

KIC 010489539

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})
010489539-01	OBS	3231.01	19.765043	134.145202	62.4	13.345	9.9	10.3	1.62	6195	1.55	155.72

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010489539-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_UNRESOLVED_OFFSET—HALO_GHOST

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

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

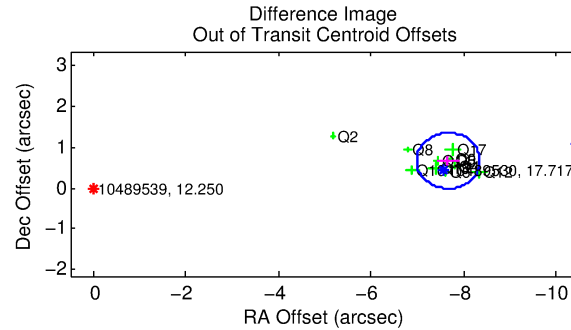
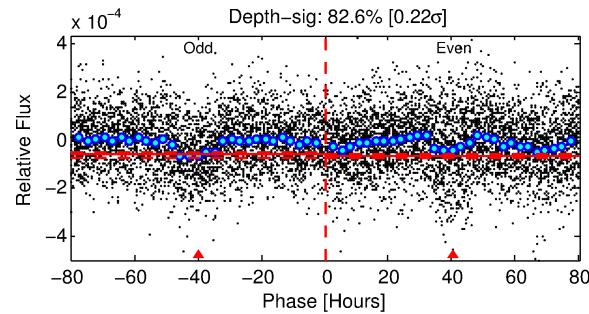
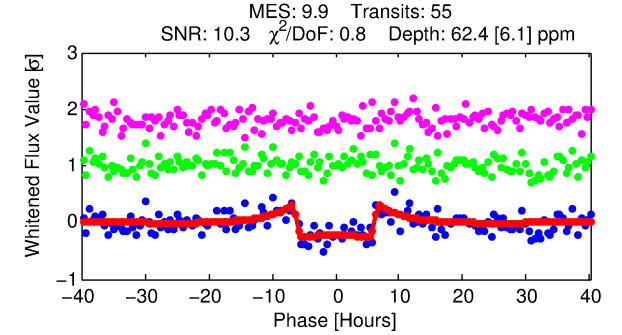
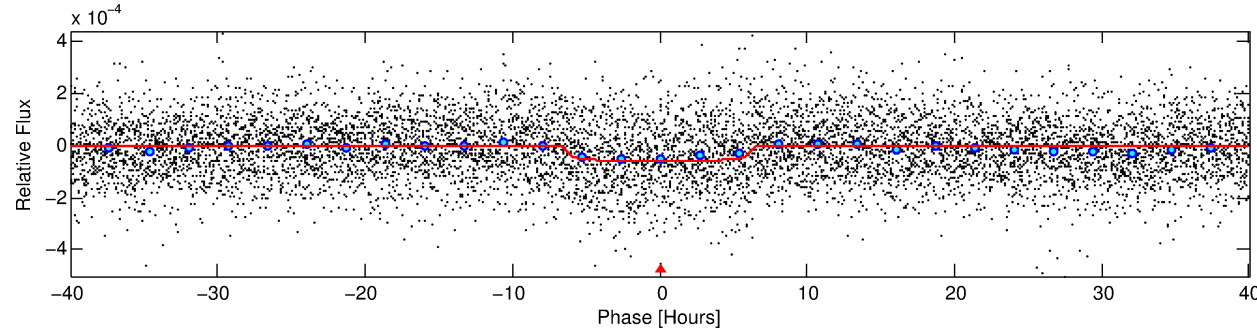
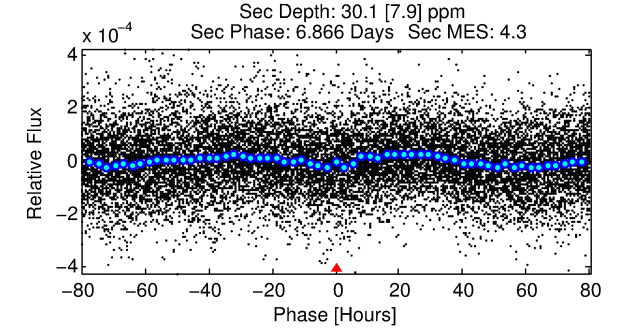
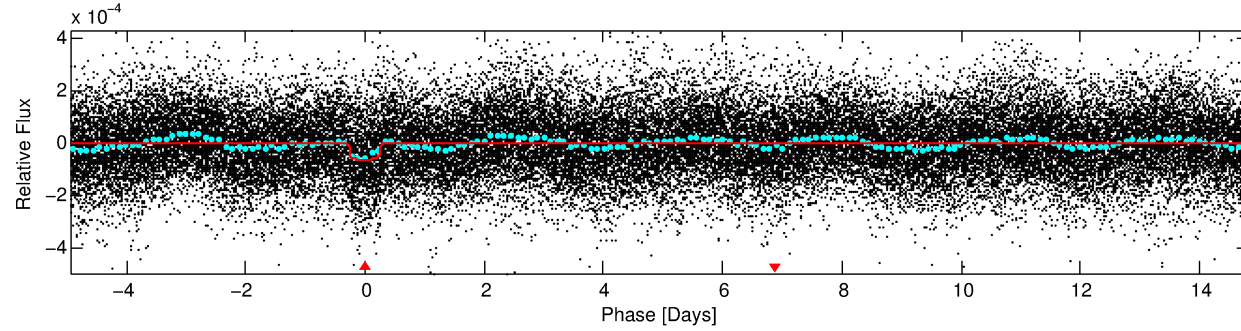
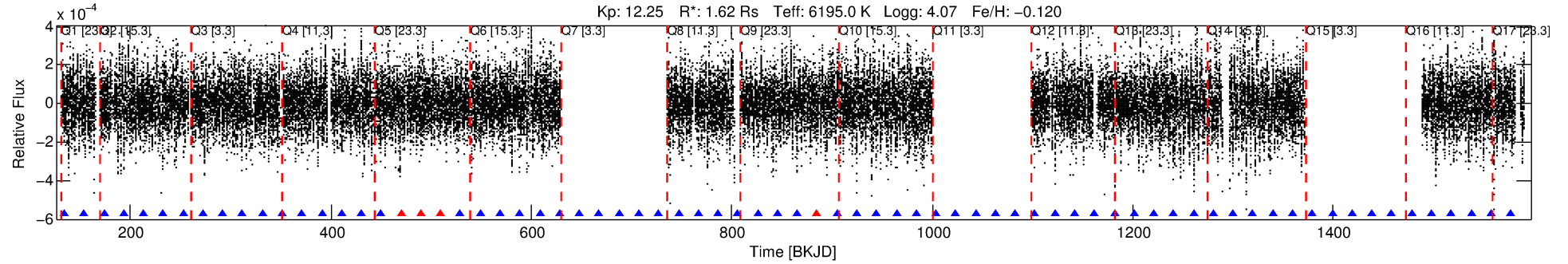
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010489539-01

No Significant Match Found

DV One-Page Summary

KIC: 10489539 Candidate: 1 of 1 Period: 19.765 d
KOI: K03231.01 Corr: 0.945



DV Fit Results:

Period = 19.76504 [0.00023] d
Epoch = 134.1452 [0.0093] BKJD
Rp/R* = 0.0088 [0.0007]
a/R* = 4.45 [1.22]
b = 0.93 [0.04]
Seff = 155.72 [81.82]
Teq = 901 [118] K
Rp = 1.55 [0.53] Re
a = 0.1489 [0.0470] AU
Ag = 152.63 [89.45] [1.70σ]
Teff = 4895 [418] K [9.20σ]

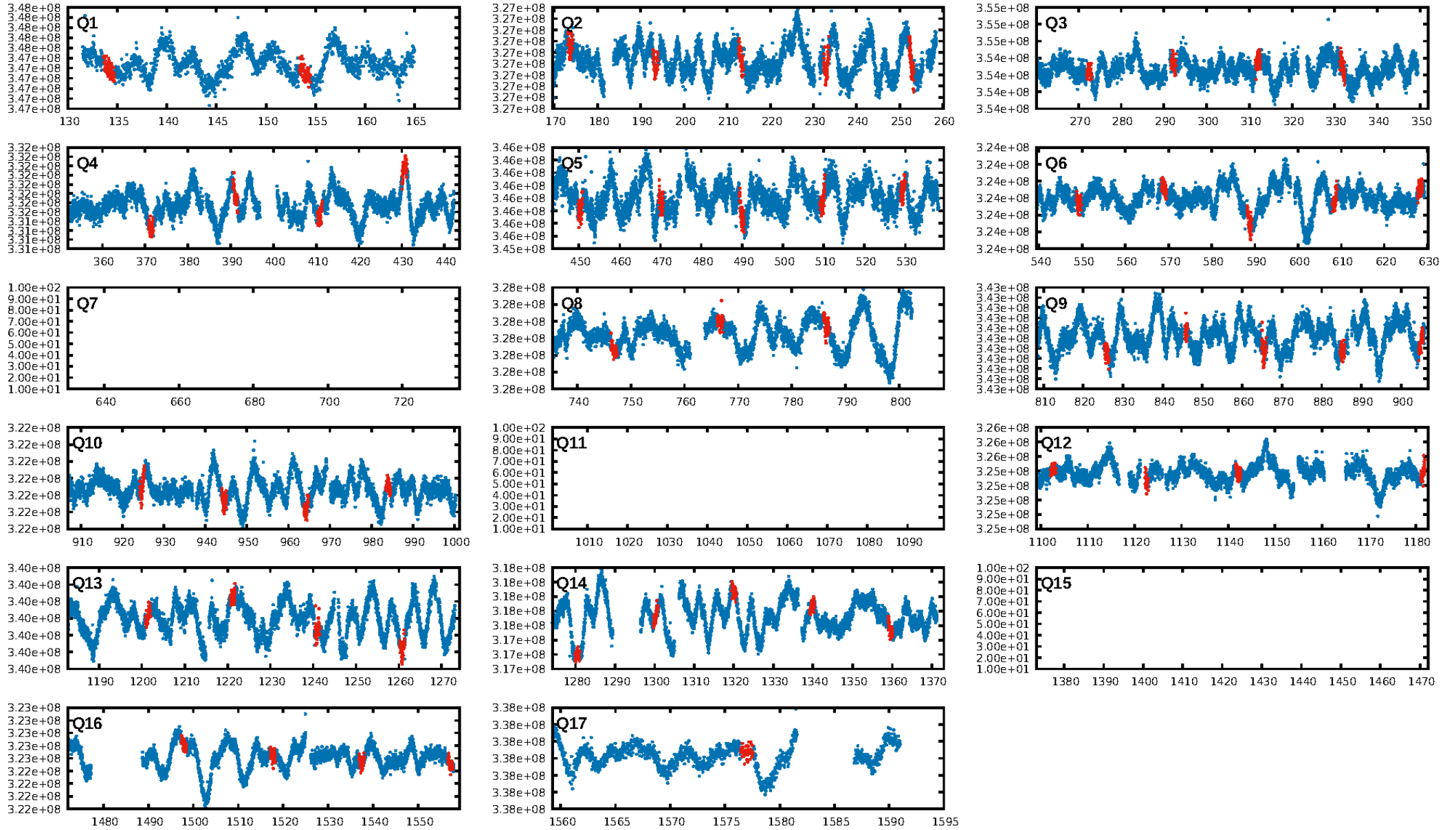
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 64.0%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.56e-22
RollingBand-fgt: 0.92 [48/52]
GhostDiagnostic-chr: 0.07706
Centroid-sig: 0.0%
Centroid-so: 12.841 arcsec [12.32σ]
OotOffset-rm: 7.694 arcsec [33.86σ]
KicOffset-rm: 7.707 arcsec [29.64σ]
OotOffset-st: 4/0/3/4 [11]
KicOffset-st: 4/0/3/4 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 1.00 [14/14]

