

KIC 007459173

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})
007459173-01	OBS	No	540.446929	203.973894	1441.5	3.449	16.6	12.1	1.64	5605	6.16	1.45
007459173-02	OBS	No	513.130888	371.019532	685.7	4.951	16.2	6.3	1.64	5605	4.62	1.56
007459173-03	OBS	No	494.596011	154.218462	1014.3	5.446	14.9	9.5	1.64	5605	5.44	1.64
007459173-05	OBS	No	299.863108	334.084916	681.4	7.342	13.0	6.9	1.64	5605	4.74	3.19
007459173-06	OBS	No	494.958274	393.893323	814.0	3.631	11.7	8.4	1.64	5605	5.01	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007459173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
007459173-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

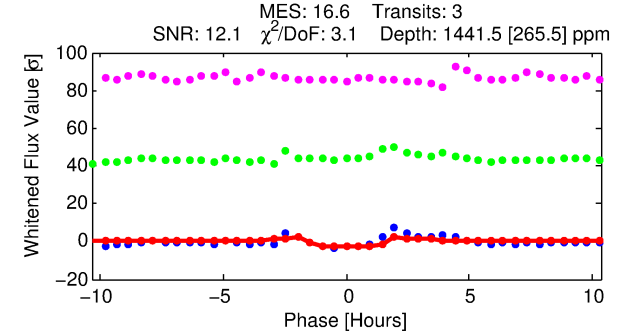
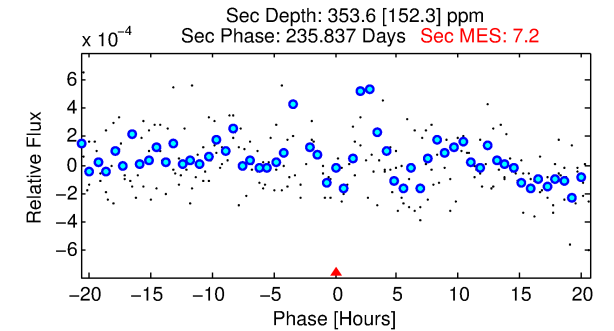
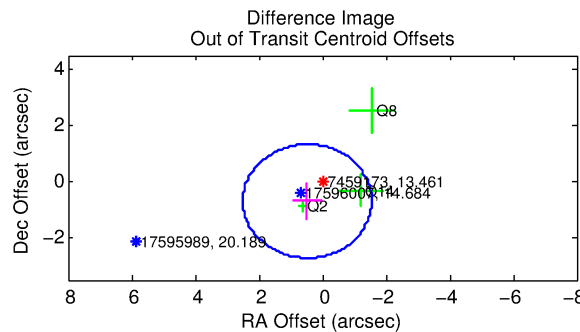
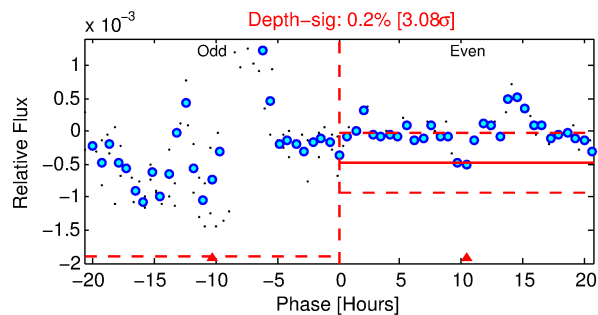
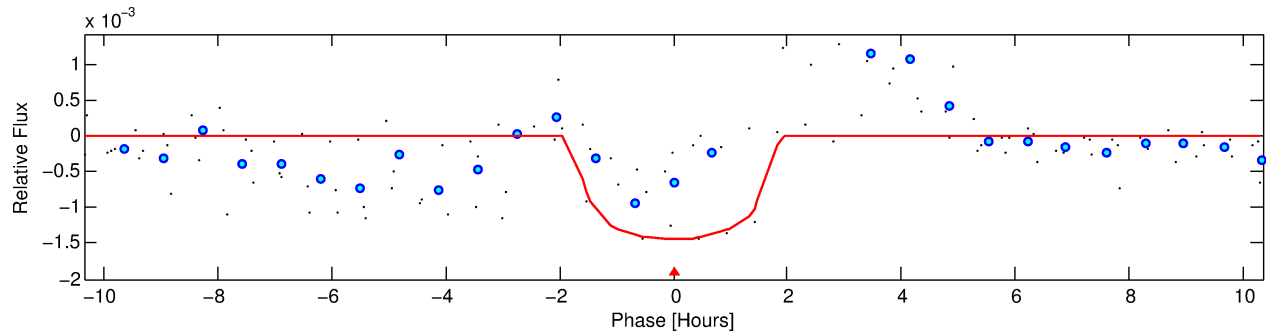
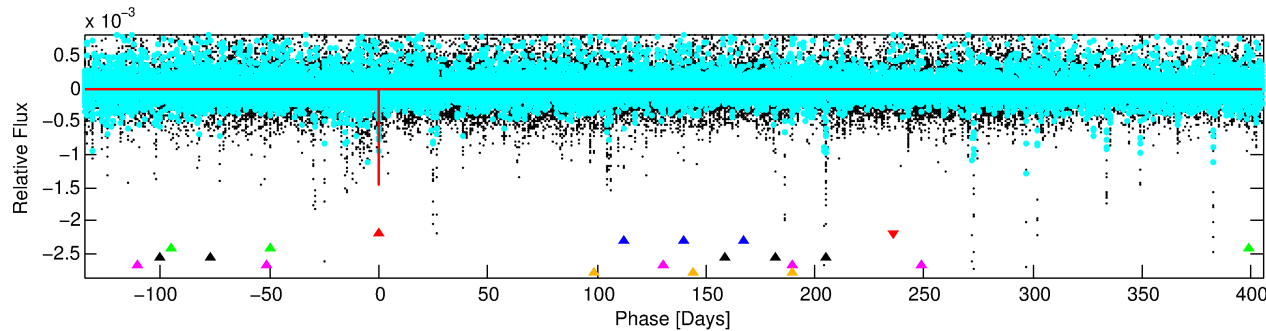
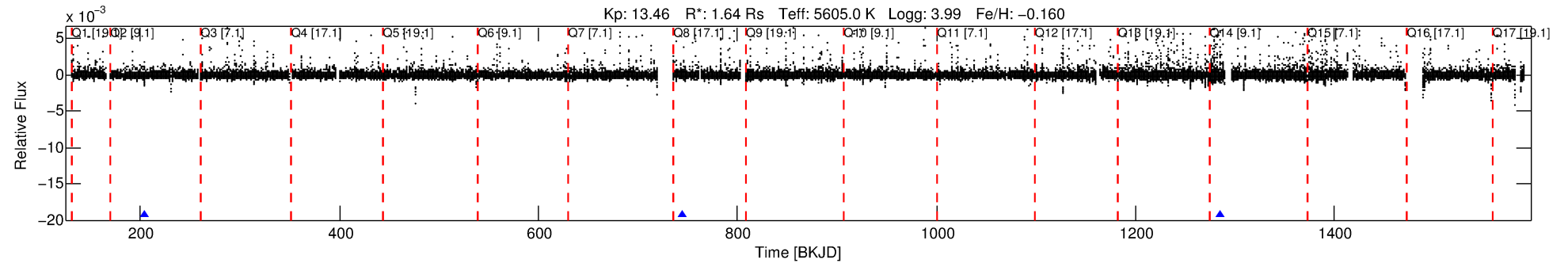
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007459173-01

No Significant Match Found

DV One-Page Summary

KIC: 7459173 Candidate: 1 of 6 Period: 540.447 d



DV Fit Results:

Period = 540.44693 [0.00532] d
Epoch = 203.9739 [0.0059] BKJD
Rp/R* = 0.0344 [0.0591]
a/R* = 1238.07 [8937.04]
b = 0.01 [677.18]
Seff = 1.45 [1.14]
Teq = 280 [55] K
Rp = 6.16 [10.98] Re
a = 1.2807 [0.6068] AU
Ag = 8412.50 [29870.80] [0.28σ]
Teffp = 4146 [3593] K [1.08σ]

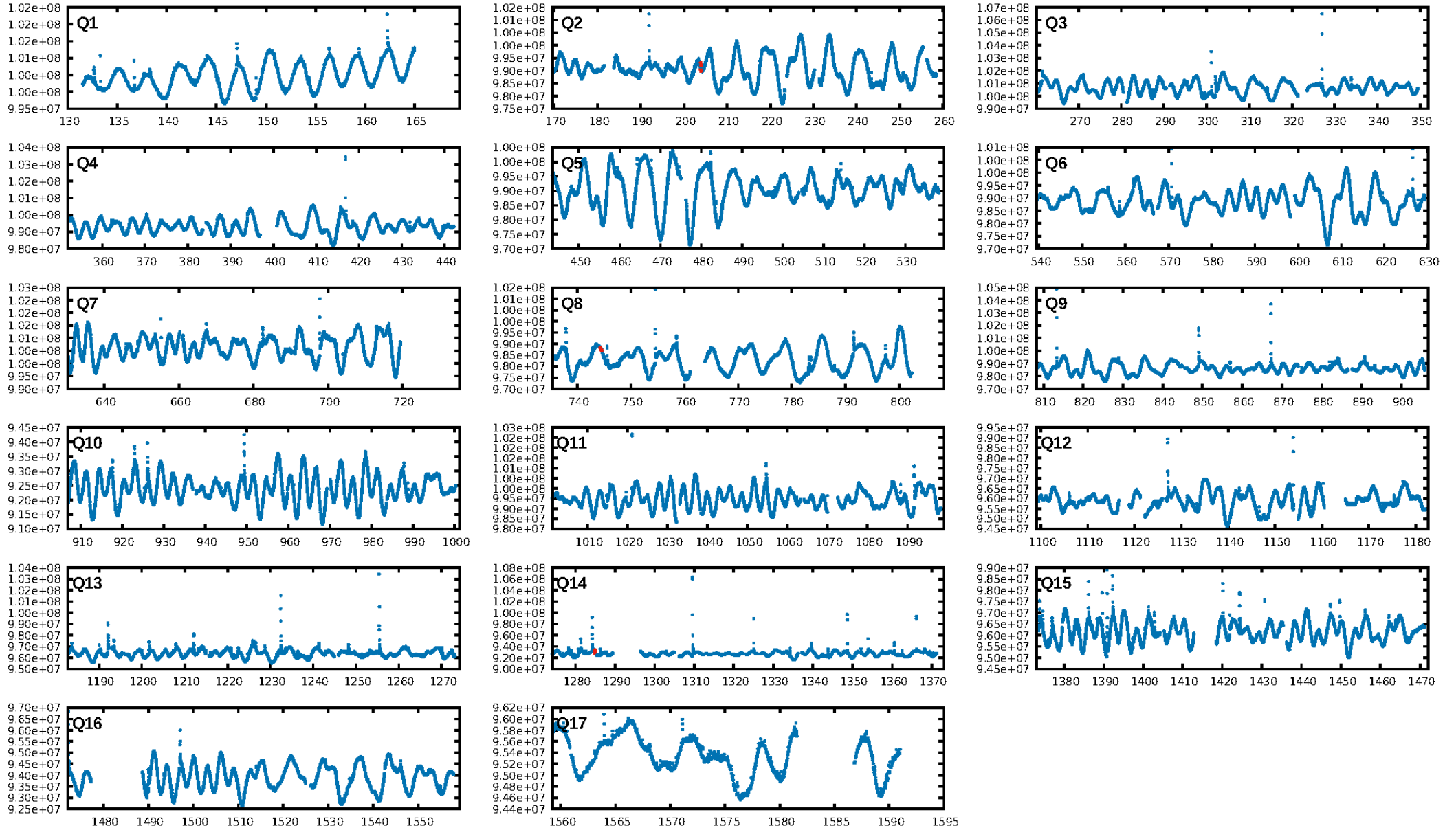
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [108.65σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 11.81
Centroid-sig: 9.2%
Centroid-so: 0.778 arcsec [1.67σ]
OotOffset-rm: 0.843 arcsec [1.25σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-rm: 0.725 arcsec [0.76σ]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

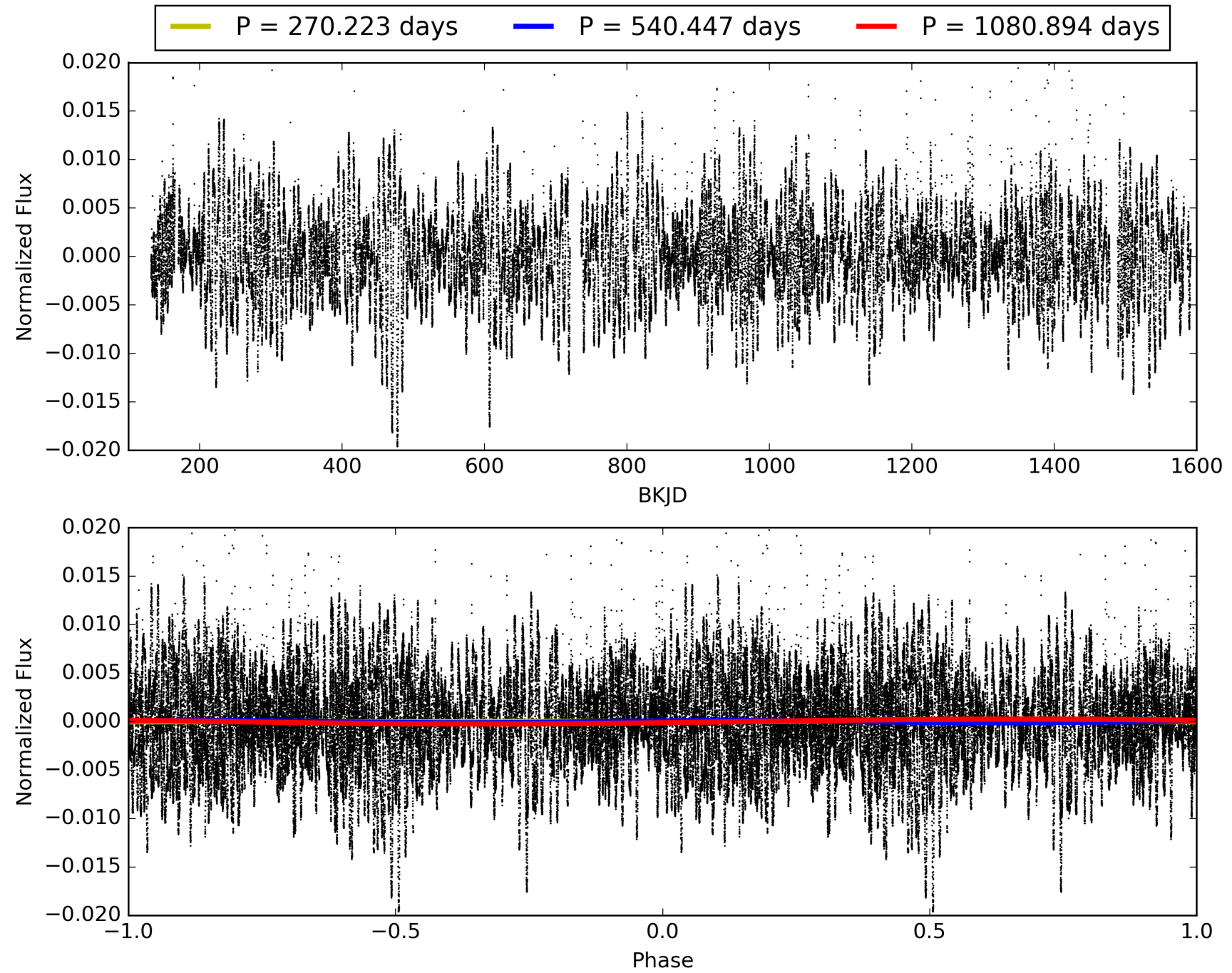
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:16:44 Z

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

TCE 007459173-01, PDC Light Curves

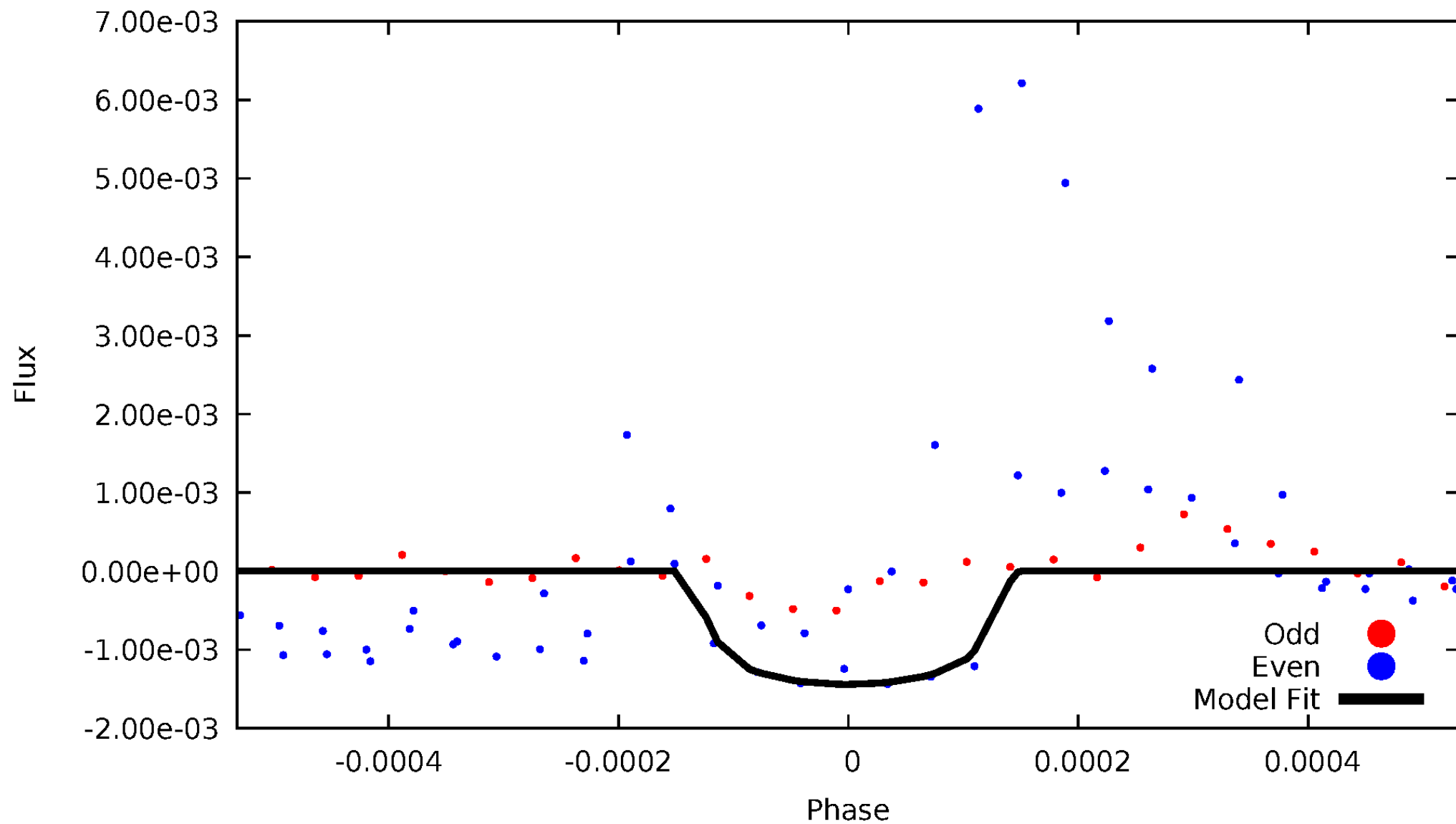


TCE 007459173-01



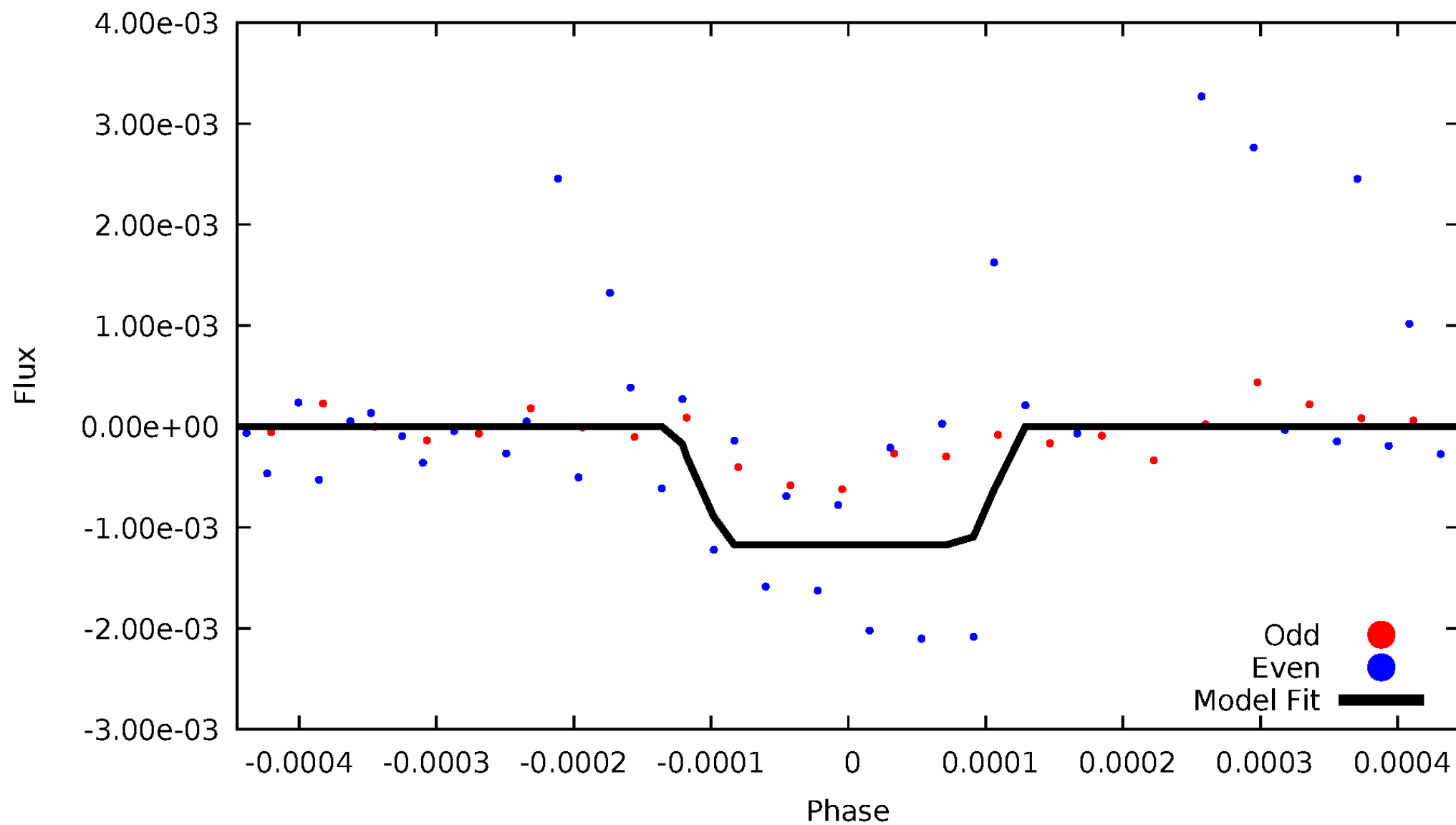
DV Odd/Even

TCE 007459173-01



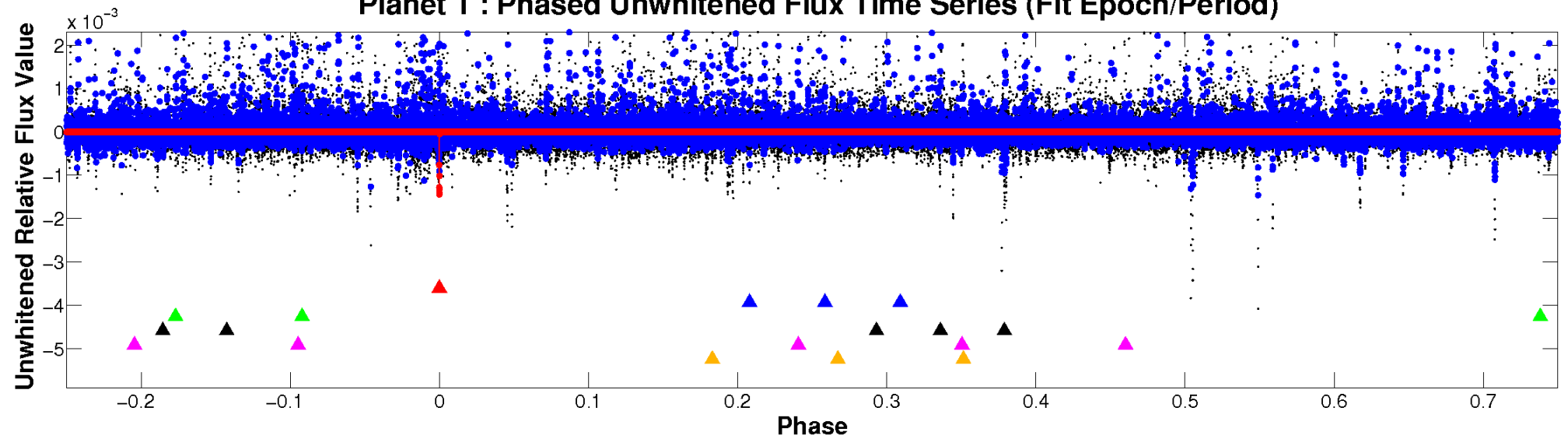
ALT Odd/Even

TCE 007459173-01

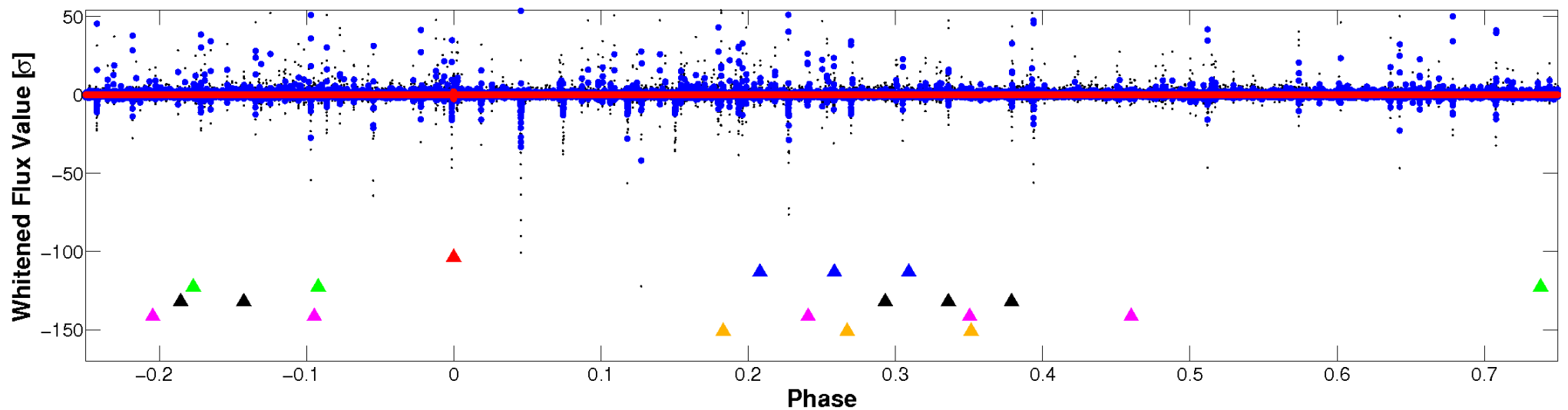


Non-Whitened Vs. Whitened Light Curve

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

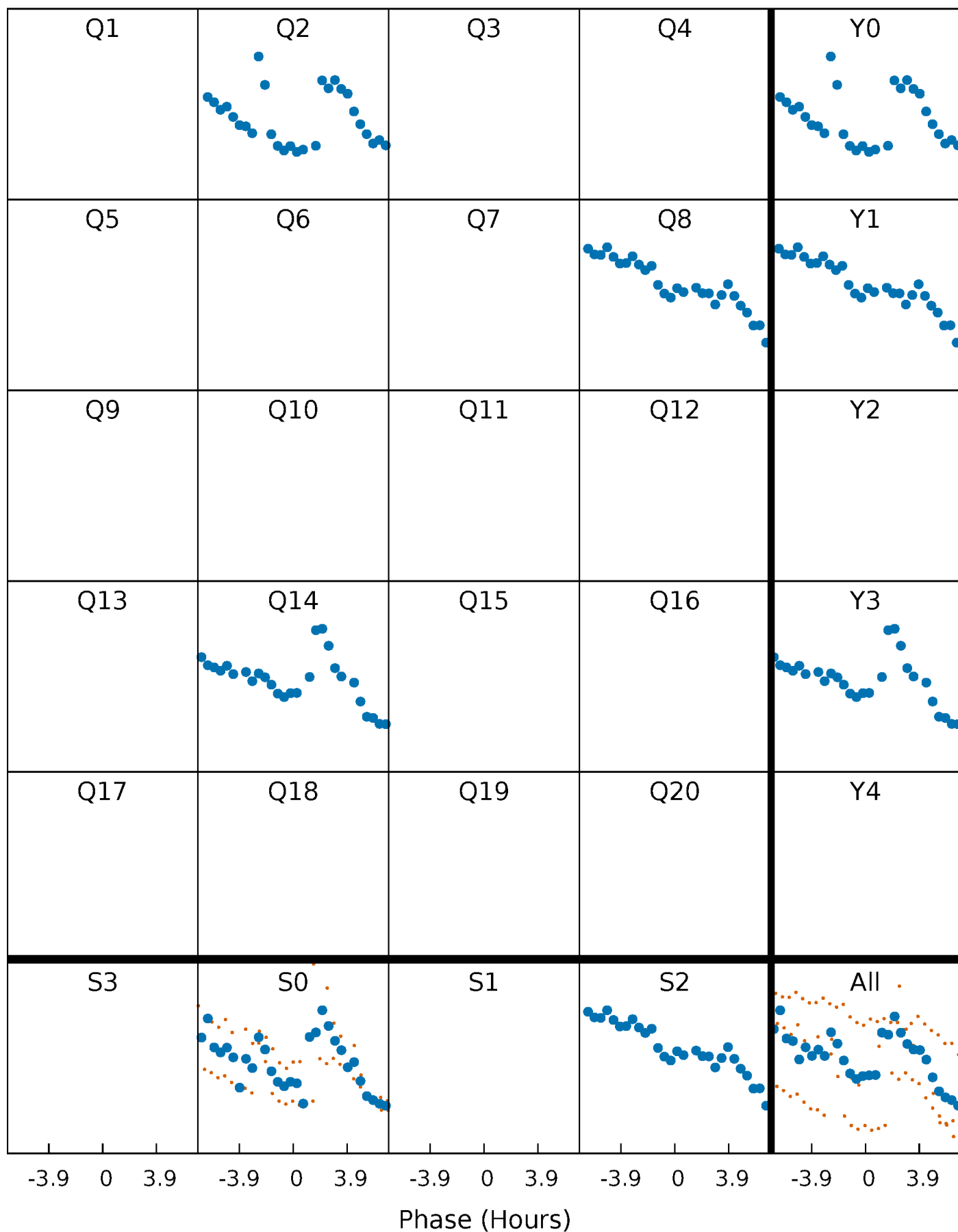


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



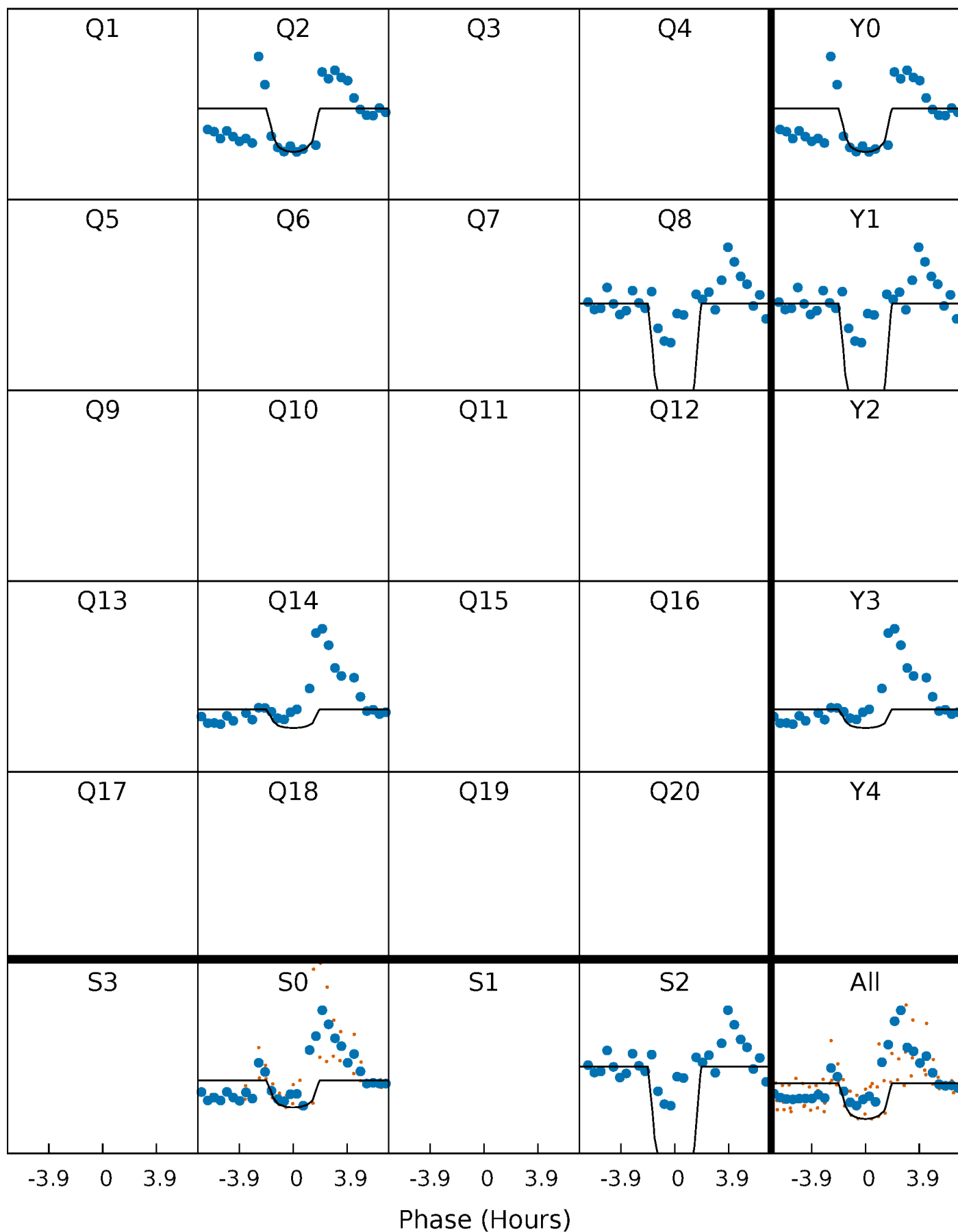
PDC Quarter-Phased Transit Curves

TCE 007459173-01 P=540.446929 Days $T_0=203.973894$ (BKJD)



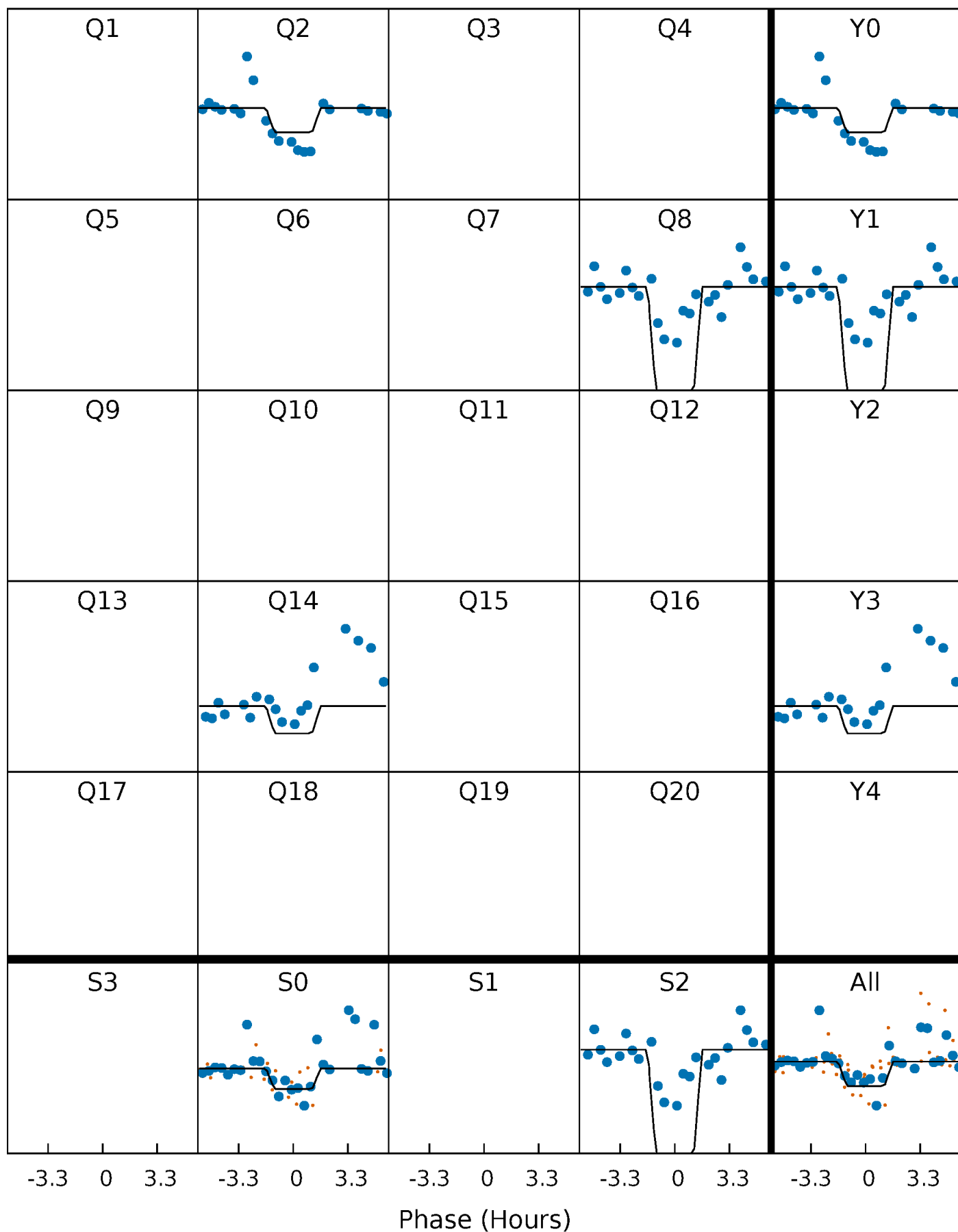
DV Quarter-Phased Transit Curves

TCE 007459173-01 P=540.446929 Days $T_0=203.973894$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

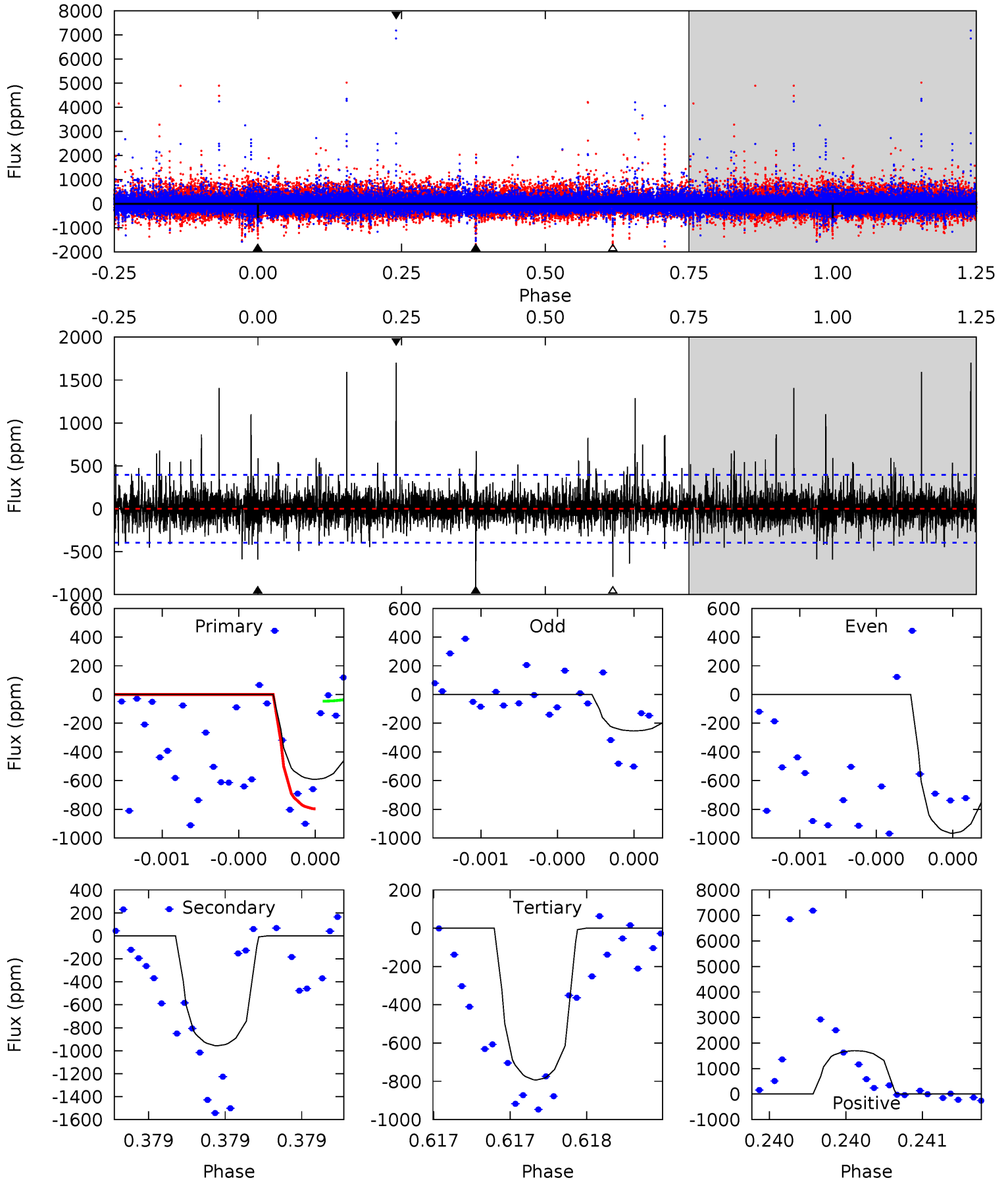
TCE 007459173-01 P=540.433606 Days $T_0=203.983998$ (BKJD)



