

KIC 005286786

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})
005286786-01	OBS	6554.01	9.948712	138.553361	2736.9	3.188	96.0	98.2	0.79	5152	6.62	58.08
005286786-02	OBS	No	9.948740	133.802642	2414.6	3.867	91.7	94.9	0.79	5152	7.12	58.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005286786-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005286786-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

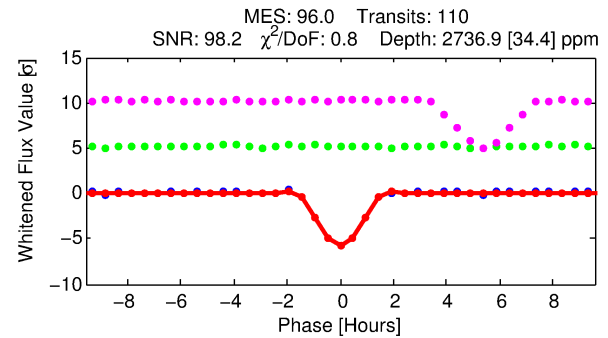
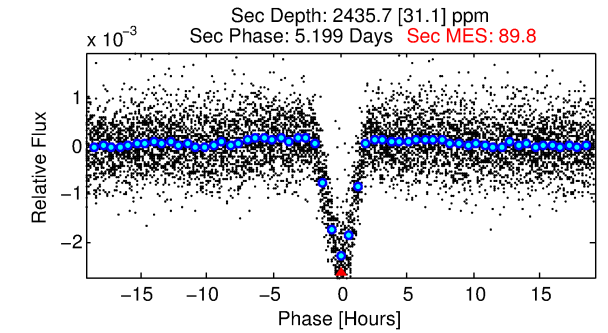
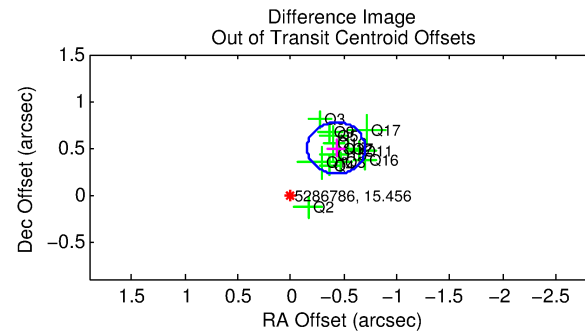
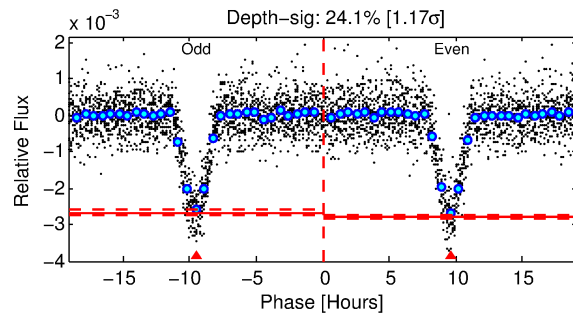
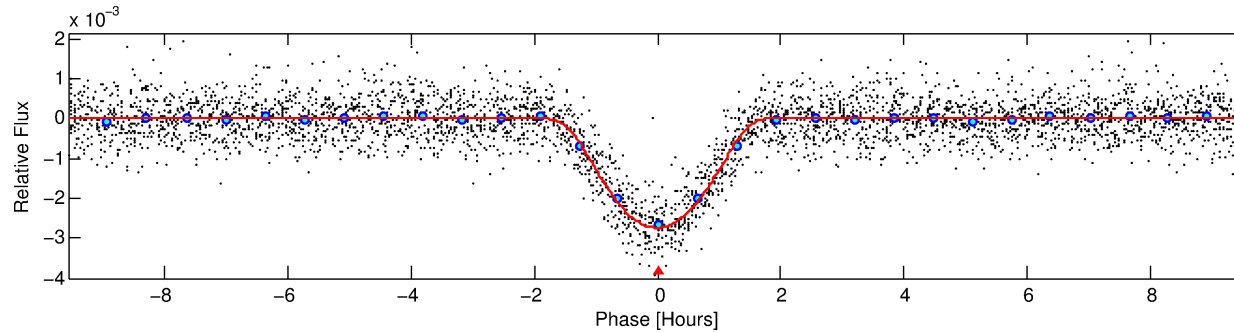
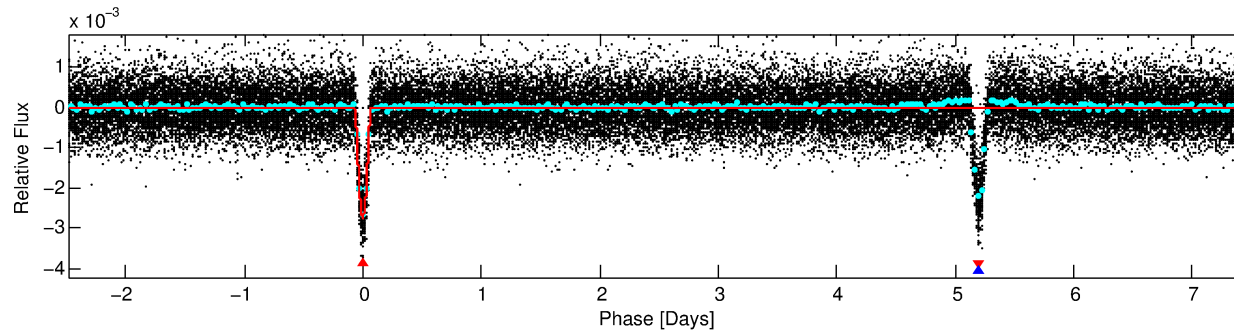
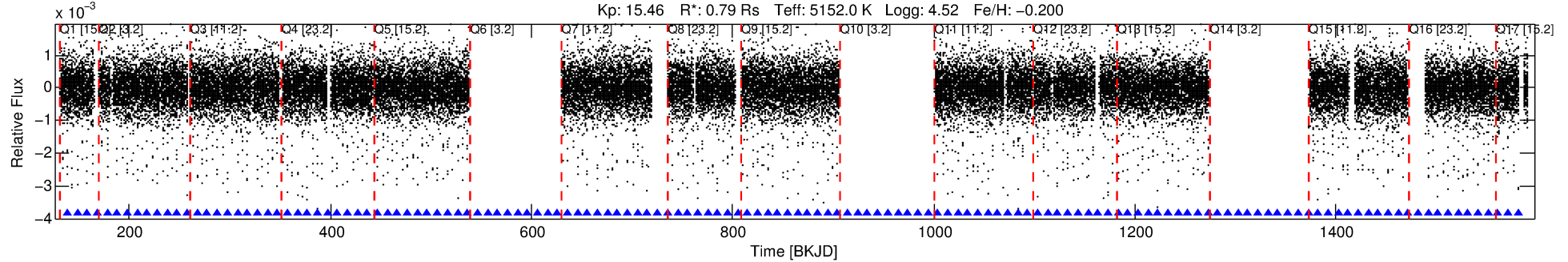
Ephemeris Match Information For 005286786-01

No Significant Match Found

DV One-Page Summary

KIC: 5286786 Candidate: 1 of 2 Period: 9.949 d
KOI: K06554.01 Corr: 0.985

Kp: 15.46 R*: 0.79 Rs Teff: 5152.0 K Logg: 4.52 Fe/H: -0.200



DV Fit Results:

Period = 9.94871 [0.00001] d
Epoch = 138.5534 [0.0007] BKJD
Rp/R* = 0.0772 [0.0194]
a/R* = 10.97 [0.81]
b = 0.97 [0.03]
Seff = 58.08 [11.59]
Teq = 704 [35] K
Rp = 6.62 [1.85] Re
a = 0.0819 [0.0087] AU
Ag = 205.15 [108.06] [1.89σ]
Teff = 4119 [531] K [6.42σ]

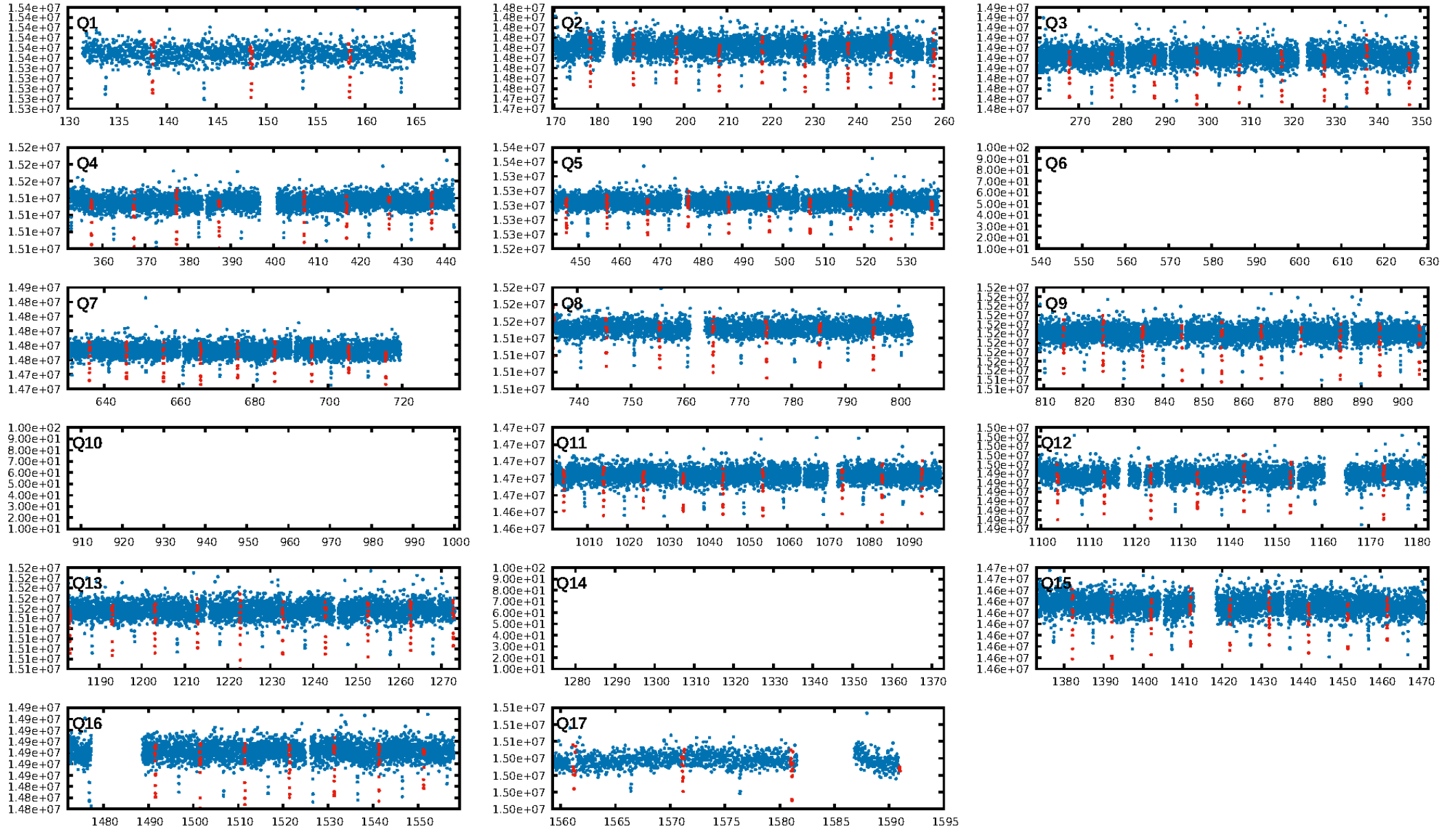
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 97.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [103/103]
GhostDiagnostic-chr: 5.013
Centroid-sig: 0.0%
Centroid-so: 0.530 arcsec [3.00σ]
OotOffset-rm: 0.657 arcsec [7.18σ]
KicOffset-rm: 0.623 arcsec [6.74σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

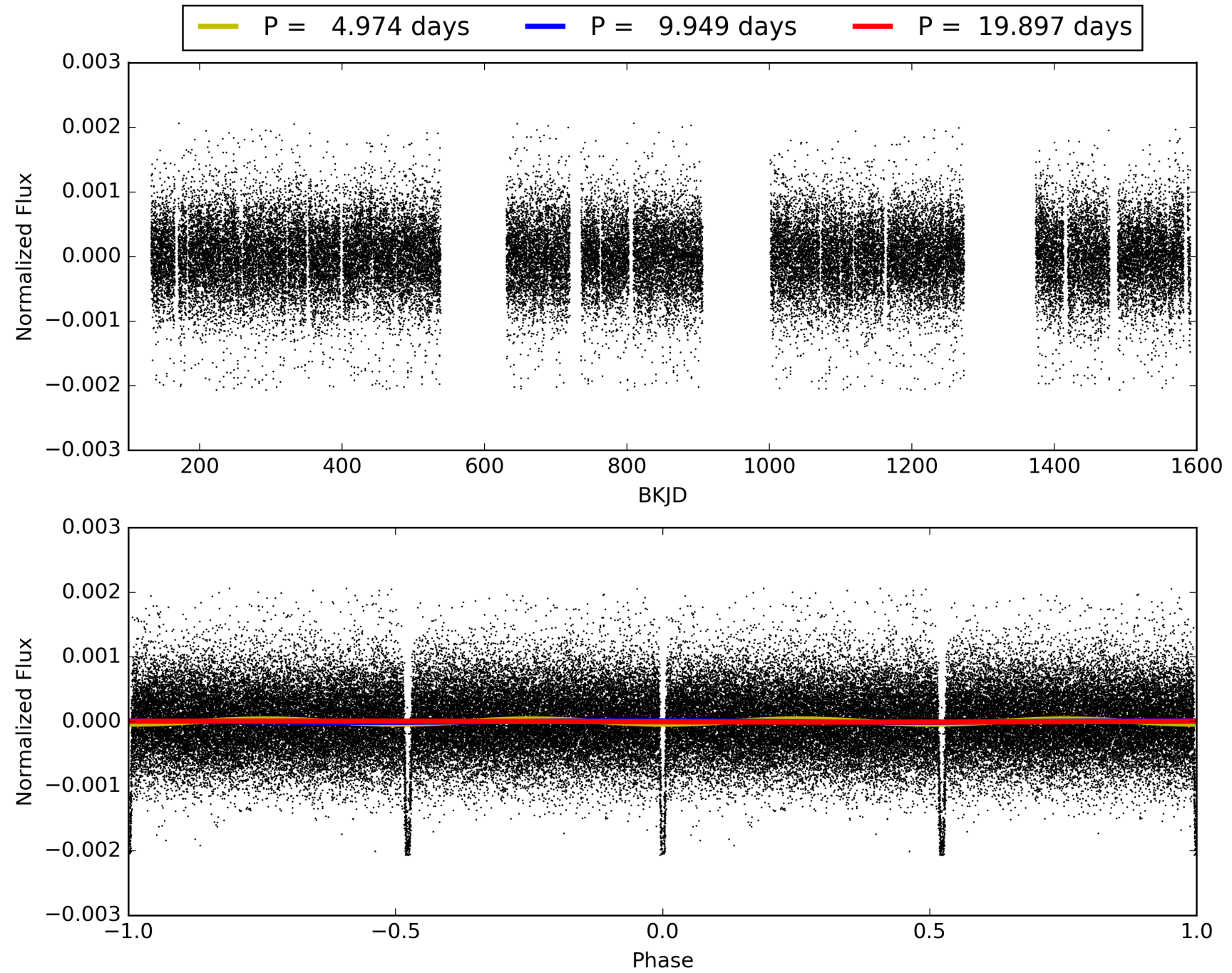
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:21:50 Z

