good PRF difference image offsets

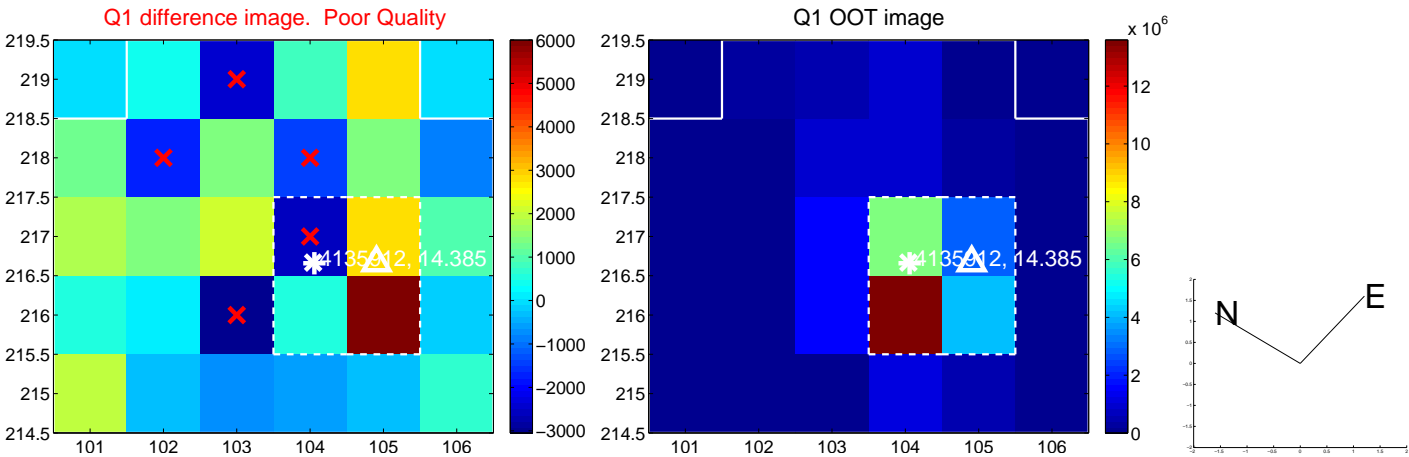
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.060 ± 1.007	1.05	