DV Model-Shift Uniqueness Test

007459173-01, P = 540.446929 Days, E = 203.973894 Days

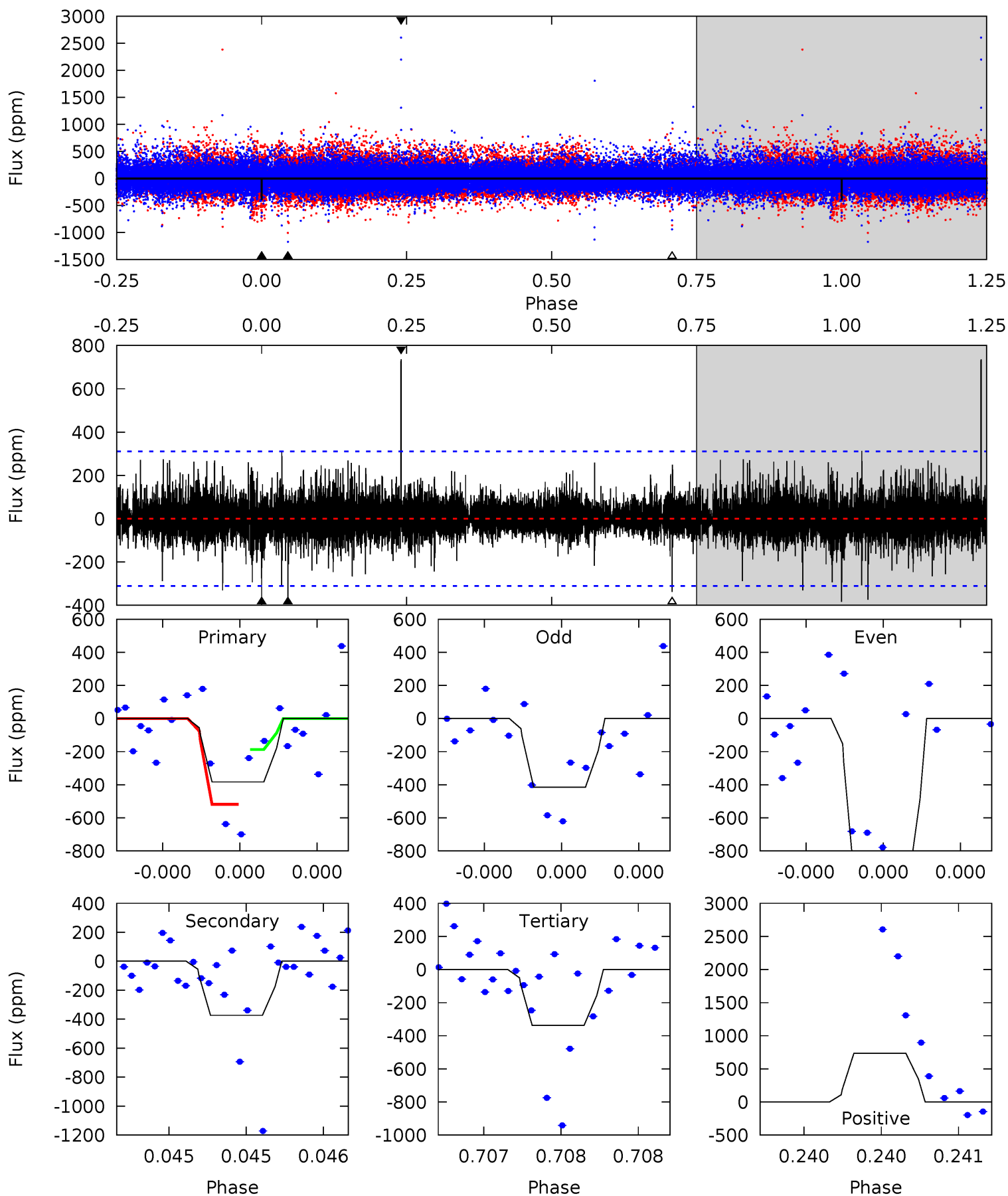
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.51	13.8	11.4	24.4	5.68	3.64	1.75	-2.89	-15.9	2.36	-10.7	2.44	1.40	0.64	5.23



Alt Model-Shift Uniqueness Test

007459173-01, P = 540.433606 Days, E = 203.983998 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.03	6.85	6.19	13.5	5.71	3.68	1.01	0.84	-6.47	0.66	-6.65	6.22	1.97	0.66	2.94



Stellar Parameters For KIC 007459173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5605^{+169}_{-152}	$3.989^{+0.462}_{-0.165}$	$-0.160^{+0.300}_{-0.250}$	$1.642^{+0.476}_{-0.774}$	$0.959^{+0.111}_{-0.123}$	$0.305^{+1.403}_{-0.131}$
	+3%/-3%	+12%/-4%	+188%/-156%	+29%/-47%	+12%/-13%	+460%/-43%
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 007459173-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-957 ± 70	$9.38^{+9.07}_{-6.30}$	385^{+35}_{-46}	4379^{+2788}_{-904}	9769^{+81045}_{-7098}
Alt.	-373 ± 54	$9.18^{+9.33}_{-6.10}$	384^{+35}_{-47}	3681^{+2201}_{-650}	3963^{+33916}_{-2949}

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

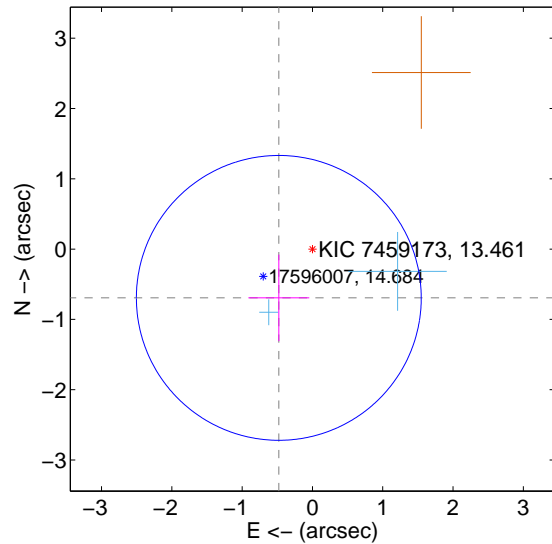
Supplemental centroid analysis for 007459173-01. Kepler magnitude: 13.46. Transit SNR 12.10

There are 2 quarters with good PRF difference image offsets

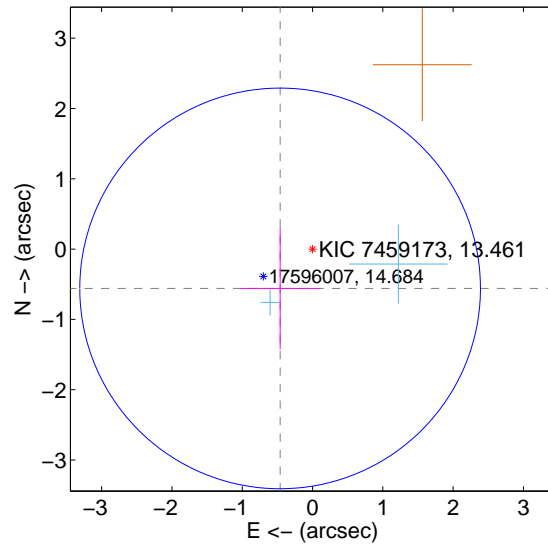
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.843 ± 0.675	1.25	0.478 ± 0.434	-0.694 ± 0.614
PRF-fit source offset from KIC position	0.725 ± 0.950	0.76	0.461 ± 0.559	-0.559 ± 0.867
photometric centroid source offset	0.78 ± 0.46	1.67	0.72 ± 0.47	0.30 ± 0.44

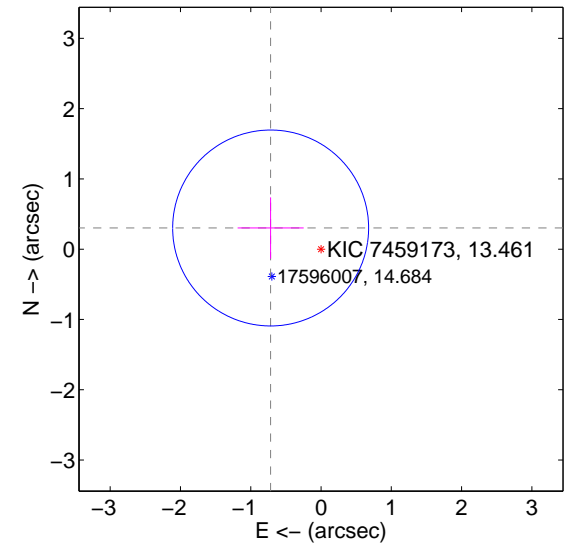
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

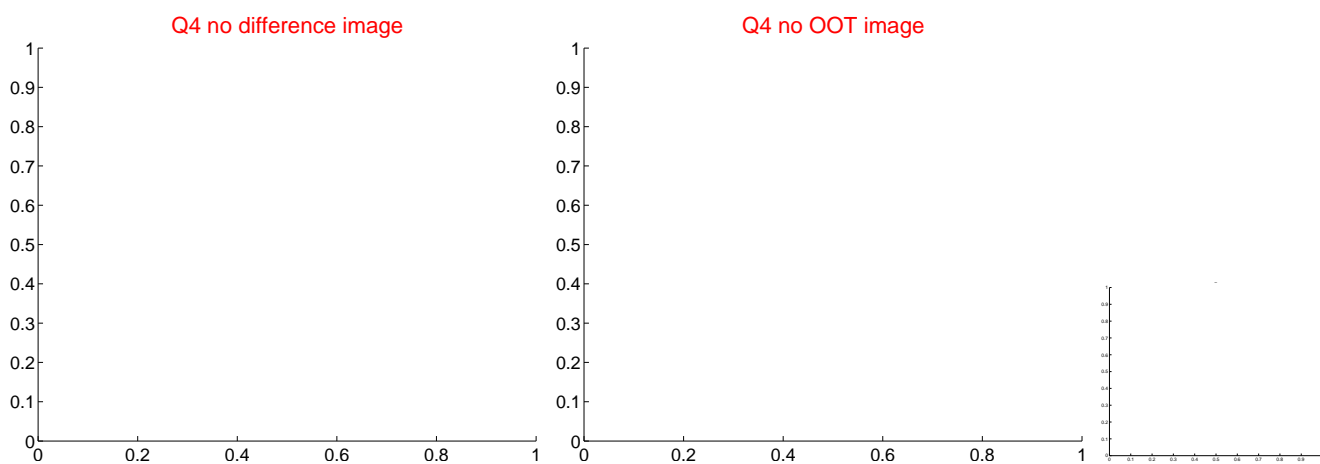
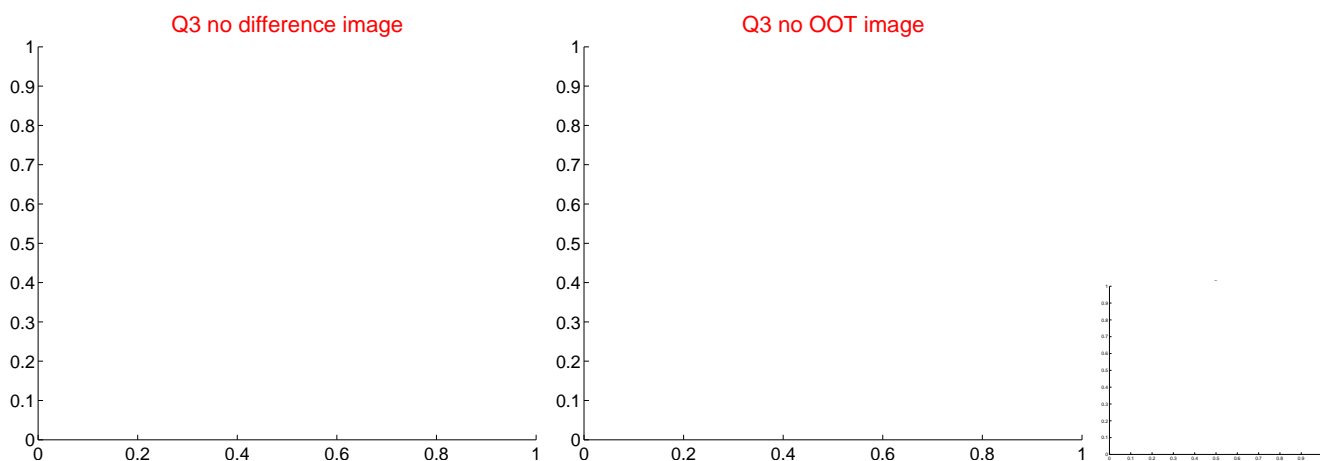
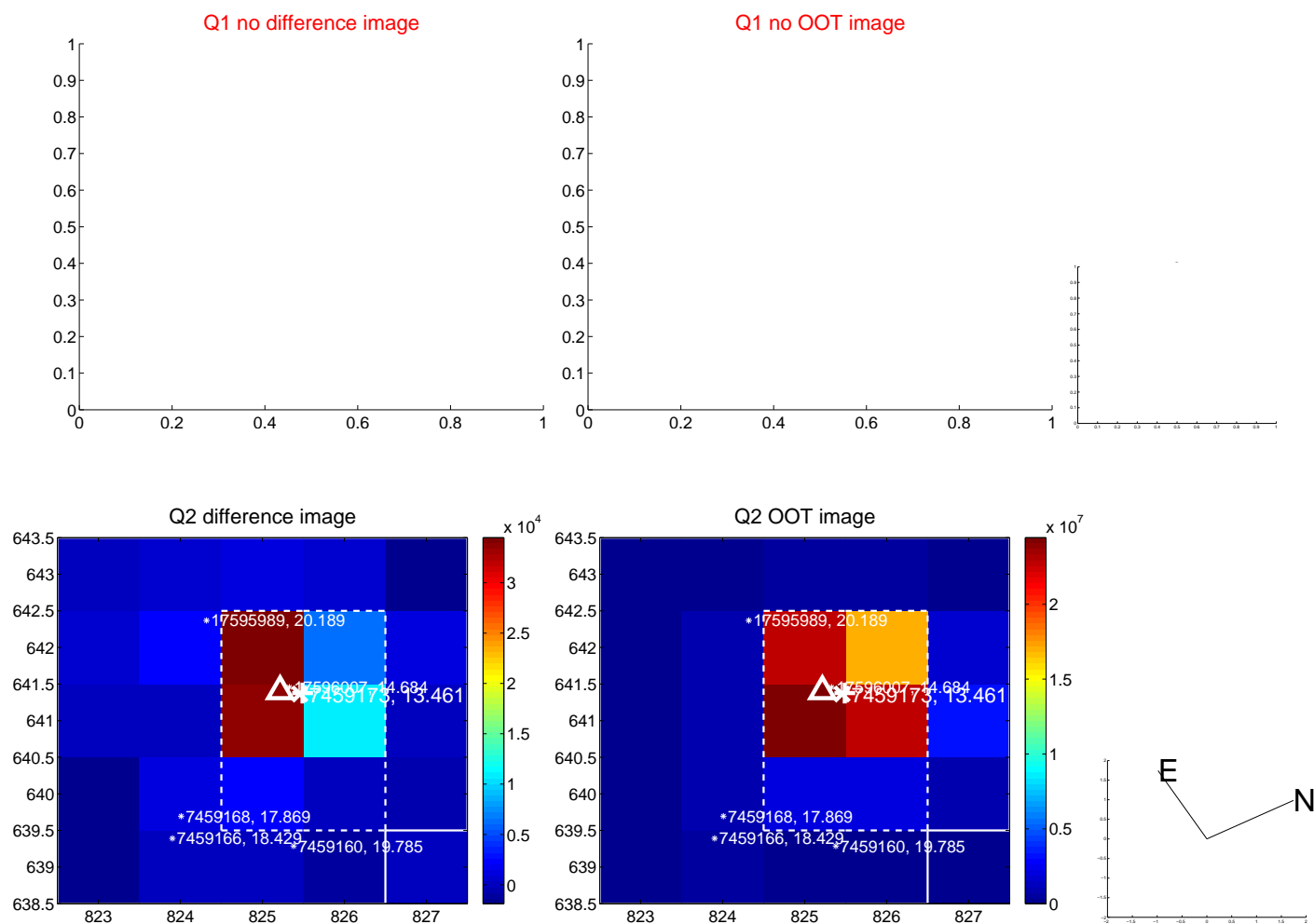


offset from photometric centroids

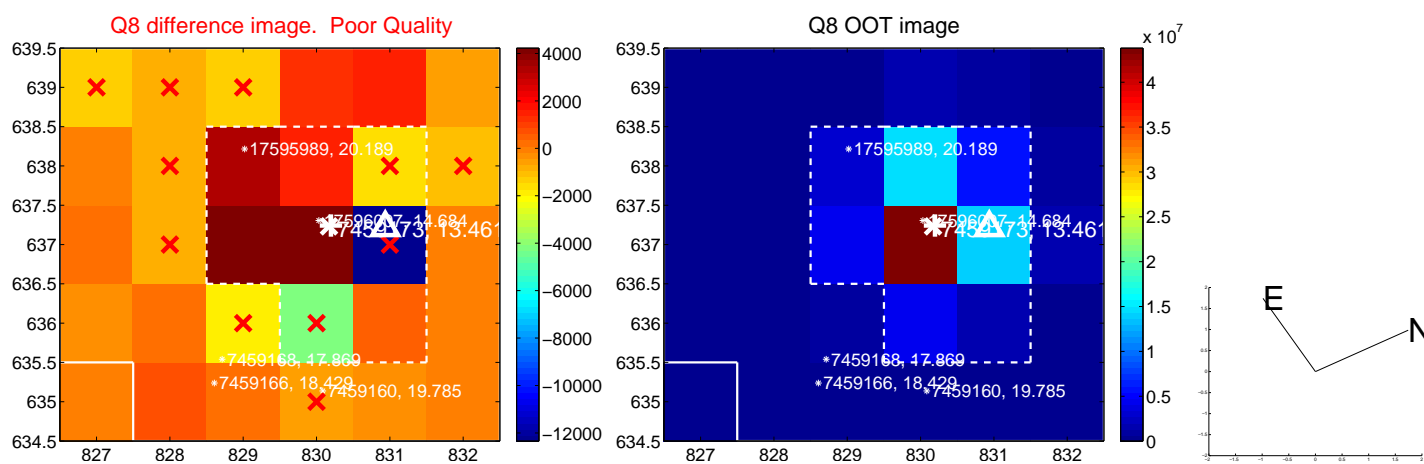
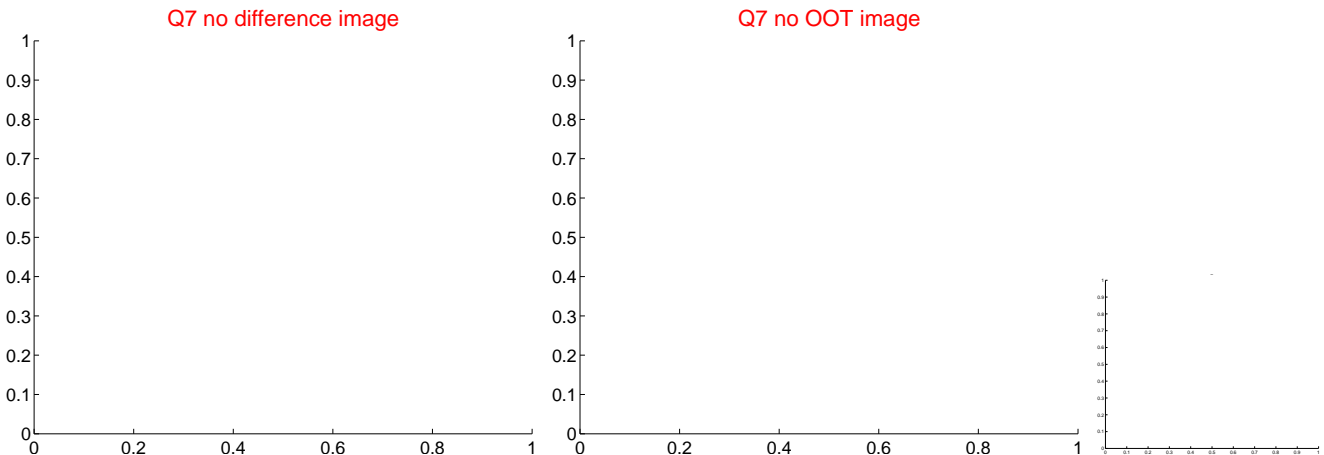
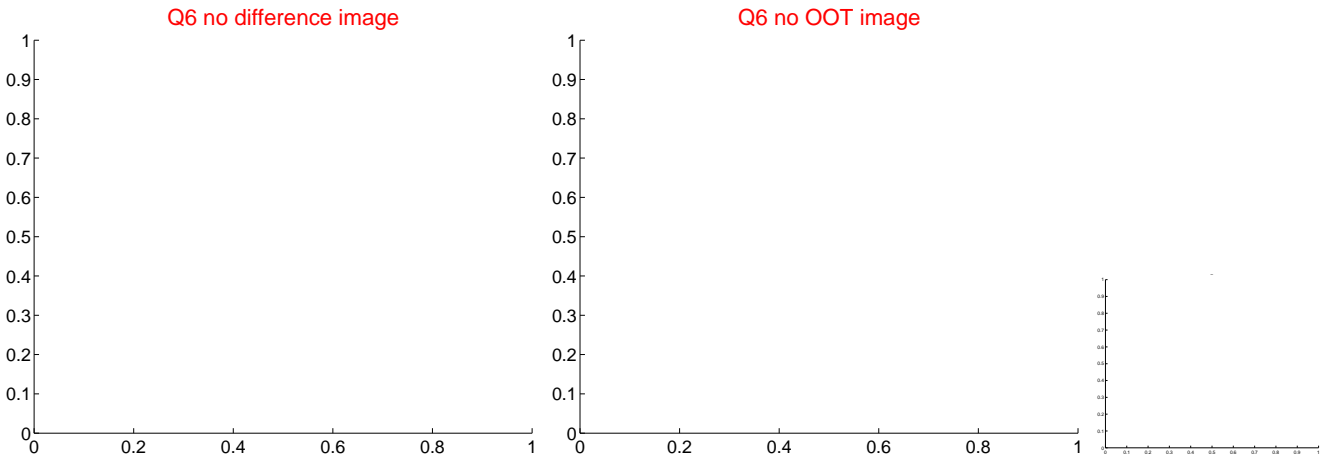
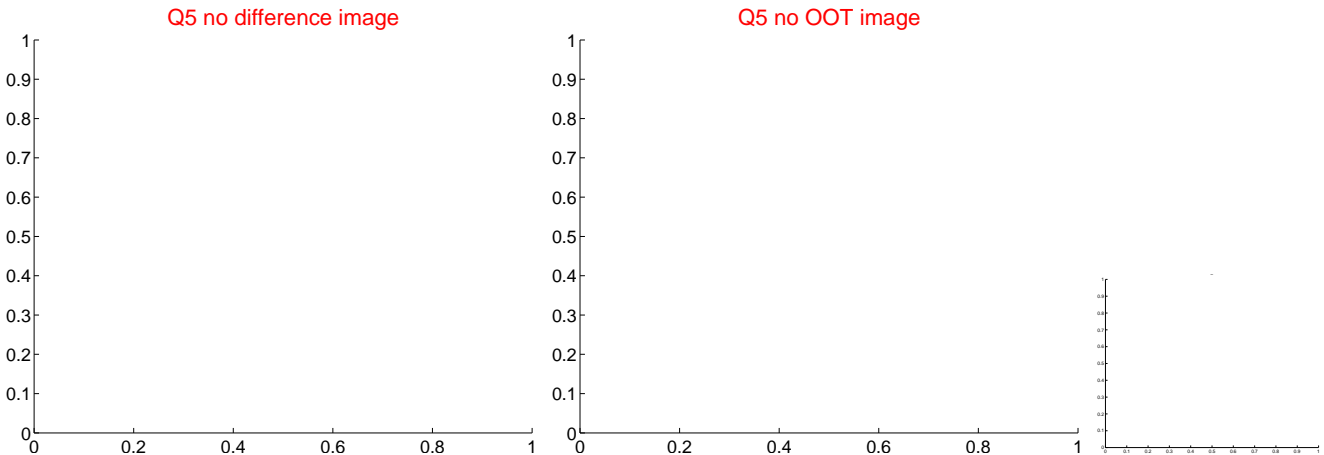


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



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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.

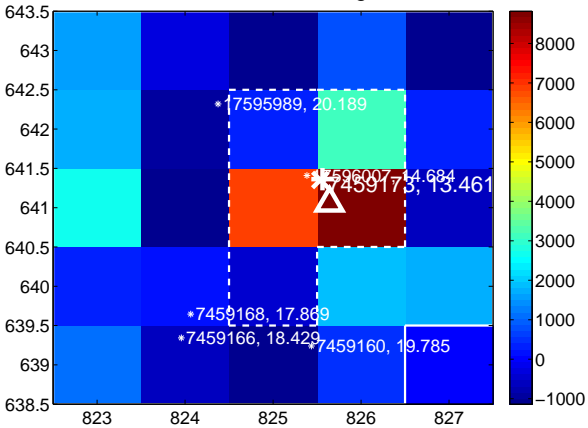
Q13 no difference image



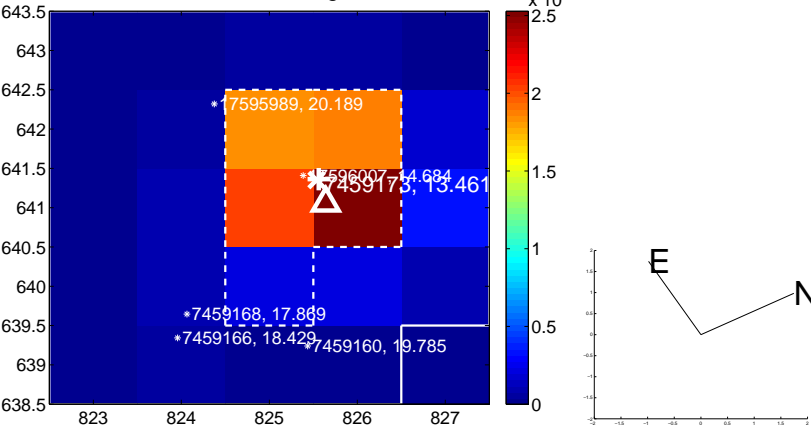
Q13 no OOT image



Q14 difference image



Q14 OOT image



Q15 no difference image



Q15 no OOT image



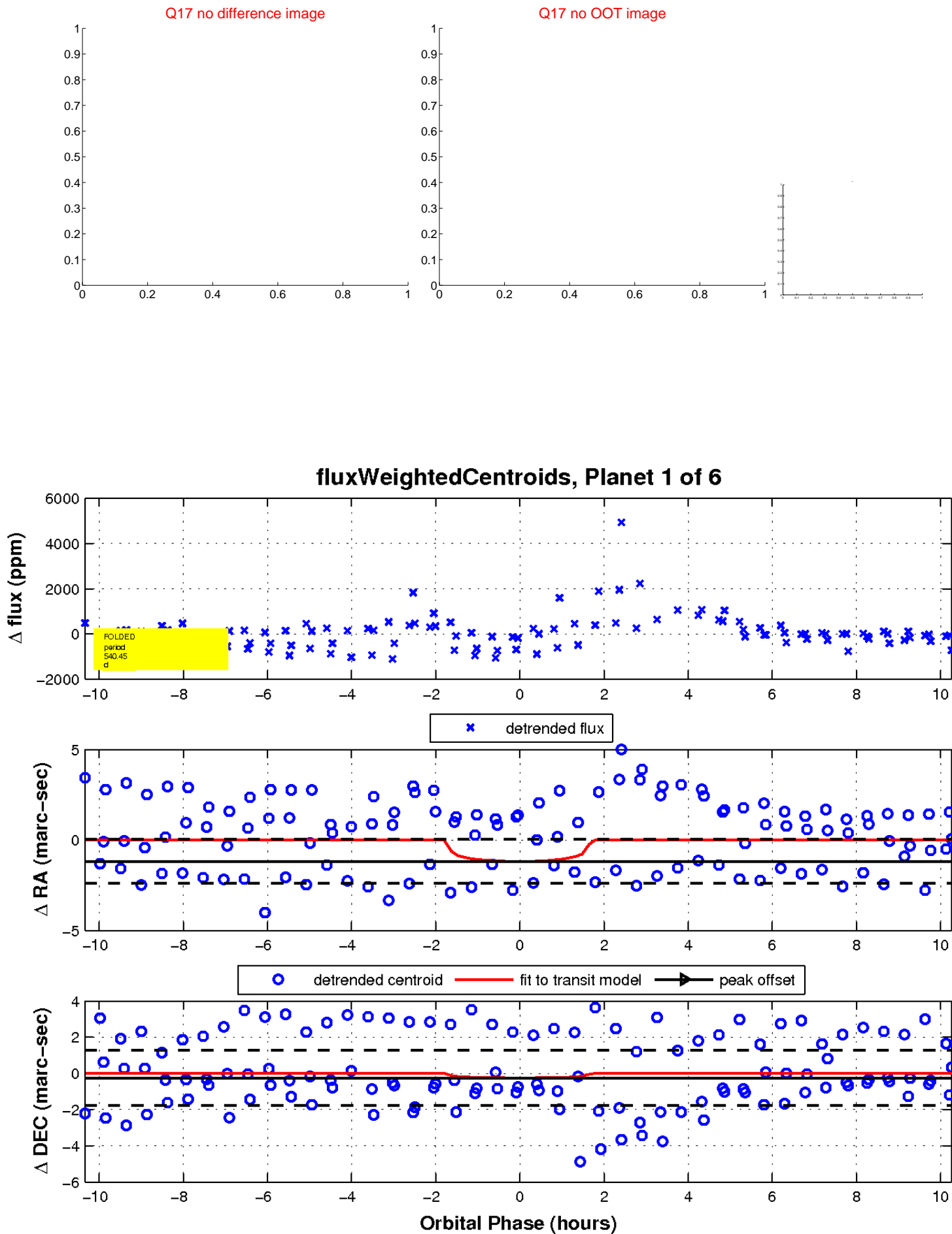
Q16 no difference image



Q16 no OOT image

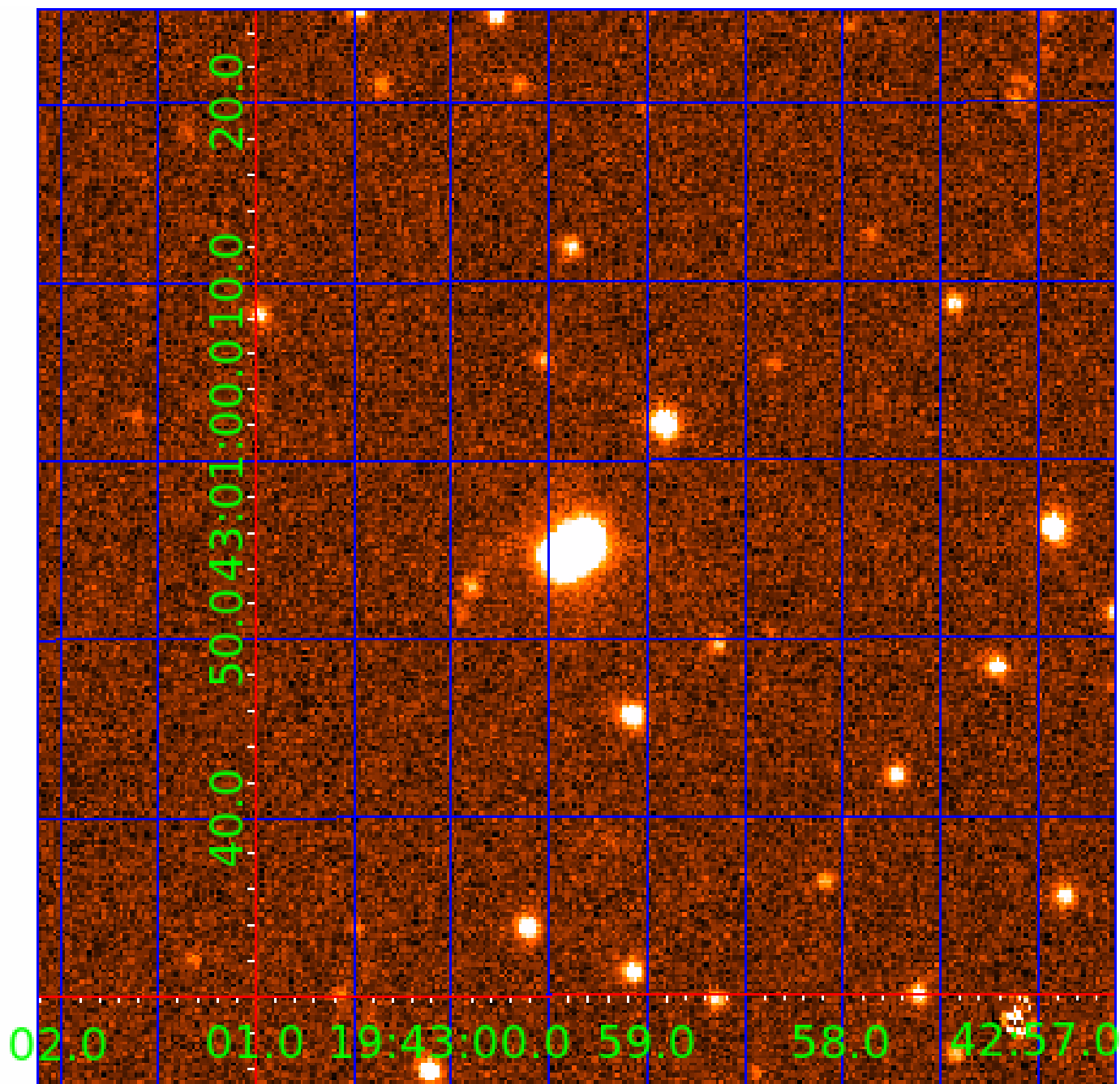


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007459173

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})
007459173-01	OBS	No	540.446929	203.973894	1441.5	3.449	16.6	12.1	1.64	5605	6.16	1.45
007459173-02	OBS	No	513.130888	371.019532	685.7	4.951	16.2	6.3	1.64	5605	4.62	1.56
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007459173-05	OBS	No	299.863108	334.084916	681.4	7.342	13.0	6.9	1.64	5605	4.74	3.19
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Robovetter Results

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007459173-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
007459173-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

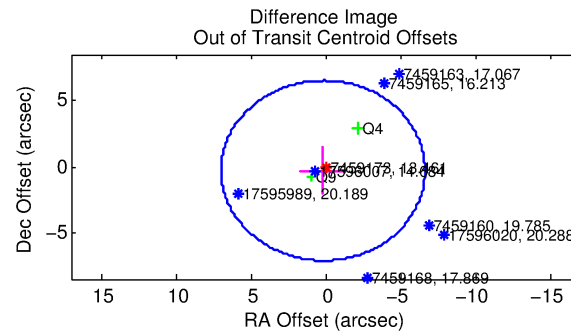
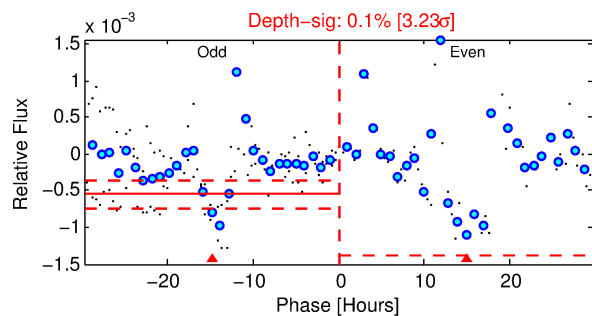
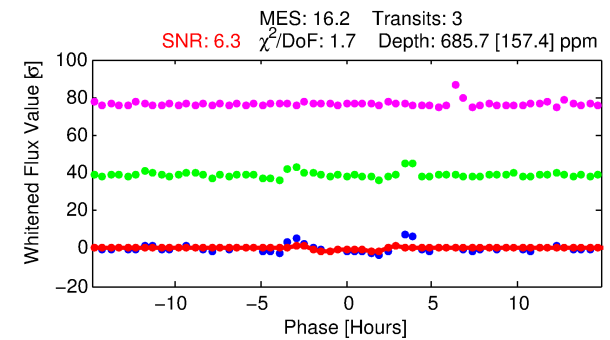
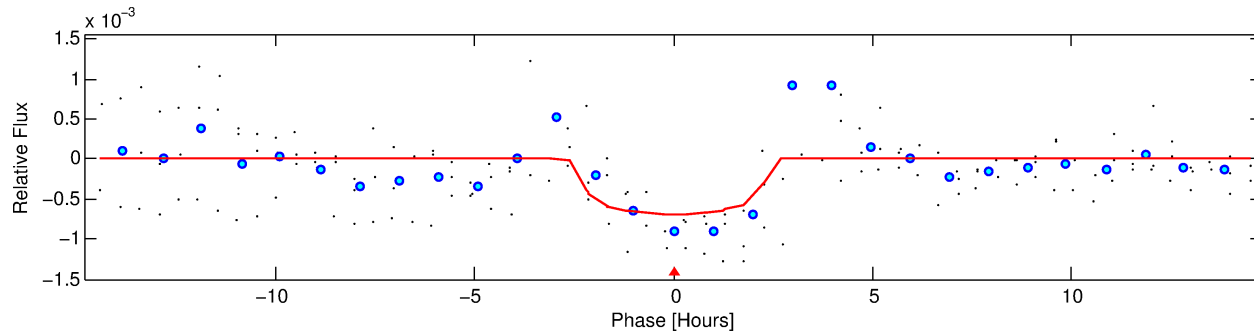
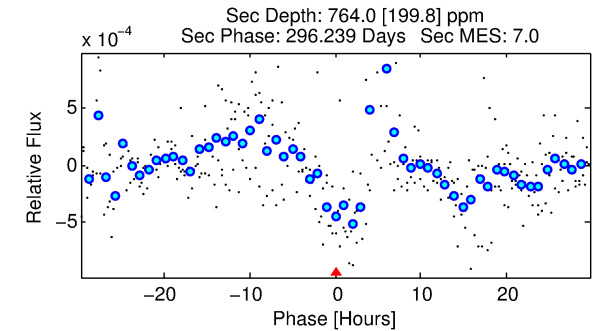
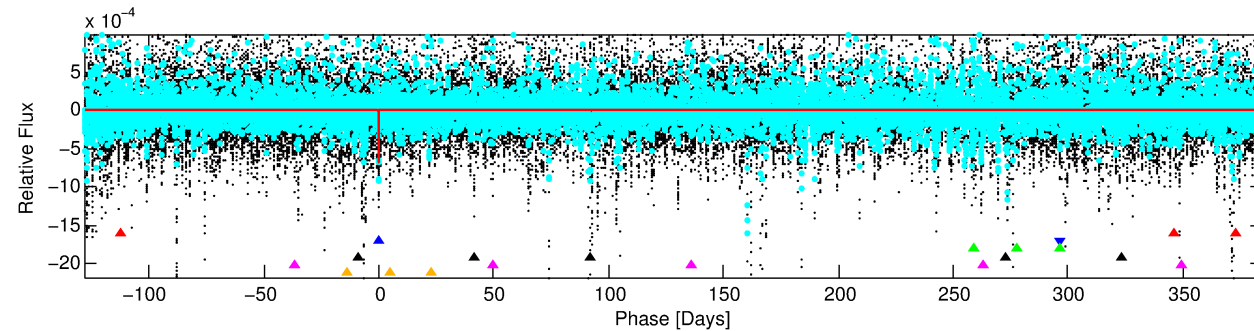
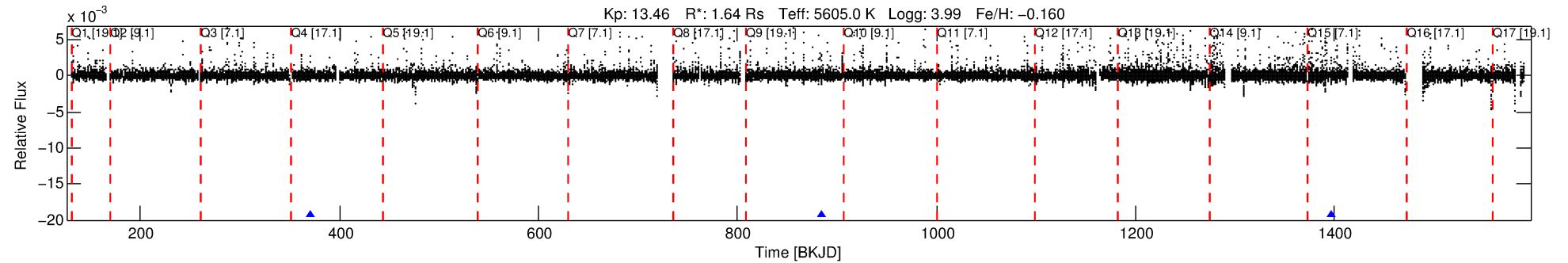
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007459173-02

No Significant Match Found

DV One-Page Summary

KIC: 7459173 Candidate: 2 of 6 Period: 513.131 d



DV Fit Results:

Period = 513.13089 [0.00614] d
Epoch = 371.0195 [0.0089] BKJD
Rp/R* = 0.0258 [0.0276]
a/R* = 580.05 [2640.04]
b = 0.72 [3.10]
Seff = 1.56 [1.22]
Teff = 285 [56] K
Rp = 4.62 [5.41] Re
a = 1.2372 [0.5862] AU
Ag = 30135.39 [69137.52] [0.44σ]
Teffp = 5803 [3137] K [1.76σ]

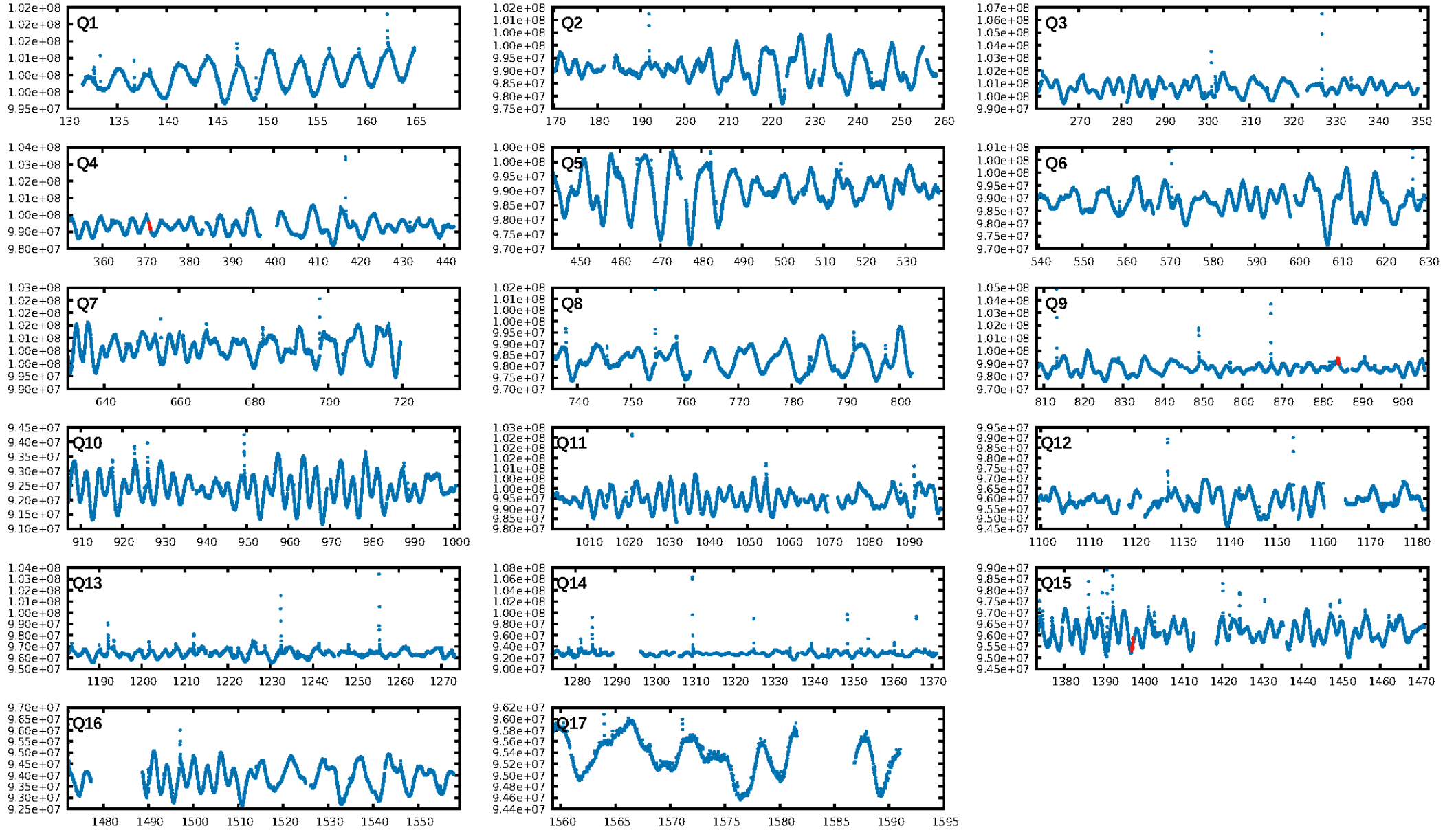
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [71.04σ]
LongPeriod-sig: 100.0% [108.65σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 16.9%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 161.9
Centroid-sig: 60.5%
Centroid-so: 0.534 arcsec [0.58σ]
OotOffset-rm: 0.337 arcsec [0.15σ]
KicOffset-rm: 0.248 arcsec [0.16σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