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

TCE 005286786-01, PDC Light Curves

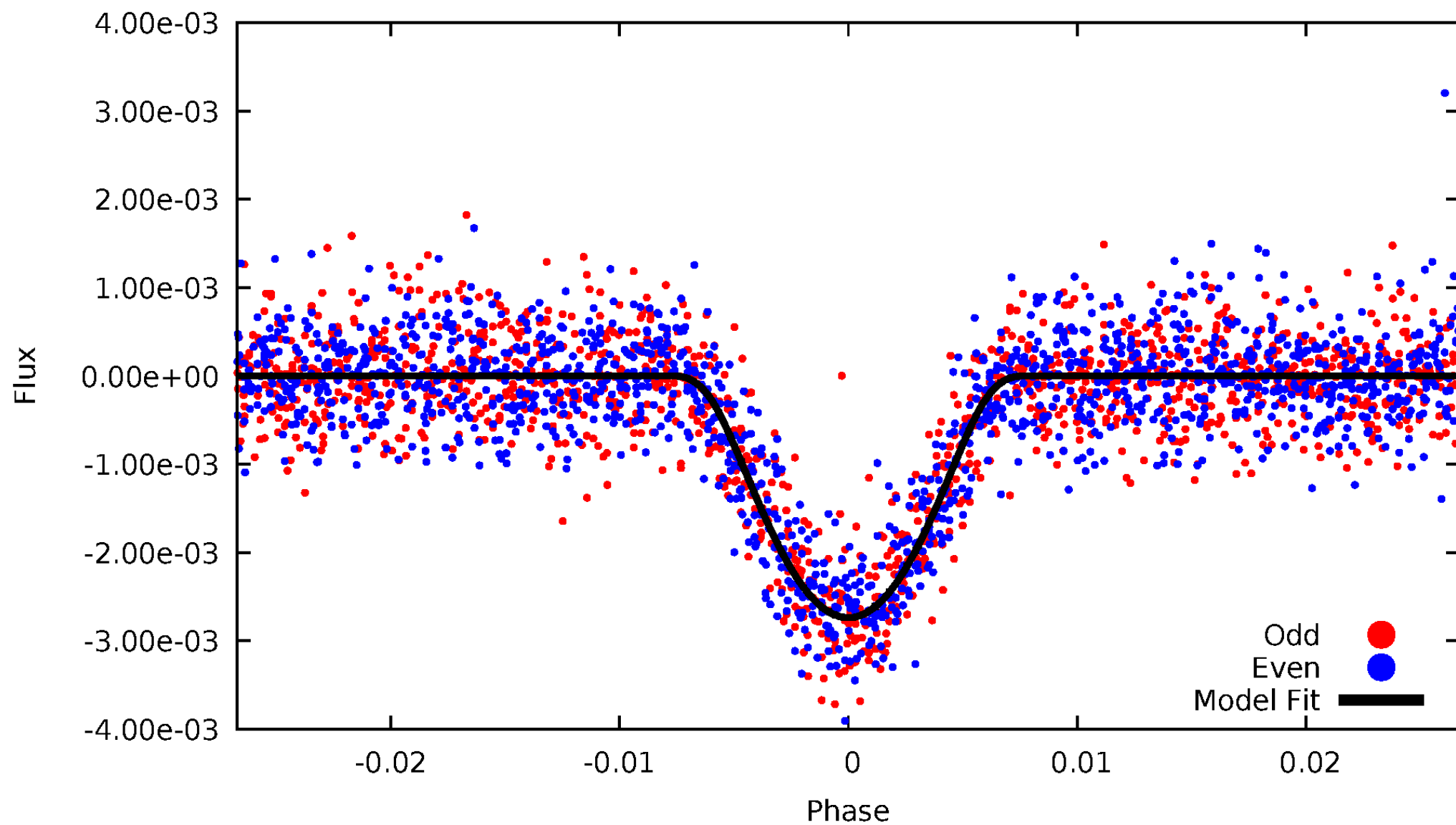


TCE 005286786-01



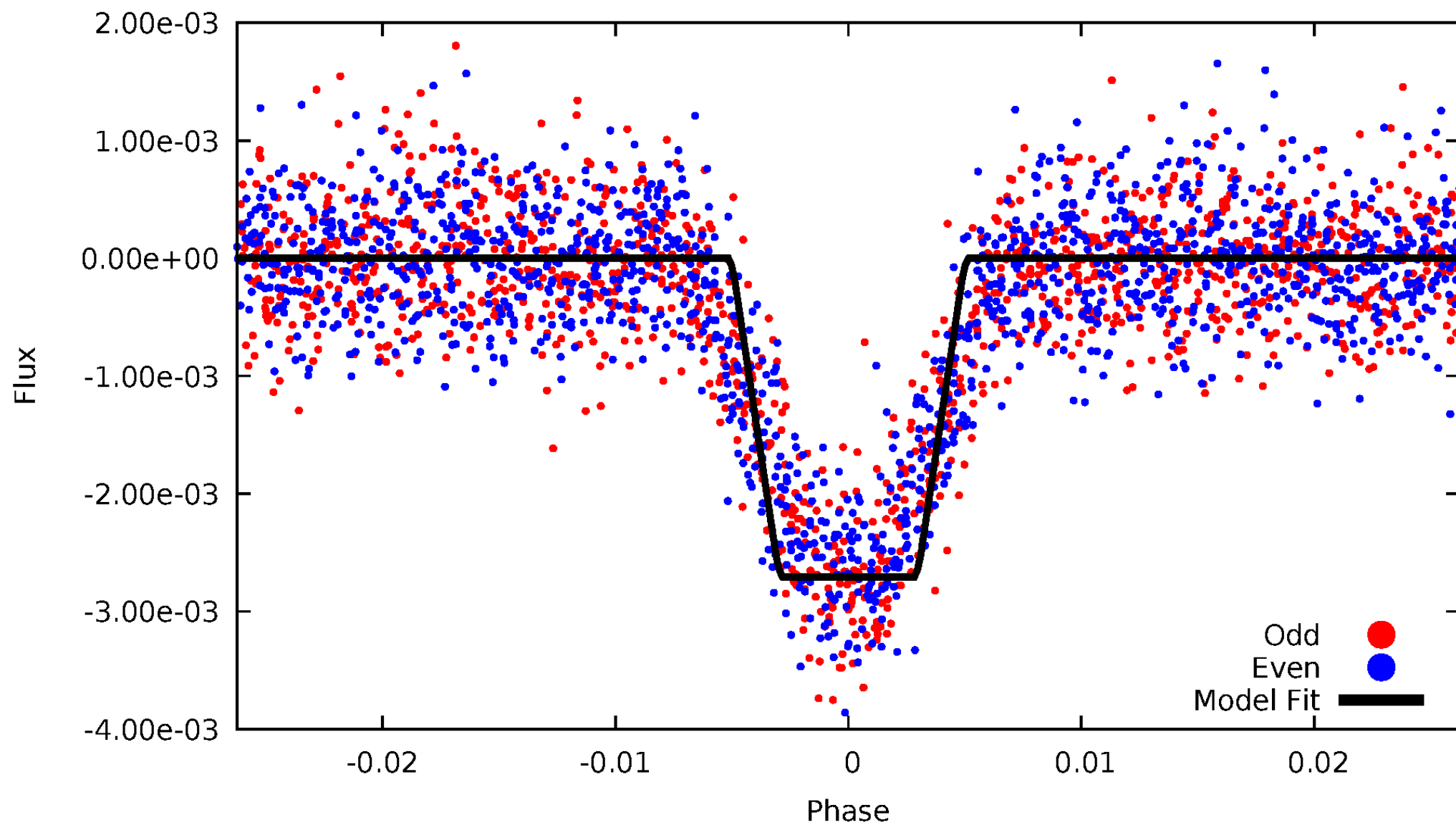
DV Odd/Even

TCE 005286786-01



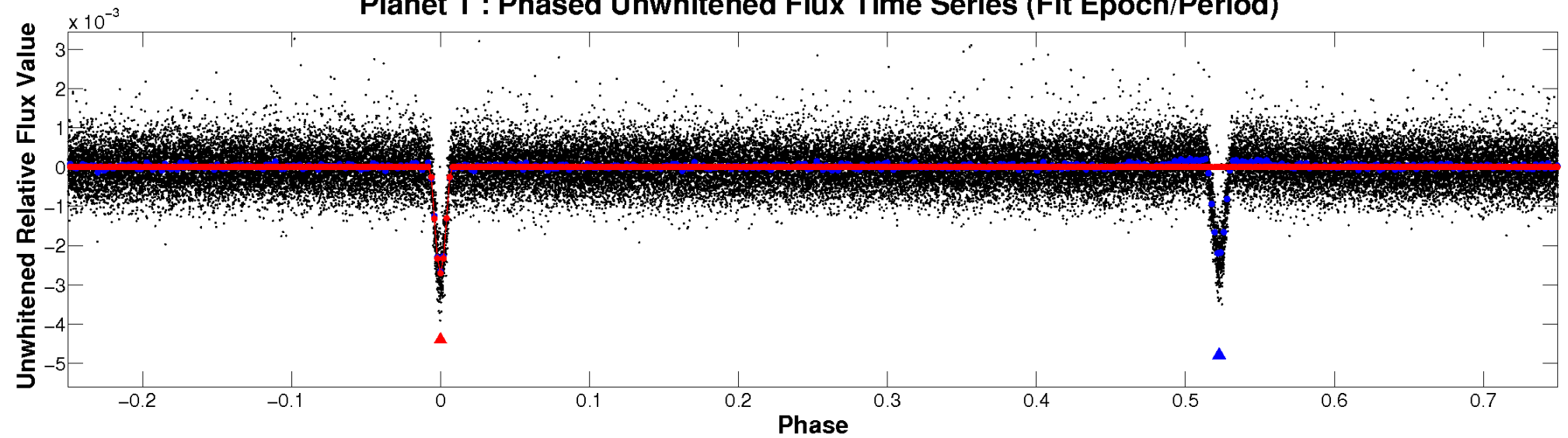
ALT Odd/Even

TCE 005286786-01

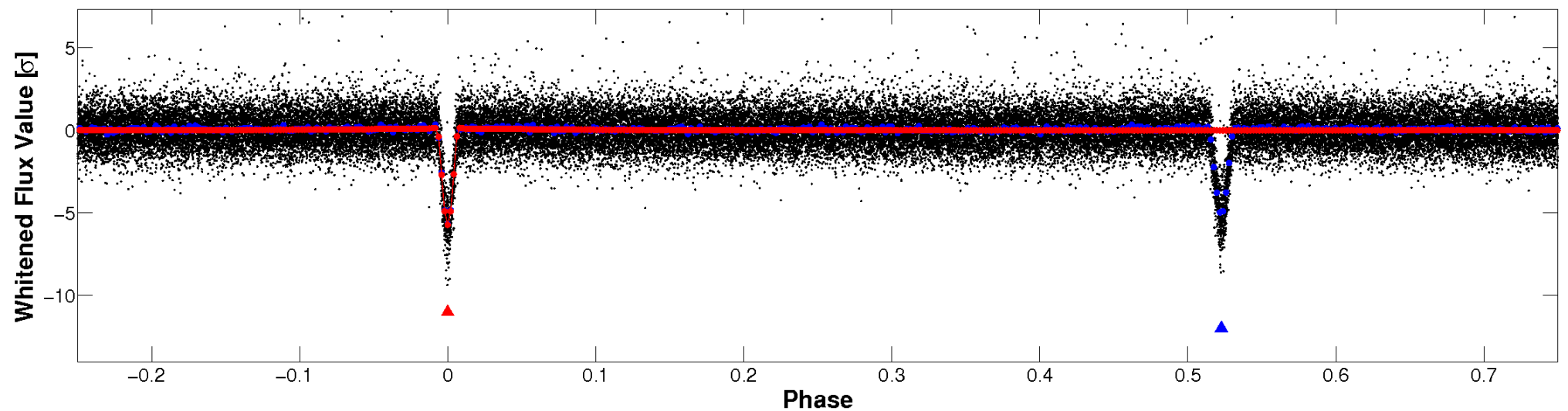


Non-Whitened Vs. Whitened Light Curve

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

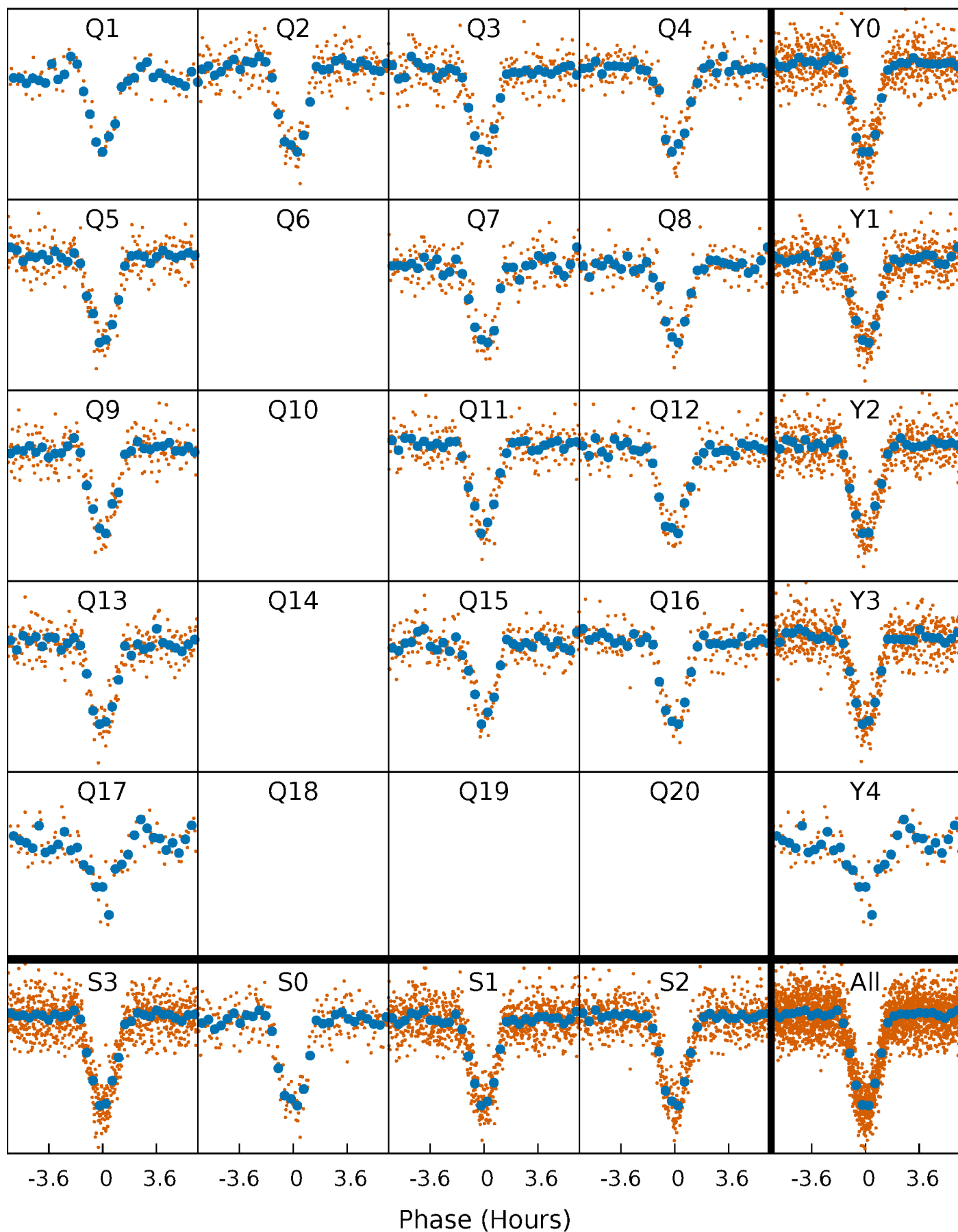


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



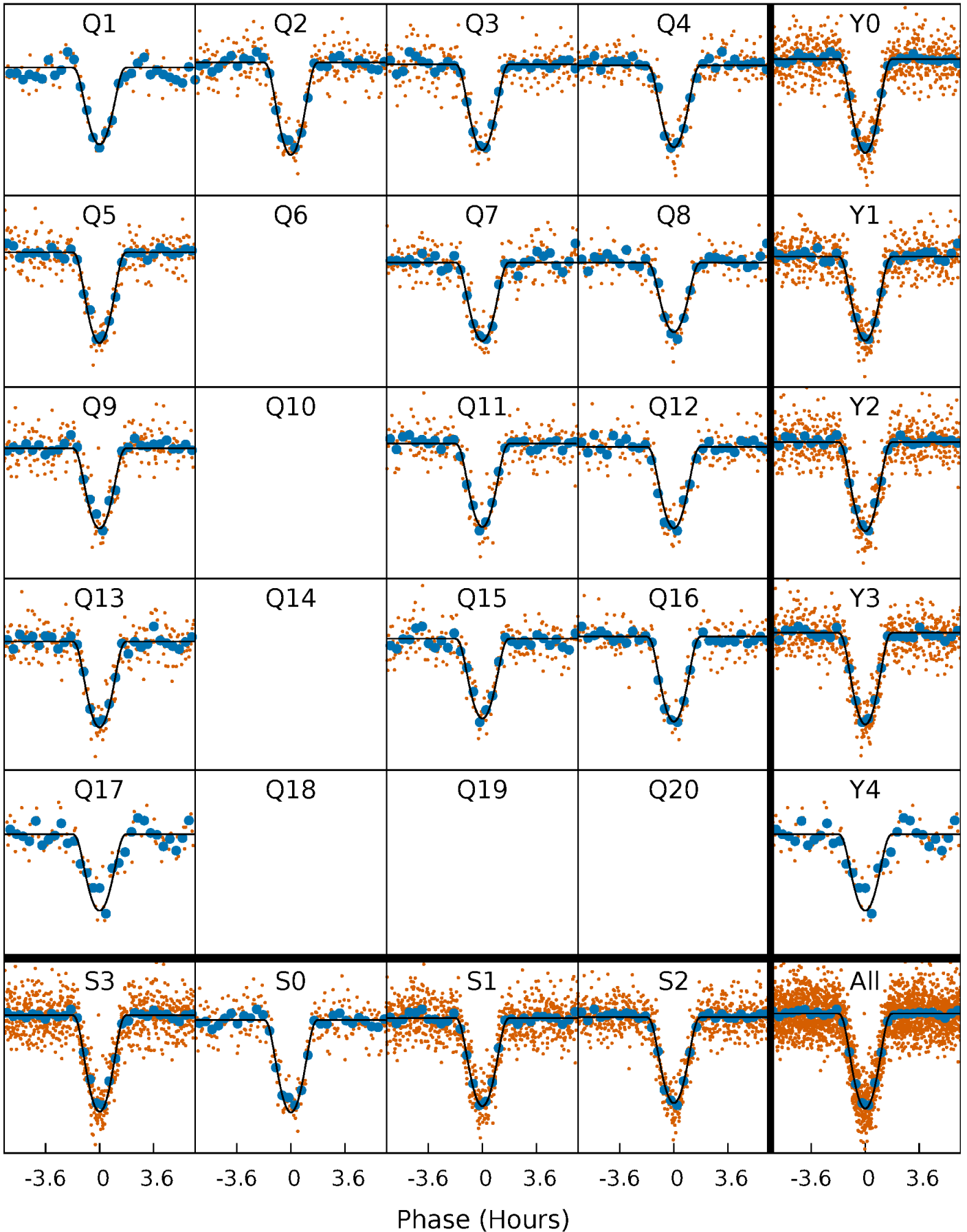
PDC Quarter-Phased Transit Curves

TCE 005286786-01 P= 9.948712 Days $T_0=138.553361$ (BKJD)



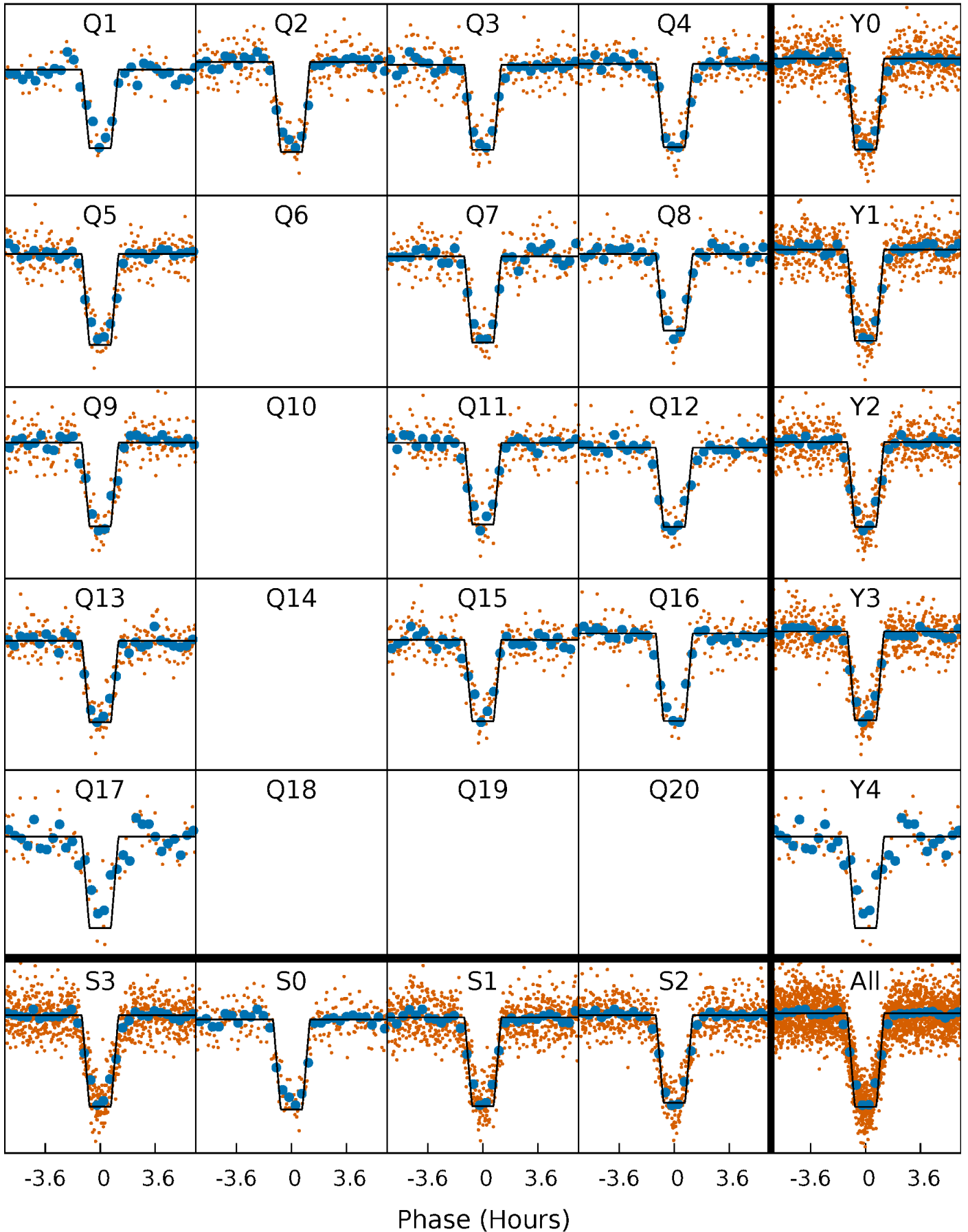
DV Quarter-Phased Transit Curves

TCE 005286786-01 P= 9.948712 Days $T_0=138.553361$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

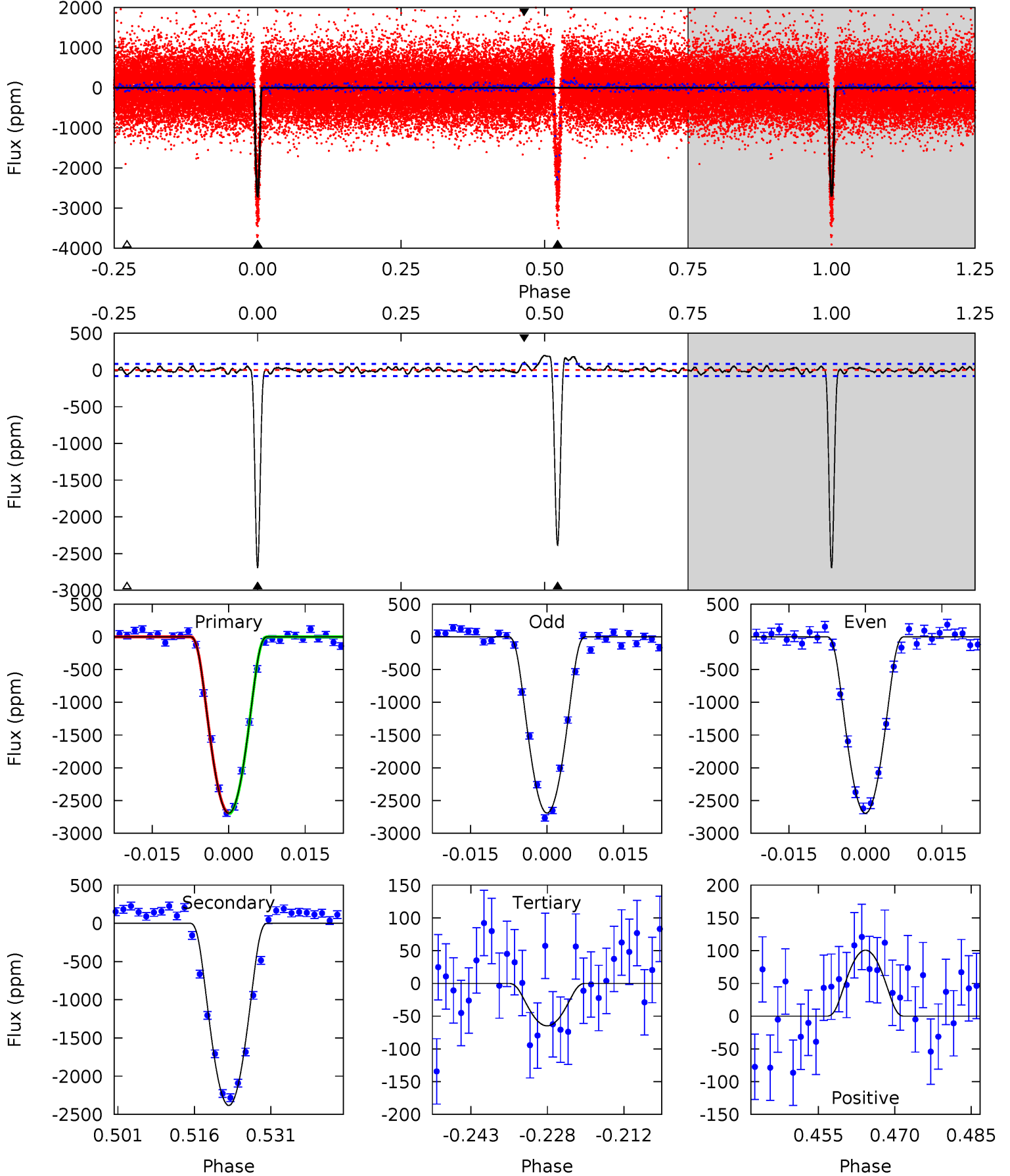
TCE 005286786-01 P= 9.948740 Days $T_0=138.551376$ (BKJD)