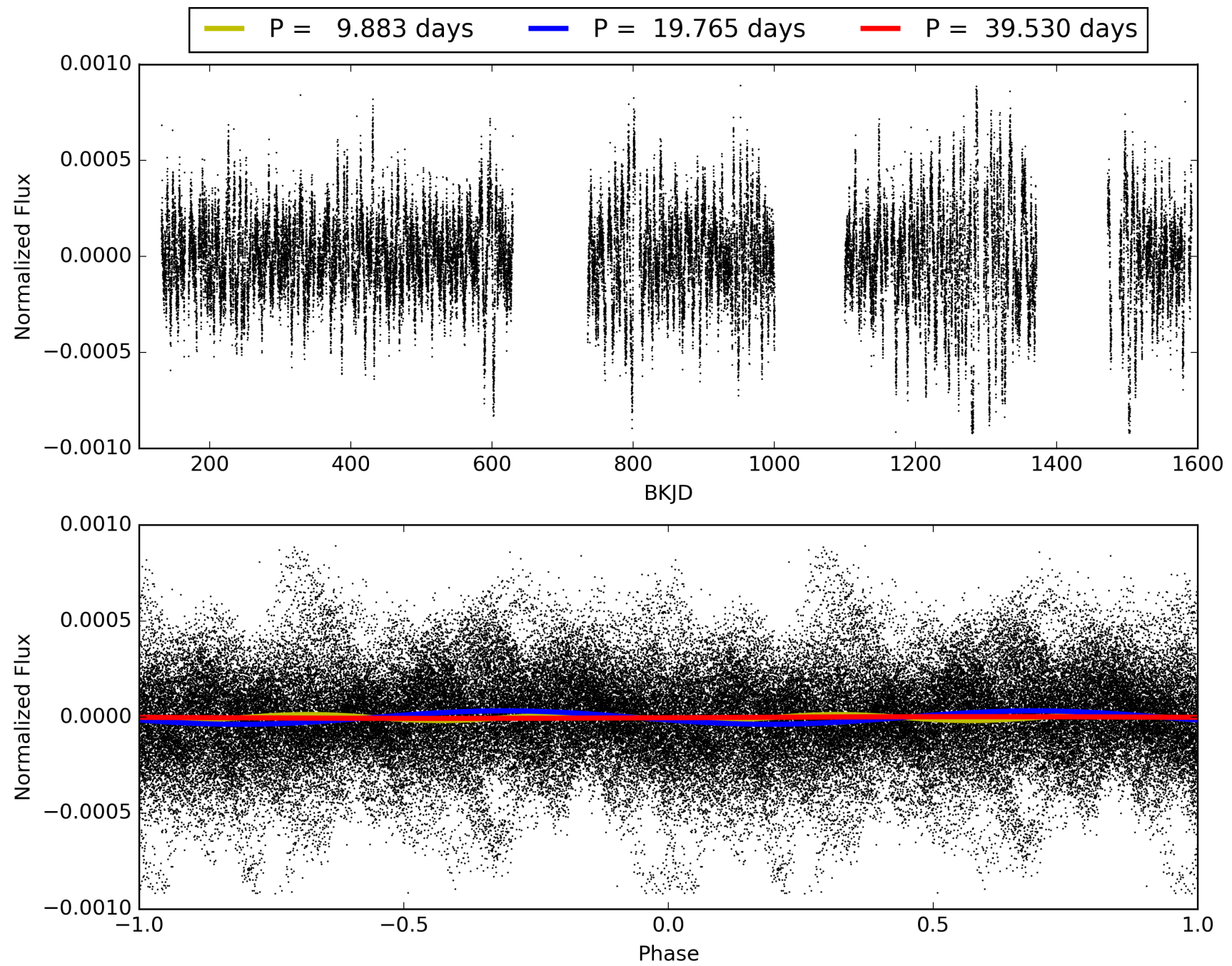
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:13:41 Z

