

KIC 005700900

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})
005700900-01	OBS	No	477.574534	137.156565	916.3	25.177	7.8	9.3	0.96	5982	2.90	0.72
005700900-02	OBS	4100.01	379.071847	287.568238	1146.3	29.133	8.3	8.6	0.96	5982	4.08	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005700900-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005700900-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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 005700900-01

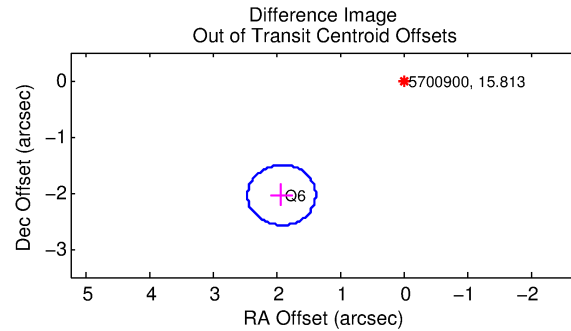
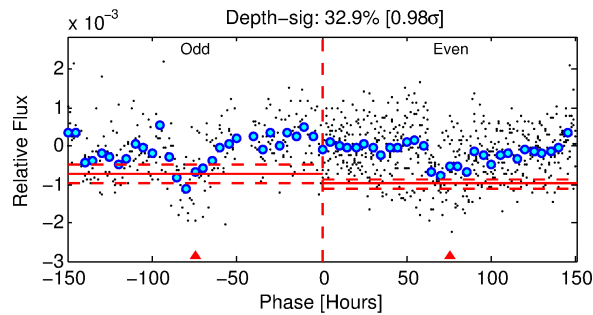
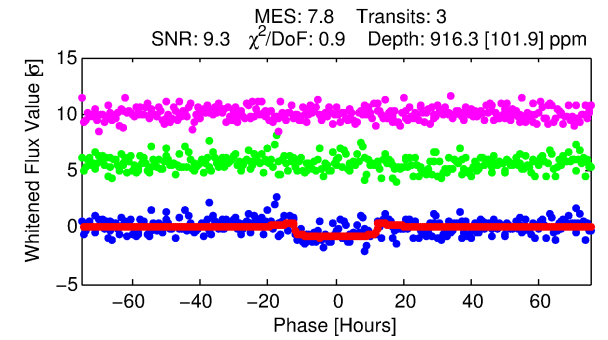
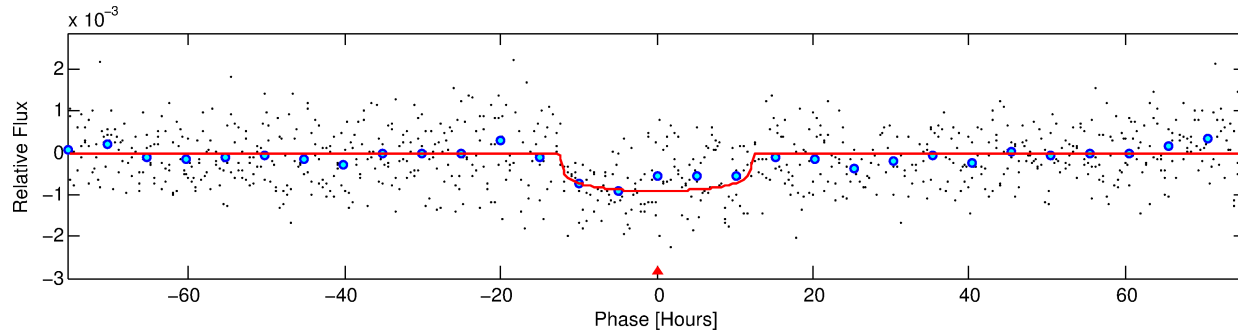
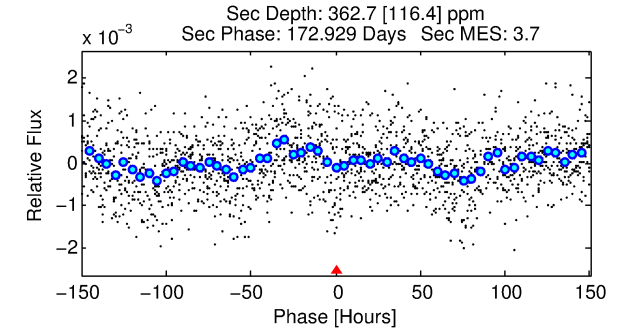
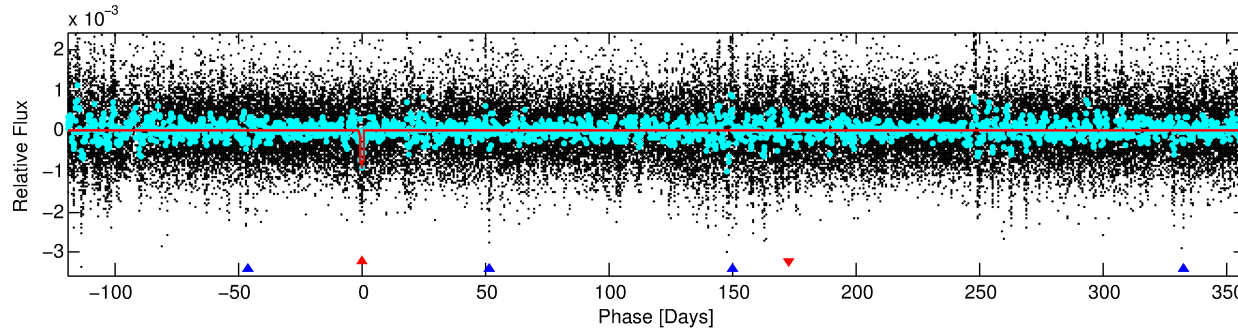
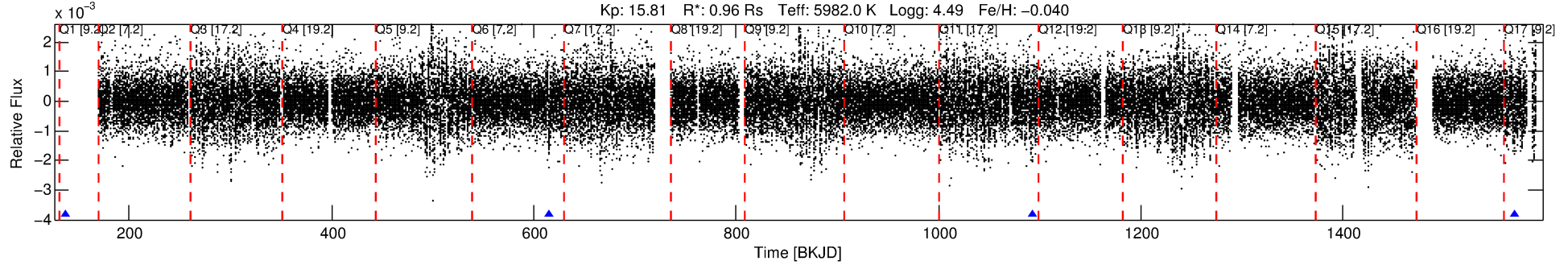
No Significant Match Found

DV One-Page Summary

KIC: 5700900 Candidate: 1 of 2 Period: 477.575 d

KOI: K04100 Corr: No Ephemeris Match

Kp: 15.81 R*: 0.96 Rs Teff: 5982.0 K Logg: 4.49 Fe/H: -0.040



DV Fit Results:

Period = 477.57453 [0.01558] d
Epoch = 137.1566 [0.0311] BKJD
Rp/R* = 0.0277 [0.0092]
a/R* = 145.71 [222.24]
b = 0.21 [6.88]
Seff = 0.72 [0.28]
Teq = 235 [23] K
Rp = 2.90 [1.29] Re
a = 1.2141 [0.3041] AU
Ag = 34879.88 [28745.39] [1.21σ]
Teff = 4958 [932] K [5.0σ]

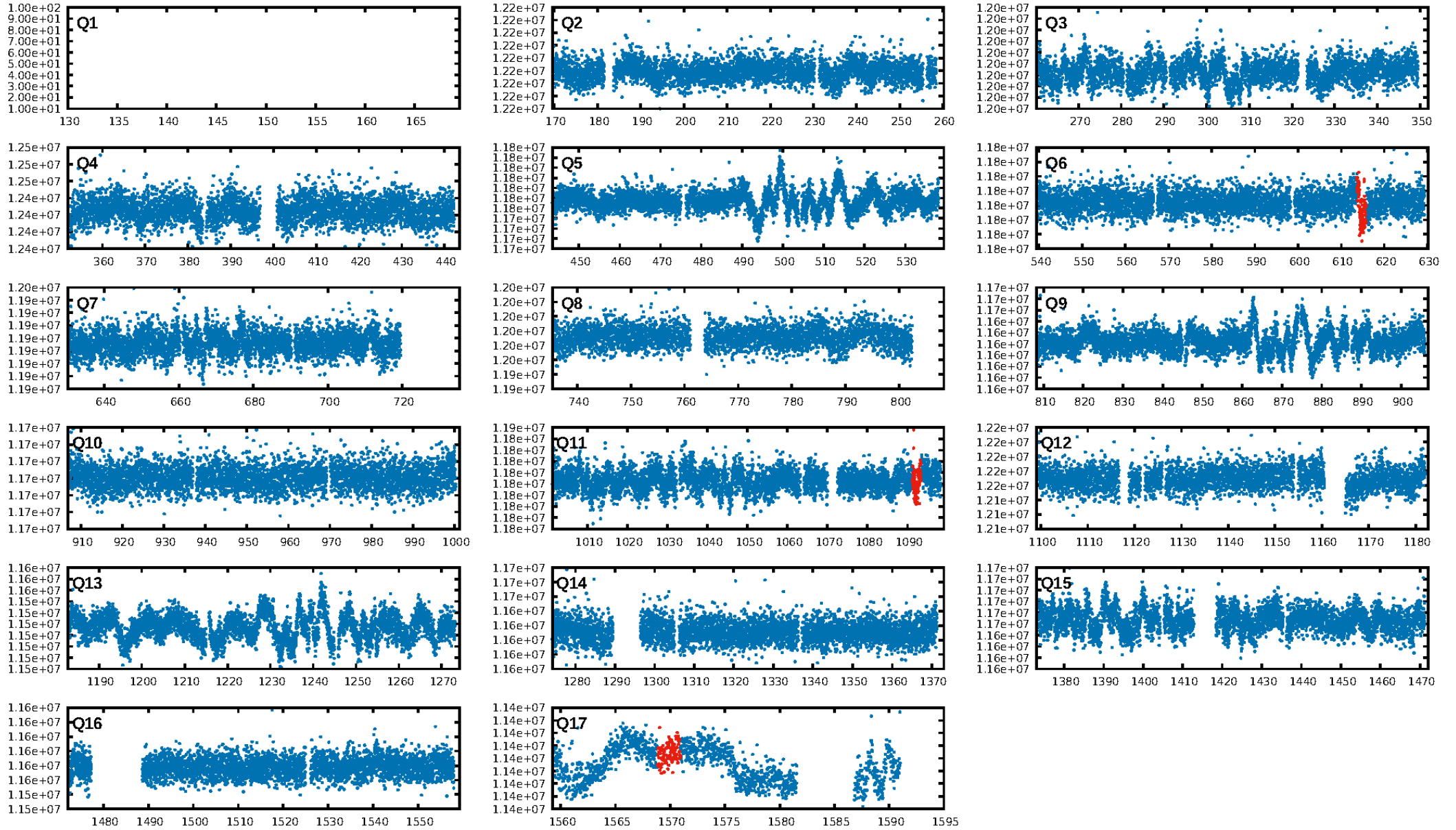
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [61.40σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 13.5%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 2.08e-09
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.6509
Centroid-sig: 0.0%
Centroid-so: 3.034 arcsec [2.32σ]
OotOffset-rm: 2.809 arcsec [15.75σ]
KicOffset-rm: 2.720 arcsec [15.15σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

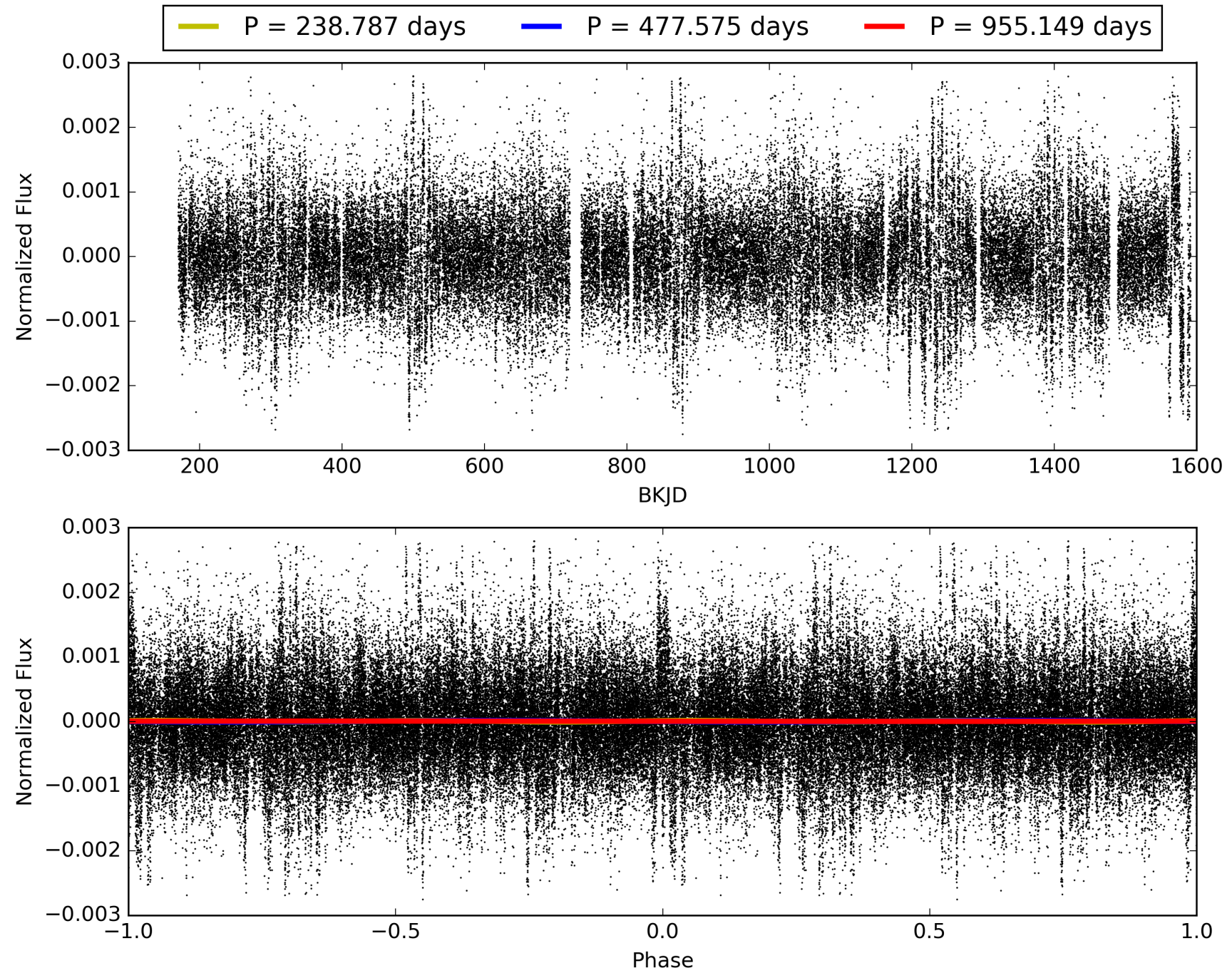
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:19:38 Z

