

KIC 010599575

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})
010599575-01	OBS	No	423.713740	434.016611	137.3	17.437	8.3	9.2	0.95	6053	1.23	0.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010599575-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—CENT_FEW_DIFFS

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

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

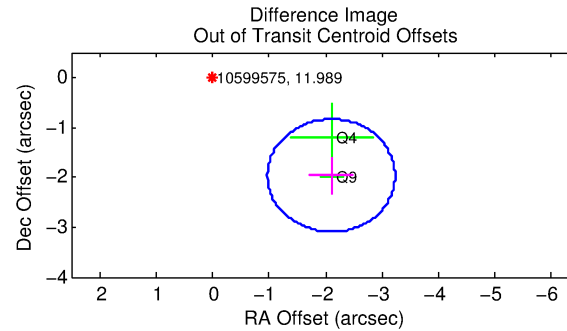
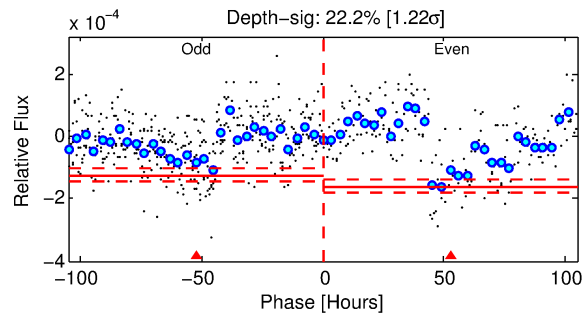
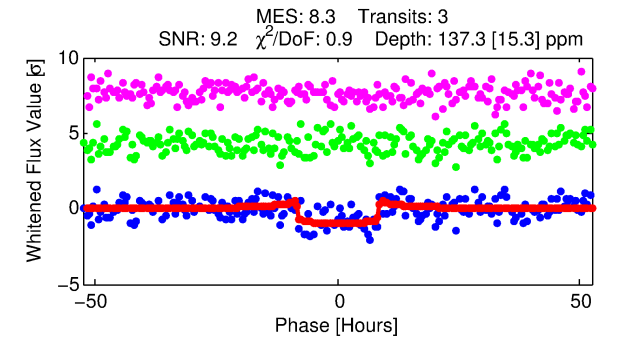
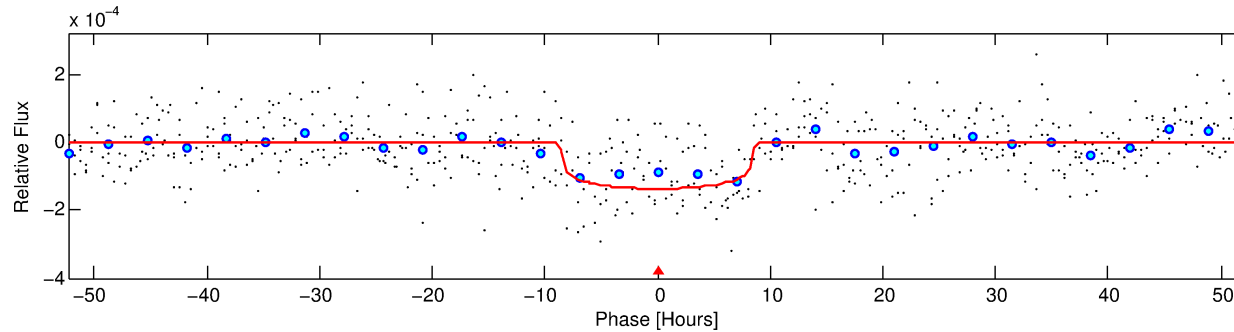
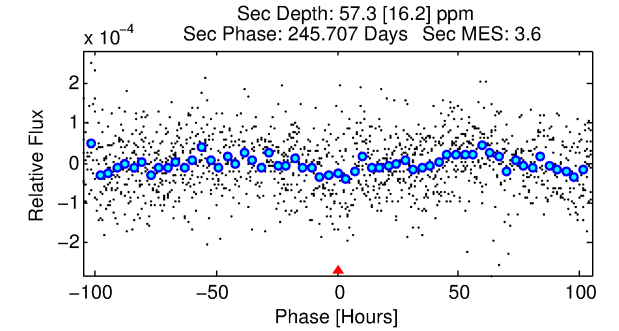
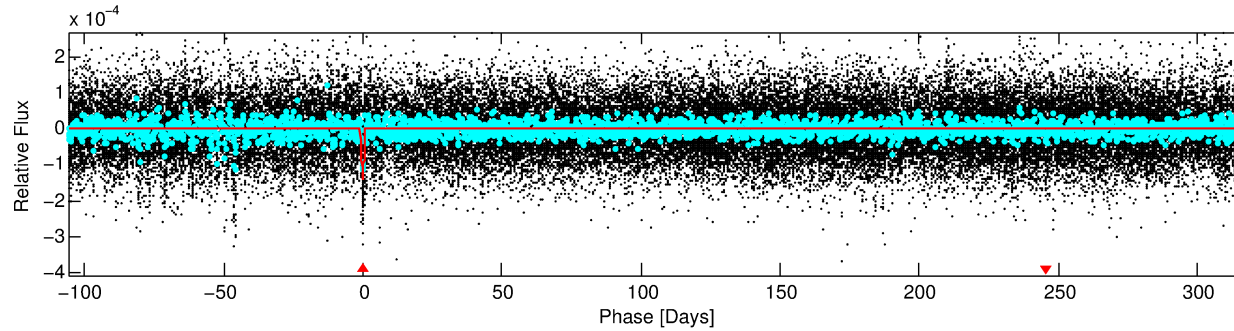
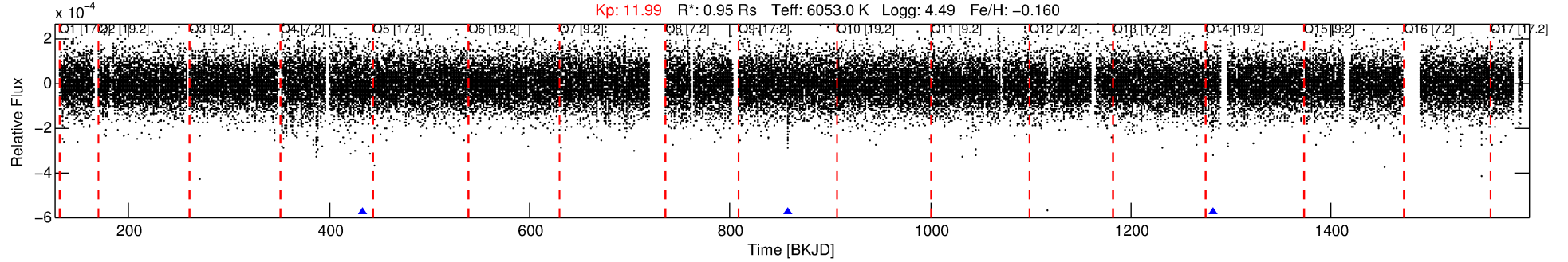
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010599575-01

