

KIC 006891998

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})
006891998-01	OBS	No	0.944104	131.817869	265.3	4.755	8.7	11.0	1.67	6873	3.16	12408.79
006891998-02	OBS	No	0.944097	132.275819	403.4	5.697	11.3	17.3	1.67	6873	4.33	12408.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006891998-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006891998-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

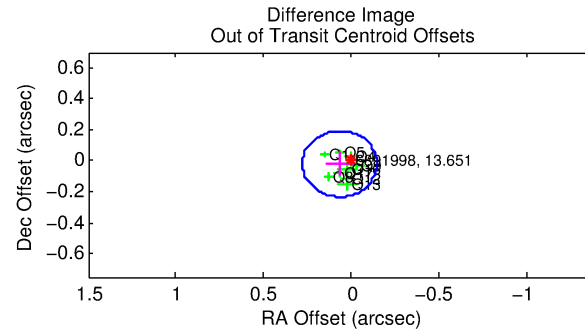
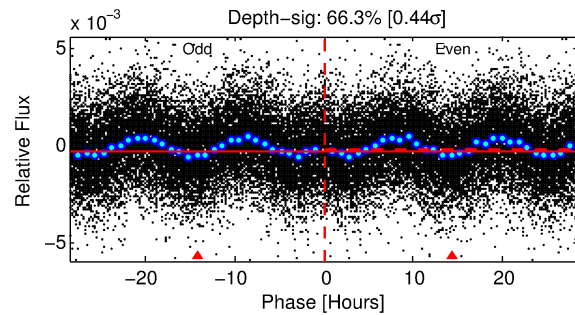
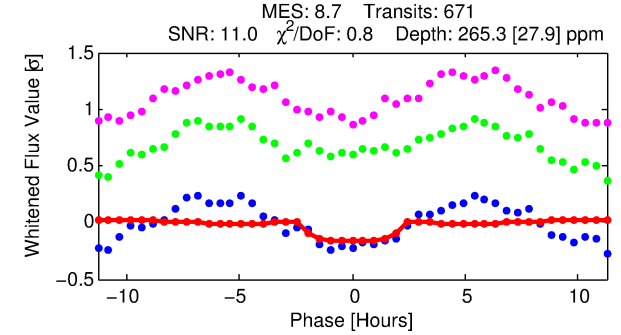
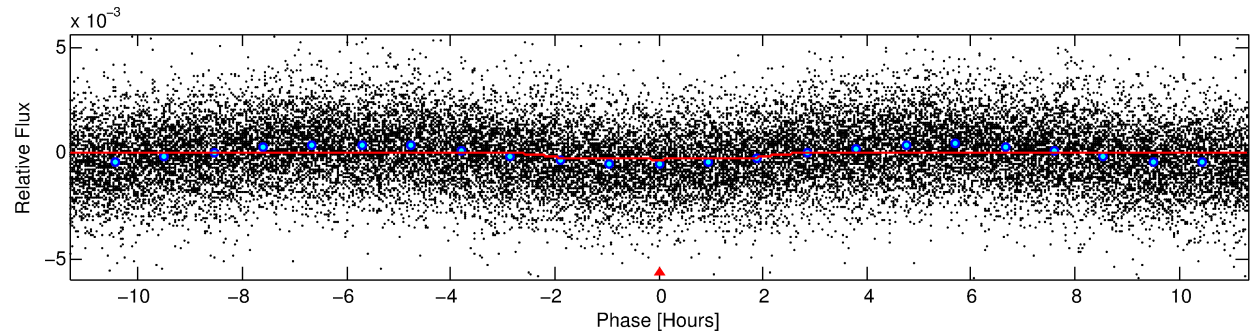
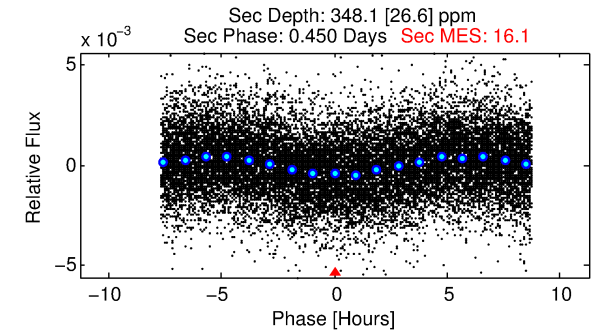
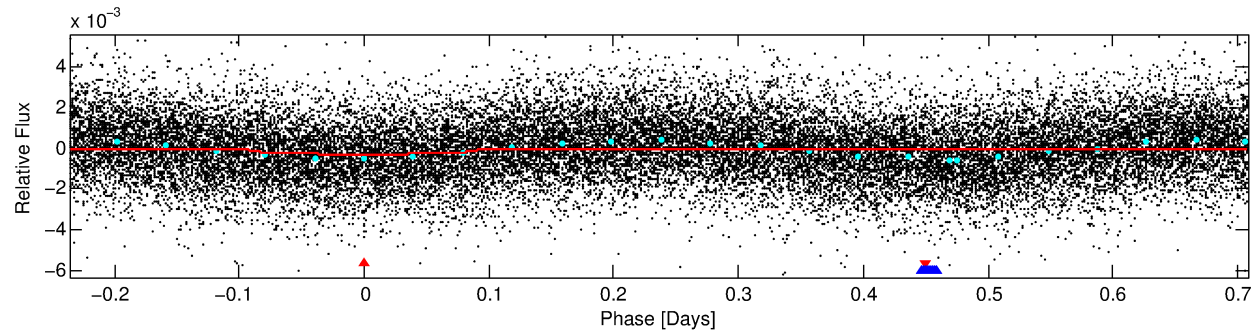
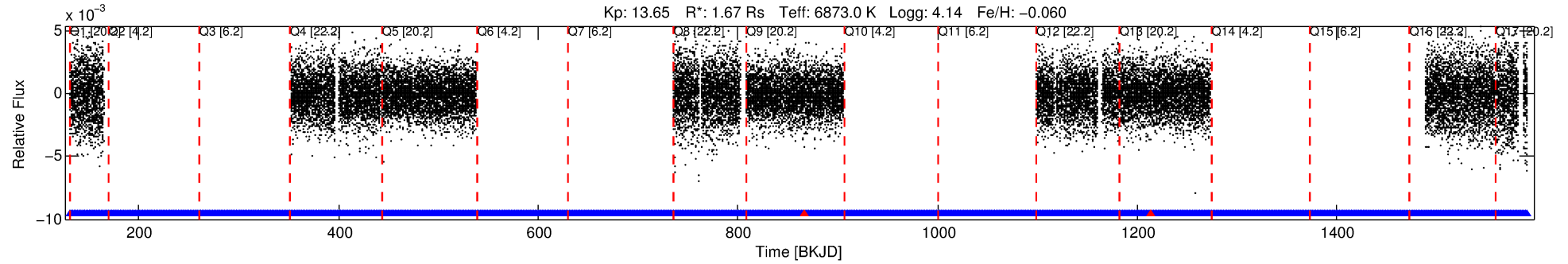
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006891998-01

No Significant Match Found

DV One-Page Summary

KIC: 6891998 Candidate: 1 of 2 Period: 0.944 d



DV Fit Results:

Period = 0.94410 [0.00001] d
Epoch = 131.8179 [0.0044] BKJD
Rp/R* = 0.0174 [0.0031]
a/R* = 1.19 [0.34]
b = 0.90 [0.21]
Seff = 12408.79 [5001.66]
Teq = 2691 [271] K
Rp = 3.16 [1.18] Re
a = 0.0211 [0.0055] AU
Ag = 8.58 [4.40] [1.72σ]
Teffp = 7120 [723] K [5.74σ]

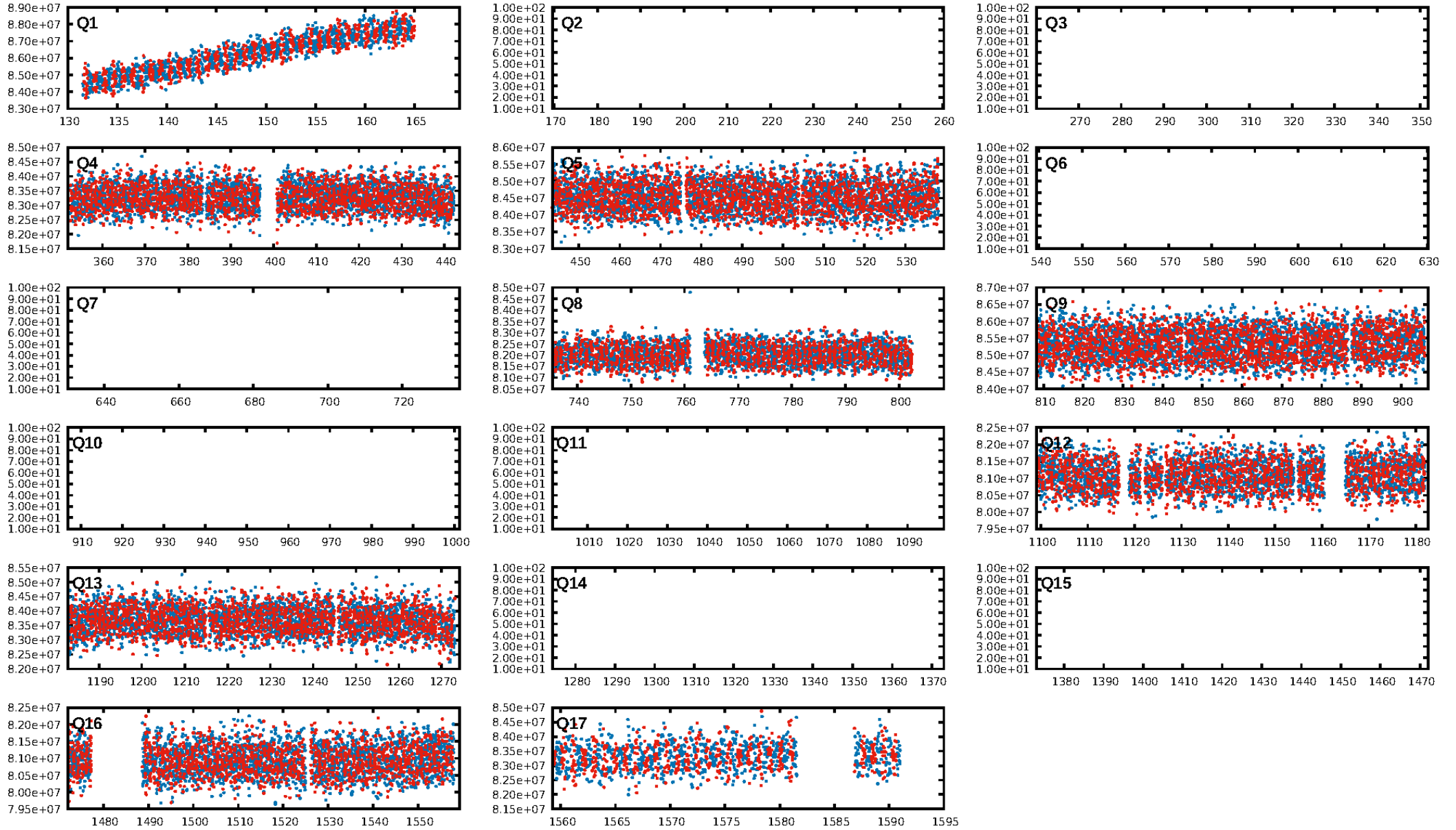
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [605/607]
GhostDiagnostic-chr: 1.663
Centroid-sig: 0.0%
Centroid-so: 0.462 arcsec [3.27σ]
OotOffset-rm: 0.070 arcsec [0.99σ]
OotOffset-st: 0/0/4/5 [9]
KicOffset-rm: 0.065 arcsec [0.87σ]
KicOffset-st: 0/0/4/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/9]

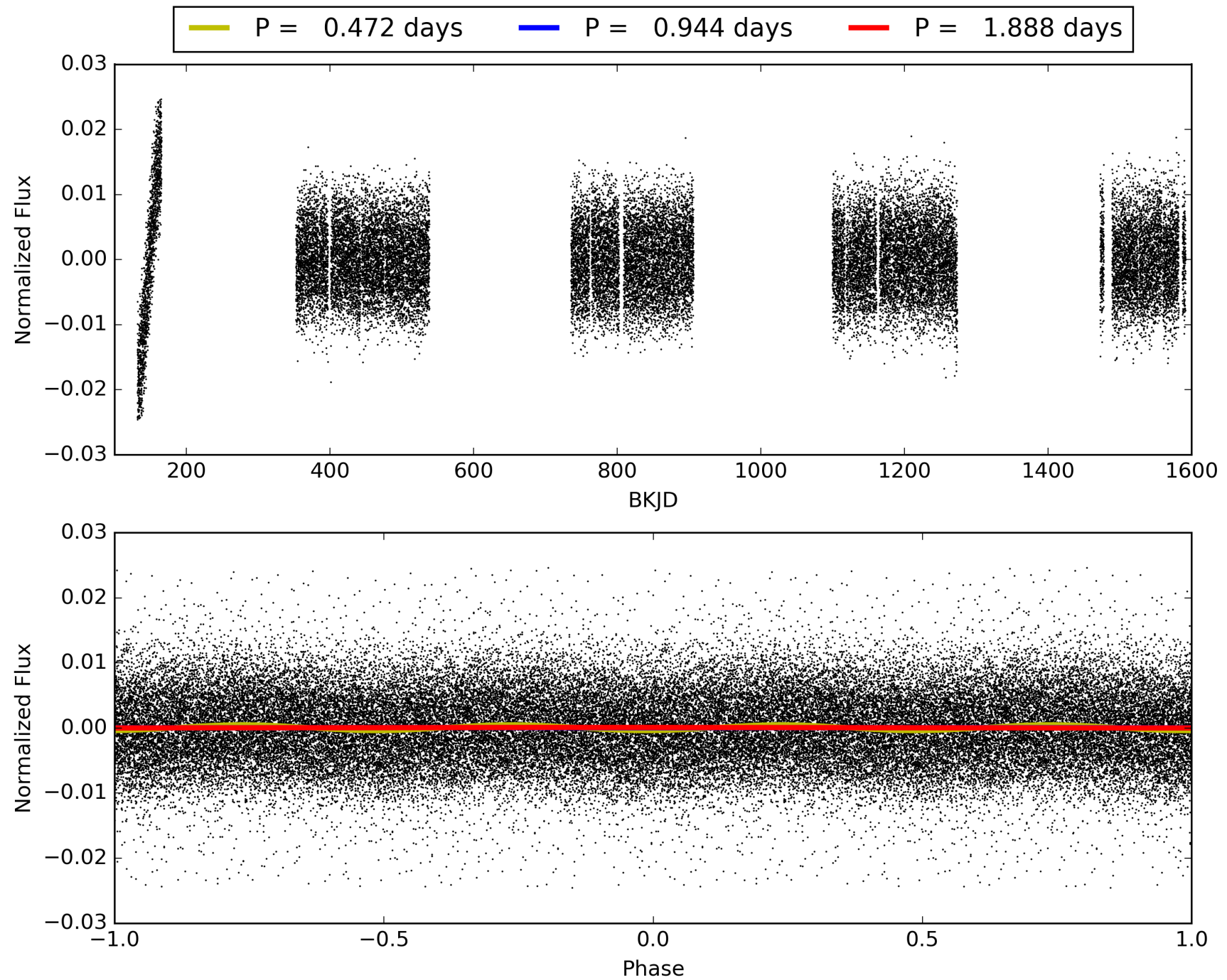
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 006891998-01, PDC Light Curves

