

KIC 010355055

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})
010355055-01	OBS	No	286.342895	338.974709	414.5	32.665	14.6	16.0	3.22	8319	6.80	38.06
010355055-02	OBS	No	0.815713	132.199860	33.5	8.187	8.0	12.4	3.22	8319	1.92	94248.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010355055-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010355055-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

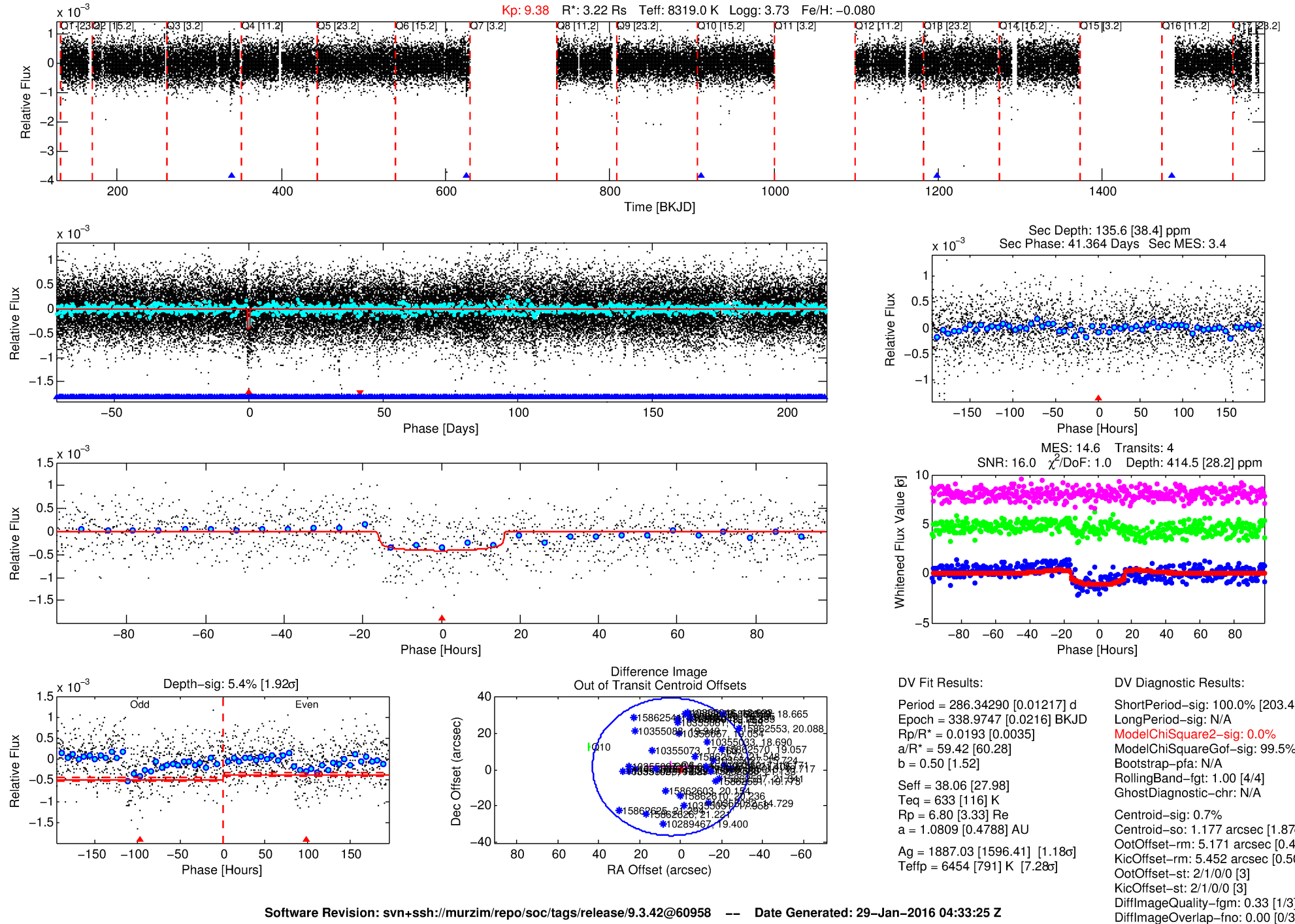
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010355055-01

No Significant Match Found

DV One-Page Summary

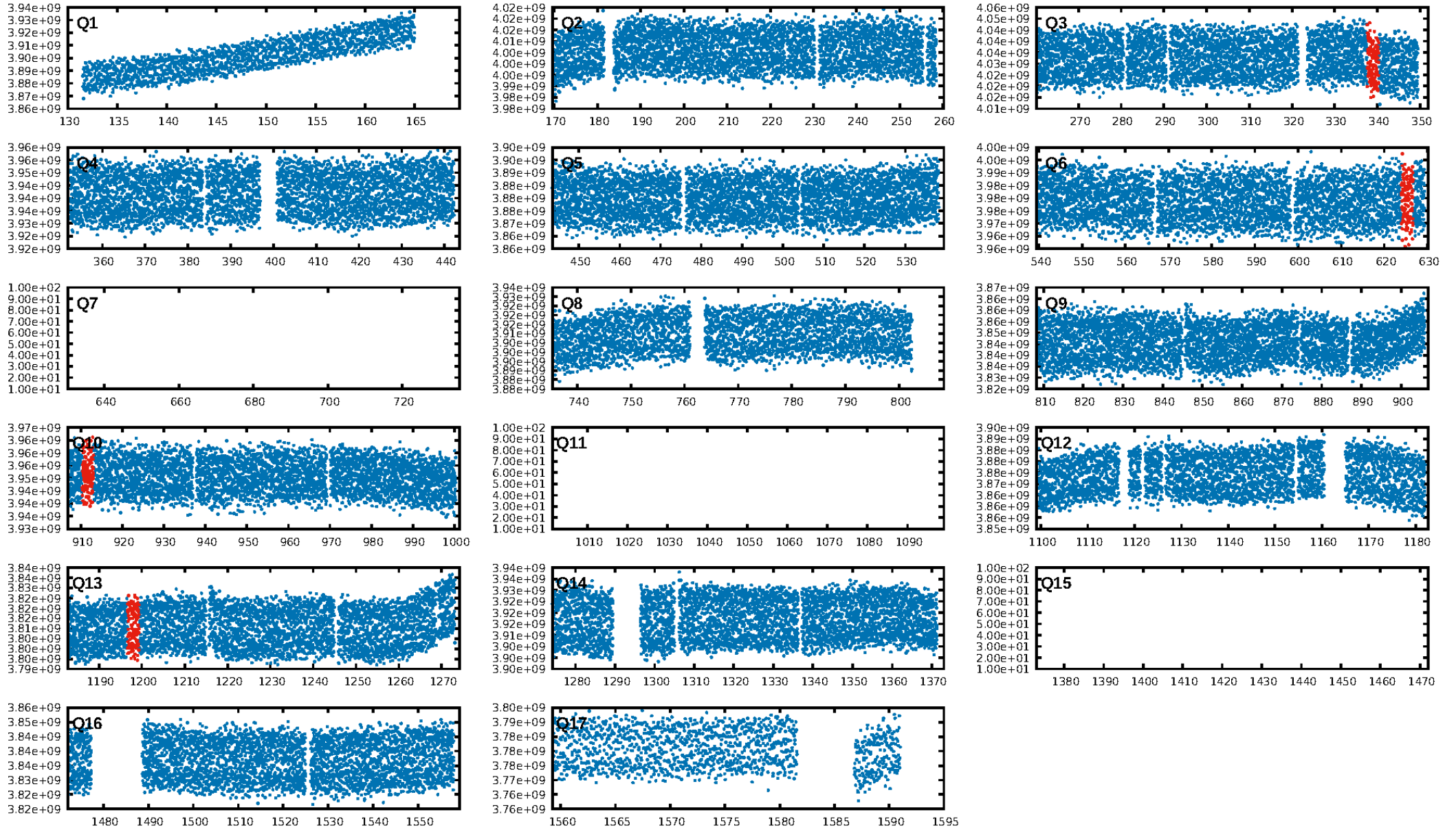
KIC: 10355055 Candidate: 1 of 2 Period: 286.343 d



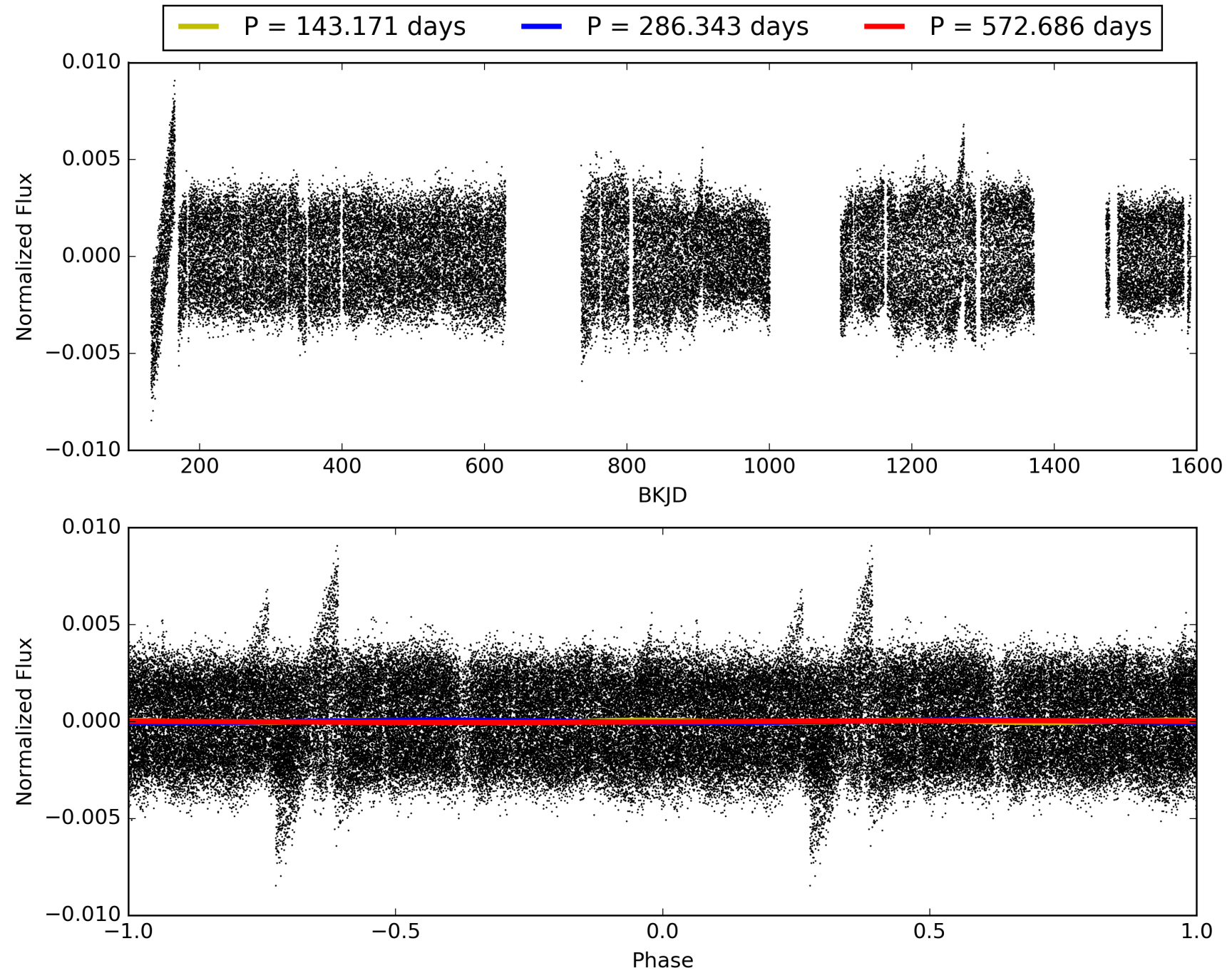
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:33:25 Z

