

KIC 006531143

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})
006531143-01	OBS	7784.01	19.443569	147.978746	179.2	7.067	7.4	7.1	1.08	6278	1.58	74.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006531143-01	OBS	FP	0.00	1	0	0	0	MOD_NONUNIQ_ALT—CENT_KIC_POS

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

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

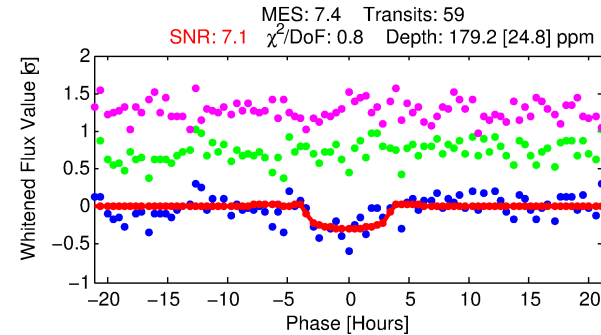
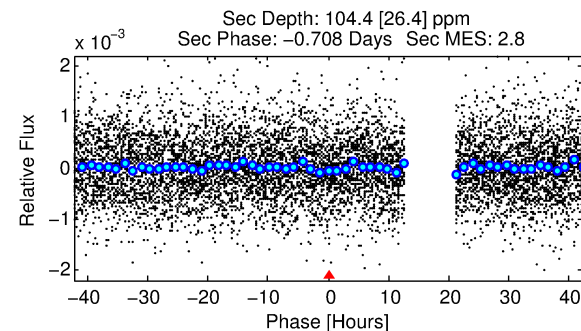
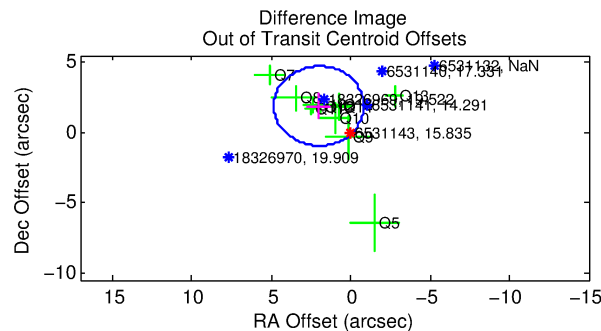
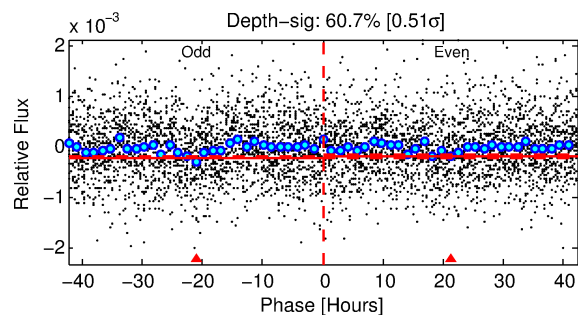
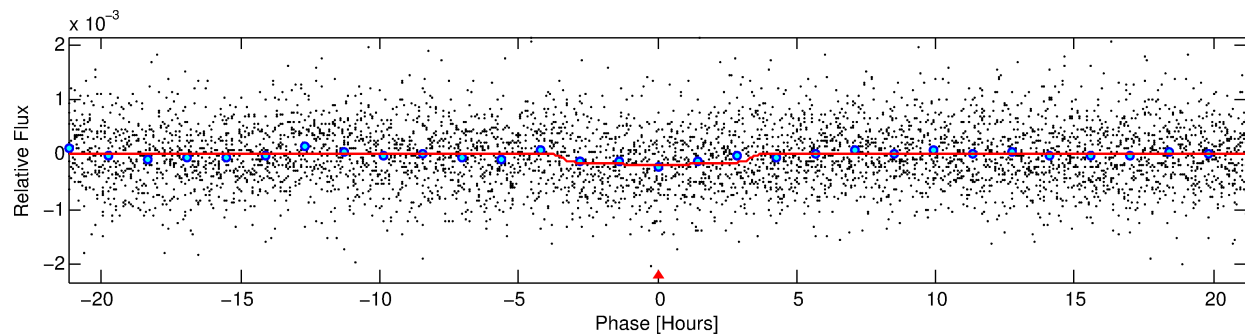
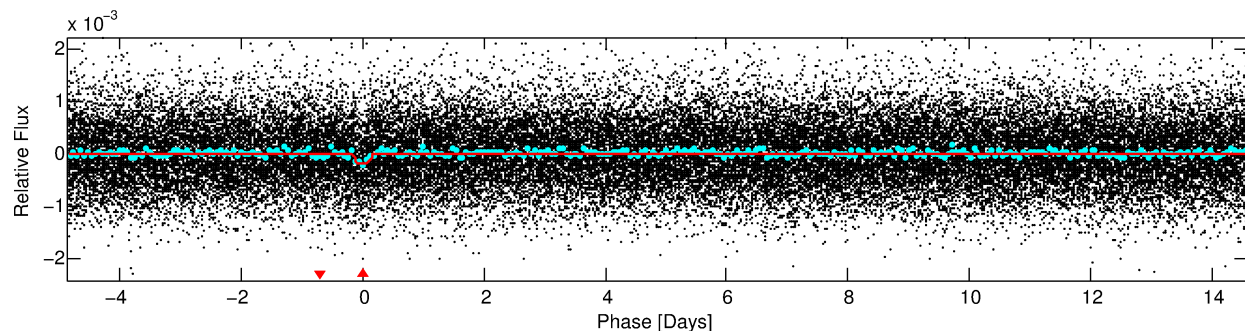
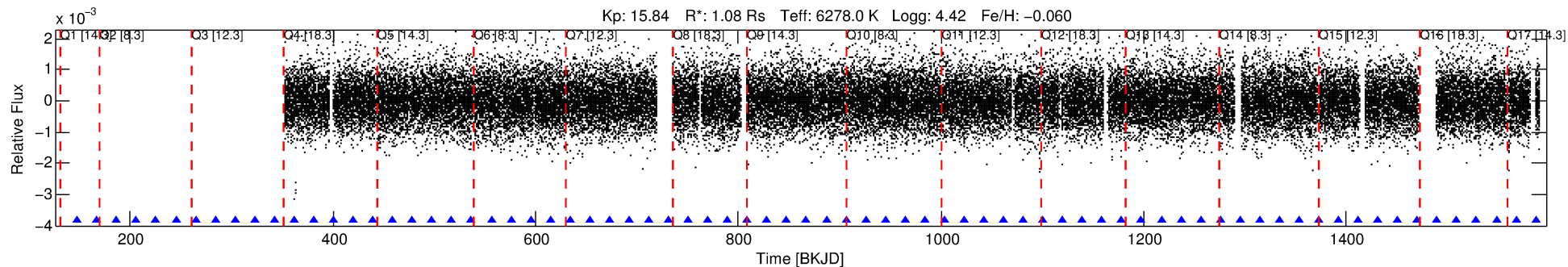
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006531143-01

No Significant Match Found

DV One-Page Summary

KIC: 6531143 Candidate: 1 of 1 Period: 19.444 d



DV Fit Results:

Period = 19.44357 [0.00047] d
Epoch = 147.9787 [0.0217] BKJD
Rp/R* = 0.0134 [0.0115]
a/R* = 13.88 [61.77]
b = 0.77 [2.39]
Seff = 74.65 [30.32]
Teq = 750 [76] K
Rp = 1.58 [1.44] Re
a = 0.1476 [0.0377] AU
Ag = 500.64 [888.39] [0.56 σ]
Teffp = 5482 [2389] K [1.98 σ]

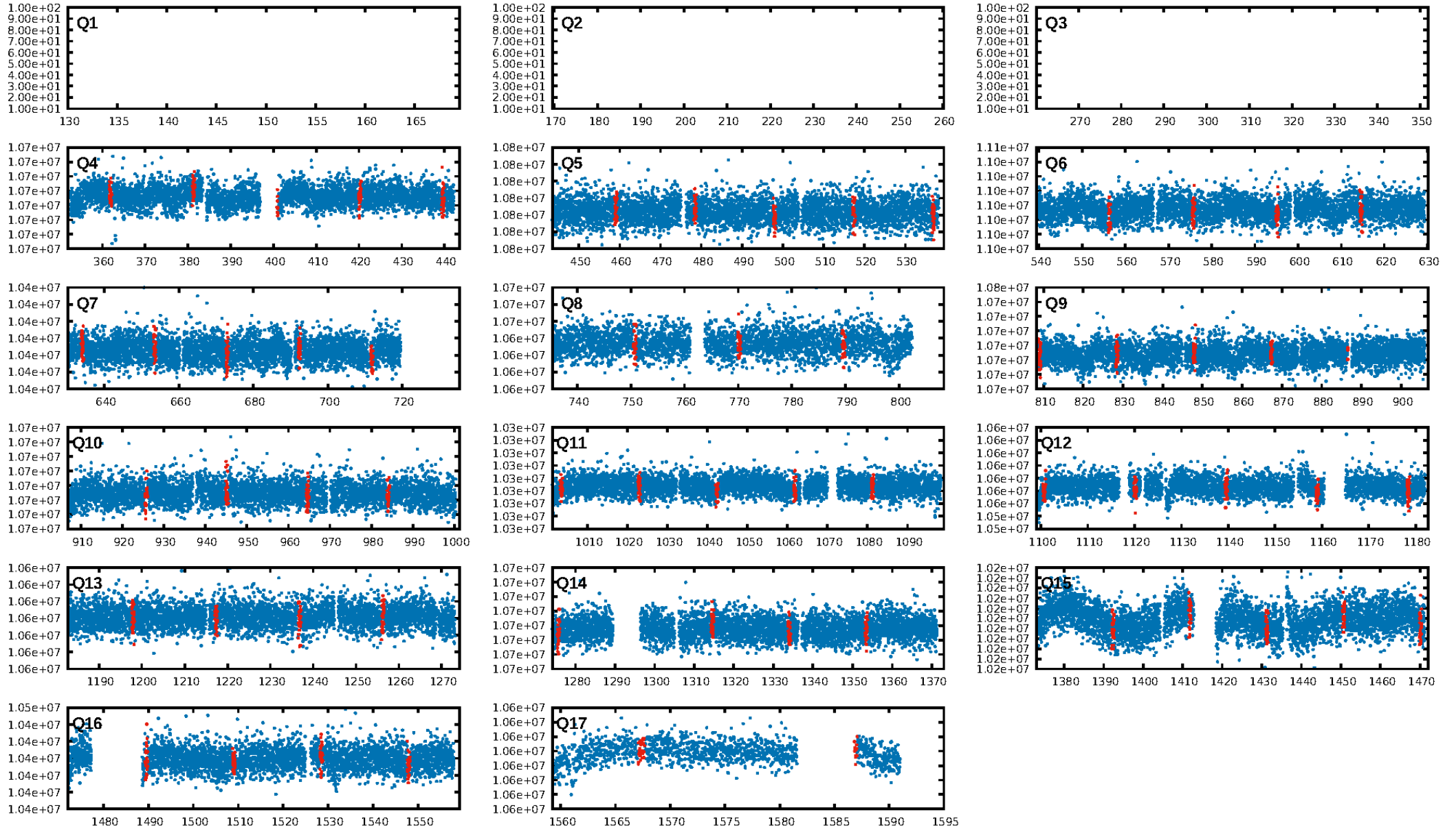
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.63e-13
RollingBand-fgt: 1.00 [57/57]
GhostDiagnostic-chr: 3.587
Centroid-sig: 0.3%
Centroid-so: 3.341 arcsec [2.28 σ]
OotOffset-rm: 2.743 arcsec [2.91 σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-rm: 2.959 arcsec [3.29 σ]
KicOffset-st: 2/3/3/3 [11]
DiffImageQuality-fgm: 0.64 [7/11]
DiffImageOverlap-fno: 1.00 [14/14]