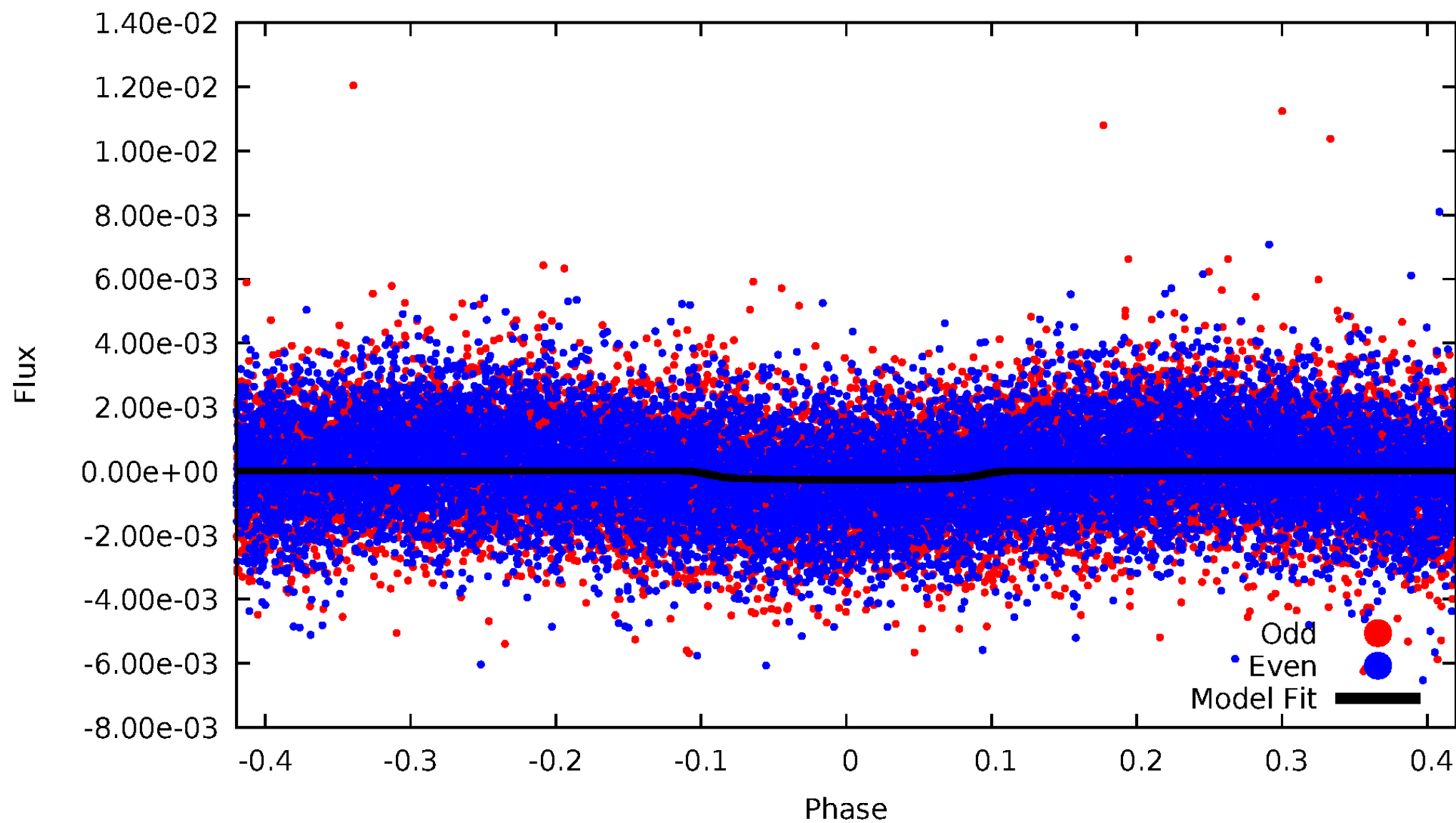


TCE 006891998-01



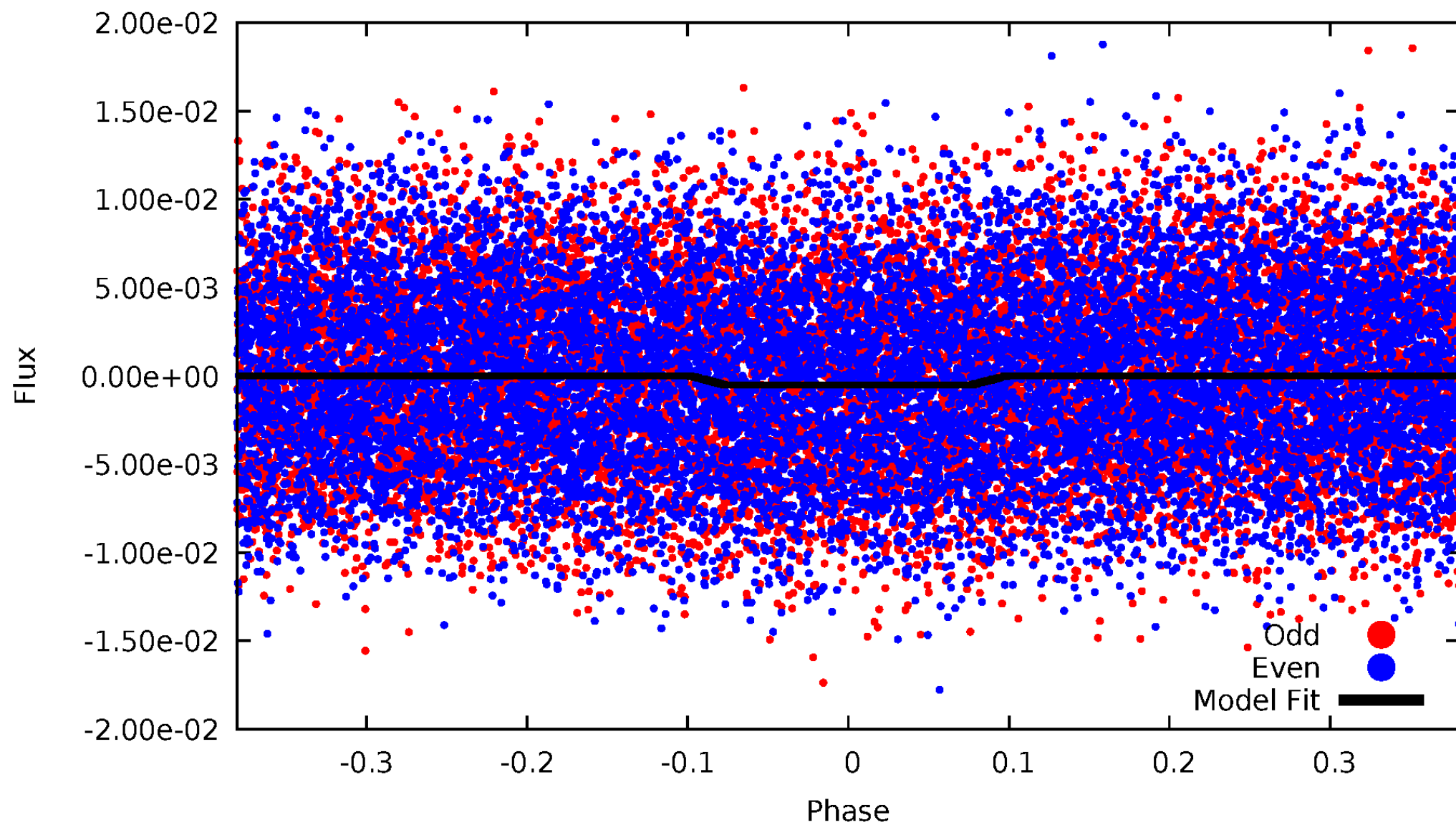
DV Odd/Even

TCE 006891998-01



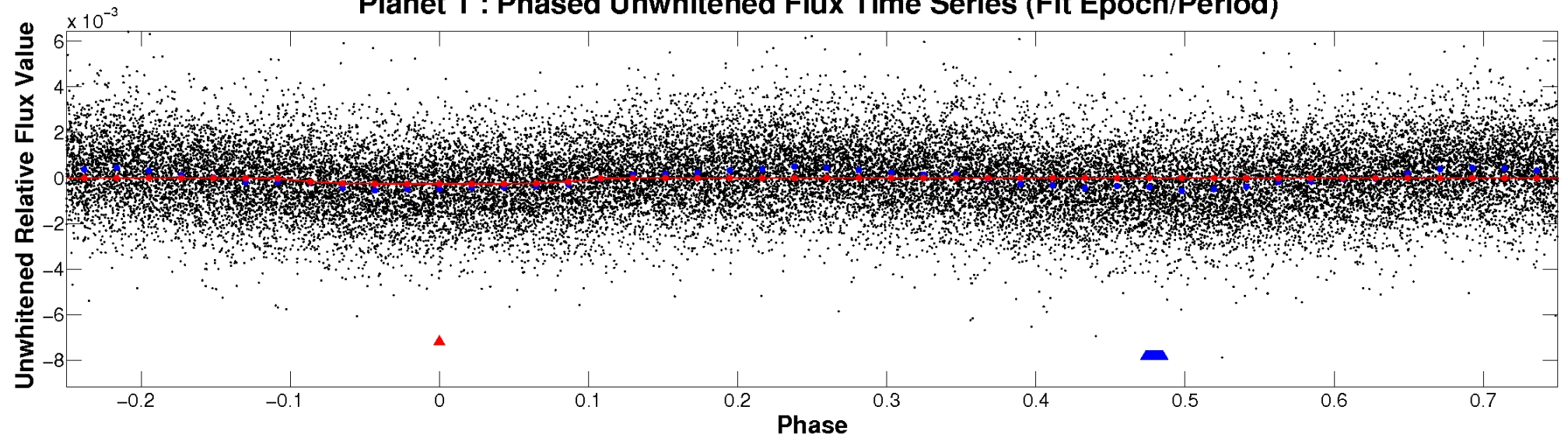
ALT Odd/Even

TCE 006891998-01

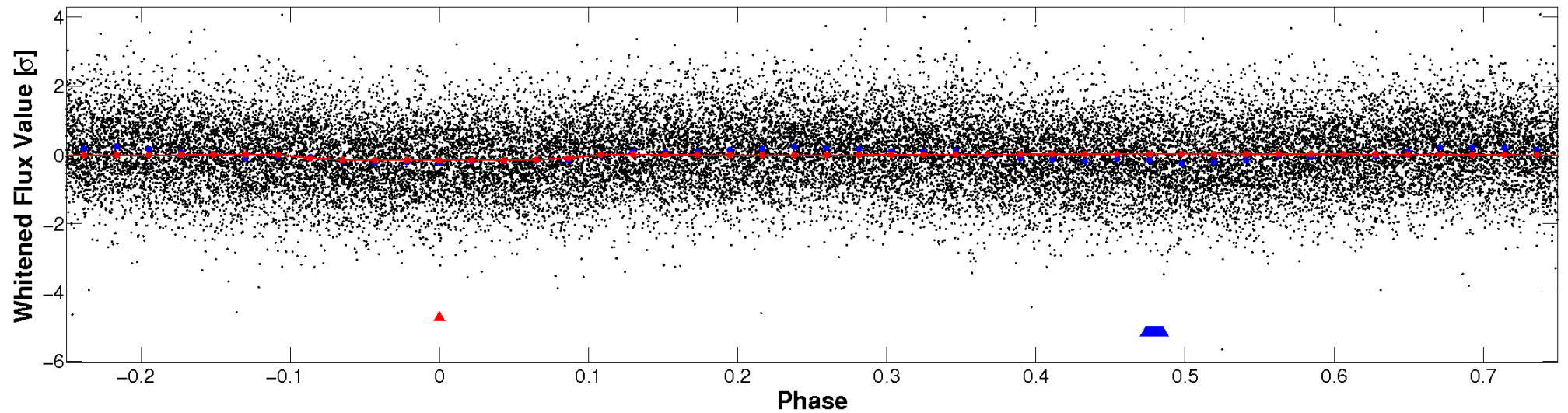


Non-Whitened Vs. Whitened Light Curve

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

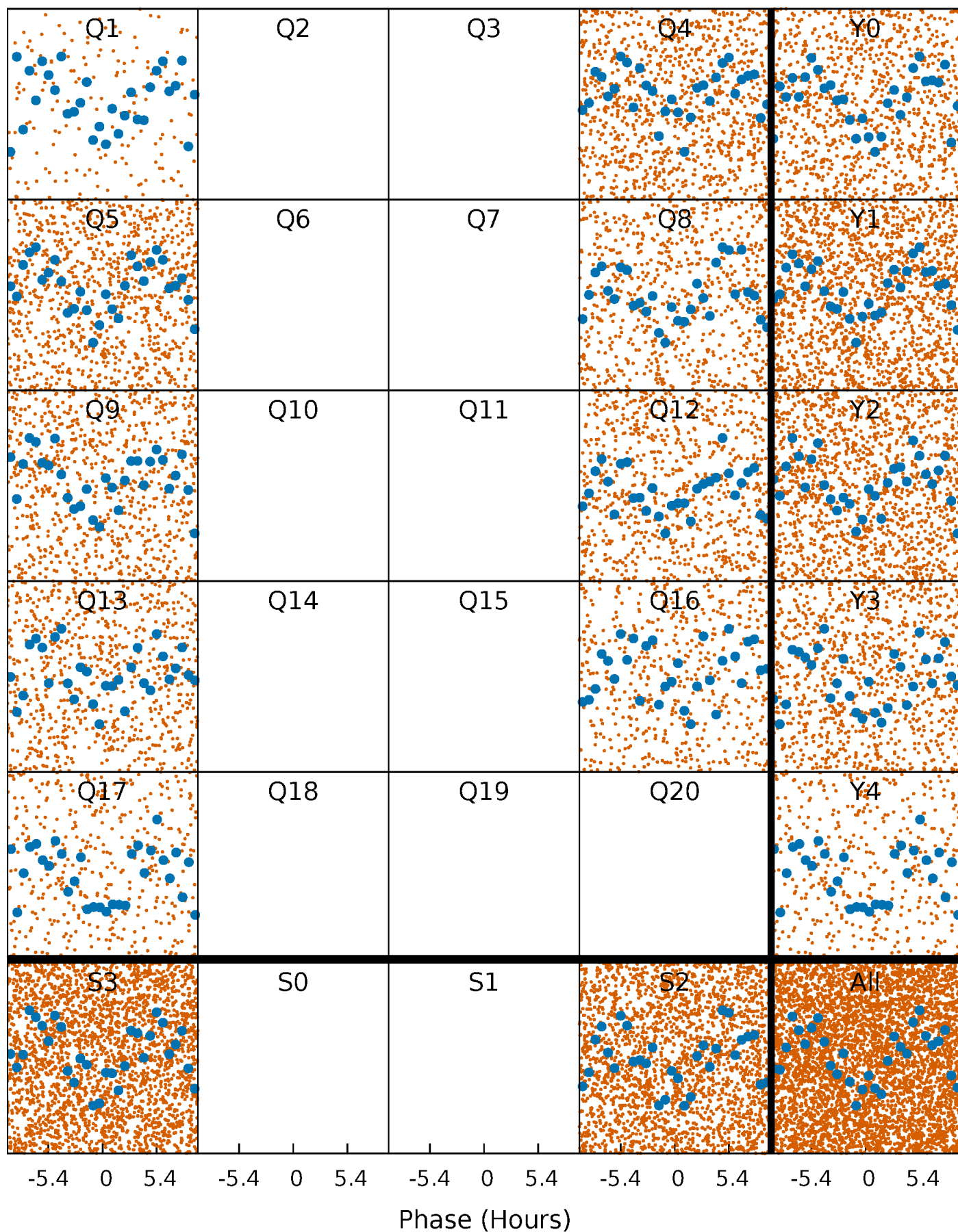


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



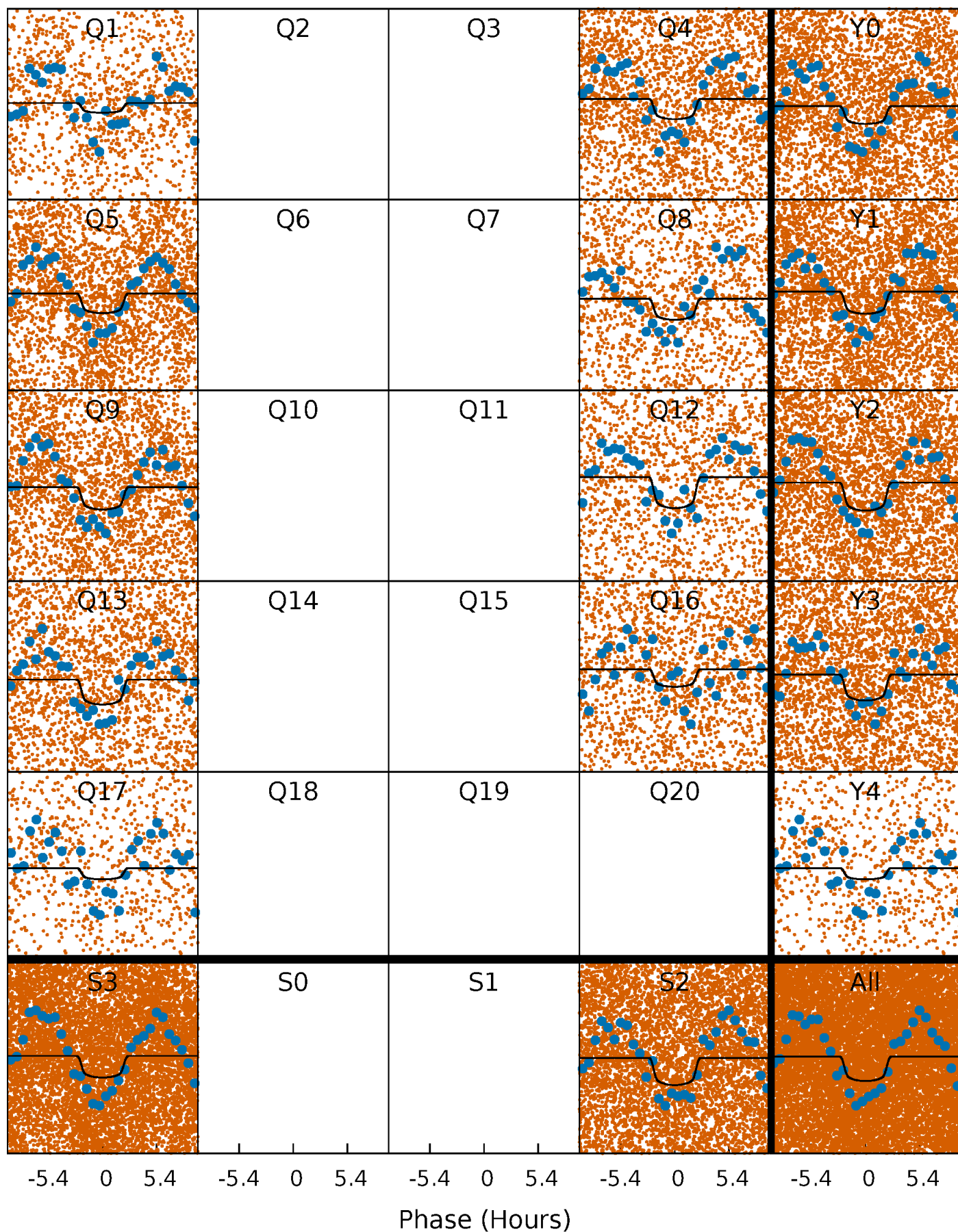
PDC Quarter-Phased Transit Curves

TCE 006891998-01 P= 0.944104 Days $T_0=131.817869$ (BKJD)



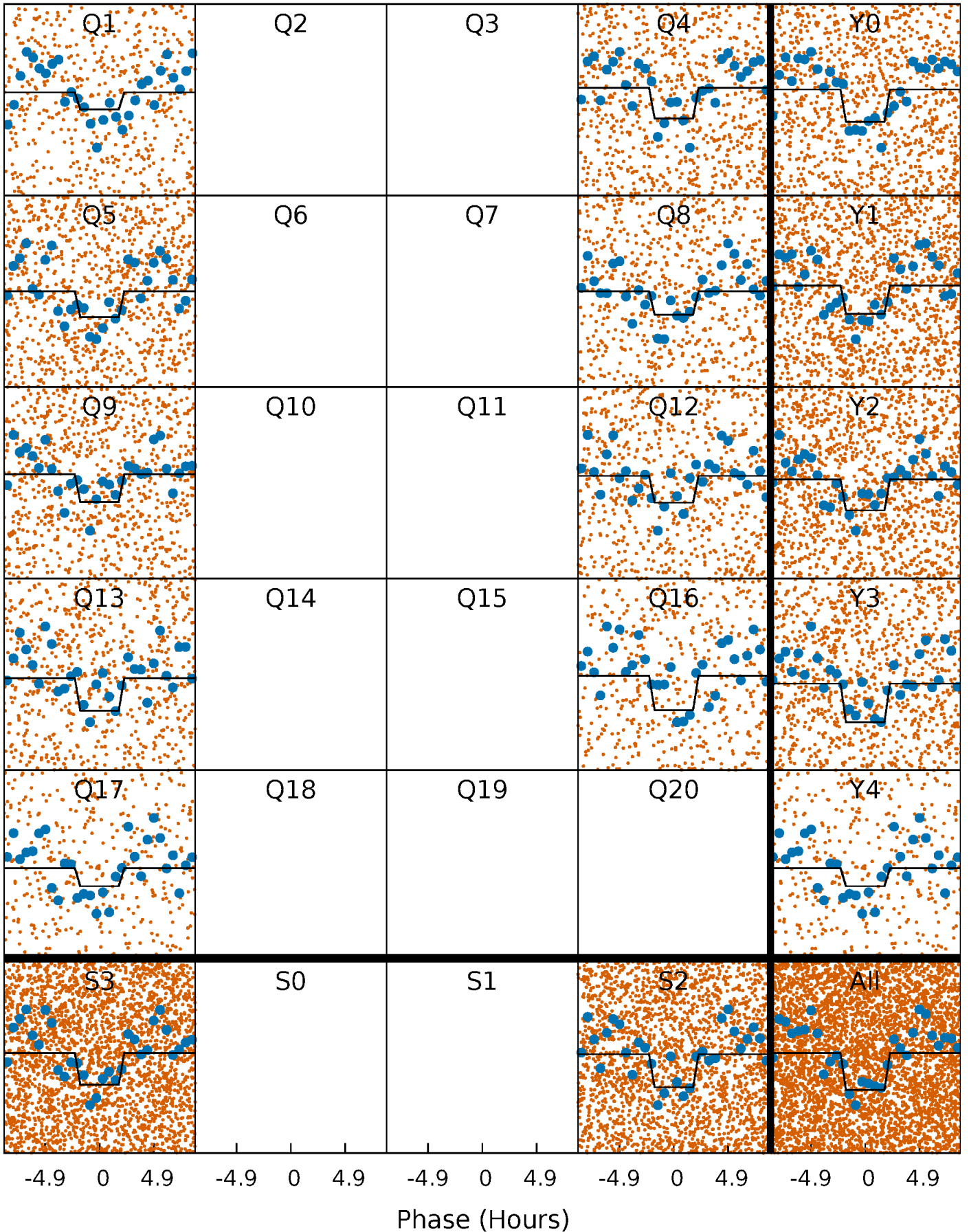
DV Quarter-Phased Transit Curves

TCE 006891998-01 P= 0.944104 Days $T_0=131.817869$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

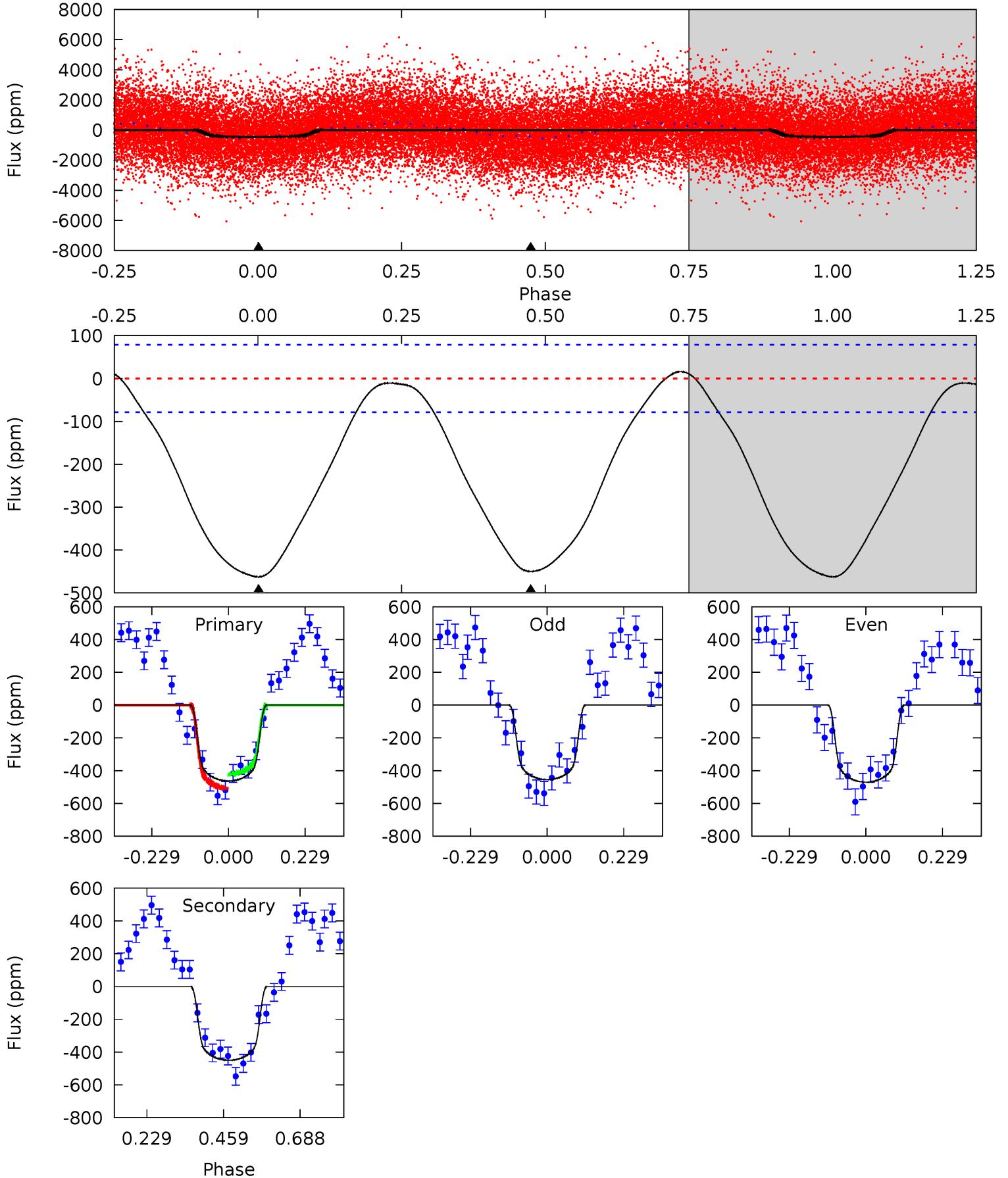
TCE 006891998-01 P= 0.944132 Days $T_0=131.801715$ (BKJD)