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

TCE 010355055-01, PDC Light Curves

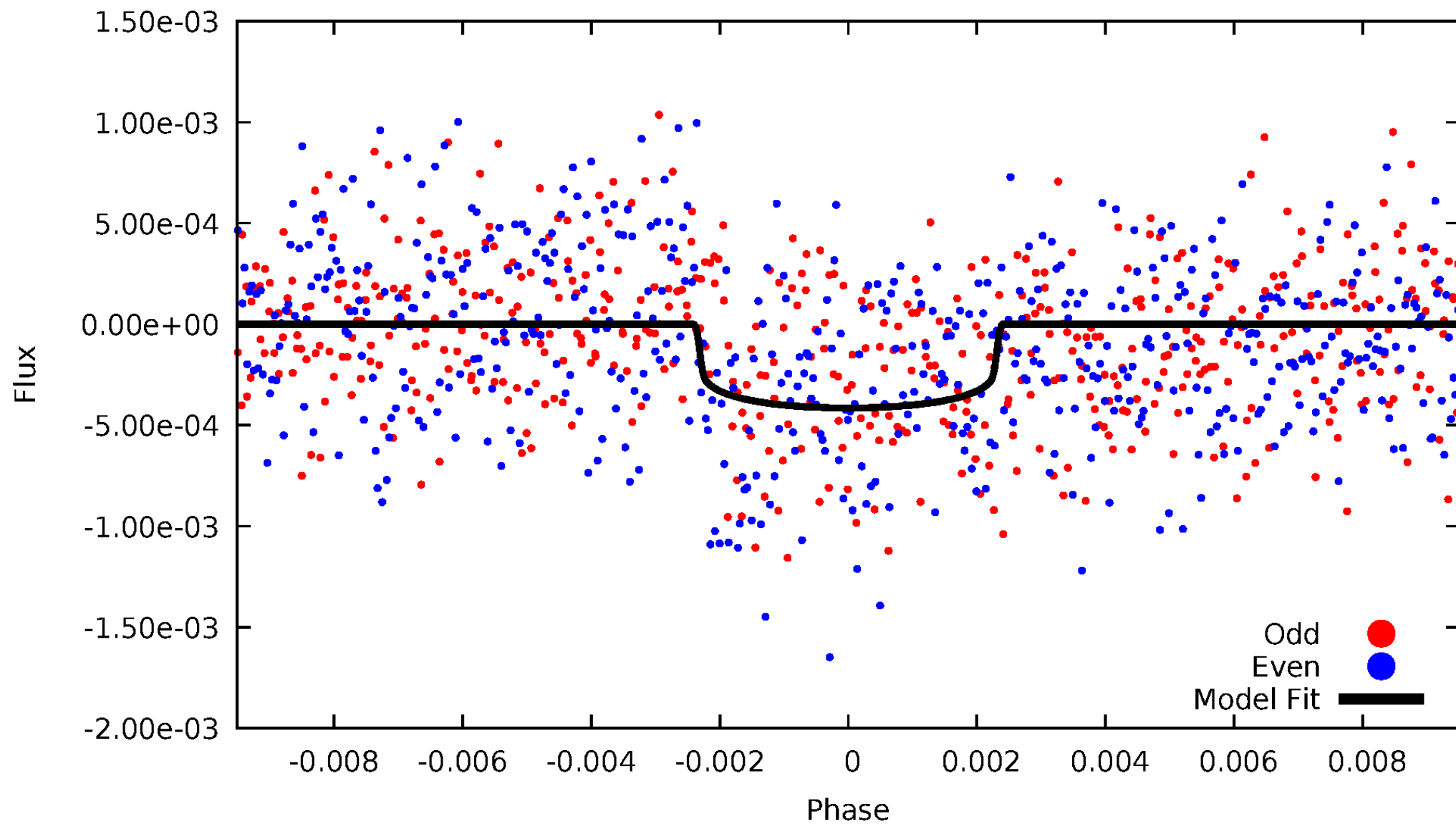


TCE 010355055-01



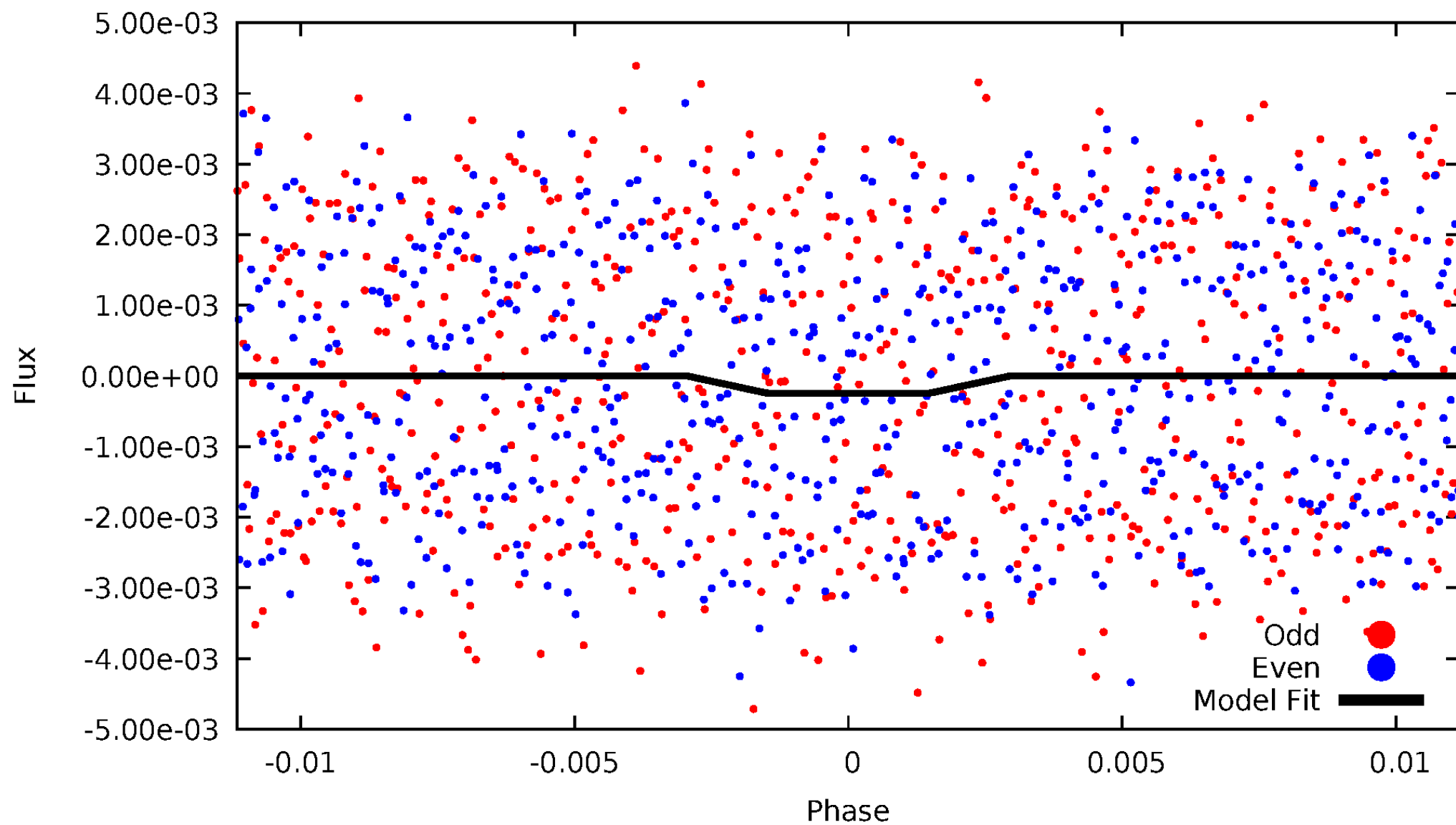
DV Odd/Even

TCE 010355055-01



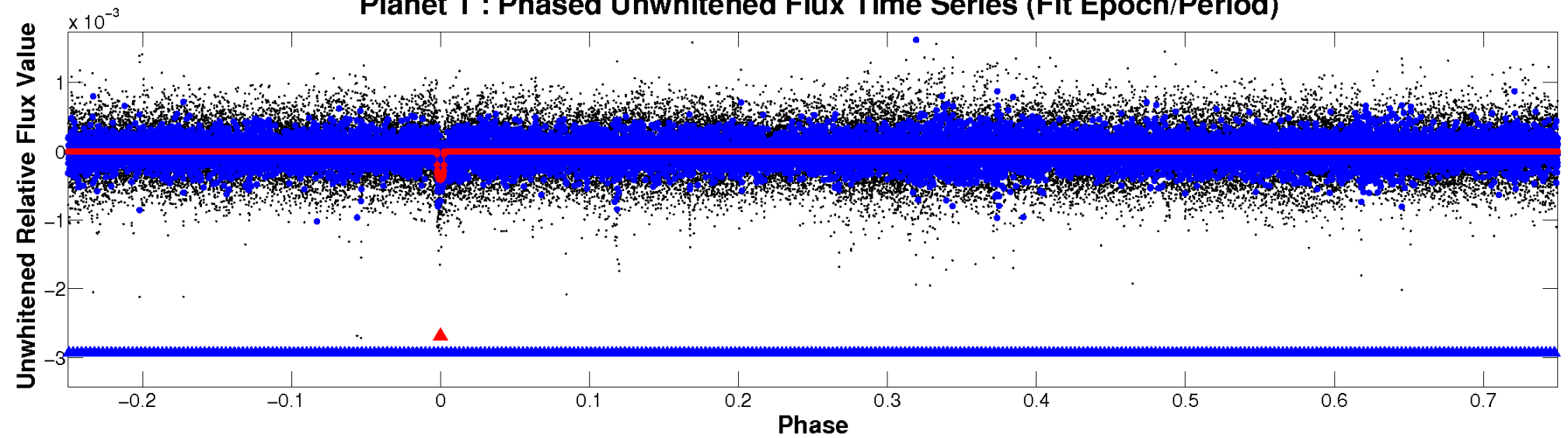
ALT Odd/Even

TCE 010355055-01

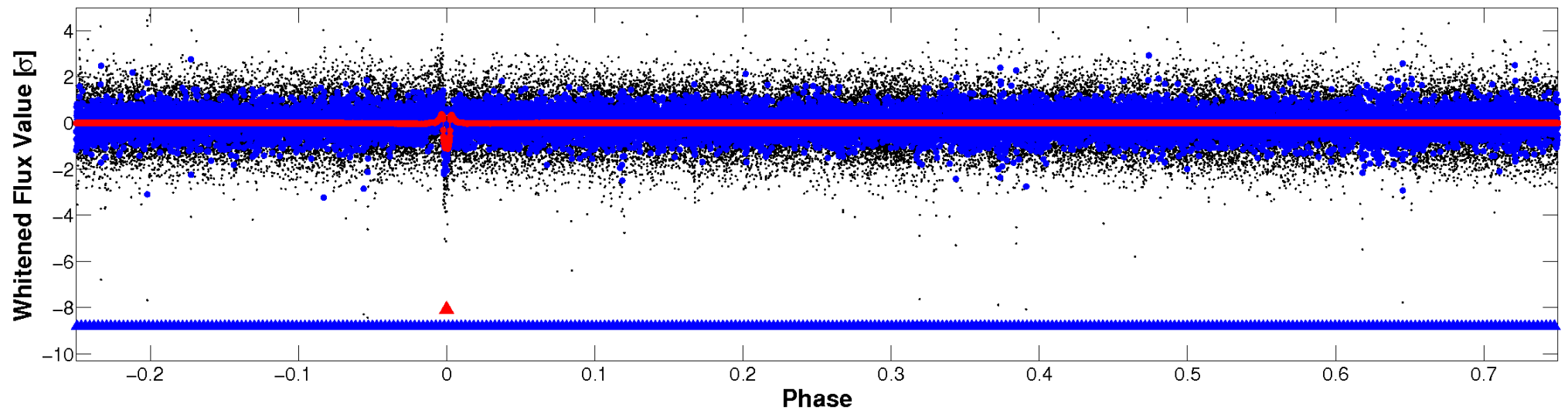


Non-Whitened Vs. Whitened Light Curve

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

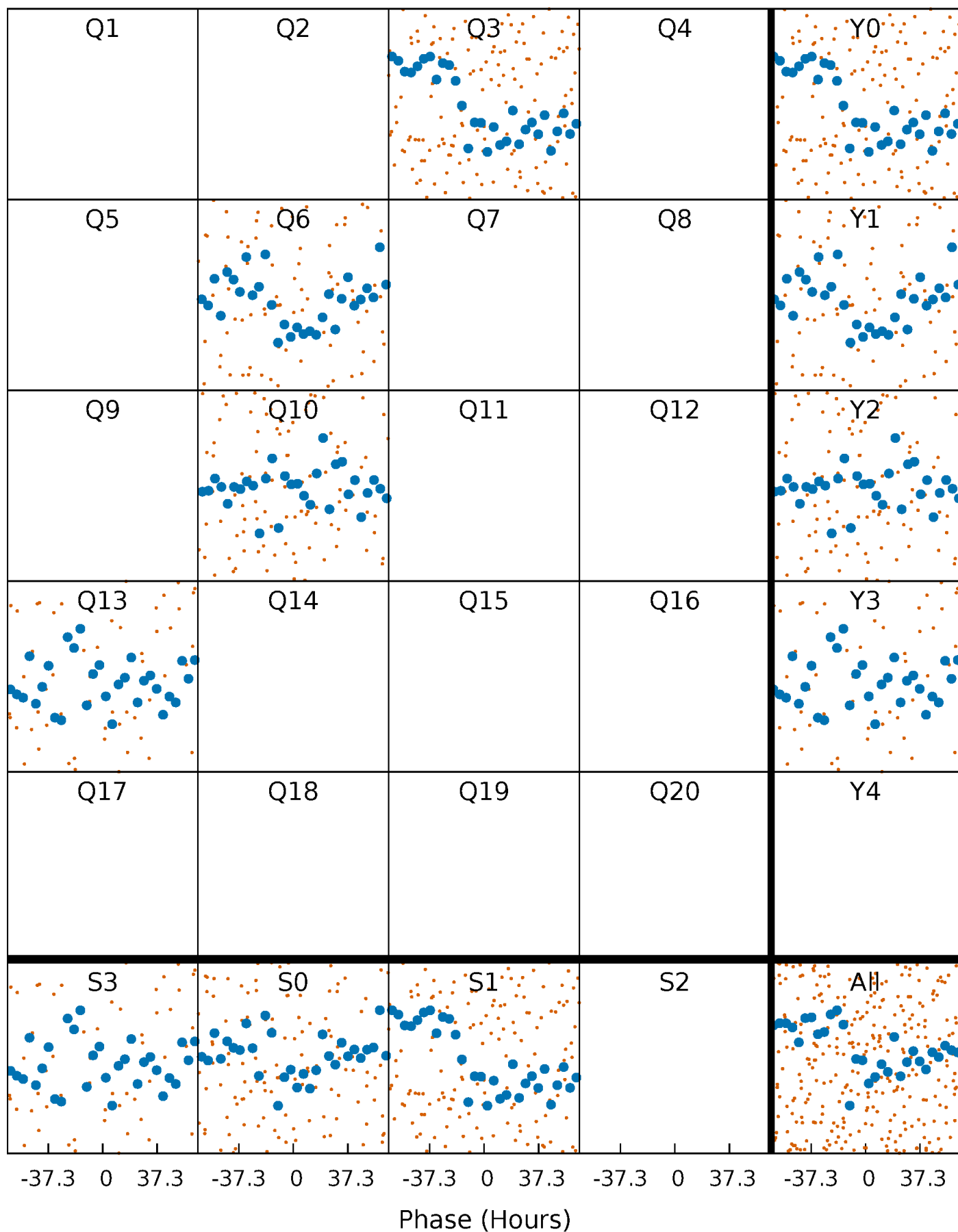


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



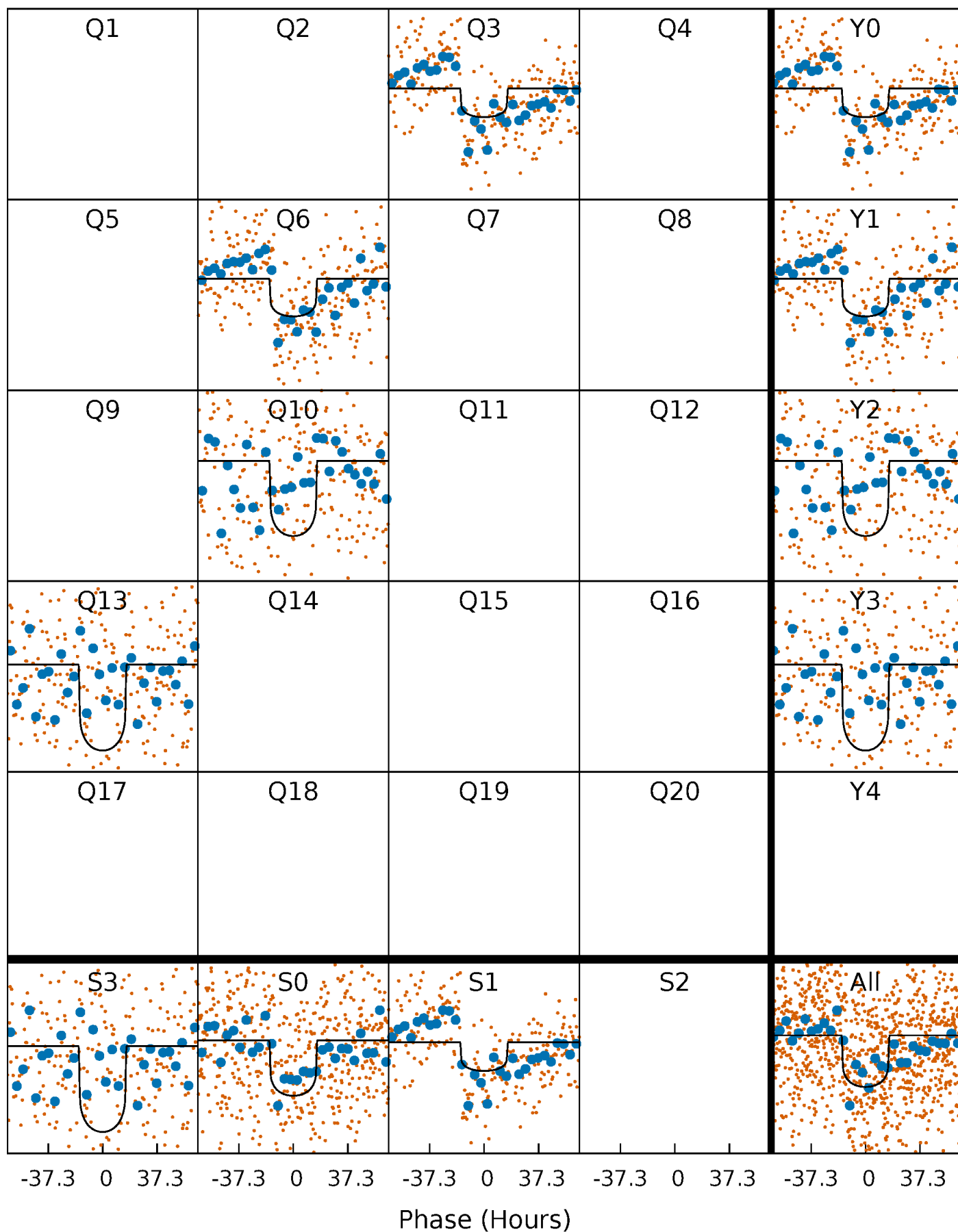
PDC Quarter-Phased Transit Curves

TCE 010355055-01 P=286.342895 Days $T_0=338.974709$ (BKJD)



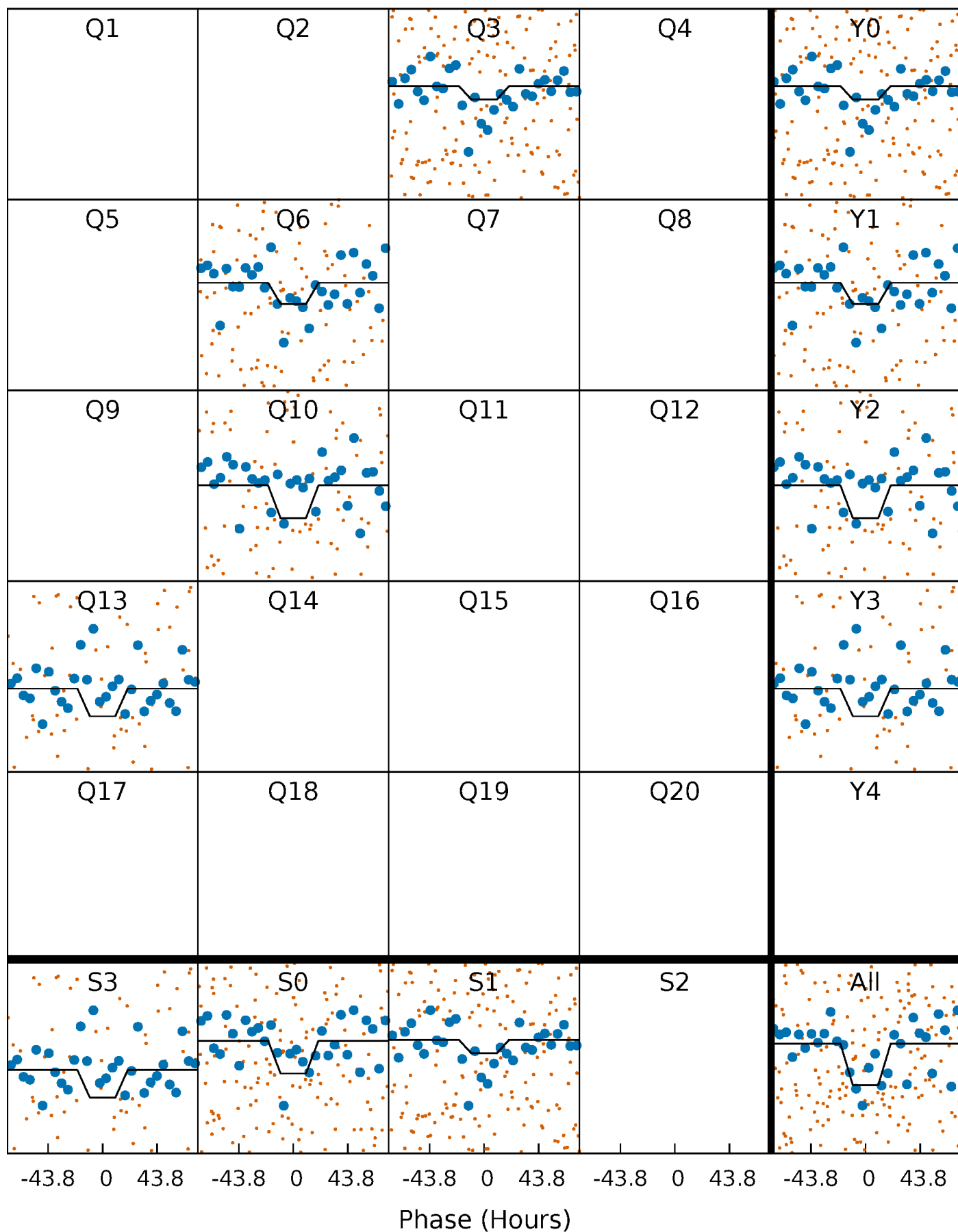
DV Quarter-Phased Transit Curves

TCE 010355055-01 P=286.342895 Days $T_0=338.974709$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

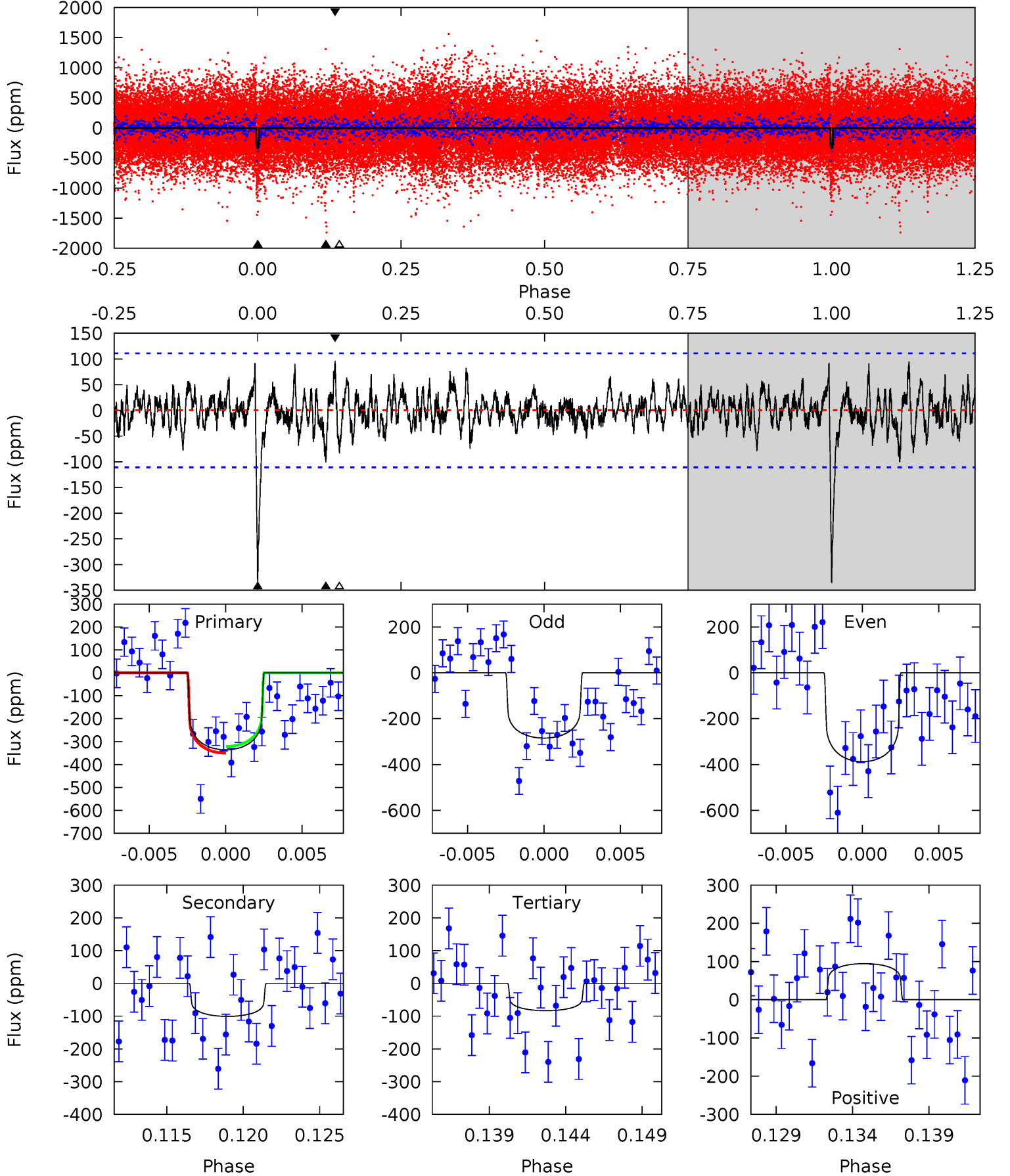
TCE 010355055-01 P=286.206064 Days $T_0=339.070350$ (BKJD)



