

KIC 009700449

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})
009700449-01	OBS	4120.01	110.452758	147.619163	285.6	12.961	11.9	12.4	1.06	6321	1.91	7.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009700449-01	OBS	PC	0.96	0	0	0	0	NO_COMMENT

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

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

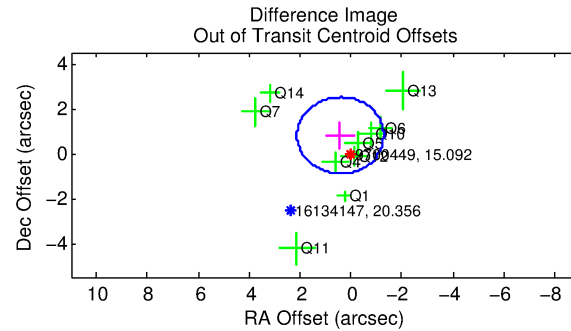
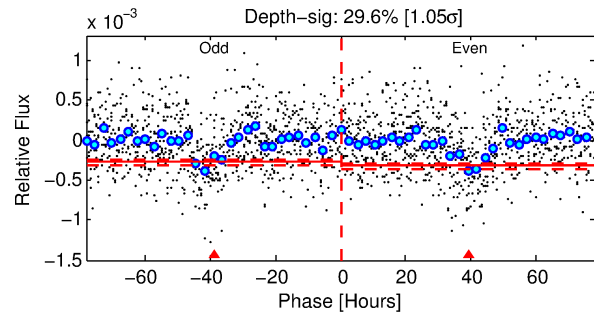
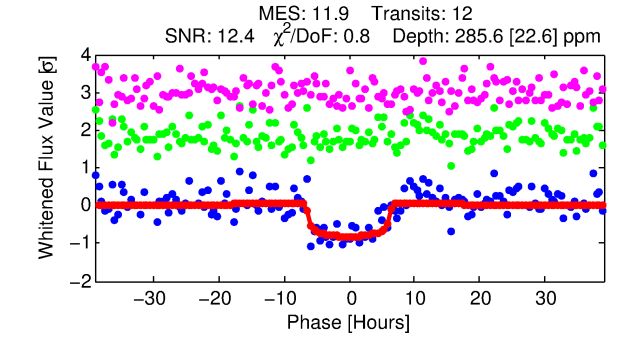
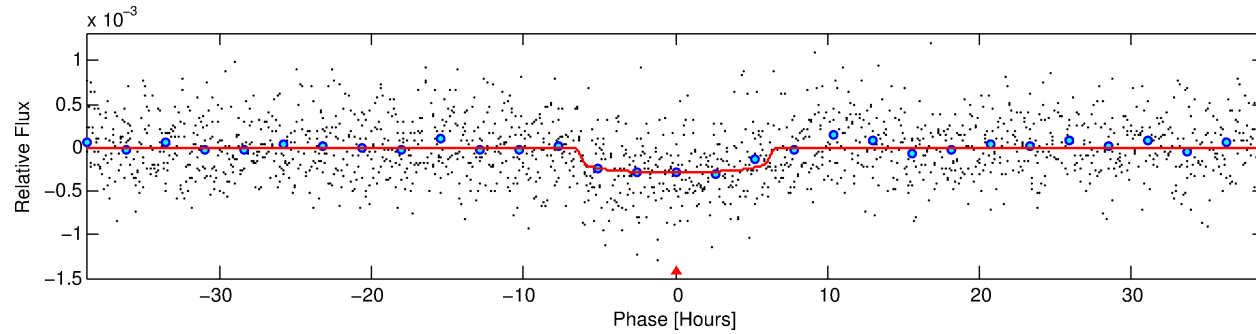
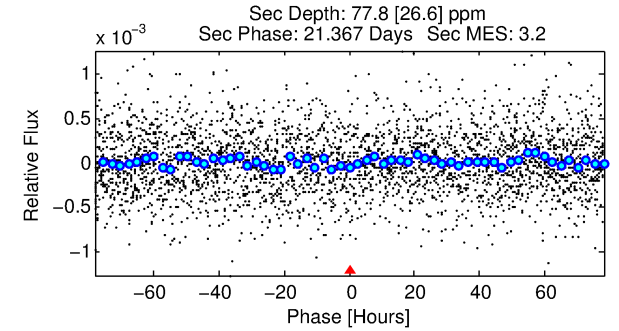
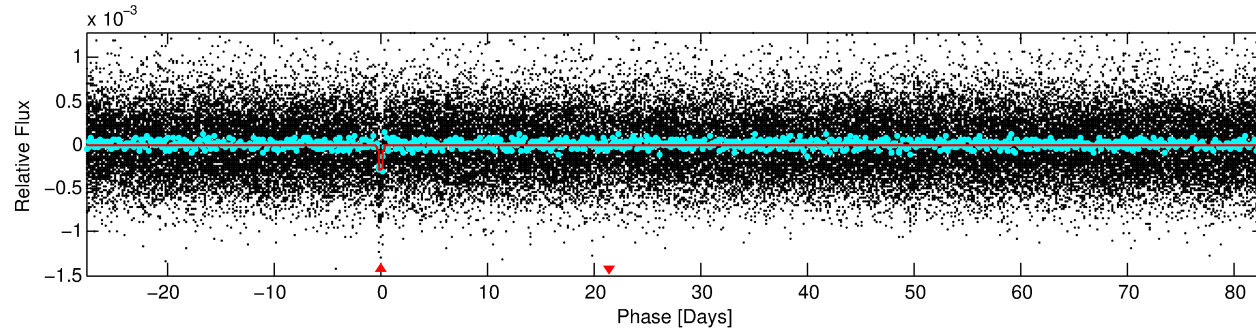
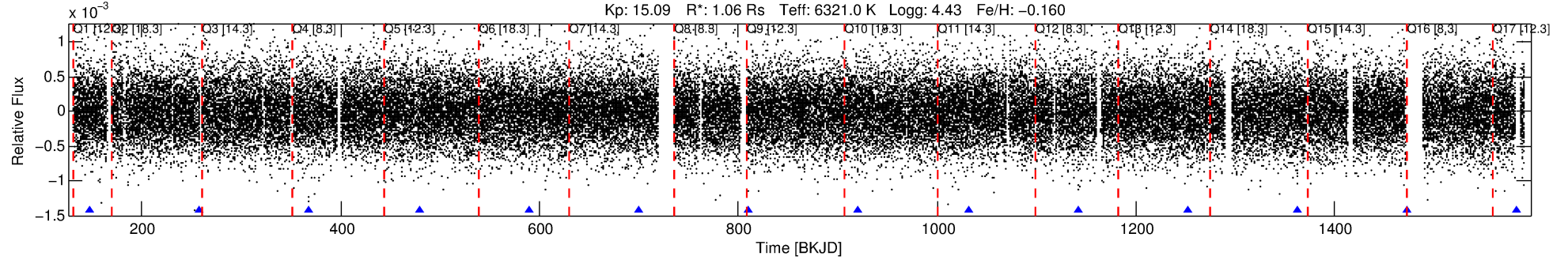
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009700449-01

No Significant Match Found

DV One-Page Summary

KIC: 9700449 Candidate: 1 of 1 Period: 110.453 d
KOI: K04120.01 Corr: 0.945



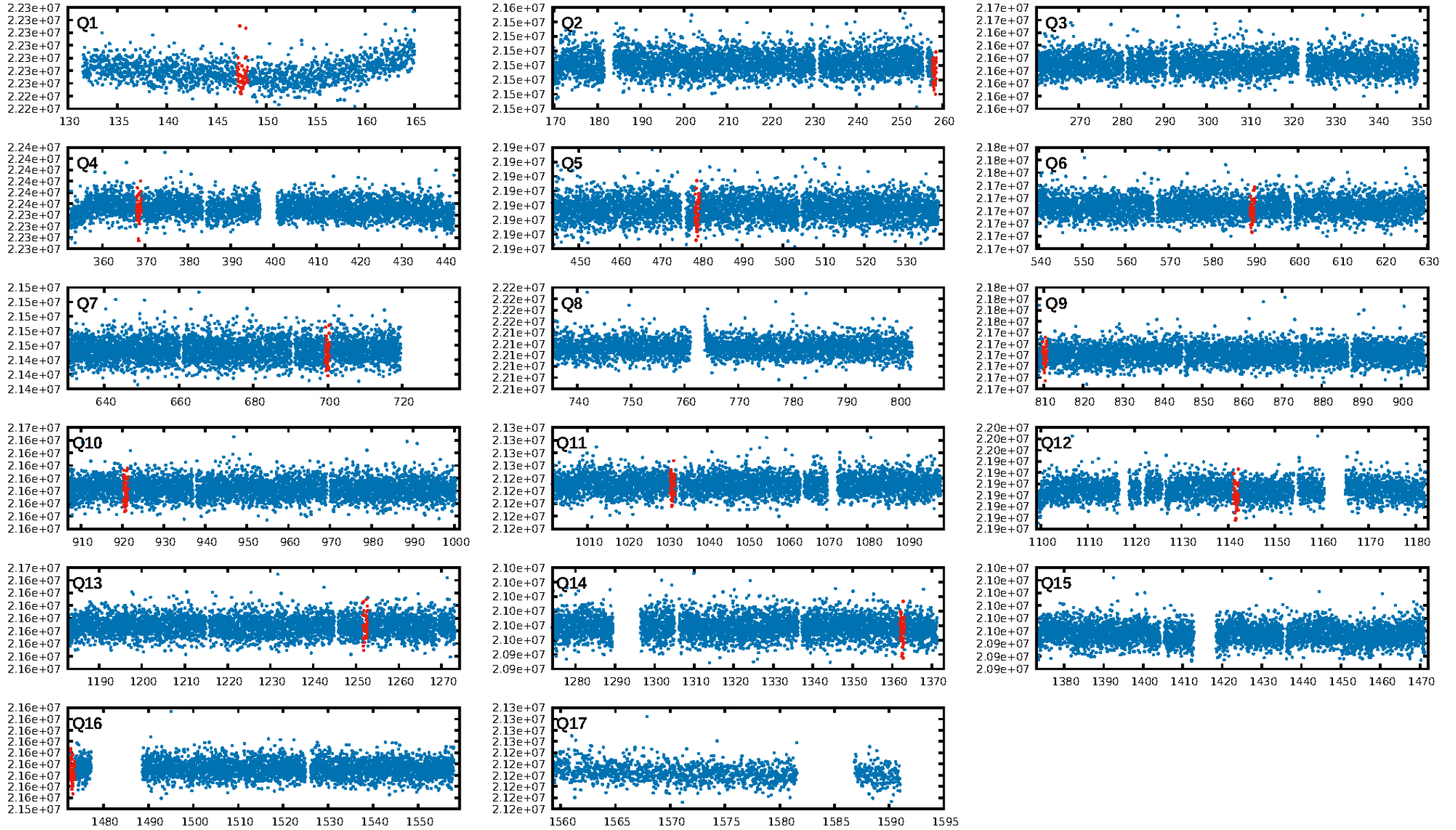
DV Fit Results:

