

KIC 005442481

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})
005442481-01	OBS	No	0.591635	131.788752	12.2	4.506	9.4	7.5	1.05	6105	0.37	6837.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005442481-01	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.

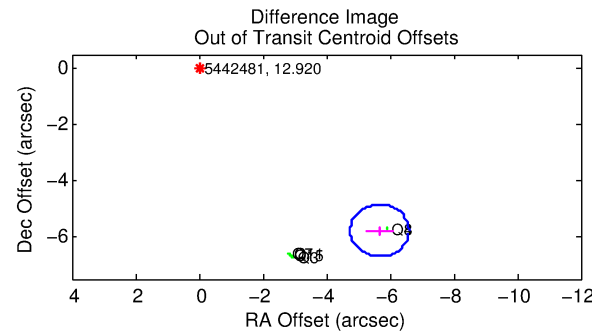
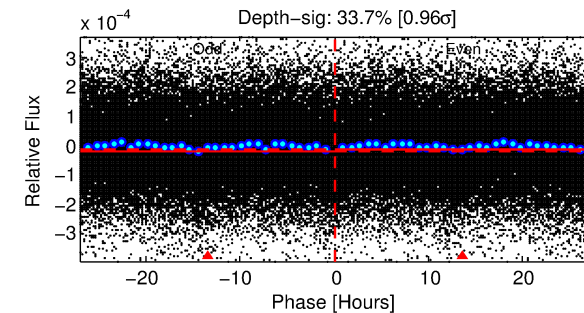
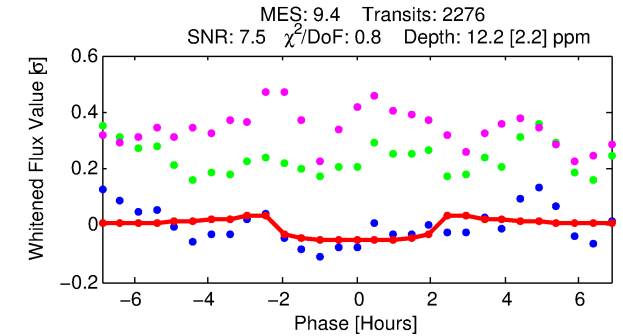
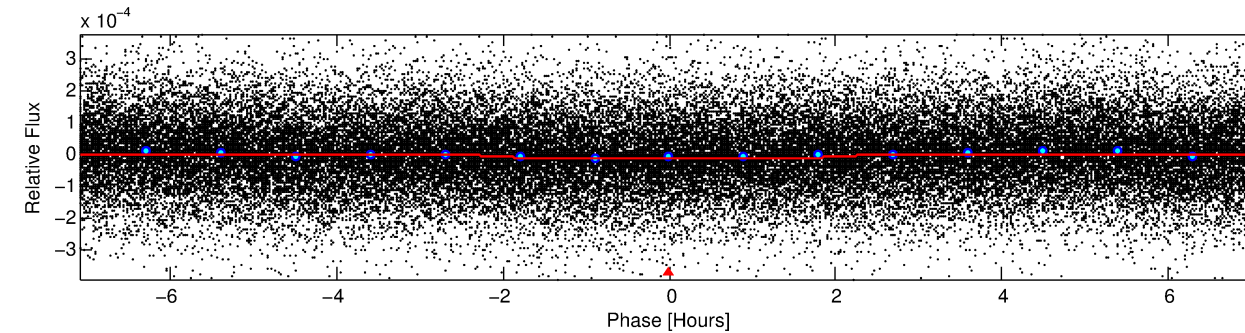
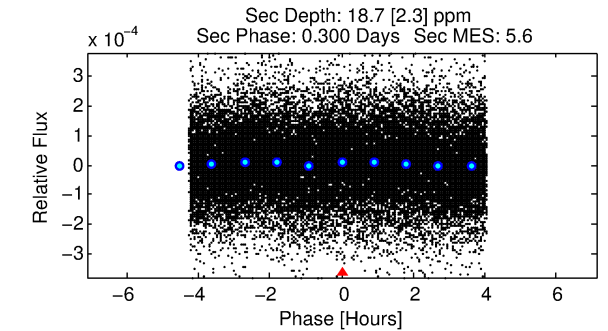
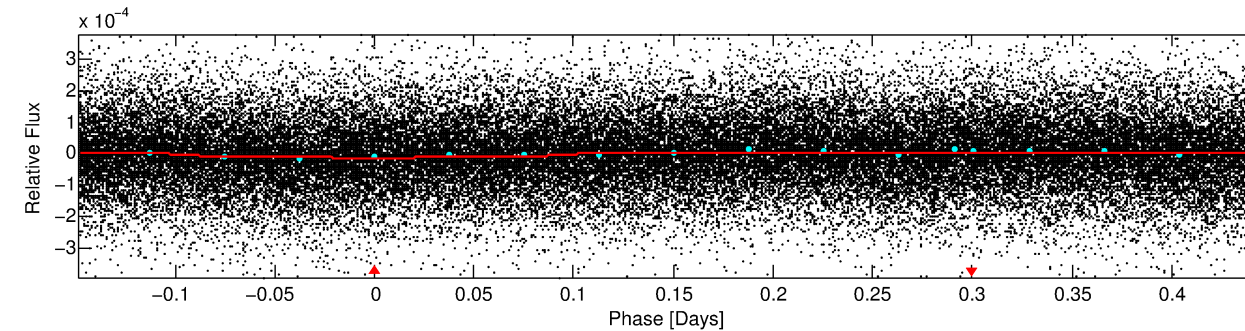
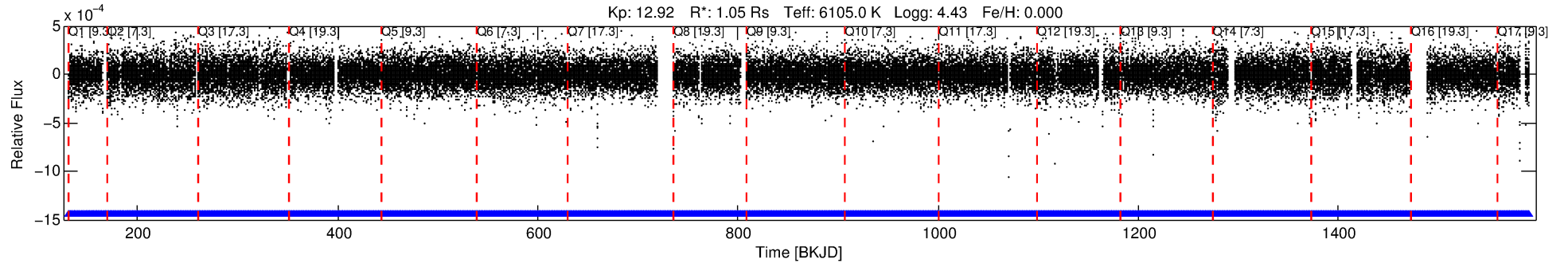
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005442481-01

No Significant Match Found

DV One-Page Summary

KIC: 5442481 Candidate: 1 of 1 Period: 0.592 d



DV Fit Results:

Period = 0.59164 [0.00001] d
Epoch = 131.7888 [0.0037] BKJD
Rp/R* = 0.0032 [0.0032]
a/R* = 1.19 [1.72]
b = 0.11 [44.95]
Seff = 6837.68 [2951.63]
Teq = 2319 [250] K
Rp = 0.37 [0.39] Re
a = 0.0142 [0.0040] AU
Ag = 15.41 [31.85] [0.45σ]
Teffp = 7103 [3610] K [1.32σ]

