

KIC 008957023

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})
008957023-01	OBS	No	652.509340	161.778335	352.3	6.061	8.4	7.8	0.57	3716	1.26	0.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008957023-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—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.

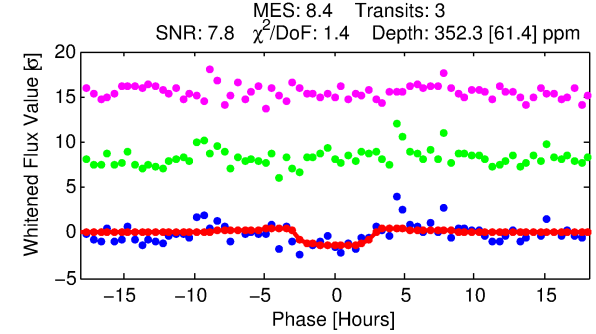
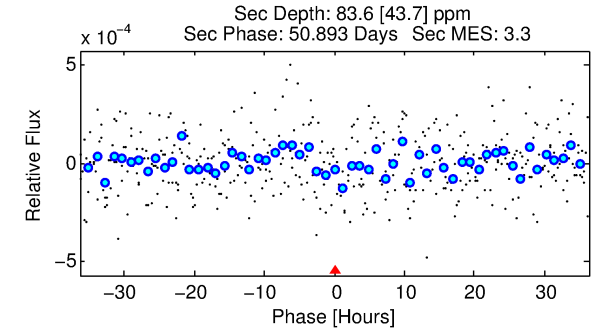
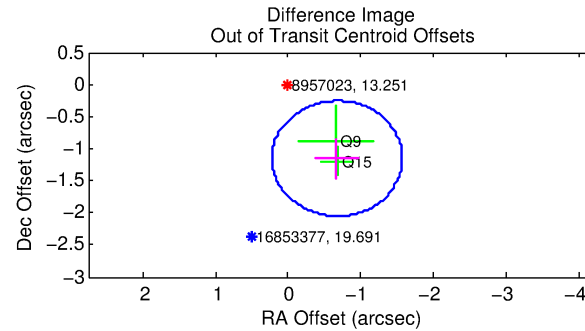
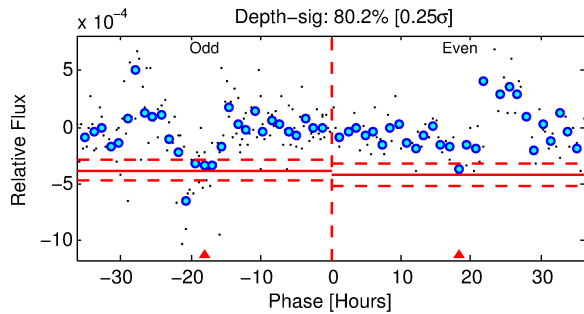
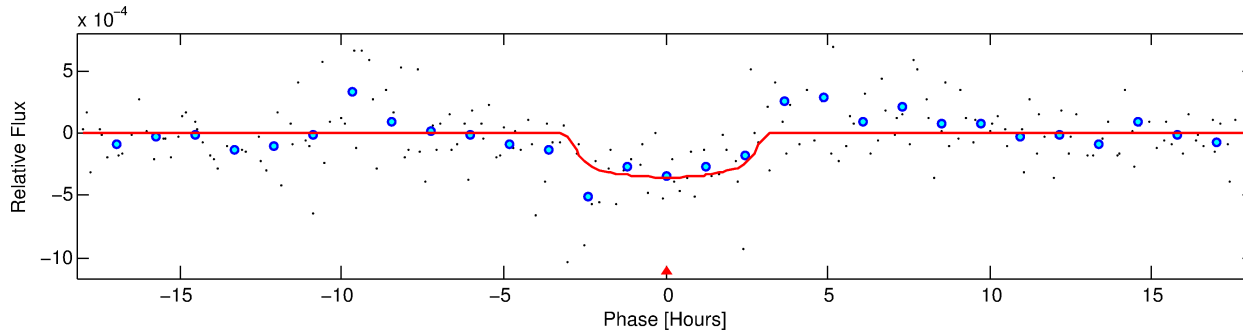
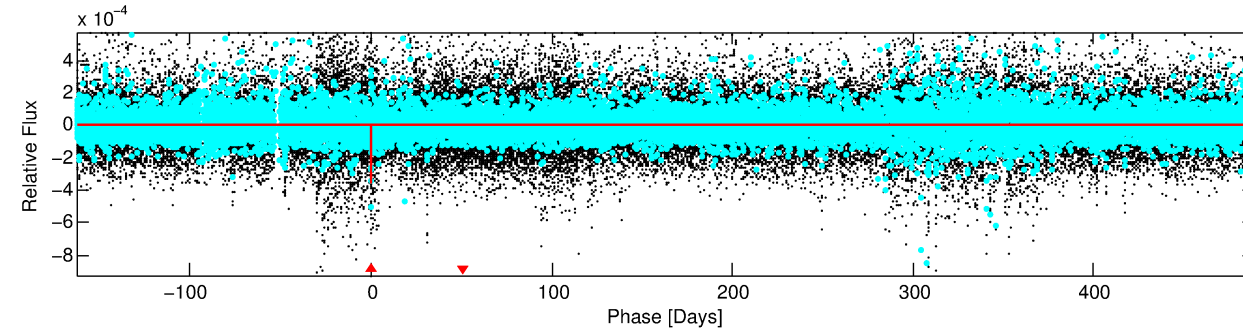
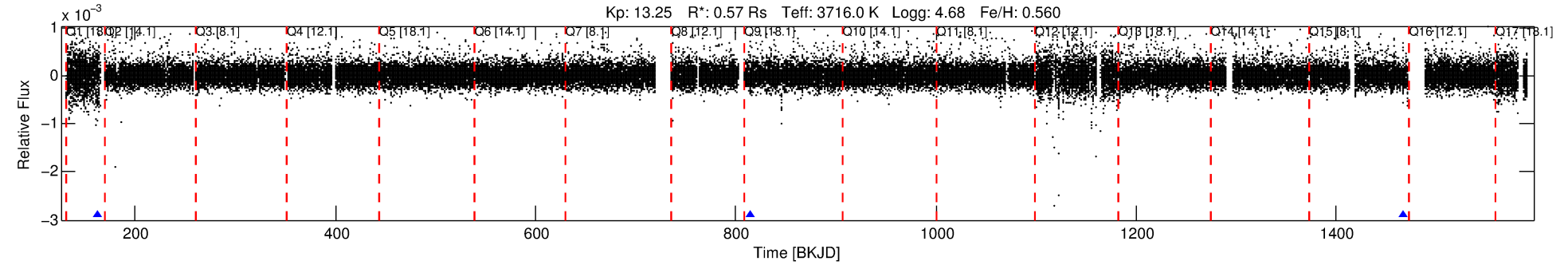
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008957023-01

No Significant Match Found

DV One-Page Summary

KIC: 8957023 Candidate: 1 of 1 Period: 652.509 d



DV Fit Results:

Period = 652.50934 [0.01183] d
Epoch = 161.7783 [0.0188] BKJD
Rp/R* = 0.0201 [0.0149]
a/R* = 457.64 [1251.33]
b = 0.86 [0.87]
Seff = 0.04 [0.01]
Teq = 112 [6] K
Rp = 1.26 [0.95] Re
a = 1.2228 [0.1277] AU
Ag = 43574.17 [68778.38] [0.63 σ]
Teffp = 2505 [989] K [2.42 σ]

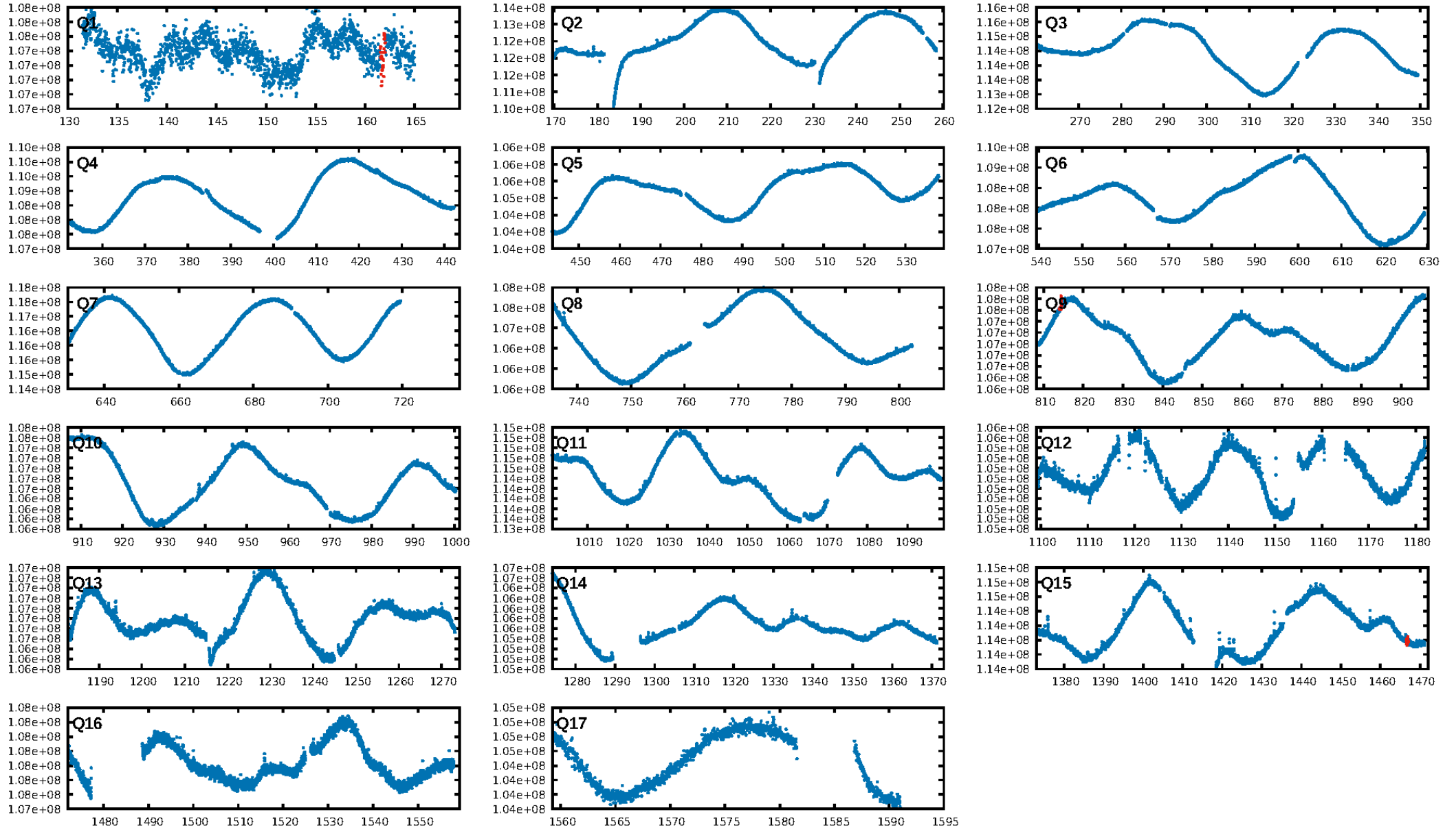
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 56.4%
ModelChiSquareGoF-sig: 94.0%
Bootstrap-pfa: 2.39e-08
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.8549
Centroid-sig: 0.5%
Centroid-so: 0.284 arcsec [0.29 σ]
OotOffset-rm: 1.336 arcsec [4.46 σ]
KicOffset-rm: 1.049 arcsec [3.47 σ]
OotOffset-st: 0/1/0/1 [2]
KicOffset-st: 0/1/0/1 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