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

TCE 005700900-01, PDC Light Curves

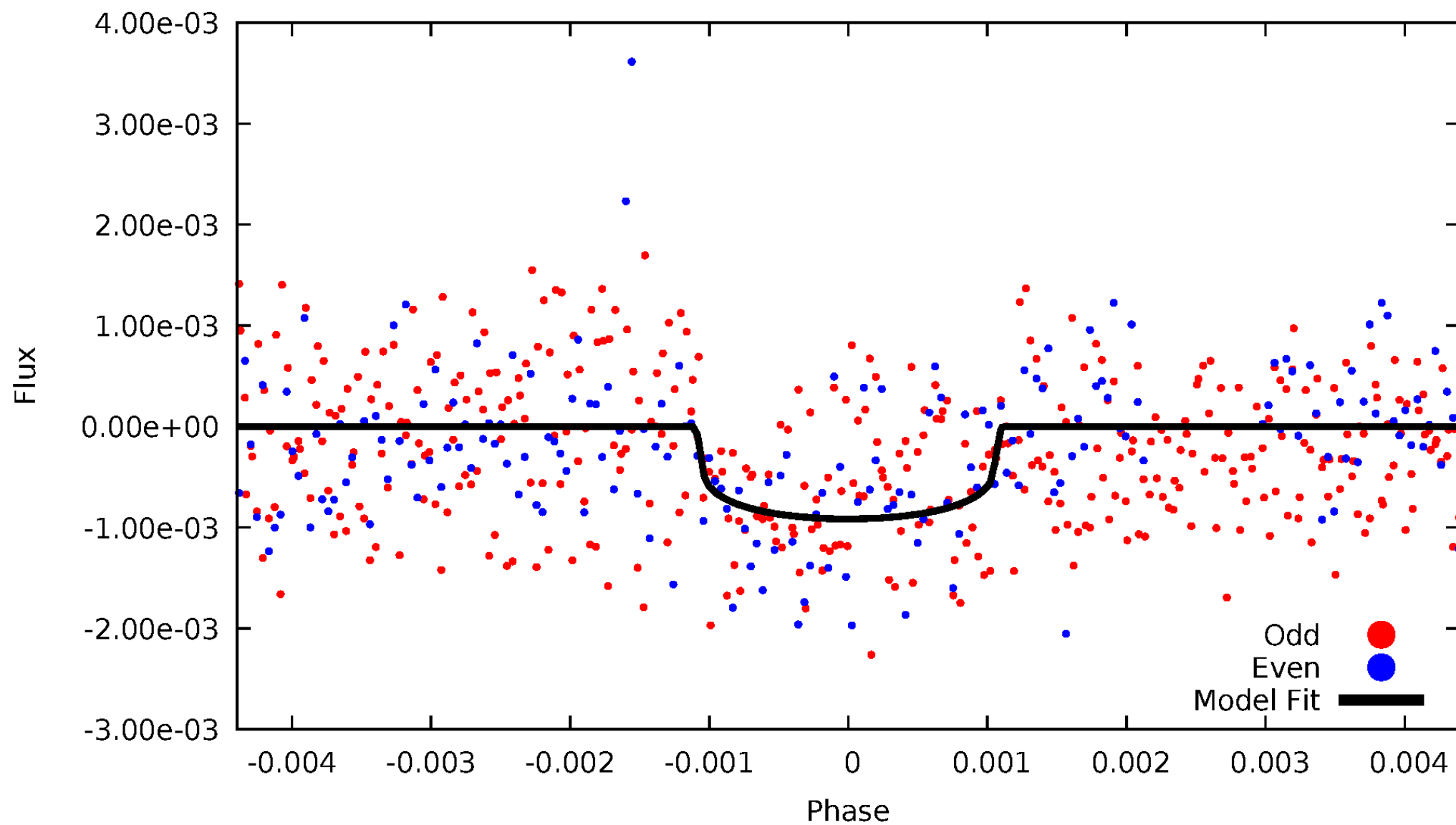


TCE 005700900-01



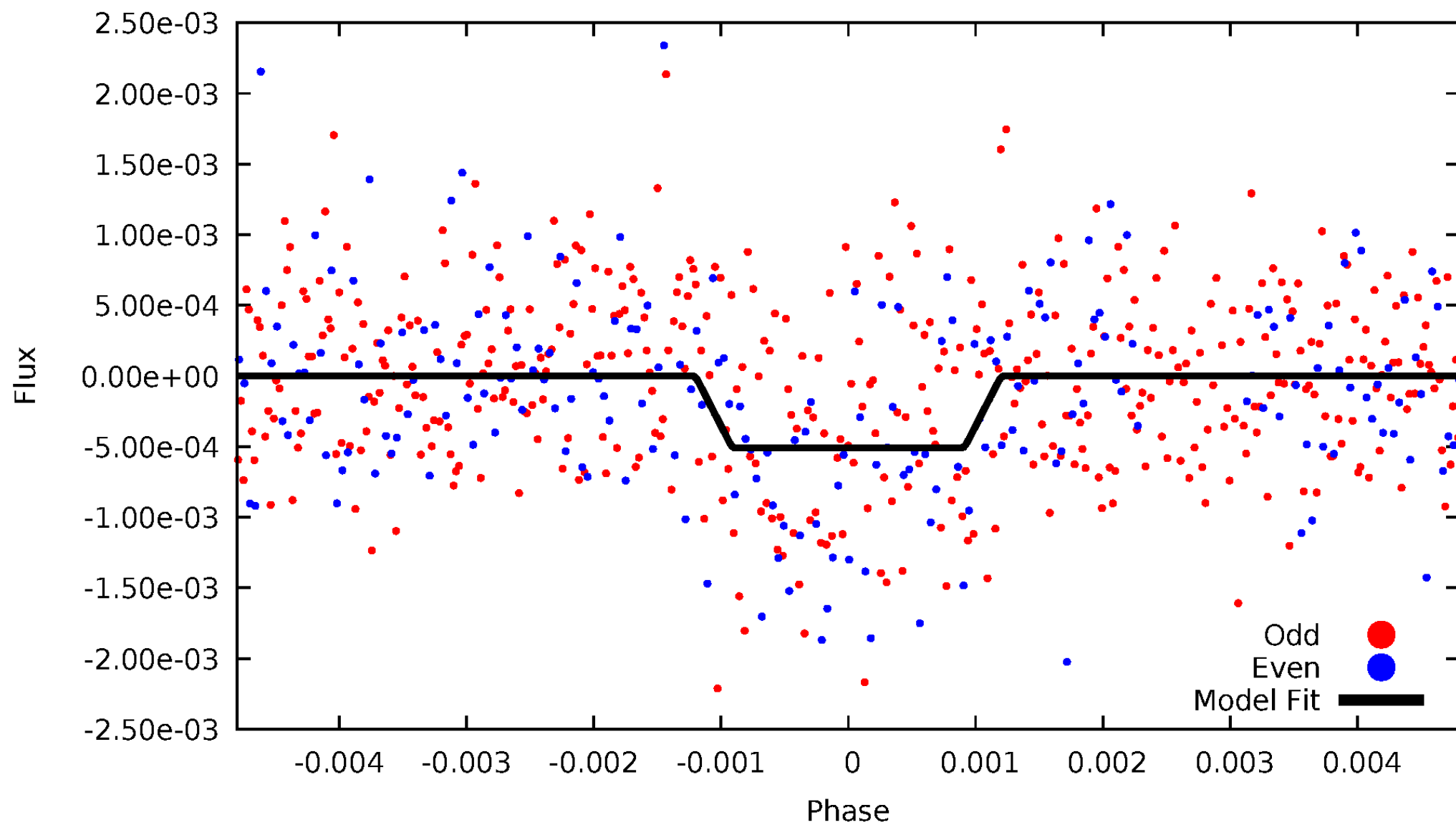
DV Odd/Even

TCE 005700900-01



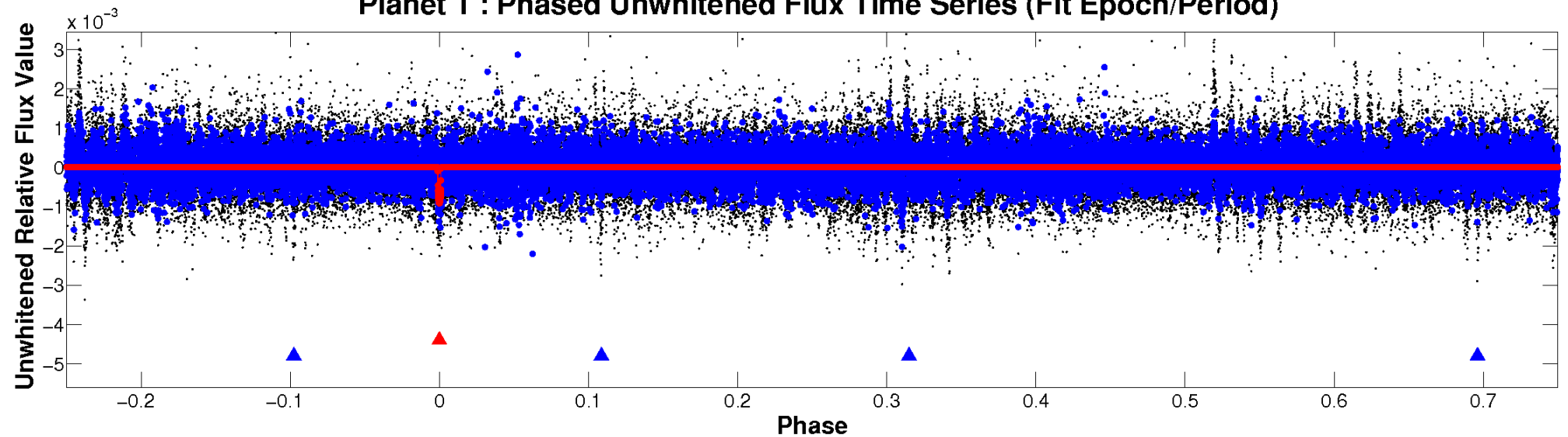
ALT Odd/Even

TCE 005700900-01

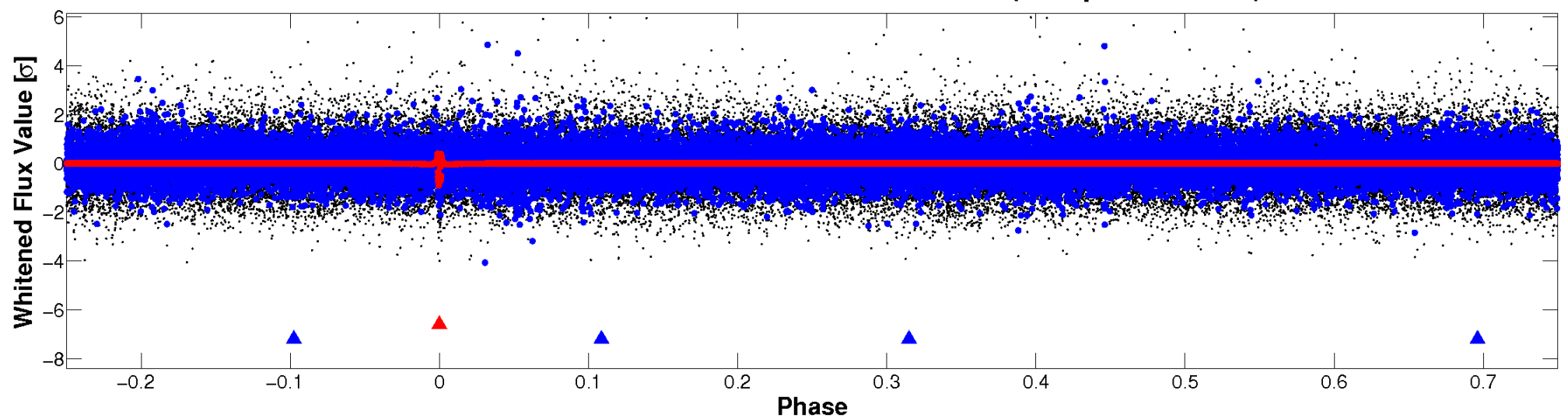


Non-Whitened Vs. Whitened Light Curve

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

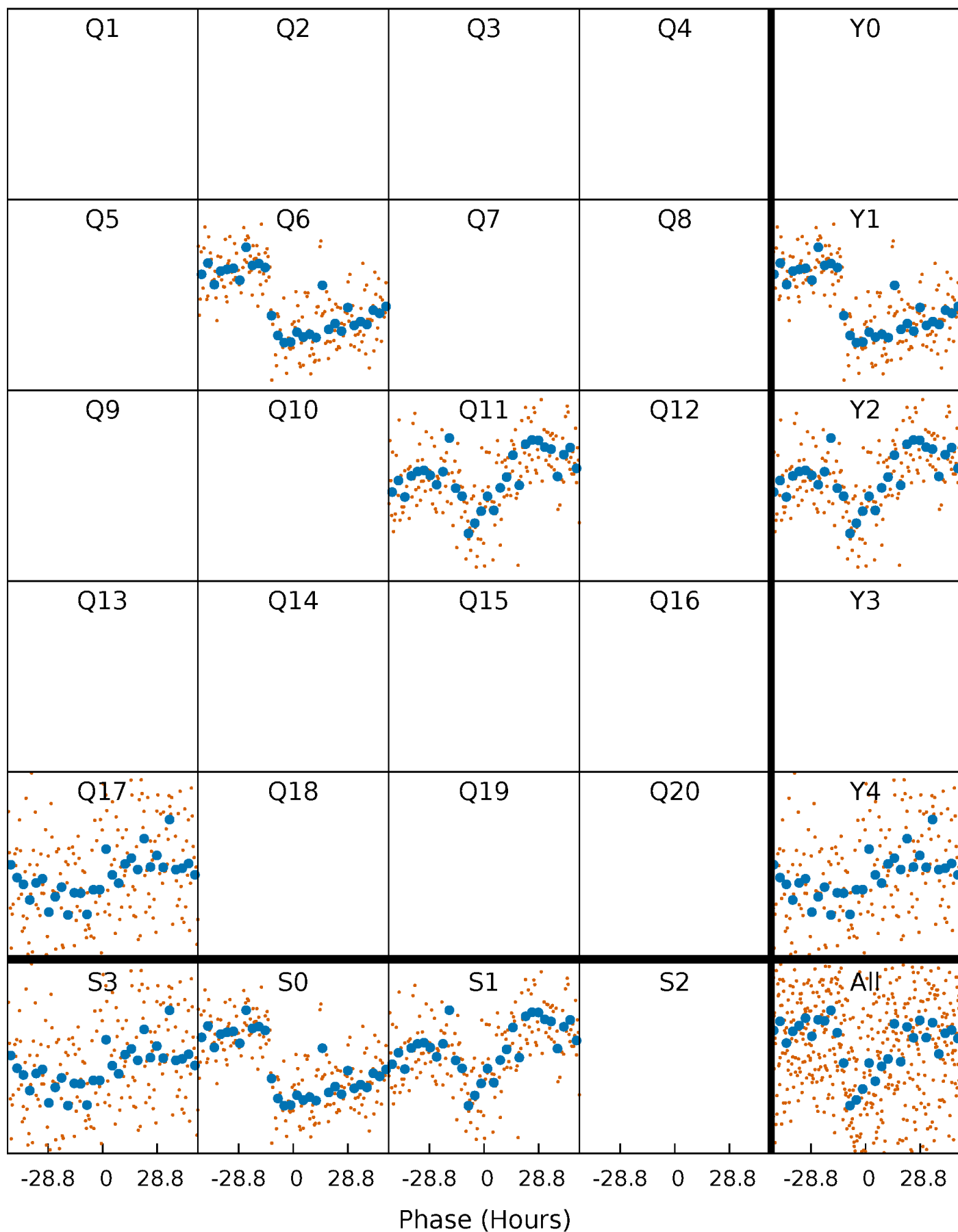


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



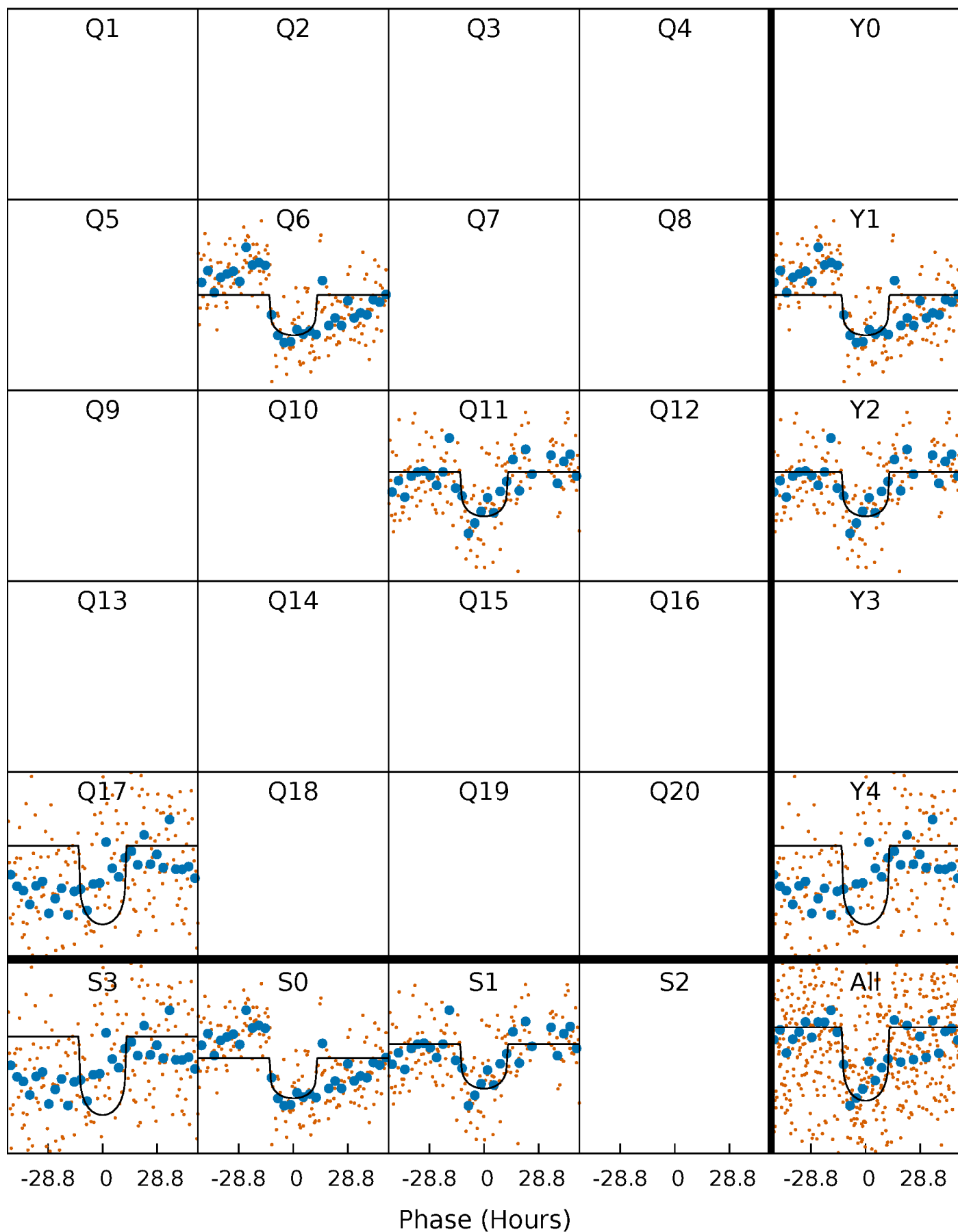
PDC Quarter-Phased Transit Curves

TCE 005700900-01 P=477.574534 Days $T_0=137.156565$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 005700900-01 P=477.574534 Days $T_0=137.156565$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

