

KIC 008487242

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})
008487242-01	OBS	No	421.972214	458.565631	1198.3	4.273	14.6	5.3	0.57	4843	1.94	0.19
008487242-02	OBS	No	303.479898	238.637581	1146.2	14.660	15.8	4.5	0.57	4843	1.97	0.30
008487242-03	OBS	No	482.490528	445.741249	1391.2	3.650	14.3	6.2	0.57	4843	2.16	0.16
008487242-04	OBS	No	540.407827	415.517374	1779.8	8.389	12.2	6.3	0.57	4843	2.36	0.14
008487242-05	OBS	No	410.830393	479.438419	3322.0	6.172	11.1	13.0	0.57	4843	4.00	0.20
008487242-06	OBS	No	456.274584	429.479977	840.6	3.500	10.9	-1.0	0.57	4843	1.62	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487242-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

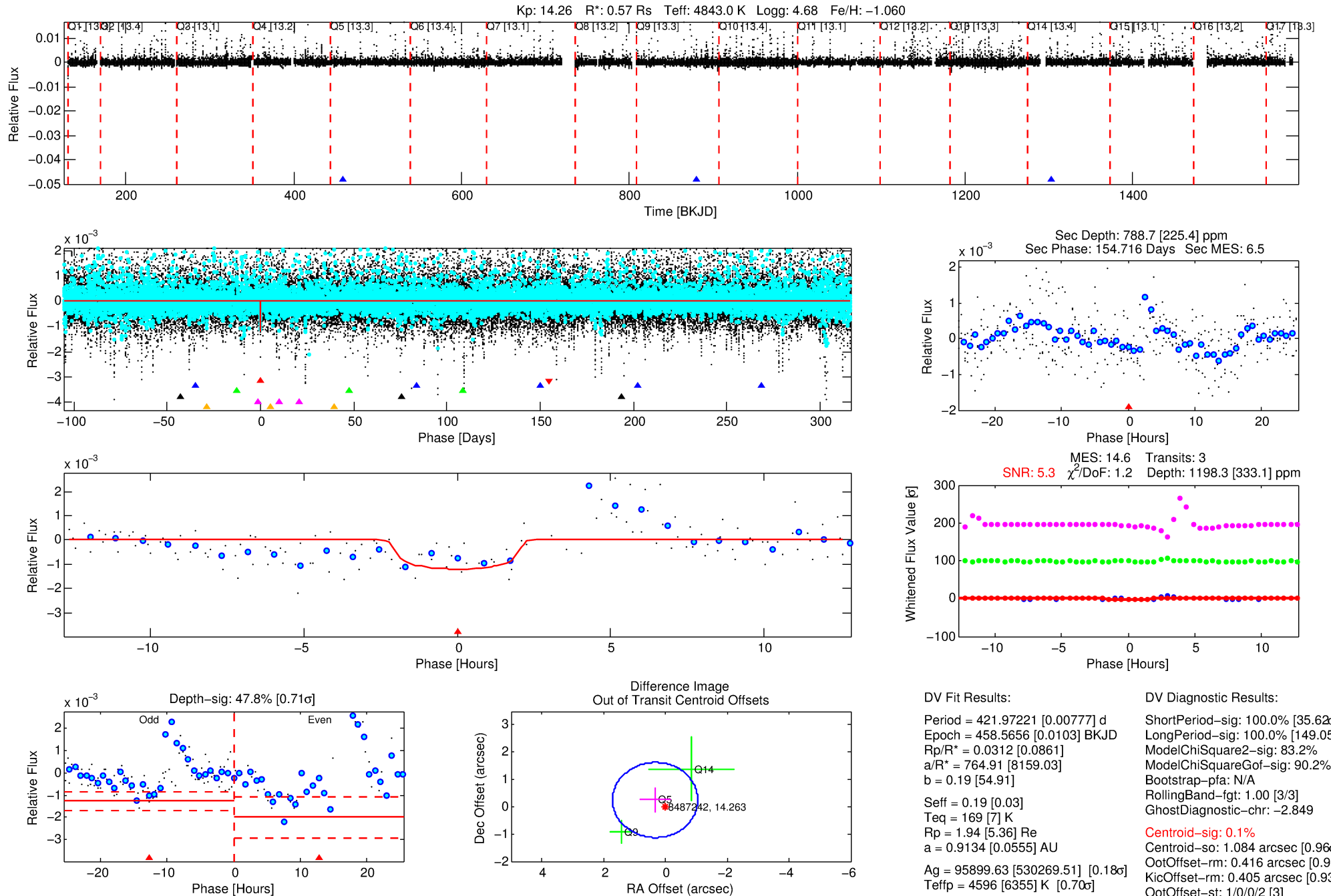
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-01

No Significant Match Found

DV One-Page Summary

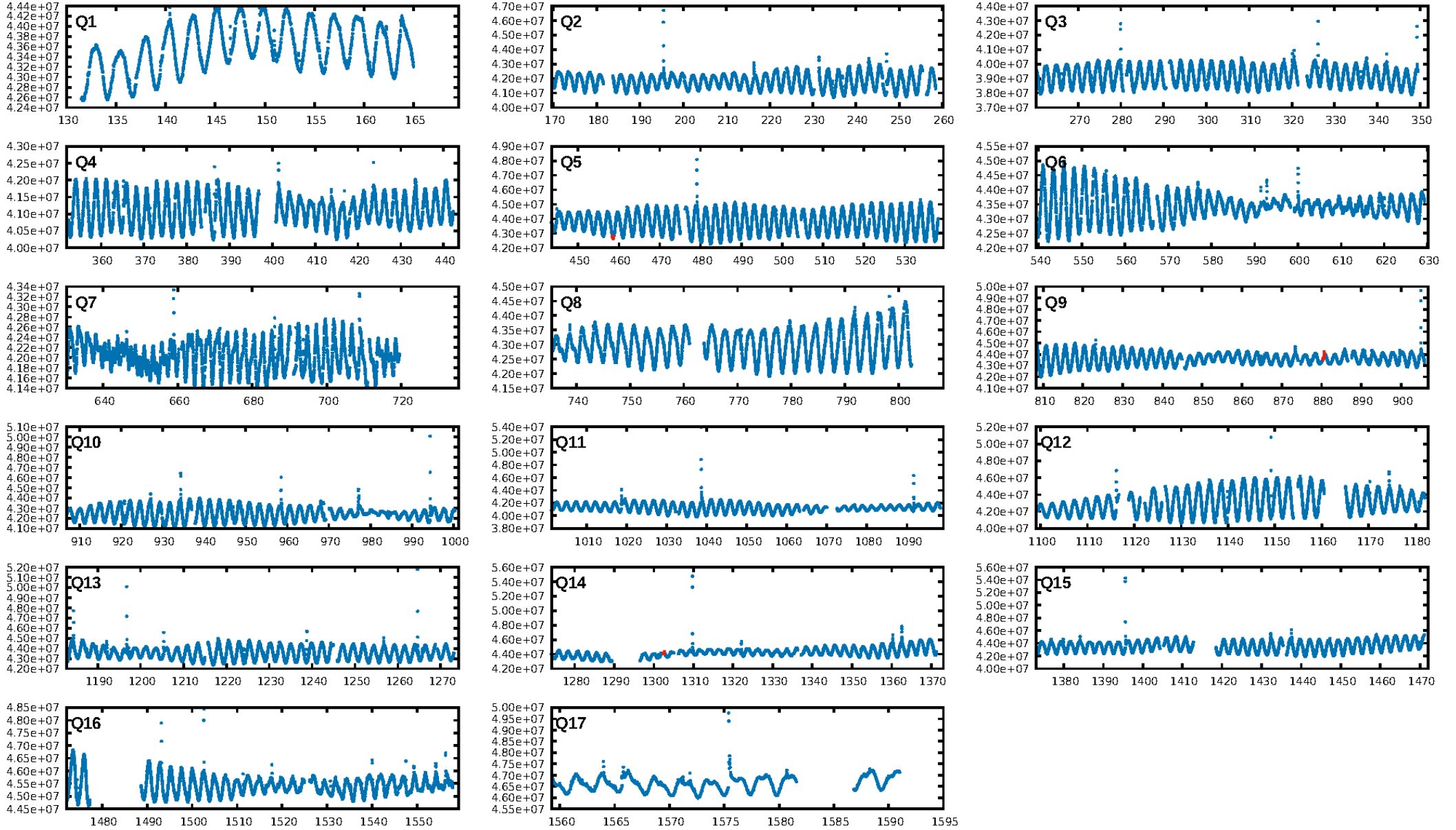
KIC: 8487242 Candidate: 1 of 6 Period: 421.972 d



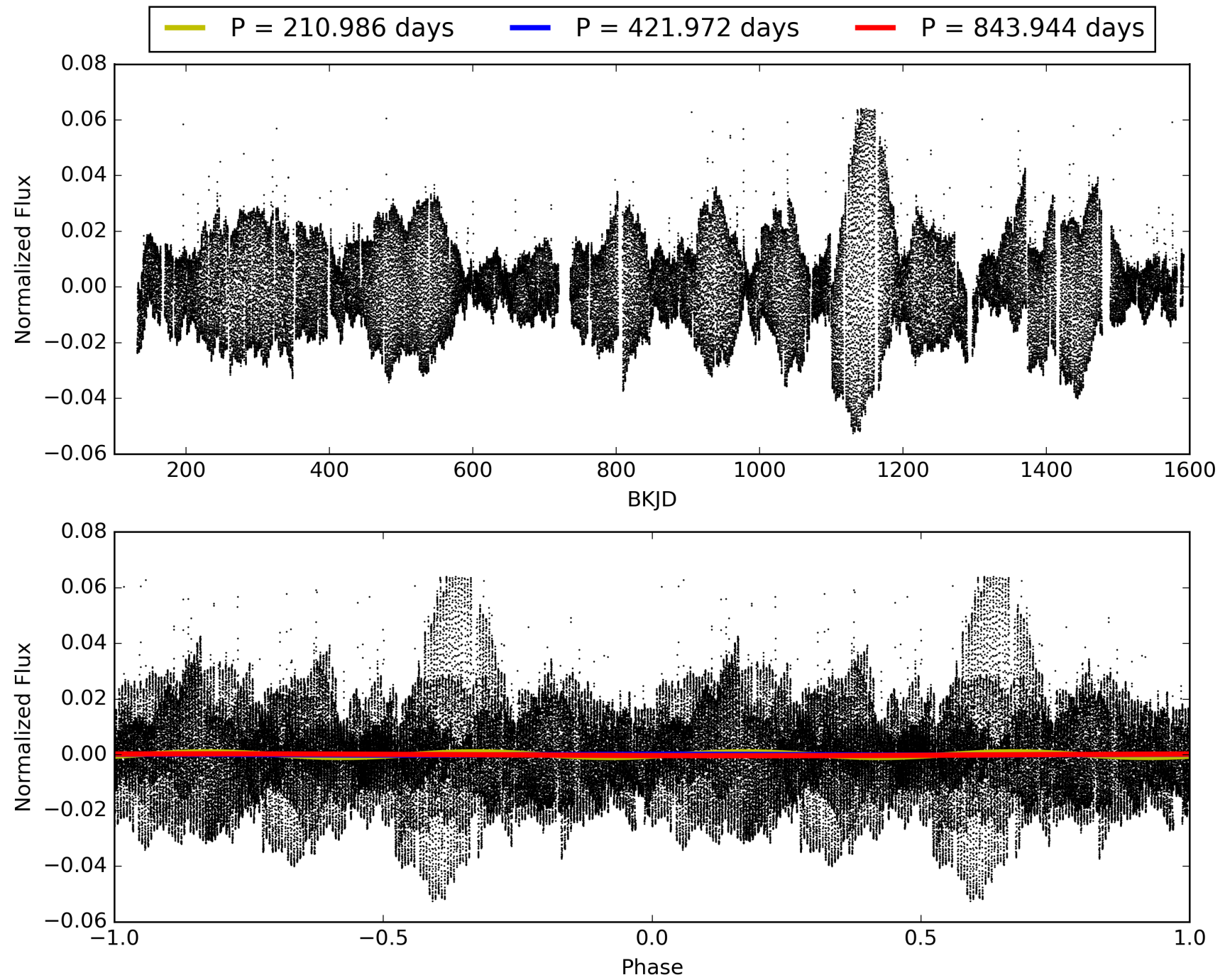
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:50:40 Z

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

TCE 008487242-01, PDC Light Curves

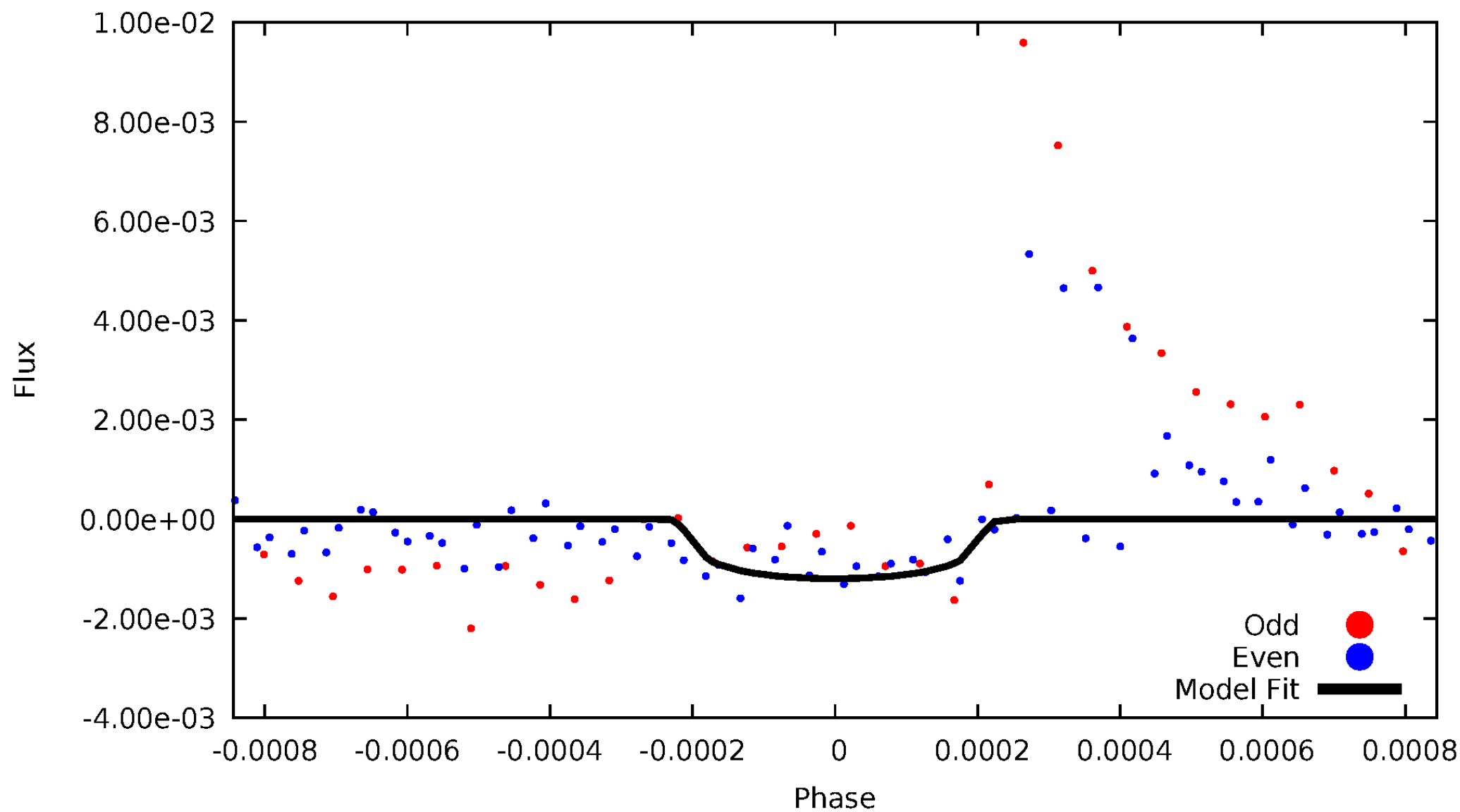


TCE 008487242-01



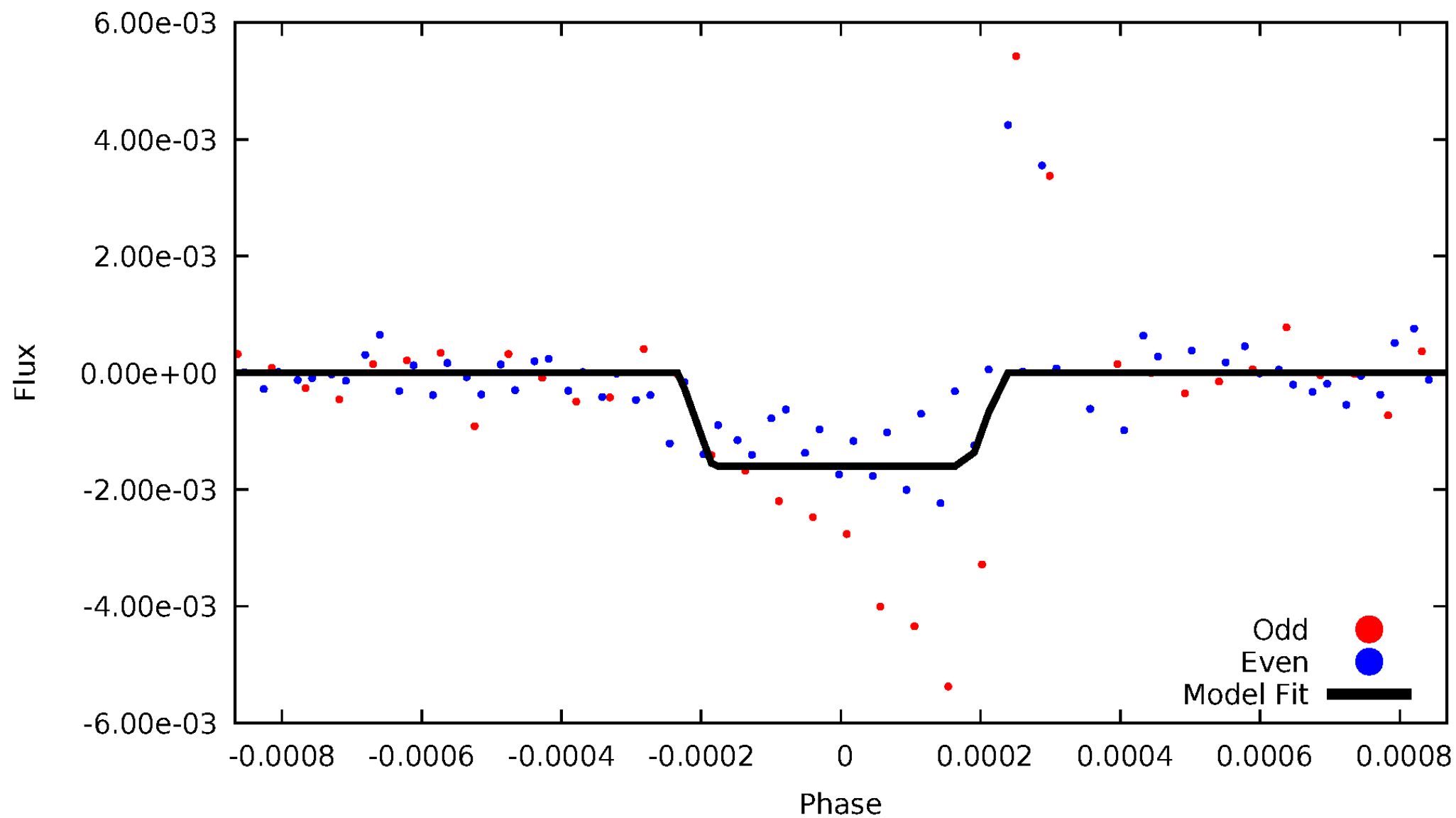
DV Odd/Even

TCE 008487242-01



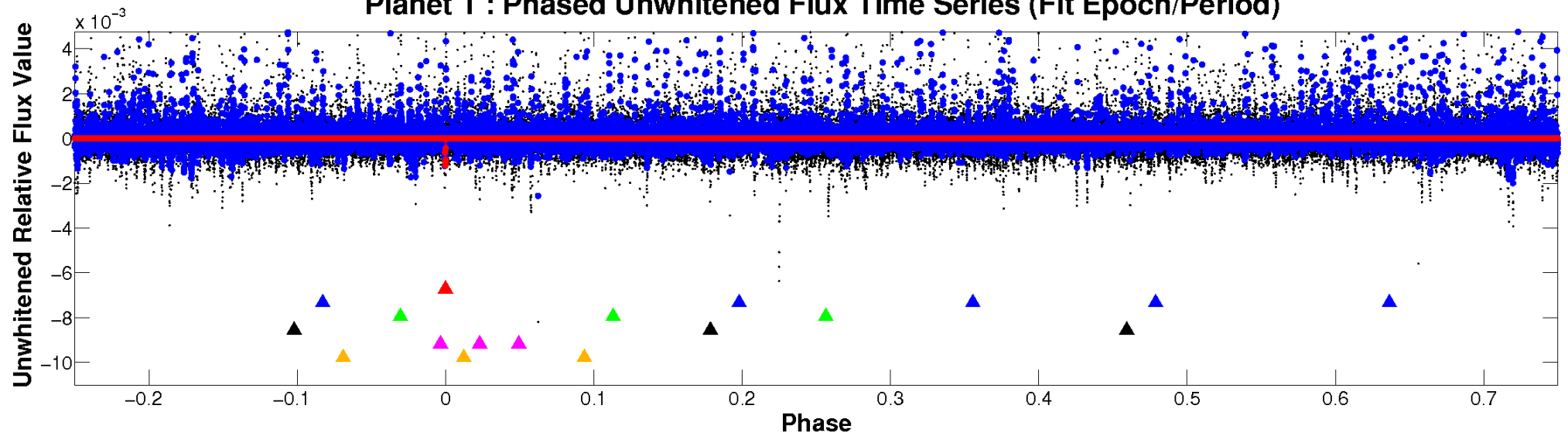
ALT Odd/Even

TCE 008487242-01

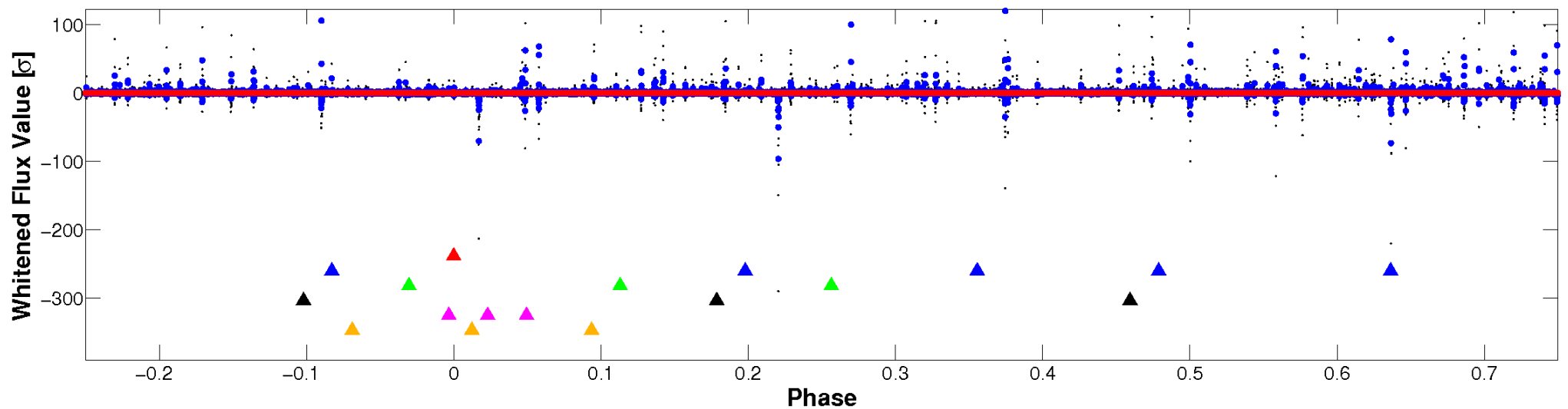


Non-Whitened Vs. Whitened Light Curve

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

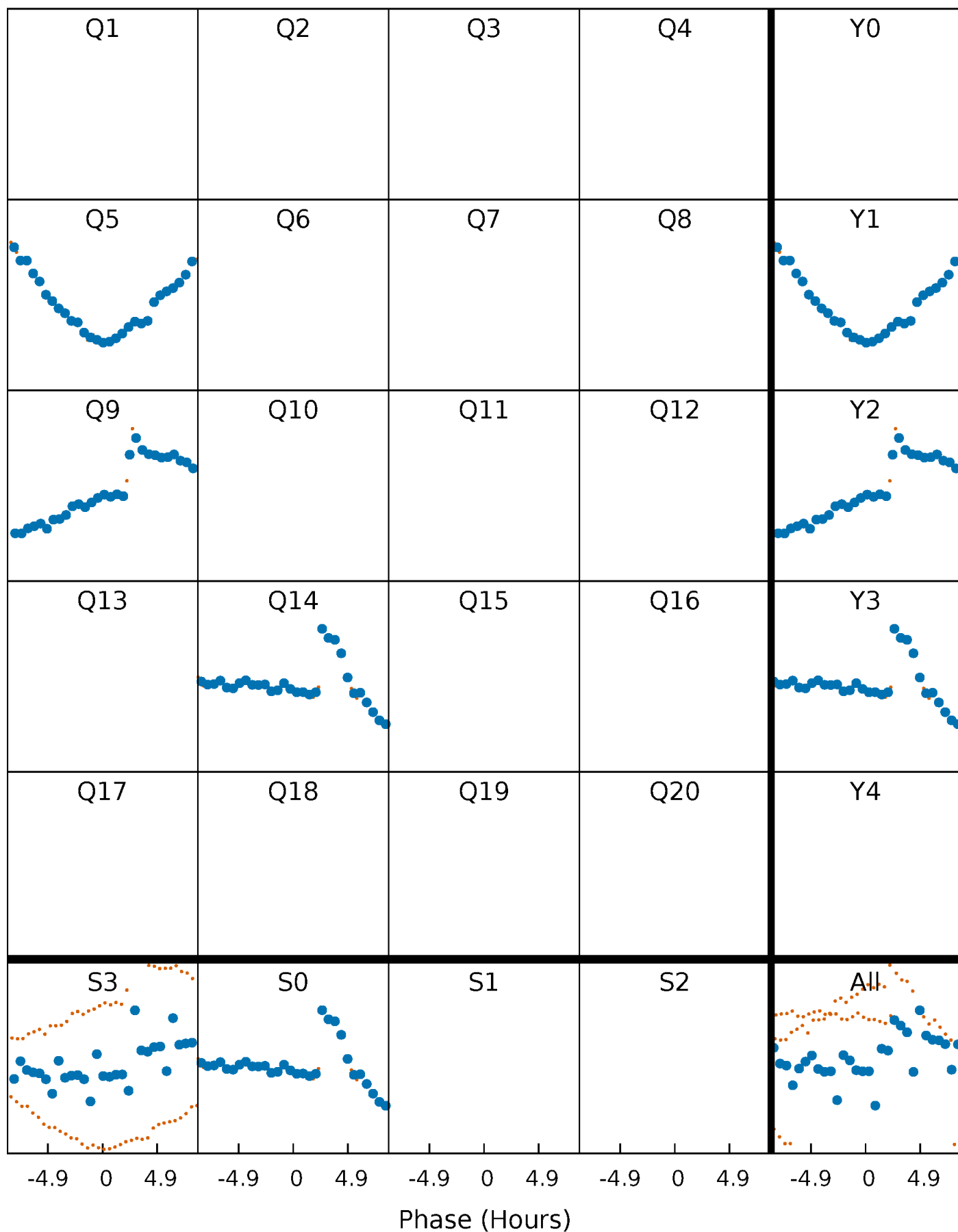


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



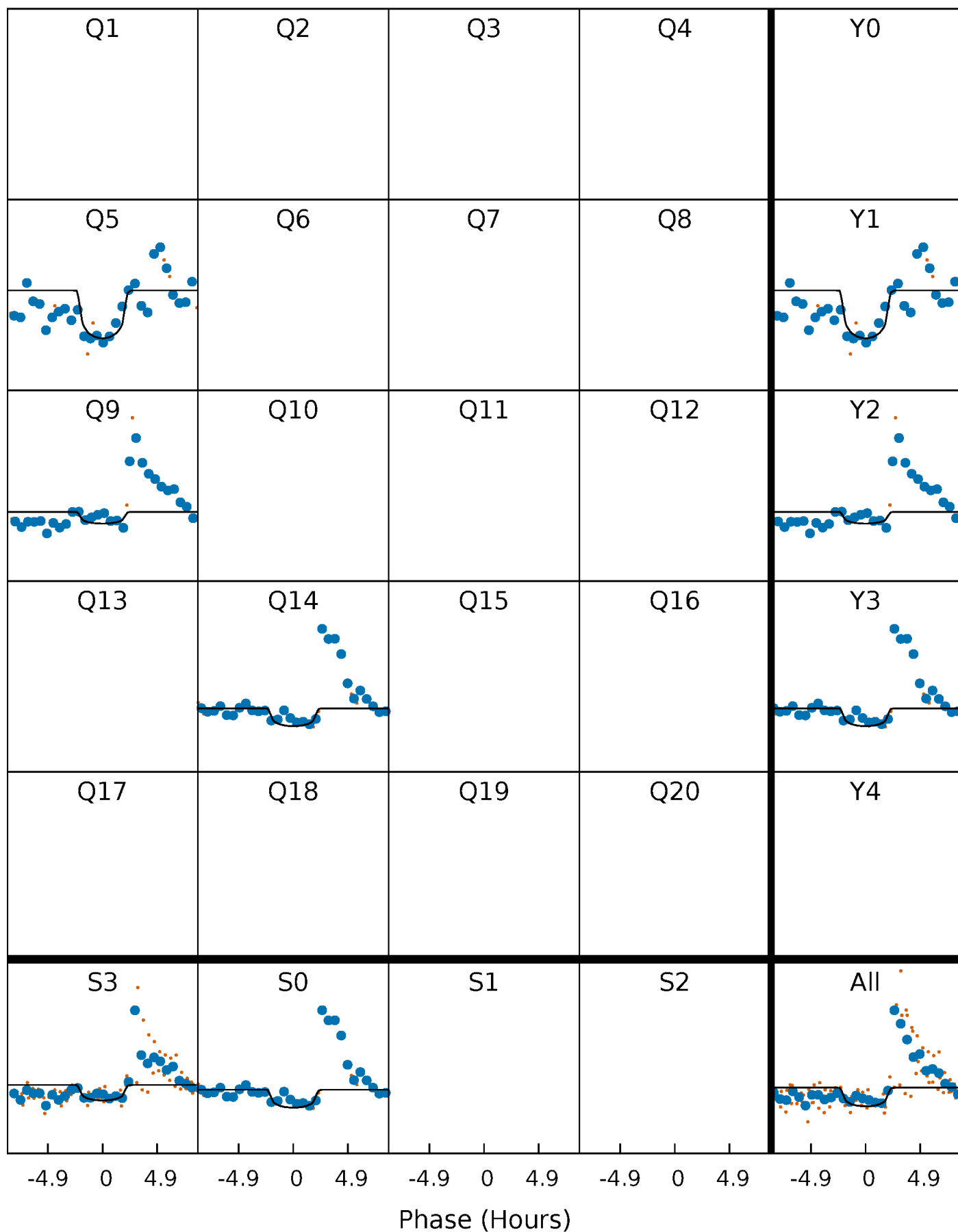
PDC Quarter-Phased Transit Curves

TCE 008487242-01 P=421.972214 Days $T_0=458.565631$ (BKJD)



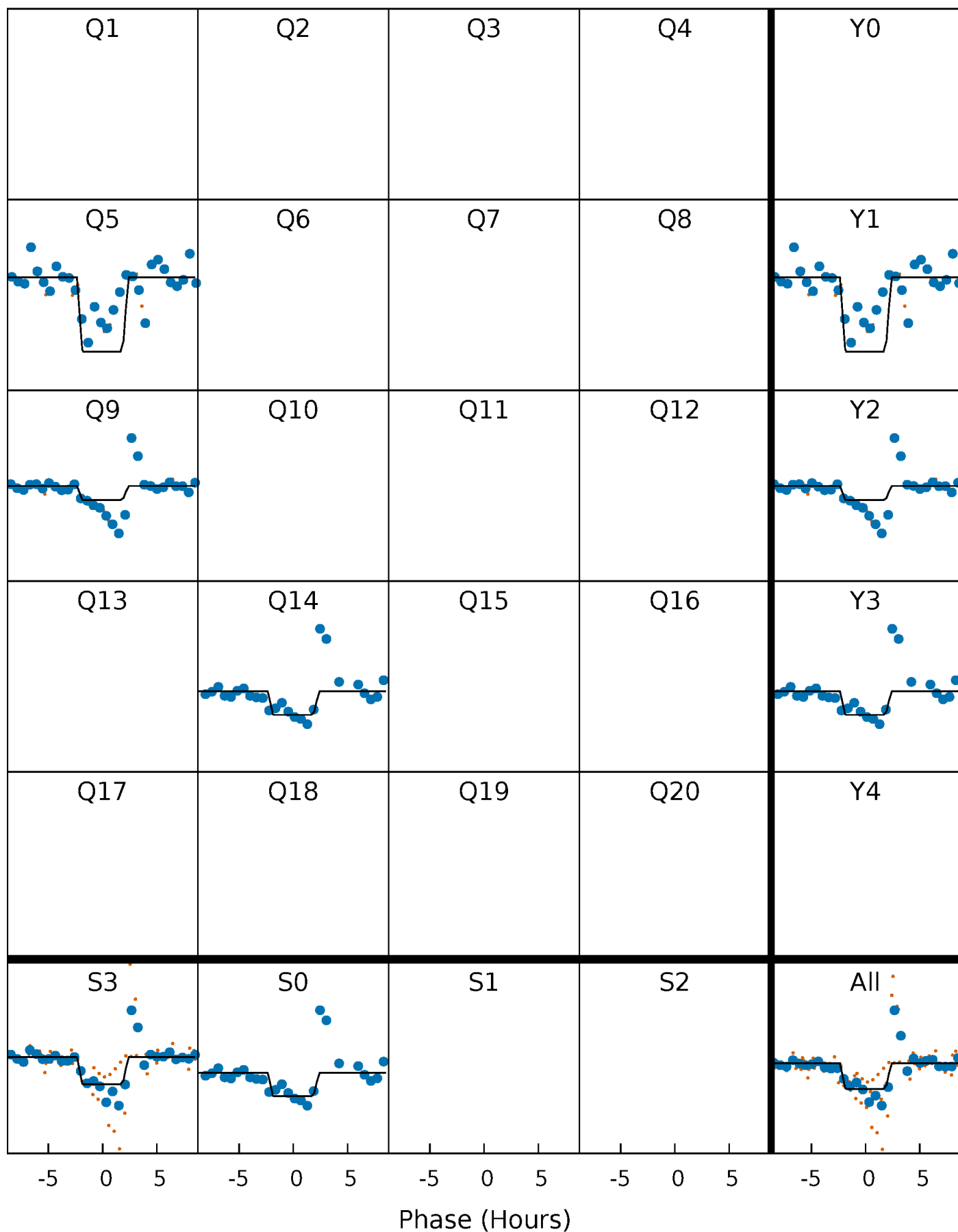
DV Quarter-Phased Transit Curves

TCE 008487242-01 P=421.972214 Days $T_0=458.565631$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

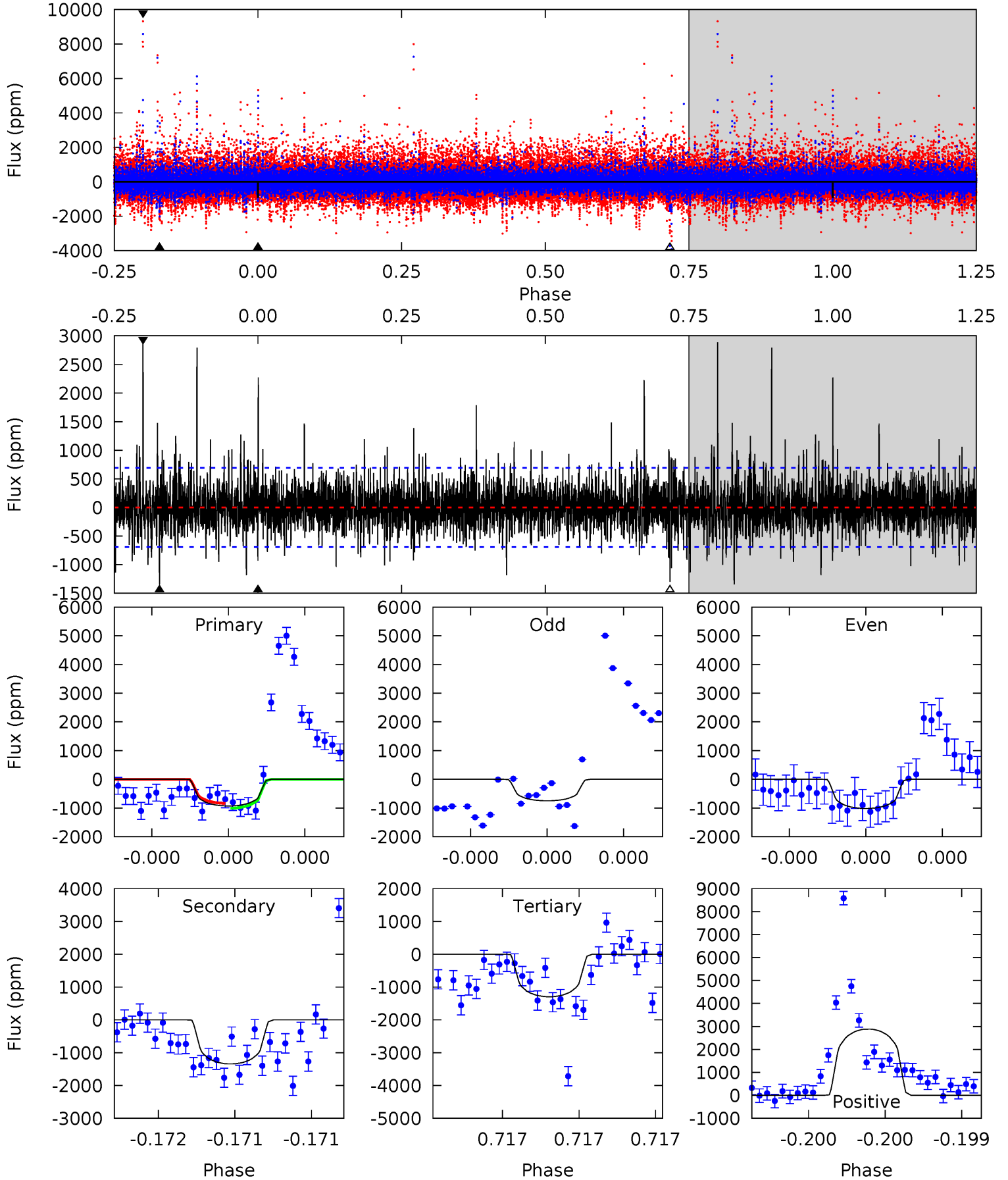
TCE 008487242-01 P=421.980259 Days $T_0=458.563366$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-01, P = 421.972214 Days, E = 36.593417 Days

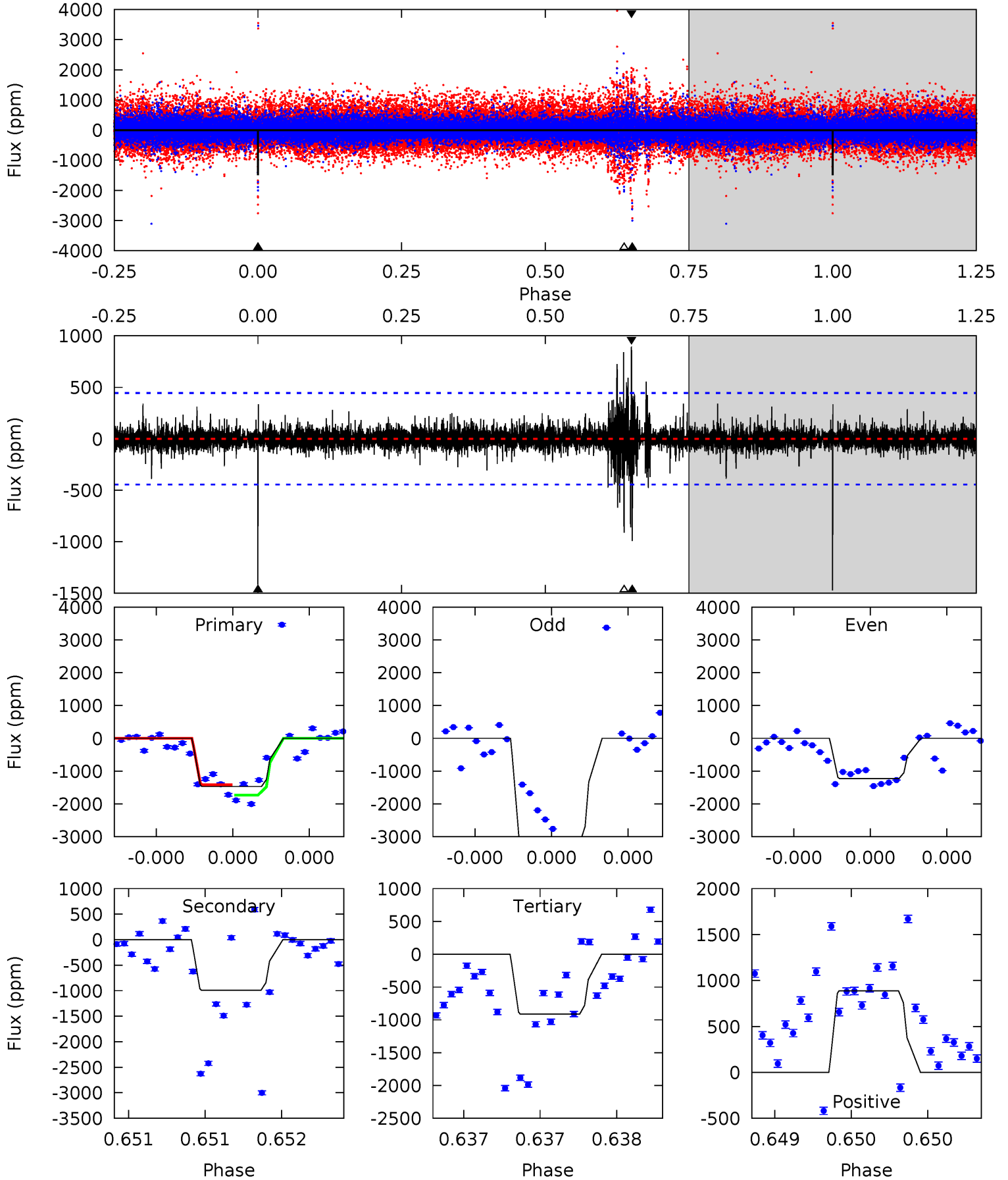
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.51	10.8	10.5	23.3	5.59	3.51	2.46	-2.96	-15.8	0.38	-12.5	0.60	1.05	0.68	0.70



Alt Model-Shift Uniqueness Test

008487242-01, P = 421.980259 Days, E = 36.583107 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	12.5	11.5	11.2	5.60	3.52	1.05	7.05	7.35	1.00	1.30	9.25	1.18	0.38	1.91



Stellar Parameters For KIC 008487242

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1343 ± 124	$4.49^{+4.38}_{-3.05}$	235^{+7}_{-9}	3770^{+2149}_{-744}	$30383^{+267153}_{-22544}$
Alt.	-991 ± 79	$4.79^{+4.17}_{-3.30}$	235^{+7}_{-8}	3508^{+1846}_{-598}	$20283^{+178135}_{-14441}$

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

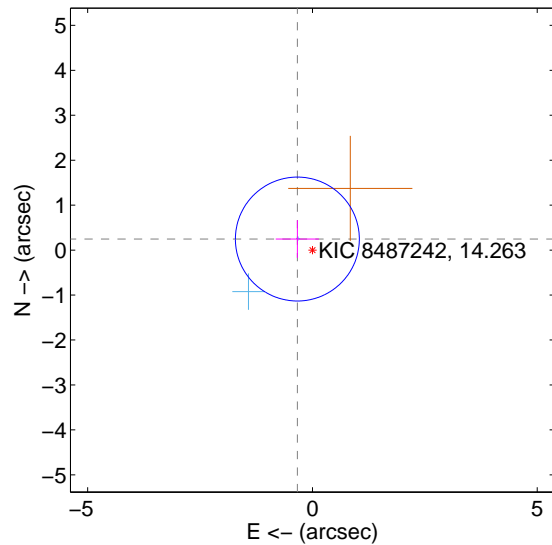
Supplemental centroid analysis for 008487242-01. Kepler magnitude: 14.26. Transit SNR 5.28

There are 2 quarters with good PRF difference image offsets

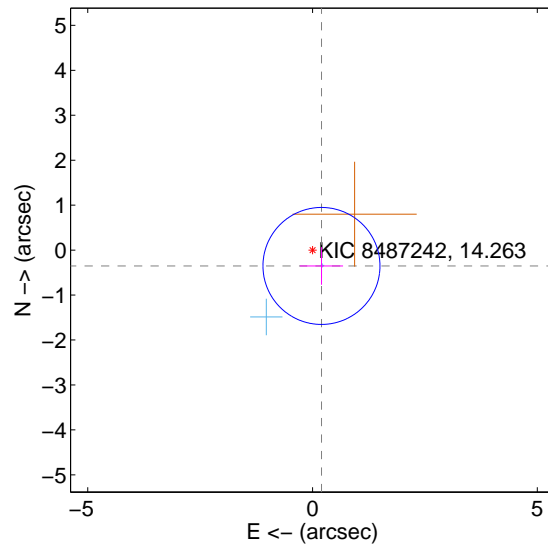
The direct PRF centroid is offset from the target star catalog position by about 0.58 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.416 ± 0.460	0.91	0.335 ± 0.480	0.246 ± 0.418
PRF-fit source offset from KIC position	0.405 ± 0.434	0.93	-0.199 ± 0.480	-0.353 ± 0.418
photometric centroid source offset	1.08 ± 1.13	0.96	-0.89 ± 1.27	0.62 ± 0.76

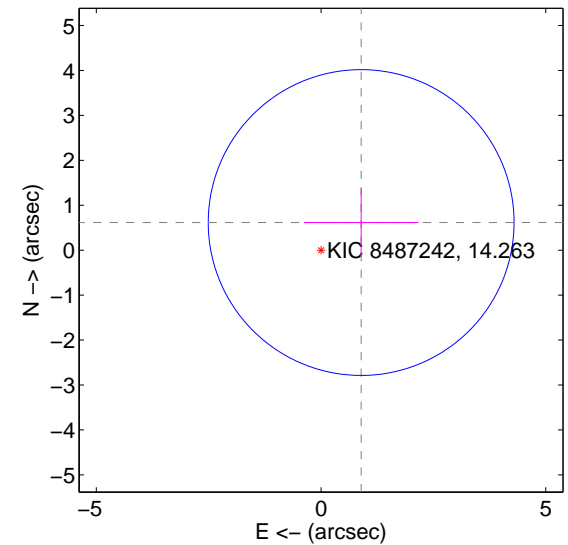
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

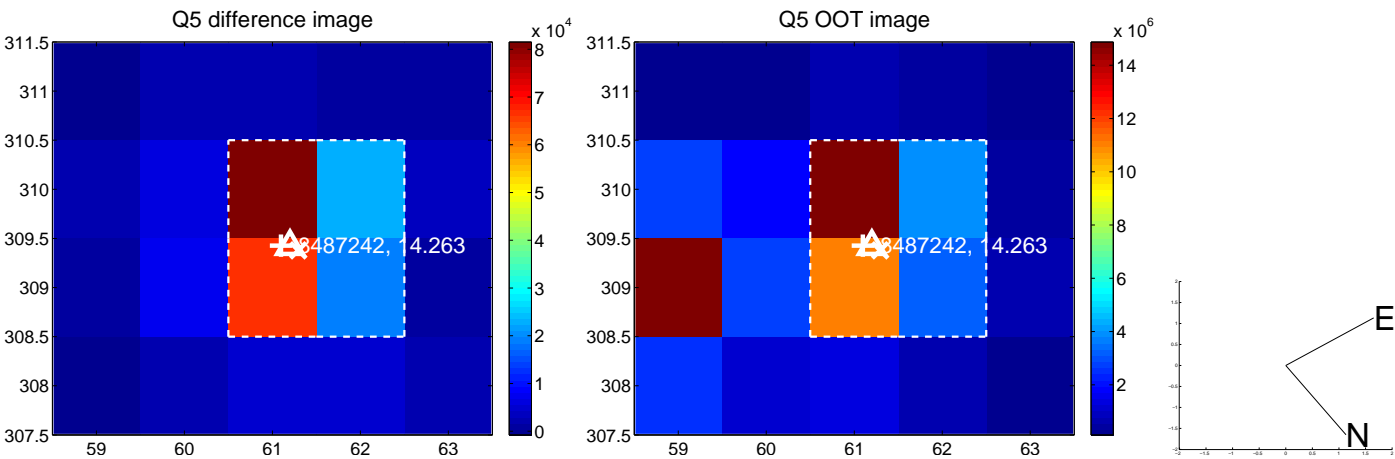


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

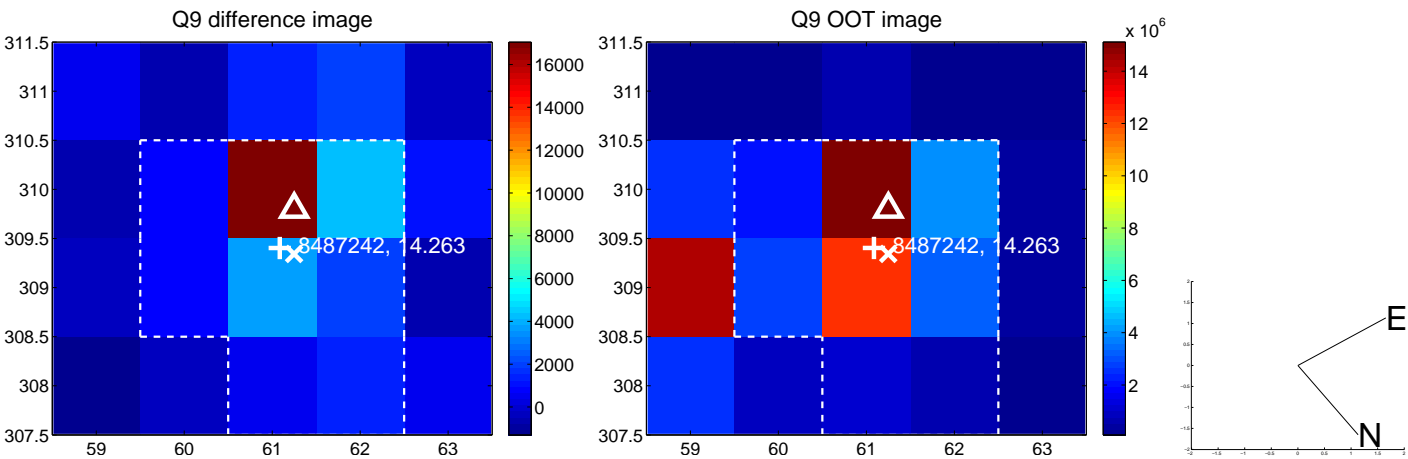
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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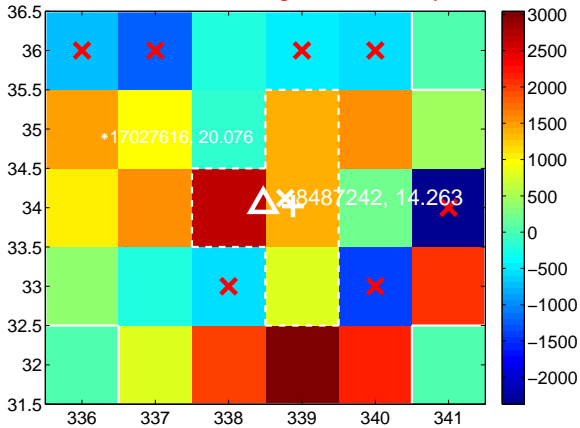
Q13 no difference image



