

KIC 009907527

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})
009907527-01	OBS	No	281.479336	406.286833	629.3	8.825	7.9	7.4	0.88	5799	2.28	1.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009907527-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

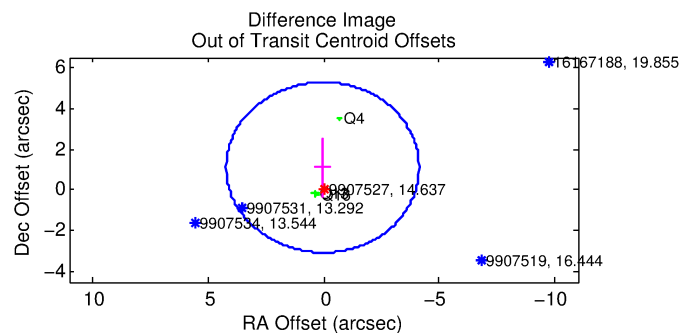
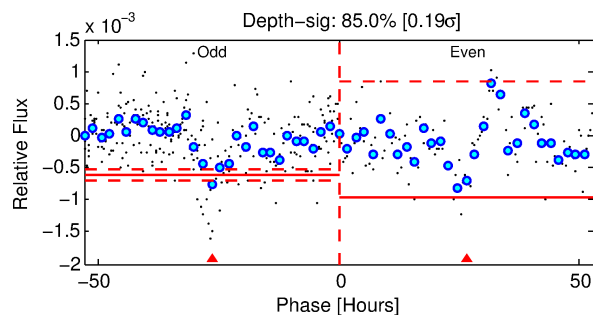
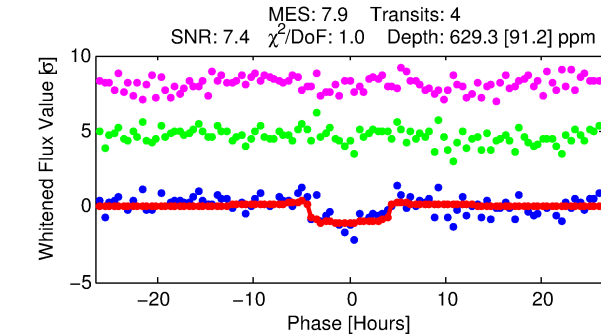
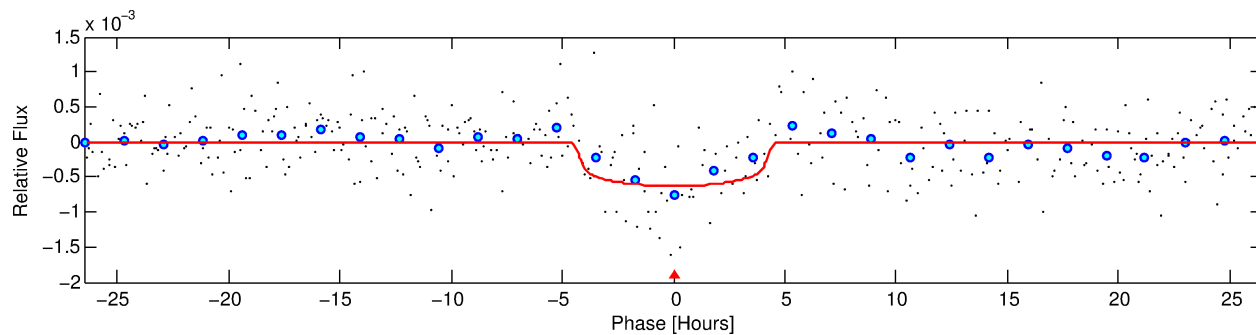
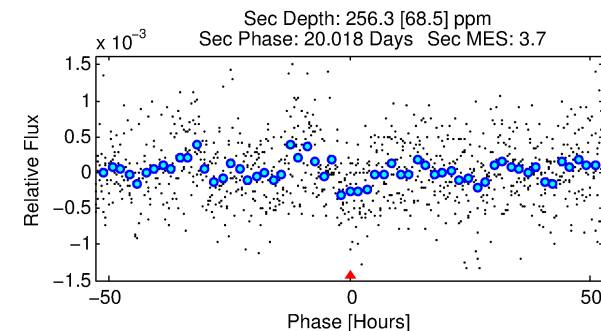
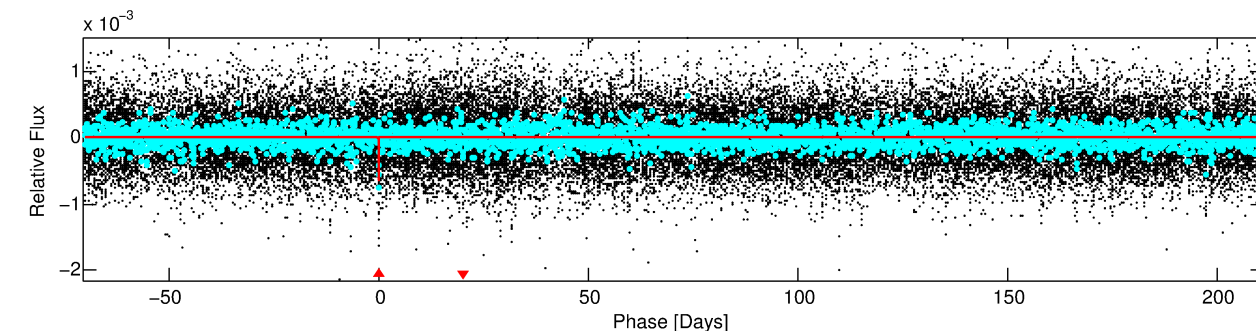
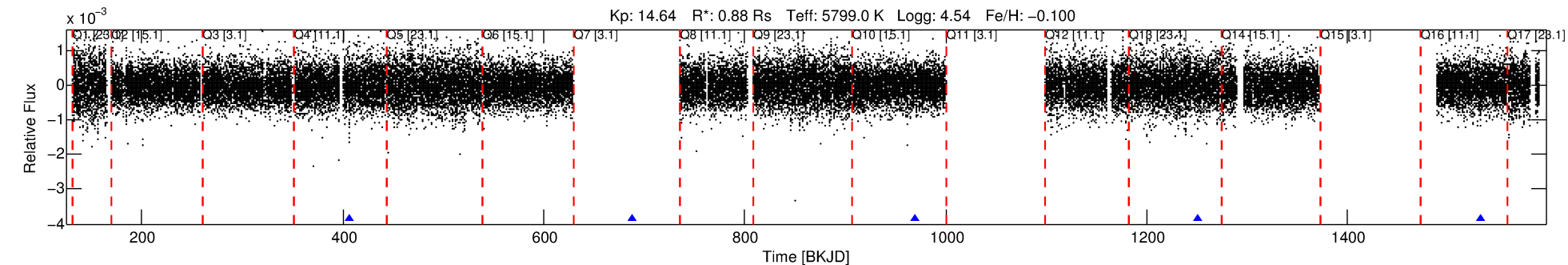
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009907527-01

No Significant Match Found

DV One-Page Summary

KIC: 9907527 Candidate: 1 of 1 Period: 281.479 d



DV Fit Results:

Period = 281.47934 [0.00513] d
Epoch = 406.2868 [0.0143] BKJD
Rp/R* = 0.0238 [0.0227]
a/R* = 207.84 [888.41]
b = 0.57 [5.16]
Seff = 1.13 [0.42]
Teq = 263 [24] K
Rp = 2.28 [2.27] Re
a = 0.8330 [0.1982] AU
Ag = 18857.47 [36972.57] [0.51σ]
Teffp = 4759 [2300] K [1.95σ]

