

KIC 003957082

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})
003957082-01	OBS	2864.01	3.778795	134.204118	52.6	8.518	16.2	18.0	5.54	6115	7.75	10500.85
003957082-02	OBS	No	610.064367	237.697394	554.0	3.500	11.2	-1.0	5.54	6115	13.07	11.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003957082-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
003957082-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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.

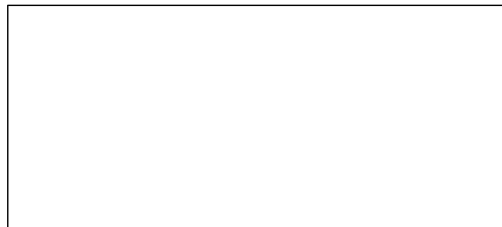
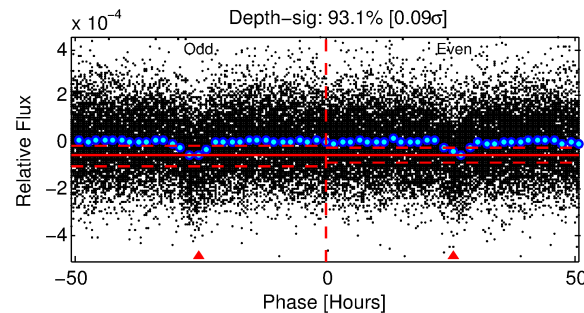
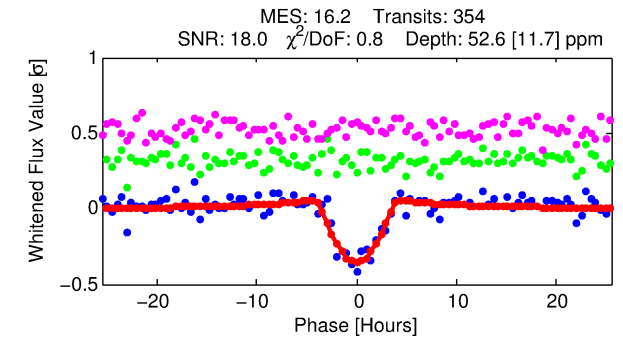
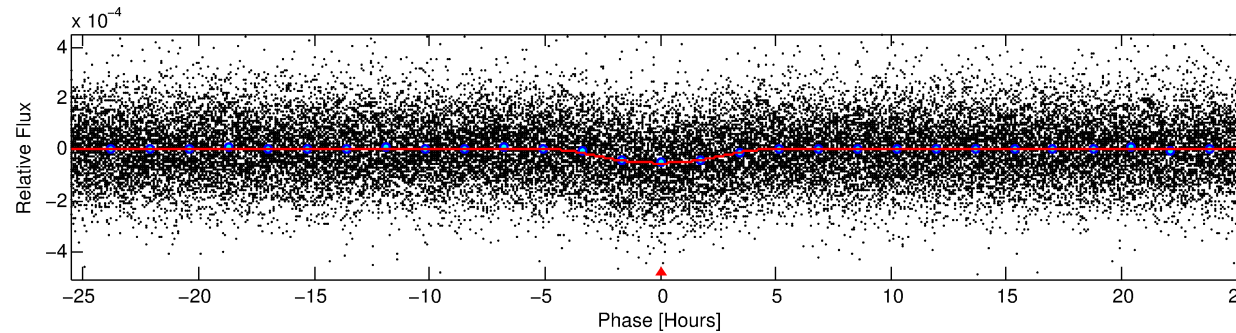
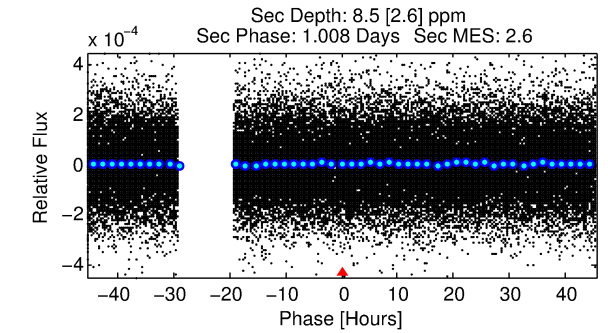
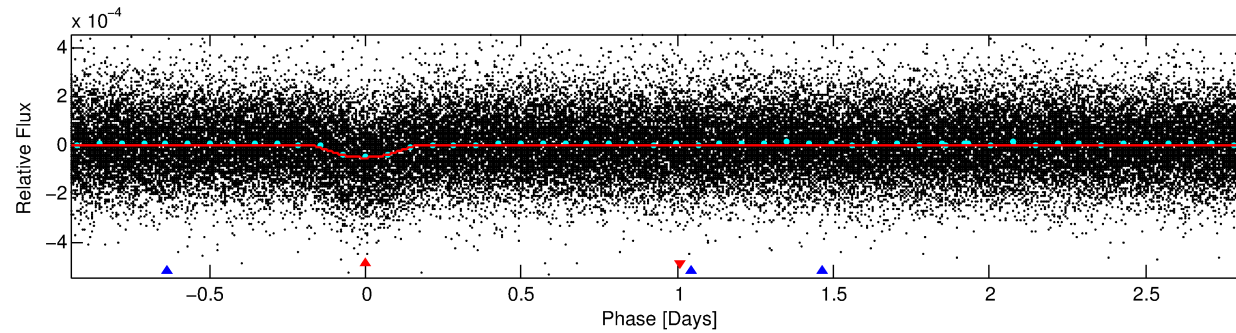
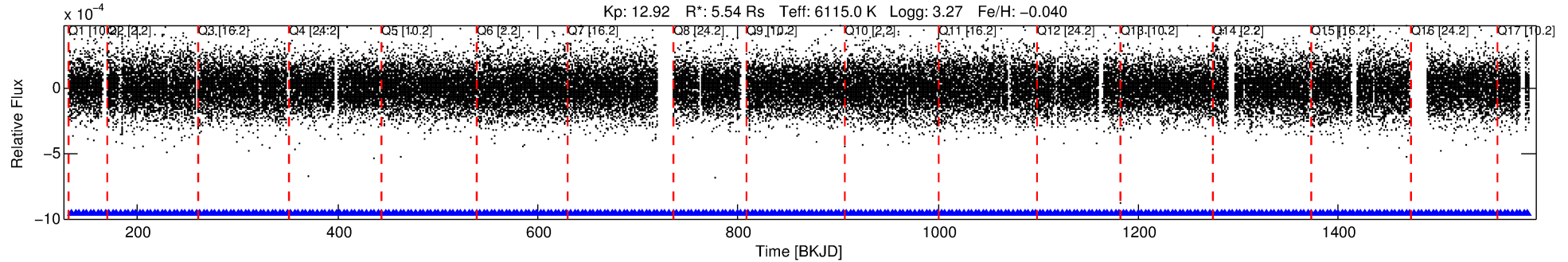
Ephemeris Match Information For 003957082-01

No Significant Match Found

DV One-Page Summary

KIC: 3957082 Candidate: 1 of 2 Period: 3.779 d
KOI: K02864.01 Corr: 0.818

Kp: 12.92 R*: 5.54 Rs Teff: 6115.0 K Logg: 3.27 Fe/H: -0.040



DV Fit Results:

Period = 3.77879 [0.00005] d
Epoch = 134.2041 [0.0097] BKJD
Rp/R* = 0.0128 [0.0150]
a/R* = 1.16 [0.09]
b = 1.00 [0.02]
Seff = 10500.85 [8073.01]
Teff = 2581 [496] K
Rp = 7.75 [9.82] Re
a = 0.0606 [0.0284] AU
Ag = 0.29 [0.71] [-1.00σ]
Teffp = 2920 [1731] K [0.19σ]

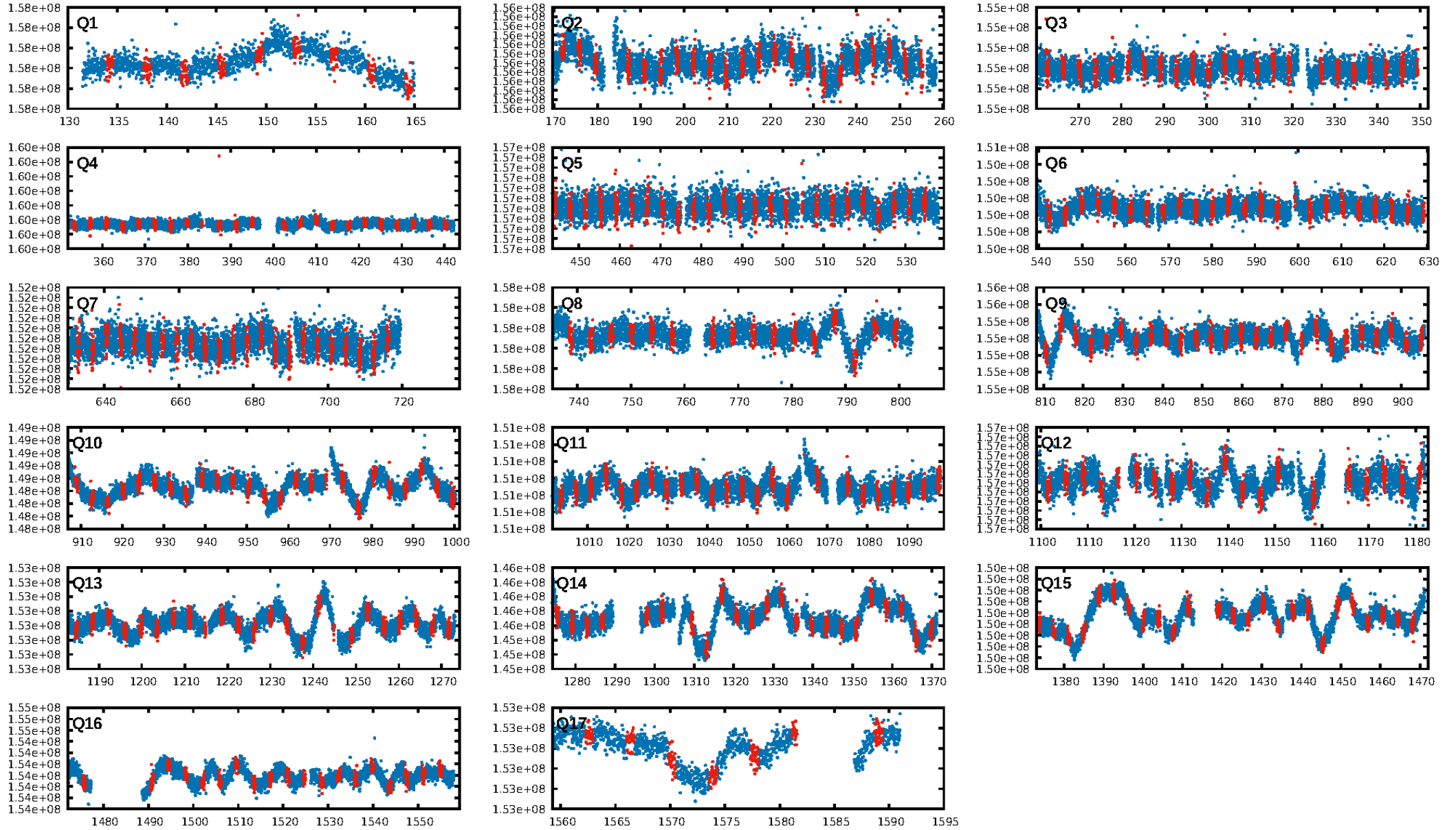
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [1580.04σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.76e-53
RollingBand-fgt: 1.00 [338/338]
GhostDiagnostic-chr: -0.2773
Centroid-sig: 0.0%
Centroid-so: 55.851 arcsec [59.35σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [17/17]

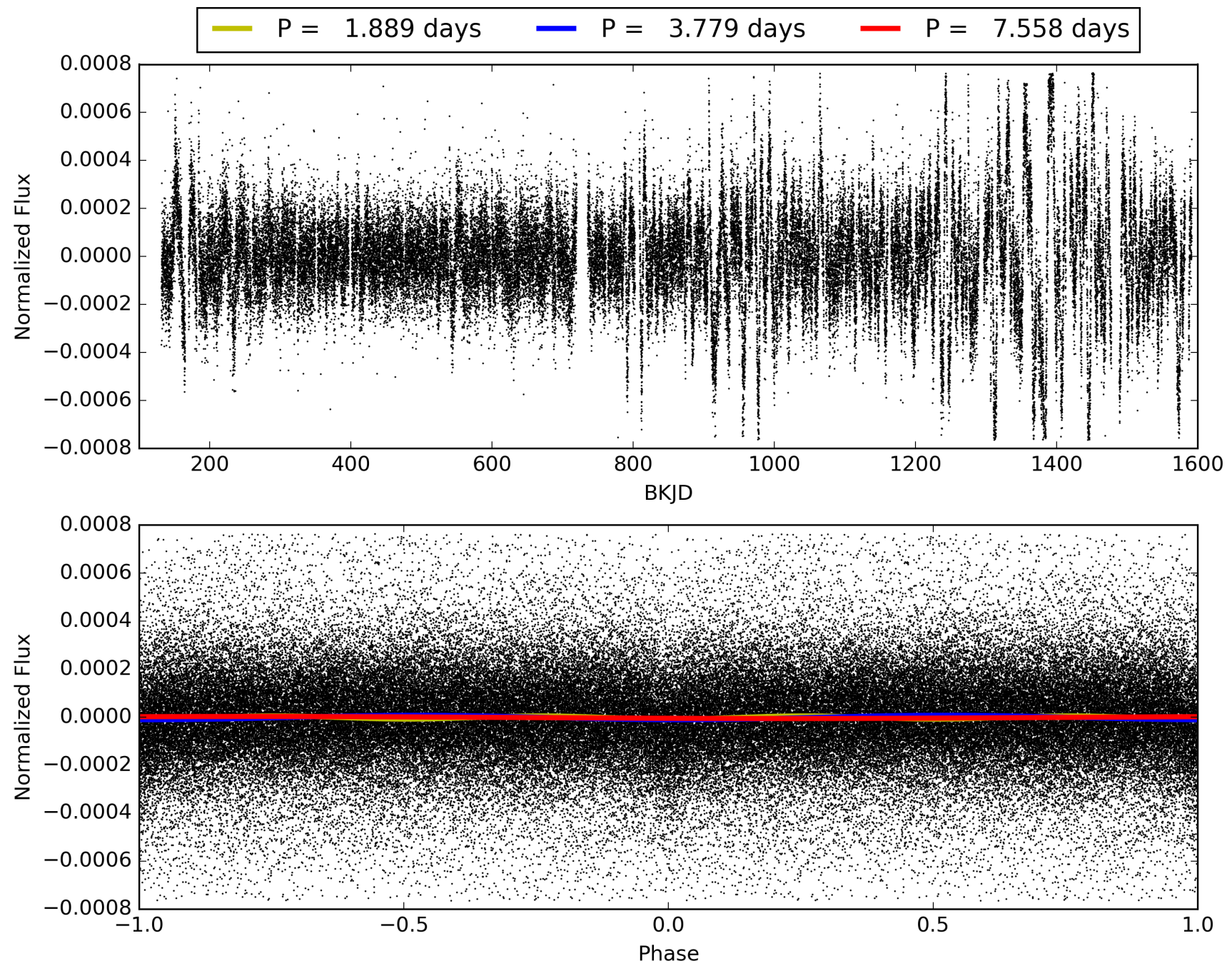
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:56:20 Z

