

KIC 010415576

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})
010415576-01	OBS	No	79.692045	159.790920	271.1	4.154	9.0	4.7	19.27	4684	38.07	625.20

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010415576-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_SATURATED

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

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

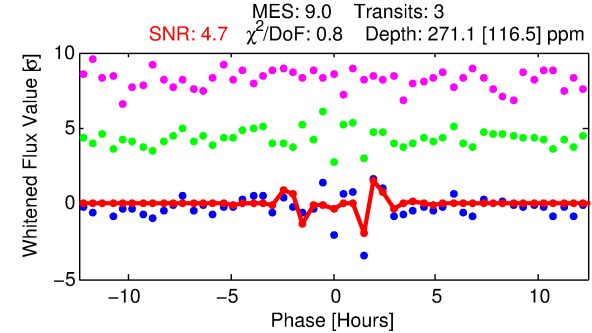
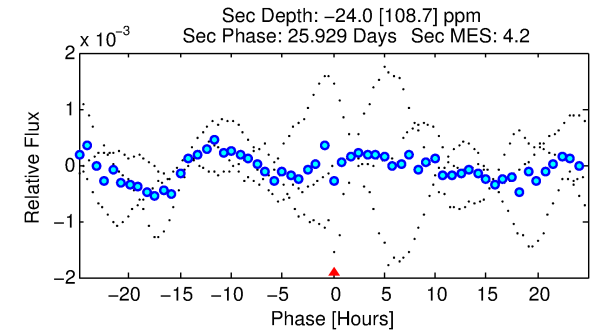
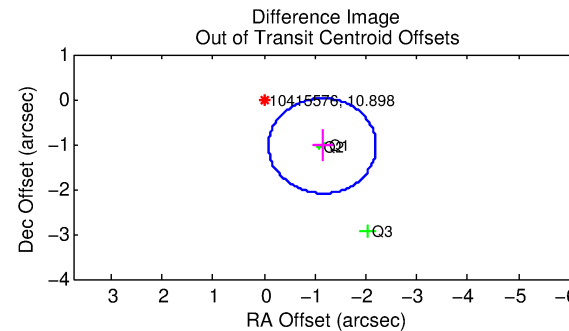
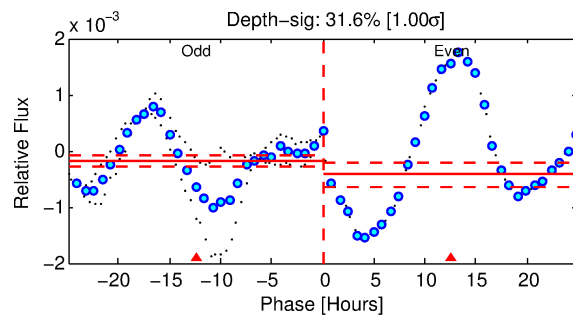
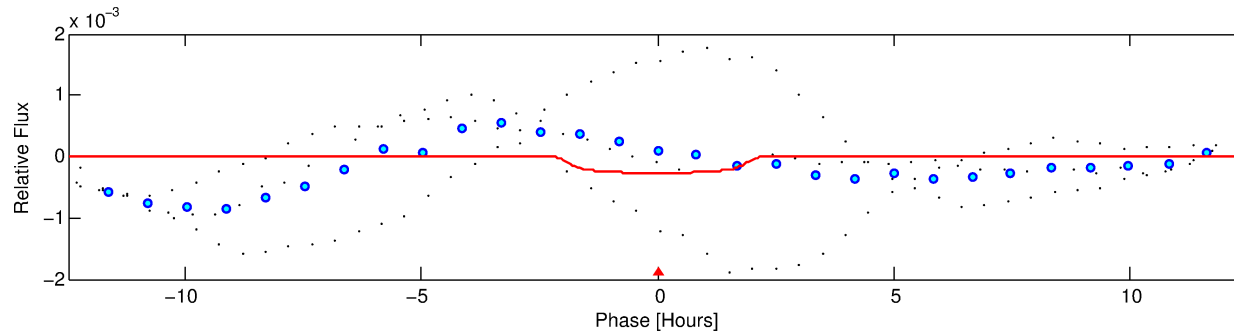
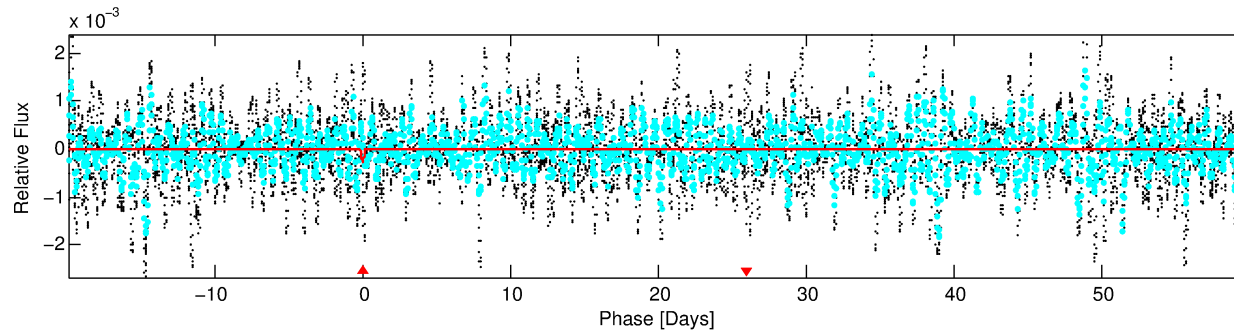
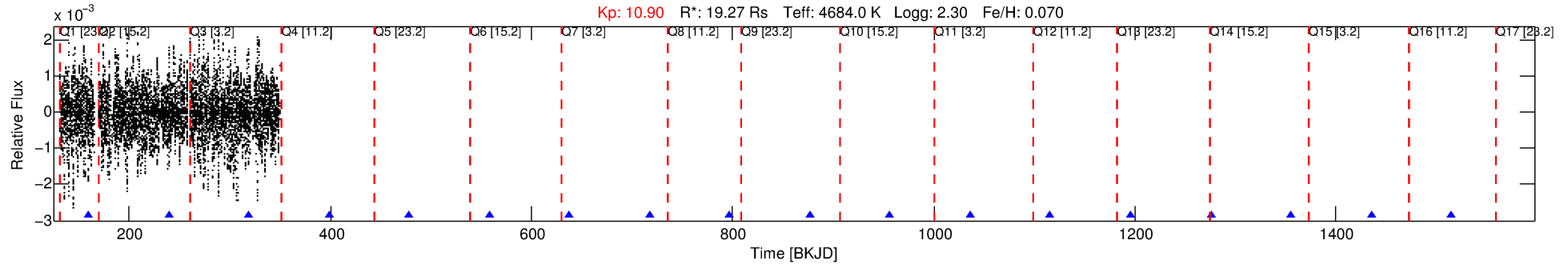
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010415576-01

No Significant Match Found

DV One-Page Summary

KIC: 10415576 Candidate: 1 of 1 Period: 79.692 d



DV Fit Results:

Period = 79.69205 [0.00195] d
Epoch = 159.7909 [0.0021] BKJD
Rp/R* = 0.0181 [0.0146]
a/R* = 75.27 [271.94]
b = 0.88 [0.95]
Seff = 625.20 [478.04]
Teq = 1275 [244] K
Rp = 38.07 [37.29] Re
a = 0.5060 [0.2515] AU
Ag = N/A
Teffp = N/A

