

KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
011244150-02	OBS	No	681.580099	215.140879	1665.9	17.828	13.6	7.3	0.49	3738	2.19	0.03
011244150-03	OBS	No	552.214651	361.196180	1357.2	3.682	13.3	6.5	0.49	3738	1.94	0.04
011244150-04	OBS	No	341.785764	254.977429	1383.0	6.403	13.0	9.0	0.49	3738	1.80	0.07
011244150-05	OBS	No	416.963704	498.214392	1247.6	11.316	11.2	6.1	0.49	3738	1.75	0.06
011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

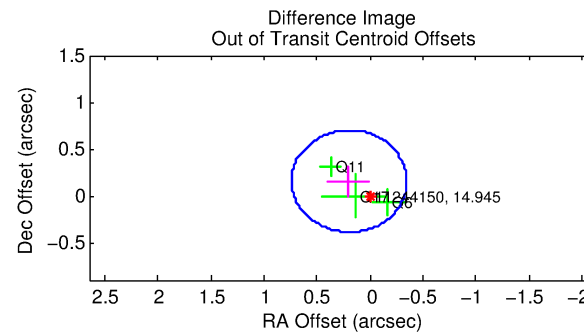
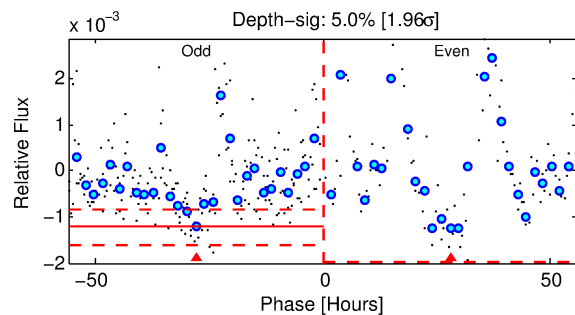
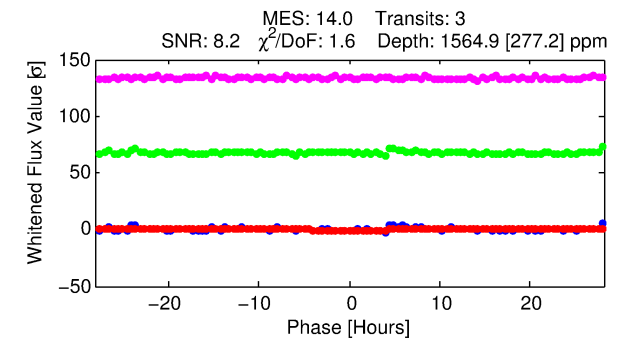
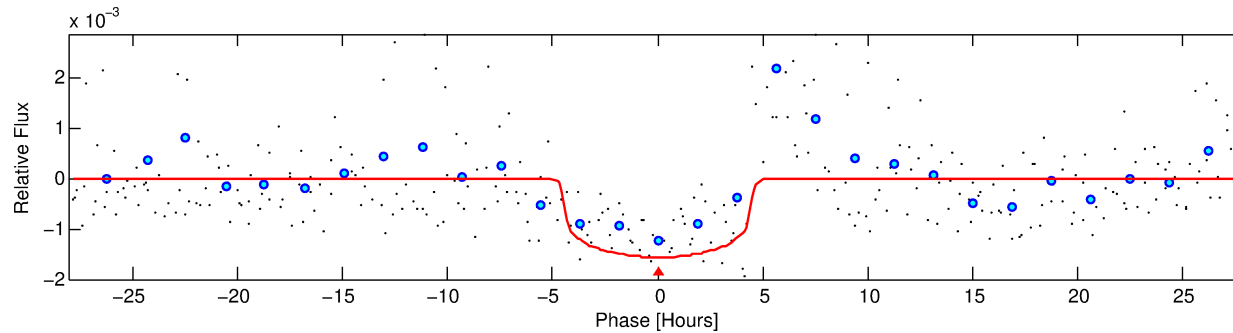
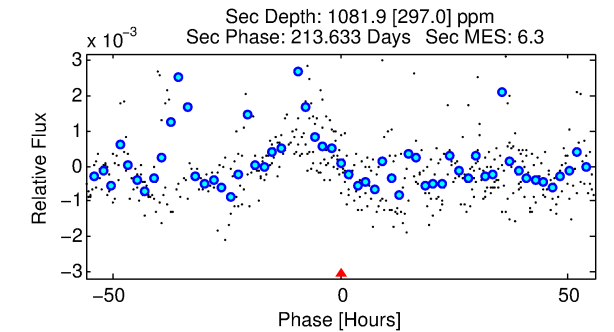
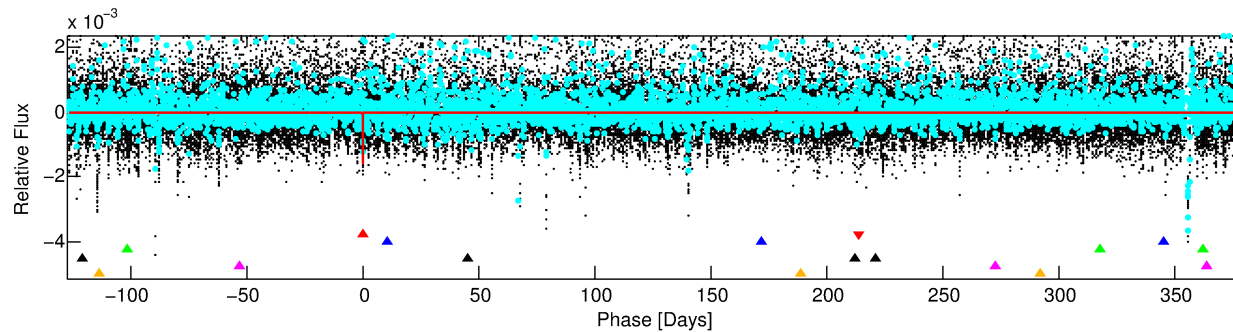
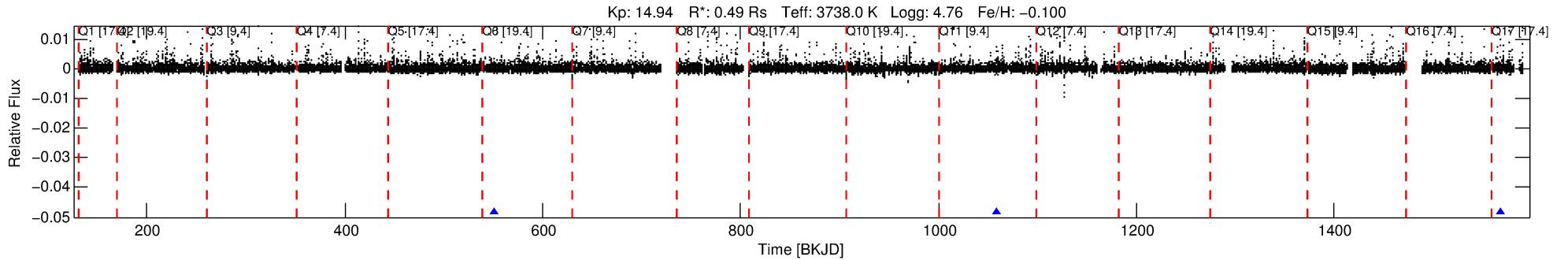
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-01

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 1 of 6 Period: 508.097 d



DV Fit Results:

Period = 508.09670 [0.00885] d
Epoch = 551.2557 [0.0115] BKJD
Rp/R* = 0.0359 [0.0266]
a/R* = 429.82 [1398.42]
b = 0.03 [129.29]
Seff = 0.04 [0.00]
Teq = 116 [3] K
Rp = 1.91 [1.42] Re
a = 0.9856 [0.0545] AU
Ag = 159075.57 [240580.90] [0.66σ]
Teffp = 3579 [1353] K [2.56σ]

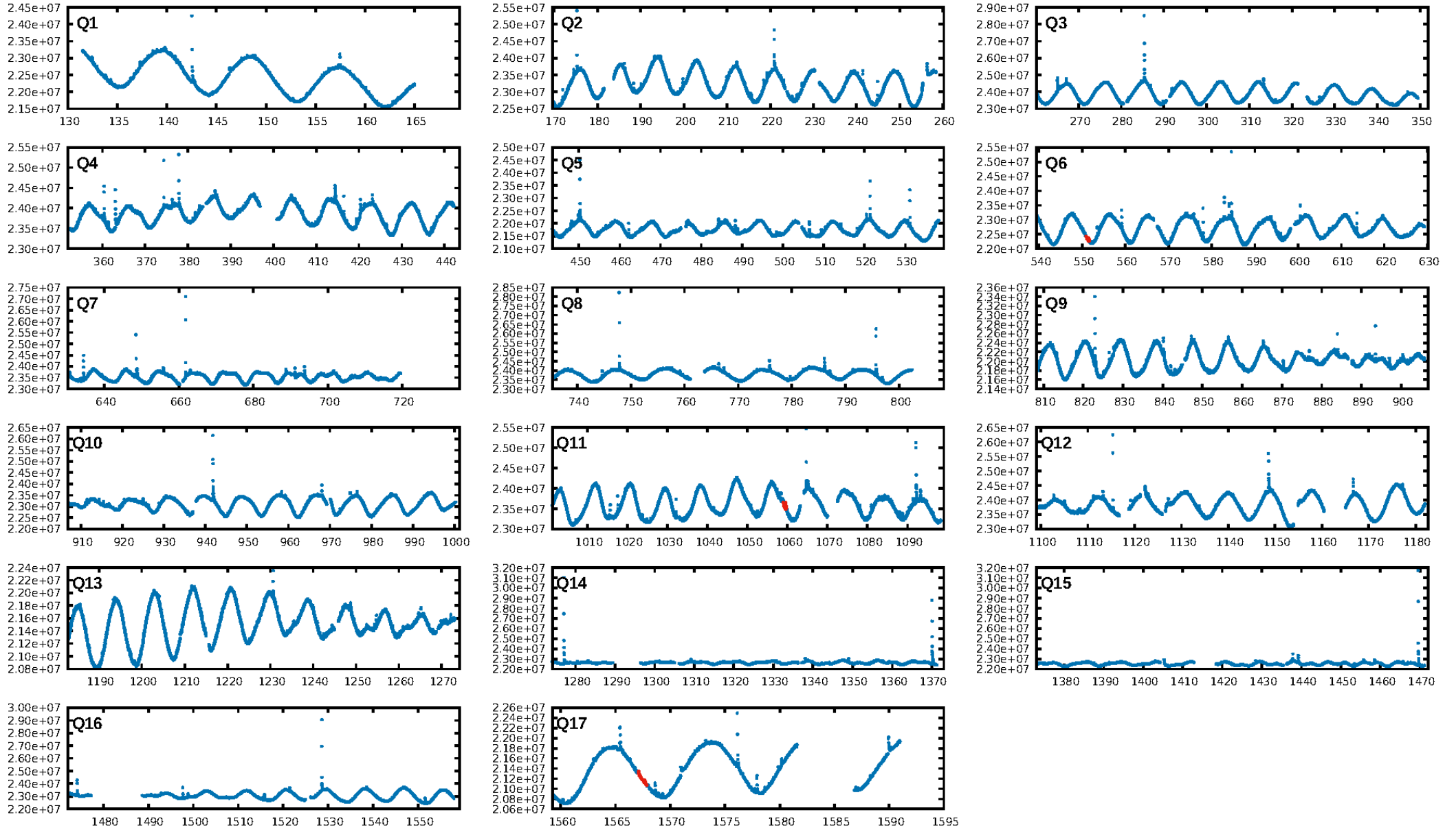
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [148.99σ]
LongPeriod-sig: 100.0% [105.35σ]
ModelChiSquare2-sig: 2.0%
ModelChiSquareGof-sig: 84.8%
Bootstrap-pfa: 1.16e-12
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 1.543
Centroid-sig: 45.0%
Centroid-so: 0.222 arcsec [0.45σ]
OotOffset-rm: 0.251 arcsec [1.38σ]
KicOffset-rm: 0.628 arcsec [3.99σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

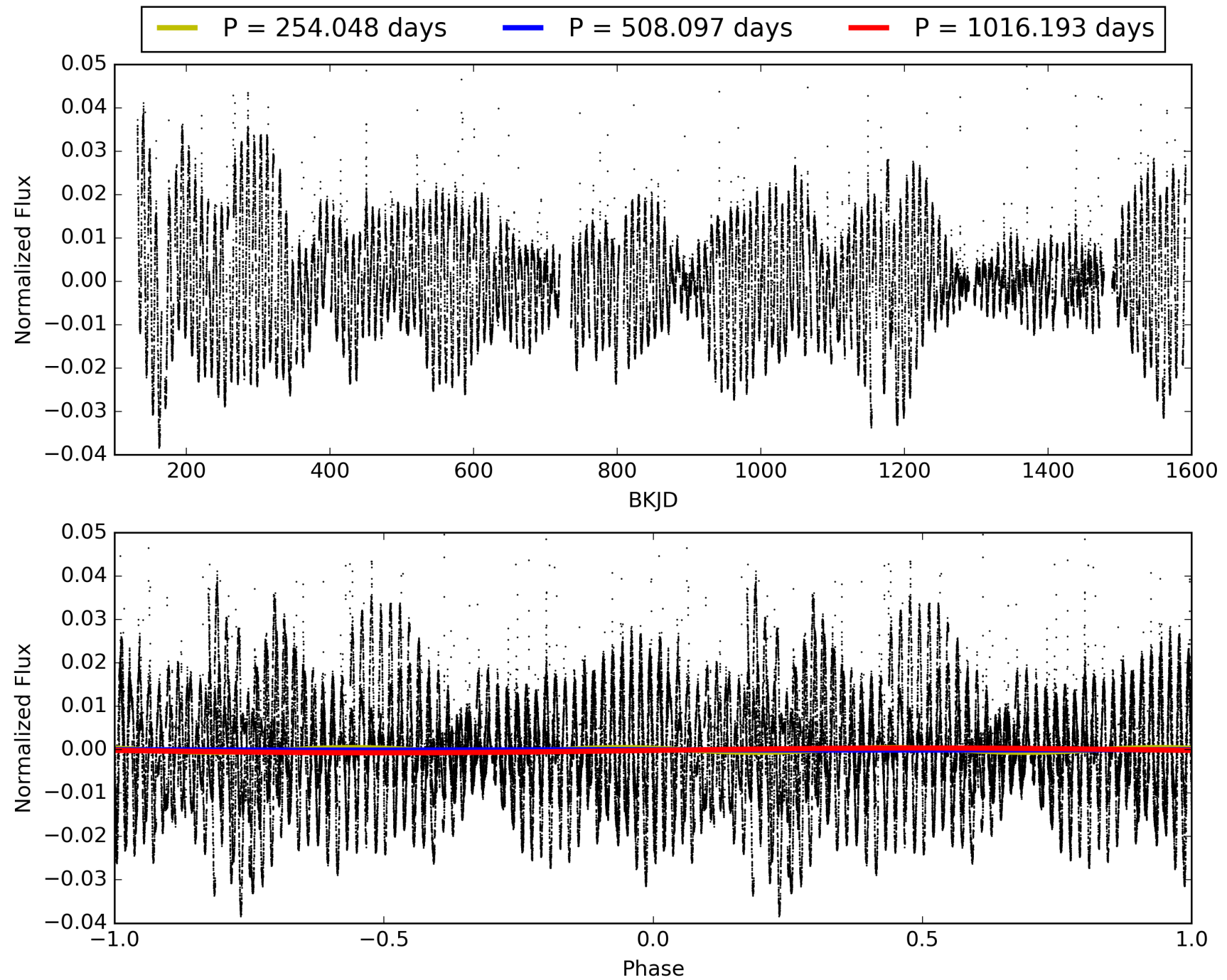
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:45:29 Z

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

TCE 011244150-01, PDC Light Curves

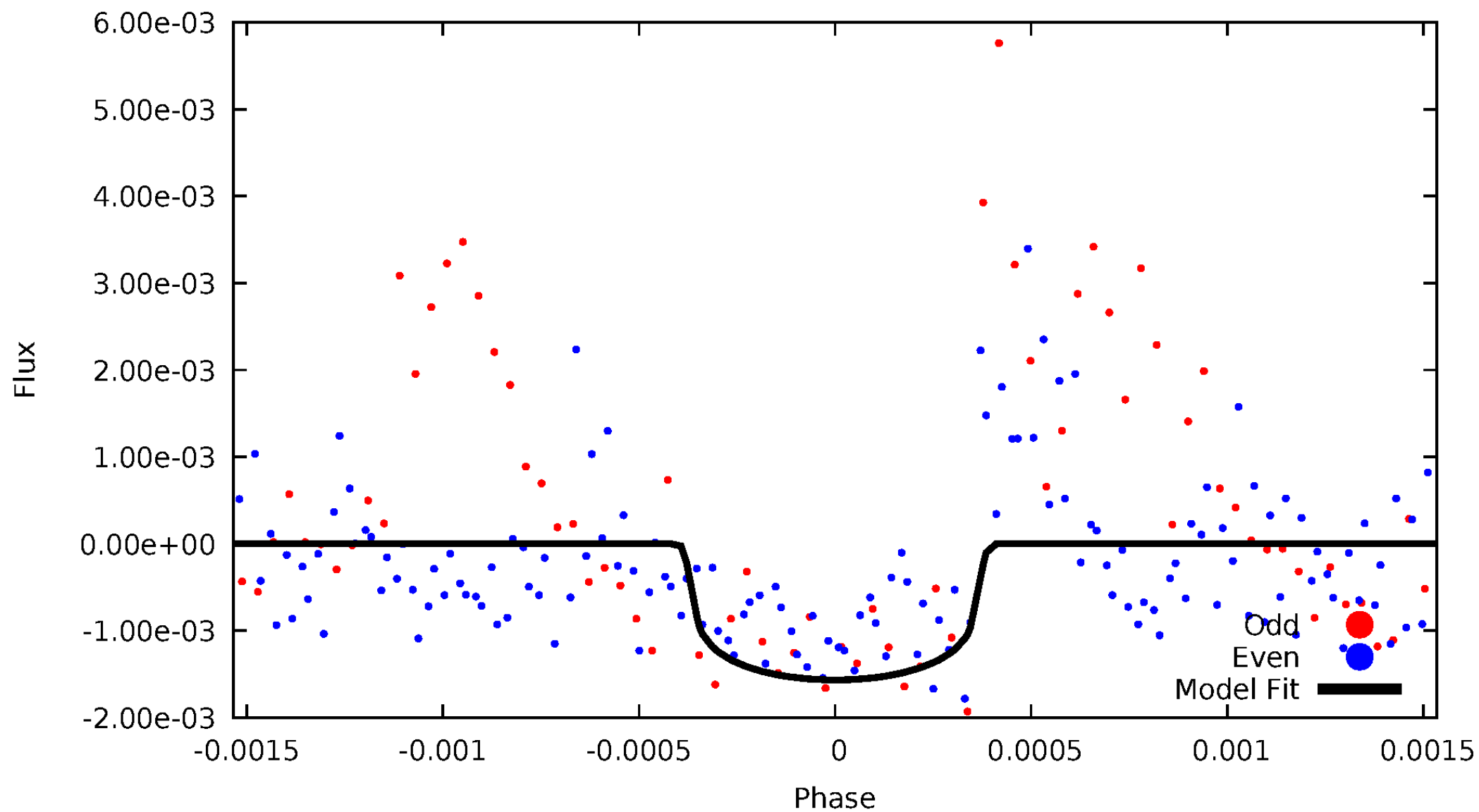


TCE 011244150-01



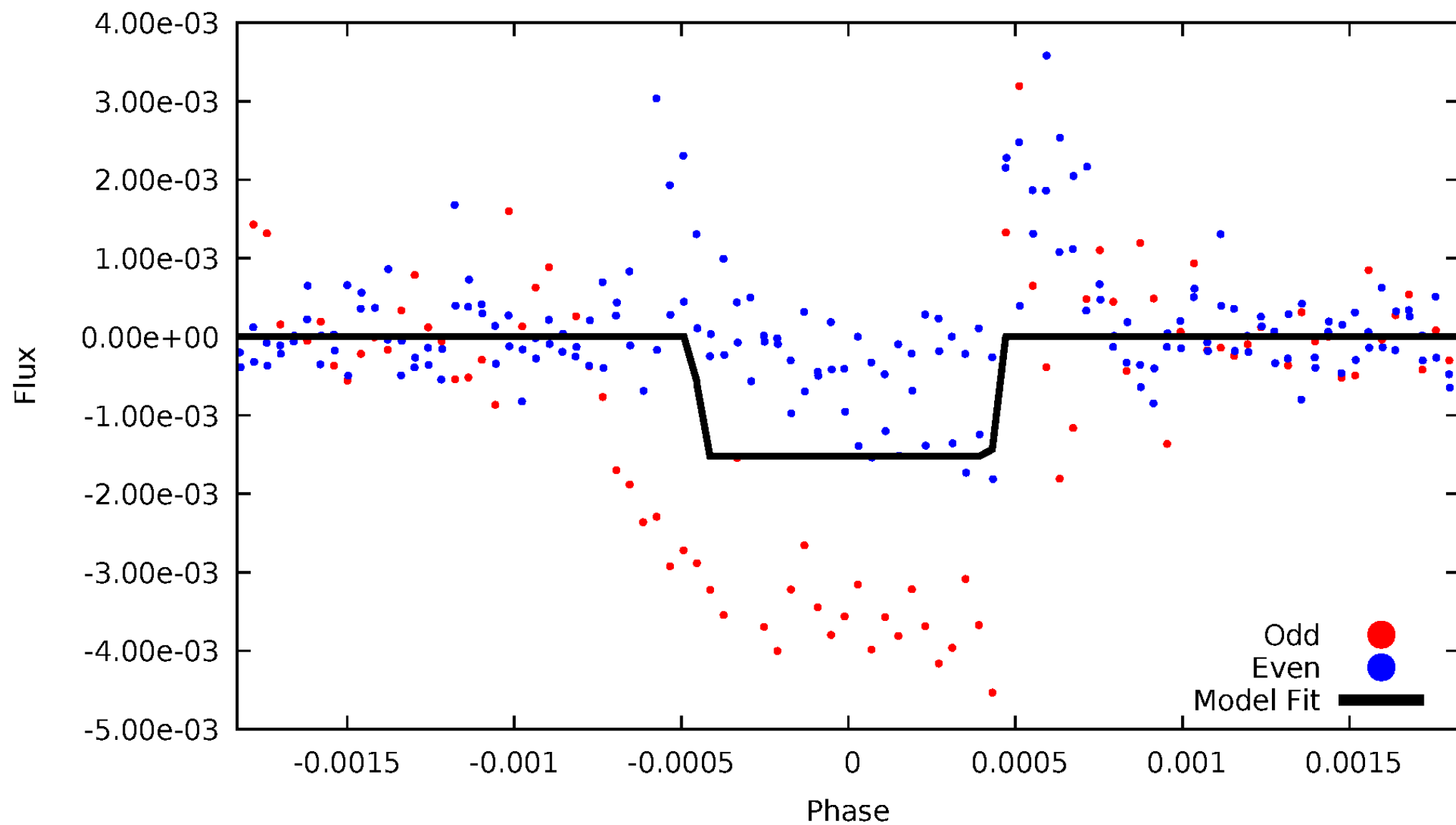
DV Odd/Even

TCE 011244150-01



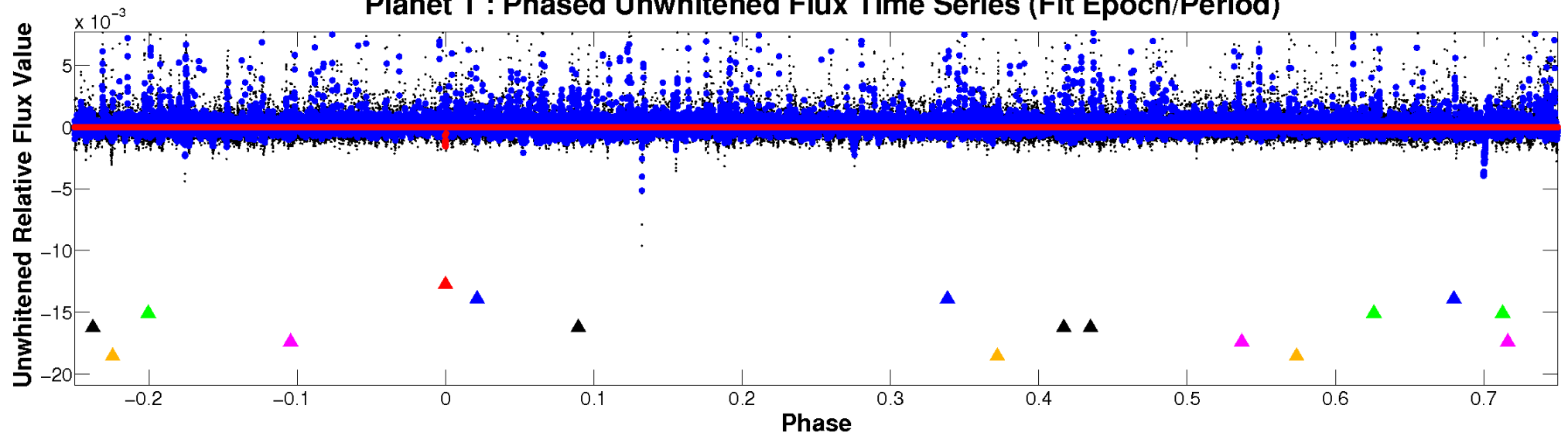
ALT Odd/Even

TCE 011244150-01

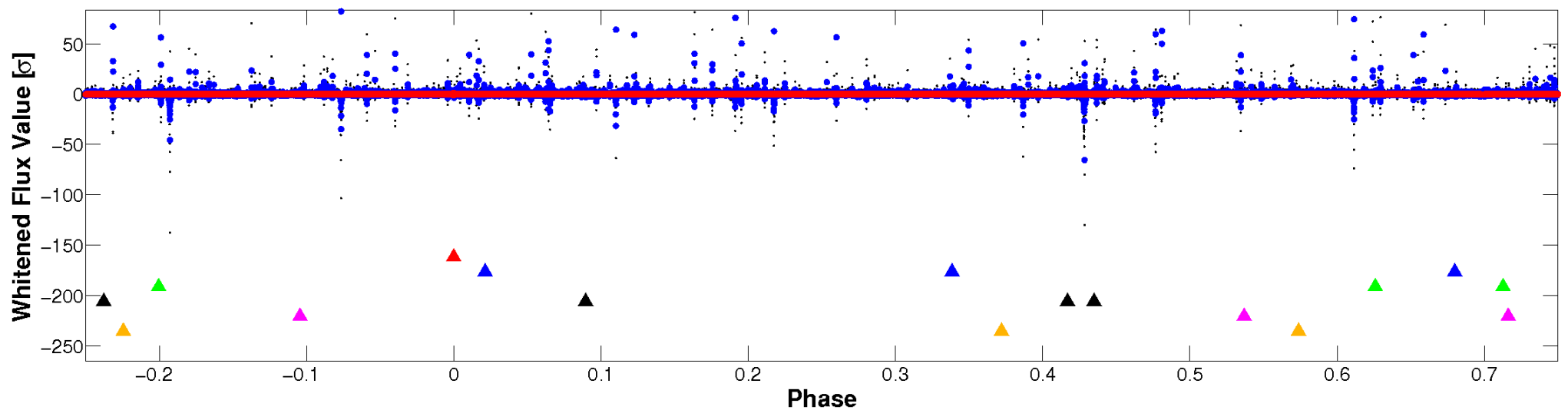


Non-Whitened Vs. Whitened Light Curve

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

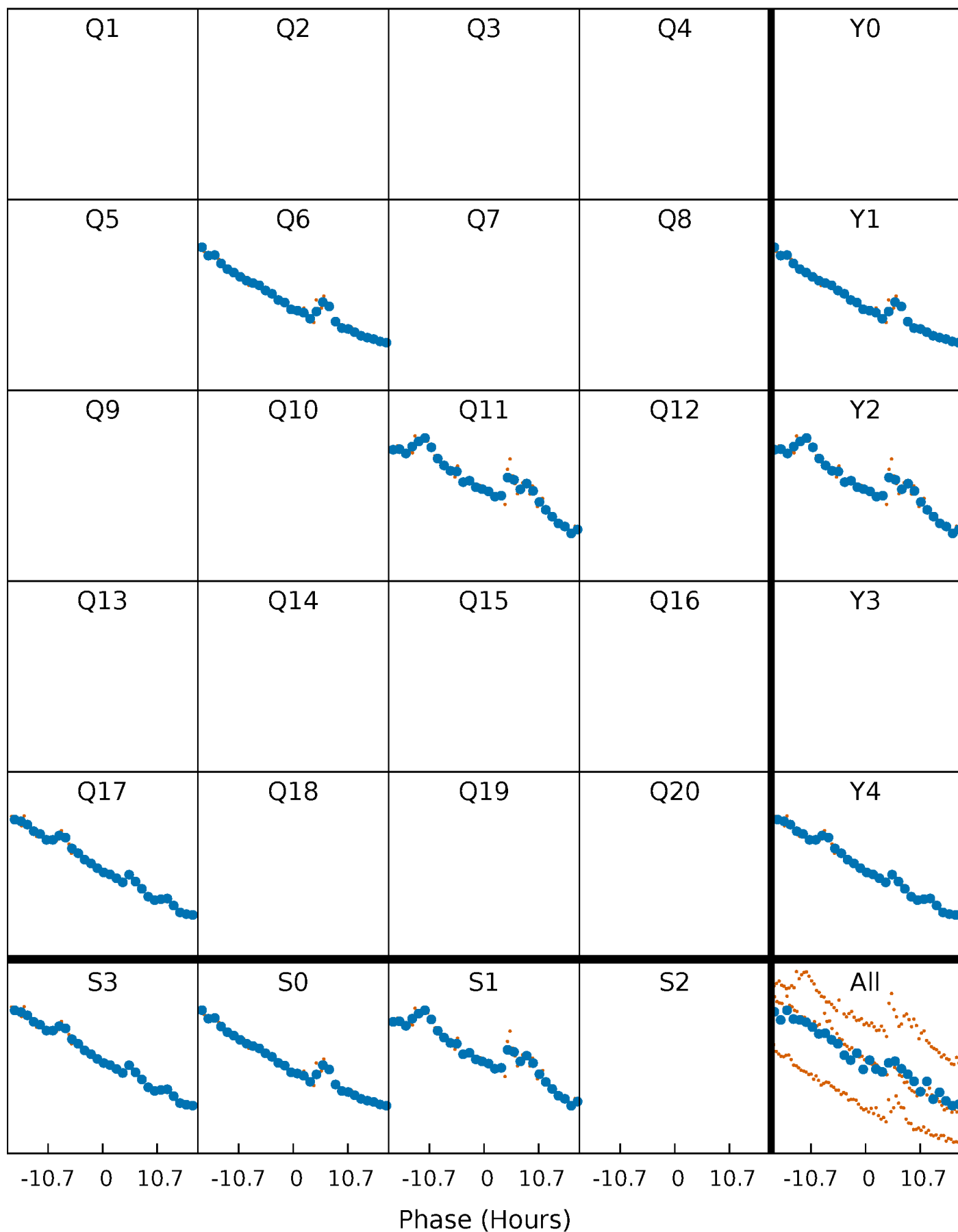


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



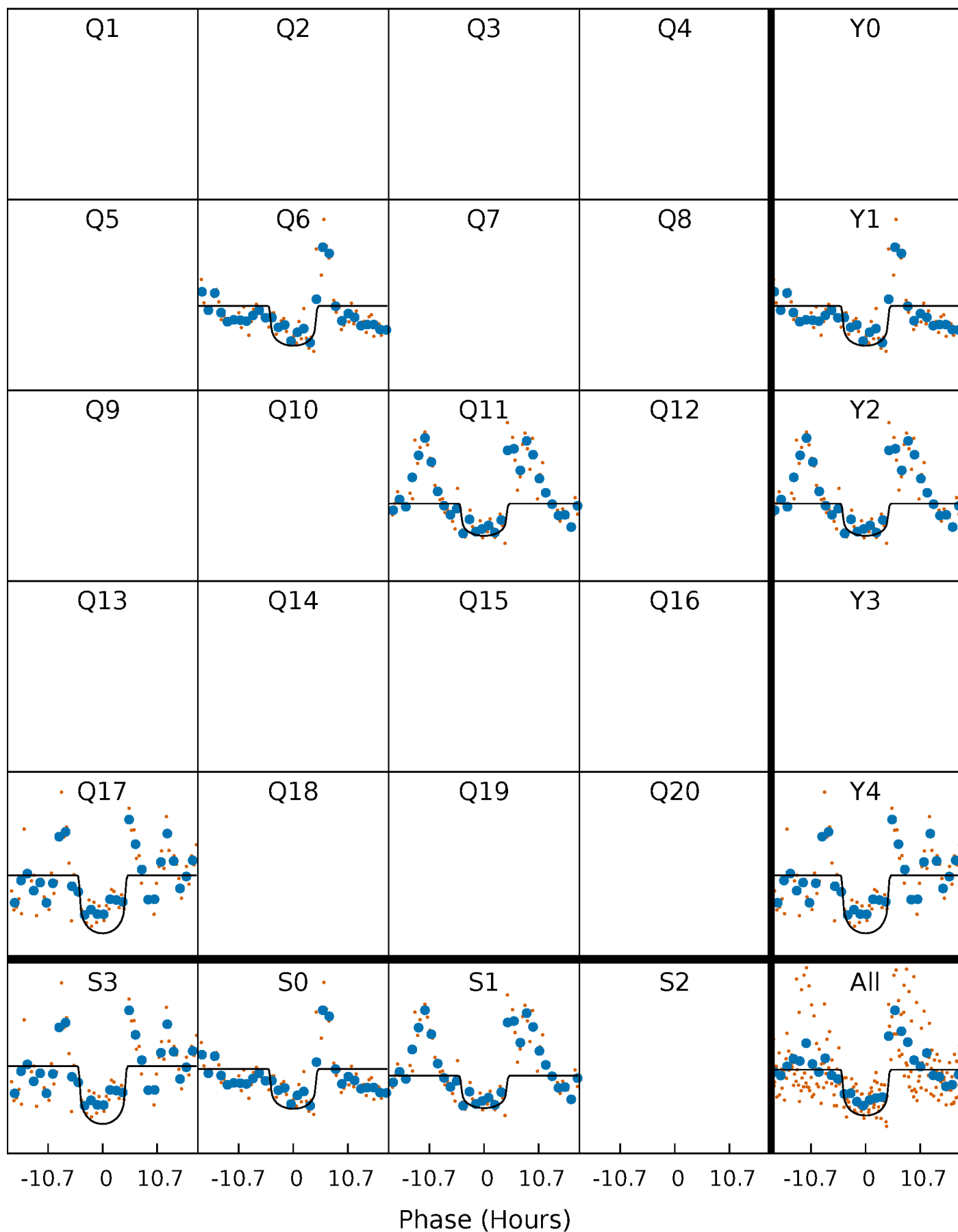
PDC Quarter-Phased Transit Curves

TCE 011244150-01 P=508.096701 Days $T_0=551.255728$ (BKJD)



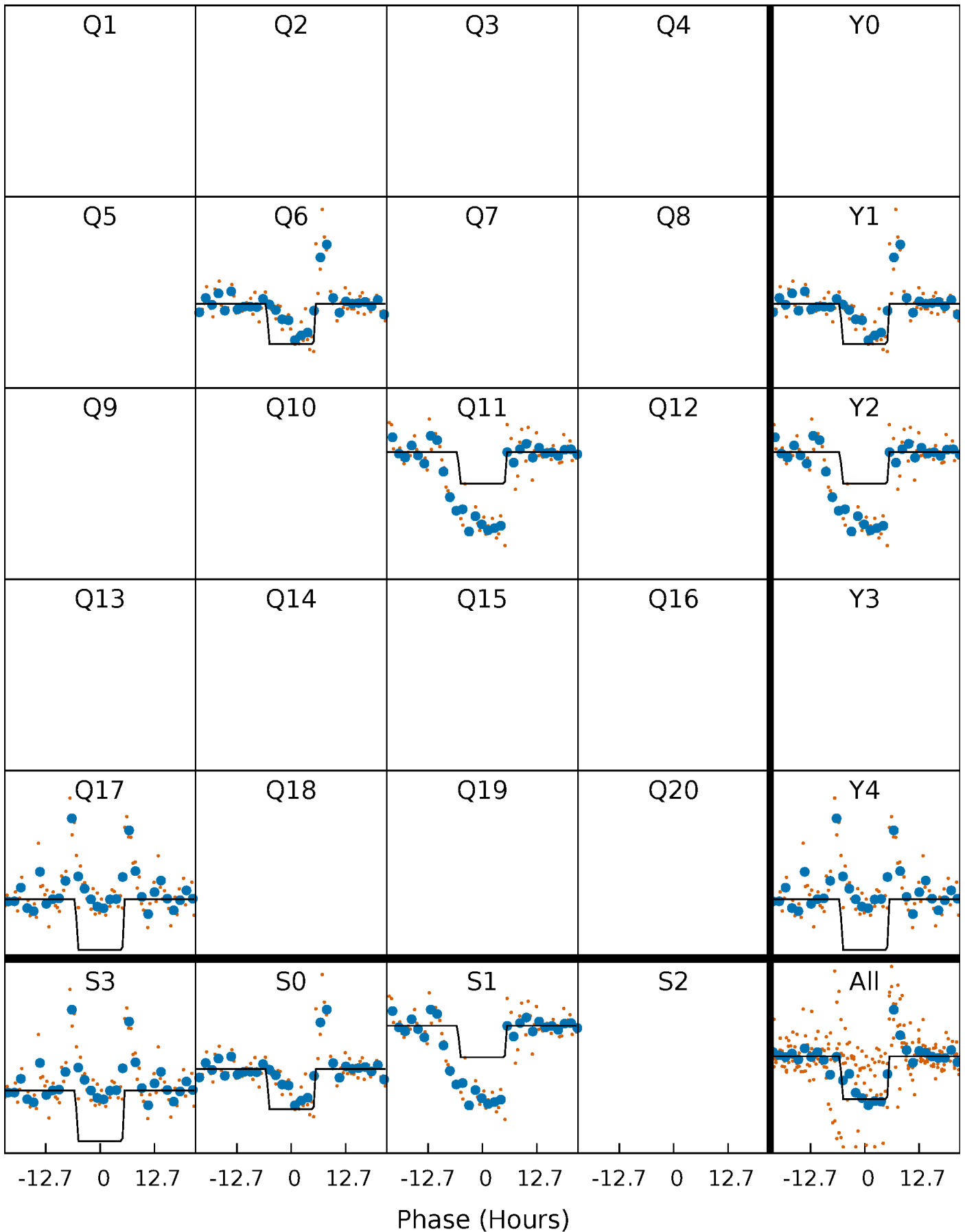
DV Quarter-Phased Transit Curves

TCE 011244150-01 P=508.096701 Days $T_0=551.255728$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

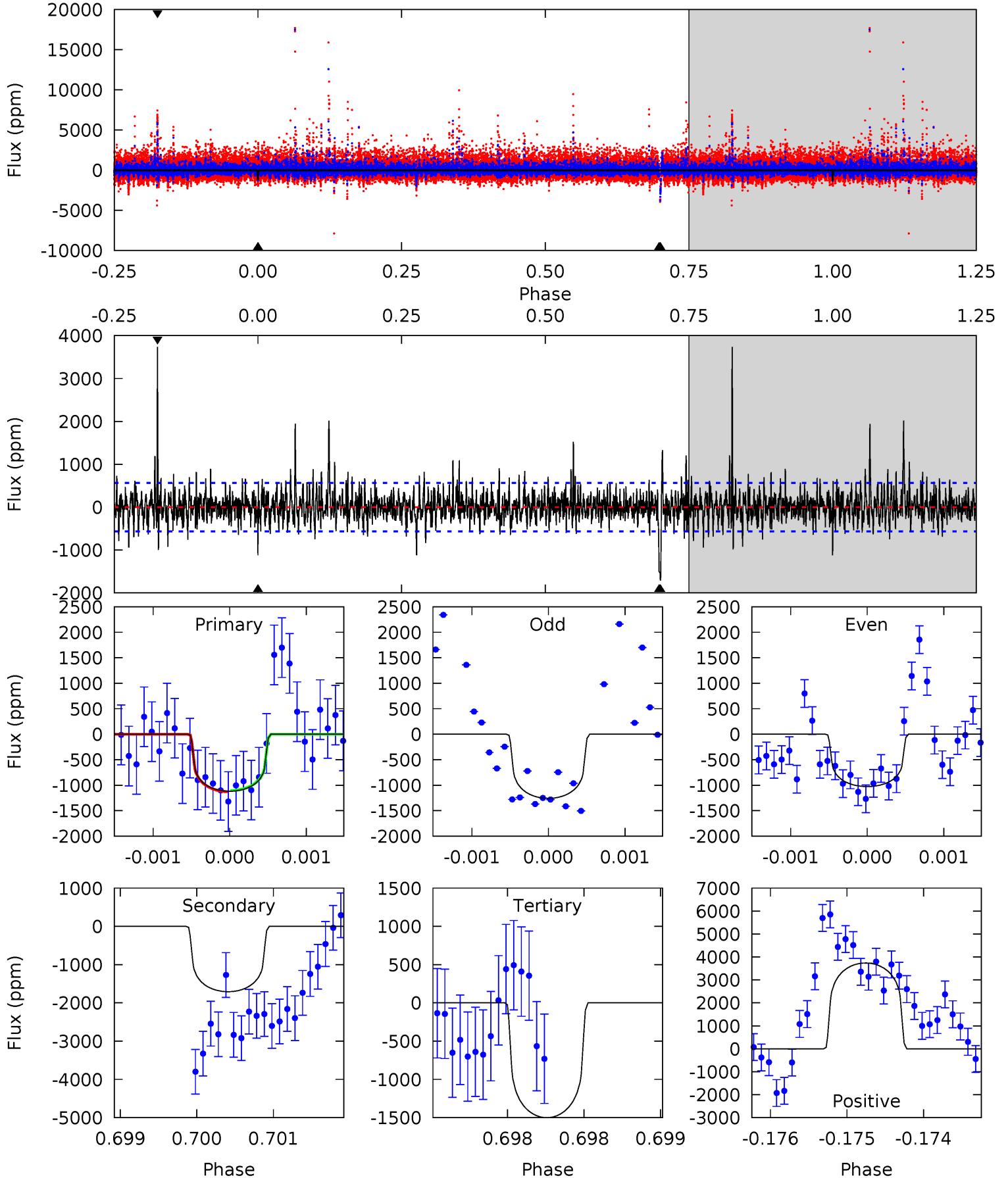
TCE 011244150-01 P=508.100903 Days $T_0=551.203927$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-01, $P = 508.096701$ Days, $E = 43.159027$ Days

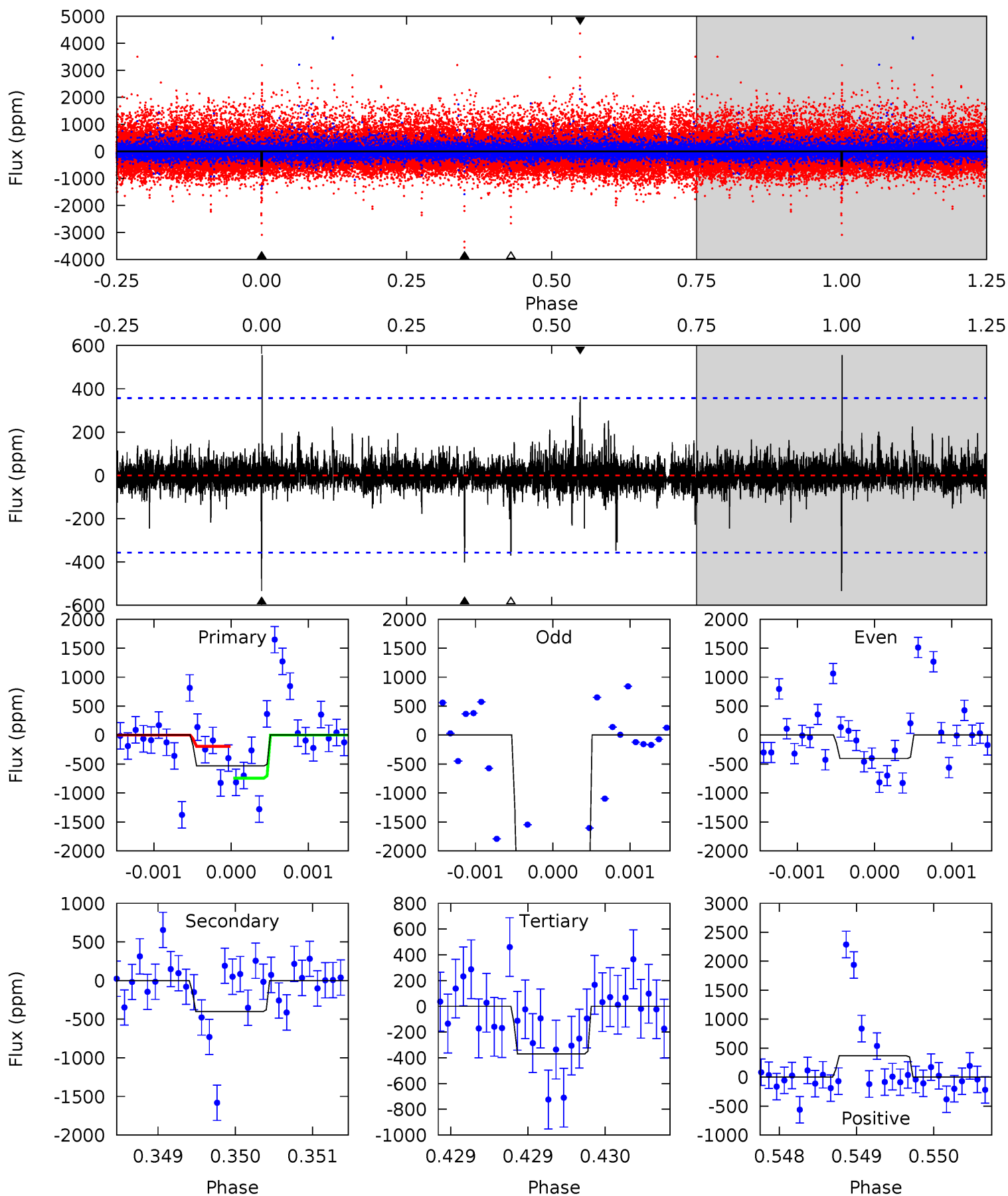
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	16.6	14.6	36.4	5.50	3.37	2.78	-3.72	-25.5	2.03	-19.8	0.57	1.02	0.69	0.11



Alt Model-Shift Uniqueness Test

011244150-01, P = 508.100903 Days, E = 43.103024 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.18	6.15	5.66	5.62	5.47	3.31	0.73	2.51	2.55	0.48	0.52	26.2	1.73	0.51	4.15



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1708 ± 103	$2.08^{+1.34}_{-1.22}$	161^{+4}_{-3}	3802^{+1542}_{-552}	$212217^{+936967}_{-133602}$
Alt.	-401 ± 65	$2.14^{+1.37}_{-1.17}$	161^{+4}_{-4}	3005^{+836}_{-366}	$45945^{+175910}_{-28527}$

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

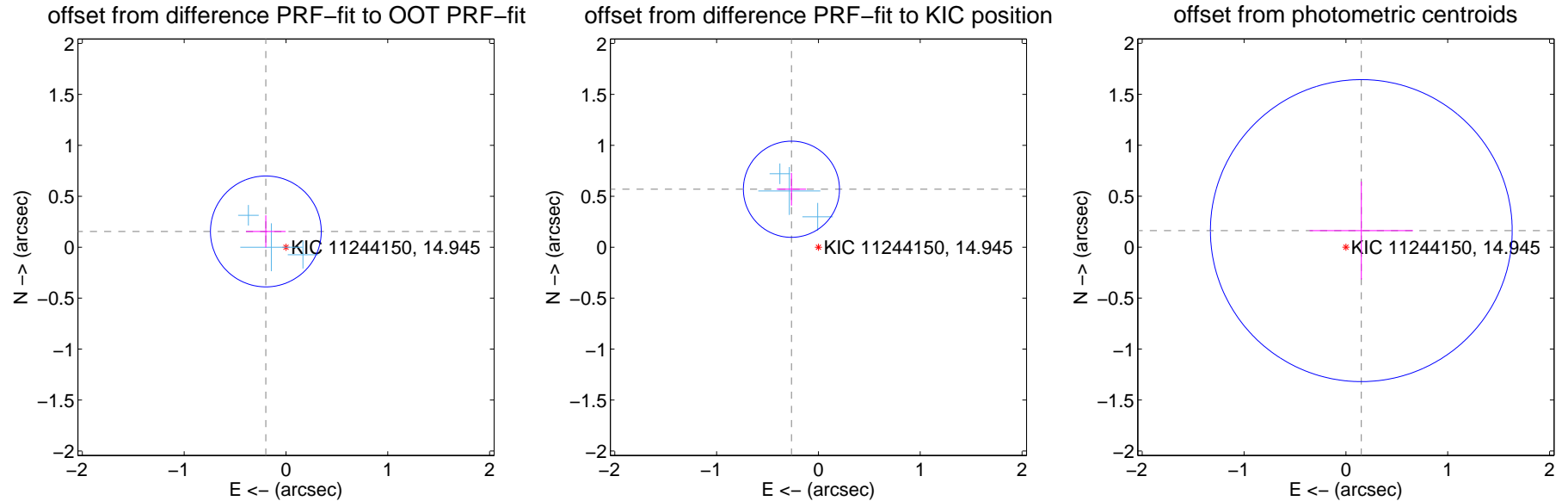
DV Centroid Data

Supplemental centroid analysis for 011244150-01. Kepler magnitude: 14.95. Transit SNR 8.19

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.57 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.251 ± 0.181	1.38	0.197 ± 0.194	0.155 ± 0.158
PRF-fit source offset from KIC position	0.628 ± 0.157	3.99	0.265 ± 0.143	0.569 ± 0.160
photometric centroid source offset	0.22 ± 0.49	0.45	-0.15 ± 0.51	0.16 ± 0.48

