

KIC 005287983

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})
005287983-01	OBS	0828.01	2.507060	133.404203	1027.3	1.639	50.7	55.3	0.94	5926	3.58	731.42
005287983-02	OBS	No	2.507059	132.147380	263.0	1.510	14.5	14.9	0.94	5926	1.81	731.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005287983-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005287983-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

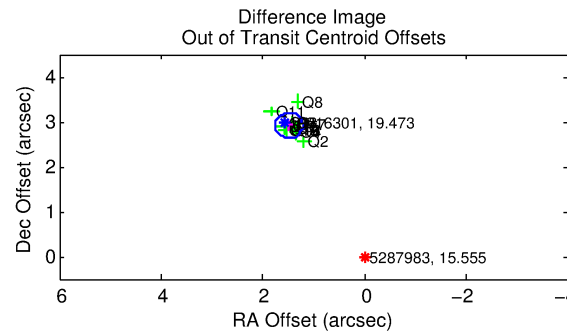
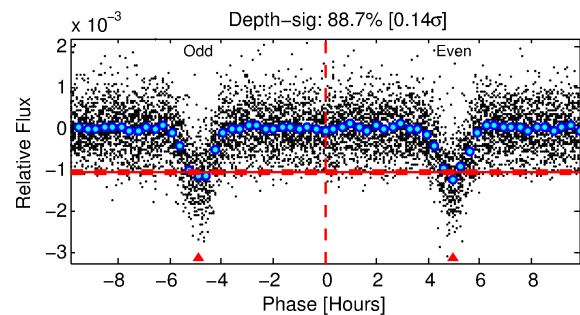
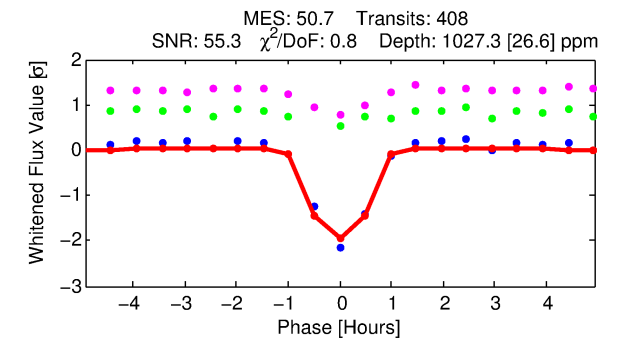
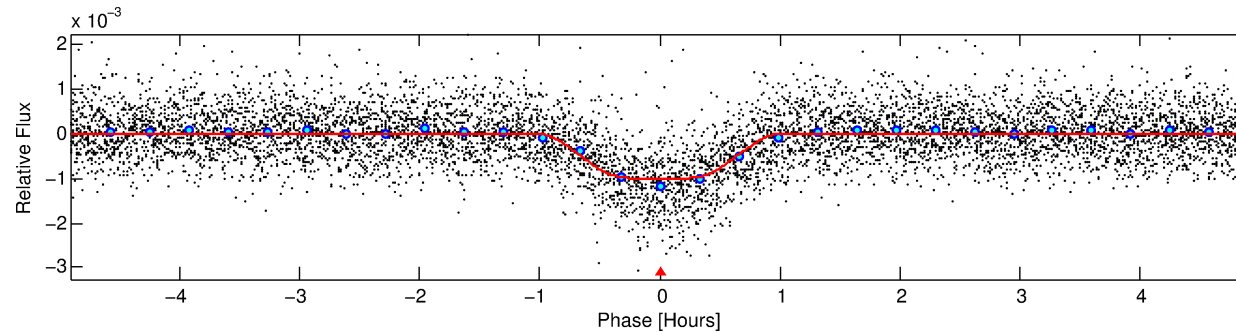
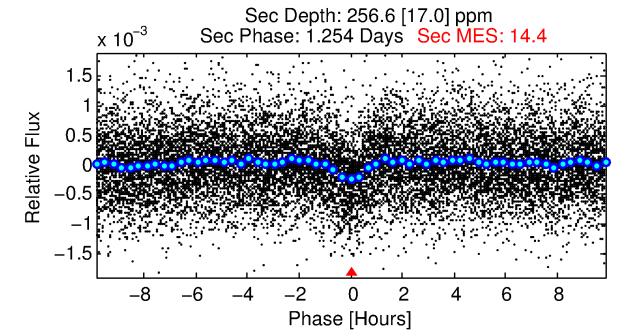
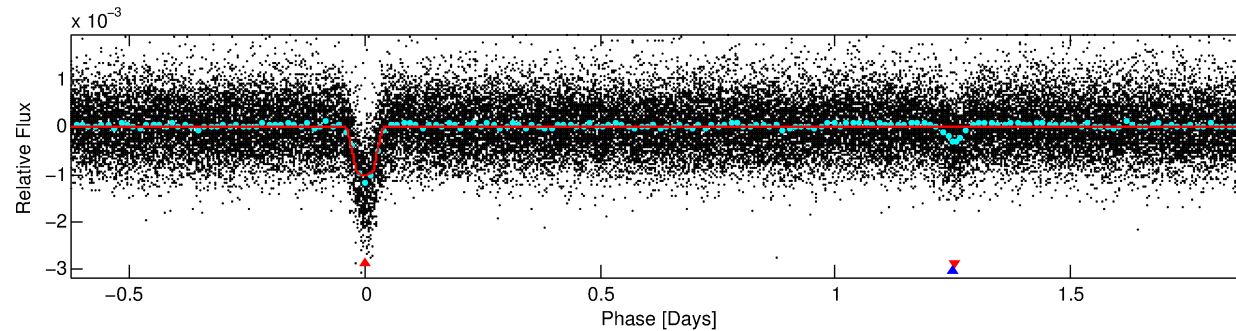
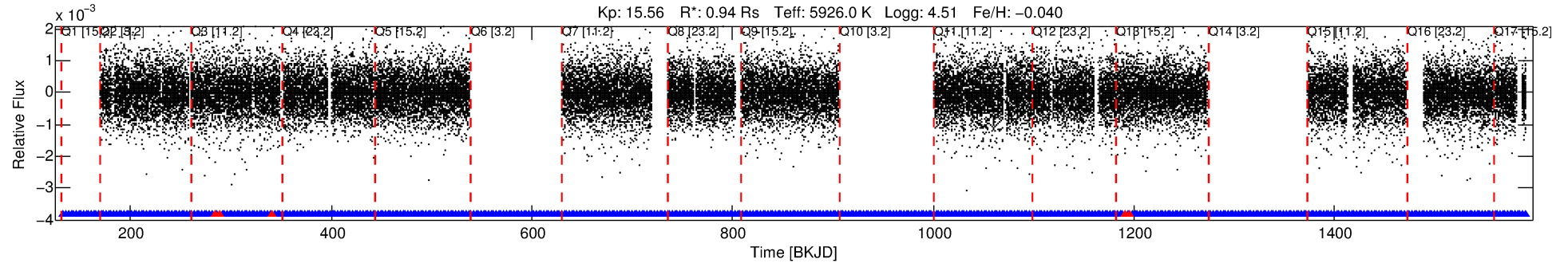
Ephemeris Match Information For 005287983-01

No Significant Match Found

DV One-Page Summary

KIC: 5287983 Candidate: 1 of 2 Period: 2.507 d
KOI: K00828.01 Corr: 0.904

Kp: 15.56 R*: 0.94 Rs Teff: 5926.0 K Logg: 4.51 Fe/H: -0.040



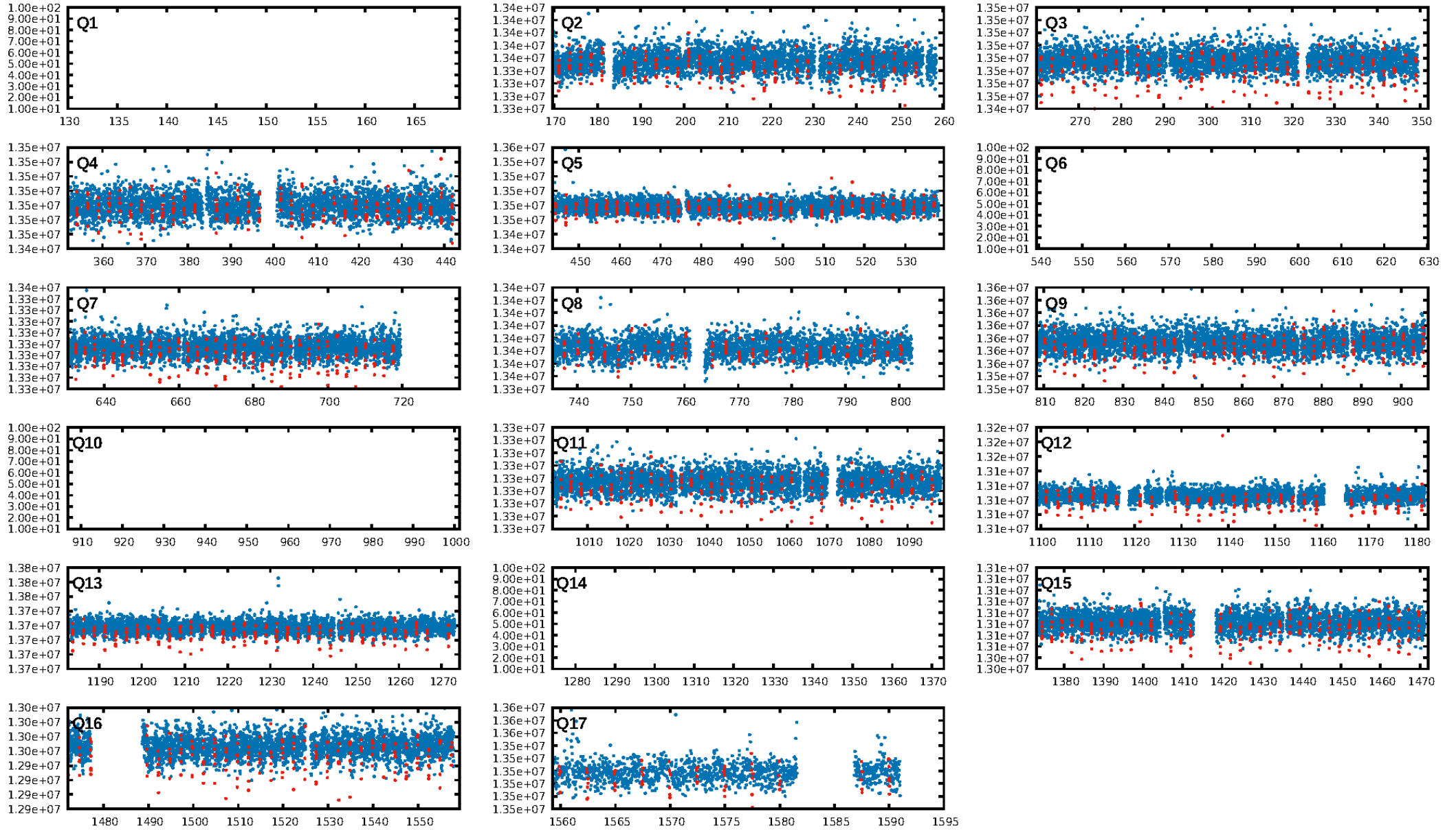
DV Fit Results:

Period = 2.50706 [0.00000] d
Epoch = 133.4042 [0.0005] BKJD
Rp/R* = 0.0350 [0.0022]
a/R* = 6.03 [1.68]
b = 0.90 [0.06]
Seff = 731.42 [308.30]
Teq = 1326 [140] K
Rp = 3.58 [1.16] Re
a = 0.0365 [0.0098] AU
Ag = 14.66 [6.13] [2.23σ]
Teff = 4012 [210] K [10.66σ]

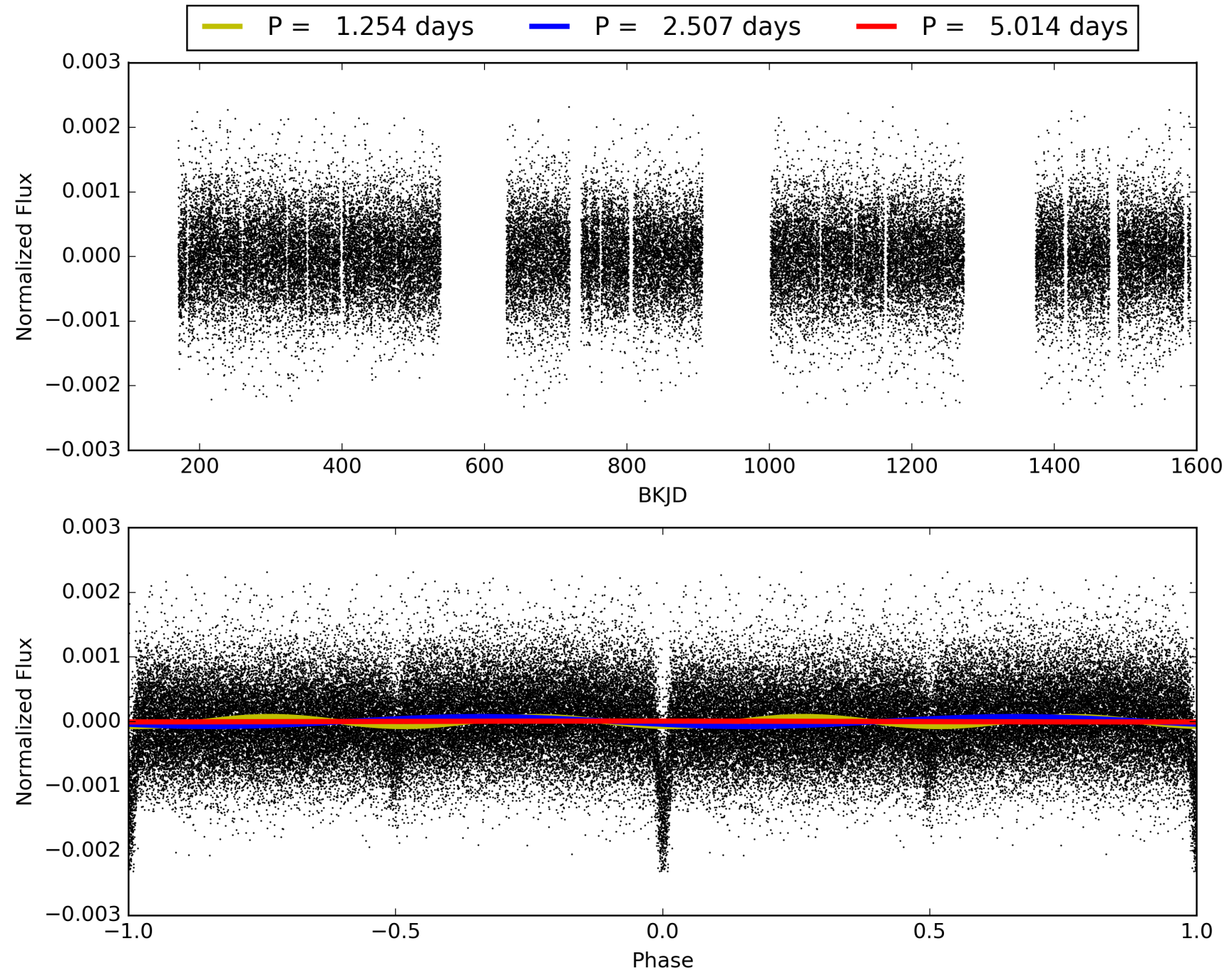
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.99 [392/397]
GhostDiagnostic-chr: 0.8072
Centroid-sig: 0.0%
Centroid-so: 5.036 arcsec [23.52σ]
OotOffset-rm: 3.275 arcsec [35.22σ]
KicOffset-rm: 3.251 arcsec [37.33σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 005287983-01, PDC Light Curves

