

KIC 009776816

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})
009776816-01	OBS	No	2.387148	132.991378	236.2	26.810	10.4	19.5	1.50	6982	2.59	3420.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009776816-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_MEAS

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

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

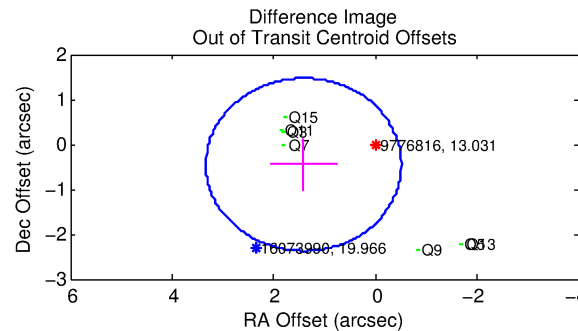
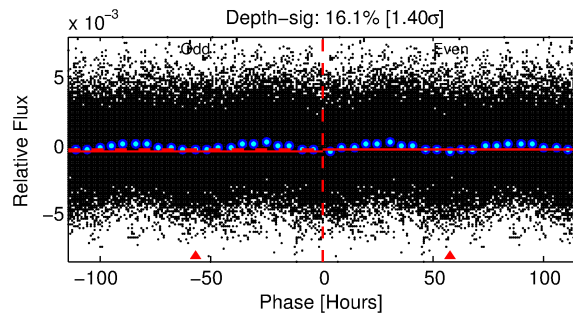
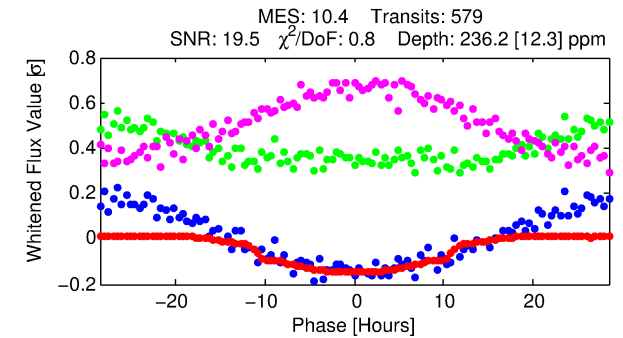
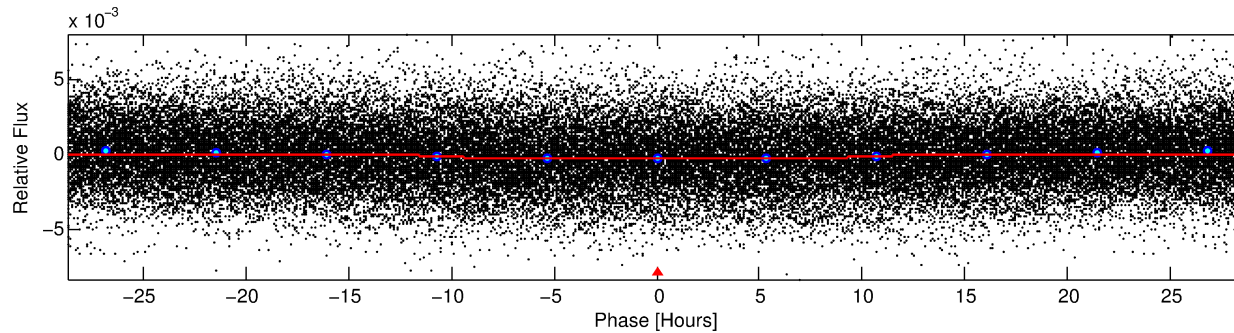
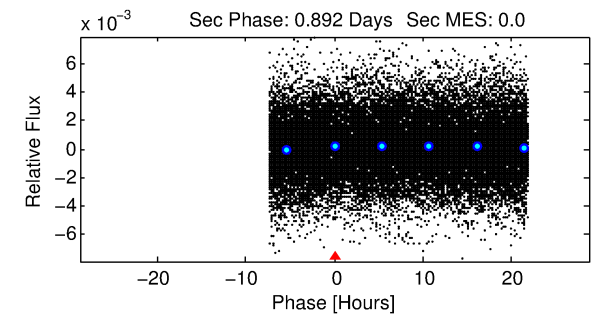
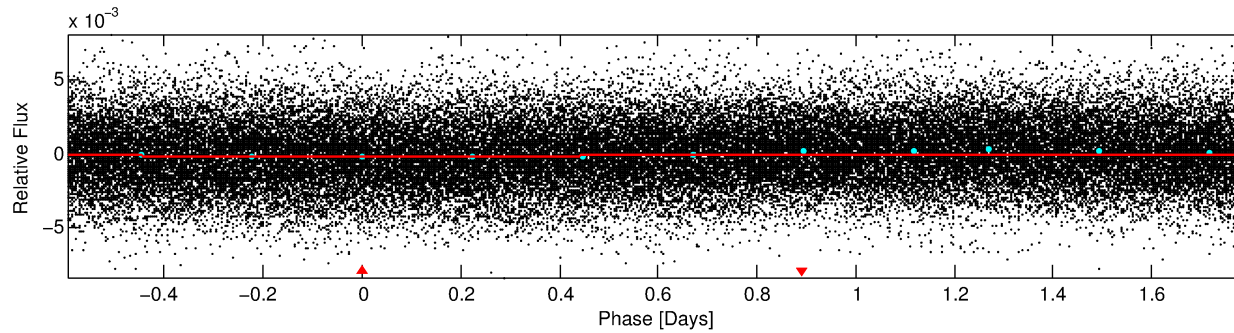
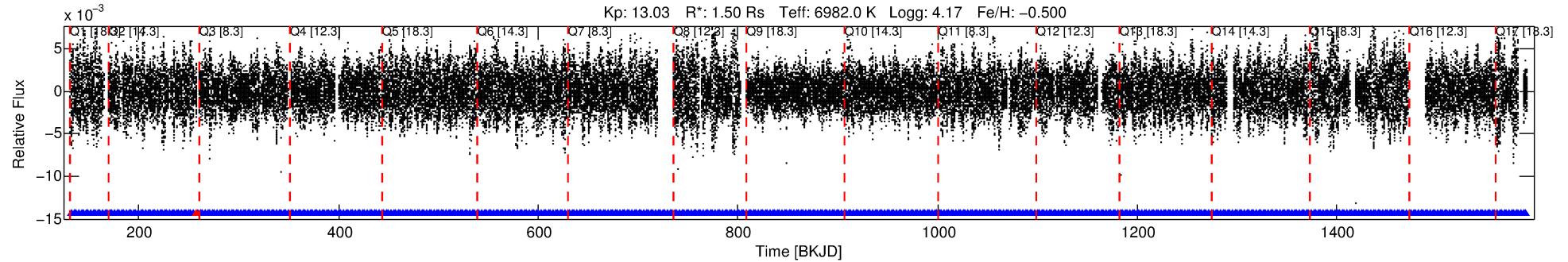
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009776816-01

No Significant Match Found

DV One-Page Summary

KIC: 9776816 Candidate: 1 of 1 Period: 2.387 d



DV Fit Results:

Period = 2.38715 [0.00008] d
Epoch = 132.9914 [0.0240] BKJD
Rp/R* = 0.0159 [0.0007]
a/R* = 1.02 [0.01]
b = 0.85 [0.07]
Seff = 3420.34 [1301.19]
Teq = 1950 [185] K
Rp = 2.59 [0.75] Re
a = 0.0373 [0.0088] AU
Ag = N/A
Teffp = N/A

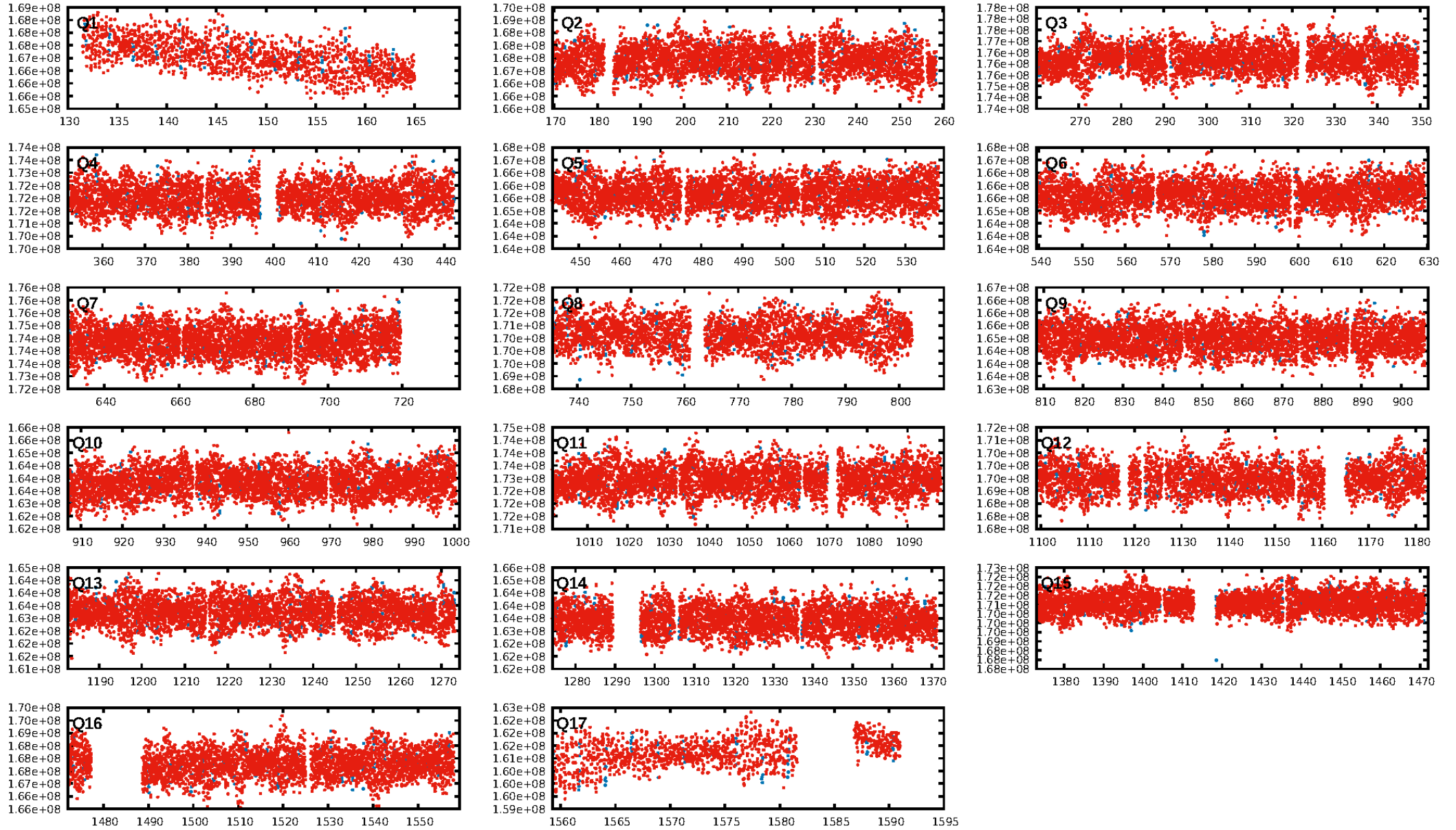
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [551/552]
GhostDiagnostic-chr: 1.973
Centroid-sig: 0.0%
Centroid-so: 0.084 arcsec [1.97σ]
OotOffset-rm: 1.485 arcsec [2.32σ]
KicOffset-rm: 1.498 arcsec [2.33σ]
OotOffset-st: 0/4/0/3 [7]
KicOffset-st: 0/4/0/3 [7]
DiffImageQuality-fgm: 0.57 [4/7]
DiffImageOverlap-fno: 1.00 [17/17]