Period = 110.45276 [0.00239] d
Epoch = 147.6192 [0.0156] BKJD
Rp/R* = 0.0166 [0.0057]
a/R* = 47.79 [85.77]
b = 0.70 [1.30]
Seff = 7.36 [3.08]
Teq = 420 [44] K
Rp = 1.91 [0.91] Re
a = 0.4665 [0.1285] AU
Ag = 2540.94 [2196.20] [1.16 σ]
Teff = 4610 [897] K [4.67 σ]

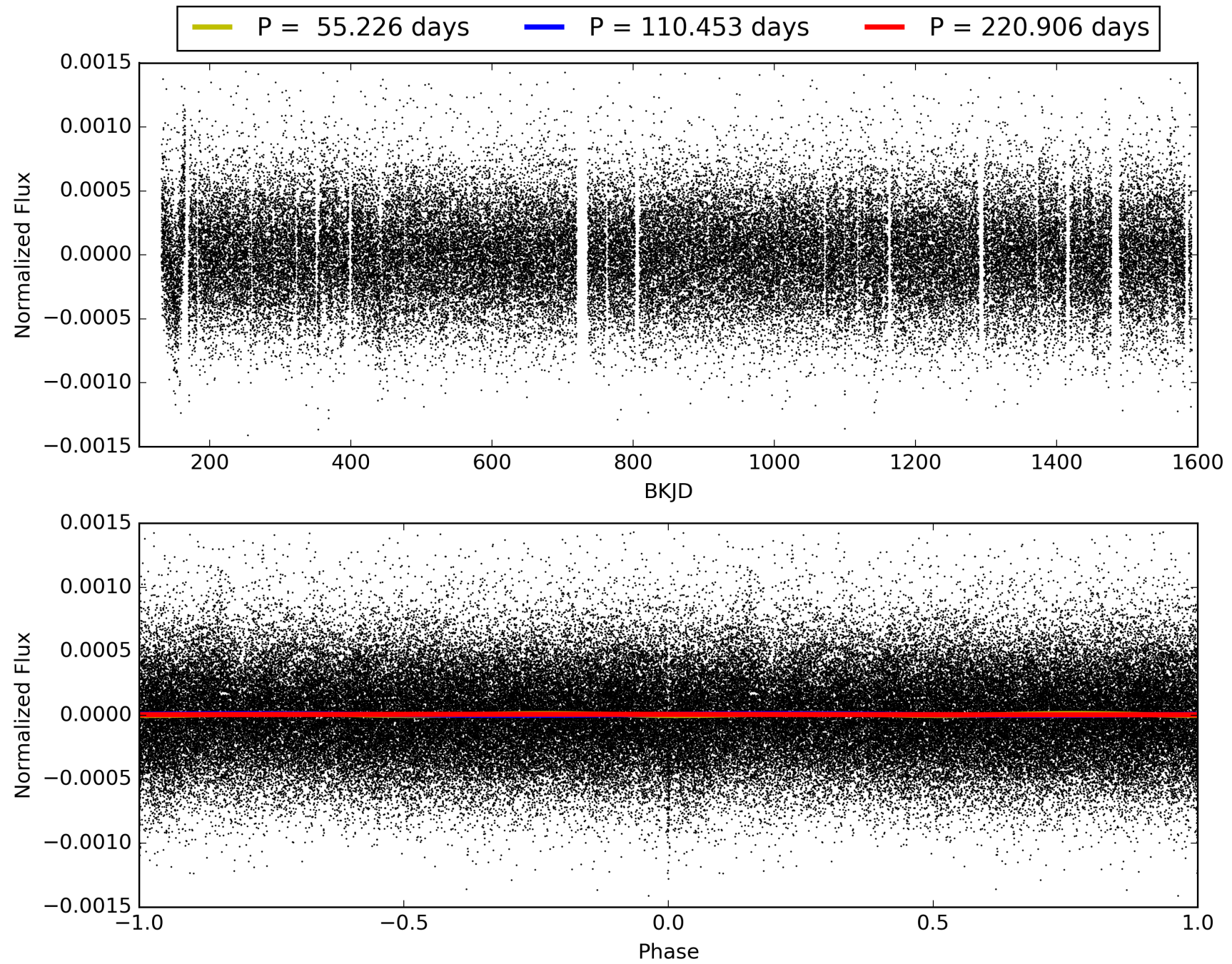
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 45.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.68e-29
RollingBand-fgt: 1.00 [11/11]
GhostDiagnostic-chr: 0.7574
Centroid-sig: 88.6%
Centroid-so: 0.190 arcsec [0.16 σ]
OotOffset-rm: 0.899 arcsec [1.58 σ]
KicOffset-rm: 0.711 arcsec [1.24 σ]
OotOffset-st: 3/2/2/3 [10]
KicOffset-st: 3/2/2/3 [10]
DiffImageQuality-fgm: 0.70 [7/10]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 009700449-01, PDC Light Curves