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

TCE 010489539-01, PDC Light Curves

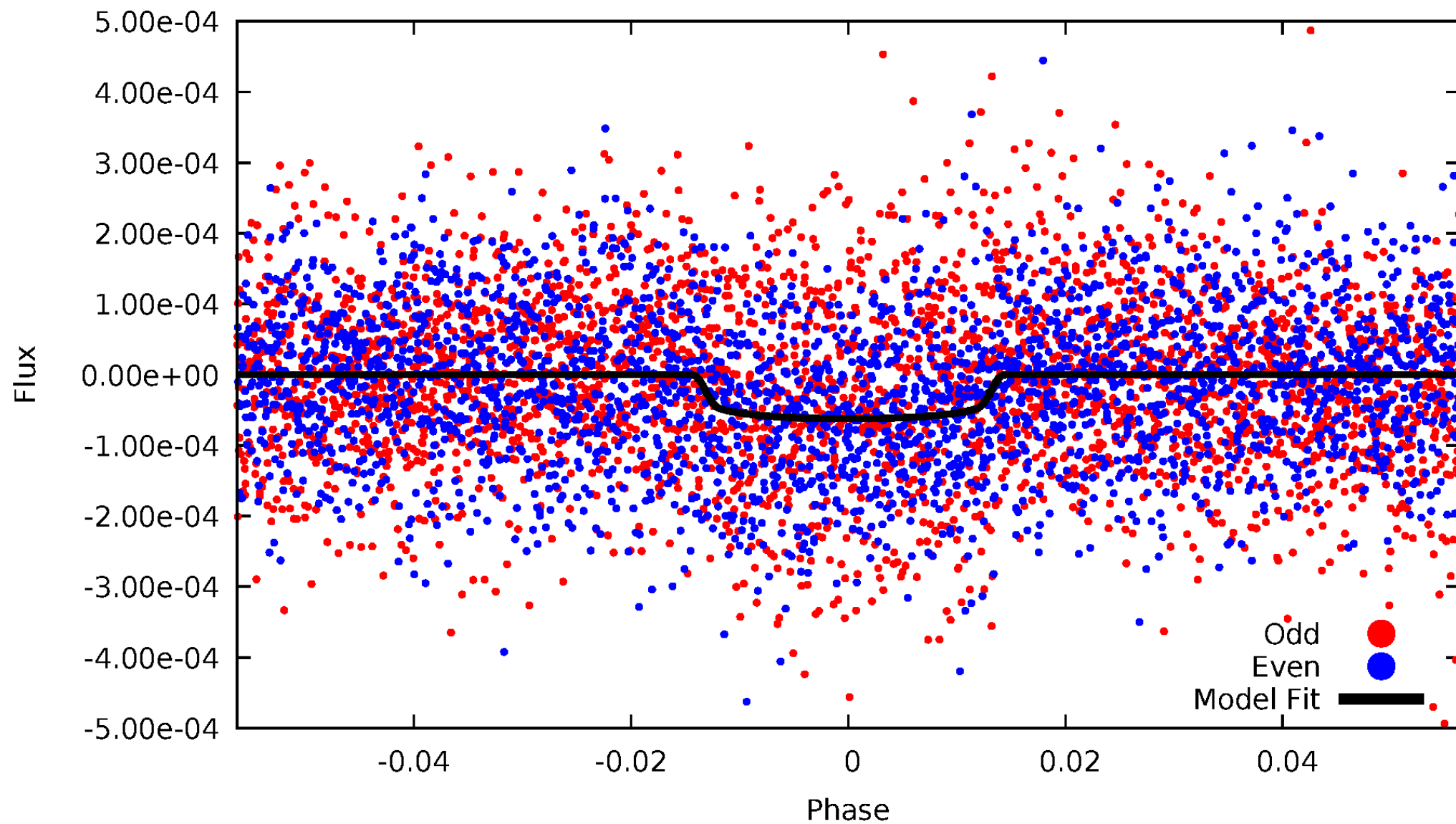


TCE 010489539-01



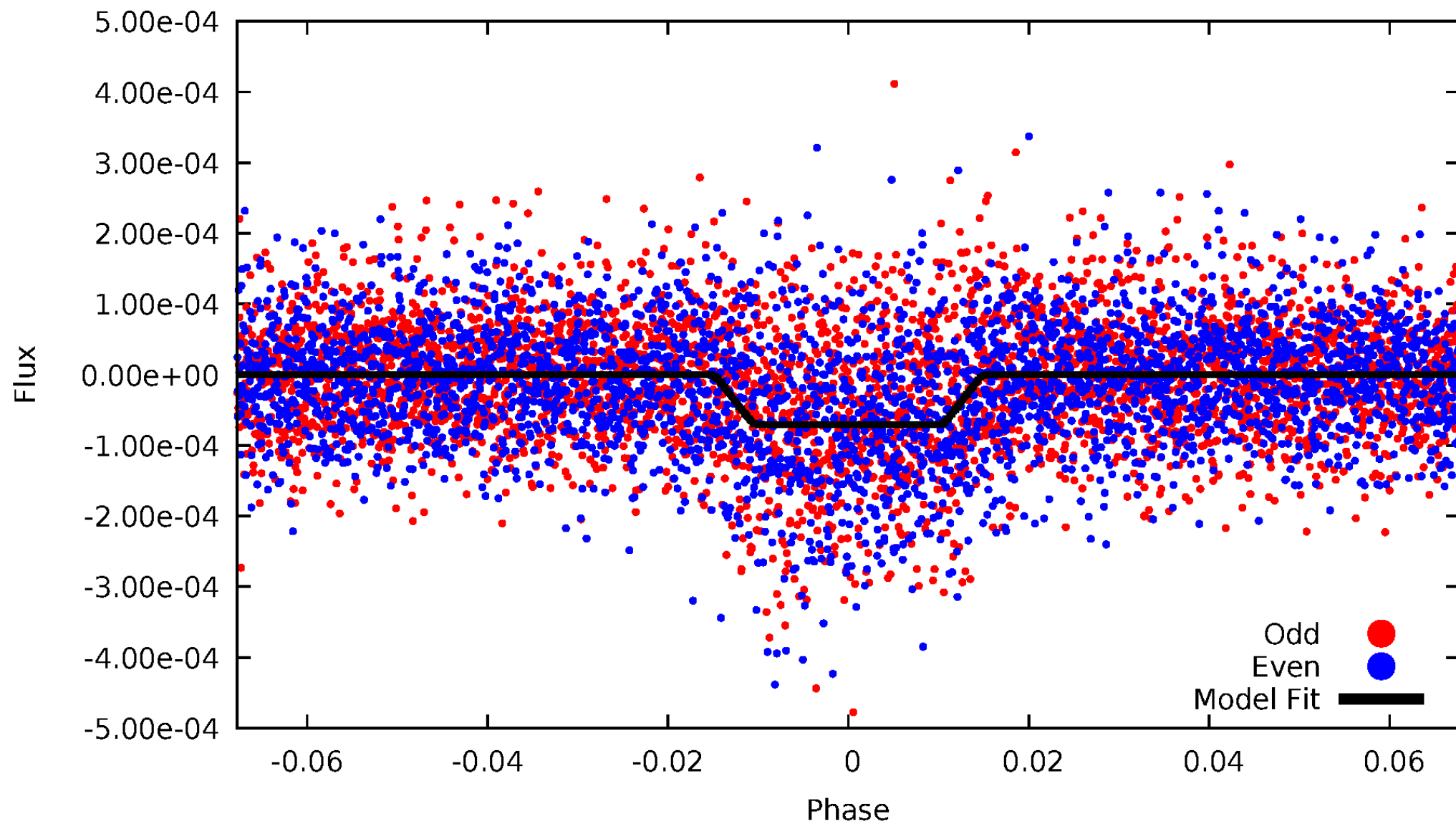
DV Odd/Even

TCE 010489539-01



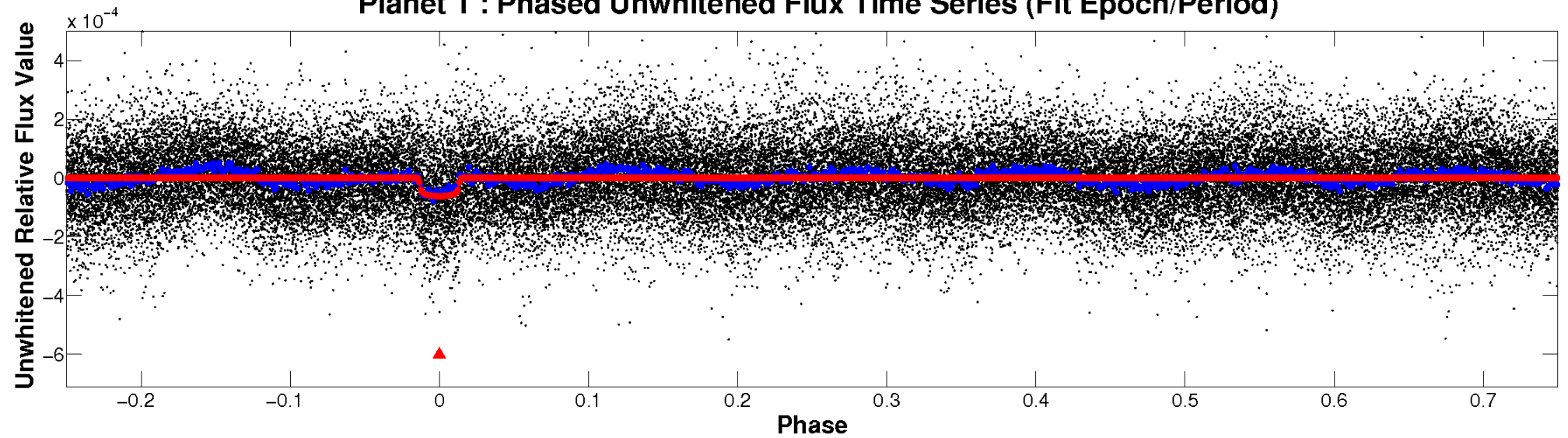
ALT Odd/Even

TCE 010489539-01

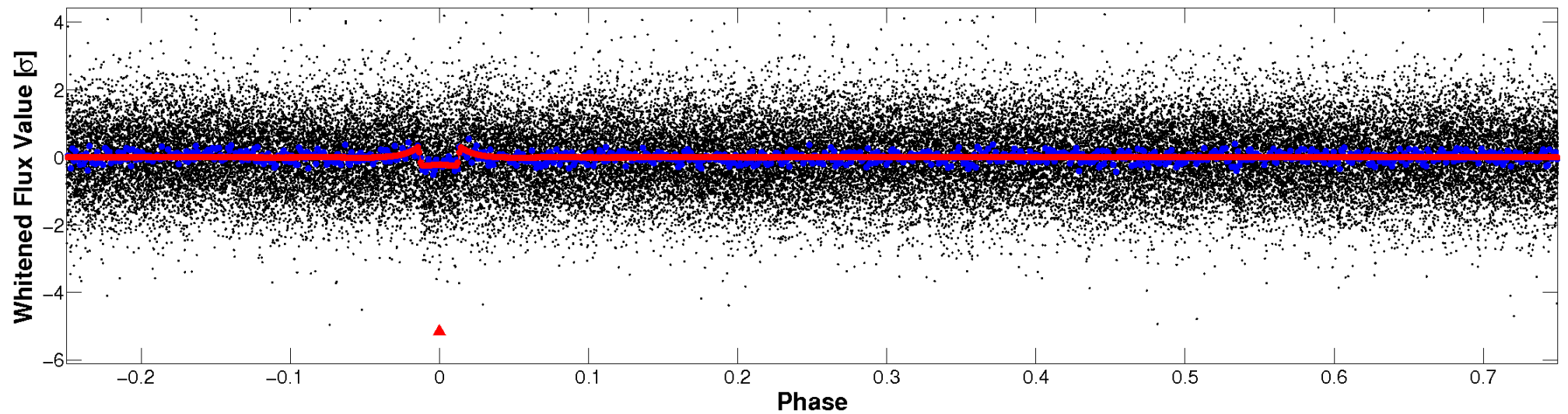


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

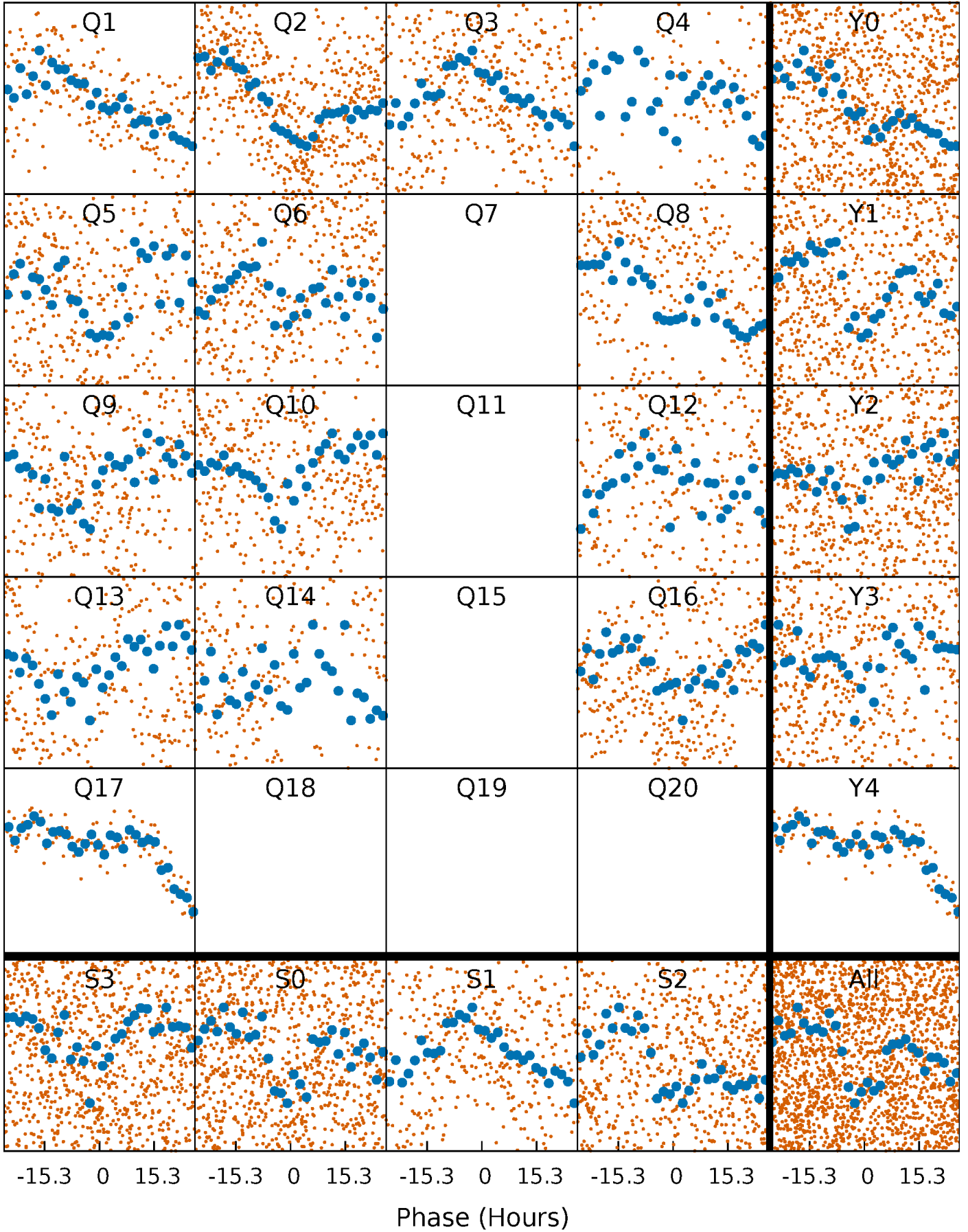


