

KIC 005802398

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})
005802398-01	OBS	No	0.988943	132.465494	13.0	4.787	9.9	4.9	1.16	6638	0.43	5916.11
005802398-02	OBS	No	216.930355	198.133163	246.2	6.780	7.4	7.3	1.16	6638	2.06	4.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802398-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005802398-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

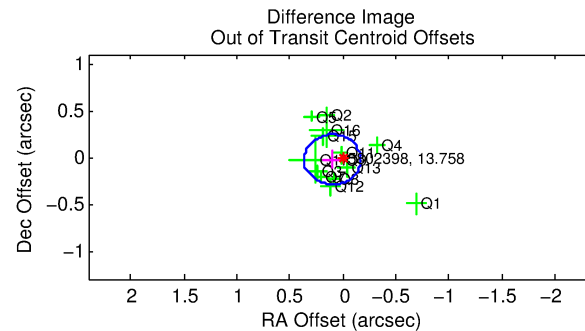
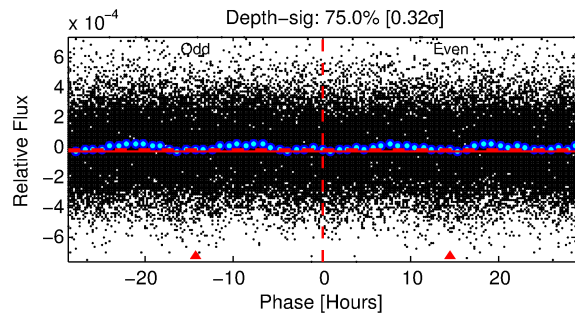
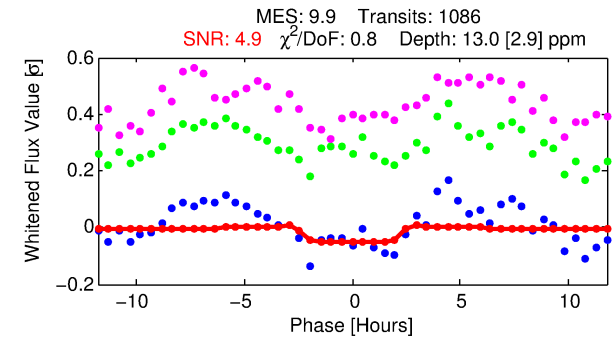
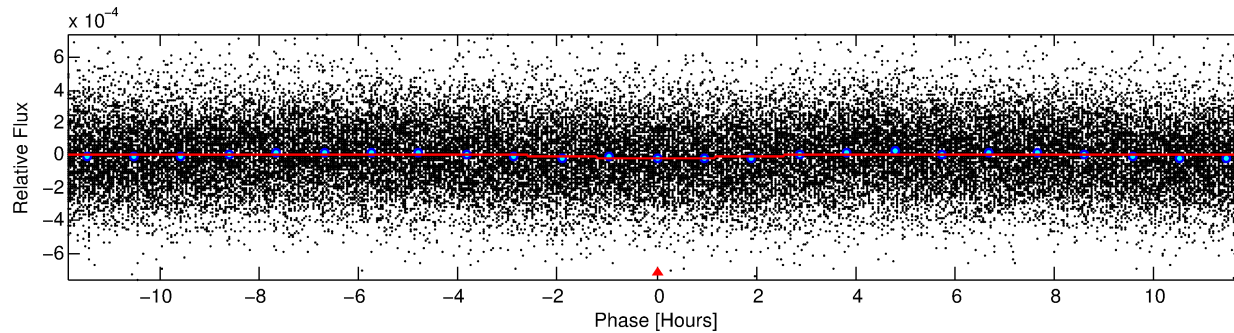
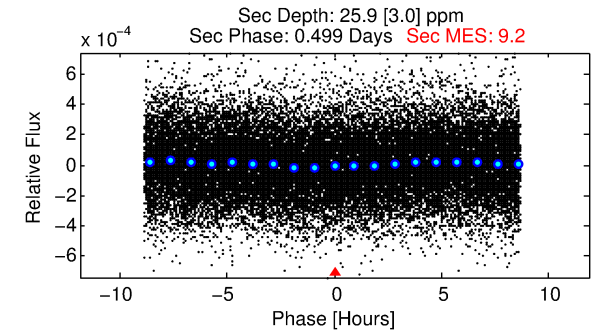
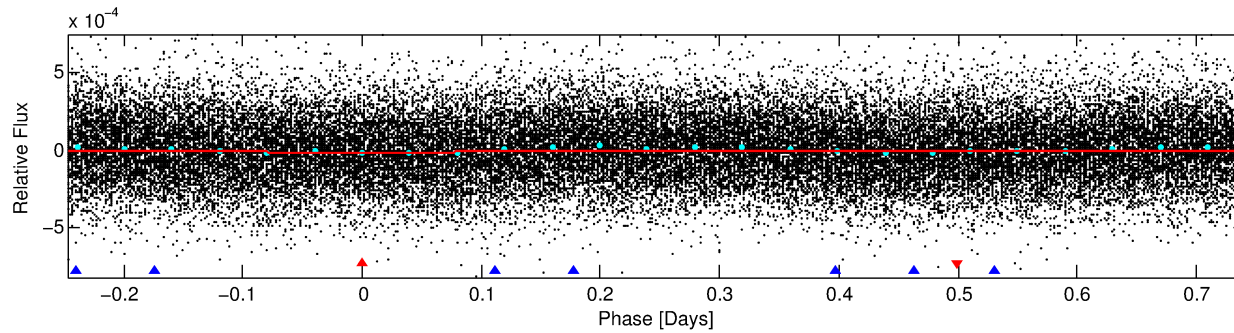
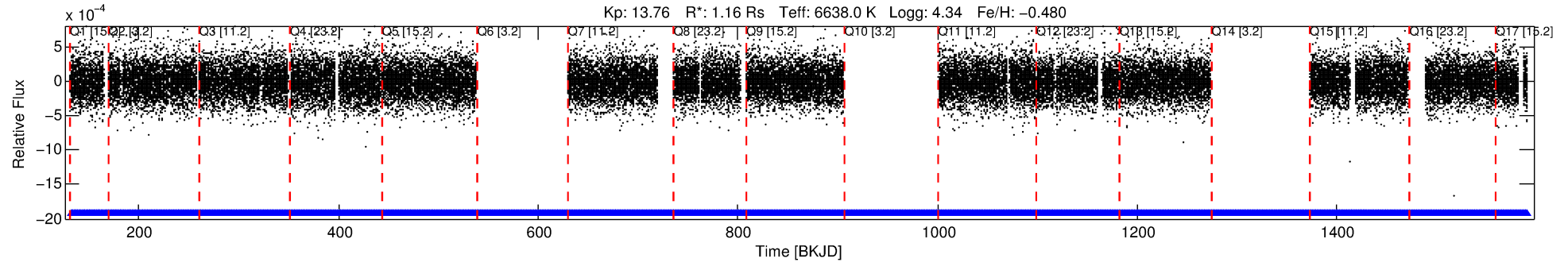
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005802398-01

No Significant Match Found

DV One-Page Summary

KIC: 5802398 Candidate: 1 of 2 Period: 0.989 d



DV Fit Results:

Period = 0.98894 [0.00003] d
Epoch = 132.4655 [0.0095] BKJD
Rp/R* = 0.0034 [0.0023]
a/R* = 1.59 [3.61]
b = 0.43 [7.12]
Seff = 5916.11 [2156.01]
Teq = 2236 [204] K
Rp = 0.43 [0.32] Re
a = 0.0199 [0.0046] AU
Ag = 30.59 [43.19] [0.69σ]
Teffp = 8131 [2804] K [2.10σ]

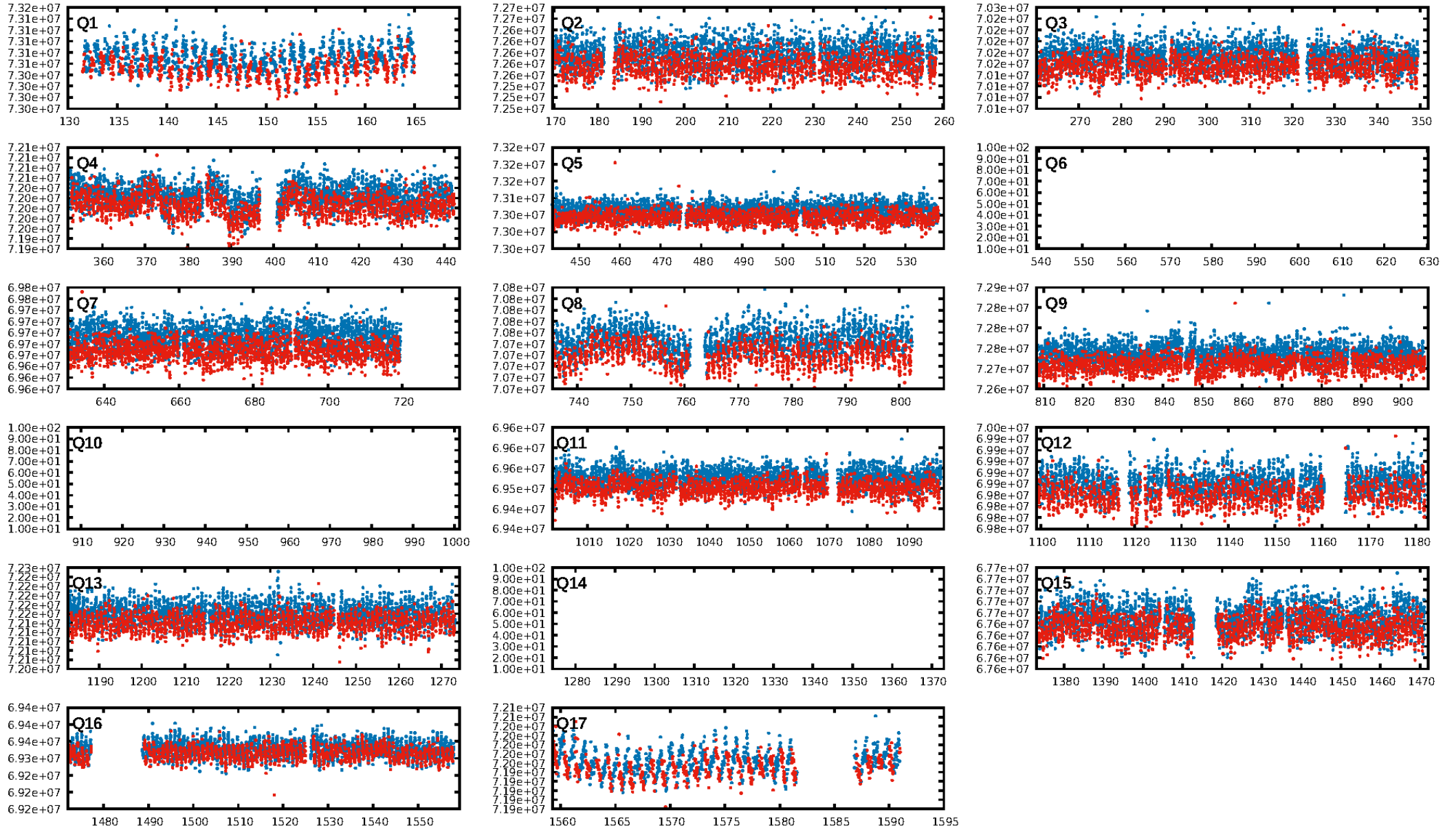
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [624.43σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.07e-15
RollingBand-fgt: 1.00 [1025/1025]
GhostDiagnostic-chr: 1.267
Centroid-sig: 15.8%
Centroid-so: 1.977 arcsec [1.00σ]
OotOffset-rm: 0.101 arcsec [1.13σ]
KicOffset-rm: 0.117 arcsec [1.17σ]
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]

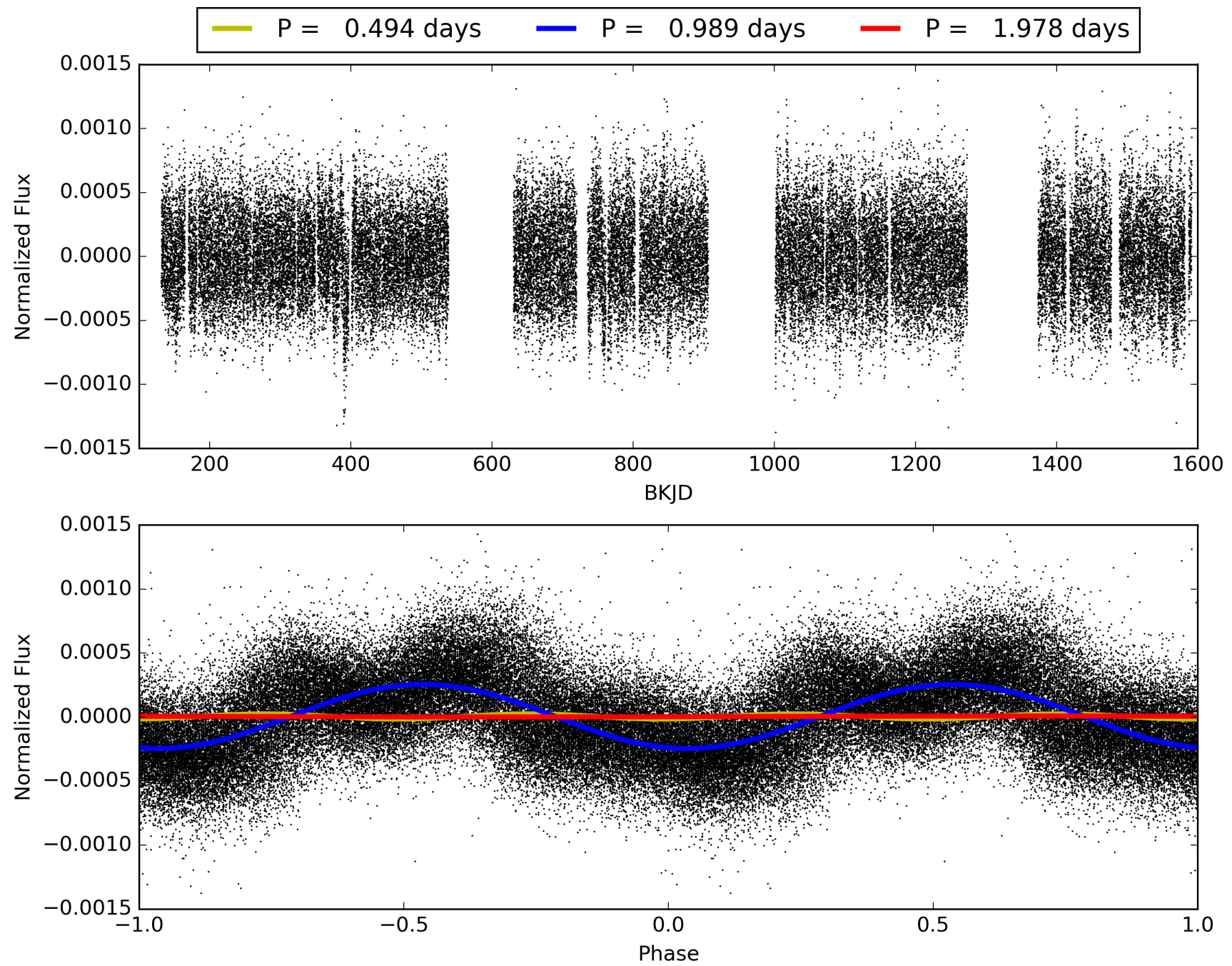
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 005802398-01, PDC Light Curves