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

TCE 003957082-01, PDC Light Curves

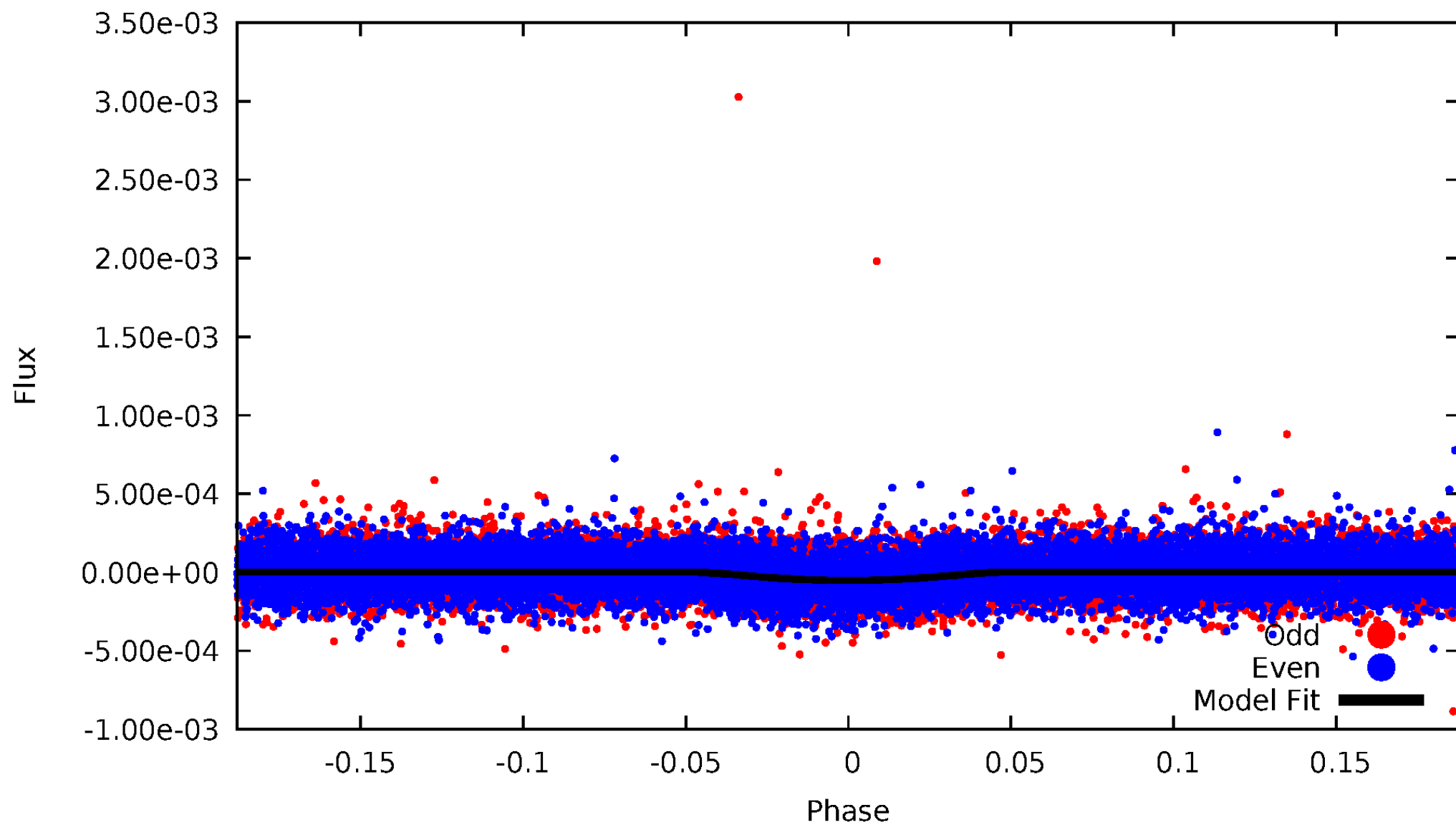


TCE 003957082-01



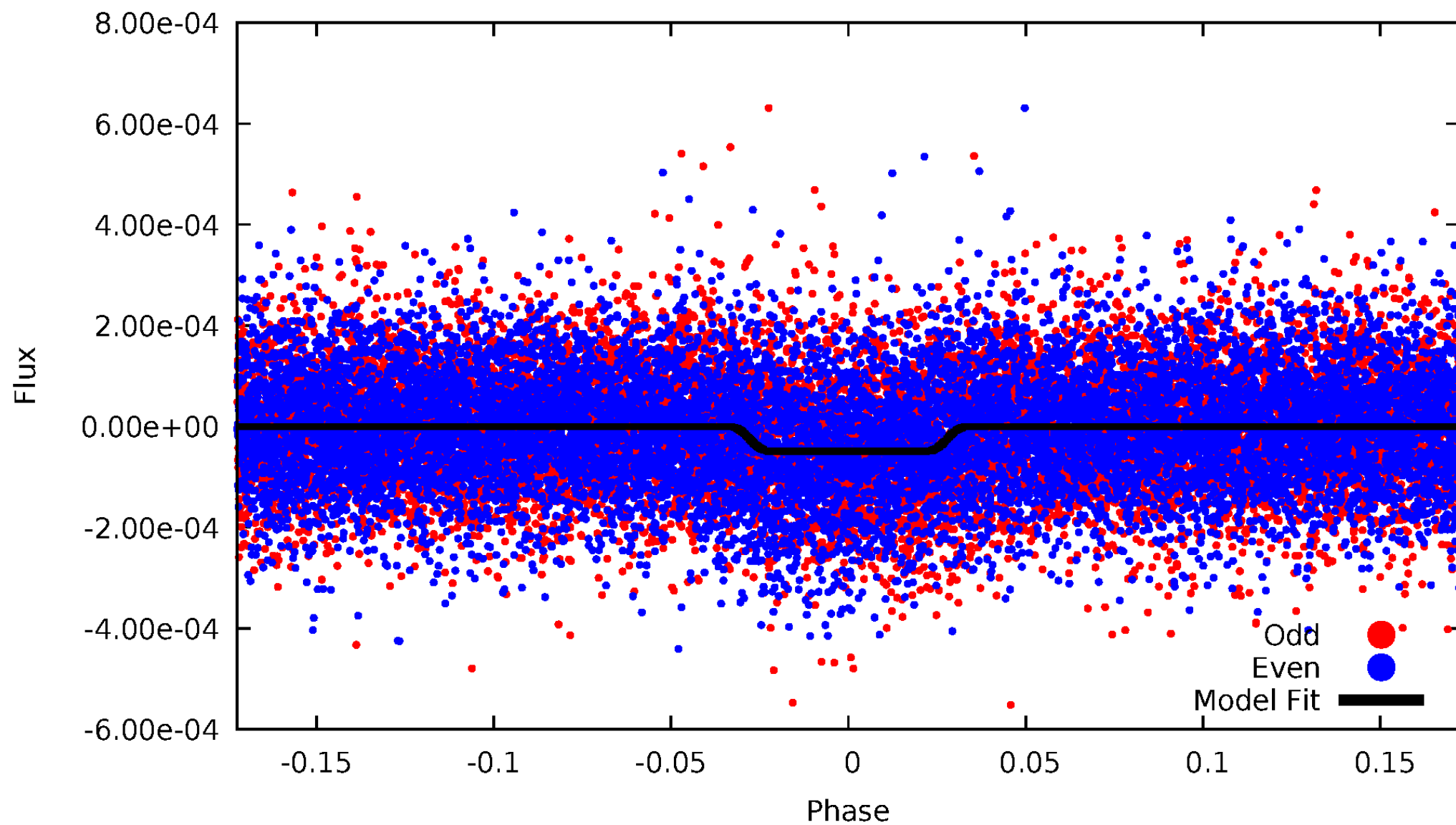
DV Odd/Even

TCE 003957082-01



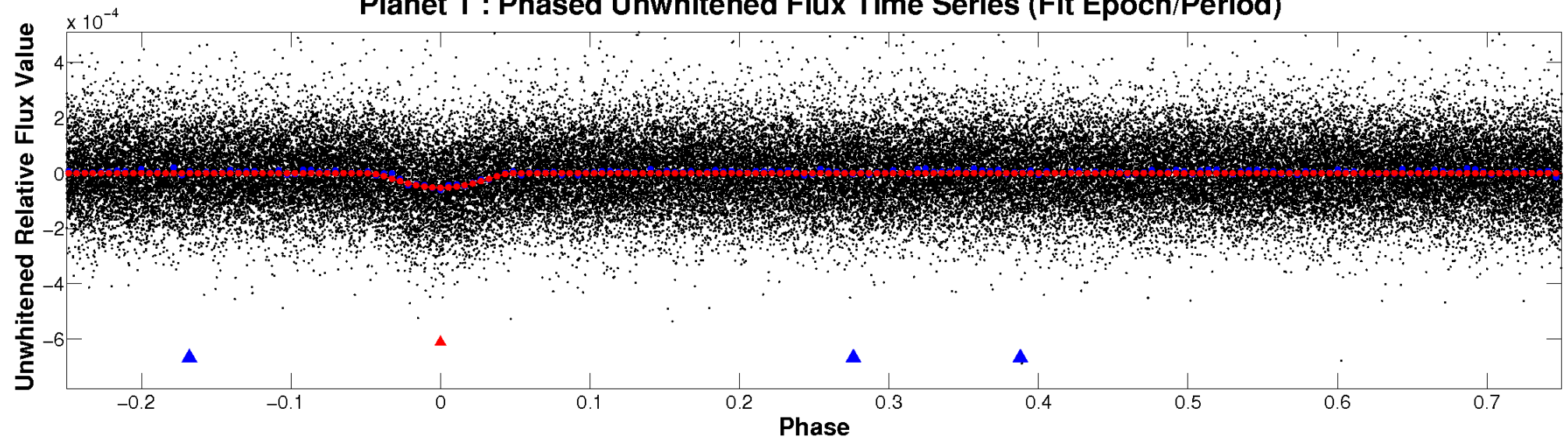
ALT Odd/Even

TCE 003957082-01

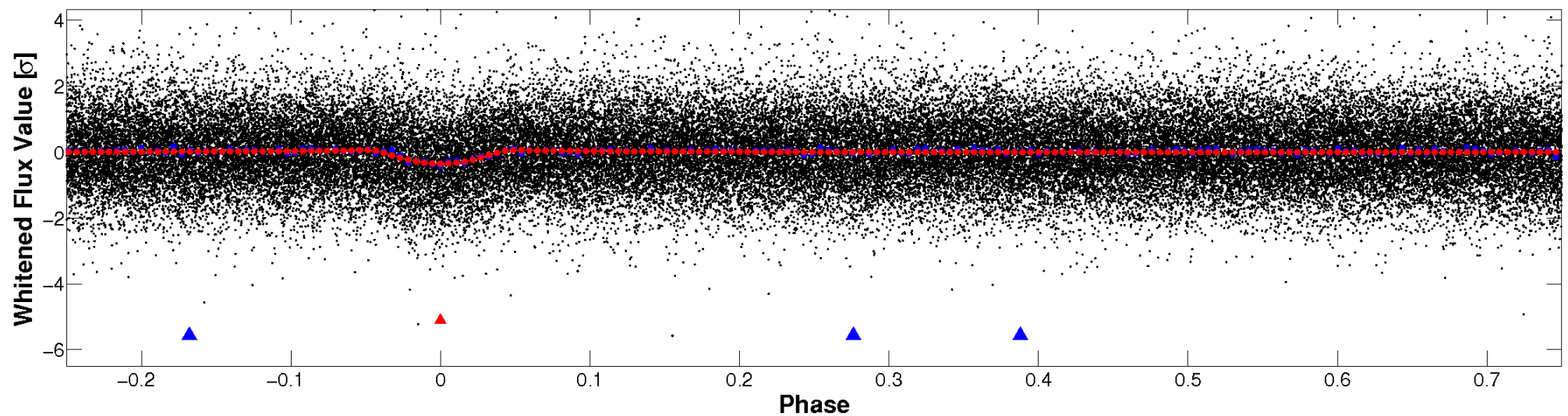


Non-Whitened Vs. Whitened Light Curve

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

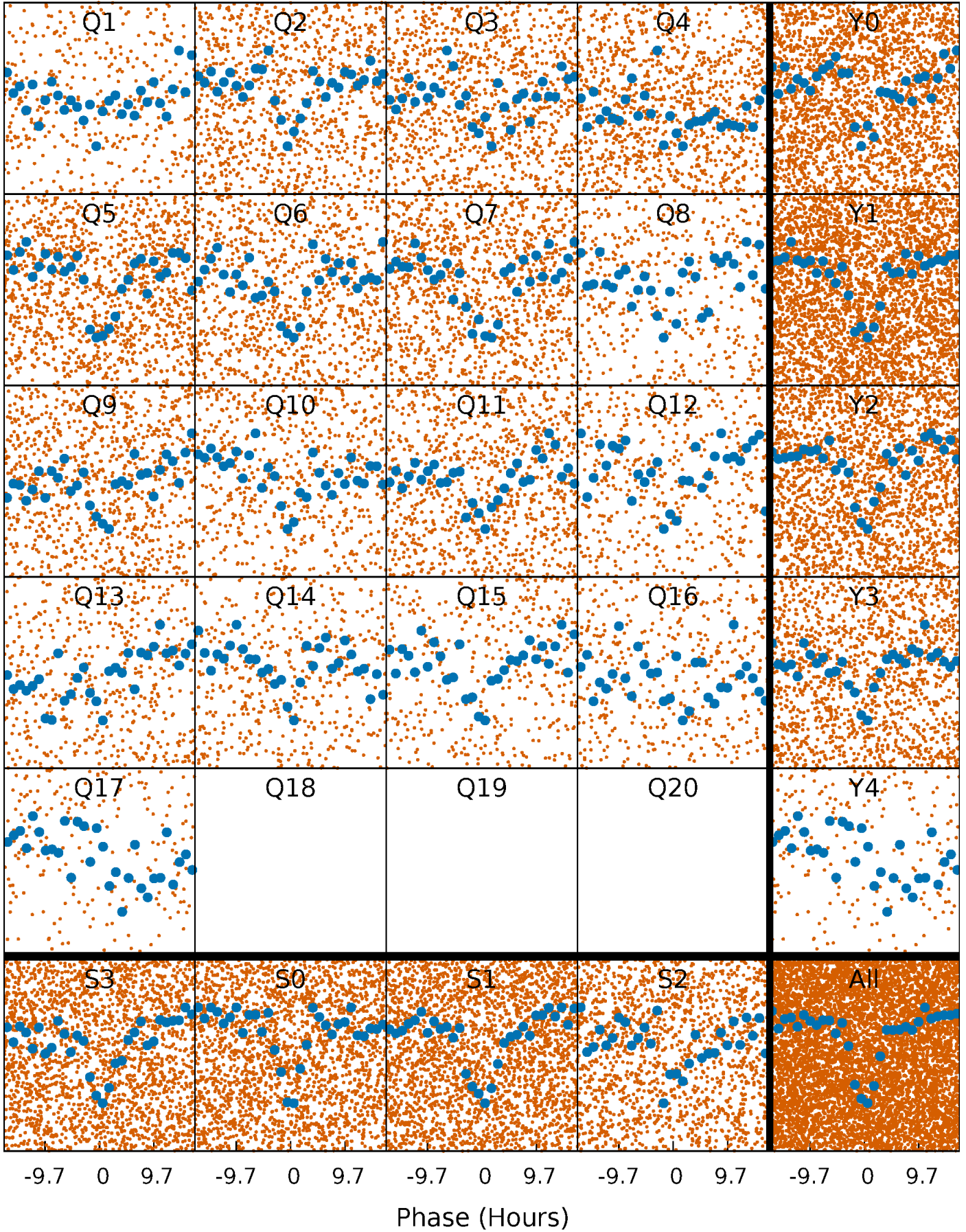


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



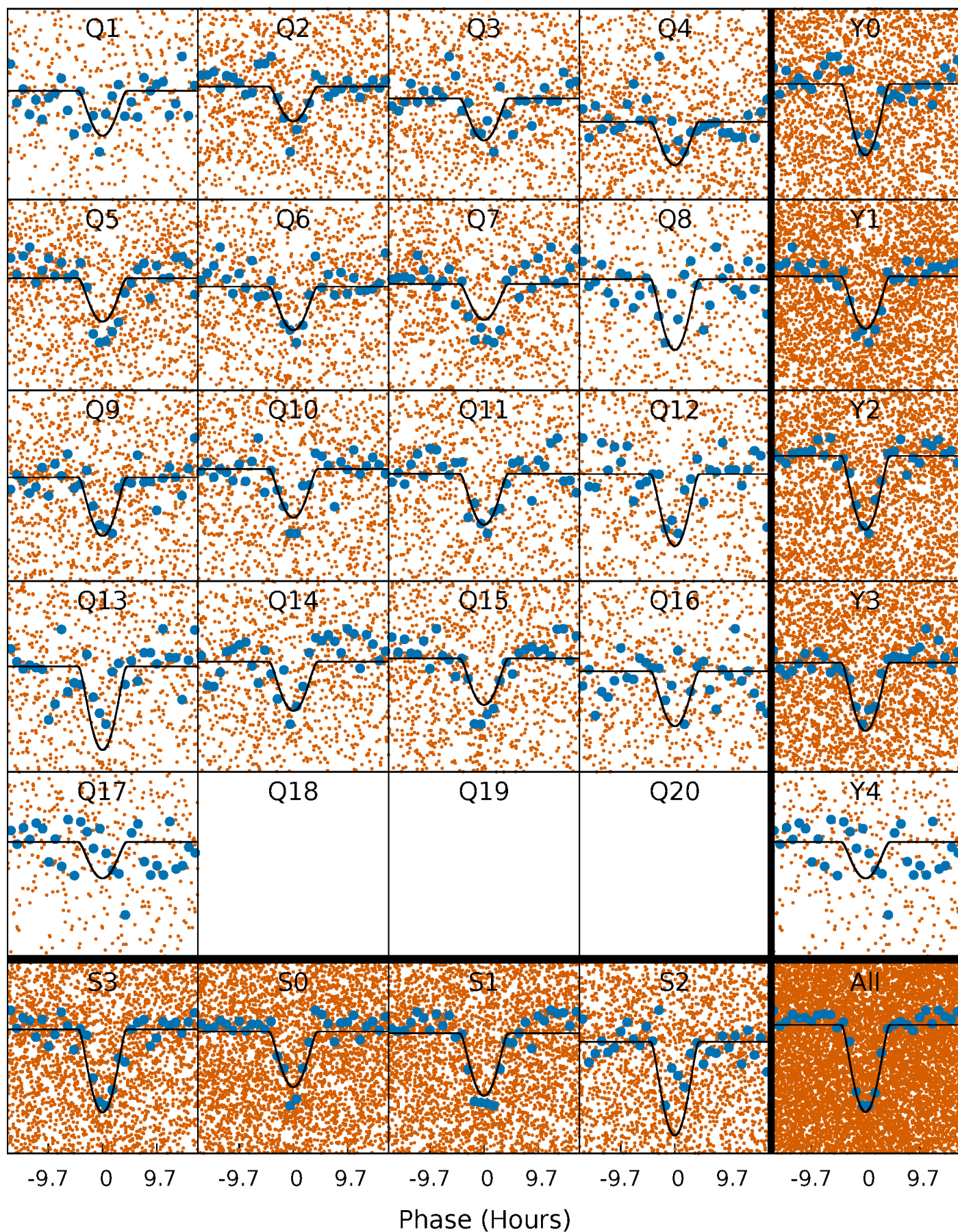
PDC Quarter-Phased Transit Curves

TCE 003957082-01 P= 3.778795 Days $T_0=134.204118$ (BKJD)