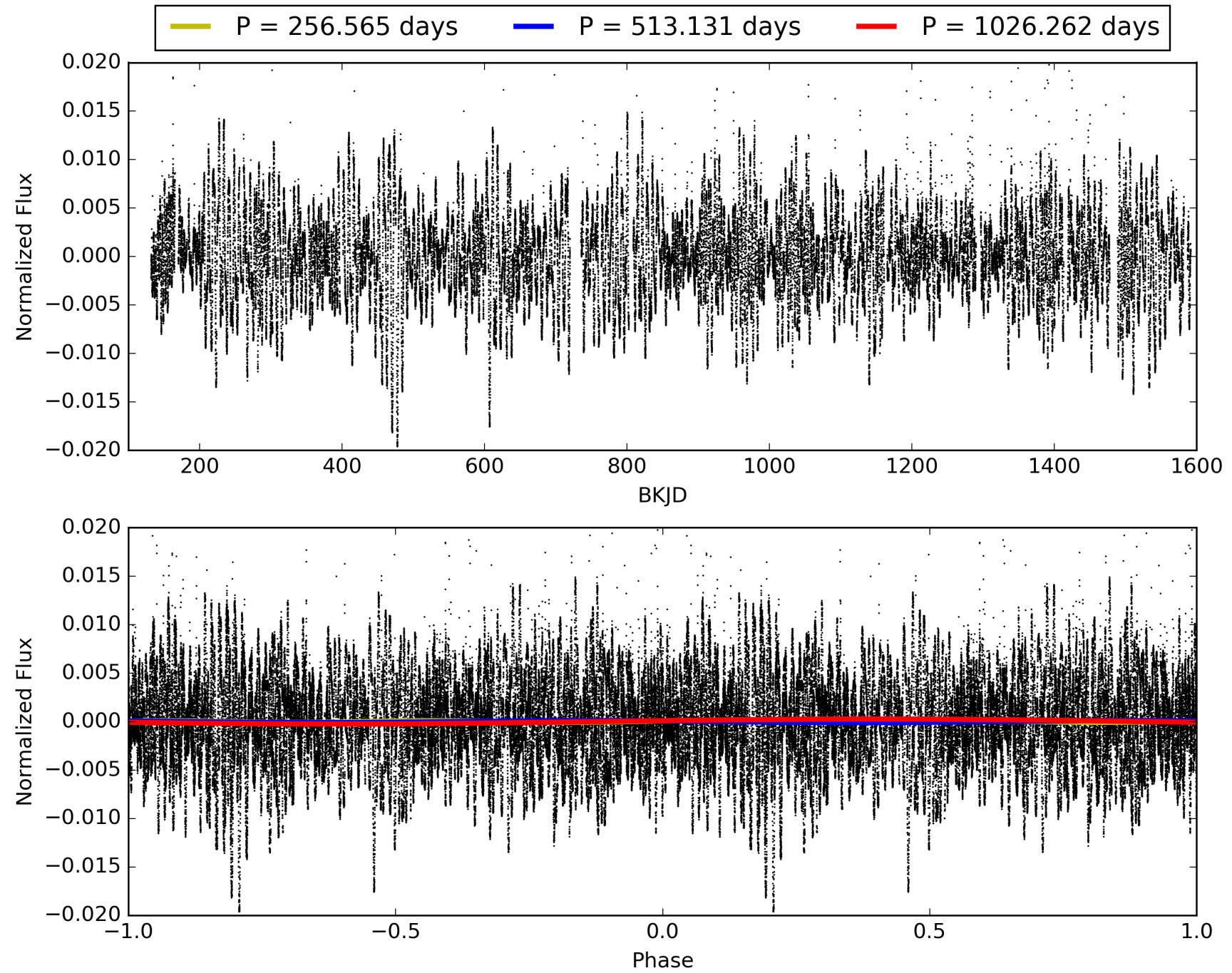
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:17:00 Z

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

TCE 007459173-02, PDC Light Curves

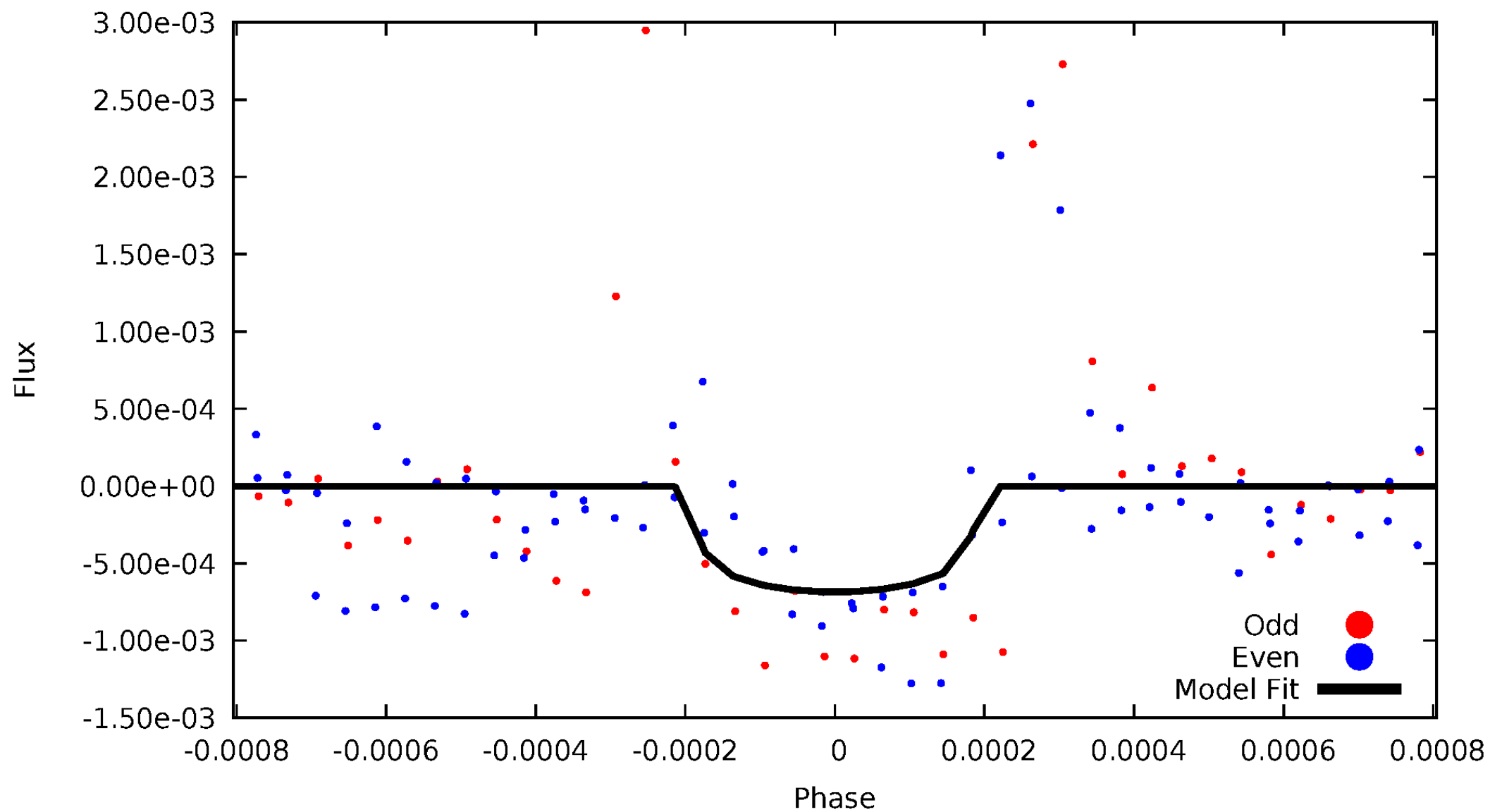


TCE 007459173-02



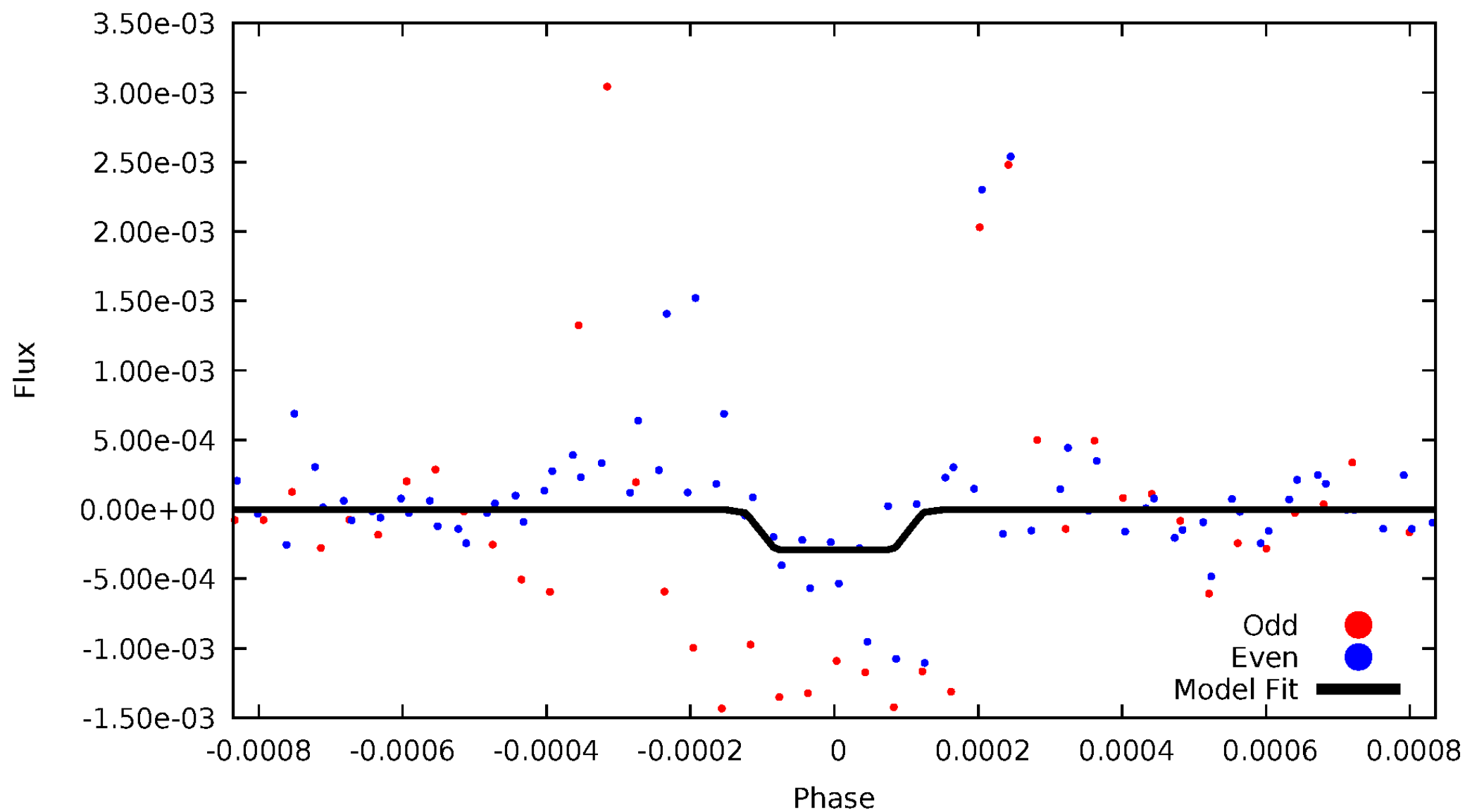
DV Odd/Even

TCE 007459173-02



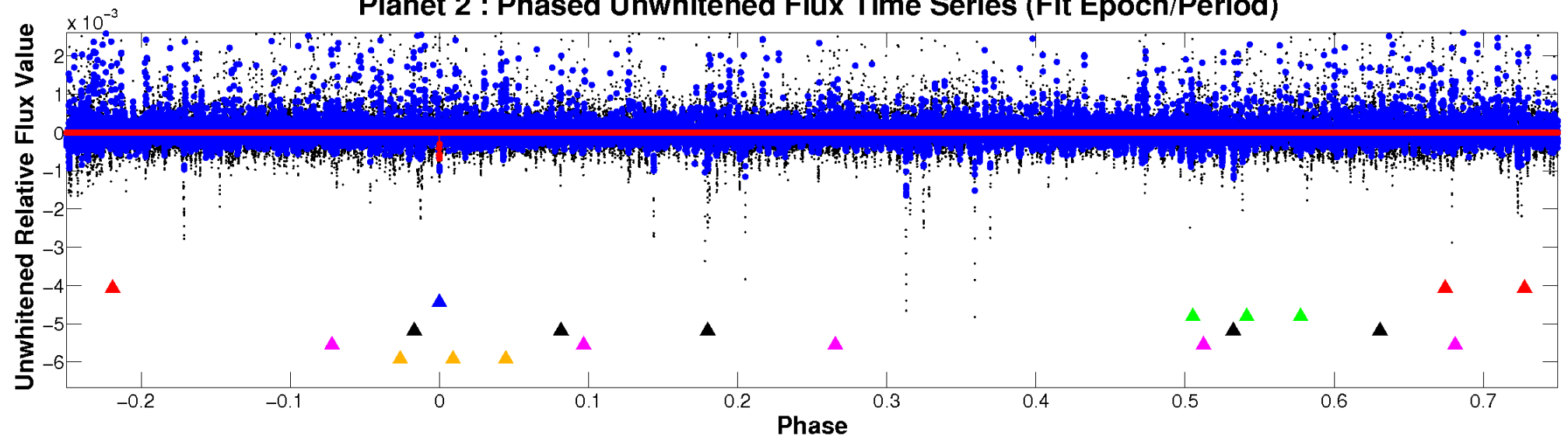
ALT Odd/Even

TCE 007459173-02

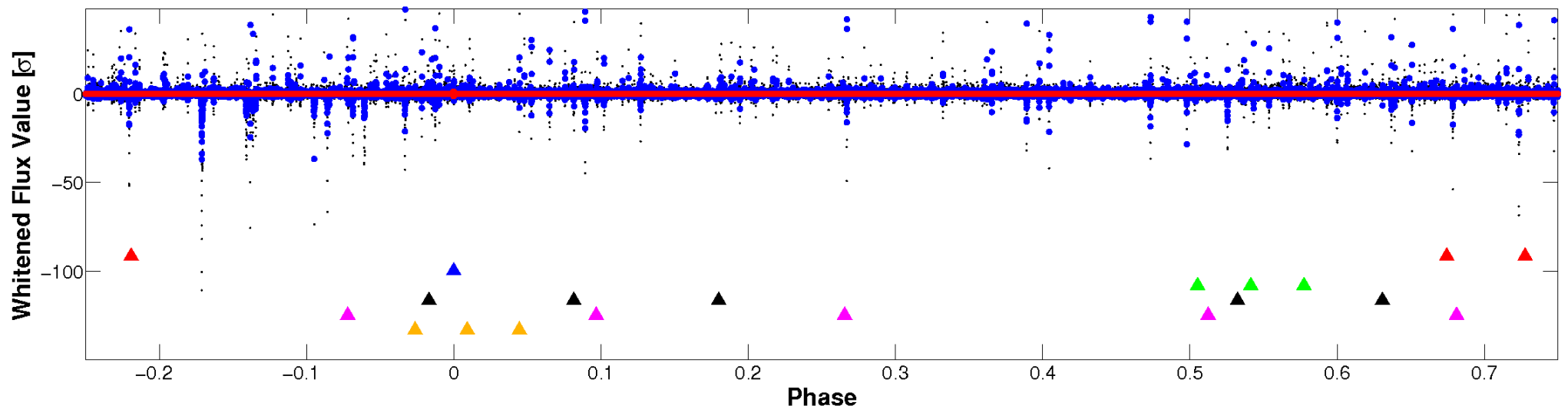


Non-Whitened Vs. Whitened Light Curve

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

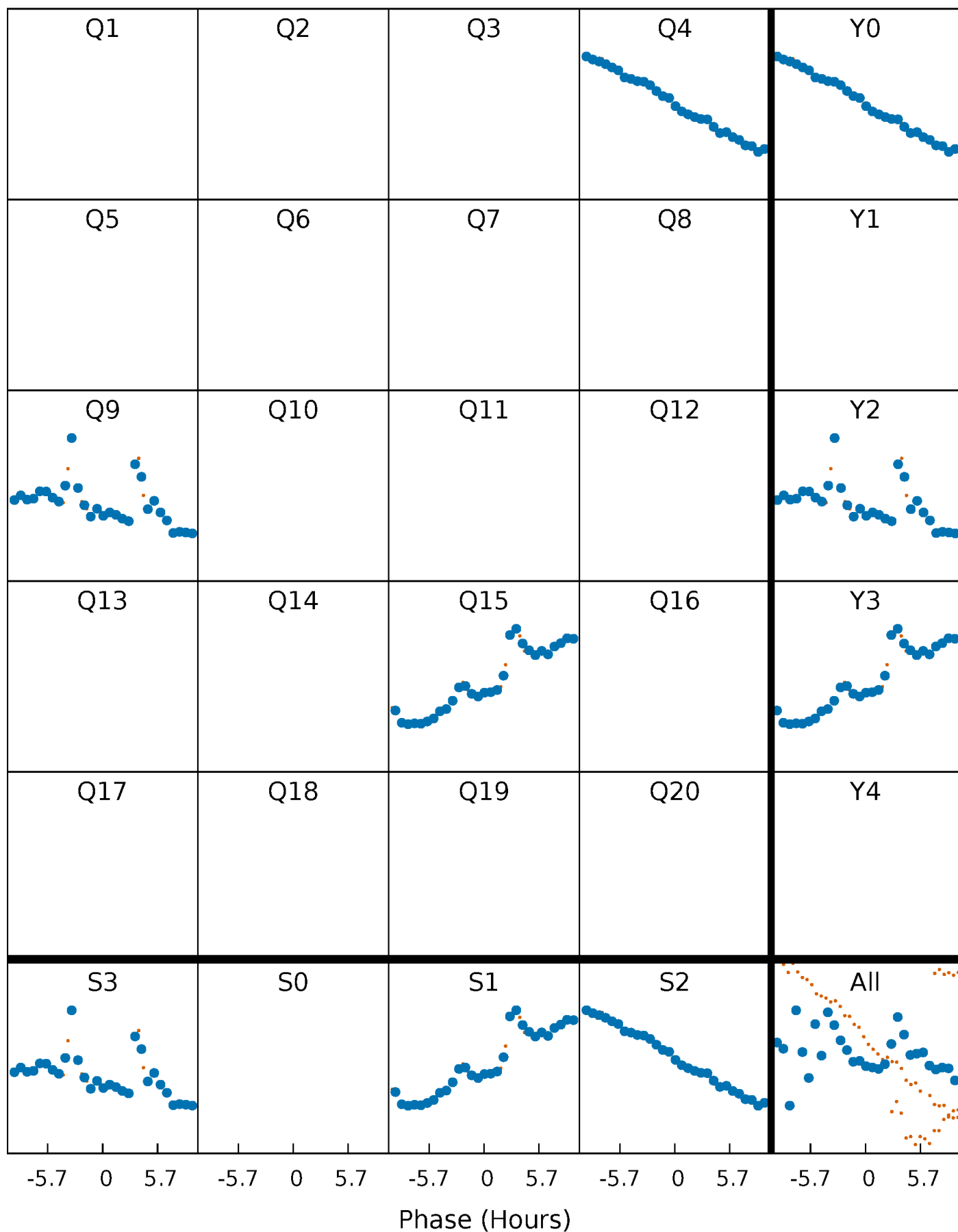


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



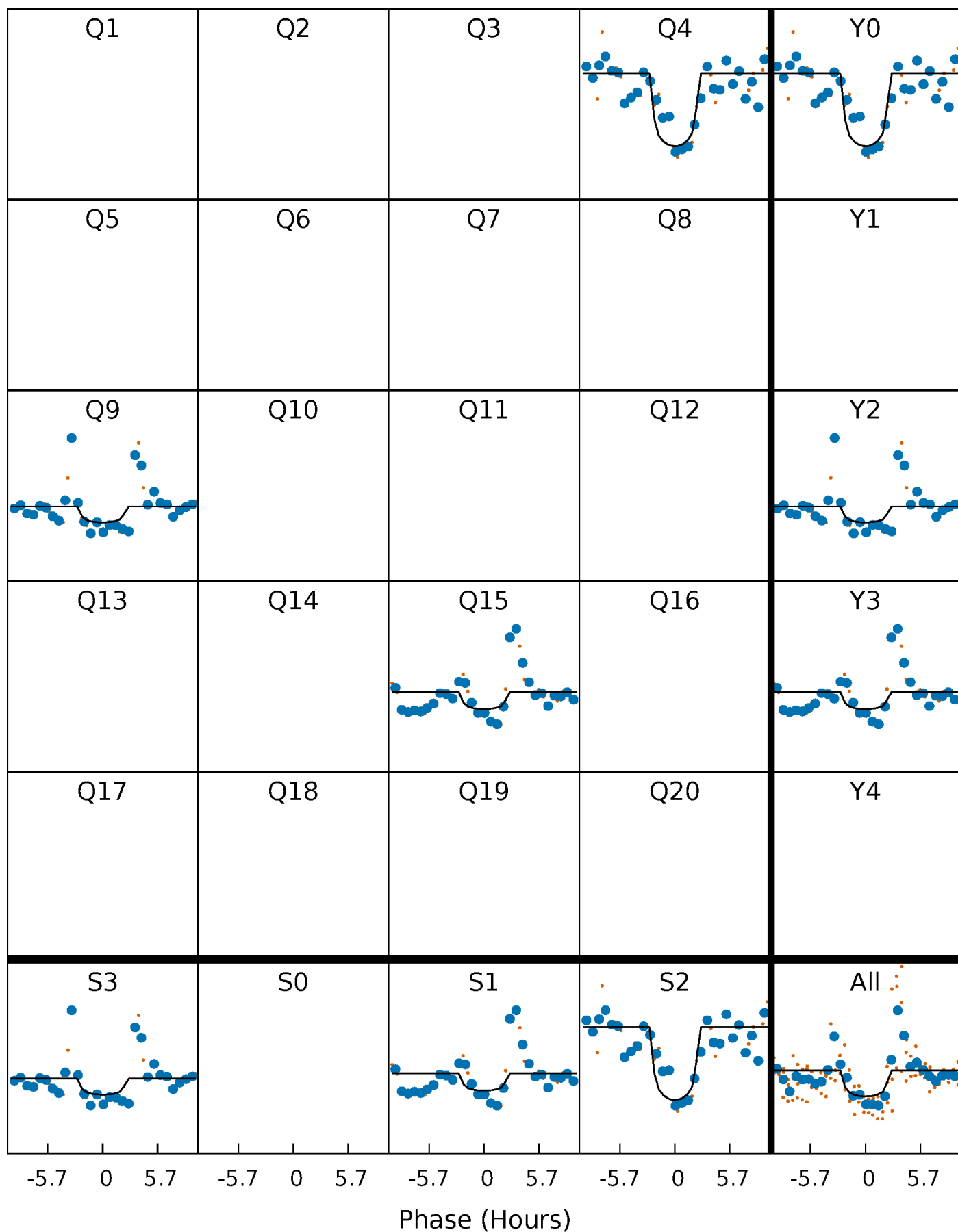
PDC Quarter-Phased Transit Curves

TCE 007459173-02 P=513.130888 Days $T_0=371.019532$ (BKJD)



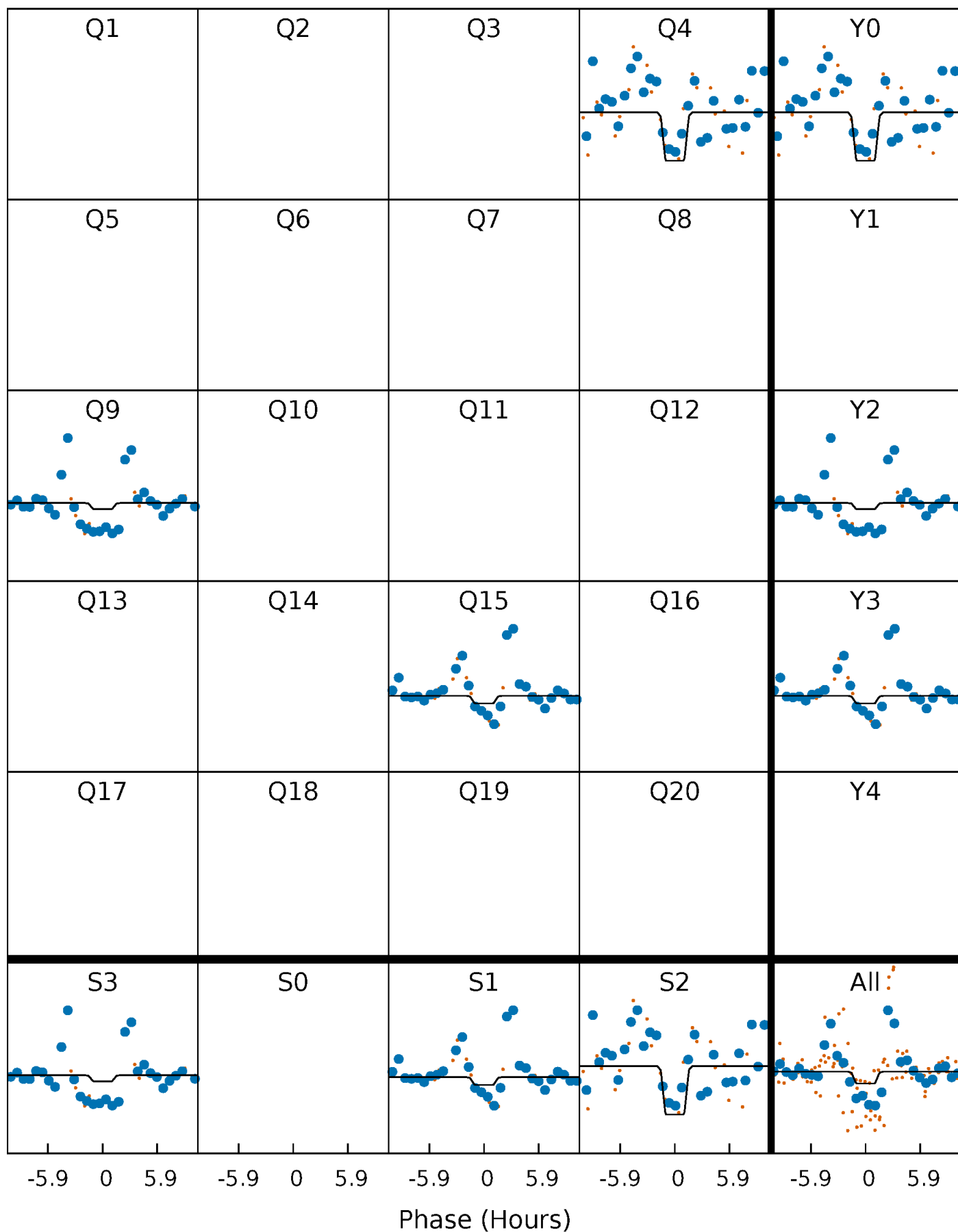
DV Quarter-Phased Transit Curves

TCE 007459173-02 $P=513.130888$ Days $T_0=371.019532$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

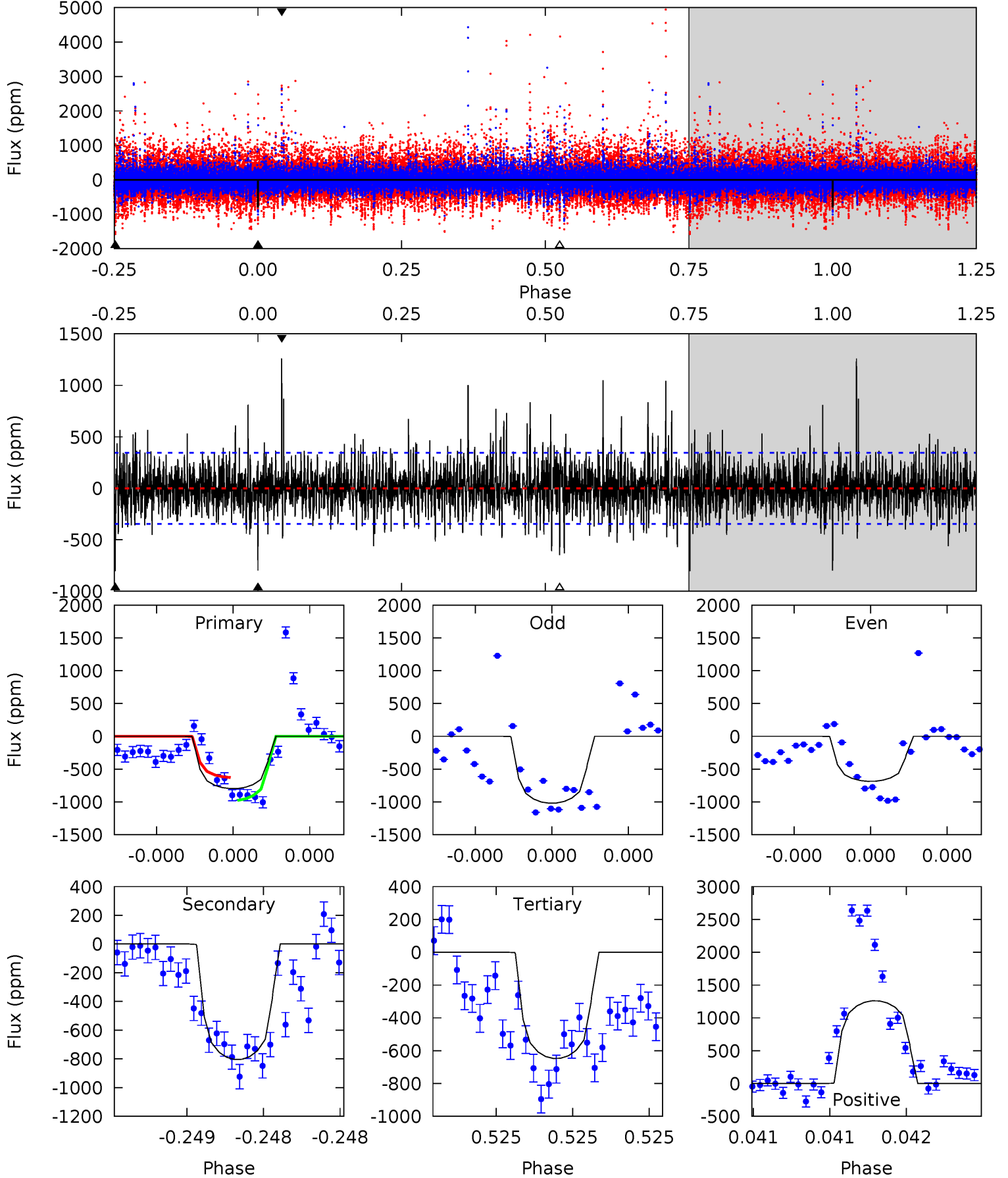
TCE 007459173-02 P=513.107125 Days $T_0=371.075440$ (BKJD)



DV Model-Shift Uniqueness Test

007459173-02, P = 513.130888 Days, E = 371.019532 Days

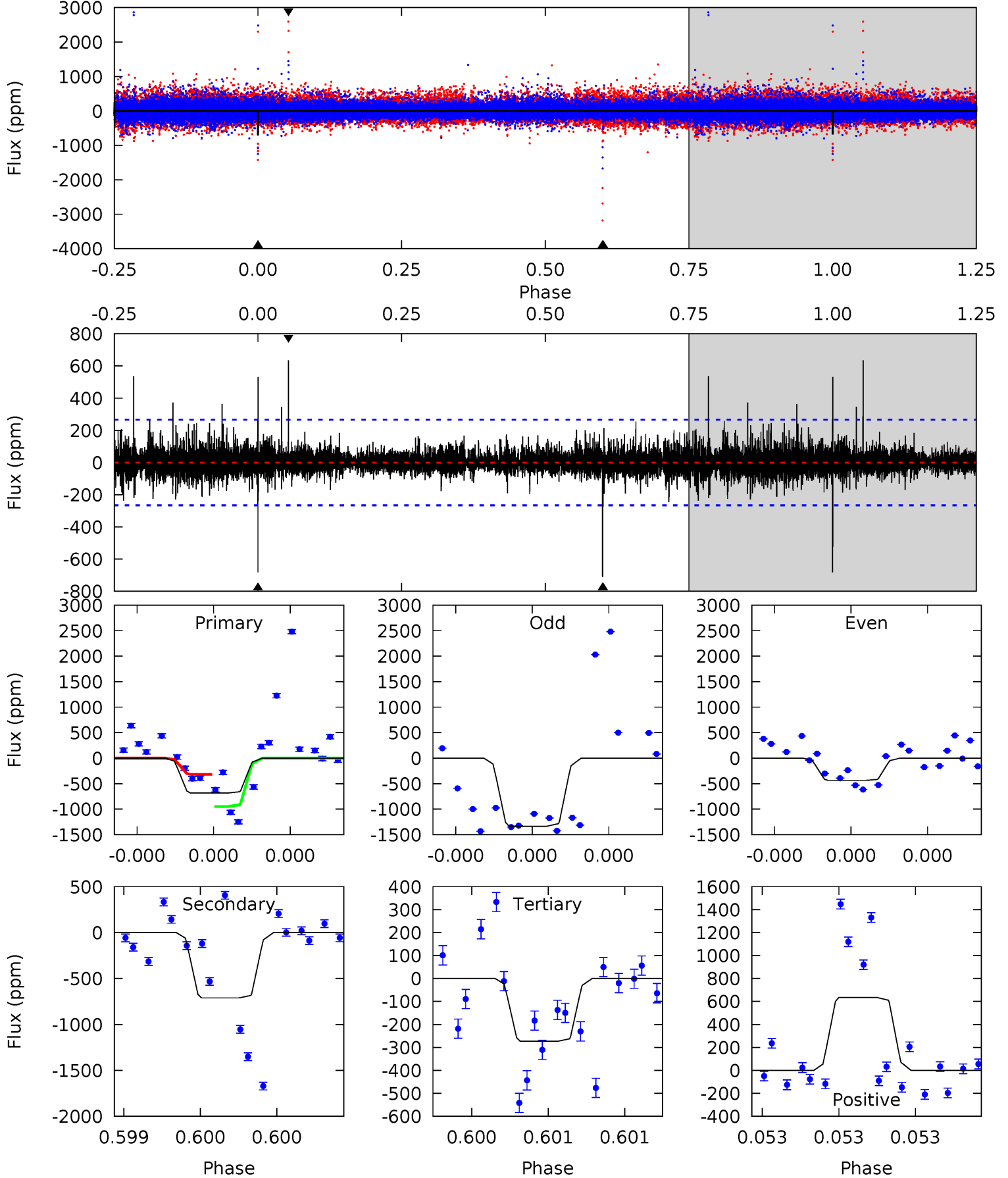
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	13.1	10.5	20.5	5.61	3.54	2.65	2.44	-7.51	2.55	-7.39	1.16	1.04	0.61	2.85



Alt Model-Shift Uniqueness Test

007459173-02, P = 513.107125 Days, E = 371.075440 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	15.2	5.85	13.6	5.70	3.67	1.05	8.77	1.02	9.38	1.63	9.37	1.05	0.47	6.49



Stellar Parameters For KIC 007459173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5605^{+169}_{-152}	$3.989^{+0.462}_{-0.165}$	$-0.160^{+0.300}_{-0.250}$	$1.642^{+0.476}_{-0.774}$	$0.959^{+0.111}_{-0.123}$	$0.305^{+1.403}_{-0.131}$
	+3%/-3%	+12%/-4%	+188%/-156%	+29%/-47%	+12%/-13%	+460%/-43%
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 007459173-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-804 ± 62	$5.36^{+5.04}_{-3.41}$	392^{+30}_{-45}	5320^{+3804}_{-1140}	$24824^{+147560}_{-18482}$
Alt.	-712 ± 47	$4.46^{+4.10}_{-3.07}$	392^{+35}_{-49}	5479^{+5396}_{-1179}	$29331^{+276560}_{-21223}$

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 $A_{\text{obs}} \gg 1.0$

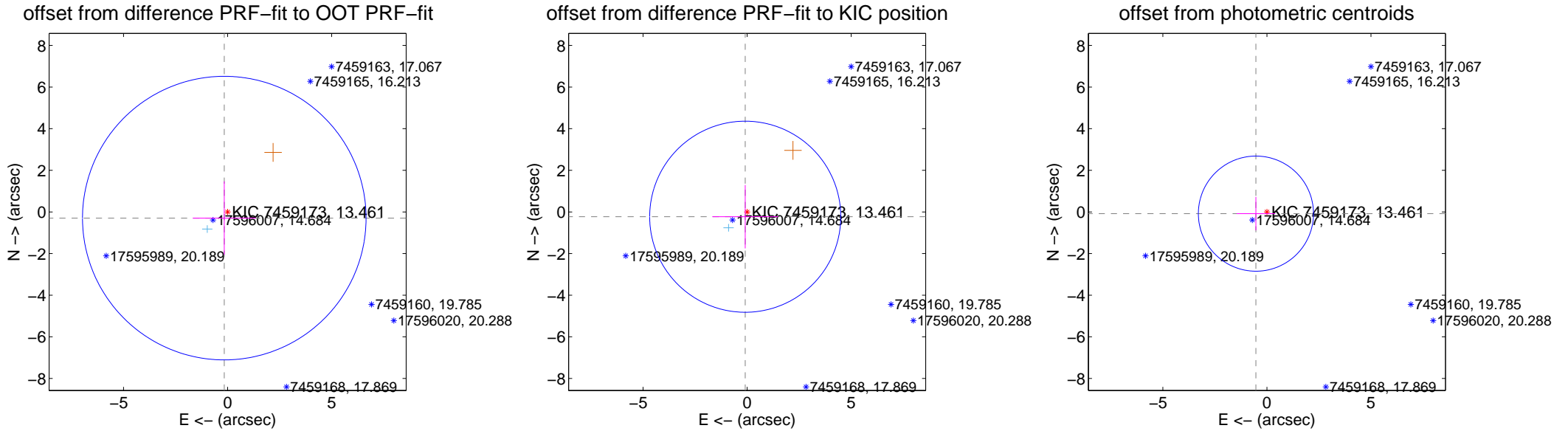
DV Centroid Data

Supplemental centroid analysis for 007459173-02. Kepler magnitude: 13.46. Transit SNR 6.28

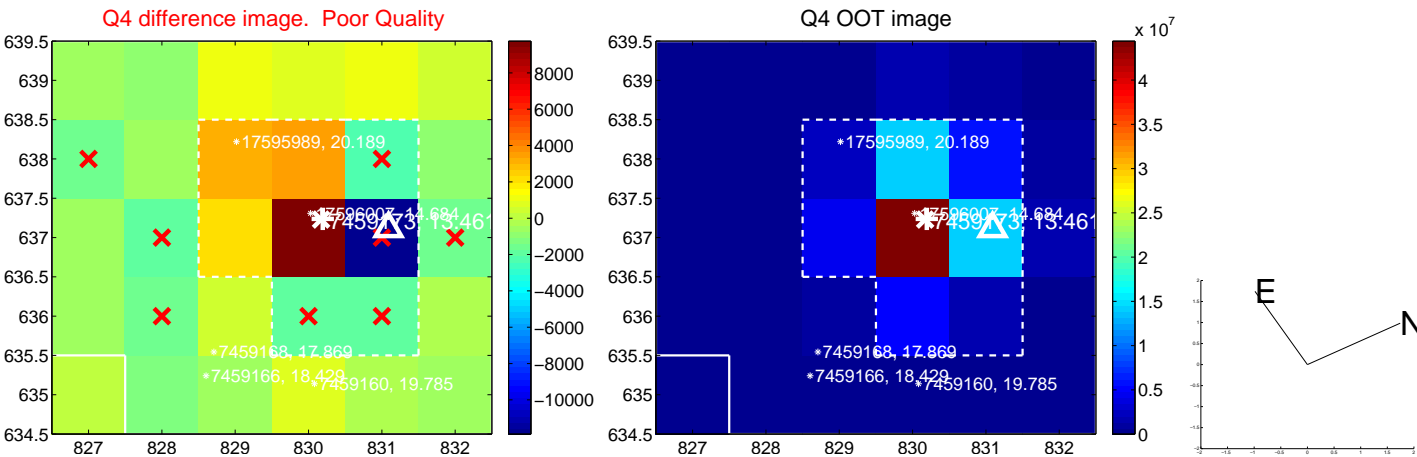
There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.337 ± 2.271	0.15	0.159 ± 1.516	-0.296 ± 1.765
PRF-fit source offset from KIC position	0.248 ± 1.530	0.16	0.091 ± 1.585	-0.230 ± 1.522
photometric centroid source offset	0.53 ± 0.92	0.58	0.53 ± 0.92	-0.08 ± 0.80



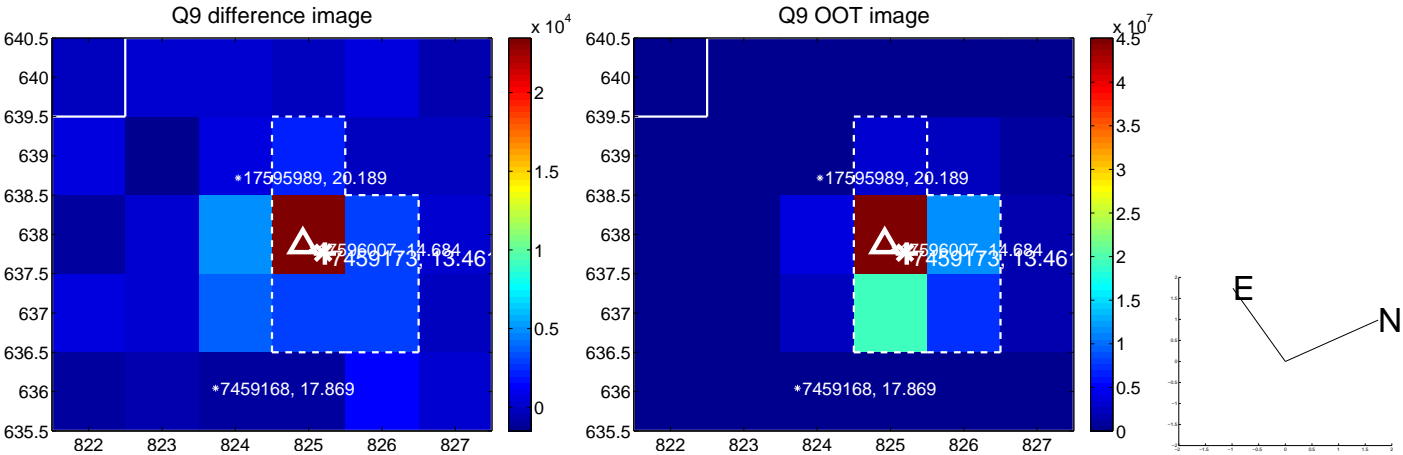
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