No Significant Match Found

DV One-Page Summary

KIC: 10599575 Candidate: 1 of 1 Period: 423.714 d



DV Fit Results:

Period = 423.71374 [0.01158] d
Epoch = 434.0166 [0.0151] BKJD
 $R_p/R^* = 0.0118$ [0.0022]
 $a/R^* = 116.96$ [102.48]
 $b = 0.79$ [0.42]
 $\text{Seff} = 0.87$ [0.26]
 $T_{\text{eq}} = 247$ [18] K
 $R_p = 1.23$ [0.35] R_e
 $a = 1.1132$ [0.2065] AU
 $A_g = 25975.93$ [14186.40] [1.83σ]
 $T_{\text{eff}} = 4839$ [591] K [7.77σ]

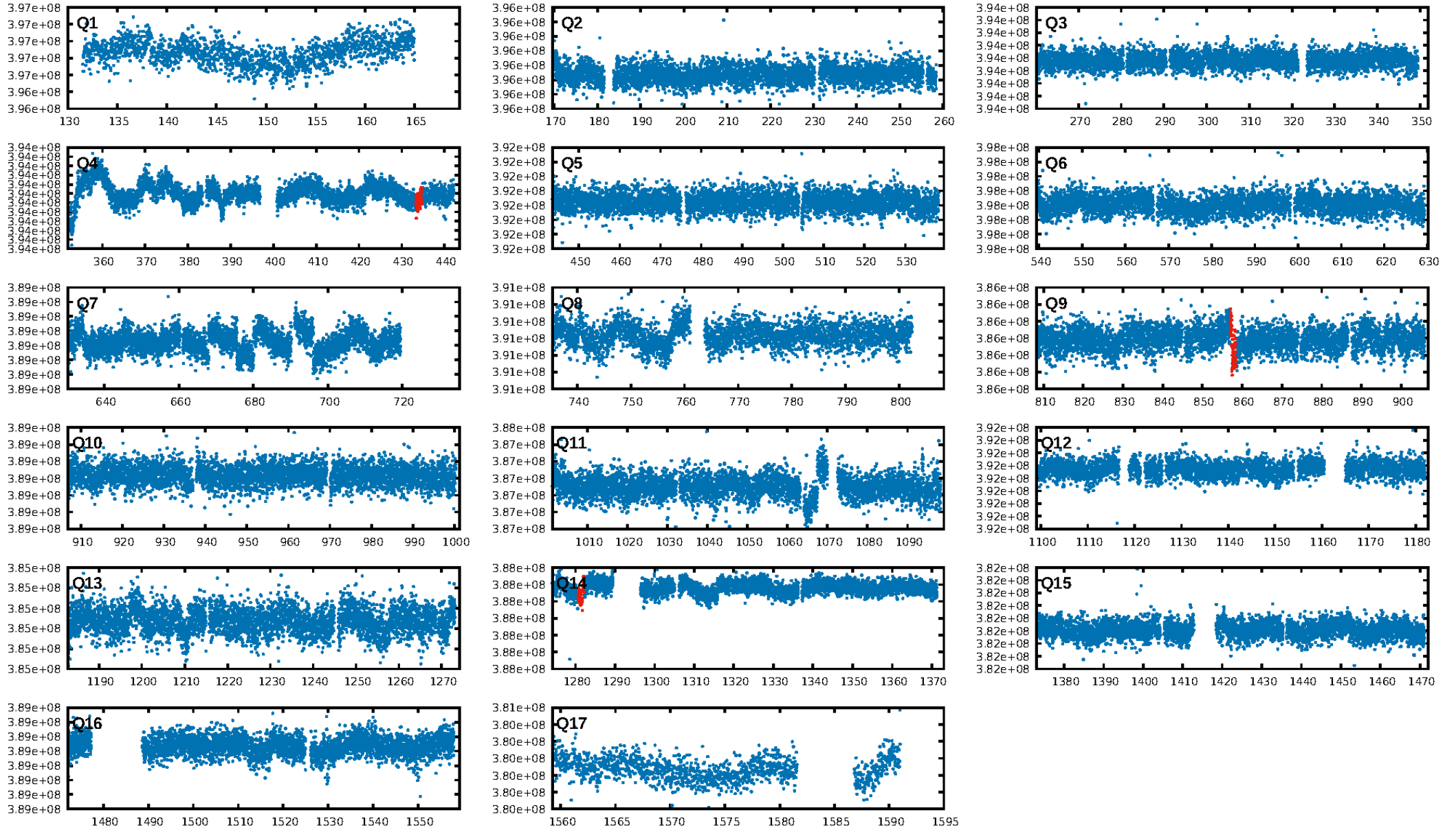
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 14.3%
ModelChiSquareGof-sig: 99.7%
Bootstrap-pfa: 5.06e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -5.794
Centroid-sig: 24.5%
Centroid-so: 1.262 arcsec [1.35σ]
OotOffset-rm: 2.878 arcsec [7.65σ]
KicOffset-rm: 2.484 arcsec [6.56σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

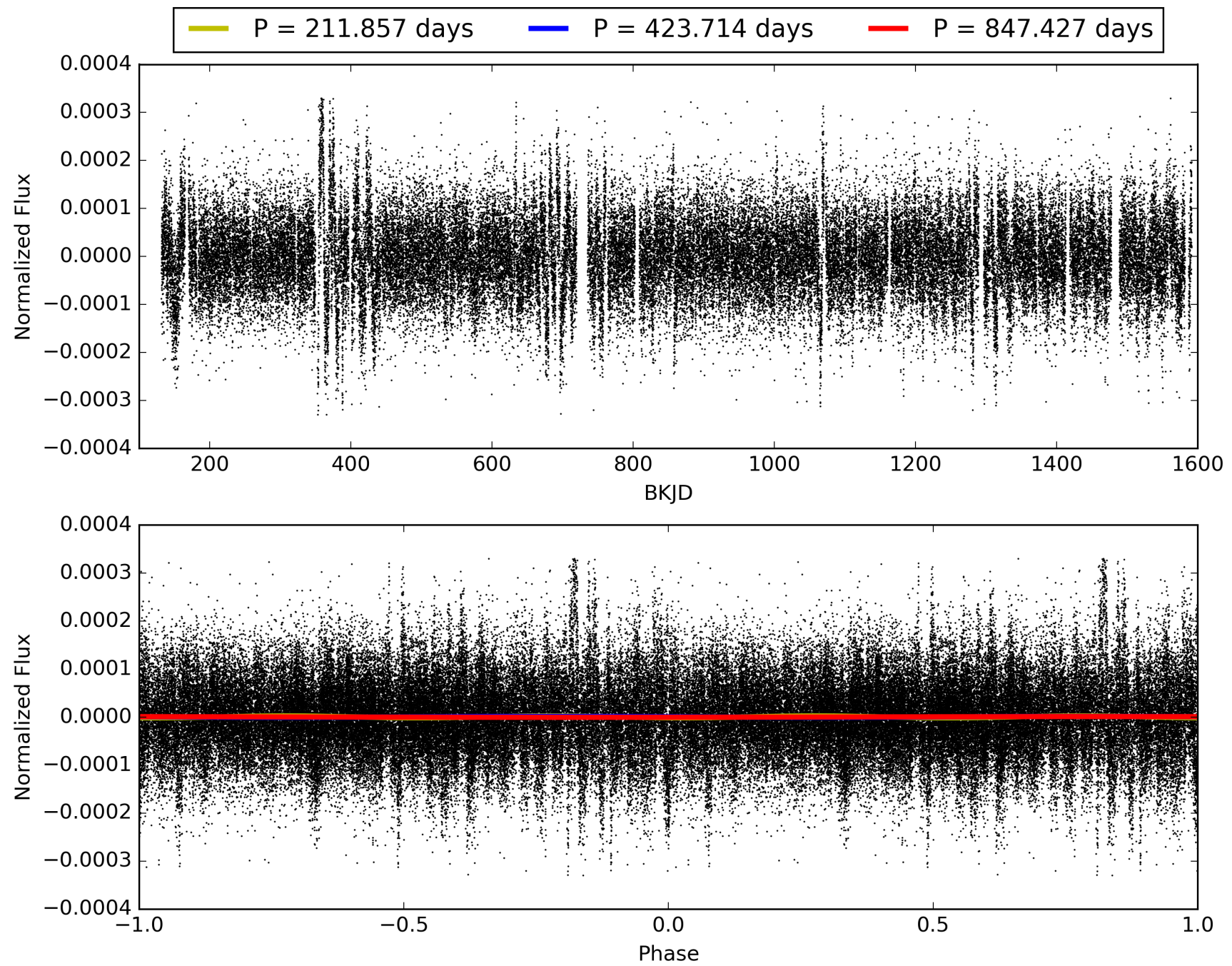
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:31:16 Z

