

KIC 007886049

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})
007886049-01	OBS	No	566.680210	208.790970	2463.7	5.111	21.6	6.4	0.48	4551	4.48	0.08
007886049-02	OBS	No	451.961806	301.255197	2564.1	4.664	15.7	6.6	0.48	4551	2.42	0.11
007886049-03	OBS	No	516.009679	426.483555	2649.6	2.825	14.1	8.1	0.48	4551	2.69	0.09
007886049-04	OBS	No	587.426005	254.074682	2248.6	3.507	12.9	5.2	0.48	4551	2.26	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007886049-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007886049-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—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

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

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

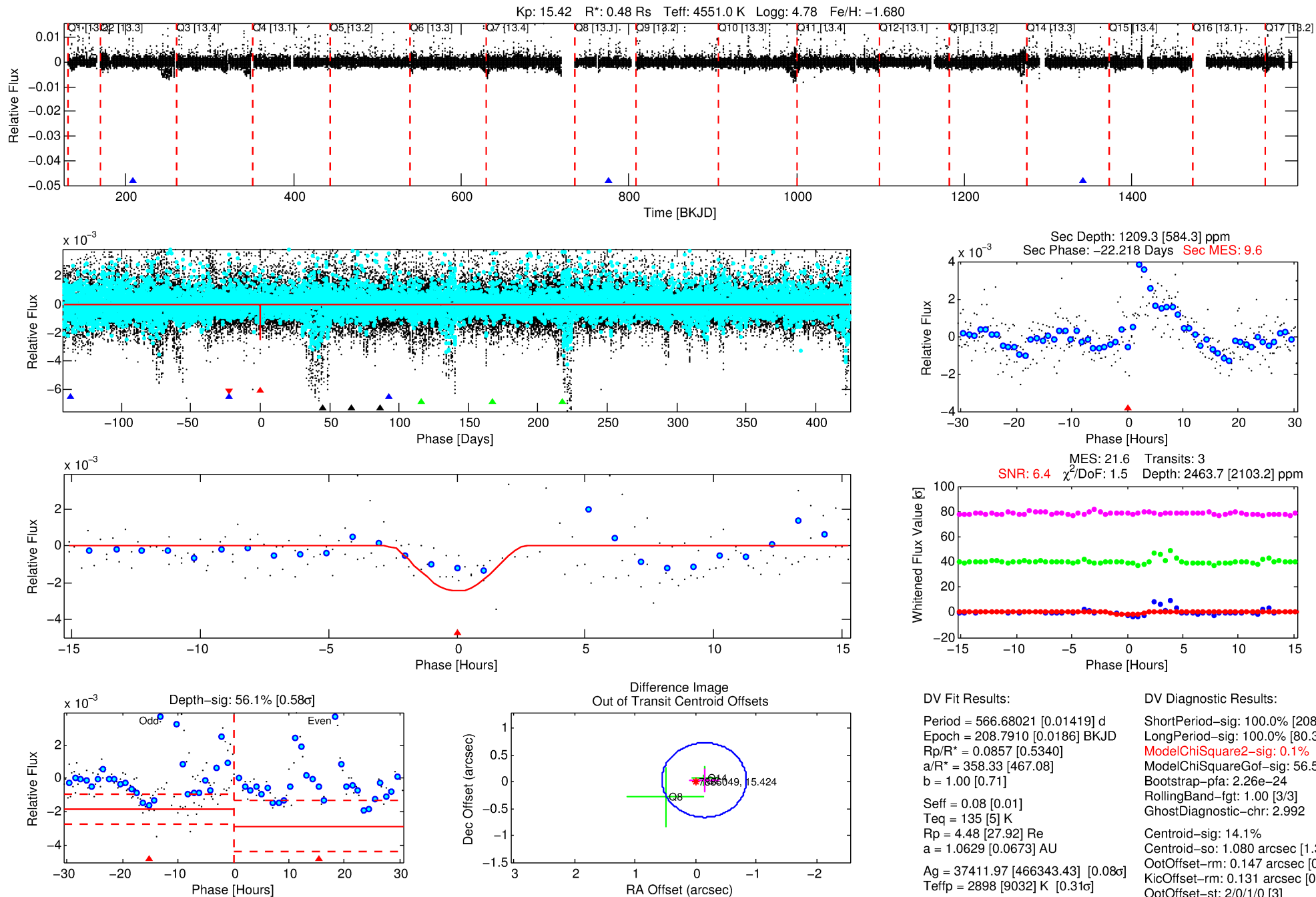
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007886049-01

No Significant Match Found

DV One-Page Summary

KIC: 7886049 Candidate: 1 of 4 Period: 566.680 d



DV Fit Results:

Period = 566.68021 [0.01419] d
Epoch = 208.7910 [0.0186] BKJD
Rp/R* = 0.0857 [0.5340]
a/R* = 358.33 [467.08]
b = 1.00 [0.71]
Seff = 0.08 [0.01]
Teq = 135 [5] K
Rp = 4.48 [27.92] Re
a = 1.0629 [0.0673] AU
Ag = 37411.97 [466343.43] [0.08σ]
Teffp = 2898 [9032] K [0.31σ]

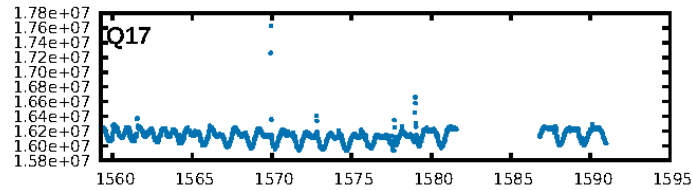
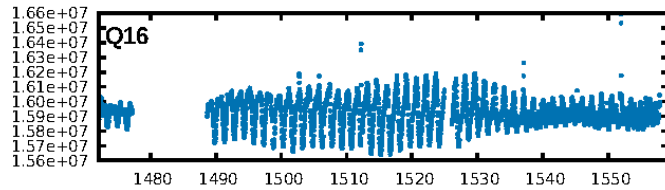
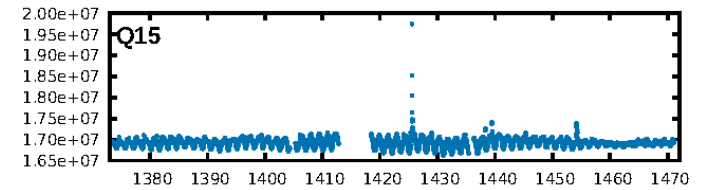
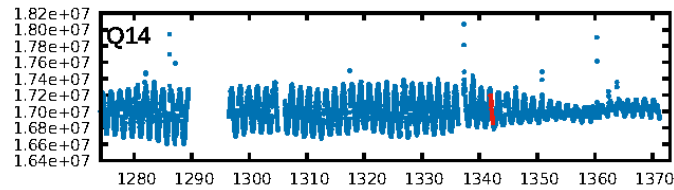
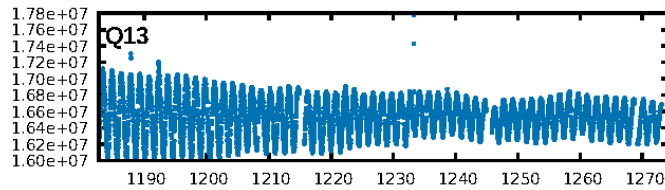
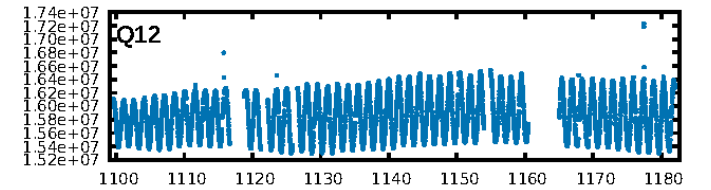
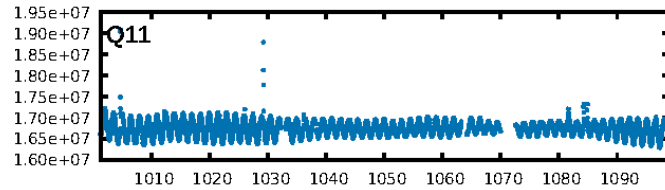
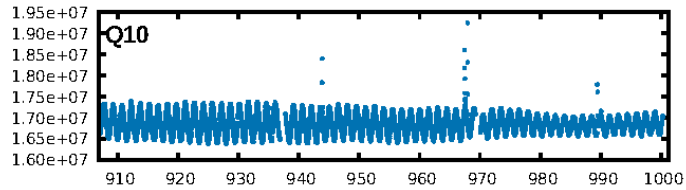
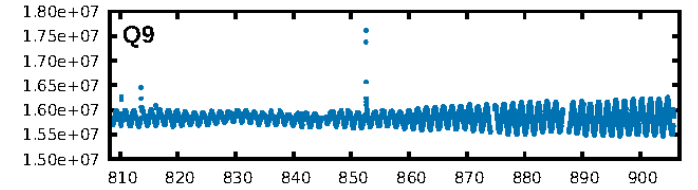
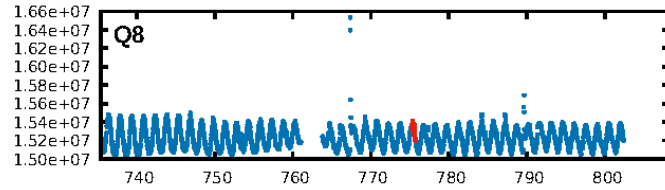
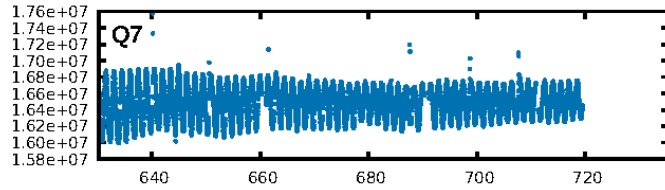
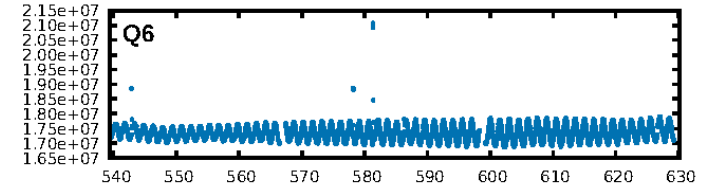
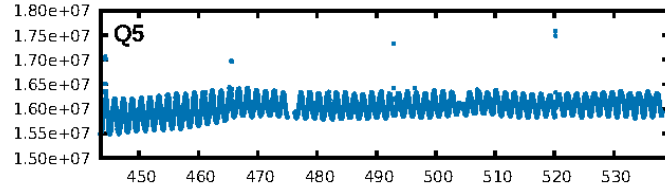
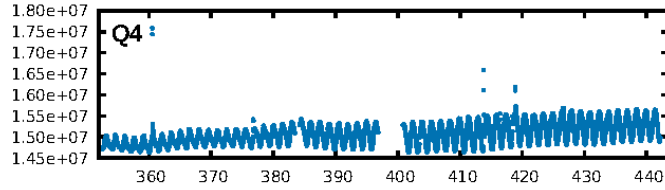
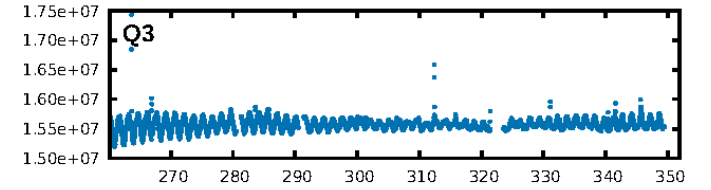
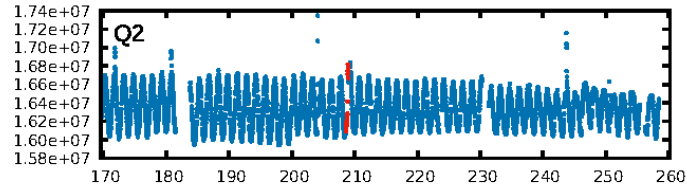
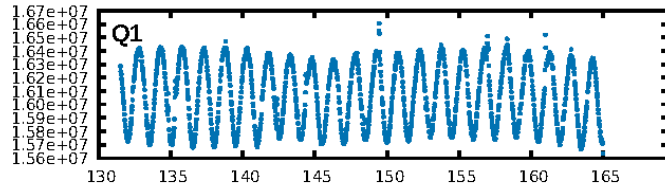
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [208.24σ]
LongPeriod-sig: 100.0% [80.32σ]
ModelChiSquare2-sig: 0.1%
ModelChiSquareGof-sig: 56.5%
Bootstrap-pfa: 2.26e-24
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.992
Centroid-sig: 14.1%
Centroid-so: 1.080 arcsec [1.36σ]
OotOffset-rm: 0.147 arcsec [0.63σ]
KicOffset-rm: 0.131 arcsec [0.60σ]
OotOffset-st: 2/0/1/0 [3]
KicOffset-st: 2/0/1/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

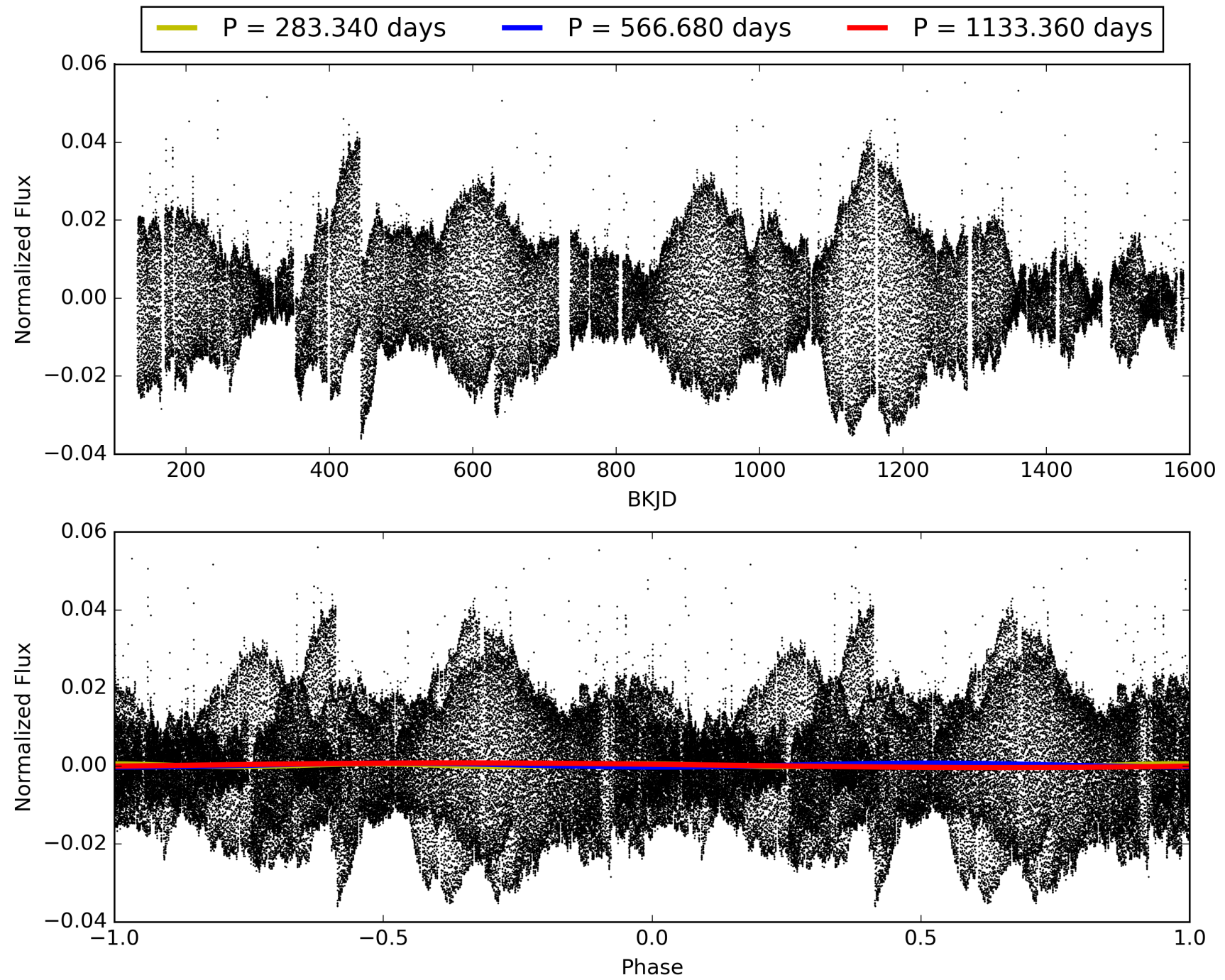
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:49:39 Z

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

TCE 007886049-01, PDC Light Curves

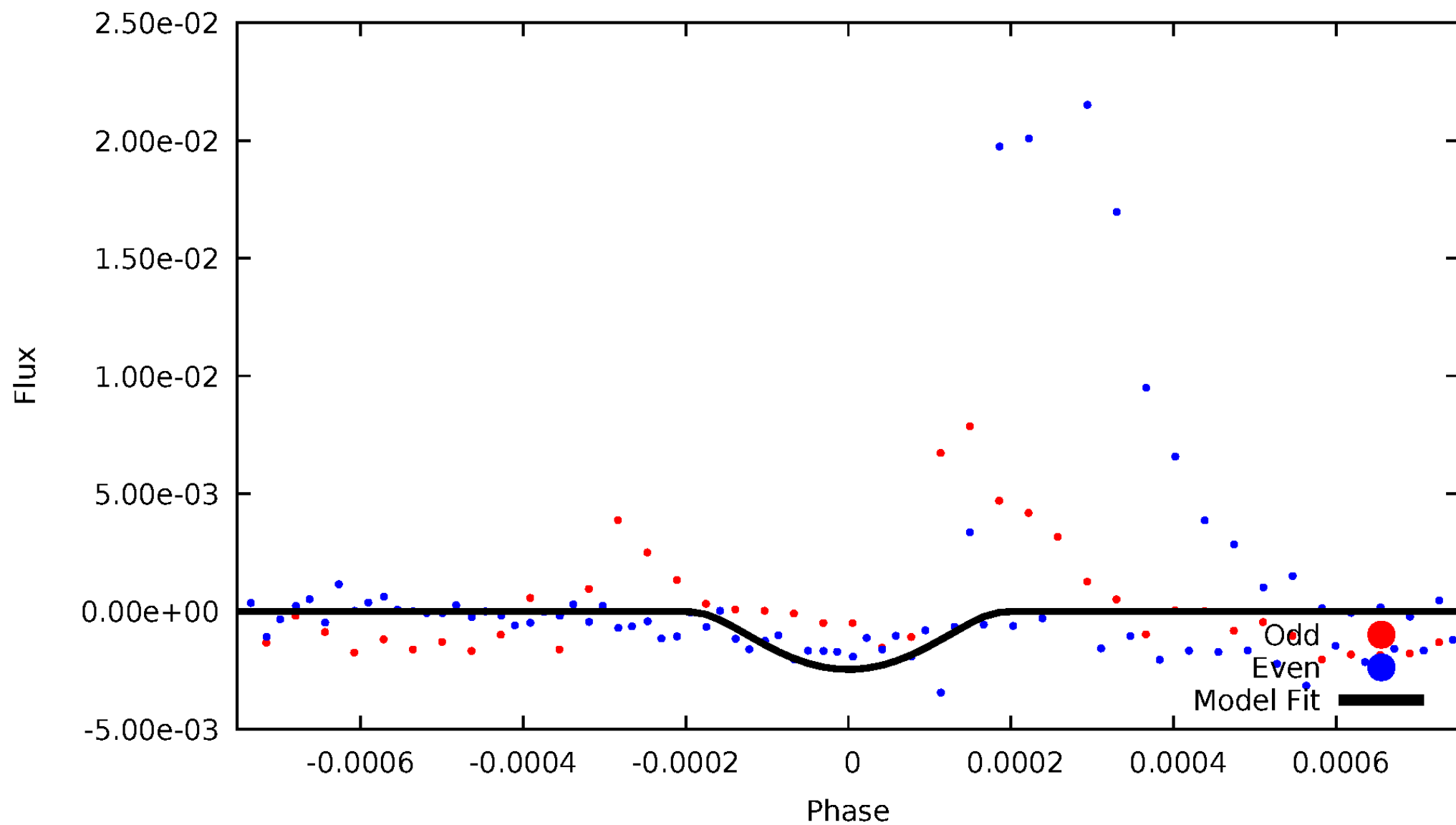


TCE 007886049-01



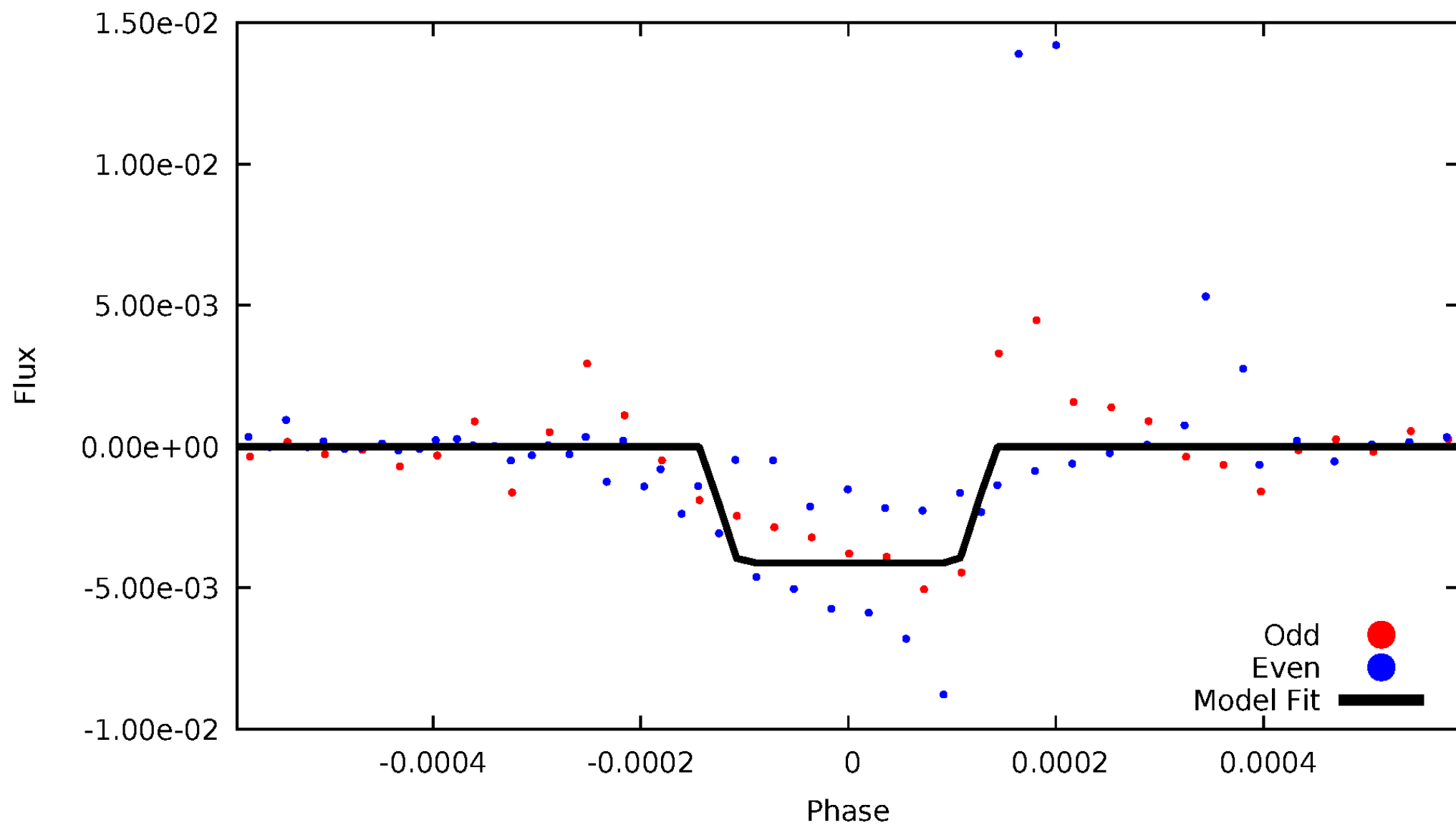
DV Odd/Even

TCE 007886049-01



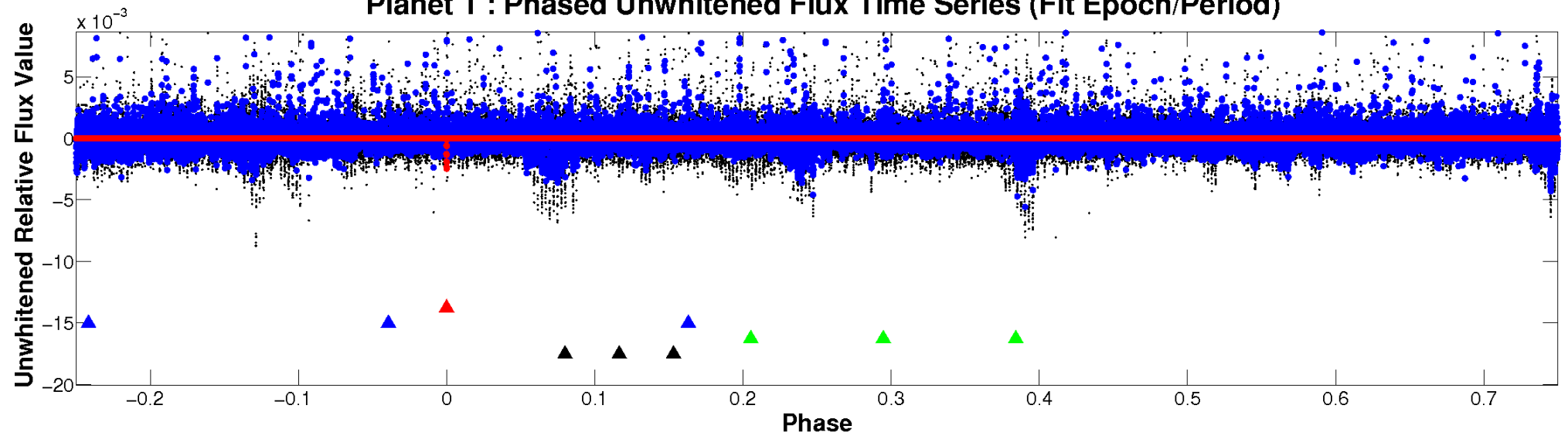
ALT Odd/Even

TCE 007886049-01

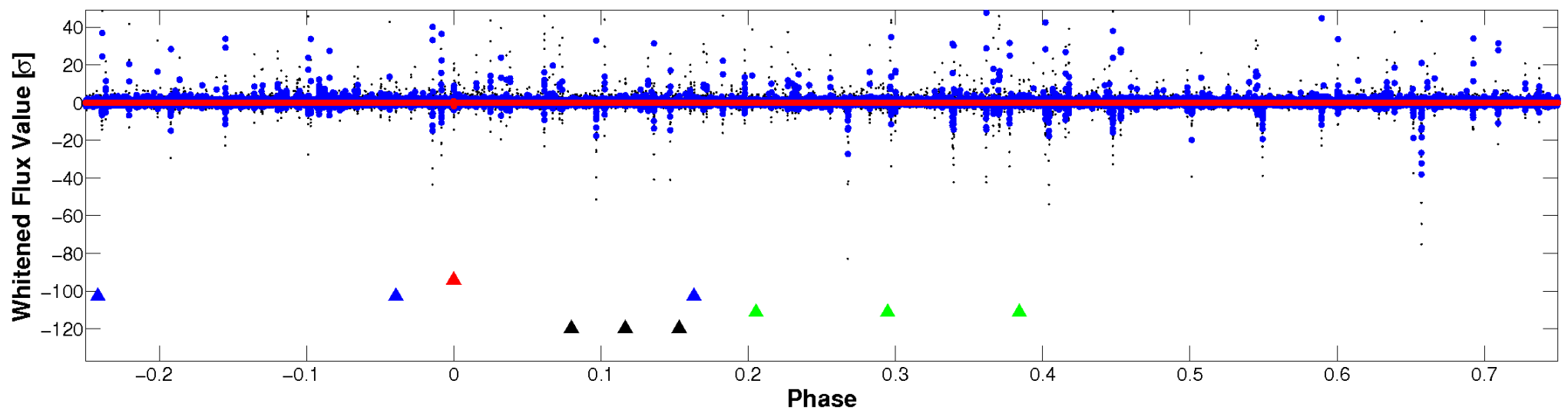


Non-Whitened Vs. Whitened Light Curve

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

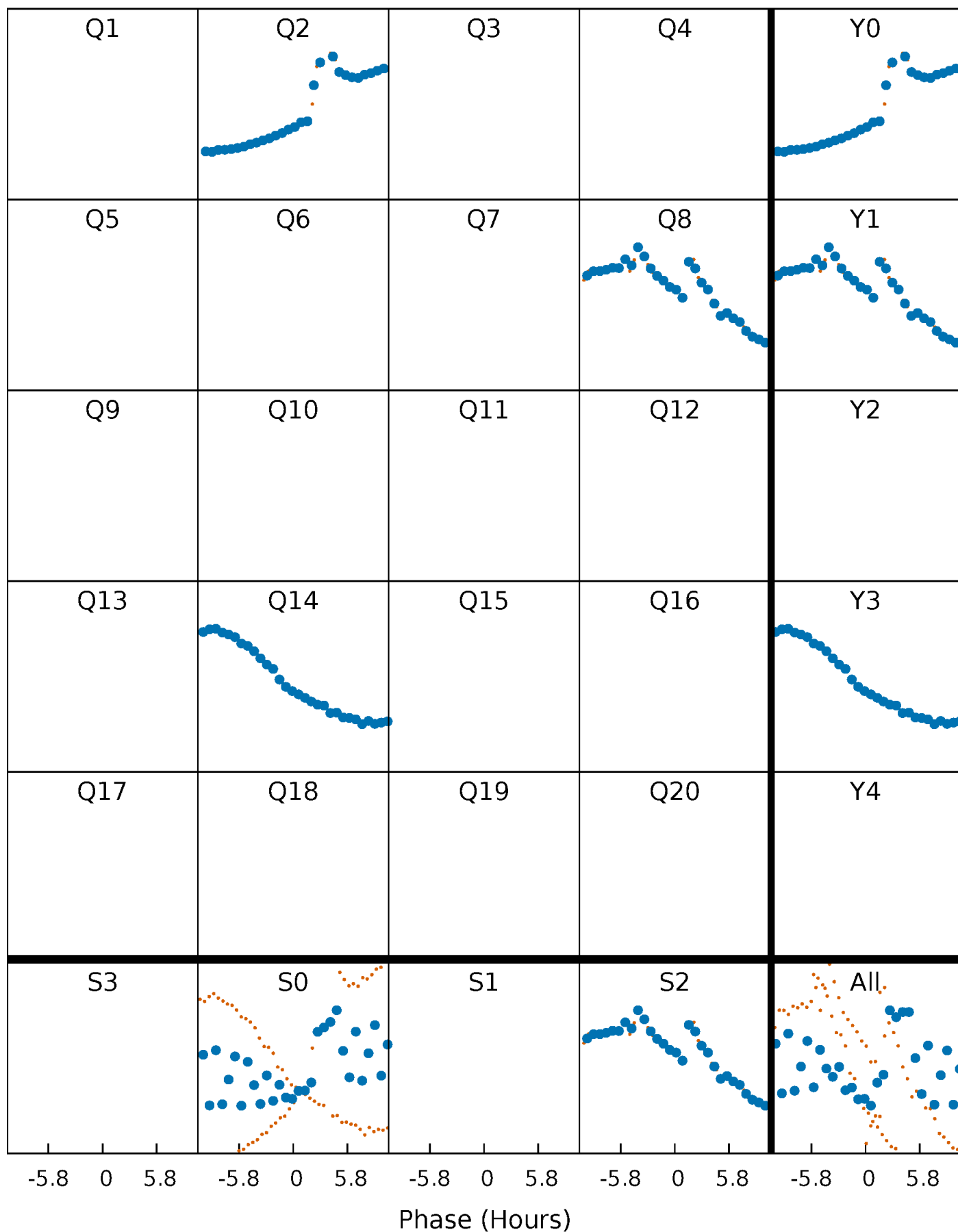


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



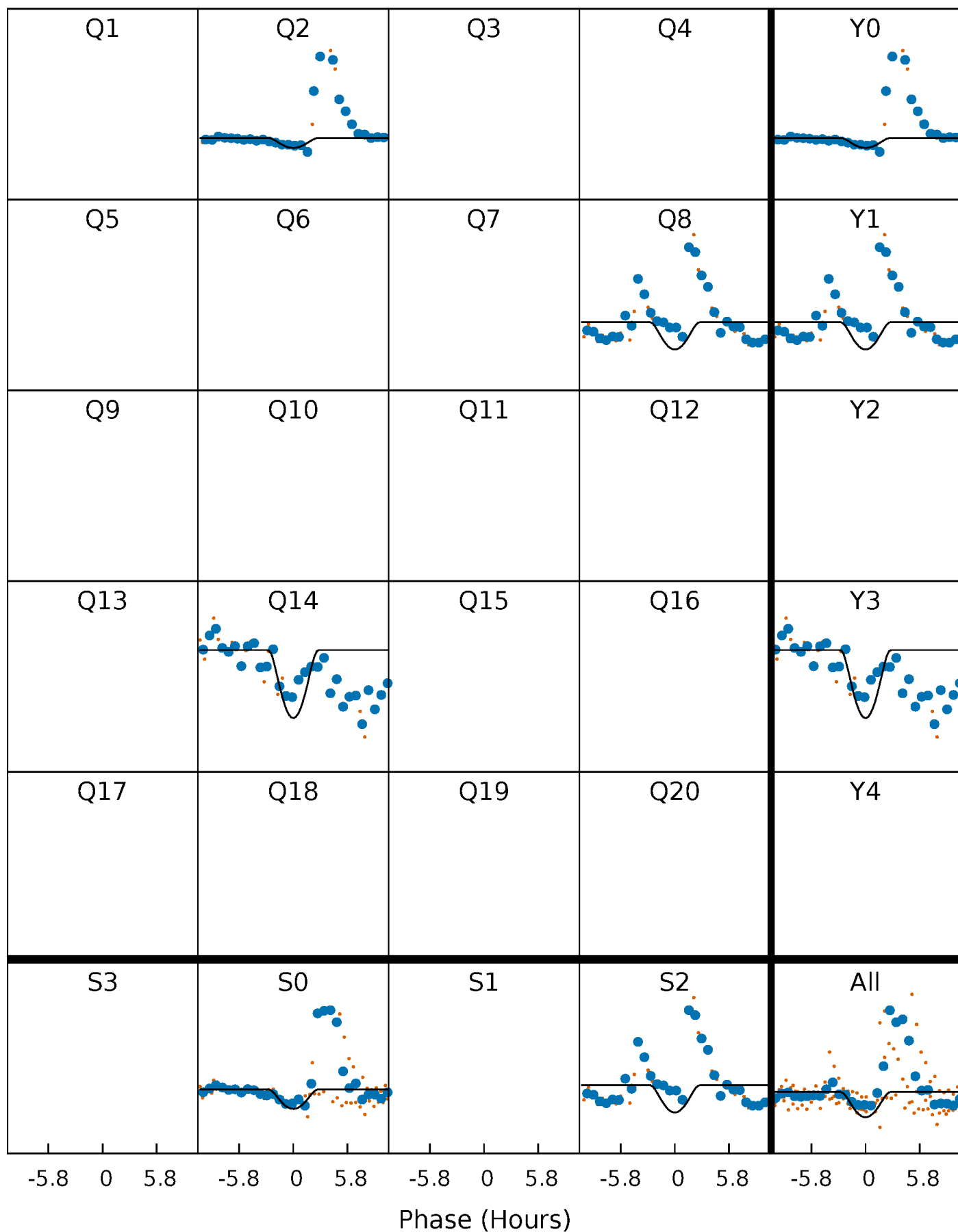
PDC Quarter-Phased Transit Curves

TCE 007886049-01 P=566.680210 Days $T_0=208.790970$ (BKJD)