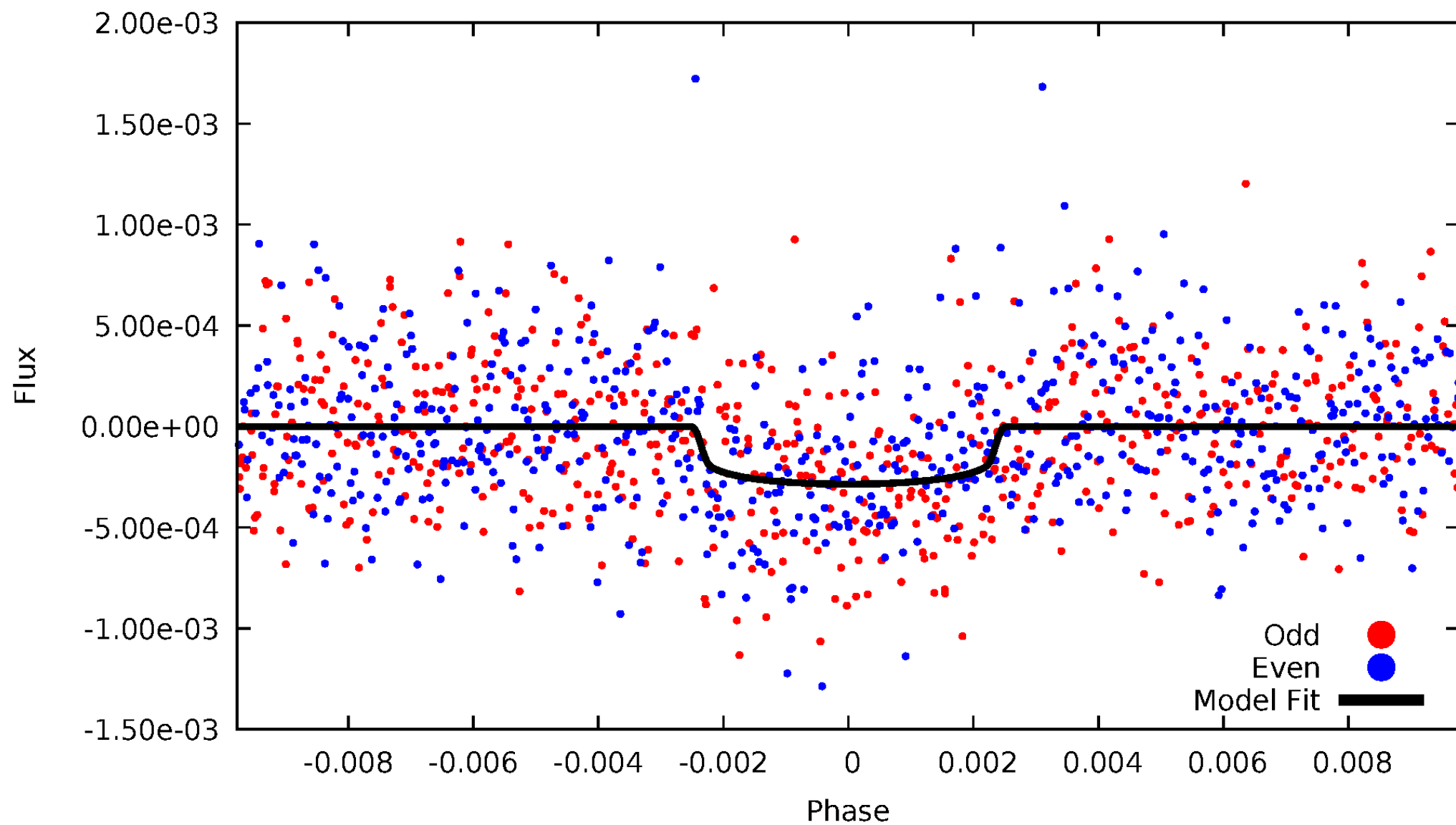


TCE 009700449-01



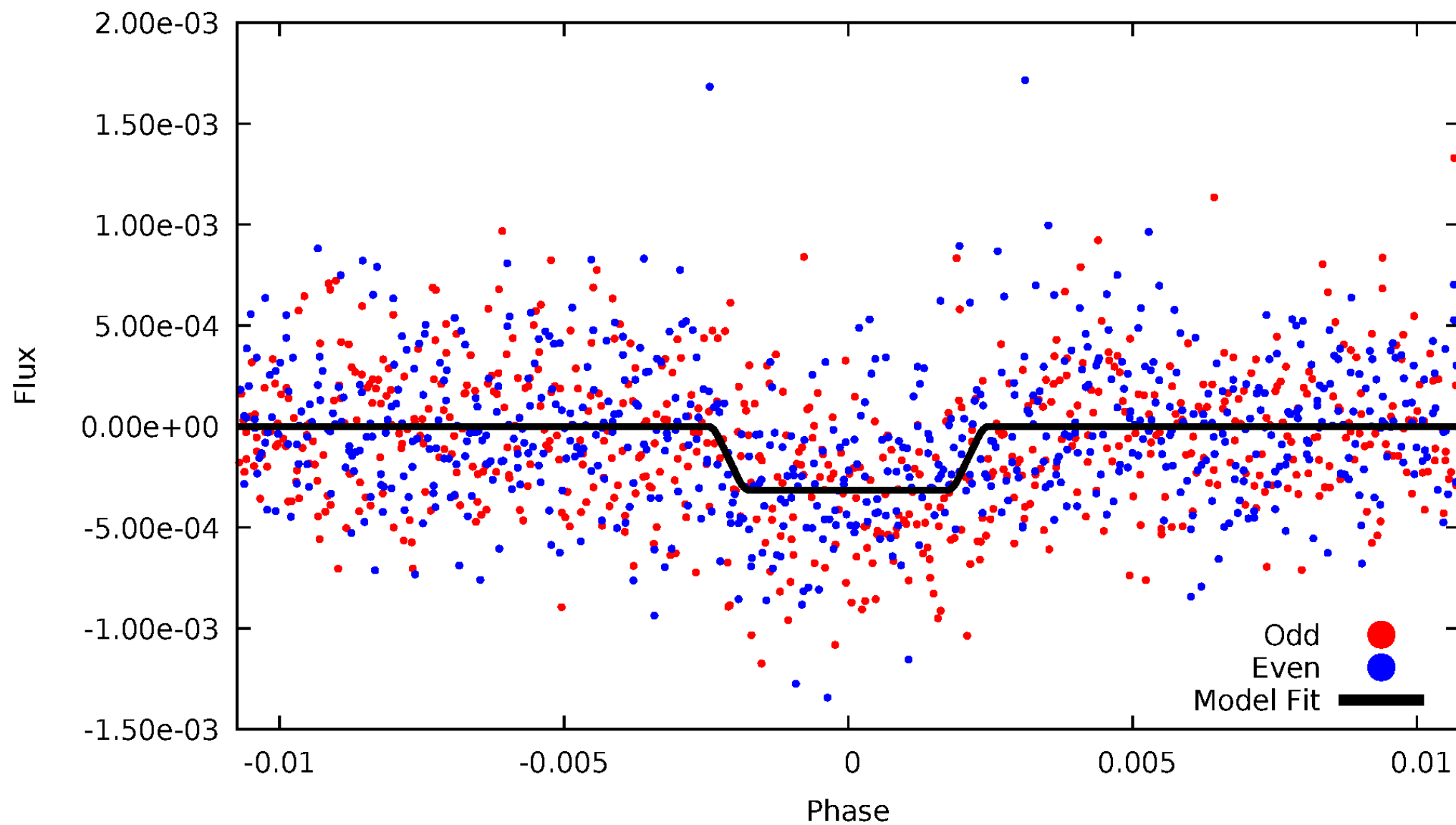
DV Odd/Even

TCE 009700449-01

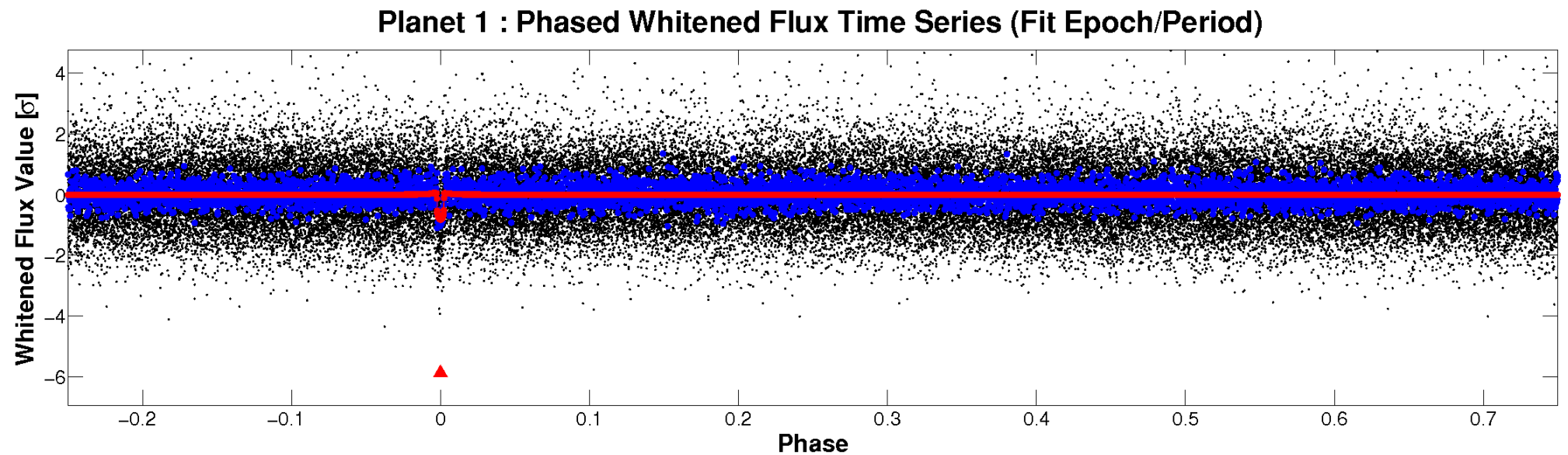
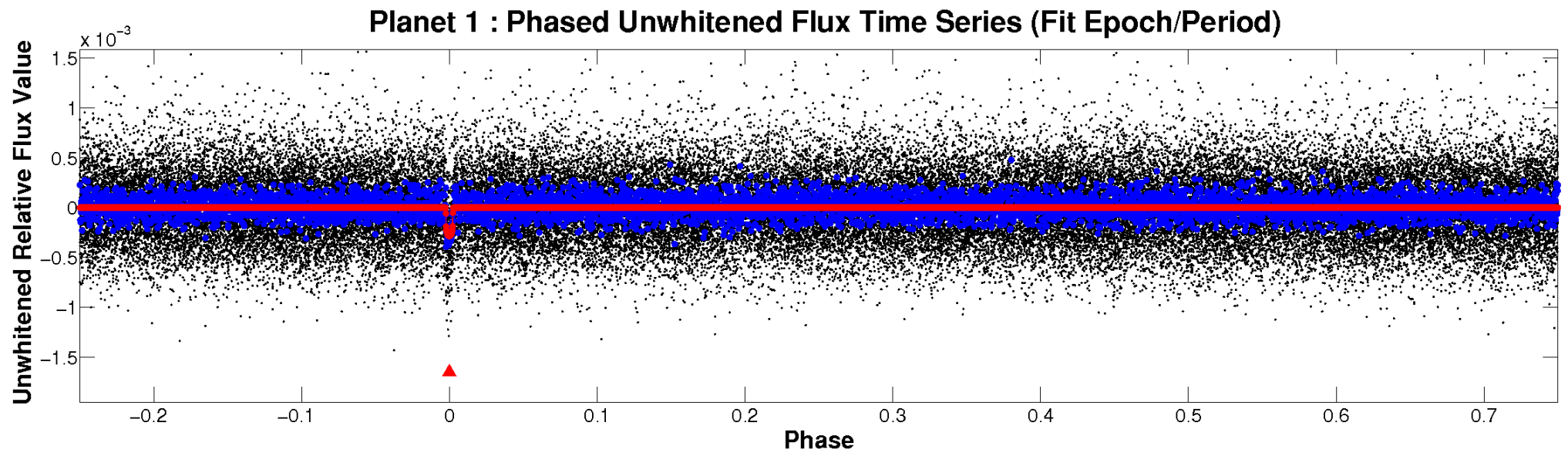