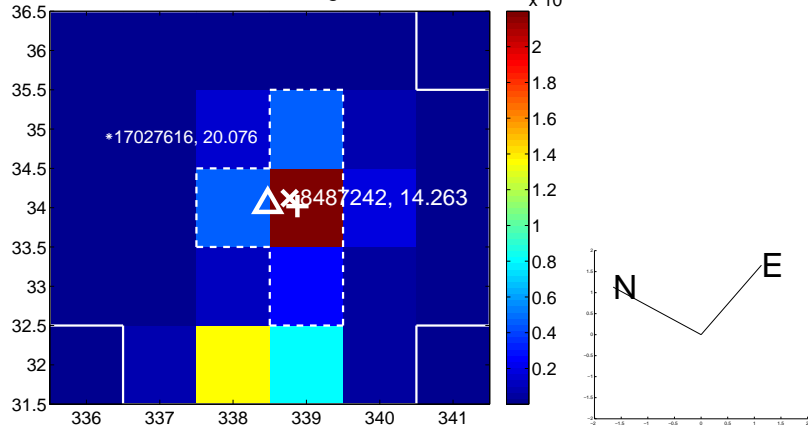
Q13 no OOT image



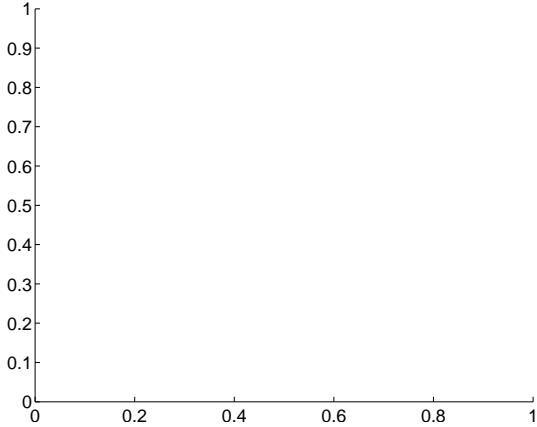
Q14 difference image. Poor Quality



Q14 OOT image



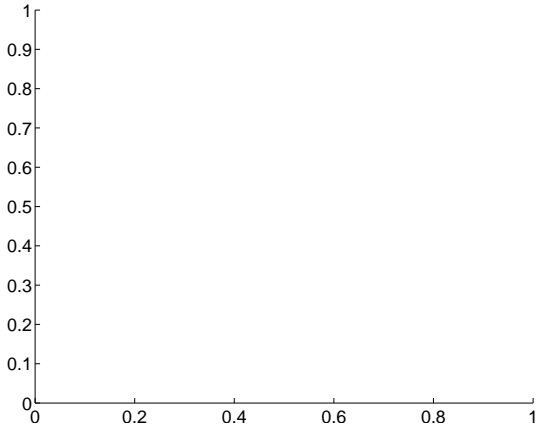
Q15 no difference image



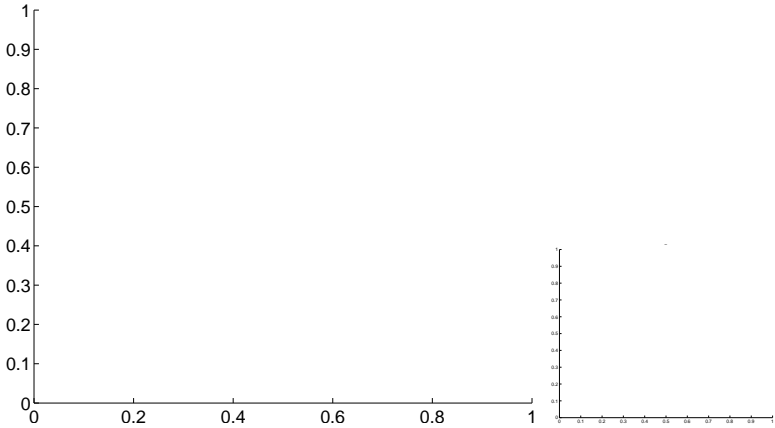
Q15 no OOT image



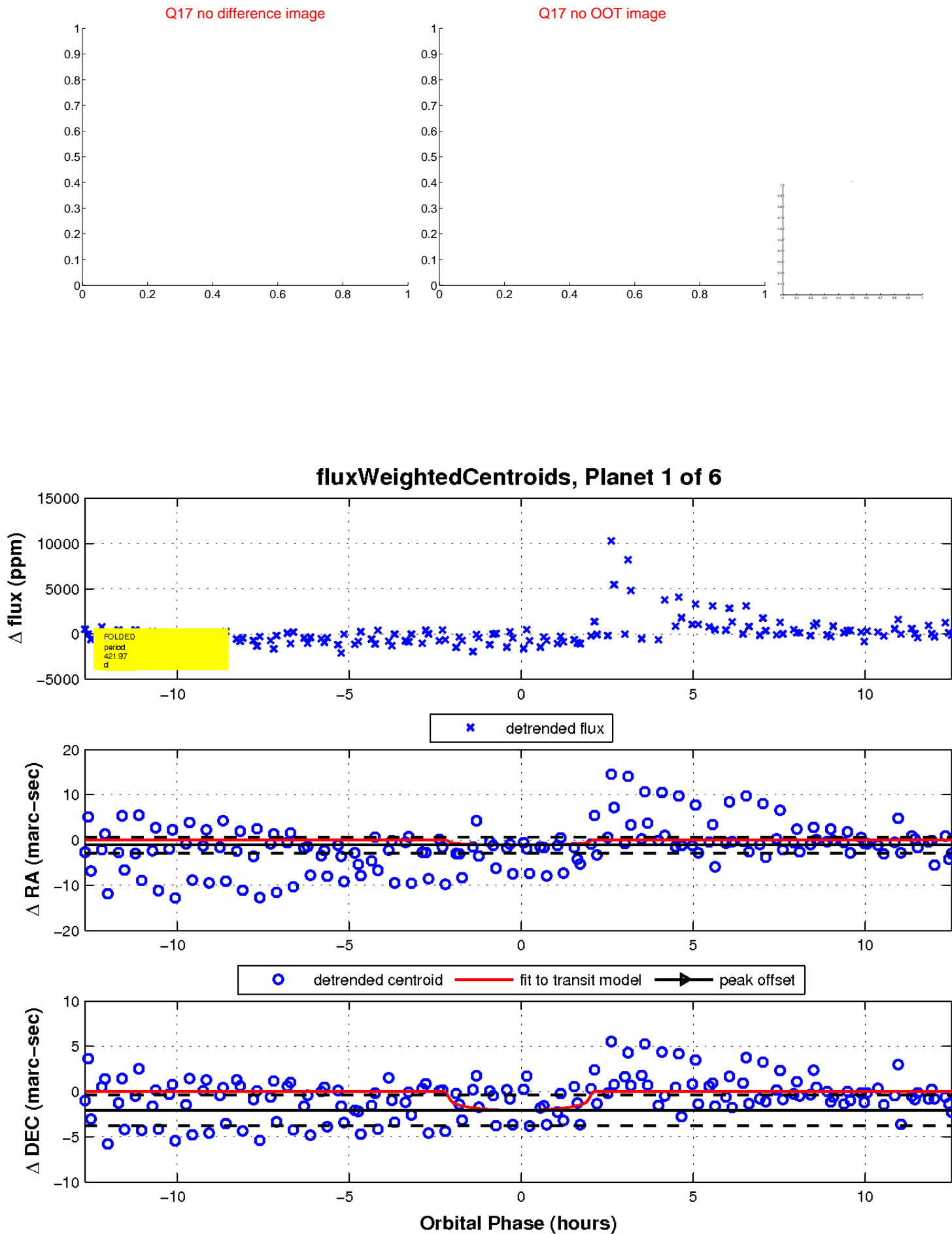
Q16 no difference image



Q16 no OOT image

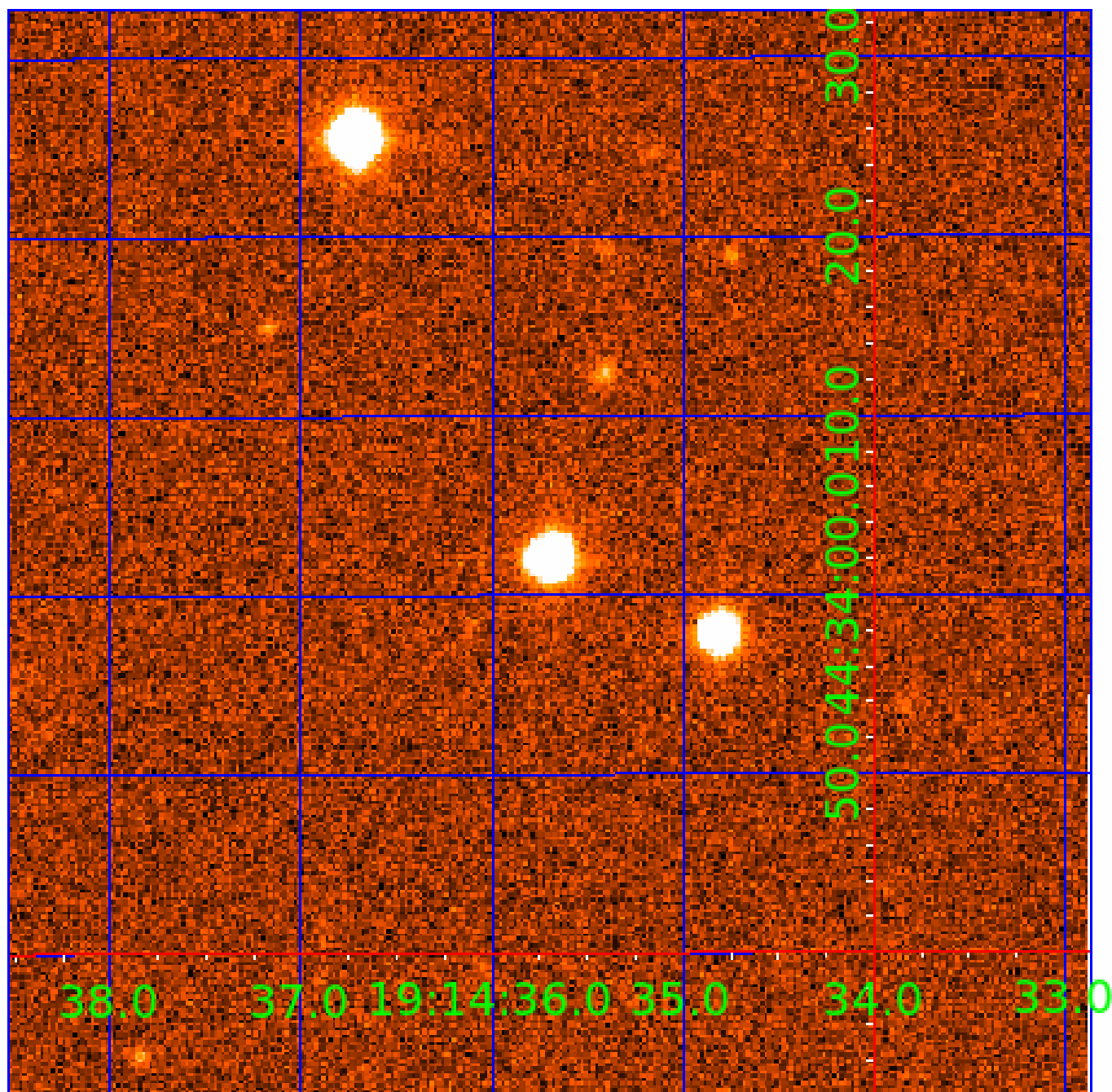


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008487242

Q1-17 DR25 TCE Parameters

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Robovetter Results

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008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

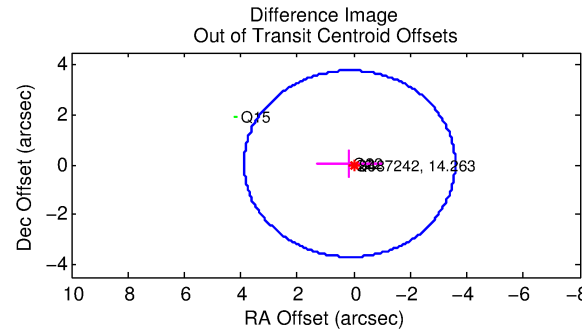
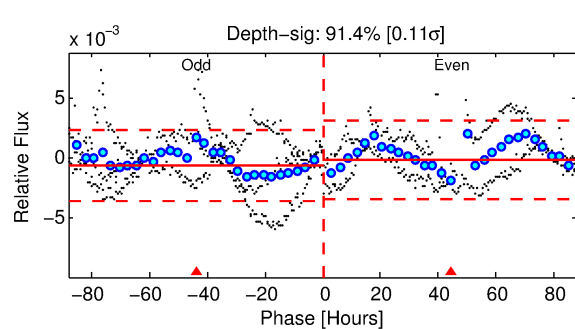
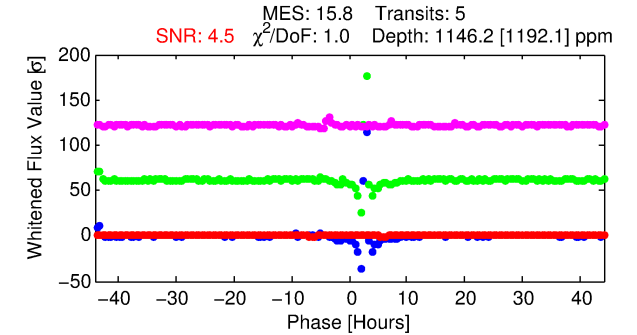
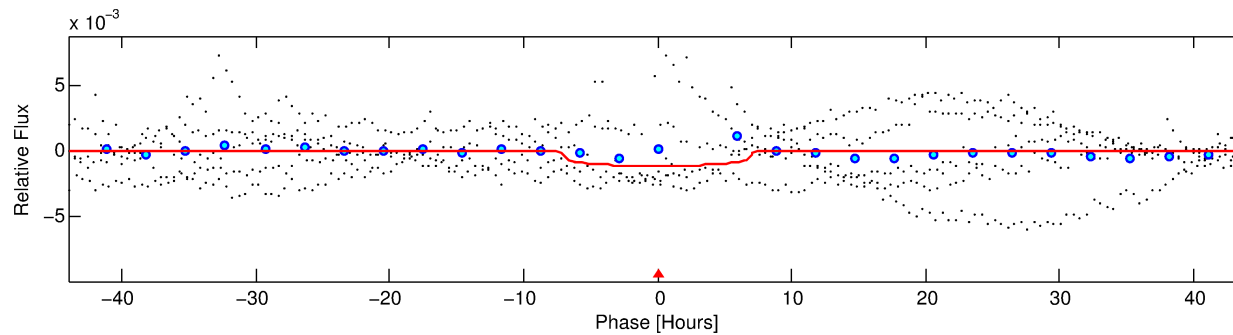
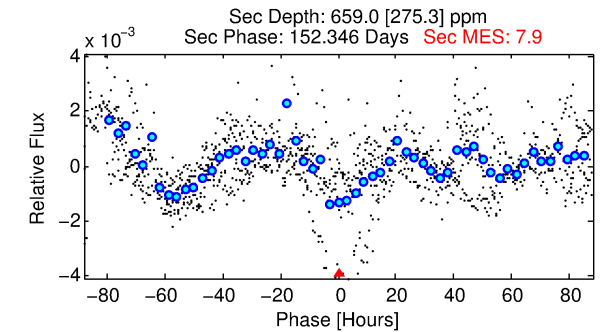
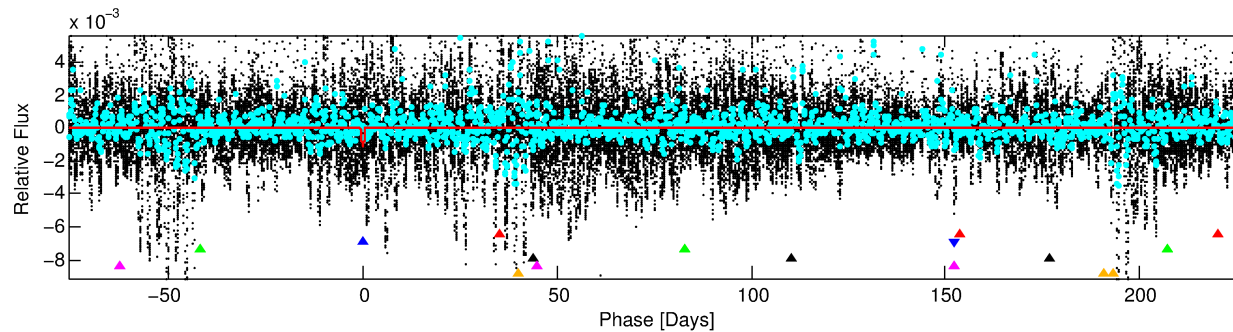
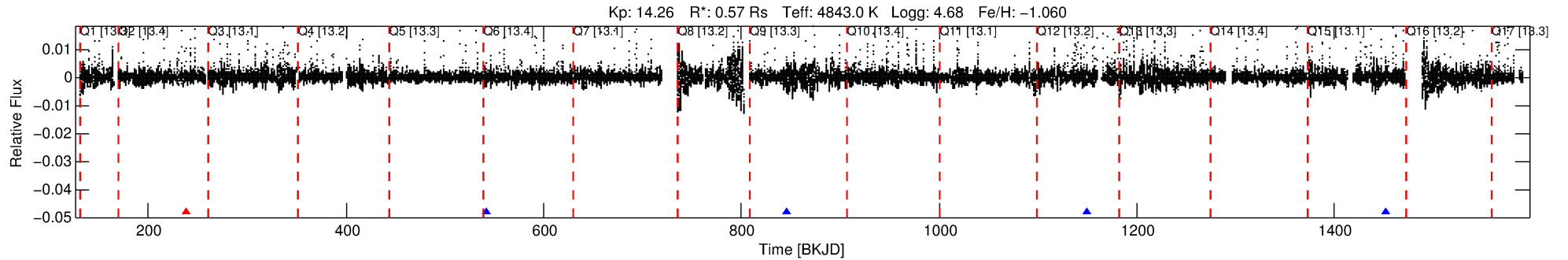
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-02

No Significant Match Found

DV One-Page Summary

KIC: 8487242 Candidate: 2 of 6 Period: 303.480 d



DV Fit Results:

Period = 303.47990 [0.01969] d
Epoch = 238.6376 [0.0500] BKJD
Rp/R* = 0.0316 [0.0361]
a/R* = 140.66 [490.97]
b = 0.52 [4.92]
Seff = 0.30 [0.05]
Teq = 189 [8] K
Rp = 1.97 [2.25] Re
a = 0.7332 [0.0445] AU
Ag = 50323.60 [117118.05] [0.43σ]
Teffp = 4366 [2542] K [1.64σ]

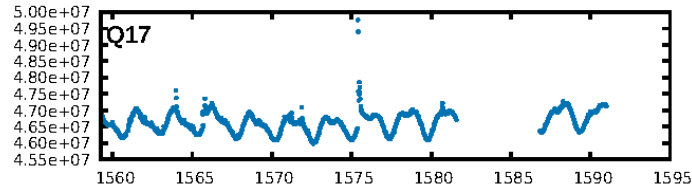
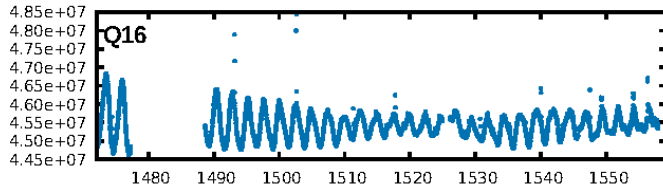
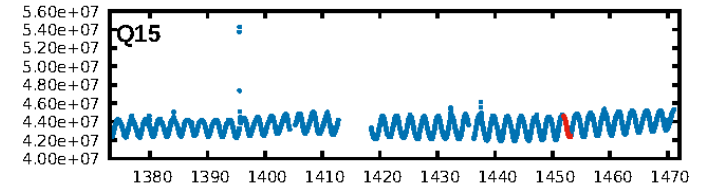
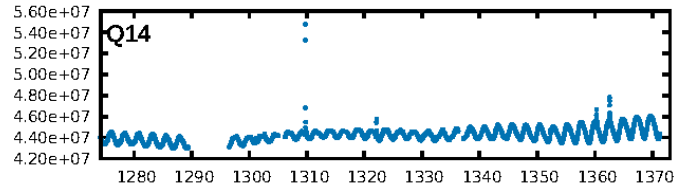
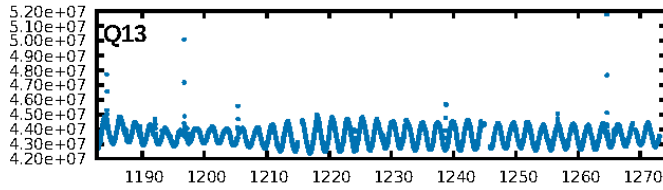
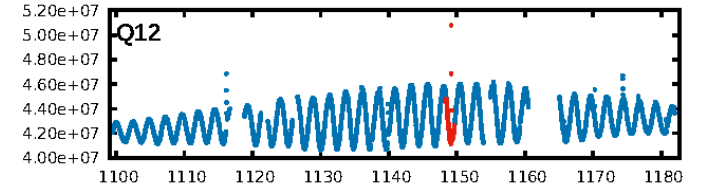
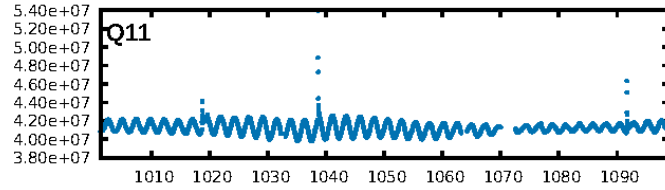
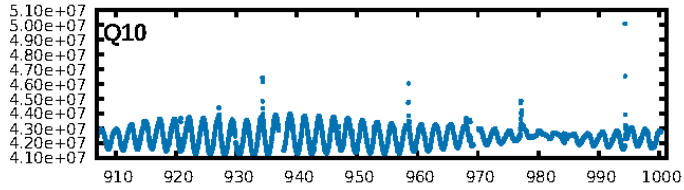
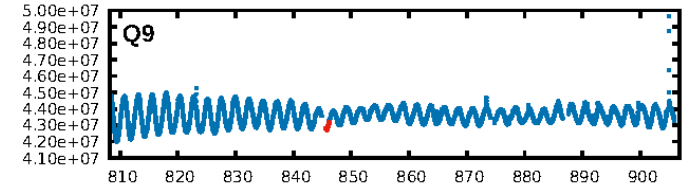
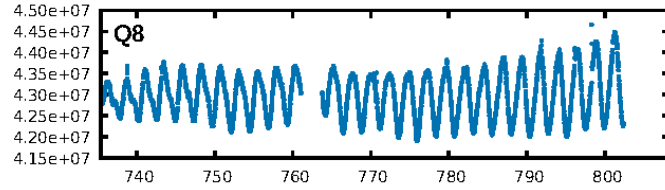
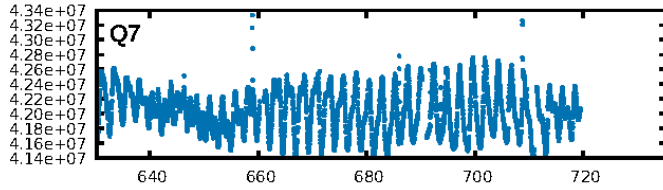
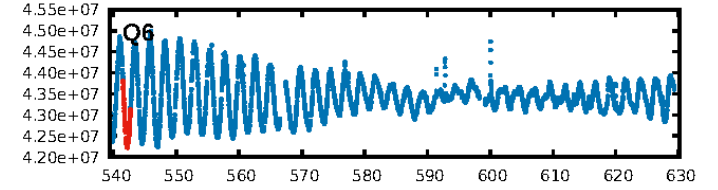
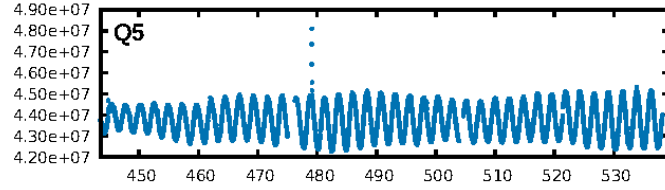
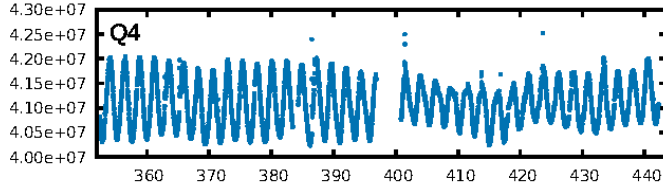
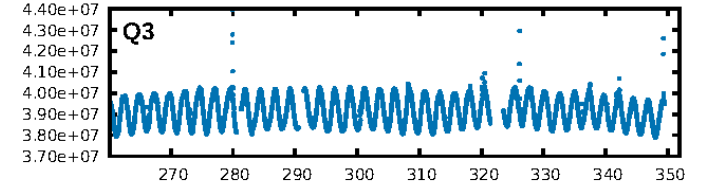
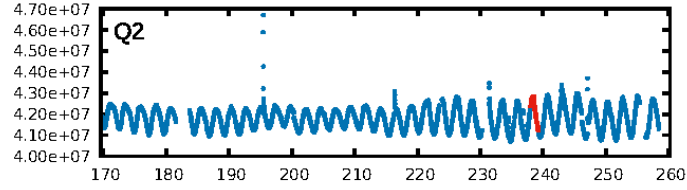
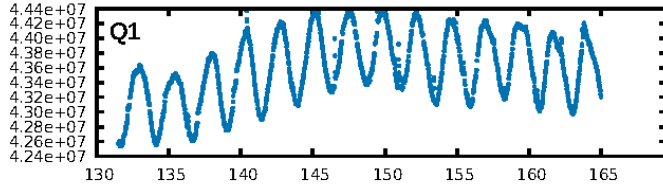
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [161.97σ]
ModelChiSquare2-sig: 6.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.80 [4/5]
GhostDiagnostic-chr: -0.4291
Centroid-sig: 15.9%
Centroid-so: 1.752 arcsec [0.69σ]
OotOffset-rm: 0.150 arcsec [0.12σ]
KicOffset-rm: 0.542 arcsec [6.10σ]
OotOffset-st: 2/1/1/0 [4]
KicOffset-st: 2/1/1/0 [4]
DiffImageQuality-fgm: 0.75 [3/4]
DiffImageOverlap-fno: 1.00 [4/4]

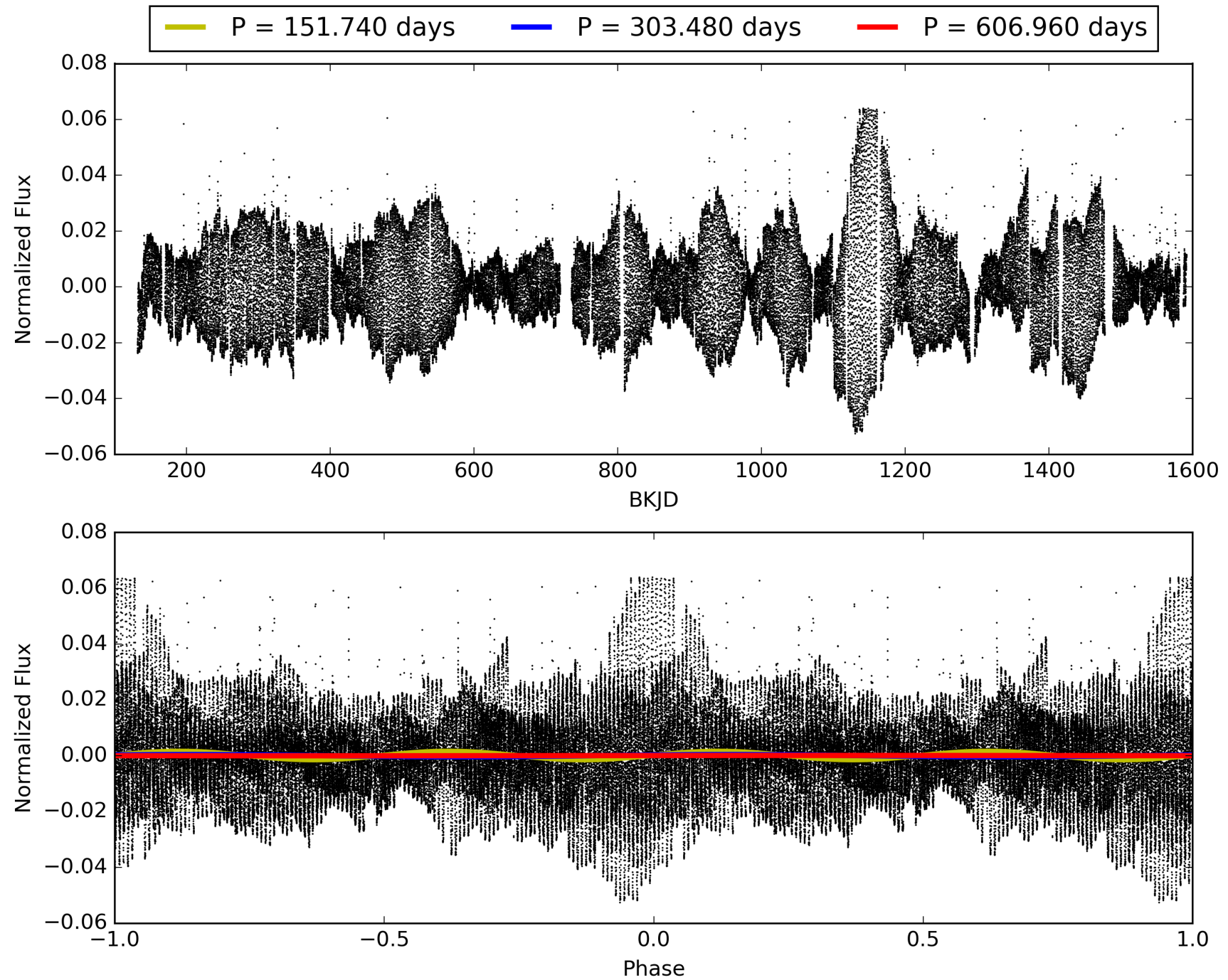
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:50:48 Z

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

TCE 008487242-02, PDC Light Curves

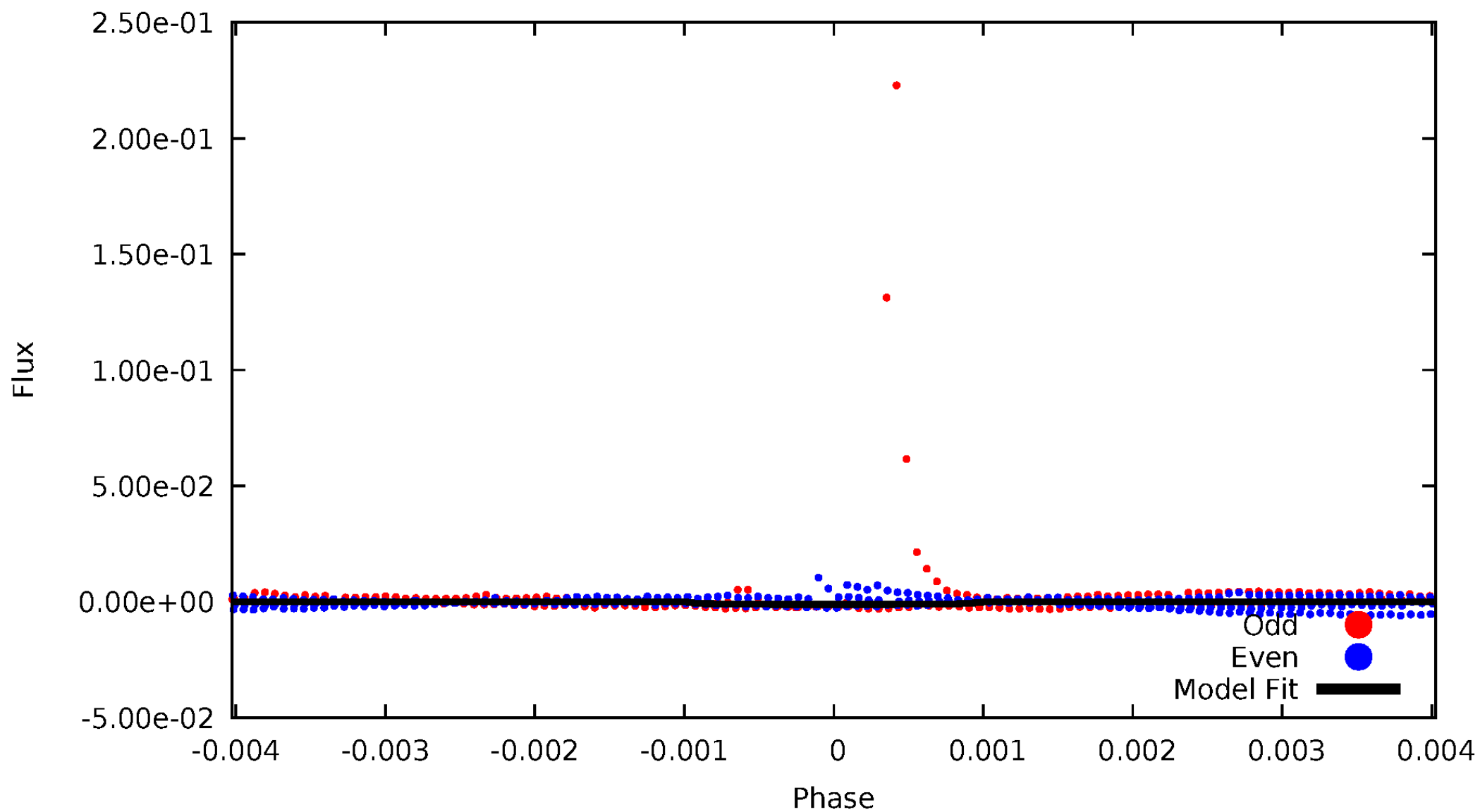


TCE 008487242-02



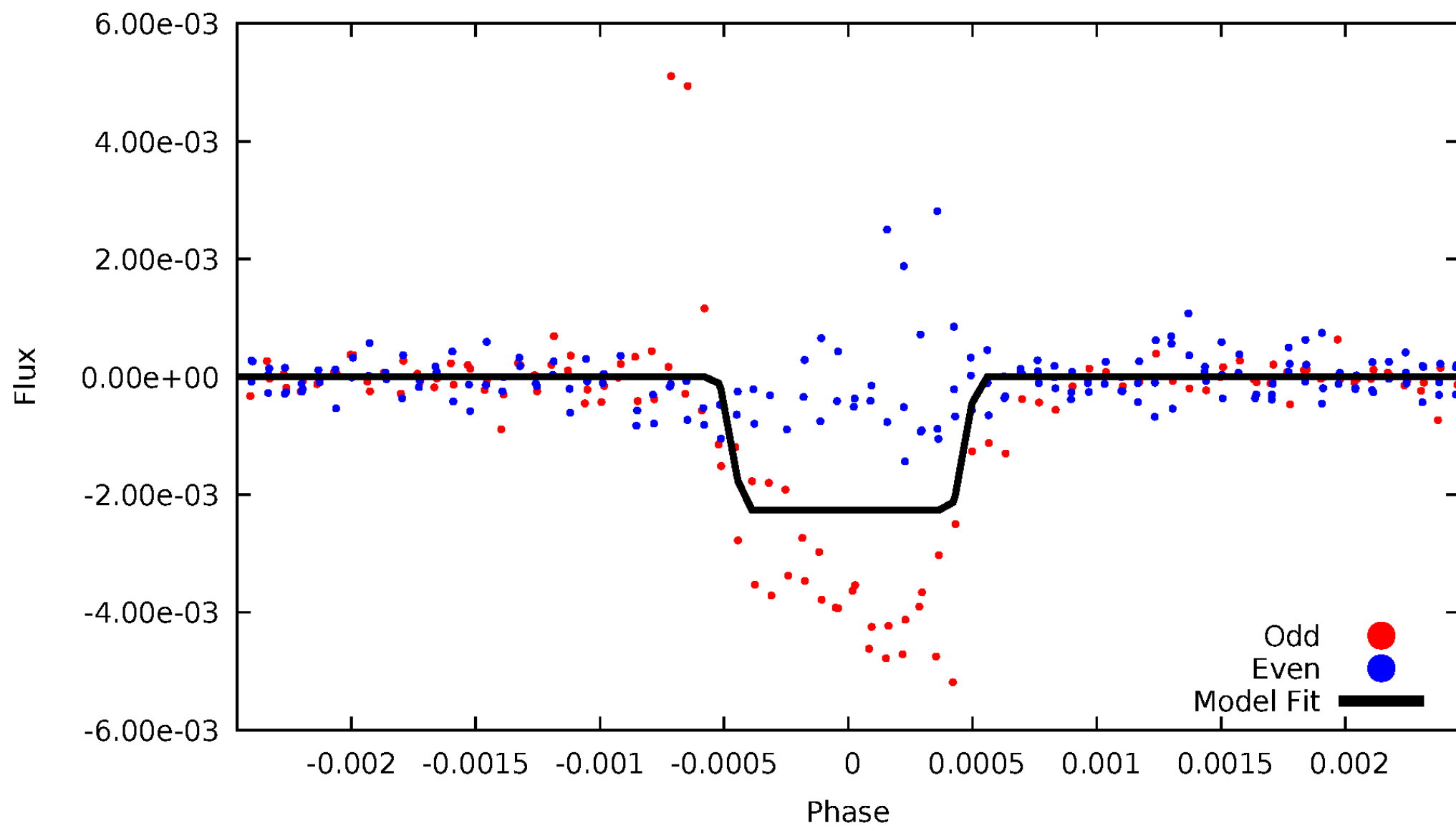
DV Odd/Even

TCE 008487242-02



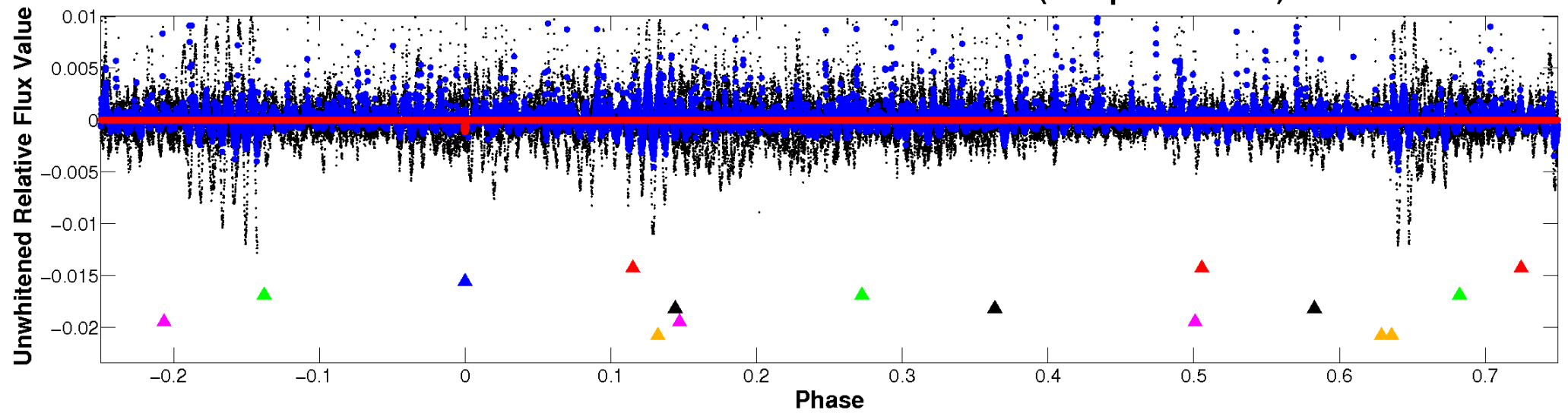
ALT Odd/Even

TCE 008487242-02

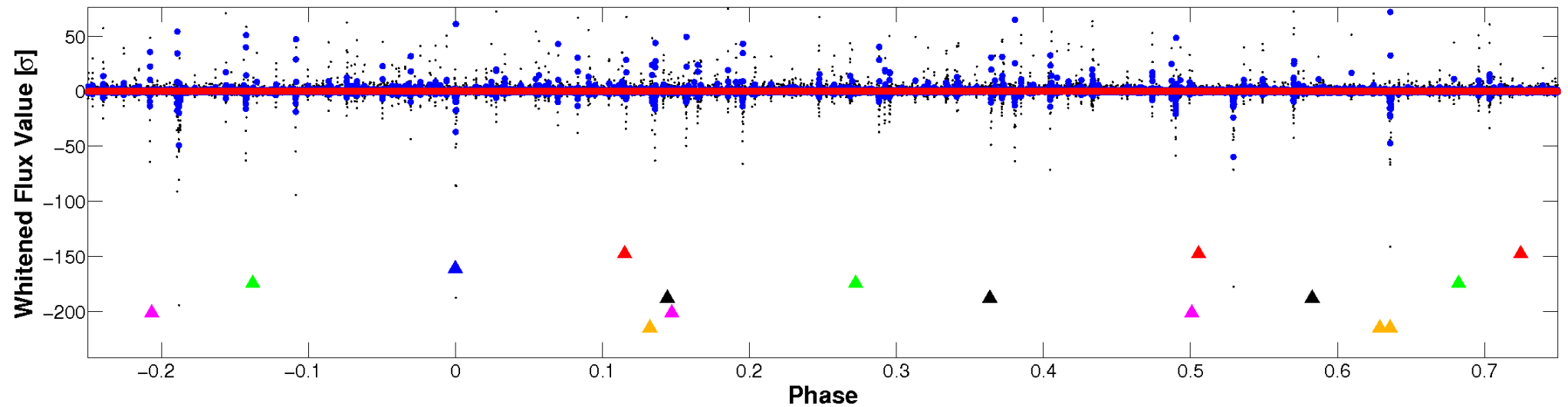


Non-Whitened Vs. Whitened Light Curve

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

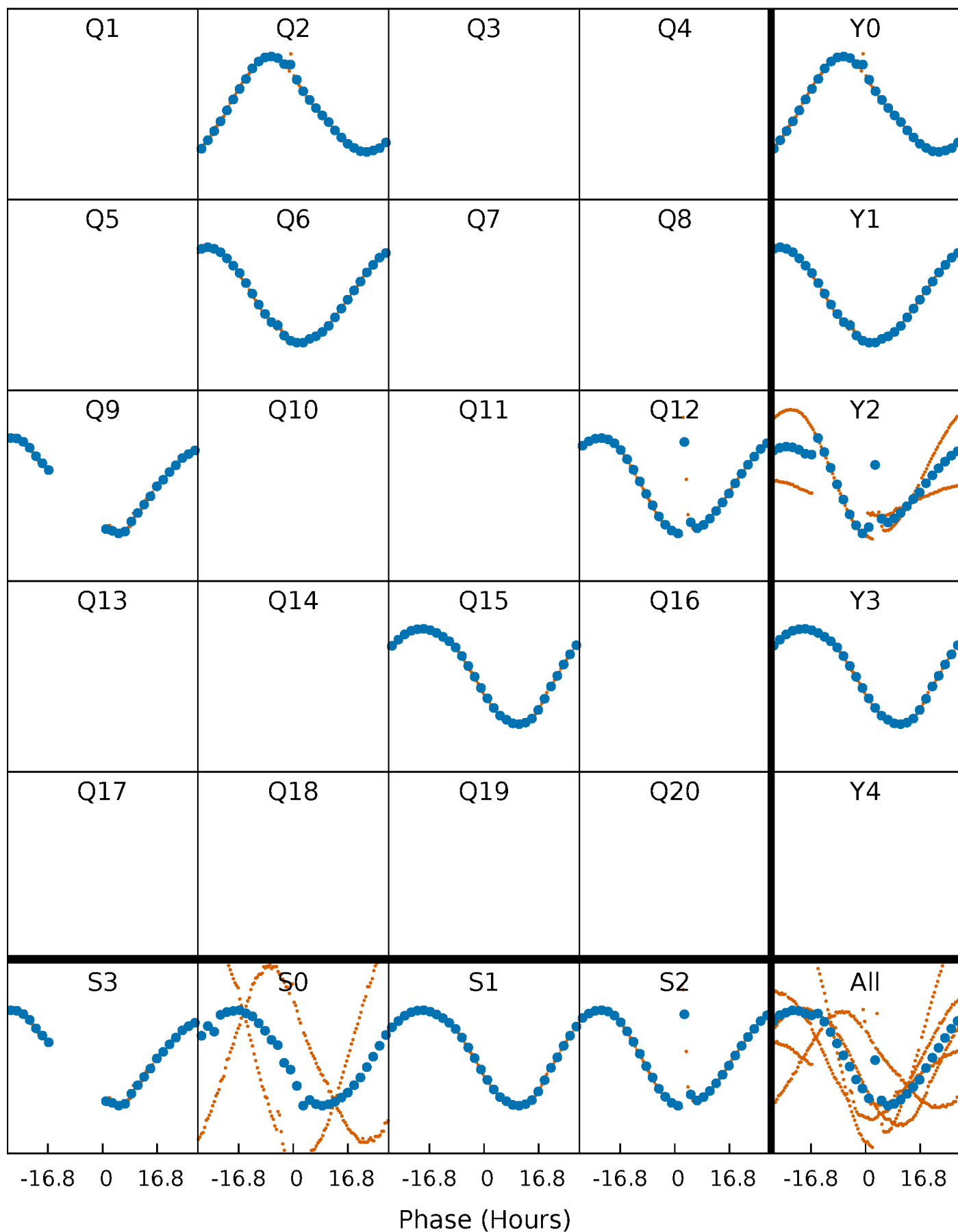


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



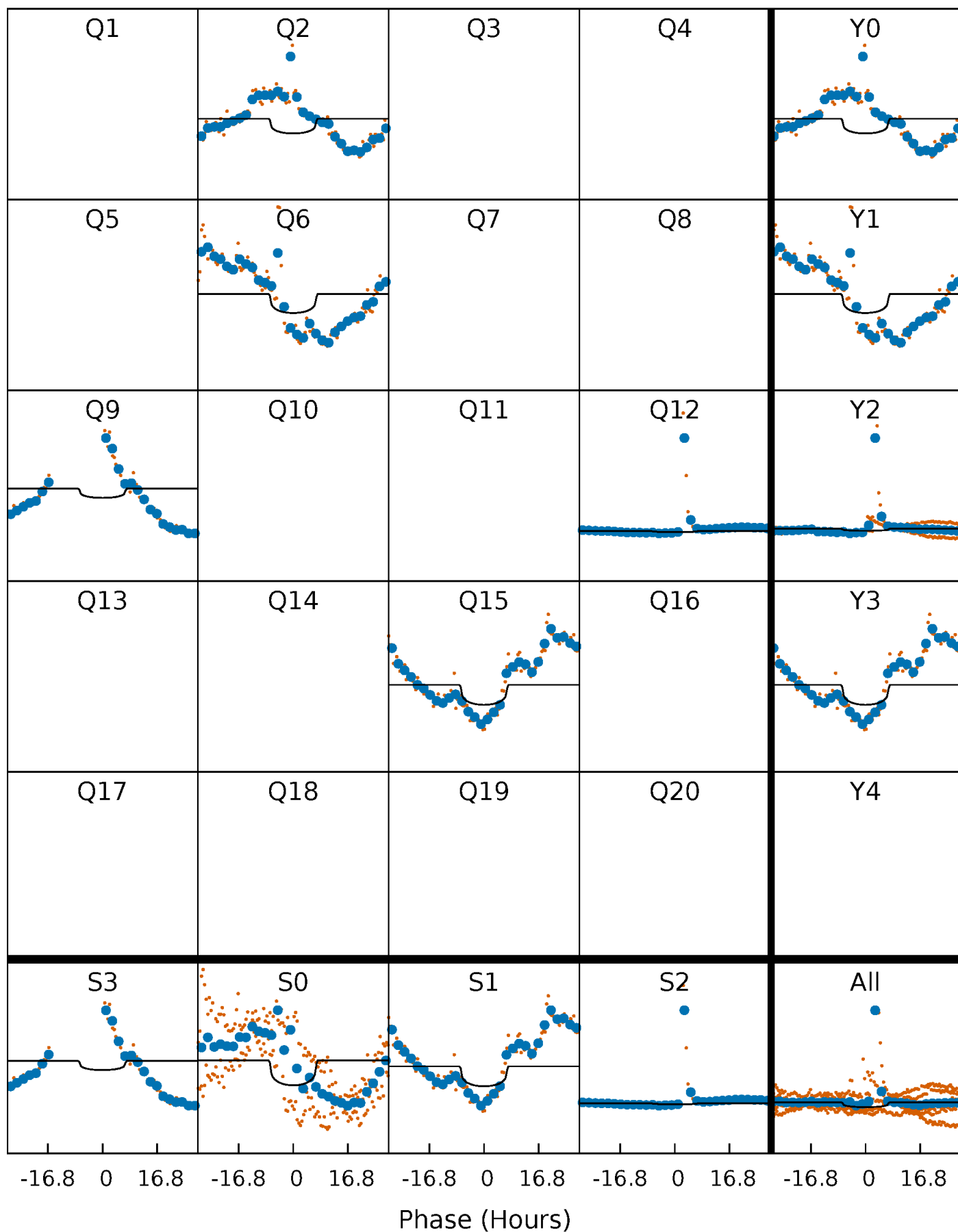
PDC Quarter-Phased Transit Curves

TCE 008487242-02 $P=303.479898$ Days $T_0=238.637581$ (BKJD)



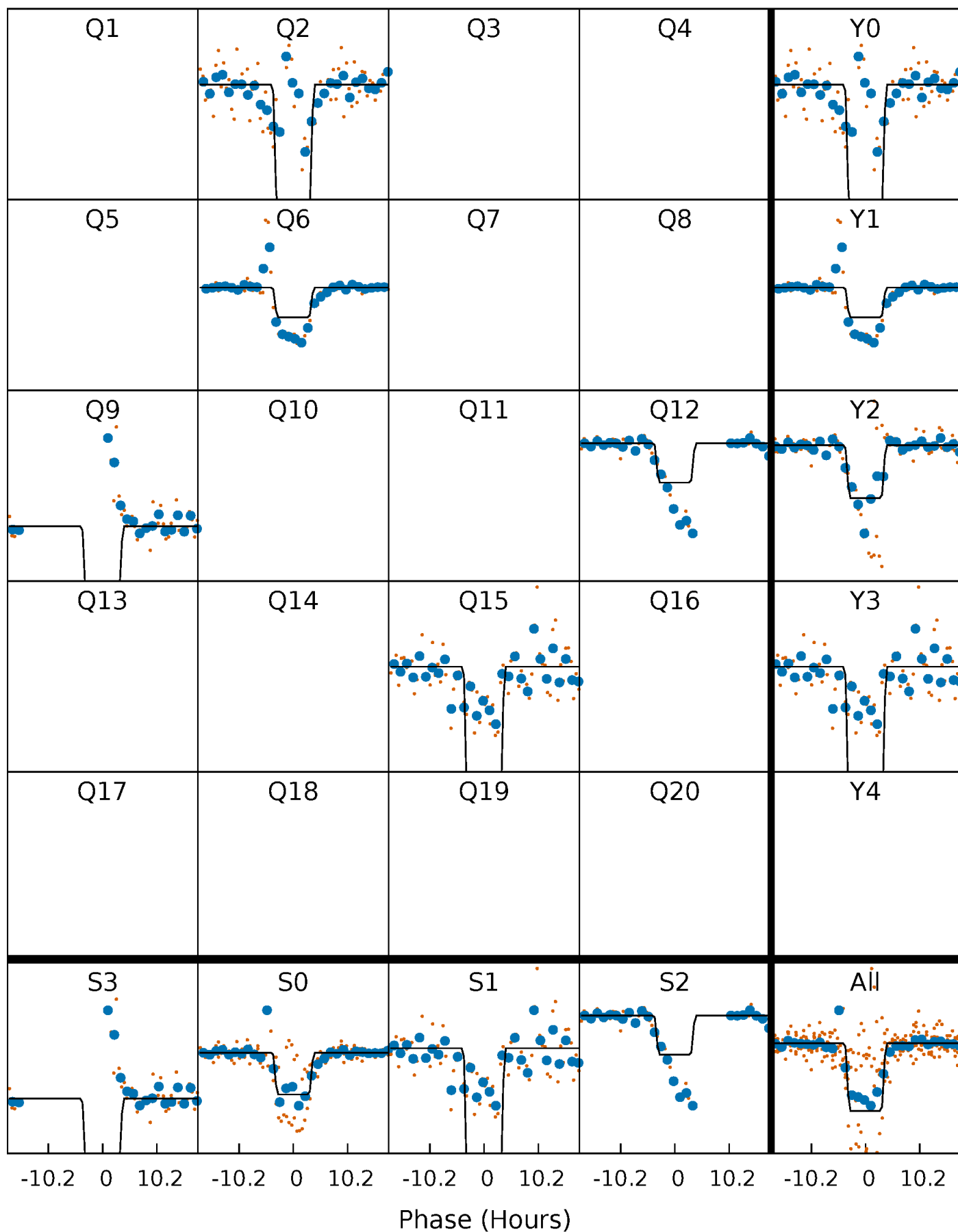
DV Quarter-Phased Transit Curves

TCE 008487242-02 $P=303.479898$ Days $T_0=238.637581$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