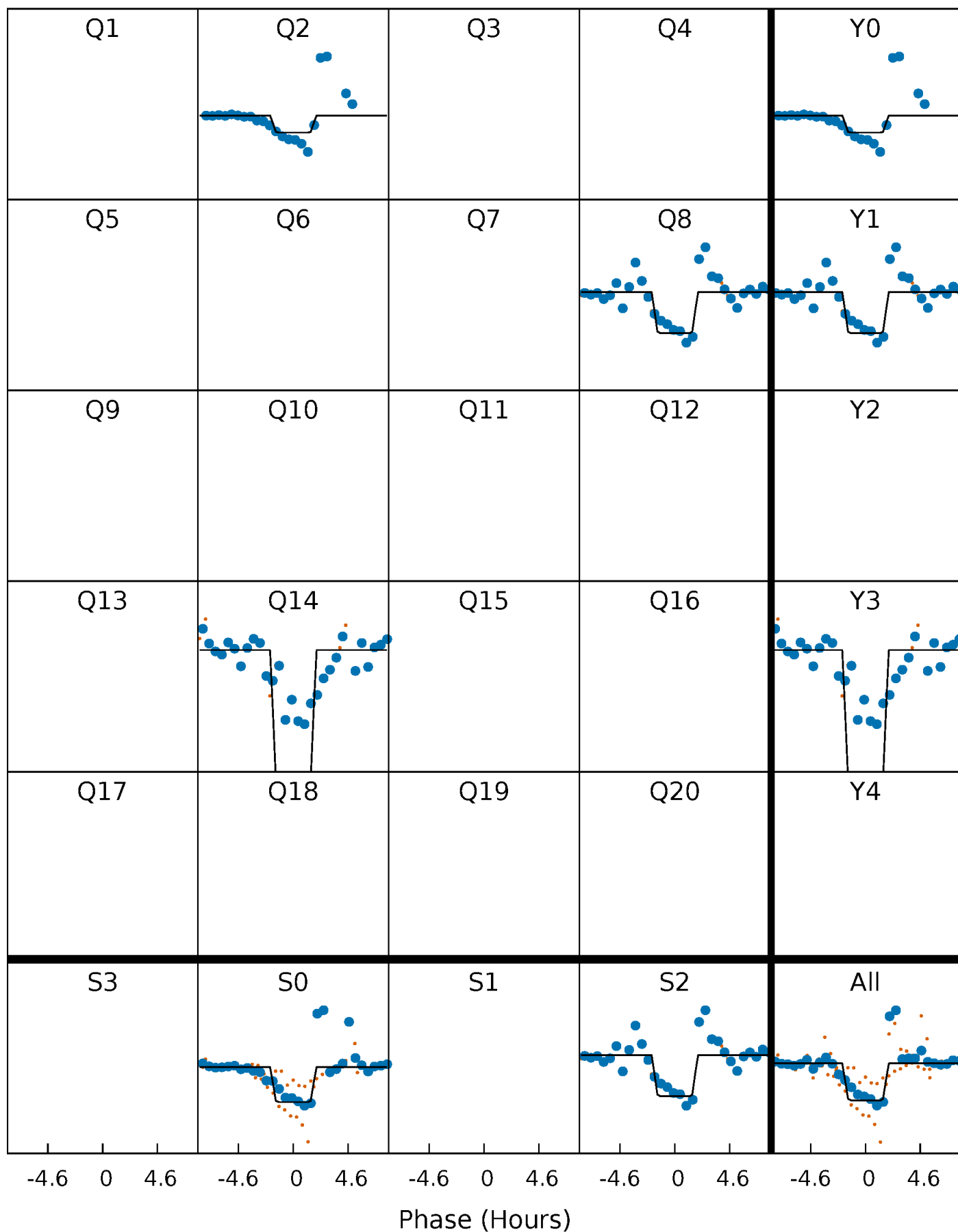
DV Quarter-Phased Transit Curves

TCE 007886049-01 P=566.680210 Days $T_0=208.790970$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

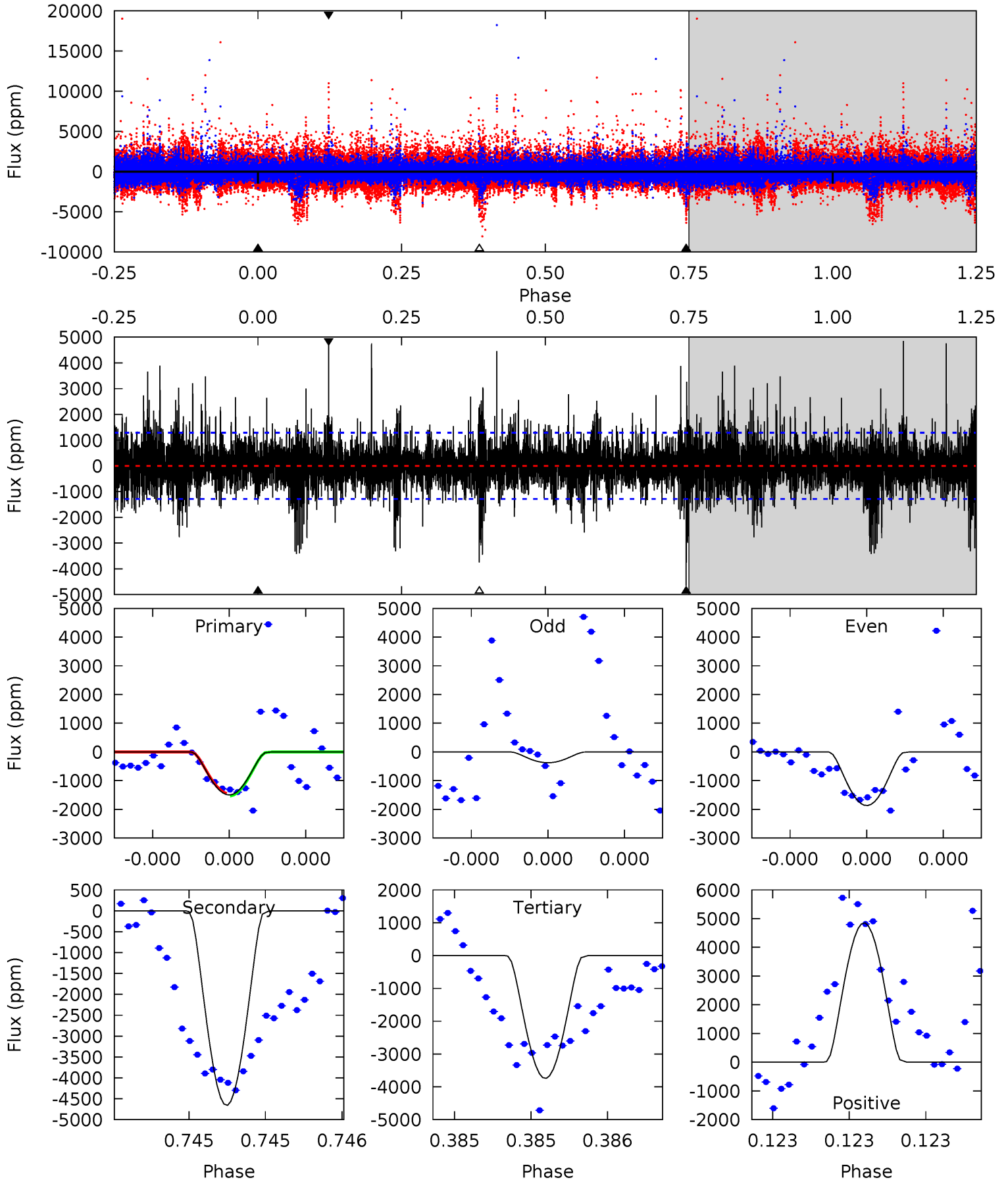
TCE 007886049-01 P=566.649864 Days $T_0=208.803418$ (BKJD)



DV Model-Shift Uniqueness Test

007886049-01, P = 566.680210 Days, E = 208.790970 Days

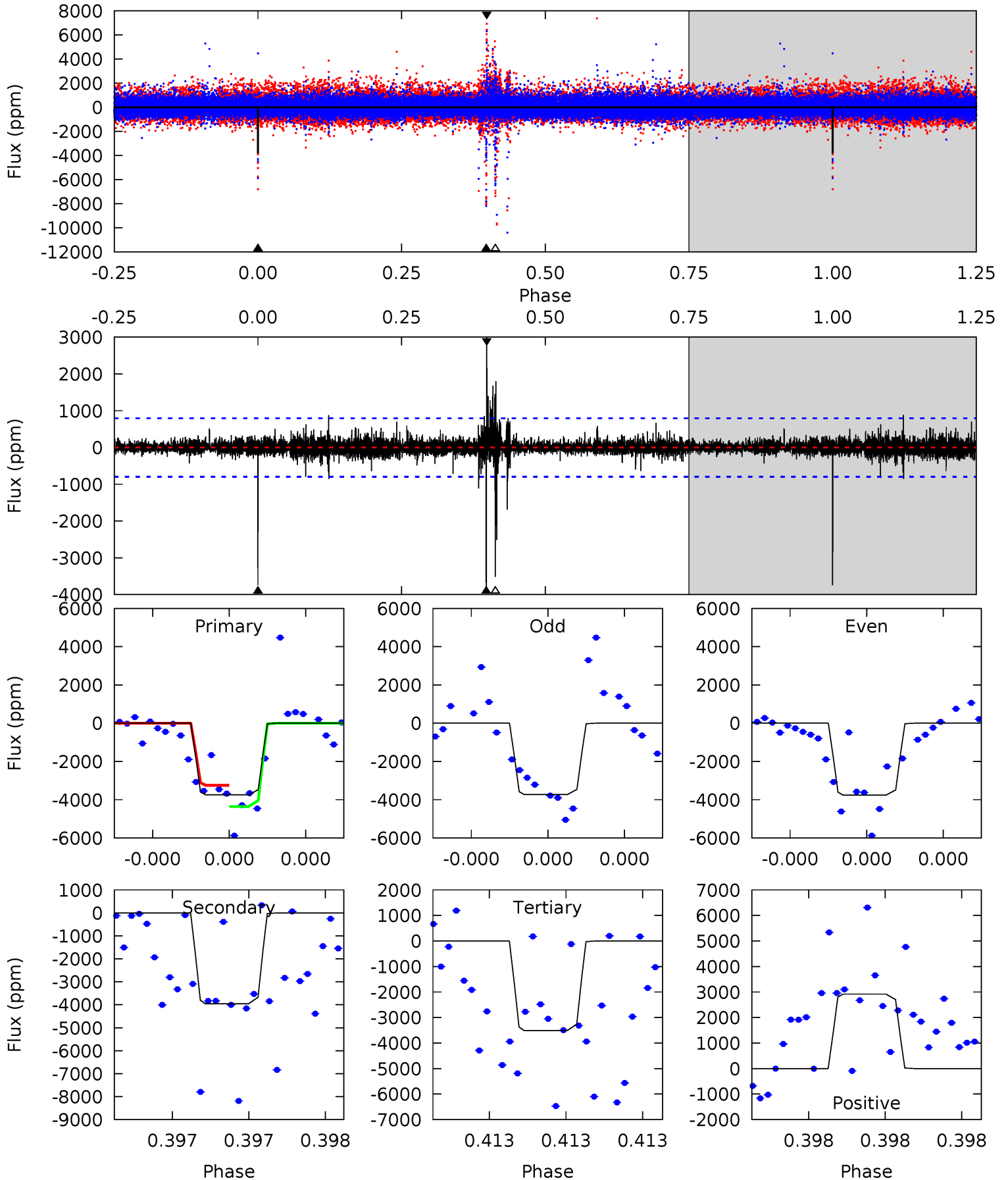
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.56	20.4	16.4	21.2	5.61	3.54	3.35	-9.82	-14.7	4.00	-0.84	1.76	0.70	0.51	0.20



Alt Model-Shift Uniqueness Test

007886049-01, P = 566.649864 Days, E = 208.803418 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	28.2	25.0	20.8	5.67	3.63	1.29	1.66	5.91	3.18	7.43	0.07	1.02	0.43	3.81



Stellar Parameters For KIC 007886049

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4551^{+137}_{-151}	$4.775^{+0.048}_{-0.028}$	$-1.680^{+0.300}_{-0.200}$	$0.479^{+0.027}_{-0.037}$	$0.499^{+0.031}_{-0.028}$	$6.389^{+1.378}_{-0.724}$
	+3%/-3%	+1%/-1%	+18%/-12%	+6%/-8%	+6%/-6%	+22%/-11%
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 007886049-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-4658 ± 229	$21.06^{+20.43}_{-14.83}$	188^{+6}_{-7}	2608^{+1099}_{-376}	6655^{+66461}_{-4943}
Alt.	-3960 ± 140	$18.89^{+21.09}_{-13.61}$	188^{+7}_{-7}	2627^{+1211}_{-408}	6892^{+81976}_{-5297}

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 $A_{obs} \gg 1.0$

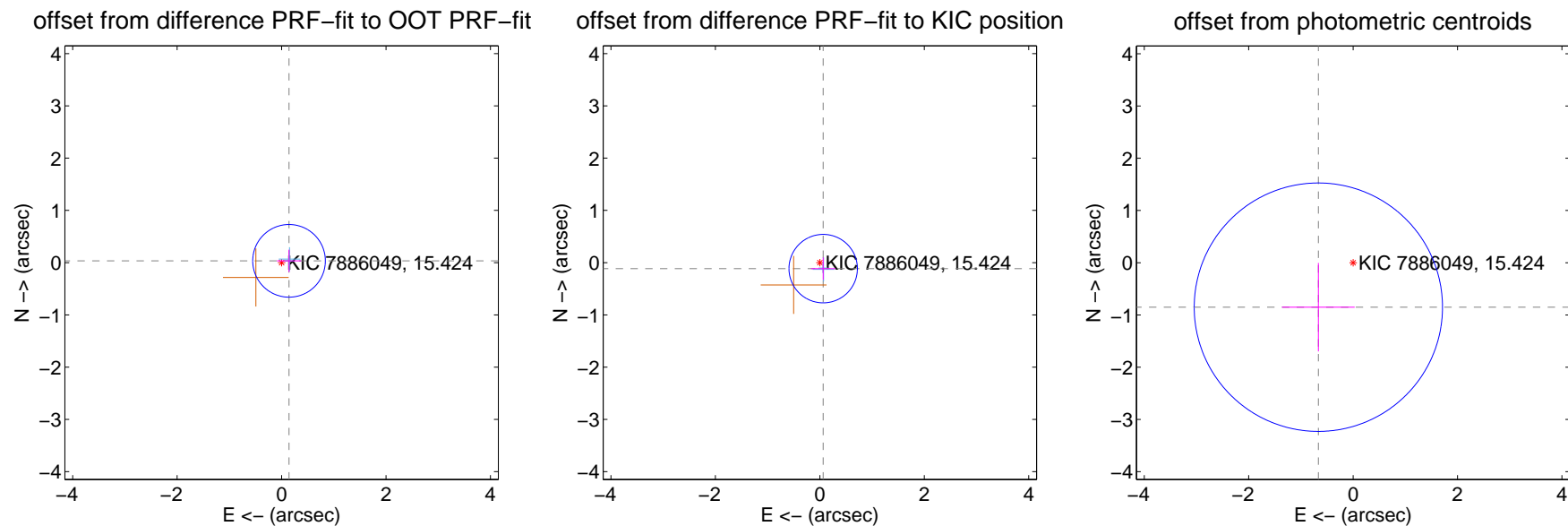
DV Centroid Data

Supplemental centroid analysis for 007886049-01. Kepler magnitude: 15.42. Transit SNR 6.40

There are 2 quarters with good PRF difference image offsets

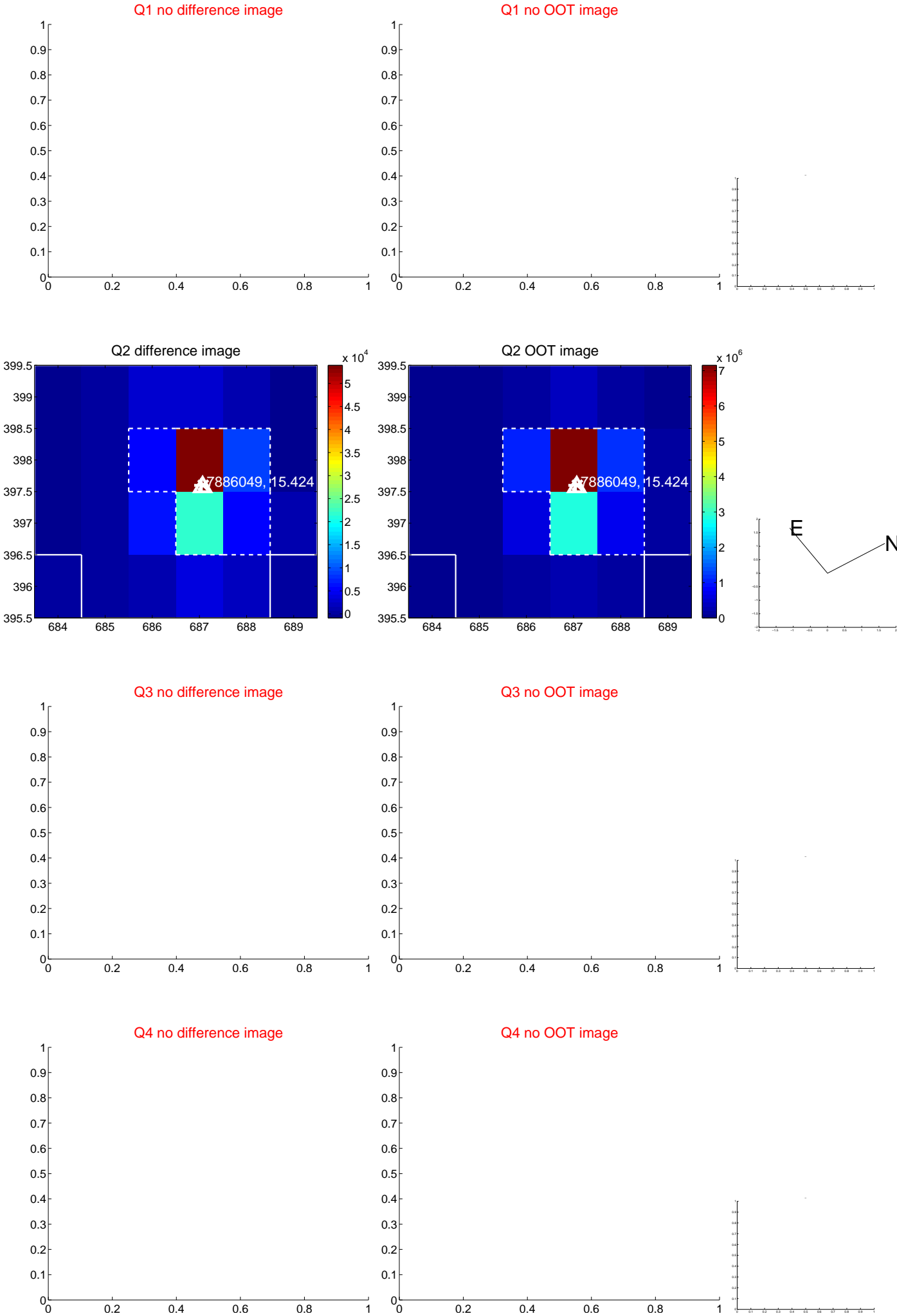
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.147 ± 0.232	0.63	-0.143 ± 0.233	0.035 ± 0.214
PRF-fit source offset from KIC position	0.131 ± 0.218	0.60	-0.064 ± 0.233	-0.114 ± 0.214
photometric centroid source offset	1.08 ± 0.79	1.36	0.67 ± 0.70	-0.85 ± 0.85

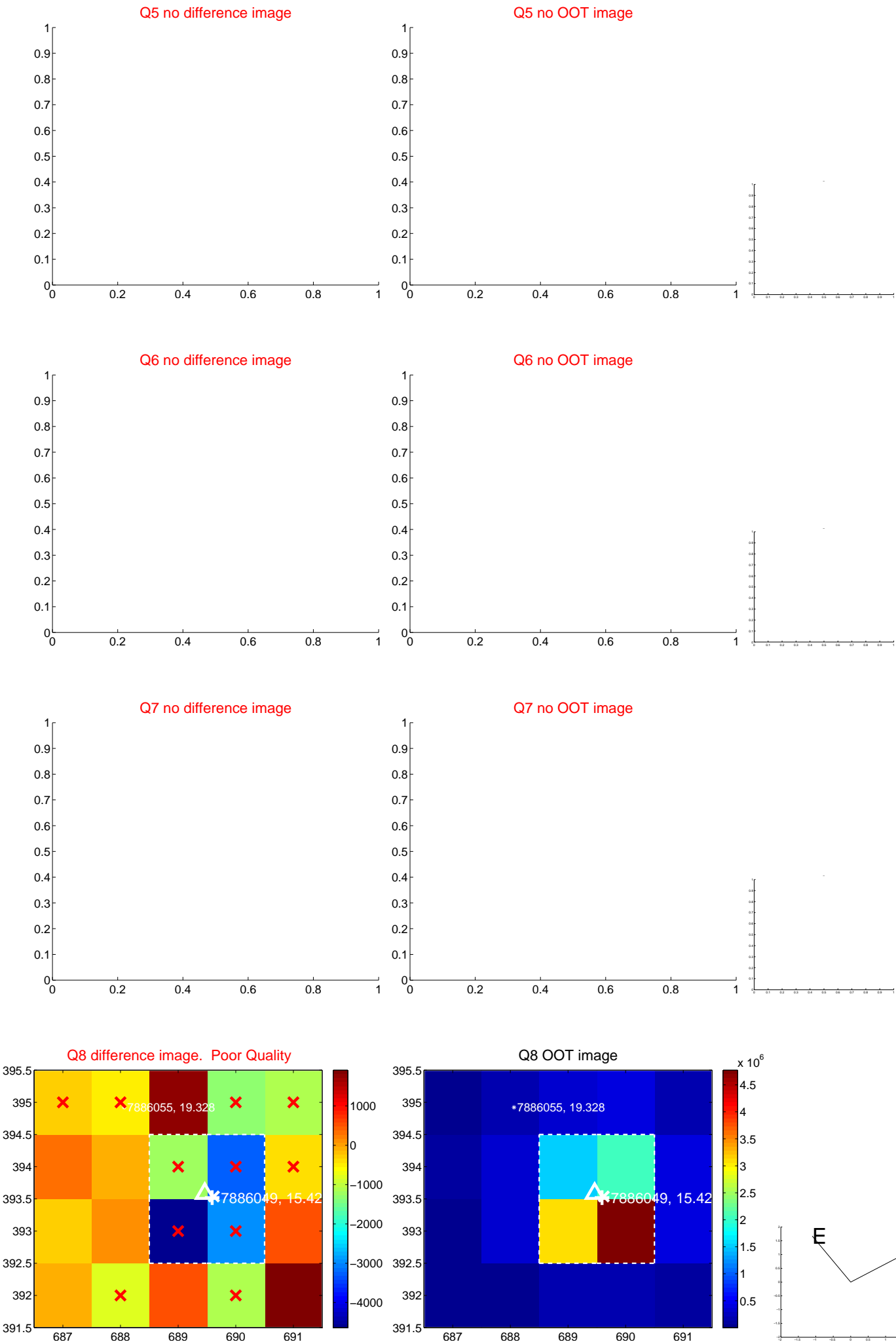


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



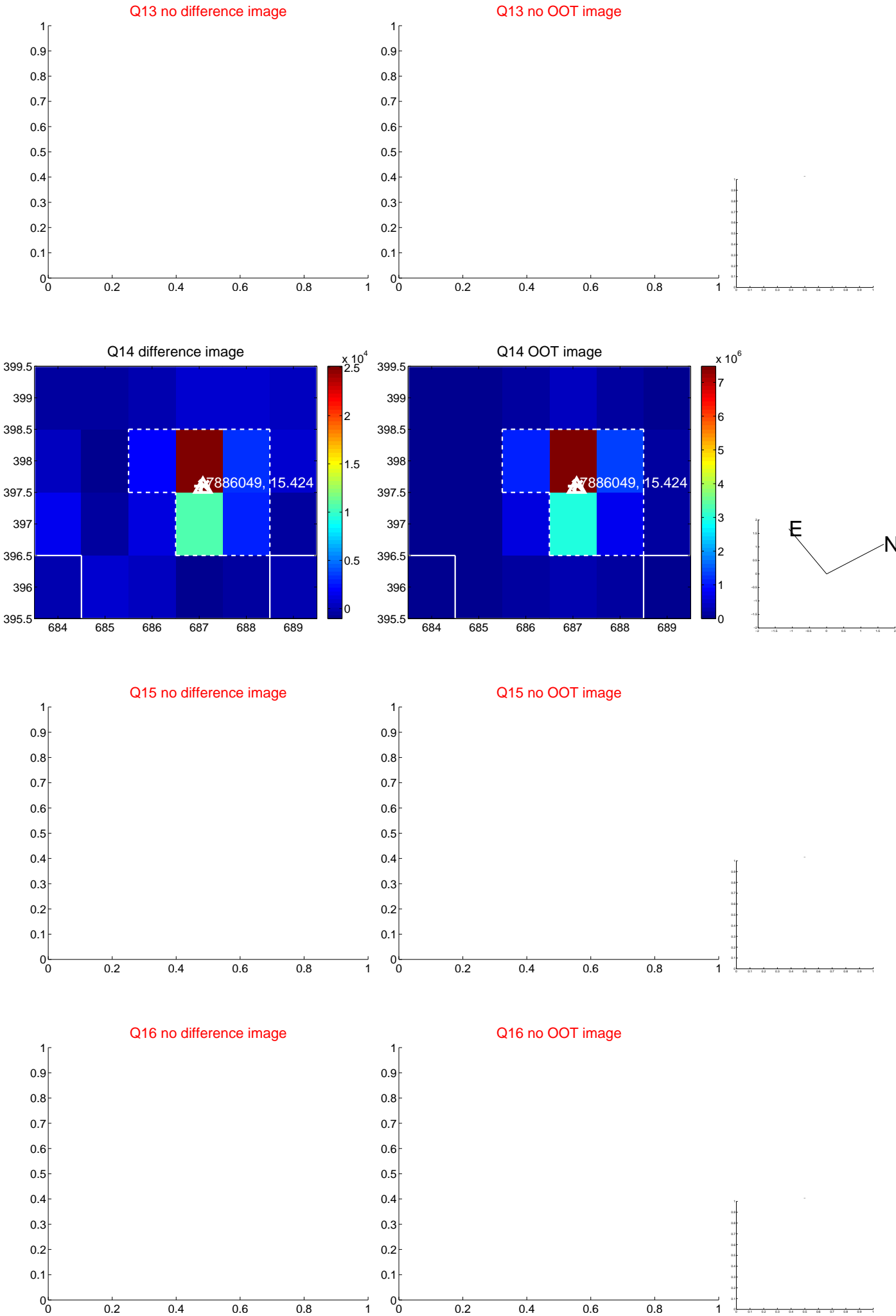
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



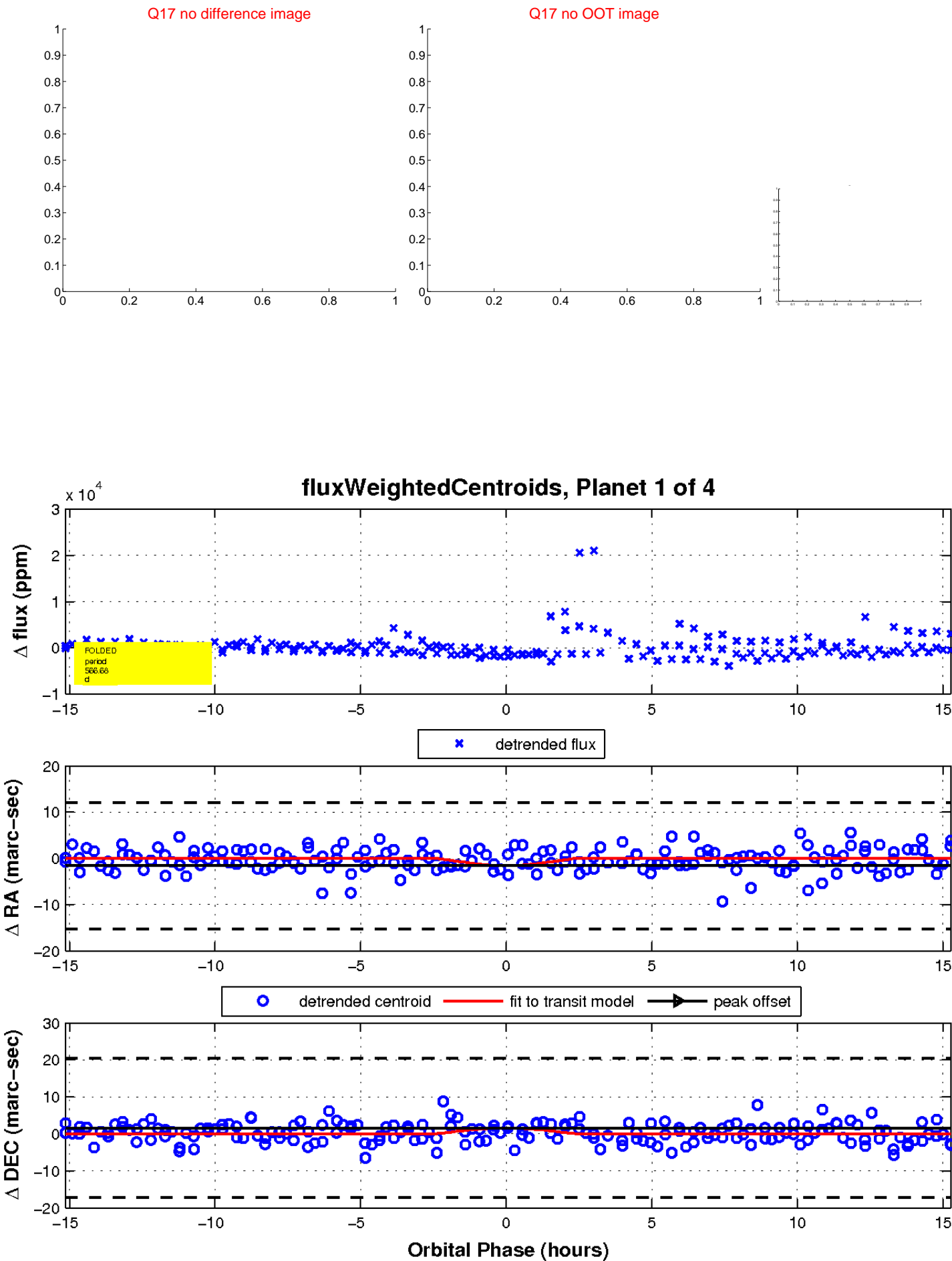
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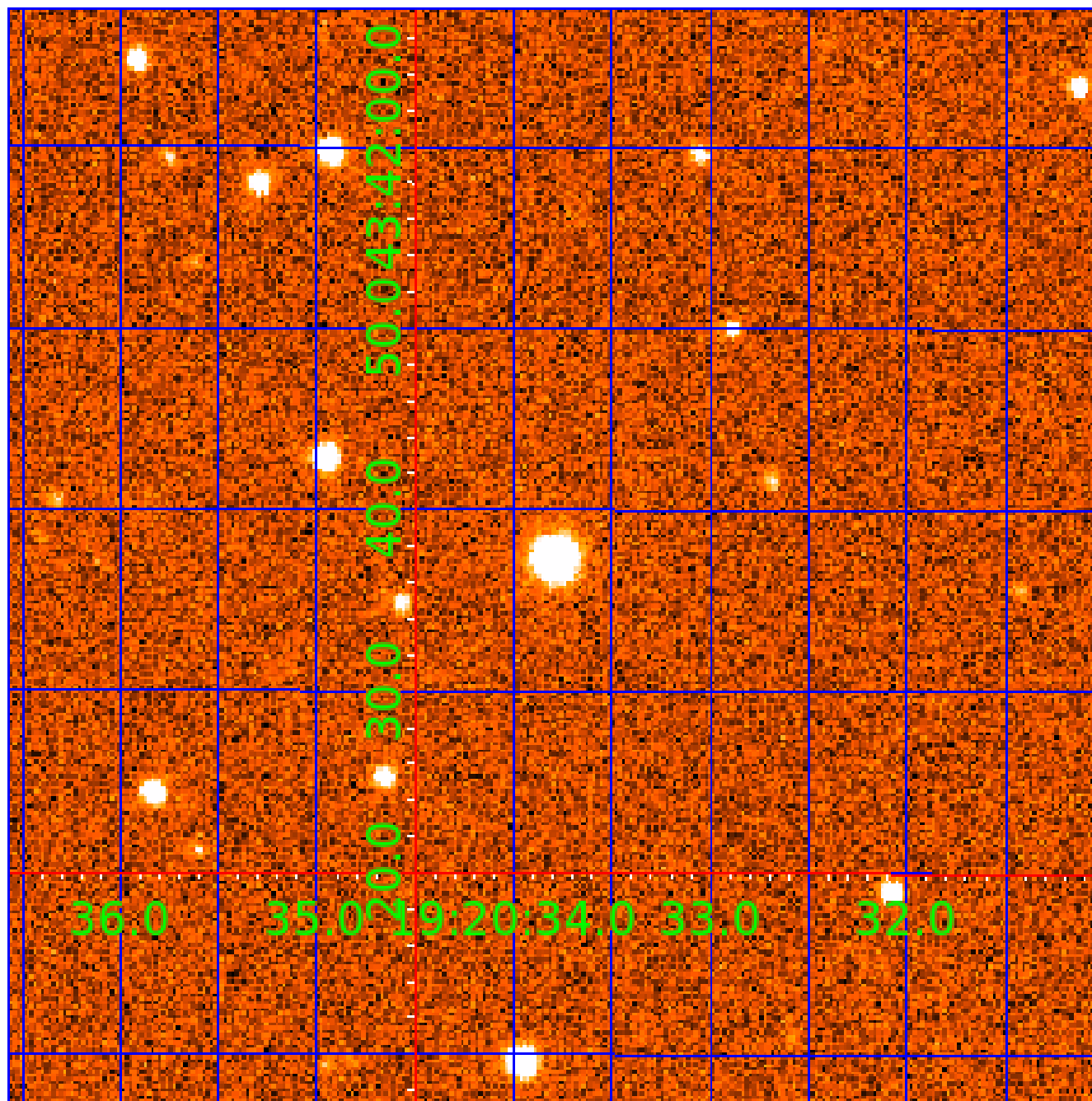


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007886049

Q1-17 DR25 TCE Parameters

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007886049-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
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007886049-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—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