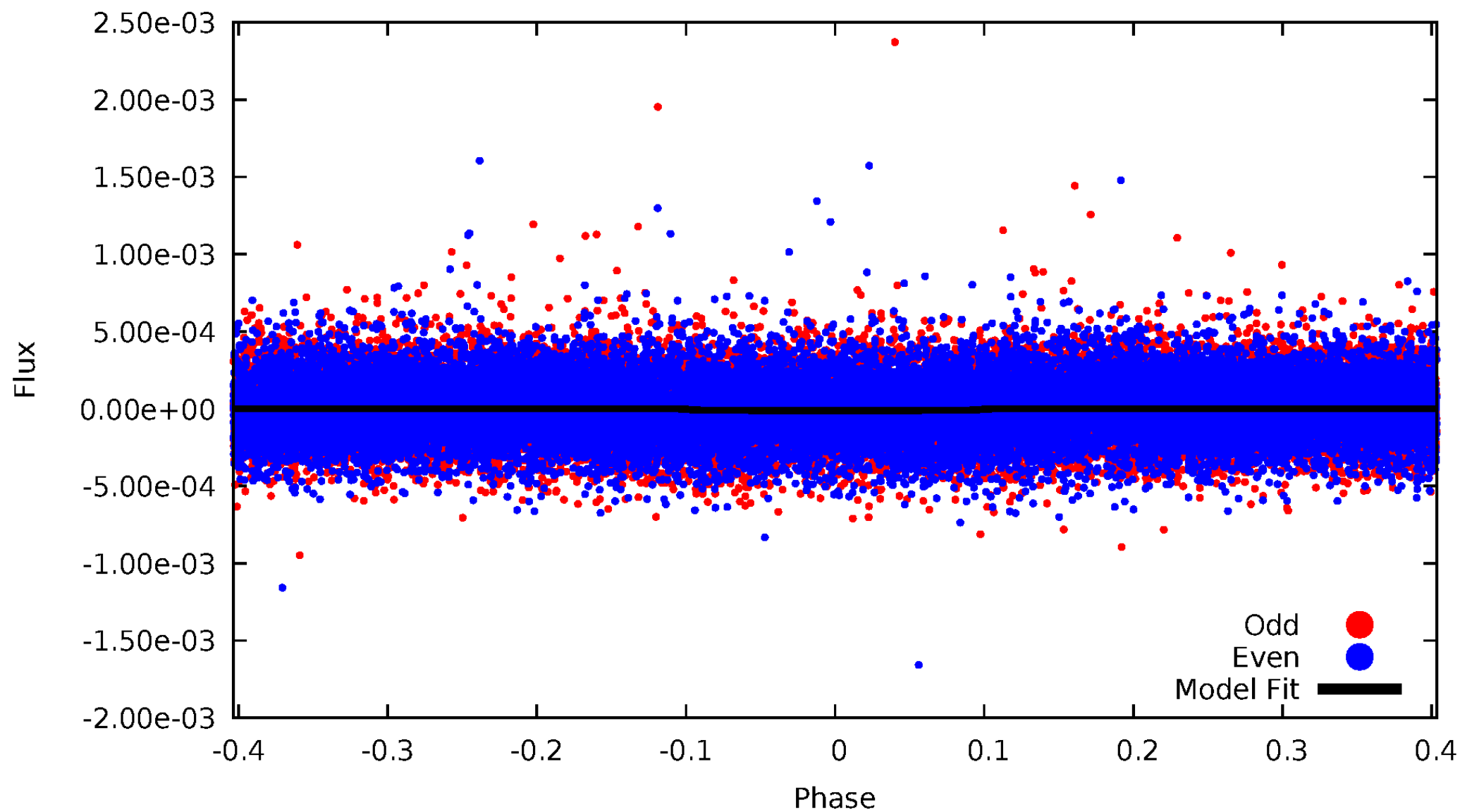


TCE 005802398-01



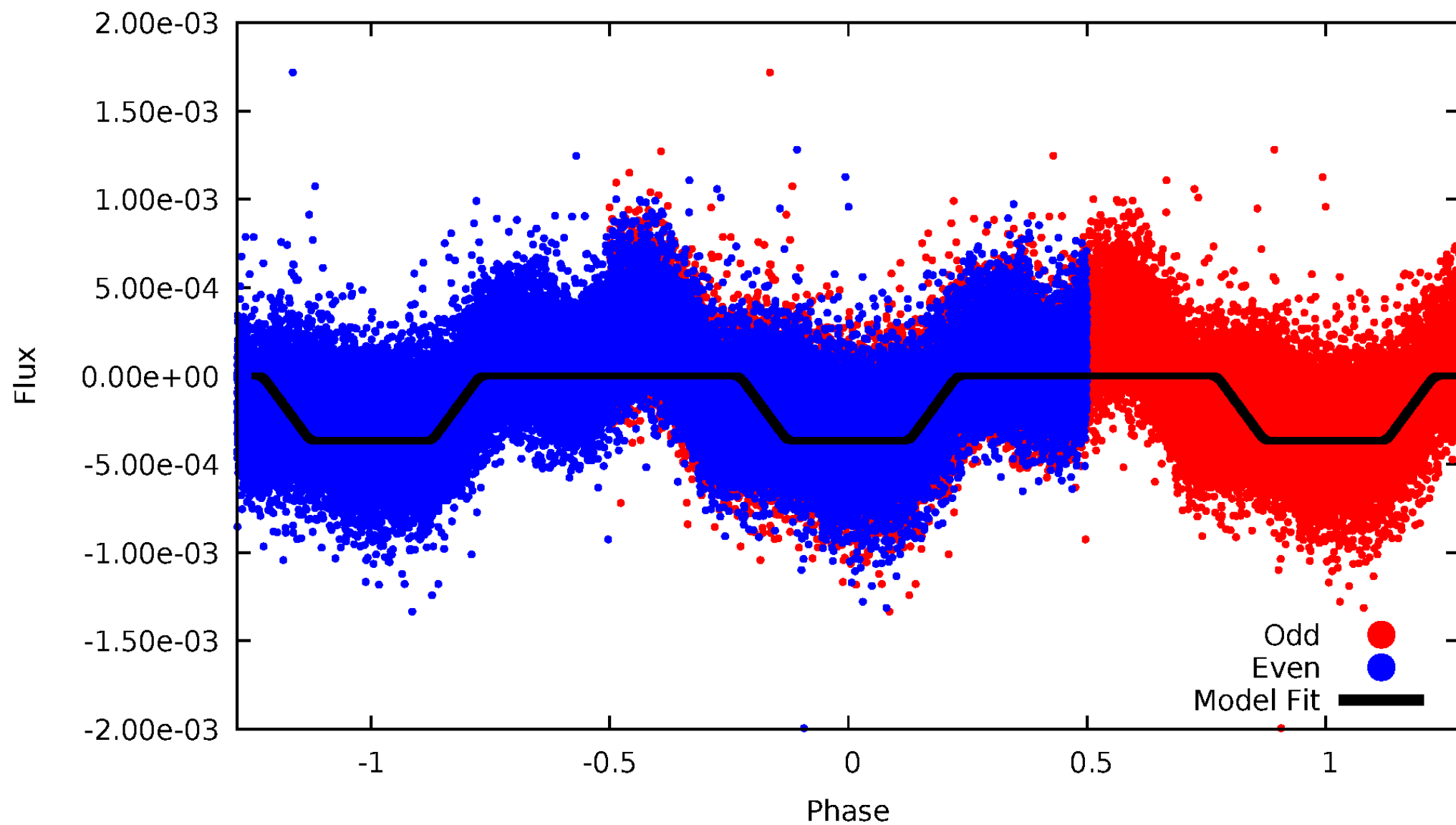
DV Odd/Even

TCE 005802398-01

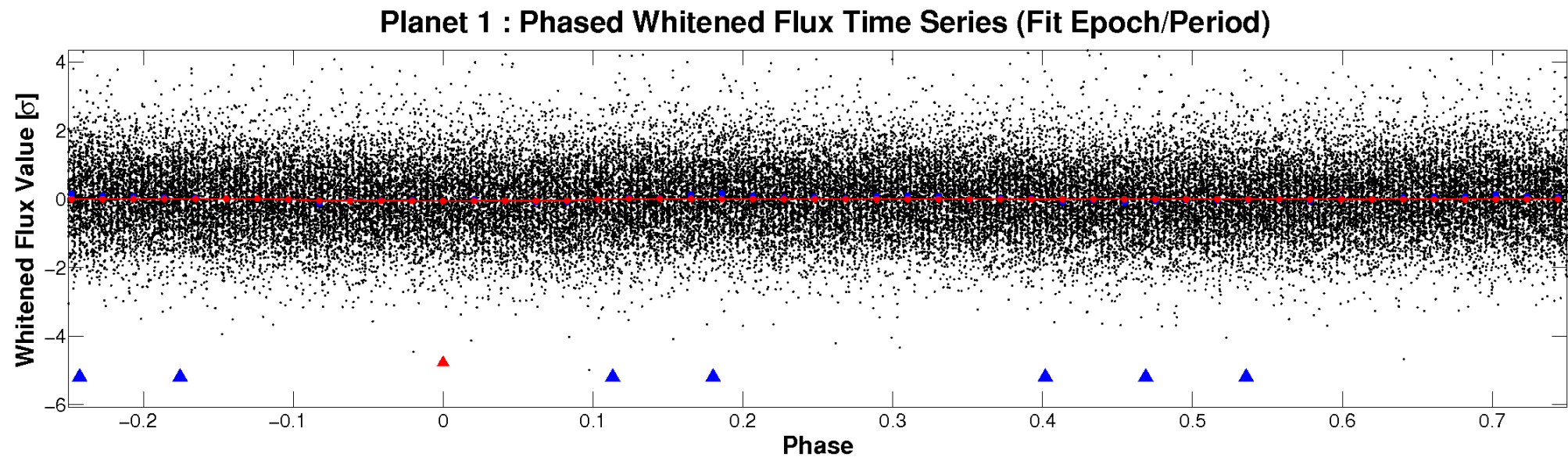
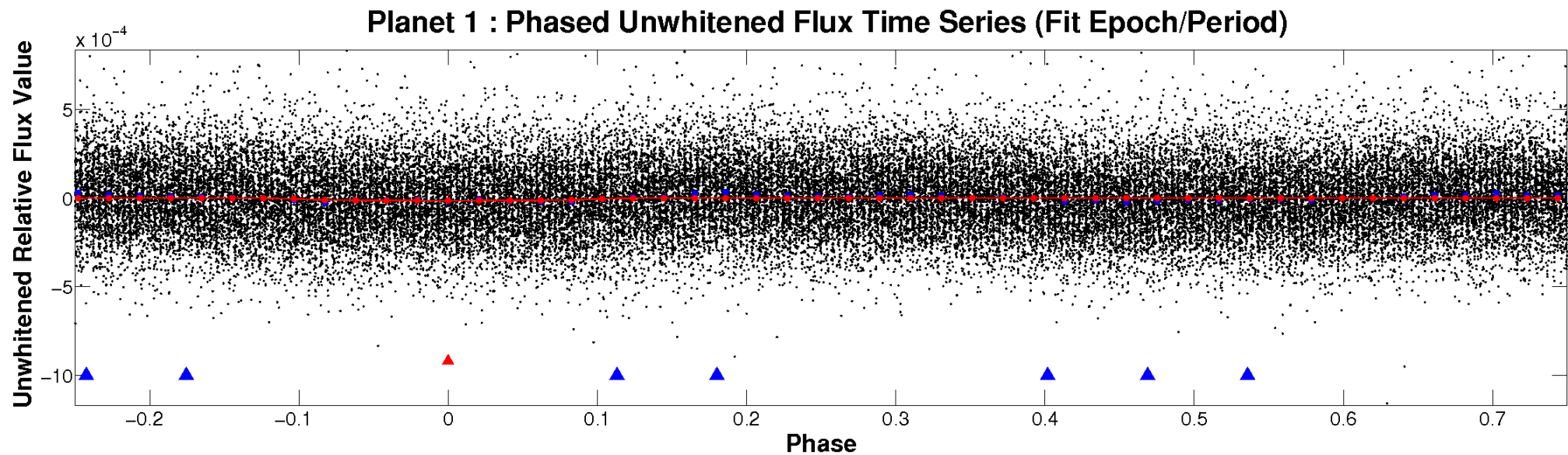


ALT Odd/Even

TCE 005802398-01

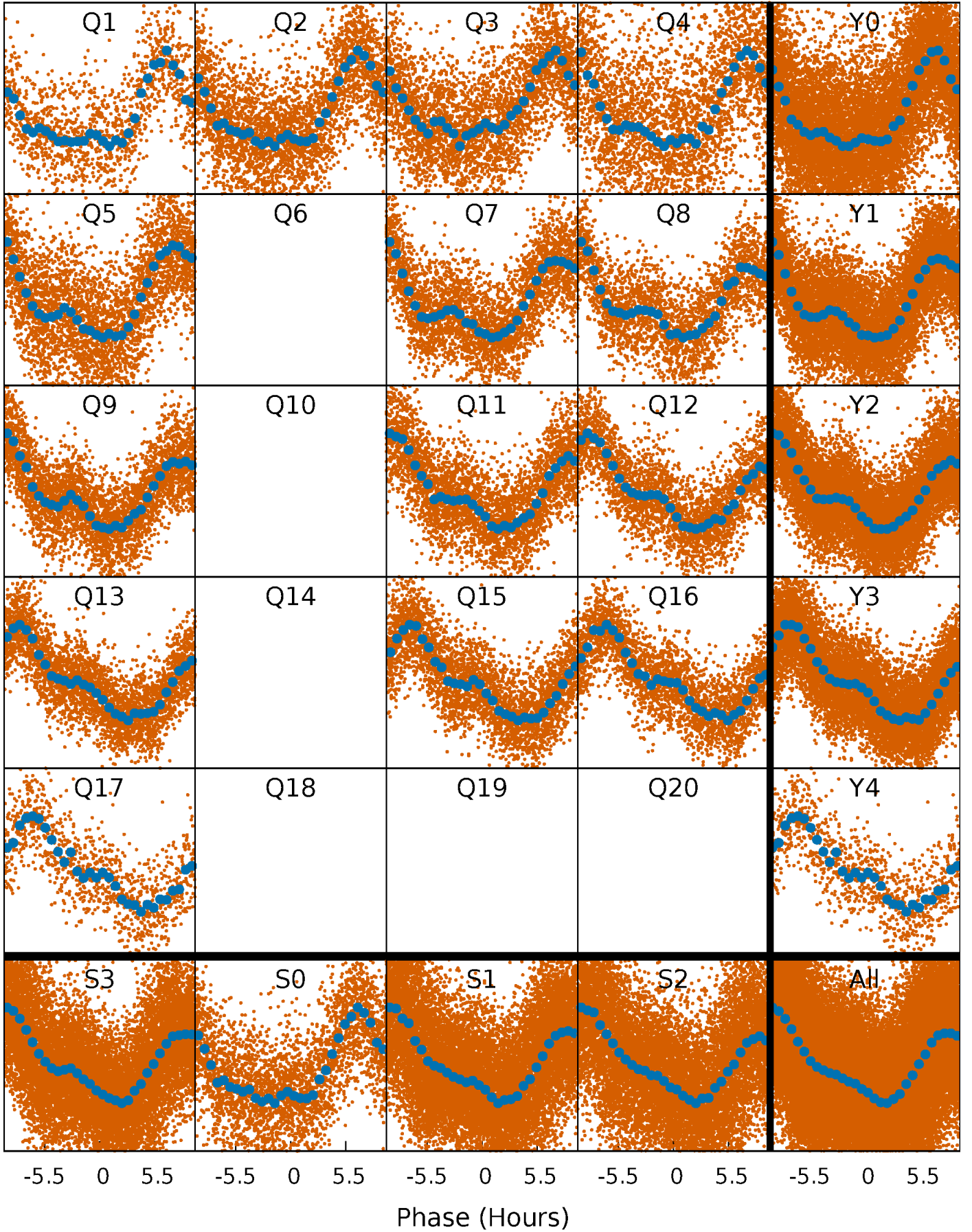


Non-Whitened Vs. Whitened Light Curve



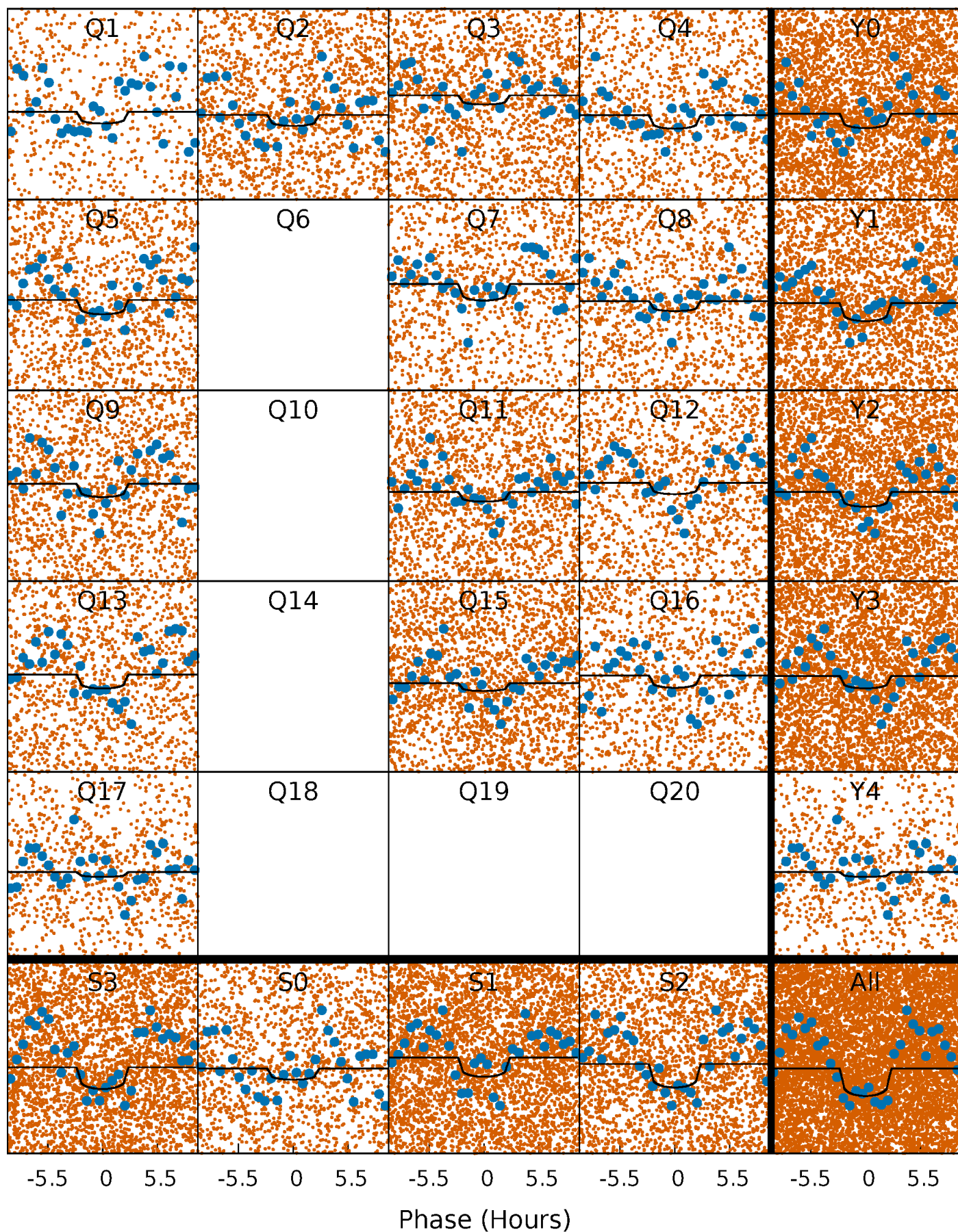
PDC Quarter-Phased Transit Curves

TCE 005802398-01 P= 0.988943 Days $T_0=132.465494$ (BKJD)