DV Model-Shift Uniqueness Test

006891998-01, P = 0.944104 Days, E = 130.873765 Days

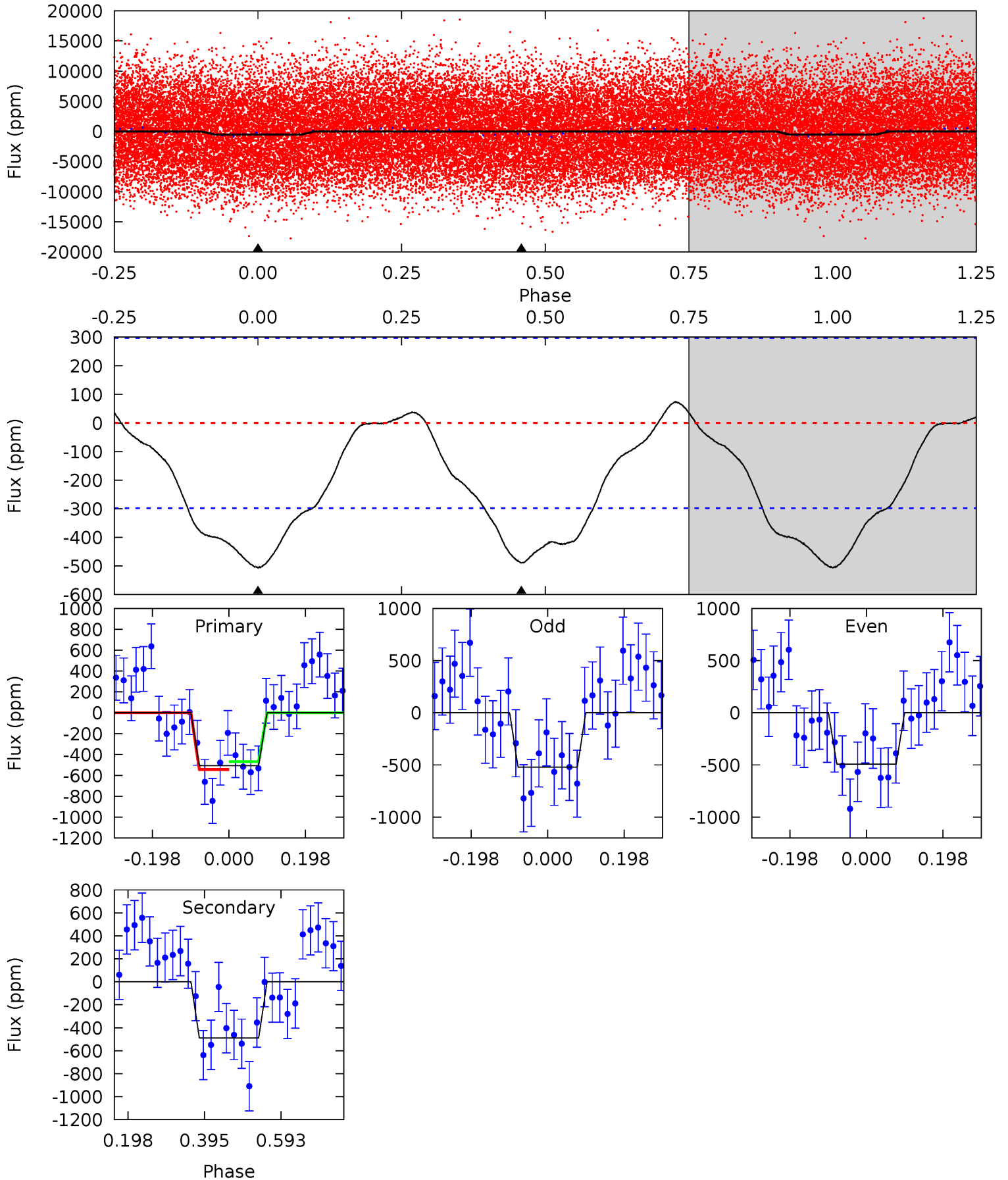
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.8	25.1	0	0	4.39	1.20	0.67	25.8	25.8	25.1	25.1	0.44	1.00	0.03	2.55



Alt Model-Shift Uniqueness Test

006891998-01, P = 0.944132 Days, E = 130.857583 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.50	7.25	0	0	4.42	1.29	0.64	7.50	7.50	7.25	7.25	0.21	0.96	0.13	0.56



Stellar Parameters For KIC 006891998

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6873^{+189}_{-307}	$4.145^{+0.153}_{-0.187}$	$-0.060^{+0.250}_{-0.350}$	$1.665^{+0.548}_{-0.411}$	$1.417^{+0.208}_{-0.254}$	$0.432^{+0.357}_{-0.225}$
	+3%/-4%	+4%/-5%	+417%/-583%	+33%/-25%	+15%/-18%	+83%/-52%
Source	KIC0	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 006891998-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-450 ± 18	$3.23^{+0.72}_{-0.73}$	3775^{+286}_{-272}	7542^{+1144}_{-743}	11^{+7}_{-4}
Alt.	-489 ± 67	$4.16^{+0.86}_{-0.82}$	3784^{+295}_{-307}	6667^{+697}_{-537}	$6.883^{+3.613}_{-2.300}$

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 $A_{obs} \gg 1.0$

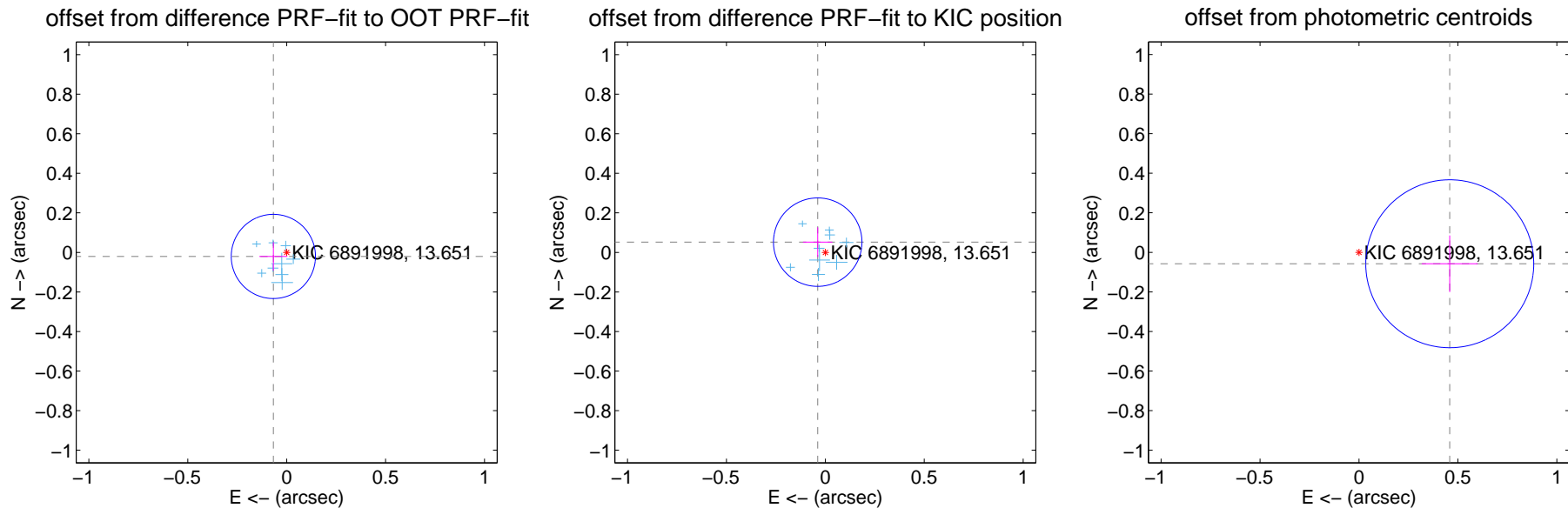
DV Centroid Data

Supplemental centroid analysis for 006891998-01. Kepler magnitude: 13.65. Transit SNR 10.98

There are 9 quarters with good PRF difference image offsets

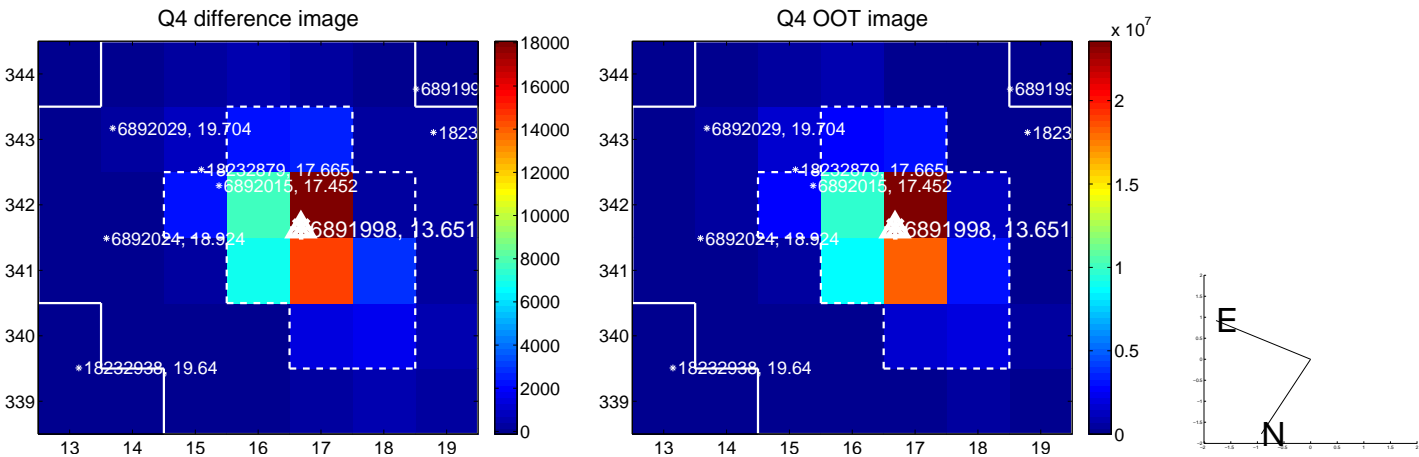
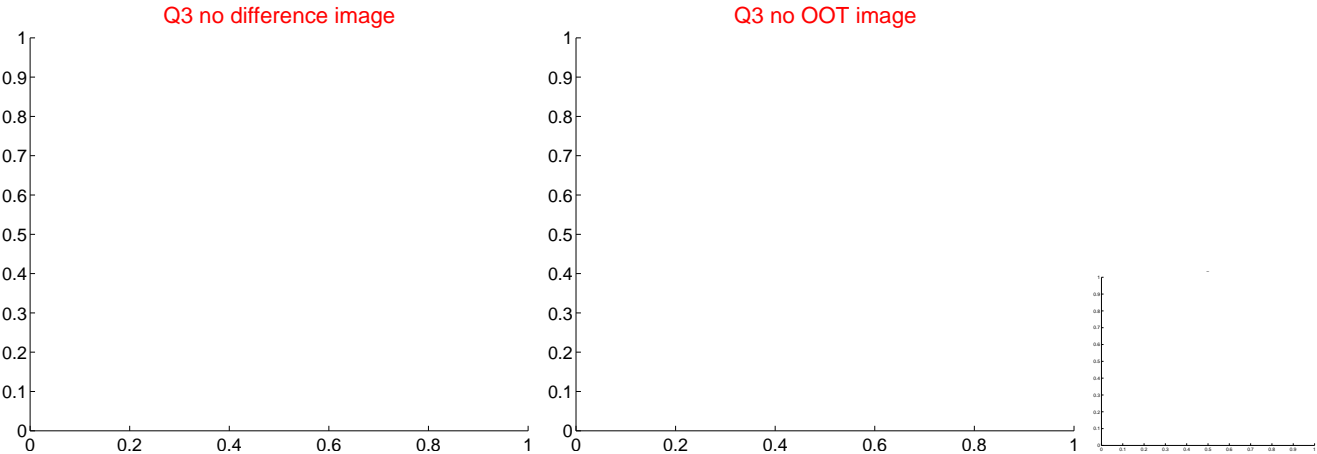
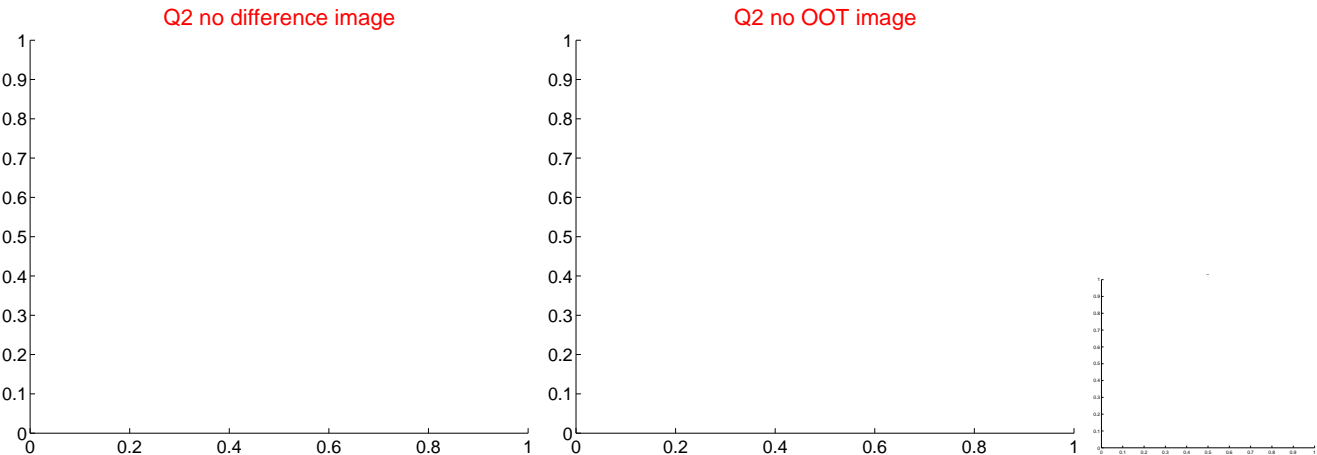
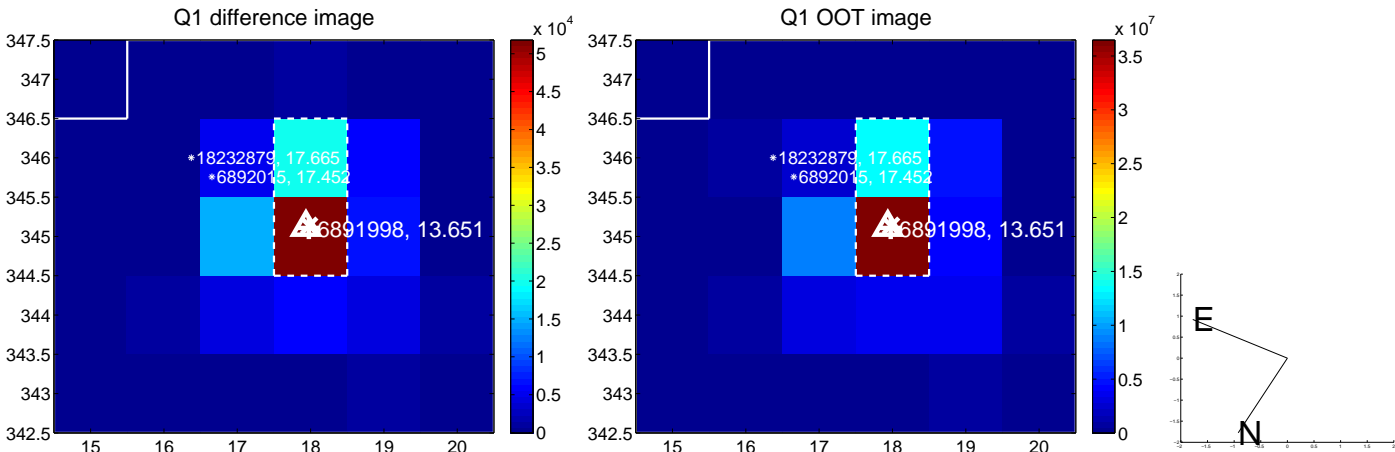
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.070 ± 0.071	0.99	0.067 ± 0.071	-0.020 ± 0.072
PRF-fit source offset from KIC position	0.065 ± 0.075	0.87	0.039 ± 0.074	0.052 ± 0.075
photometric centroid source offset	0.46 ± 0.14	3.27	-0.46 ± 0.14	-0.06 ± 0.14

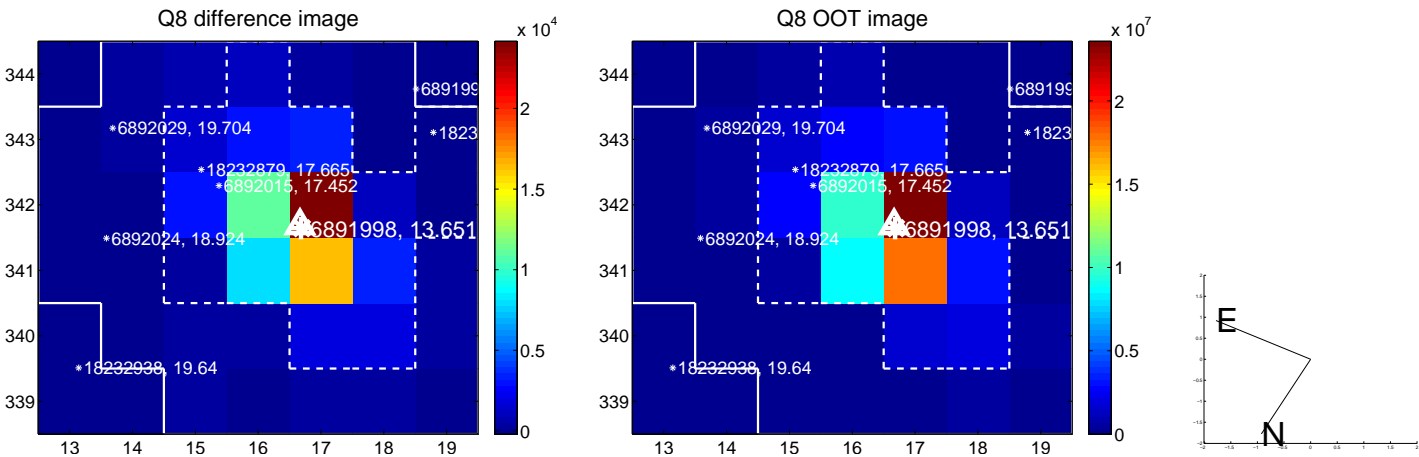
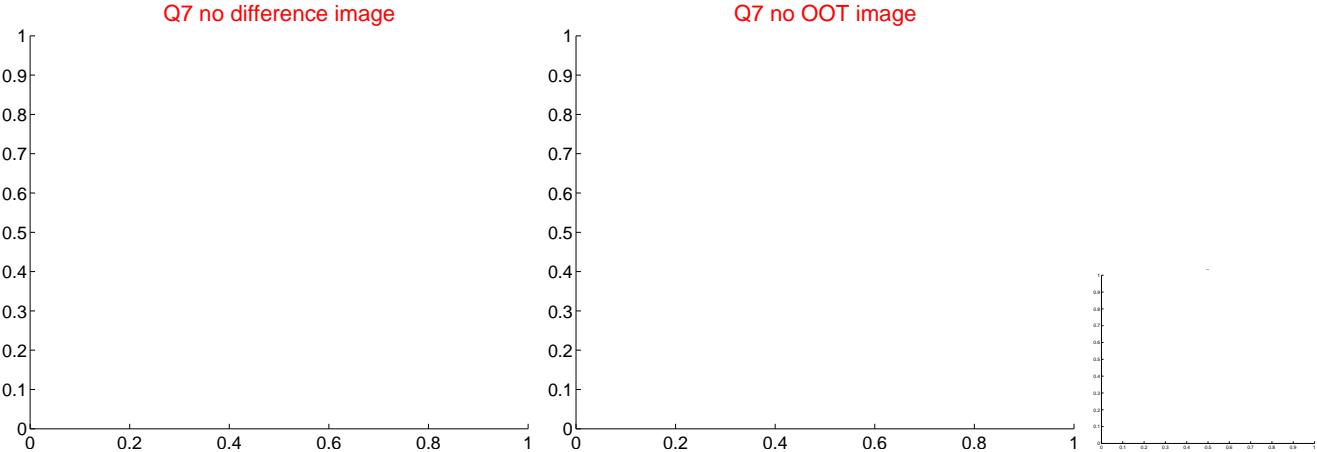
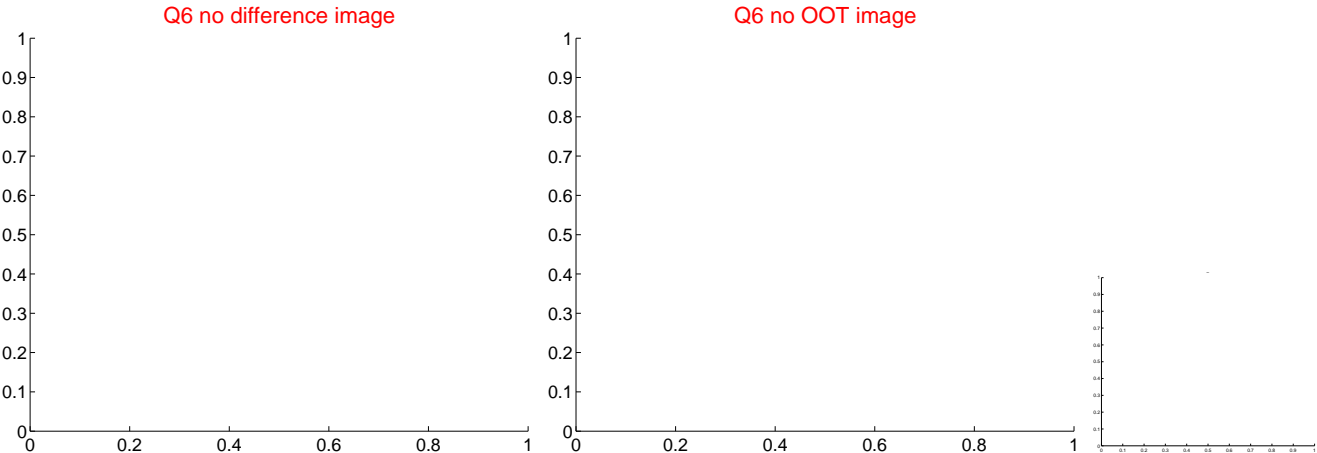
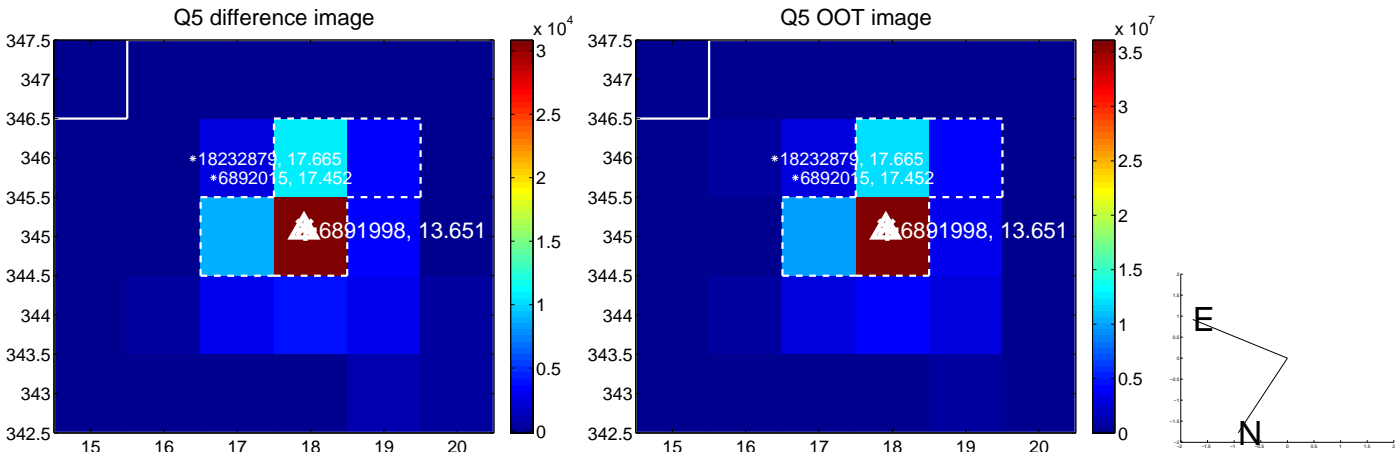