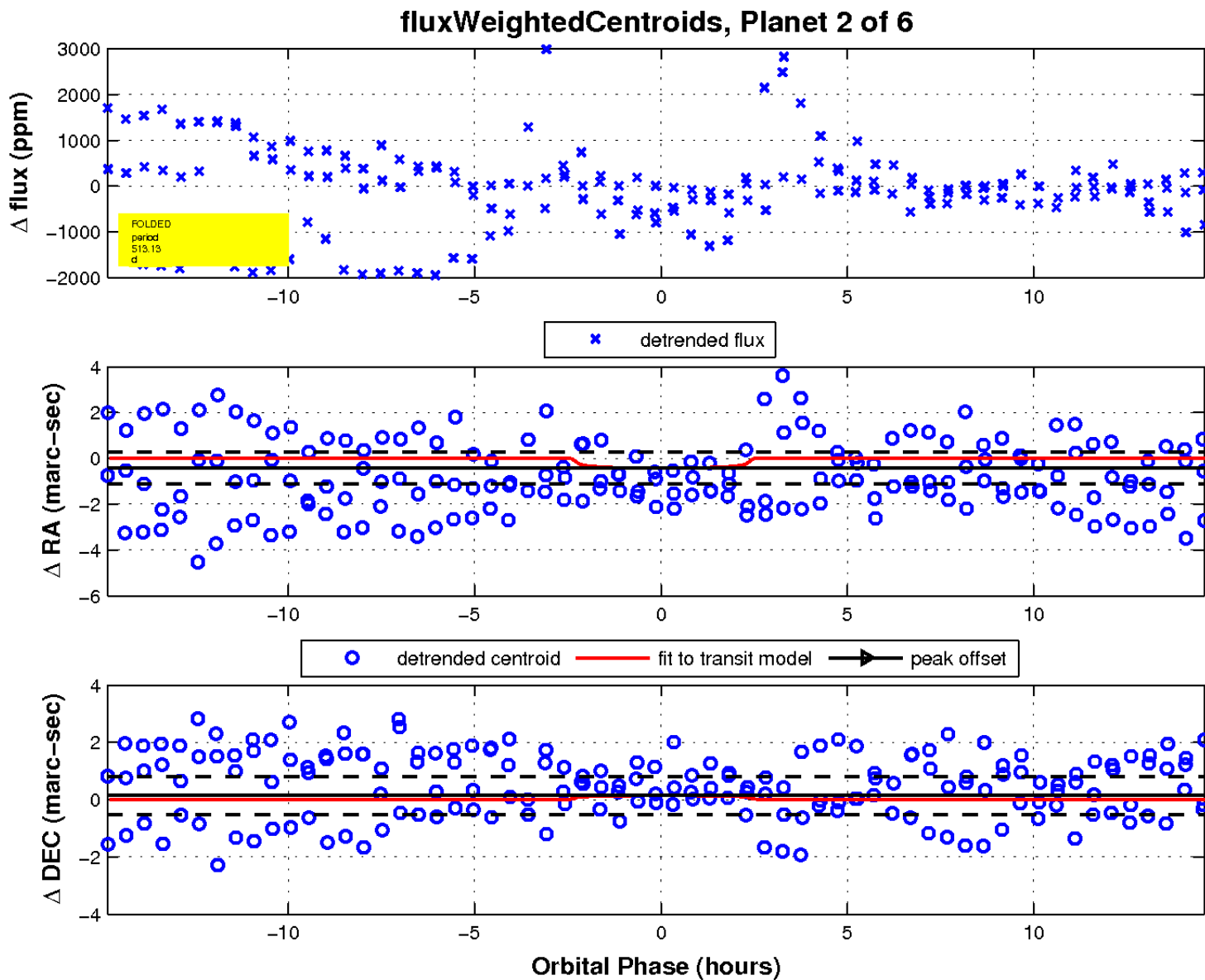
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

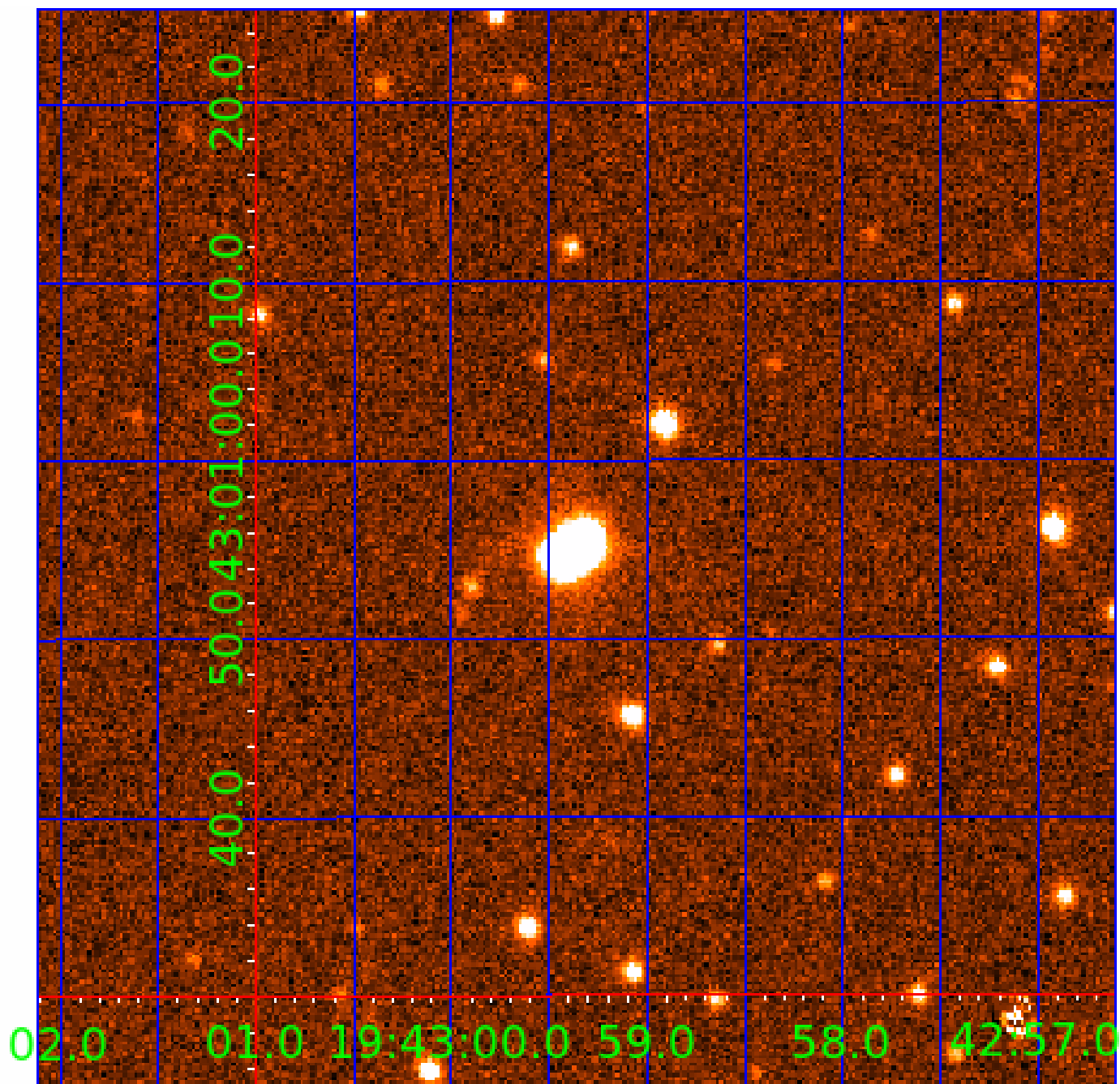


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007459173

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})
007459173-01	OBS	No	540.446929	203.973894	1441.5	3.449	16.6	12.1	1.64	5605	6.16	1.45
007459173-02	OBS	No	513.130888	371.019532	685.7	4.951	16.2	6.3	1.64	5605	4.62	1.56
007459173-03	OBS	No	494.596011	154.218462	1014.3	5.446	14.9	9.5	1.64	5605	5.44	1.64
007459173-05	OBS	No	299.863108	334.084916	681.4	7.342	13.0	6.9	1.64	5605	4.74	3.19
007459173-06	OBS	No	494.958274	393.893323	814.0	3.631	11.7	8.4	1.64	5605	5.01	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007459173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
007459173-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

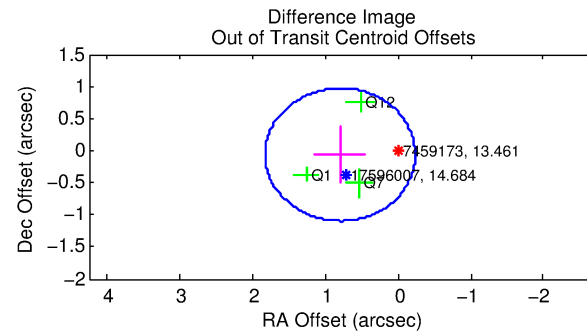
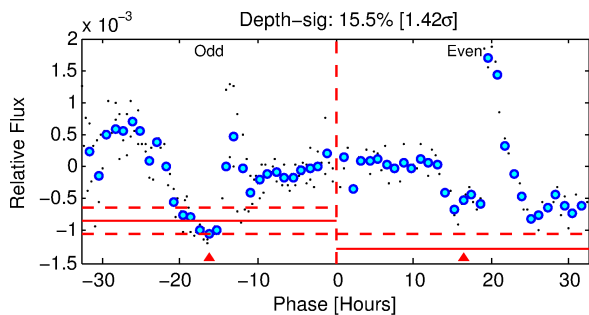
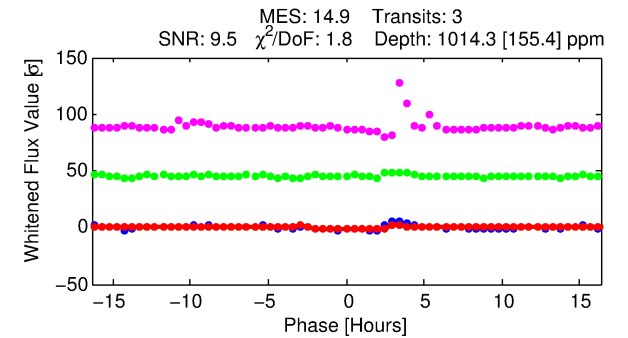
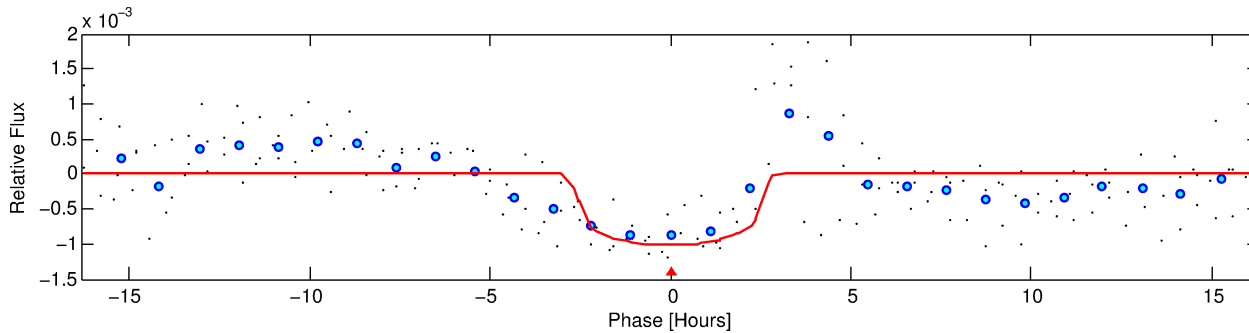
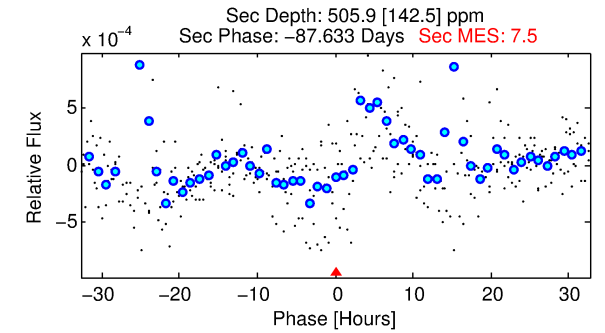
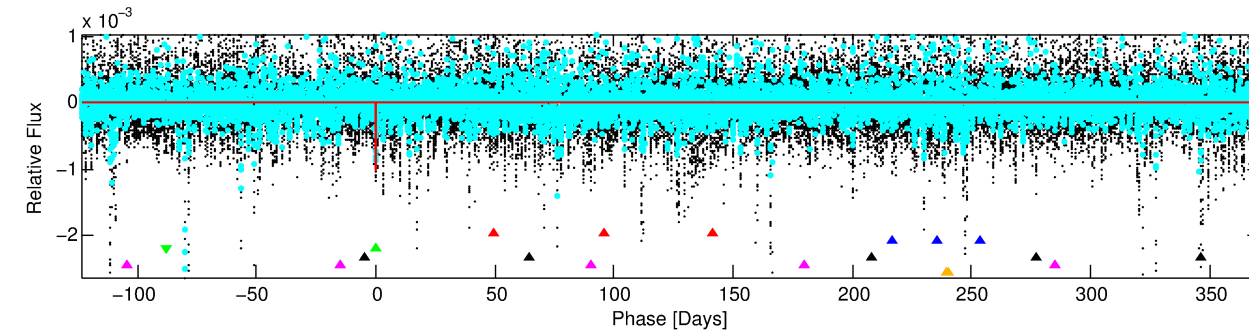
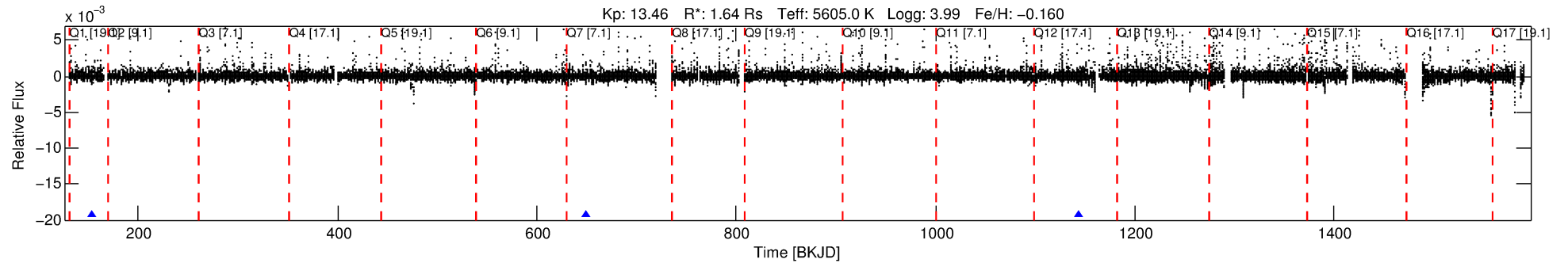
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007459173-03

No Significant Match Found

DV One-Page Summary

KIC: 7459173 Candidate: 3 of 6 Period: 494.596 d



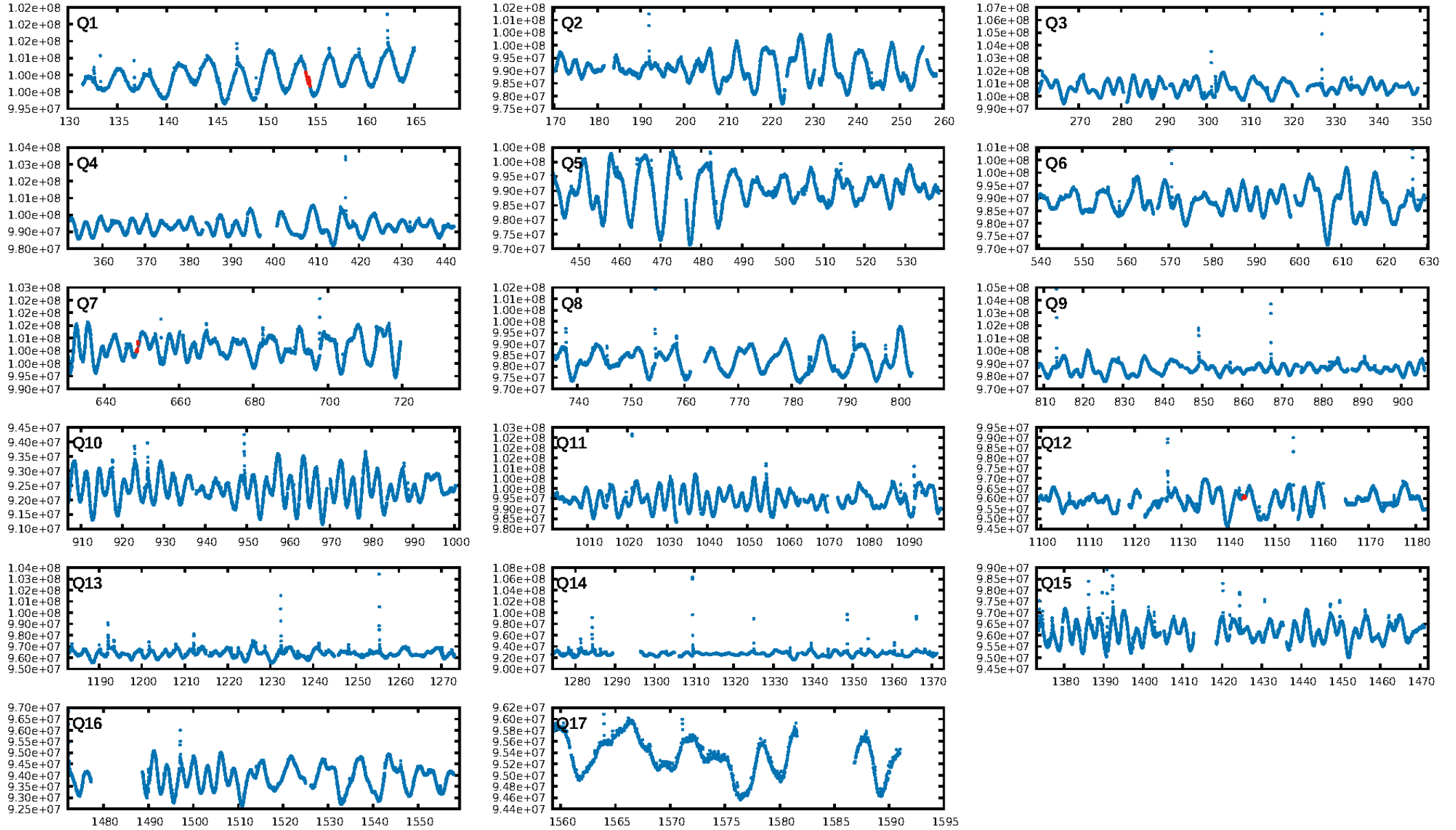
DV Fit Results:

Period = 494.59601 [0.00503] d
Epoch = 154.2185 [0.0058] BKJD
Rp/R* = 0.0304 [0.0137]
a/R* = 578.89 [1053.37]
b = 0.60 [1.92]
Seff = 1.64 [1.28]
Teq = 288 [57] K
Rp = 5.44 [3.55] Re
a = 1.2072 [0.5720] AU
Ag = 13686.50 [16720.76] [0.82σ]
Teffp = 4823 [1147] K [3.95σ]

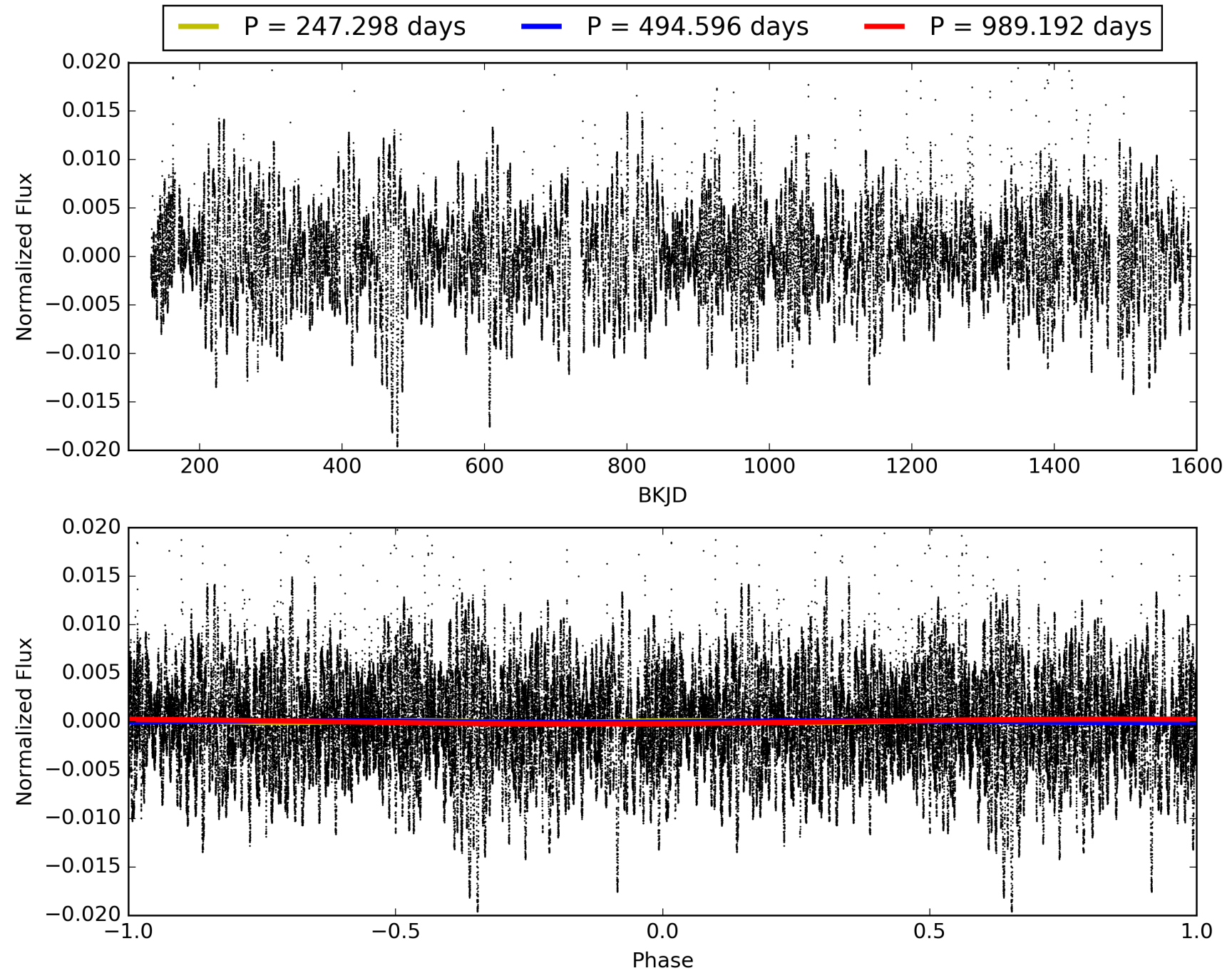
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [511.26σ]
LongPeriod-sig: 81.6% [1.33σ]
ModelChiSquare2-sig: 6.0%
ModelChiSquareGof-sig: 35.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 2.018
Centroid-sig: 93.8%
Centroid-so: 0.073 arcsec [0.12σ]
OotOffset-rm: 0.798 arcsec [2.32σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-rm: 0.785 arcsec [2.79σ]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007459173-03, PDC Light Curves

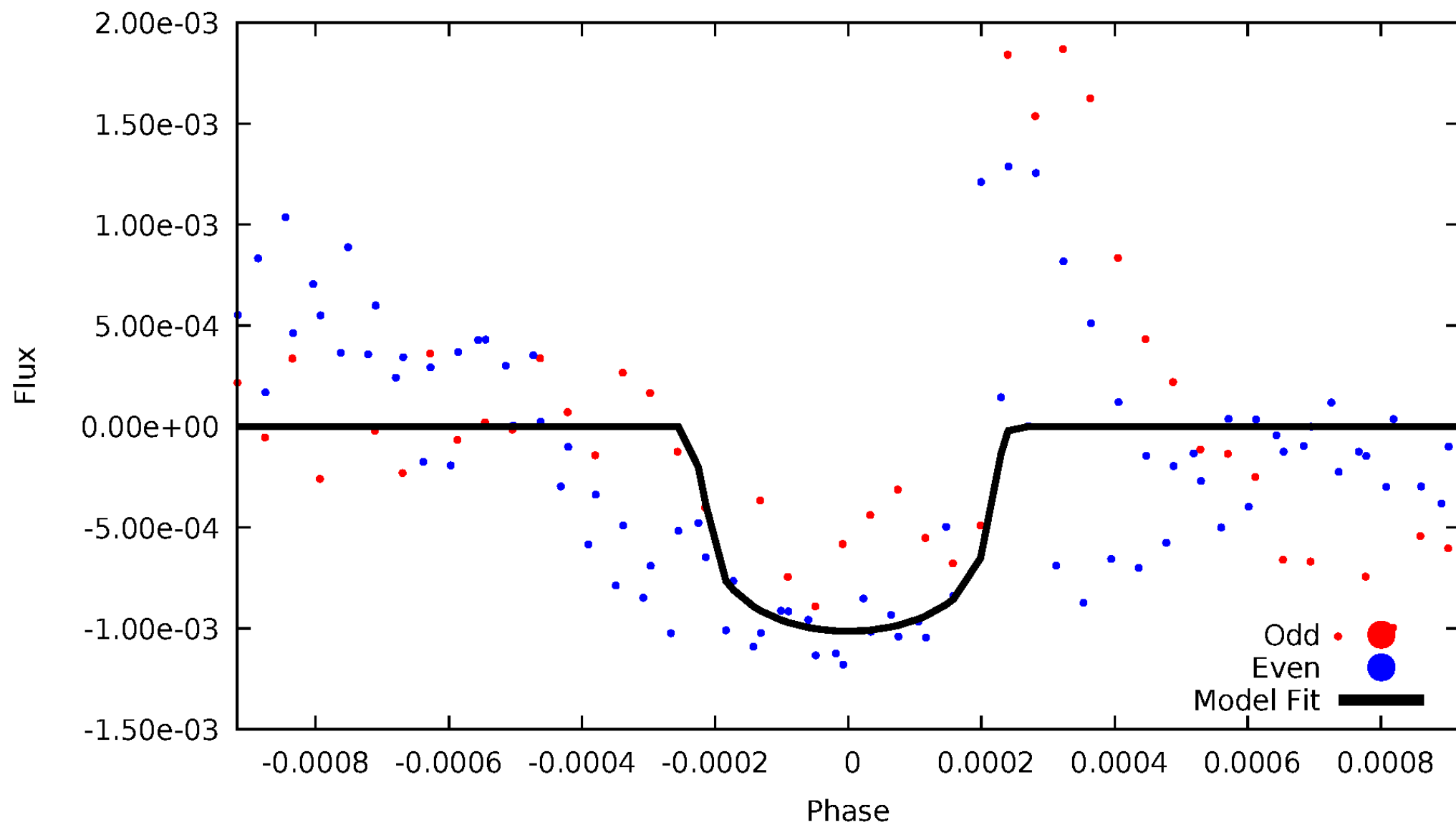


TCE 007459173-03



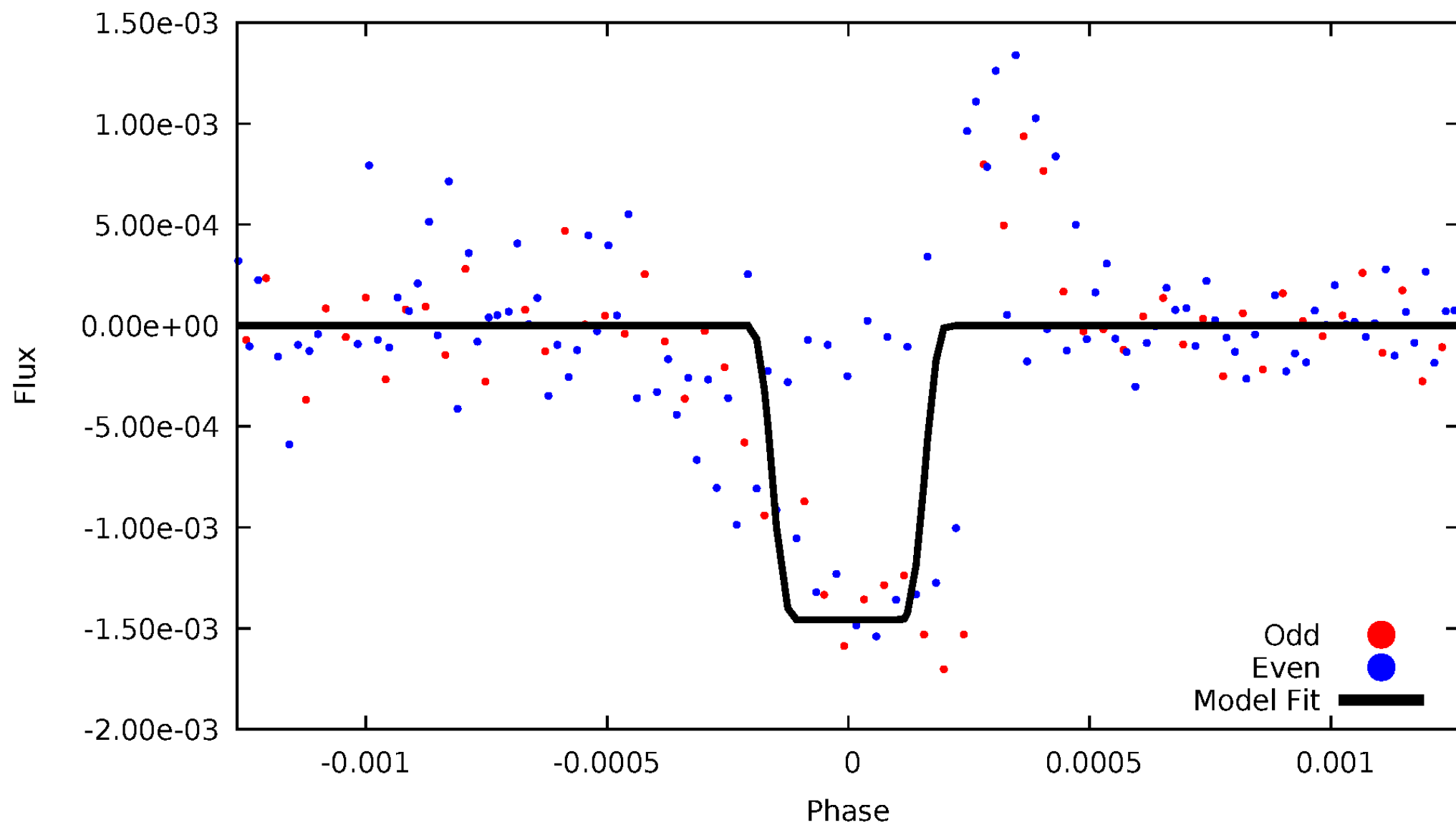
DV Odd/Even

TCE 007459173-03



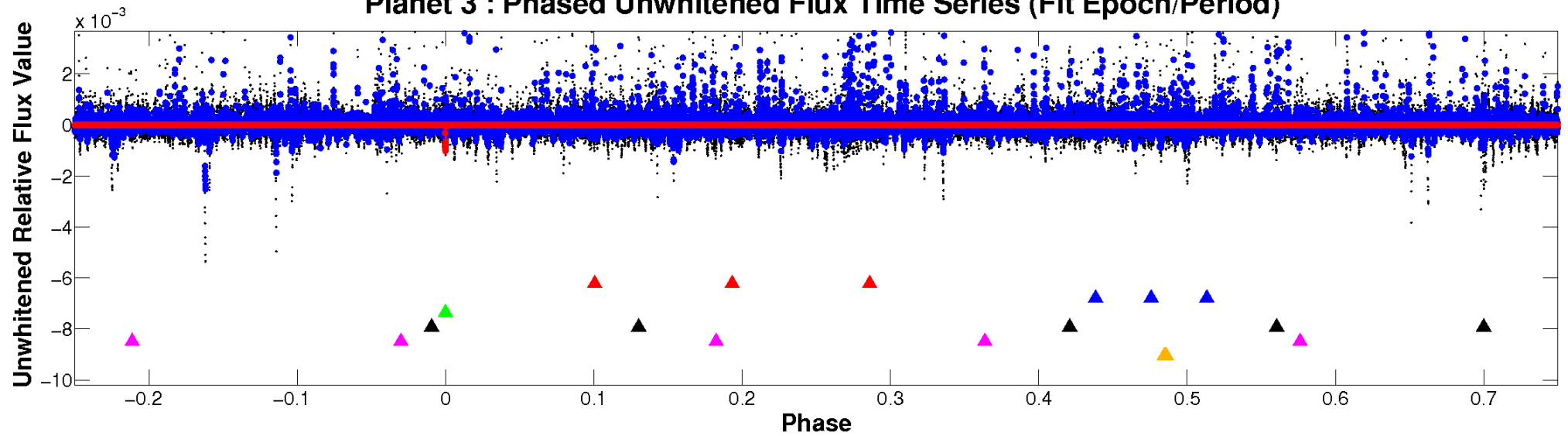
ALT Odd/Even

TCE 007459173-03

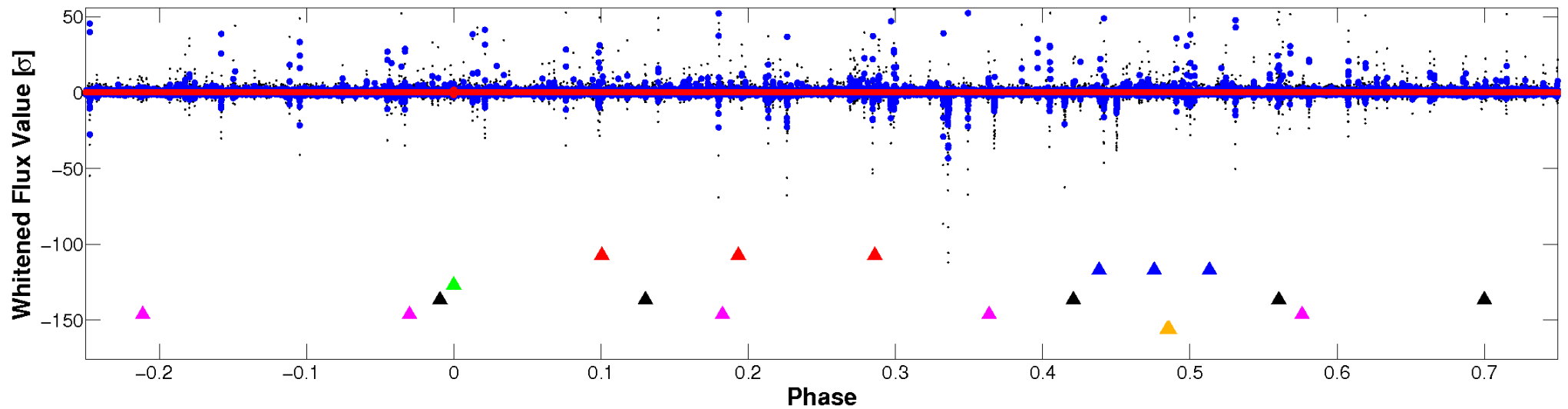


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

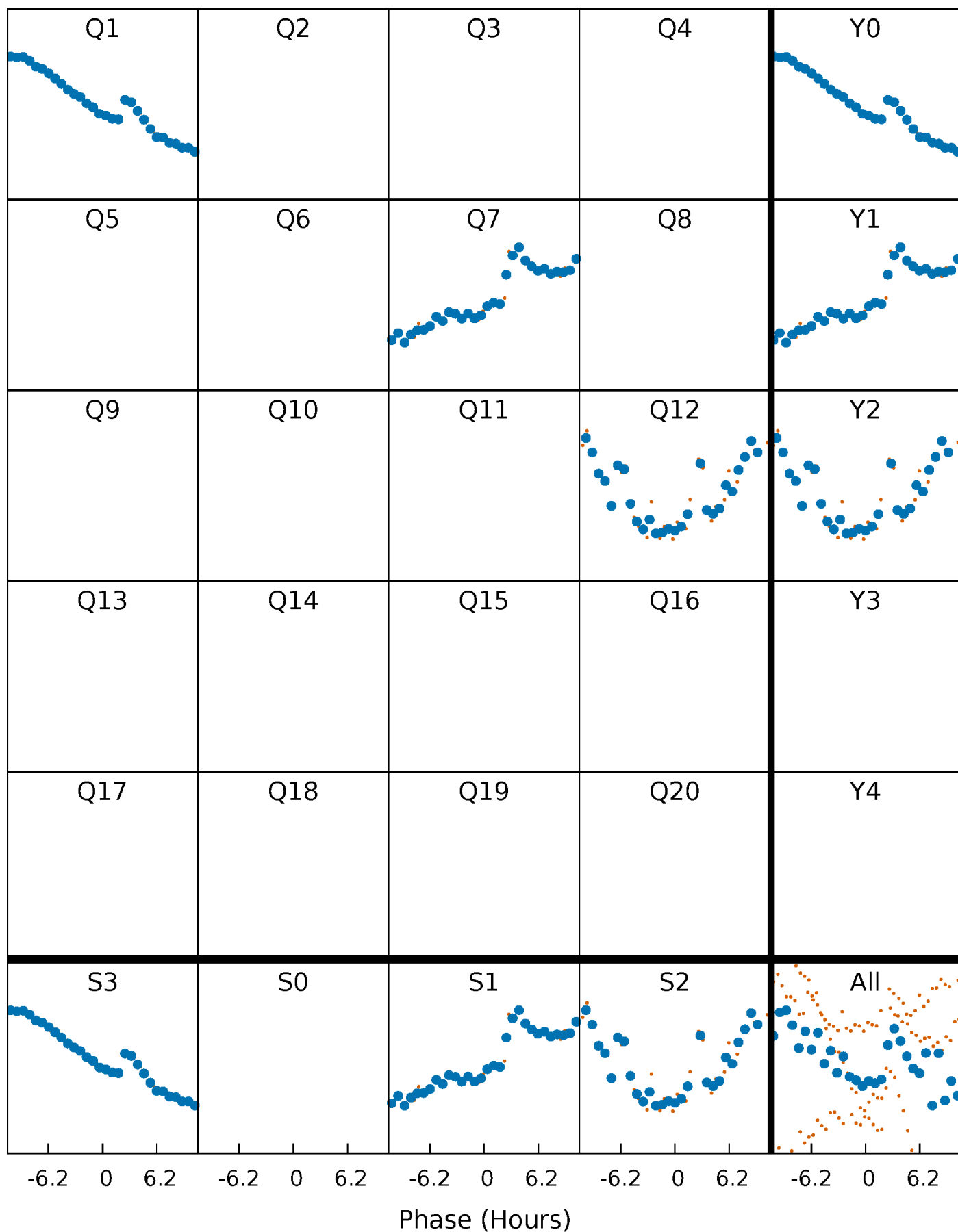


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



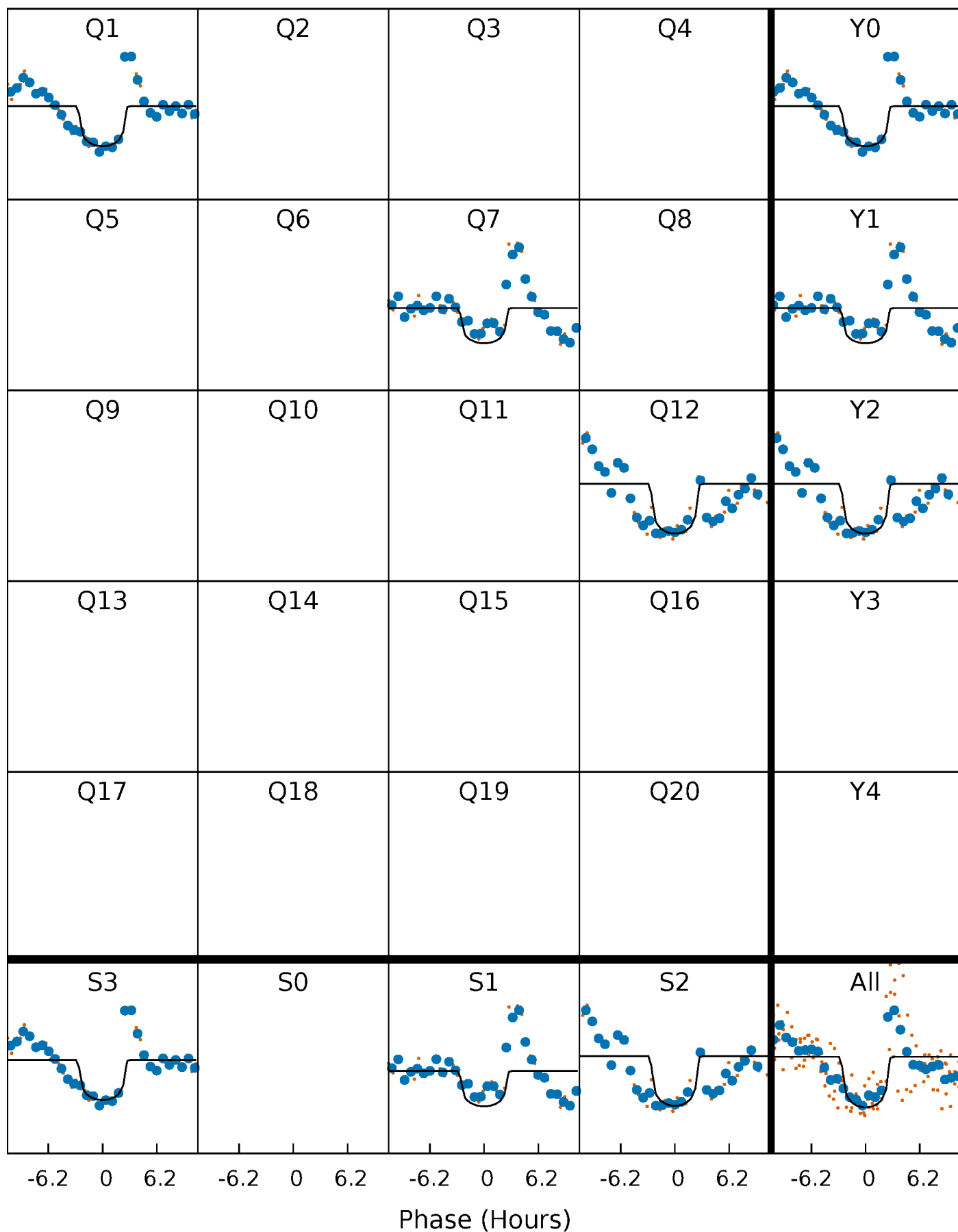
PDC Quarter-Phased Transit Curves

TCE 007459173-03 P=494.596011 Days $T_0=154.218462$ (BKJD)



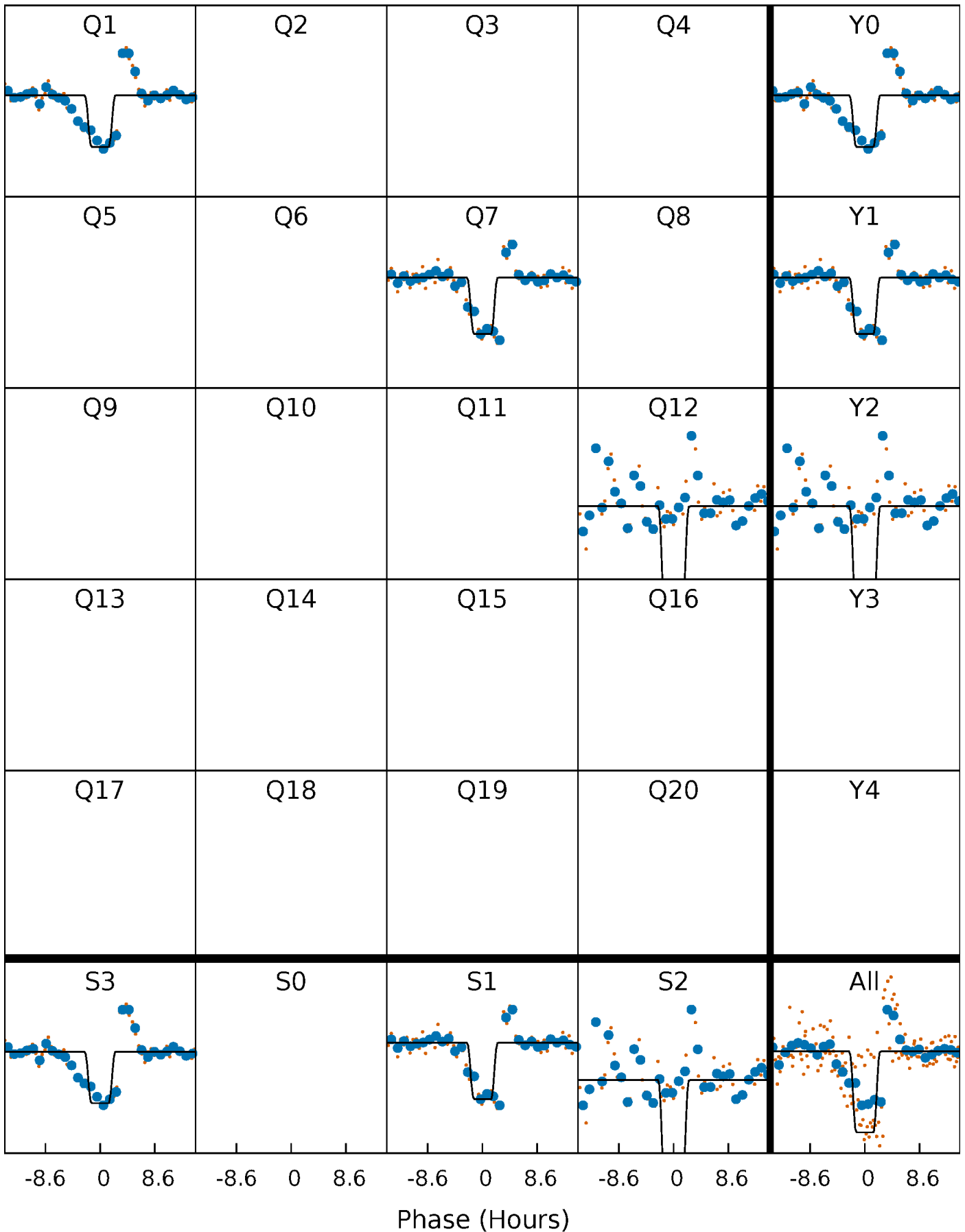
DV Quarter-Phased Transit Curves

TCE 007459173-03 P=494.596011 Days $T_0=154.218462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

