

KIC 009048160

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})
009048160-01	OBS	No	4.077103	133.877859	22.9	25.590	7.7	6.4	0.99	5177	0.46	276.58

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009048160-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

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

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

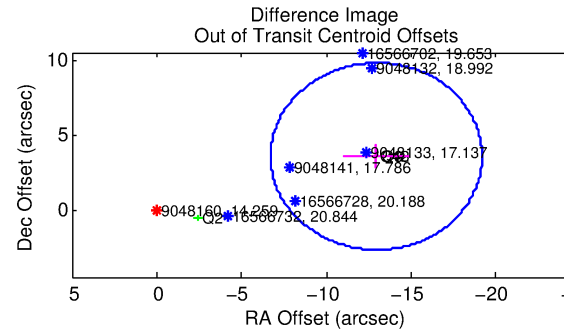
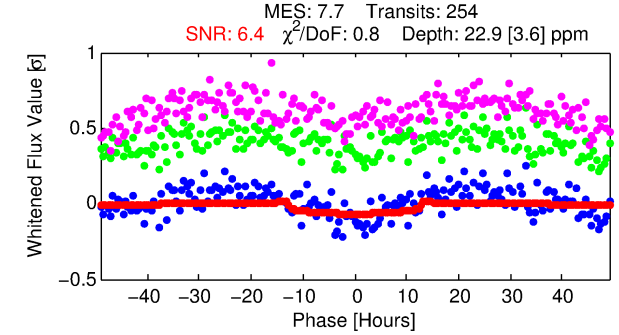
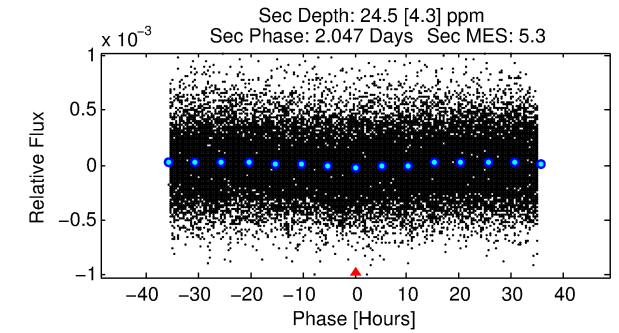
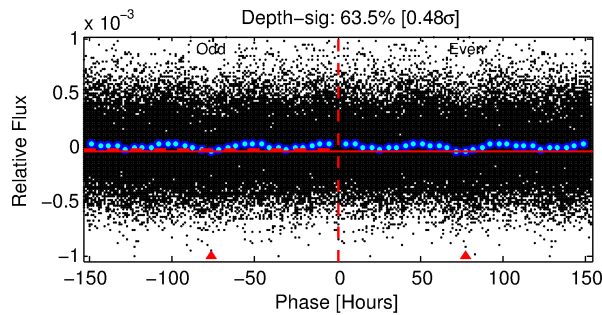
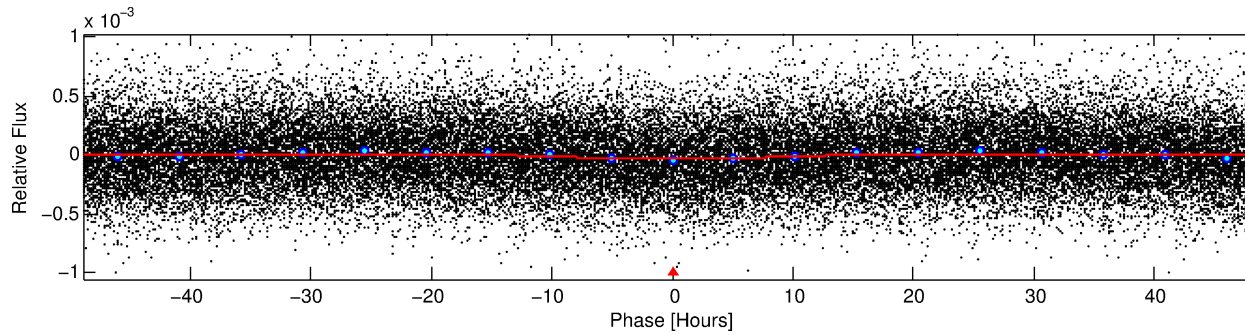
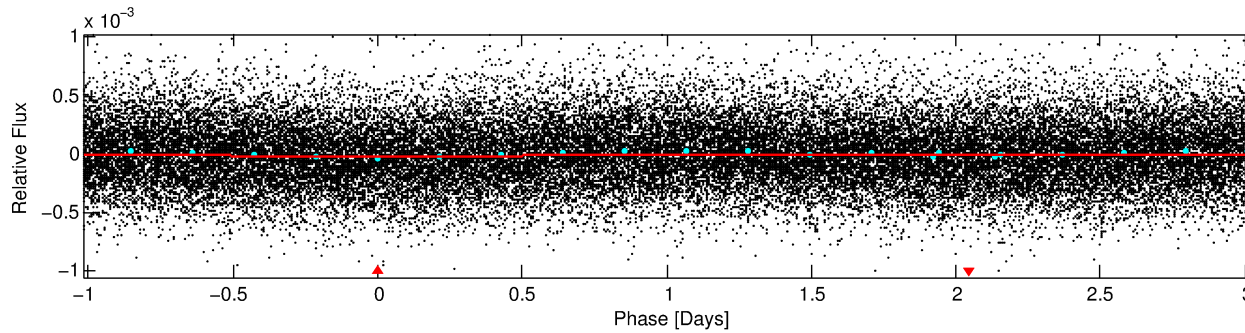
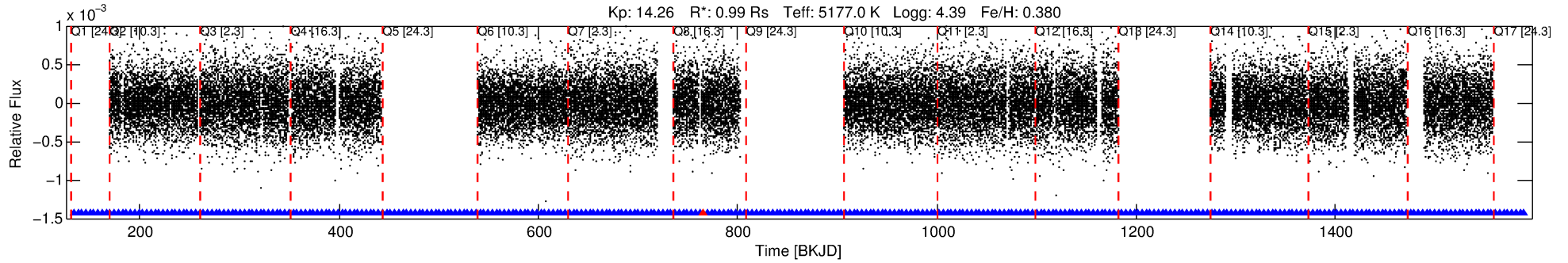
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009048160-01

No Significant Match Found

DV One-Page Summary

KIC: 9048160 Candidate: 1 of 1 Period: 4.077 d



DV Fit Results:

Period = 4.07710 [0.00020] d
Epoch = 133.8779 [0.0347] BKJD
Rp/R* = 0.0042 [0.0054]
a/R* = 1.37 [2.81]
b = 0.00 [1002.71]
Seff = 276.58 [132.75]
Teq = 1040 [125] K
Rp = 0.46 [0.60] Re
a = 0.0478 [0.0144] AU
Ag = 146.19 [377.50] [0.38 σ]
Teffp = 5591 [3555] K [1.28 σ]