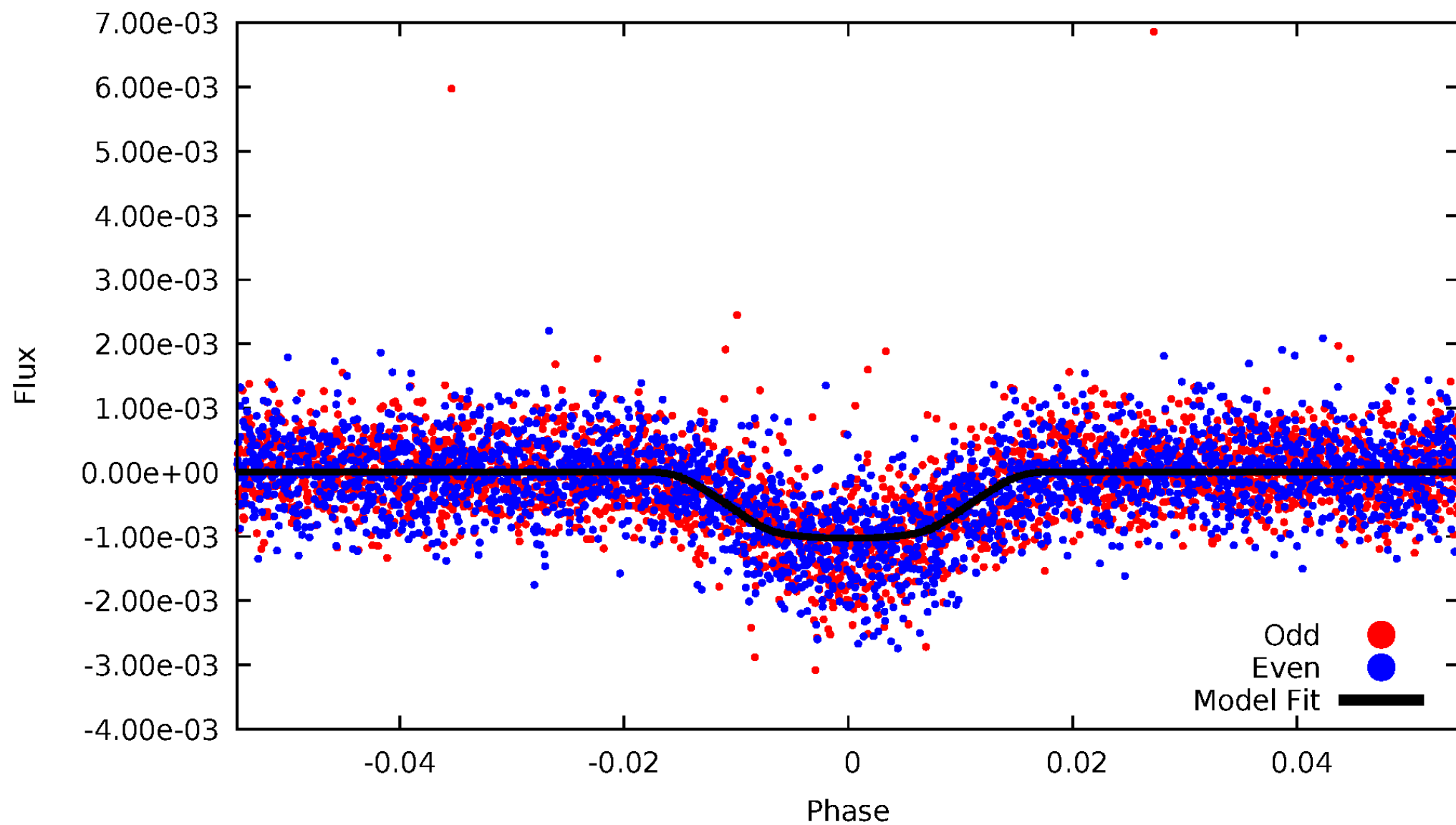


TCE 005287983-01



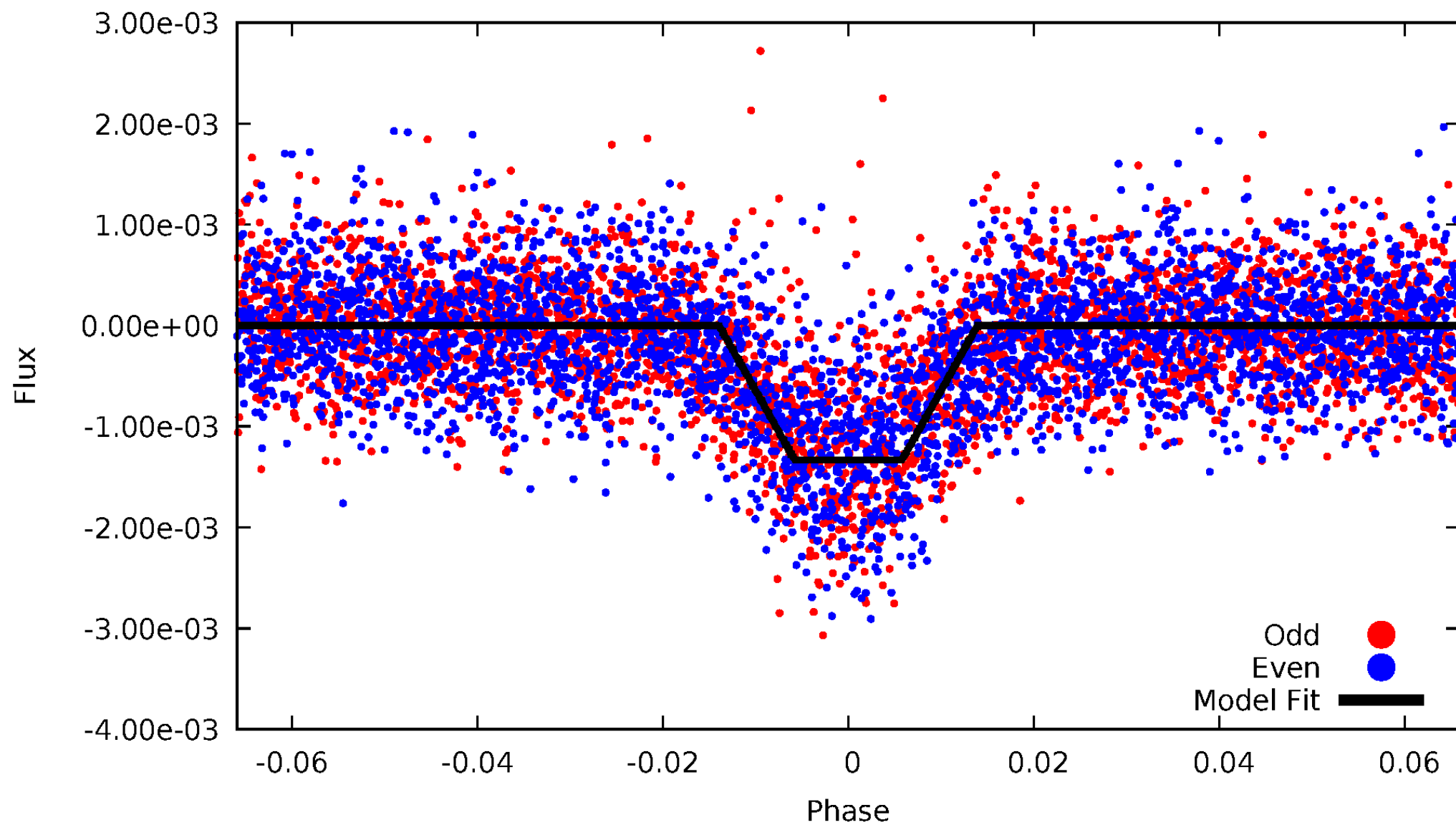
DV Odd/Even

TCE 005287983-01



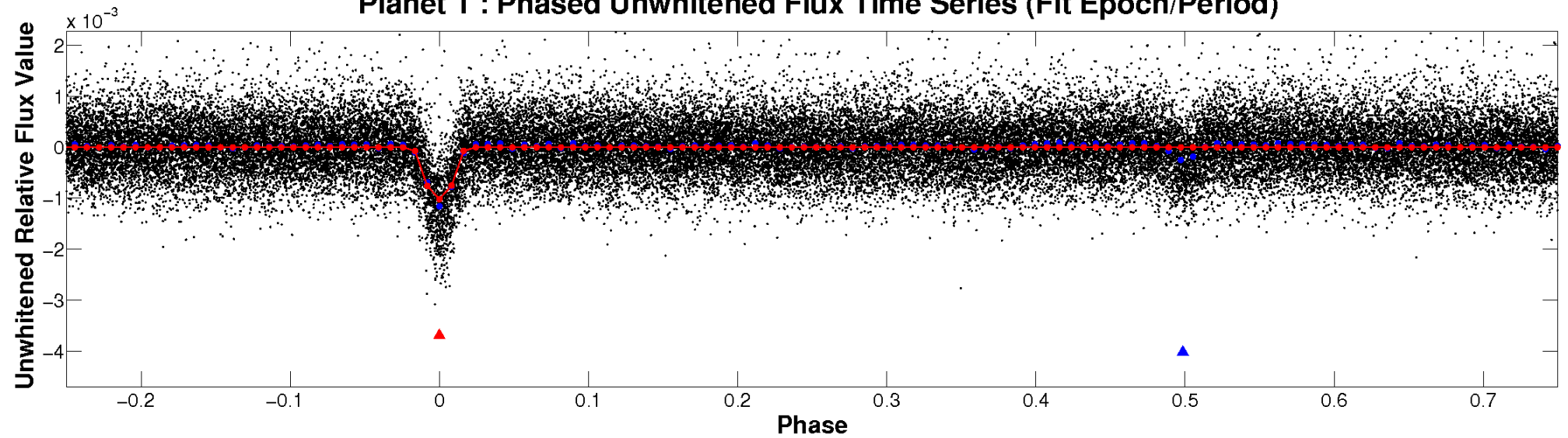
ALT Odd/Even

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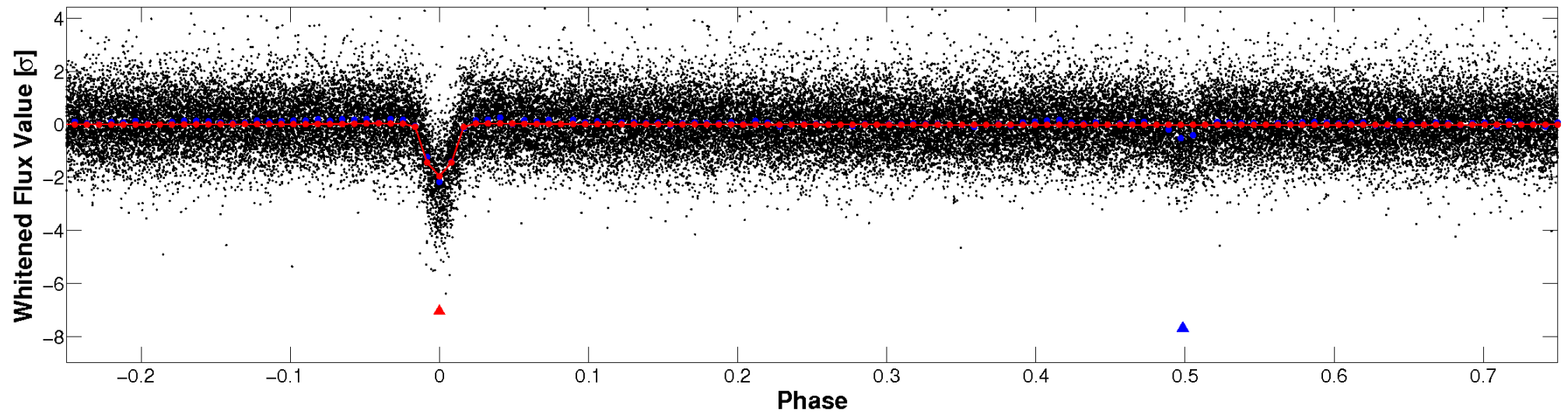


Non-Whitened Vs. Whitened Light Curve

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

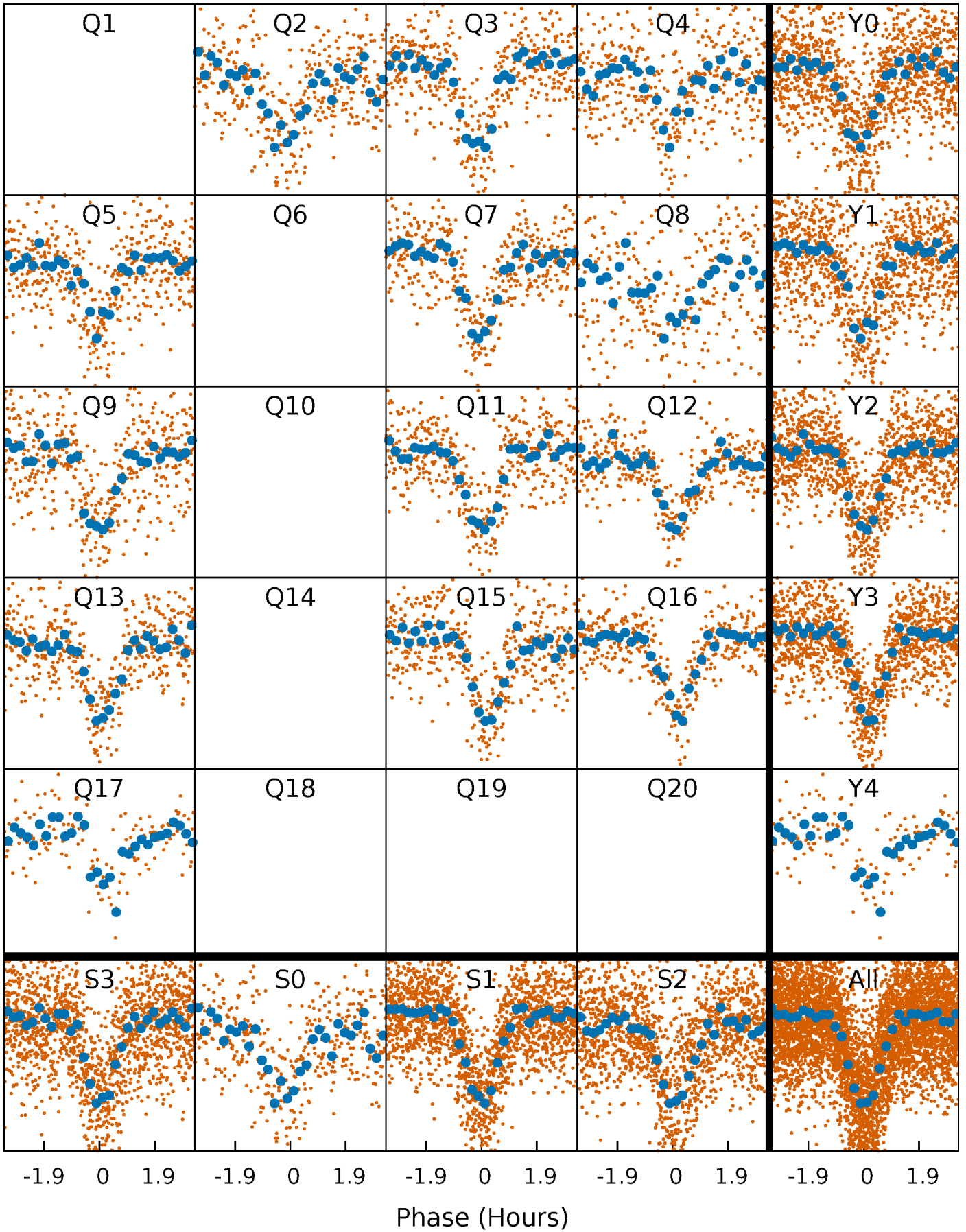


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



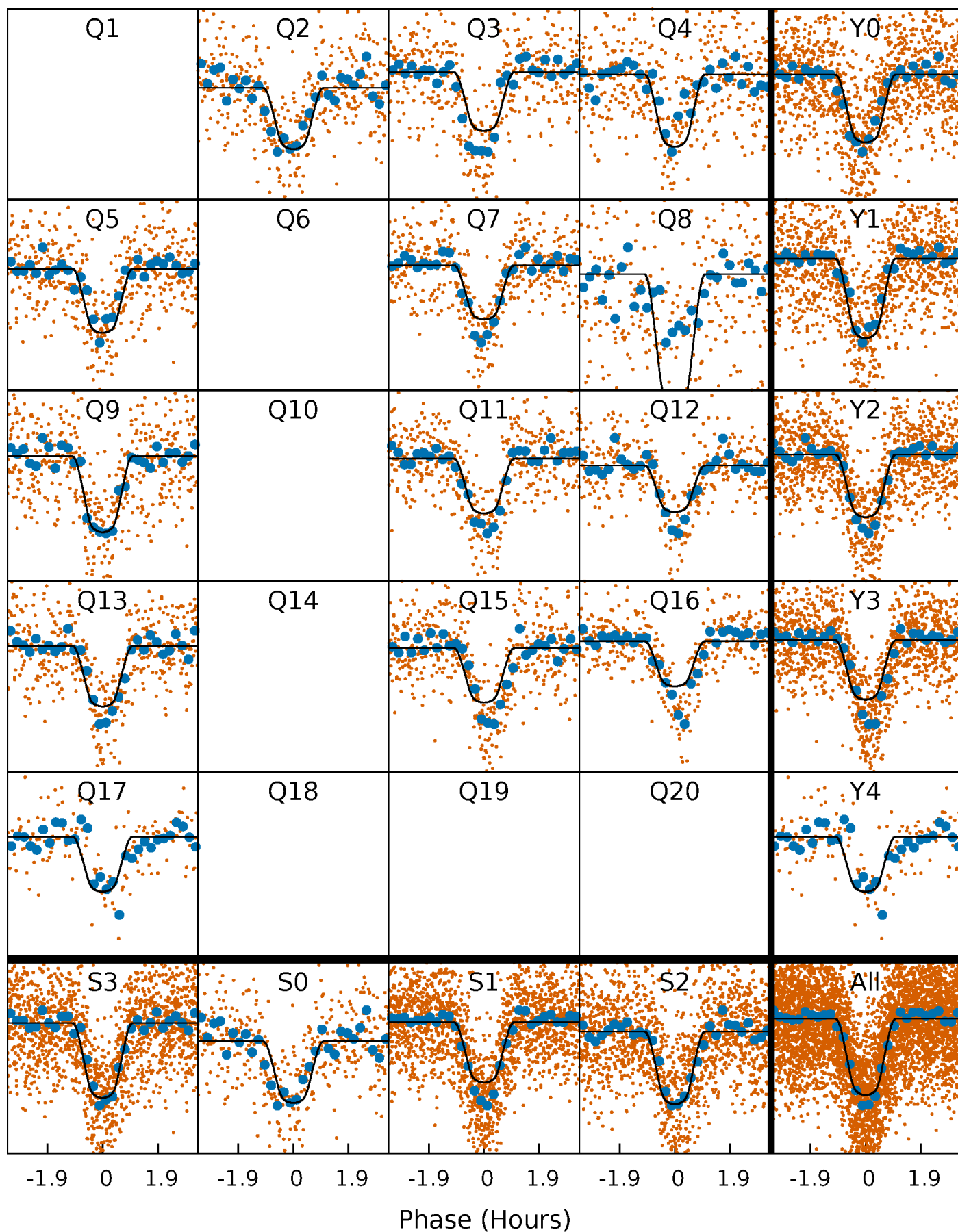
PDC Quarter-Phased Transit Curves

TCE 005287983-01 P= 2.507060 Days $T_0=133.404202$ (BKJD)



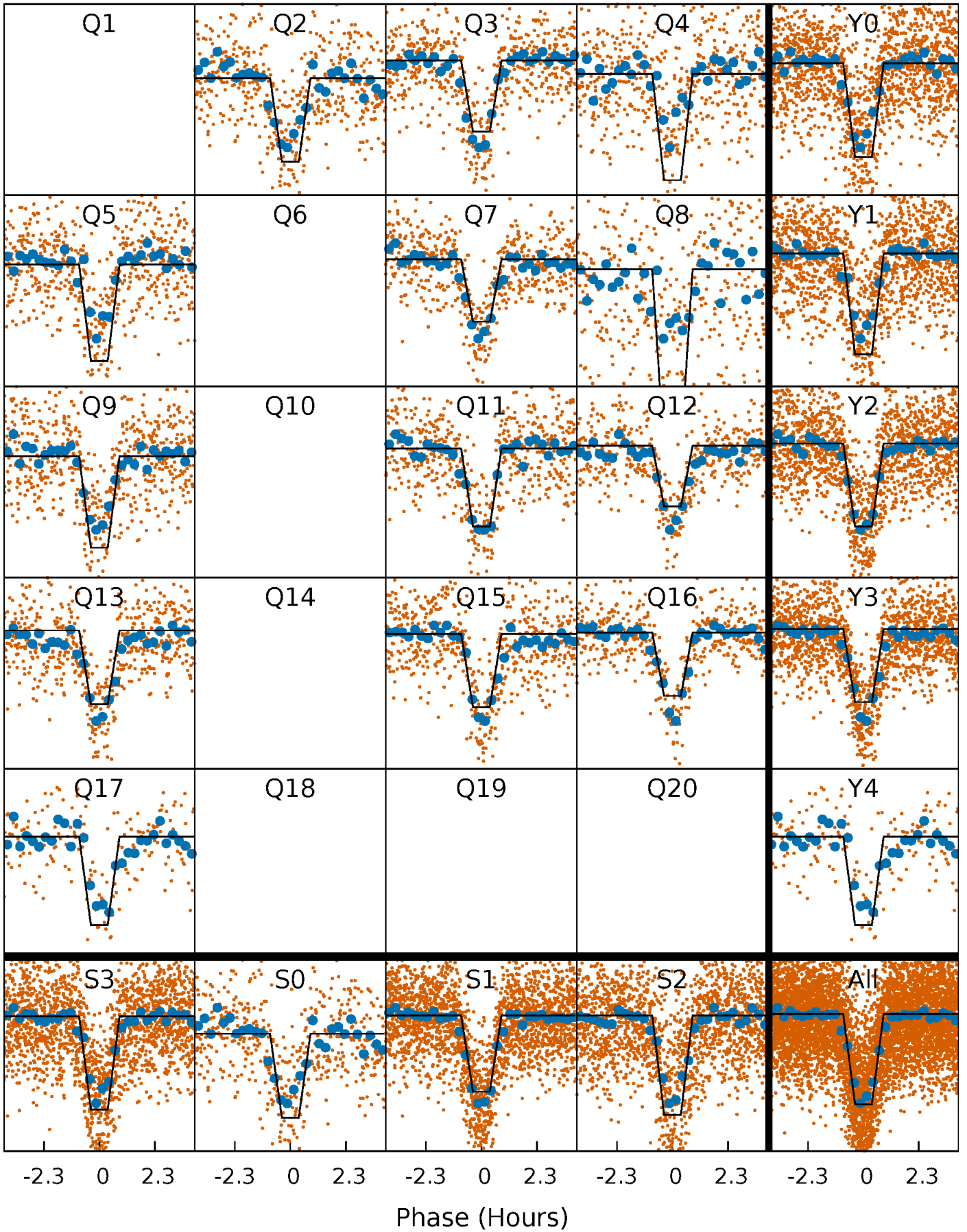
DV Quarter-Phased Transit Curves

TCE 005287983-01 P= 2.507060 Days $T_0=133.404202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