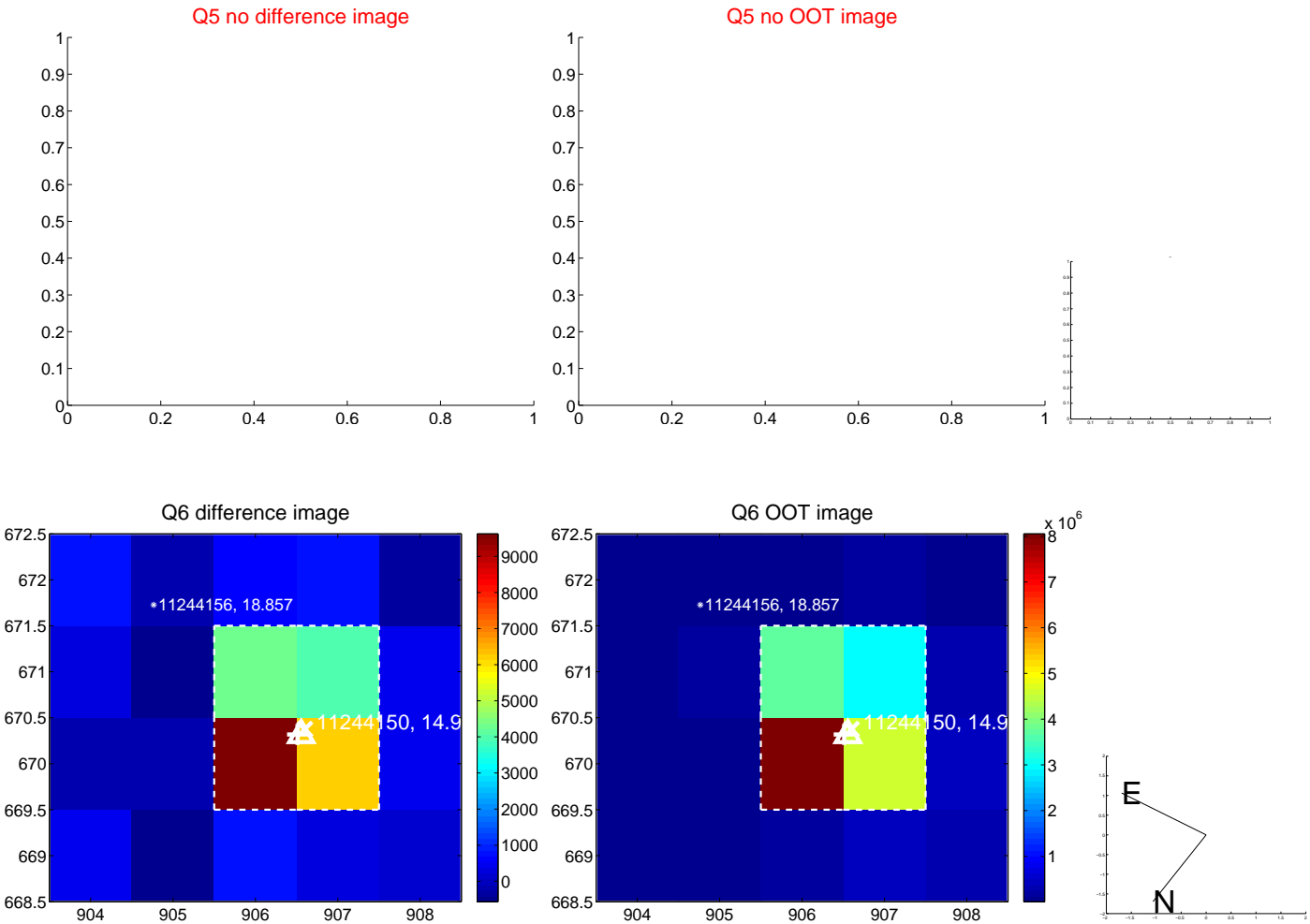


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

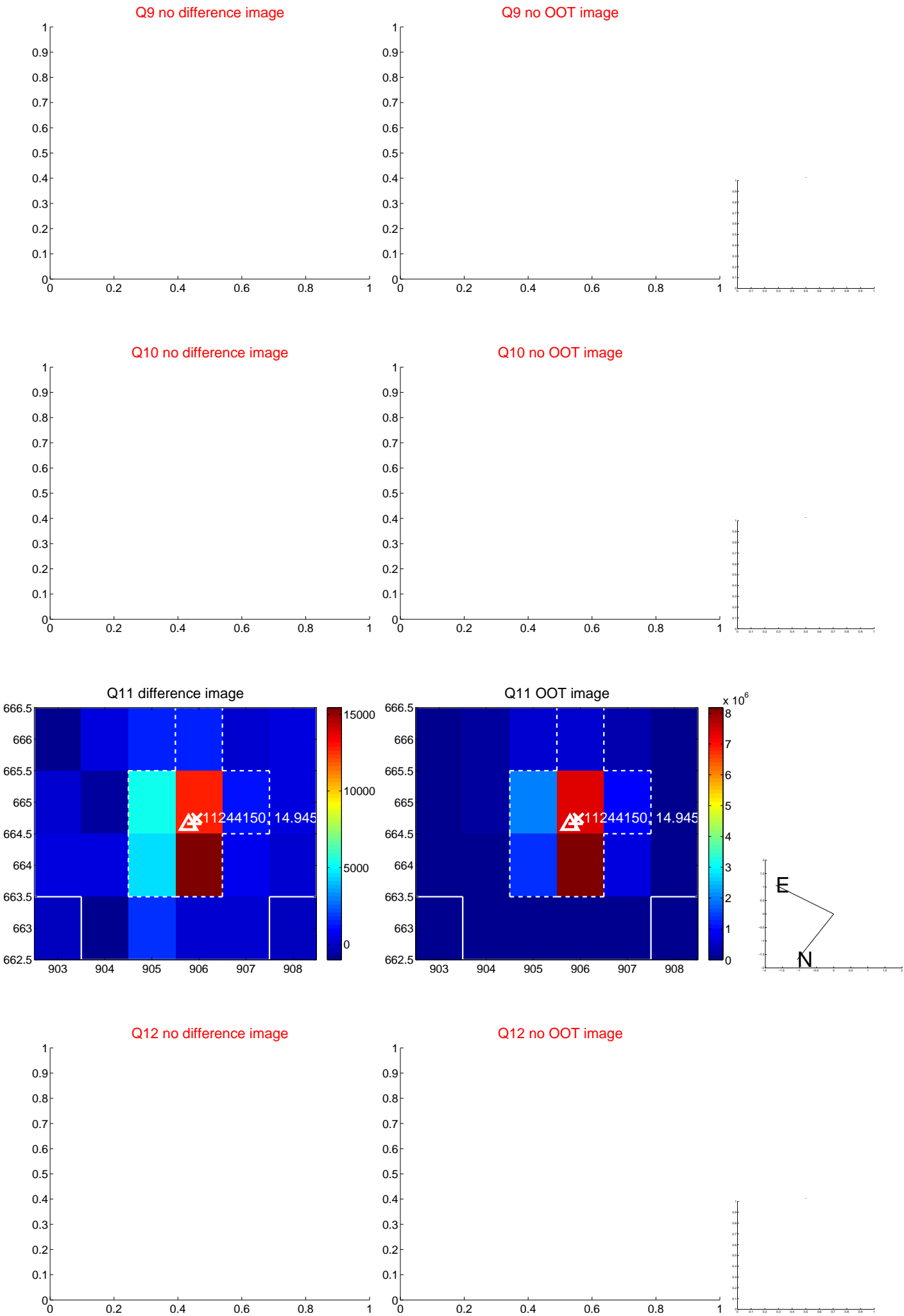
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



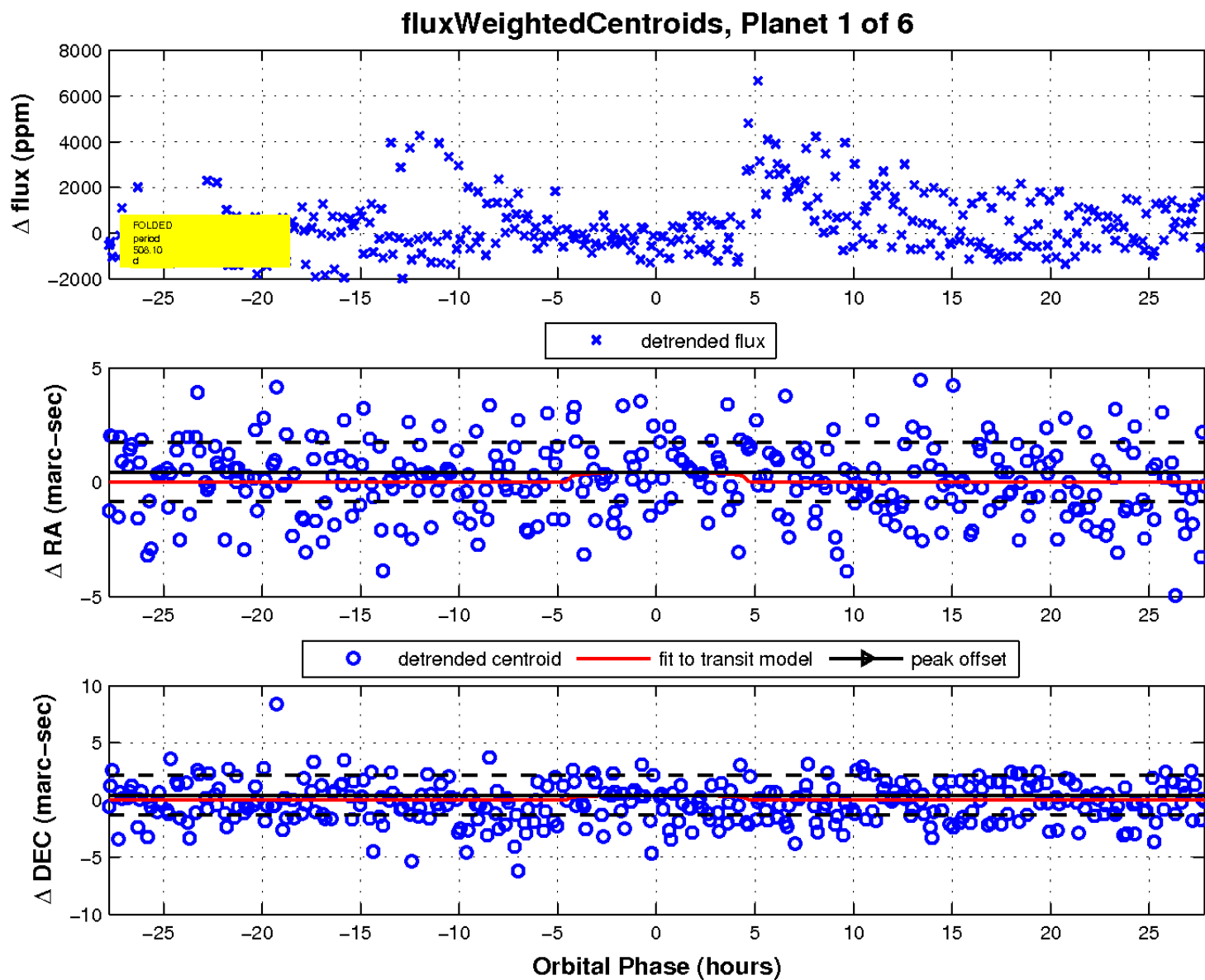
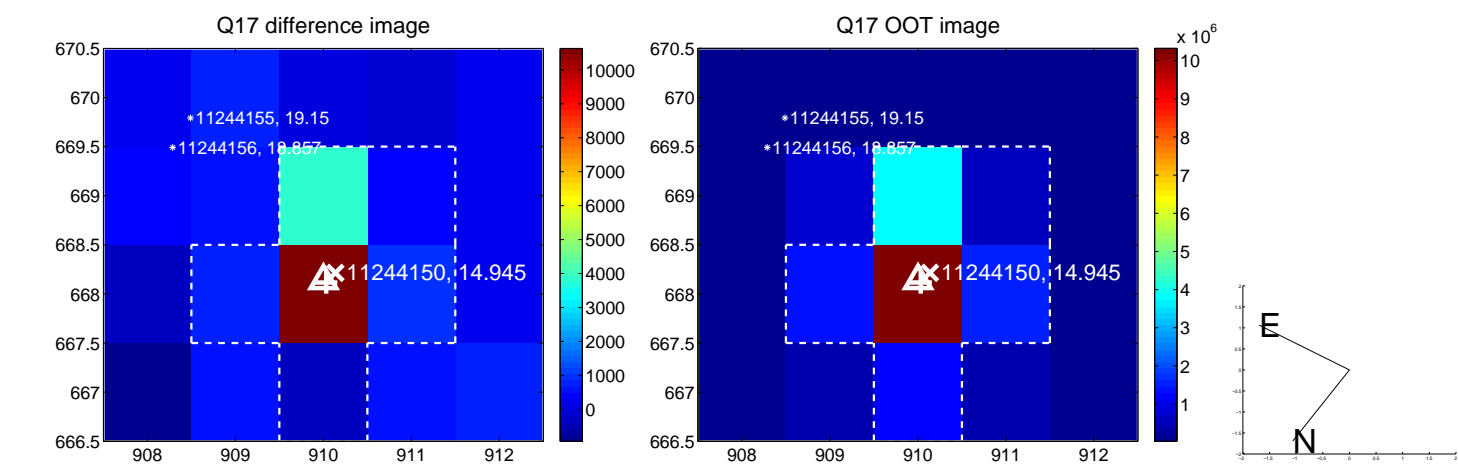
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

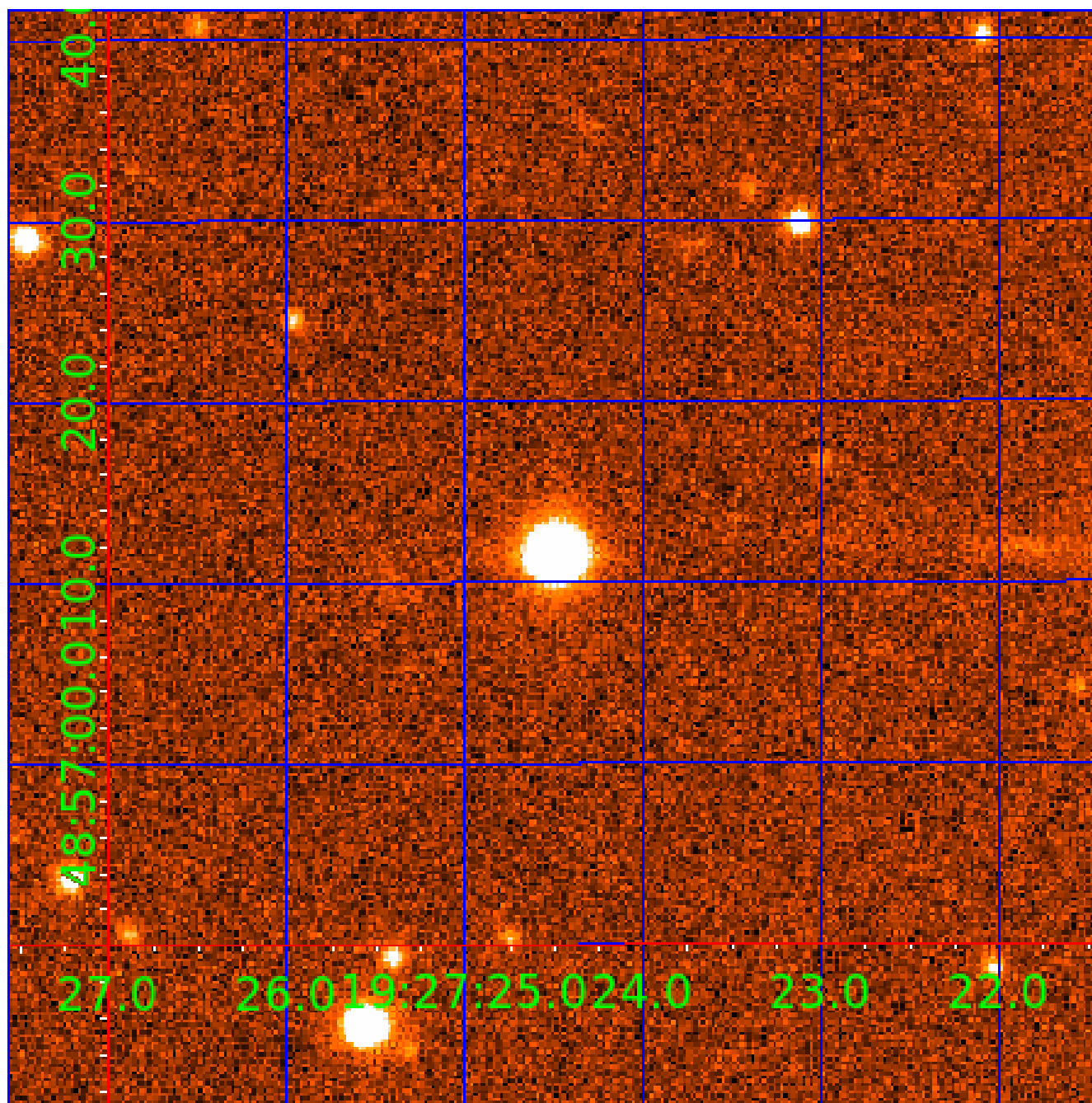


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
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011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

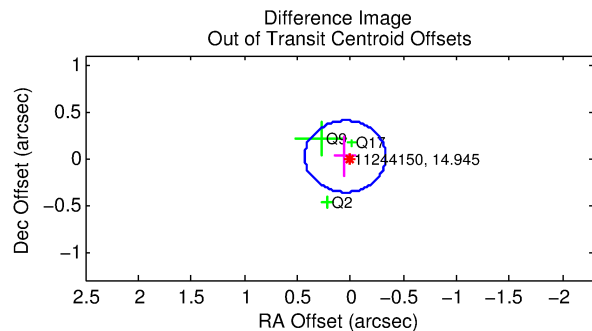
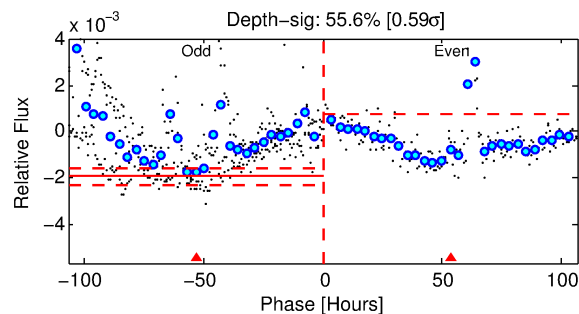
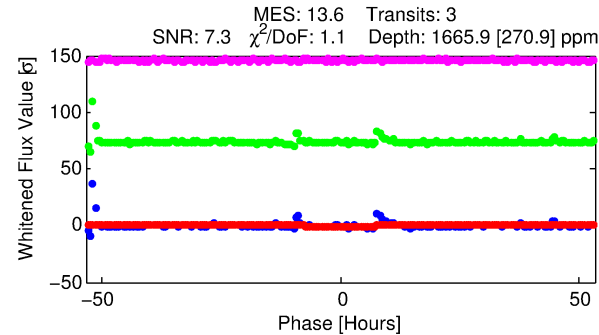
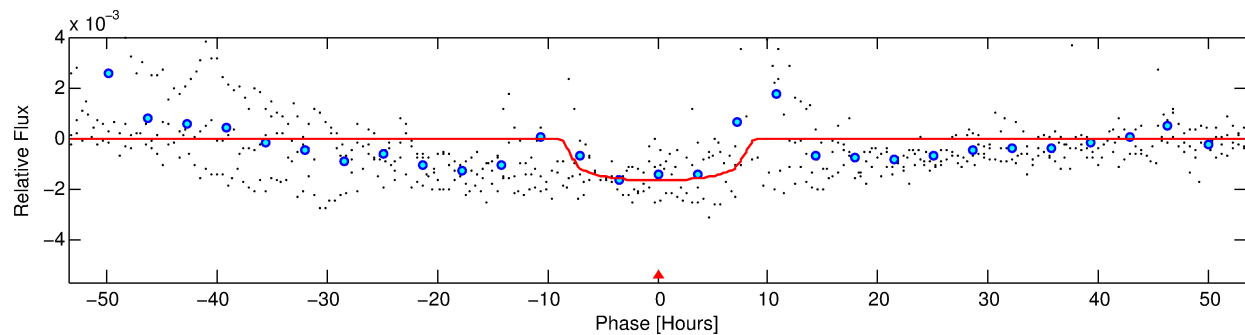
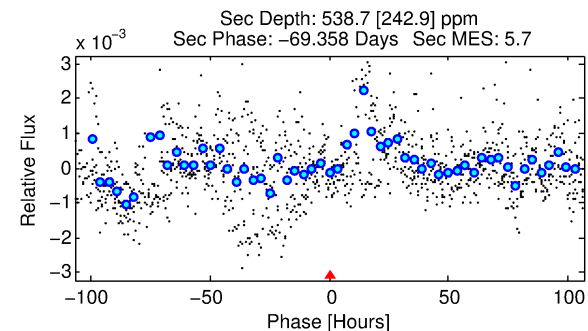
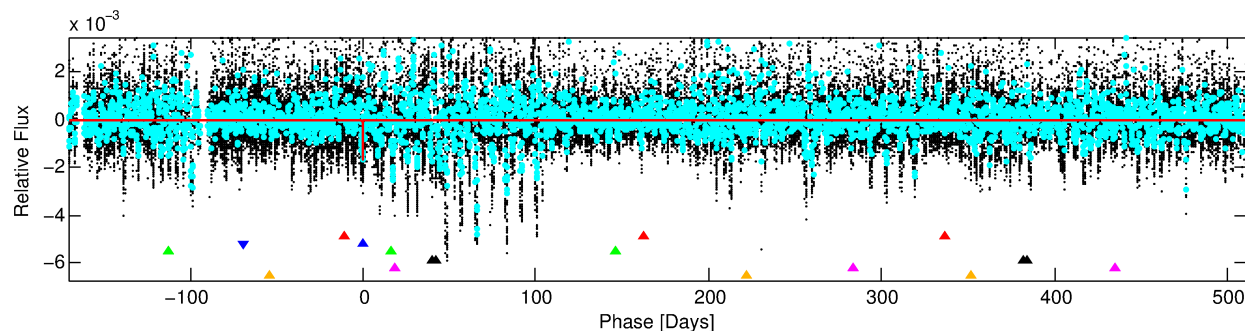
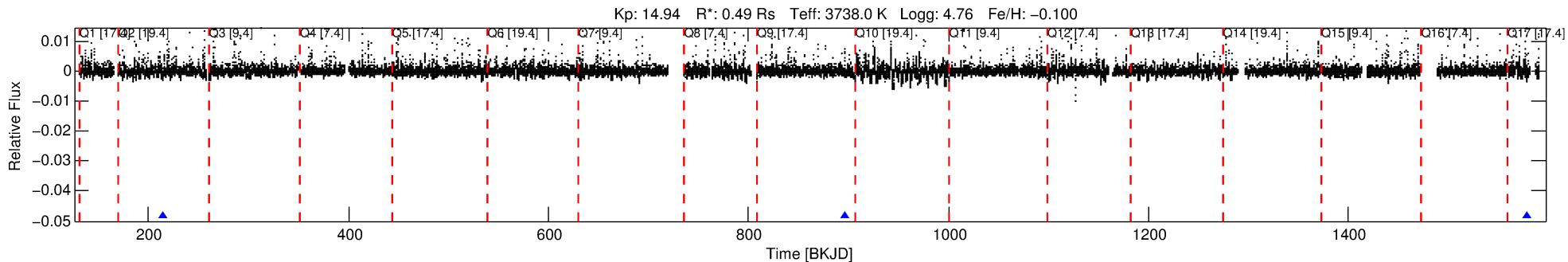
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-02

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 2 of 6 Period: 681.580 d



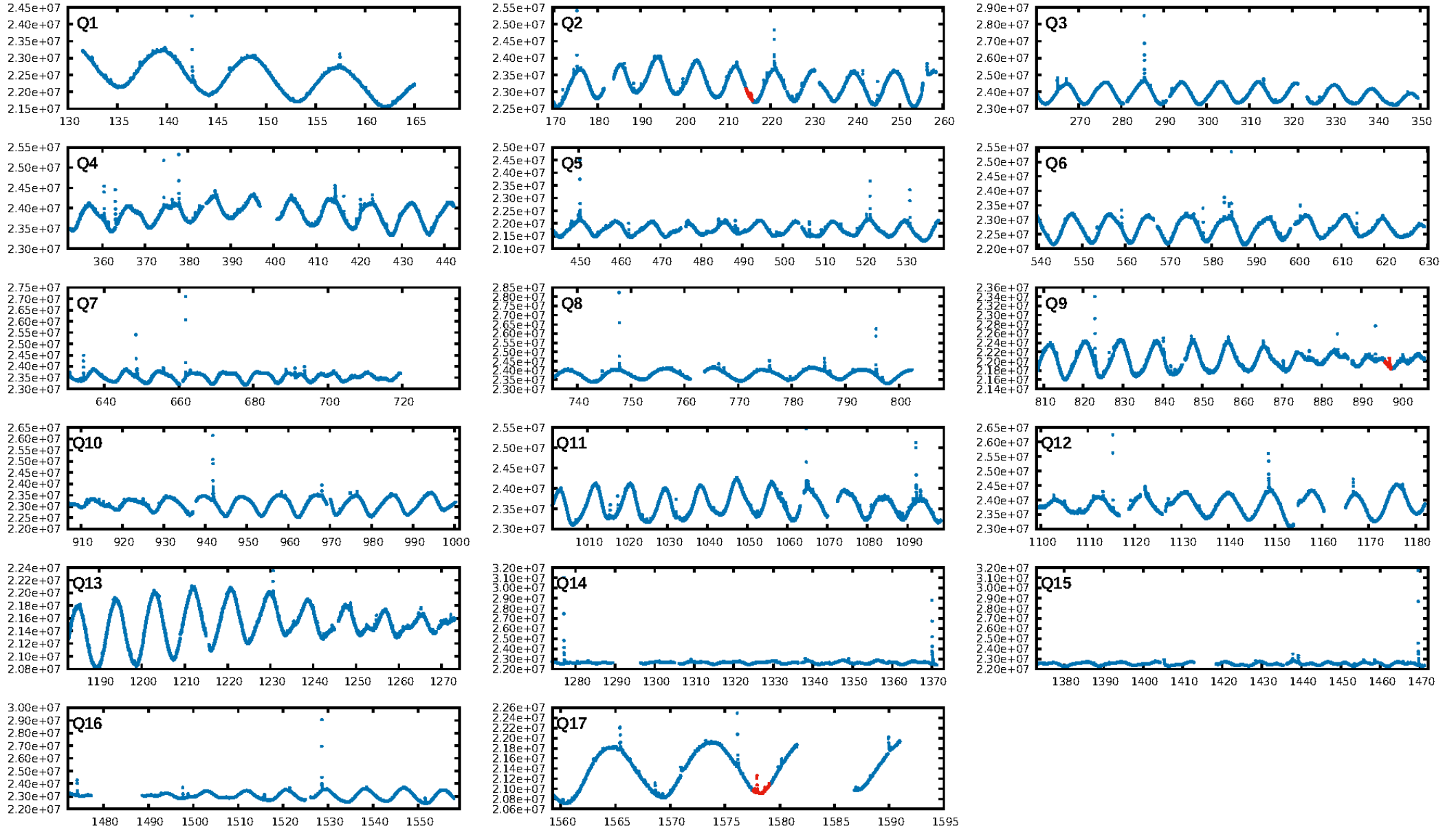
DV Fit Results:

Period = 681.58010 [0.01371] d
Epoch = 215.1409 [0.0171] BKJD
Rp/R* = 0.0413 [0.0045]
a/R* = 197.33 [53.78]
b = 0.79 [0.13]
Seff = 0.03 [0.00]
Teq = 105 [3] K
Rp = 2.19 [0.29] Re
a = 1.1987 [0.0663] AU
Ag = 88499.91 [44892.23] [1.97σ]
Teffp = 2803 [355] K [7.60σ]

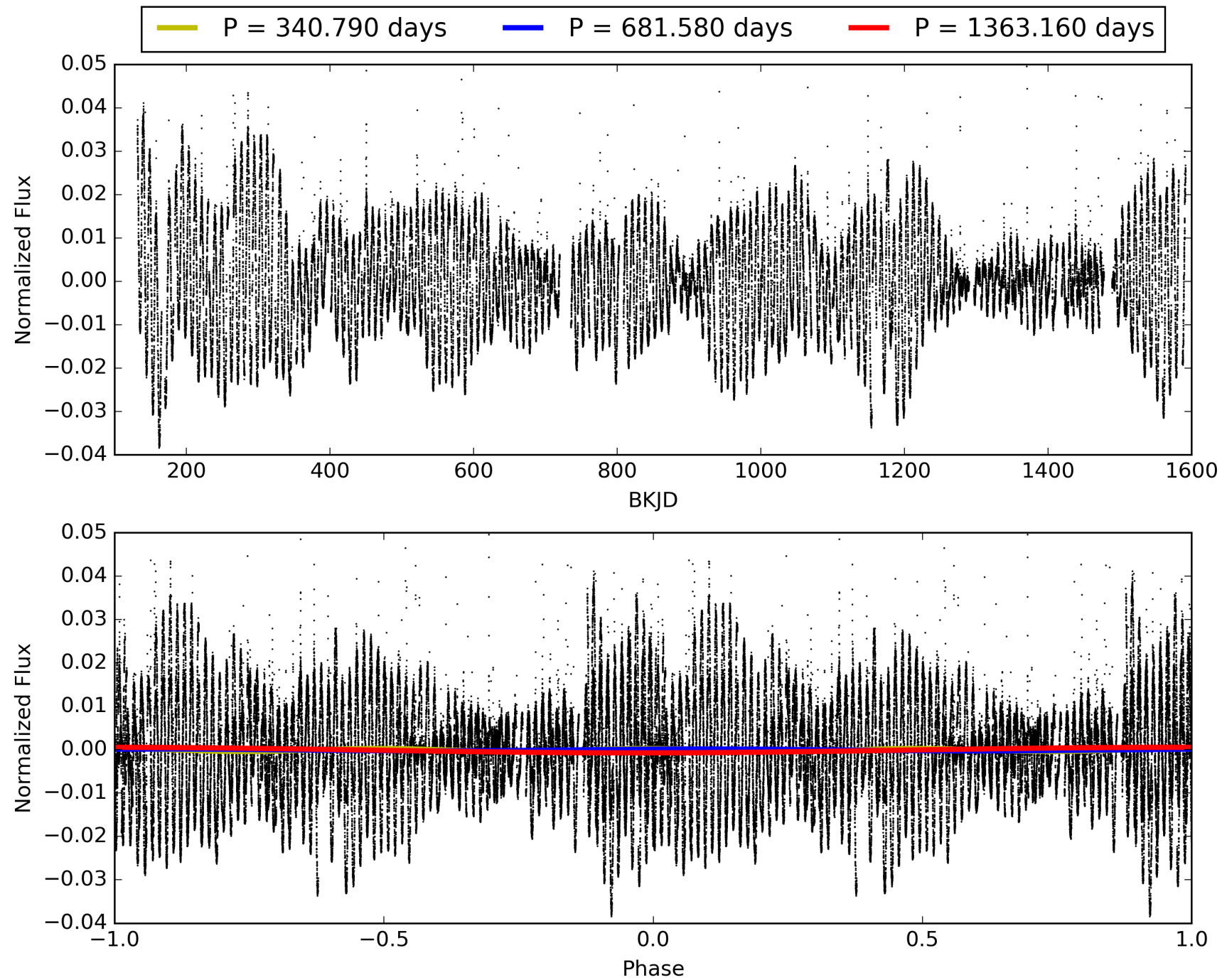
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [170.55σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 47.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.28e-13
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 0.1552
Centroid-sig: 84.8%
Centroid-so: 0.440 arcsec [1.14σ]
OotOffset-rm: 0.052 arcsec [0.41σ]
KicOffset-rm: 0.553 arcsec [2.06σ]
OotOffset-st: 1/0/0/2 [3]
KicOffset-st: 1/0/0/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 011244150-02, PDC Light Curves

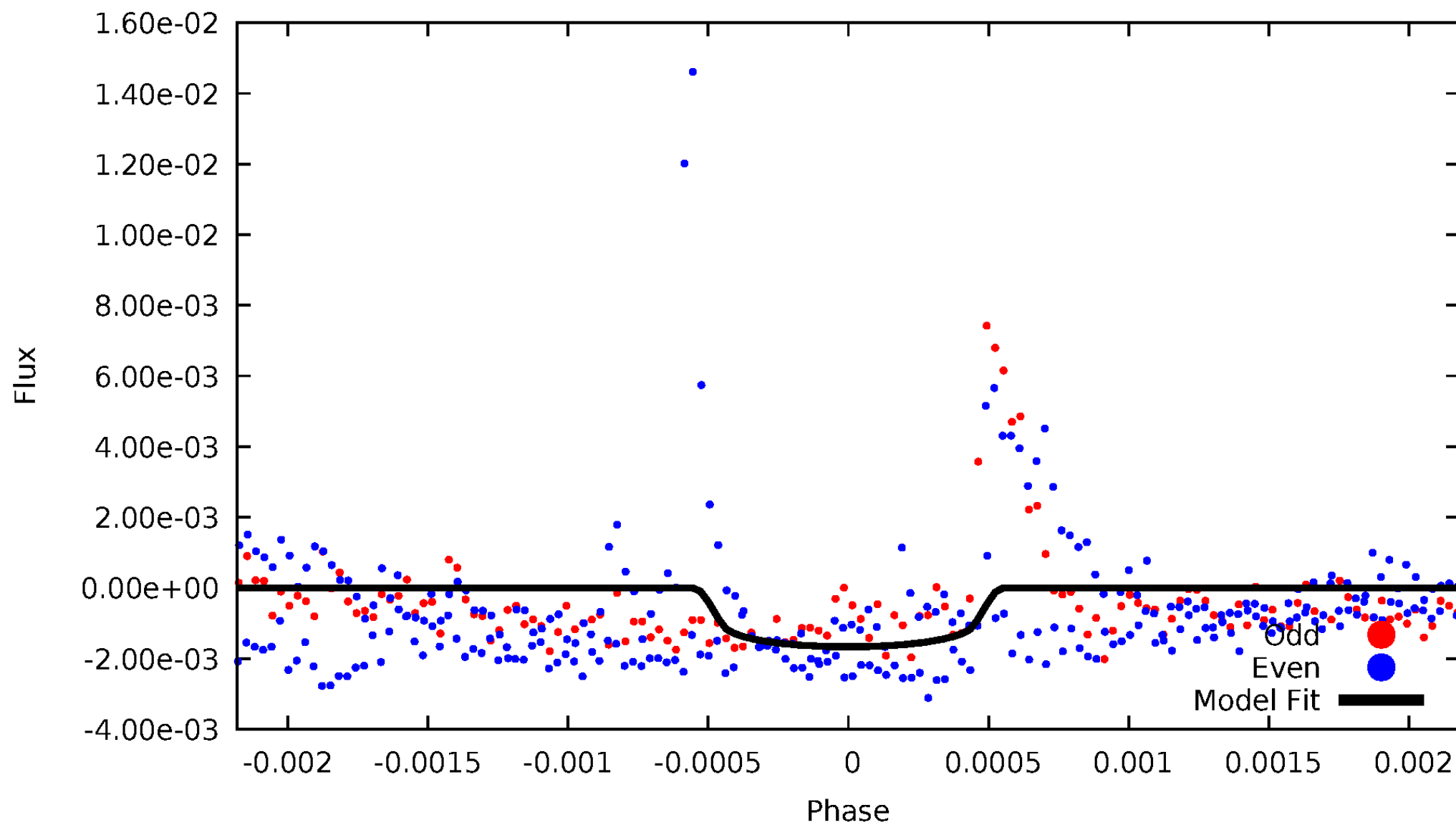


TCE 011244150-02



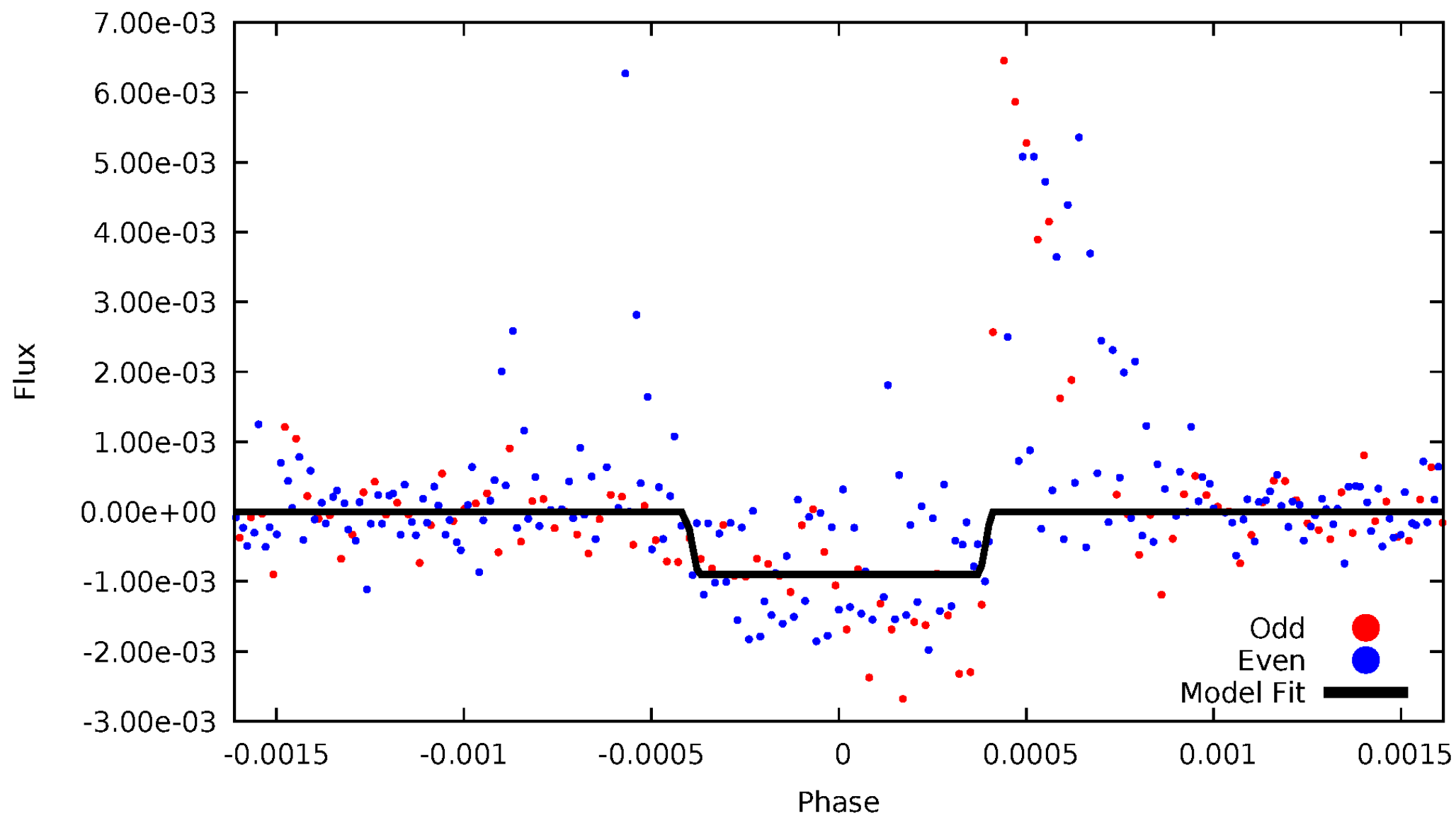
DV Odd/Even

TCE 011244150-02



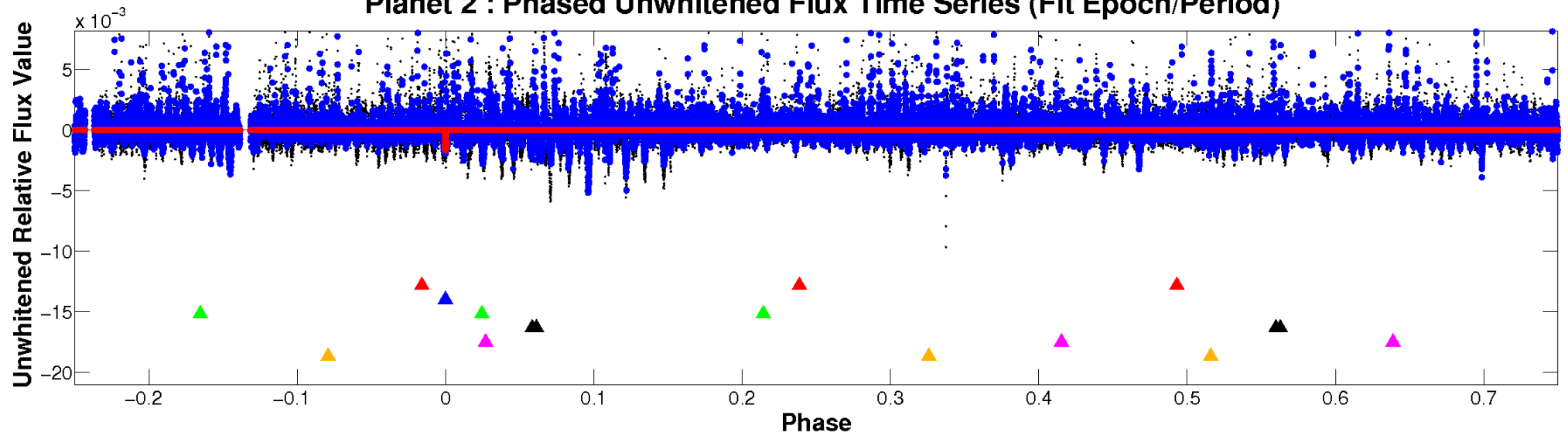
ALT Odd/Even

TCE 011244150-02

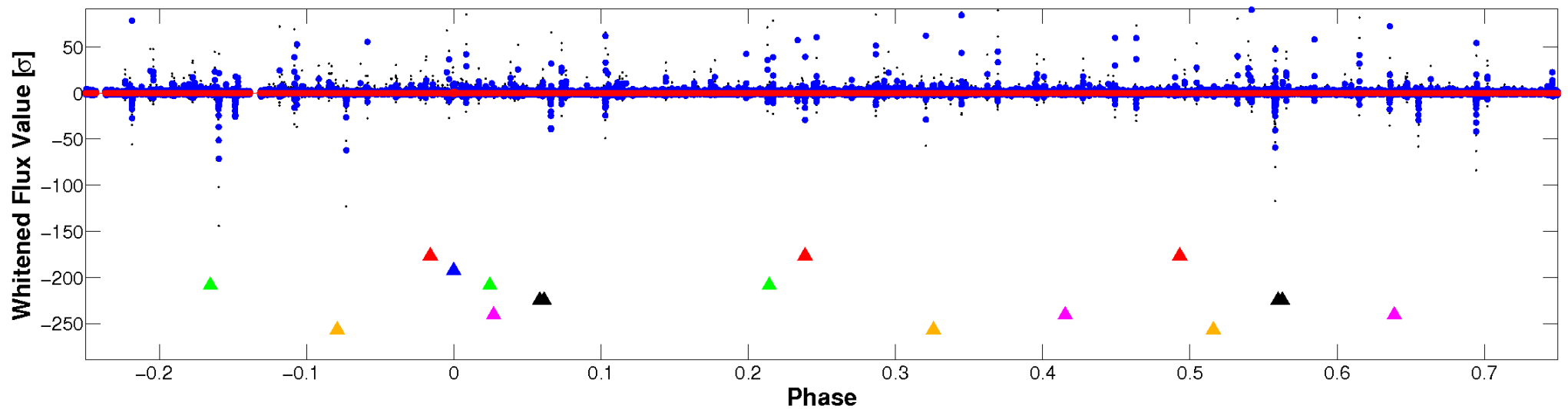


Non-Whitened Vs. Whitened Light Curve

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

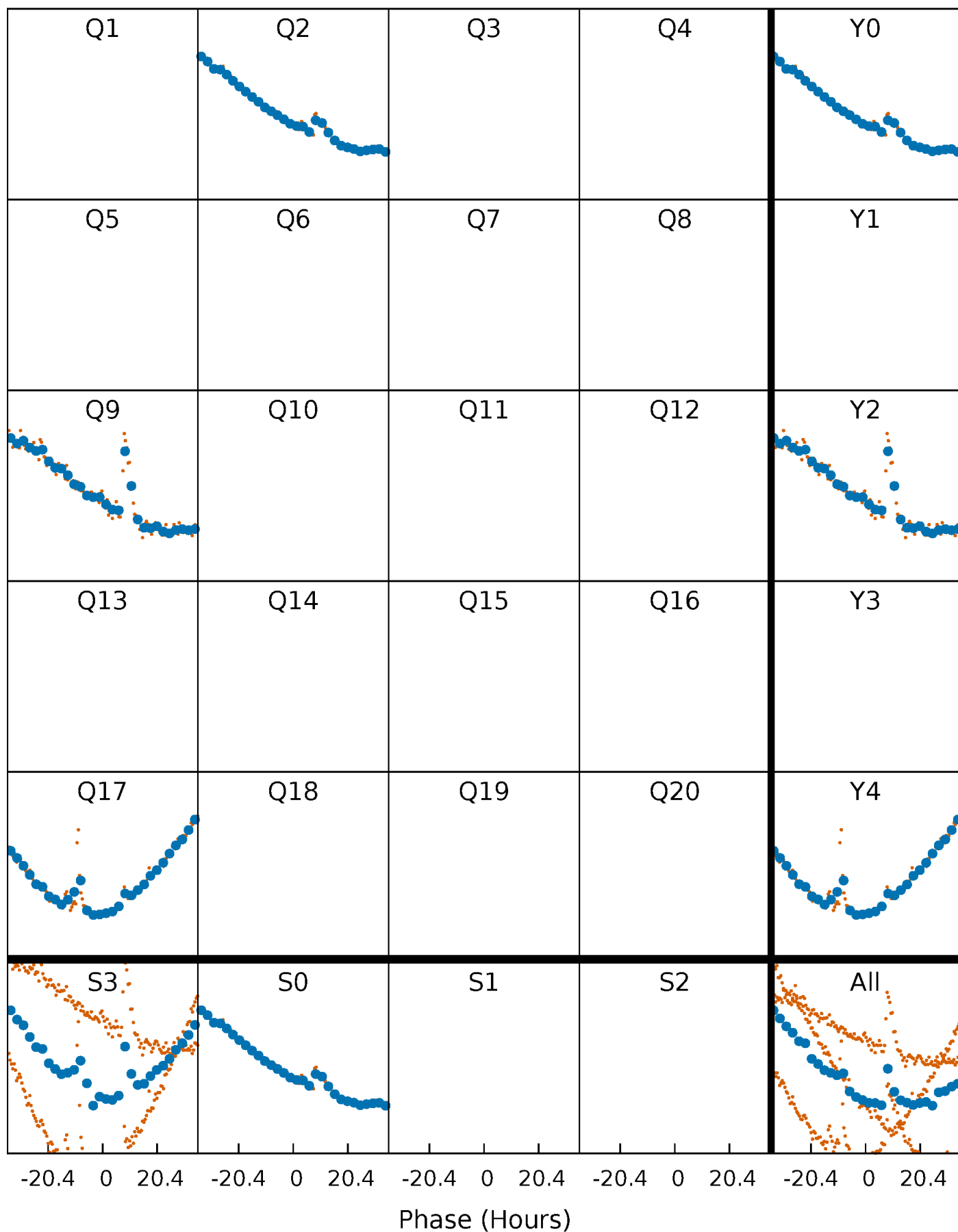


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



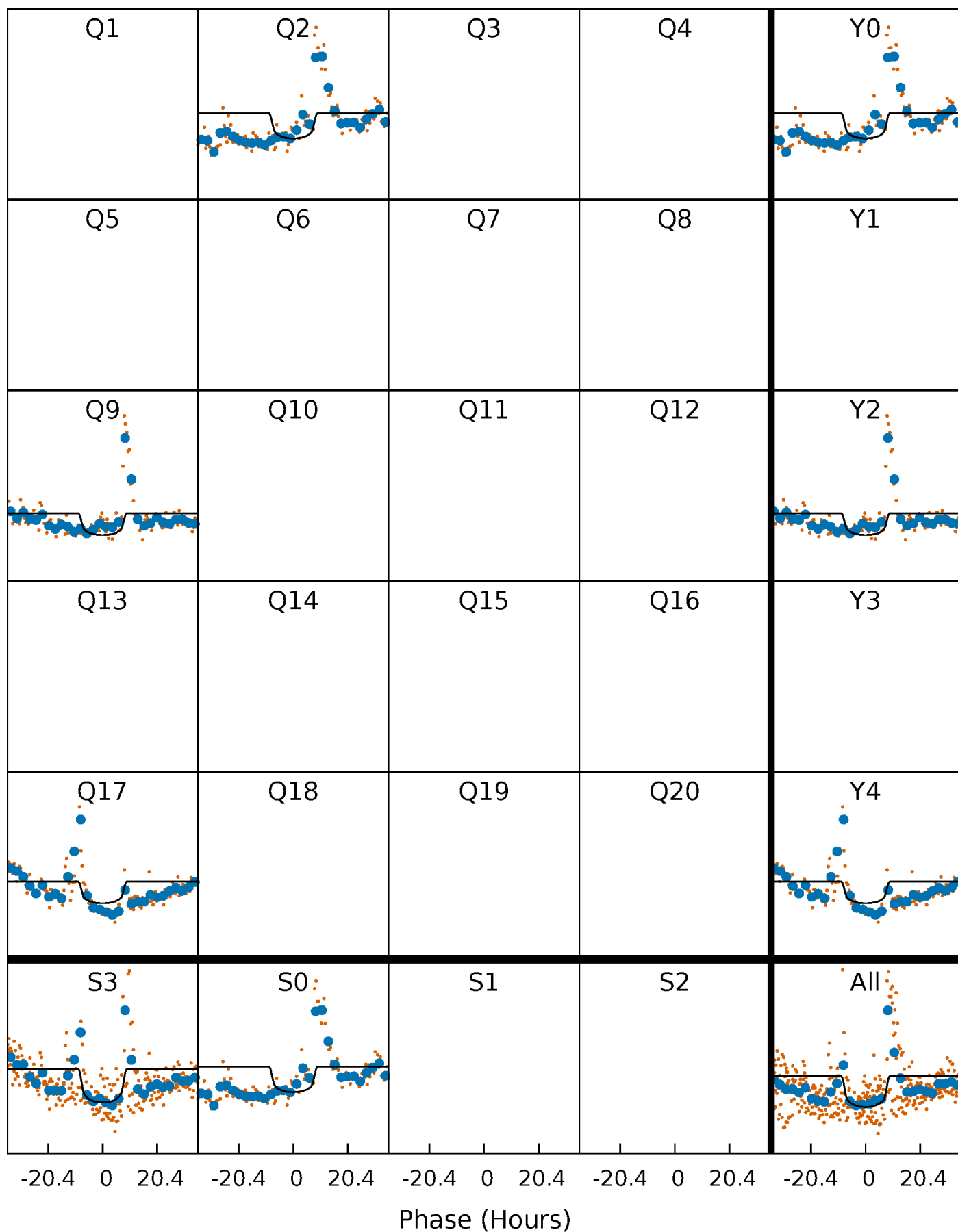
PDC Quarter-Phased Transit Curves

TCE 011244150-02 P=681.580099 Days $T_0=215.140879$ (BKJD)