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

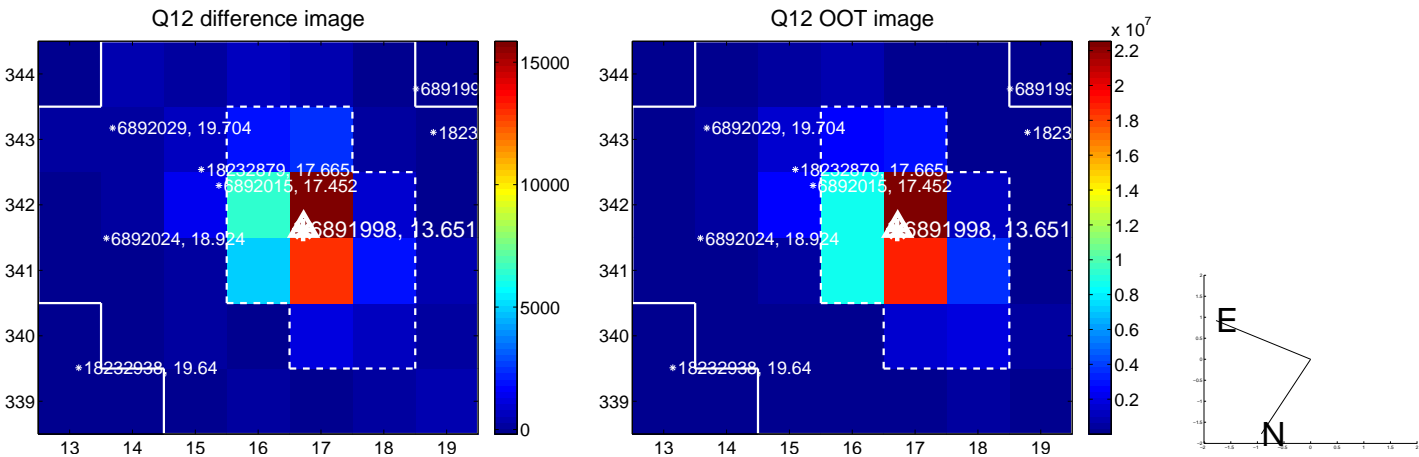
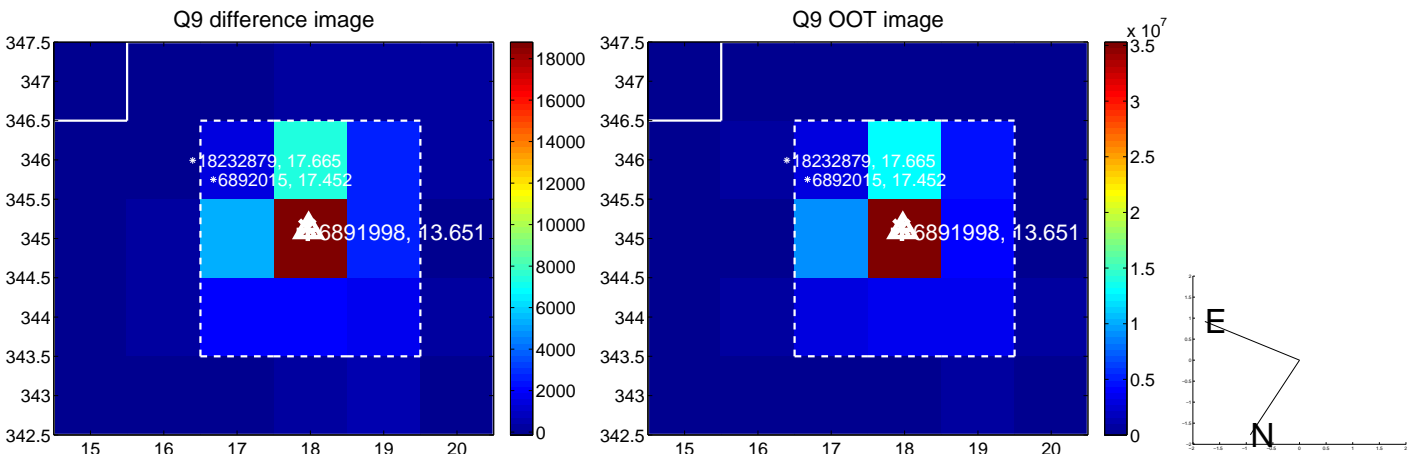
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



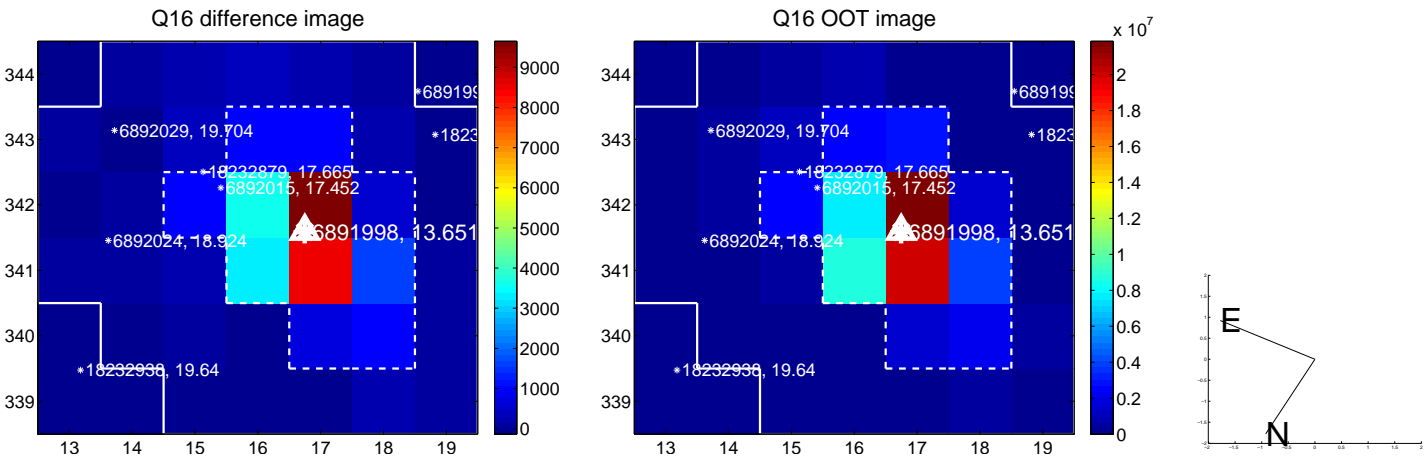
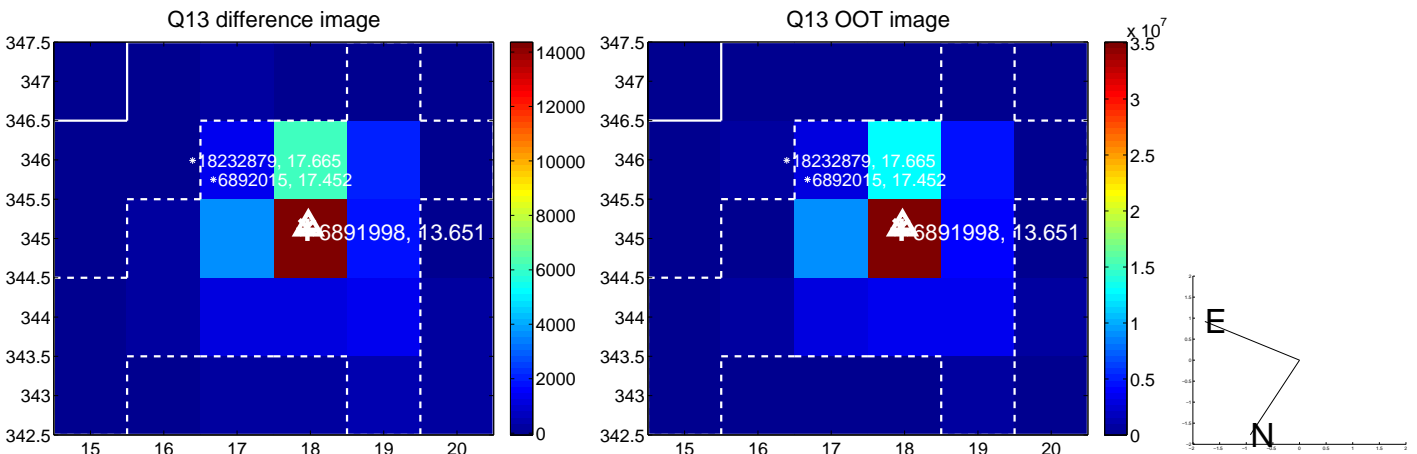
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



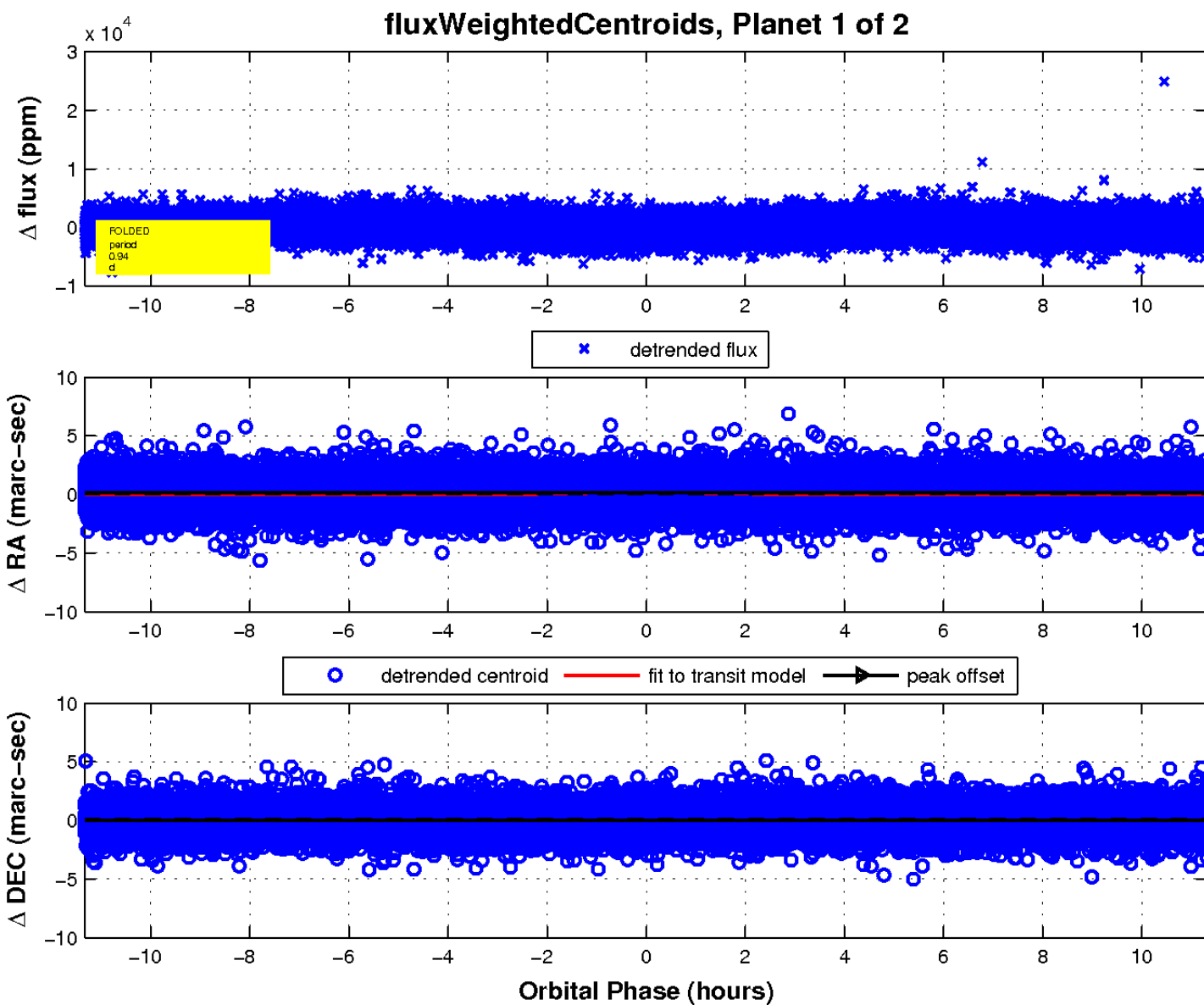
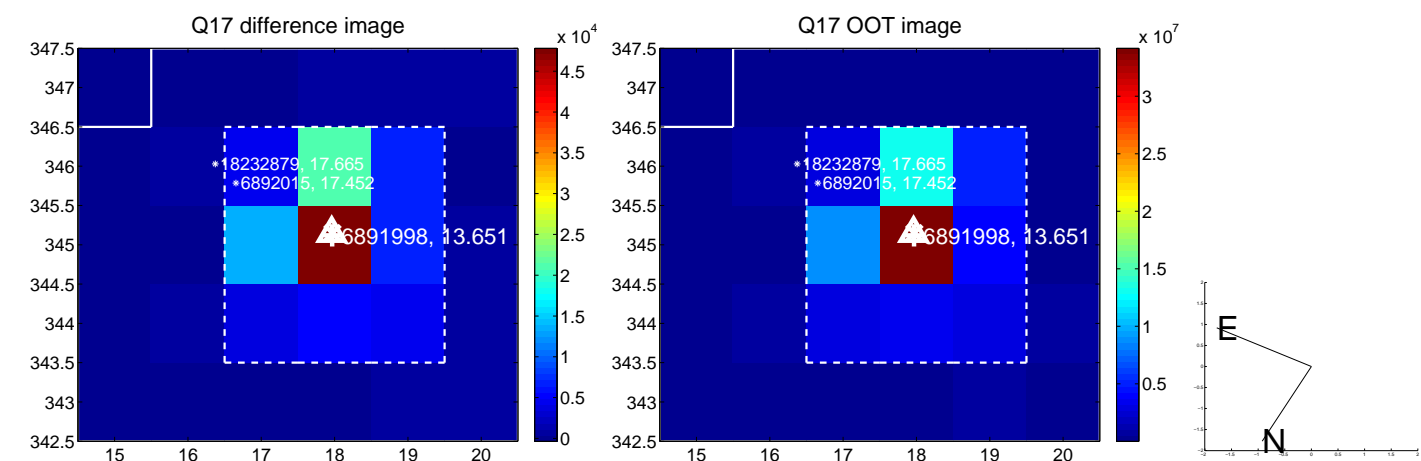
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

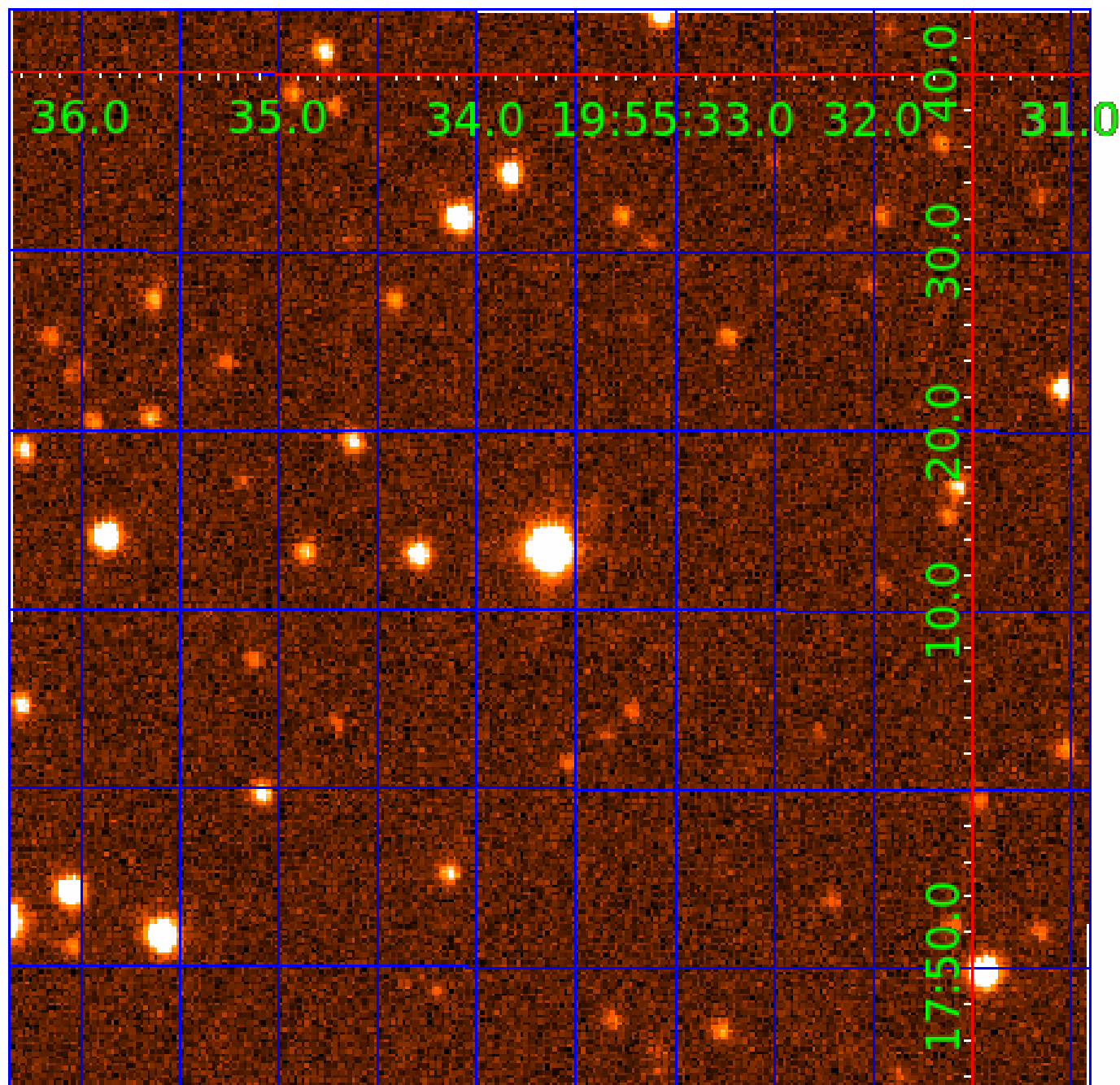


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 006891998

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})
006891998-01	OBS	No	0.944104	131.817869	265.3	4.755	8.7	11.0	1.67	6873	3.16	12408.79
006891998-02	OBS	No	0.944097	132.275819	403.4	5.697	11.3	17.3	1.67	6873	4.33	12408.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006891998-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
006891998-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—LPP_ALT—SAME_NTL_PERIOD