DV Model-Shift Uniqueness Test

010355055-01, $P = 286.342895$ Days, $E = 52.631814$ Days

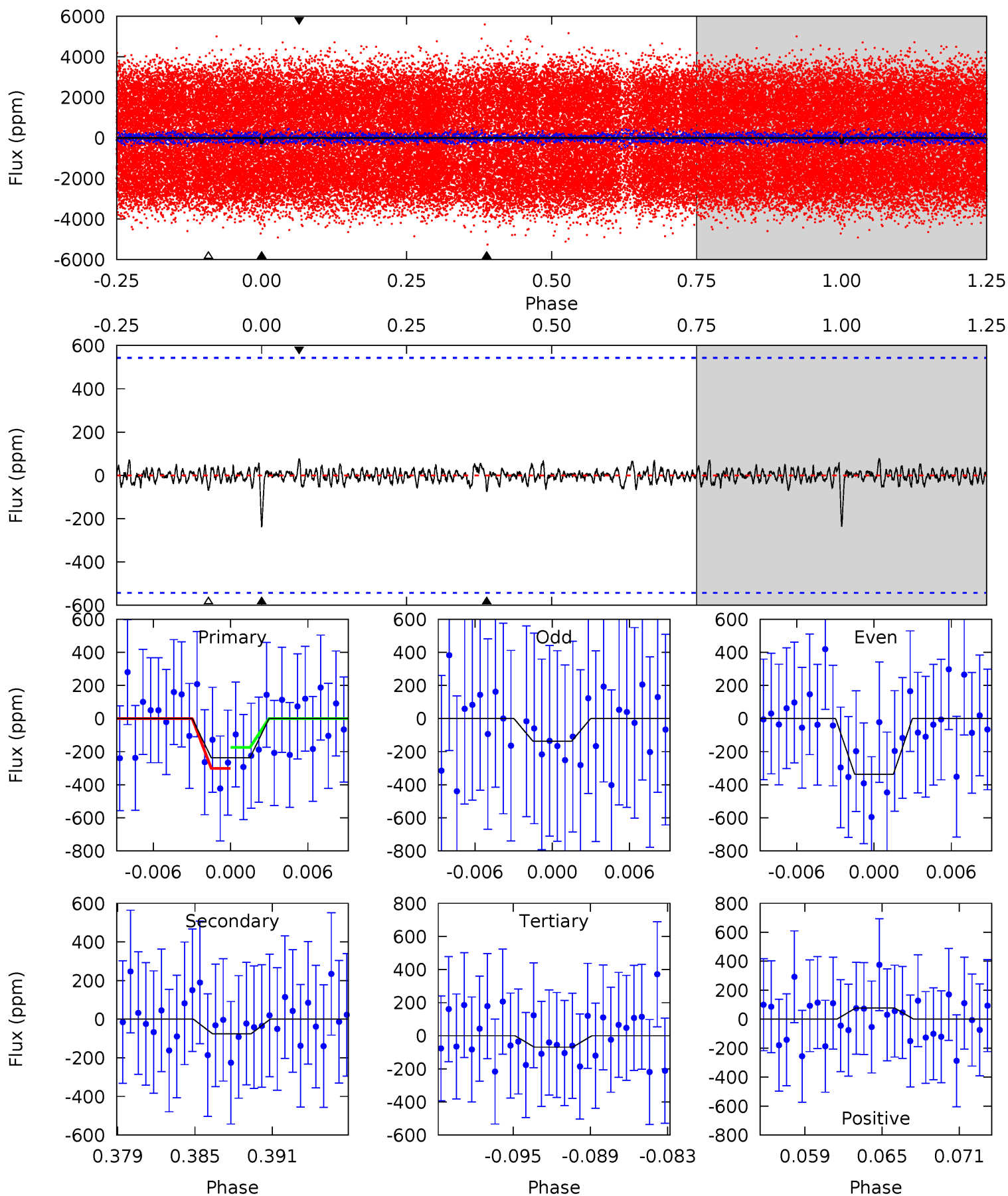
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	4.69	3.88	4.41	5.17	2.82	1.24	11.8	11.3	0.81	0.28	2.40	1.09	0.22	0.69



Alt Model-Shift Uniqueness Test

010355055-01, P = 286.206064 Days, E = 52.864286 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.24	0.71	0.65	0.73	5.13	2.75	0.22	1.59	1.51	0.06	-0.02	0.94	1.17	0.25	0.60



Stellar Parameters For KIC 010355055

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8319^{+230}_{-374}	$3.735^{+0.420}_{-0.140}$	$-0.080^{+0.300}_{-0.400}$	$3.219^{+0.978}_{-1.467}$	$2.053^{+0.387}_{-0.473}$	$0.087^{+0.349}_{-0.036}$
	+3%/-4%	+11%/-4%	+375%/-500%	+30%/-46%	+19%/-23%	+402%/-41%
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 010355055-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-101 ± 21	$6.13^{+1.90}_{-1.65}$	851^{+78}_{-102}	5779^{+682}_{-561}	1662^{+1610}_{-722}
Alt.	-76 ± 106	$5.03^{+1.76}_{-1.53}$	857^{+81}_{-99}	5925^{+1935}_{-10890}	1747^{+3937}_{-2547}

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 $A_{obs} \gg 1.0$

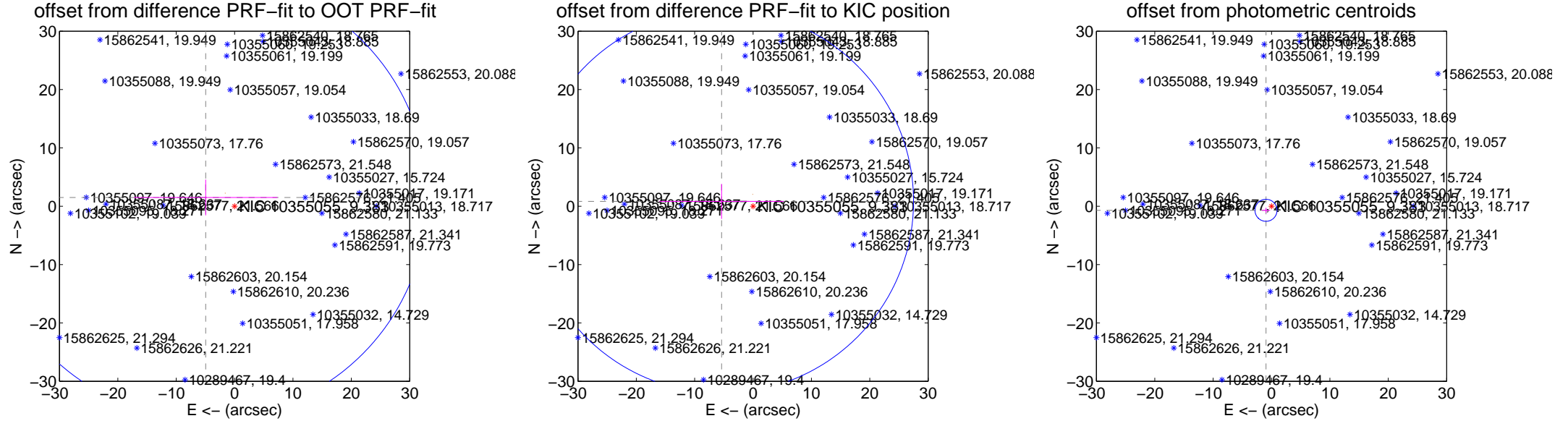
DV Centroid Data

Supplemental centroid analysis for 010355055-01. **Kepler magnitude: 9.38.** Transit SNR 15.99

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.81 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.171 ± 12.657	0.41	4.948 ± 12.299	1.502 ± 3.068
PRF-fit source offset from KIC position	5.452 ± 10.960	0.50	5.389 ± 10.640	0.825 ± 2.997
photometric centroid source offset	1.18 ± 0.63	1.87	0.95 ± 0.71	-0.70 ± 0.44



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.

Q1 no difference image



Q1 no OOT image



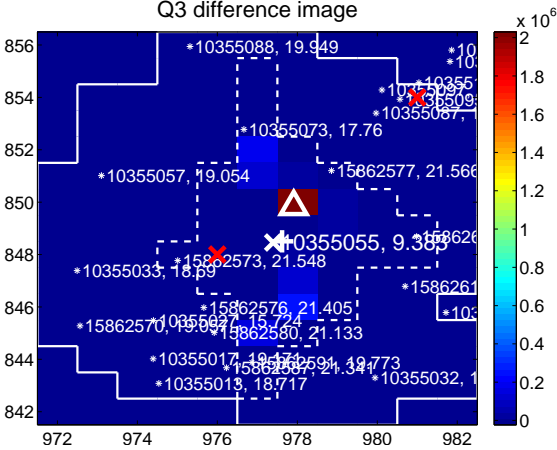
Q2 no difference image



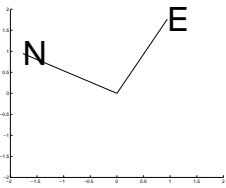
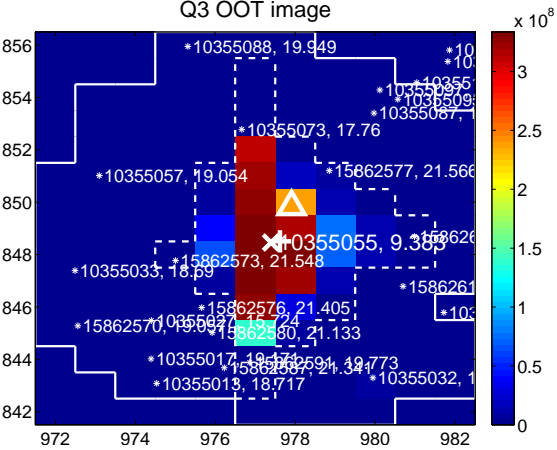
Q2 no OOT image