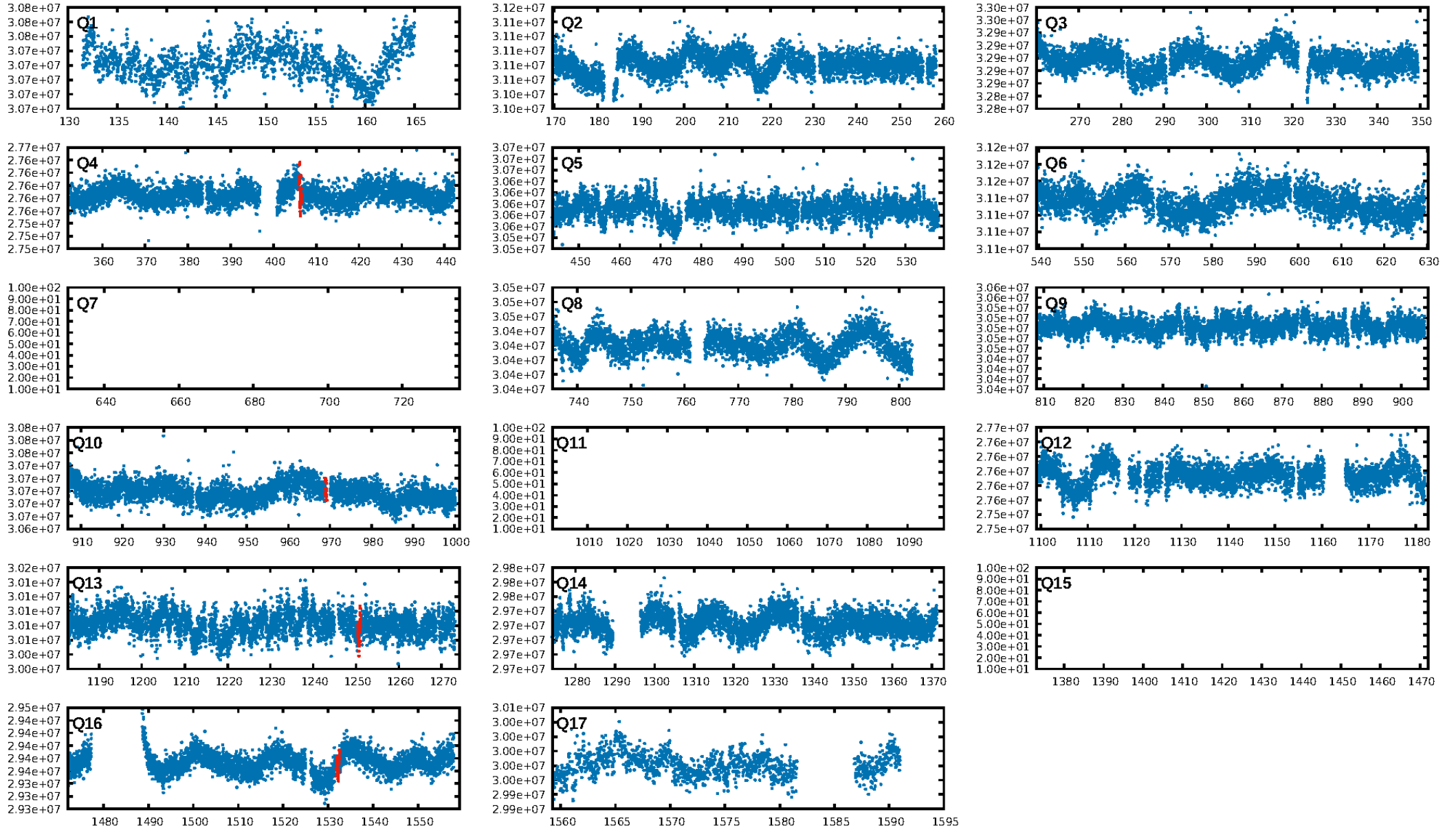
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.6%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 8.68e-12
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -0.1601
Centroid-sig: 3.6%
Centroid-so: 4.130 arcsec [3.70σ]
OotOffset-rm: 1.108 arcsec [0.80σ]
OotOffset-st: 0/0/2/1 [3]
KicOffset-rm: **5.322 arcsec [15.13σ]**
KicOffset-st: 0/0/2/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

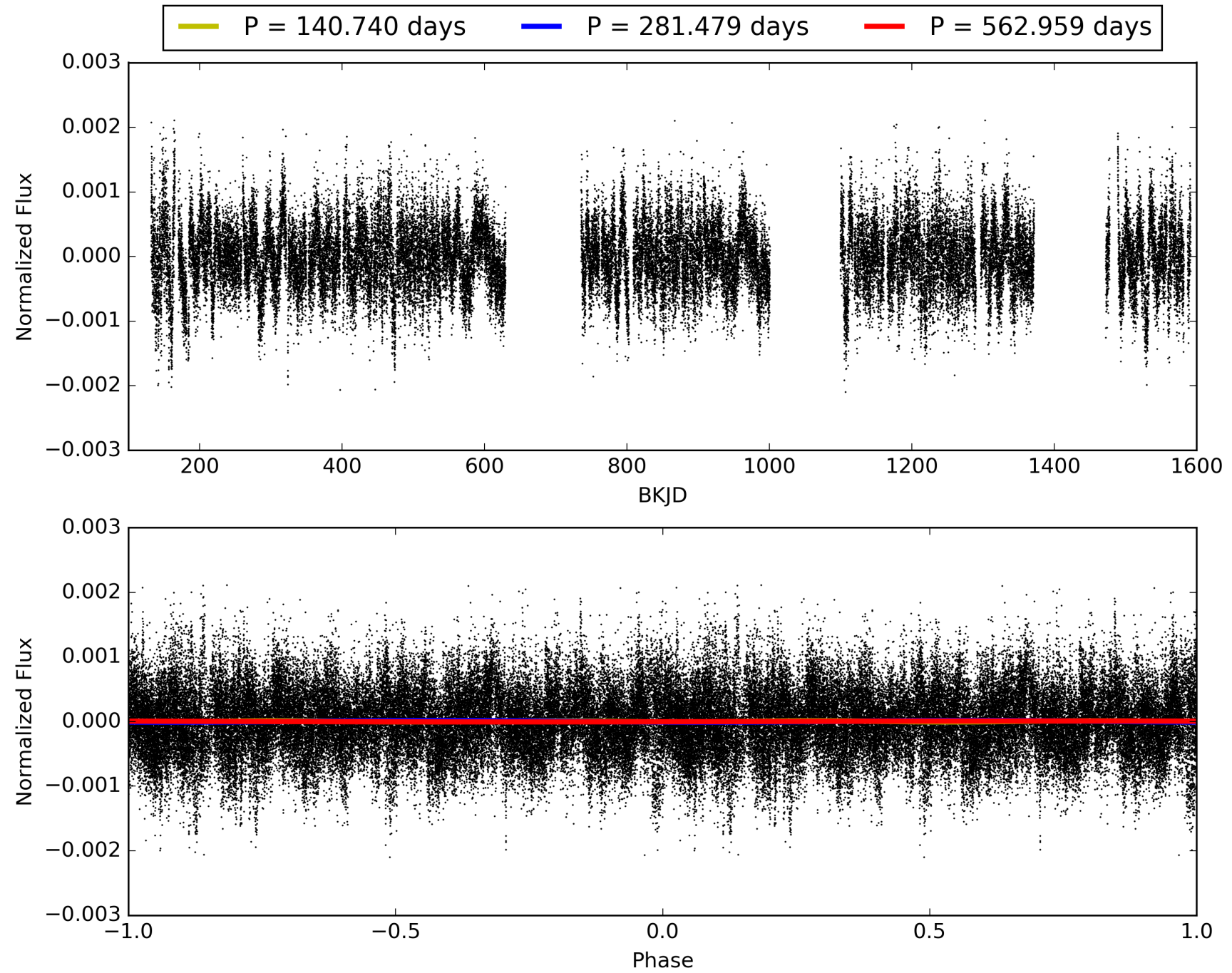
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:44:05 Z