ALT Odd/Even

TCE 009700449-01

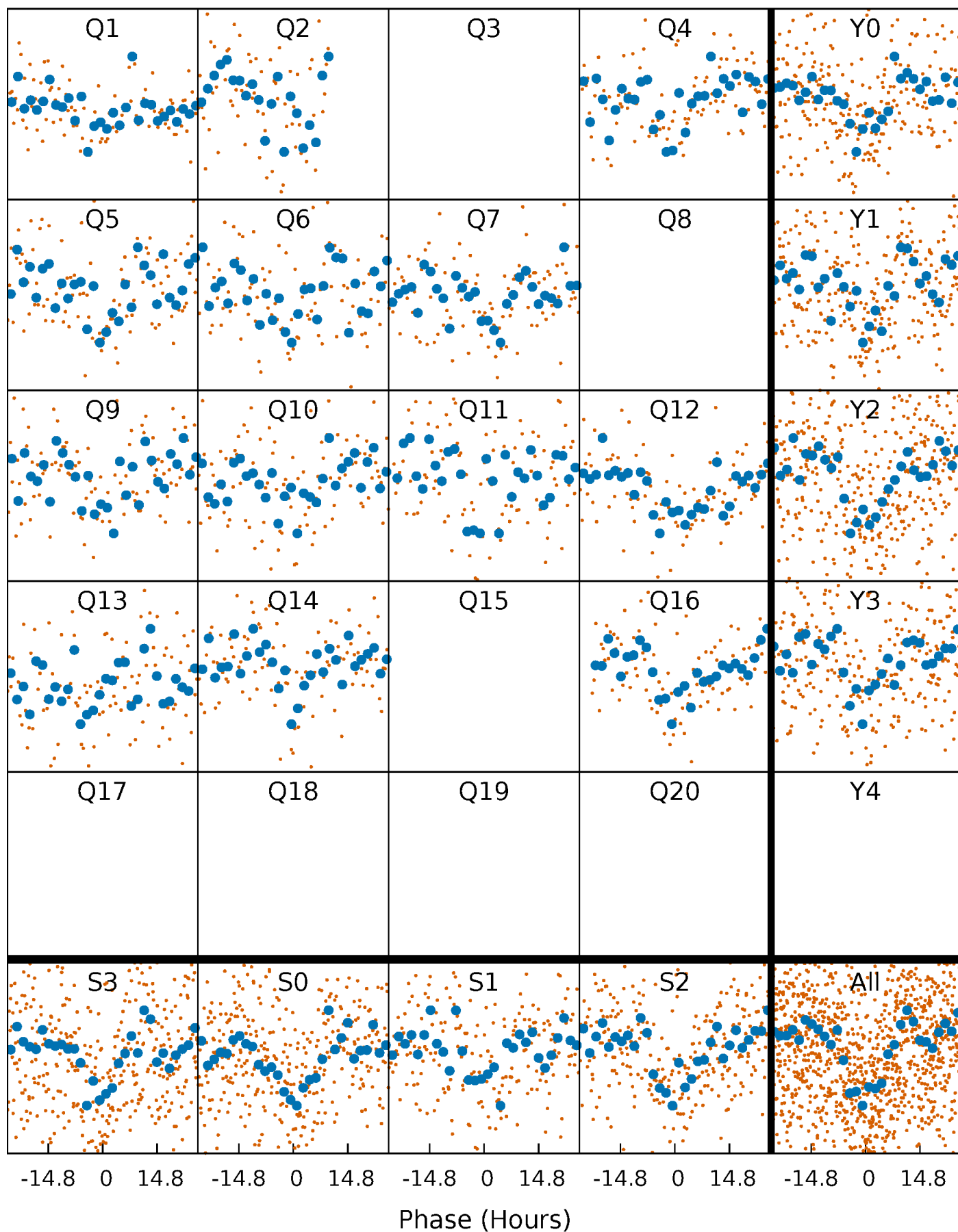


Non-Whitened Vs. Whitened Light Curve



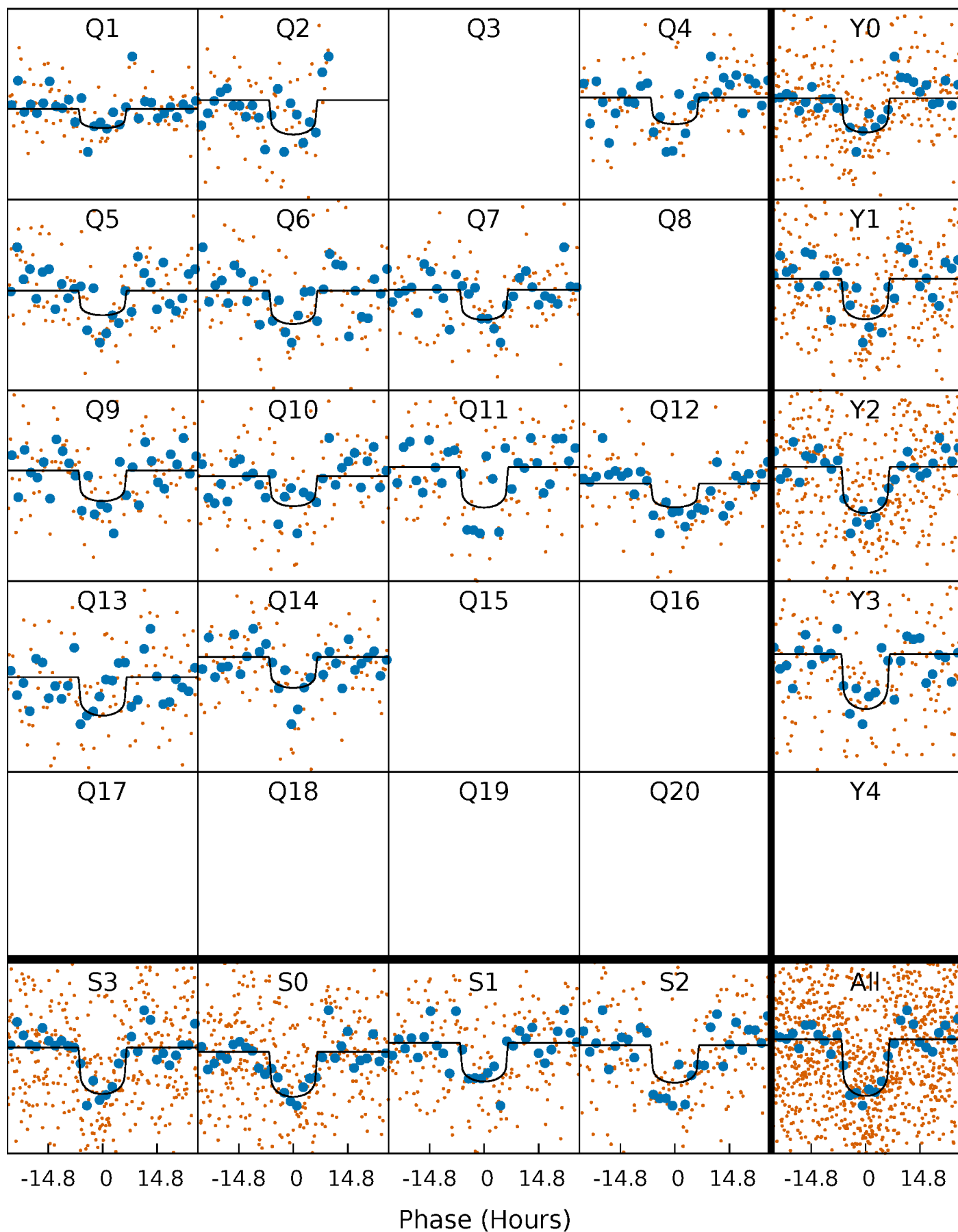
PDC Quarter-Phased Transit Curves

TCE 009700449-01 P=110.452758 Days $T_0=147.619163$ (BKJD)



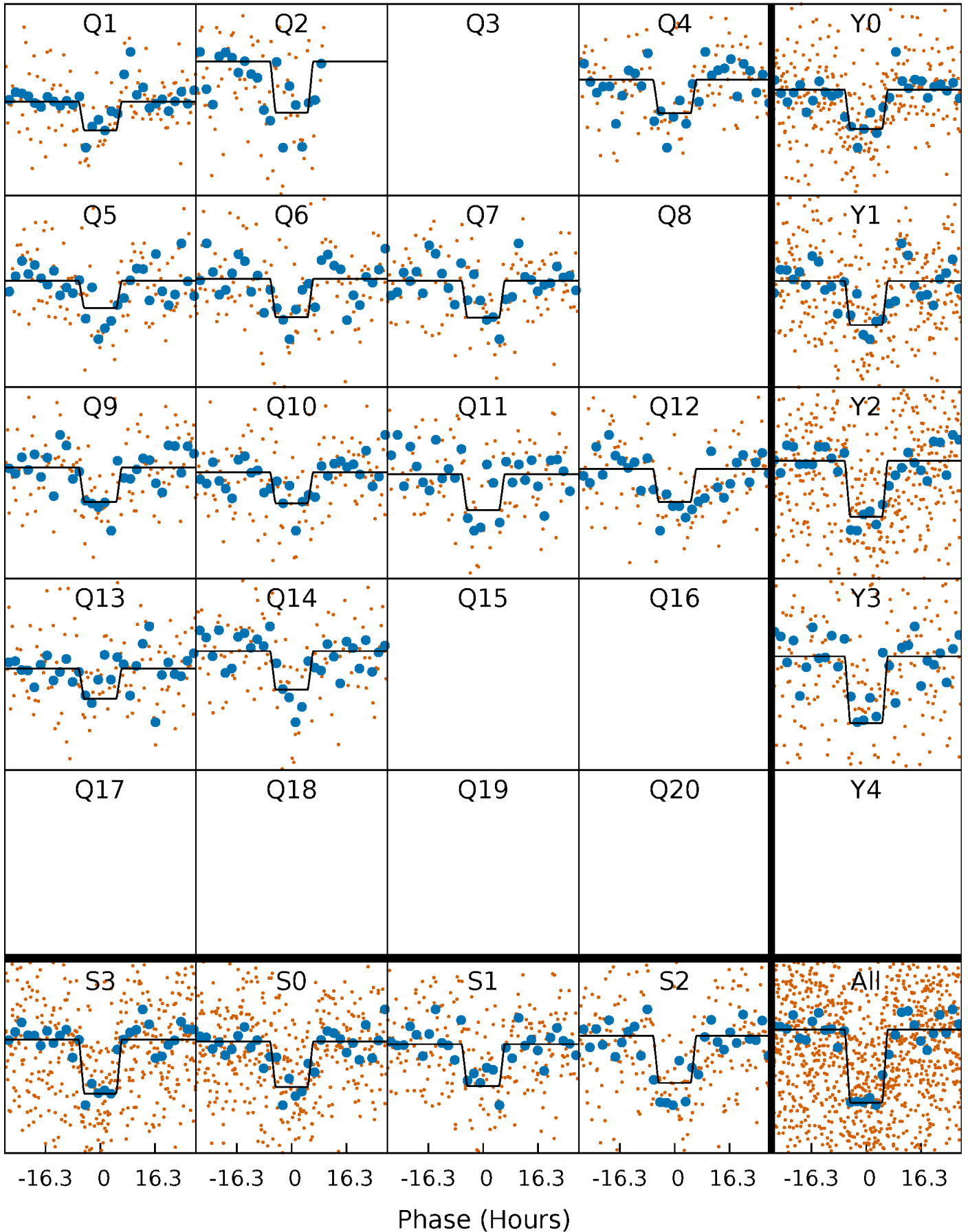
DV Quarter-Phased Transit Curves

TCE 009700449-01 P=110.452758 Days $T_0=147.619163$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