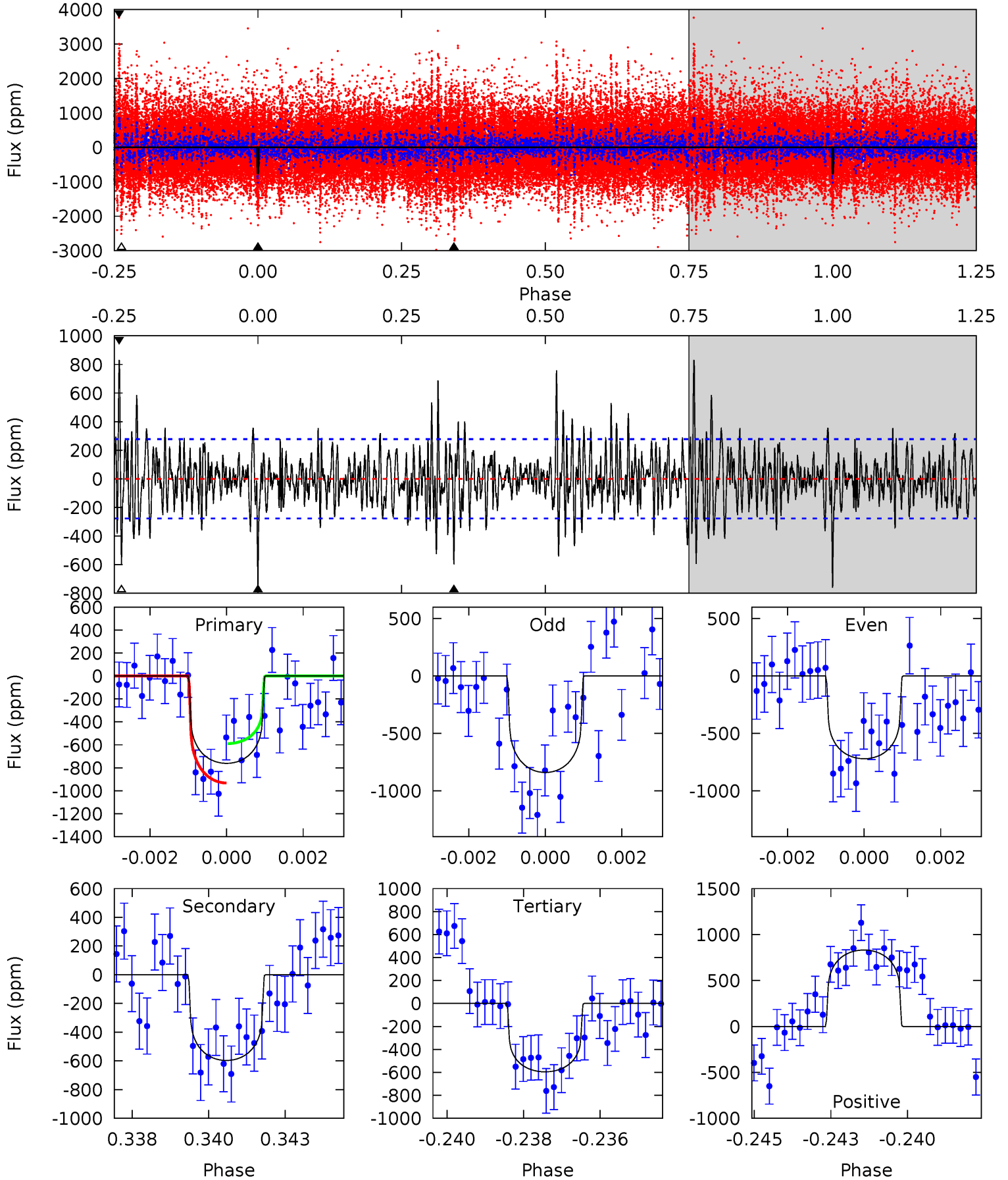
TCE 005700900-01 P=477.484619 Days $T_0=137.264214$ (BKJD)



DV Model-Shift Uniqueness Test

005700900-01, P = 477.574534 Days, E = 137.156565 Days

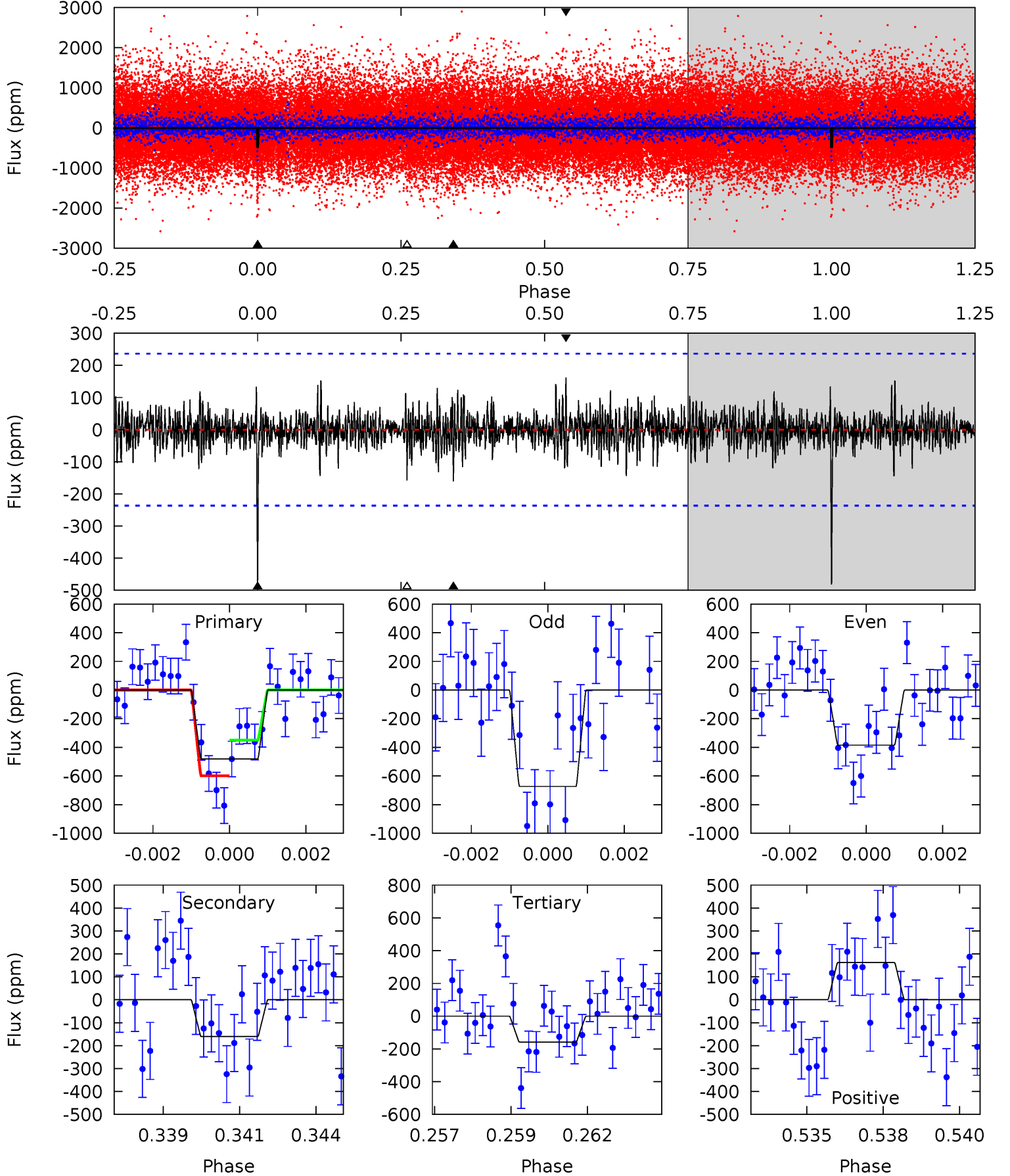
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	11.4	11.4	15.9	5.31	3.06	3.13	3.17	-1.34	0.03	-4.48	1.07	0.90	0.52	3.28



Alt Model-Shift Uniqueness Test

005700900-01, P = 477.484619 Days, E = 137.264214 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	3.59	3.54	3.63	5.29	3.03	0.87	7.24	7.14	0.05	-0.04	3.04	0.71	0.25	2.76



Stellar Parameters For KIC 005700900

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5982^{+189}_{-210}	$4.493^{+0.050}_{-0.200}$	$-0.040^{+0.250}_{-0.300}$	$0.960^{+0.285}_{-0.095}$	$1.047^{+0.129}_{-0.142}$	$1.667^{+0.436}_{-0.840}$
	+3%/-4%	+1%/-4%	+625%/-750%	+30%/-10%	+12%/-14%	+26%/-50%
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 005700900-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-597 ± 52	$3.14^{+1.12}_{-1.05}$	335^{+23}_{-17}	5542^{+1302}_{-650}	47805^{+64266}_{-21446}
Alt.	-161 ± 45	$2.51^{+1.13}_{-1.06}$	335^{+24}_{-17}	4623^{+1261}_{-629}	20415^{+38845}_{-11478}

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

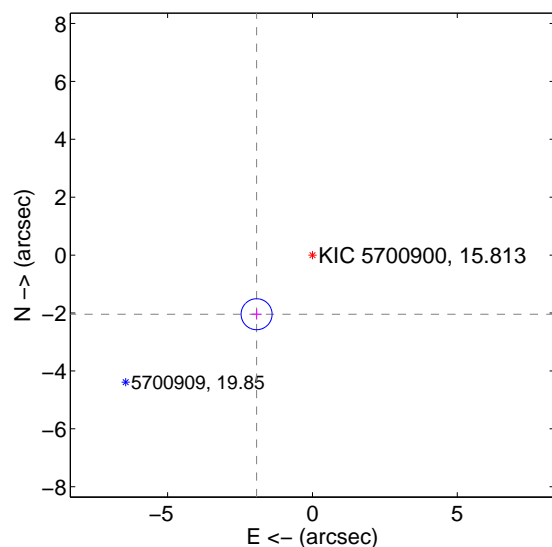
Supplemental centroid analysis for 005700900-01. Kepler magnitude: 15.81. Transit SNR 9.28

There are 1 quarters with good PRF difference image offsets

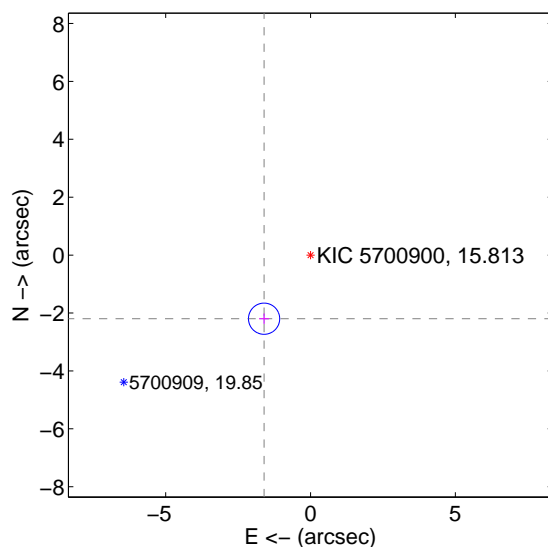
The direct PRF centroid is offset from the target star catalog position by about 0.36 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.809 ± 0.178	15.75	1.929 ± 0.173	-2.042 ± 0.183
PRF-fit source offset from KIC position	2.720 ± 0.180	15.15	1.604 ± 0.173	-2.197 ± 0.183
photometric centroid source offset	3.03 ± 1.31	2.32	1.72 ± 1.43	-2.50 ± 1.25

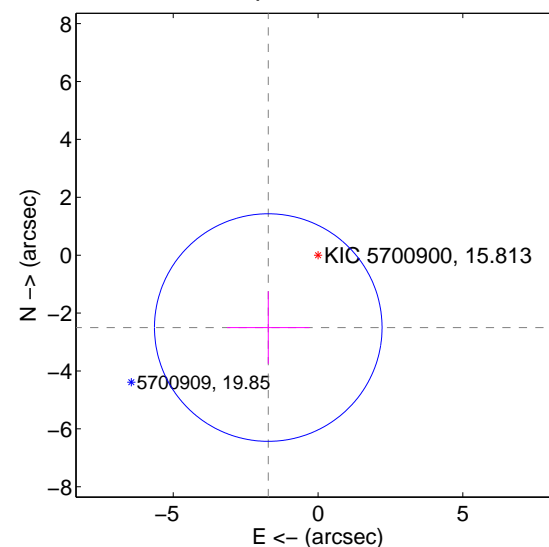
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



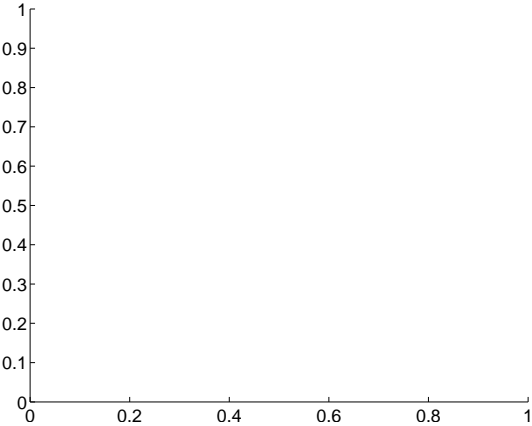
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

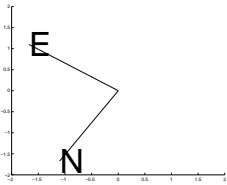
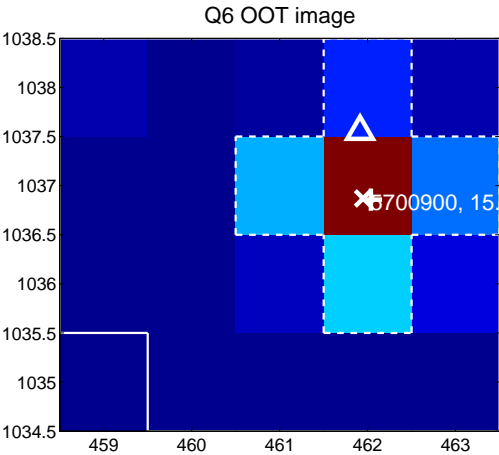
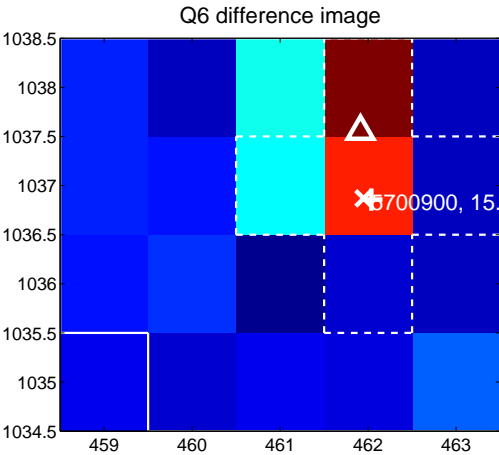
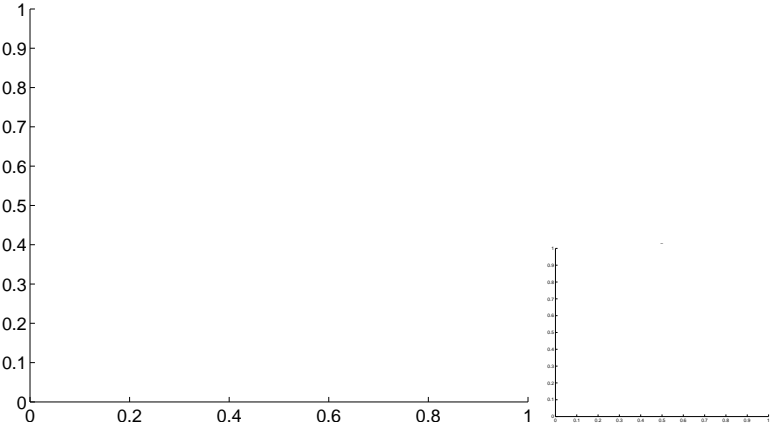