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

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

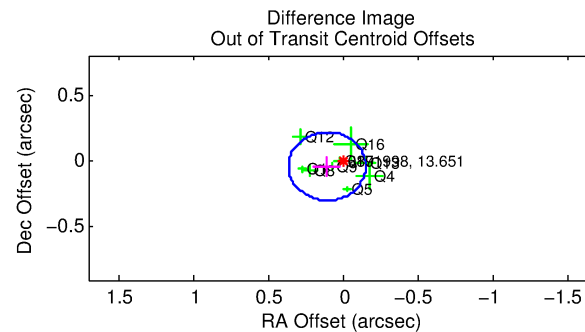
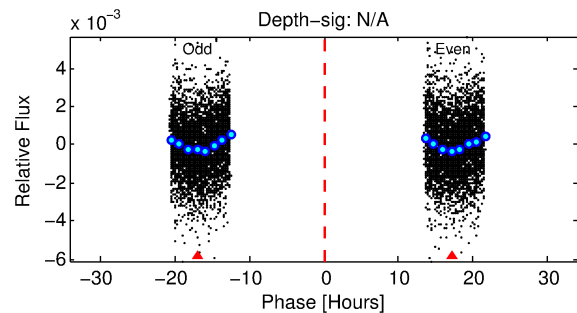
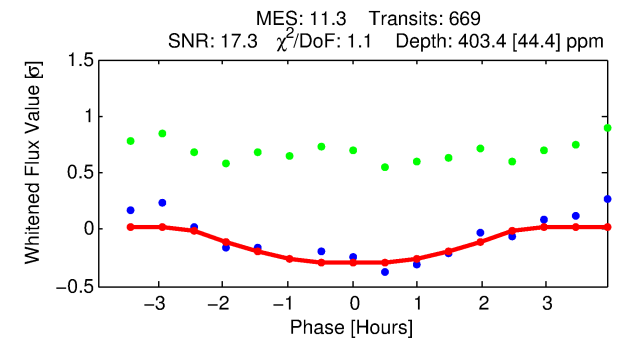
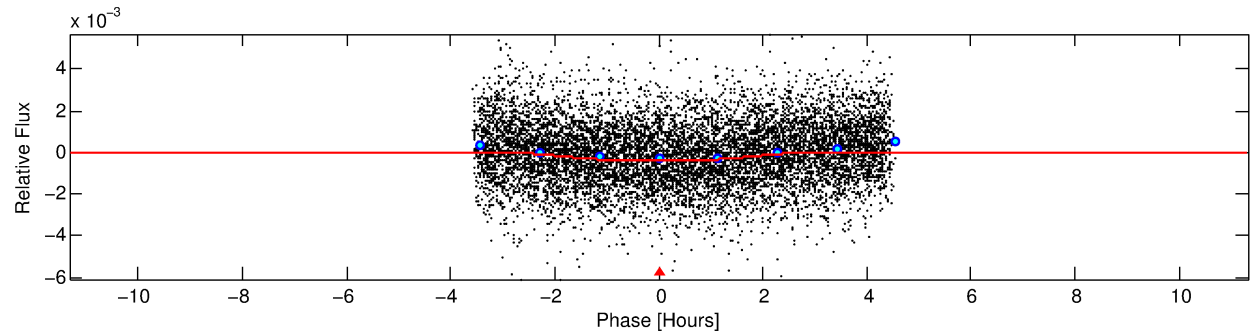
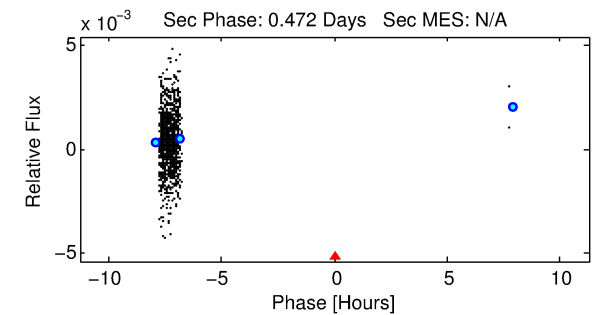
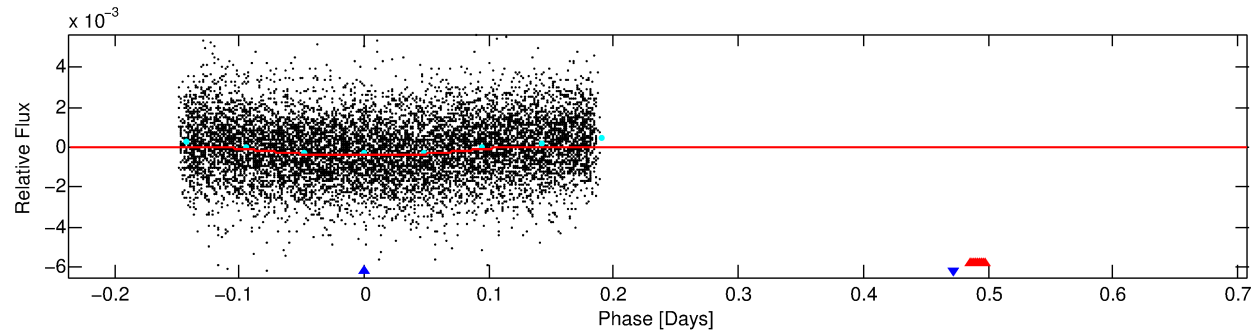
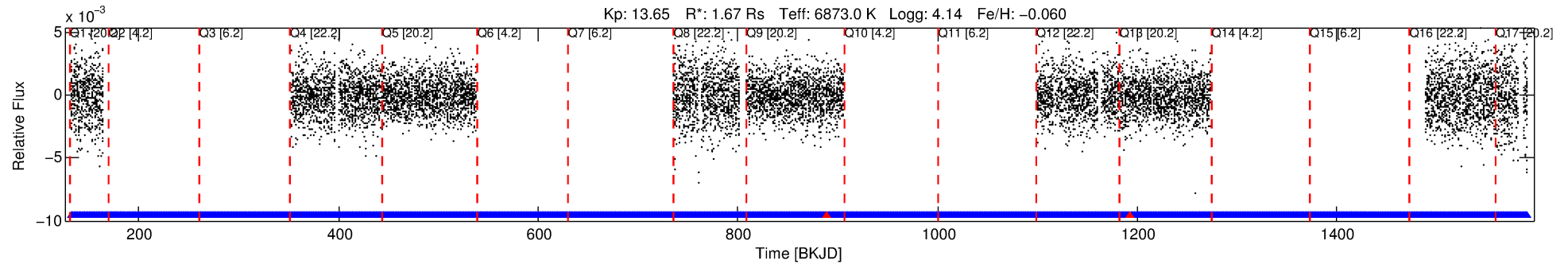
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 006891998-02

No Significant Match Found

DV One-Page Summary

KIC: 6891998 Candidate: 2 of 2 Period: 0.944 d



DV Fit Results:

Period = 0.94410 [0.00001] d
Epoch = 132.2758 [0.0053] BKJD
Rp/R* = 0.0238 [0.0017]
a/R* = 1.07 [0.02]
b = 0.97 [0.01]
Seff = 12408.91 [5001.71]
Teq = 2691 [271] K
Rp = 4.33 [1.46] Re
a = 0.0211 [0.0055] AU

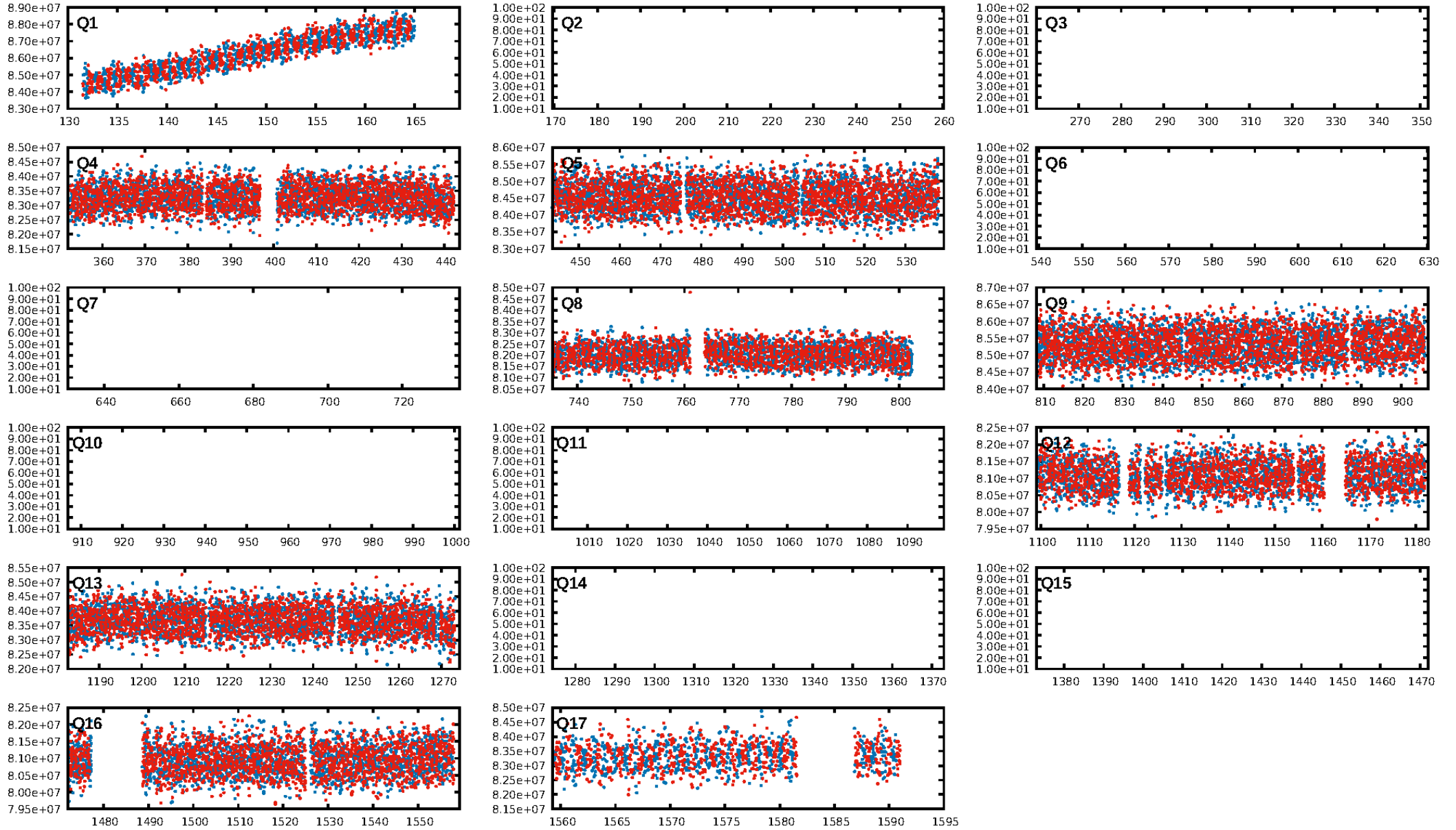
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [603/605]
GhostDiagnostic-chr: 2.194
Centroid-sig: 0.0%
Centroid-so: 0.374 arcsec [3.63σ]
OotOffset-rm: 0.112 arcsec [1.30σ]
KicOffset-rm: 0.083 arcsec [0.95σ]
OotOffset-st: 0/0/4/5 [9]
KicOffset-st: 0/0/4/5 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.00 [0/9]

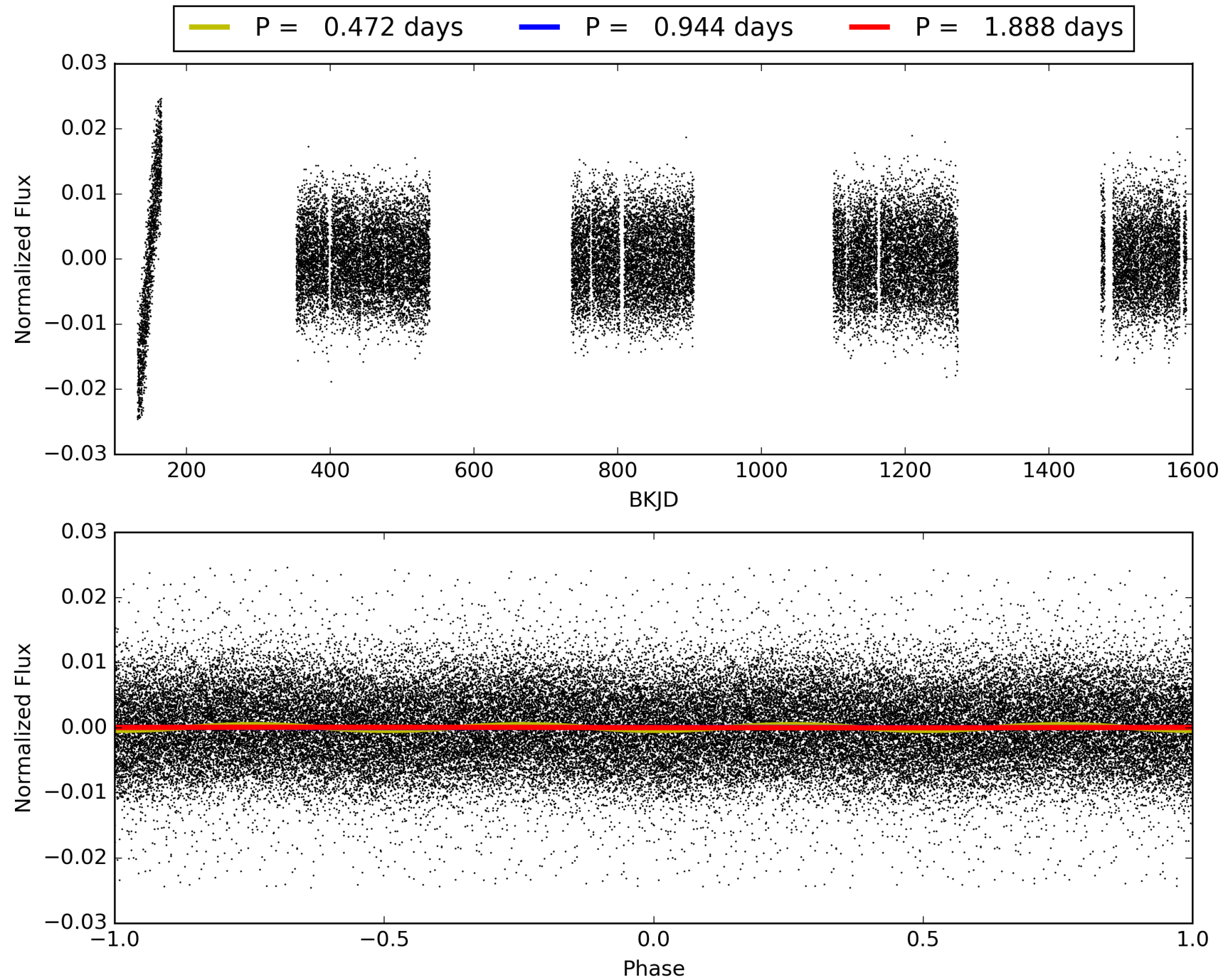
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 05:08:16 Z

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TCE 006891998-02, PDC Light Curves