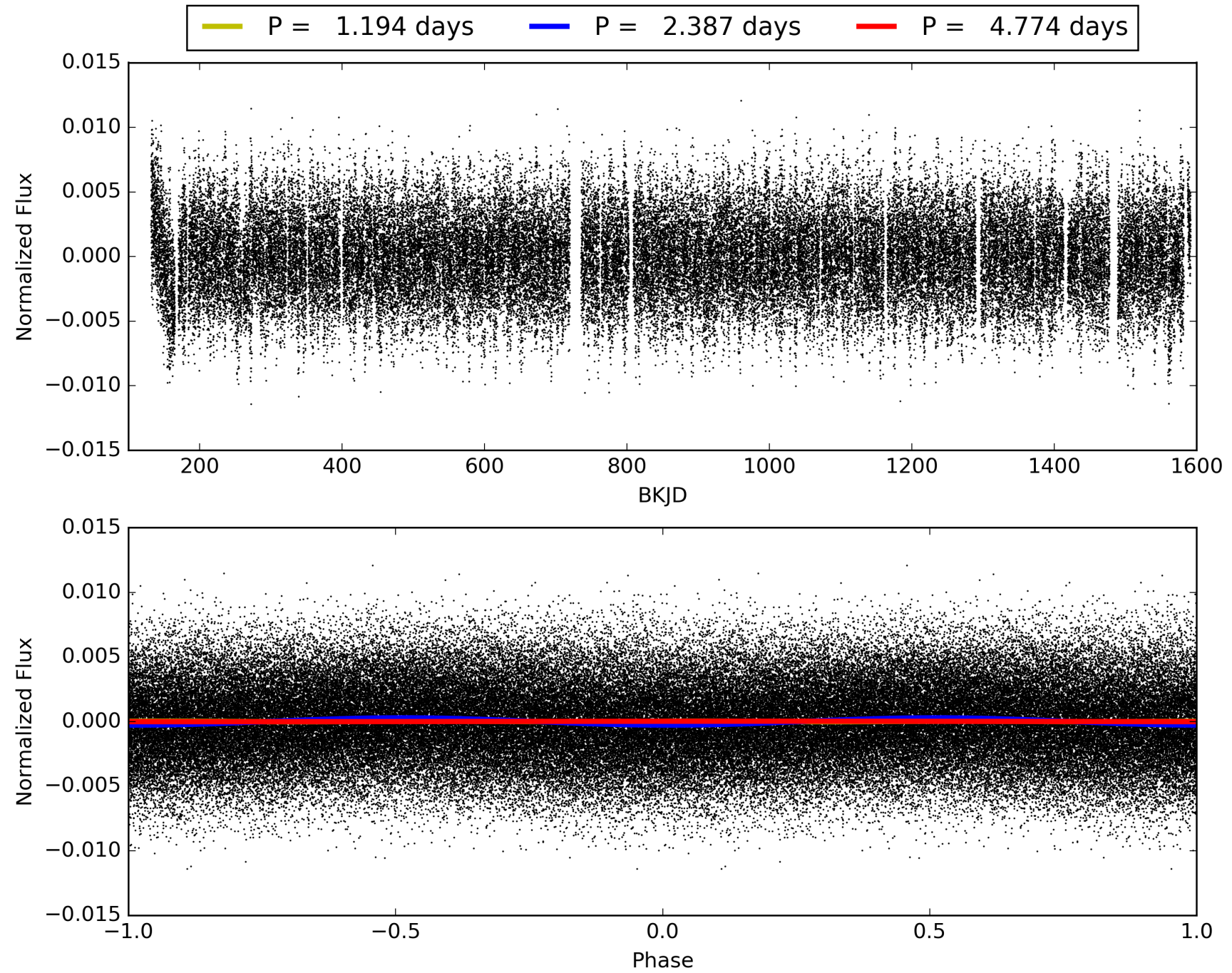
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:27:03 Z