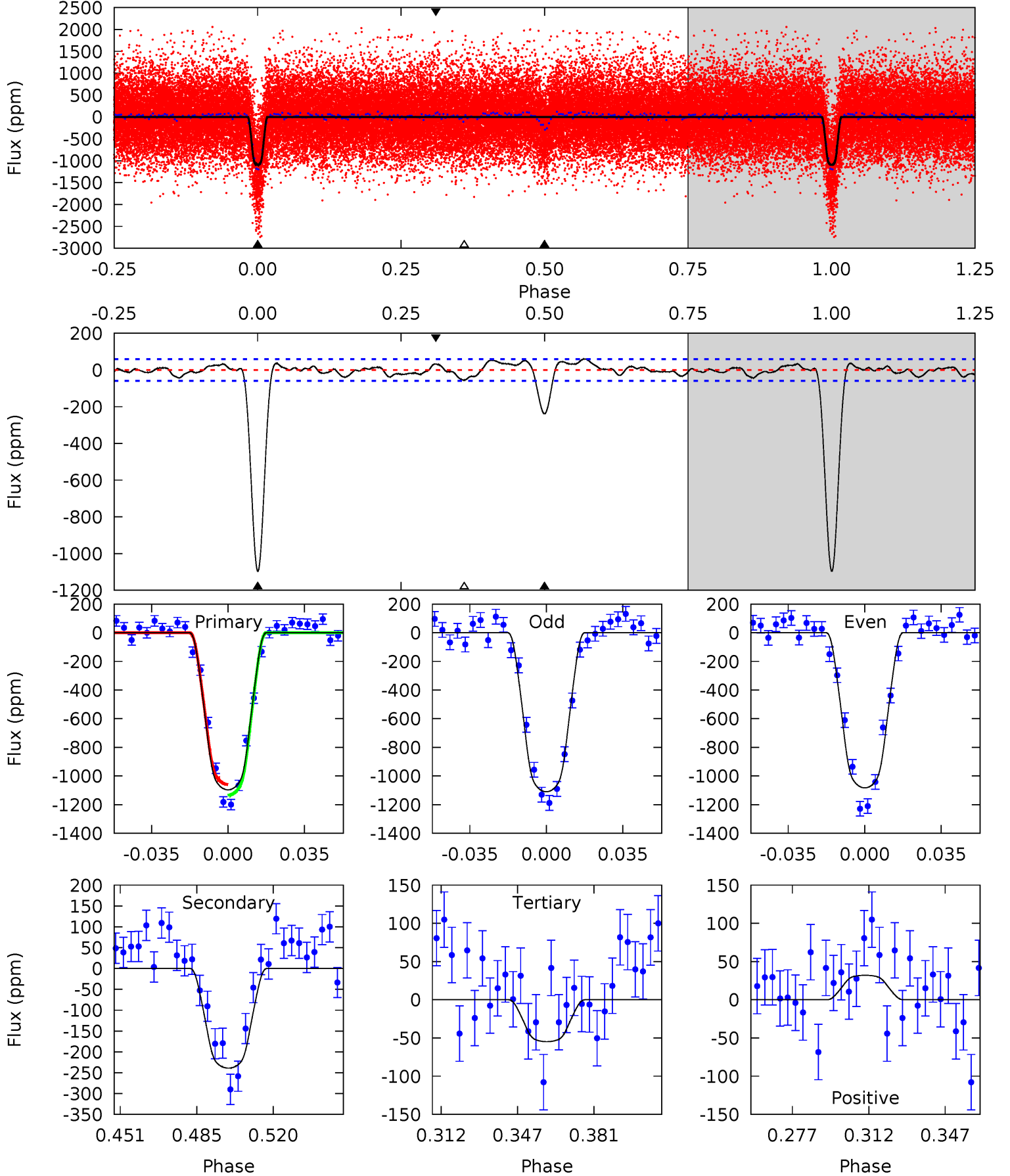
TCE 005287983-01 P= 2.507075 Days $T_0=133.400892$ (BKJD)



DV Model-Shift Uniqueness Test

005287983-01, P = 2.507060 Days, E = 133.404202 Days

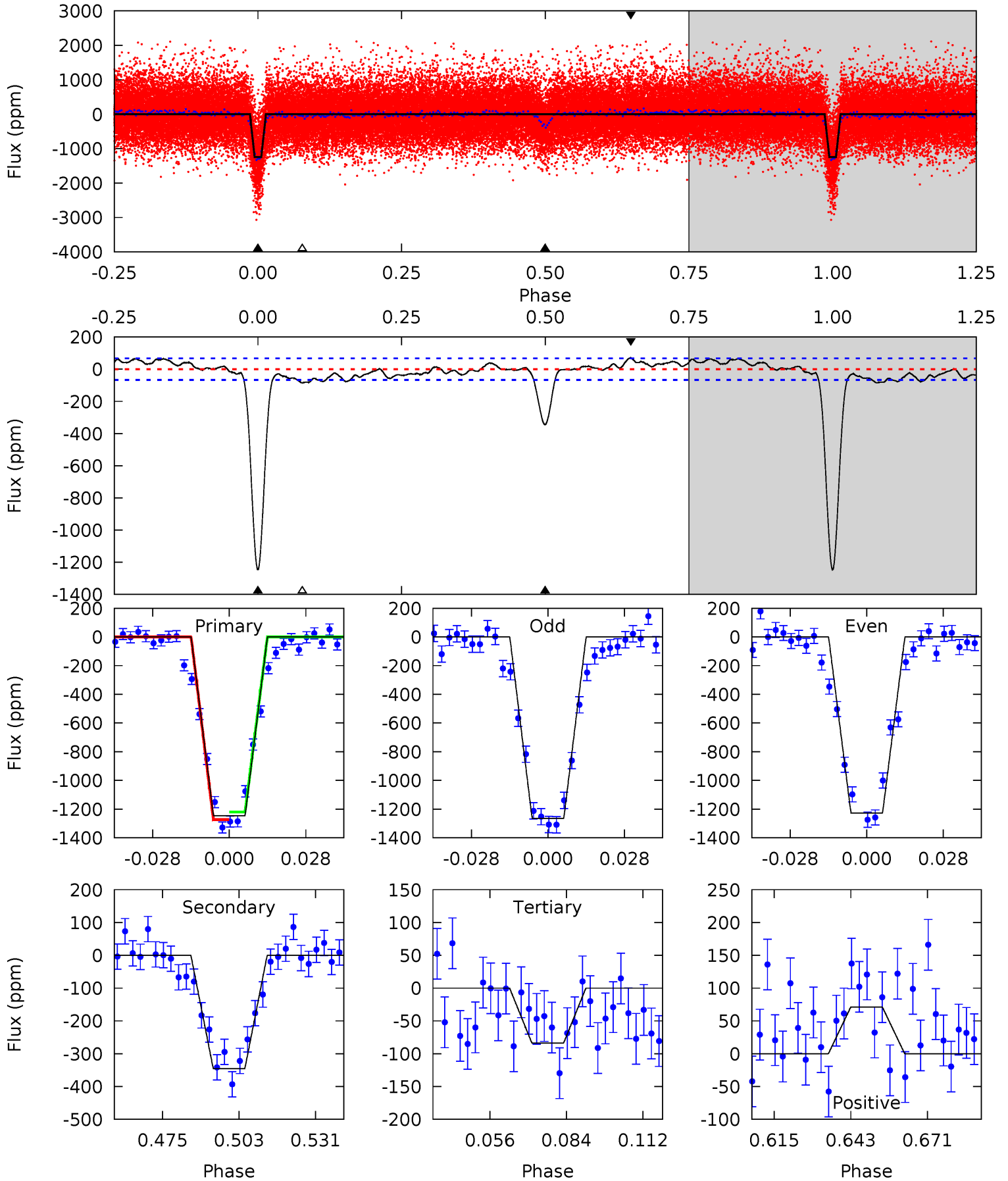
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.3	19.5	4.46	2.61	4.78	2.11	1.92	84.8	86.7	15.0	16.9	1.11	0.97	0.05	3.03



Alt Model-Shift Uniqueness Test

005287983-01, P = 2.507075 Days, E = 133.400892 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
89.5	24.8	6.02	5.10	4.83	2.20	2.68	83.4	84.4	18.8	19.7	1.39	0.98	0.05	1.91



Stellar Parameters For KIC 005287983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5926^{+184}_{-226}	$4.506^{+0.054}_{-0.216}$	$-0.040^{+0.250}_{-0.300}$	$0.939^{+0.297}_{-0.099}$	$1.030^{+0.124}_{-0.138}$	$1.752^{+0.470}_{-0.926}$
	+3%/-4%	+1%/-5%	+625%/-750%	+32%/-11%	+12%/-13%	+27%/-53%
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 005287983-01 / KOI 0828.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-239 ± 12	$3.72^{+0.69}_{-0.41}$	1898^{+145}_{-108}	4181^{+153}_{-149}	13^{+3}_{-3}
Alt.	-345 ± 14	$3.88^{+0.65}_{-0.43}$	1884^{+157}_{-99}	4398^{+174}_{-170}	16^{+4}_{-4}

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

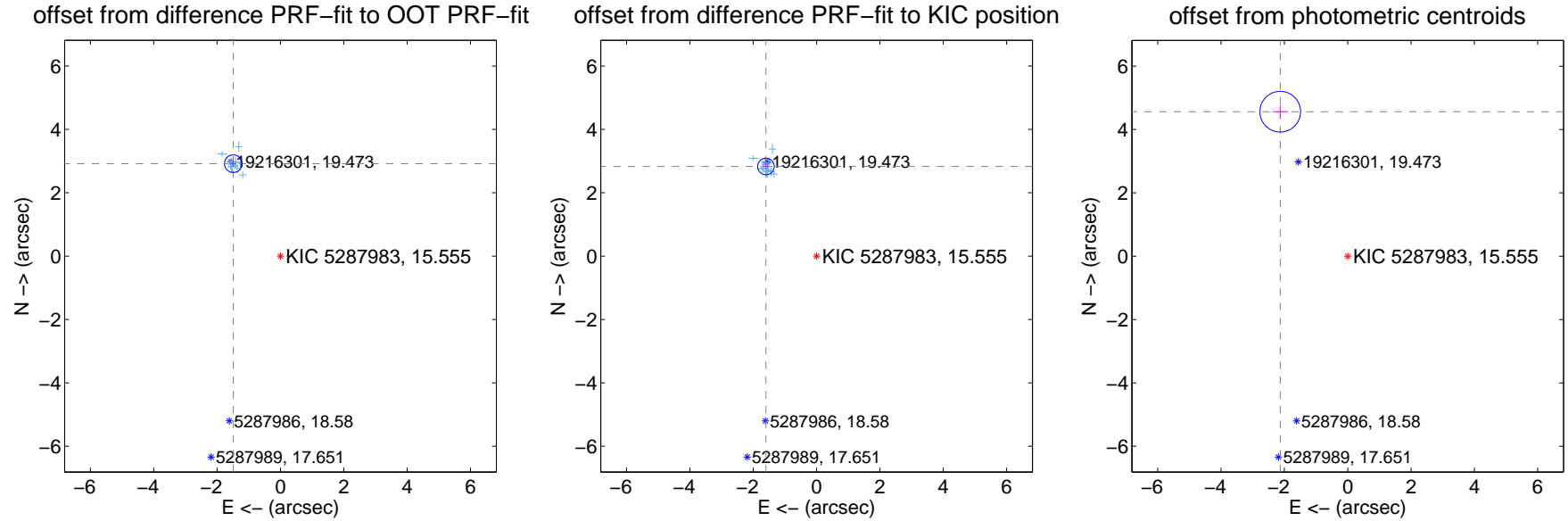
DV Centroid Data

Supplemental centroid analysis for 005287983-01. Kepler magnitude: 15.55. Transit SNR 55.30

There are 13 quarters with good PRF difference image offsets

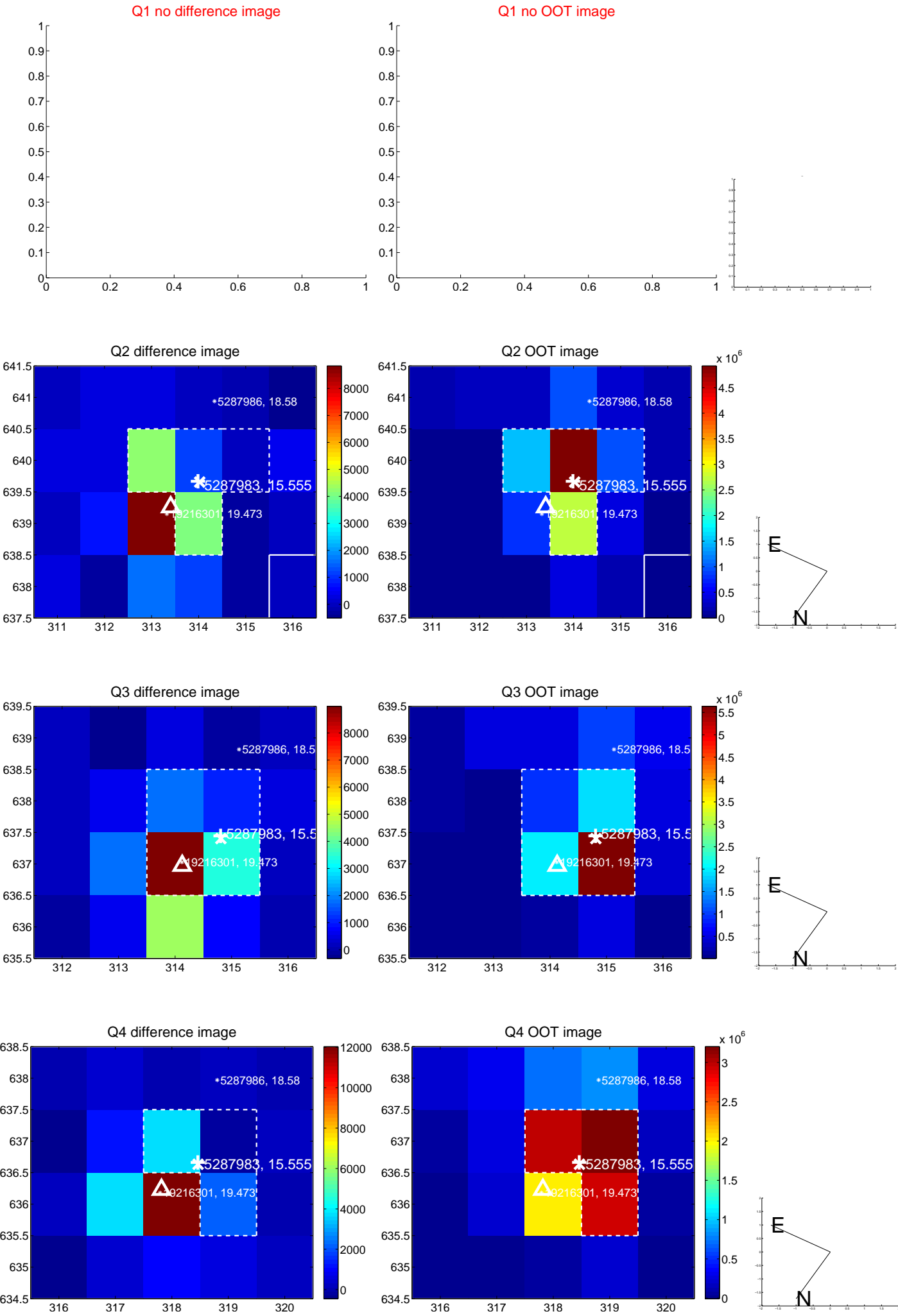
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.275 \pm 0.093	35.22	1.489 \pm 0.080	2.917 \pm 0.090
PRF-fit source offset from KIC position	3.251 \pm 0.087	37.33	1.599 \pm 0.081	2.830 \pm 0.085
photometric centroid source offset	5.04 \pm 0.21	23.52	2.13 \pm 0.25	4.56 \pm 0.21

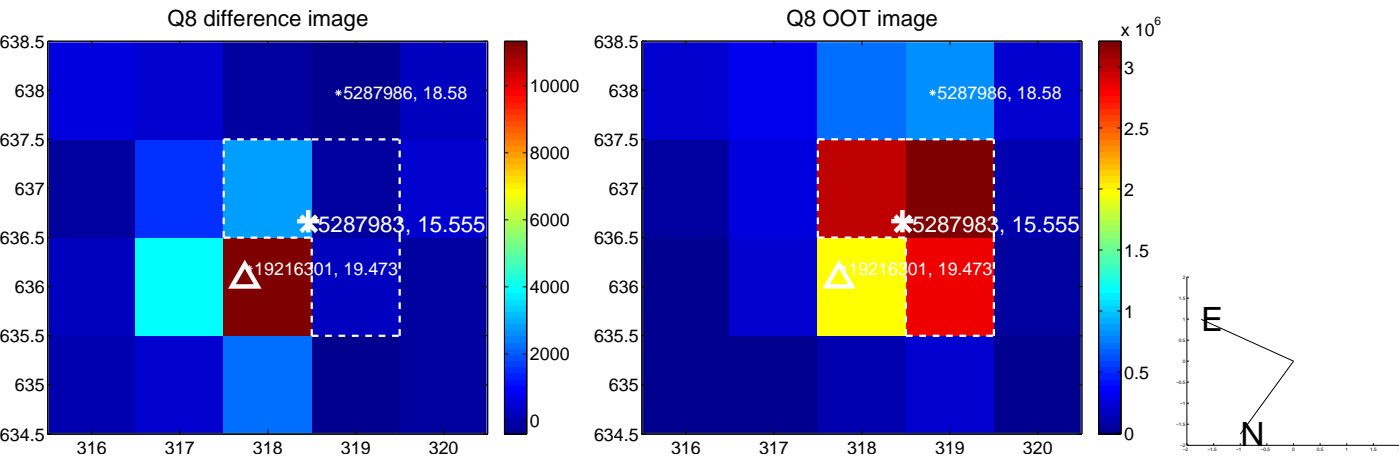
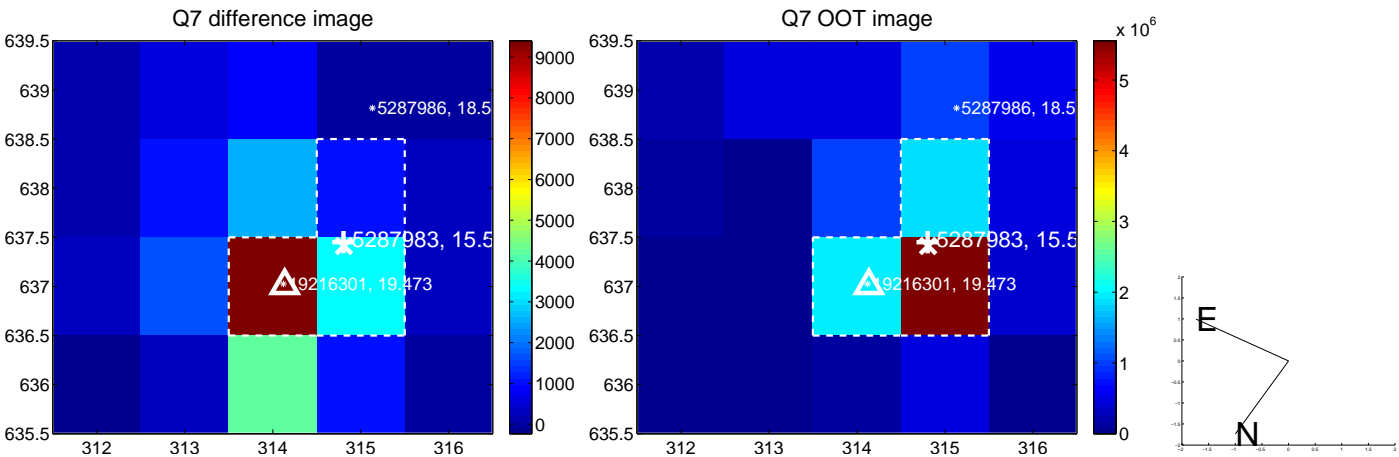
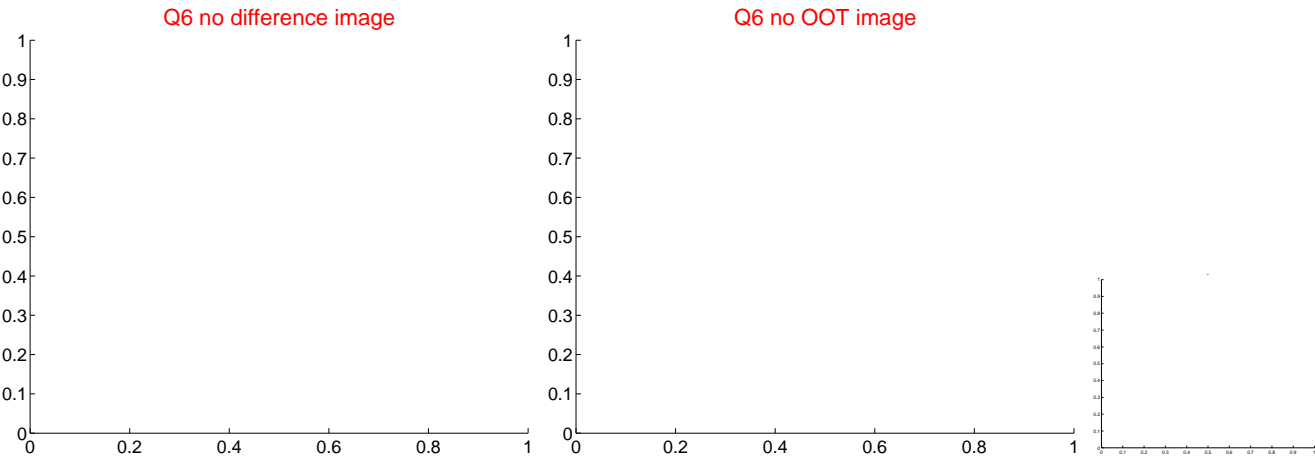
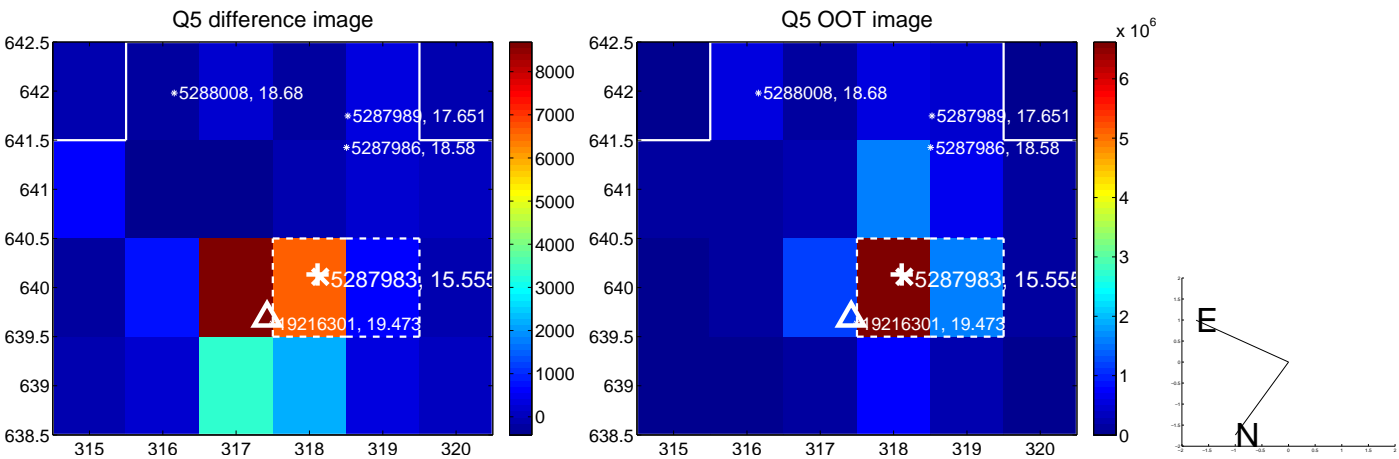