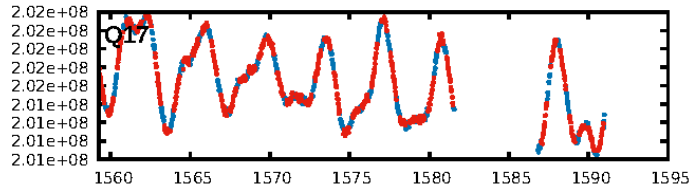
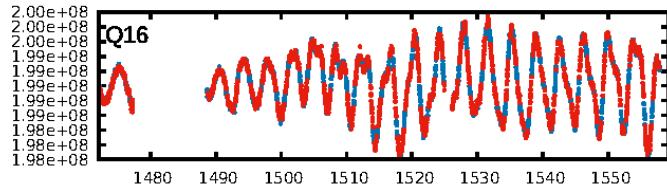
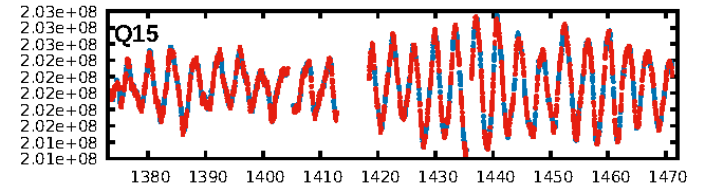
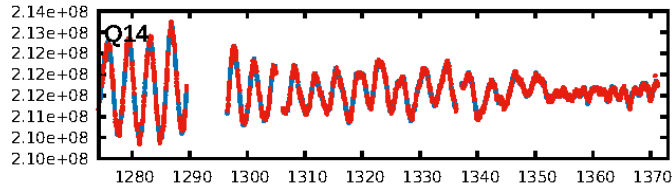
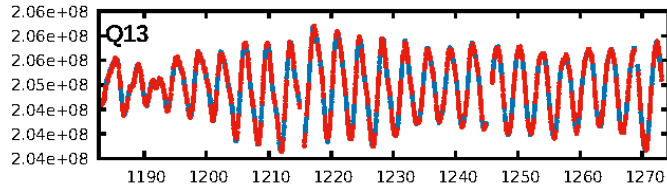
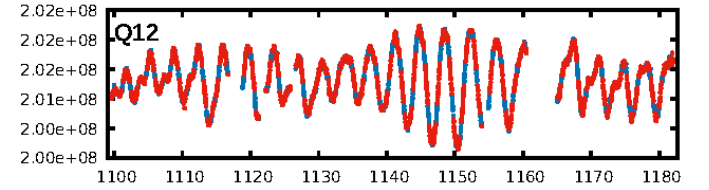
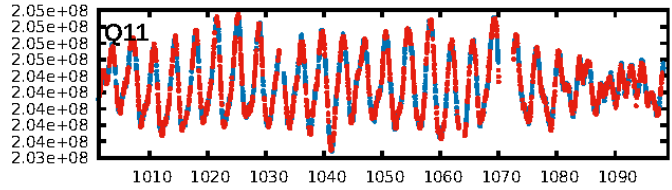
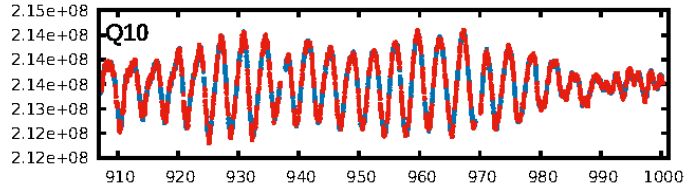
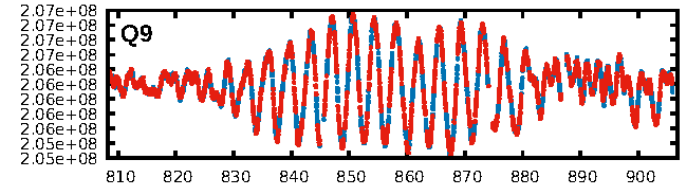
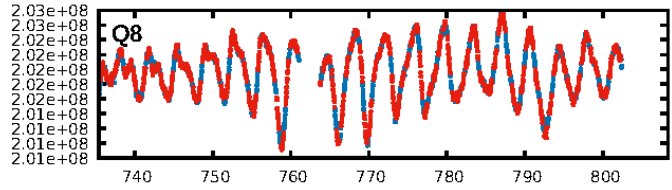
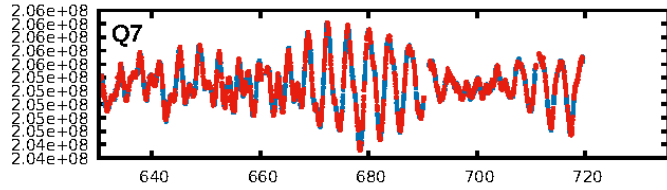
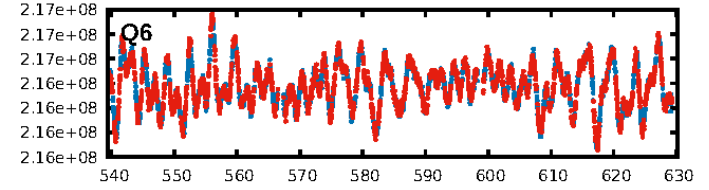
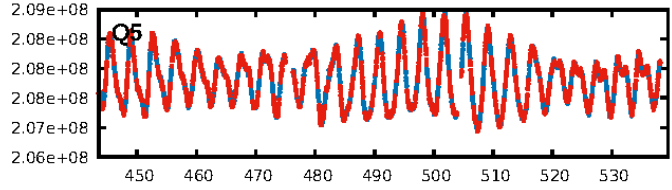
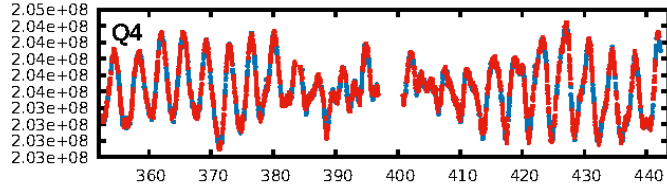
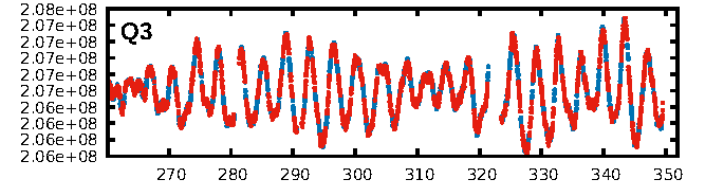
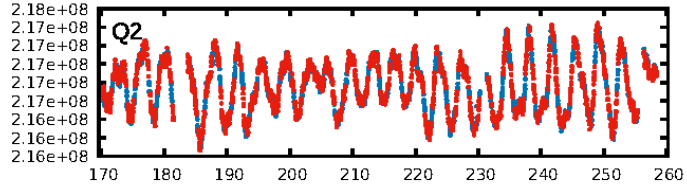
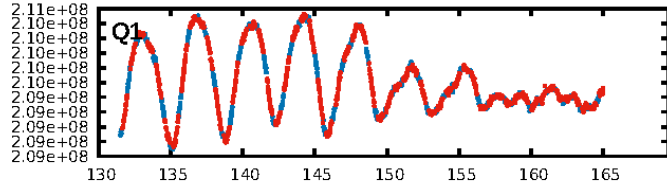
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.65e-21
RollingBand-fgt: 1.00 [2174/2174]
GhostDiagnostic-chr: -0.7703
Centroid-sig: 0.0%
Centroid-so: 2.932 arcsec [3.62σ]
OotOffset-rm: 8.091 arcsec [26.24σ]
KicOffset-rm: 8.284 arcsec [27.61σ]
OotOffset-st: 0/4/2/0 [6]
KicOffset-st: 0/4/2/0 [6]
DiffImageQuality-fgm: 1.00 [6/6]
DiffImageOverlap-fno: 1.00 [17/17]

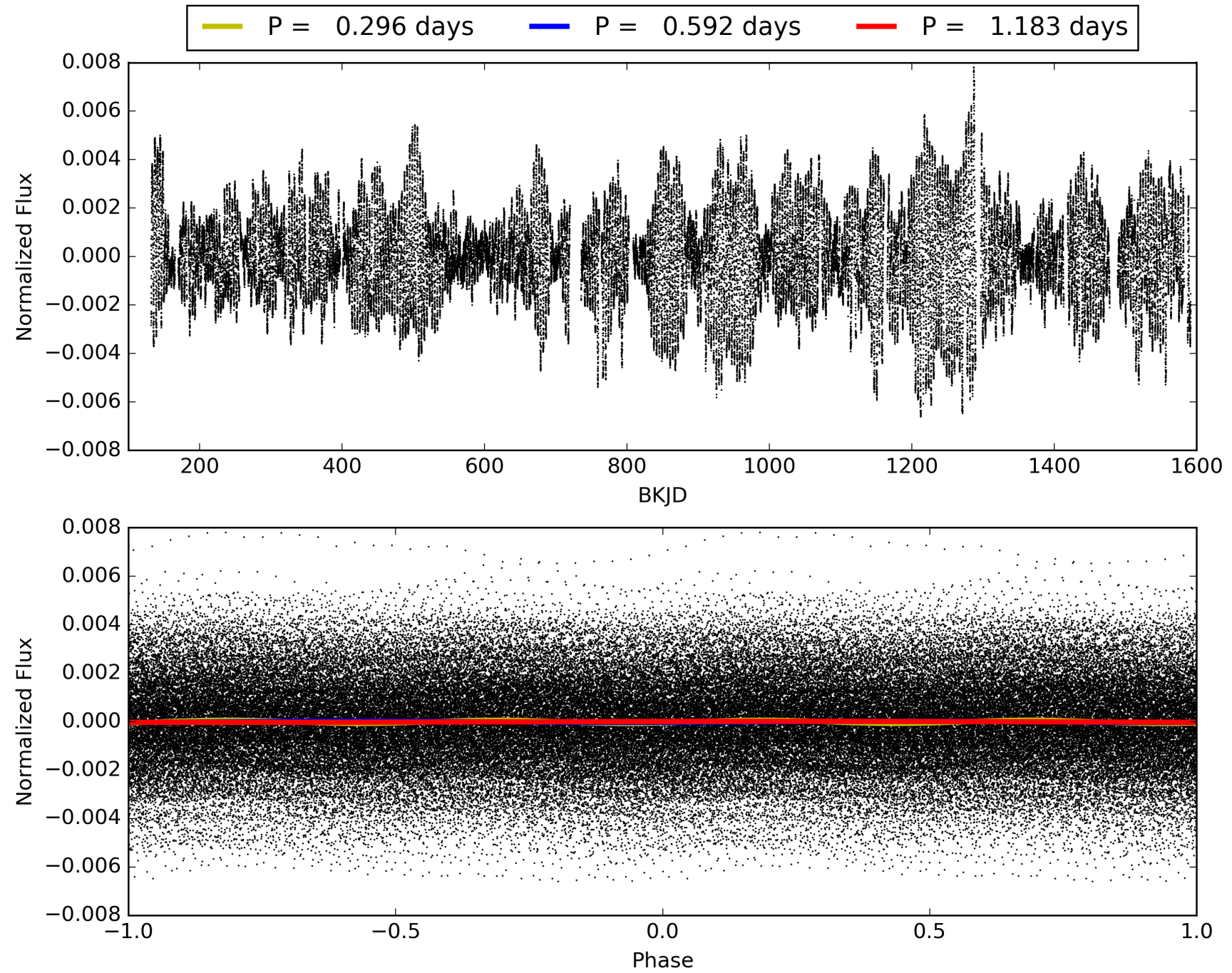
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 13:54:59 Z