DV Model-Shift Uniqueness Test

005286786-01, P = 9.948712 Days, E = 128.604649 Days

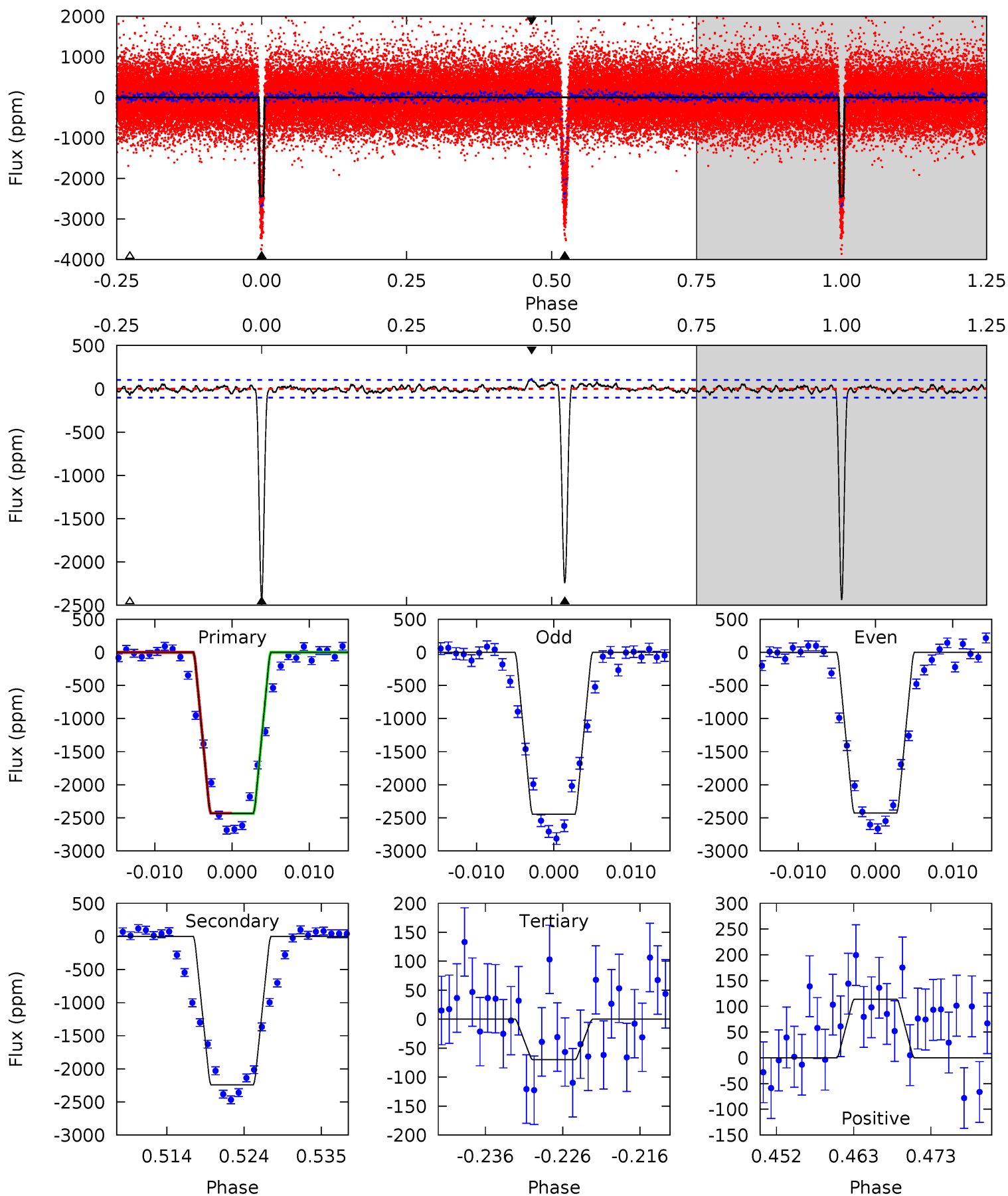
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
160.3	141.9	3.86	6.00	4.95	2.43	2.36	156.5	154.3	138.0	135.9	0.14	1.00	0.07	0.42



Alt Model-Shift Uniqueness Test

005286786-01, P = 9.948740 Days, E = 128.602636 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
120.0	110.5	3.45	5.62	5.02	2.57	1.40	116.5	114.3	107.1	104.9	0.48	1.00	0.04	0.11



Stellar Parameters For KIC 005286786

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5152^{+153}_{-153}	$4.517^{+0.090}_{-0.090}$	$-0.200^{+0.300}_{-0.300}$	$0.786^{+0.096}_{-0.096}$	$0.741^{+0.106}_{-0.057}$	$2.149^{+0.789}_{-0.578}$
	+3%/-3%	+2%/-2%	+150%/-150%	+12%/-12%	+14%/-8%	+37%/-27%
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 005286786-01 / KOI 6554.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2383 ± 17	$6.53^{+2.05}_{-1.58}$	982^{+47}_{-40}	4299^{+524}_{-380}	207^{+156}_{-86}
Alt.	-2241 ± 20	$4.40^{+1.84}_{-1.66}$	985^{+45}_{-46}	4986^{+1285}_{-626}	434^{+704}_{-218}

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 $A_{obs} \gg 1.0$

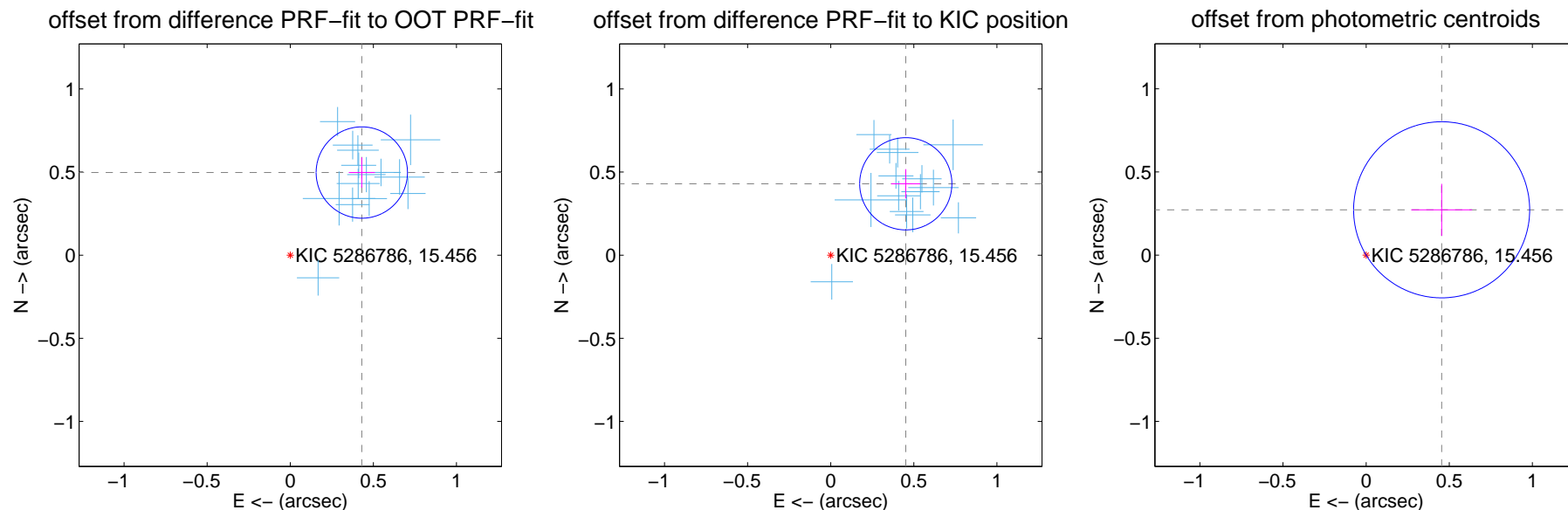
DV Centroid Data

Supplemental centroid analysis for 005286786-01. Kepler magnitude: 15.46. Transit SNR 98.18

There are 14 quarters with good PRF difference image offsets

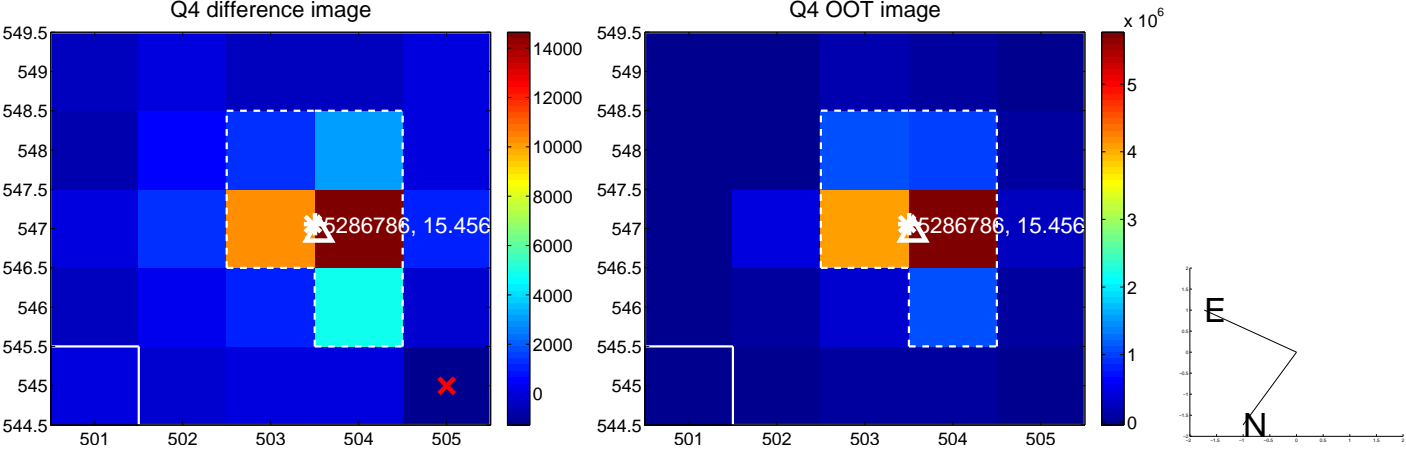
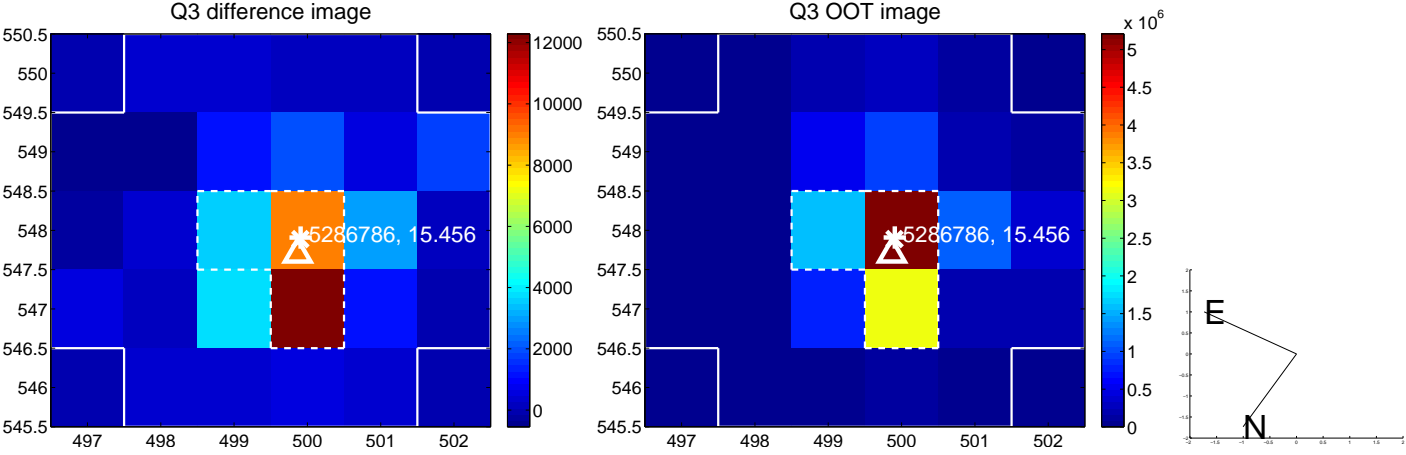
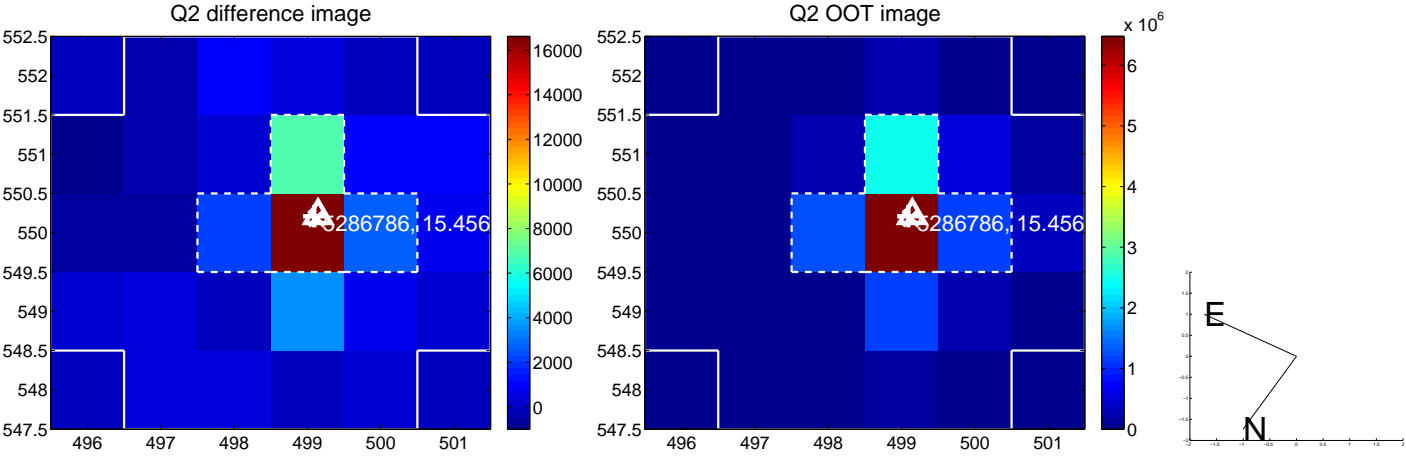
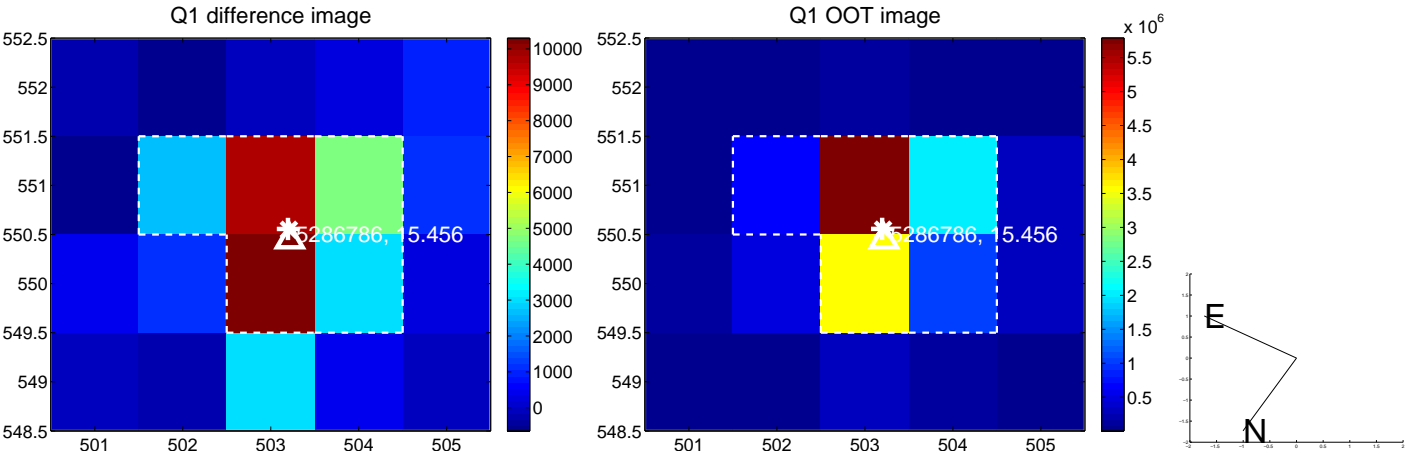
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.657 ± 0.092	7.18	-0.430 ± 0.078	0.497 ± 0.091
PRF-fit source offset from KIC position	0.623 ± 0.092	6.74	-0.452 ± 0.088	0.429 ± 0.089
photometric centroid source offset	0.53 ± 0.18	3.00	-0.45 ± 0.18	0.27 ± 0.16

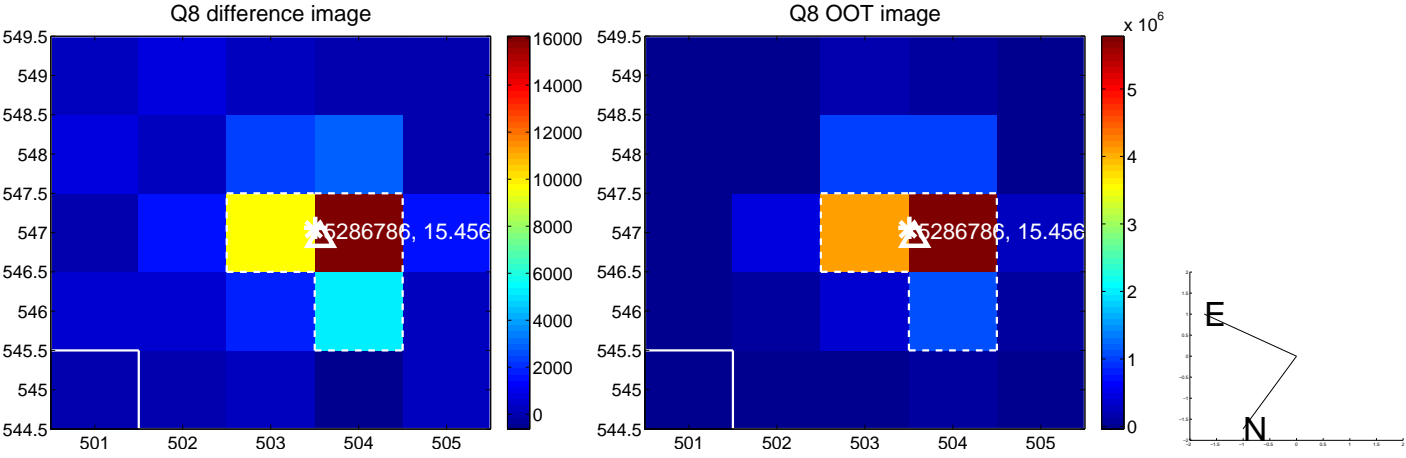
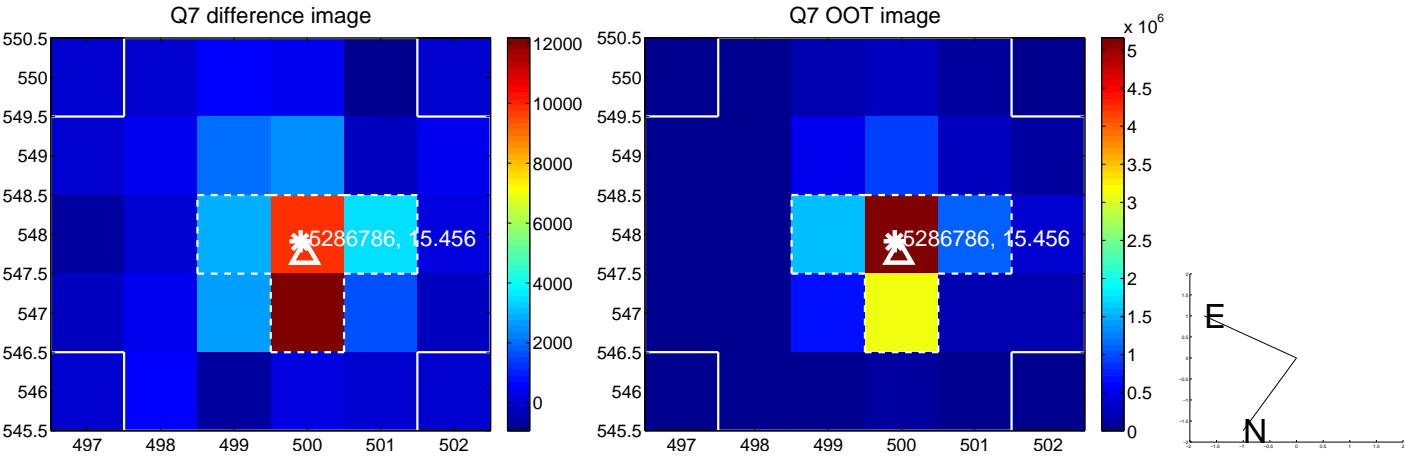
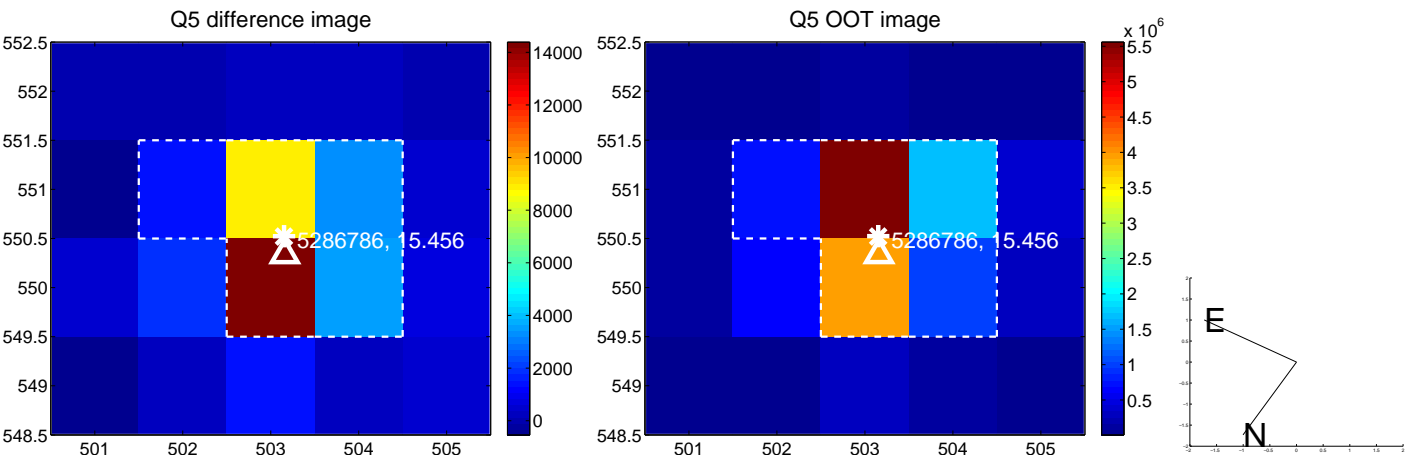


