

KIC 004281581

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})
004281581-01	OBS	No	0.725602	131.530945	50.0	1.659	8.3	7.7	3.06	8437	2.51	106392.83

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004281581-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

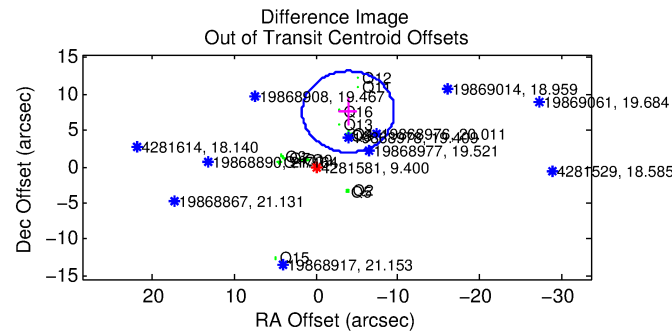
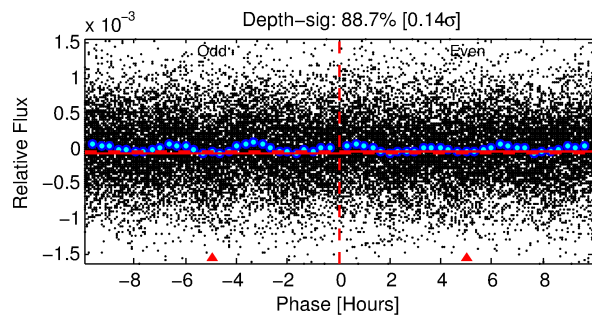
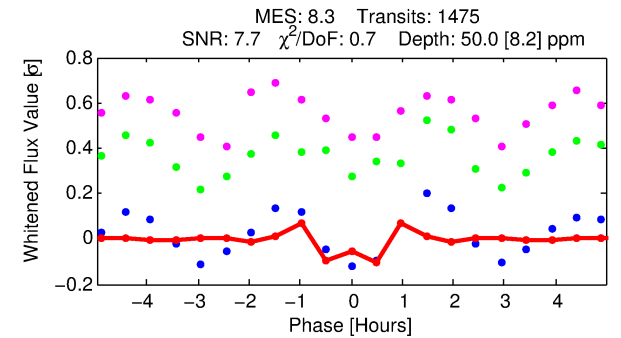
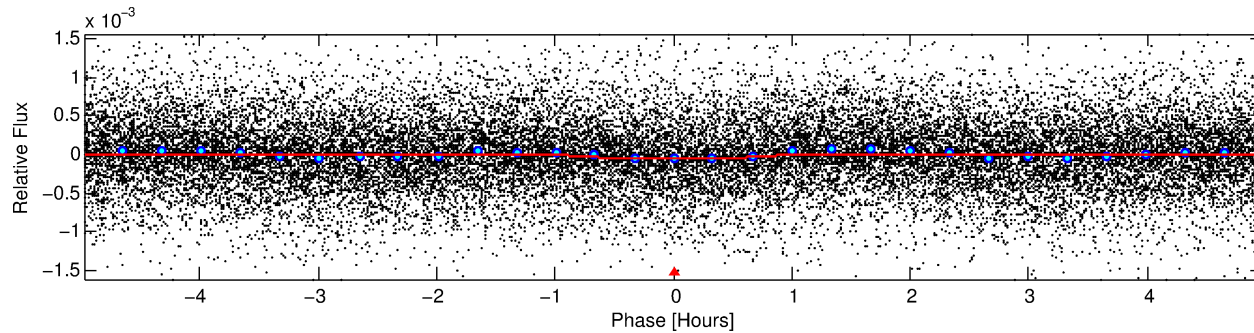
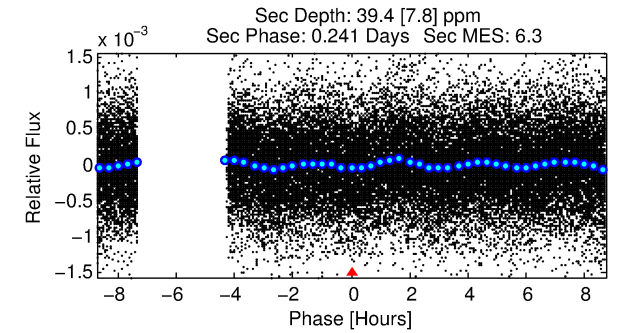
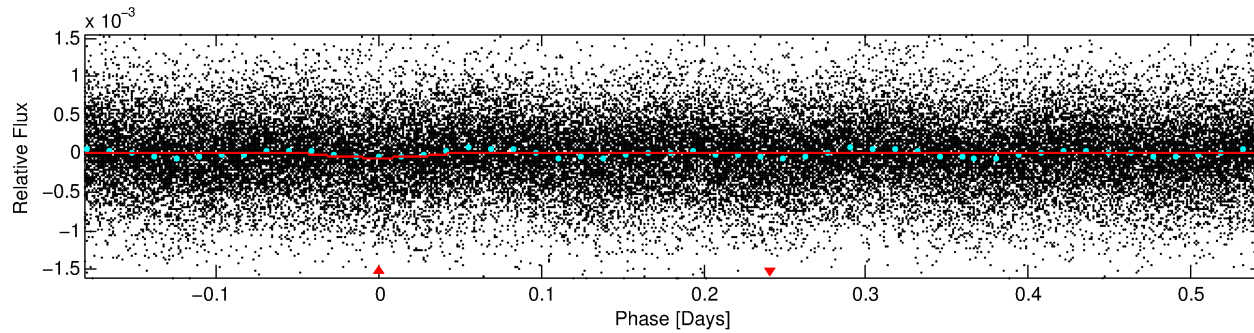
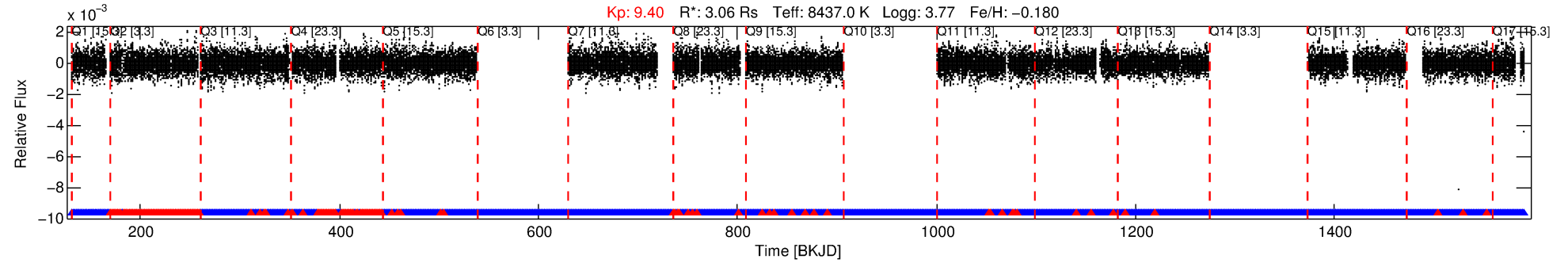
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004281581-01

No Significant Match Found

DV One-Page Summary

KIC: 4281581 Candidate: 1 of 1 Period: 0.726 d



DV Fit Results:

Period = 0.72560 [0.00001] d
Epoch = 131.5309 [0.0011] BKJD
Rp/R* = 0.0075 [0.0014]
a/R* = 1.79 [1.39]
b = 0.90 [0.25]
Seff = 106392.83 [49693.57]
Teff = 4605 [538] K
Rp = 2.51 [0.90] Re
a = 0.0200 [0.0058] AU
Ag = 1.37 [0.87] [0.43σ]
Teffp = 7702 [830] K [3.13σ]

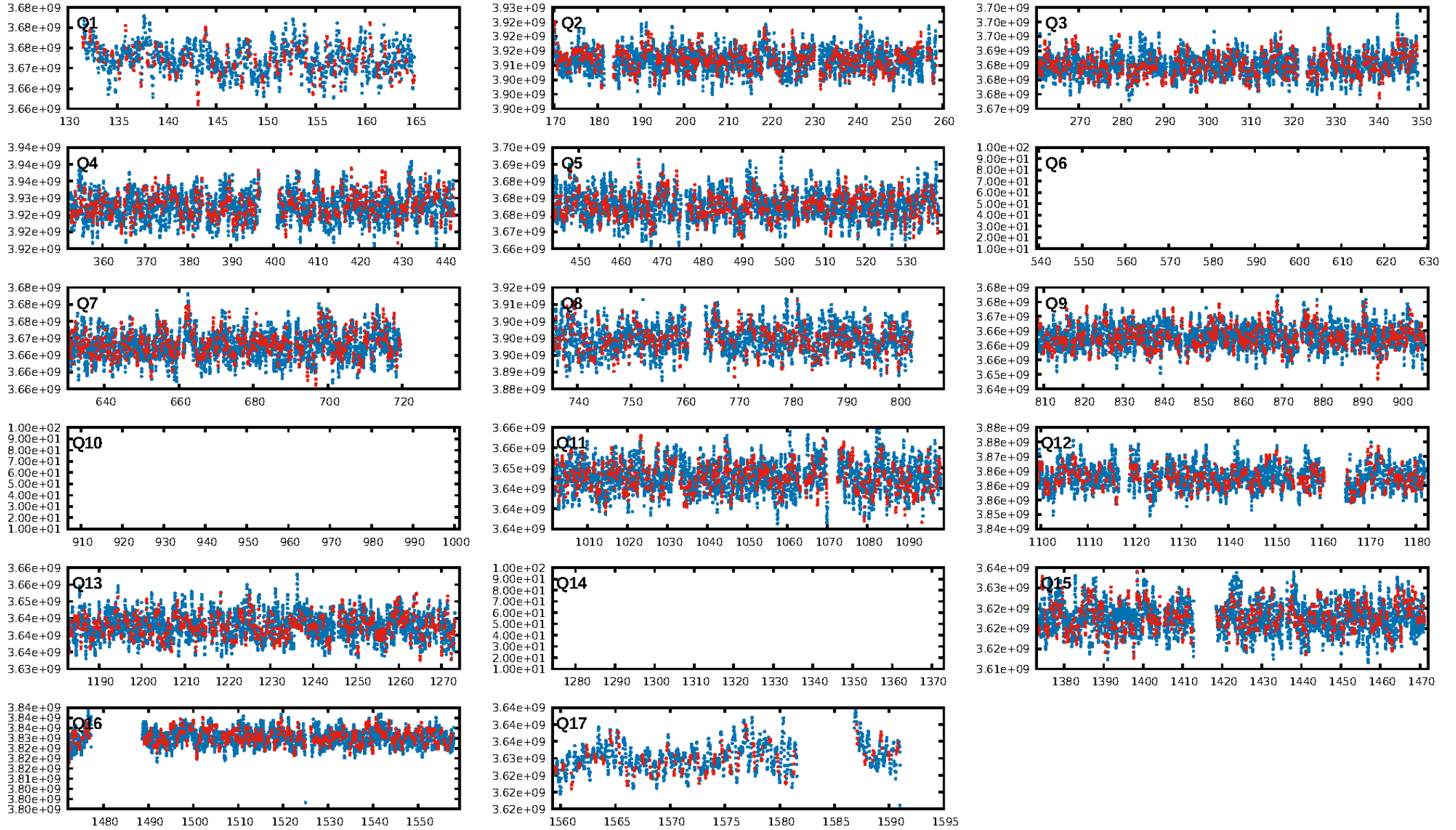
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.84e-27
RollingBand-fgt: 0.84 [1165/1391]
GhostDiagnostic-chr: N/A
Centroid-sig: 1.2%
Centroid-so: 1.039 arcsec [2.15σ]
OotOffset-rm: 8.541 arcsec [4.57σ]
KicOffset-rm: 9.961 arcsec [4.97σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 0.00 [0/14]
DiffImageOverlap-fno: 1.00 [14/14]

