

KIC 010221507

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})
010221507-01	OBS	No	25.709615	140.767825	72.8	28.539	7.2	11.2	1.40	6726	1.29	104.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010221507-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_UNCERTAIN

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

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

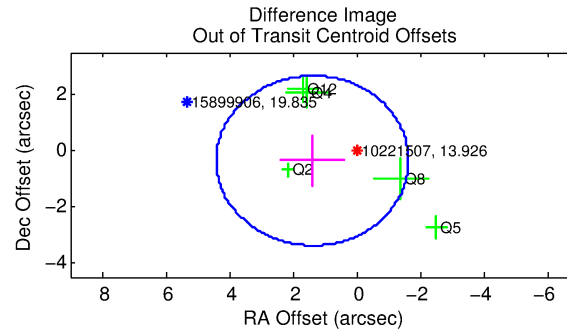
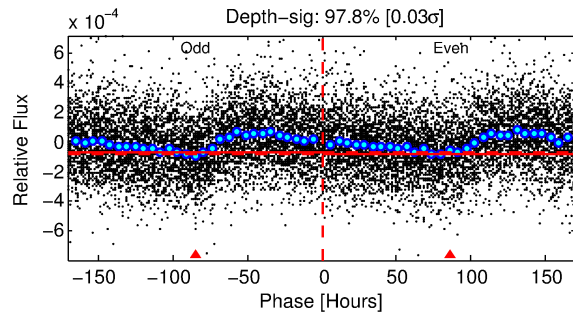
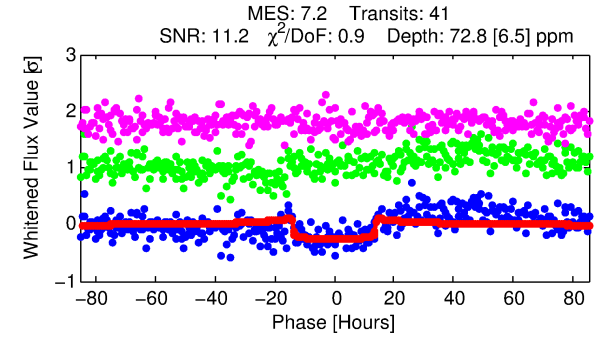
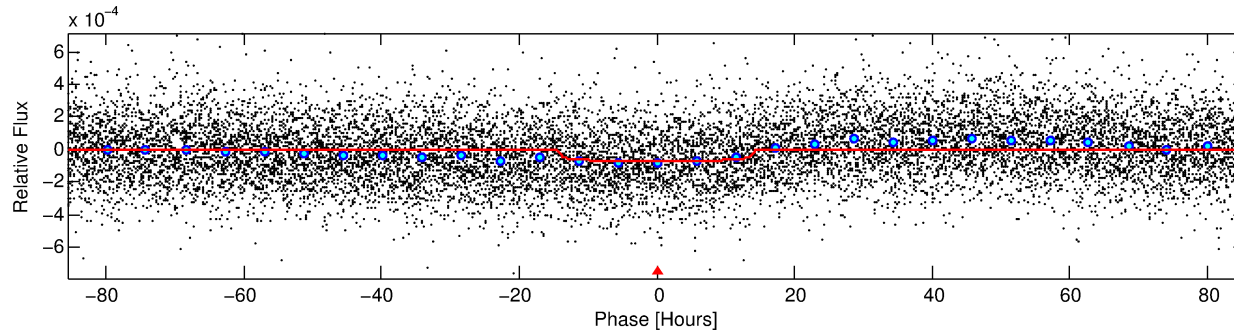
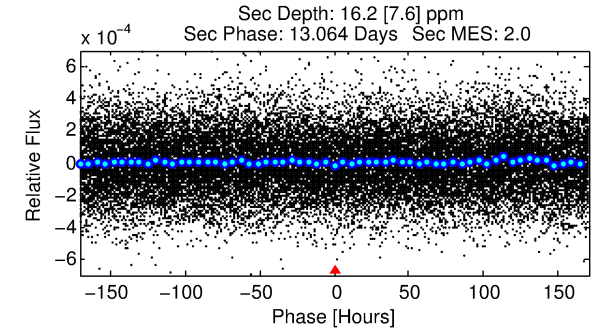
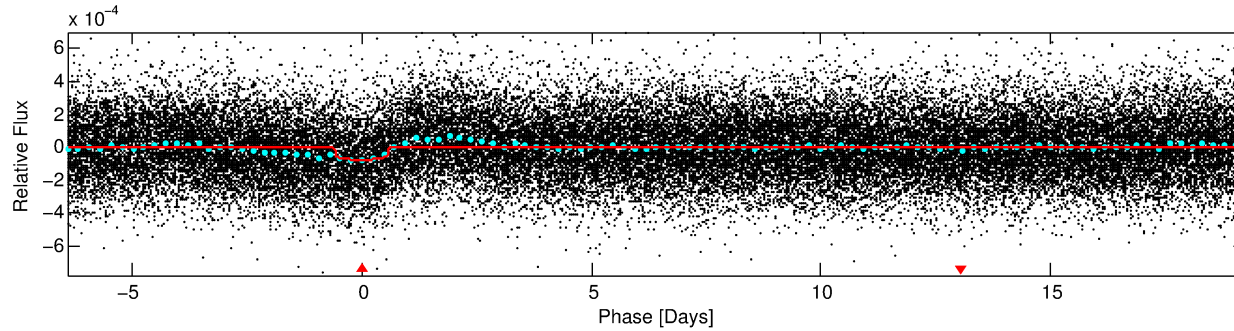
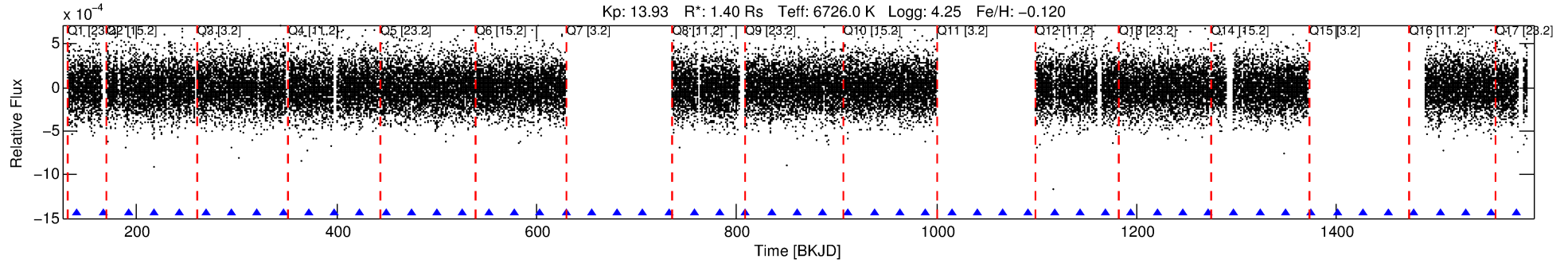
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010221507-01

No Significant Match Found

DV One-Page Summary

KIC: 10221507 Candidate: 1 of 1 Period: 25.710 d



DV Fit Results:

Period = 25.70962 [0.00065] d
Epoch = 140.7678 [0.0206] BKJD
Rp/R* = 0.0084 [0.0012]
a/R* = 4.83 [3.43]
b = 0.73 [0.47]
Seff = 104.84 [41.60]
Teq = 816 [81] K
Rp = 1.29 [0.46] Re
a = 0.1851 [0.0488] AU
Ag = 183.02 [120.53] [1.51σ]
Teffp = 4640 [654] K [5.80σ]

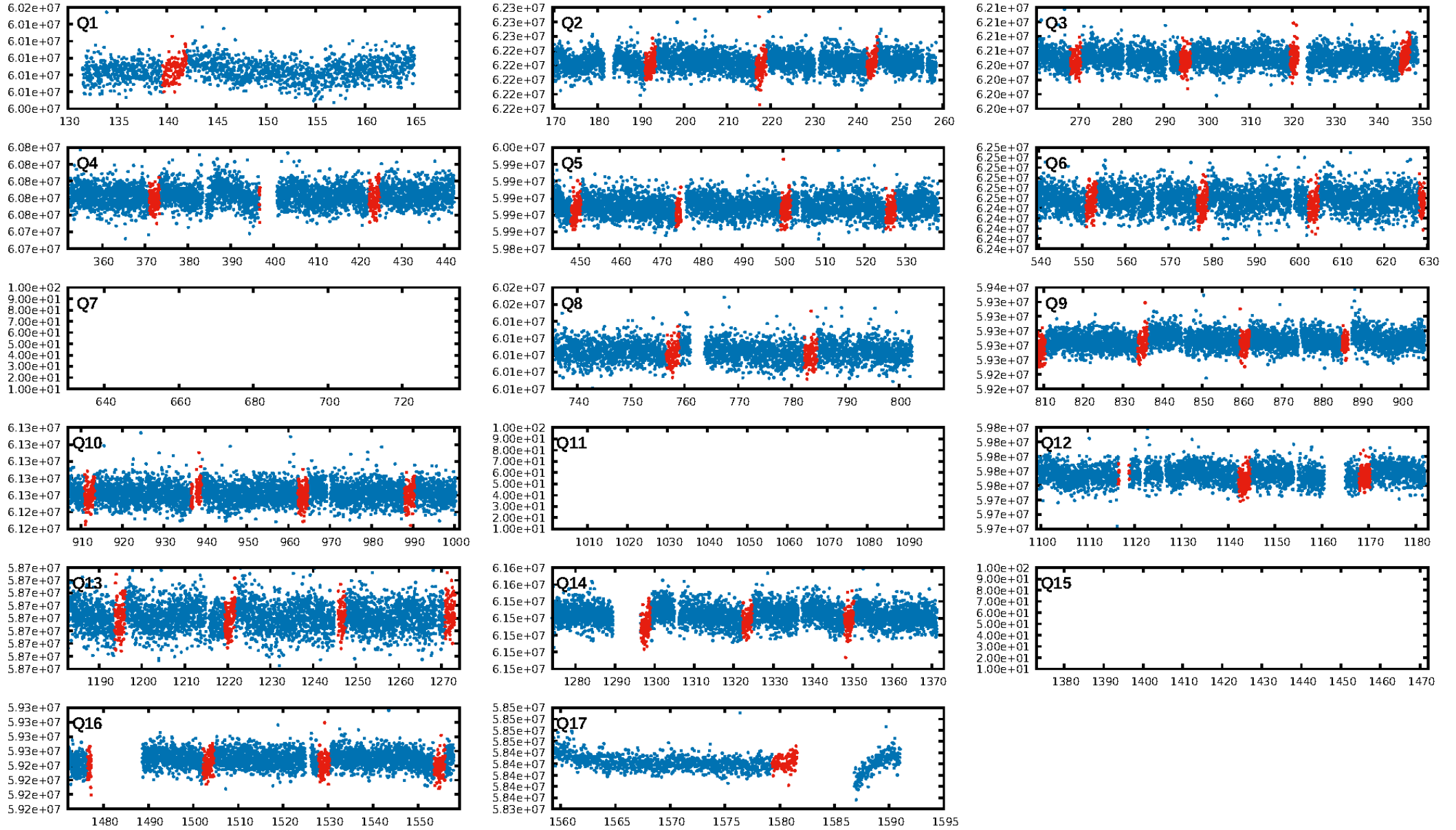
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.07e-13
RollingBand-fgt: 1.00 [39/39]
GhostDiagnostic-chr: 2.839
Centroid-sig: 11.7%
Centroid-so: 1.464 arcsec [1.43σ]
OotOffset-rm: 1.430 arcsec [1.42σ]
KicOffset-rm: 1.396 arcsec [1.38σ]
OotOffset-st: 1/0/3/1 [5]
KicOffset-st: 1/0/3/1 [5]
DiffImageQuality-fgm: 0.80 [4/5]
DiffImageOverlap-fno: 1.00 [12/12]