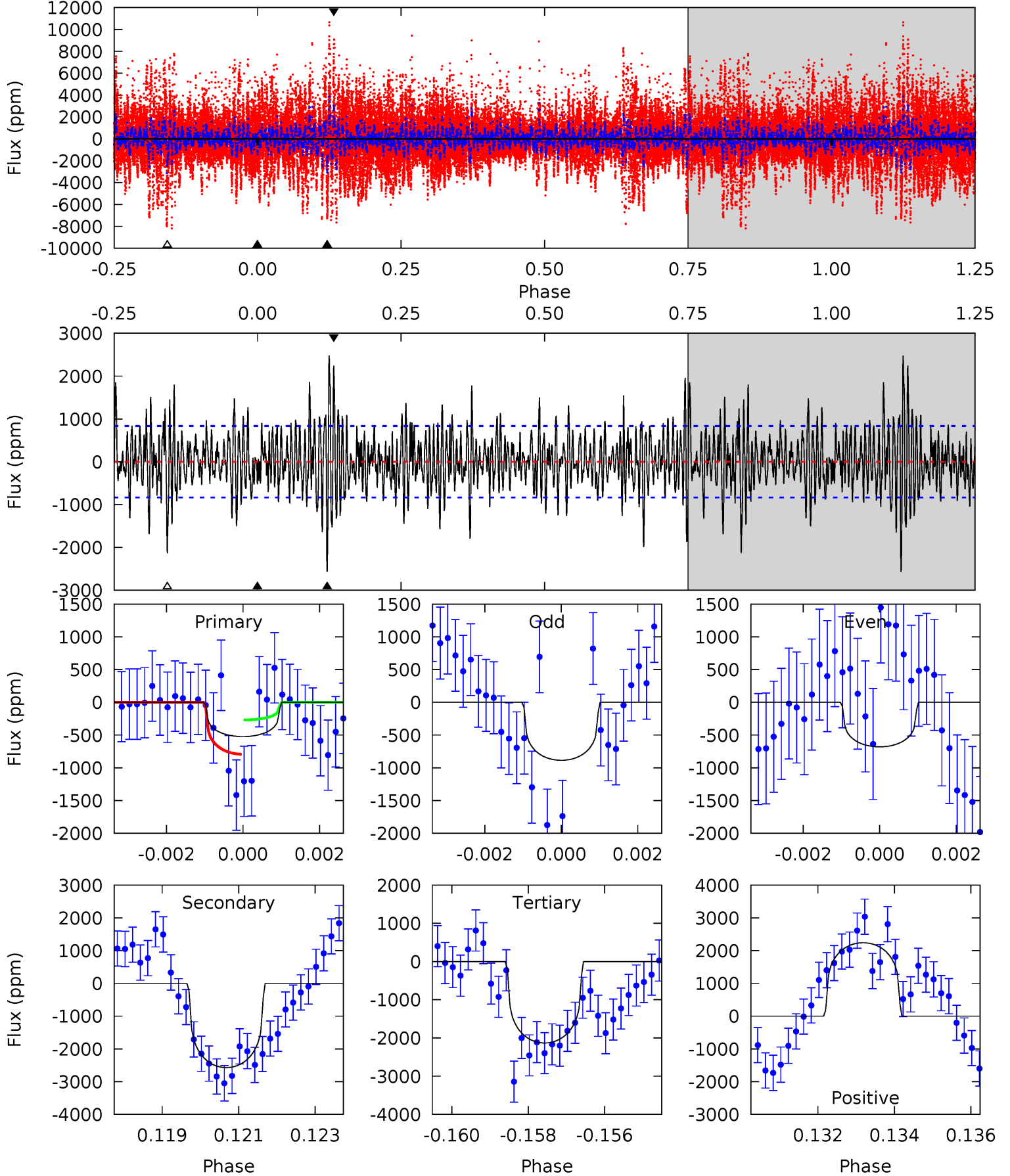
TCE 008487242-02 $P=303.438366$ Days $T_0=238.700769$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-02, P = 303.479898 Days, E = 238.637581 Days

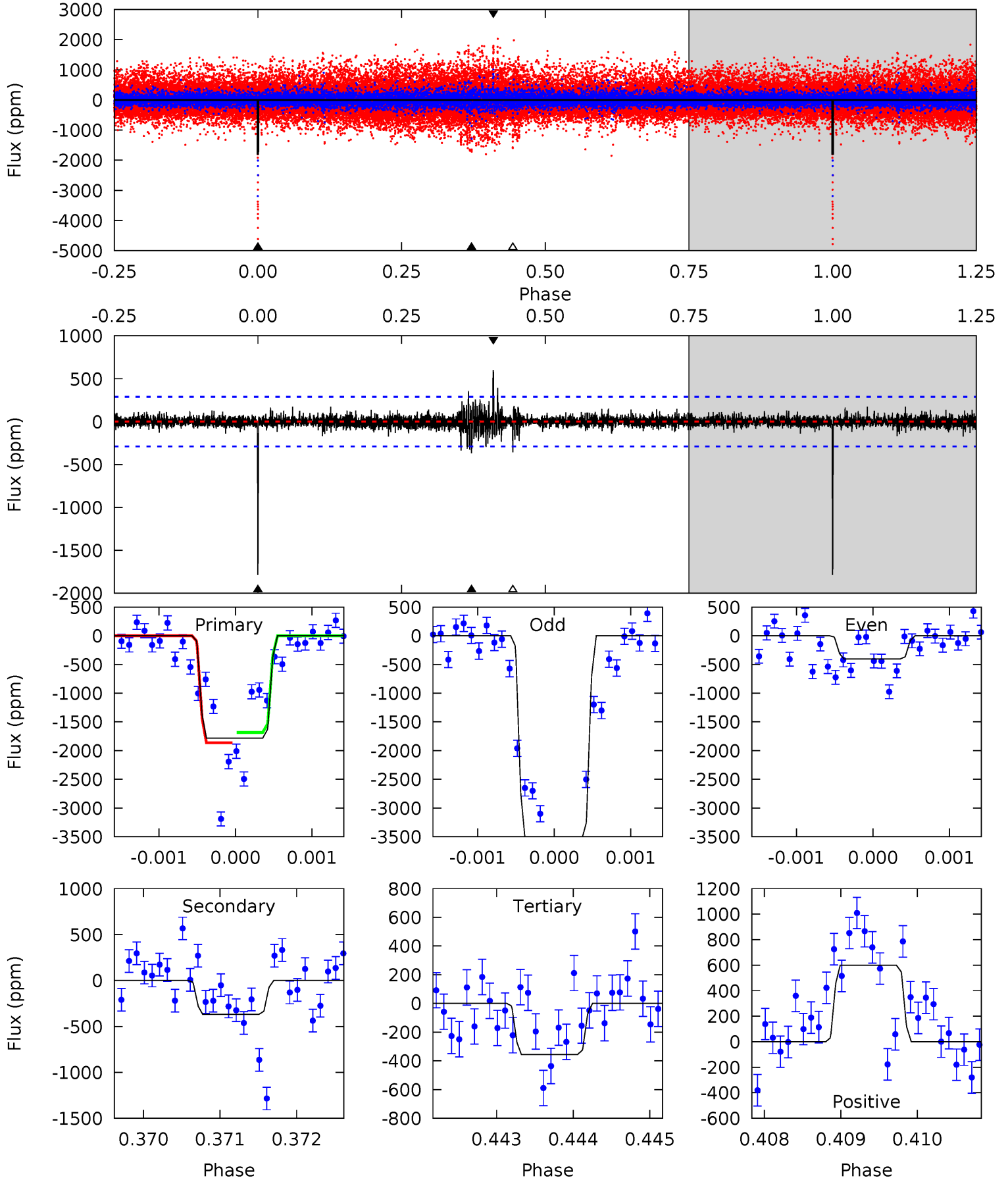
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.34	16.4	13.6	14.3	5.32	3.09	3.74	-10.3	-11.0	2.81	2.11	0.62	2.11	0.49	0



Alt Model-Shift Uniqueness Test

008487242-02, P = 303.438366 Days, E = 238.700769 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.6	6.93	6.70	11.3	5.45	3.28	0.97	26.9	22.3	0.23	-4.37	32.1	2.26	0.25	1.59



Stellar Parameters For KIC 008487242

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2571 ± 157	$2.52^{+1.98}_{-1.49}$	262^{+8}_{-9}	5311^{+3394}_{-1150}	$119834^{+609873}_{-81789}$
Alt.	-368 ± 53	$3.19^{+2.22}_{-1.95}$	263^{+8}_{-9}	3399^{+1340}_{-475}	10736^{+61484}_{-6950}

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

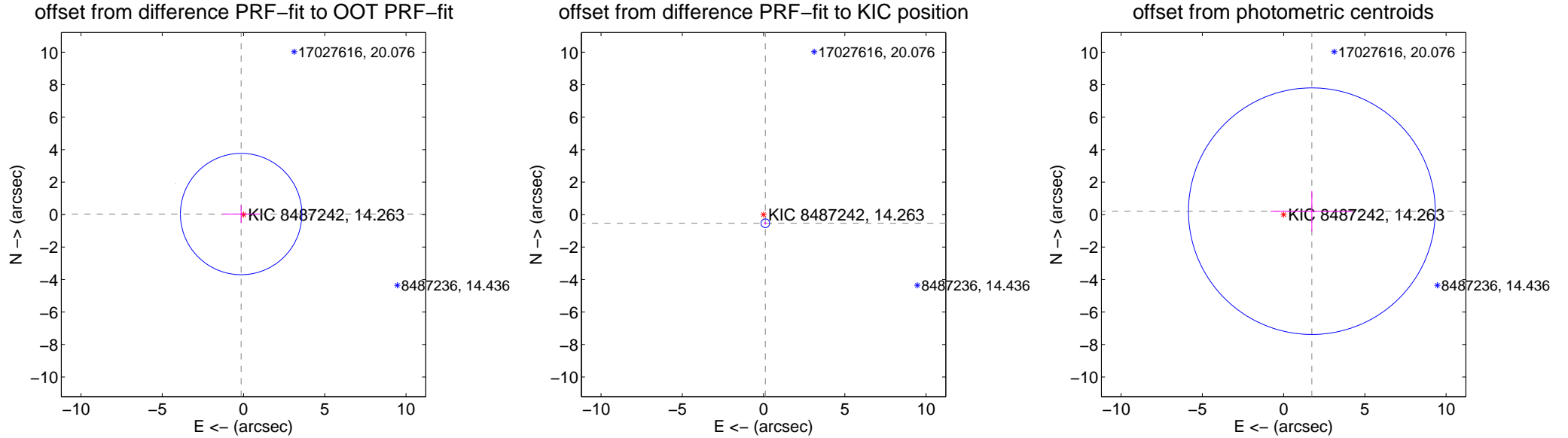
DV Centroid Data

Supplemental centroid analysis for 008487242-02. Kepler magnitude: 14.26. Transit SNR 4.53

There are 3 quarters with good PRF difference image offsets

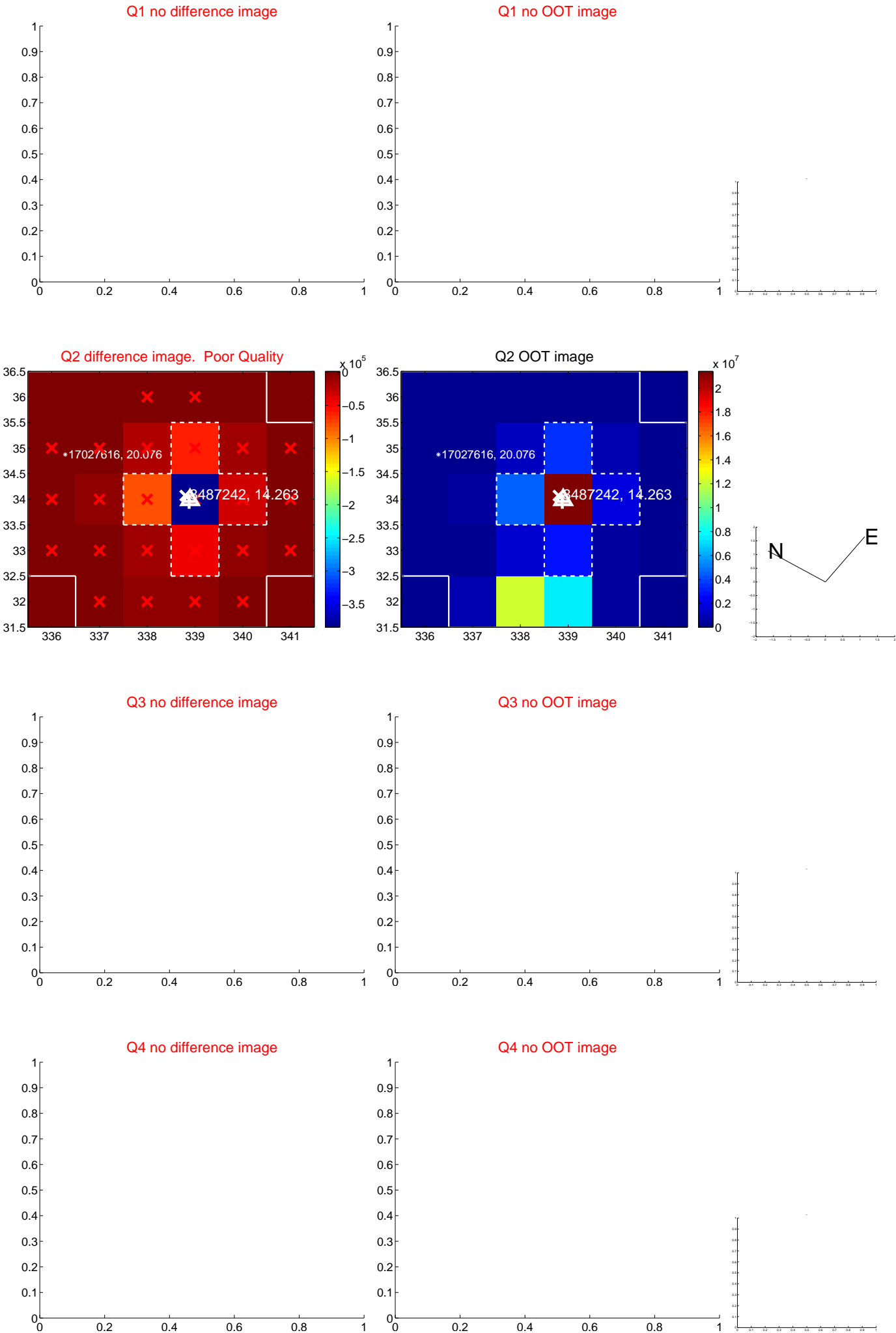
The OOT PRF centroid is offset from the target star catalog position by about 4.72 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 1.245	0.12	0.146 ± 1.150	0.035 ± 0.547
PRF-fit source offset from KIC position	0.542 ± 0.089	6.10	-0.108 ± 0.076	-0.531 ± 0.085
photometric centroid source offset	1.75 ± 2.53	0.69	-1.74 ± 2.54	0.21 ± 1.25

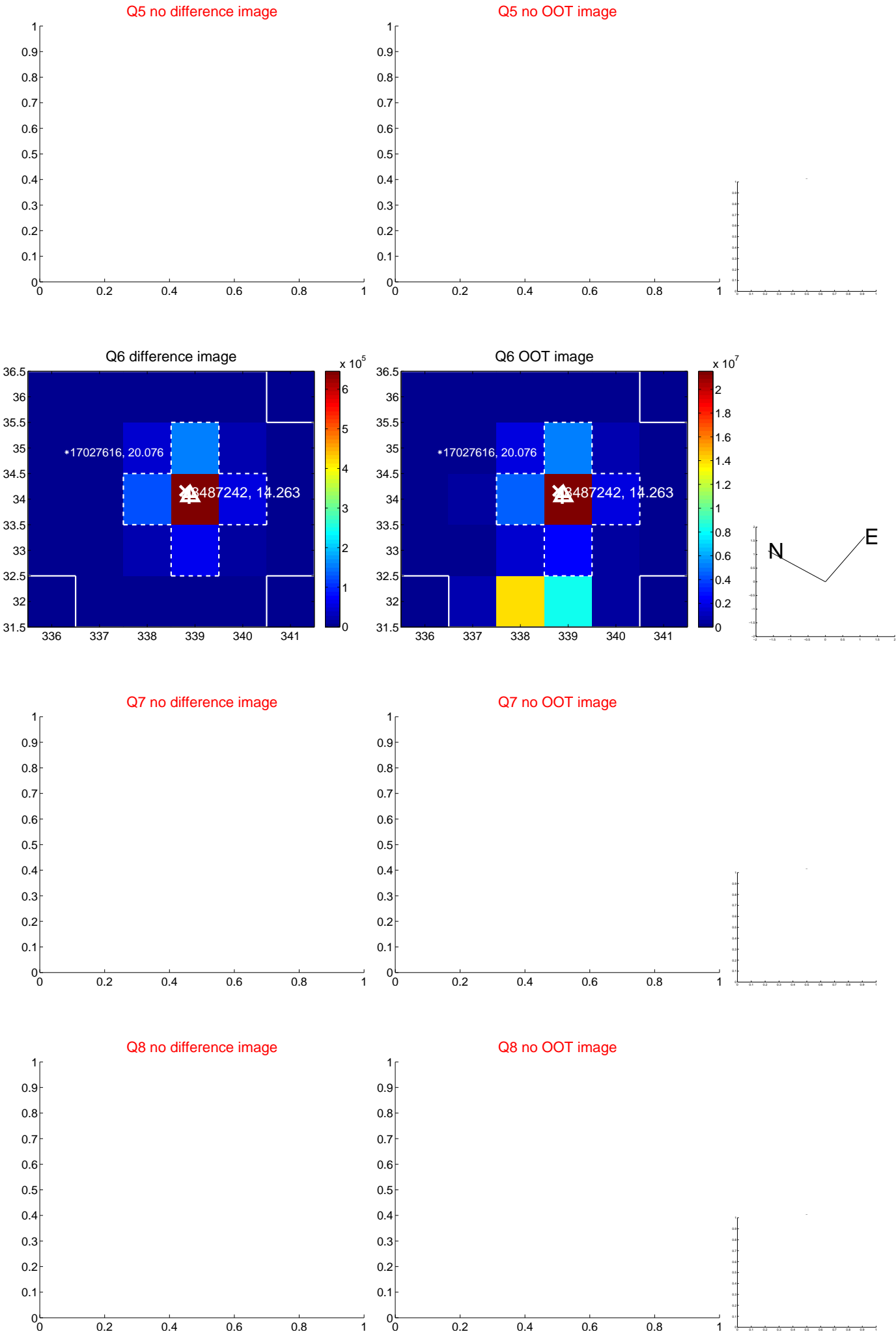


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

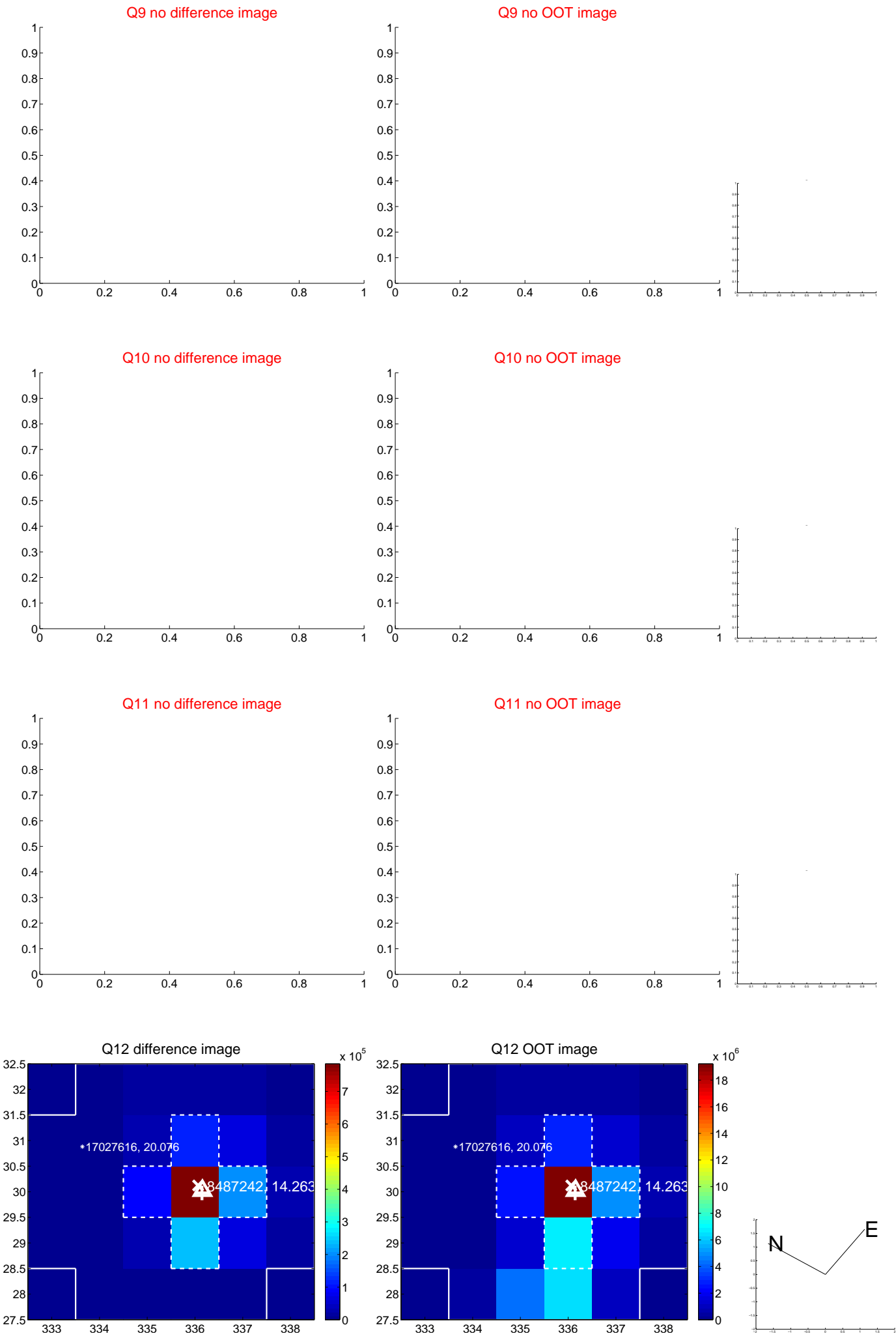
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

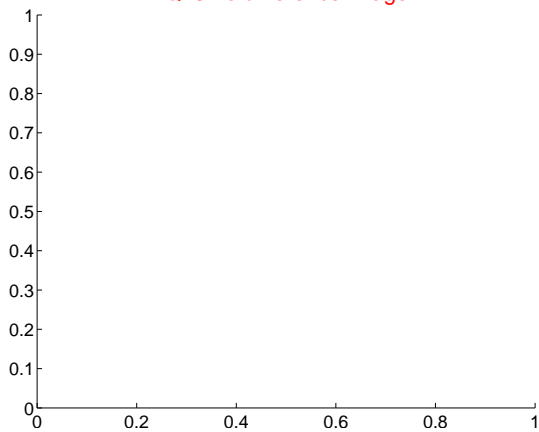


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

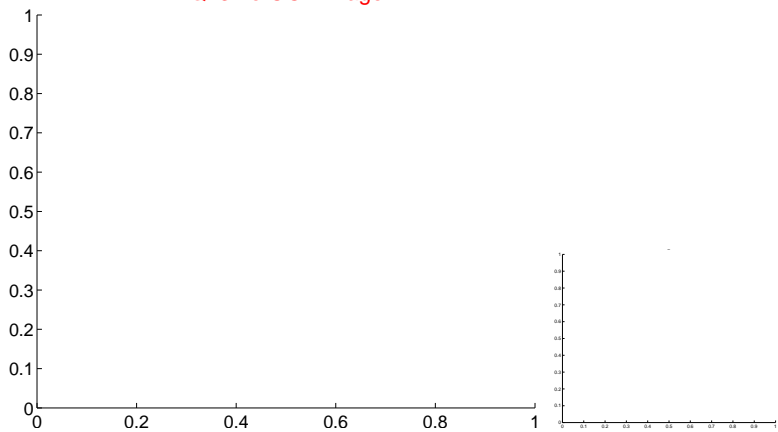


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

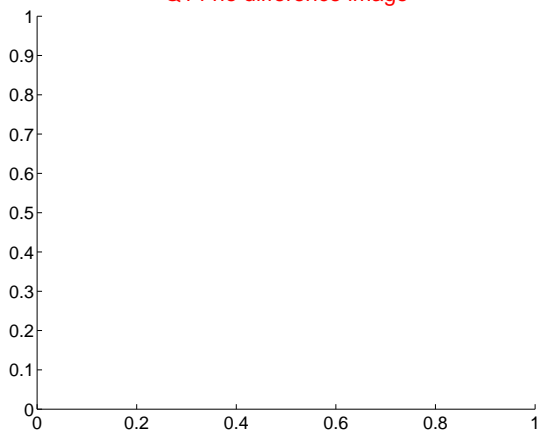
Q13 no difference image



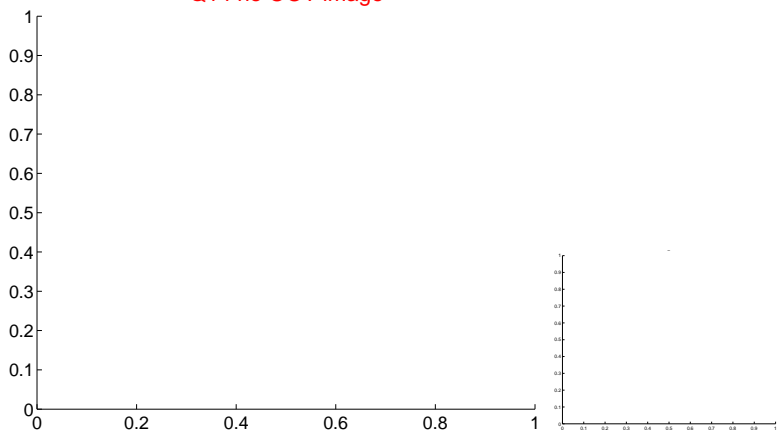
Q13 no OOT image



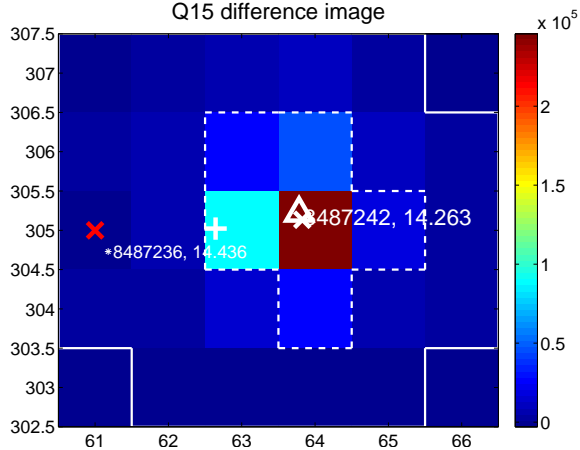
Q14 no difference image



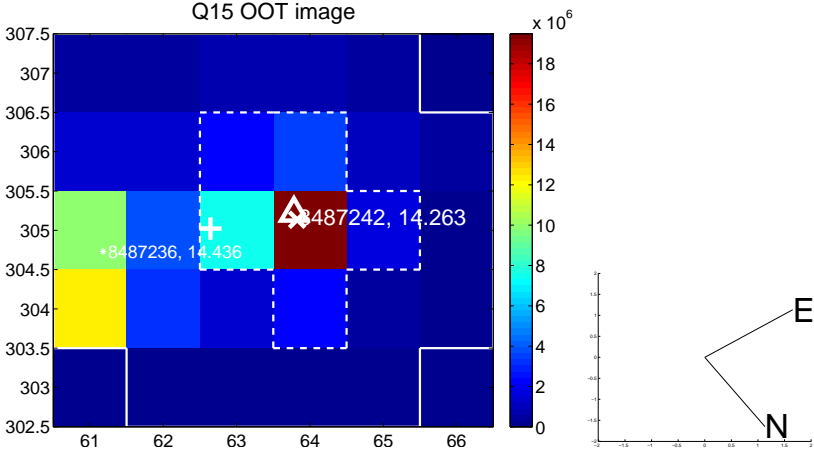
Q14 no OOT image



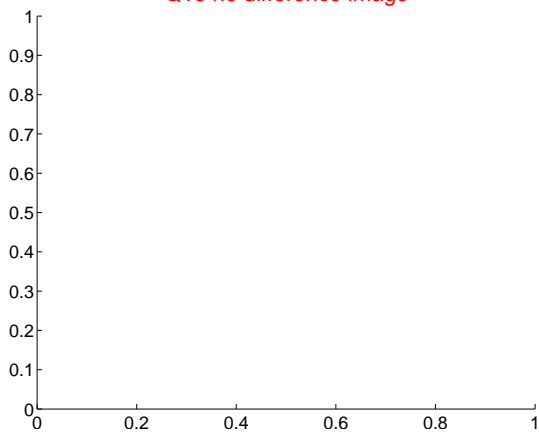
Q15 difference image



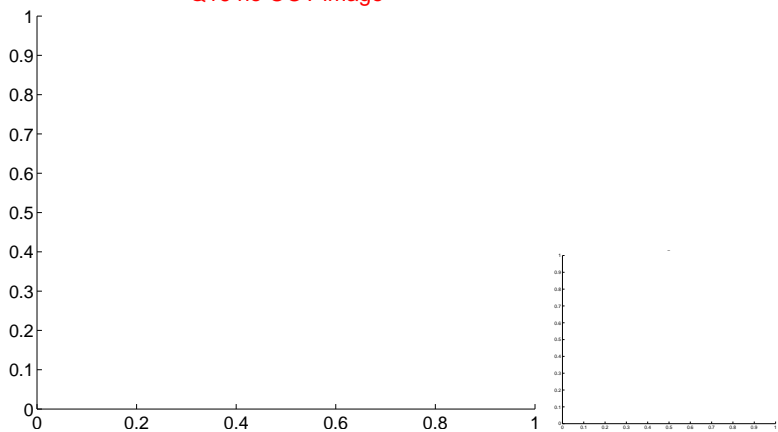
Q15 OOT image



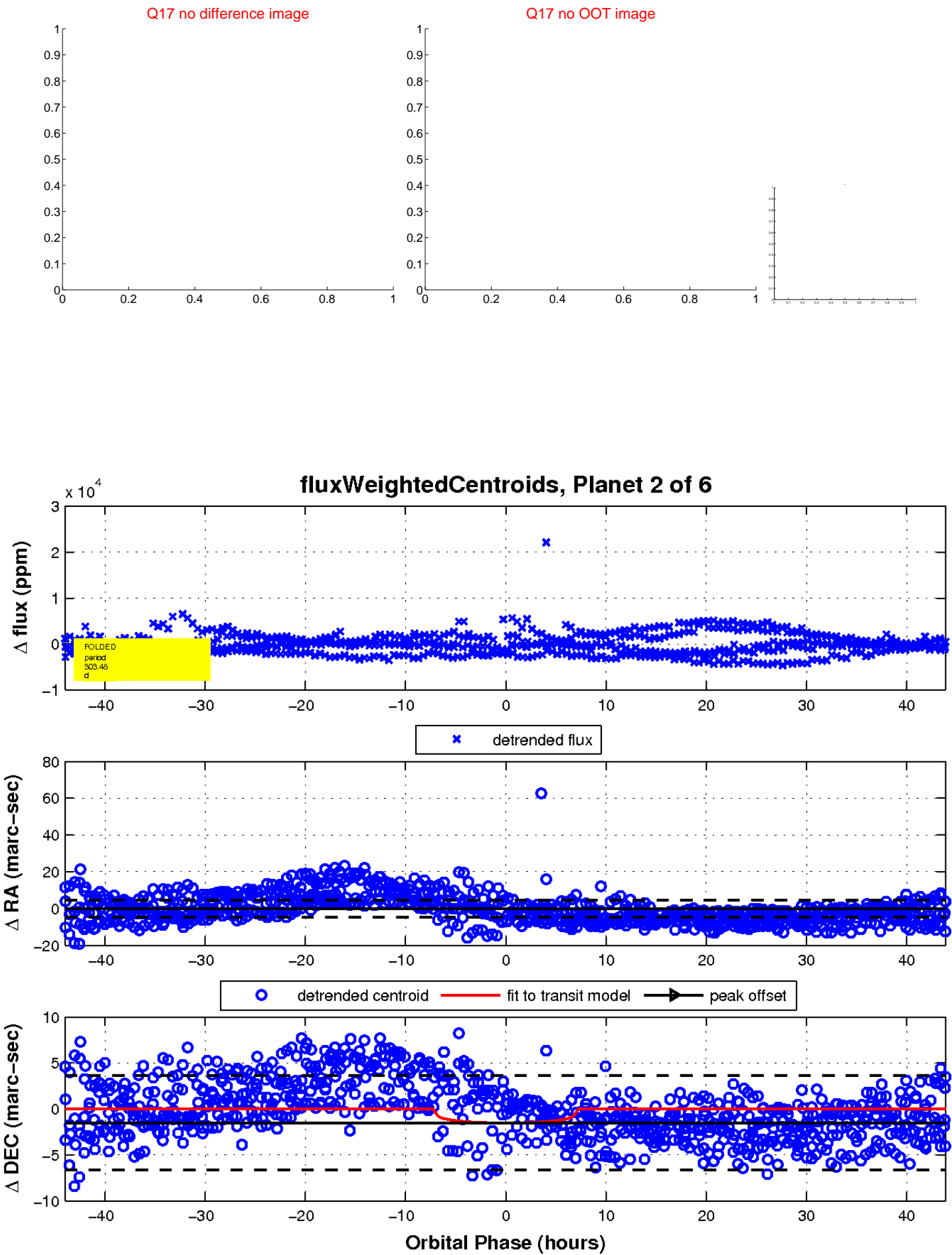
Q16 no difference image



Q16 no OOT image

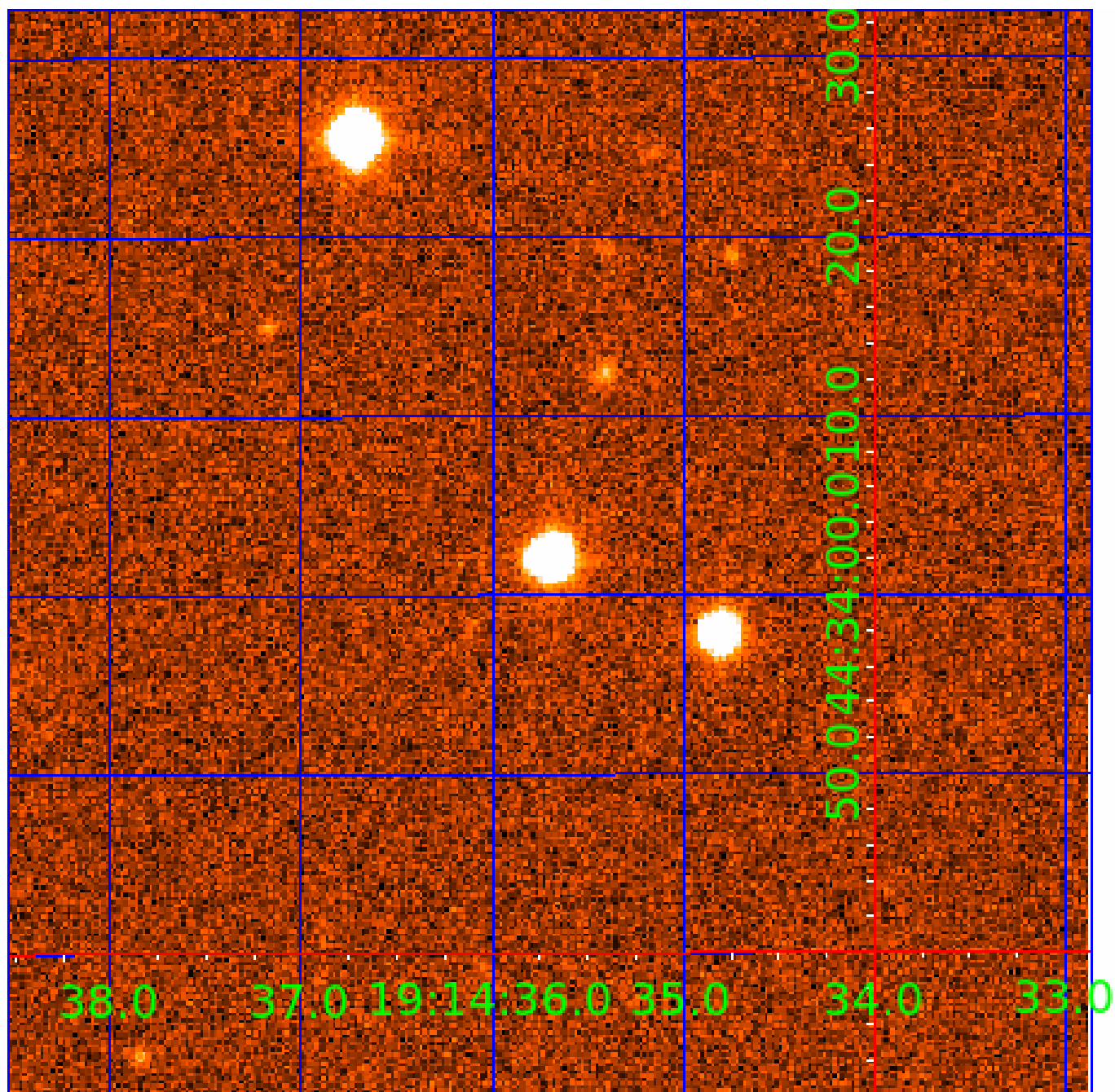


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008487242

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})
008487242-01	OBS	No	421.972214	458.565631	1198.3	4.273	14.6	5.3	0.57	4843	1.94	0.19
008487242-02	OBS	No	303.479898	238.637581	1146.2	14.660	15.8	4.5	0.57	4843	1.97	0.30
008487242-03	OBS	No	482.490528	445.741249	1391.2	3.650	14.3	6.2	0.57	4843	2.16	0.16
008487242-04	OBS	No	540.407827	415.517374	1779.8	8.389	12.2	6.3	0.57	4843	2.36	0.14
008487242-05	OBS	No	410.830393	479.438419	3322.0	6.172	11.1	13.0	0.57	4843	4.00	0.20
008487242-06	OBS	No	456.274584	429.479977	840.6	3.500	10.9	-1.0	0.57	4843	1.62	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487242-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

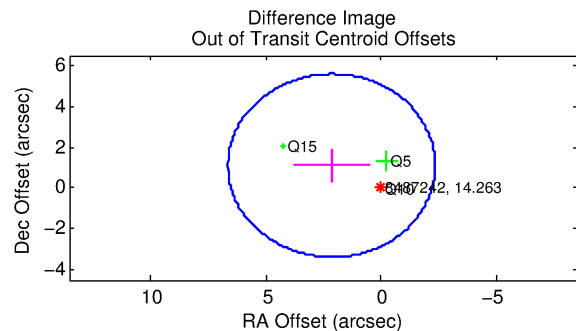
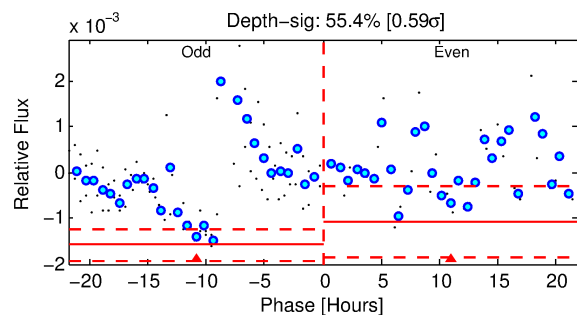
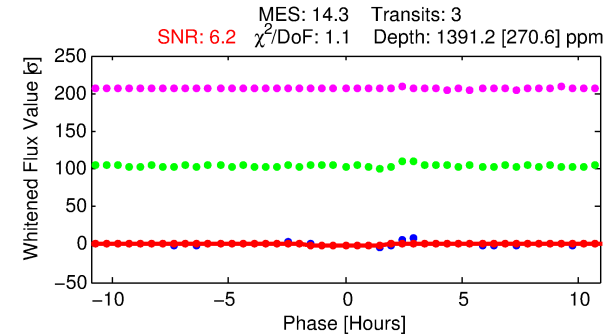
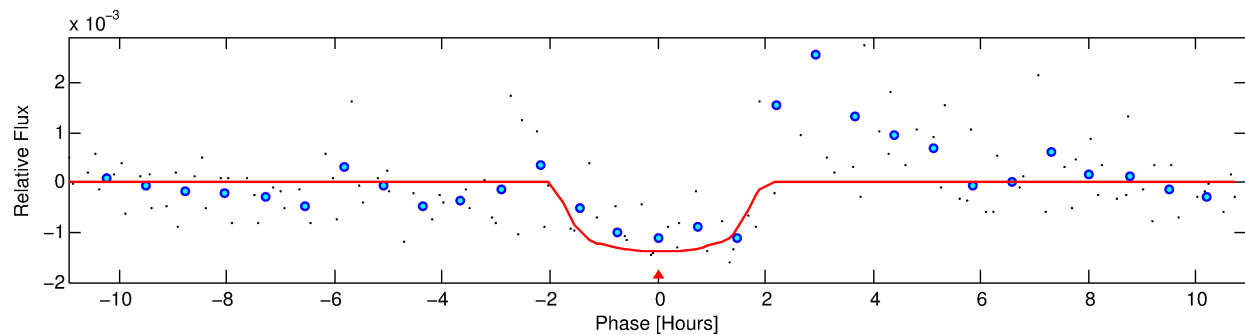
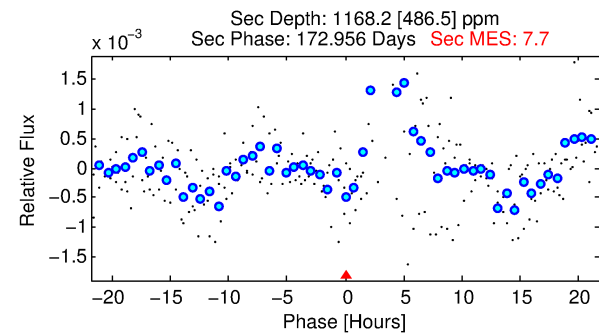
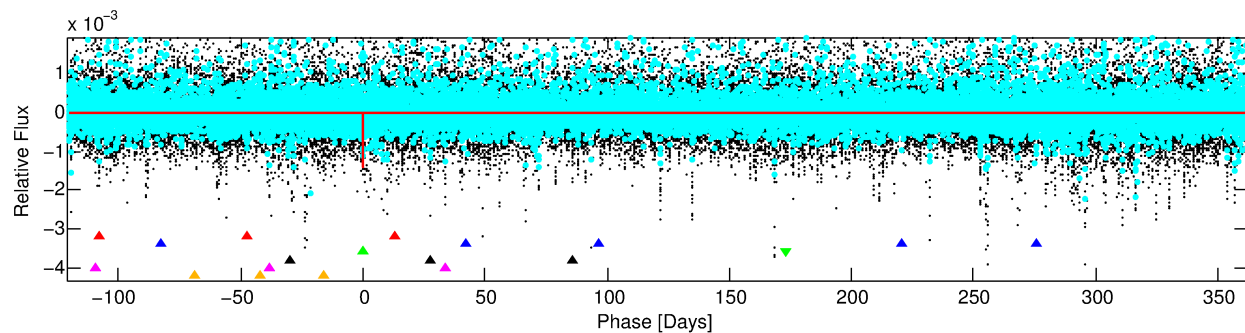
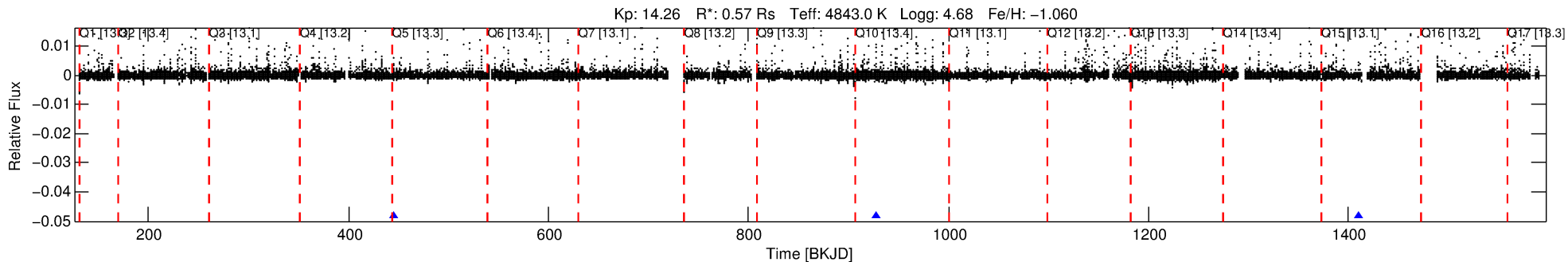
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-03

No Significant Match Found

DV One-Page Summary

KIC: 8487242 Candidate: 3 of 6 Period: 482.491 d



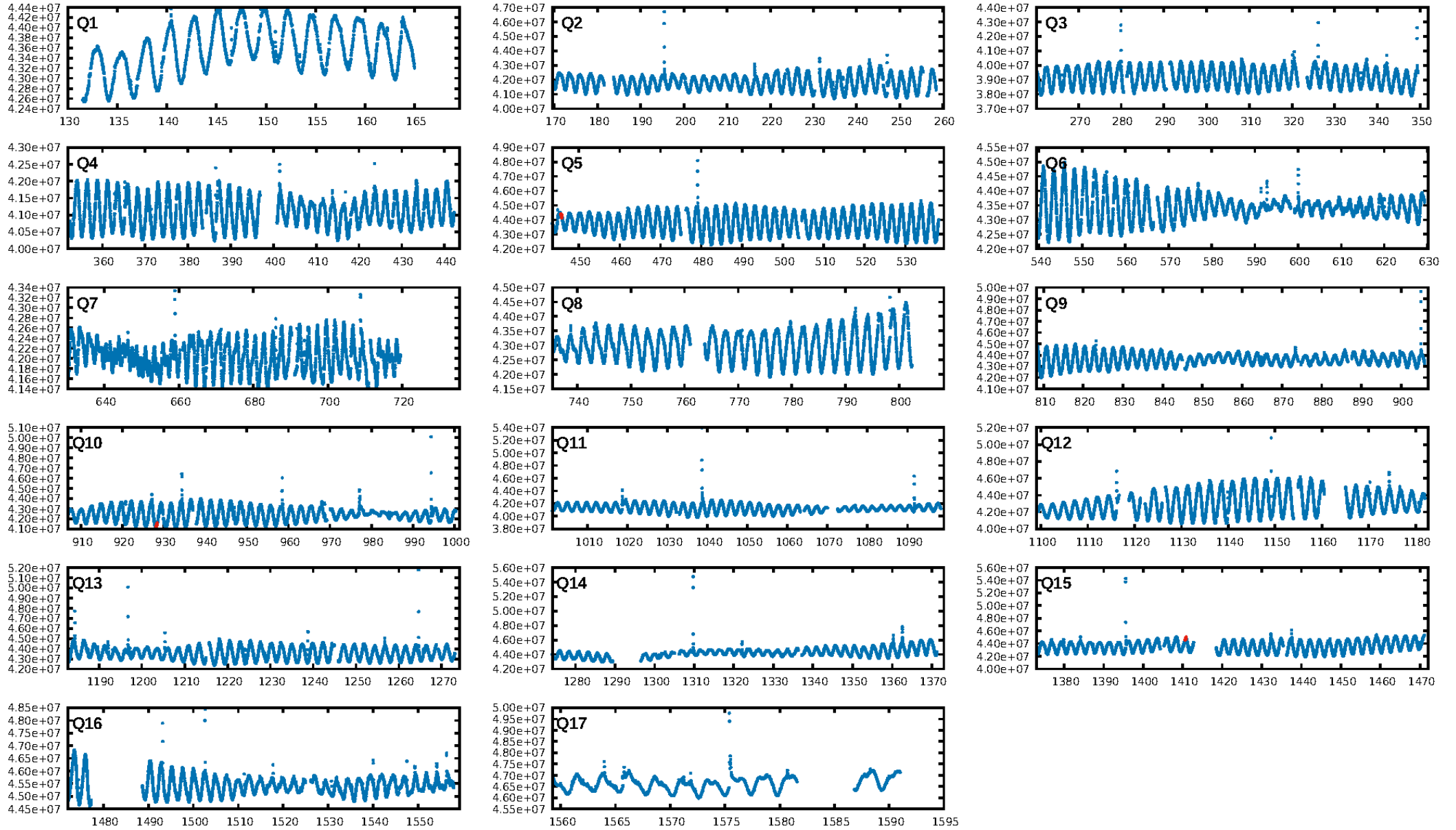
DV Fit Results:

Period = 482.49053 [0.00521] d
Epoch = 445.7412 [0.0067] BKJD
Rp/R* = 0.0347 [0.0974]
a/R* = 914.98 [9827.60]
b = 0.50 [16.29]
Seff = 0.16 [0.03]
Teq = 162 [7] K
Rp = 2.16 [6.07] Re
a = 0.9987 [0.0606] AU
Ag = 137214.99 [772590.26] [0.18σ]
Teffp = 4807 [6768] K [0.69σ]