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

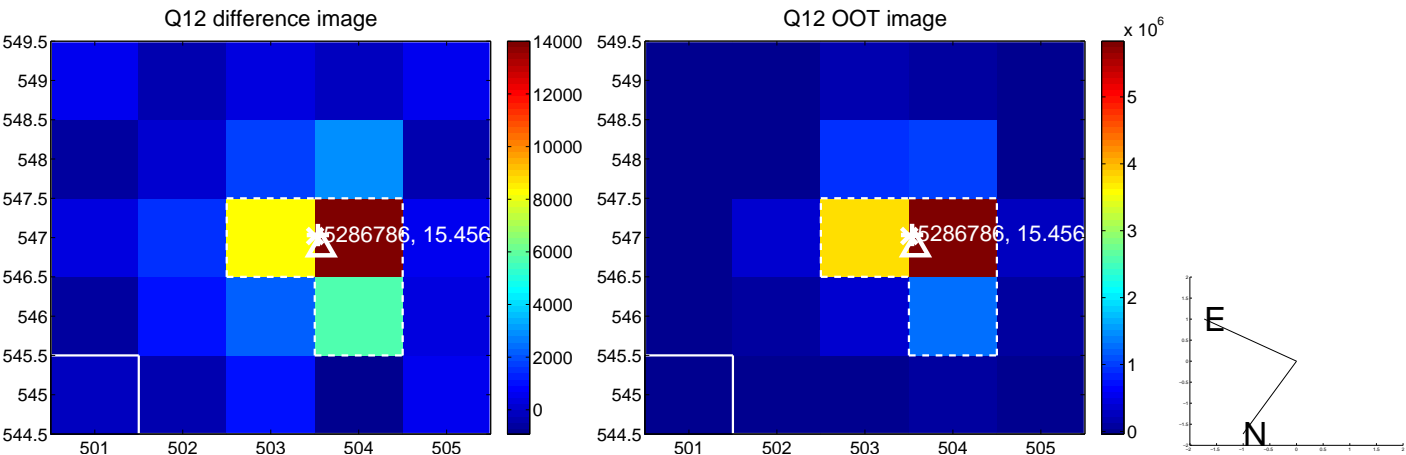
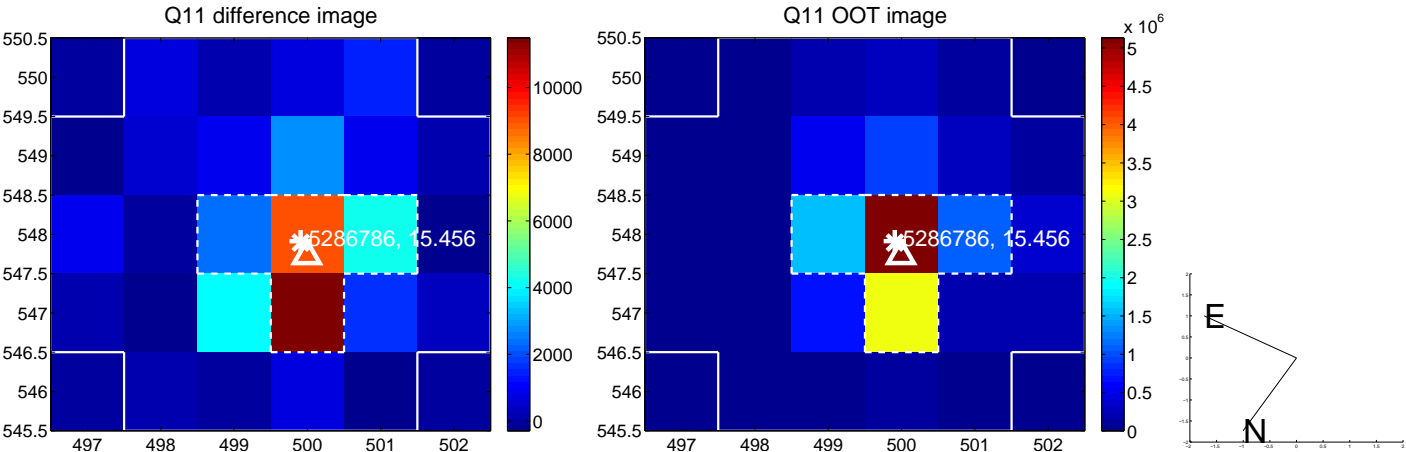
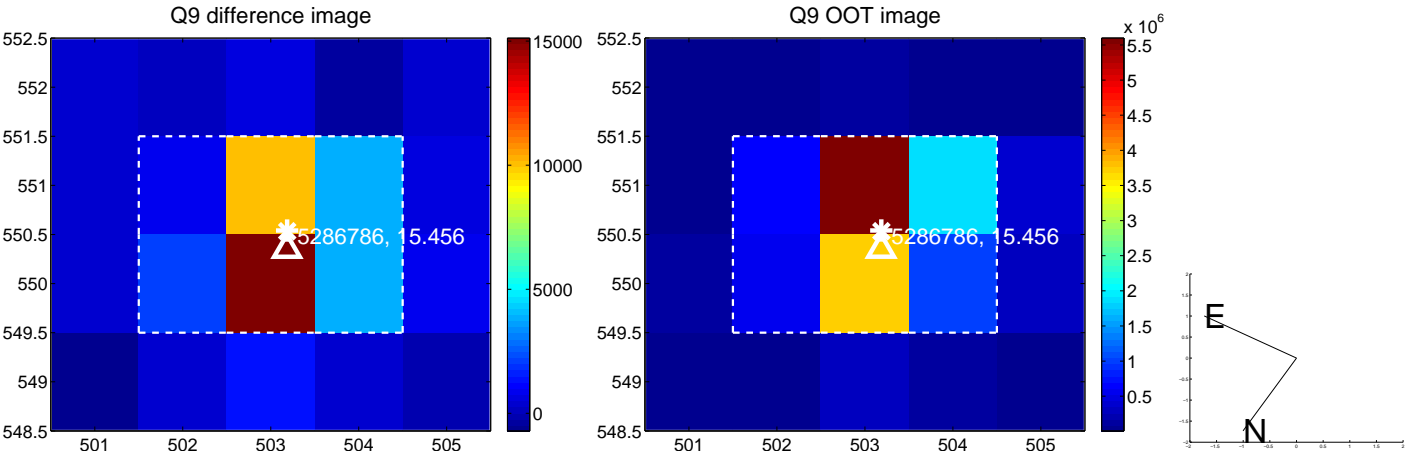
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



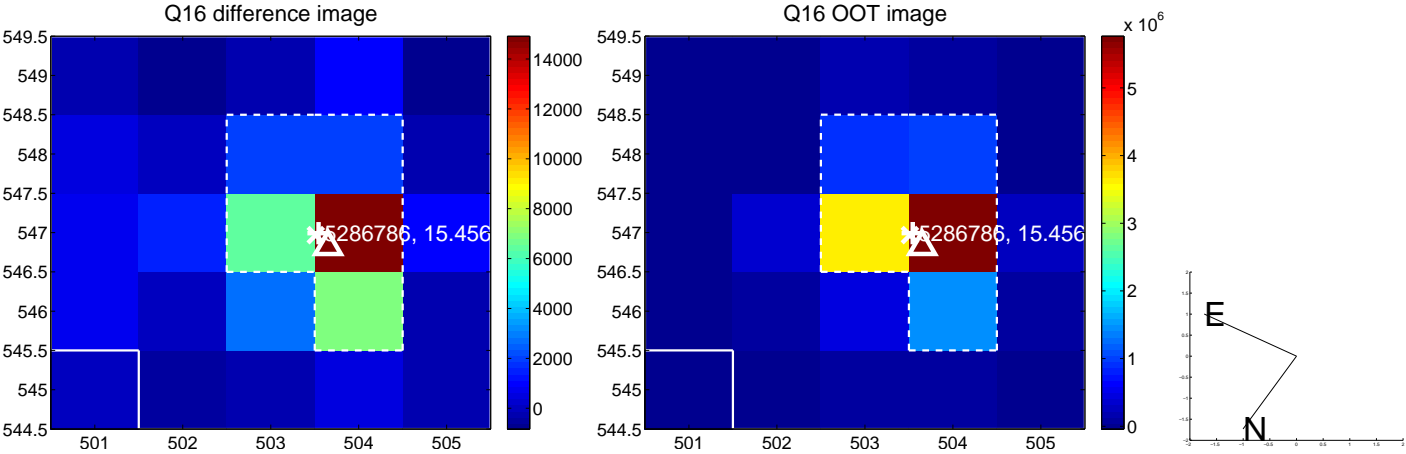
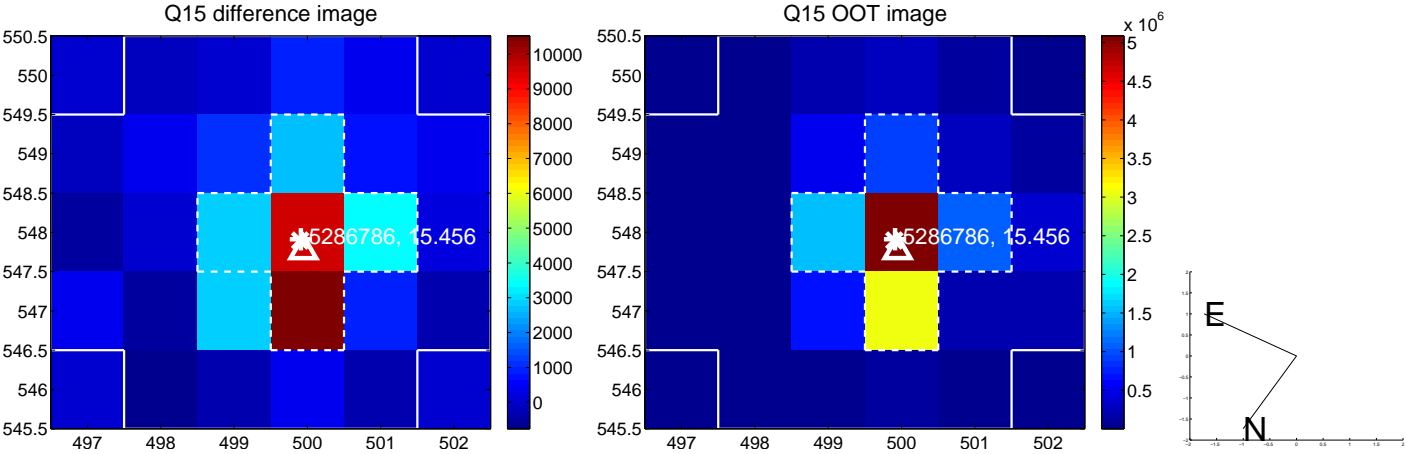
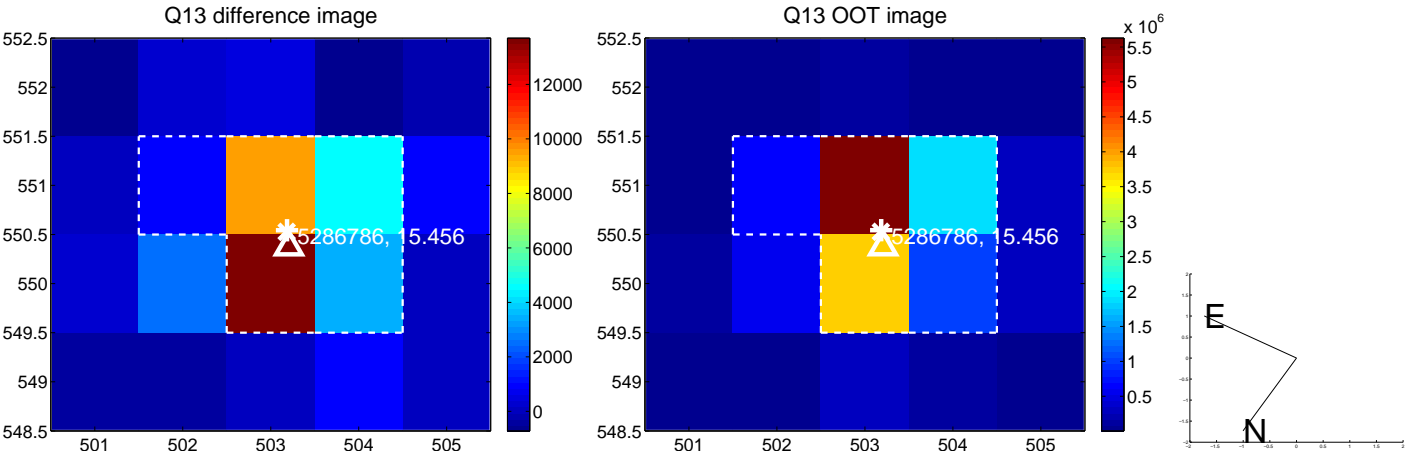
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



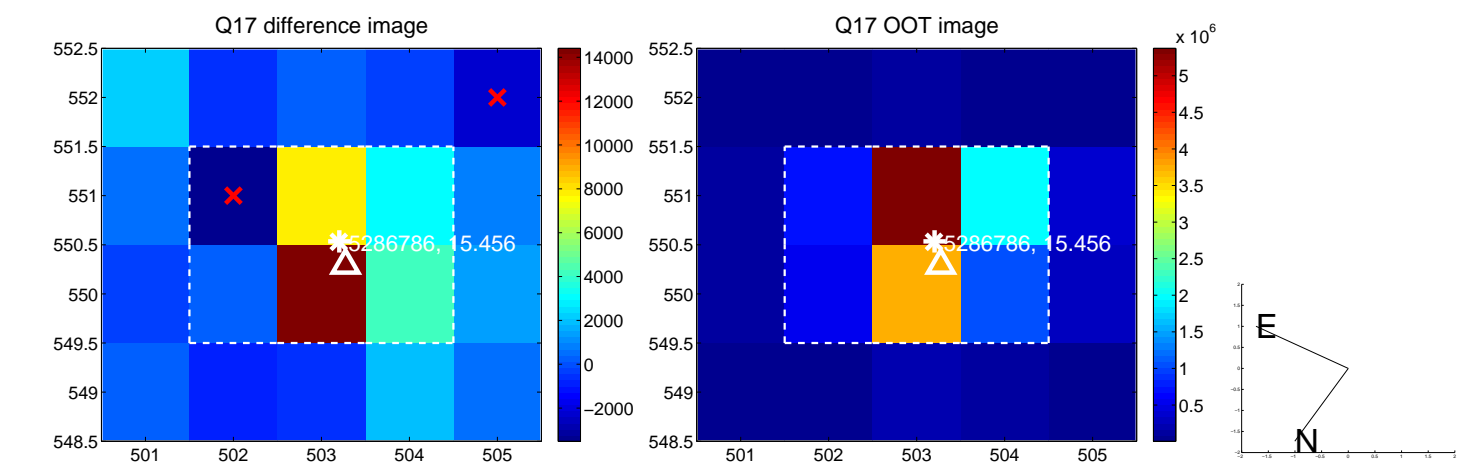
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



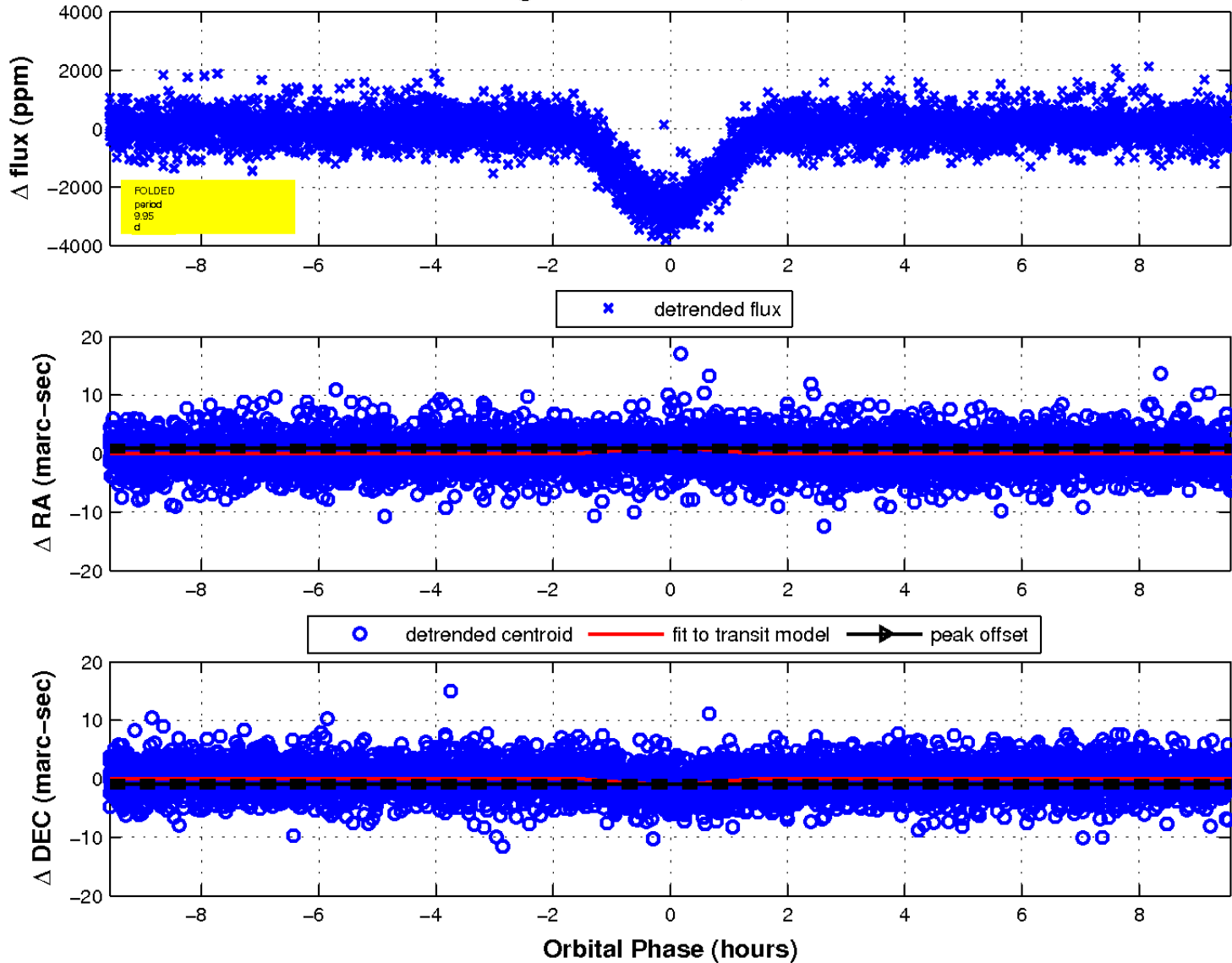
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

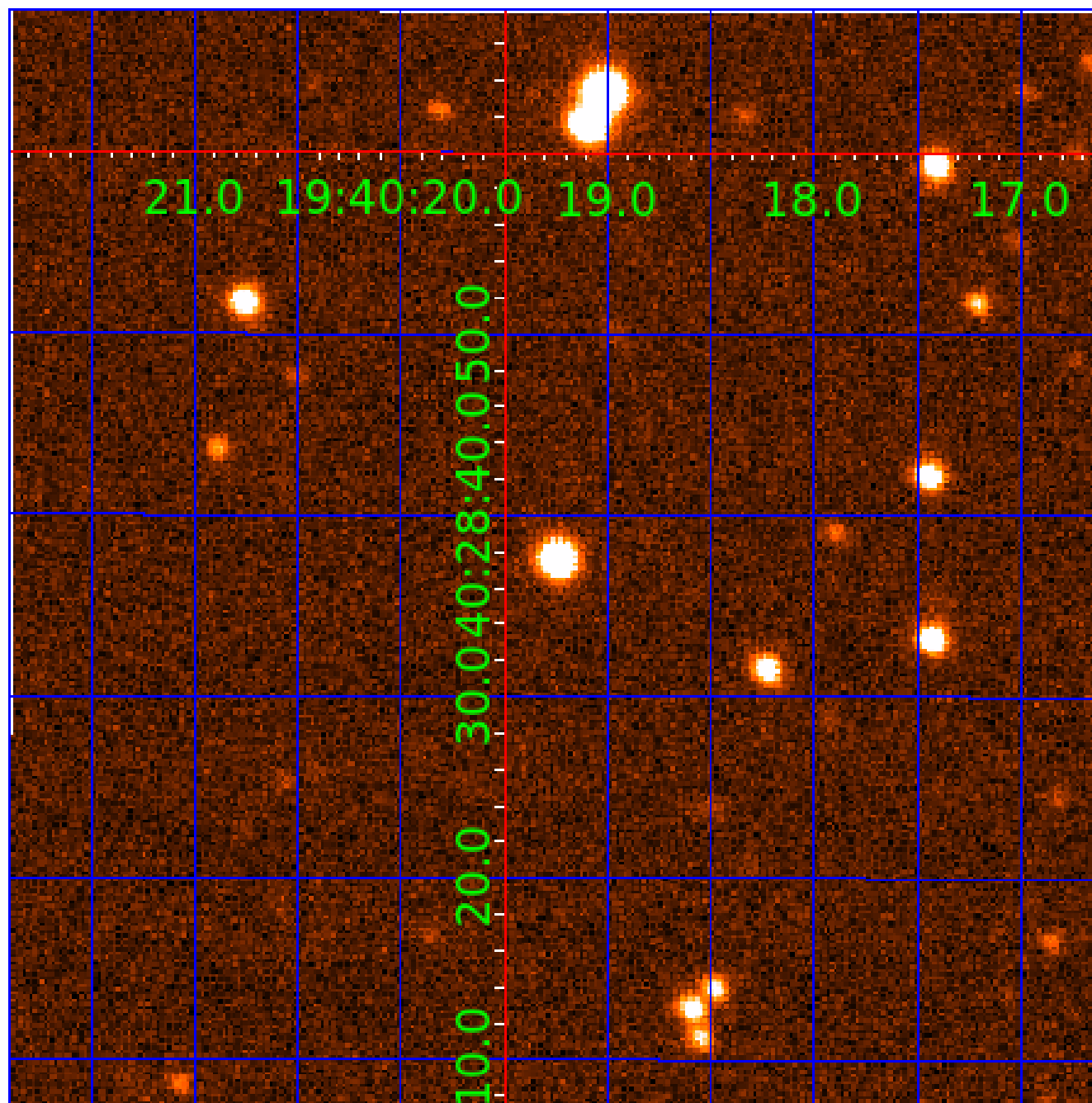


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005286786

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})
005286786-01	OBS	6554.01	9.948712	138.553361	2736.9	3.188	96.0	98.2	0.79	5152	6.62	58.08
005286786-02	OBS	No	9.948740	133.802642	2414.6	3.867	91.7	94.9	0.79	5152	7.12	58.08