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

TCE 009907527-01, PDC Light Curves

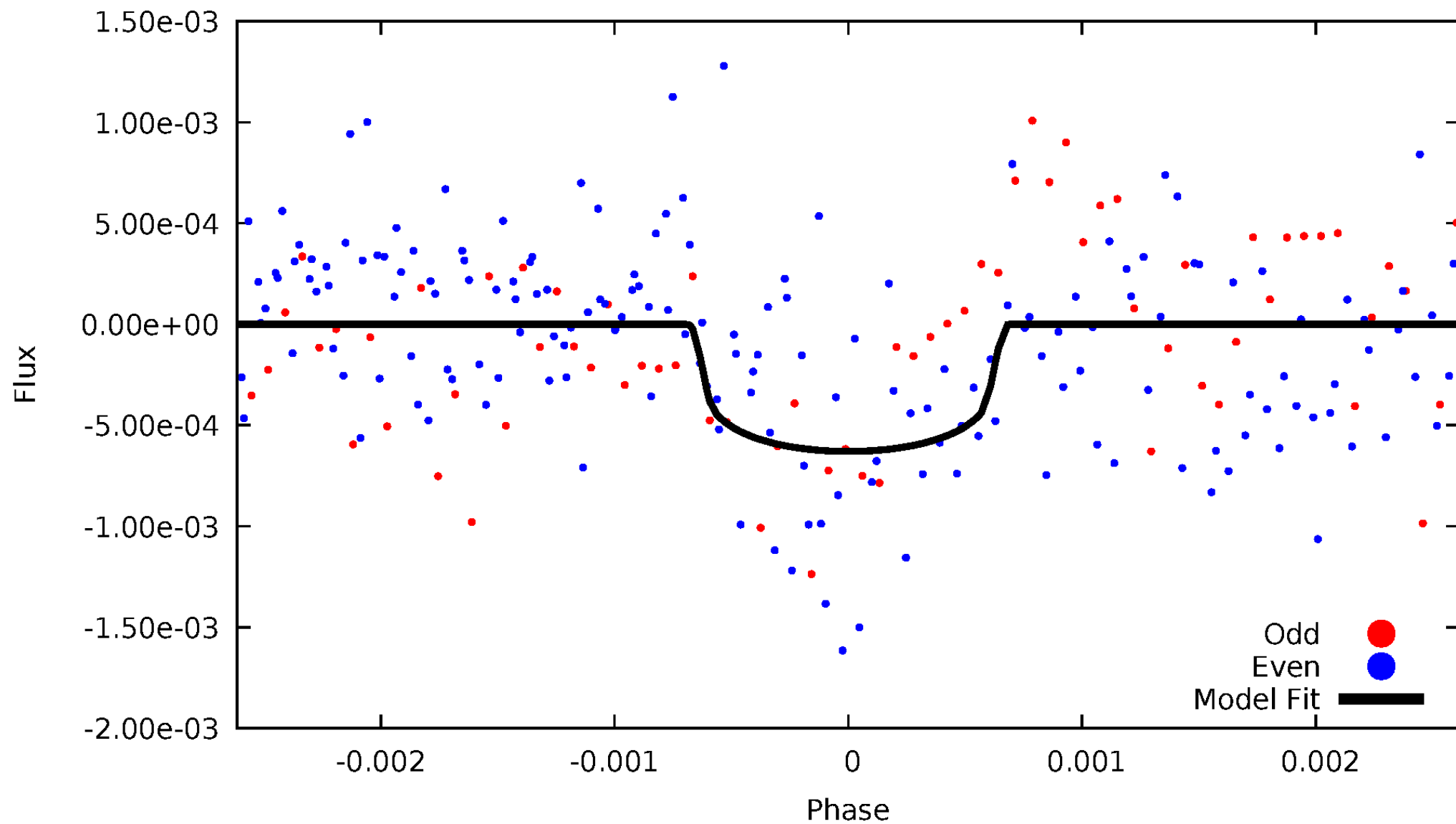


TCE 009907527-01



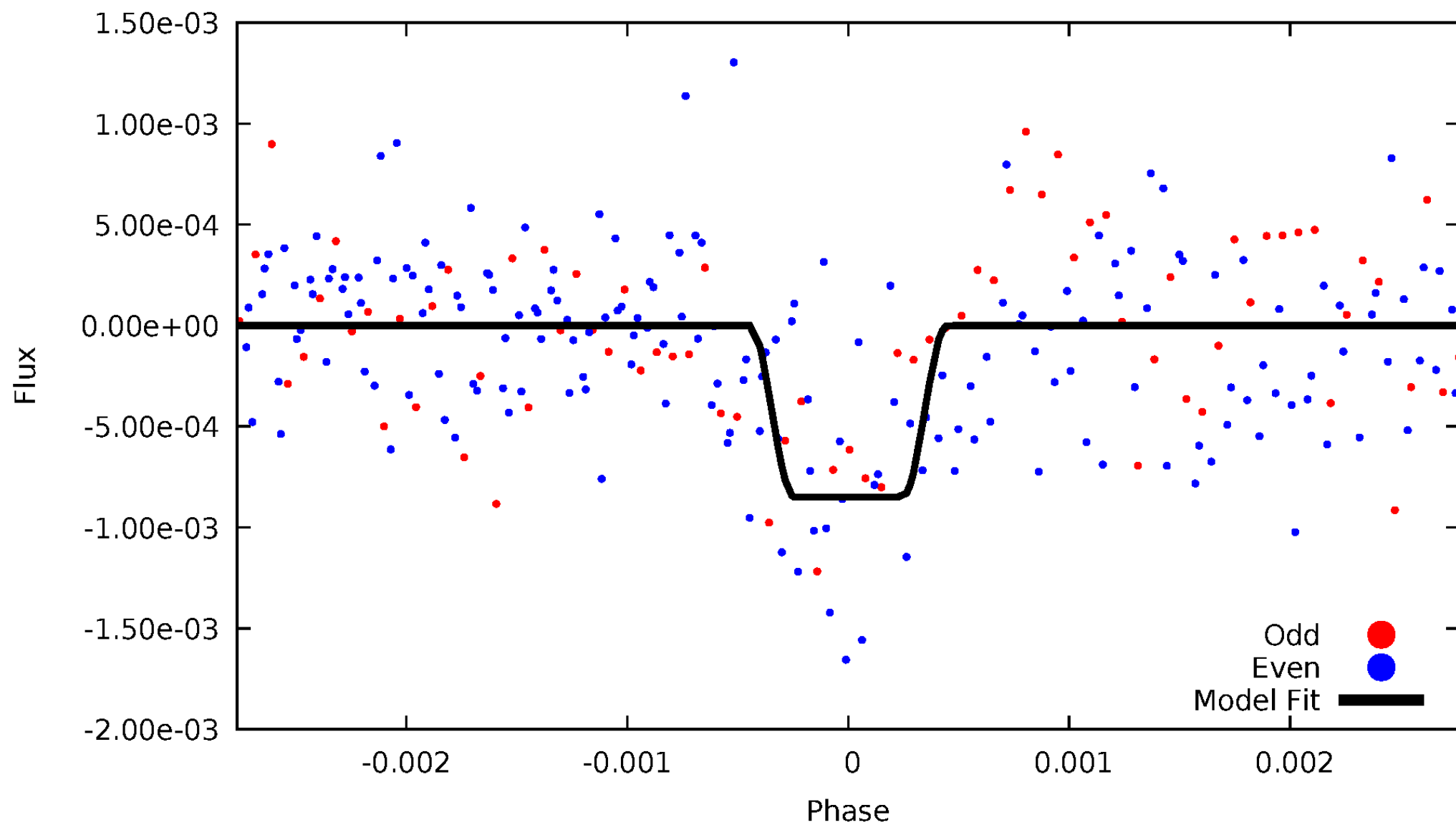
DV Odd/Even

TCE 009907527-01



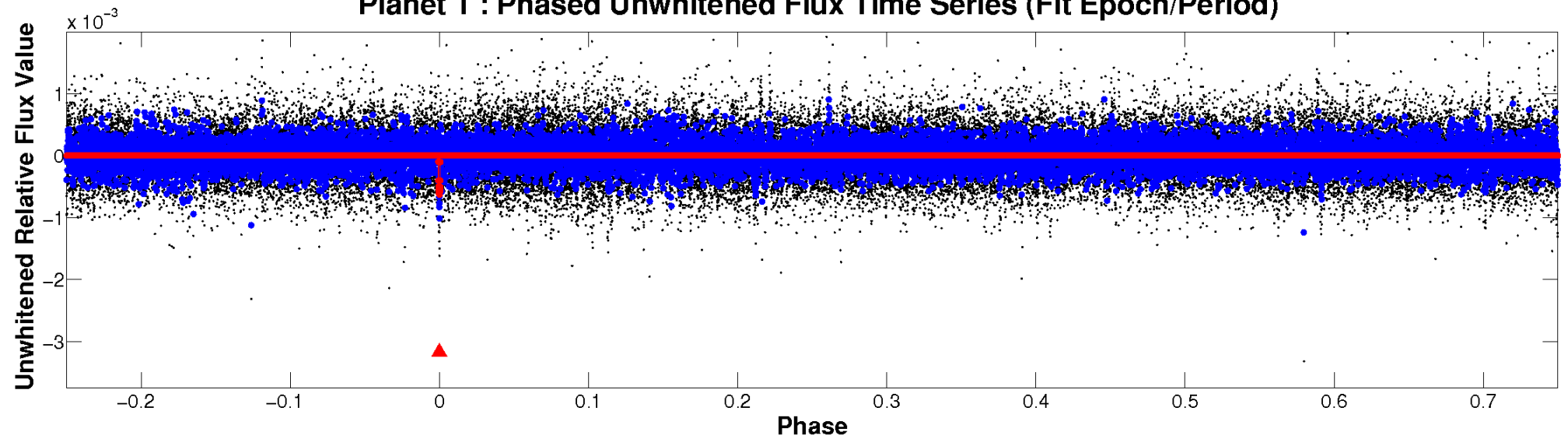
ALT Odd/Even