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

TCE 009776816-01, PDC Light Curves

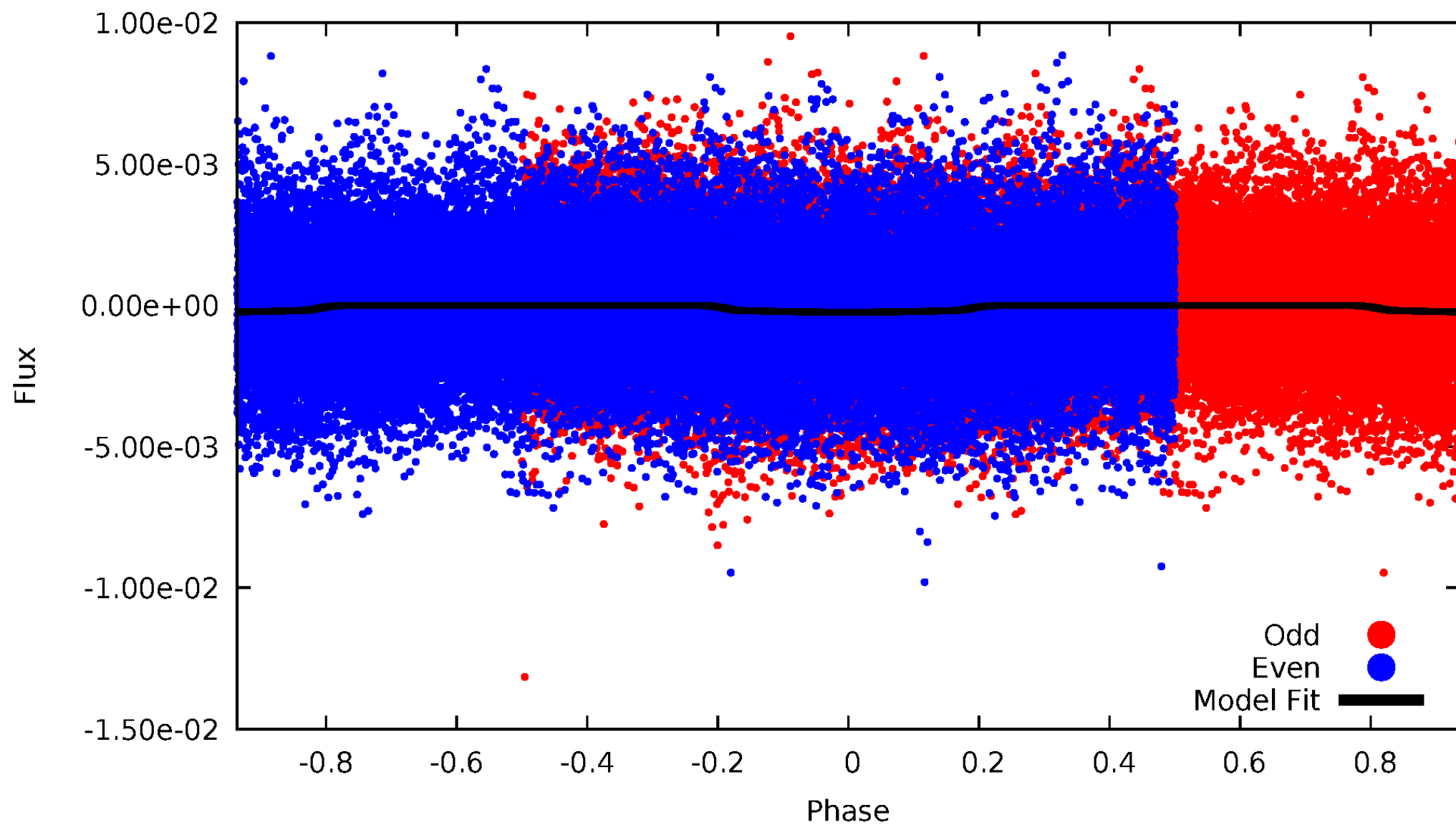


TCE 009776816-01



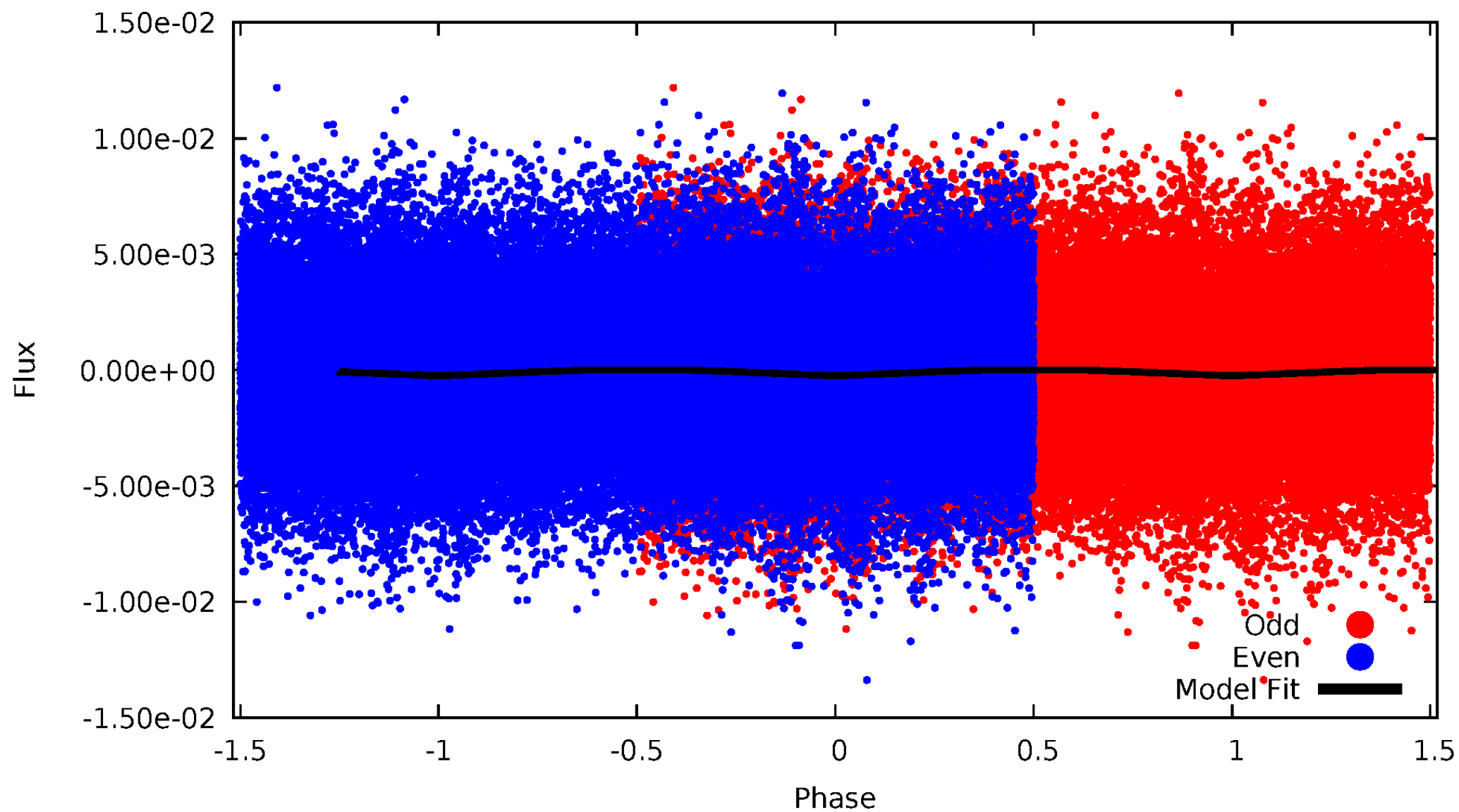
DV Odd/Even

TCE 009776816-01

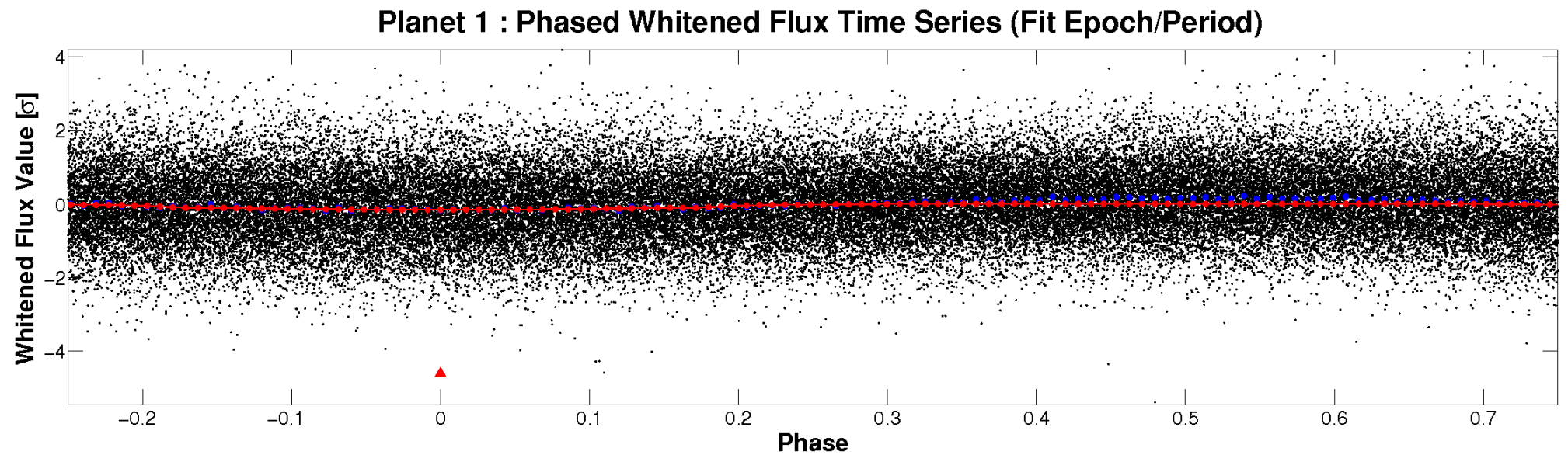
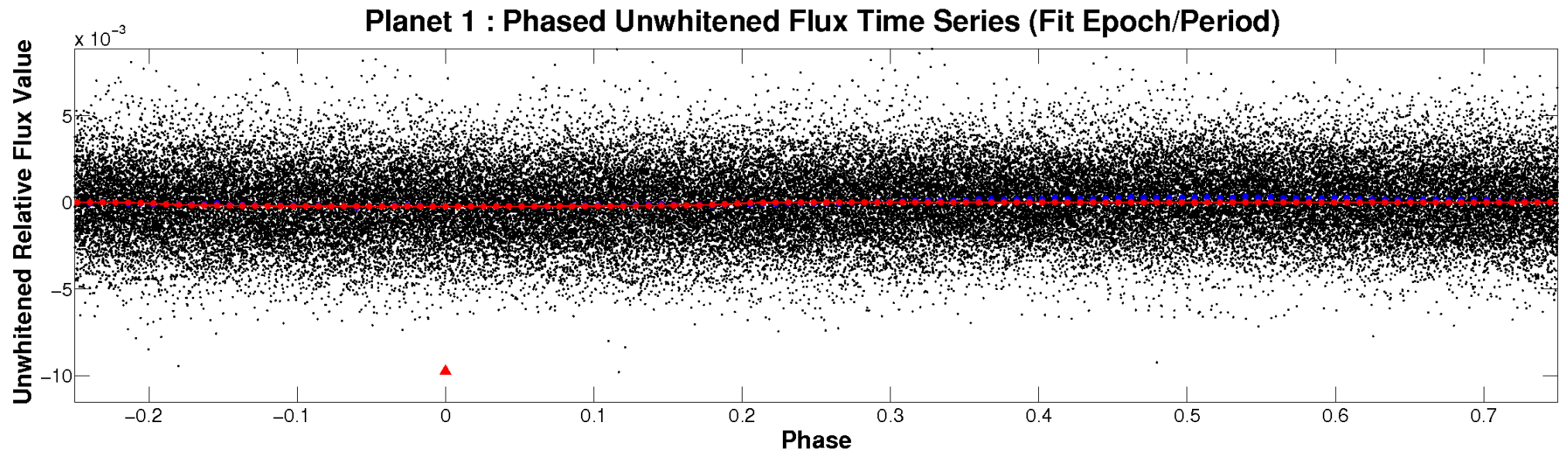