0.555 ± 0.929	-0.903 ± 0.880
PRF-fit source offset from KIC position	1.112 ± 0.952	1.17	0.506 ± 1.036	-0.991 ± 0.816
photometric centroid source offset	0.98 ± 1.29	0.76	-0.97 ± 1.29	-0.09 ± 1.46

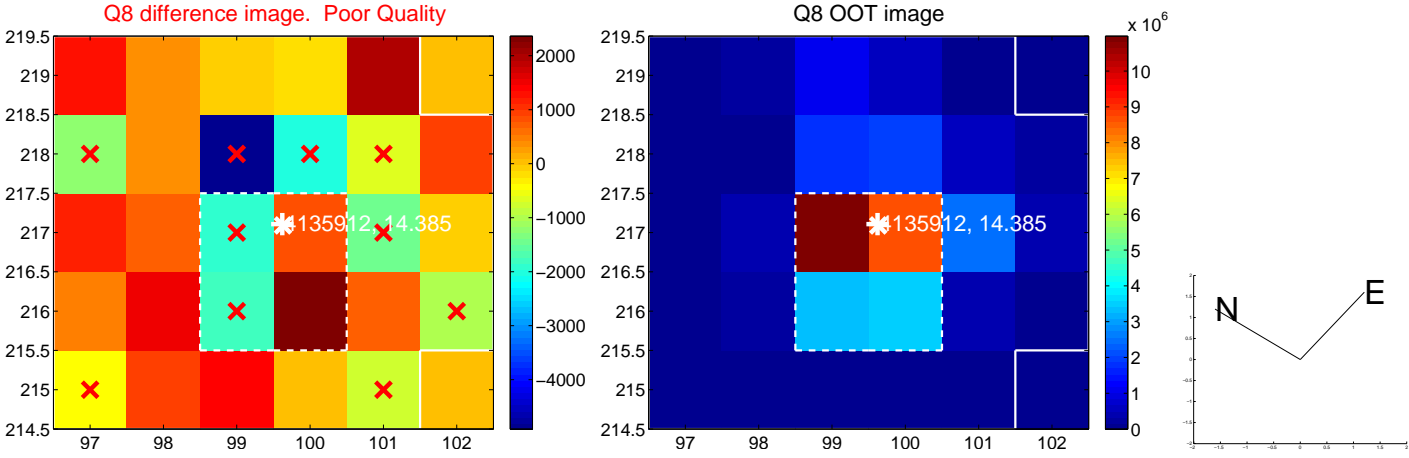
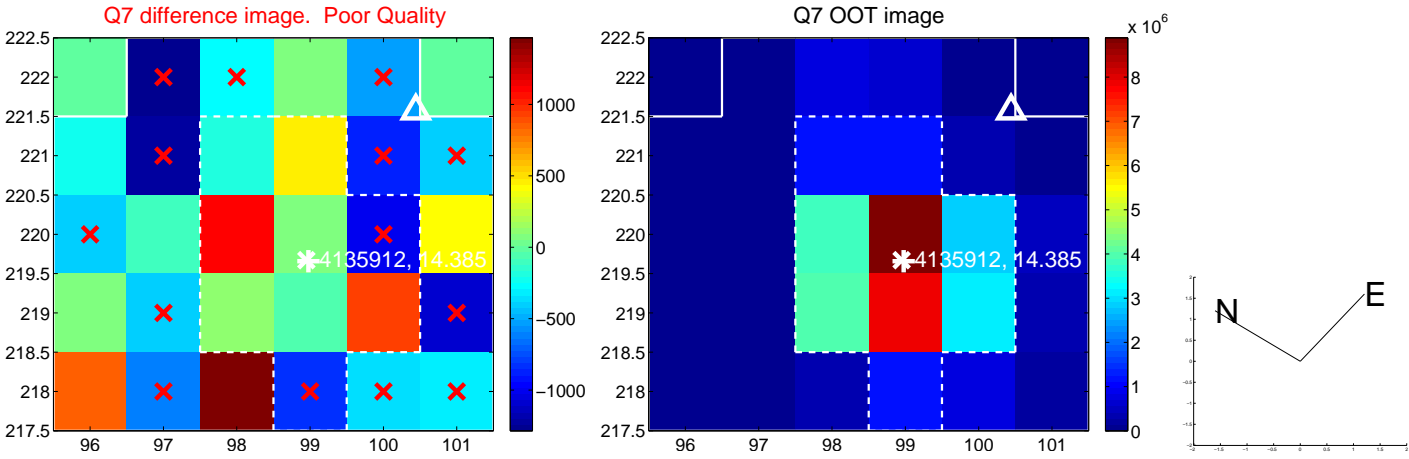
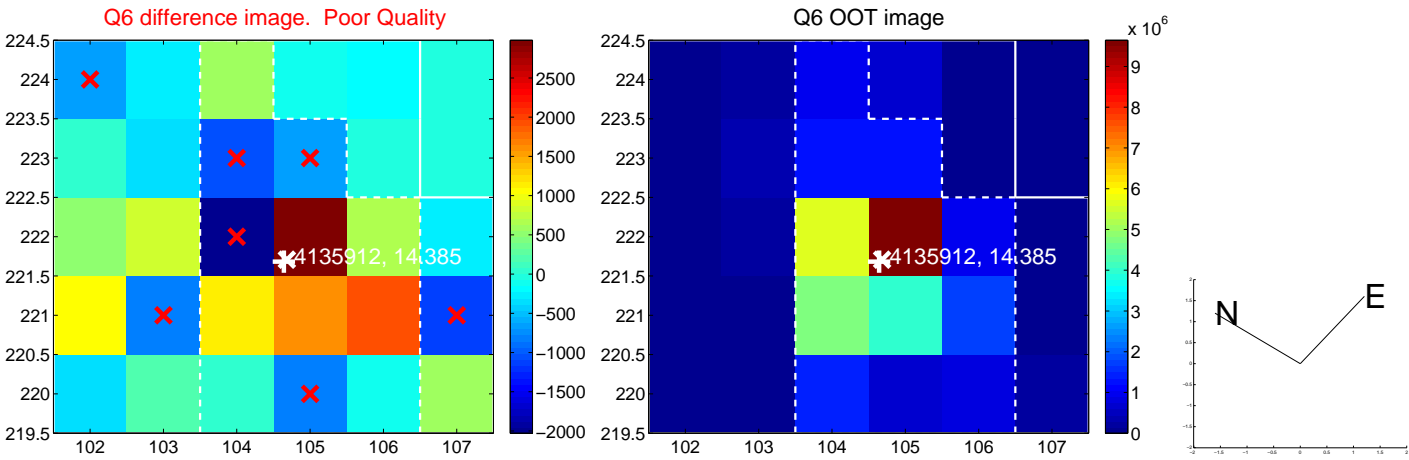