TCE 009907527-01

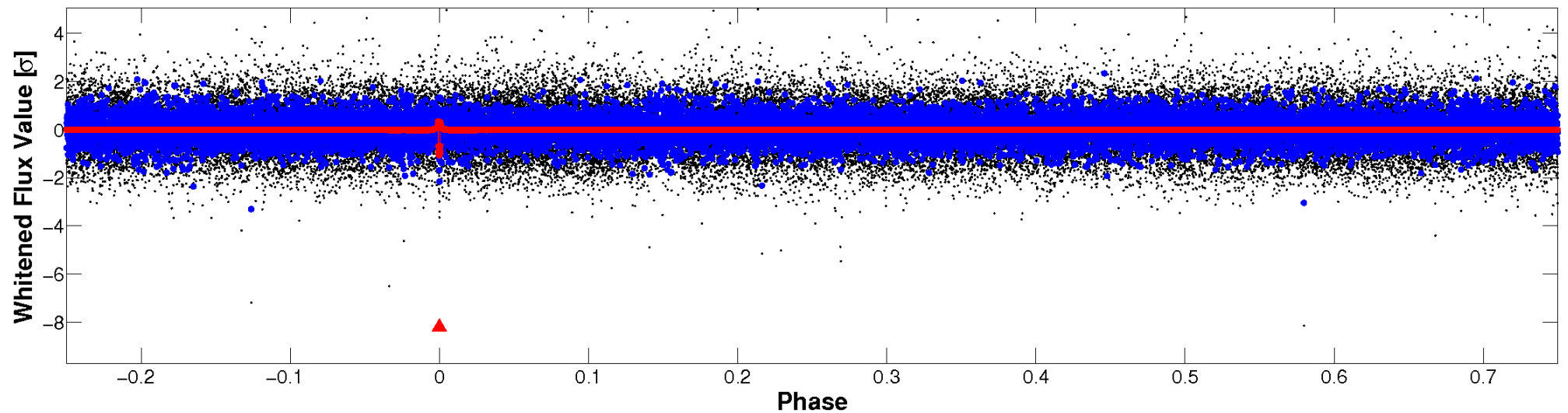


Non-Whitened Vs. Whitened Light Curve

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

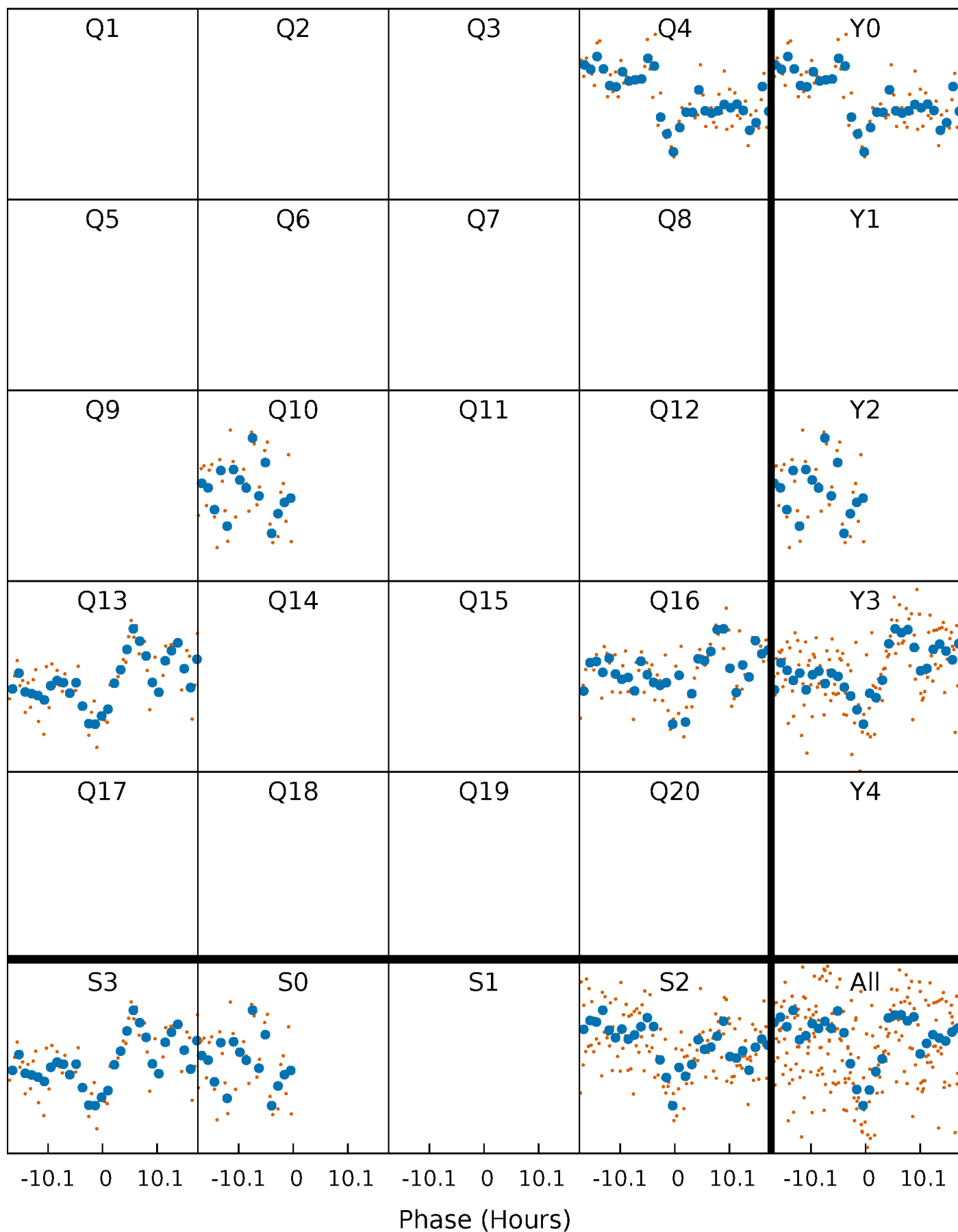


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



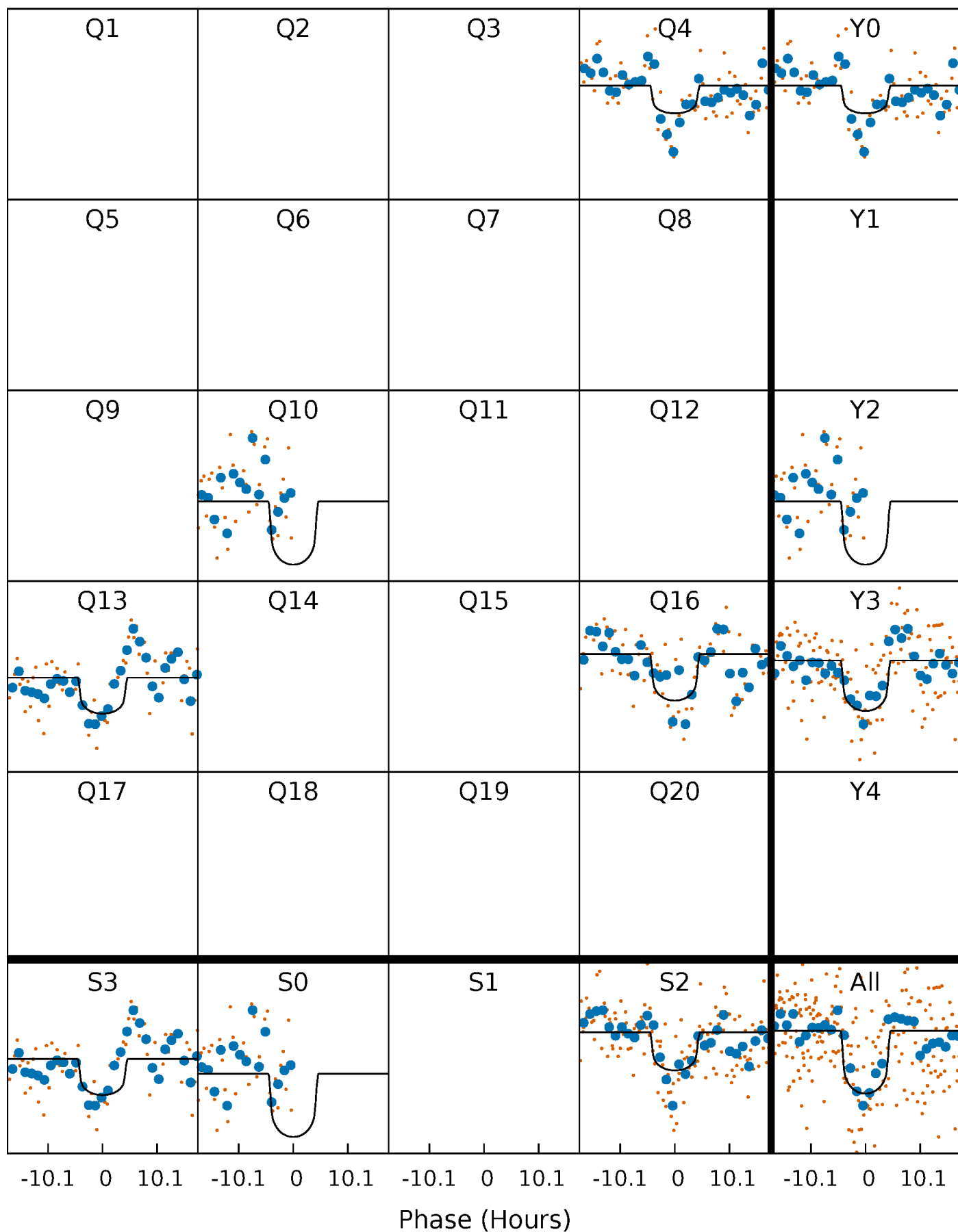