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

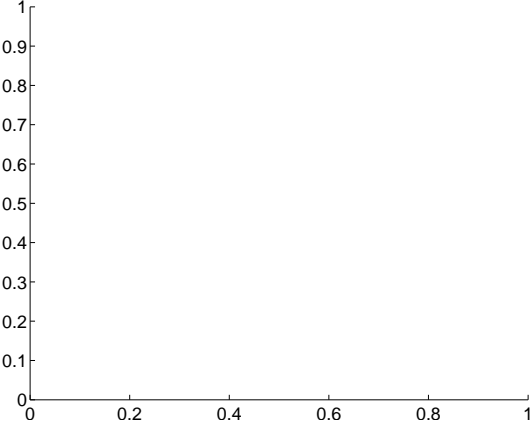
Q5 no difference image



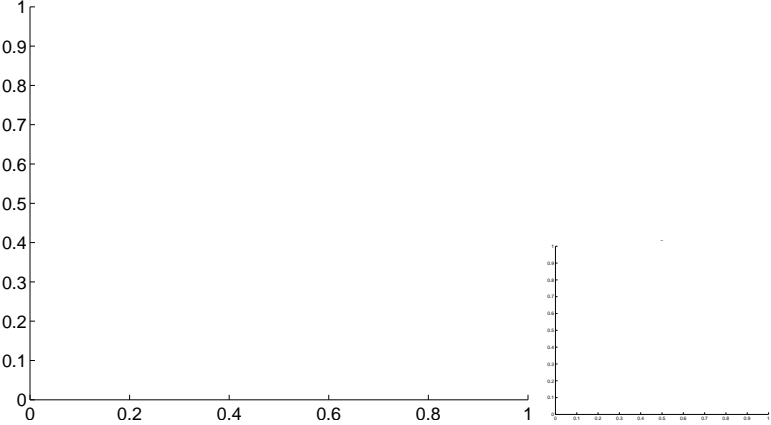
Q5 no OOT image



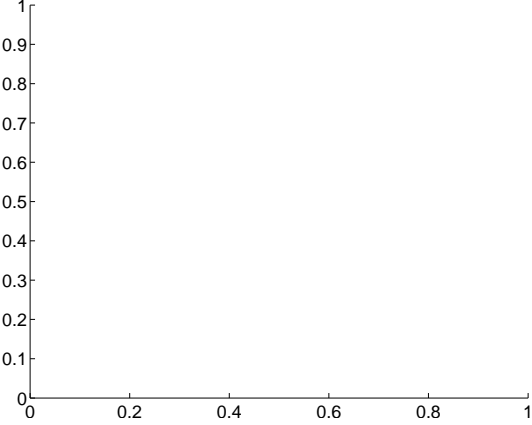
Q7 no difference image



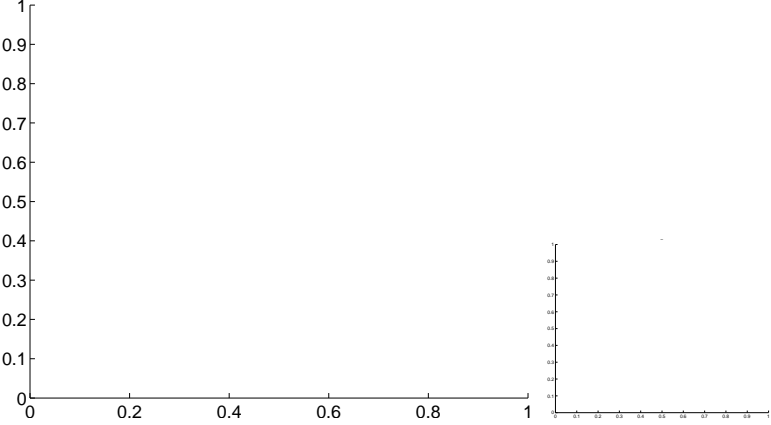
Q7 no OOT image



Q8 no difference image



Q8 no OOT image



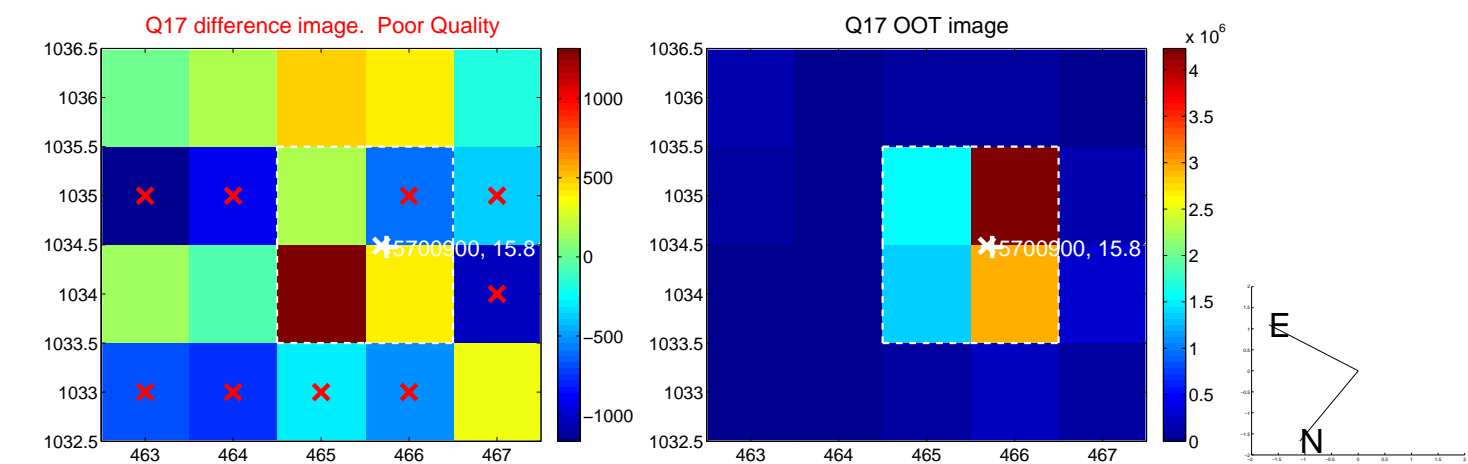
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



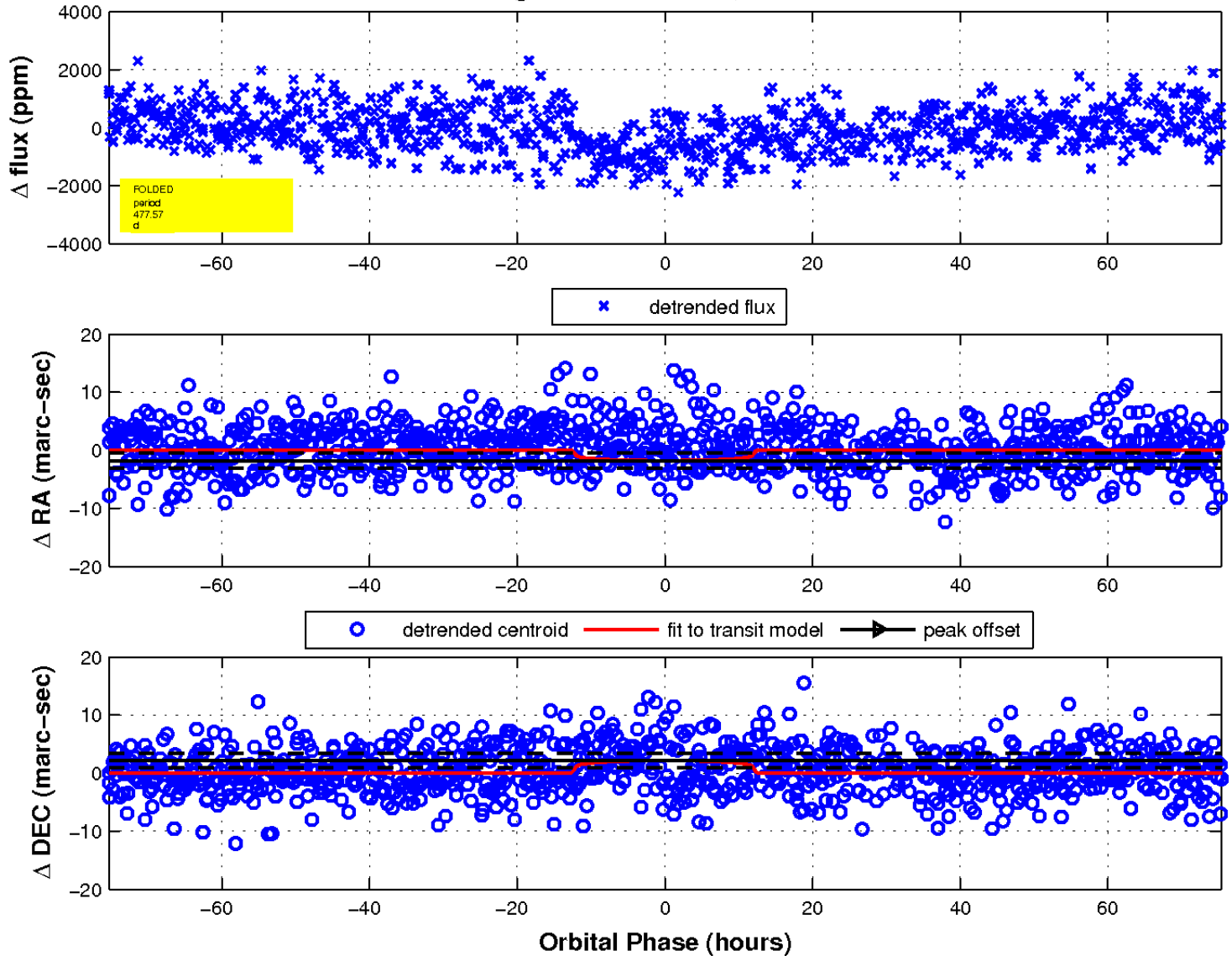
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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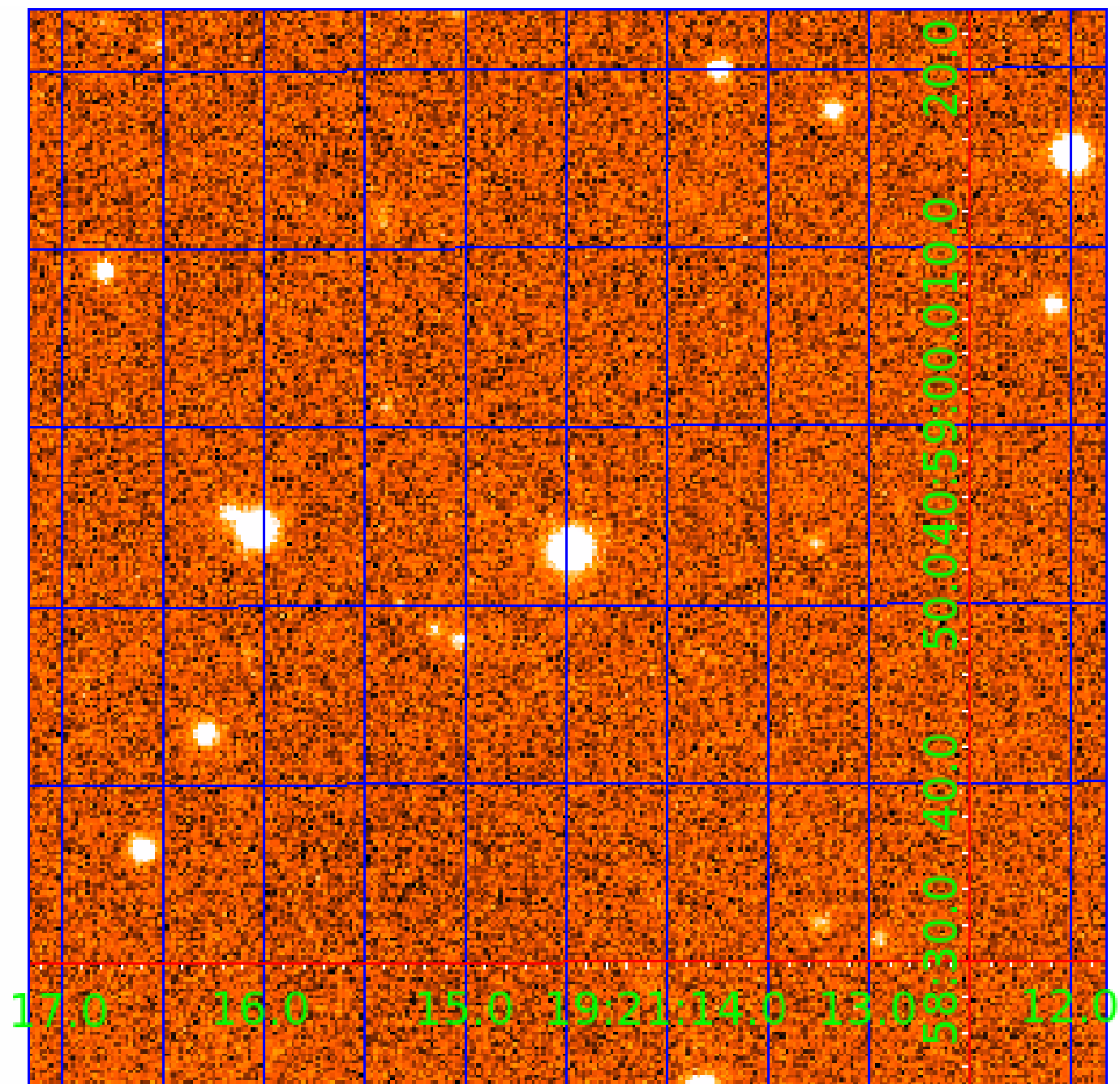


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005700900

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})
005700900-01	OBS	No	477.574534	137.156565	916.3	25.177	7.8	9.3	0.96	5982	2.90	0.72
005700900-02	OBS	4100.01	379.071847	287.568238	1146.3	29.133	8.3	8.6	0.96	5982	4.08	0.98

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005700900-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005700900-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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 005700900-02