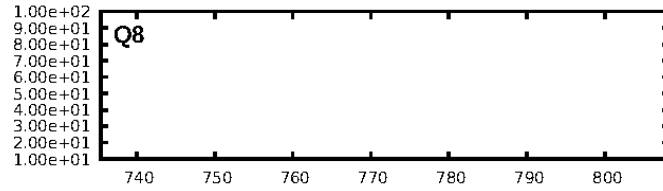
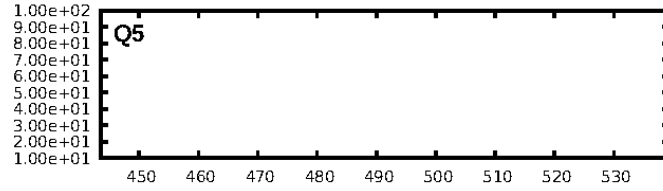
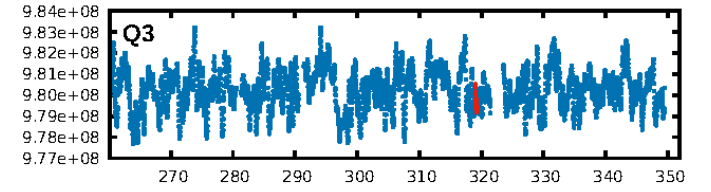
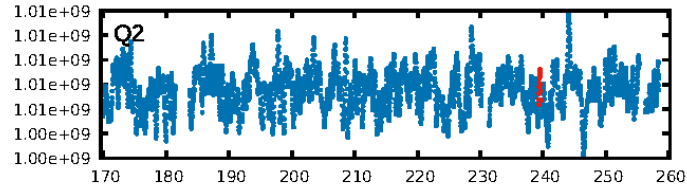
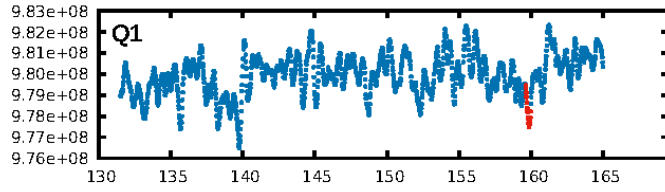
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 36.5%
ModelChiSquareGof-sig: 93.0%
Bootstrap-pfa: 2.77e-17
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 9.321
Centroid-sig: 0.4%
Centroid-so: 3.016 arcsec [1.66 σ]
OotOffset-rm: 1.546 arcsec [4.39 σ]
KicOffset-rm: 1.859 arcsec [6.19 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

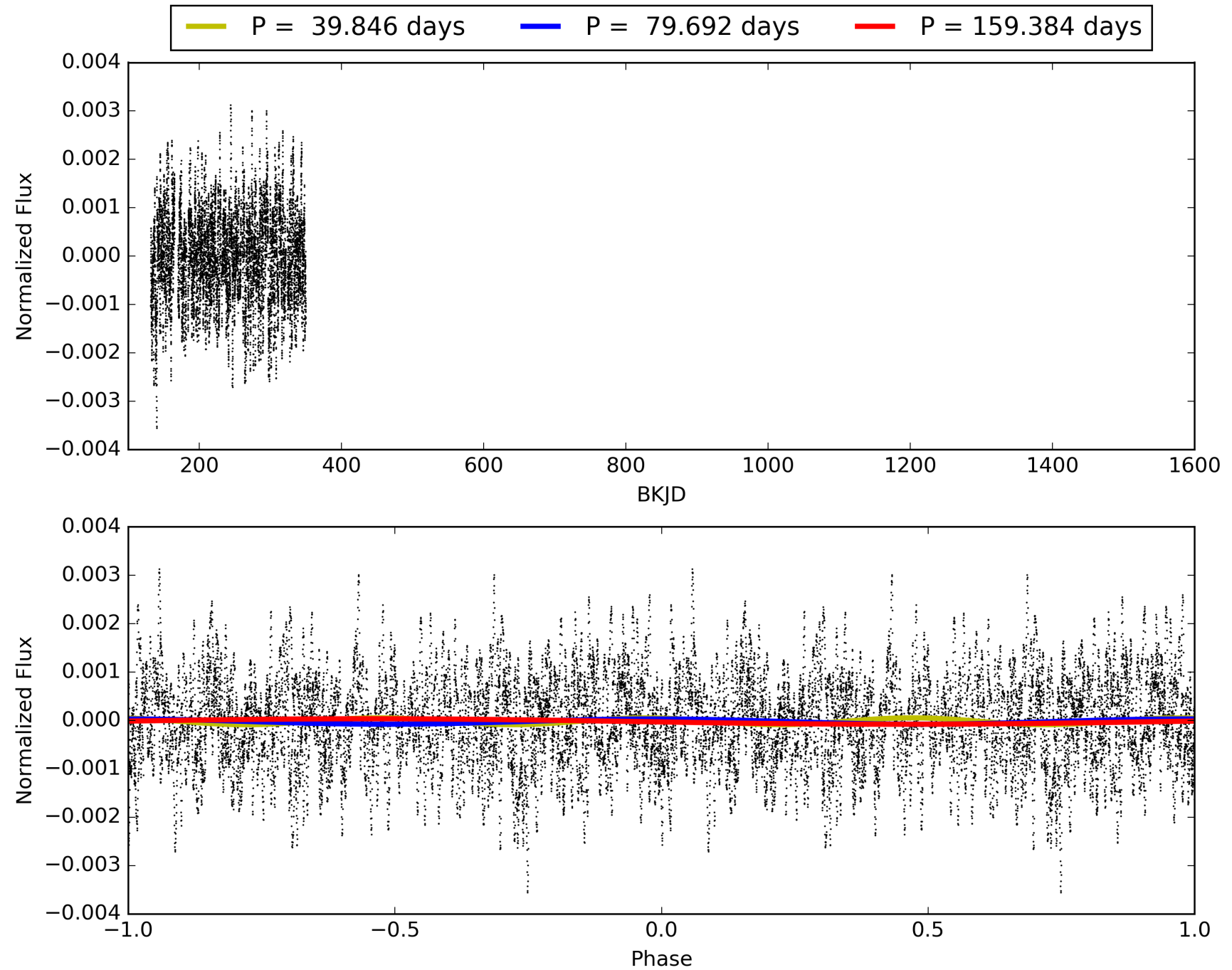
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:27:44 Z