ALT Odd/Even

TCE 009776816-01

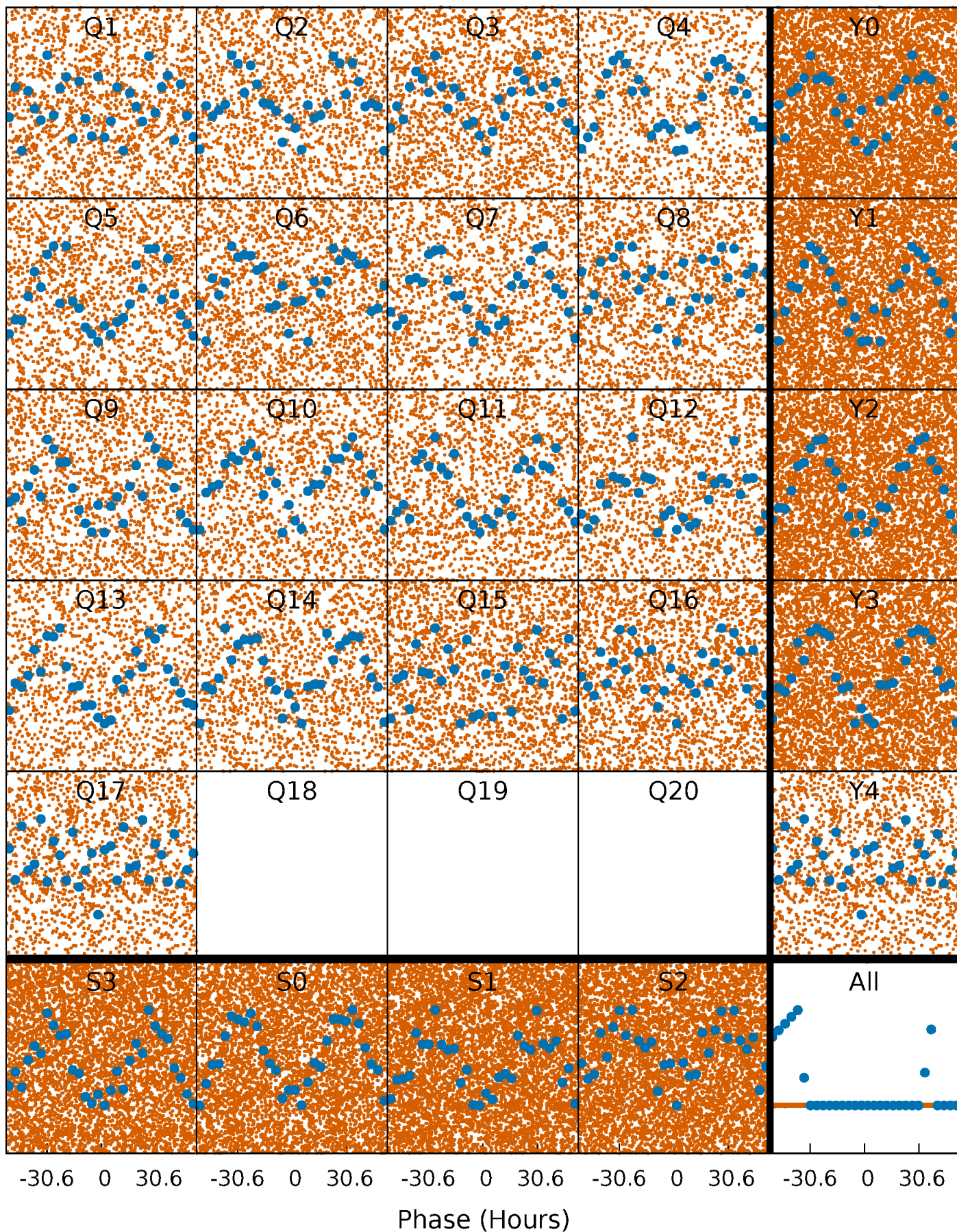


Non-Whitened Vs. Whitened Light Curve



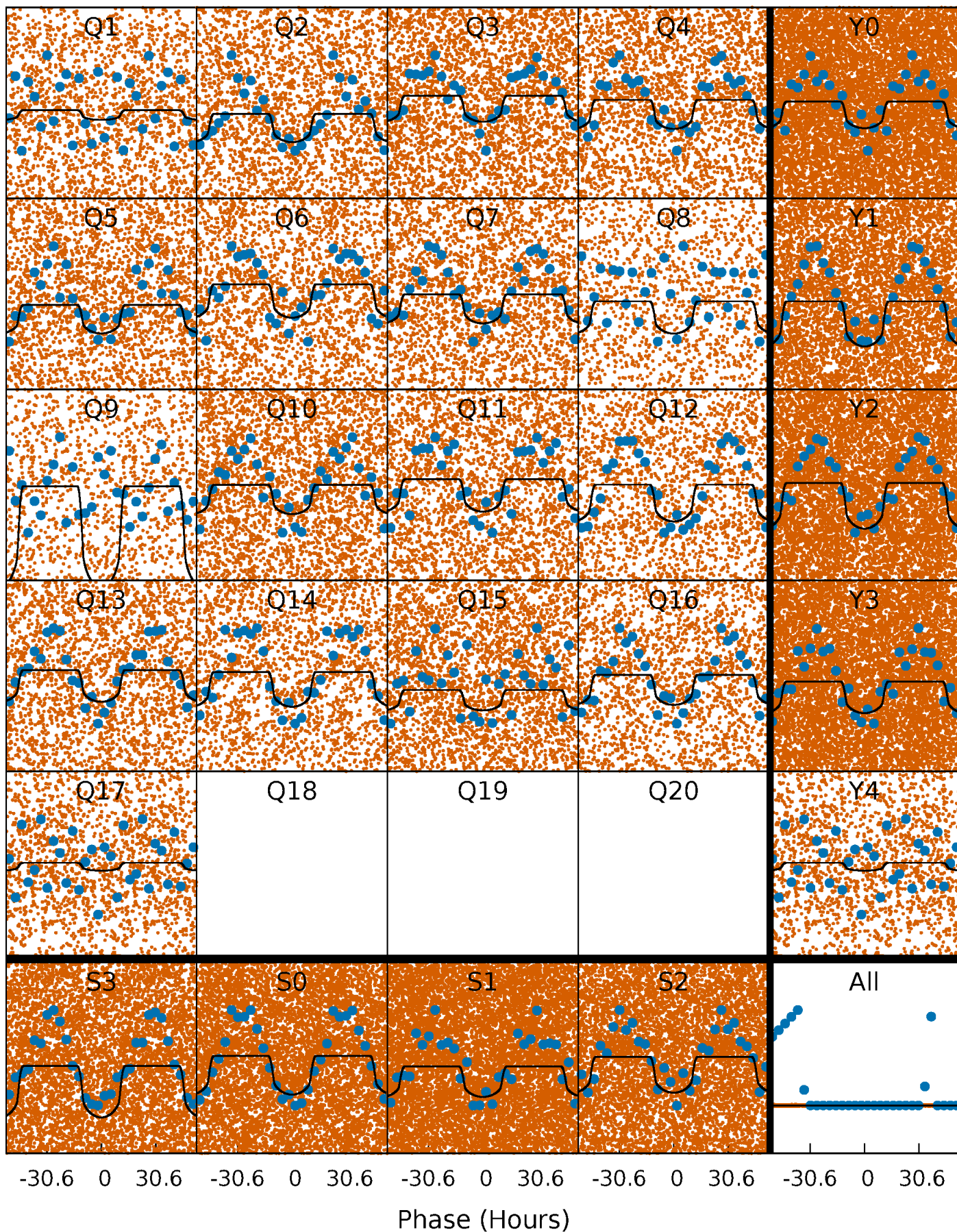
PDC Quarter-Phased Transit Curves

TCE 009776816-01 P= 2.387148 Days $T_0=132.991378$ (BKJD)



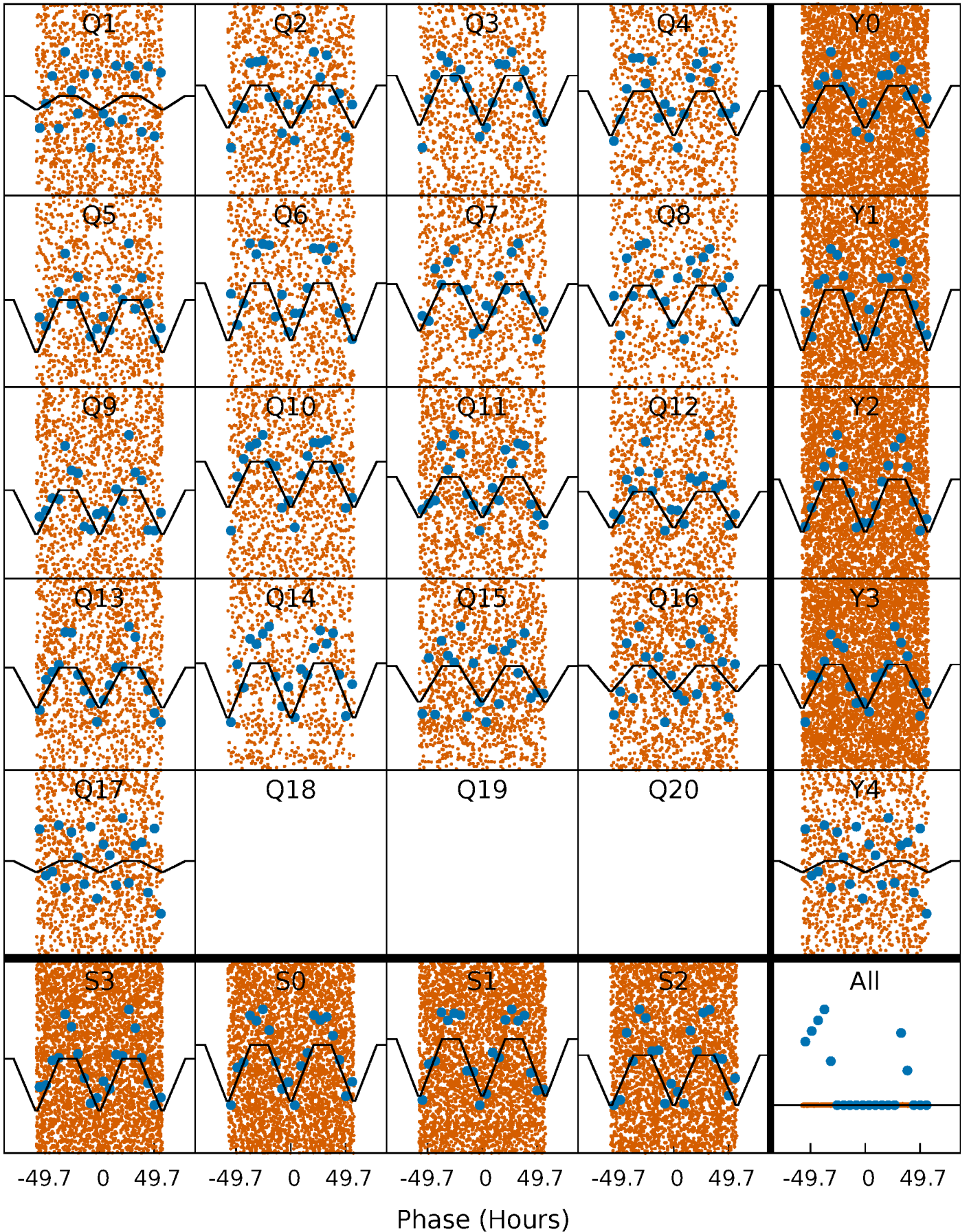
DV Quarter-Phased Transit Curves

TCE 009776816-01 P= 2.387148 Days $T_0=132.991378$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