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

TCE 010599575-01, PDC Light Curves

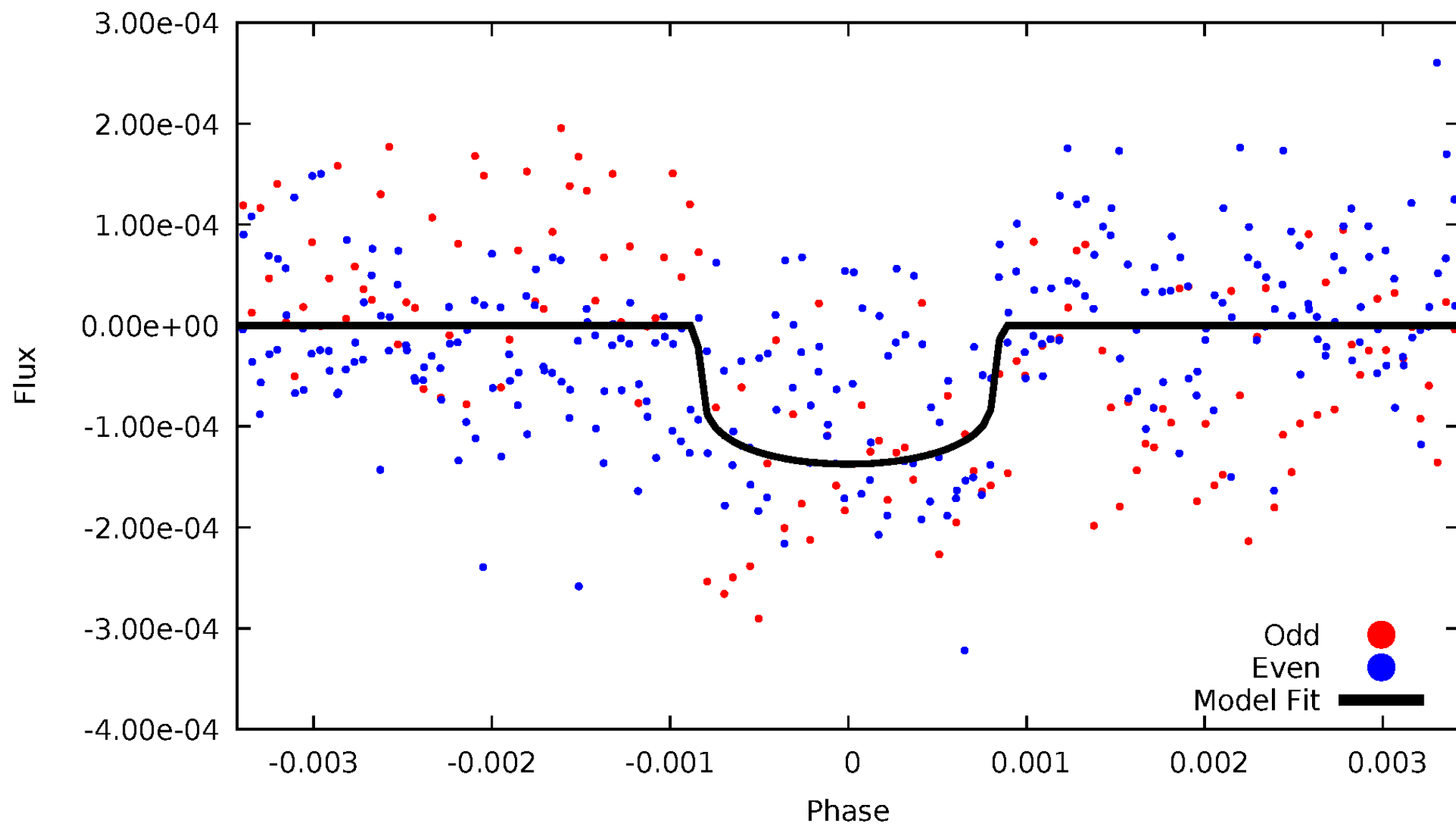


TCE 010599575-01



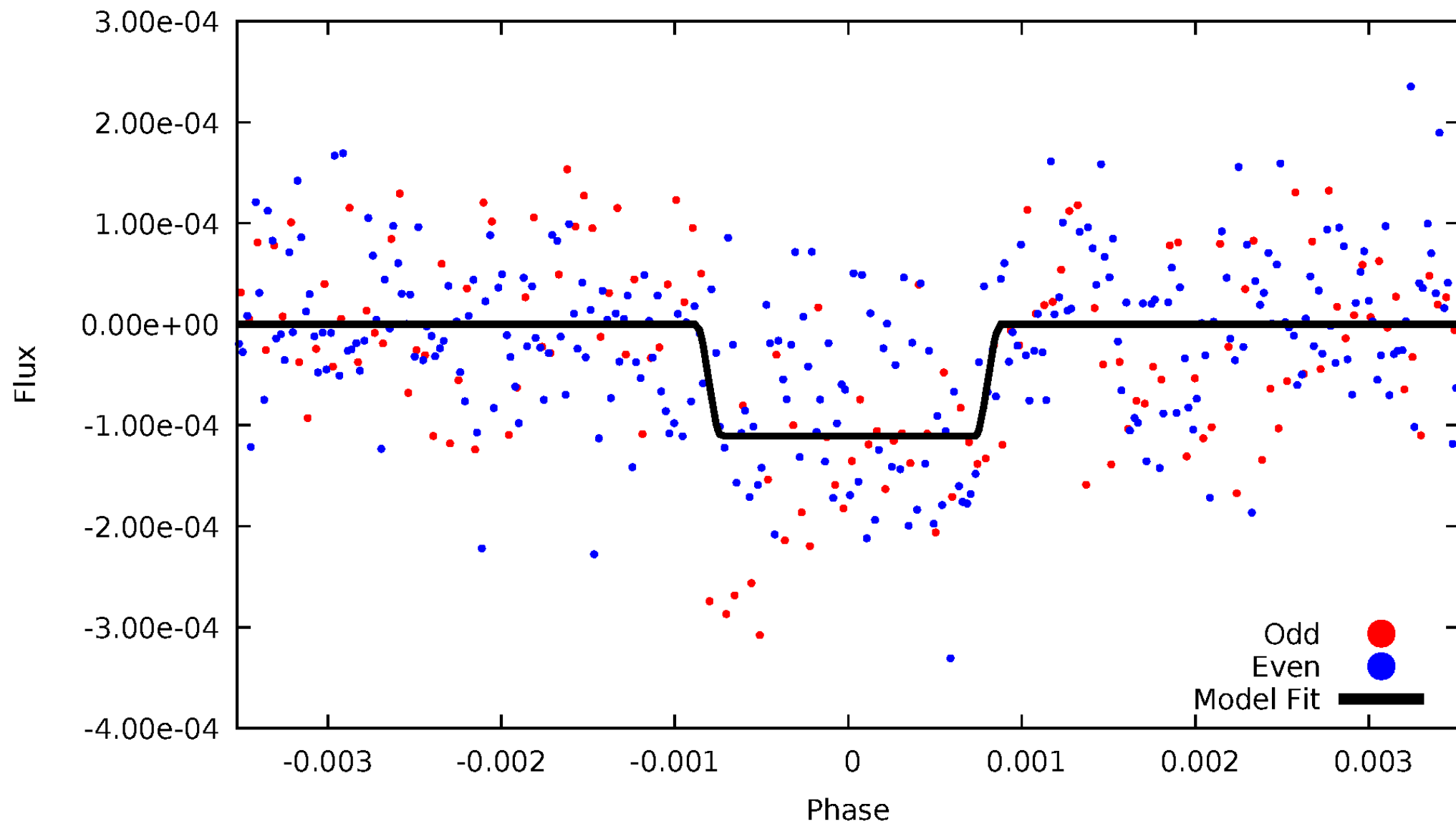
DV Odd/Even

TCE 010599575-01



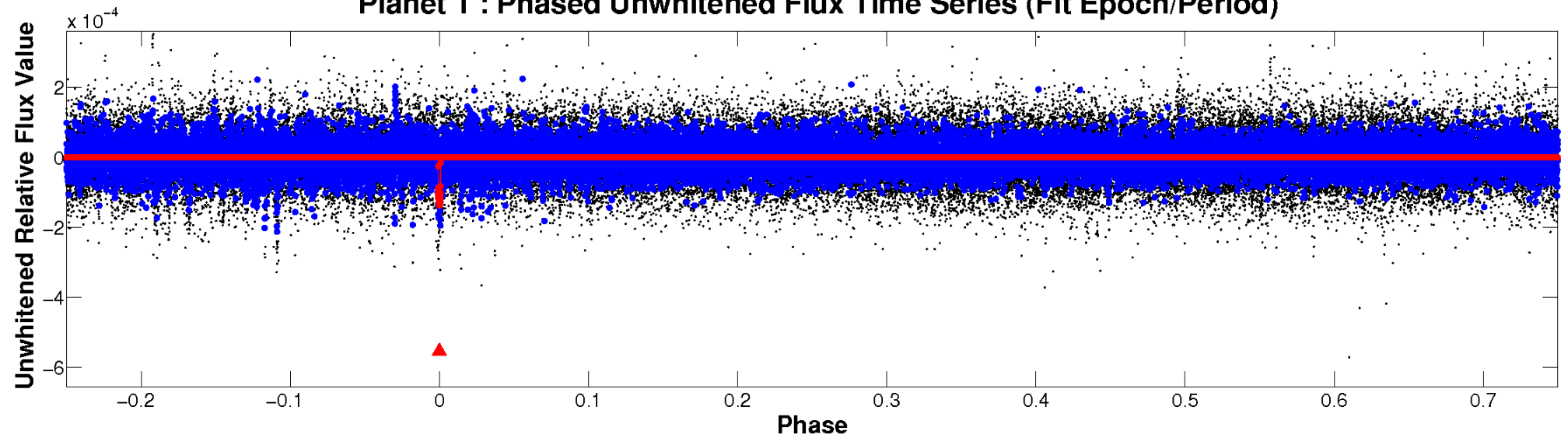