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

TCE 005442481-01, PDC Light Curves

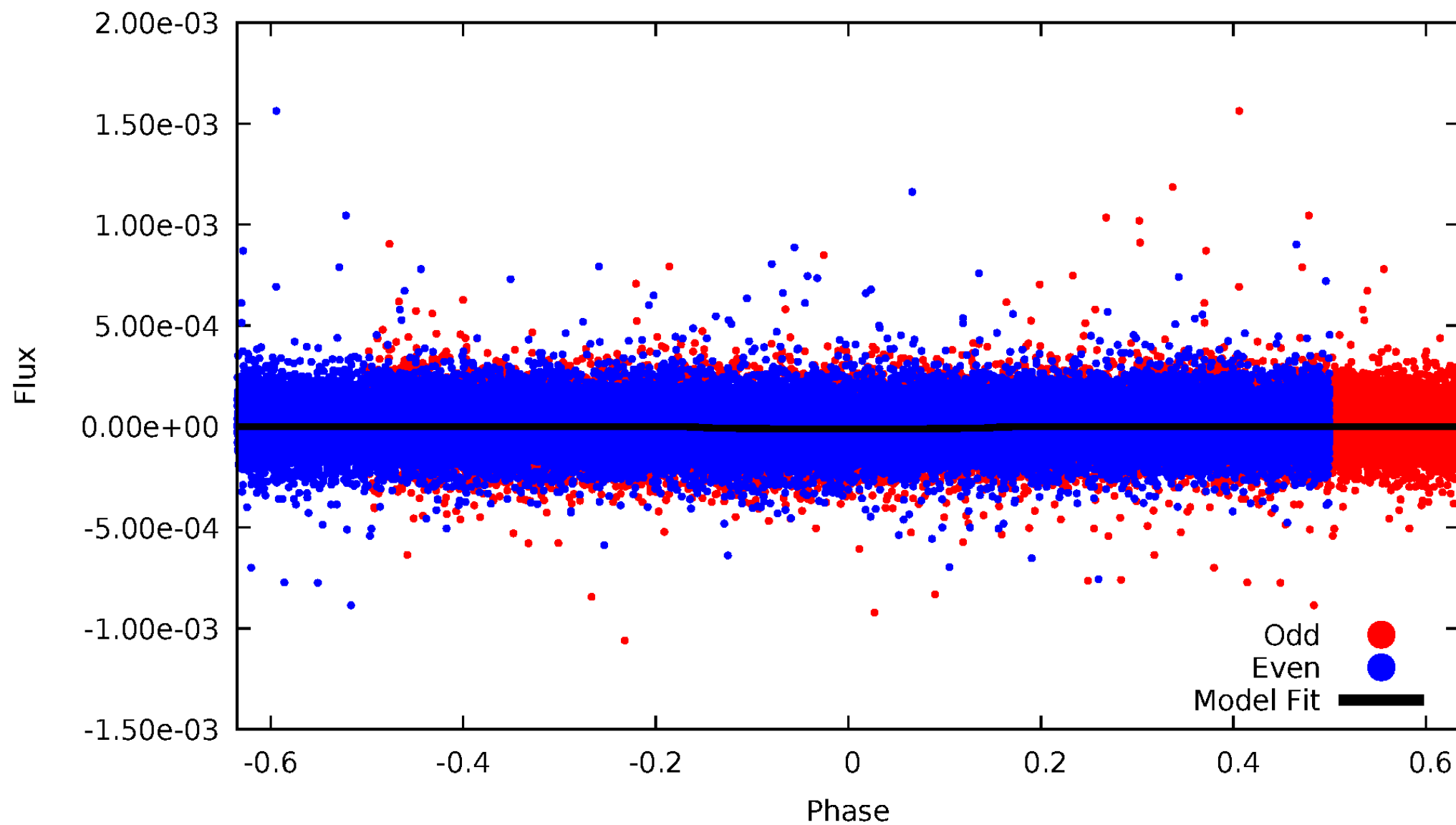


TCE 005442481-01



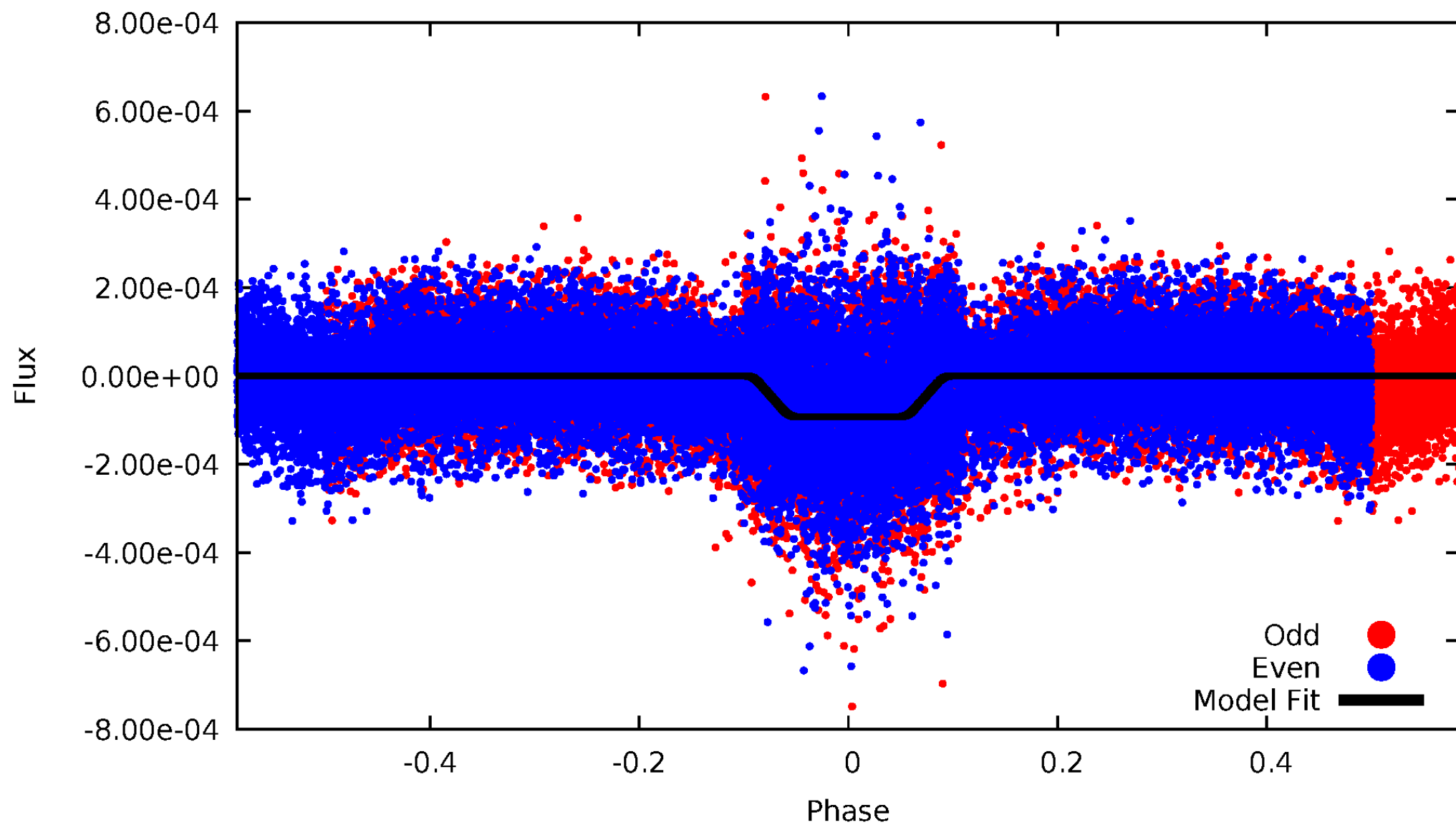
DV Odd/Even

TCE 005442481-01

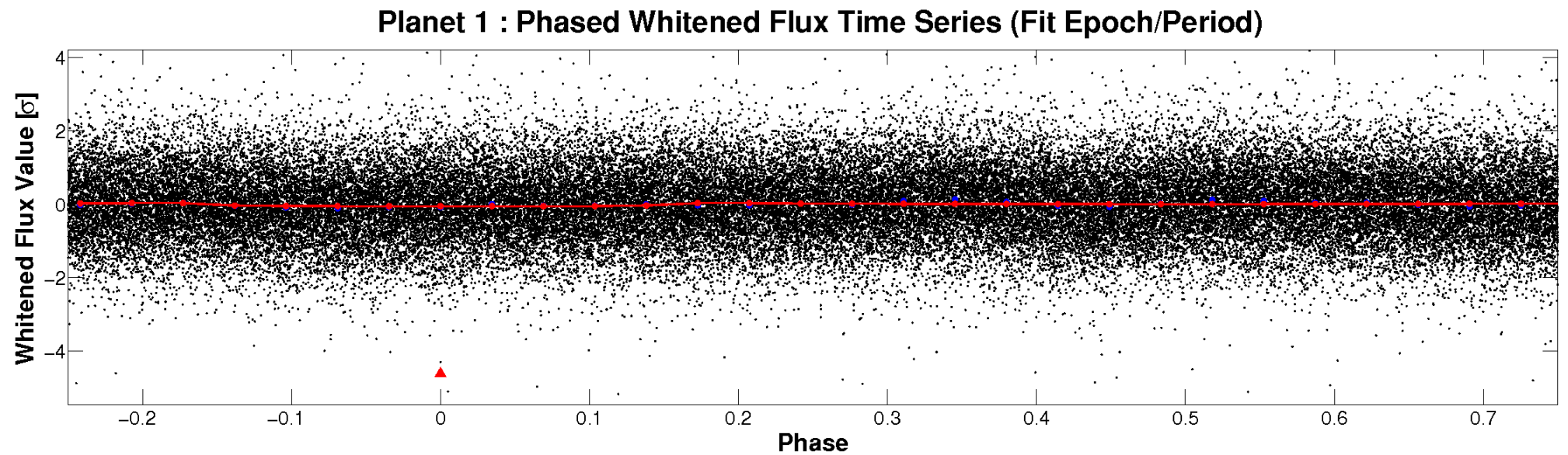
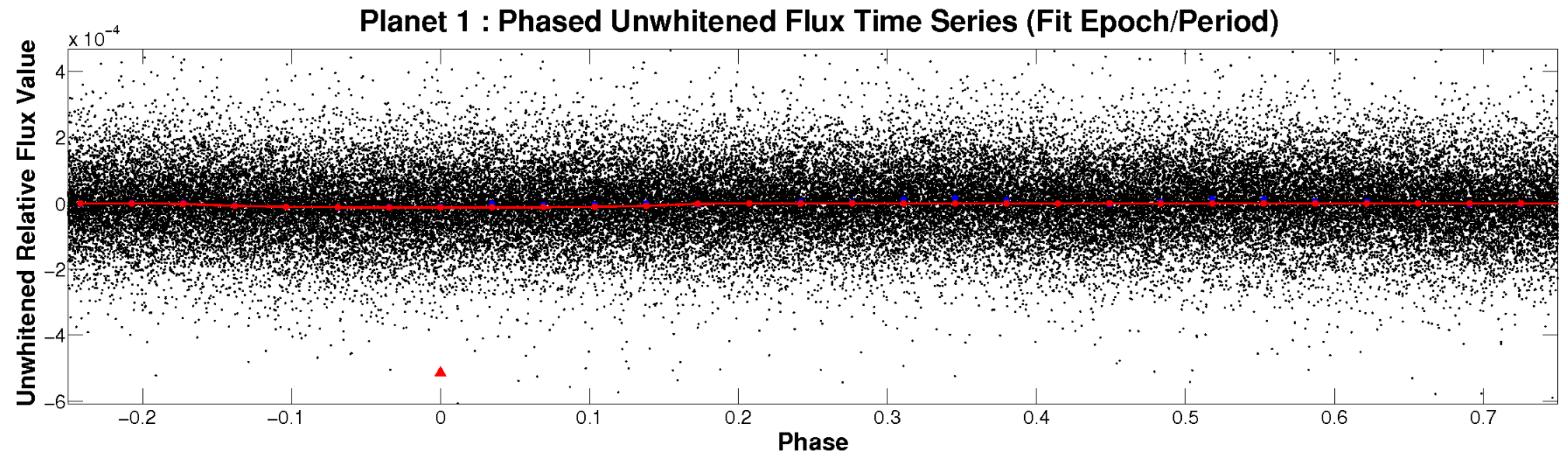