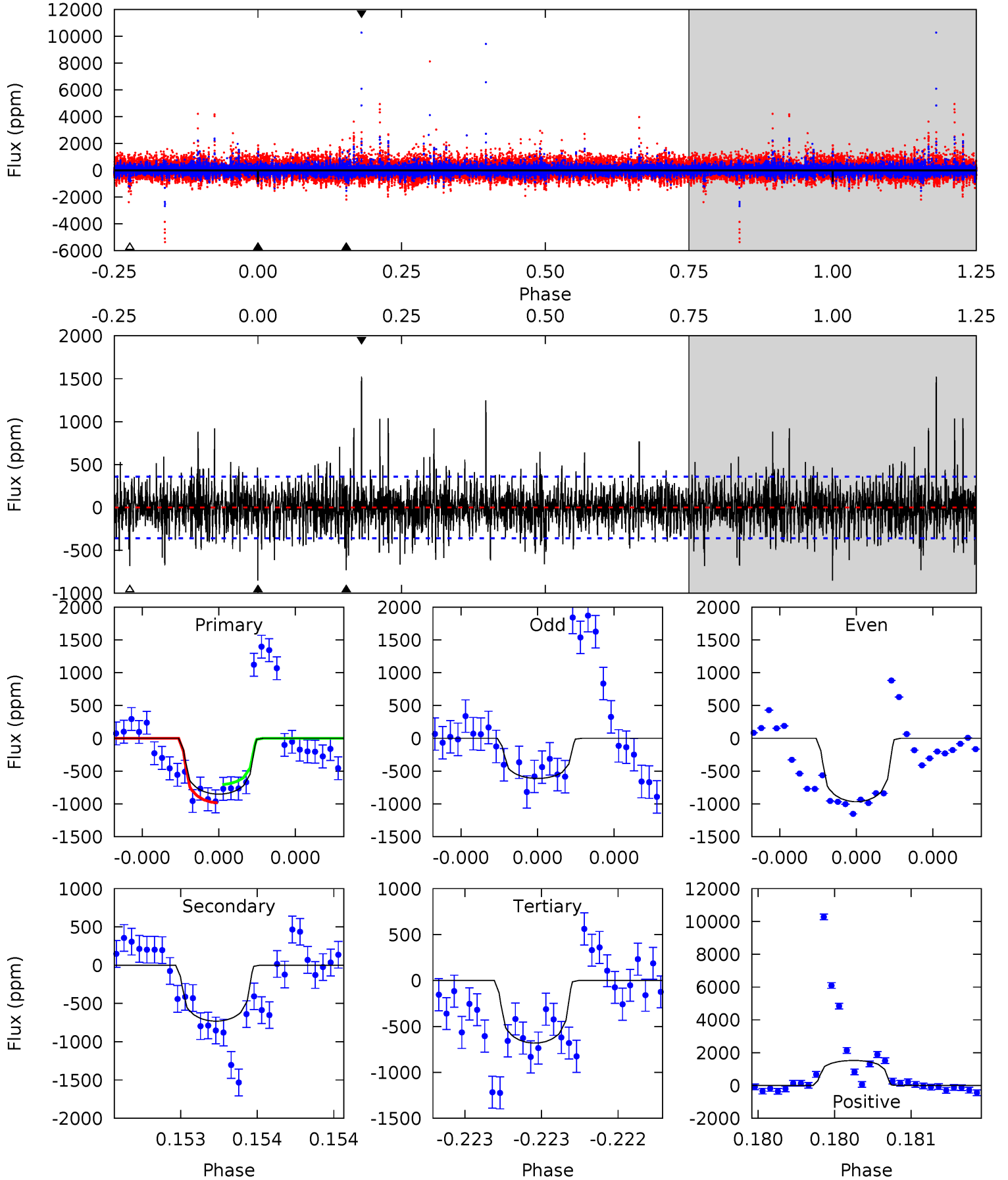
TCE 007459173-03 P=494.607942 Days $T_0=154.186190$ (BKJD)



DV Model-Shift Uniqueness Test

007459173-03, P = 494.596011 Days, E = 154.218462 Days

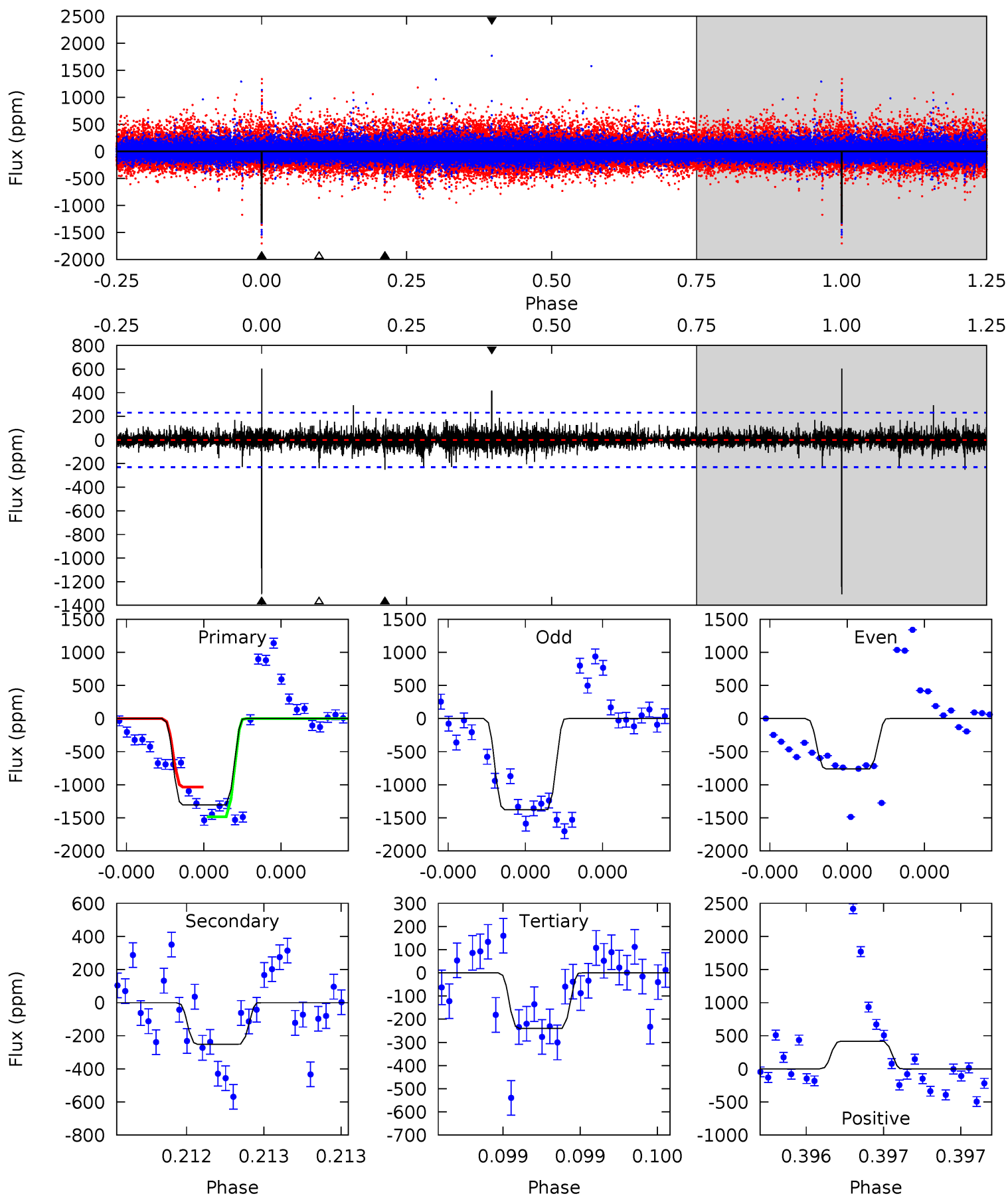
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	11.3	10.6	23.6	5.58	3.49	2.66	2.64	-10.4	0.77	-12.3	1.50	0.91	0.64	2.19



Alt Model-Shift Uniqueness Test

007459173-03, P = 494.607942 Days, E = 154.186190 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.7	6.11	5.82	10.1	5.61	3.54	0.97	25.9	21.6	0.29	-4.02	7.92	0.69	0.32	5.60



Stellar Parameters For KIC 007459173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5605^{+169}_{-152}	$3.989^{+0.462}_{-0.165}$	$-0.160^{+0.300}_{-0.250}$	$1.642^{+0.476}_{-0.774}$	$0.959^{+0.111}_{-0.123}$	$0.305^{+1.403}_{-0.131}$
	+3%/-3%	+12%/-4%	+188%/-156%	+29%/-47%	+12%/-13%	+460%/-43%
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 007459173-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-731 ± 64	$5.18^{+2.69}_{-2.35}$	398^{+33}_{-51}	5270^{+1506}_{-752}	22282^{+48194}_{-12853}
Alt.	-251 ± 41	$6.43^{+3.05}_{-2.77}$	399^{+35}_{-50}	3948^{+684}_{-404}	4820^{+9951}_{-2679}

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 $A_{\text{obs}} \gg 1.0$

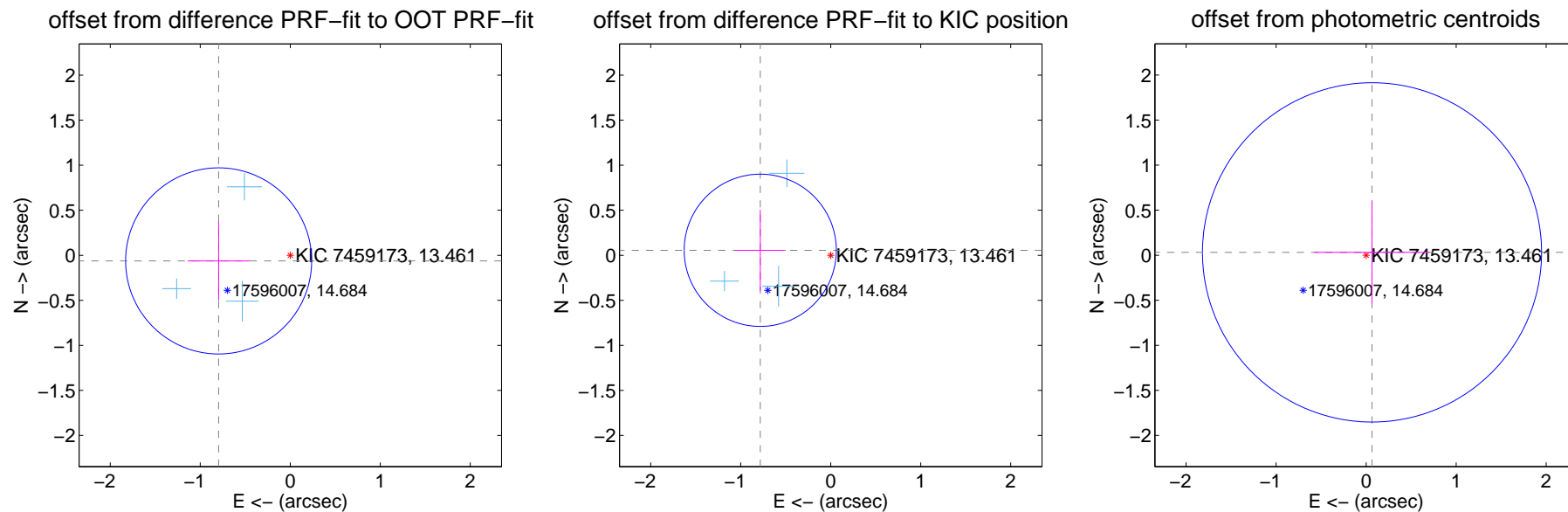
DV Centroid Data

Supplemental centroid analysis for 007459173-03. Kepler magnitude: 13.46. Transit SNR 9.48

There are 3 quarters with good PRF difference image offsets

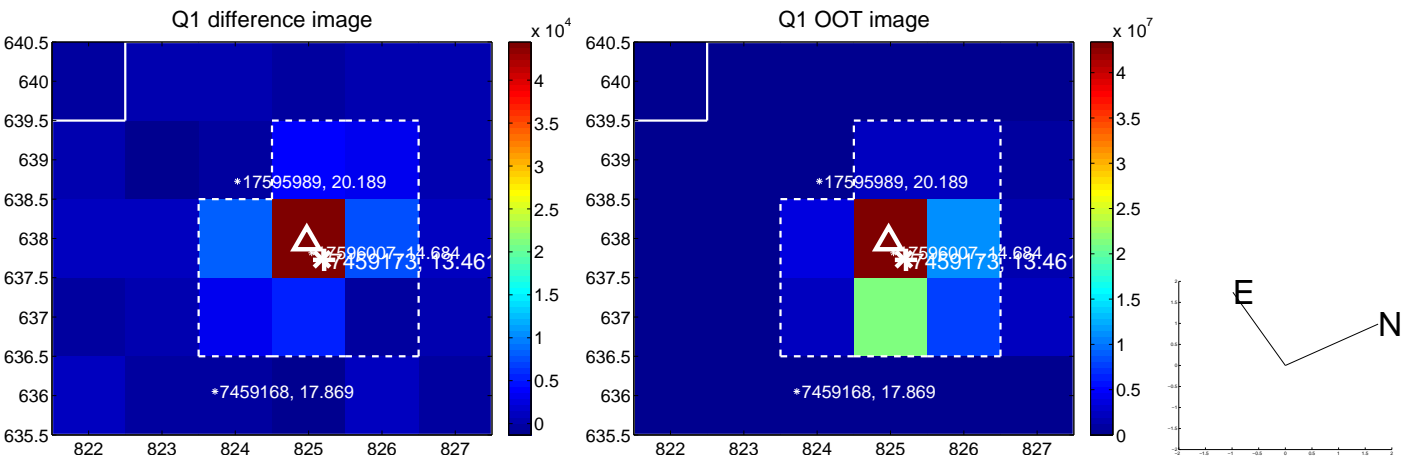
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.798 ± 0.345	2.32	0.796 ± 0.344	-0.063 ± 0.439
PRF-fit source offset from KIC position	0.785 ± 0.282	2.79	0.783 ± 0.281	0.055 ± 0.449
photometric centroid source offset	0.07 ± 0.63	0.12	-0.07 ± 0.64	0.03 ± 0.57



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



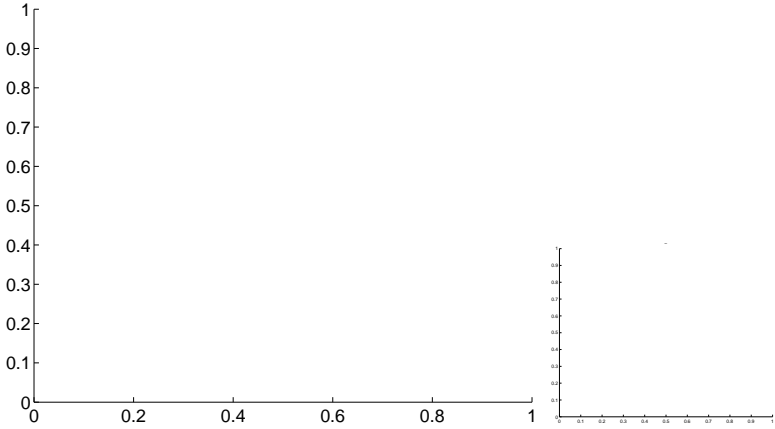
Q5 no OOT image



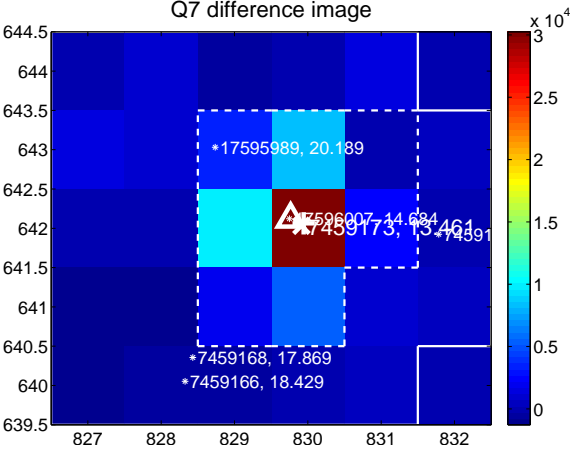
Q6 no difference image



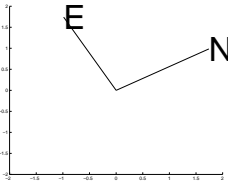
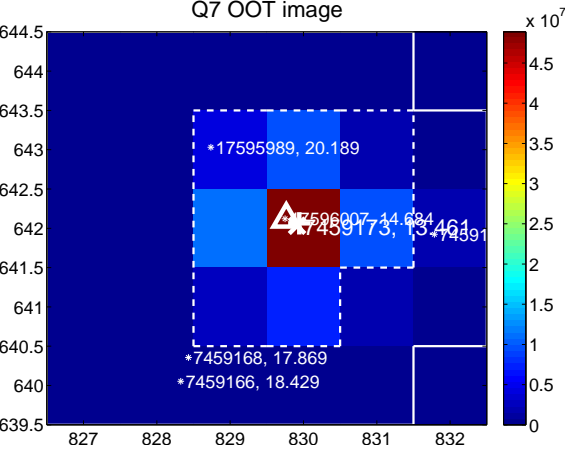
Q6 no OOT image



Q7 difference image



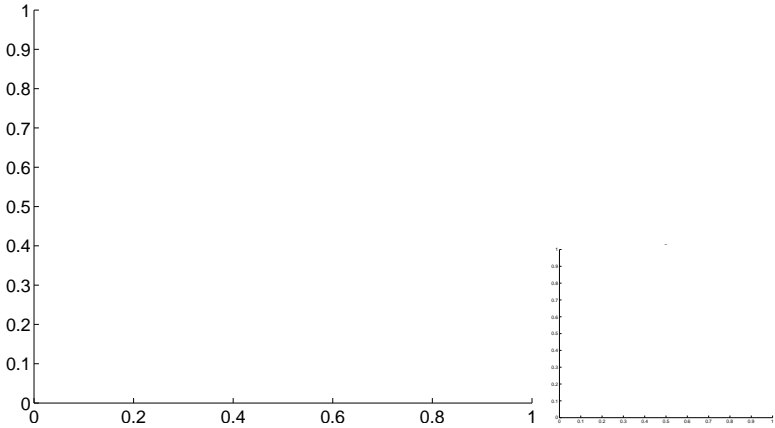
Q7 OOT image



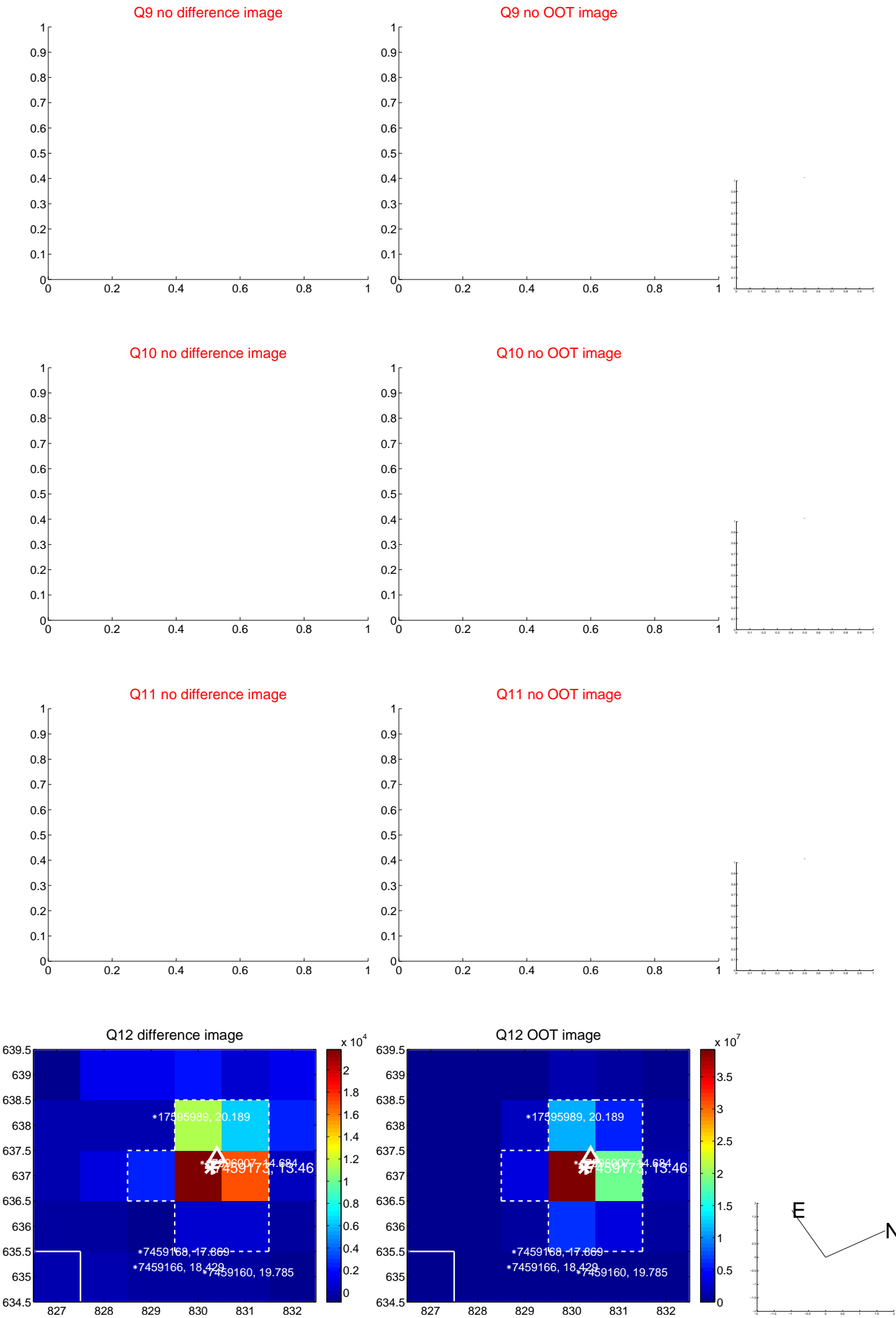
Q8 no difference image



Q8 no OOT image



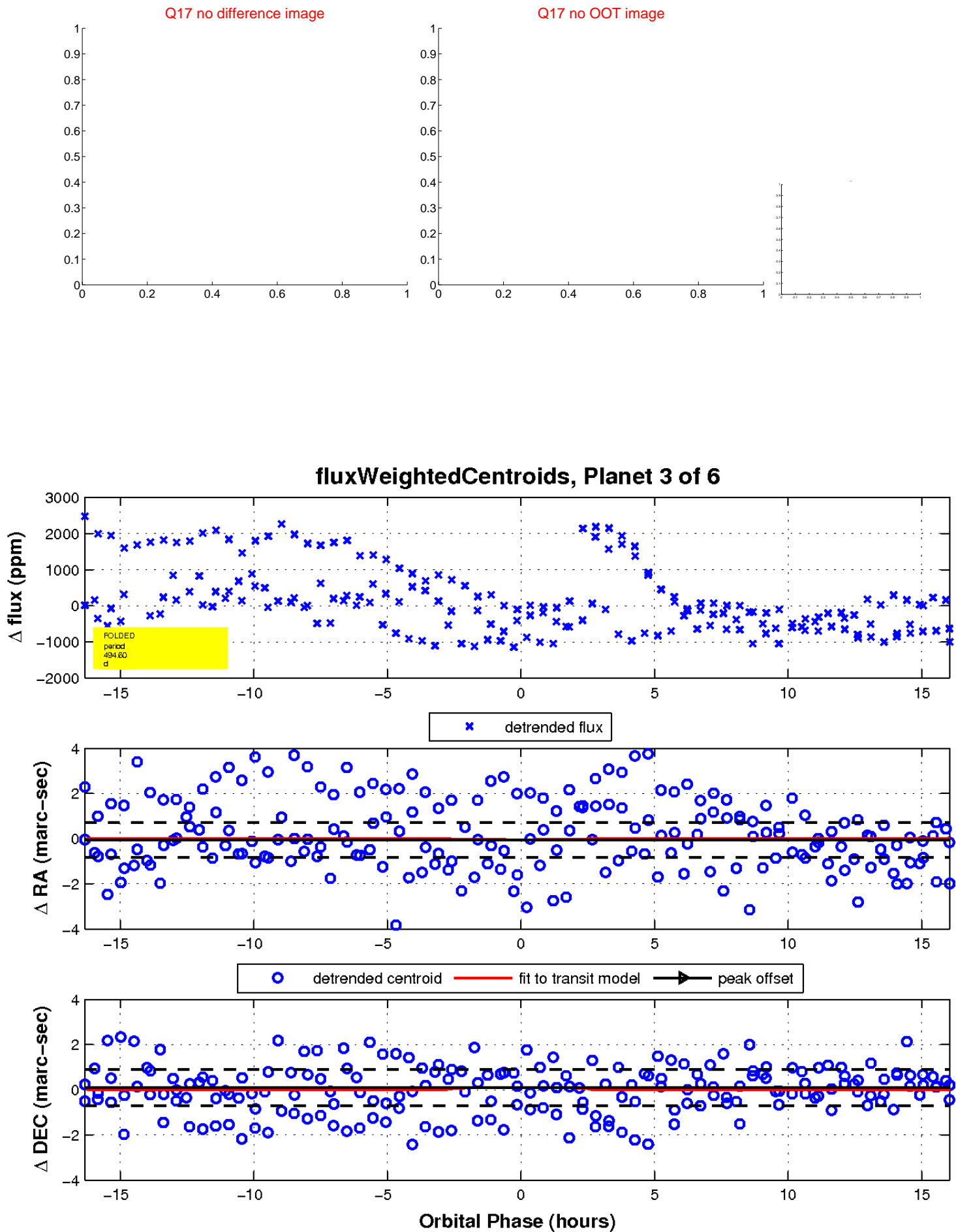
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

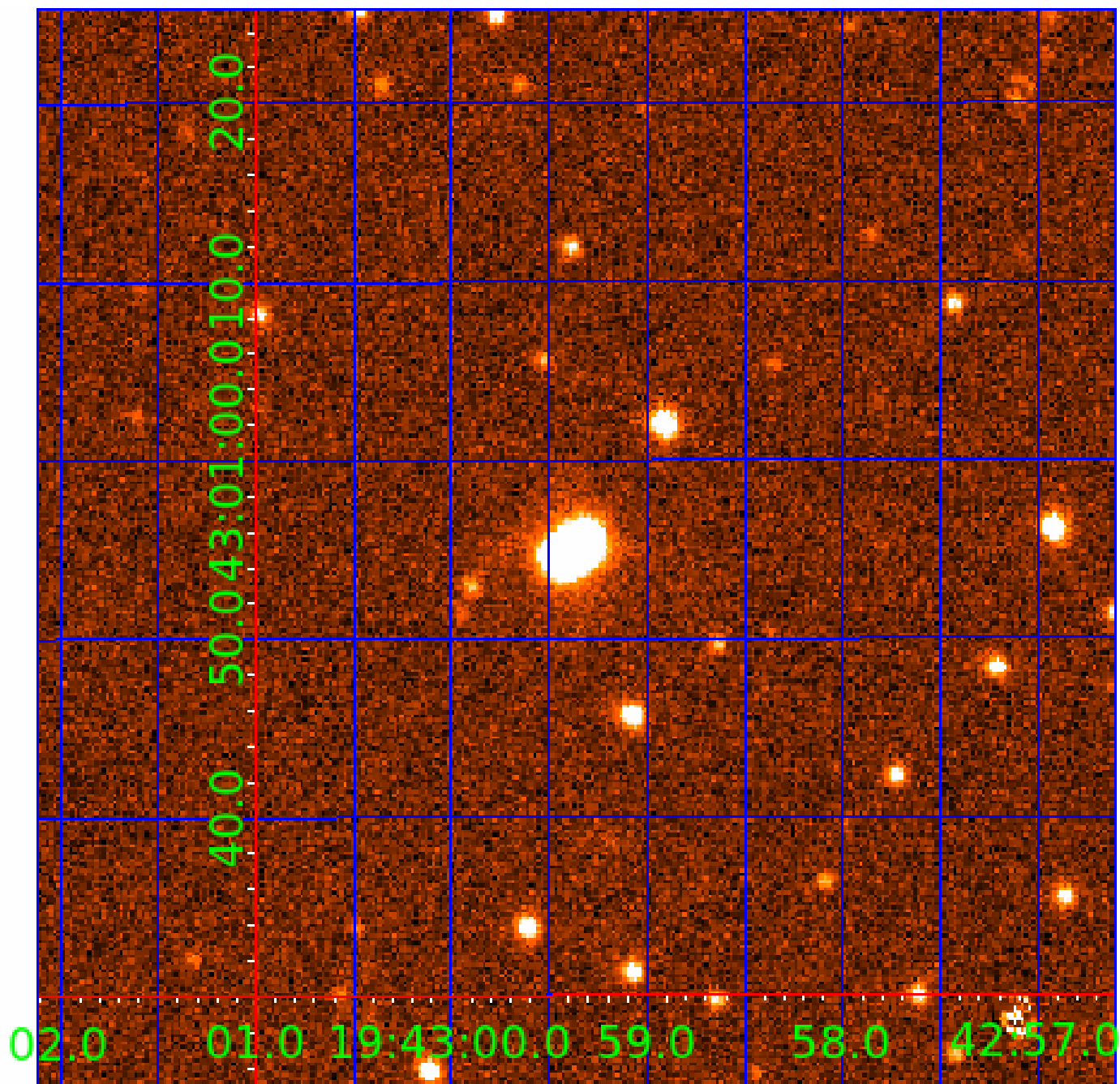


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007459173

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})
007459173-01	OBS	No	540.446929	203.973894	1441.5	3.449	16.6	12.1	1.64	5605	6.16	1.45
007459173-02	OBS	No	513.130888	371.019532	685.7	4.951	16.2	6.3	1.64	5605	4.62	1.56
007459173-03	OBS	No	494.596011	154.218462	1014.3	5.446	14.9	9.5	1.64	5605	5.44	1.64
007459173-05	OBS	No	299.863108	334.084916	681.4	7.342	13.0	6.9	1.64	5605	4.74	3.19
007459173-06	OBS	No	494.958274	393.893323	814.0	3.631	11.7	8.4	1.64	5605	5.01	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007459173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
007459173-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

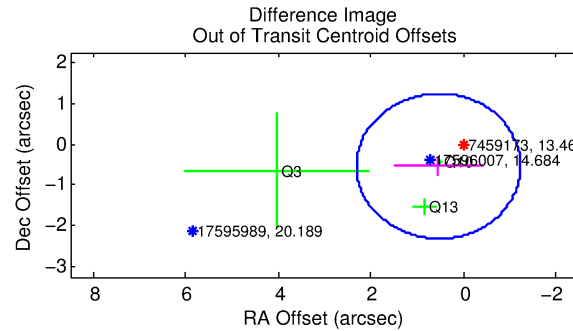
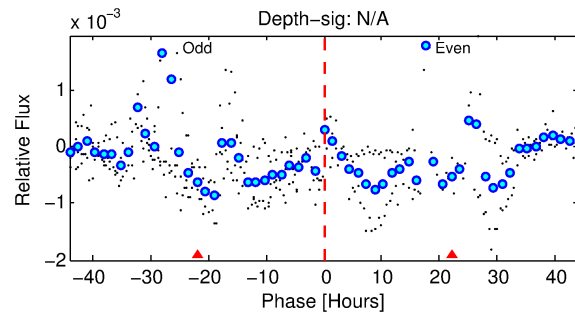
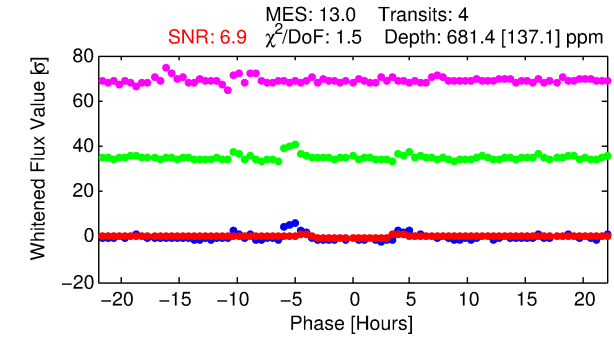
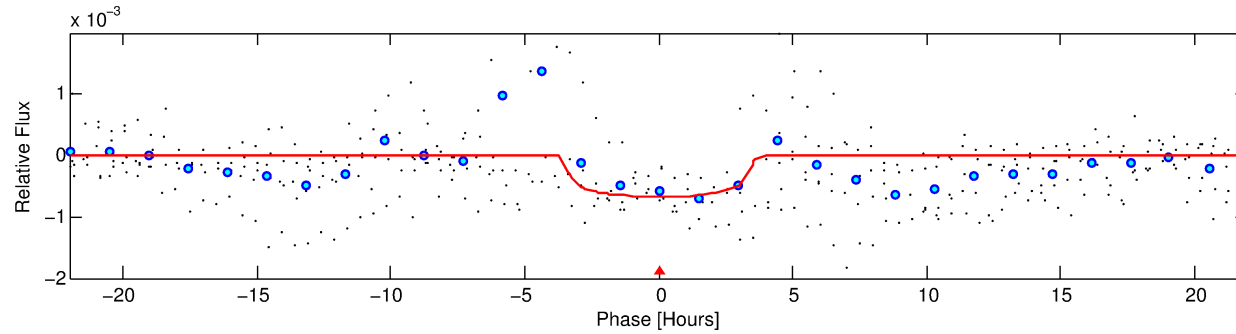
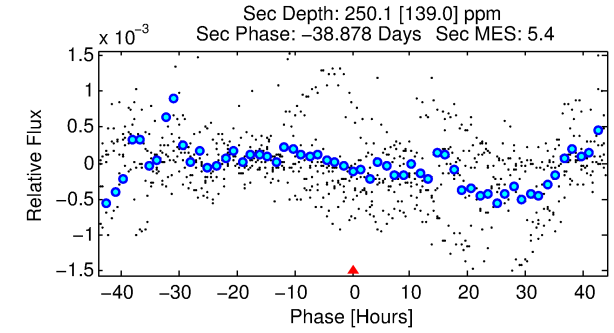
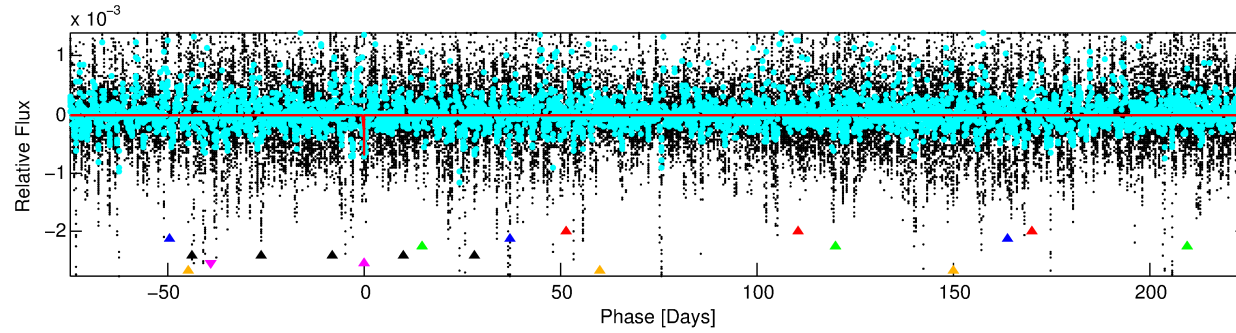
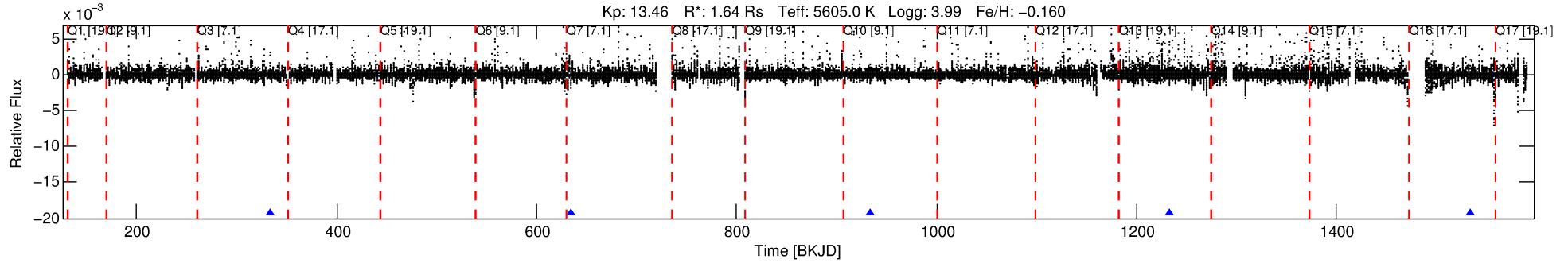
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007459173-05

No Significant Match Found

DV One-Page Summary

KIC: 7459173 Candidate: 5 of 6 Period: 299.863 d



DV Fit Results:

Period = 299.86311 [0.00373] d
Epoch = 334.0849 [0.0115] BKJD
Rp/R* = 0.0265 [0.0089]
a/R* = 203.60 [269.46]
b = 0.79 [0.63]
Seff = 3.19 [2.50]
Teq = 341 [67] K
Rp = 4.74 [2.75] Re
a = 0.8648 [0.4097] AU
Ag = 4573.44 [5343.84] [0.86] σ
Teffp = 4332 [955] K [4.17] σ

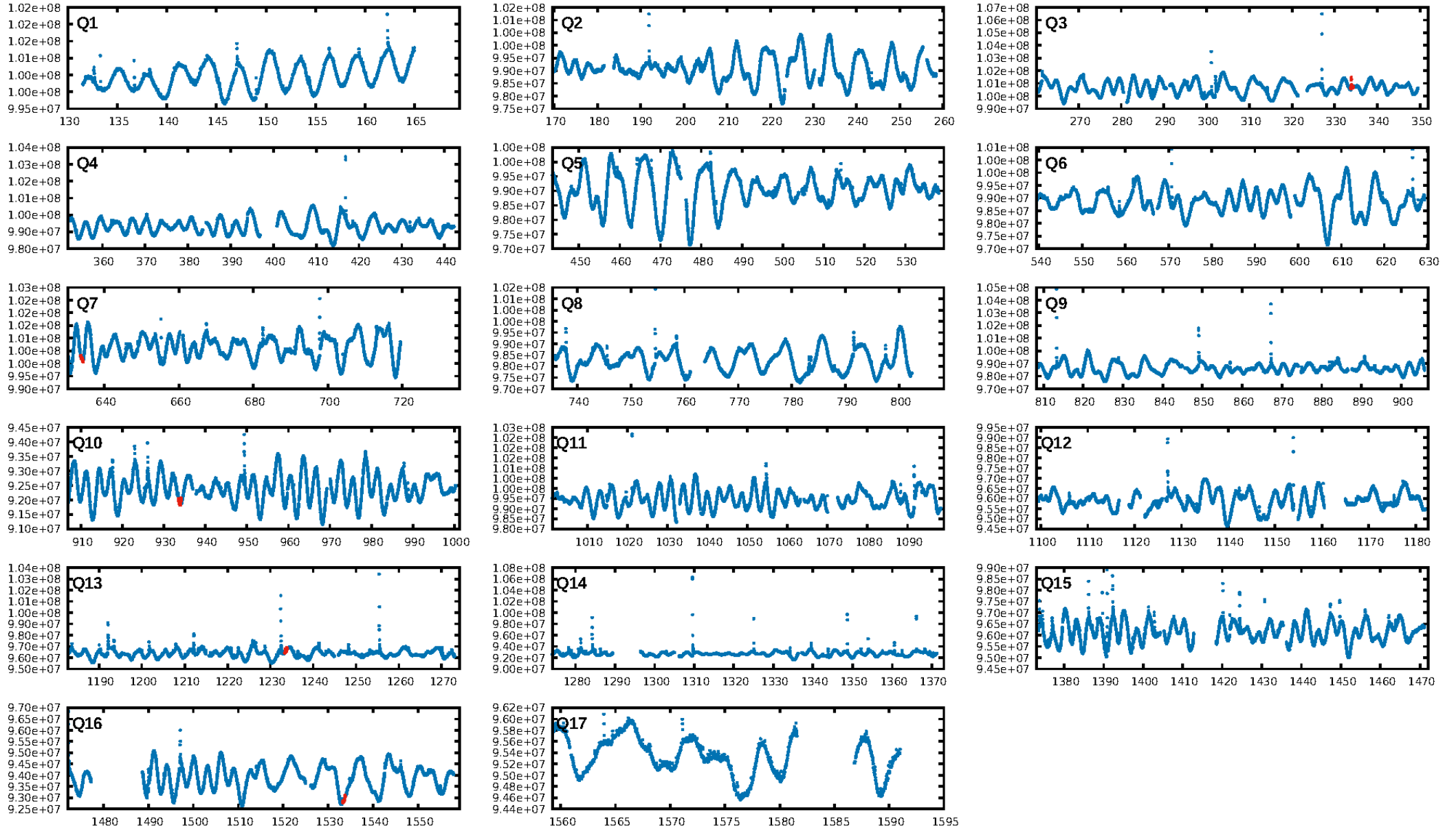
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [50.31] σ
LongPeriod-sig: 100.0% [511.26] σ
ModelChiSquare2-sig: 67.2%
ModelChiSquareGof-sig: 86.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 1.298
Centroid-sig: 2.7%
Centroid-so: 1.105 arcsec [1.46] σ
OotOffset-rm: 0.761 arcsec [1.29] σ
OotOffset-st: 1/1/0/1 [3]
KicOffset-rm: 0.678 arcsec [0.97] σ
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

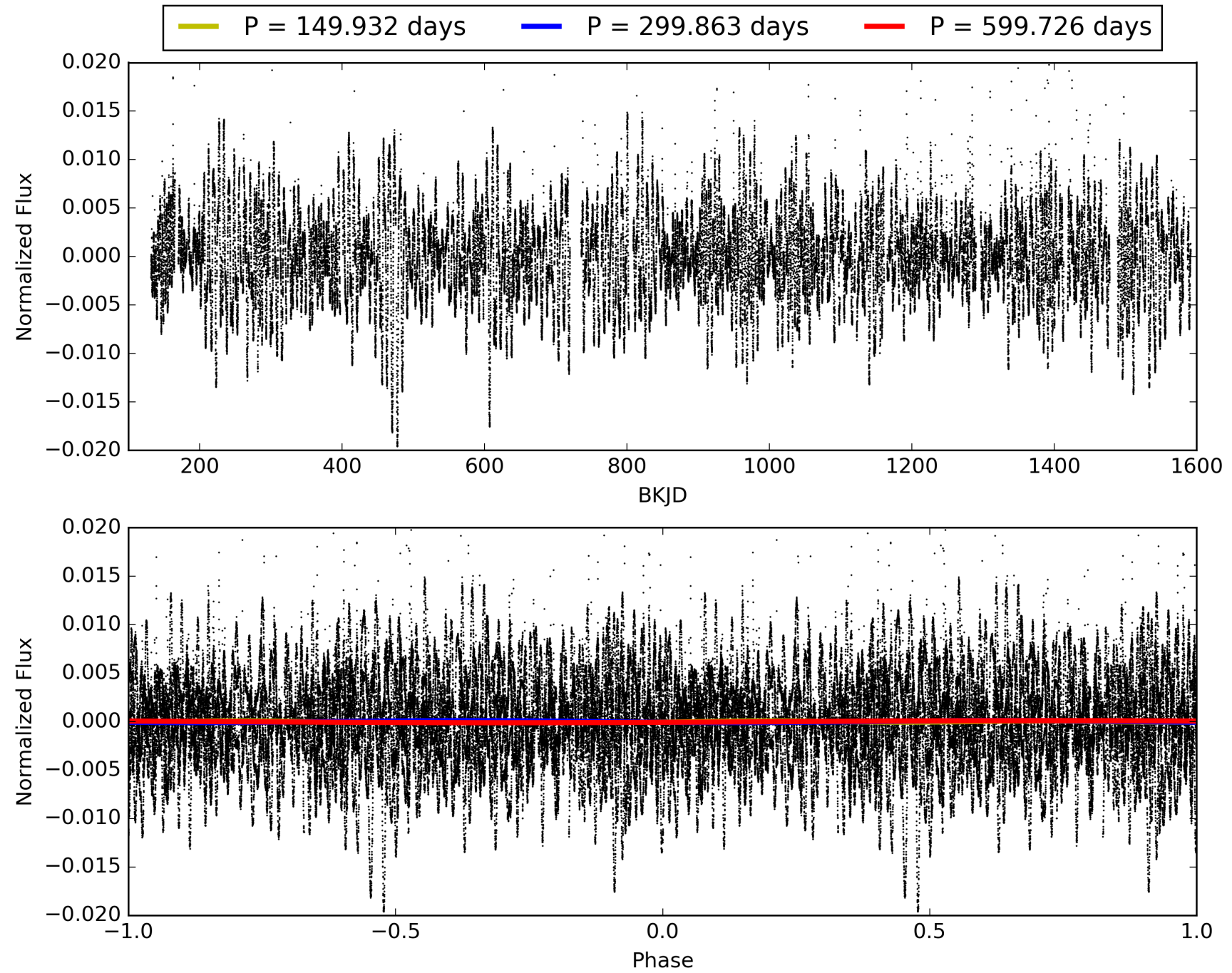
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:17:58 Z