ALT Odd/Even

TCE 010599575-01

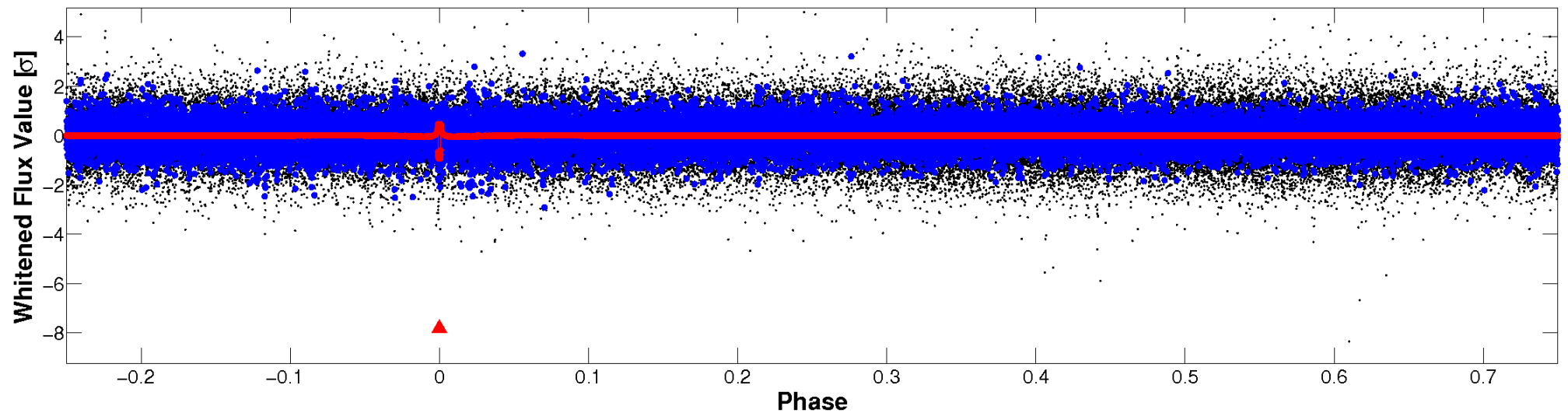


Non-Whitened Vs. Whitened Light Curve

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

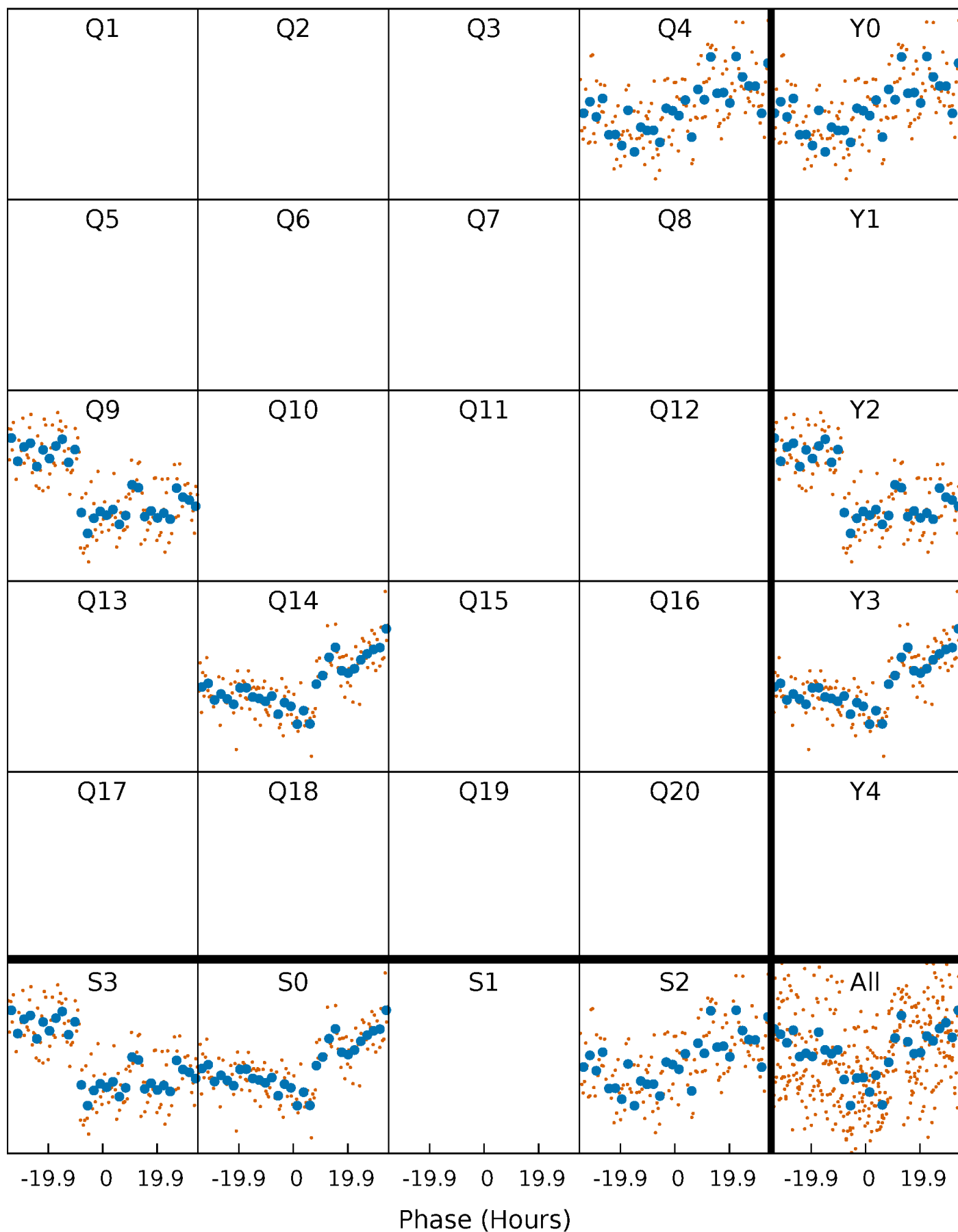


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