ALT Odd/Even

TCE 005442481-01

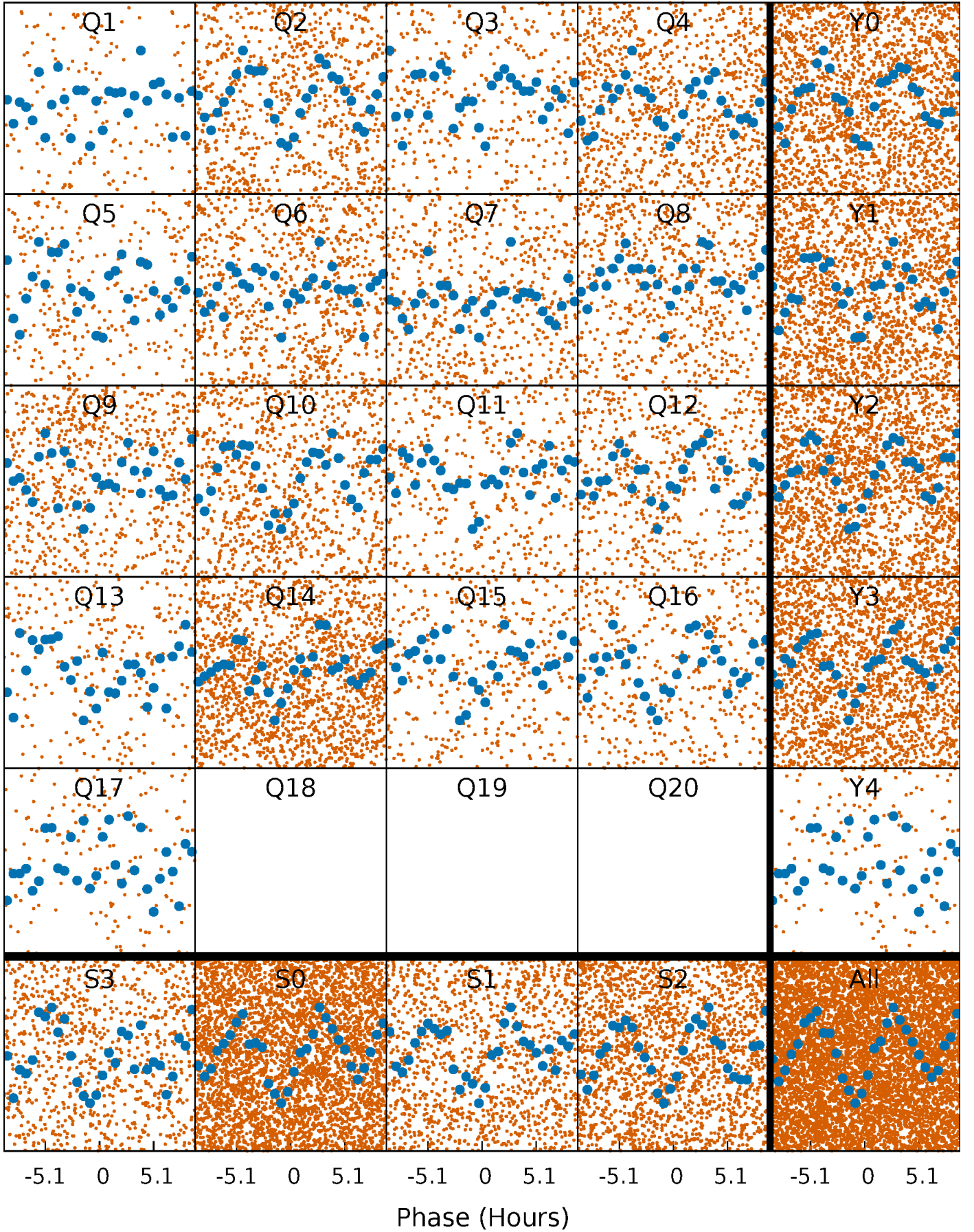


Non-Whitened Vs. Whitened Light Curve



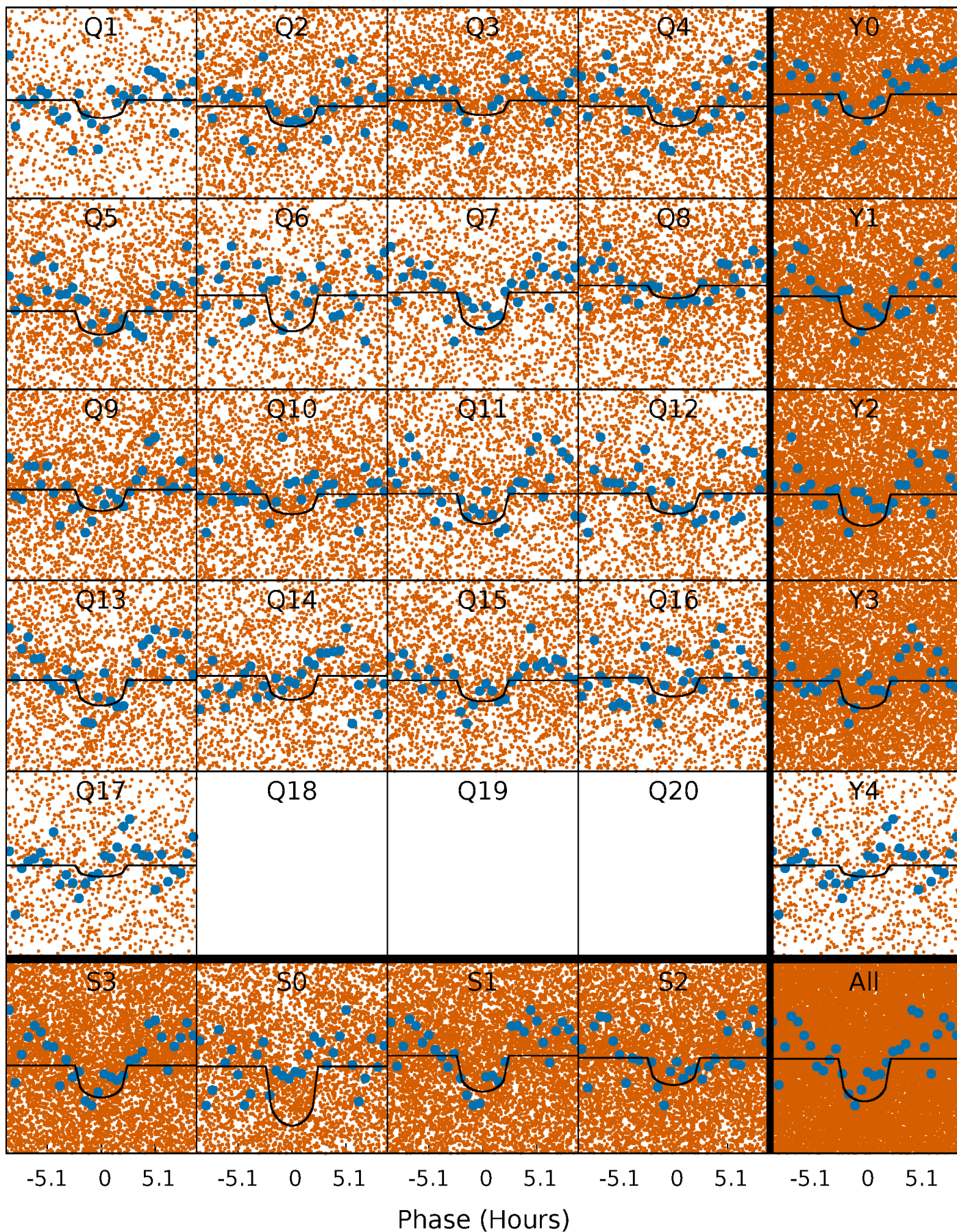
PDC Quarter-Phased Transit Curves

TCE 005442481-01 P= 0.591635 Days $T_0=131.788752$ (BKJD)