PDC Quarter-Phased Transit Curves

TCE 009907527-01 P=281.479336 Days $T_0=406.286833$ (BKJD)



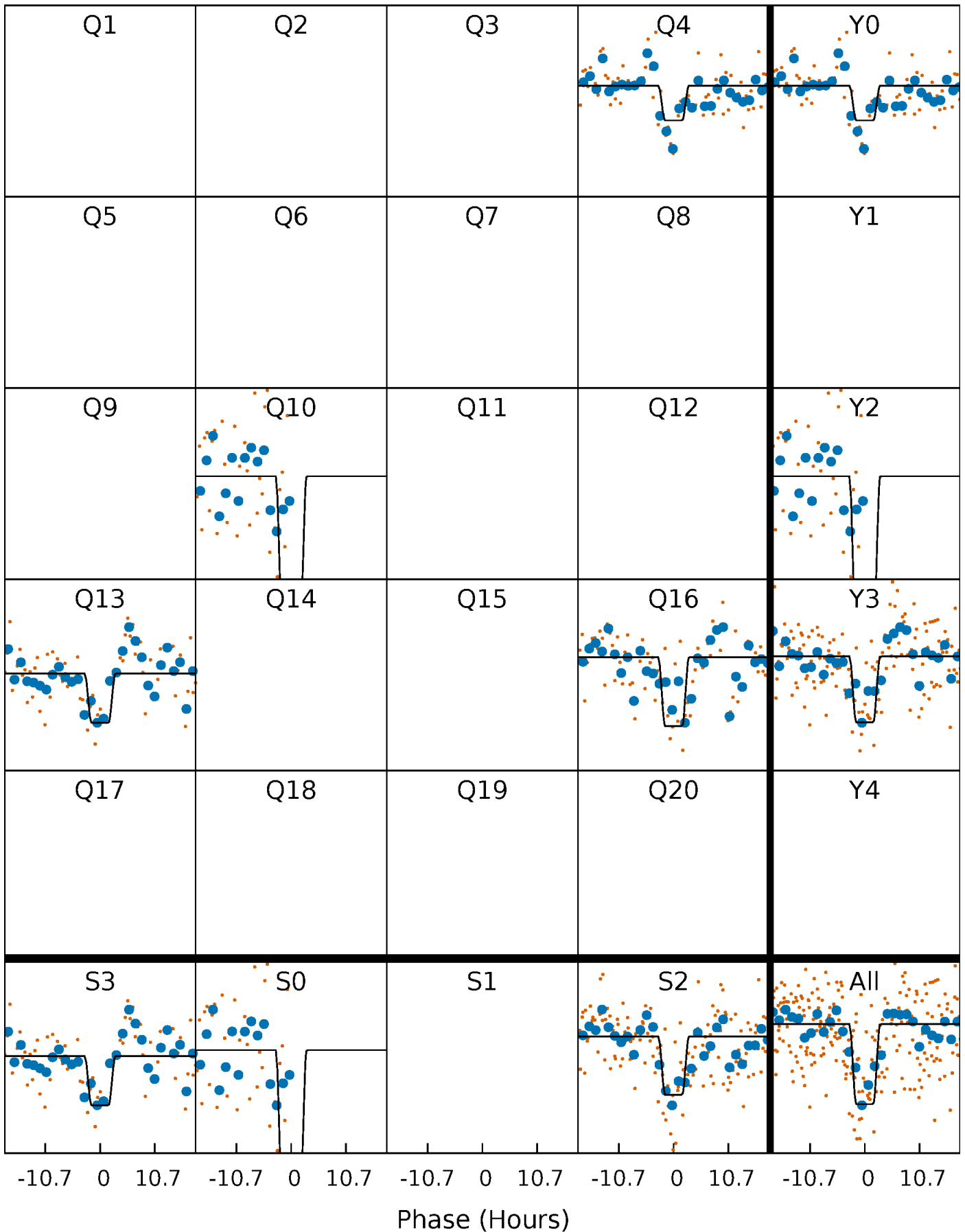
DV Quarter-Phased Transit Curves

TCE 009907527-01 P=281.479336 Days $T_0=406.286833$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