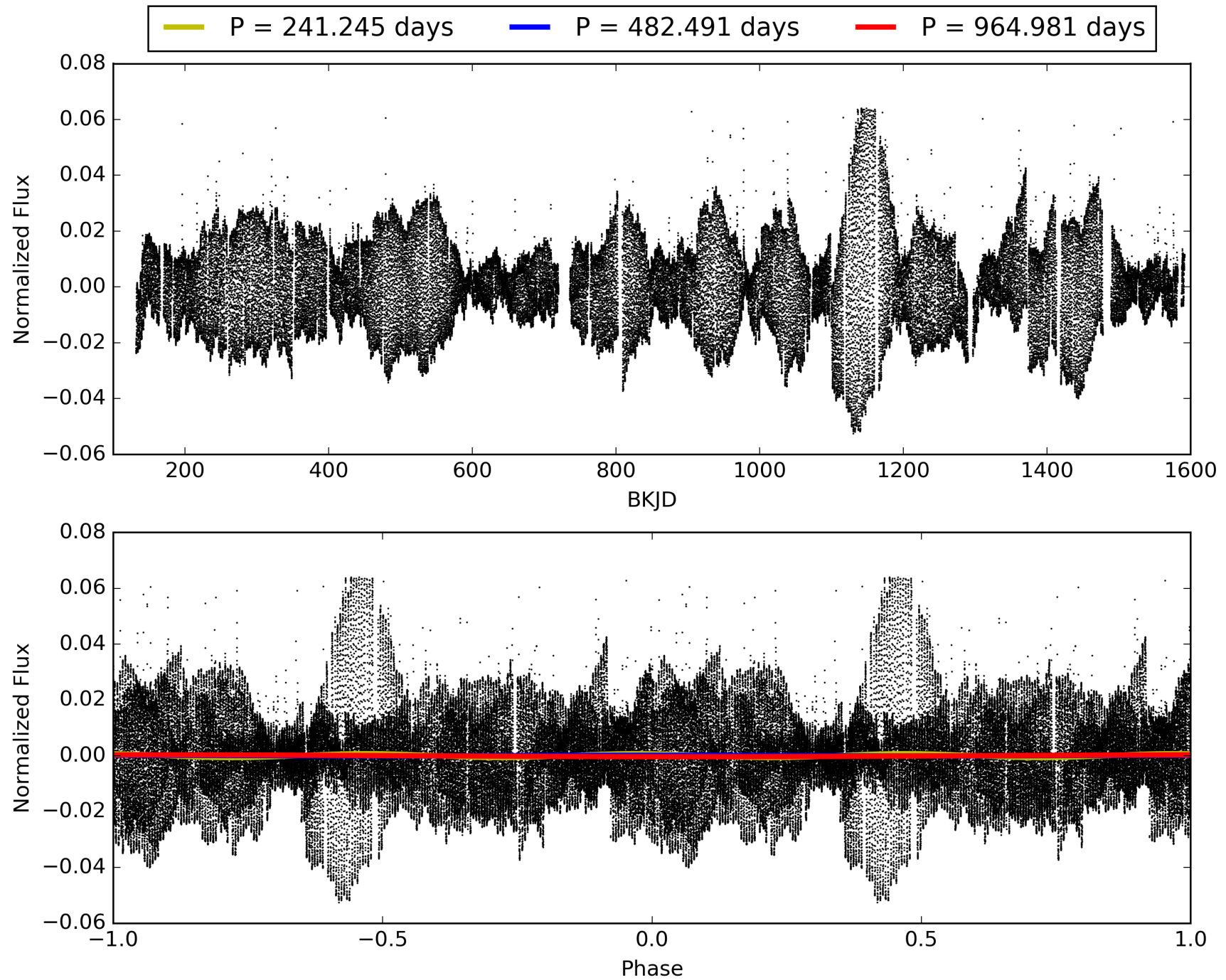
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [124.42σ]
LongPeriod-sig: 100.0% [151.94σ]
ModelChiSquare2-sig: 6.3%
ModelChiSquareGof-sig: 94.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 6.247
Centroid-sig: 74.6%
Centroid-so: 2.219 arcsec [2.17σ]
OotOffset-rm: 2.416 arcsec [1.62σ]
KicOffset-rm: 0.362 arcsec [1.51σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008487242-03, PDC Light Curves

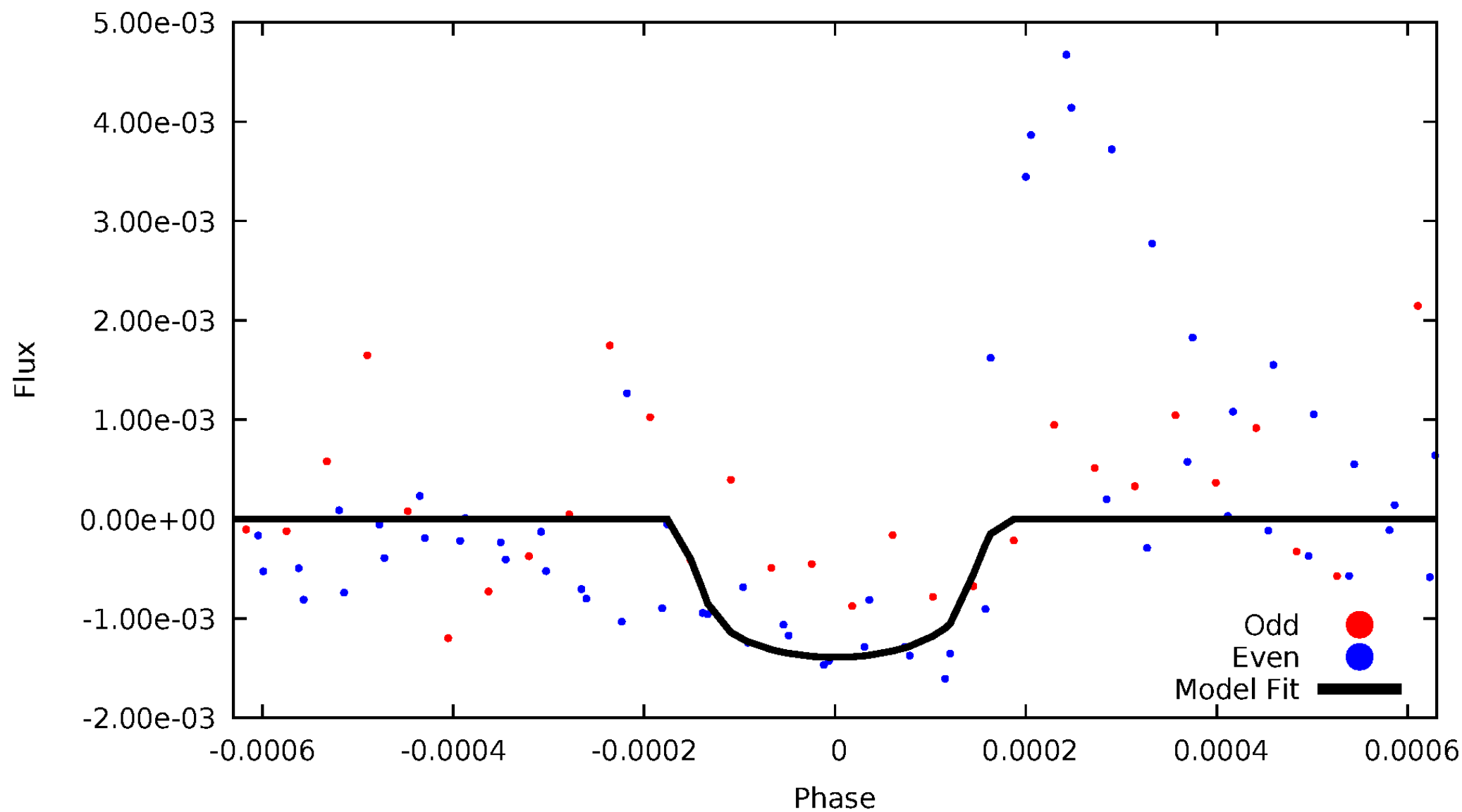


TCE 008487242-03



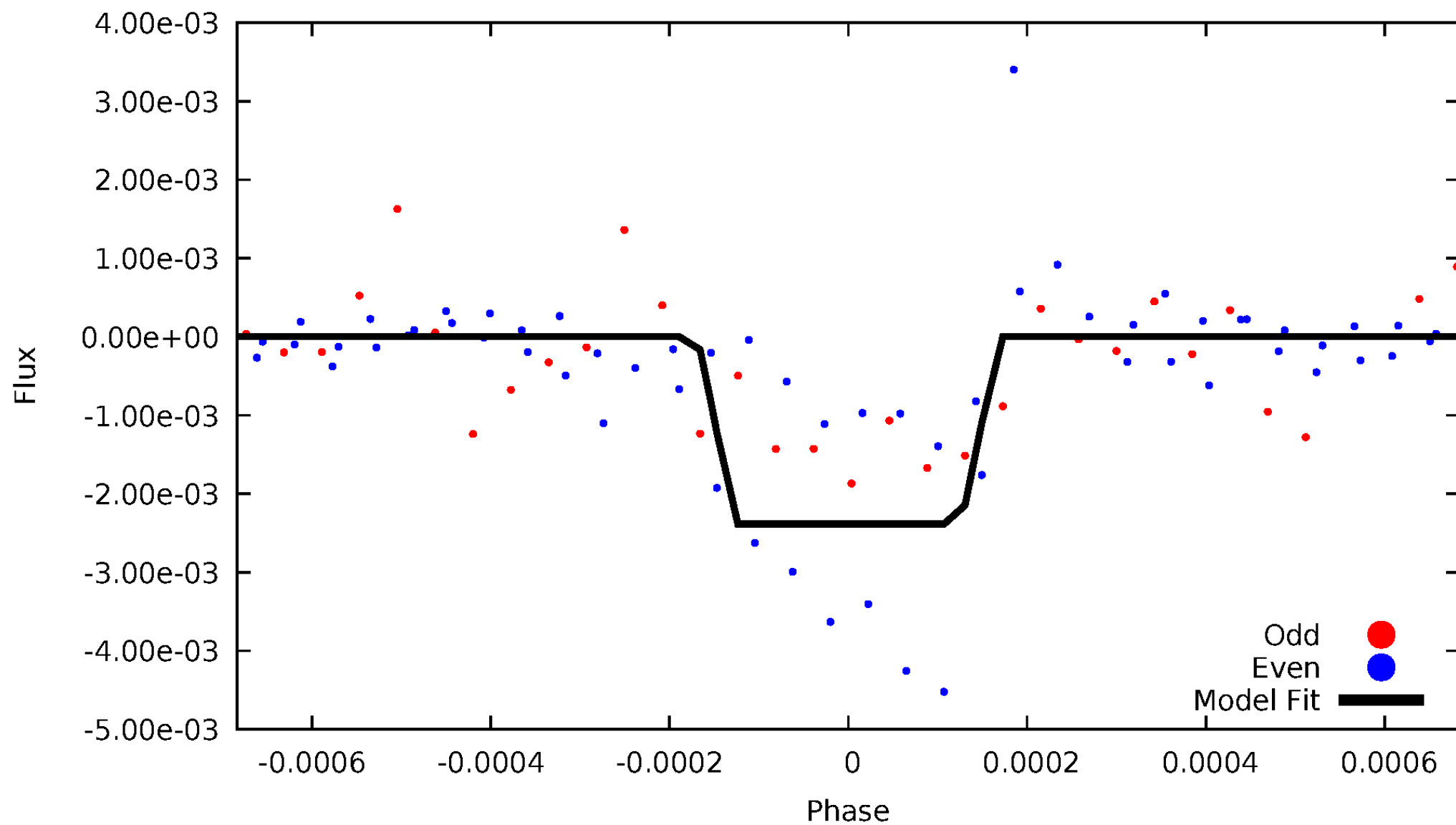
DV Odd/Even

TCE 008487242-03



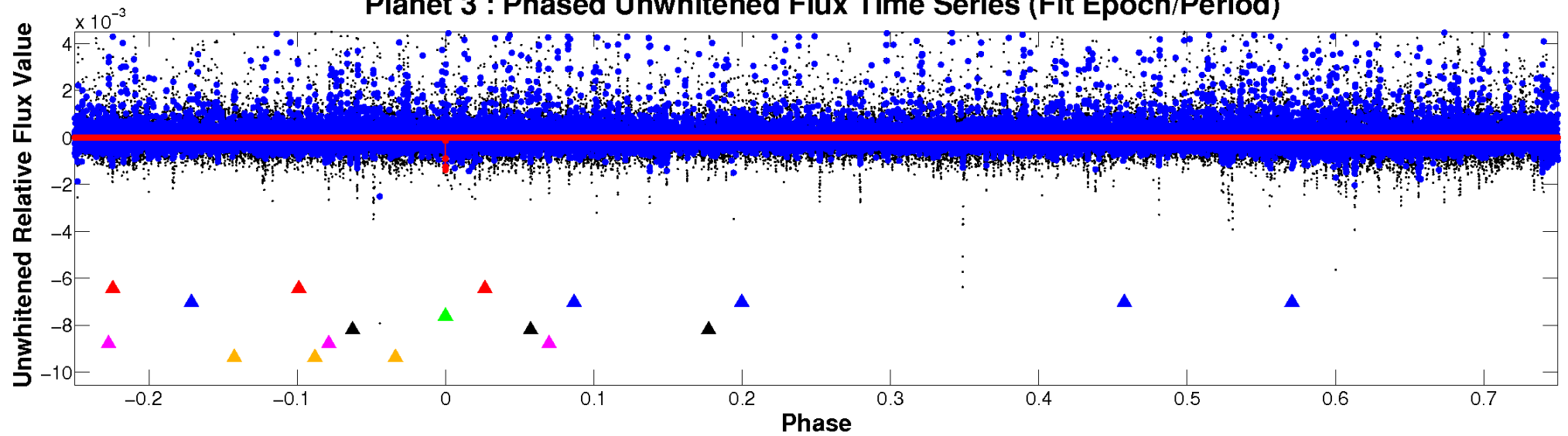
ALT Odd/Even

TCE 008487242-03

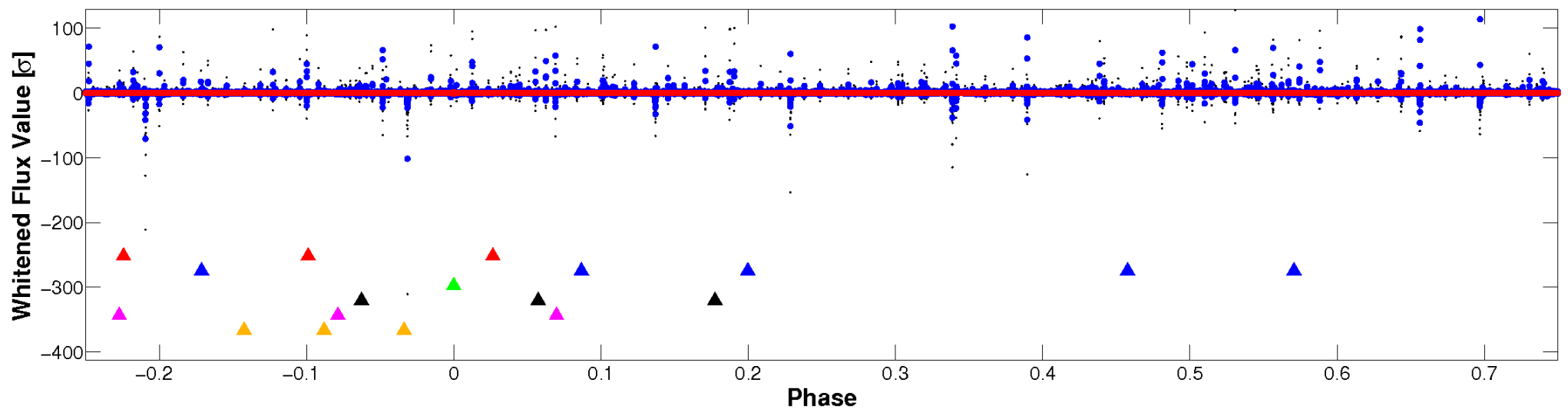


Non-Whitened Vs. Whitened Light Curve

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

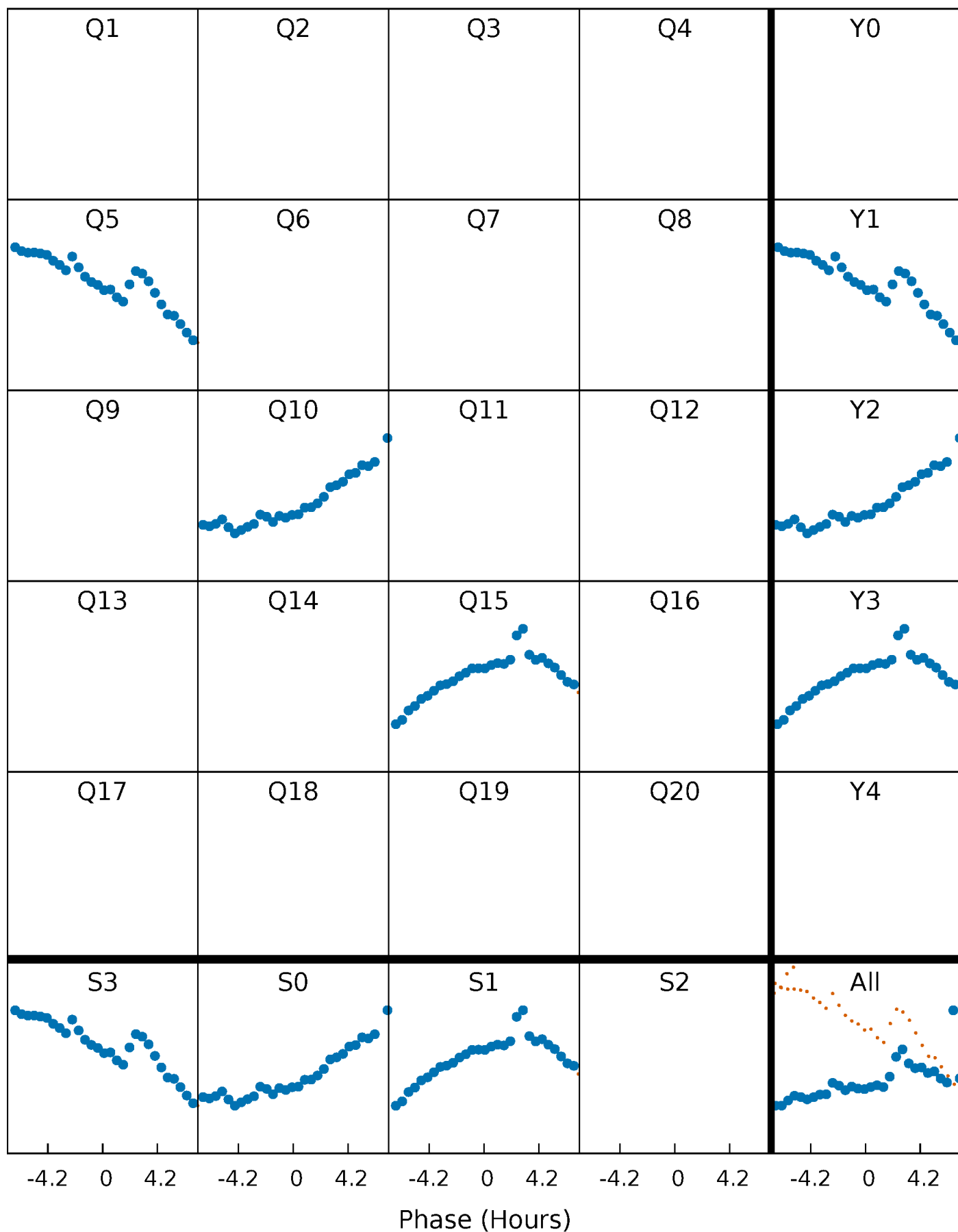


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



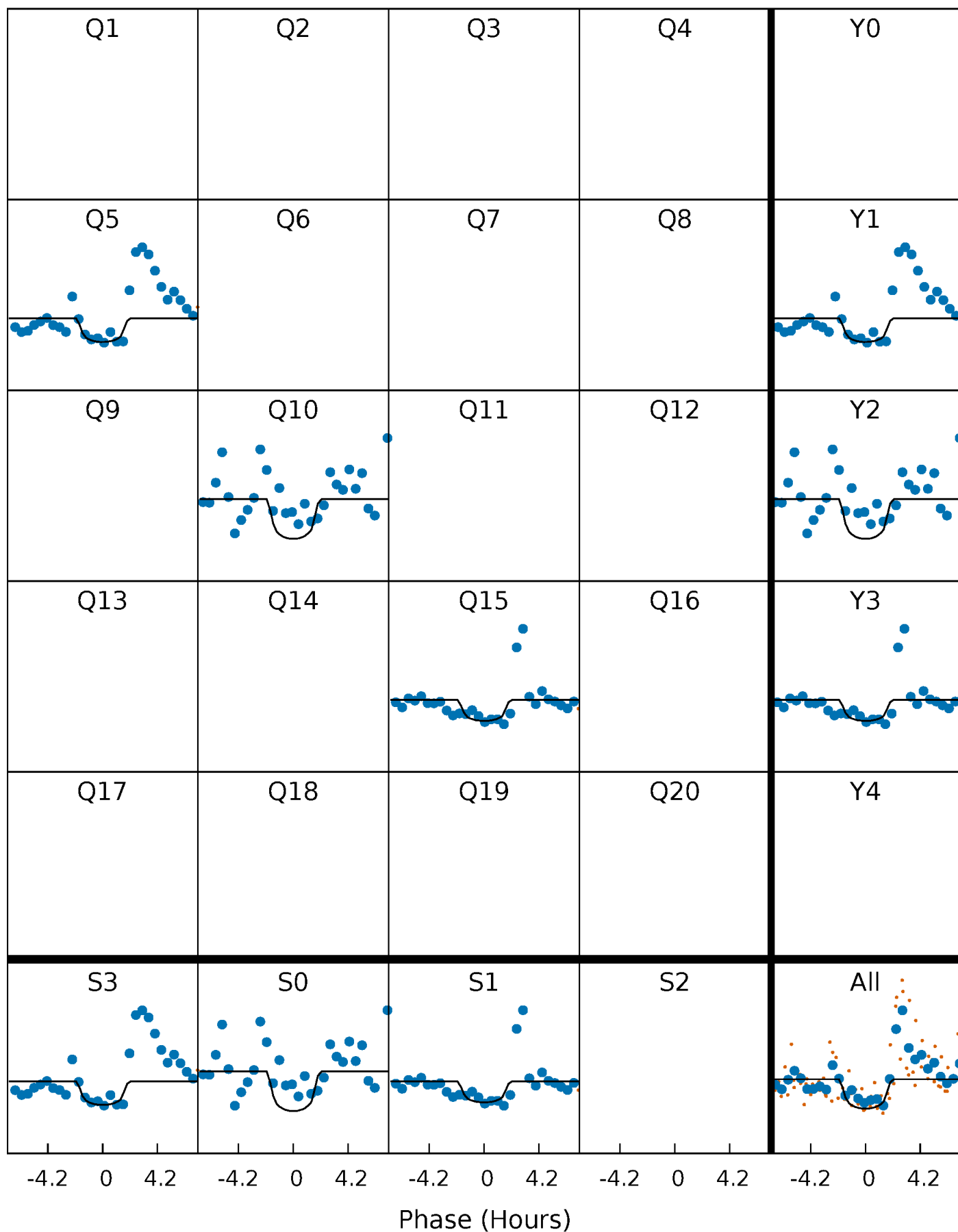
PDC Quarter-Phased Transit Curves

TCE 008487242-03 $P=482.490528$ Days $T_0=445.741249$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 008487242-03 $P=482.490528$ Days $T_0=445.741249$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

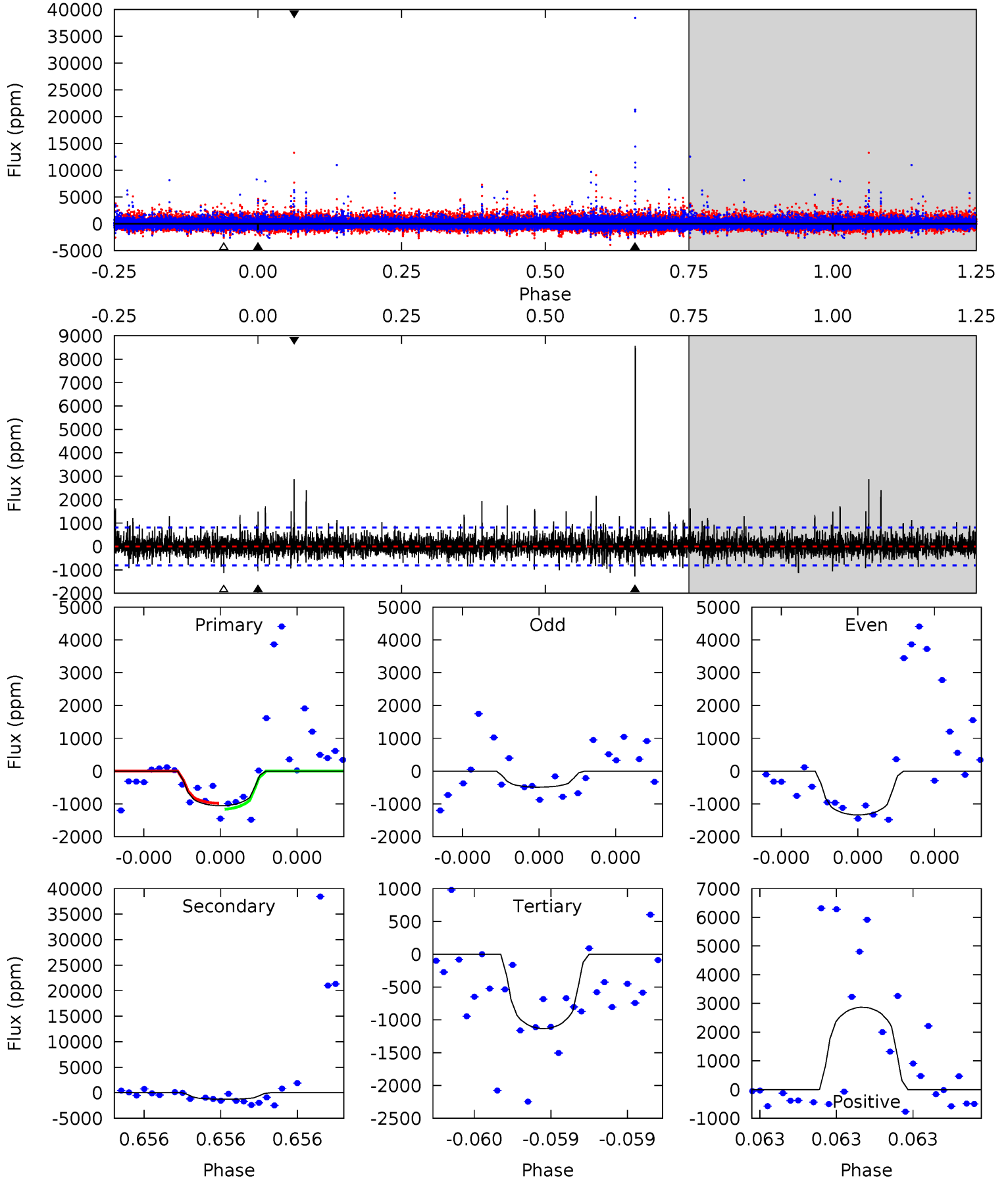
TCE 008487242-03 P=482.490841 Days $T_0=445.747876$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-03, P = 482.490528 Days, E = 445.741249 Days

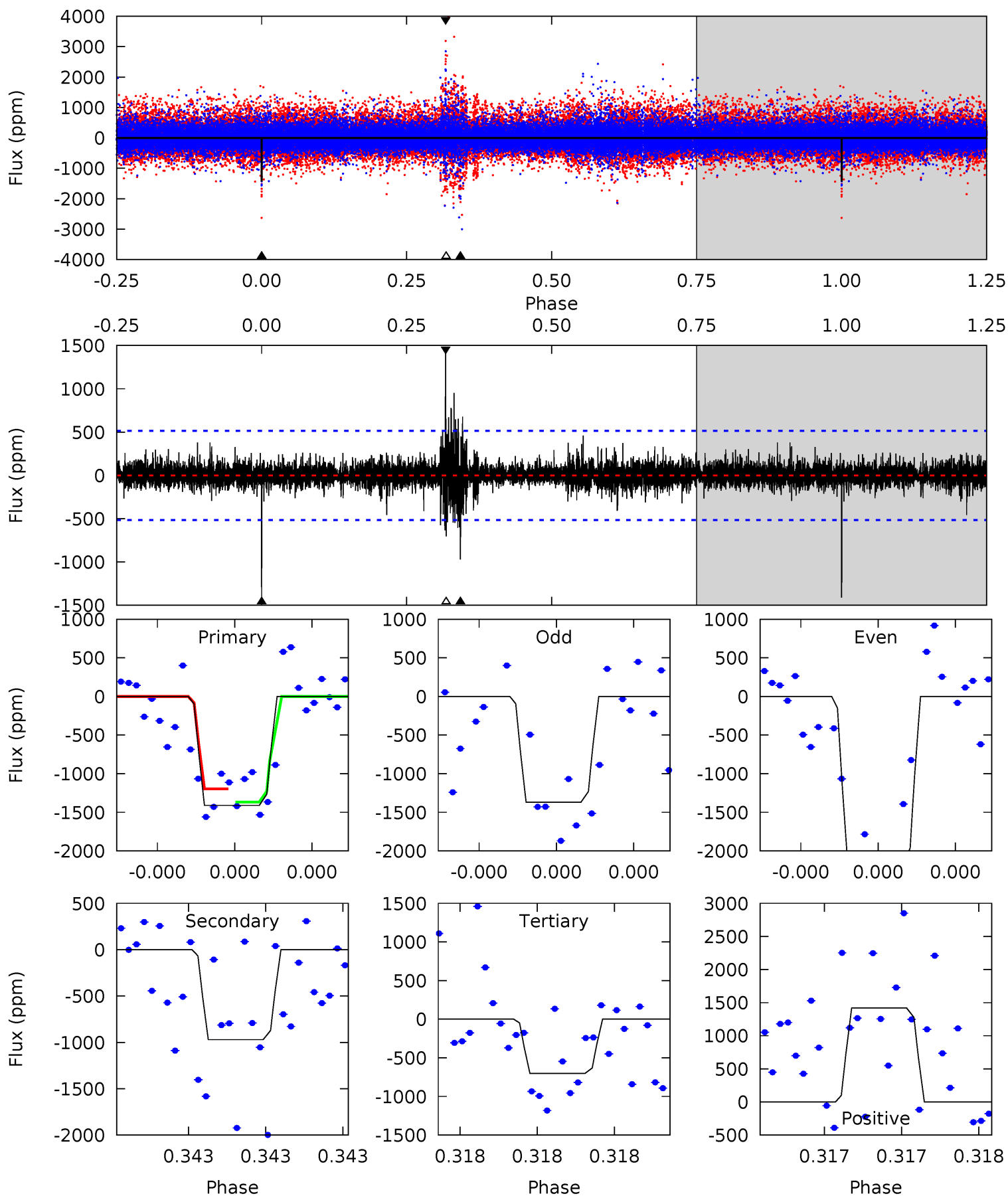
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.42	8.95	7.95	20.1	5.65	3.60	2.13	-0.53	-12.7	1.00	-11.2	0.95	0.81	0.87	0.67



Alt Model-Shift Uniqueness Test

008487242-03, P = 482.490841 Days, E = 445.747876 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	10.6	7.70	15.6	5.65	3.60	1.06	7.76	-0.11	2.93	-4.93	3.70	1.41	0.50	0



Stellar Parameters For KIC 008487242

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1276 ± 143	$5.21^{+4.72}_{-3.69}$	225^{+7}_{-8}	3552^{+2072}_{-637}	$27013^{+274736}_{-19849}$
Alt.	-970 ± 91	$5.69^{+5.01}_{-3.86}$	224^{+8}_{-8}	3295^{+1689}_{-527}	$16354^{+146743}_{-11701}$

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

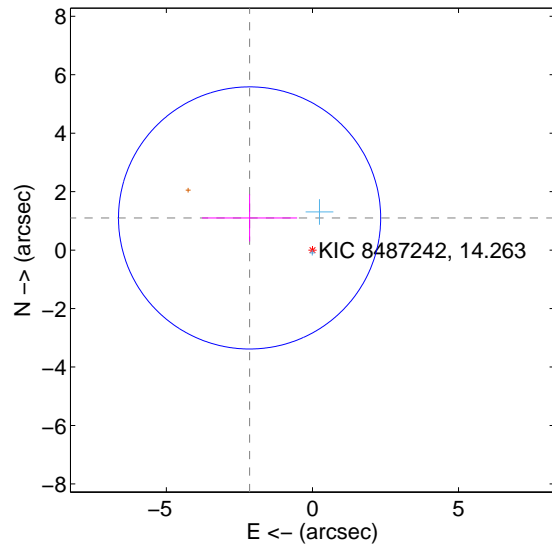
Supplemental centroid analysis for 008487242-03. Kepler magnitude: 14.26. Transit SNR 6.22

There are 2 quarters with good PRF difference image offsets

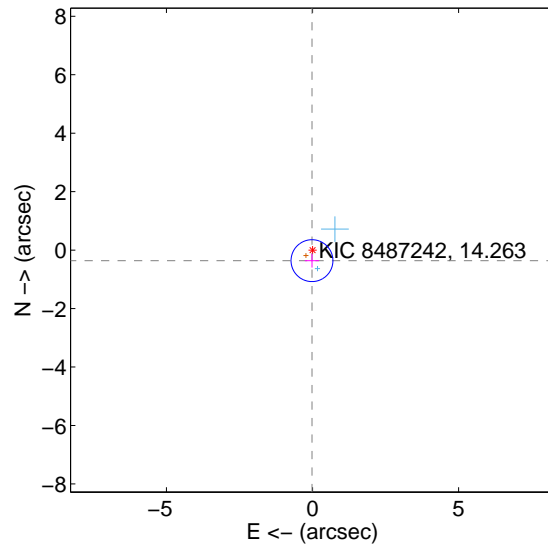
The OOT PRF centroid is offset from the target star catalog position by about 4.61 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.416 ± 1.495	1.62	2.150 ± 1.628	1.101 ± 0.806
PRF-fit source offset from KIC position	0.362 ± 0.239	1.51	0.018 ± 0.245	-0.361 ± 0.235
photometric centroid source offset	2.22 ± 1.02	2.17	-1.73 ± 1.18	-1.38 ± 0.72

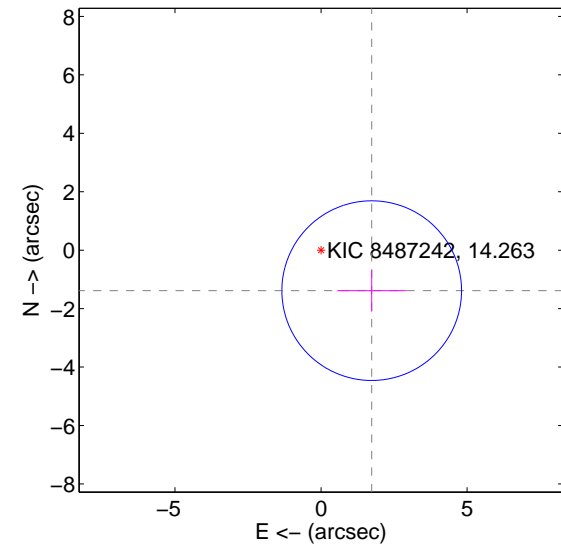
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

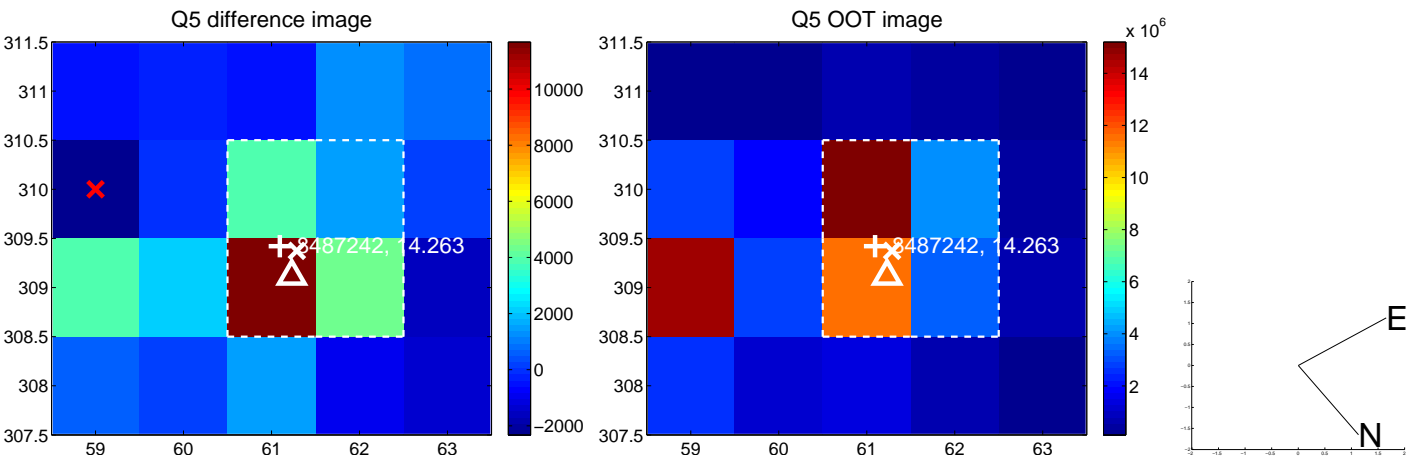


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

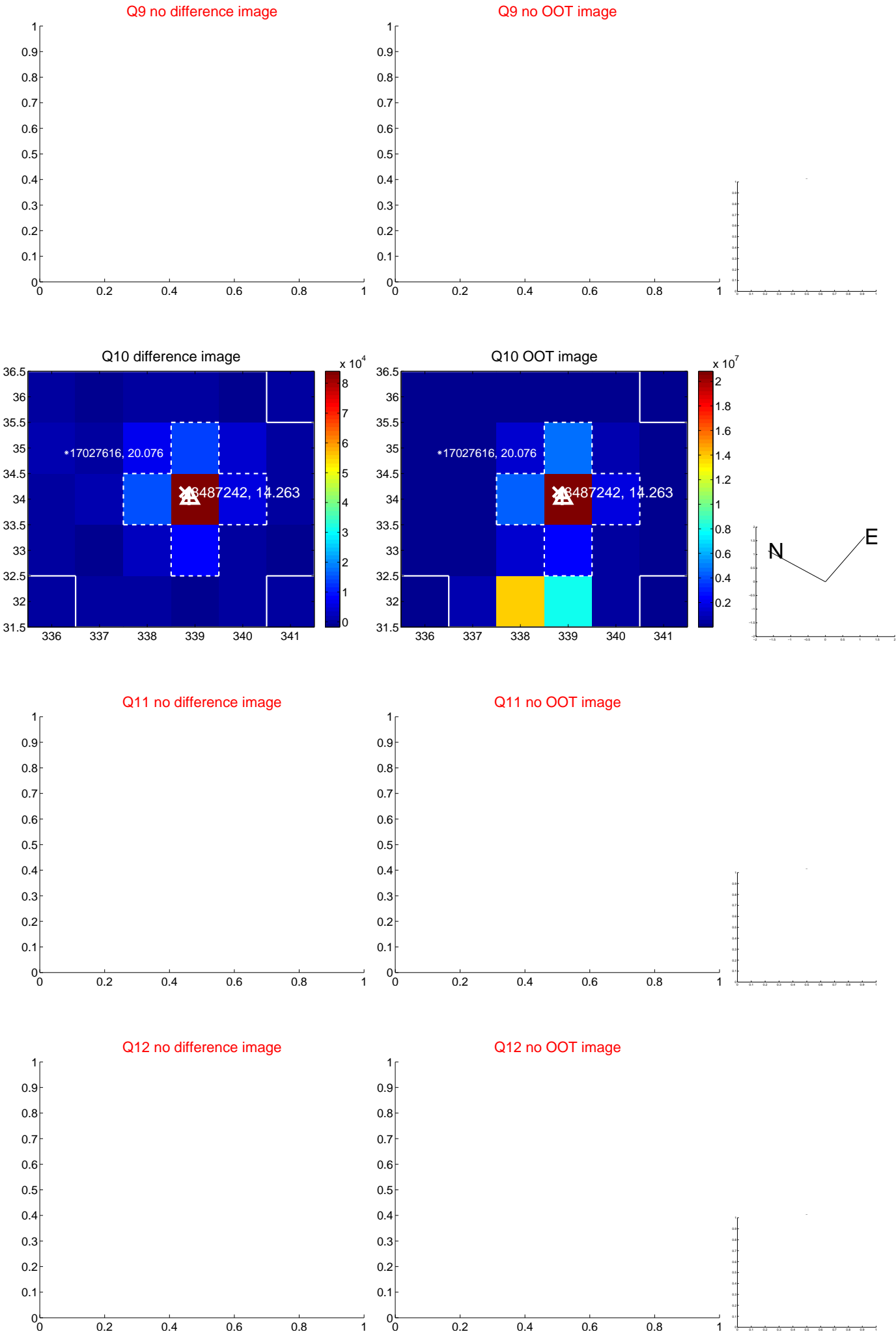
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



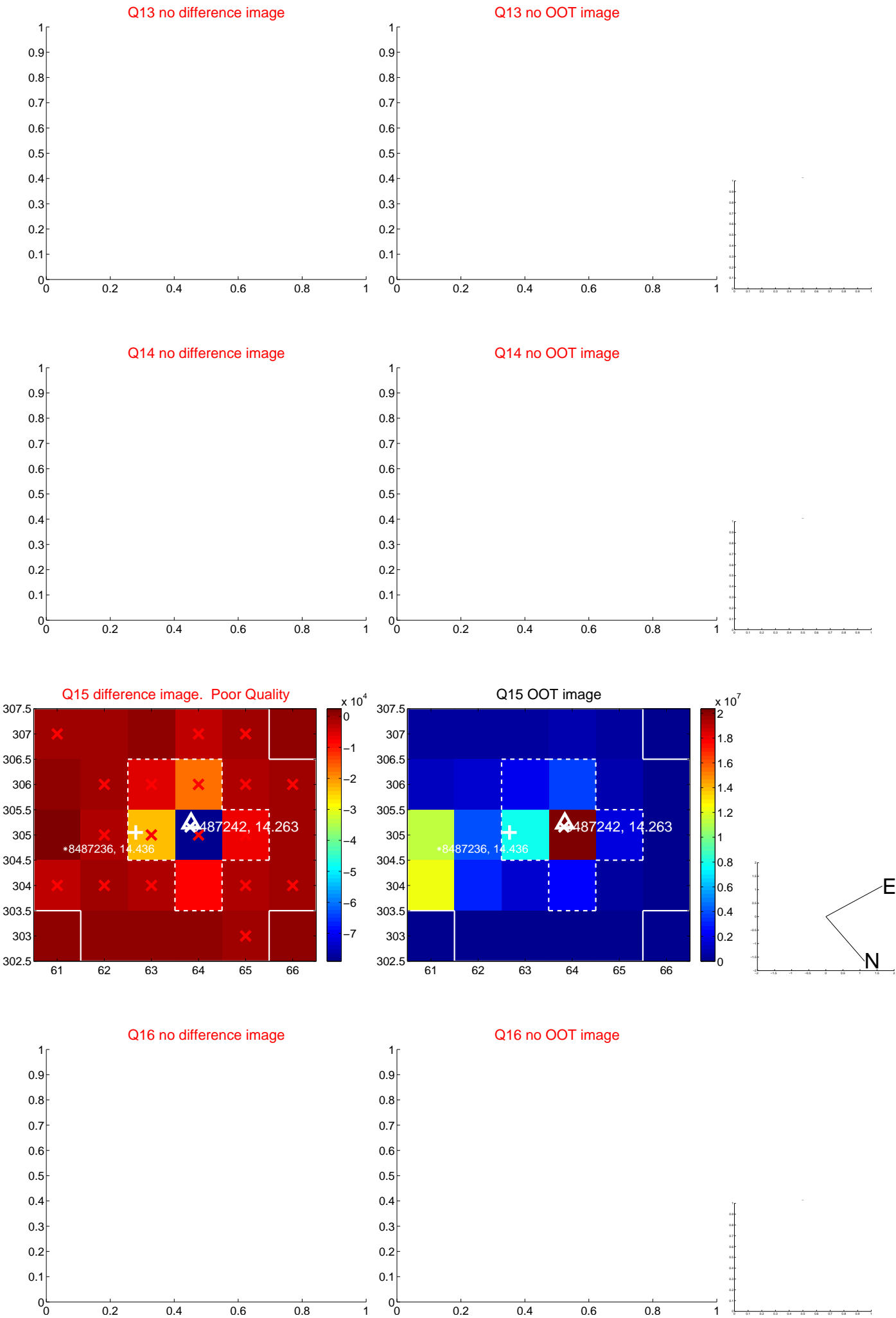
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



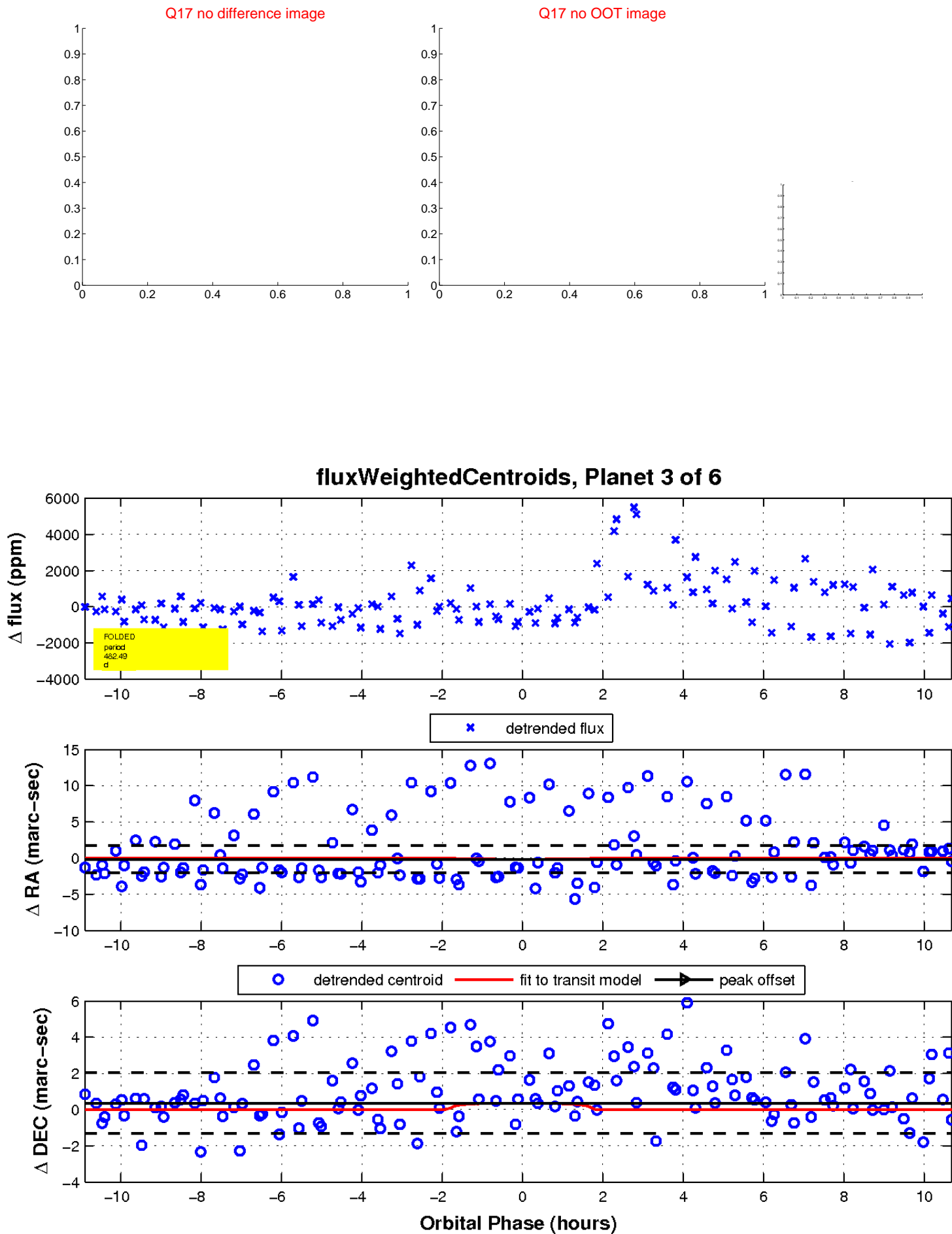
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

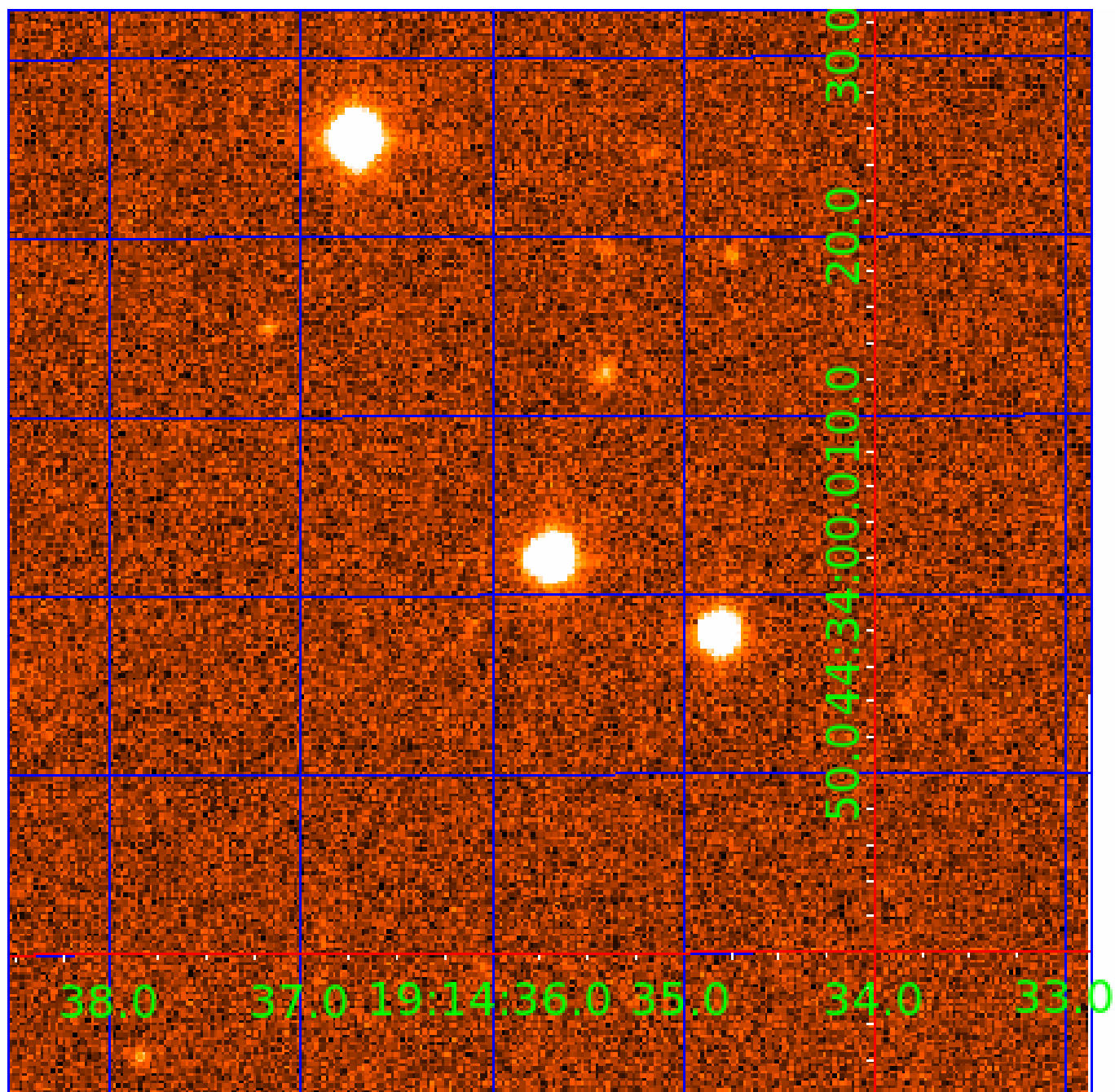


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008487242

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})
008487242-01	OBS	No	421.972214	458.565631	1198.3	4.273	14.6	5.3	0.57	4843	1.94	0.19
008487242-02	OBS	No	303.479898	238.637581	1146.2	14.660	15.8	4.5	0.57	4843	1.97	0.30
008487242-03	OBS	No	482.490528	445.741249	1391.2	3.650	14.3	6.2	0.57	4843	2.16	0.16
008487242-04	OBS	No	540.407827	415.517374	1779.8	8.389	12.2	6.3	0.57	4843	2.36	0.14
008487242-05	OBS	No	410.830393	479.438419	3322.0	6.172	11.1	13.0	0.57	4843	4.00	0.20
008487242-06	OBS	No	456.274584	429.479977	840.6	3.500	10.9	-1.0	0.57	4843	1.62	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487242-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