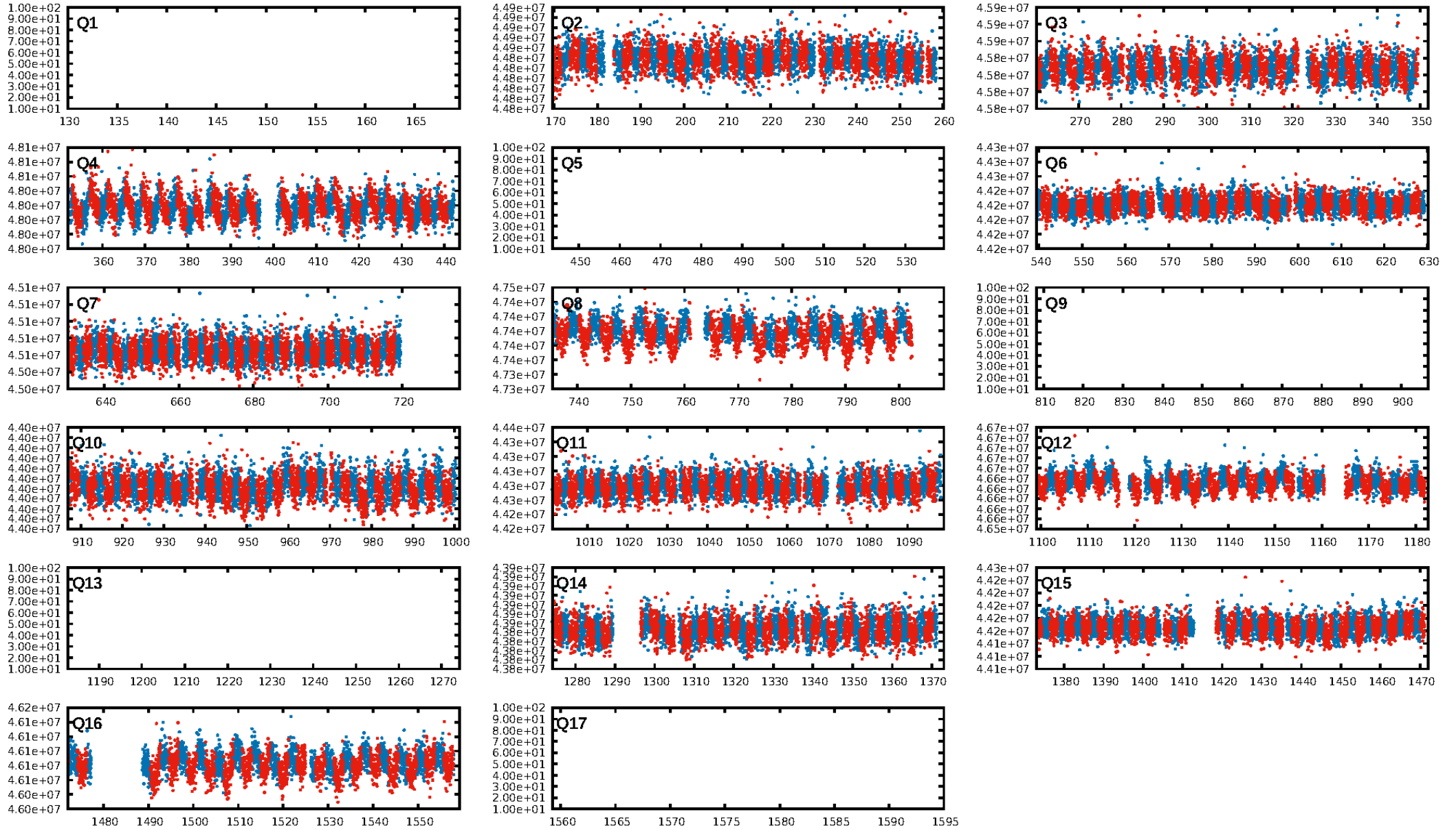
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [253/254]
GhostDiagnostic-chr: -0.5664
Centroid-sig: 0.0%
Centroid-so: 19.364 arcsec [4.14 σ]
OotOffset-rm: 13.434 arcsec [6.46 σ]
KicOffset-rm: 13.464 arcsec [7.25 σ]
OotOffset-st: 1/0/4/0 [5]
KicOffset-st: 1/0/4/0 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [12/12]

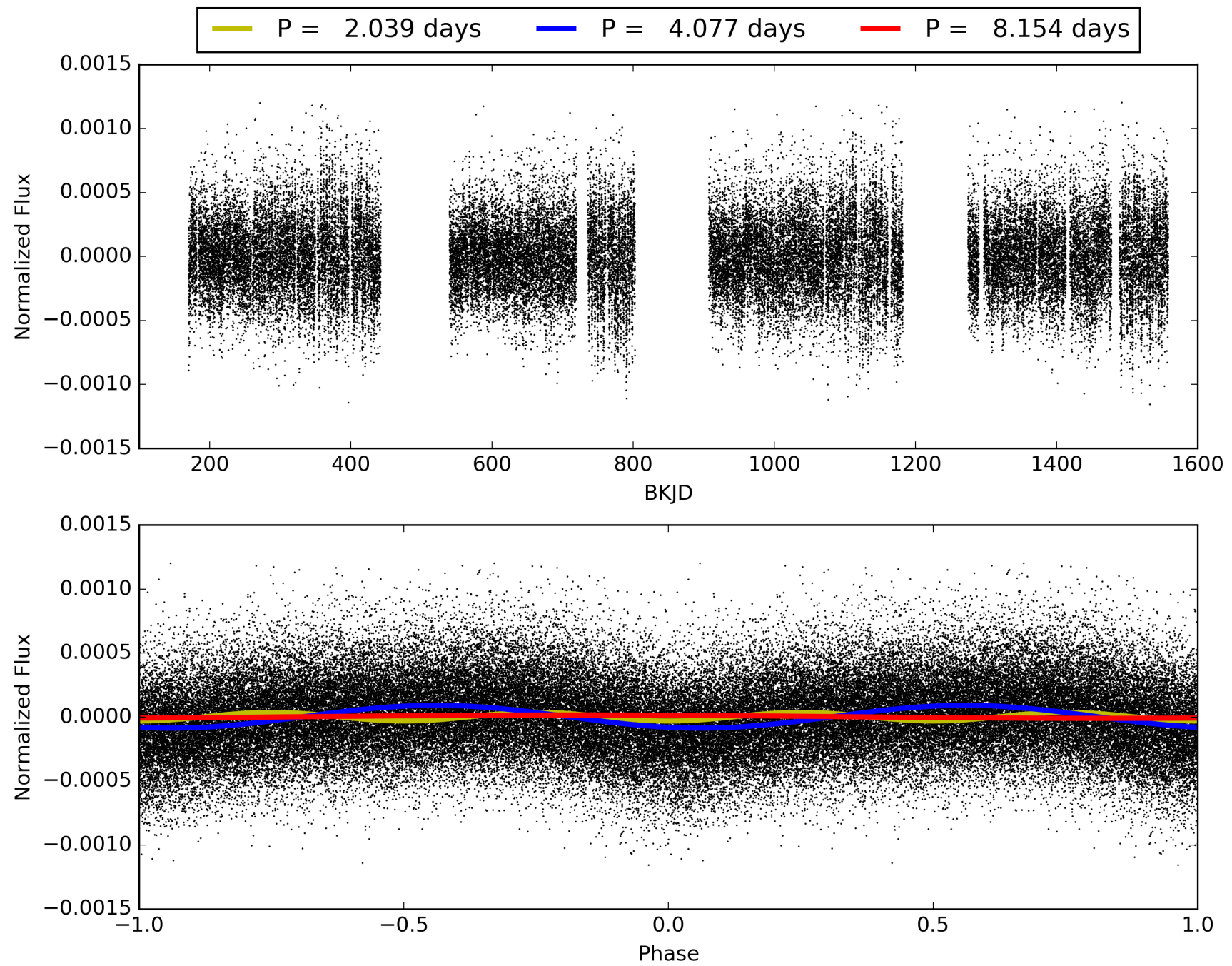
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:02:02 Z