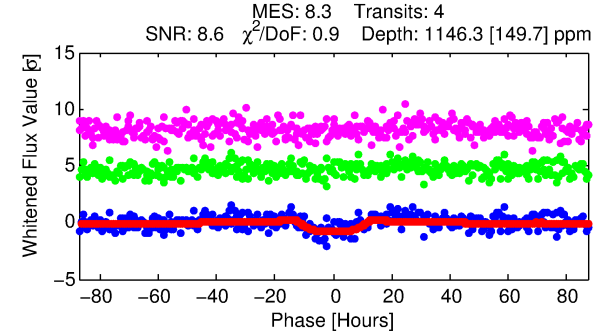
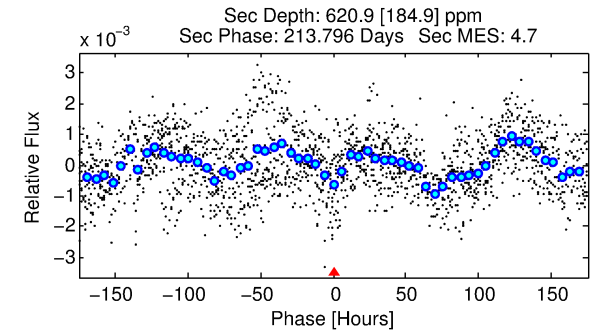
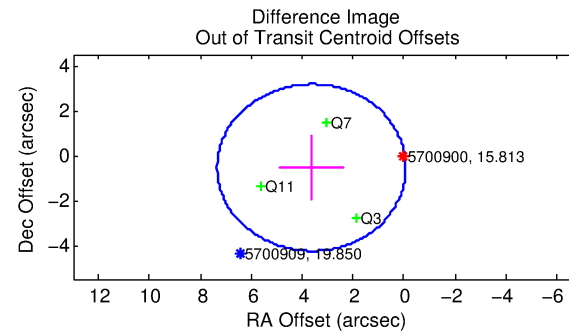
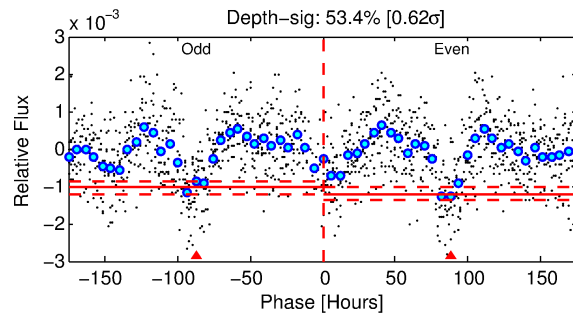
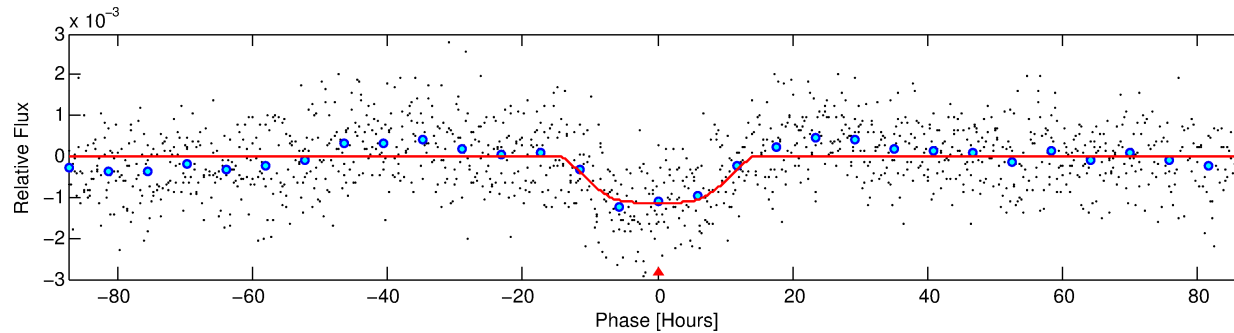
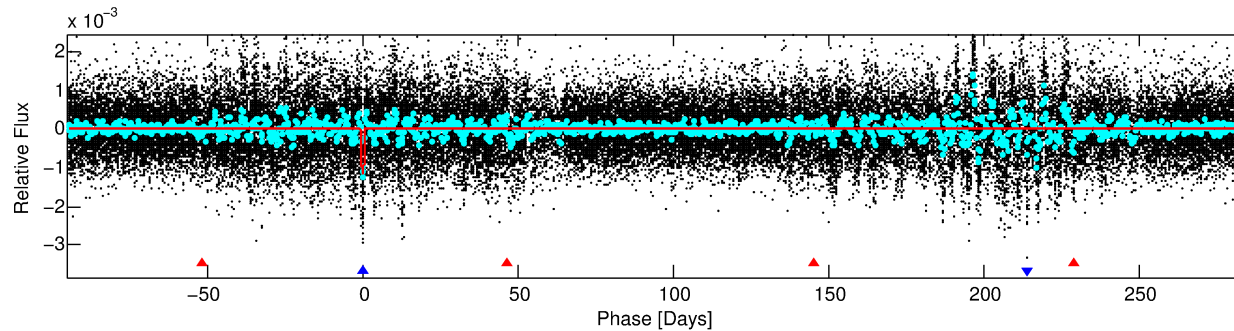
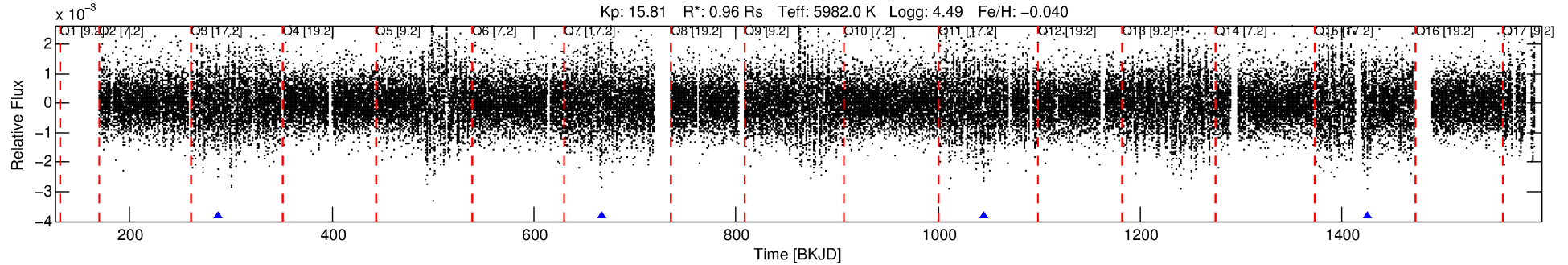
No Significant Match Found

DV One-Page Summary

KIC: 5700900 Candidate: 2 of 2 Period: 379.072 d

KOI: K04100.01 Corr: 0.865

Kp: 15.81 R*: 0.96 Rs Teff: 5982.0 K Logg: 4.49 Fe/H: -0.040



DV Fit Results:

Period = 379.07185 [0.02706] d
Epoch = 287.5682 [0.0477] BKJD
Rp/R* = 0.0389 [0.0032]
a/R* = 42.60 [6.24]
b = 0.95 [0.02]
Seff = 0.98 [0.38]
Teq = 253 [25] K
Rp = 4.08 [1.26] Re
a = 1.0408 [0.2607] AU
Ag = 22230.86 [11078.15] [2.01σ]
Teff = 4785 [439] K [10.31σ]

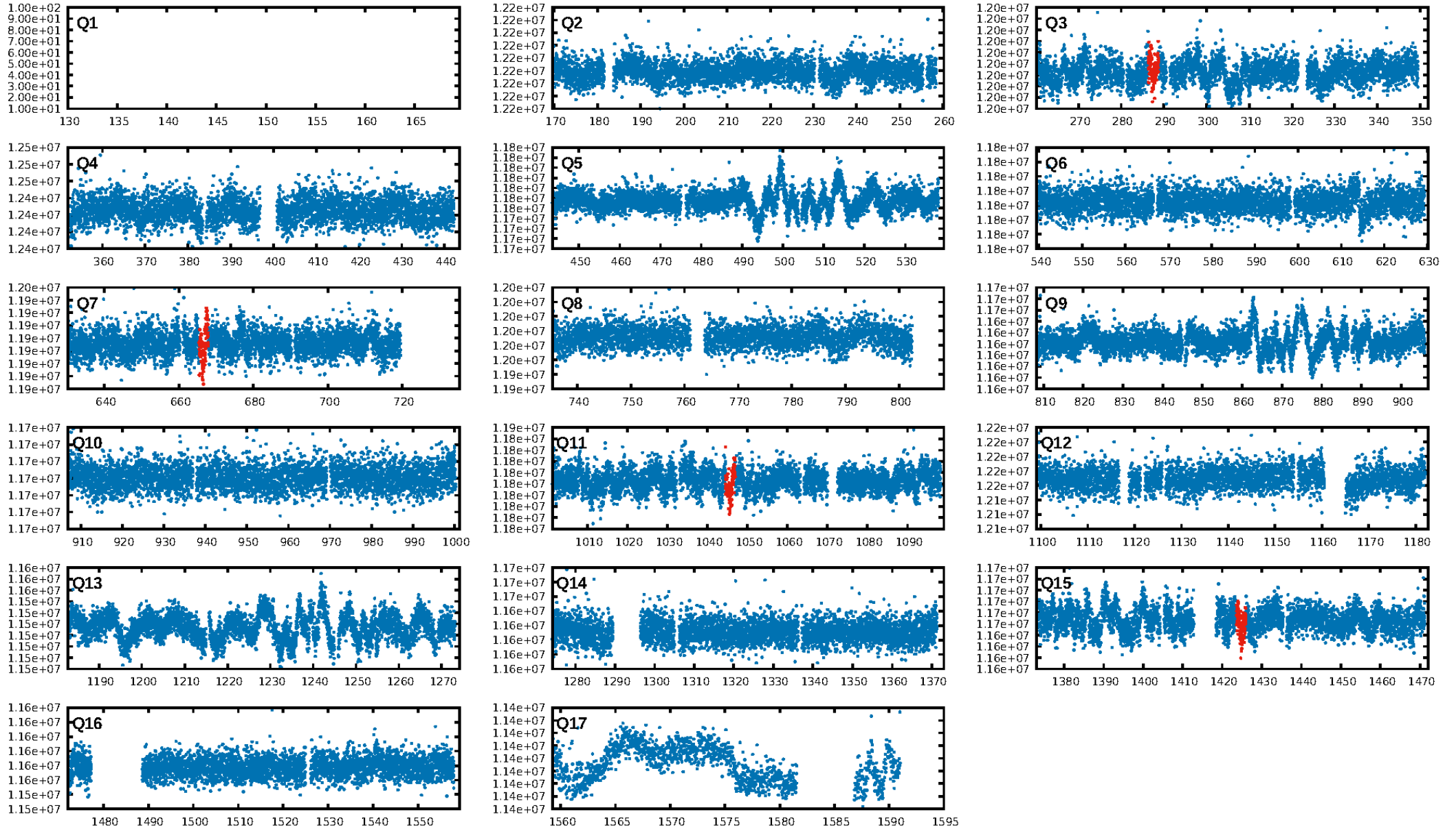
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [61.40σ]
ModelChiSquare2-sig: 77.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.15e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.988
Centroid-sig: 9.5%
Centroid-so: 2.076 arcsec [1.04σ]
OotOffset-rm: 3.670 arcsec [2.97σ]
KicOffset-rm: 3.460 arcsec [2.78σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [4/4]

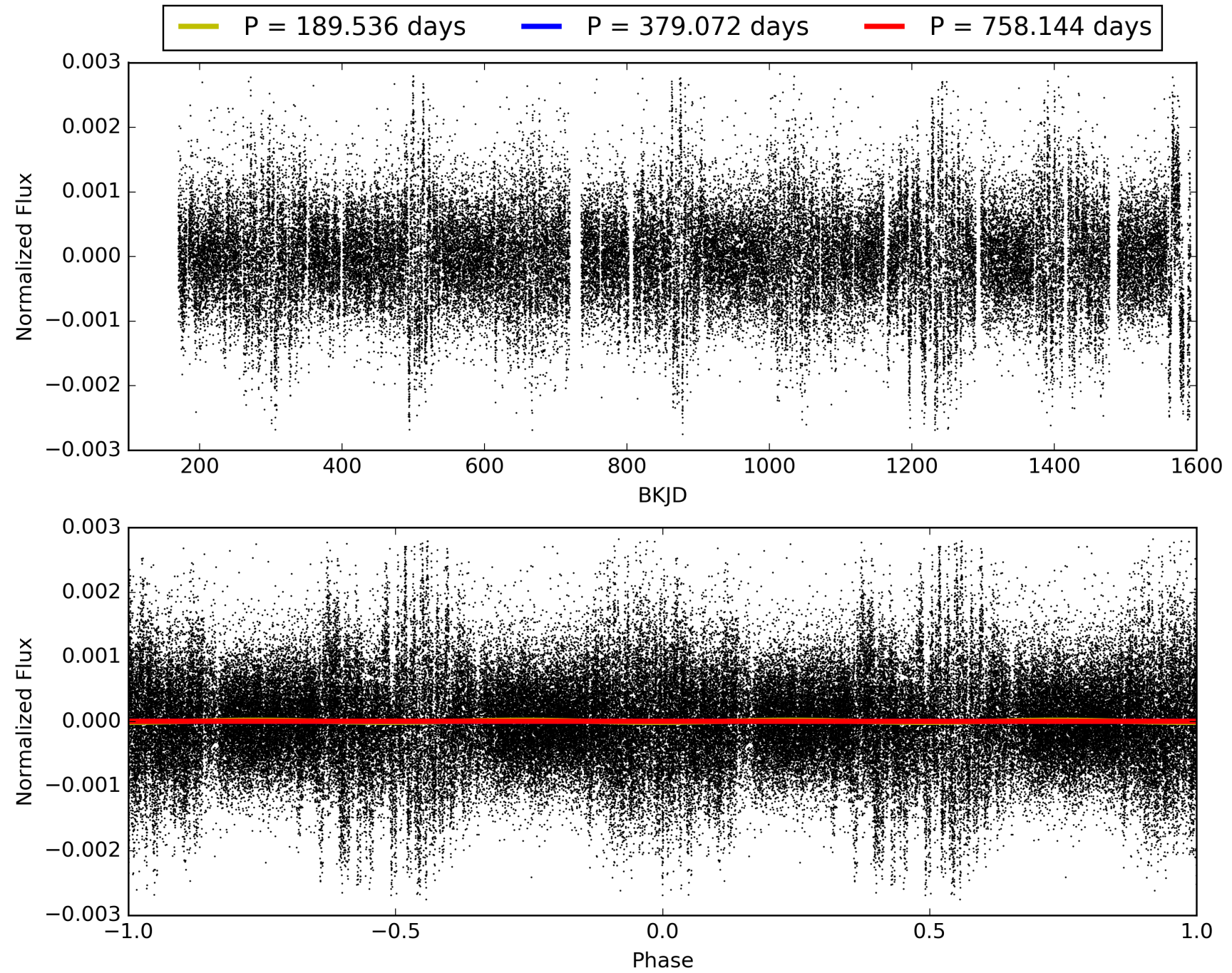
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:19:47 Z

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TCE 005700900-02, PDC Light Curves