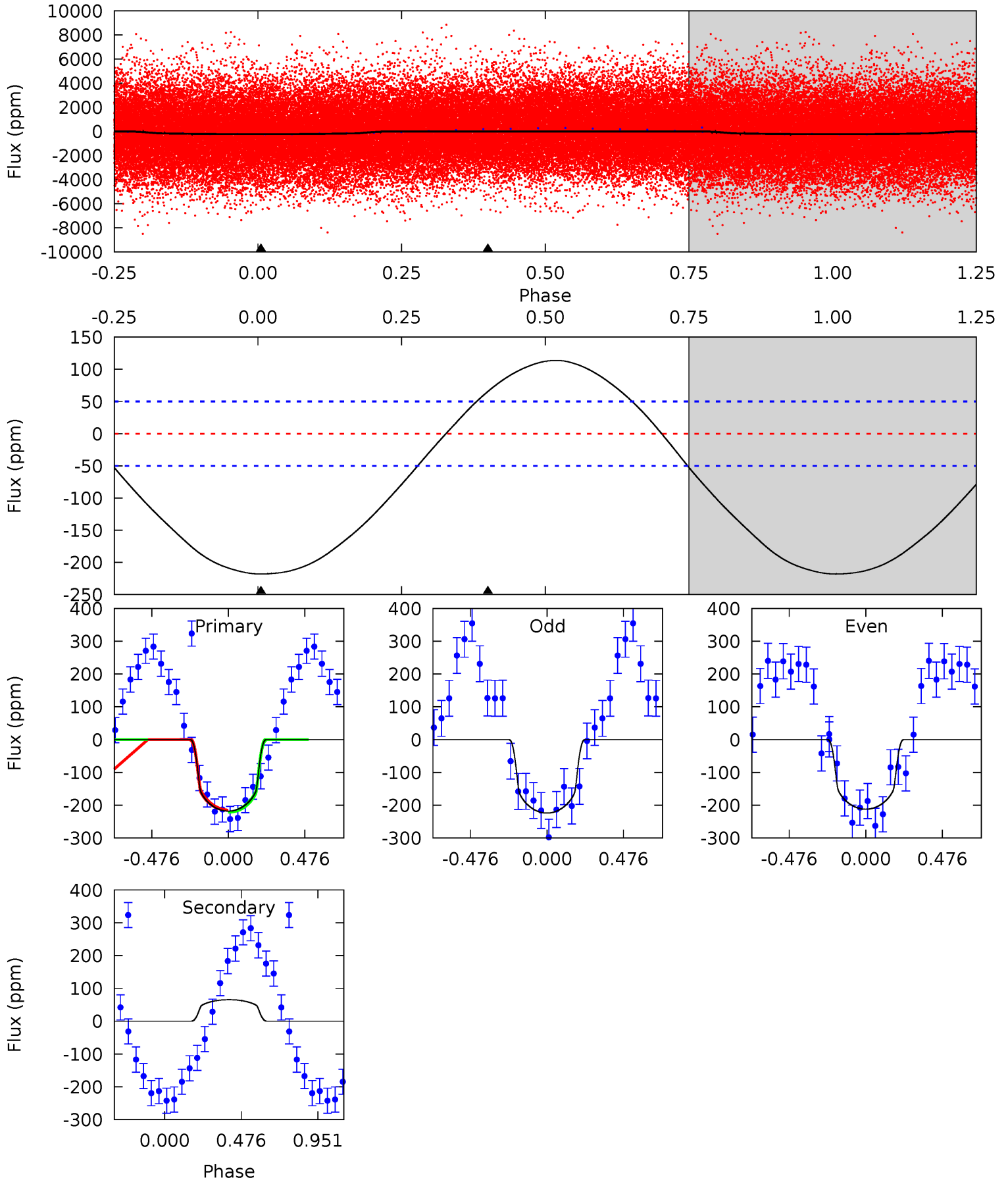
TCE 009776816-01 P= 2.387107 Days $T_0=133.065285$ (BKJD)



DV Model-Shift Uniqueness Test

009776816-01, P = 2.387148 Days, E = 130.604230 Days

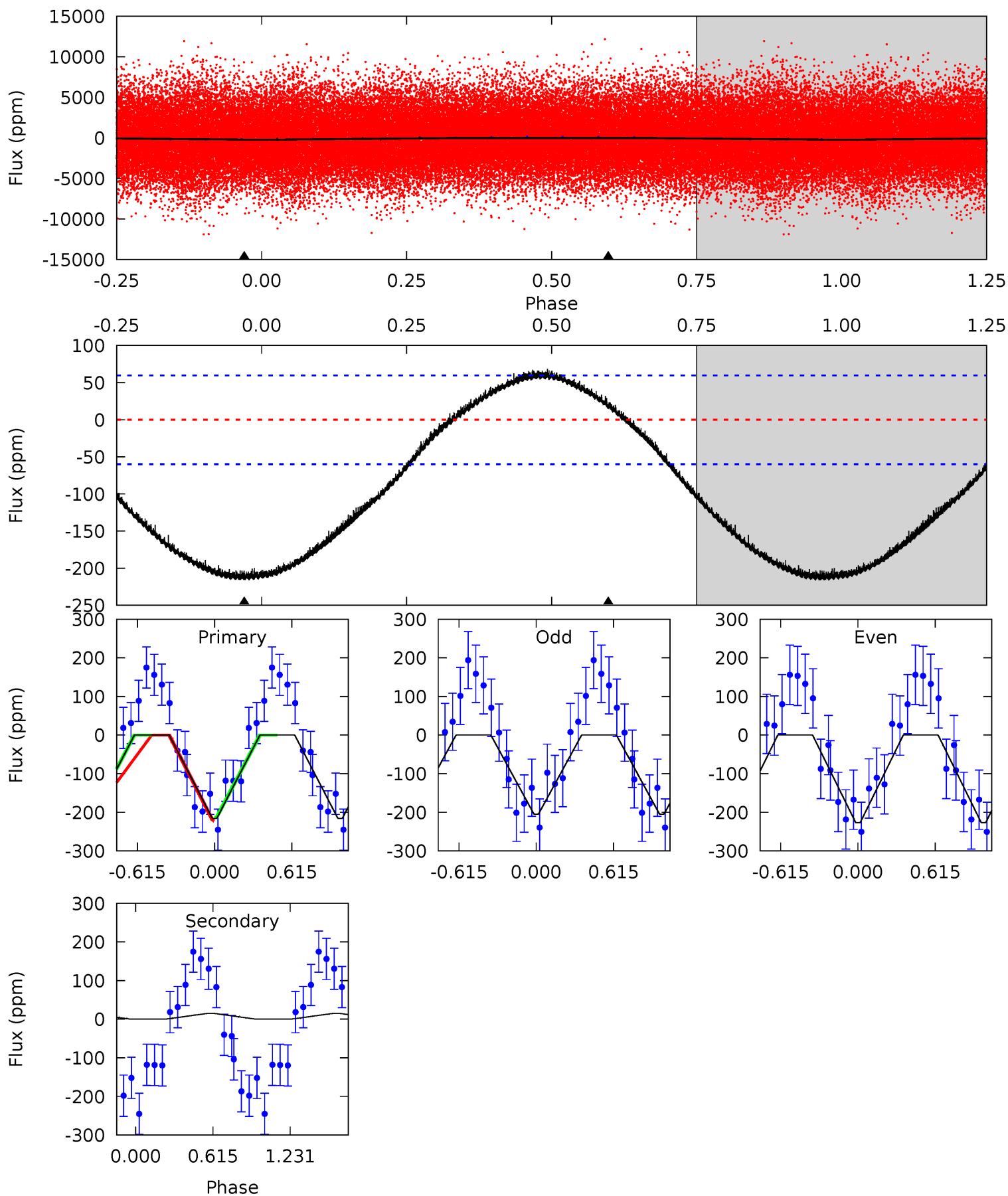
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	-5.55	0	0	4.23	0.71	2.60	18.5	18.5	-5.55	-5.55	0.50	1.29	0.34	0.25



Alt Model-Shift Uniqueness Test

009776816-01, P = 2.387107 Days, E = 130.678178 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	-1.07	0	0	4.17	0.50	1.32	15.0	15.0	-1.07	-1.07	0.77	1.03	0.24	0.24



Stellar Parameters For KIC 009776816

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6982^{+216}_{-312}	$4.173^{+0.180}_{-0.180}$	$-0.500^{+0.250}_{-0.300}$	$1.495^{+0.428}_{-0.351}$	$1.213^{+0.185}_{-0.185}$	$0.511^{+0.497}_{-0.255}$
	+3%/-4%	+4%/-4%	+50%/-60%	+29%/-23%	+15%/-15%	+97%/-50%
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 009776816-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	66 ± 12	$2.61^{+0.44}_{-0.34}$	2725^{+219}_{-192}	-5040^{+235}_{-273}	$-7.228^{+2.124}_{-2.804}$
Alt.	15 ± 14	$2.47^{+0.44}_{-0.33}$	2714^{+208}_{-201}	-3945^{+974}_{-477}	$-1.779^{+1.749}_{-1.871}$

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

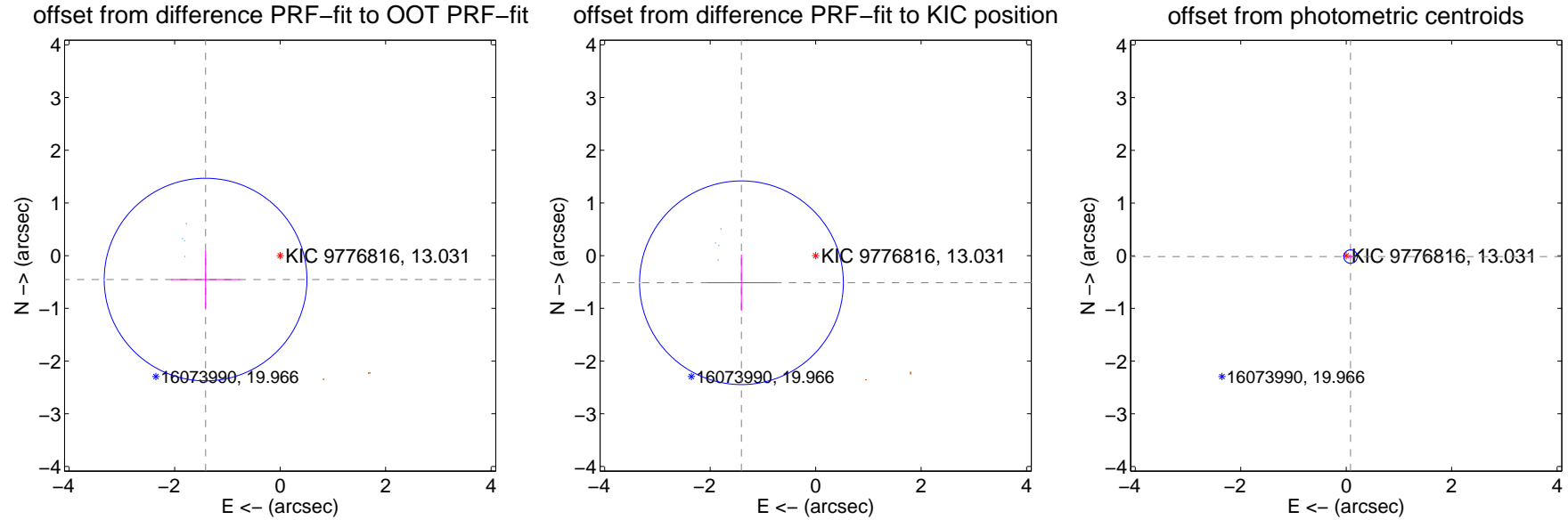
DV Centroid Data

Supplemental centroid analysis for 009776816-01. Kepler magnitude: 13.03. Transit SNR 19.47