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

TCE 009048160-01, PDC Light Curves

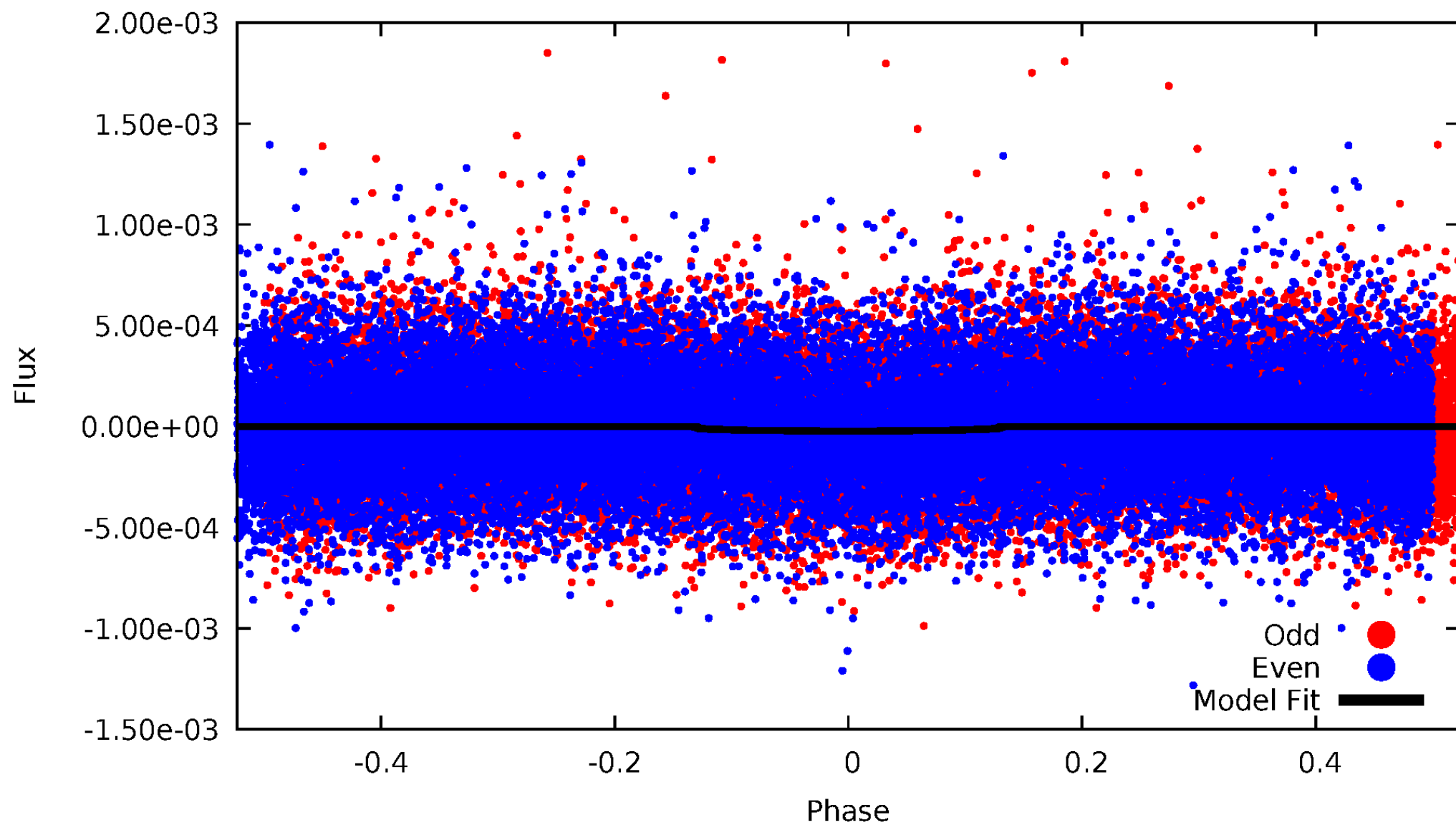


TCE 009048160-01



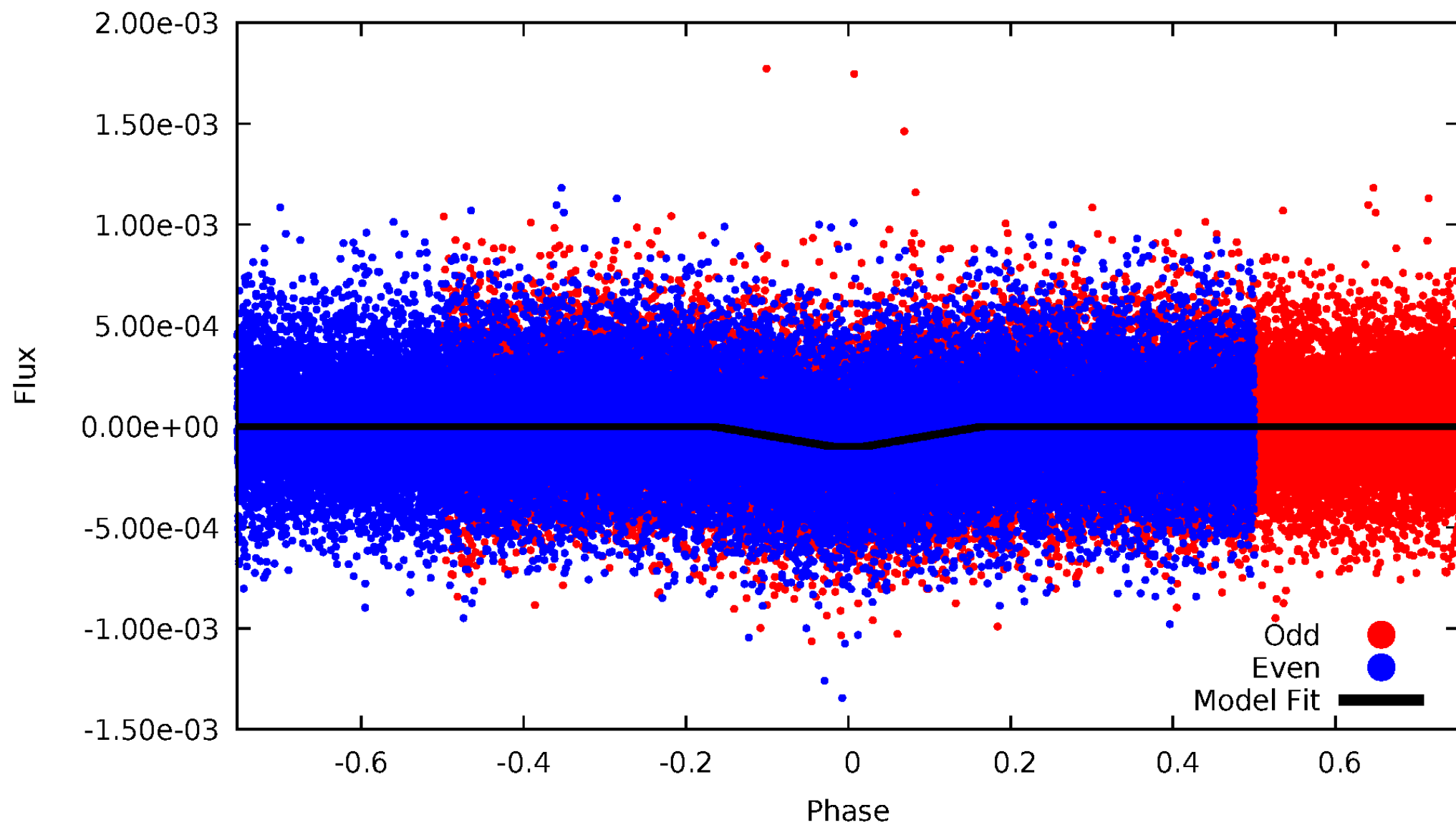
DV Odd/Even

TCE 009048160-01

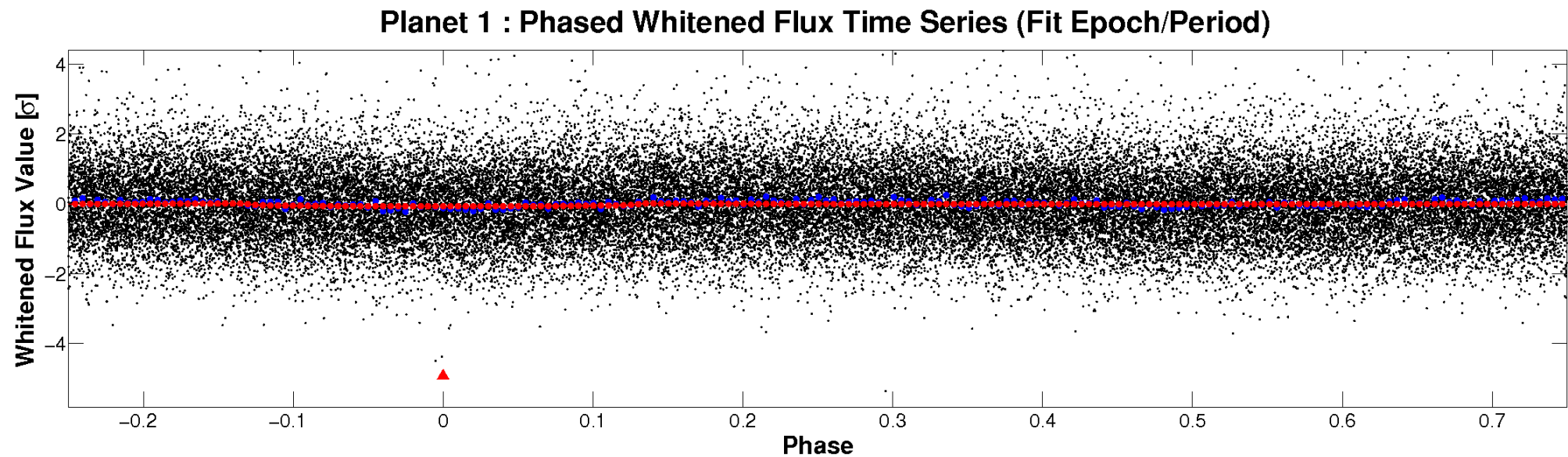
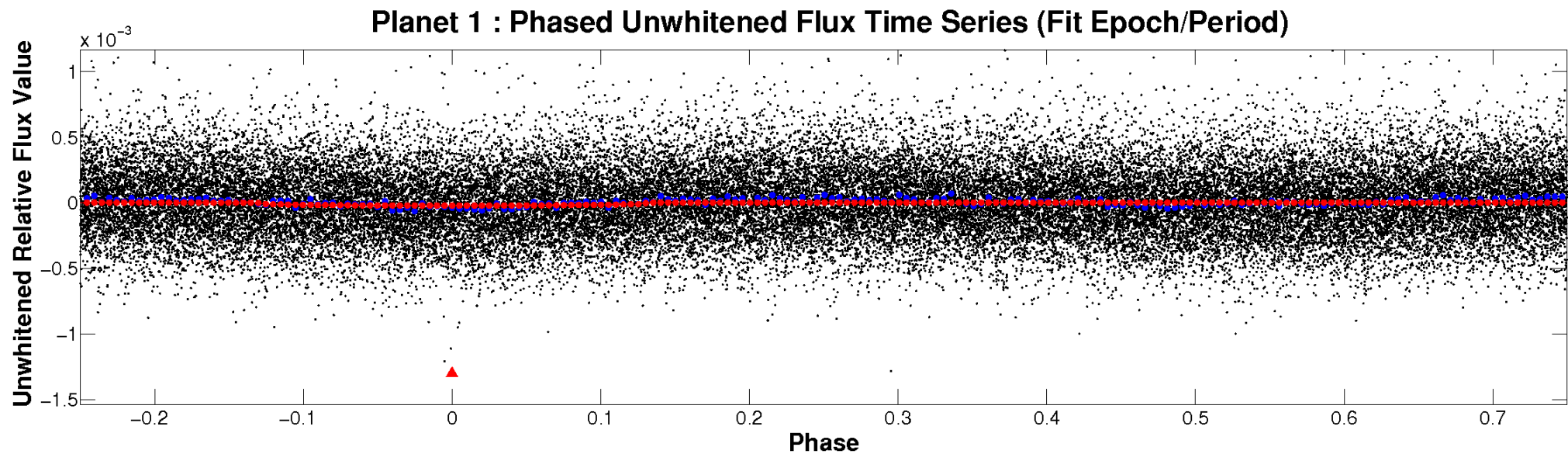