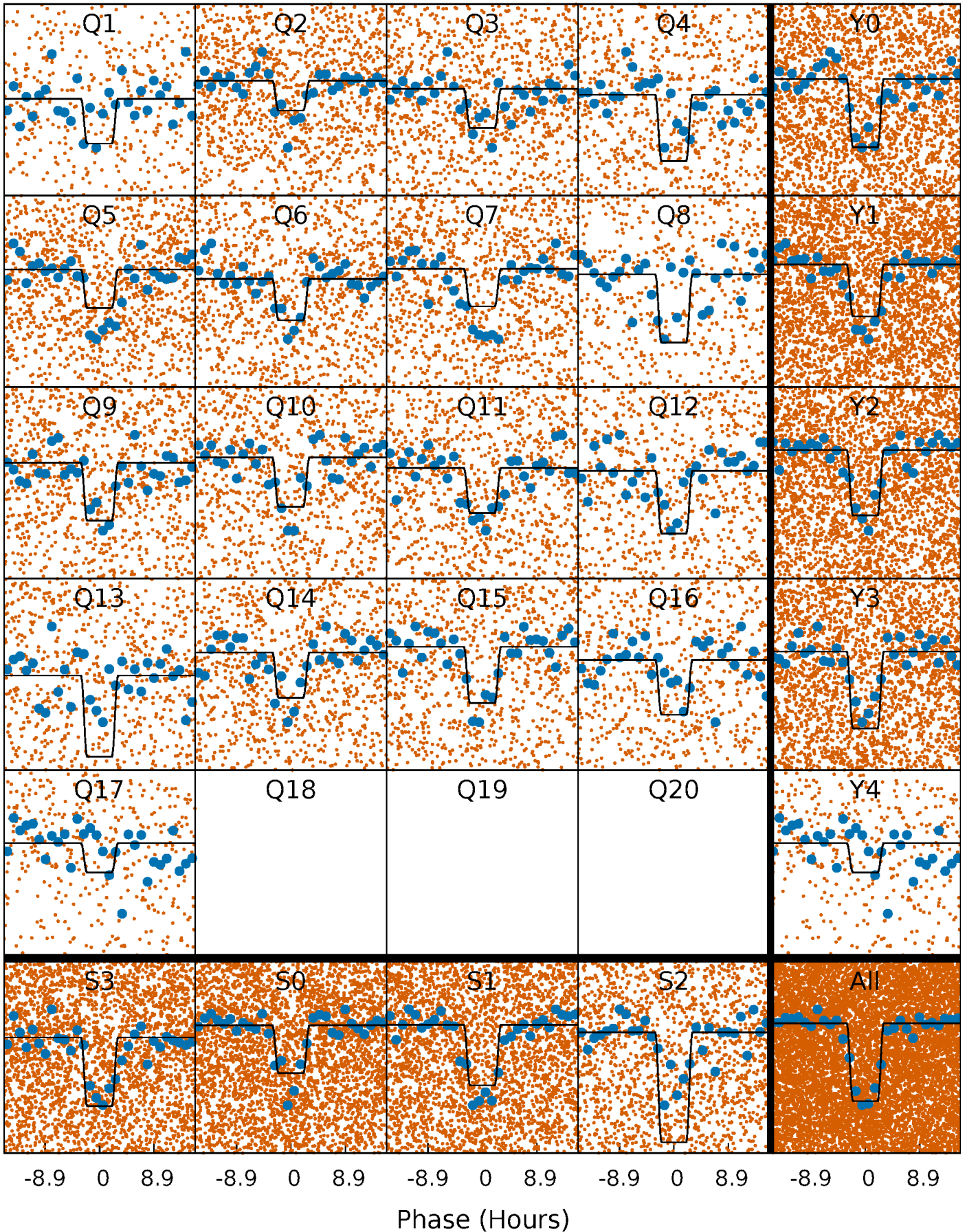
DV Quarter-Phased Transit Curves

TCE 003957082-01 P= 3.778795 Days $T_0=134.204118$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

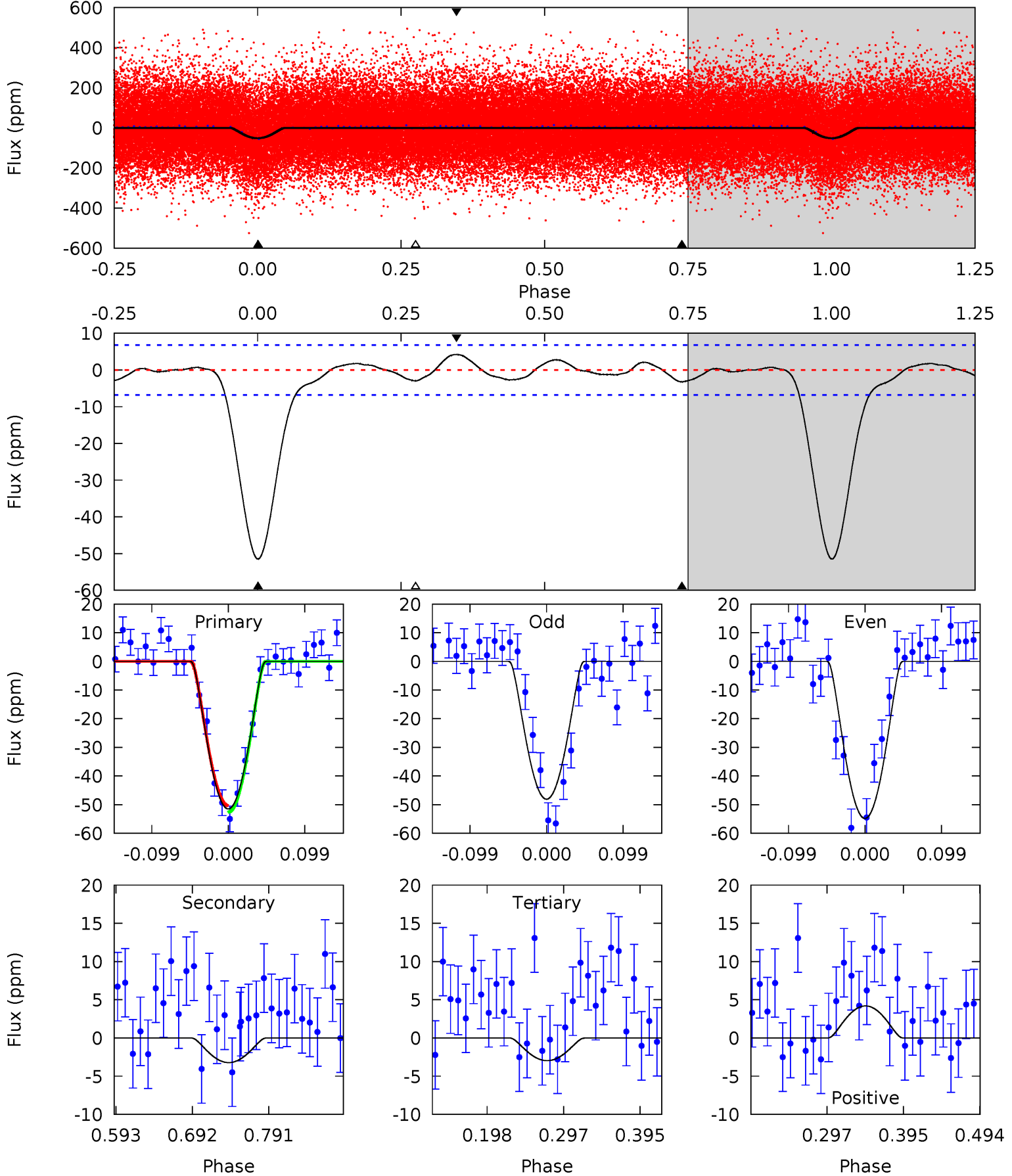
TCE 003957082-01 P= 3.778801 Days $T_0=134.206323$ (BKJD)



DV Model-Shift Uniqueness Test

003957082-01, P = 3.778795 Days, E = 130.425323 Days

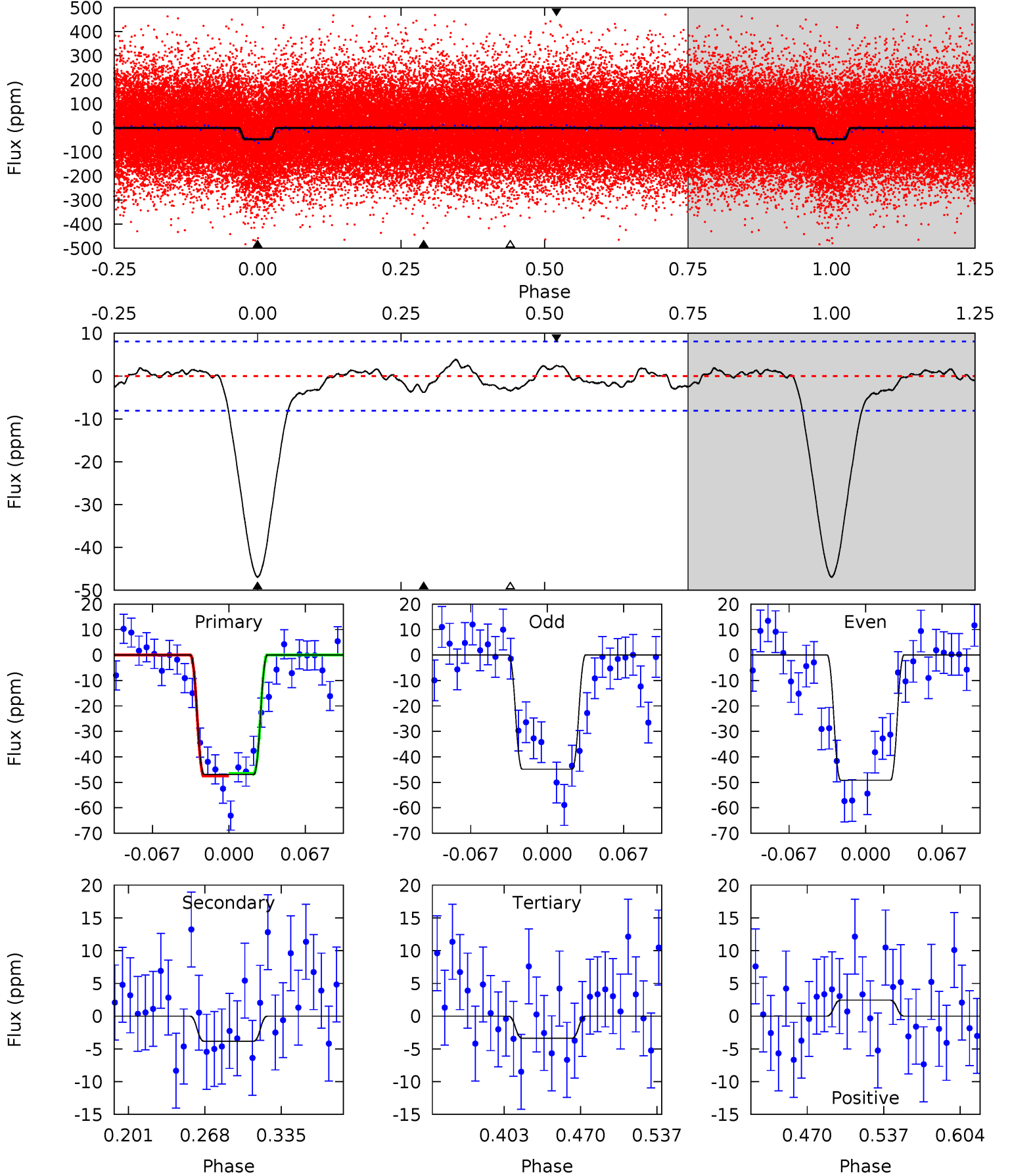
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.6	2.17	1.99	2.82	4.57	1.65	1.21	32.6	31.8	0.17	-0.65	2.25	1.02	0.08	0.76



Alt Model-Shift Uniqueness Test

003957082-01, P = 3.778801 Days, E = 130.427522 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	2.20	1.95	1.41	4.65	1.83	0.98	25.0	25.6	0.25	0.79	1.24	0.97	0.08	0.28



Stellar Parameters For KIC 003957082

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6115^{+201}_{-183}	$3.267^{+0.447}_{-0.047}$	$-0.040^{+0.300}_{-0.350}$	$5.544^{+0.140}_{-2.668}$	$2.072^{+0.098}_{-0.522}$	$0.017^{+0.076}_{-0.001}$
	+3%/-3%	+14%/-1%	+750%/-875%	+3%/-48%	+5%/-25%	+444%/-8%
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 003957082-01 / KOI 2864.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-3 ± 1	$8.56^{+7.66}_{-5.51}$	3542^{+160}_{-362}	-3185^{+6697}_{-238}	$0.079^{+0.632}_{-0.061}$
Alt.	-4 ± 2	$7.15^{+7.17}_{-4.97}$	3529^{+165}_{-361}	-3026^{+7137}_{-351}	$0.137^{+1.185}_{-0.109}$

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

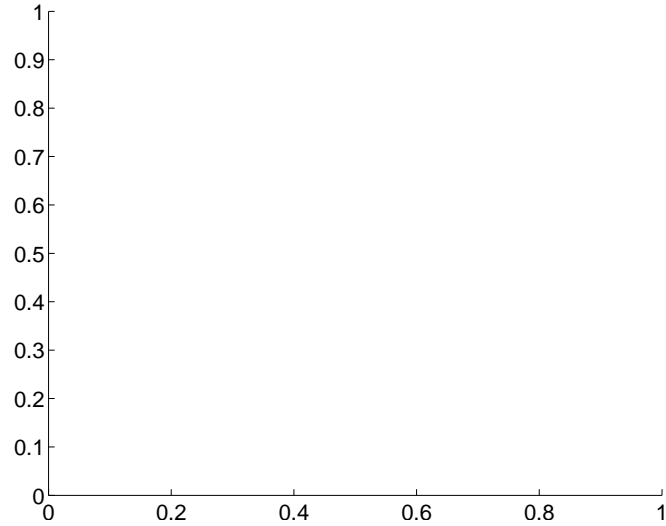
Supplemental centroid analysis for 003957082-01. Kepler magnitude: 12.92. Transit SNR 17.96

There are 0 quarters with good PRF difference image offsets

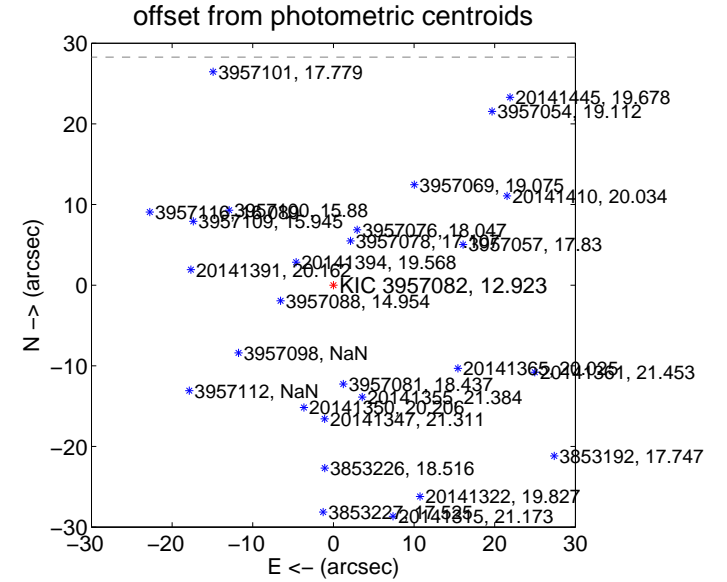
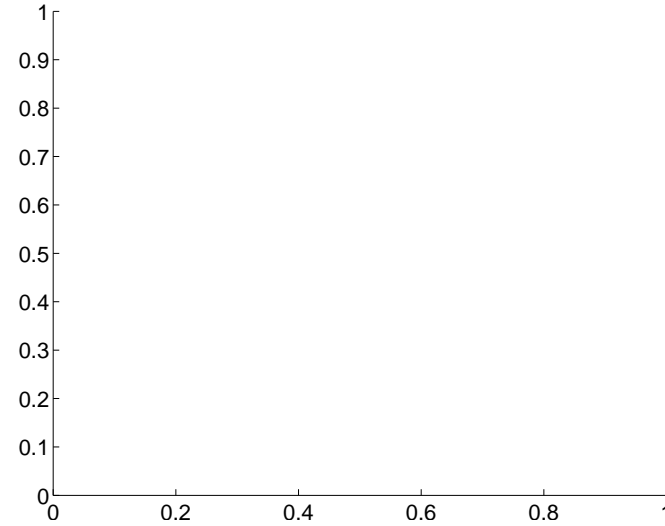
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	55.85 ± 0.94	59.35	48.16 ± 0.96	28.28 ± 0.89