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



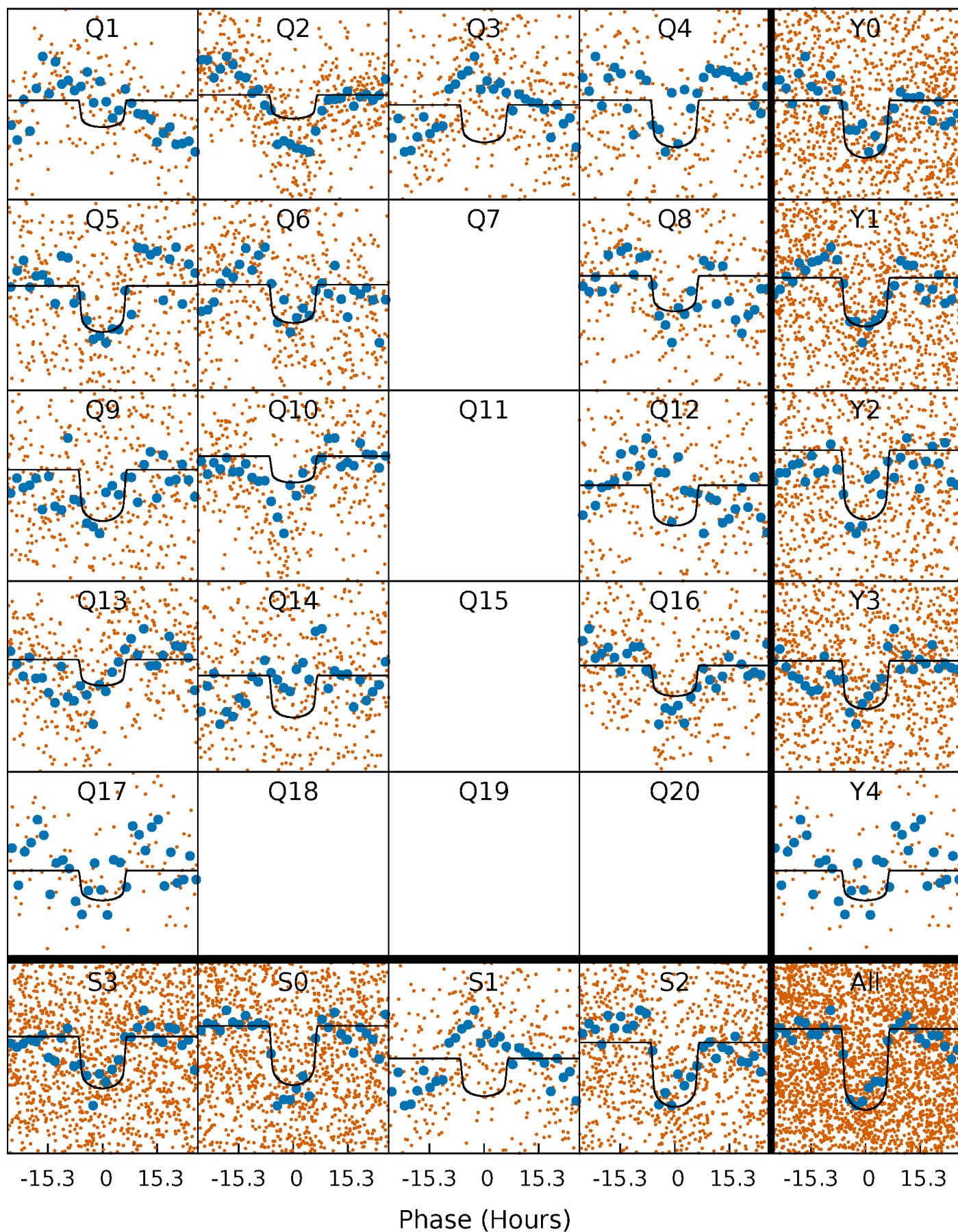
PDC Quarter-Phased Transit Curves

TCE 010489539-01 P= 19.765043 Days $T_0=134.145202$ (BKJD)



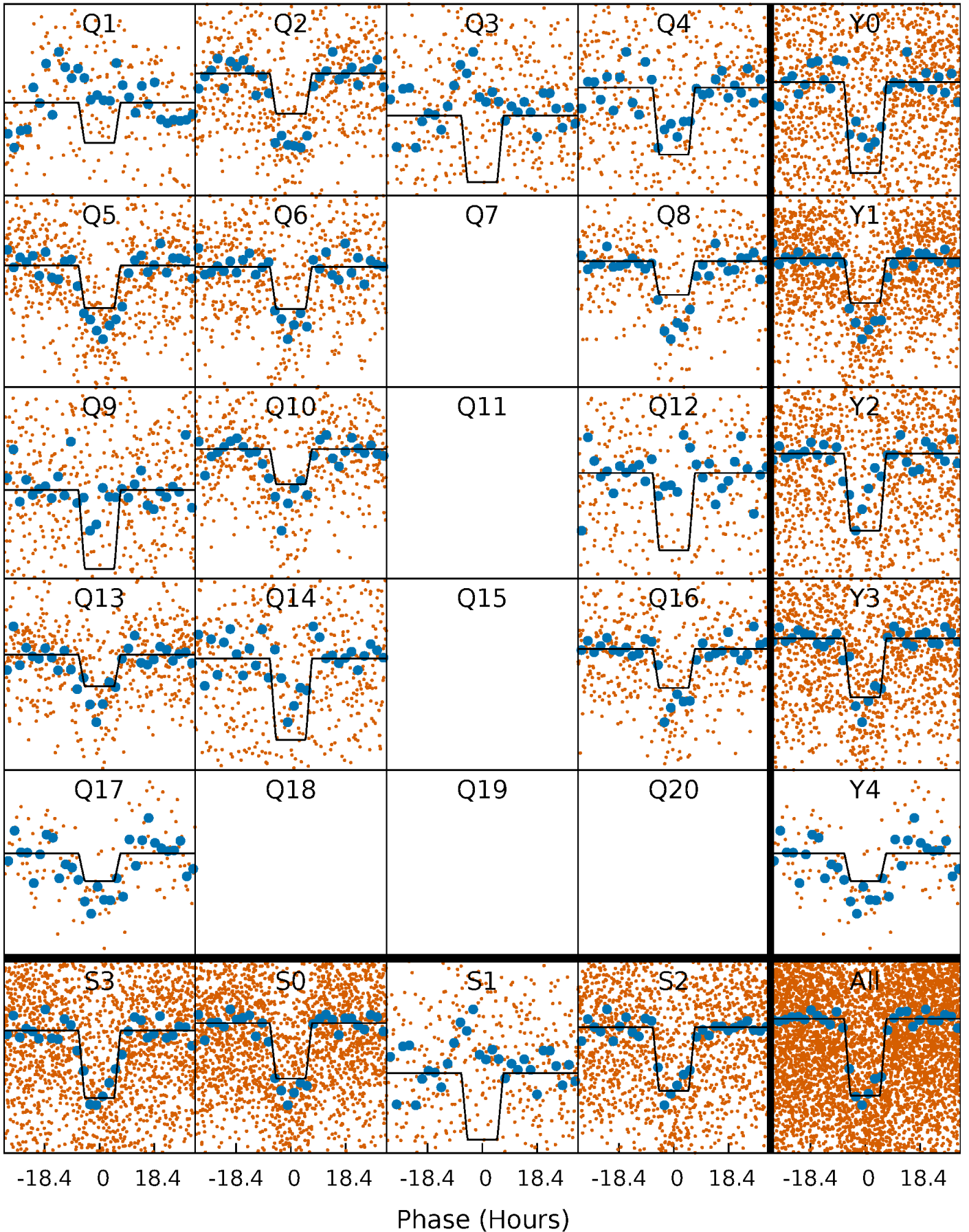
DV Quarter-Phased Transit Curves

TCE 010489539-01 P= 19.765043 Days $T_0=134.145202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

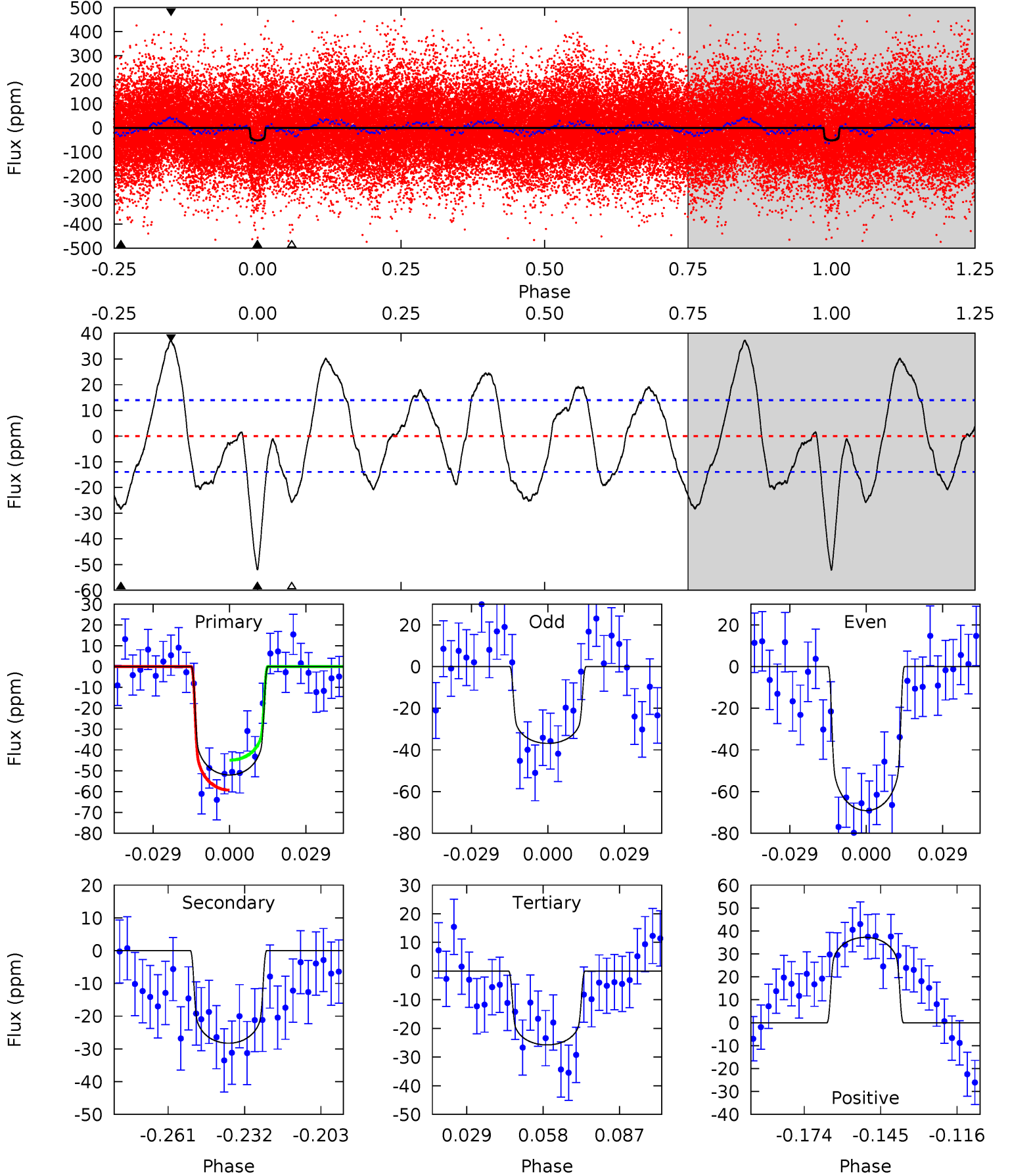
TCE 010489539-01 P= 19.764005 Days $T_0=134.162592$ (BKJD)