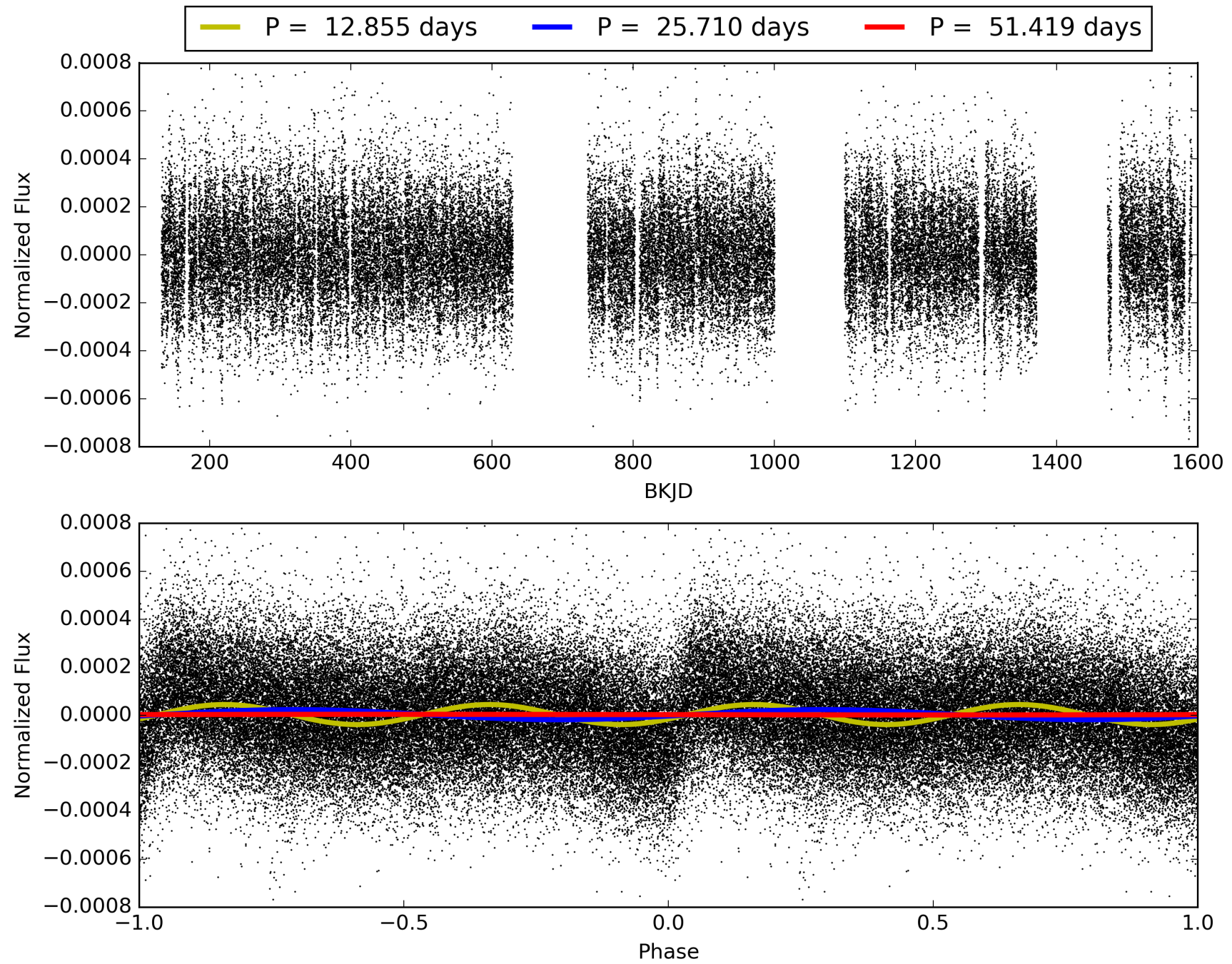
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:21:23 Z