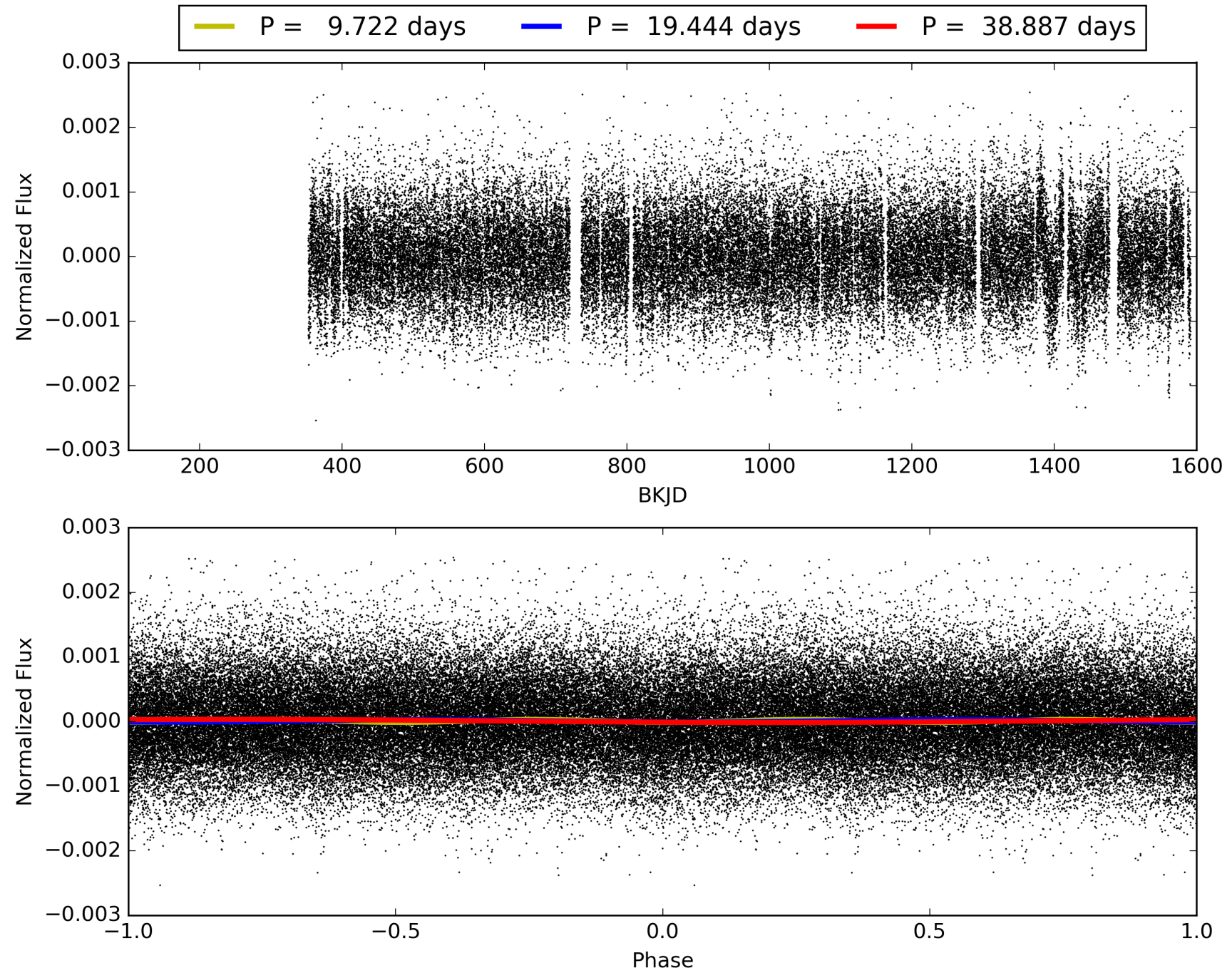
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:34:10 Z