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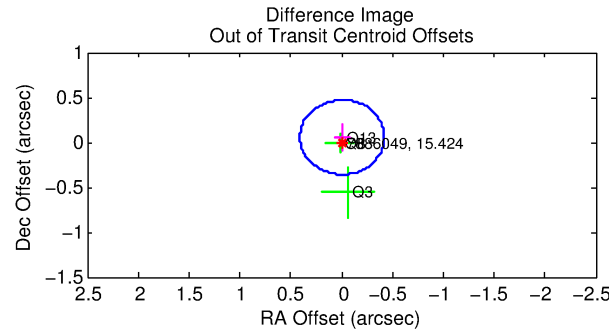
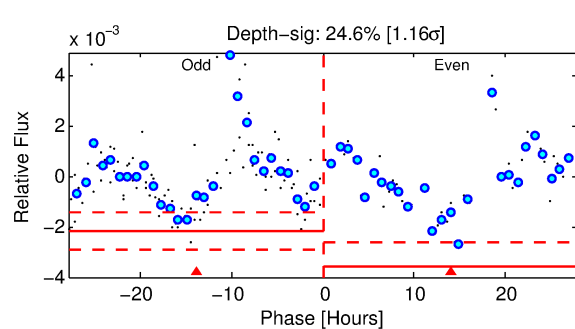
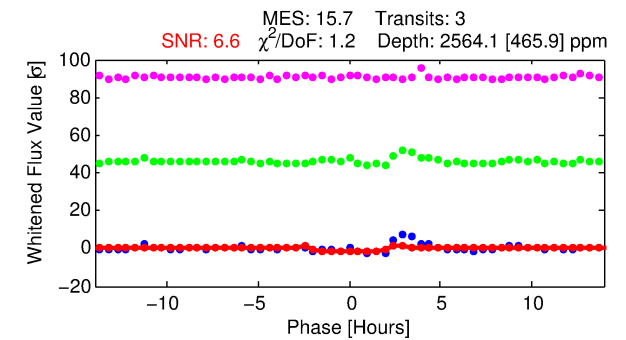
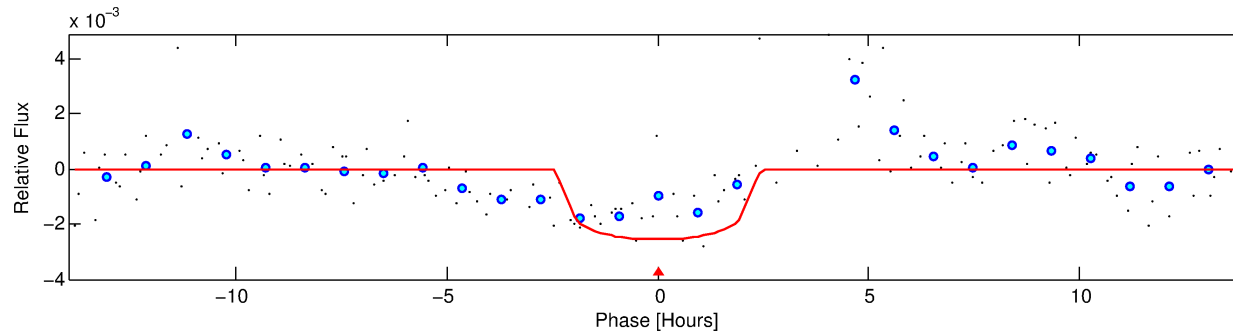
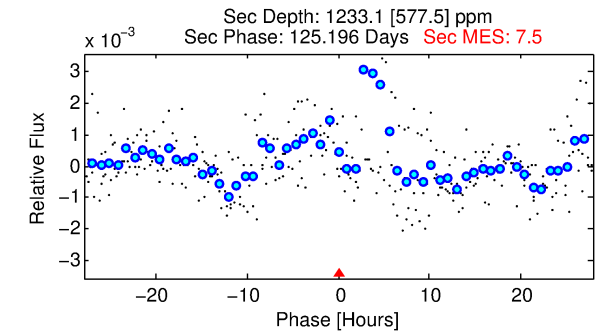
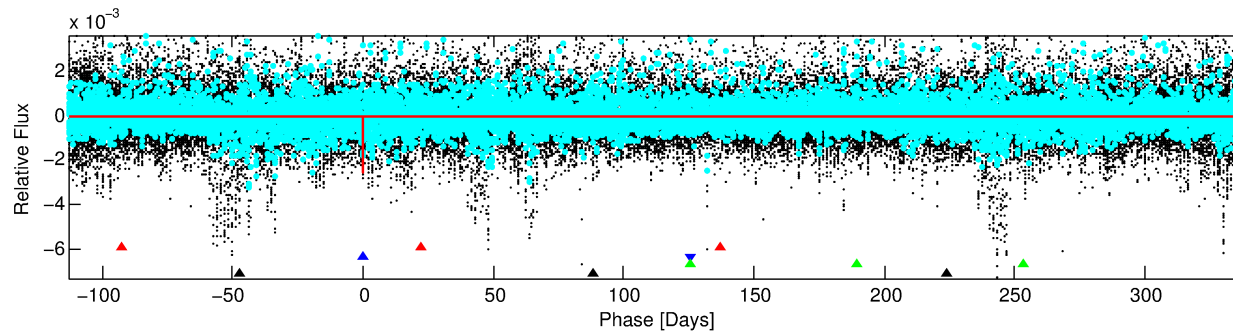
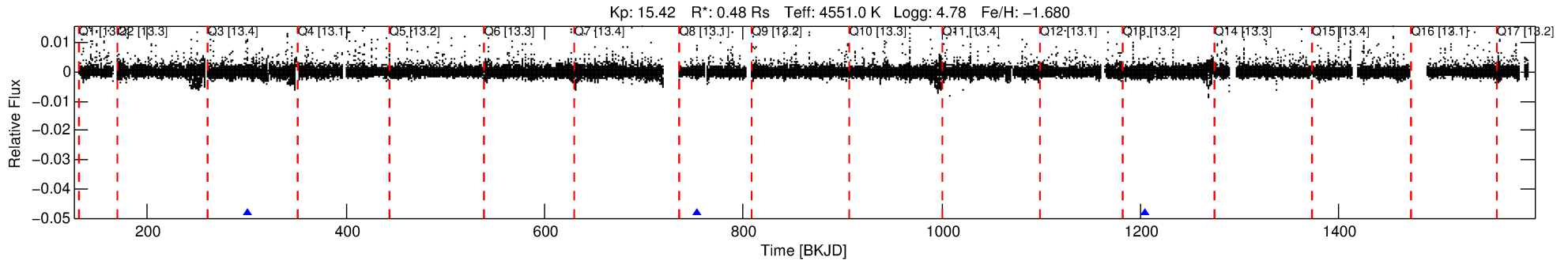
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007886049-02

No Significant Match Found

DV One-Page Summary

KIC: 7886049 Candidate: 2 of 4 Period: 451.962 d



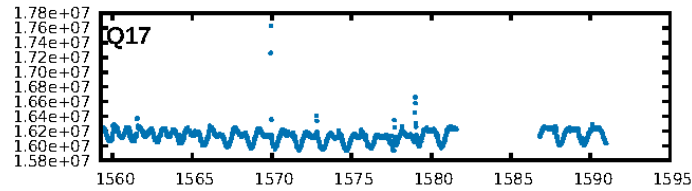
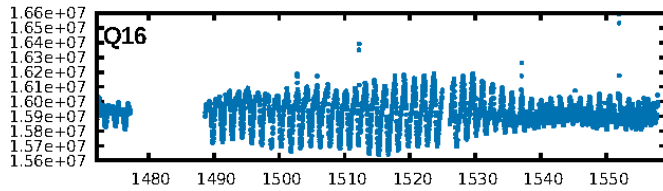
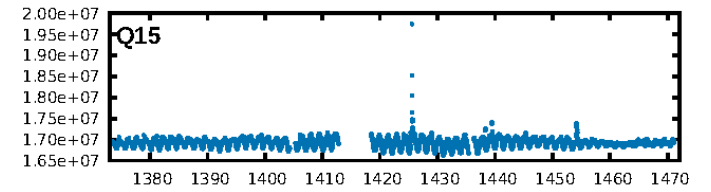
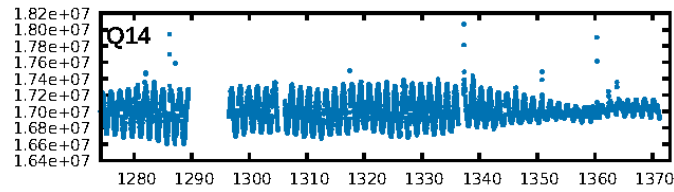
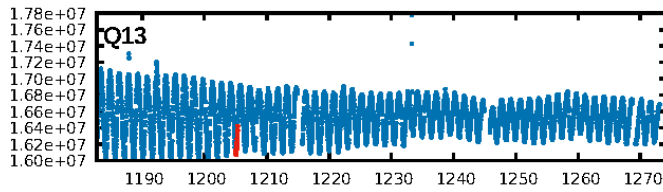
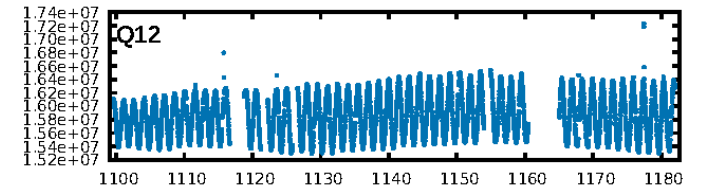
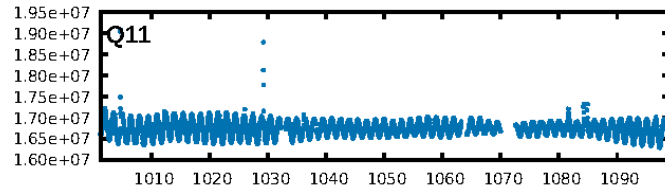
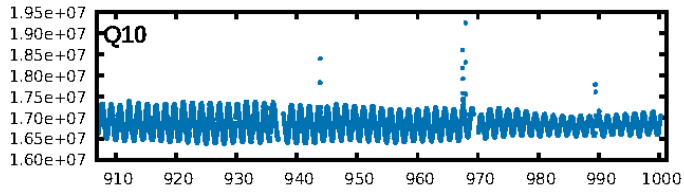
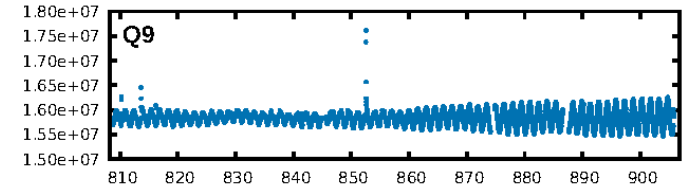
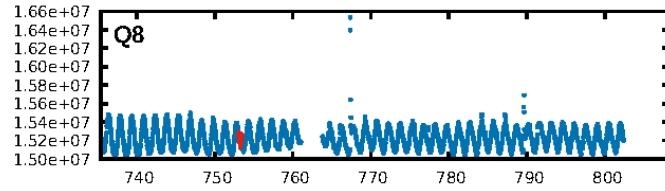
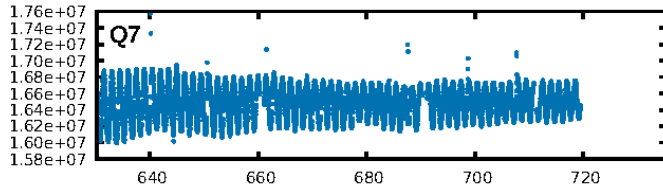
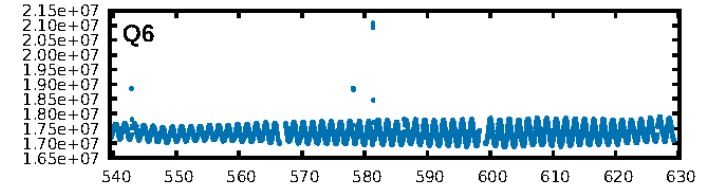
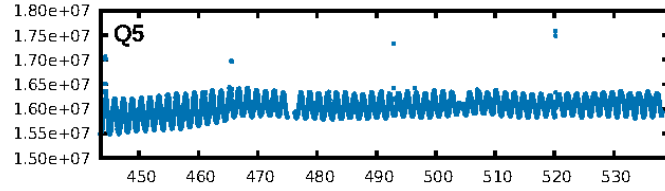
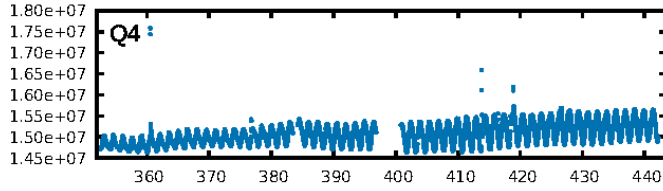
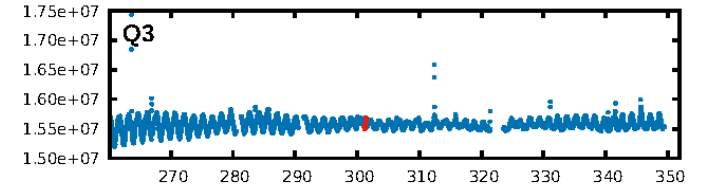
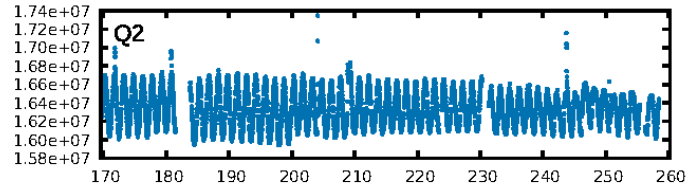
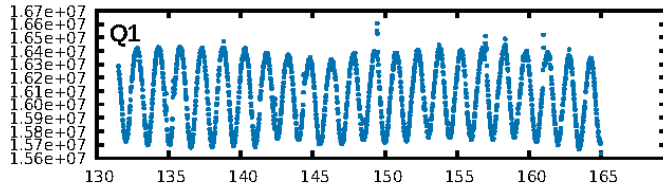
DV Fit Results:

Period = 451.96181 [0.00666] d
Epoch = 301.2552 [0.0095] BKJD
Rp/R* = 0.0462 [0.0546]
a/R* = 773.06 [4230.61]
b = 0.06 [84.20]
Seff = 0.11 [0.02]
Teq = 145 [6] K
Rp = 2.42 [2.86] Re
a = 0.9141 [0.0579] AU
Ag = 97168.62 [234305.57] [0.41σ]
Teffp = 3967 [2394] K [1.60σ]

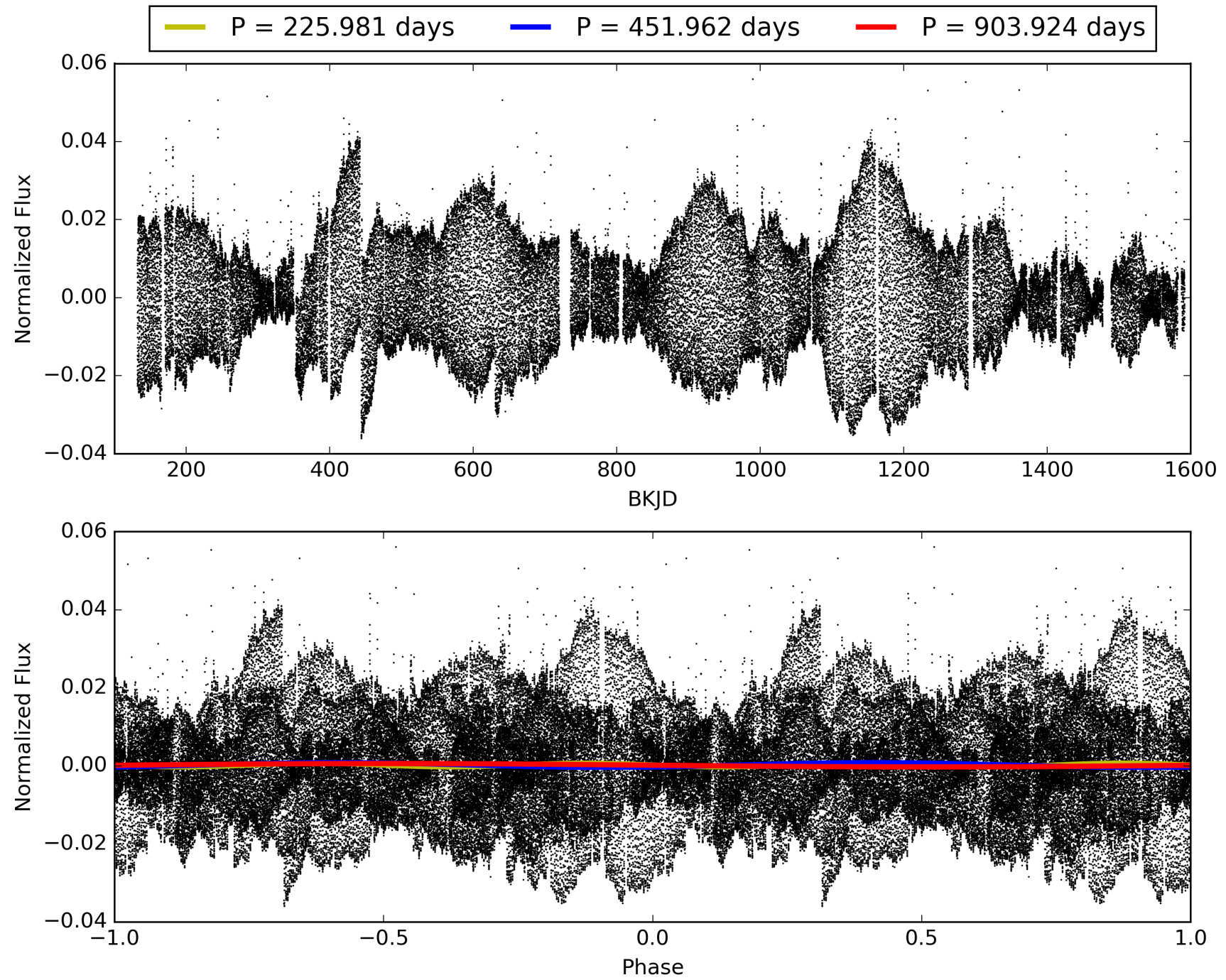
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [281.91σ]
ModelChiSquare2-sig: 1.1%
ModelChiSquareGof-sig: 64.6%
Bootstrap-pfa: 5.83e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.8453
Centroid-sig: 42.1%
Centroid-so: 0.352 arcsec [0.54σ]
OotOffset-rm: 0.055 arcsec [0.40σ]
KicOffset-rm: 0.139 arcsec [0.75σ]
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]

TCE 007886049-02, PDC Light Curves

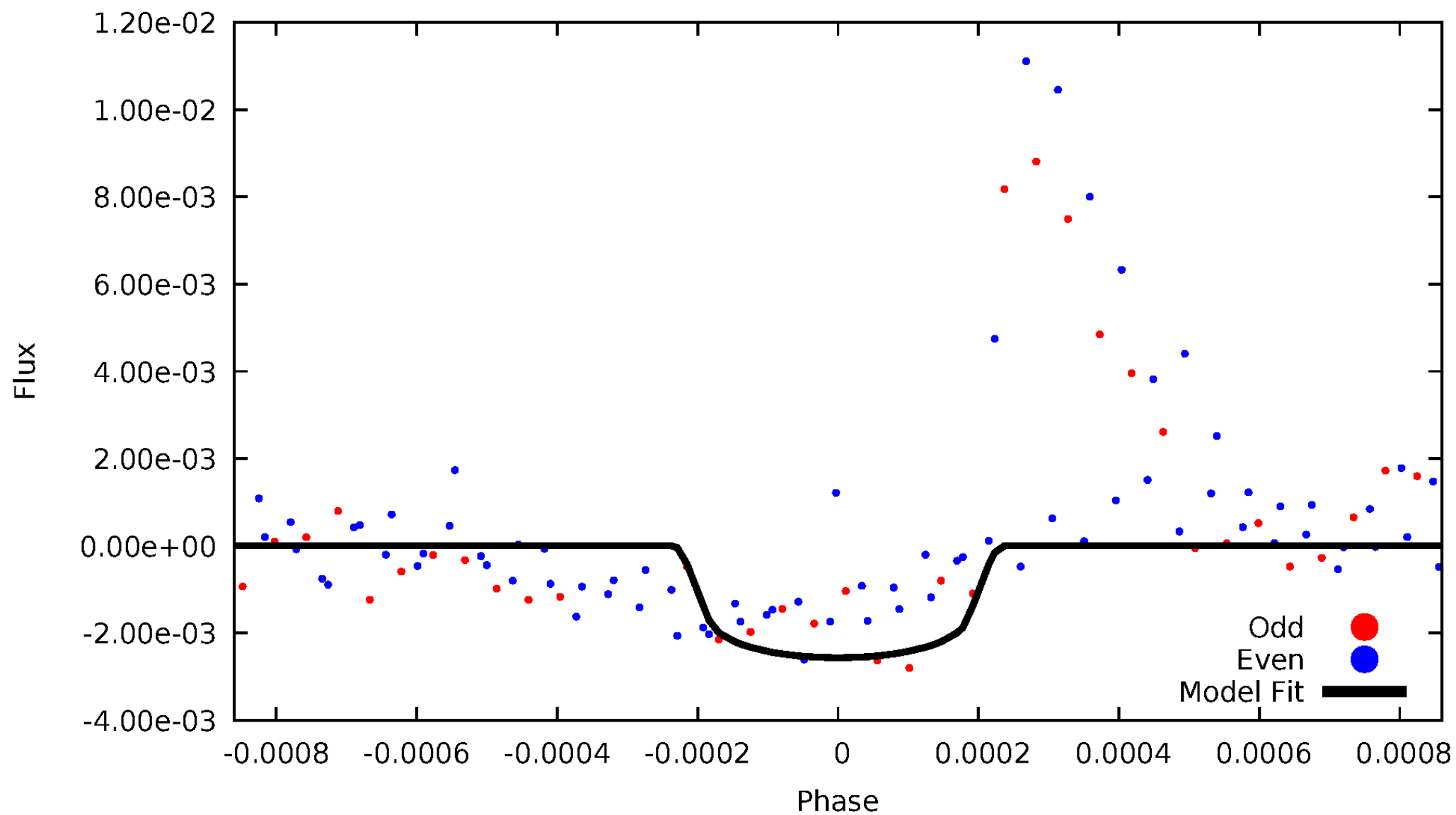


TCE 007886049-02



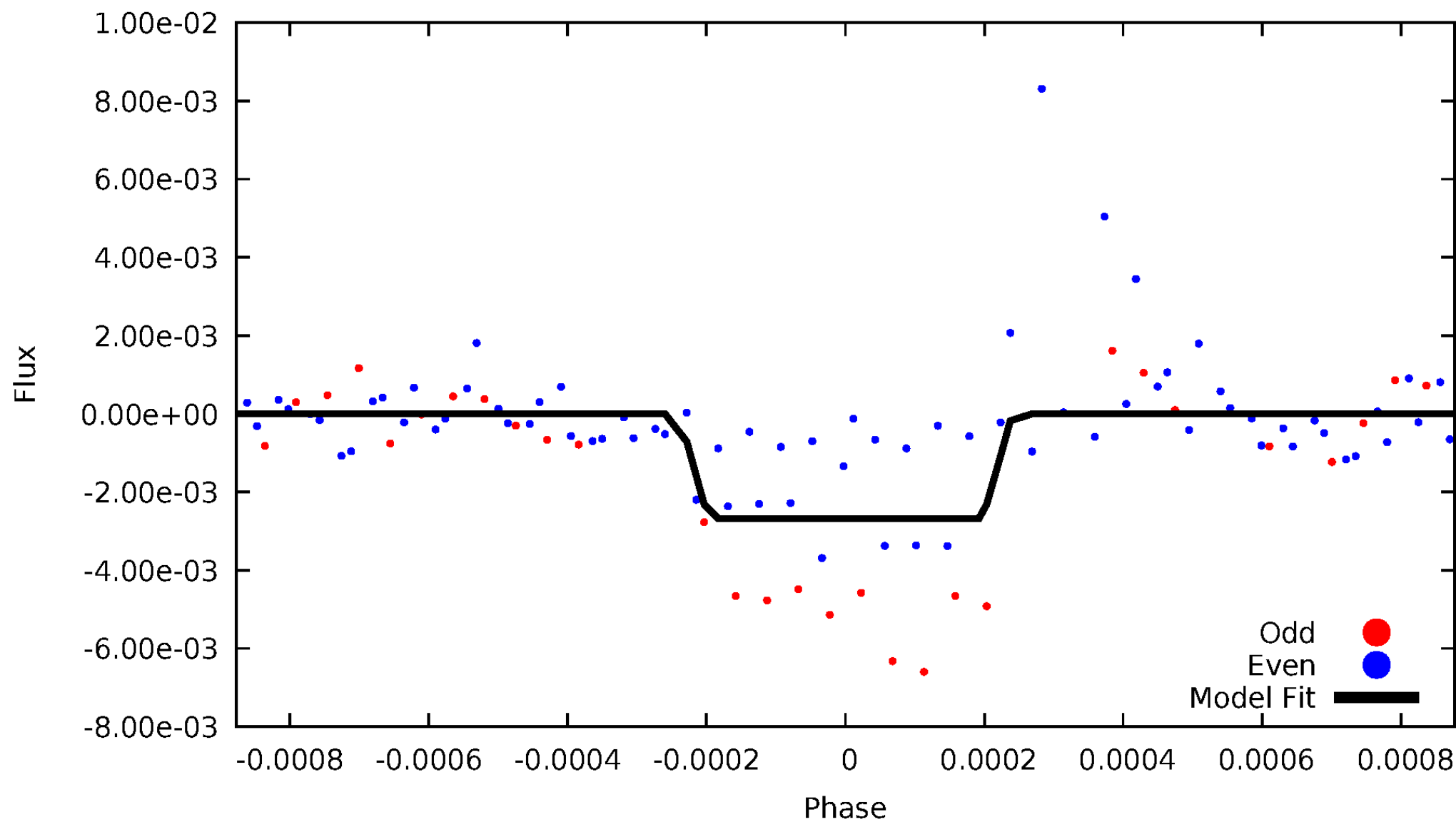
DV Odd/Even

TCE 007886049-02



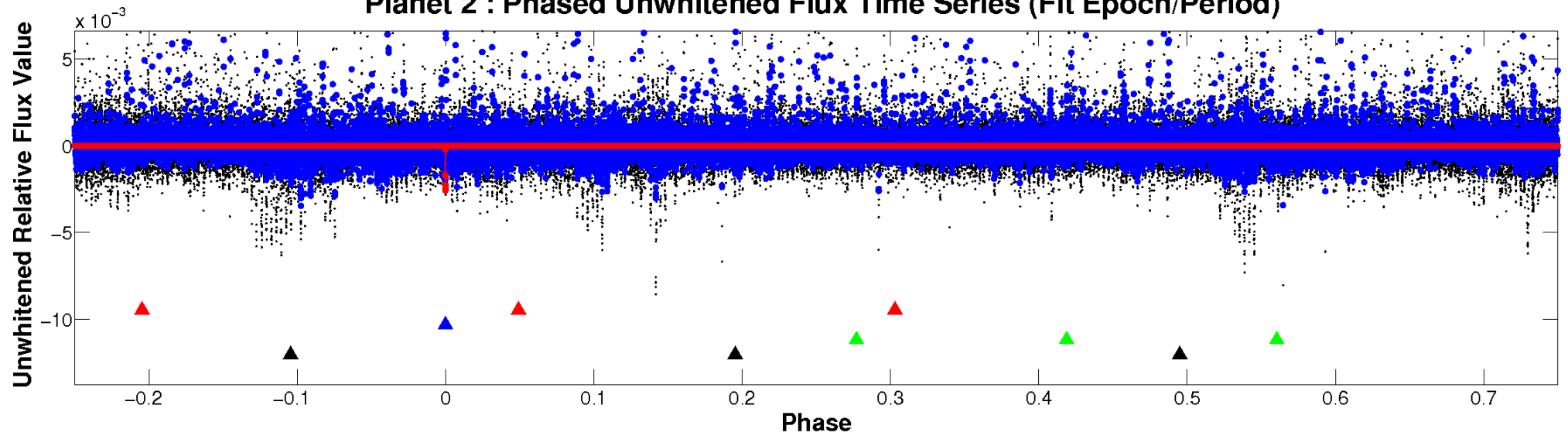
ALT Odd/Even

TCE 007886049-02

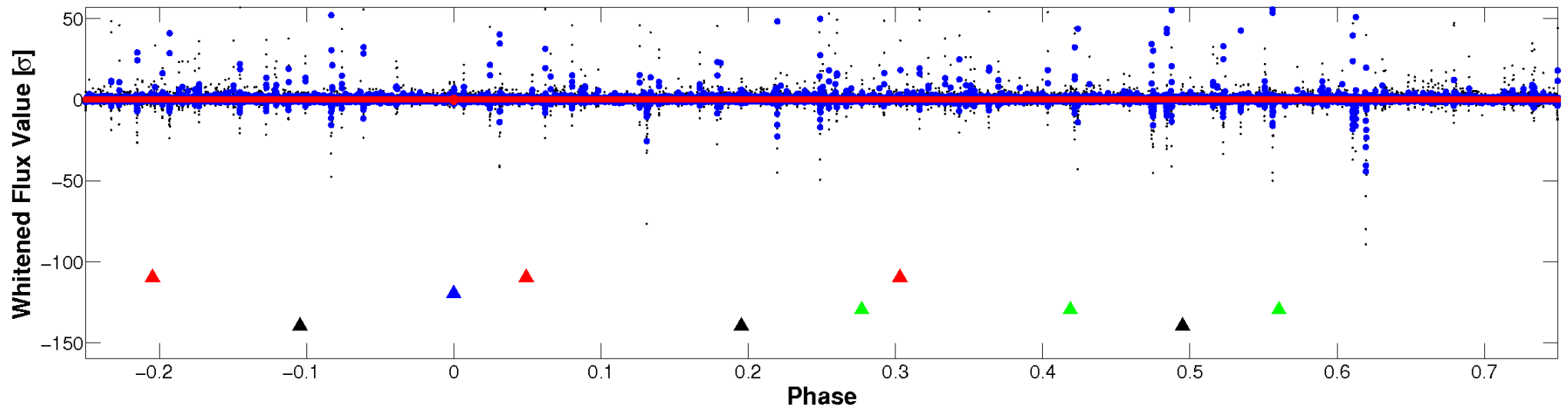


Non-Whitened Vs. Whitened Light Curve

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

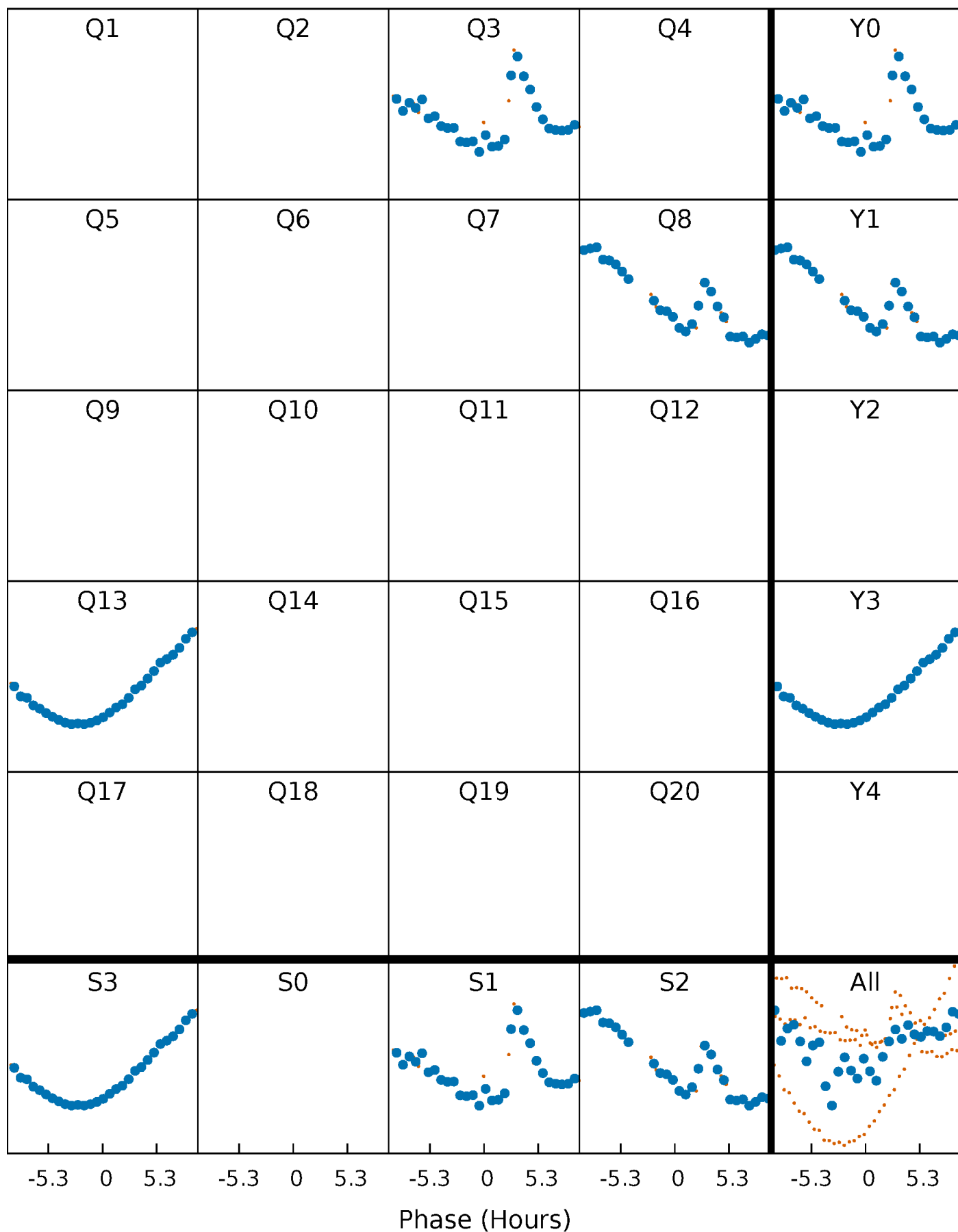


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



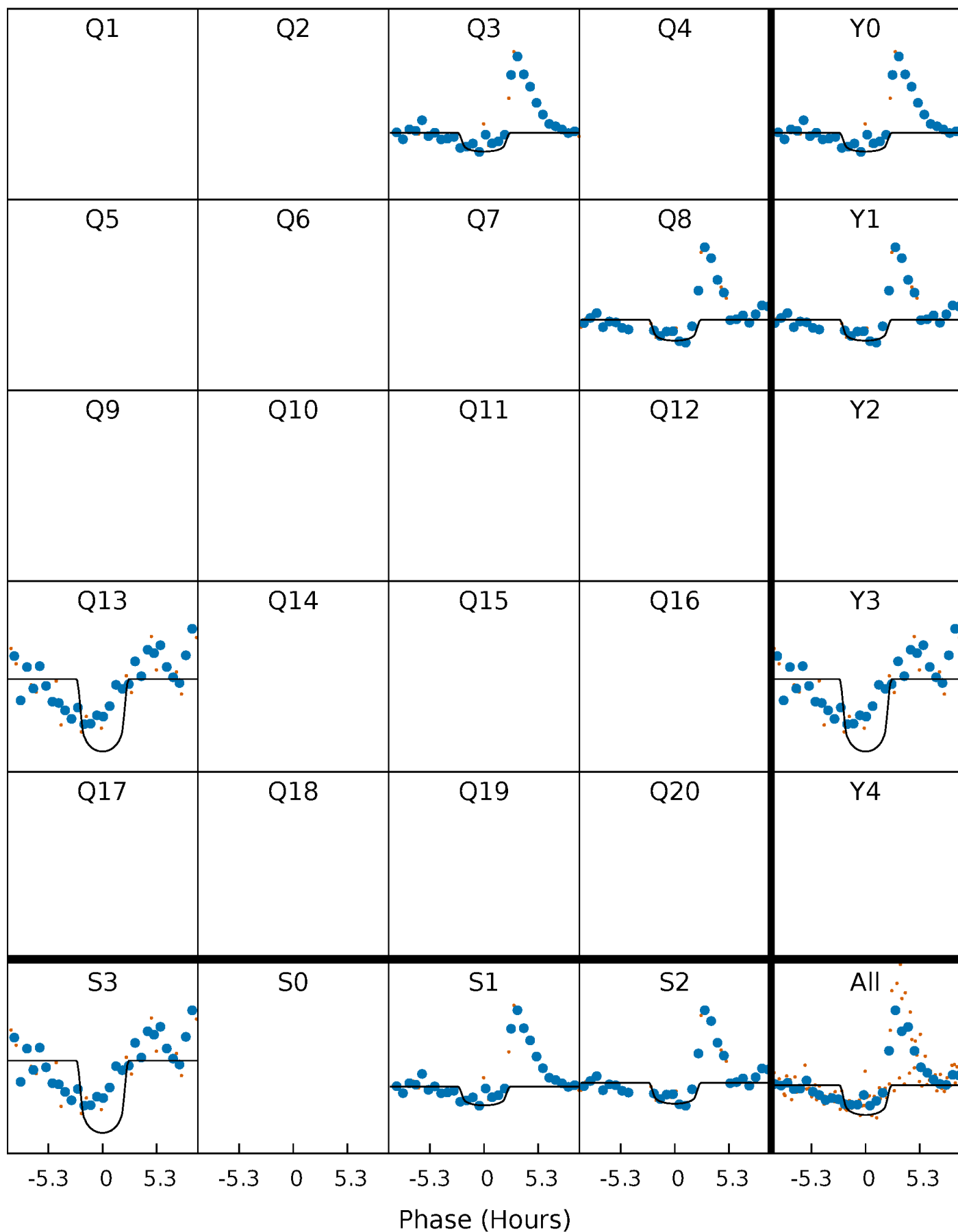
PDC Quarter-Phased Transit Curves

TCE 007886049-02 P=451.961806 Days $T_0=301.255197$ (BKJD)