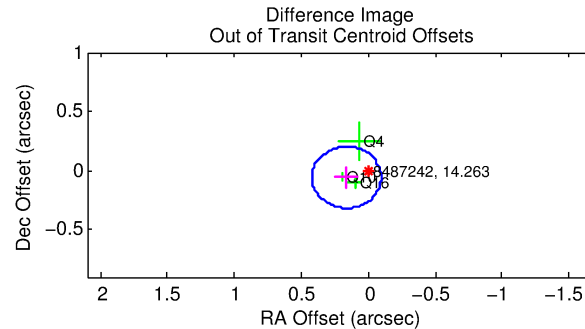
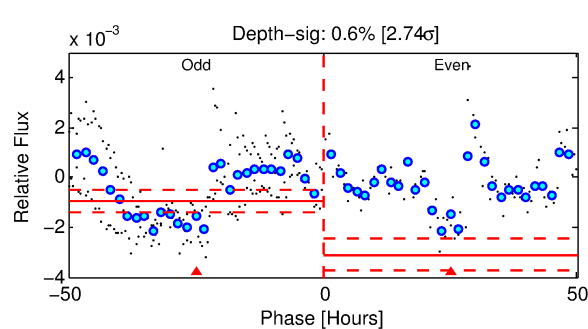
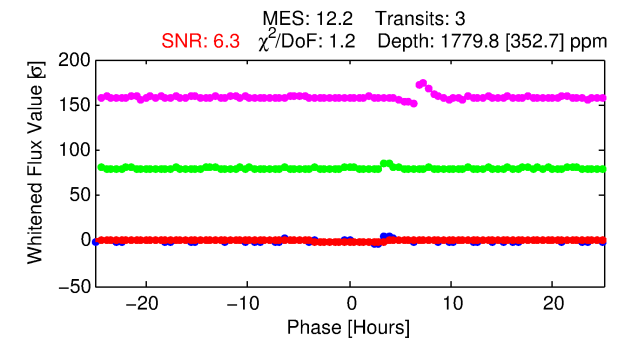
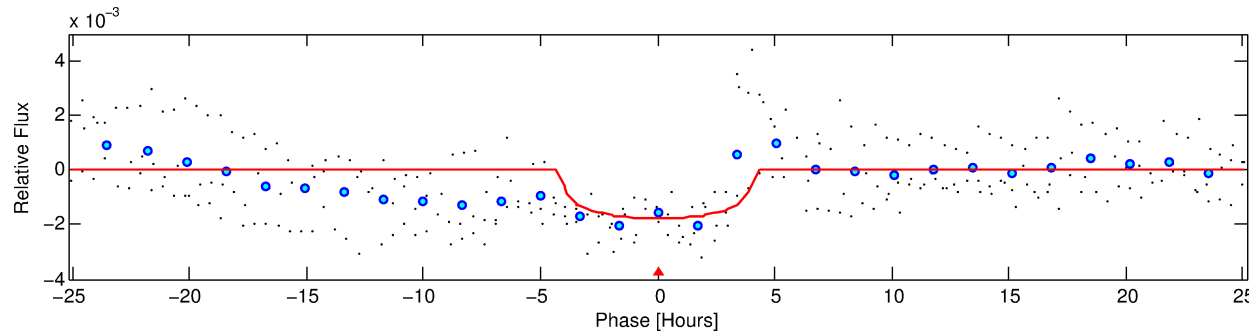
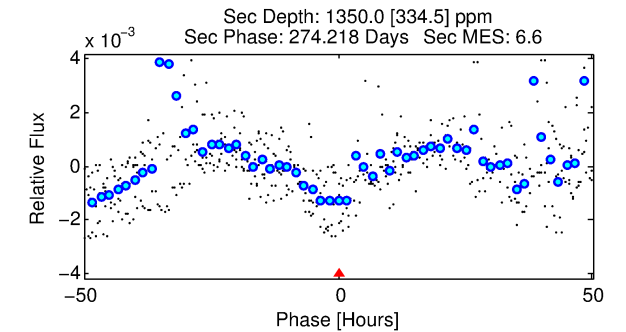
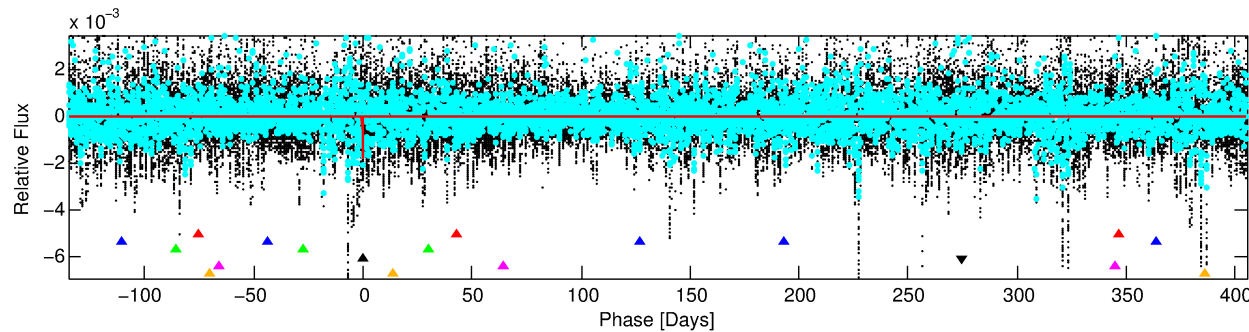
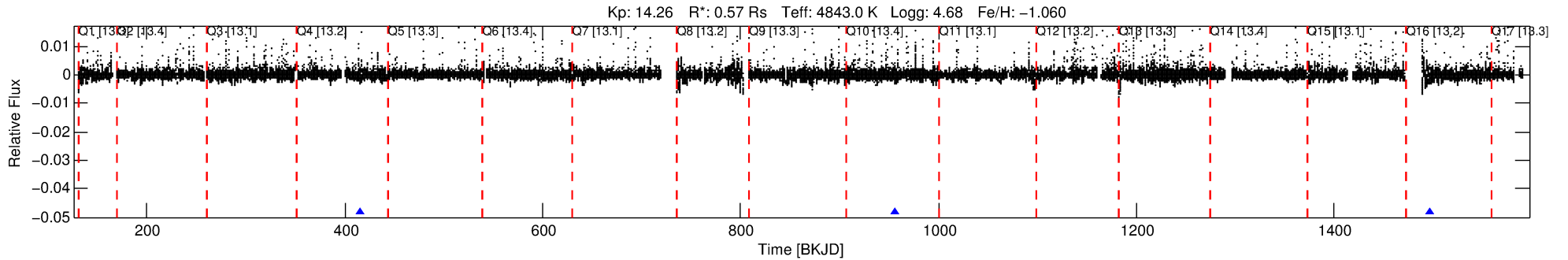
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-04

No Significant Match Found

DV One-Page Summary

KIC: 8487242 Candidate: 4 of 6 Period: 540.408 d



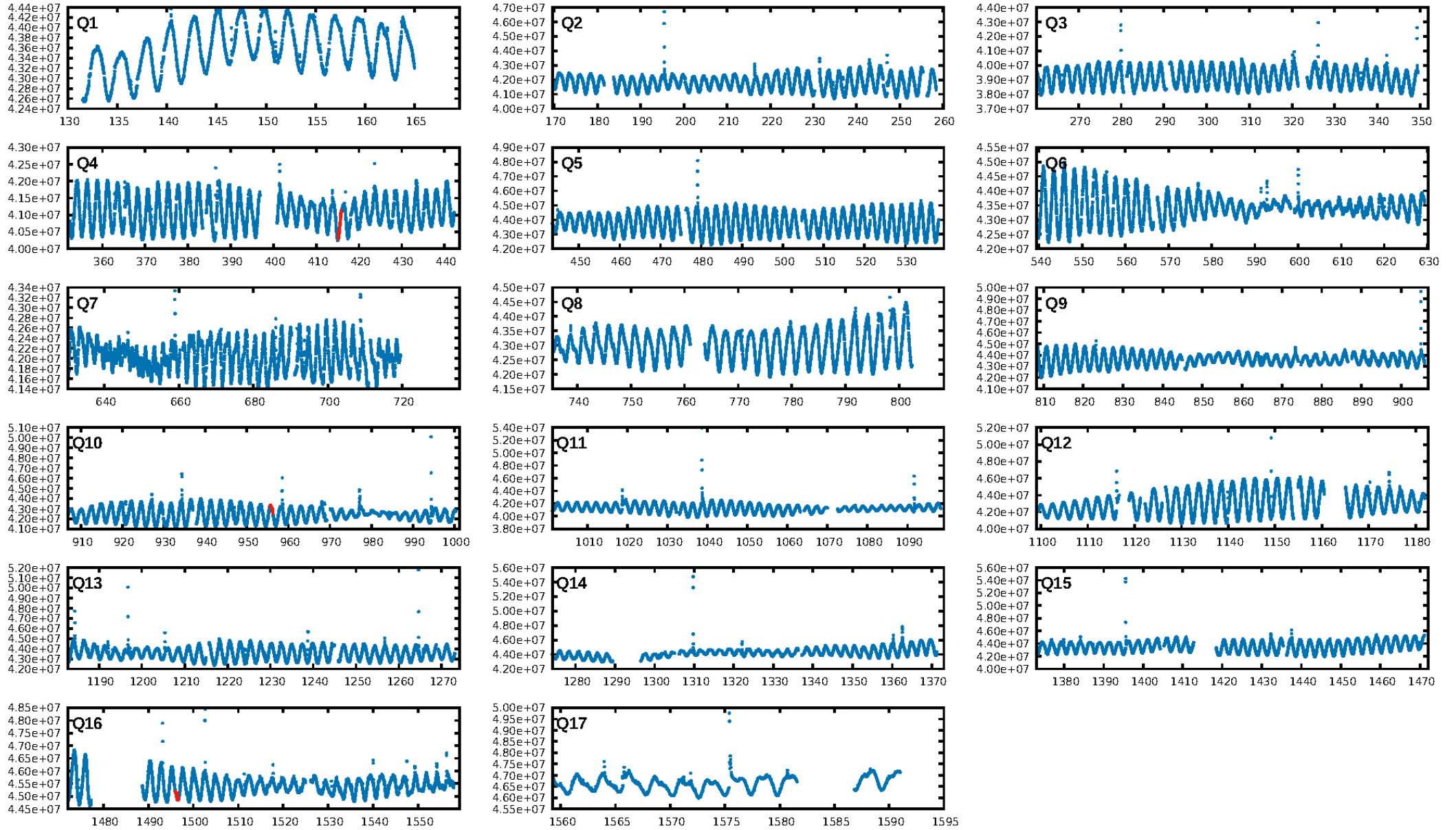
DV Fit Results:

Period = 540.40783 [0.00463] d
Epoch = 415.5174 [0.0066] BKJD
Rp/R* = 0.0378 [0.0353]
a/R* = 509.40 [1790.50]
b = 0.08 [46.46]
Seff = 0.14 [0.02]
Teq = 156 [6] K
Rp = 2.36 [2.21] Re
a = 1.0771 [0.0654] AU
Ag = 155156.97 [292754.47] [0.53σ]
Teffp = 4773 [2254] K [2.05σ]

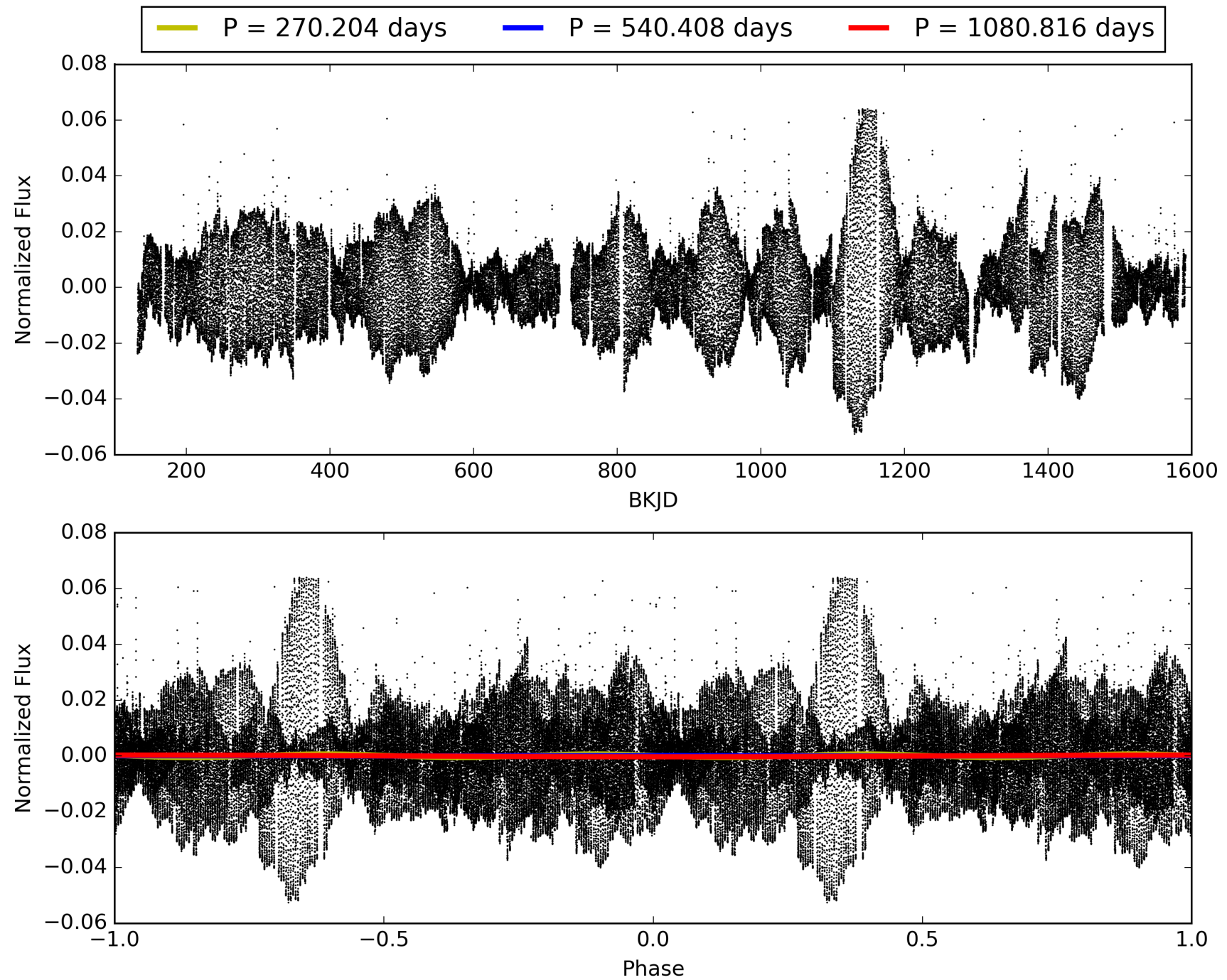
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [151.94σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.7%
ModelChiSquareGof-sig: 71.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.612
Centroid-sig: 0.0%
Centroid-so: 1.151 arcsec [0.85σ]
OotOffset-rm: 0.174 arcsec [2.01σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.614 arcsec [5.34σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008487242-04, PDC Light Curves

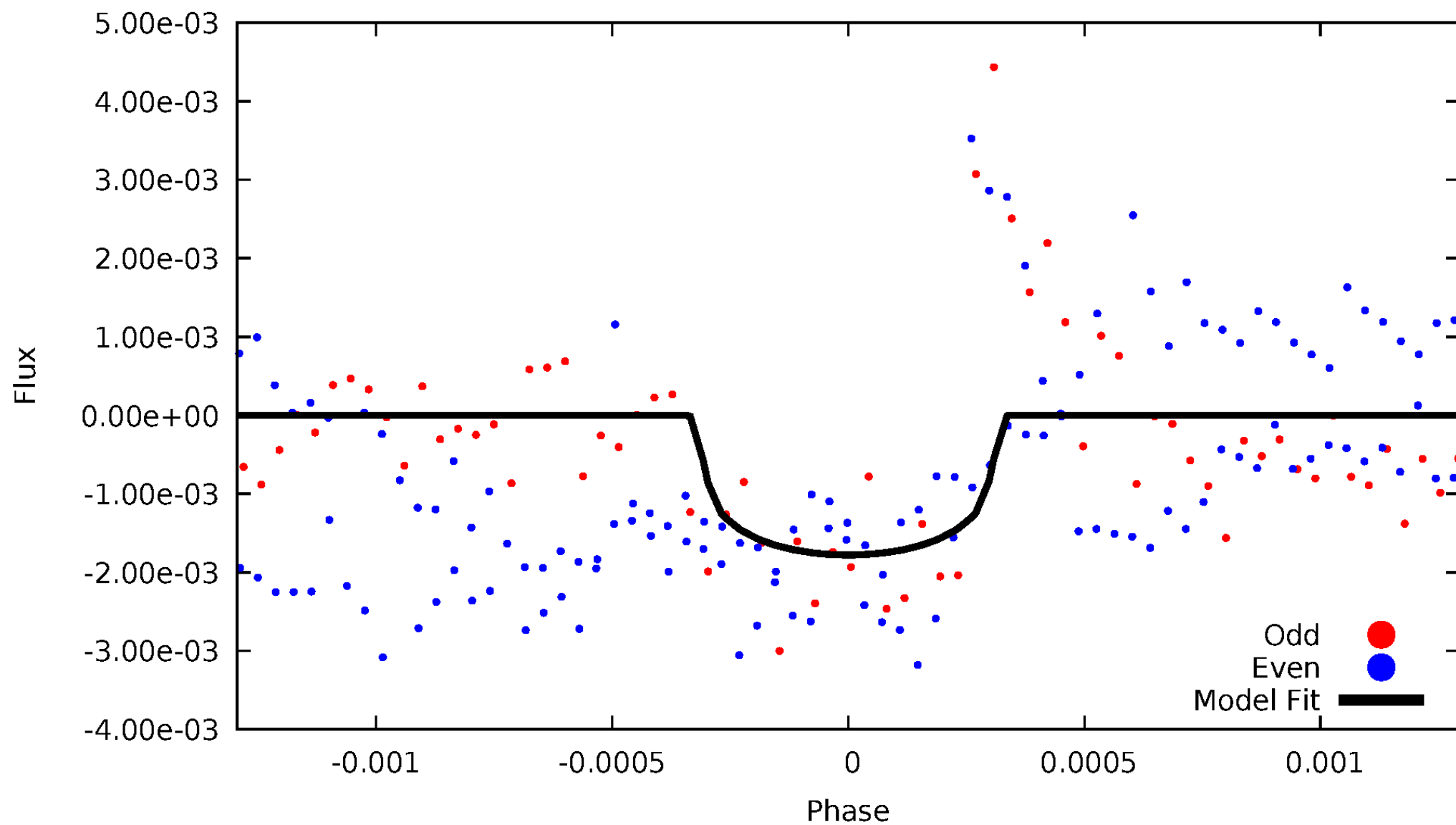


TCE 008487242-04



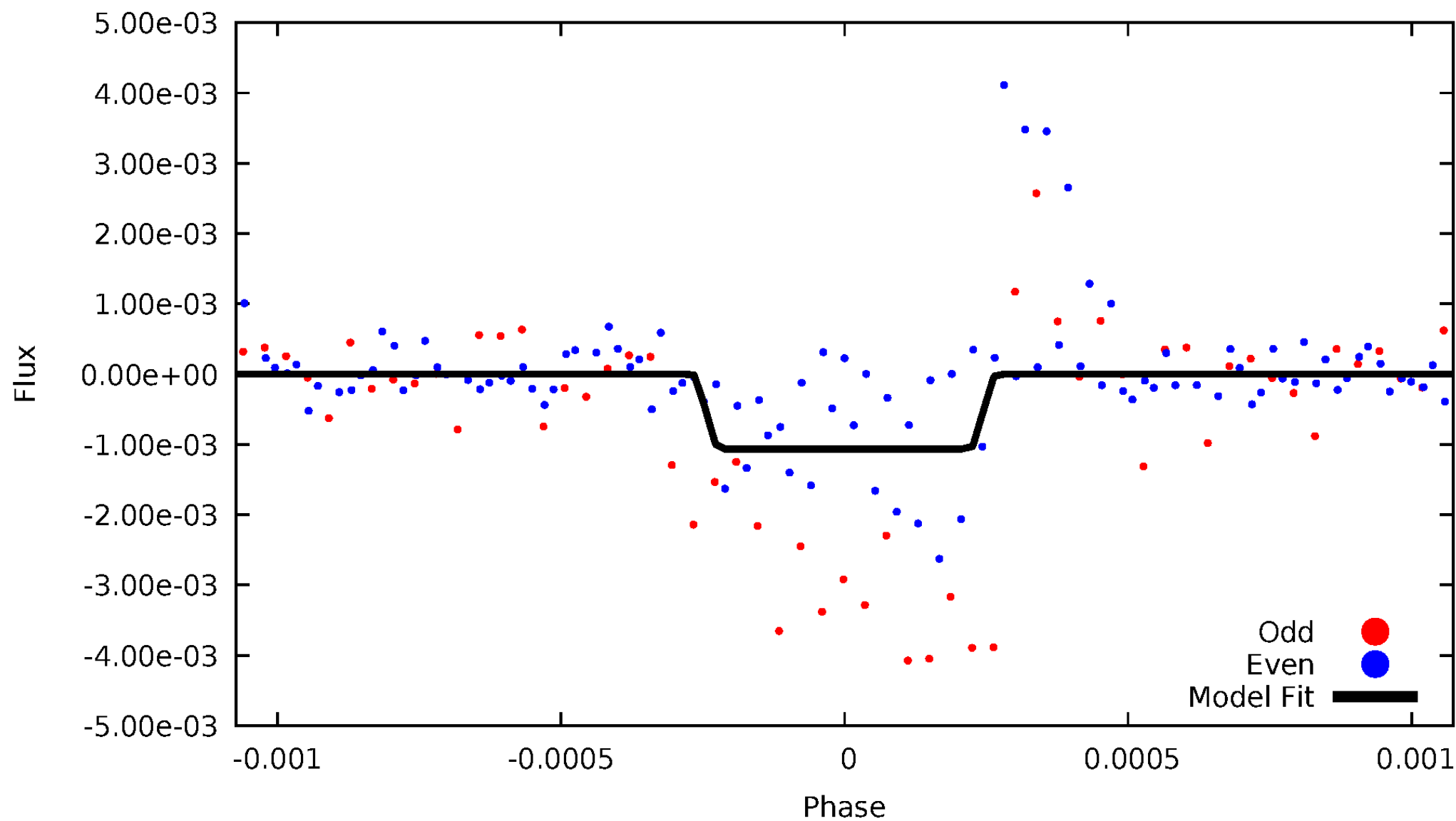
DV Odd/Even

TCE 008487242-04



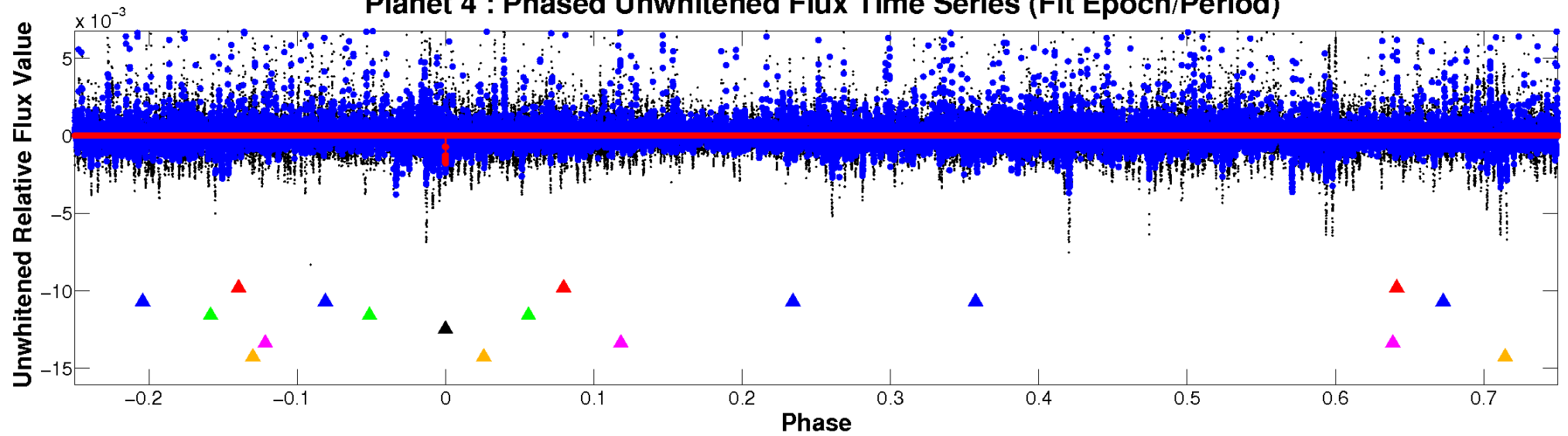
ALT Odd/Even

TCE 008487242-04

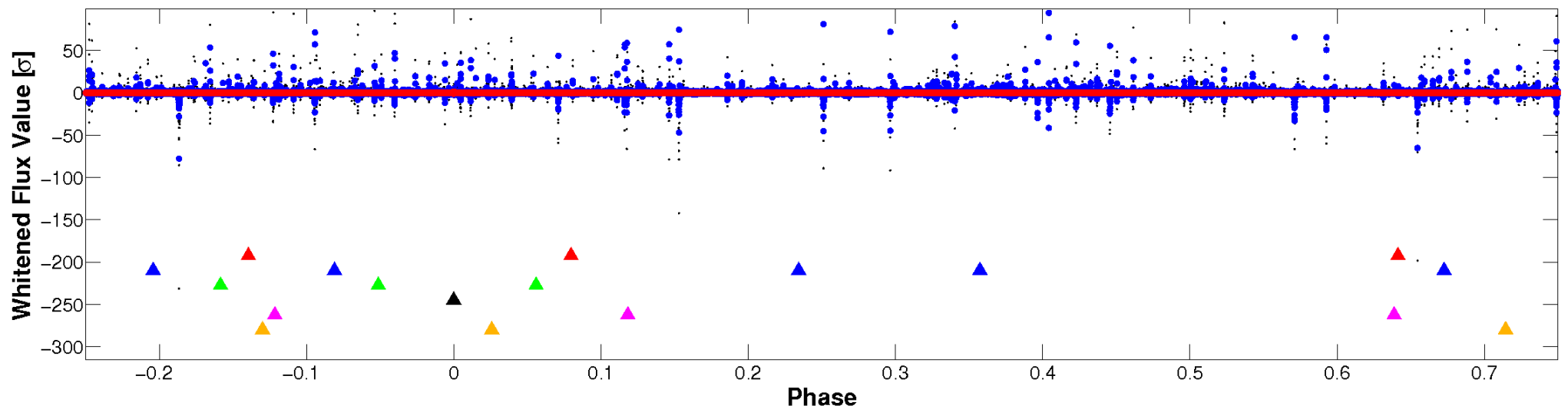


Non-Whitened Vs. Whitened Light Curve

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

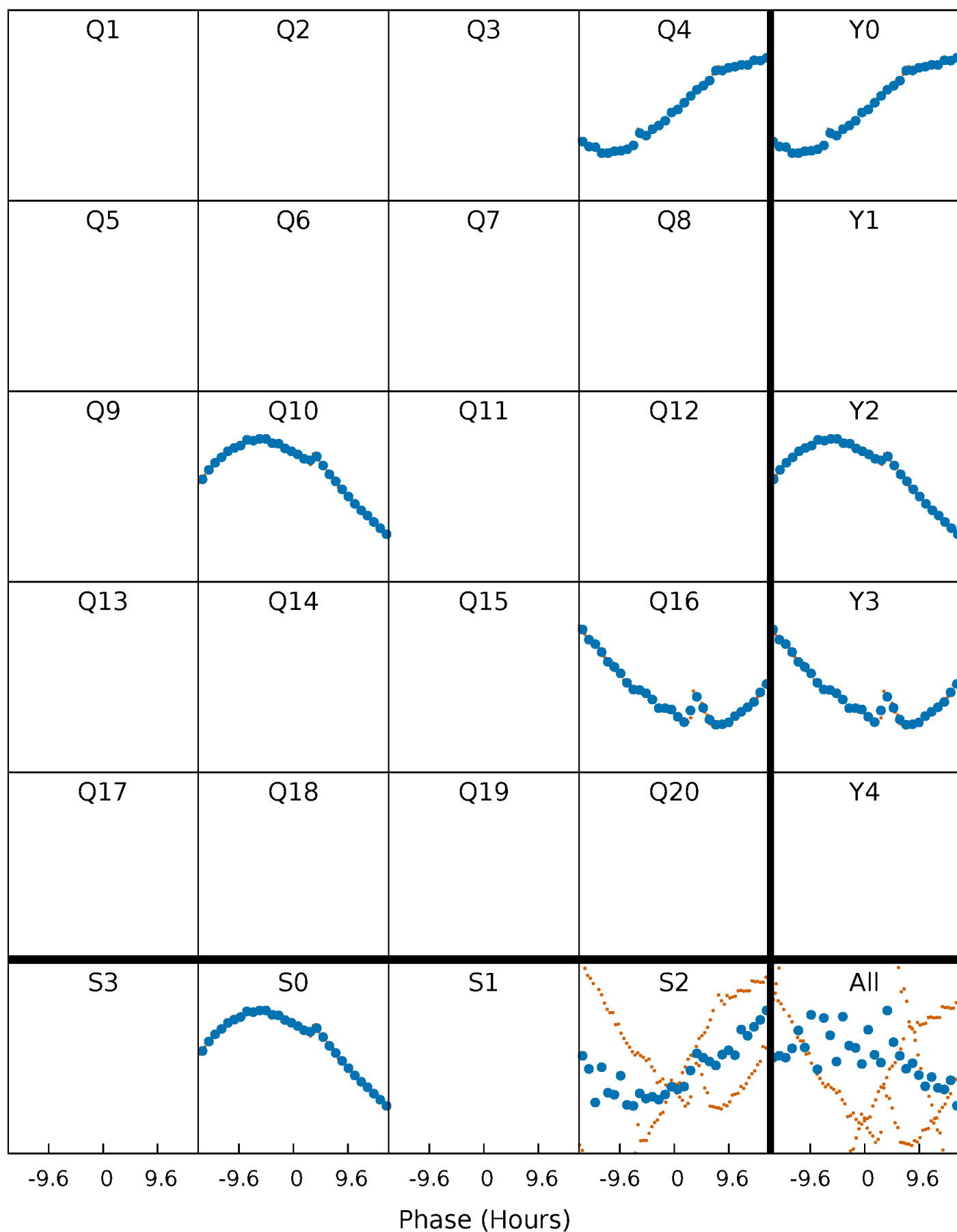


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



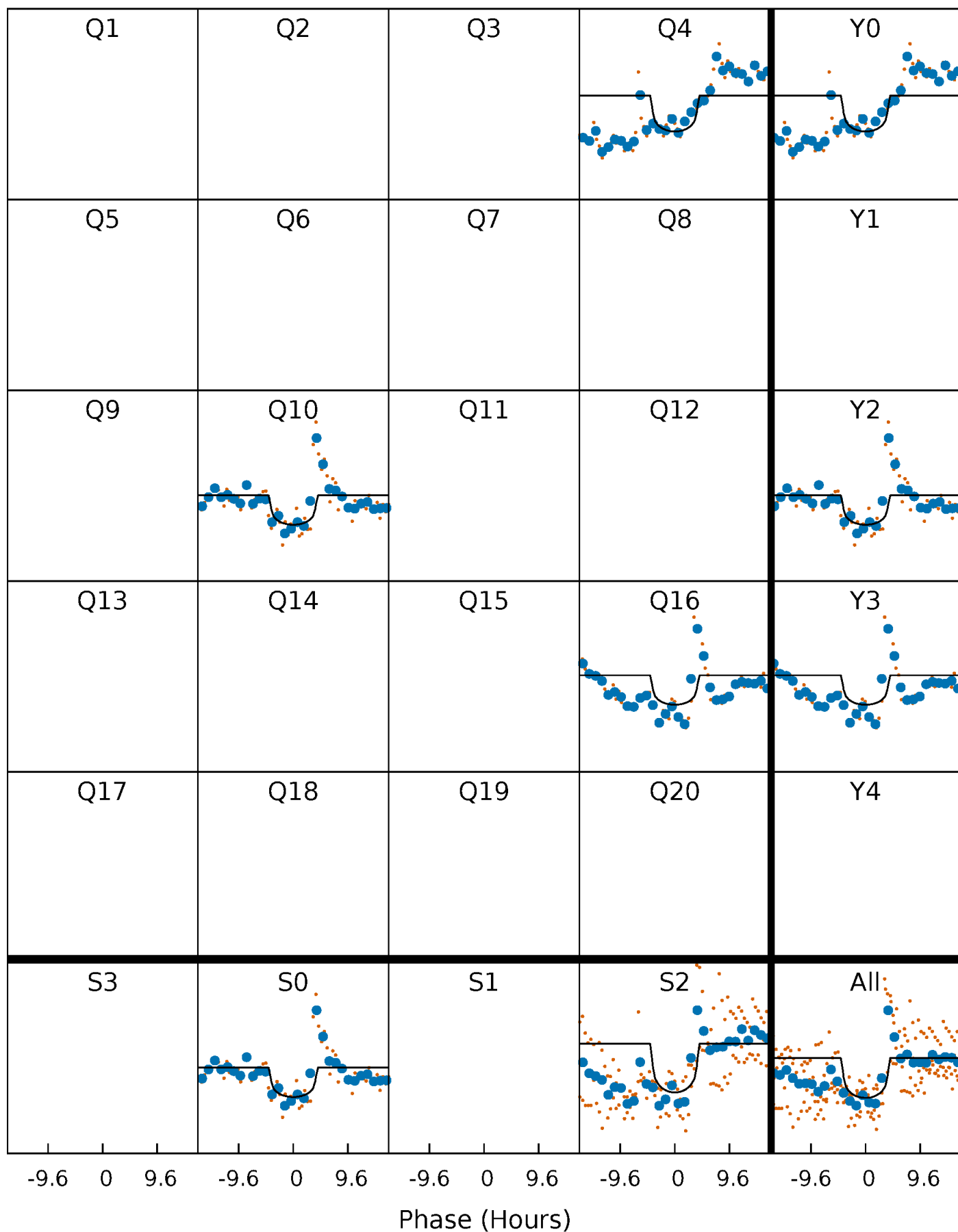
PDC Quarter-Phased Transit Curves

TCE 008487242-04 P=540.407827 Days $T_0=415.517374$ (BKJD)



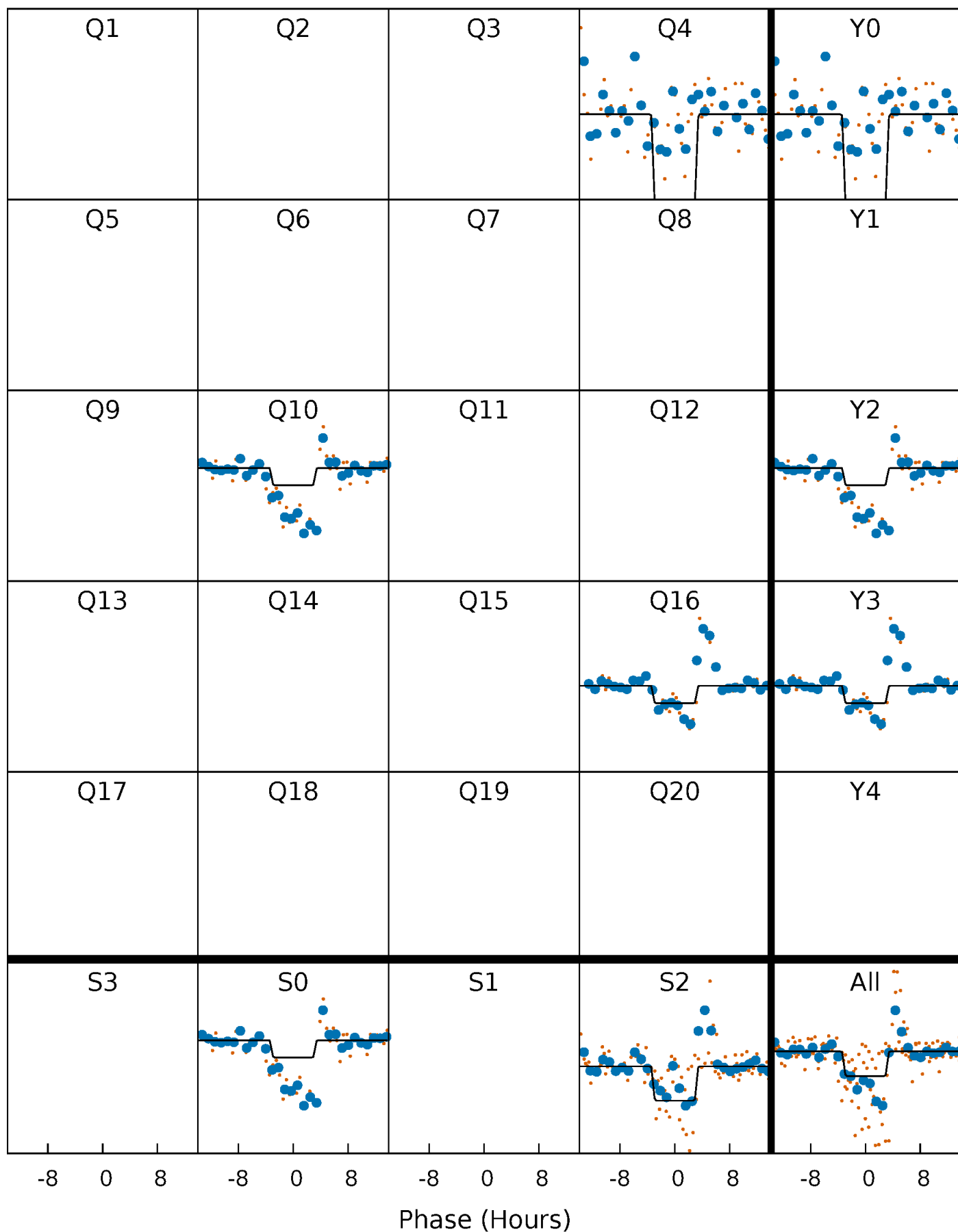
DV Quarter-Phased Transit Curves

TCE 008487242-04 $P=540.407827$ Days $T_0=415.517374$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

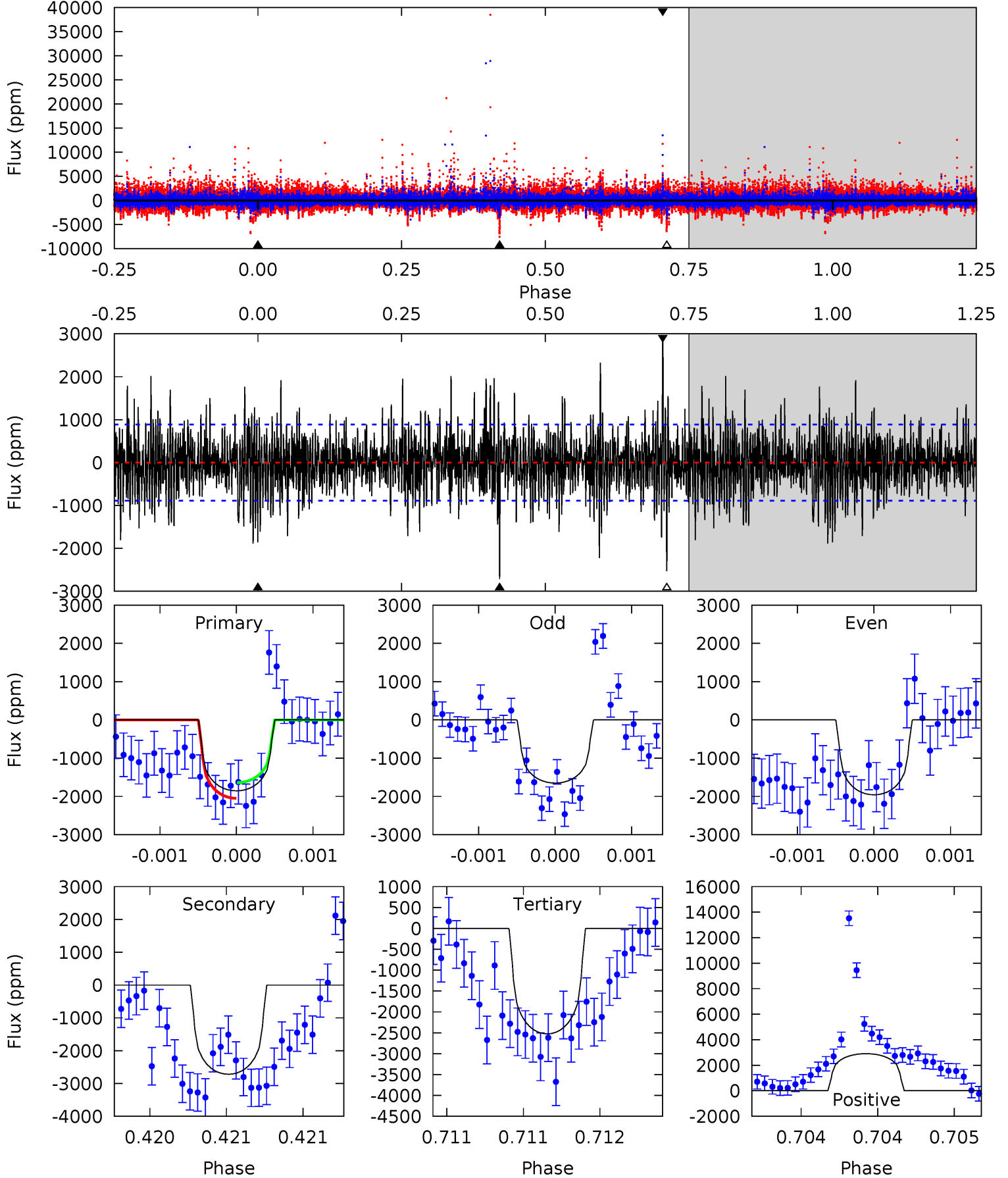
TCE 008487242-04 $P=540.413172$ Days $T_0=415.495673$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-04, P = 540.407827 Days, E = 415.517374 Days

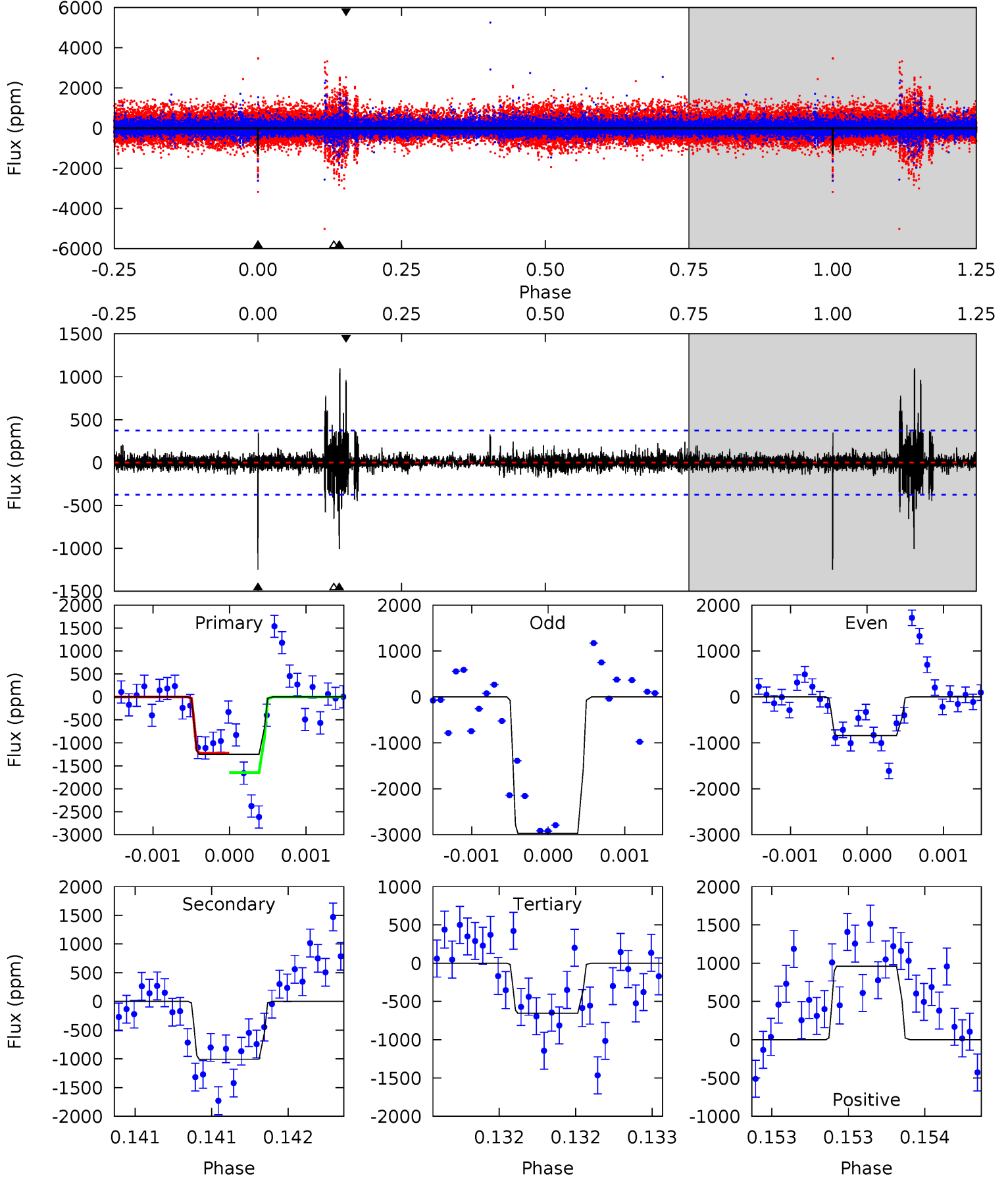
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	16.9	15.7	18.1	5.52	3.40	3.39	-4.18	-6.56	1.20	-1.18	0.41	1.07	0.52	1.28



Alt Model-Shift Uniqueness Test

008487242-04, P = 540.413172 Days, E = 415.495673 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.5	14.9	9.74	14.3	5.56	3.46	1.14	8.79	4.26	5.20	0.67	13.6	1.01	0.47	2.99



Stellar Parameters For KIC 008487242

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-2718 ± 161	$2.78^{+2.01}_{-1.63}$	216^{+7}_{-8}	5149^{+3109}_{-1023}	$226890^{+1072354}_{-150319}$
Alt.	-1006 ± 67	$2.60^{+1.97}_{-1.58}$	216^{+7}_{-8}	4307^{+2261}_{-756}	$99483^{+531980}_{-68233}$

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

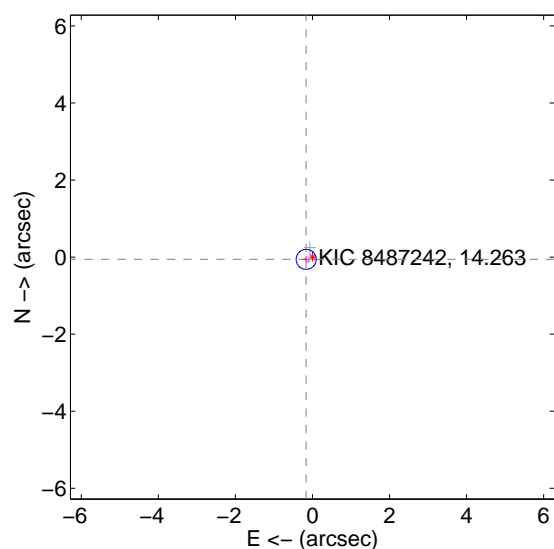
Supplemental centroid analysis for 008487242-04. Kepler magnitude: 14.26. Transit SNR 6.31

There are 2 quarters with good PRF difference image offsets

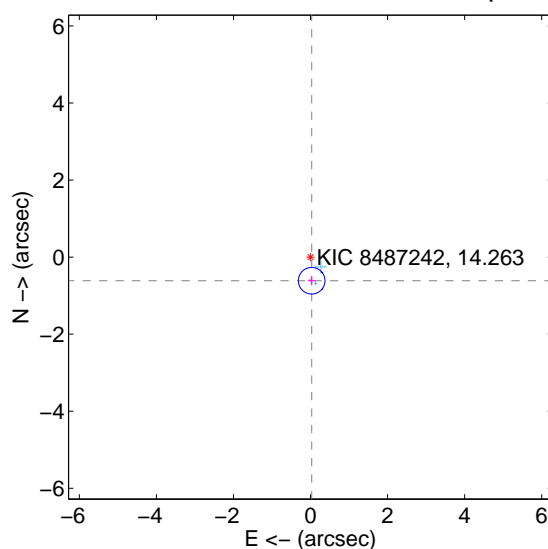
The direct PRF centroid is offset from the target star catalog position by about 0.62 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.174 ± 0.086	2.01	0.164 ± 0.086	-0.058 ± 0.088
PRF-fit source offset from KIC position	0.614 ± 0.115	5.34	-0.030 ± 0.097	-0.614 ± 0.118
photometric centroid source offset	1.15 ± 1.36	0.85	1.10 ± 1.41	0.34 ± 0.68

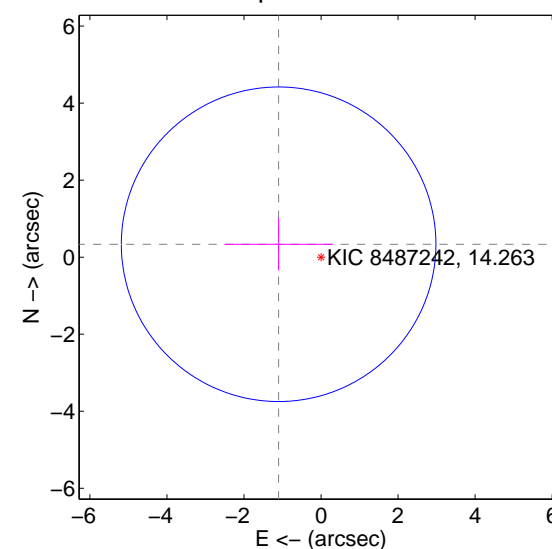
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

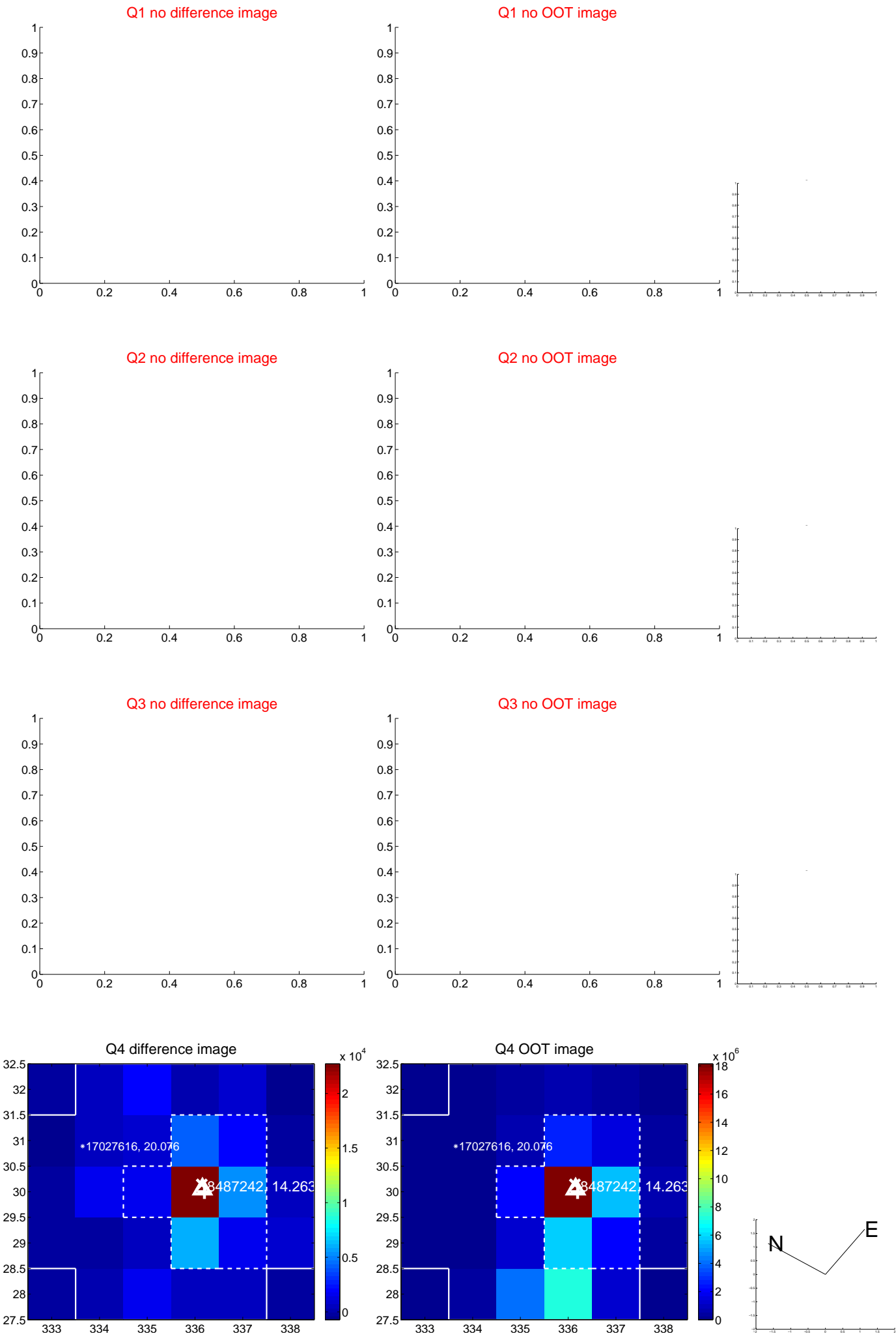


offset from photometric centroids



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.