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

TCE 010221507-01, PDC Light Curves

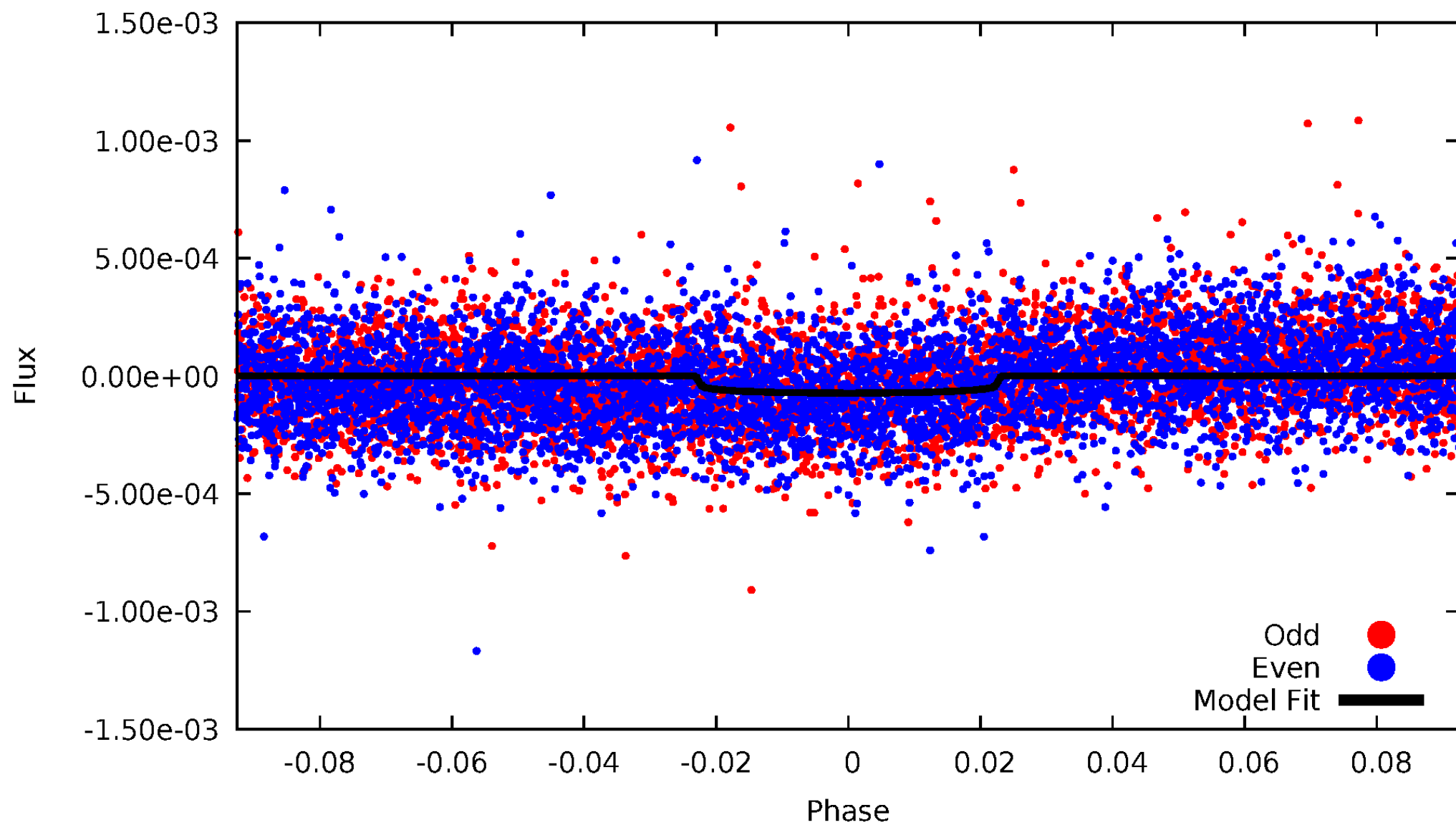


TCE 010221507-01



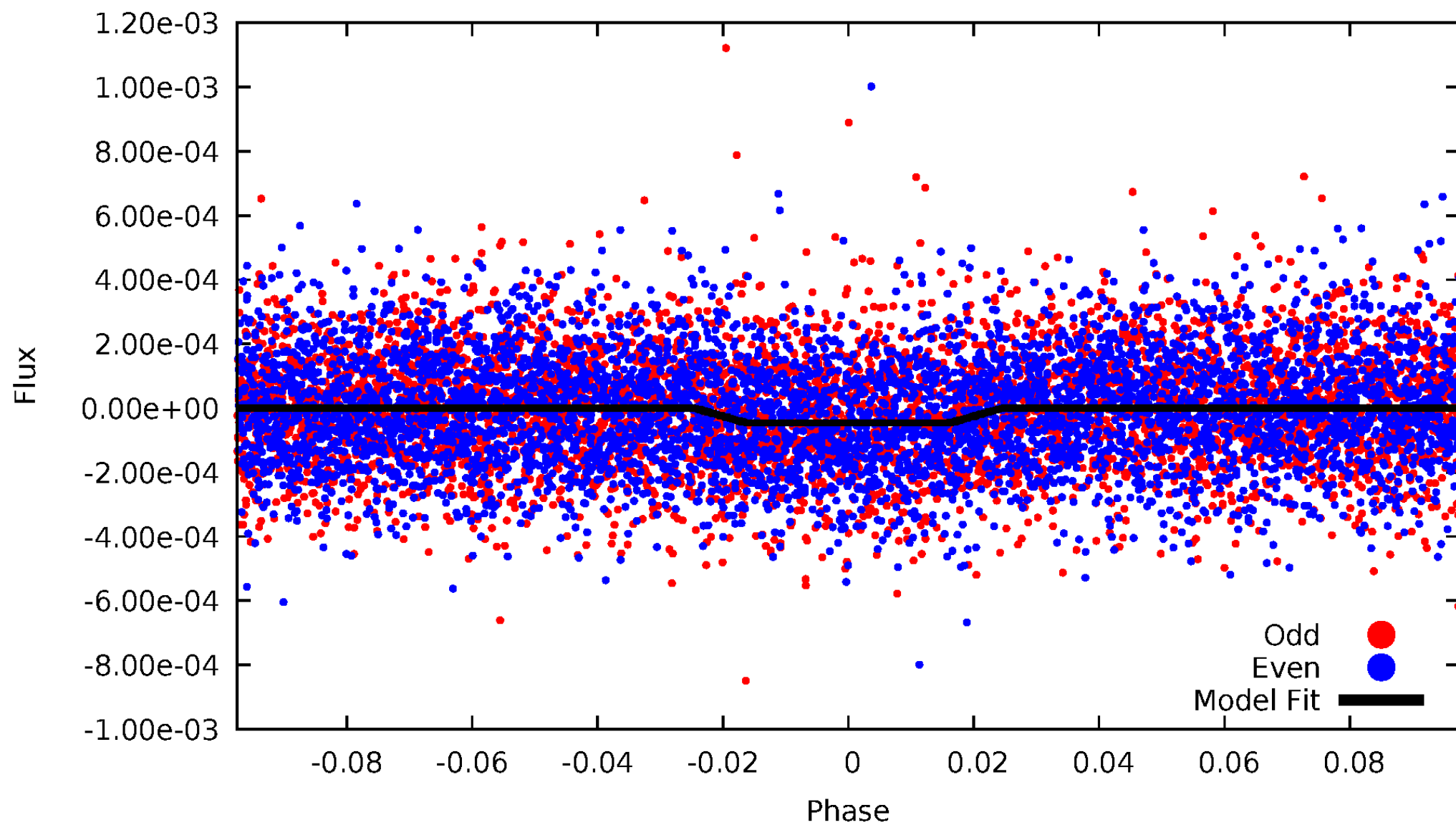
DV Odd/Even

TCE 010221507-01

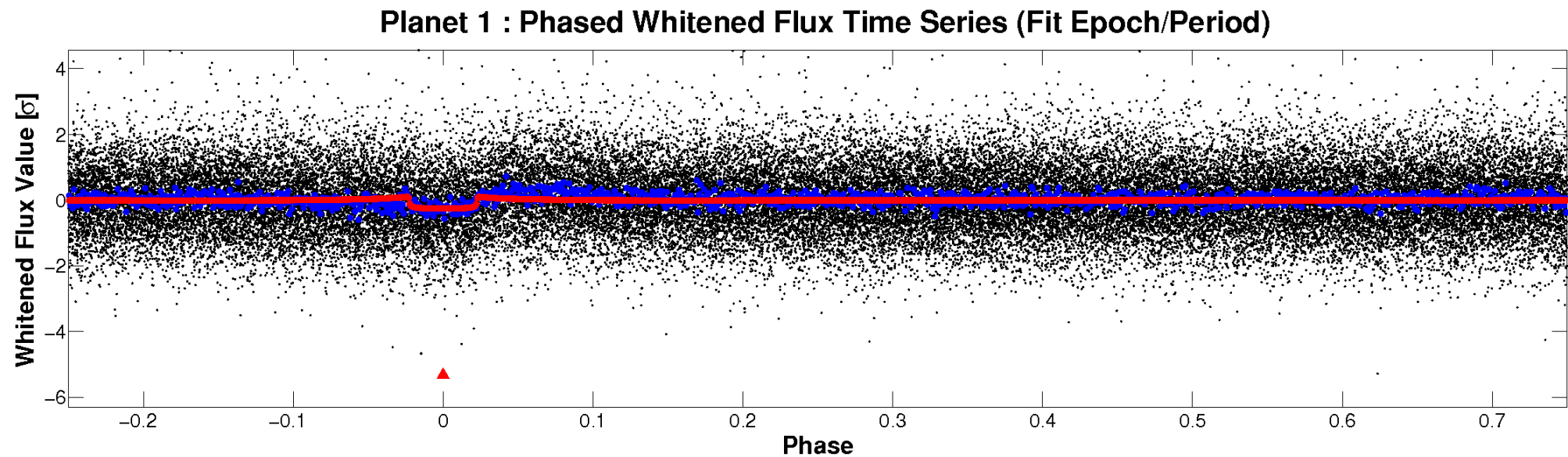
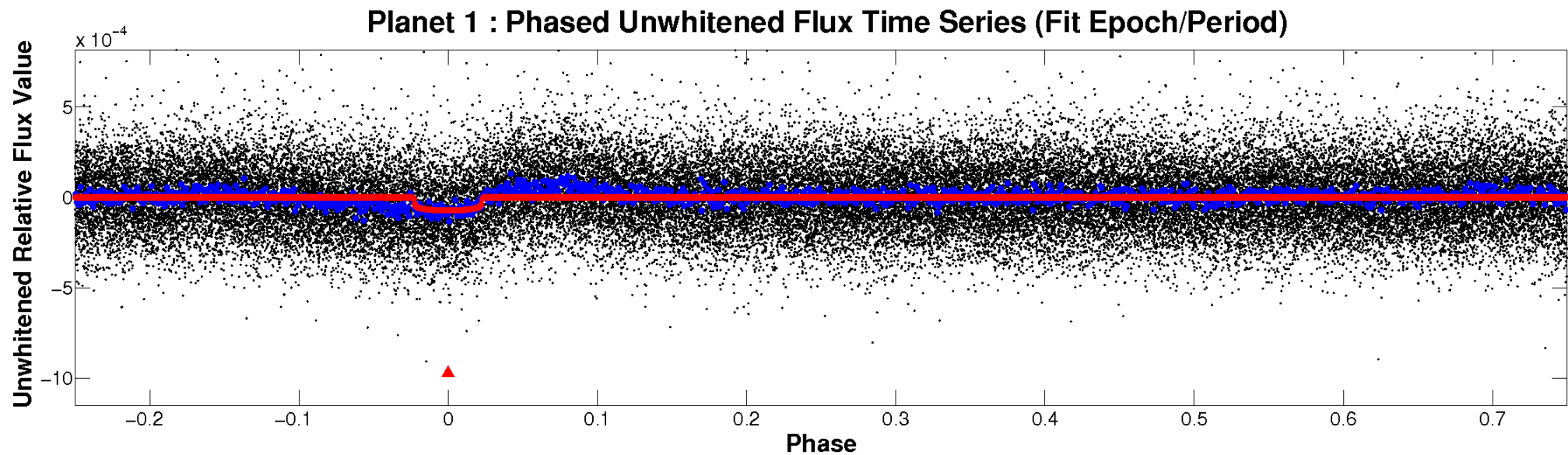