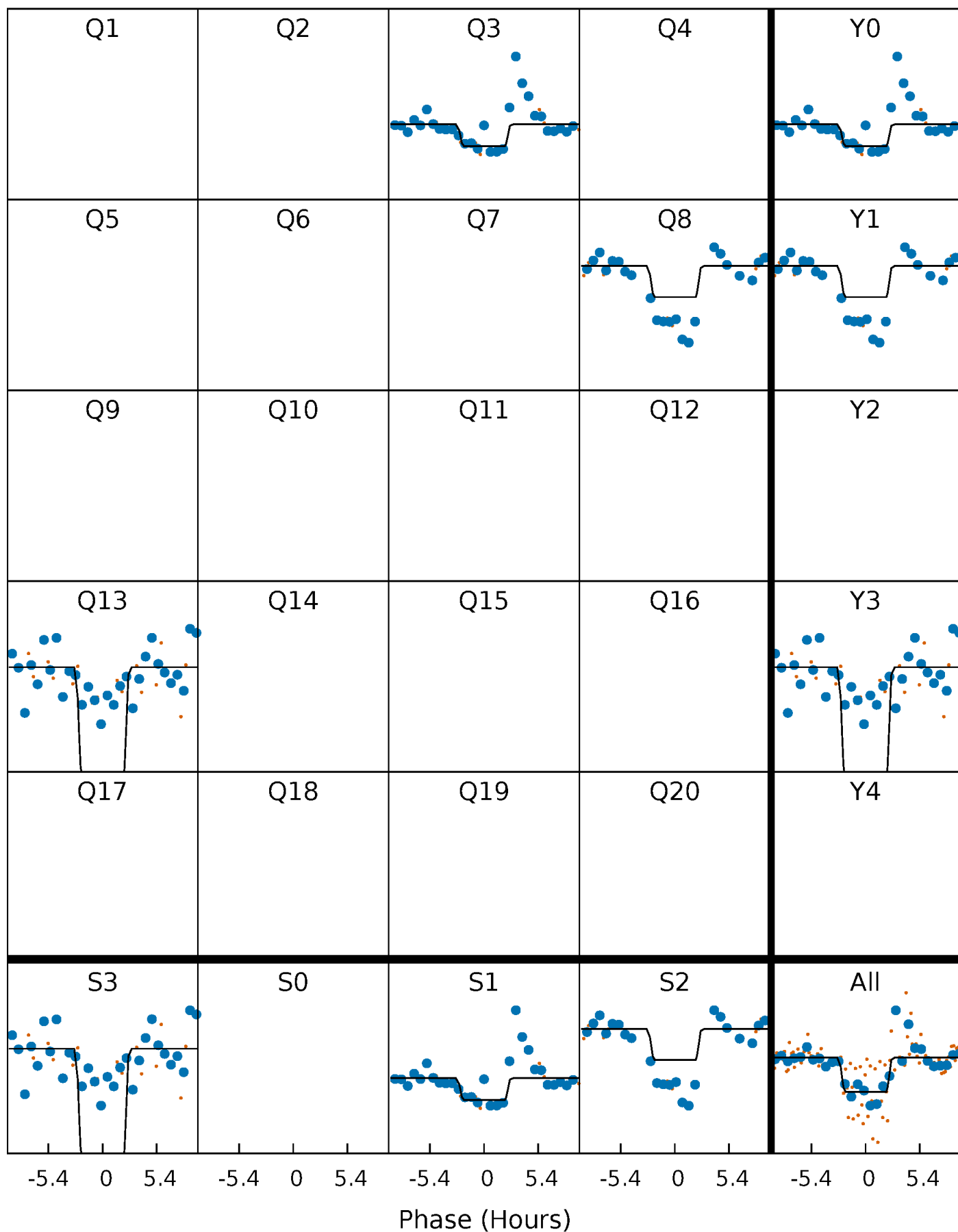
DV Quarter-Phased Transit Curves

TCE 007886049-02 P=451.961806 Days $T_0=301.255197$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

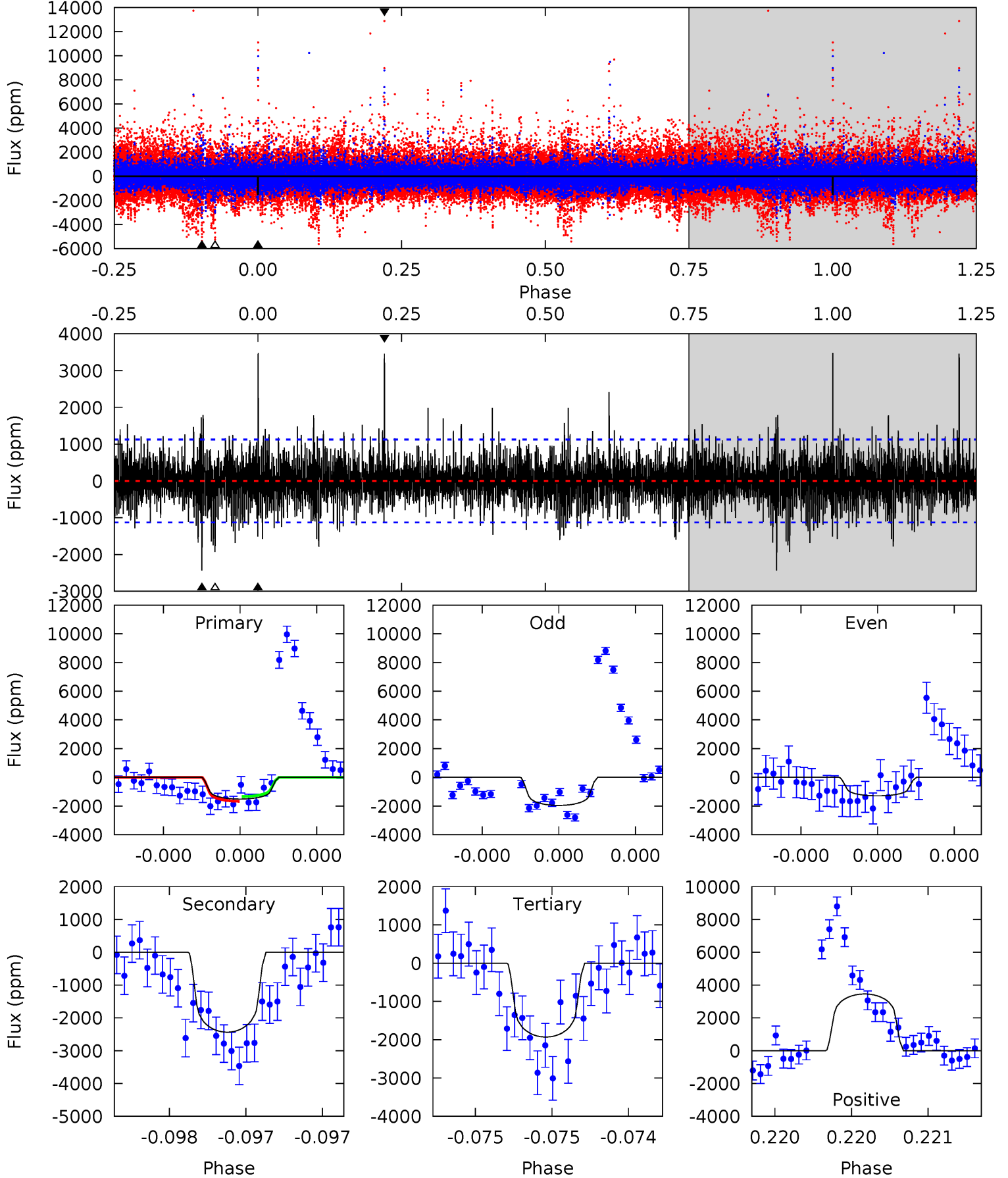
TCE 007886049-02 P=451.963102 Days $T_0=301.248666$ (BKJD)



DV Model-Shift Uniqueness Test

007886049-02, P = 451.961806 Days, E = 301.255197 Days

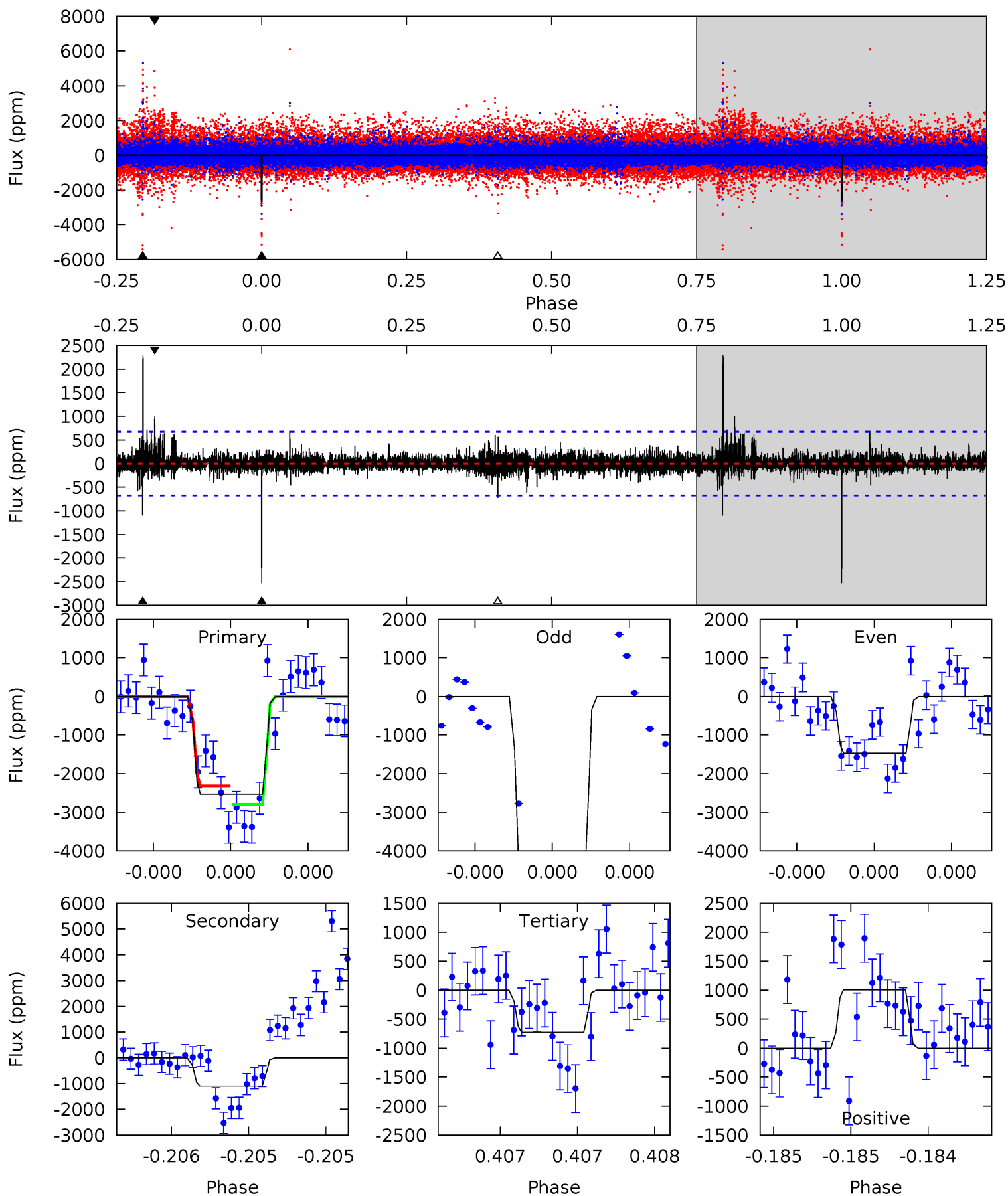
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.52	12.1	9.57	17.1	5.59	3.50	2.32	-2.05	-9.61	2.51	-5.04	0.76	1.14	0.59	0.82



Alt Model-Shift Uniqueness Test

007886049-02, P = 451.963102 Days, E = 301.248666 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.9	9.12	5.98	8.30	5.59	3.50	0.99	14.9	12.6	3.14	0.82	10.2	1.06	0.48	1.94



Stellar Parameters For KIC 007886049

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4551^{+137}_{-151}	$4.775^{+0.048}_{-0.028}$	$-1.680^{+0.300}_{-0.200}$	$0.479^{+0.027}_{-0.037}$	$0.499^{+0.031}_{-0.028}$	$6.389^{+1.378}_{-0.724}$
	+3%/-3%	+1%/-1%	+18%/-12%	+6%/-8%	+6%/-6%	+22%/-11%
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 007886049-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2436 ± 202	$2.98^{+2.60}_{-1.91}$	202^{+7}_{-7}	4279^{+2551}_{-815}	$125663^{+901760}_{-89899}$
Alt.	-1103 ± 121	$3.25^{+2.59}_{-2.05}$	202^{+7}_{-7}	3622^{+1661}_{-598}	$47683^{+284532}_{-33238}$

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

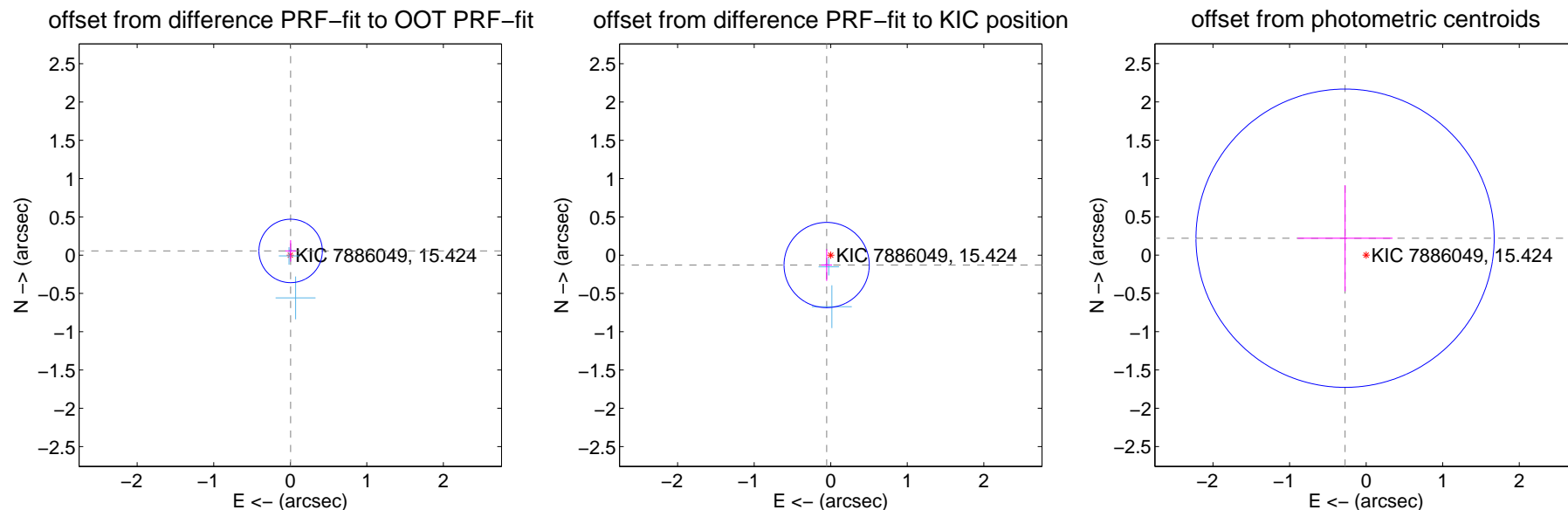
DV Centroid Data

Supplemental centroid analysis for 007886049-02. Kepler magnitude: 15.42. Transit SNR 6.61

There are 3 quarters with good PRF difference image offsets

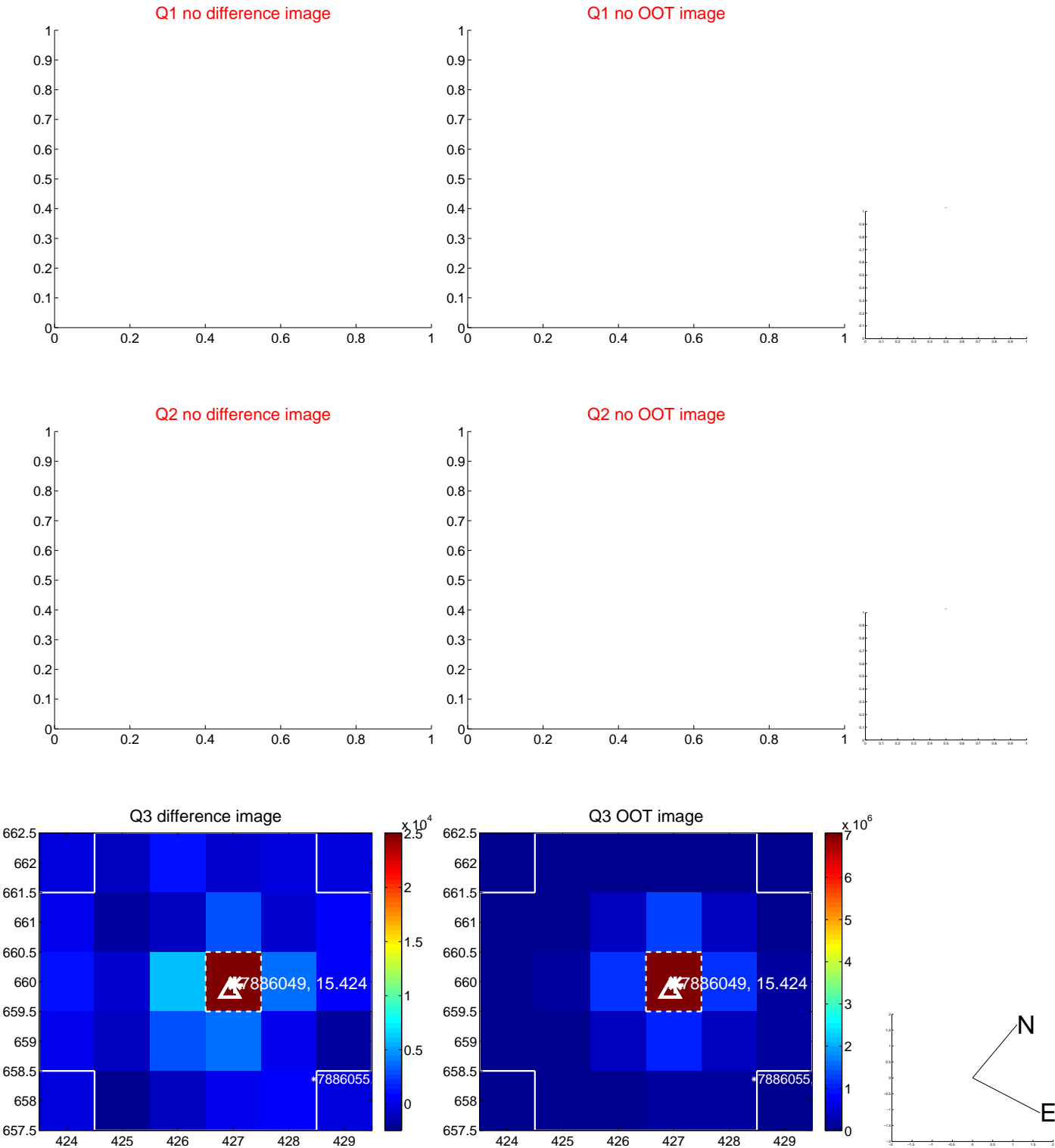
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.055 ± 0.138	0.40	-0.005 ± 0.070	0.055 ± 0.140
PRF-fit source offset from KIC position	0.139 ± 0.186	0.75	0.053 ± 0.070	-0.129 ± 0.207
photometric centroid source offset	0.35 ± 0.65	0.54	0.27 ± 0.62	0.22 ± 0.69

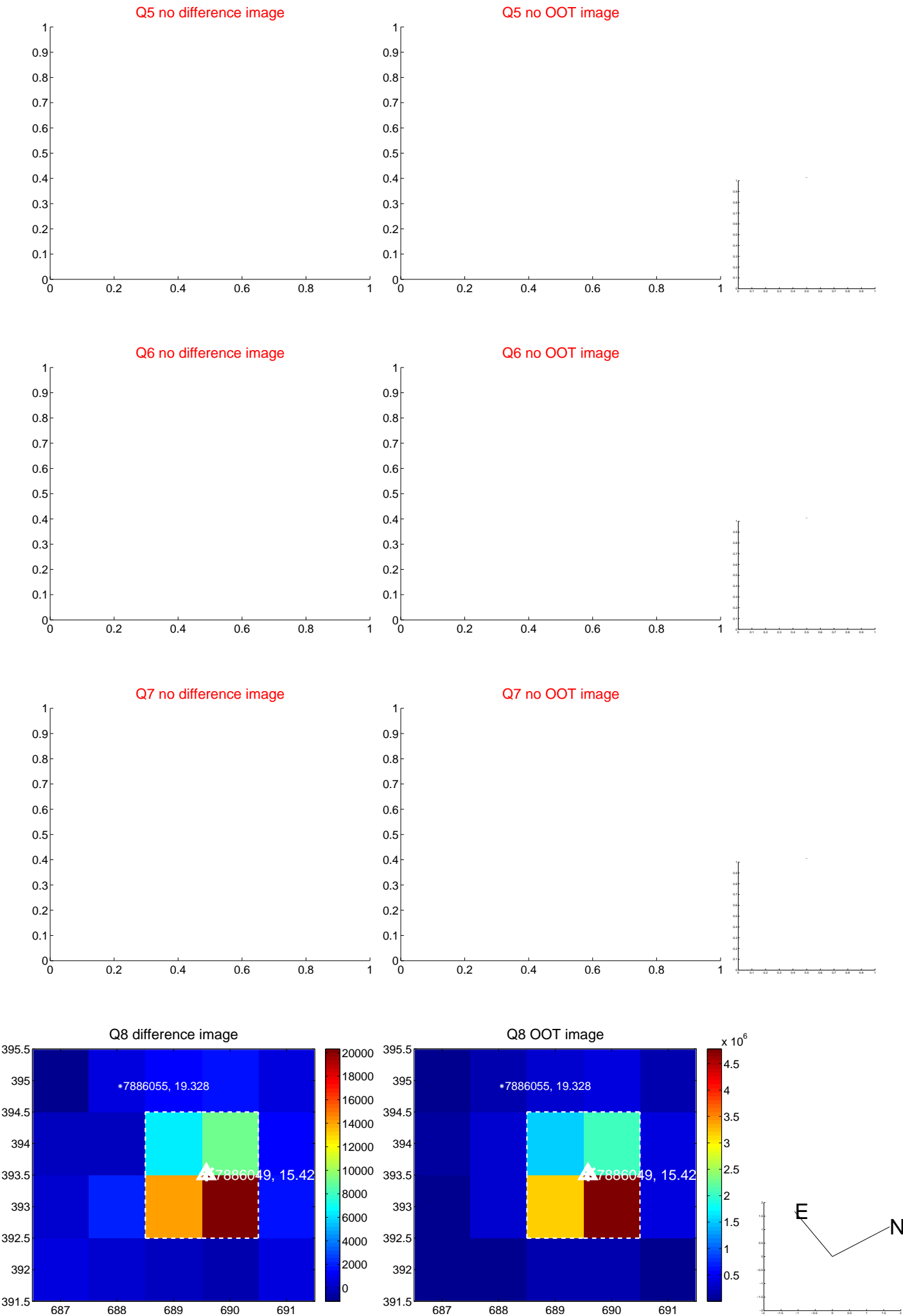


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



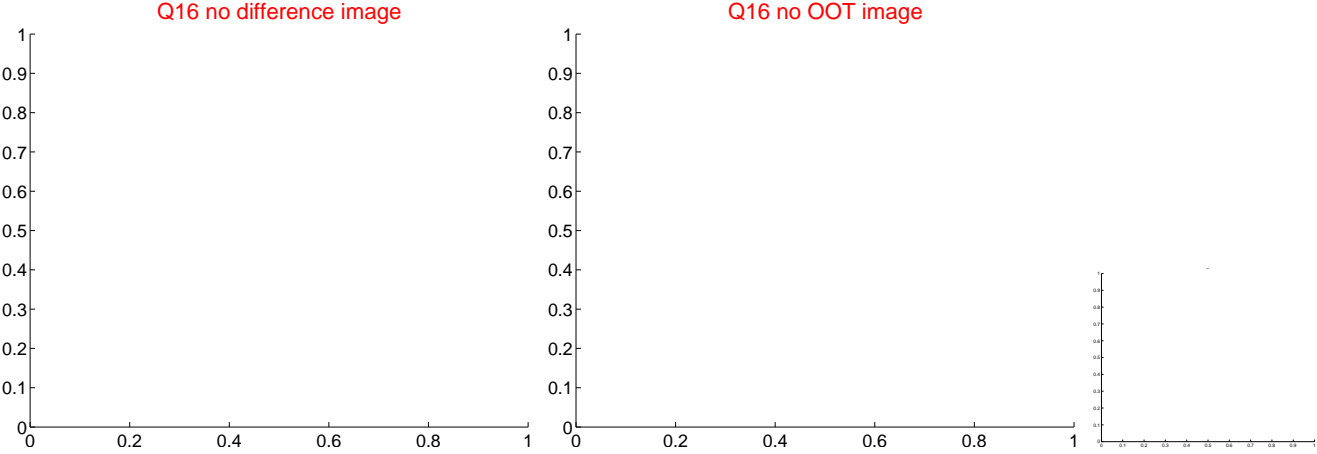
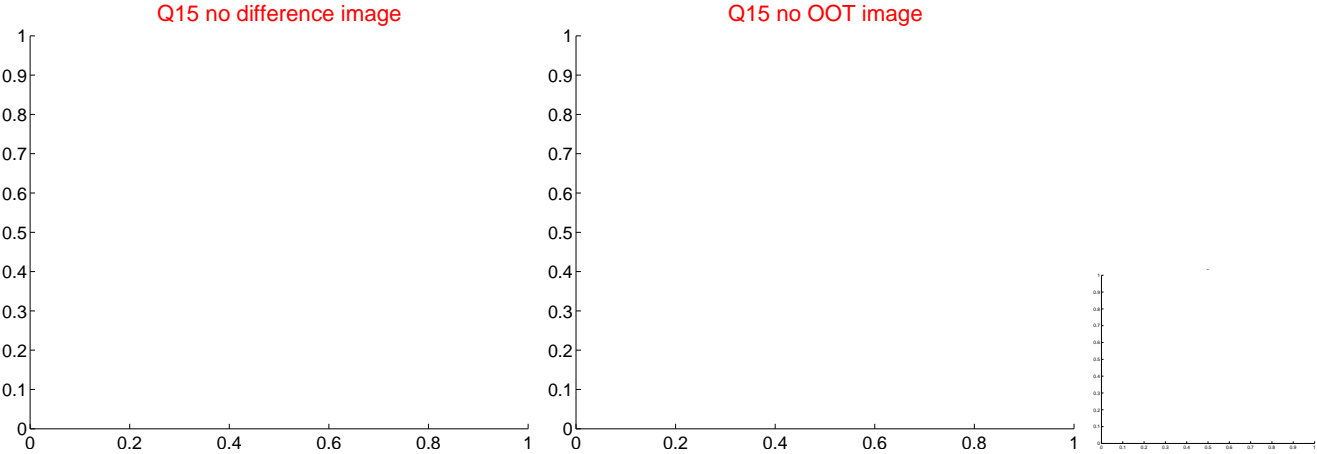
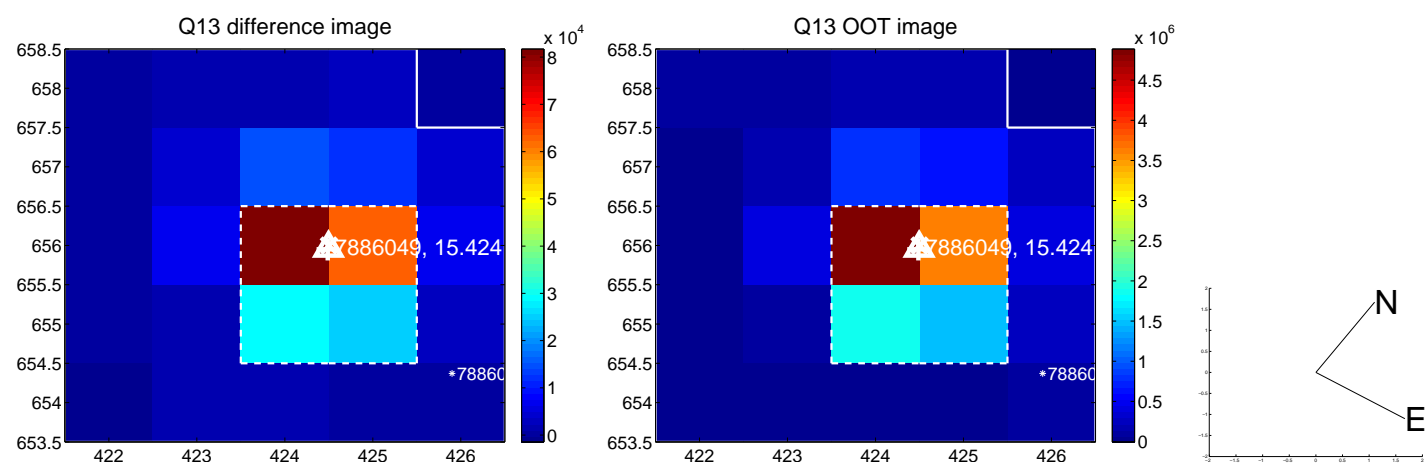
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



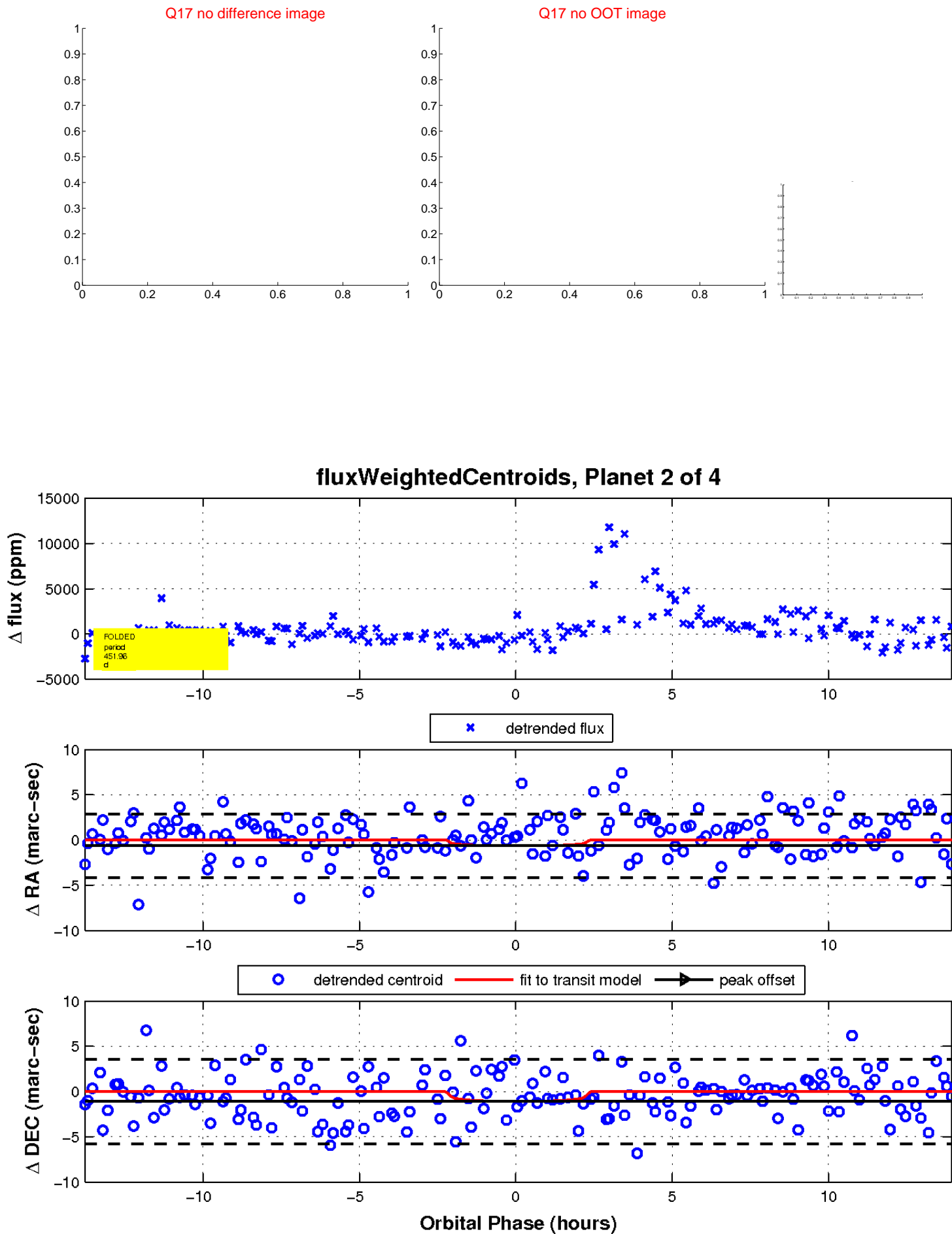
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

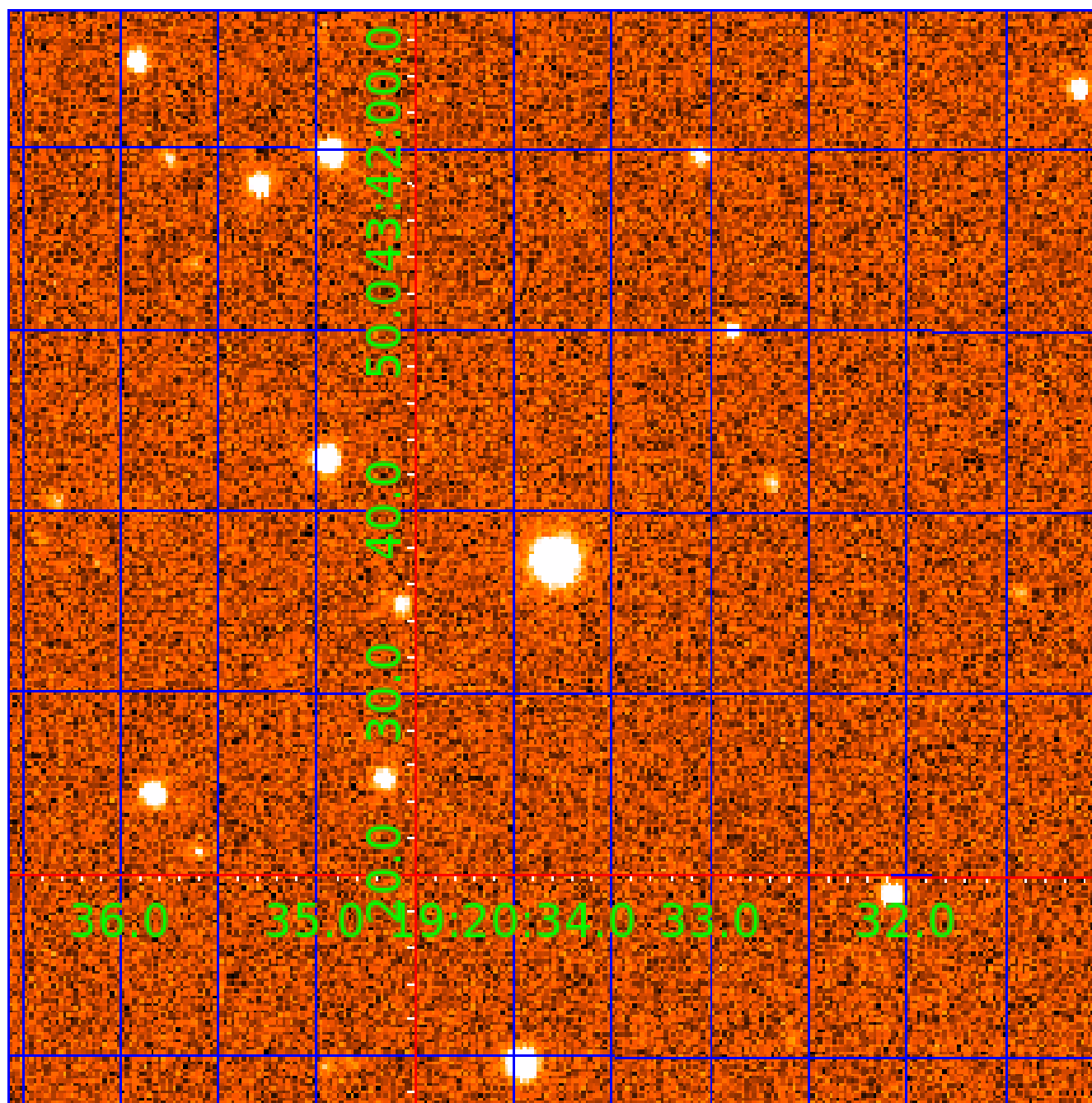


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007886049

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})
007886049-01	OBS	No	566.680210	208.790970	2463.7	5.111	21.6	6.4	0.48	4551	4.48	0.08
007886049-02	OBS	No	451.961806	301.255197	2564.1	4.664	15.7	6.6	0.48	4551	2.42	0.11
007886049-03	OBS	No	516.009679	426.483555	2649.6	2.825	14.1	8.1	0.48	4551	2.69	0.09
007886049-04	OBS	No	587.426005	254.074682	2248.6	3.507	12.9	5.2	0.48	4551	2.26	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007886049-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007886049-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—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