Q3 difference image



Q3 OOT image



Q4 no difference image



Q4 no OOT image

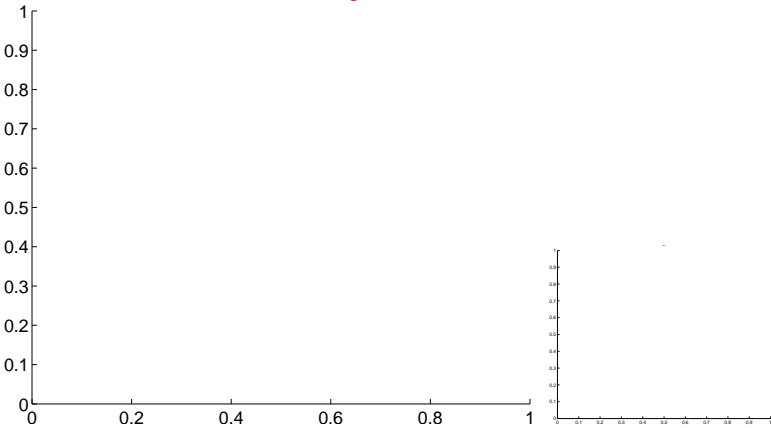


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

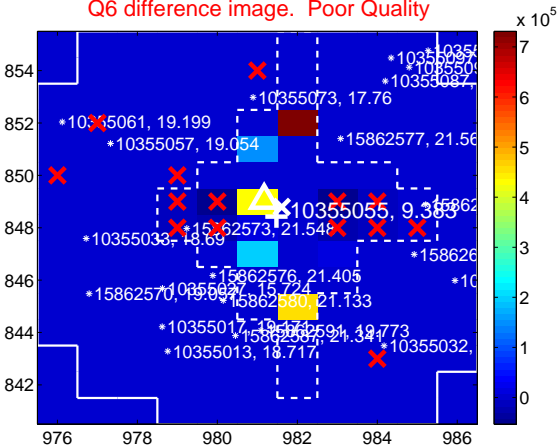
Q5 no difference image



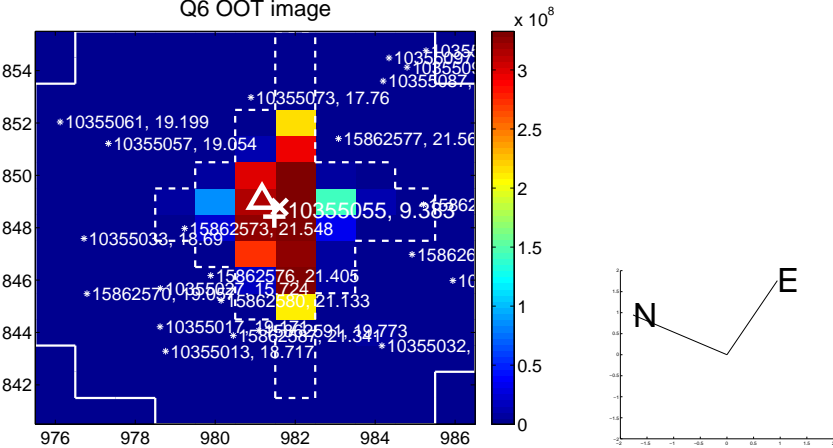
Q5 no OOT image



Q6 difference image. Poor Quality



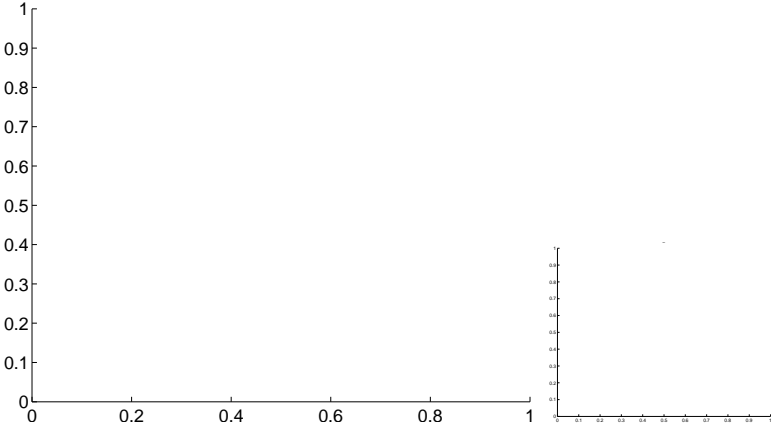
Q6 OOT image



Q7 no difference image



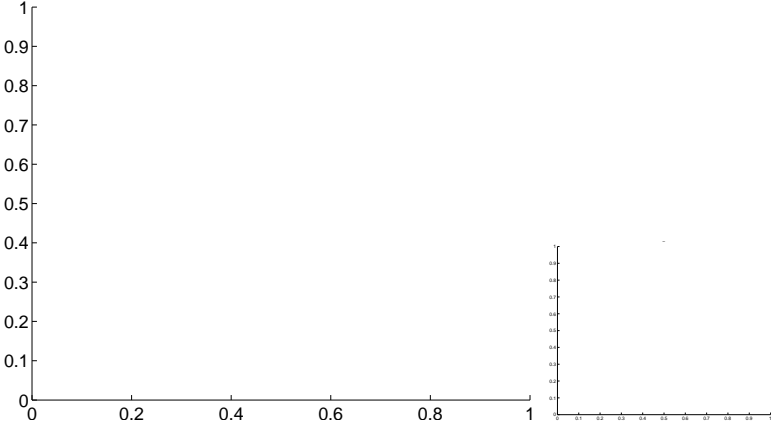
Q7 no OOT image



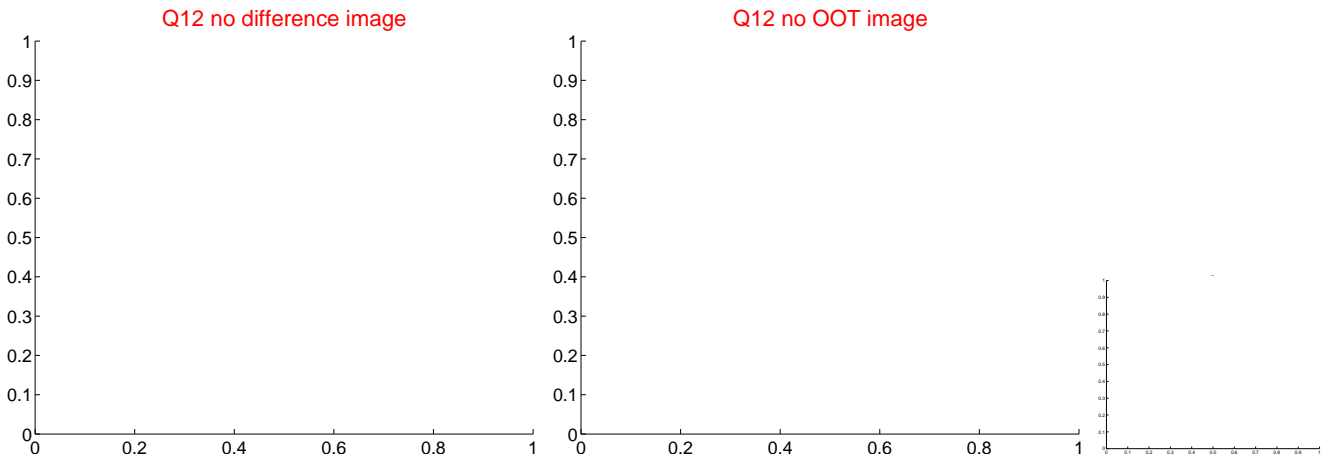
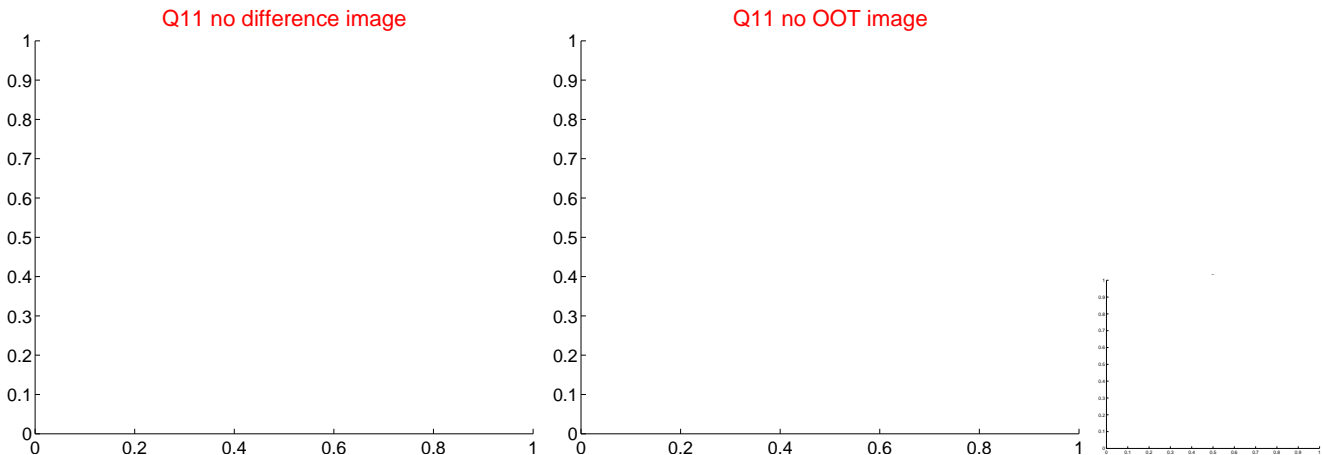
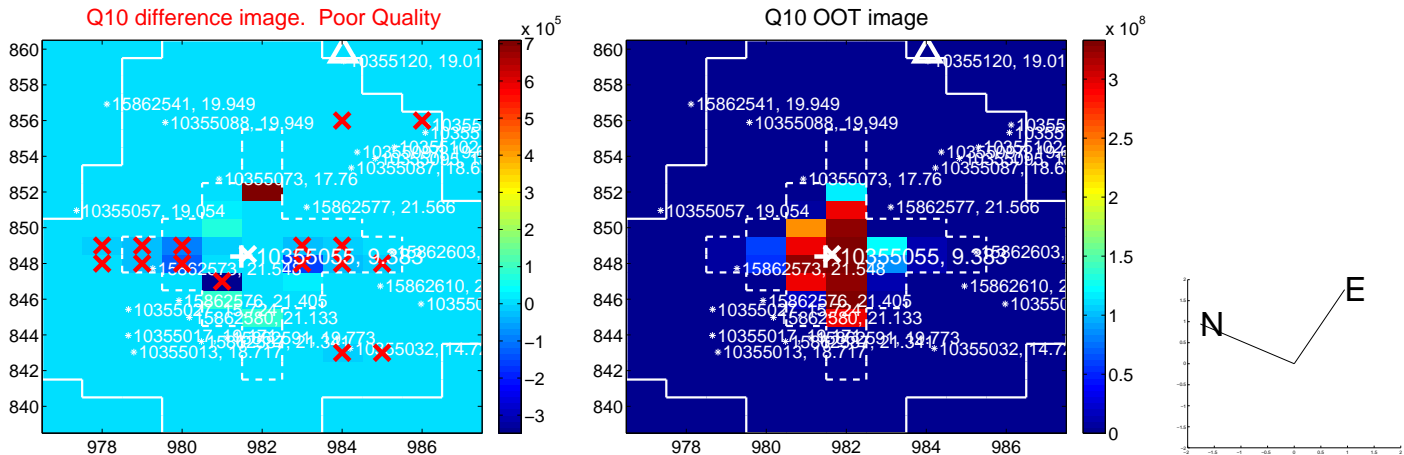
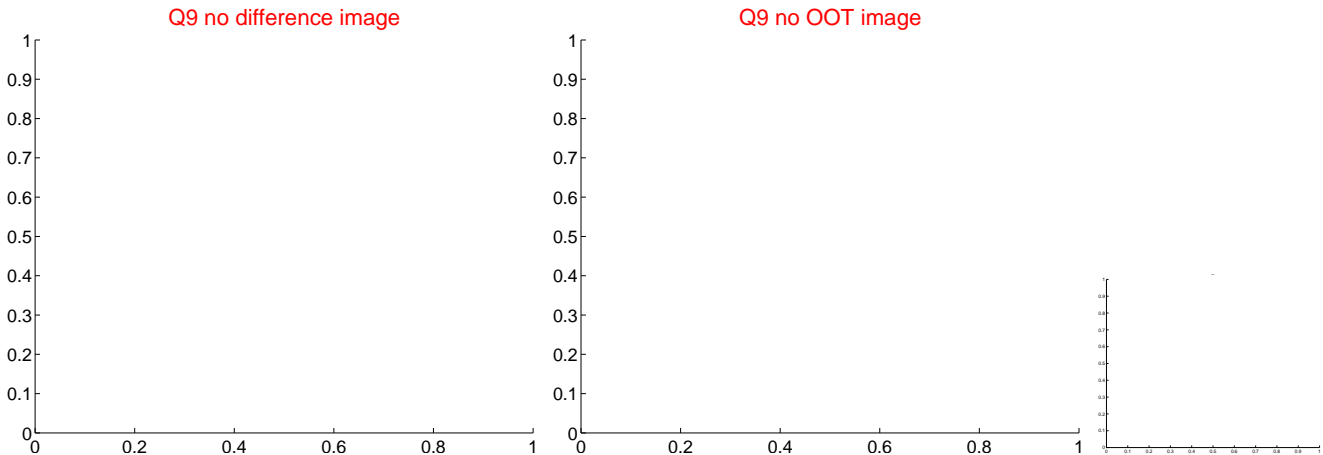
Q8 no difference image



Q8 no OOT image



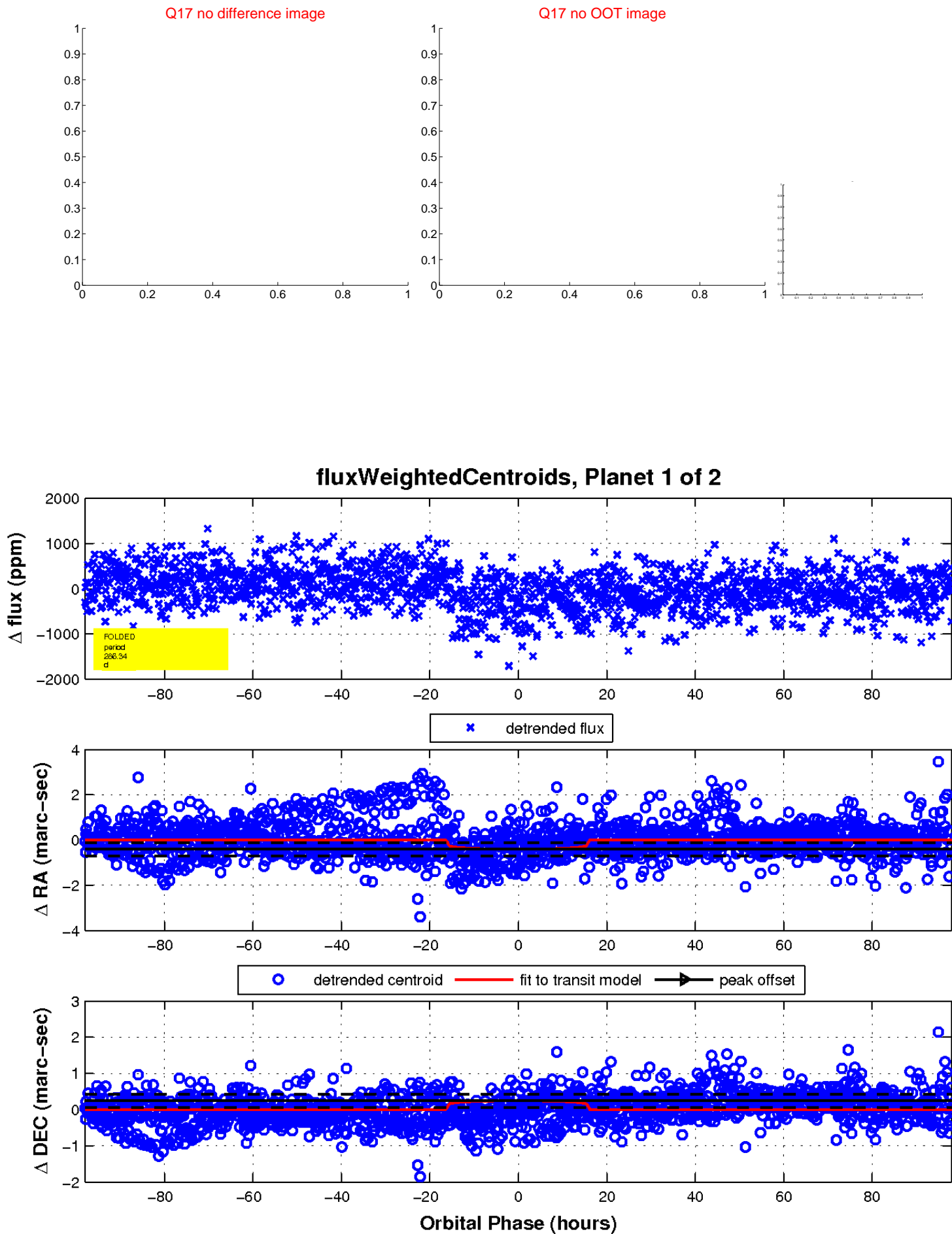
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

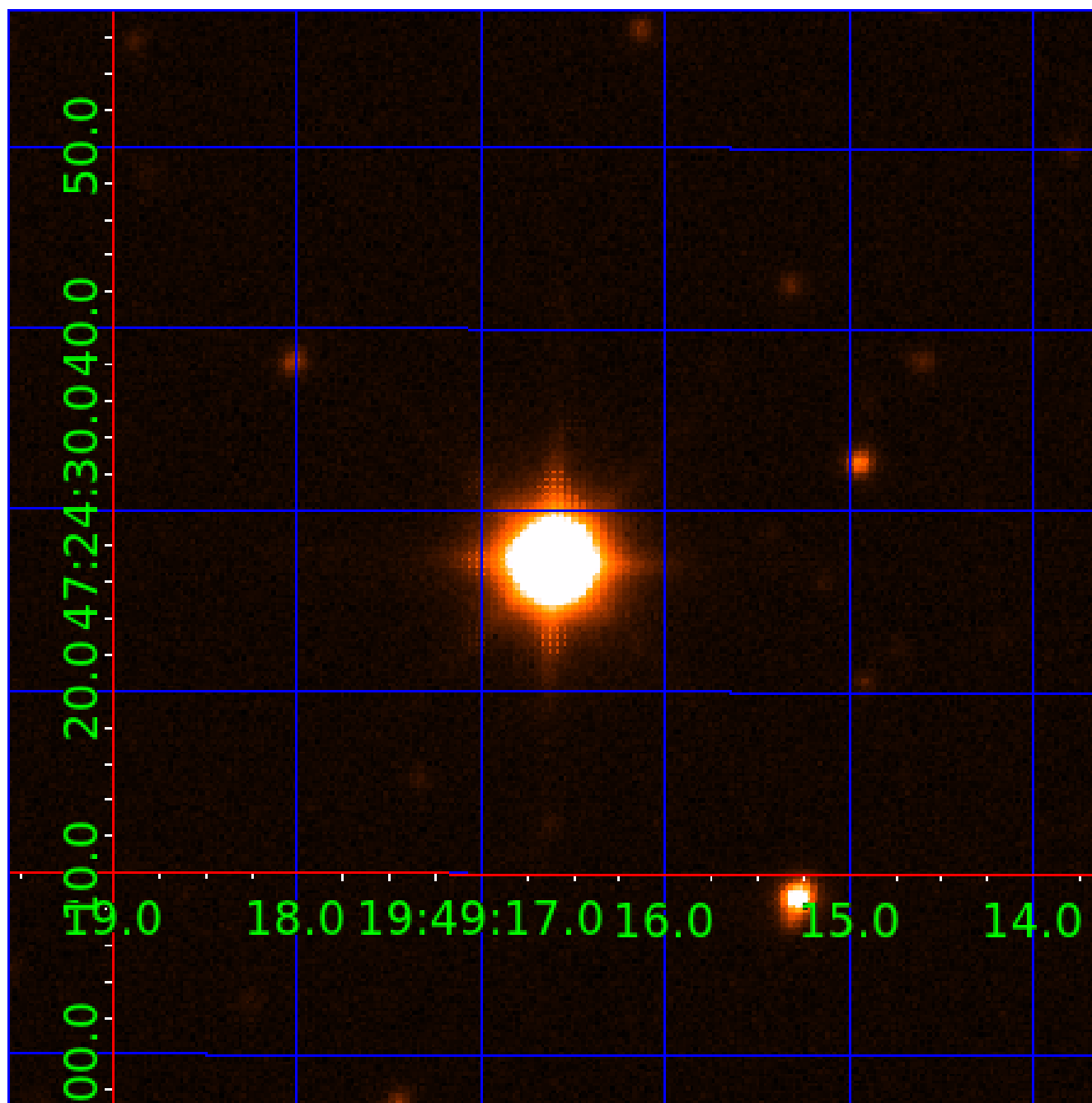


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 010355055

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})
010355055-01	OBS	No	286.342895	338.974709	414.5	32.665	14.6	16.0	3.22	8319	6.80	38.06
010355055-02	OBS	No	0.815713	132.199860	33.5	8.187	8.0	12.4	3.22	8319	1.92	94248.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010355055-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
010355055-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_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.

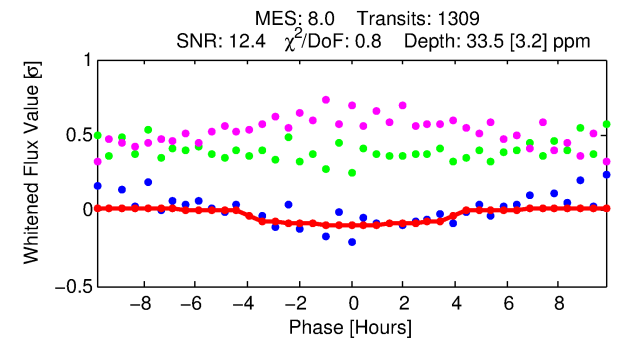
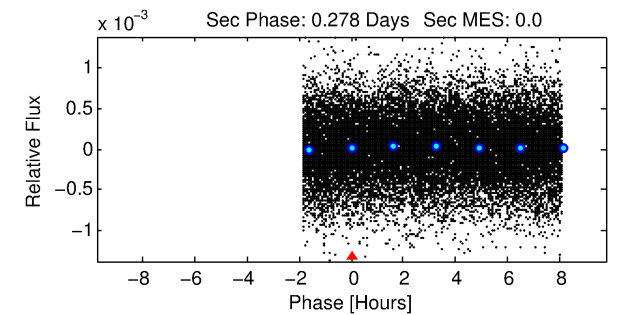
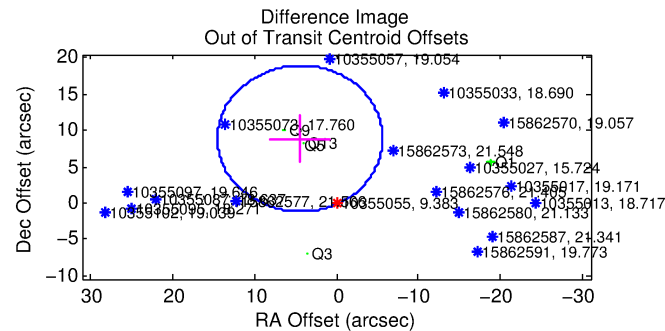
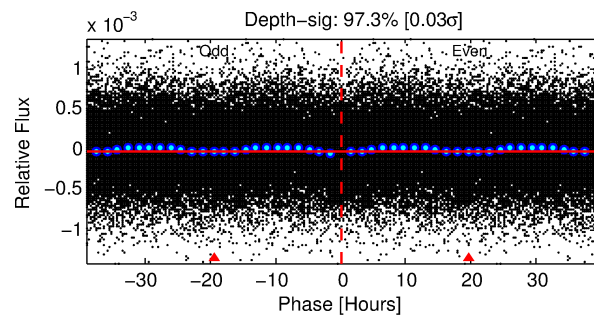
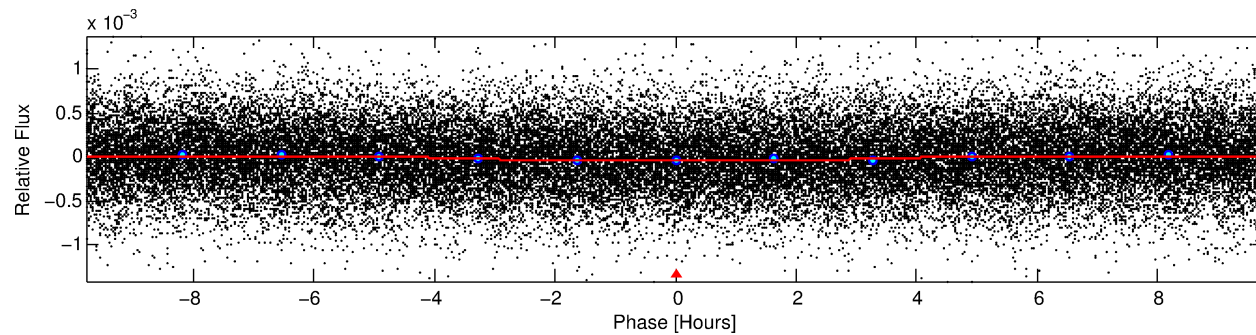
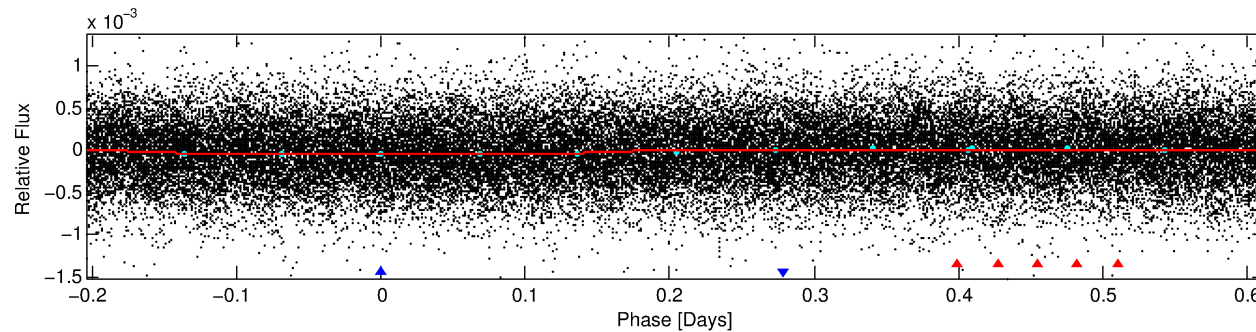
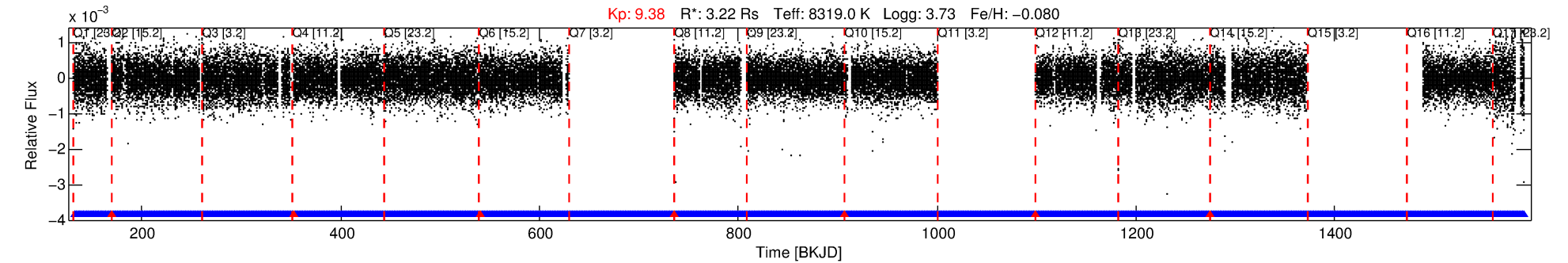
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010355055-02