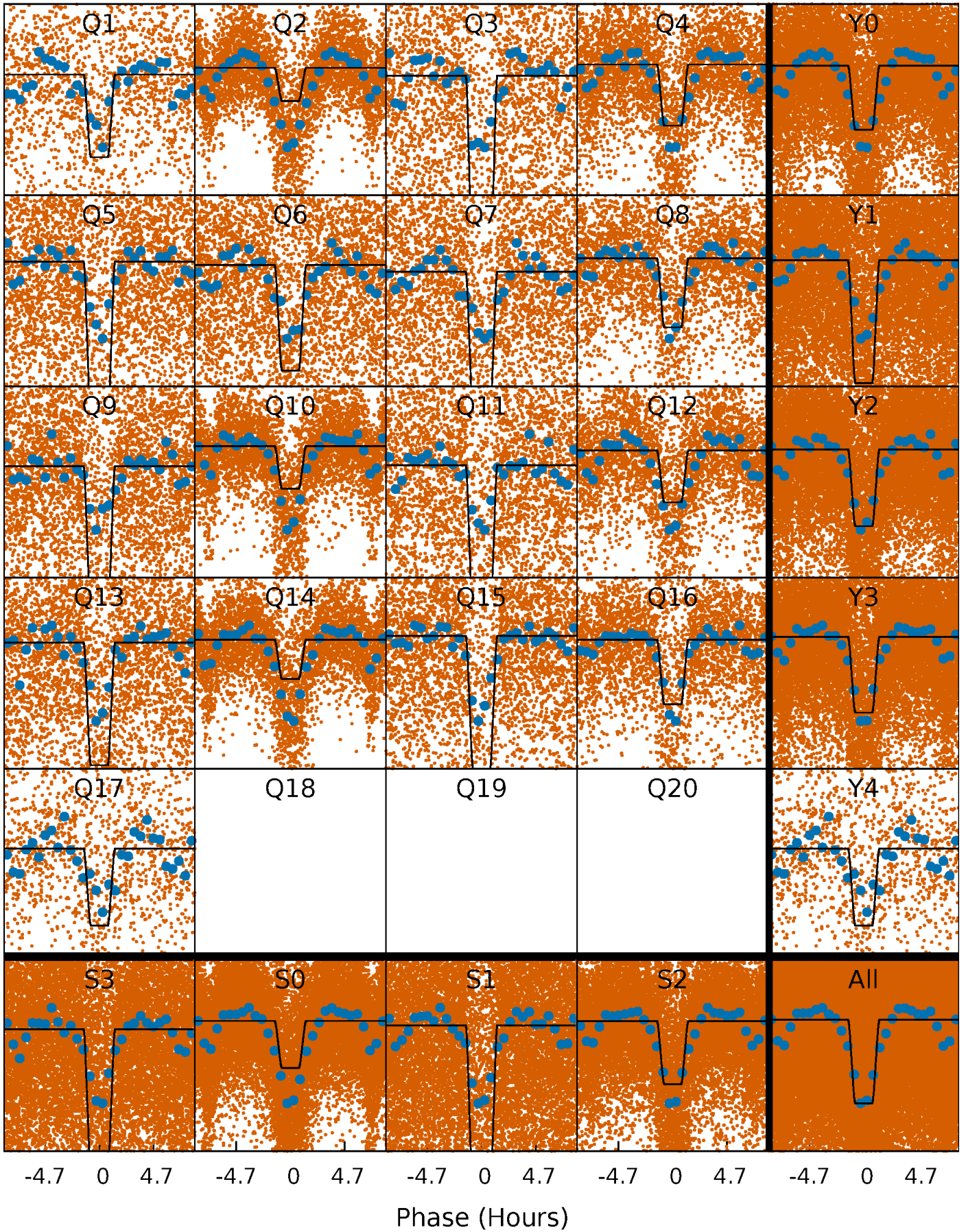
DV Quarter-Phased Transit Curves

TCE 005442481-01 P= 0.591635 Days $T_0=131.788752$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

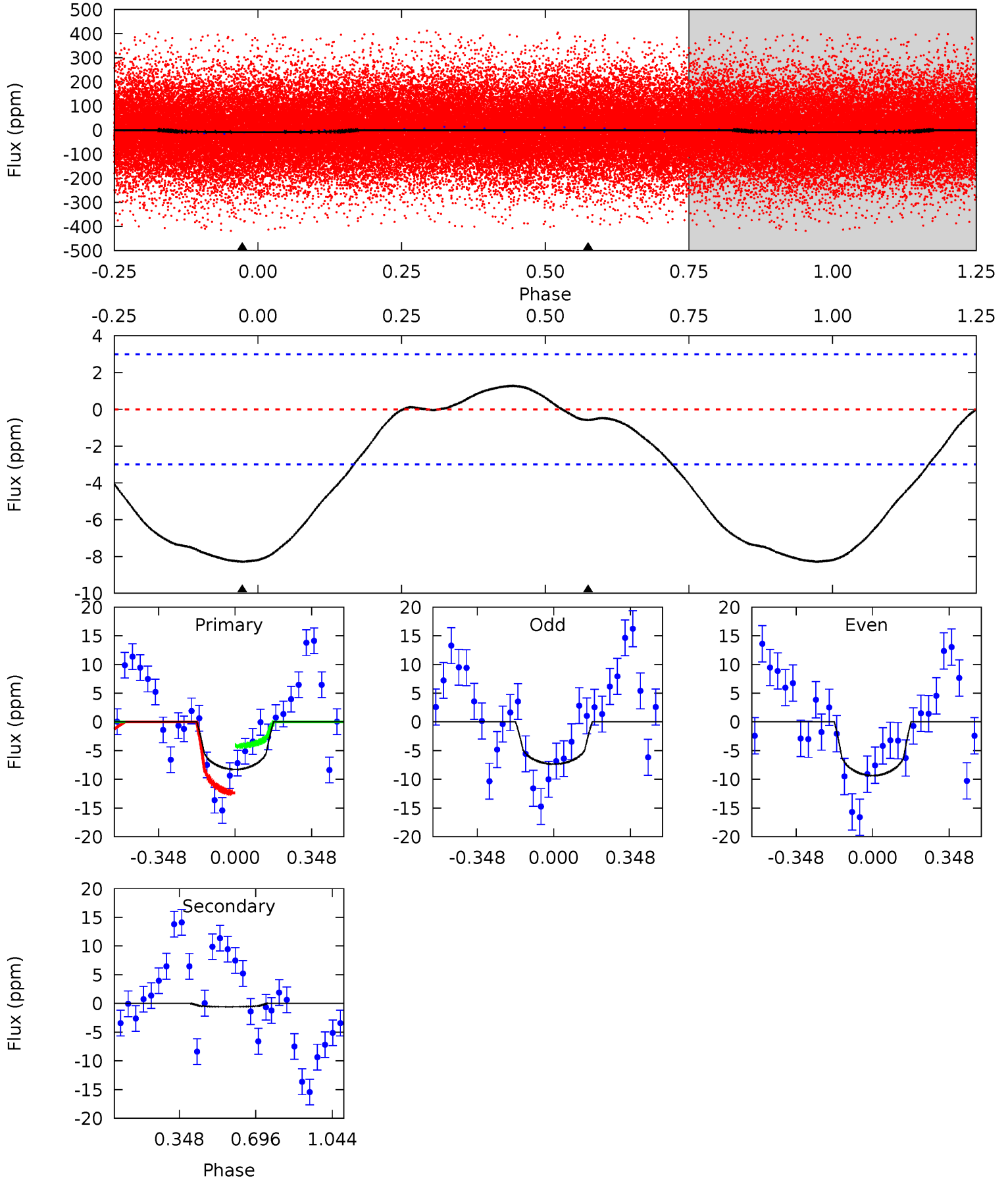
TCE 005442481-01 P= 0.591615 Days $T_0=131.775034$ (BKJD)



DV Model-Shift Uniqueness Test

005442481-01, $P = 0.591635$ Days, $E = 131.197117$ Days

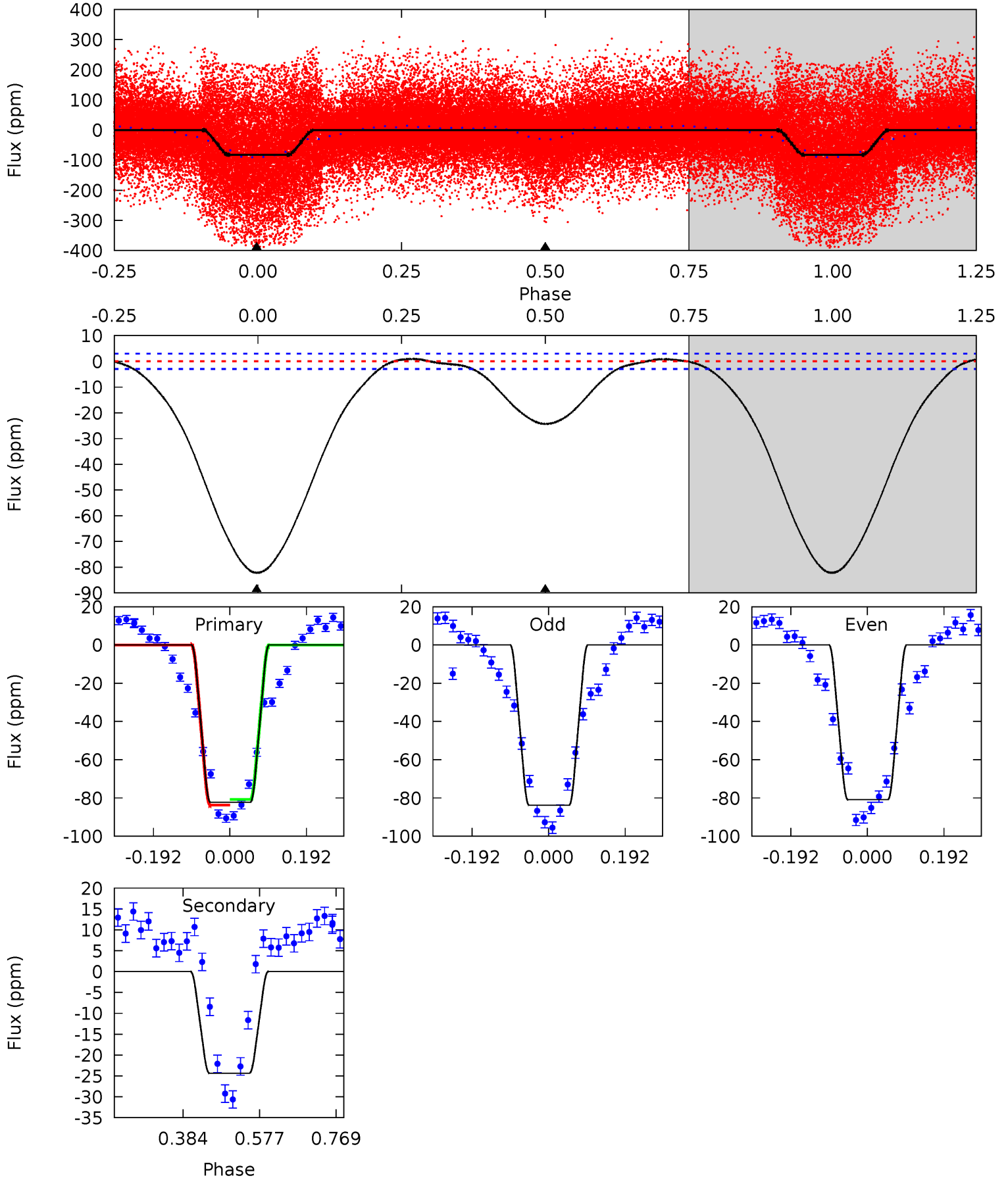
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	0.84	0	0	4.30	0.94	0.30	11.9	11.9	0.84	0.84	1.45	1.02	0.13	5.82