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

TCE 010415576-01, PDC Light Curves

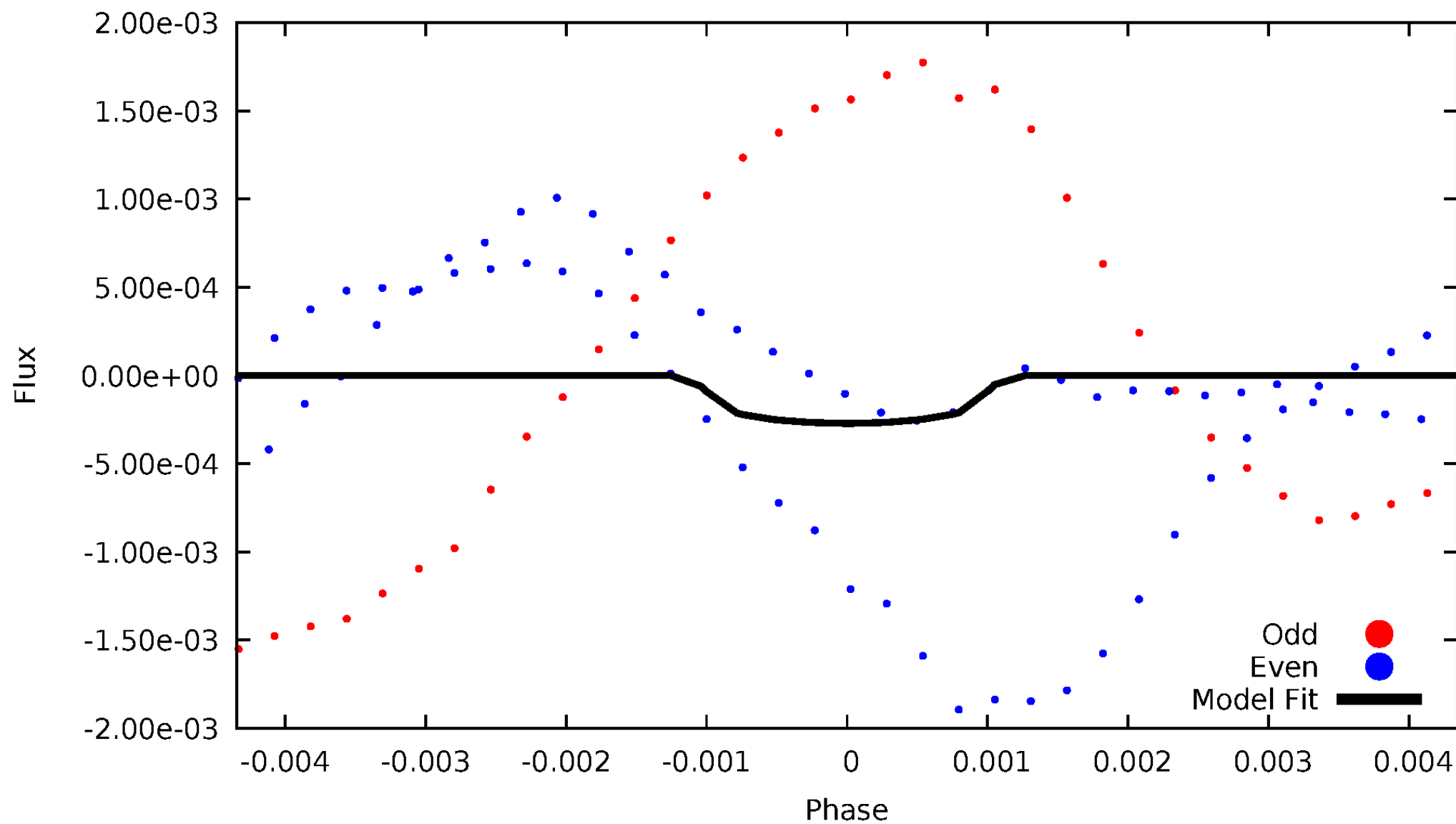


TCE 010415576-01



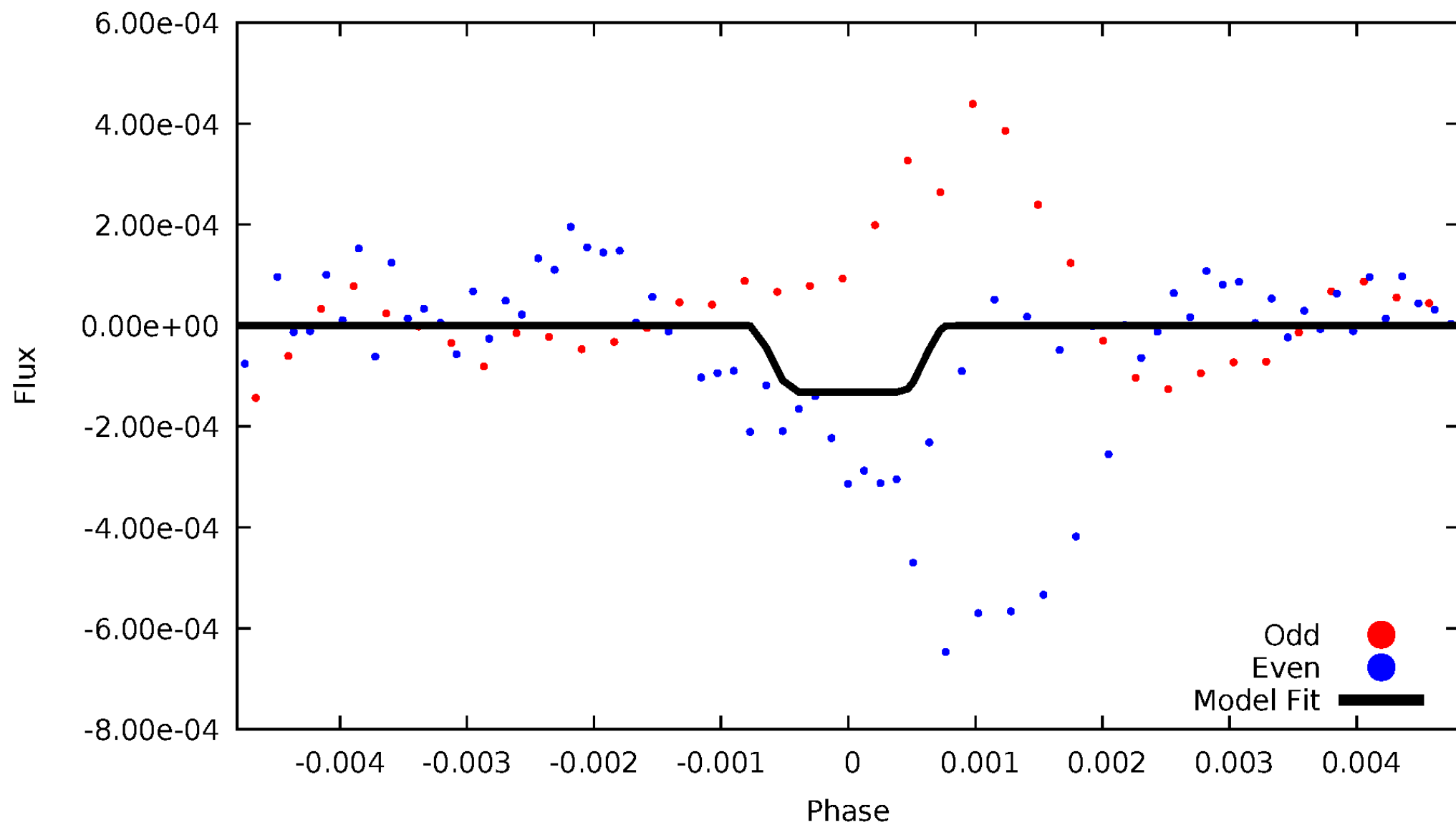
DV Odd/Even

TCE 010415576-01



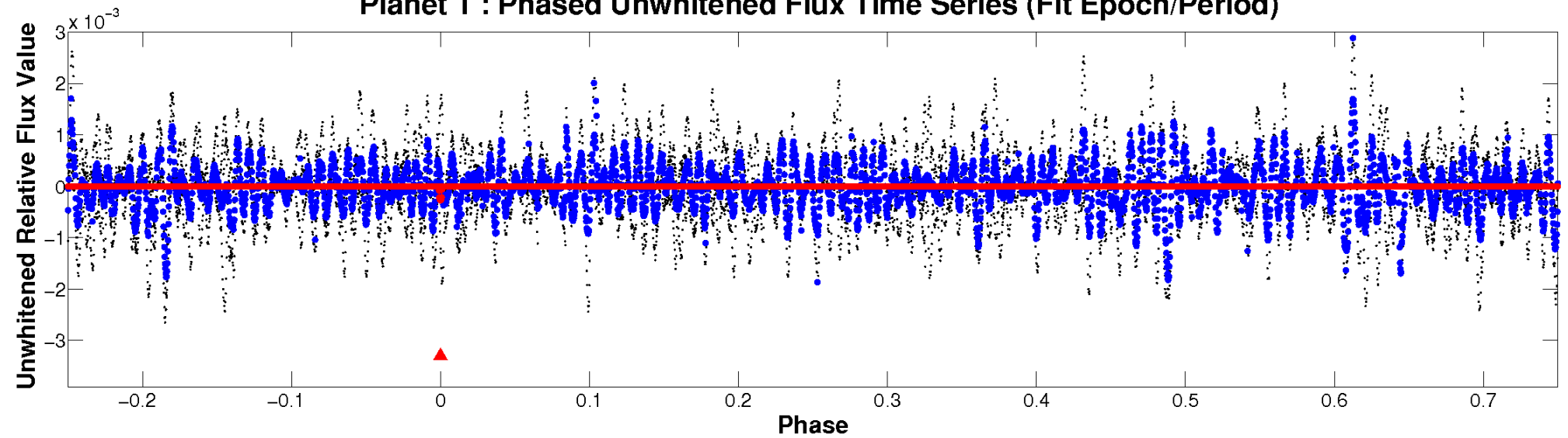
ALT Odd/Even

TCE 010415576-01