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

TCE 007459173-05, PDC Light Curves

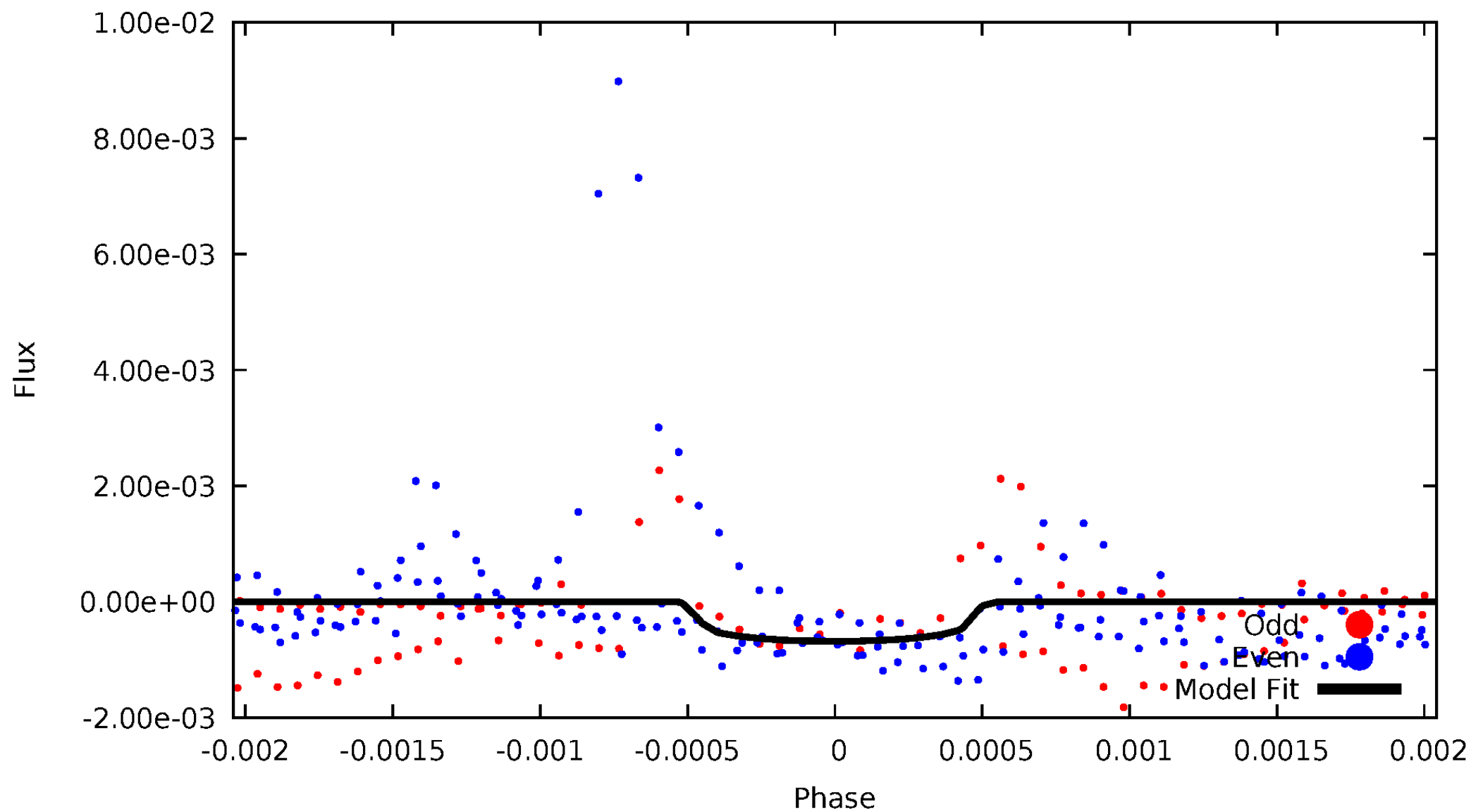


TCE 007459173-05



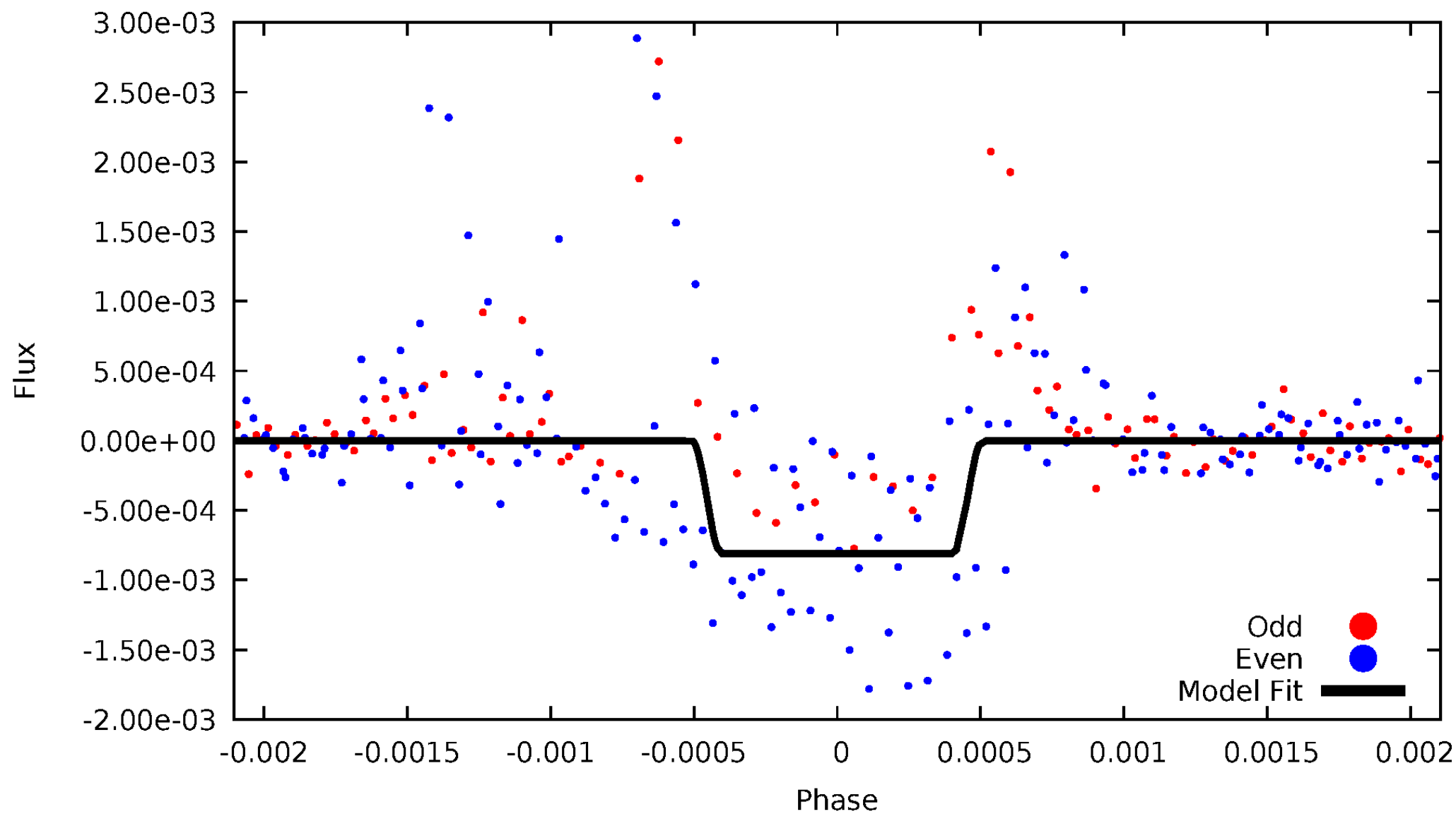
DV Odd/Even

TCE 007459173-05



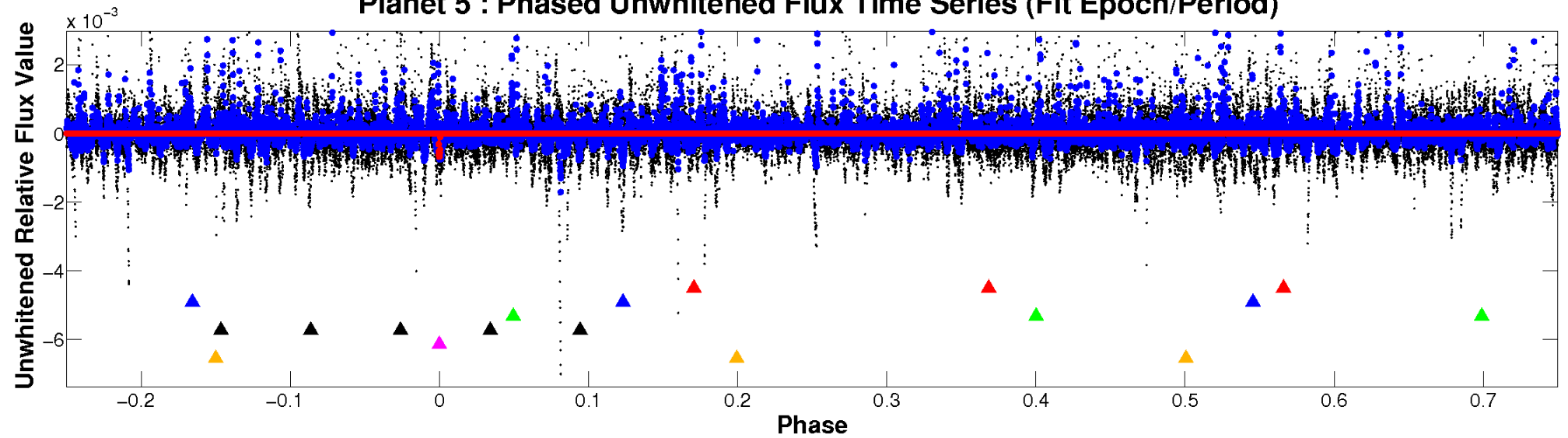
ALT Odd/Even

TCE 007459173-05

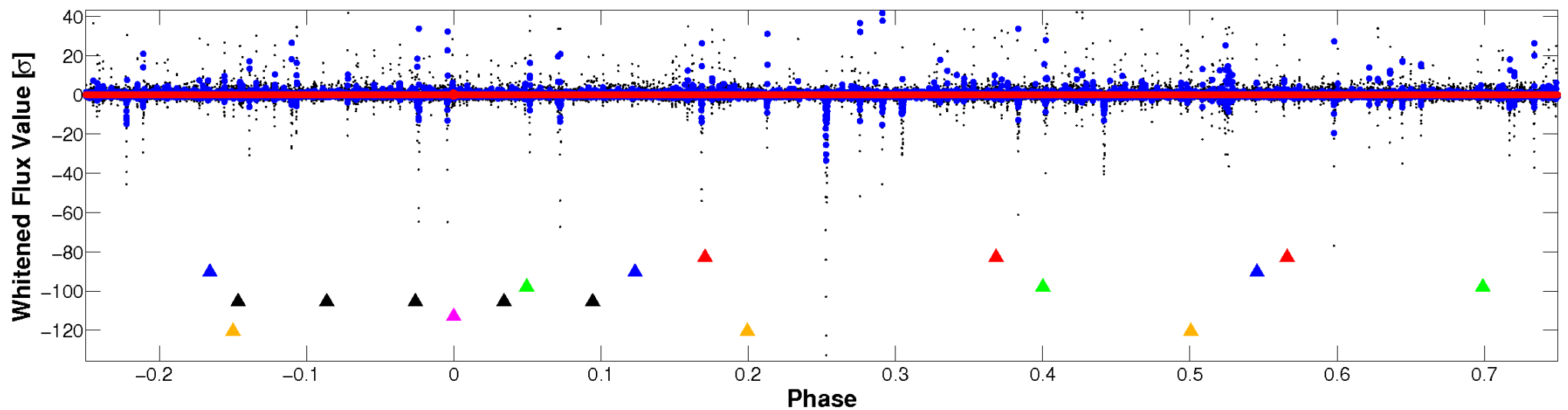


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

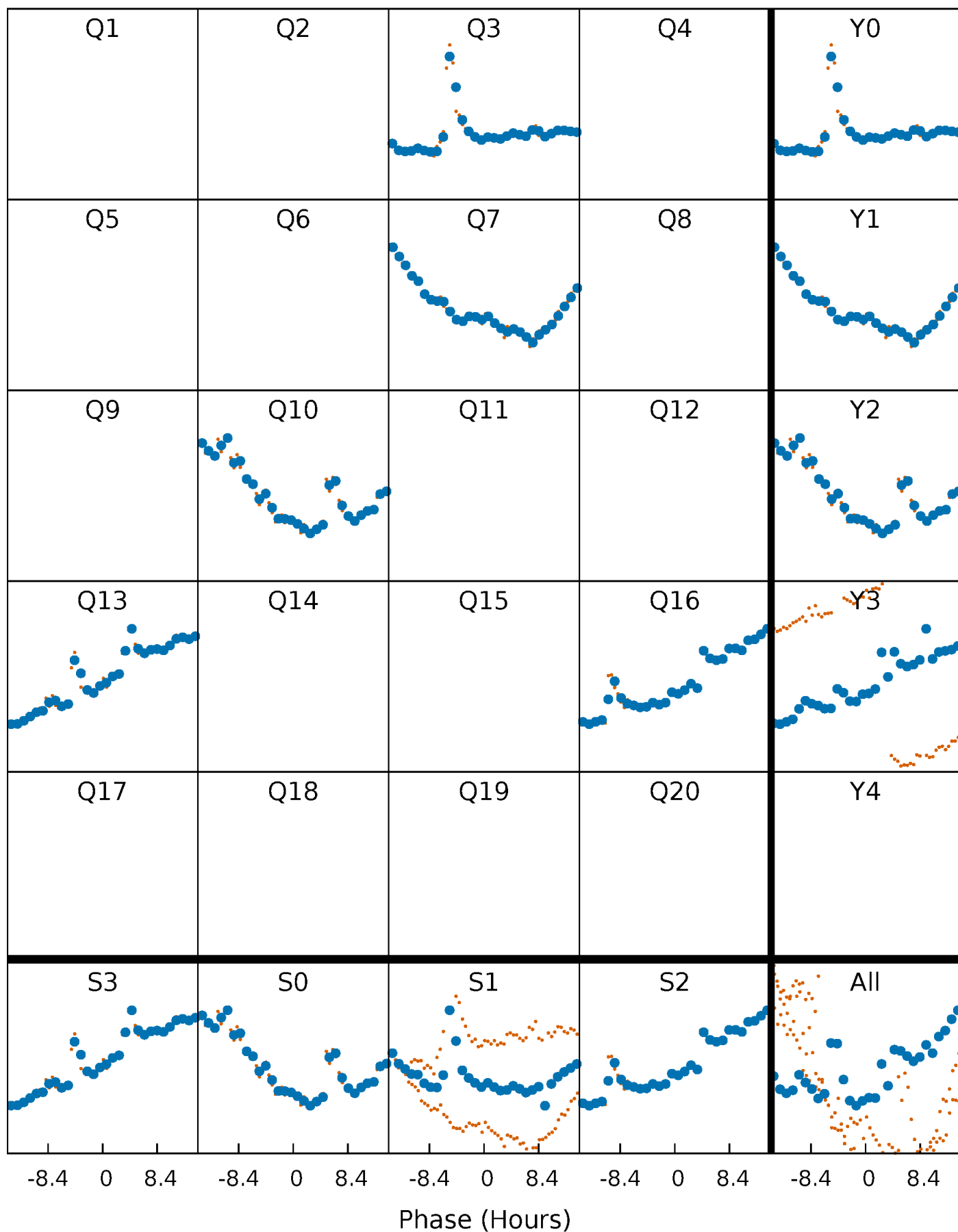


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



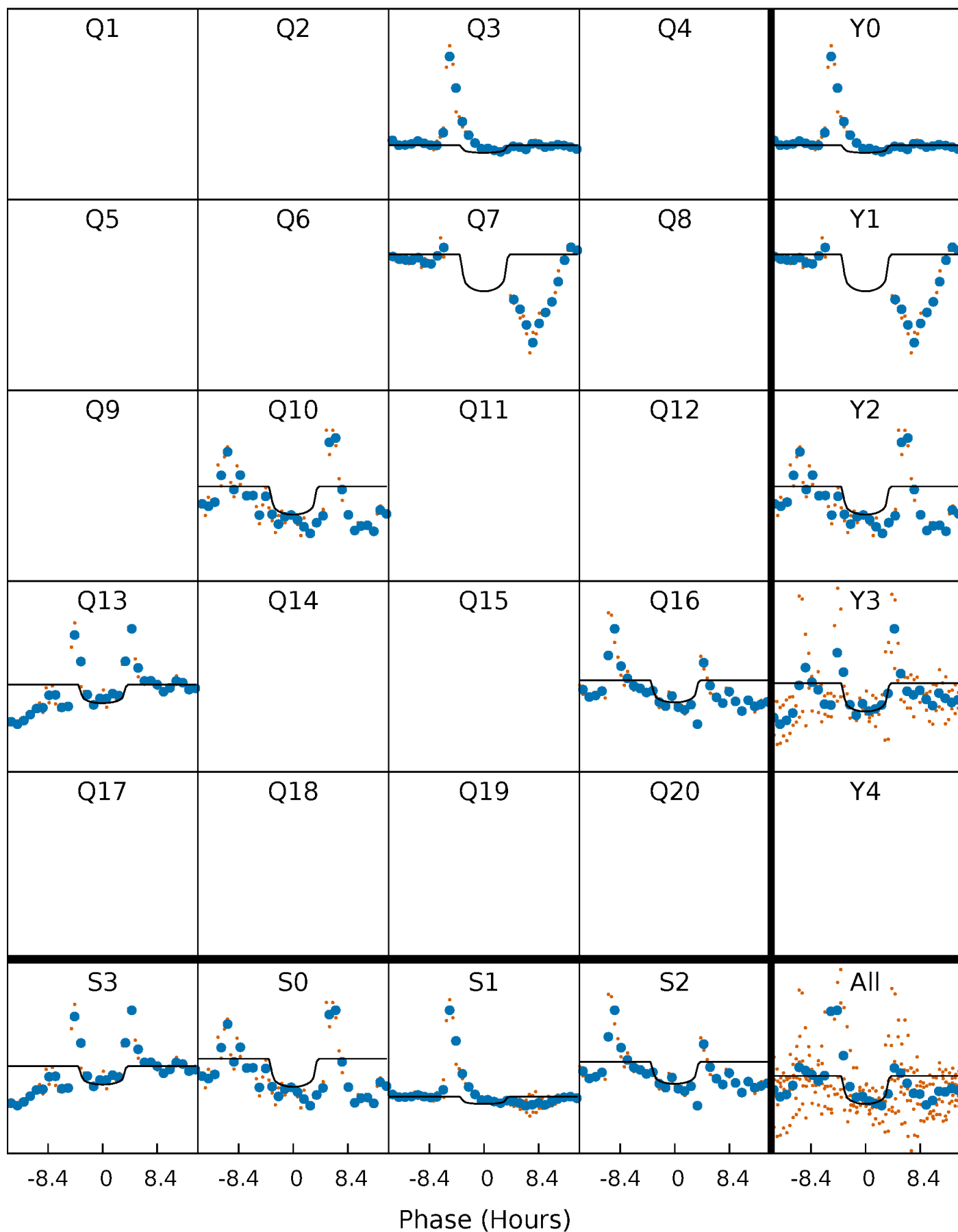
PDC Quarter-Phased Transit Curves

TCE 007459173-05 $P=299.863108$ Days $T_0=334.084916$ (BKJD)



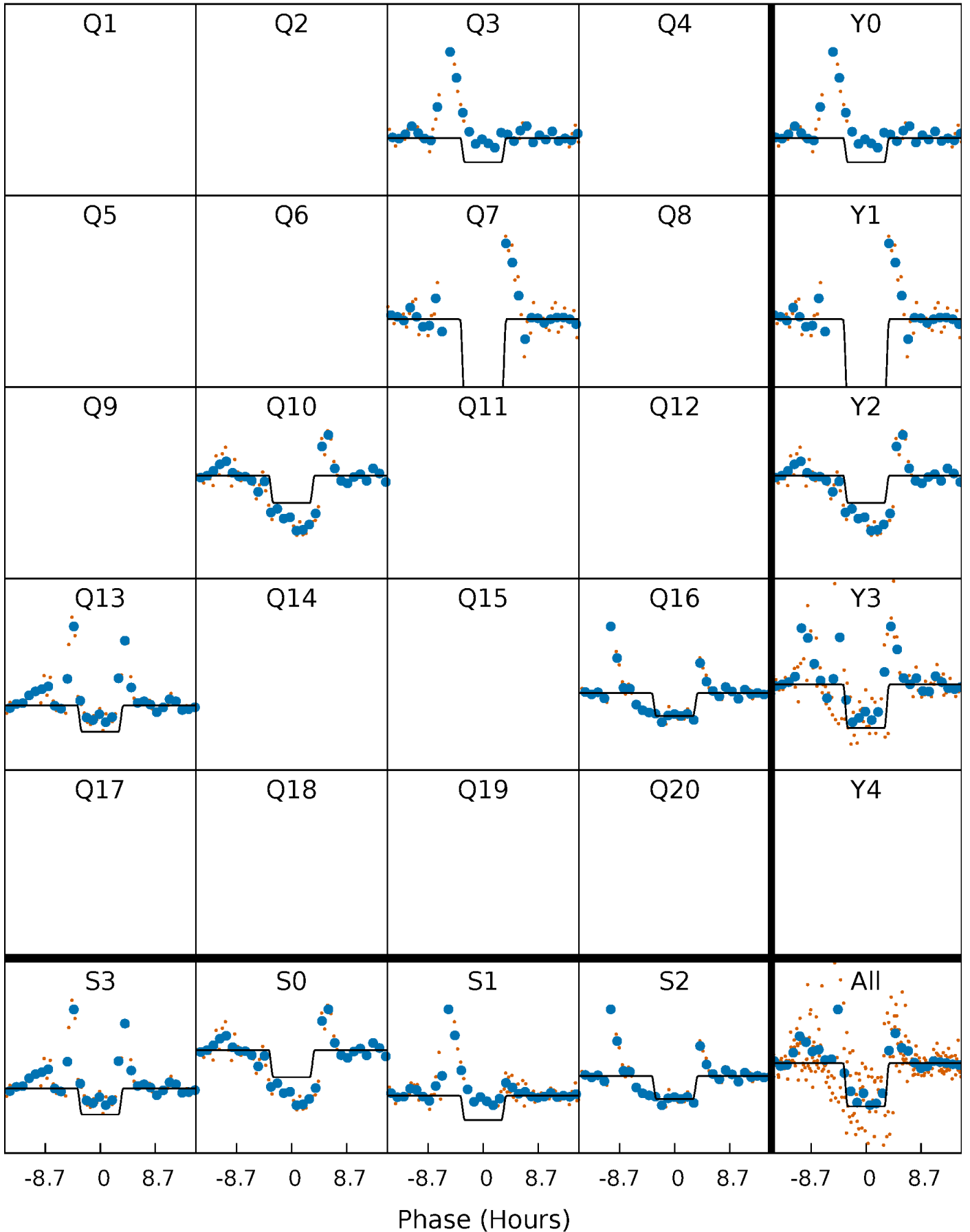
DV Quarter-Phased Transit Curves

TCE 007459173-05 $P=299.863108$ Days $T_0=334.084916$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

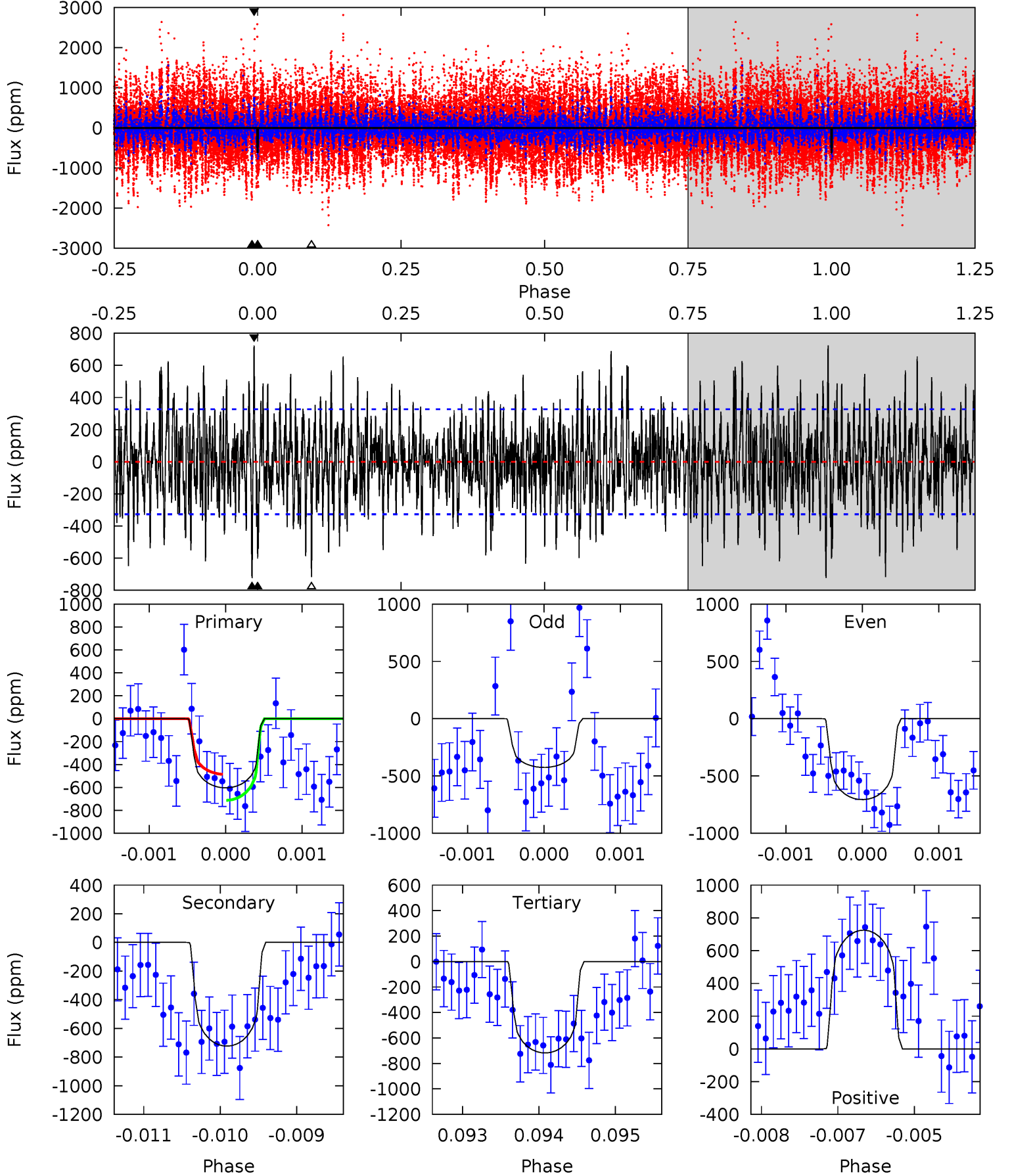
TCE 007459173-05 $P=299.855682$ Days $T_0=334.115138$ (BKJD)



DV Model-Shift Uniqueness Test

007459173-05, $P = 299.863108$ Days, $E = 34.221808$ Days

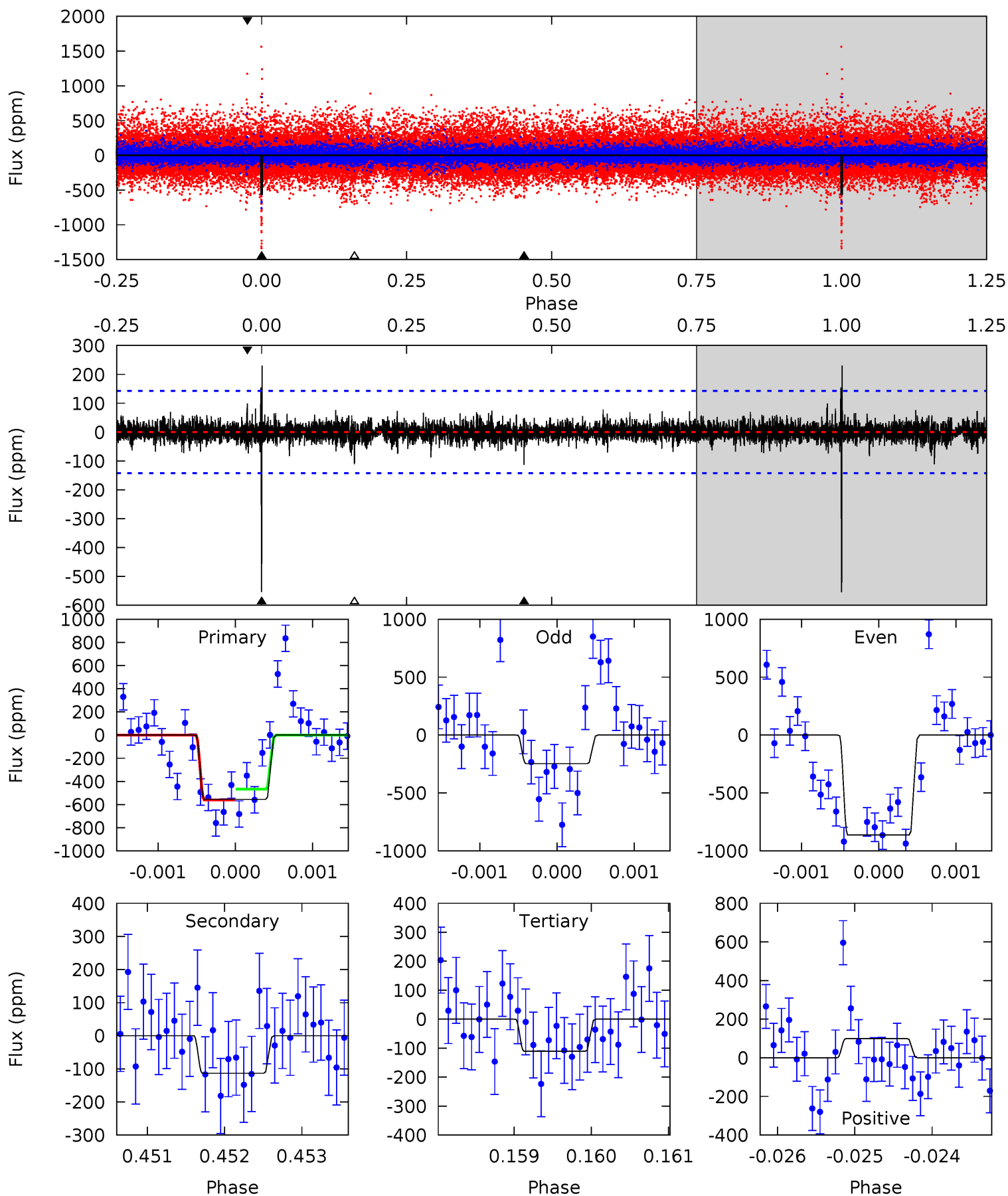
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.0	12.0	11.9	12.0	5.44	3.27	3.40	-1.89	-2.01	0.10	-0.02	1.31	0.91	0.50	1.90



Alt Model-Shift Uniqueness Test

007459173-05, P = 299.855682 Days, E = 34.259456 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	4.33	4.23	3.80	5.45	3.29	0.76	17.0	17.4	0.09	0.53	10.5	1.17	0.29	1.73



Stellar Parameters For KIC 007459173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5605^{+169}_{-152}	$3.989^{+0.462}_{-0.165}$	$-0.160^{+0.300}_{-0.250}$	$1.642^{+0.476}_{-0.774}$	$0.959^{+0.111}_{-0.123}$	$0.305^{+1.403}_{-0.131}$
	+3%/-3%	+12%/-4%	+188%/-156%	+29%/-47%	+12%/-13%	+460%/-43%
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 007459173-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-723 ± 60	$4.34^{+2.07}_{-1.55}$	470^{+39}_{-61}	5615^{+1298}_{-702}	15931^{+21908}_{-8519}
Alt.	-113 ± 26	$4.71^{+1.99}_{-1.65}$	468^{+39}_{-58}	3793^{+569}_{-362}	2009^{+3029}_{-1025}

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 $A_{\text{obs}} \gg 1.0$

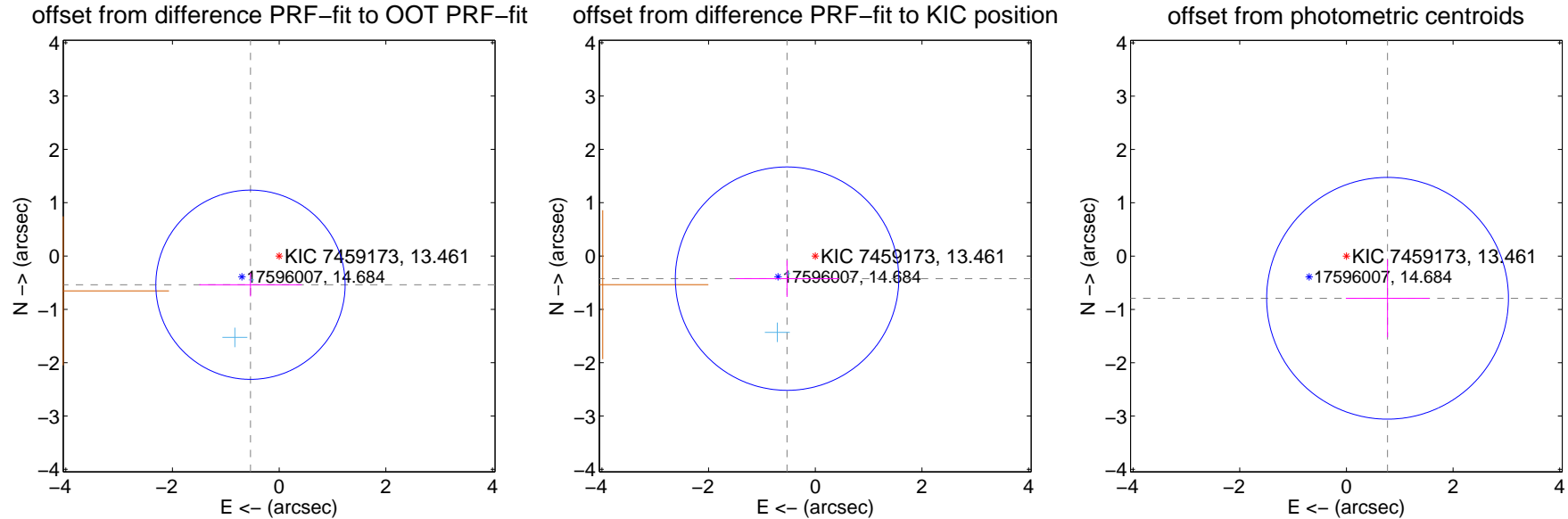
DV Centroid Data

Supplemental centroid analysis for 007459173-05. Kepler magnitude: 13.46. Transit SNR 6.87

There are 2 quarters with good PRF difference image offsets

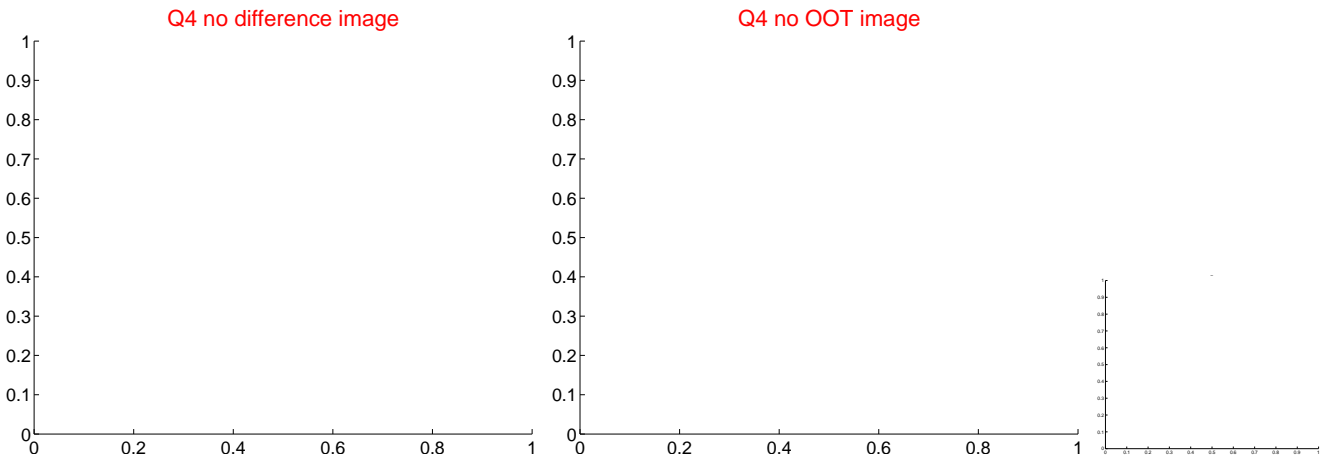
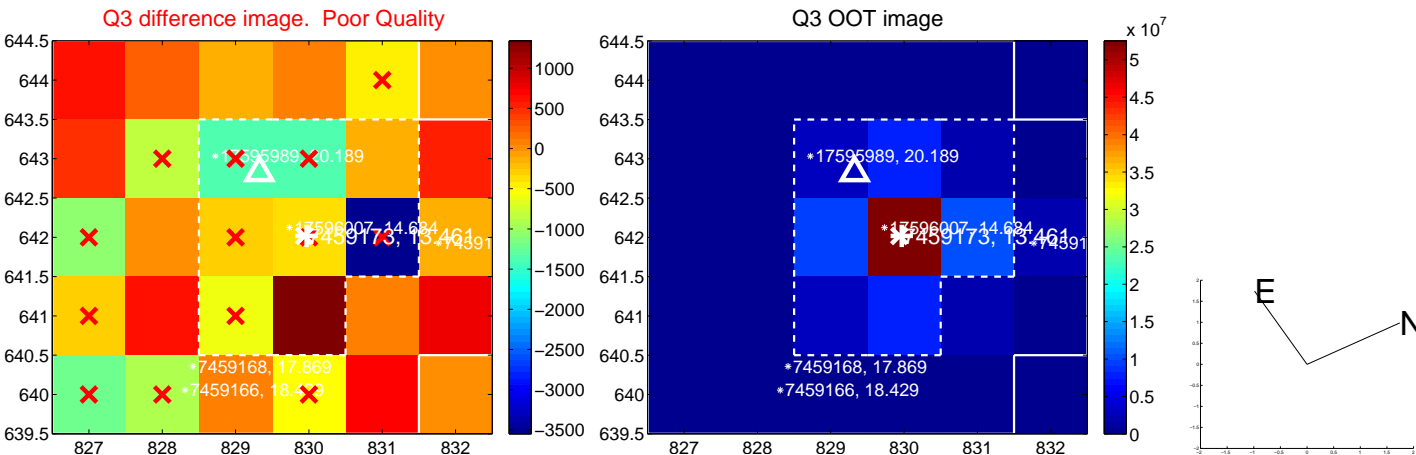
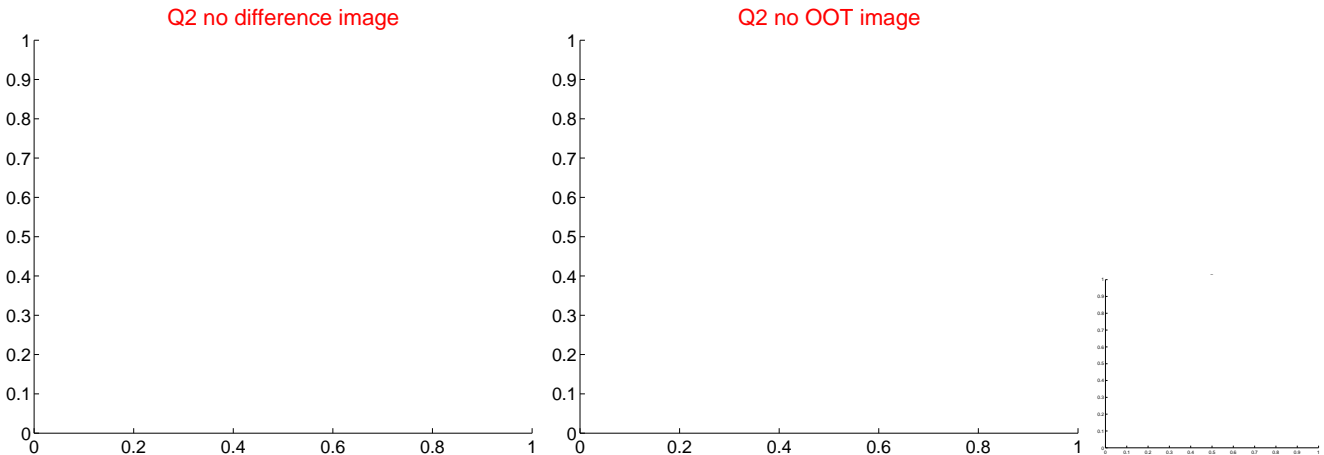
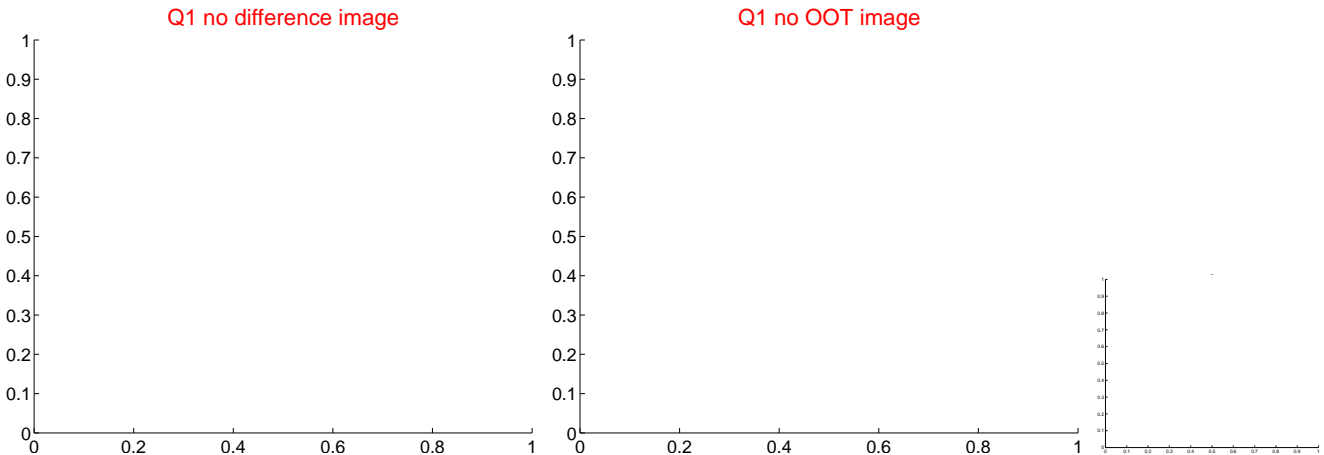
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.761 ± 0.591	1.29	0.537 ± 0.961	-0.538 ± 0.219
PRF-fit source offset from KIC position	0.678 ± 0.698	0.97	0.529 ± 0.967	-0.424 ± 0.342
photometric centroid source offset	1.11 ± 0.76	1.46	-0.77 ± 0.78	-0.79 ± 0.73



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.

