

KIC 010160922

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})
010160922-01	OBS	7990.01	87.488355	154.512927	523.4	5.840	7.8	8.0	0.82	5774	2.10	4.80

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010160922-01	OBS	PC	0.79	0	0	0	0	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.

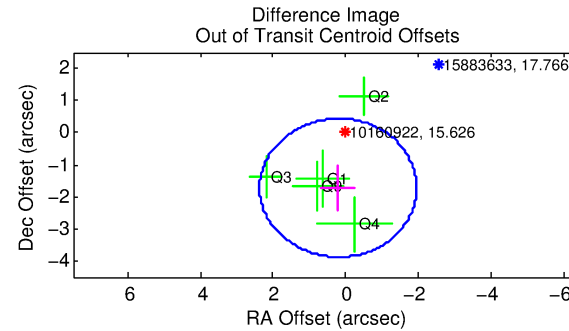
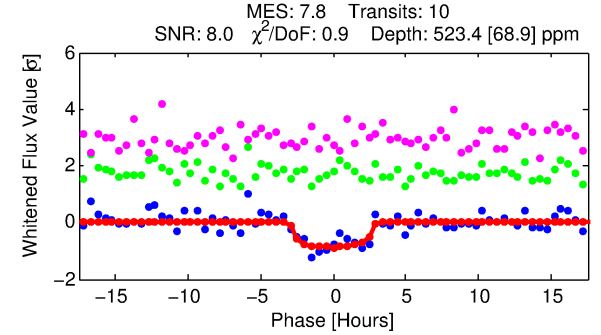
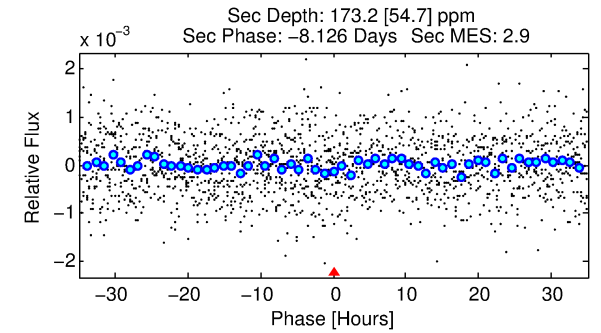
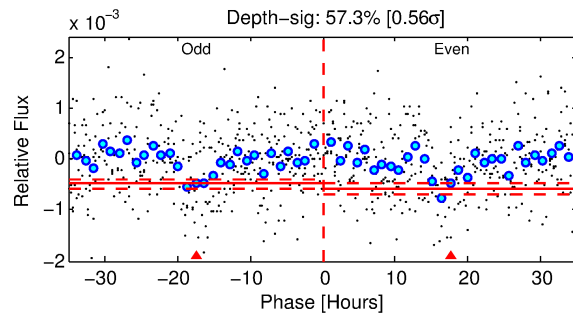
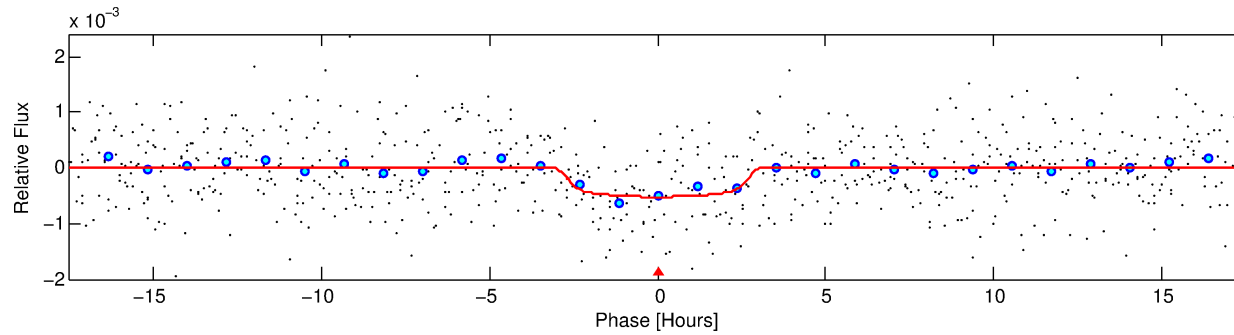
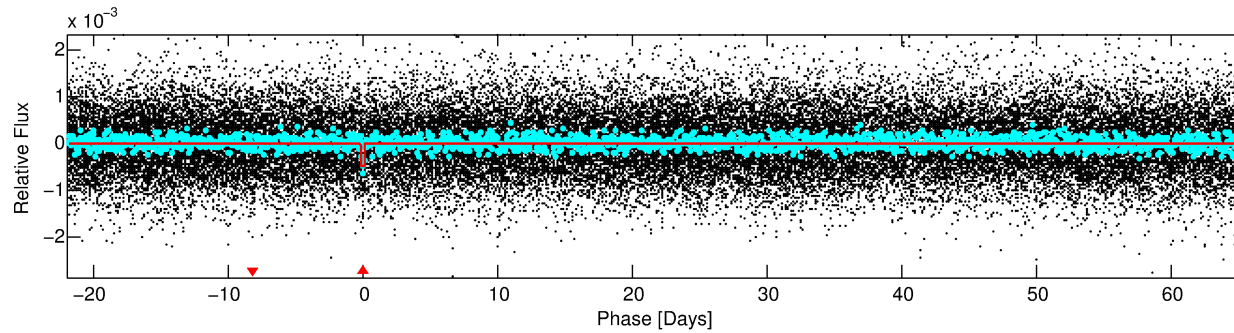
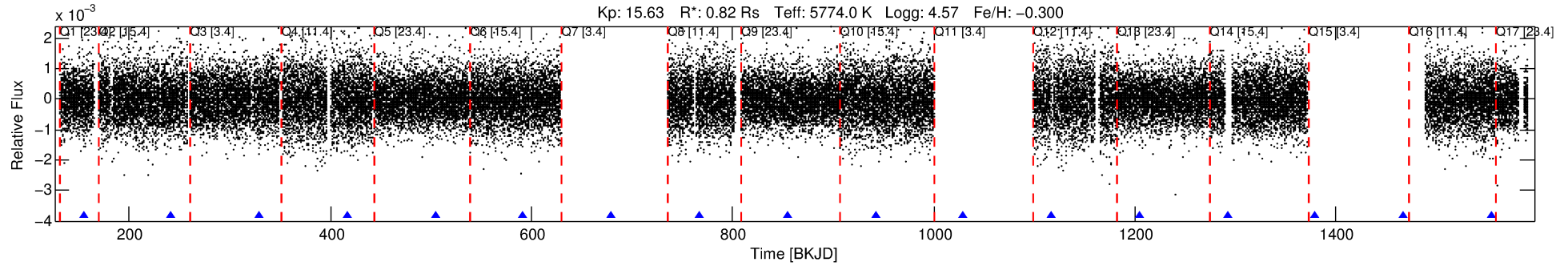
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010160922-01

No Significant Match Found

DV One-Page Summary

KIC: 10160922 Candidate: 1 of 1 Period: 87.488 d



DV Fit Results:

Period = 87.48835 [0.00162] d
Epoch = 154.5129 [0.0131] BKJD
Rp/R* = 0.0236 [0.0114]
a/R* = 68.98 [155.87]
b = 0.83 [0.87]
Seff = 4.80 [1.64]
Teq = 377 [32] K
Rp = 2.10 [1.16] Re
a = 0.3725 [0.0817] AU
Ag = 2989.36 [3199.87] [0.93 σ]
Teffp = 4315 [1109] K [3.55 σ]

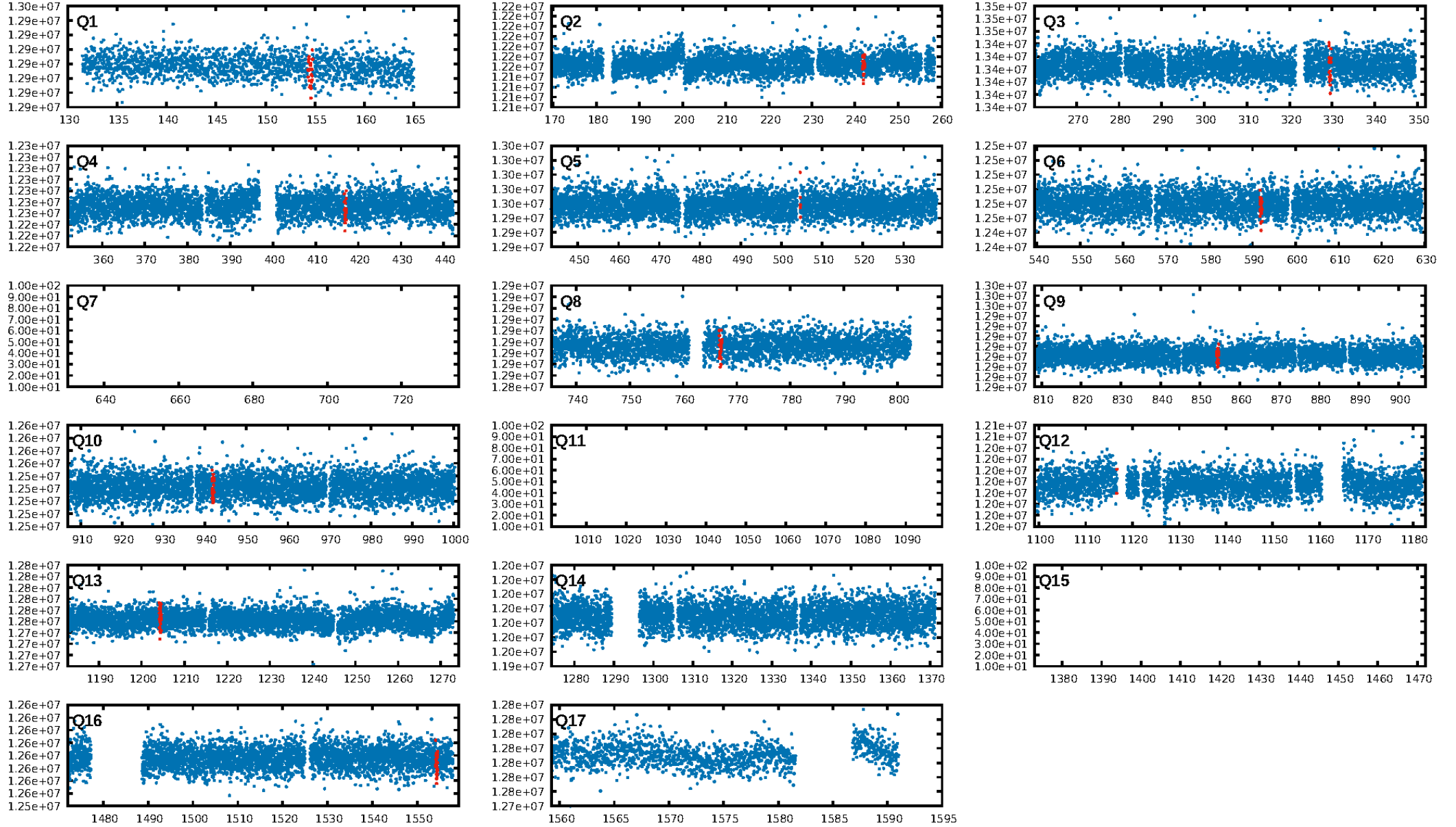
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 85.9%
ModelChiSquareGof-sig: 99.8%
Bootstrap-pfa: 2.42e-14
RollingBand-fgt: 1.00 [9/9]
GhostDiagnostic-chr: 1.479
Centroid-sig: 0.1%
Centroid-so: 4.237 arcsec [2.46 σ]
OotOffset-rm: 1.736 arcsec [2.41 σ]
KicOffset-rm: 1.449 arcsec [2.09 σ]
OotOffset-st: 1/1/1/2 [5]
KicOffset-st: 1/1/1/2 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 1.00 [10/10]