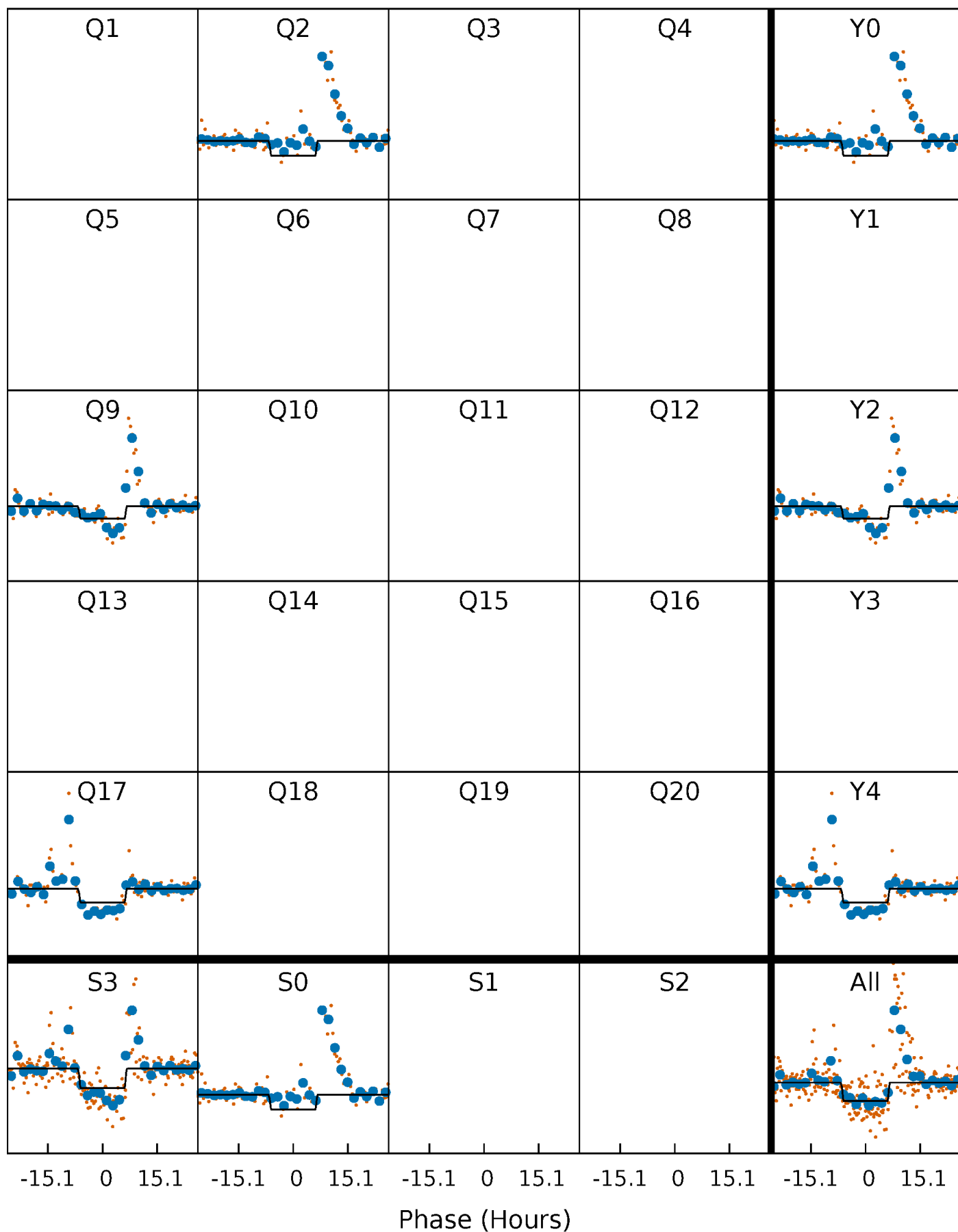
DV Quarter-Phased Transit Curves

TCE 011244150-02 P=681.580099 Days $T_0=215.140879$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

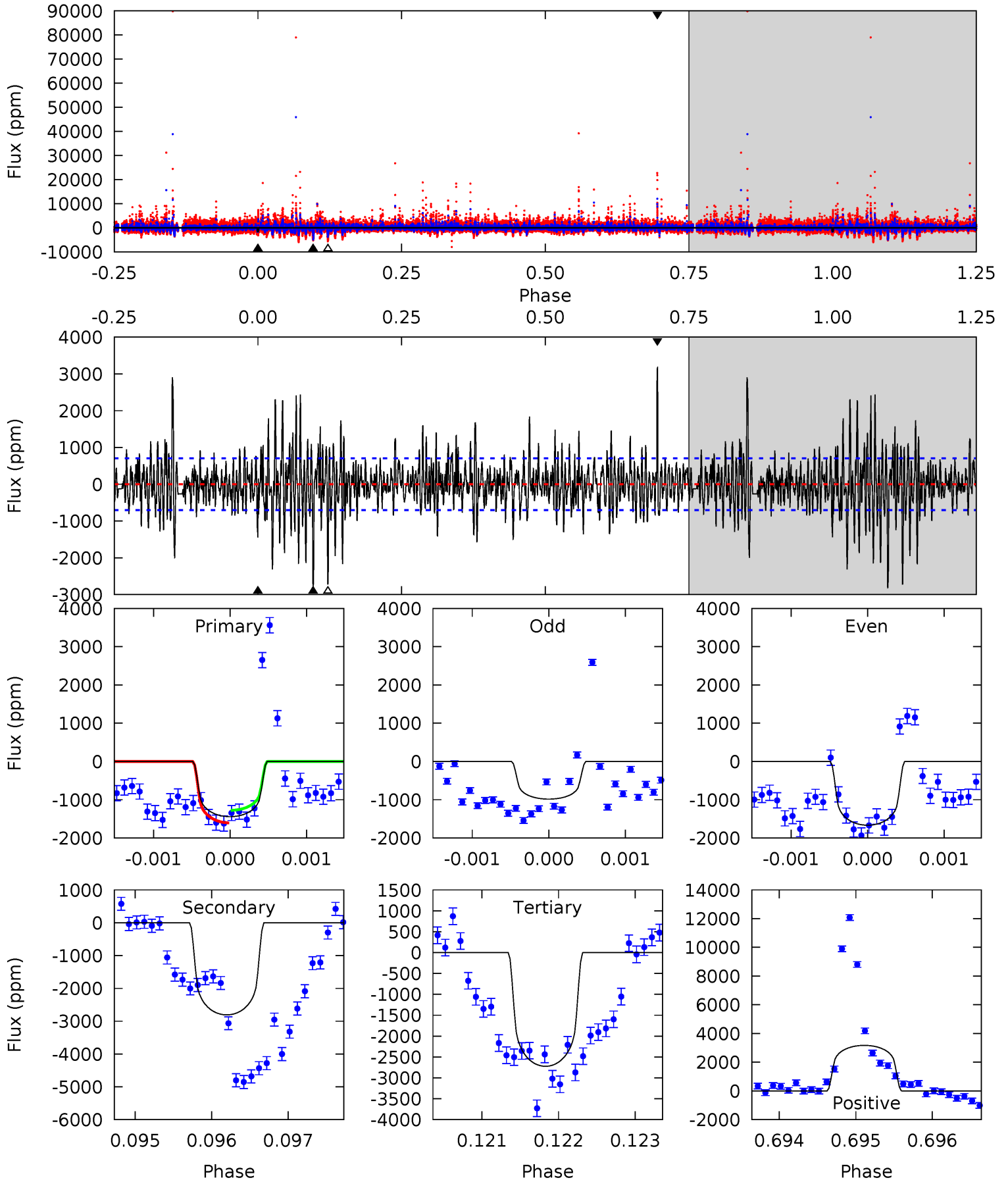
TCE 011244150-02 P=681.575016 Days $T_0=215.182027$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-02, P = 681.580099 Days, E = 215.140879 Days

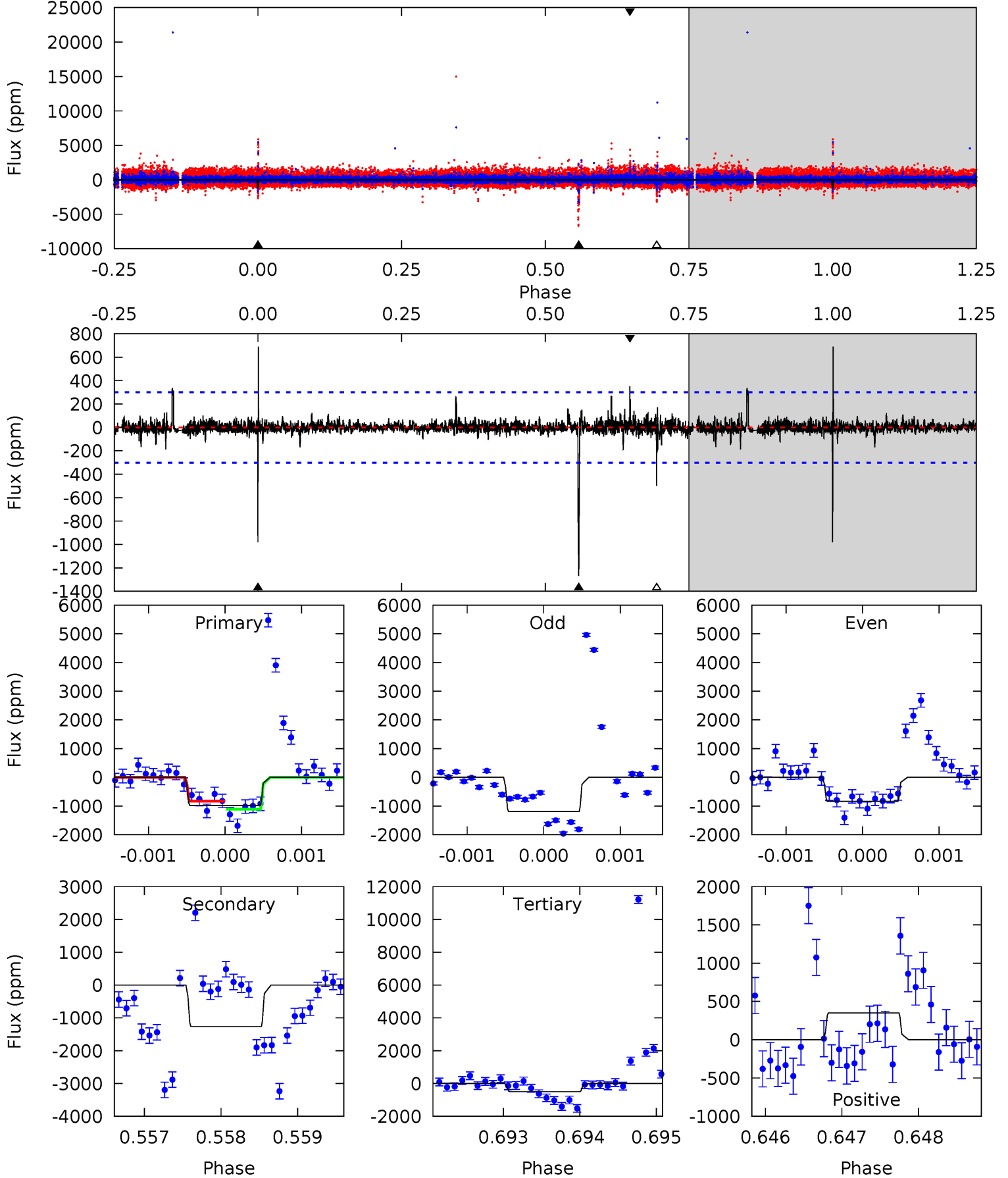
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	21.6	21.0	24.4	5.43	3.25	4.44	-9.86	-13.3	0.65	-2.80	1.34	1.18	0.53	1.27



Alt Model-Shift Uniqueness Test

011244150-02, P = 681.575016 Days, E = 215.182027 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	23.0	9.05	6.40	5.49	3.35	0.79	8.79	11.4	14.0	16.6	2.90	0.77	0.35	2.50



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2808 ± 130	$2.18^{+0.25}_{-0.26}$	146^{+3}_{-3}	4075^{+187}_{-164}	$469302^{+131365}_{-93682}$
Alt.	-1264 ± 55	$1.59^{+0.24}_{-0.26}$	146^{+3}_{-3}	3966^{+257}_{-203}	$399171^{+170399}_{-98934}$

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 $A_{obs} \gg 1.0$

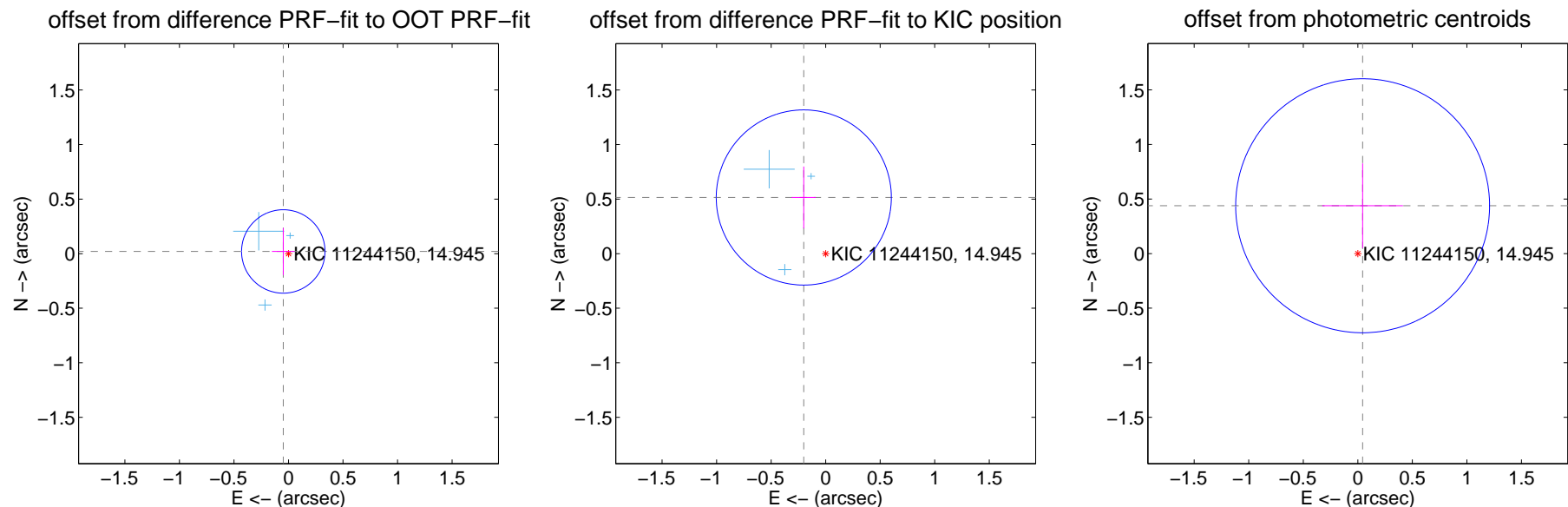
DV Centroid Data

Supplemental centroid analysis for 011244150-02. Kepler magnitude: 14.95. Transit SNR 7.25

There are 3 quarters with good PRF difference image offsets

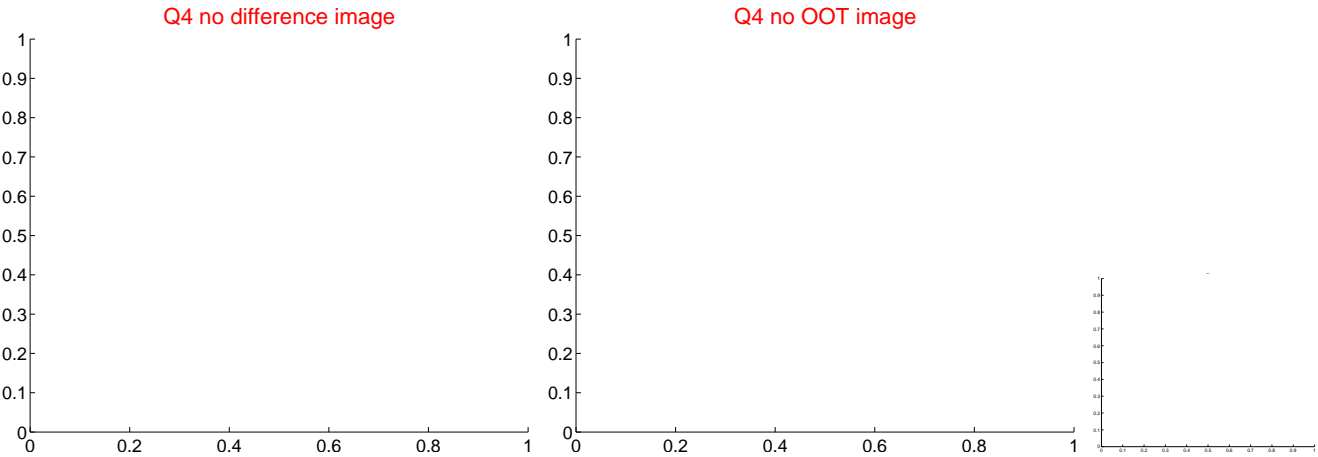
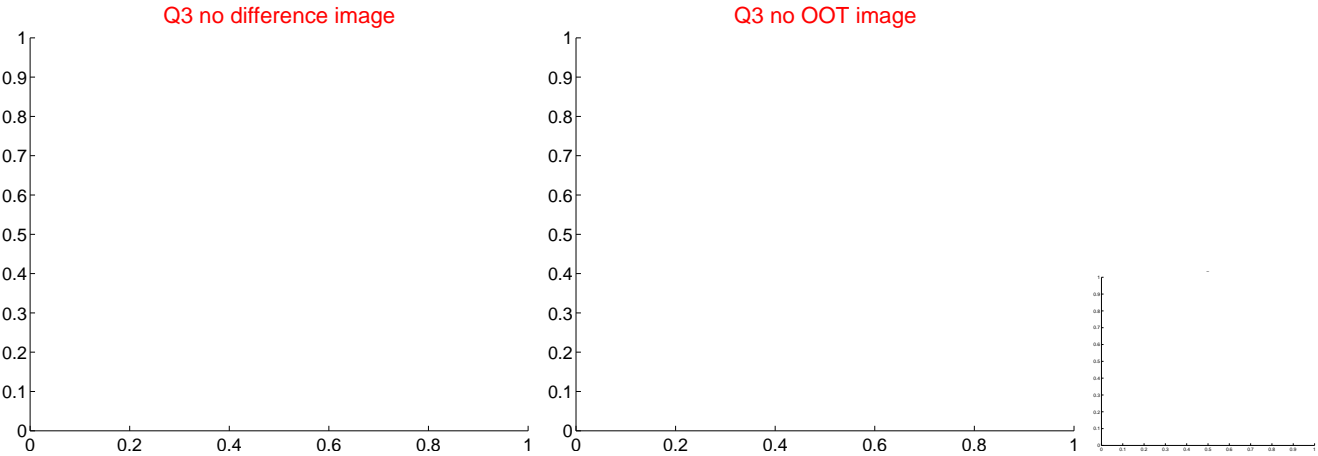
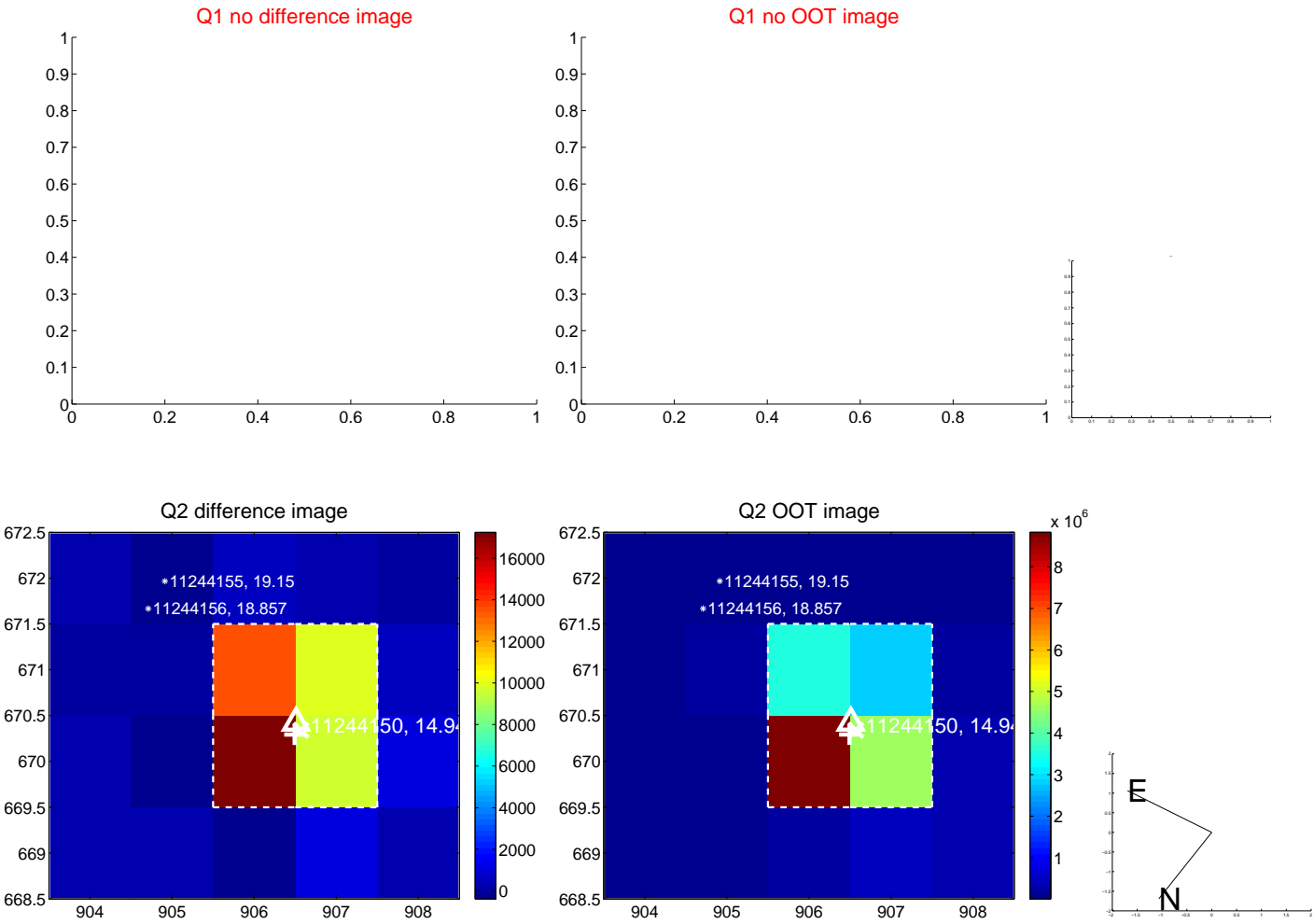
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.052 ± 0.127	0.41	0.048 ± 0.104	0.020 ± 0.216
PRF-fit source offset from KIC position	0.553 ± 0.268	2.06	0.201 ± 0.110	0.515 ± 0.284
photometric centroid source offset	0.44 ± 0.39	1.14	-0.04 ± 0.37	0.44 ± 0.39



Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

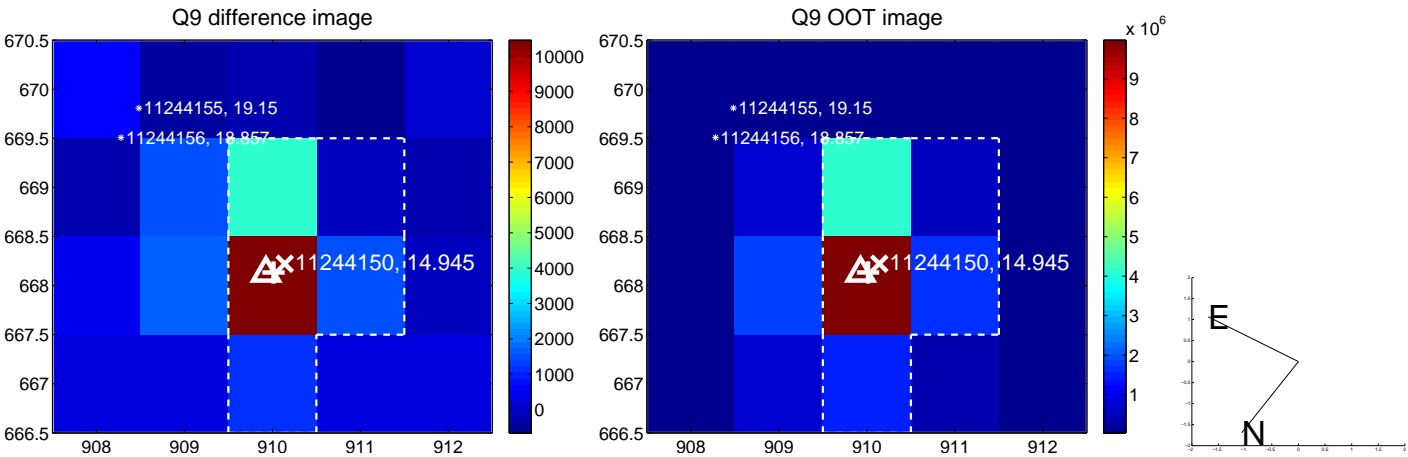
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



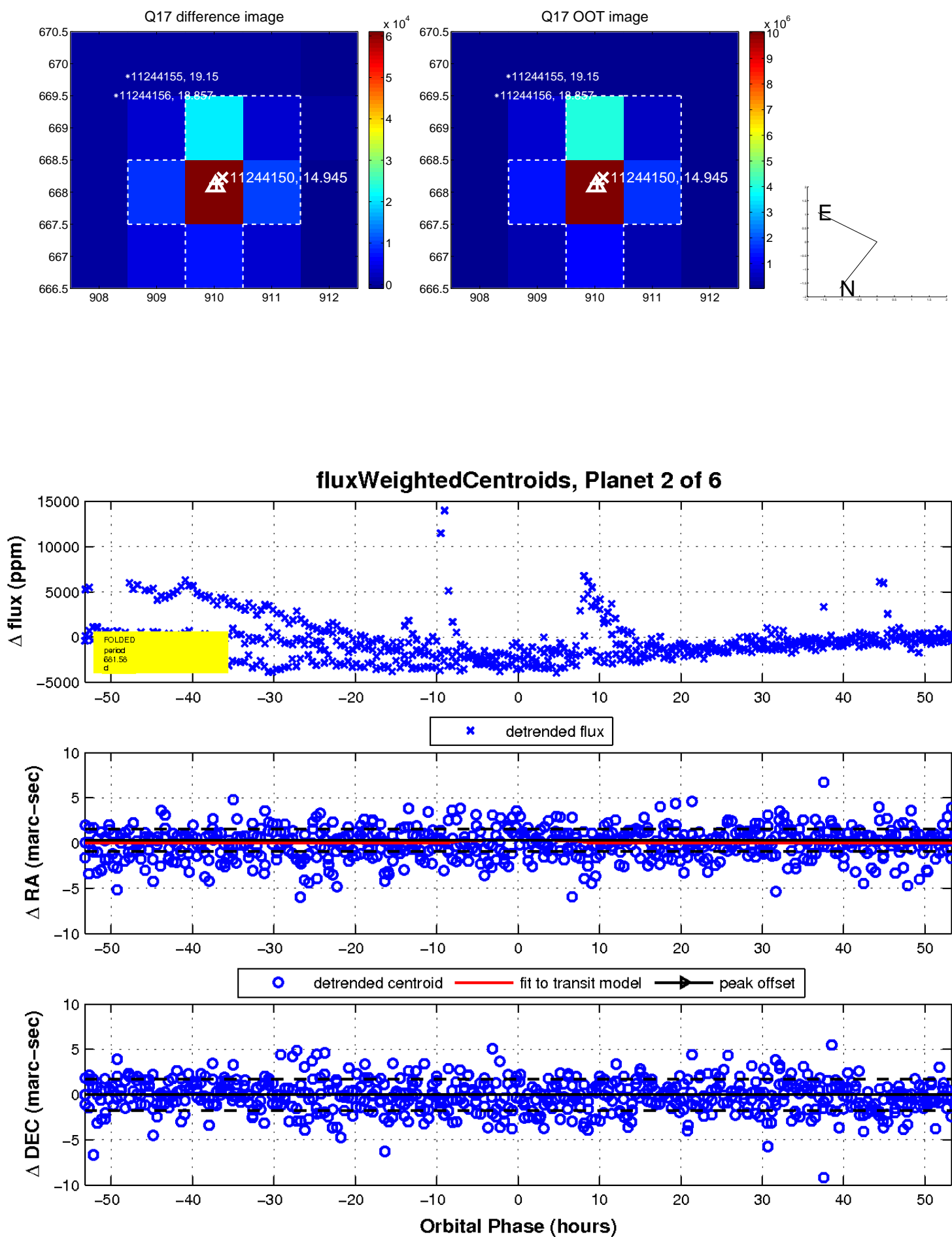
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

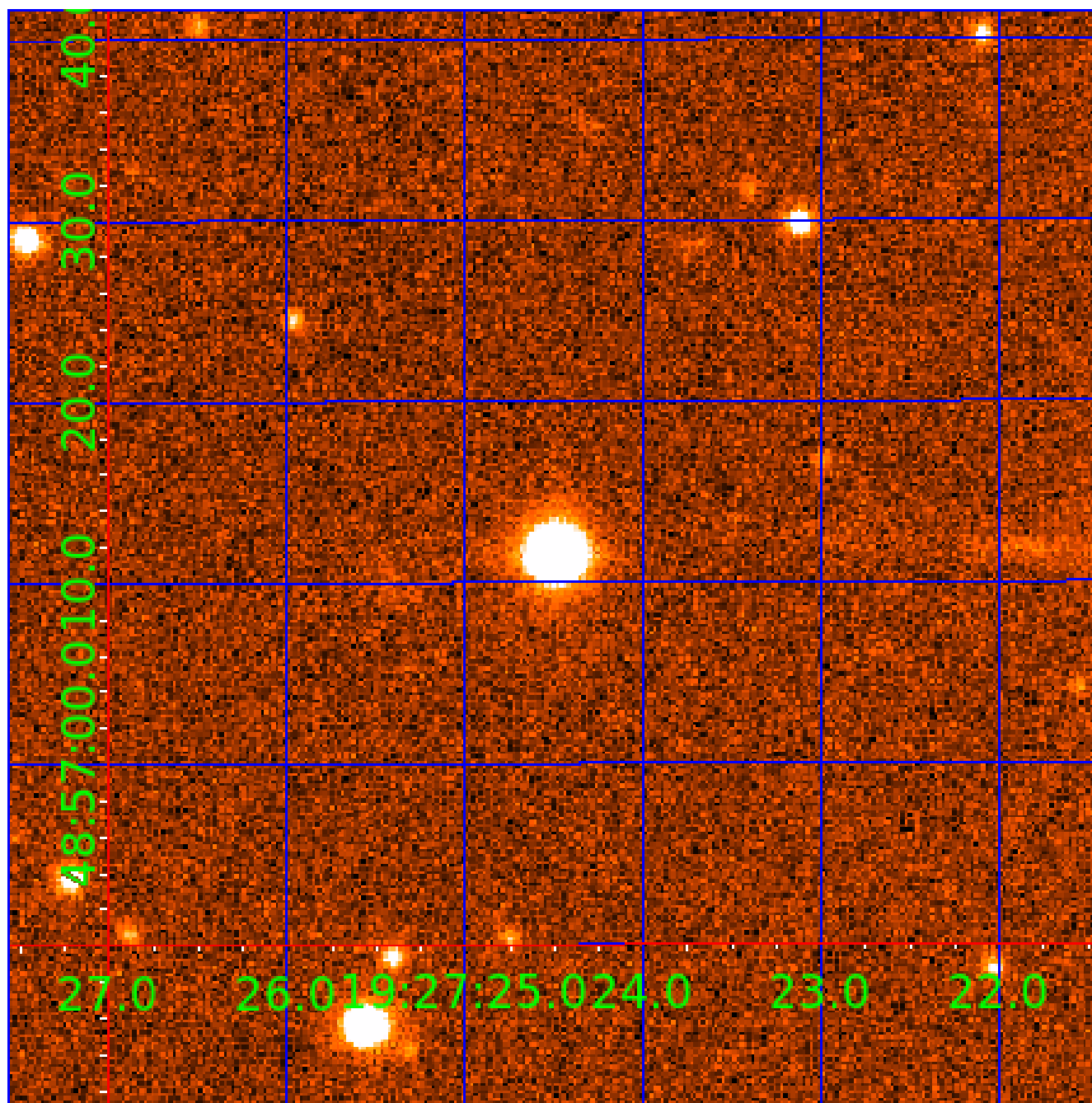


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
011244150-02	OBS	No	681.580099	215.140879	1665.9	17.828	13.6	7.3	0.49	3738	2.19	0.03
011244150-03	OBS	No	552.214651	361.196180	1357.2	3.682	13.3	6.5	0.49	3738	1.94	0.04
011244150-04	OBS	No	341.785764	254.977429	1383.0	6.403	13.0	9.0	0.49	3738	1.80	0.07
011244150-05	OBS	No	416.963704	498.214392	1247.6	11.316	11.2	6.1	0.49	3738	1.75	0.06
011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

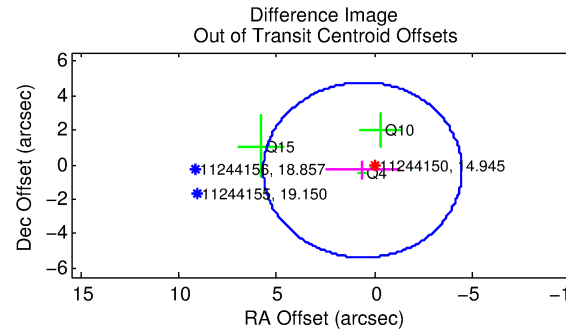
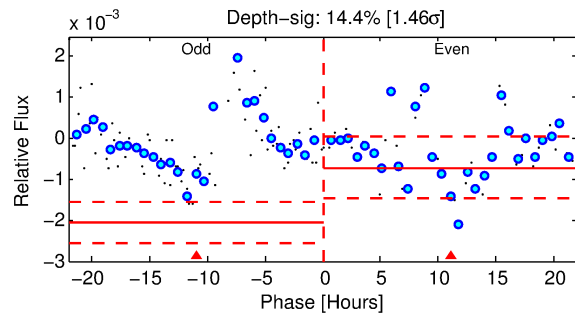
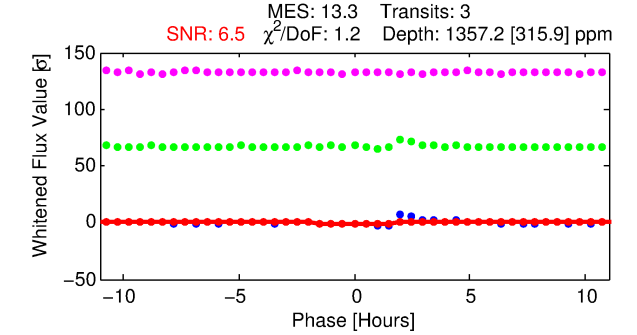
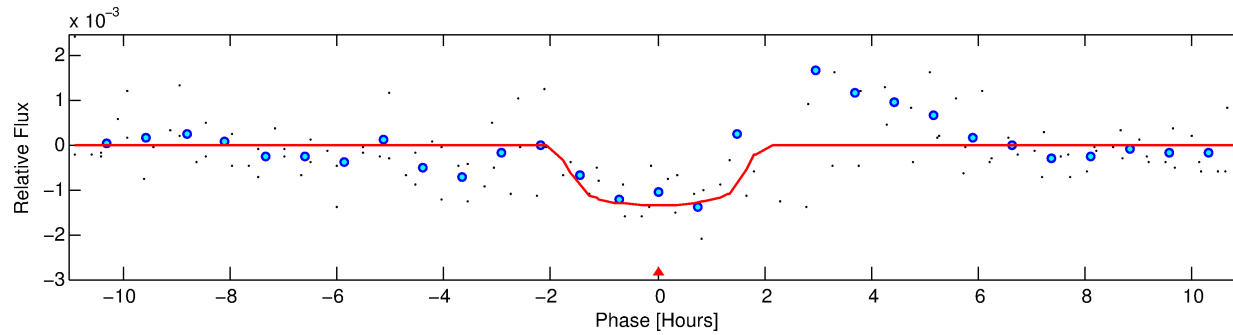
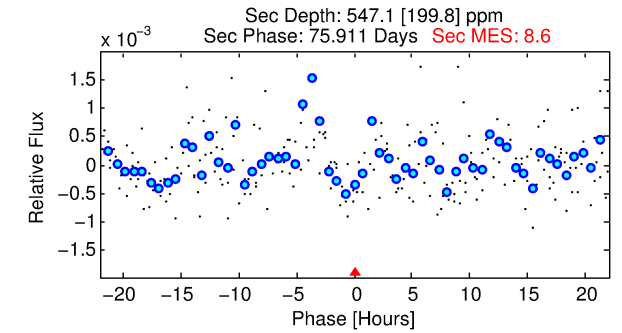
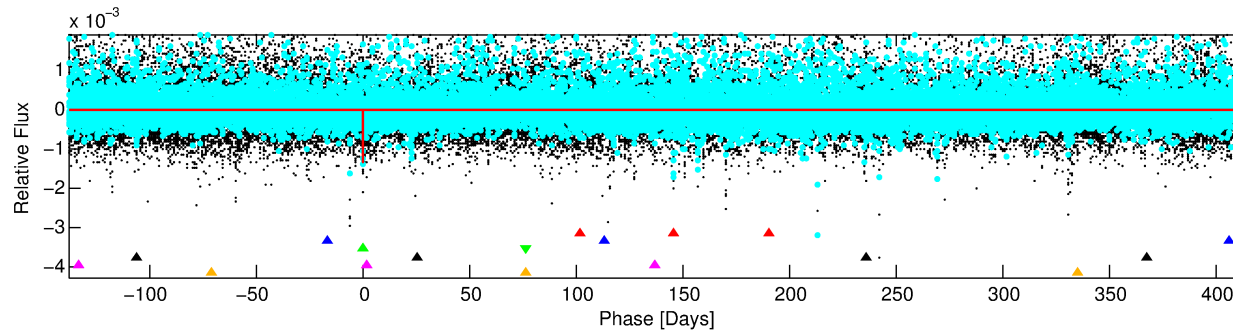
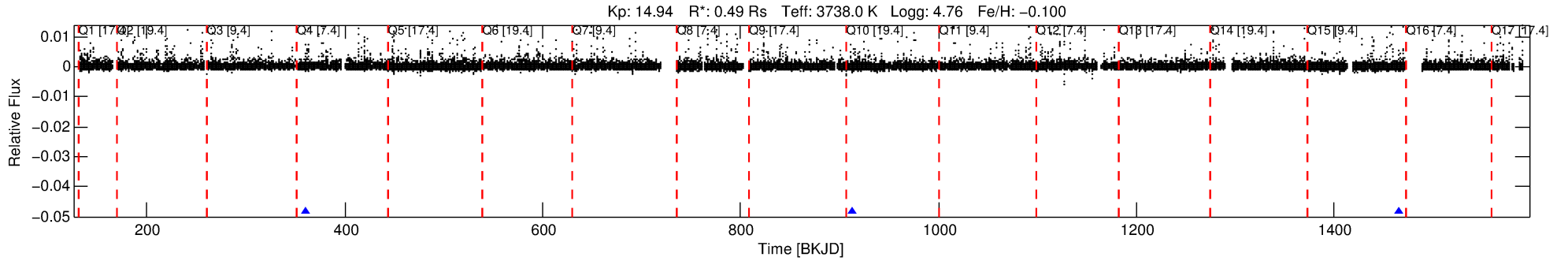
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-03

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 3 of 6 Period: 552.215 d



DV Fit Results:

Period = 552.21465 [0.00774] d
Epoch = 361.1962 [0.0087] BKJD
Rp/R* = 0.0364 [0.0951]
a/R* = 837.01 [9707.68]
b = 0.74 [7.33]
Seff = 0.04 [0.00]
Teq = 113 [3] K
Rp = 1.94 [5.05] Re
a = 1.0418 [0.0577] AU
Ag = 87068.47 [455293.39] [0.19σ]
Teffp = 2994 [3915] K [0.74σ]

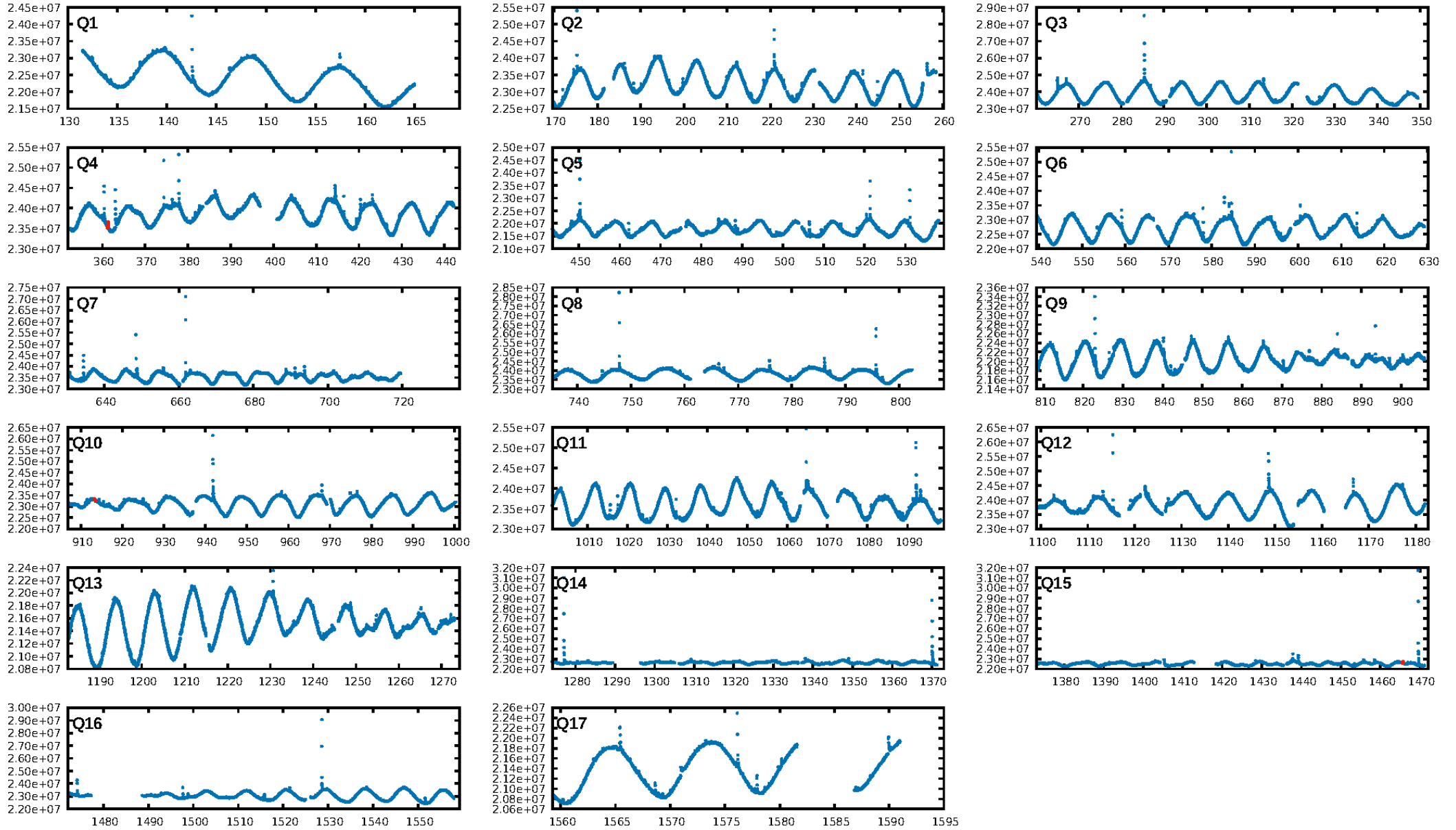
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [105.35σ]
LongPeriod-sig: 100.0% [170.55σ]
ModelChiSquare2-sig: 27.1%
ModelChiSquareGof-sig: 93.2%
Bootstrap-pfa: 2.99e-12
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -3.602
Centroid-sig: 72.6%
Centroid-so: 0.309 arcsec [0.37σ]
OotOffset-rm: 0.680 arcsec [0.40σ]
KicOffset-rm: 0.783 arcsec [0.42σ]
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]

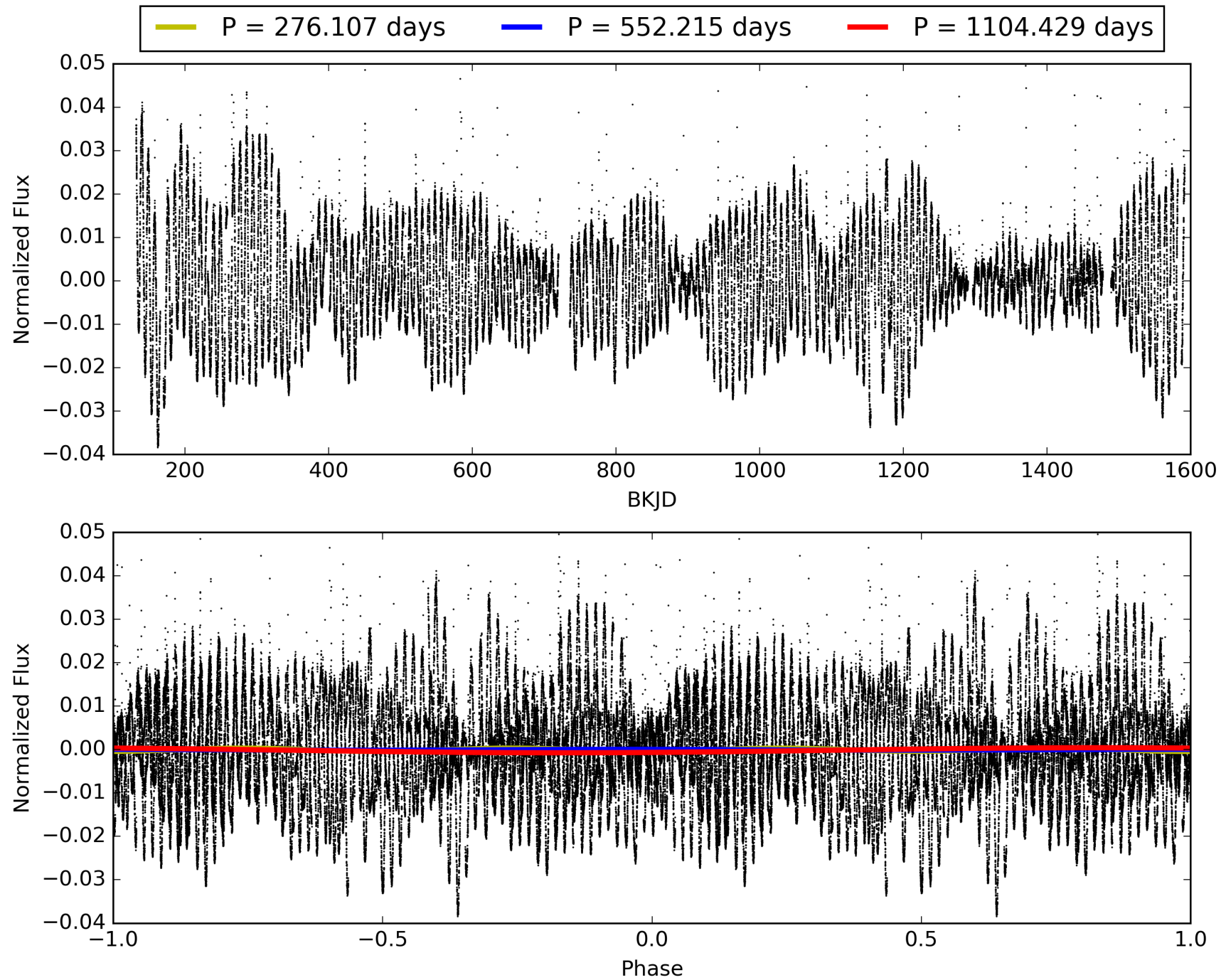
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:45:58 Z