DV Model-Shift Uniqueness Test

010489539-01, P = 19.765043 Days, E = 114.380159 Days

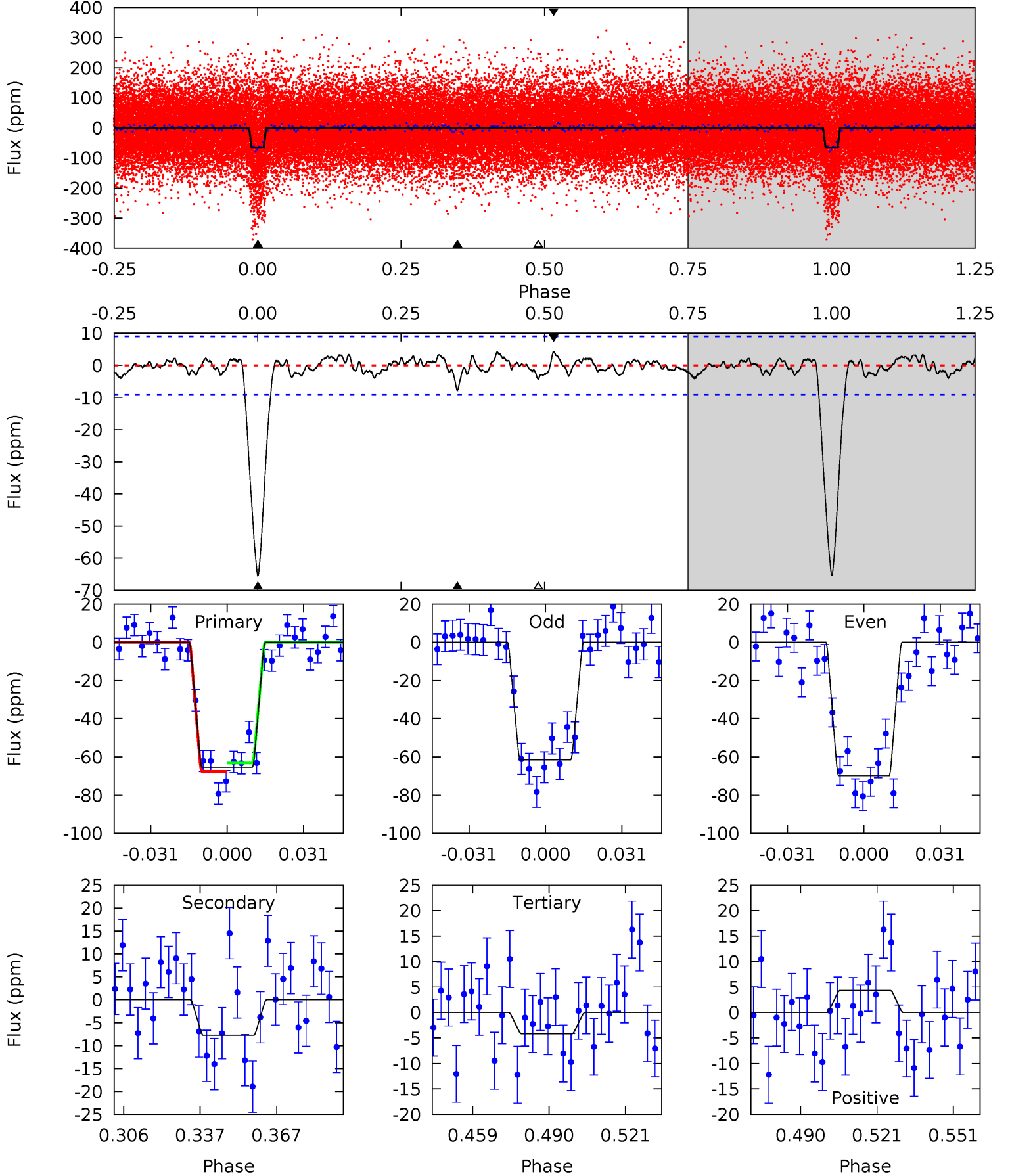
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	9.76	8.90	12.9	4.82	2.18	5.47	9.07	5.12	0.87	-3.09	5.53	0.96	0.42	2.48



Alt Model-Shift Uniqueness Test

010489539-01, $P = 19.764005$ Days, $E = 114.398587$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.9	4.14	2.24	2.31	4.81	2.16	0.93	32.7	32.6	1.90	1.83	2.24	0.94	0.06	1.17



Stellar Parameters For KIC 010489539

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6195^{+199}_{-243}	$4.072^{+0.293}_{-0.158}$	$-0.120^{+0.250}_{-0.300}$	$1.617^{+0.440}_{-0.538}$	$1.127^{+0.177}_{-0.177}$	$0.375^{+0.750}_{-0.166}$
	+3%/-4%	+7%/-4%	+208%/-250%	+27%/-33%	+16%/-16%	+200%/-44%
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 010489539-01 / KOI 3231.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-28 ± 3	$1.52^{+0.27}_{-0.28}$	1239^{+97}_{-112}	4917^{+228}_{-258}	151^{+73}_{-43}
Alt.	-8 ± 2	$1.43^{+0.27}_{-0.27}$	1238^{+97}_{-114}	3901^{+214}_{-212}	46^{+25}_{-16}

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

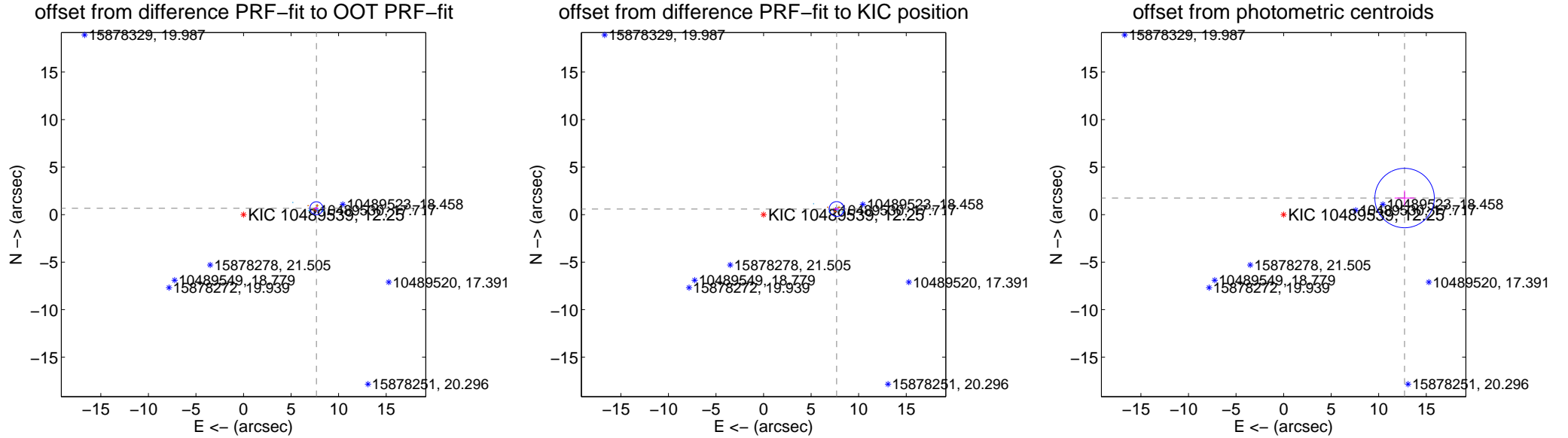
DV Centroid Data

Supplemental centroid analysis for 010489539-01. Kepler magnitude: 12.25. Transit SNR 10.34

There are 6 quarters with good PRF difference image offsets

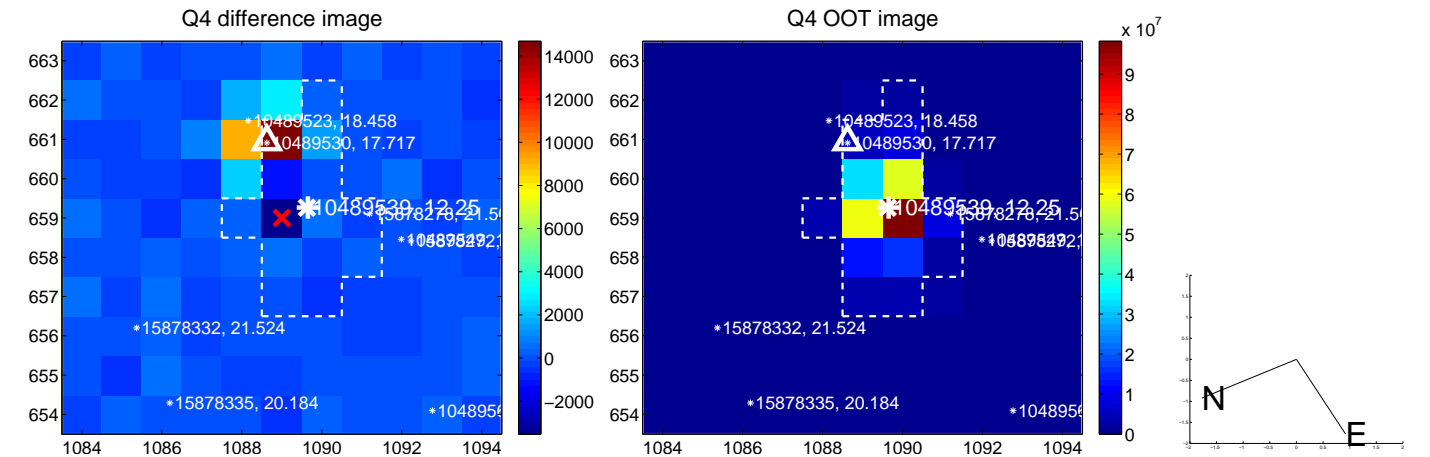
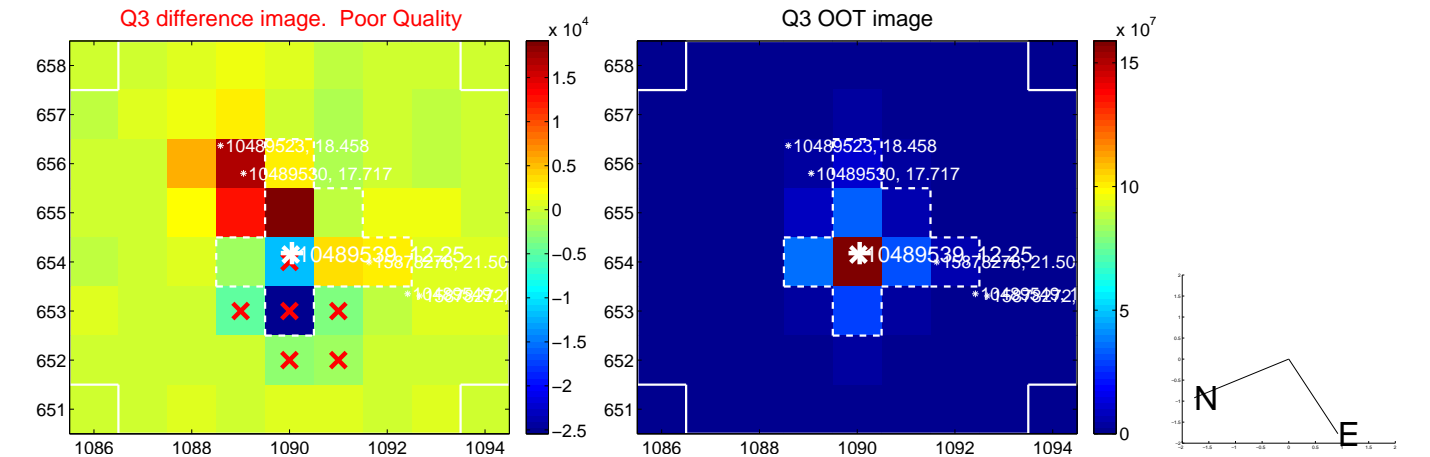
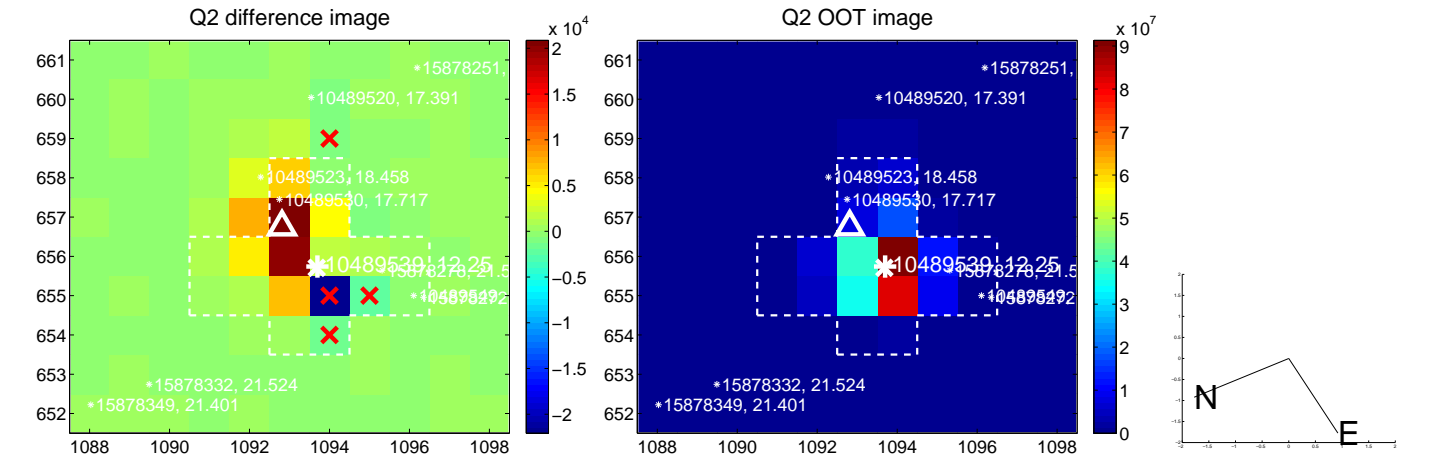
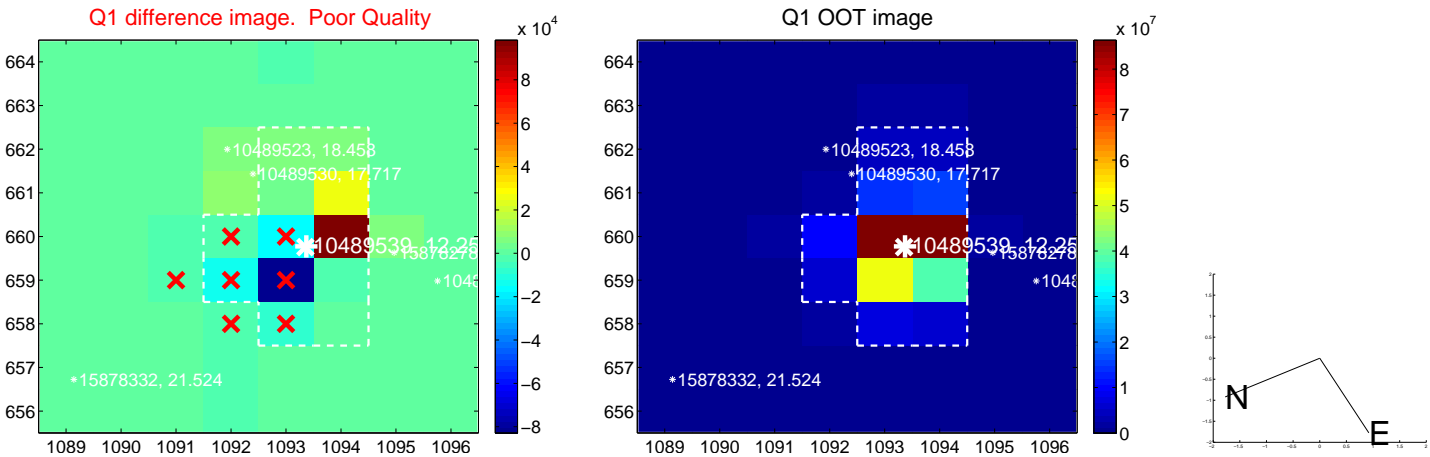
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.694 ± 0.227	33.86	-7.665 ± 0.232	0.670 ± 0.105
PRF-fit source offset from KIC position	7.707 ± 0.260	29.64	-7.685 ± 0.265	0.588 ± 0.103
photometric centroid source offset	12.84 ± 1.04	12.32	-12.72 ± 1.05	1.74 ± 0.79