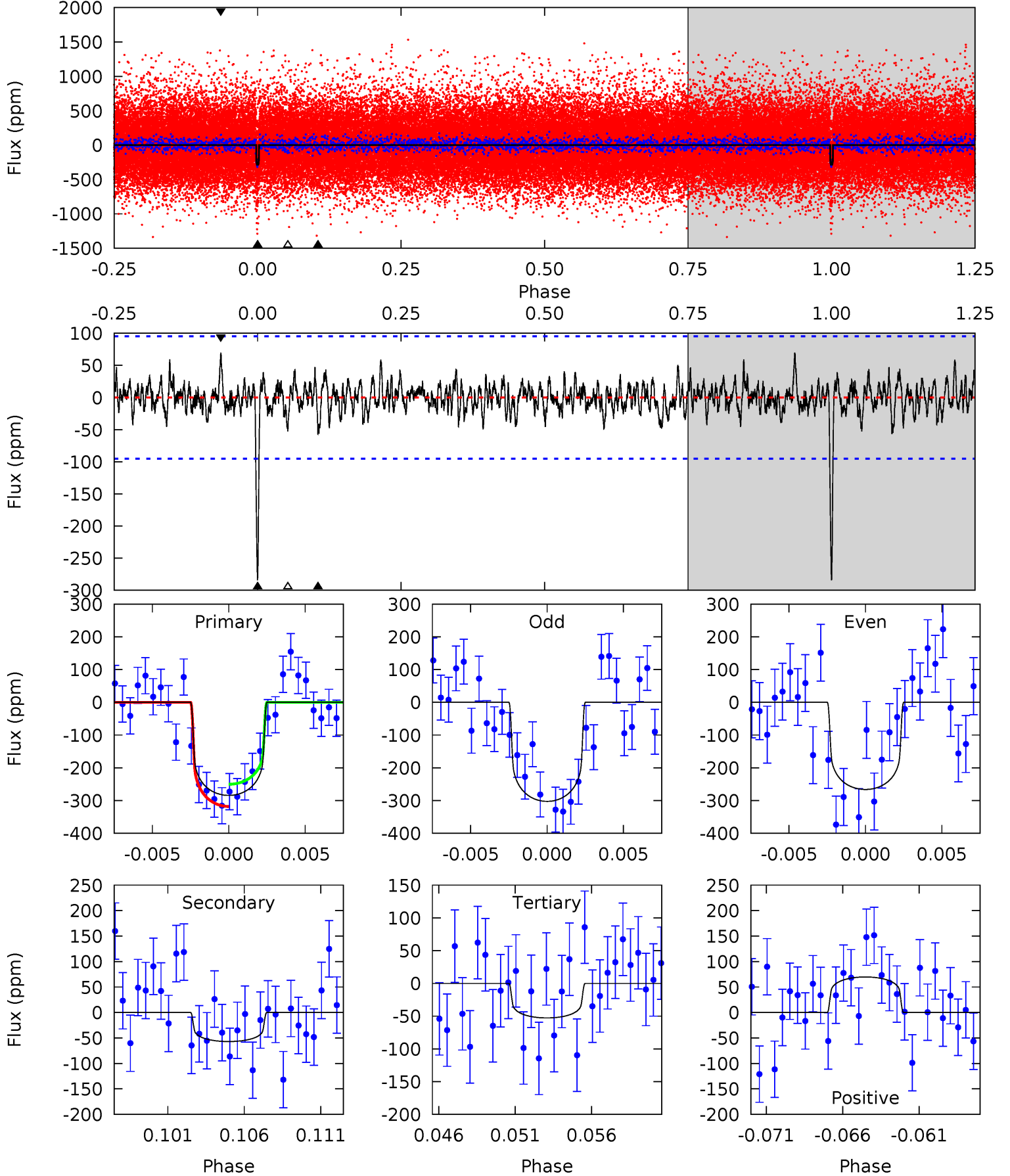
TCE 009700449-01 P=110.450203 Days $T_0=147.618374$ (BKJD)



DV Model-Shift Uniqueness Test

009700449-01, $P = 110.452758$ Days, $E = 37.166405$ Days

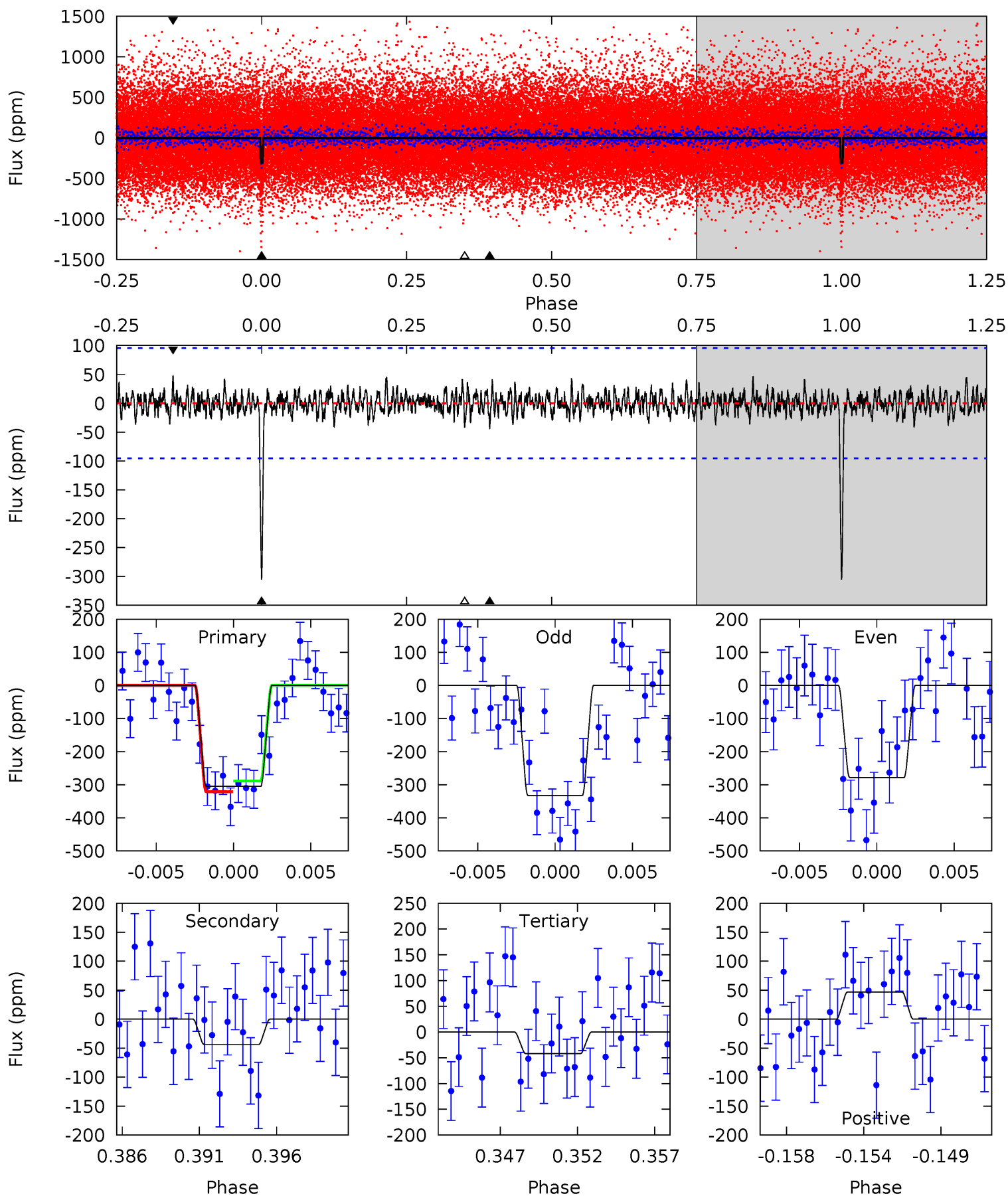
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.4	3.09	2.86	3.77	5.16	2.80	0.97	12.5	11.6	0.23	-0.69	0.99	0.94	0.20	1.84



Alt Model-Shift Uniqueness Test

009700449-01, P = 110.450203 Days, E = 37.168171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	2.36	2.27	2.53	5.16	2.81	0.76	14.2	14.0	0.09	-0.18	1.48	1.00	0.13	0.87



Stellar Parameters For KIC 009700449

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6321^{+169}_{-206}	$4.434^{+0.054}_{-0.216}$	$-0.160^{+0.250}_{-0.300}$	$1.058^{+0.349}_{-0.116}$	$1.108^{+0.154}_{-0.139}$	$1.317^{+0.377}_{-0.695}$
	+3%/-3%	+1%/-5%	+156%/-188%	+33%/-11%	+14%/-13%	+29%/-53%
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 009700449-01 / KOI 4120.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-57 ± 18	$2.00^{+0.76}_{-0.72}$	599^{+43}_{-30}	4453^{+940}_{-548}	1577^{+2672}_{-803}
Alt.	-44 ± 19	$2.18^{+0.78}_{-0.69}$	600^{+45}_{-31}	4078^{+745}_{-516}	1029^{+1489}_{-588}

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 $A_{obs} \gg 1.0$

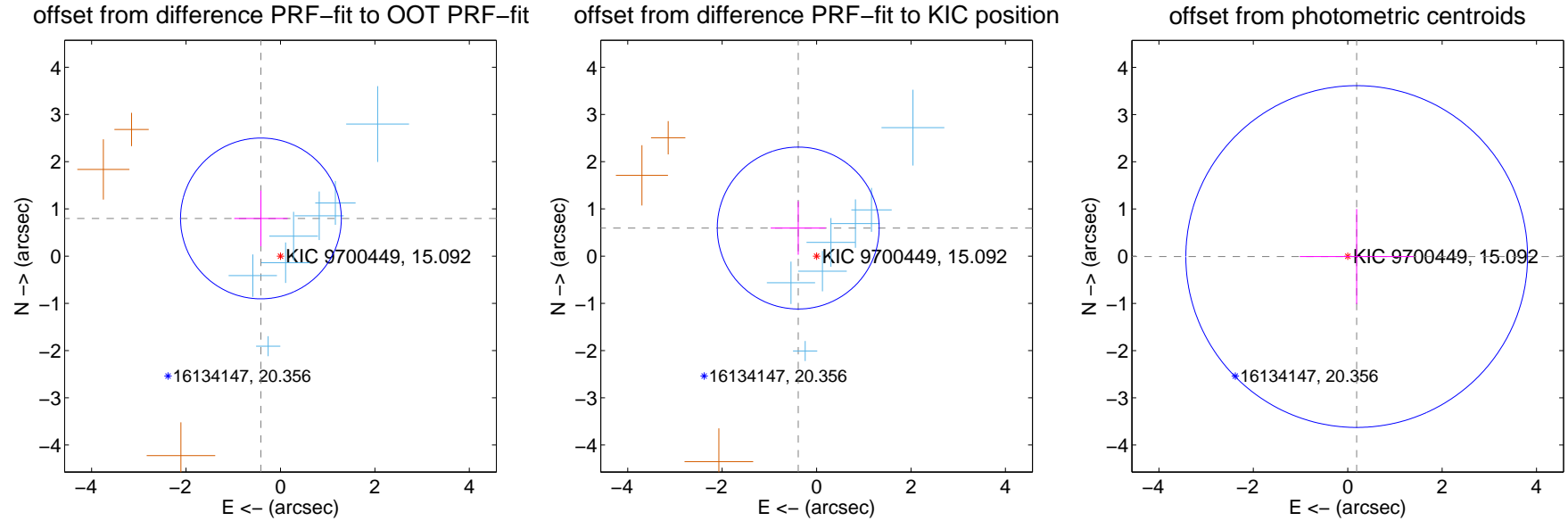
DV Centroid Data

Supplemental centroid analysis for 009700449-01. Kepler magnitude: 15.09. Transit SNR 12.37