ALT Odd/Even

TCE 010221507-01

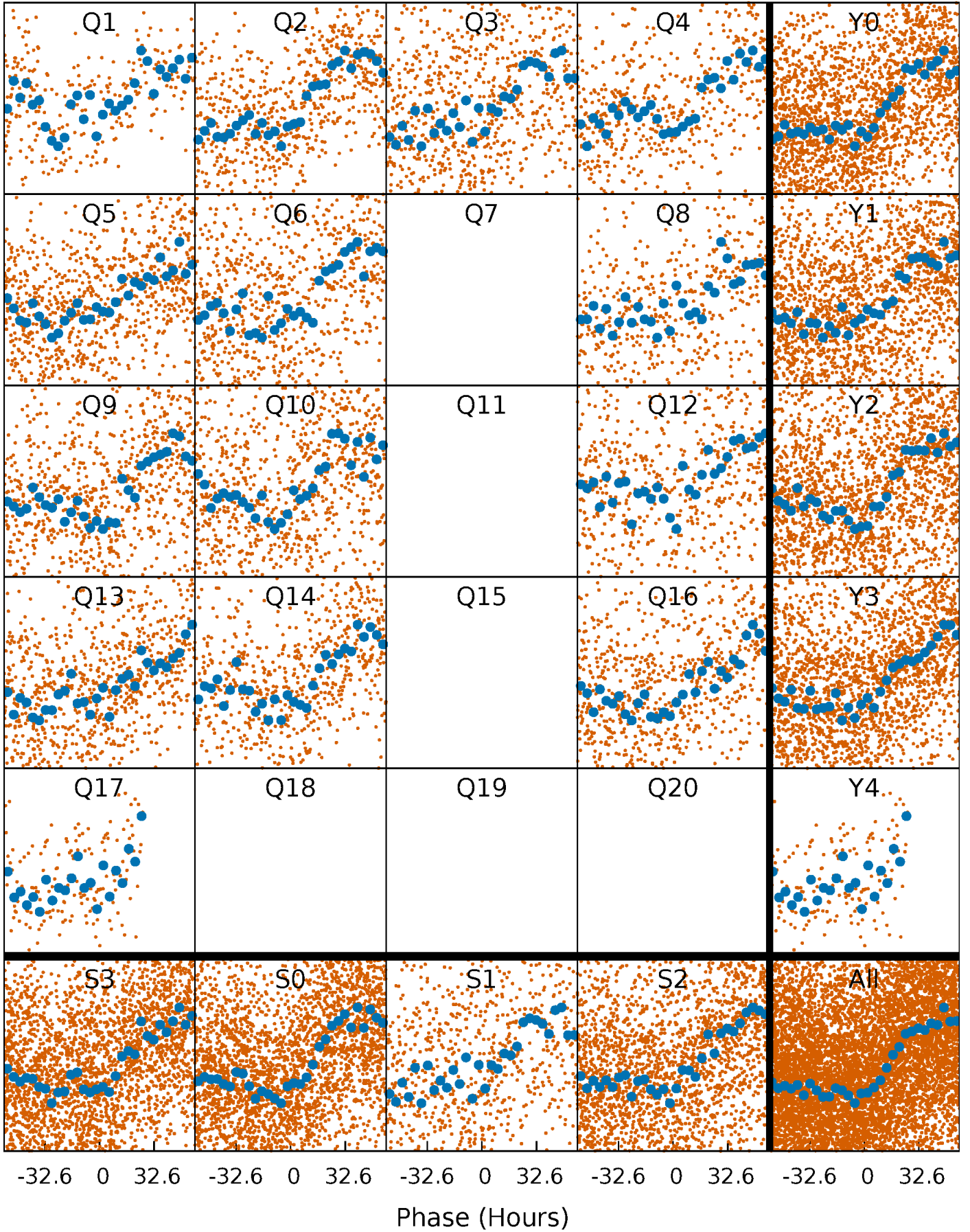


Non-Whitened Vs. Whitened Light Curve



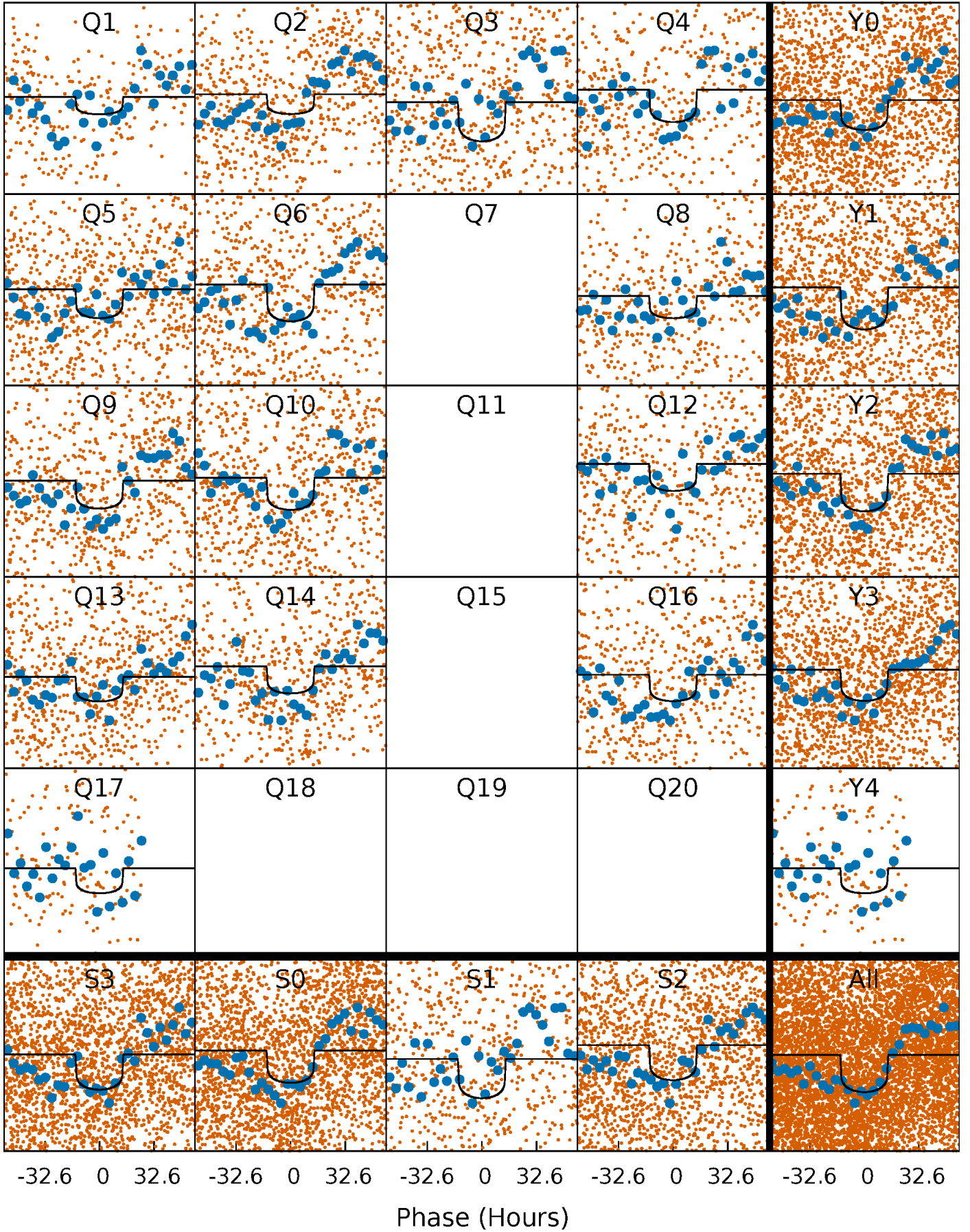
PDC Quarter-Phased Transit Curves

TCE 010221507-01 P= 25.709615 Days $T_0=140.767825$ (BKJD)



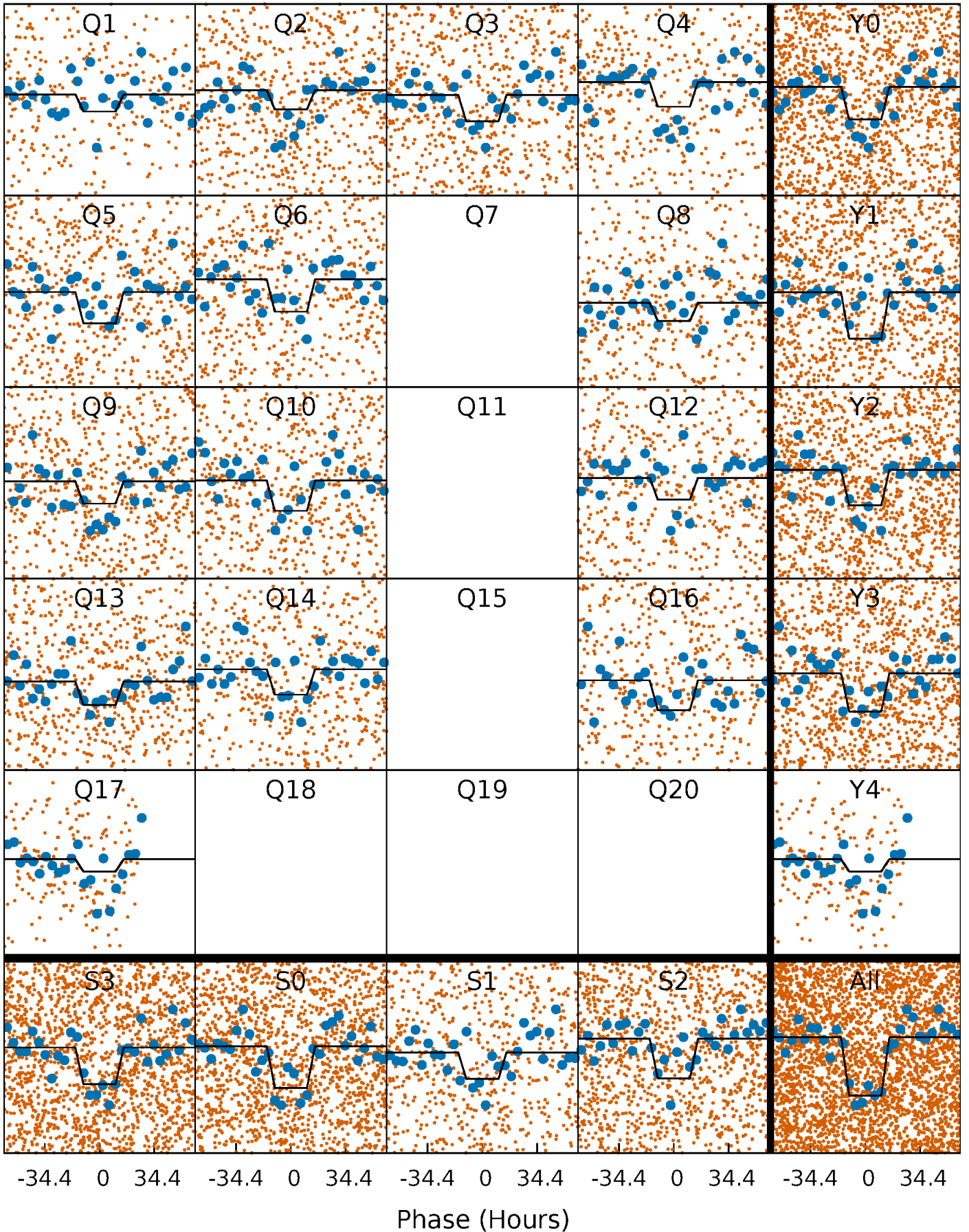
DV Quarter-Phased Transit Curves

TCE 010221507-01 P= 25.709615 Days $T_0=140.767825$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