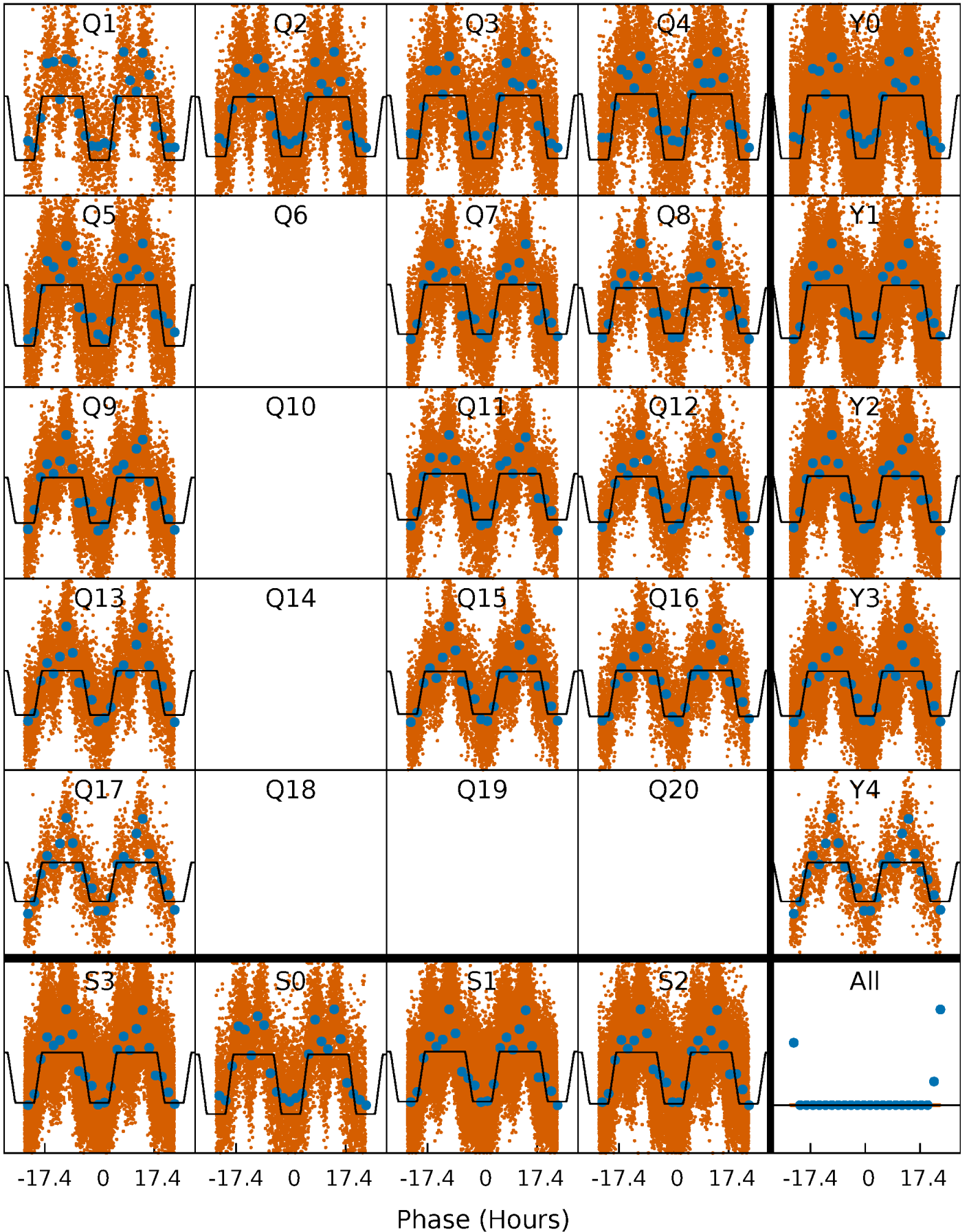
DV Quarter-Phased Transit Curves

TCE 005802398-01 P= 0.988943 Days $T_0=132.465494$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

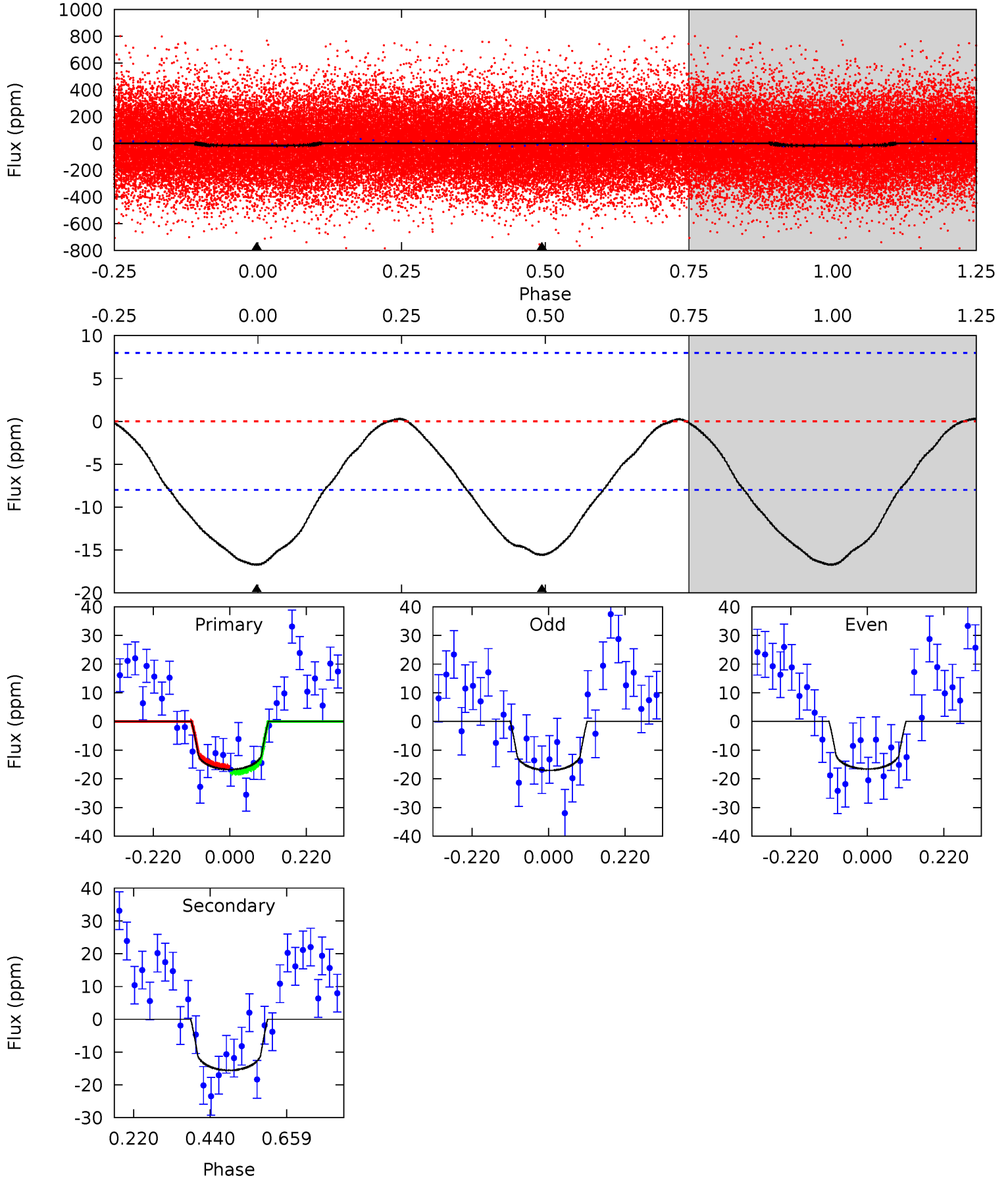
TCE 005802398-01 P= 0.989097 Days $T_0=132.397464$ (BKJD)



DV Model-Shift Uniqueness Test

005802398-01, P = 0.988943 Days, E = 131.476551 Days

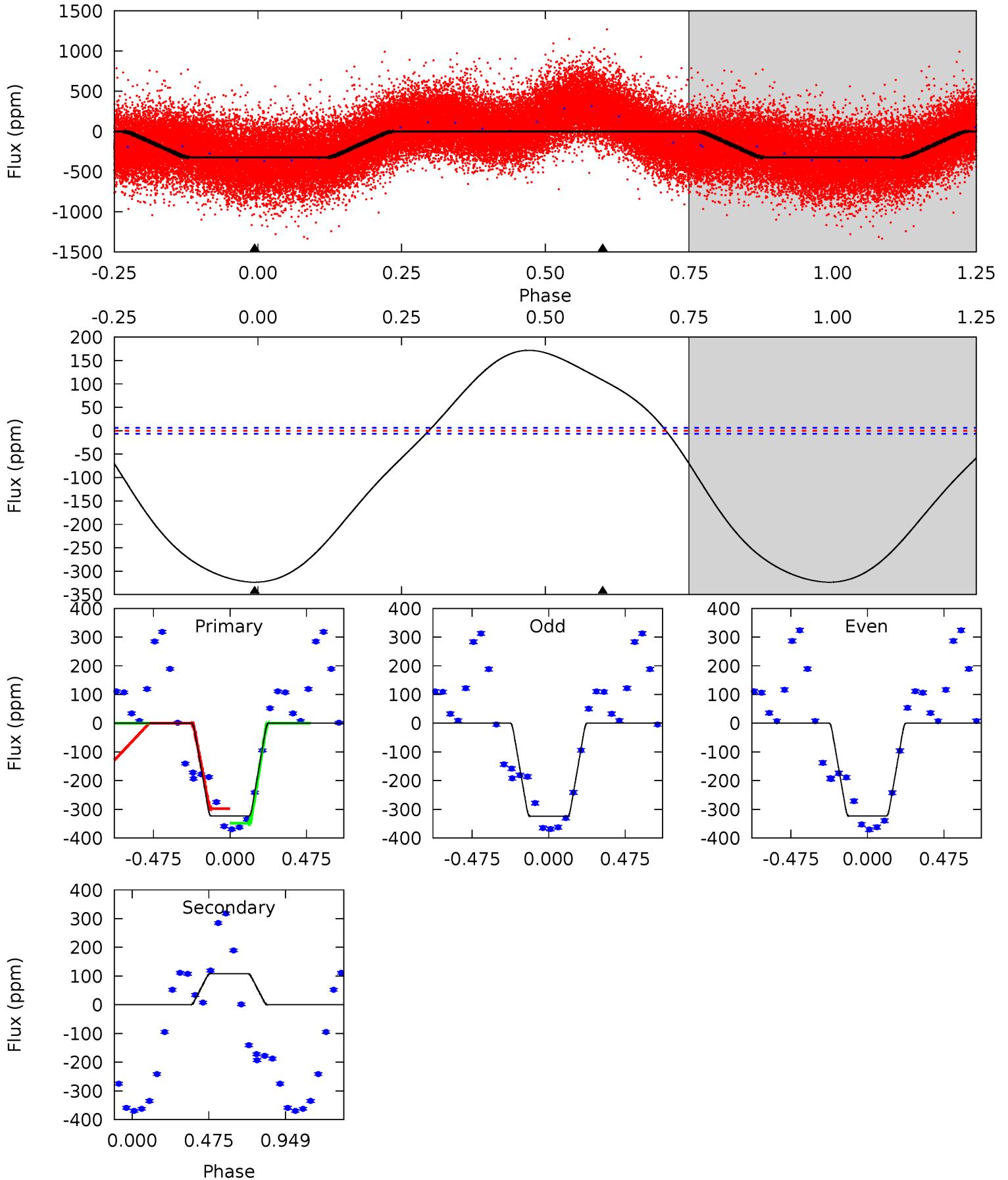
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.21	8.57	0	0	4.40	1.23	0.26	9.21	9.21	8.57	8.57	0.13	1.03	0.02	0.61



Alt Model-Shift Uniqueness Test

005802398-01, P = 0.989097 Days, E = 131.408367 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
219.9	-73.4	0	0	4.23	0.72	26.2	219.9	219.9	-73.4	-73.4	0.29	1.01	0.35	16.0



Stellar Parameters For KIC 005802398

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6638^{+158}_{-238}	$4.340^{+0.098}_{-0.182}$	$-0.480^{+0.250}_{-0.300}$	$1.161^{+0.322}_{-0.173}$	$1.076^{+0.152}_{-0.124}$	$0.969^{+0.500}_{-0.446}$
	+2%/-4%	+2%/-4%	+52%/-62%	+28%/-15%	+14%/-12%	+52%/-46%
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 005802398-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-16 ± 2	$0.47^{+0.30}_{-0.26}$	3160^{+200}_{-184}	6929^{+5258}_{-1598}	16^{+61}_{-10}
Alt.	108 ± 1	$2.49^{+0.47}_{-0.38}$	3157^{+213}_{-168}	-5038^{+257}_{-331}	$-3.788^{+1.019}_{-1.406}$

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

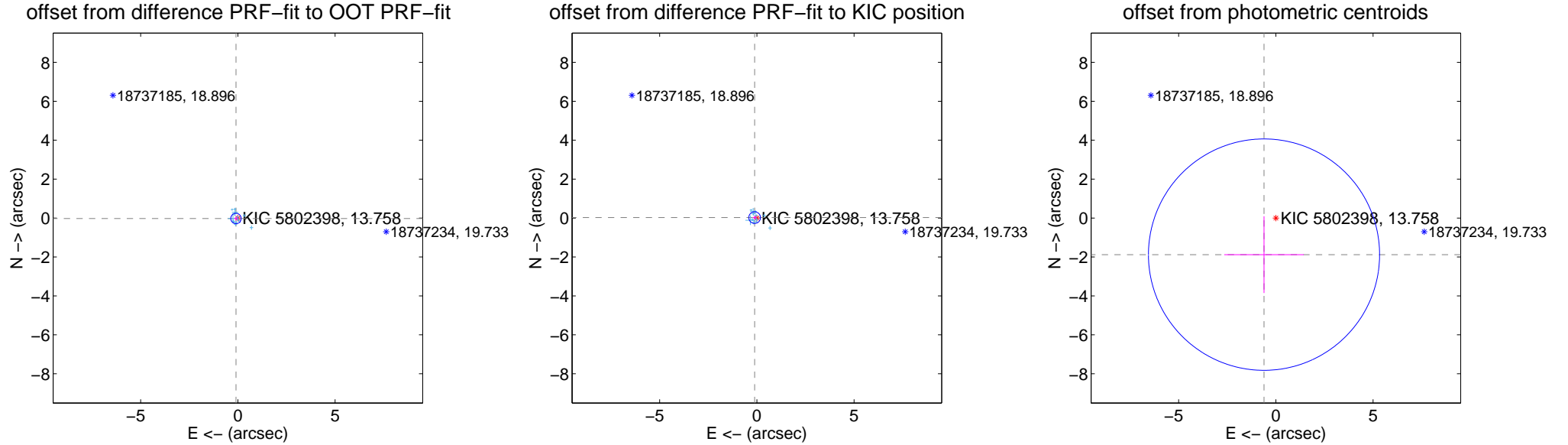
DV Centroid Data

Supplemental centroid analysis for 005802398-01. Kepler magnitude: 13.76. Transit SNR 4.92