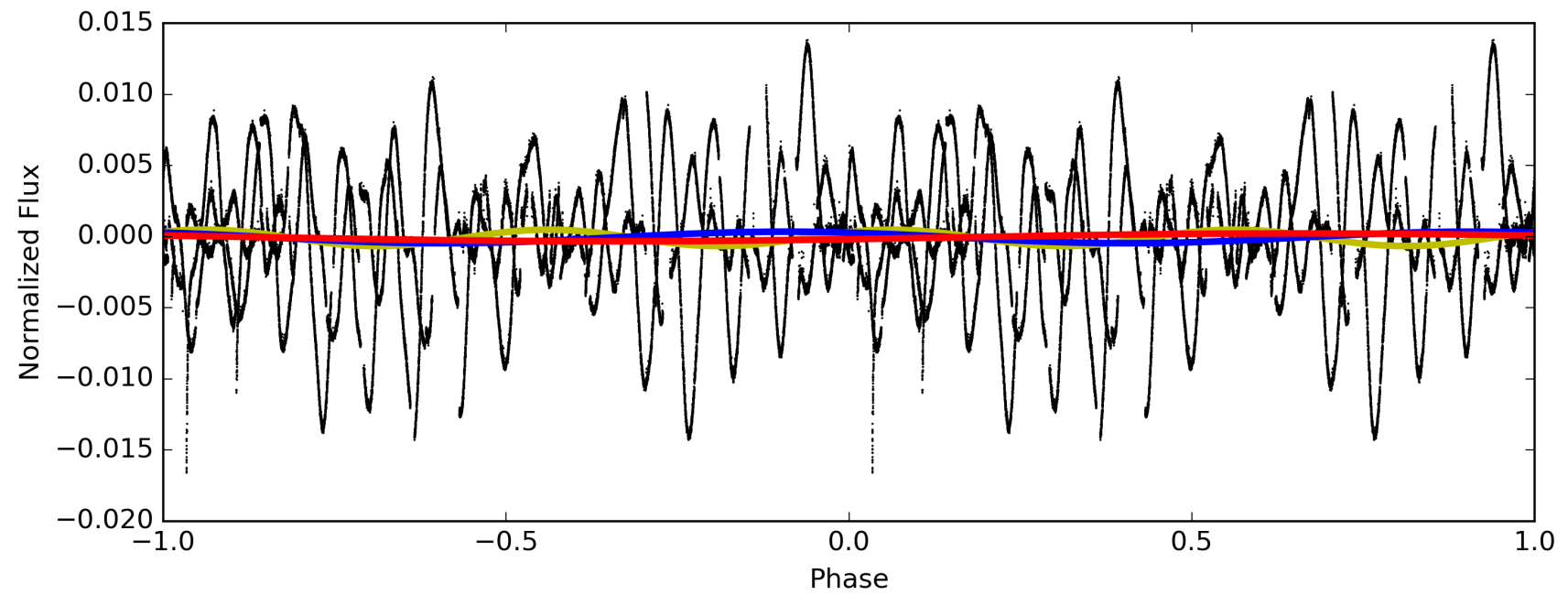
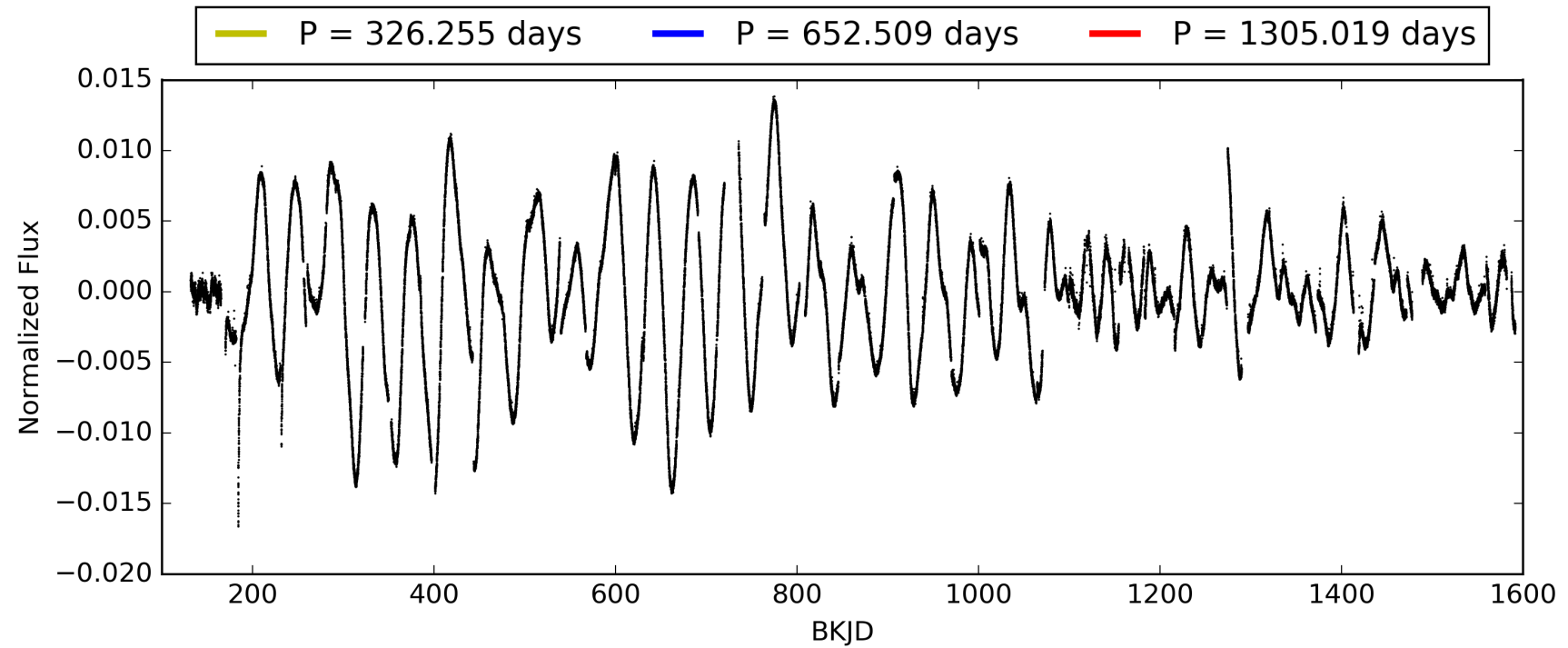
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:30:01 Z