There is no PRF-fit offset from OOT-fit

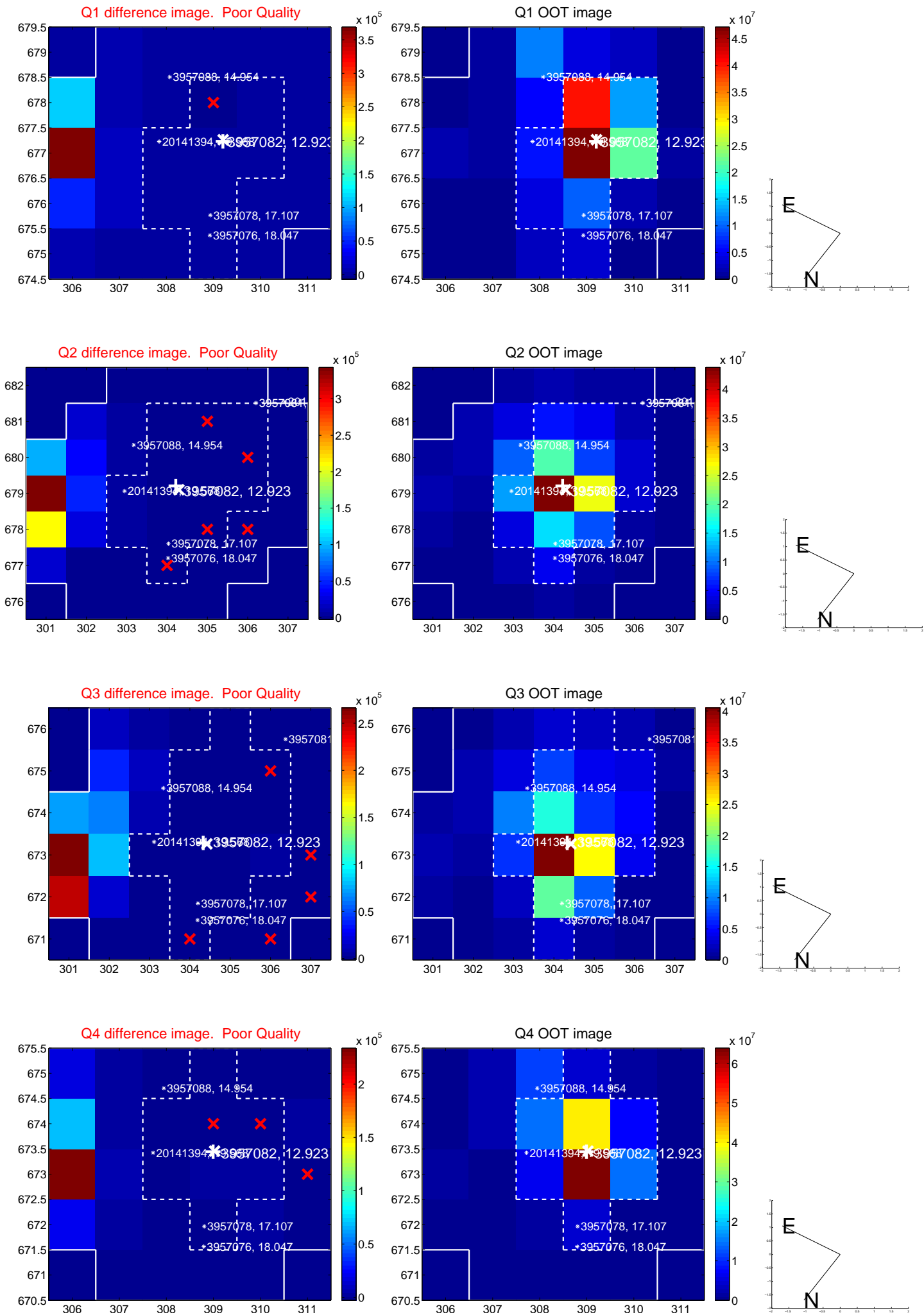


There is no PRF-fit offset from KIC

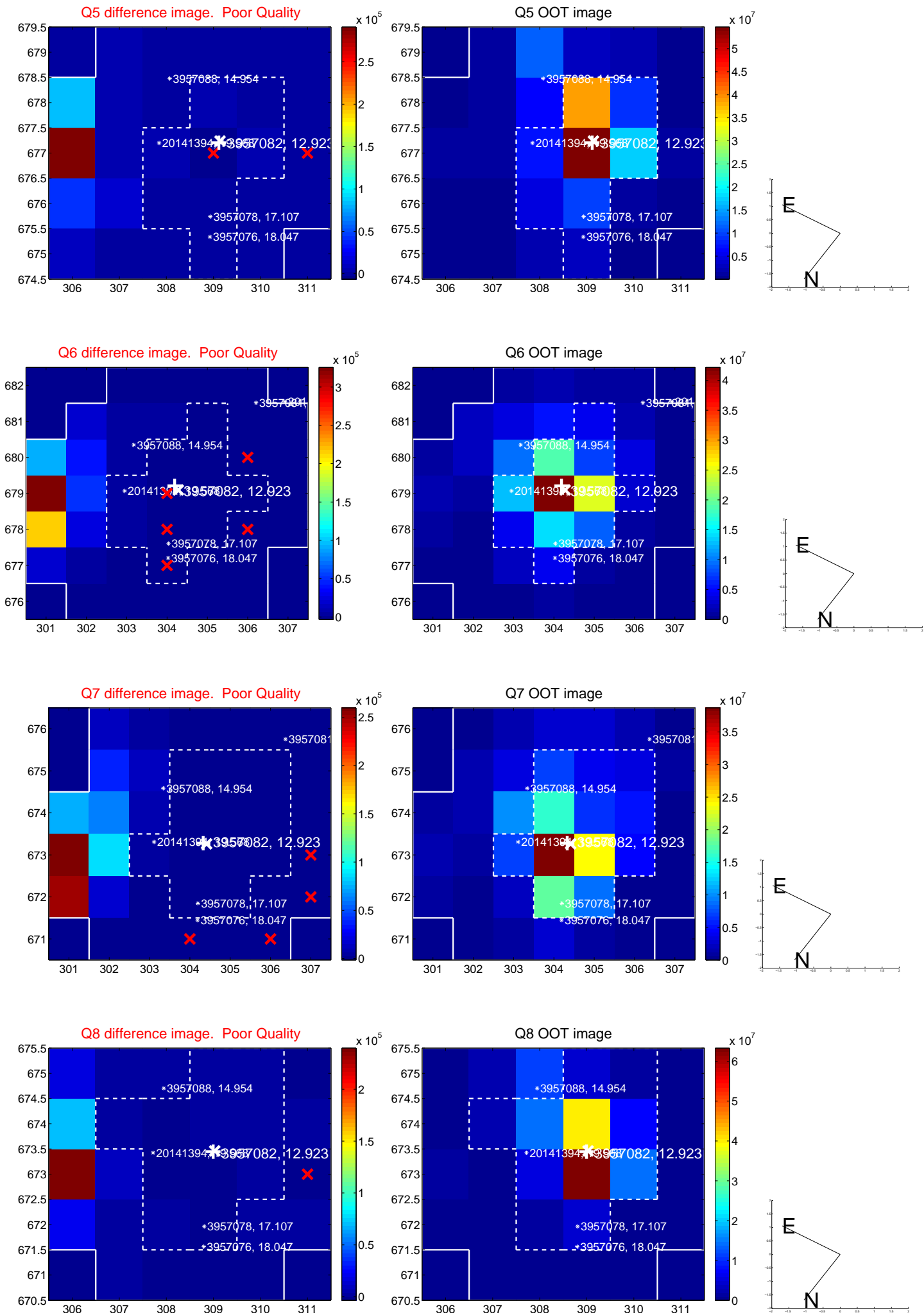


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

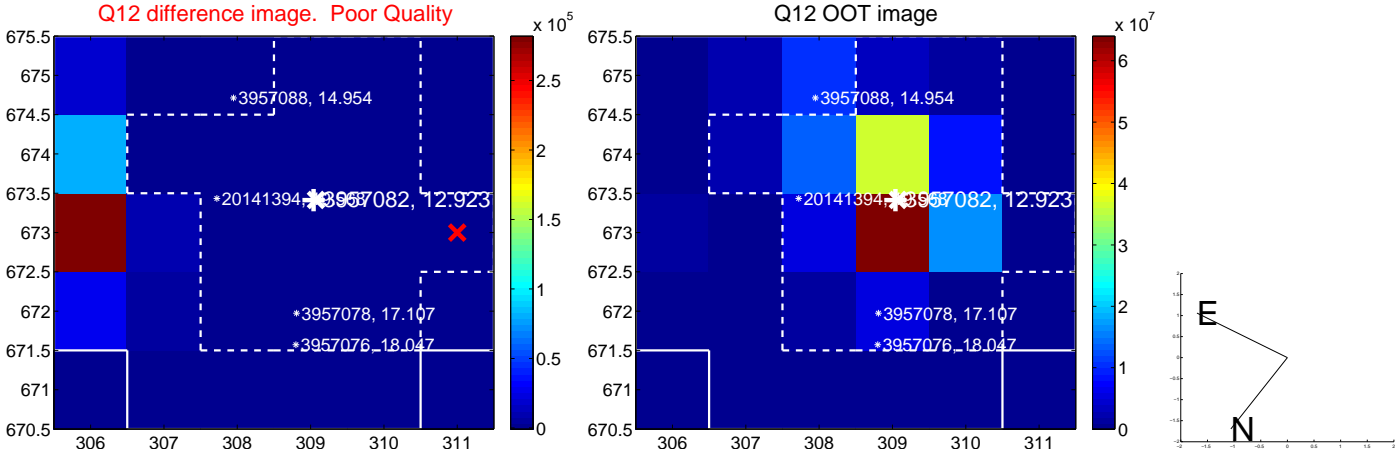
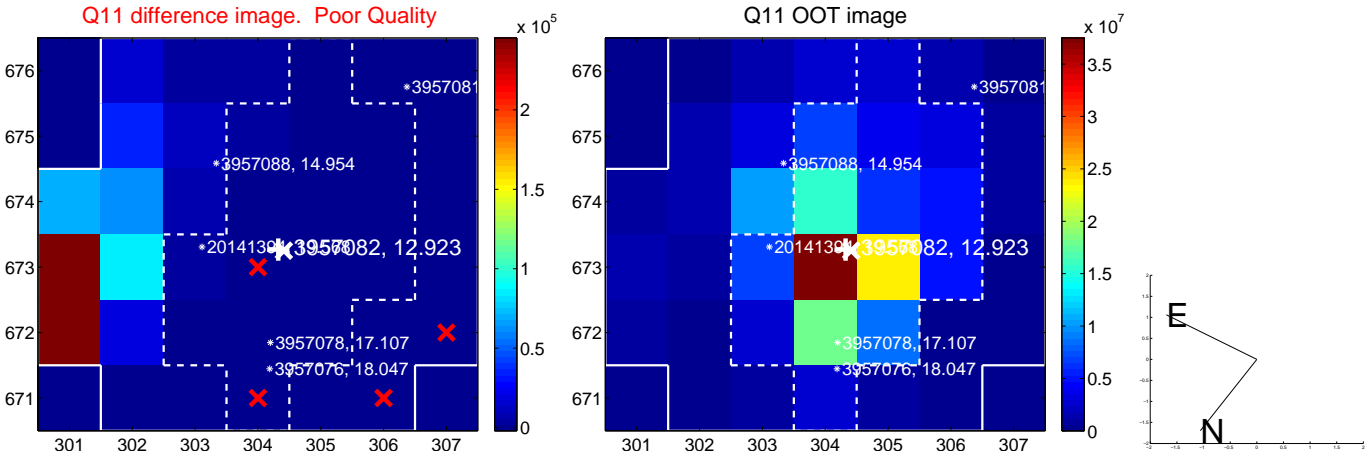
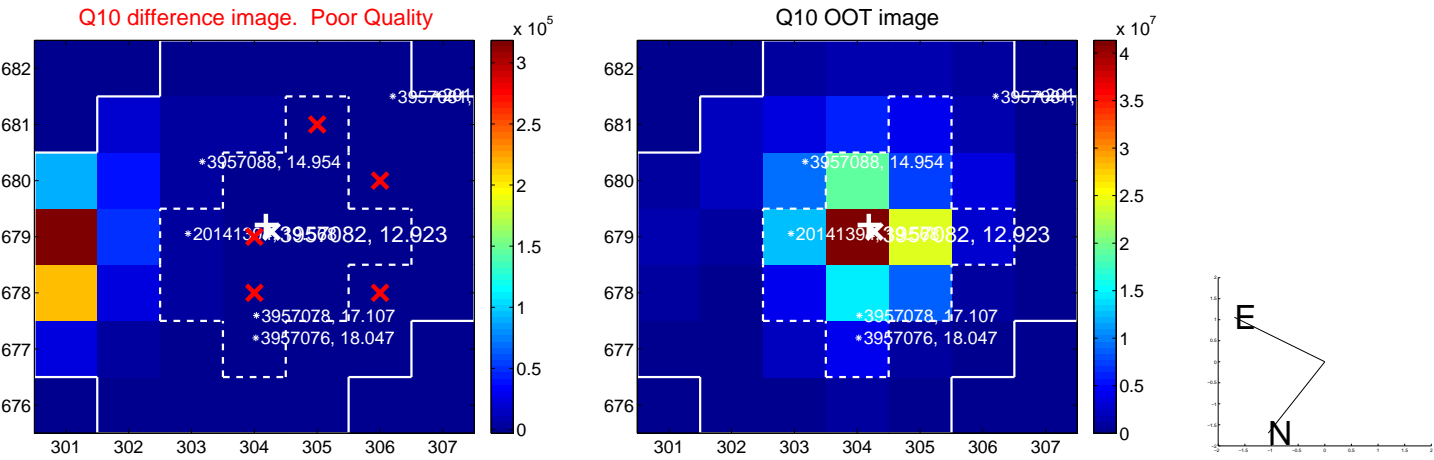
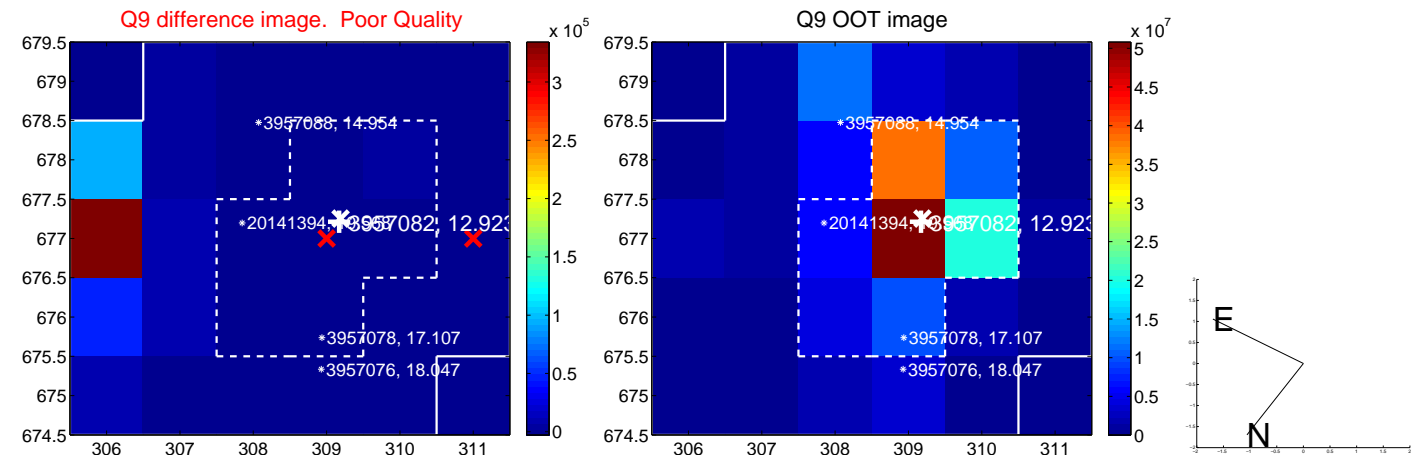
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



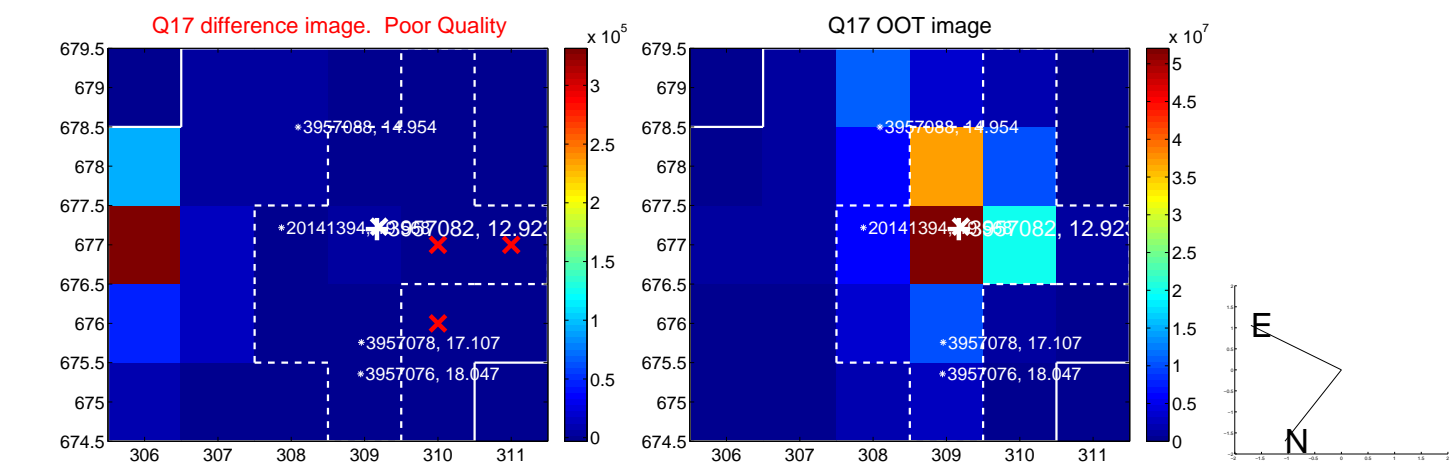
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