There are 14 quarters with good PRF difference image offsets

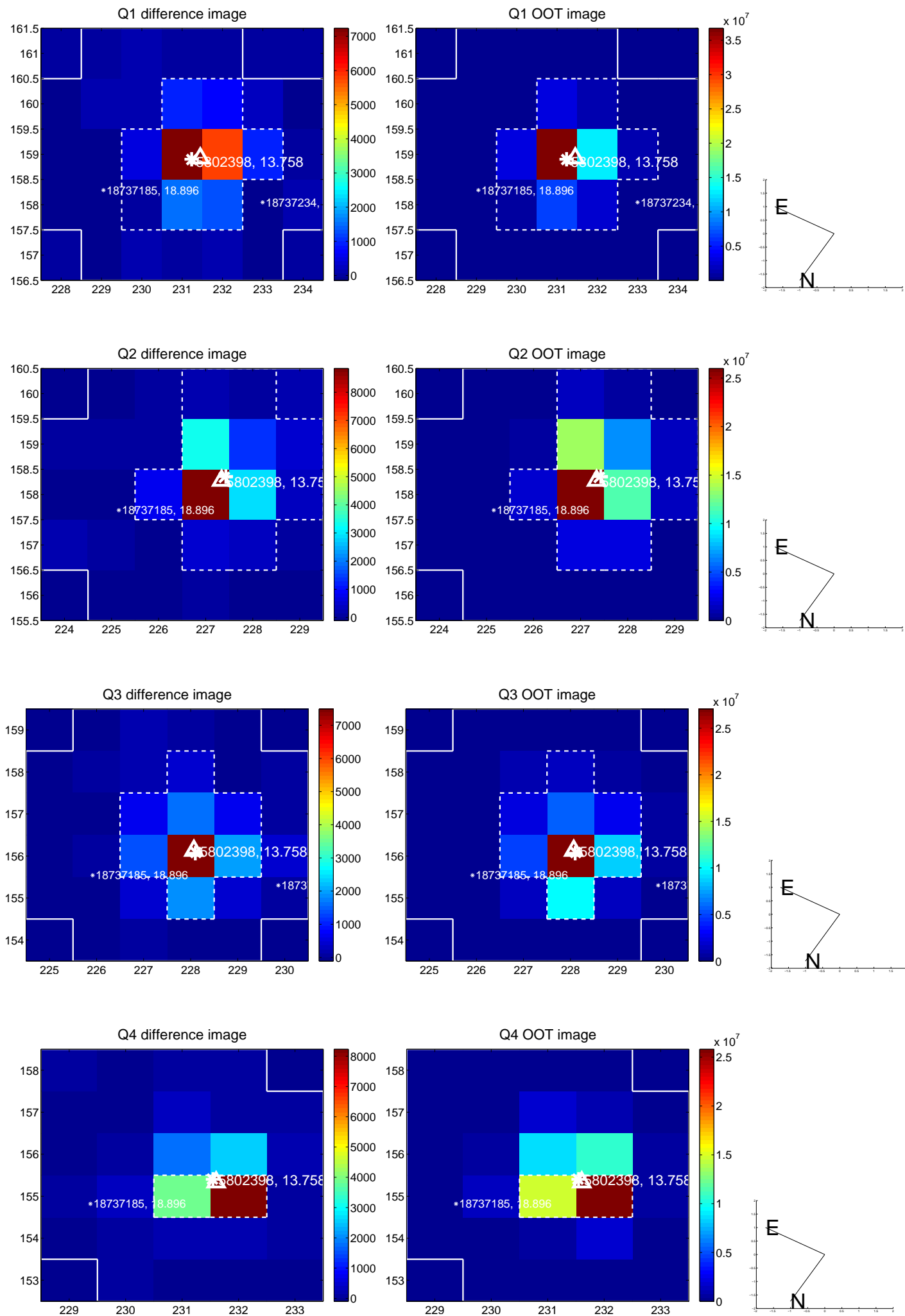
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.101 ± 0.089	1.13	0.098 ± 0.094	-0.024 ± 0.094
PRF-fit source offset from KIC position	0.117 ± 0.100	1.17	0.115 ± 0.096	0.023 ± 0.094
photometric centroid source offset	1.98 ± 1.98	1.00	0.61 ± 2.05	-1.88 ± 1.97

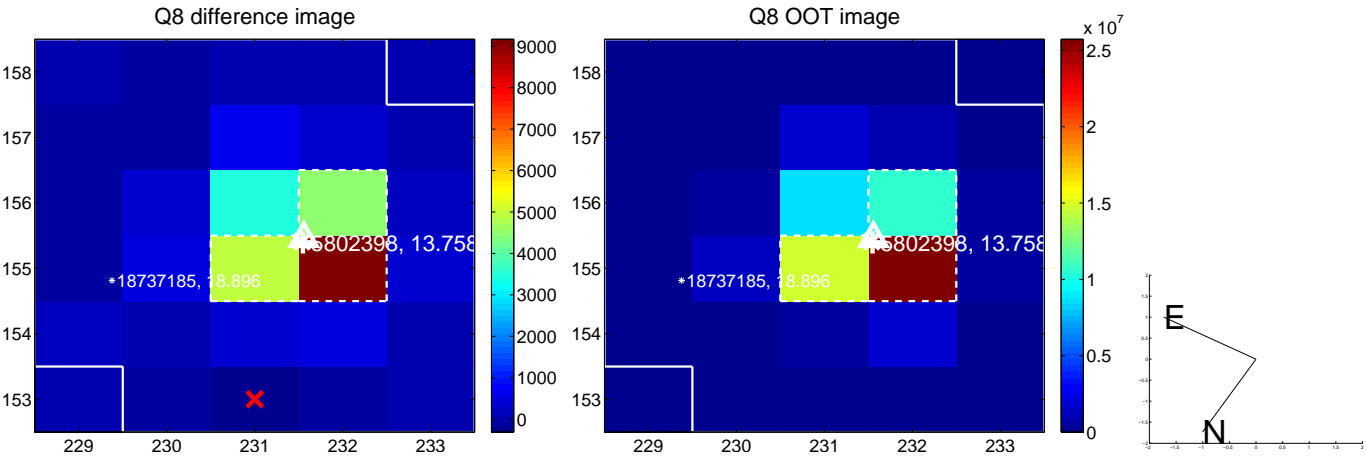
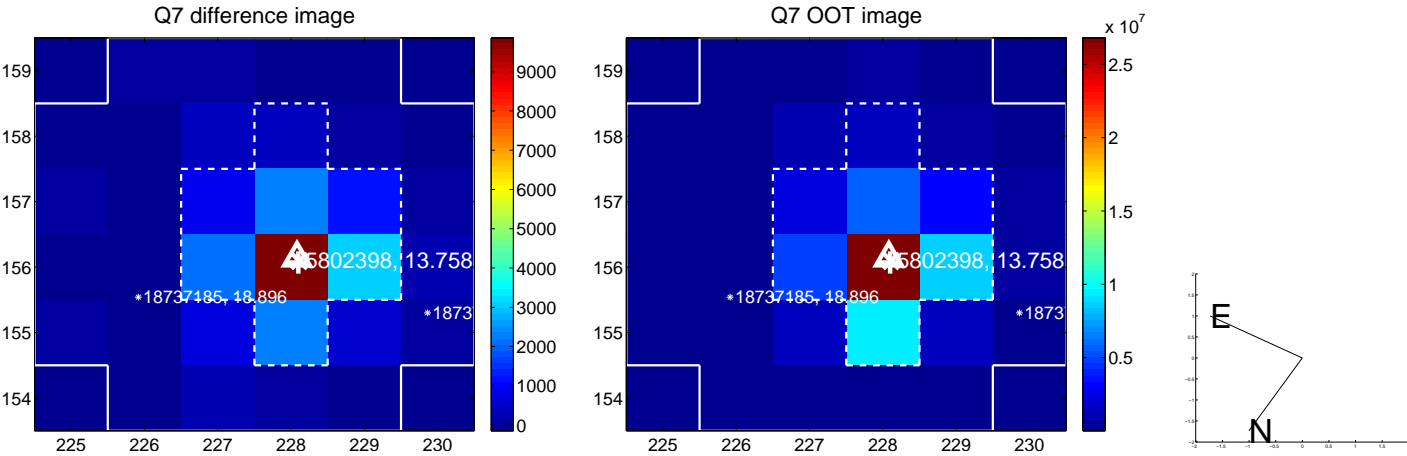
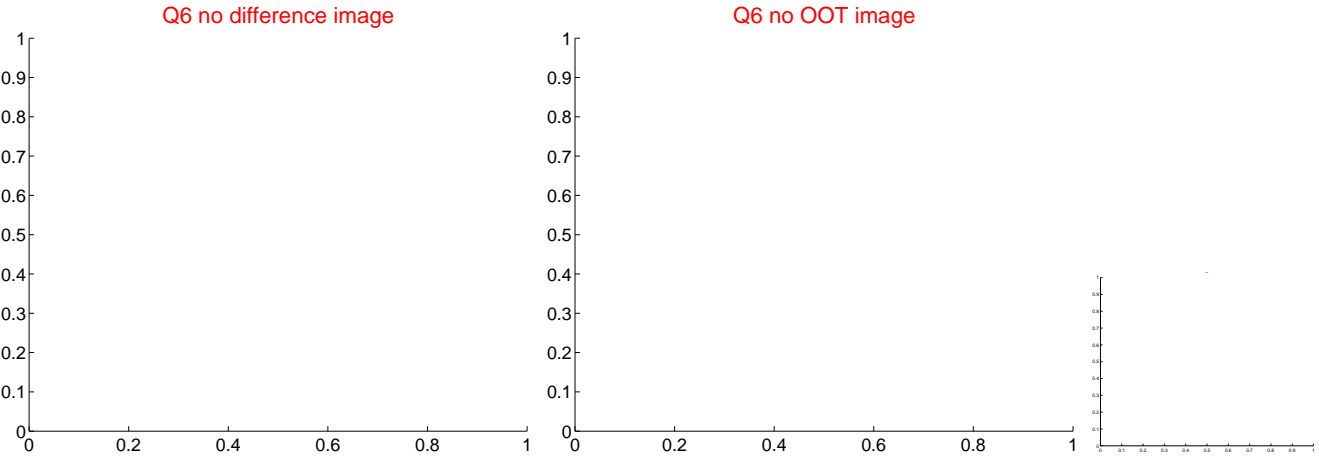
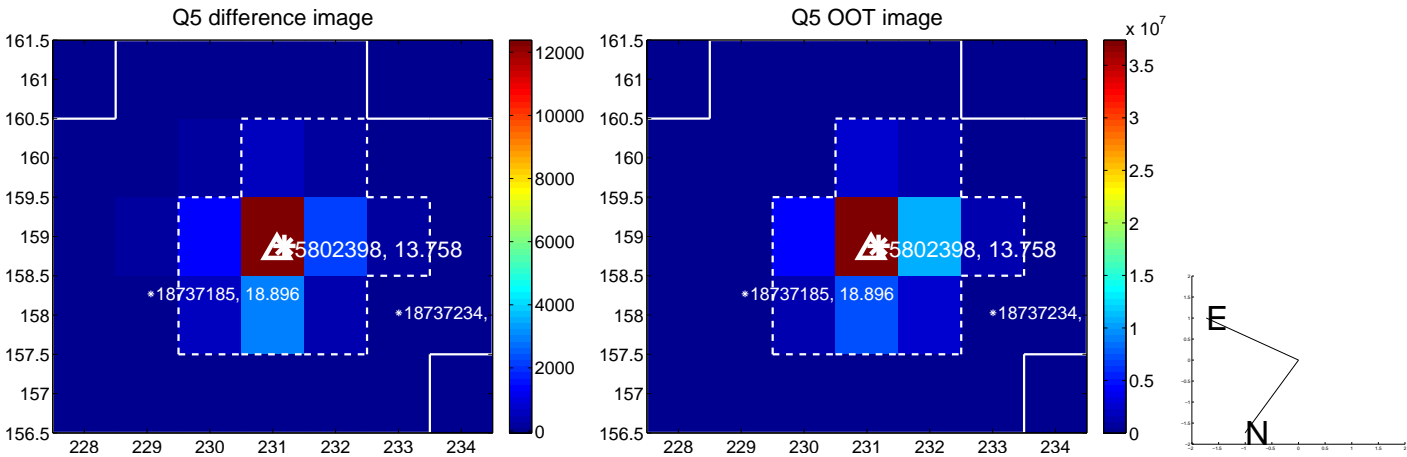