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

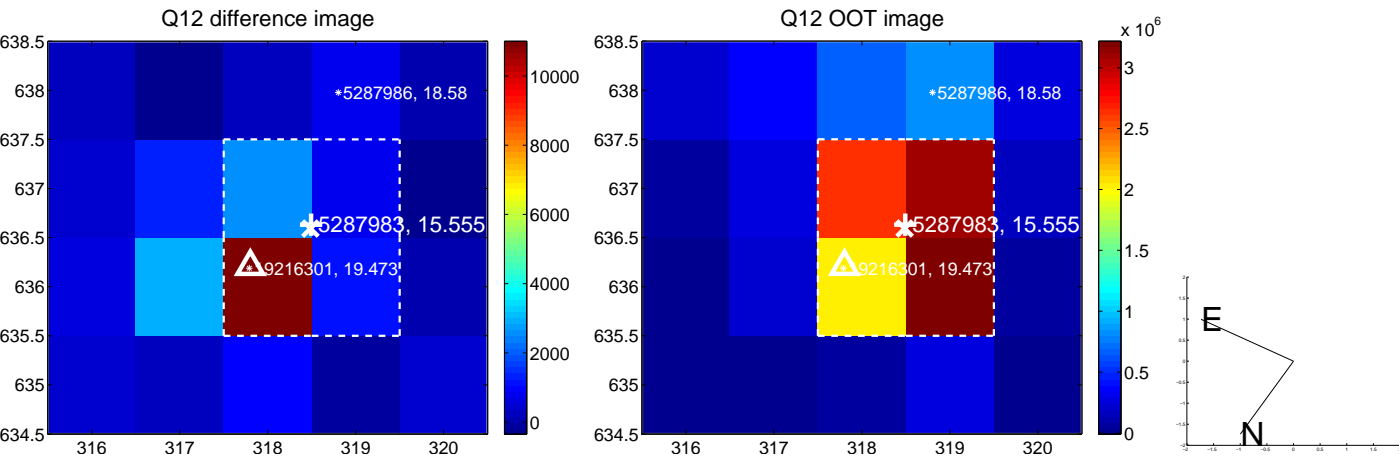
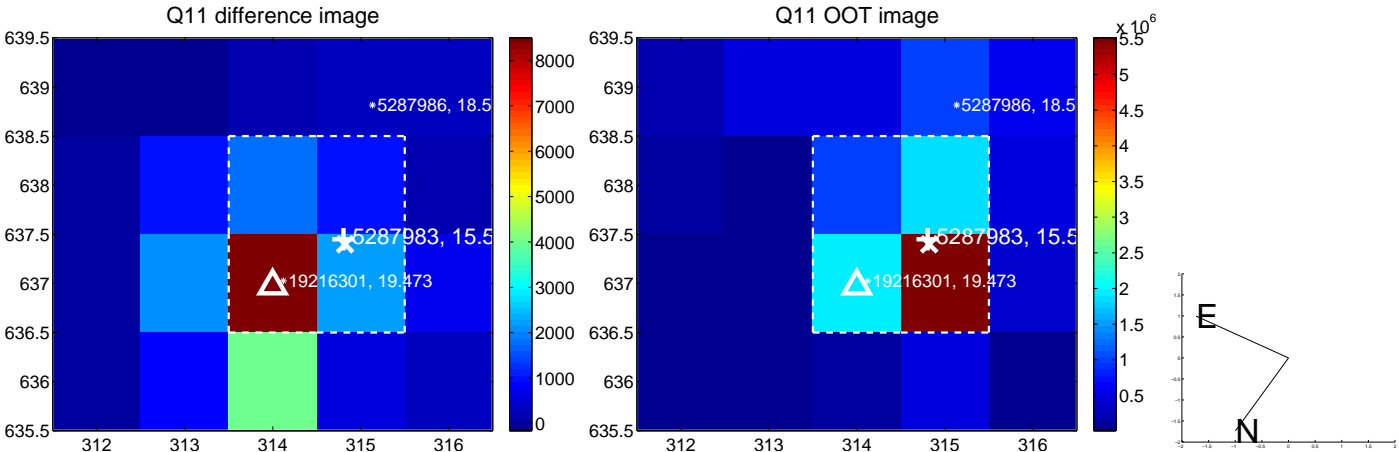
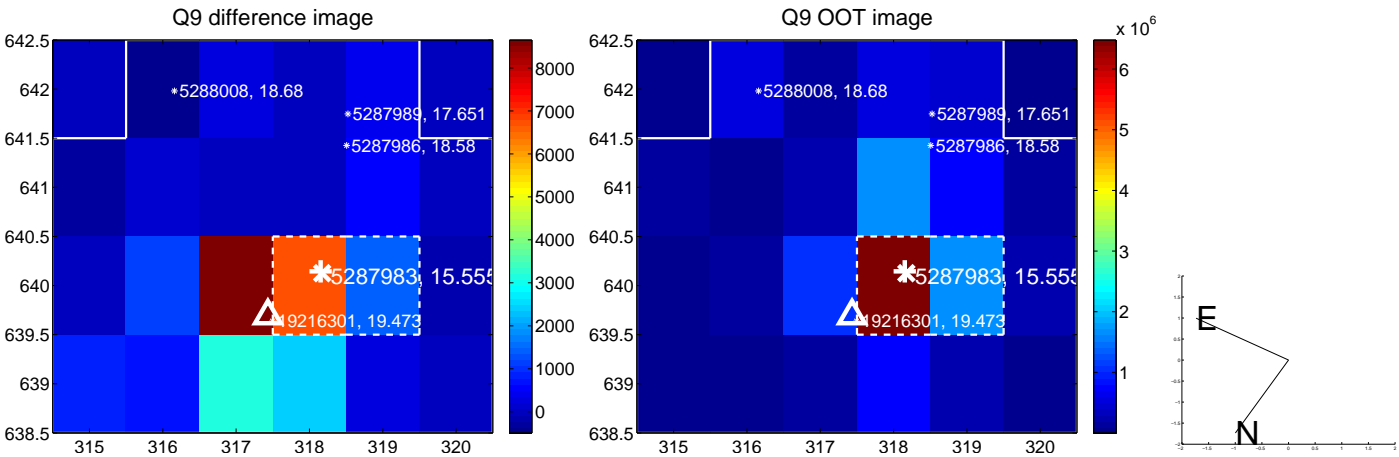
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



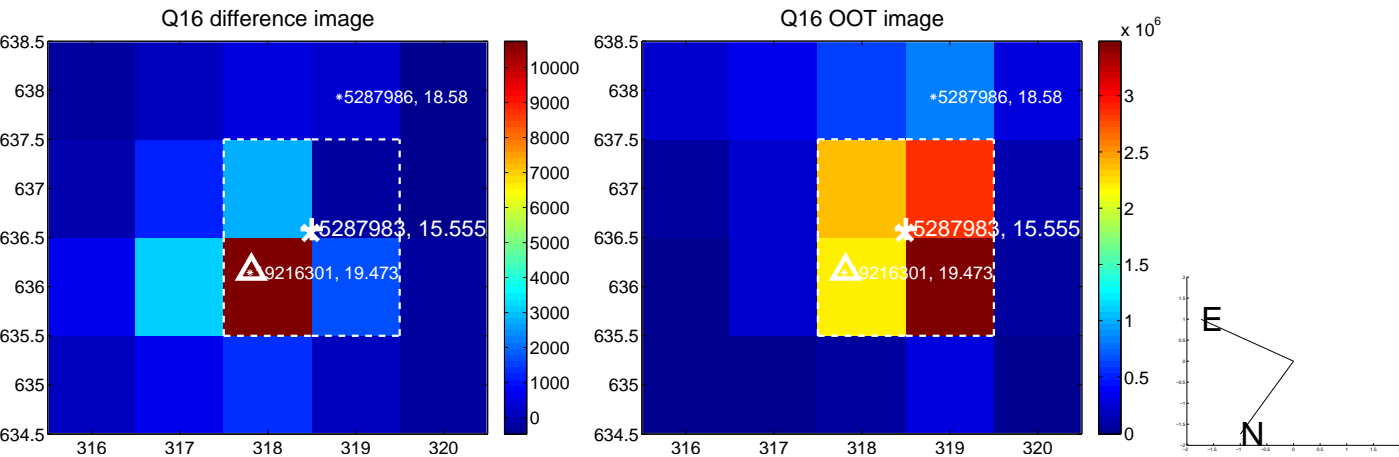
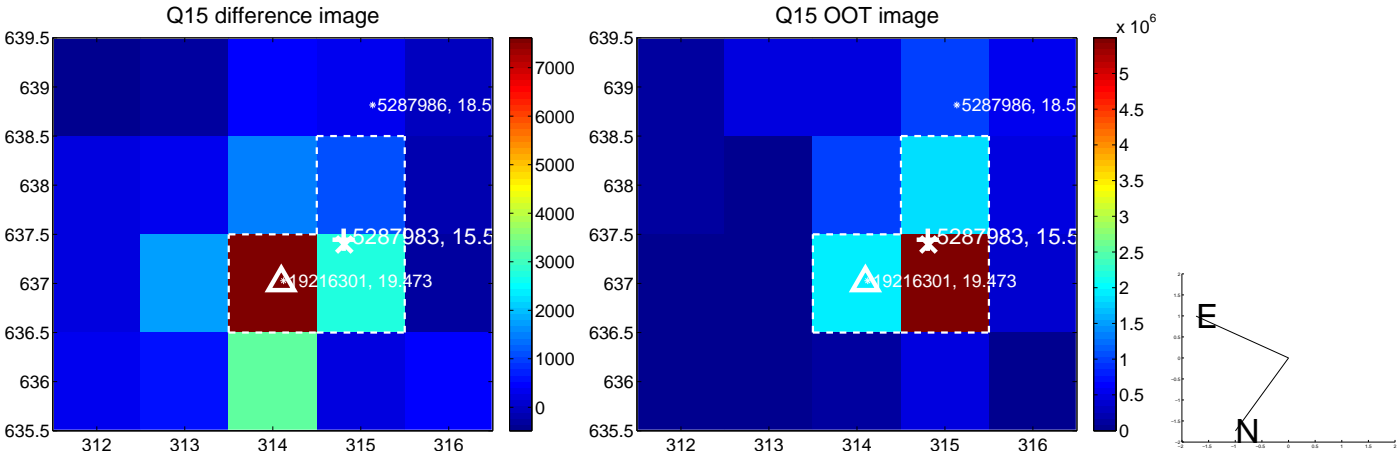
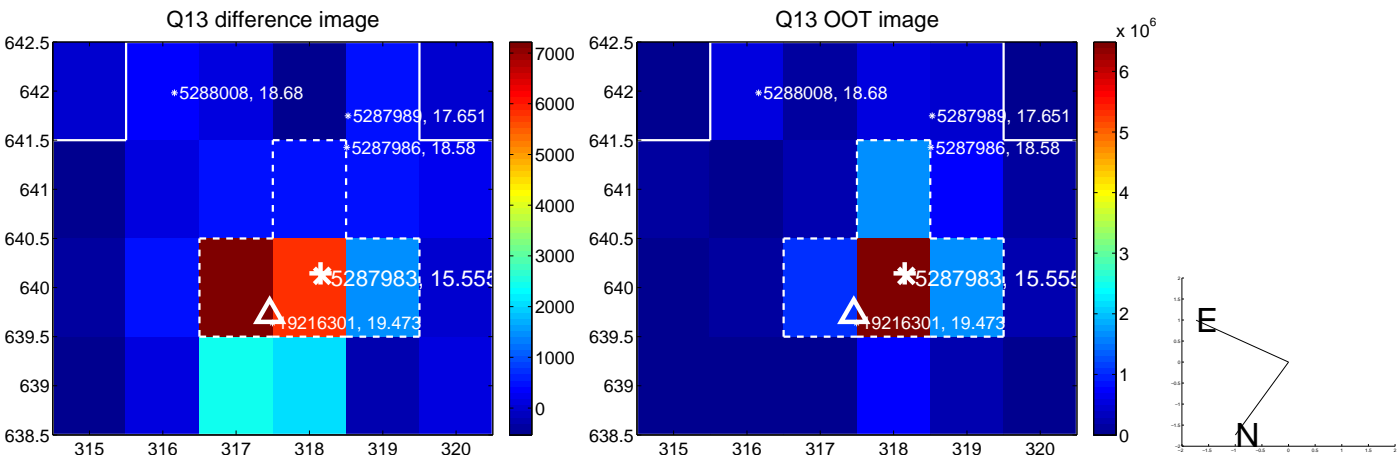
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



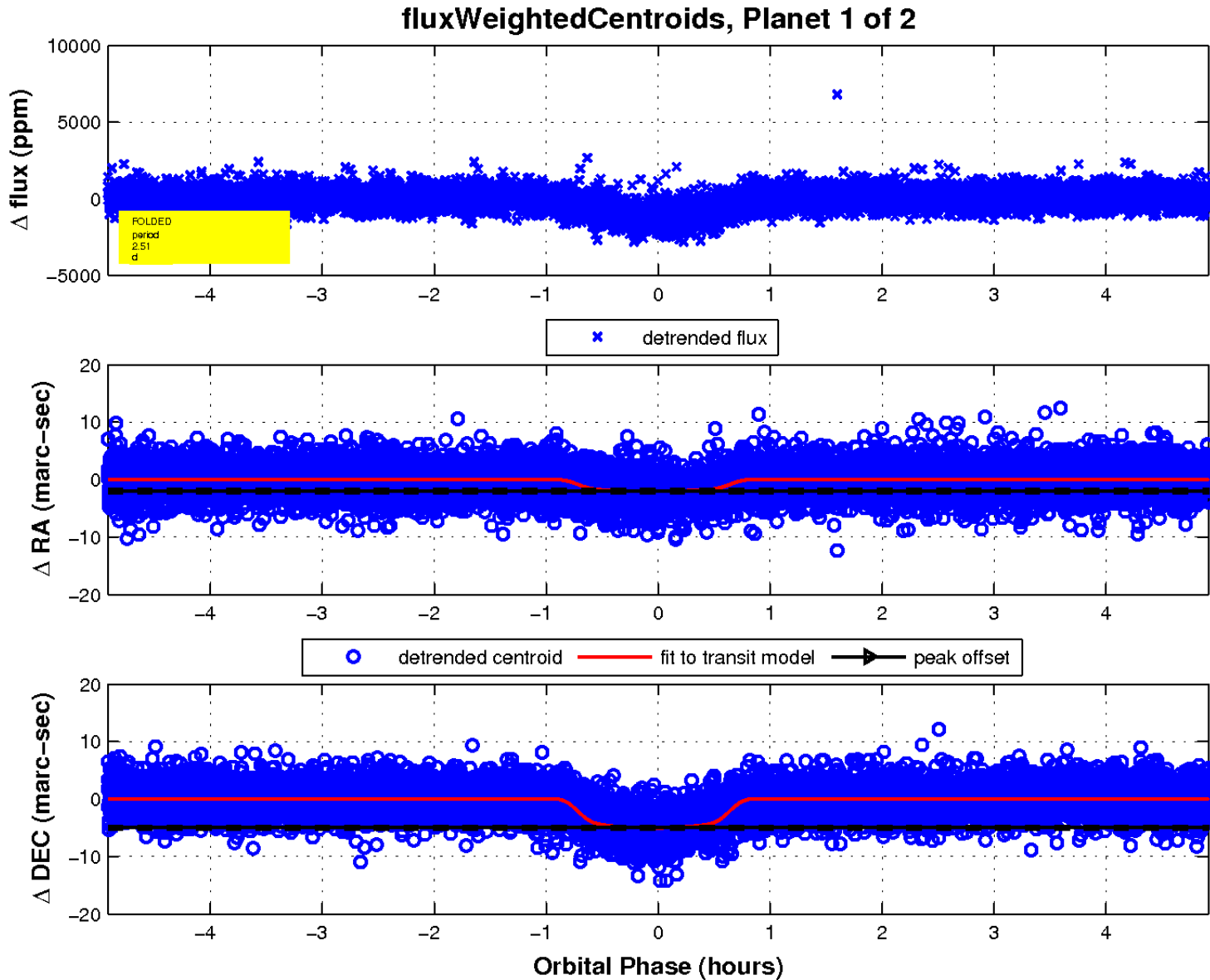
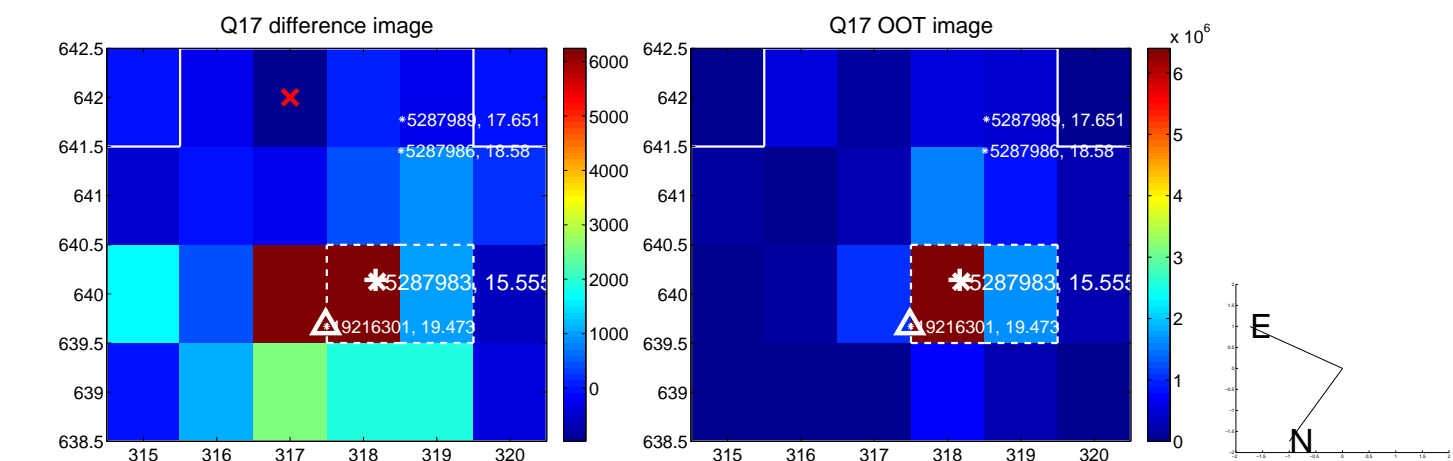
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