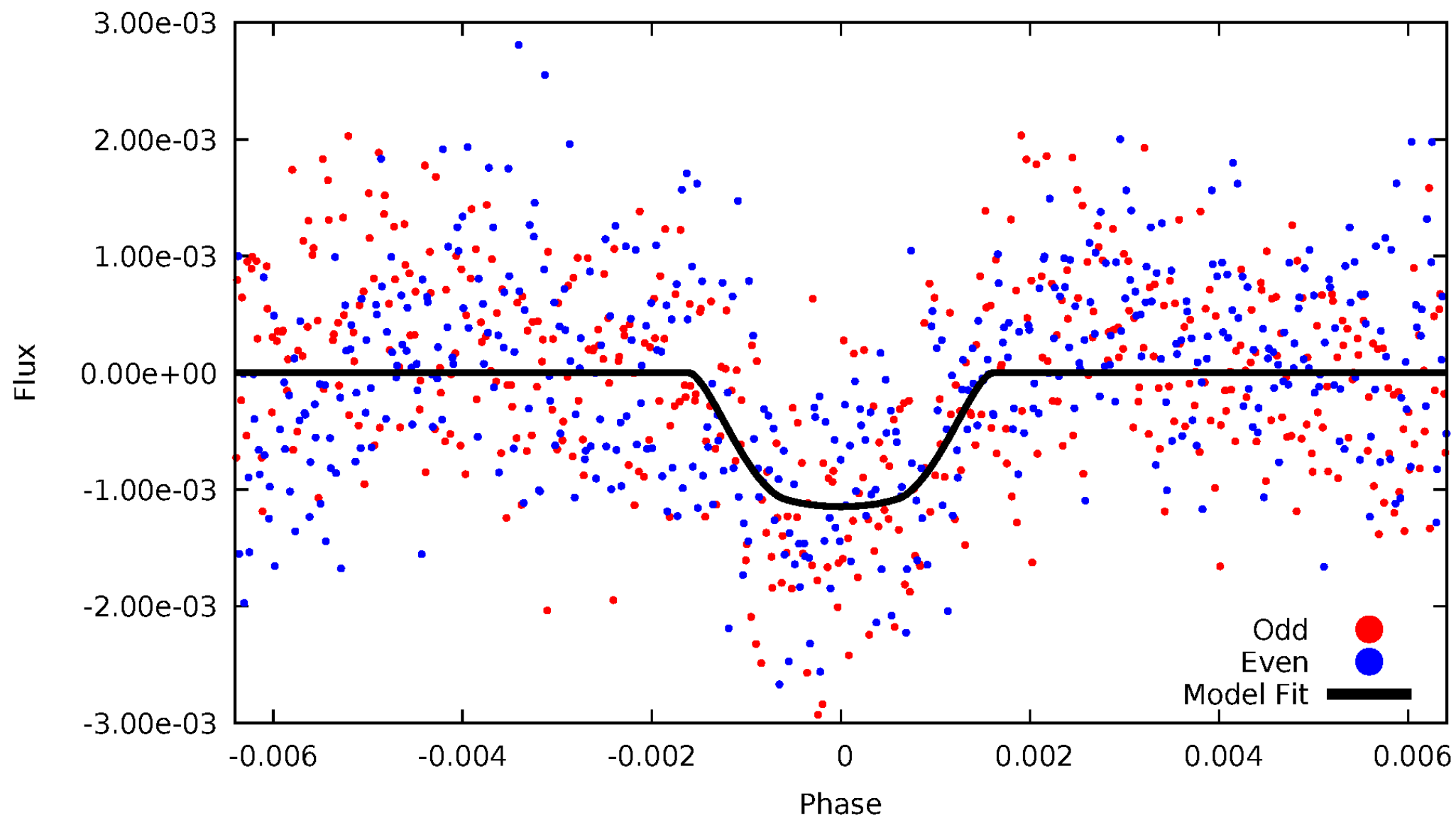


TCE 005700900-02



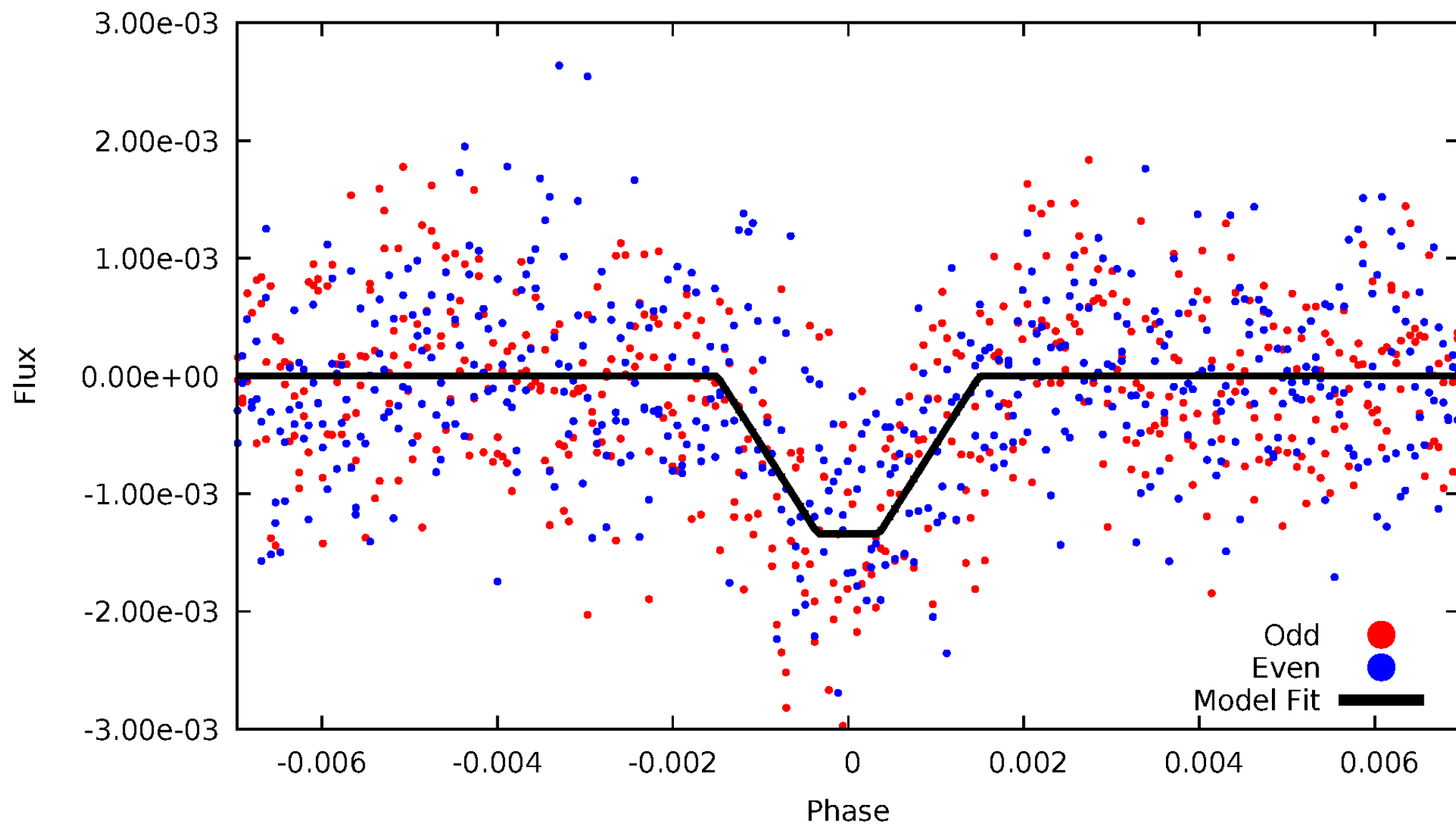
DV Odd/Even

TCE 005700900-02



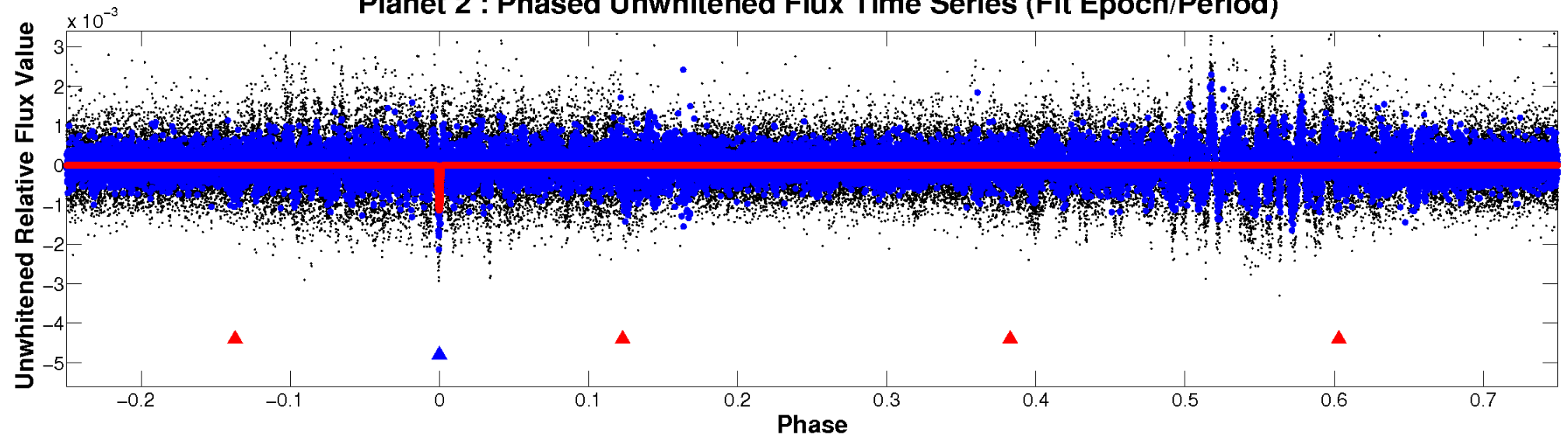
ALT Odd/Even

TCE 005700900-02

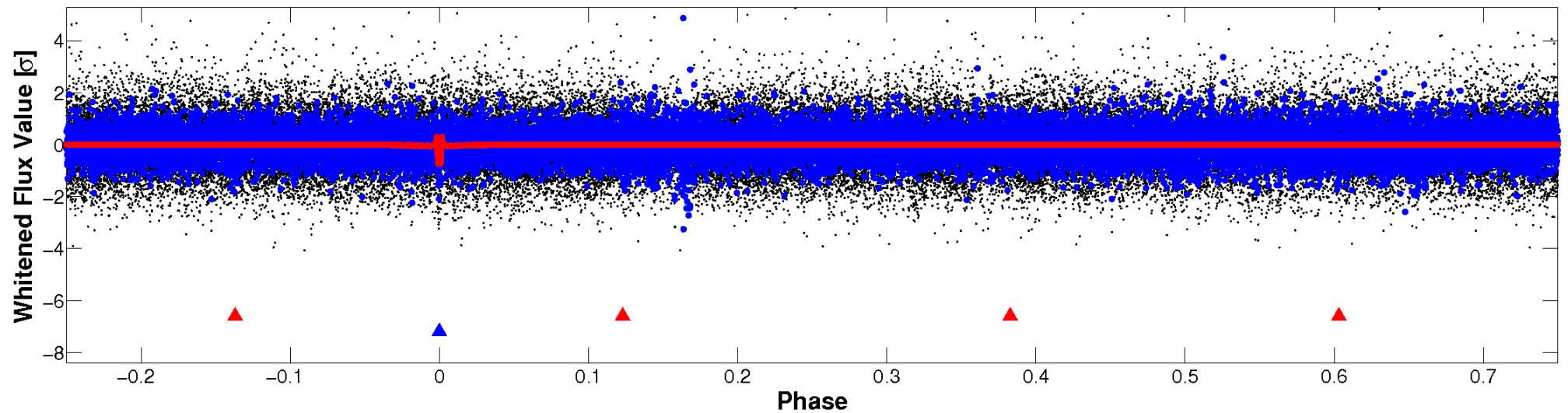


Non-Whitened Vs. Whitened Light Curve

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

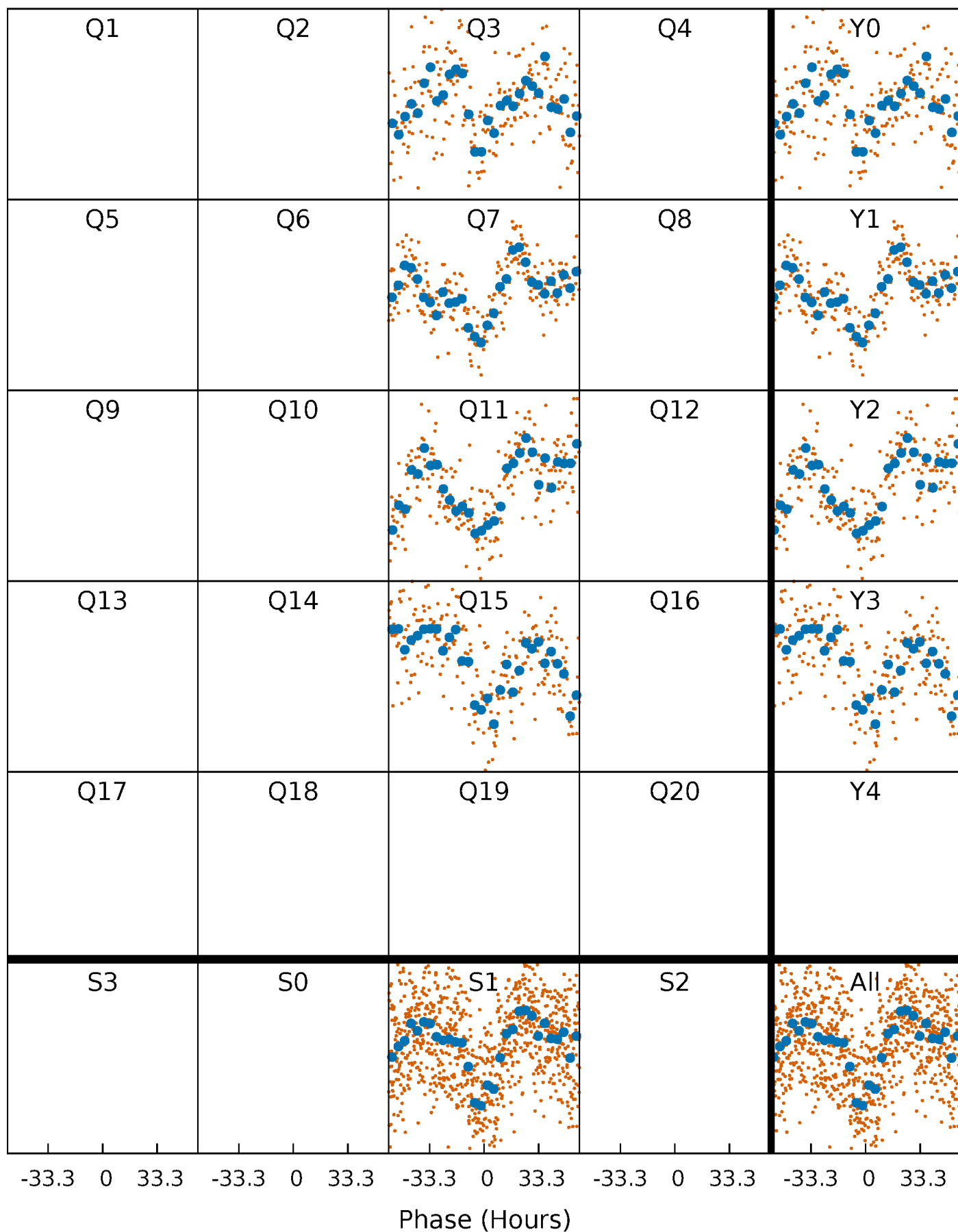


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



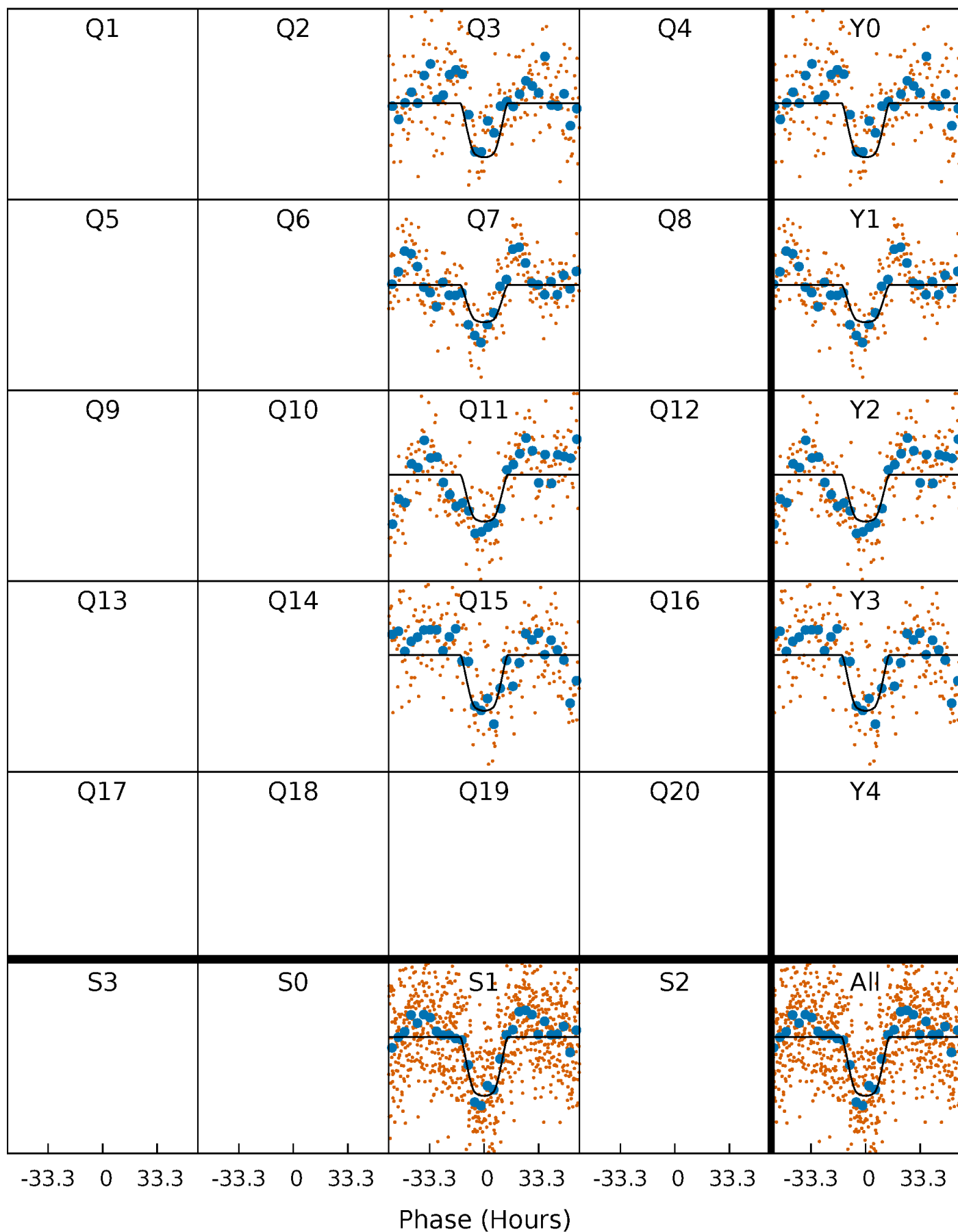
PDC Quarter-Phased Transit Curves

TCE 005700900-02 $P=379.071847$ Days $T_0=287.568238$ (BKJD)



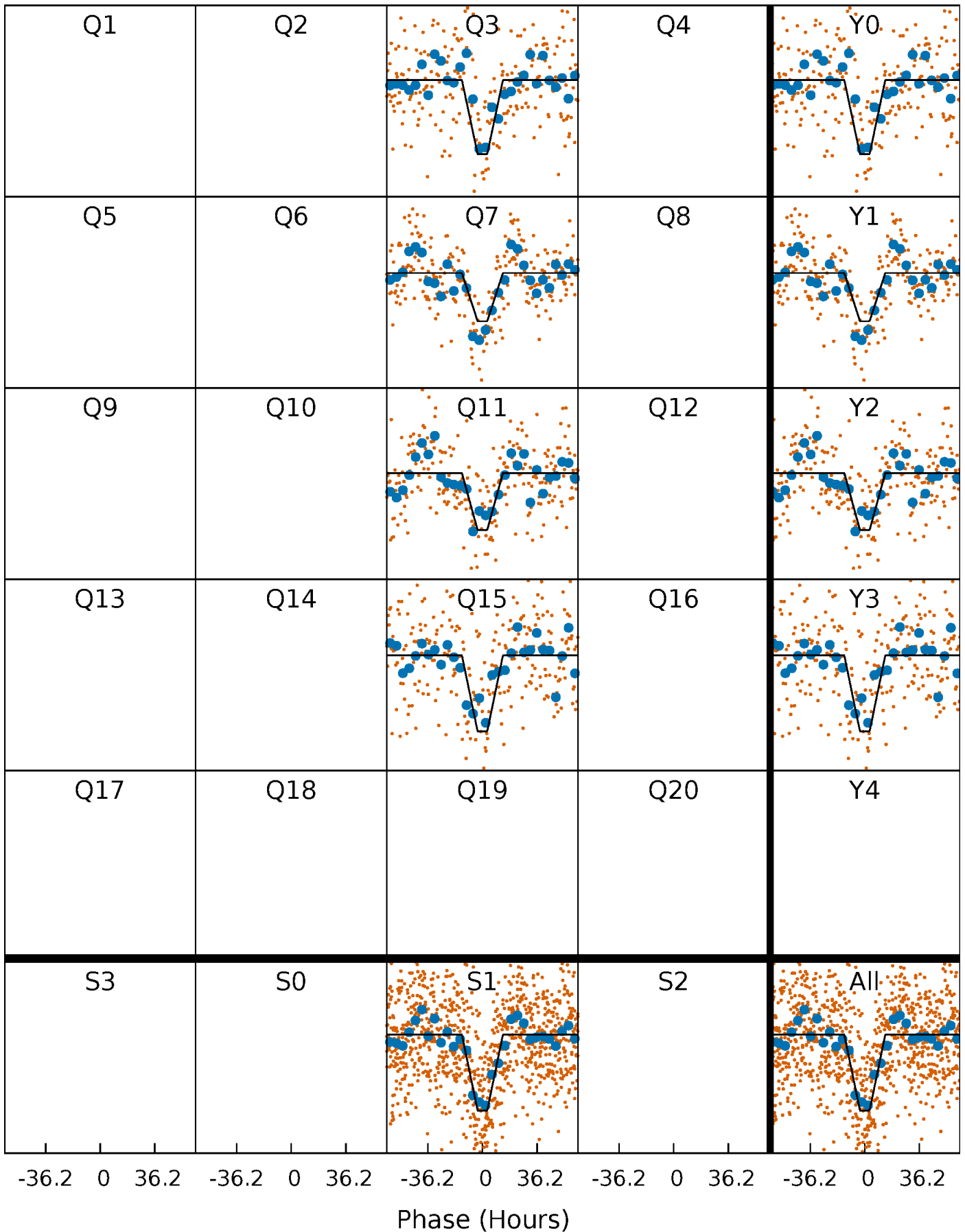
DV Quarter-Phased Transit Curves

TCE 005700900-02 $P=379.071847$ Days $T_0=287.568238$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