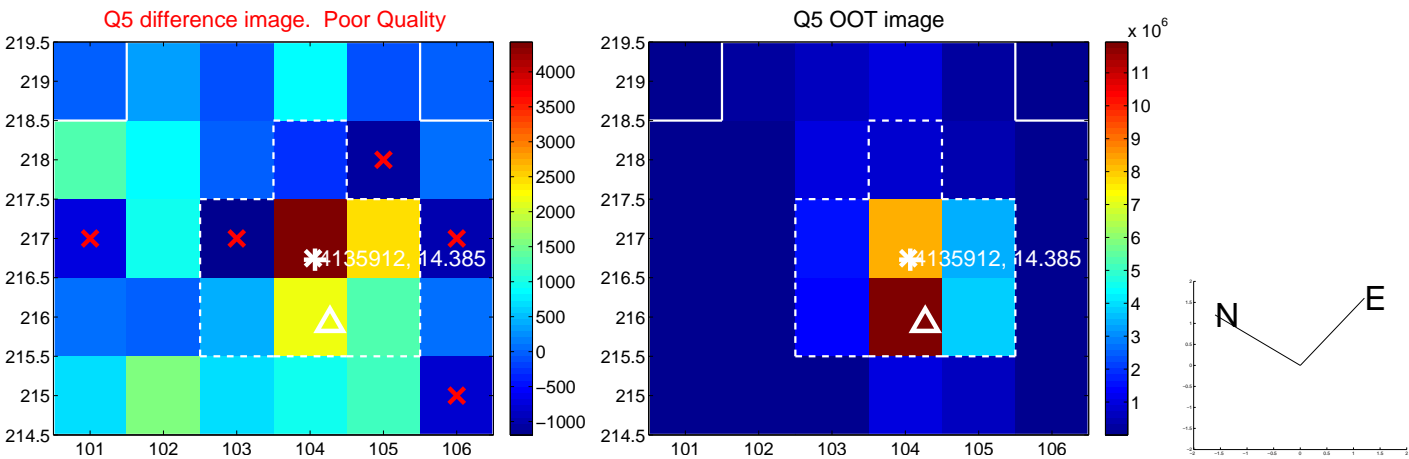


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

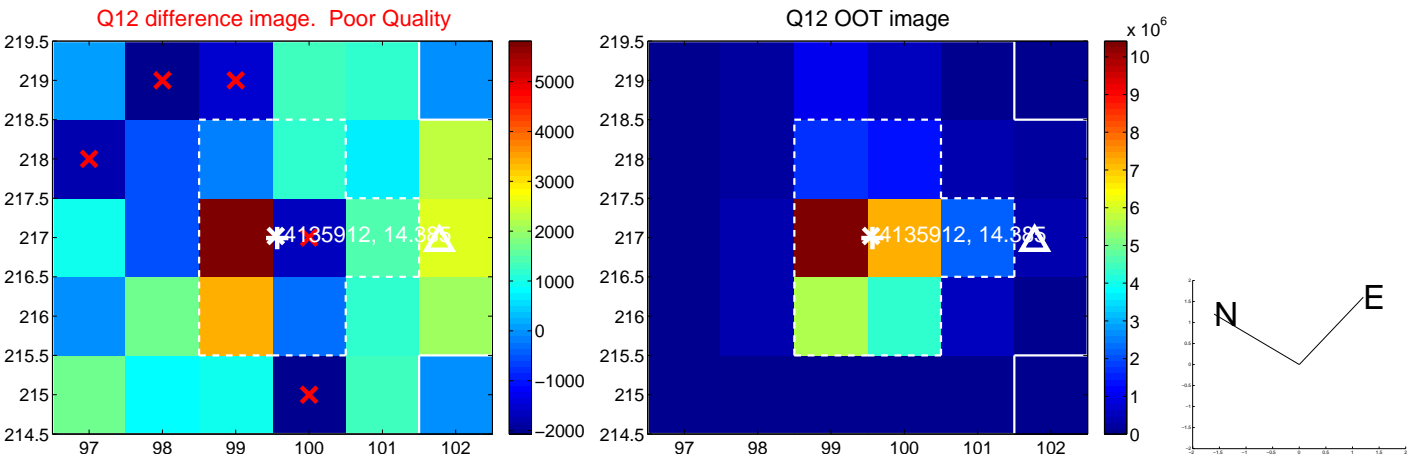