There are 7 quarters with good PRF difference image offsets

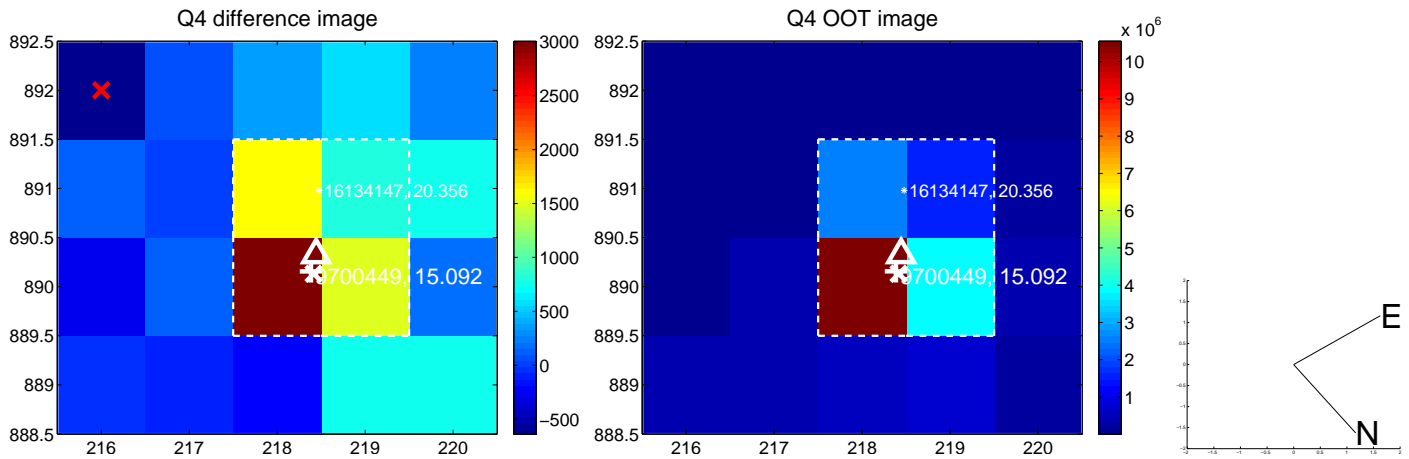
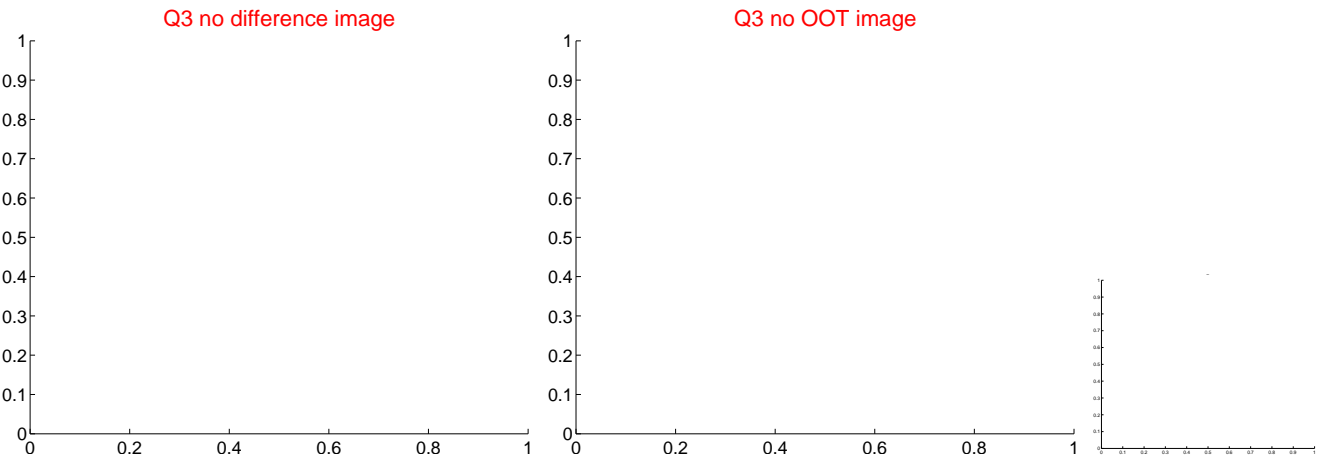
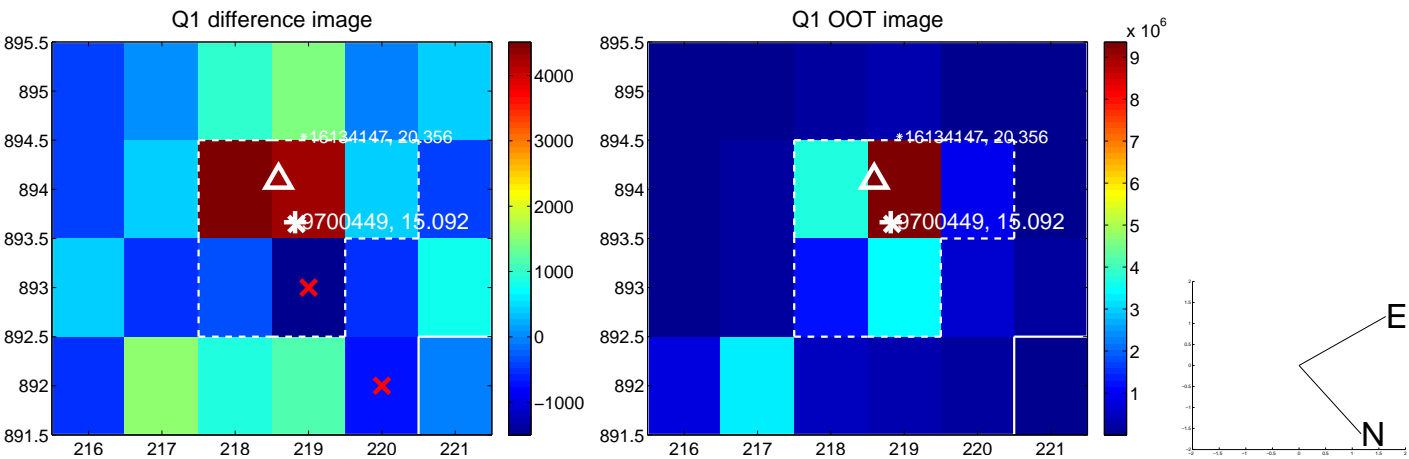
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.899 ± 0.567	1.58	0.414 ± 0.566	0.798 ± 0.590
PRF-fit source offset from KIC position	0.711 ± 0.571	1.24	0.389 ± 0.583	0.595 ± 0.566
photometric centroid source offset	0.19 ± 1.21	0.16	-0.19 ± 1.21	-0.01 ± 1.01