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

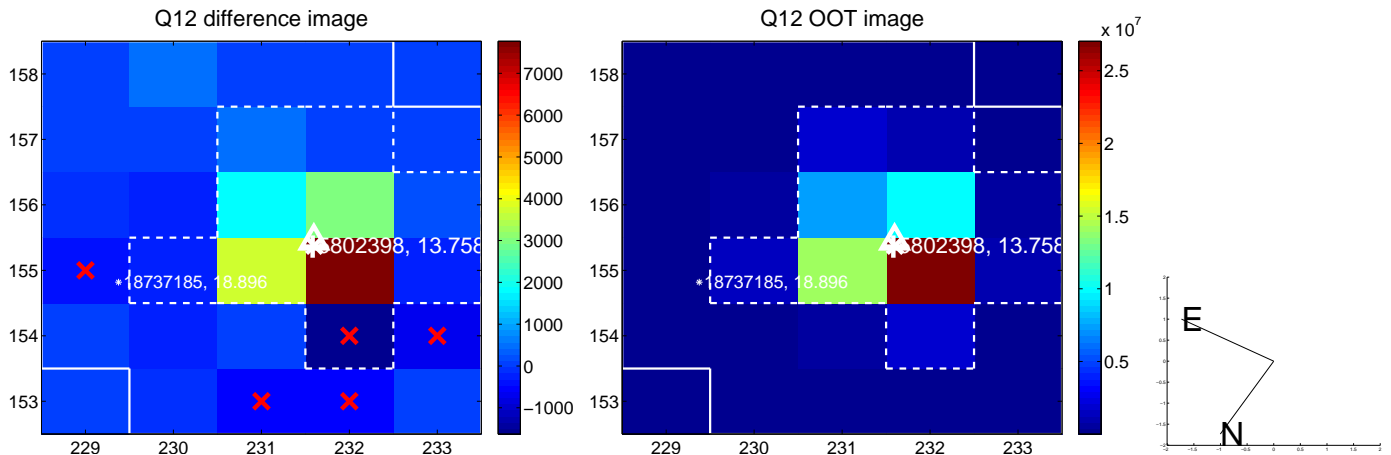
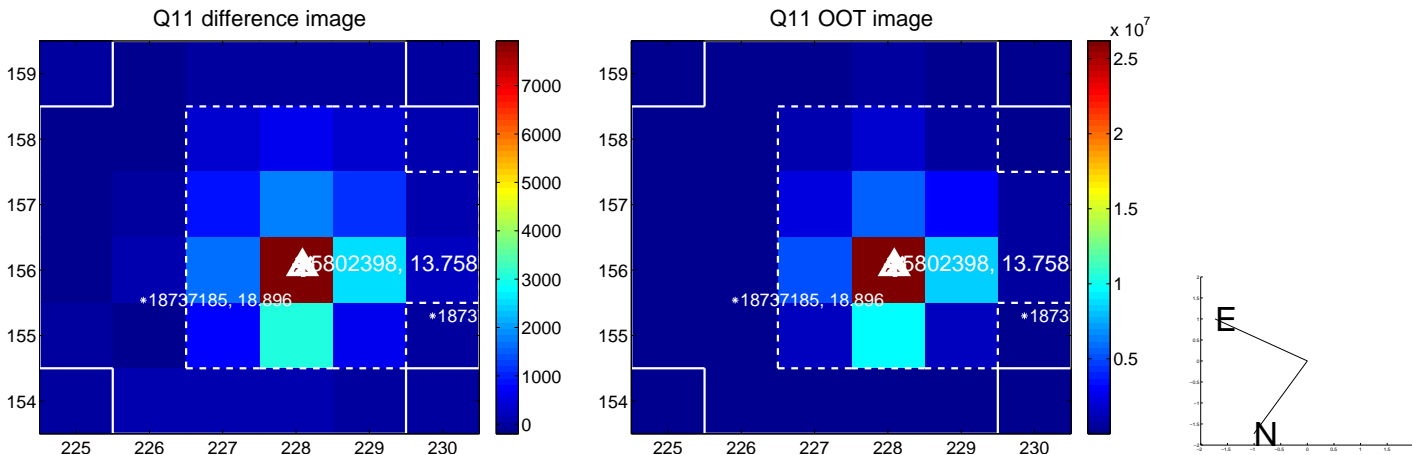
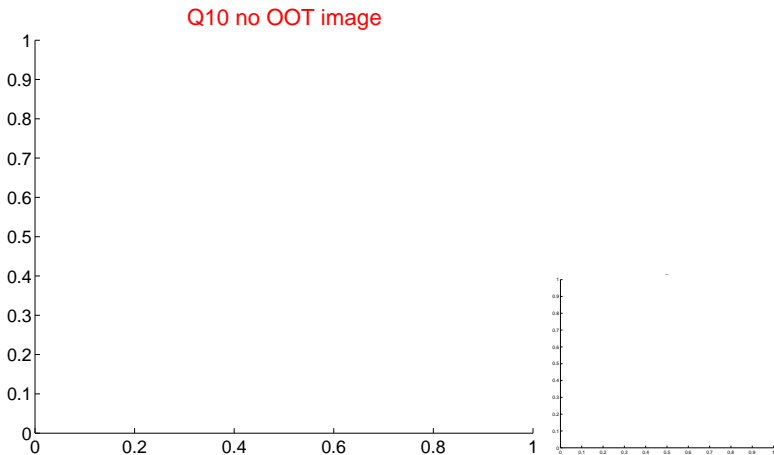
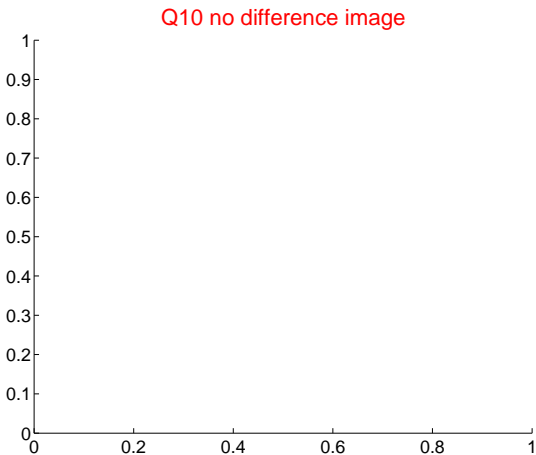
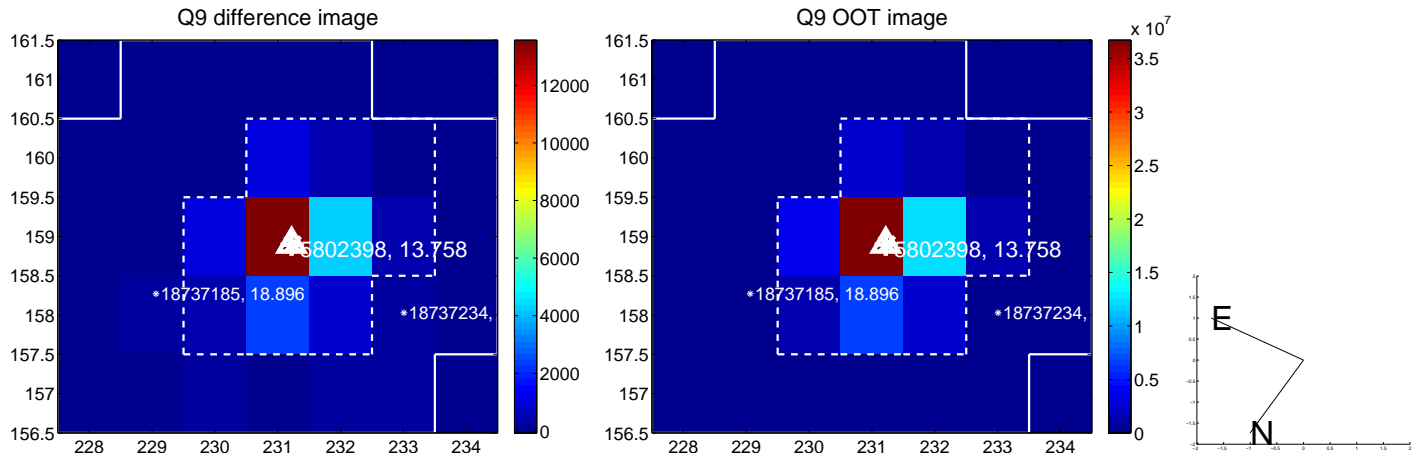
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



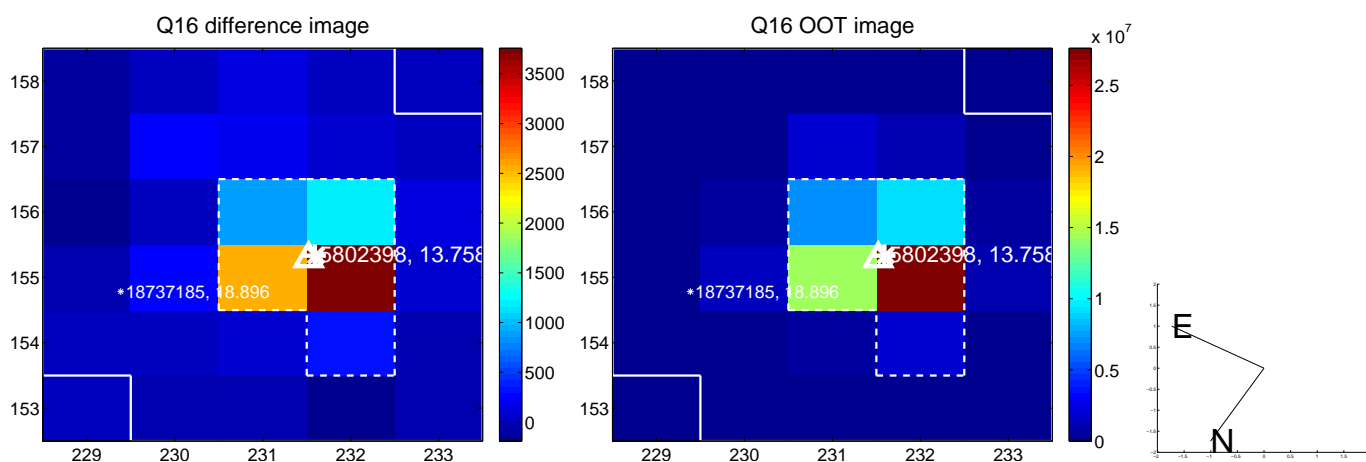
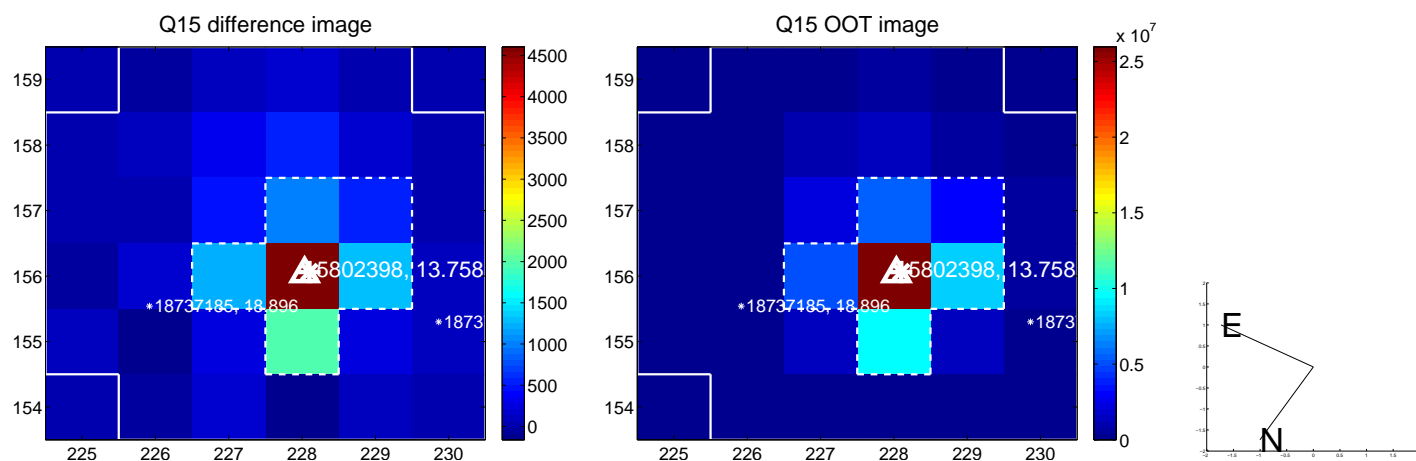
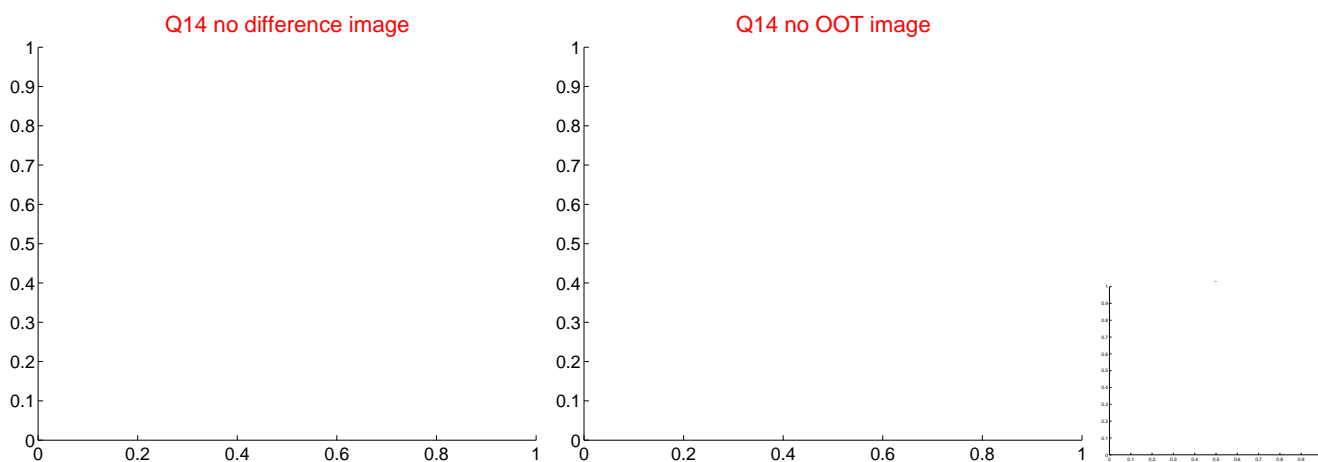
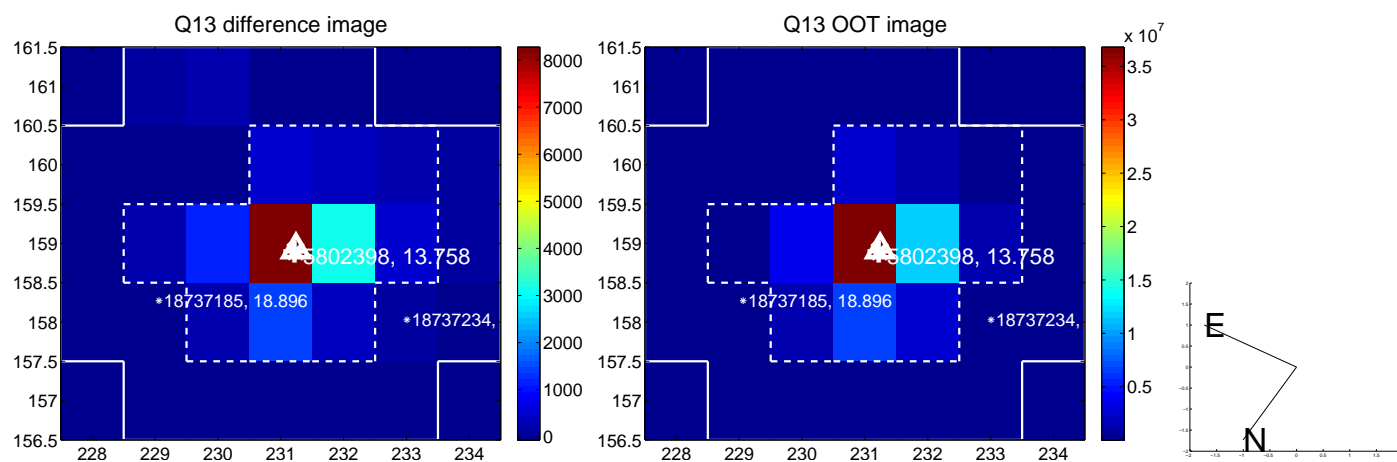
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



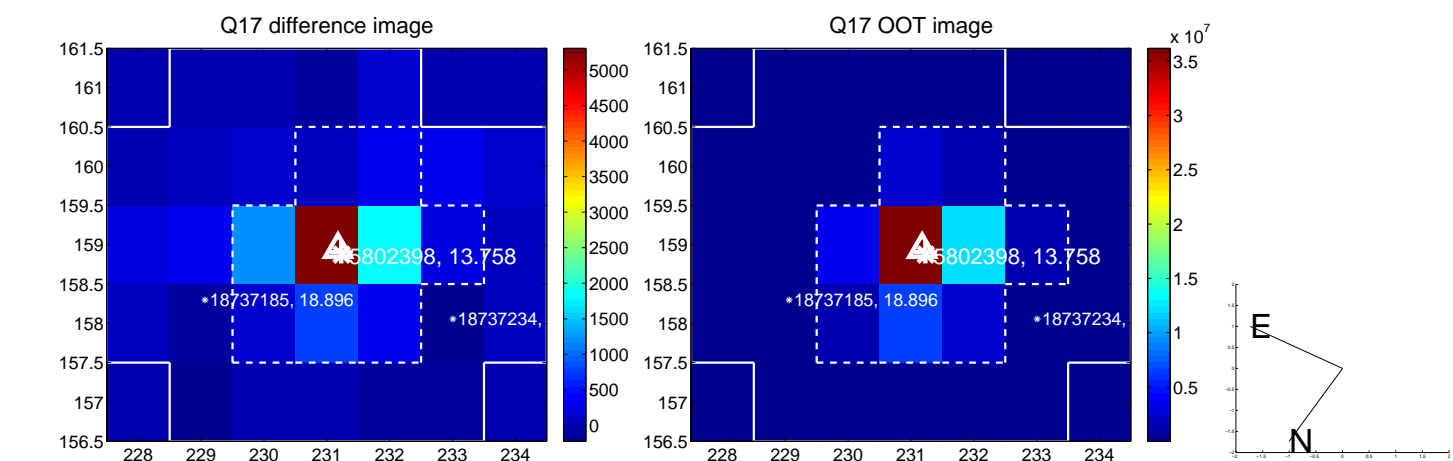
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