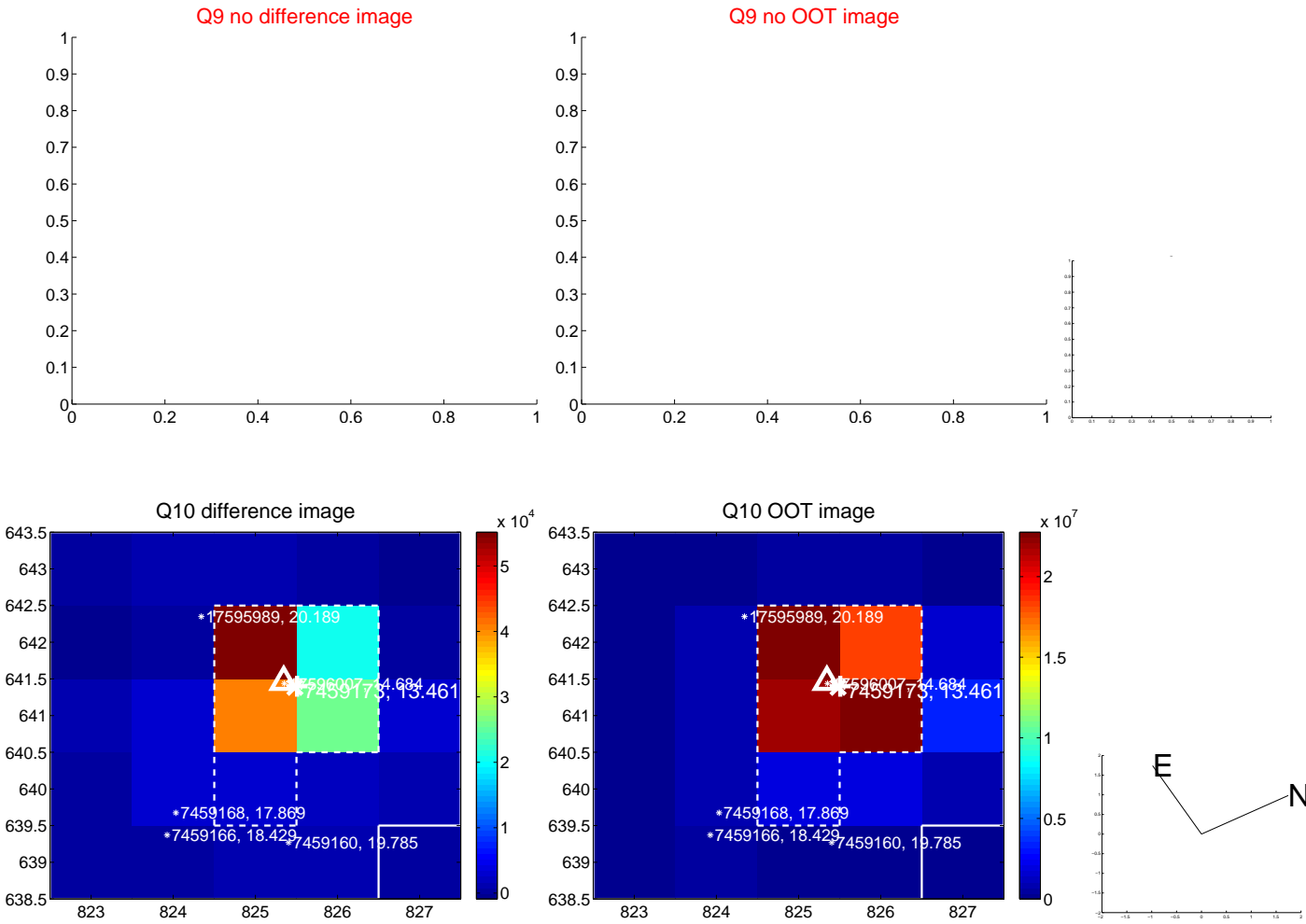
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



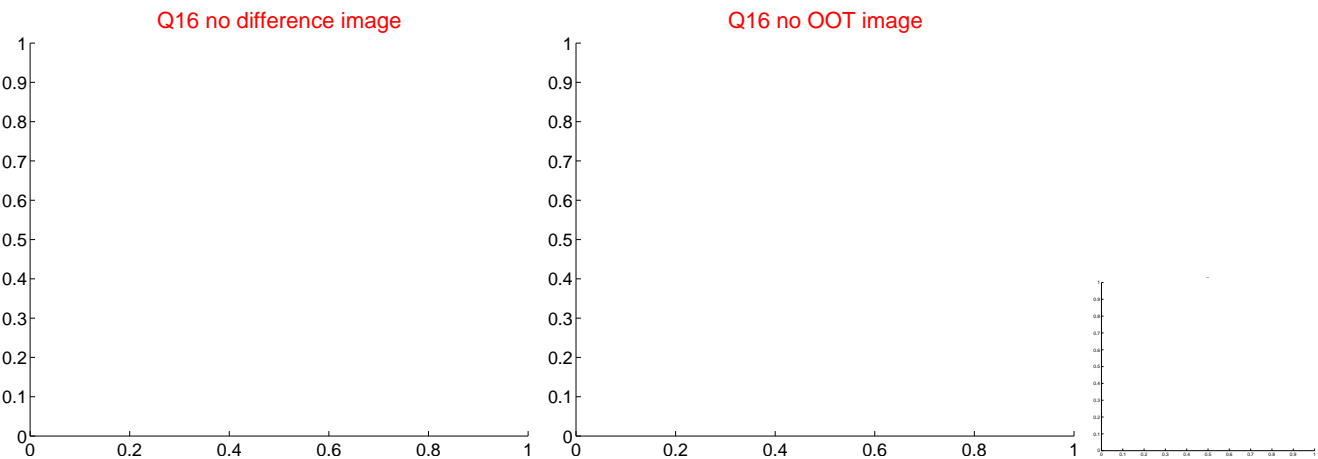
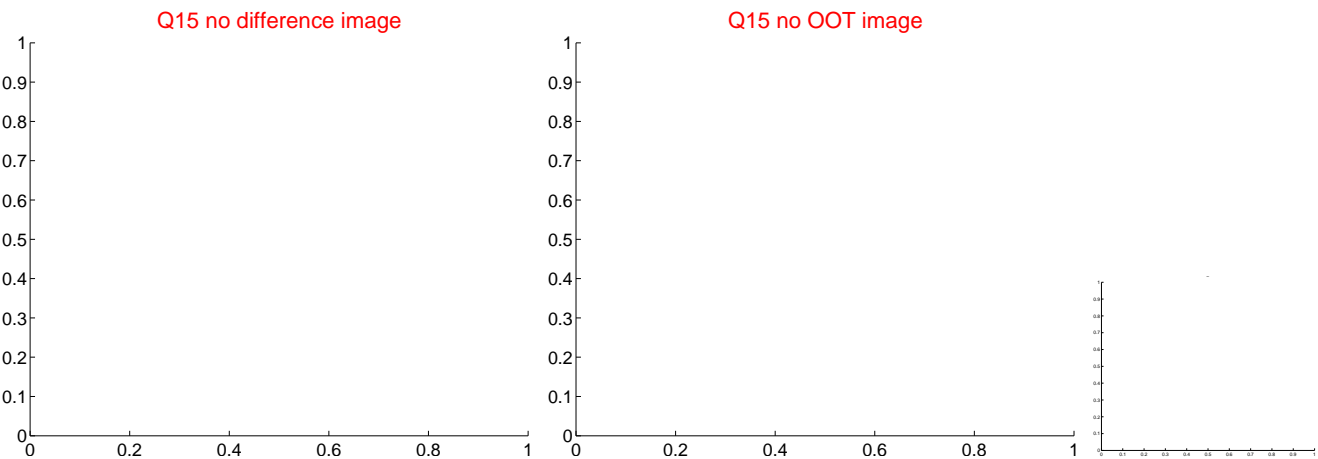
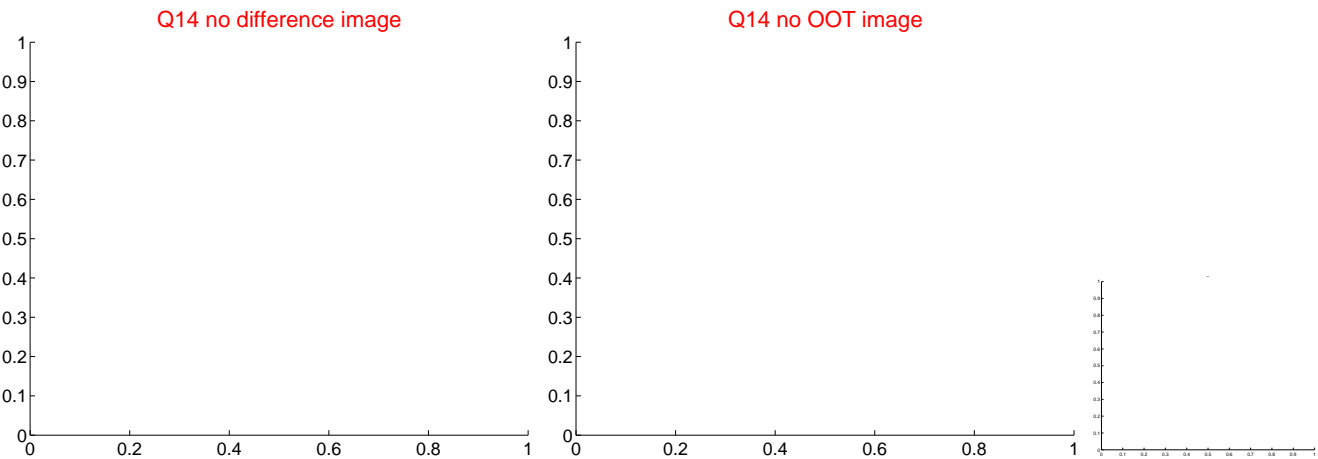
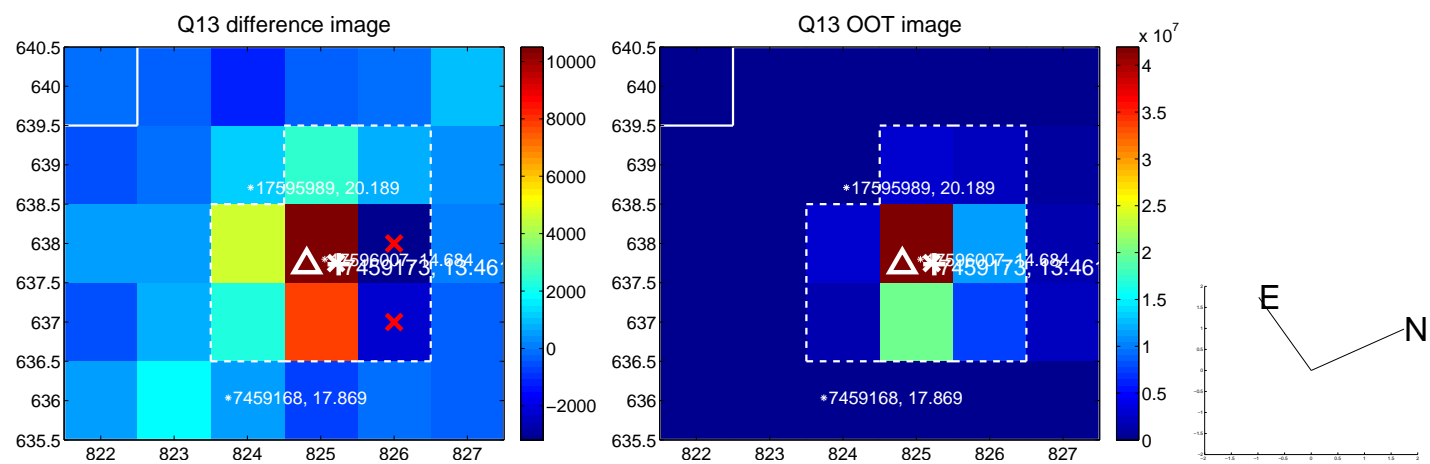
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



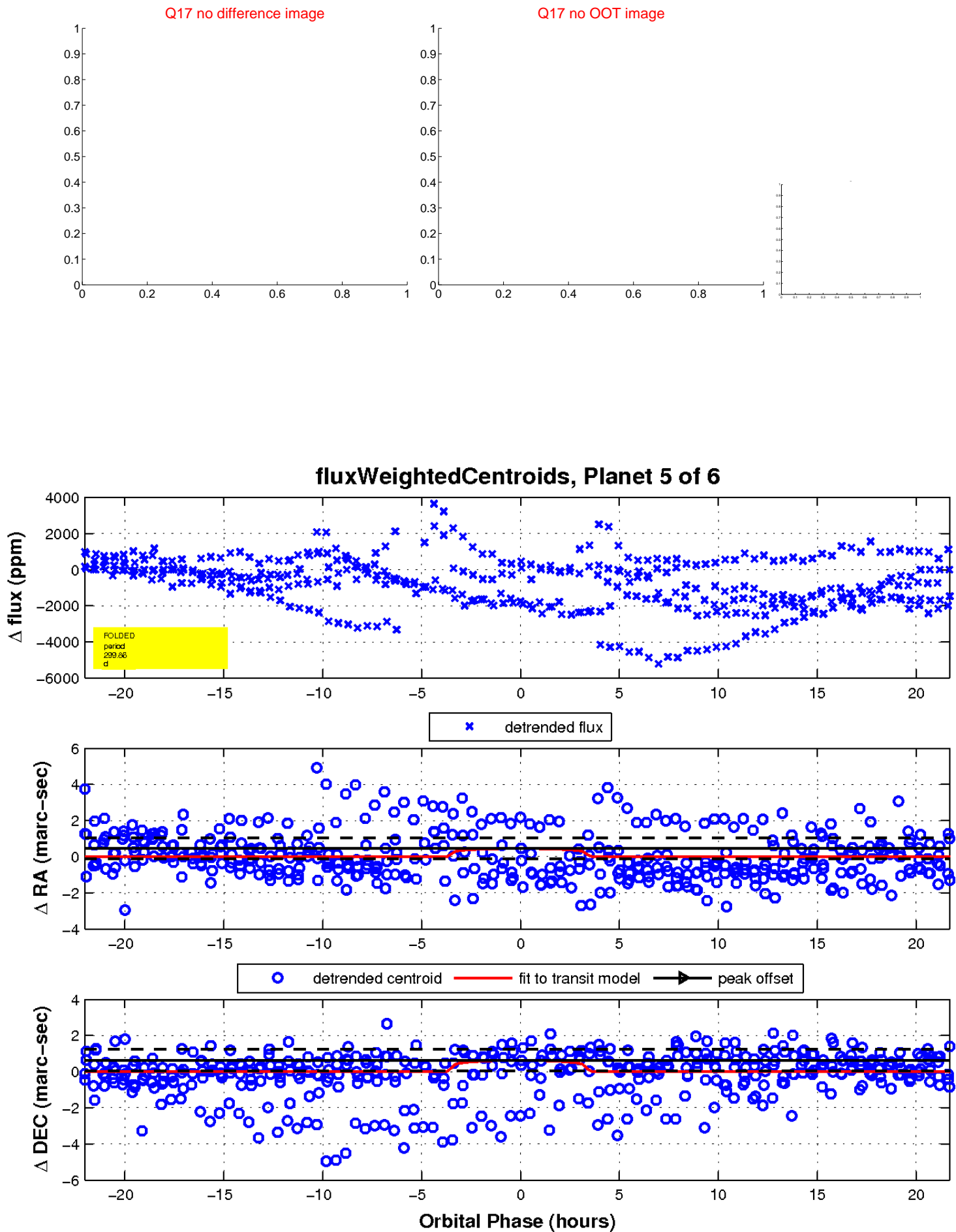
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

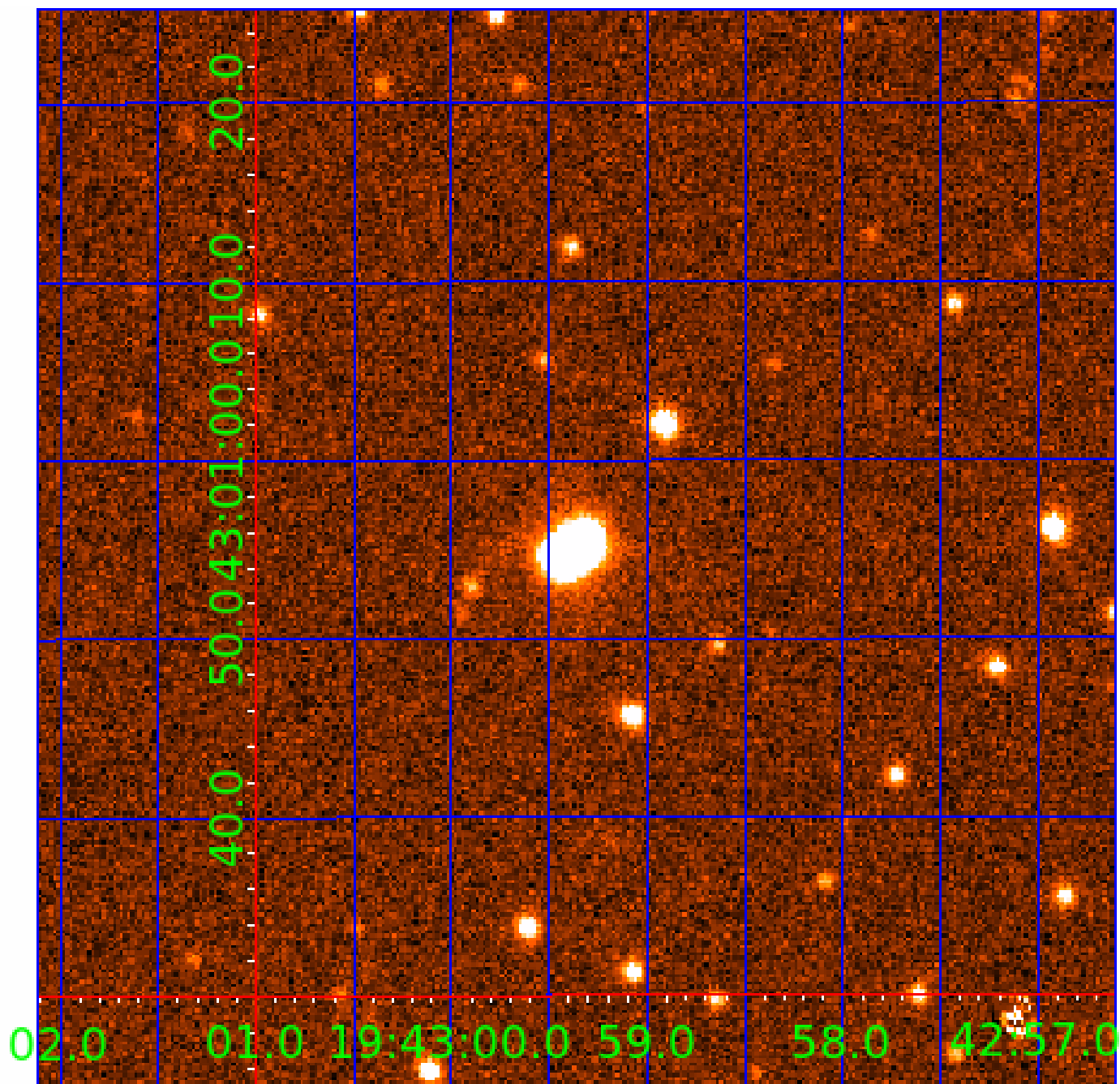


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007459173

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})
007459173-01	OBS	No	540.446929	203.973894	1441.5	3.449	16.6	12.1	1.64	5605	6.16	1.45
007459173-02	OBS	No	513.130888	371.019532	685.7	4.951	16.2	6.3	1.64	5605	4.62	1.56
007459173-03	OBS	No	494.596011	154.218462	1014.3	5.446	14.9	9.5	1.64	5605	5.44	1.64
007459173-05	OBS	No	299.863108	334.084916	681.4	7.342	13.0	6.9	1.64	5605	4.74	3.19
007459173-06	OBS	No	494.958274	393.893323	814.0	3.631	11.7	8.4	1.64	5605	5.01	1.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007459173-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_POS_DV
007459173-05	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007459173-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

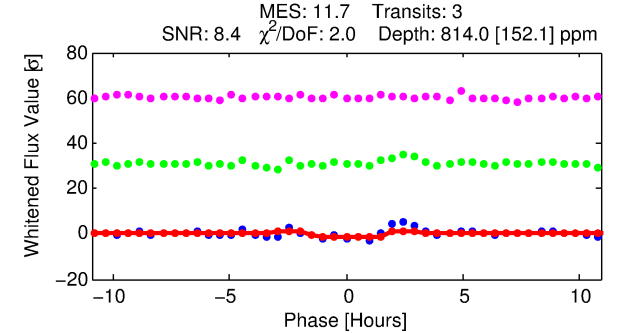
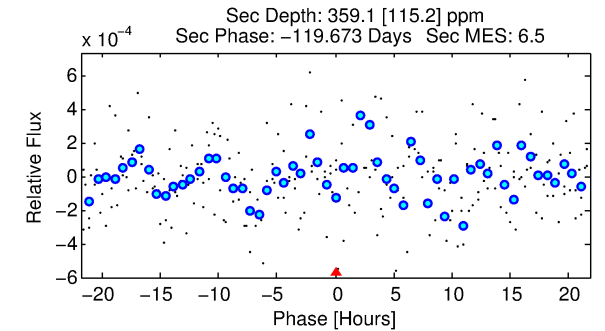
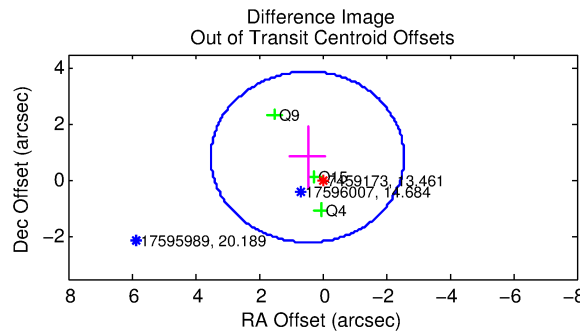
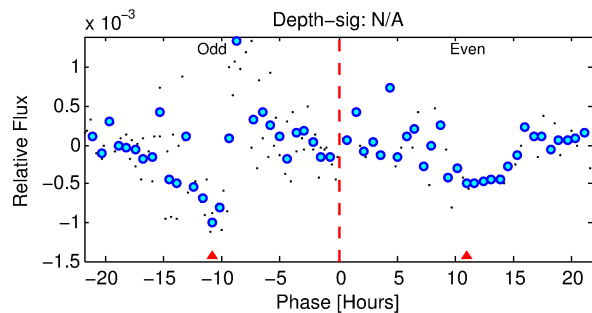
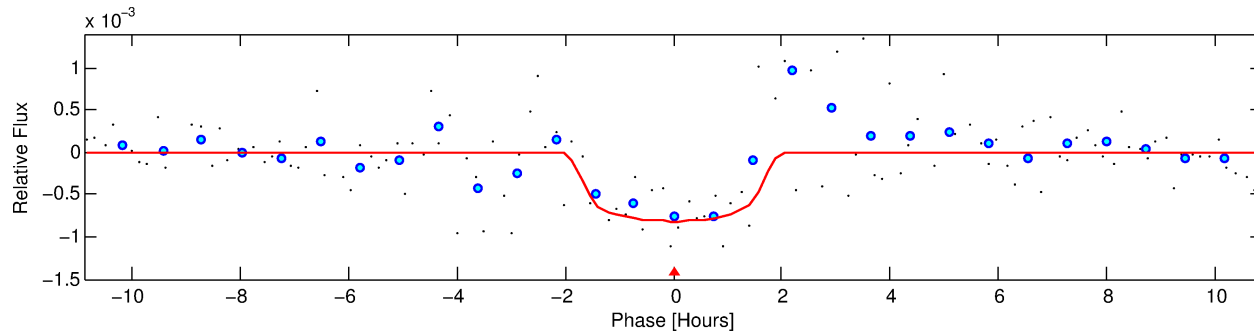
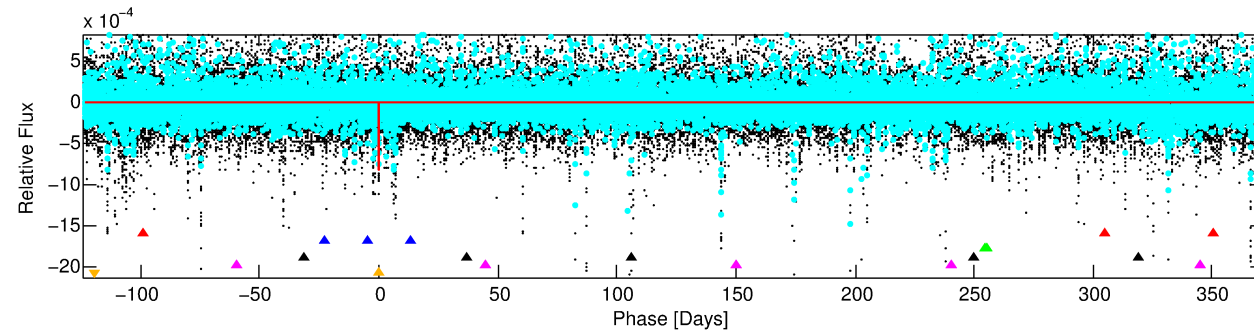
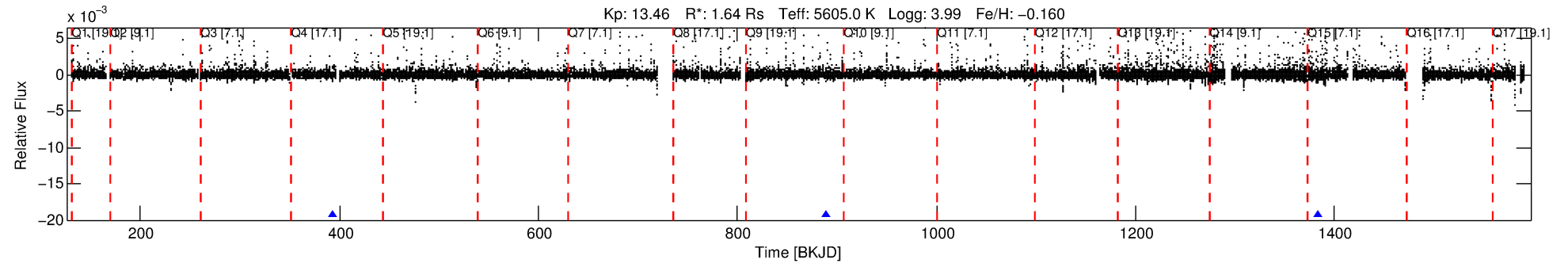
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007459173-06

No Significant Match Found

DV One-Page Summary

KIC: 7459173 Candidate: 6 of 6 Period: 494.958 d



DV Fit Results:

Period = 494.95827 [0.00823] d
Epoch = 393.8933 [0.0084] BKJD
Rp/R* = 0.0280 [0.0568]
a/R* = 779.80 [6789.55]
b = 0.70 [6.33]
Seff = 1.63 [1.28]
Teq = 288 [57] K
Rp = 5.01 [10.45] Re
a = 1.2078 [0.5723] AU
Ag = 11477.43 [47607.24] [0.24σ]
Teffp = 4614 [4702] K [0.92σ]

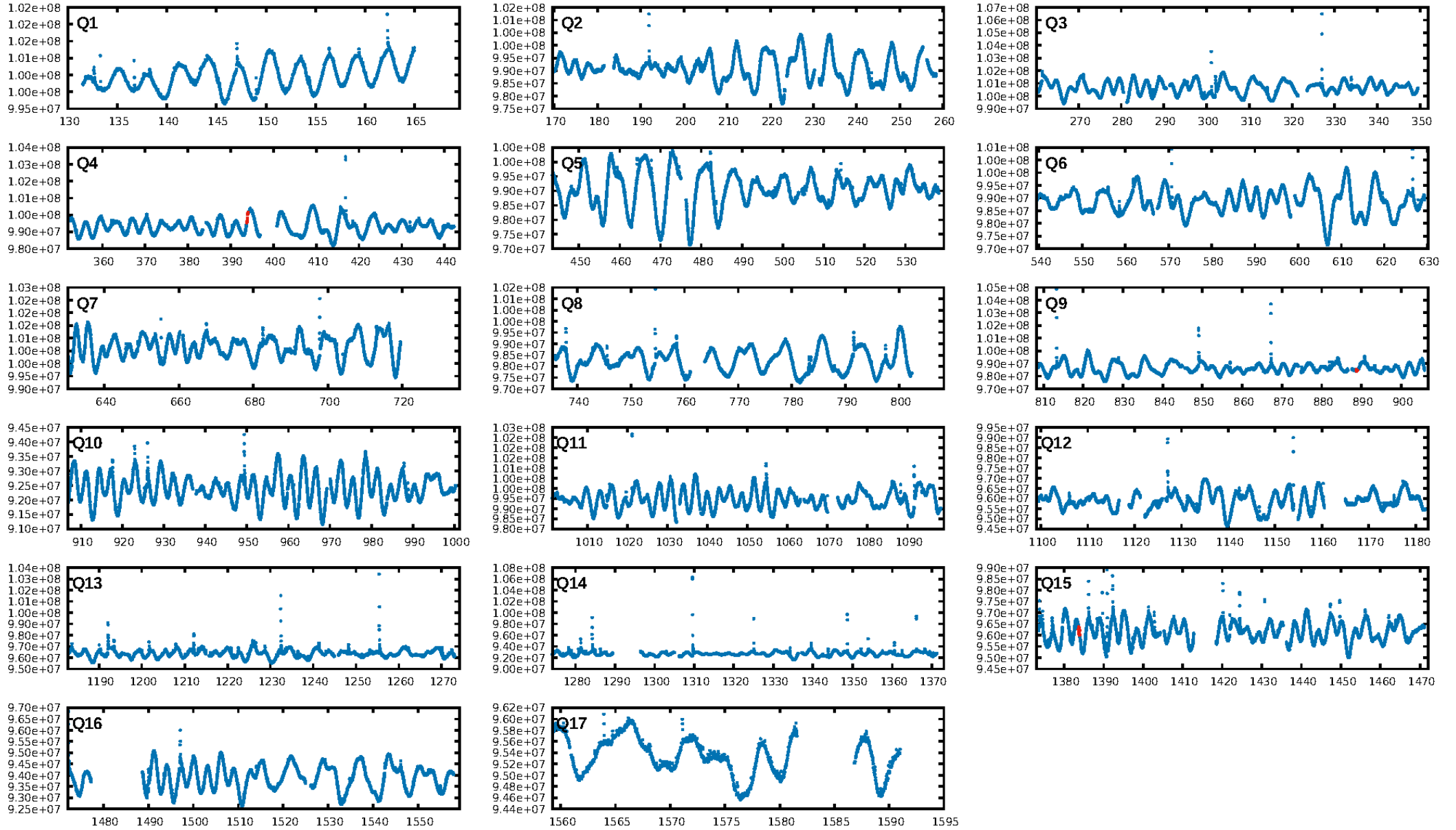
DV Diagnostic Results:

ShortPeriod-sig: 81.6% [1.33σ]
LongPeriod-sig: 100.0% [71.04σ]
ModelChiSquare2-sig: 0.3%
ModelChiSquareGof-sig: 7.3%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -0.8598
Centroid-sig: 4.1%
Centroid-so: 1.417 arcsec [1.80σ]
OotOffset-rm: 0.965 arcsec [0.95σ]
KicOffset-rm: 1.077 arcsec [1.08σ]
OotOffset-st: 0/1/1/1 [3]
KicOffset-st: 0/1/1/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

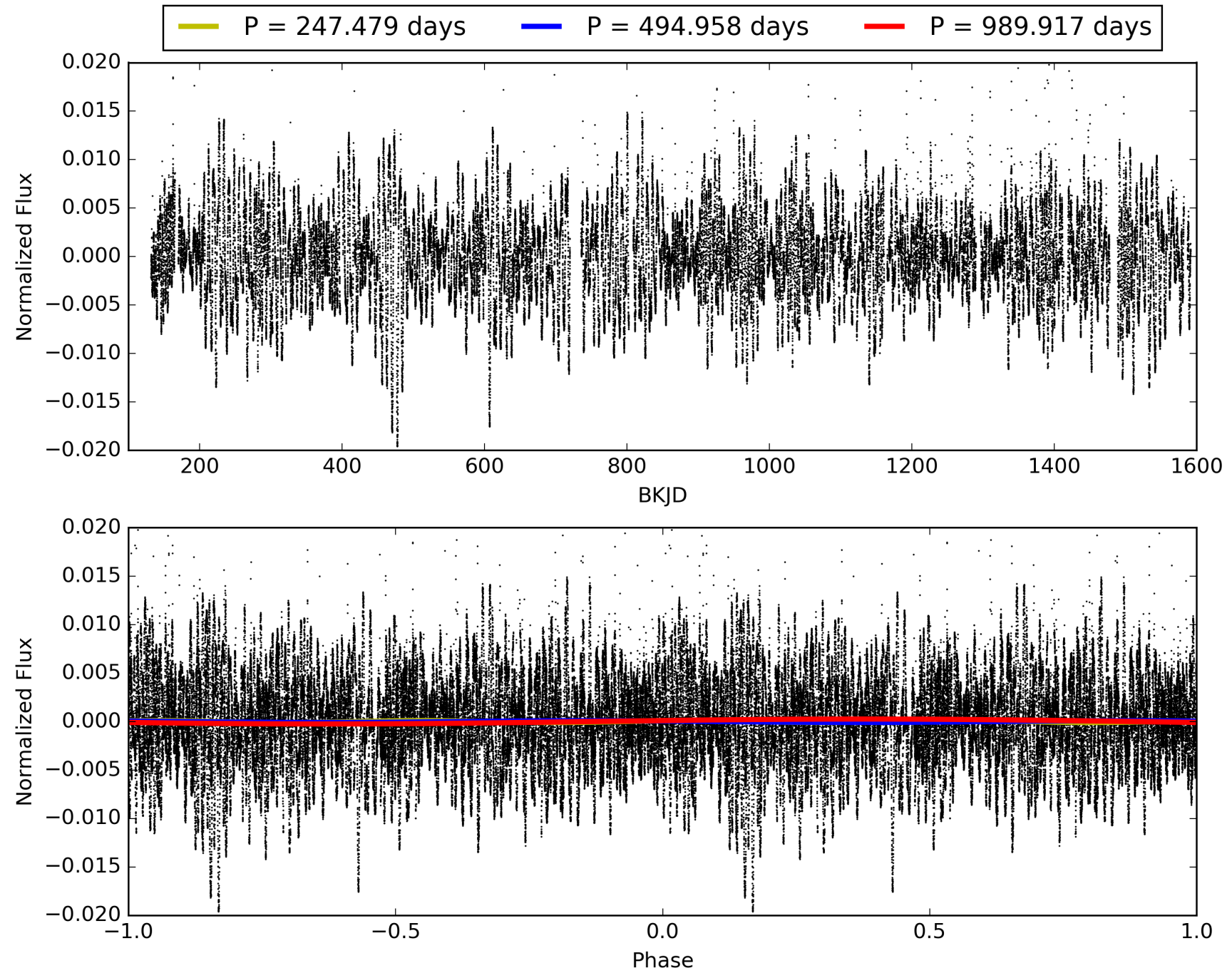
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 08:18:17 Z