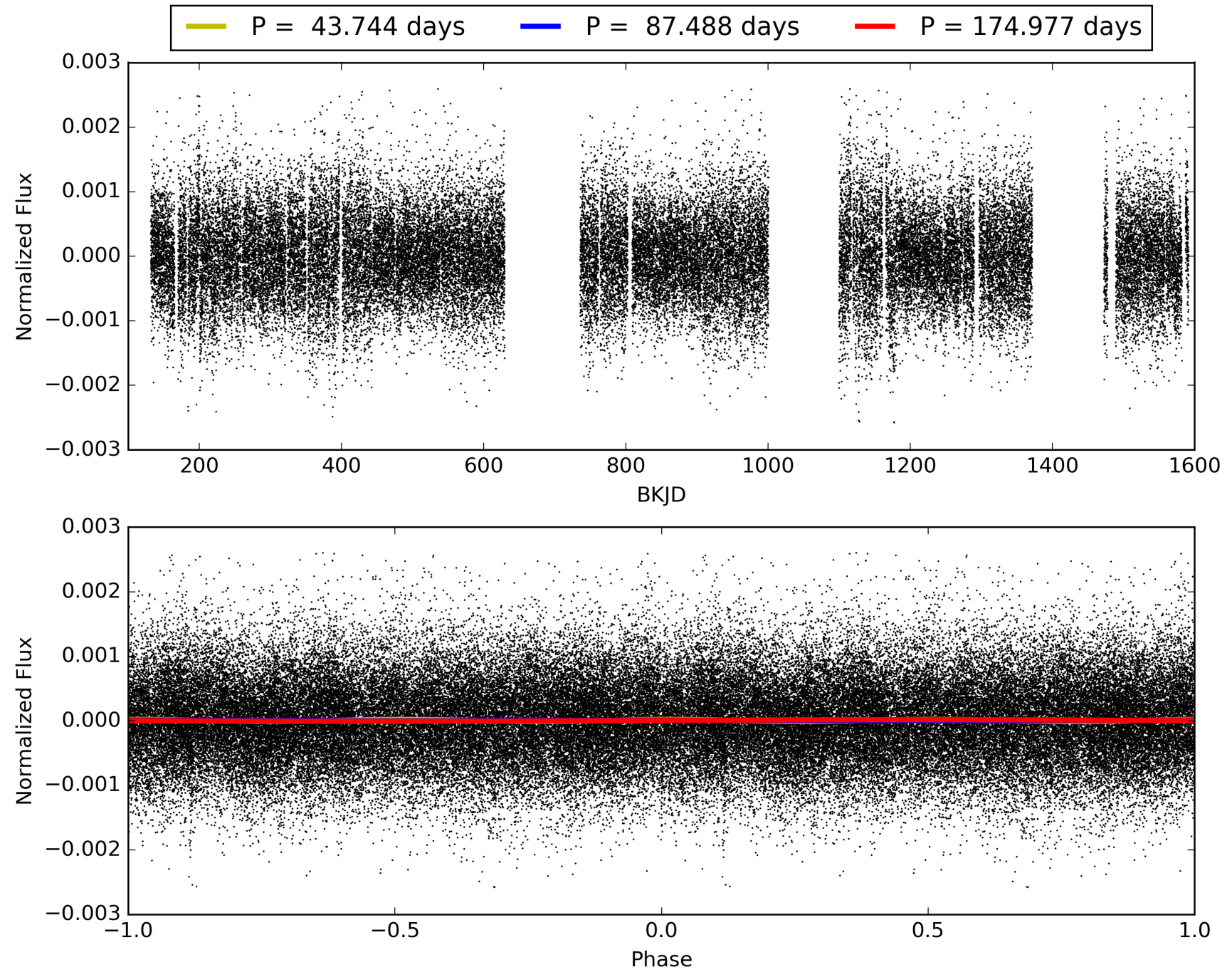
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 06:47:57 Z