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

TCE 006531143-01, PDC Light Curves

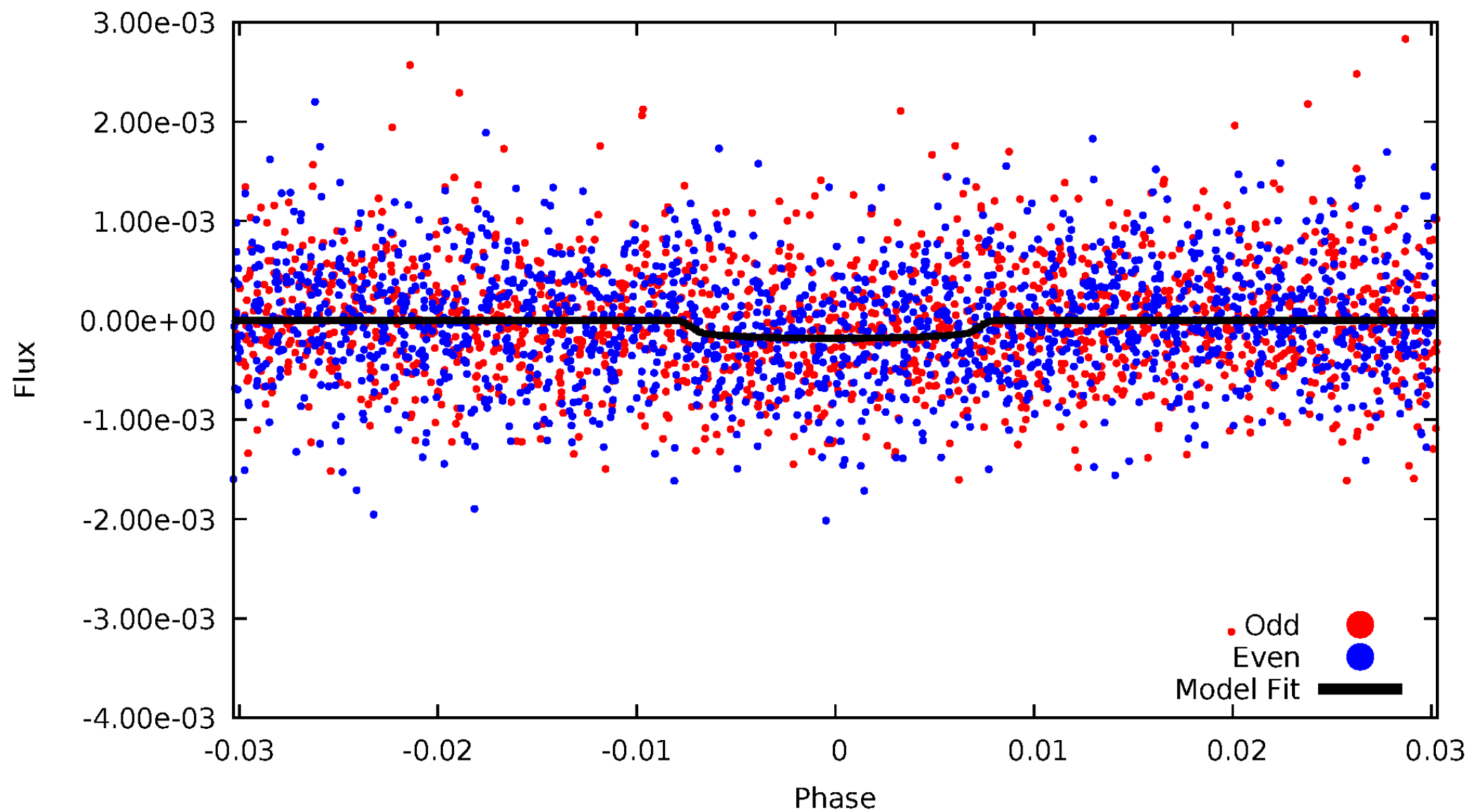


TCE 006531143-01



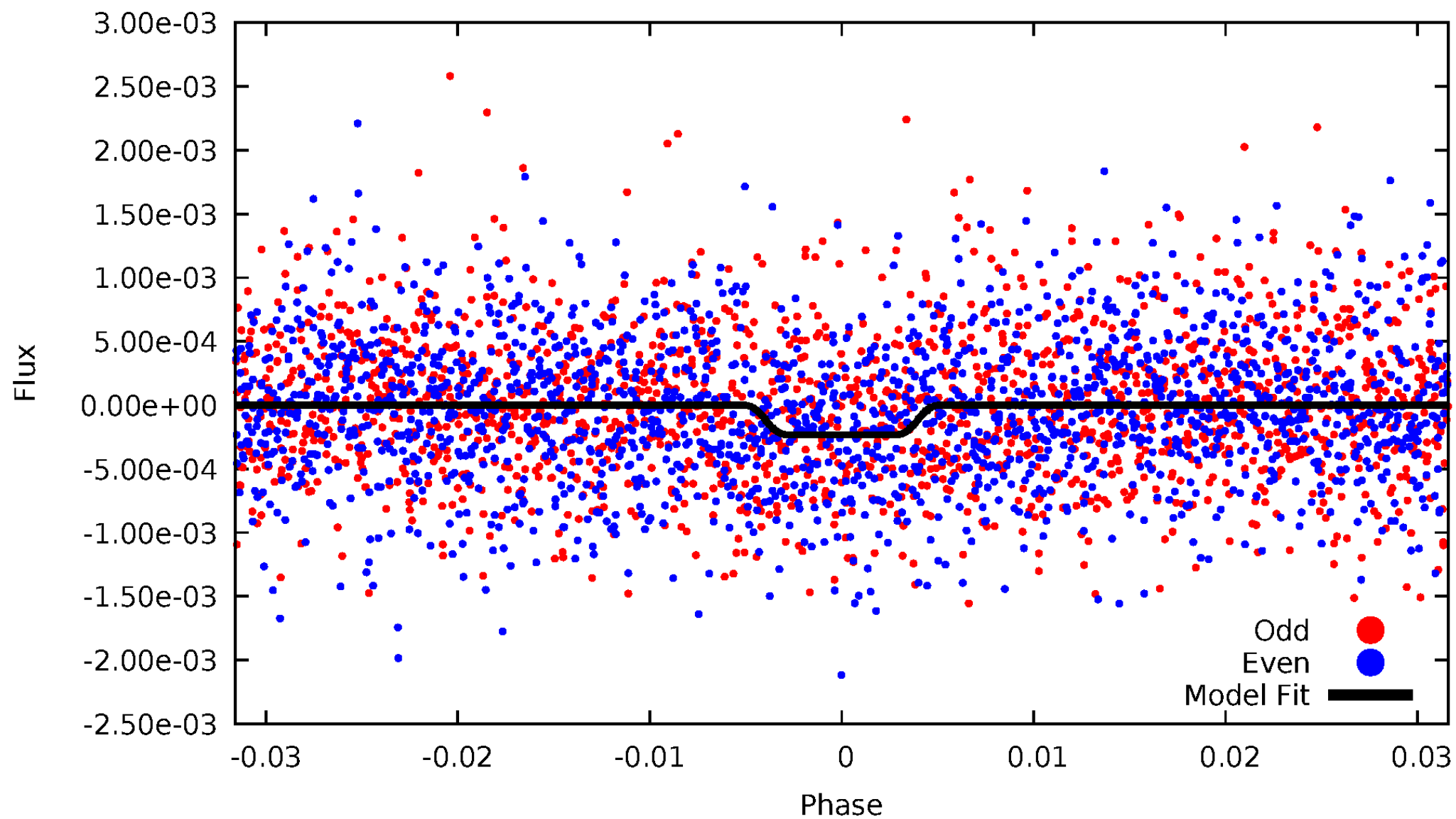
DV Odd/Even

TCE 006531143-01



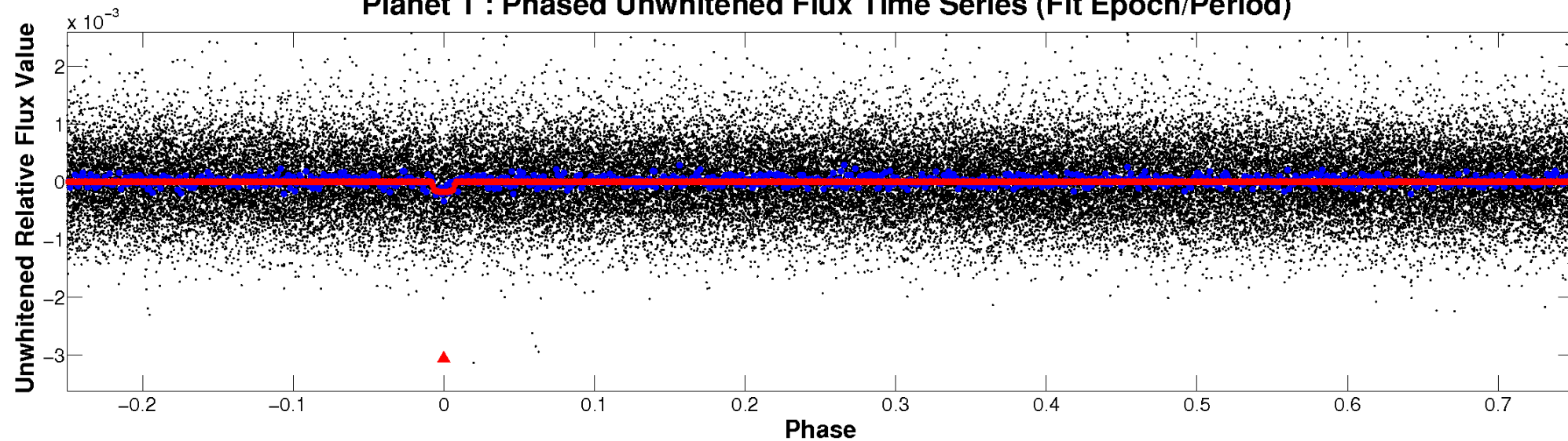
ALT Odd/Even

TCE 006531143-01

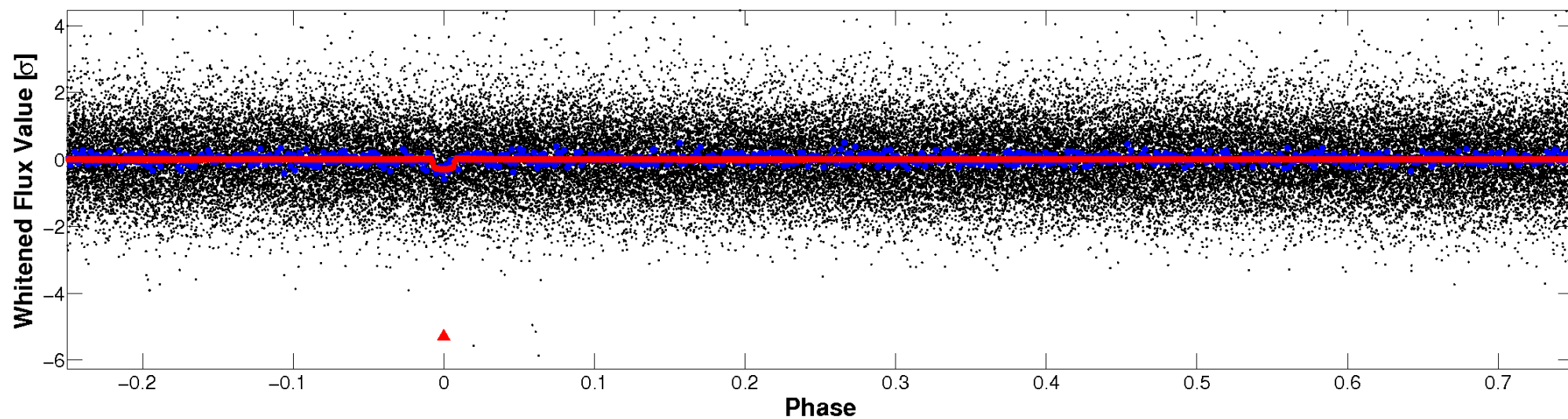


Non-Whitened Vs. Whitened Light Curve

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

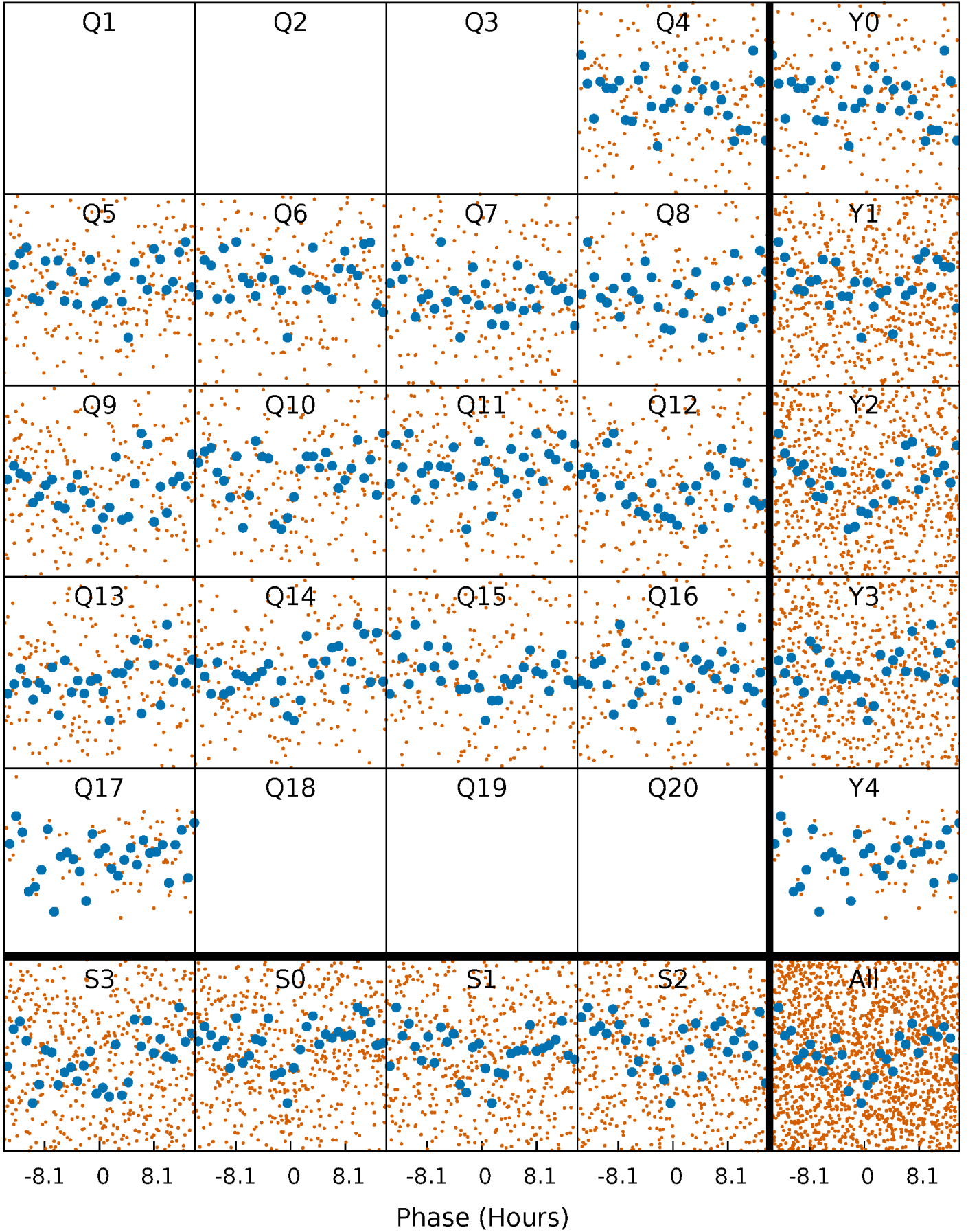