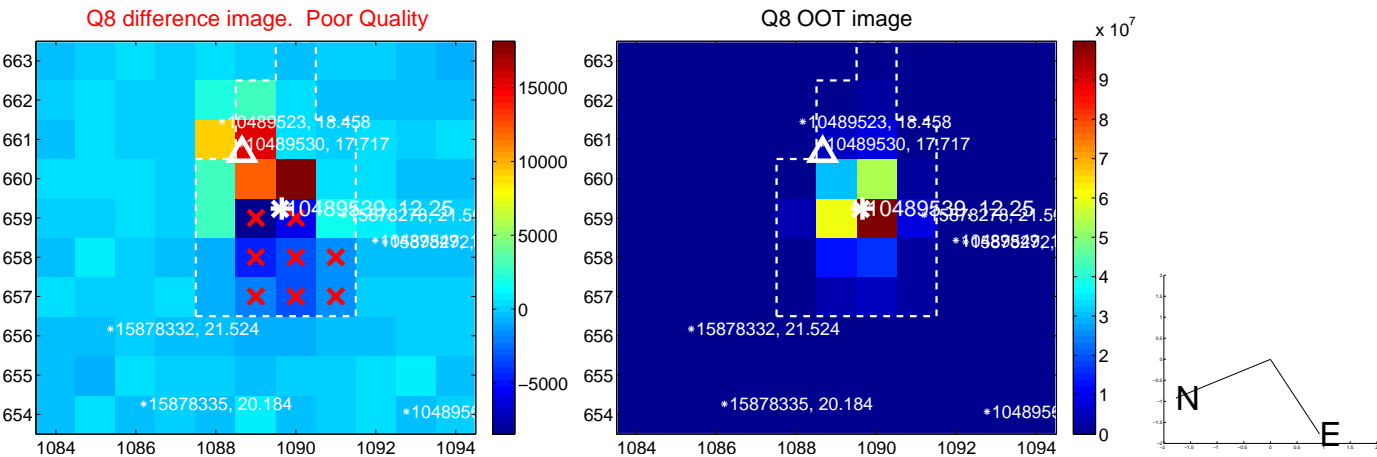
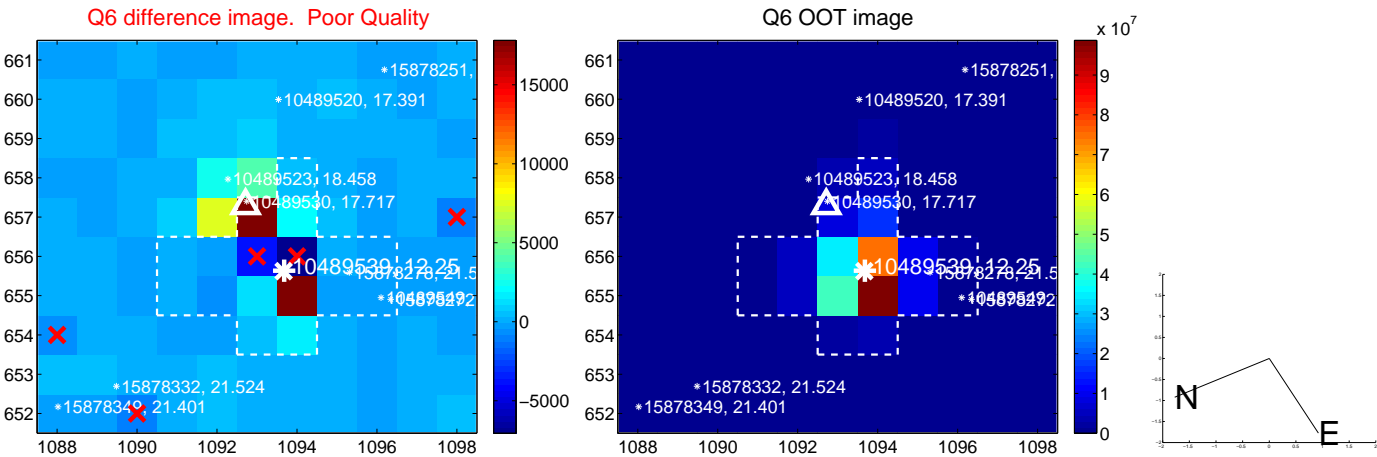
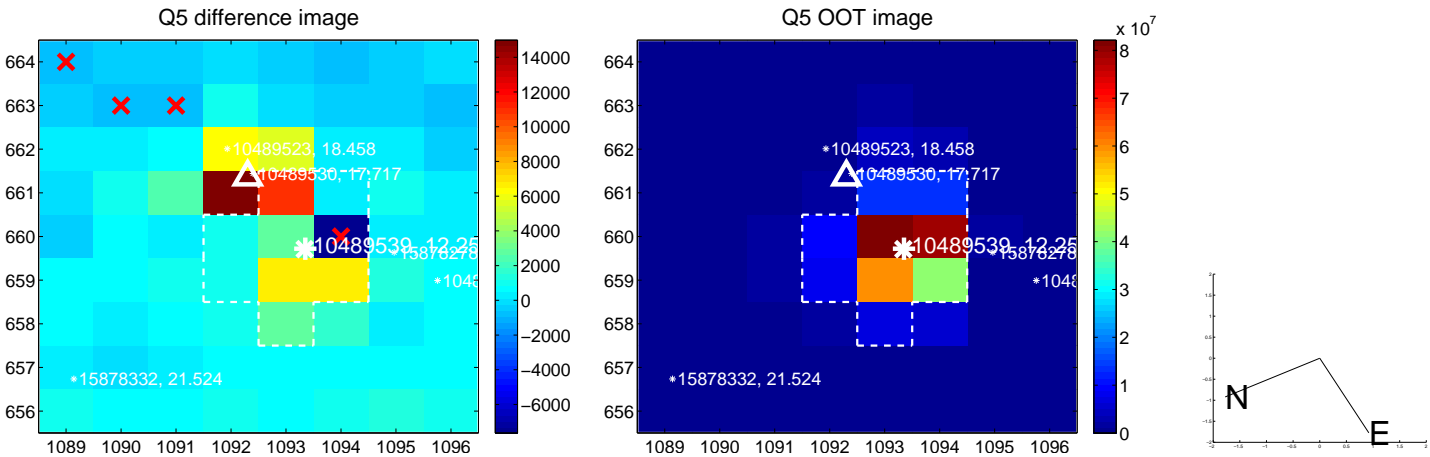