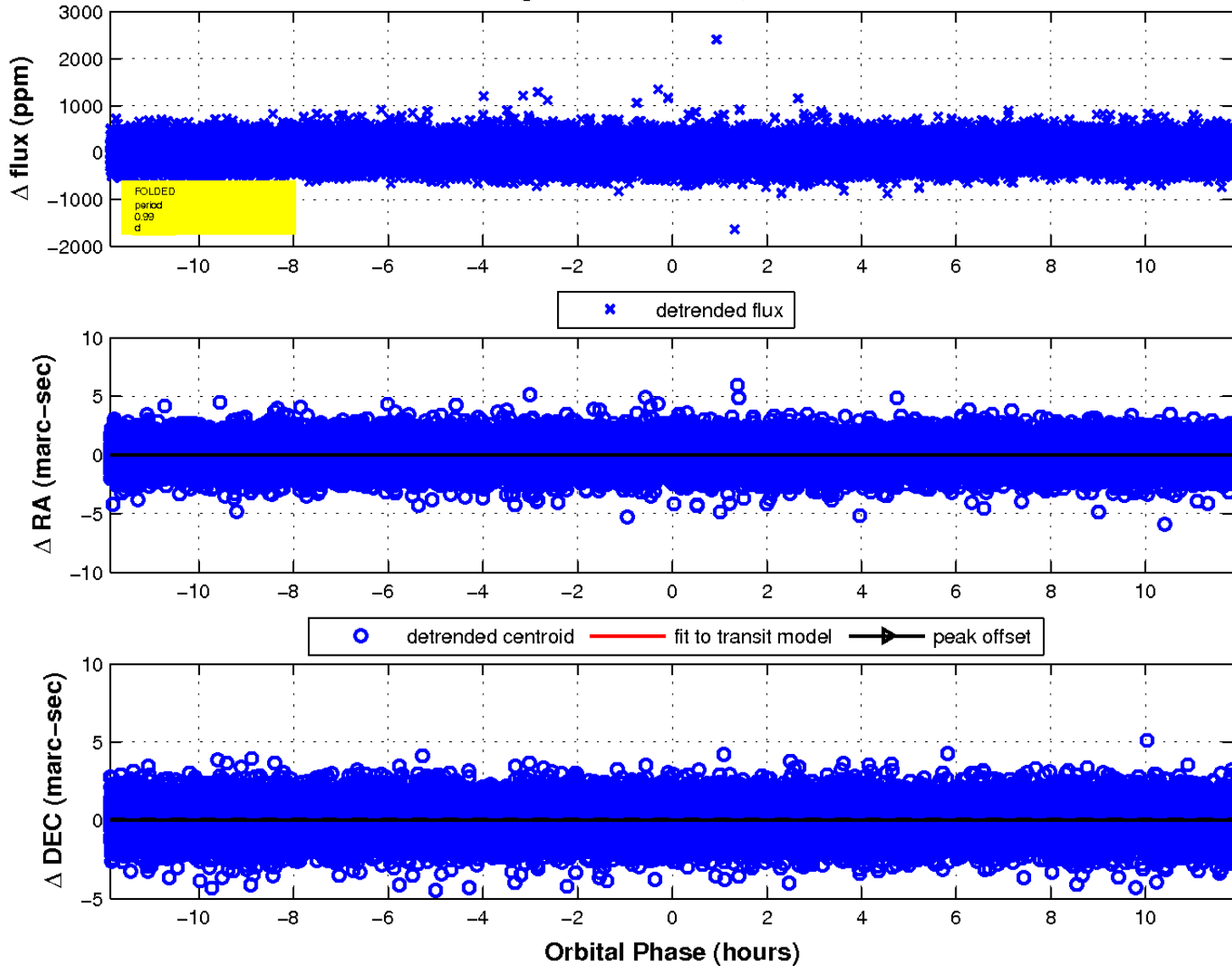
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

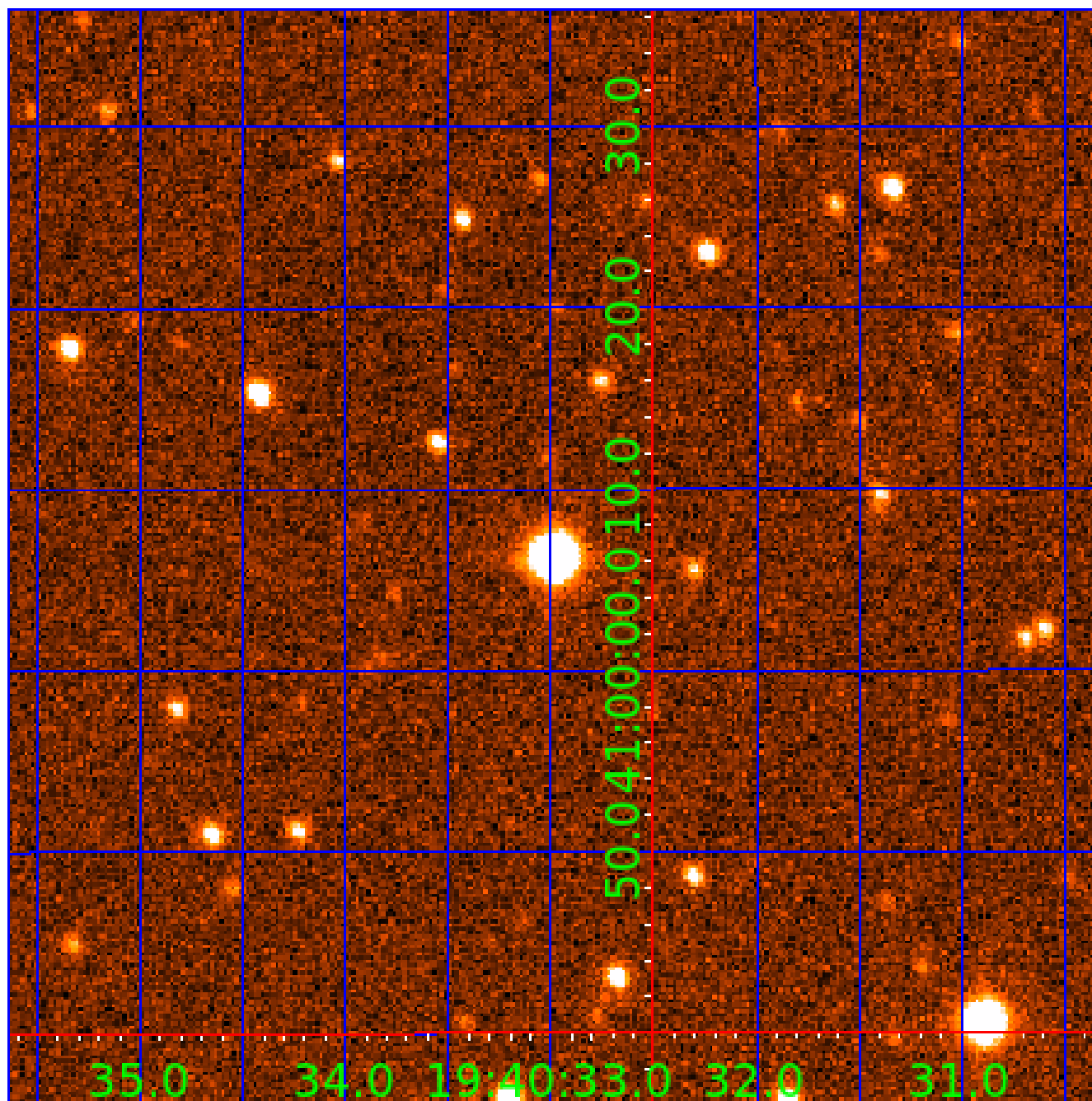


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005802398

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})
005802398-01	OBS	No	0.988943	132.465494	13.0	4.787	9.9	4.9	1.16	6638	0.43	5916.11
005802398-02	OBS	No	216.930355	198.133163	246.2	6.780	7.4	7.3	1.16	6638	2.06	4.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802398-01	OBS	FP	0.00	1	0	0	0	LPP_DV
005802398-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

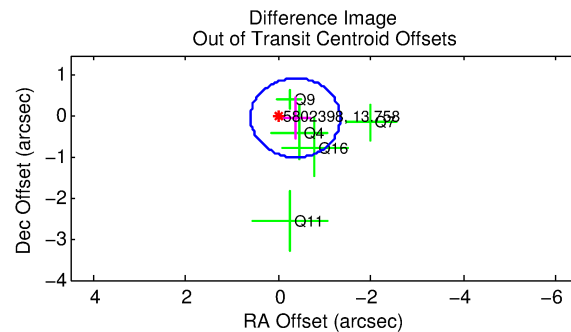
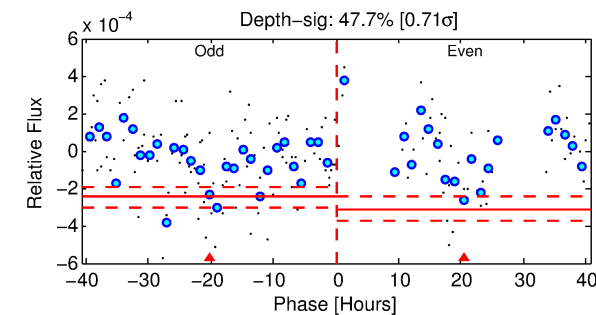
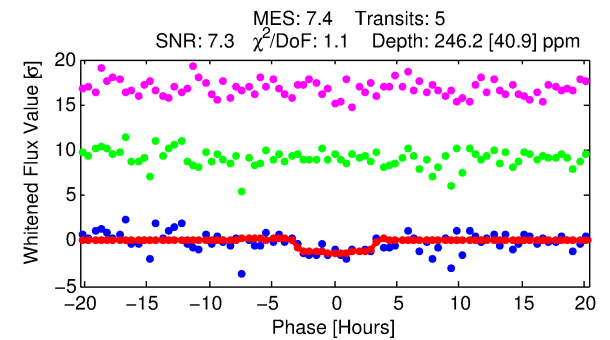
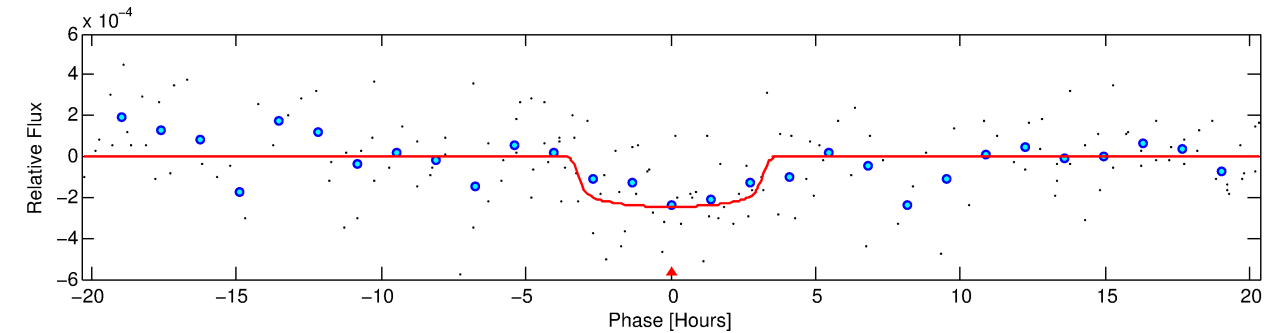
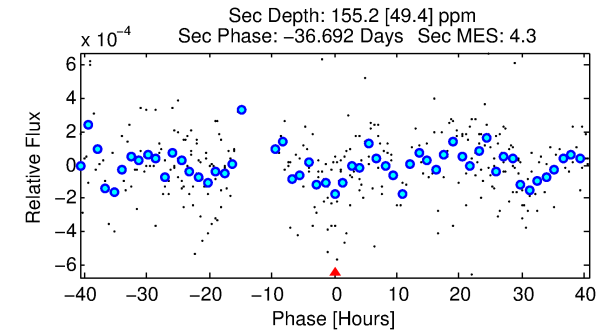
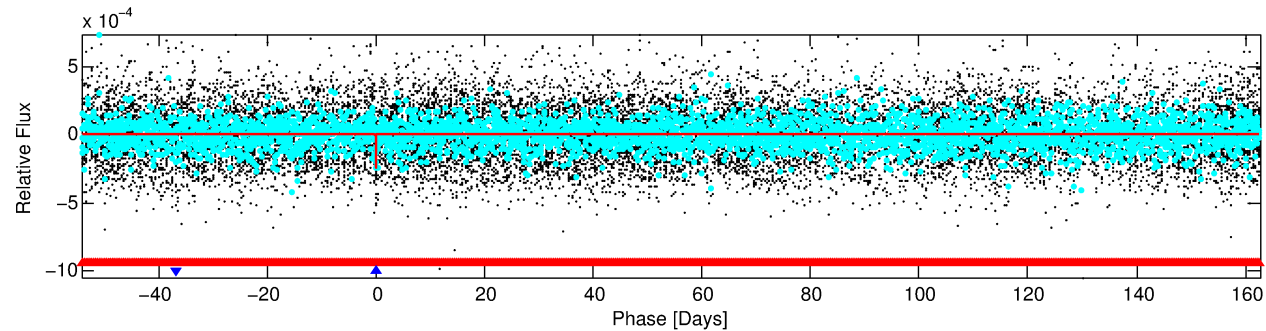
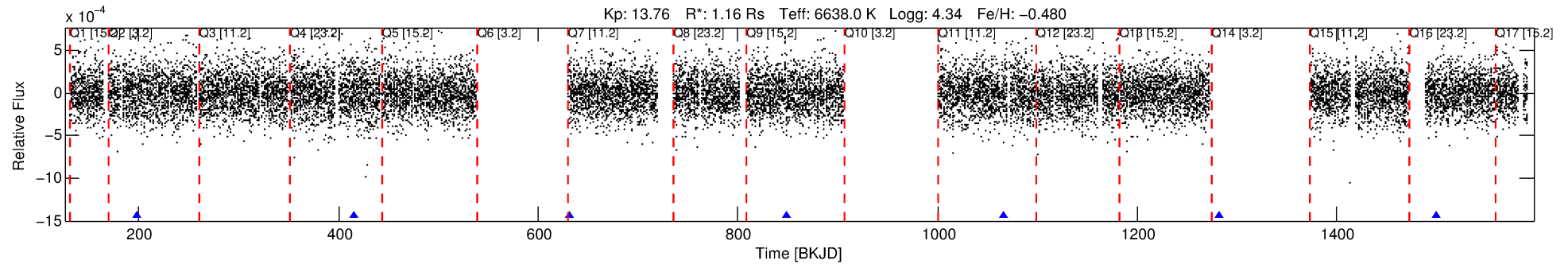
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005802398-02

No Significant Match Found

DV One-Page Summary

KIC: 5802398 Candidate: 2 of 2 Period: 216.930 d



DV Fit Results:

Period = 216.93035 [0.00411] d
Epoch = 198.1332 [0.0169] BKJD
Rp/R* = 0.0163 [0.0115]
a/R* = 134.97 [550.45]
b = 0.85 [1.32]
Seff = 4.47 [1.63]
Teff = 371 [34] K
Rp = 2.06 [1.57] Re
a = 0.7241 [0.1678] AU
Ag = 10556.12 [15714.16] [0.67 σ]
Teffp = 5811 [2118] K [2.57 σ]

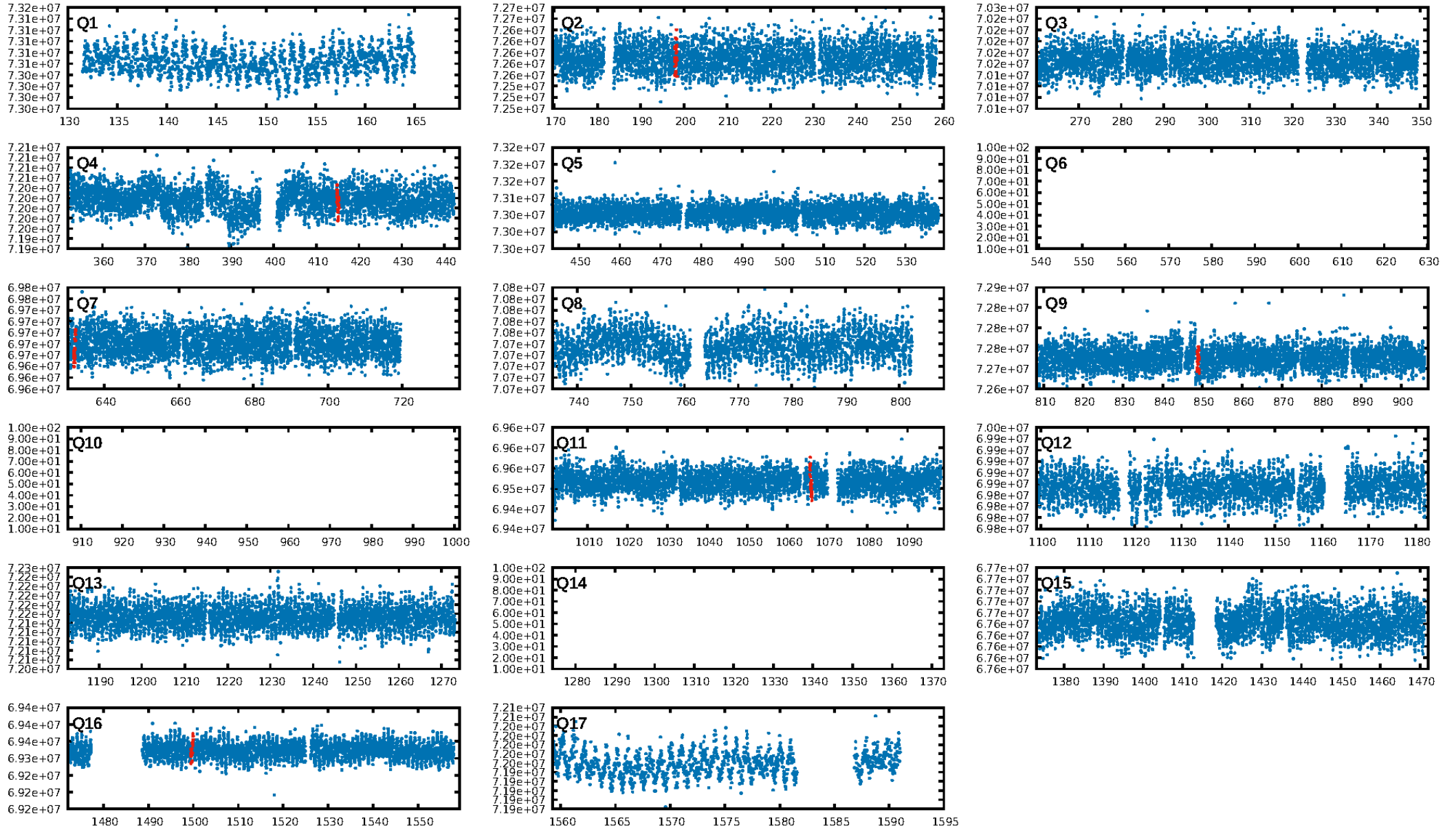
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [624.43 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 51.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.17e-09
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.7277
Centroid-sig: 0.9%
Centroid-so: 2.980 arcsec [2.34 σ]
OotOffset-rm: 0.370 arcsec [1.15 σ]
OotOffset-st: 0.2/2/1 [5]
KicOffset-rm: 0.347 arcsec [1.12 σ]
KicOffset-st: 0.2/2/1 [5]
DiffImageQuality-fgm: 0.60 [3/5]
DiffImageOverlap-fno: 0.00 [0/6]