Alt Model-Shift Uniqueness Test

005442481-01, P = 0.591615 Days, E = 131.183419 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
122.1	36.2	0	0	4.43	1.30	3.21	122.1	122.1	36.2	36.2	2.17	1.02	0.01	2.19



Stellar Parameters For KIC 005442481

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6105^{+193}_{-236}	$4.431^{+0.058}_{-0.217}$	$0.000^{+0.250}_{-0.300}$	$1.052^{+0.358}_{-0.143}$	$1.085^{+0.151}_{-0.135}$	$1.314^{+0.402}_{-0.726}$
	+3%/-4%	+1%/-5%	+inf%/-inf%	+34%/-14%	+14%/-12%	+31%/-55%
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 005442481-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1 ± 1	$0.46^{+0.38}_{-0.26}$	3320^{+252}_{-190}	-2766^{+6971}_{-670}	$0.211^{+1.322}_{-0.260}$
Alt.	-24 ± 1	$1.15^{+0.47}_{-0.39}$	3304^{+278}_{-179}	4406^{+877}_{-606}	$2.020^{+2.609}_{-0.993}$

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

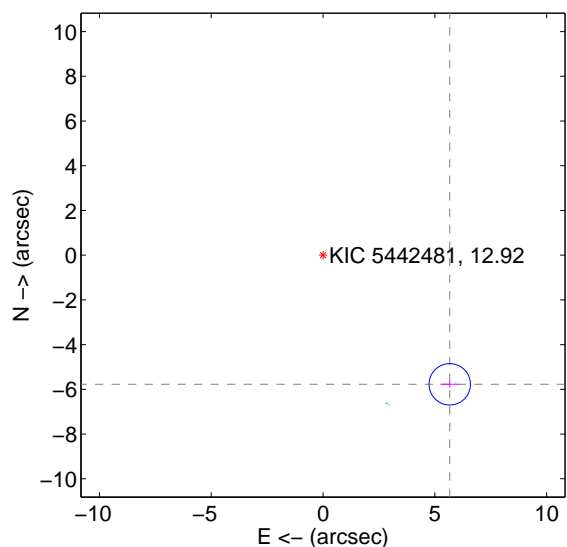
Supplemental centroid analysis for 005442481-01. Kepler magnitude: 12.92. Transit SNR 7.49

There are 6 quarters with good PRF difference image offsets

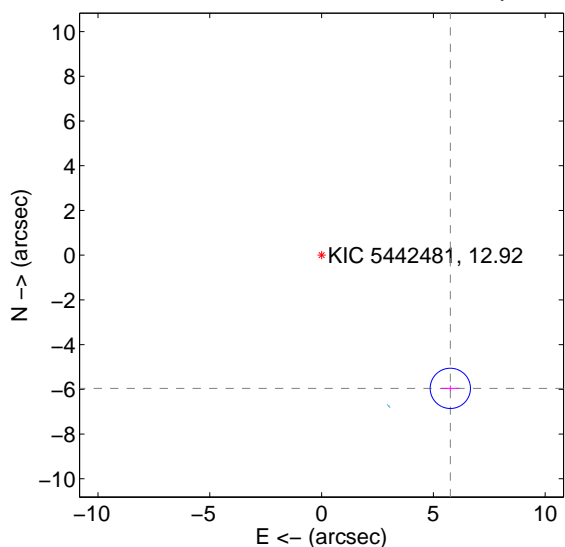
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.091 ± 0.308	26.24	-5.667 ± 0.418	-5.775 ± 0.136
PRF-fit source offset from KIC position	8.284 ± 0.300	27.61	-5.757 ± 0.412	-5.956 ± 0.126
photometric centroid source offset	2.93 ± 0.81	3.62	-2.66 ± 0.82	-1.24 ± 0.79

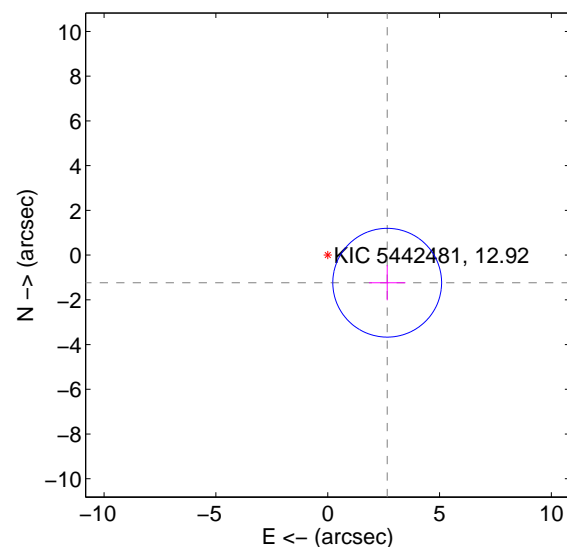
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