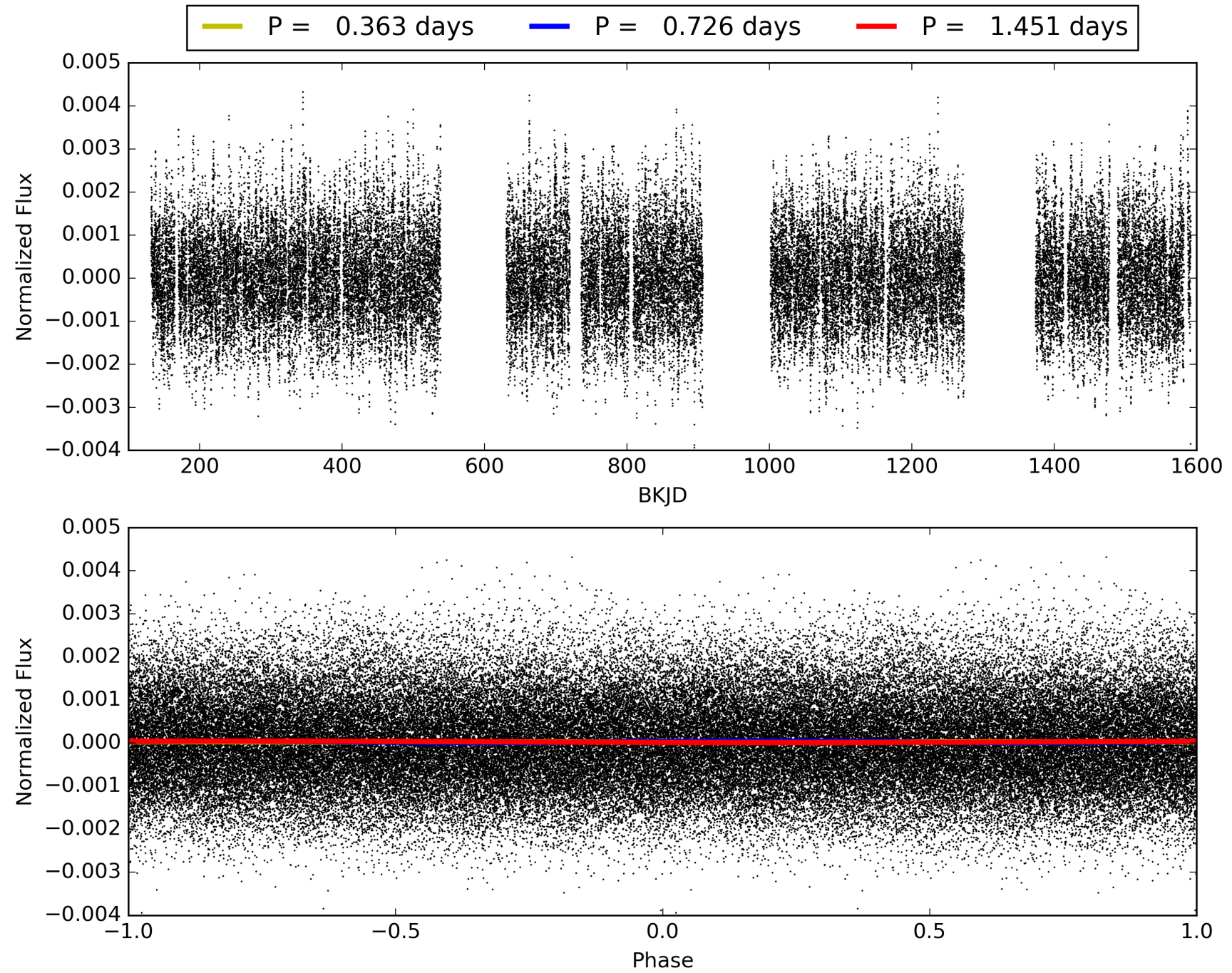
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 03:46:24 Z