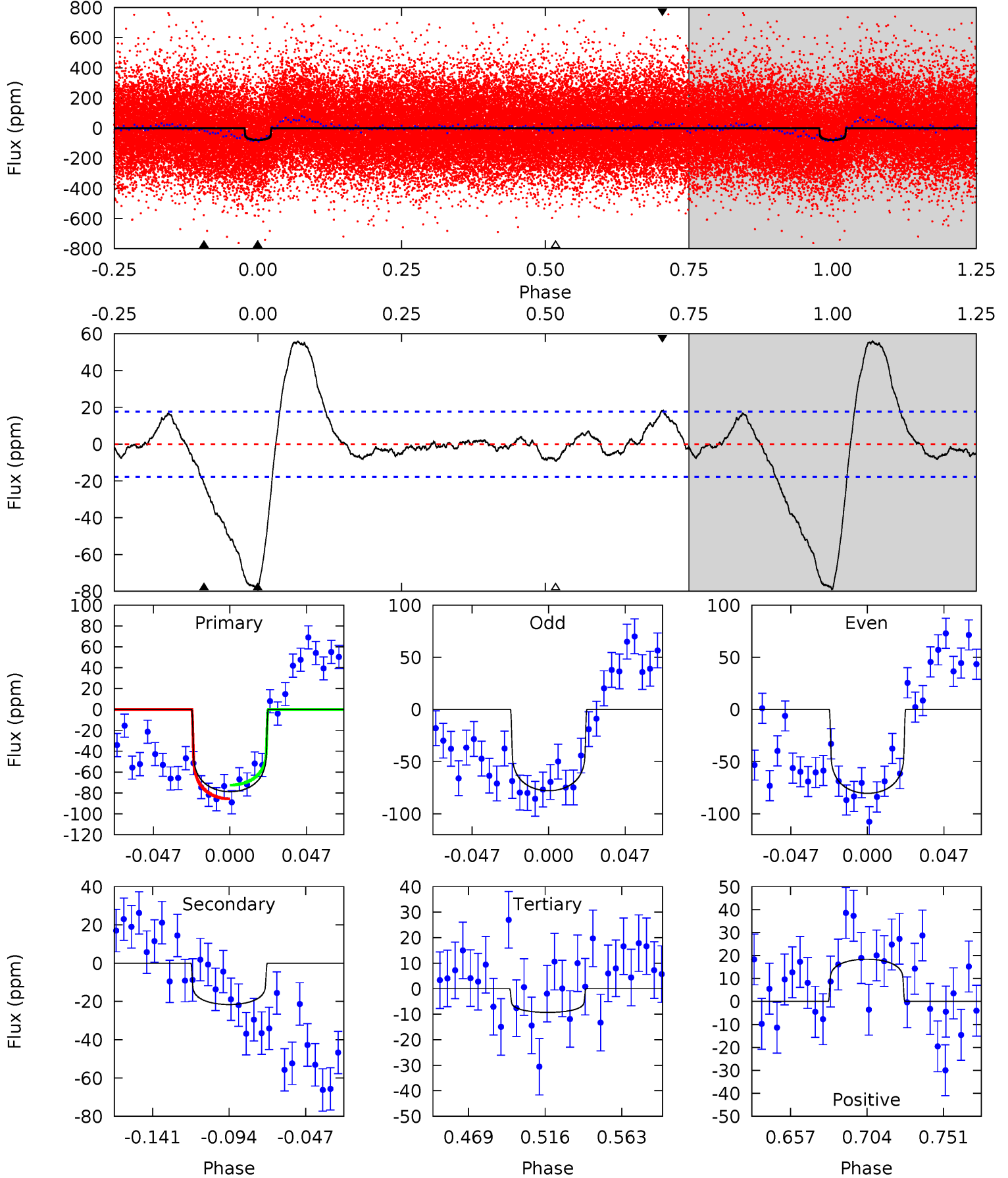
TCE 010221507-01 P= 25.709330 Days $T_0=140.810913$ (BKJD)



DV Model-Shift Uniqueness Test

010221507-01, P = 25.709615 Days, E = 115.058210 Days

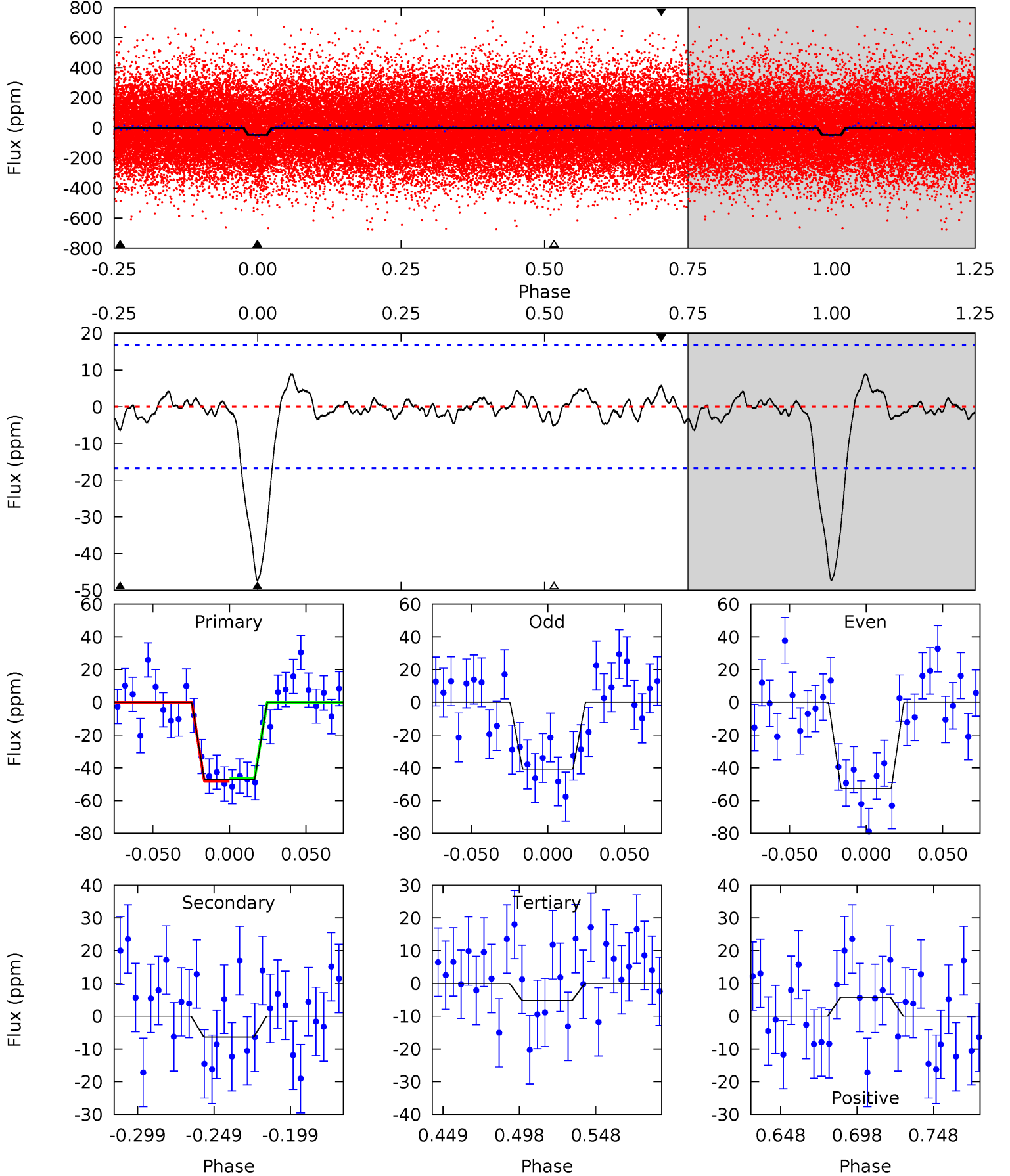
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	5.77	2.48	4.91	4.72	1.99	3.63	18.6	16.1	3.29	0.86	0.34	0.86	0.42	1.76



Alt Model-Shift Uniqueness Test

010221507-01, P = 25.709330 Days, E = 115.101583 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.3	1.79	1.46	1.61	4.71	1.96	0.70	11.8	11.7	0.33	0.18	1.66	0.79	0.16	0.27



Stellar Parameters For KIC 010221507

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6726^{+182}_{-243}	$4.253^{+0.105}_{-0.195}$	$-0.120^{+0.250}_{-0.300}$	$1.400^{+0.455}_{-0.245}$	$1.289^{+0.190}_{-0.209}$	$0.661^{+0.380}_{-0.324}$
	+3%/-4%	+2%/-5%	+208%/-250%	+32%/-18%	+15%/-16%	+58%/-49%
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 010221507-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-22 ± 4	$1.32^{+0.30}_{-0.23}$	1154^{+89}_{-67}	5022^{+426}_{-326}	223^{+116}_{-75}
Alt.	-6 ± 4	$1.06^{+0.25}_{-0.22}$	1151^{+90}_{-66}	4286^{+571}_{-653}	101^{+93}_{-65}

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 $A_{obs} \gg 1.0$

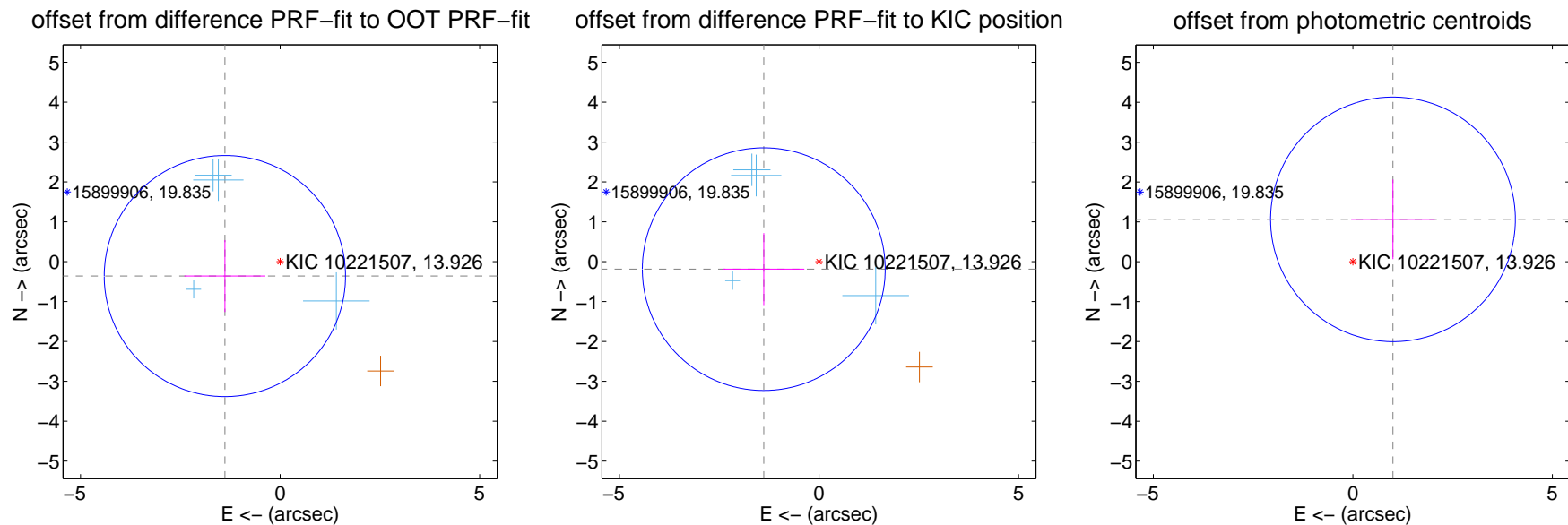
DV Centroid Data

Supplemental centroid analysis for 010221507-01. Kepler magnitude: 13.93. Transit SNR 11.22