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

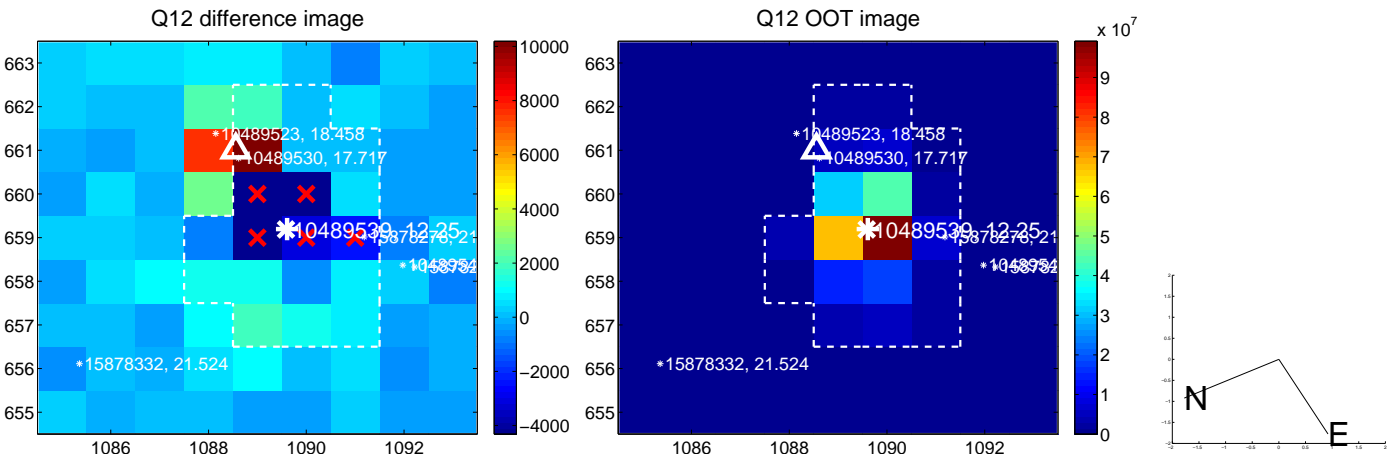
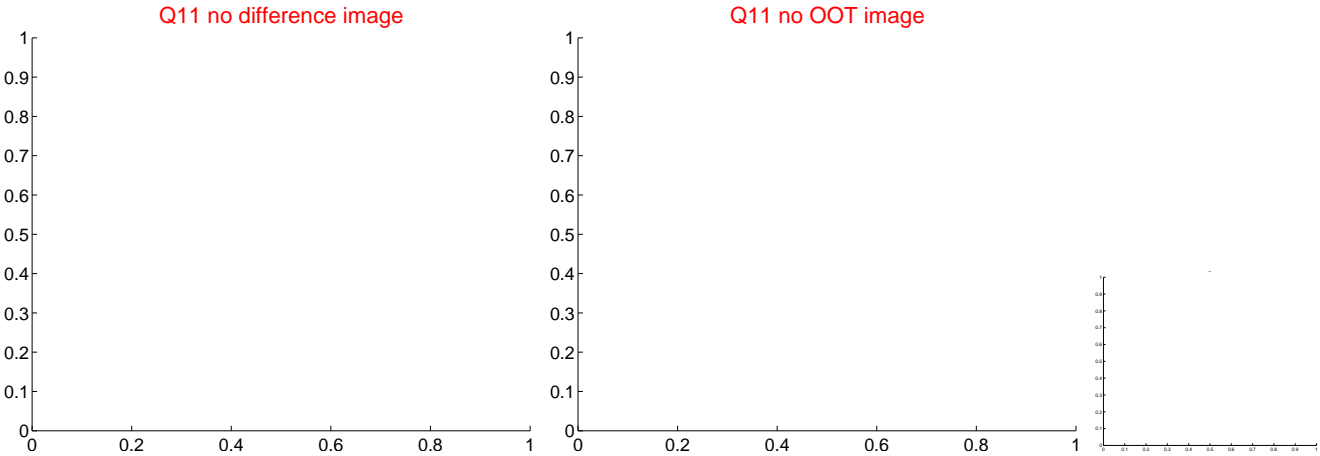
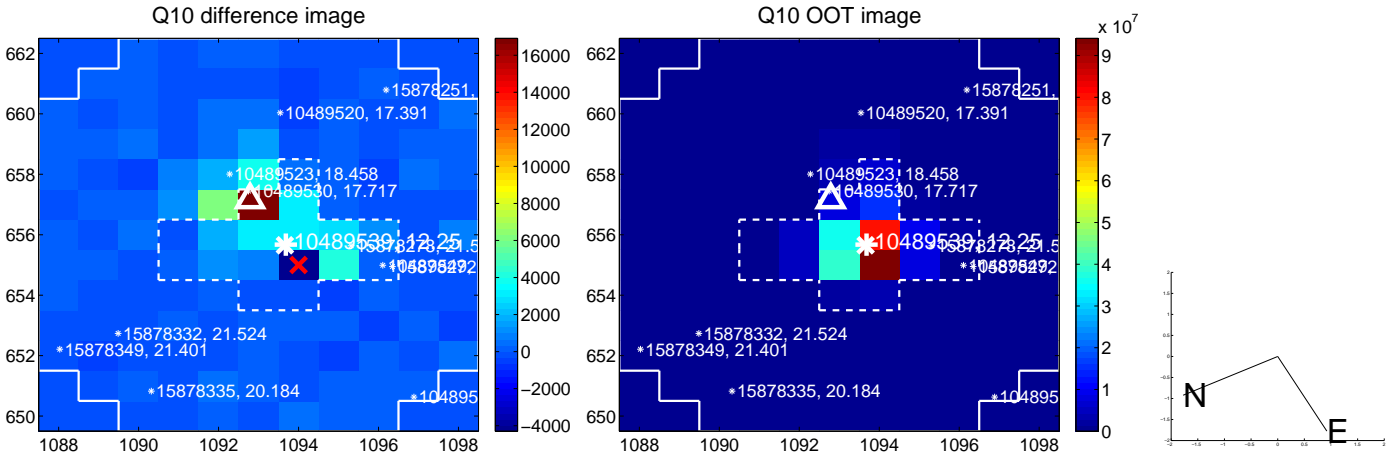
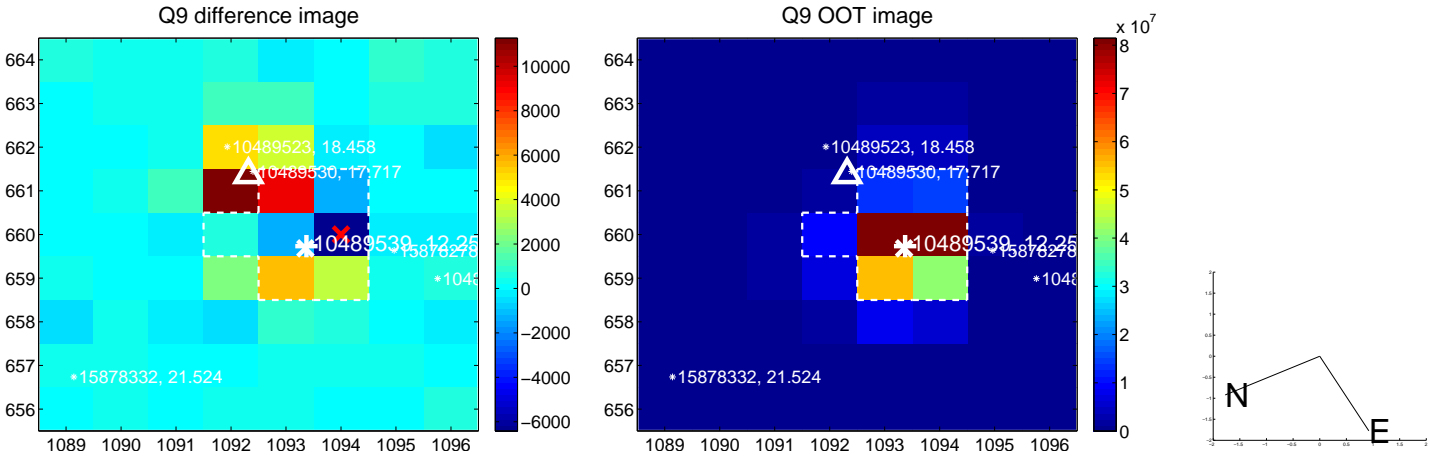
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