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



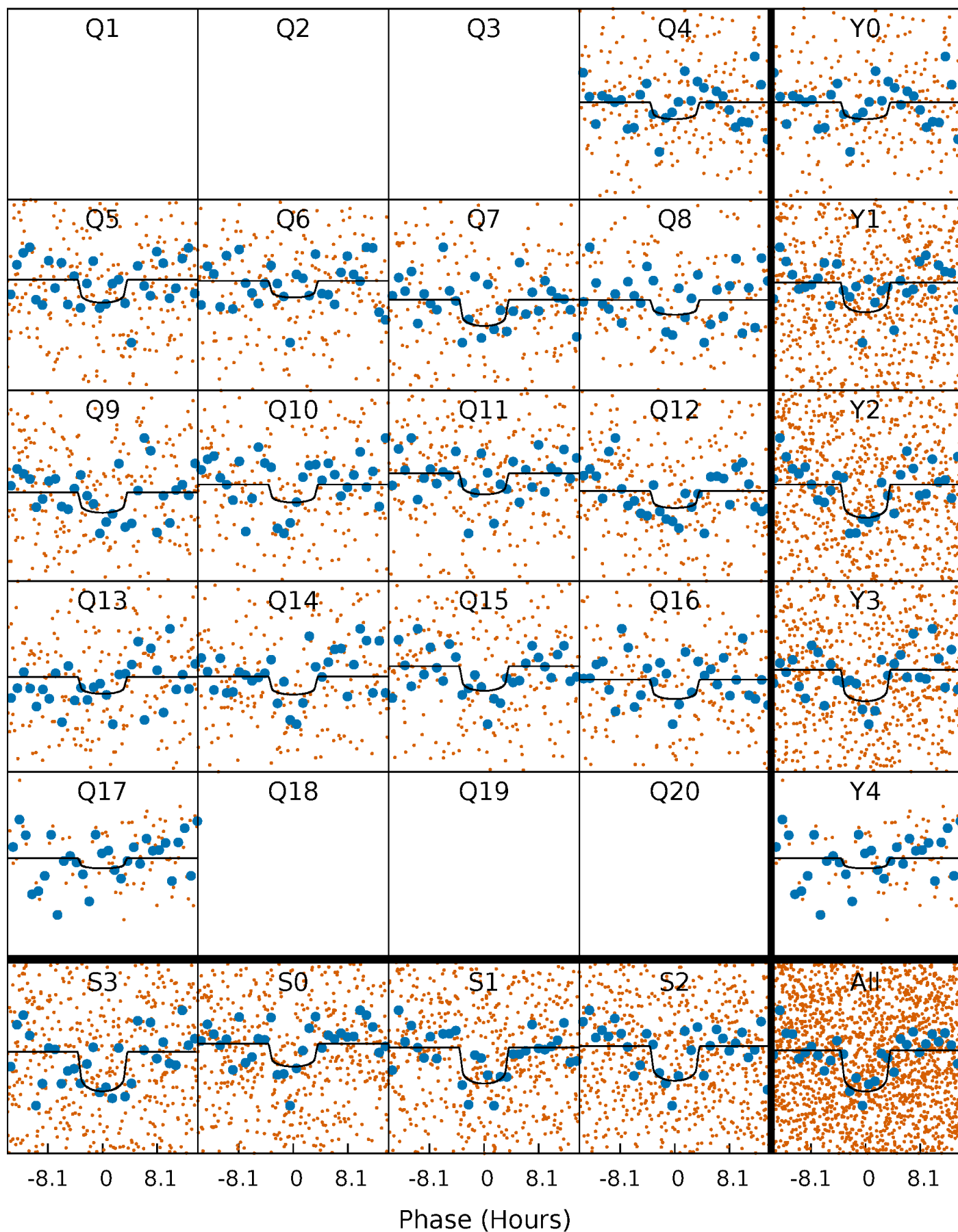
PDC Quarter-Phased Transit Curves

TCE 006531143-01 P= 19.443569 Days $T_0=147.978746$ (BKJD)



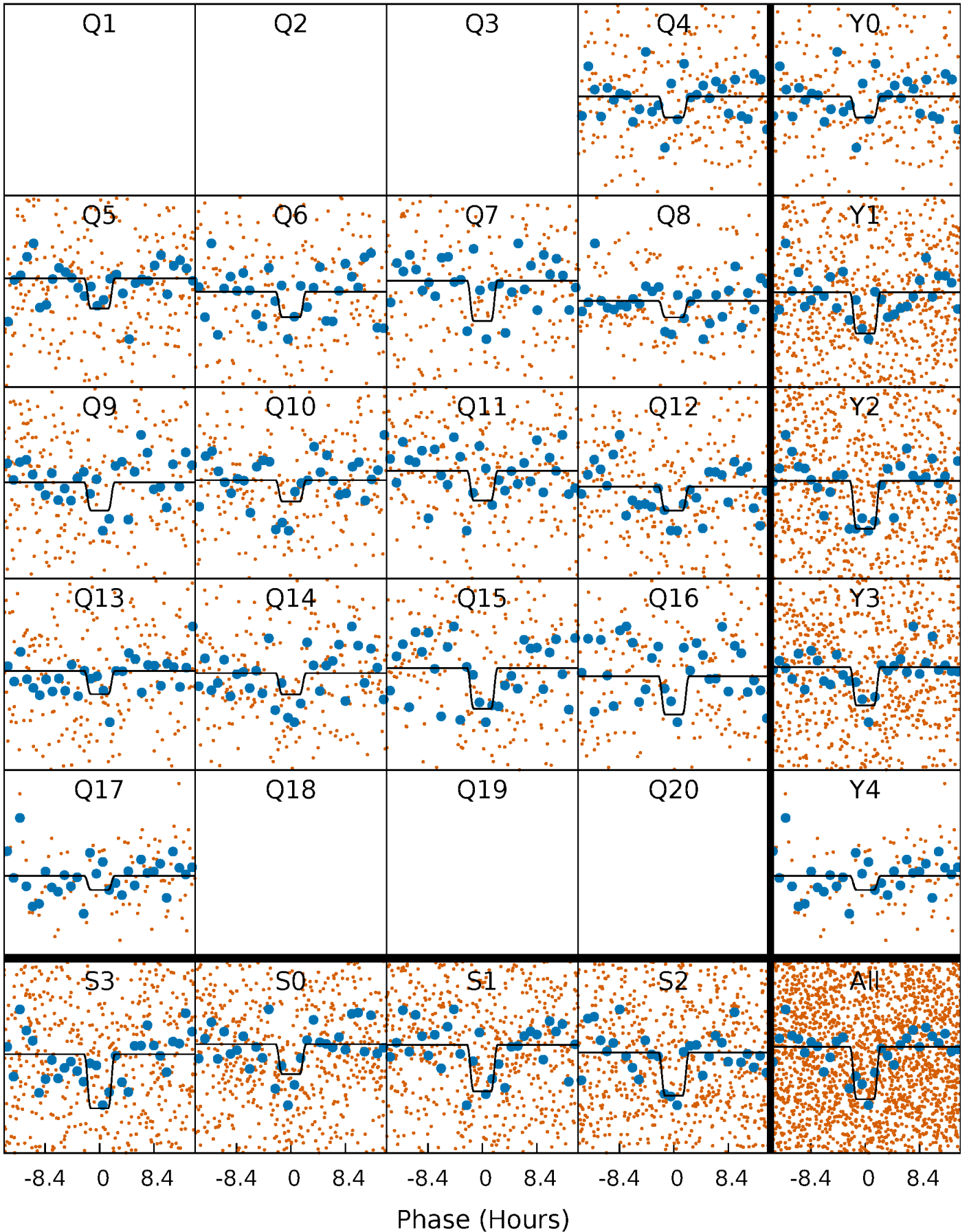
DV Quarter-Phased Transit Curves

TCE 006531143-01 P= 19.443569 Days $T_0=147.978746$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

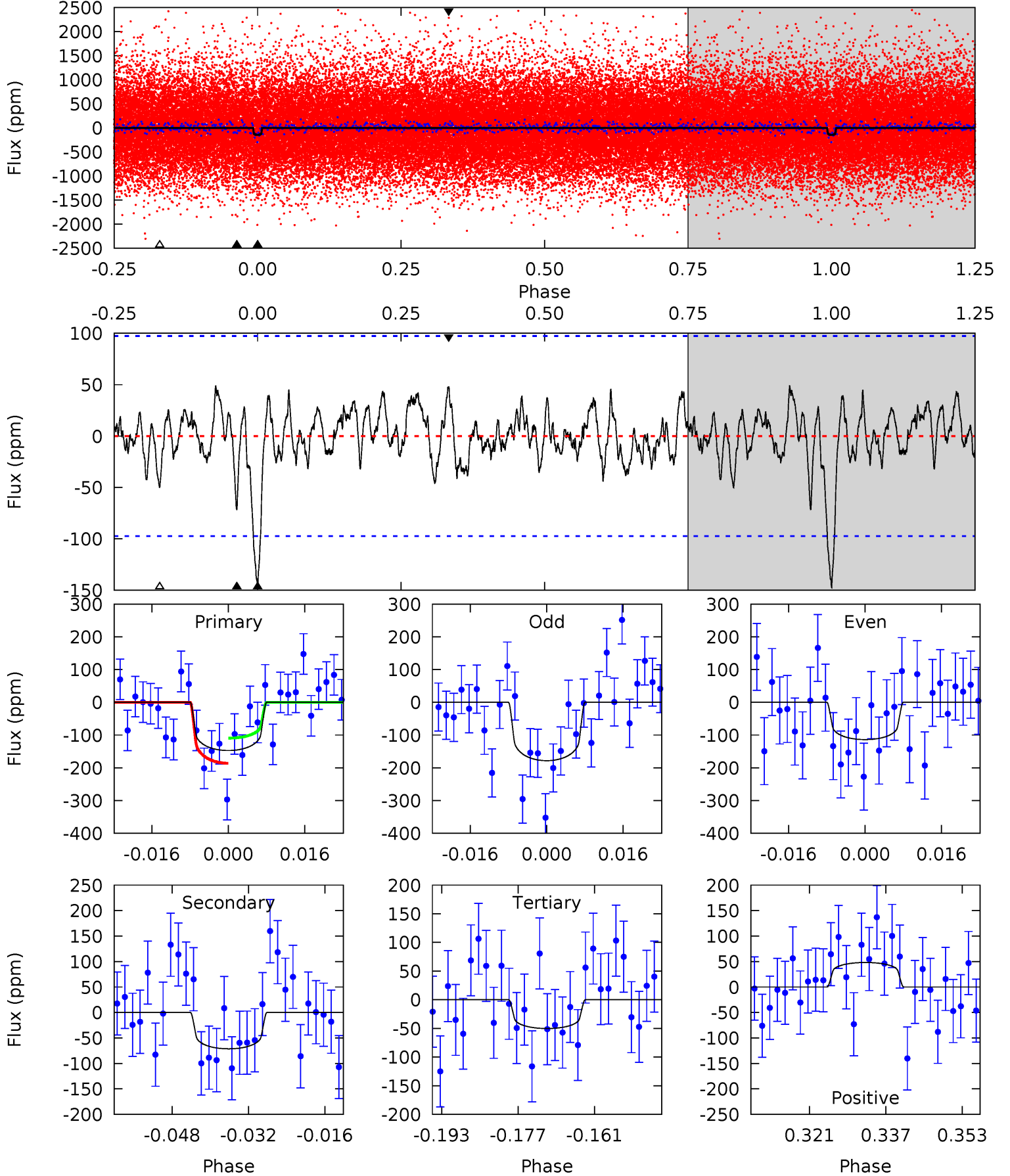
TCE 006531143-01 P= 19.443955 Days $T_0=147.950500$ (BKJD)