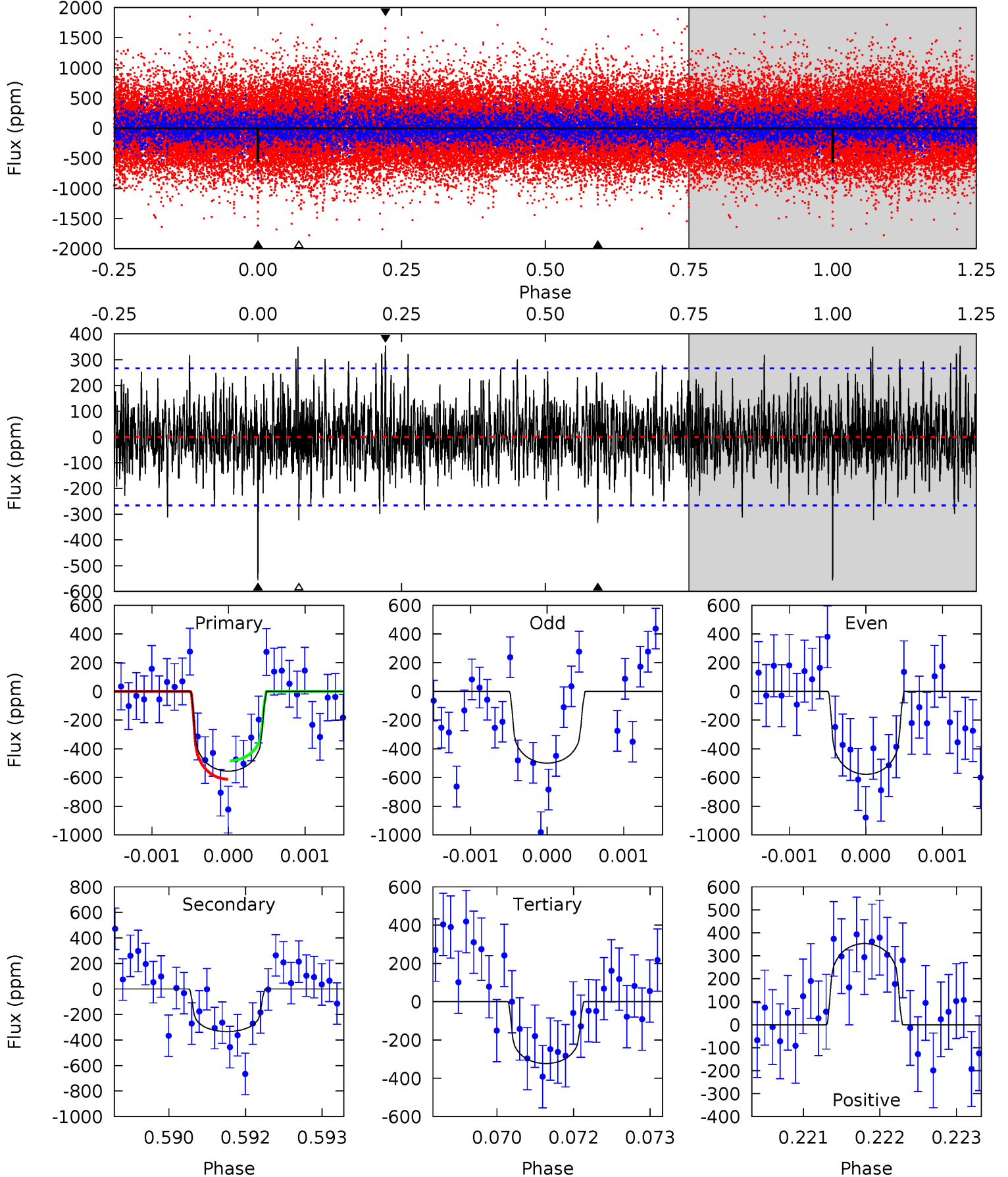
TCE 009907527-01 P=281.479100 Days $T_0=406.282908$ (BKJD)



DV Model-Shift Uniqueness Test

009907527-01, P = 281.479336 Days, E = 124.807497 Days

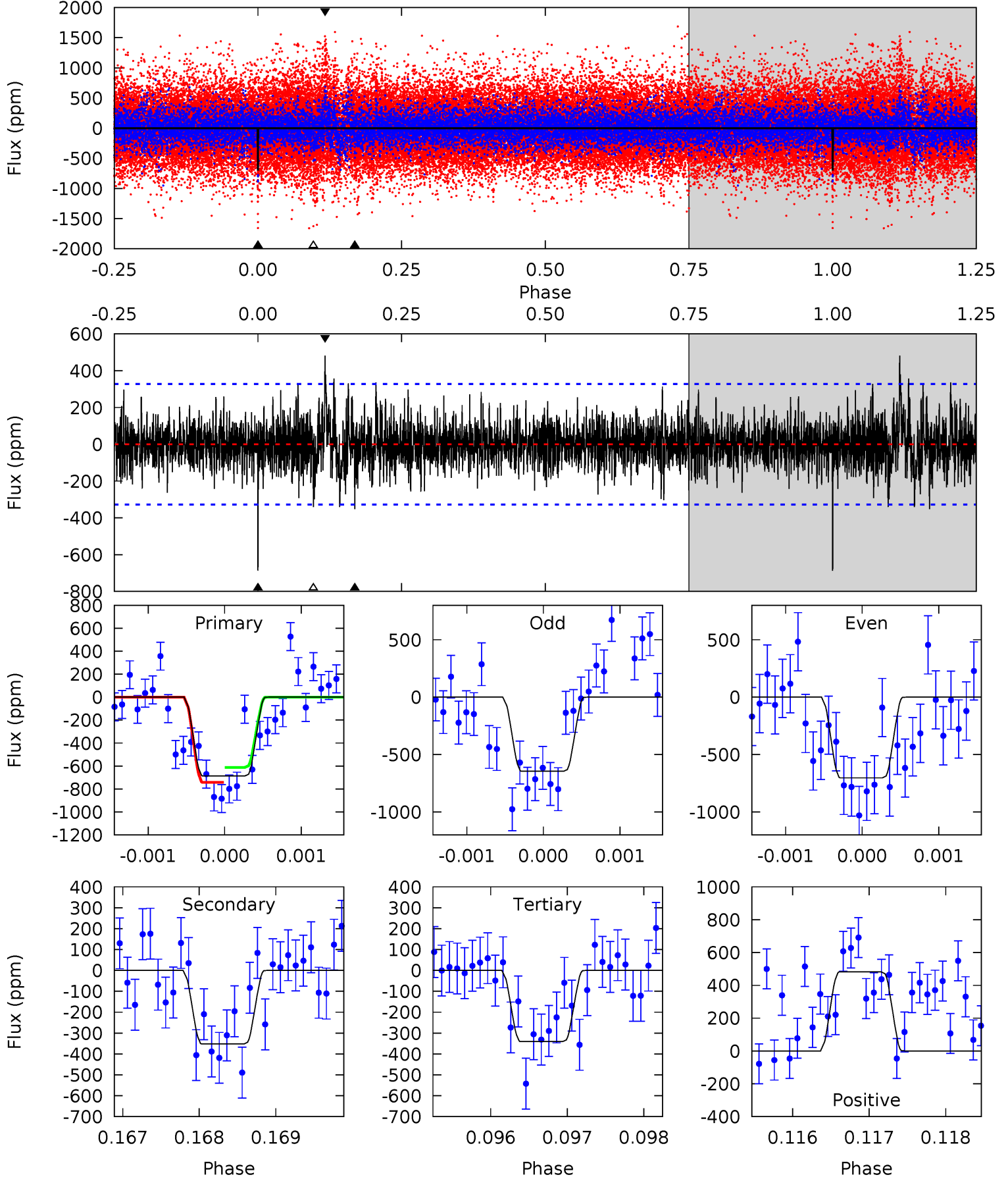
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	6.76	6.54	7.15	5.39	3.20	1.87	4.72	4.11	0.22	-0.39	0.72	0.90	0.39	1.29



Alt Model-Shift Uniqueness Test

009907527-01, P = 281.479100 Days, E = 124.803808 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.90	5.71	8.06	5.48	3.34	1.53	5.79	3.44	0.19	-2.17	0.43	1.01	0.41	1.10



Stellar Parameters For KIC 009907527

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5799^{+157}_{-175}	$4.539^{+0.036}_{-0.192}$	$-0.100^{+0.300}_{-0.300}$	$0.878^{+0.246}_{-0.082}$	$0.975^{+0.105}_{-0.126}$	$2.026^{+0.385}_{-1.014}$
	+3%/-3%	+1%/-4%	+300%/-300%	+28%/-9%	+11%/-13%	+19%/-50%
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 009907527-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-334 ± 49	$2.85^{+2.06}_{-1.81}$	376^{+25}_{-18}	4758^{+2877}_{-879}	15223^{+96845}_{-10382}
Alt.	-352 ± 60	$3.24^{+2.14}_{-1.98}$	376^{+22}_{-17}	4575^{+2281}_{-772}	12875^{+64932}_{-8452}