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

TCE 008957023-01, PDC Light Curves

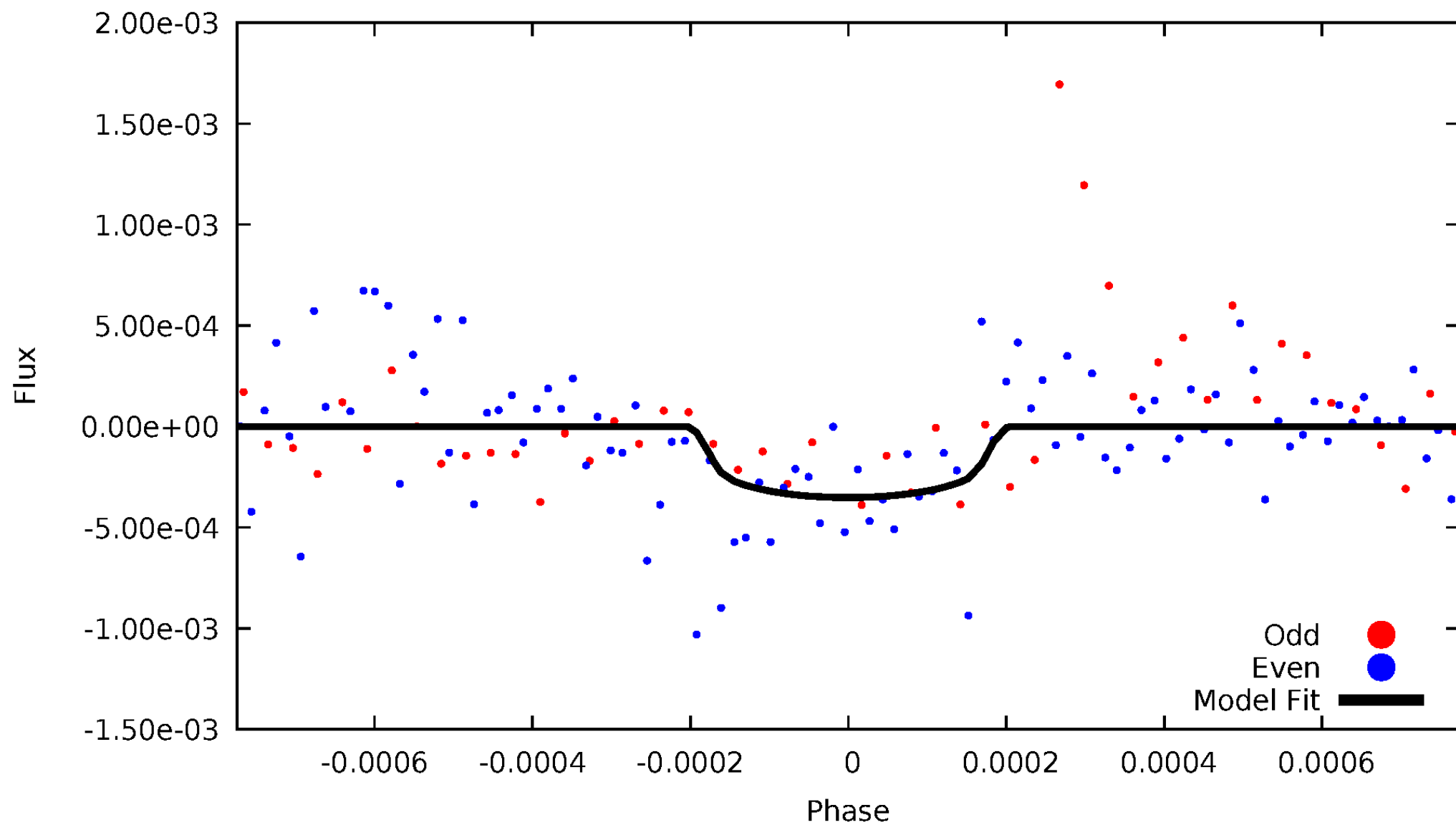


TCE 008957023-01



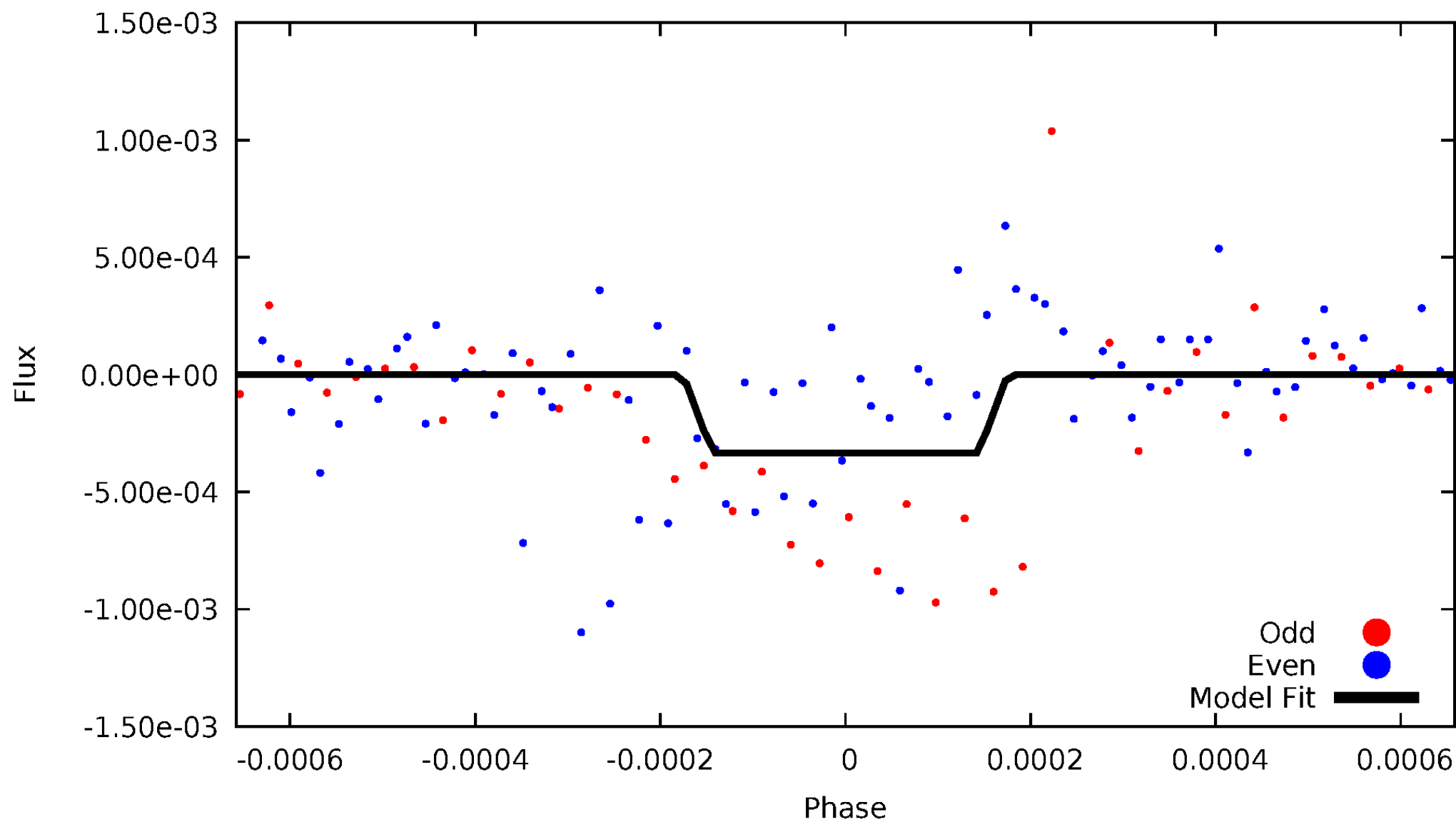
DV Odd/Even

TCE 008957023-01



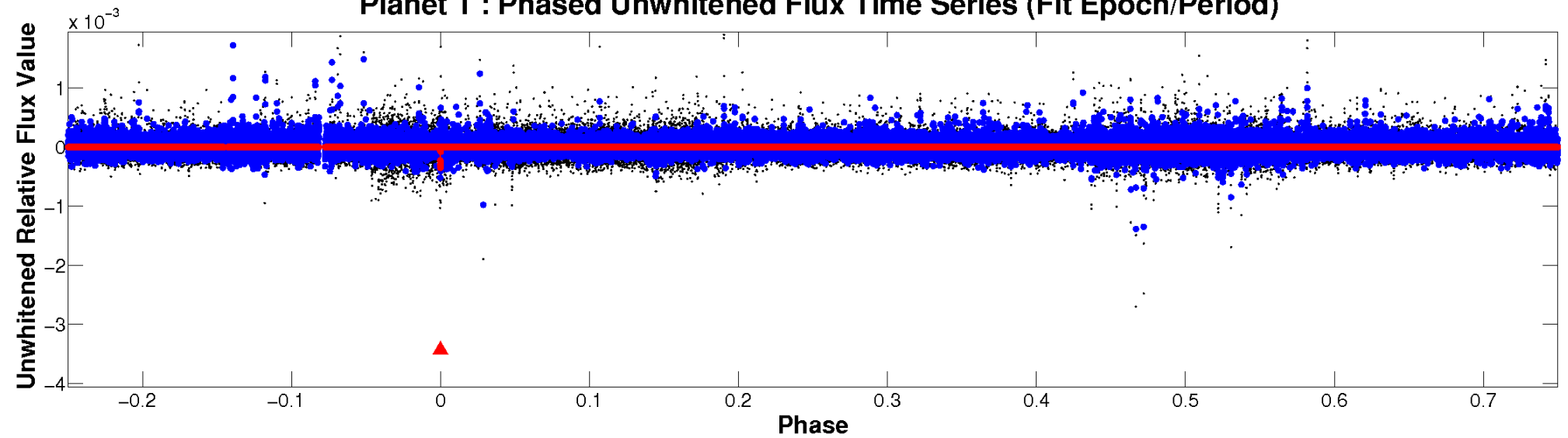
ALT Odd/Even

TCE 008957023-01

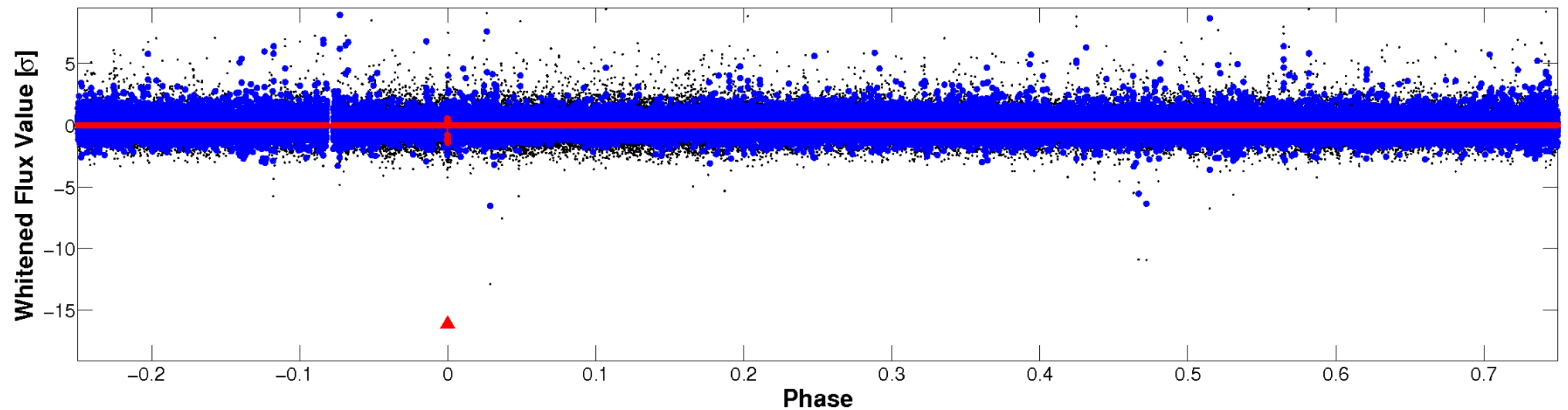


Non-Whitened Vs. Whitened Light Curve

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