DV Model-Shift Uniqueness Test

006531143-01, P = 19.443569 Days, E = 147.978746 Days

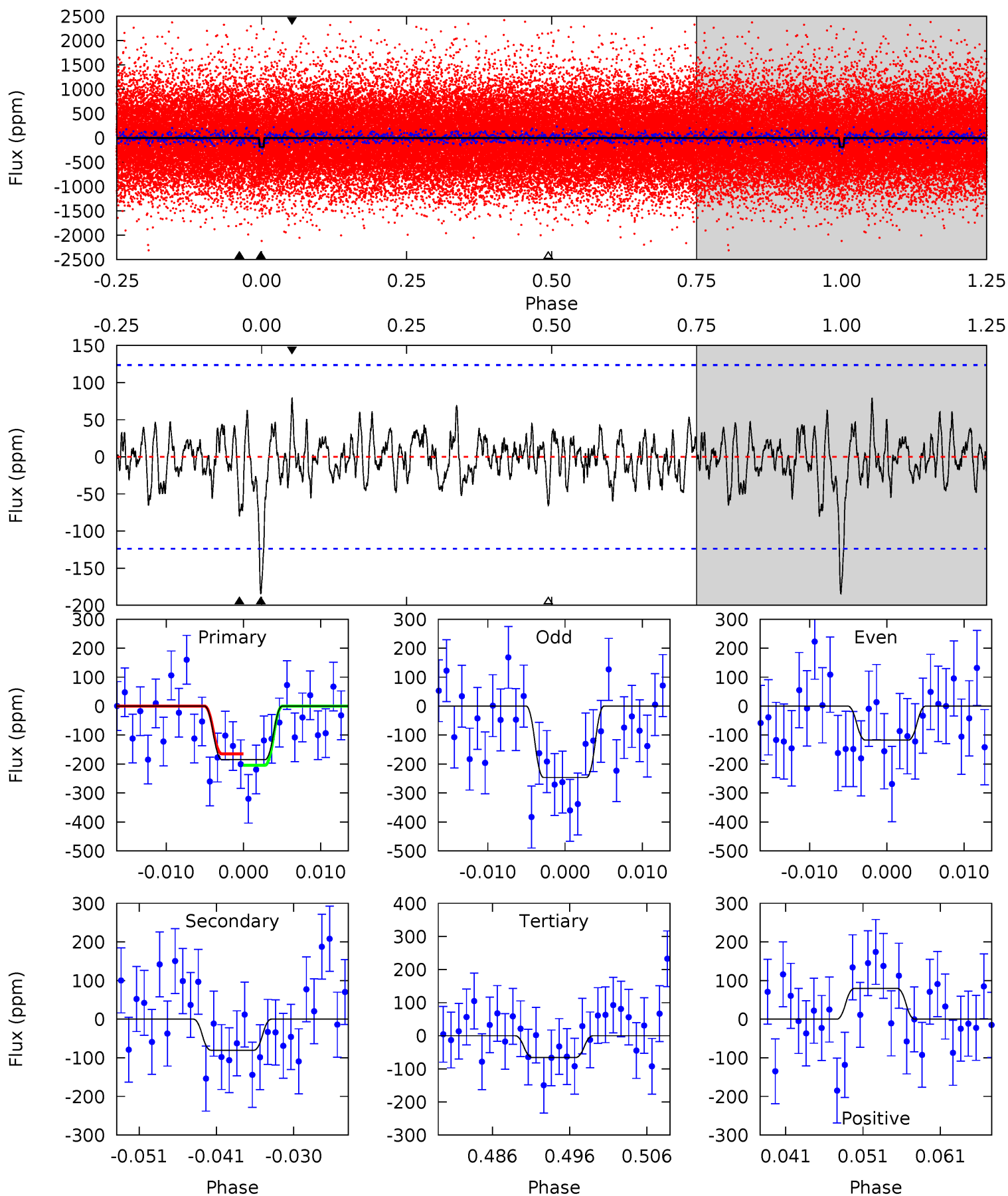
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.46	3.61	2.54	2.44	4.93	2.41	1.01	4.92	5.02	1.07	1.17	1.63	1.00	0.25	1.95



Alt Model-Shift Uniqueness Test

006531143-01, P = 19.443955 Days, E = 147.950500 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.50	3.26	2.67	3.23	5.02	2.57	0.99	4.83	4.27	0.59	0.03	2.62	1.01	0.30	0.80



Stellar Parameters For KIC 006531143

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6278^{+174}_{-261}	$4.425^{+0.067}_{-0.202}$	$-0.060^{+0.250}_{-0.300}$	$1.081^{+0.329}_{-0.141}$	$1.132^{+0.157}_{-0.157}$	$1.264^{+0.364}_{-0.641}$
	+3%/-4%	+2%/-5%	+417%/-500%	+30%/-13%	+14%/-14%	+29%/-51%
Source	KIC0	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 006531143-01 / KOI 7784.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-71 ± 20	$1.91^{+1.38}_{-1.23}$	1066^{+82}_{-59}	4695^{+2936}_{-842}	222^{+1410}_{-149}
Alt.	-80 ± 25	$2.06^{+1.35}_{-1.15}$	1066^{+76}_{-59}	4740^{+2487}_{-926}	223^{+1032}_{-151}

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

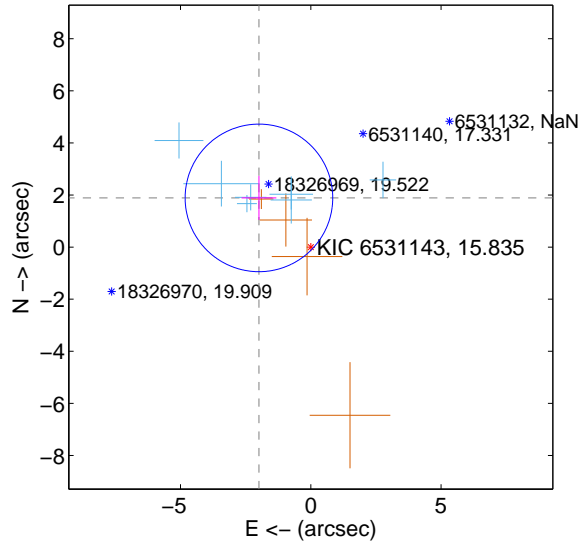
Supplemental centroid analysis for 006531143-01. Kepler magnitude: 15.84. Transit SNR 7.08

There are 7 quarters with good PRF difference image offsets

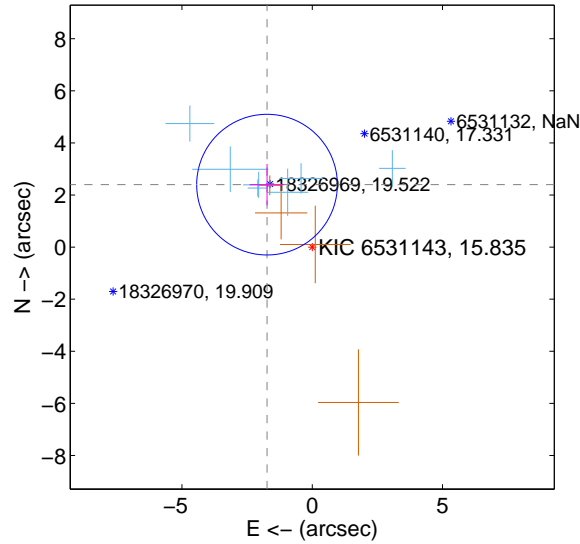
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.743 ± 0.944	2.91	1.990 ± 0.669	1.888 ± 0.843
PRF-fit source offset from KIC position	2.959 ± 0.900	3.29	1.735 ± 0.652	2.397 ± 0.796
photometric centroid source offset	3.34 ± 1.47	2.28	2.19 ± 1.48	2.52 ± 1.46

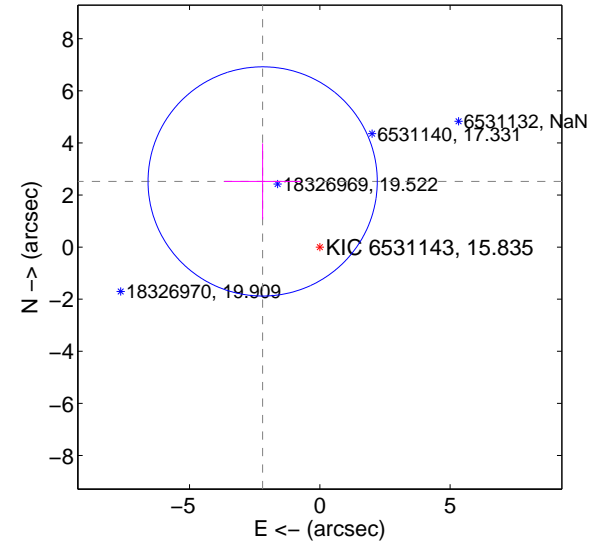
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