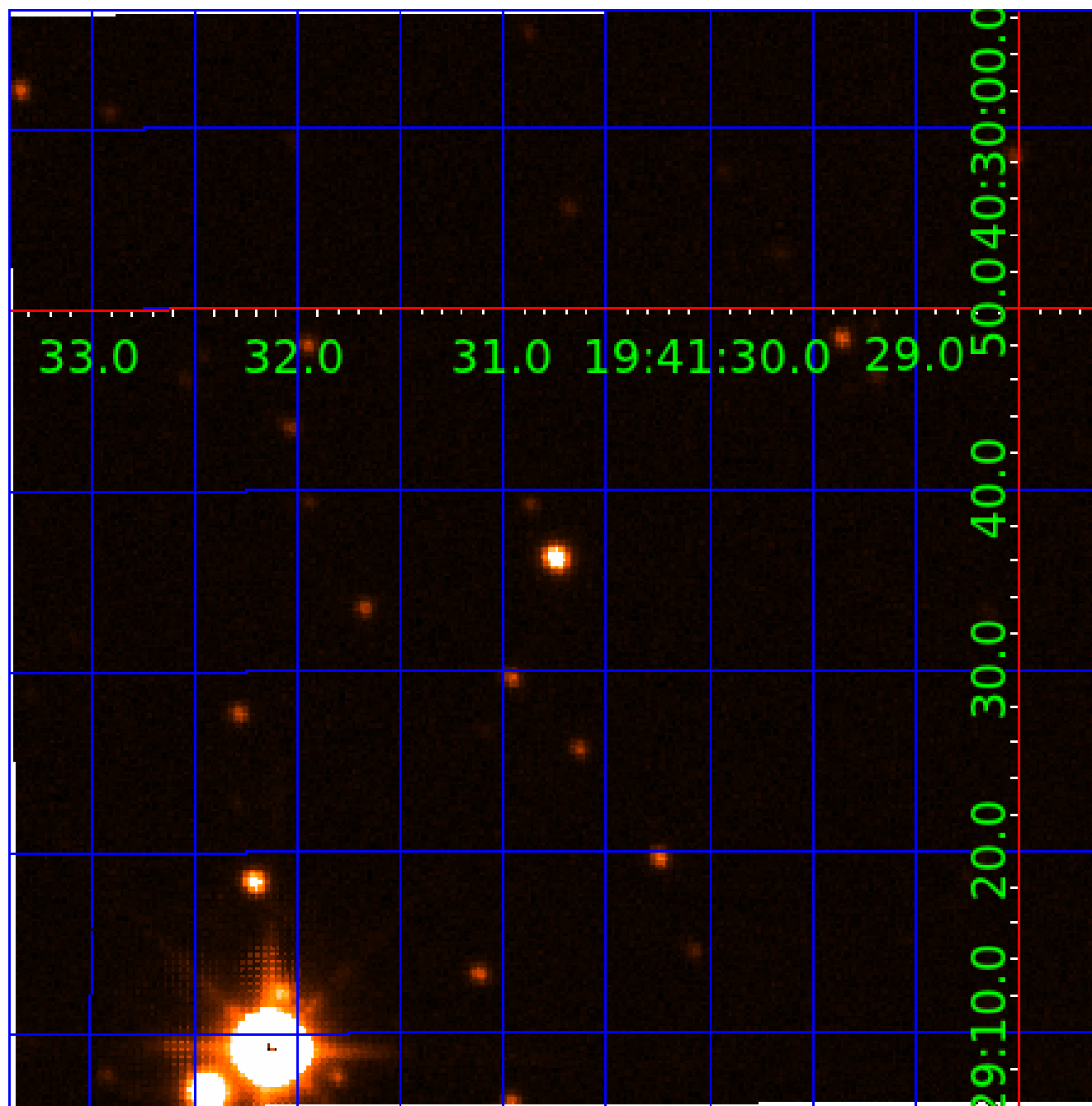


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 005287983

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})
005287983-01	OBS	0828.01	2.507060	133.404203	1027.3	1.639	50.7	55.3	0.94	5926	3.58	731.42
005287983-02	OBS	No	2.507059	132.147380	263.0	1.510	14.5	14.9	0.94	5926	1.81	731.42

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005287983-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_UNRESOLVED_OFFSET
005287983-02	OBS	FP	0.00	1	1	1	0	IS_SEC_TCE—CENT_UNRESOLVED_OFFSET

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.

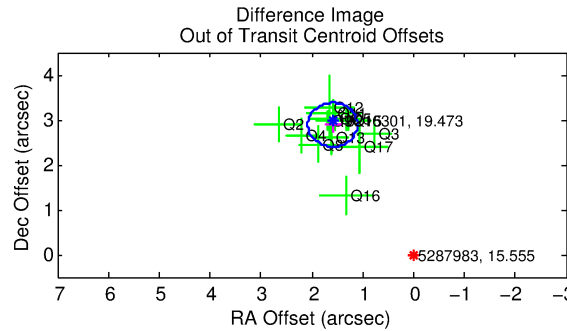
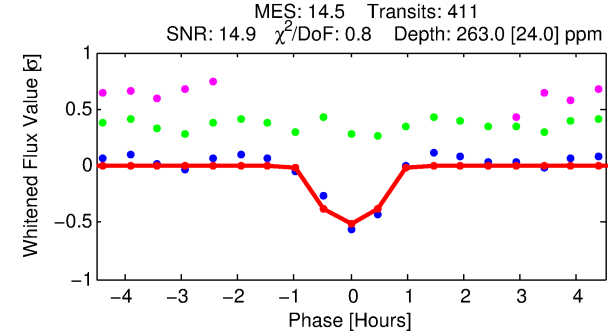
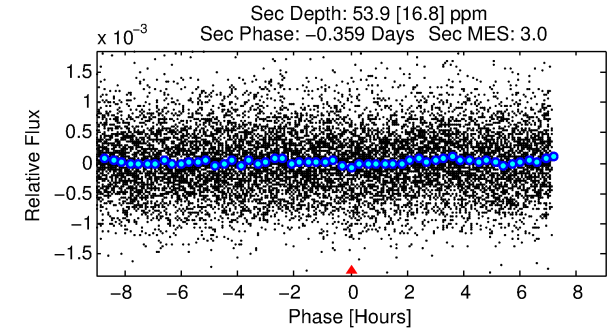
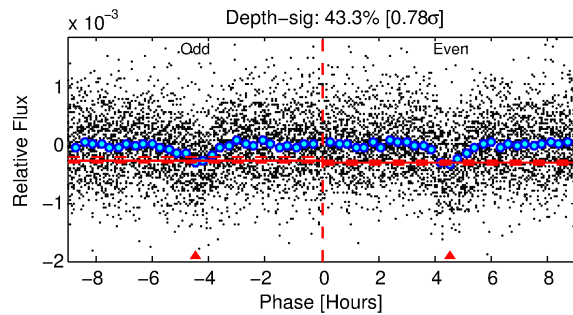
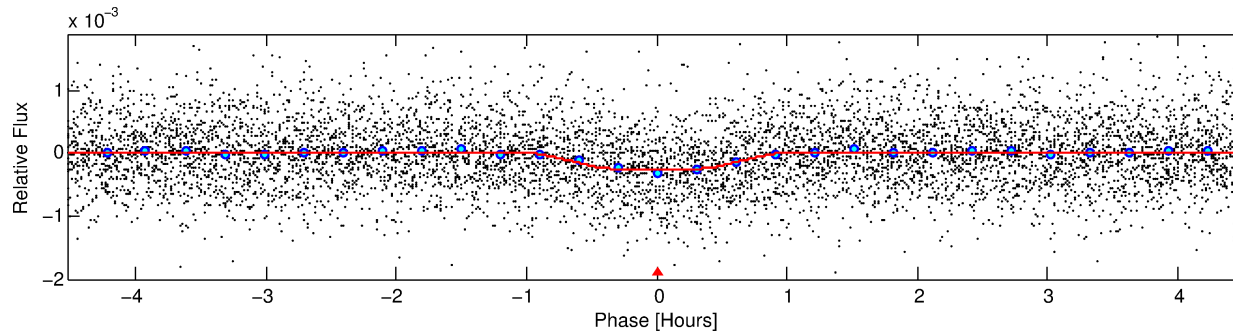
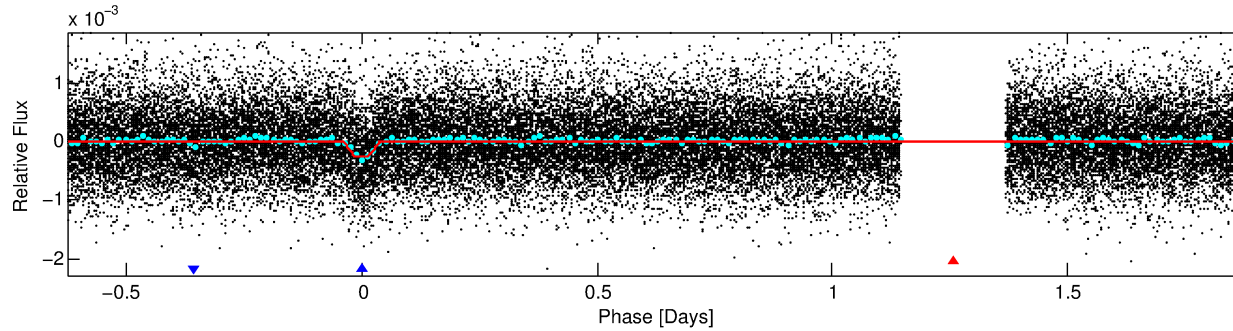
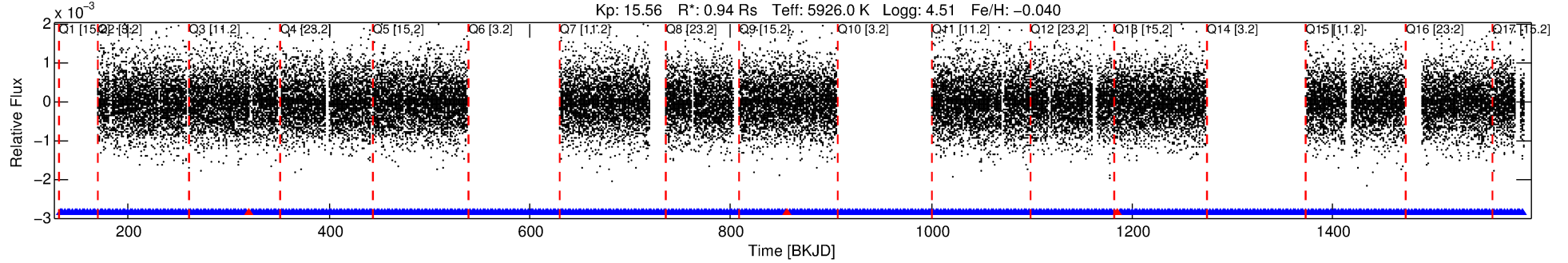
Ephemeris Match Information For 005287983-02

No Significant Match Found

DV One-Page Summary

KIC: 5287983 Candidate: 2 of 2 Period: 2.507 d
KOI: K00828 Corr: No Ephemeris Match

Kp: 15.56 R*: 0.94 Rs Teff: 5926.0 K Logg: 4.51 Fe/H: -0.040



DV Fit Results:

Period = 2.50706 [0.00001] d
Epoch = 132.1474 [0.0018] BKJD
Rp/R* = 0.0177 [0.0084]
a/R* = 6.08 [13.79]
b = 0.90 [0.50]
Seff = 731.42 [308.30]
Teq = 1326 [140] K
Rp = 1.81 [1.03] Re
a = 0.0365 [0.0098] AU
Ag = 12.04 [12.90] [0.86σ]
Teff = 3819 [963] K [2.56σ]

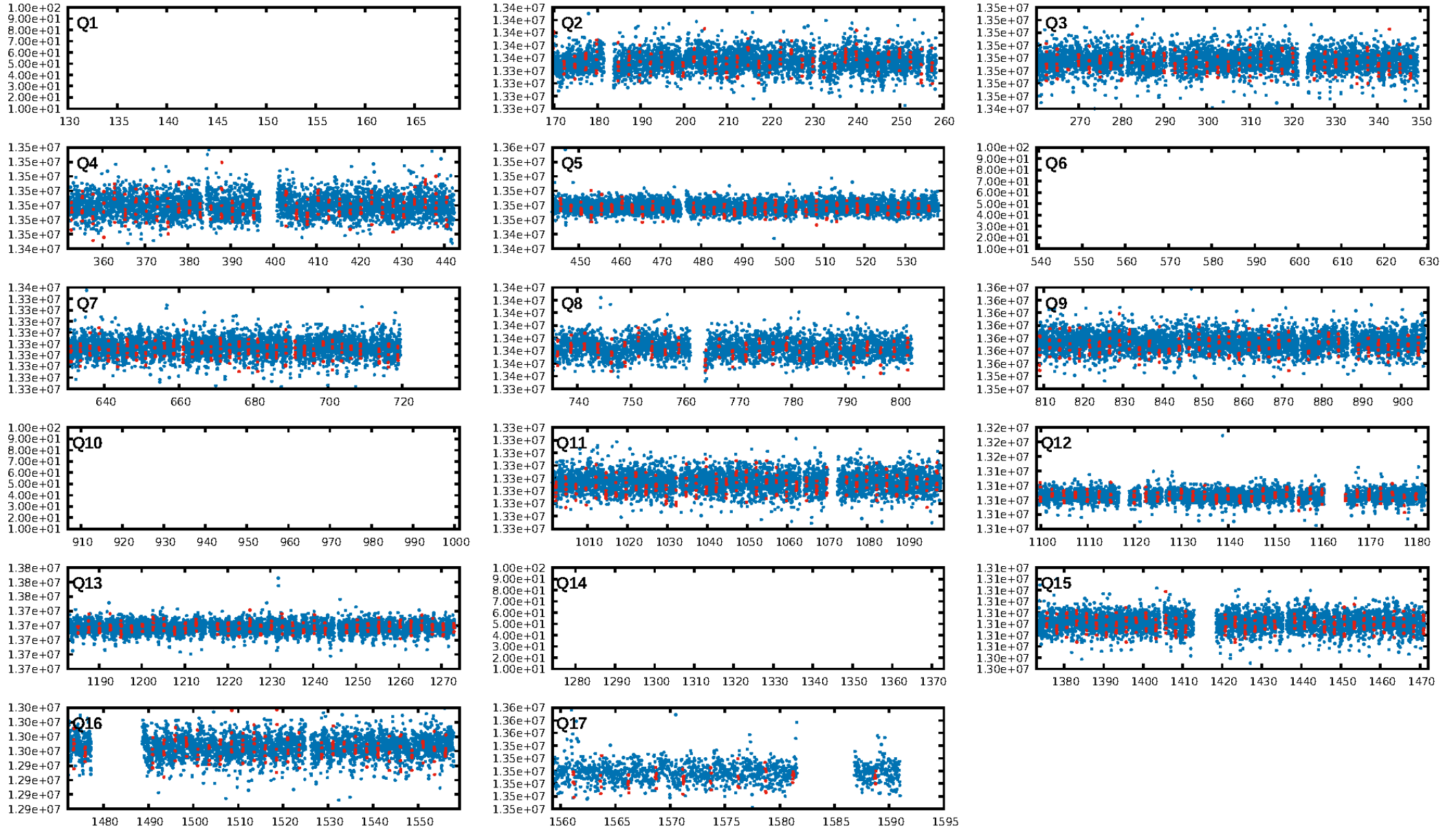
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.86e-48
RollingBand-fgt: 0.99 [398/401]
GhostDiagnostic-chr: 1.279
Centroid-sig: 0.0%
Centroid-so: 1.906 arcsec [2.19σ]
OotOffset-rm: 3.300 arcsec [20.32σ]
KicOffset-rm: 3.285 arcsec [19.97σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

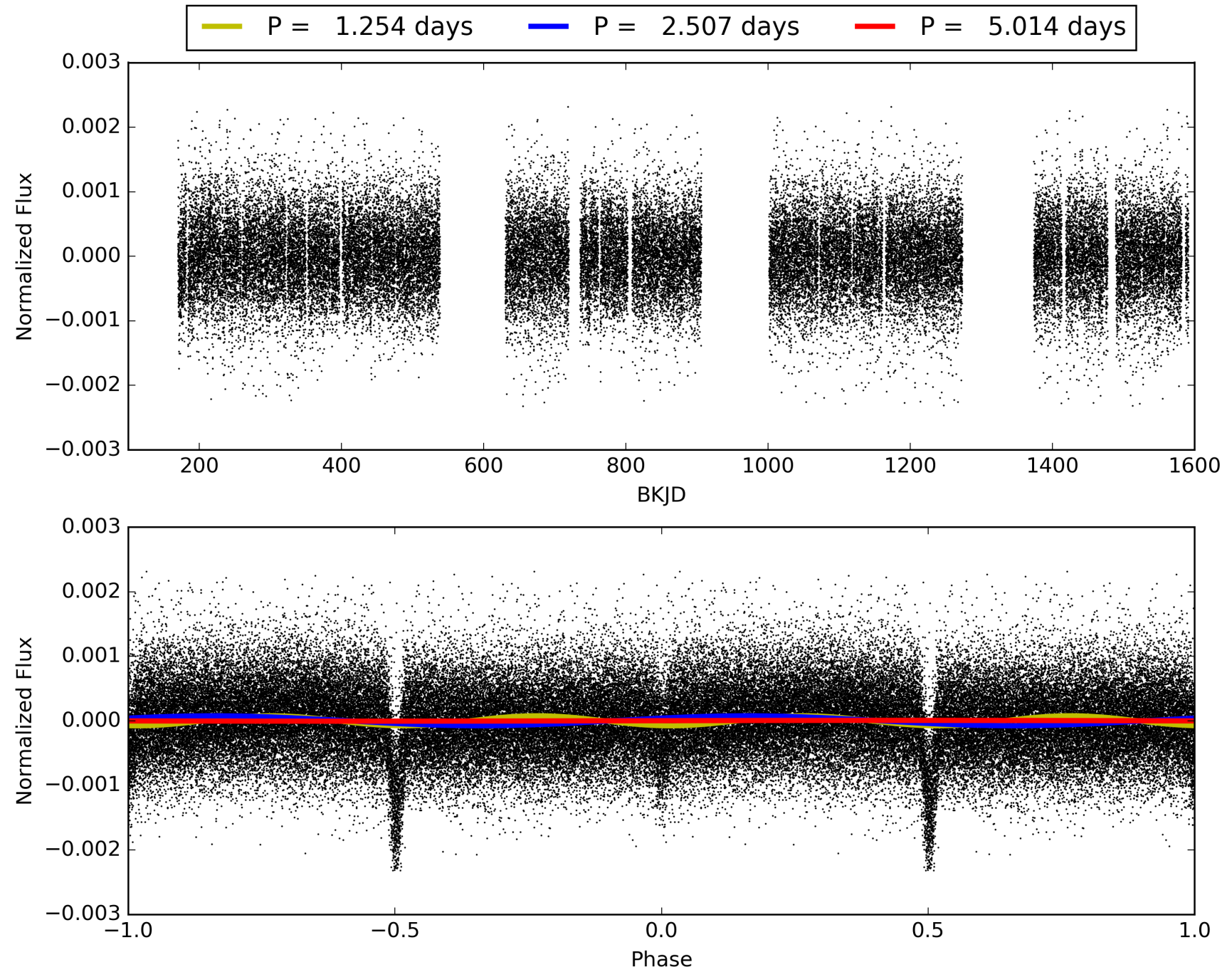
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005287983-02, PDC Light Curves