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

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

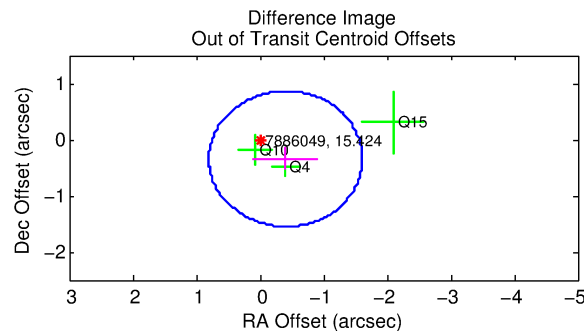
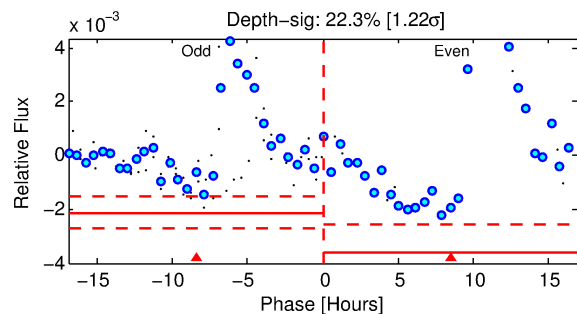
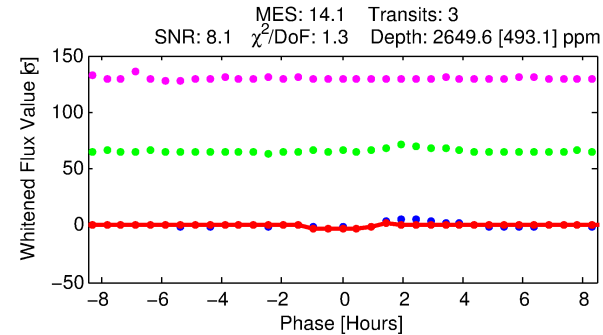
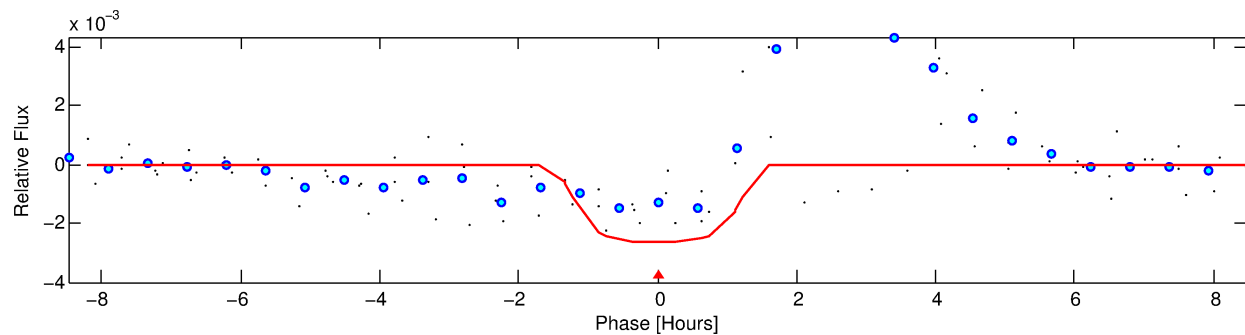
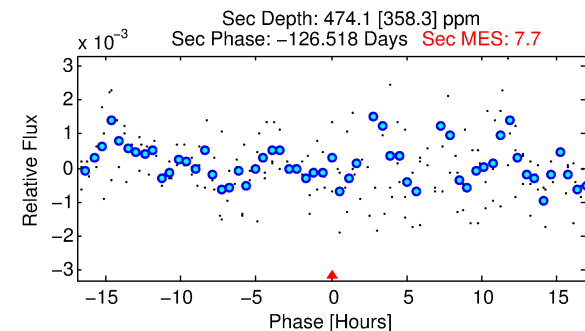
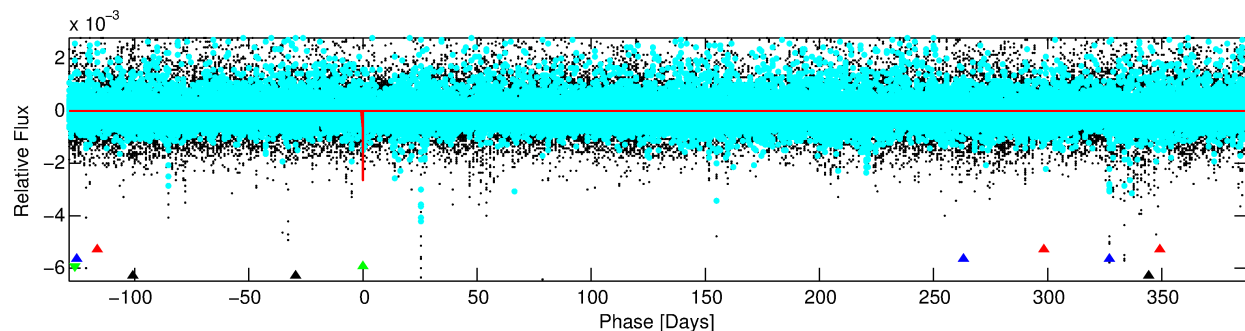
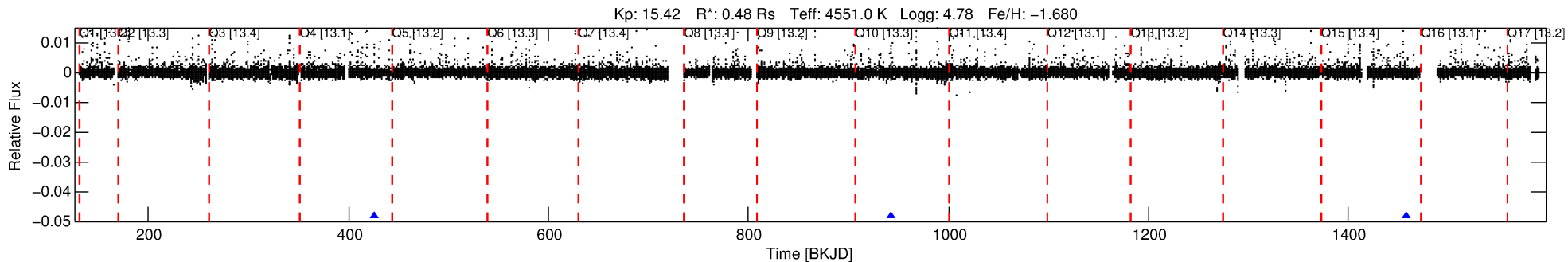
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007886049-03

No Significant Match Found

DV One-Page Summary

KIC: 7886049 Candidate: 3 of 4 Period: 516.010 d



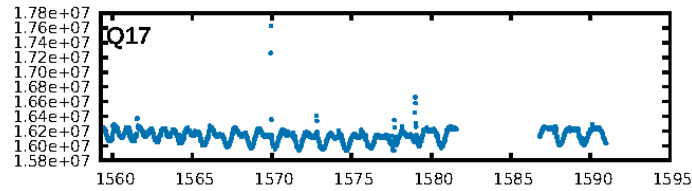
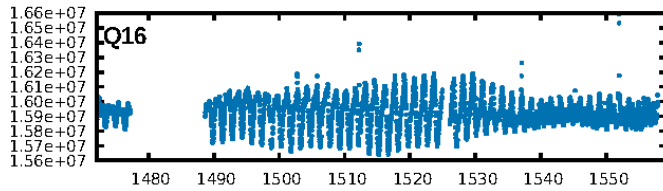
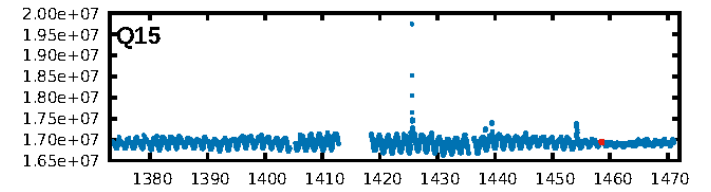
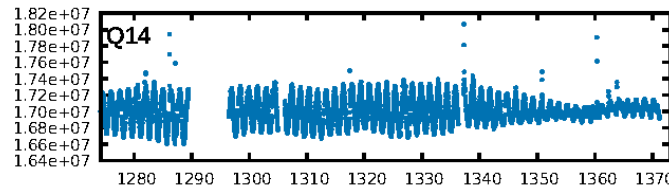
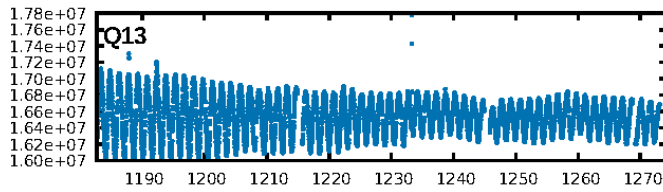
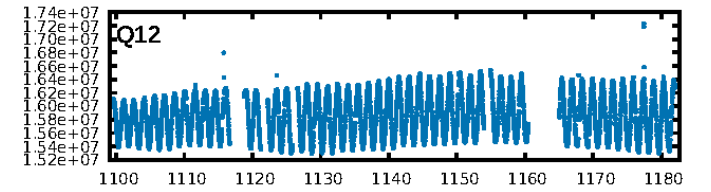
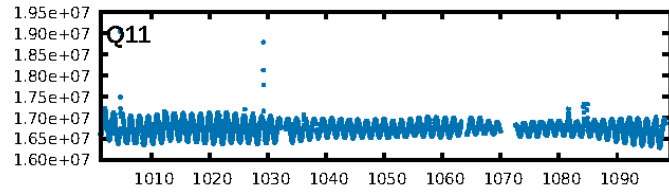
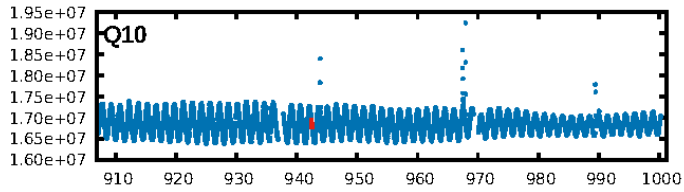
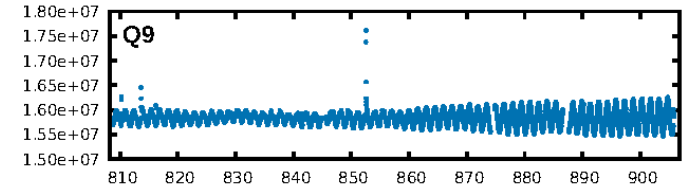
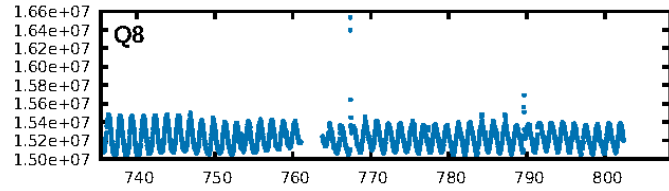
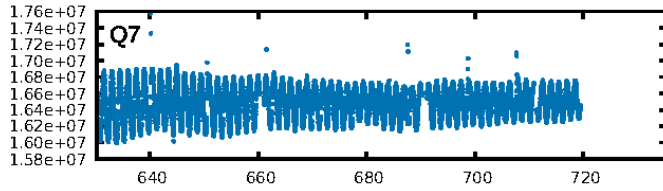
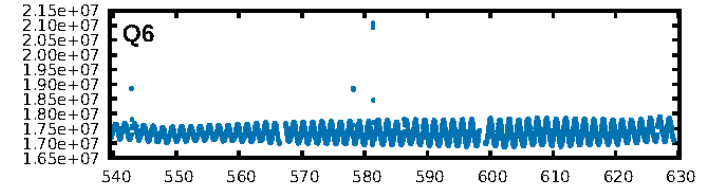
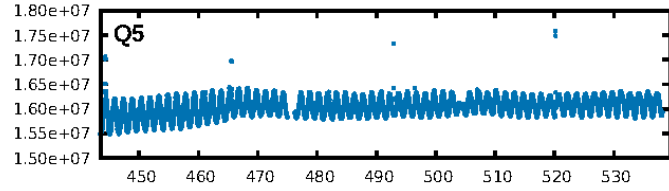
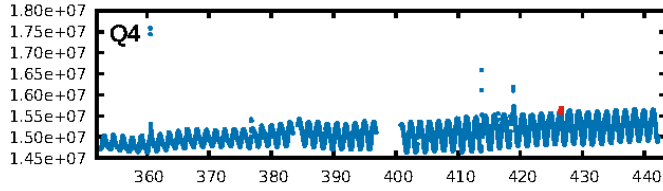
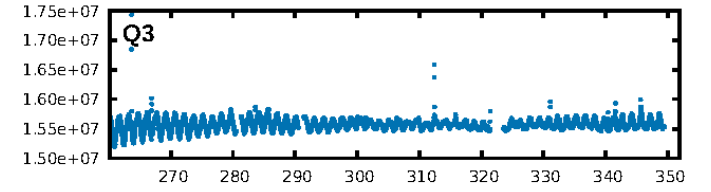
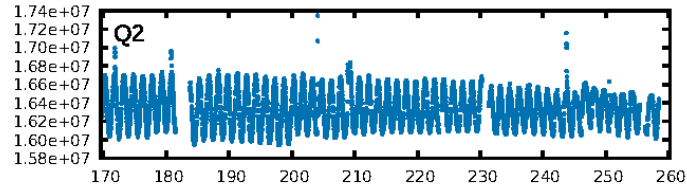
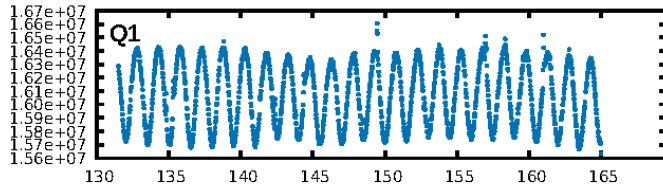
DV Fit Results:

Period = 516.00968 [0.00472] d
Epoch = 426.4836 [0.0061] BKJD
Rp/R* = 0.0514 [0.0601]
a/R* = 1021.82 [5574.89]
b = 0.75 [3.14]
Seff = 0.09 [0.01]
Teq = 139 [6] K
Rp = 2.69 [3.15] Re
a = 0.9985 [0.0632] AU
Ag = 36055.36 [88688.95] [0.41σ]
Teffp = 2963 [1823] K [1.55σ]

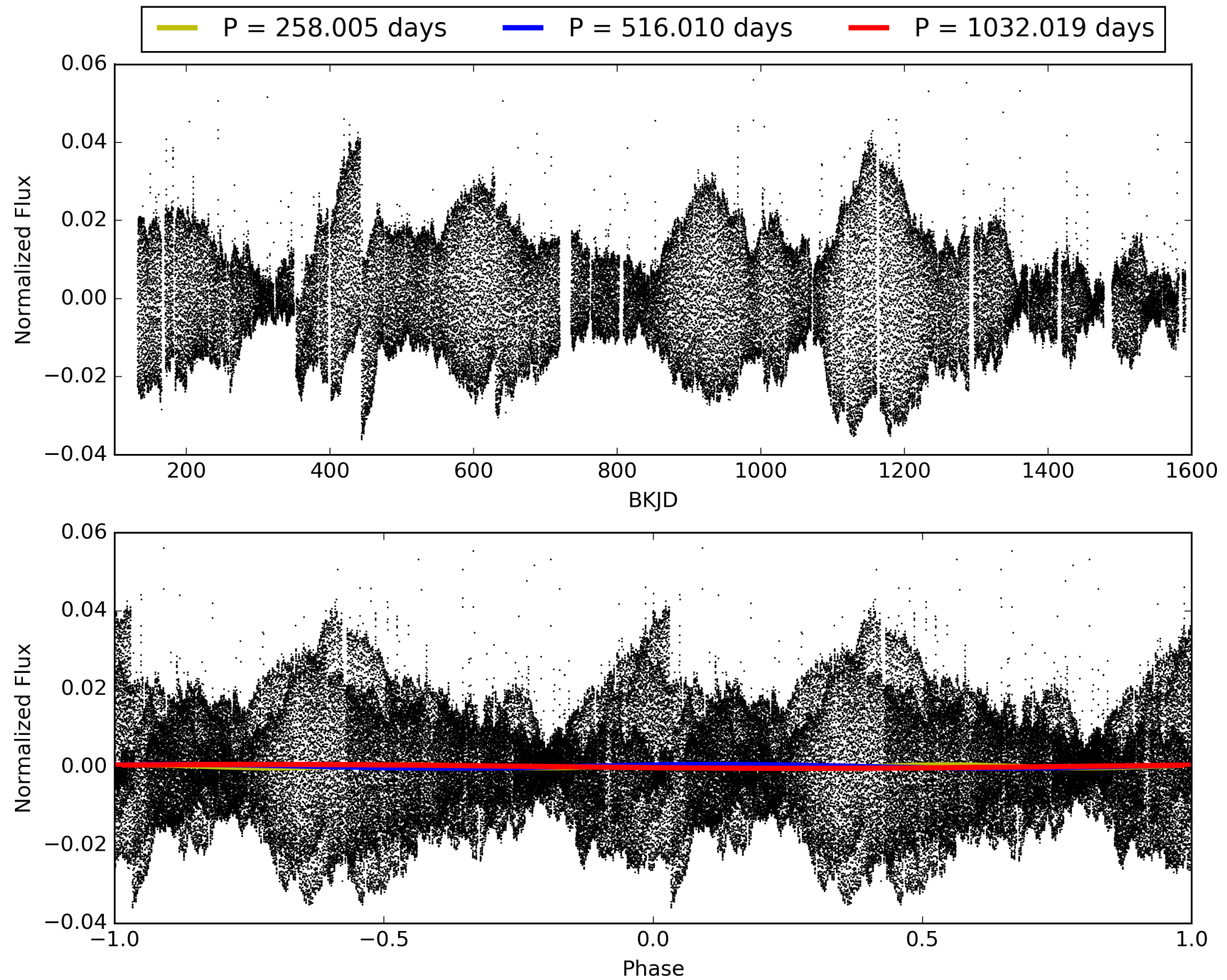
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [281.91σ]
LongPeriod-sig: 100.0% [208.24σ]
ModelChiSquare2-sig: 0.8%
ModelChiSquareGof-sig: 41.8%
Bootstrap-pfa: 4.81e-13
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.881
Centroid-sig: 21.1%
Centroid-so: 0.417 arcsec [0.57σ]
OotOffset-rm: 0.529 arcsec [1.32σ]
KicOffset-rm: 0.621 arcsec [1.86σ]
OotOffset-st: 1/1/1/0 [3]
KicOffset-st: 1/1/1/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 007886049-03, PDC Light Curves

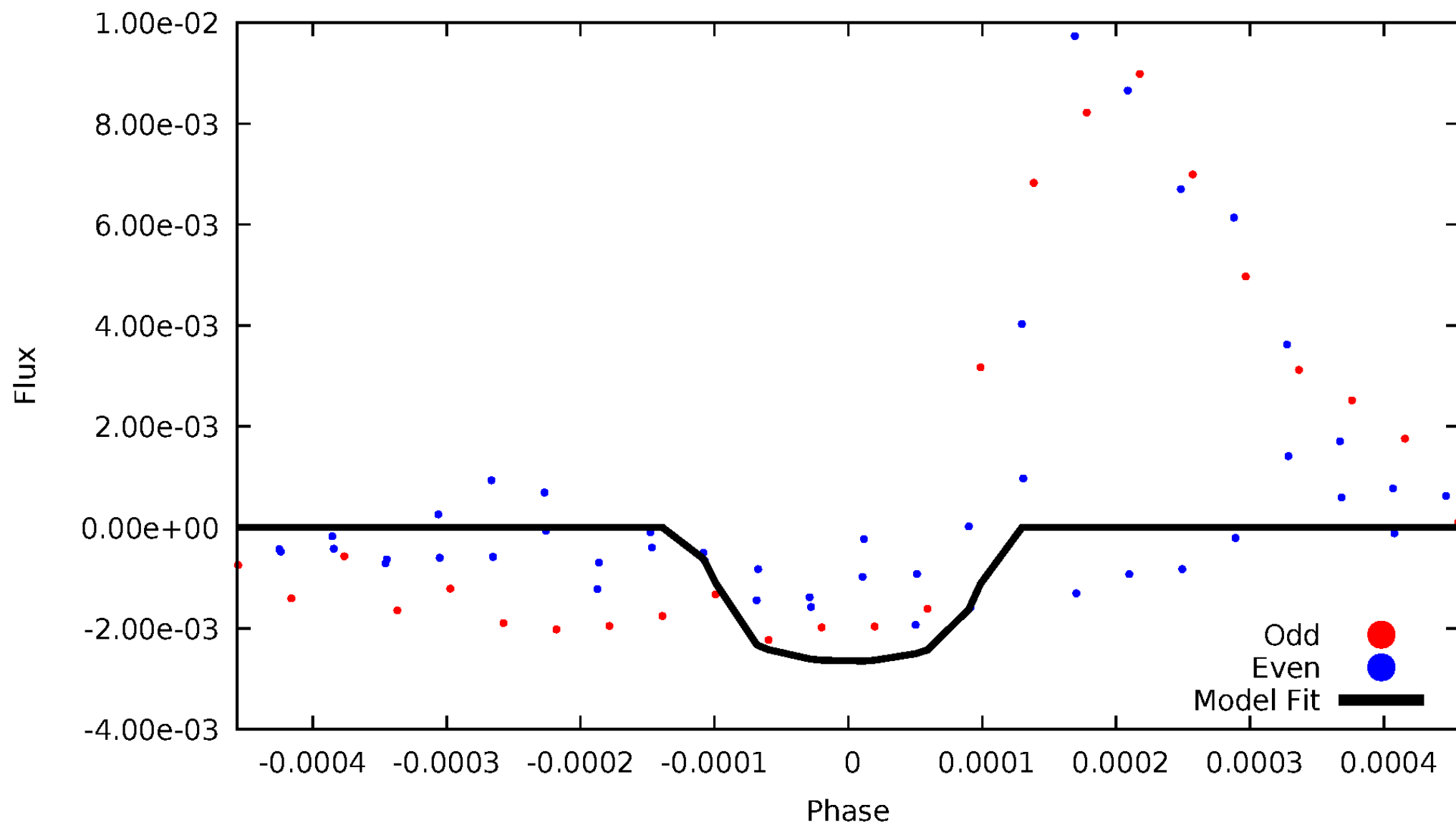


TCE 007886049-03



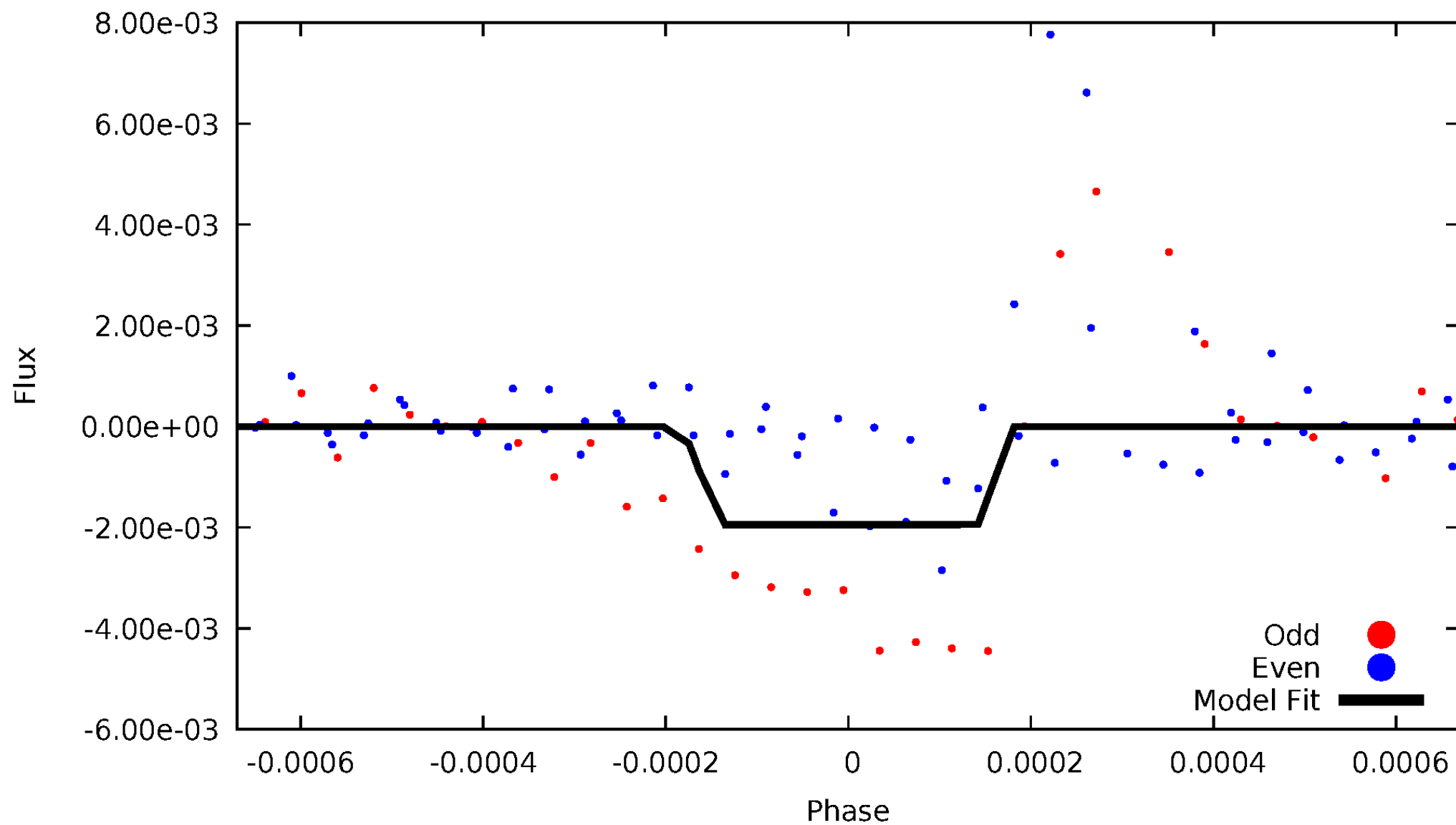
DV Odd/Even

TCE 007886049-03



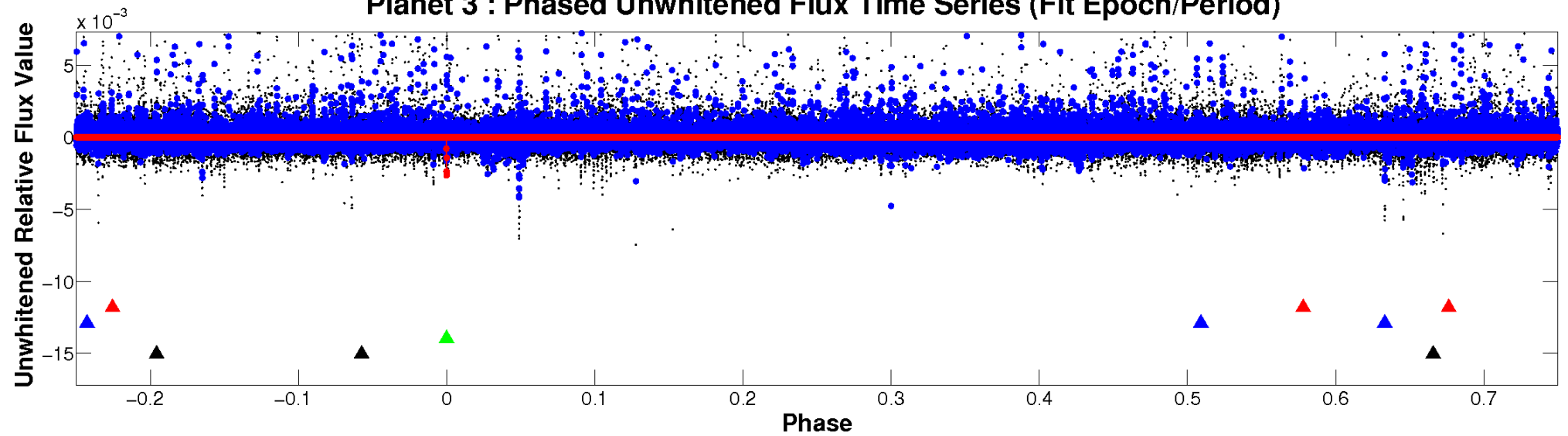
ALT Odd/Even

TCE 007886049-03

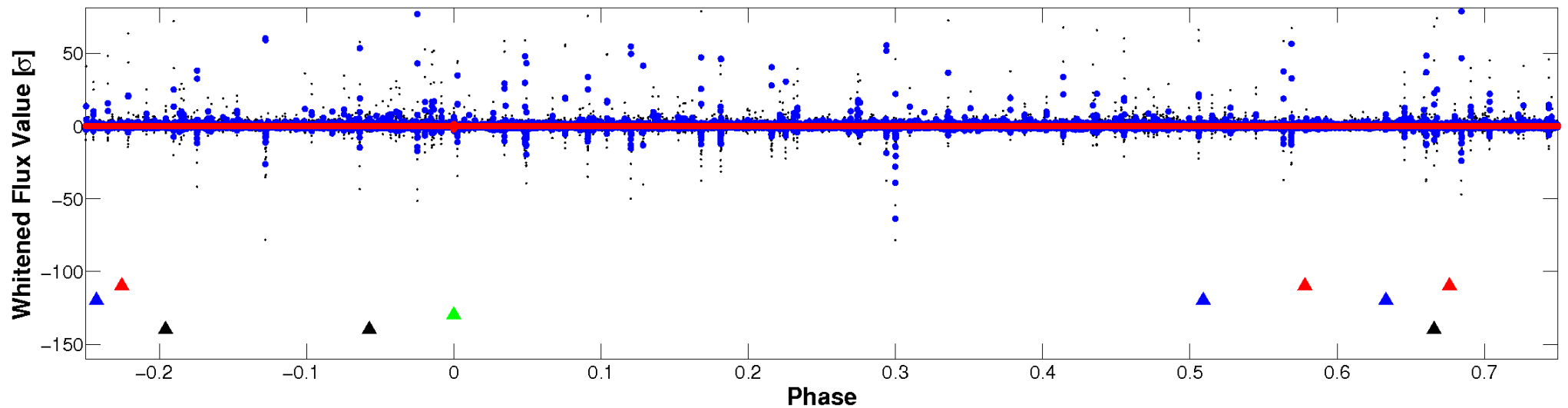


Non-Whitened Vs. Whitened Light Curve

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

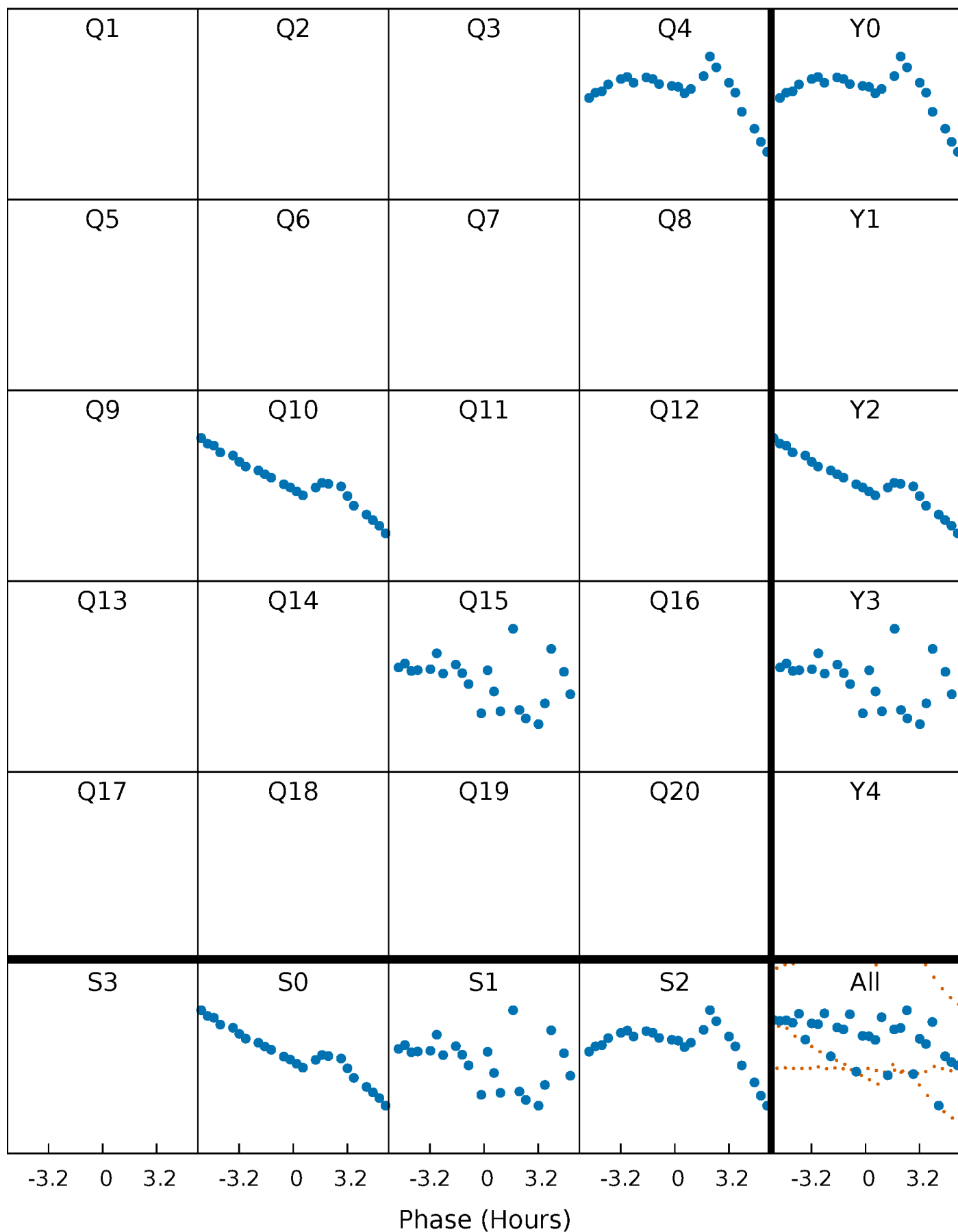


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



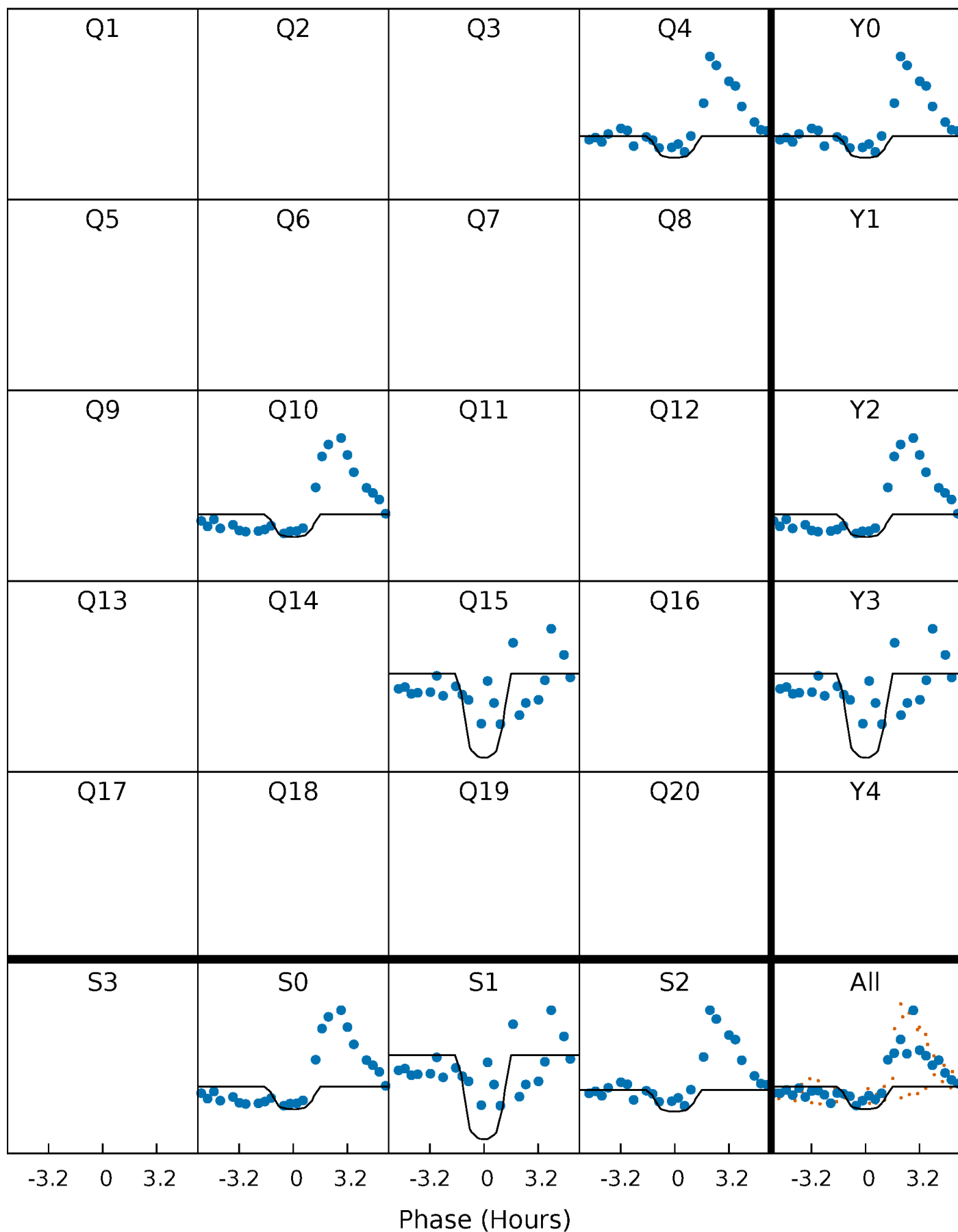
PDC Quarter-Phased Transit Curves

TCE 007886049-03 P=516.009679 Days $T_0=426.483555$ (BKJD)