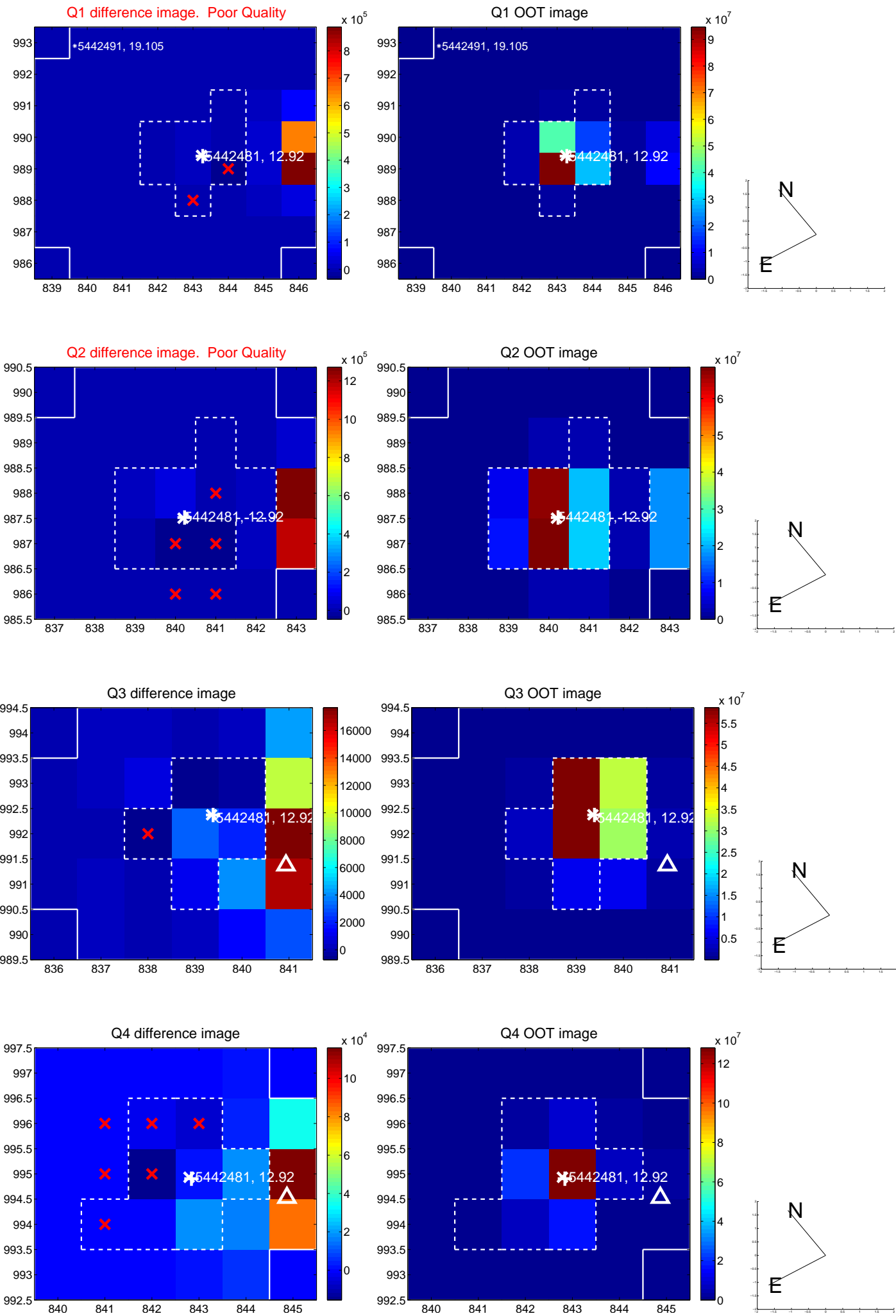


offset from photometric centroids

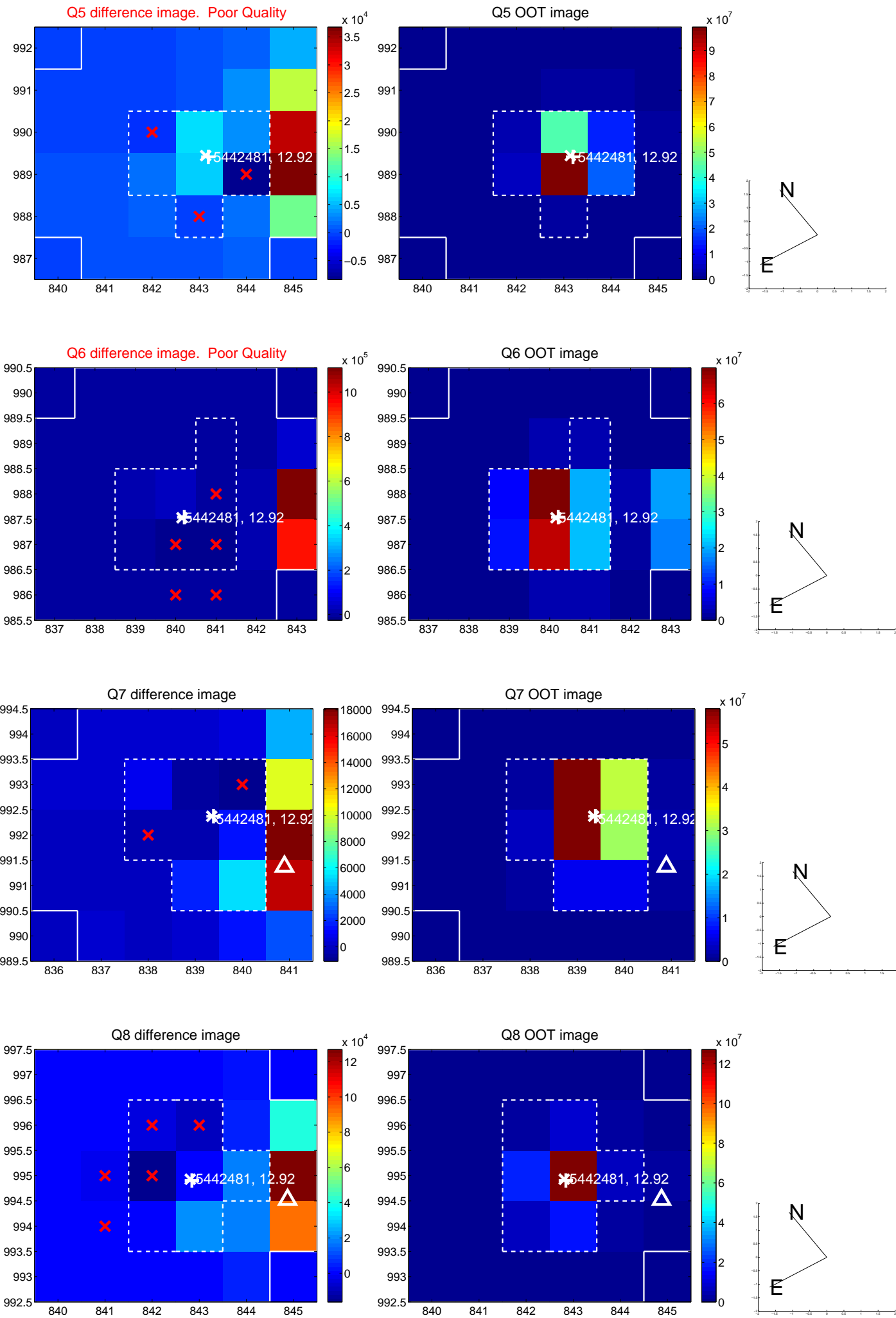


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

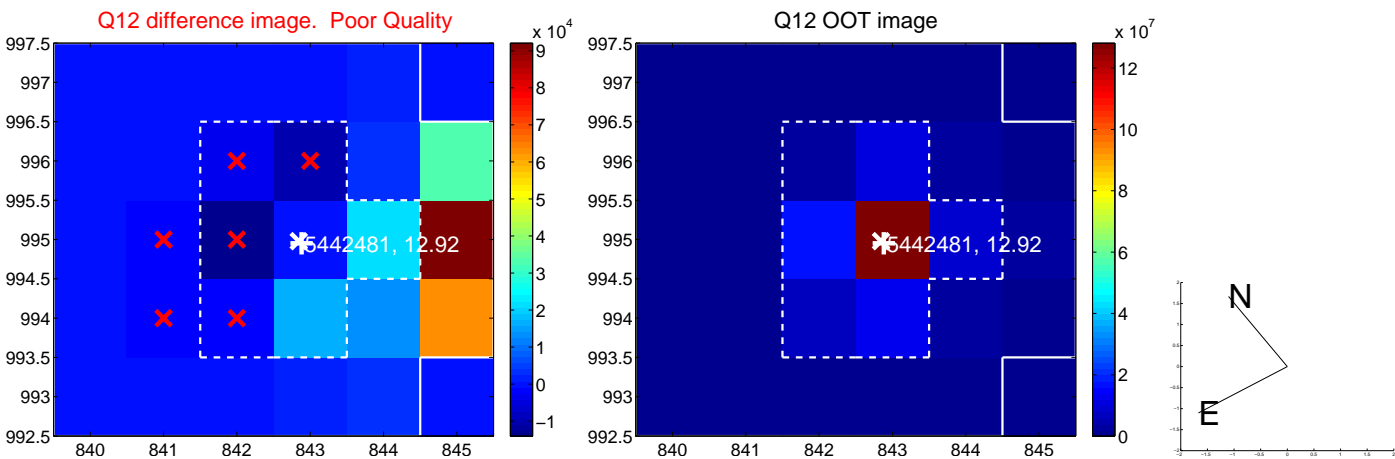
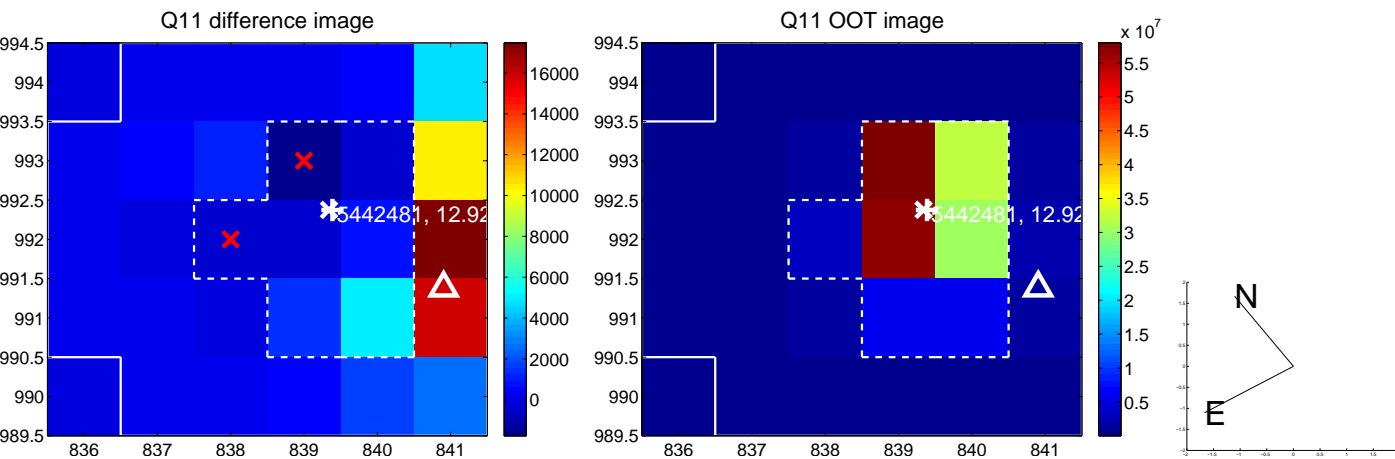
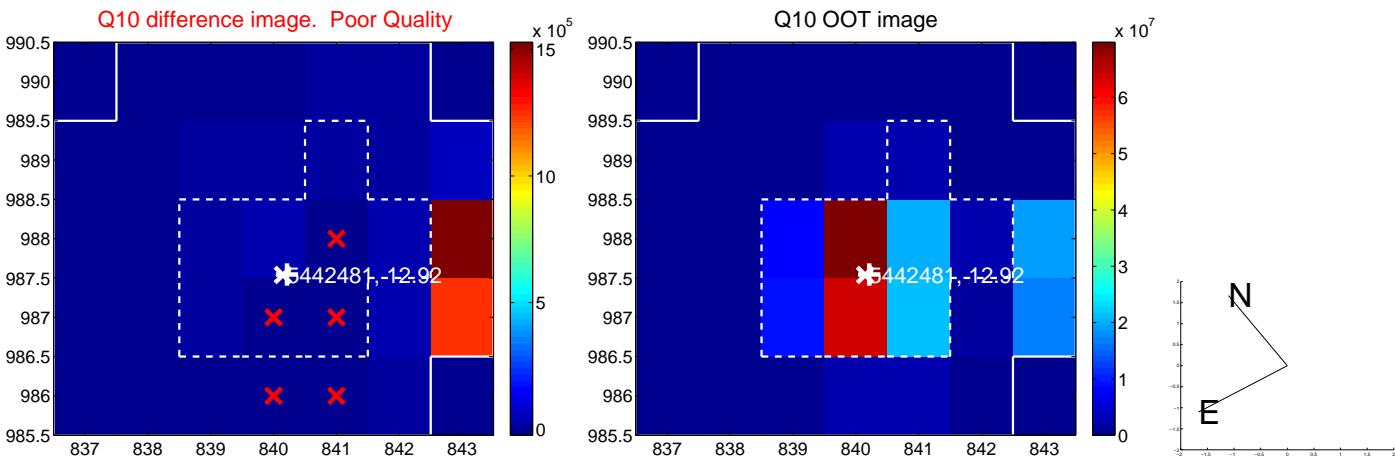
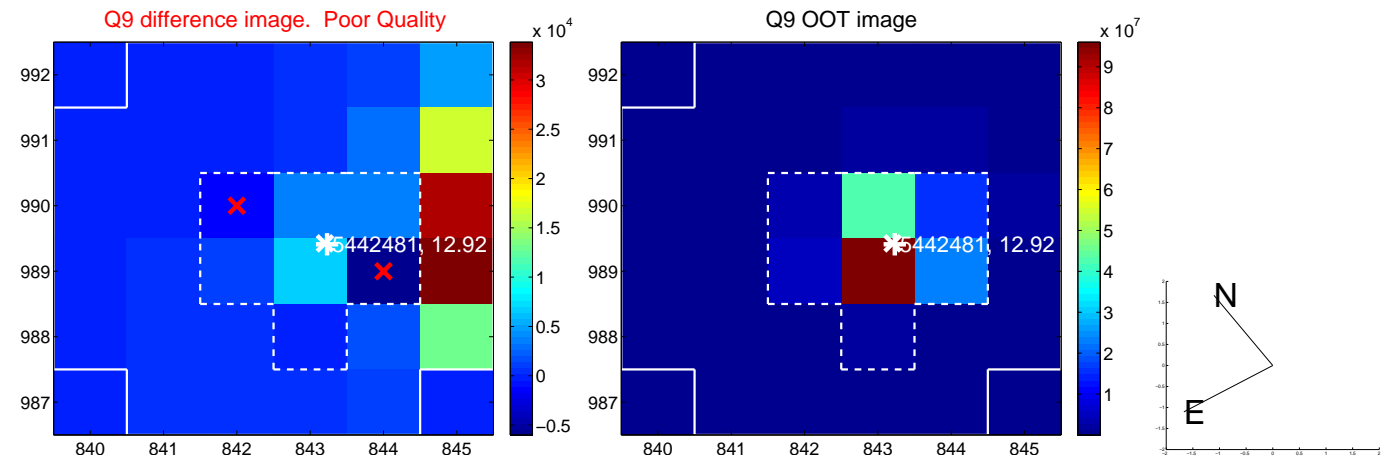
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