No Significant Match Found

DV One-Page Summary

KIC: 10355055 Candidate: 2 of 2 Period: 0.816 d



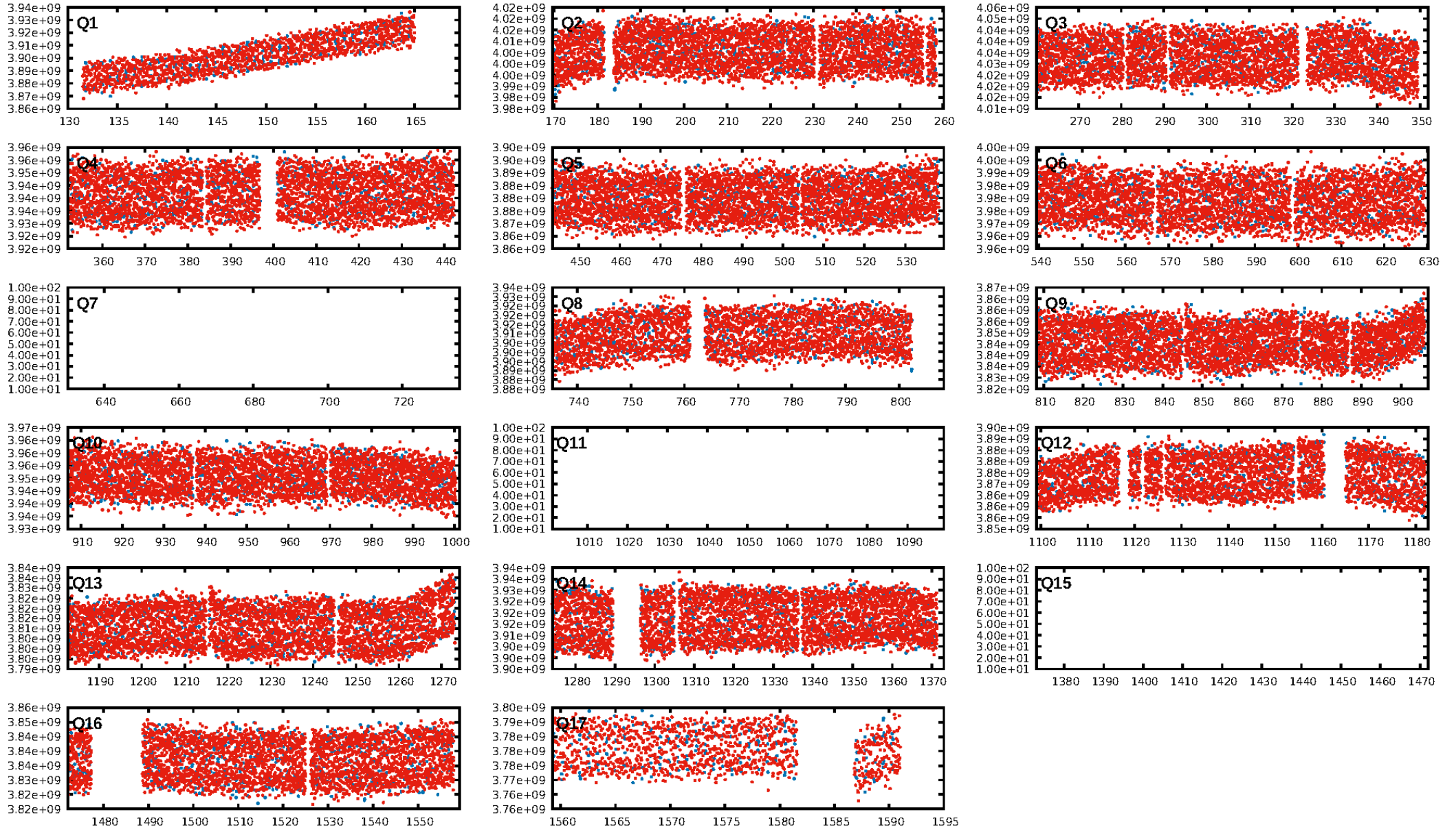
DV Fit Results:

Period = 0.81571 [0.00001] d
Epoch = 132.1999 [0.0064] BKJD
Rp/R* = 0.0055 [0.0042]
a/R* = 1.03 [0.29]
b = 0.43 [8.65]
Seff = 94248.87 [69278.66]
Teq = 4468 [821] K
Rp = 1.92 [1.70] Re
a = 0.0217 [0.0096] AU
Ag = N/A
Teffp = N/A

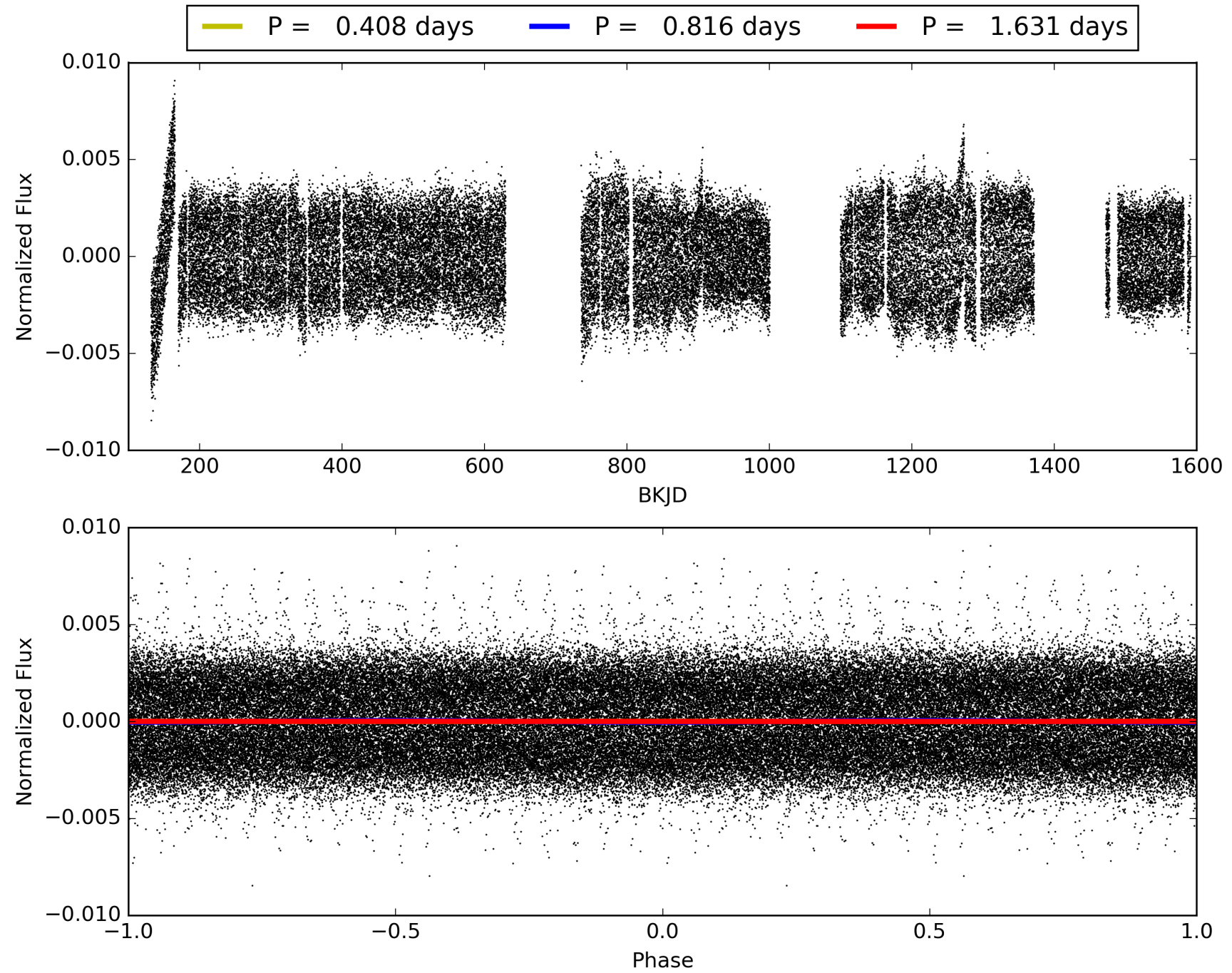
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [203.49 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [1226/1234]
GhostDiagnostic-chr: N/A
Centroid-sig: 4.2%
Centroid-so: 0.313 arcsec [0.94 σ]
OotOffset-rm: 9.916 arcsec [2.96 σ]
OotOffset-st: 0/1/0/4 [5]
KicOffset-rm: 8.779 arcsec [3.55 σ]
KicOffset-st: 0/1/0/4 [5]
DiffImageQuality-fgm: 0.00 [0/5]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010355055-02, PDC Light Curves