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

TCE 011244150-03, PDC Light Curves

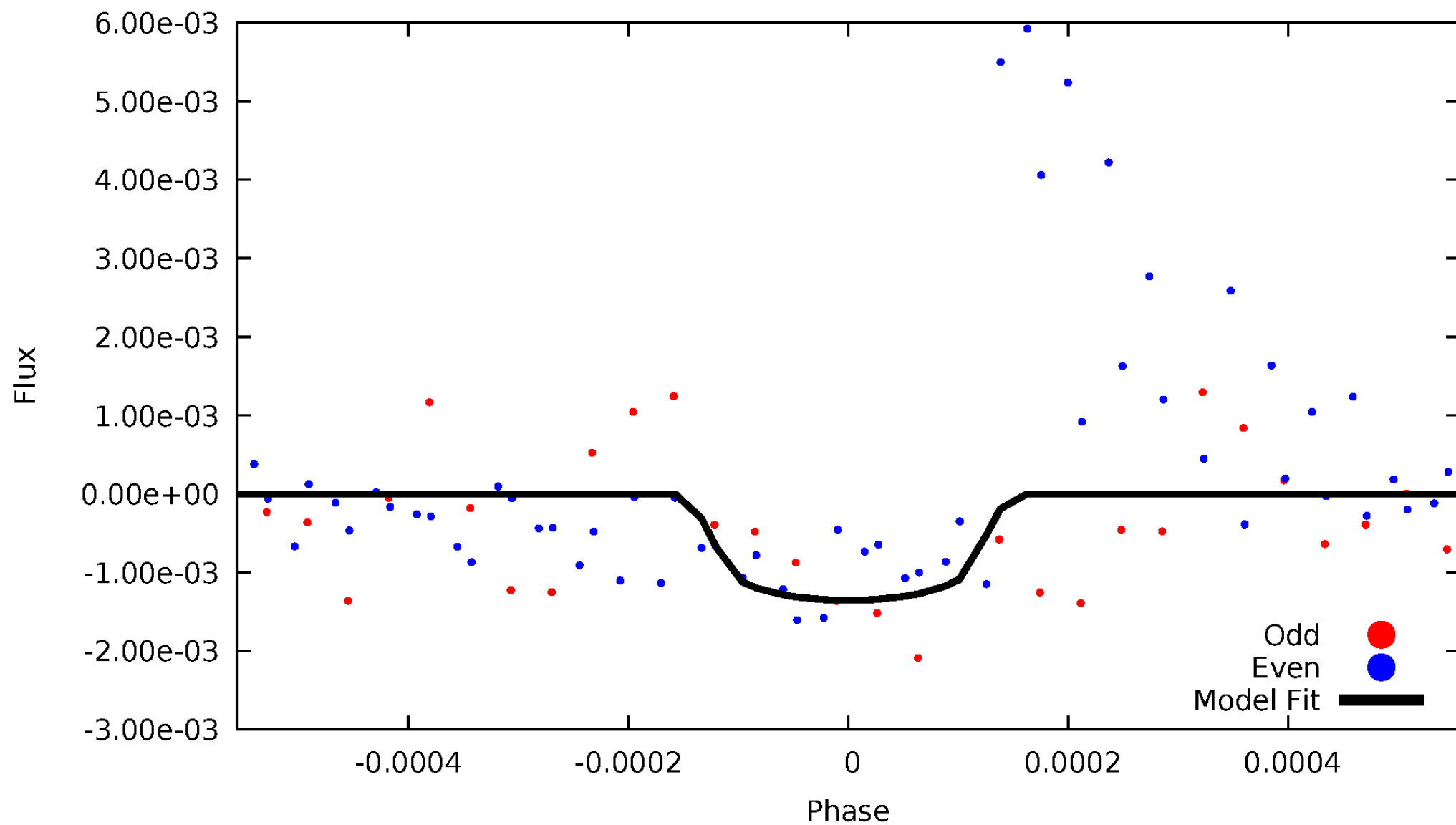


TCE 011244150-03



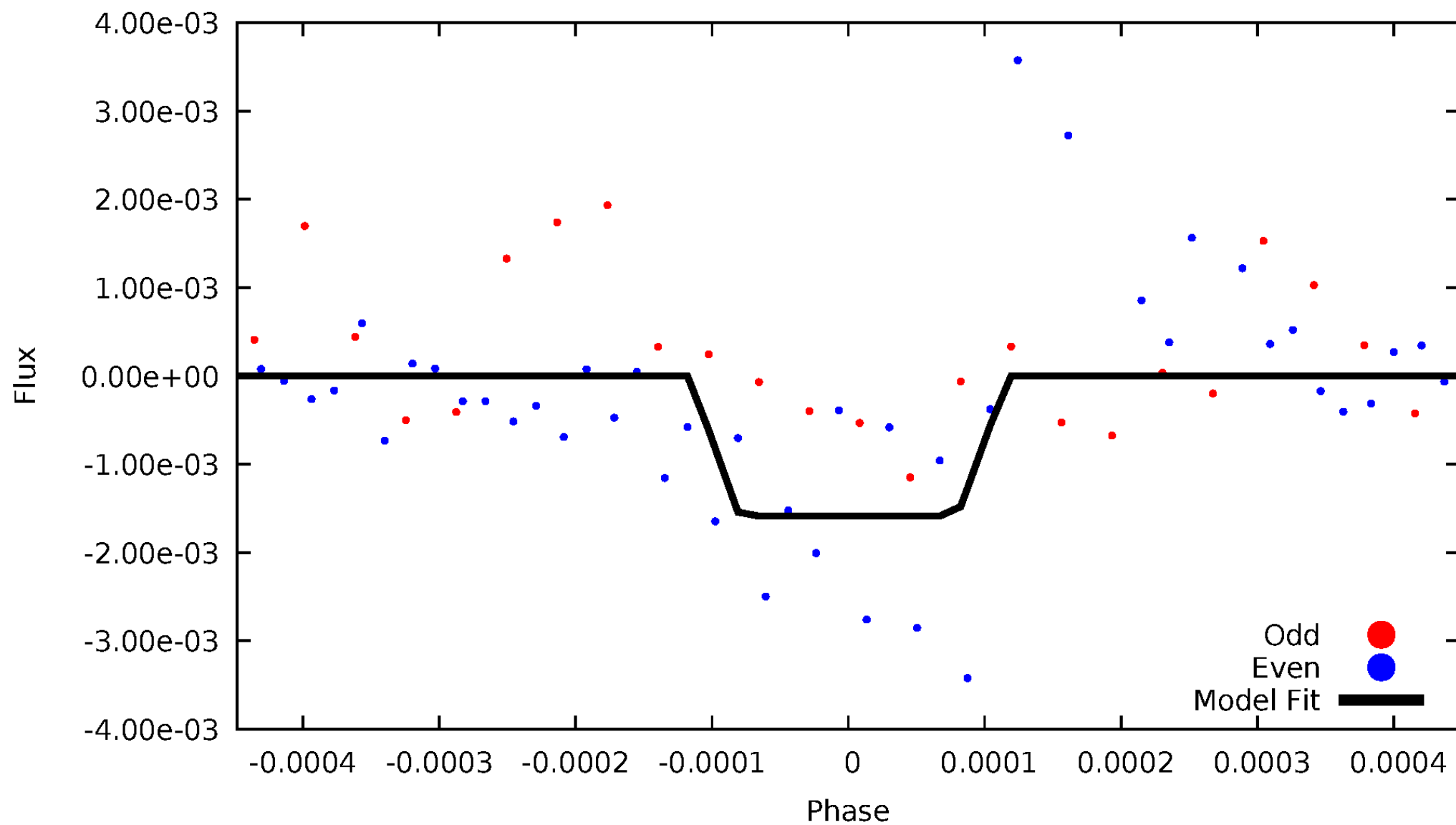
DV Odd/Even

TCE 011244150-03



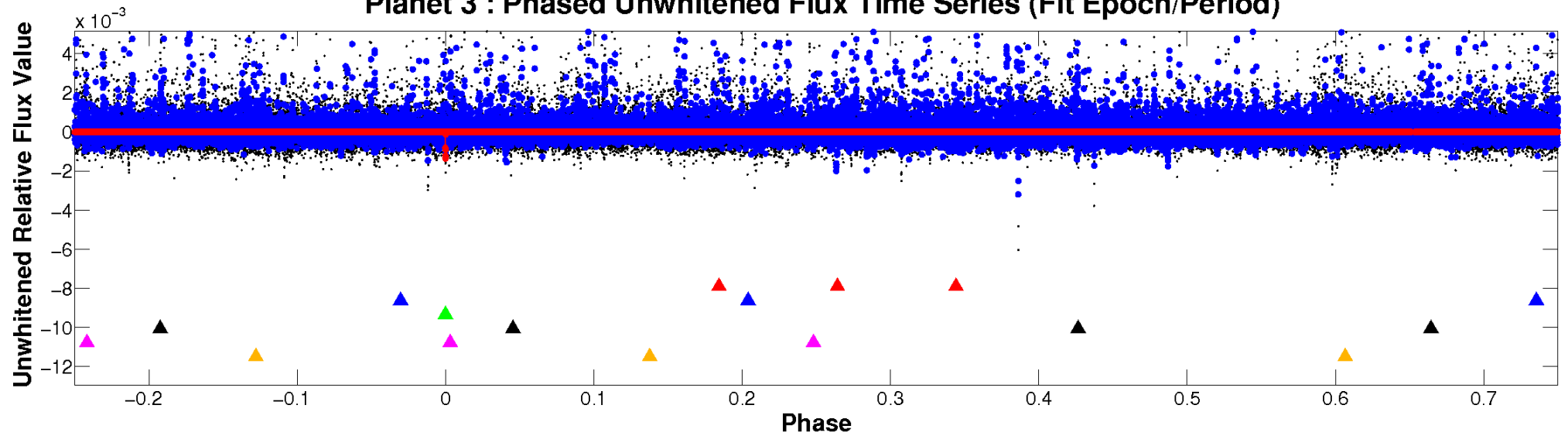
ALT Odd/Even

TCE 011244150-03

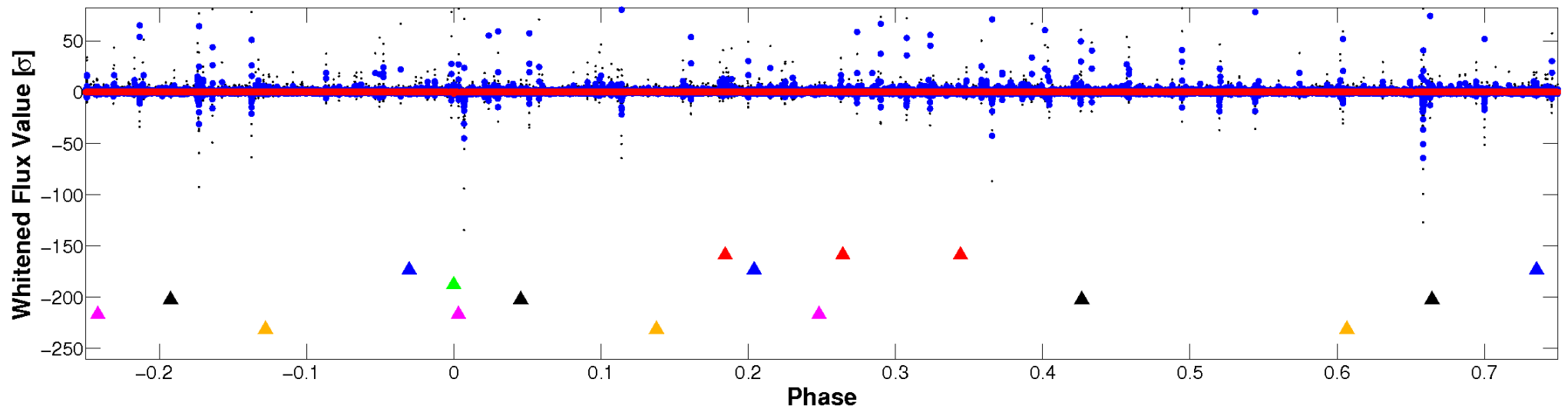


Non-Whitened Vs. Whitened Light Curve

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

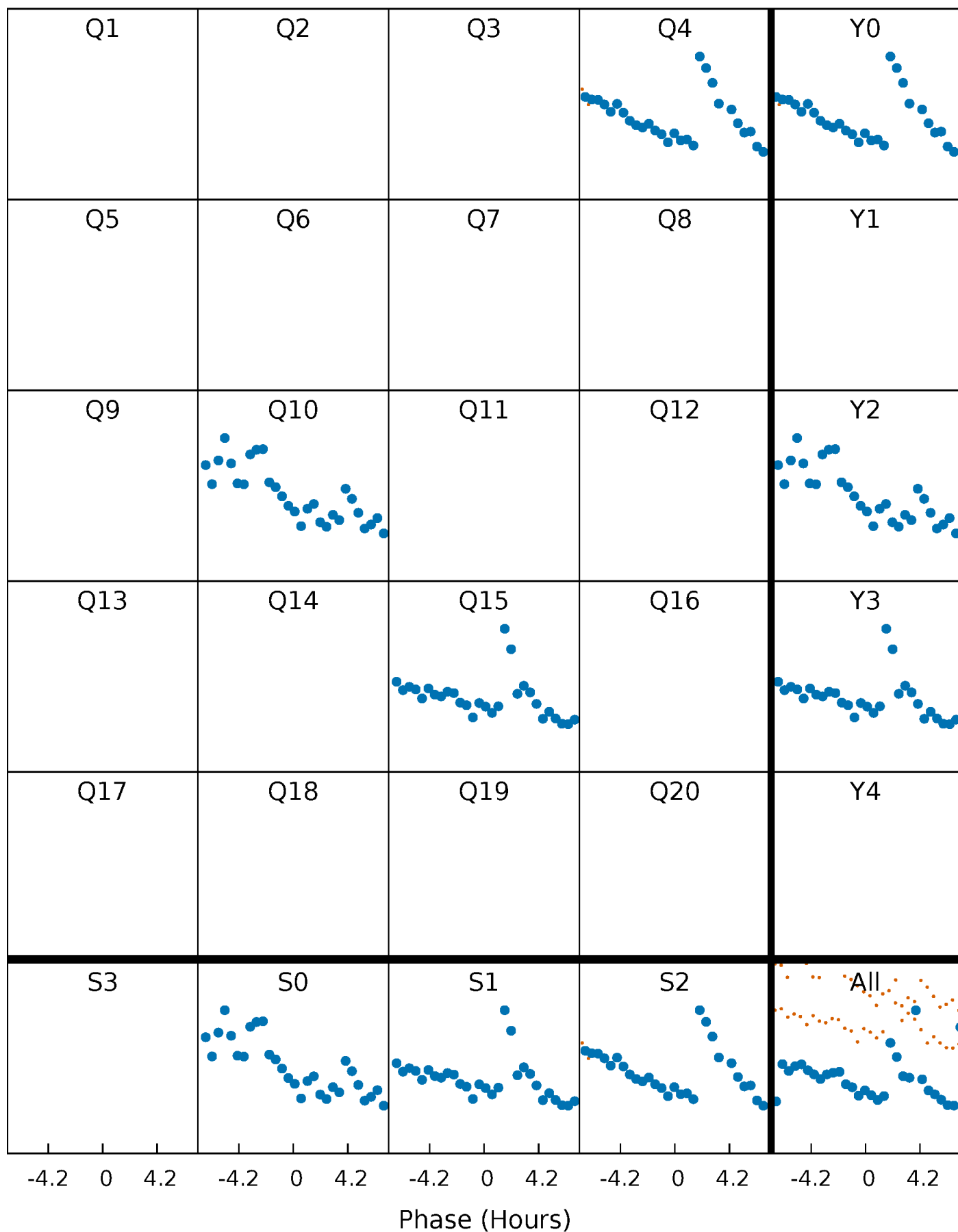


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



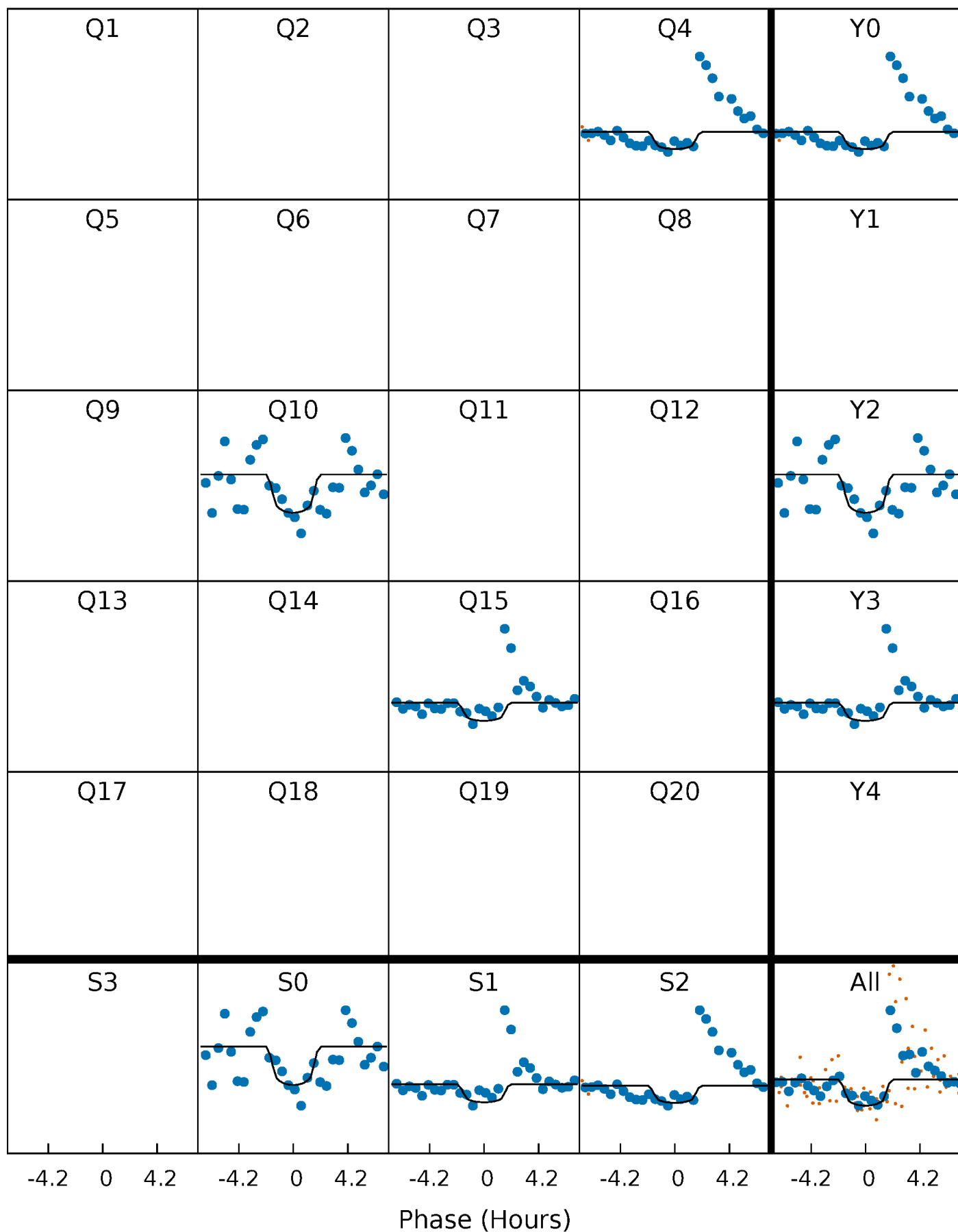
PDC Quarter-Phased Transit Curves

TCE 011244150-03 P=552.214651 Days $T_0=361.196180$ (BKJD)



DV Quarter-Phased Transit Curves

TCE 011244150-03 P=552.214651 Days $T_0=361.196180$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

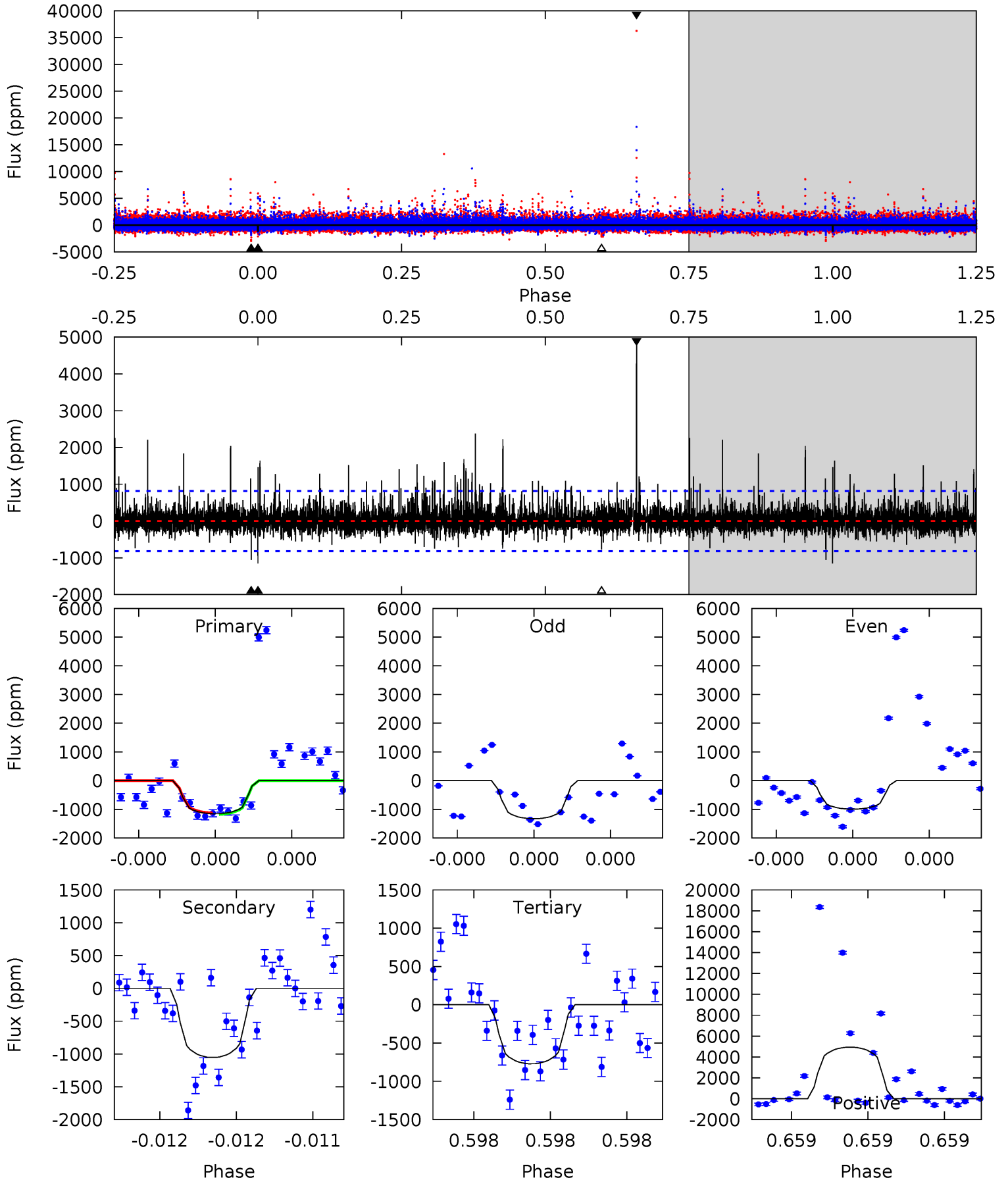
TCE 011244150-03 P=552.203337 Days $T_0=361.217322$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-03, P = 552.214651 Days, E = 361.196180 Days

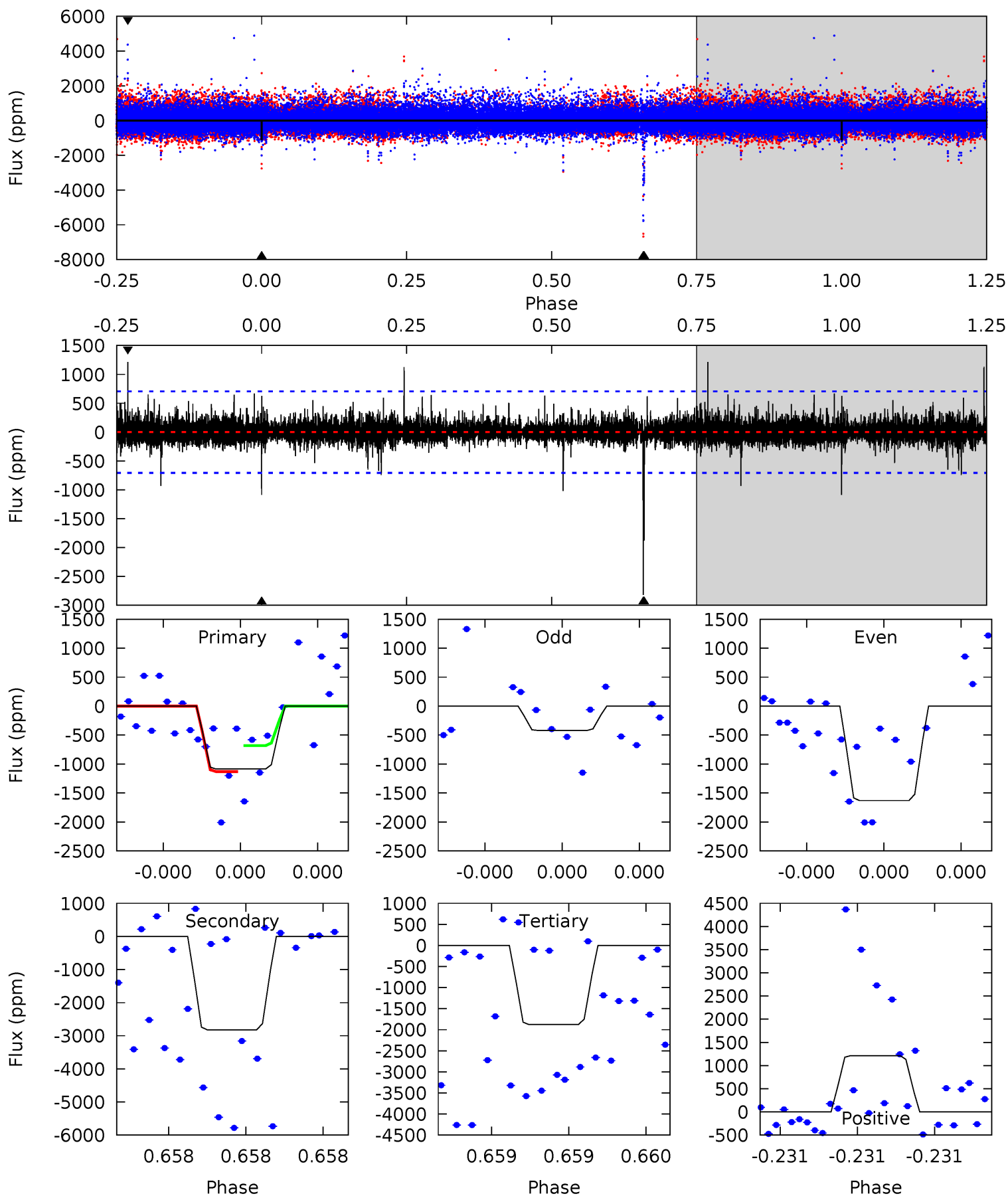
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.02	7.31	5.35	34.3	5.67	3.63	1.78	2.67	-26.3	1.96	-27.0	0.44	0.90	0.81	0.17



Alt Model-Shift Uniqueness Test

011244150-03, P = 552.203337 Days, E = 361.217322 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.80	22.9	15.2	9.84	5.73	3.71	1.03	-6.41	-1.04	7.65	13.0	4.46	1.61	0.30	1.73



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1053 ± 144	$3.93^{+4.25}_{-2.61}$	157^{+3}_{-4}	2922^{+1210}_{-519}	$41222^{+328974}_{-32129}$
Alt.	-2821 ± 123	$4.15^{+4.02}_{-2.85}$	157^{+4}_{-3}	3293^{+1600}_{-563}	$99019^{+879930}_{-73595}$

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 $A_{obs} \gg 1.0$

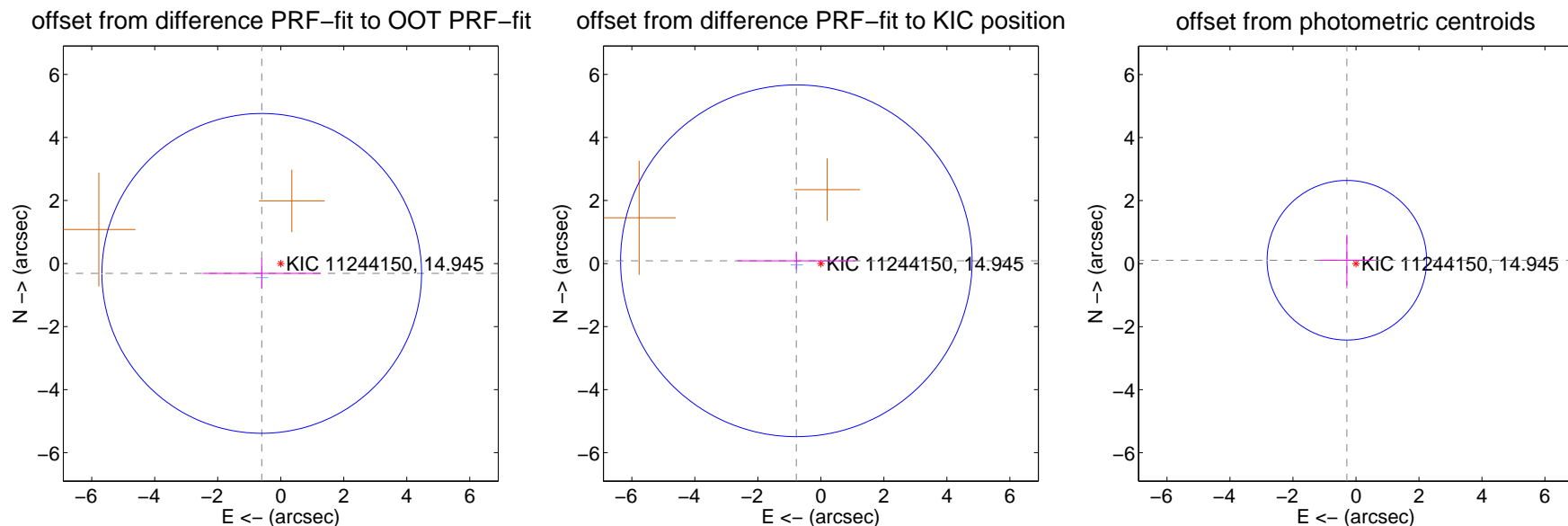
DV Centroid Data

Supplemental centroid analysis for 011244150-03. Kepler magnitude: 14.95. Transit SNR 6.48

There are 1 quarters with good PRF difference image offsets

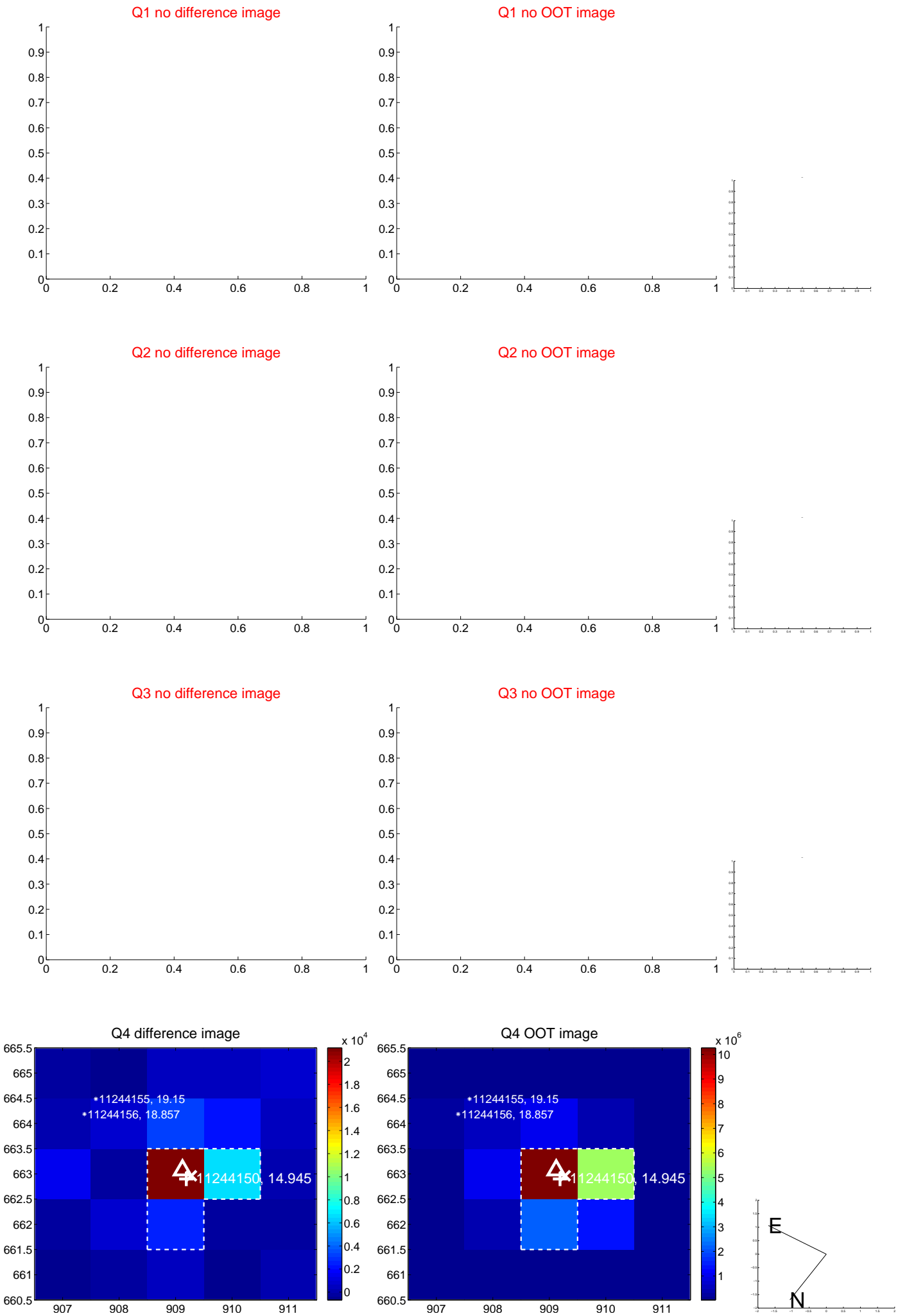
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.680 ± 1.691	0.40	0.603 ± 1.873	-0.313 ± 0.485
PRF-fit source offset from KIC position	0.783 ± 1.860	0.42	0.778 ± 1.873	0.087 ± 0.272
photometric centroid source offset	0.31 ± 0.84	0.37	0.29 ± 0.85	0.11 ± 0.81



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.

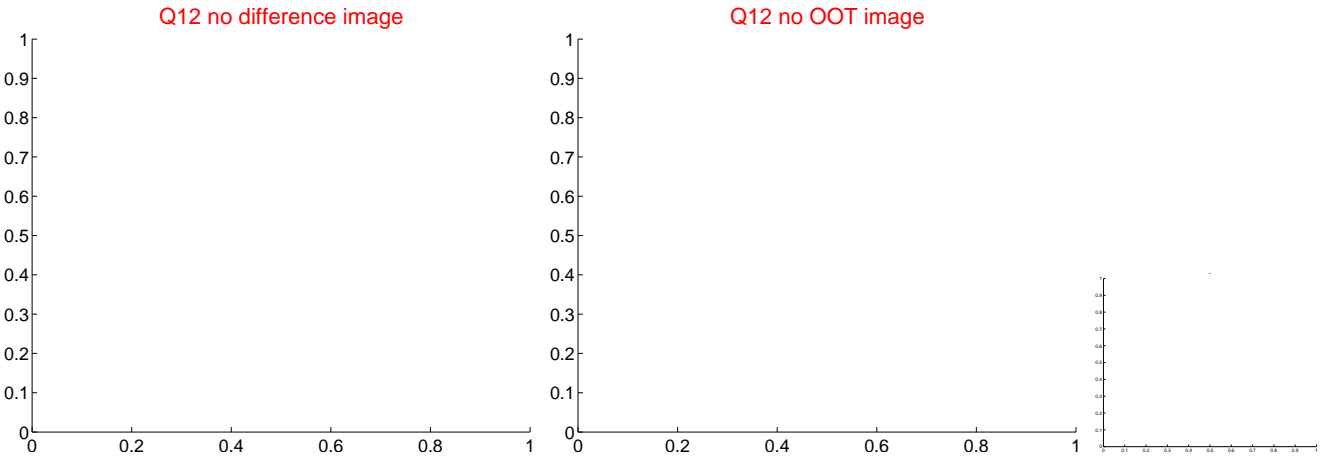
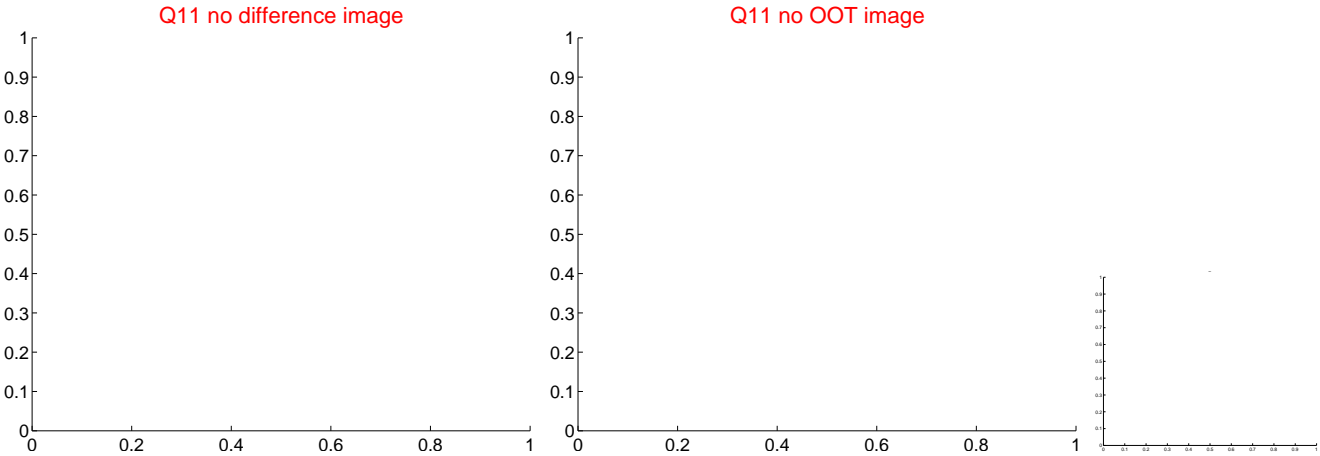
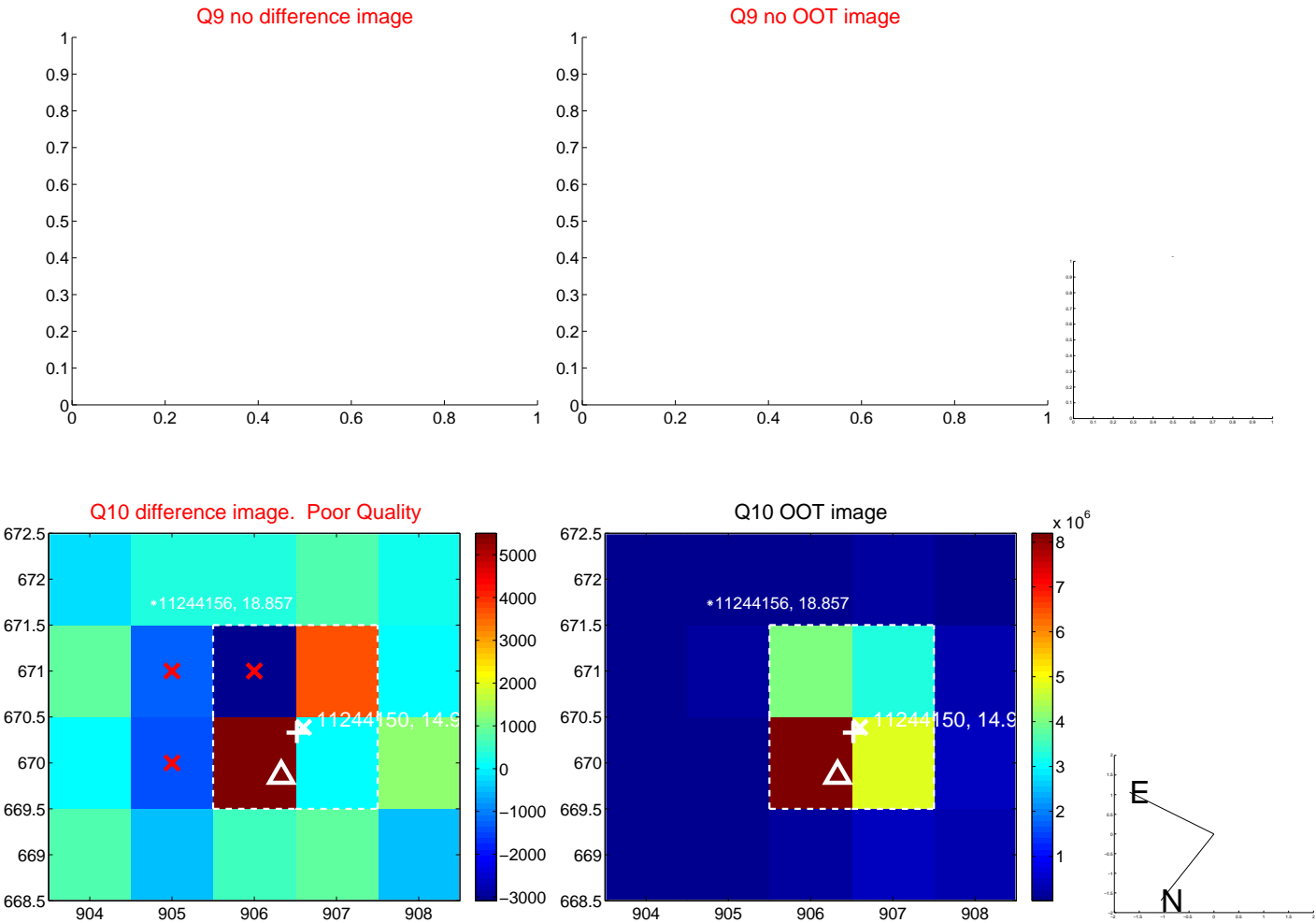
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



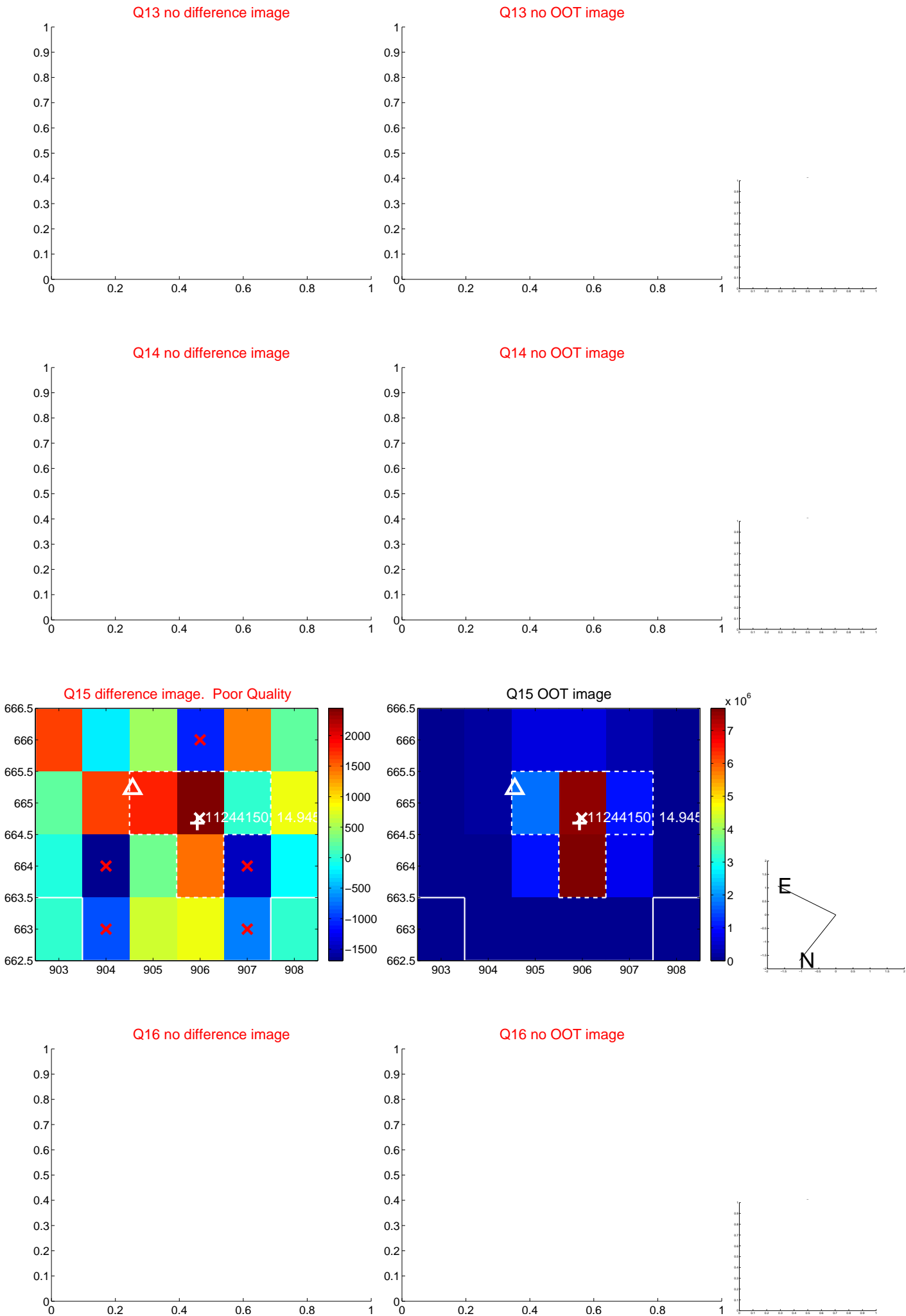
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



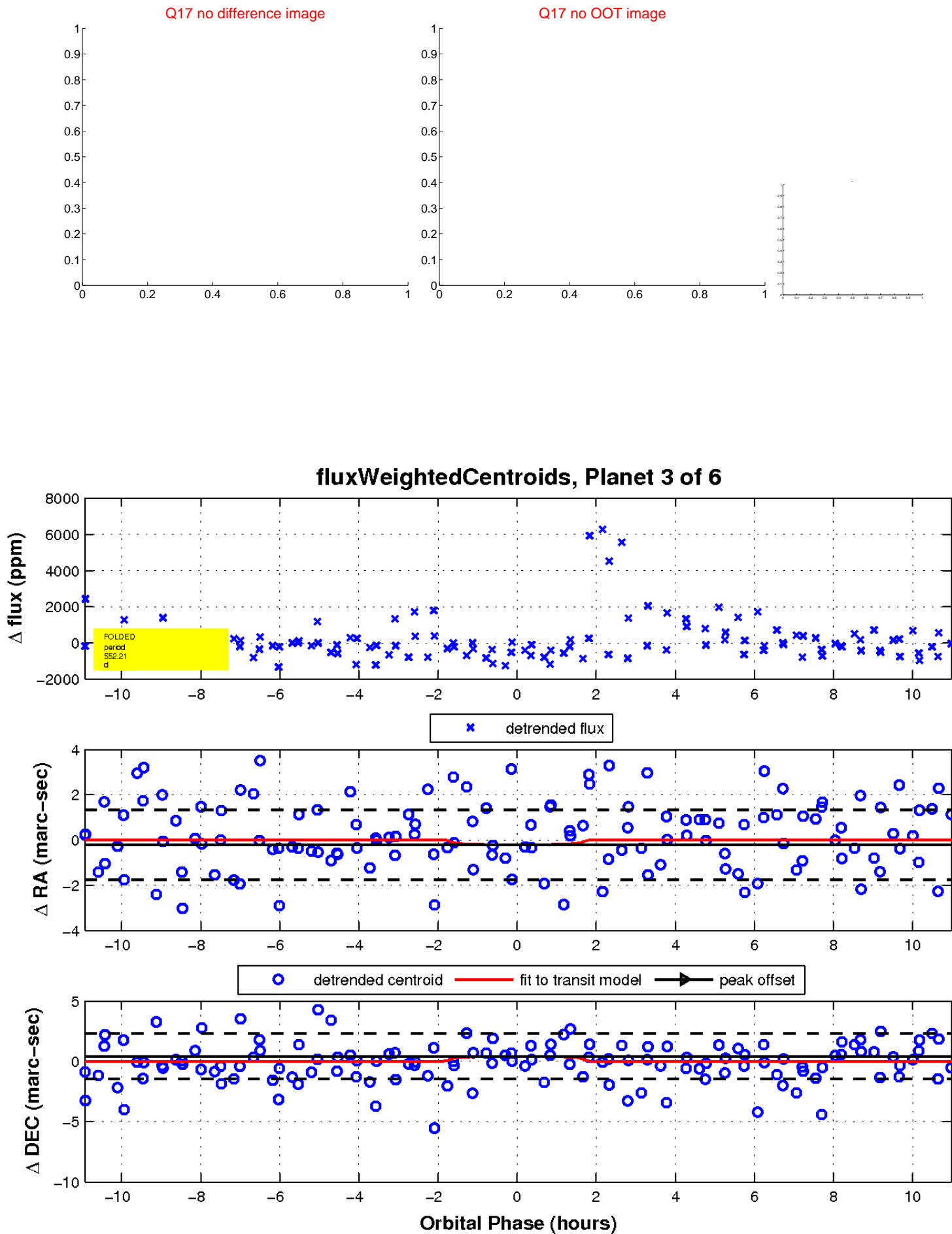
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

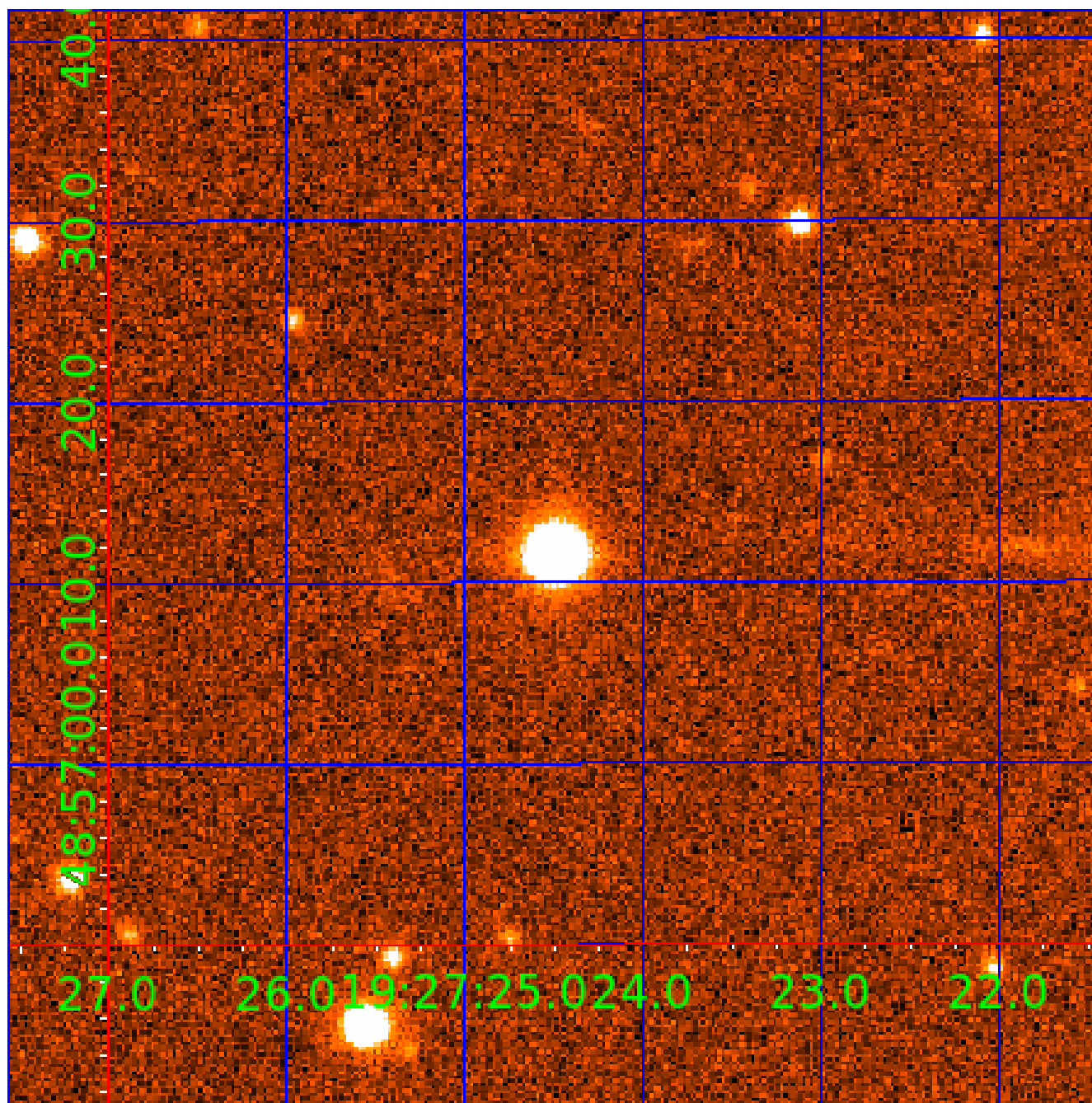


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
011244150-02	OBS	No	681.580099	215.140879	1665.9	17.828	13.6	7.3	0.49	3738	2.19	0.03
011244150-03	OBS	No	552.214651	361.196180	1357.2	3.682	13.3	6.5	0.49	3738	1.94	0.04
011244150-04	OBS	No	341.785764	254.977429	1383.0	6.403	13.0	9.0	0.49	3738	1.80	0.07
011244150-05	OBS	No	416.963704	498.214392	1247.6	11.316	11.2	6.1	0.49	3738	1.75	0.06
011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