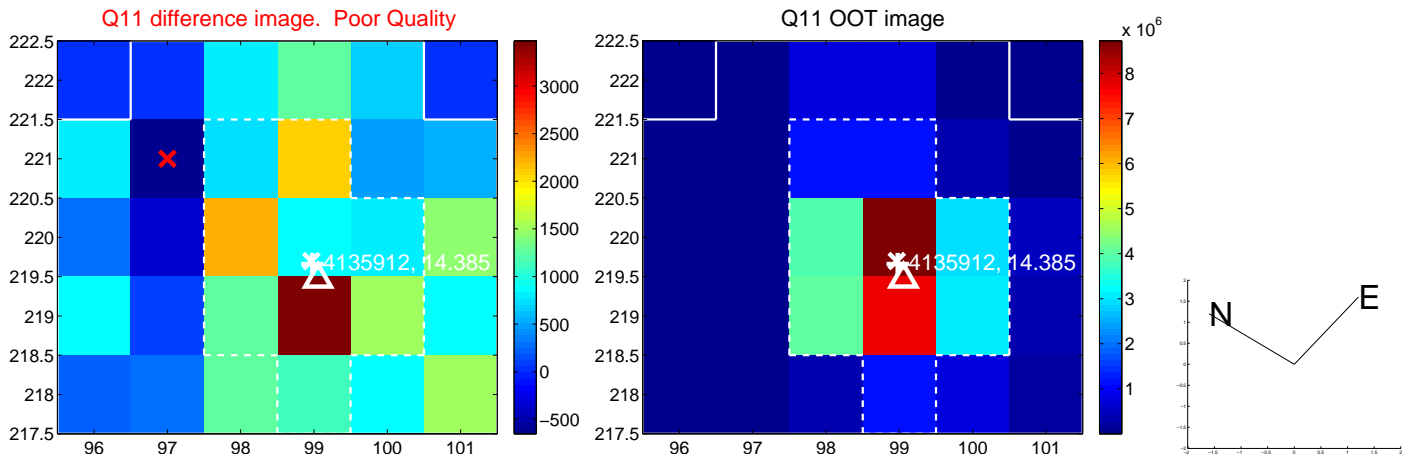
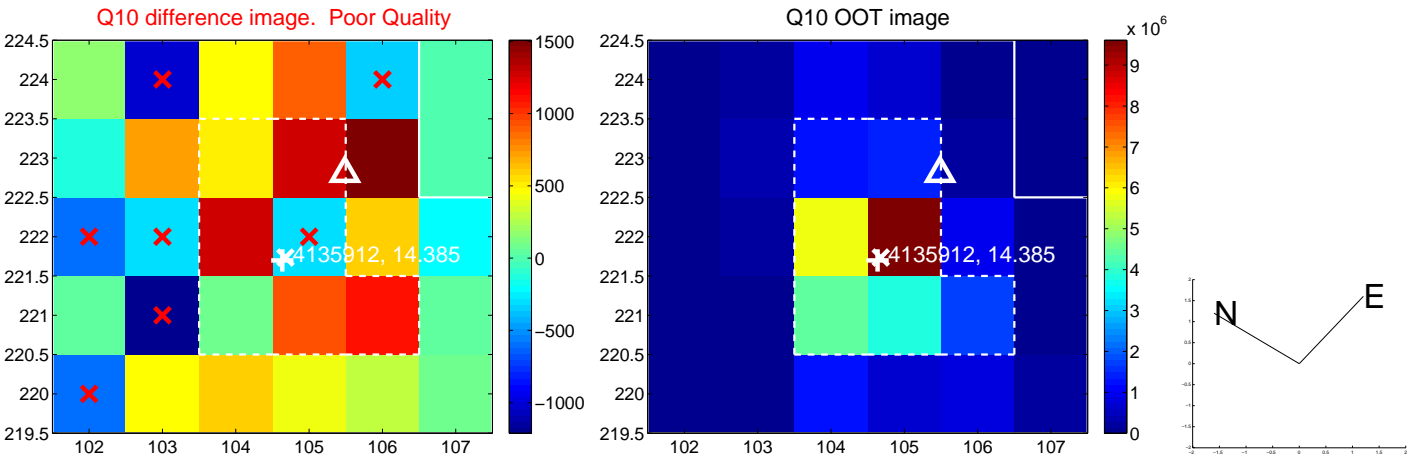
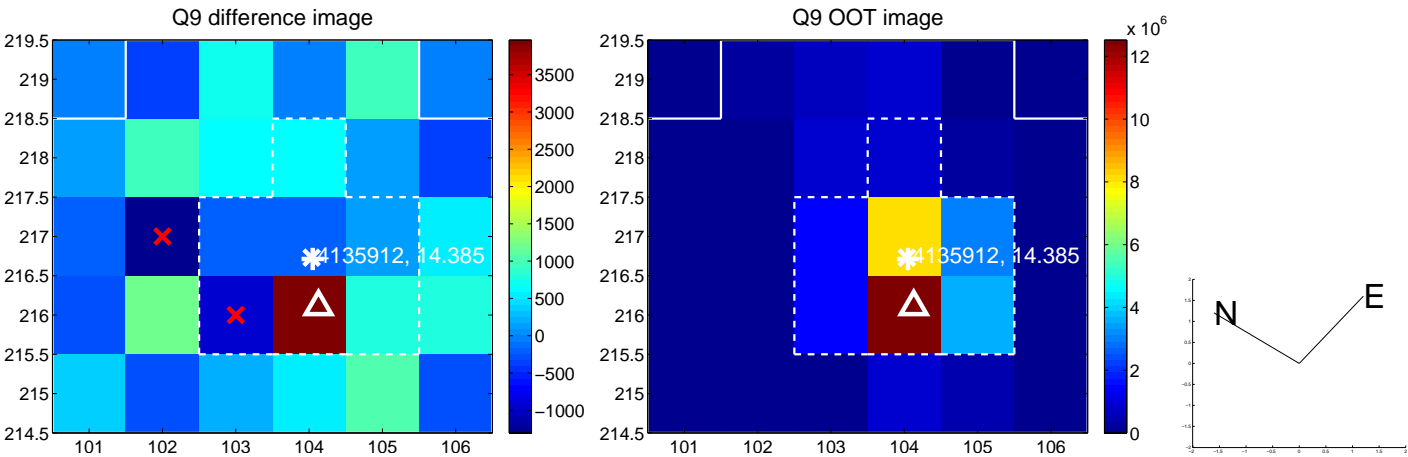