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005286786-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—HAS_SEC_TCE
005286786-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

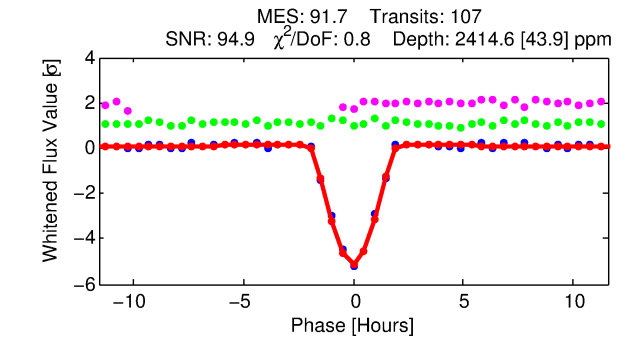
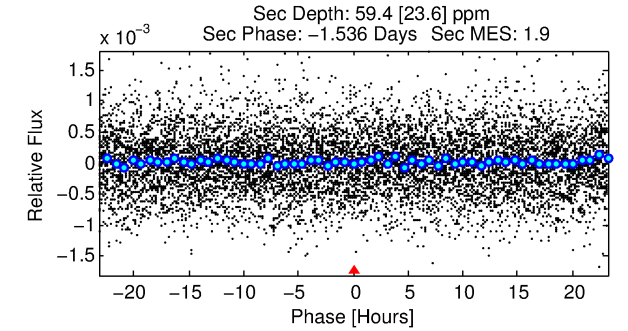
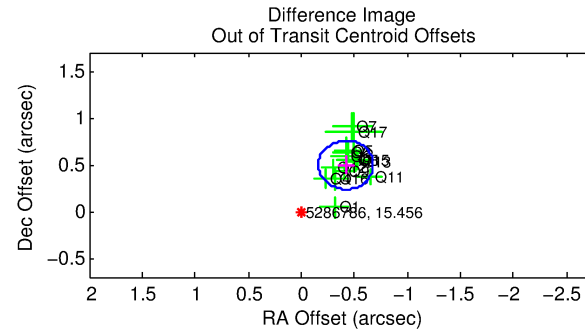
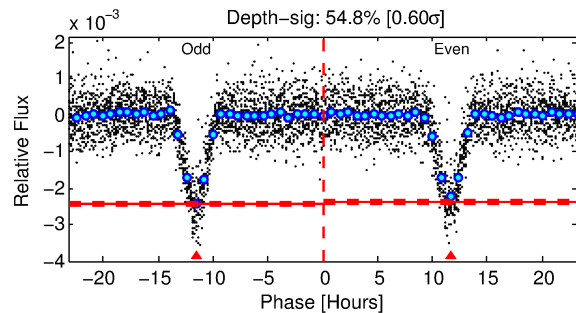
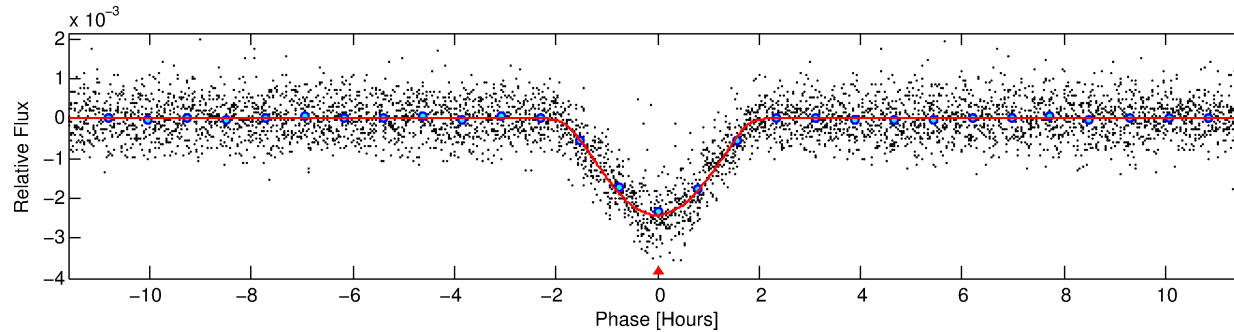
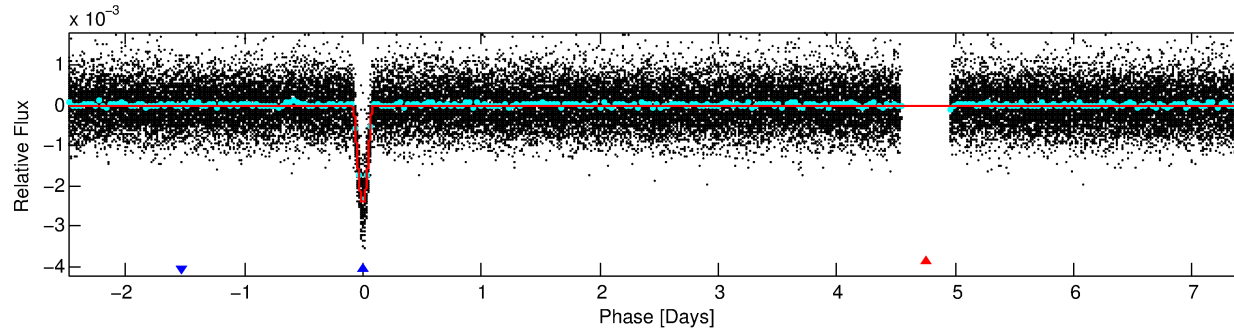
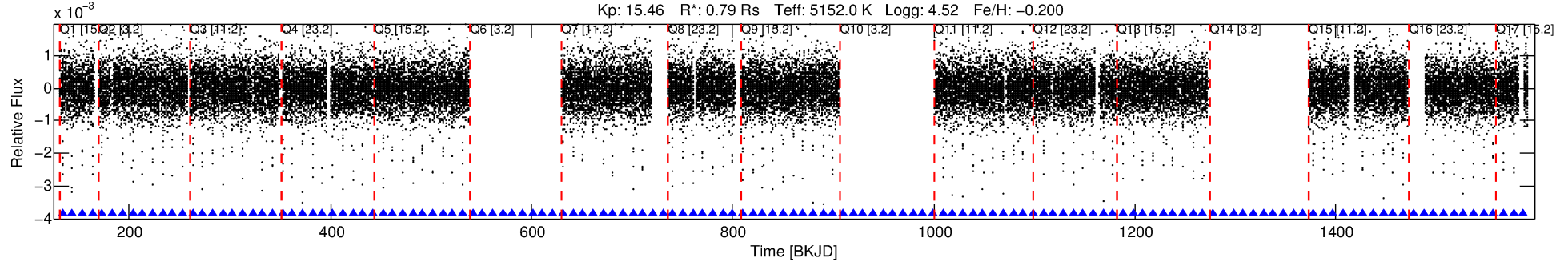
Ephemeris Match Information For 005286786-02

No Significant Match Found

DV One-Page Summary

KIC: 5286786 Candidate: 2 of 2 Period: 9.949 d
KOI: K06554 Corr: No Ephemeris Match

Kp: 15.46 R*: 0.79 Rs Teff: 5152.0 K Logg: 4.52 Fe/H: -0.200



DV Fit Results:

Period = 9.94874 [0.00001] d
Epoch = 133.8026 [0.0009] BKJD
Rp/R* = 0.0830 [0.0375]
a/R* = 8.56 [0.85]
b = 0.99 [0.06]
Seff = 58.08 [11.59]
Teq = 704 [35] K
Rp = 7.12 [3.33] Re
a = 0.0819 [0.0087] AU
Ag = 4.33 [4.33] [0.77σ]
Teffp = 1570 [390] K [2.21σ]

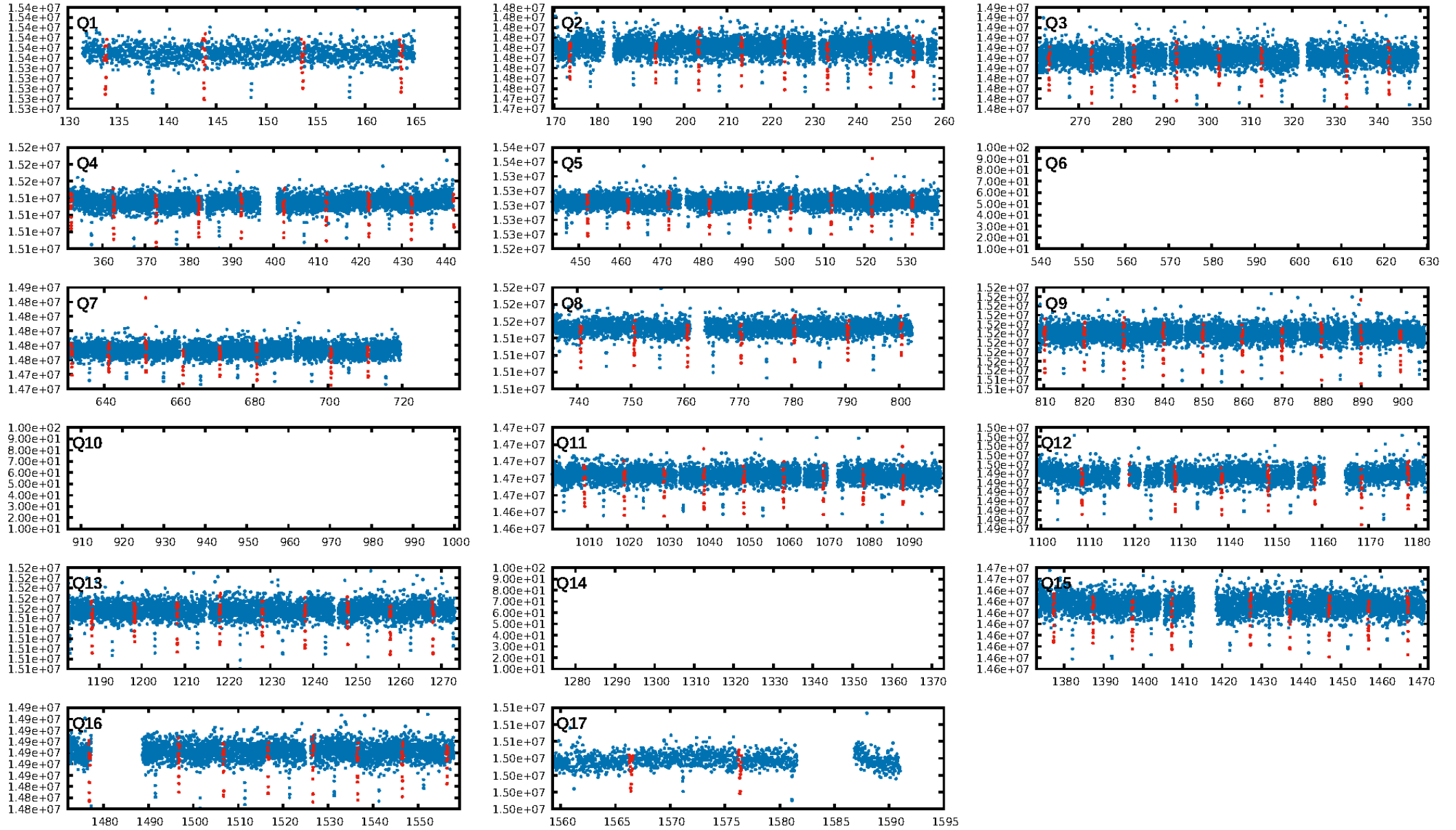
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 57.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [101/101]
GhostDiagnostic-chr: 7.228
Centroid-sig: 0.0%
Centroid-so: 0.689 arcsec [4.00σ]
OotOffset-rm: 0.651 arcsec [7.51σ]
KicOffset-rm: 0.602 arcsec [7.11σ]
OotOffset-st: 1/4/4/5 [14]
KicOffset-st: 1/4/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

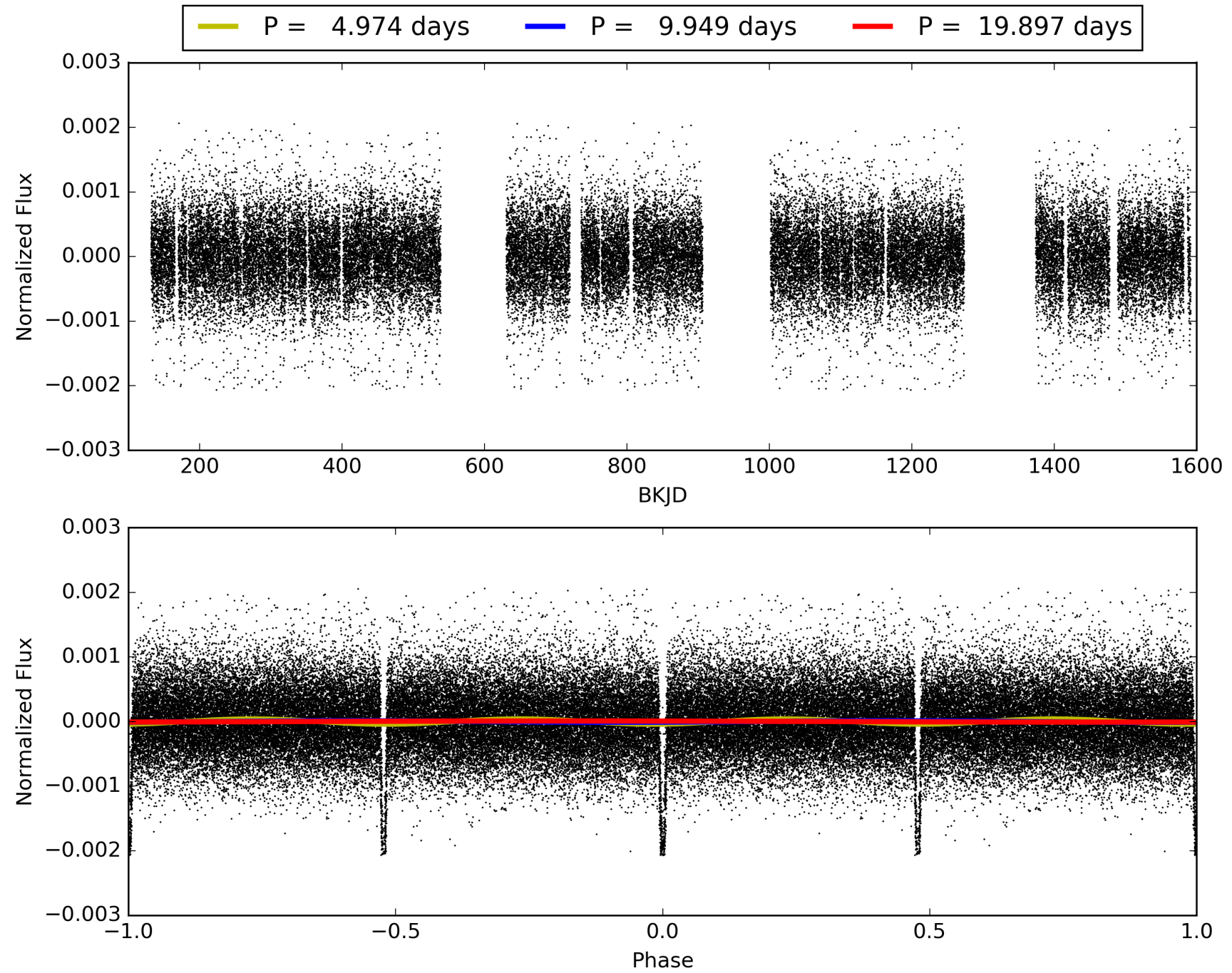
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 02:21:57 Z