There are 4 quarters with good PRF difference image offsets

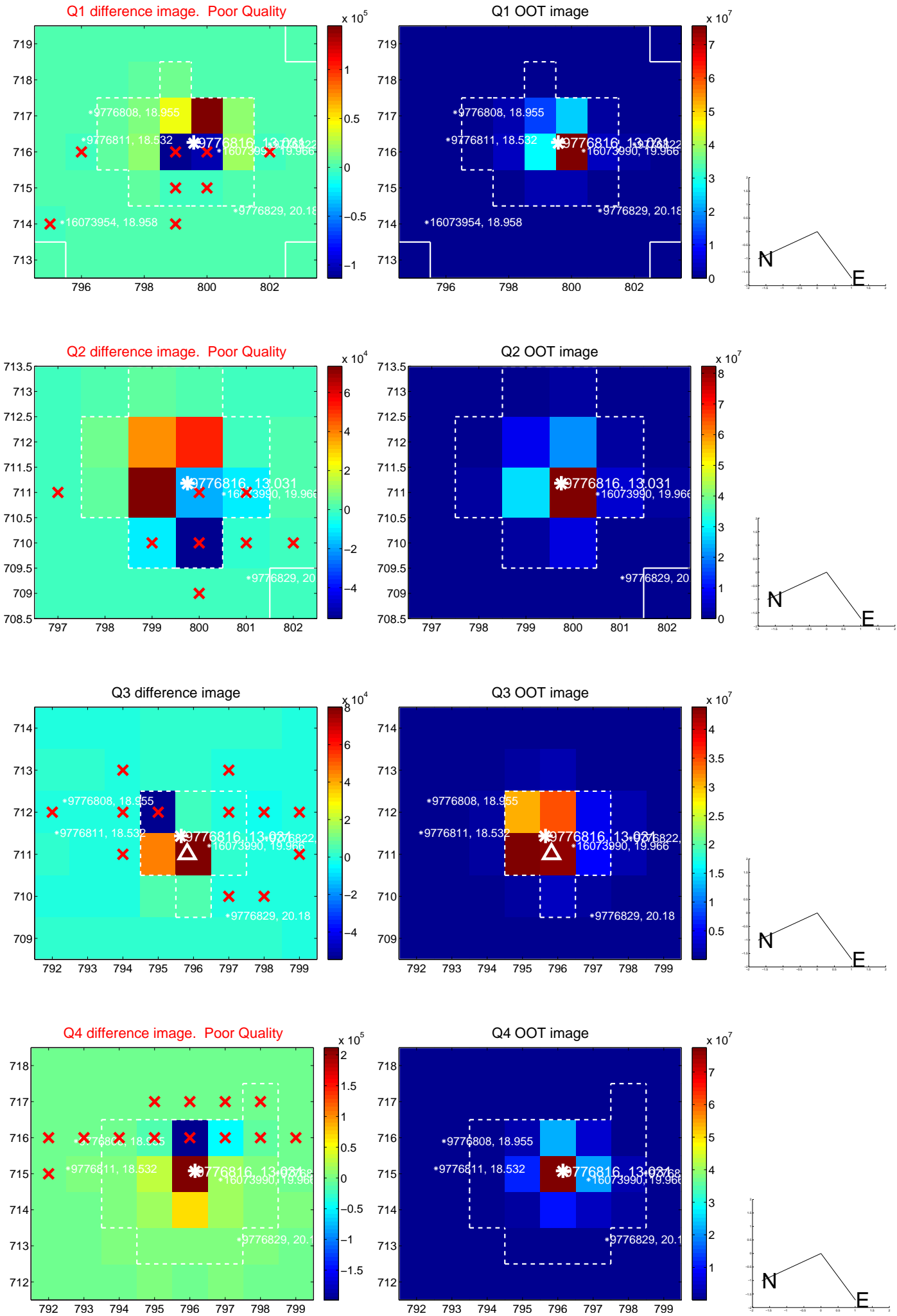
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.485 ± 0.641	2.32	1.414 ± 0.650	-0.454 ± 0.549
PRF-fit source offset from KIC position	1.498 ± 0.644	2.33	1.407 ± 0.658	-0.514 ± 0.532
photometric centroid source offset	0.08 ± 0.04	1.97	-0.08 ± 0.04	-0.02 ± 0.04