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

TCE 010160922-01, PDC Light Curves

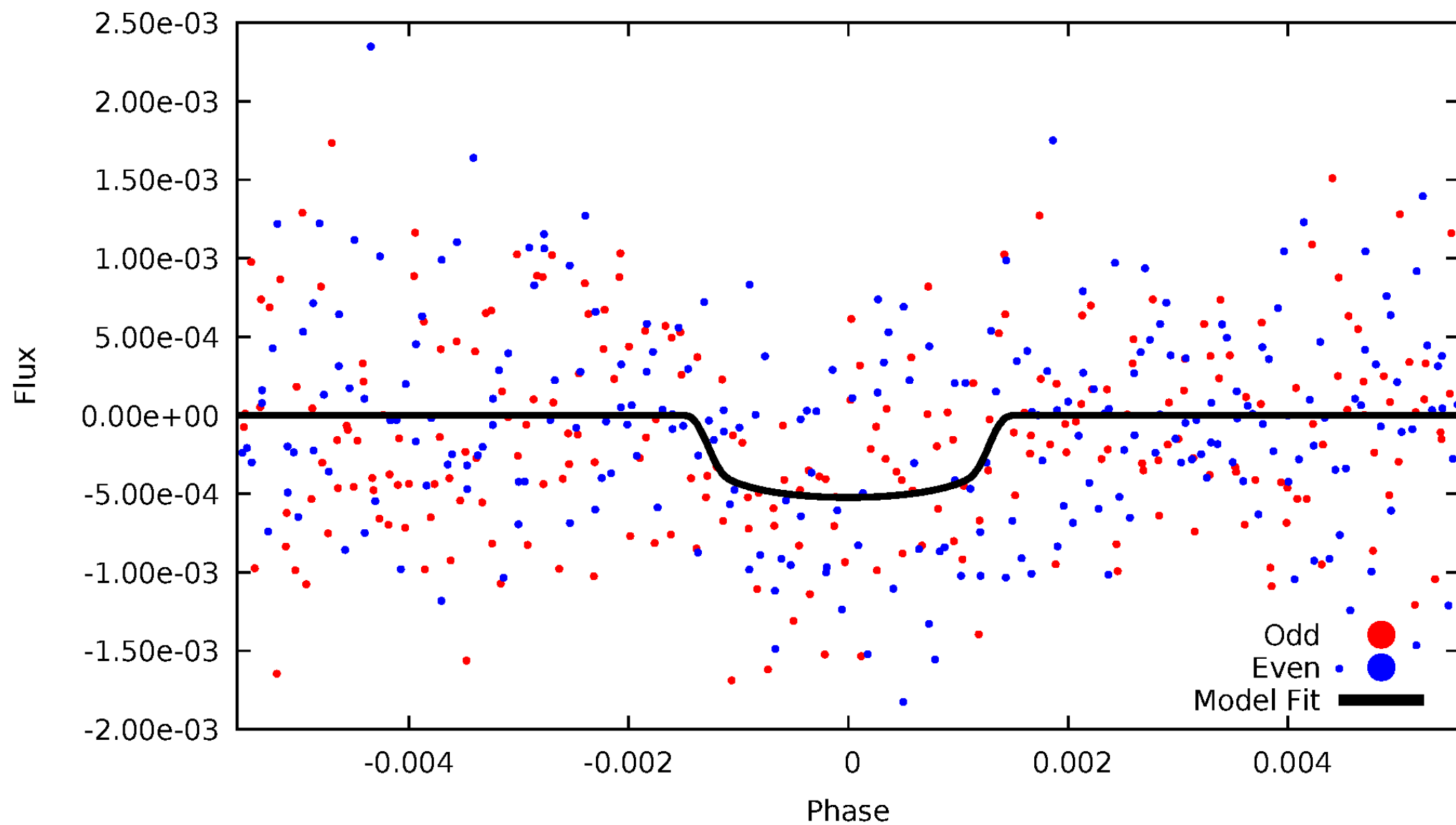


TCE 010160922-01



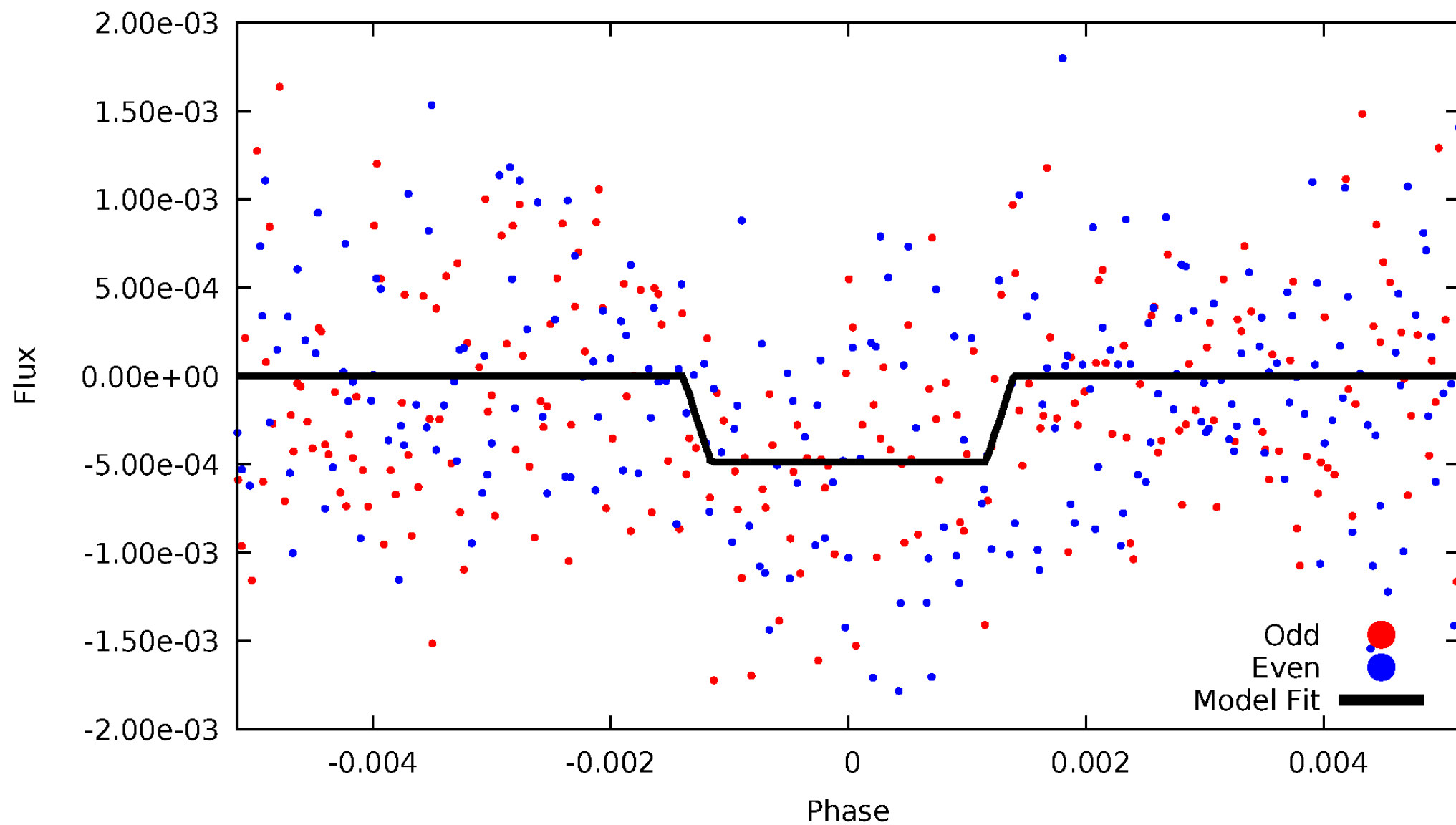
DV Odd/Even

TCE 010160922-01



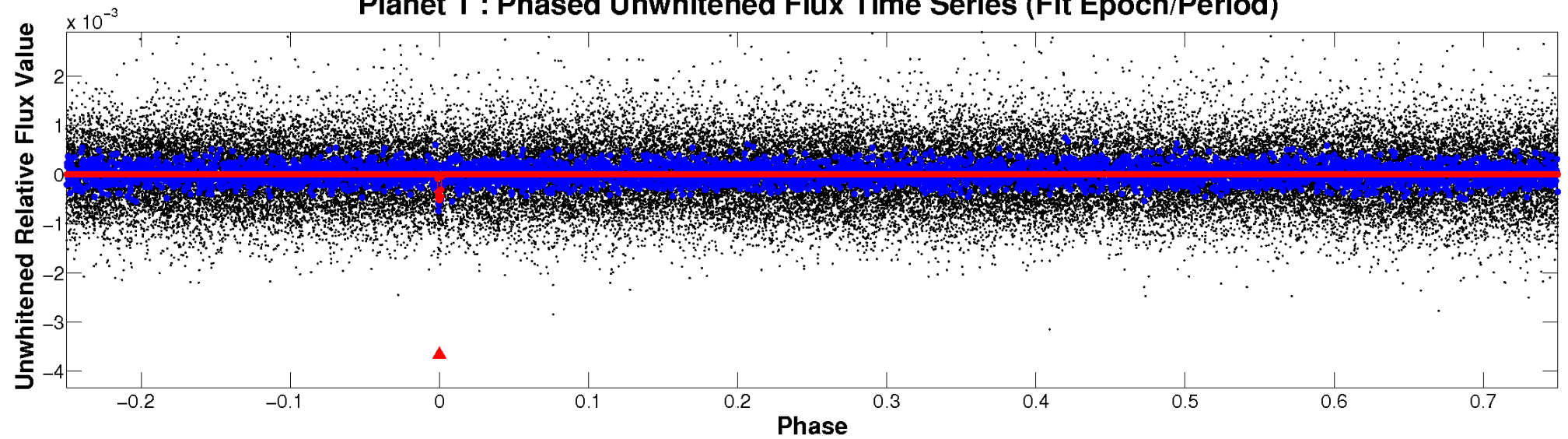
ALT Odd/Even

TCE 010160922-01

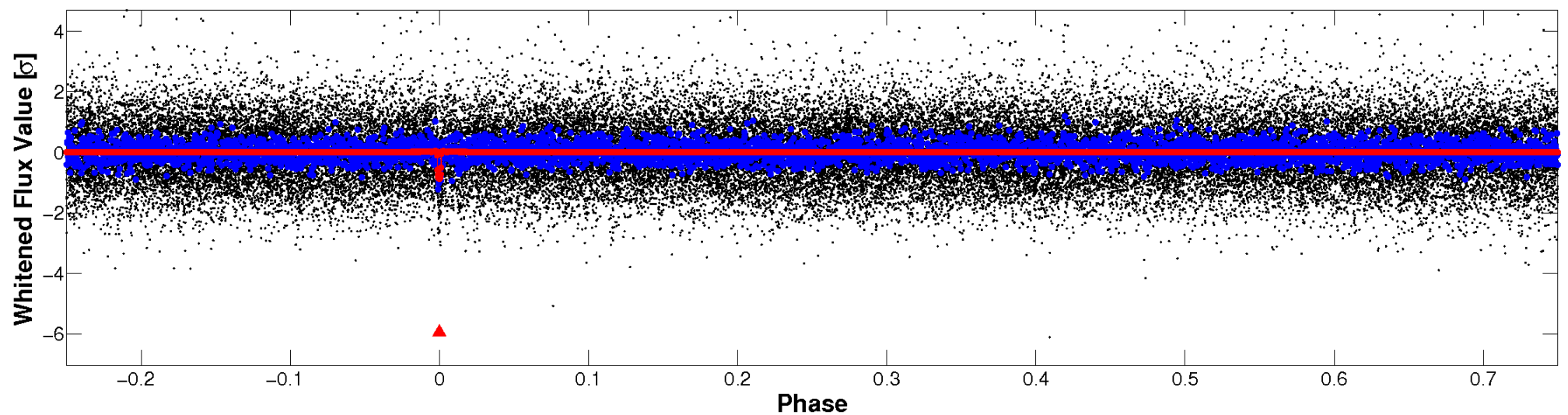


Non-Whitened Vs. Whitened Light Curve

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