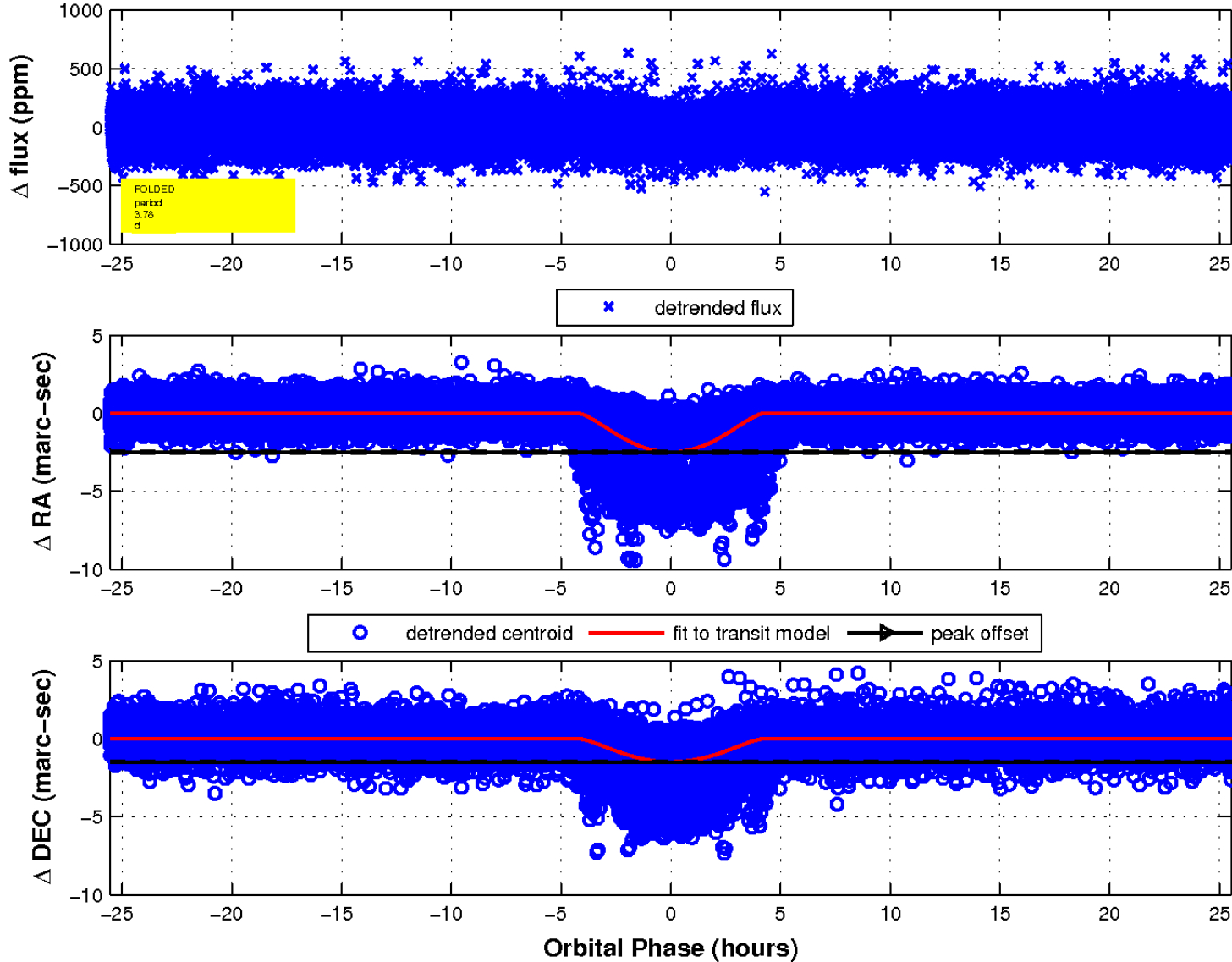
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

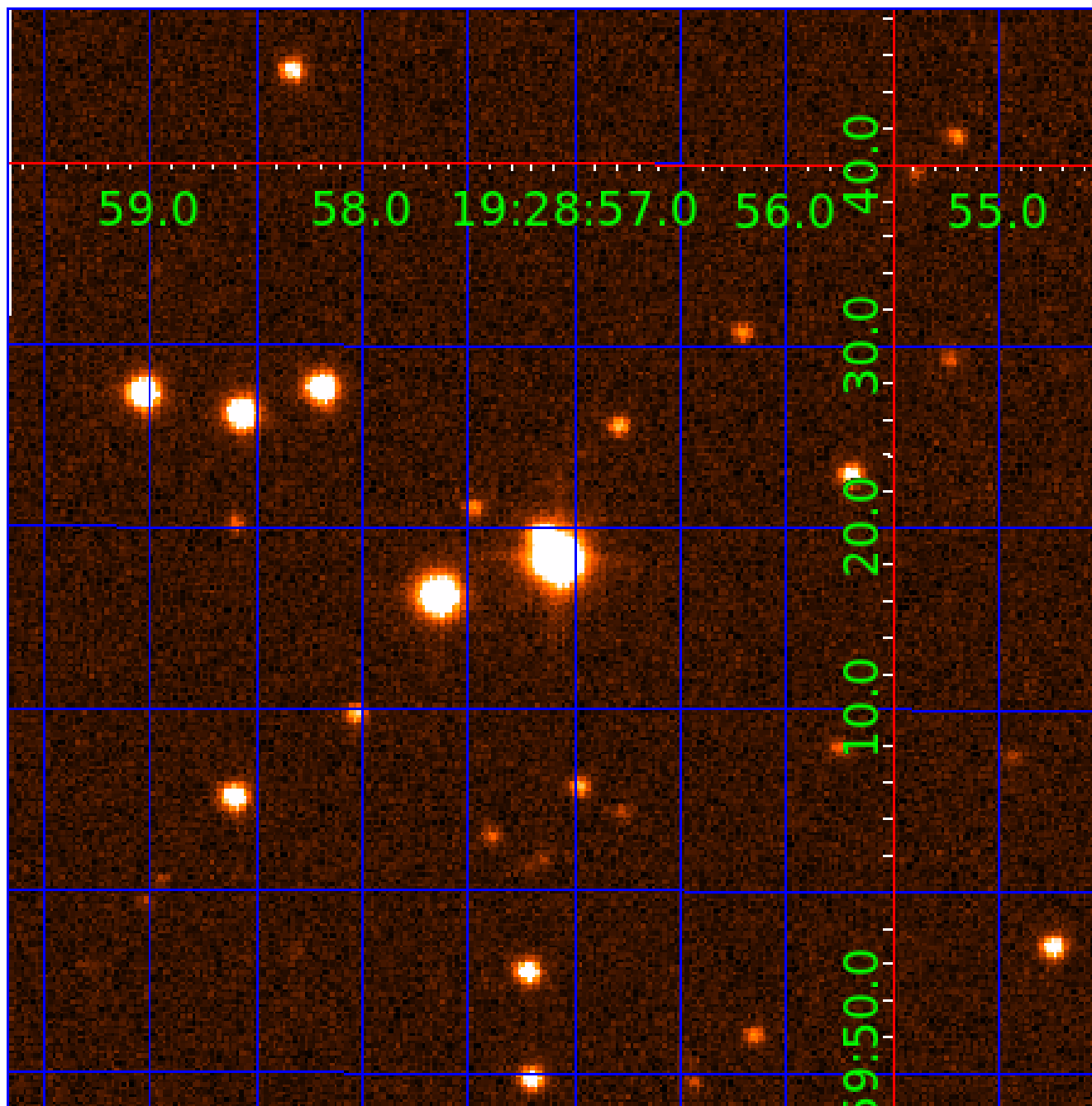


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003957082

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})
003957082-01	OBS	2864.01	3.778795	134.204118	52.6	8.518	16.2	18.0	5.54	6115	7.75	10500.85
003957082-02	OBS	No	610.064367	237.697394	554.0	3.500	11.2	-1.0	5.54	6115	13.07	11.95

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003957082-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET
003957082-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS

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 003957082-02

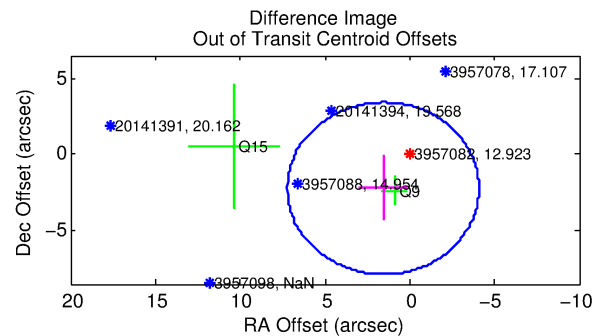
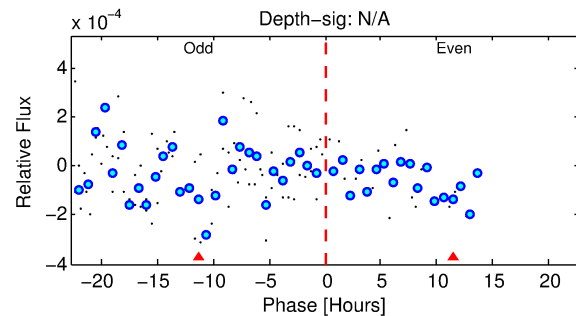
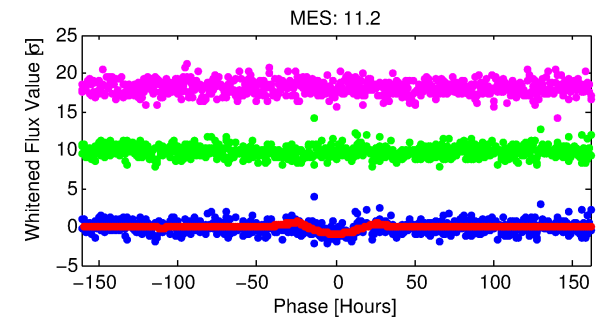
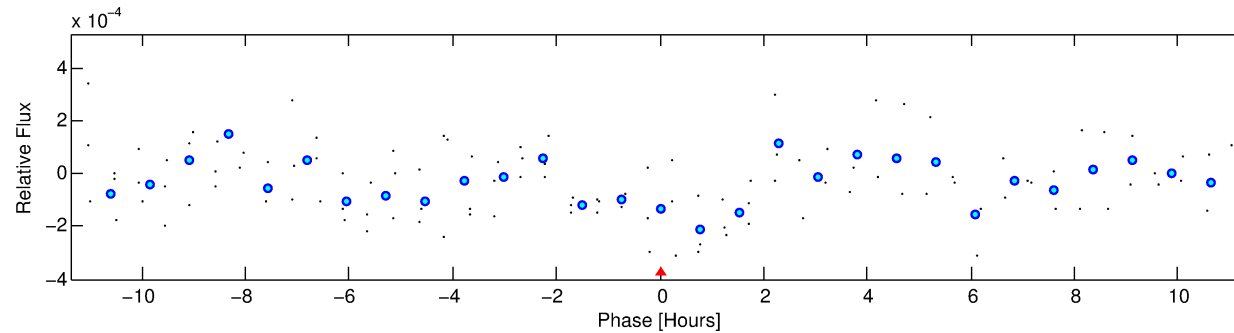
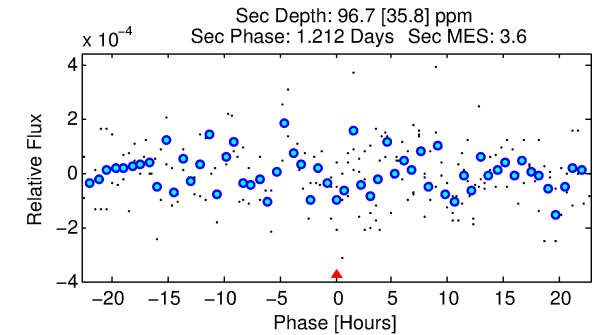
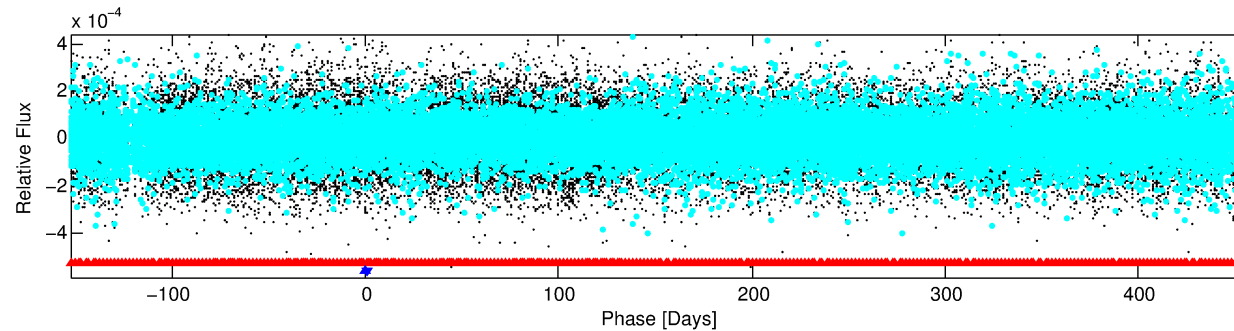
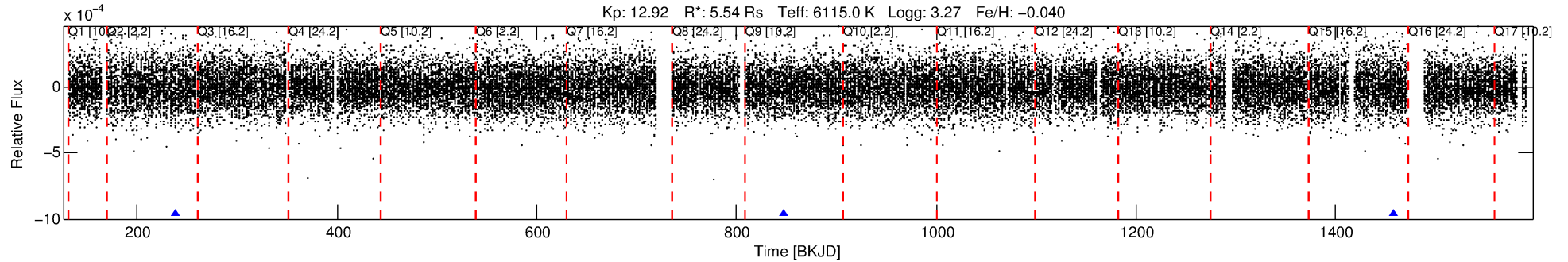
No Significant Match Found

DV One-Page Summary

KIC: 3957082 Candidate: 2 of 2 Period: 610.064 d

KOI: K02864 Corr: No Ephemeris Match

Kp: 12.92 R*: 5.54 Rs Teff: 6115.0 K Logg: 3.27 Fe/H: -0.040



TPS TCE Results:

Period = 610.06437 d

Epoch = 237.6974 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1580.04σ]

LongPeriod-sig: N/A

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: 6.77e-18

RollingBand-fgt: 1.00 [3/3]

GhostDiagnostic-chr: -2.083

Centroid-sig: 85.4%

Centroid-so: 2.408 arcsec [0.53σ]

OotOffset-rm: 2.720 arcsec [1.44σ]

KicOffset-rm: 2.614 arcsec [1.38σ]

OotOffset-st: 0/1/0/1 [2]

KicOffset-st: 0/1/0/1 [2]