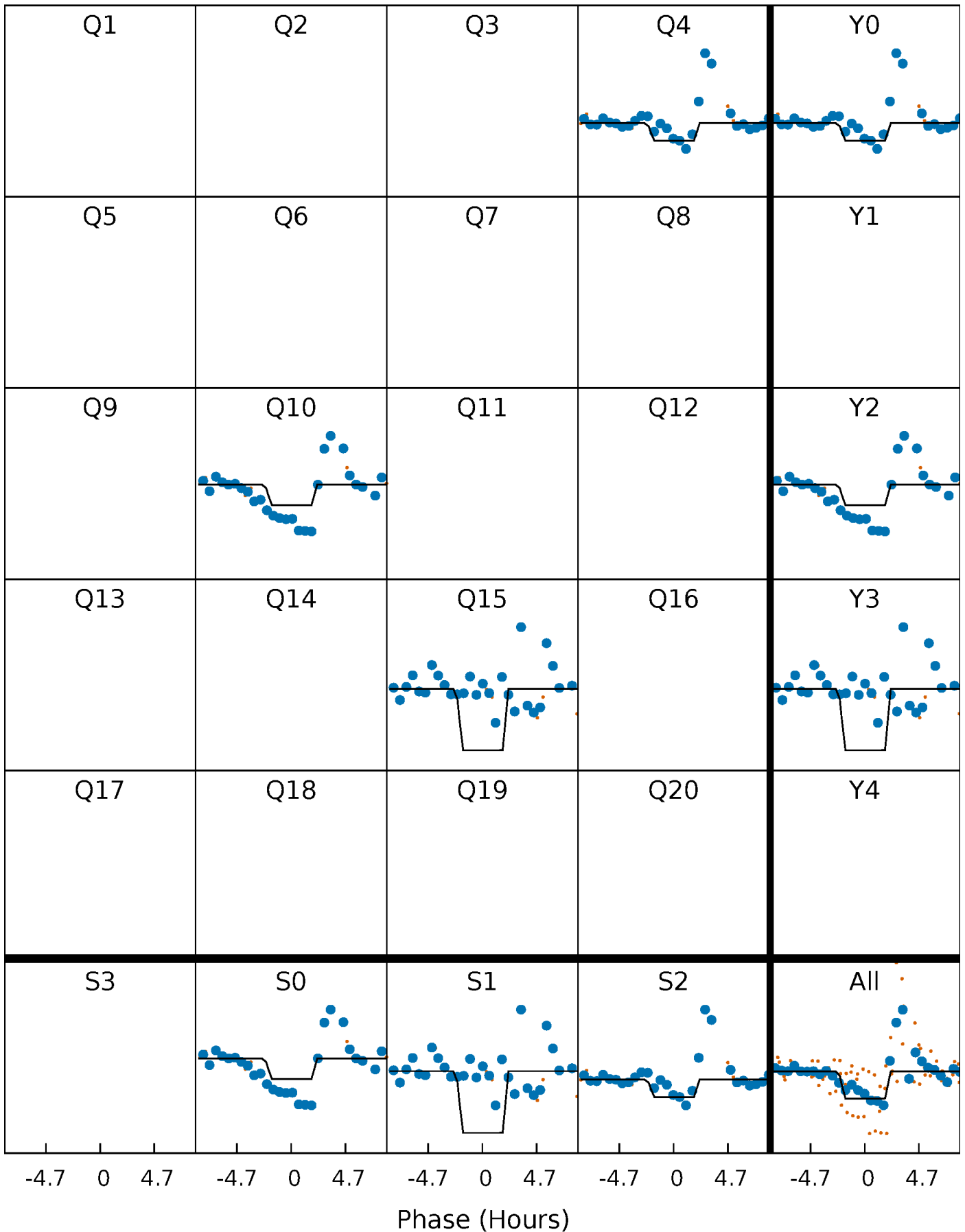
DV Quarter-Phased Transit Curves

TCE 007886049-03 P=516.009679 Days $T_0=426.483555$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

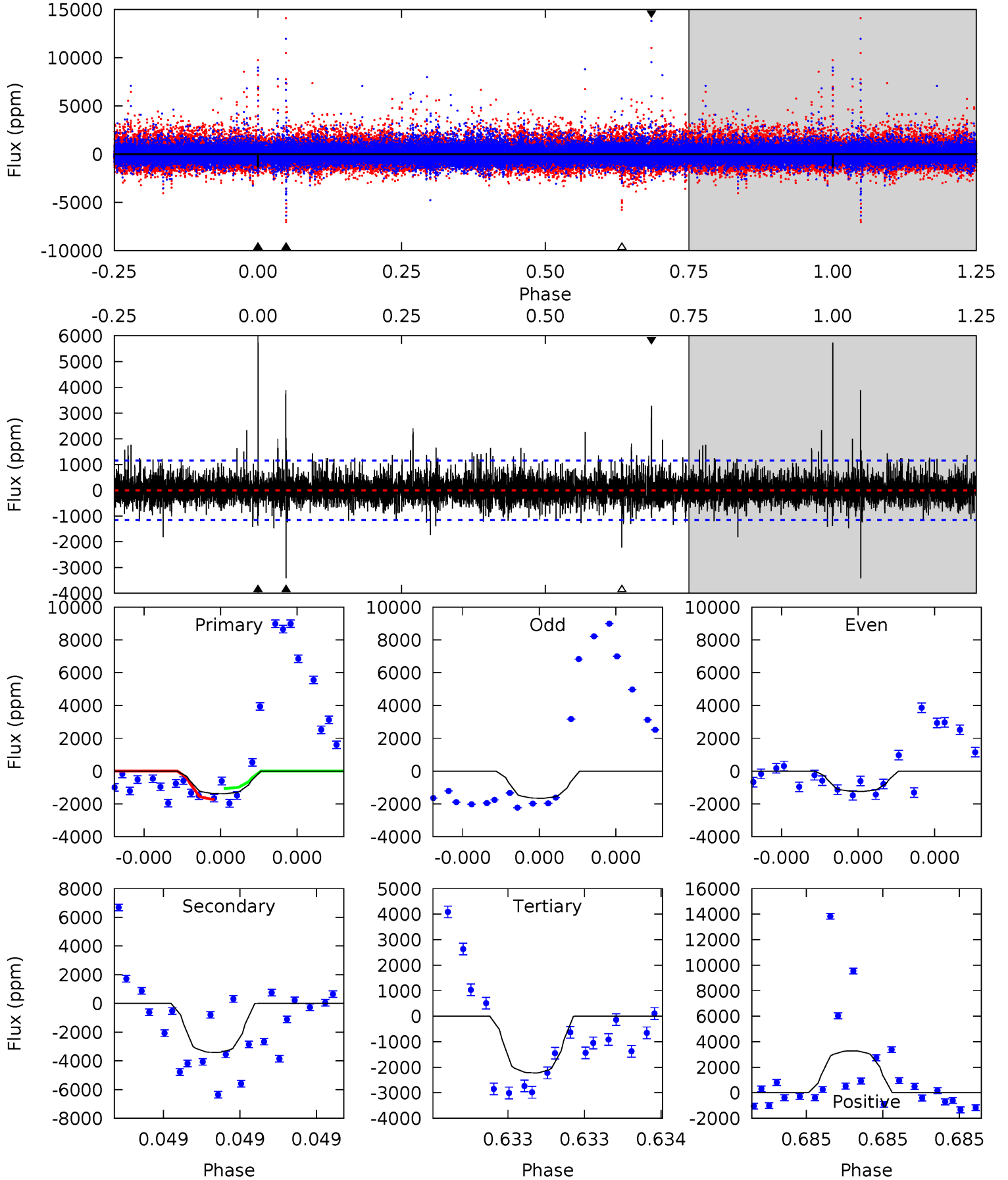
TCE 007886049-03 P=515.988257 Days $T_0=426.456546$ (BKJD)



DV Model-Shift Uniqueness Test

007886049-03, P = 516.009679 Days, E = 426.483555 Days

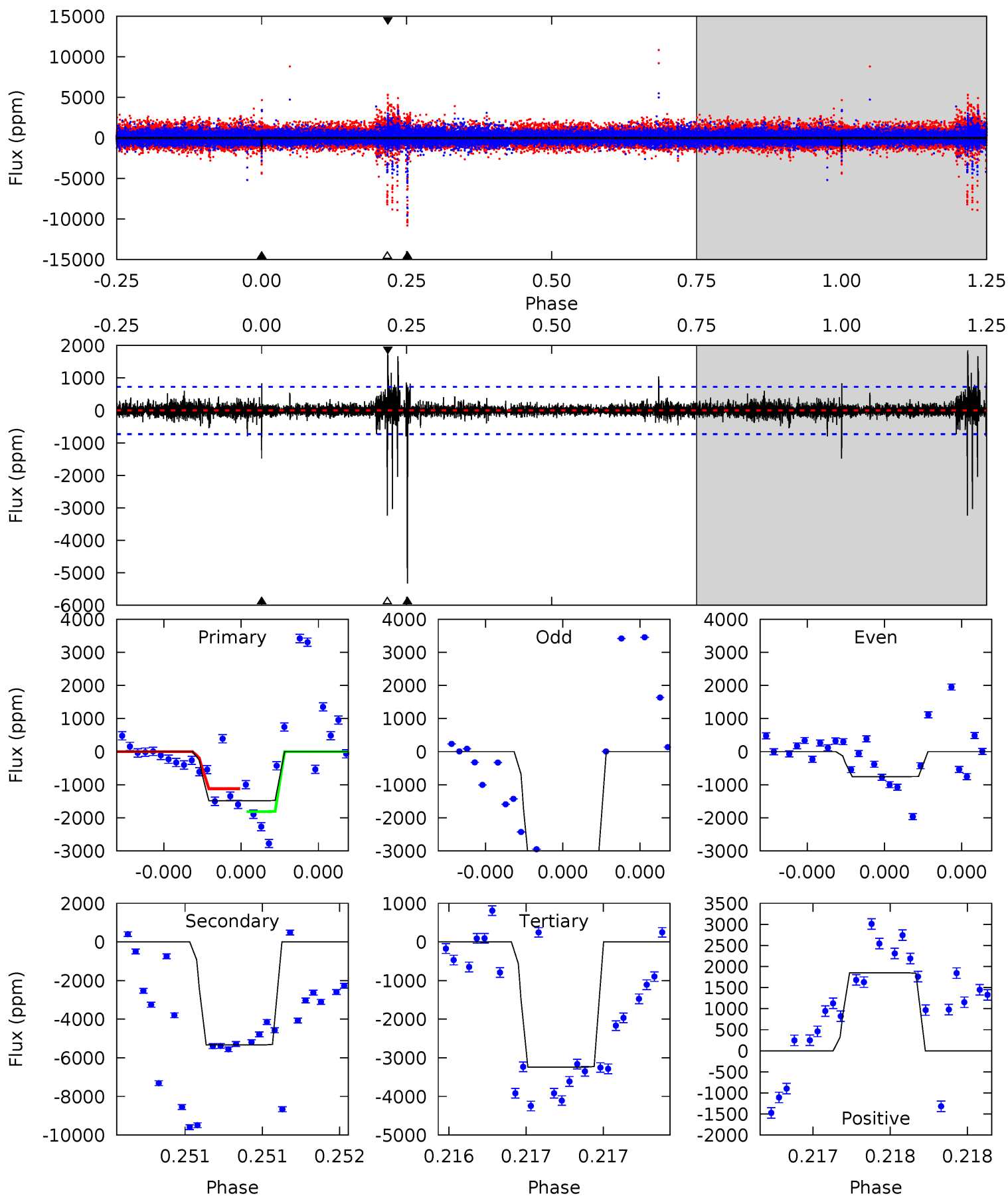
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.80	16.9	11.0	16.2	5.70	3.67	1.86	-4.18	-9.42	5.88	0.64	0.41	1.01	0.63	1.61



Alt Model-Shift Uniqueness Test

007886049-03, P = 515.988257 Days, E = 426.456546 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	41.3	25.1	14.3	5.65	3.60	1.23	-13.6	-2.84	16.2	27.0	10.2	1.30	0.26	2.59



Stellar Parameters For KIC 007886049

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4551^{+137}_{-151}	$4.775^{+0.048}_{-0.028}$	$-1.680^{+0.300}_{-0.200}$	$0.479^{+0.027}_{-0.037}$	$0.499^{+0.031}_{-0.028}$	$6.389^{+1.378}_{-0.724}$
	+3%/-3%	+1%/-1%	+18%/-12%	+6%/-8%	+6%/-6%	+22%/-11%
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 007886049-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3416 ± 203	$3.51^{+2.80}_{-2.13}$	193^{+7}_{-7}	4287^{+2246}_{-791}	$155290^{+828582}_{-108711}$
Alt.	-5329 ± 129	$3.30^{+2.66}_{-2.17}$	193^{+7}_{-7}	4802^{+3593}_{-952}	$275923^{+2150501}_{-192614}$

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

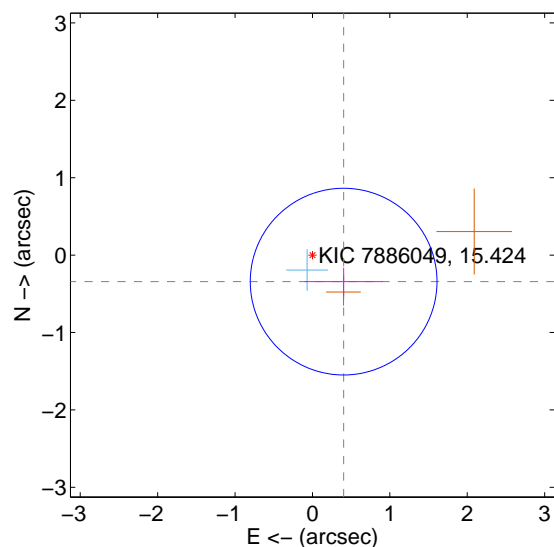
Supplemental centroid analysis for 007886049-03. Kepler magnitude: 15.42. Transit SNR 8.08

There are 1 quarters with good PRF difference image offsets

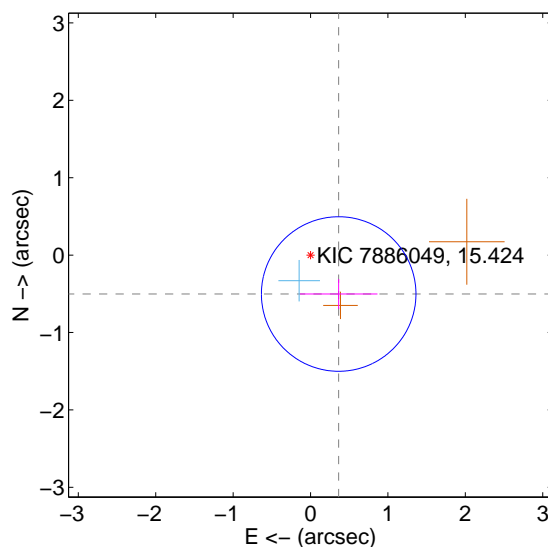
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.529 ± 0.402	1.32	-0.403 ± 0.505	-0.343 ± 0.180
PRF-fit source offset from KIC position	0.621 ± 0.333	1.86	-0.364 ± 0.501	-0.503 ± 0.193
photometric centroid source offset	0.42 ± 0.73	0.57	0.08 ± 0.70	0.41 ± 0.73

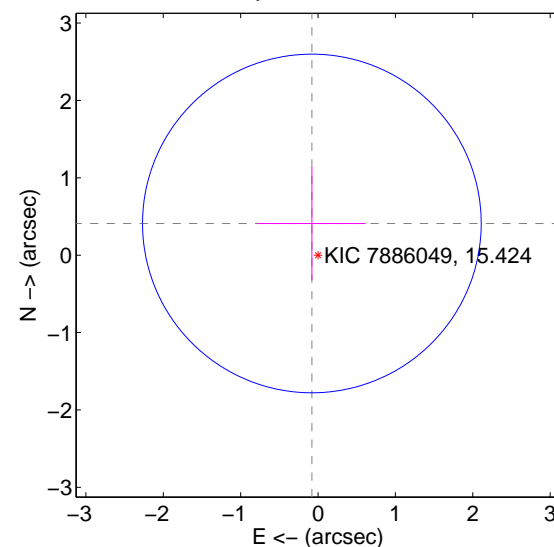
offset from difference PRF-fit to OOT PRF-fit



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

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



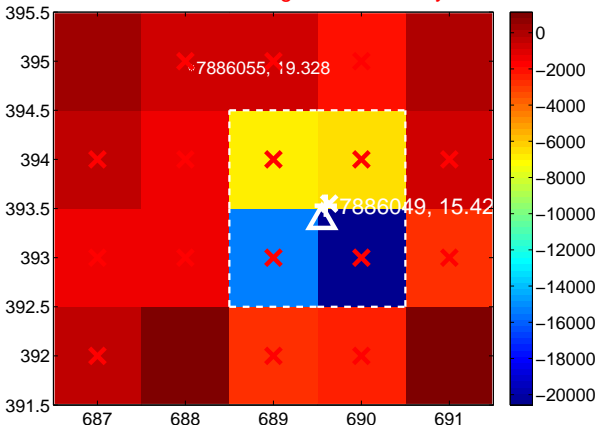
Q3 no difference image



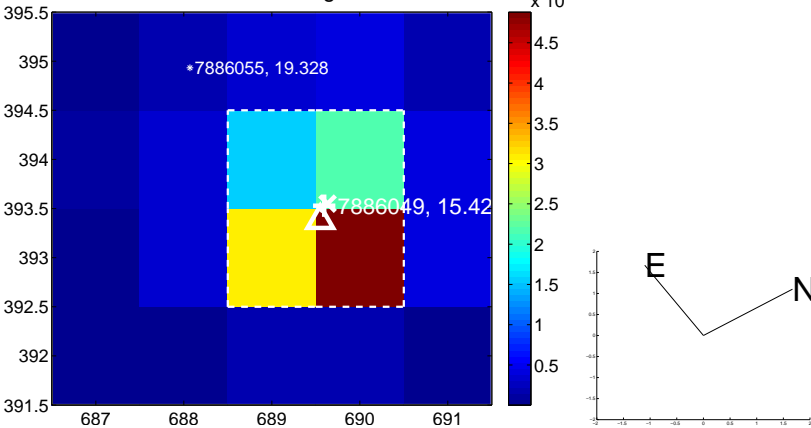
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image



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

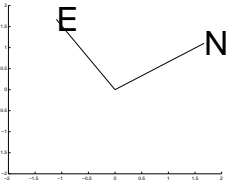
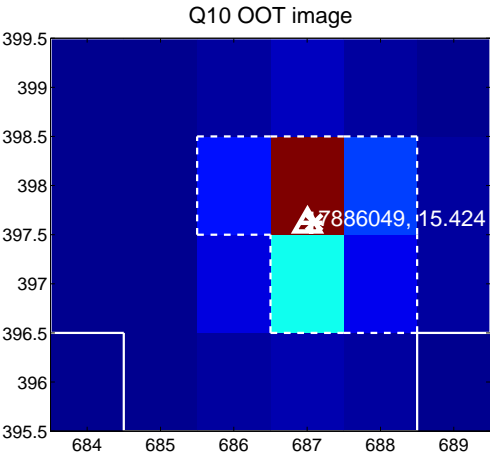
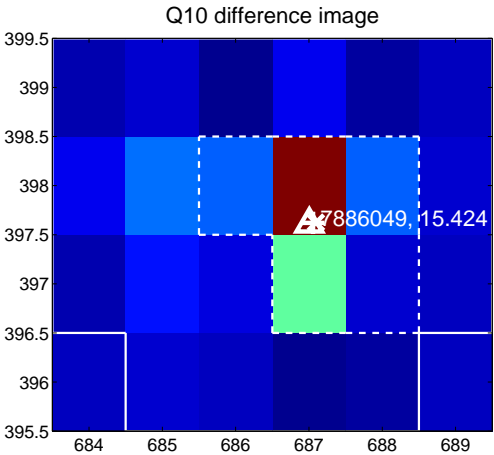


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

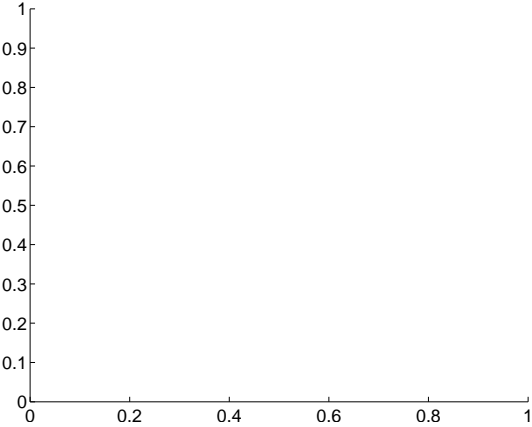
Q9 no difference image



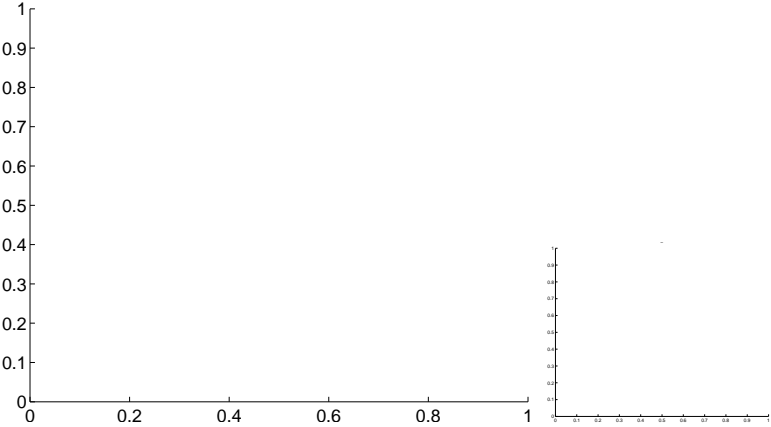
Q9 no OOT image



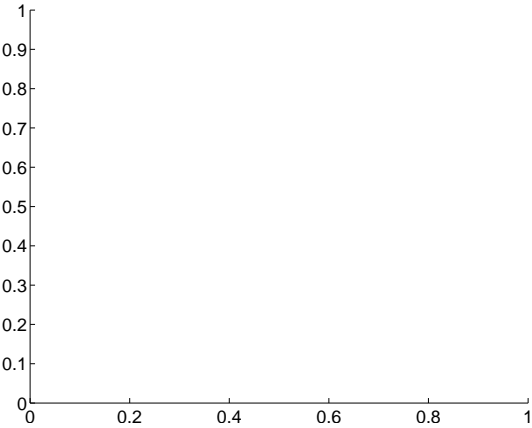
Q11 no difference image



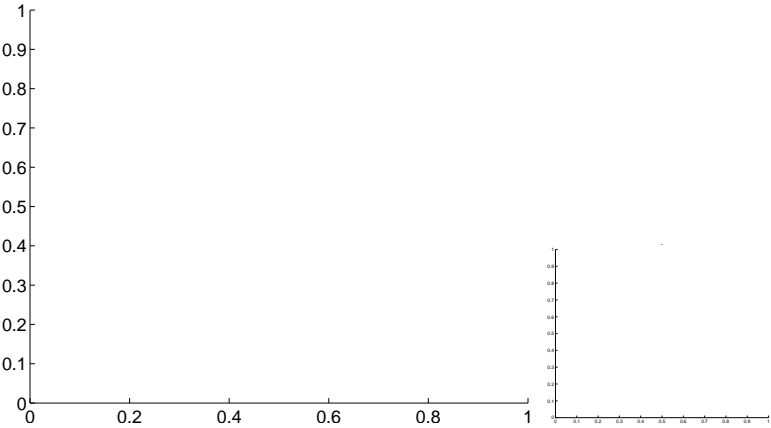
Q11 no OOT image



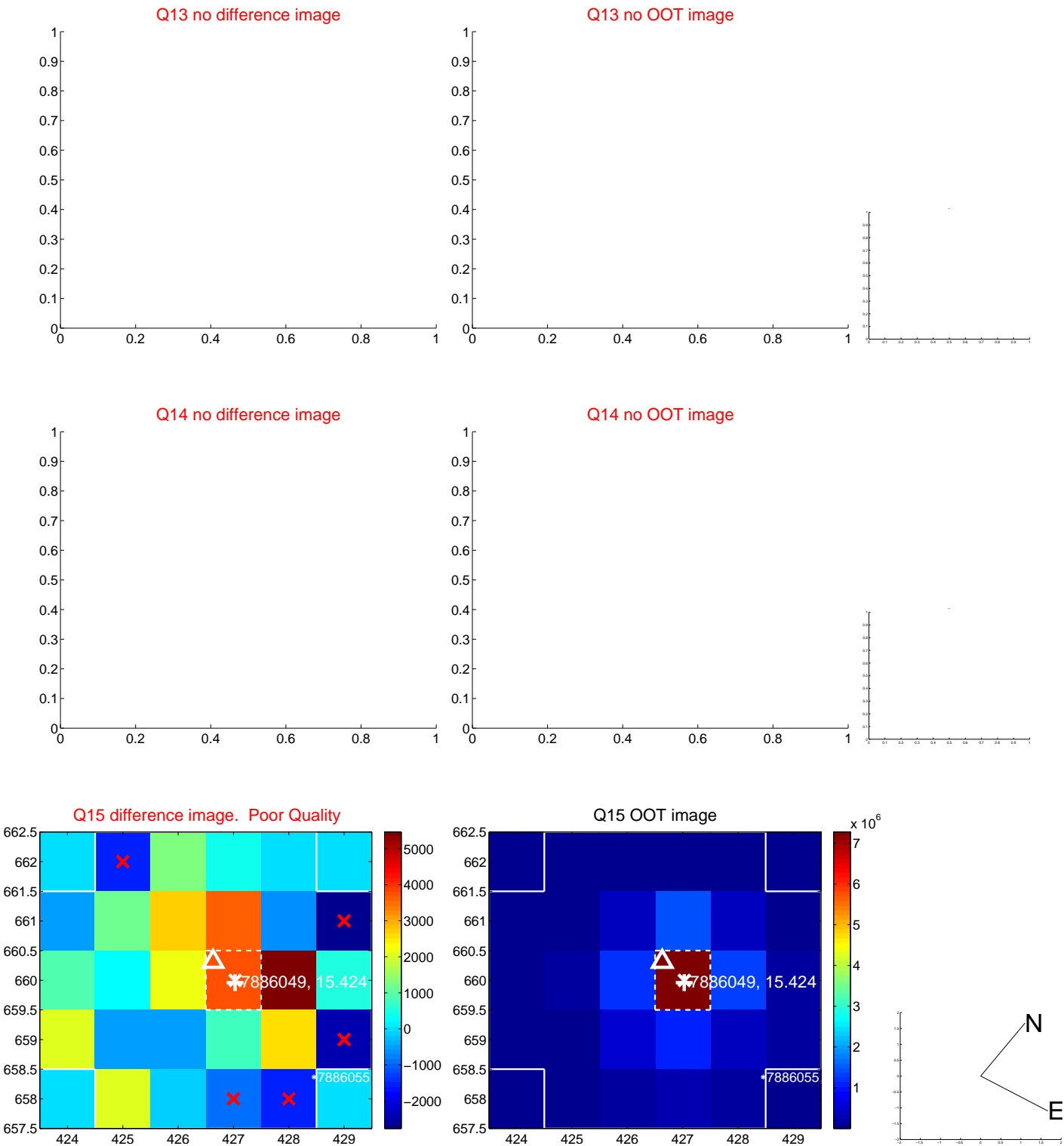
Q12 no difference image



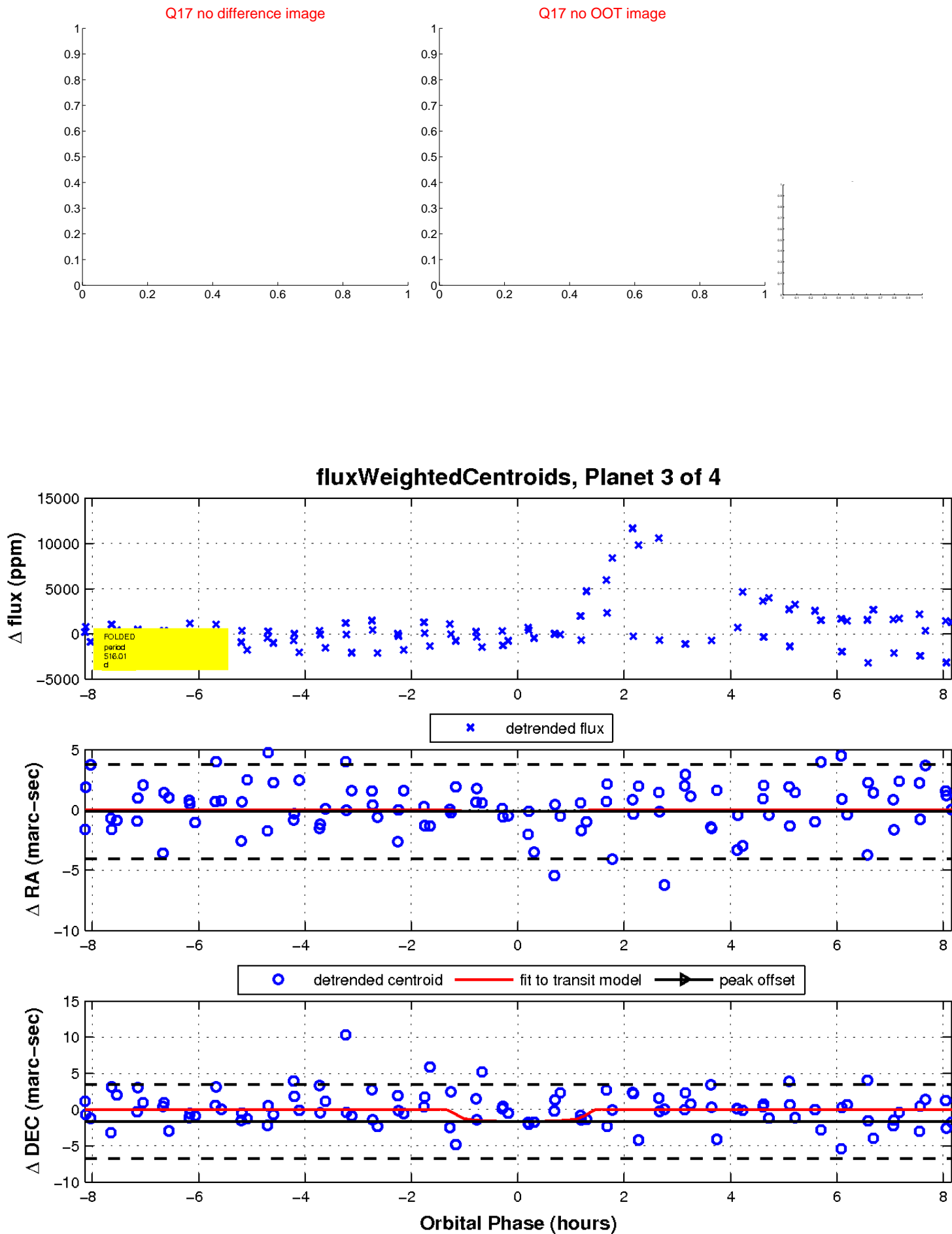
Q12 no OOT image



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

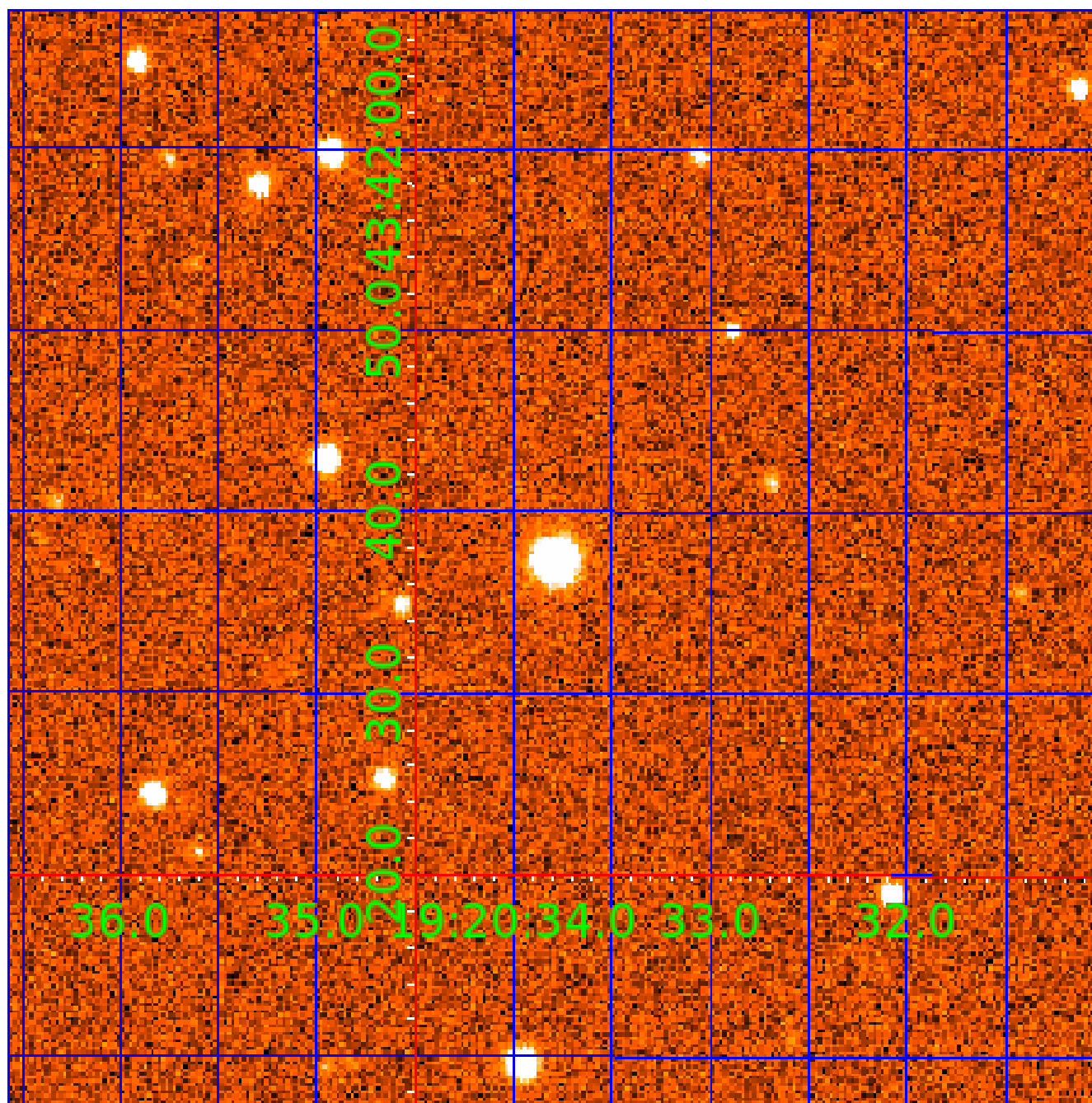


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007886049

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})
007886049-01	OBS	No	566.680210	208.790970	2463.7	5.111	21.6	6.4	0.48	4551	4.48	0.08
007886049-02	OBS	No	451.961806	301.255197	2564.1	4.664	15.7	6.6	0.48	4551	2.42	0.11
007886049-03	OBS	No	516.009679	426.483555	2649.6	2.825	14.1	8.1	0.48	4551	2.69	0.09
007886049-04	OBS	No	587.426005	254.074682	2248.6	3.507	12.9	5.2	0.48	4551	2.26	0.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007886049-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
007886049-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
007886049-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—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