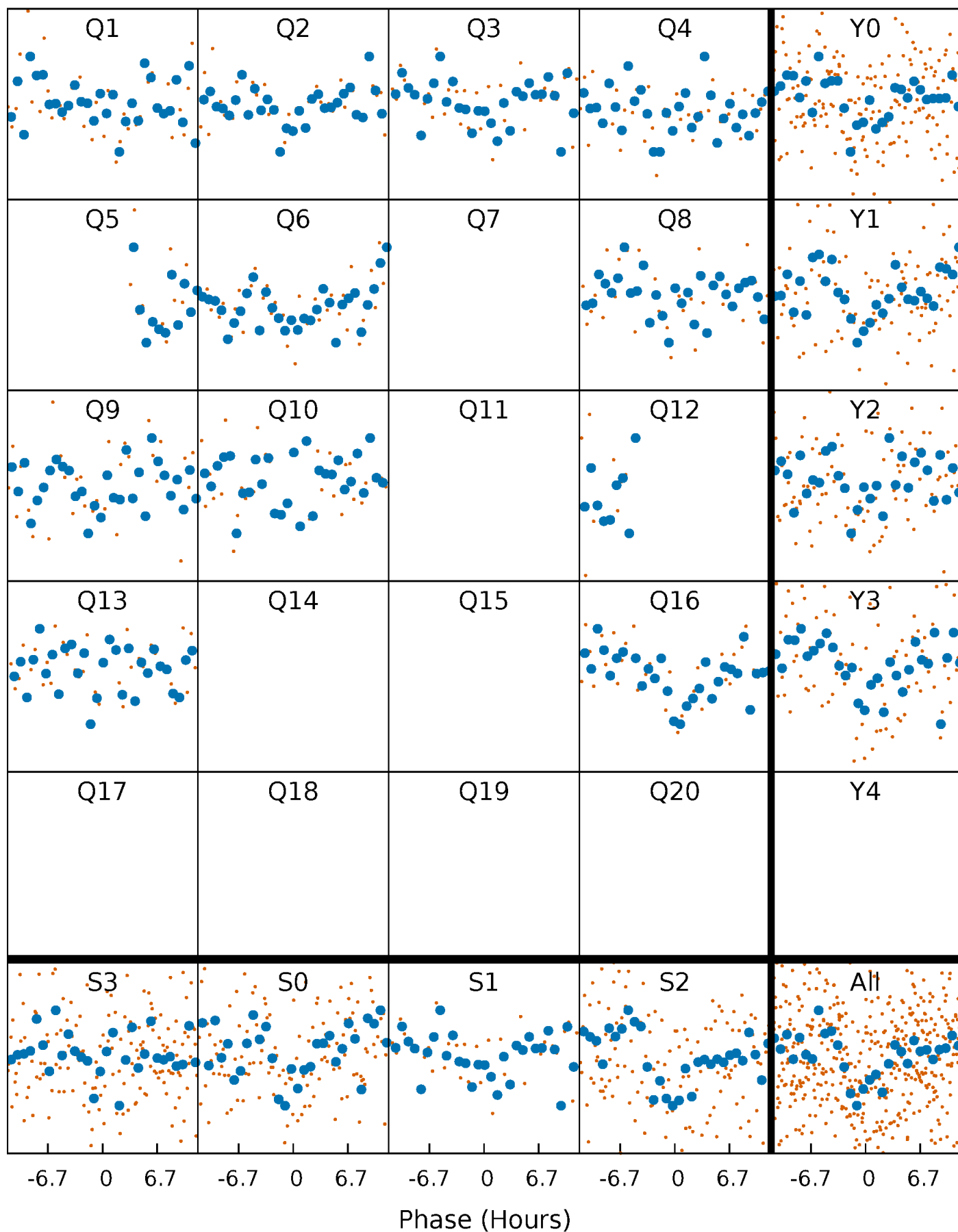


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



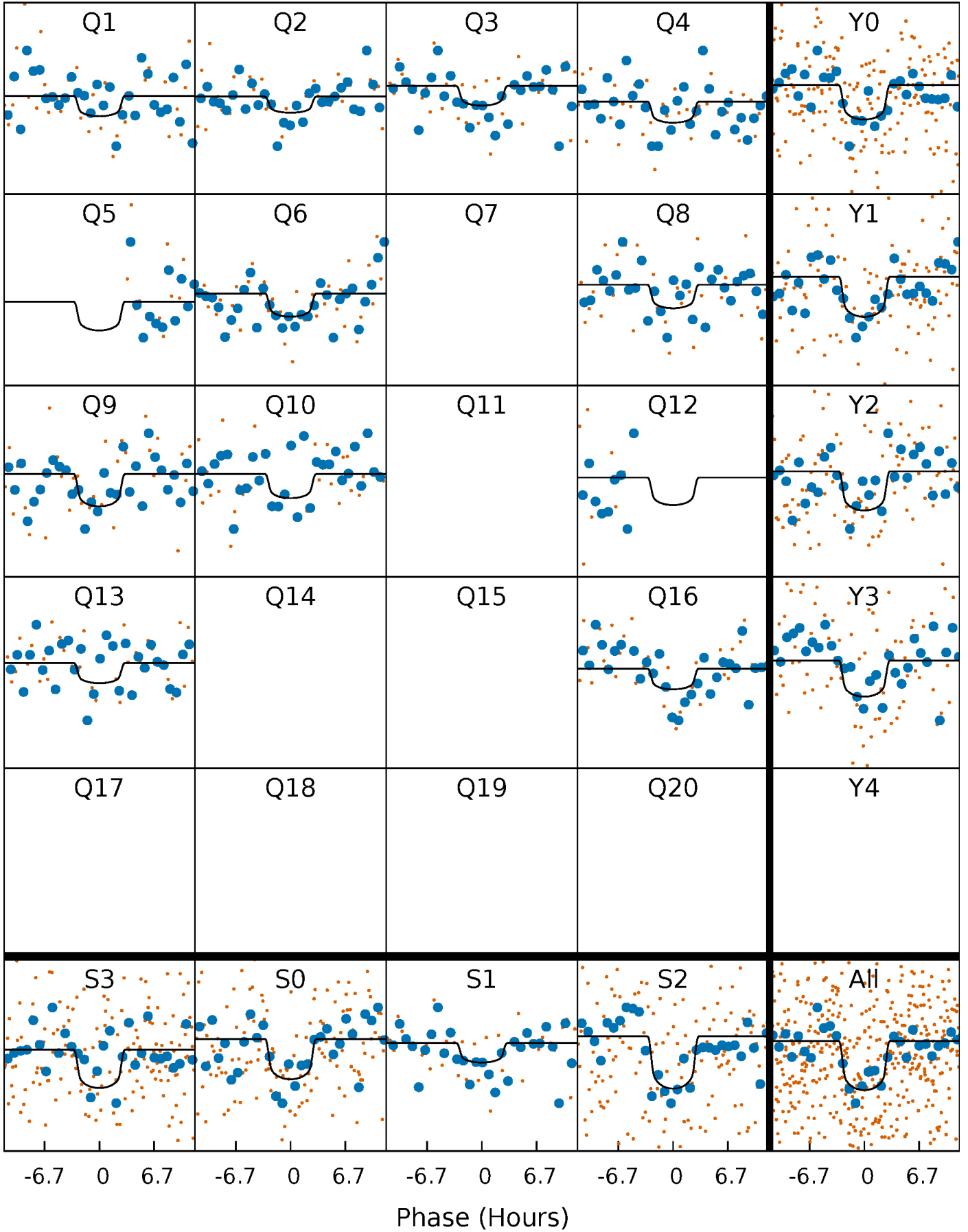
PDC Quarter-Phased Transit Curves

TCE 010160922-01 P= 87.488355 Days $T_0=154.512927$ (BKJD)



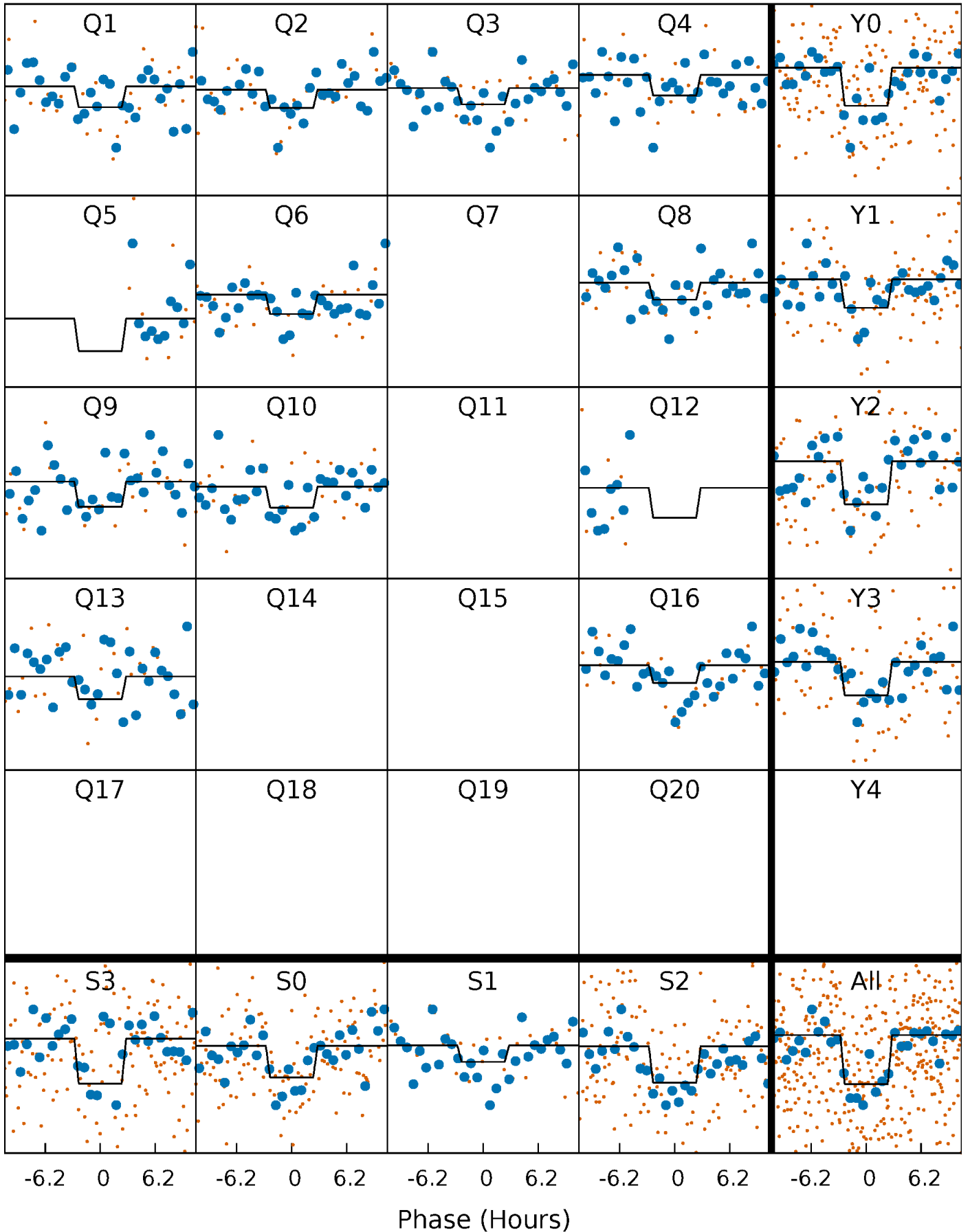
DV Quarter-Phased Transit Curves

TCE 010160922-01 P= 87.488355 Days $T_0=154.512927$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