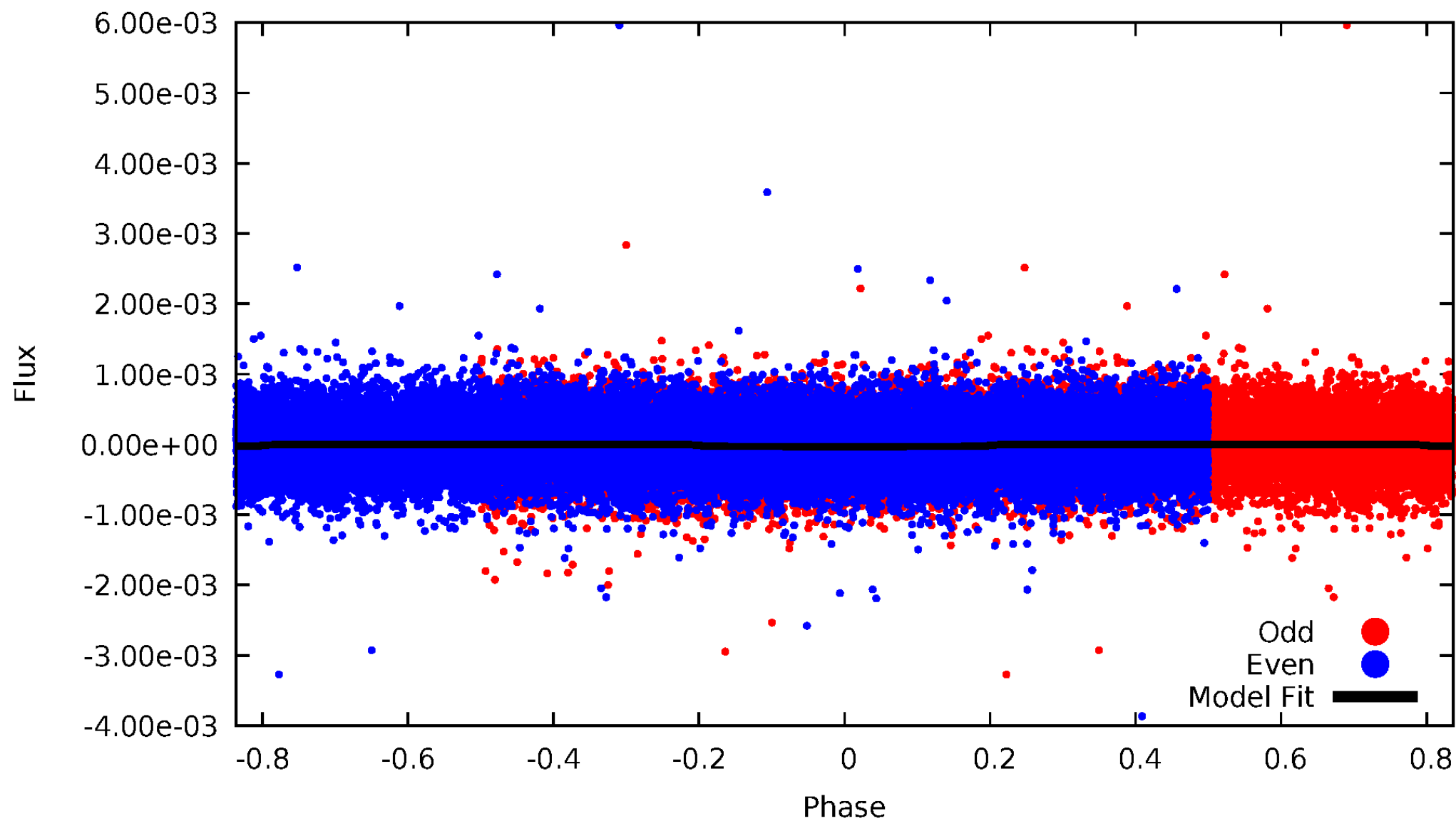


TCE 010355055-02



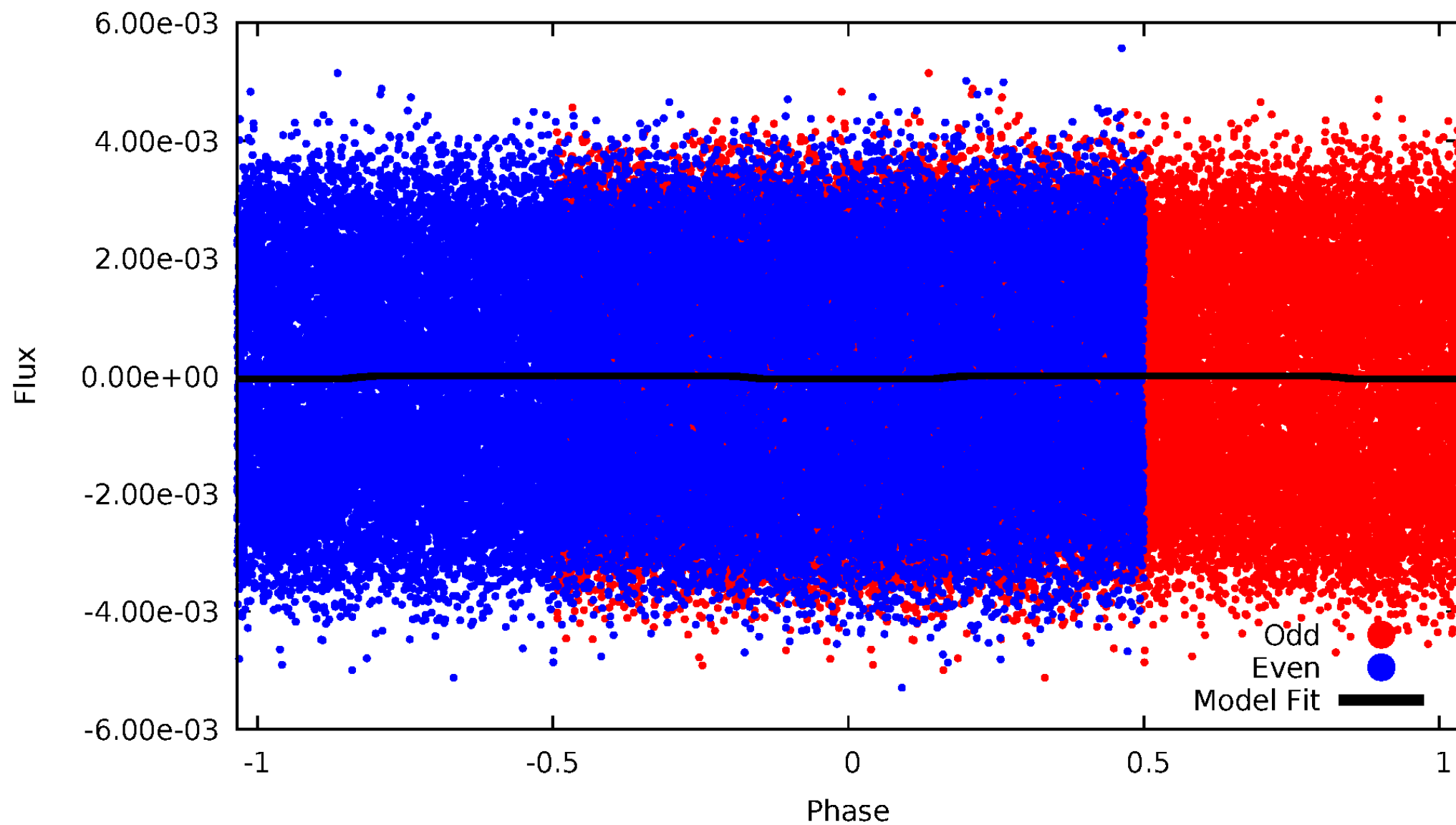
DV Odd/Even

TCE 010355055-02



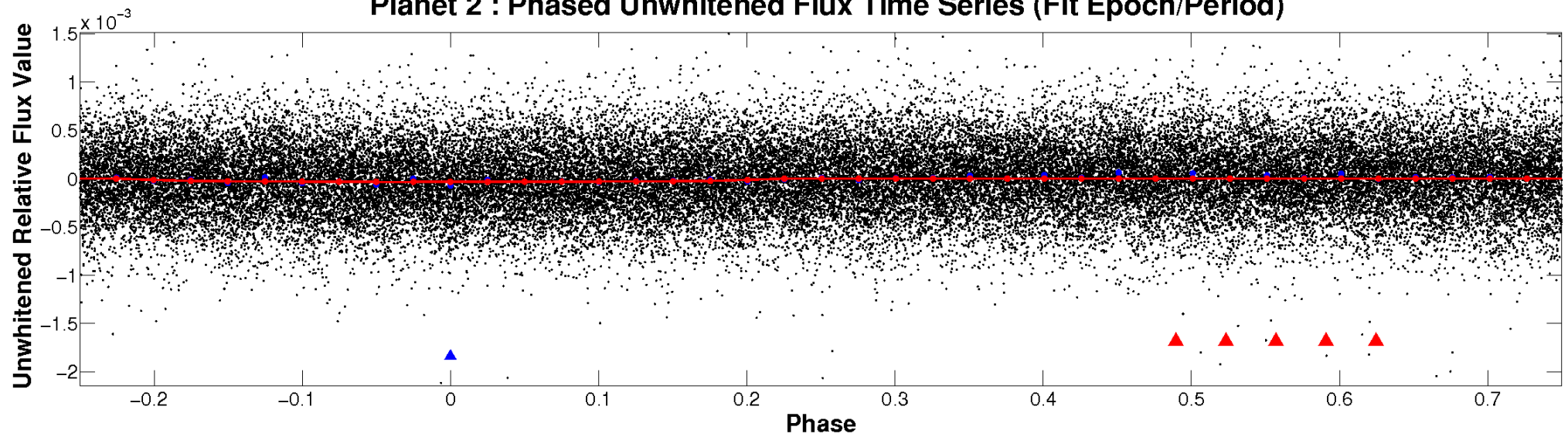
ALT Odd/Even

TCE 010355055-02

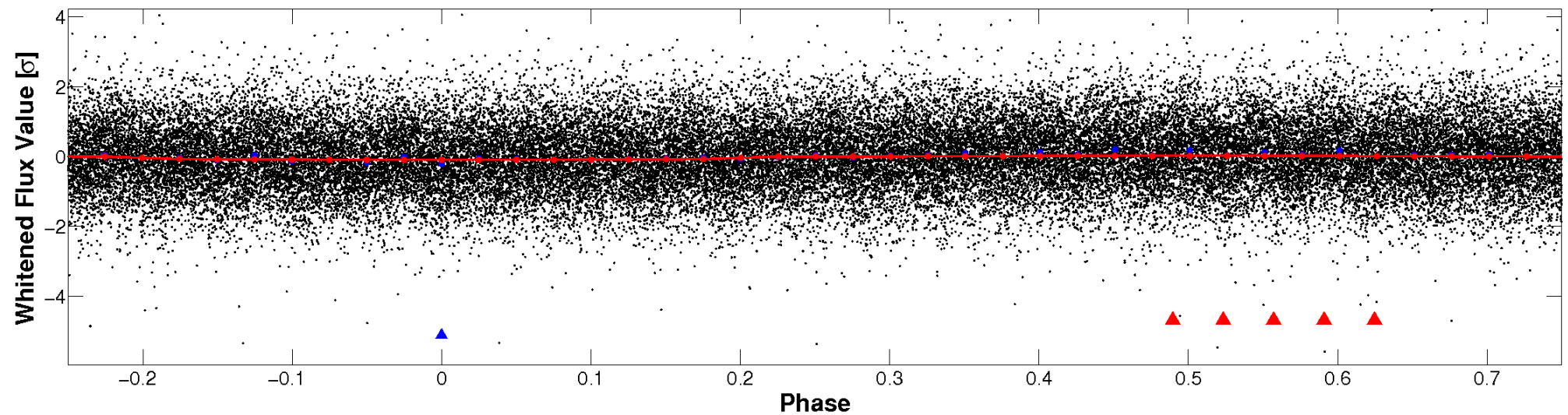


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

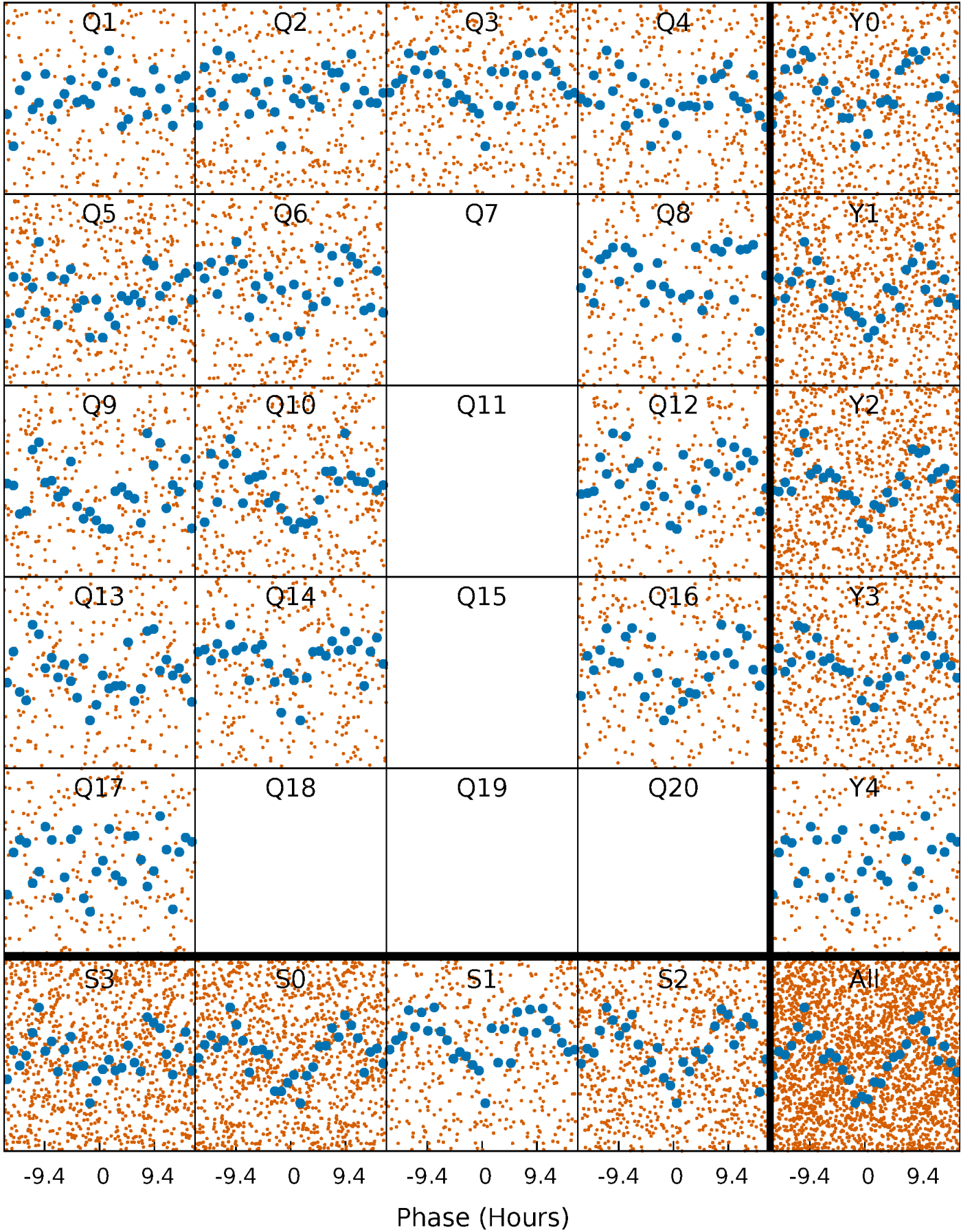


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



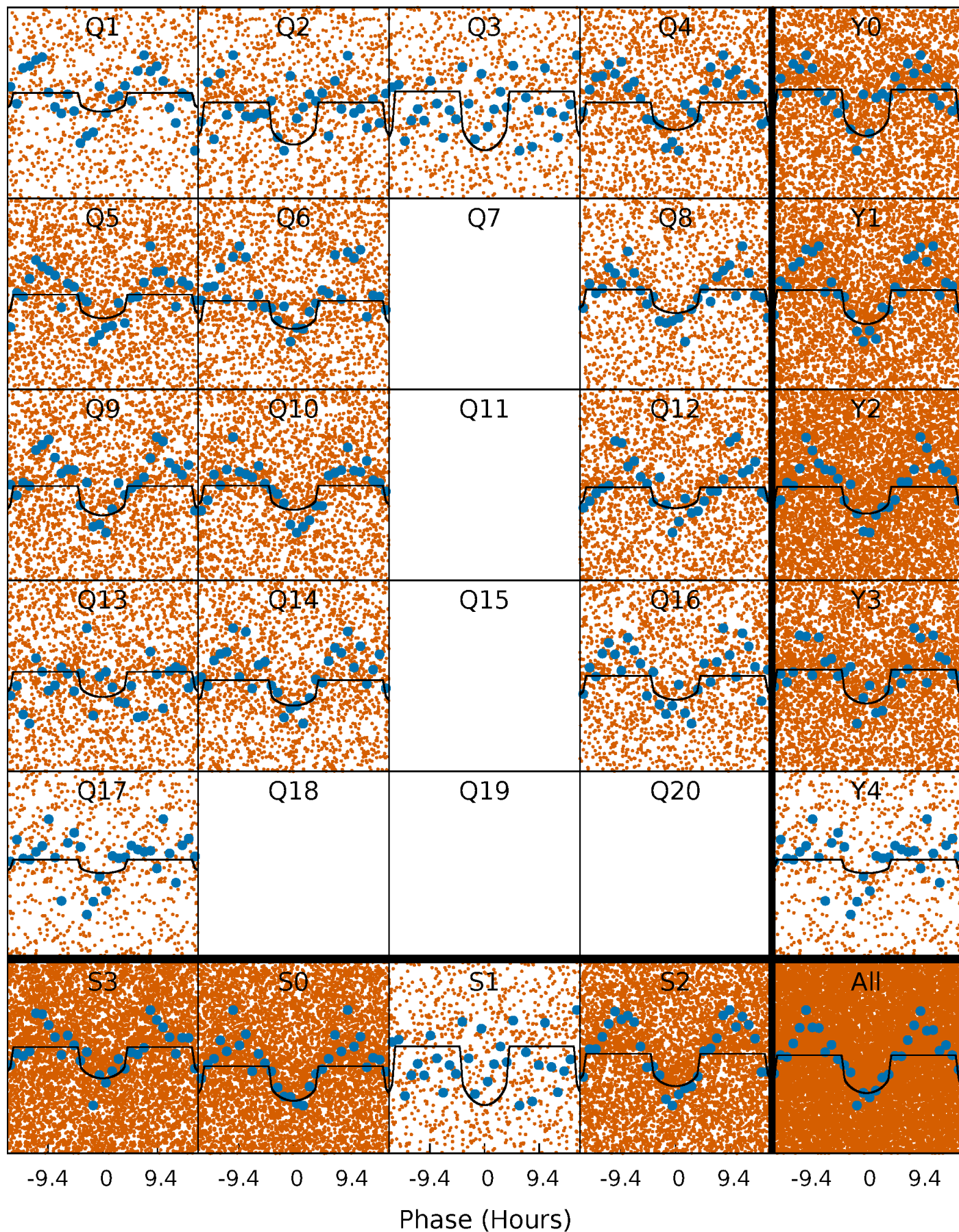
PDC Quarter-Phased Transit Curves

TCE 010355055-02 P= 0.815713 Days $T_0=132.199860$ (BKJD)



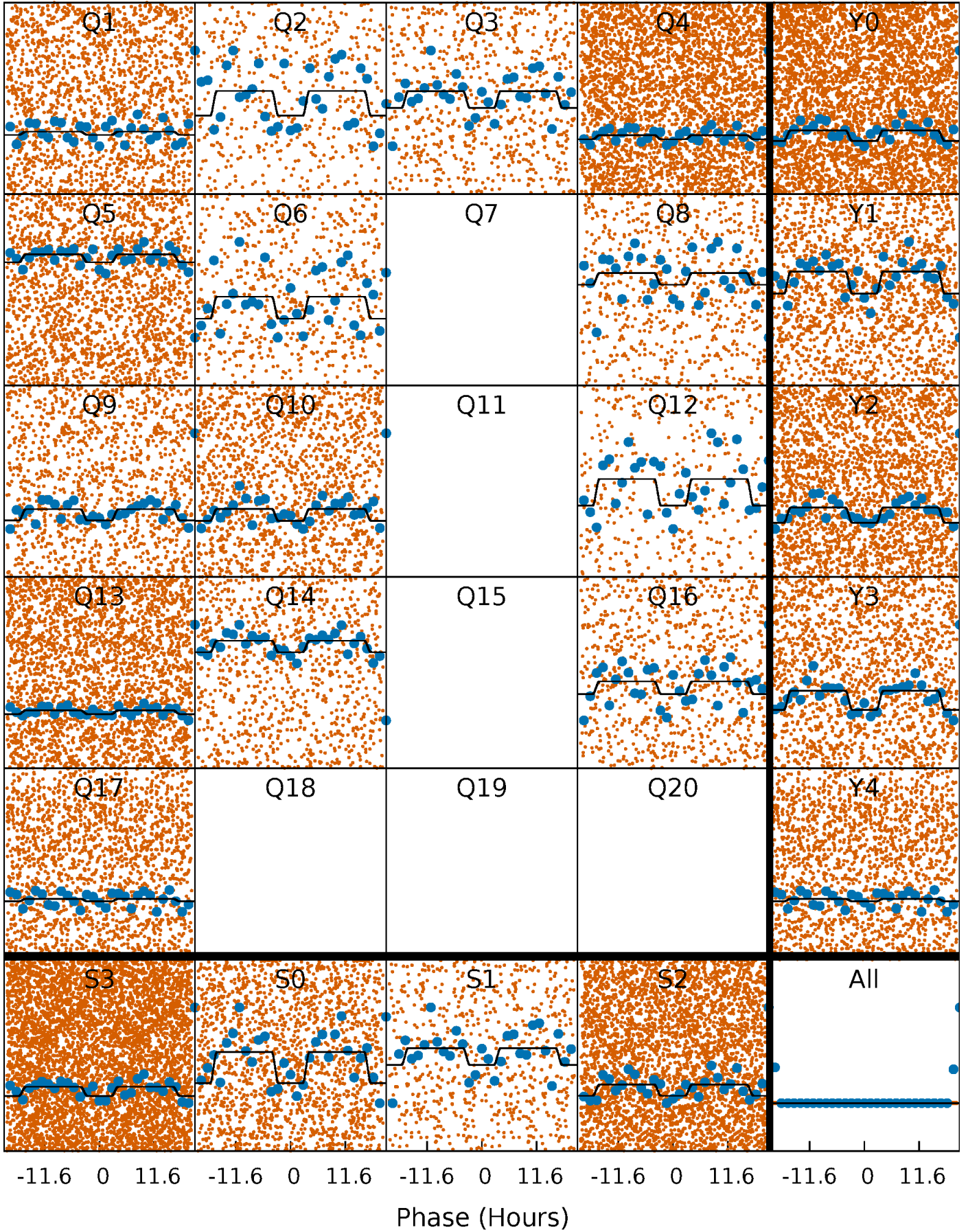
DV Quarter-Phased Transit Curves

TCE 010355055-02 P= 0.815713 Days $T_0=132.199860$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

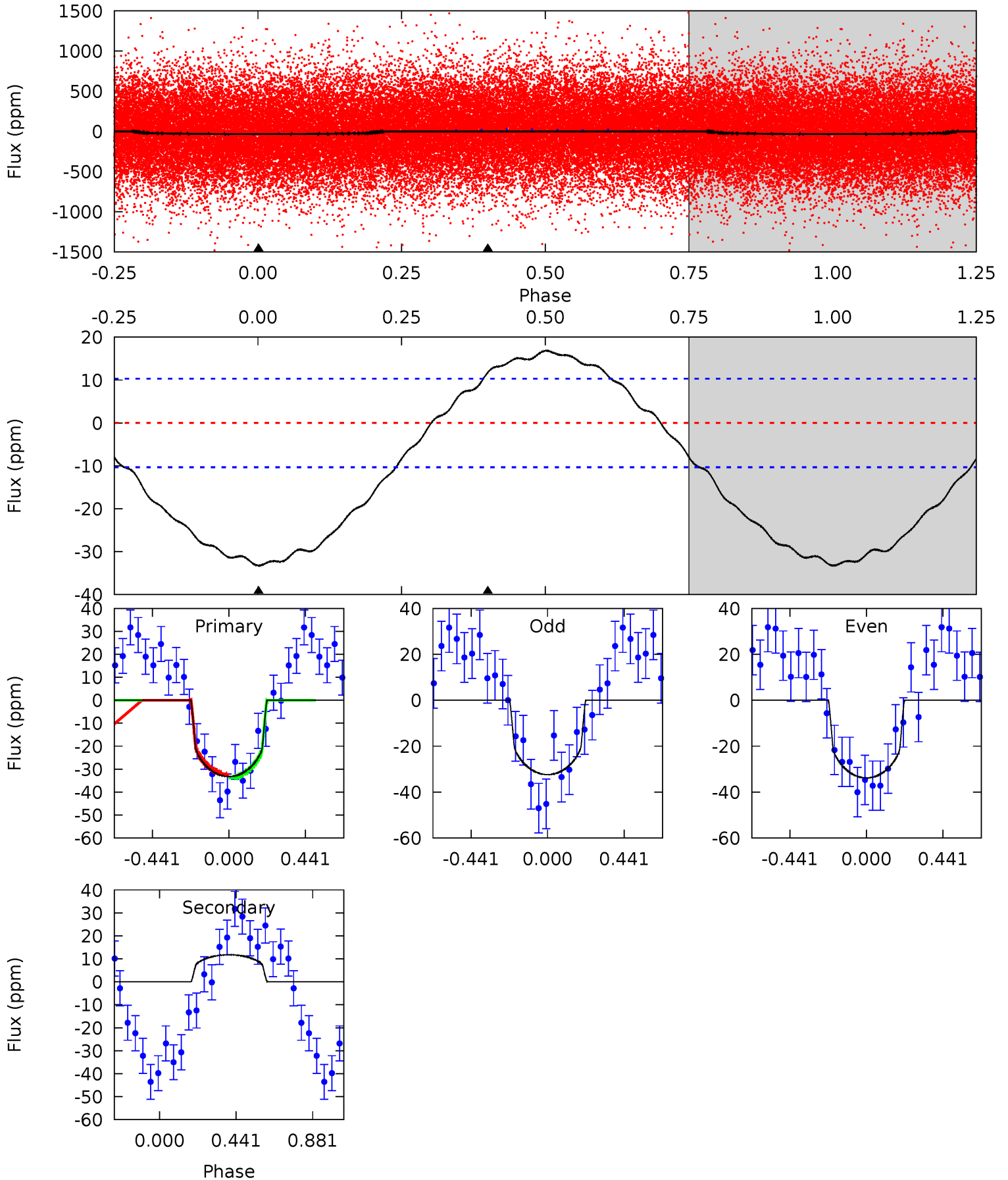
TCE 010355055-02 P= 0.815743 Days $T_0=132.172741$ (BKJD)



DV Model-Shift Uniqueness Test

010355055-02, P = 0.815713 Days, E = 131.384147 Days

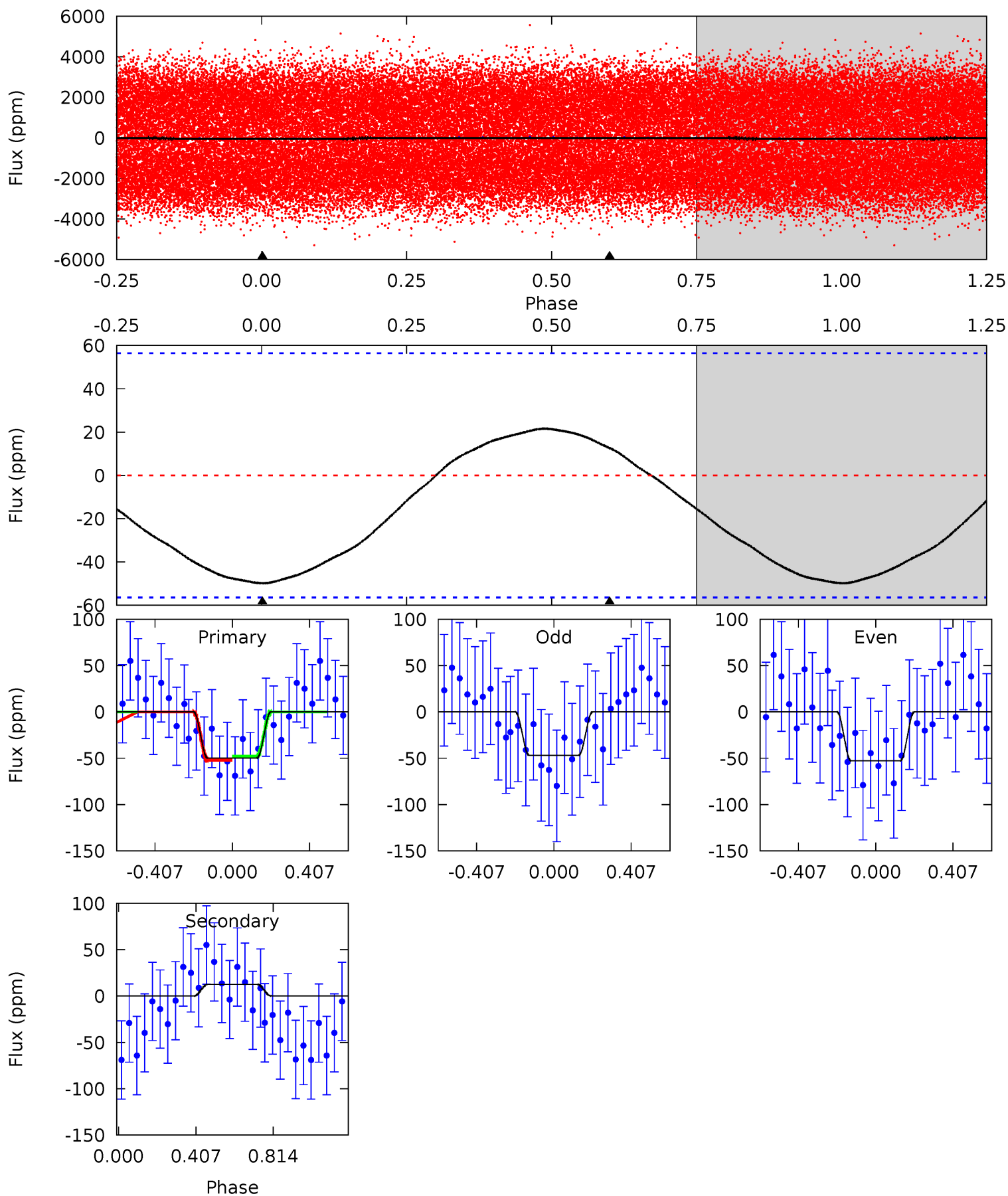
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	-4.84	0	0	4.24	0.77	1.65	13.7	13.7	-4.84	-4.84	0.30	1.10	0.34	0.32