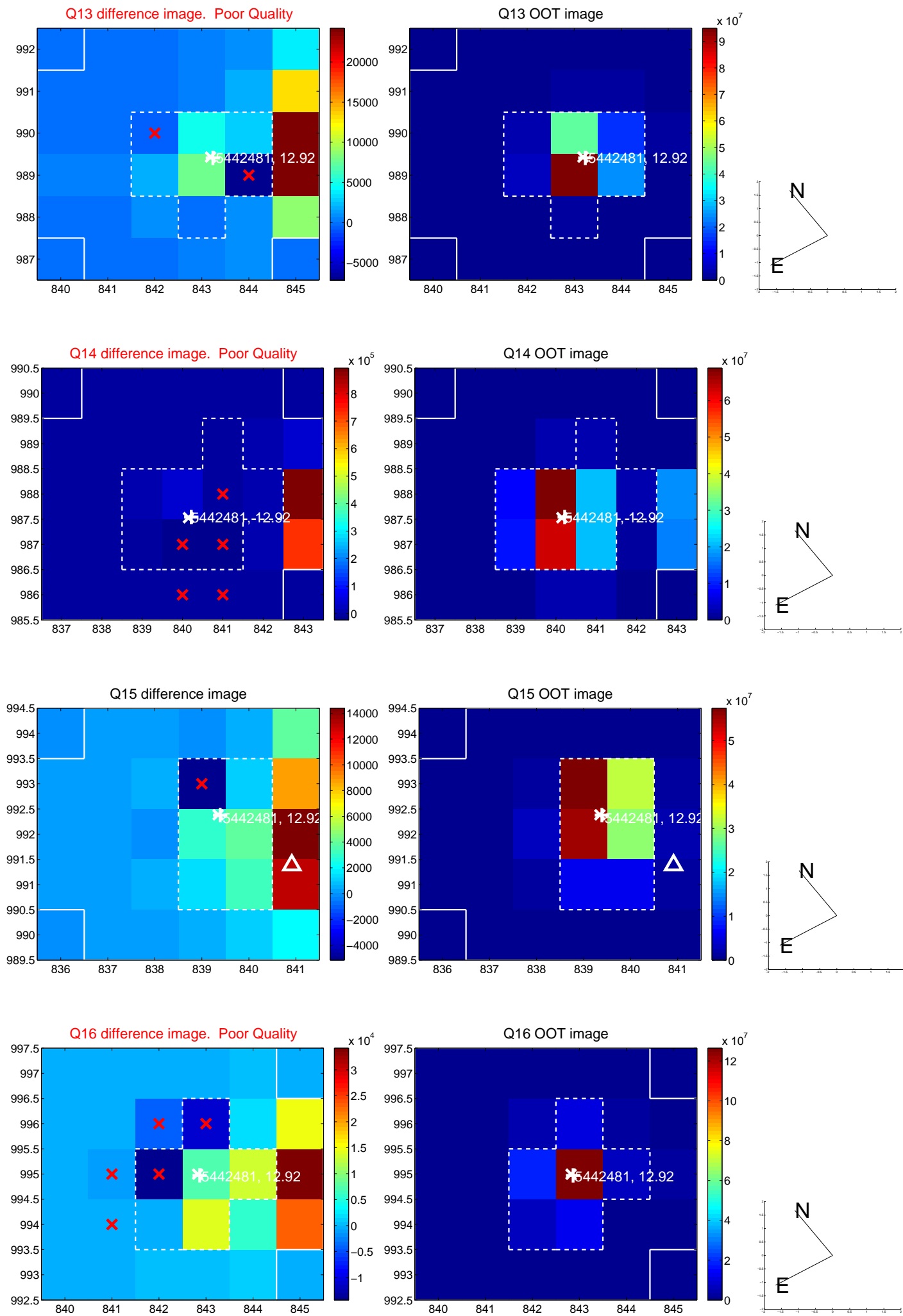
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



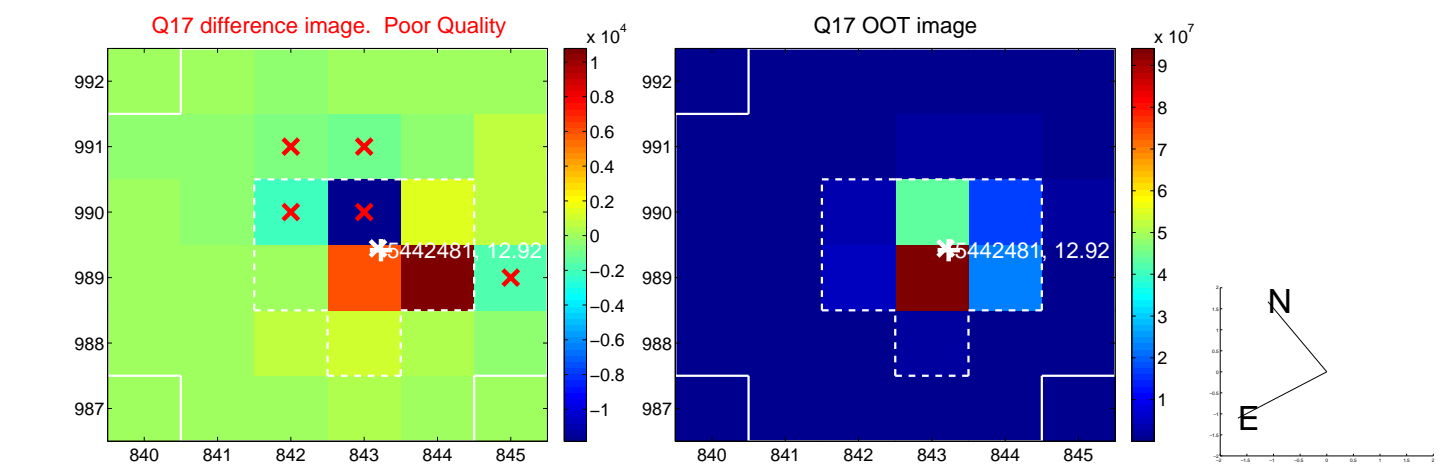
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



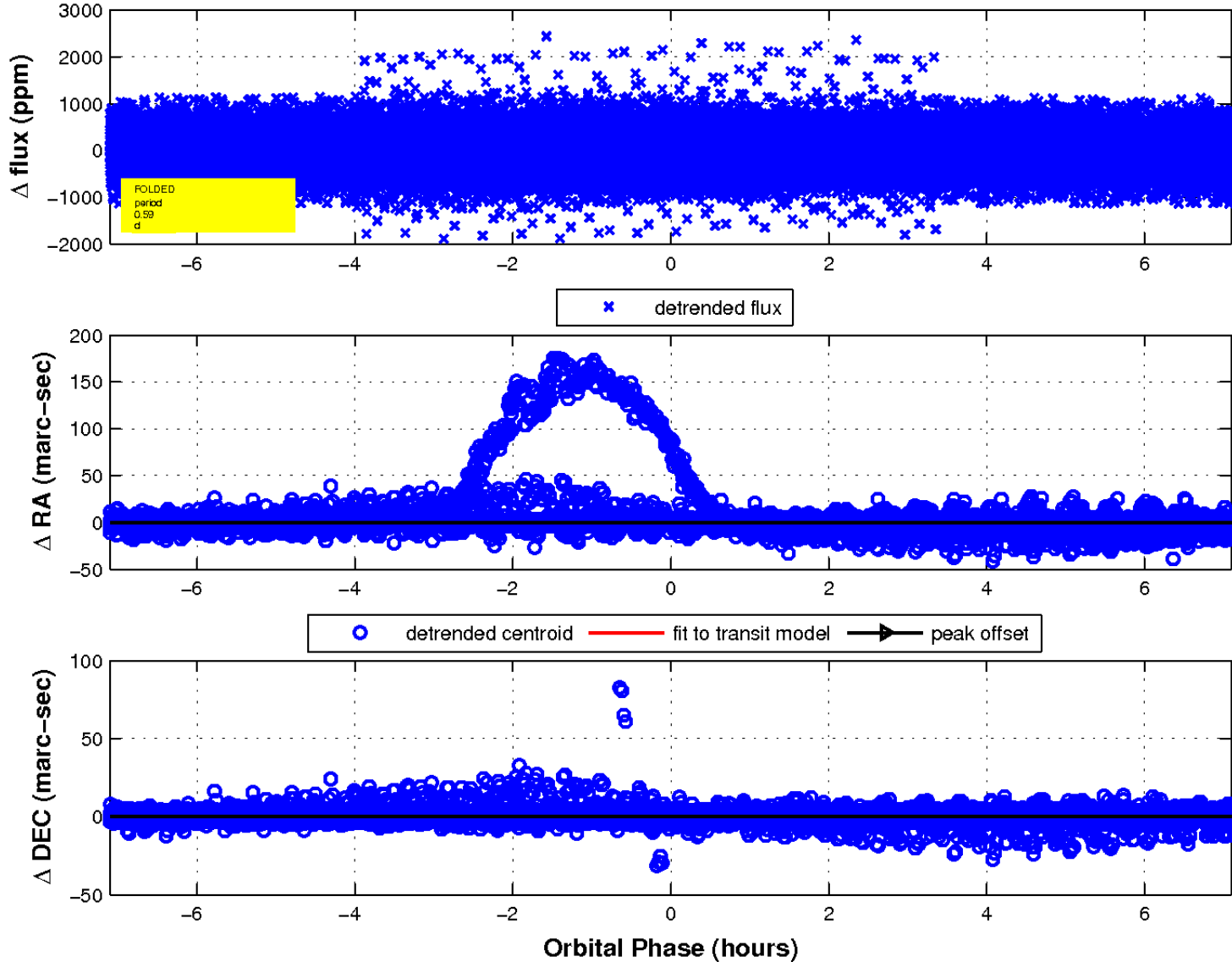
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