ALT Odd/Even

TCE 009048160-01

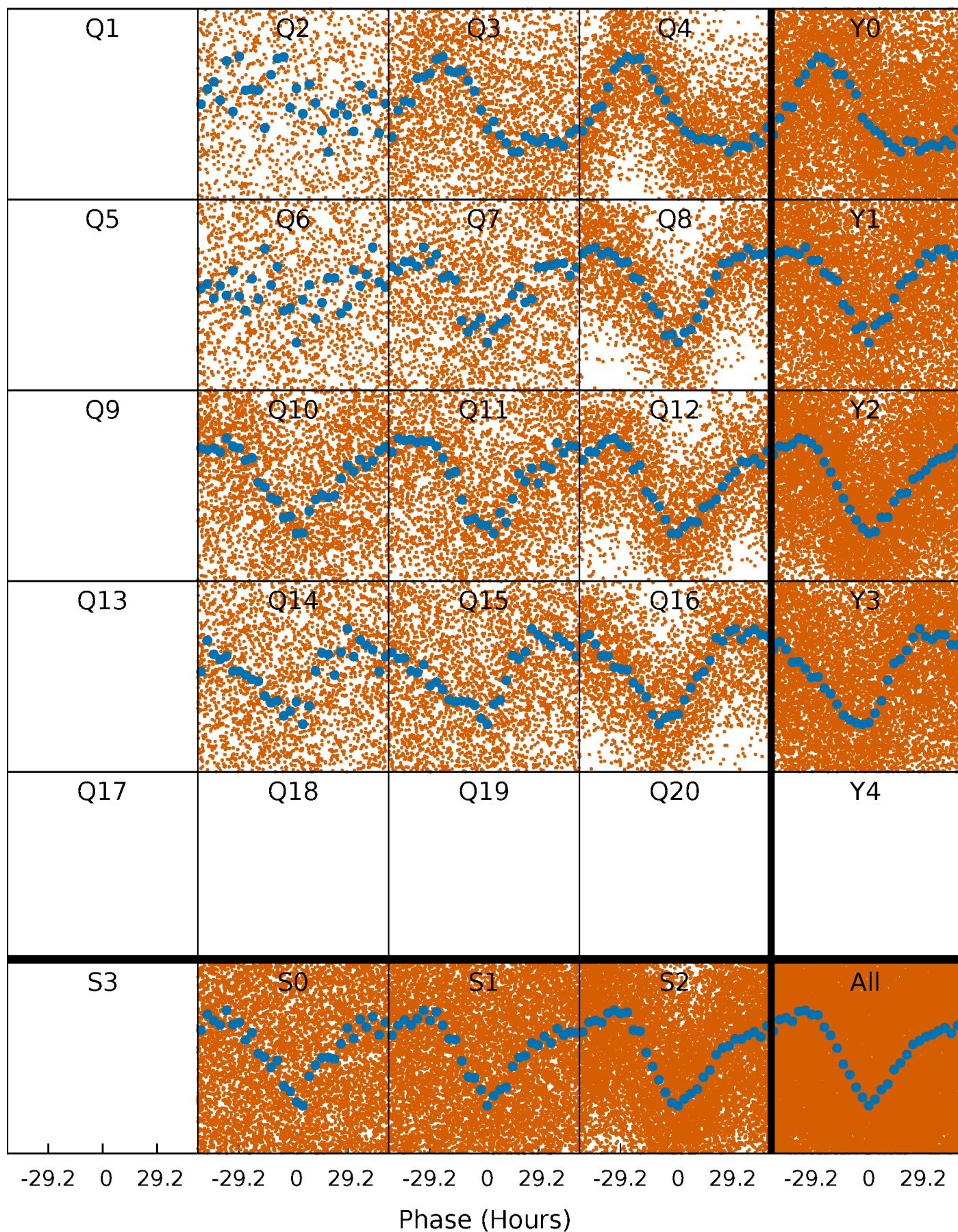


Non-Whitened Vs. Whitened Light Curve



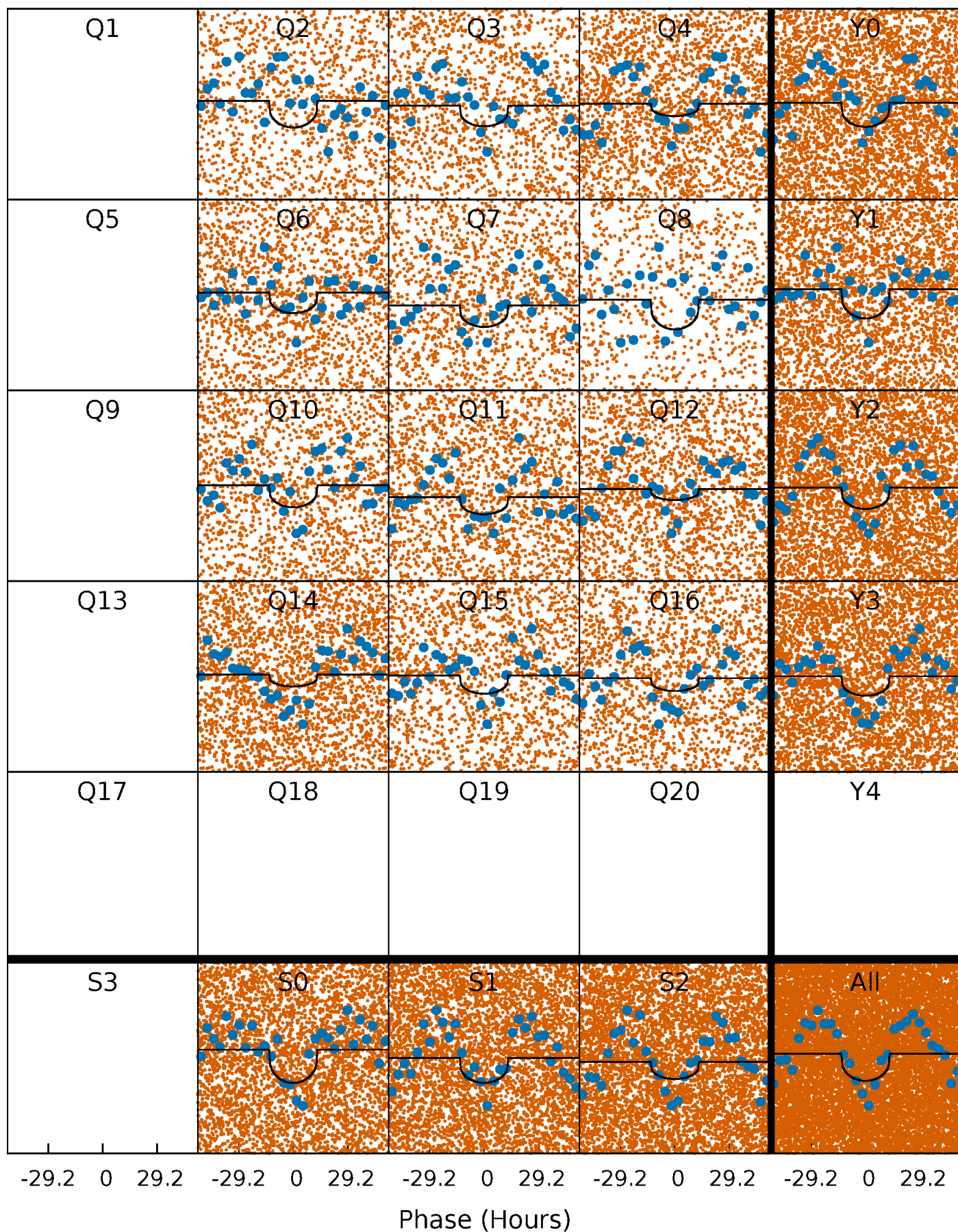
PDC Quarter-Phased Transit Curves

TCE 009048160-01 P= 4.077103 Days $T_0=133.877859$ (BKJD)