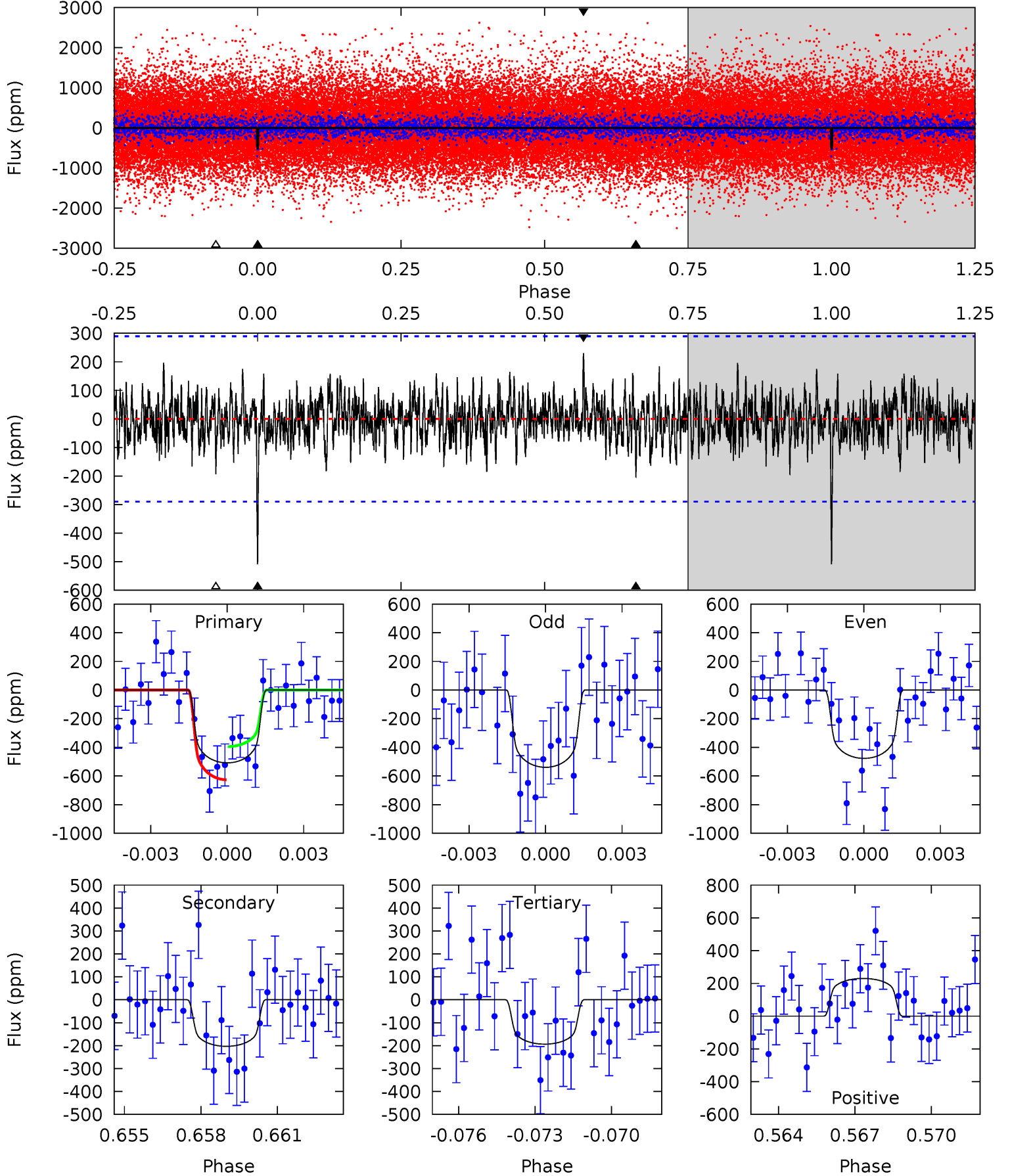
TCE 010160922-01 P= 87.487679 Days $T_0=154.520924$ (BKJD)



DV Model-Shift Uniqueness Test

010160922-01, P = 87.488355 Days, E = 67.024572 Days

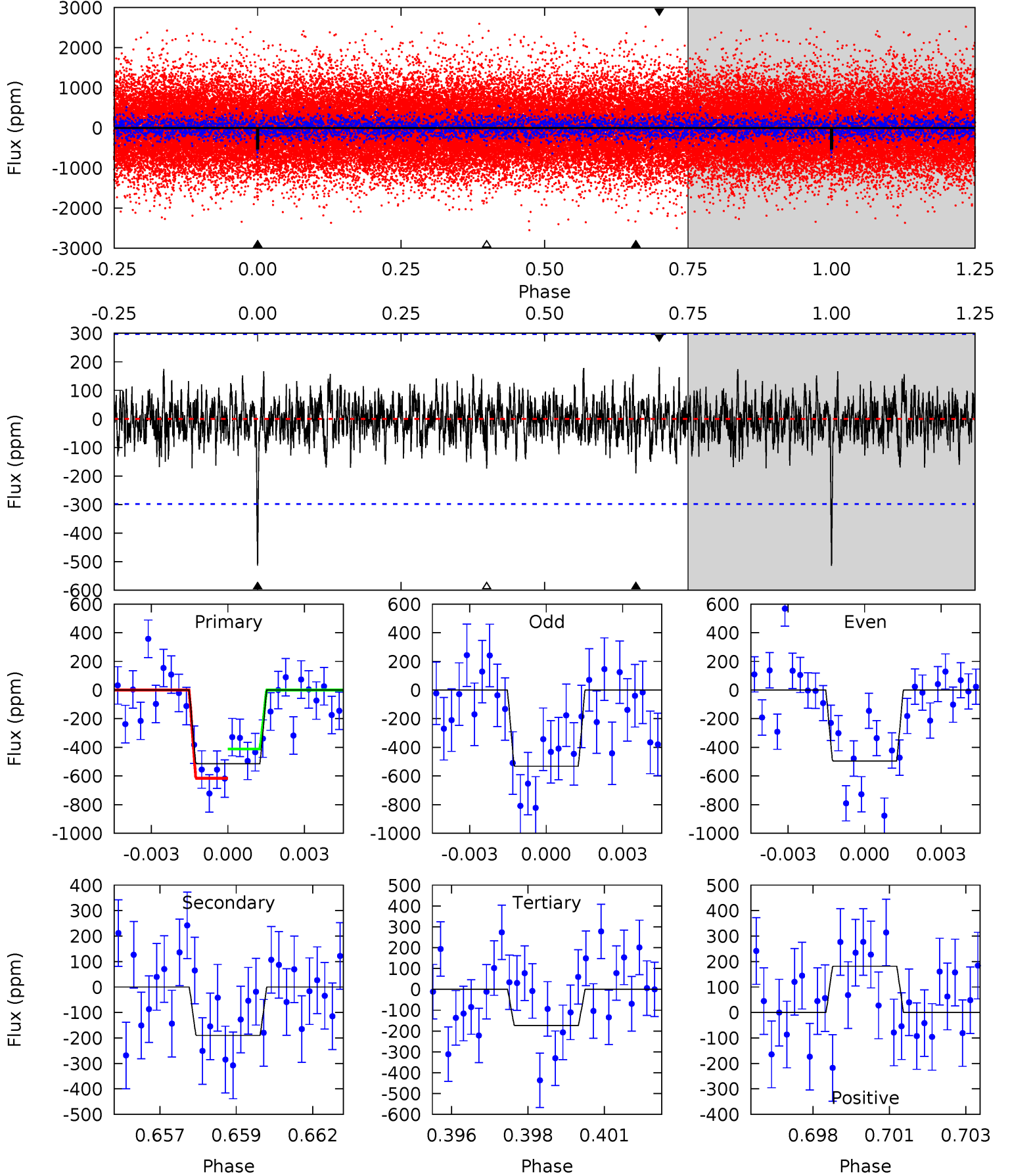
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.23	3.69	3.52	4.18	5.26	2.98	1.12	5.72	5.05	0.17	-0.49	0.57	1.02	0.31	2.11



Alt Model-Shift Uniqueness Test

010160922-01, P = 87.487679 Days, E = 67.033245 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.08	3.36	3.07	3.21	5.27	2.99	0.97	6.01	5.87	0.29	0.15	0.32	0.95	0.26	1.81



Stellar Parameters For KIC 010160922

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5774^{+155}_{-172}	$4.567^{+0.033}_{-0.176}$	$-0.300^{+0.300}_{-0.300}$	$0.818^{+0.212}_{-0.071}$	$0.907^{+0.098}_{-0.109}$	$2.332^{+0.417}_{-1.071}$
	+3%/-3%	+1%/-4%	+100%/-100%	+26%/-9%	+11%/-12%	+18%/-46%
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 010160922-01 / KOI 7990.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-203 ± 55	$2.20^{+1.13}_{-1.05}$	539^{+34}_{-24}	4661^{+1527}_{-746}	3104^{+8135}_{-1863}
Alt.	-190 ± 57	$2.13^{+1.11}_{-1.02}$	539^{+35}_{-22}	4614^{+1558}_{-669}	3032^{+8441}_{-1732}

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 $A_{obs} \gg 1.0$

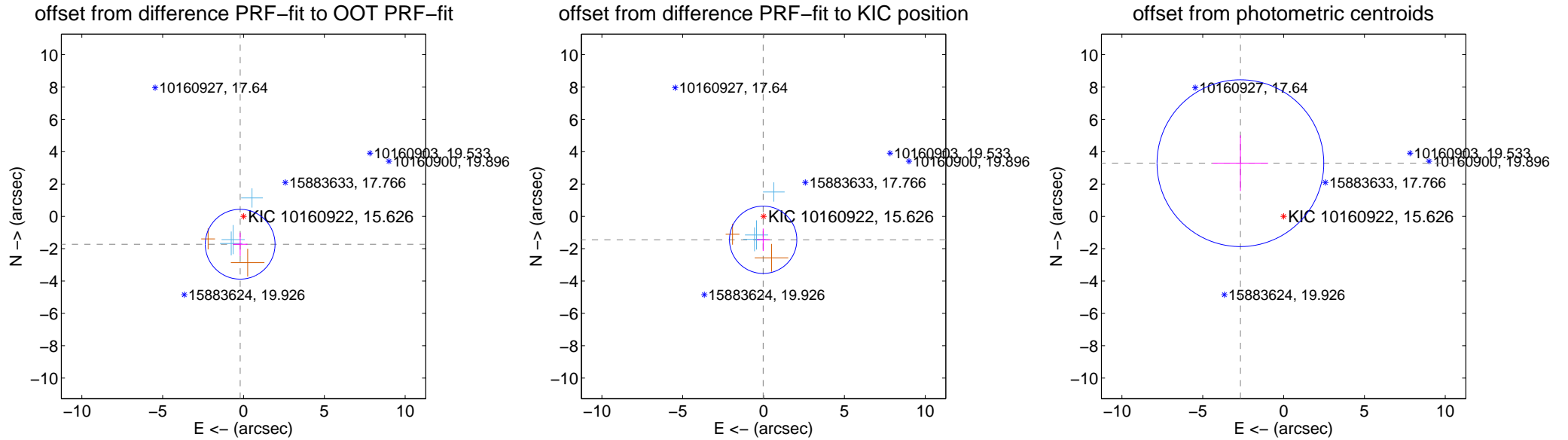
DV Centroid Data

Supplemental centroid analysis for 010160922-01. Kepler magnitude: 15.63. Transit SNR 7.98