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

TCE 005286786-02, PDC Light Curves

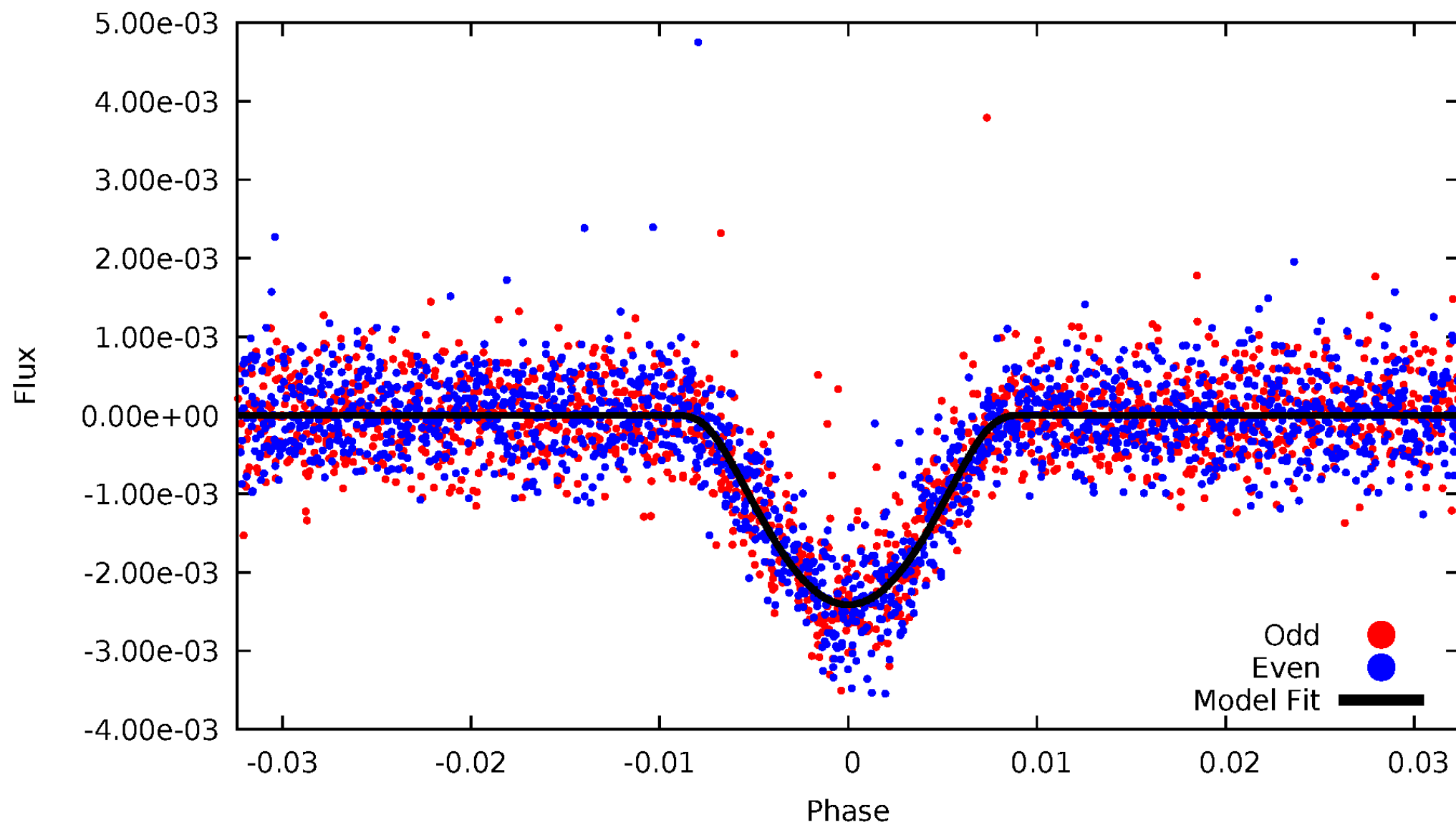


TCE 005286786-02



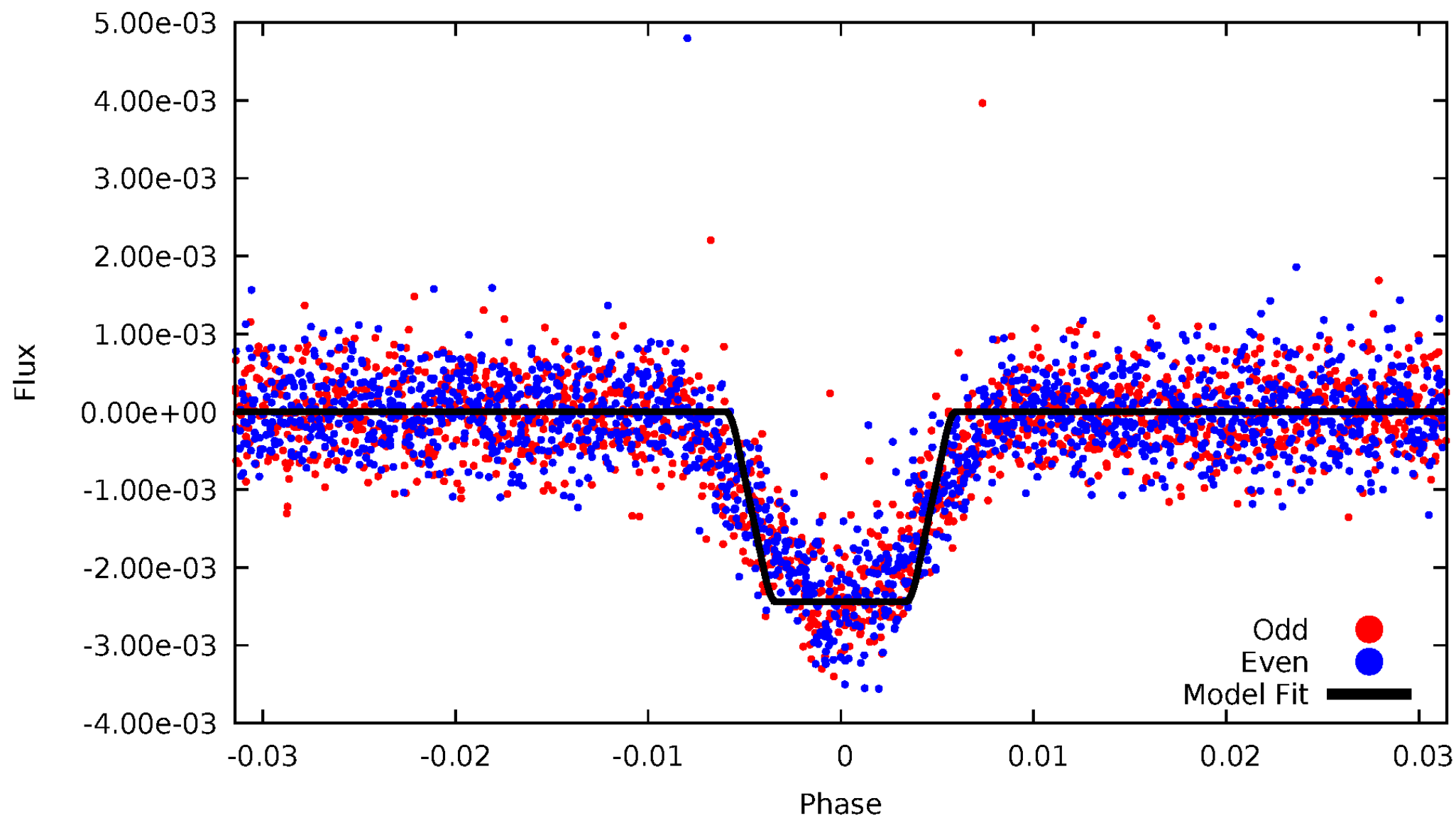
DV Odd/Even

TCE 005286786-02



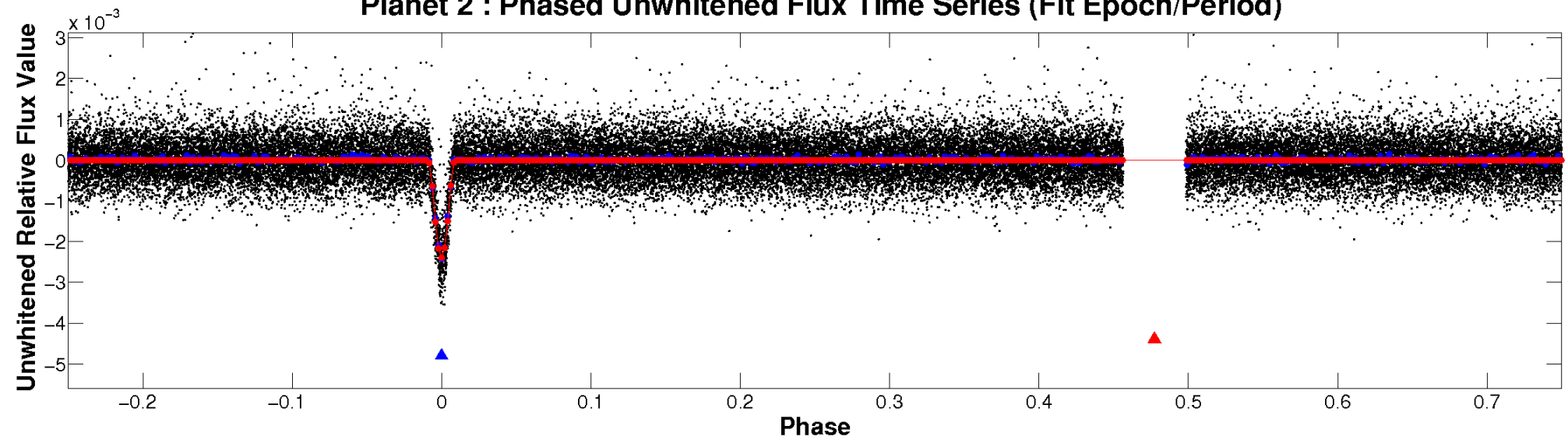
ALT Odd/Even

TCE 005286786-02

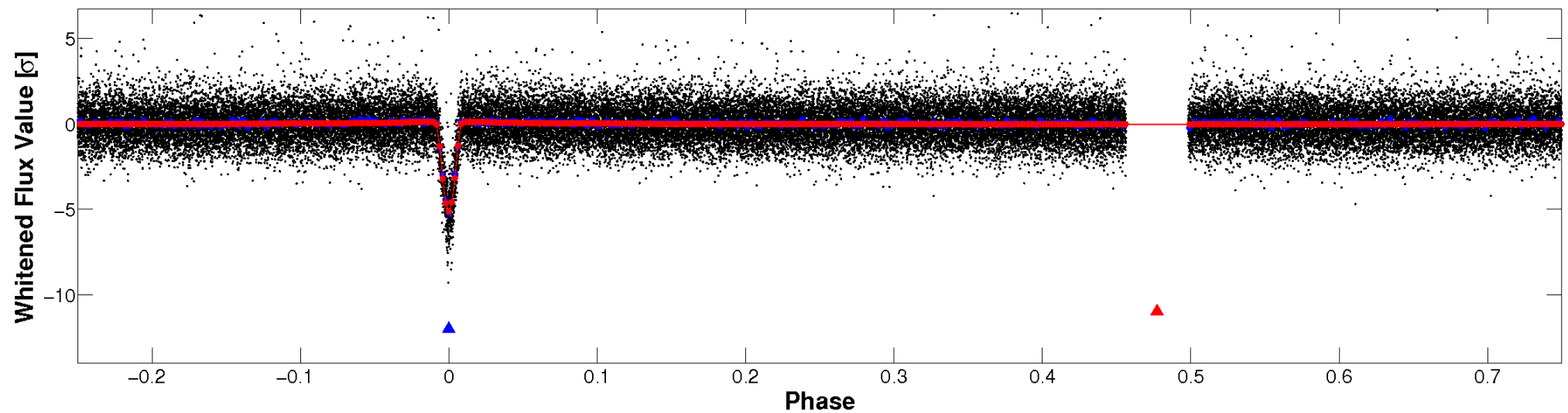


Non-Whitened Vs. Whitened Light Curve

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

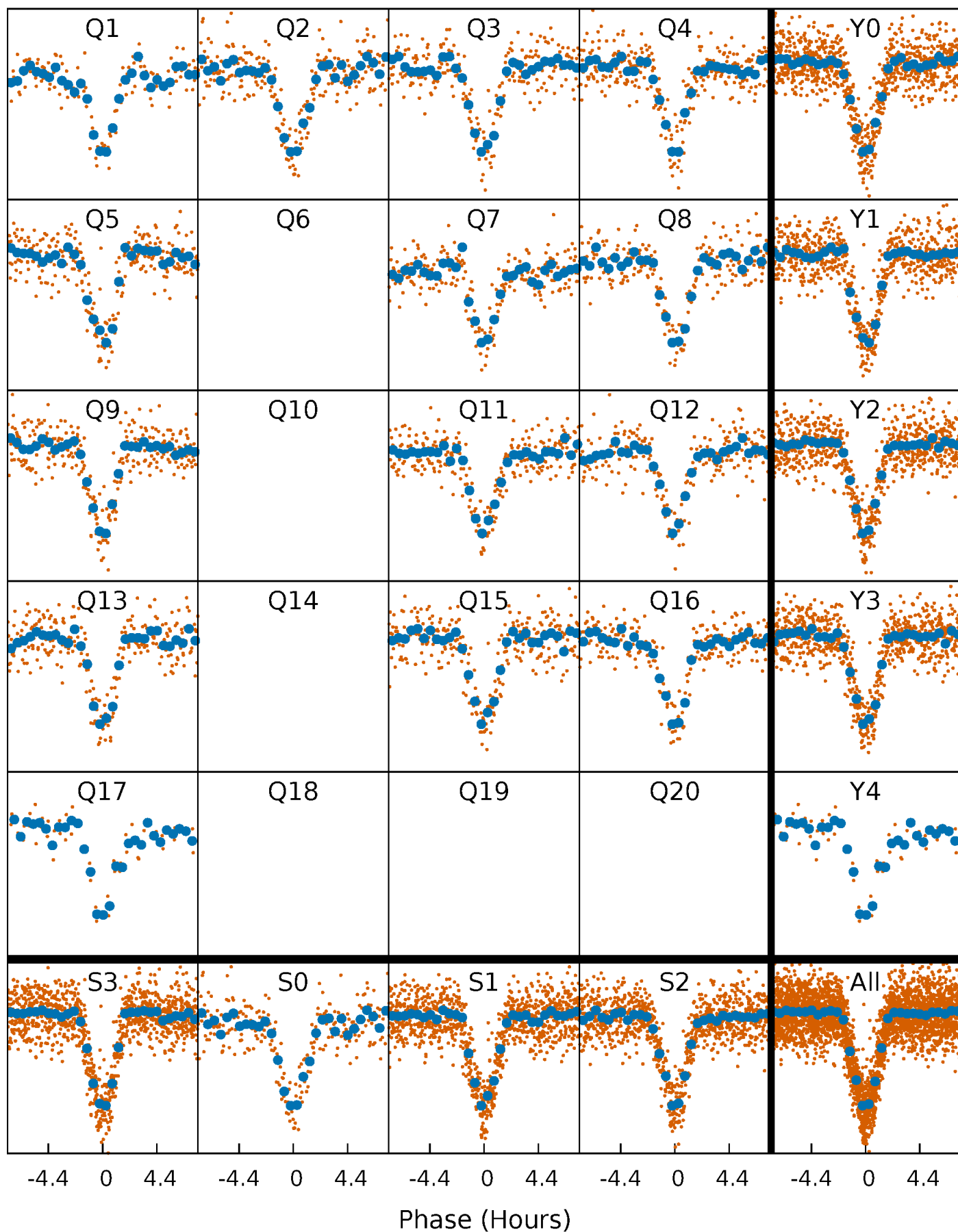


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



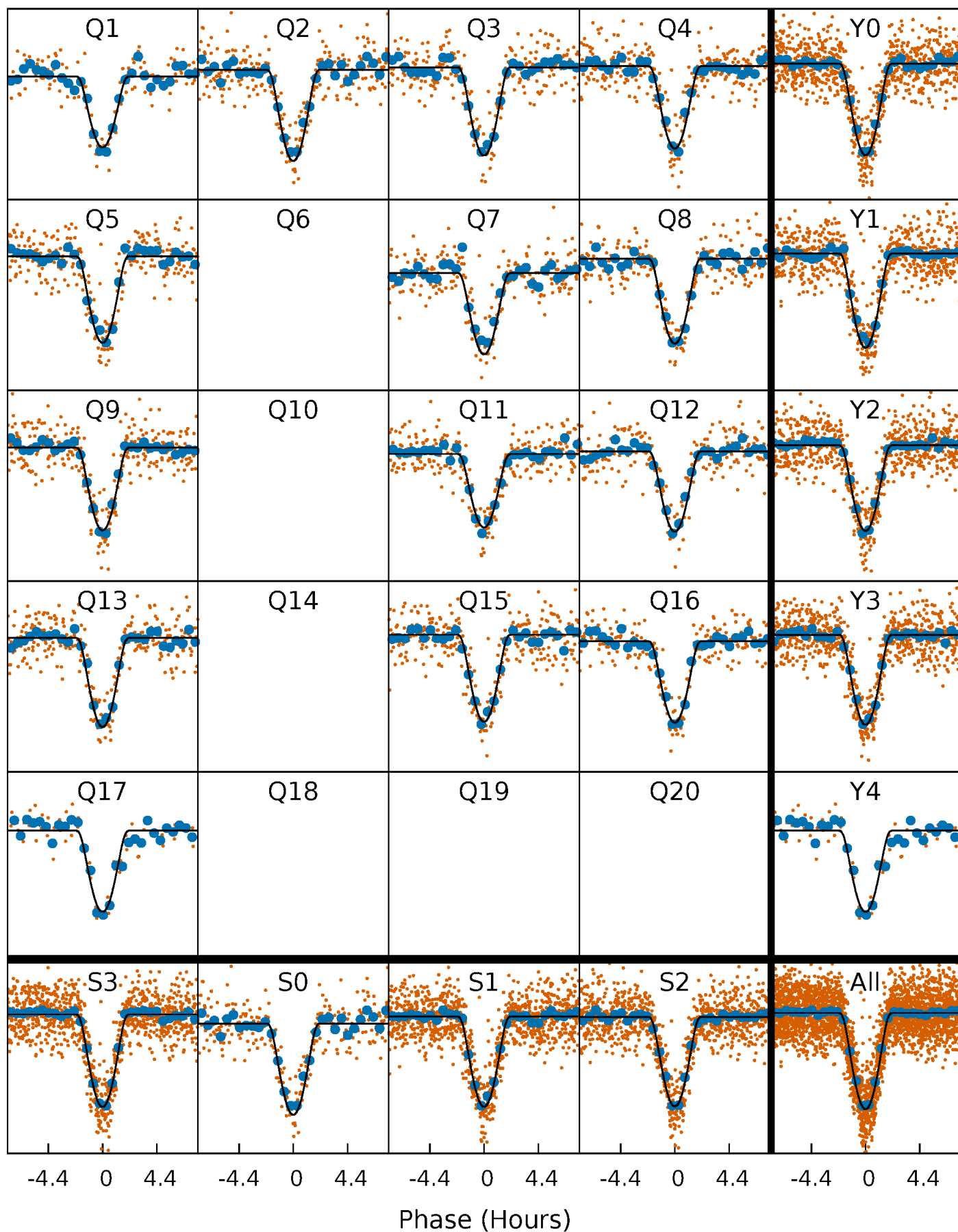
PDC Quarter-Phased Transit Curves

TCE 005286786-02 $P = 9.948740$ Days $T_0 = 133.802642$ (BKJD)



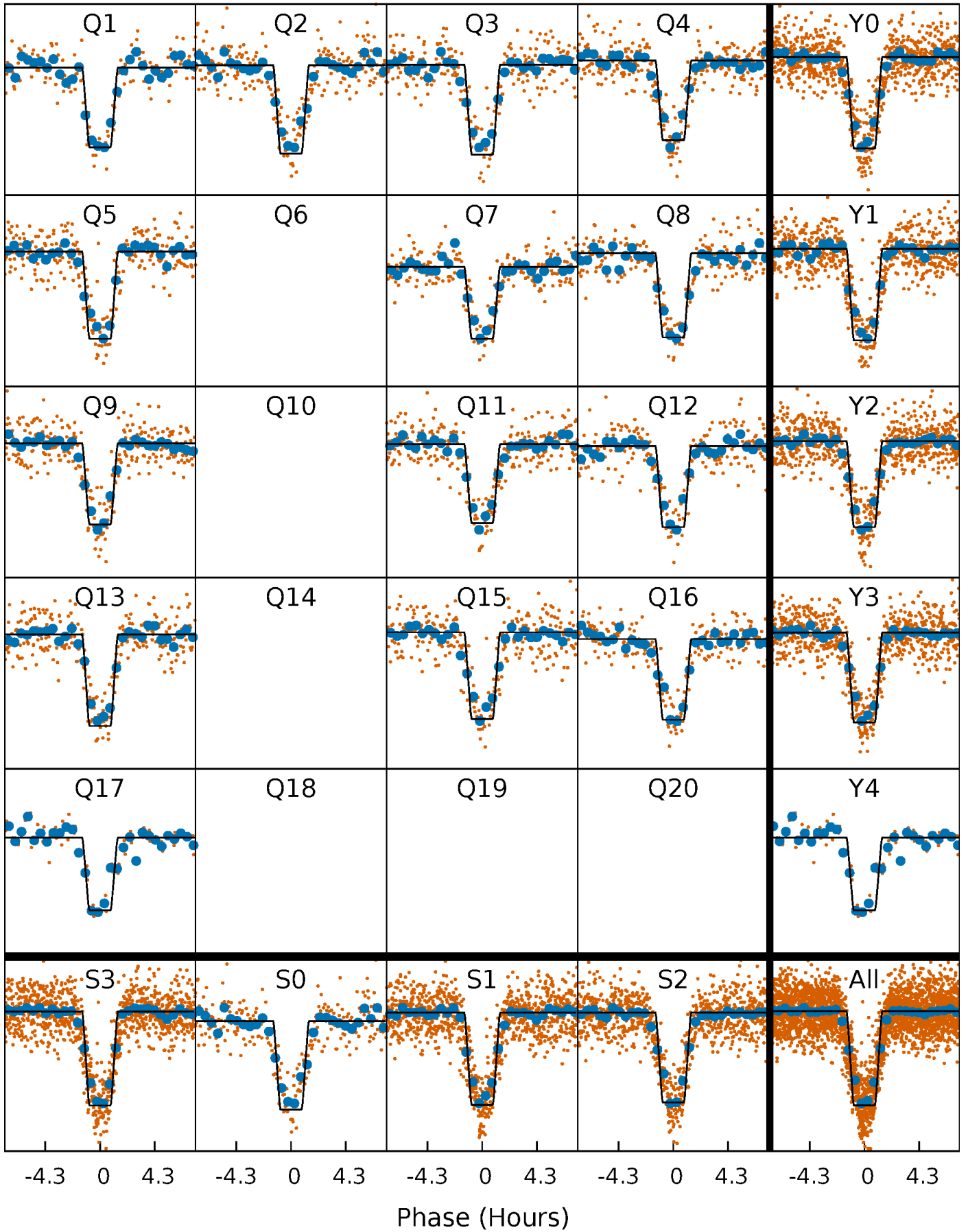
DV Quarter-Phased Transit Curves

TCE 005286786-02 P= 9.948740 Days $T_0=133.802642$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

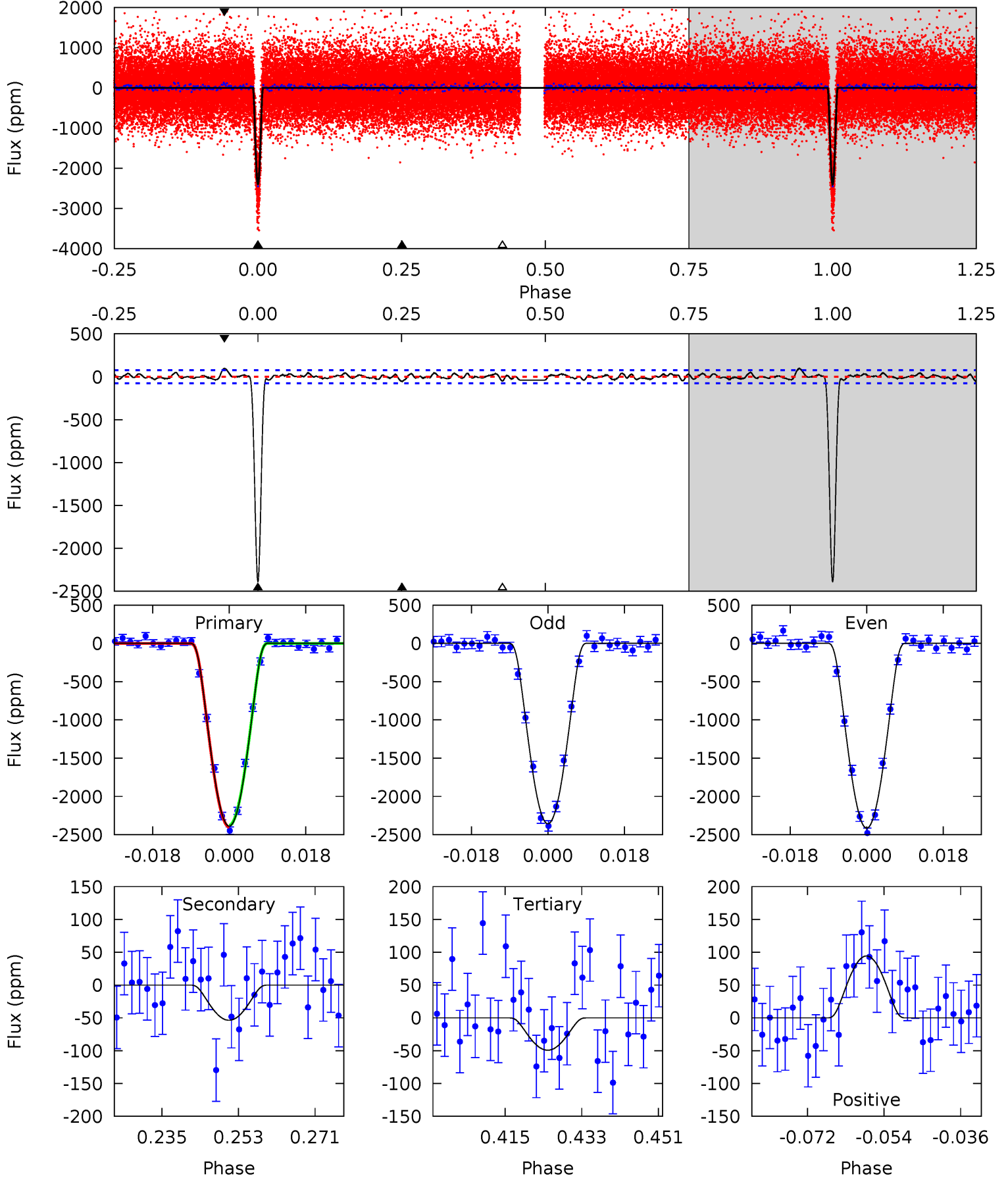
TCE 005286786-02 P= 9.948736 Days $T_0=133.802888$ (BKJD)