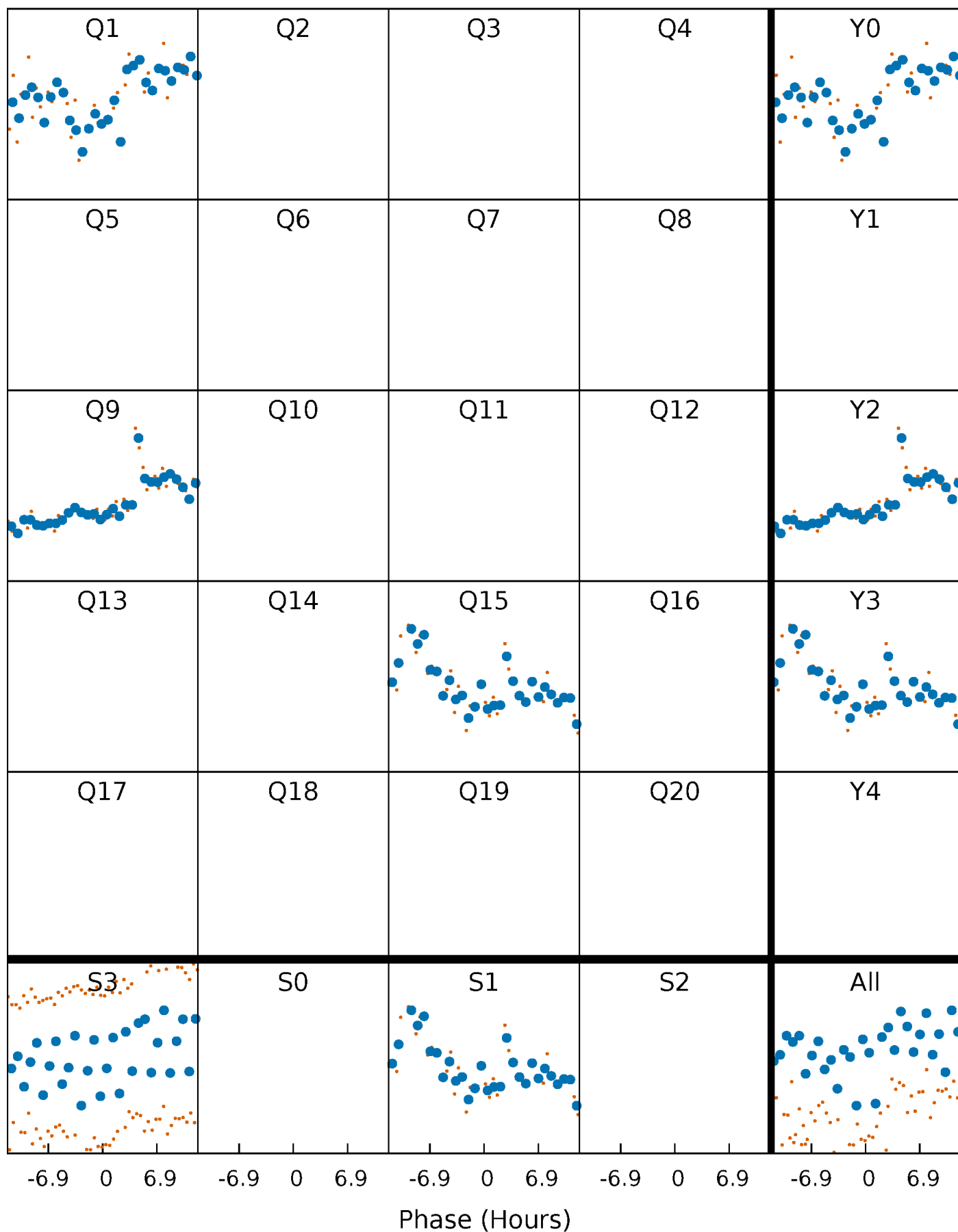


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



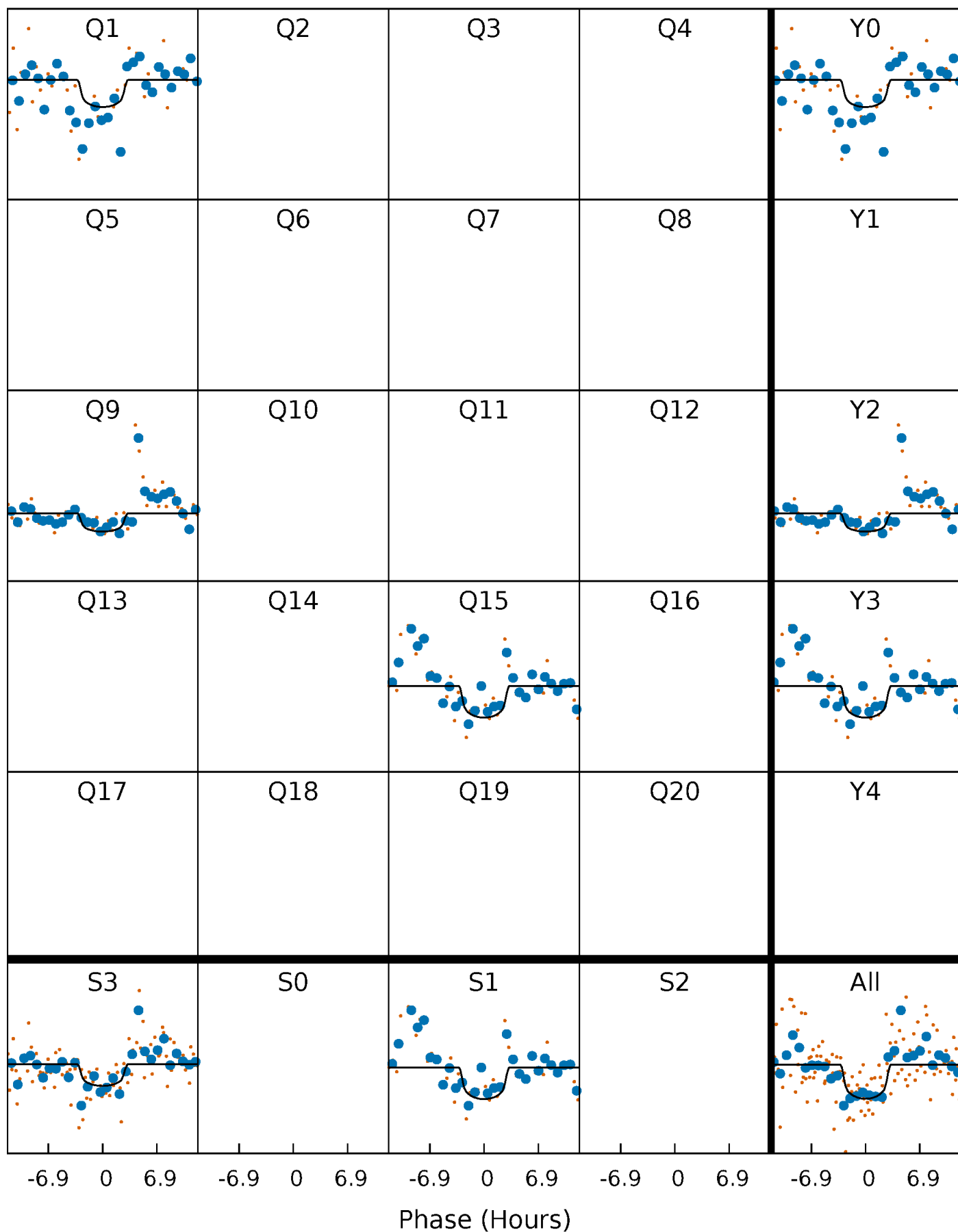
PDC Quarter-Phased Transit Curves

TCE 008957023-01 P=652.509340 Days $T_0=161.778334$ (BKJD)



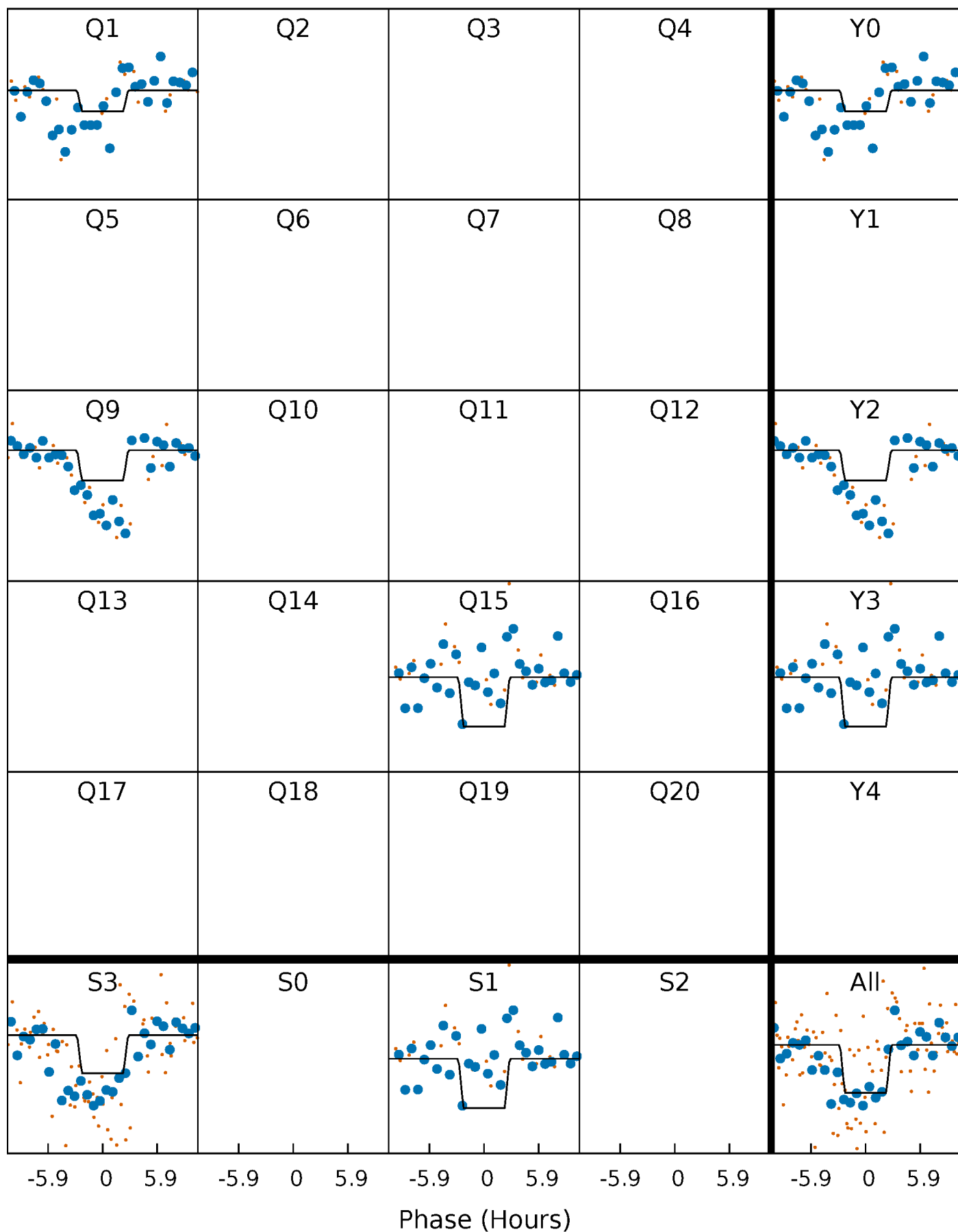
DV Quarter-Phased Transit Curves

TCE 008957023-01 P=652.509340 Days $T_0=161.778334$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