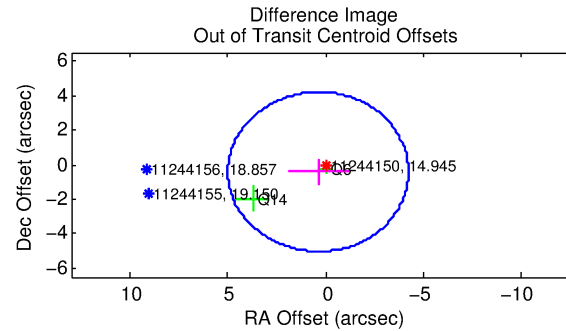
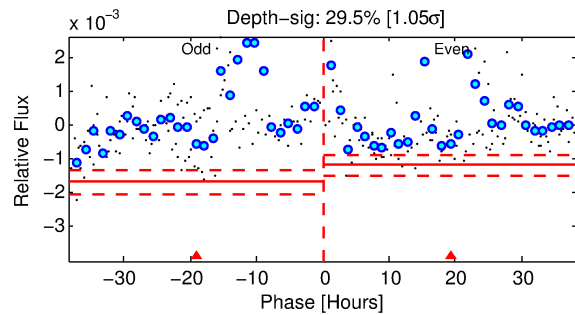
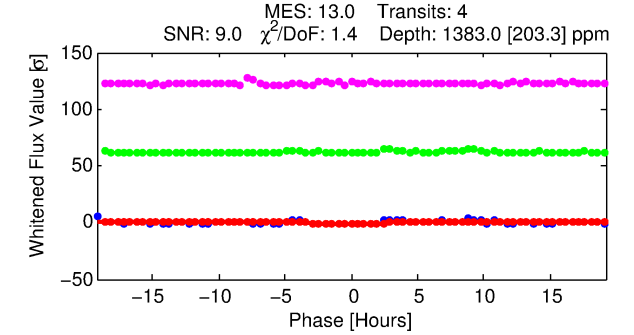
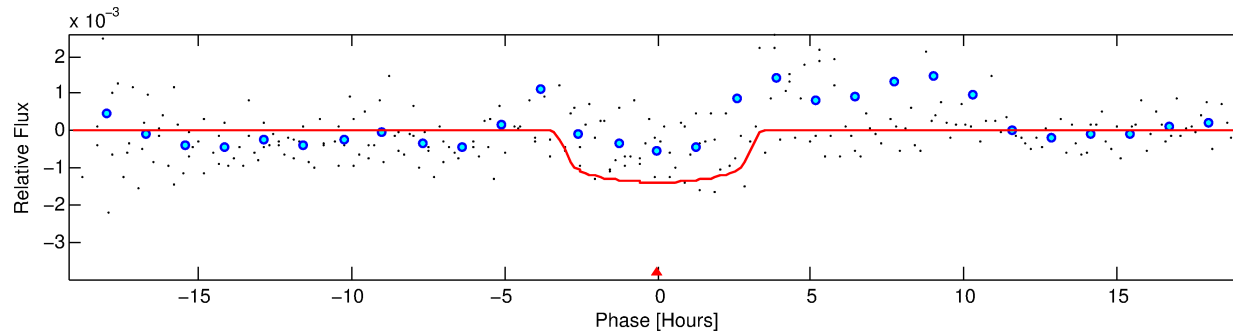
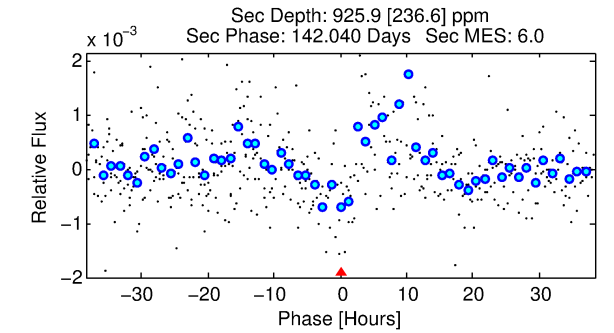
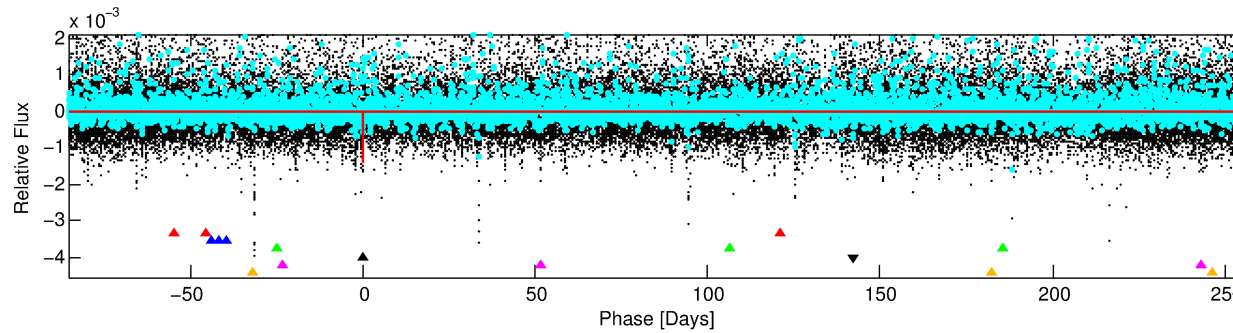
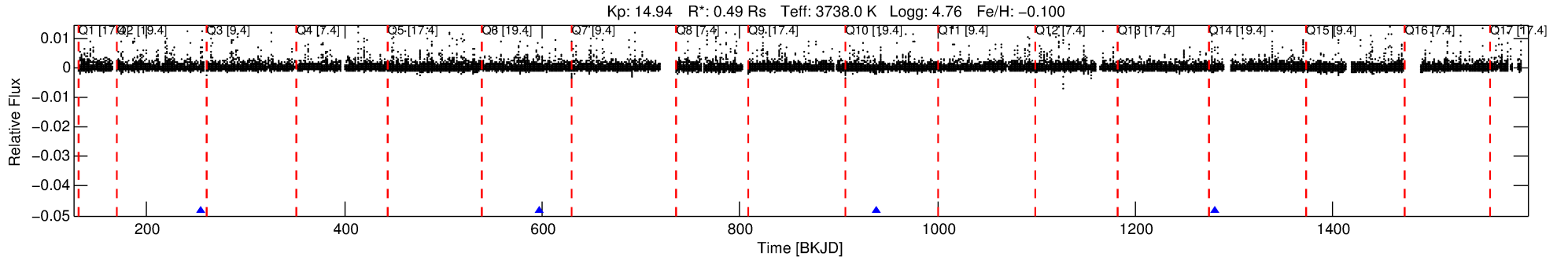
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-04

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 4 of 6 Period: 341.786 d



DV Fit Results:

Period = 341.78576 [0.00522] d
Epoch = 254.9774 [0.0101] BKJD
Rp/R* = 0.0339 [0.0344]
a/R* = 413.51 [1864.27]
b = 0.20 [21.52]
Seff = 0.07 [0.01]
Teff = 132 [3] K
Rp = 1.80 [1.84] Re
a = 0.7566 [0.0419] AU
Ag = 89949.69 [184483.87] [0.49σ]
Teffp = 3542 [1816] K [1.88σ]

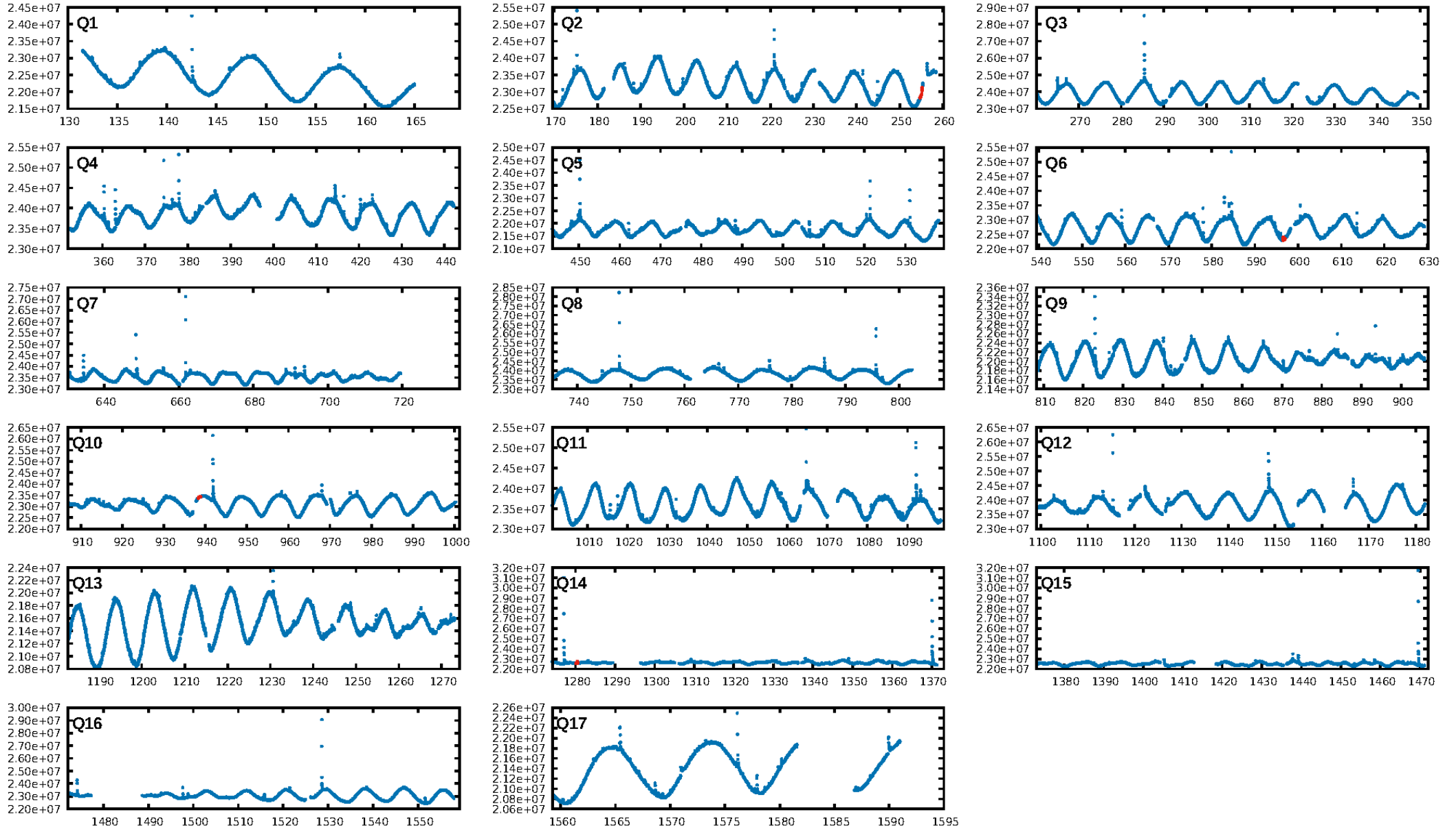
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [110.96σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 64.6%
Bootstrap-pfa: 6.26e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.2381
Centroid-sig: 71.6%
Centroid-so: 0.605 arcsec [1.11σ]
OotOffset-rm: 0.558 arcsec [0.36σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-rm: 0.568 arcsec [0.42σ]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

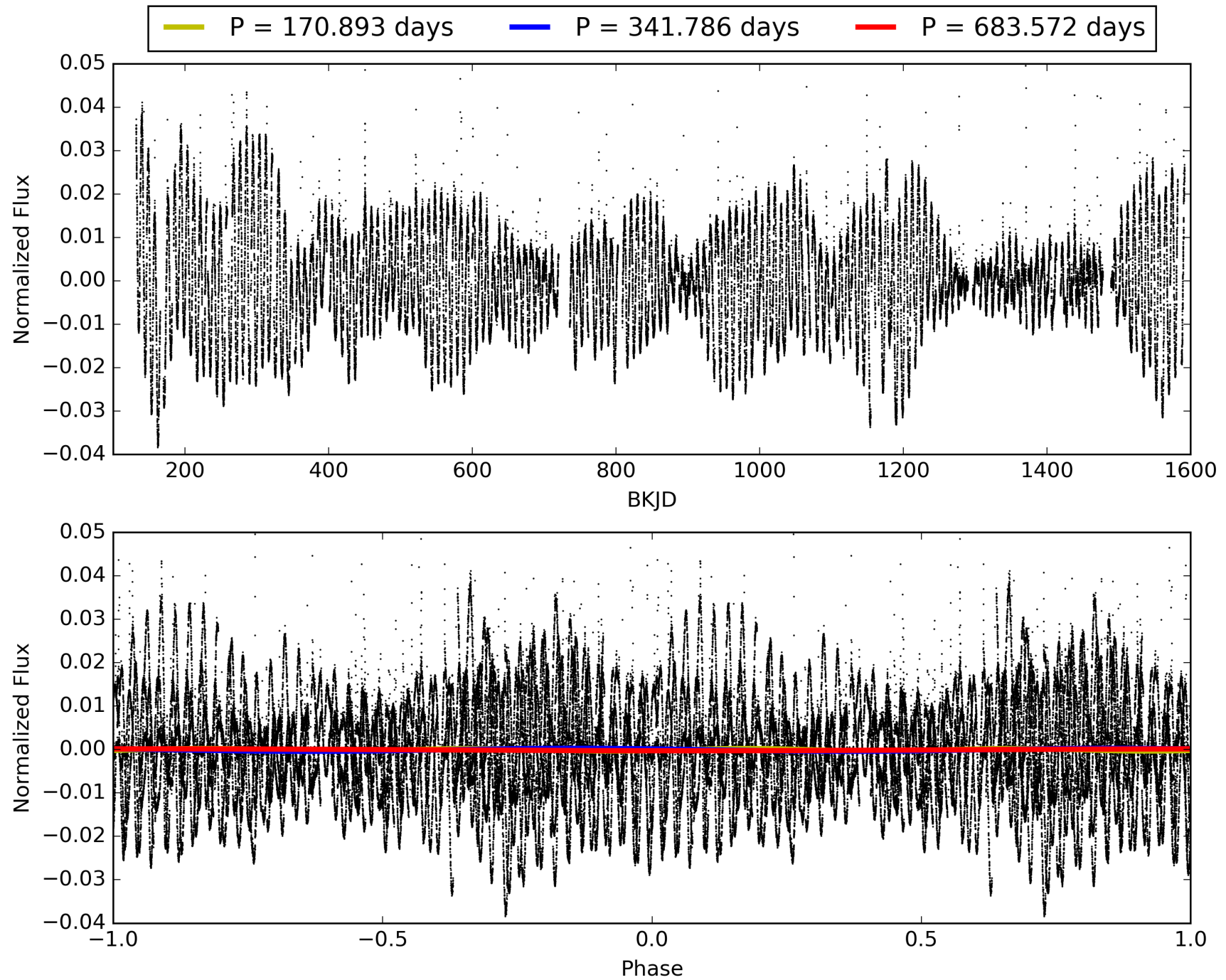
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:46:09 Z

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

TCE 011244150-04, PDC Light Curves

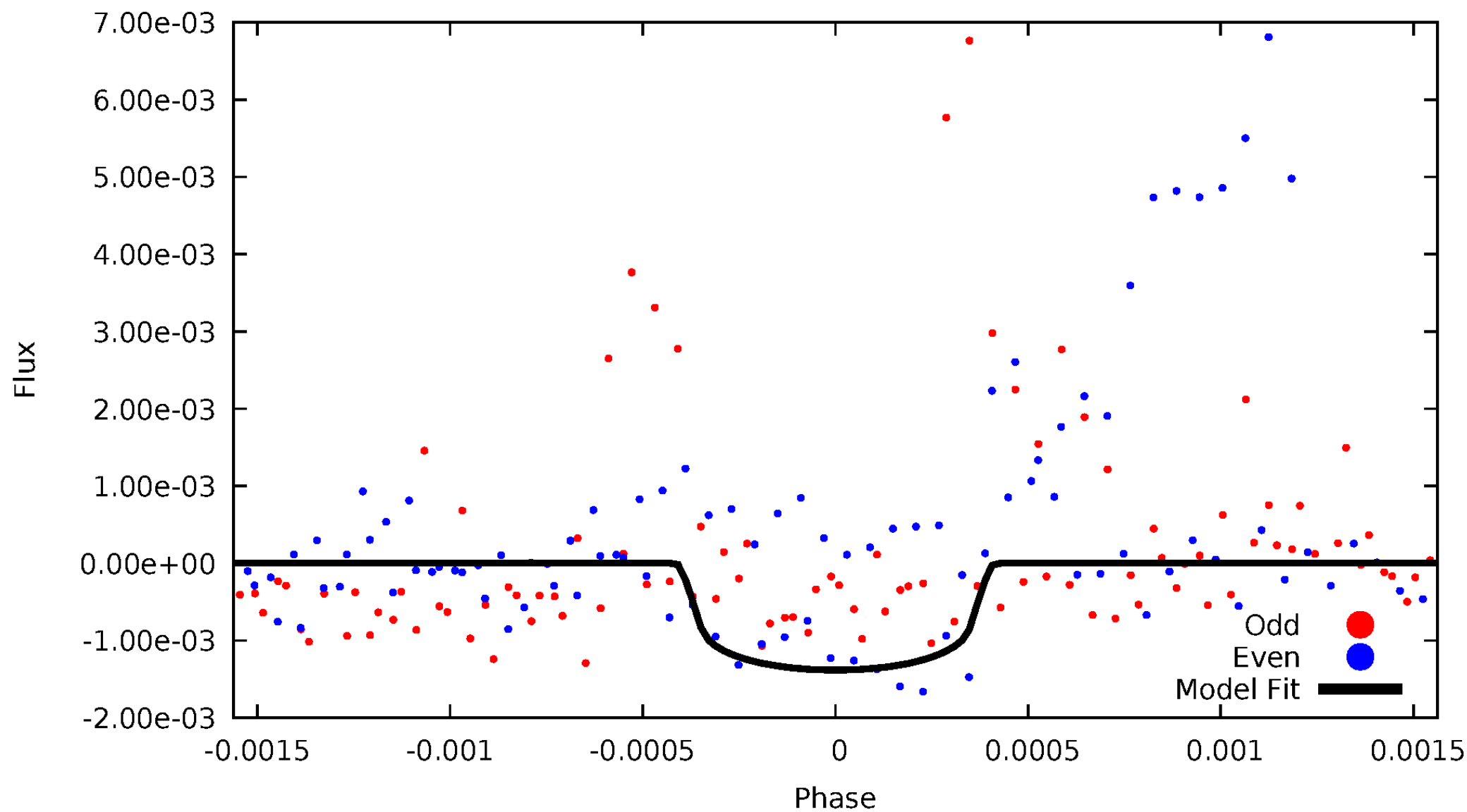


TCE 011244150-04



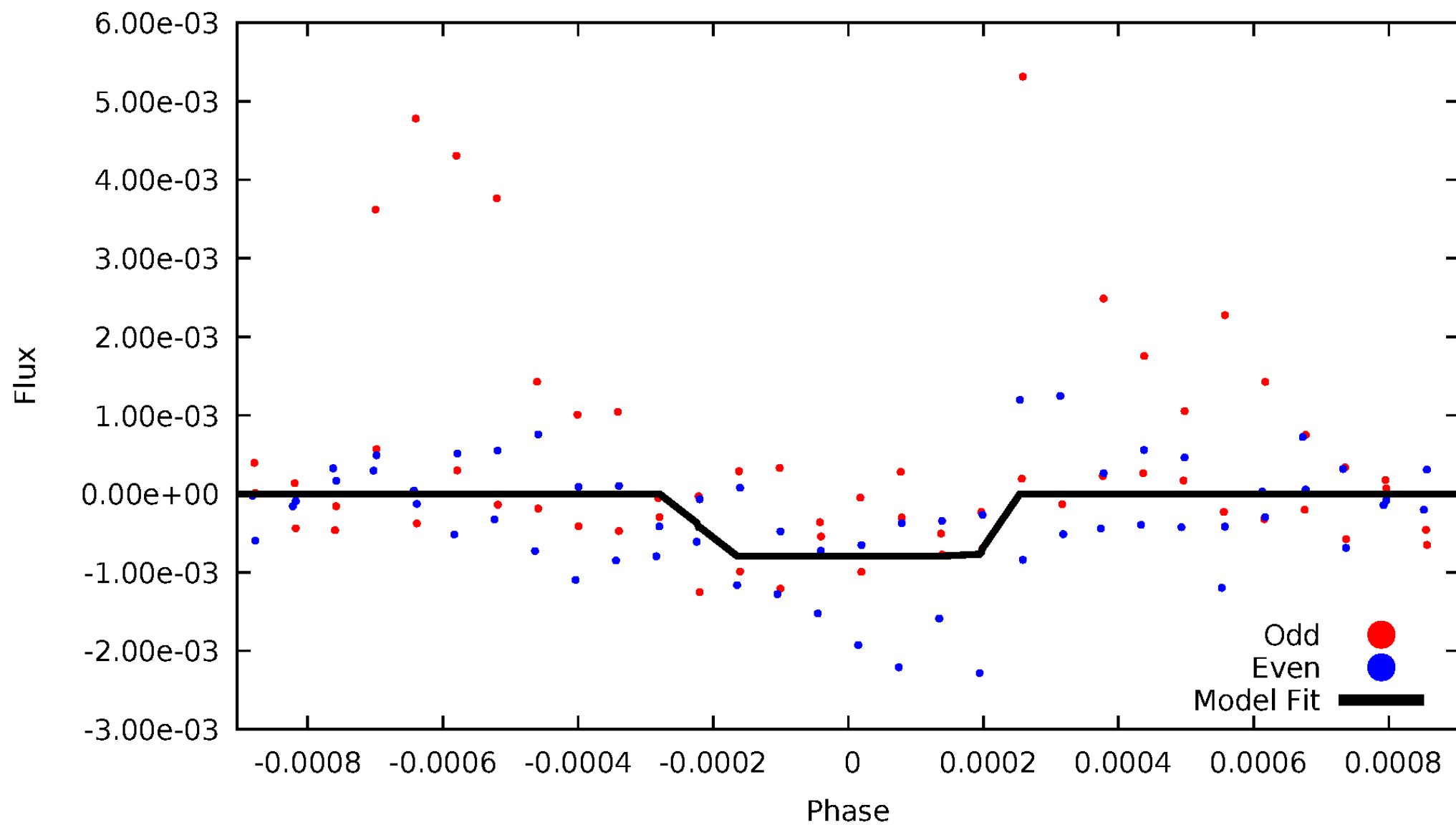
DV Odd/Even

TCE 011244150-04



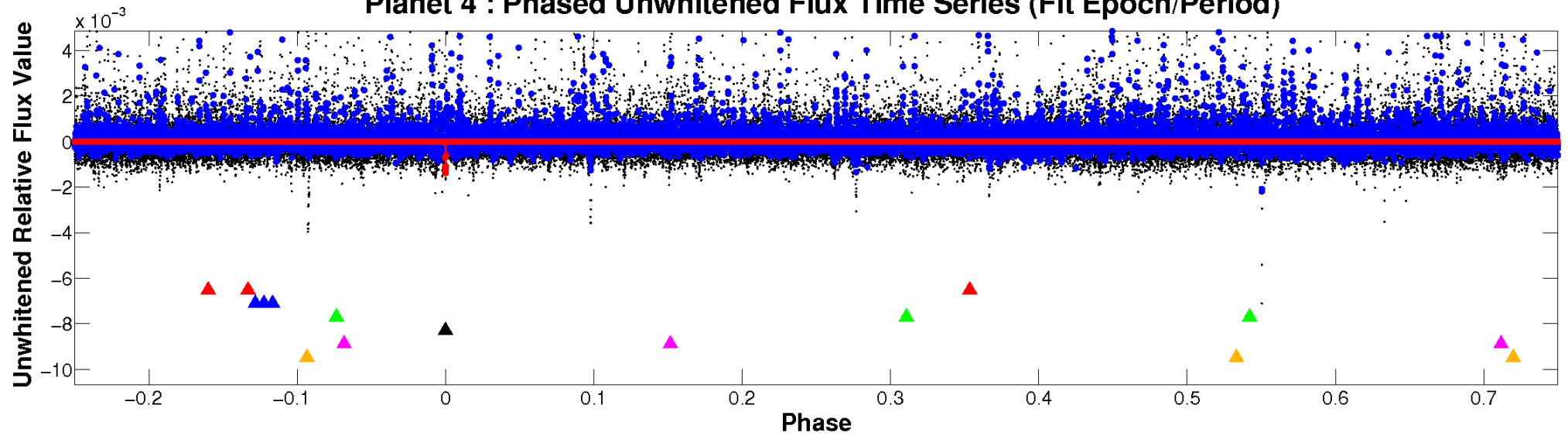
ALT Odd/Even

TCE 011244150-04

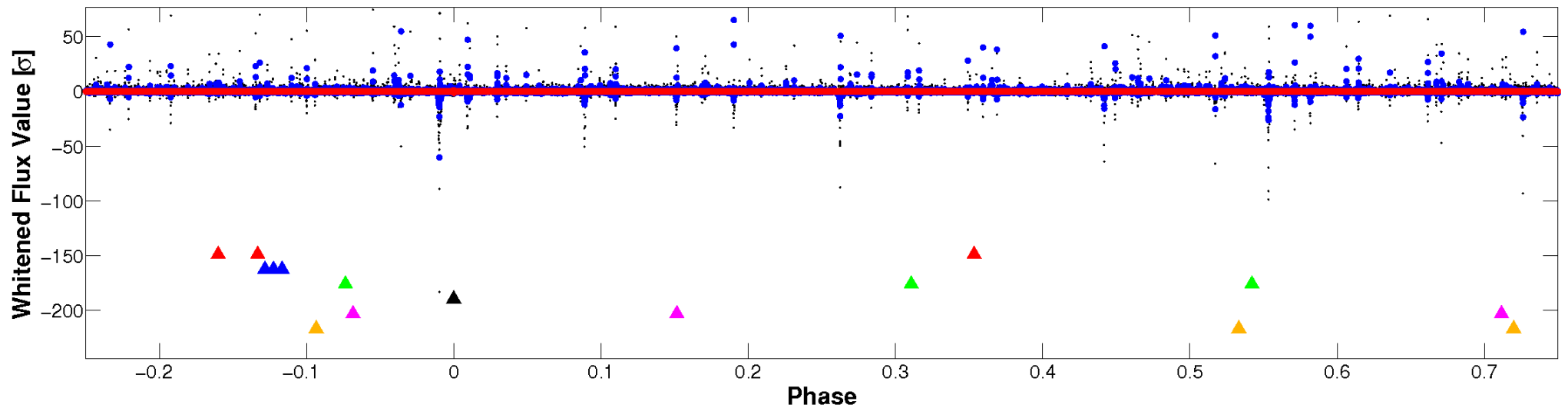


Non-Whitened Vs. Whitened Light Curve

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

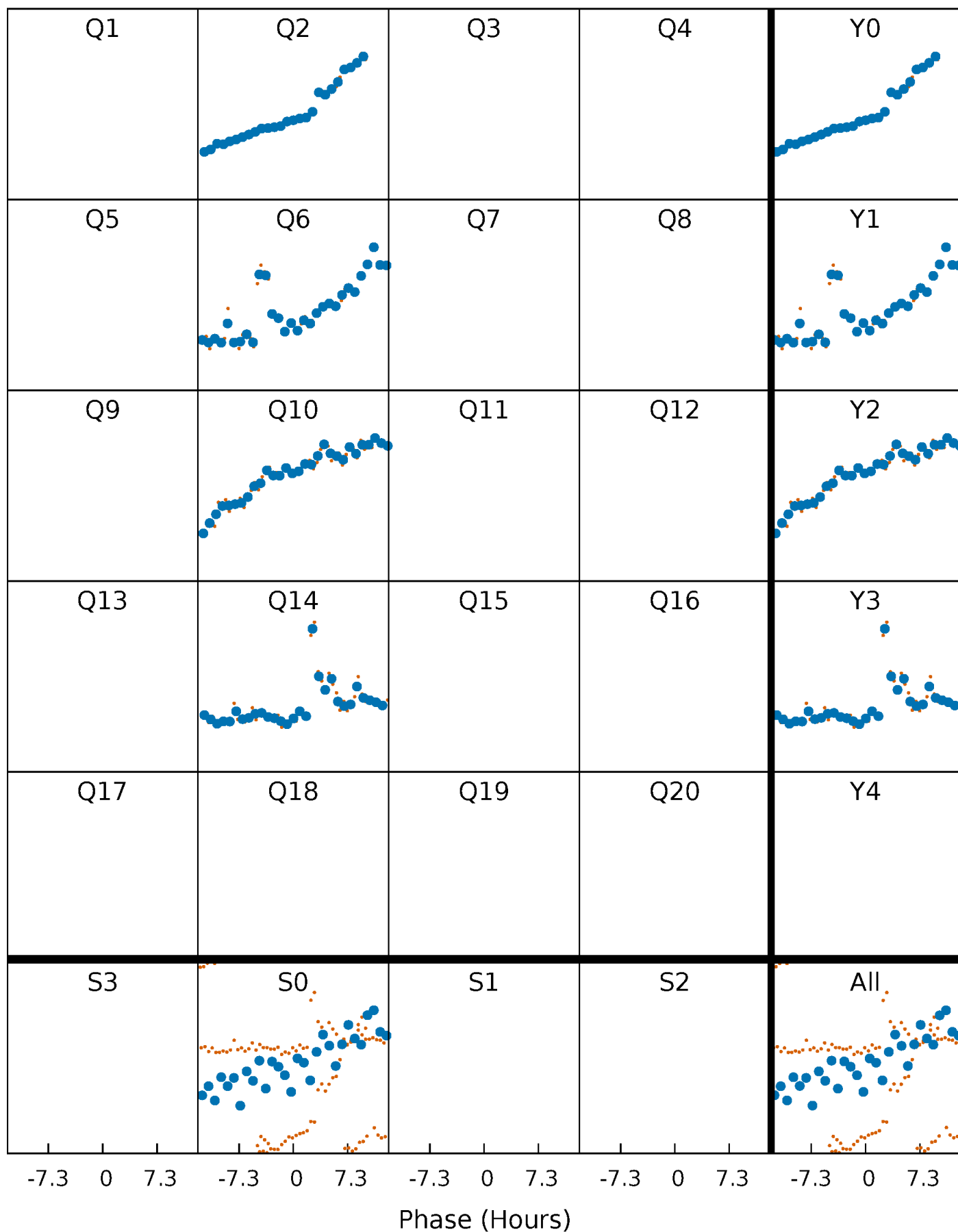


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



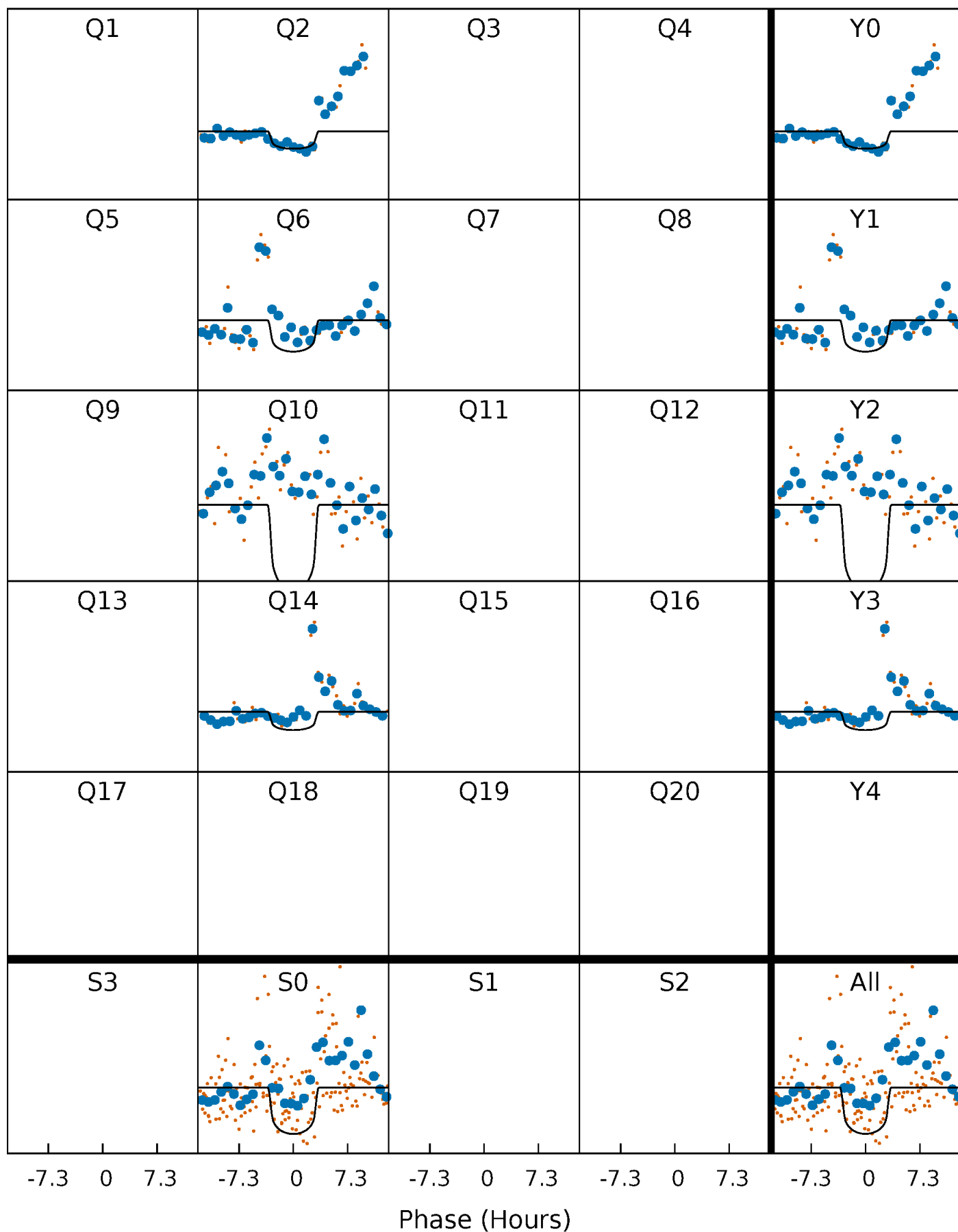
PDC Quarter-Phased Transit Curves

TCE 011244150-04 P=341.785764 Days $T_0=254.977429$ (BKJD)



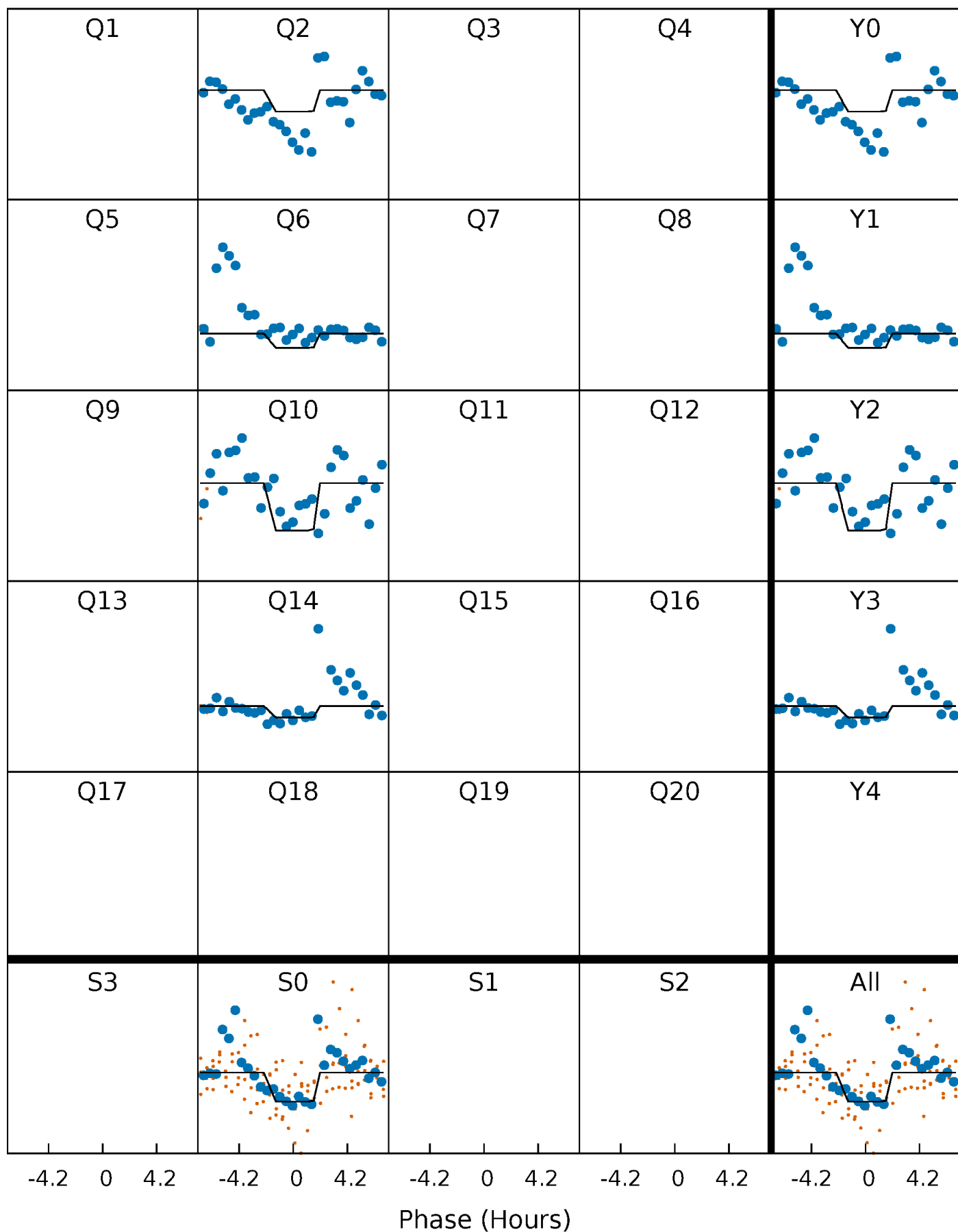
DV Quarter-Phased Transit Curves

TCE 011244150-04 P=341.785764 Days $T_0=254.977429$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

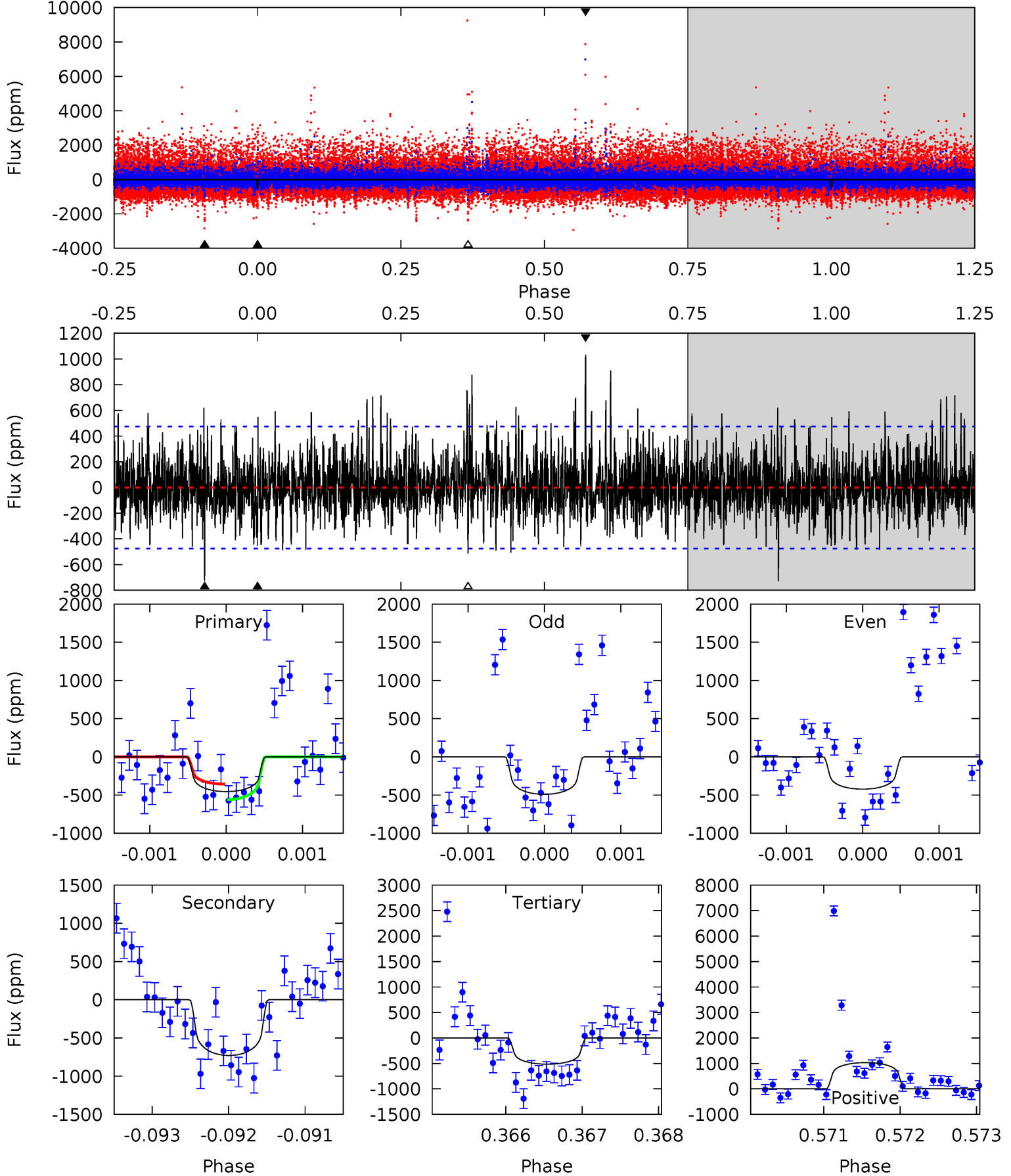
TCE 011244150-04 P=341.771725 Days $T_0=255.029548$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-04, P = 341.785764 Days, E = 254.977429 Days

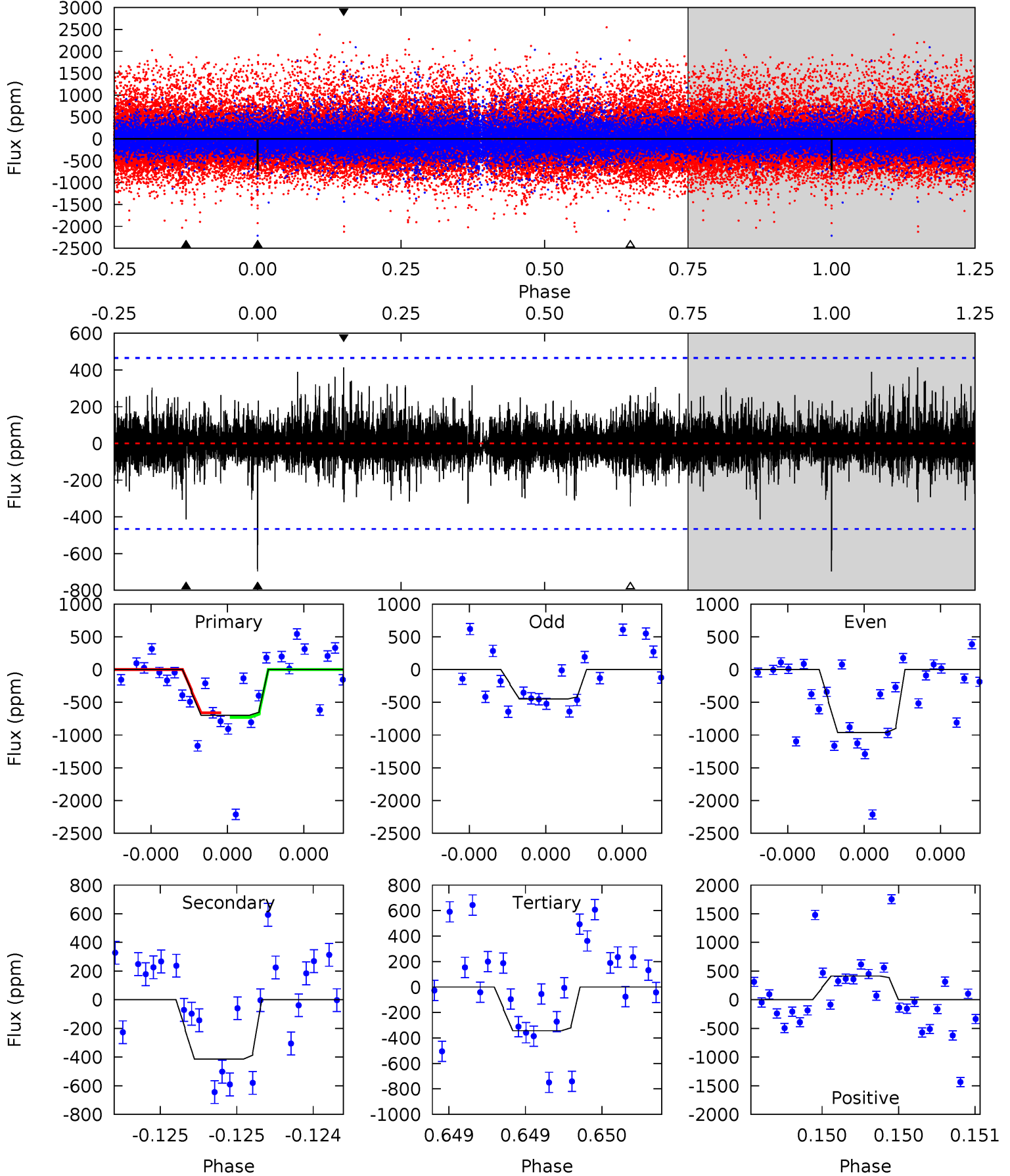
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.25	8.42	5.94	11.9	5.49	3.35	2.01	-0.69	-6.69	2.48	-3.51	0.27	12.1	0.59	1.18



Alt Model-Shift Uniqueness Test

011244150-04, P = 341.771725 Days, E = 255.029548 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.34	4.97	4.11	4.96	5.58	3.49	0.95	4.23	3.38	0.86	0.01	2.90	1.19	0.37	0.43



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-729 ± 87	$2.24^{+1.53}_{-1.40}$	184^{+4}_{-4}	3240^{+1263}_{-439}	$45796^{+271063}_{-29411}$
Alt.	-414 ± 83	$1.96^{+1.62}_{-1.23}$	184^{+4}_{-4}	3102^{+1136}_{-487}	$33518^{+200114}_{-23764}$

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 $A_{obs} \gg 1.0$

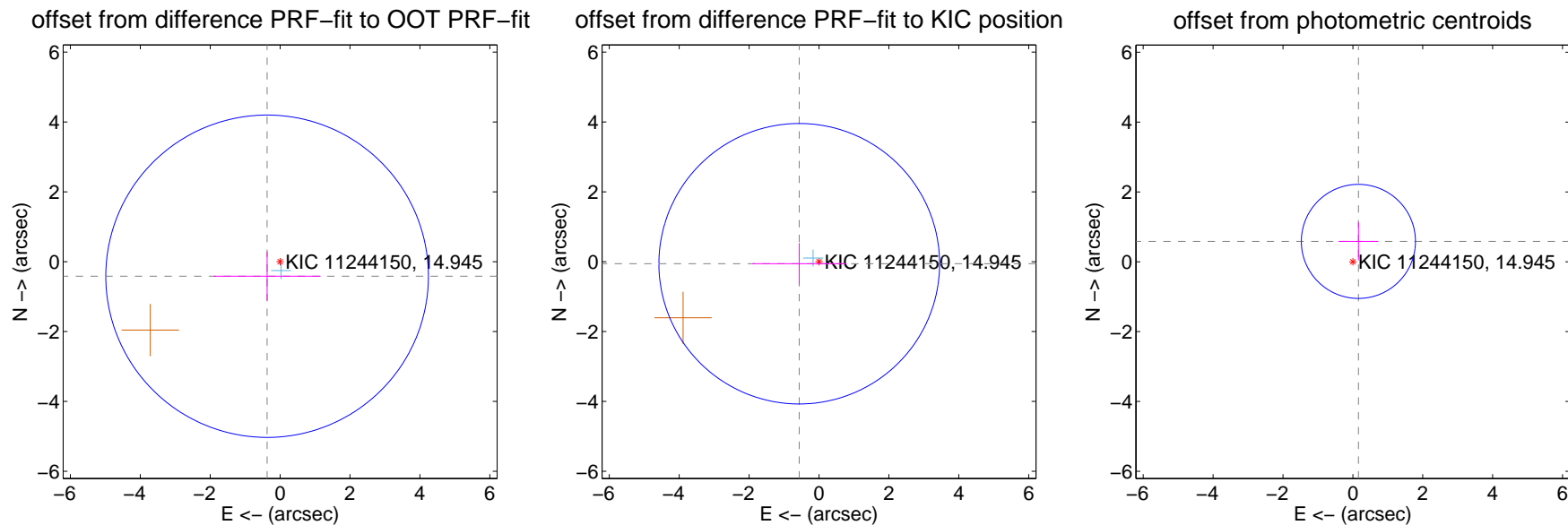
DV Centroid Data

Supplemental centroid analysis for 011244150-04. Kepler magnitude: 14.95. Transit SNR 8.97

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.558 ± 1.538	0.36	0.372 ± 1.529	-0.416 ± 0.699
PRF-fit source offset from KIC position	0.568 ± 1.338	0.42	0.565 ± 1.344	-0.059 ± 0.592
photometric centroid source offset	0.60 ± 0.54	1.11	-0.16 ± 0.57	0.58 ± 0.54