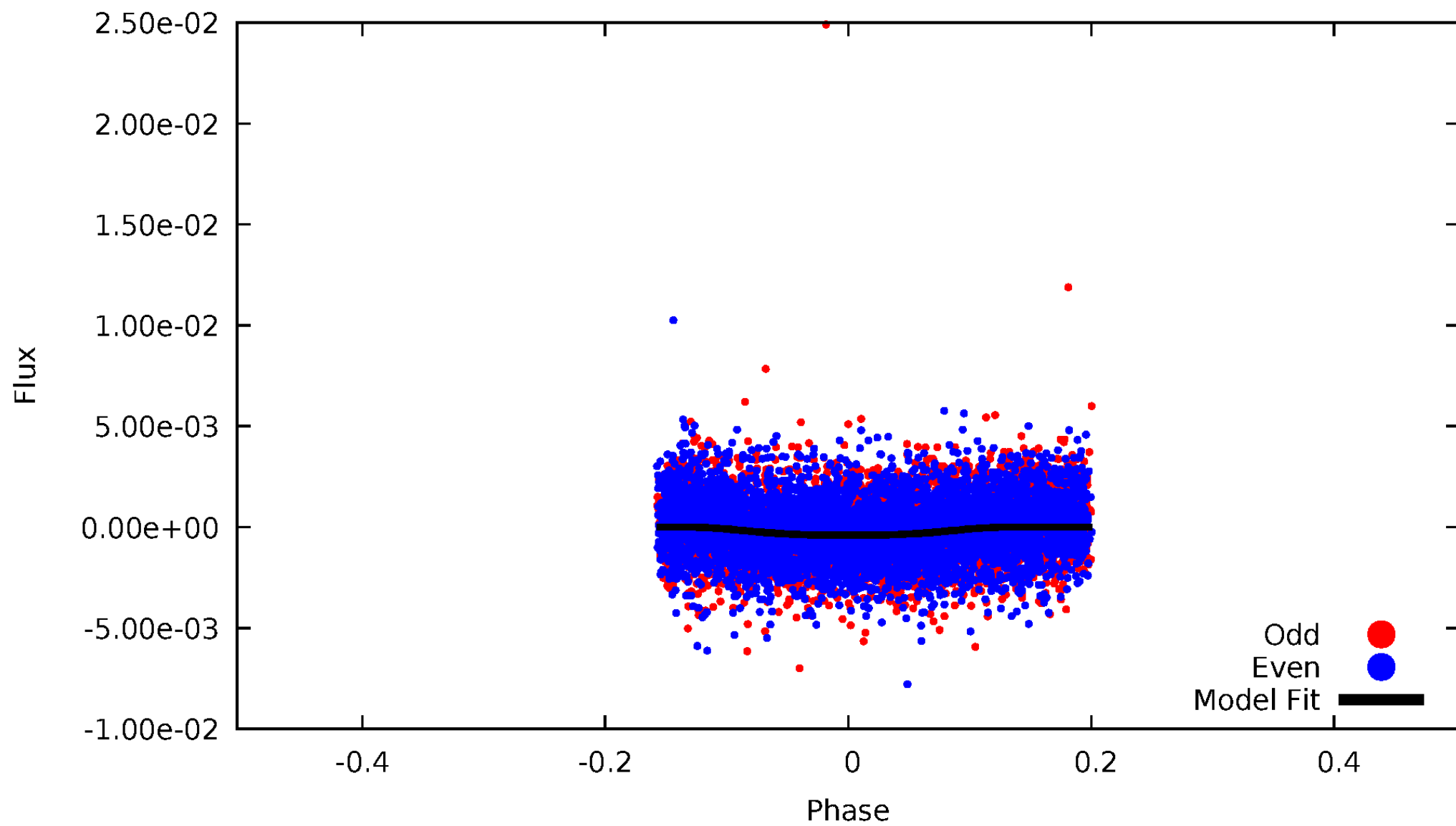


TCE 006891998-02



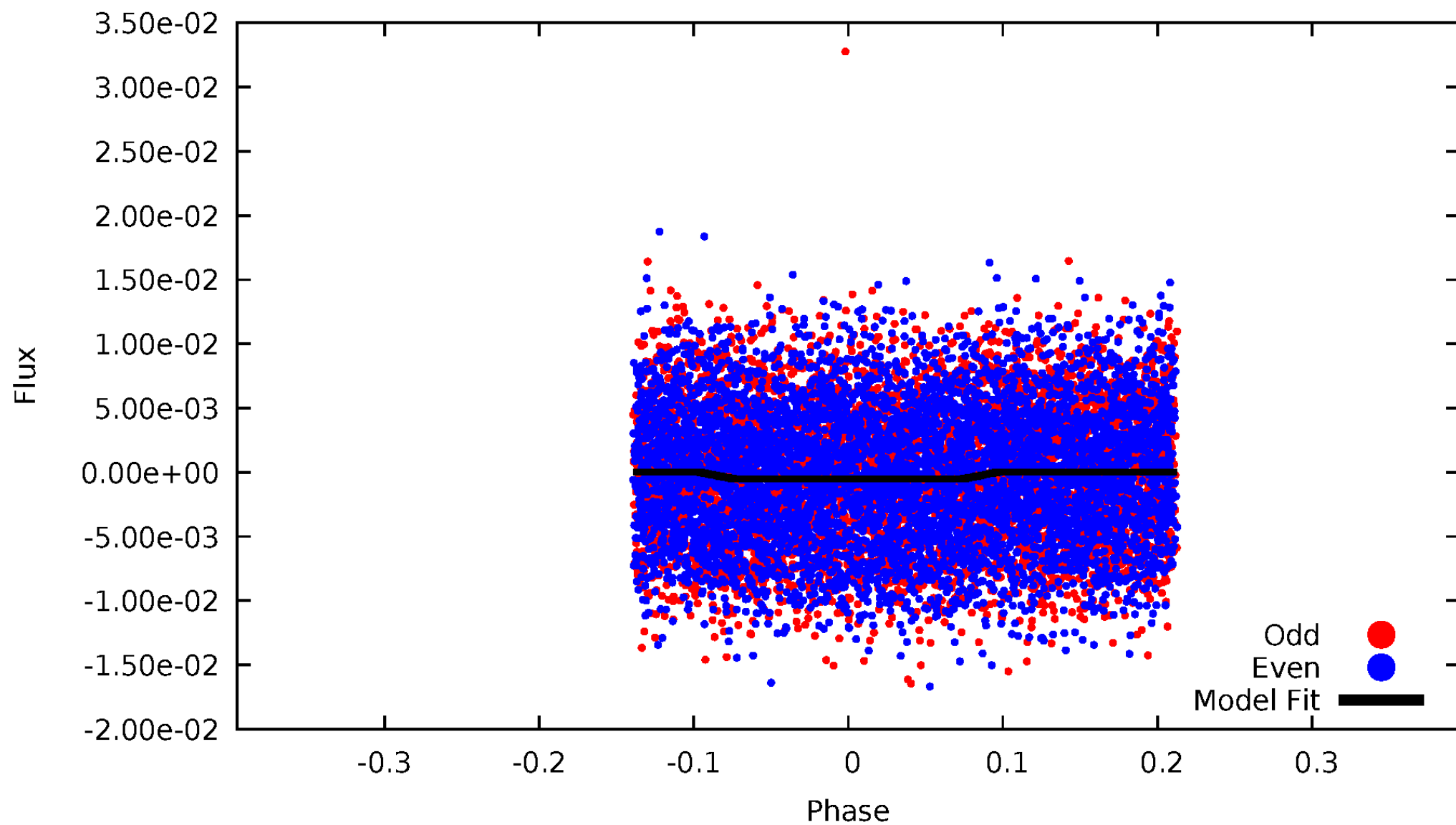
DV Odd/Even

TCE 006891998-02



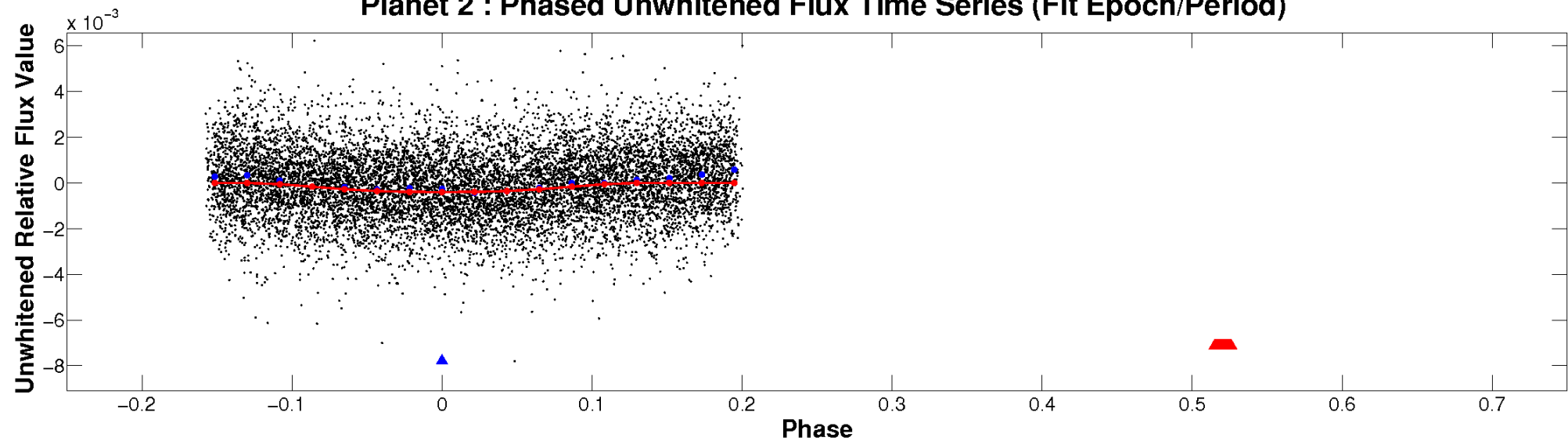
ALT Odd/Even

TCE 006891998-02

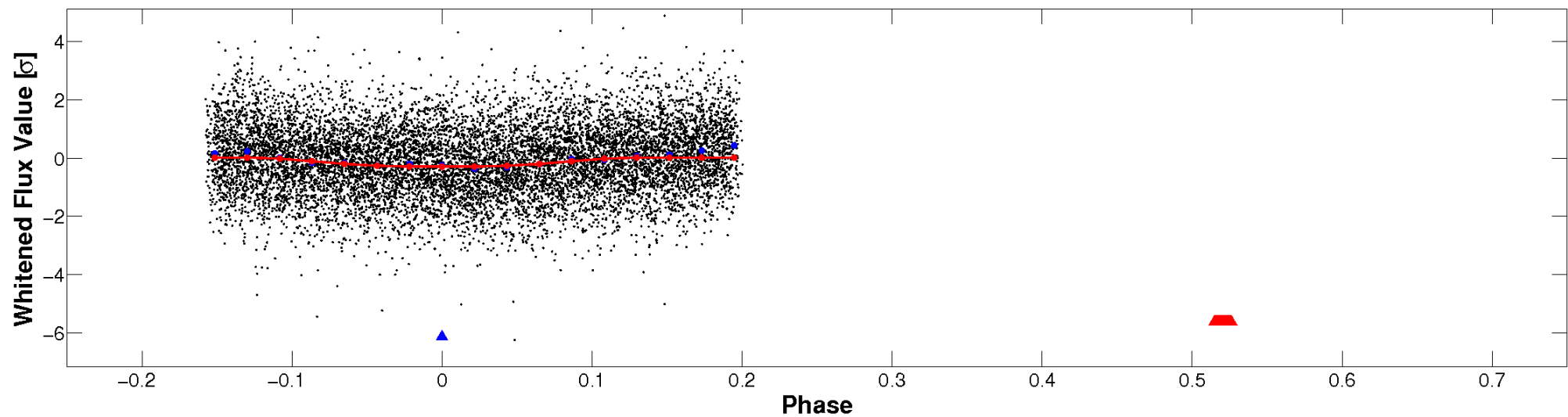


Non-Whitened Vs. Whitened Light Curve

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

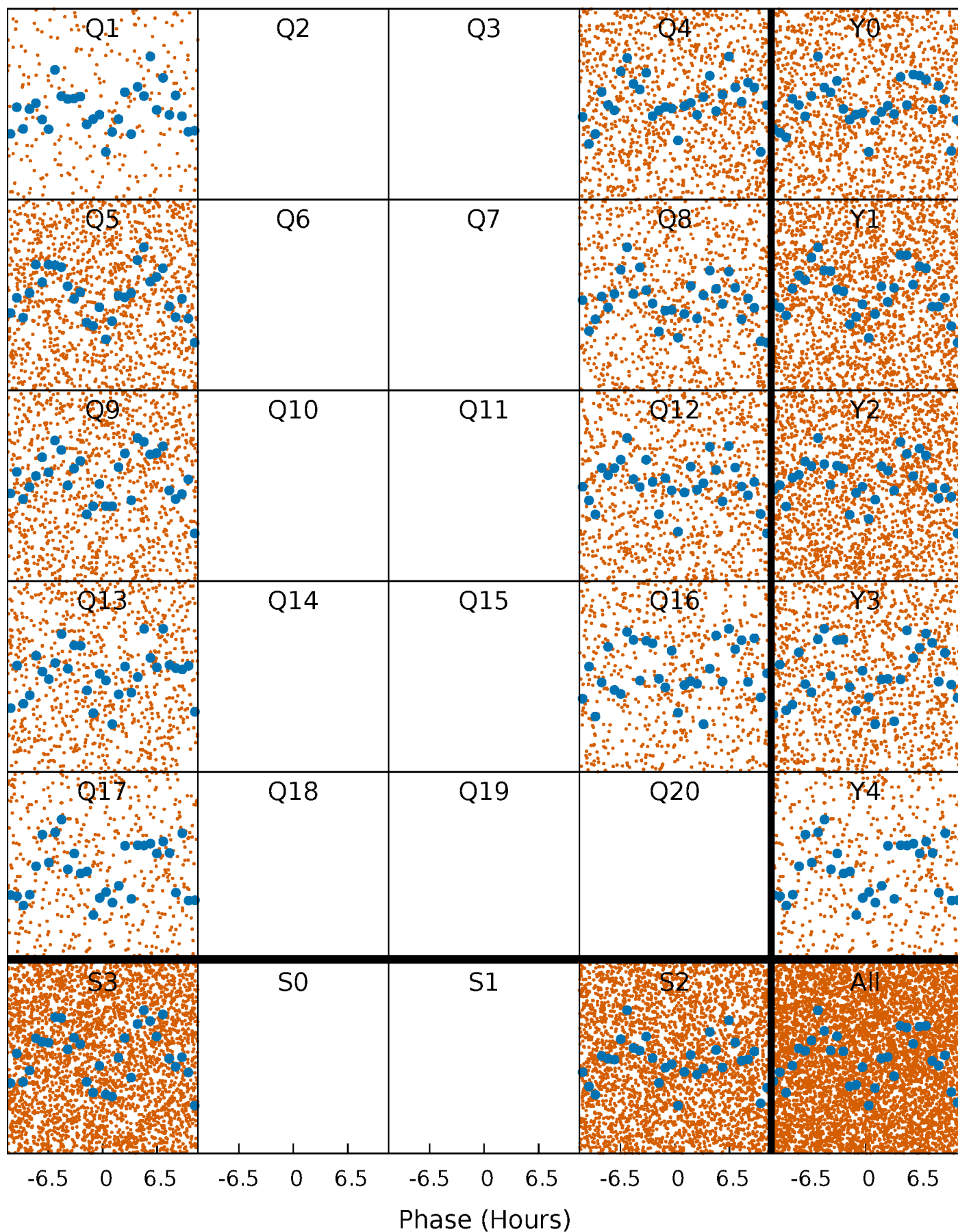


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



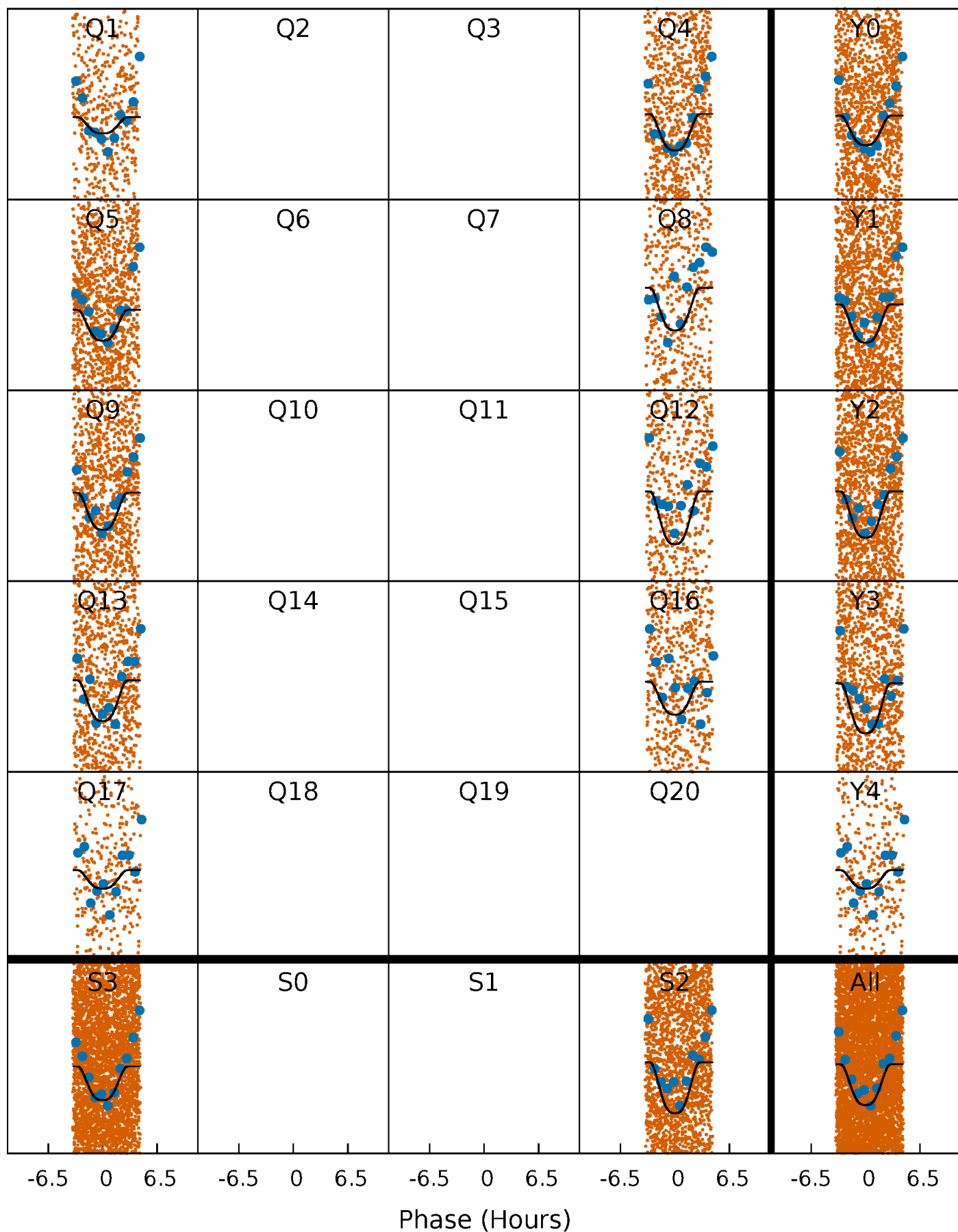
PDC Quarter-Phased Transit Curves

TCE 006891998-02 P= 0.944097 Days $T_0=132.275819$ (BKJD)



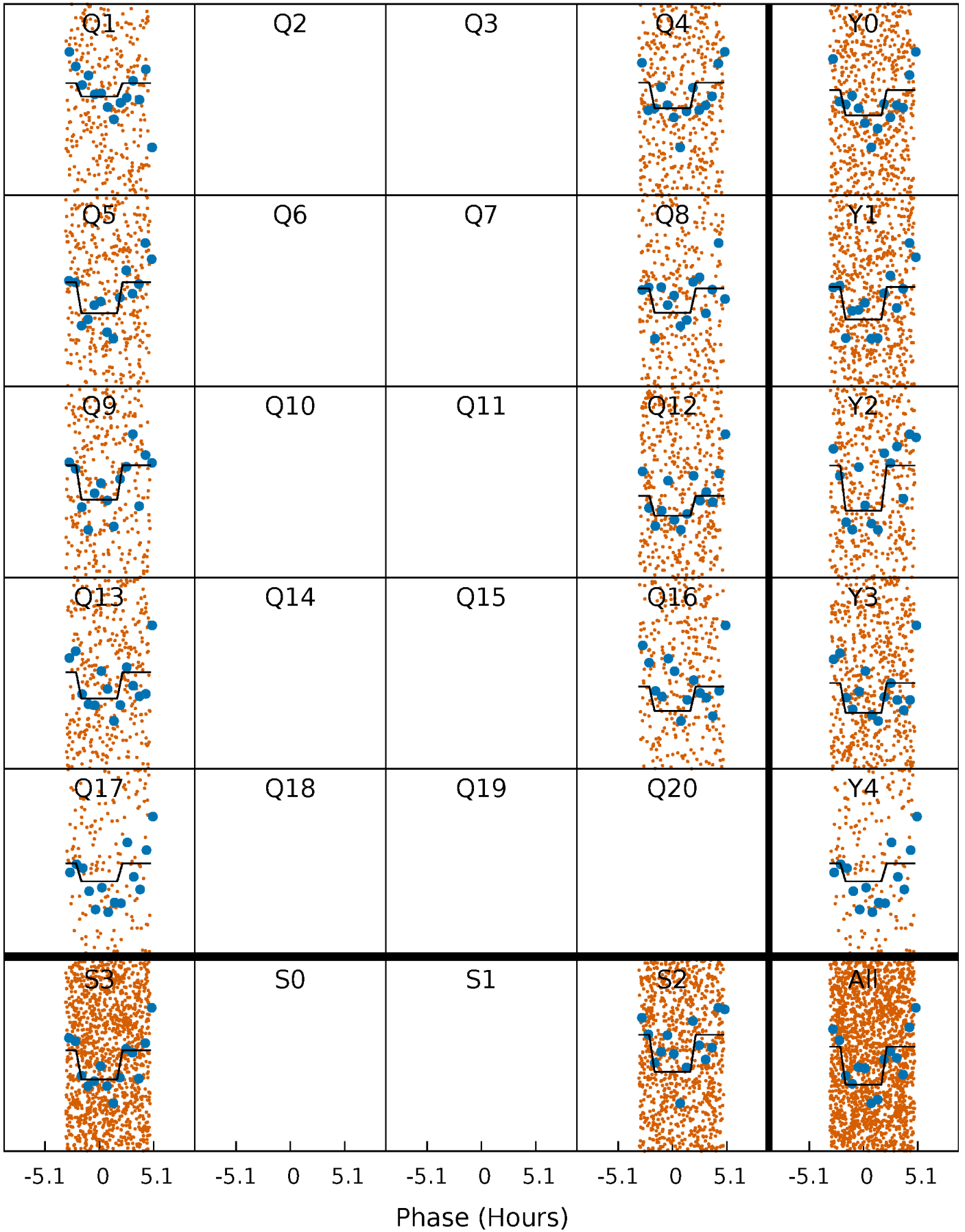
DV Quarter-Phased Transit Curves

TCE 006891998-02 $P = 0.944097$ Days $T_0 = 132.275819$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

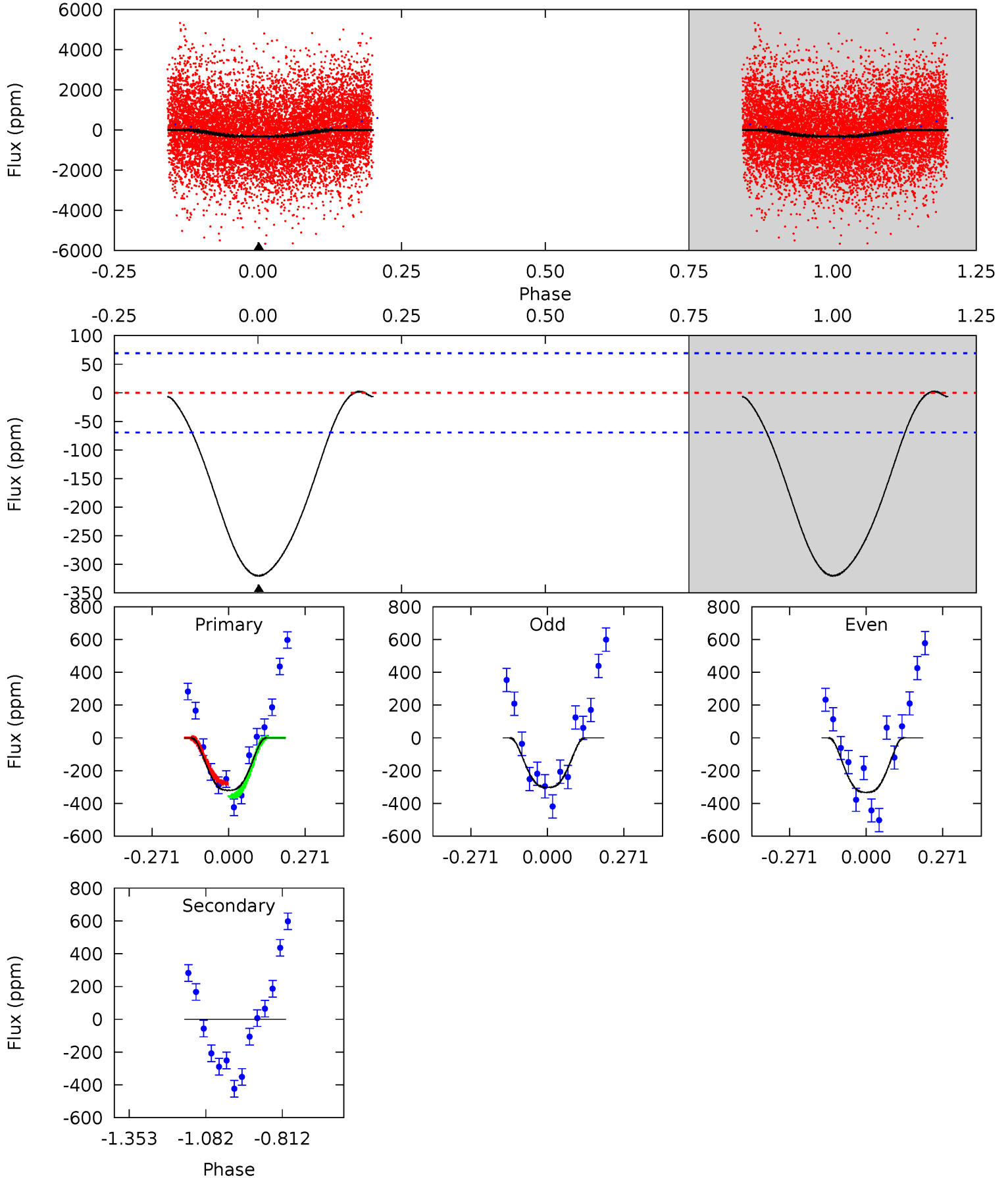
TCE 006891998-02 P= 0.944102 Days $T_0=132.257460$ (BKJD)