DV Model-Shift Uniqueness Test

005286786-02, P = 9.948740 Days, E = 123.853902 Days

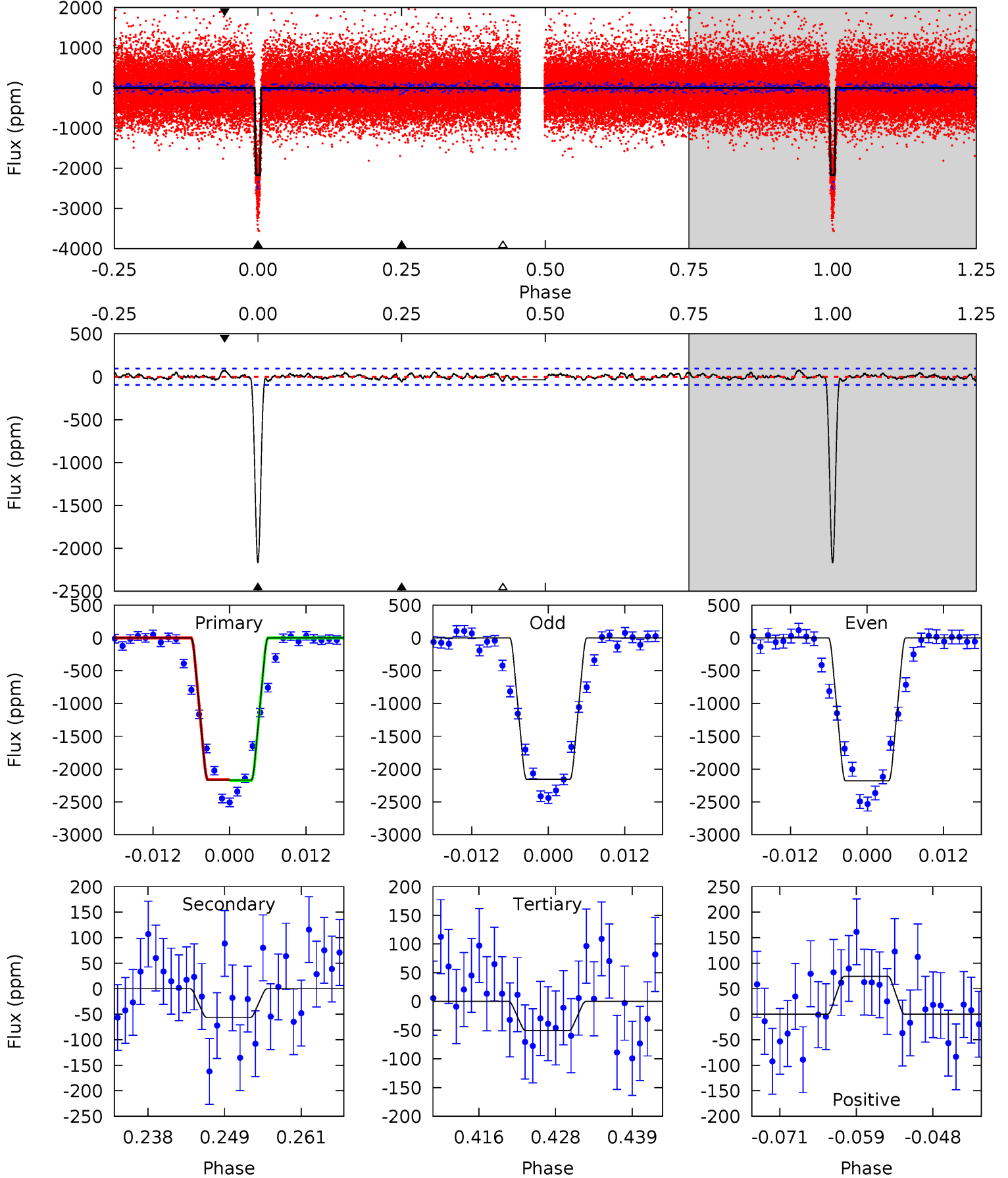
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
154.1	3.46	3.18	6.09	4.91	2.36	1.37	150.9	148.0	0.28	-2.62	1.84	0.97	0.04	0.66



Alt Model-Shift Uniqueness Test

005286786-02, P = 9.948736 Days, E = 123.854152 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
113.5	2.96	2.66	3.90	4.99	2.52	1.11	110.8	109.6	0.30	-0.94	0.56	0.99	0.03	0.32



Stellar Parameters For KIC 005286786

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5152^{+153}_{-153}	$4.517^{+0.090}_{-0.090}$	$-0.200^{+0.300}_{-0.300}$	$0.786^{+0.096}_{-0.096}$	$0.741^{+0.106}_{-0.057}$	$2.149^{+0.789}_{-0.578}$
	+3%/-3%	+2%/-2%	+150%/-150%	+12%/-12%	+14%/-8%	+37%/-27%
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 005286786-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-54 ± 15	$7.35^{+3.46}_{-3.15}$	983^{+45}_{-42}	2363^{+373}_{-241}	$3.725^{+7.620}_{-2.138}$
Alt.	-57 ± 19	$4.66^{+3.03}_{-2.66}$	984^{+43}_{-43}	2654^{+709}_{-330}	$9.385^{+40.896}_{-6.079}$

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 $A_{obs} \gg 1.0$

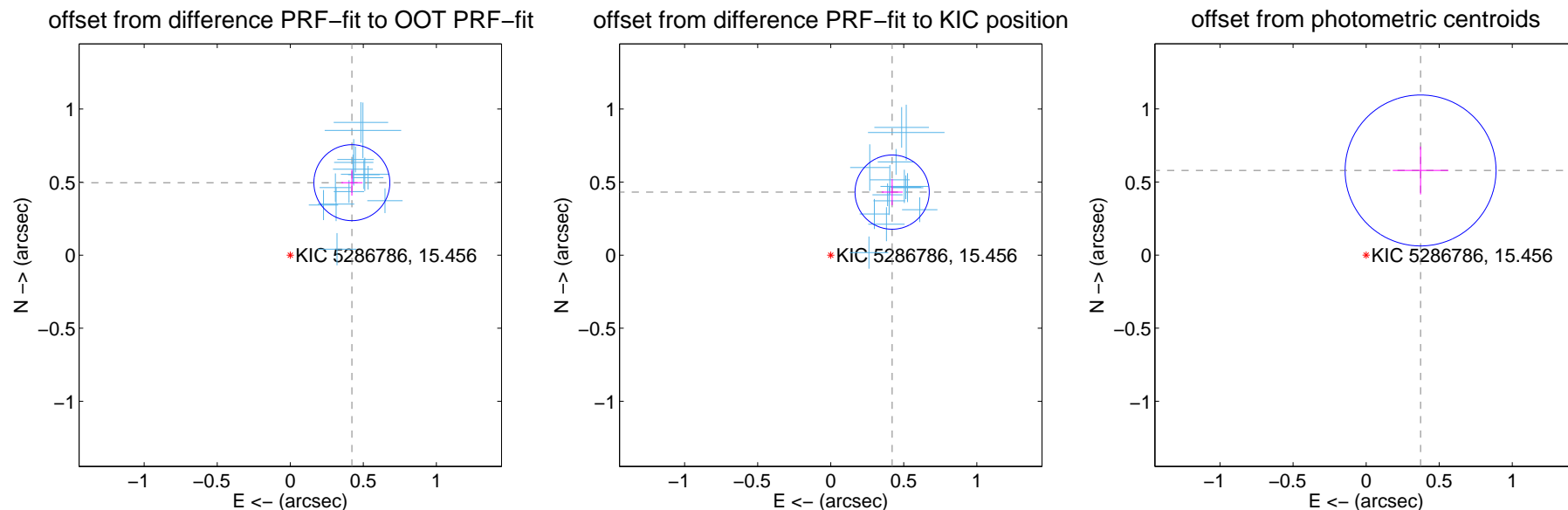
DV Centroid Data

Supplemental centroid analysis for 005286786-02. Kepler magnitude: 15.46. Transit SNR 94.86

There are 14 quarters with good PRF difference image offsets

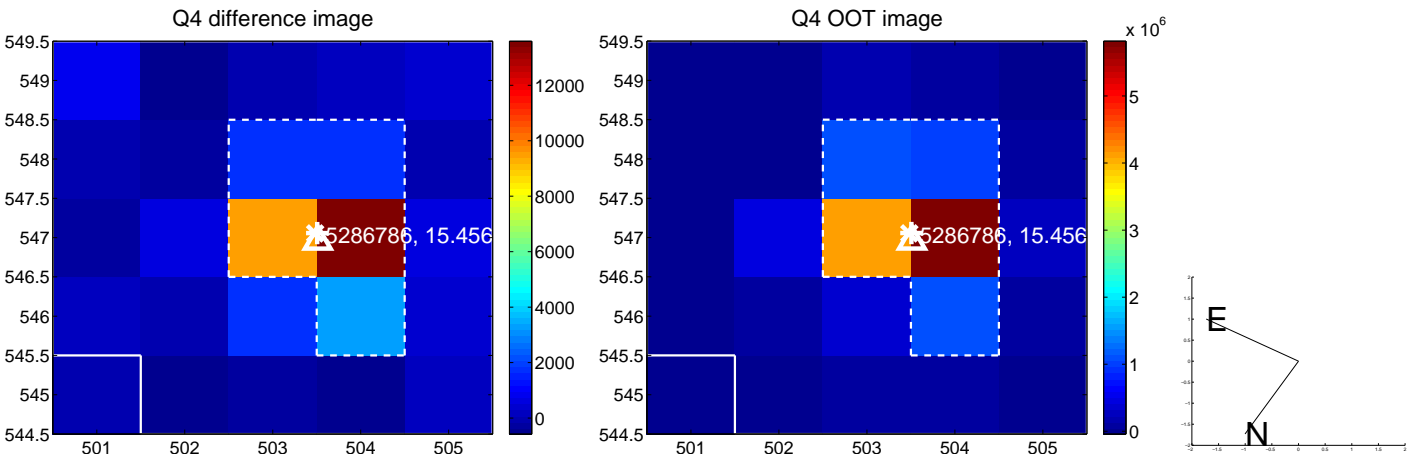
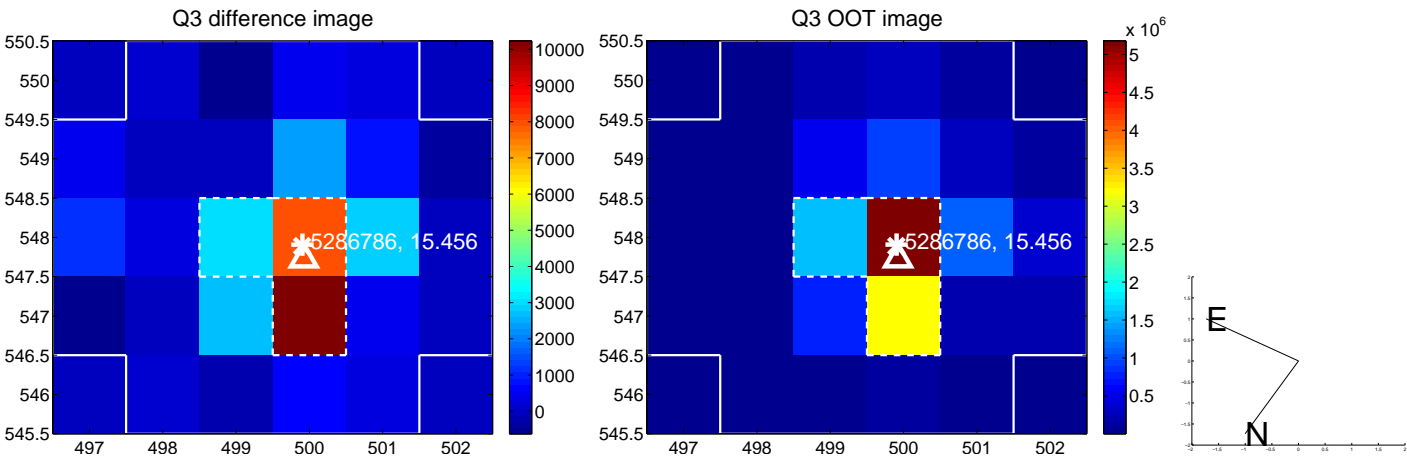
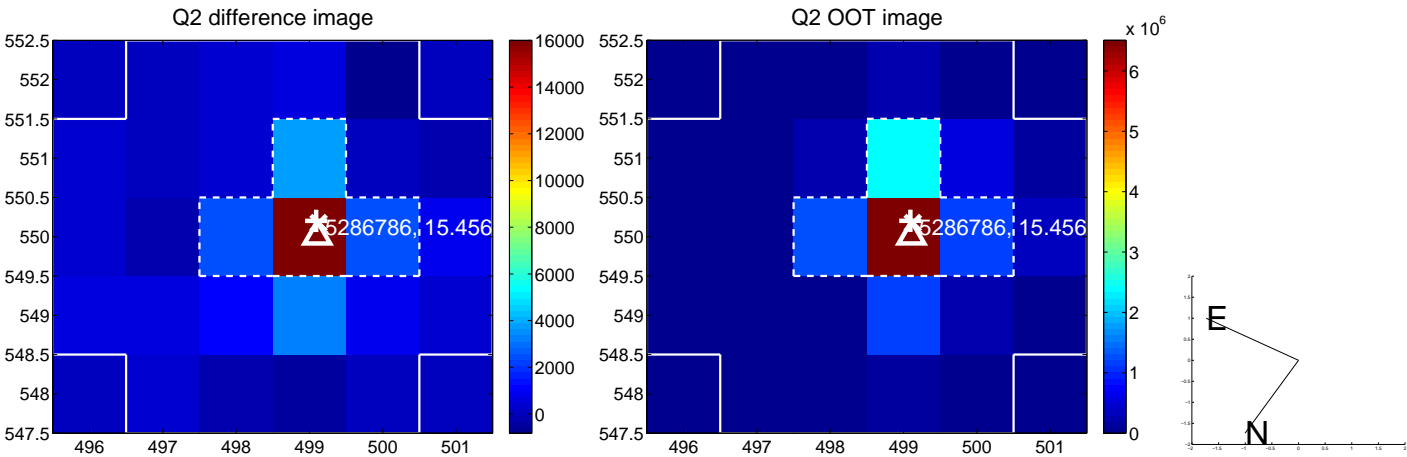
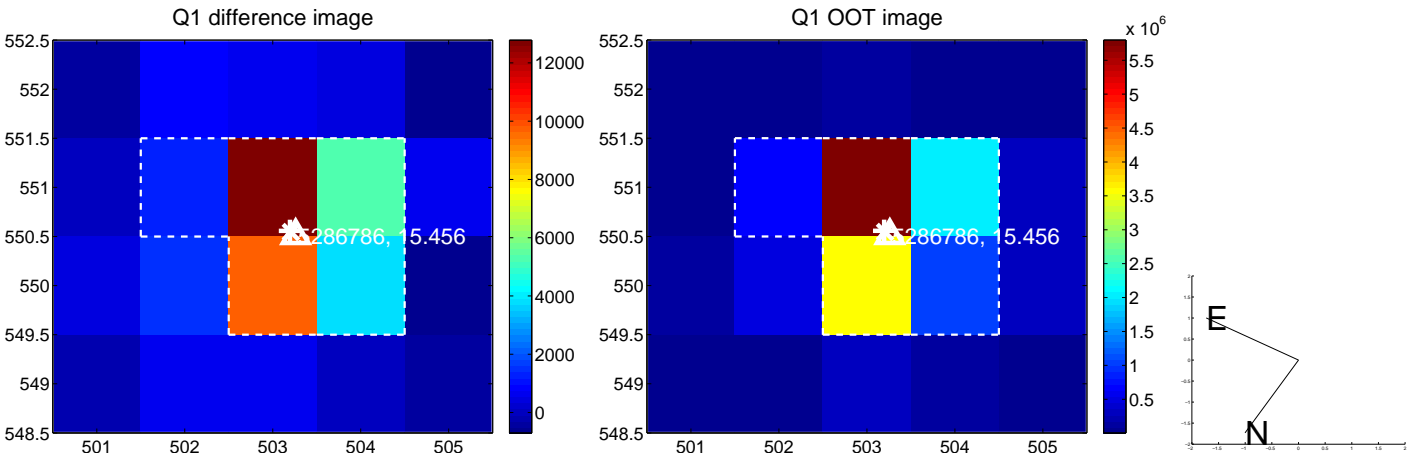
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.651 ± 0.087	7.51	-0.422 ± 0.073	0.496 ± 0.089
PRF-fit source offset from KIC position	0.602 ± 0.085	7.11	-0.420 ± 0.072	0.431 ± 0.090
photometric centroid source offset	0.69 ± 0.17	4.00	-0.37 ± 0.19	0.58 ± 0.16

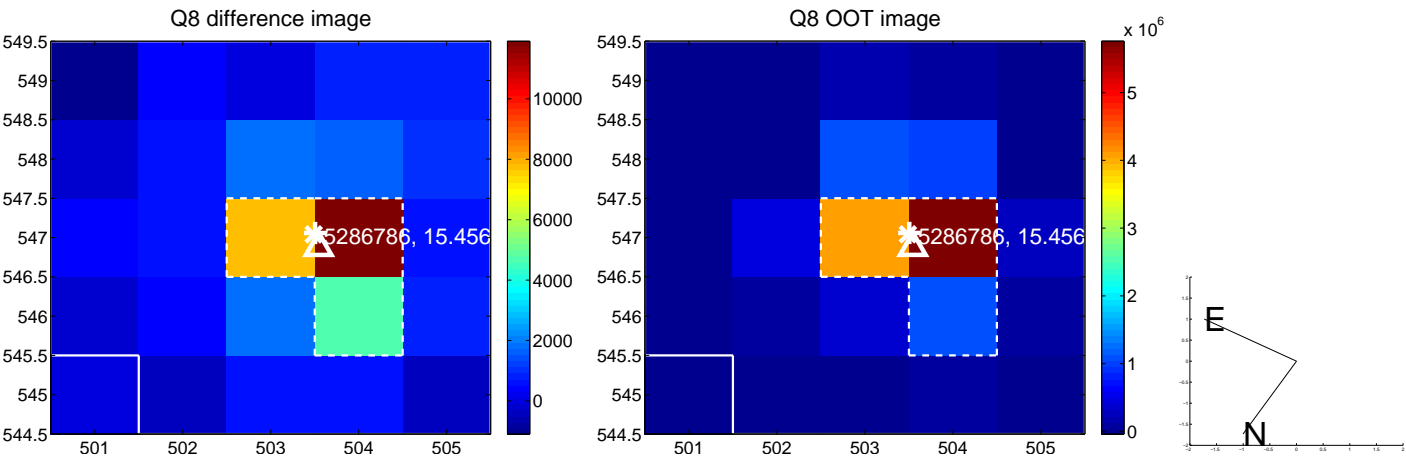
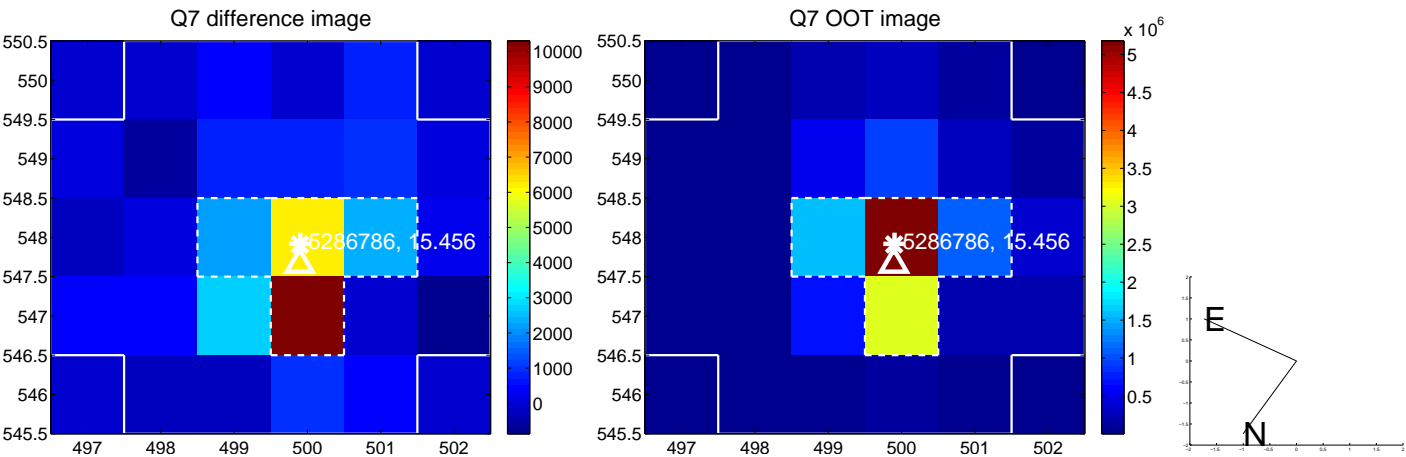
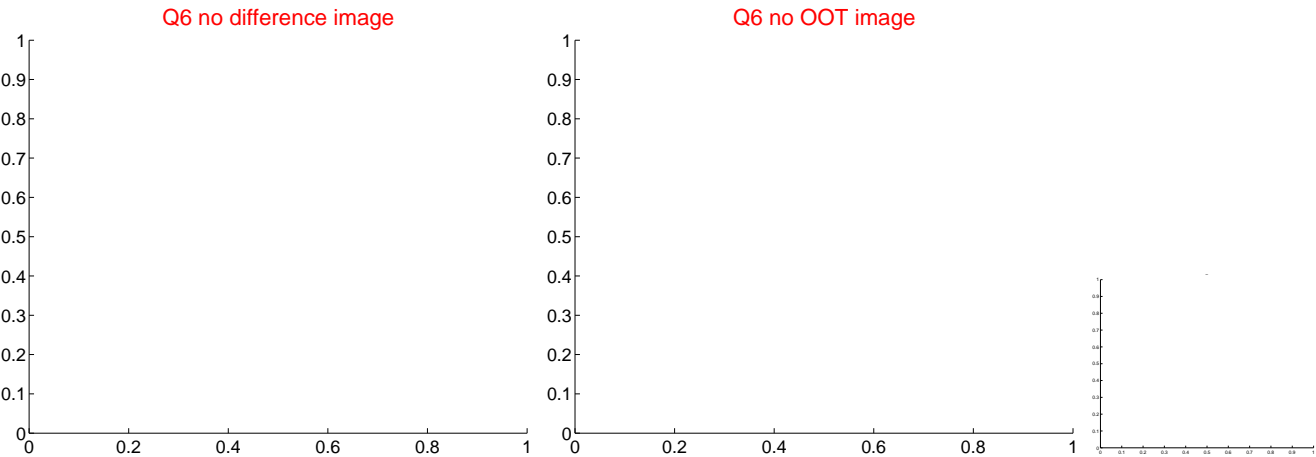
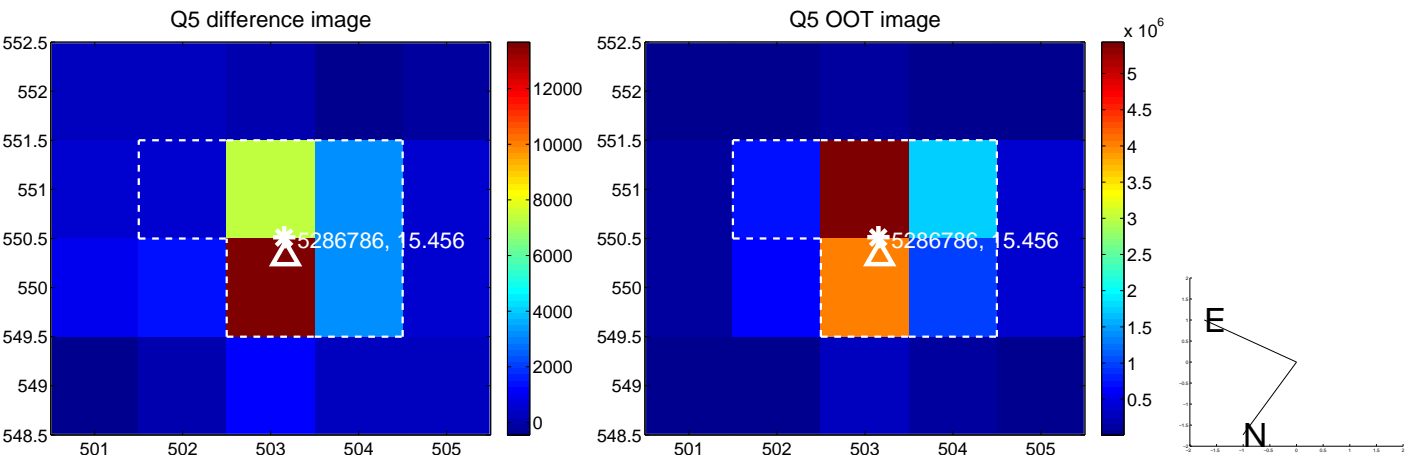