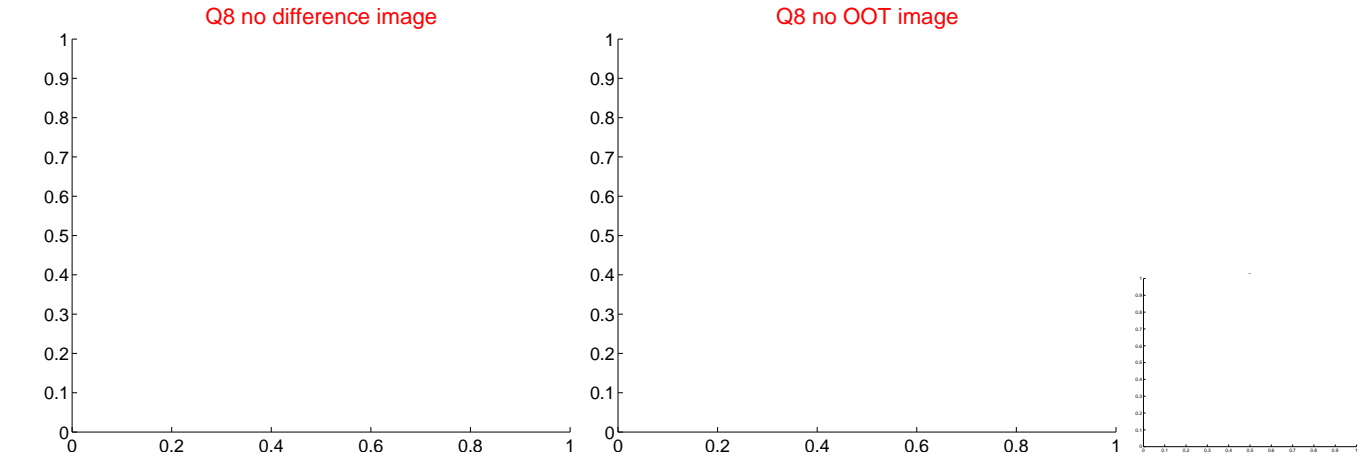
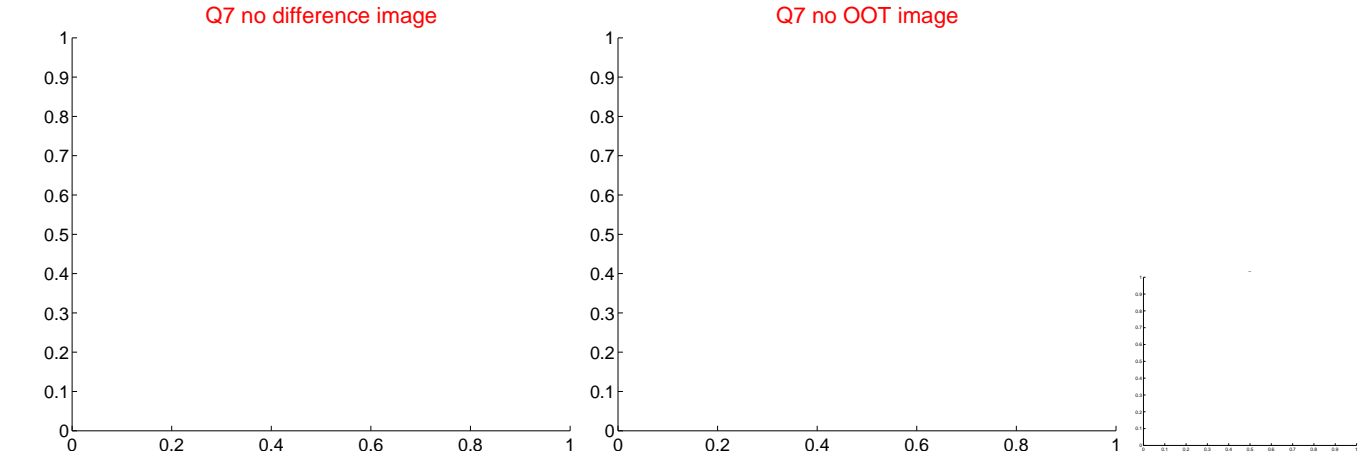
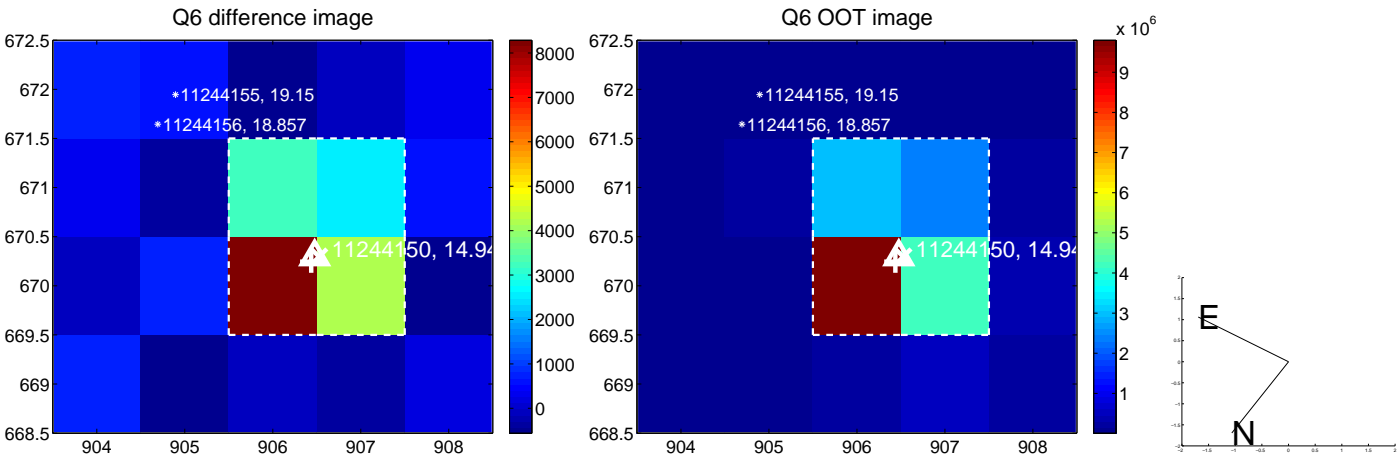
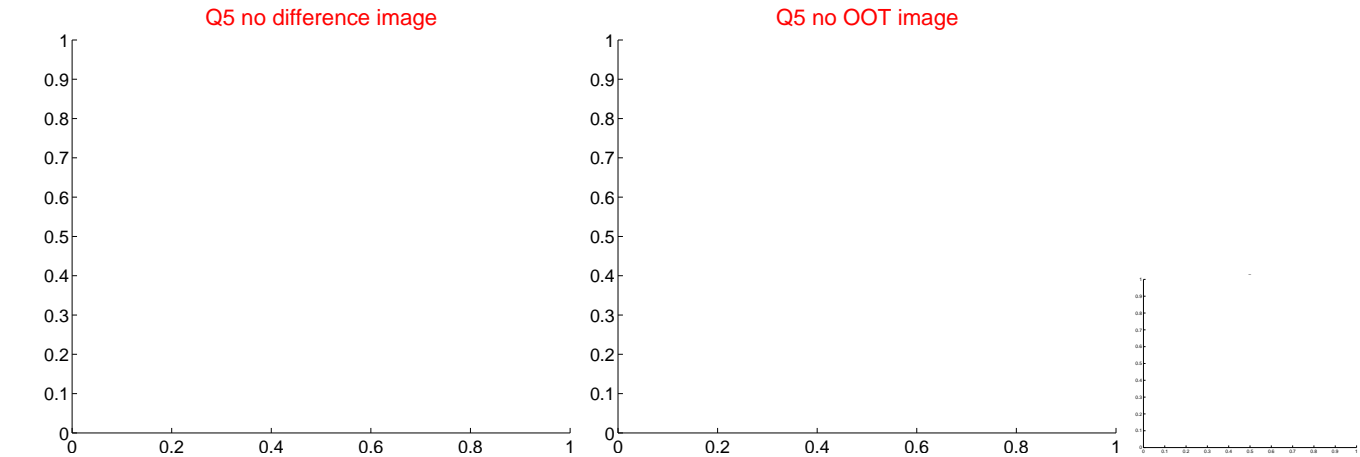


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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



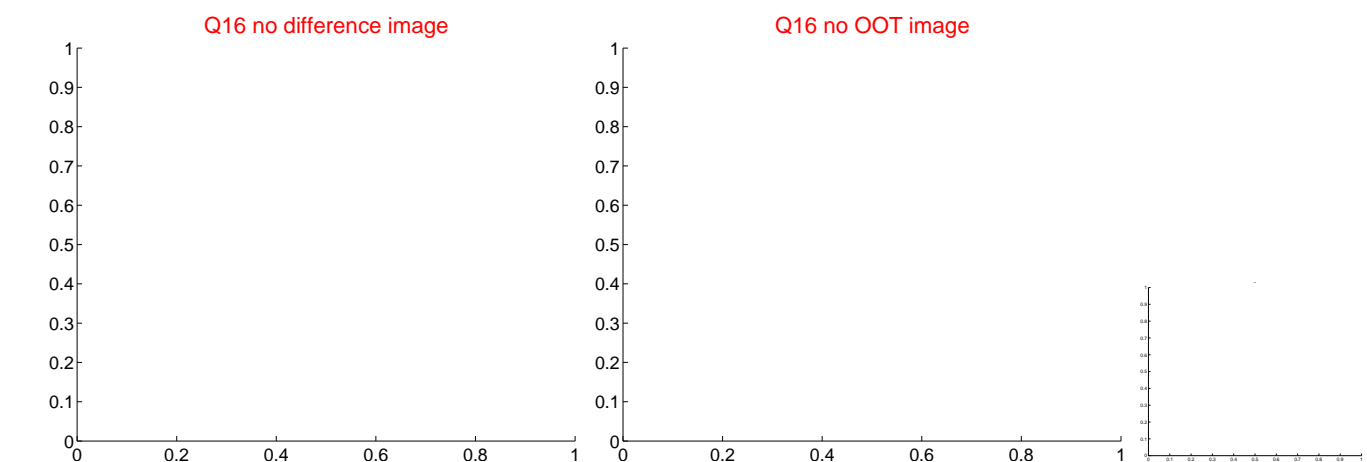
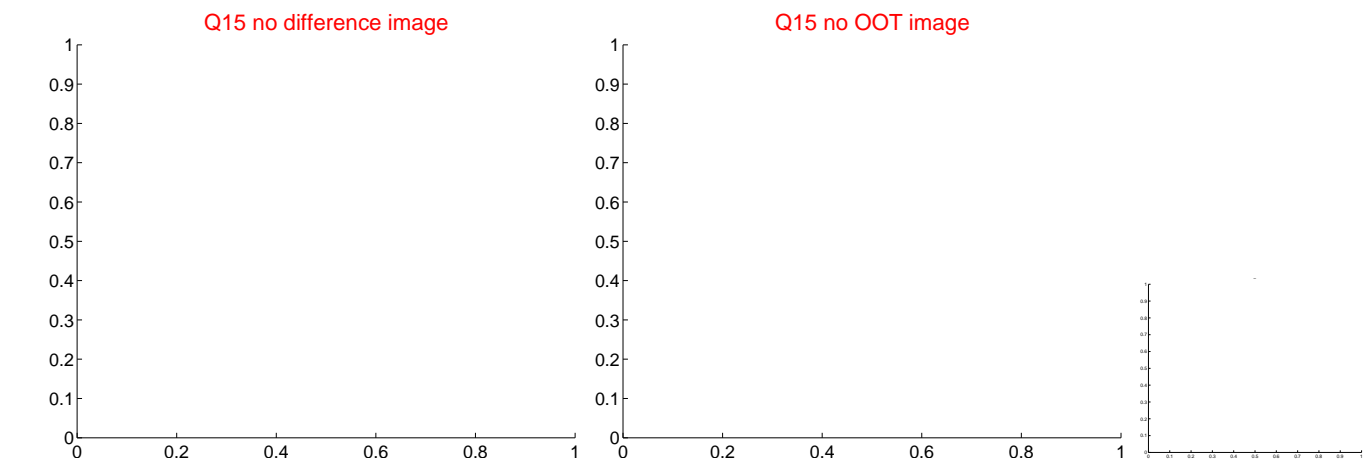
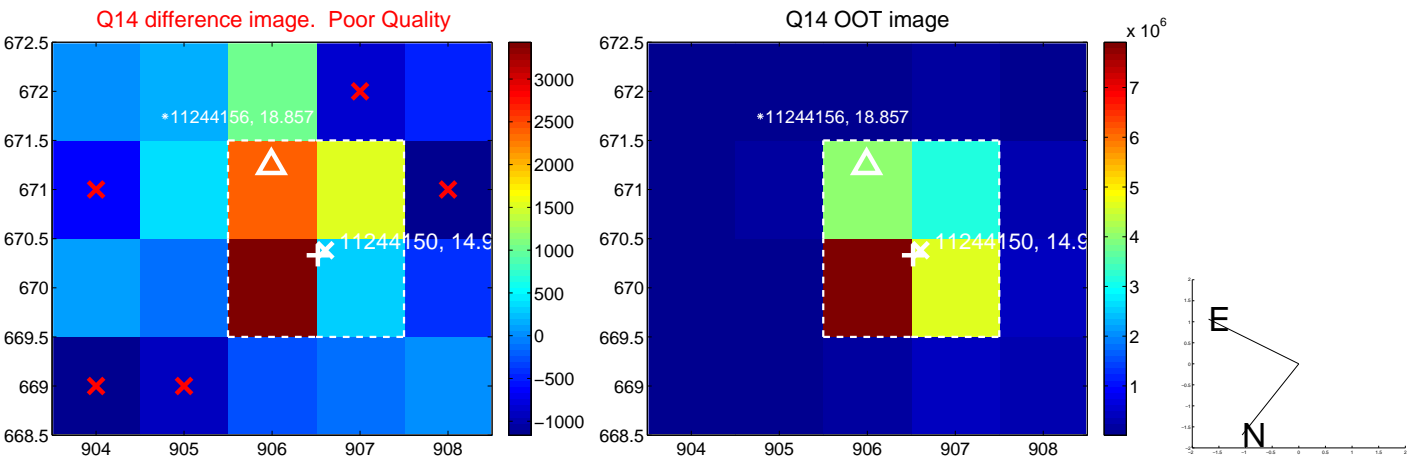
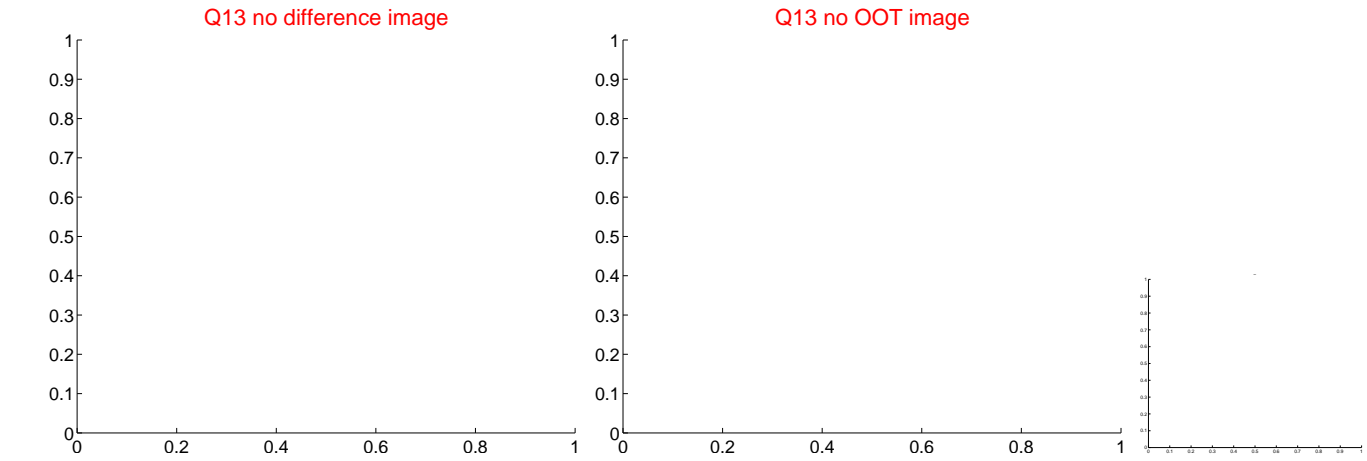
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



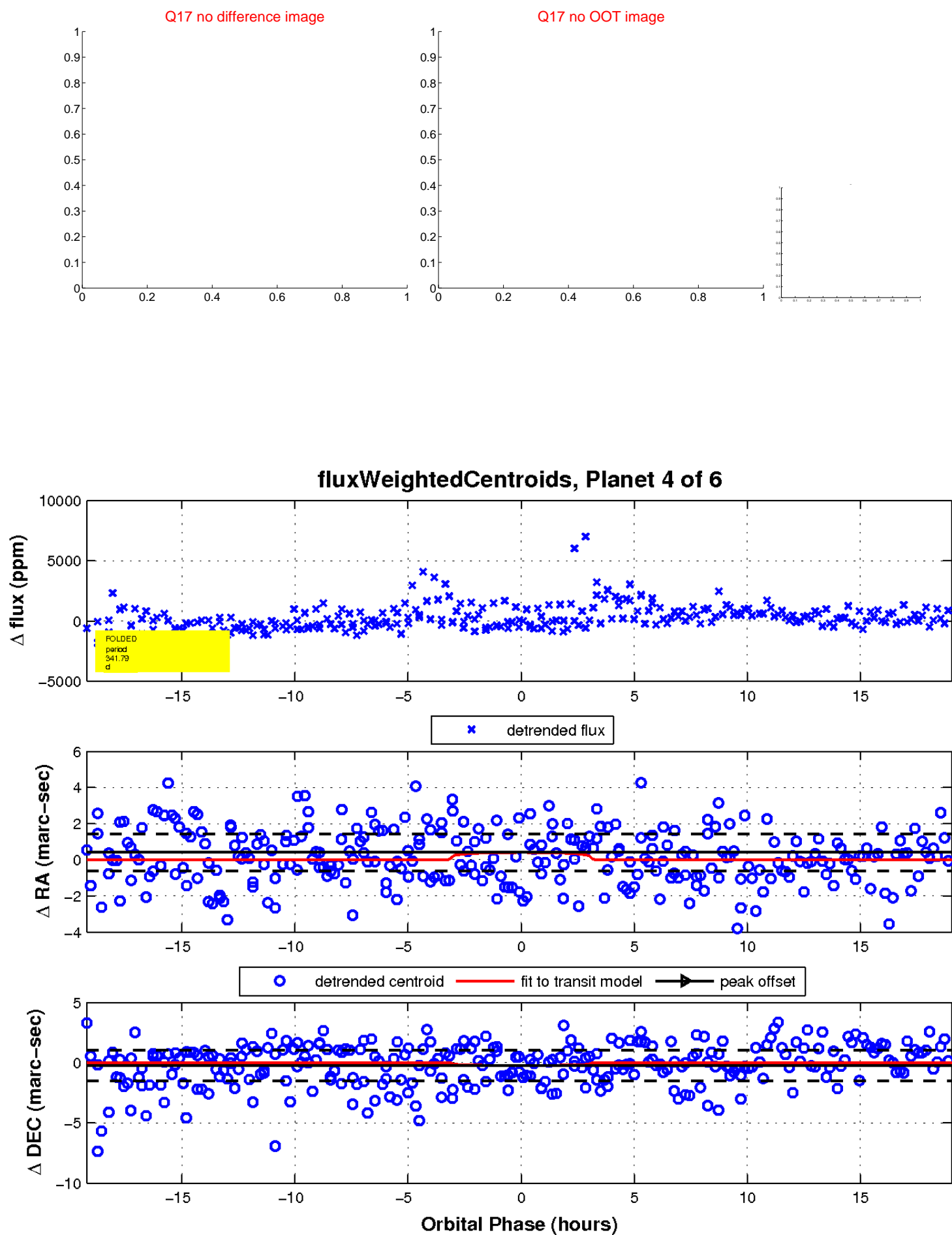
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

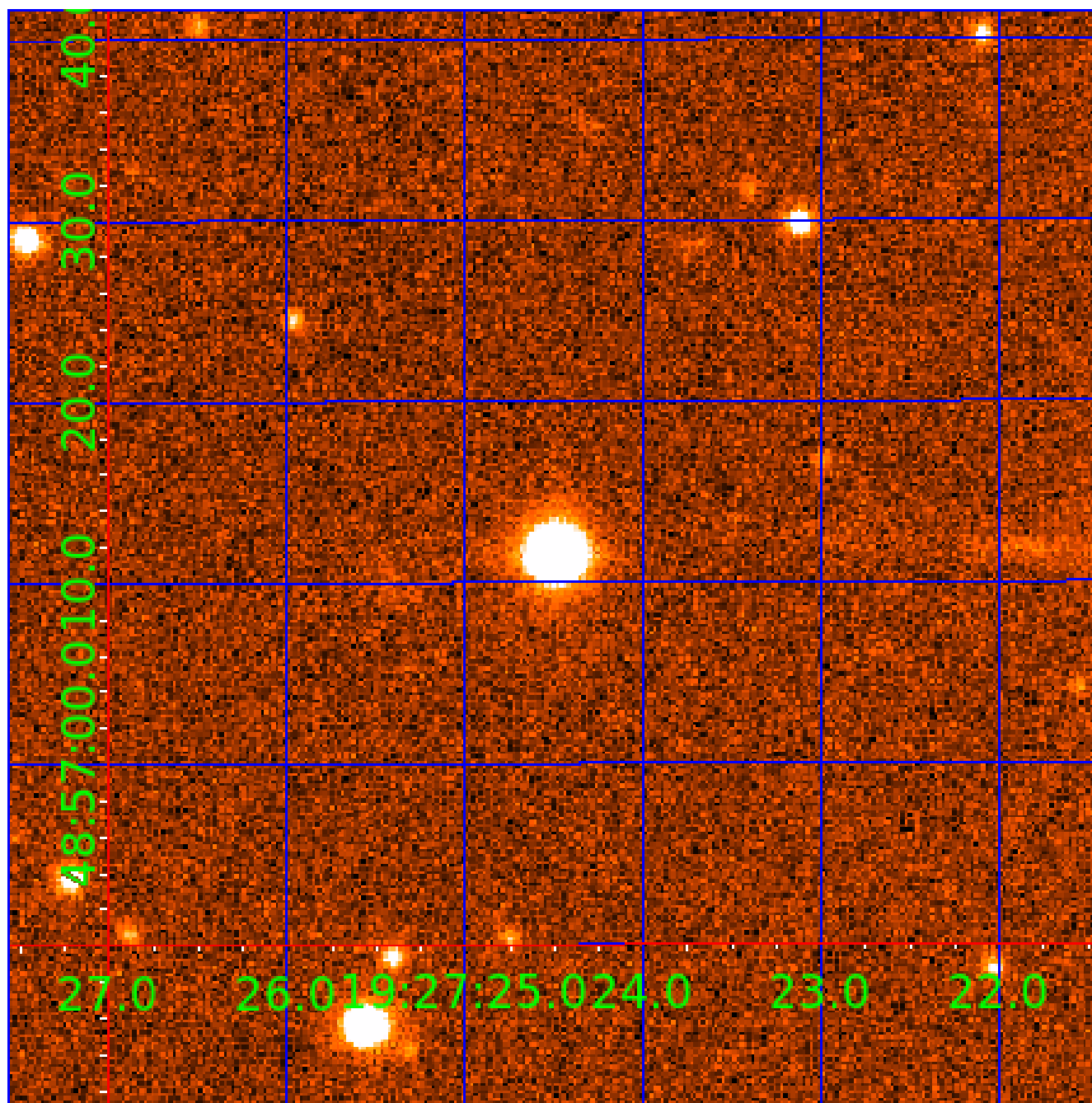


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
011244150-02	OBS	No	681.580099	215.140879	1665.9	17.828	13.6	7.3	0.49	3738	2.19	0.03
011244150-03	OBS	No	552.214651	361.196180	1357.2	3.682	13.3	6.5	0.49	3738	1.94	0.04
011244150-04	OBS	No	341.785764	254.977429	1383.0	6.403	13.0	9.0	0.49	3738	1.80	0.07
011244150-05	OBS	No	416.963704	498.214392	1247.6	11.316	11.2	6.1	0.49	3738	1.75	0.06
011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

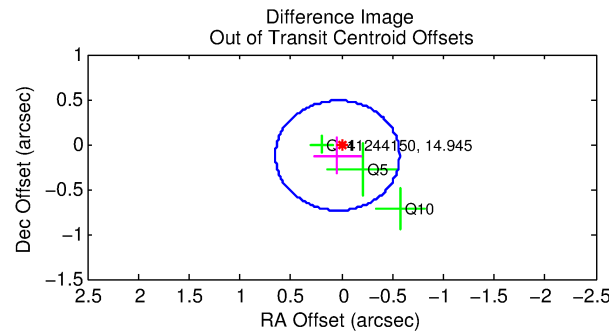
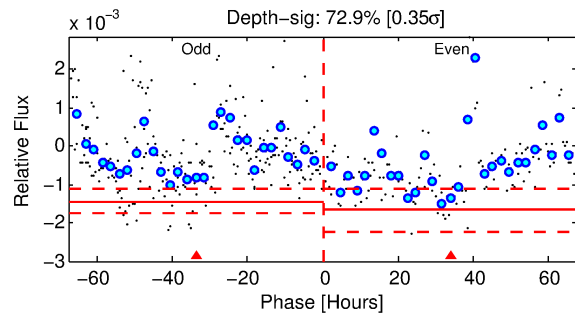
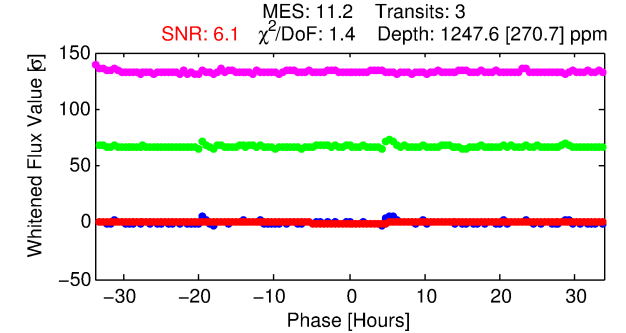
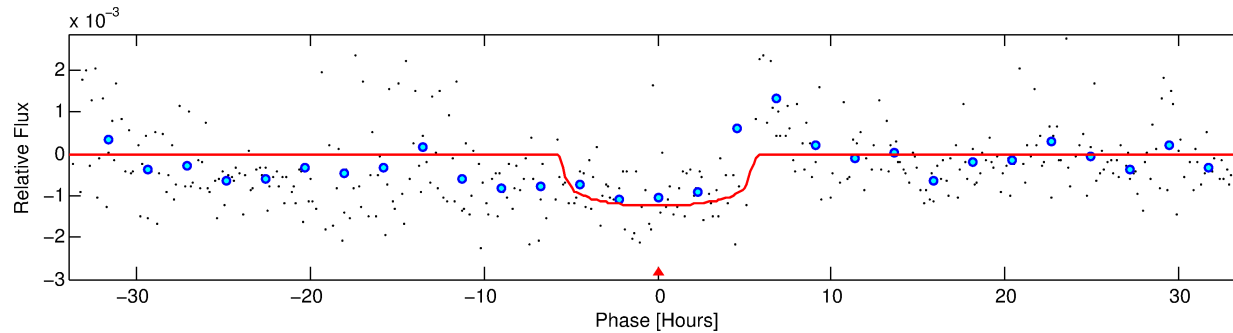
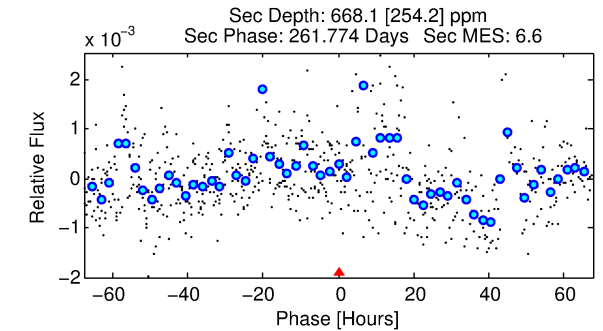
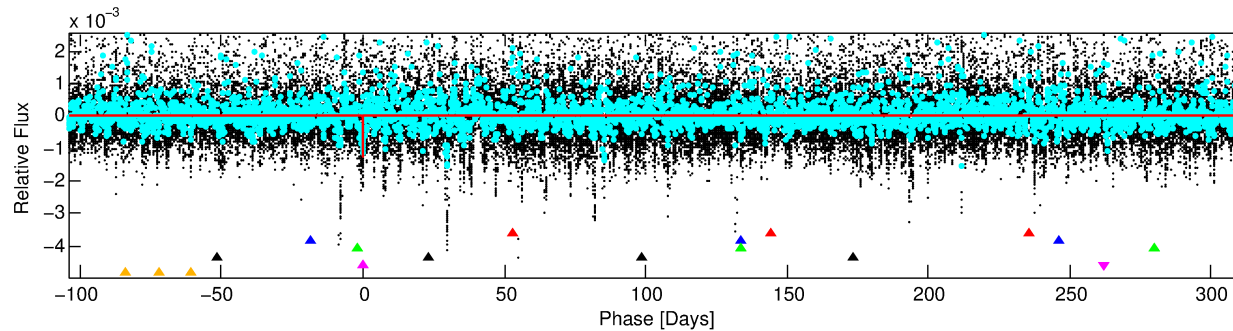
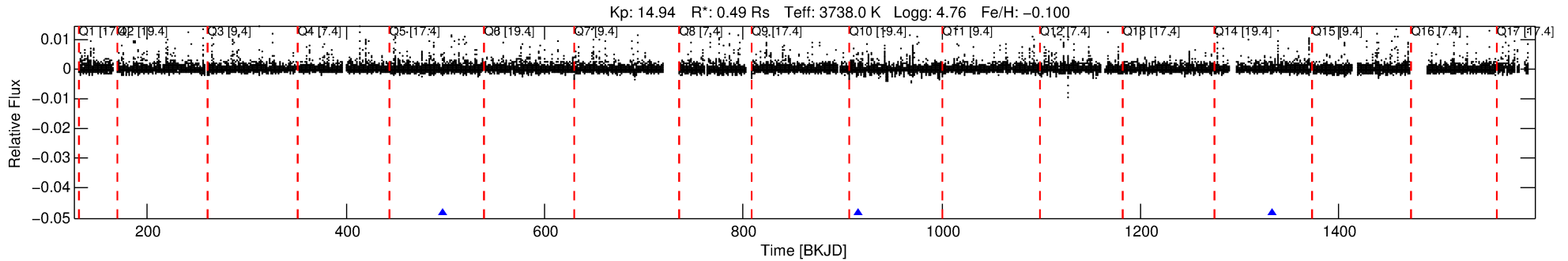
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-05

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 5 of 6 Period: 416.964 d



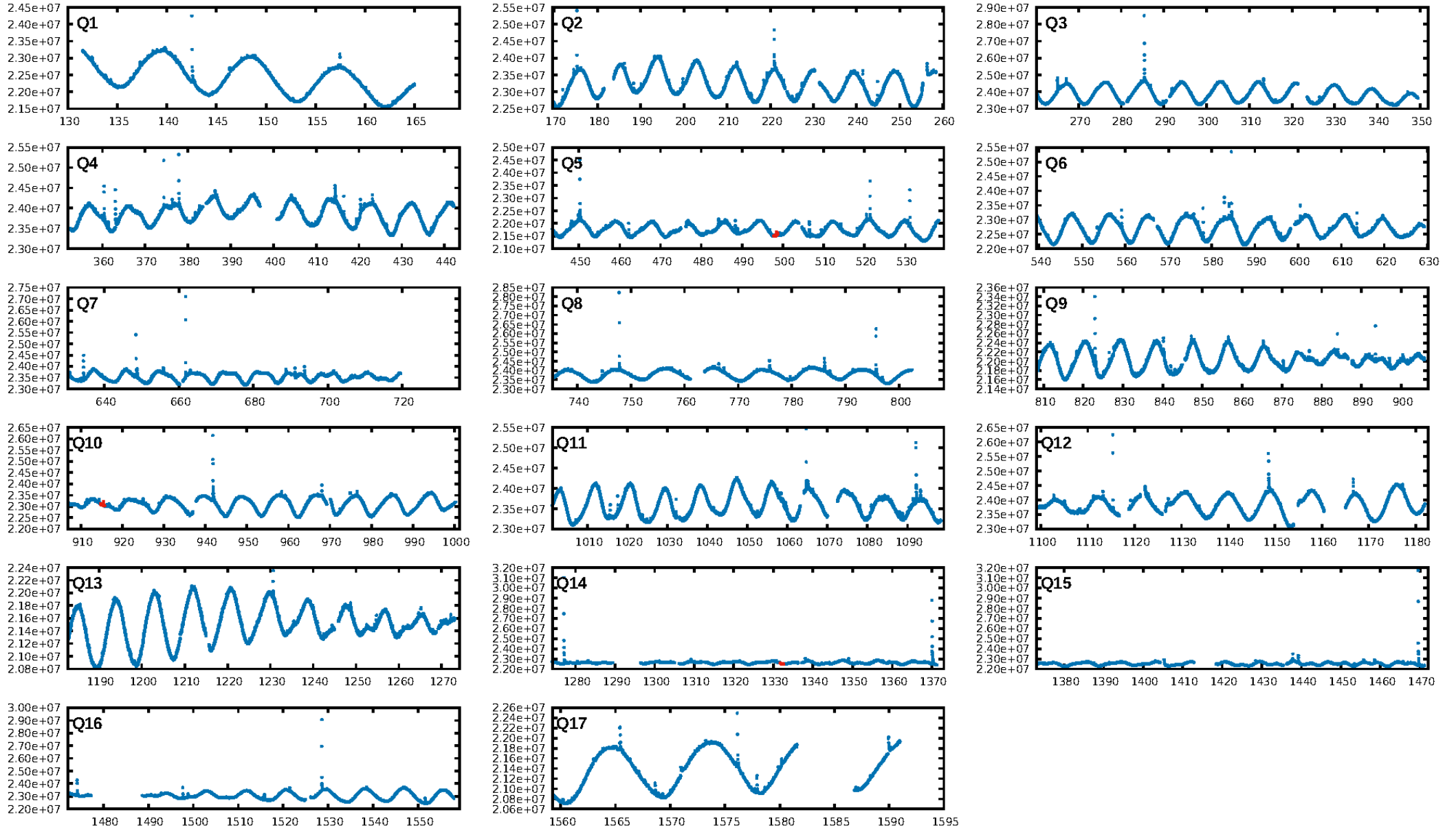
DV Fit Results:

Period = 416.96370 [0.01083] d
Epoch = 498.2144 [0.0122] BKJD
Rp/R* = 0.0329 [0.0157]
a/R* = 259.38 [516.47]
b = 0.47 [3.35]
Seff = 0.06 [0.01]
Teq = 124 [3] K
Rp = 1.75 [0.84] Re
a = 0.8639 [0.0478] AU
Ag = 89669.89 [92357.59] [0.97σ]
Teffp = 3313 [853] K [3.74σ]

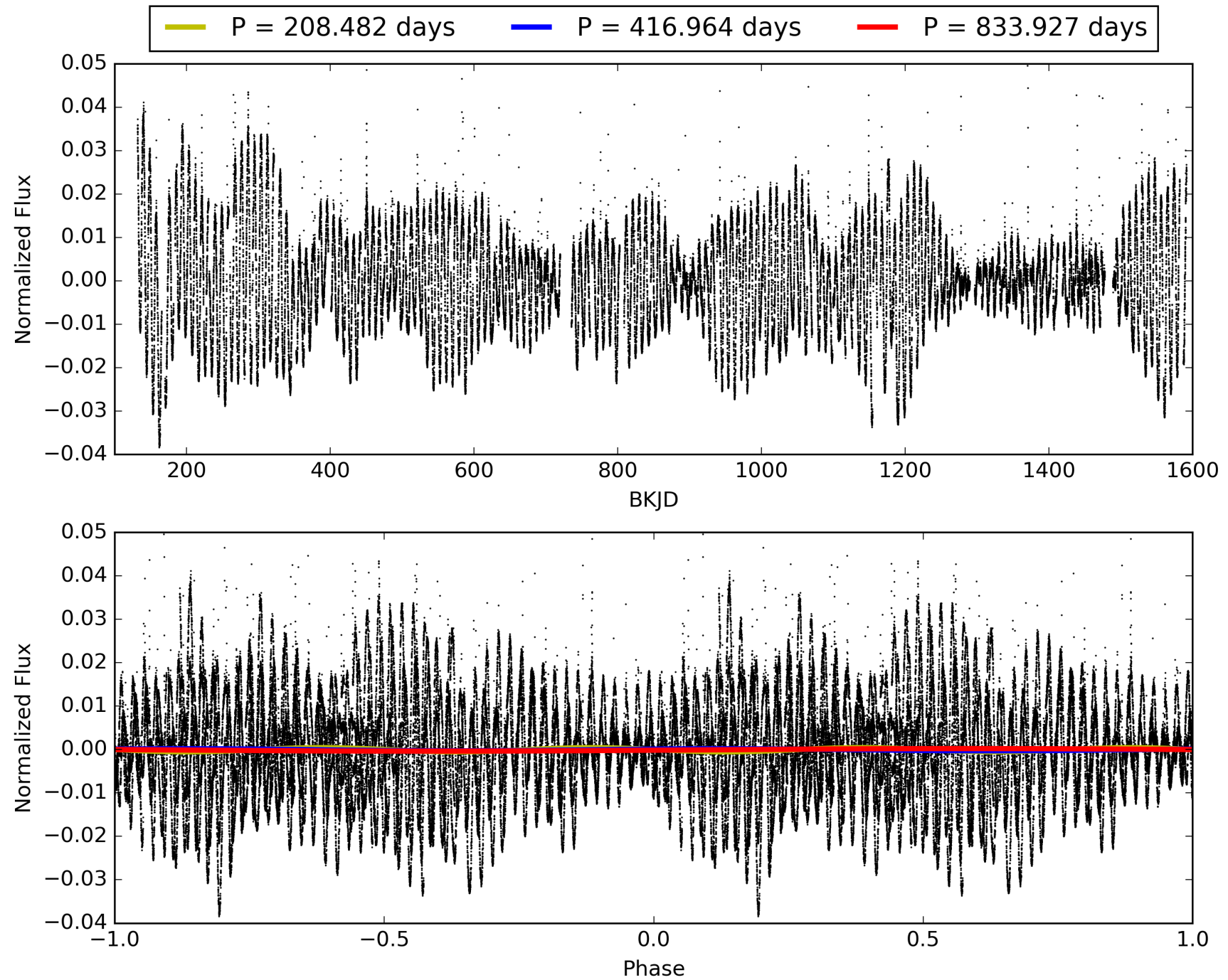
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.40σ]
LongPeriod-sig: 100.0% [148.99σ]
ModelChiSquare2-sig: 49.7%
ModelChiSquareGof-sig: 80.7%
Bootstrap-pfa: 2.42e-09
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.495
Centroid-sig: 29.5%
Centroid-so: 0.880 arcsec [1.69σ]
OotOffset-rm: 0.132 arcsec [0.65σ]
KicOffset-rm: 0.301 arcsec [1.23σ]
OotOffset-st: 2/0/0/1 [3]
KicOffset-st: 2/0/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 011244150-05, PDC Light Curves

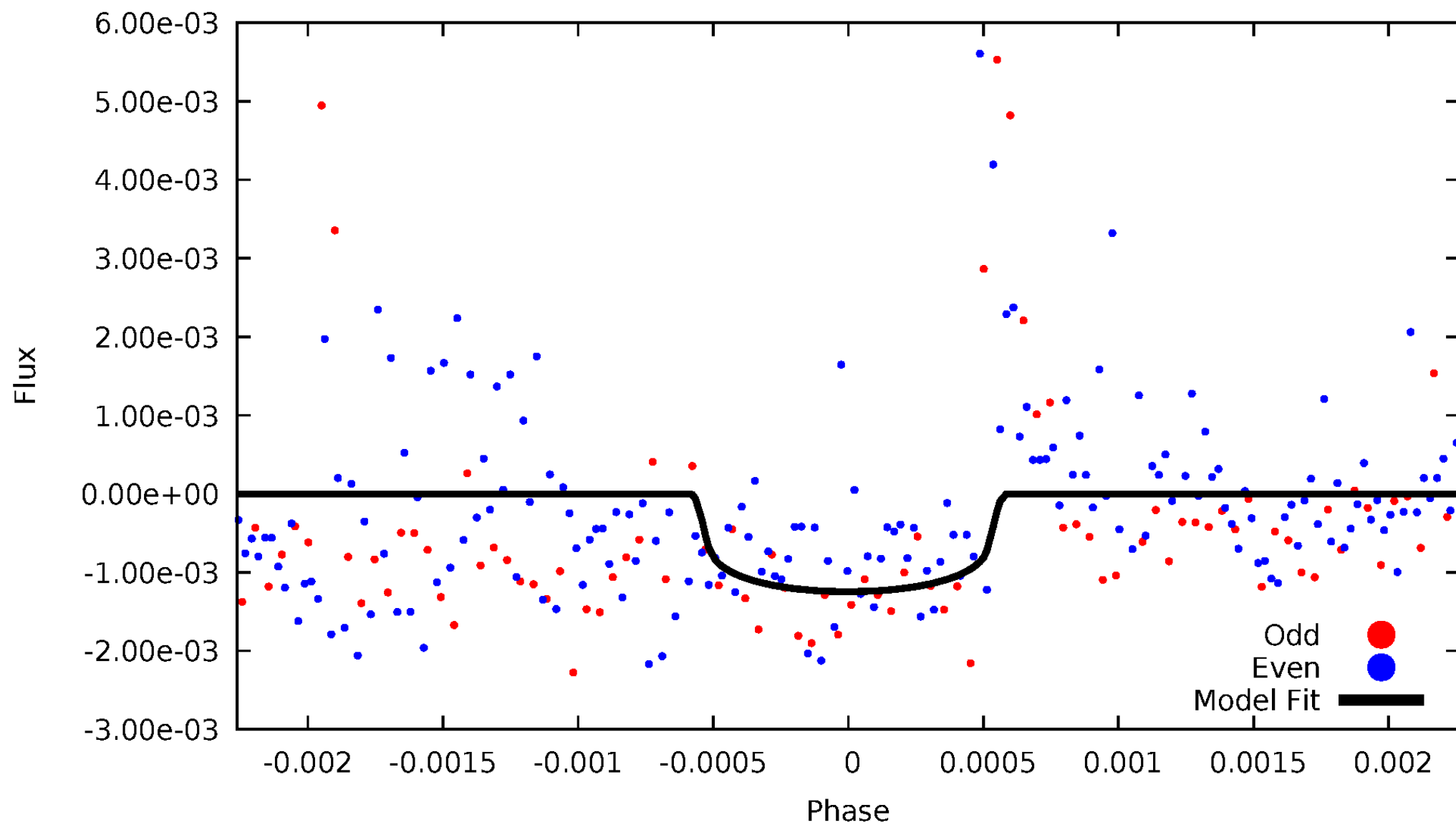


TCE 011244150-05



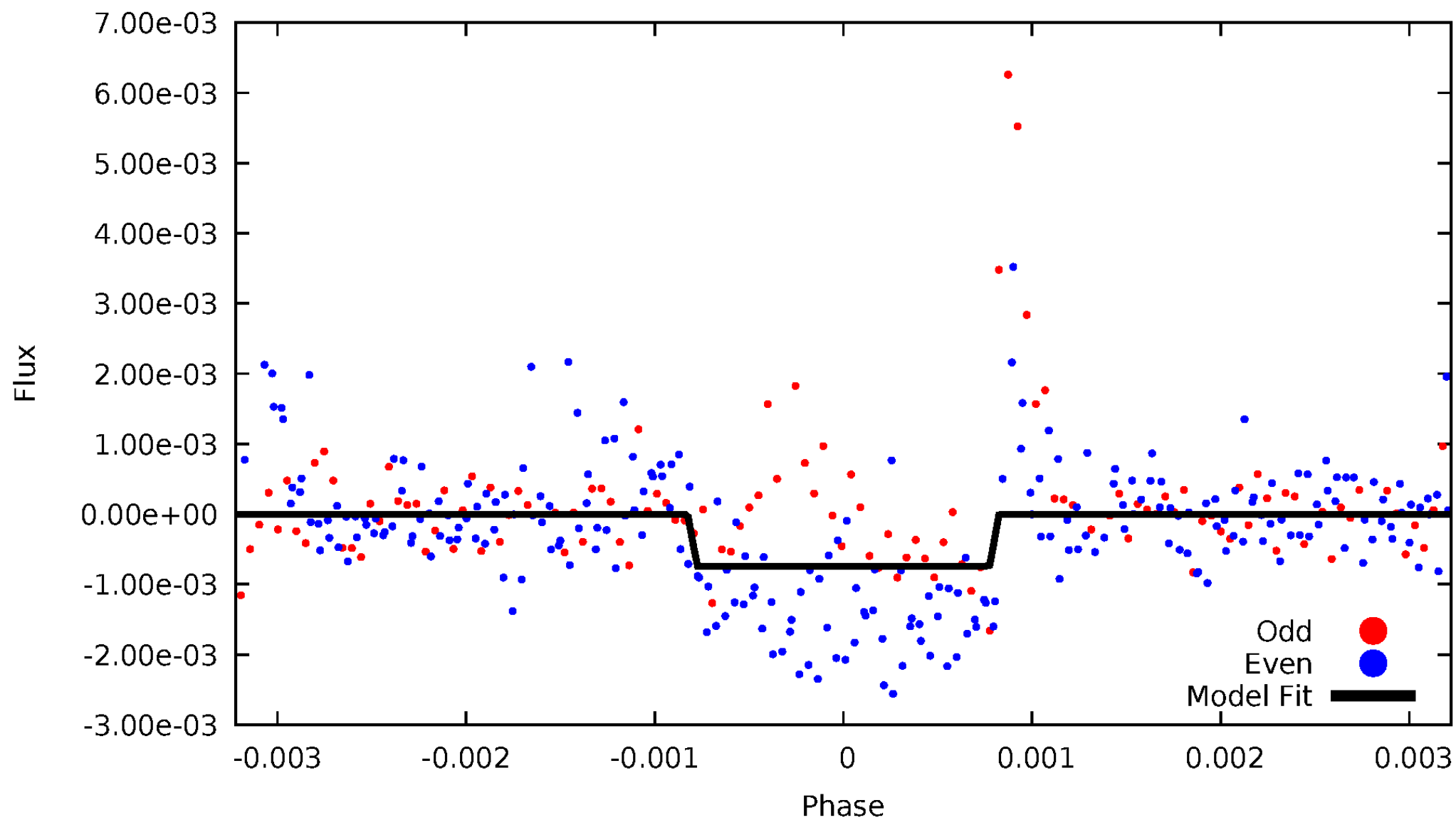
DV Odd/Even

TCE 011244150-05



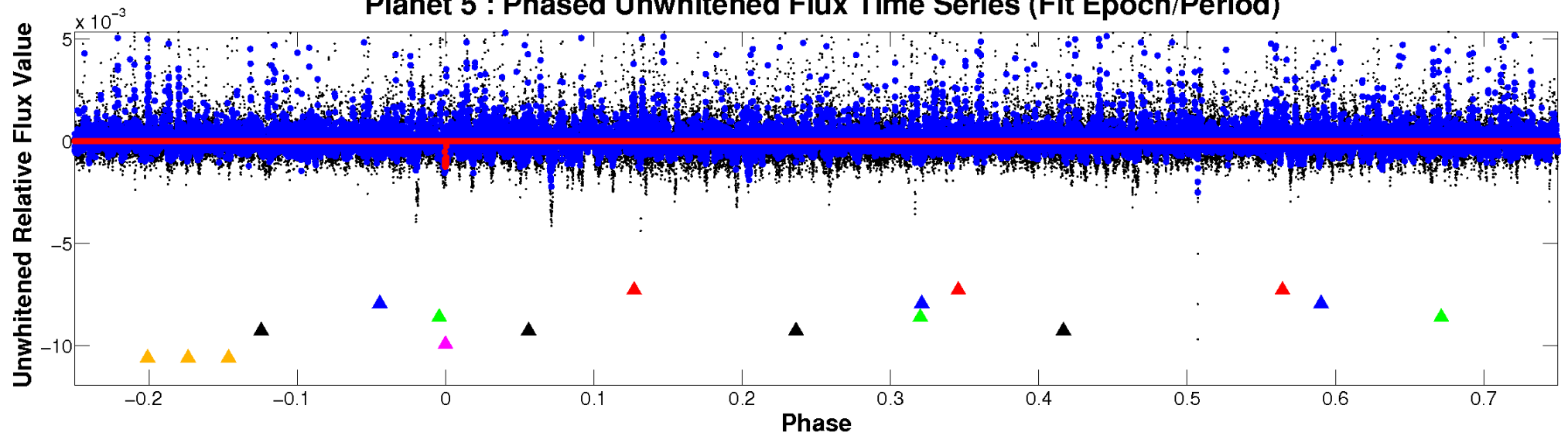
ALT Odd/Even

TCE 011244150-05

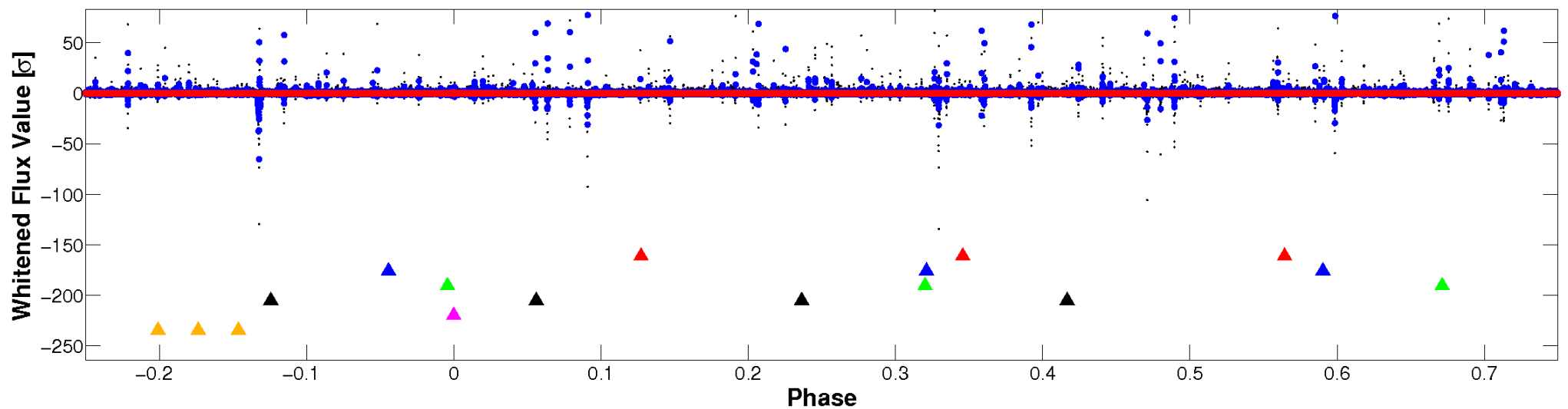


Non-Whitened Vs. Whitened Light Curve

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

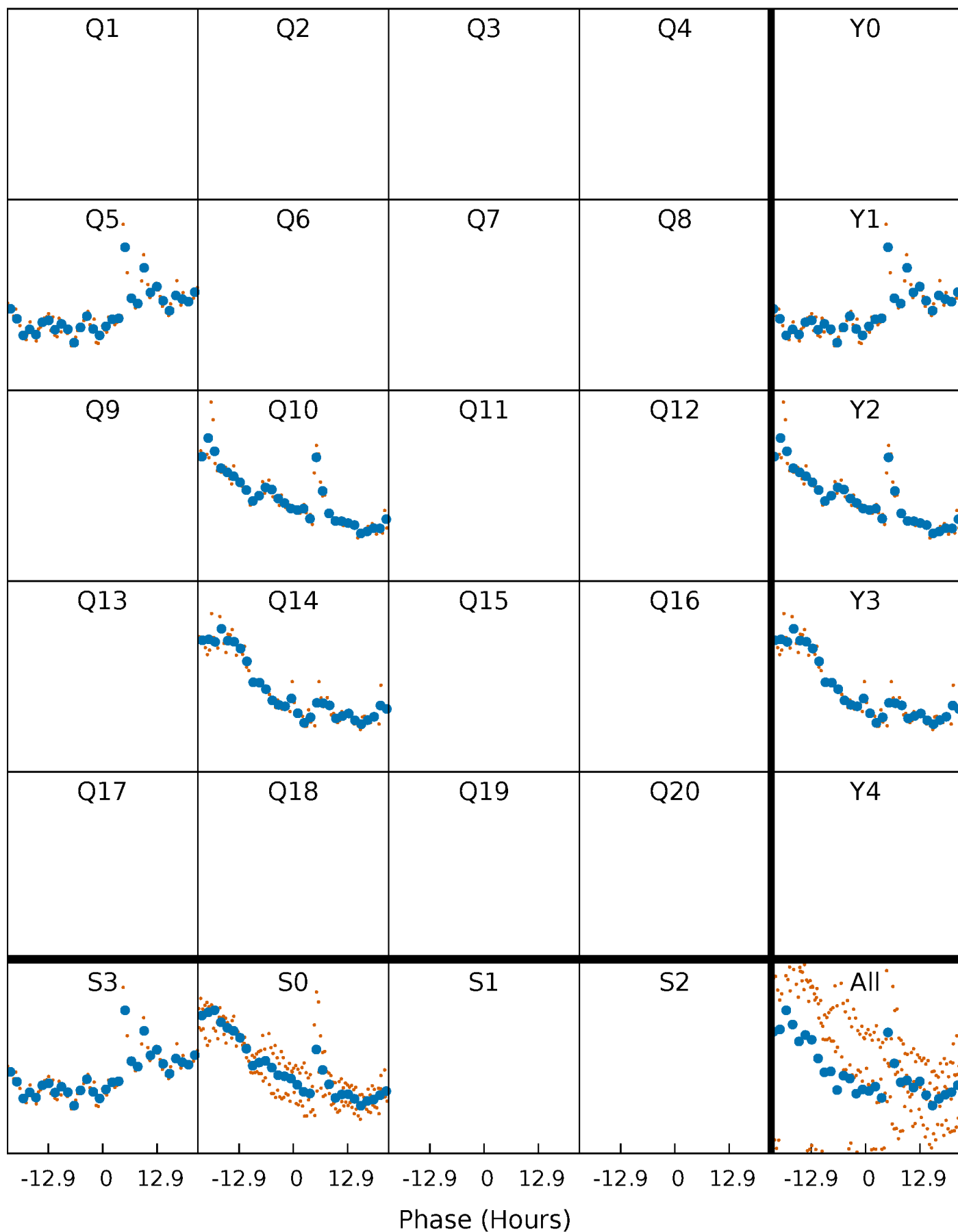


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



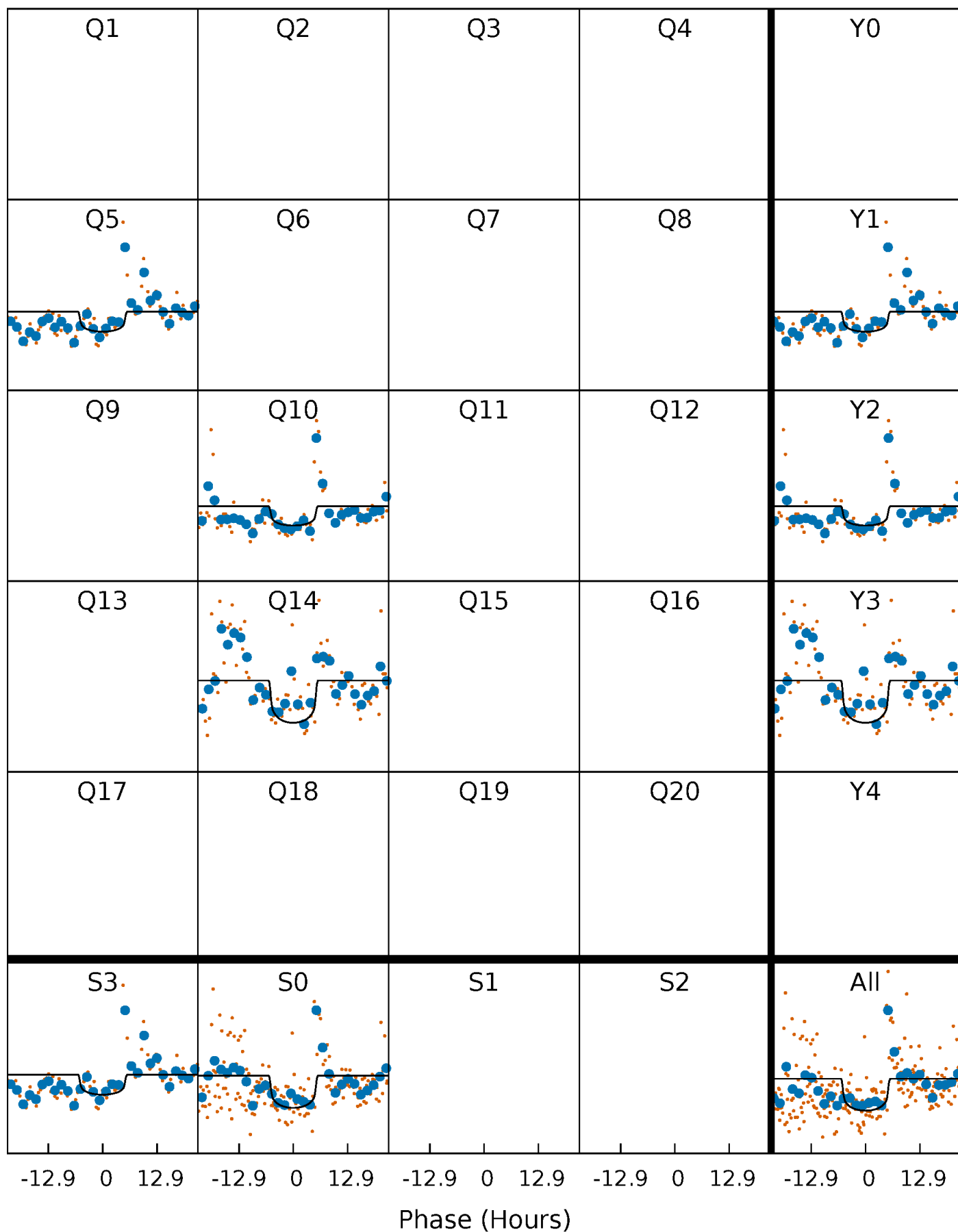
PDC Quarter-Phased Transit Curves

TCE 011244150-05 $P=416.963704$ Days $T_0=498.214392$ (BKJD)