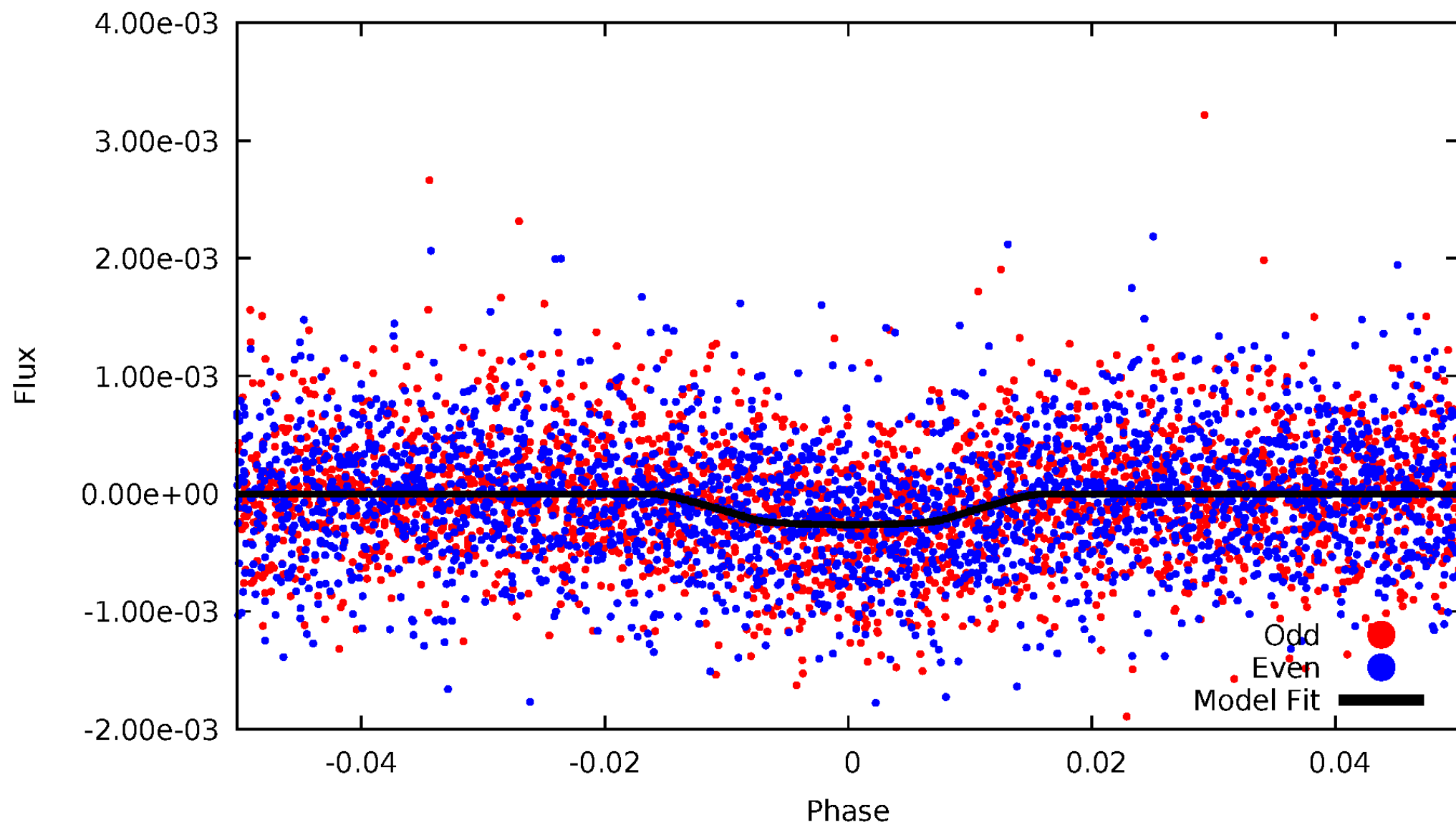


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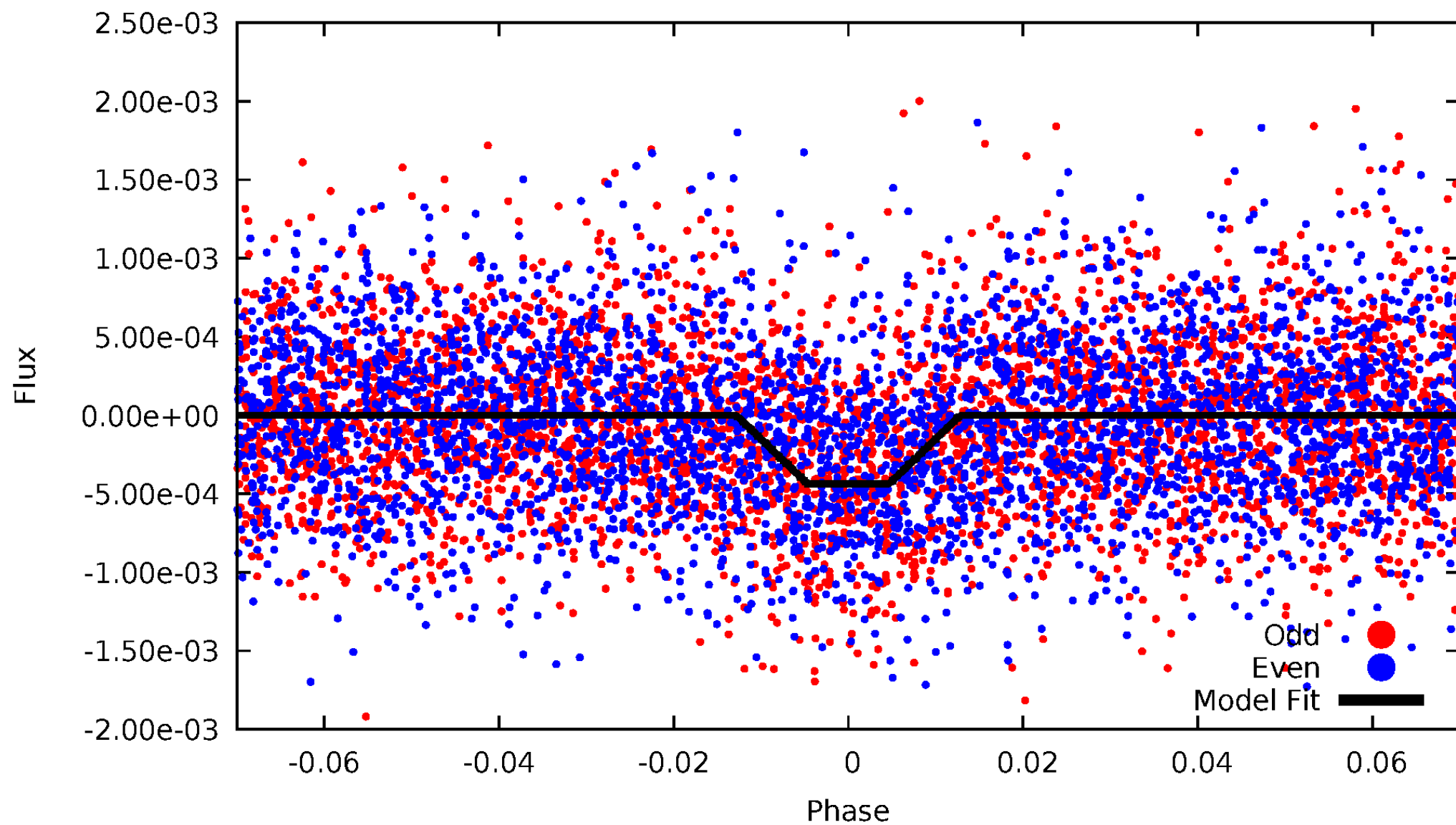
DV Odd/Even

TCE 005287983-02



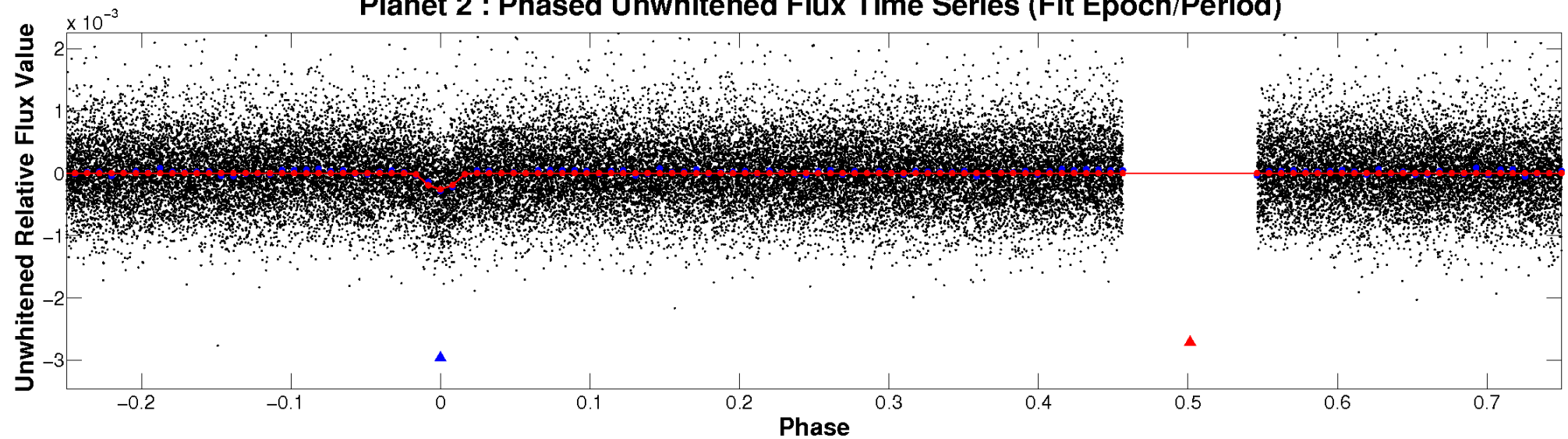
ALT Odd/Even

TCE 005287983-02

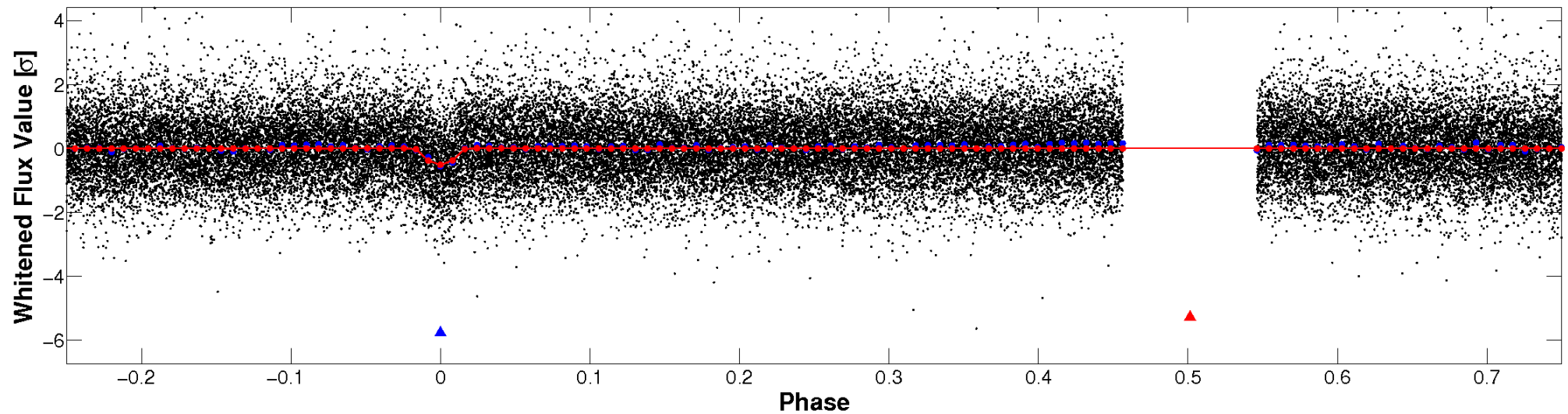


Non-Whitened Vs. Whitened Light Curve

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

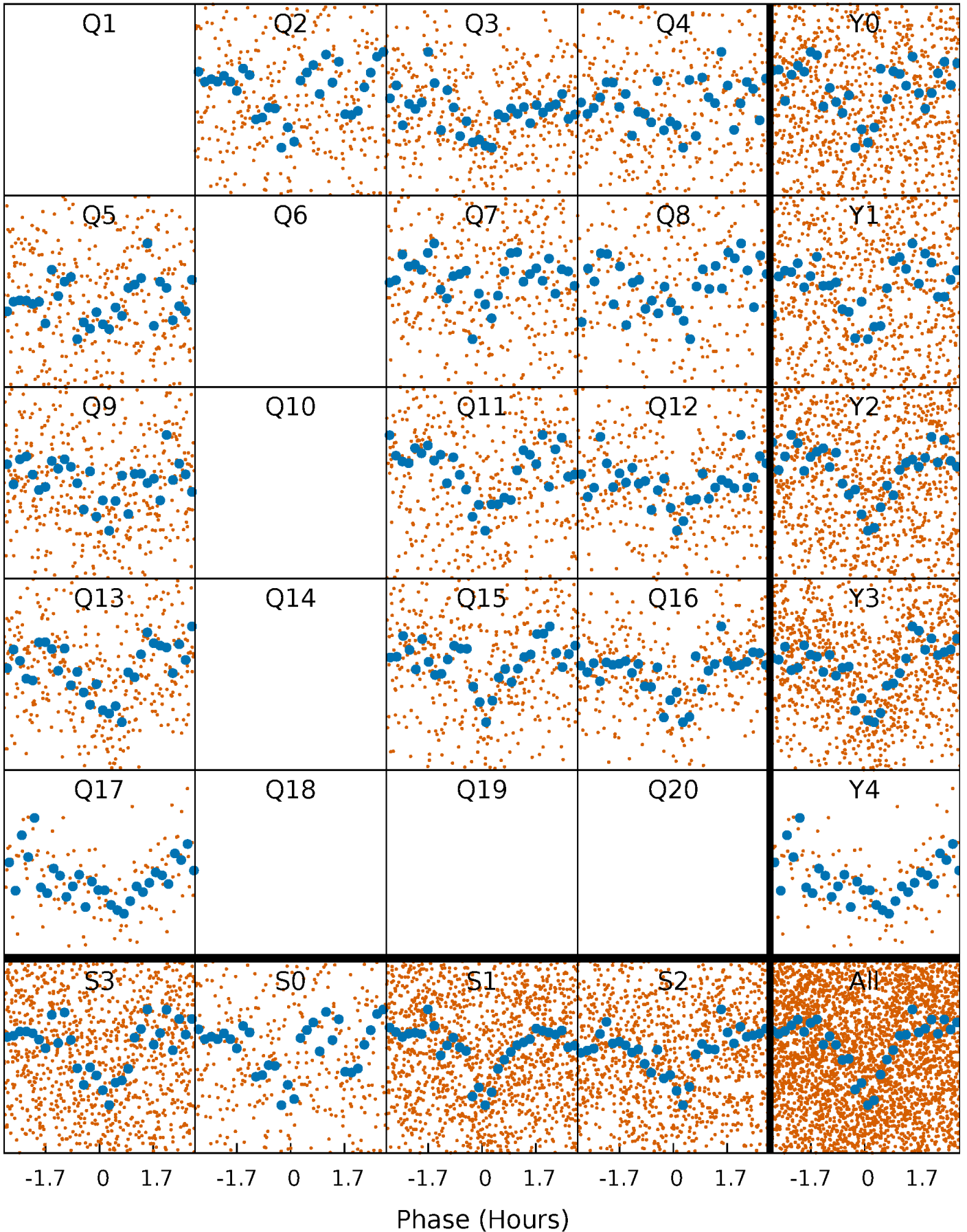


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



PDC Quarter-Phased Transit Curves

TCE 005287983-02 P= 2.507059 Days $T_0=132.147380$ (BKJD)



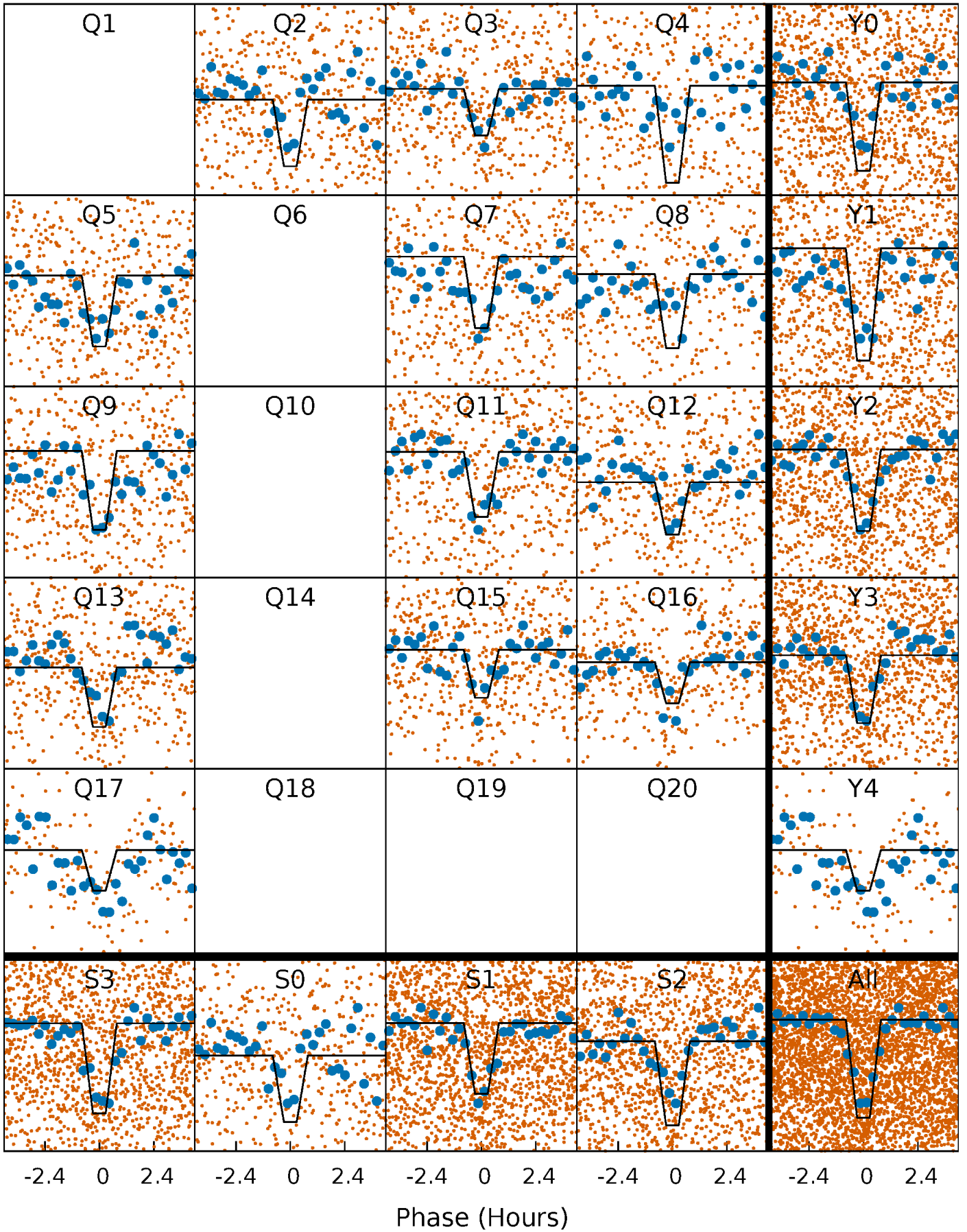
DV Quarter-Phased Transit Curves

TCE 005287983-02 P= 2.507059 Days $T_0=132.147380$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