Alt Model-Shift Uniqueness Test

010355055-02, P = 0.815743 Days, E = 131.356998 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.77	-0.95	0	0	4.26	0.83	0.50	3.77	3.77	-0.95	-0.95	0.22	0.93	0.30	0.17



Stellar Parameters For KIC 010355055

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8319^{+230}_{-374}	$3.735^{+0.420}_{-0.140}$	$-0.080^{+0.300}_{-0.400}$	$3.219^{+0.978}_{-1.467}$	$2.053^{+0.387}_{-0.473}$	$0.087^{+0.349}_{-0.036}$
	+3%/-4%	+11%/-4%	+375%/-500%	+30%/-46%	+19%/-23%	+402%/-41%
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 010355055-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	12 ± 2	$1.89^{+1.38}_{-1.06}$	6042^{+516}_{-696}	-6649^{+1012}_{-3629}	$-0.843^{+0.573}_{-3.738}$
Alt.	13 ± 13	$2.42^{+1.52}_{-1.27}$	6040^{+533}_{-675}	-5970^{+1191}_{-2478}	$-0.461^{+0.477}_{-2.104}$

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 $A_{obs} \gg 1.0$

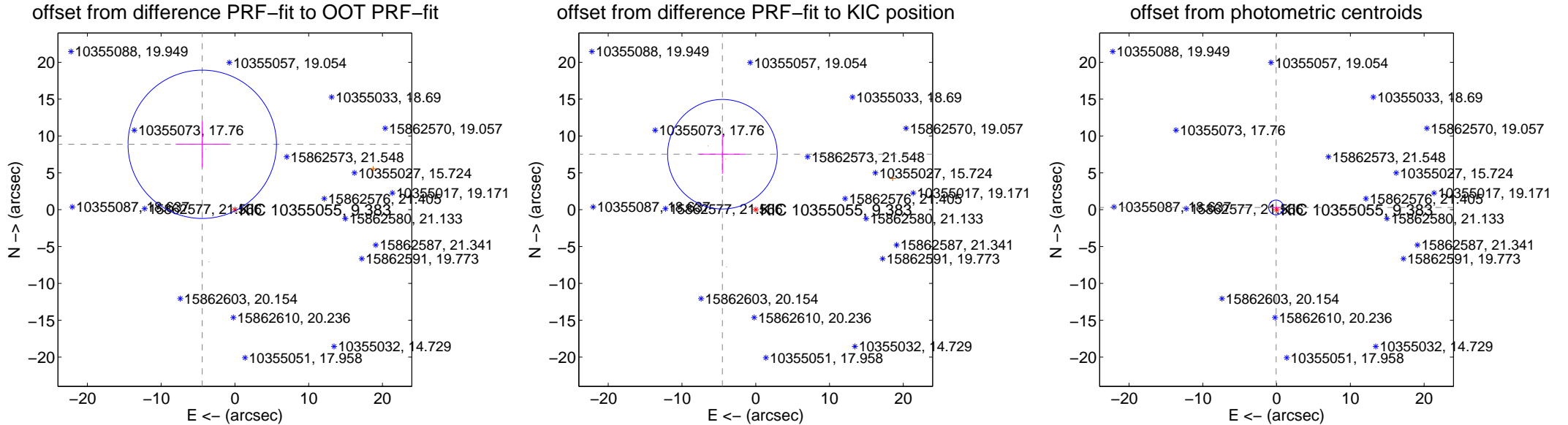
DV Centroid Data

Supplemental centroid analysis for 010355055-02. **Kepler magnitude: 9.38.** Transit SNR 12.35

There are 0 quarters with good PRF difference image offsets

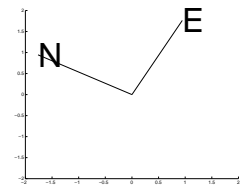
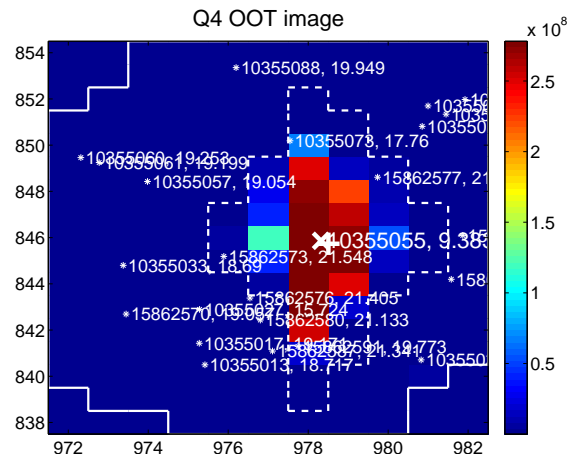
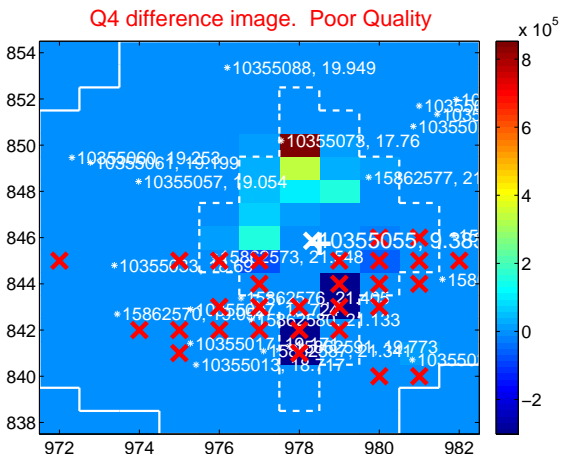
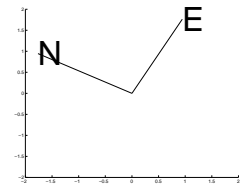
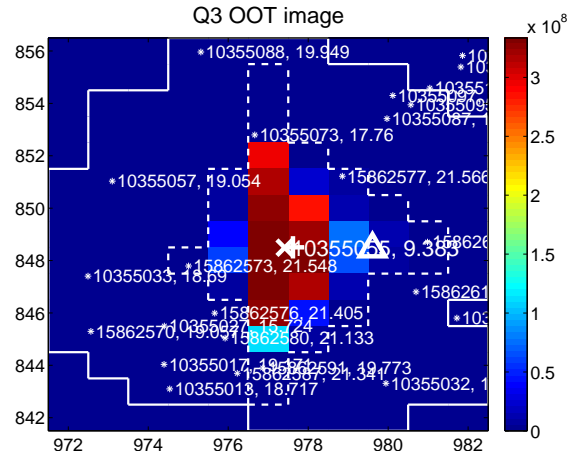
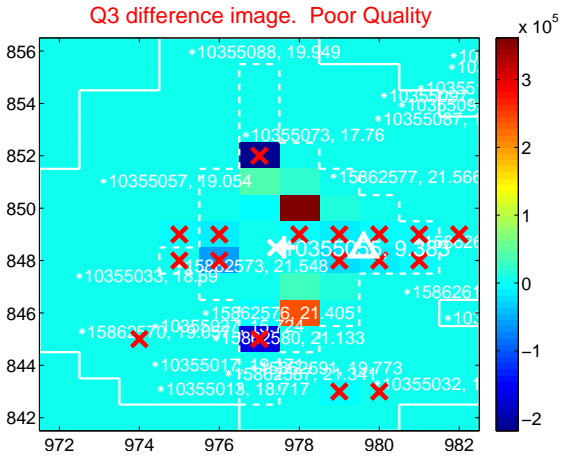
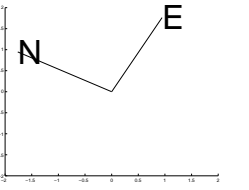
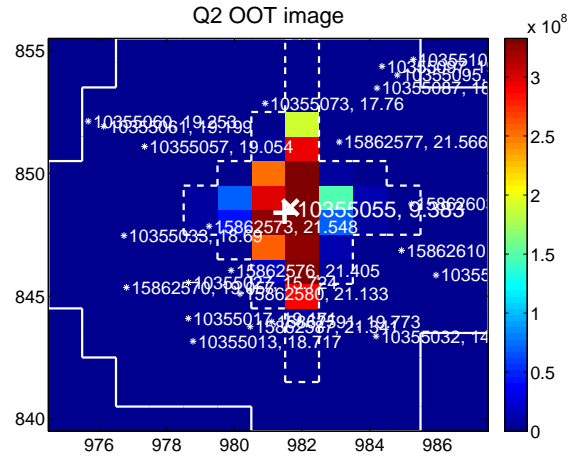
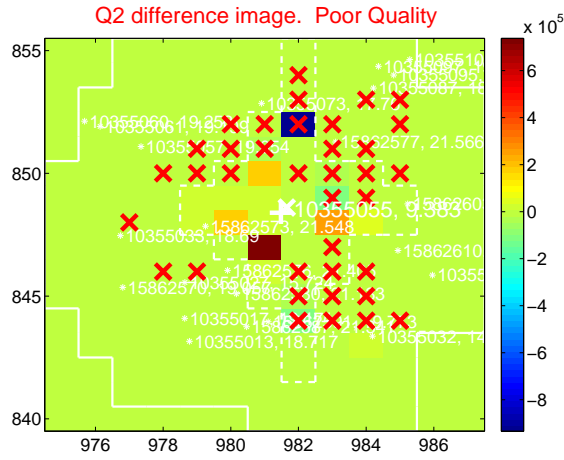
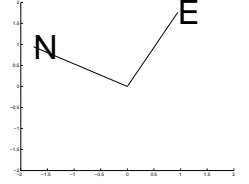
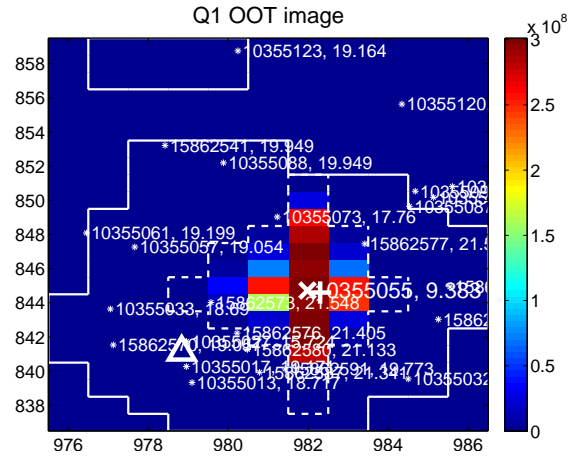
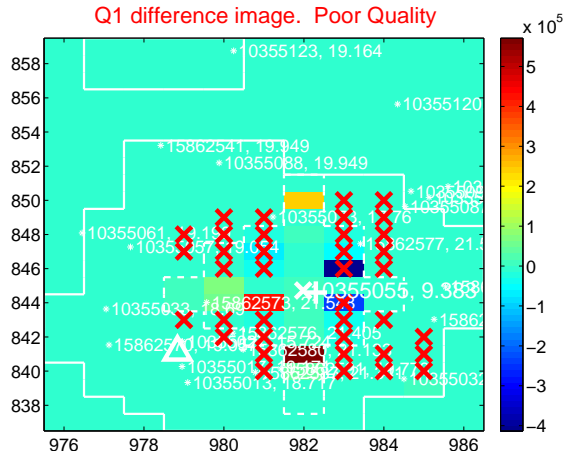
The direct PRF centroid is offset from the target star catalog position by about 1.32 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	9.916 ± 3.353	2.96	4.427 ± 3.593	8.873 ± 3.130
PRF-fit source offset from KIC position	8.779 ± 2.476	3.55	4.517 ± 3.146	7.527 ± 2.650
photometric centroid source offset	0.31 ± 0.33	0.94	0.07 ± 0.55	0.31 ± 0.32

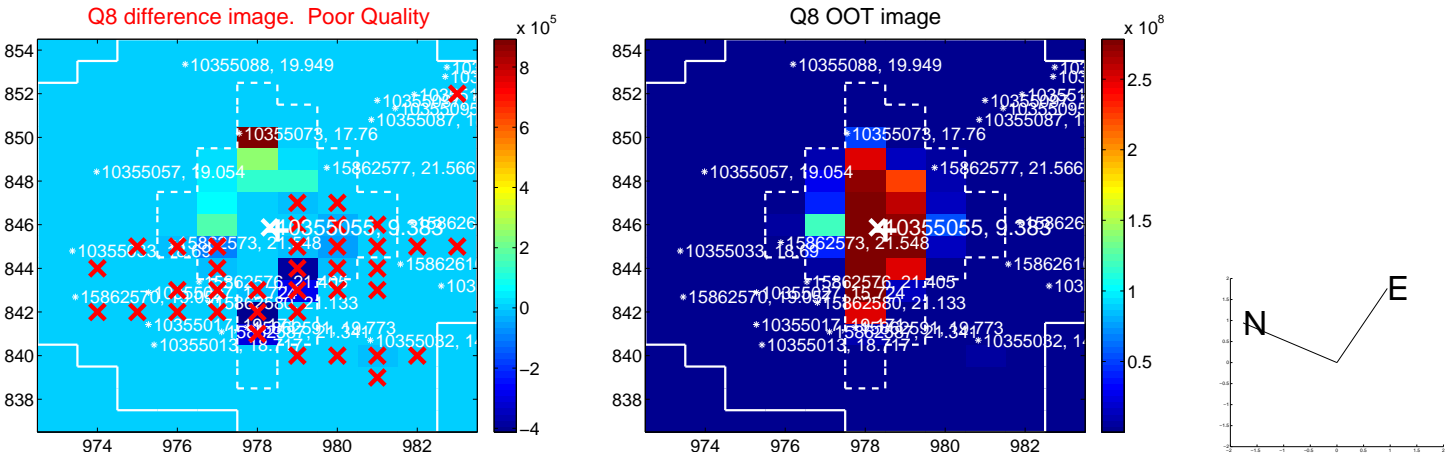
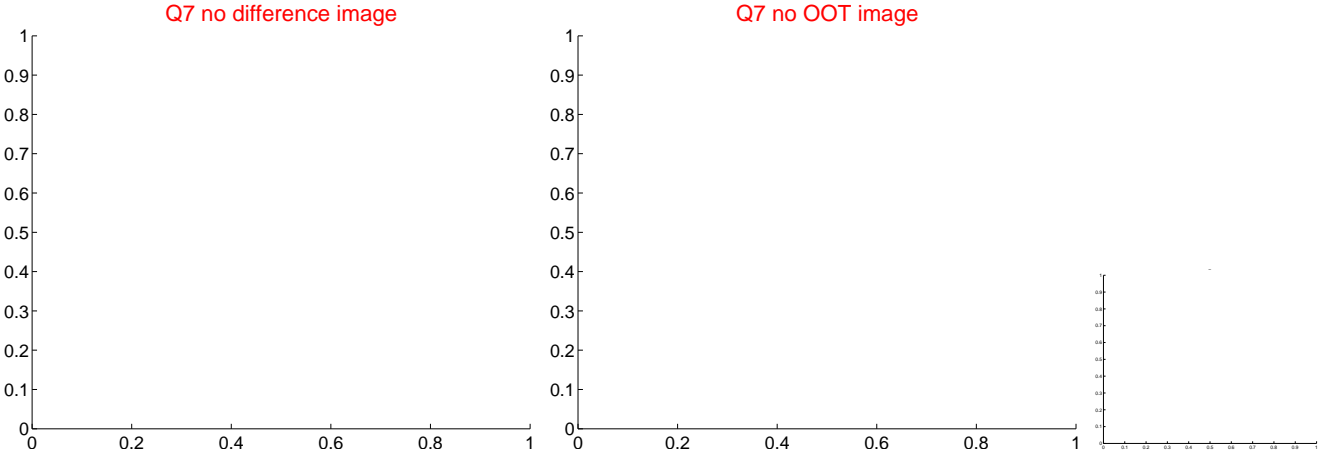
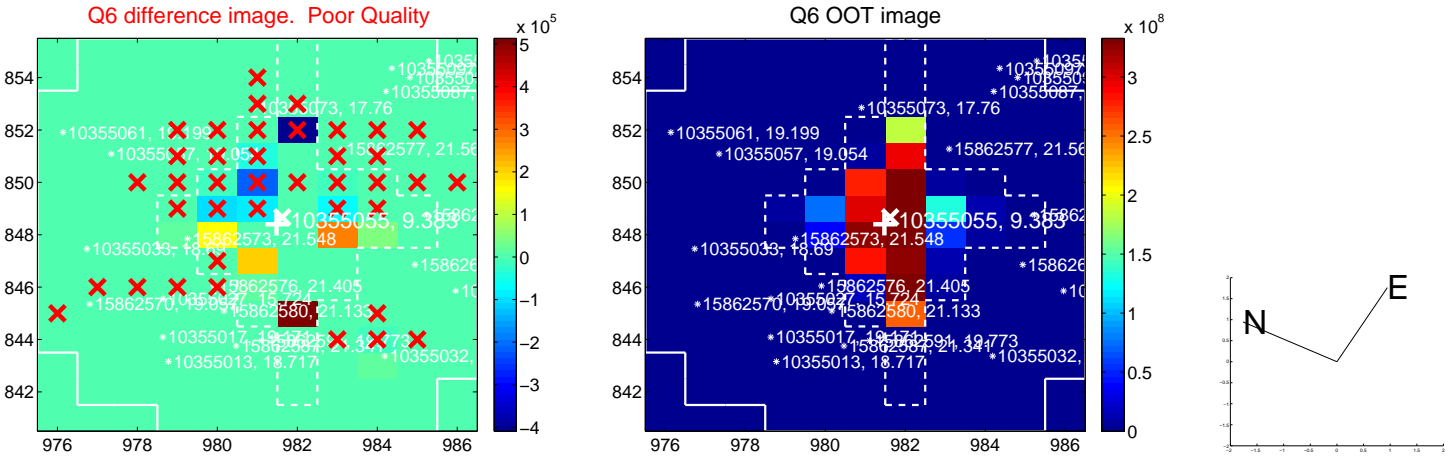
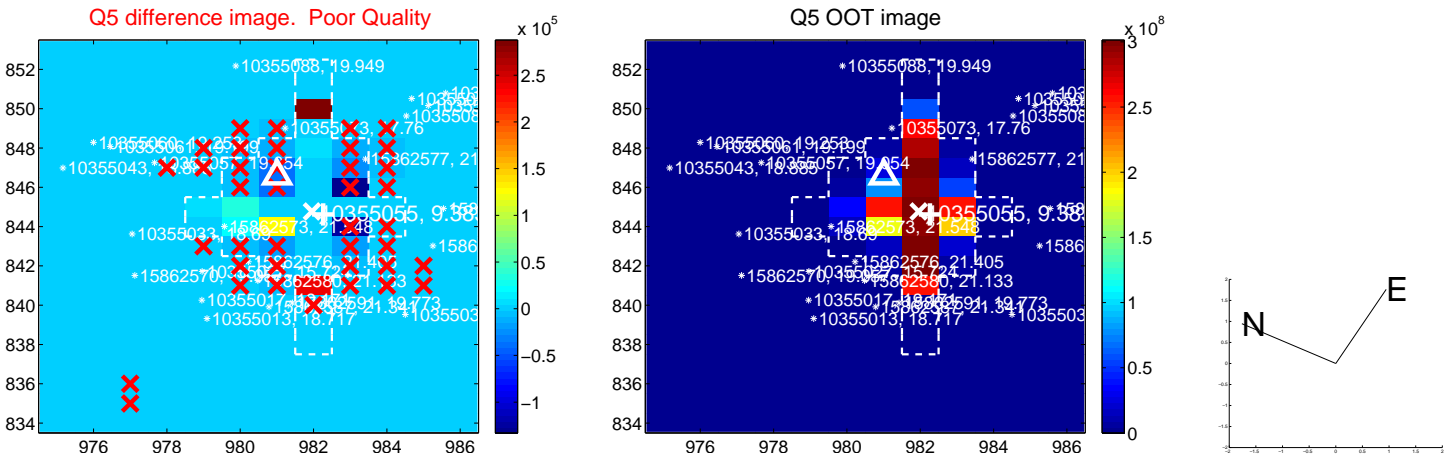