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

TCE 004281581-01, PDC Light Curves

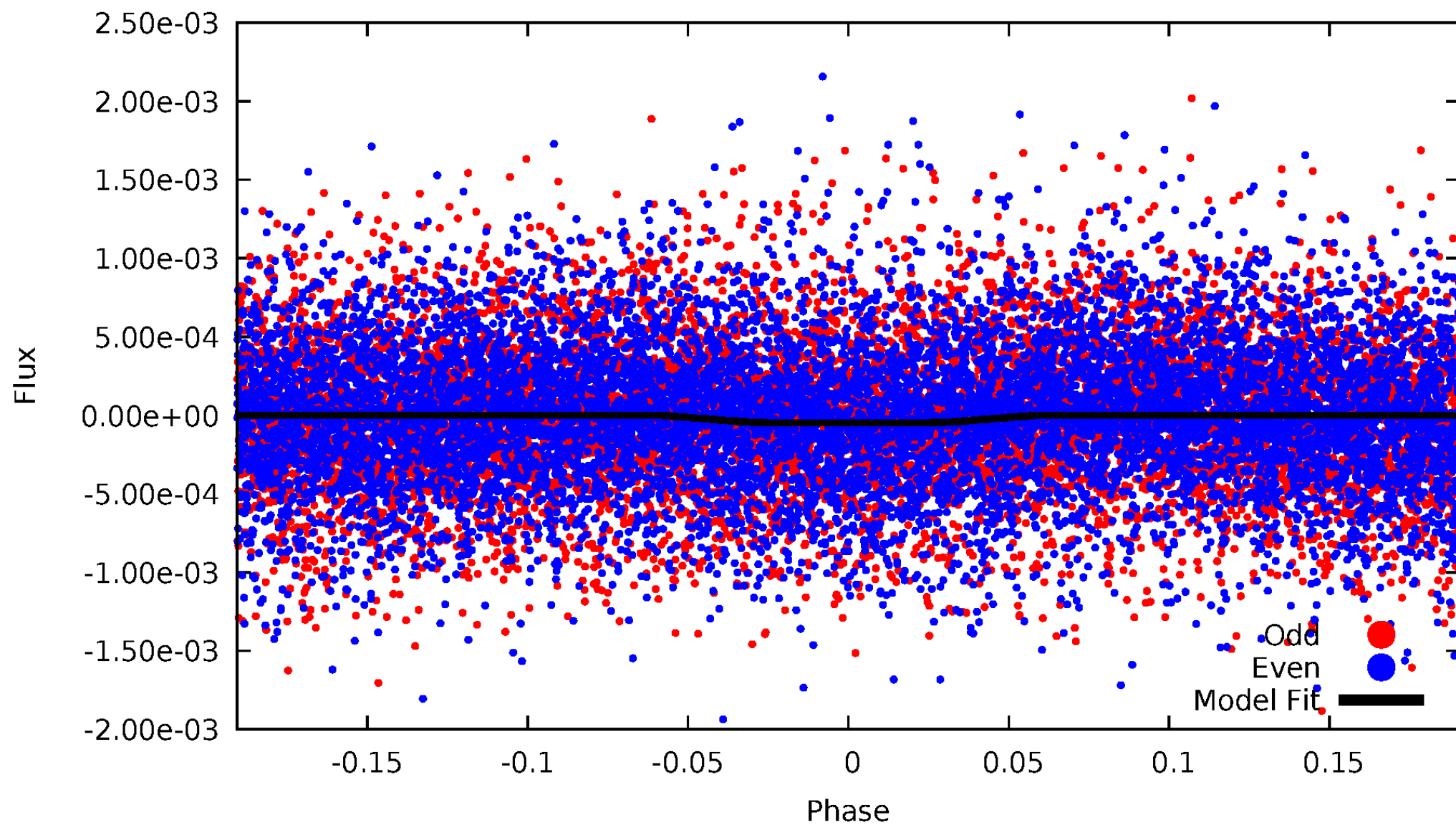


TCE 004281581-01



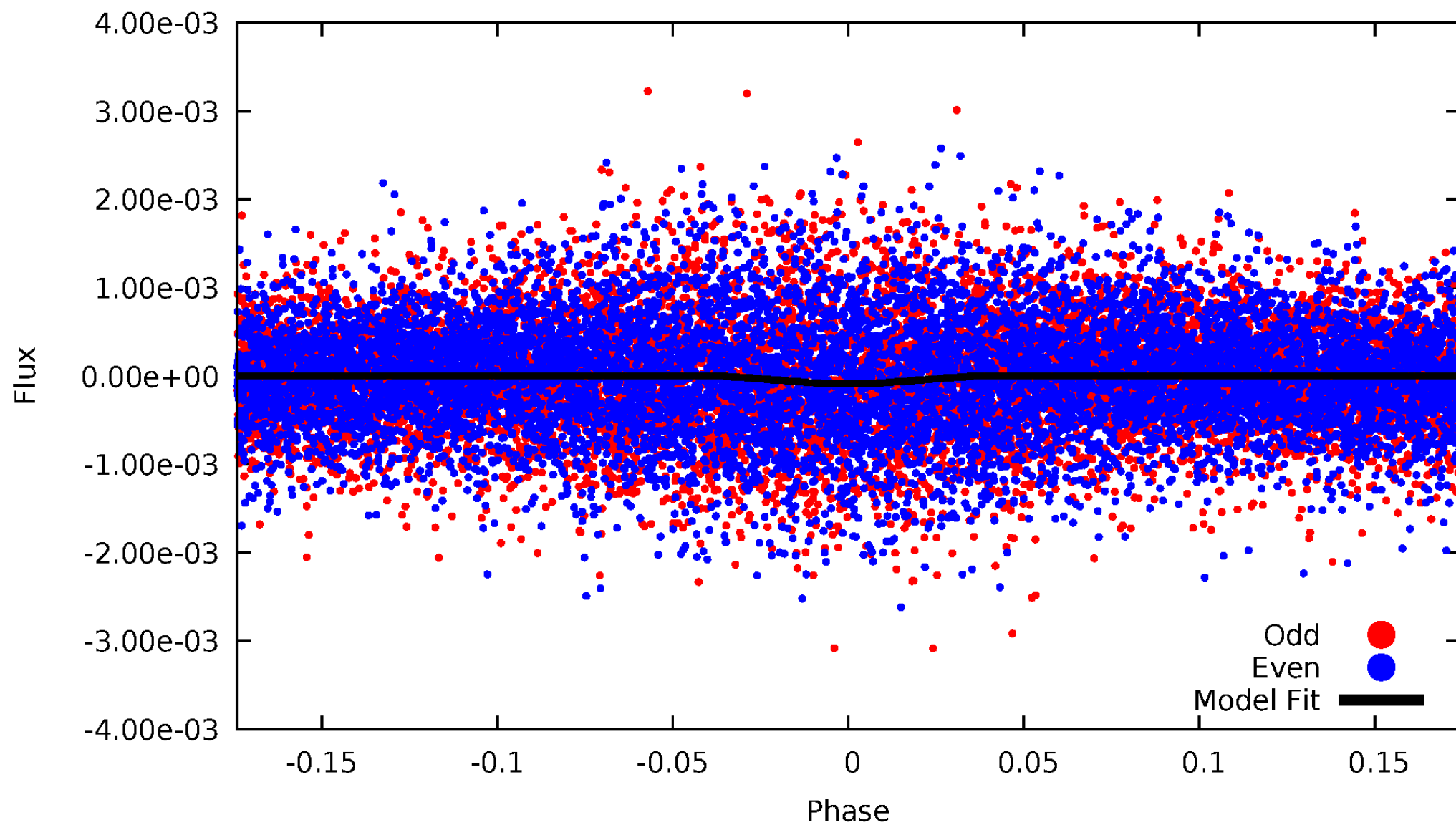
DV Odd/Even

TCE 004281581-01

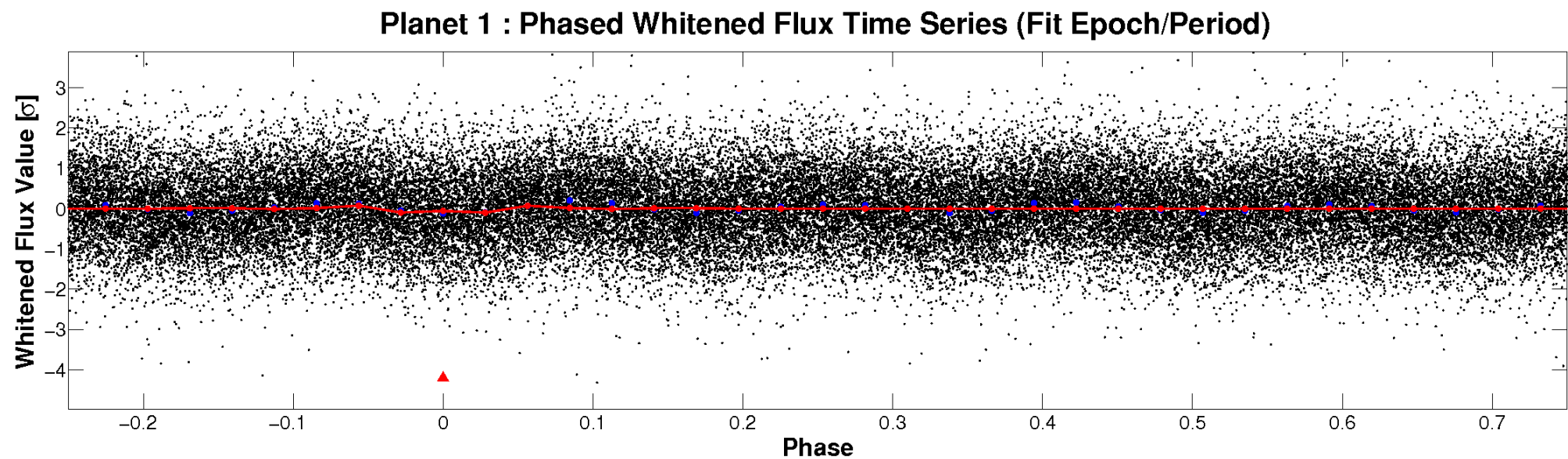
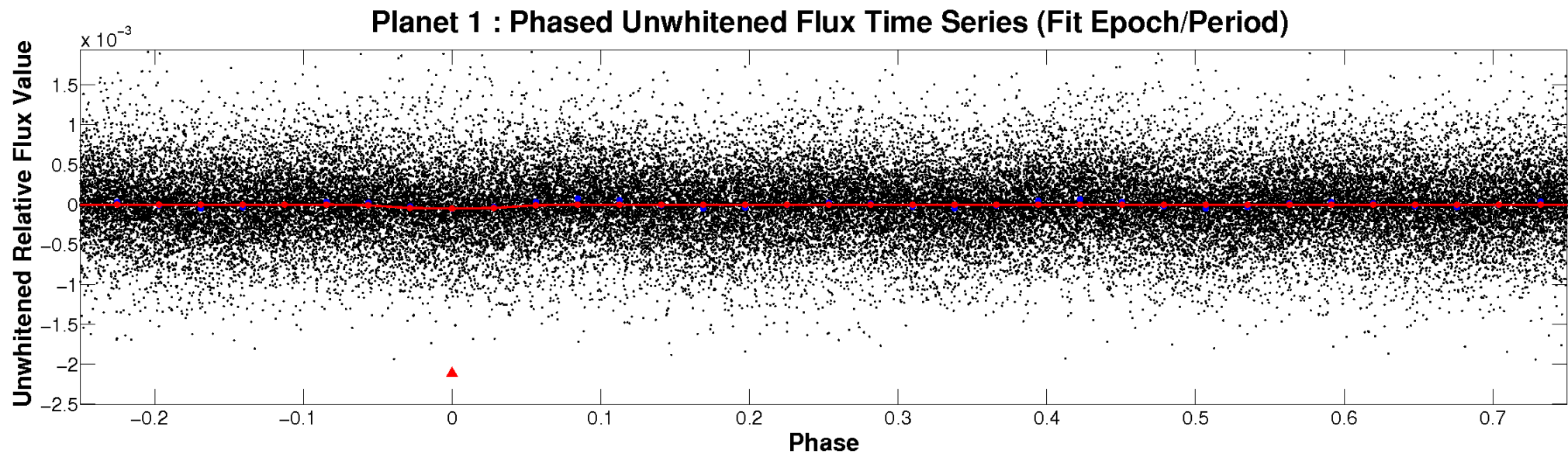