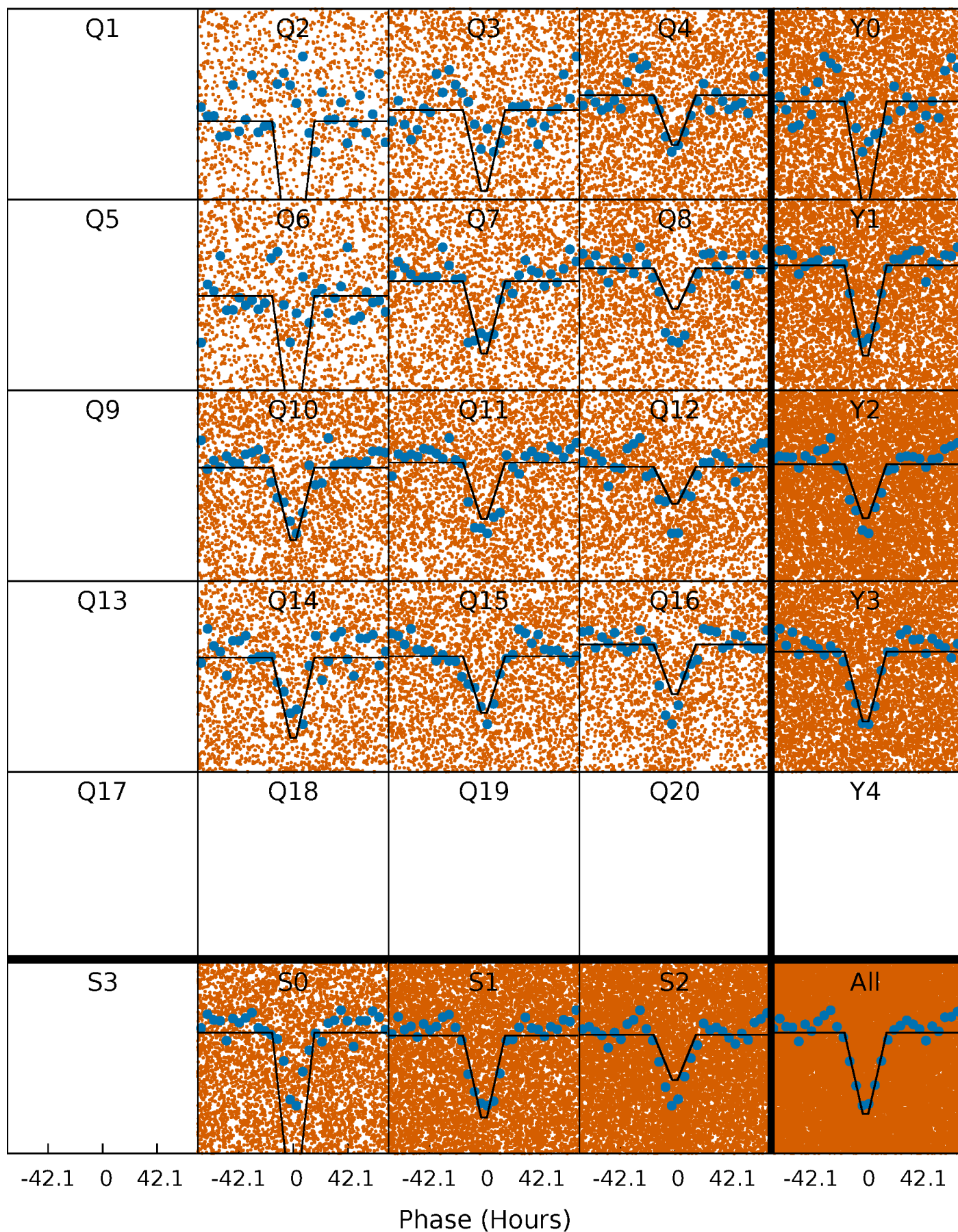
DV Quarter-Phased Transit Curves

TCE 009048160-01 P= 4.077103 Days $T_0=133.877859$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

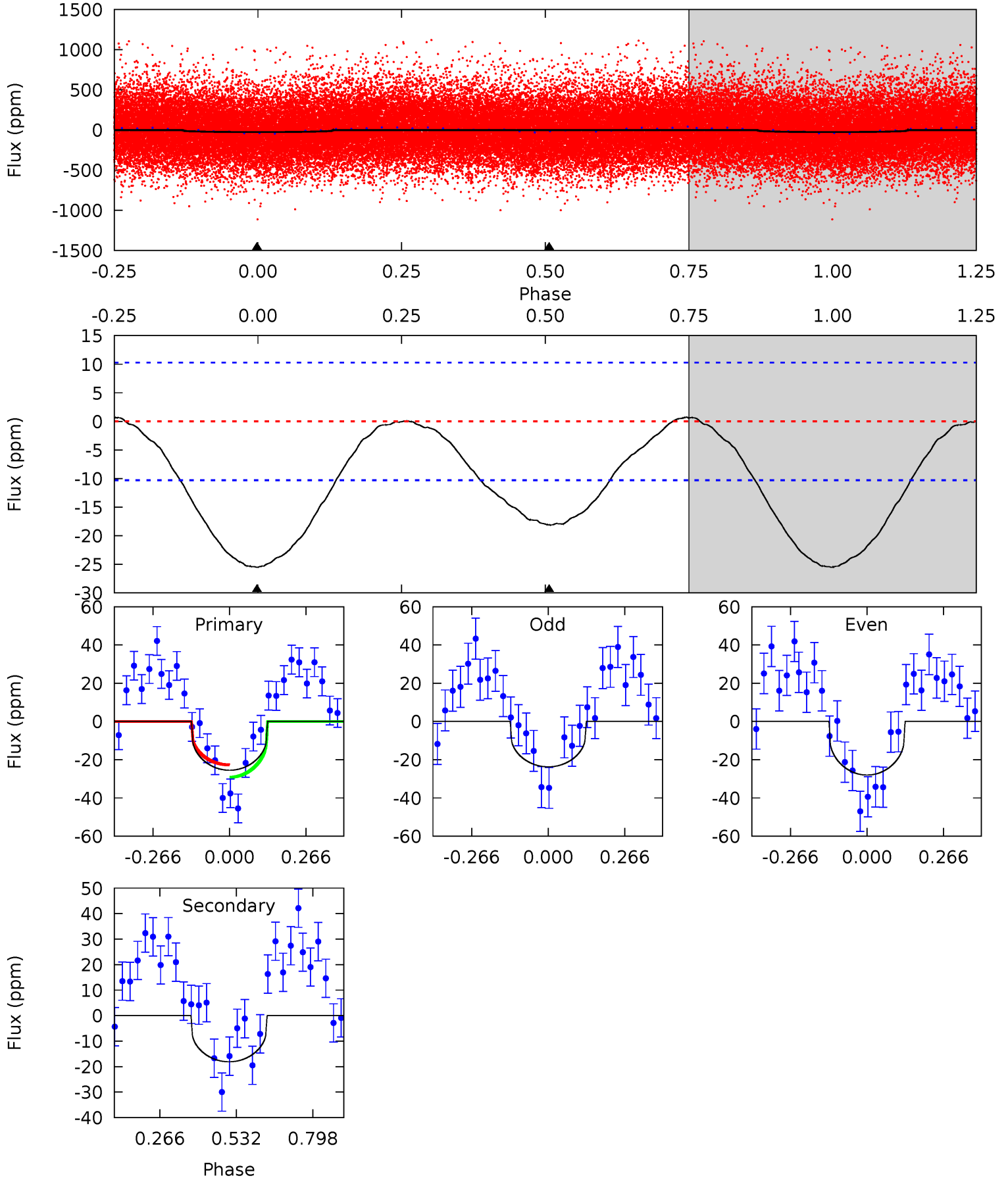
TCE 009048160-01 P= 4.076562 Days $T_0=134.019001$ (BKJD)