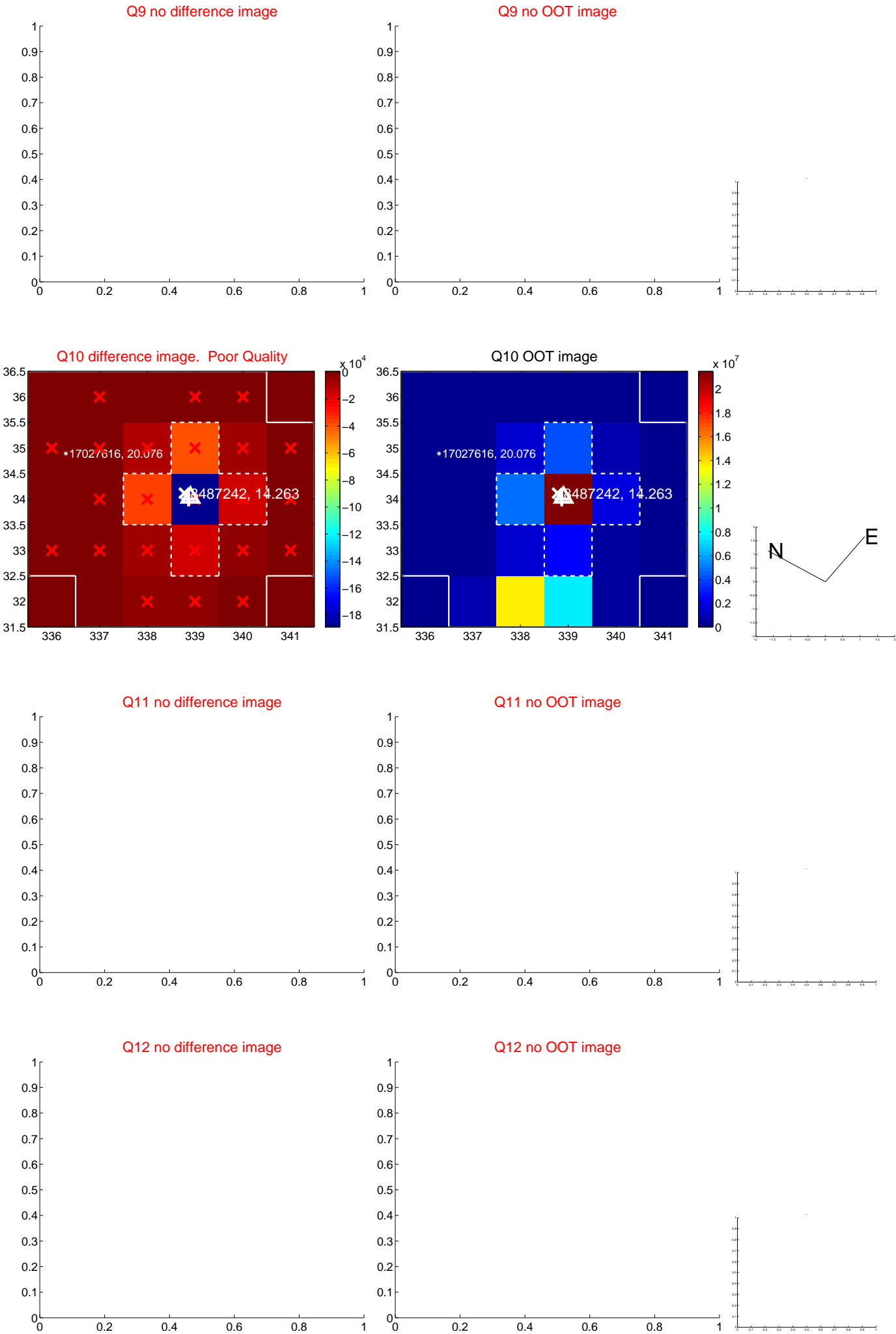
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



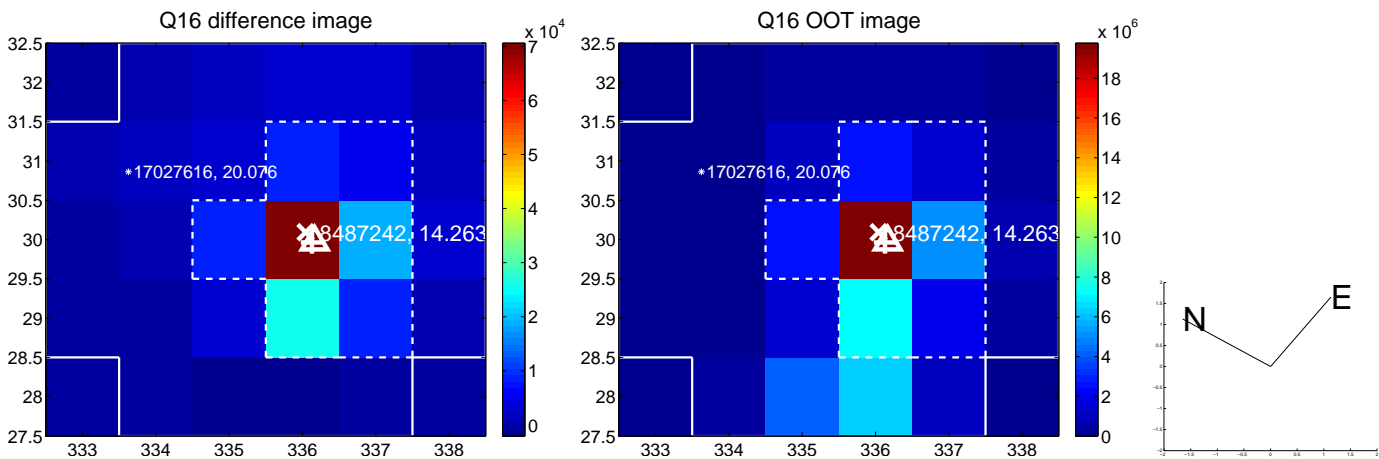
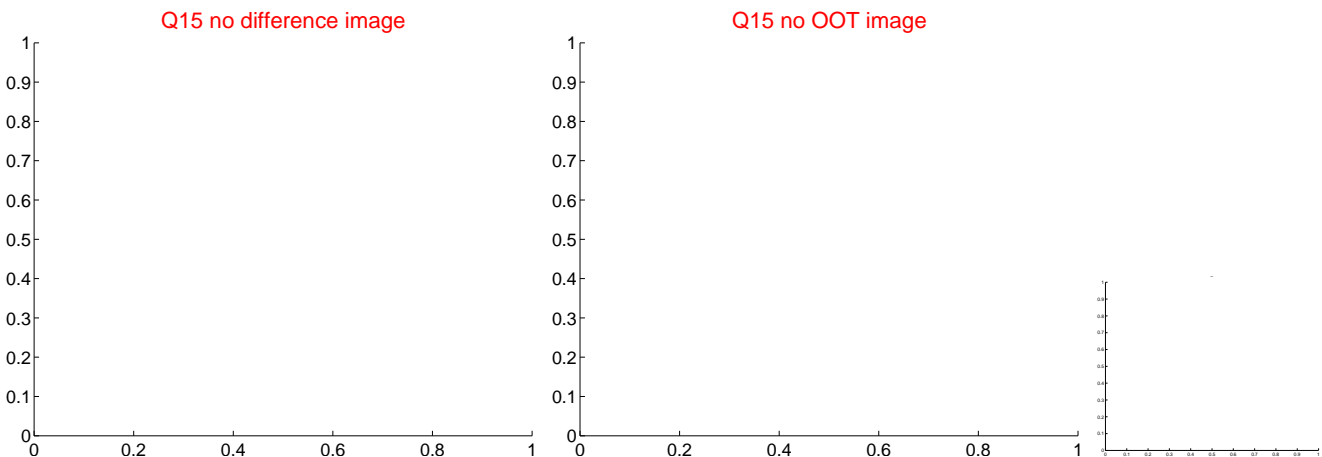
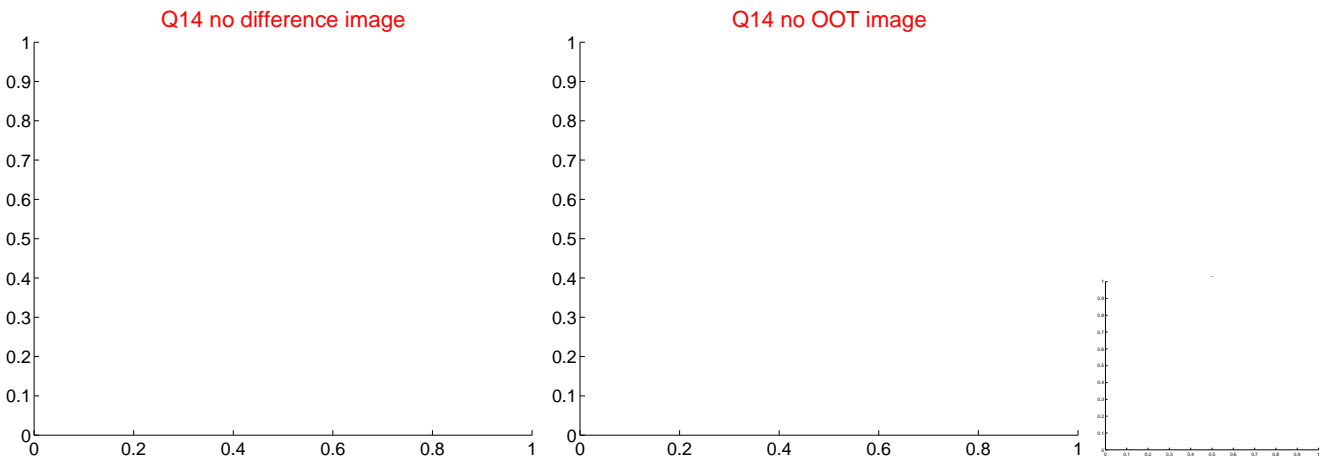
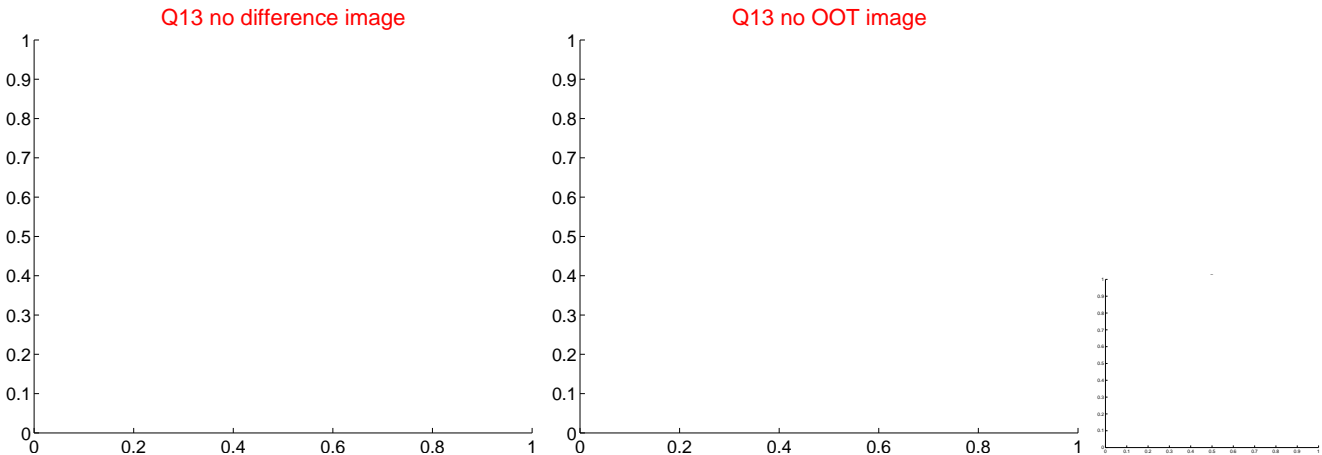
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



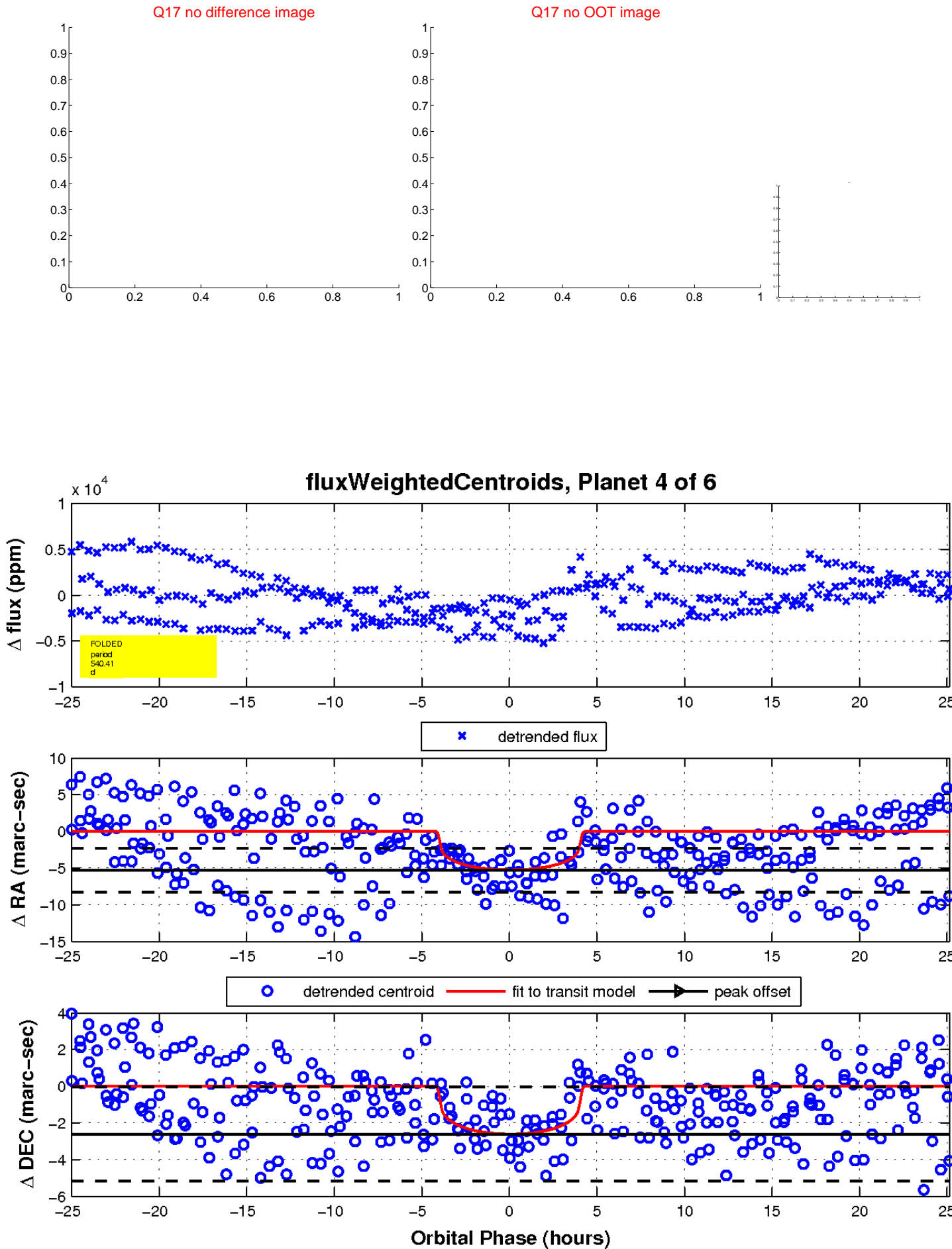
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

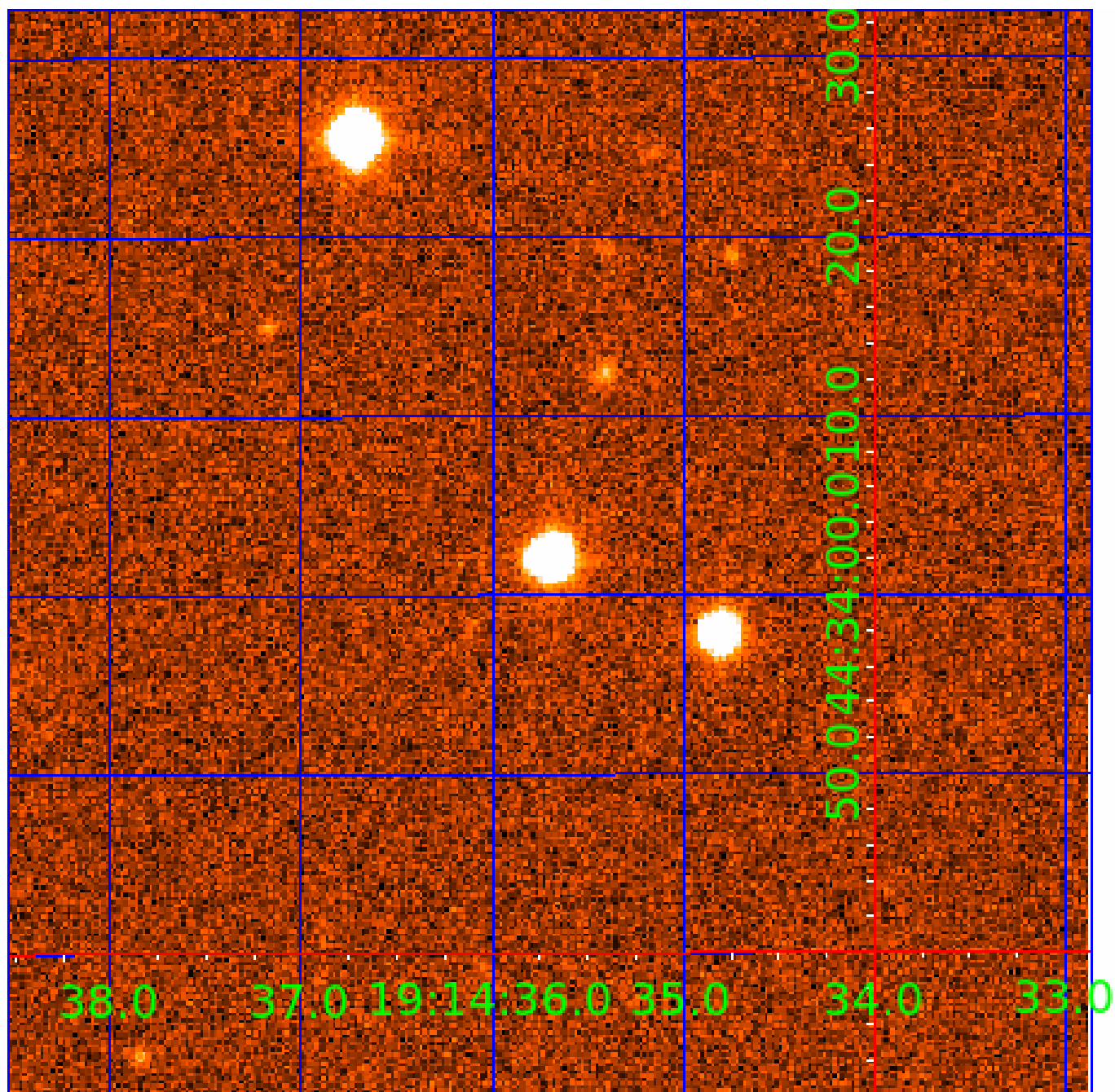


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008487242

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})
008487242-01	OBS	No	421.972214	458.565631	1198.3	4.273	14.6	5.3	0.57	4843	1.94	0.19
008487242-02	OBS	No	303.479898	238.637581	1146.2	14.660	15.8	4.5	0.57	4843	1.97	0.30
008487242-03	OBS	No	482.490528	445.741249	1391.2	3.650	14.3	6.2	0.57	4843	2.16	0.16
008487242-04	OBS	No	540.407827	415.517374	1779.8	8.389	12.2	6.3	0.57	4843	2.36	0.14
008487242-05	OBS	No	410.830393	479.438419	3322.0	6.172	11.1	13.0	0.57	4843	4.00	0.20
008487242-06	OBS	No	456.274584	429.479977	840.6	3.500	10.9	-1.0	0.57	4843	1.62	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487242-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

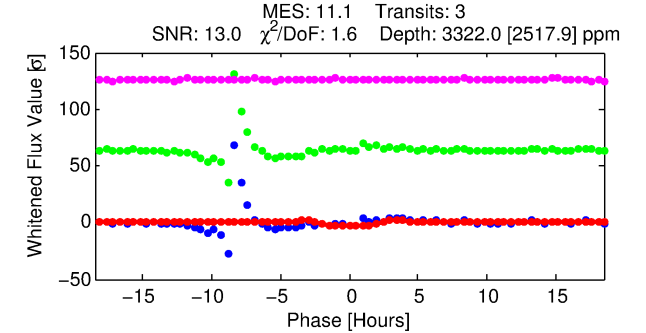
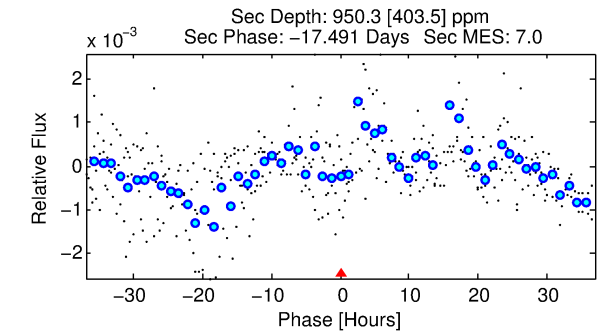
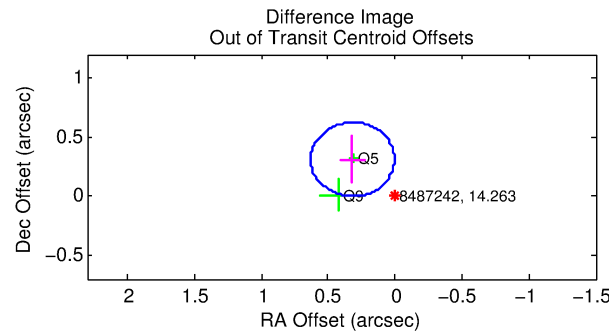
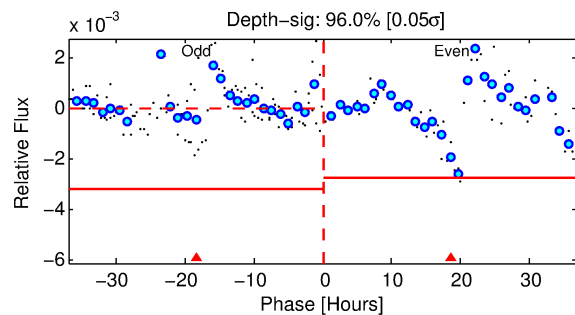
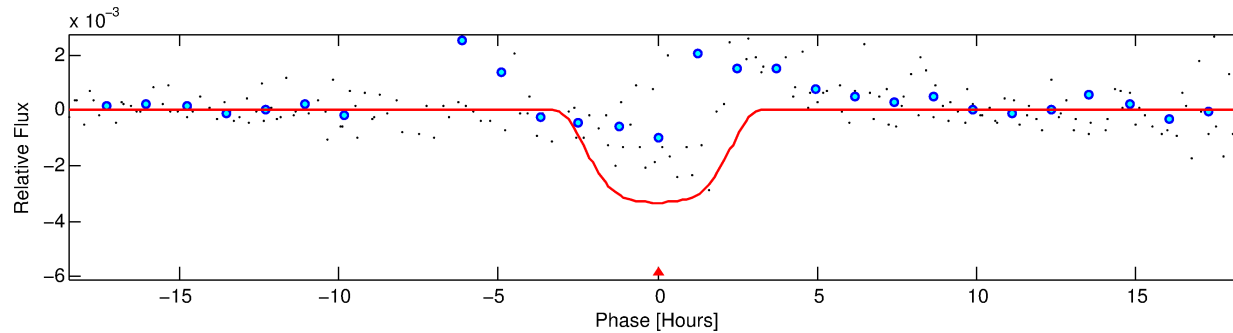
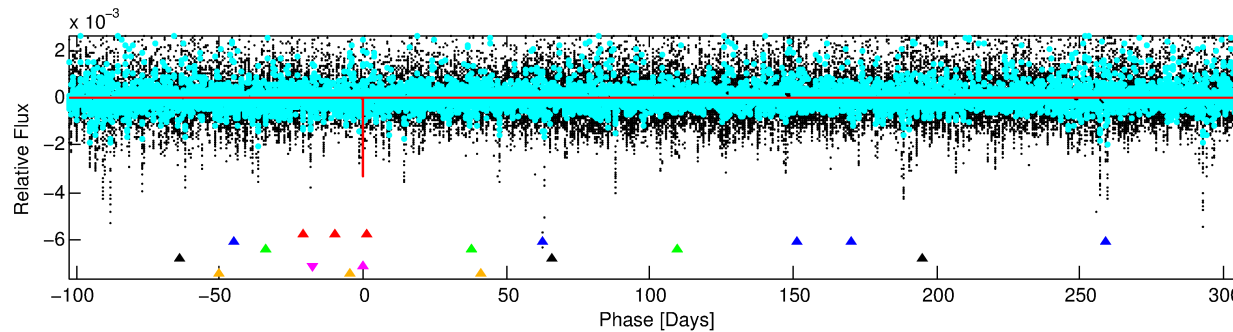
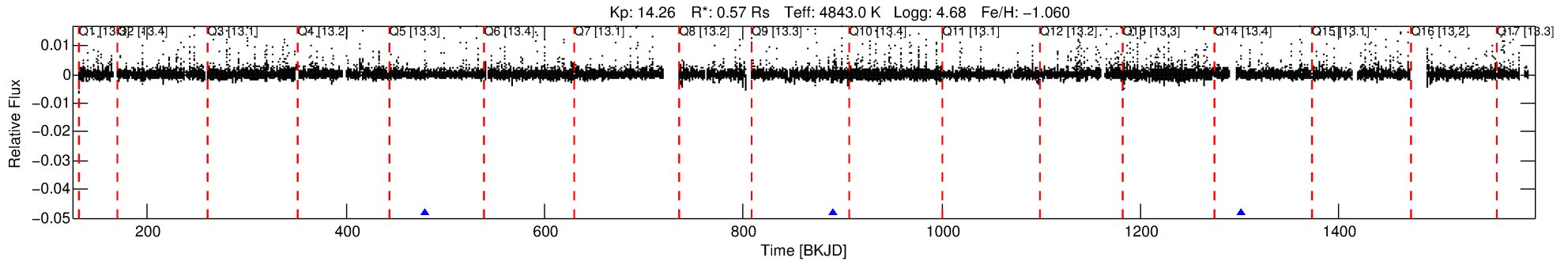
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-05

No Significant Match Found

DV One-Page Summary

KIC: 8487242 Candidate: 5 of 6 Period: 410.830 d



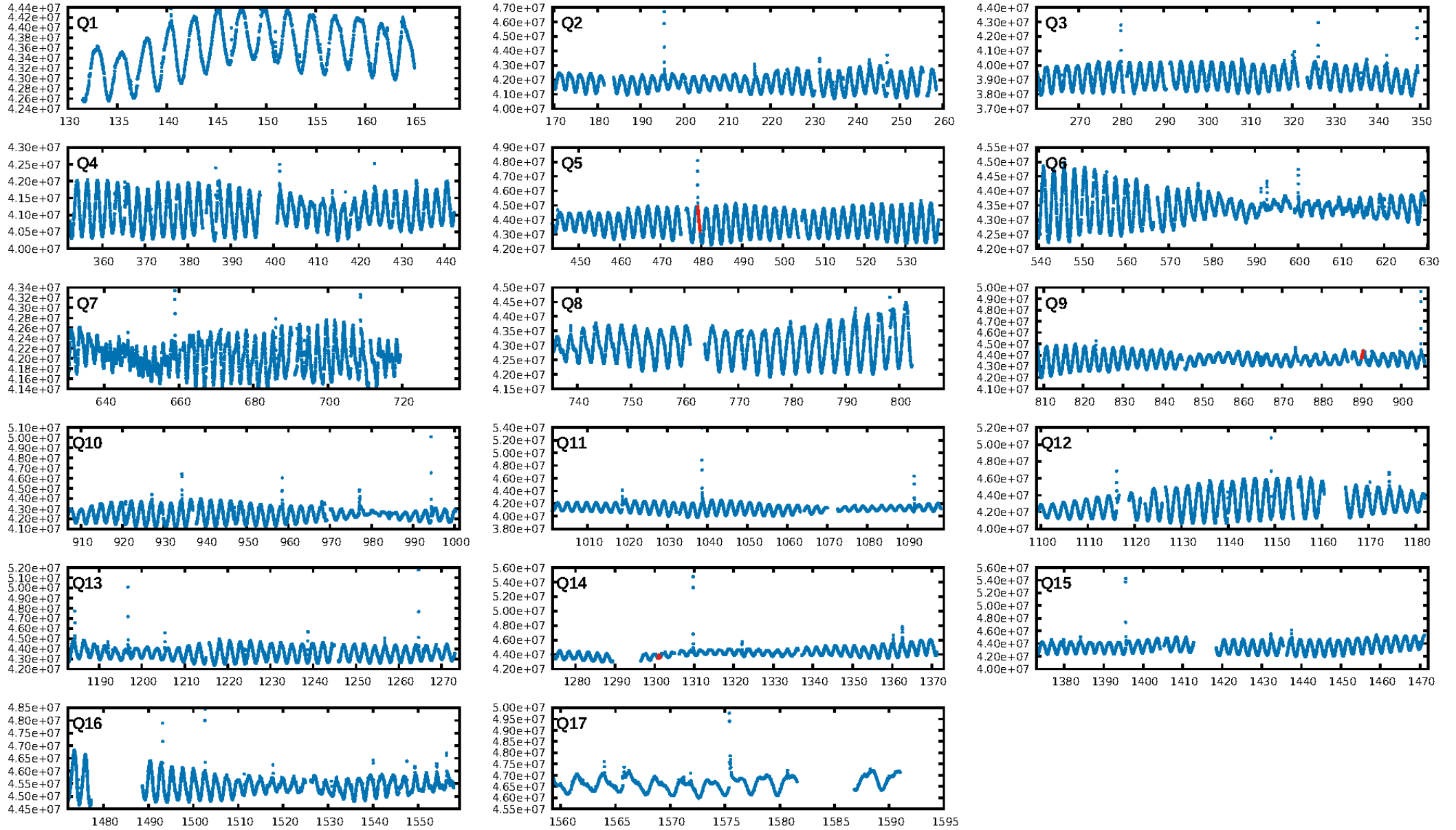
DV Fit Results:

Period = 410.83039 [0.03962] d
Epoch = 479.4384 [0.0526] BKJD
Rp/R* = 0.0643 [0.0322]
a/R* = 285.40 [257.21]
b = 0.90 [0.19]
Seff = 0.20 [0.03]
Teq = 170 [7] K
Rp = 4.00 [2.02] Re
a = 0.8972 [0.0545] AU
Ag = 26249.36 [28654.19] [0.92 σ]
Teffp = 3354 [919] K [3.47 σ]

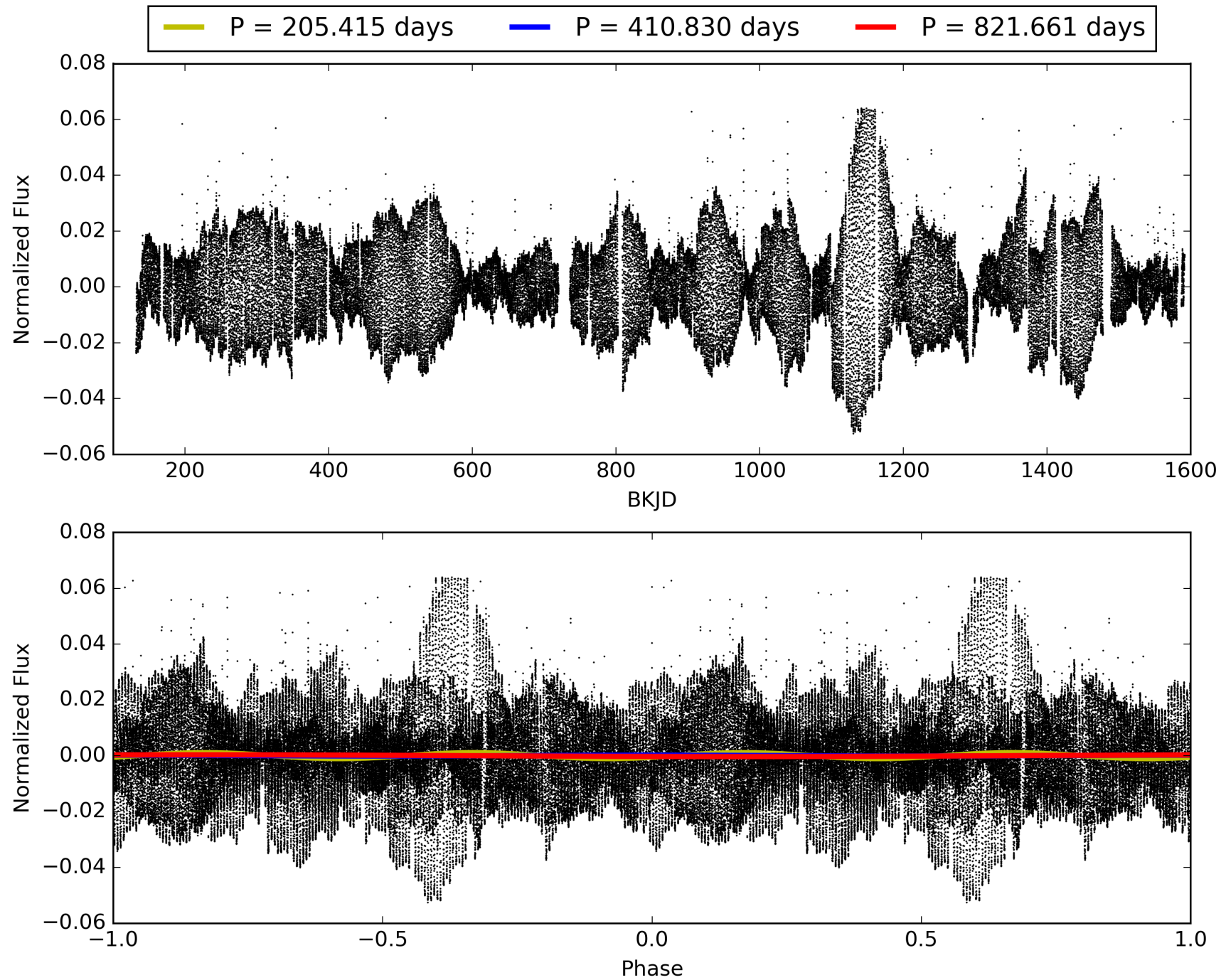
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [161.97 σ]
LongPeriod-sig: 100.0% [35.62 σ]
ModelChiSquare2-sig: 28.5%
ModelChiSquareGof-sig: 67.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.128
Centroid-sig: 41.0%
Centroid-so: 2.250 arcsec [5.25 σ]
OotOffset-rm: 0.446 arcsec [4.28 σ]
KicOffset-rm: 0.340 arcsec [3.52 σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 008487242-05, PDC Light Curves

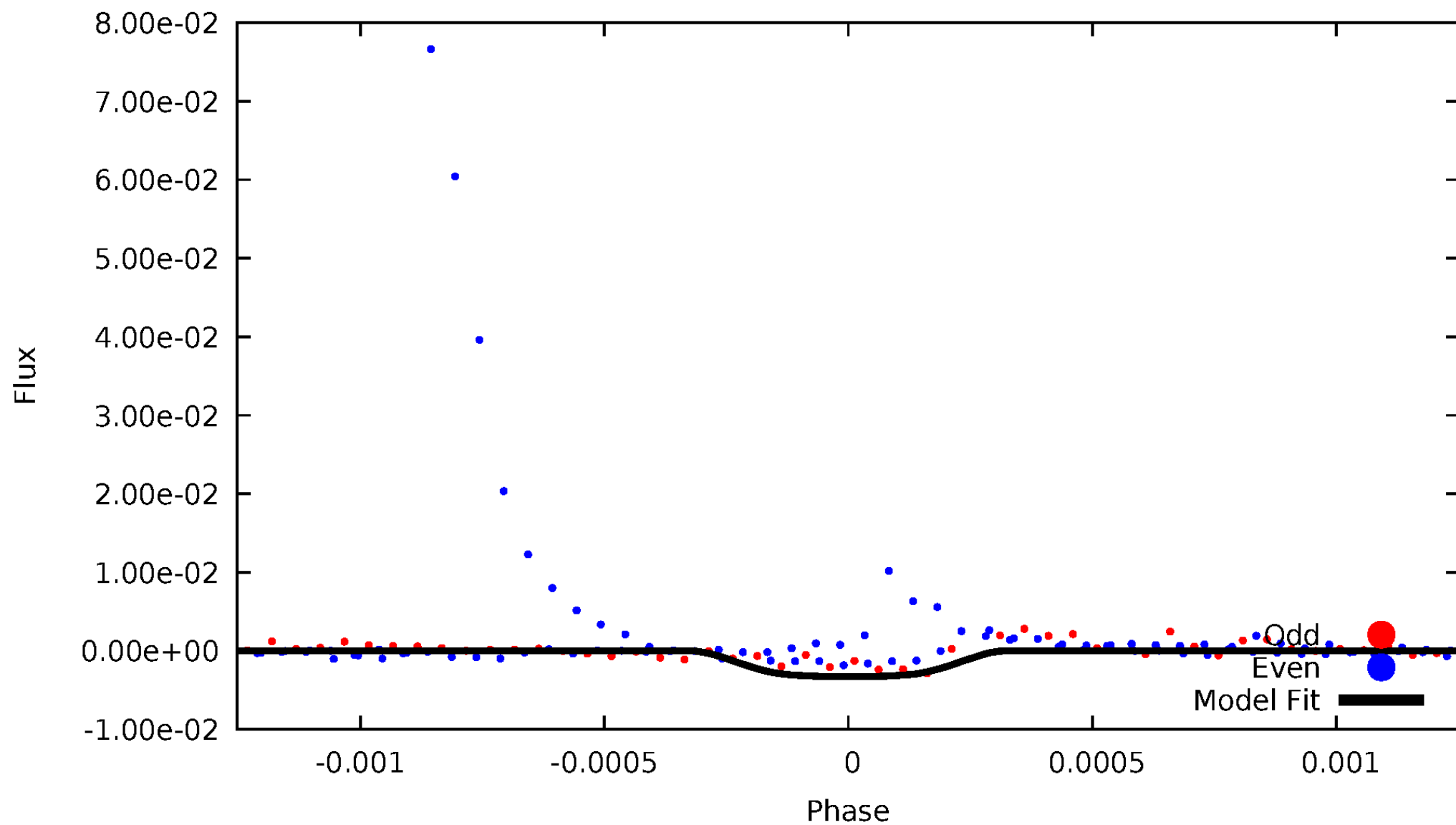


TCE 008487242-05



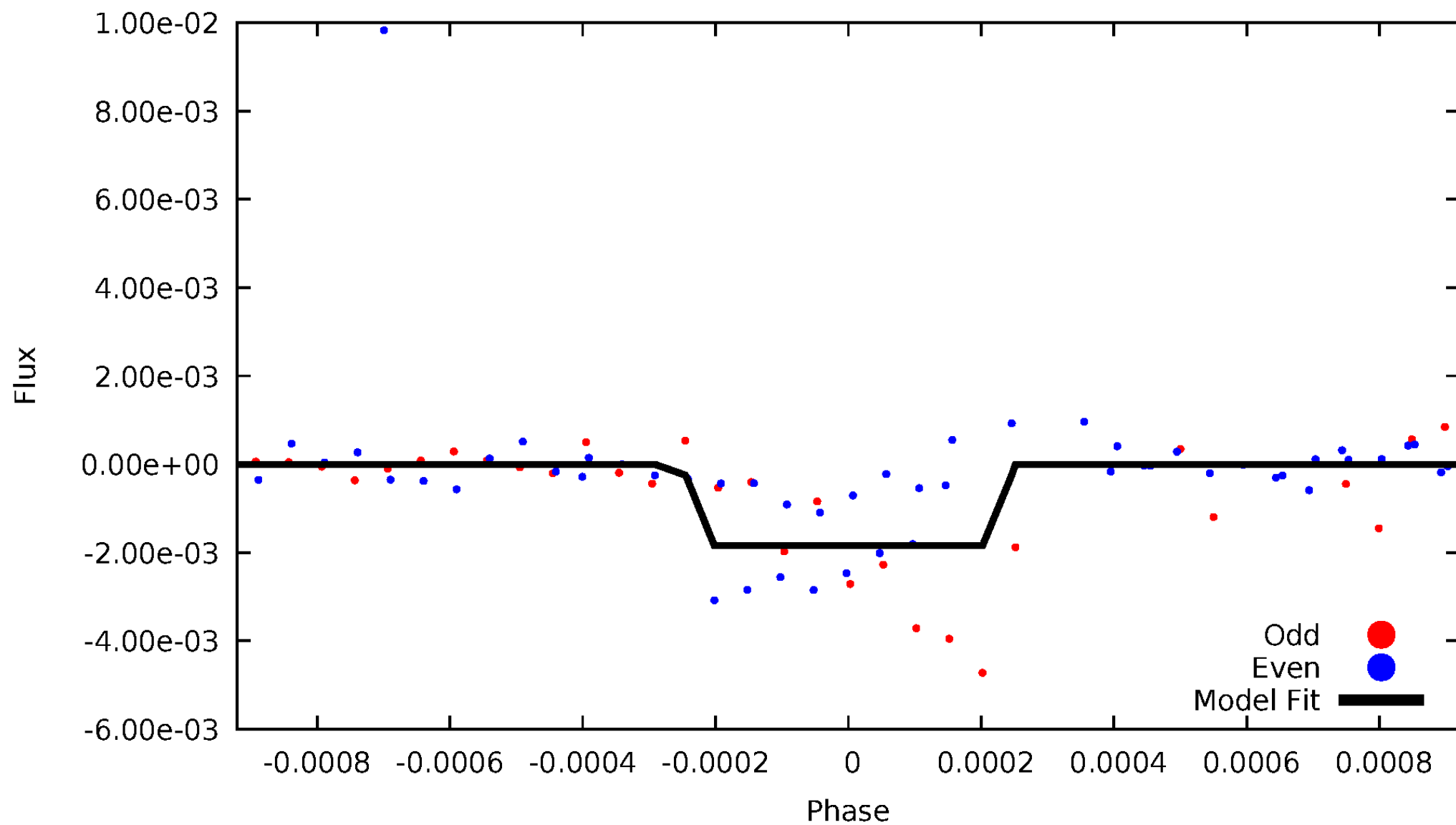
DV Odd/Even

TCE 008487242-05



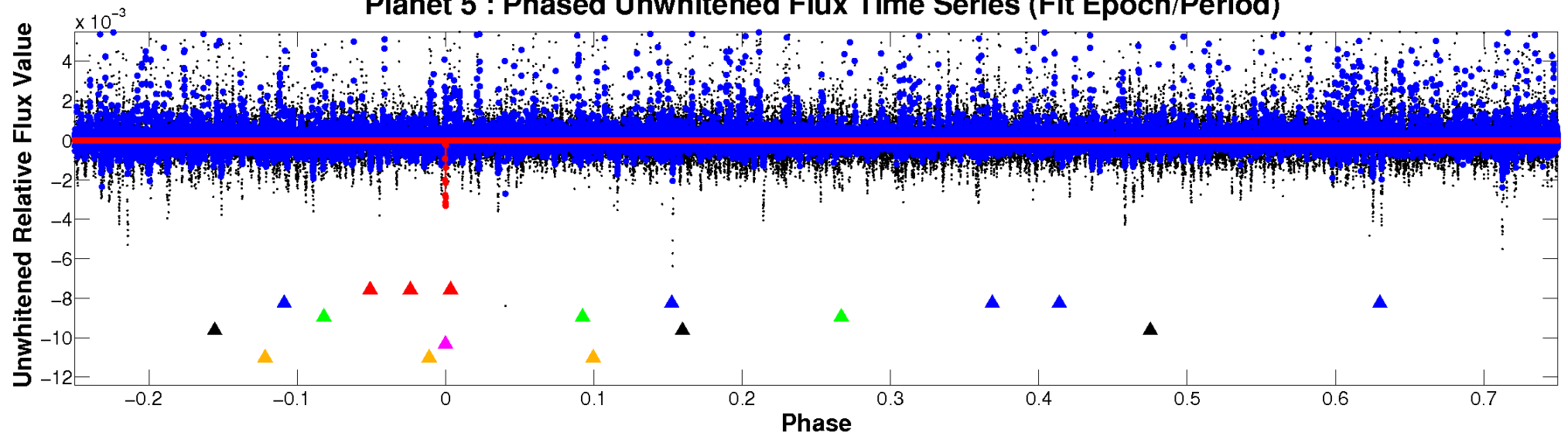
ALT Odd/Even

TCE 008487242-05

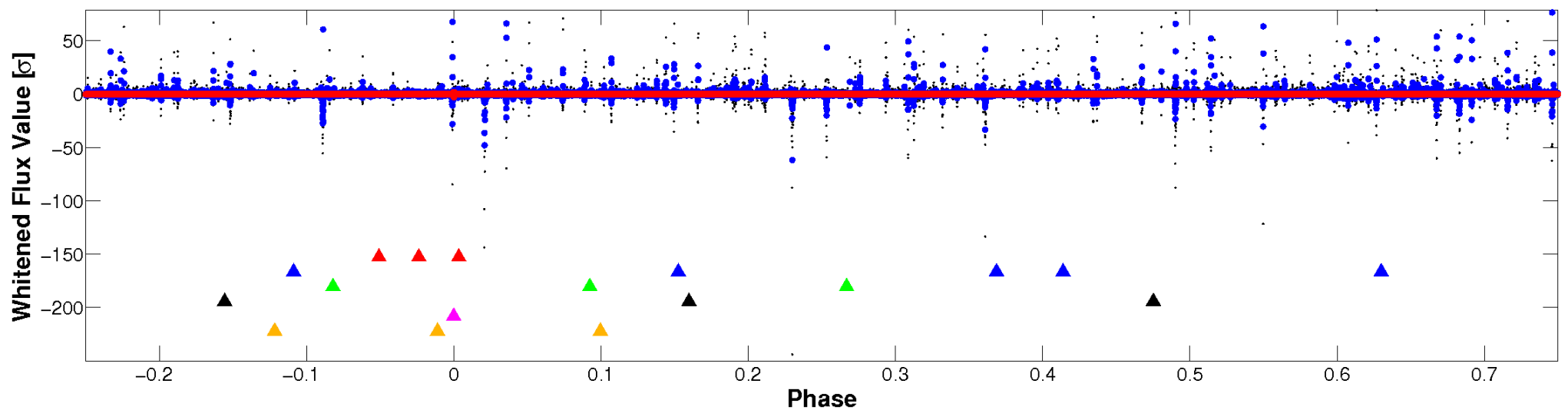


Non-Whitened Vs. Whitened Light Curve

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

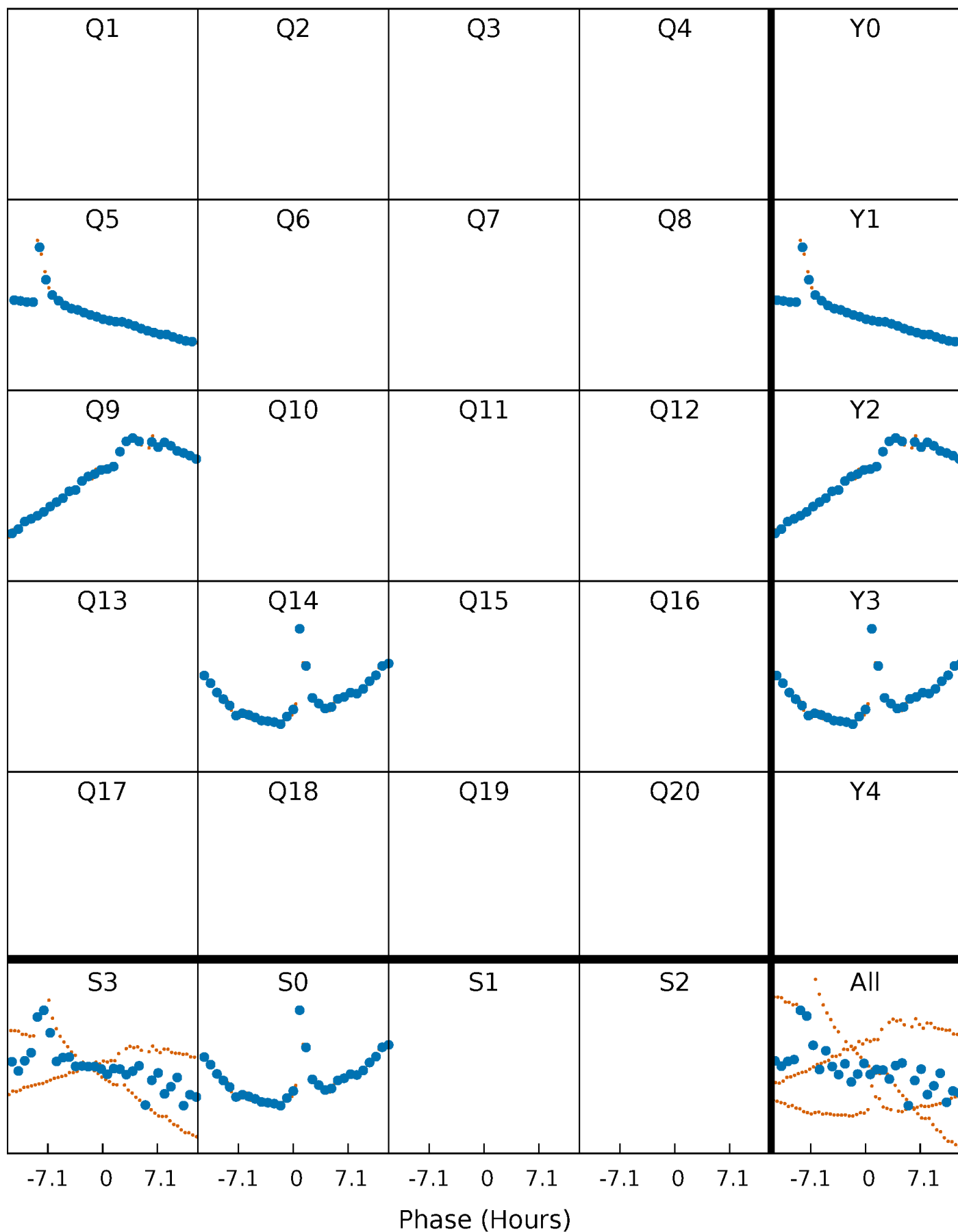


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



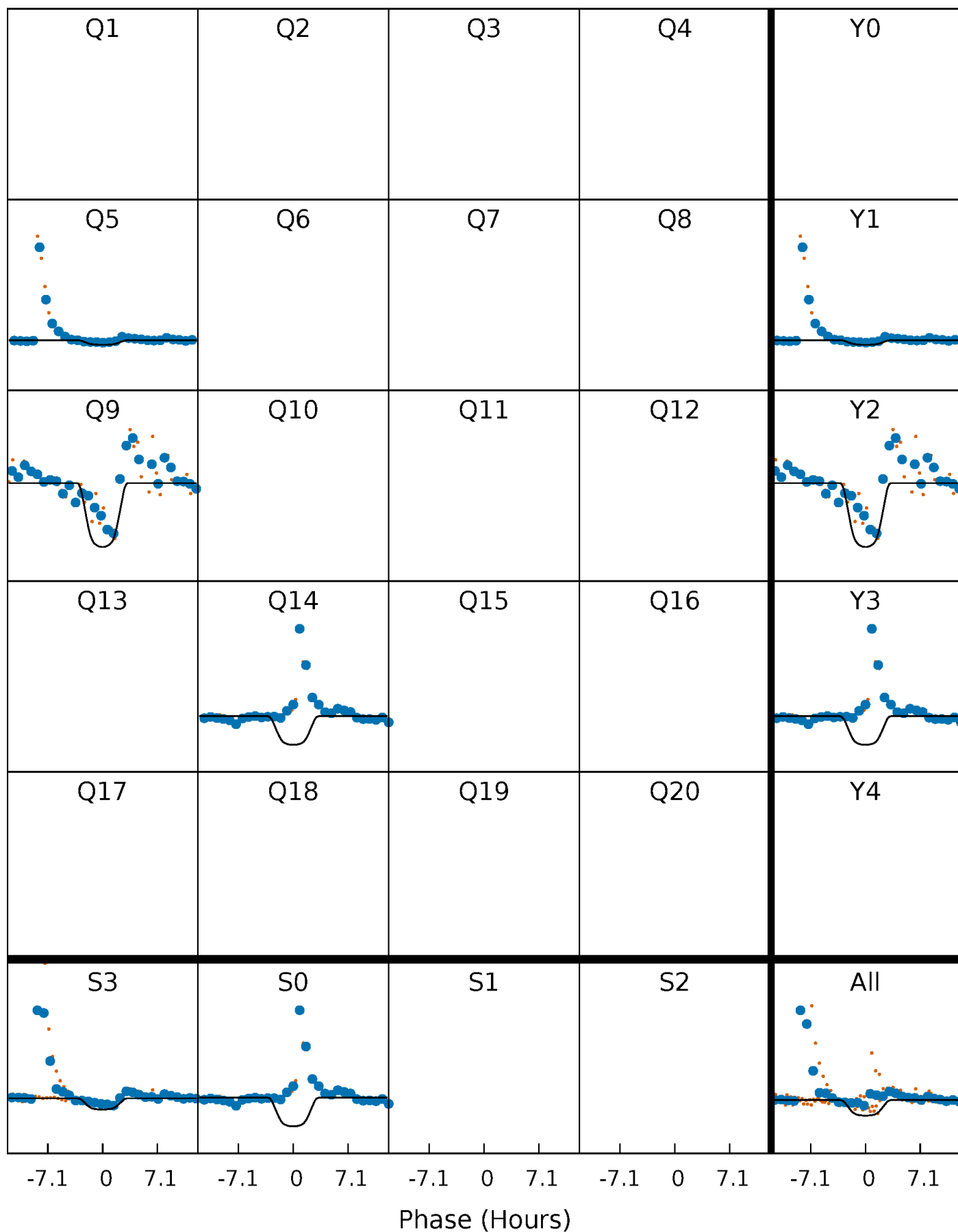
PDC Quarter-Phased Transit Curves

TCE 008487242-05 $P=410.830393$ Days $T_0=479.438419$ (BKJD)