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



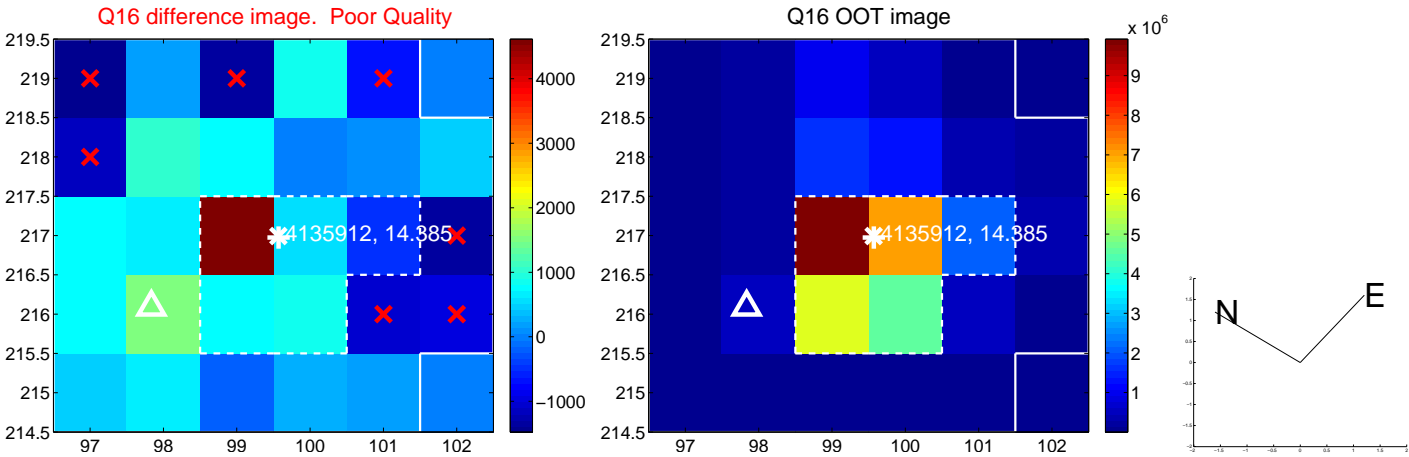
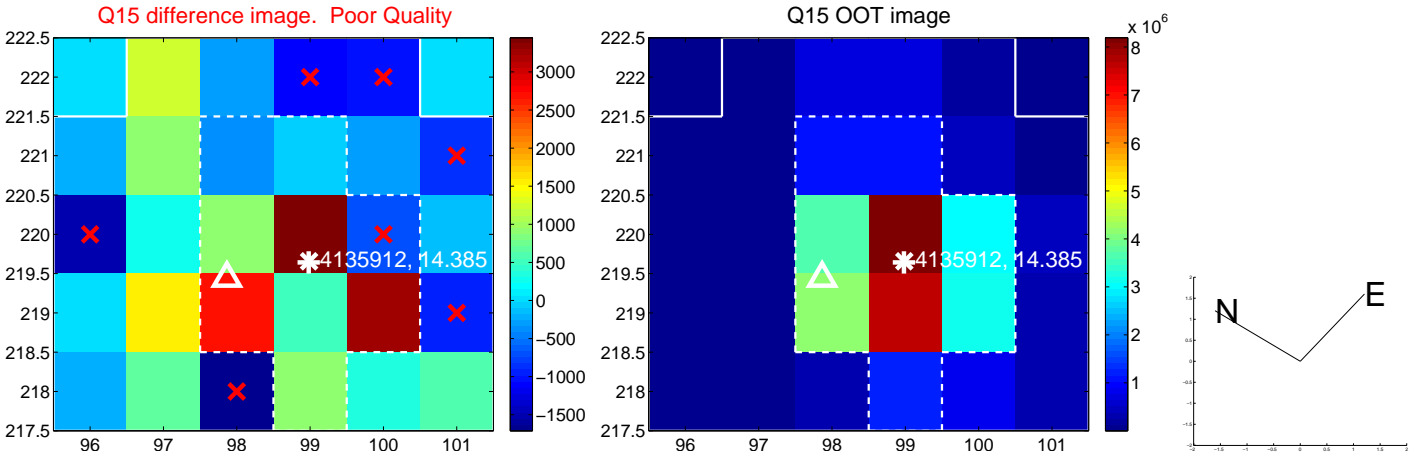
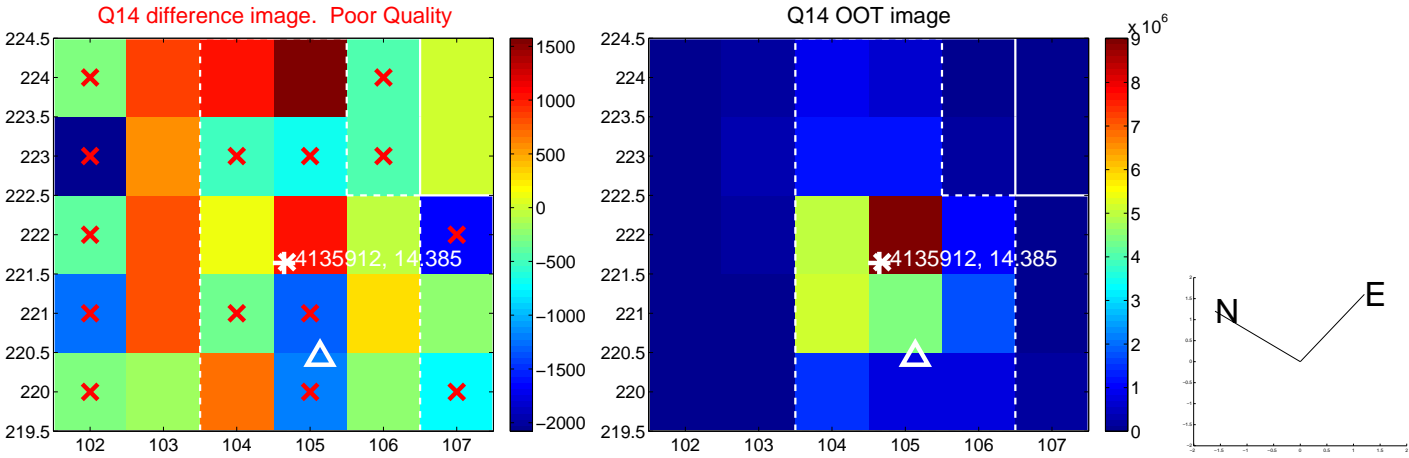