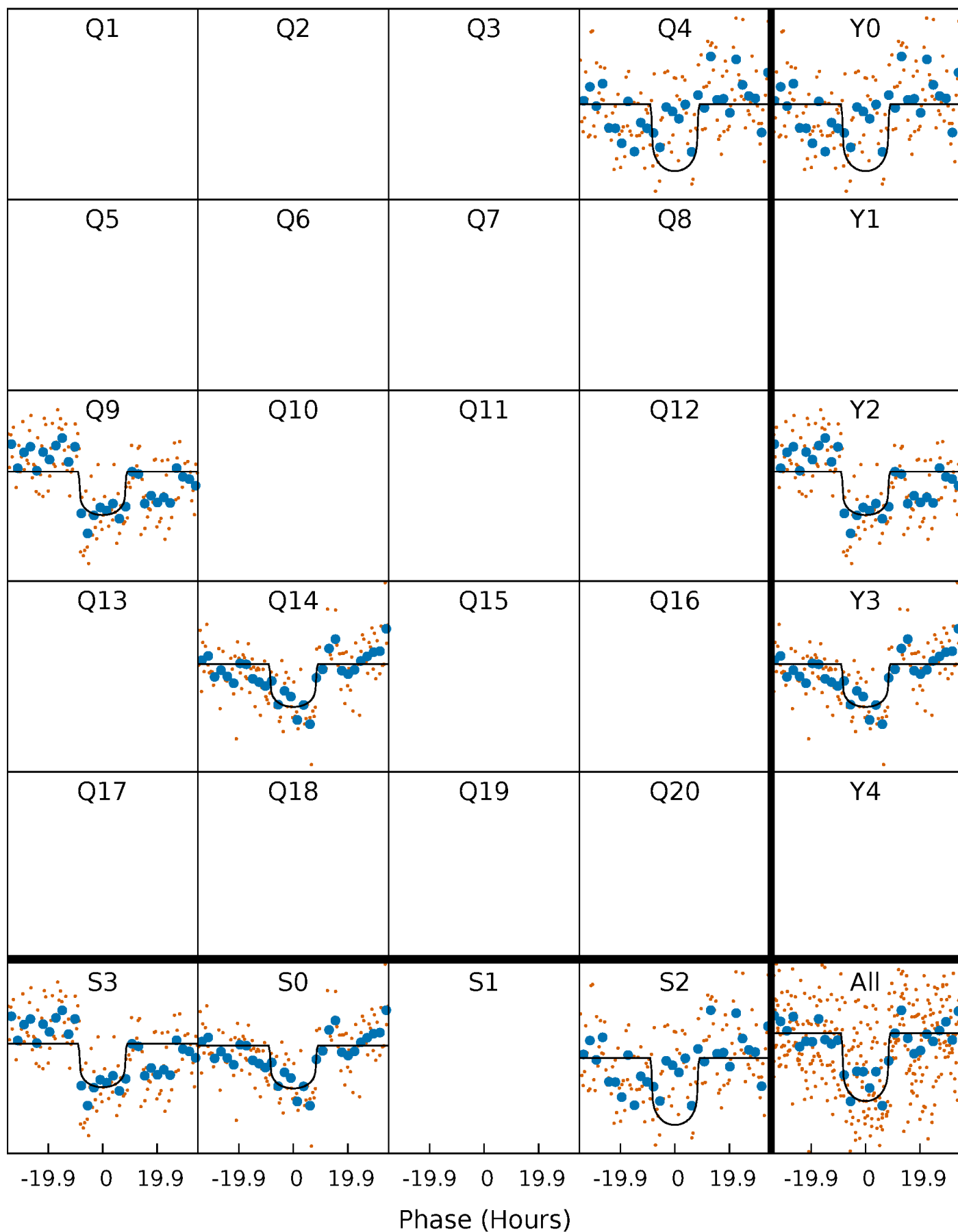
PDC Quarter-Phased Transit Curves

TCE 010599575-01 P=423.713740 Days $T_0=434.016611$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 010599575-01 P=423.713740 Days $T_0=434.016611$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