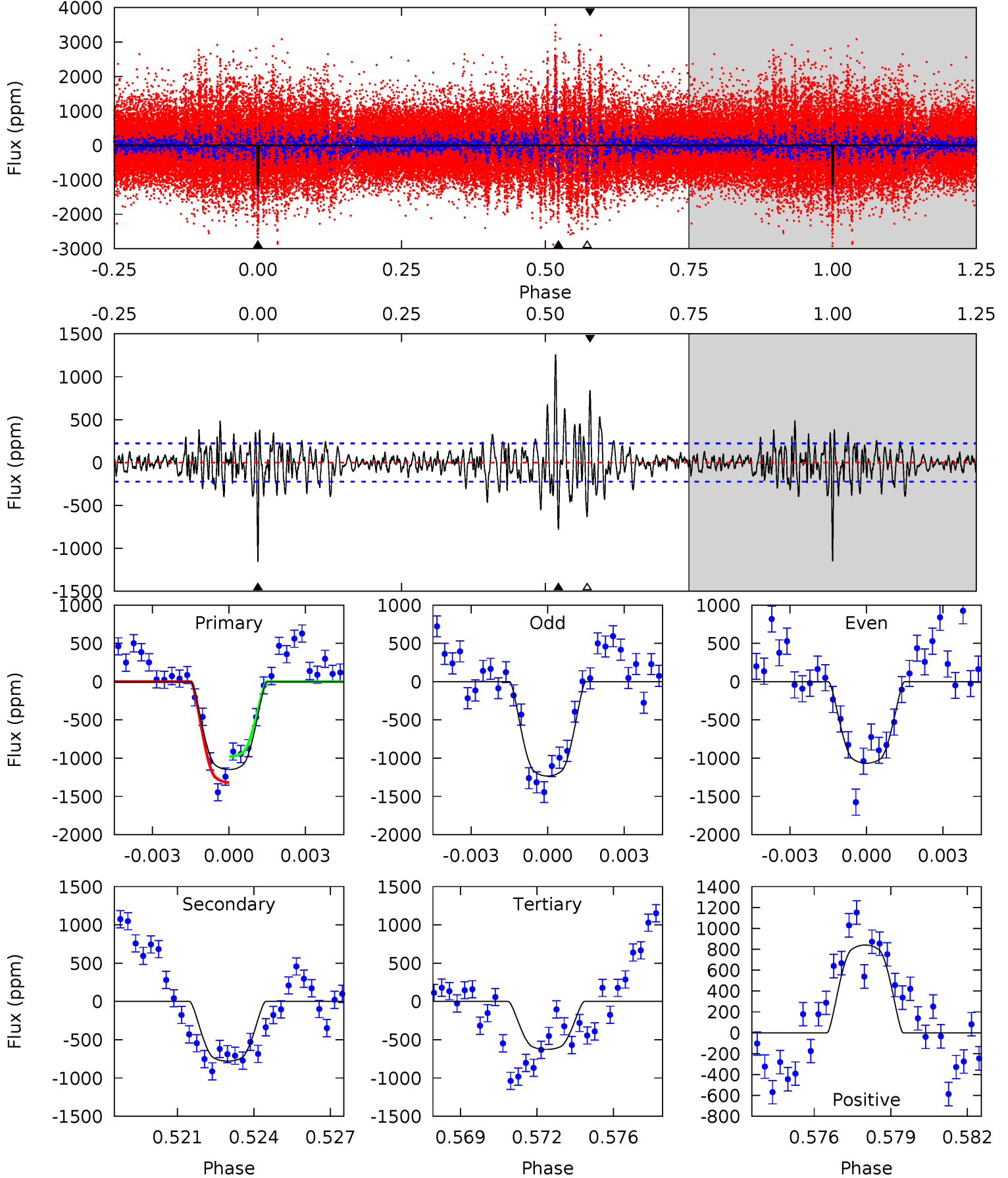
TCE 005700900-02 $P=379.185573$ Days $T_0=287.404026$ (BKJD)



DV Model-Shift Uniqueness Test

005700900-02, P = 379.071847 Days, E = 287.568238 Days

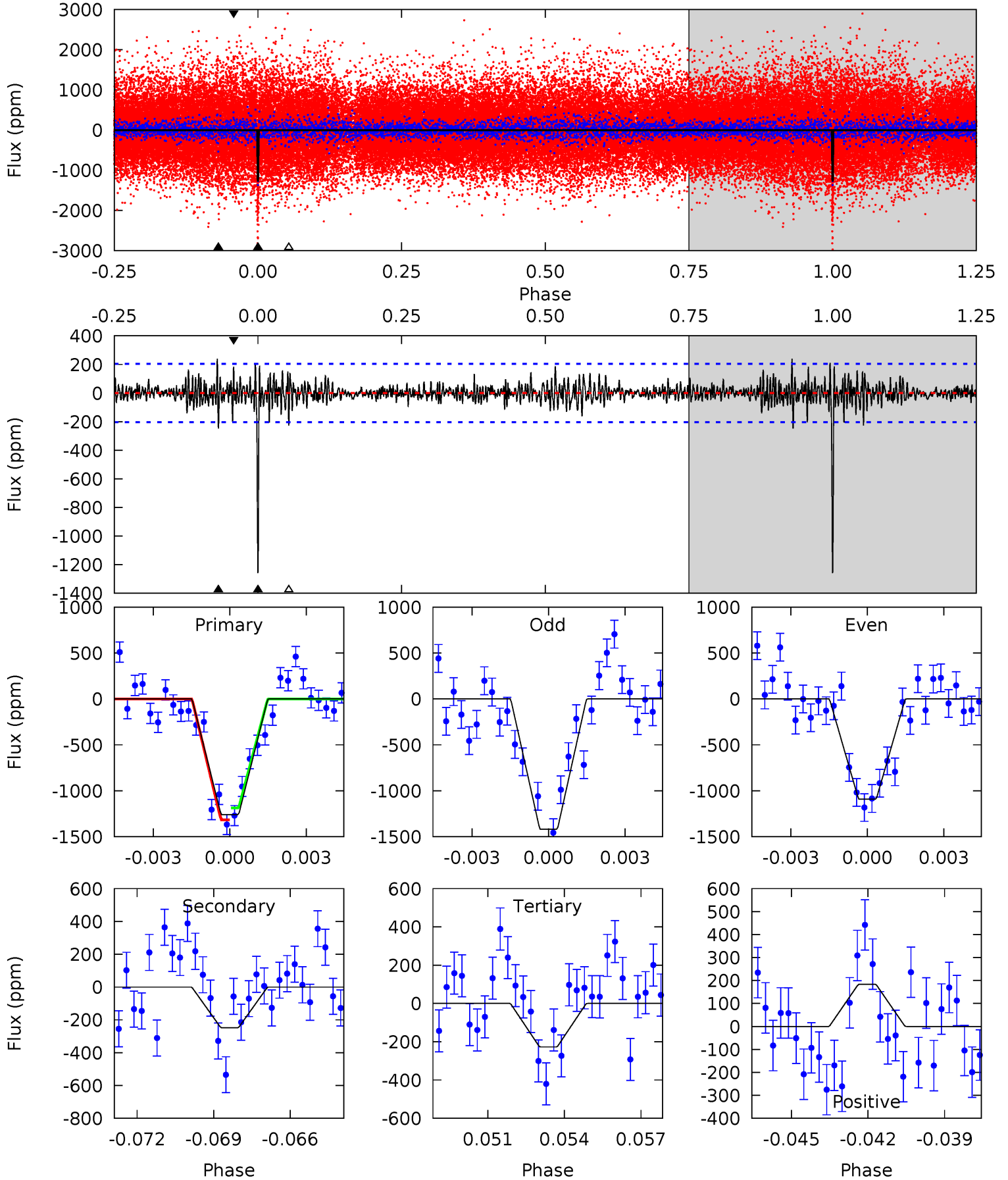
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.1	18.3	14.7	19.8	5.24	2.94	3.89	12.3	7.28	3.61	-1.44	1.97	0.93	0.52	3.99



Alt Model-Shift Uniqueness Test

005700900-02, P = 379.185573 Days, E = 287.404026 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.4	6.38	5.84	4.72	5.25	2.97	1.21	26.6	27.7	0.54	1.66	4.22	1.13	0.16	1.64



Stellar Parameters For KIC 005700900

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5982^{+189}_{-210}	$4.493^{+0.050}_{-0.200}$	$-0.040^{+0.250}_{-0.300}$	$0.960^{+0.285}_{-0.095}$	$1.047^{+0.129}_{-0.142}$	$1.667^{+0.436}_{-0.840}$
	+3%/-4%	+1%/-4%	+625%/-750%	+30%/-10%	+12%/-14%	+26%/-50%
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 005700900-02 / KOI 4100.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-779 ± 42	$4.22^{+0.71}_{-0.50}$	362^{+24}_{-19}	5145^{+233}_{-249}	25454^{+6864}_{-6243}
Alt.	-248 ± 39	$3.99^{+0.62}_{-0.47}$	361^{+26}_{-17}	4182^{+217}_{-193}	9072^{+2863}_{-2551}

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

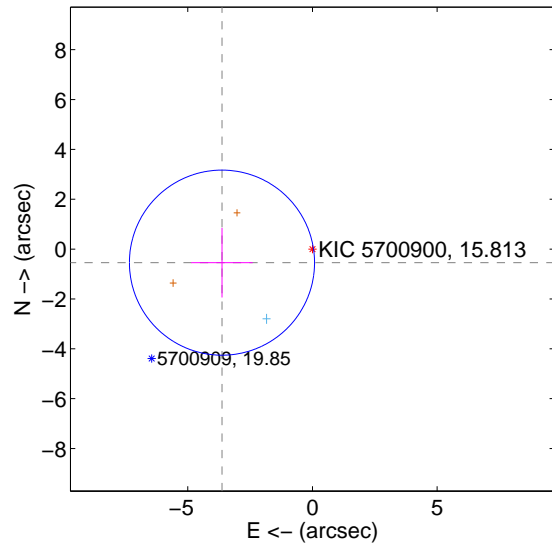
Supplemental centroid analysis for 005700900-02. Kepler magnitude: 15.81. Transit SNR 8.59

There are 1 quarters with good PRF difference image offsets

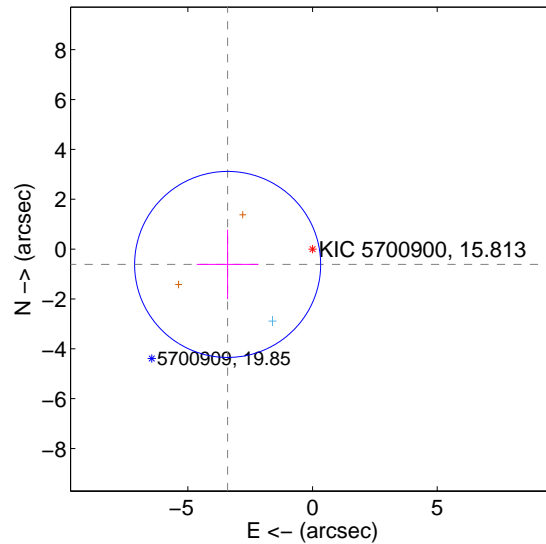
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.670 ± 1.238	2.97	3.629 ± 1.234	-0.544 ± 1.397
PRF-fit source offset from KIC position	3.460 ± 1.244	2.78	3.405 ± 1.239	-0.615 ± 1.393
photometric centroid source offset	2.08 ± 2.00	1.04	0.96 ± 2.27	1.84 ± 1.93

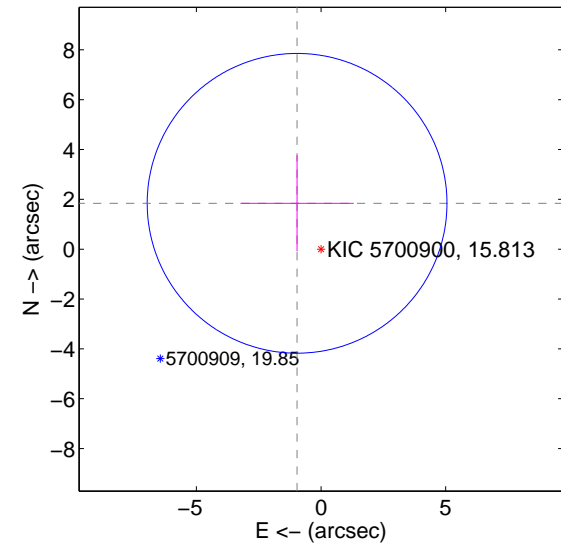
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