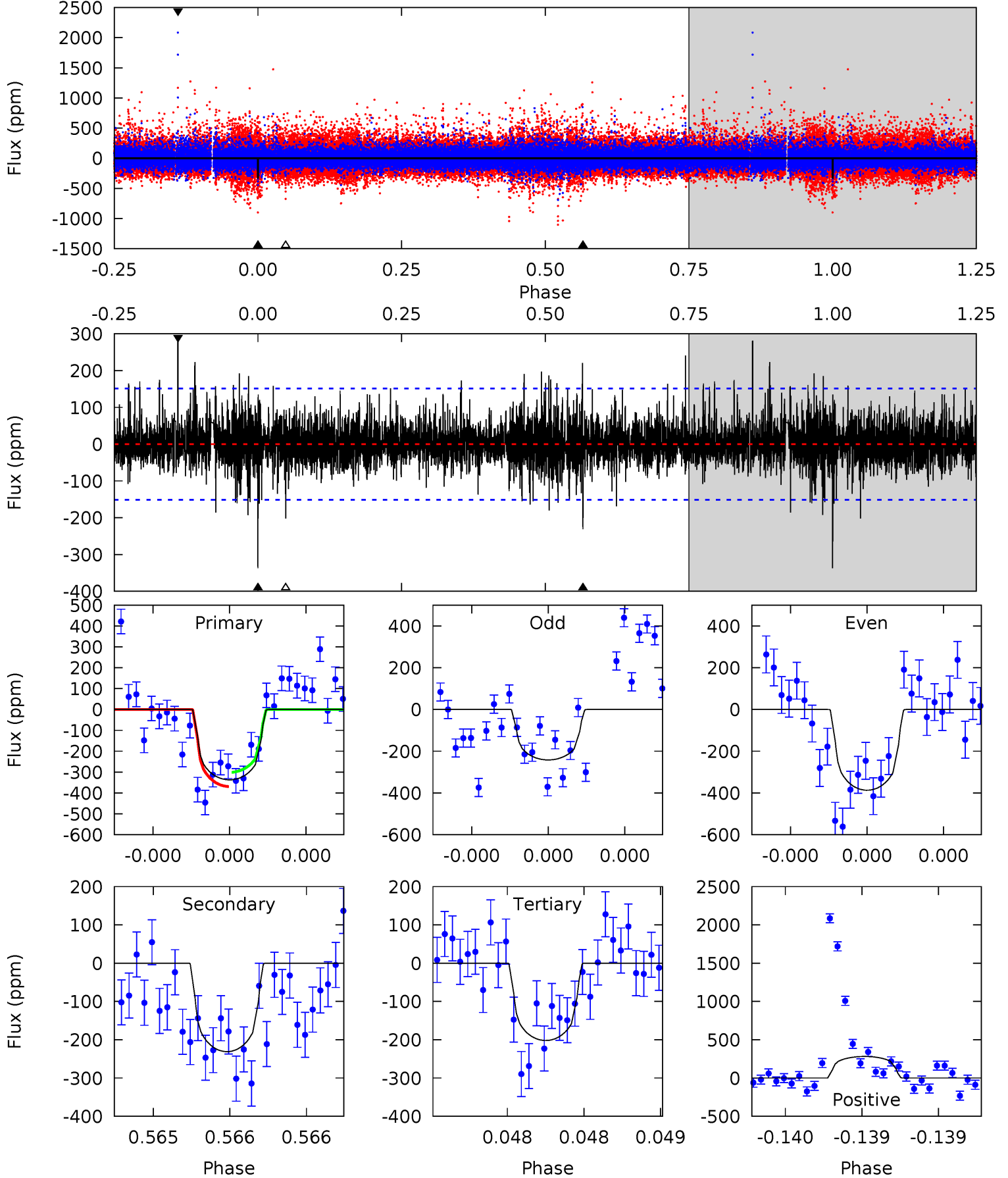
TCE 008957023-01 P=652.477627 Days $T_0=161.839123$ (BKJD)



DV Model-Shift Uniqueness Test

008957023-01, P = 652.509340 Days, E = 161.778334 Days

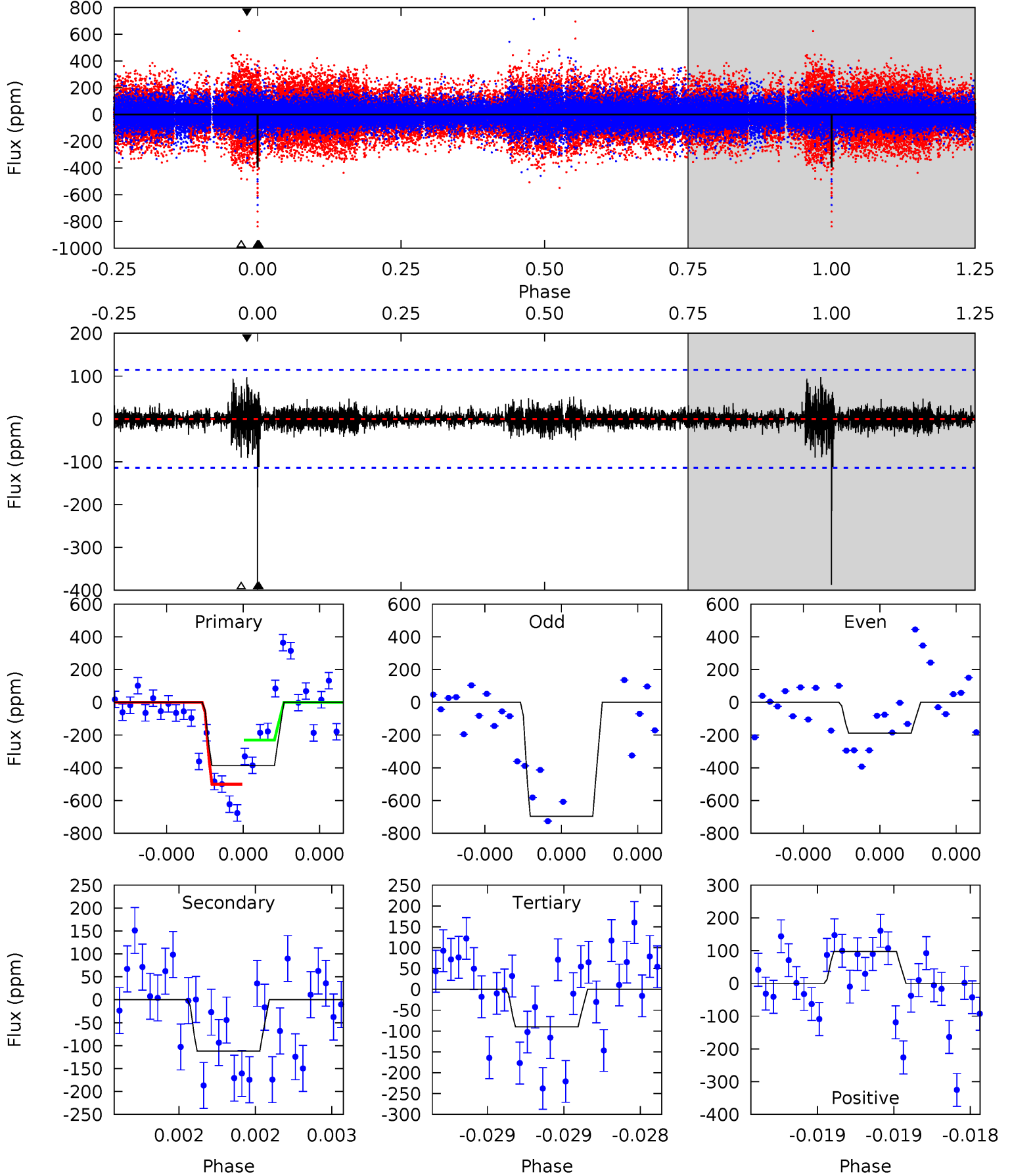
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.5	8.56	7.48	10.4	5.60	3.53	1.68	5.01	2.06	1.08	-1.87	2.53	1.43	0.46	1.27



Alt Model-Shift Uniqueness Test

008957023-01, P = 652.477627 Days, E = 161.839123 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.1	5.53	4.44	4.80	5.64	3.58	0.60	14.7	14.3	1.09	0.73	13.1	1.12	0.20	6.85



Stellar Parameters For KIC 008957023

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3716^{+116}_{-142}	$4.681^{+0.072}_{-0.022}$	$0.560^{+0.050}_{-0.300}$	$0.572^{+0.033}_{-0.076}$	$0.573^{+0.036}_{-0.068}$	$4.306^{+1.588}_{-0.403}$
	+3%/-4%	+2%/-0%	+9%/-54%	+6%/-13%	+6%/-12%	+37%/-9%
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 008957023-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-231 ± 27	$1.37^{+0.80}_{-0.76}$	156^{+6}_{-7}	3284^{+1058}_{-418}	$99807^{+417037}_{-60554}$
Alt.	-112 ± 20	$1.24^{+0.86}_{-0.72}$	155^{+6}_{-6}	3020^{+1000}_{-388}	$60856^{+274049}_{-39751}$