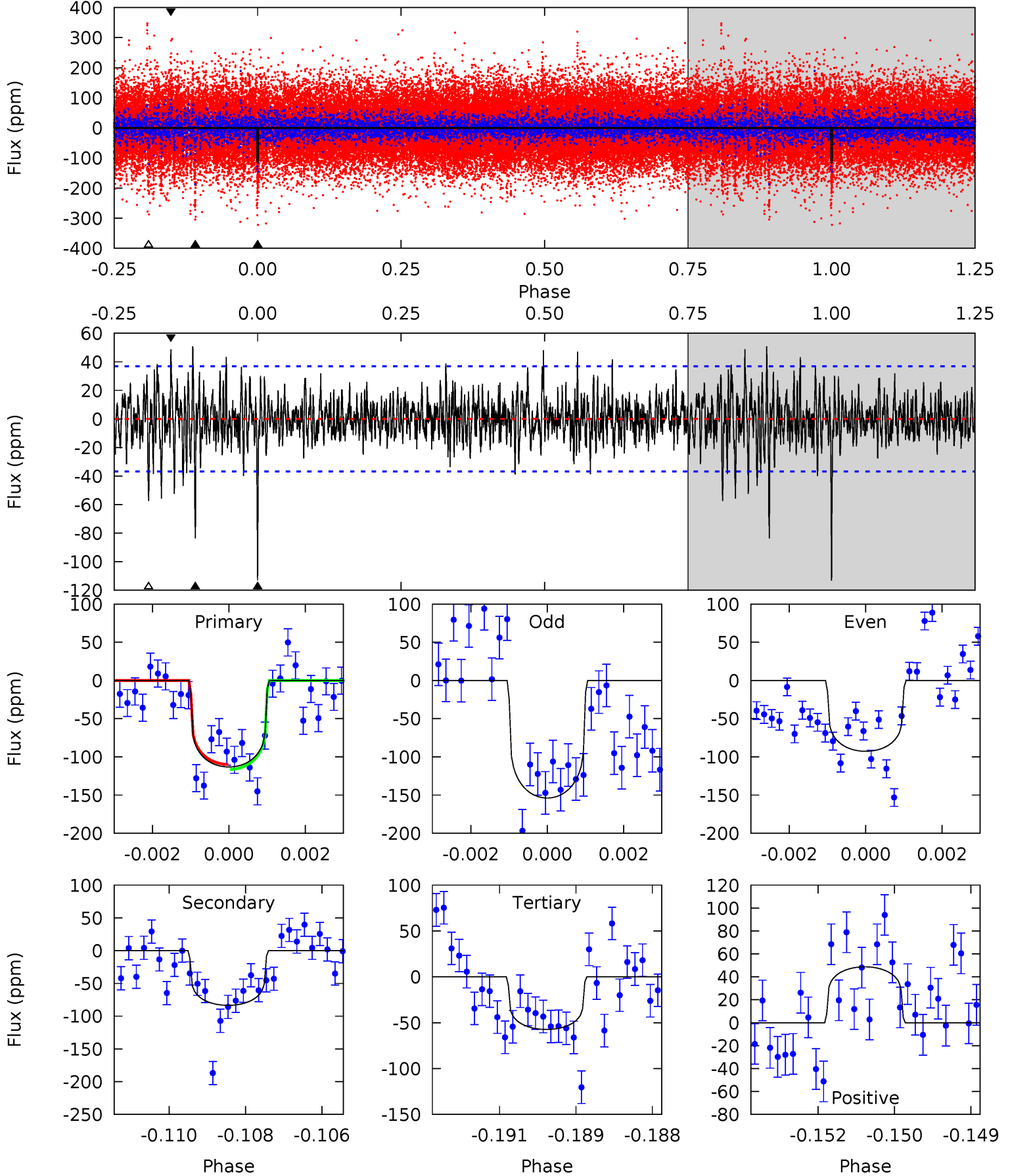
TCE 010599575-01 P=423.737545 Days $T_0=433.996030$ (BKJD)



DV Model-Shift Uniqueness Test

010599575-01, P = 423.713740 Days, E = 10.302871 Days

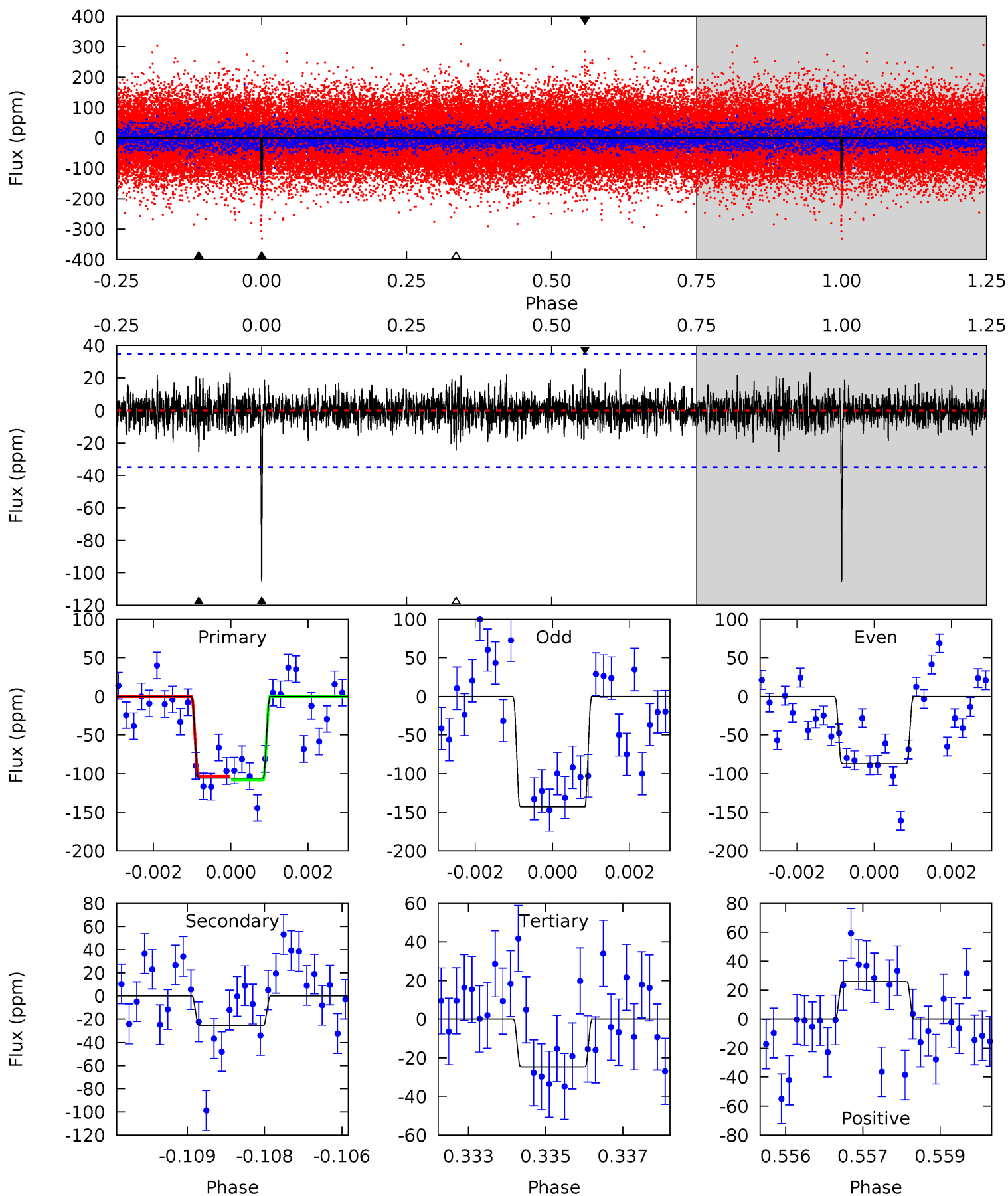
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	12.1	8.34	7.09	5.36	3.14	1.81	8.12	9.38	3.80	5.06	4.20	0.80	0.31	0.48