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

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

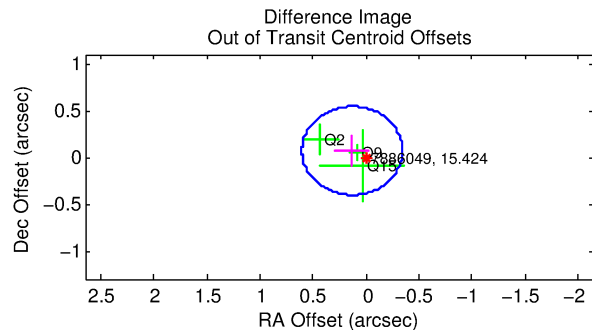
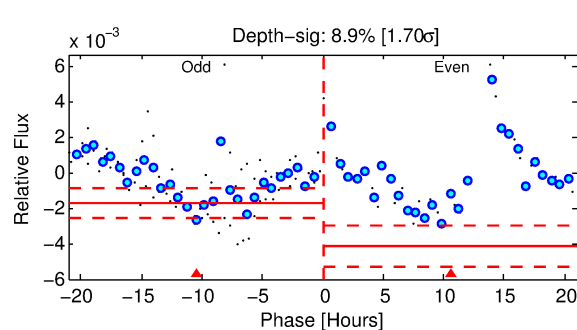
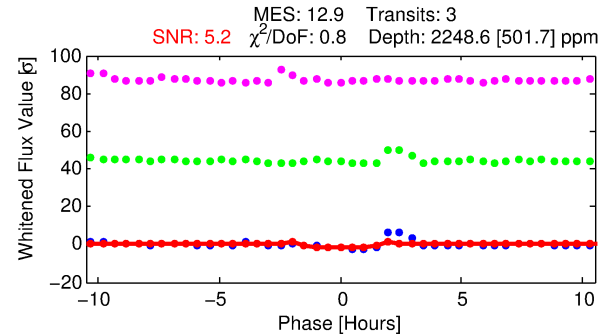
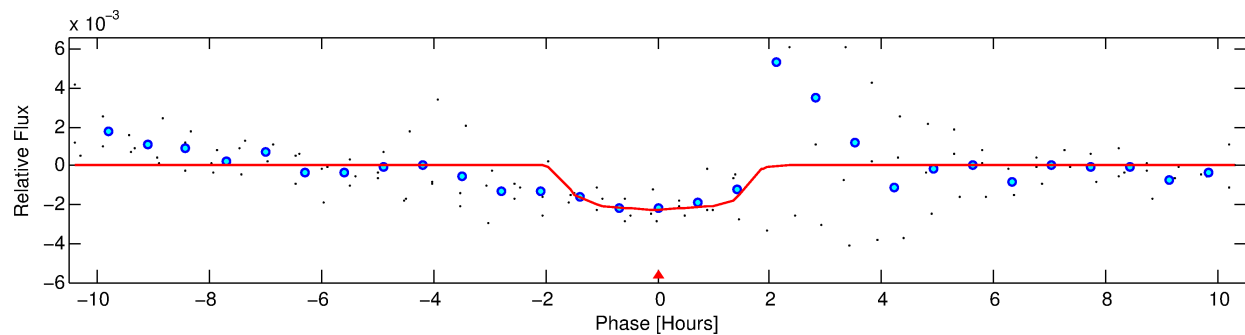
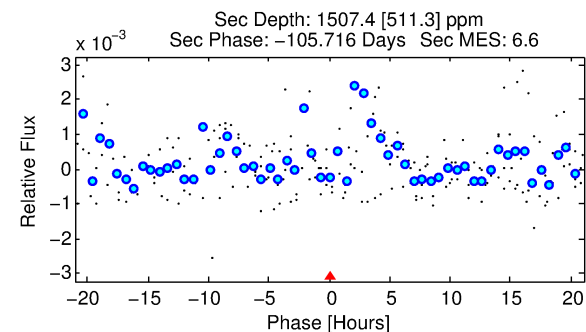
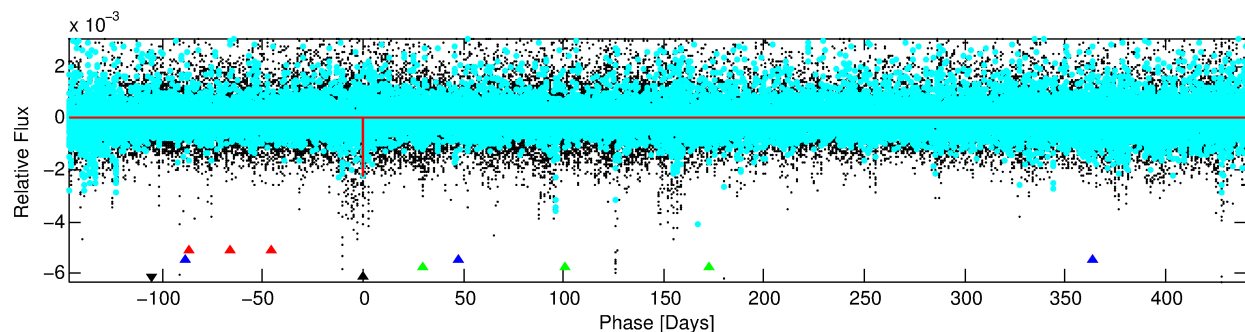
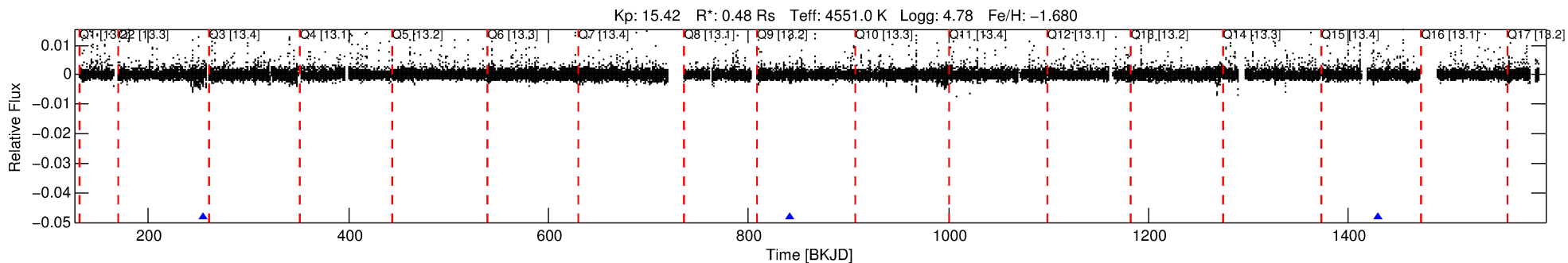
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007886049-04

No Significant Match Found

DV One-Page Summary

KIC: 7886049 Candidate: 4 of 4 Period: 587.426 d



DV Fit Results:

Period = 587.42600 [0.00645] d
Epoch = 254.0747 [0.0090] BKJD
Rp/R* = 0.0433 [0.0781]
a/R* = 1334.46 [11196.99]
b = 0.02 [366.98]
Seff = 0.07 [0.01]
Teff = 133 [5] K
Rp = 2.26 [4.08] Re
a = 1.0887 [0.0689] AU
Ag = 192164.10 [696744.52] [0.28σ]
Teffp = 4311 [3909] K [1.07σ]

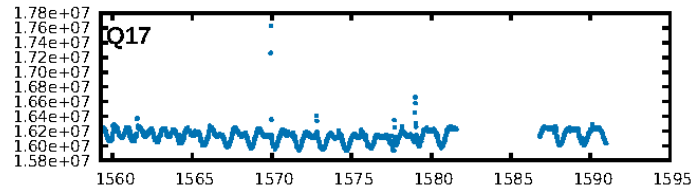
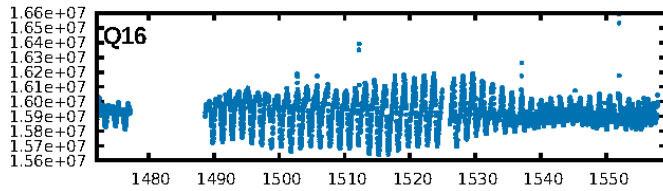
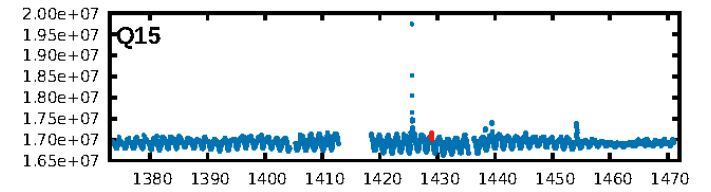
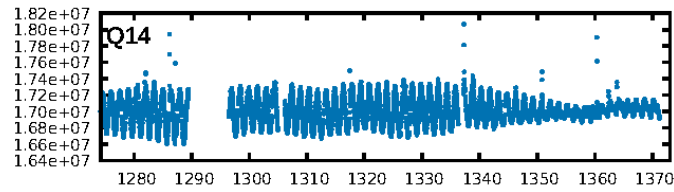
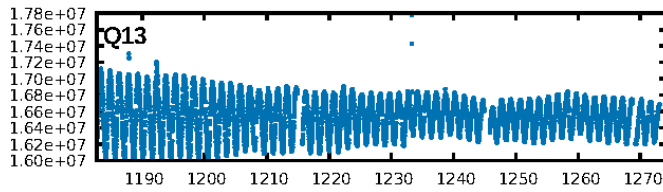
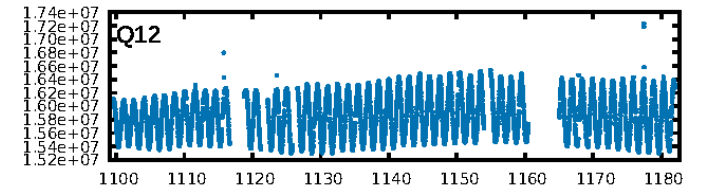
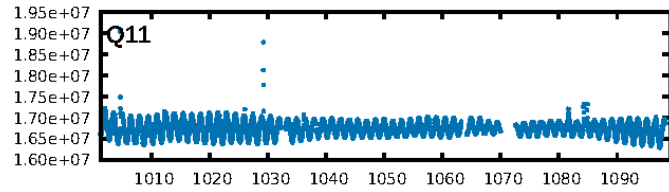
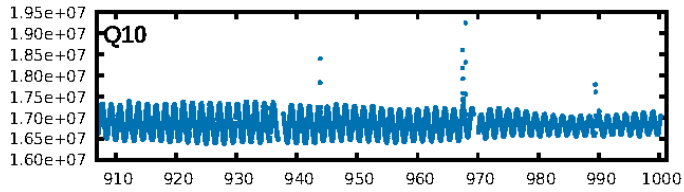
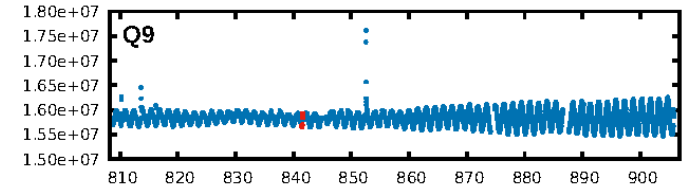
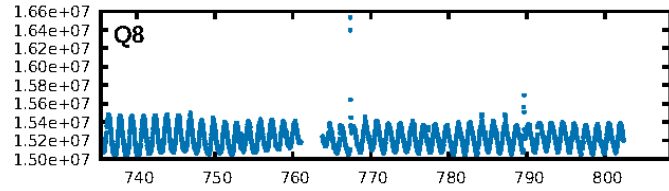
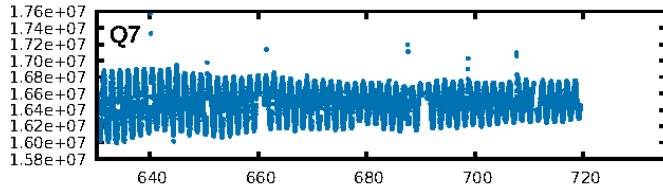
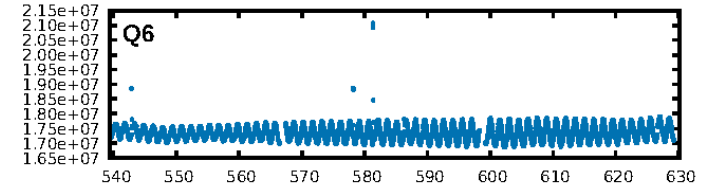
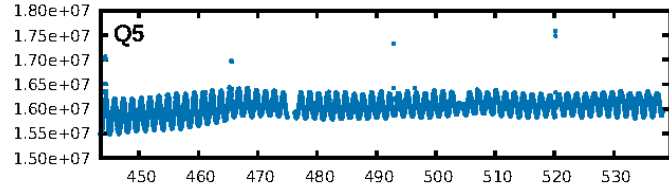
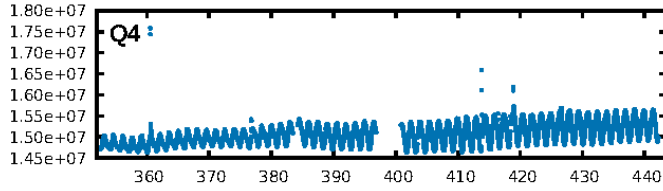
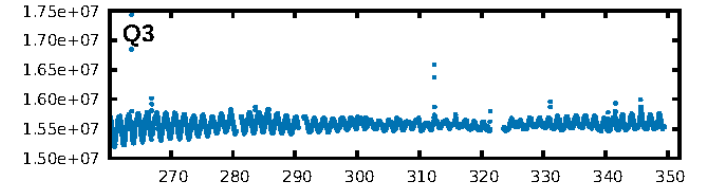
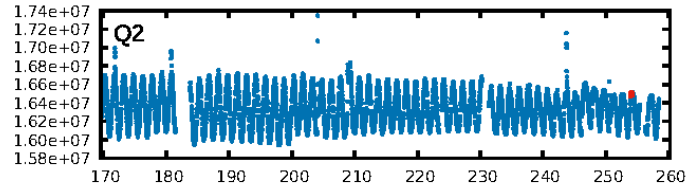
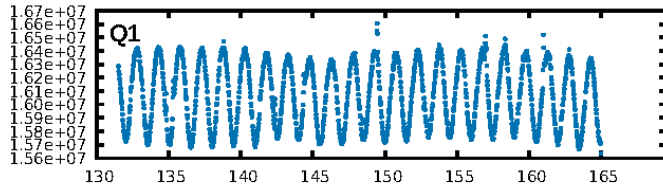
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [80.32σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 49.7%
ModelChiSquareGof-sig: 99.9%
Bootstrap-pfa: 6.08e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.296
Centroid-sig: 11.7%
Centroid-so: 1.077 arcsec [1.46σ]
OotOffset-rm: 0.149 arcsec [0.94σ]
KicOffset-rm: 0.226 arcsec [1.44σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

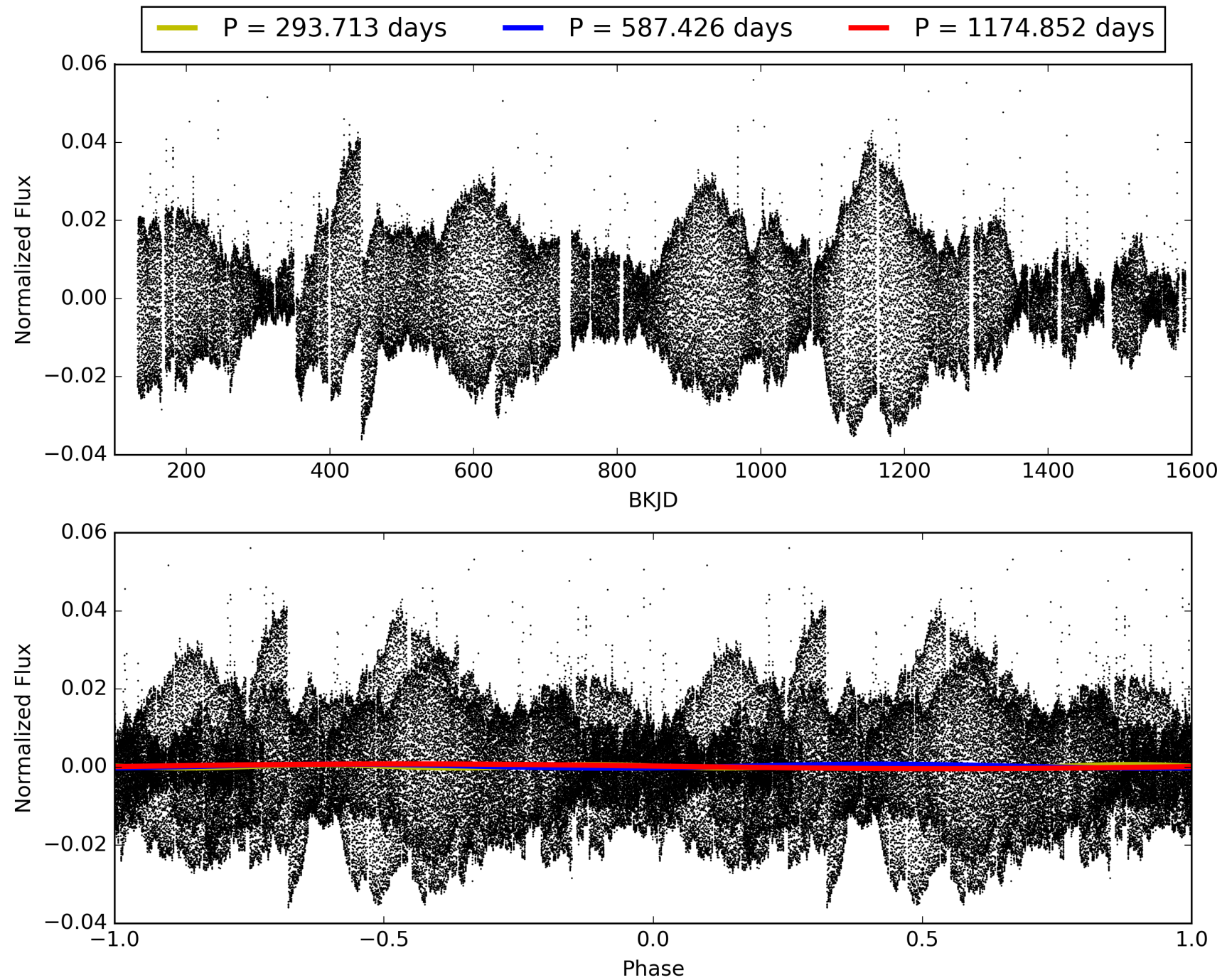
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:50:40 Z

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

TCE 007886049-04, PDC Light Curves

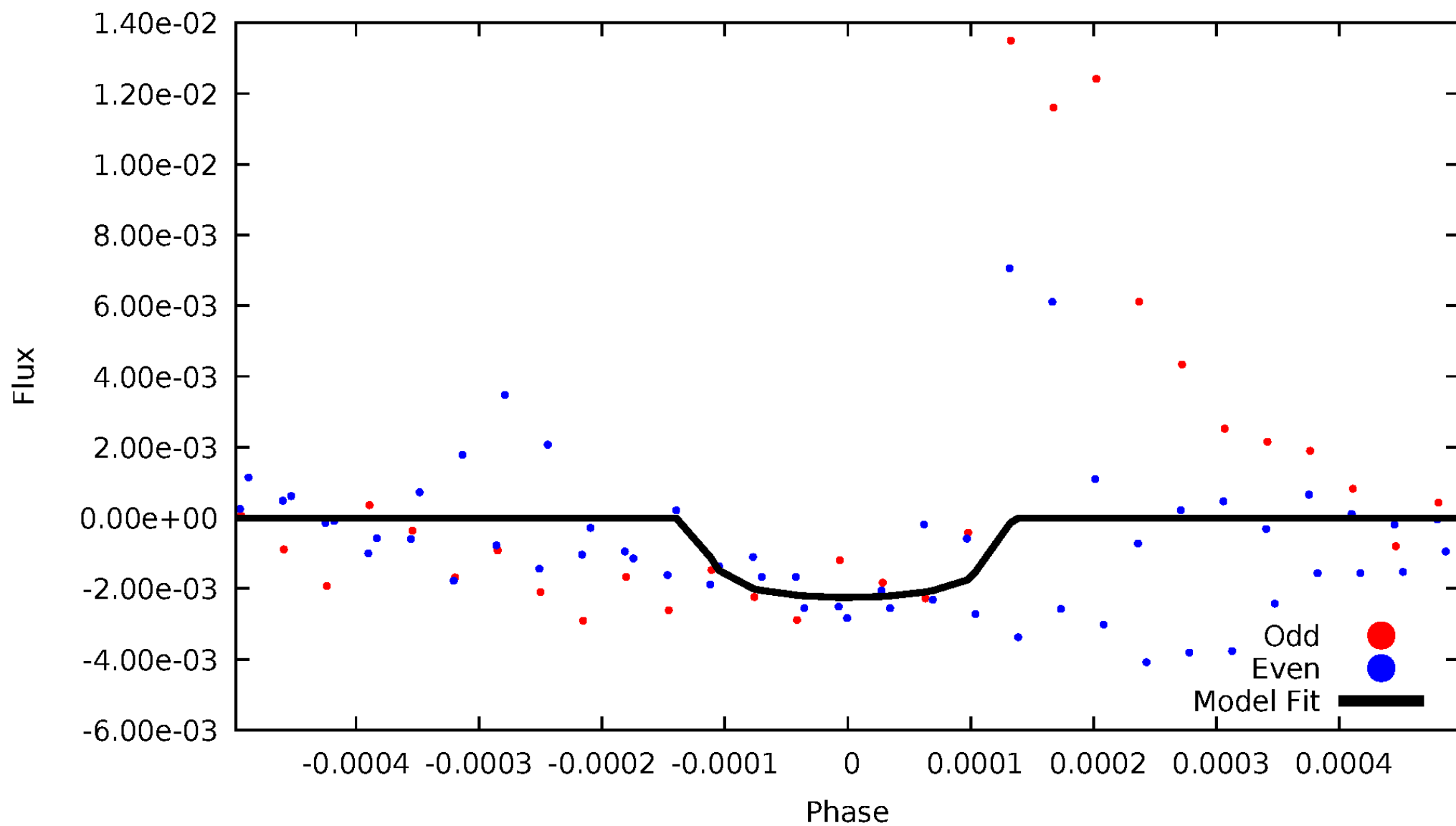


TCE 007886049-04



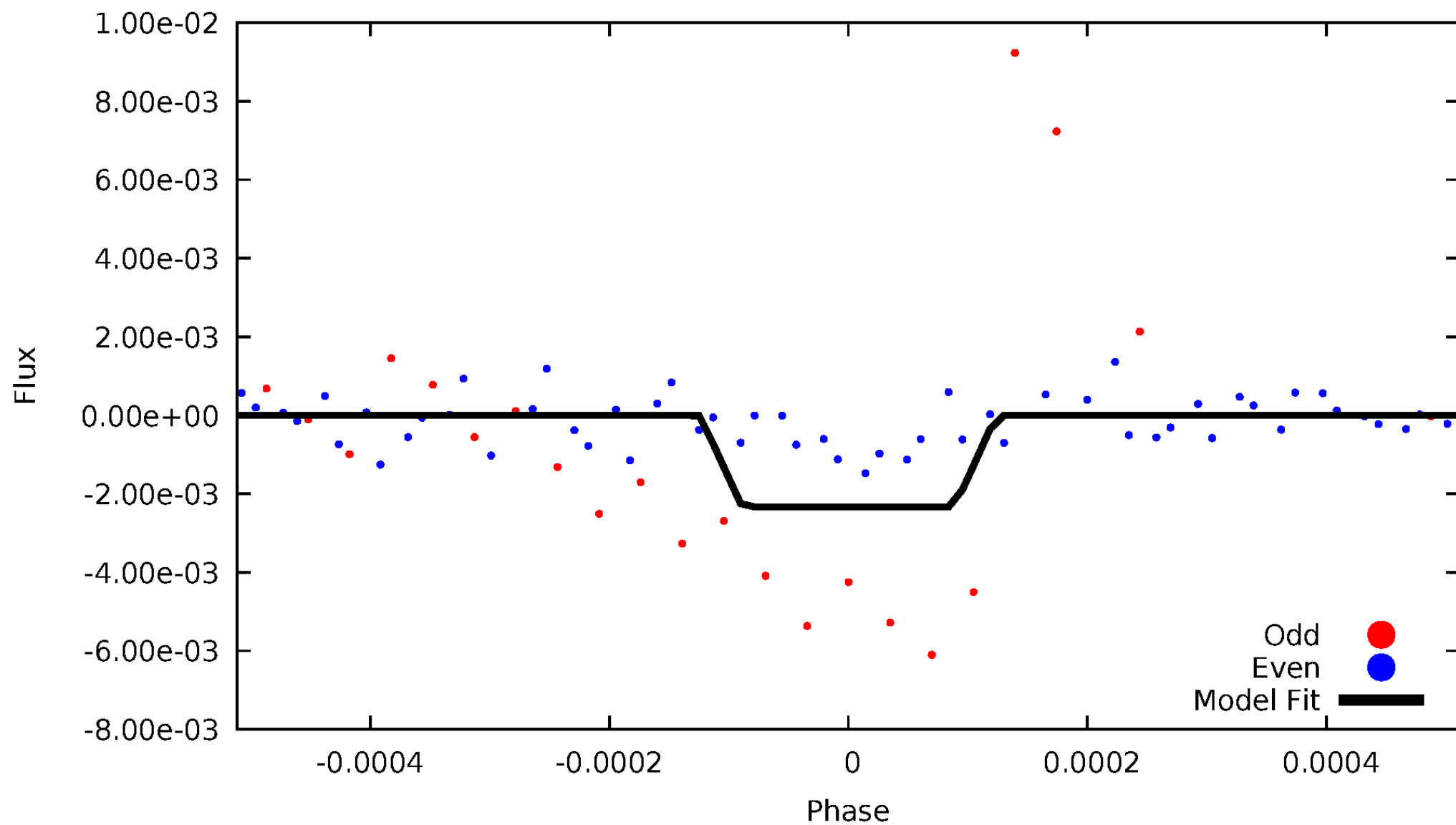
DV Odd/Even

TCE 007886049-04



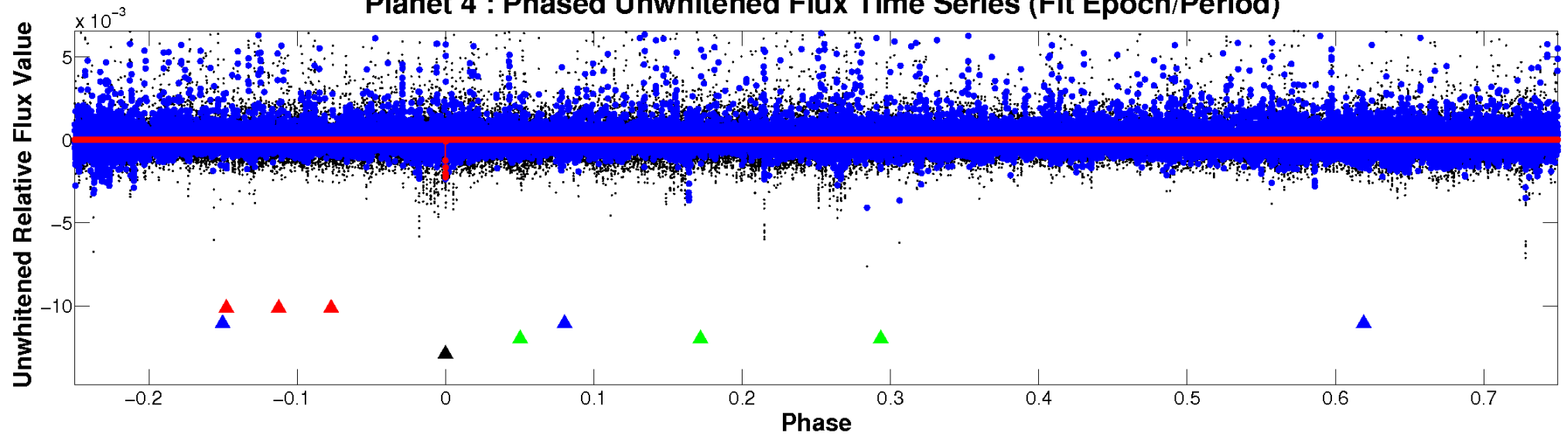
ALT Odd/Even

TCE 007886049-04

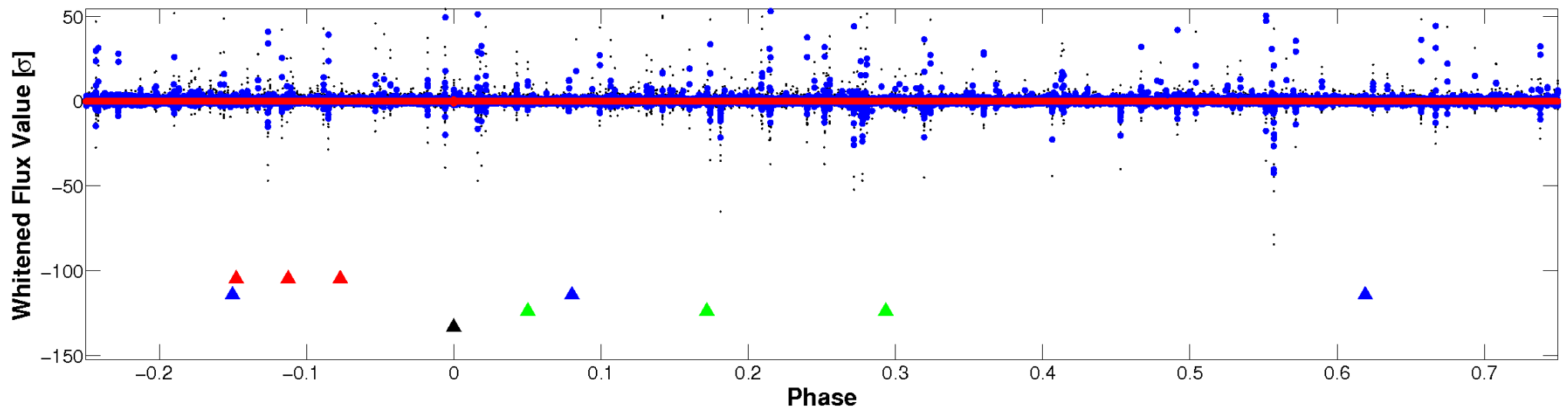


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

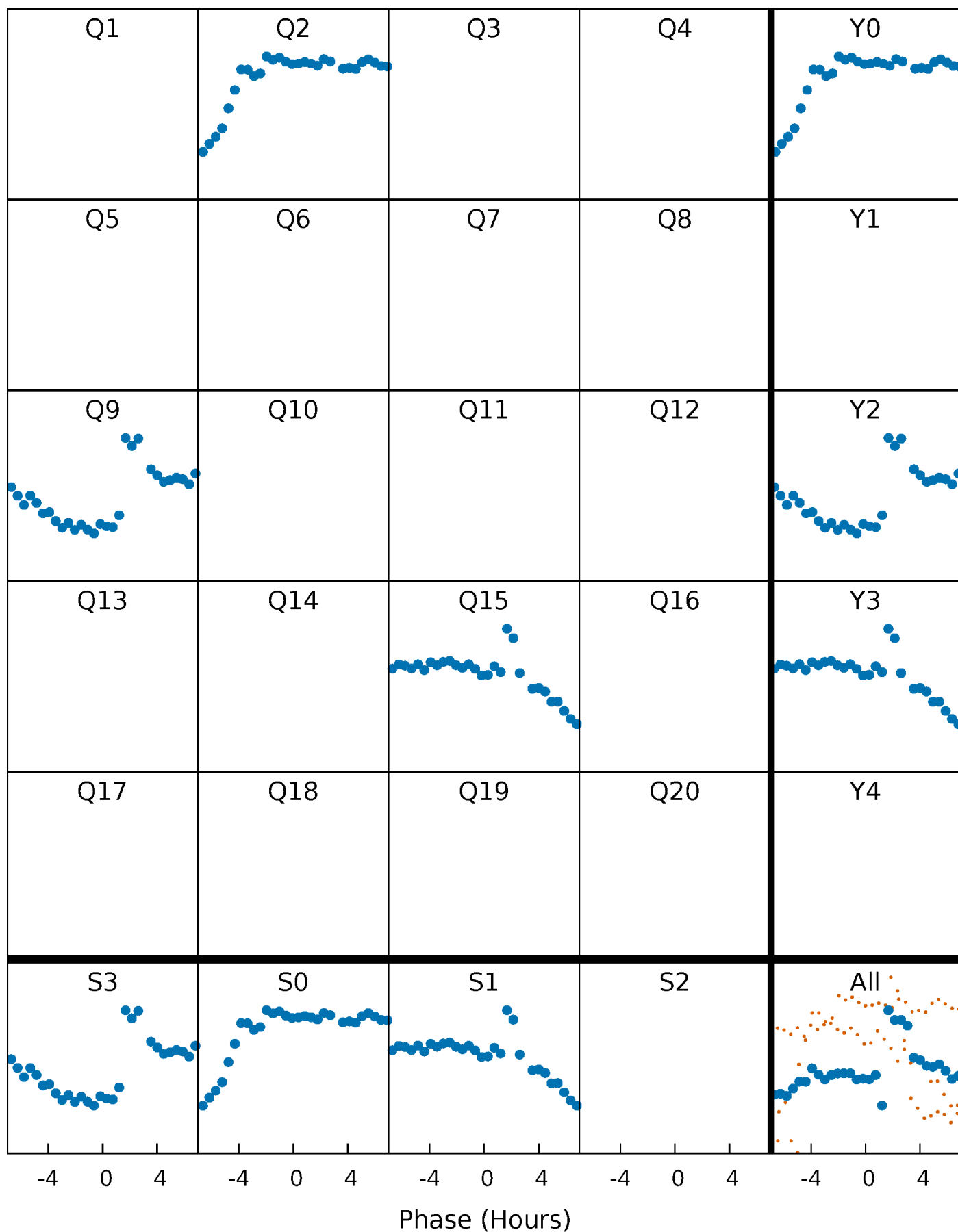


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



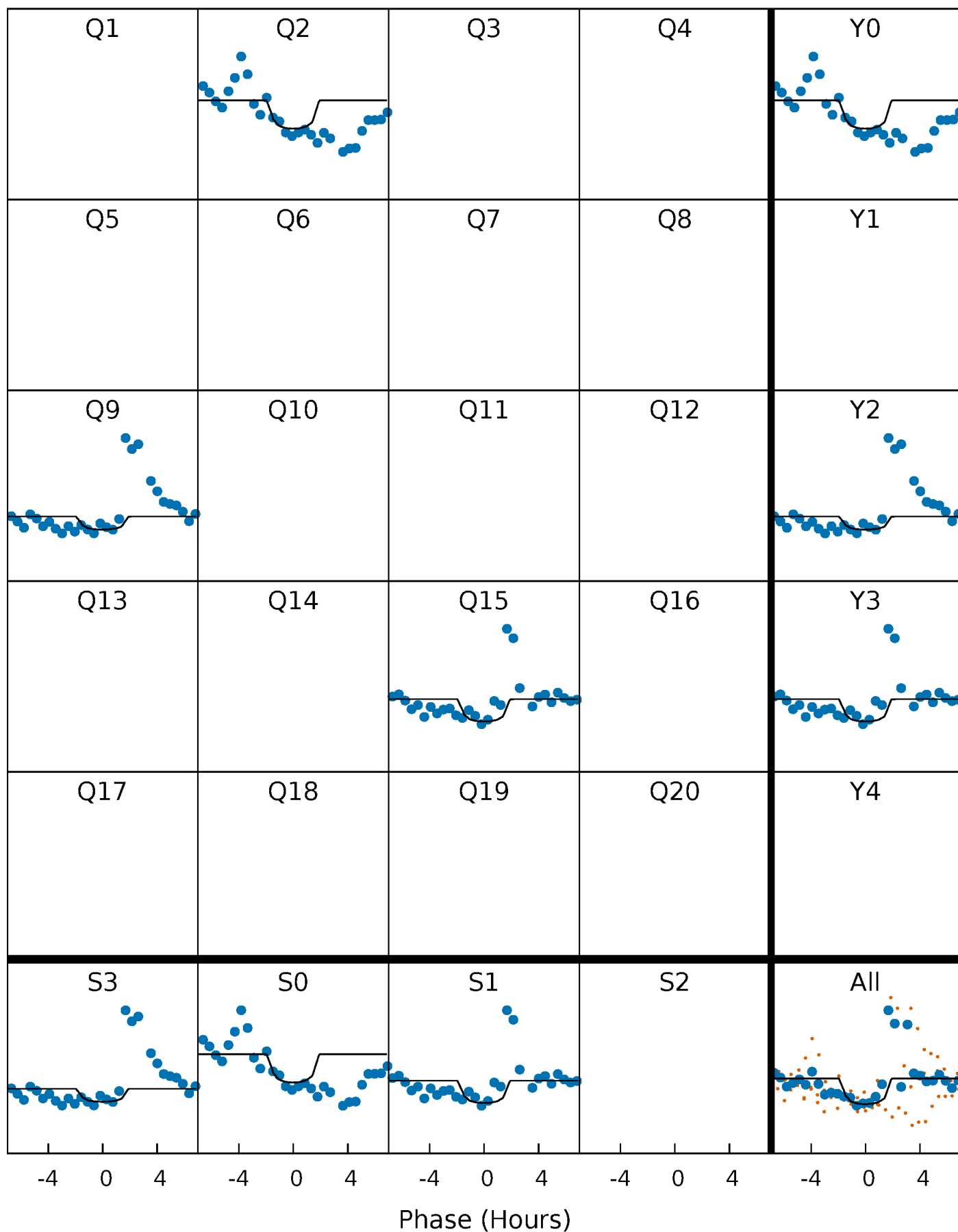
PDC Quarter-Phased Transit Curves

TCE 007886049-04 P=587.426005 Days $T_0=254.074682$ (BKJD)