ALT Odd/Even

TCE 004281581-01

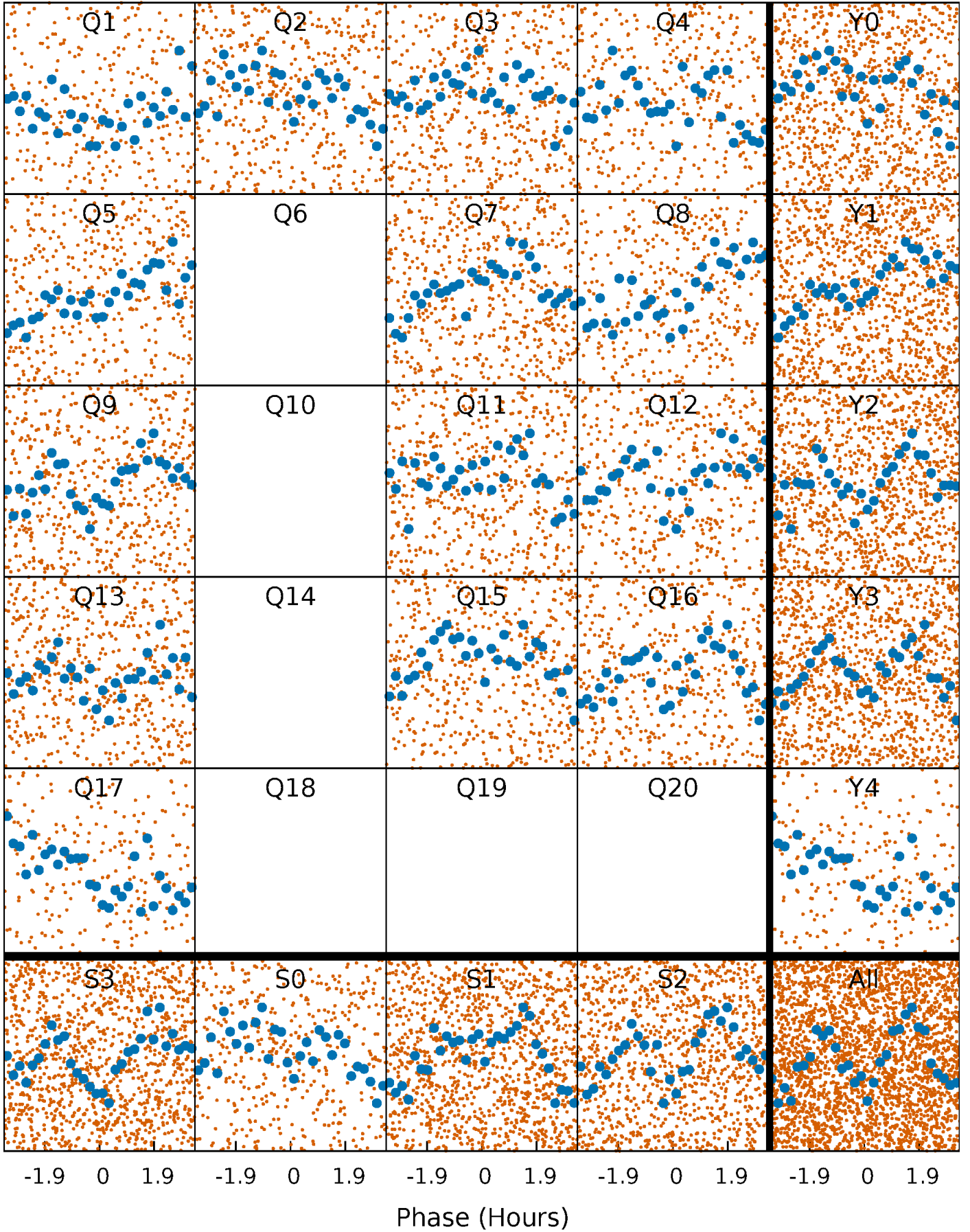


Non-Whitened Vs. Whitened Light Curve



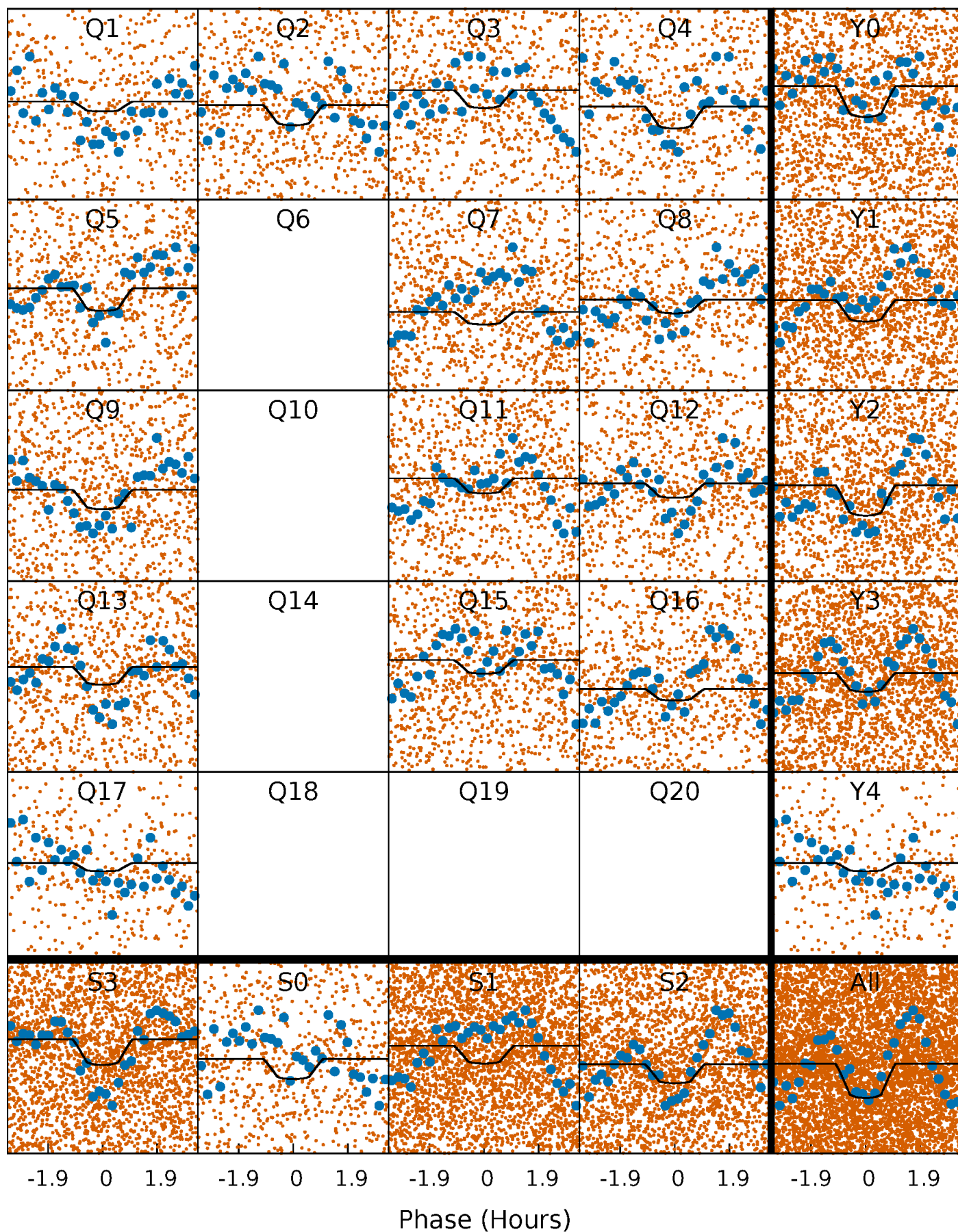
PDC Quarter-Phased Transit Curves

TCE 004281581-01 P= 0.725602 Days $T_0=131.530945$ (BKJD)



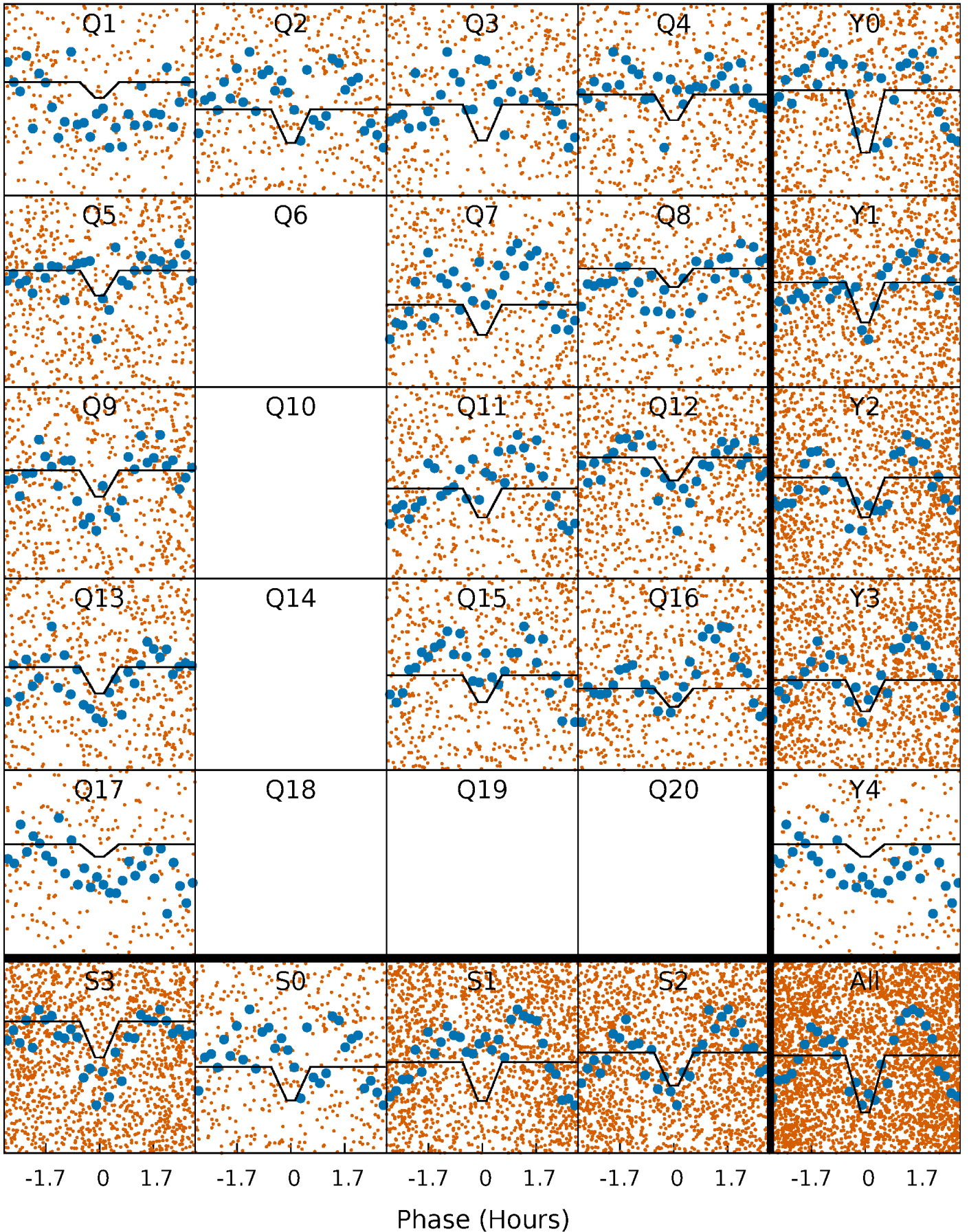
DV Quarter-Phased Transit Curves

TCE 004281581-01 P= 0.725602 Days $T_0=131.530945$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