Alt Model-Shift Uniqueness Test

010599575-01, $P = 423.737545$ Days, $E = 10.258485$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.2	3.88	3.77	3.96	5.35	3.13	0.93	12.4	12.2	0.11	-0.09	4.06	0.81	0.20	0.36



Stellar Parameters For KIC 010599575

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6053^{+144}_{-180}	$4.494^{+0.050}_{-0.150}$	$-0.160^{+0.250}_{-0.350}$	$0.949^{+0.207}_{-0.089}$	$1.025^{+0.104}_{-0.130}$	$1.691^{+0.427}_{-0.688}$
	+2%/-3%	+1%/-3%	+156%/-219%	+22%/-9%	+10%/-13%	+25%/-41%
Source	PHO1	FLK73	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 010599575-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-84 ± 7	$1.25^{+0.29}_{-0.23}$	349^{+17}_{-16}	5332^{+591}_{-427}	35414^{+17035}_{-12156}
Alt.	-25 ± 7	$1.12^{+0.27}_{-0.26}$	350^{+19}_{-15}	4390^{+519}_{-392}	13421^{+9979}_{-5436}

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 $A_{obs} \gg 1.0$

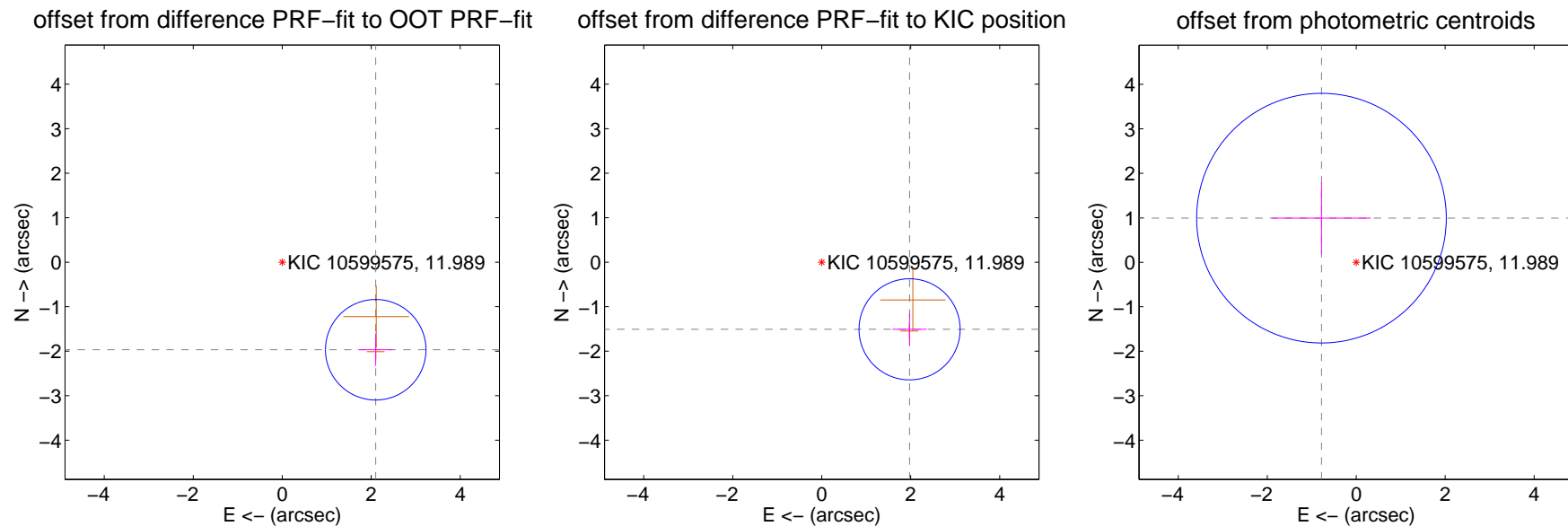
DV Centroid Data

Supplemental centroid analysis for 010599575-01. **Kepler magnitude: 11.99.** Transit SNR 9.19

There are 0 quarters with good PRF difference image offsets

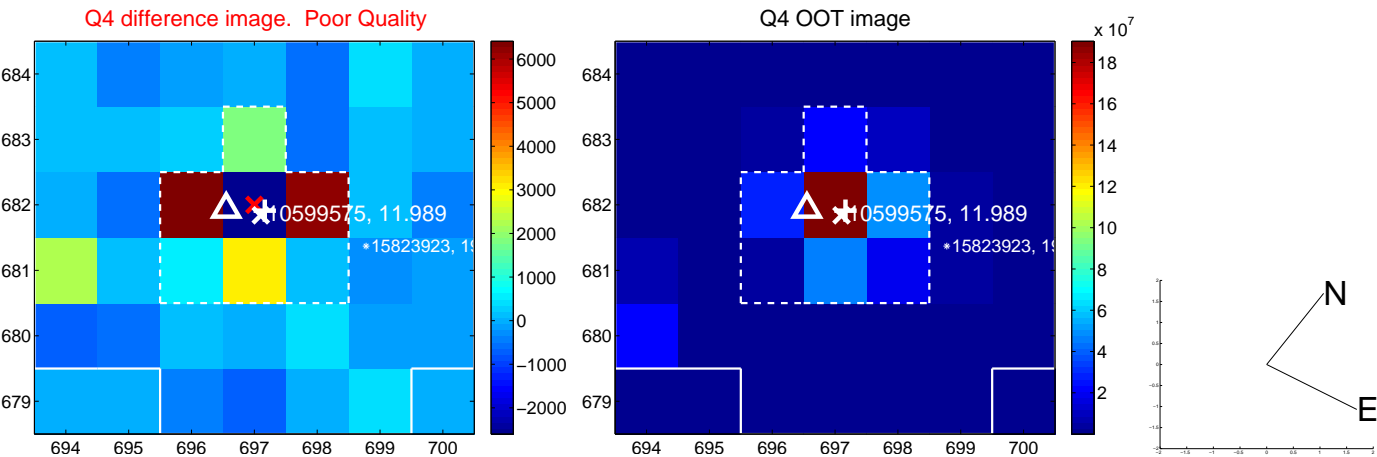
The direct PRF centroid is offset from the target star catalog position by about 0.48 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.878 ± 0.376	7.65	-2.101 ± 0.387	-1.967 ± 0.364
PRF-fit source offset from KIC position	2.484 ± 0.379	6.56	-1.974 ± 0.387	-1.508 ± 0.364
photometric centroid source offset	1.26 ± 0.94	1.35	0.78 ± 1.11	0.99 ± 0.81