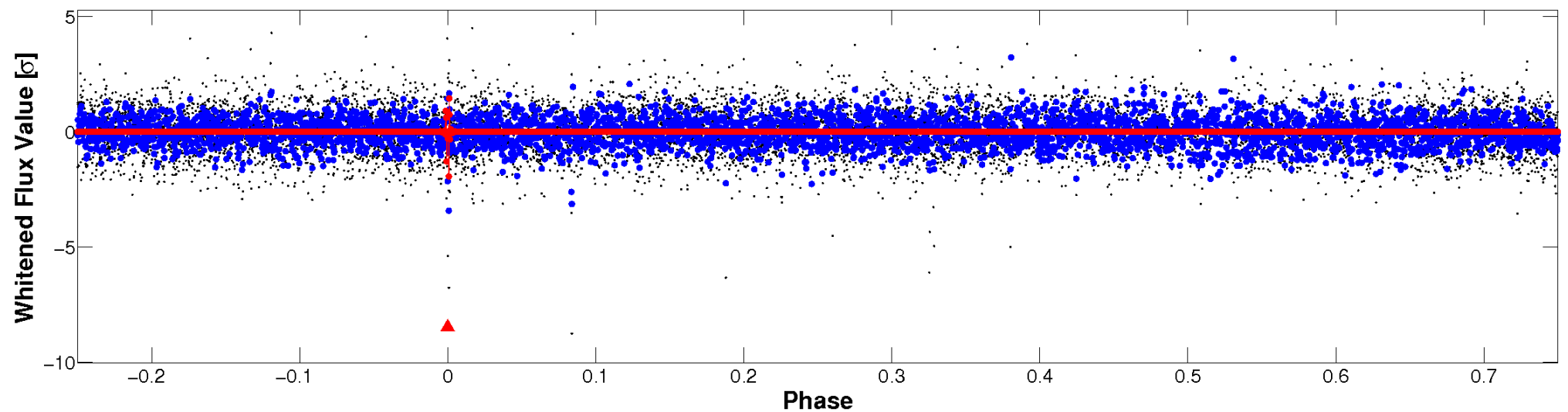


Non-Whitened Vs. Whitened Light Curve

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

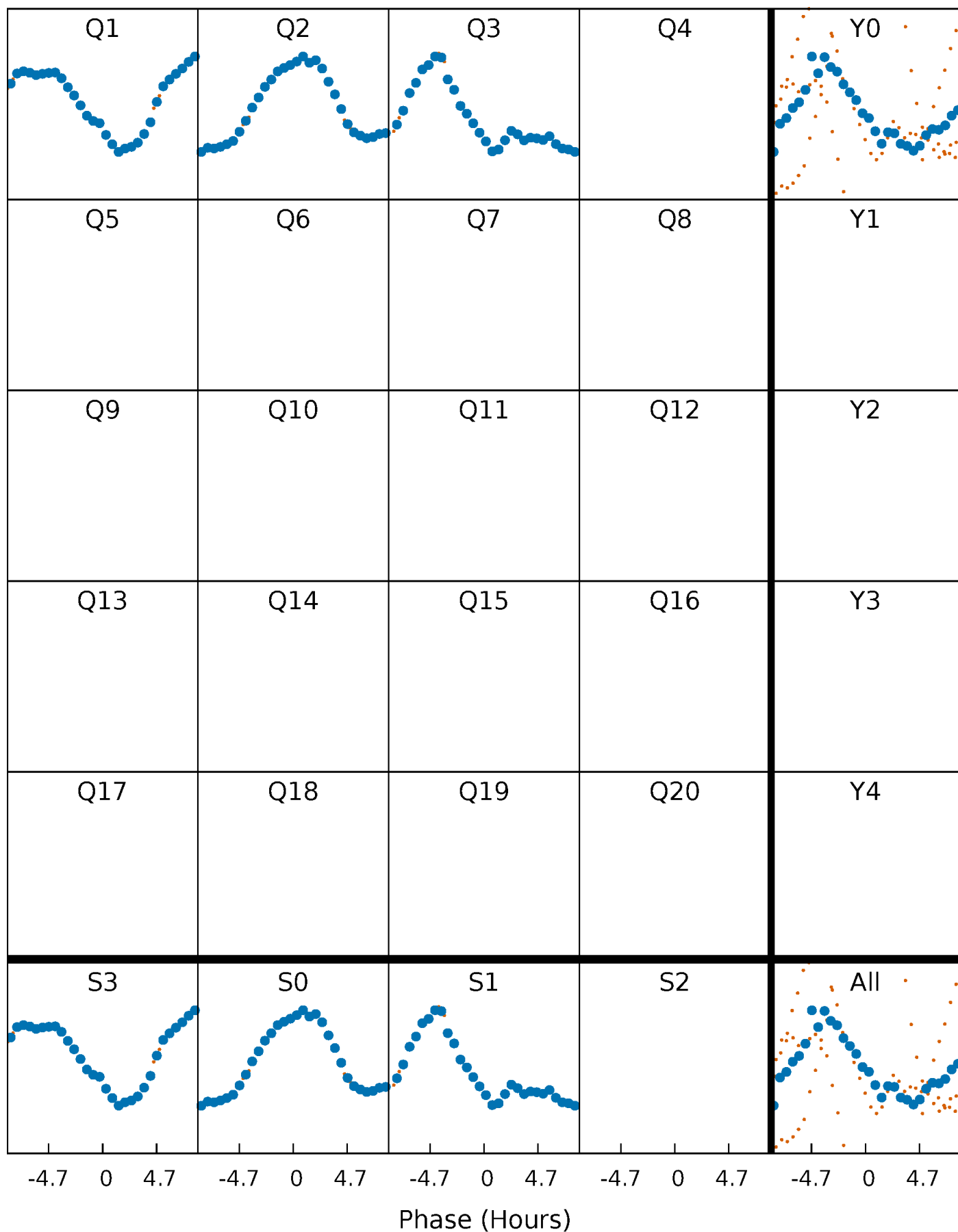


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



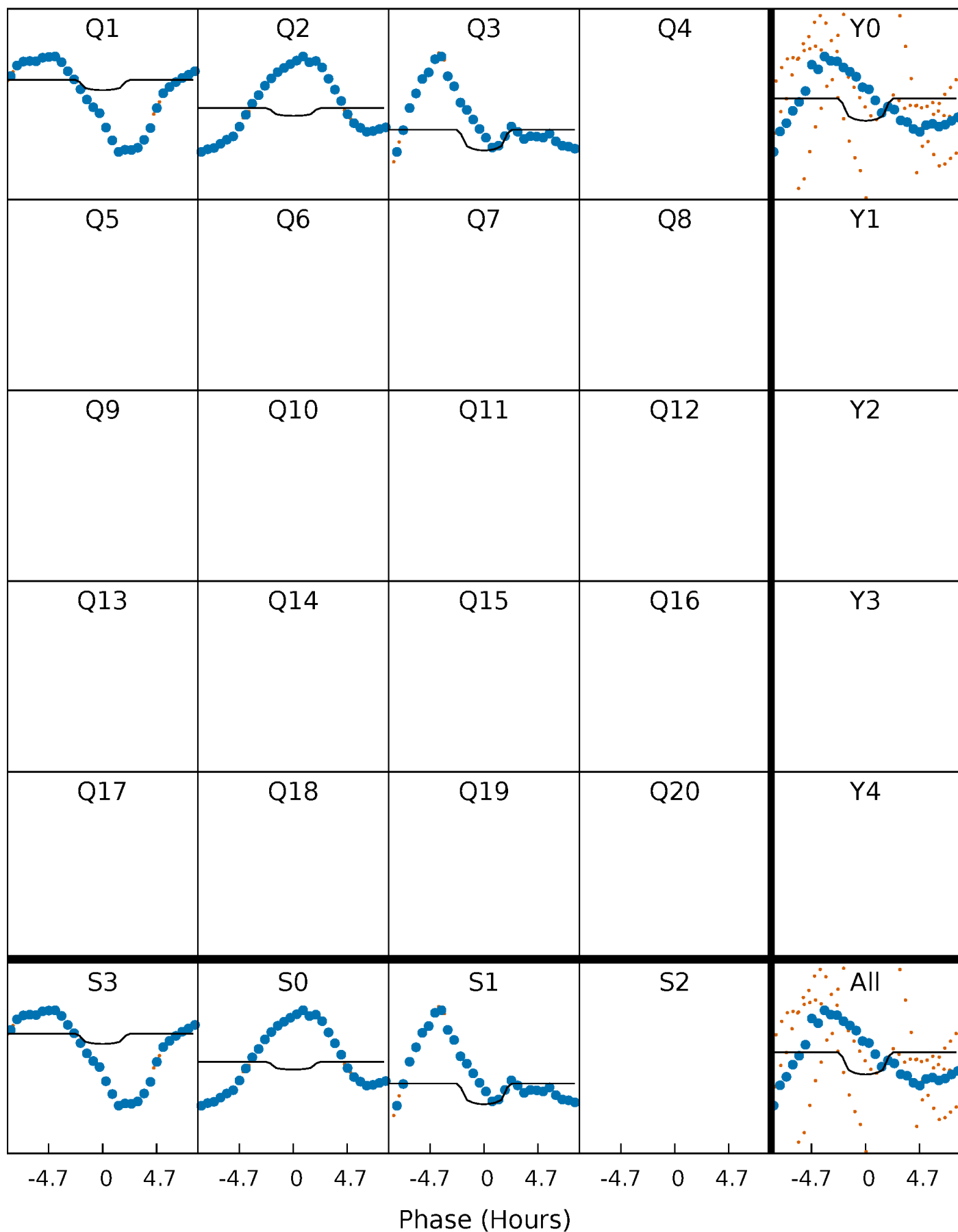
PDC Quarter-Phased Transit Curves