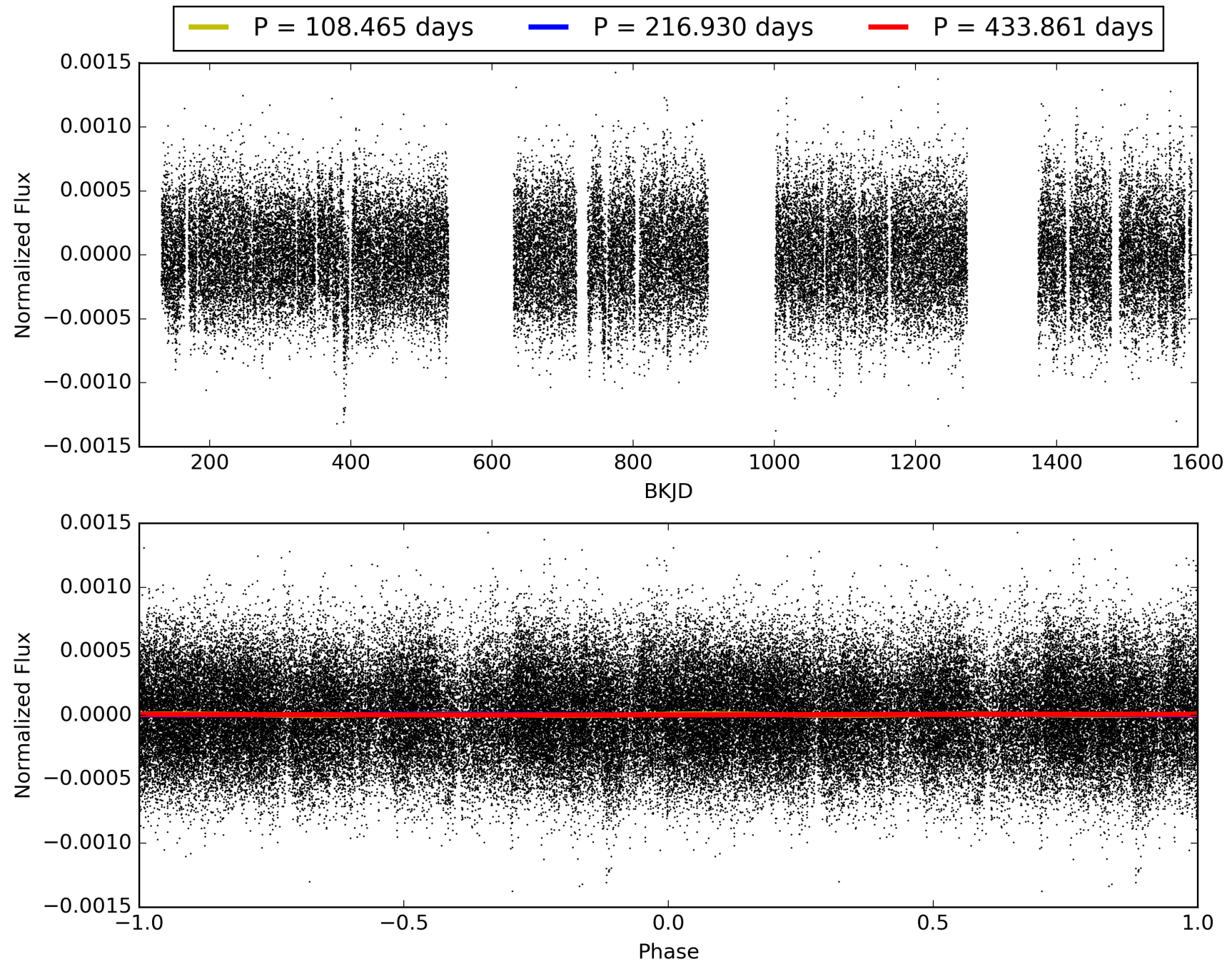
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:19:11 Z

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

TCE 005802398-02, PDC Light Curves

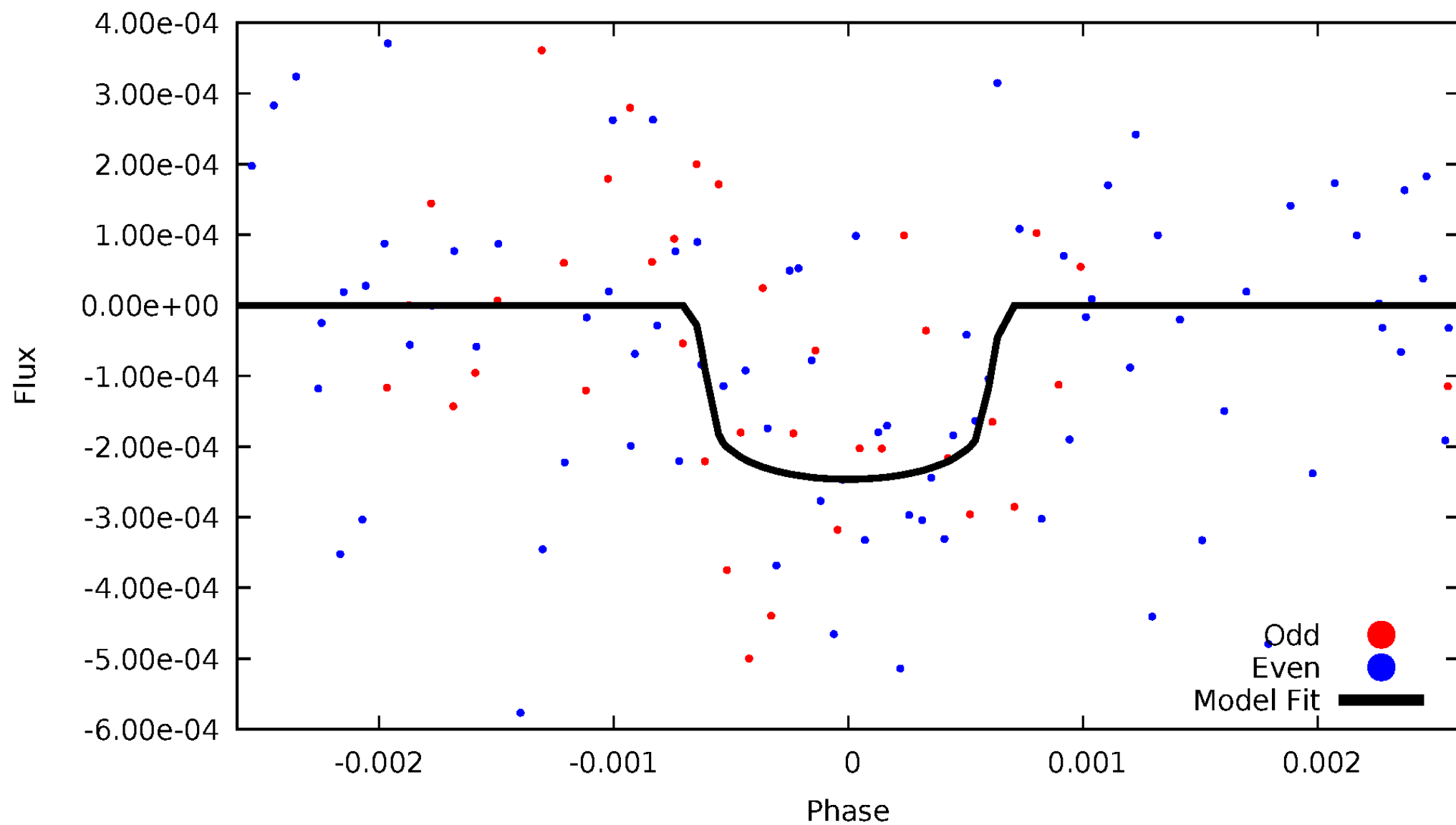


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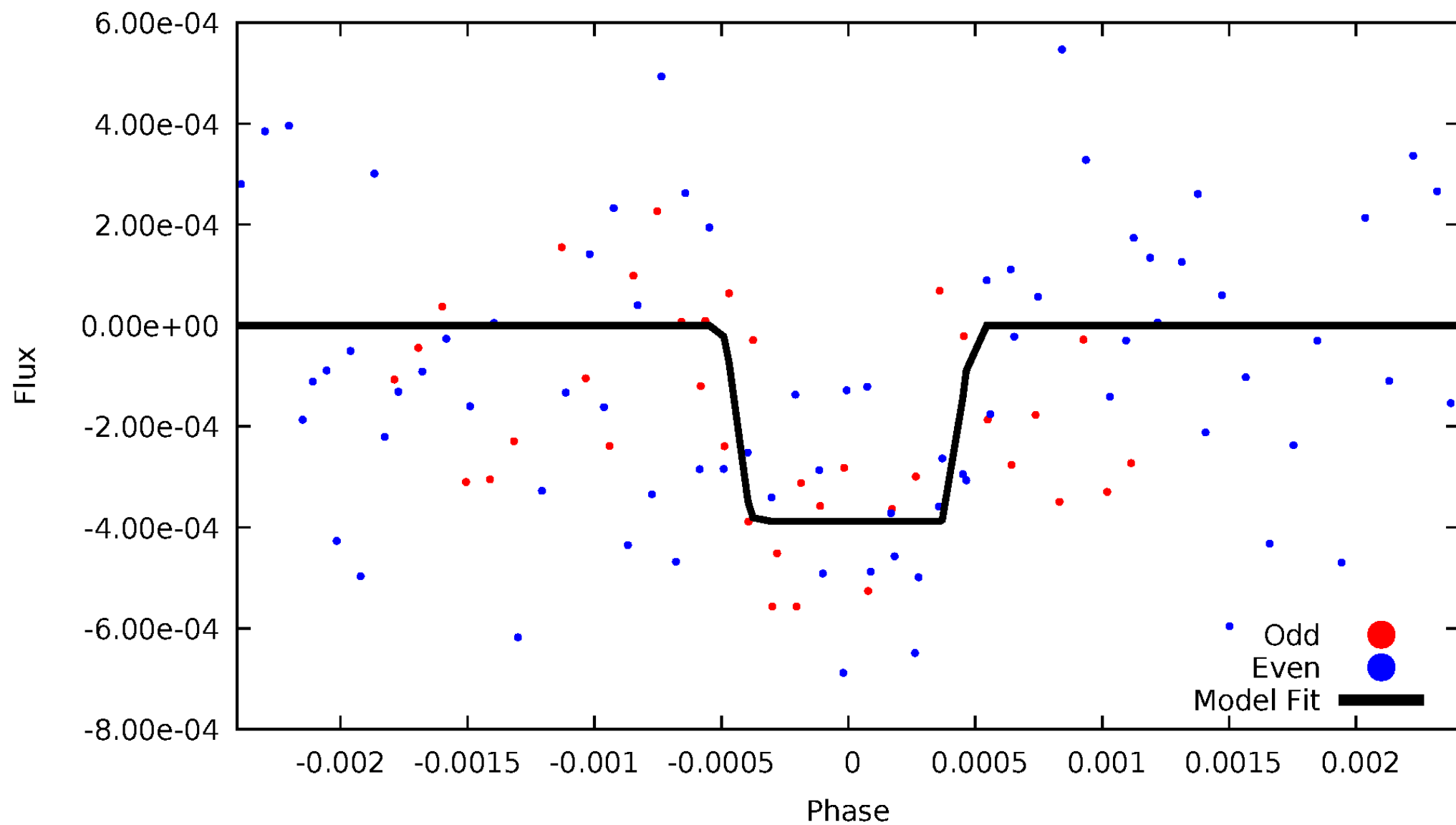
DV Odd/Even