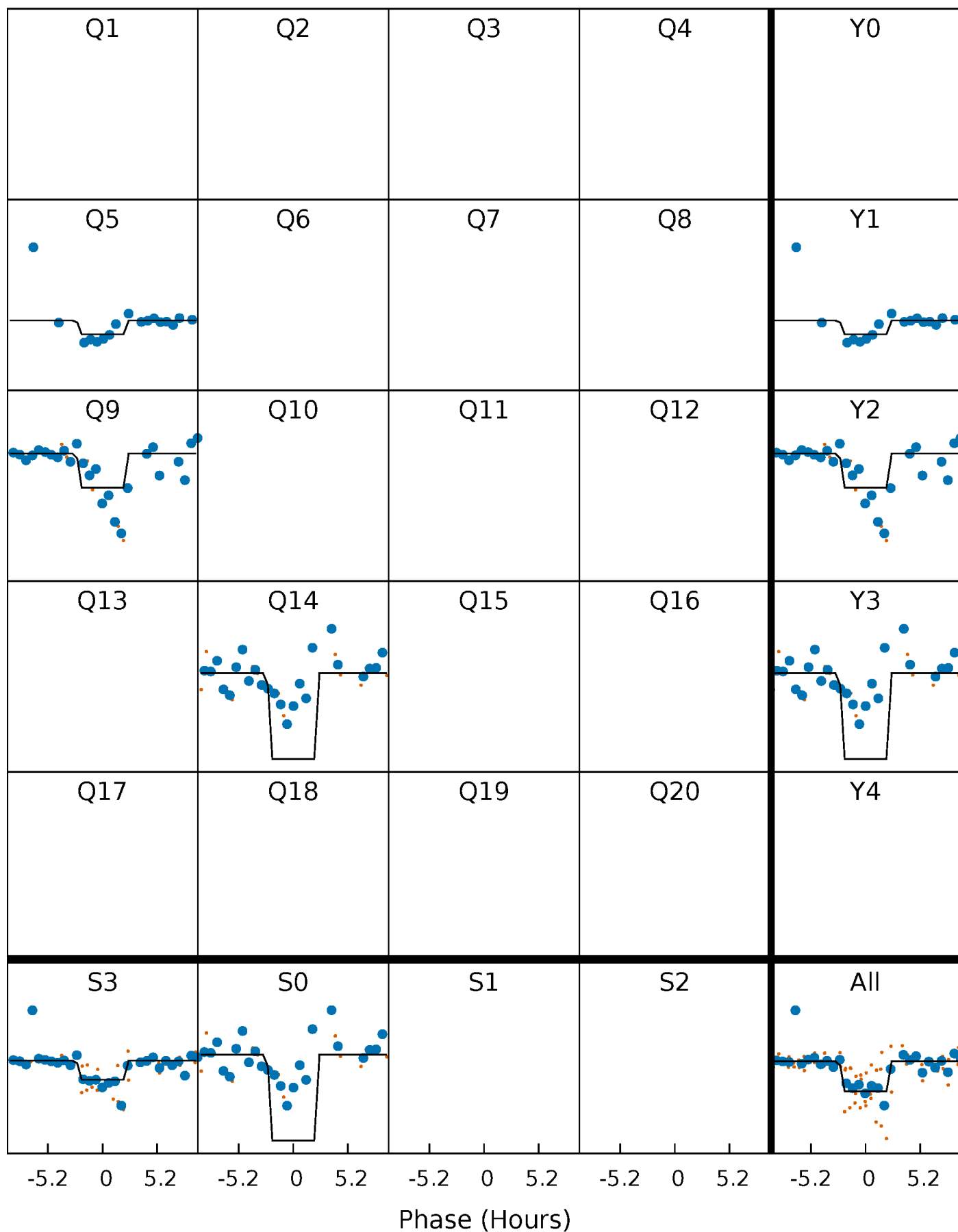
DV Quarter-Phased Transit Curves

TCE 008487242-05 $P=410.830393$ Days $T_0=479.438419$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

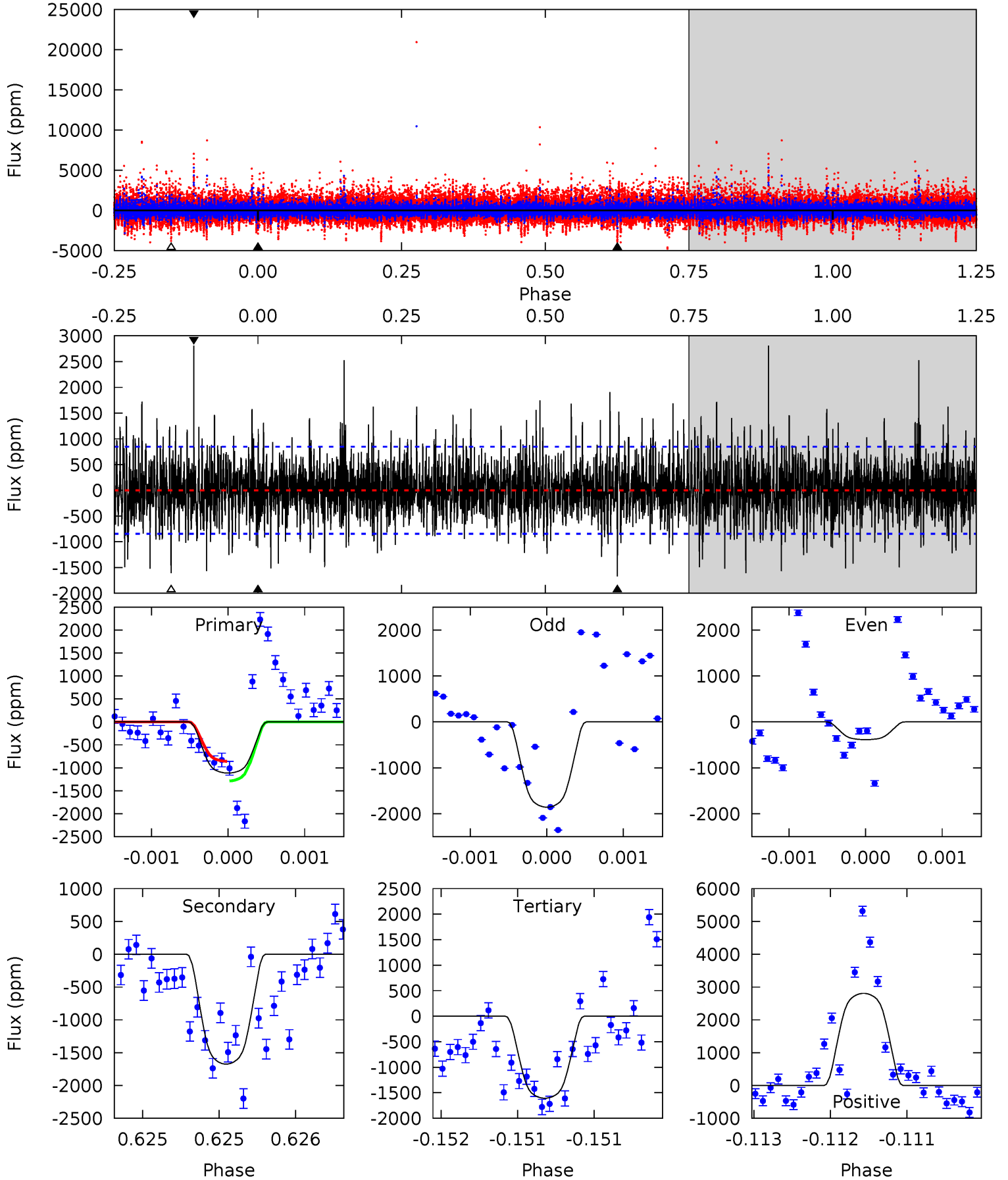
TCE 008487242-05 $P=410.796290$ Days $T_0=479.455972$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-05, $P = 410.830393$ Days, $E = 68.608026$ Days

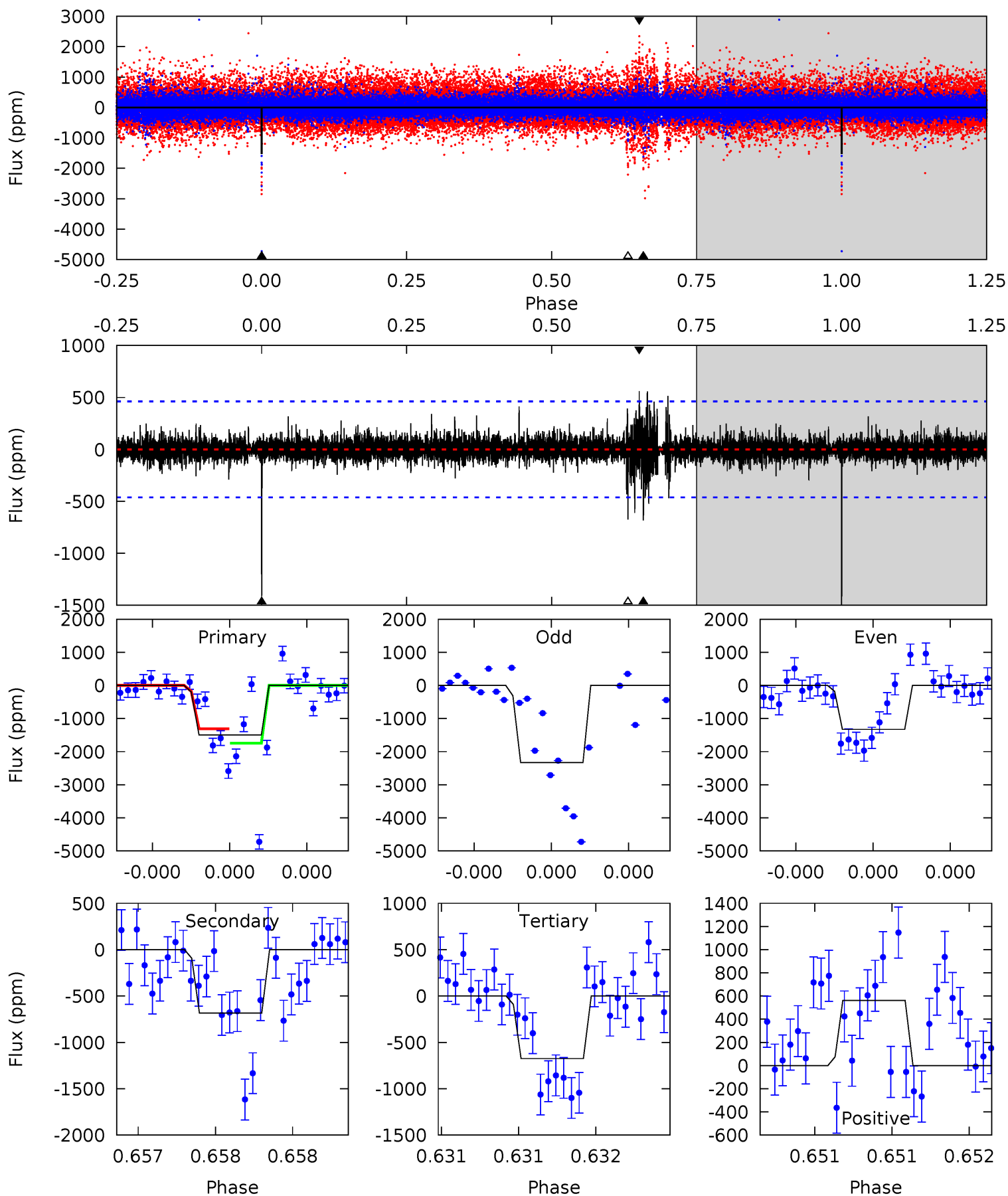
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.29	11.0	10.5	18.4	5.53	3.41	2.77	-3.22	-11.1	0.44	-7.41	3.11	-0.03	0.63	1.37



Alt Model-Shift Uniqueness Test

008487242-05, P = 410.796290 Days, E = 68.659682 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	8.26	8.15	6.79	5.58	3.48	0.92	9.90	11.3	0.11	1.47	5.40	0.75	0.27	2.66



Stellar Parameters For KIC 008487242

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-05 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1674 ± 153	$4.10^{+1.87}_{-1.96}$	237^{+8}_{-9}	4021^{+1191}_{-498}	$43669^{+118836}_{-22635}$
Alt.	-683 ± 83	$2.77^{+1.92}_{-1.47}$	237^{+8}_{-8}	3966^{+1419}_{-645}	$39380^{+142318}_{-25895}$

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 $A_{obs} \gg 1.0$

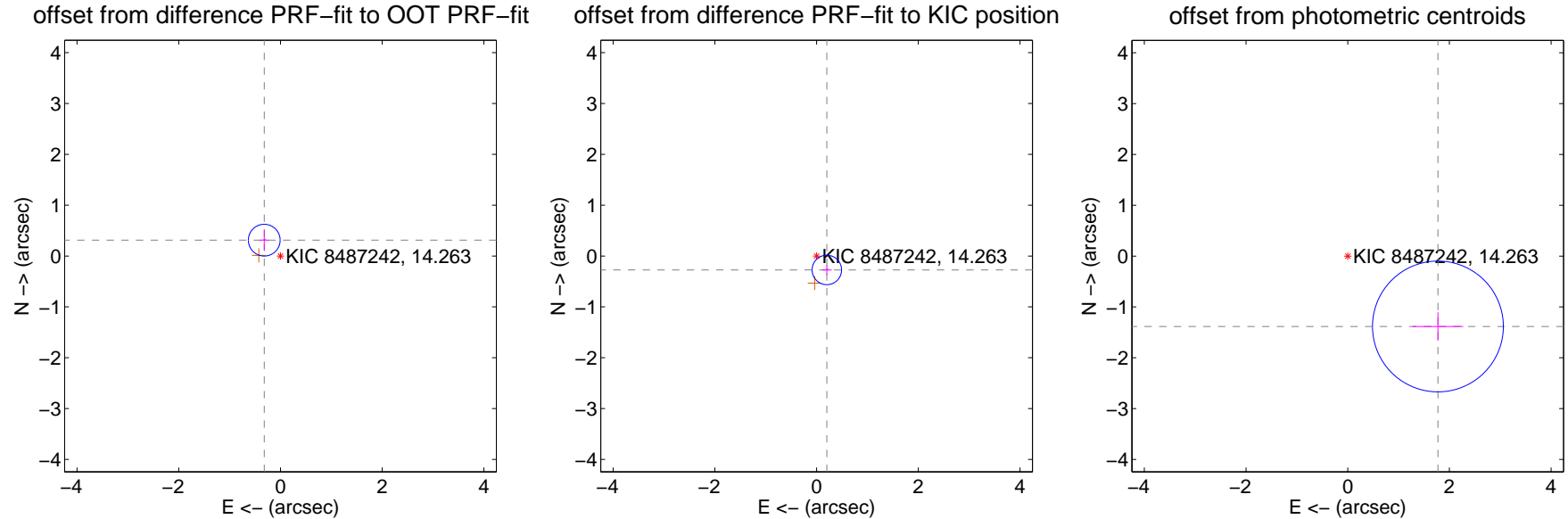
DV Centroid Data

Supplemental centroid analysis for 008487242-05. Kepler magnitude: 14.26. Transit SNR 13.02

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.446 ± 0.104	4.28	0.318 ± 0.093	0.312 ± 0.192
PRF-fit source offset from KIC position	0.340 ± 0.097	3.52	-0.202 ± 0.096	-0.274 ± 0.097
photometric centroid source offset	2.25 ± 0.43	5.25	-1.77 ± 0.50	-1.38 ± 0.28

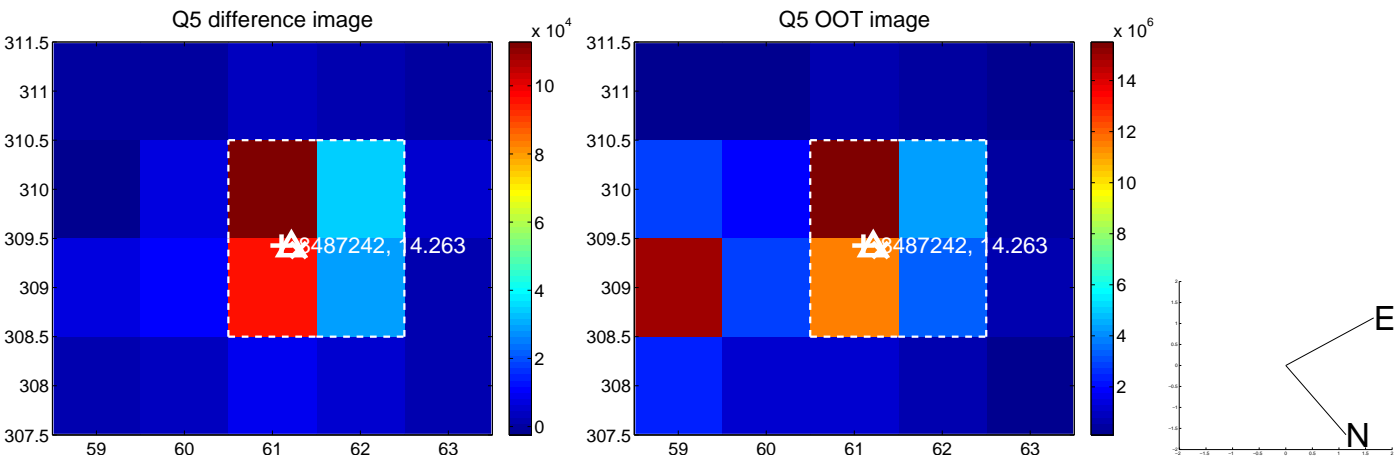


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

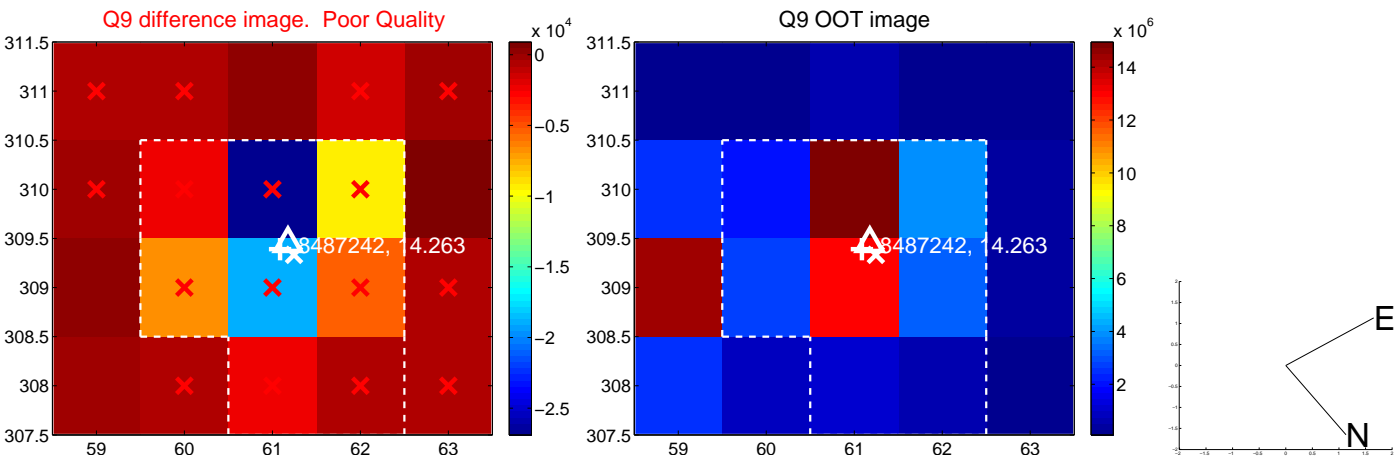
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



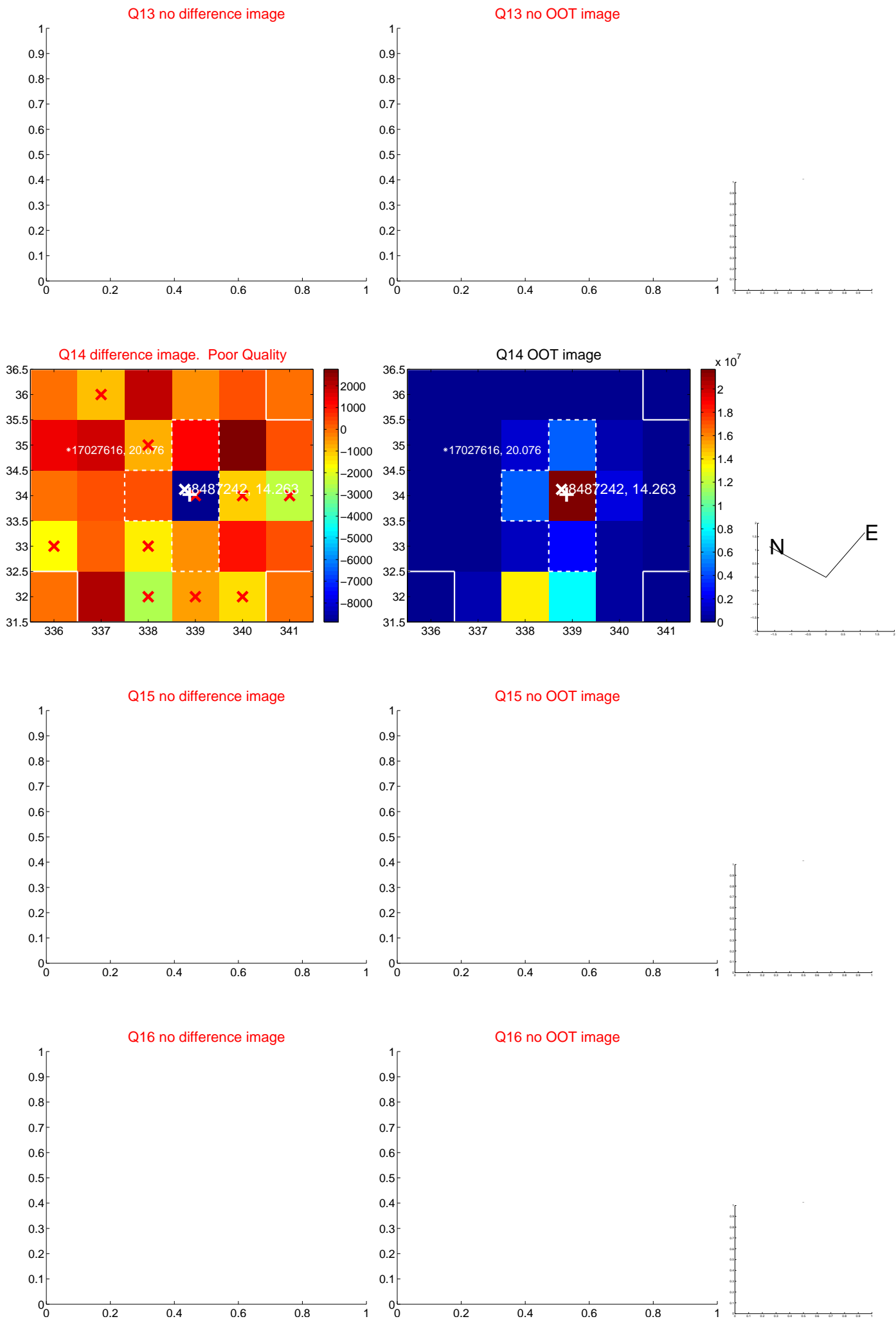
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



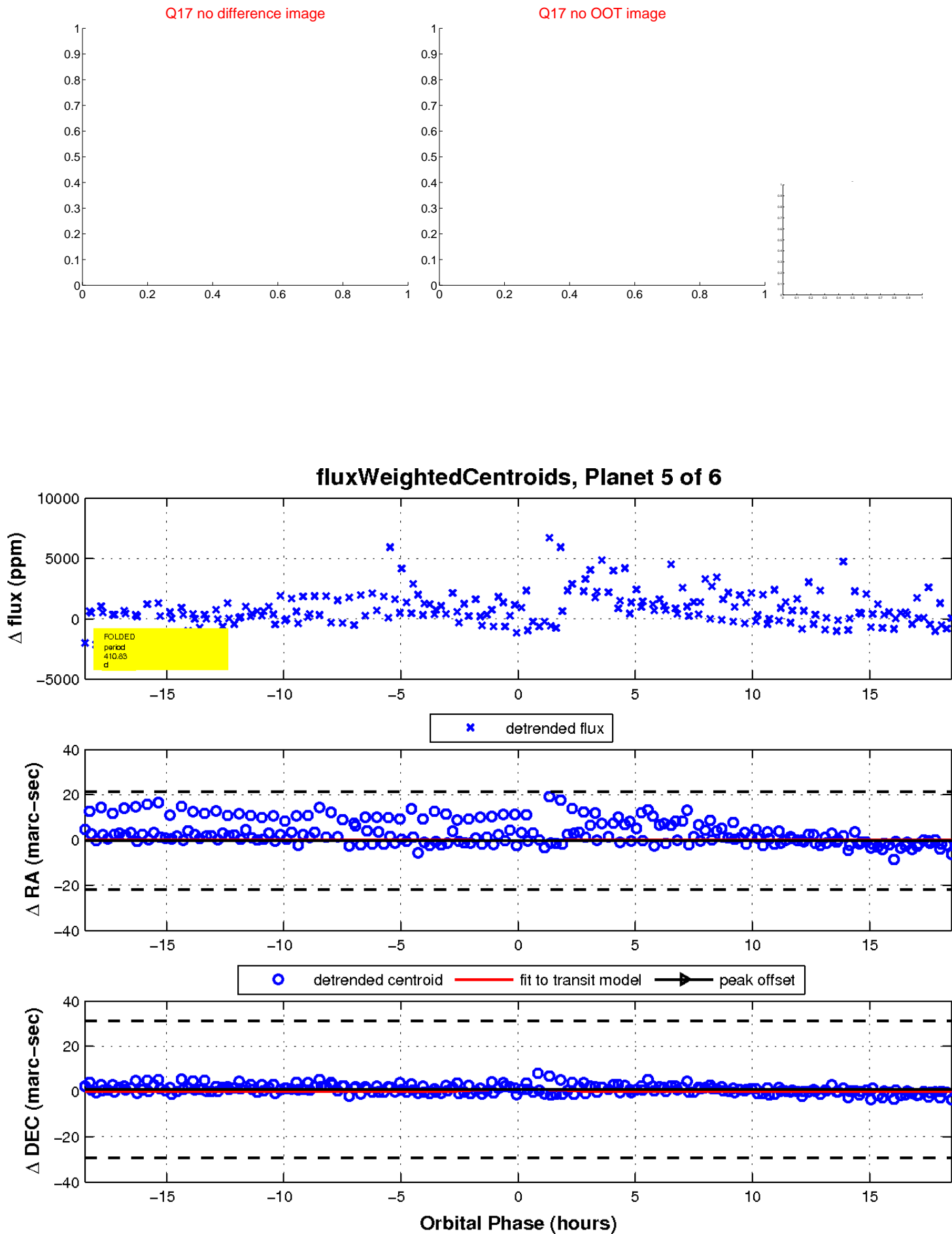
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

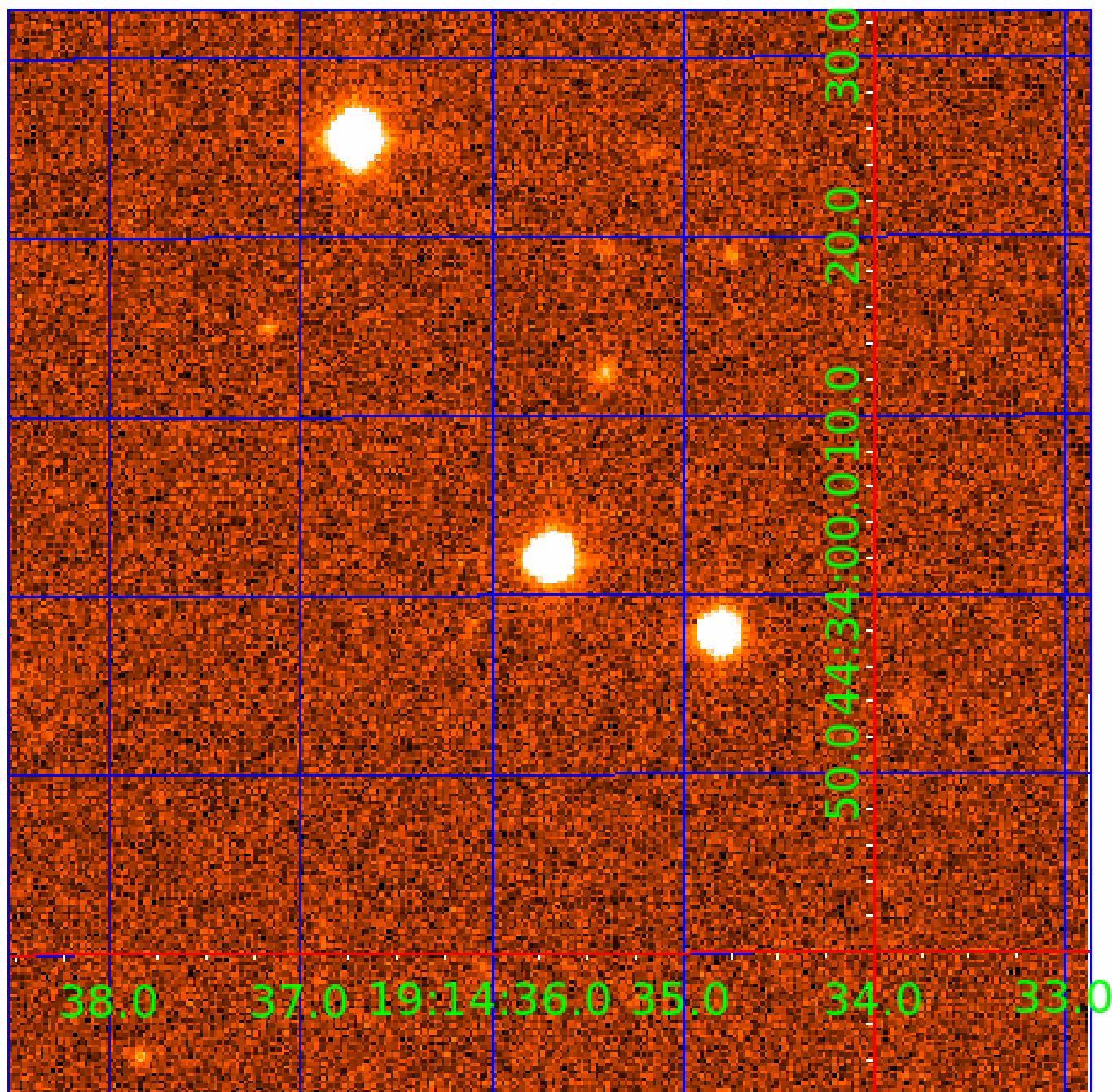


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008487242

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})
008487242-01	OBS	No	421.972214	458.565631	1198.3	4.273	14.6	5.3	0.57	4843	1.94	0.19
008487242-02	OBS	No	303.479898	238.637581	1146.2	14.660	15.8	4.5	0.57	4843	1.97	0.30
008487242-03	OBS	No	482.490528	445.741249	1391.2	3.650	14.3	6.2	0.57	4843	2.16	0.16
008487242-04	OBS	No	540.407827	415.517374	1779.8	8.389	12.2	6.3	0.57	4843	2.36	0.14
008487242-05	OBS	No	410.830393	479.438419	3322.0	6.172	11.1	13.0	0.57	4843	4.00	0.20
008487242-06	OBS	No	456.274584	429.479977	840.6	3.500	10.9	-1.0	0.57	4843	1.62	0.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008487242-01	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-02	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS
008487242-03	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_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-05	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—INCONSISTENT_TRANS—CENT_FEW_DIFFS
008487242-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_POS_ALT—CENT_NOFITS

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

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

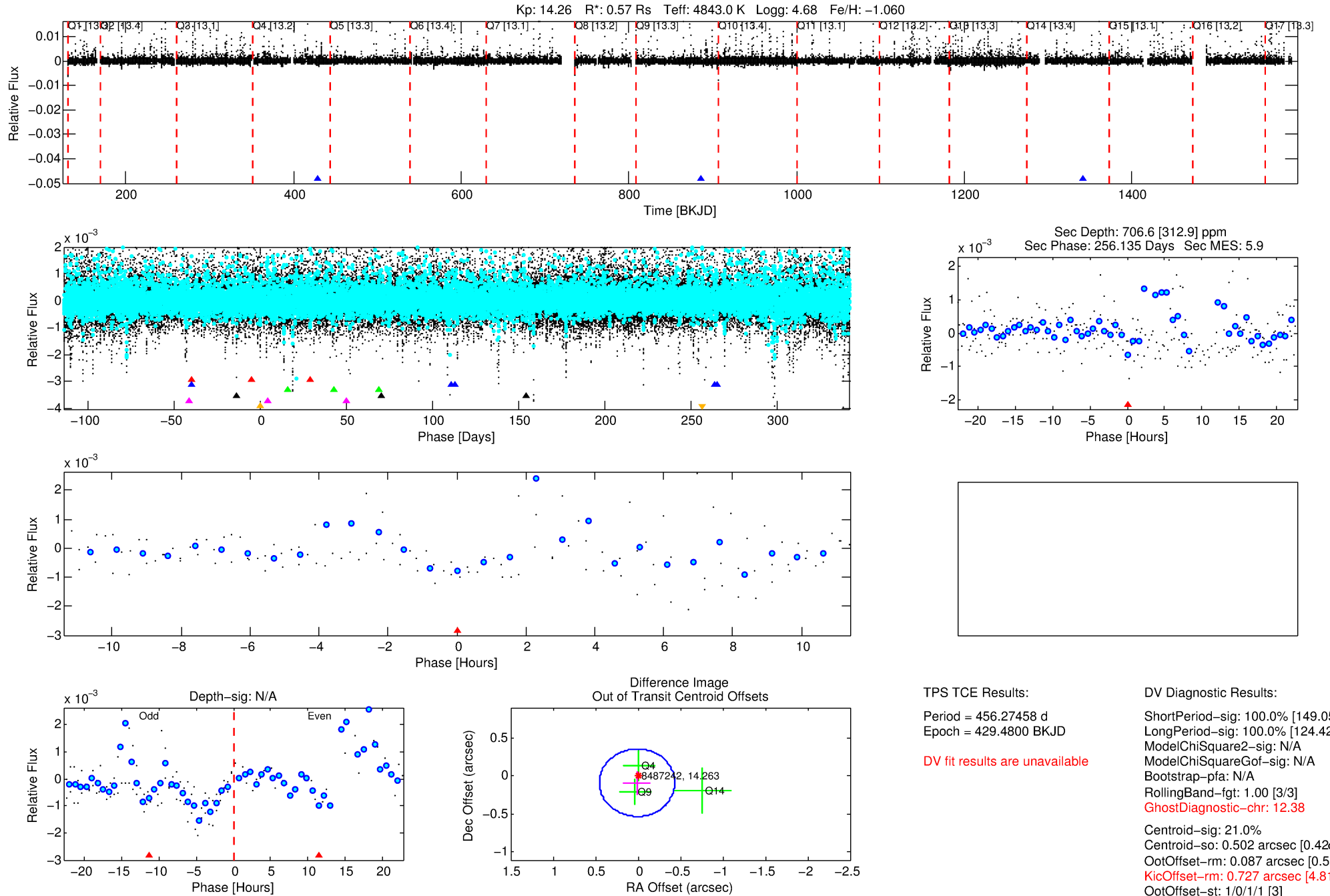
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008487242-06

No Significant Match Found

DV One-Page Summary

KIC: 8487242 Candidate: 6 of 6 Period: 456.275 d



TPS TCE Results:

Period = 456.27458 d
Epoch = 429.4800 BKJD

DV fit results are unavailable

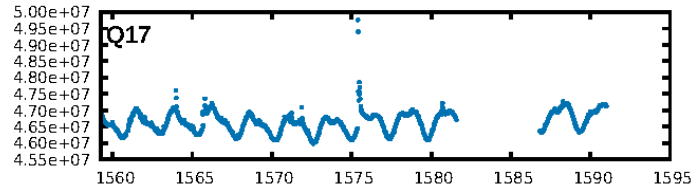
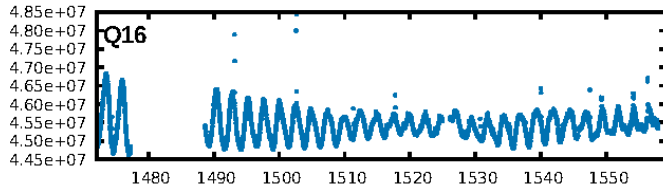
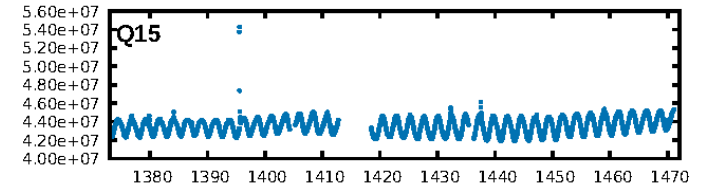
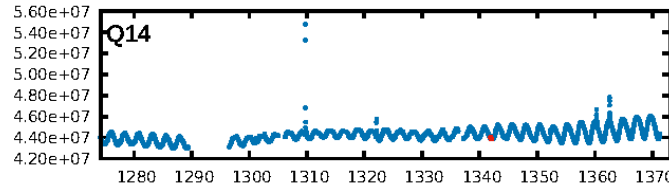
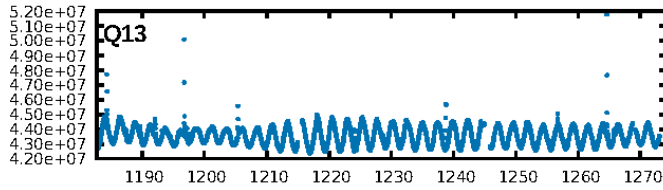
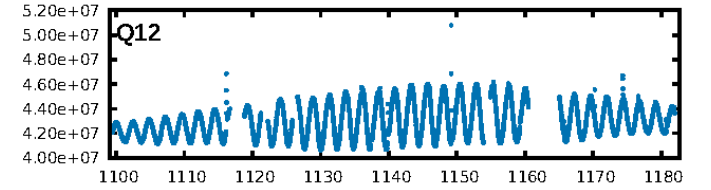
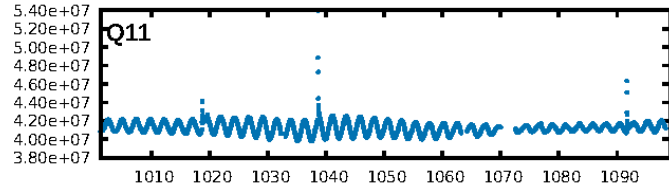
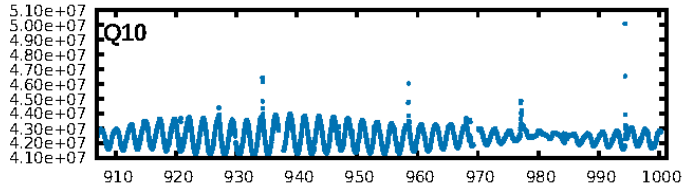
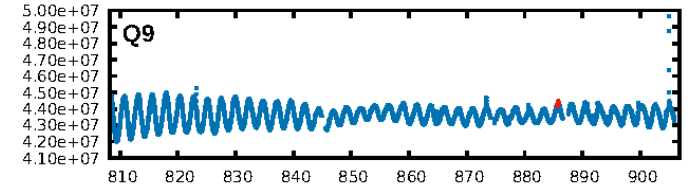
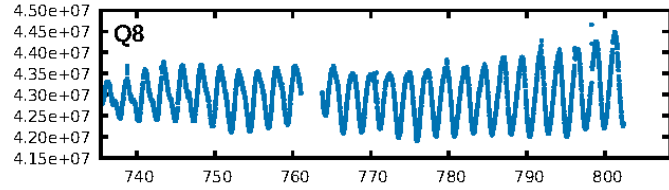
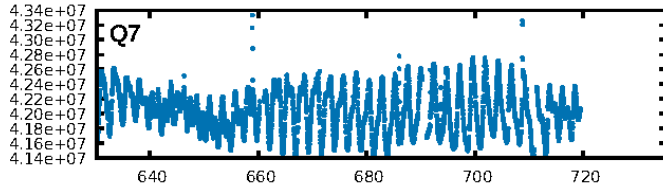
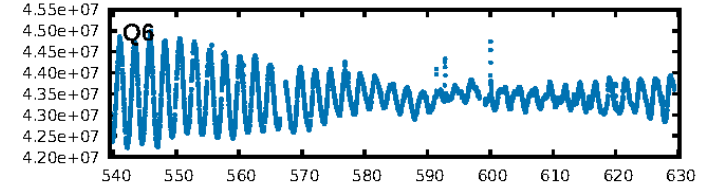
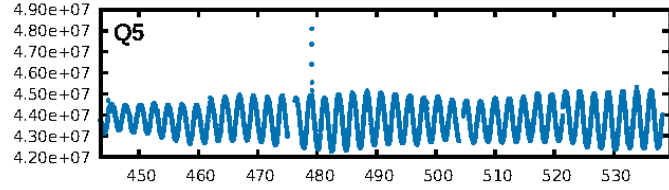
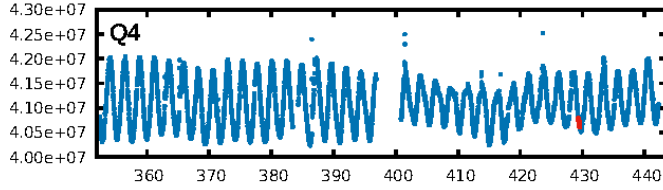
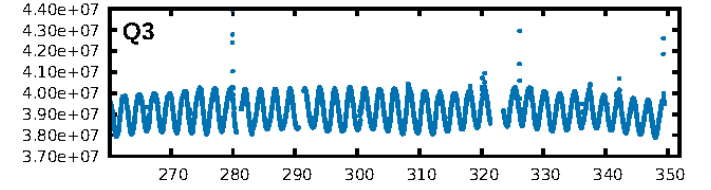
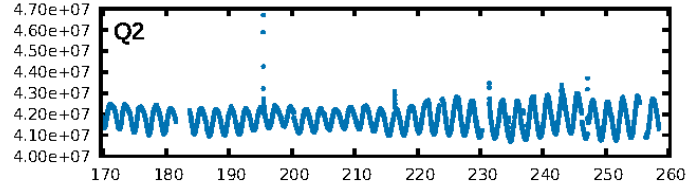
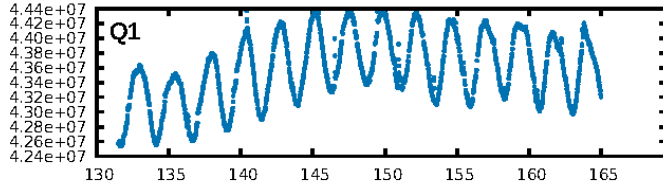
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [149.05 σ]
LongPeriod-sig: 100.0% [124.42 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 12.38
Centroid-sig: 21.0%
Centroid-so: 0.502 arcsec [0.42 σ]
OotOffset-rm: 0.087 arcsec [0.59 σ]
KicOffset-rm: 0.727 arcsec [4.81 σ]
OotOffset-st: 1/0/1/1 [3]
KicOffset-st: 1/0/1/1 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

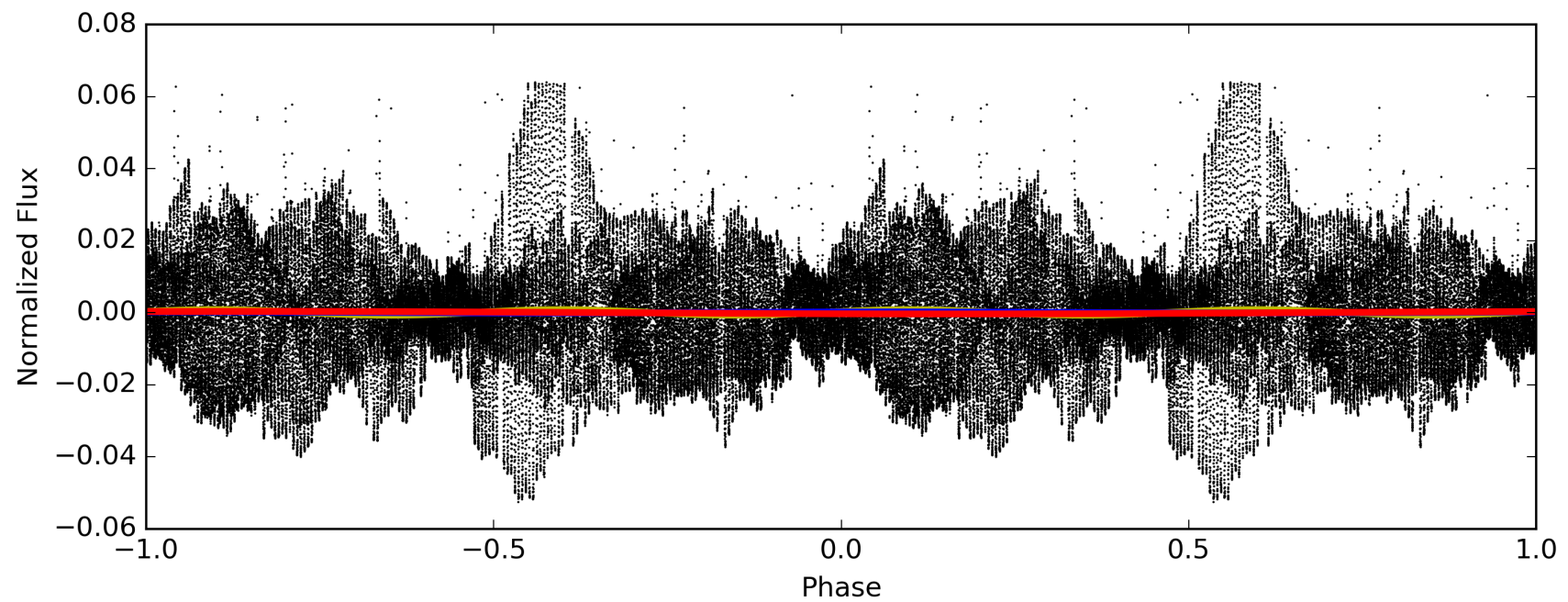
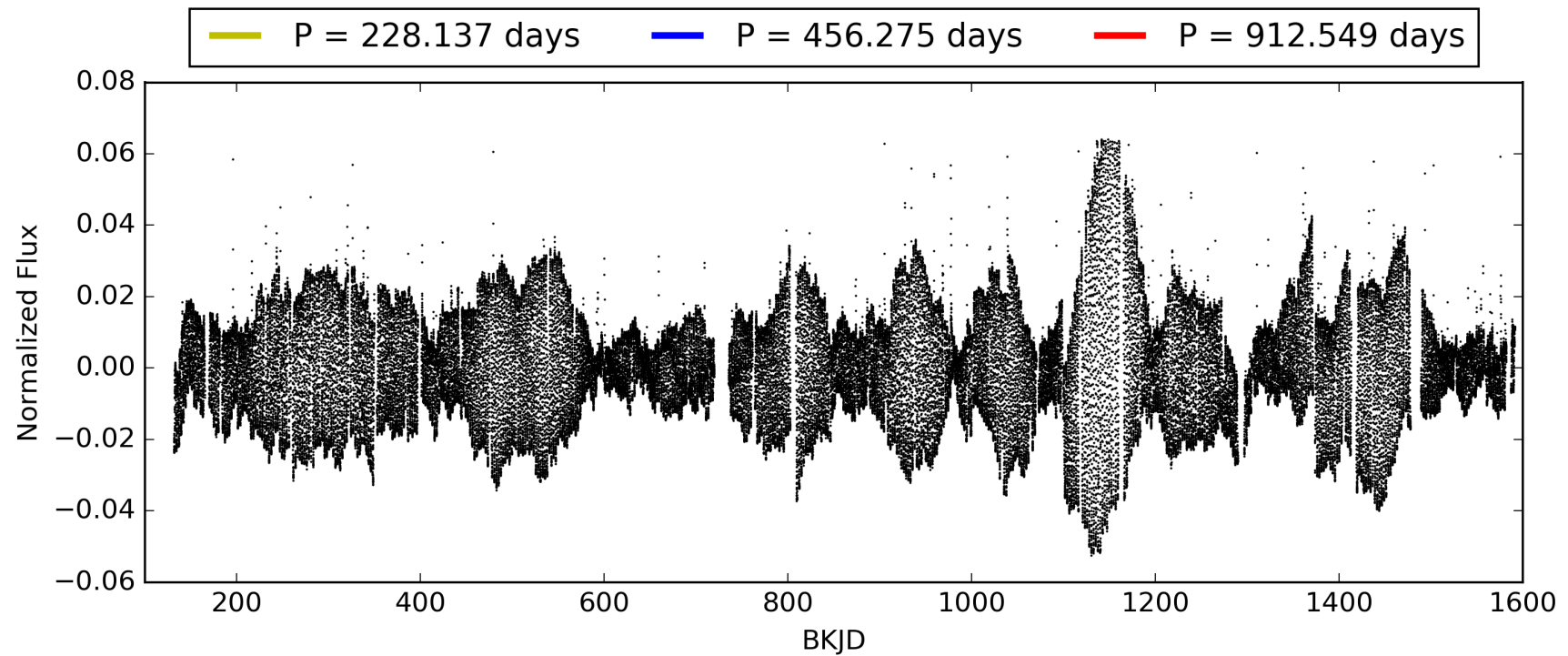
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:51:46 Z