There are 3 quarters with good PRF difference image offsets

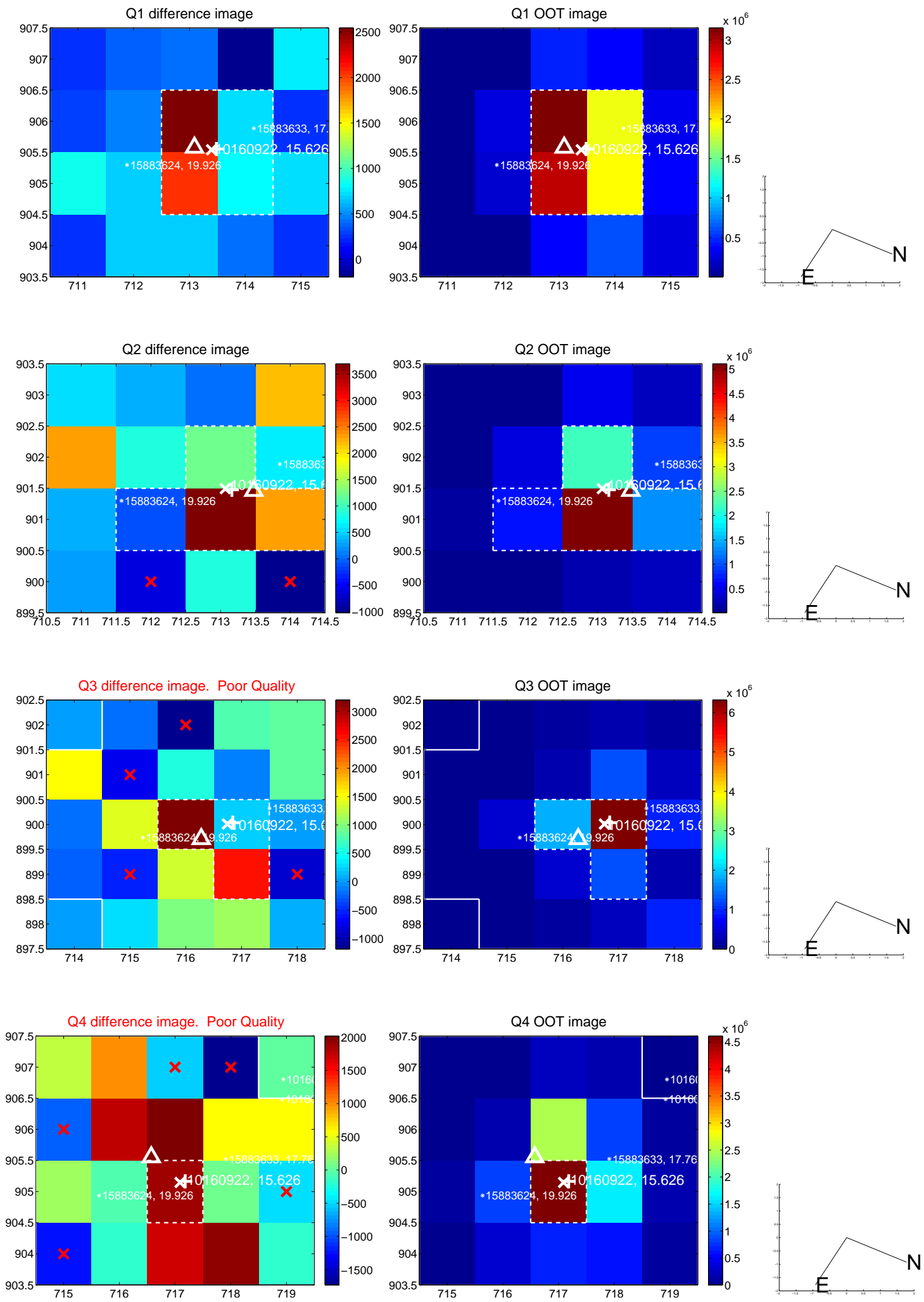
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.736 ± 0.719	2.41	0.207 ± 0.457	-1.724 ± 0.715
PRF-fit source offset from KIC position	1.449 ± 0.694	2.09	0.024 ± 0.399	-1.449 ± 0.692
photometric centroid source offset	4.24 ± 1.72	2.46	2.67 ± 1.72	3.29 ± 1.72



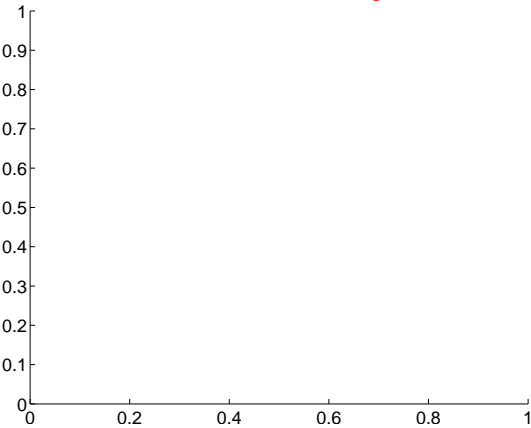
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

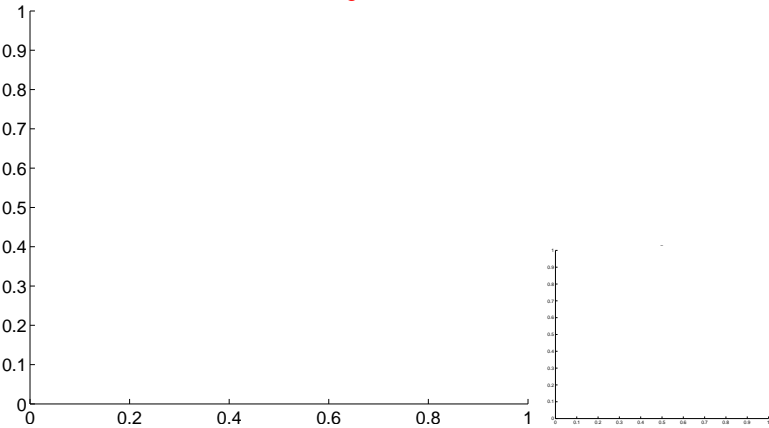


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

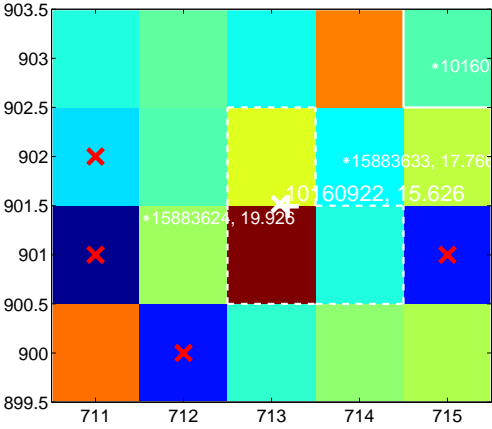
Q5 no difference image



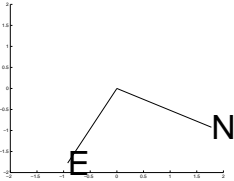
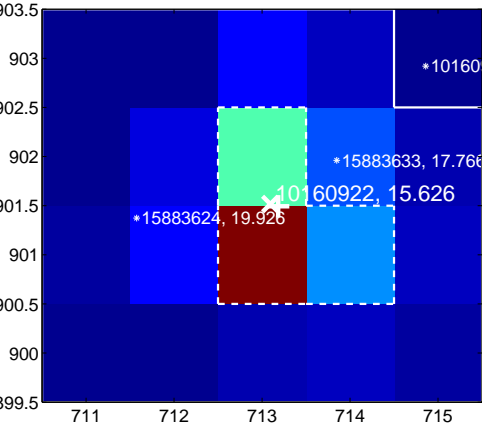
Q5 no OOT image



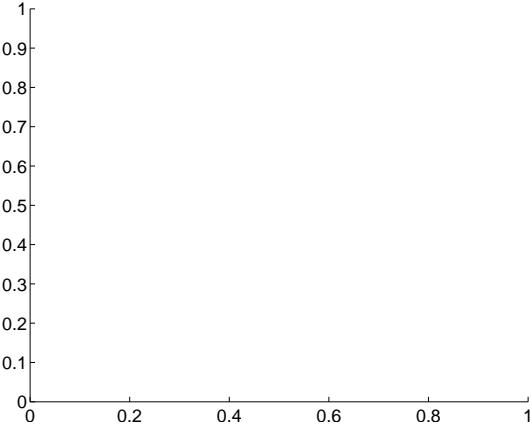
Q6 difference image. Poor Quality



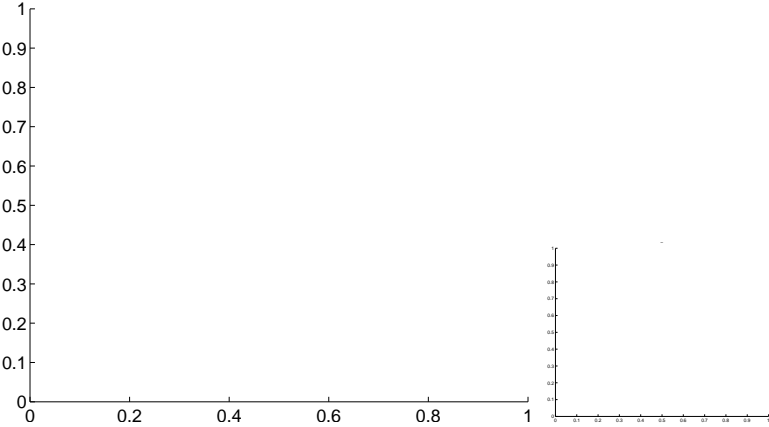
Q6 OOT image



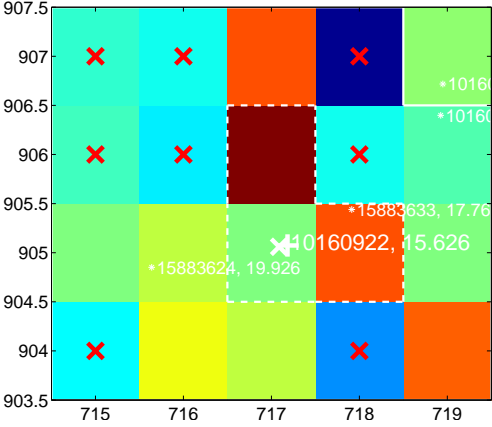
Q7 no difference image



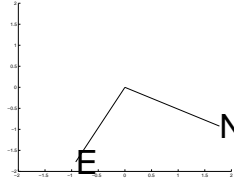
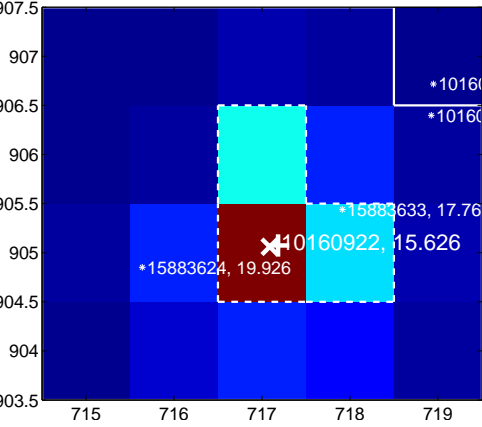
Q7 no OOT image