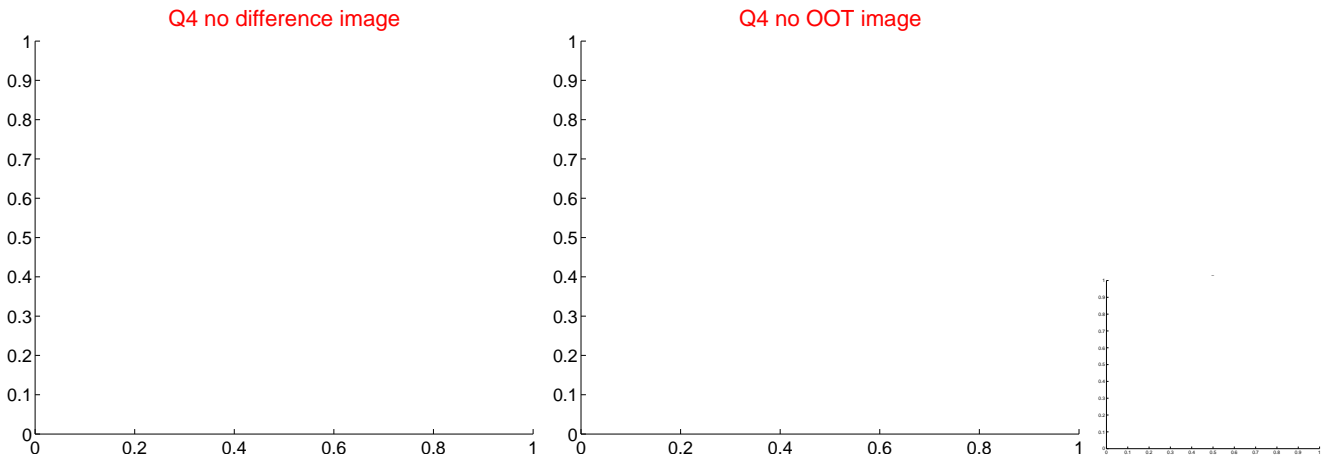
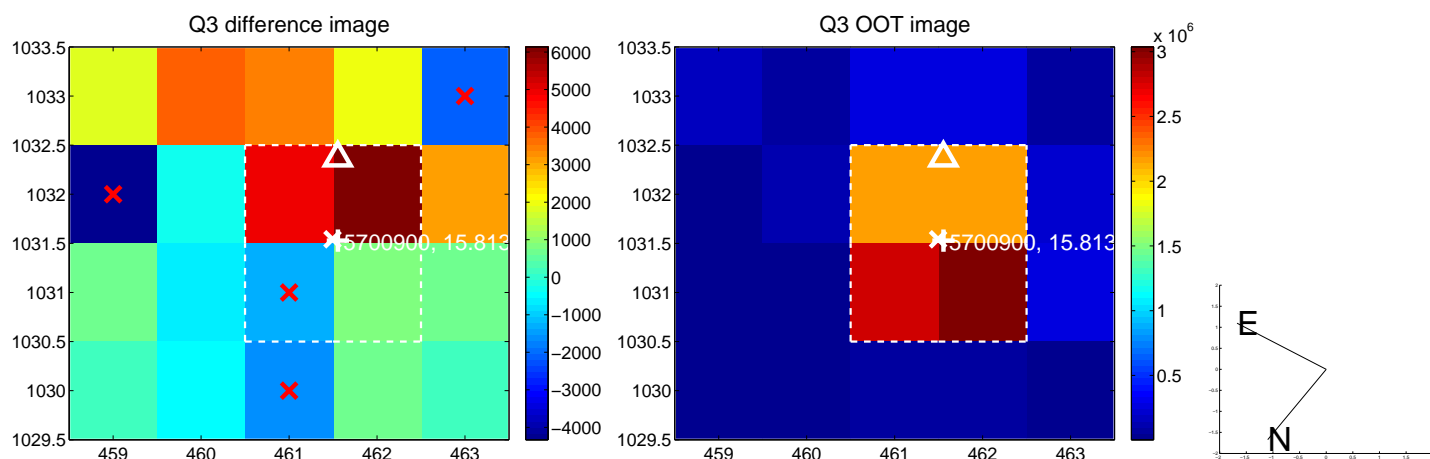
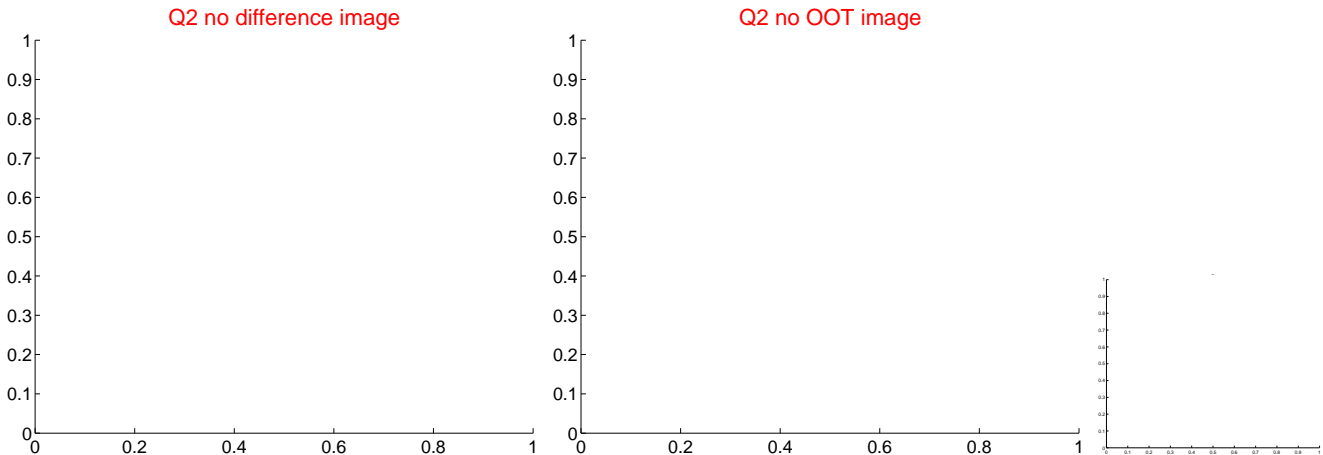


offset from photometric centroids



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.

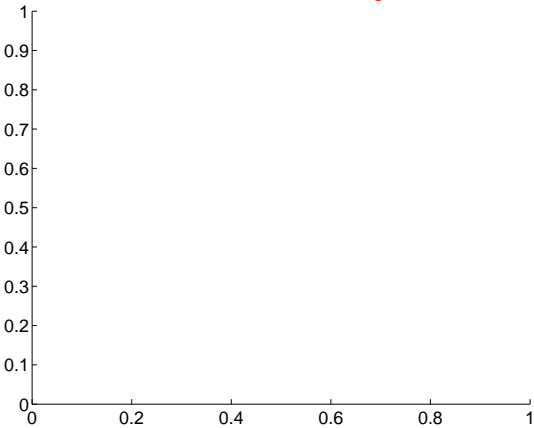
Q5 no difference image



Q5 no OOT image



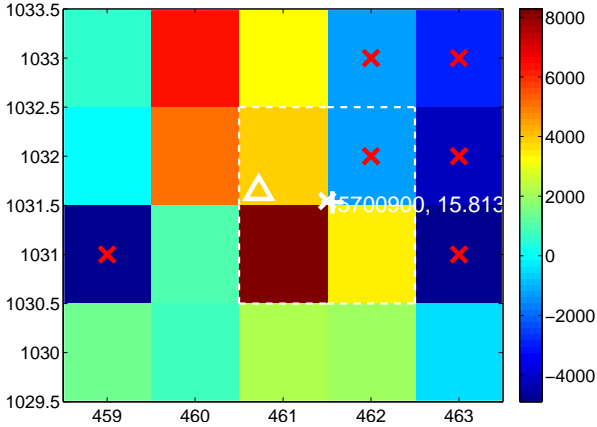
Q6 no difference image



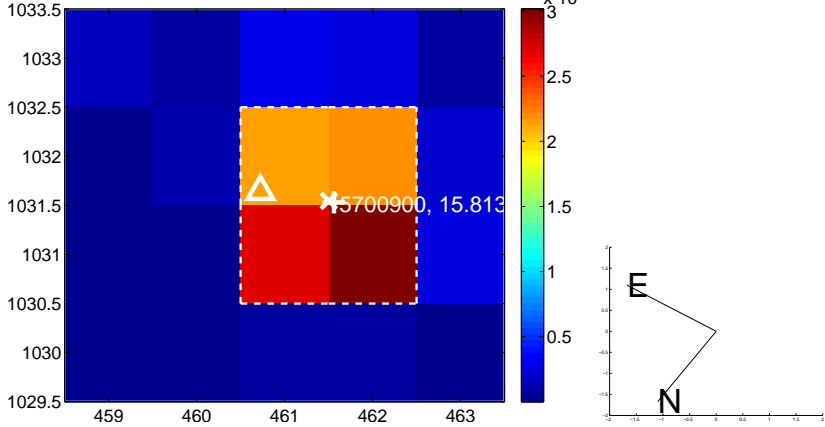
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

Q9 no difference image



Q9 no OOT image



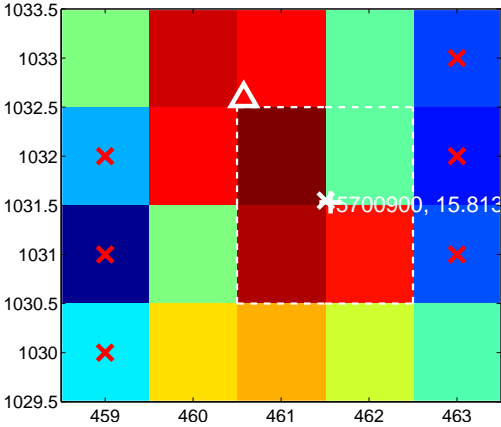
Q10 no difference image



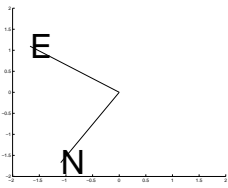
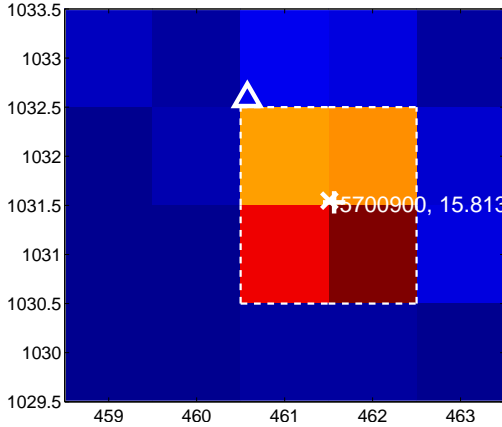
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

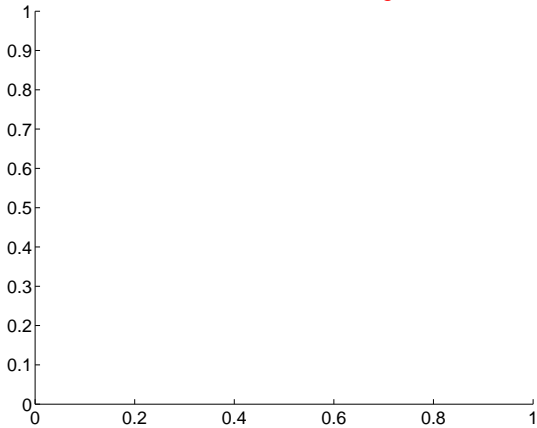
Q13 no difference image



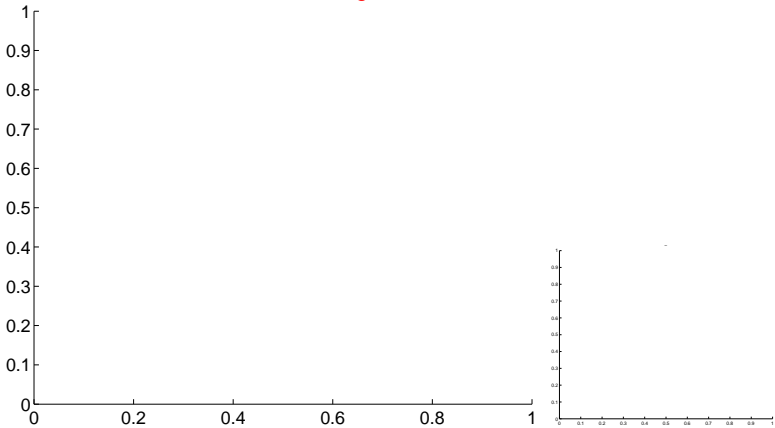
Q13 no OOT image



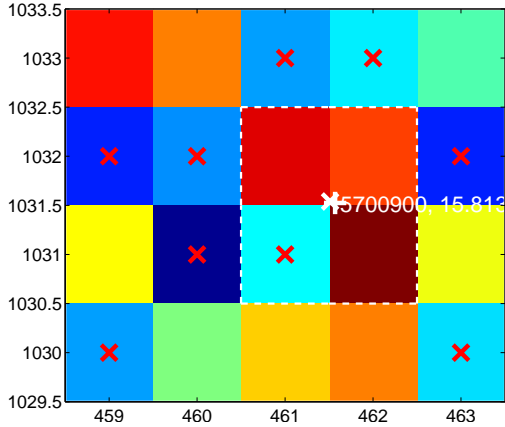
Q14 no difference image



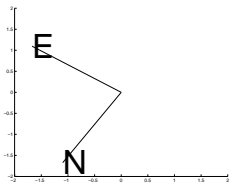
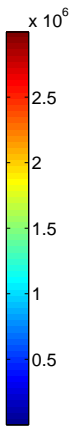
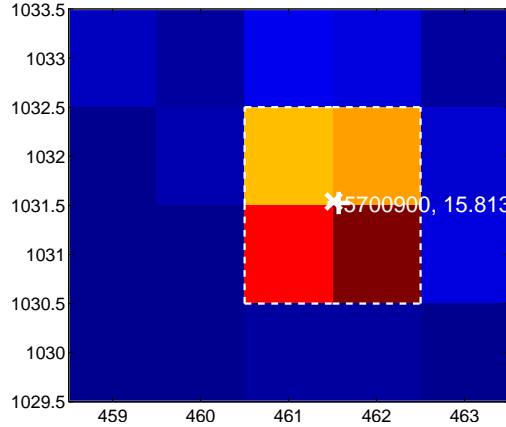
Q14 no OOT image



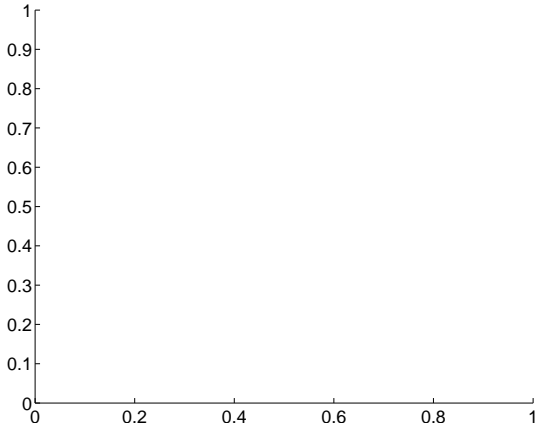
Q15 difference image. Poor Quality



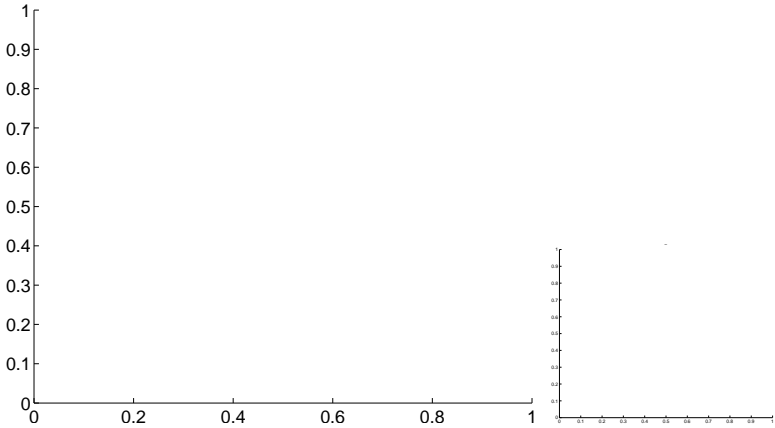
Q15 OOT image



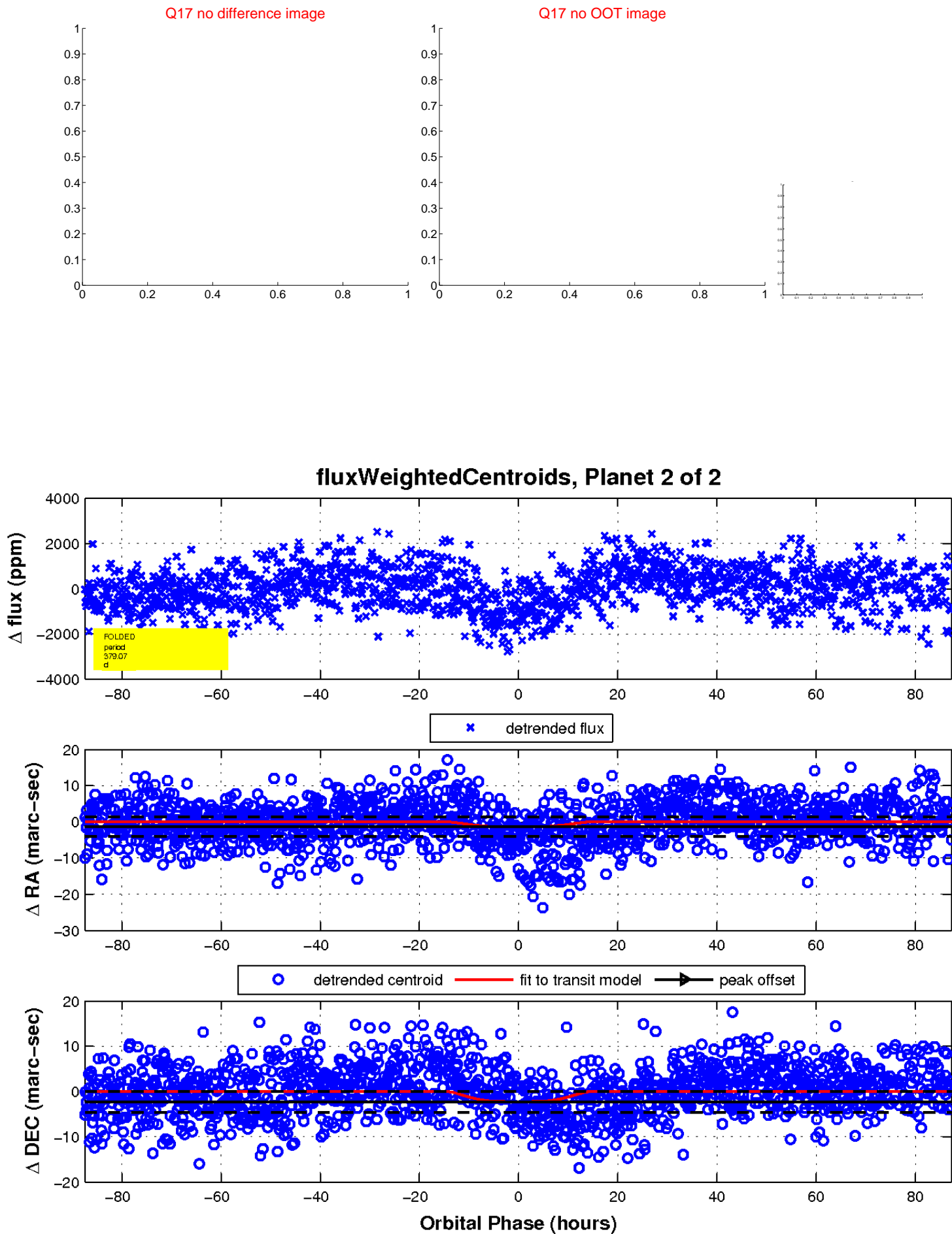
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