There are 4 quarters with good PRF difference image offsets

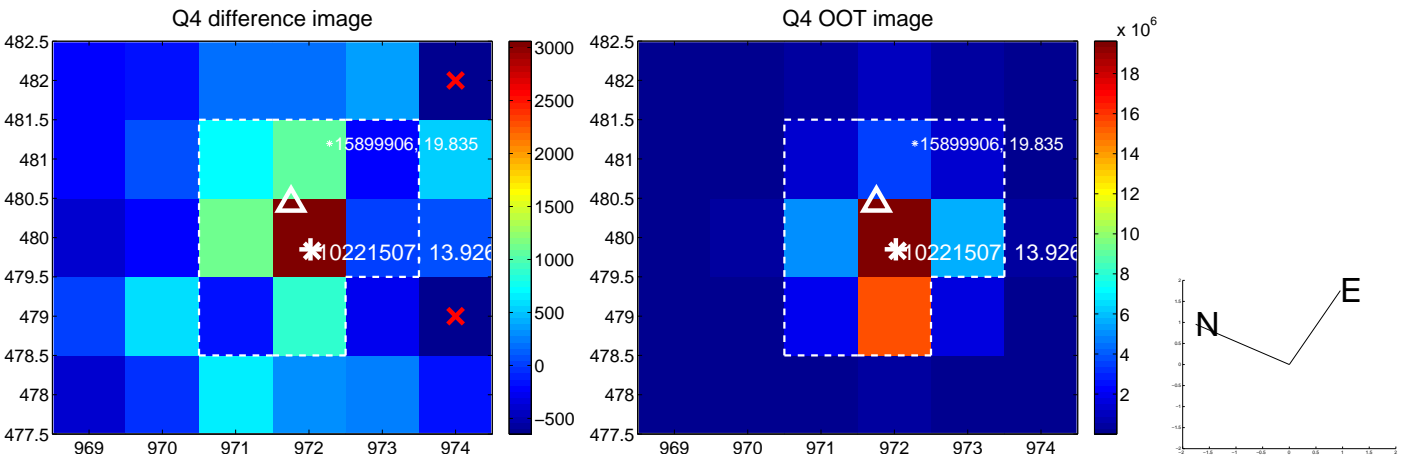
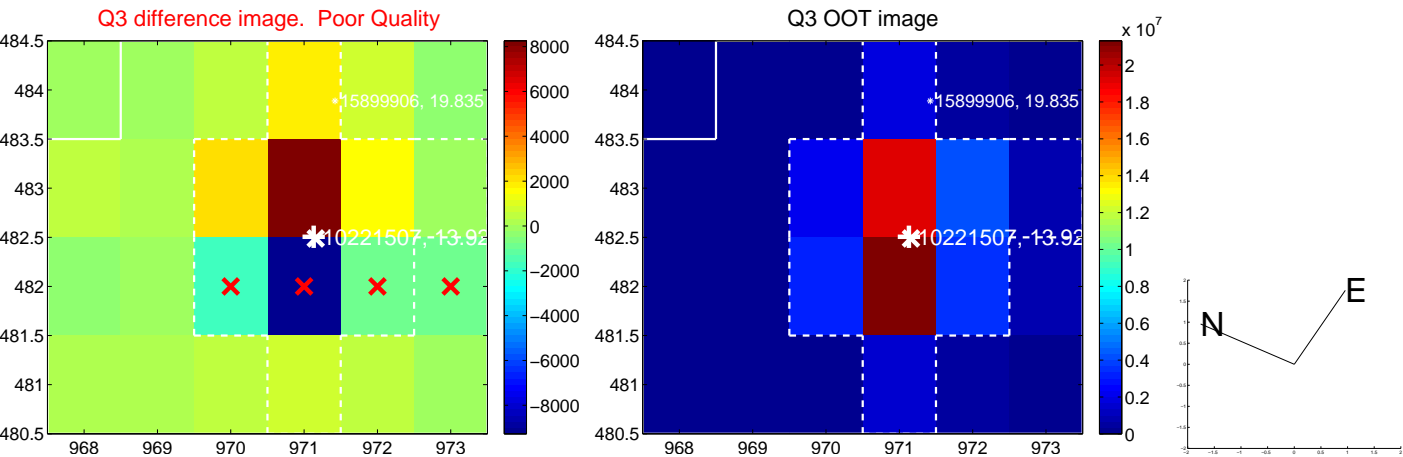
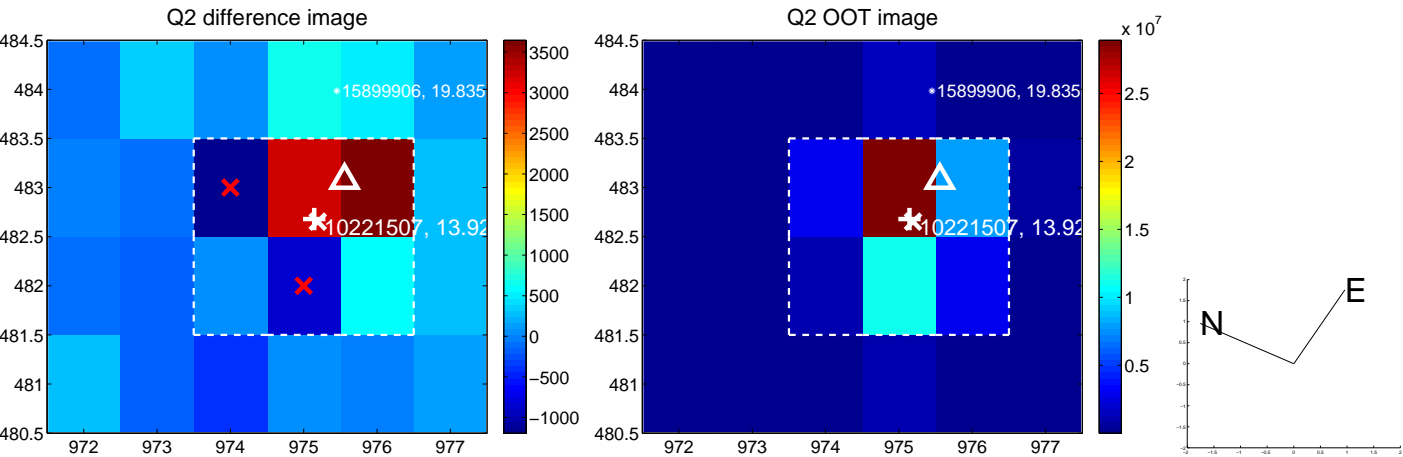
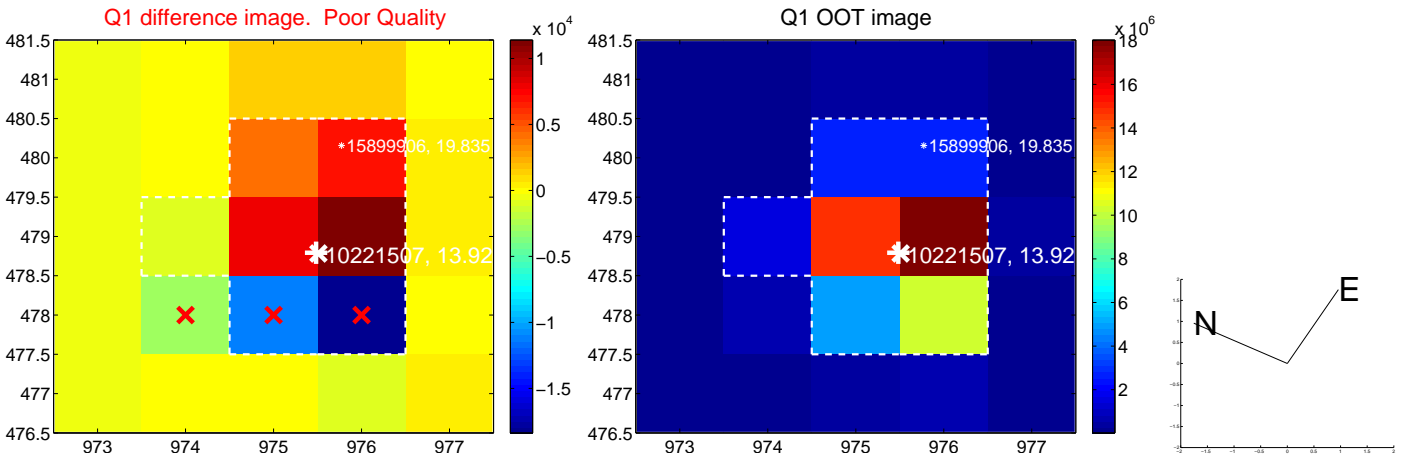
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.430 ± 1.008	1.42	1.384 ± 1.014	-0.360 ± 0.902
PRF-fit source offset from KIC position	1.396 ± 1.014	1.38	1.383 ± 1.016	-0.187 ± 0.904
photometric centroid source offset	1.46 ± 1.02	1.43	-1.01 ± 1.05	1.06 ± 1.00