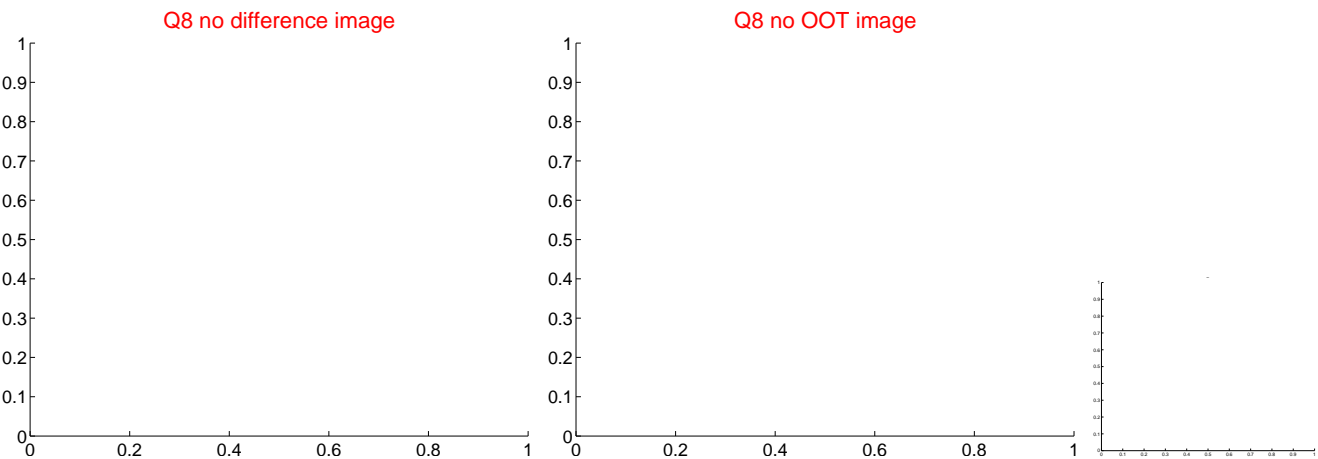
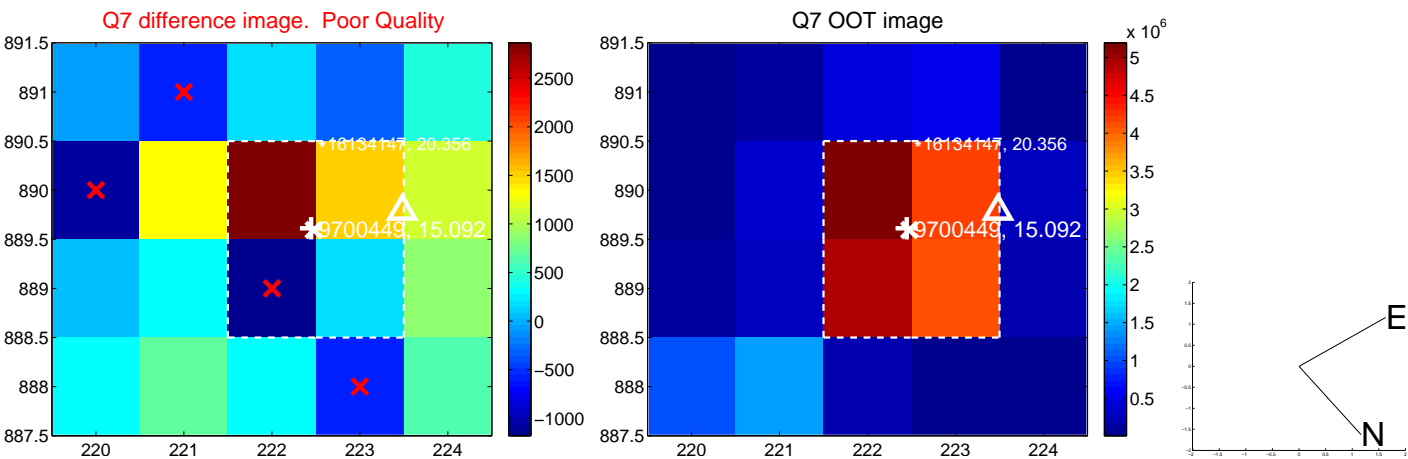
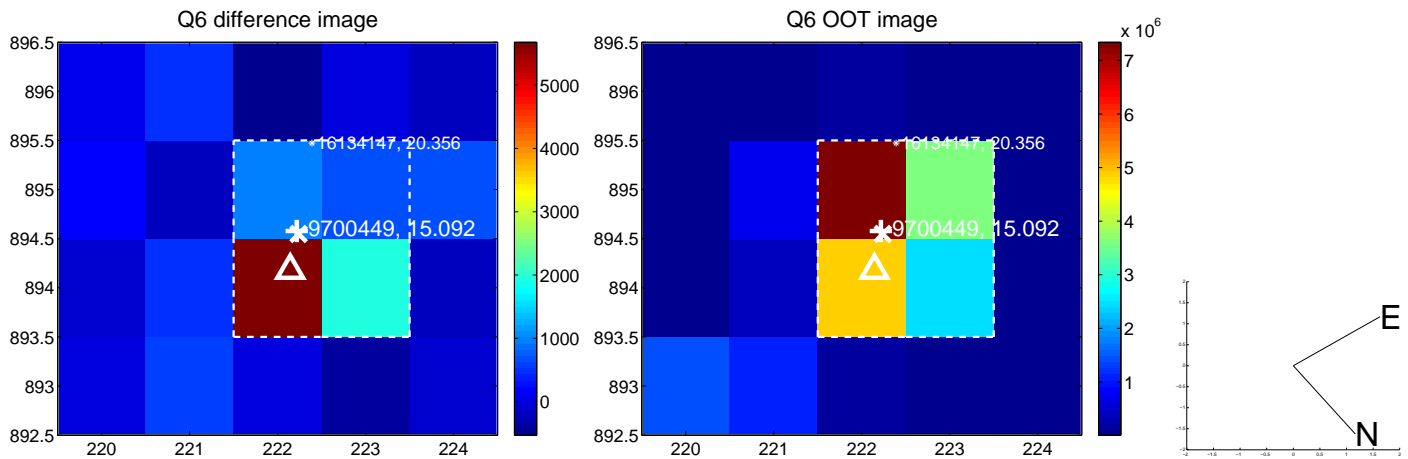
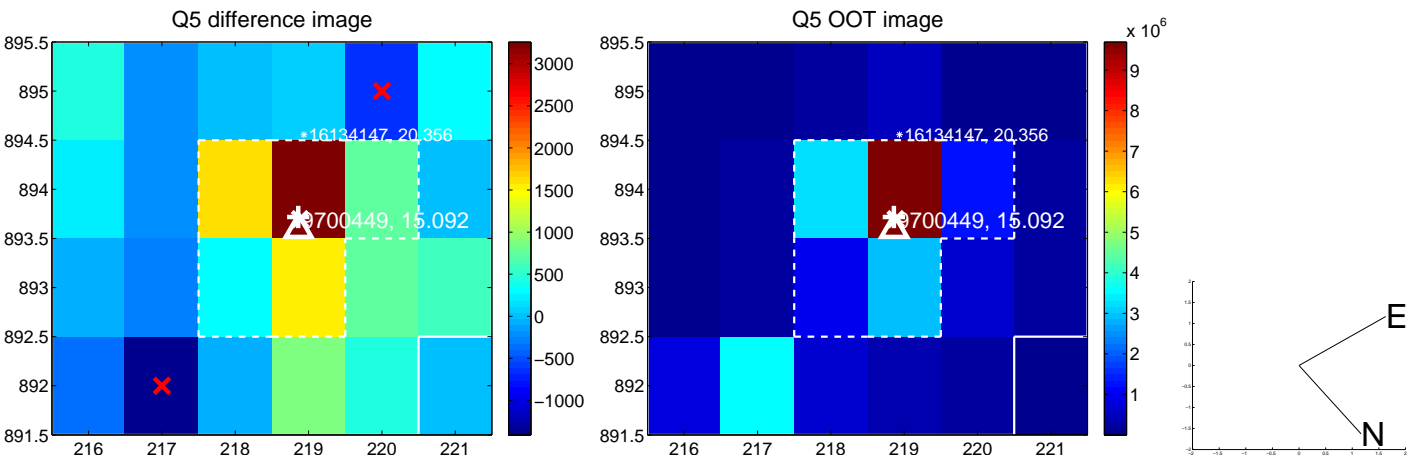


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

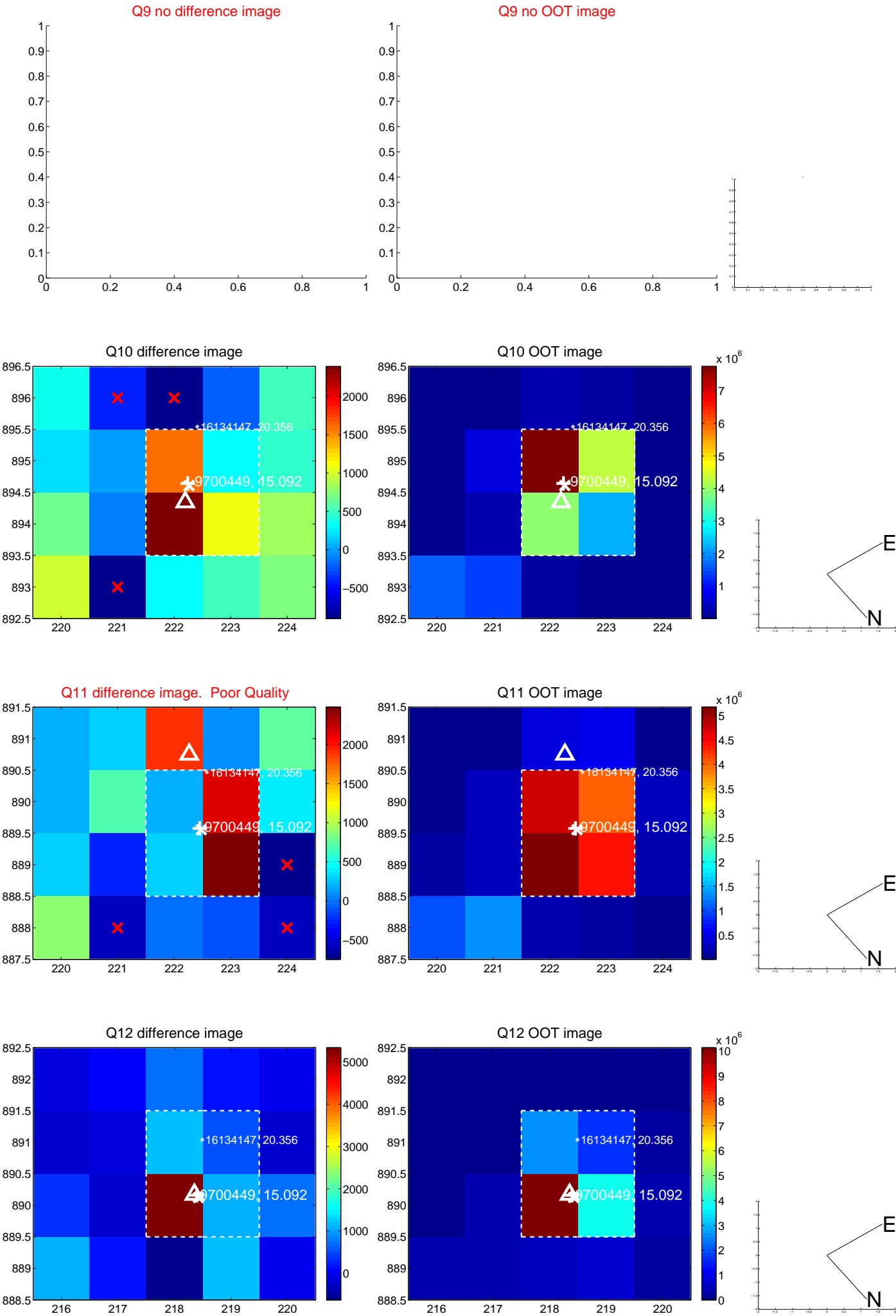
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