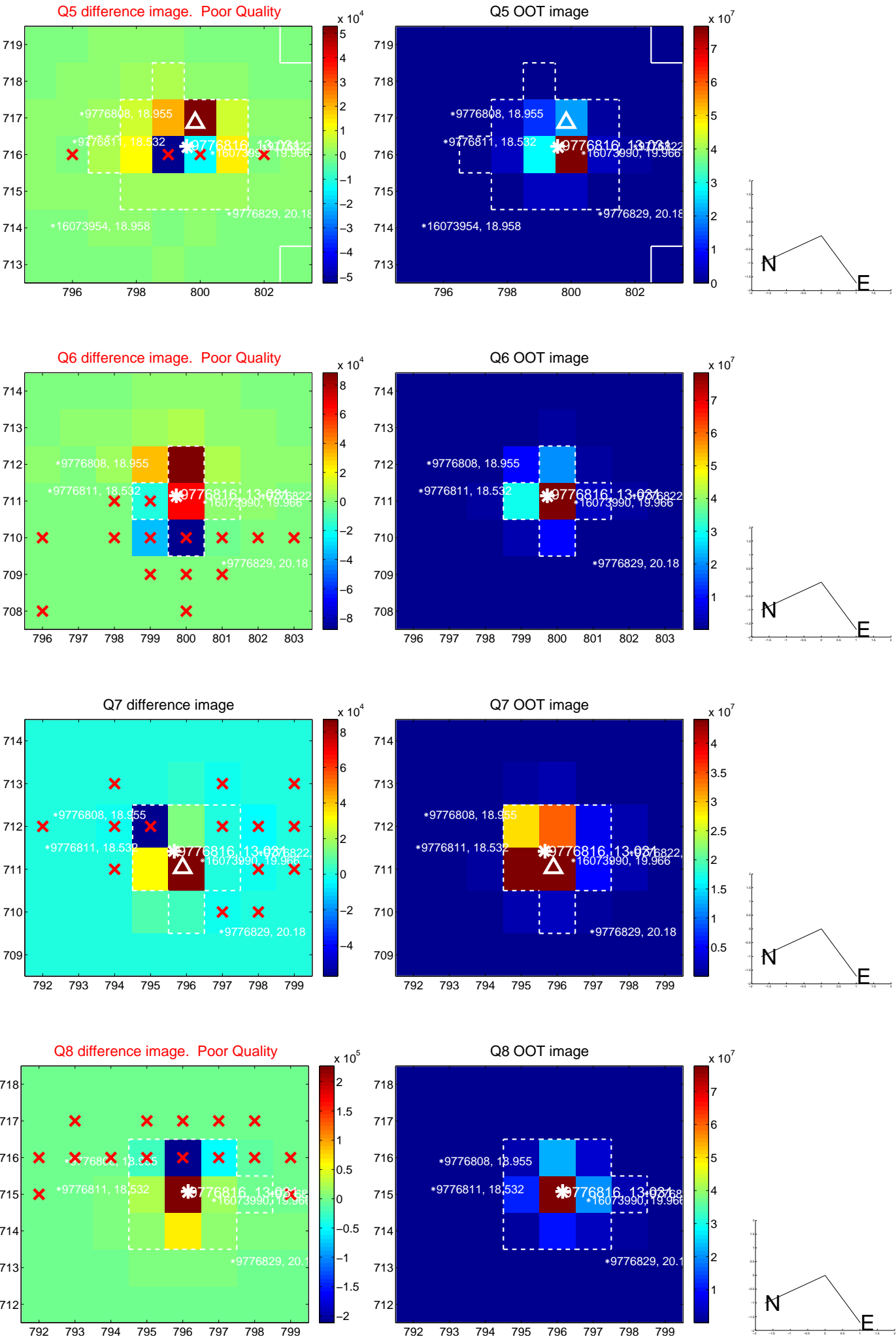


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

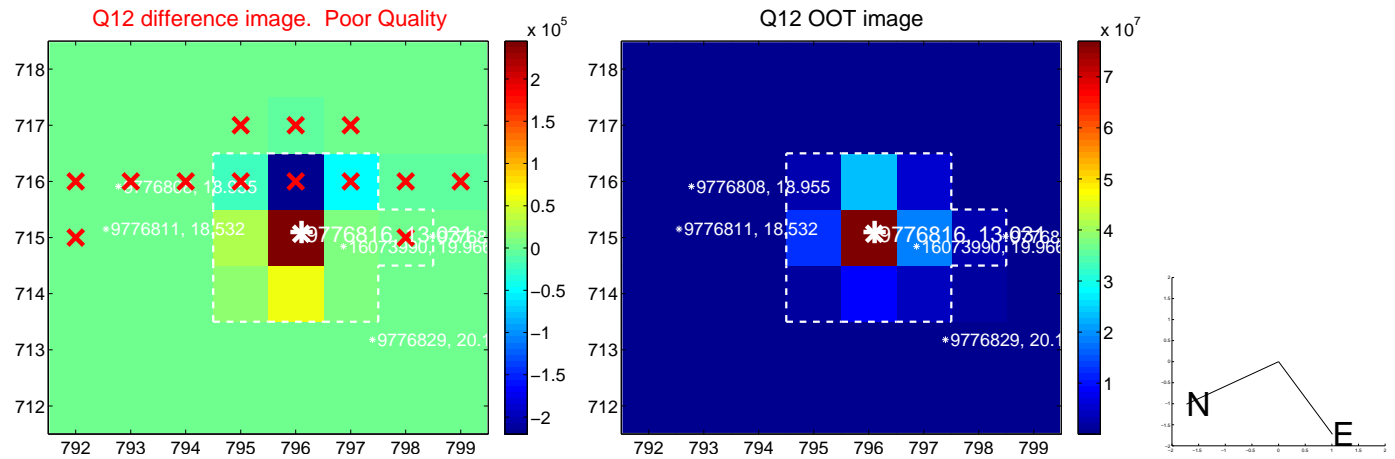
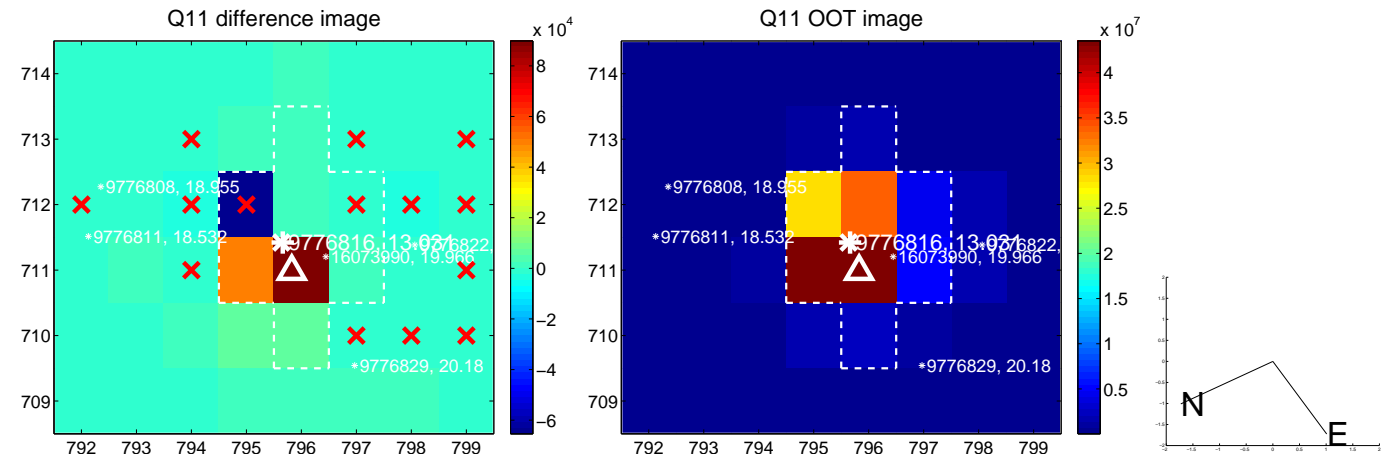
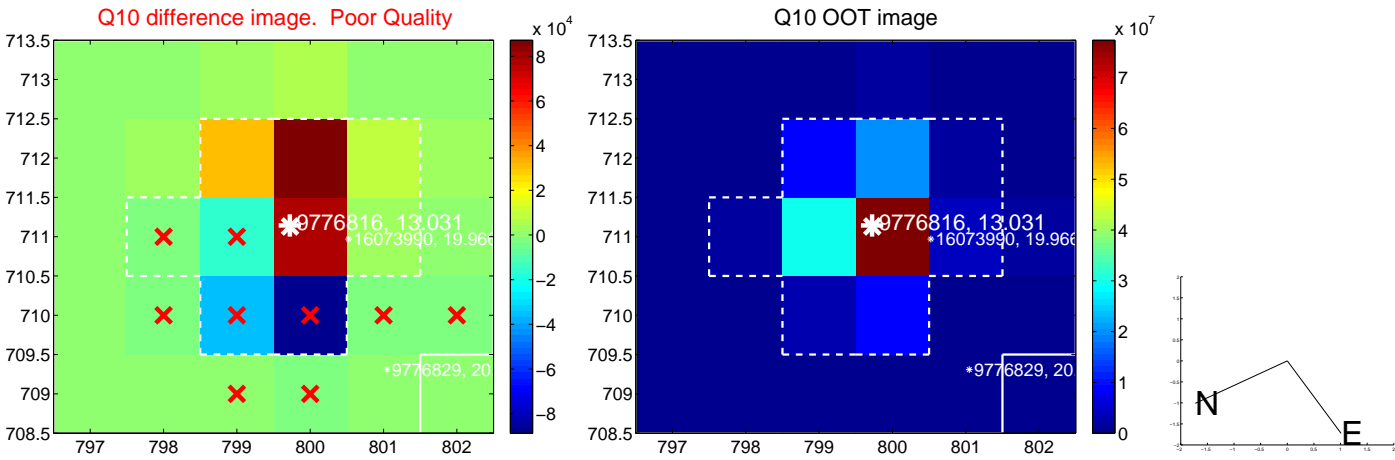
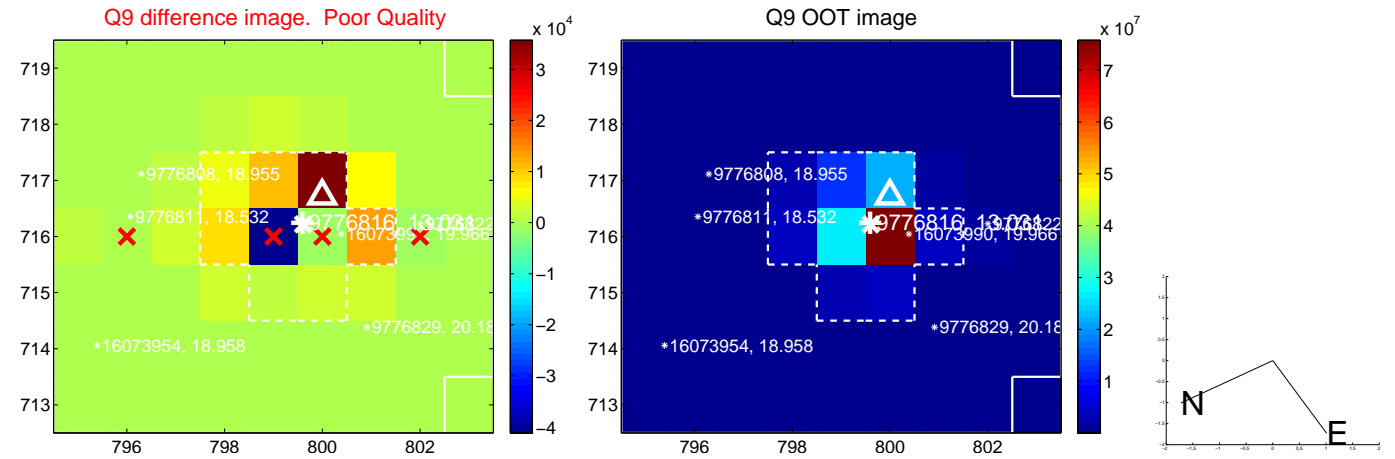
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