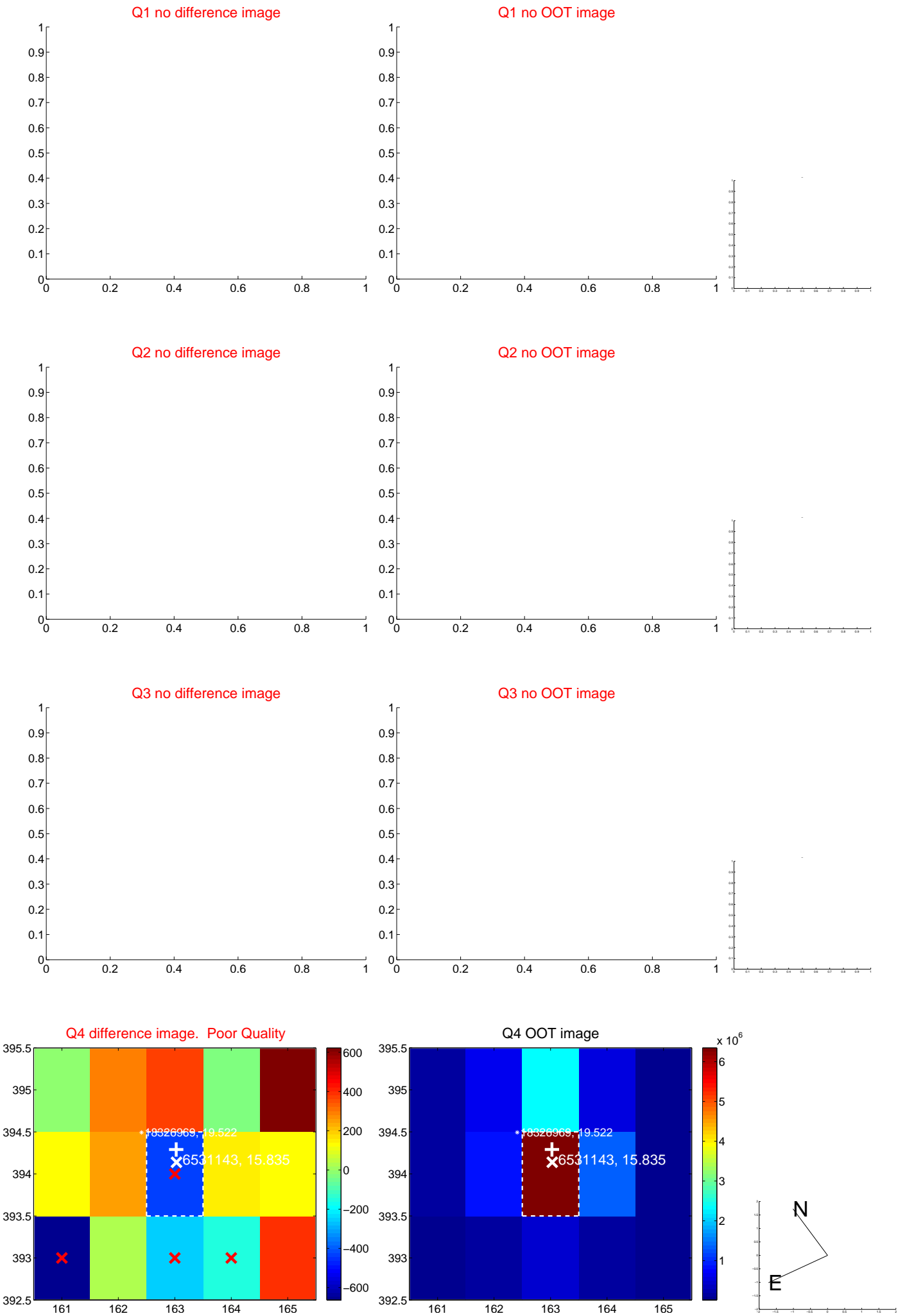


offset from photometric centroids

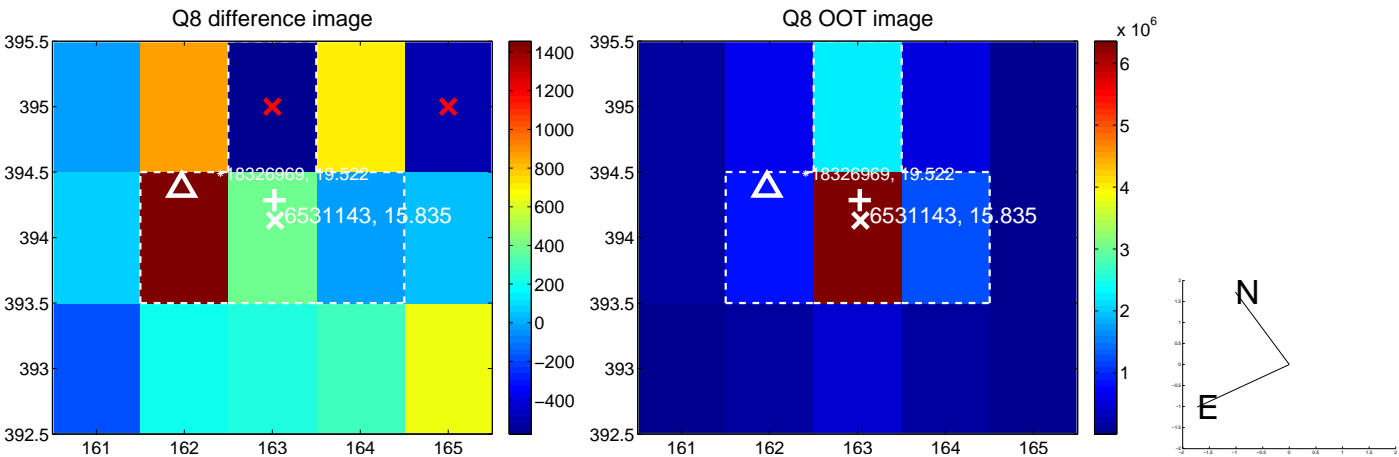
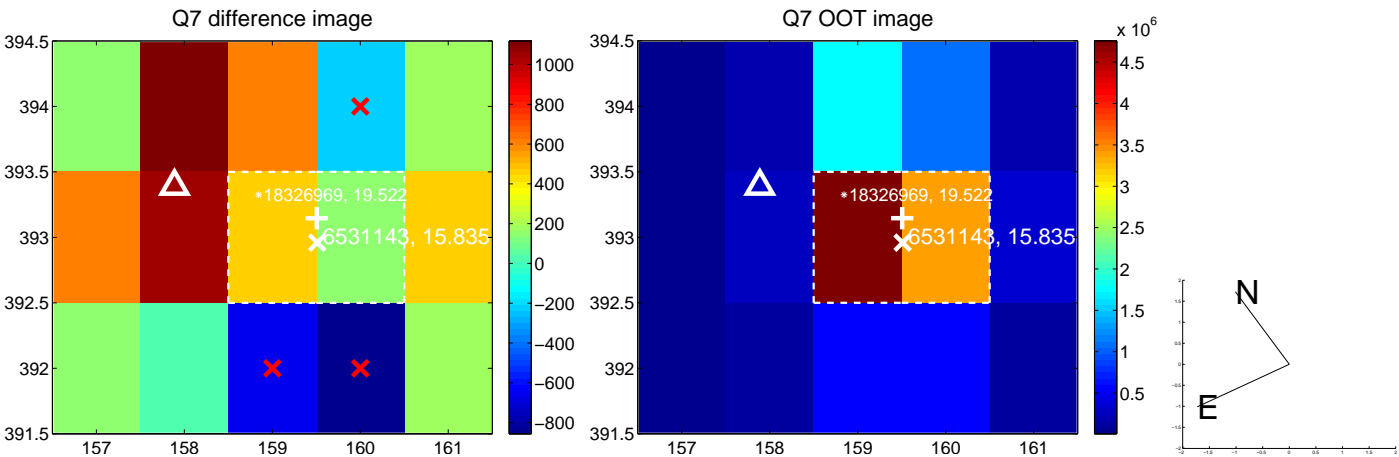
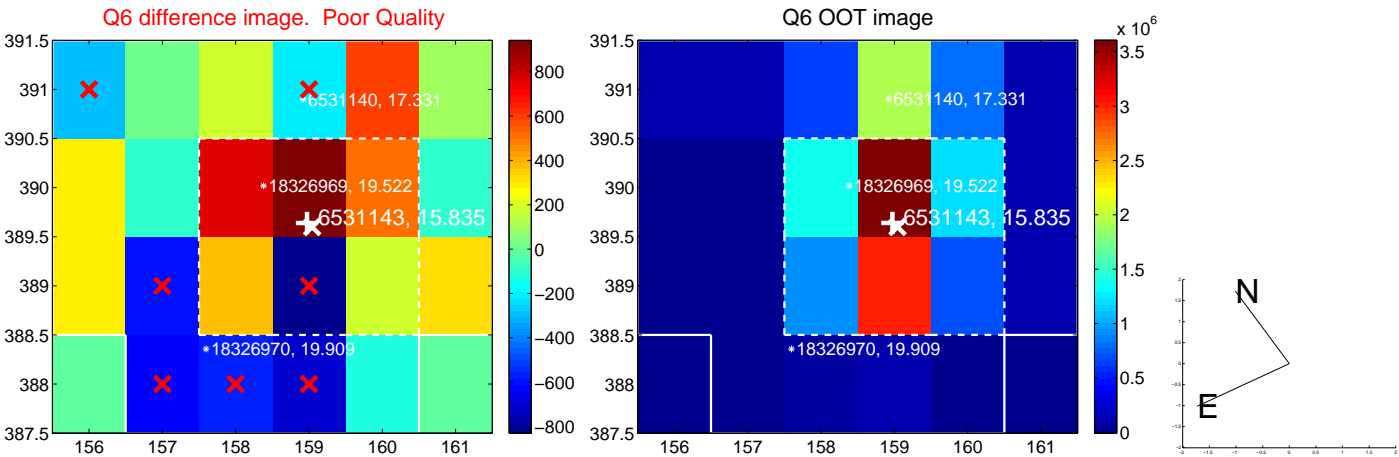
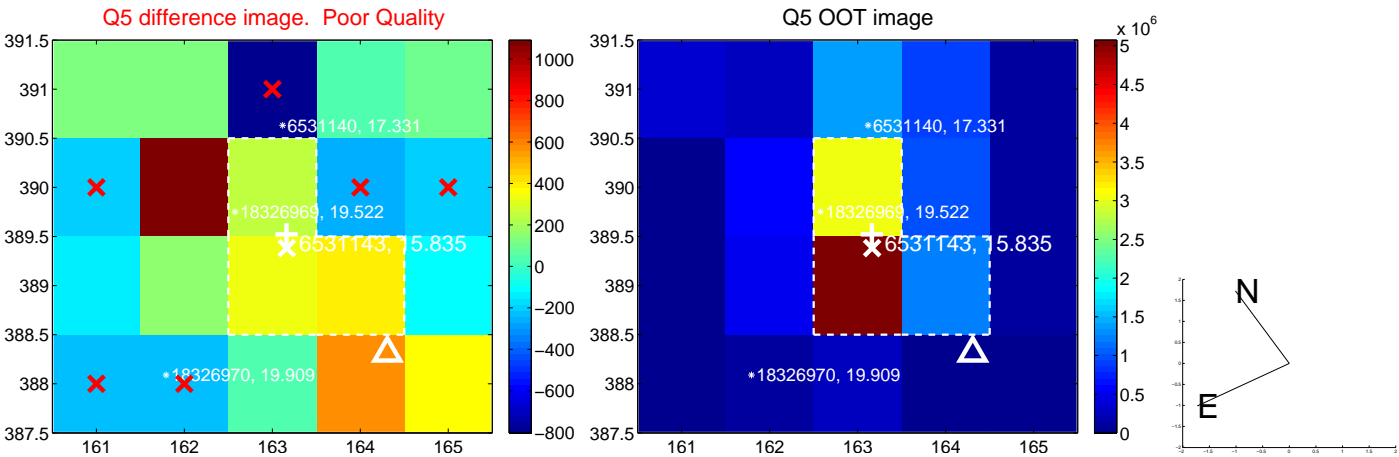