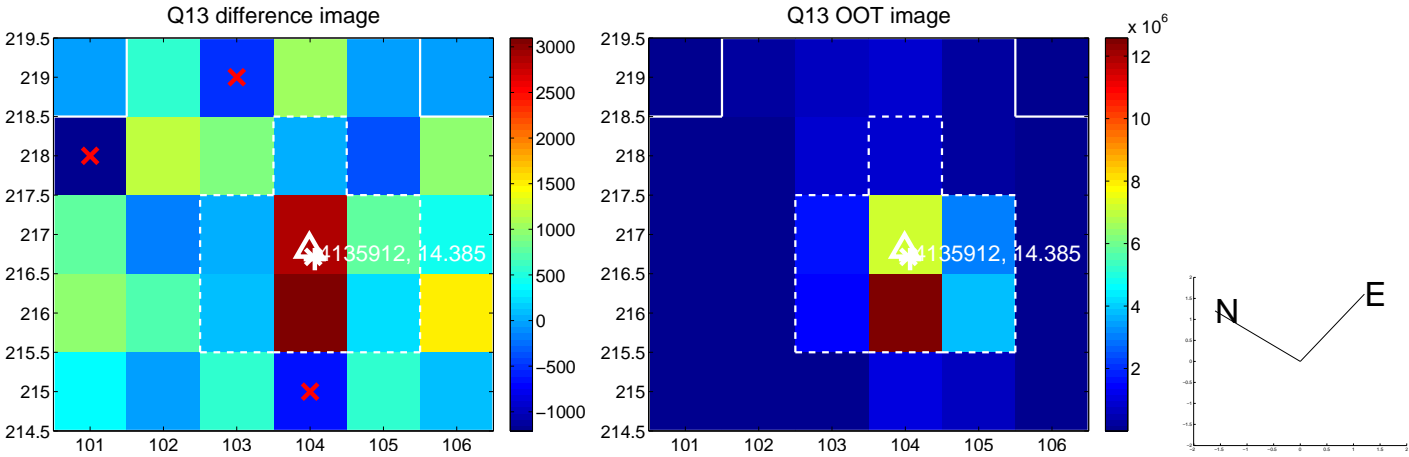
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



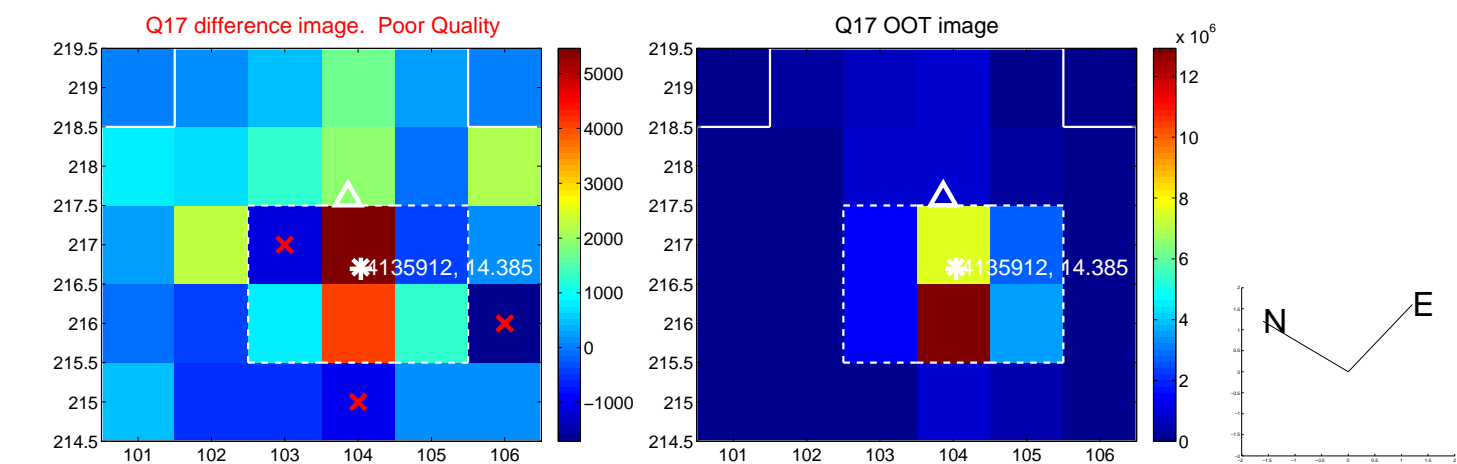