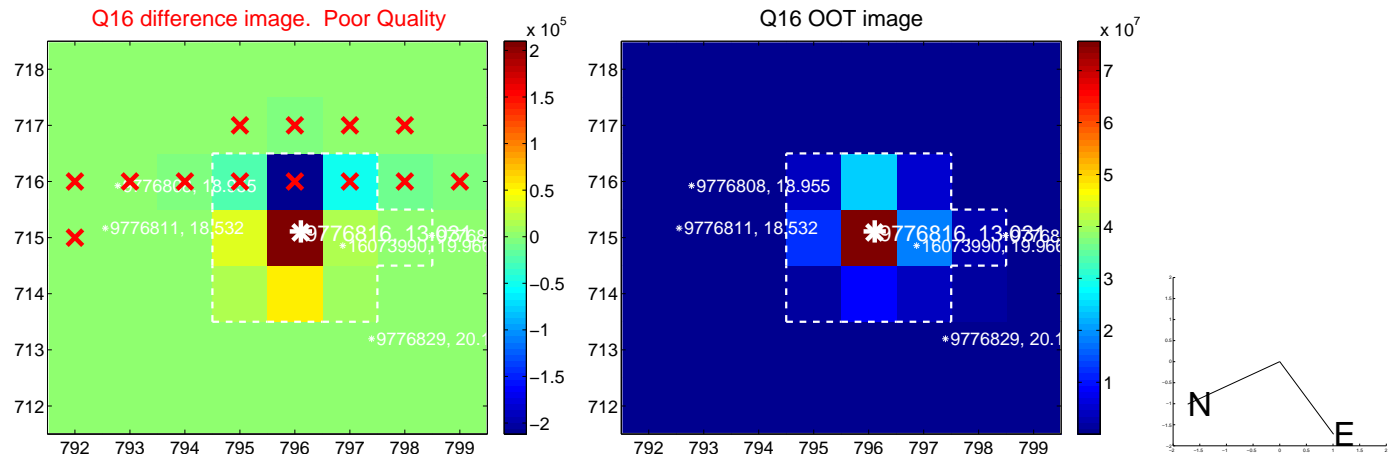
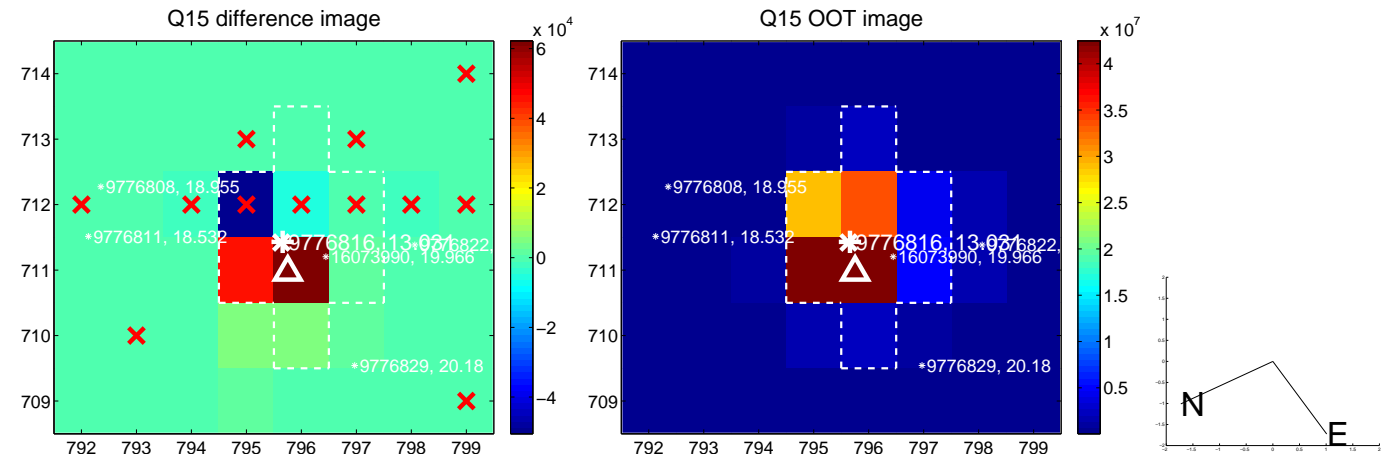
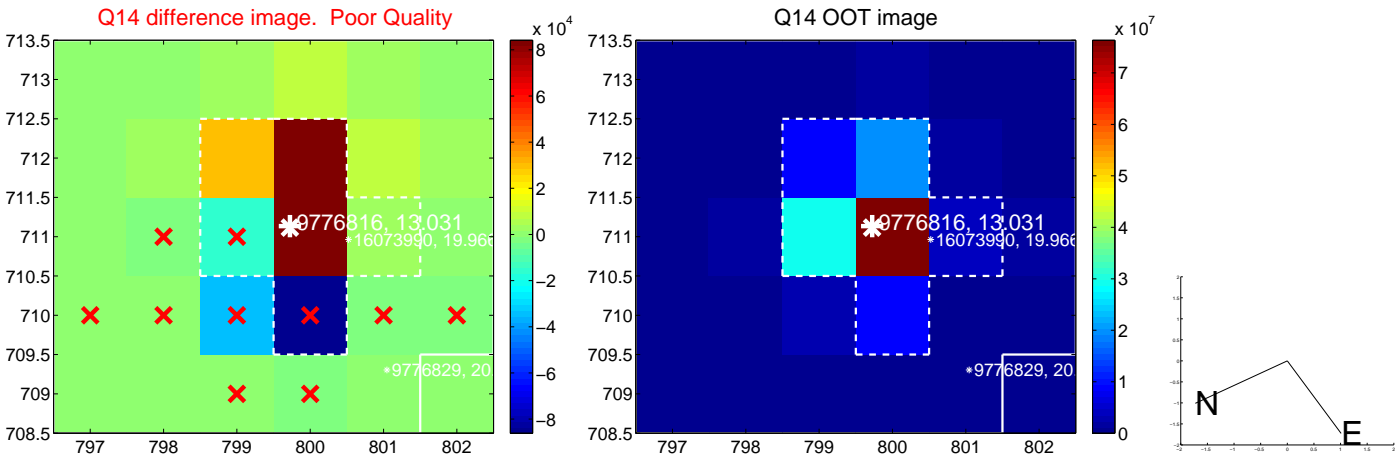
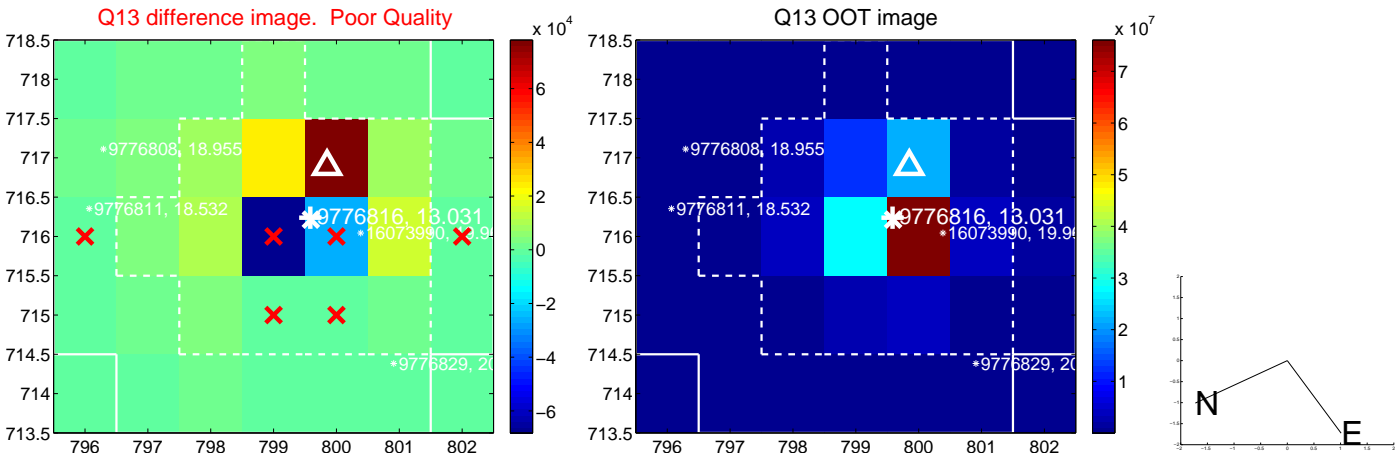
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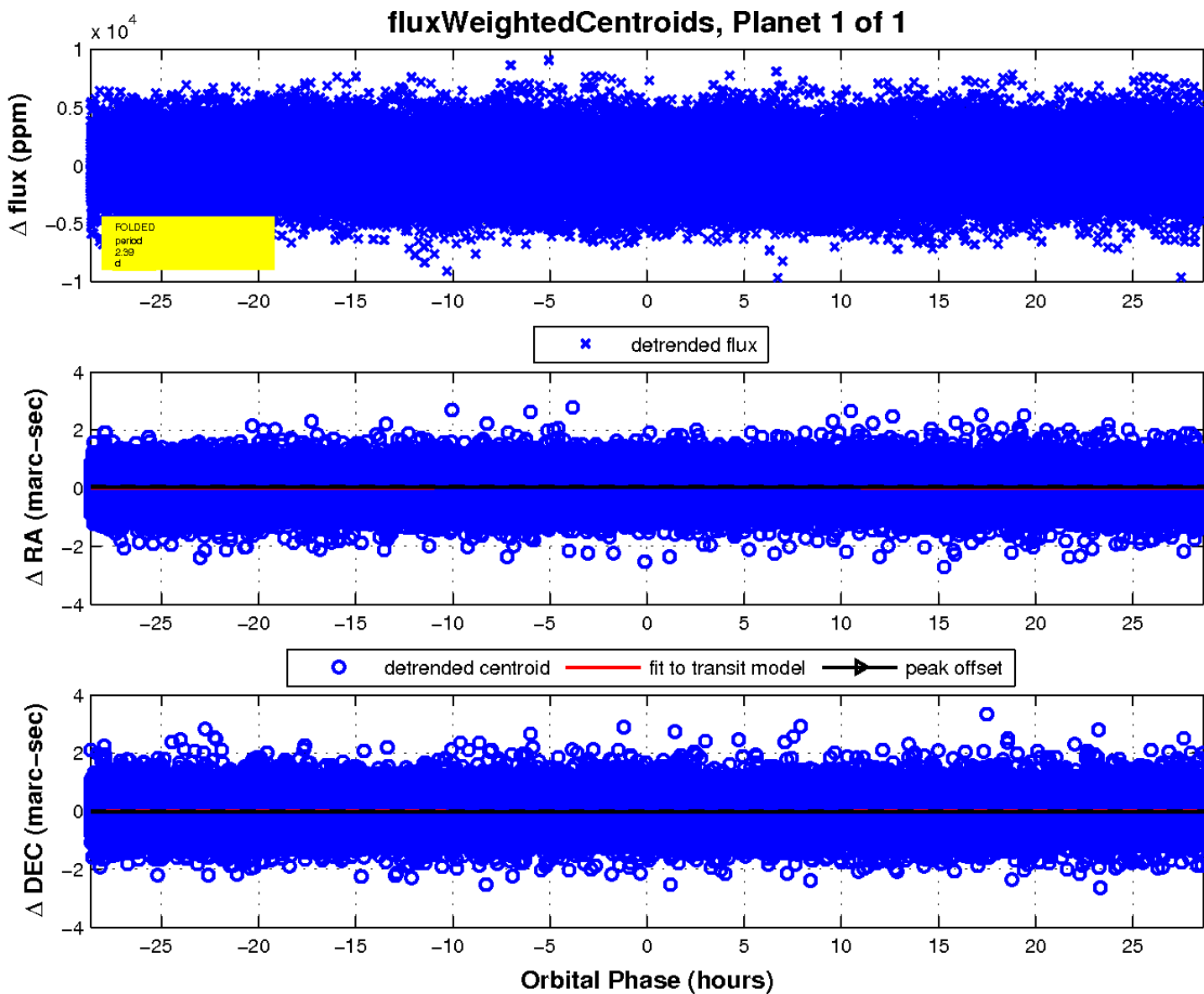
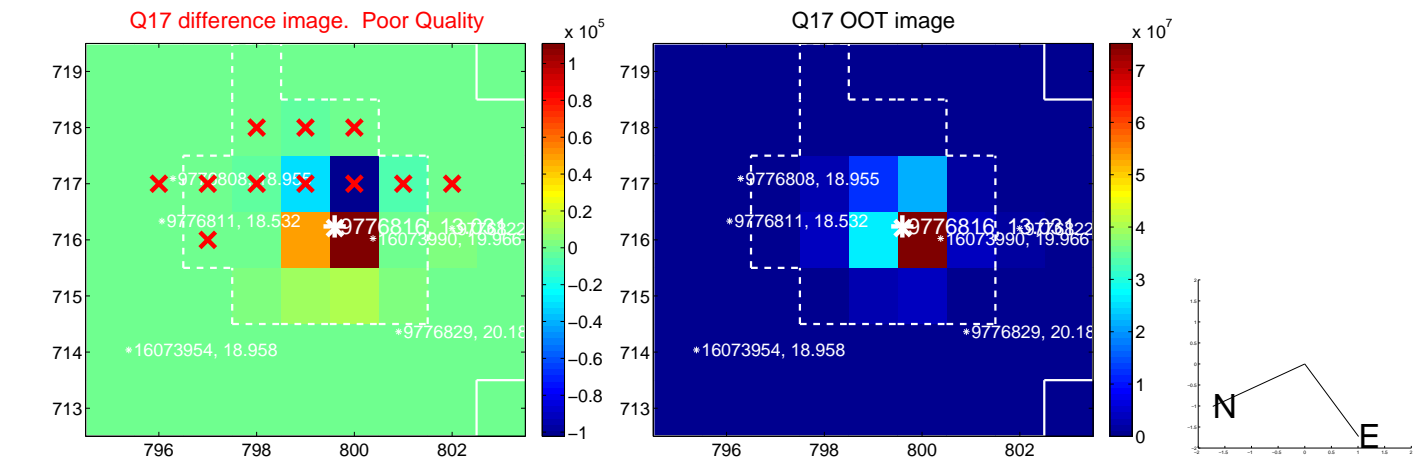
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UKIRT Image

Declination