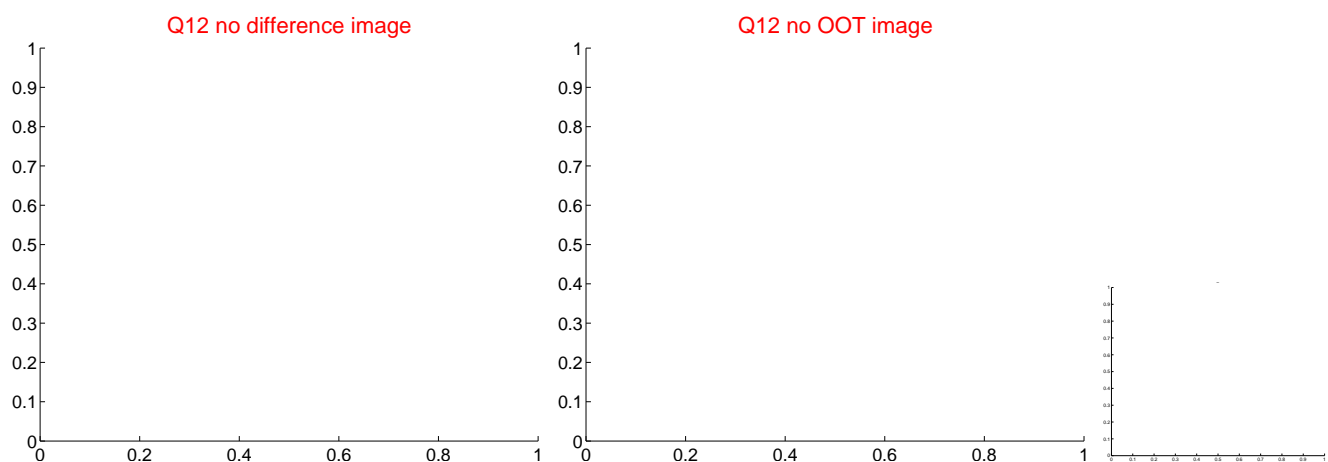
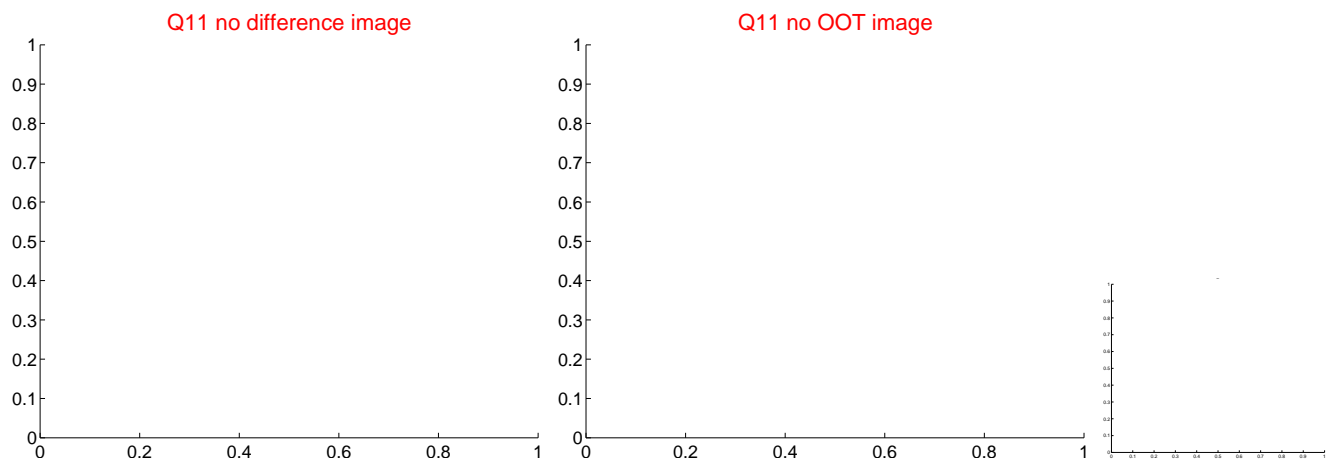
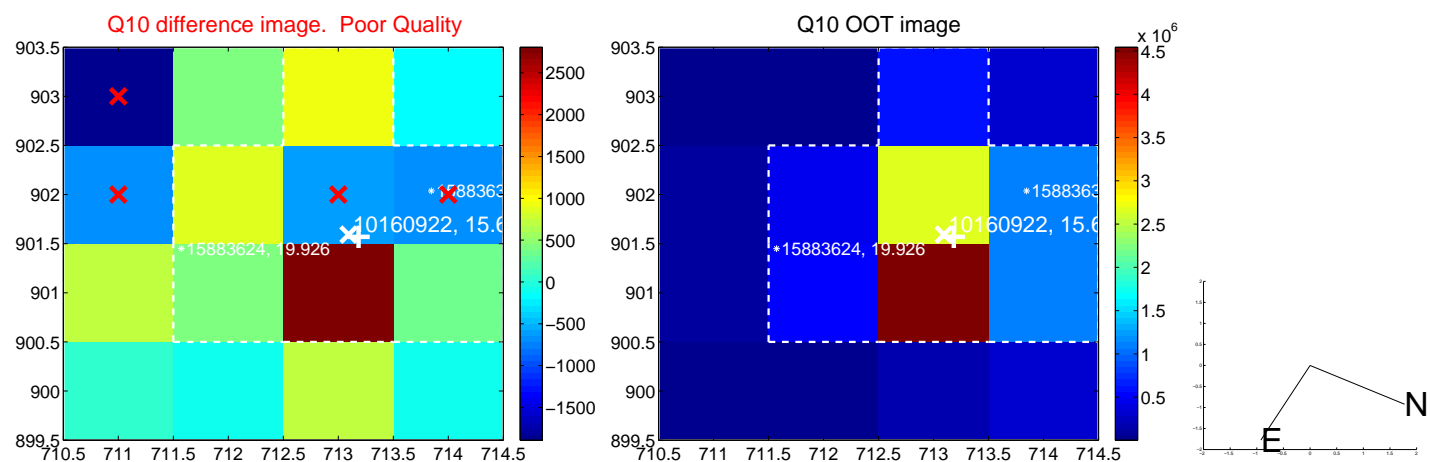
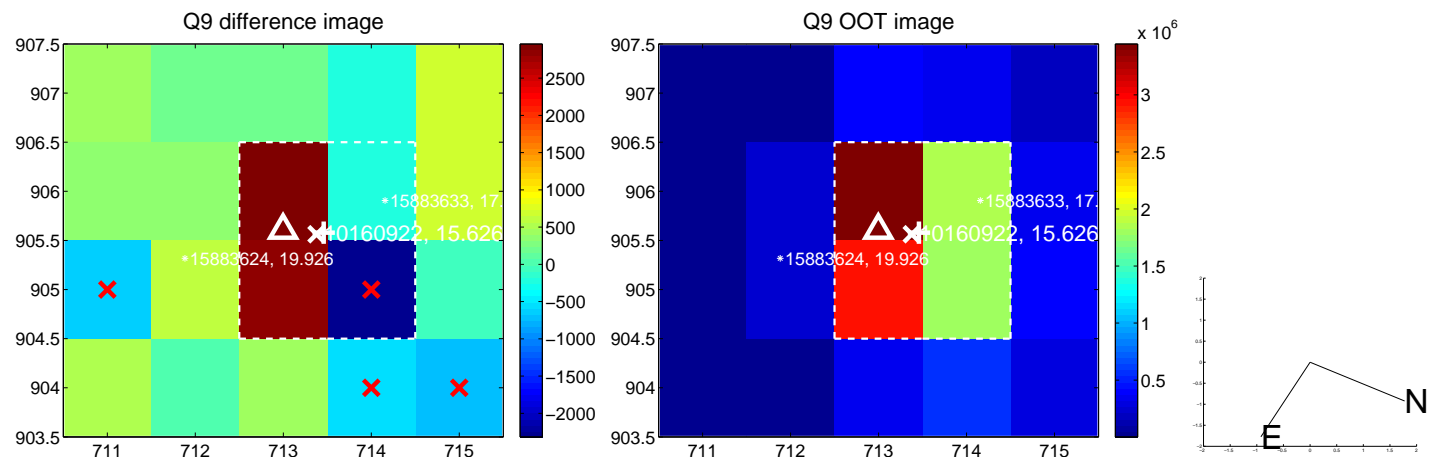
Q8 difference image. Poor Quality