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

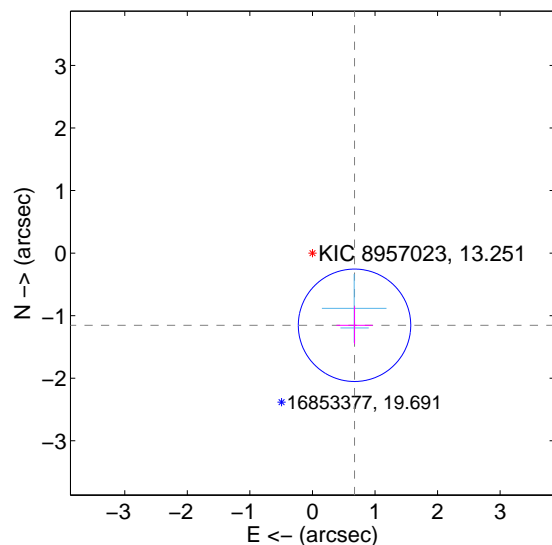
Supplemental centroid analysis for 008957023-01. Kepler magnitude: 13.25. Transit SNR 7.77

There are 2 quarters with good PRF difference image offsets

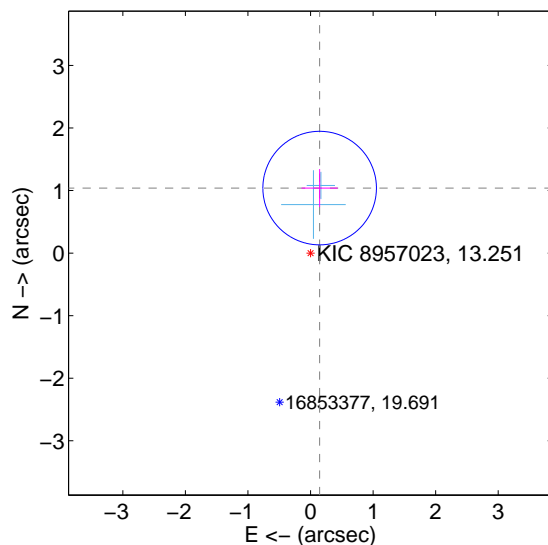
The OOT PRF centroid is offset from the target star catalog position by about 2.33 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.336 ± 0.299	4.46	-0.673 ± 0.290	-1.154 ± 0.303
PRF-fit source offset from KIC position	1.049 ± 0.302	3.47	-0.146 ± 0.290	1.039 ± 0.303
photometric centroid source offset	0.28 ± 0.98	0.29	-0.25 ± 0.93	-0.13 ± 1.14

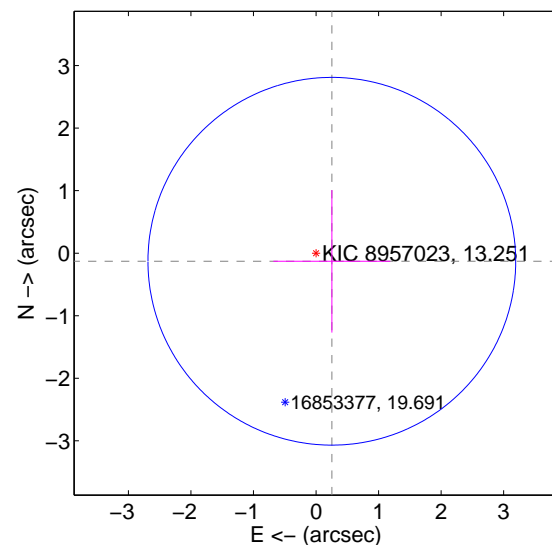
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

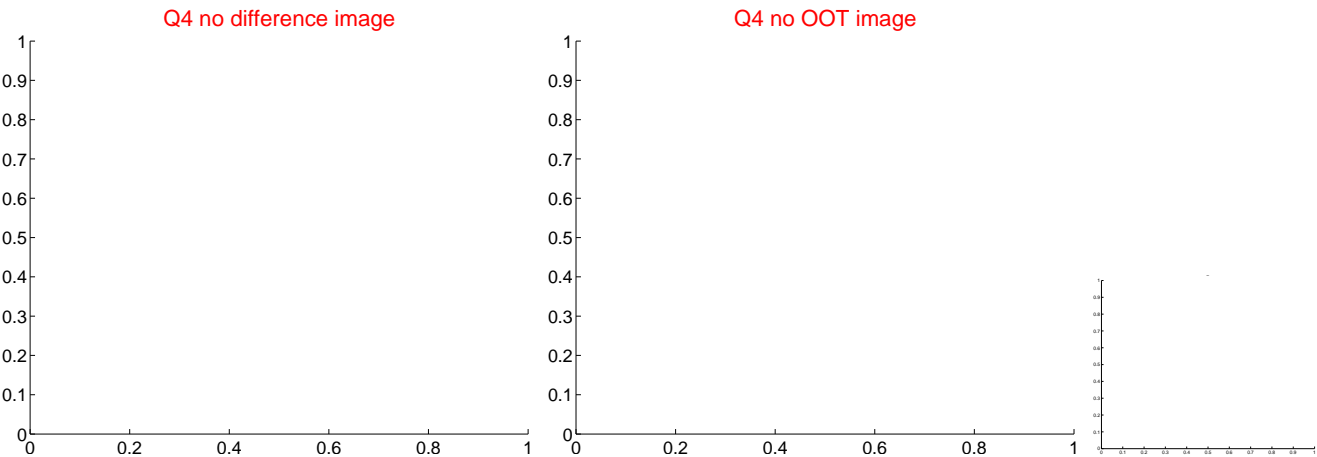
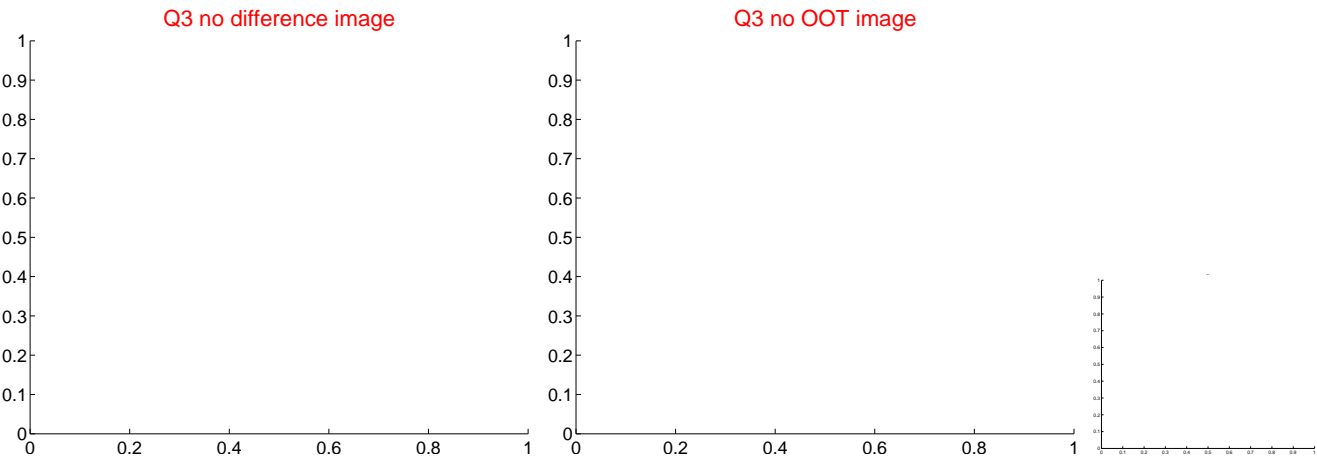
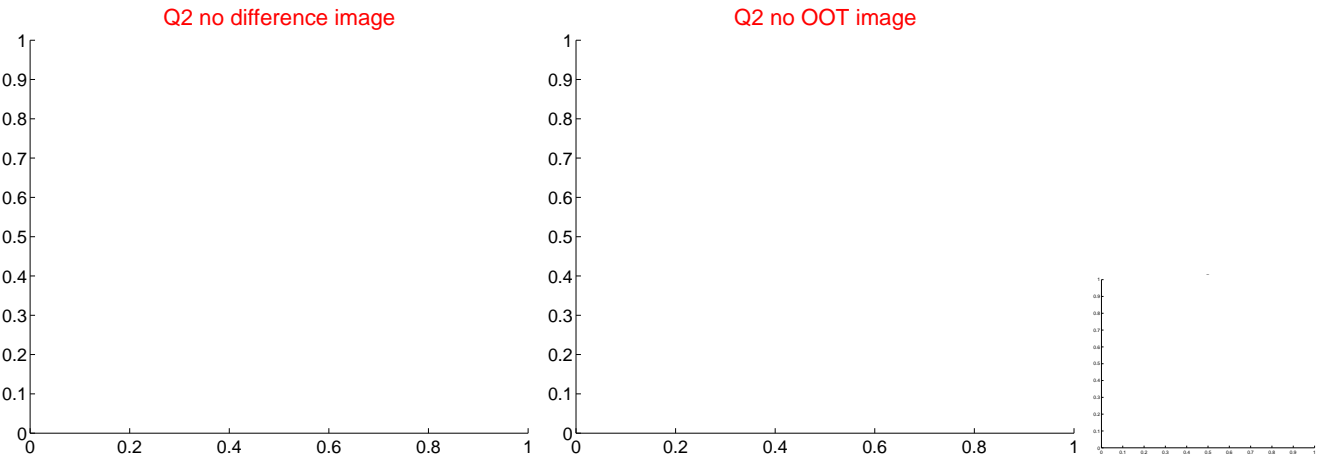
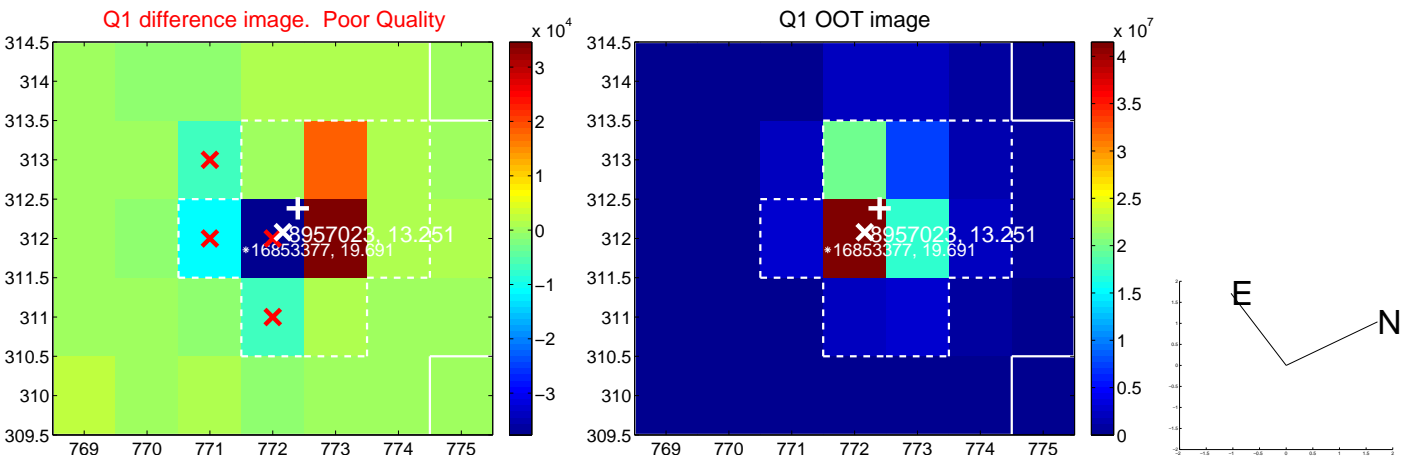


offset from photometric centroids



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.