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

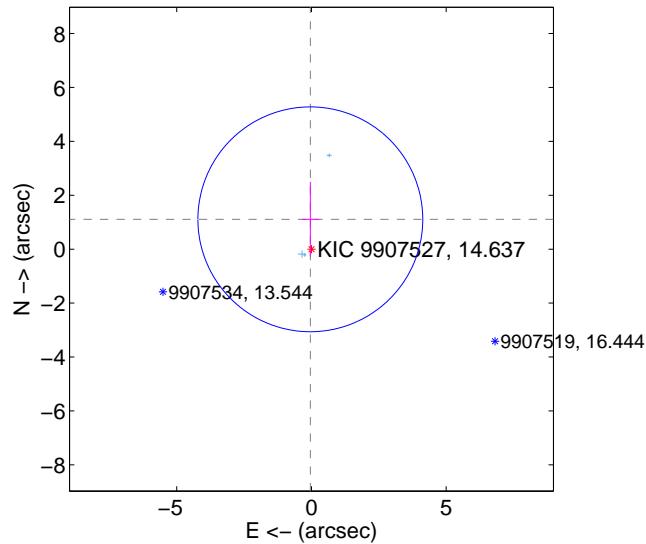
Supplemental centroid analysis for 009907527-01. Kepler magnitude: 14.64. Transit SNR 7.42

There are 3 quarters with good PRF difference image offsets

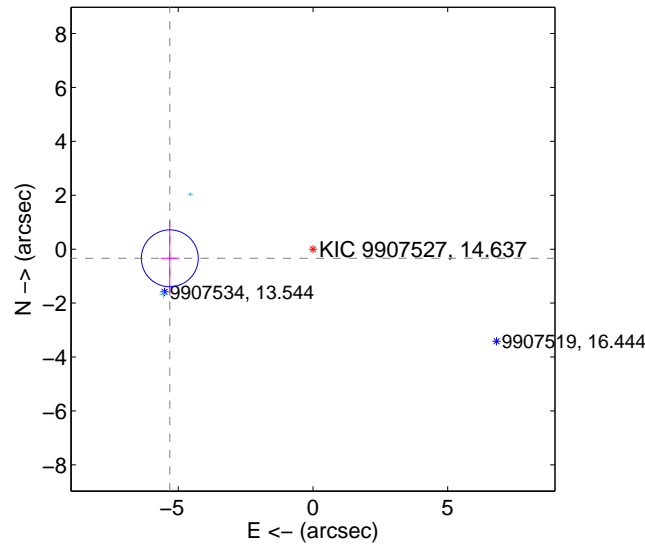
The OOT PRF centroid is offset from the target star catalog position by about 5.50 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.108 ± 1.390	0.80	0.041 ± 0.320	1.108 ± 1.391
PRF-fit source offset from KIC position	5.322 ± 0.352	15.13	5.312 ± 0.341	-0.339 ± 1.393
photometric centroid source offset	4.13 ± 1.12	3.70	3.61 ± 1.23	-2.01 ± 0.64

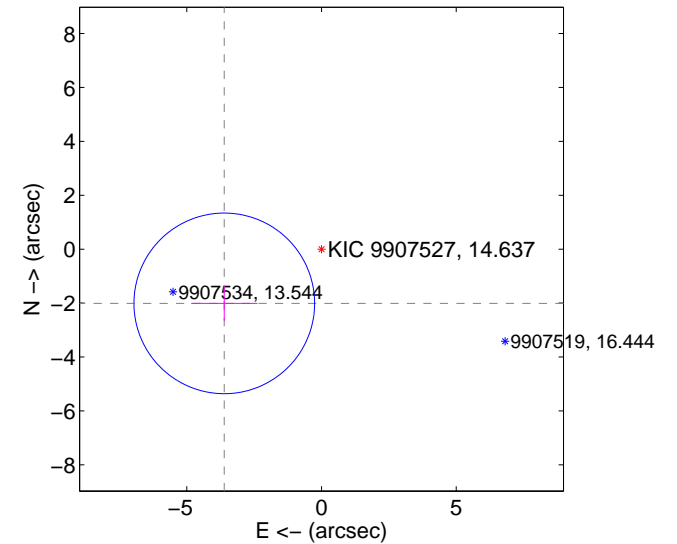
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

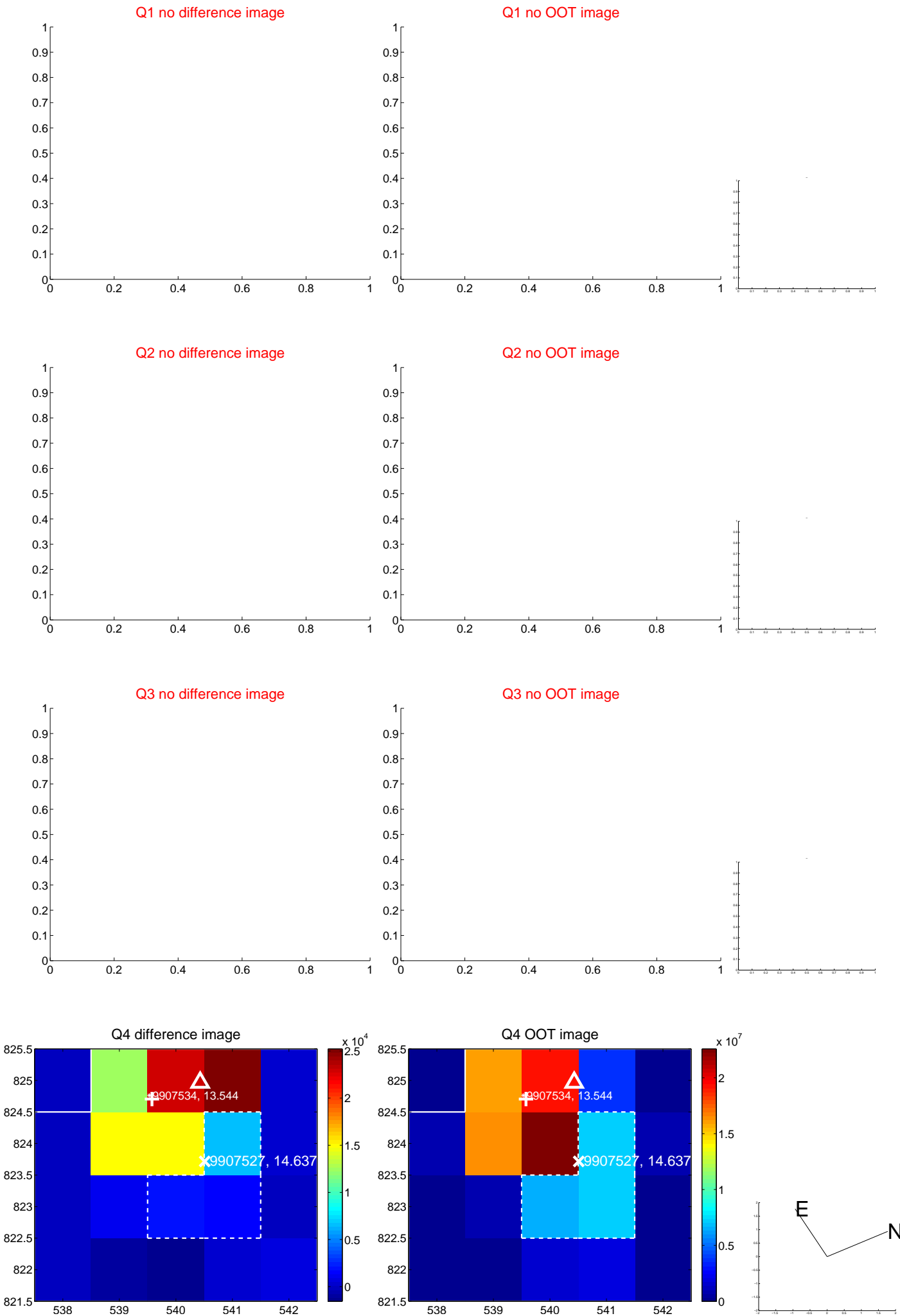


offset from photometric centroids



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.