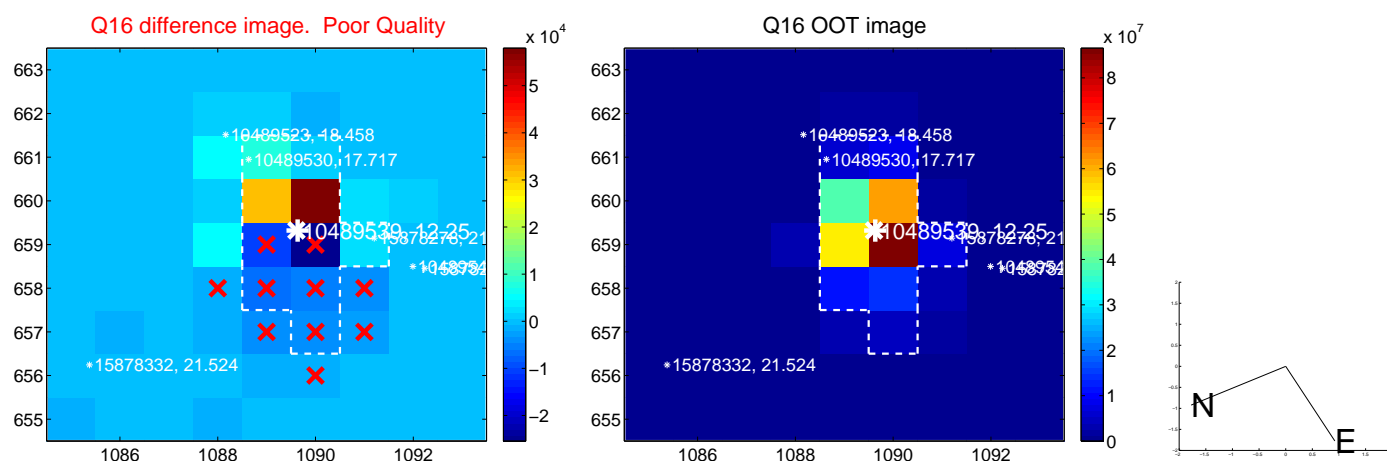
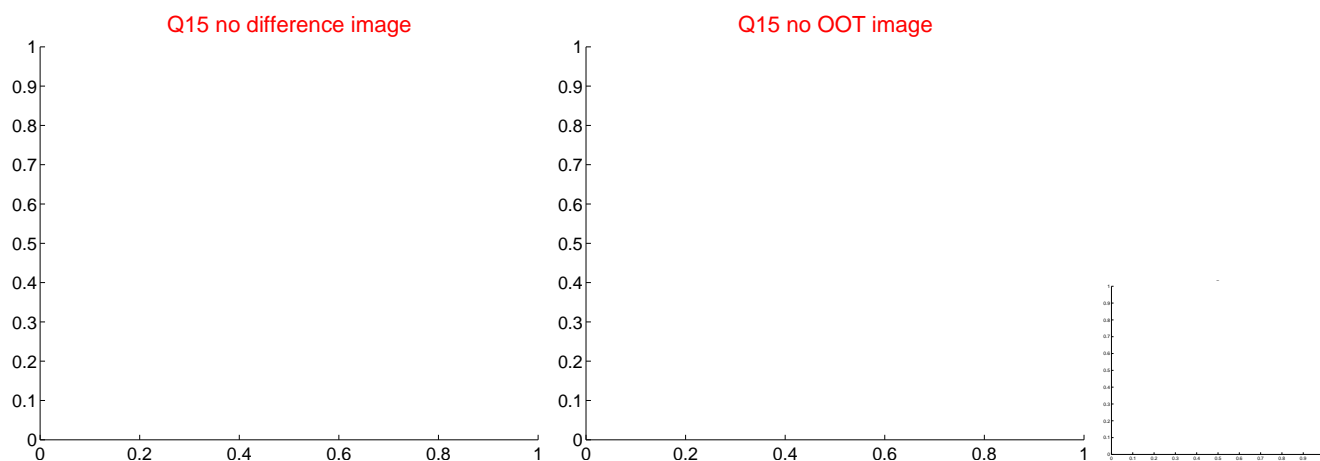
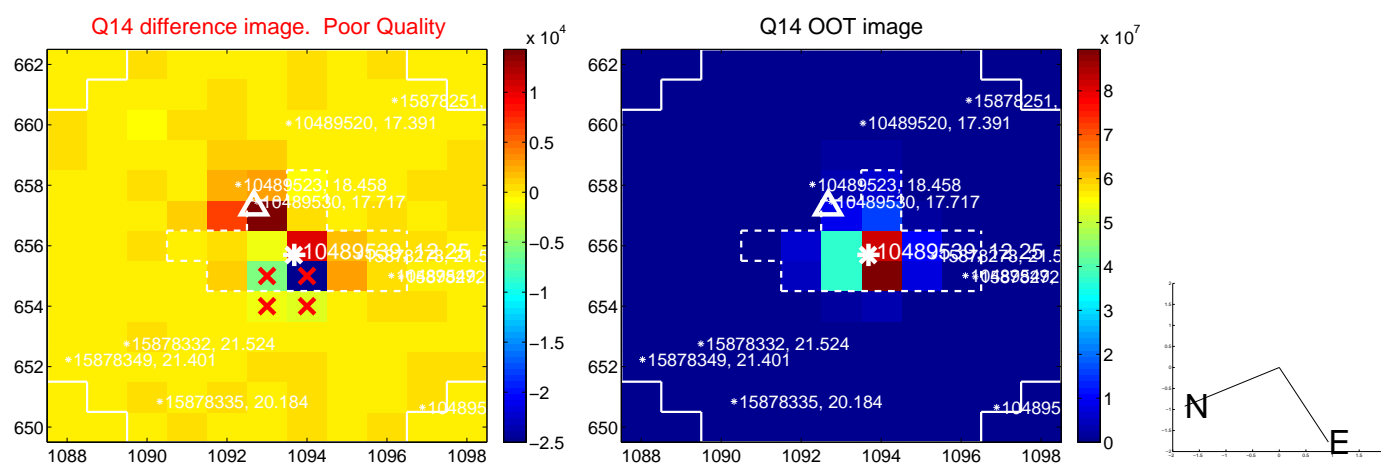
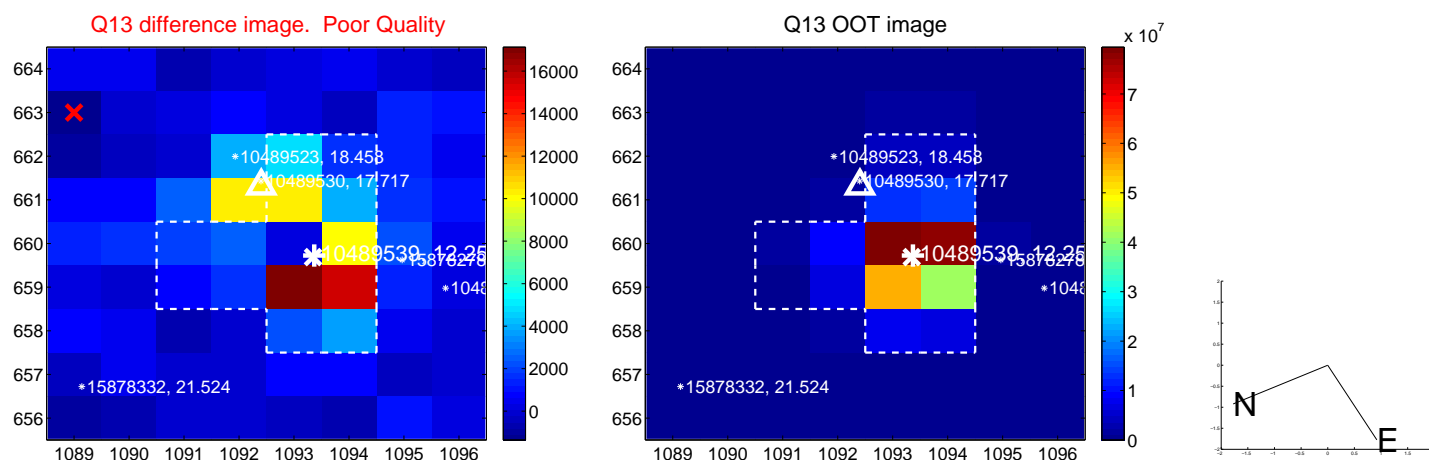
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



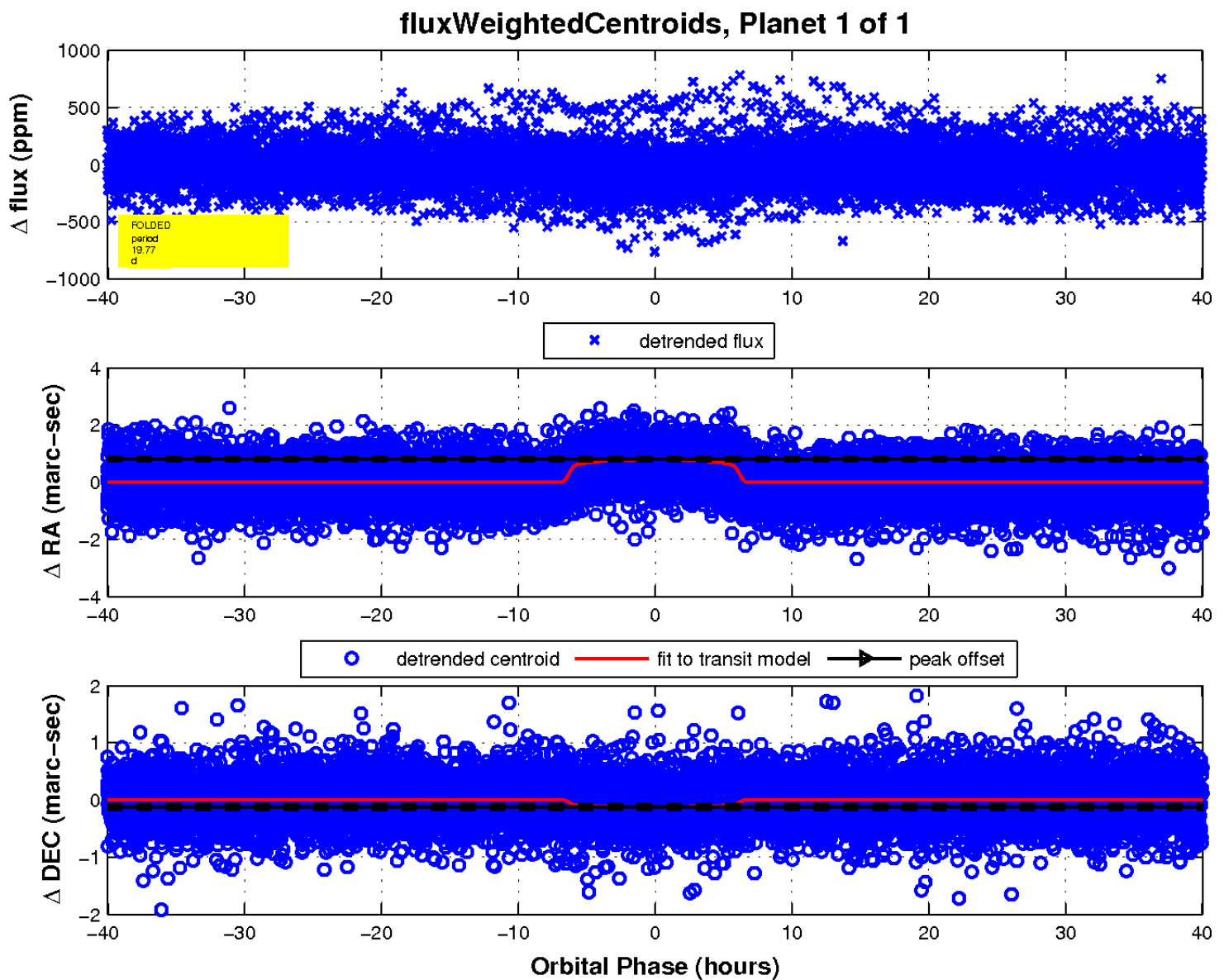
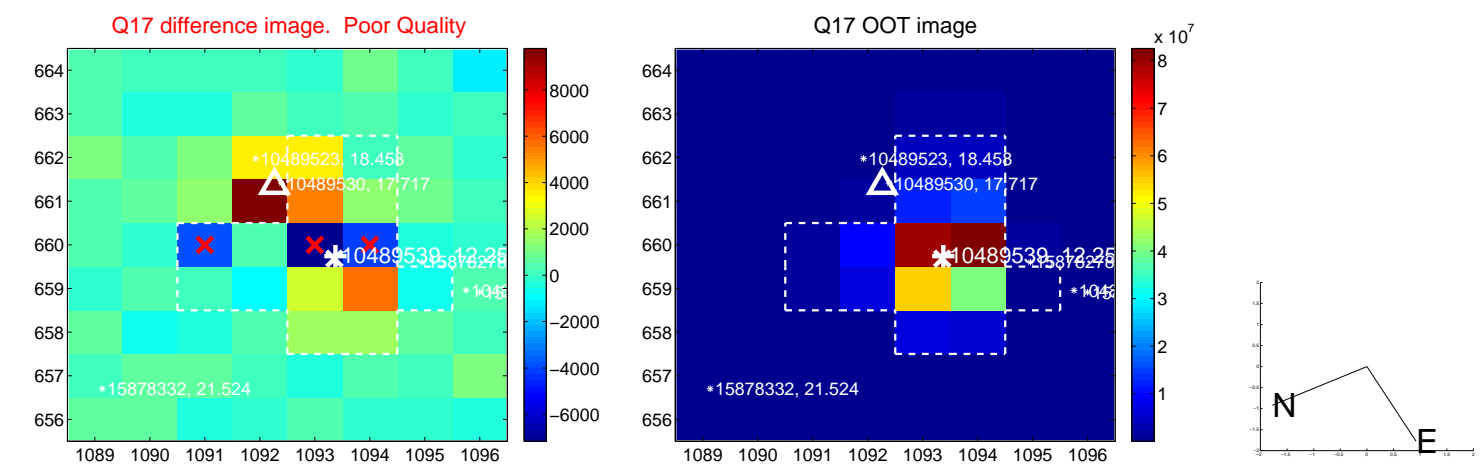
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