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

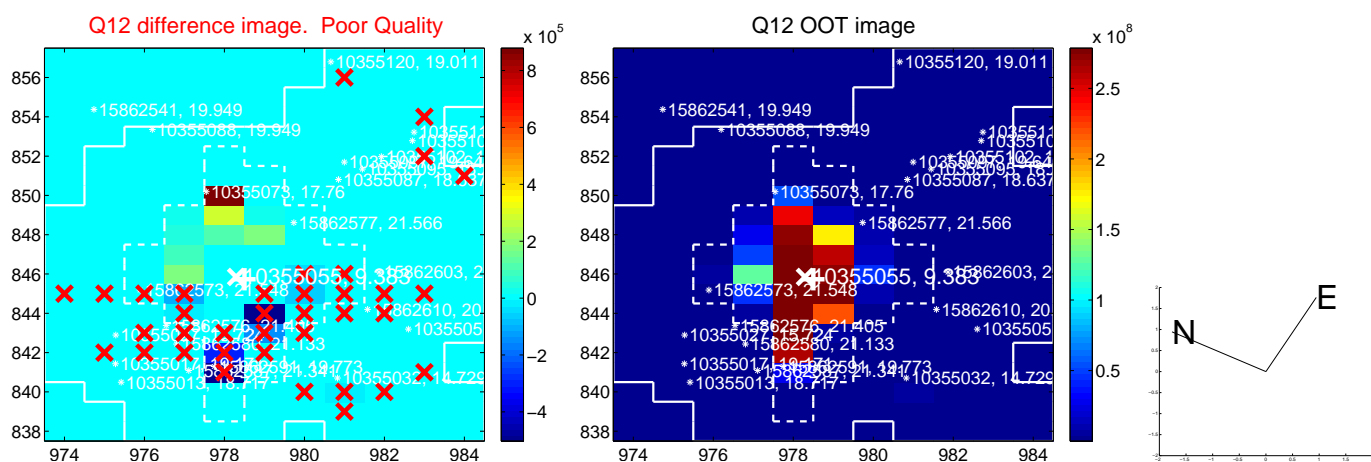
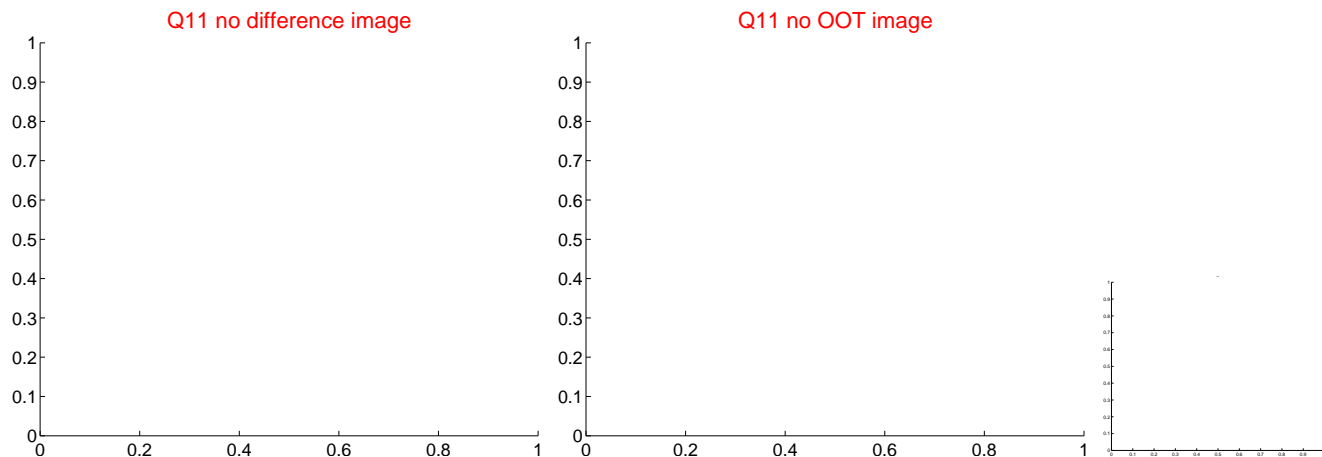
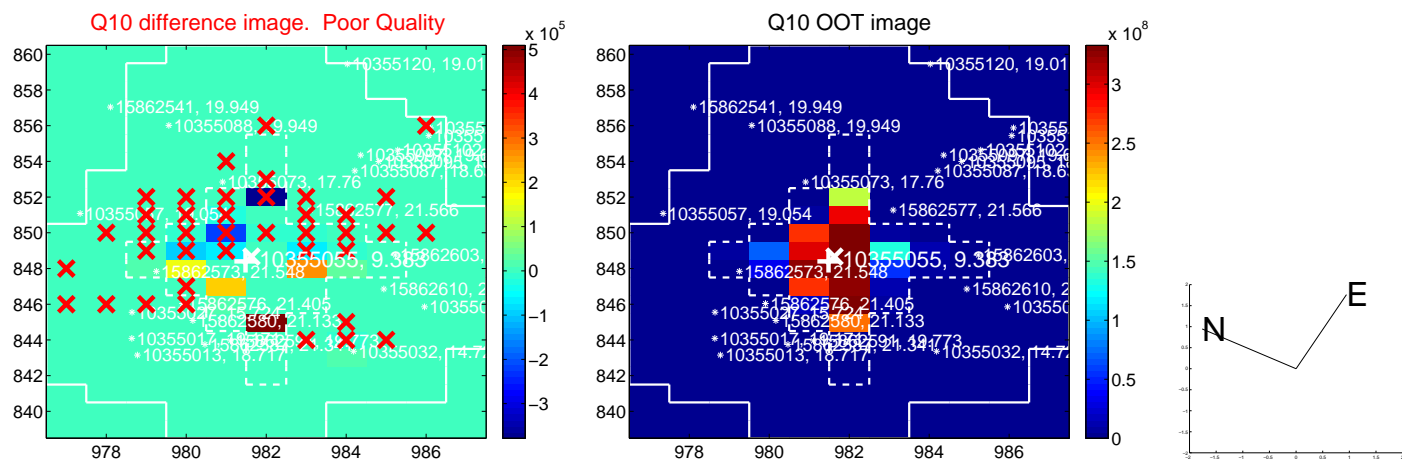
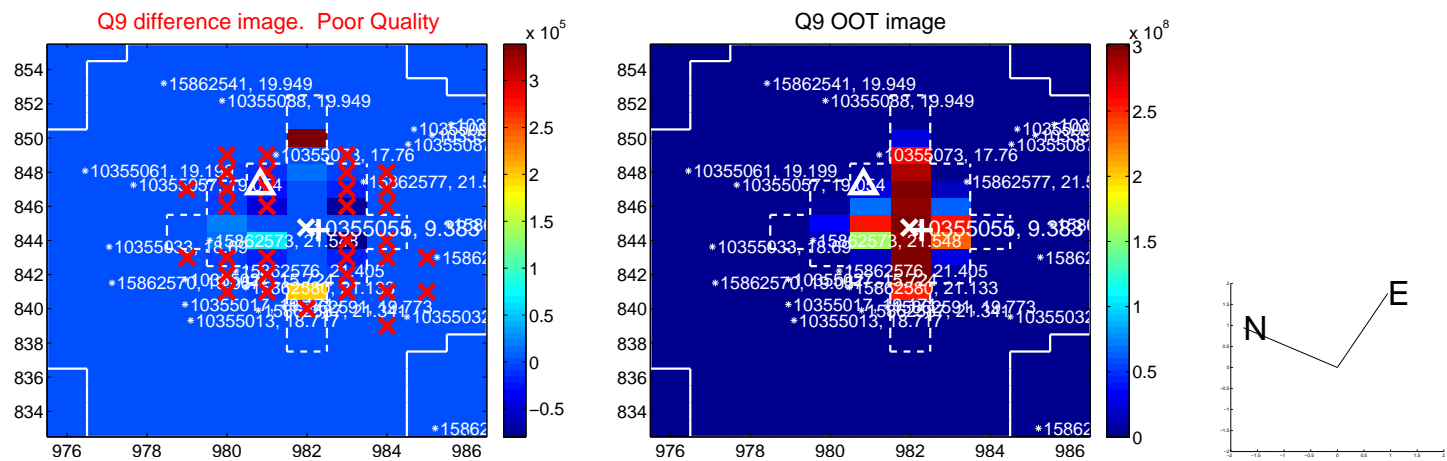
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



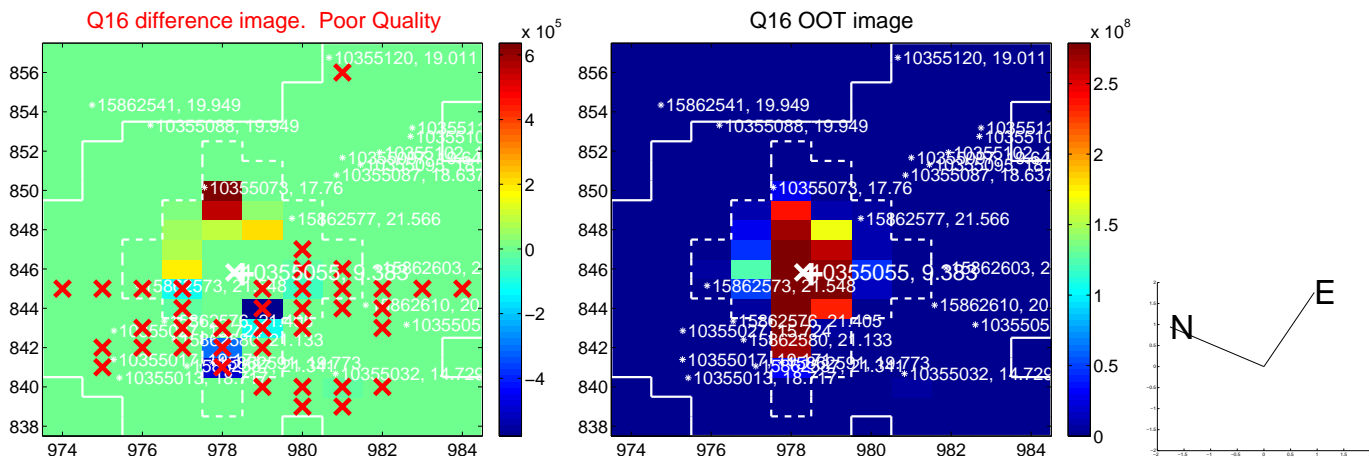
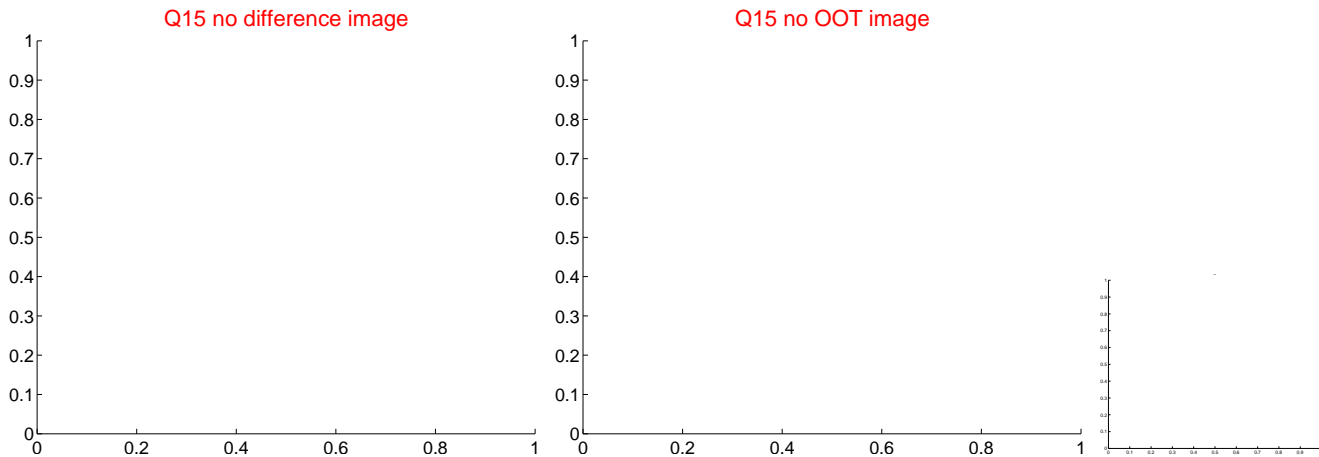
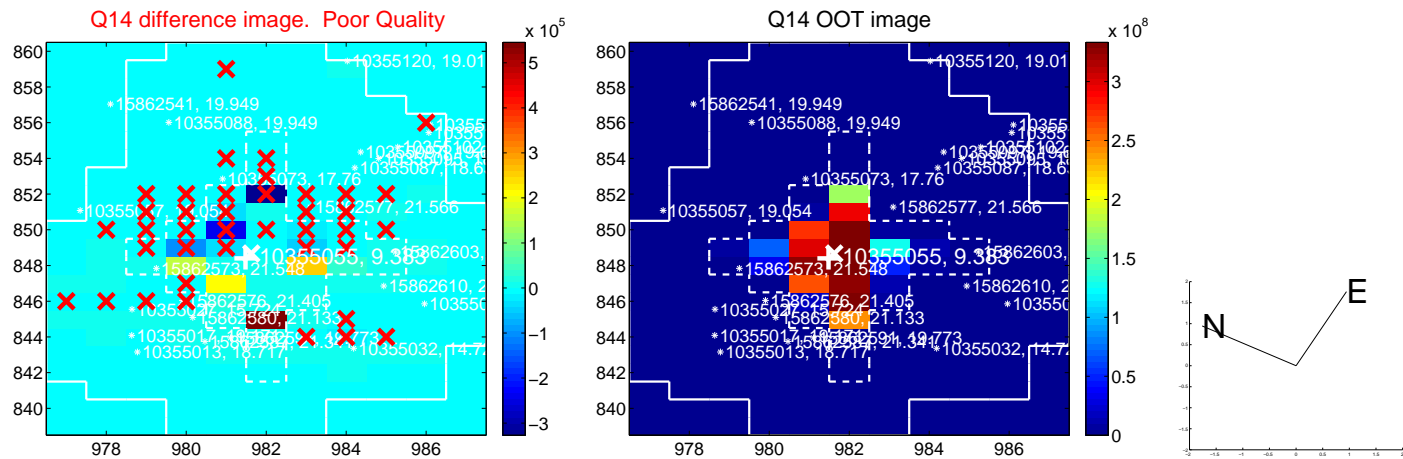
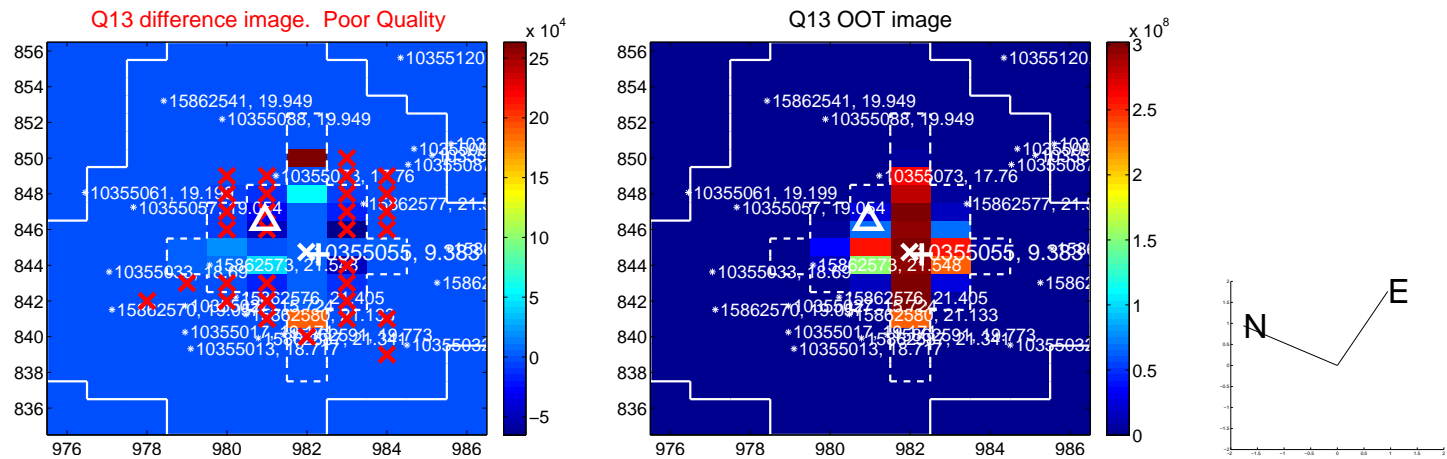
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