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.

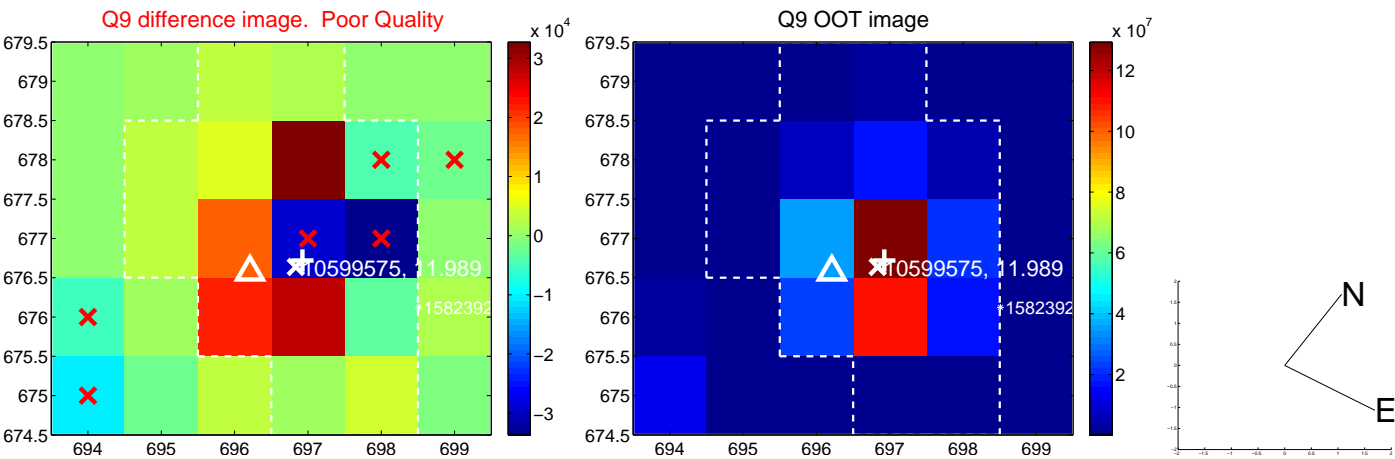
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



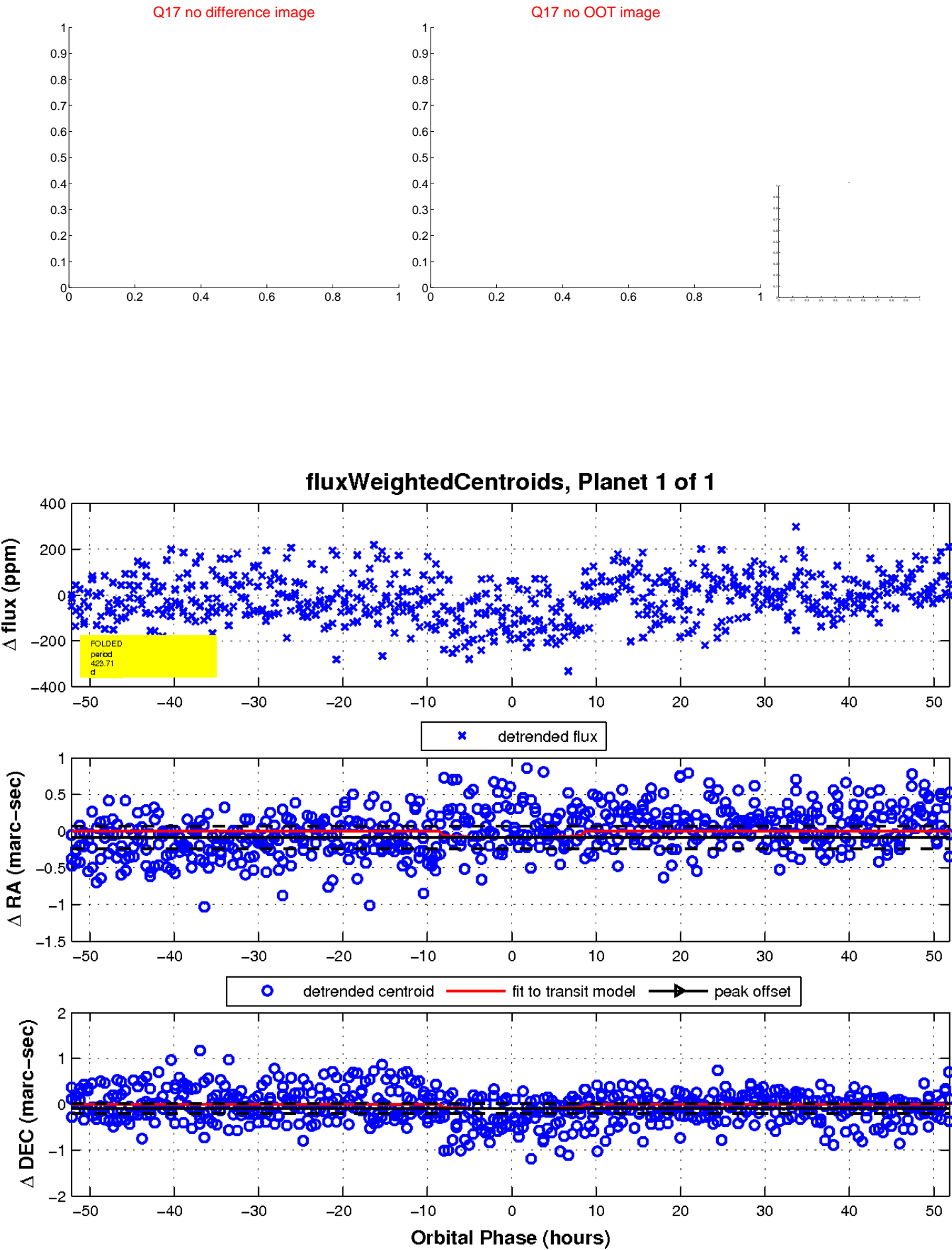
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