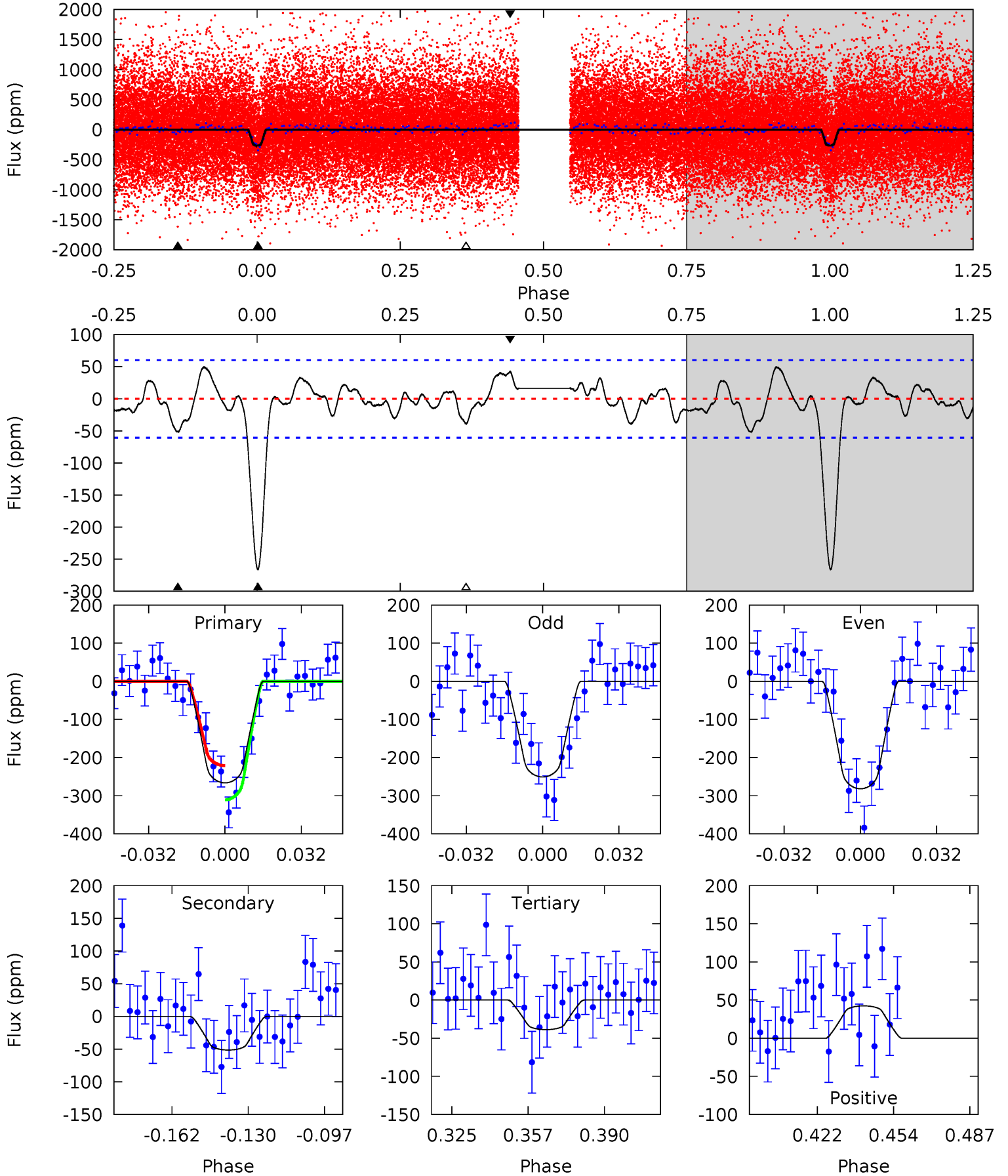
TCE 005287983-02 P= 2.507092 Days $T_0=132.140361$ (BKJD)



DV Model-Shift Uniqueness Test

005287983-02, P = 2.507059 Days, E = 132.147380 Days

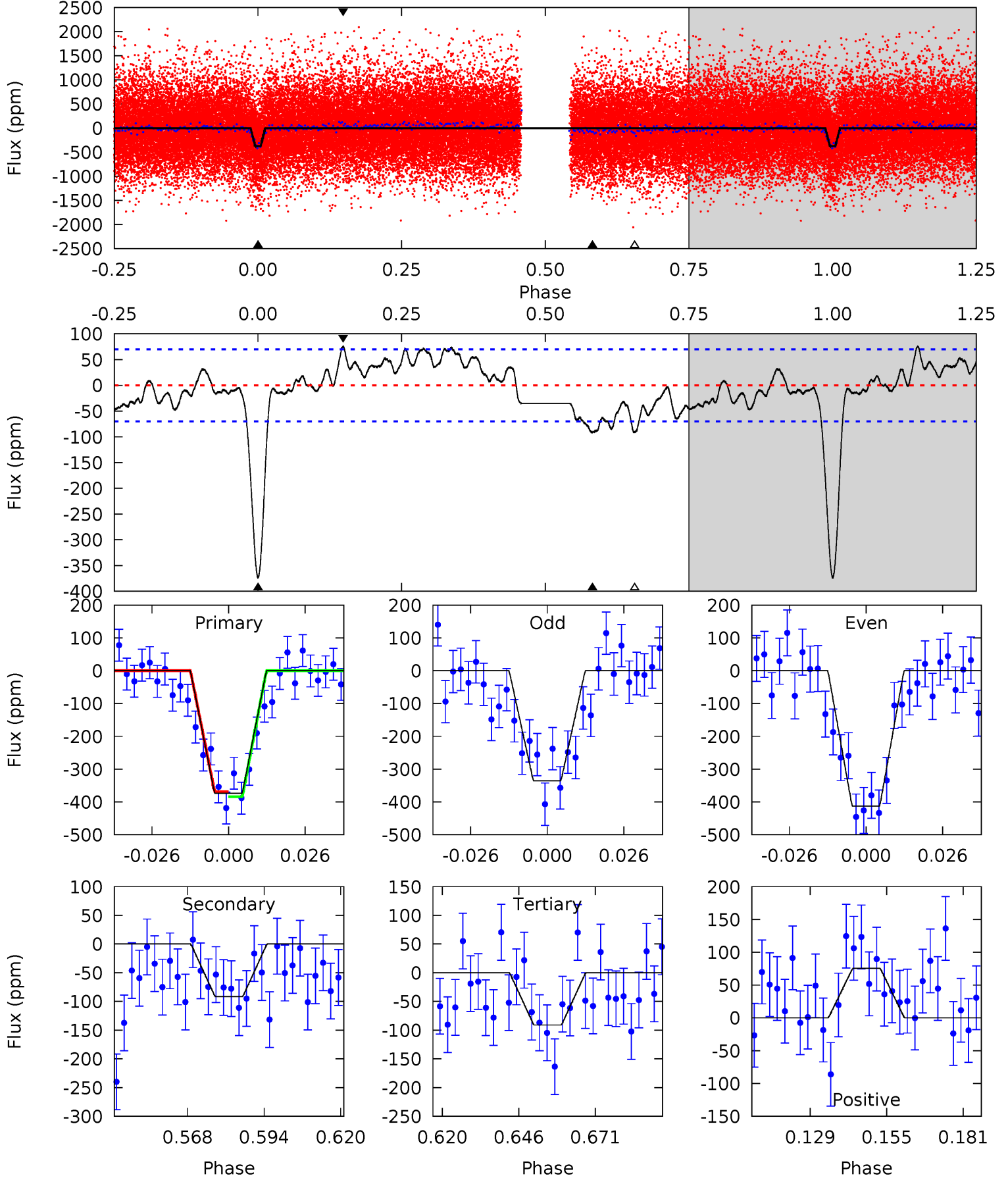
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.1	4.08	3.08	3.37	4.80	2.14	1.52	18.1	17.8	1.00	0.72	1.23	0.93	0.16	3.57



Alt Model-Shift Uniqueness Test

005287983-02, P = 2.507092 Days, E = 132.140361 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	6.36	6.32	5.22	4.84	2.23	2.73	19.6	20.7	0.04	1.13	2.68	0.96	0.17	0.55



Stellar Parameters For KIC 005287983

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5926^{+184}_{-226}	$4.506^{+0.054}_{-0.216}$	$-0.040^{+0.250}_{-0.300}$	$0.939^{+0.297}_{-0.099}$	$1.030^{+0.124}_{-0.138}$	$1.752^{+0.470}_{-0.926}$
	+3%/-4%	+1%/-5%	+625%/-750%	+32%/-11%	+12%/-13%	+27%/-53%
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 005287983-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-51 ± 13	$1.91^{+0.97}_{-0.84}$	1892^{+134}_{-92}	4005^{+1104}_{-518}	$9.666^{+24.083}_{-5.398}$
Alt.	-92 ± 14	$2.25^{+0.97}_{-0.95}$	1891^{+143}_{-101}	4247^{+1079}_{-513}	13^{+25}_{-7}

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

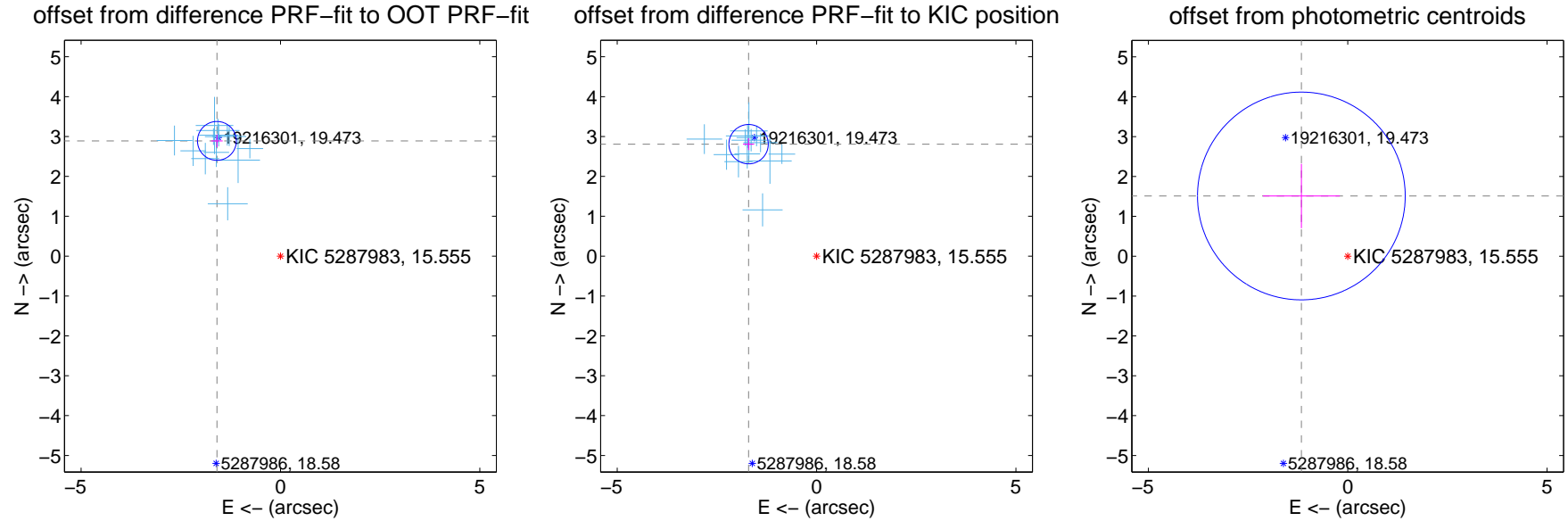
DV Centroid Data

Supplemental centroid analysis for 005287983-02. Kepler magnitude: 15.55. Transit SNR 14.85

There are 13 quarters with good PRF difference image offsets

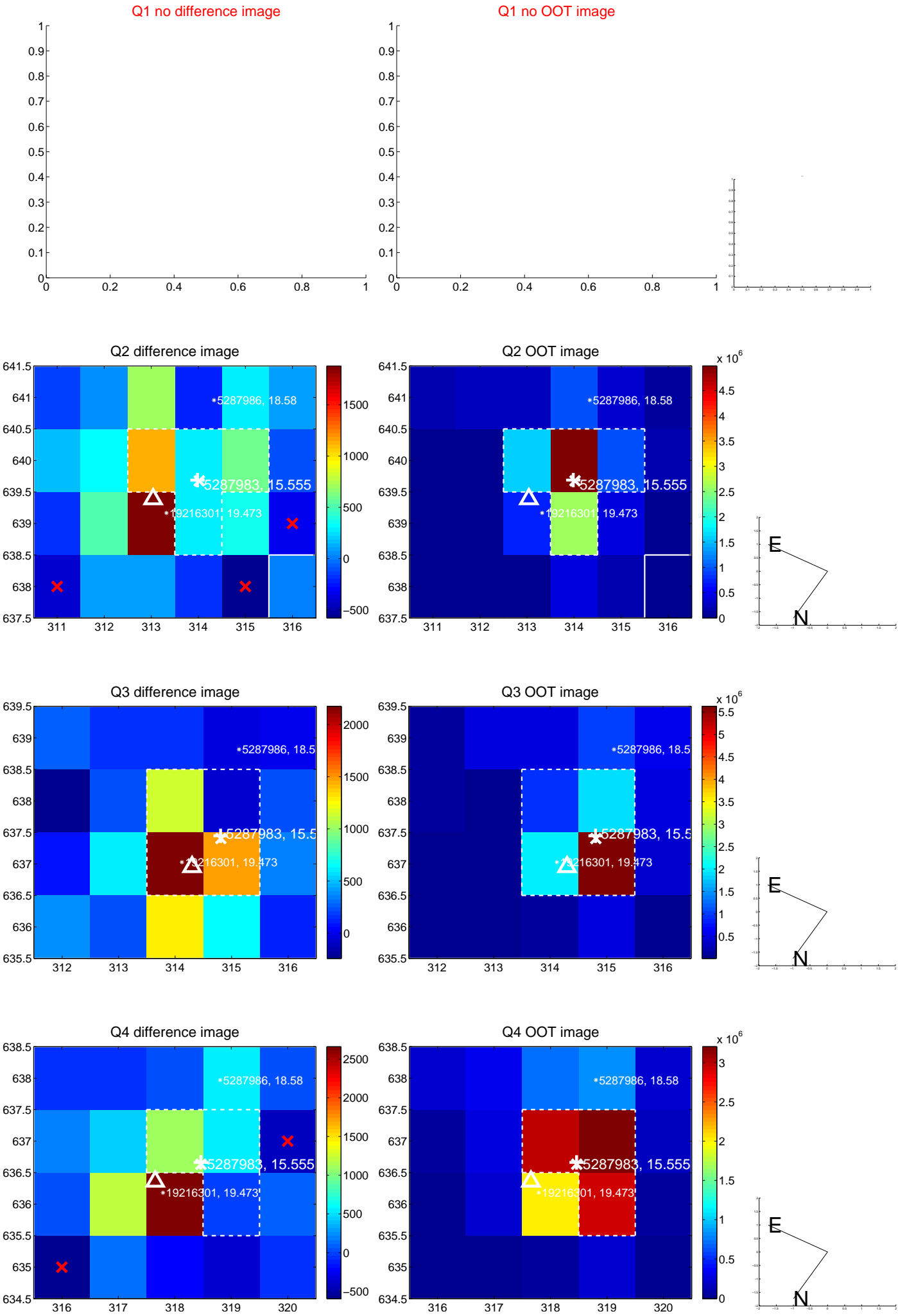
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.300 ± 0.162	20.32	1.594 ± 0.145	2.890 ± 0.160
PRF-fit source offset from KIC position	3.285 ± 0.165	19.97	1.705 ± 0.140	2.808 ± 0.150
photometric centroid source offset	1.91 ± 0.87	2.19	1.16 ± 0.96	1.51 ± 0.81

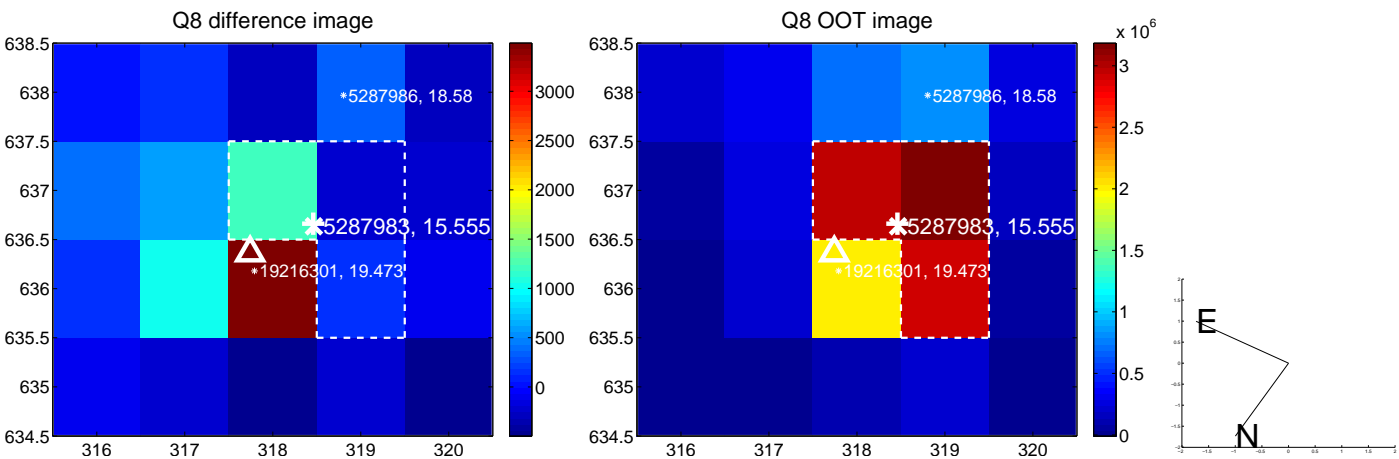
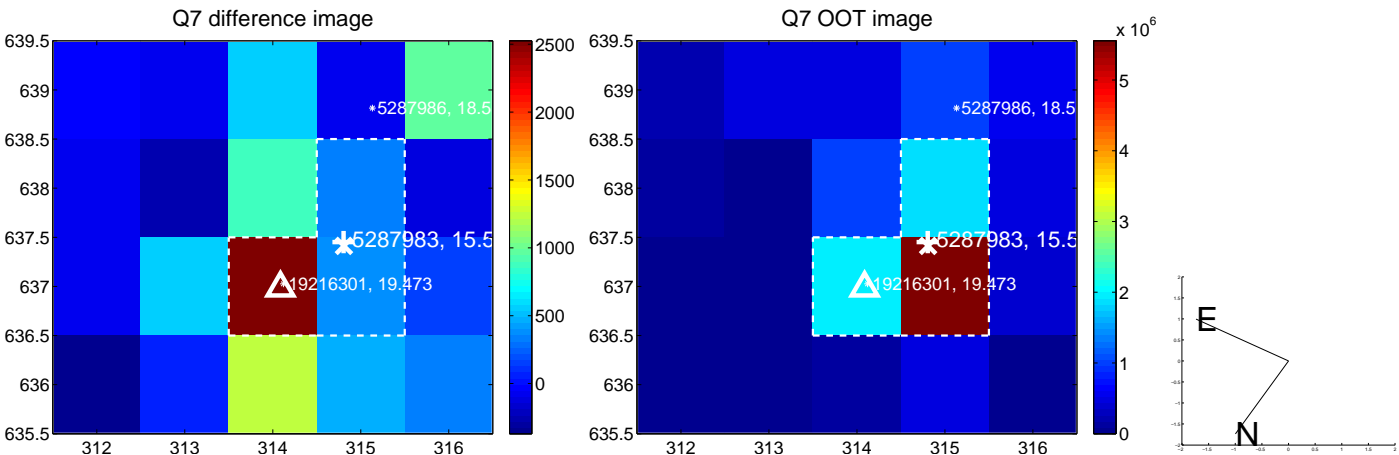
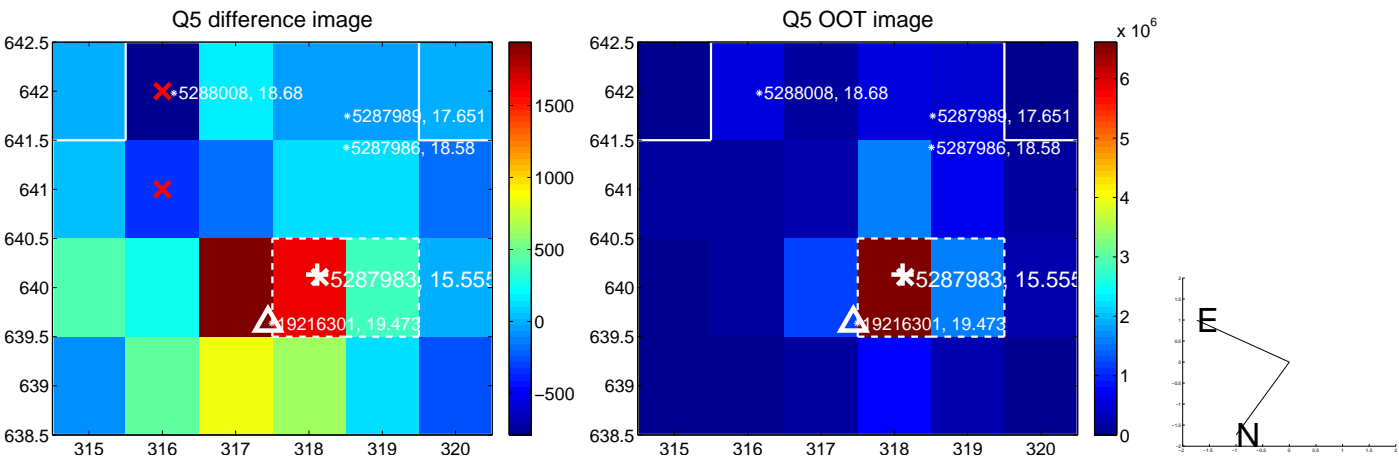