DV Model-Shift Uniqueness Test

009048160-01, P = 4.077103 Days, E = 133.877859 Days

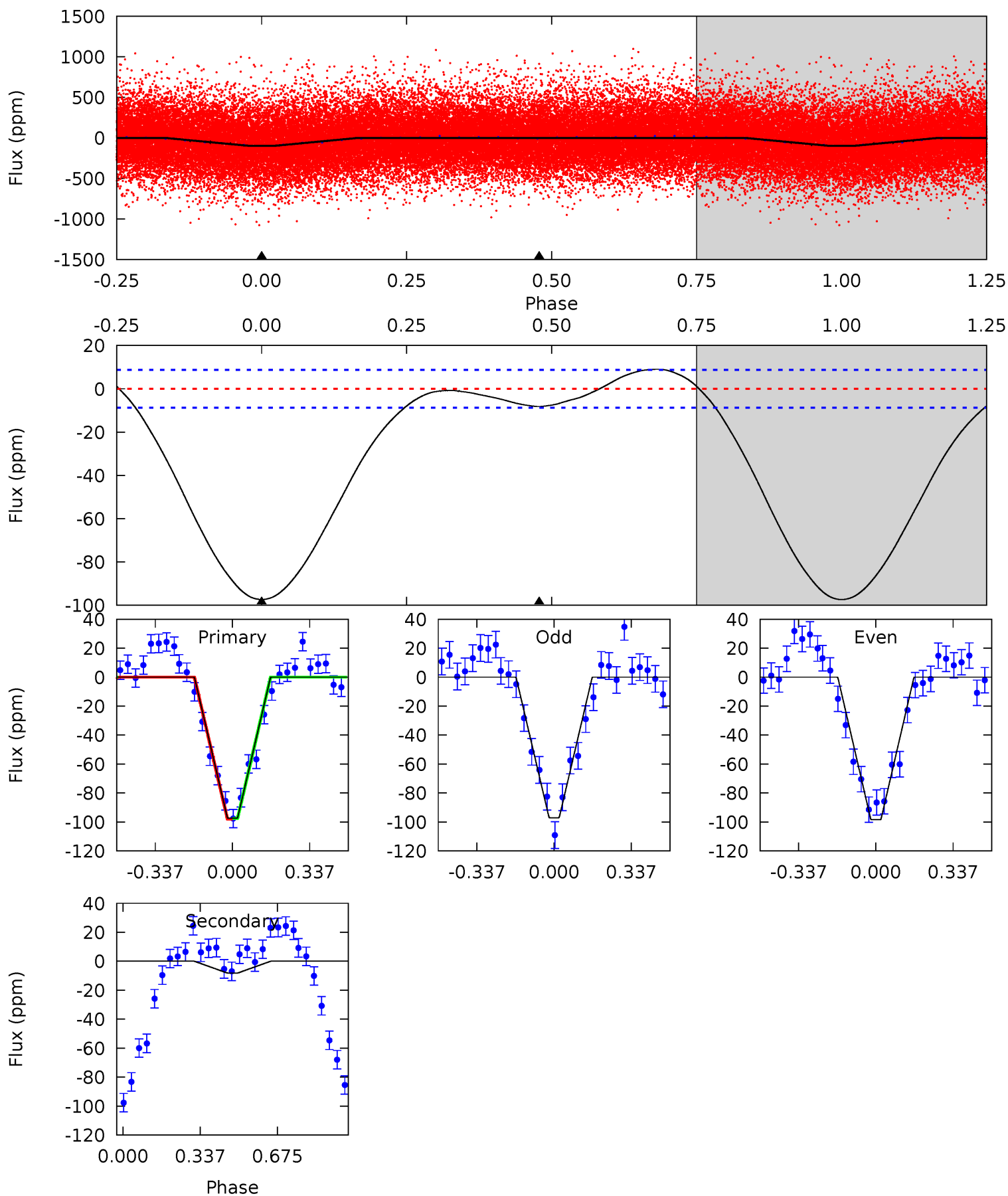
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	7.66	0	0	4.36	1.11	0.18	10.8	10.8	7.66	7.66	0.92	1.04	0.03	1.39



Alt Model-Shift Uniqueness Test

009048160-01, P = 4.076562 Days, E = 134.019001 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.9	4.03	0	0	4.30	0.96	3.46	47.9	47.9	4.03	4.03	0.32	1.09	0.08	0.11



Stellar Parameters For KIC 009048160

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5177^{+163}_{-163}	$4.388^{+0.154}_{-0.264}$	$0.380^{+0.100}_{-0.300}$	$0.990^{+0.333}_{-0.154}$	$0.872^{+0.073}_{-0.053}$	$1.267^{+0.867}_{-0.775}$
	+3%/-3%	+4%/-6%	+26%/-79%	+34%/-16%	+8%/-6%	+68%/-61%
Source	PHO1	KIC0	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 009048160-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-18 ± 2	$0.61^{+0.56}_{-0.41}$	1469^{+133}_{-93}	4705^{+3326}_{-1029}	64^{+504}_{-47}
Alt.	-8 ± 2	$1.14^{+0.60}_{-0.57}$	1460^{+148}_{-95}	3251^{+864}_{-435}	$7.851^{+25.013}_{-4.746}$

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 $A_{obs} \gg 1.0$

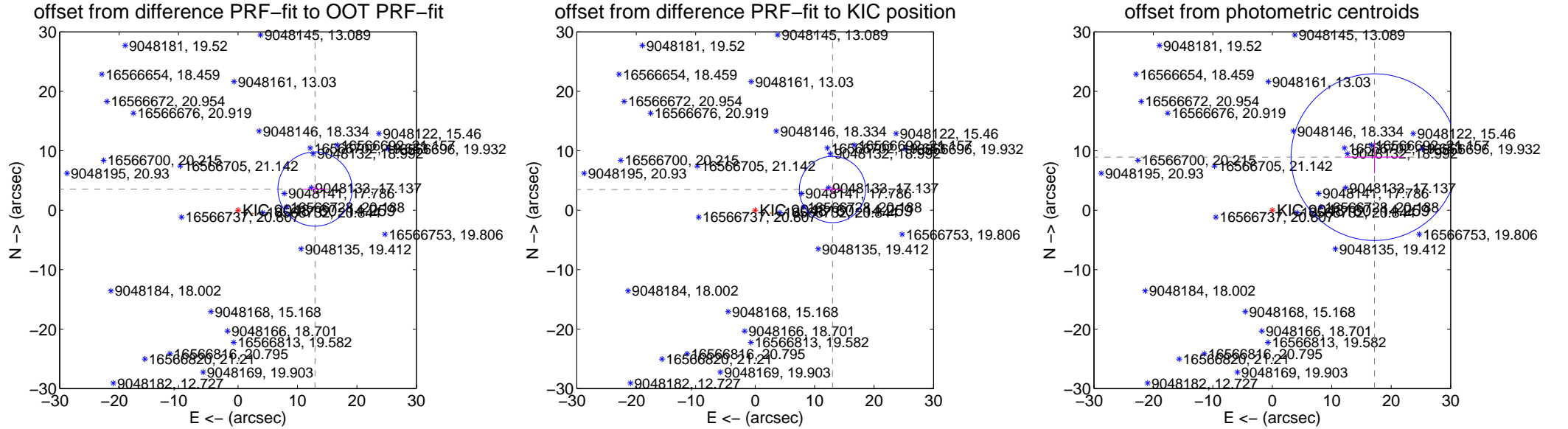
DV Centroid Data

Supplemental centroid analysis for 009048160-01. Kepler magnitude: 14.26. Transit SNR 6.38