DV Model-Shift Uniqueness Test

006891998-02, P = 0.944097 Days, E = 131.331722 Days

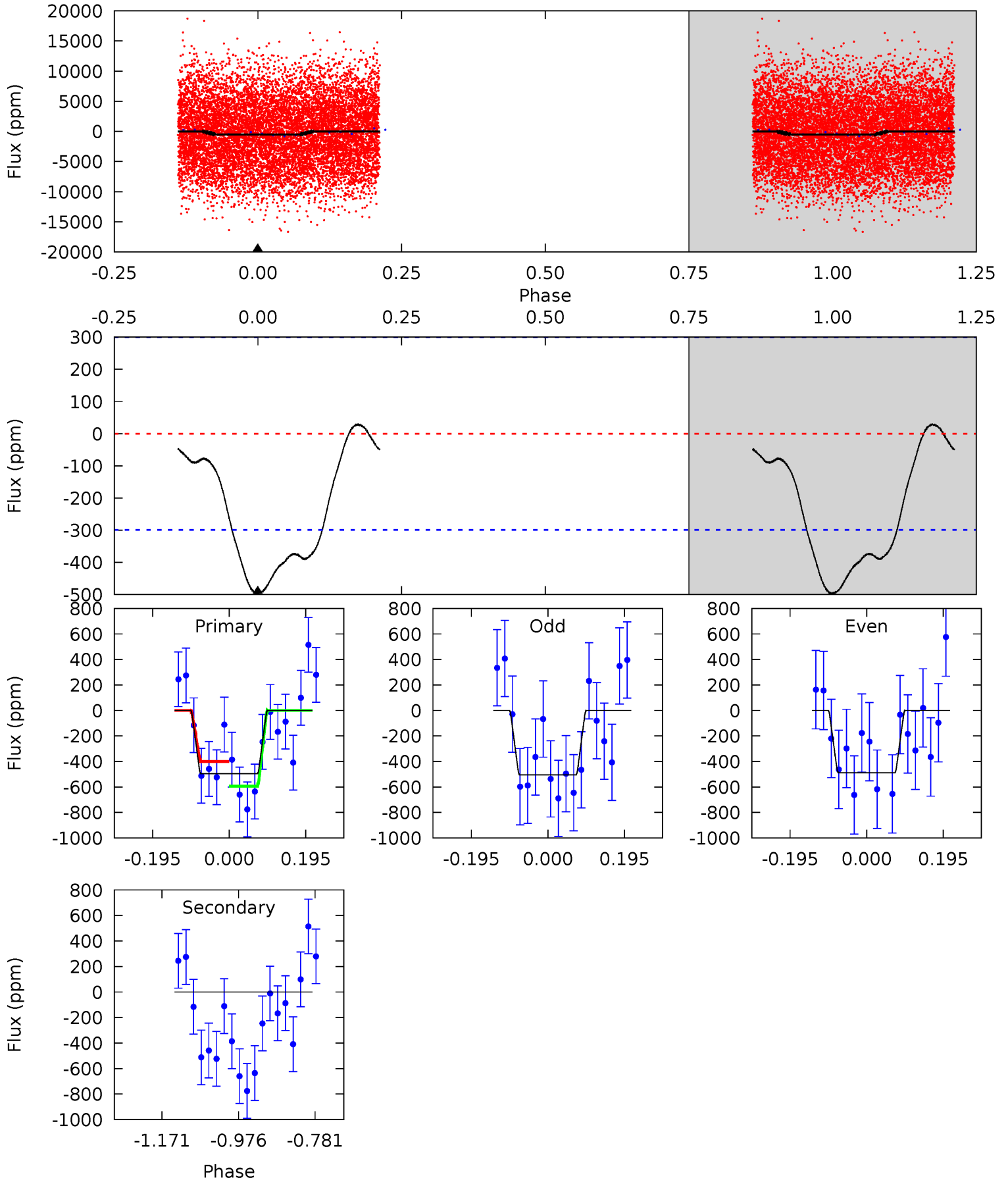
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	0	0	0	4.35	1.10	0.16	20.1	20.1	0	0	0.94	1.00	0.01	2.54



Alt Model-Shift Uniqueness Test

006891998-02, P = 0.944102 Days, E = 131.313358 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.34	0	0	0	4.42	1.30	0.37	7.34	7.34	0	0	0.12	1.02	0.05	1.43



Stellar Parameters For KIC 006891998

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6873^{+189}_{-307}	$4.145^{+0.153}_{-0.187}$	$-0.060^{+0.250}_{-0.350}$	$1.665^{+0.548}_{-0.411}$	$1.417^{+0.208}_{-0.254}$	$0.432^{+0.357}_{-0.225}$
	+3%/-4%	+4%/-5%	+417%/-583%	+33%/-25%	+15%/-18%	+83%/-52%
Source	KIC0	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 006891998-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 16	$4.33^{+0.79}_{-0.61}$	3763^{+279}_{-268}	-3553^{+605}_{-363}	$-0.010^{+0.214}_{-0.193}$
Alt.	0 ± 68	$4.12^{+0.83}_{-0.60}$	3765^{+314}_{-272}	-3503^{+7560}_{-1062}	$0.023^{+0.955}_{-0.969}$

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 $A_{obs} \gg 1.0$

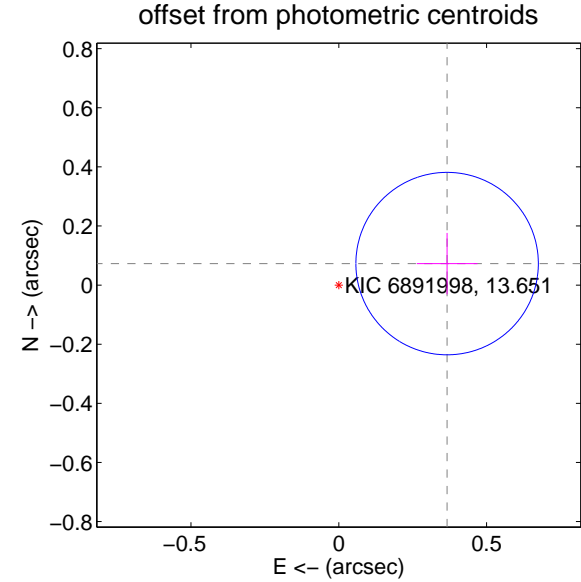
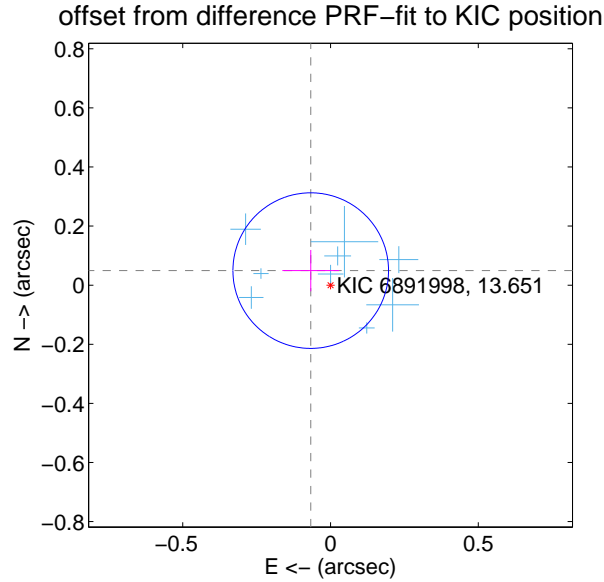
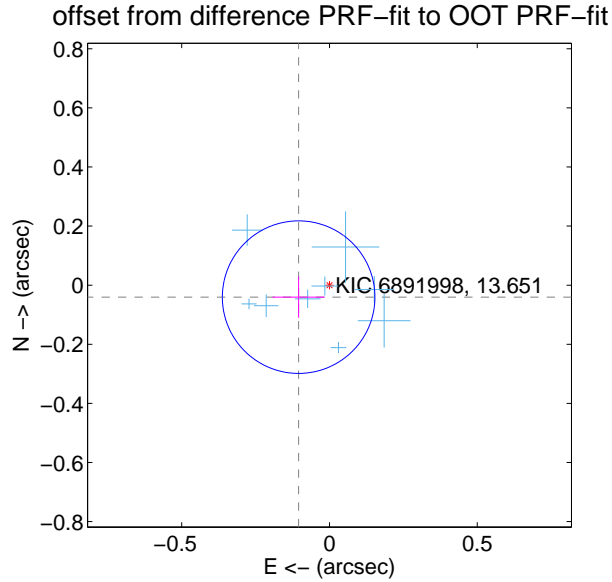
DV Centroid Data

Supplemental centroid analysis for 006891998-02. Kepler magnitude: 13.65. Transit SNR 17.31

There are 9 quarters with good PRF difference image offsets

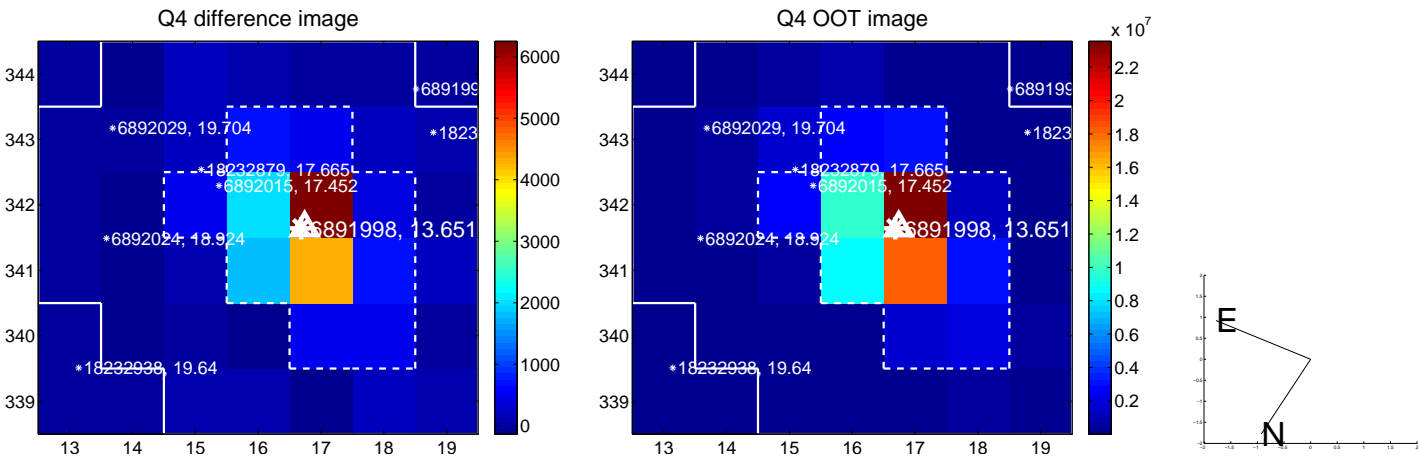
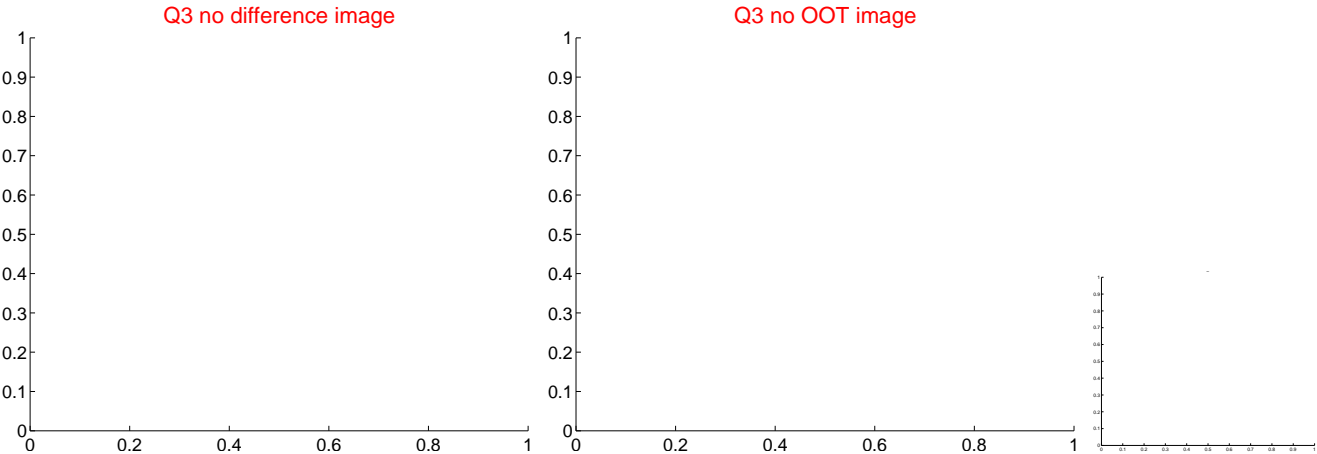
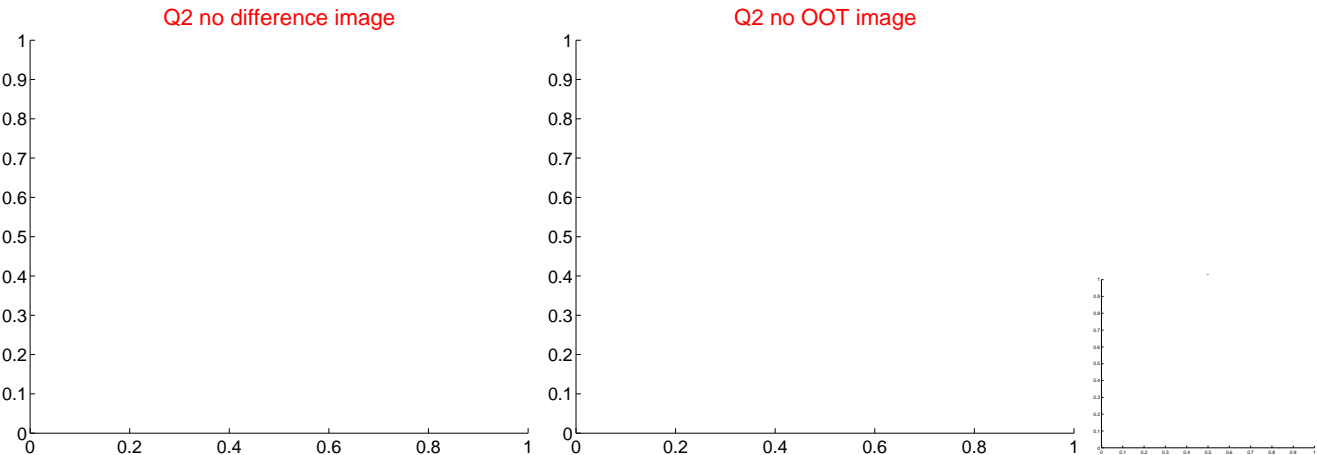
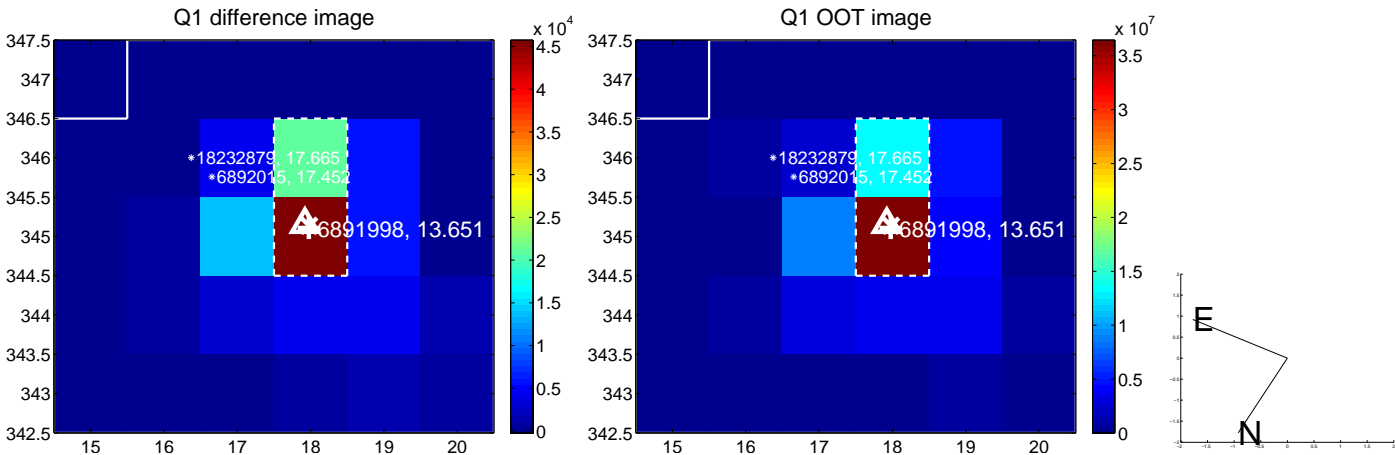
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.112 ± 0.086	1.30	0.104 ± 0.088	-0.041 ± 0.070
PRF-fit source offset from KIC position	0.083 ± 0.088	0.95	0.067 ± 0.096	0.049 ± 0.070
photometric centroid source offset	0.37 ± 0.10	3.63	-0.37 ± 0.10	0.07 ± 0.10

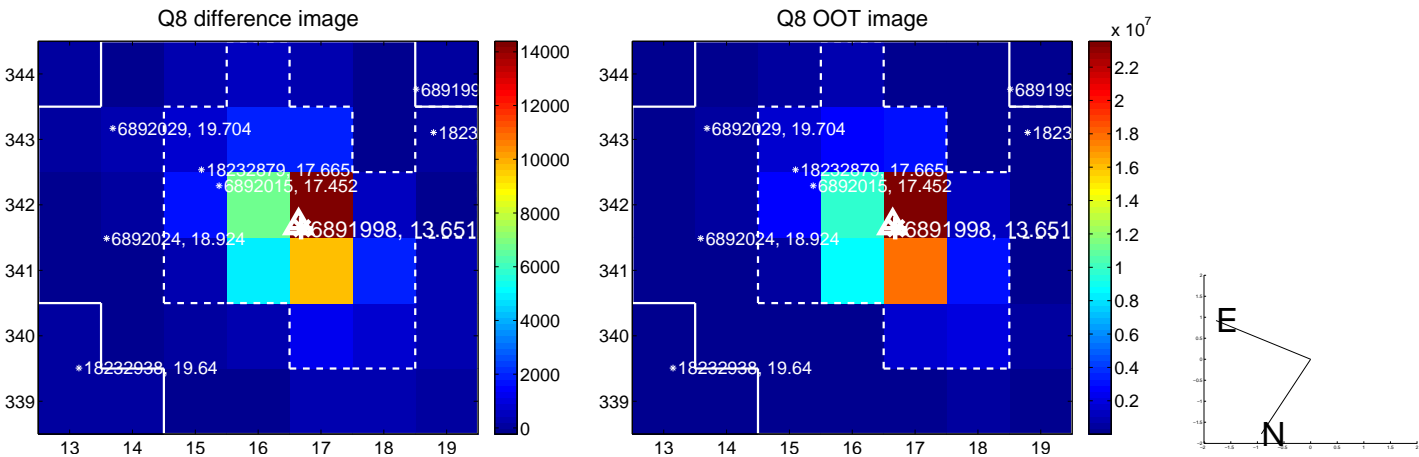
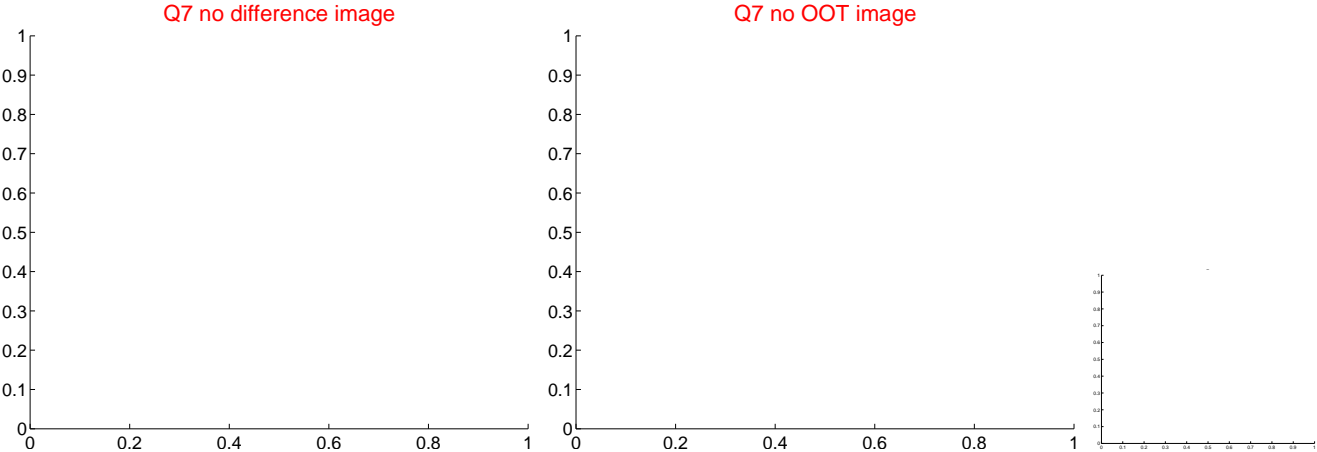
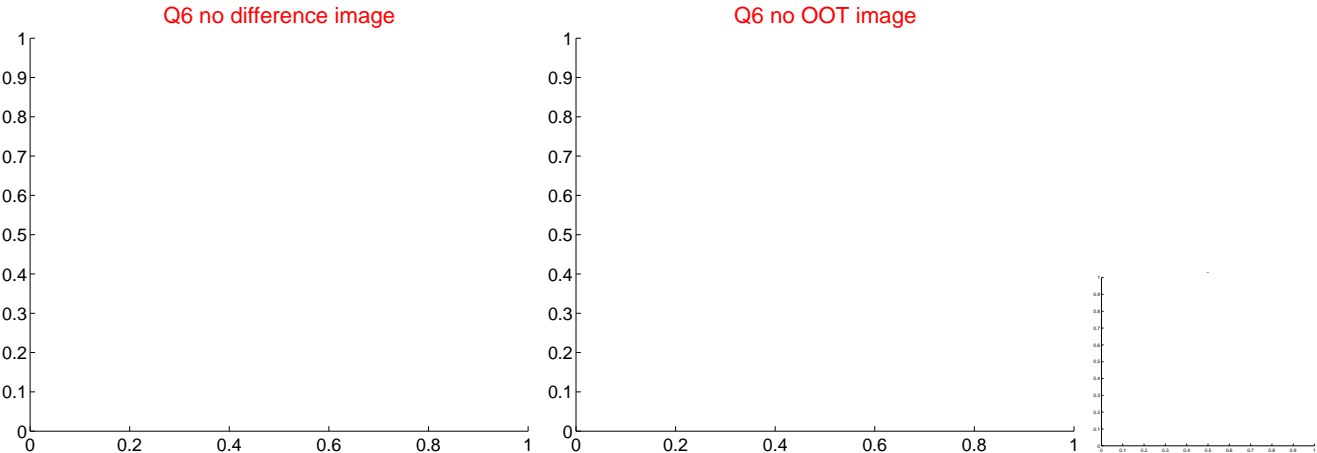
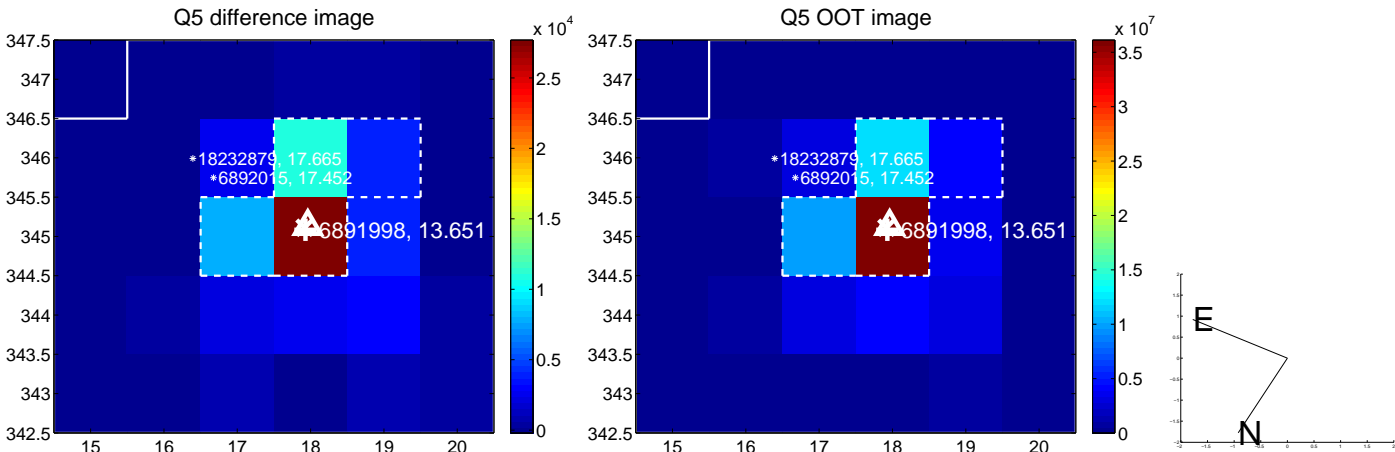