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

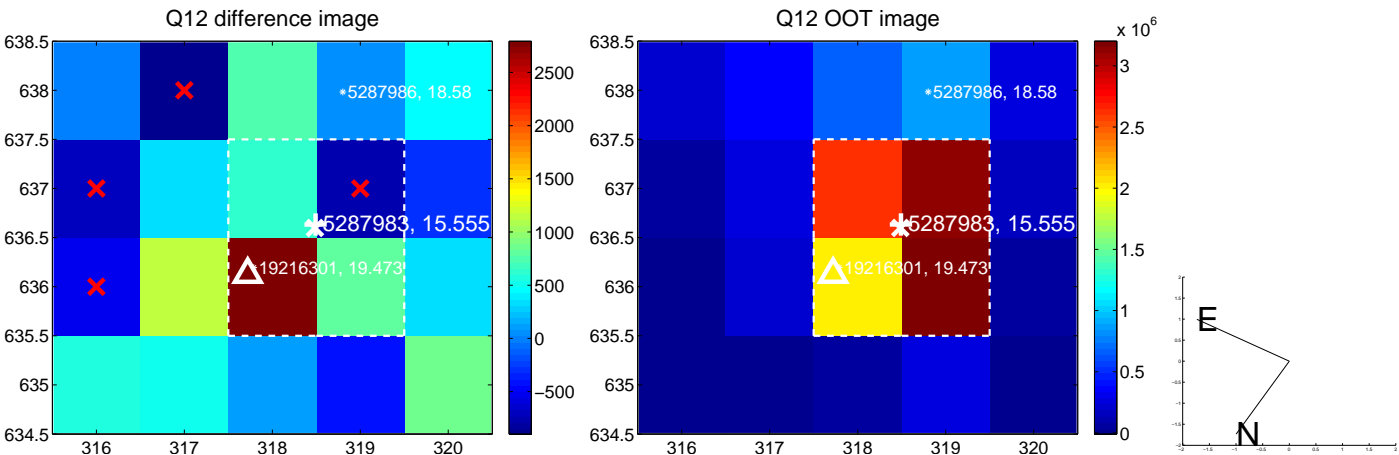
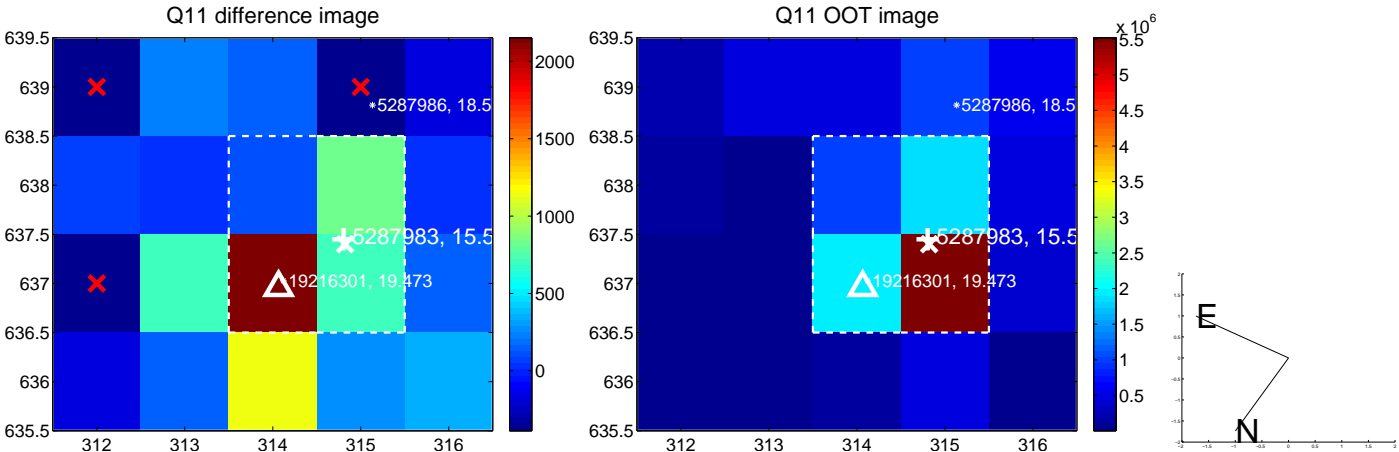
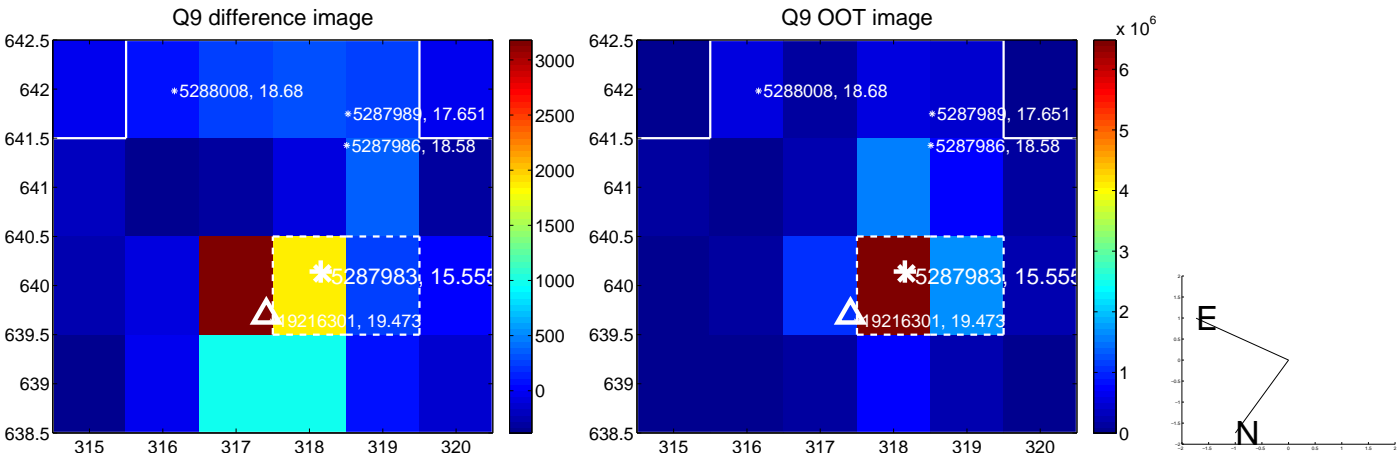
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



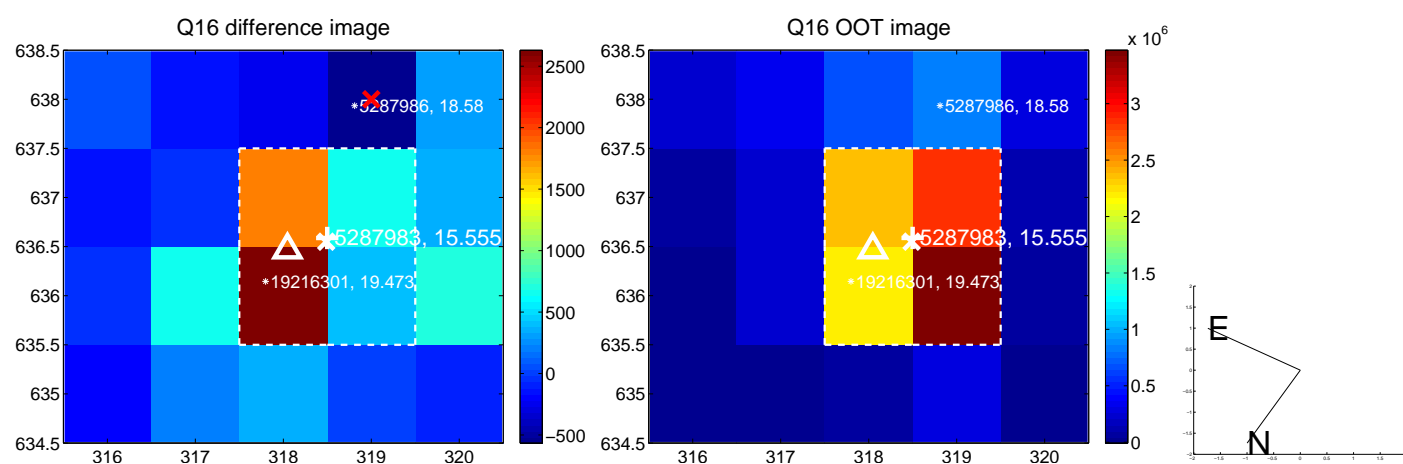
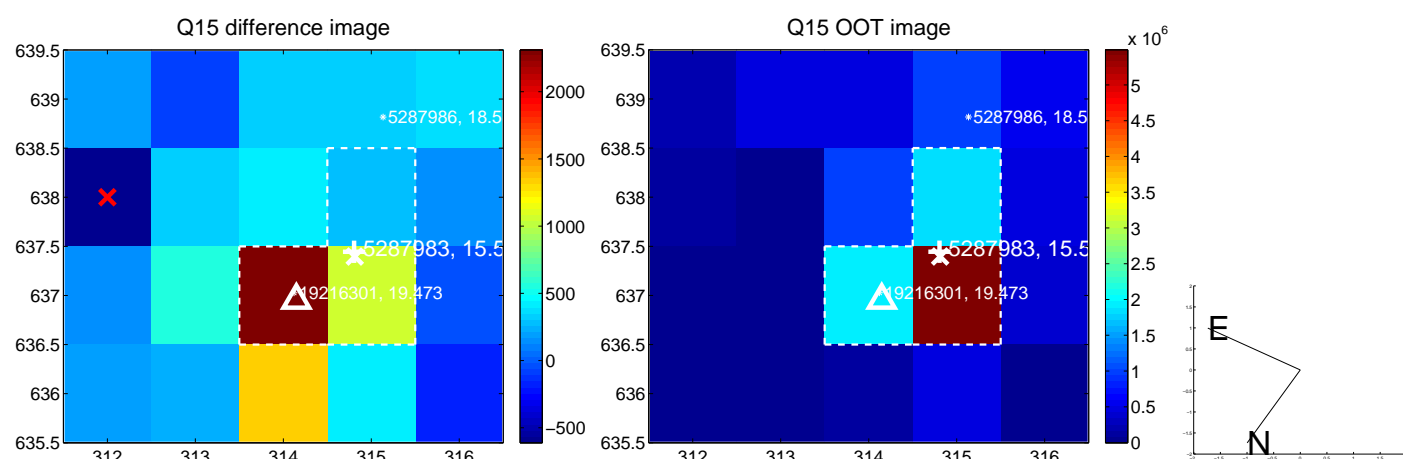
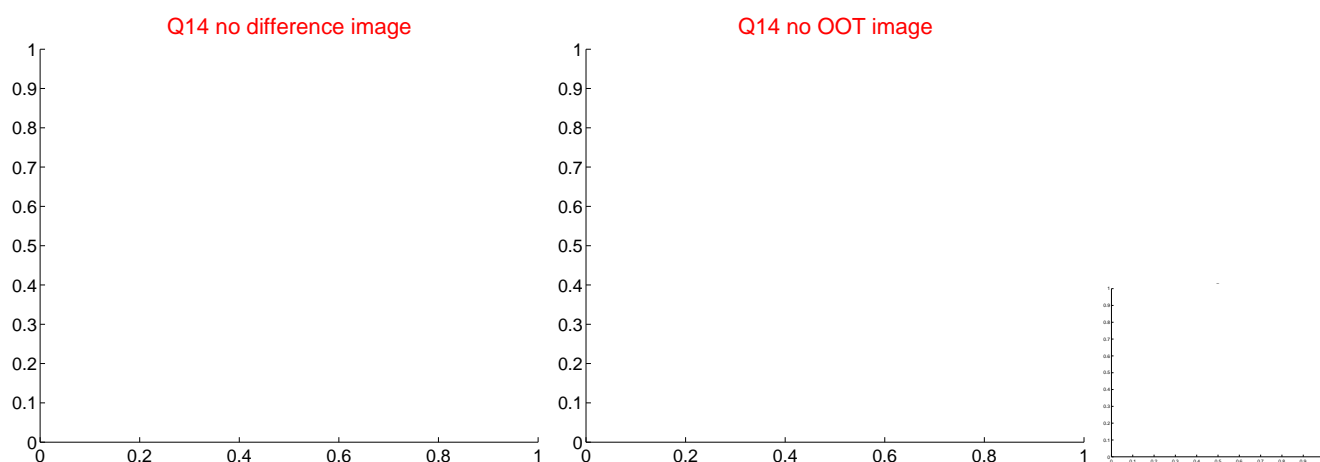
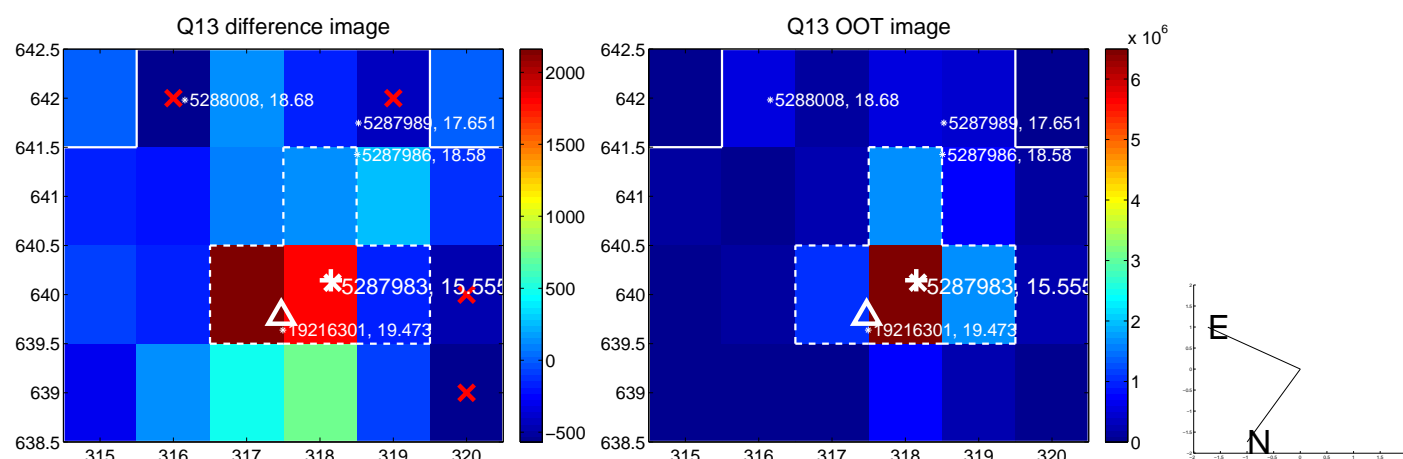
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



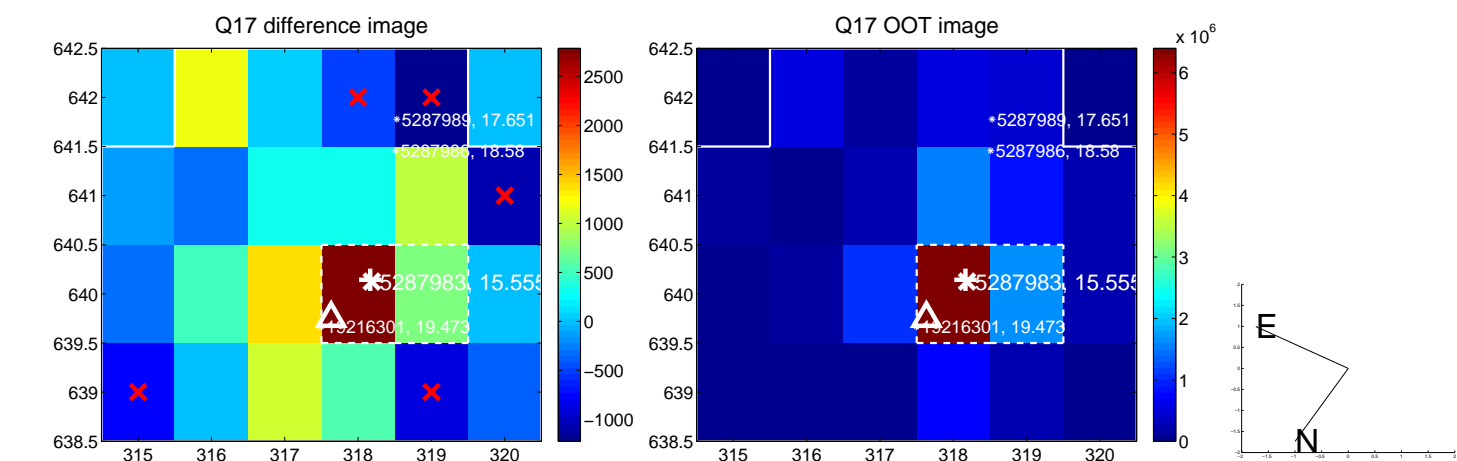
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



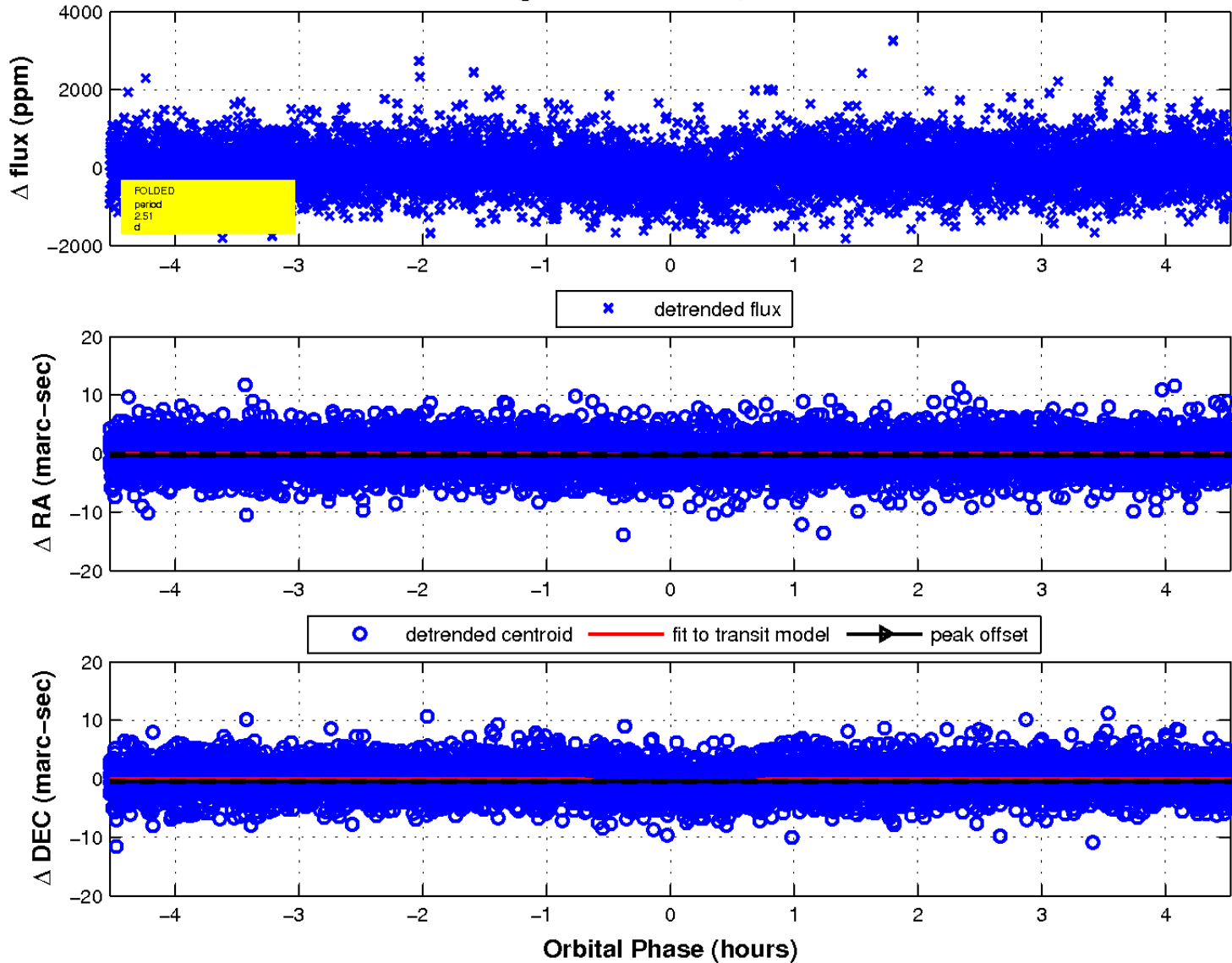
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