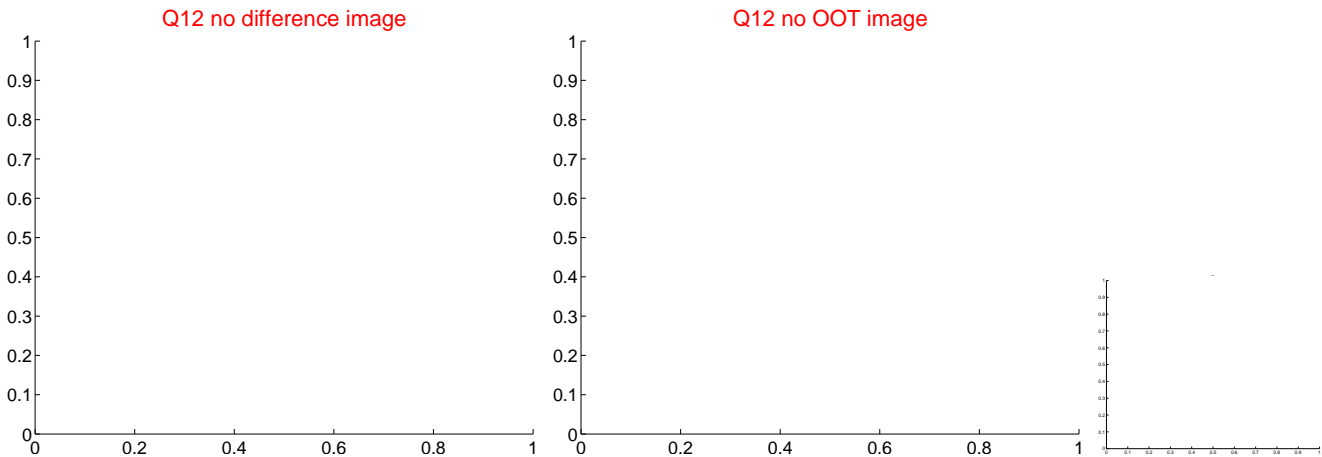
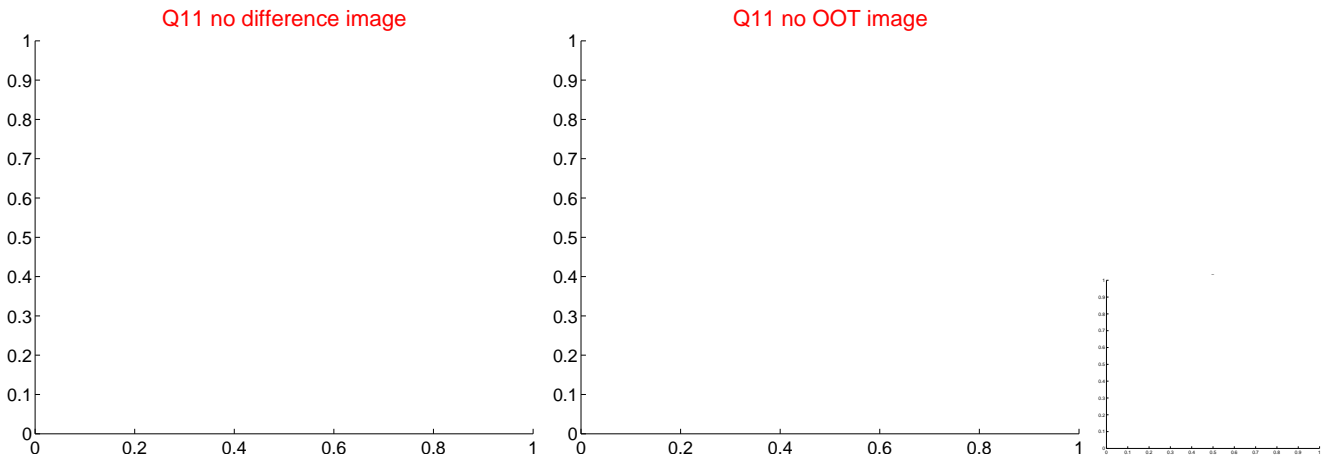
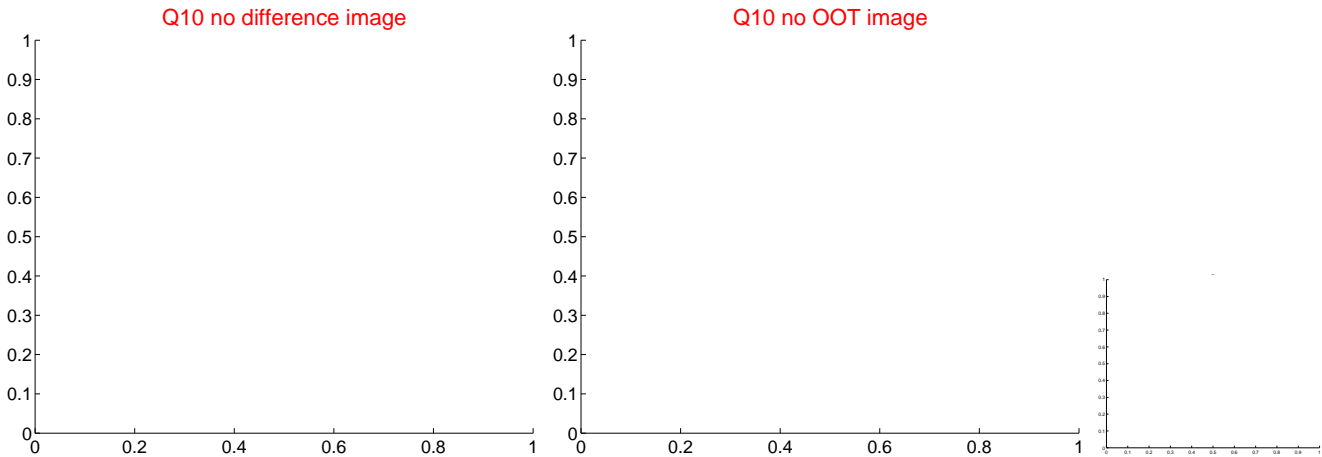
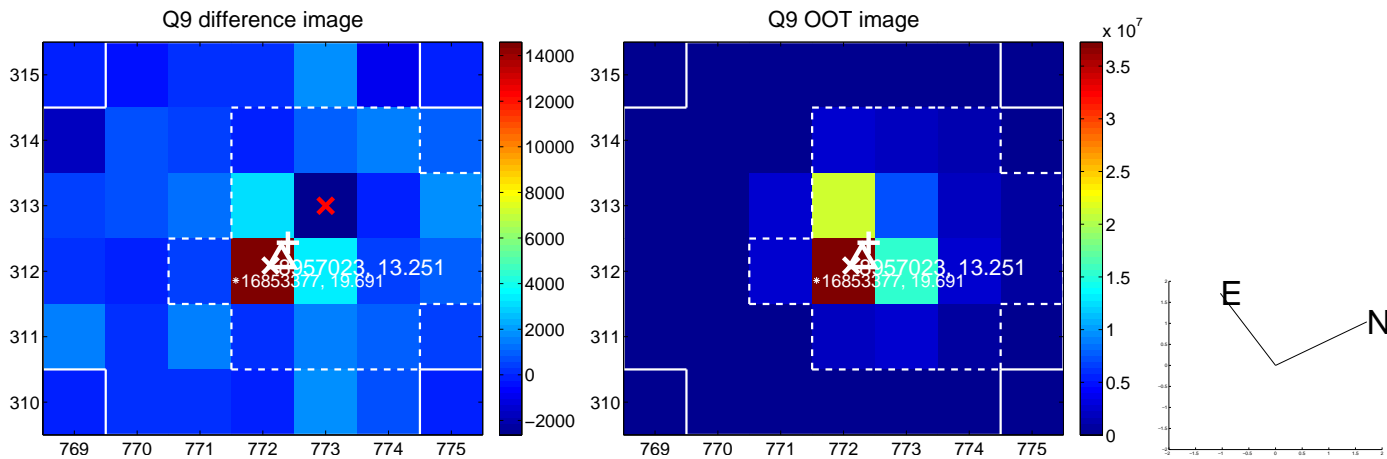
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