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

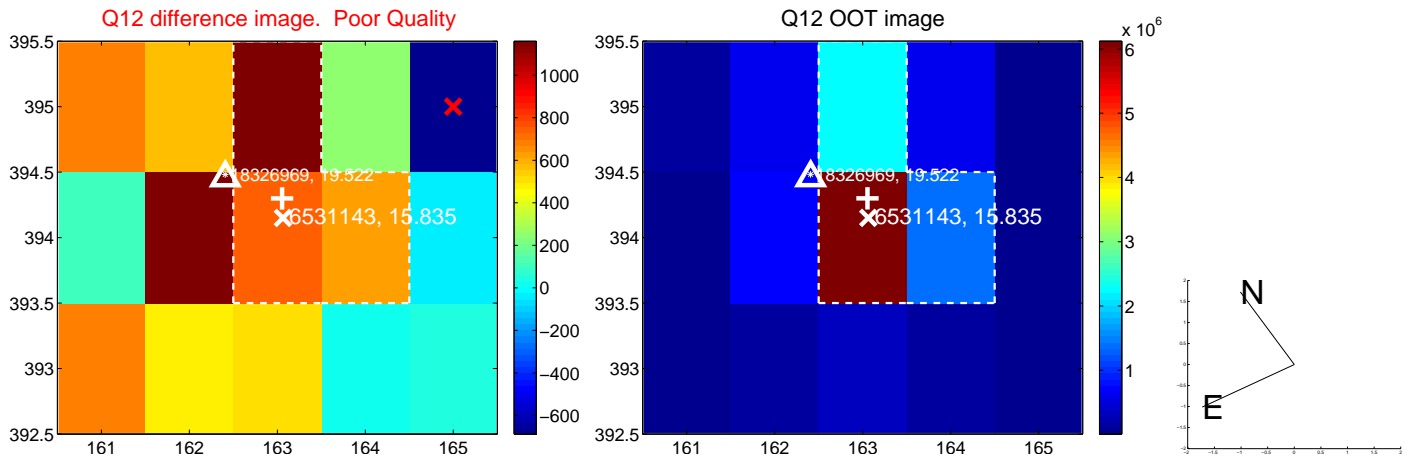
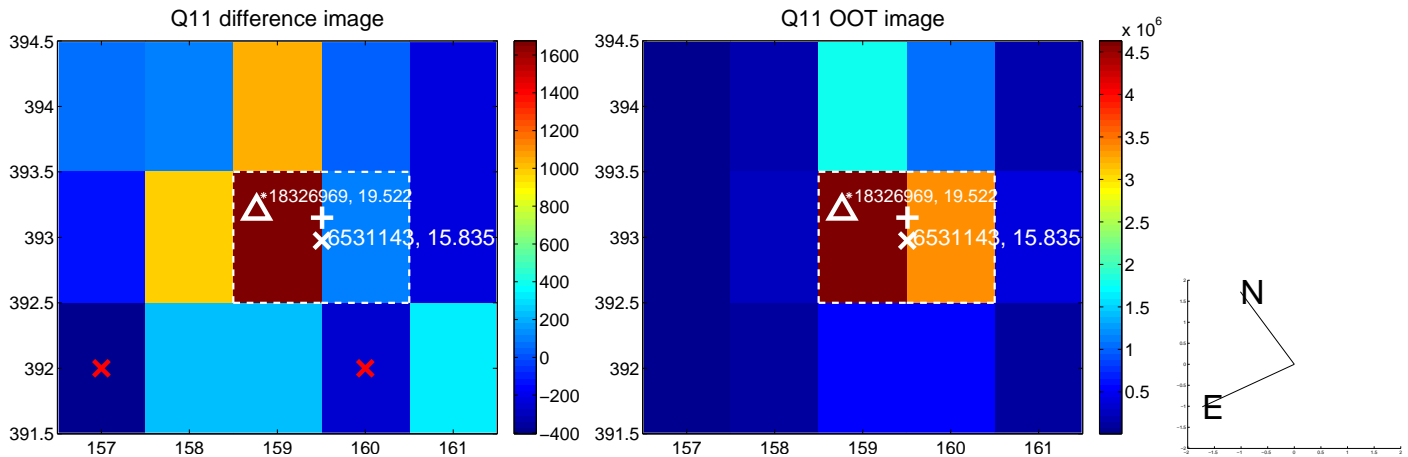
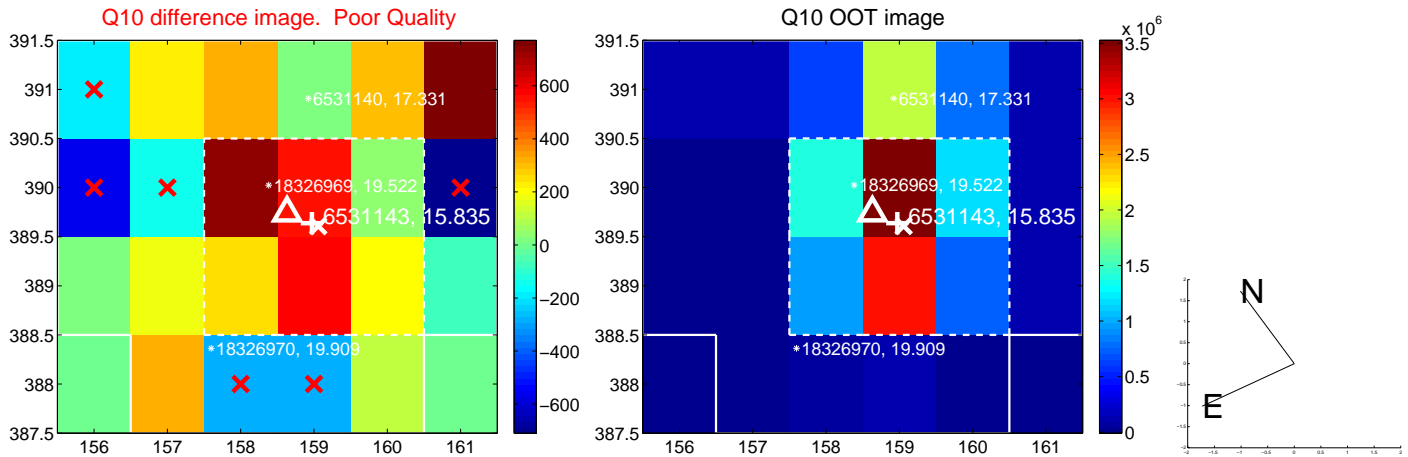
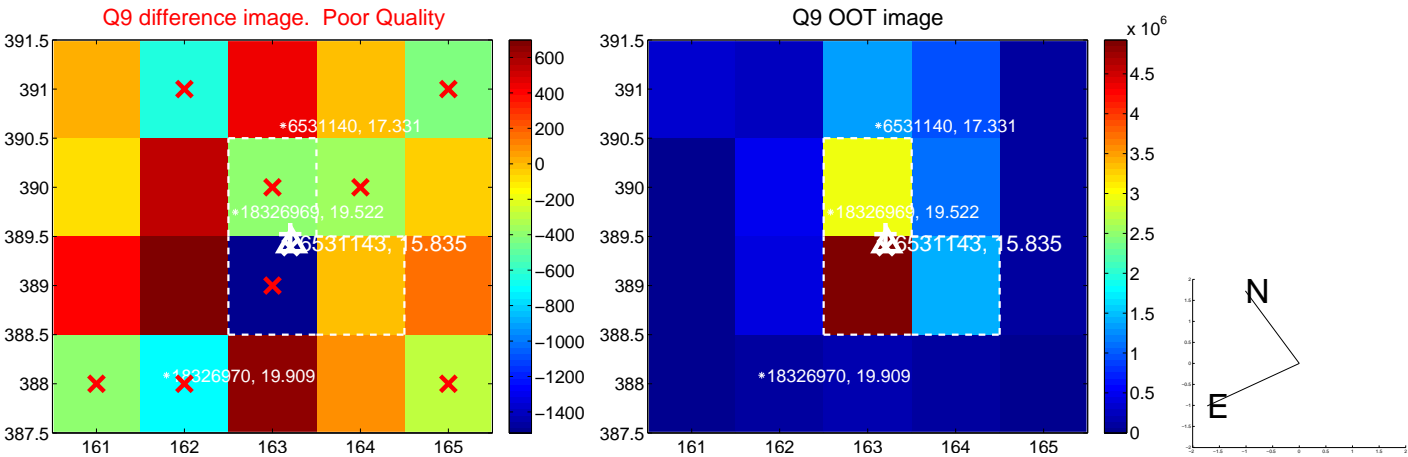
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