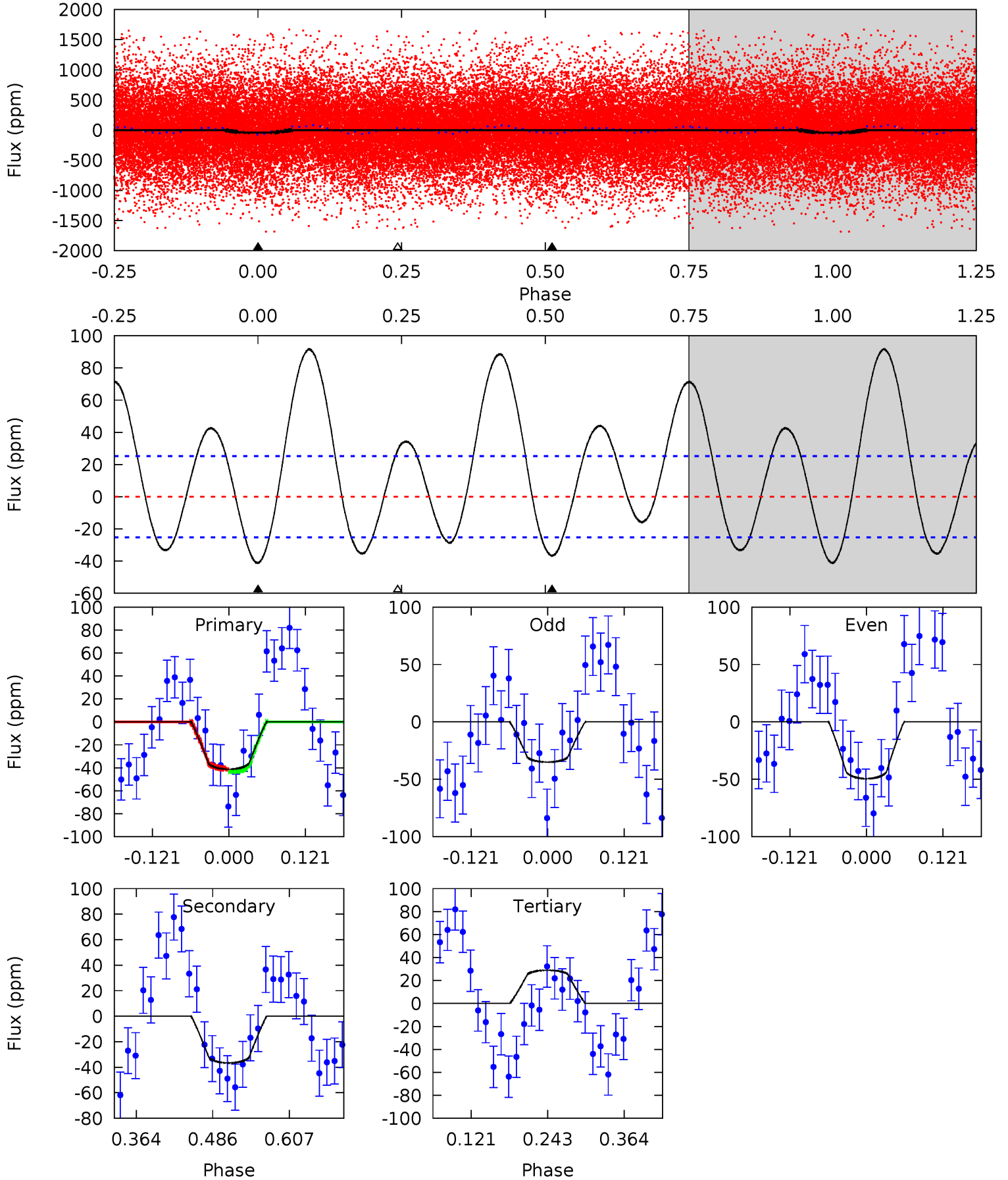
TCE 004281581-01 P= 0.725614 Days $T_0=131.518783$ (BKJD)



DV Model-Shift Uniqueness Test

004281581-01, P = 0.725602 Days, E = 130.805343 Days

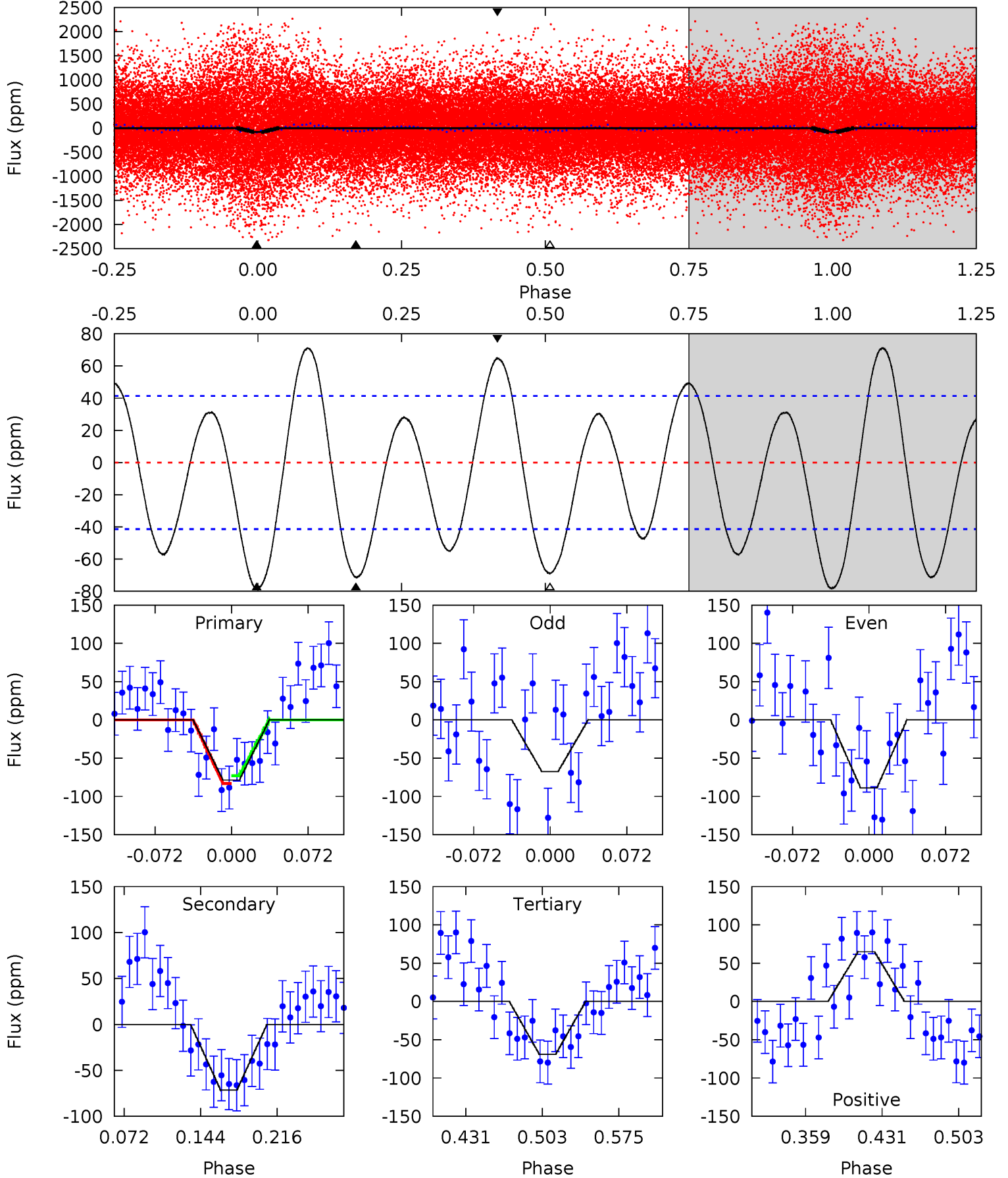
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.39	6.57	-5.19	0	4.52	1.55	5.41	12.6	7.39	11.8	6.57	1.31	0.77	0.69	0.22



Alt Model-Shift Uniqueness Test

004281581-01, P = 0.725614 Days, E = 130.793169 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.79	8.00	7.72	7.26	4.63	1.80	4.35	1.07	1.52	0.28	0.73	1.20	0.71	0.48	0.56



Stellar Parameters For KIC 004281581

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8437^{+58}_{-100}	$3.772^{+0.272}_{-0.048}$	$-0.180^{+0.250}_{-0.200}$	$3.057^{+0.401}_{-0.935}$	$2.017^{+0.326}_{-0.245}$	$0.099^{+0.168}_{-0.022}$
	+1%/-1%	+7%/-1%	+139%/-111%	+13%/-31%	+16%/-12%	+169%/-22%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004281581-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-37 ± 6	$2.35^{+0.59}_{-0.54}$	6296^{+245}_{-460}	6899^{+1257}_{-825}	$1.497^{+0.998}_{-0.551}$
Alt.	-71 ± 9	$2.89^{+0.57}_{-0.60}$	6262^{+255}_{-444}	7621^{+1084}_{-805}	$1.934^{+1.085}_{-0.580}$

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

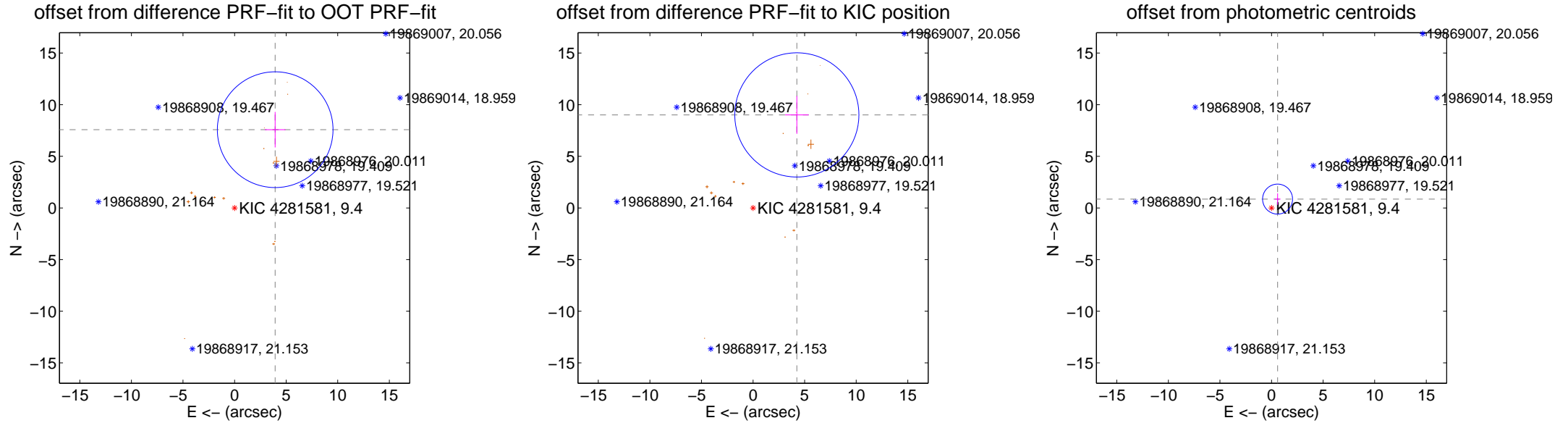
DV Centroid Data

Supplemental centroid analysis for 004281581-01. **Kepler magnitude: 9.40.** Transit SNR 7.73