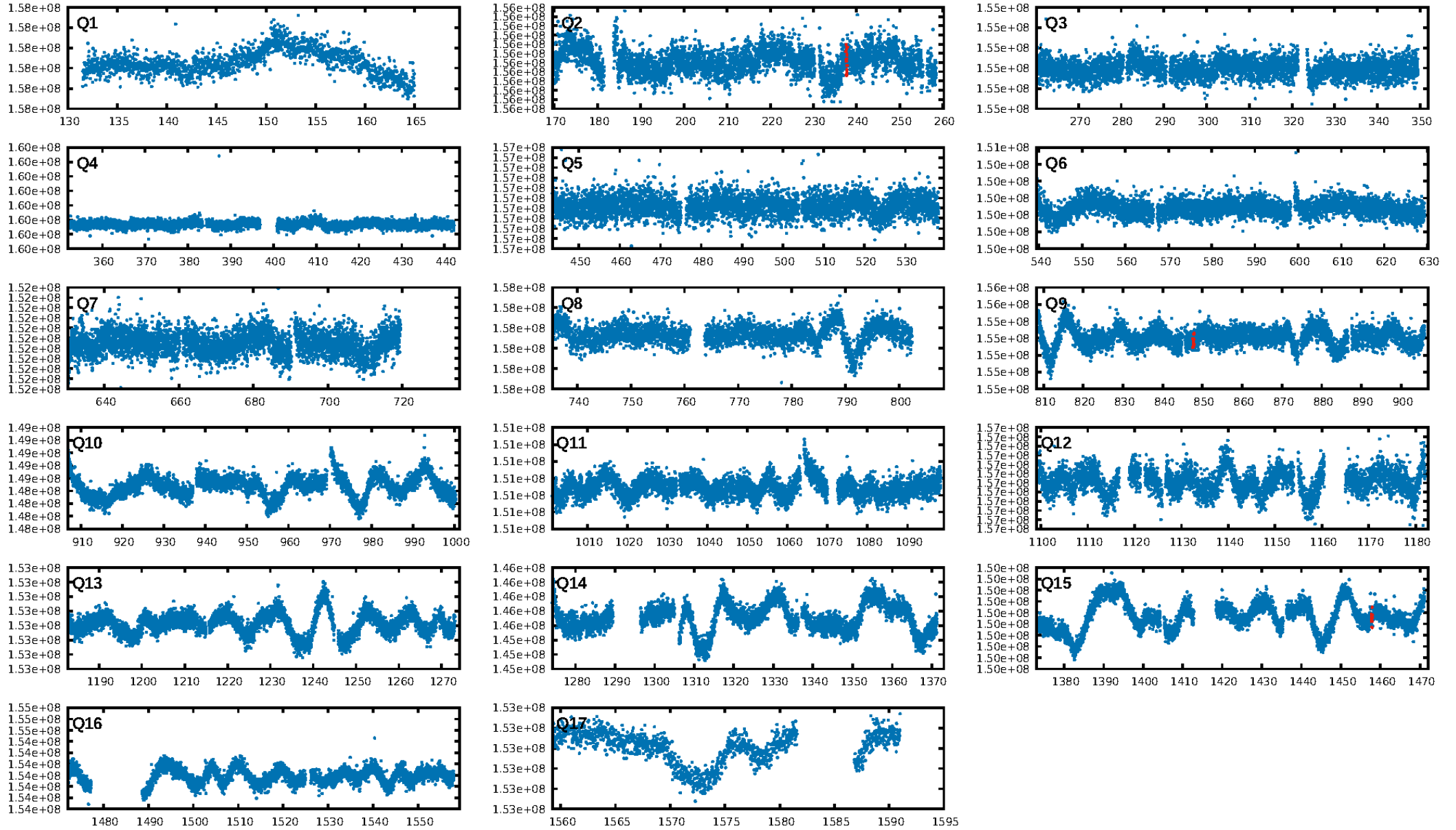
DiffImageQuality-fgm: 0.00 [0/2]

DiffImageOverlap-fno: 1.00 [3/3]

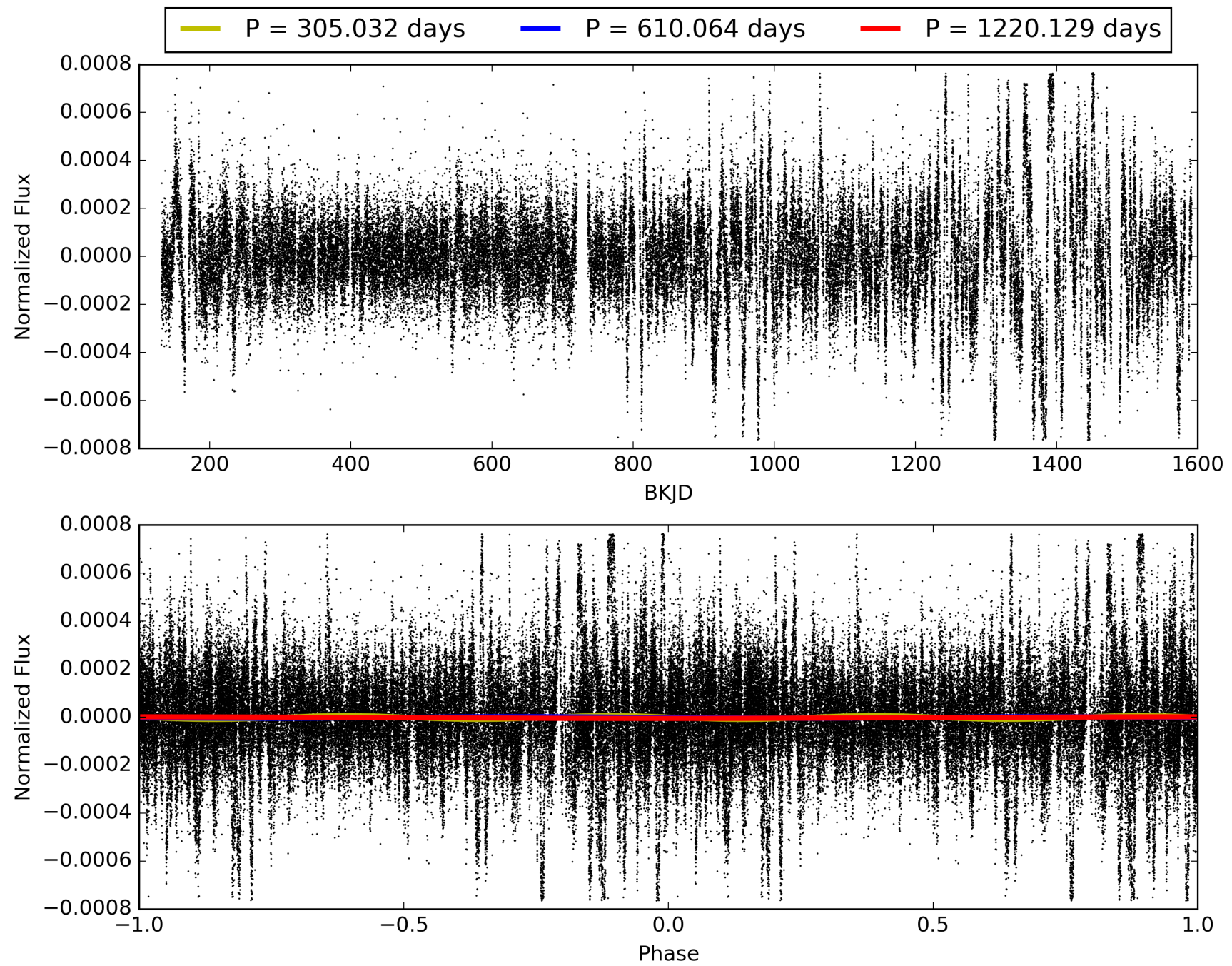
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:56:41 Z