TCE 010415576-01 P= 79.692045 Days $T_0=159.790920$ (BKJD)



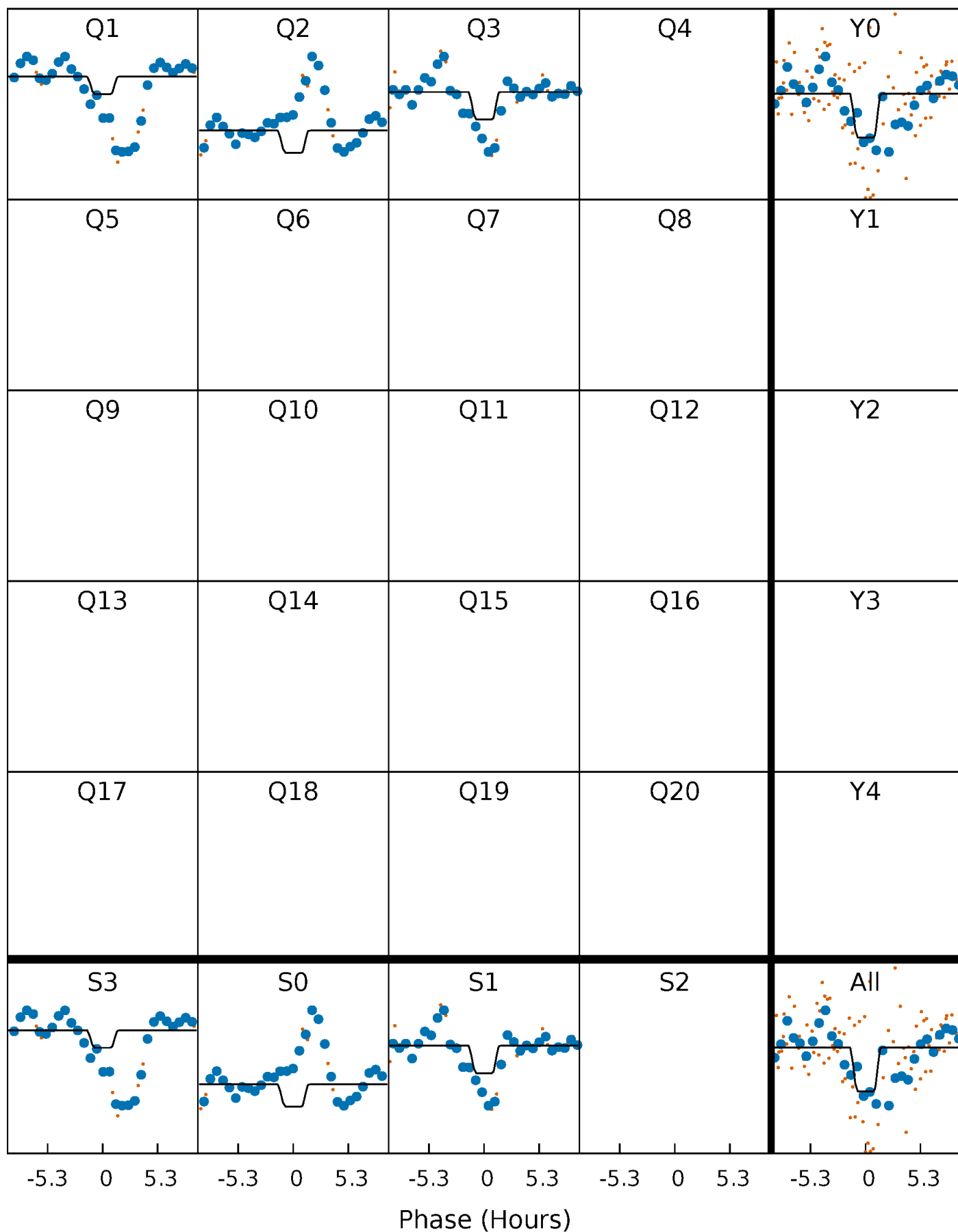
DV Quarter-Phased Transit Curves

TCE 010415576-01 P= 79.692045 Days $T_0=159.790920$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

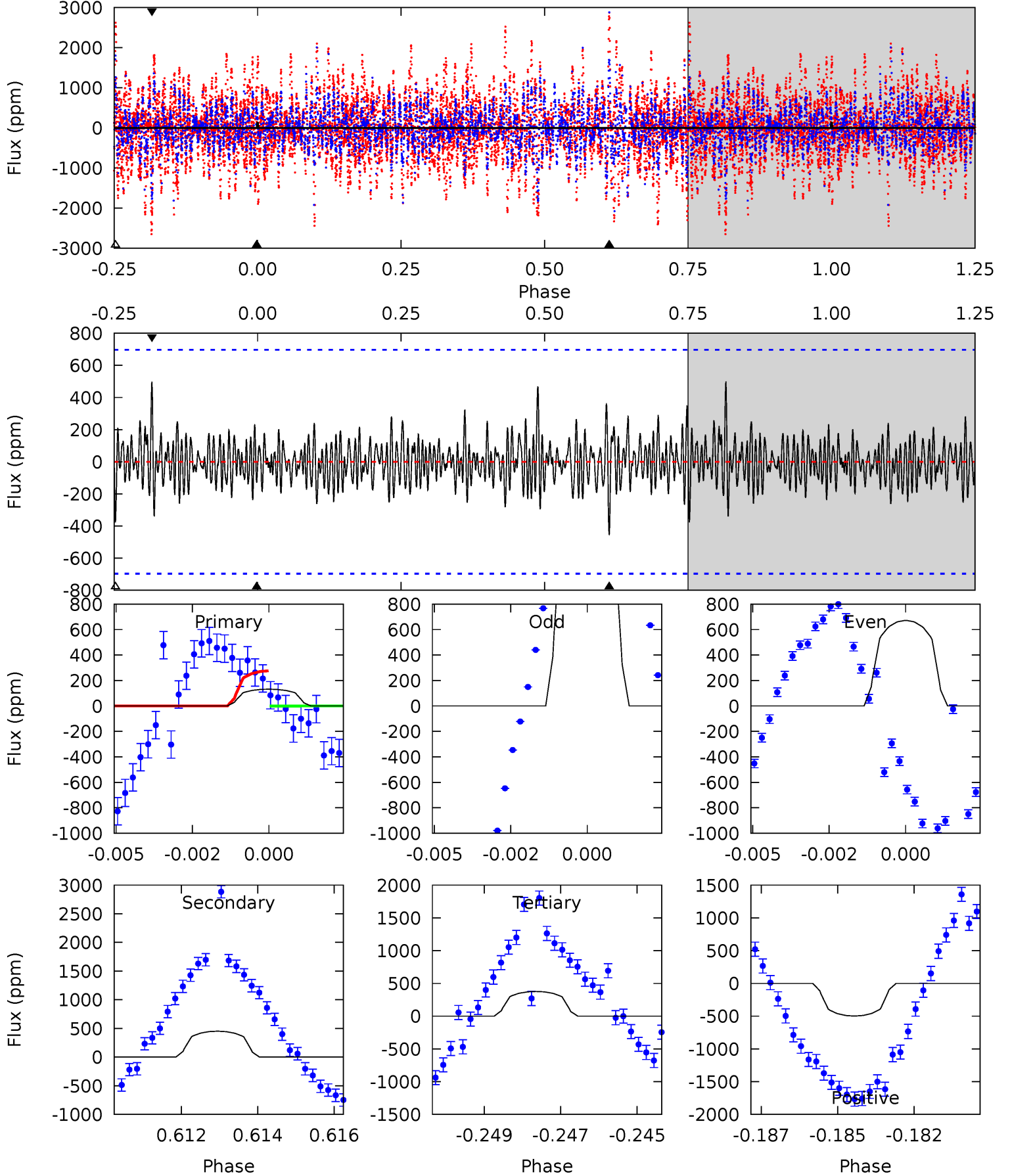
TCE 010415576-01 P= 79.695508 Days $T_0=159.793307$ (BKJD)