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

TCE 008487242-06, PDC Light Curves

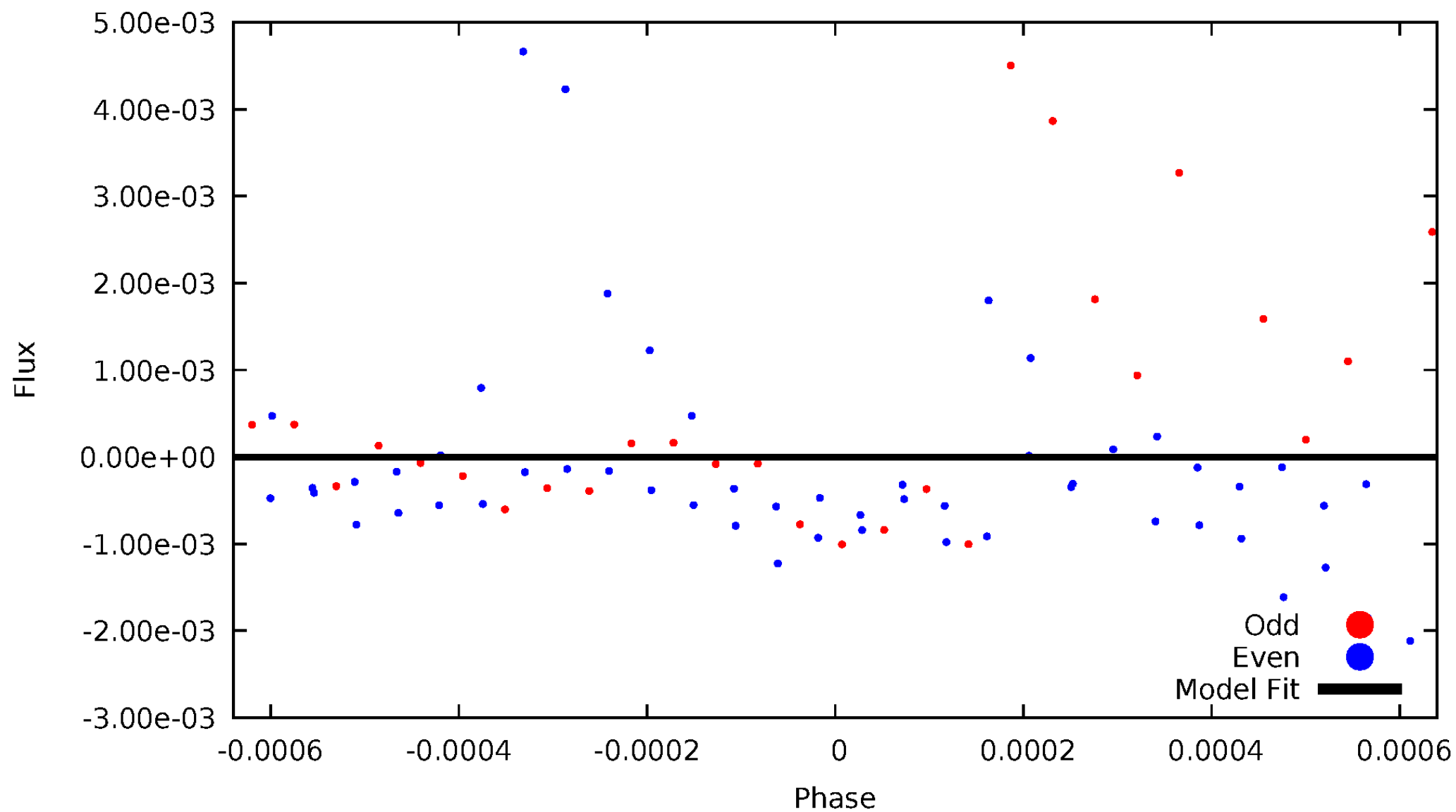


TCE 008487242-06



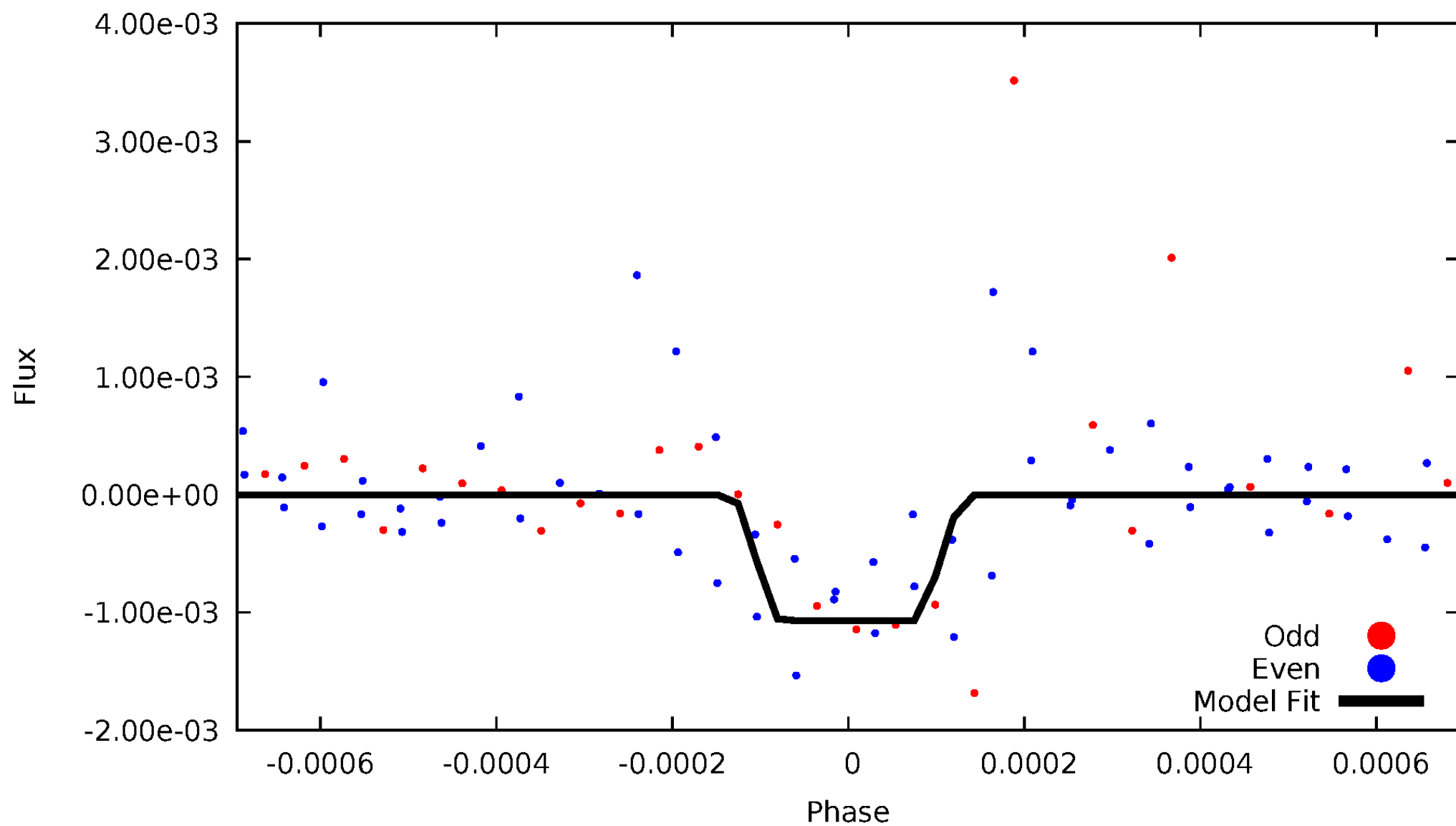
DV Odd/Even

TCE 008487242-06



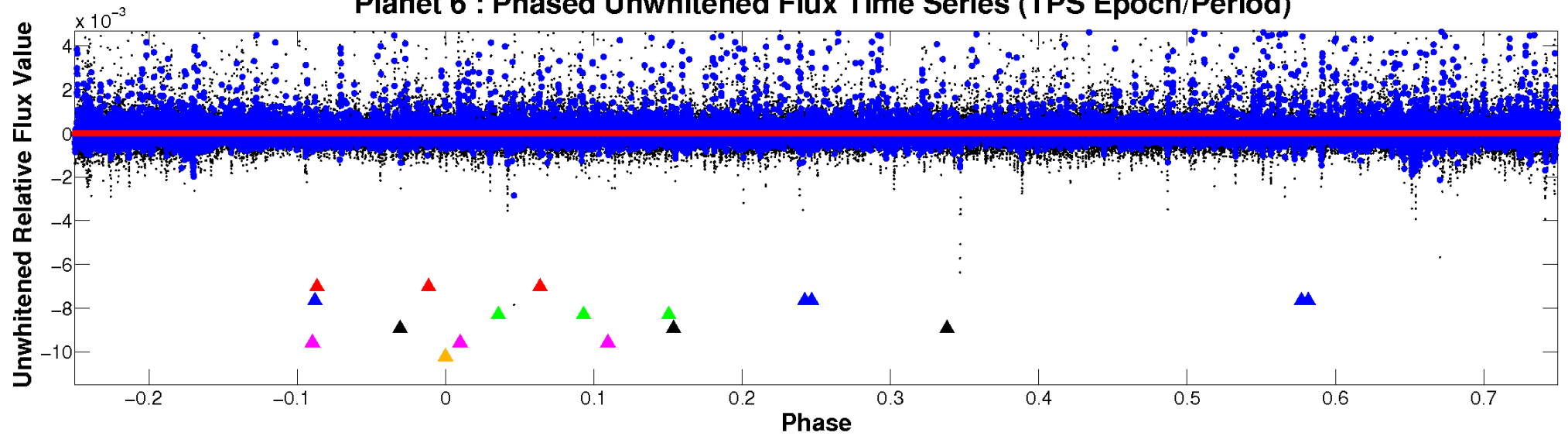
ALT Odd/Even

TCE 008487242-06



Non-Whitened Vs. Whitened Light Curve

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

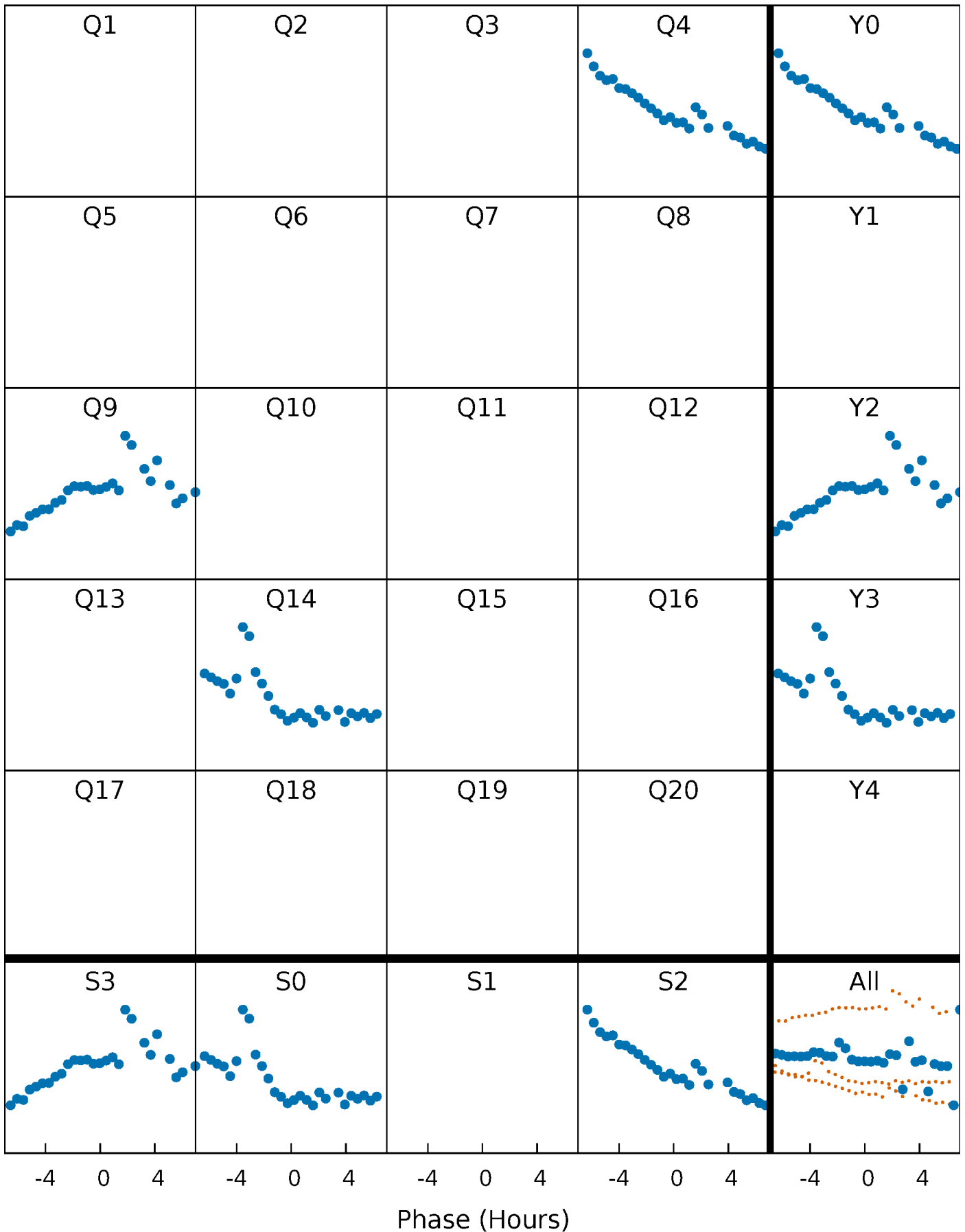


Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)



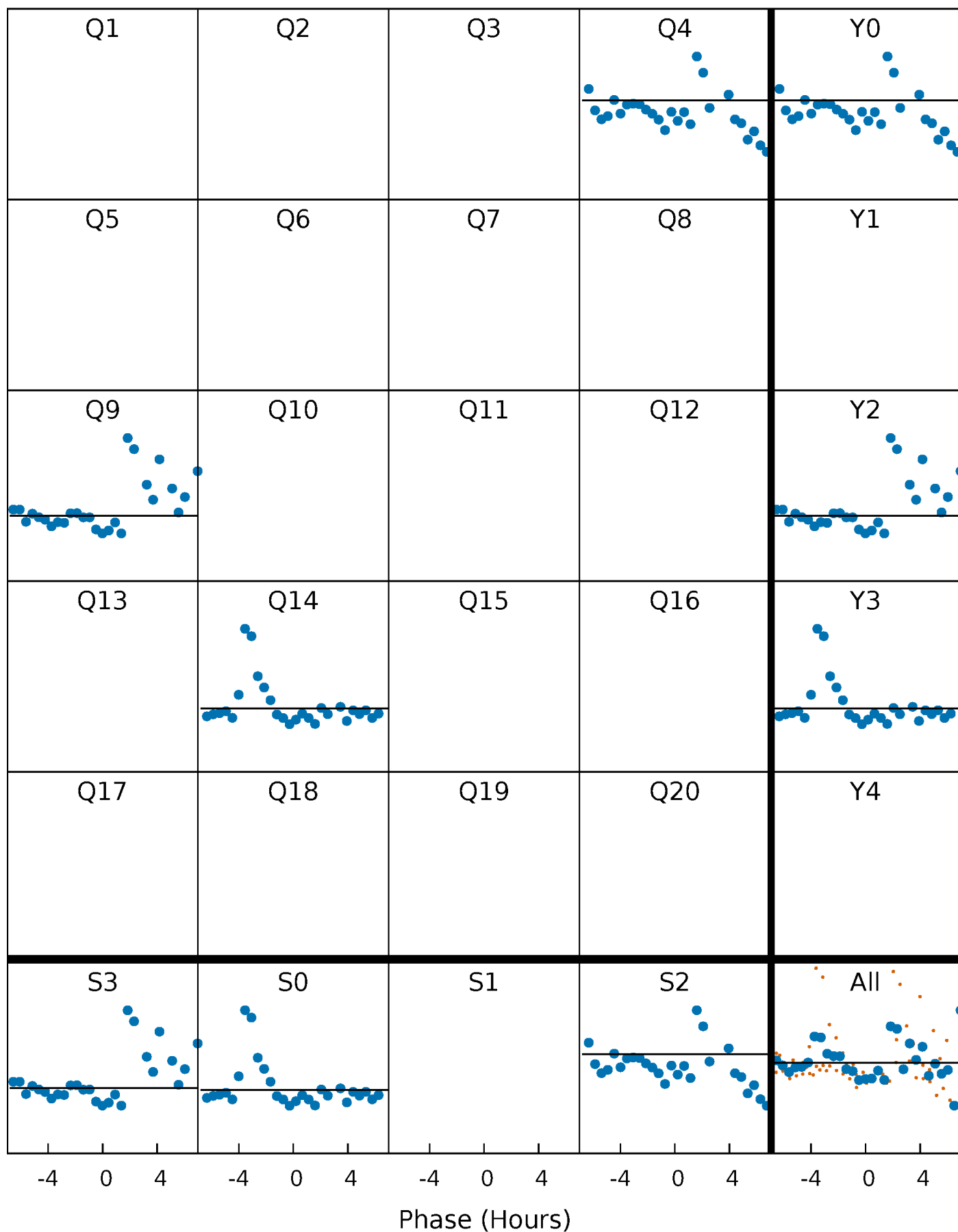
PDC Quarter-Phased Transit Curves

TCE 008487242-06 $P=456.274584$ Days $T_0=429.479977$ (BKJD)



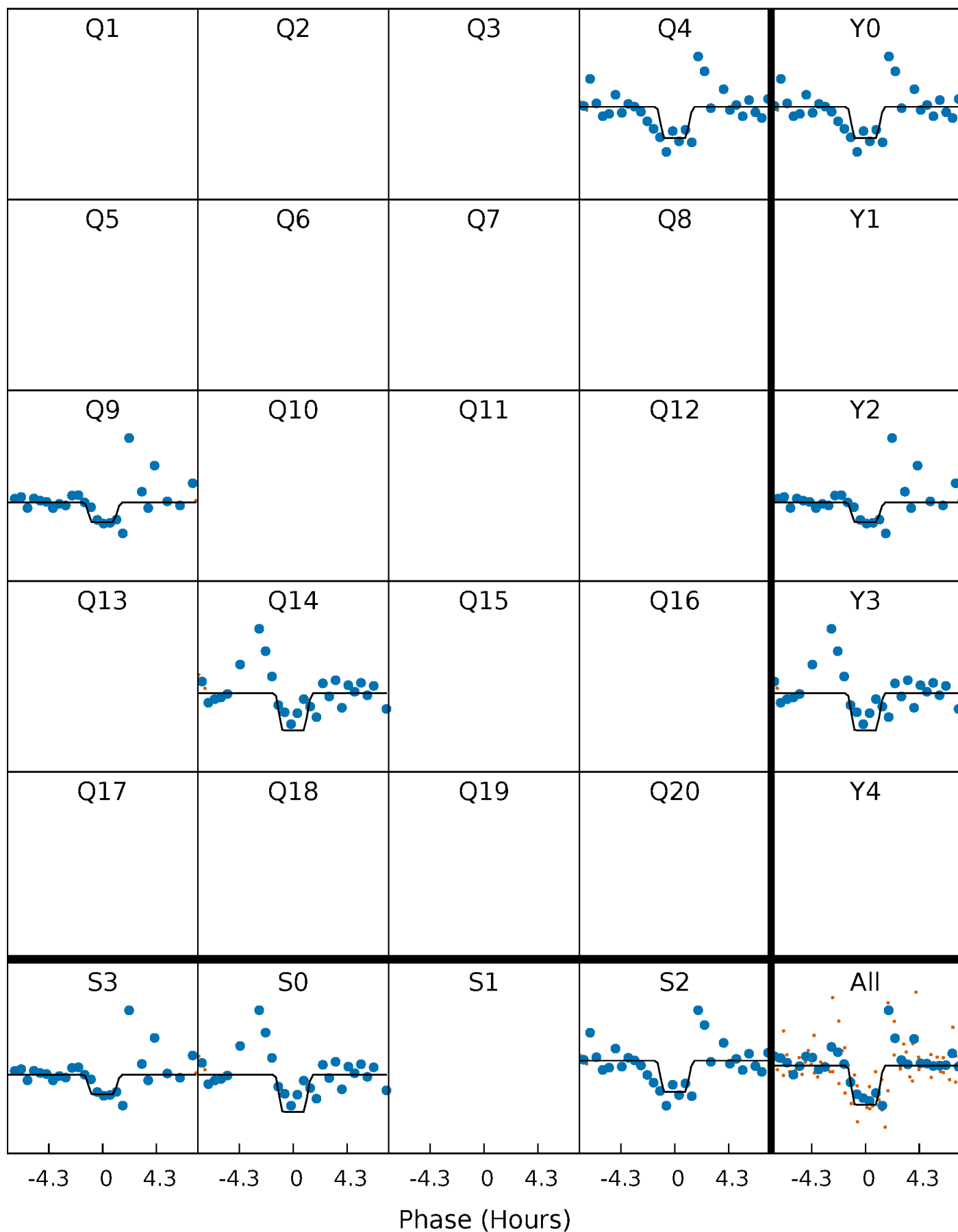
DV Quarter-Phased Transit Curves

TCE 008487242-06 P=456.274584 Days $T_0=429.479977$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

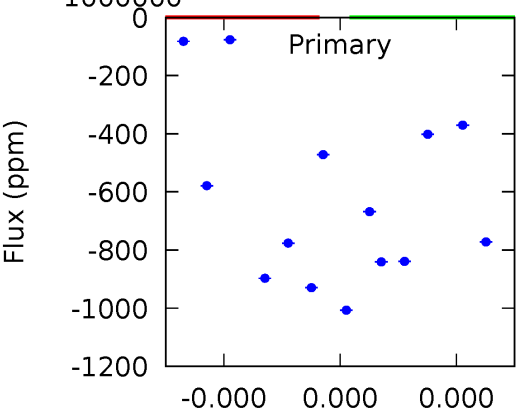
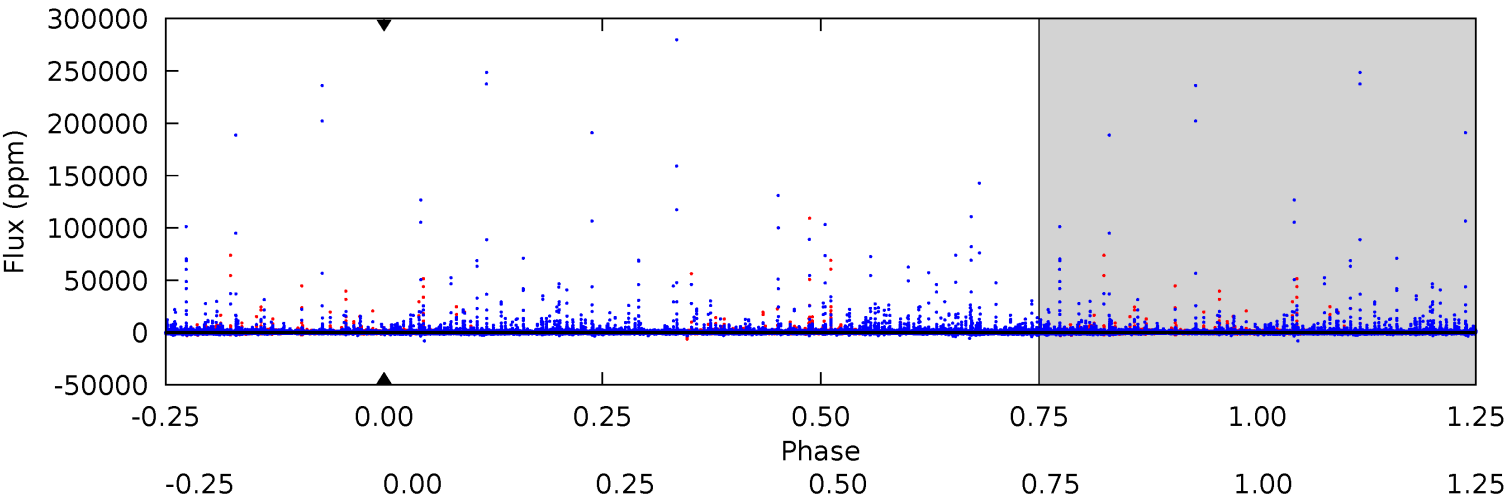
TCE 008487242-06 P=456.274584 Days $T_0=429.479186$ (BKJD)



DV Model-Shift Uniqueness Test

008487242-06, P = 456.274584 Days, E = 429.479977 Days

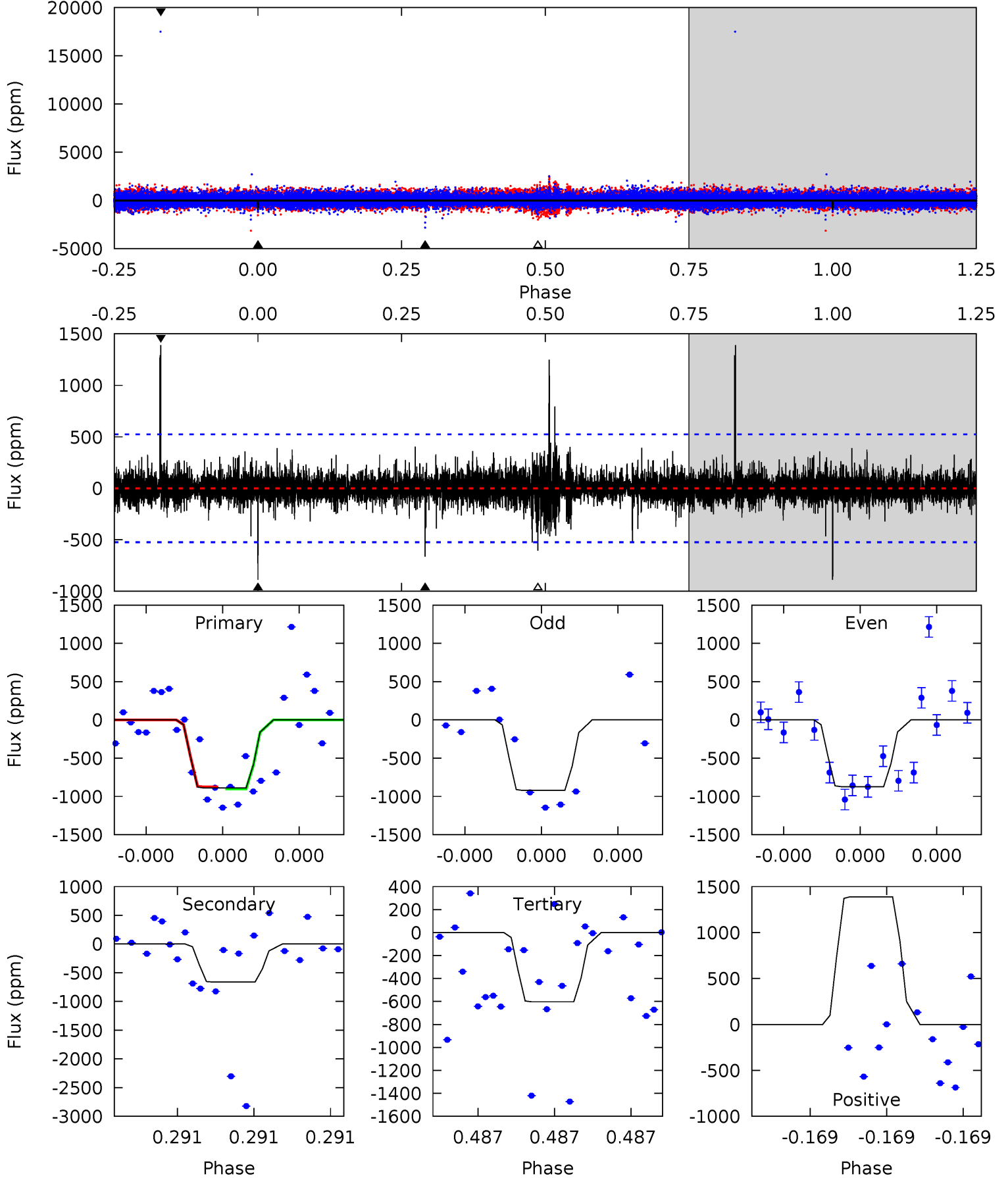
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008487242-06, P = 456.274584 Days, E = 429.479186 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.66	7.18	6.55	15.1	5.70	3.67	1.04	3.11	-5.44	0.63	-7.92	0.19	0.96	0.61	0.12



Stellar Parameters For KIC 008487242

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4843^{+130}_{-159}	$4.681^{+0.054}_{-0.032}$	$-1.060^{+0.300}_{-0.300}$	$0.571^{+0.038}_{-0.038}$	$0.571^{+0.042}_{-0.025}$	$4.318^{+0.916}_{-0.519}$
	+3%/-3%	+1%/-1%	+28%/-28%	+7%/-7%	+7%/-4%	+21%/-12%
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 008487242-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1000000	$4.69^{+4.60}_{-3.25}$	229^{+7}_{-8}	3326^{+11916}_{-15291}	$19015^{+5313736}_{-3192055}$
Alt.	-661 ± 92	$4.95^{+5.26}_{-3.37}$	229^{+7}_{-9}	3251^{+1551}_{-584}	$13358^{+122904}_{-10109}$

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

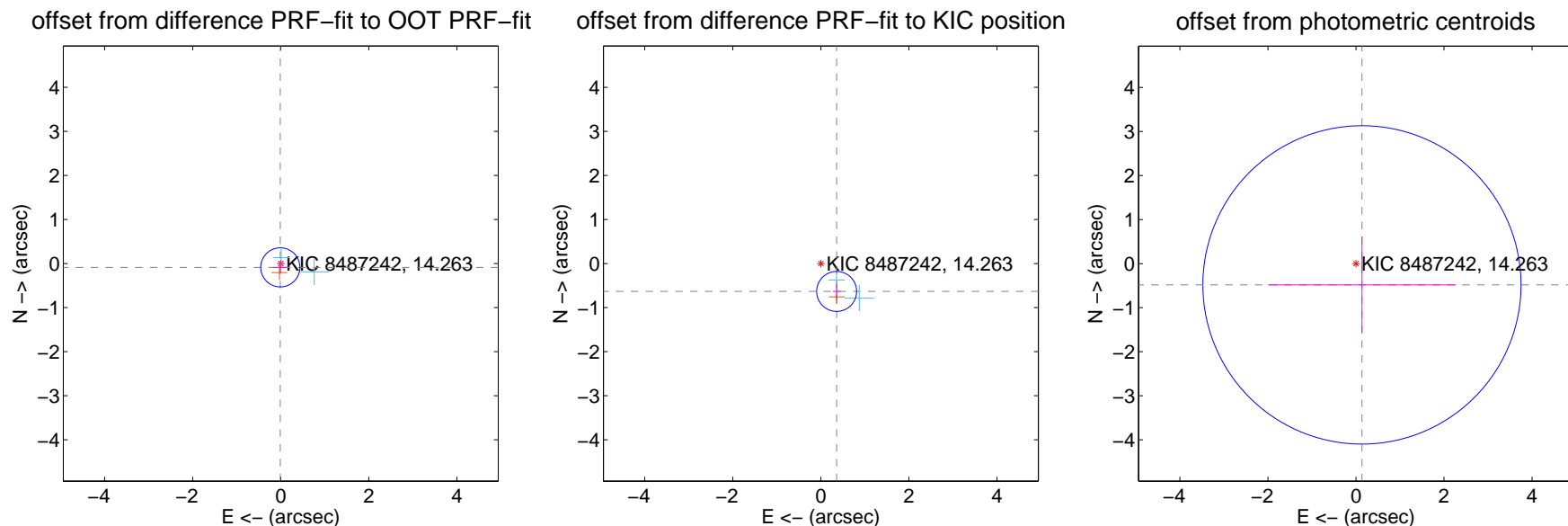
DV Centroid Data

Supplemental centroid analysis for 008487242-06. Kepler magnitude: 14.26. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

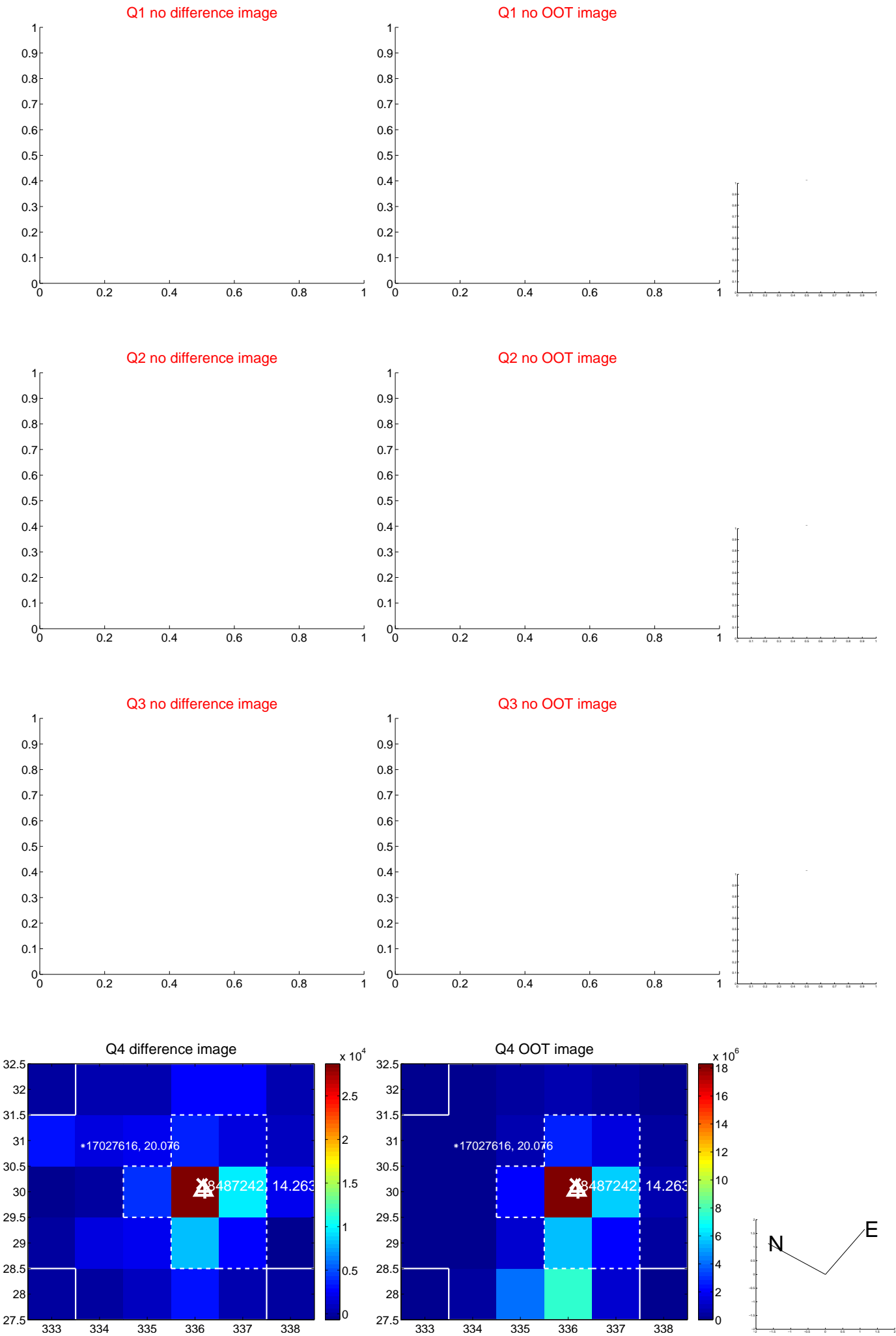
The direct PRF centroid is offset from the target star catalog position by about 0.61 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.087 ± 0.148	0.59	0.010 ± 0.156	-0.087 ± 0.148
PRF-fit source offset from KIC position	0.727 ± 0.151	4.81	-0.358 ± 0.090	-0.633 ± 0.166
photometric centroid source offset	0.50 ± 1.20	0.42	-0.14 ± 2.13	-0.48 ± 1.10



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.

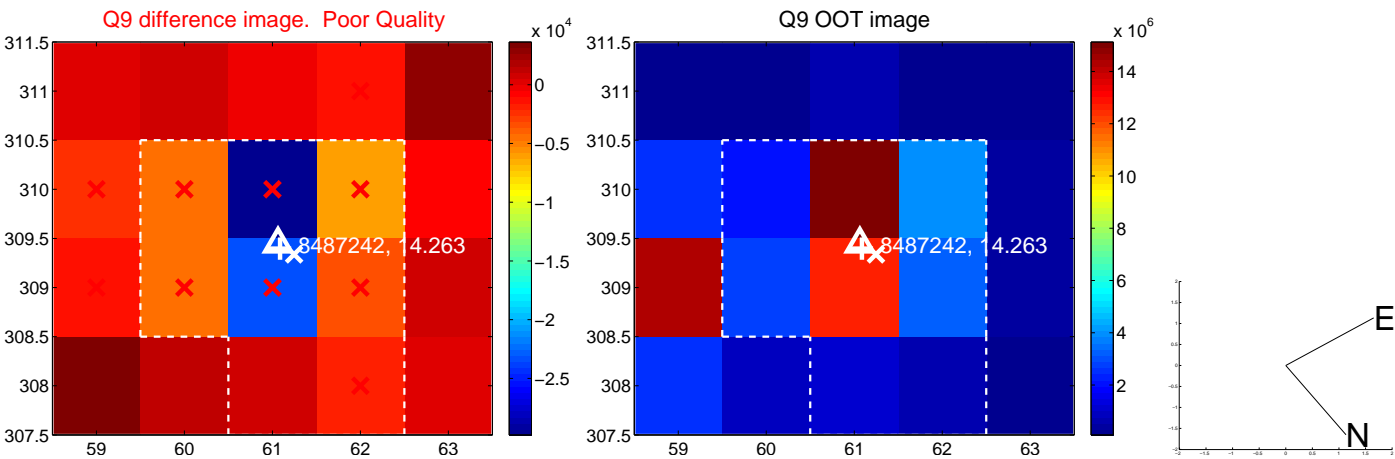
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



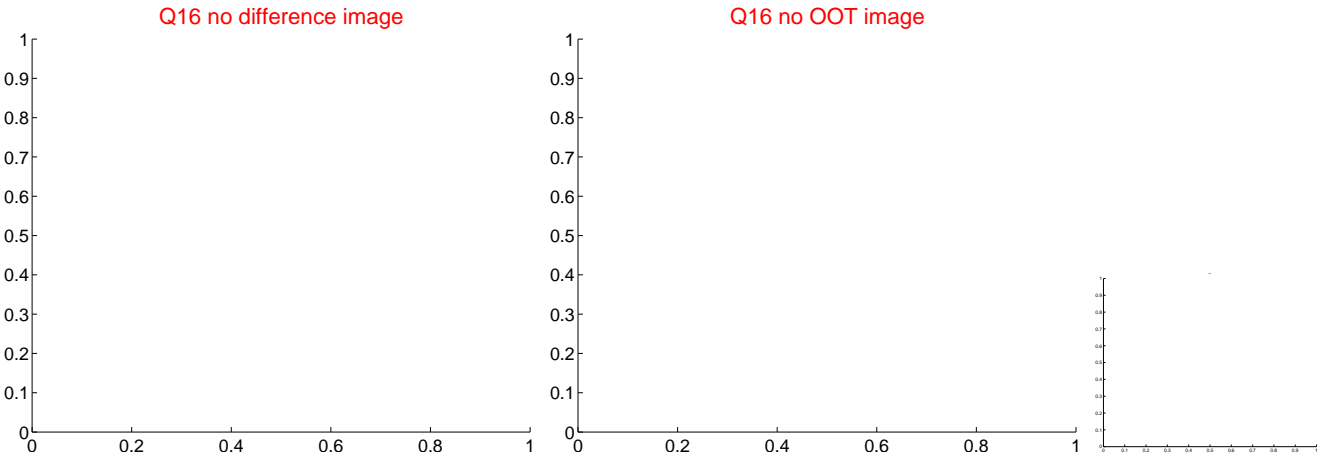
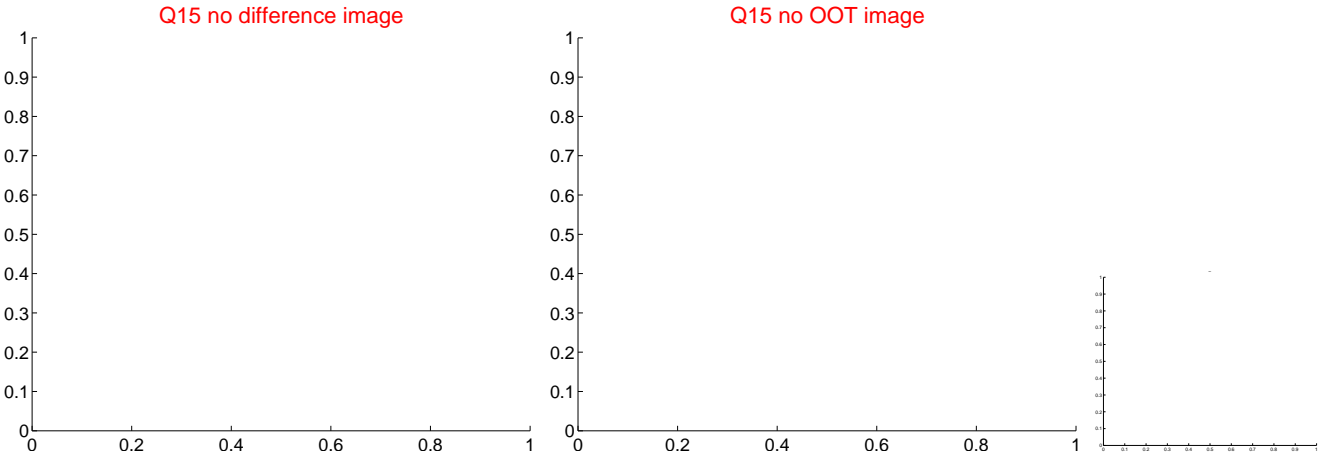
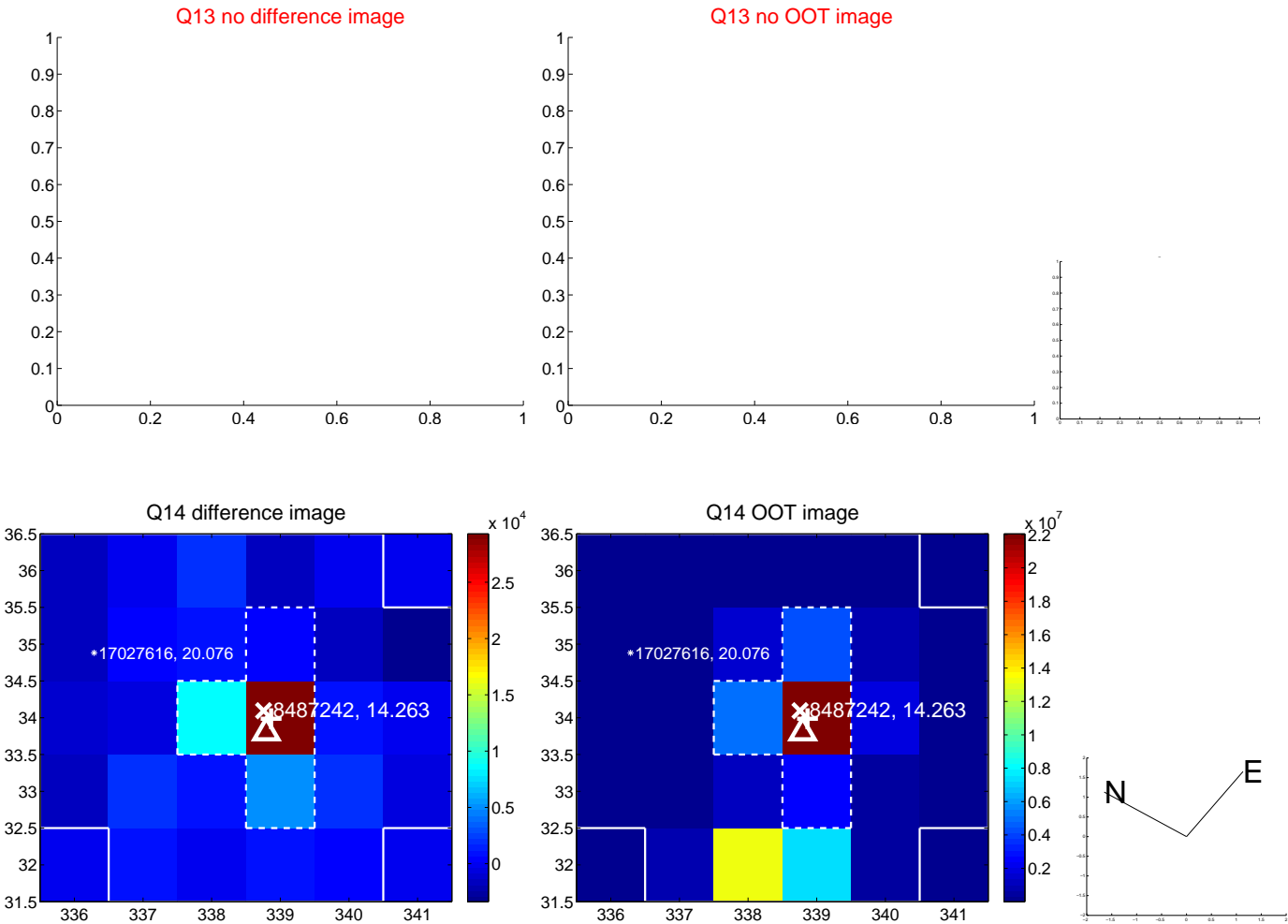
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



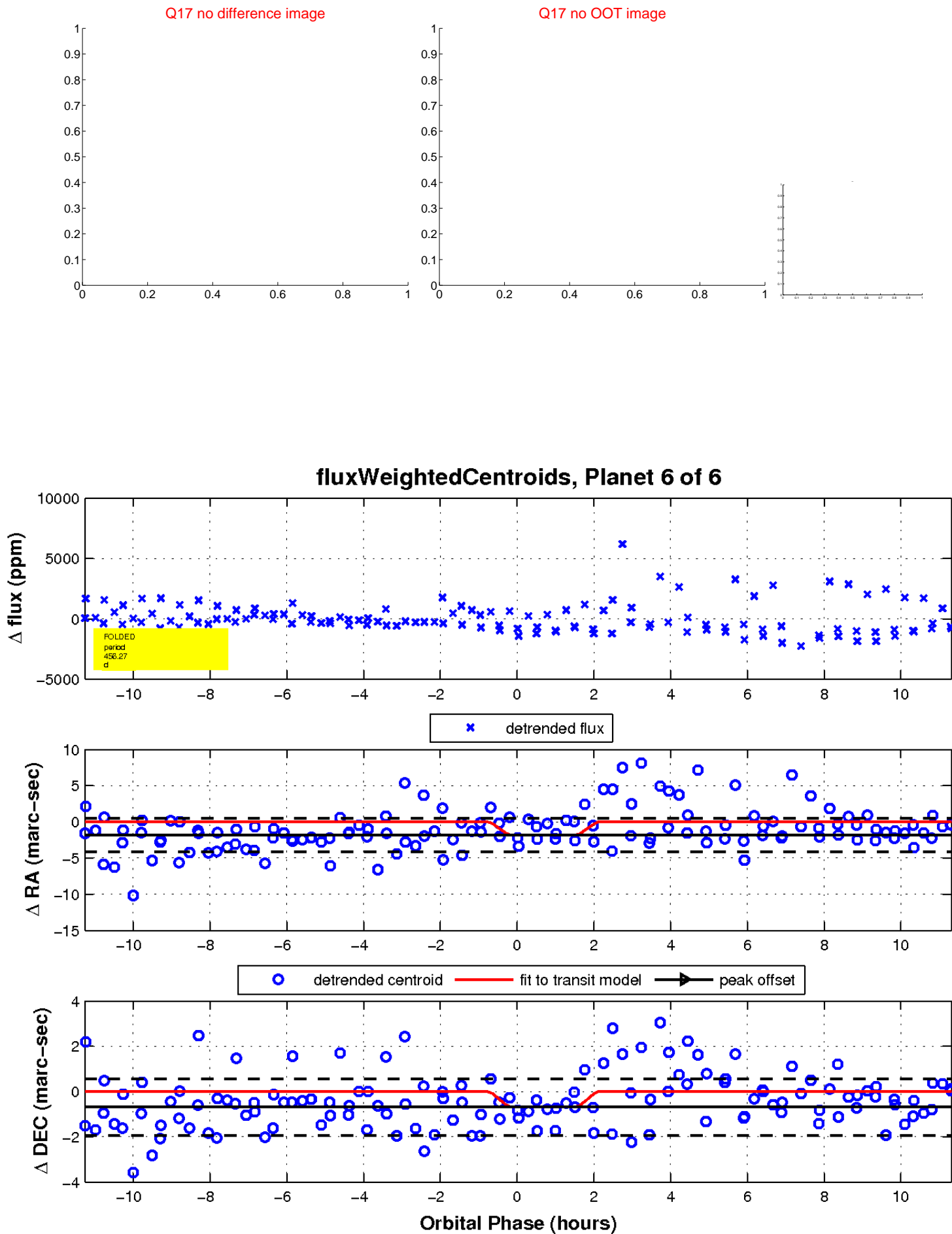
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