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

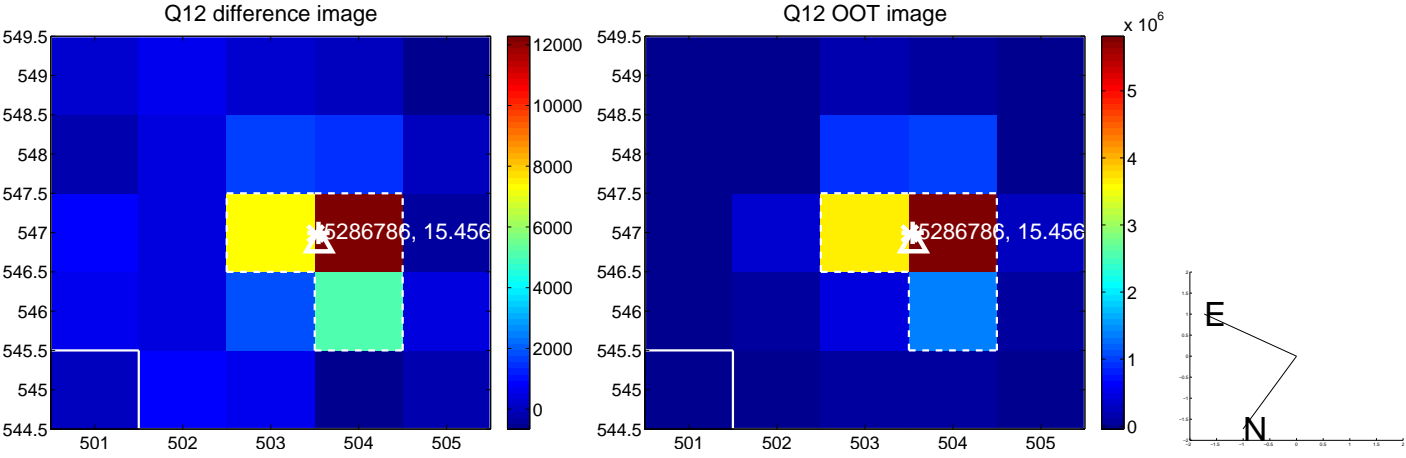
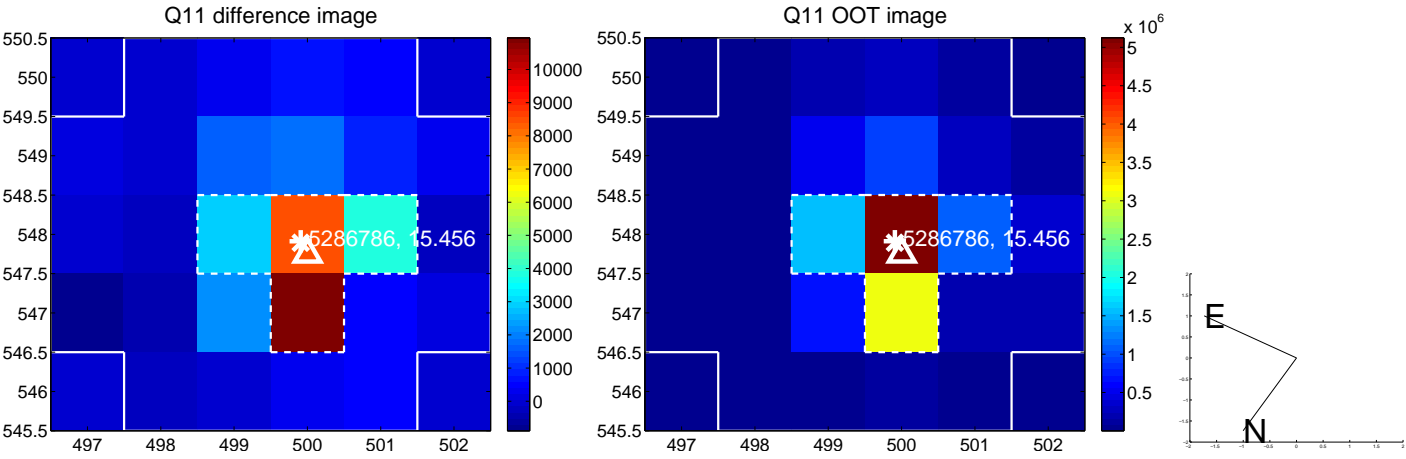
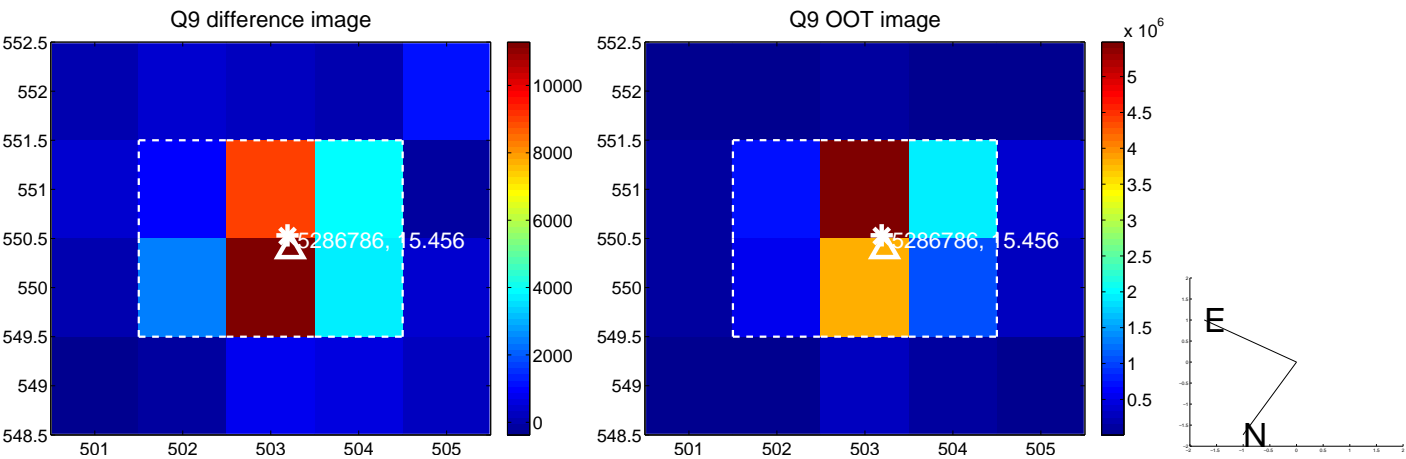
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



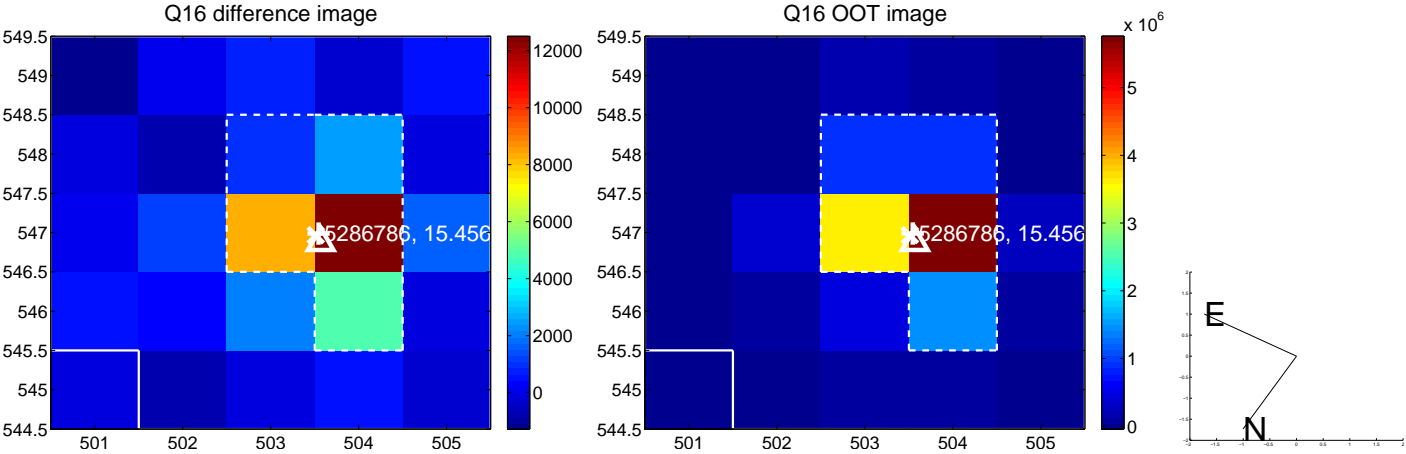
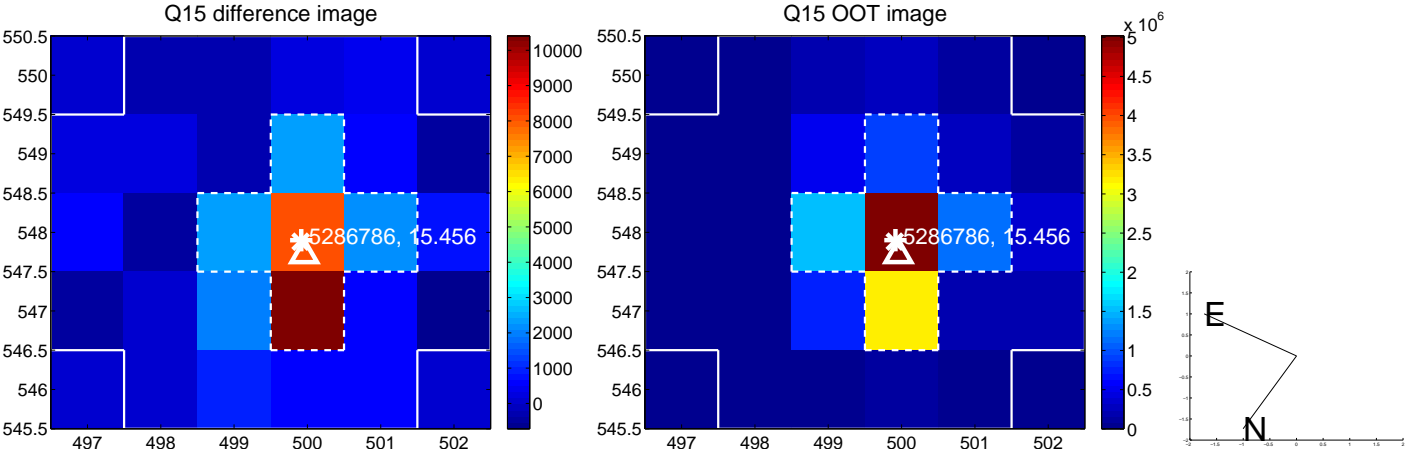
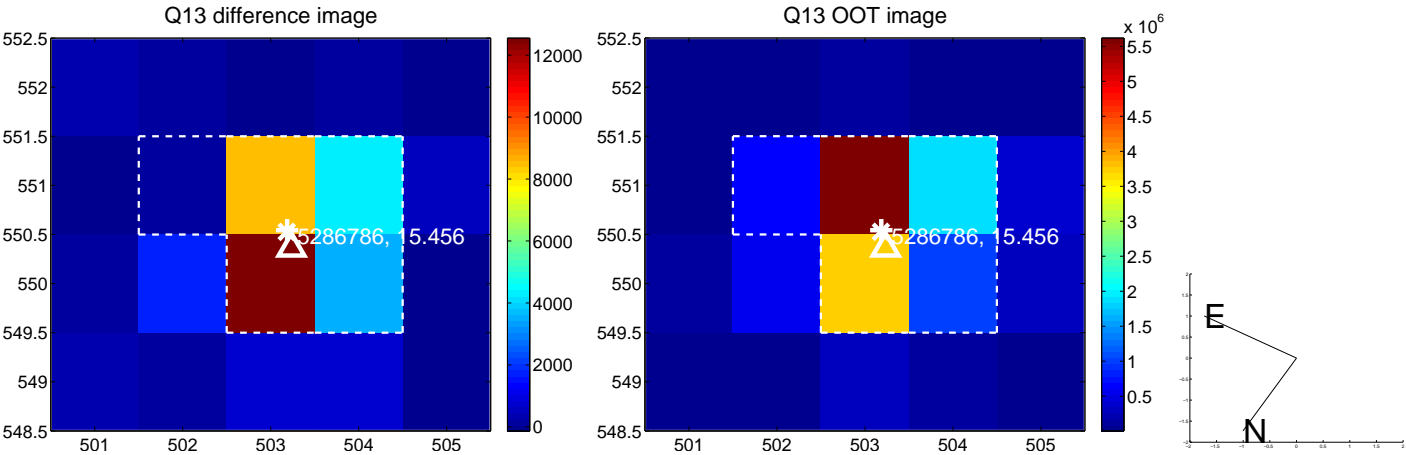
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



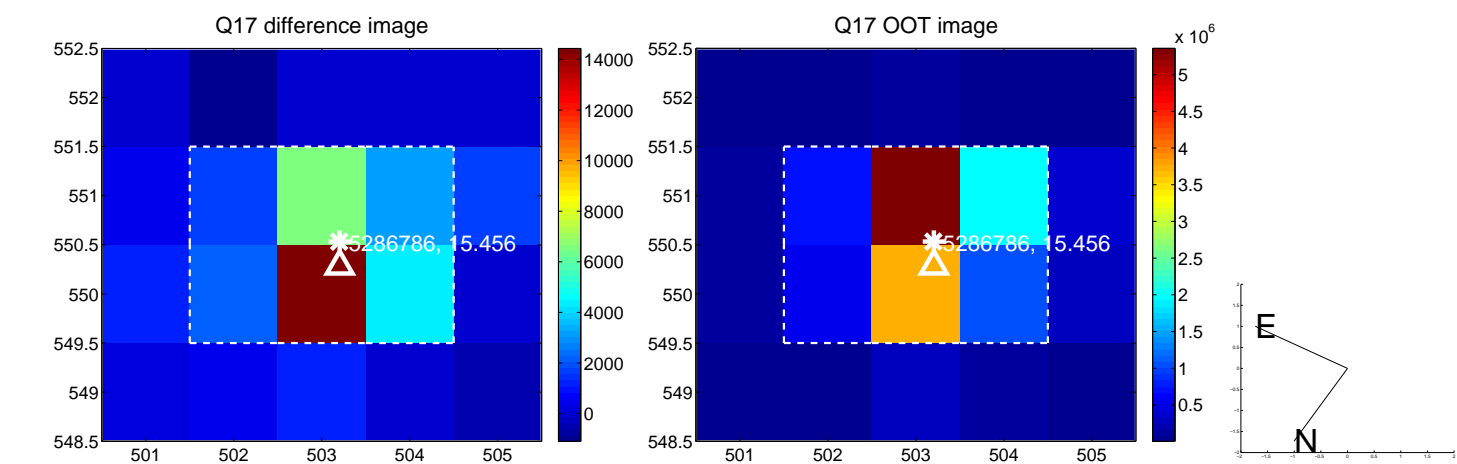
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



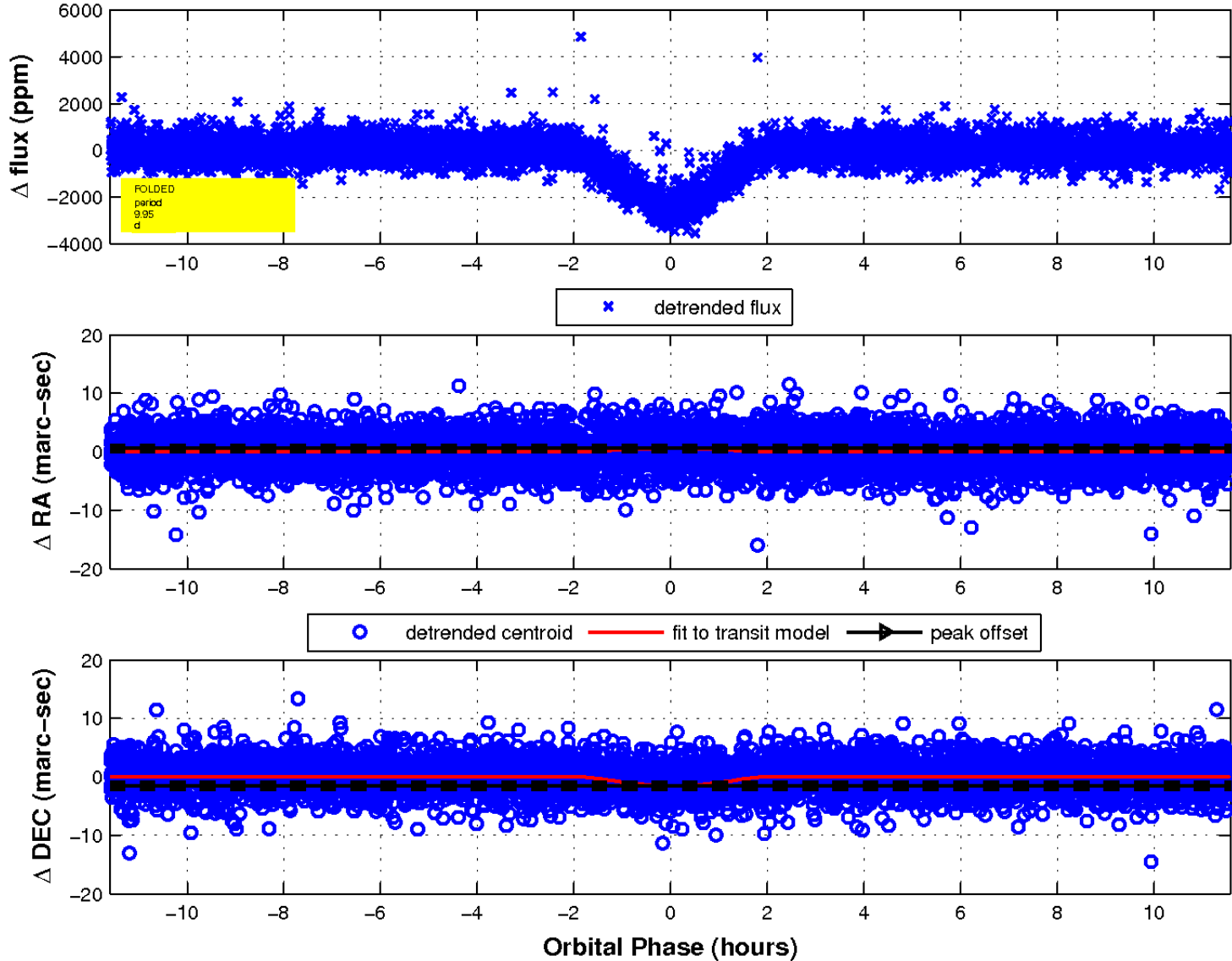
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