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

TCE 007459173-06, PDC Light Curves

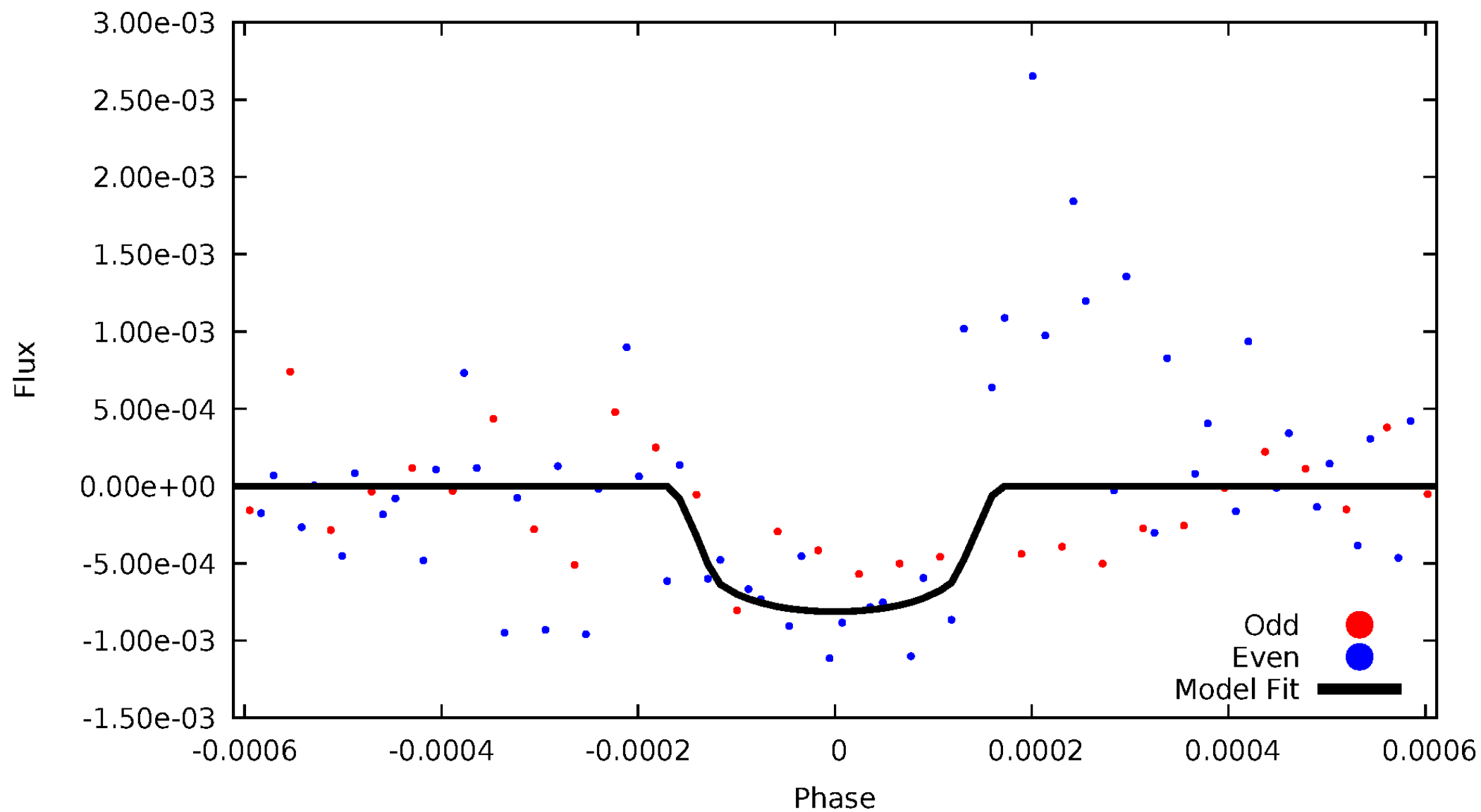


TCE 007459173-06



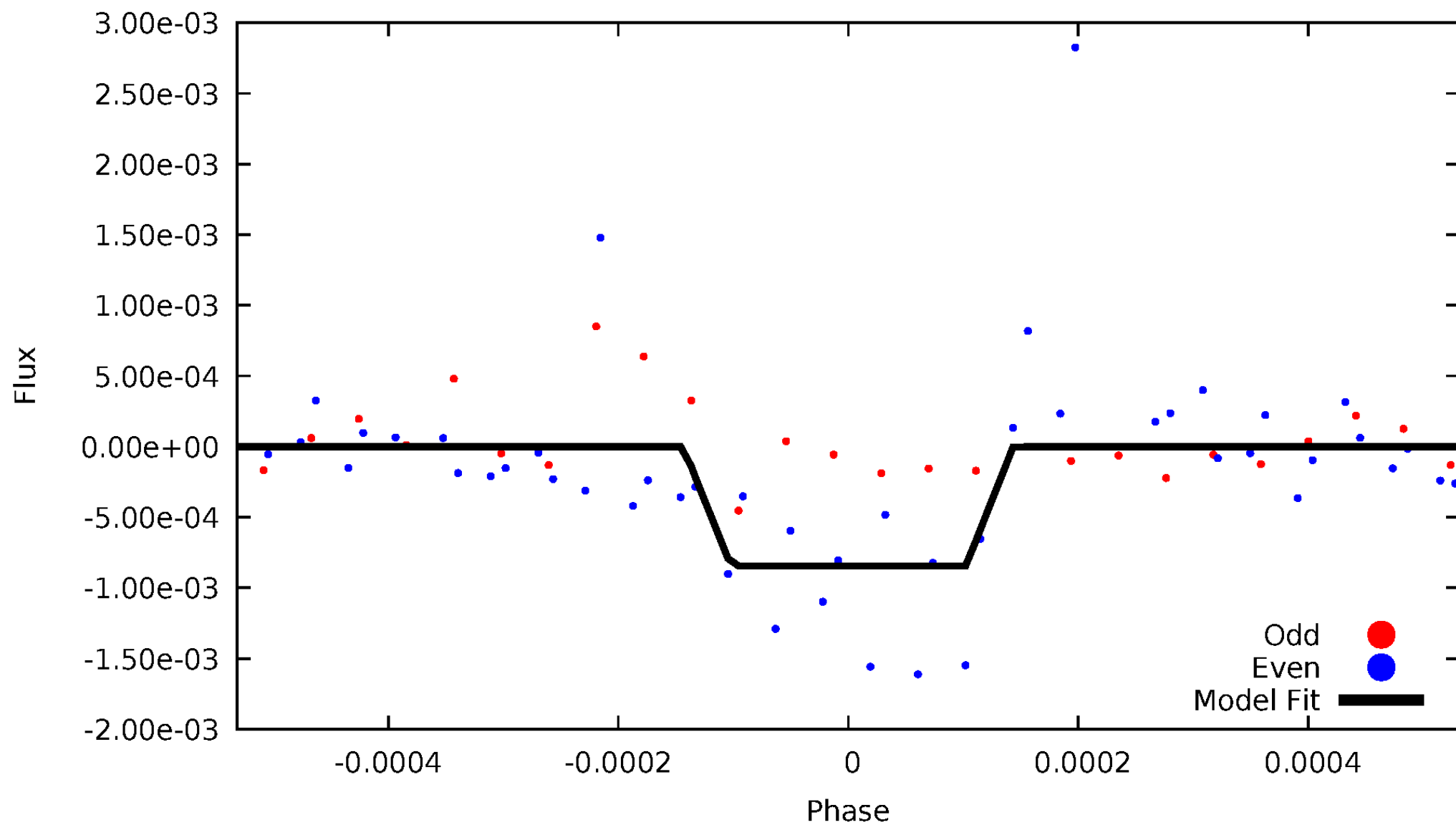
DV Odd/Even

TCE 007459173-06



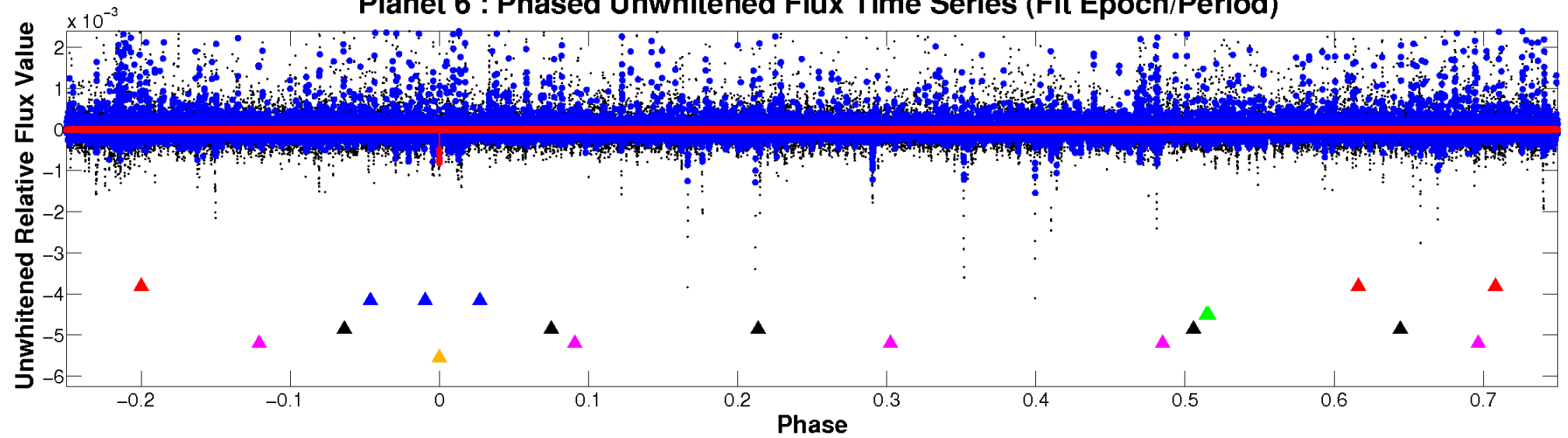
ALT Odd/Even

TCE 007459173-06

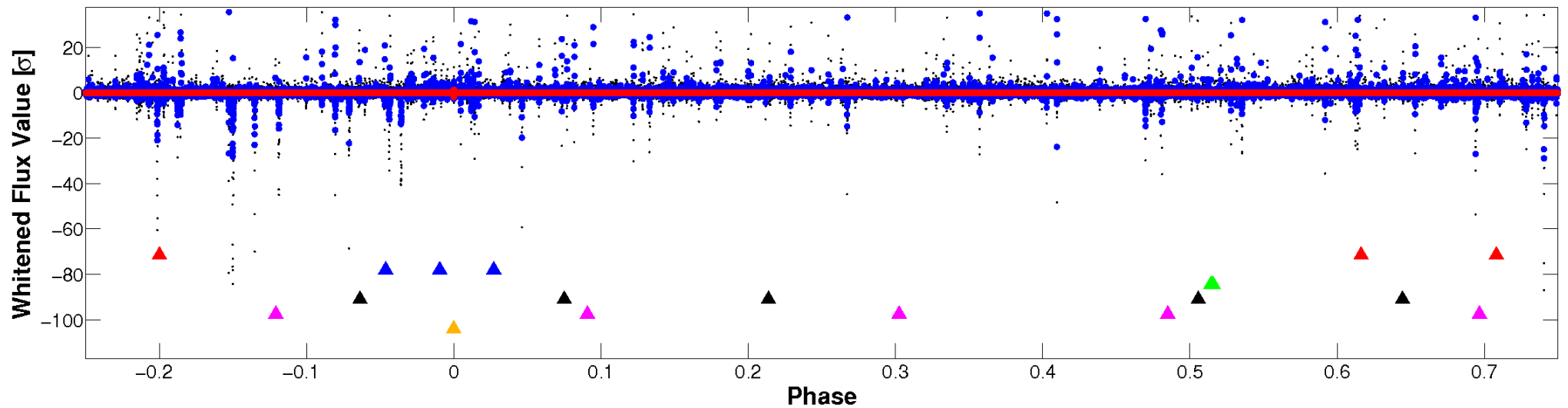


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

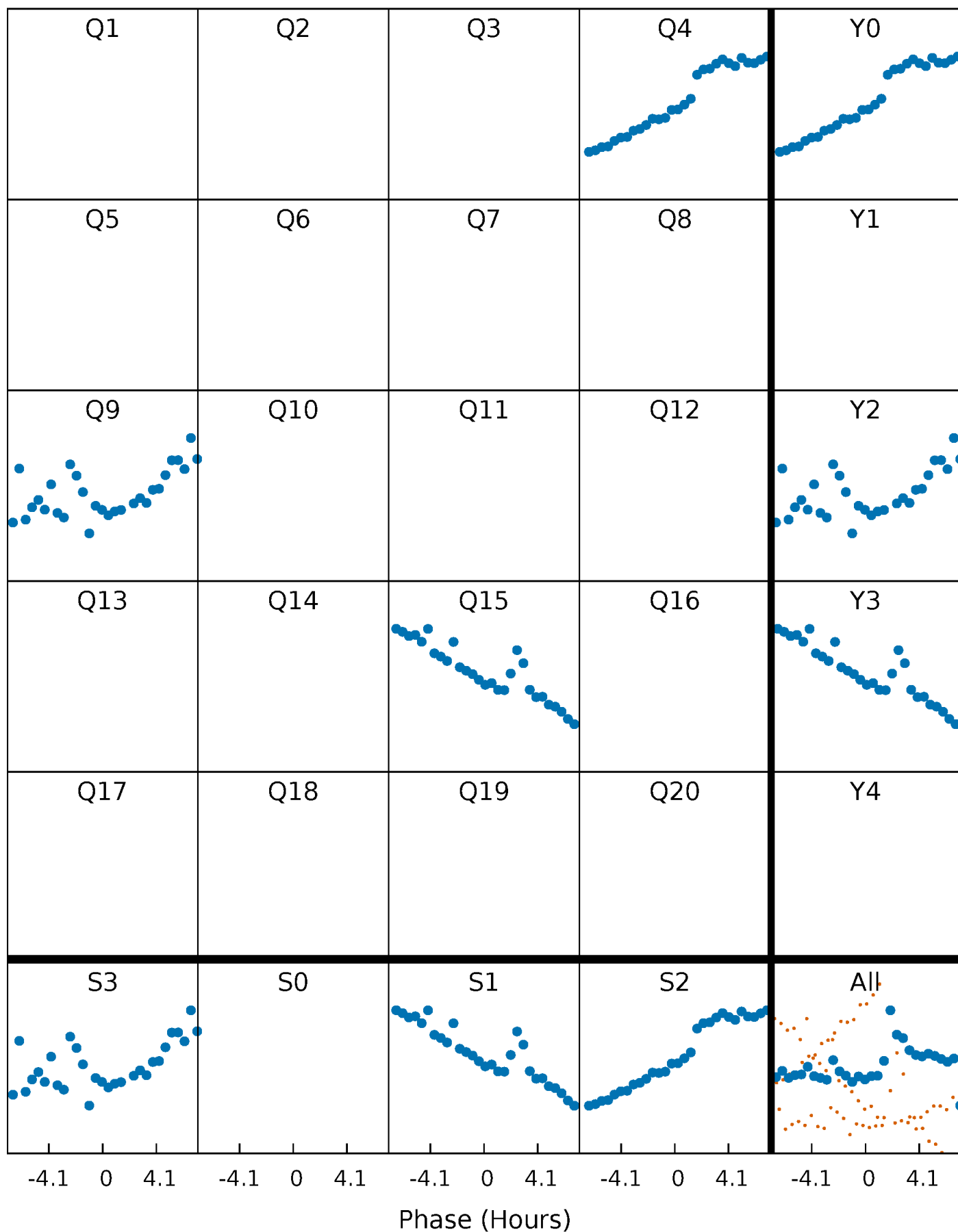


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



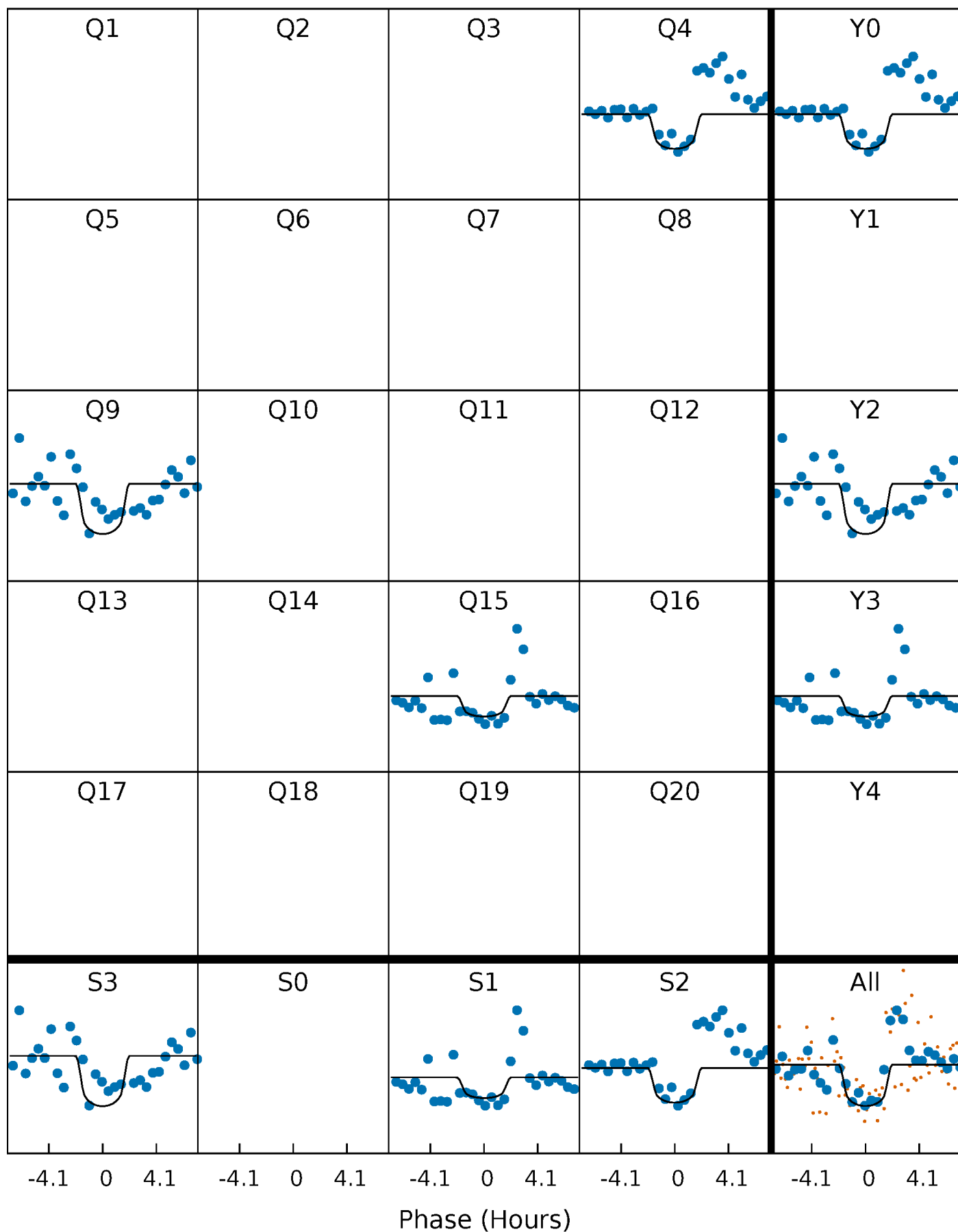
PDC Quarter-Phased Transit Curves

TCE 007459173-06 P=494.958274 Days $T_0=393.893323$ (BKJD)



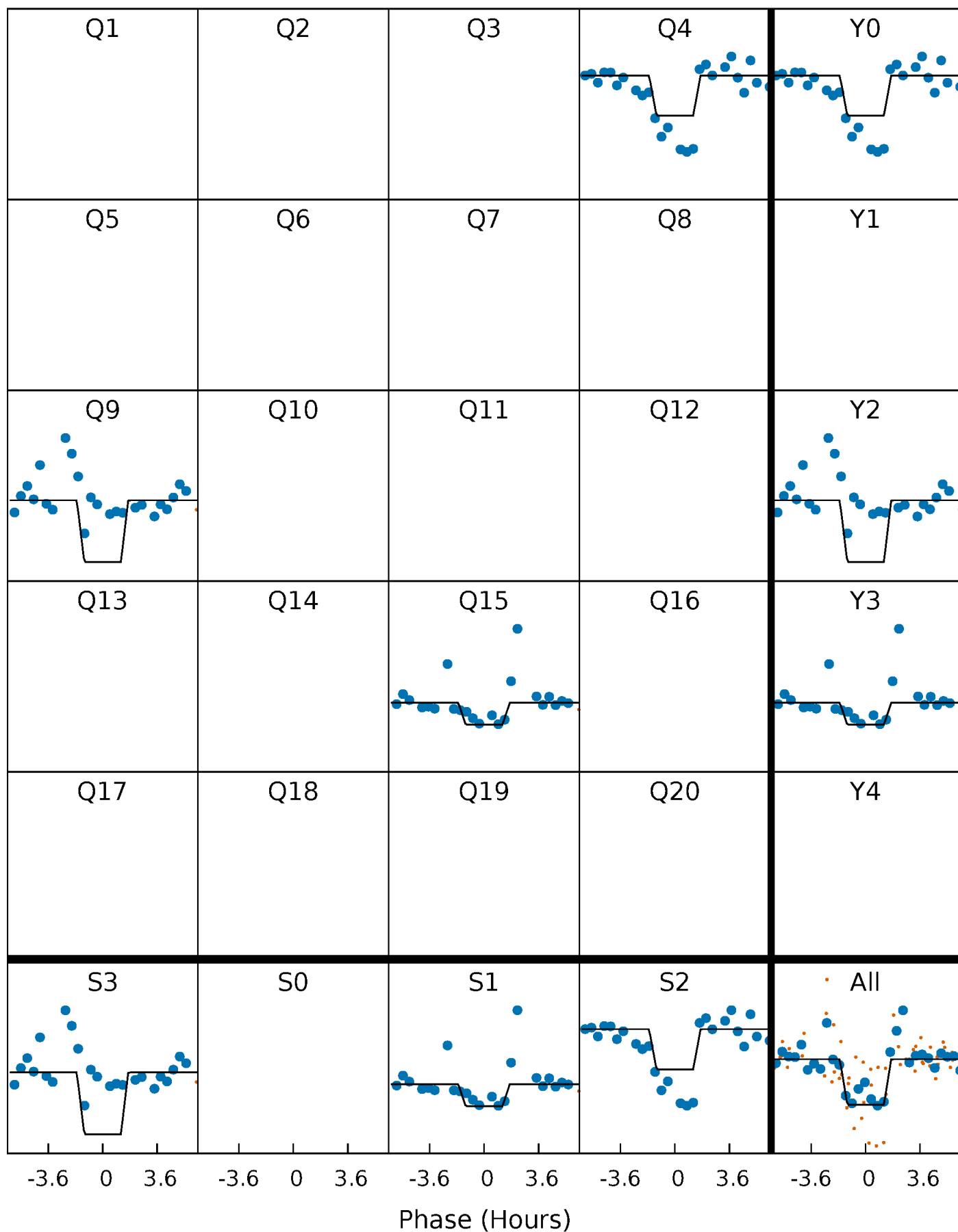
DV Quarter-Phased Transit Curves

TCE 007459173-06 P=494.958274 Days $T_0=393.893323$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

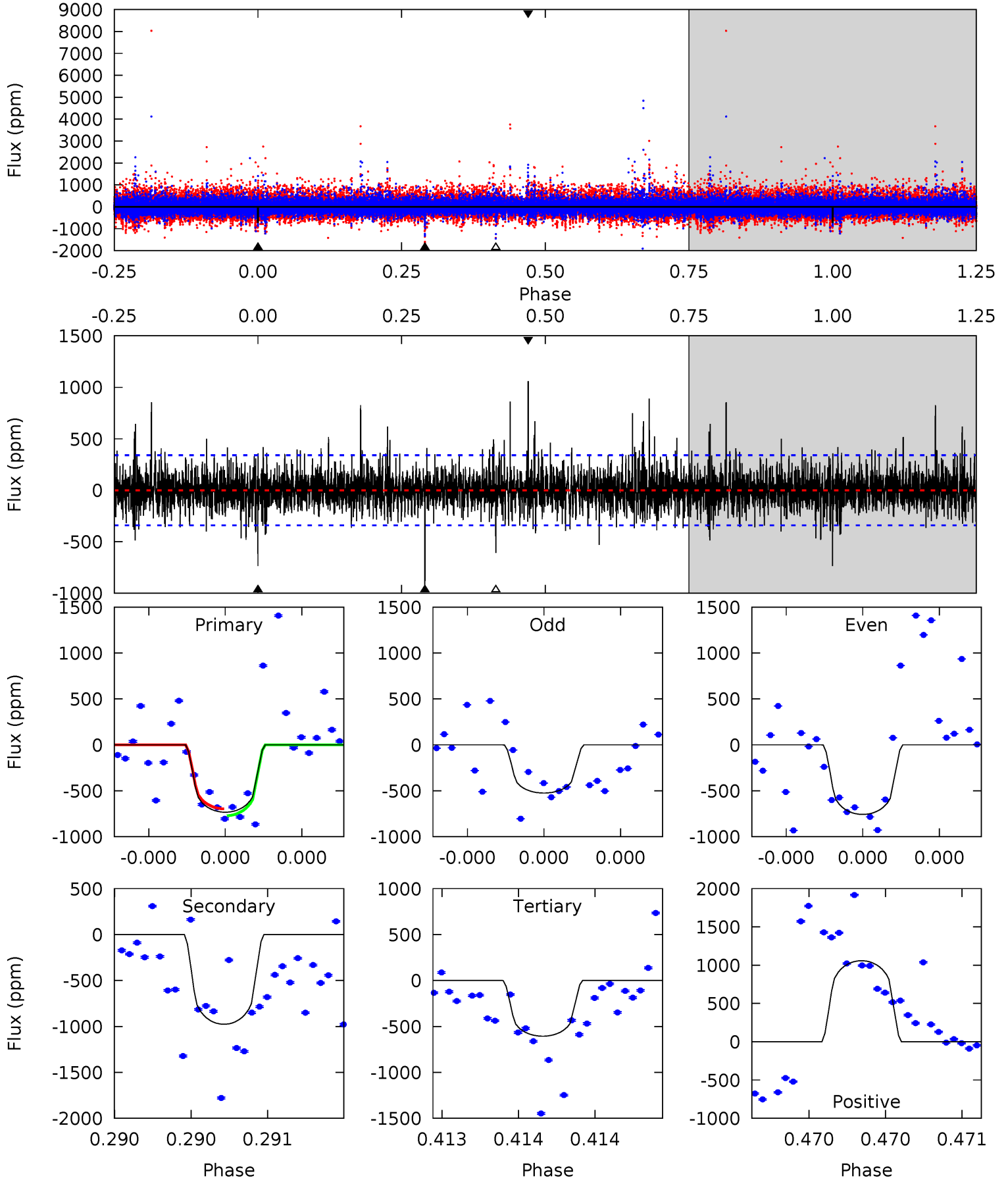
TCE 007459173-06 P=494.962124 Days $T_0=393.887418$ (BKJD)



DV Model-Shift Uniqueness Test

007459173-06, P = 494.958274 Days, E = 393.893323 Days

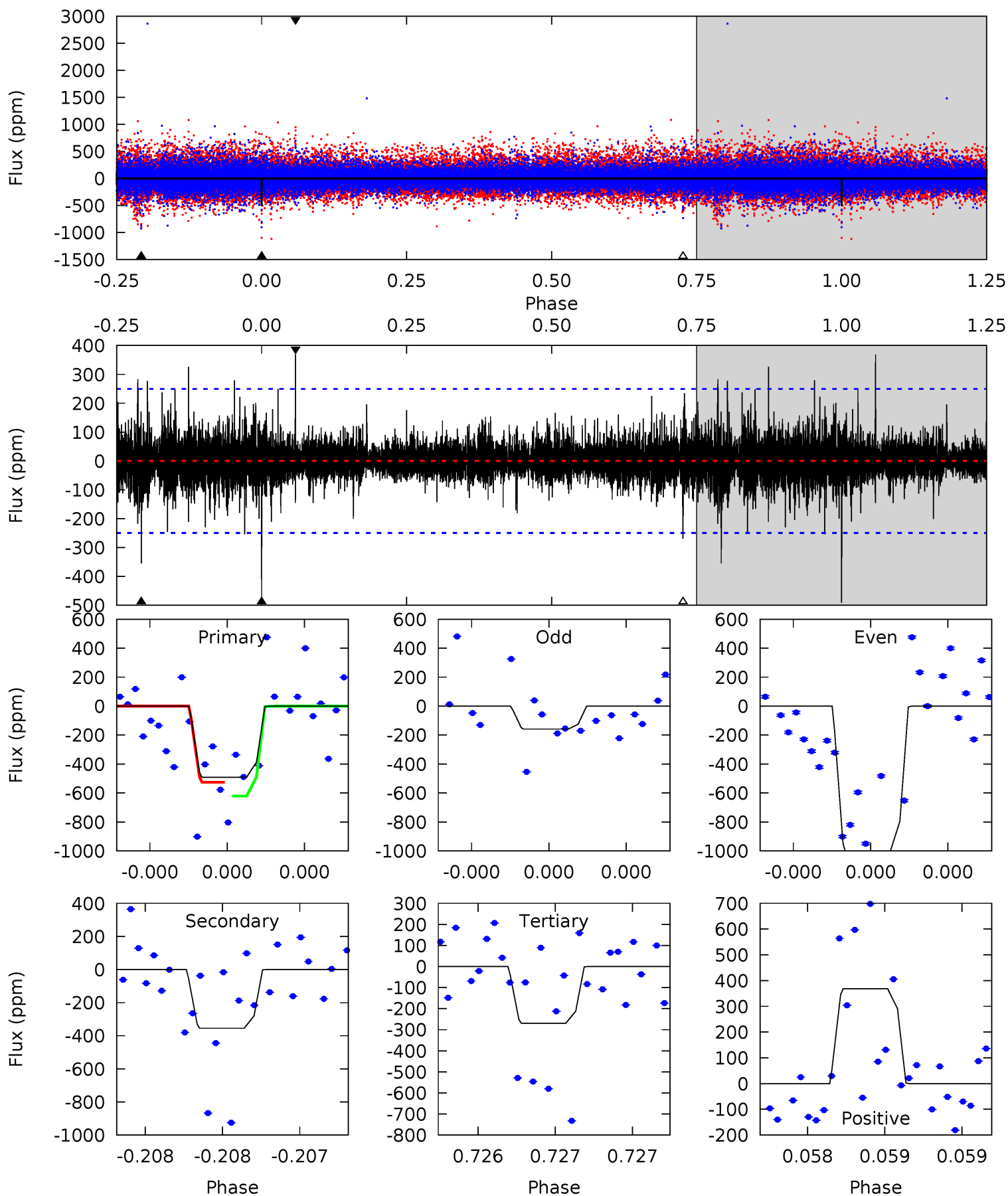
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	16.2	10.1	17.5	5.65	3.59	2.04	2.11	-5.38	6.14	-1.35	0.80	1.24	0.52	0.62



Alt Model-Shift Uniqueness Test

007459173-06, P = 494.962124 Days, E = 393.887418 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	8.05	6.11	8.38	5.67	3.62	1.03	5.05	2.78	1.94	-0.33	8.85	1.11	0.43	1.14



Stellar Parameters For KIC 007459173

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5605^{+169}_{-152}	$3.989^{+0.462}_{-0.165}$	$-0.160^{+0.300}_{-0.250}$	$1.642^{+0.476}_{-0.774}$	$0.959^{+0.111}_{-0.123}$	$0.305^{+1.403}_{-0.131}$
	+3%/-3%	+12%/-4%	+188%/-156%	+29%/-47%	+12%/-13%	+460%/-43%
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 007459173-06 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-976 ± 60	$8.59^{+7.77}_{-5.66}$	398^{+33}_{-49}	4534^{+3001}_{-910}	10854^{+83545}_{-8009}
Alt.	-354 ± 44	$8.20^{+8.83}_{-5.41}$	398^{+32}_{-48}	3865^{+1911}_{-804}	4331^{+34502}_{-3349}

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 $A_{obs} \gg 1.0$

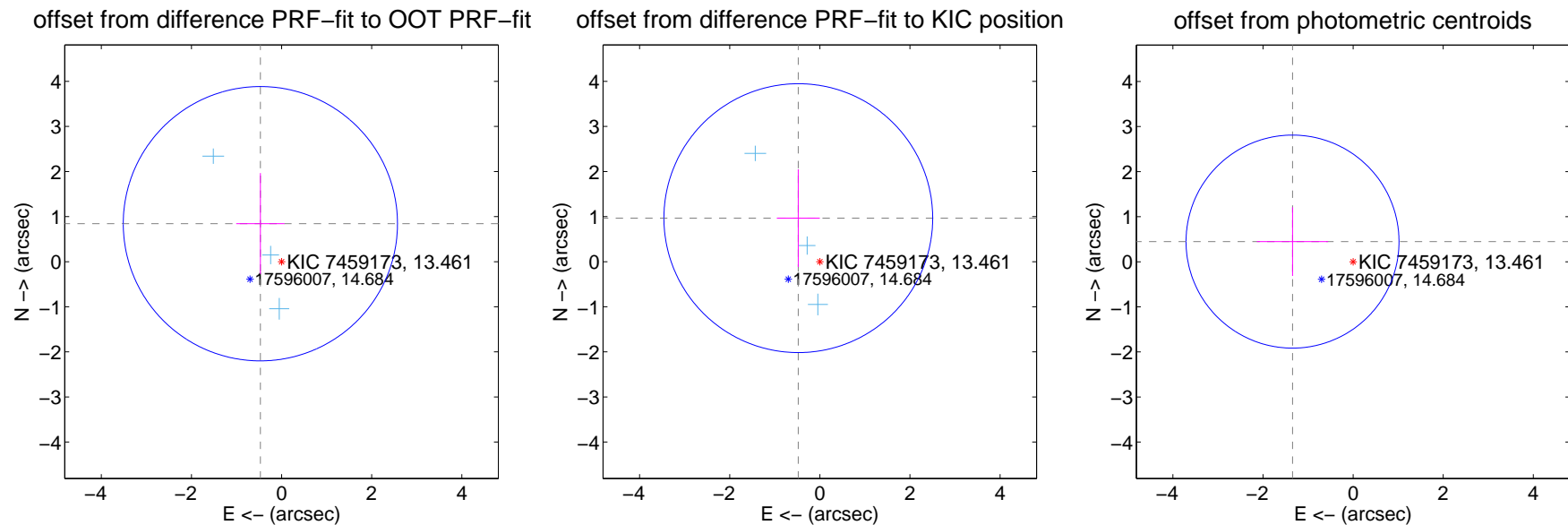
DV Centroid Data

Supplemental centroid analysis for 007459173-06. Kepler magnitude: 13.46. Transit SNR 8.40

There are 3 quarters with good PRF difference image offsets

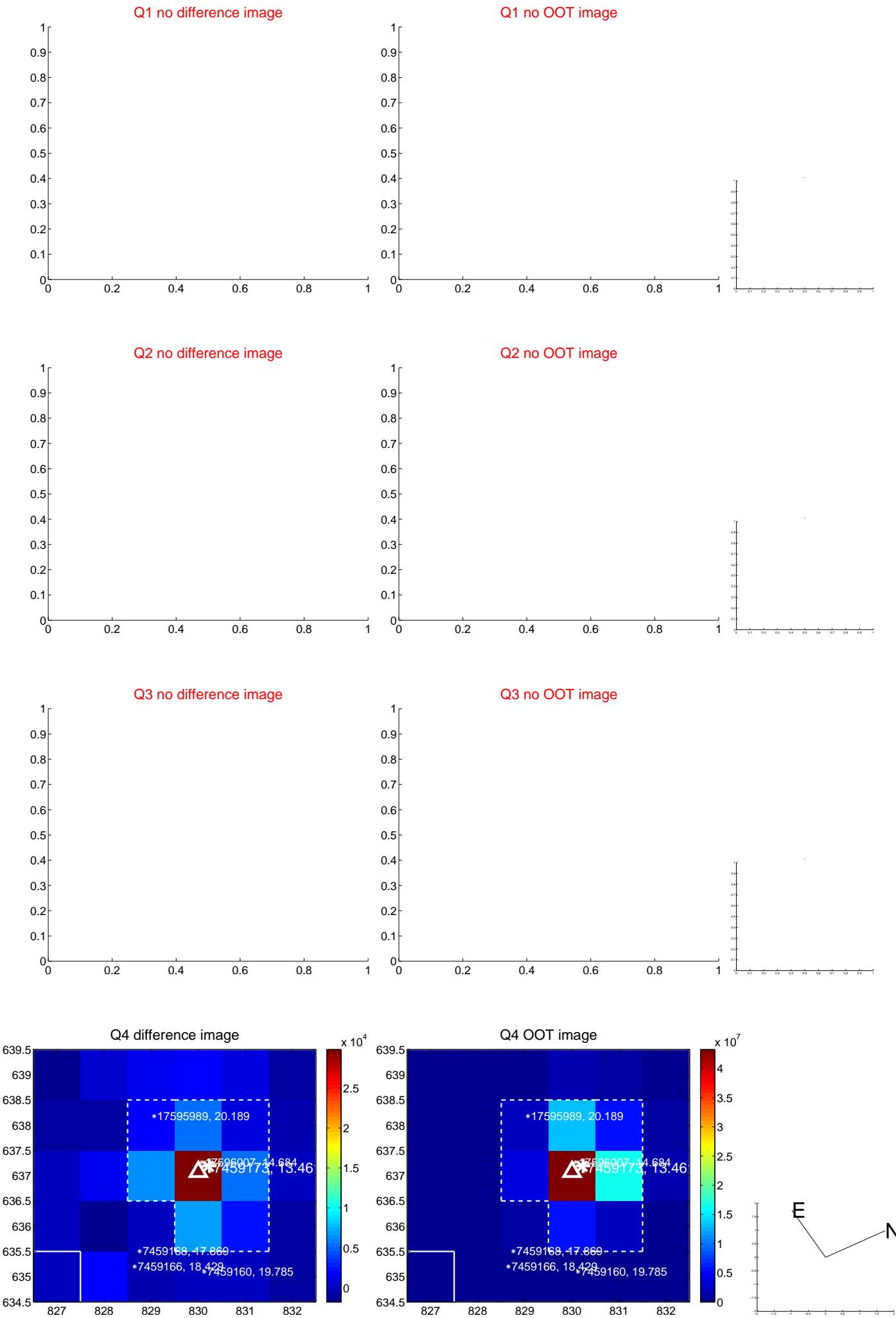
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.965 ± 1.014	0.95	0.470 ± 0.535	0.842 ± 1.122
PRF-fit source offset from KIC position	1.077 ± 0.994	1.08	0.478 ± 0.478	0.966 ± 1.083
photometric centroid source offset	1.42 ± 0.79	1.80	1.34 ± 0.79	0.45 ± 0.76



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.

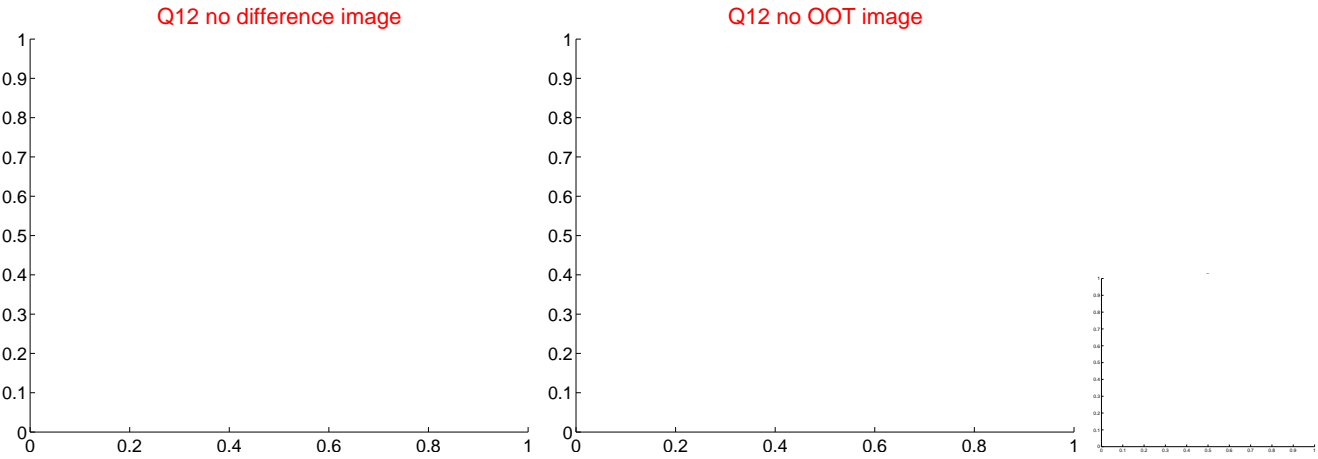
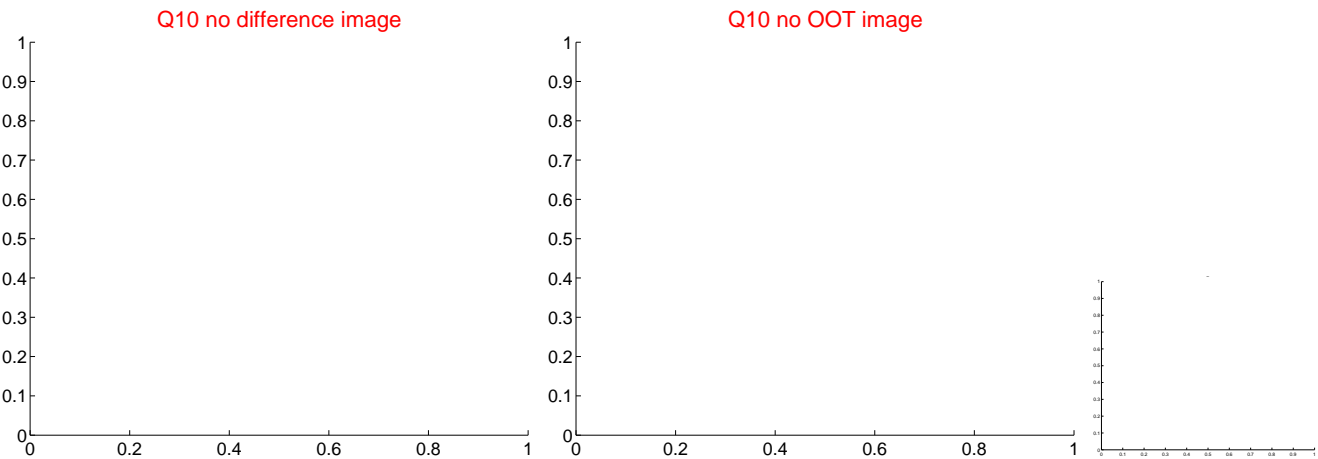
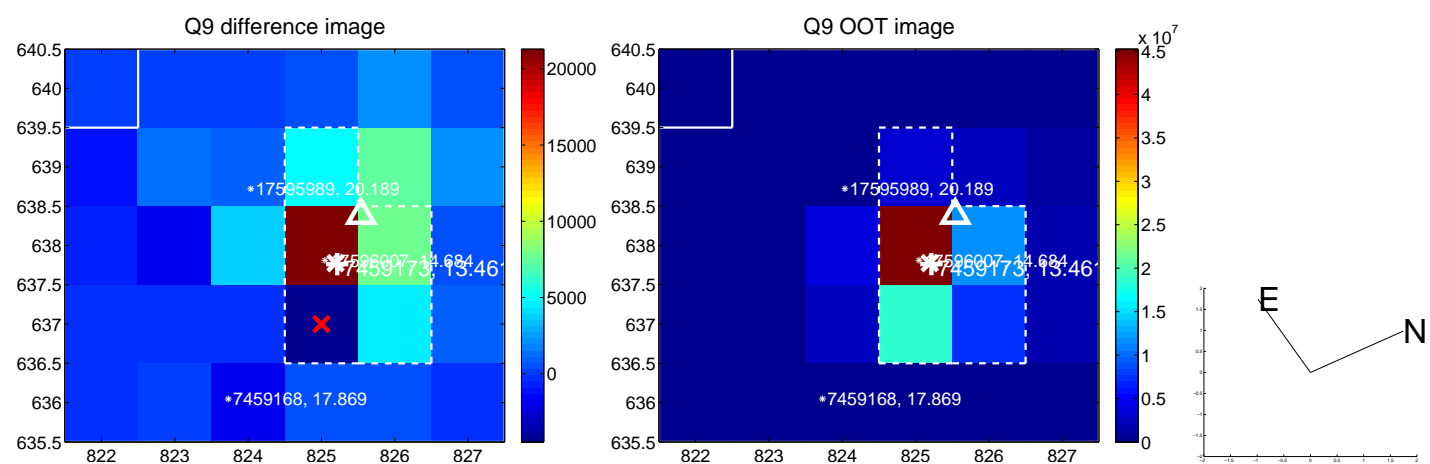
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



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

Q13 no difference image



Q13 no OOT image



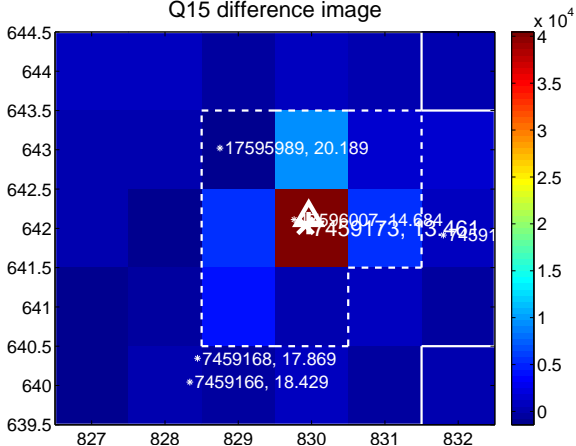
Q14 no difference image



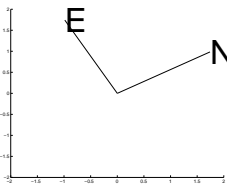
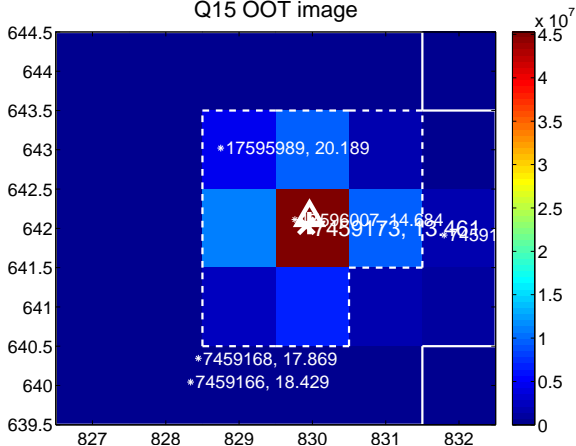
Q14 no OOT image



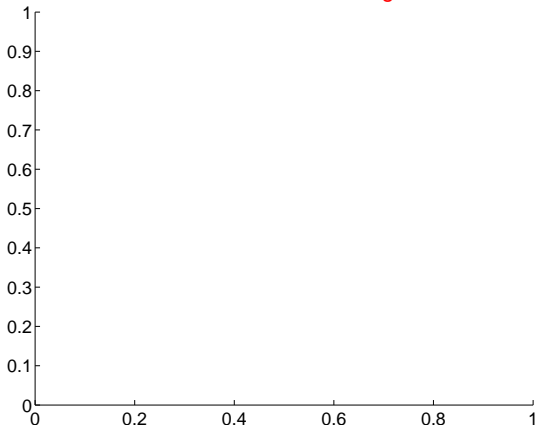
Q15 difference image



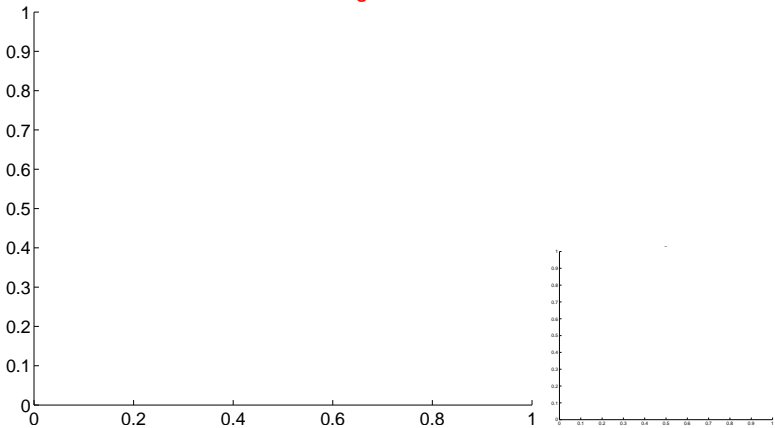
Q15 OOT image



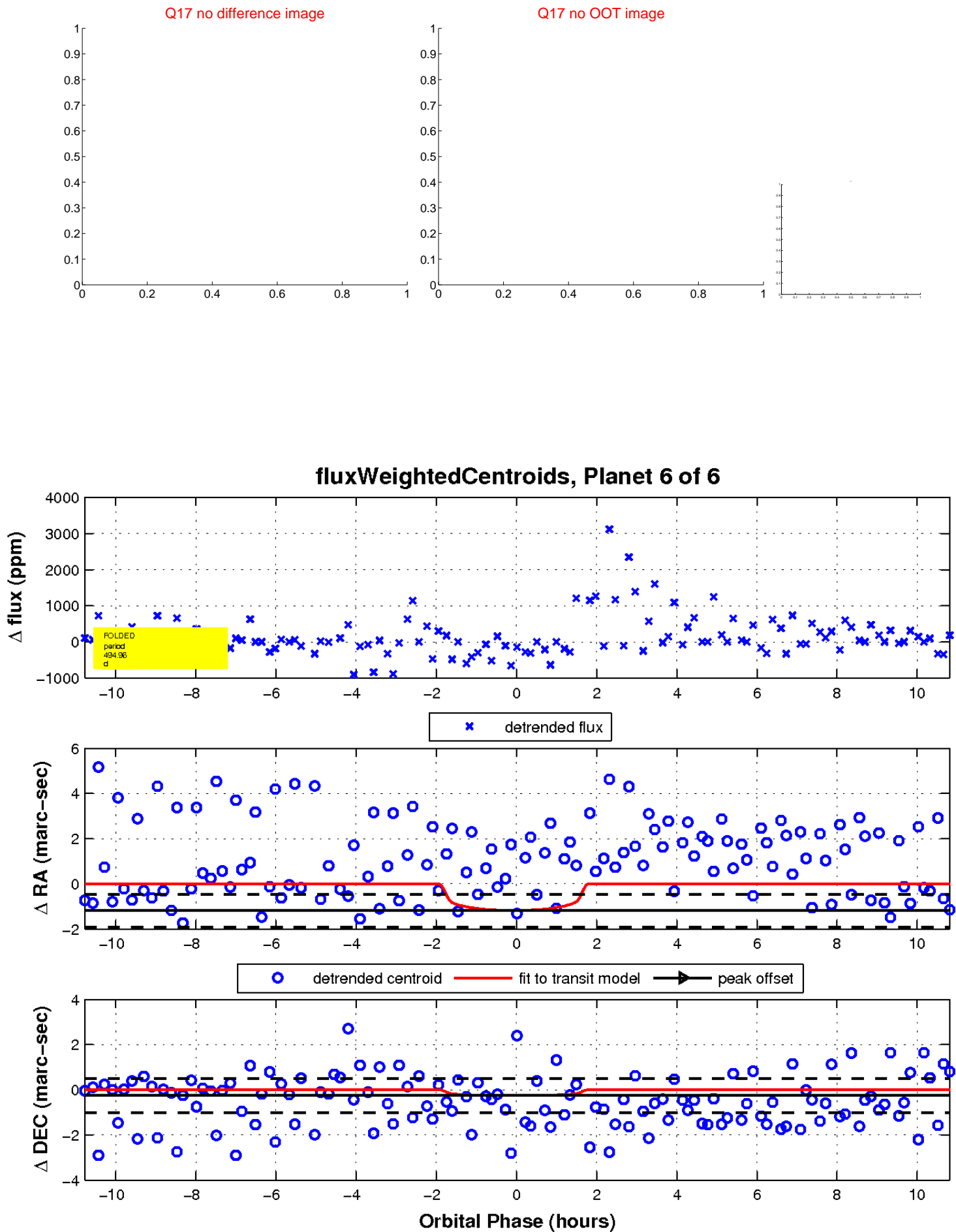
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