There are 4 quarters with good PRF difference image offsets

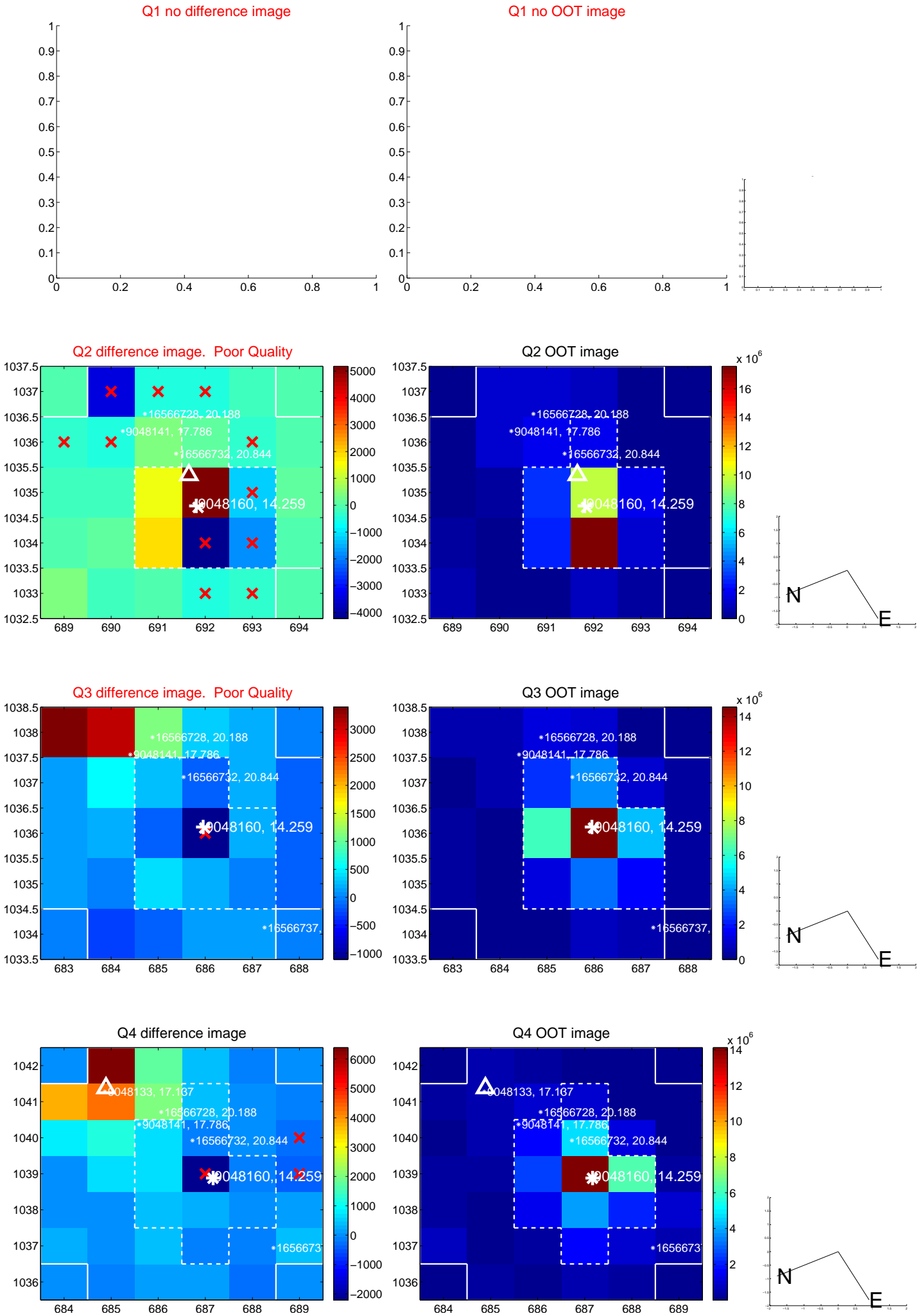
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	13.434 \pm 2.080	6.46	-12.956 \pm 1.948	3.552 \pm 0.764
PRF-fit source offset from KIC position	13.464 \pm 1.858	7.25	-13.006 \pm 1.745	3.482 \pm 0.669
photometric centroid source offset	19.36 \pm 4.67	4.14	-17.18 \pm 5.07	8.93 \pm 2.71

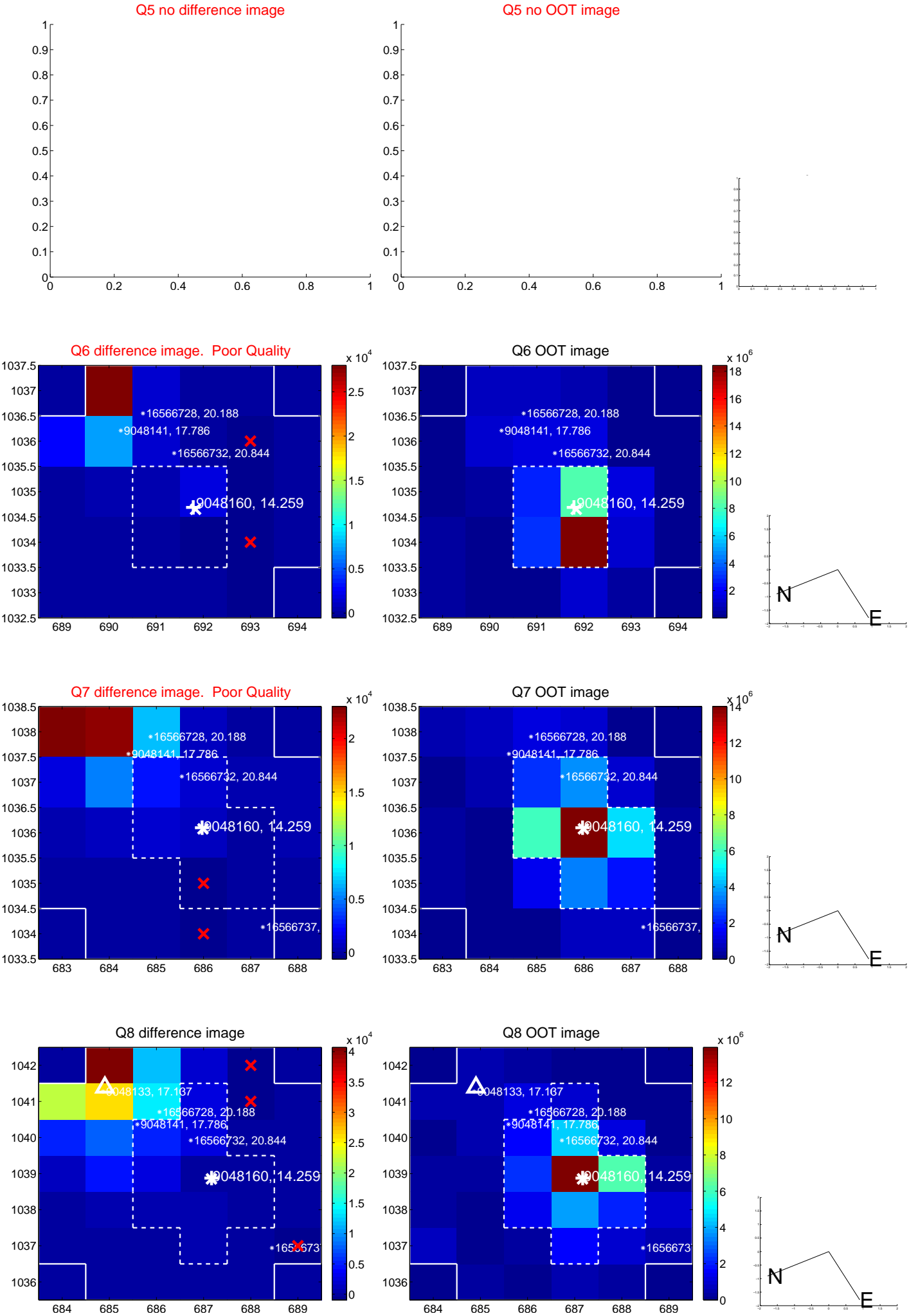


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

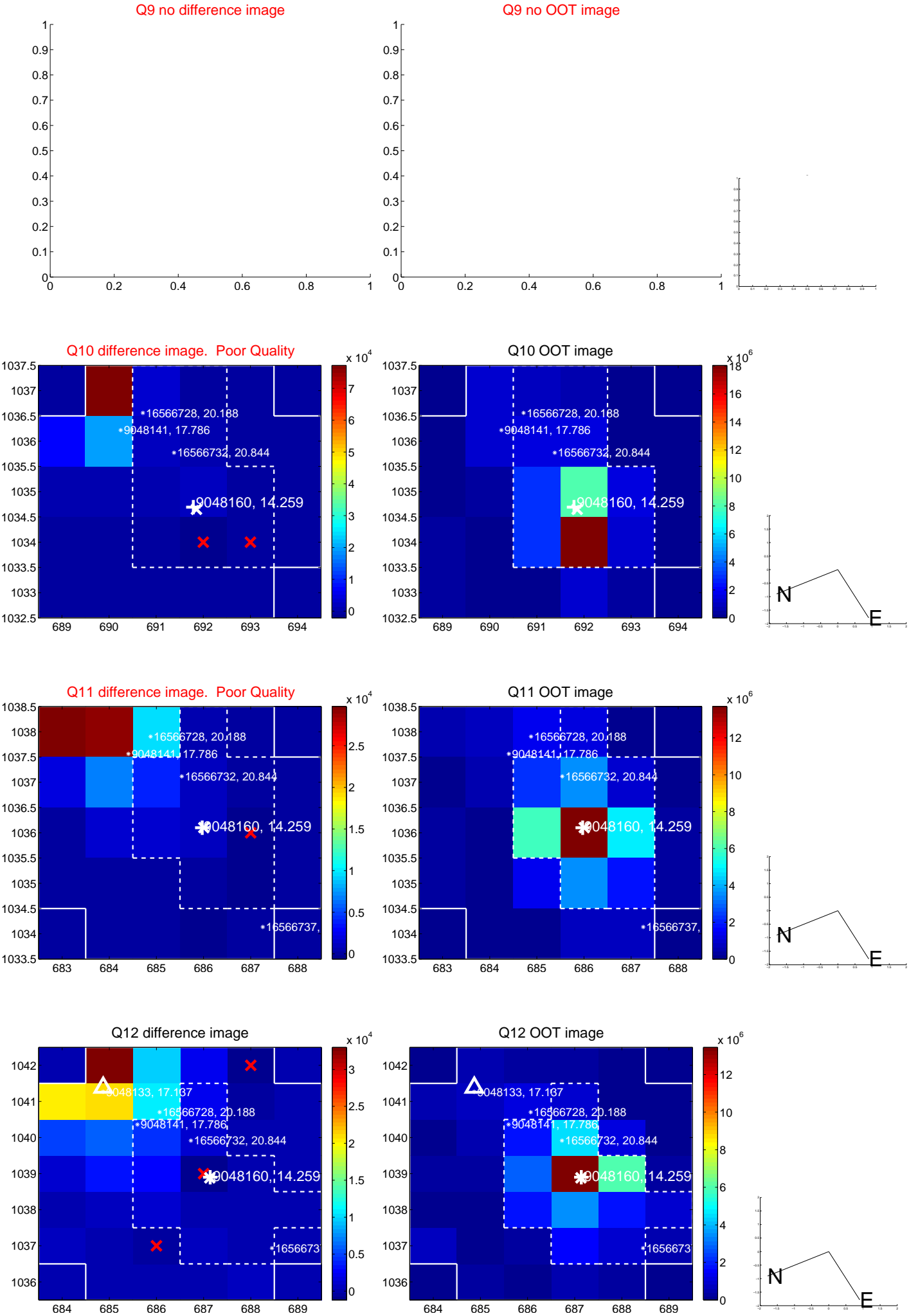
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