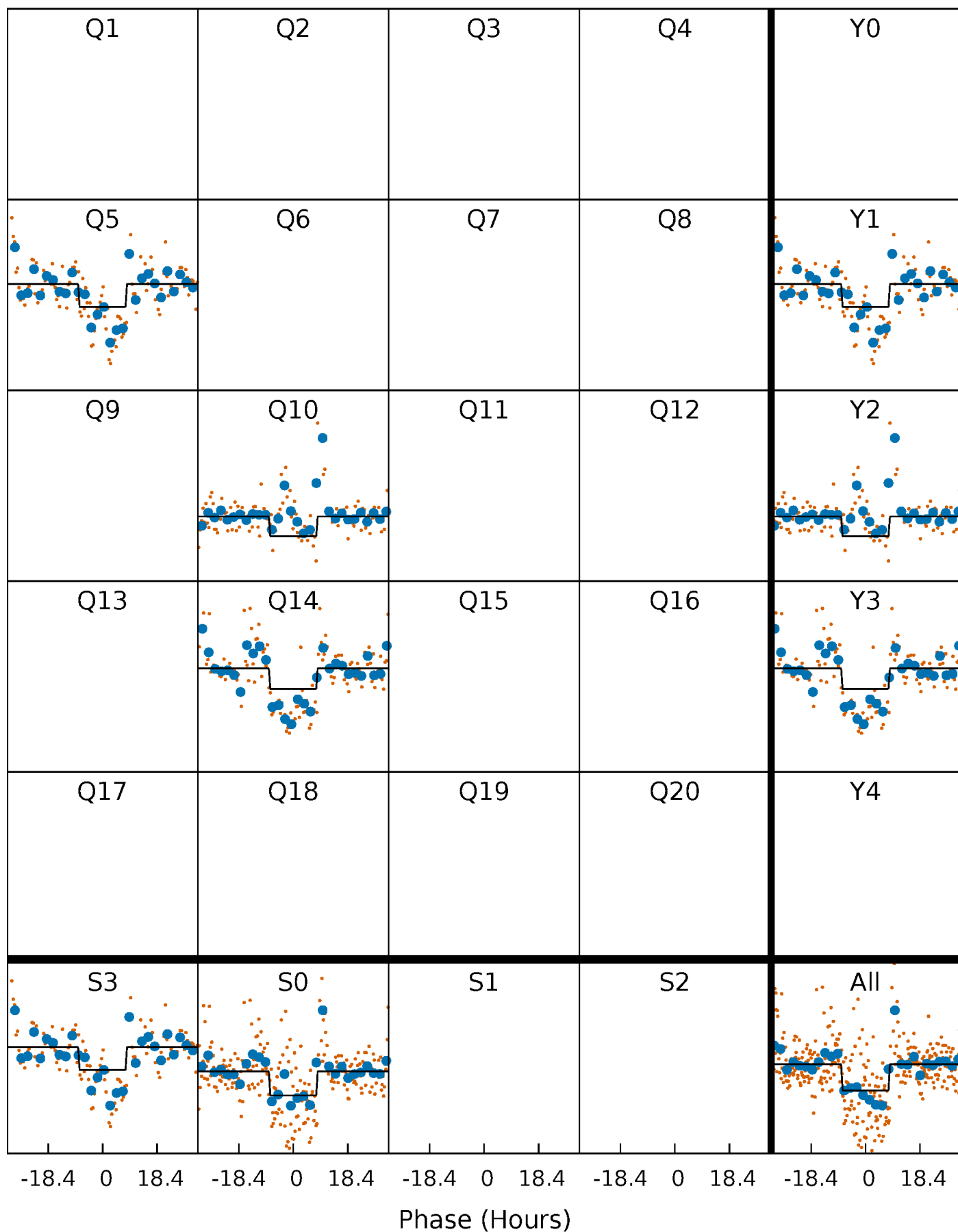
DV Quarter-Phased Transit Curves

TCE 011244150-05 $P=416.963704$ Days $T_0=498.214392$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

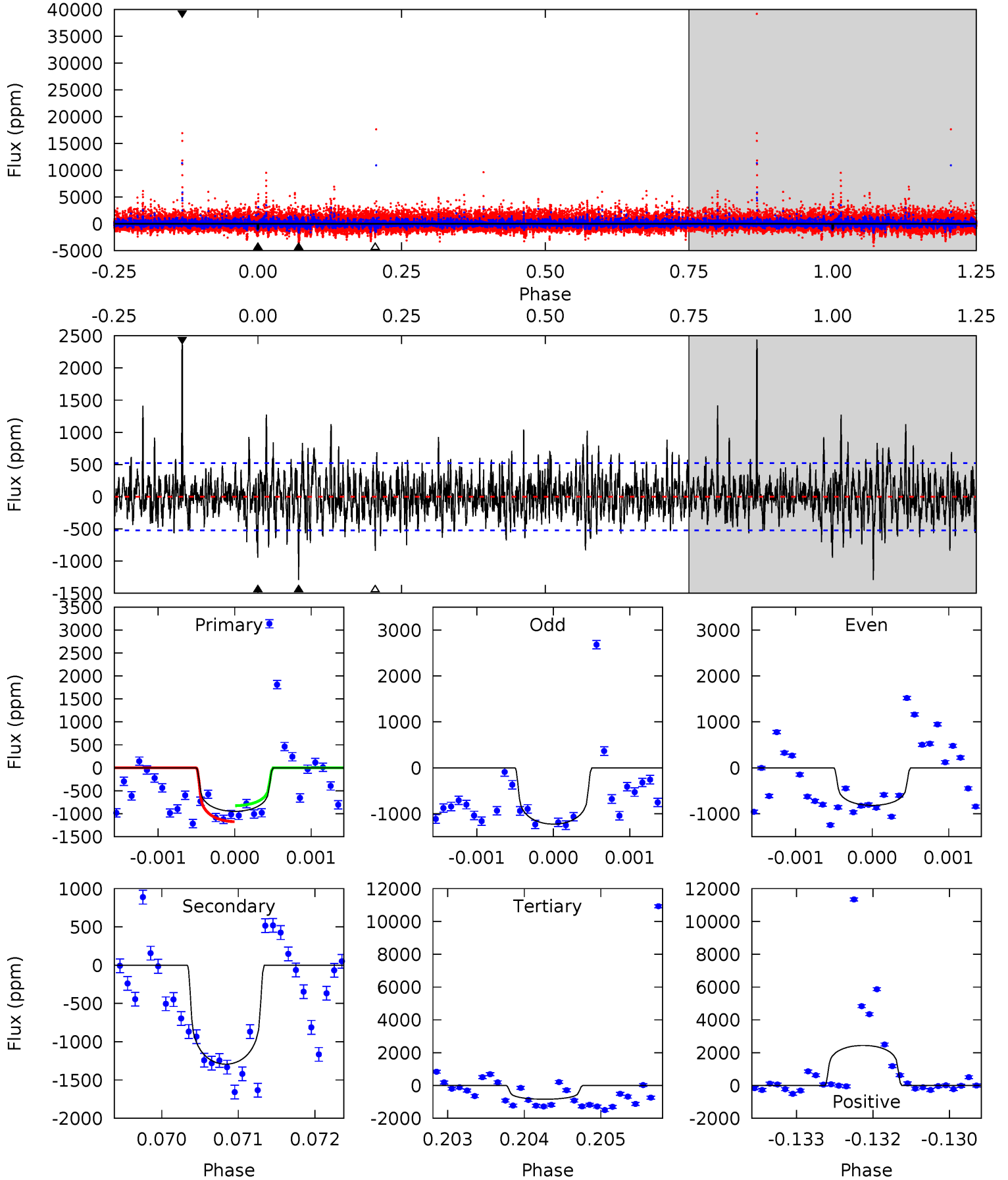
TCE 011244150-05 $P=416.980848$ Days $T_0=498.062244$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-05, P = 416.963704 Days, E = 81.250688 Days

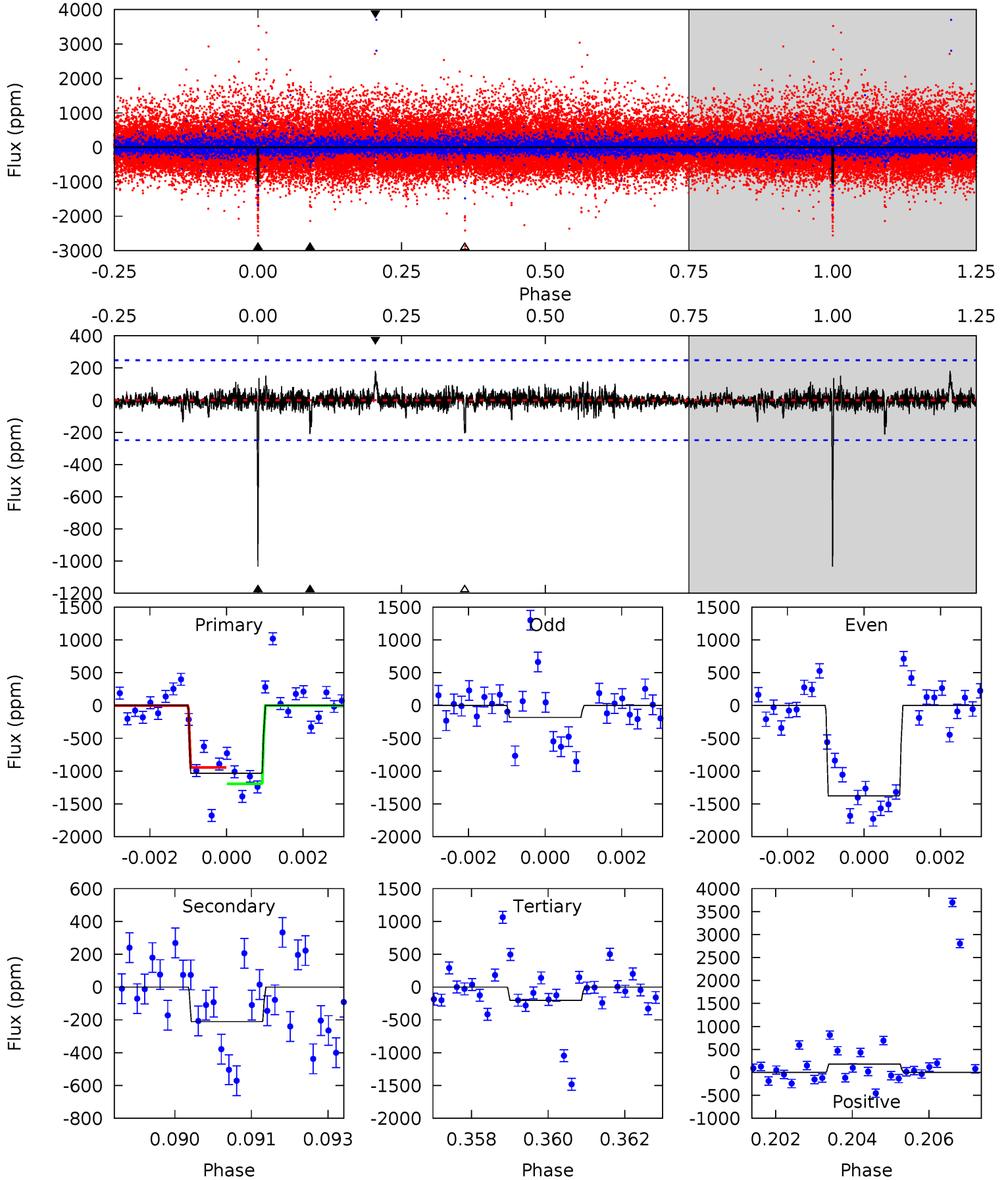
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.83	13.4	8.69	25.3	5.42	3.25	2.83	1.14	-15.5	4.72	-11.9	0.96	1.15	0.65	1.80



Alt Model-Shift Uniqueness Test

011244150-05, $P = 416.980848$ Days, $E = 81.081396$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.3	4.55	4.42	3.91	5.36	3.15	0.63	17.9	18.4	0.13	0.65	12.0	0.81	0.15	2.68



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1293 ± 96	$1.79^{+0.80}_{-0.82}$	172^{+4}_{-4}	3820^{+993}_{-447}	$168807^{+378257}_{-89619}$
Alt.	-211 ± 46	$1.46^{+0.82}_{-0.75}$	172^{+4}_{-4}	3049^{+805}_{-351}	$39841^{+143881}_{-23766}$

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

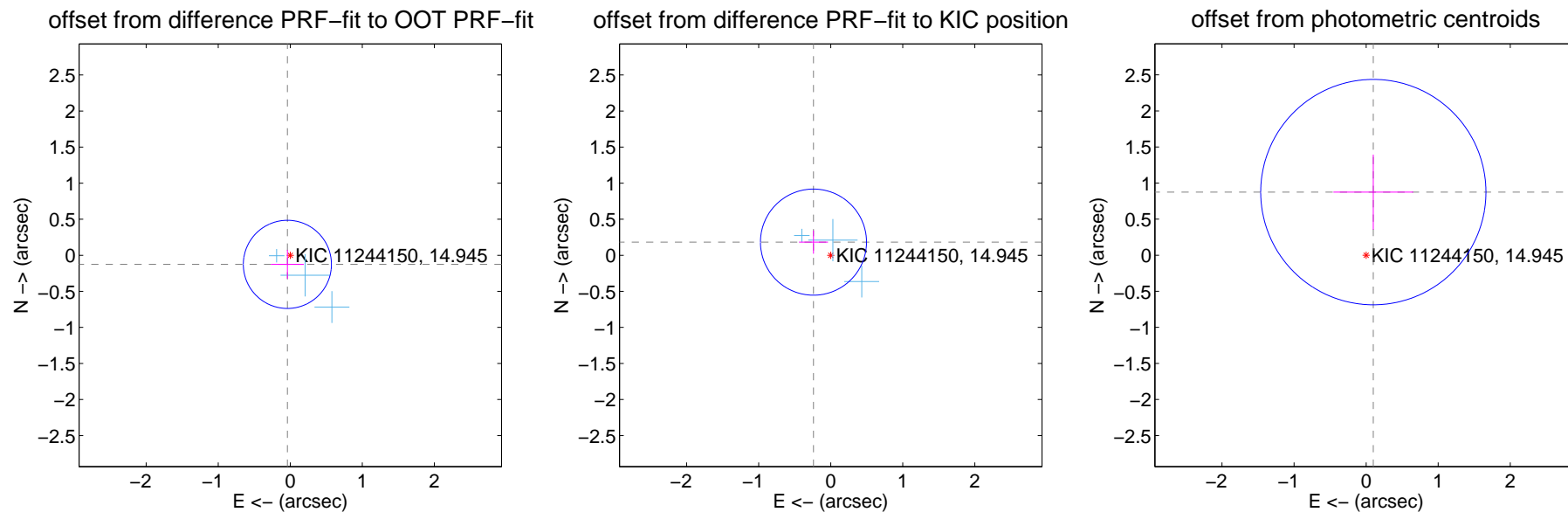
DV Centroid Data

Supplemental centroid analysis for 011244150-05. Kepler magnitude: 14.95. Transit SNR 6.10

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.132 ± 0.204	0.65	0.040 ± 0.228	-0.126 ± 0.201
PRF-fit source offset from KIC position	0.301 ± 0.245	1.23	0.239 ± 0.201	0.182 ± 0.161
photometric centroid source offset	0.88 ± 0.52	1.69	-0.10 ± 0.55	0.87 ± 0.52

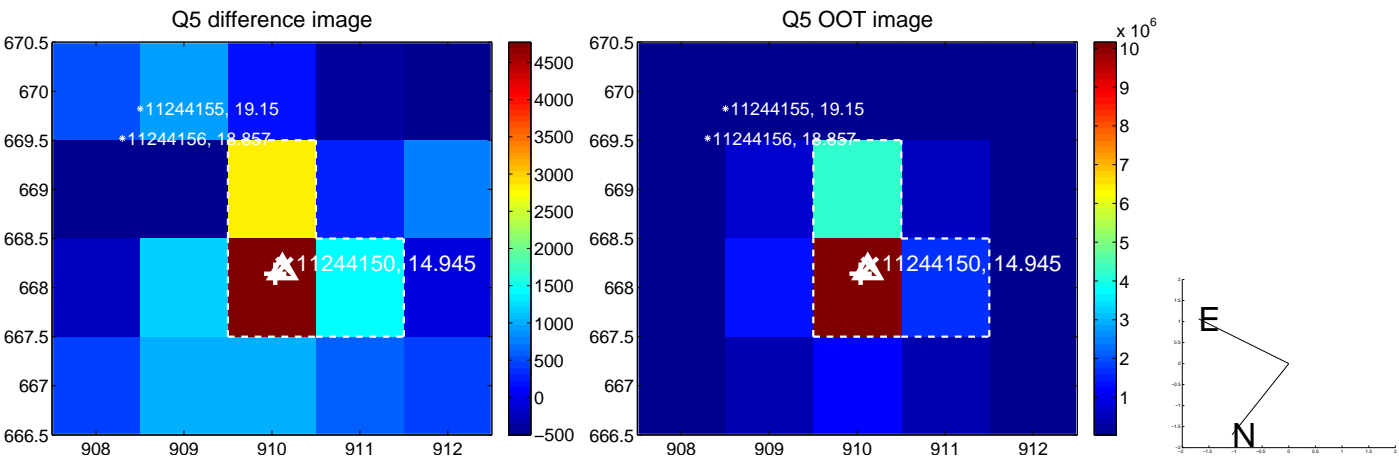


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

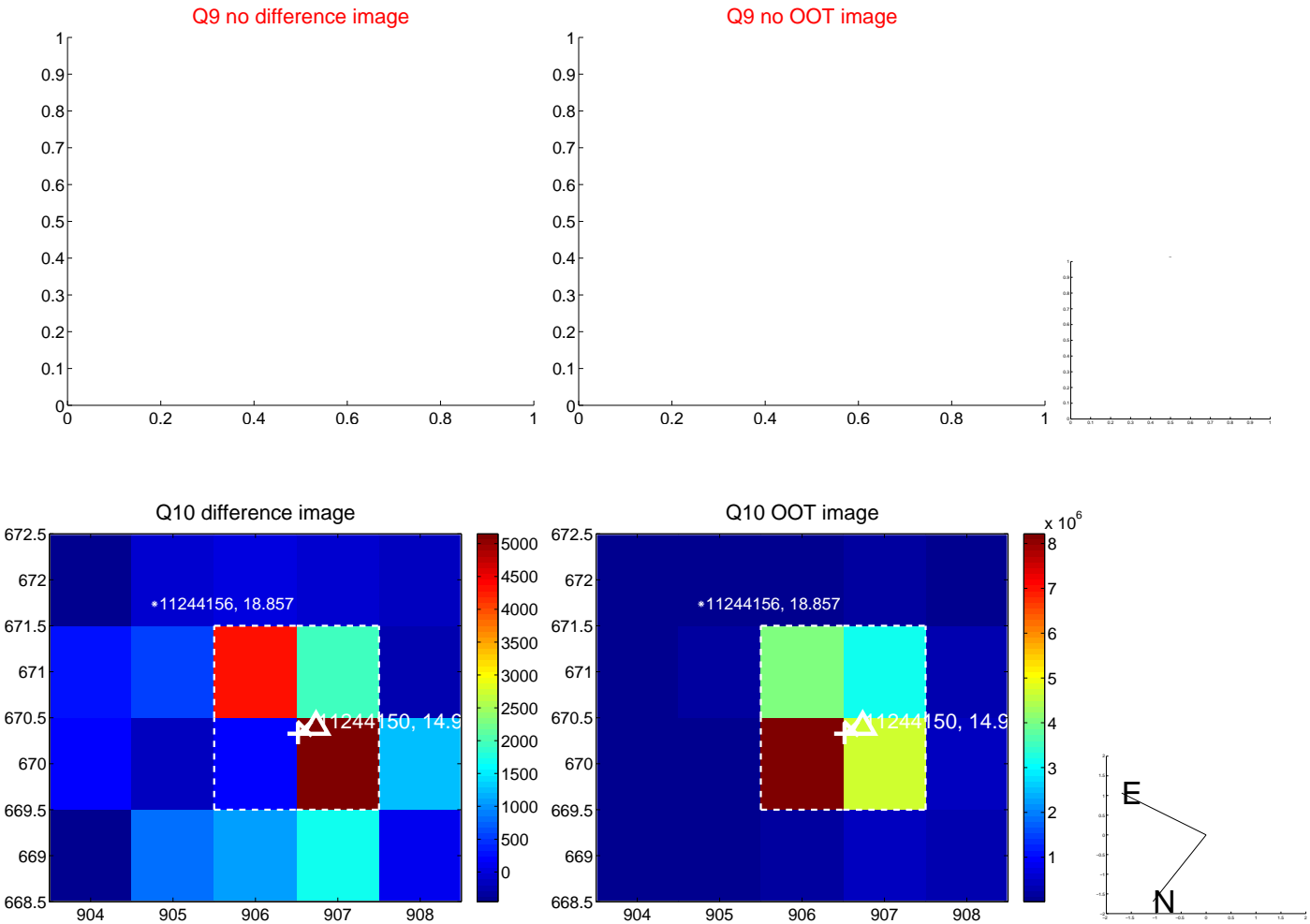
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



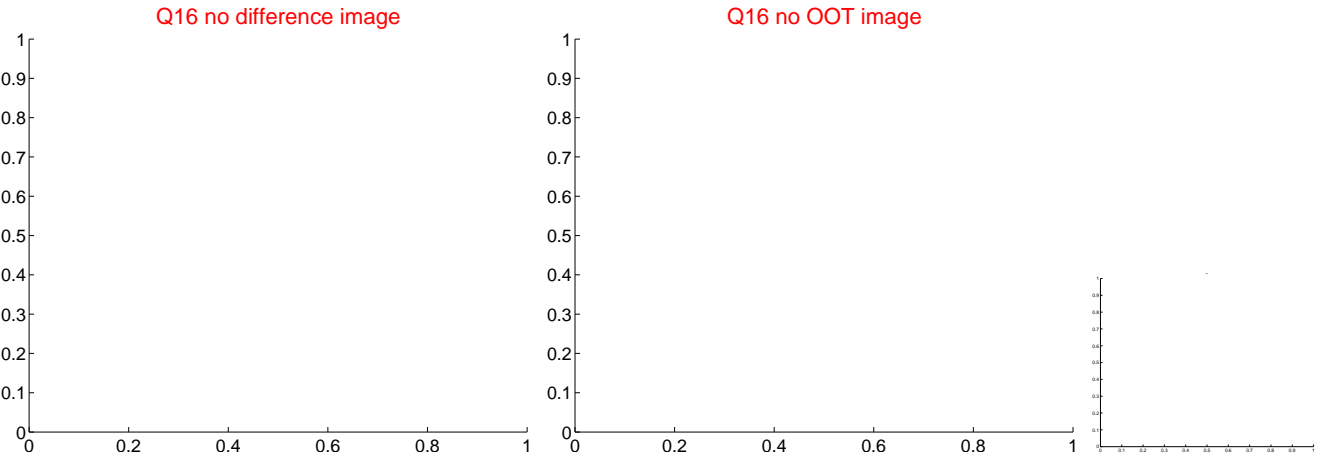
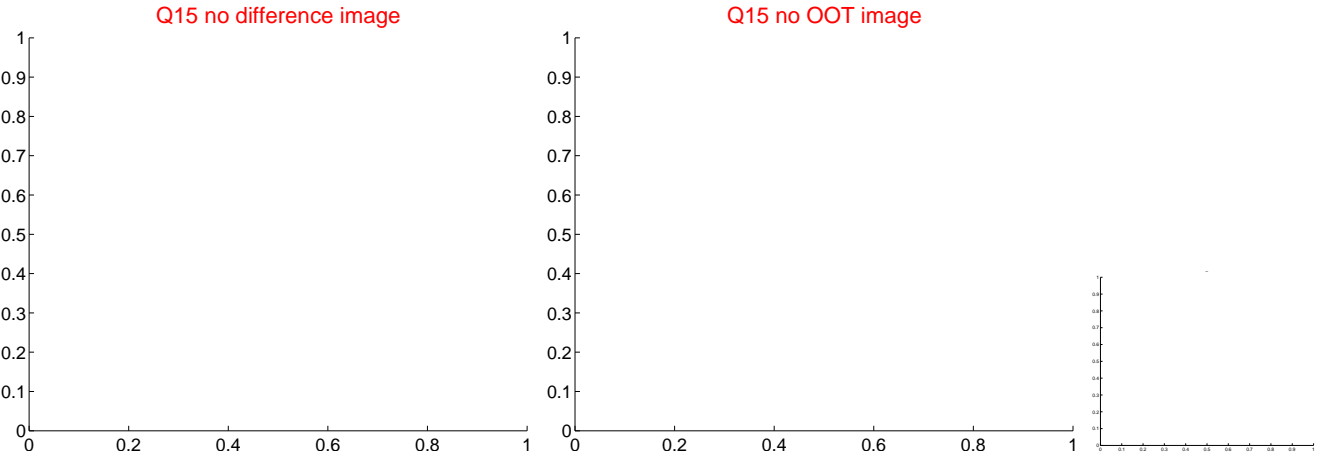
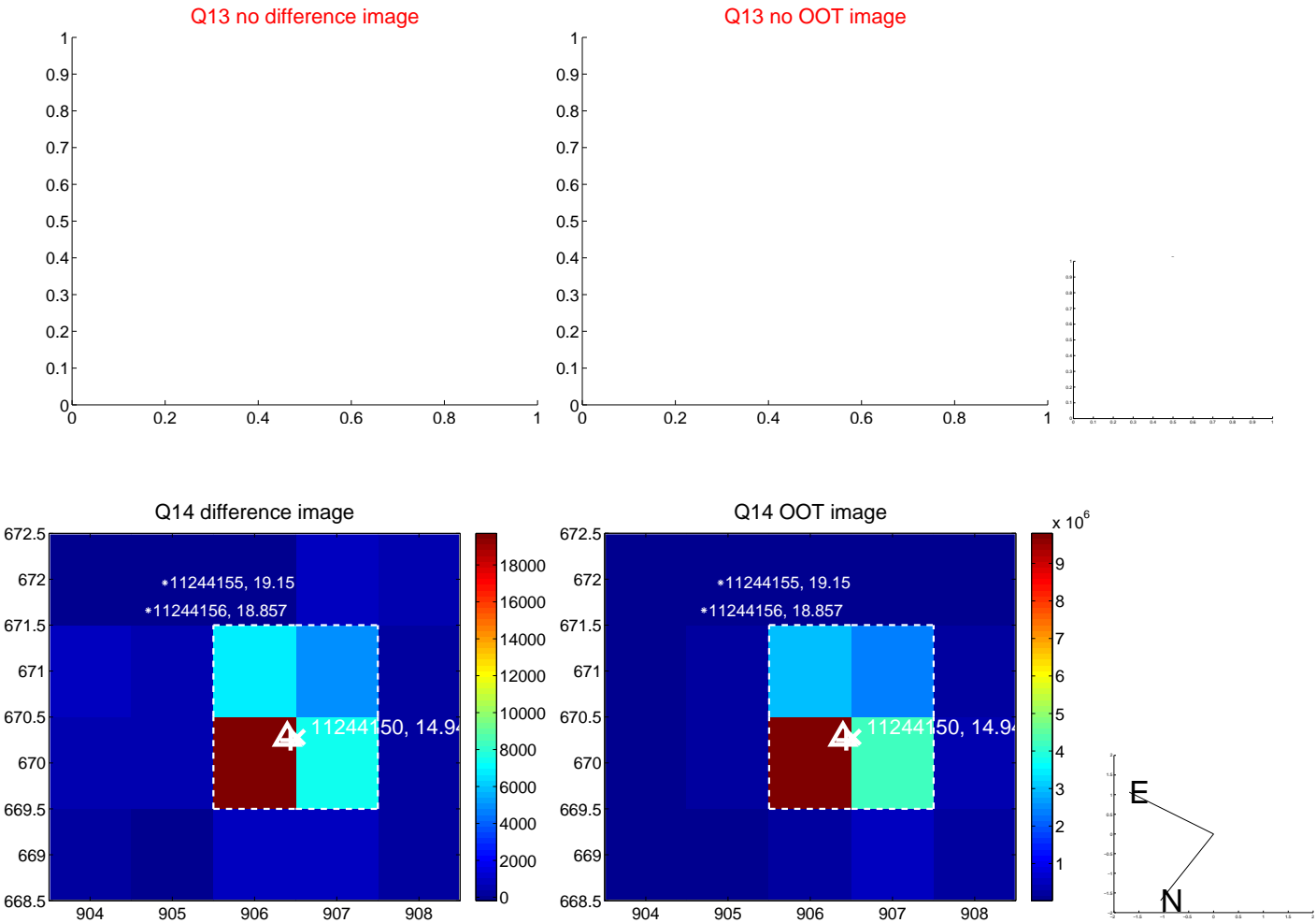
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



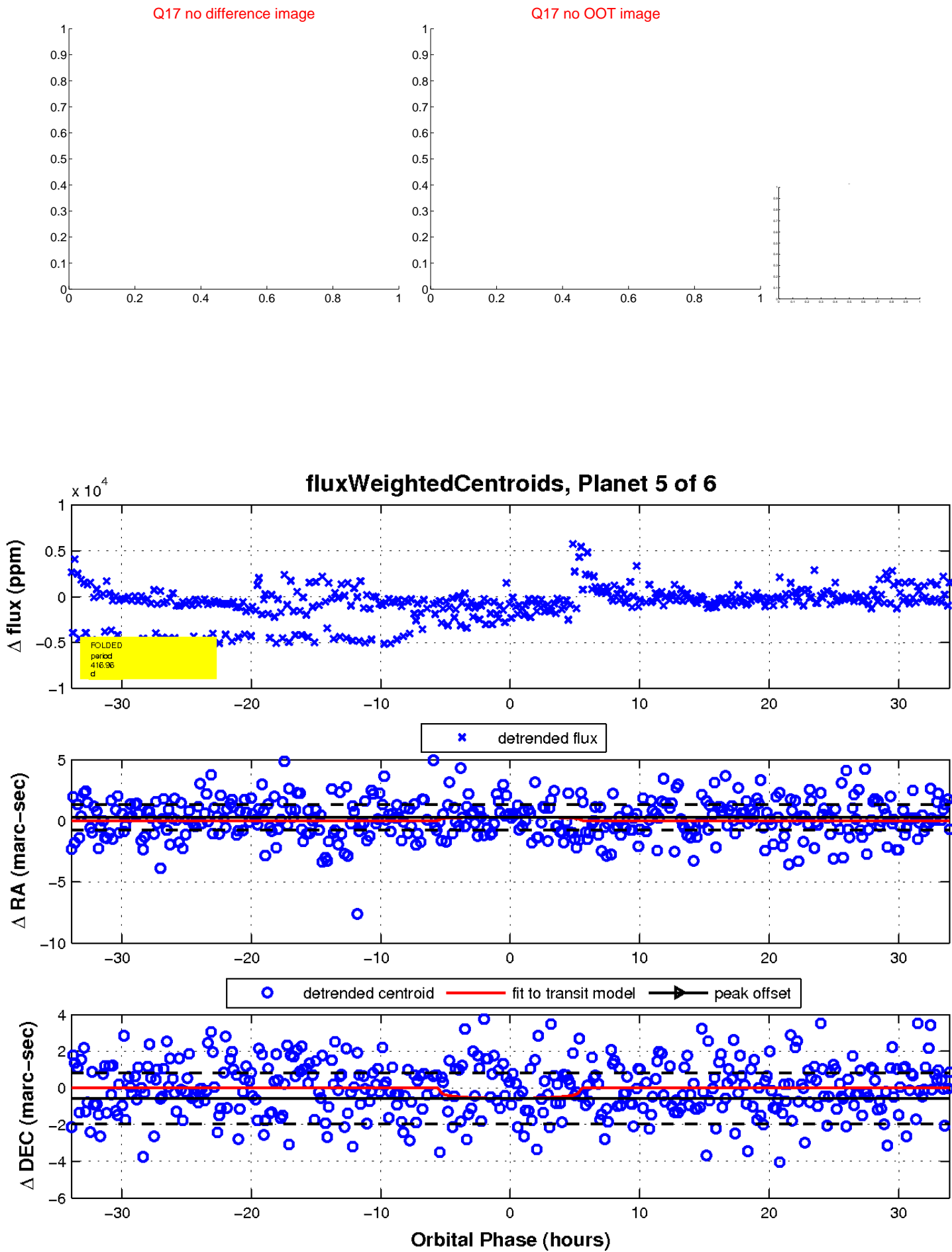
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

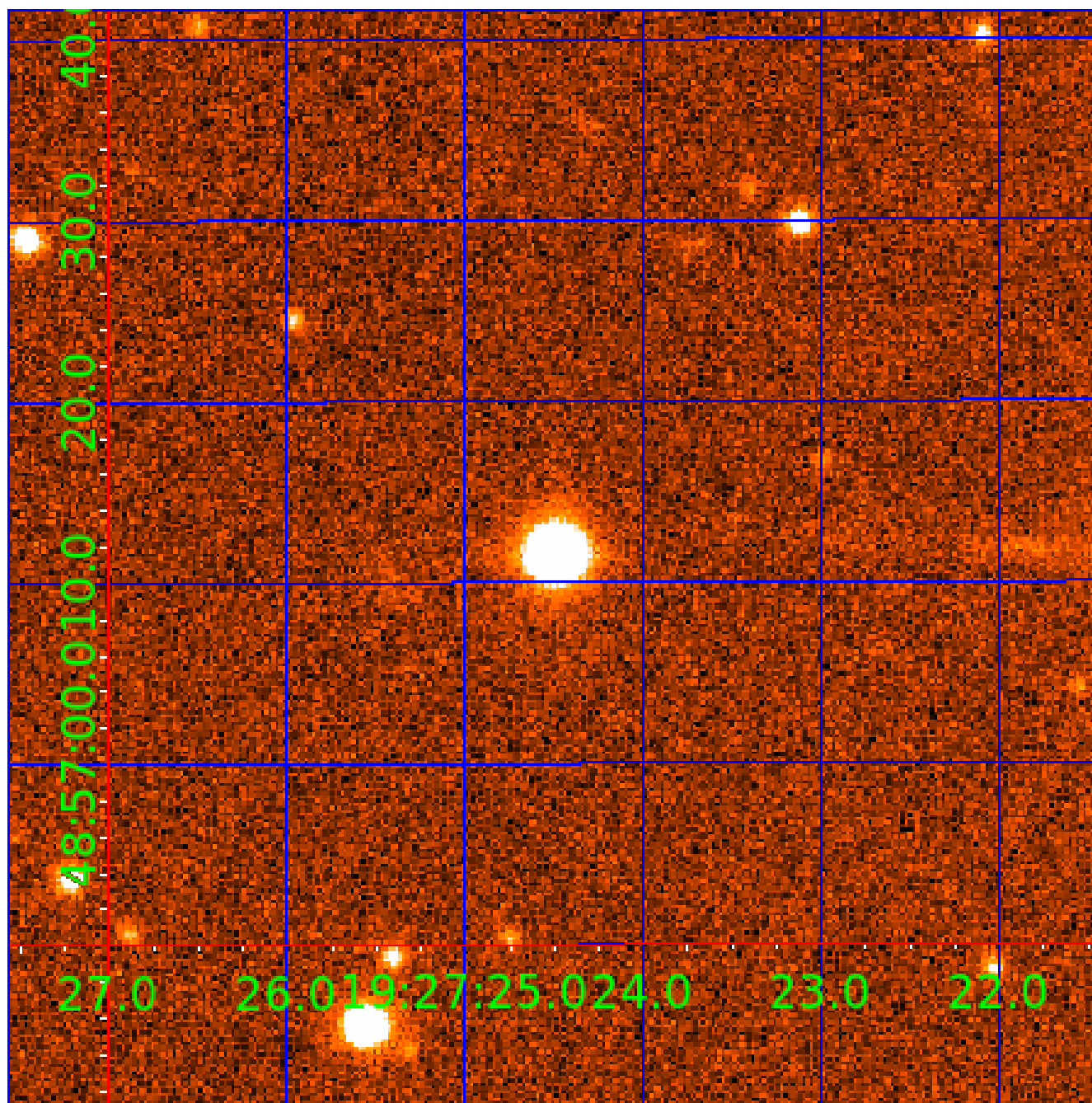


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011244150

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})
011244150-01	OBS	No	508.096701	551.255728	1564.9	9.352	14.0	8.2	0.49	3738	1.91	0.04
011244150-02	OBS	No	681.580099	215.140879	1665.9	17.828	13.6	7.3	0.49	3738	2.19	0.03
011244150-03	OBS	No	552.214651	361.196180	1357.2	3.682	13.3	6.5	0.49	3738	1.94	0.04
011244150-04	OBS	No	341.785764	254.977429	1383.0	6.403	13.0	9.0	0.49	3738	1.80	0.07
011244150-05	OBS	No	416.963704	498.214392	1247.6	11.316	11.2	6.1	0.49	3738	1.75	0.06
011244150-06	OBS	No	405.584227	437.229543	1274.5	12.223	11.6	7.0	0.49	3738	1.75	0.06

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011244150-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_KIC_POS
011244150-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS—HALO_GHOST
011244150-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011244150-04	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
011244150-05	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—CENT_KIC_POS
011244150-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

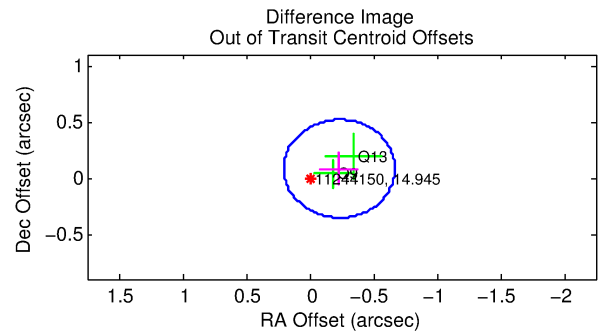
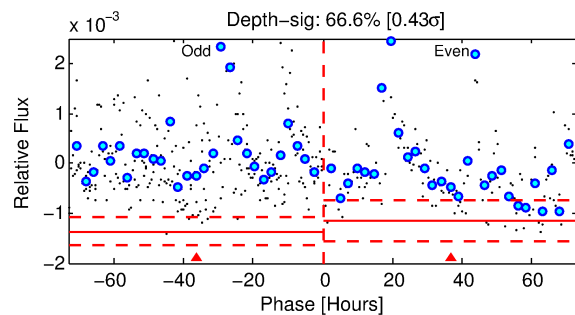
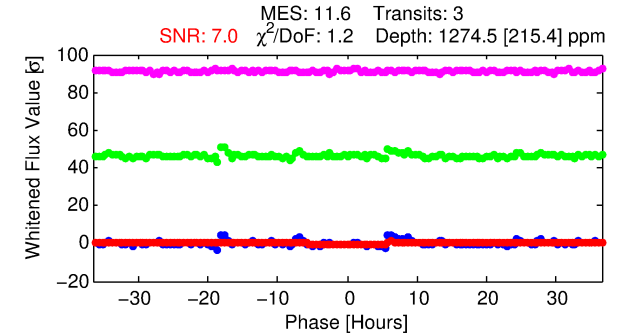
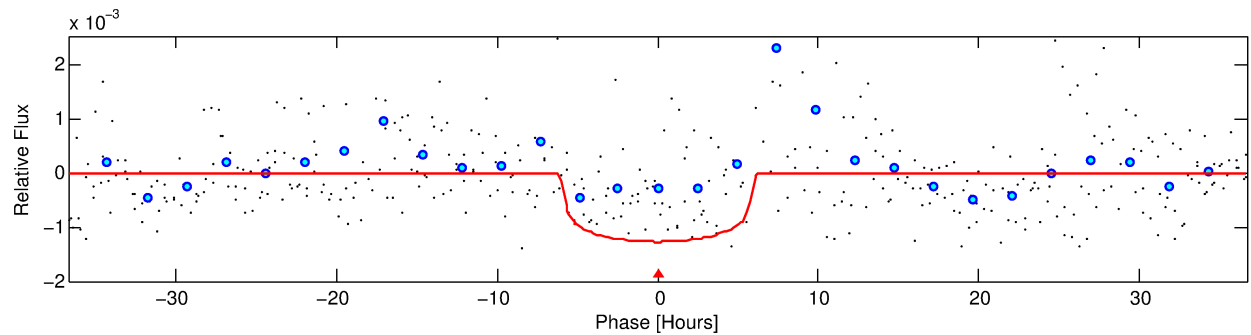
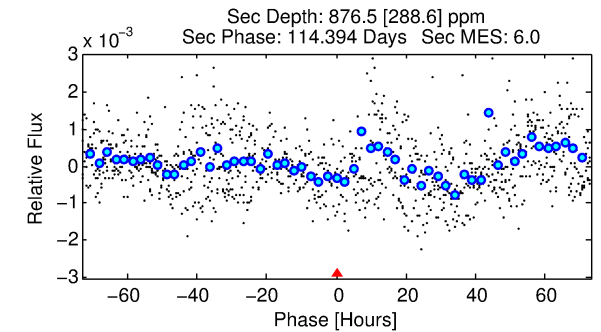
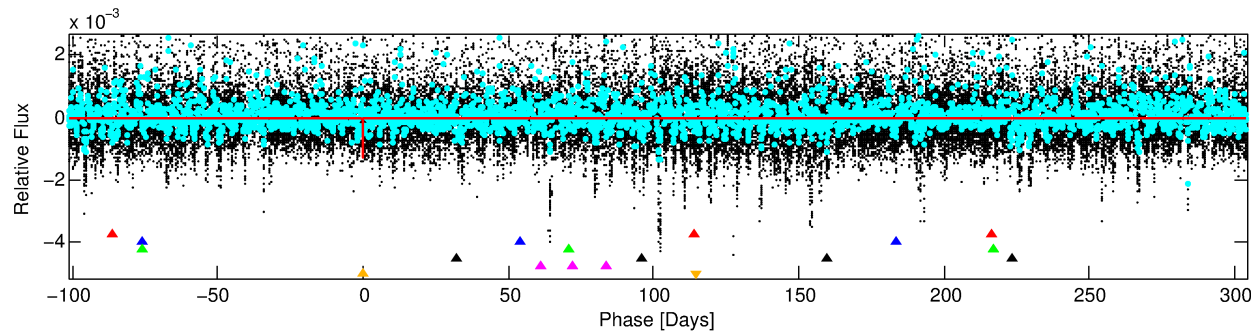
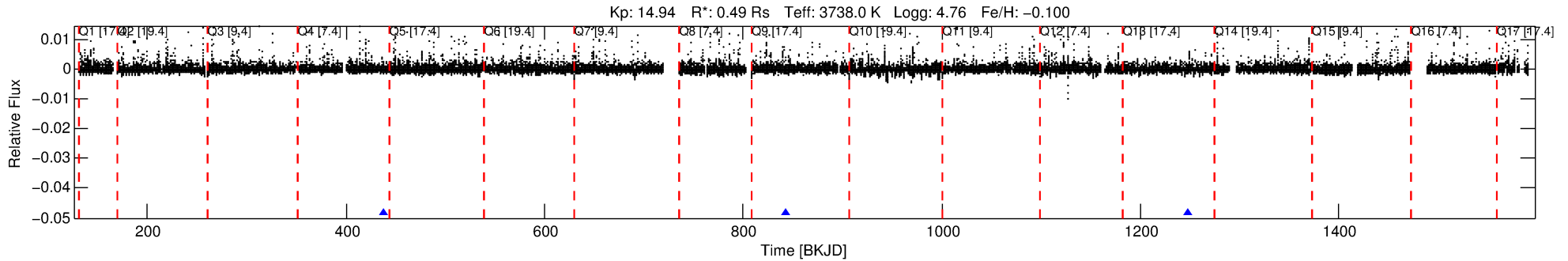
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011244150-06