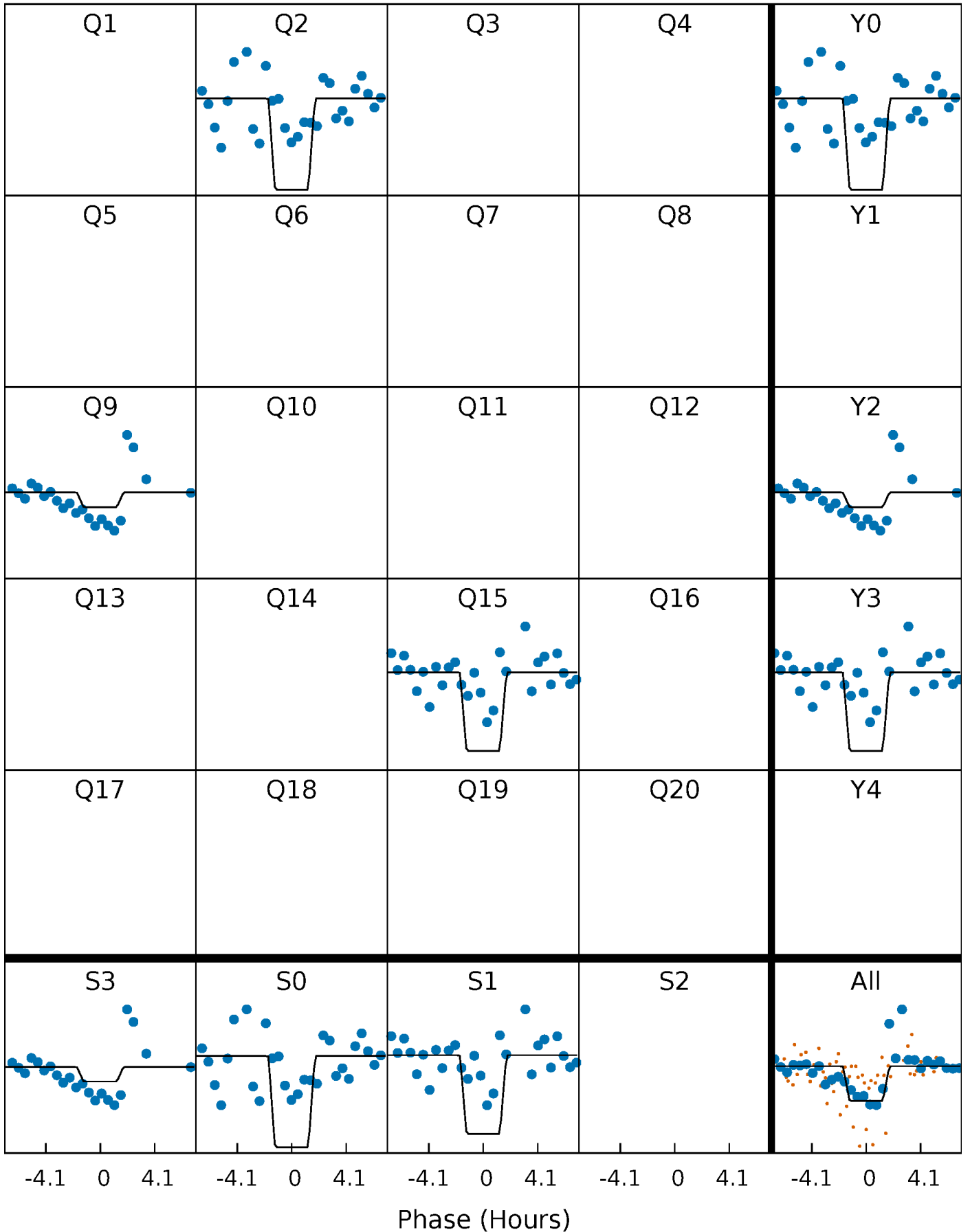
DV Quarter-Phased Transit Curves

TCE 007886049-04 P=587.426005 Days $T_0=254.074682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

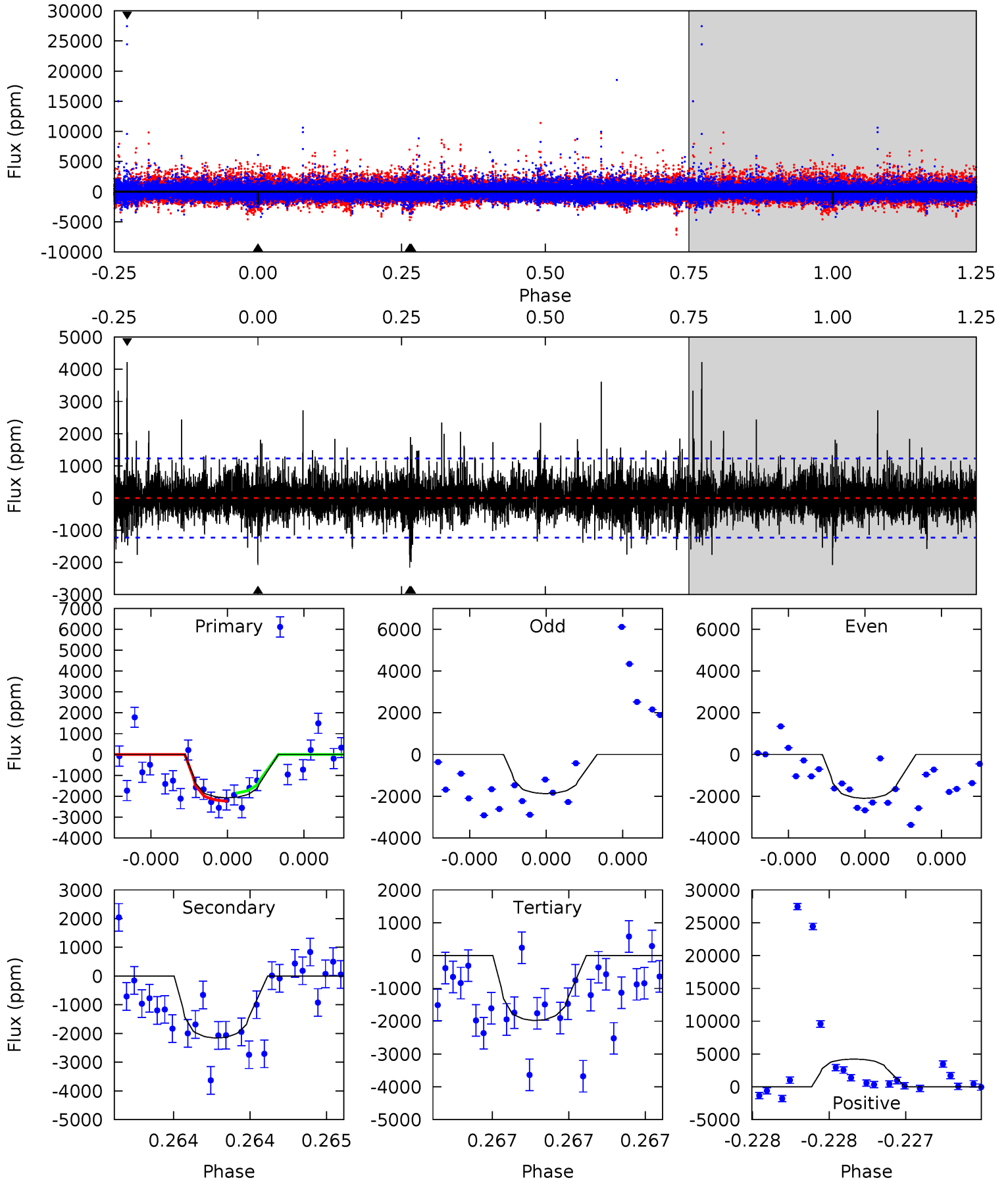
TCE 007886049-04 P=587.417172 Days $T_0=254.079592$ (BKJD)



DV Model-Shift Uniqueness Test

007886049-04, P = 587.426005 Days, E = 254.074682 Days

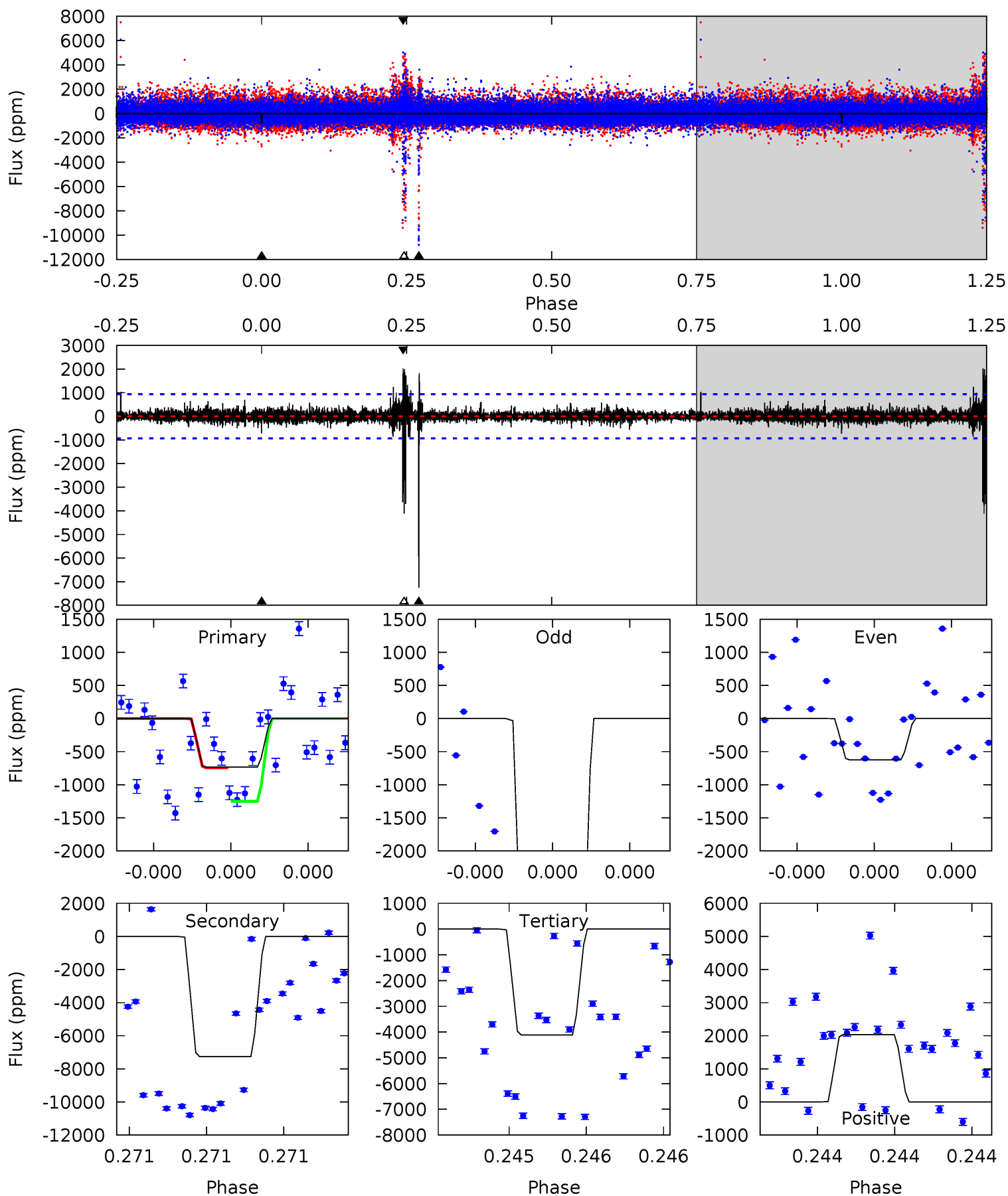
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.59	9.99	9.16	19.6	5.69	3.66	2.02	0.43	-9.96	0.83	-9.56	0.22	1.06	0.66	0.89



Alt Model-Shift Uniqueness Test

007886049-04, P = 587.417172 Days, E = 254.079592 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.47	44.2	25.0	12.4	5.70	3.67	1.25	-20.6	-7.90	19.2	31.8	14.0	3.09	0.22	1.61



Stellar Parameters For KIC 007886049

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4551^{+137}_{-151}	$4.775^{+0.048}_{-0.028}$	$-1.680^{+0.300}_{-0.200}$	$0.479^{+0.027}_{-0.037}$	$0.499^{+0.031}_{-0.028}$	$6.389^{+1.378}_{-0.724}$
	+3%/-3%	+1%/-1%	+18%/-12%	+6%/-8%	+6%/-6%	+22%/-11%
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 007886049-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2159 ± 216	$3.76^{+3.27}_{-2.48}$	185^{+6}_{-6}	3844^{+2194}_{-686}	$98237^{+797266}_{-70255}$
Alt.	-7257 ± 164	$4.02^{+3.49}_{-2.73}$	185^{+6}_{-7}	4678^{+3601}_{-911}	$297125^{+2517276}_{-211174}$

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

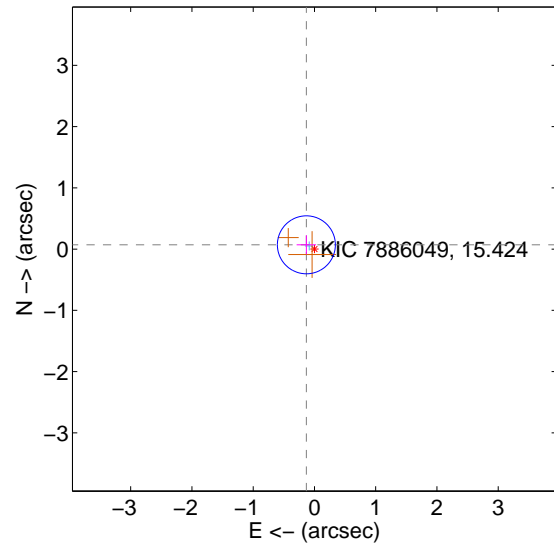
Supplemental centroid analysis for 007886049-04. Kepler magnitude: 15.42. Transit SNR 5.25

There are 1 quarters with good PRF difference image offsets

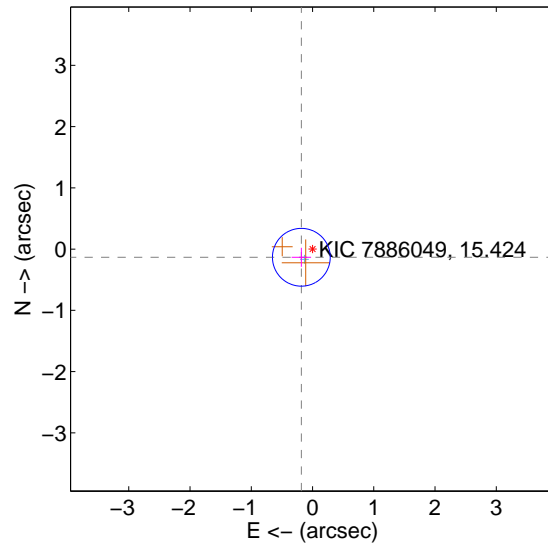
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.158	0.94	0.132 ± 0.159	0.070 ± 0.155
PRF-fit source offset from KIC position	0.226 ± 0.157	1.44	0.183 ± 0.159	-0.133 ± 0.155
photometric centroid source offset	1.08 ± 0.74	1.46	1.07 ± 0.74	0.06 ± 0.73

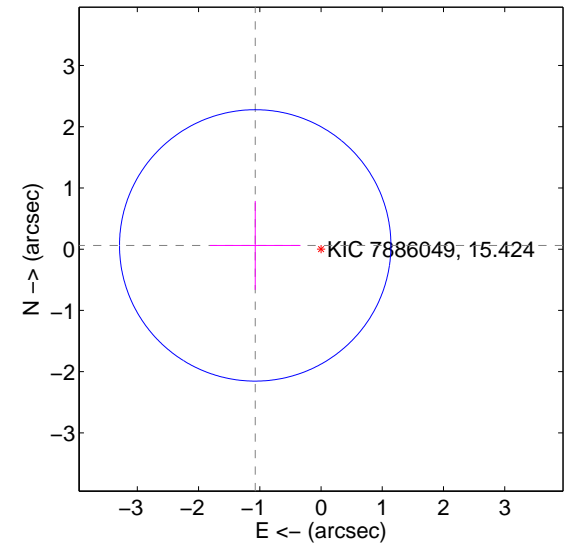
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

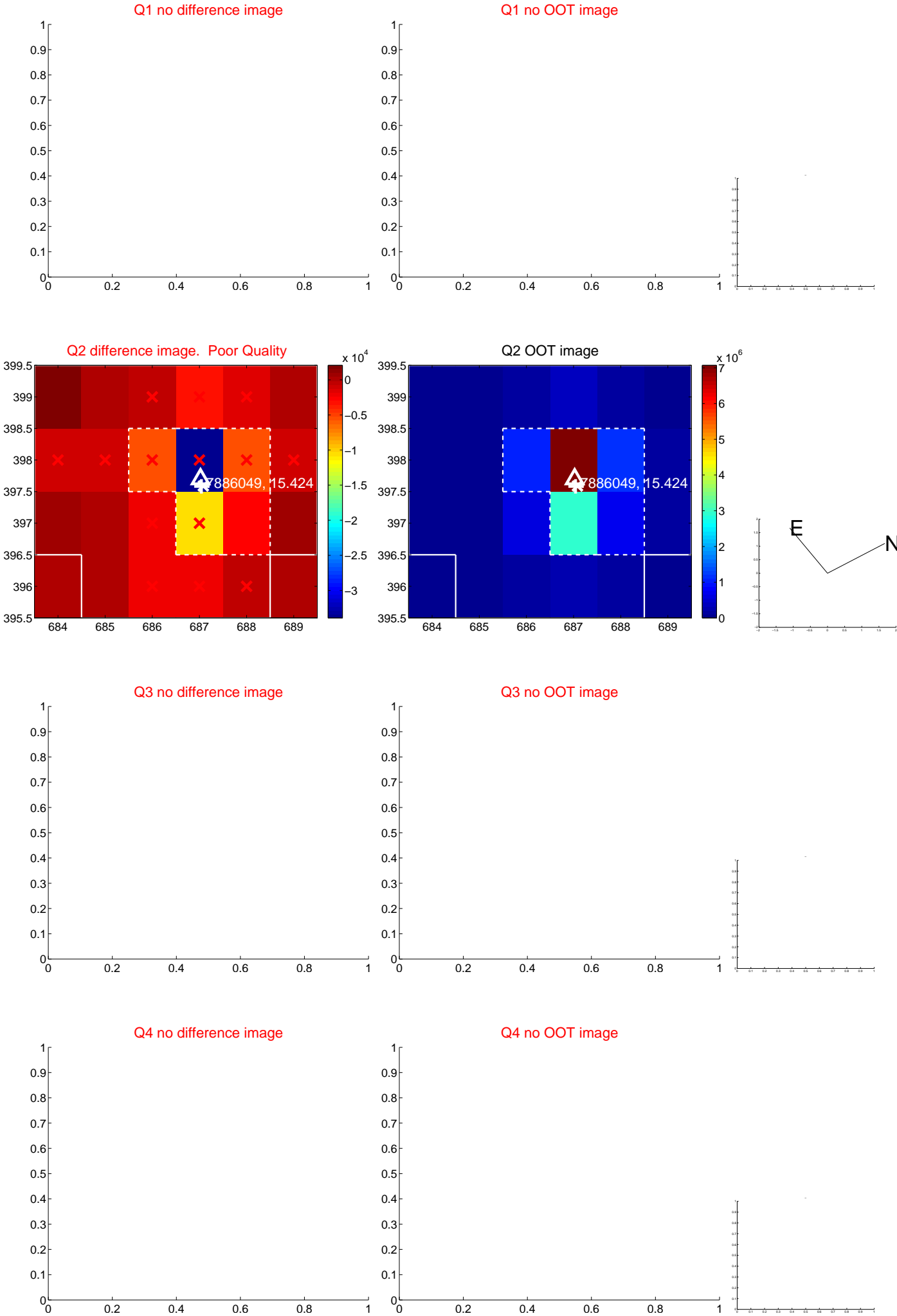


offset from photometric centroids



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.

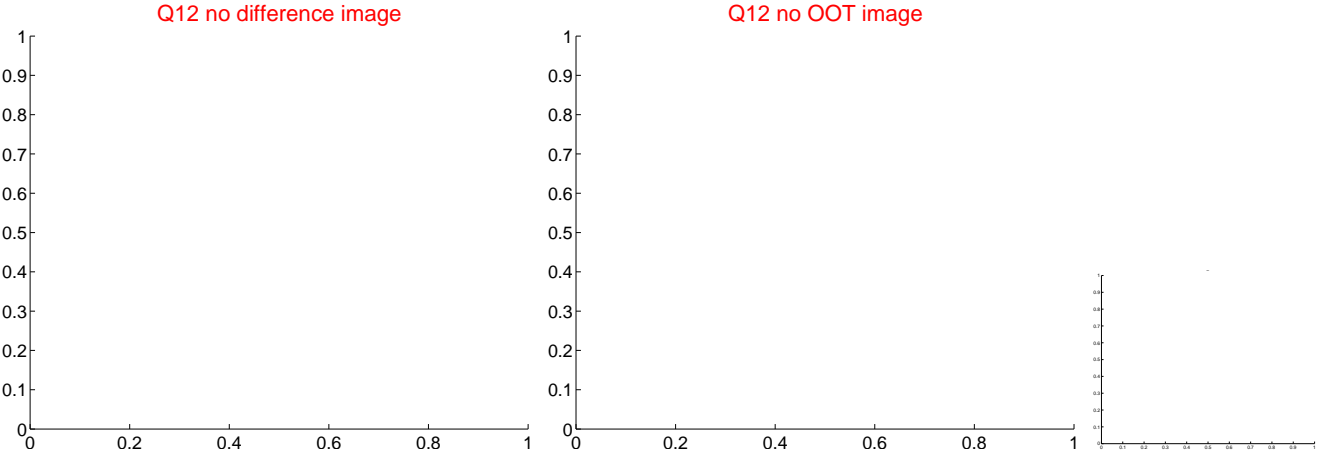
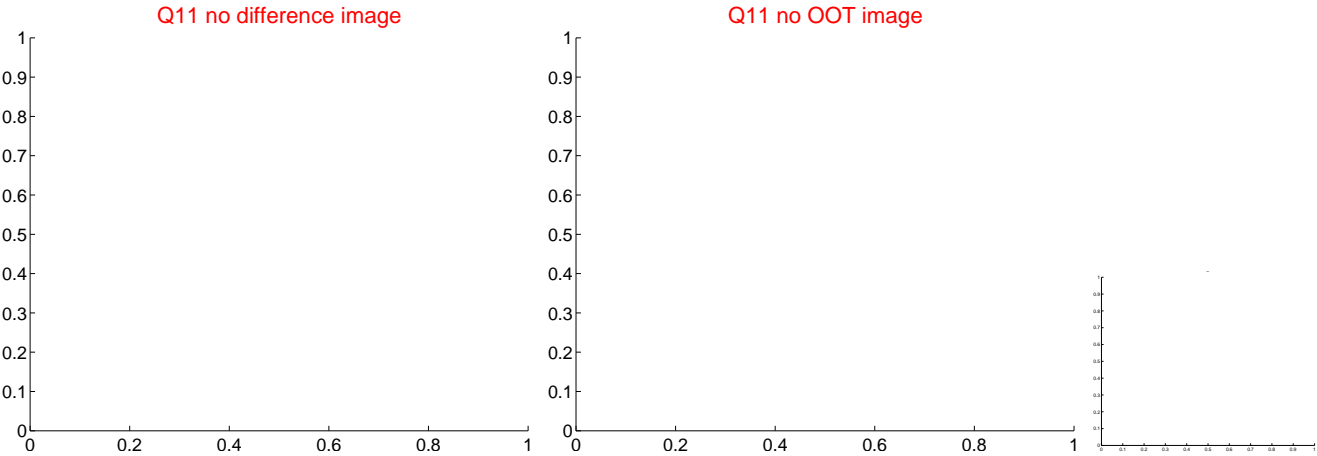
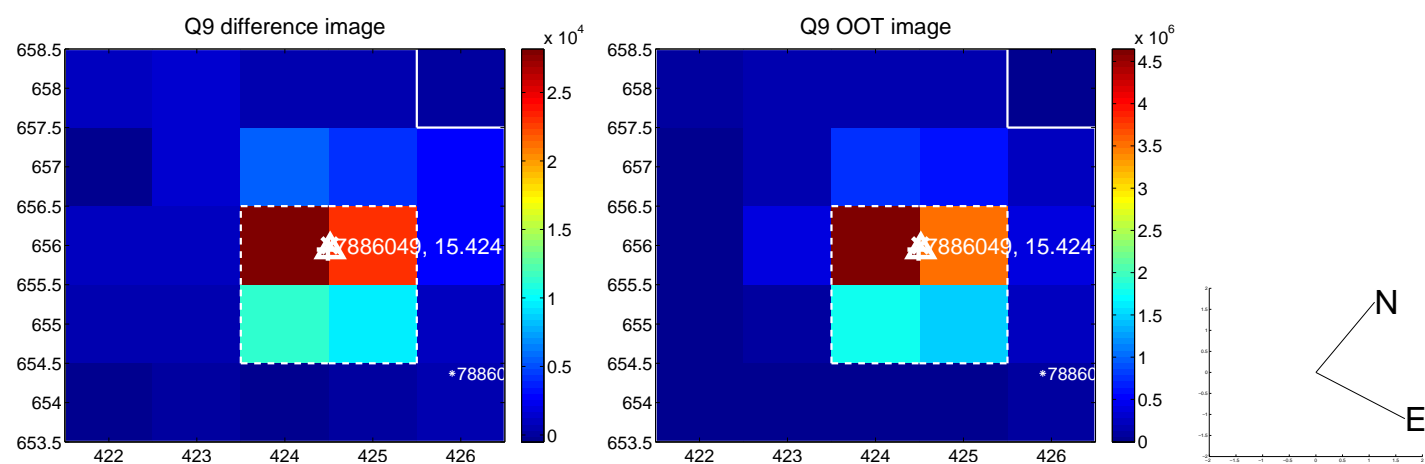
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



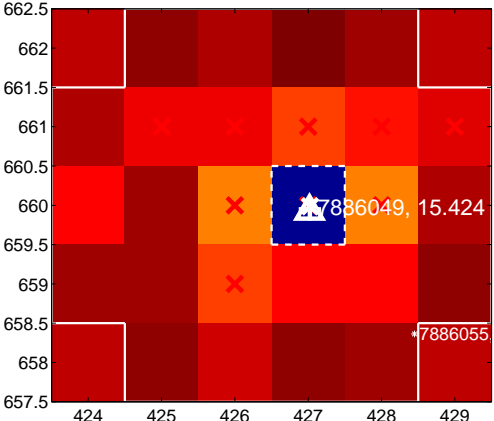
Q14 no difference image



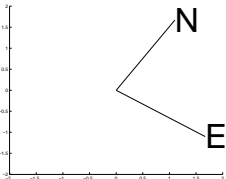
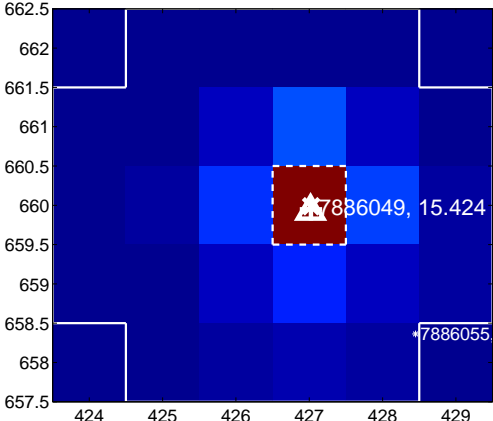
Q14 no OOT image



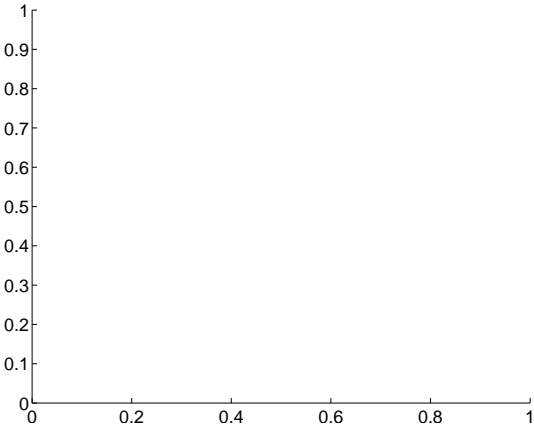
Q15 difference image. Poor Quality



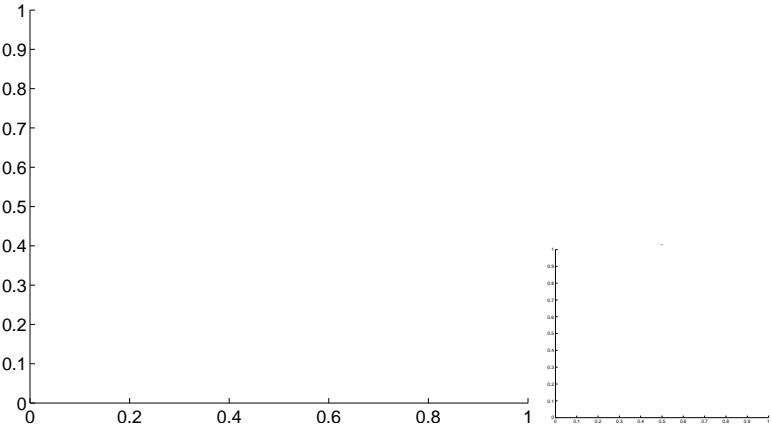
Q15 OOT image



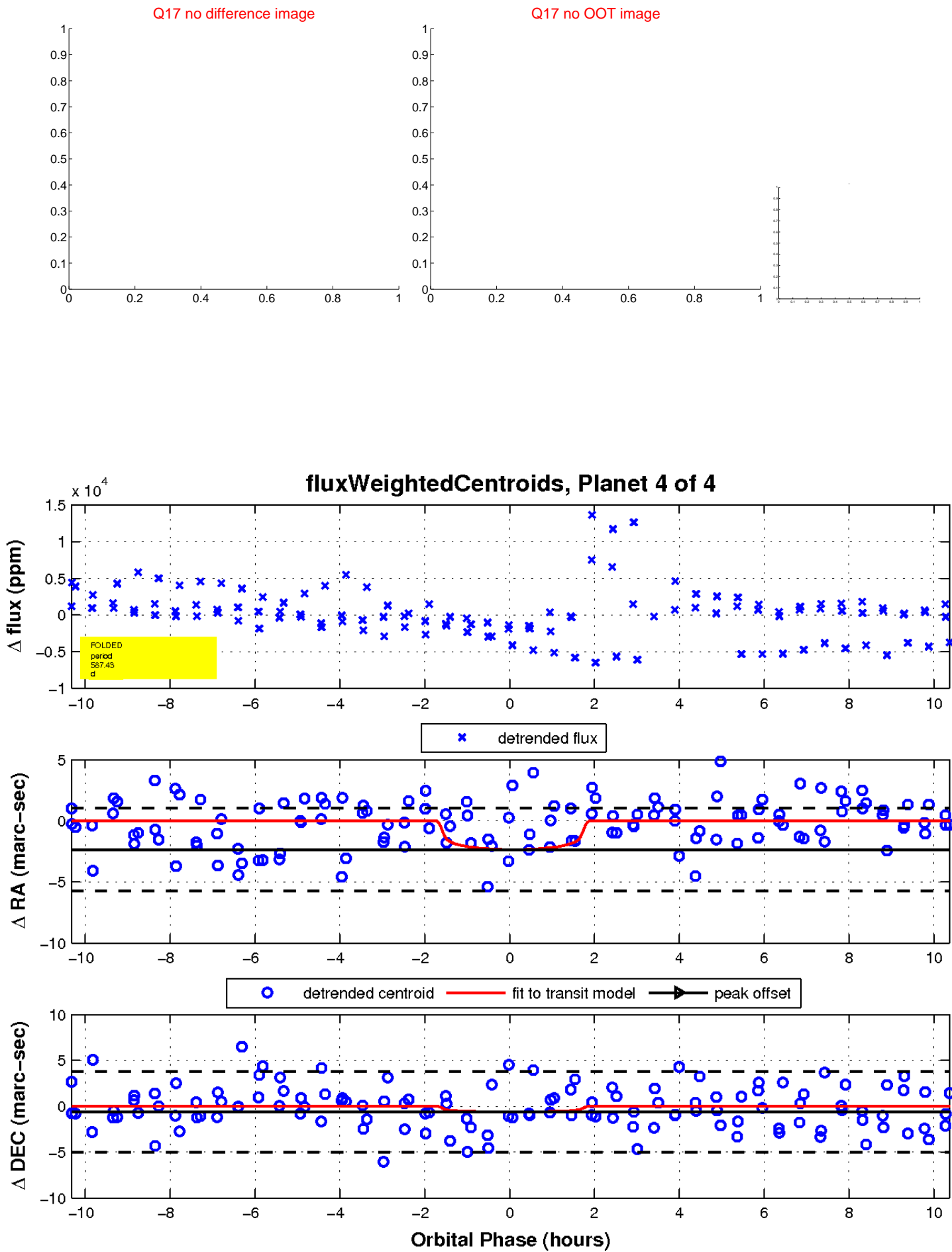
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