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

TCE 003957082-02, PDC Light Curves

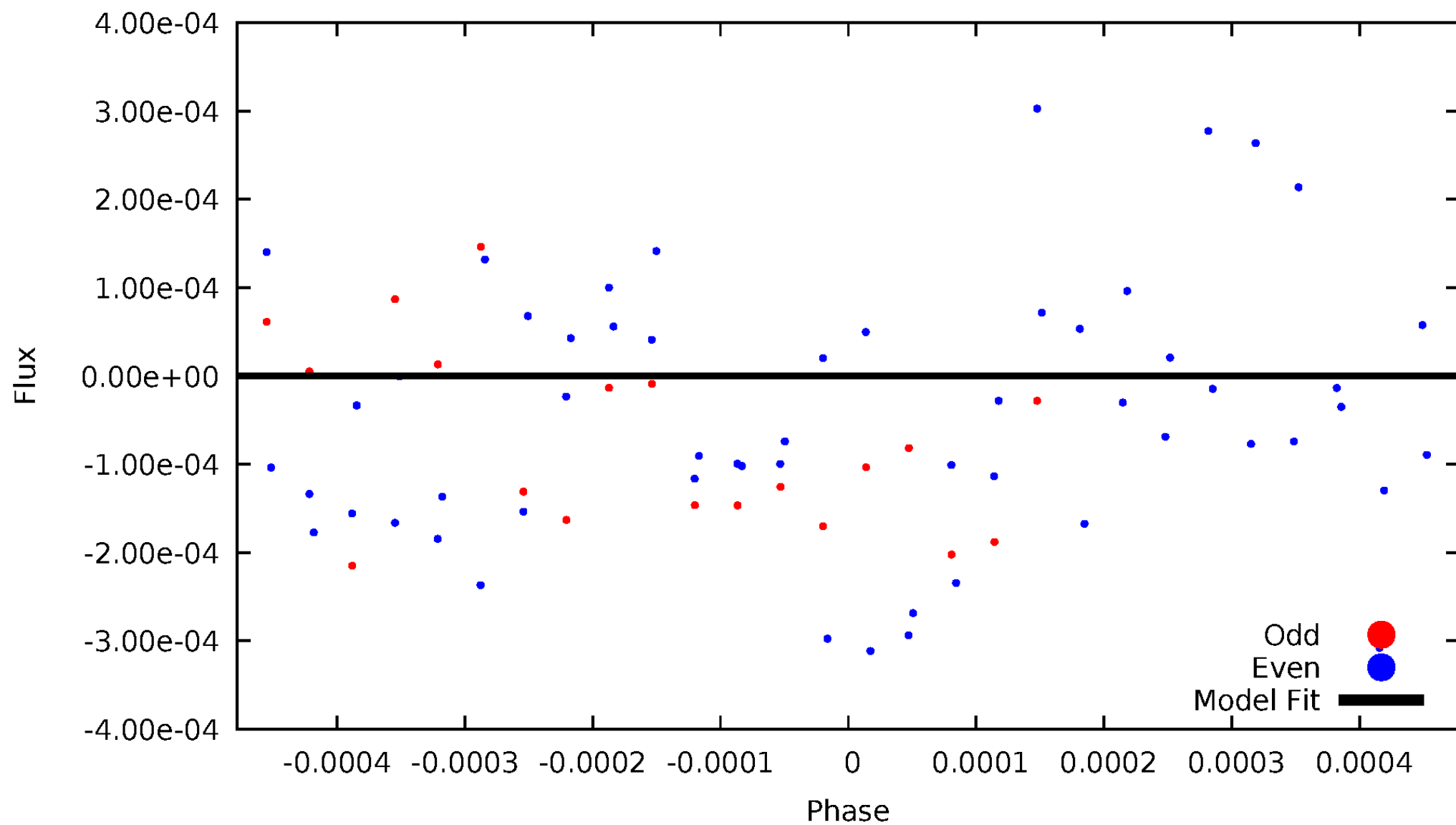


TCE 003957082-02



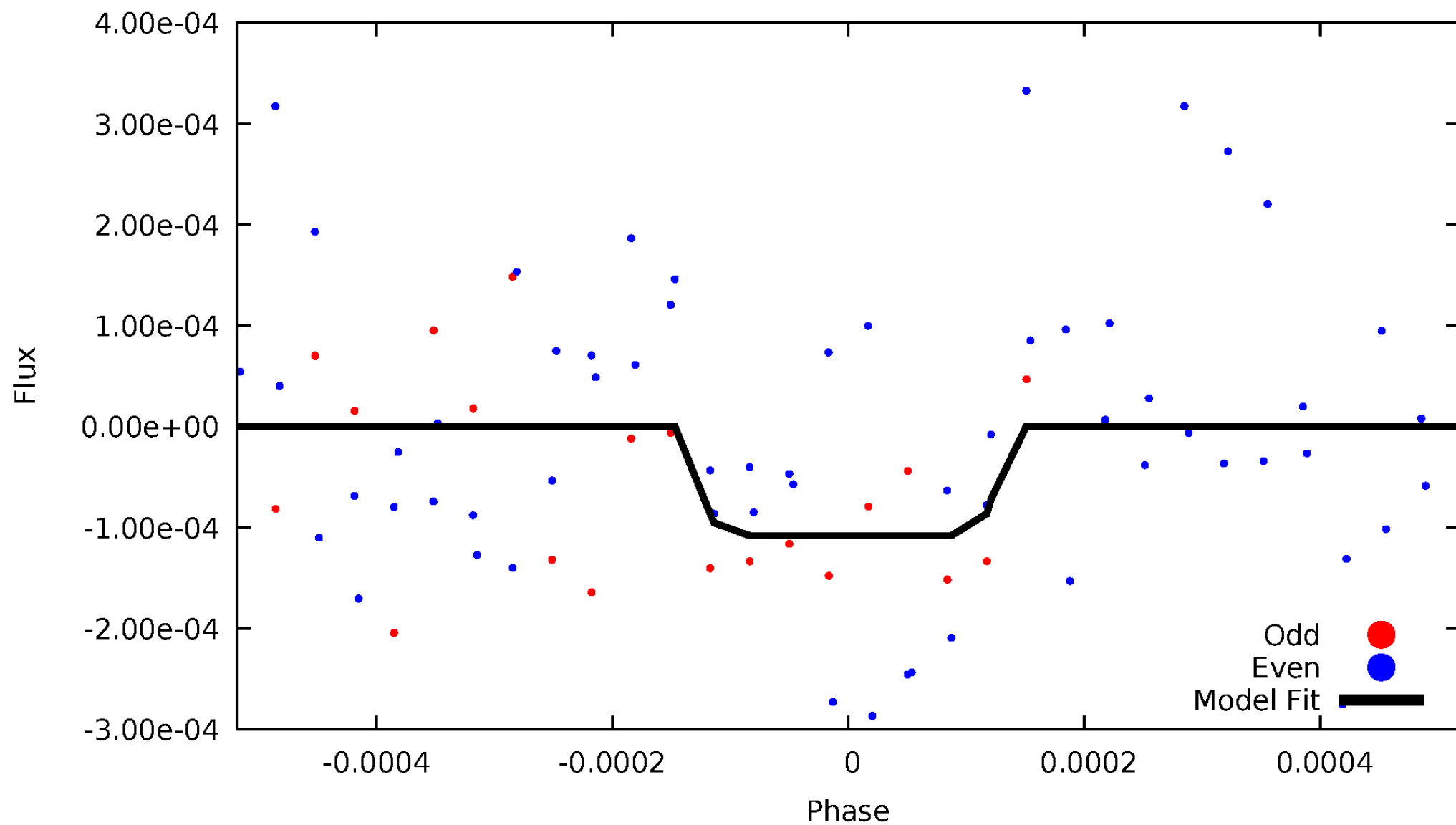
DV Odd/Even

TCE 003957082-02



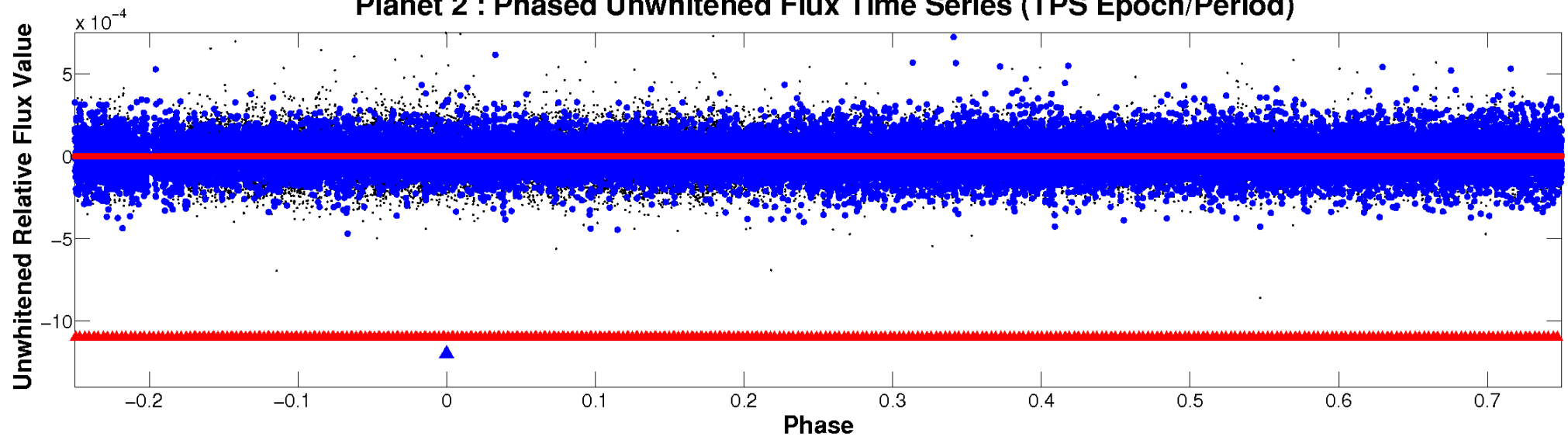
ALT Odd/Even

TCE 003957082-02

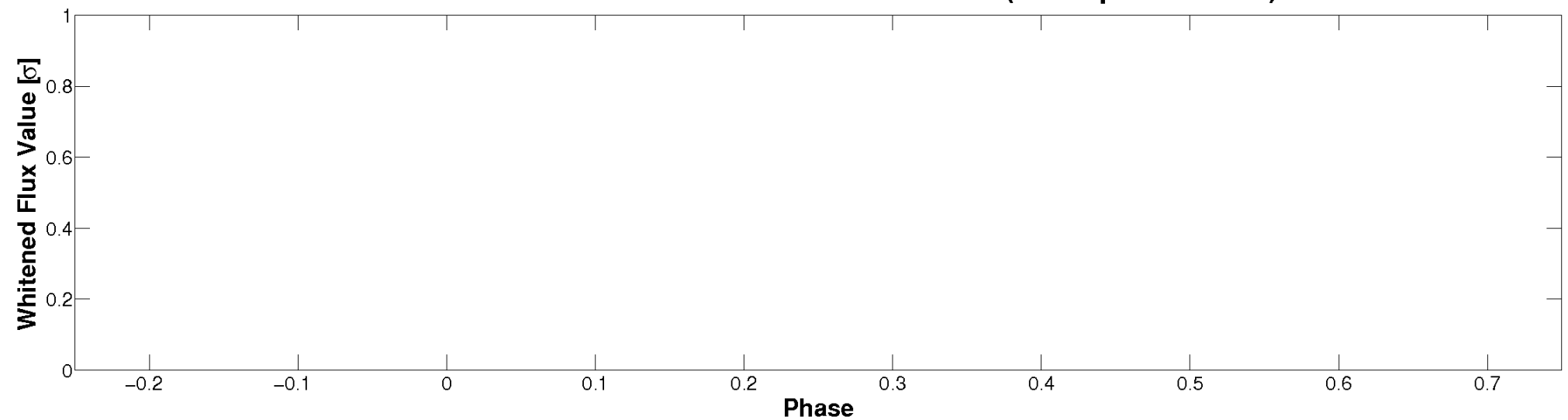


Non-Whitened Vs. Whitened Light Curve

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

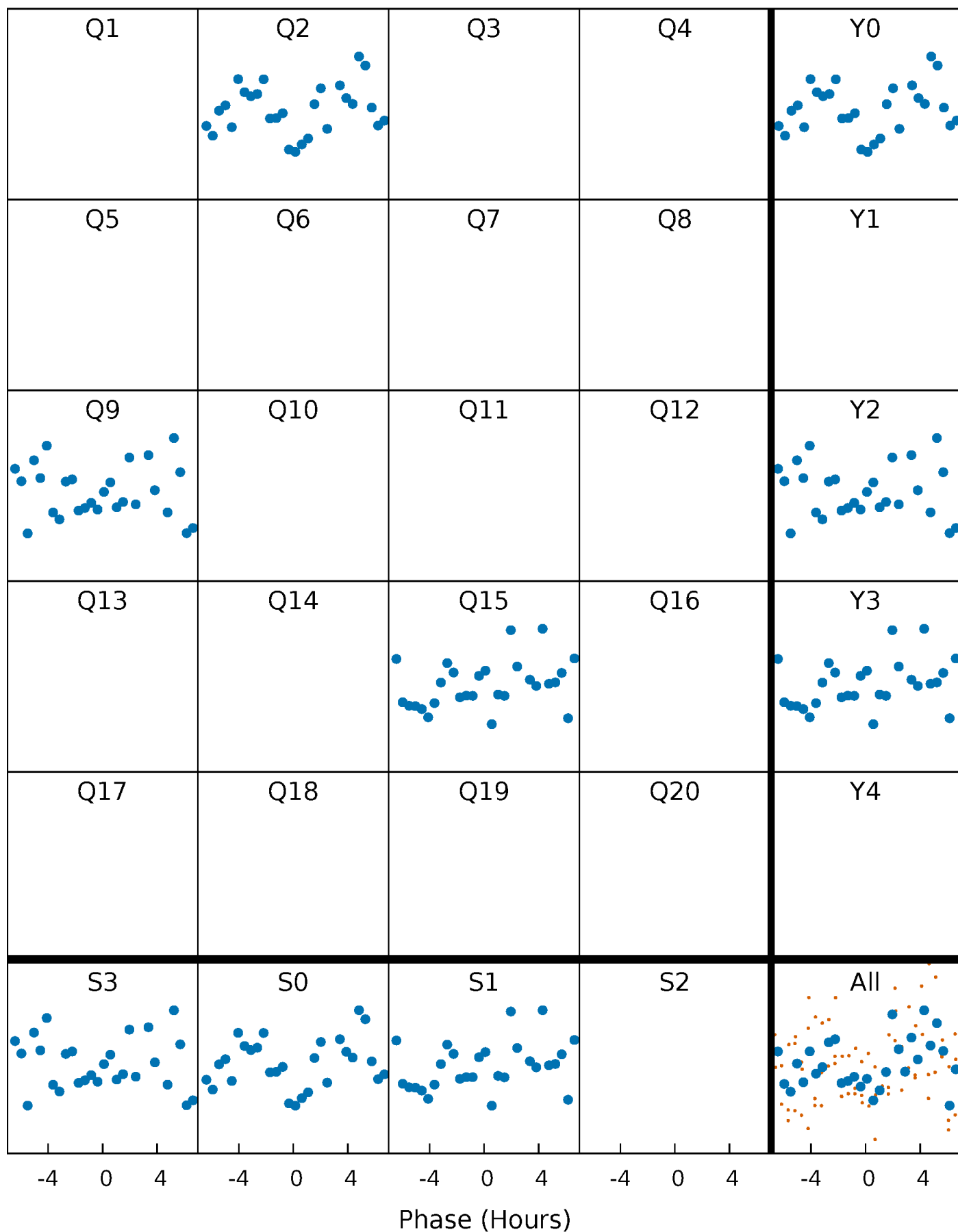


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



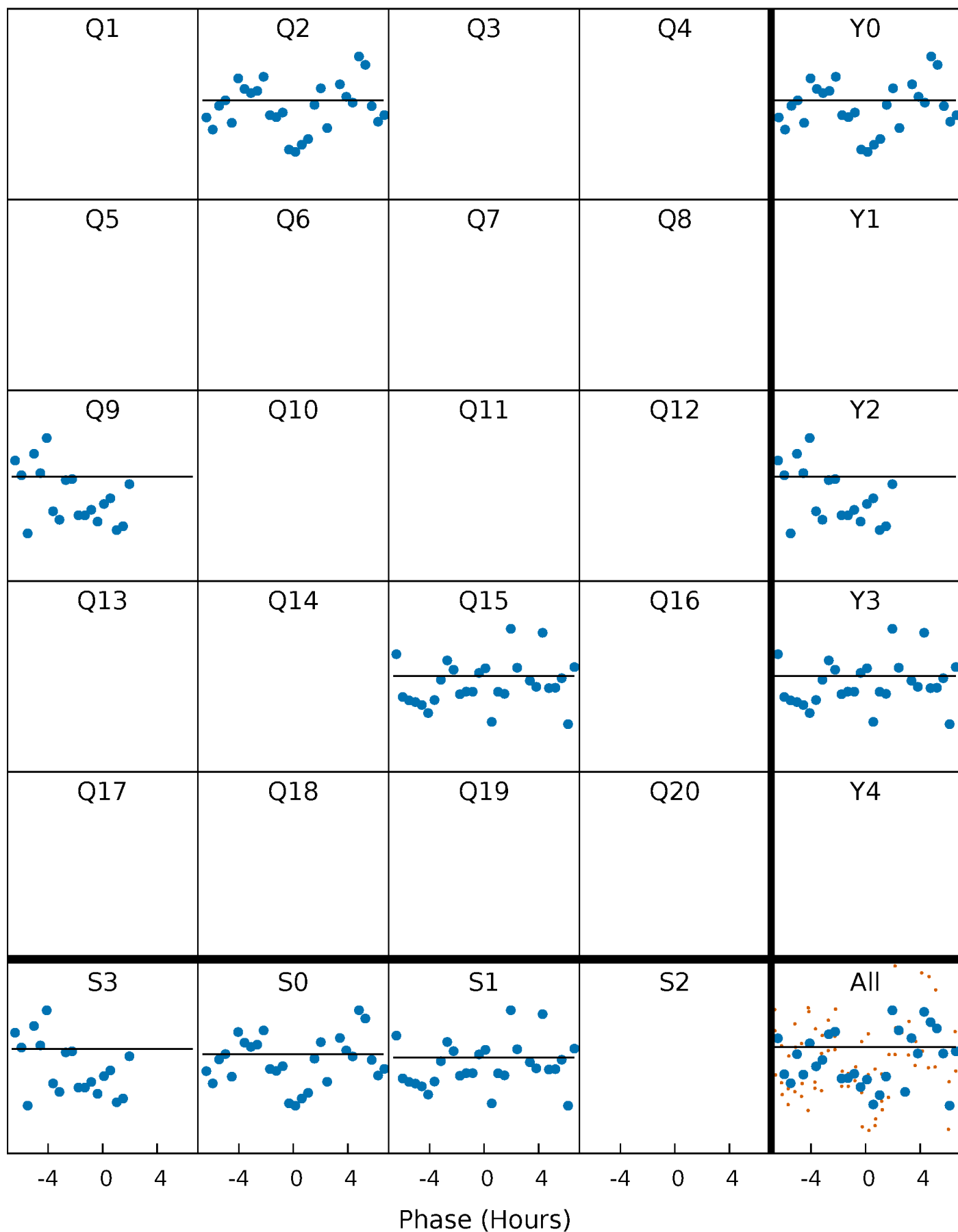
PDC Quarter-Phased Transit Curves

TCE 003957082-02 P=610.064367 Days $T_0=237.697394$ (BKJD)



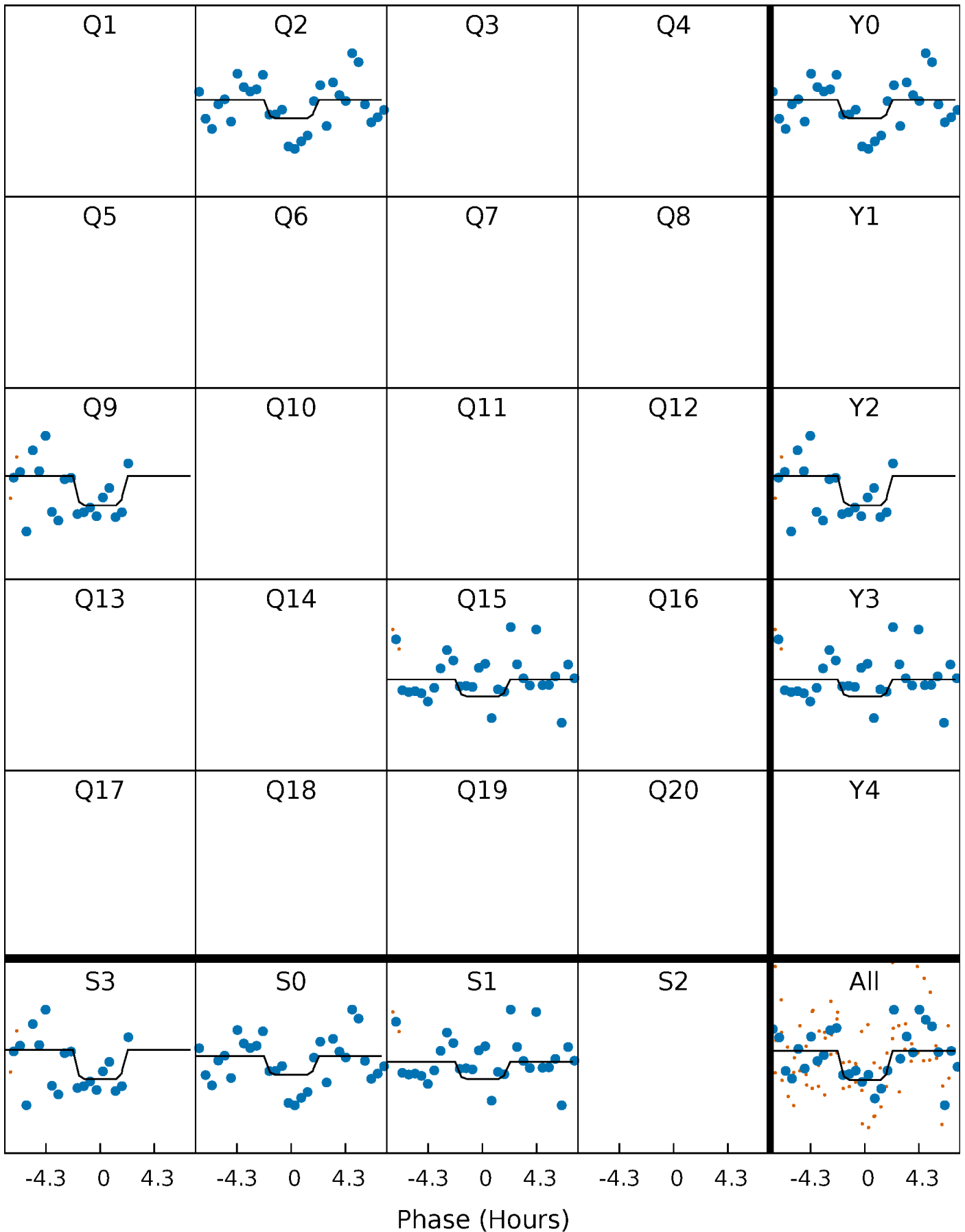
DV Quarter-Phased Transit Curves

TCE 003957082-02 $P=610.064367$ Days $T_0=237.697394$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

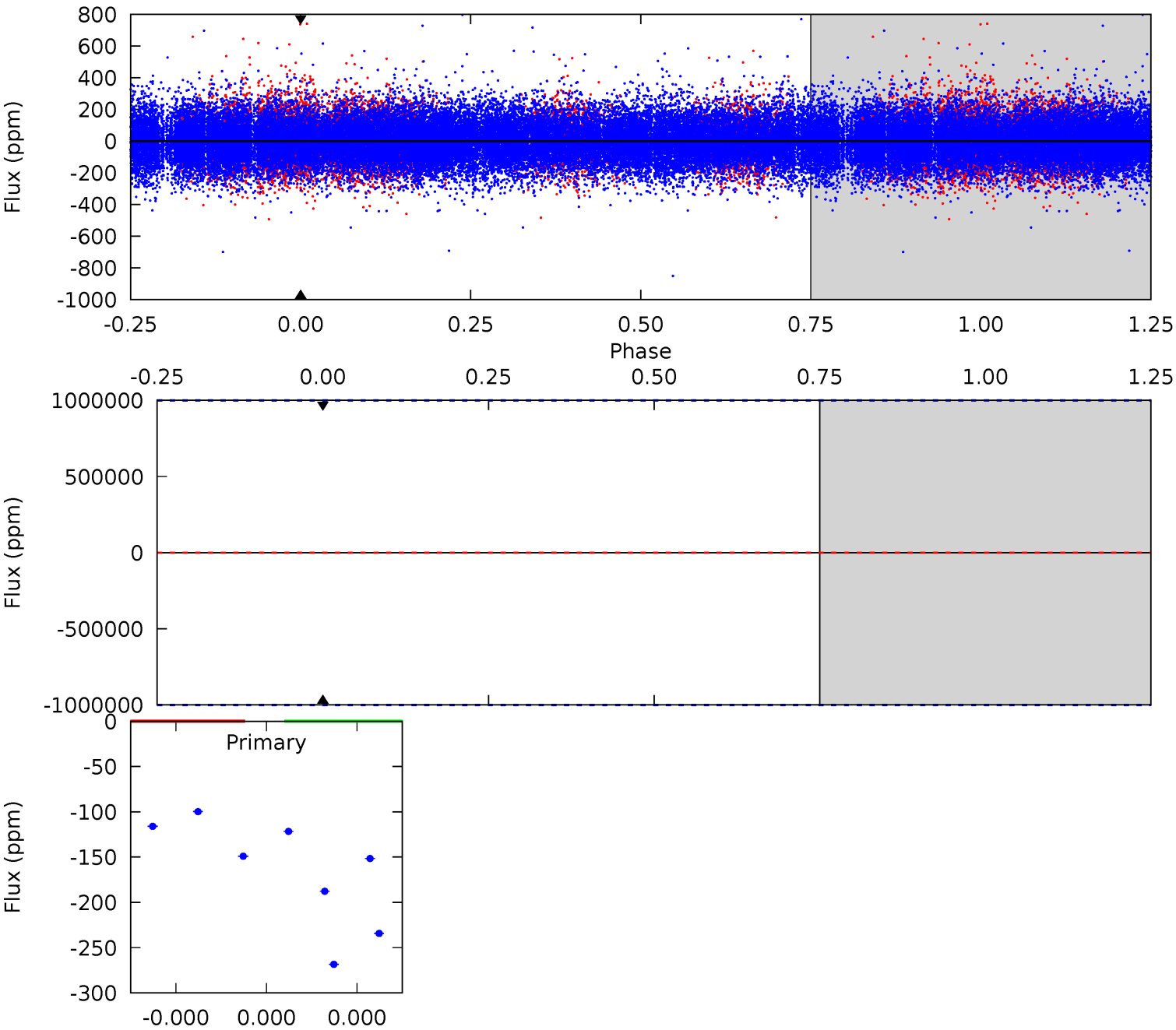
TCE 003957082-02 P=610.064367 Days $T_0=237.695485$ (BKJD)