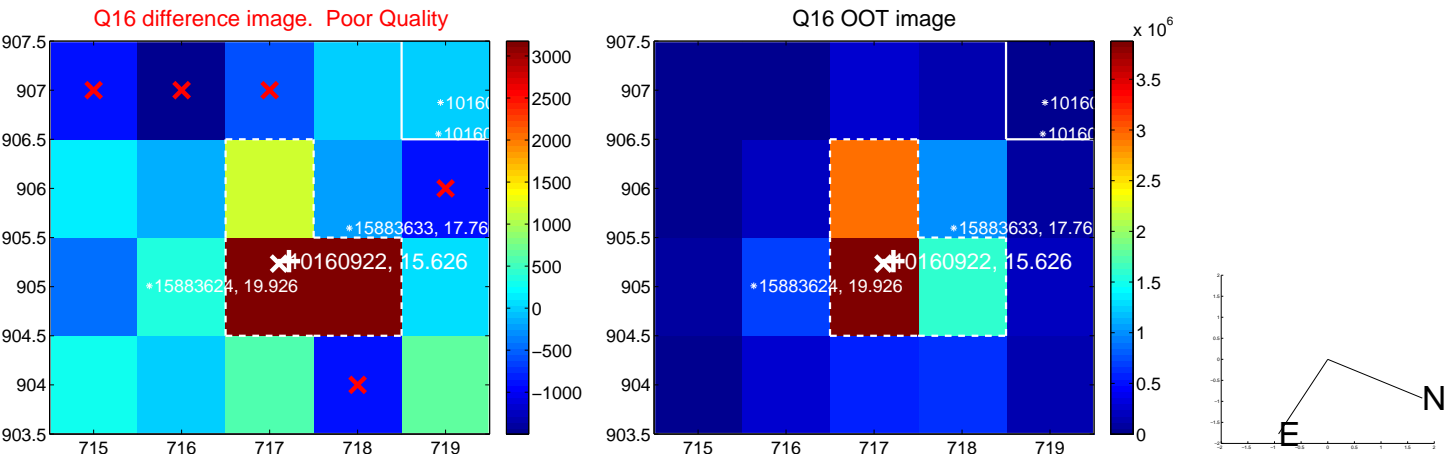
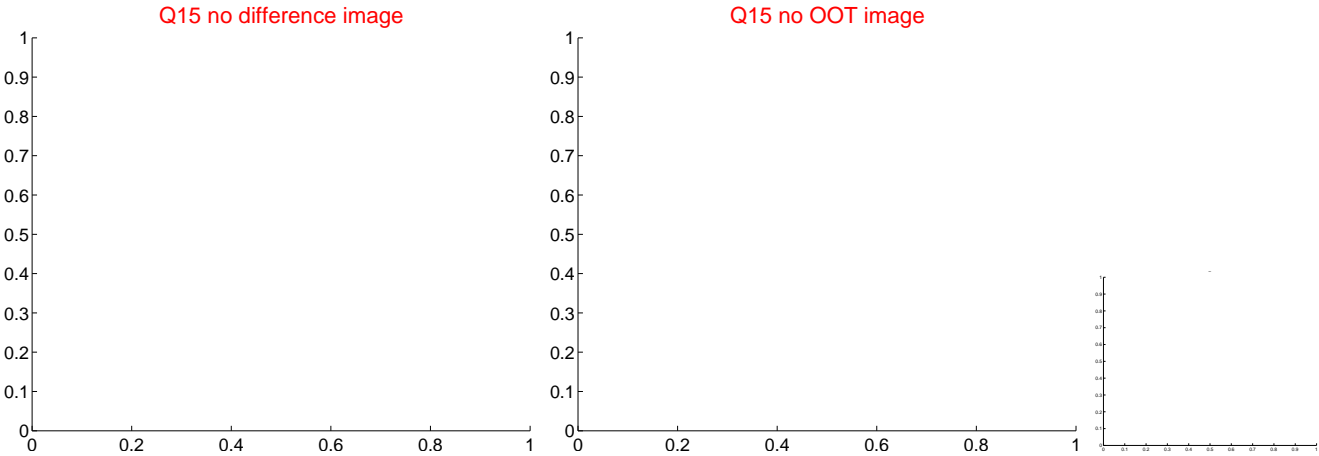
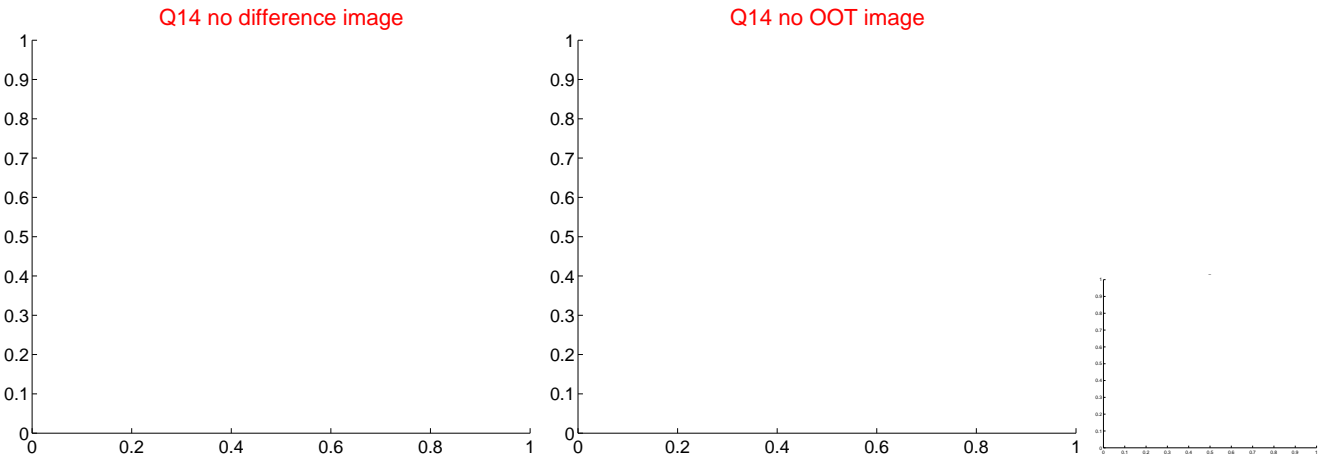
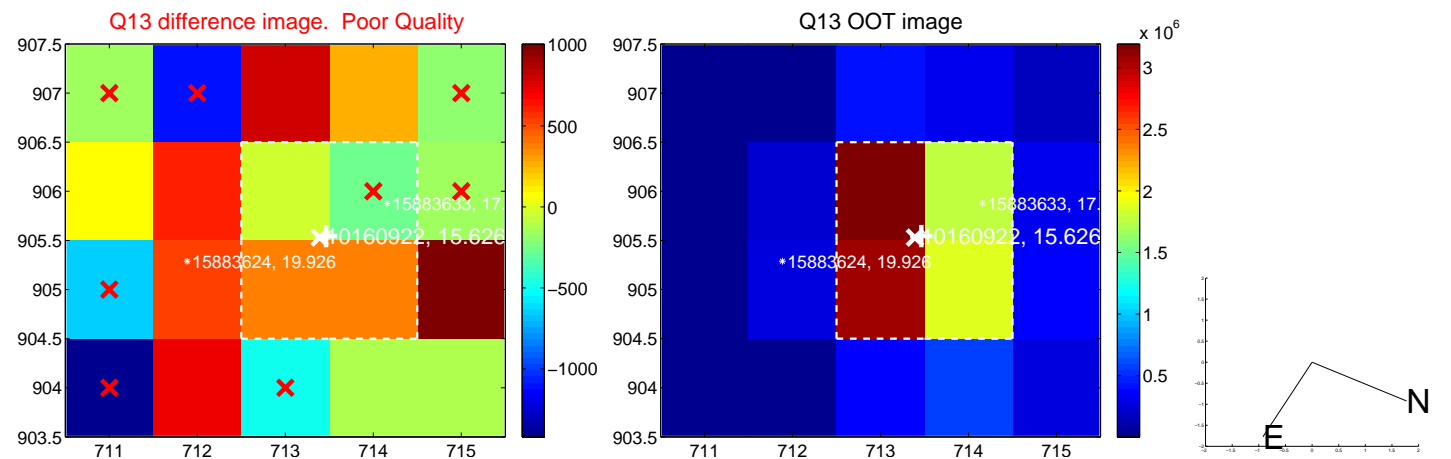
Q8 OOT image



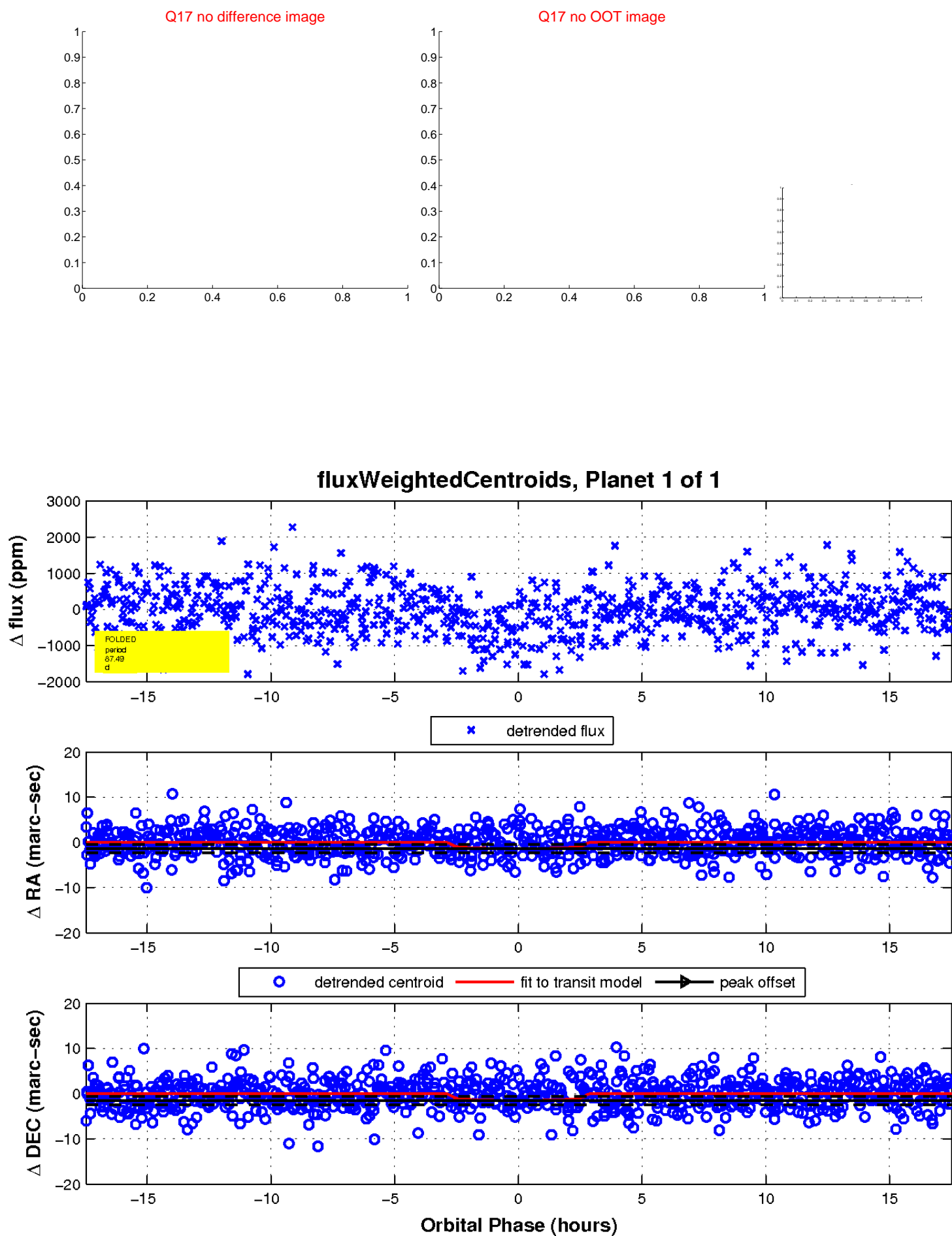
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