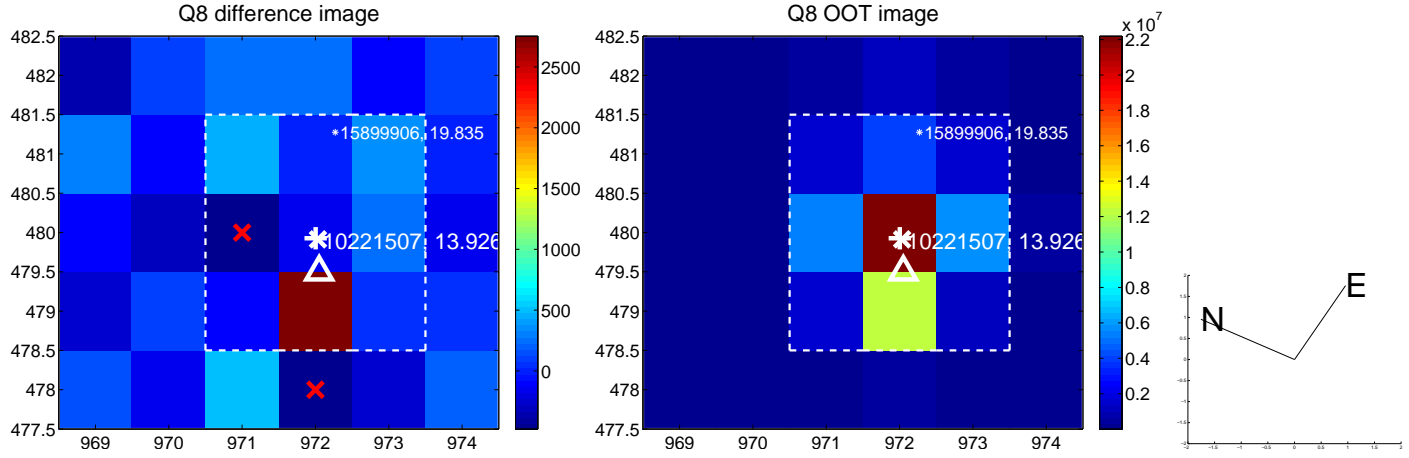
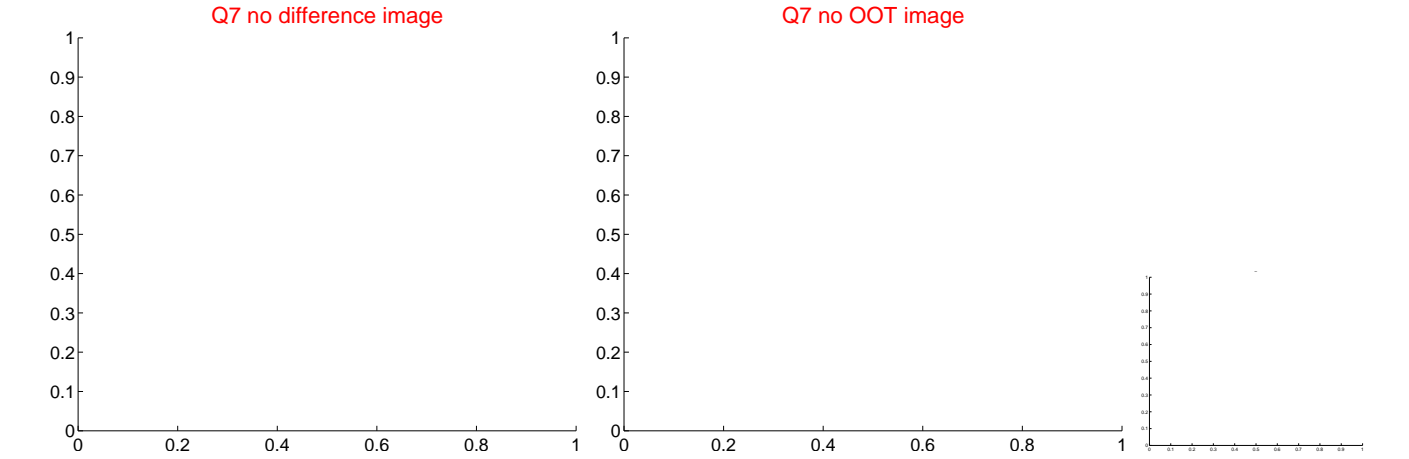
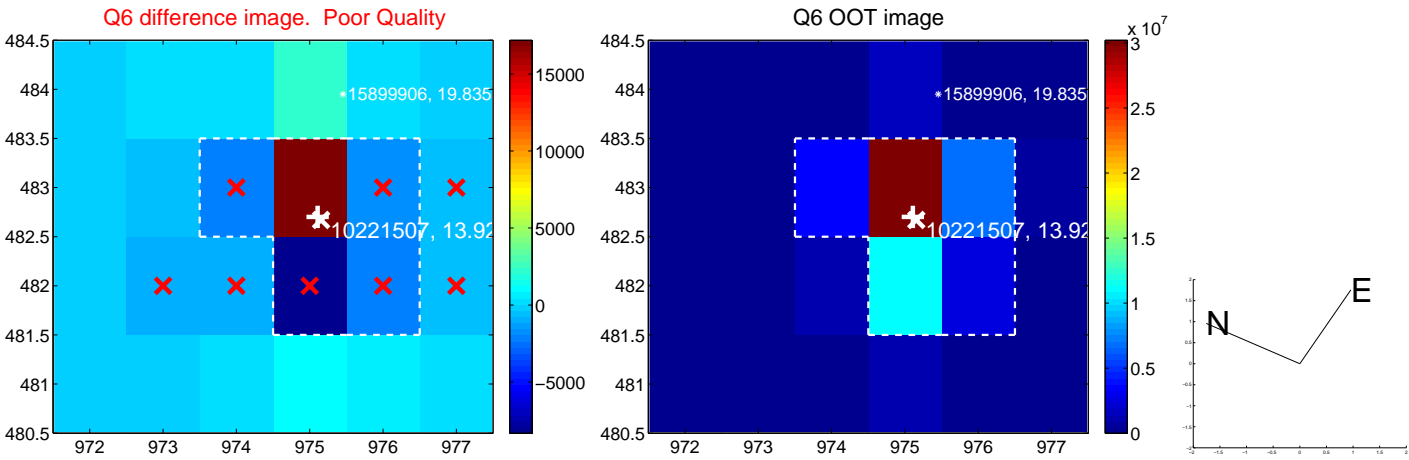
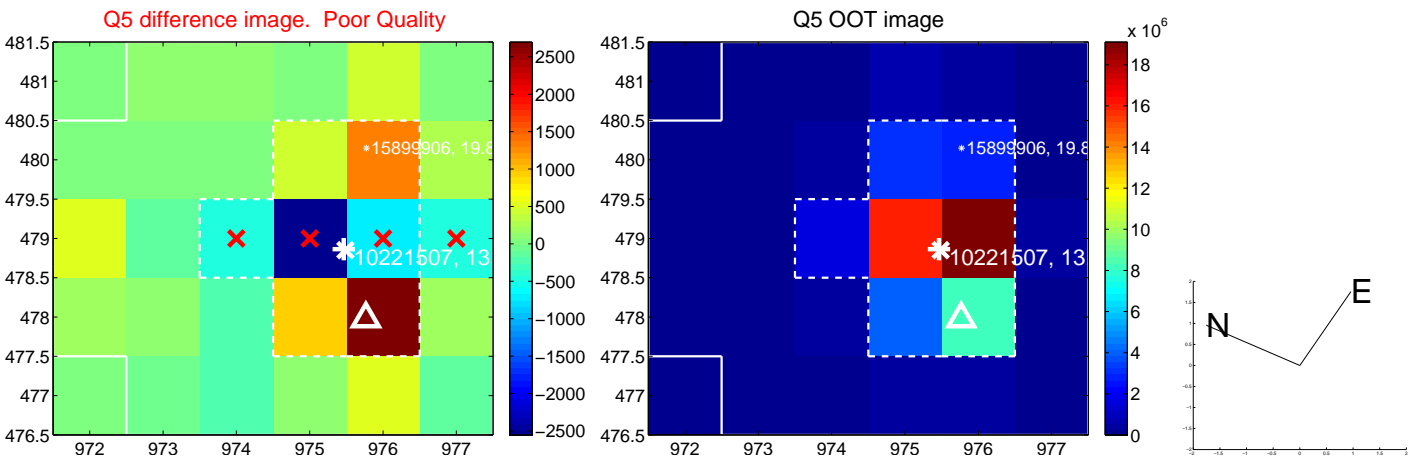


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

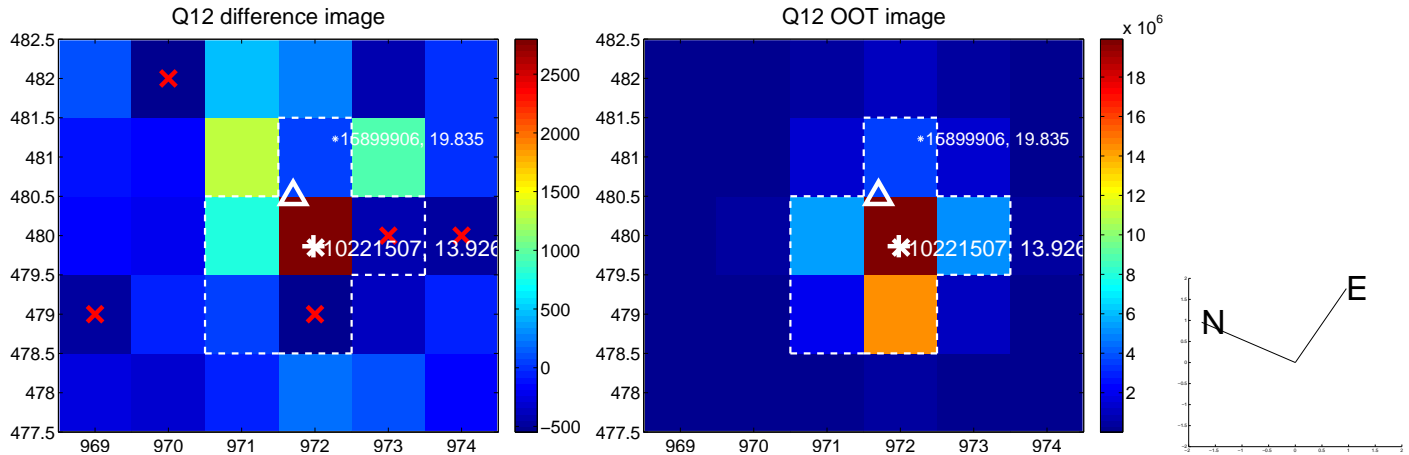
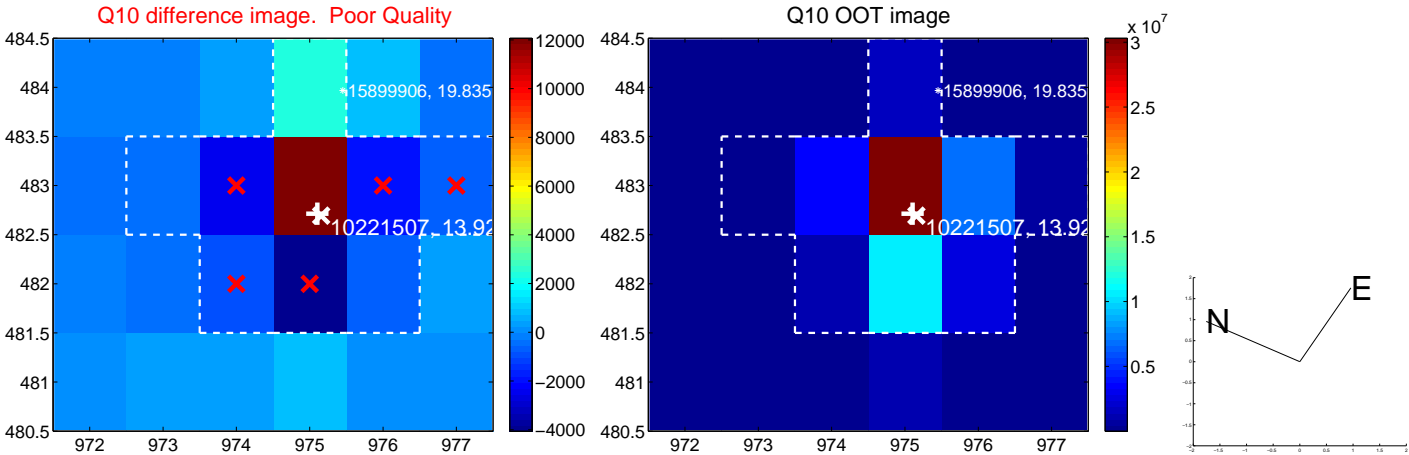
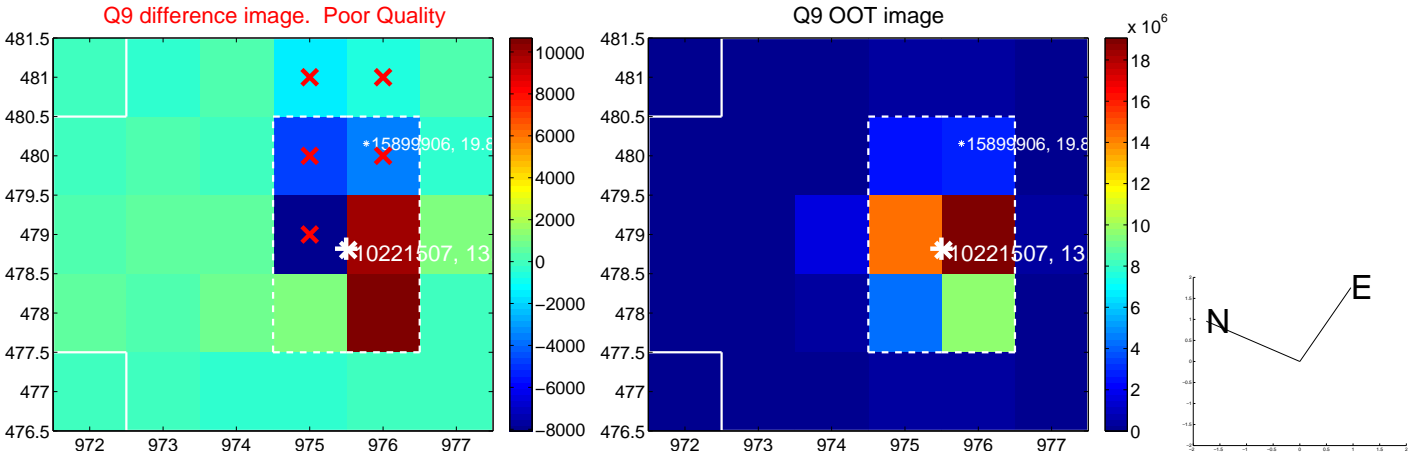
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