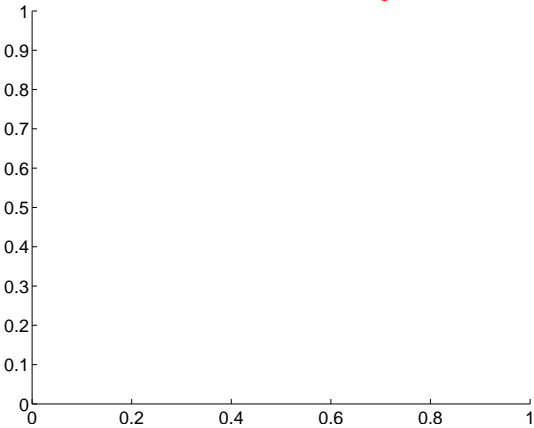


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

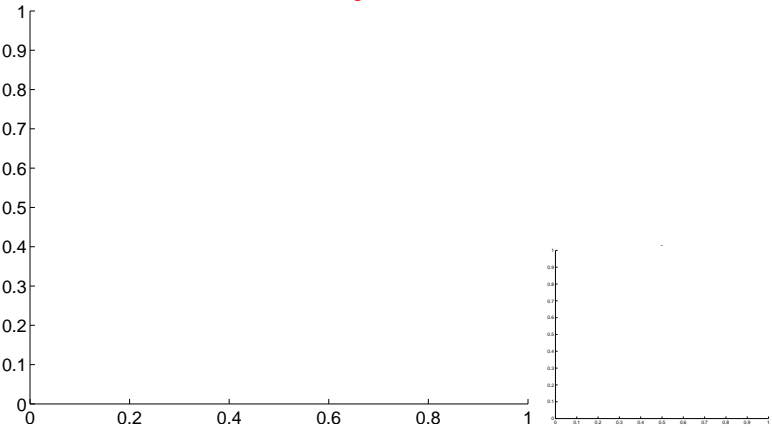


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

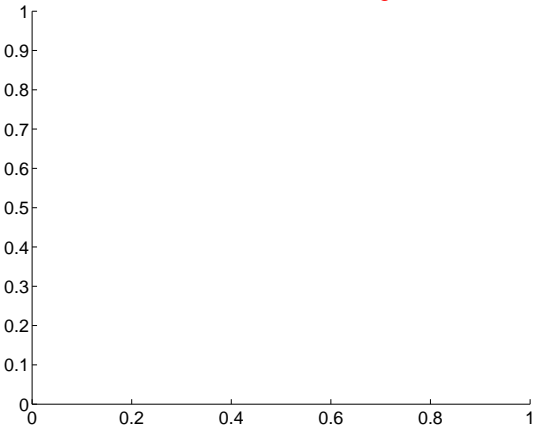
Q13 no difference image



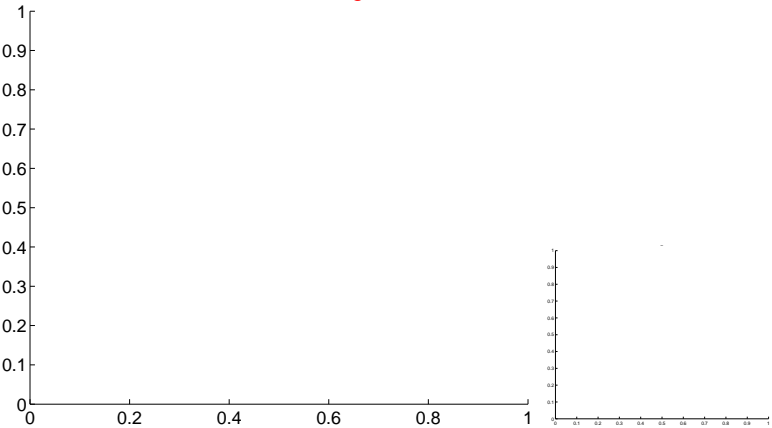
Q13 no OOT image



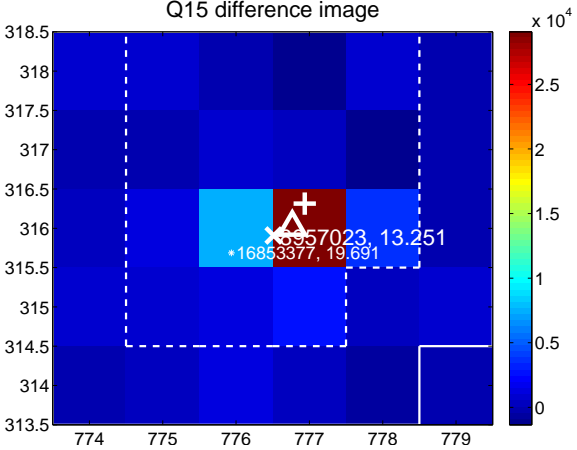
Q14 no difference image



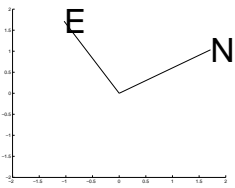
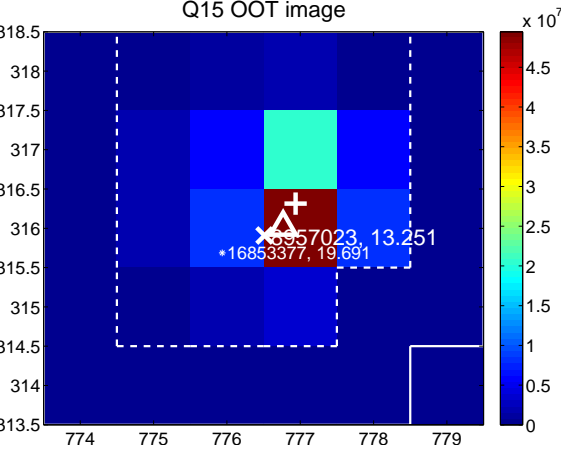
Q14 no OOT image



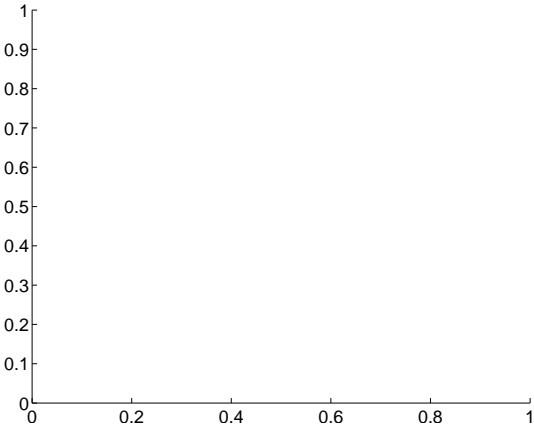
Q15 difference image



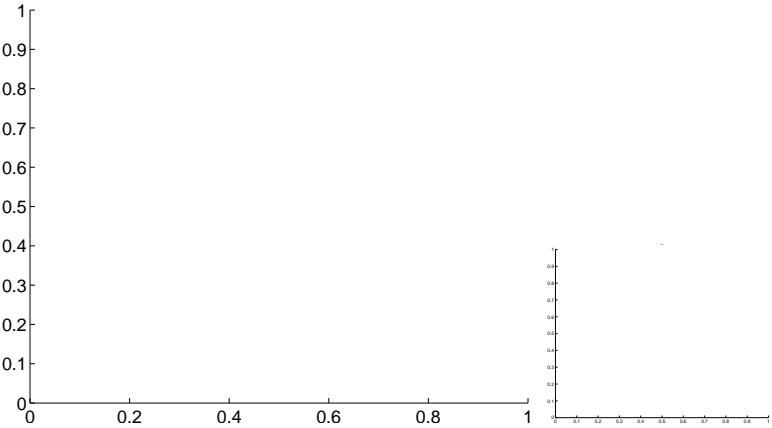
Q15 OOT image



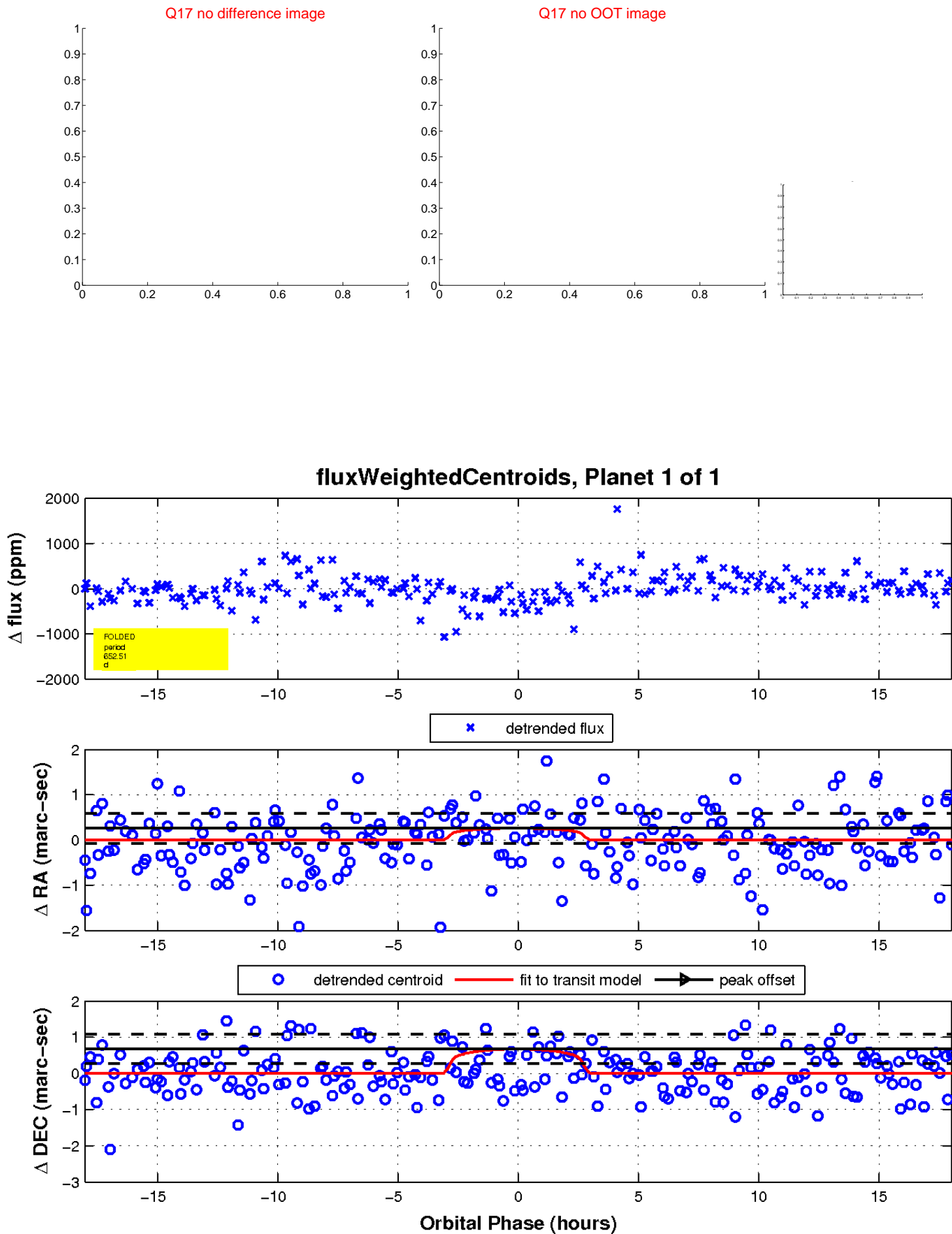
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