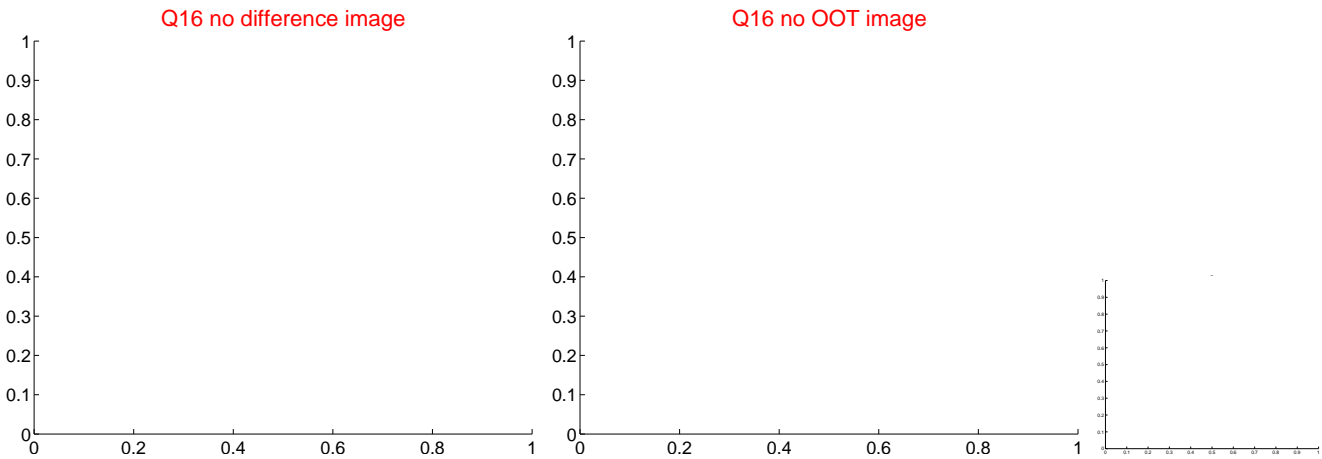
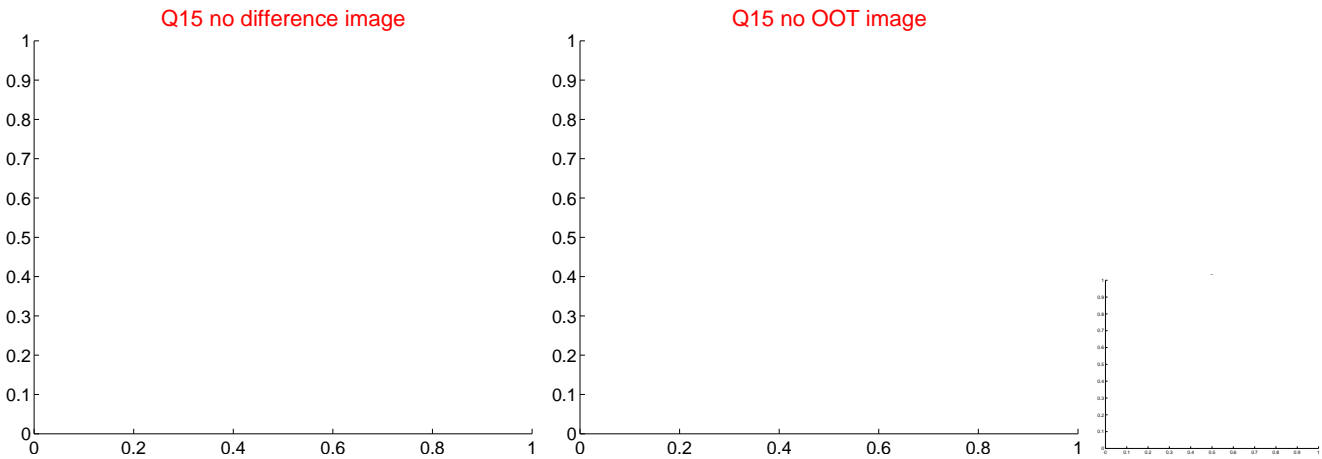
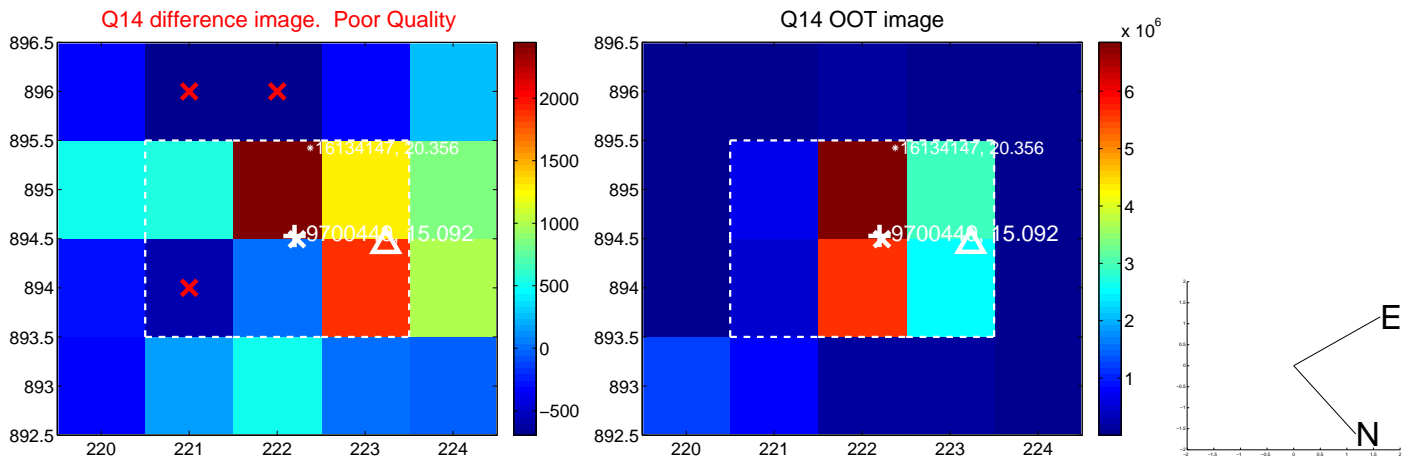
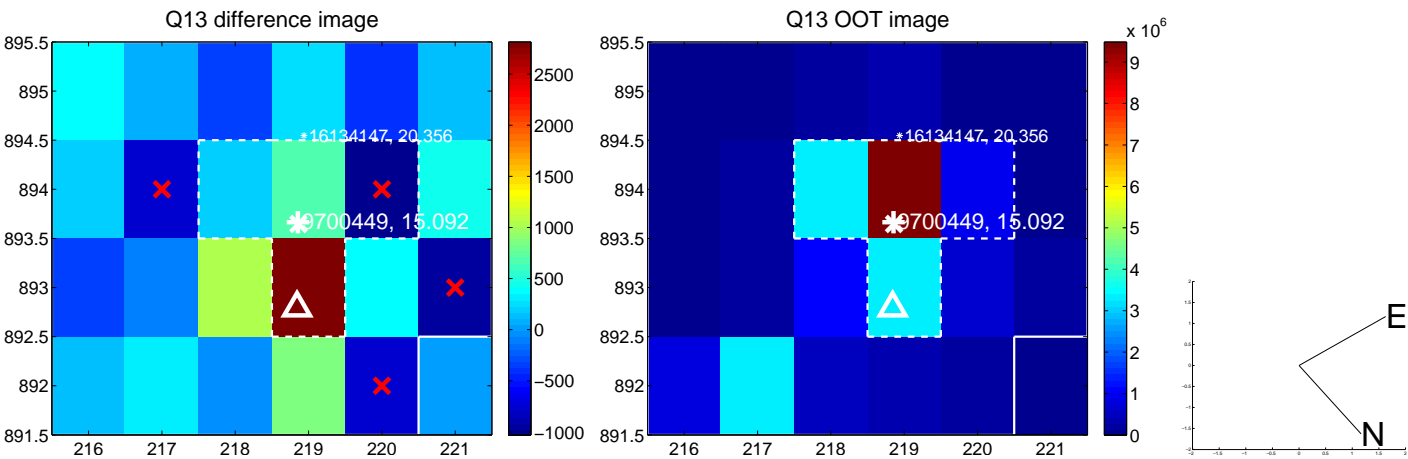
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



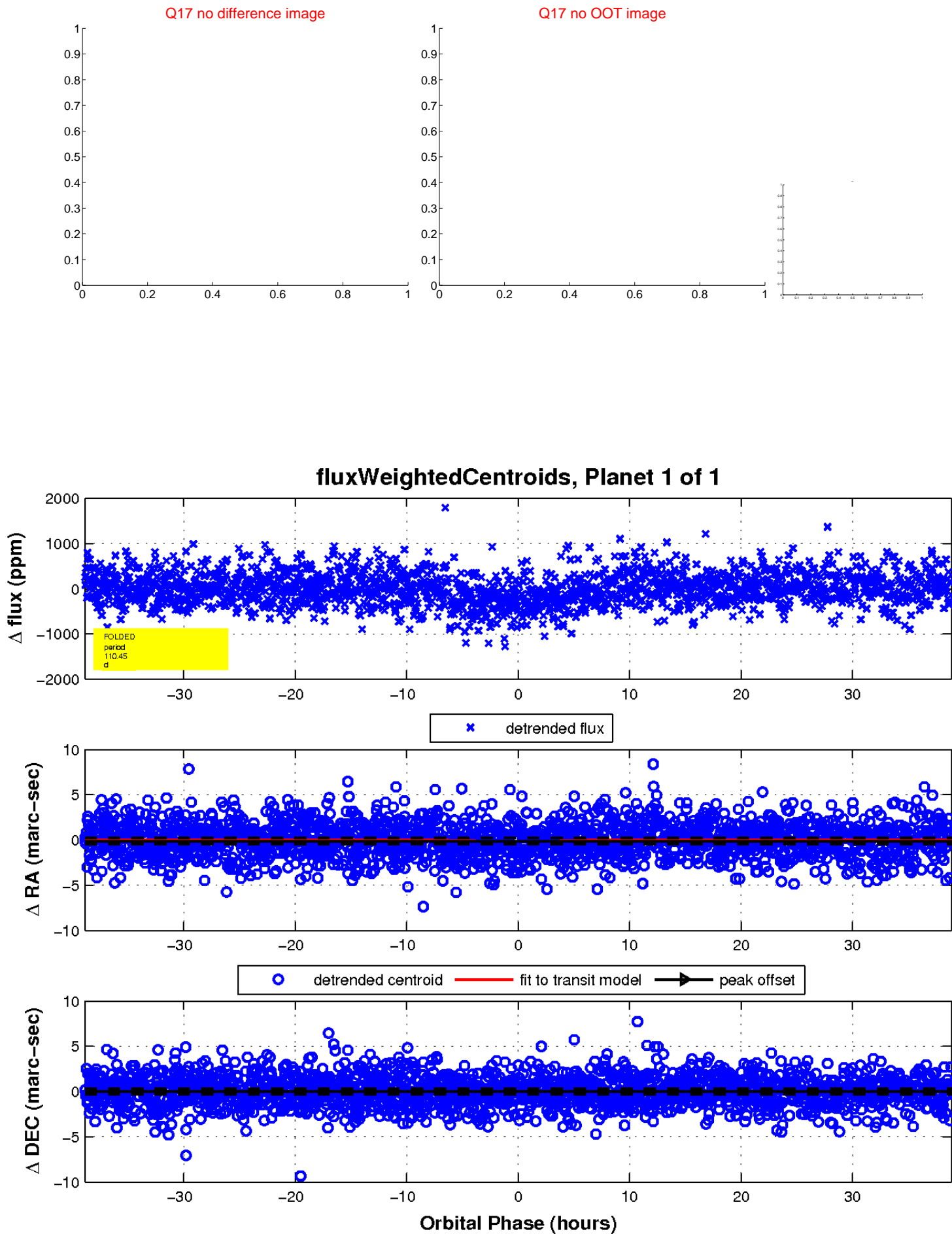
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