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



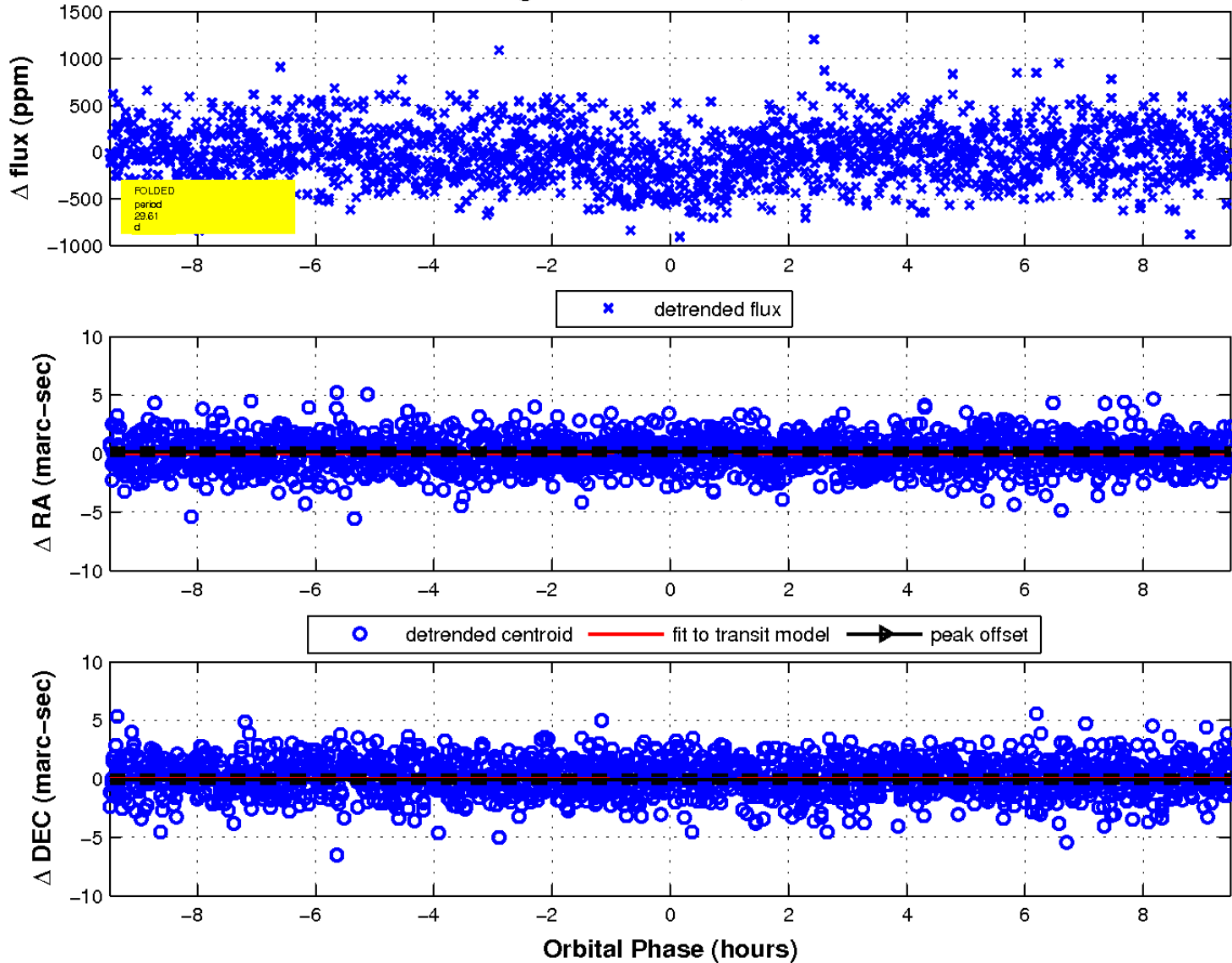
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