DV Model-Shift Uniqueness Test

010415576-01, P = 79.692045 Days, E = 80.098875 Days

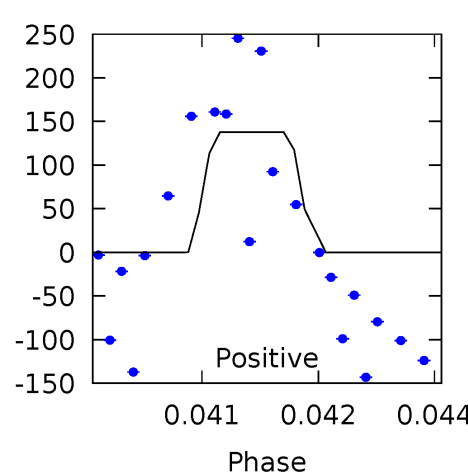
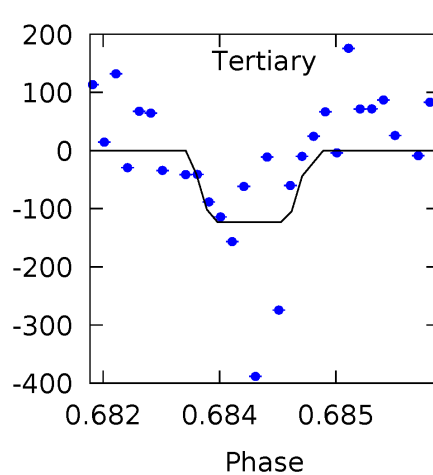
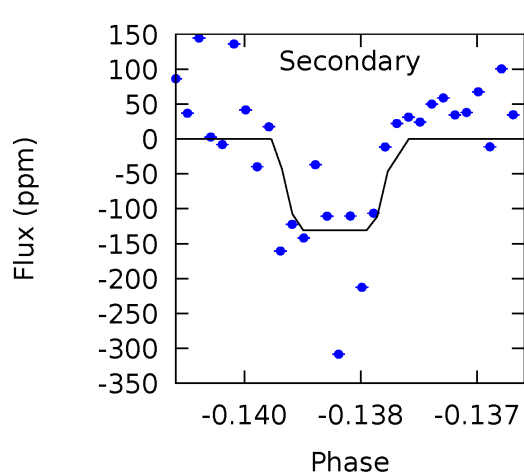
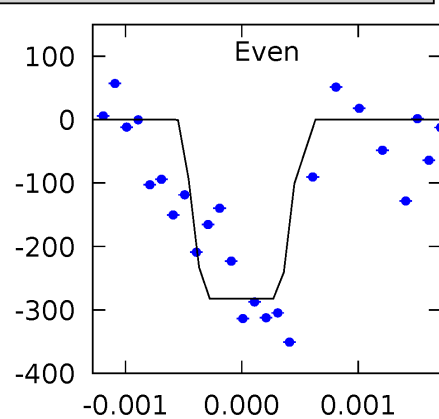
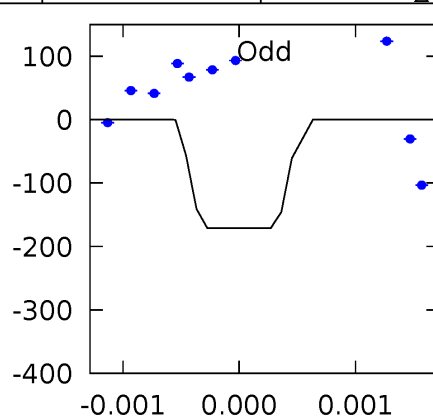
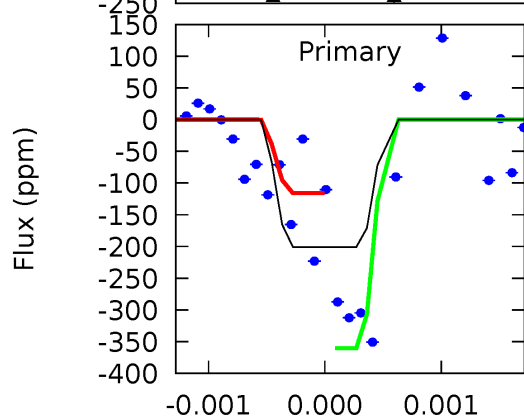
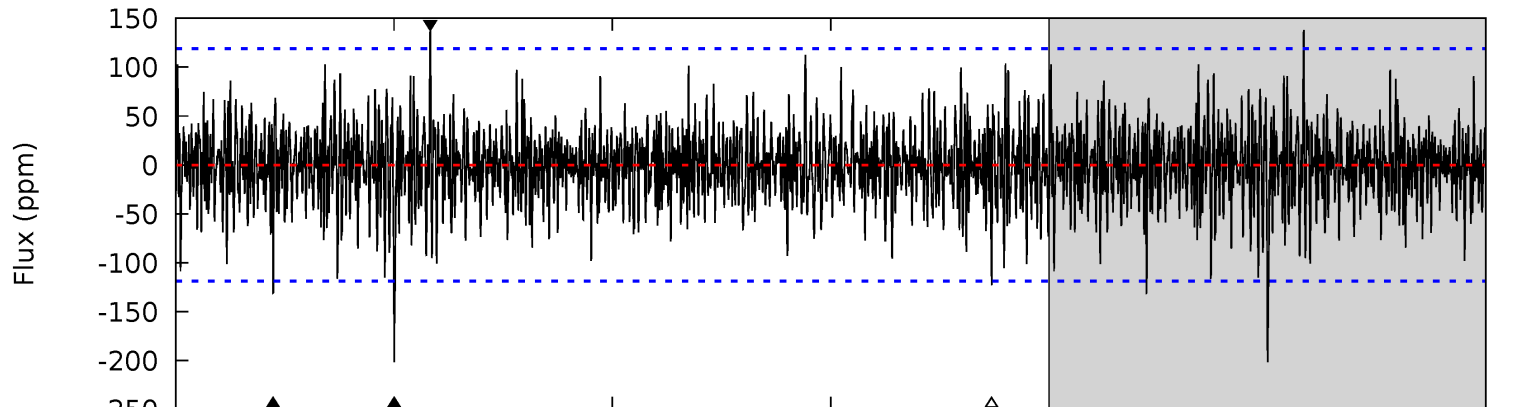
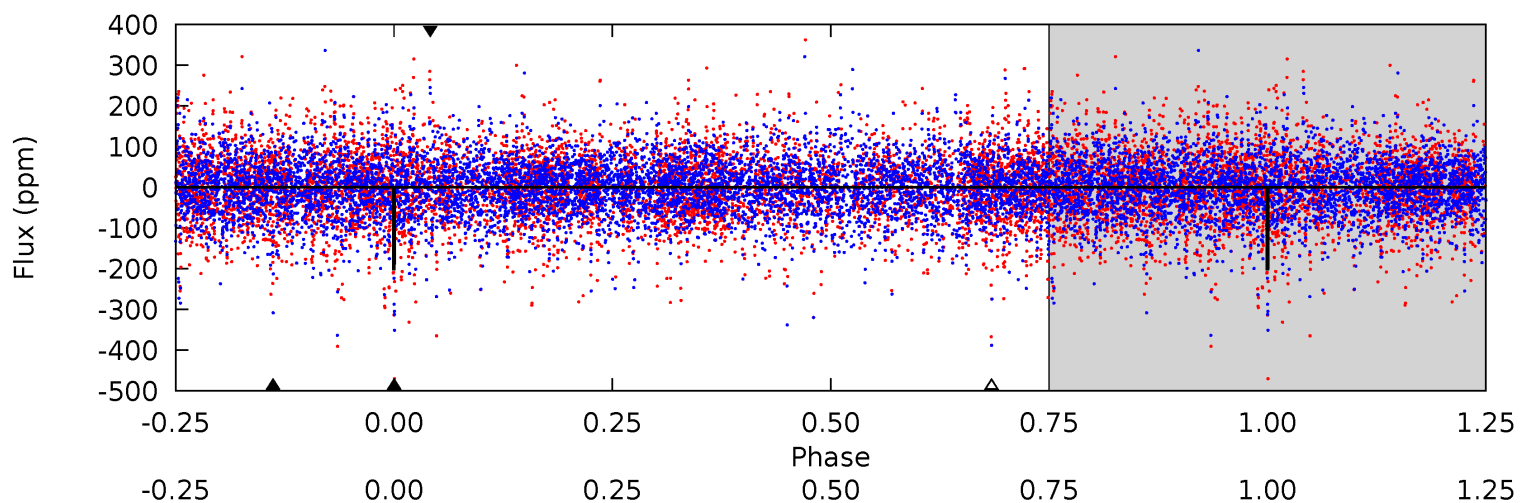
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.00	3.44	2.87	3.79	5.30	3.05	0.89	-1.86	-2.79	0.57	-0.36	3.97	-2.45	0.52	1.05