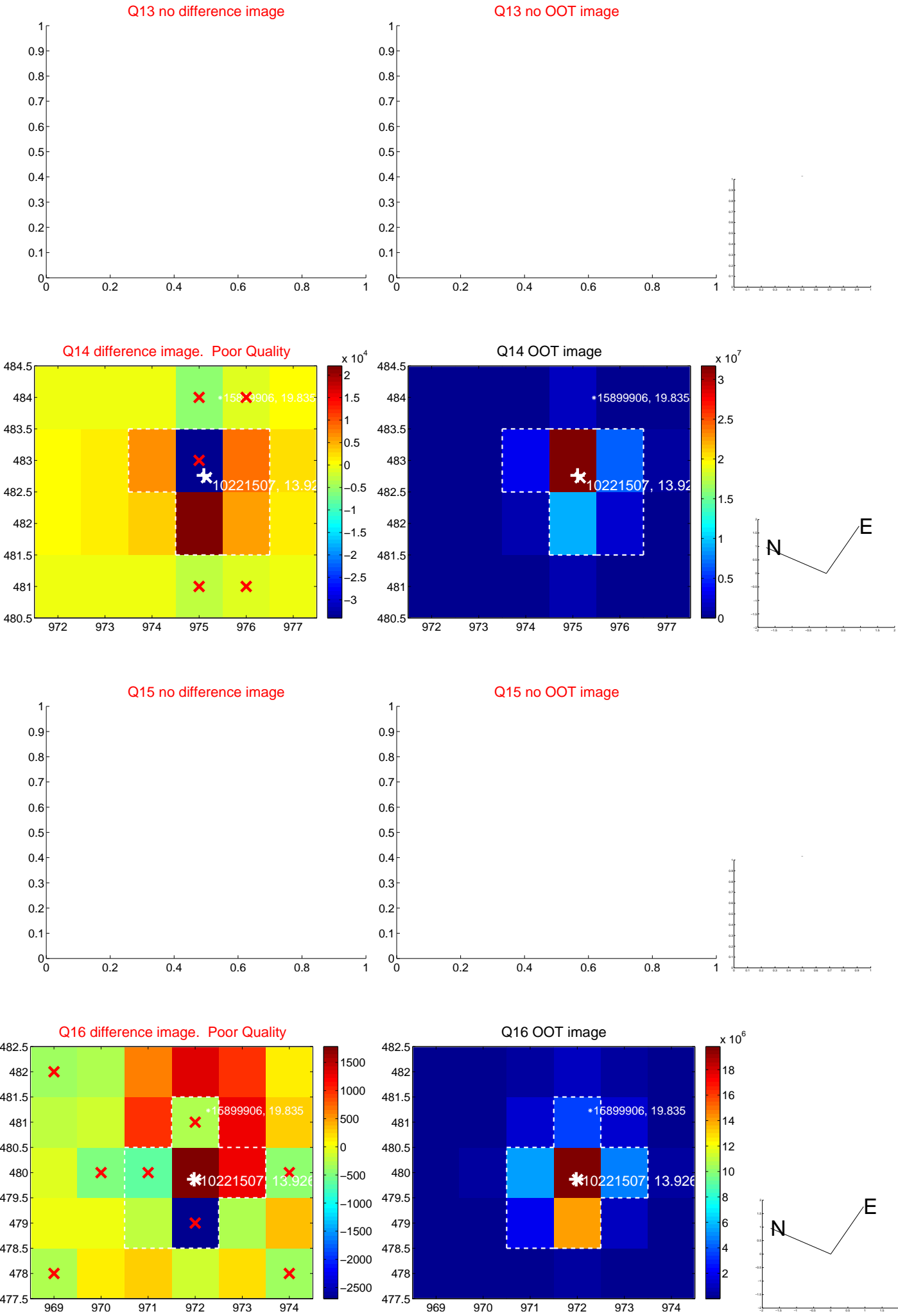
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



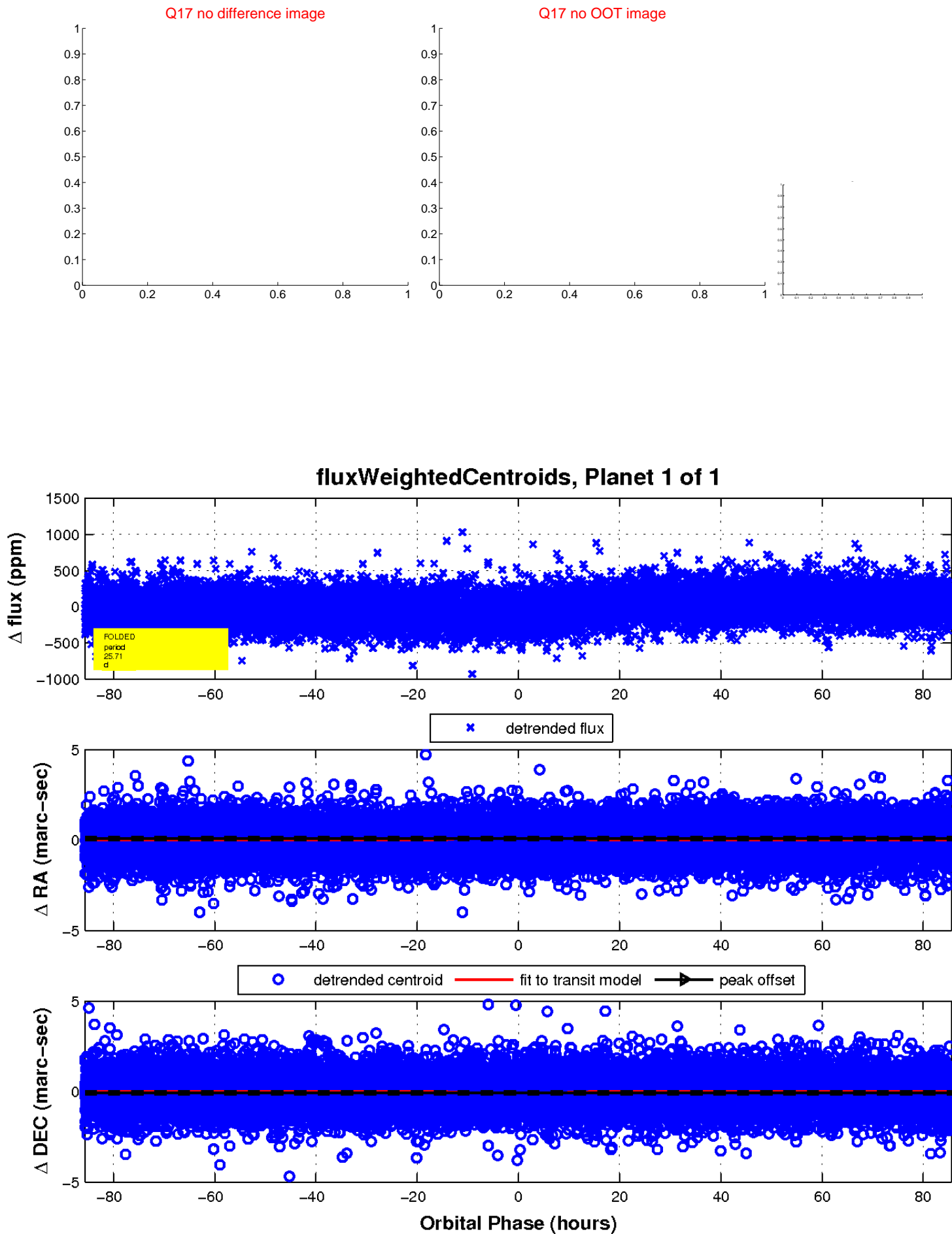
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