There are 0 quarters with good PRF difference image offsets

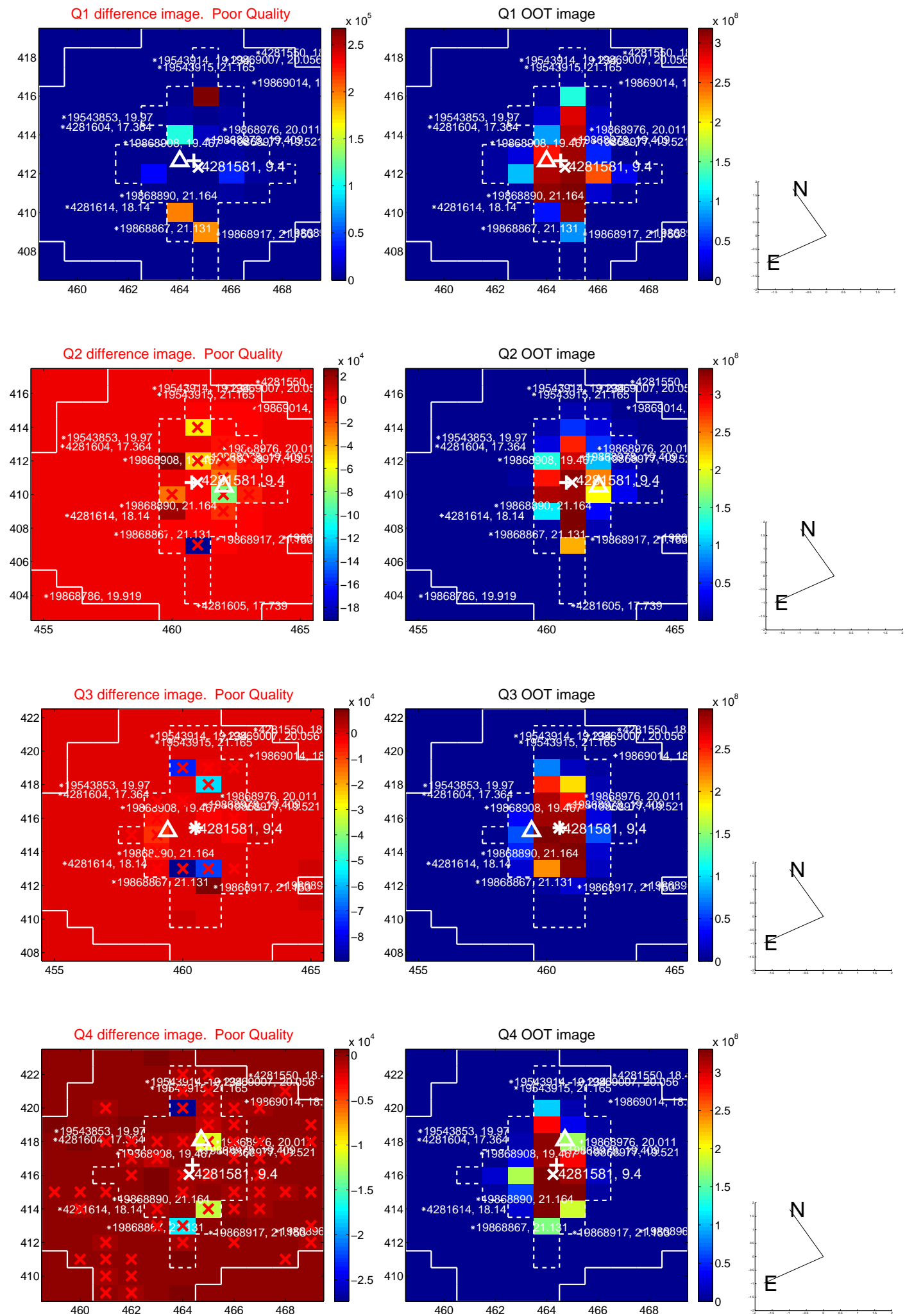
The direct PRF centroid is offset from the target star catalog position by about 1.45 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.541 ± 1.868	4.57	-3.936 ± 0.993	7.580 ± 1.721
PRF-fit source offset from KIC position	9.961 ± 2.005	4.97	-4.245 ± 1.138	9.011 ± 1.832
photometric centroid source offset	1.04 ± 0.48	2.15	-0.59 ± 0.28	0.86 ± 0.55

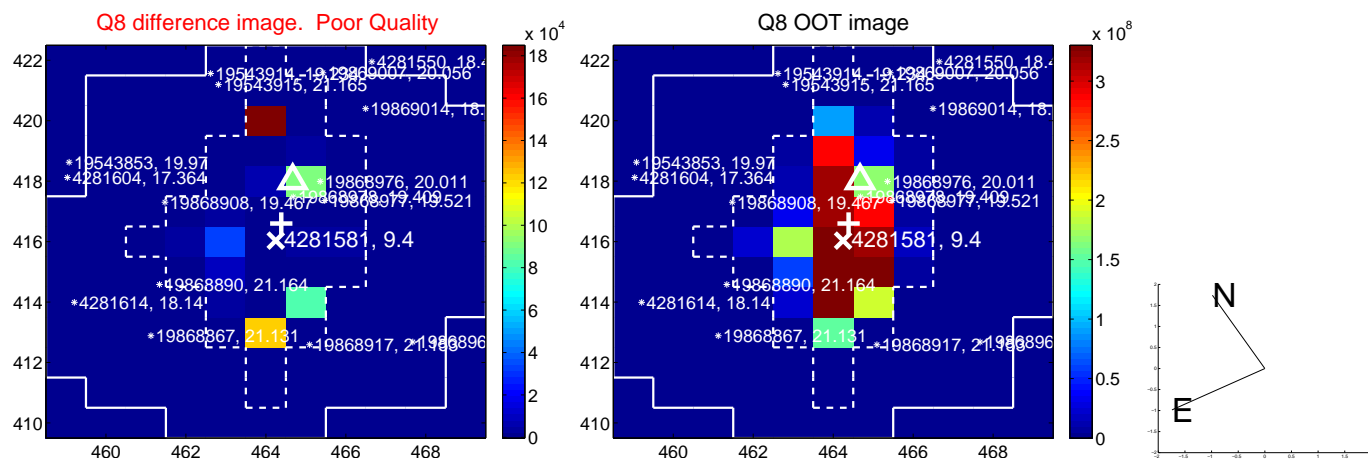
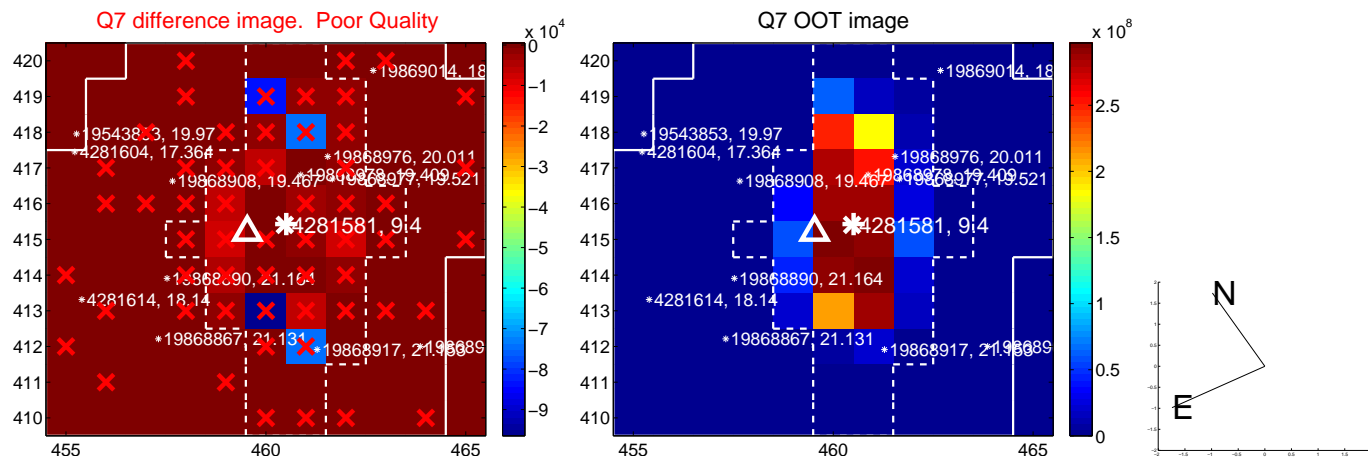
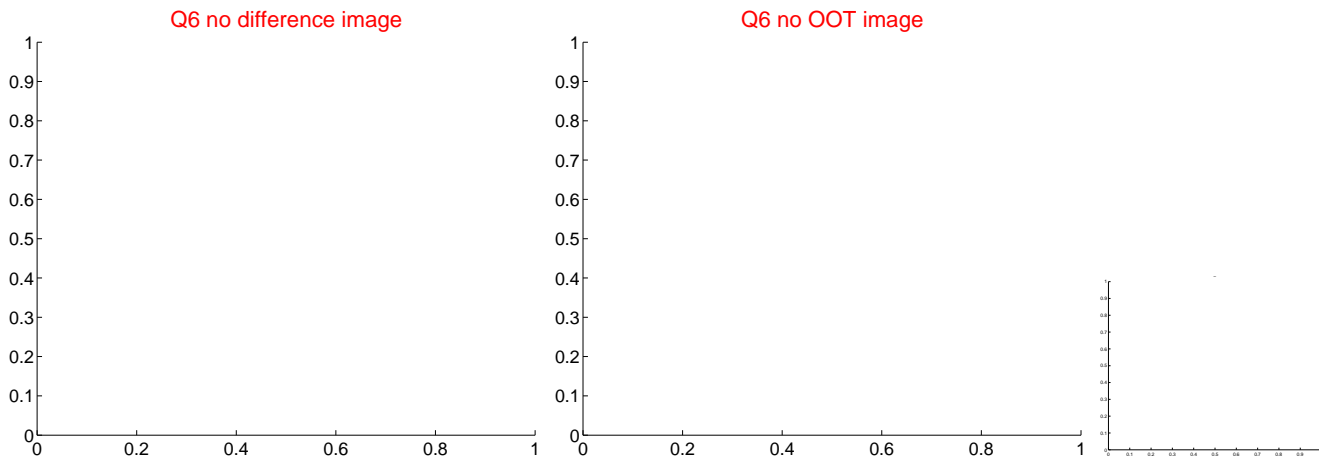
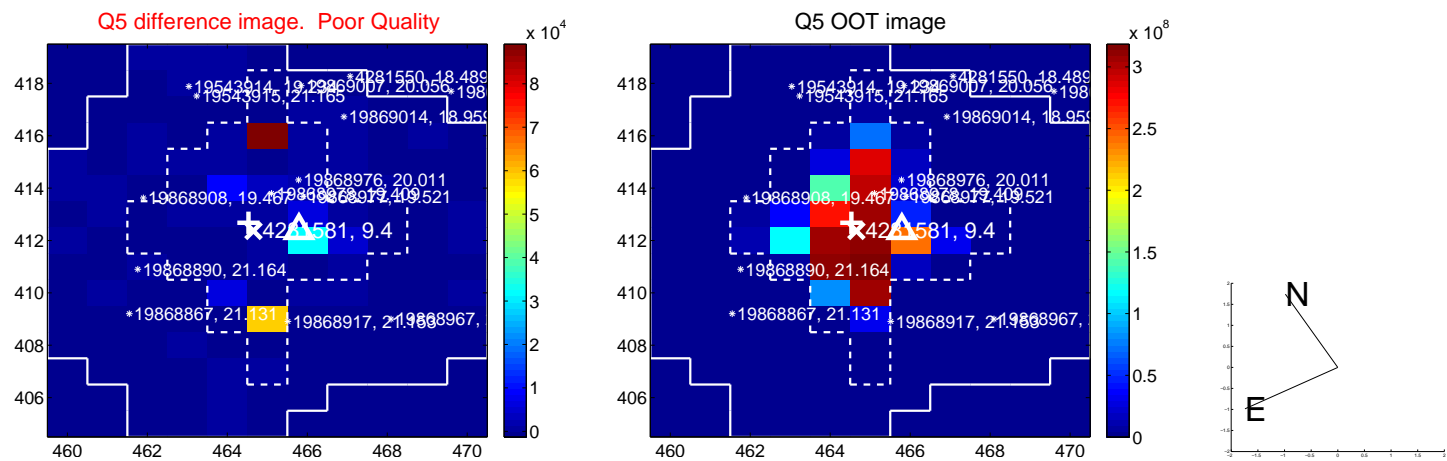