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

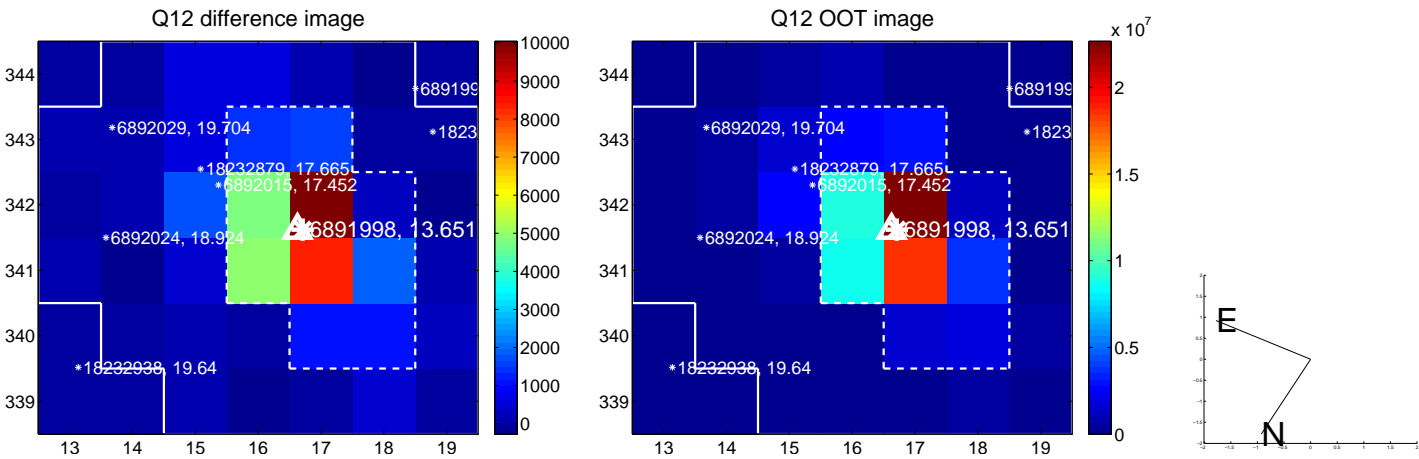
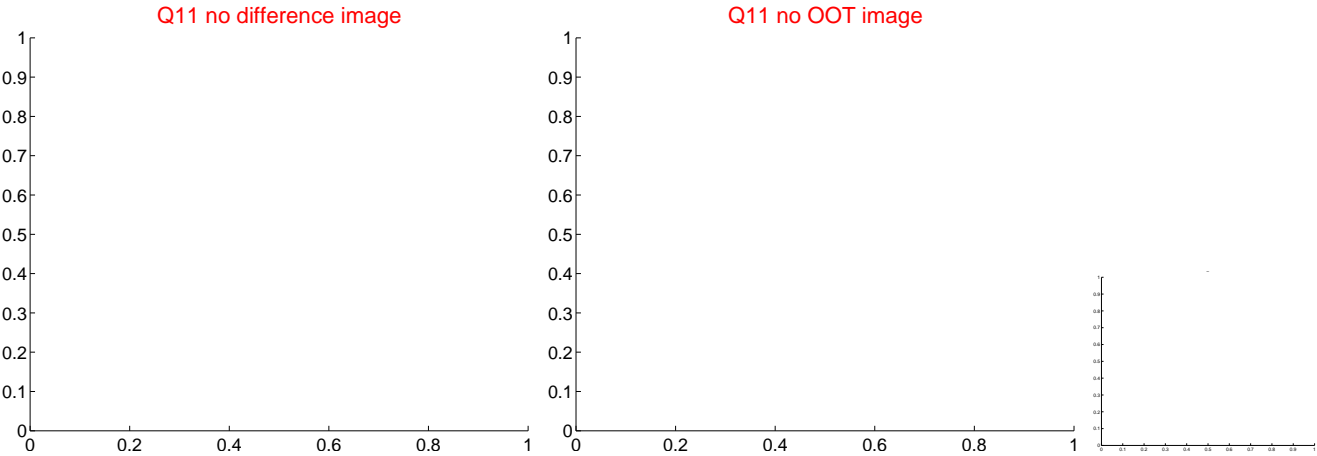
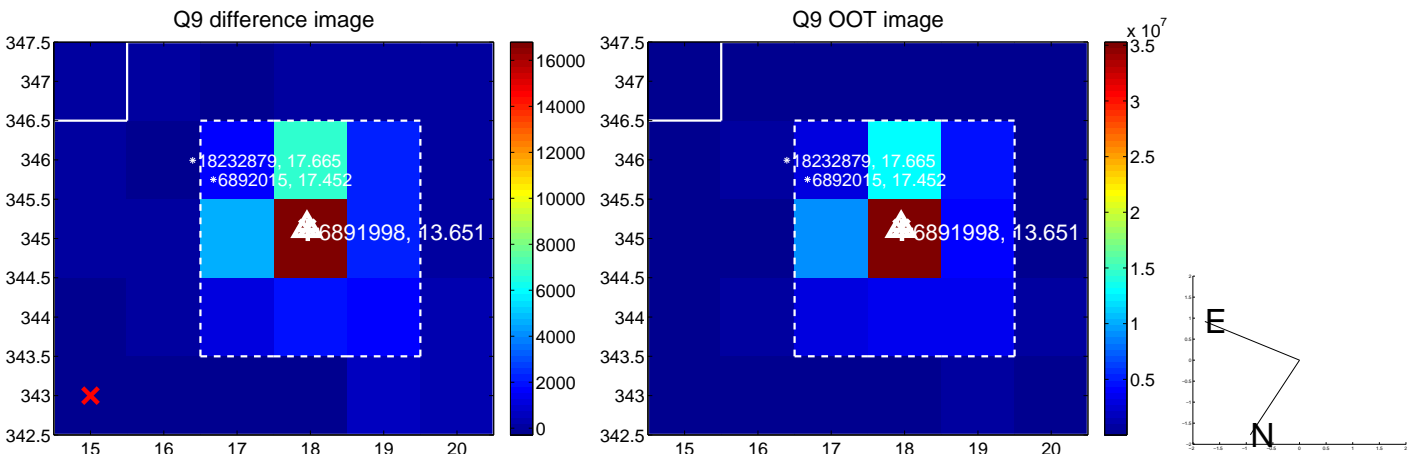
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



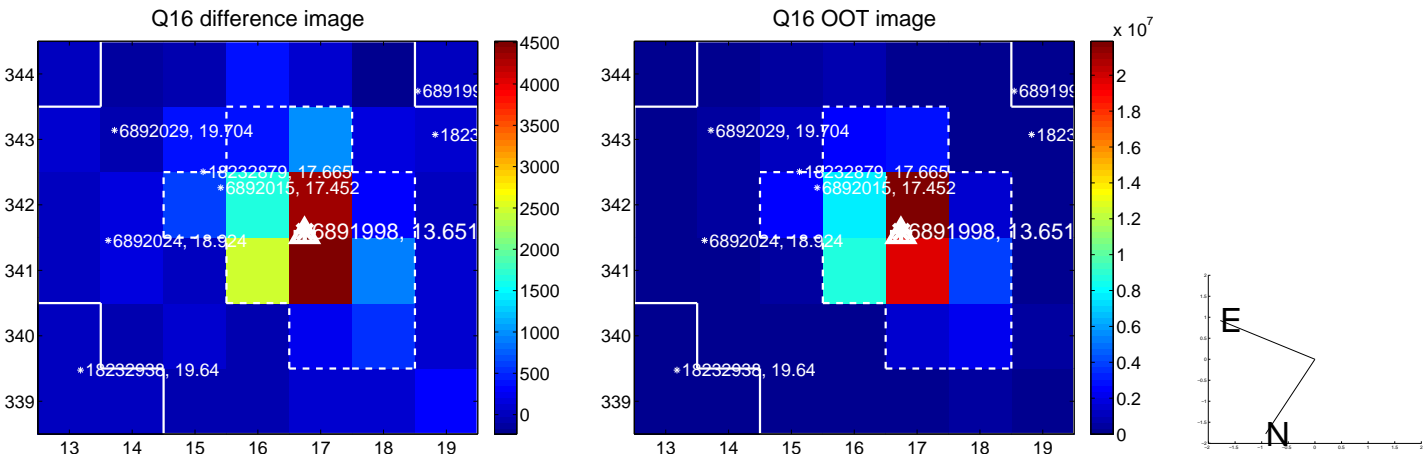
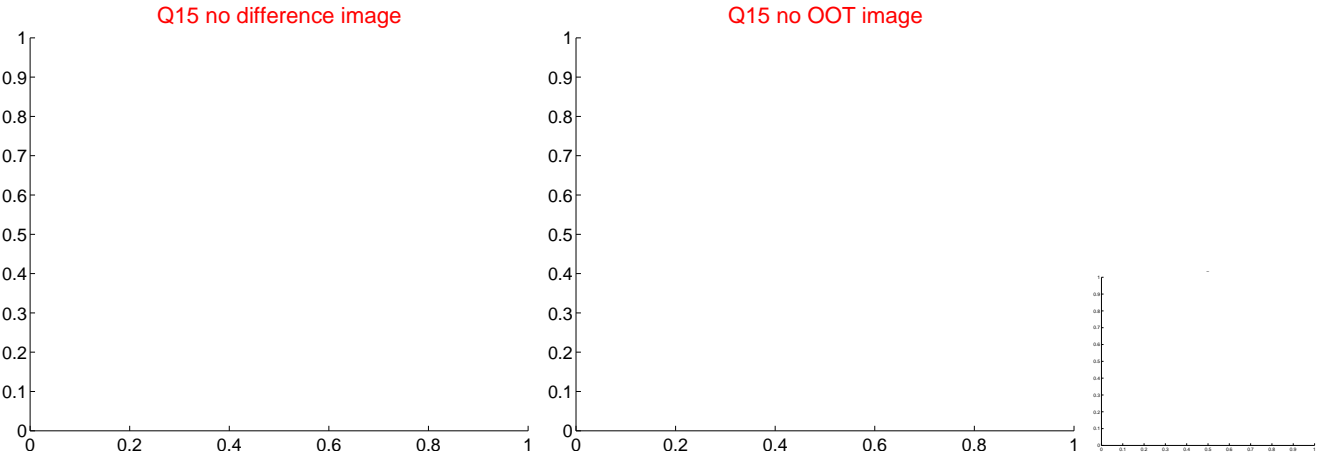
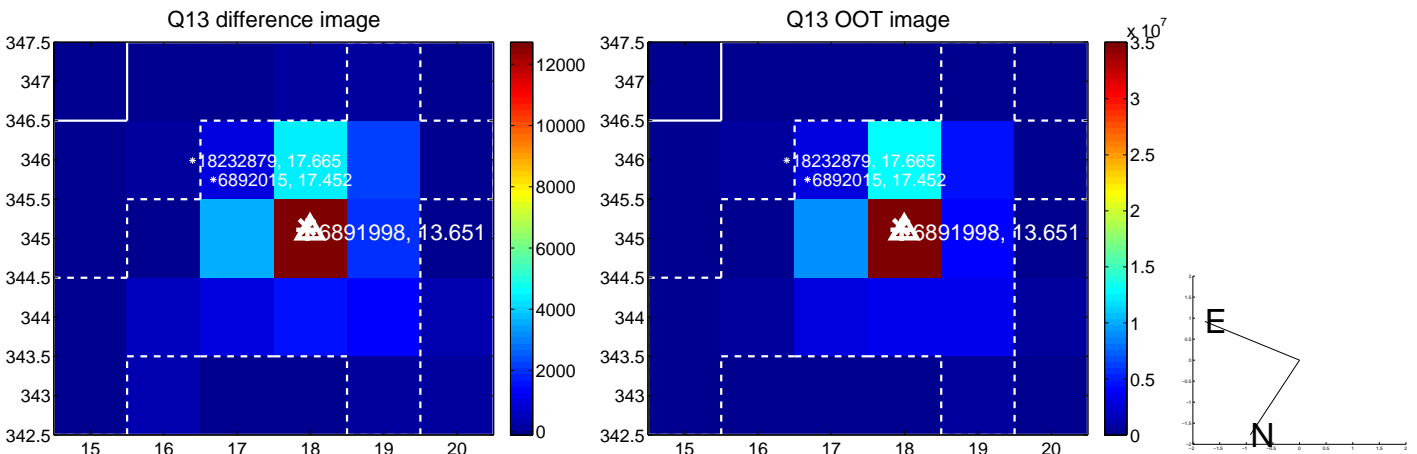
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



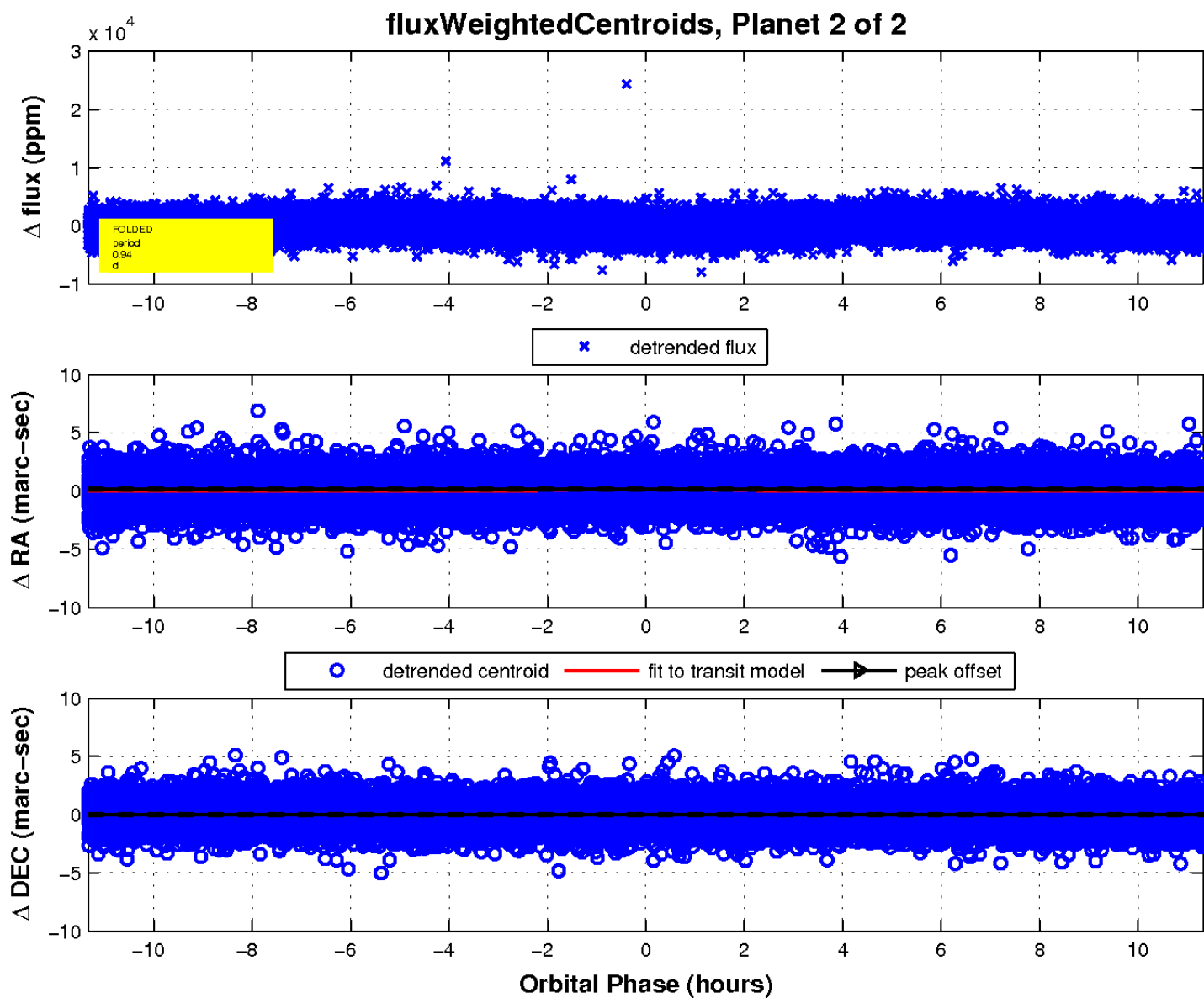
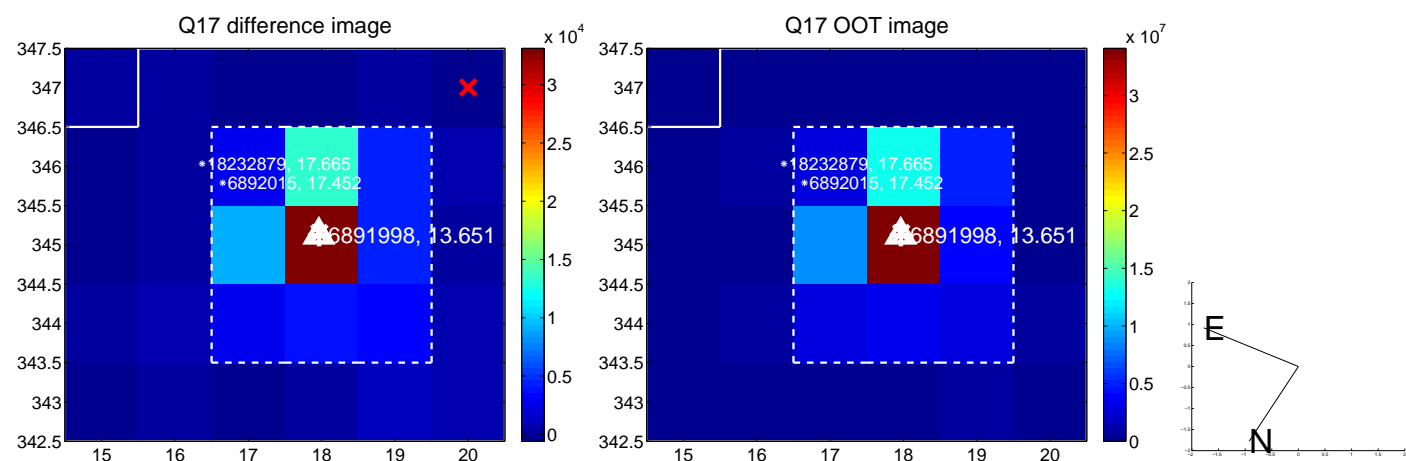
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