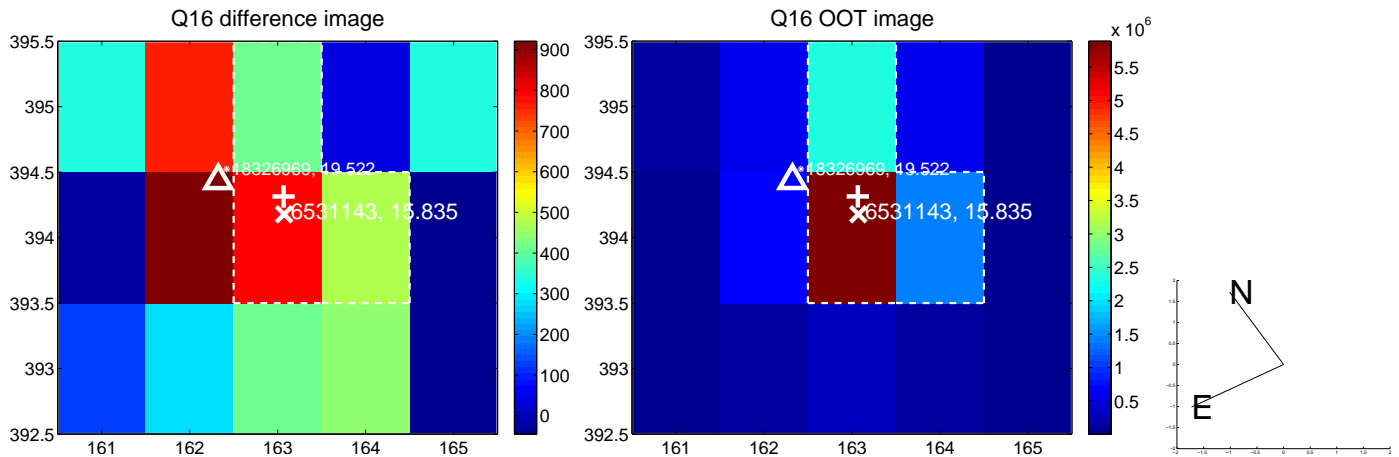
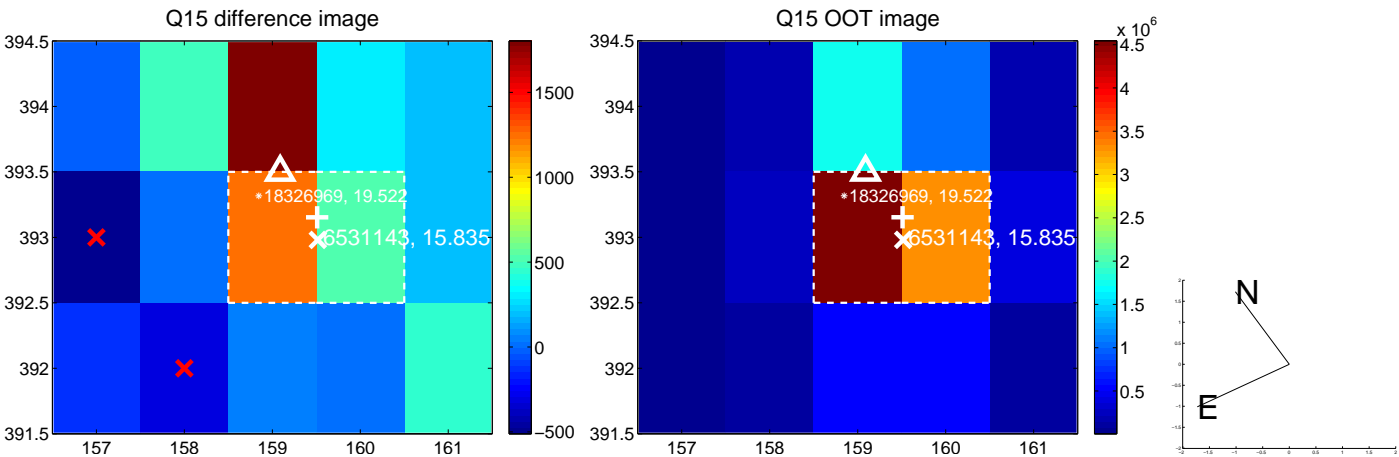
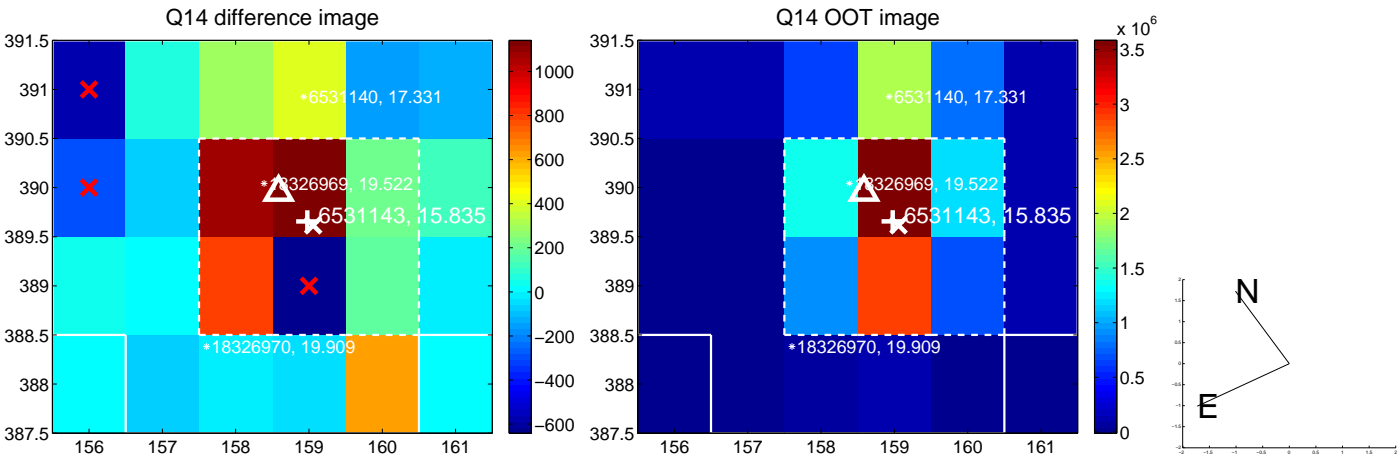
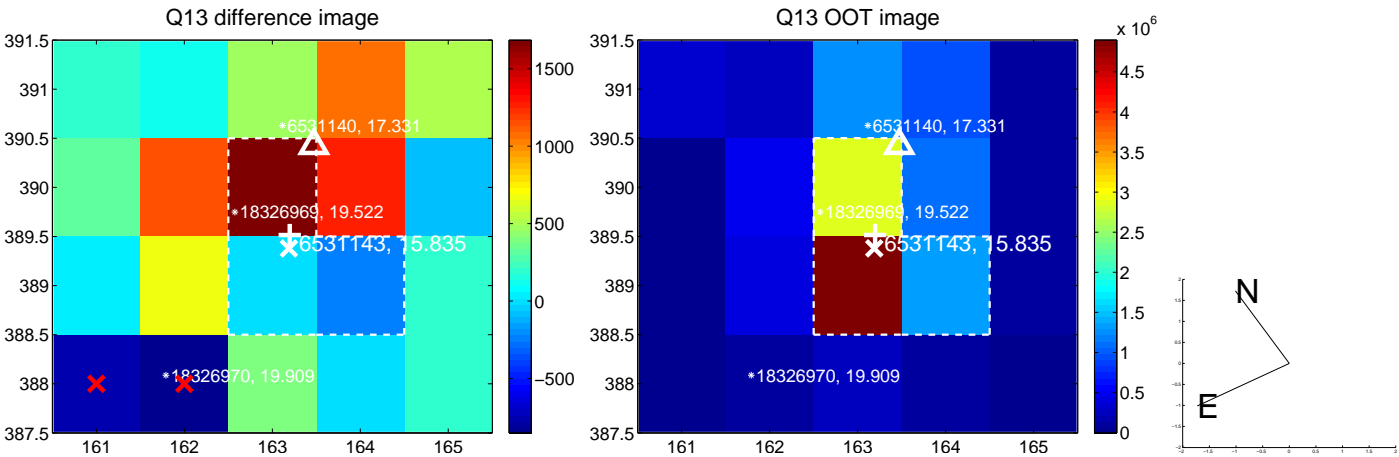
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



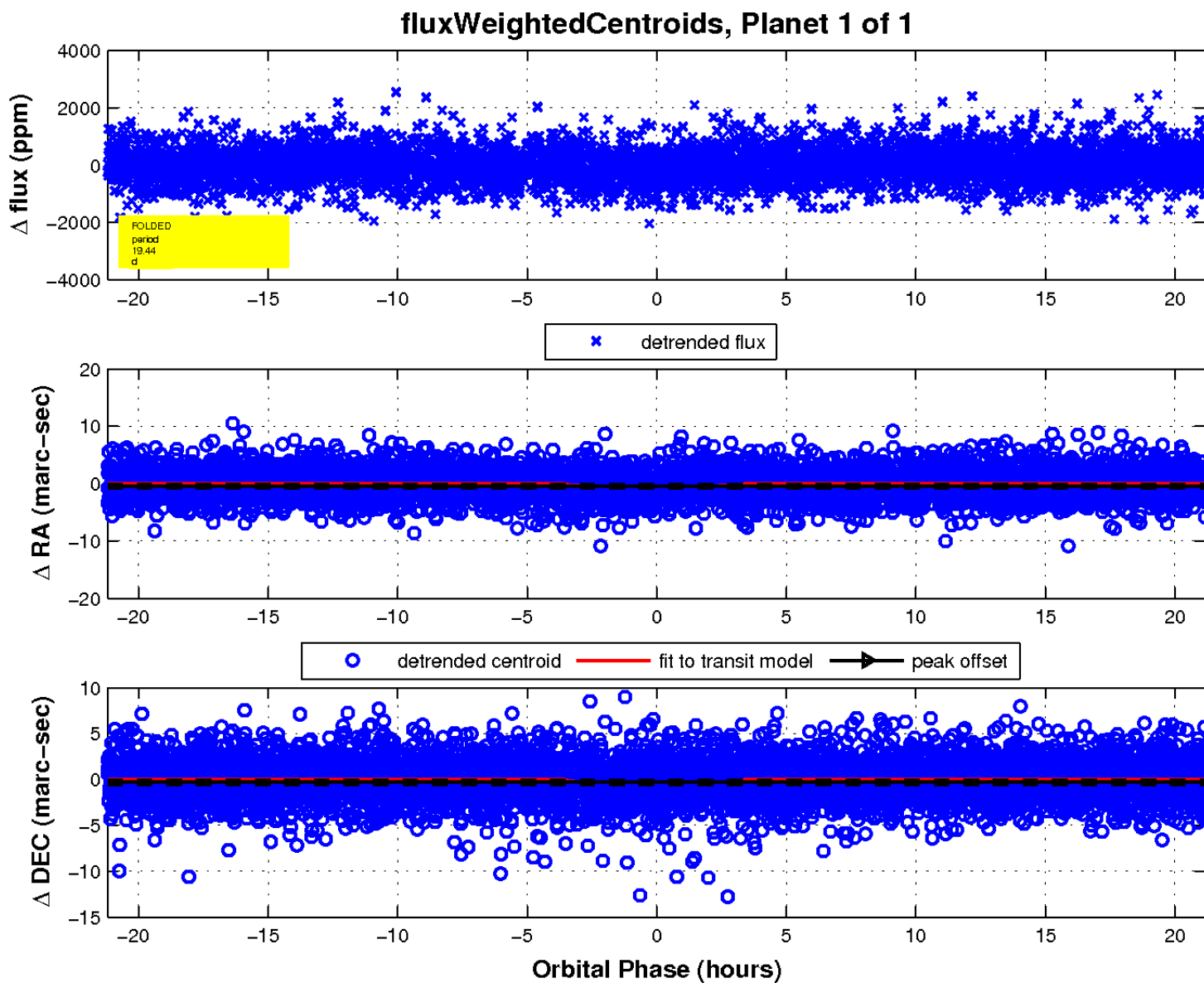
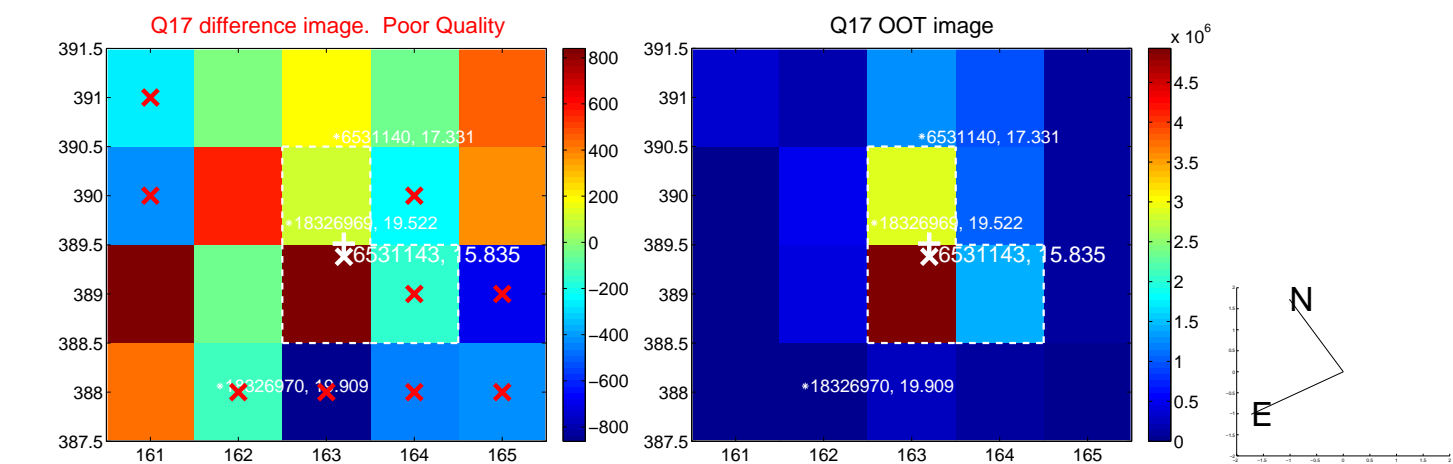
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UKIRT Image

Declination