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

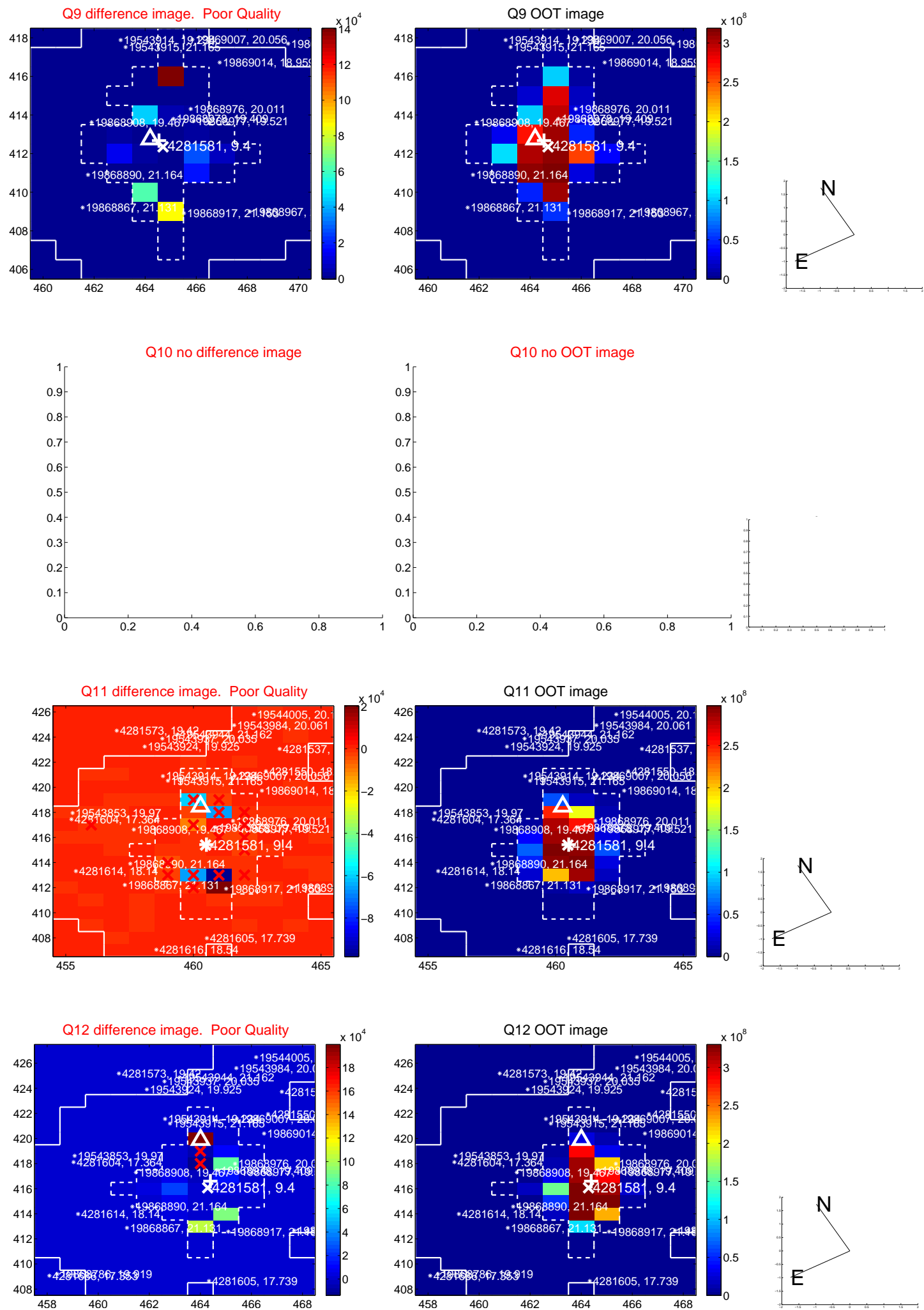
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