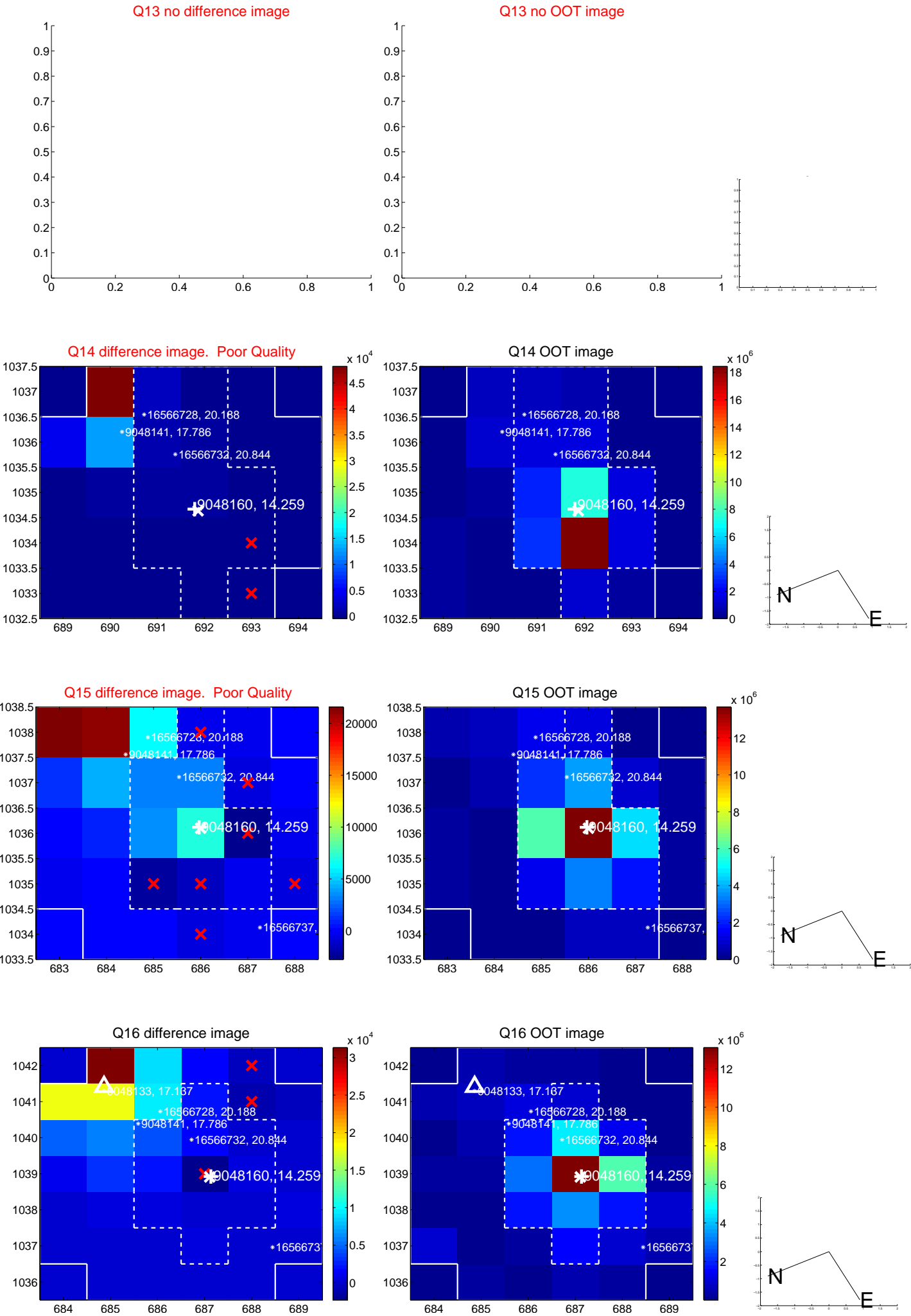
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



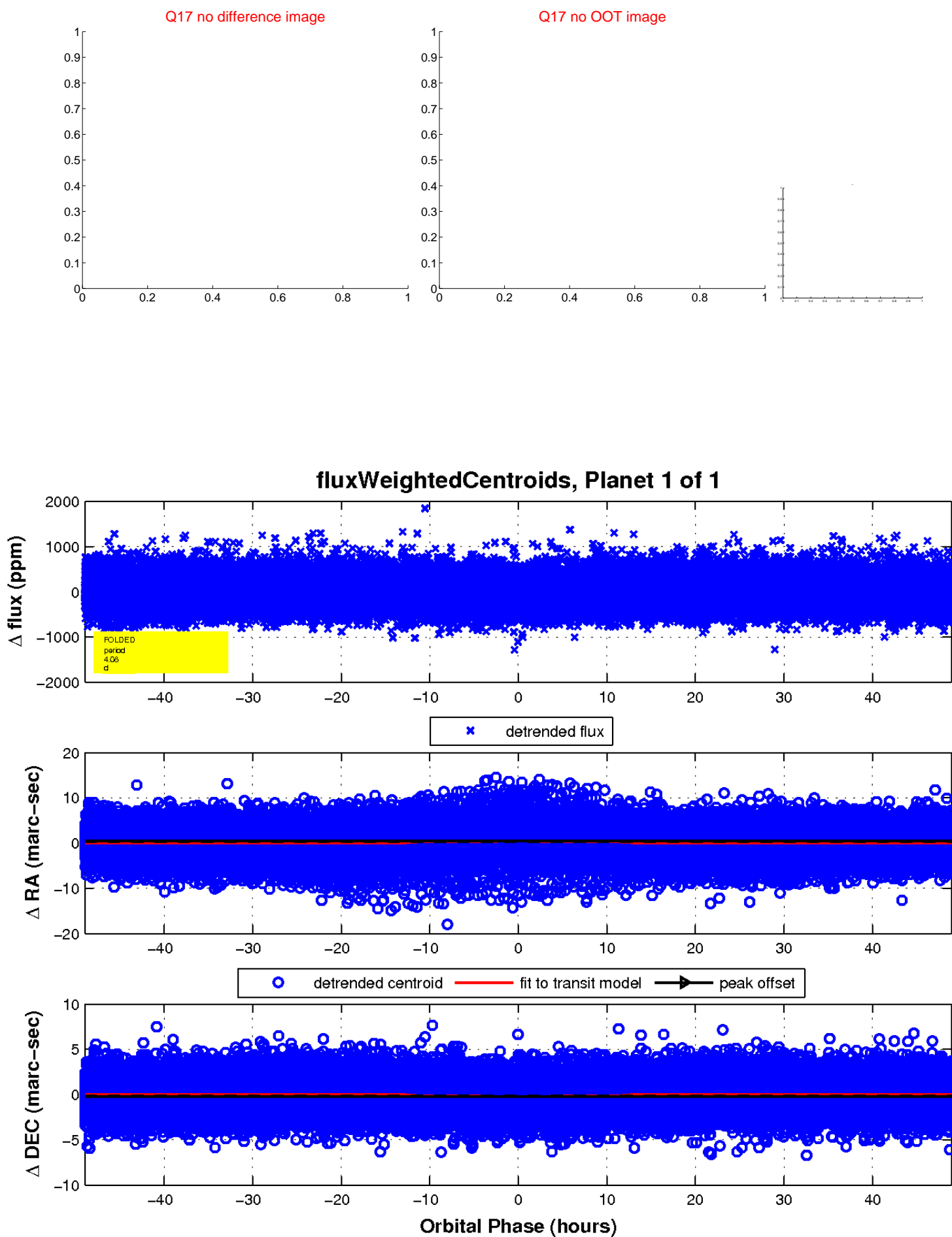
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