DV Model-Shift Uniqueness Test

003957082-02, P = 610.064367 Days, E = 237.697394 Days

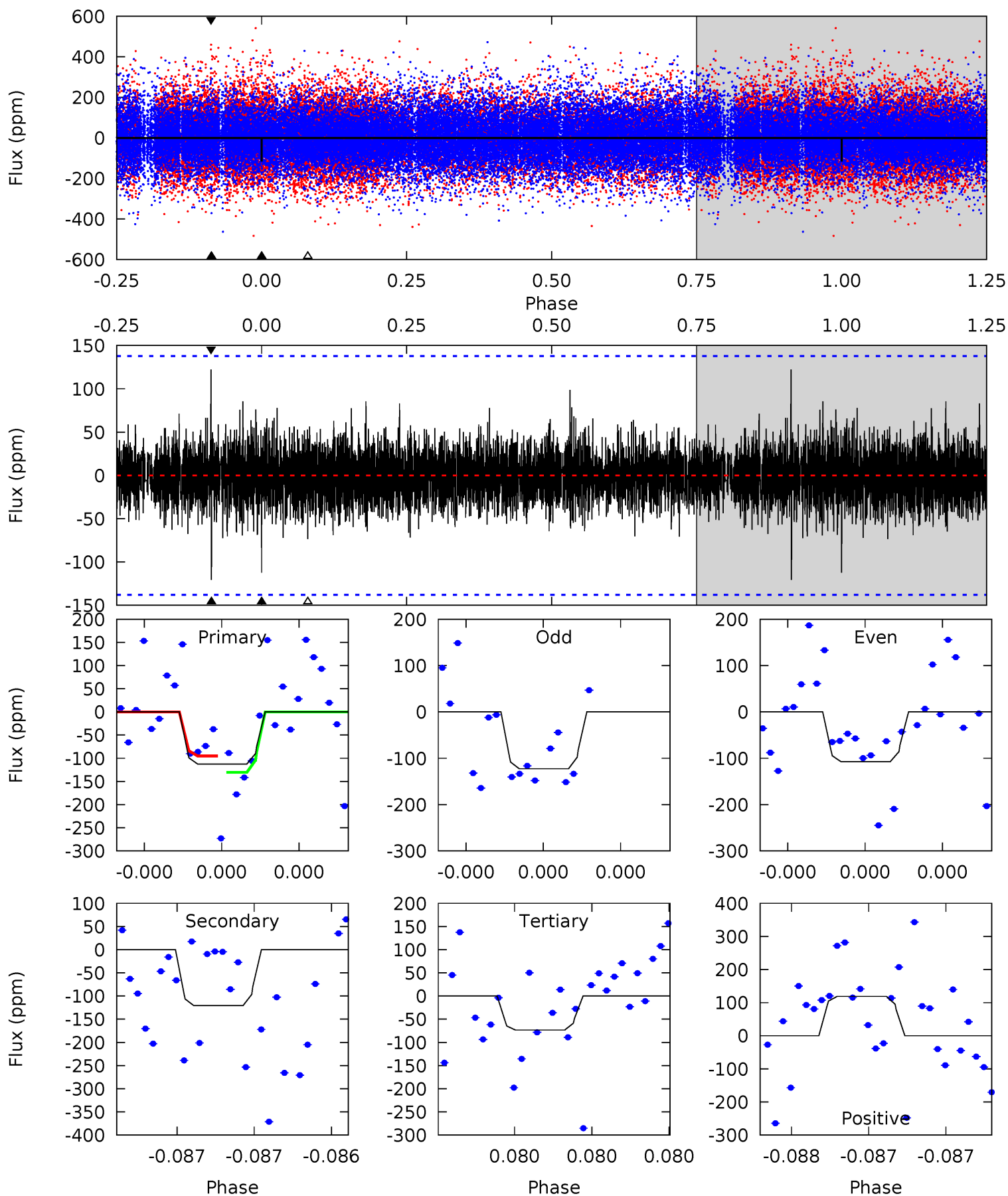
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003957082-02, P = 610.064367 Days, E = 237.695485 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.64	4.97	3.02	4.90	5.68	3.64	0.90	1.61	-0.26	1.95	0.07	0.29	0.92	0.50	0.73



Stellar Parameters For KIC 003957082

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6115^{+201}_{-183}	$3.267^{+0.447}_{-0.047}$	$-0.040^{+0.300}_{-0.350}$	$5.544^{+0.140}_{-2.668}$	$2.072^{+0.098}_{-0.522}$	$0.017^{+0.076}_{-0.001}$
	+3%/-3%	+14%/-1%	+750%/-875%	+3%/-48%	+5%/-25%	+444%/-8%
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 003957082-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$40.55^{+43.92}_{-28.92}$	649^{+29}_{-70}	-5879^{+27998}_{-20987}	$-4972.828^{+184955.048}_{-234710.086}$
Alt.	-121 ± 24	$40.79^{+45.27}_{-29.83}$	648^{+33}_{-60}	3006^{+1628}_{-529}	125^{+1596}_{-97}

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 $A_{obs} \gg 1.0$

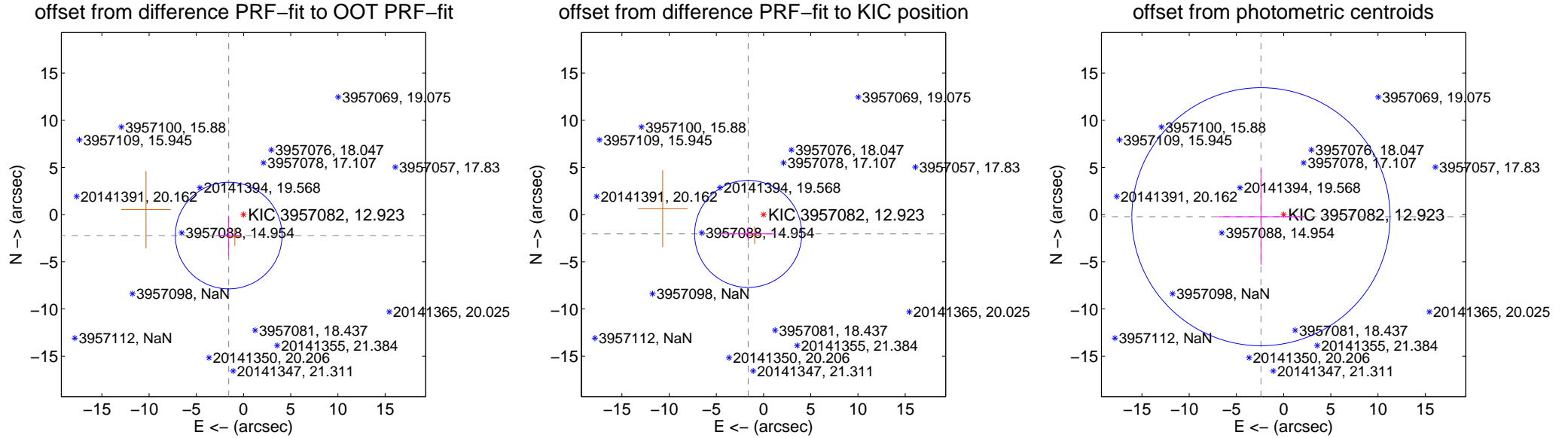
DV Centroid Data

Supplemental centroid analysis for 003957082-02. Kepler magnitude: 12.92. Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.720 ± 1.883	1.44	1.570 ± 1.363	-2.221 ± 2.096
PRF-fit source offset from KIC position	2.614 ± 1.891	1.38	1.628 ± 2.897	-2.045 ± 0.725
photometric centroid source offset	2.41 ± 4.56	0.53	2.40 ± 4.55	-0.22 ± 5.08



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.

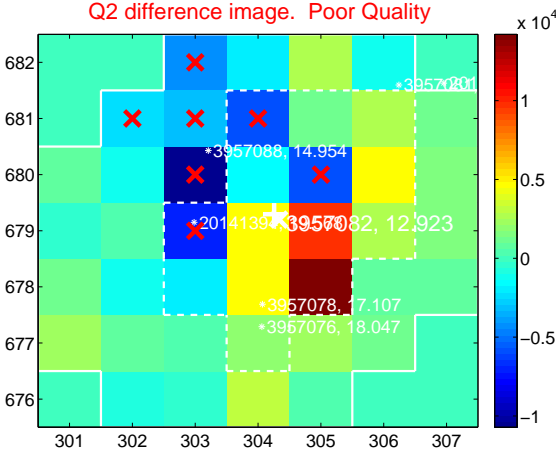
Q1 no difference image



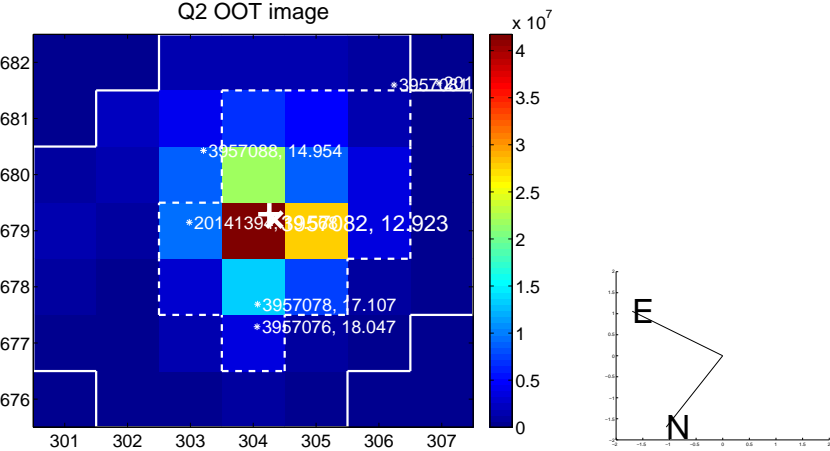
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



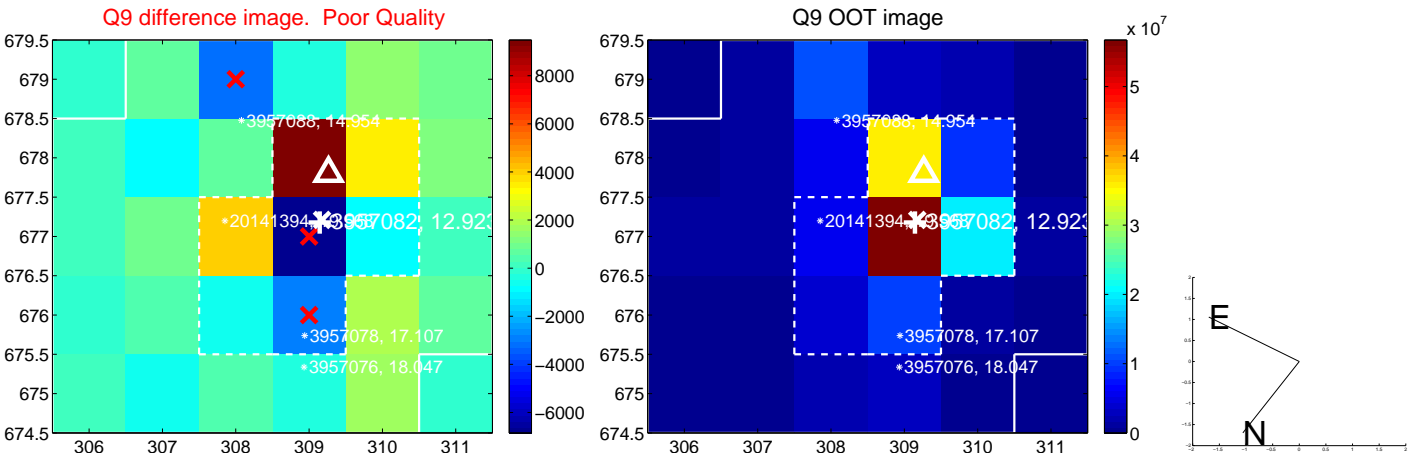
Q4 no OOT image



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



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



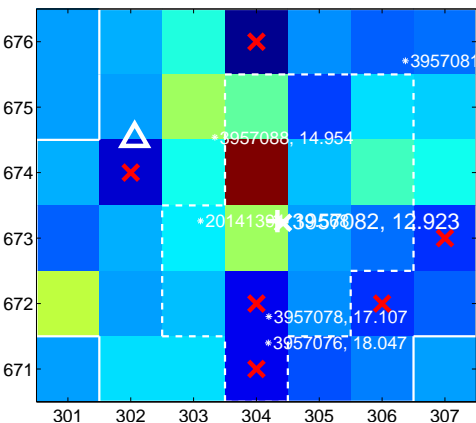
Q14 no difference image



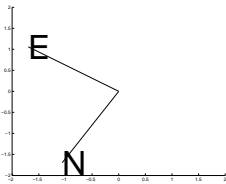
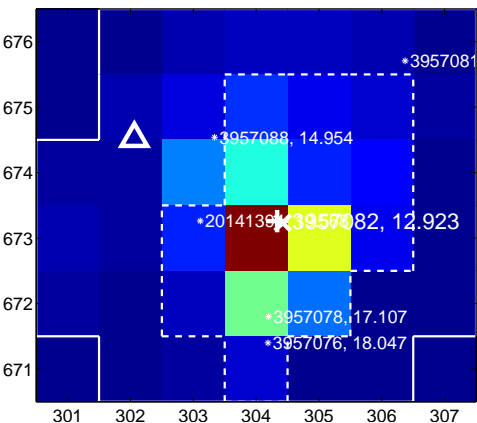
Q14 no OOT image



Q15 difference image. Poor Quality



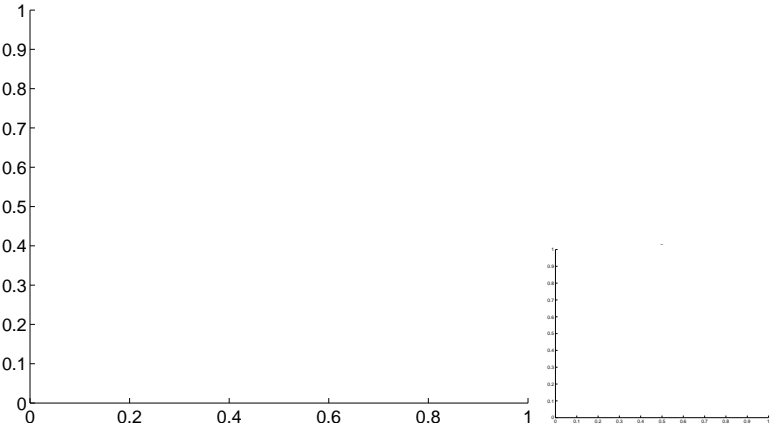
Q15 OOT image



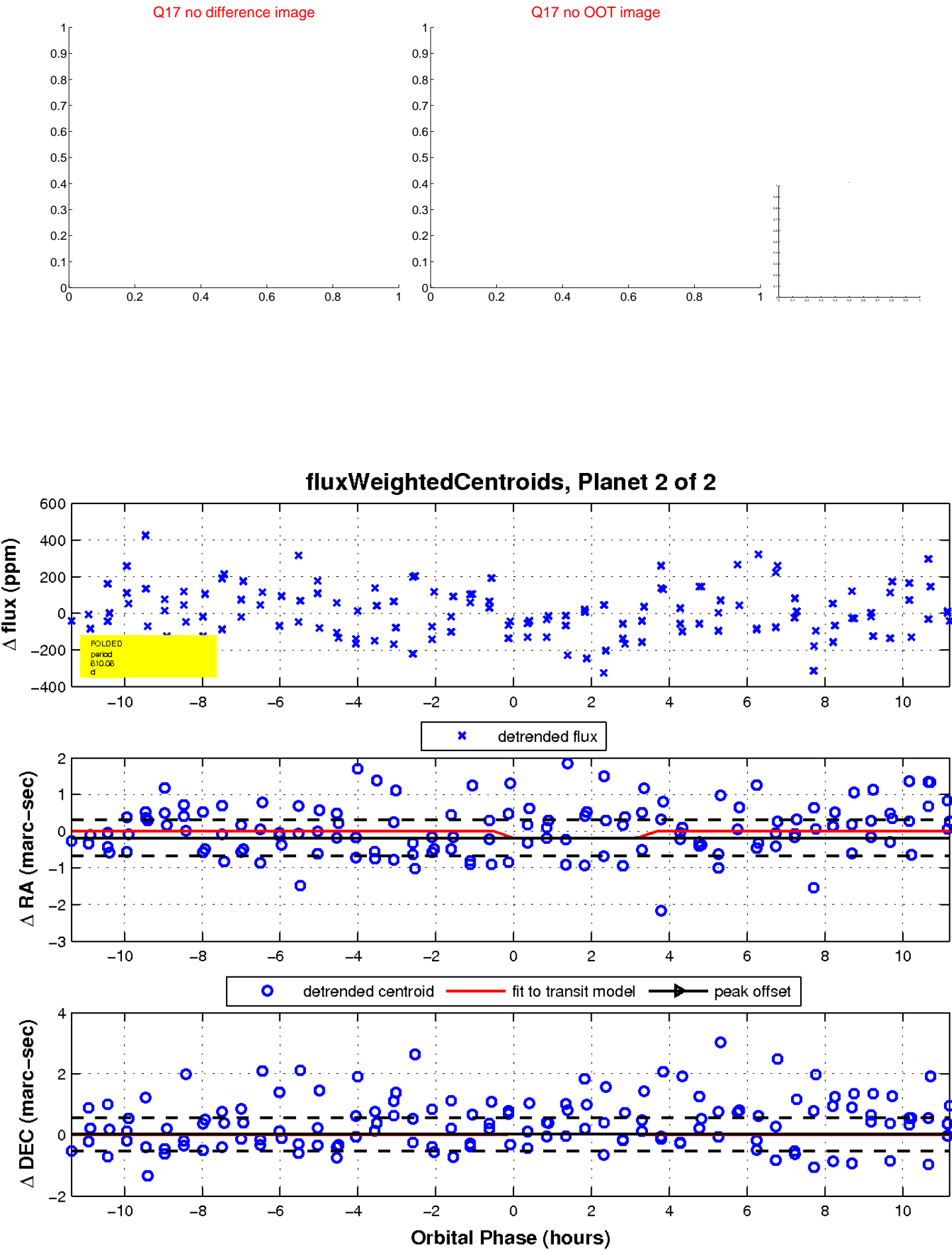
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