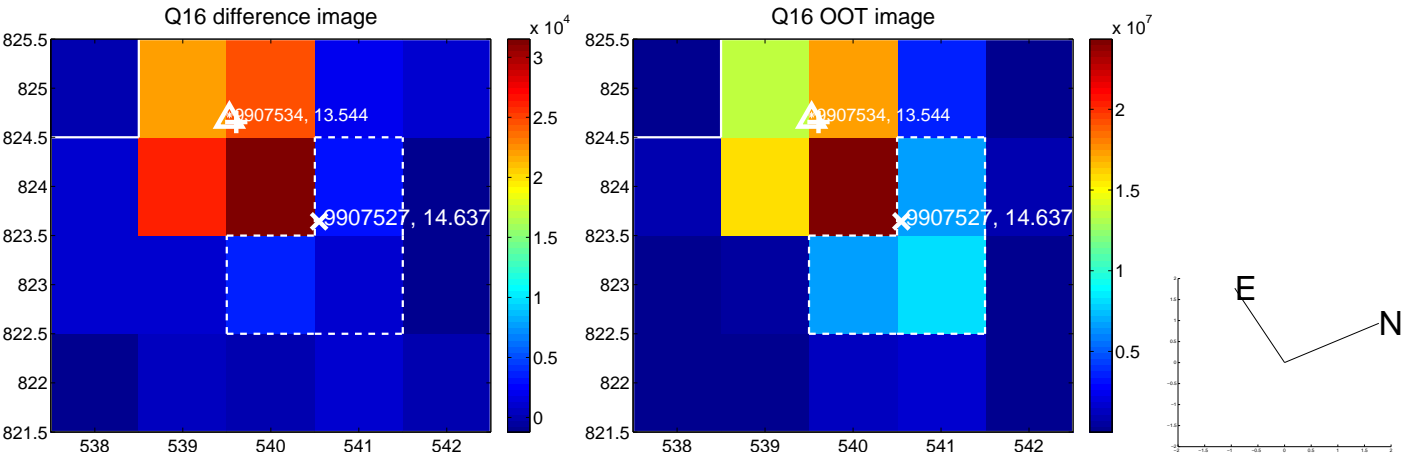
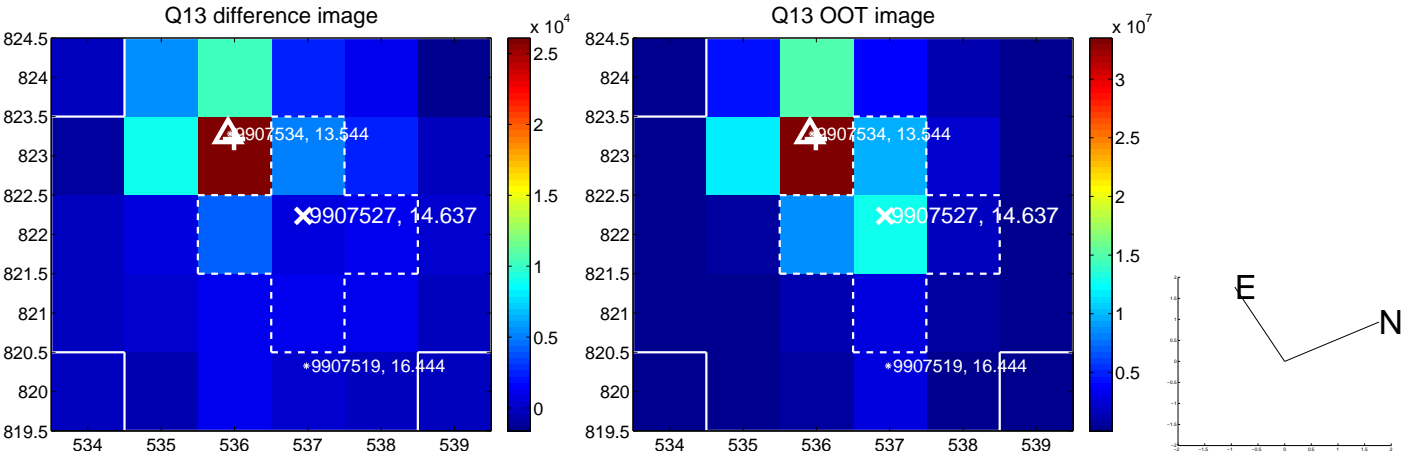
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



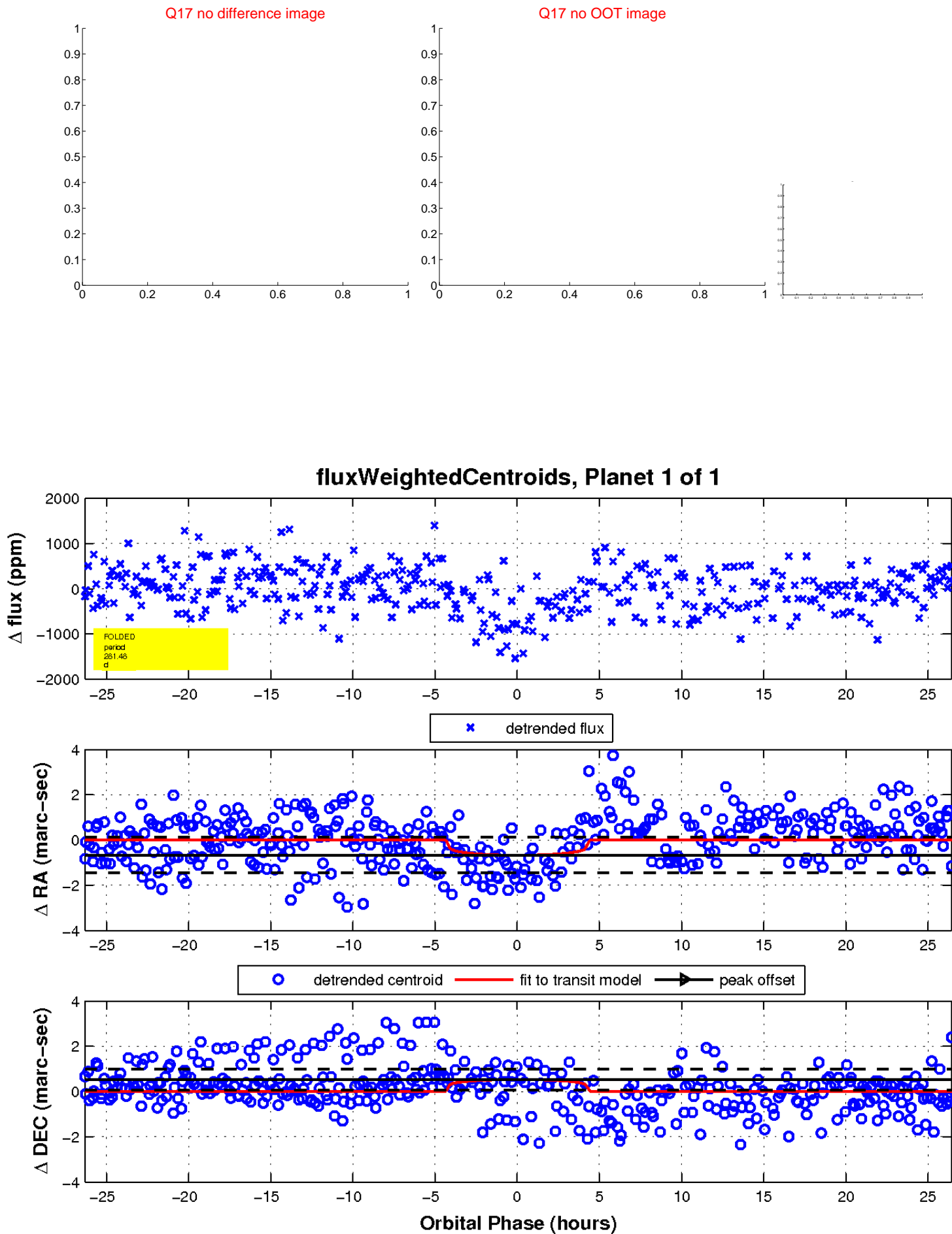
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