Alt Model-Shift Uniqueness Test

010415576-01, P = 79.695508 Days, E = 80.097799 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.10	5.93	5.58	6.25	5.39	3.19	1.53	3.53	2.85	0.35	-0.33	2.78	0.51	0.41	5.46



Stellar Parameters For KIC 010415576

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4684^{+92}_{-138}	$2.303^{+0.428}_{-0.143}$	$0.070^{+0.200}_{-0.300}$	$19.267^{+2.874}_{-10.779}$	$2.720^{+0.520}_{-1.561}$	$0.001^{+0.003}_{-0.000}$
	+2%/-3%	+19%/-6%	+286%/-429%	+15%/-56%	+19%/-57%	+494%/-36%
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 010415576-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-452 ± 131	$38.61^{+28.47}_{-22.81}$	1764^{+101}_{-206}	4793^{+2388}_{-919}	45^{+201}_{-32}
Alt.	-131 ± 22	$29.12^{+28.80}_{-17.90}$	1755^{+105}_{-191}	4122^{+2261}_{-766}	21^{+121}_{-15}

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

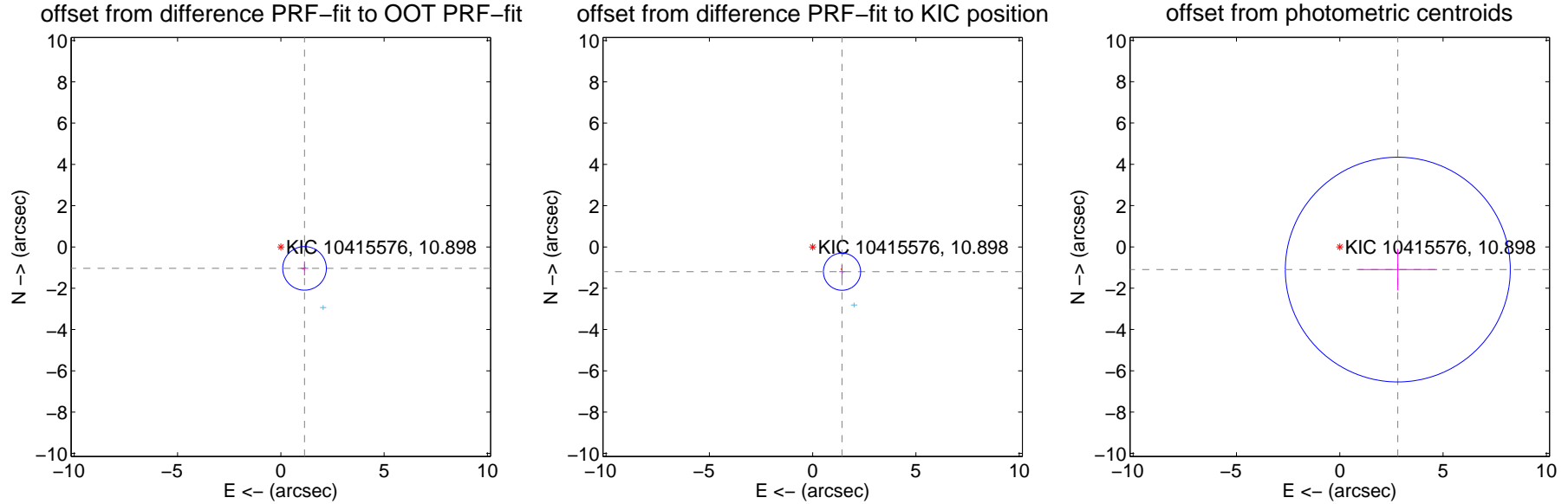
DV Centroid Data

Supplemental centroid analysis for 010415576-01. **Kepler magnitude: 10.90.** Transit SNR 4.66