No Significant Match Found

DV One-Page Summary

KIC: 11244150 Candidate: 6 of 6 Period: 405.584 d



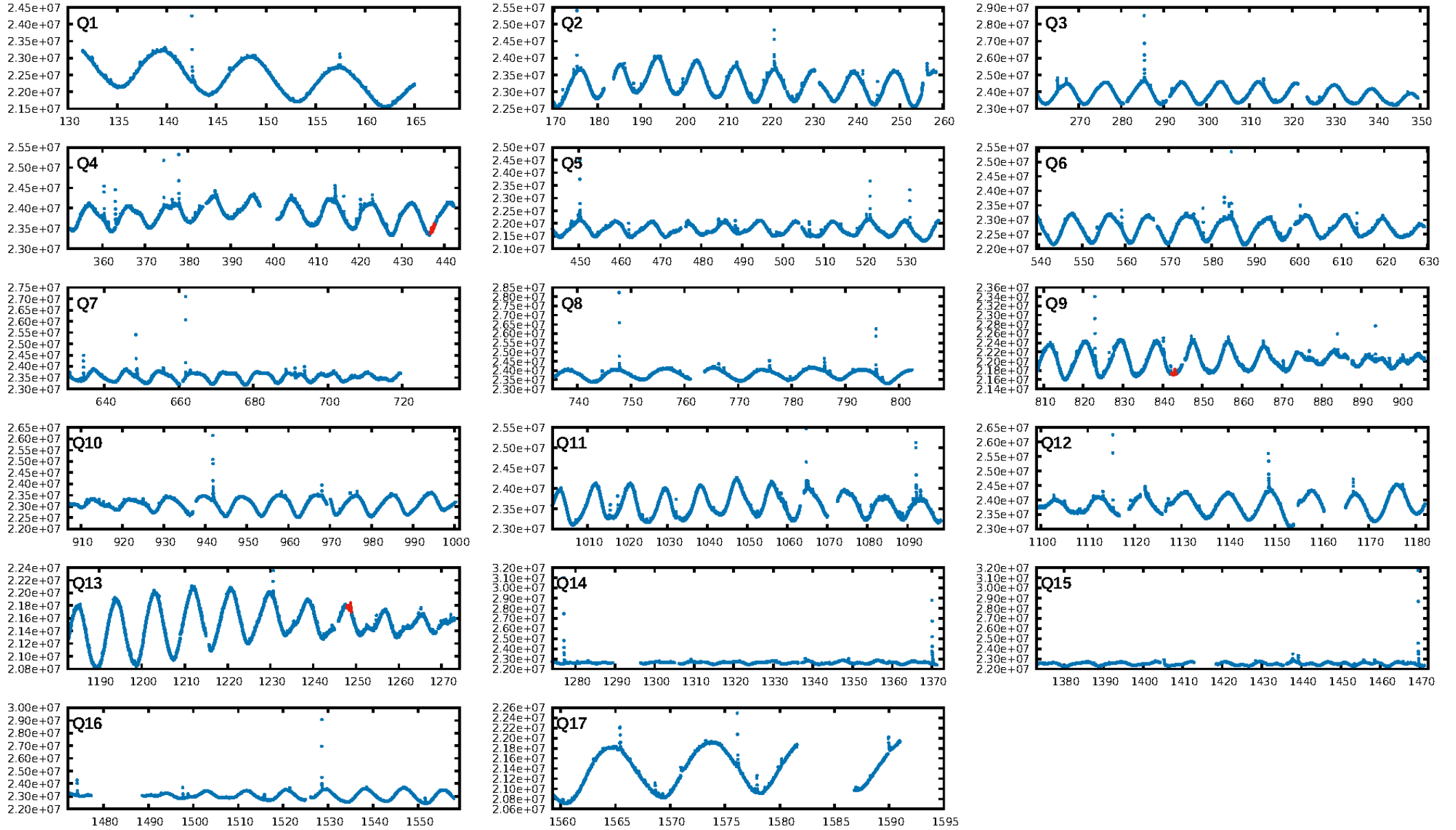
DV Fit Results:

Period = 405.58423 [0.01044] d
Epoch = 437.2295 [0.0134] BKJD
Rp/R* = 0.0329 [0.0115]
a/R* = 244.43 [355.06]
b = 0.37 [3.38]
Seff = 0.06 [0.01]
Teq = 125 [3] K
Rp = 1.75 [0.62] Re
a = 0.8481 [0.0469] AU
Ag = 113423.79 [87823.36] [1.29σ]
Teffp = 3546 [686] K [4.99σ]

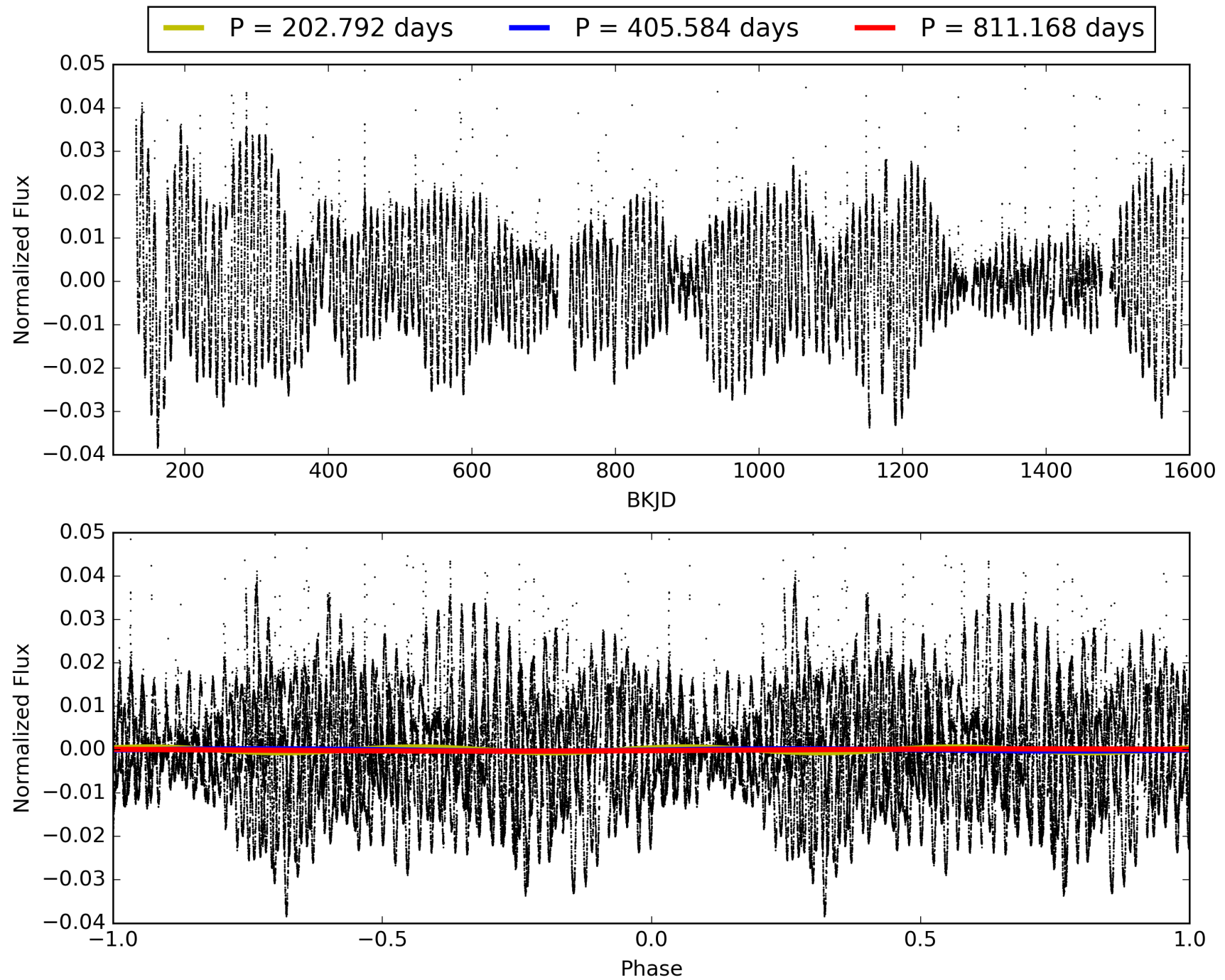
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [110.96σ]
LongPeriod-sig: 100.0% [16.40σ]
ModelChiSquare2-sig: 51.6%
ModelChiSquareGof-sig: 98.6%
Bootstrap-pfa: 9.59e-10
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.242
Centroid-sig: 26.8%
Centroid-so: 0.184 arcsec [0.37σ]
OotOffset-rm: 0.245 arcsec [1.69σ]
OotOffset-st: 0/0/0/2 [2]
KicOffset-rm: 0.625 arcsec [4.61σ]
KicOffset-st: 0/0/0/2 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 011244150-06, PDC Light Curves

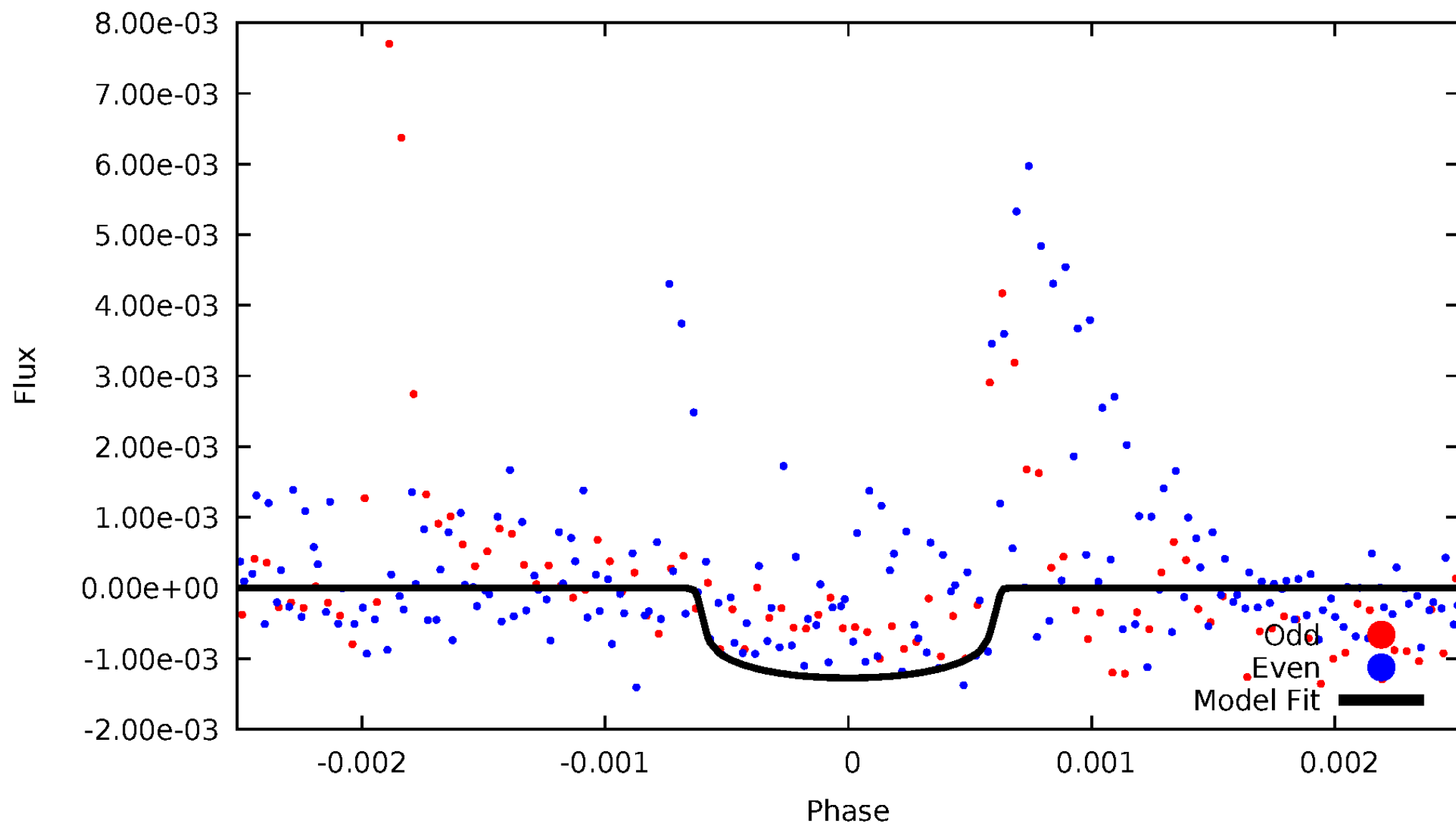


TCE 011244150-06



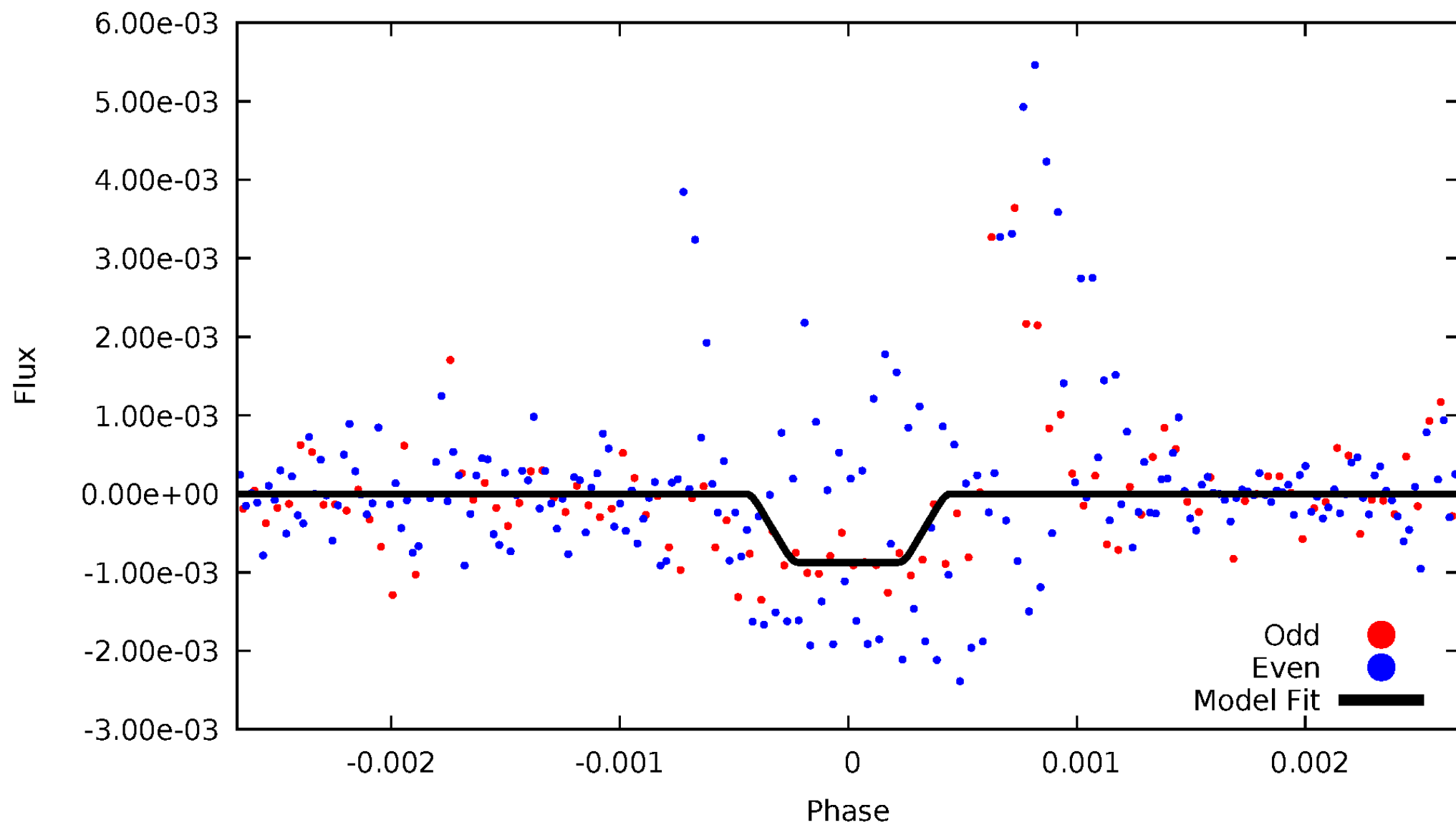
DV Odd/Even

TCE 011244150-06



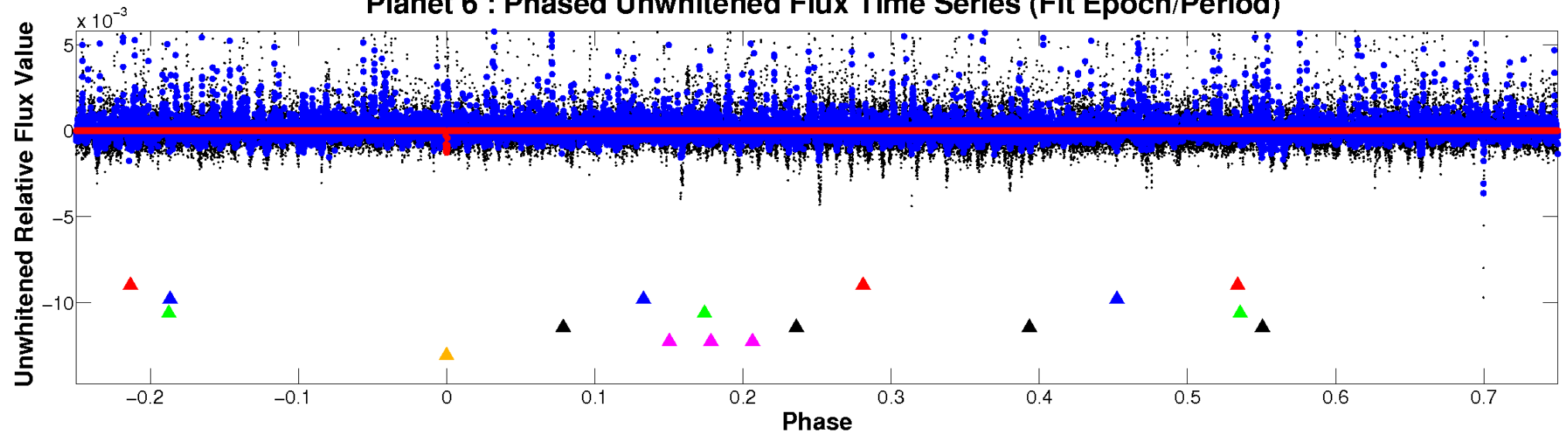
ALT Odd/Even

TCE 011244150-06

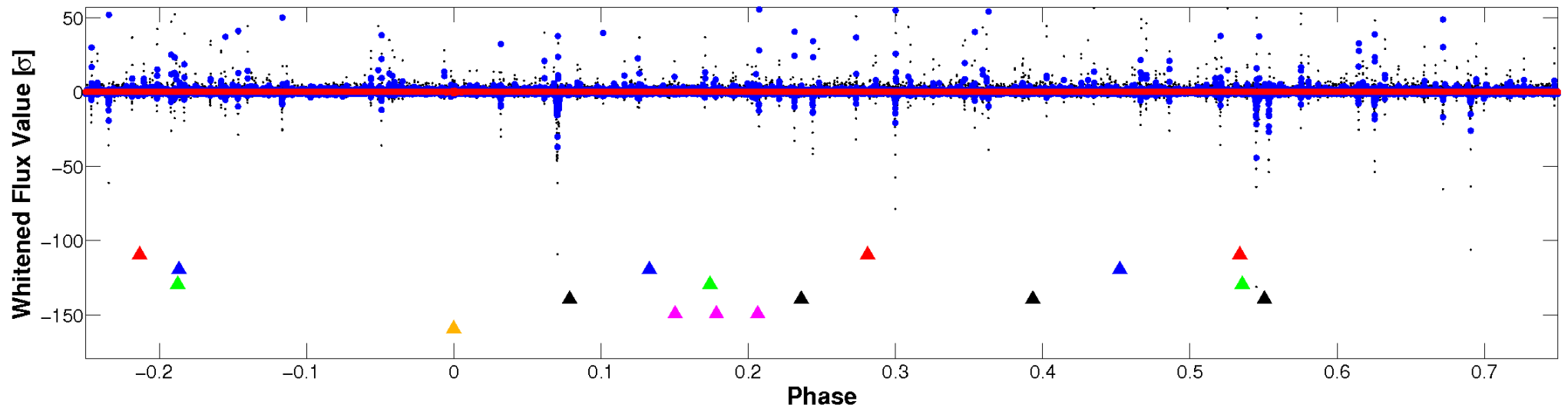


Non-Whitened Vs. Whitened Light Curve

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

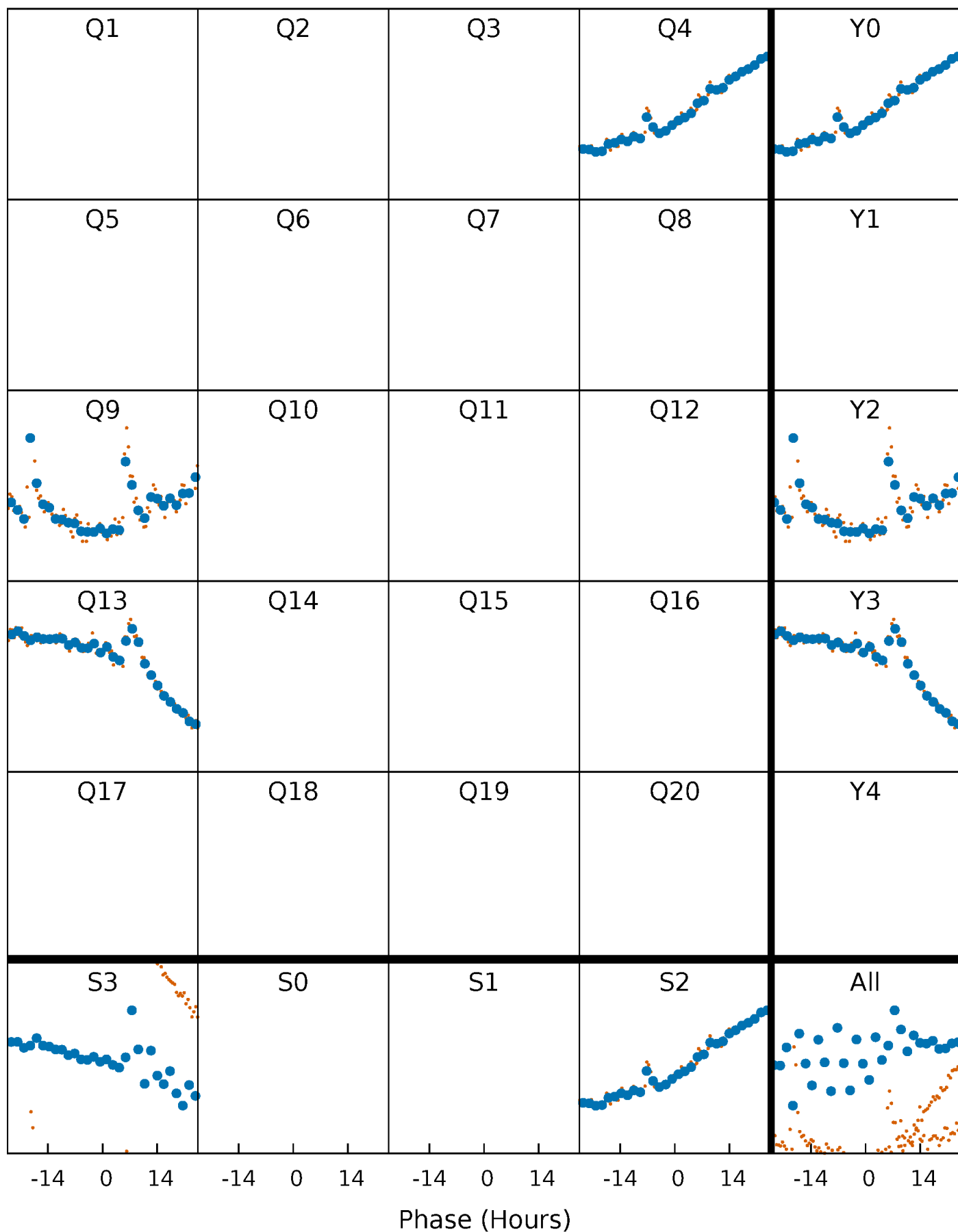


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



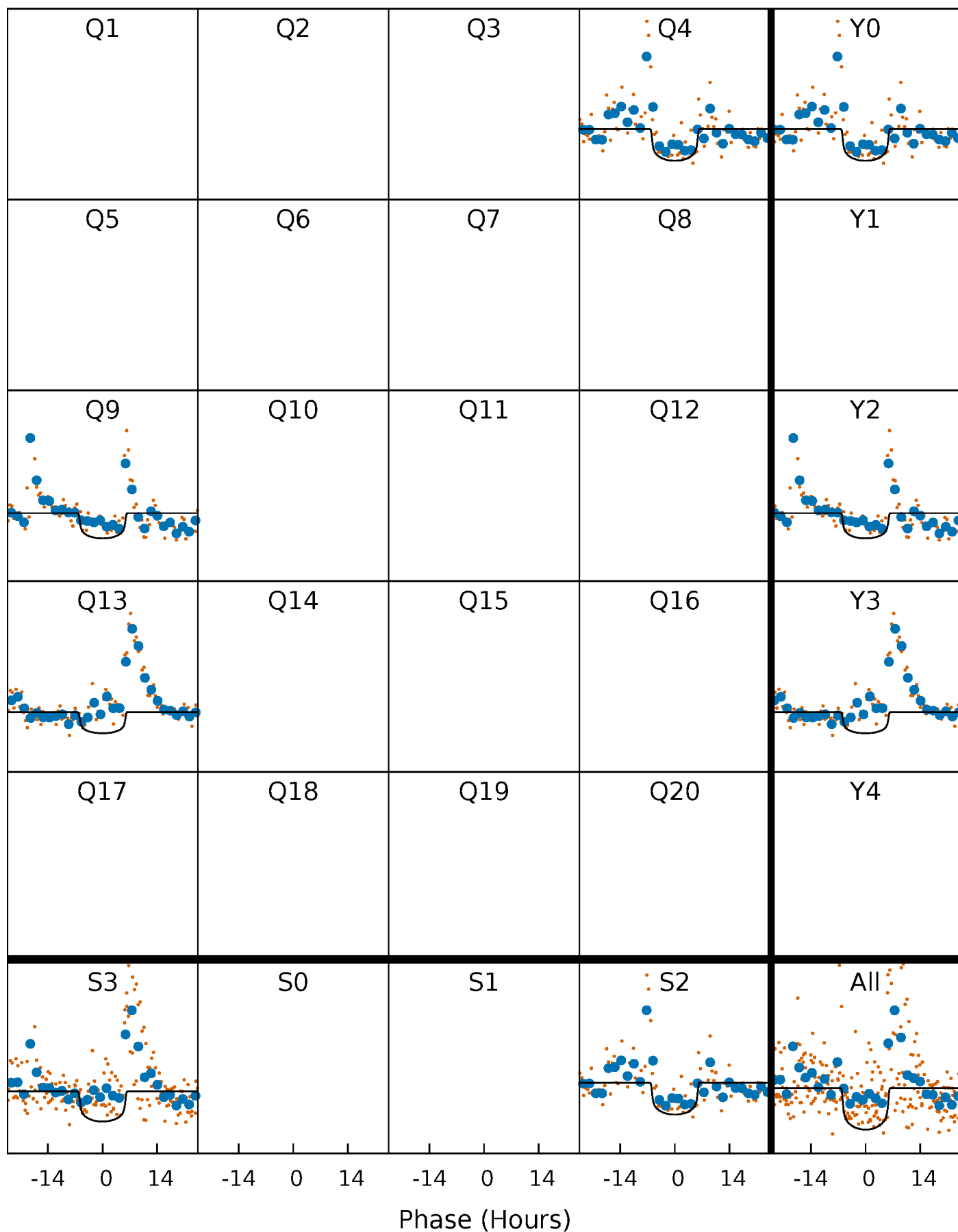
PDC Quarter-Phased Transit Curves

TCE 011244150-06 P=405.584227 Days $T_0=437.229543$ (BKJD)



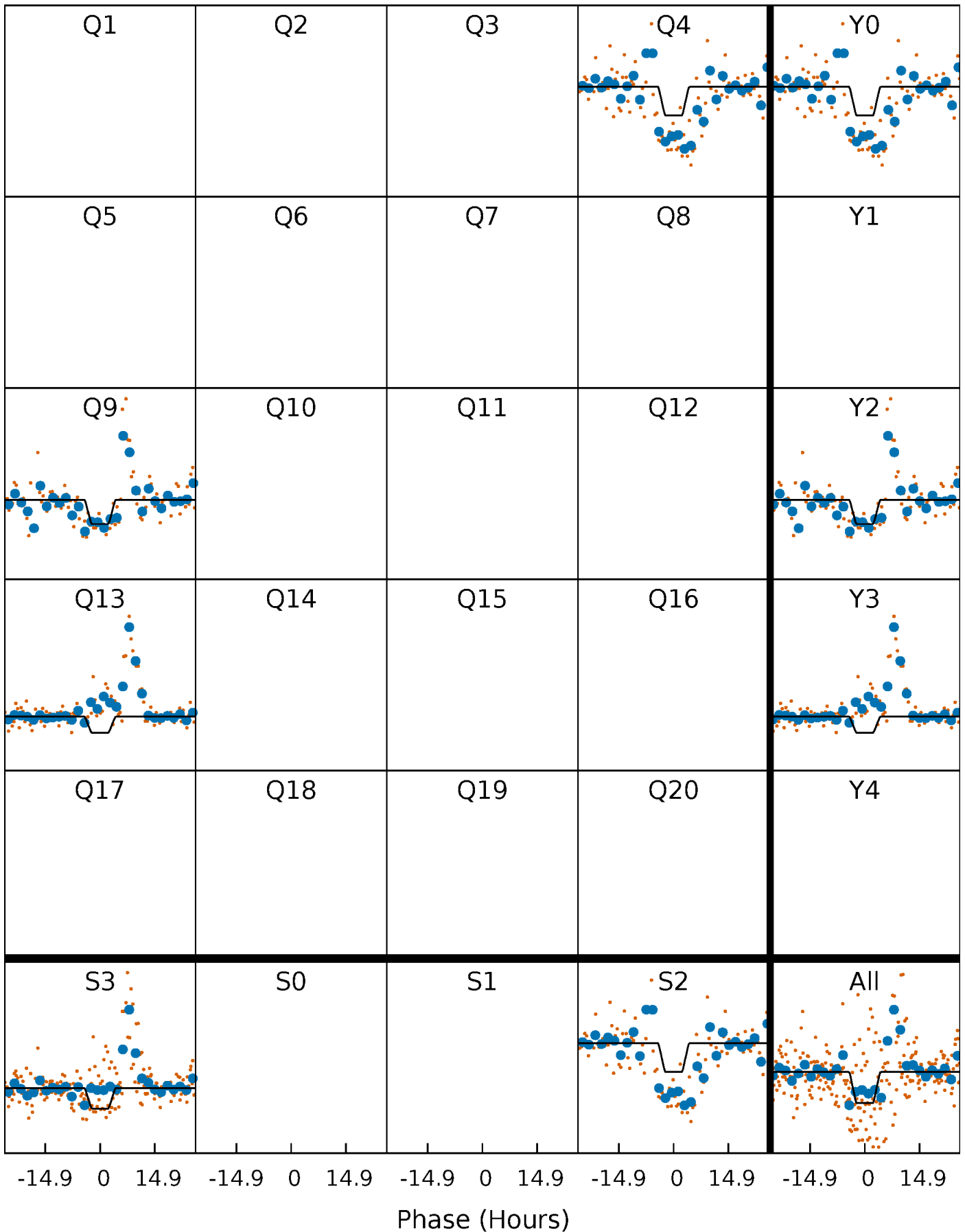
DV Quarter-Phased Transit Curves

TCE 011244150-06 P=405.584227 Days $T_0=437.229543$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

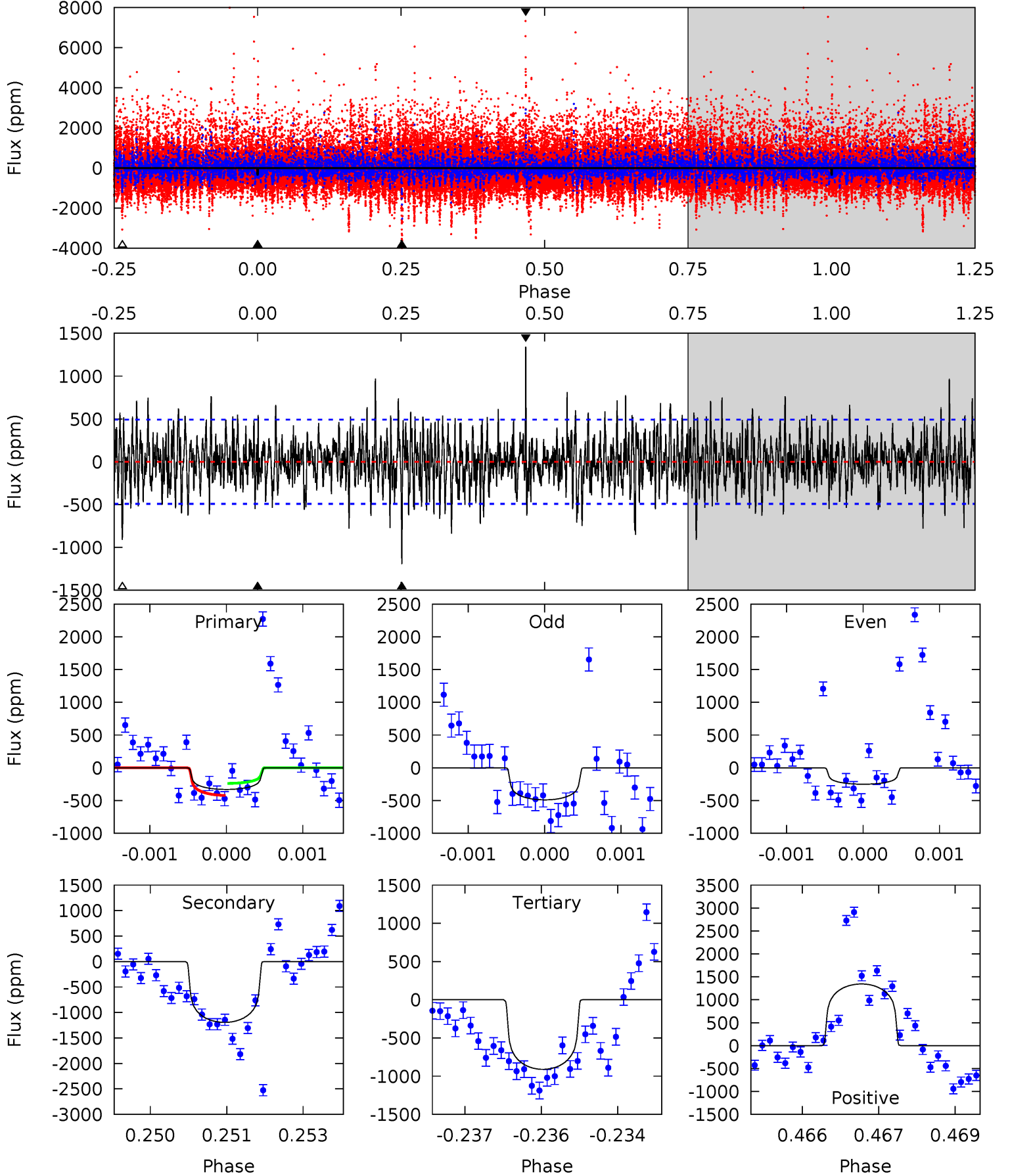
TCE 011244150-06 P=405.572110 Days $T_0=437.223506$ (BKJD)



DV Model-Shift Uniqueness Test

011244150-06, P = 405.584227 Days, E = 31.645316 Days

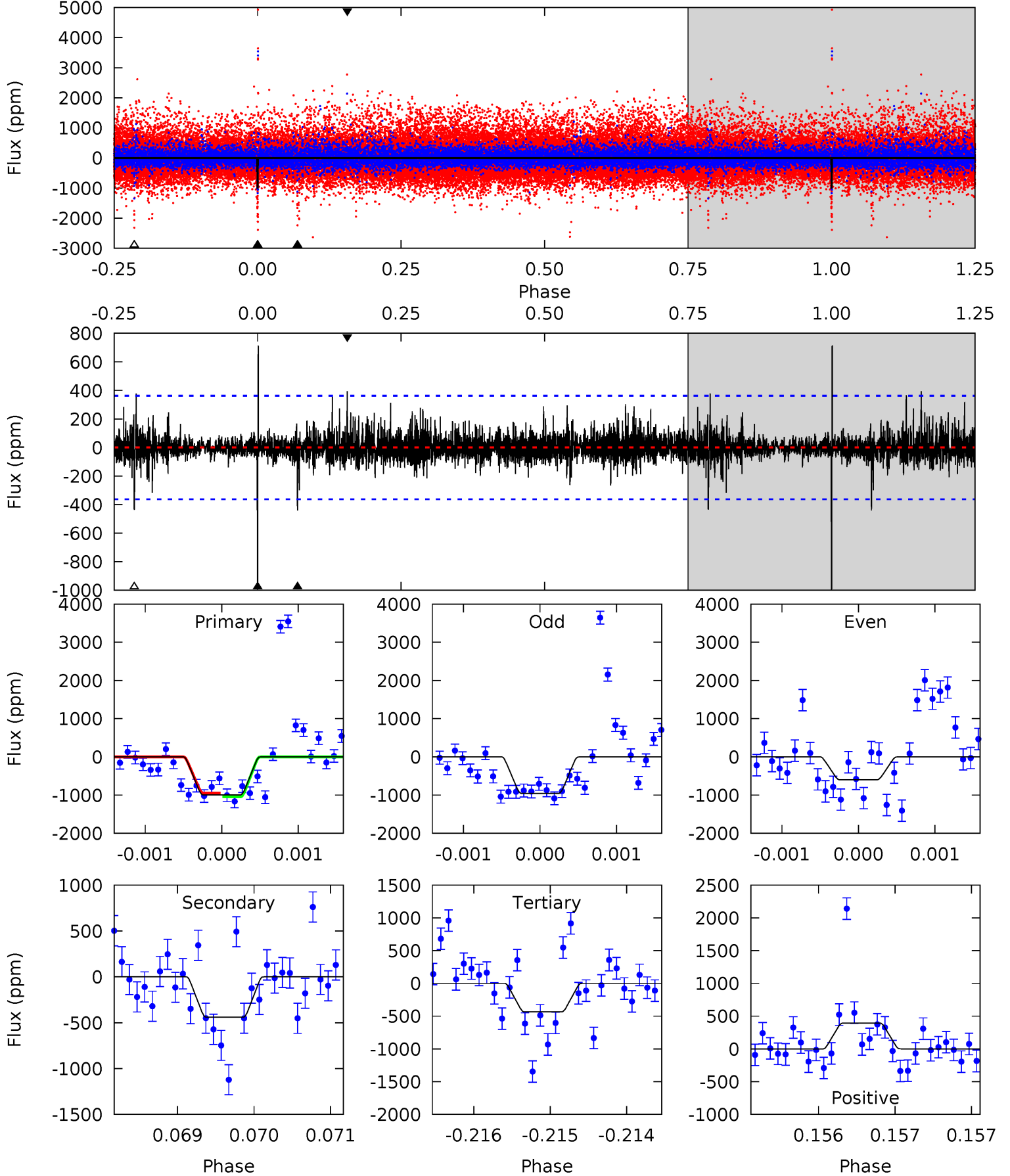
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.64	13.1	10.0	14.8	5.40	3.22	2.72	-6.38	-11.1	3.12	-1.65	0.64	0.67	0.53	1.01



Alt Model-Shift Uniqueness Test

011244150-06, P = 405.572110 Days, E = 31.651396 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	6.64	6.58	5.94	5.47	3.32	1.01	8.44	9.08	0.06	0.70	2.26	0.64	0.42	0.78



Stellar Parameters For KIC 011244150

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3738^{+67}_{-67}	$4.757^{+0.039}_{-0.021}$	$-0.100^{+0.100}_{-0.100}$	$0.487^{+0.027}_{-0.034}$	$0.495^{+0.030}_{-0.030}$	$6.038^{+0.998}_{-0.636}$
	+2%/-2%	+1%/-0%	+100%/-100%	+6%/-7%	+6%/-6%	+17%/-11%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 011244150-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1194 ± 91	$1.73^{+0.59}_{-0.65}$	174^{+4}_{-4}	3804^{+681}_{-347}	$156156^{+252933}_{-68300}$
Alt.	-440 ± 66	$1.59^{+0.60}_{-0.61}$	174^{+4}_{-4}	3324^{+596}_{-302}	$69504^{+118337}_{-33559}$

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

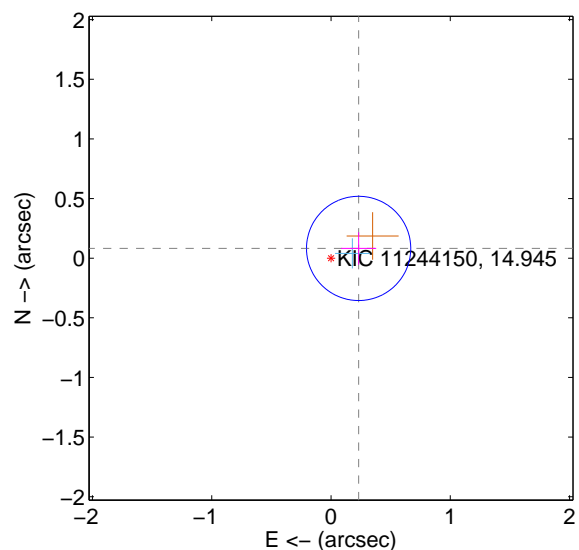
Supplemental centroid analysis for 011244150-06. Kepler magnitude: 14.95. Transit SNR 7.04

There are 1 quarters with good PRF difference image offsets

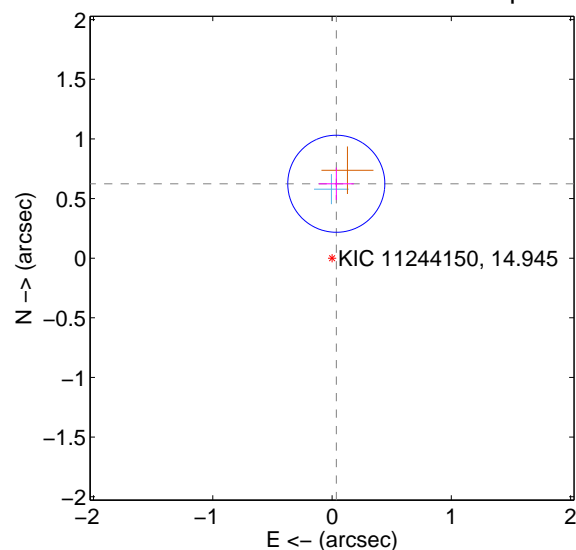
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.245 ± 0.146	1.69	-0.231 ± 0.147	0.082 ± 0.136
PRF-fit source offset from KIC position	0.625 ± 0.136	4.61	-0.036 ± 0.147	0.624 ± 0.136
photometric centroid source offset	0.18 ± 0.50	0.37	-0.18 ± 0.50	0.01 ± 0.48

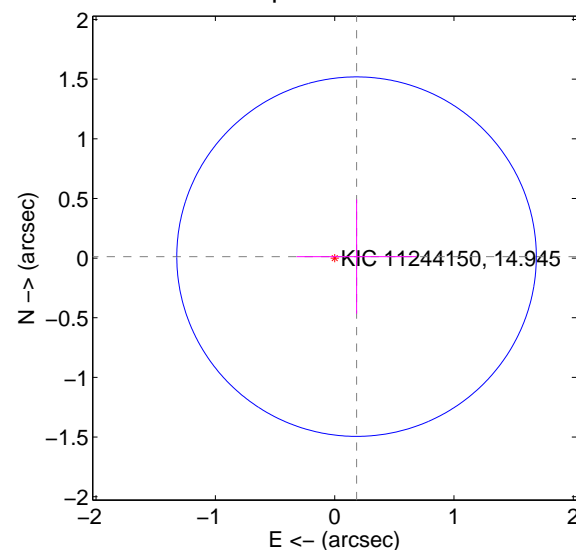
offset from difference PRF-fit to OOT PRF-fit



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.

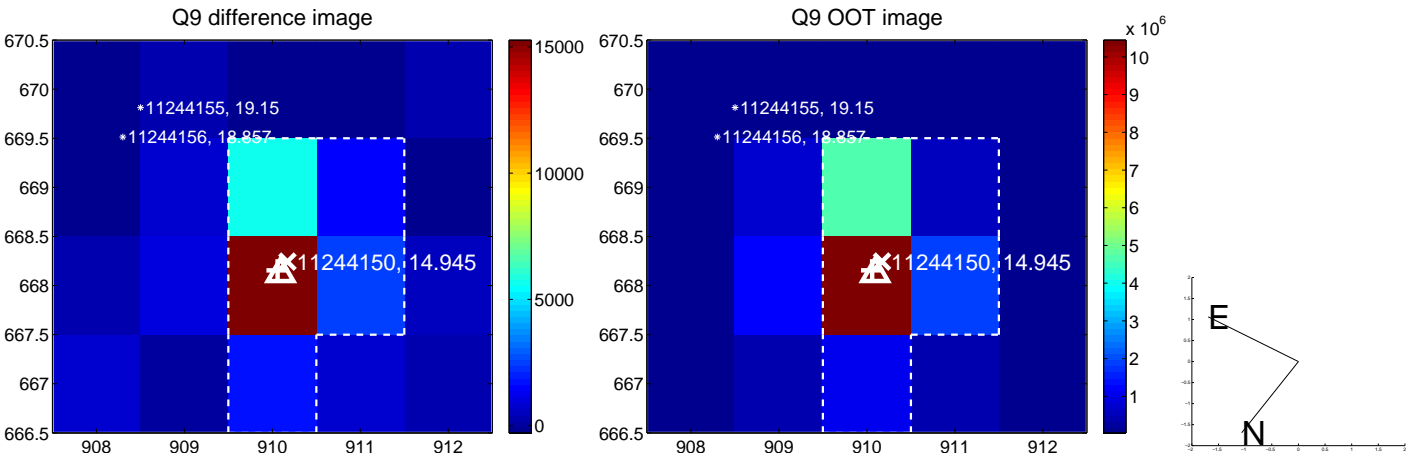
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



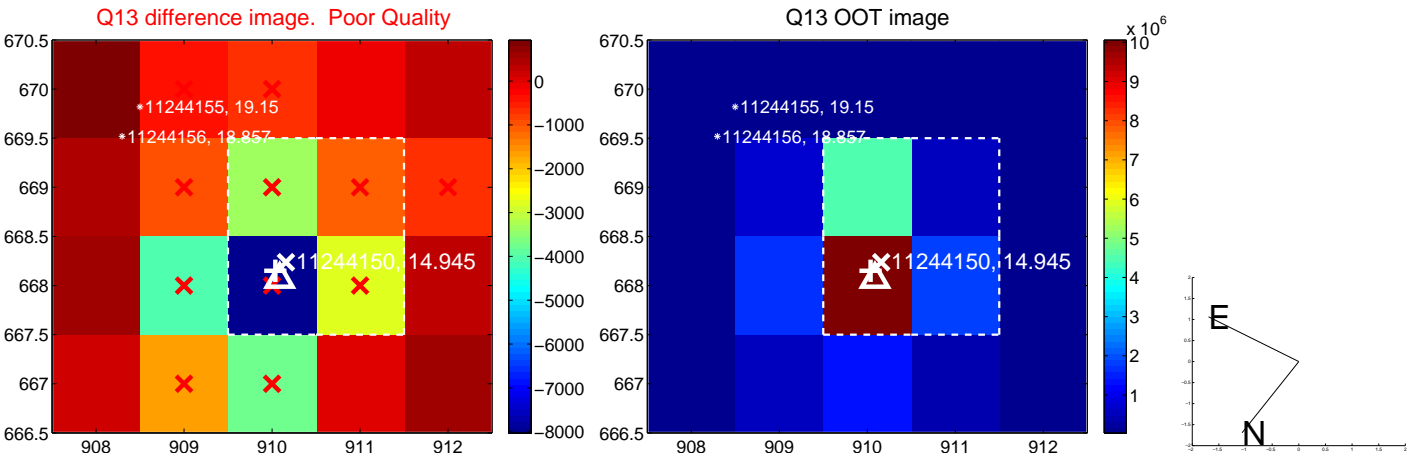
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



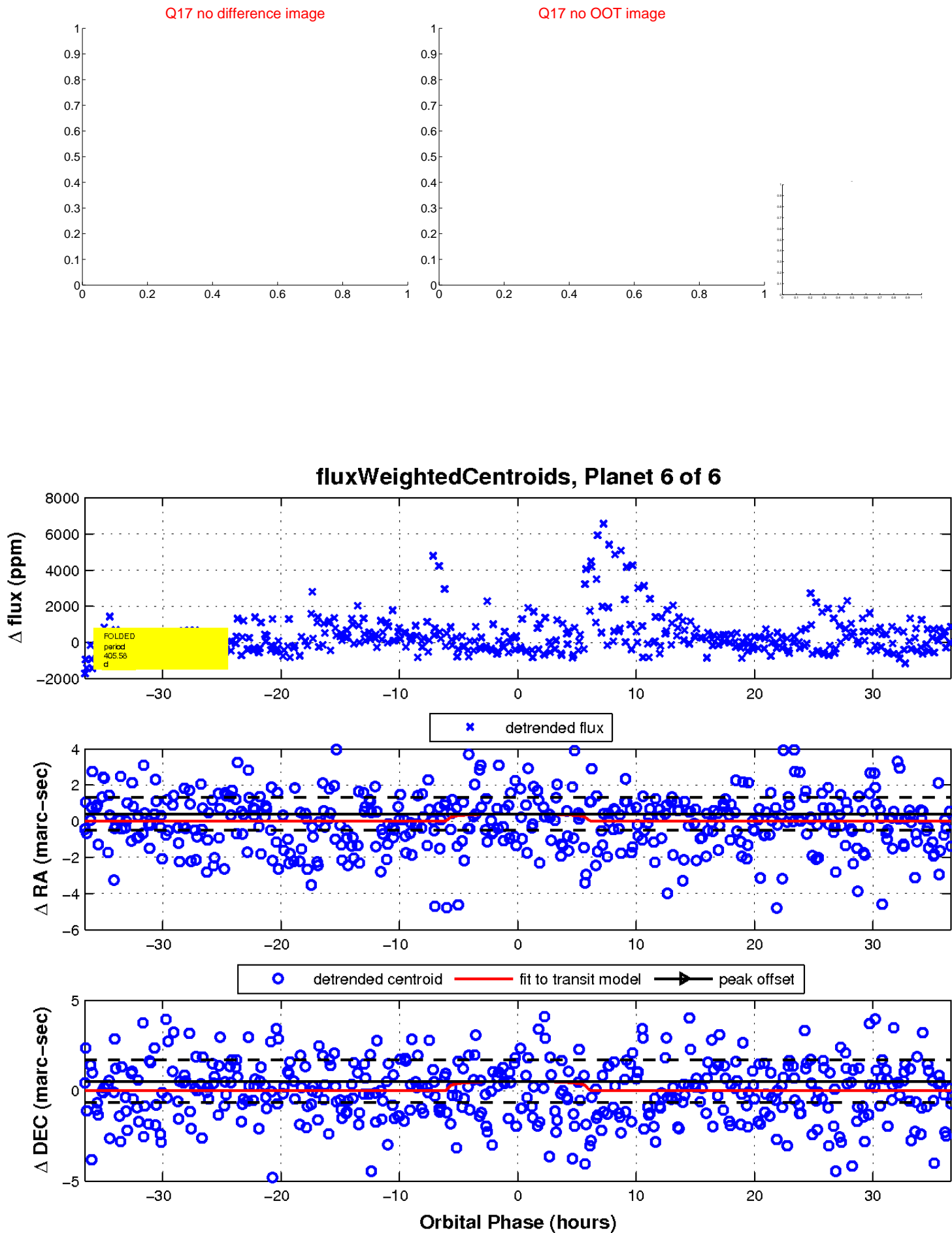
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