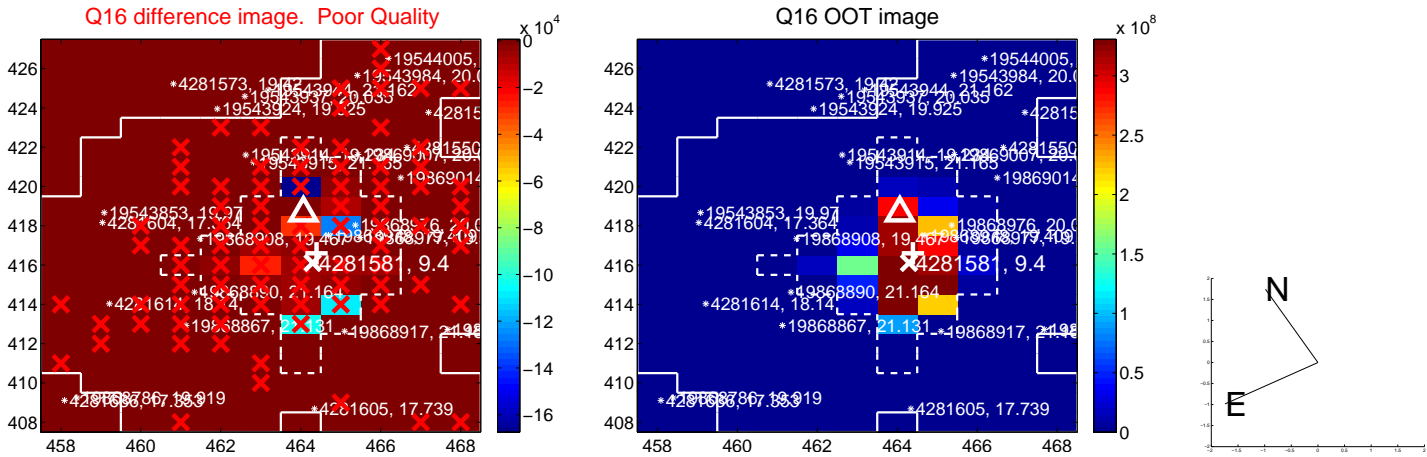
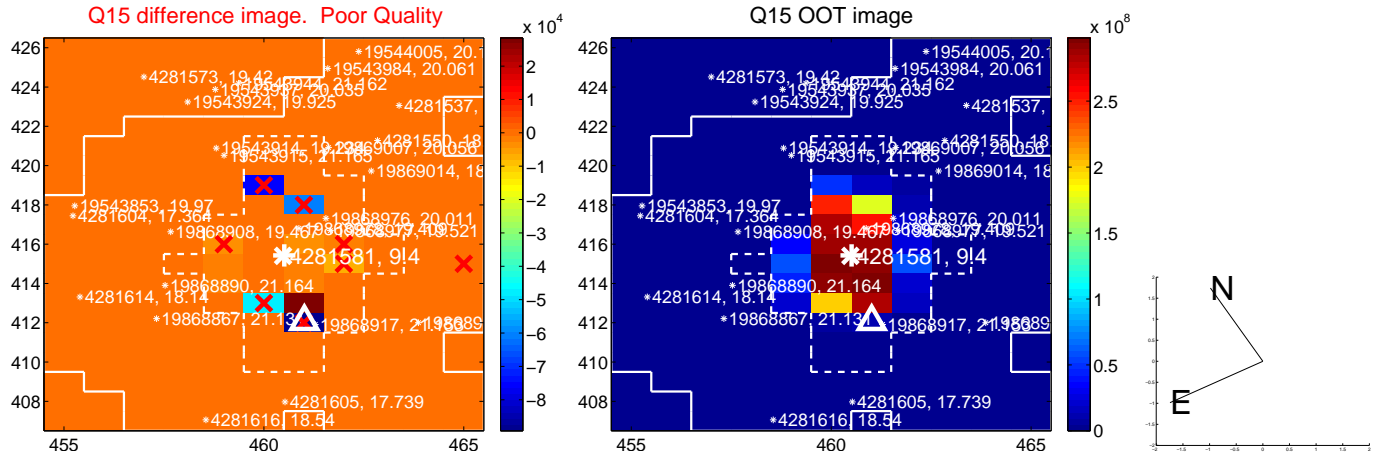
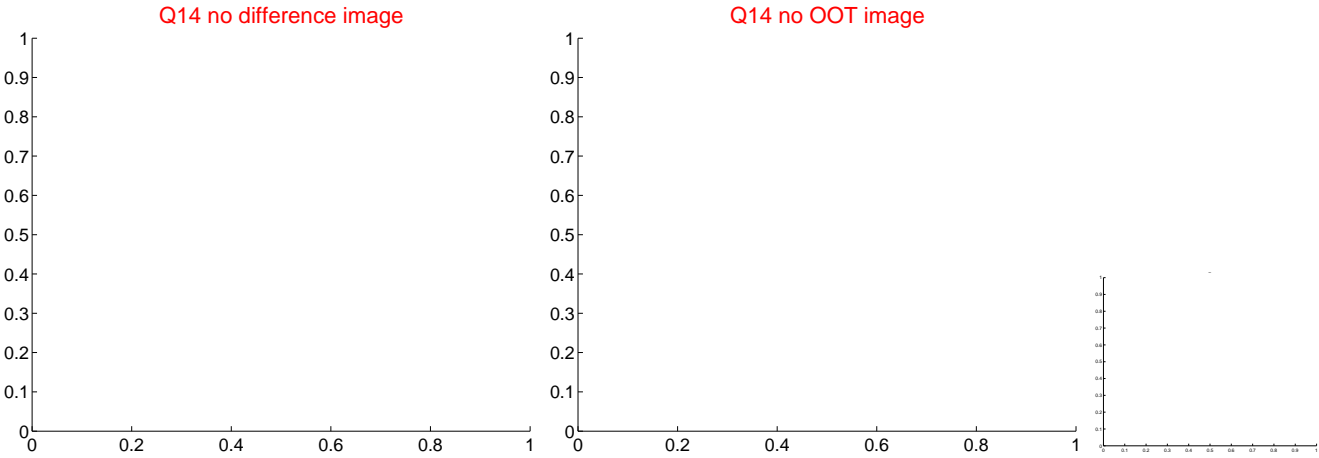
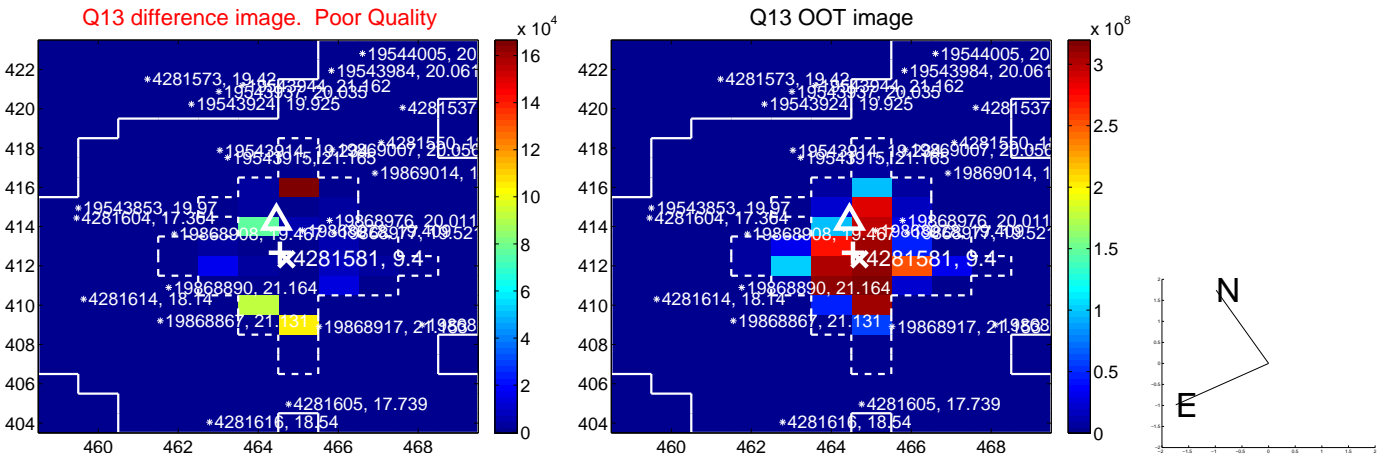
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



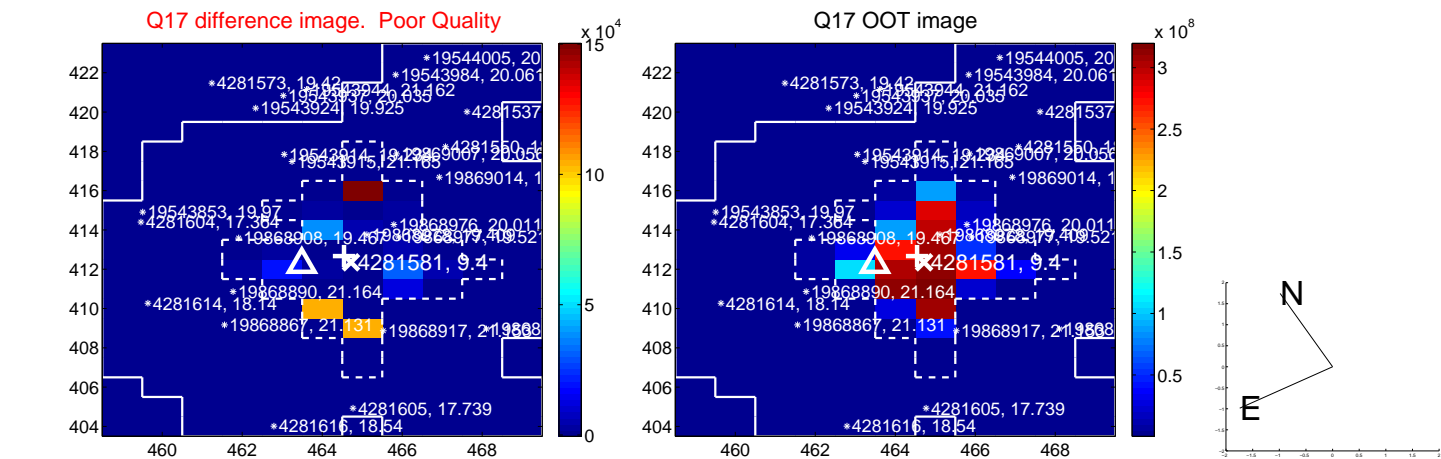
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



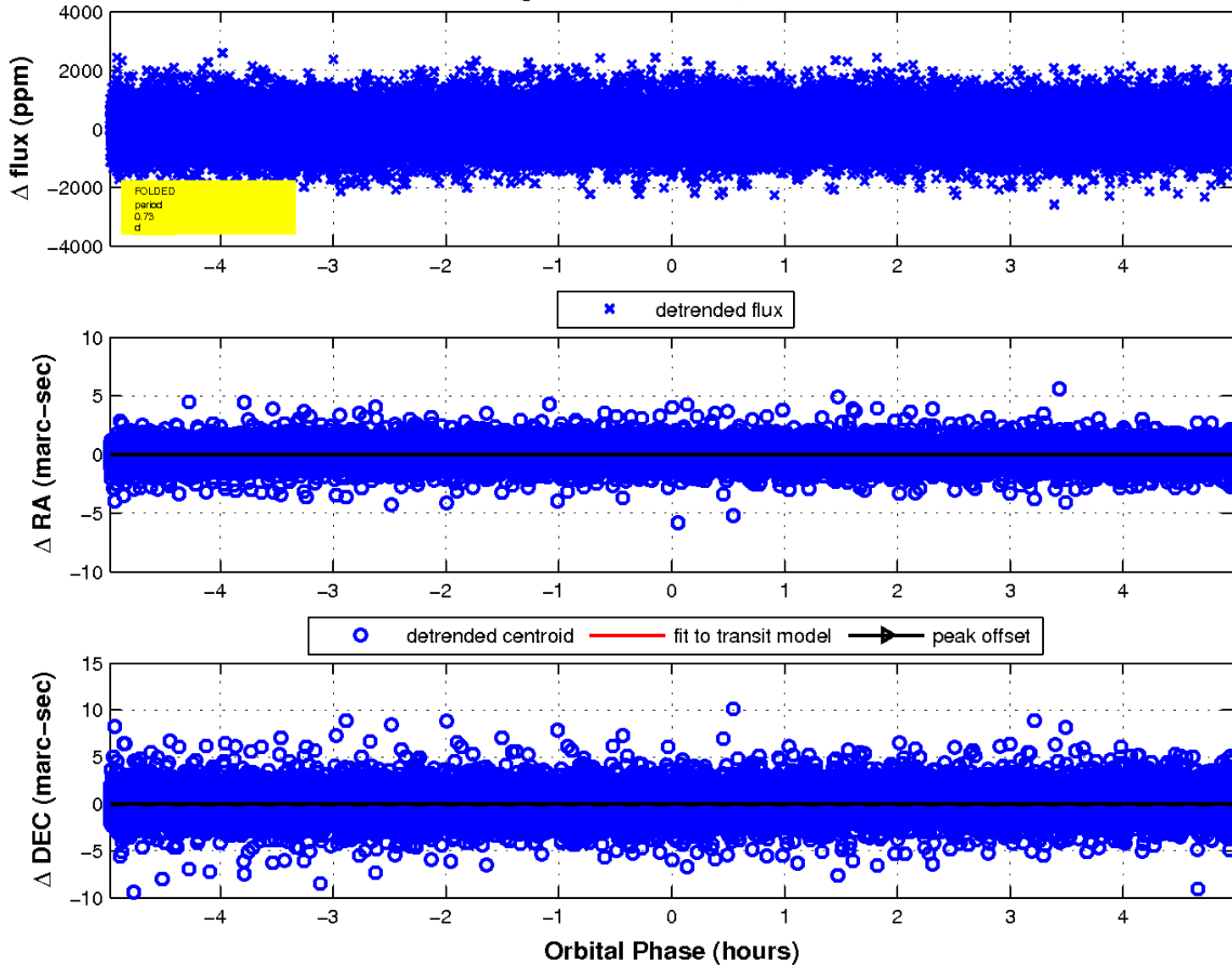
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