There are 2 quarters with good PRF difference image offsets

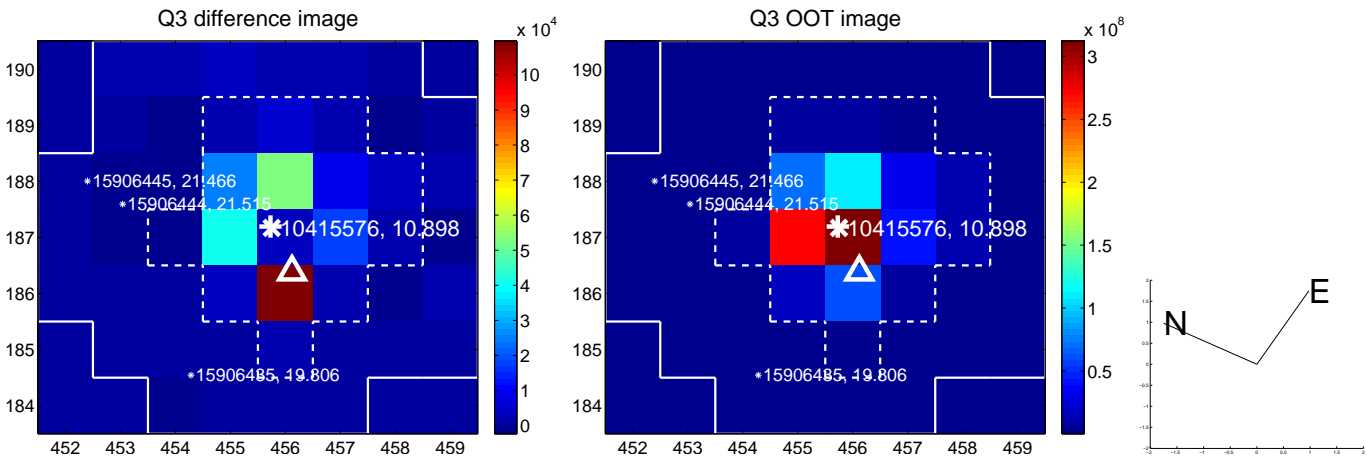
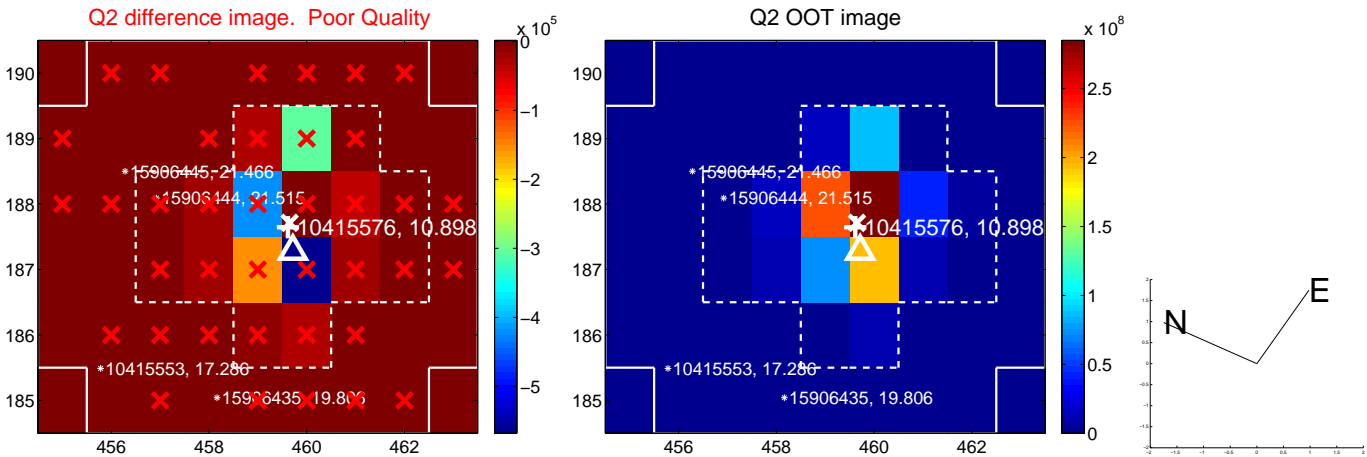
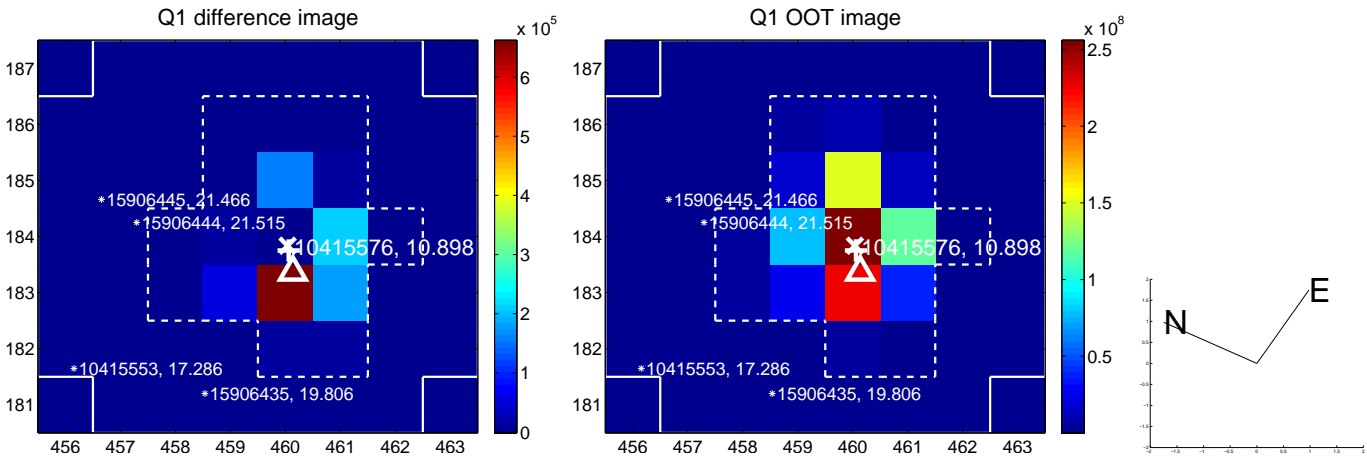
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.546 ± 0.352	4.39	-1.147 ± 0.182	-1.037 ± 0.337
PRF-fit source offset from KIC position	1.859 ± 0.300	6.19	-1.421 ± 0.132	-1.199 ± 0.326
photometric centroid source offset	3.02 ± 1.81	1.66	-2.81 ± 1.91	-1.10 ± 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.



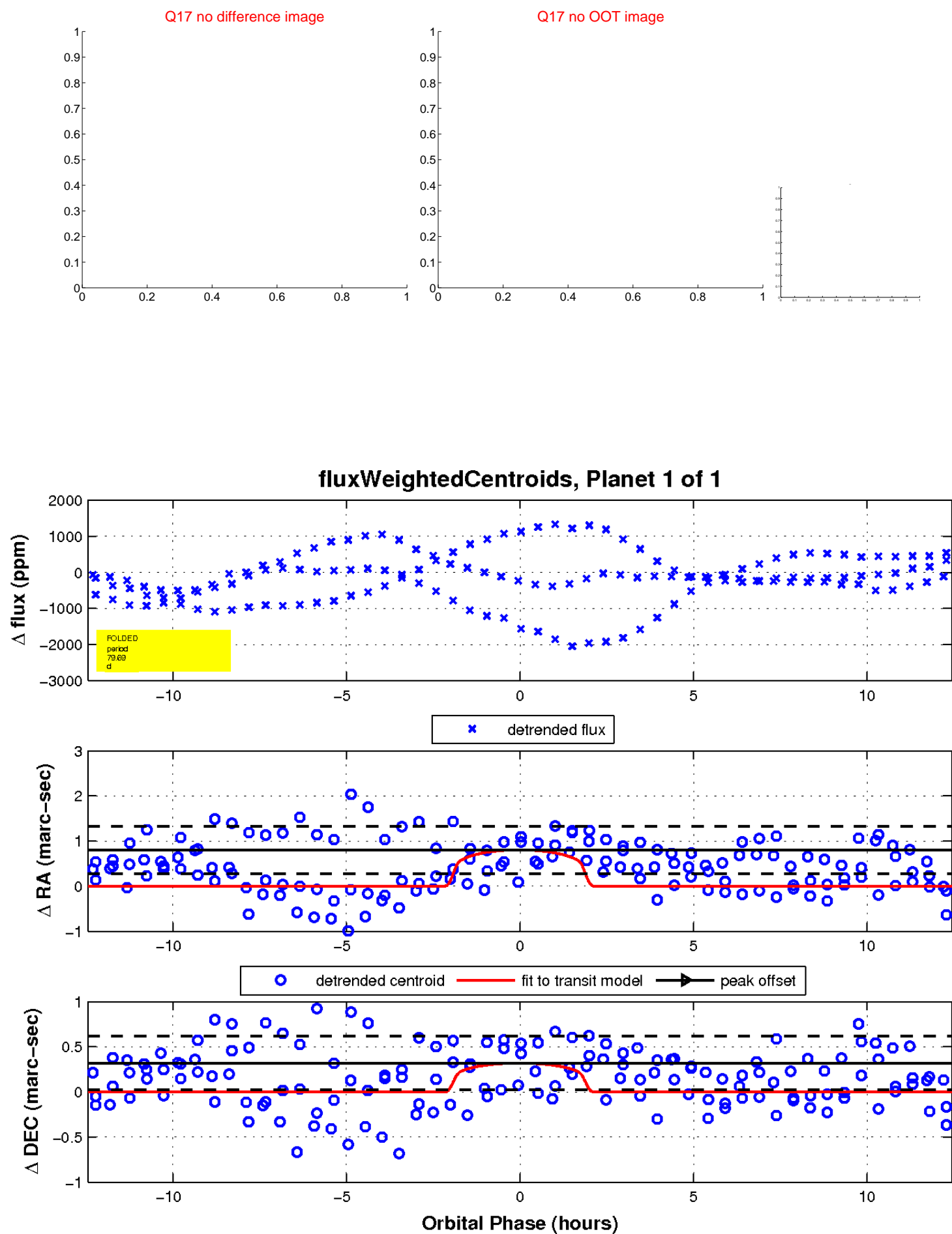
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