TCE 005802398-02



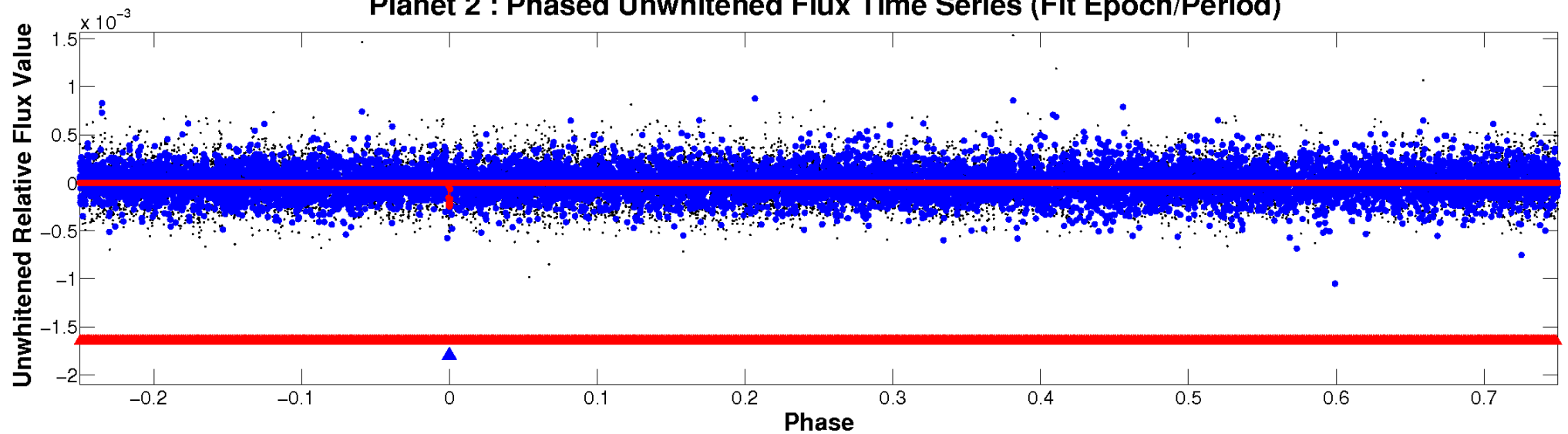
ALT Odd/Even

TCE 005802398-02

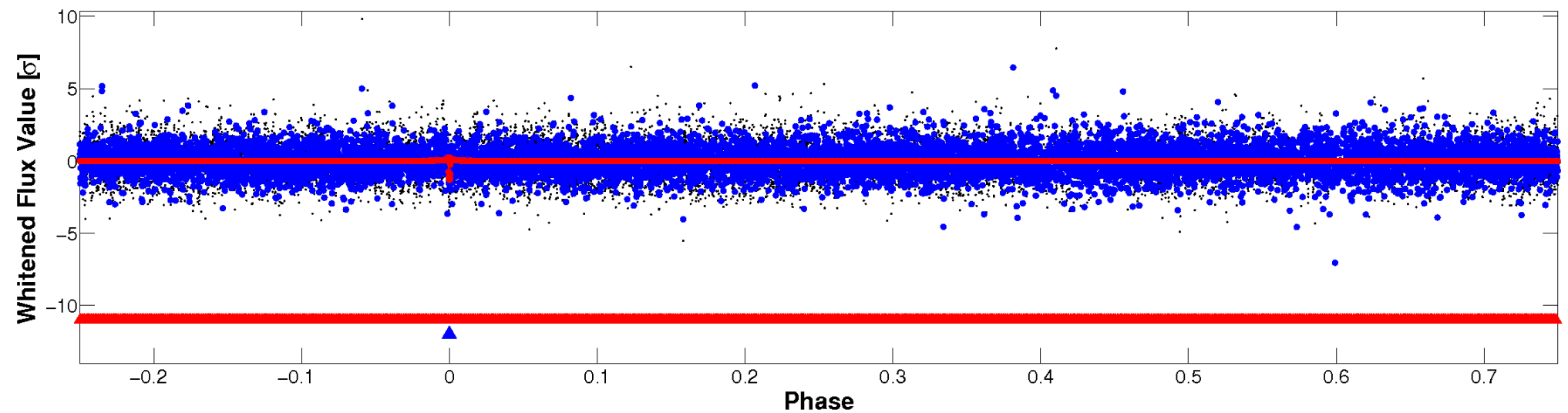


Non-Whitened Vs. Whitened Light Curve

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

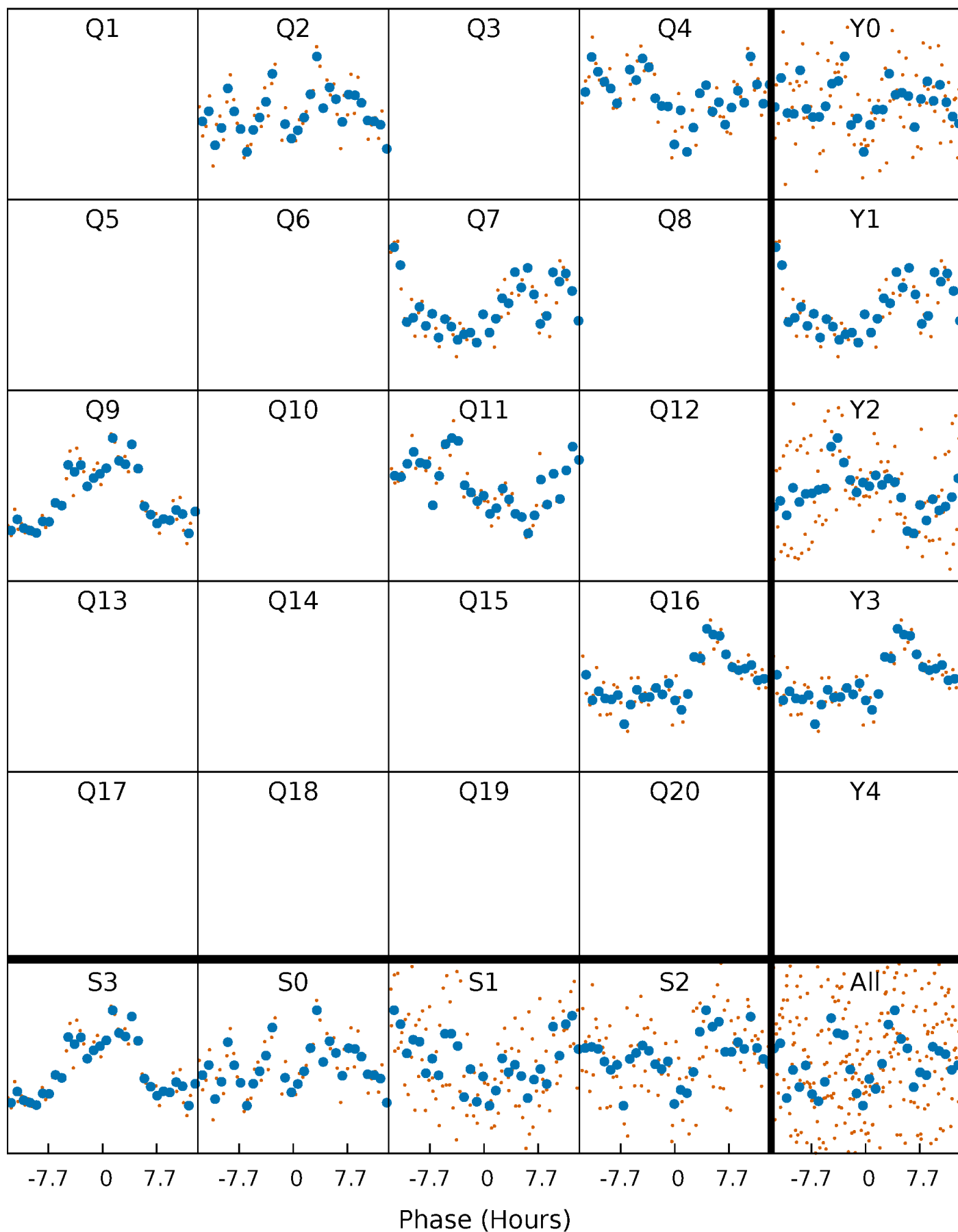


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



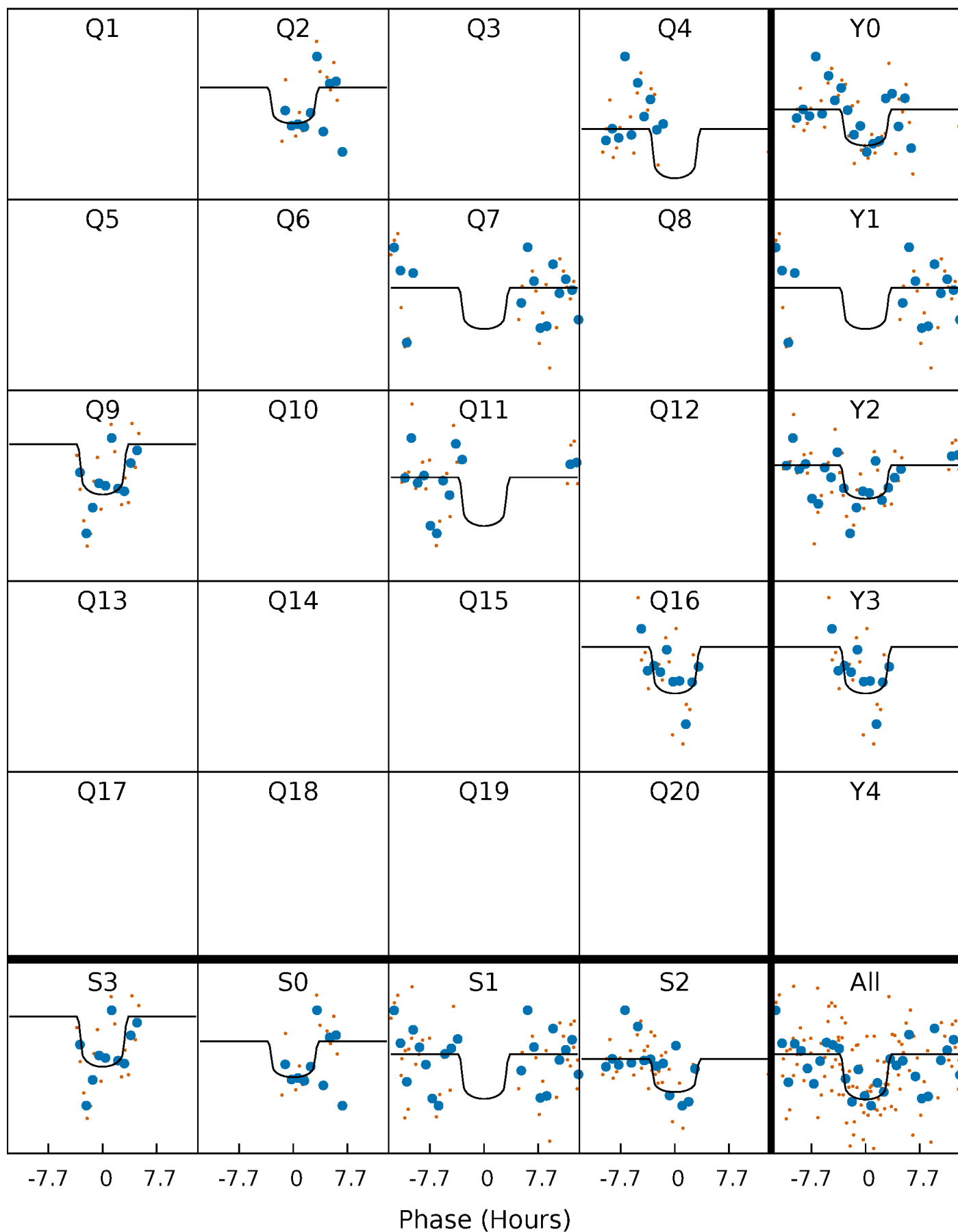
PDC Quarter-Phased Transit Curves

TCE 005802398-02 $P=216.930354$ Days $T_0=198.133163$ (BKJD)



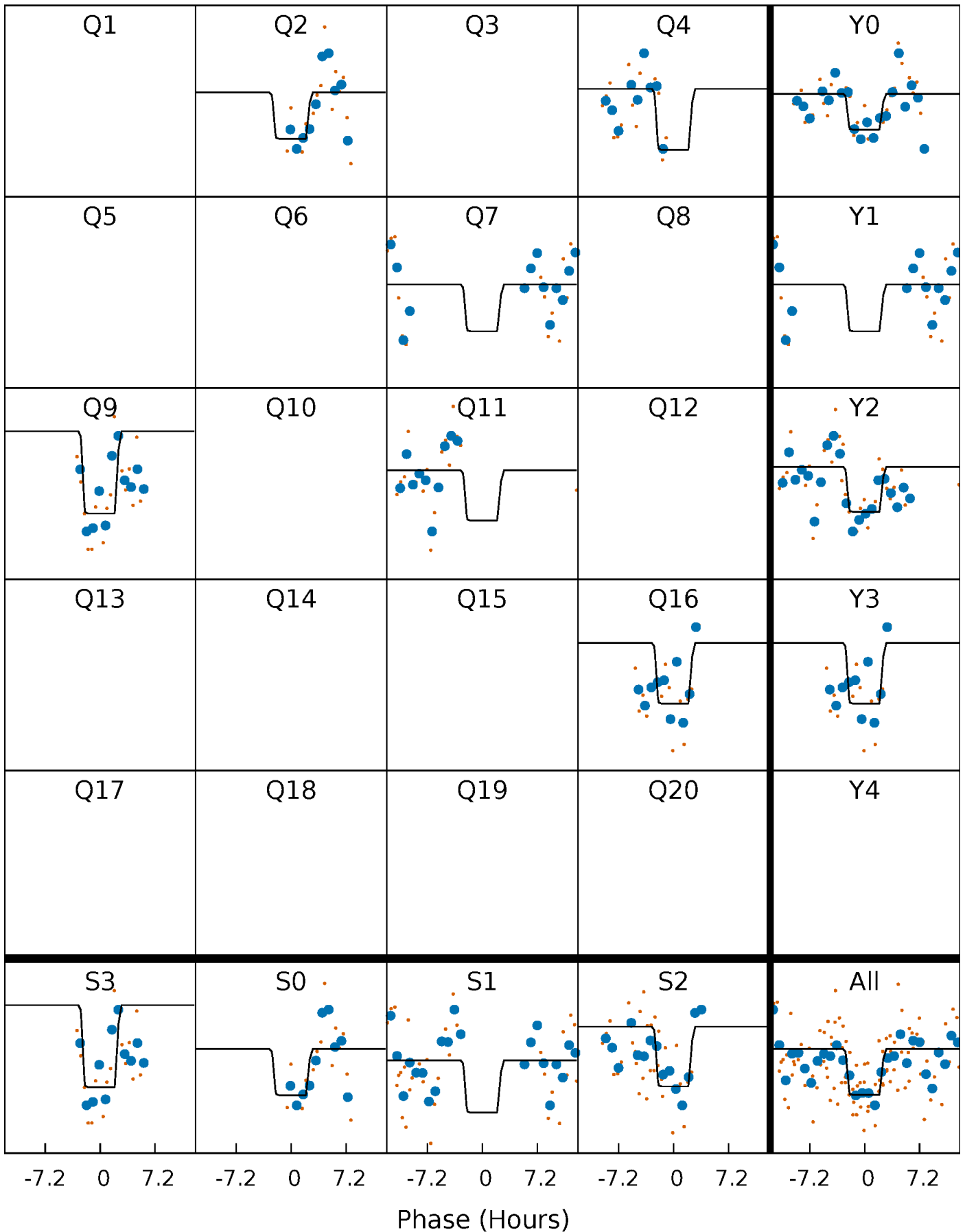
DV Quarter-Phased Transit Curves

TCE 005802398-02 P=216.930354 Days $T_0=198.133163$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

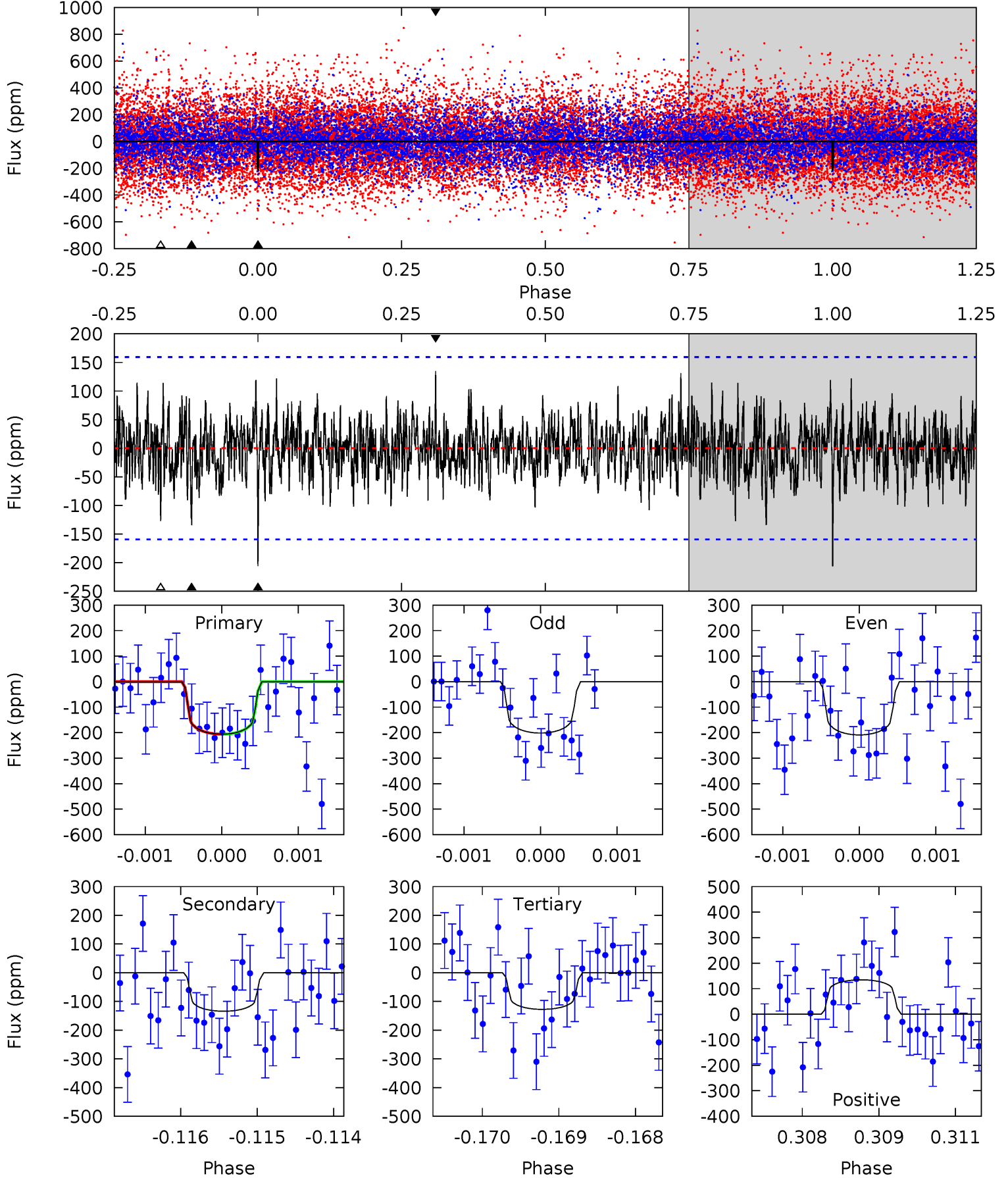
TCE 005802398-02 P=216.936295 Days $T_0=198.088521$ (BKJD)



DV Model-Shift Uniqueness Test

005802398-02, P = 216.930354 Days, E = 198.133163 Days

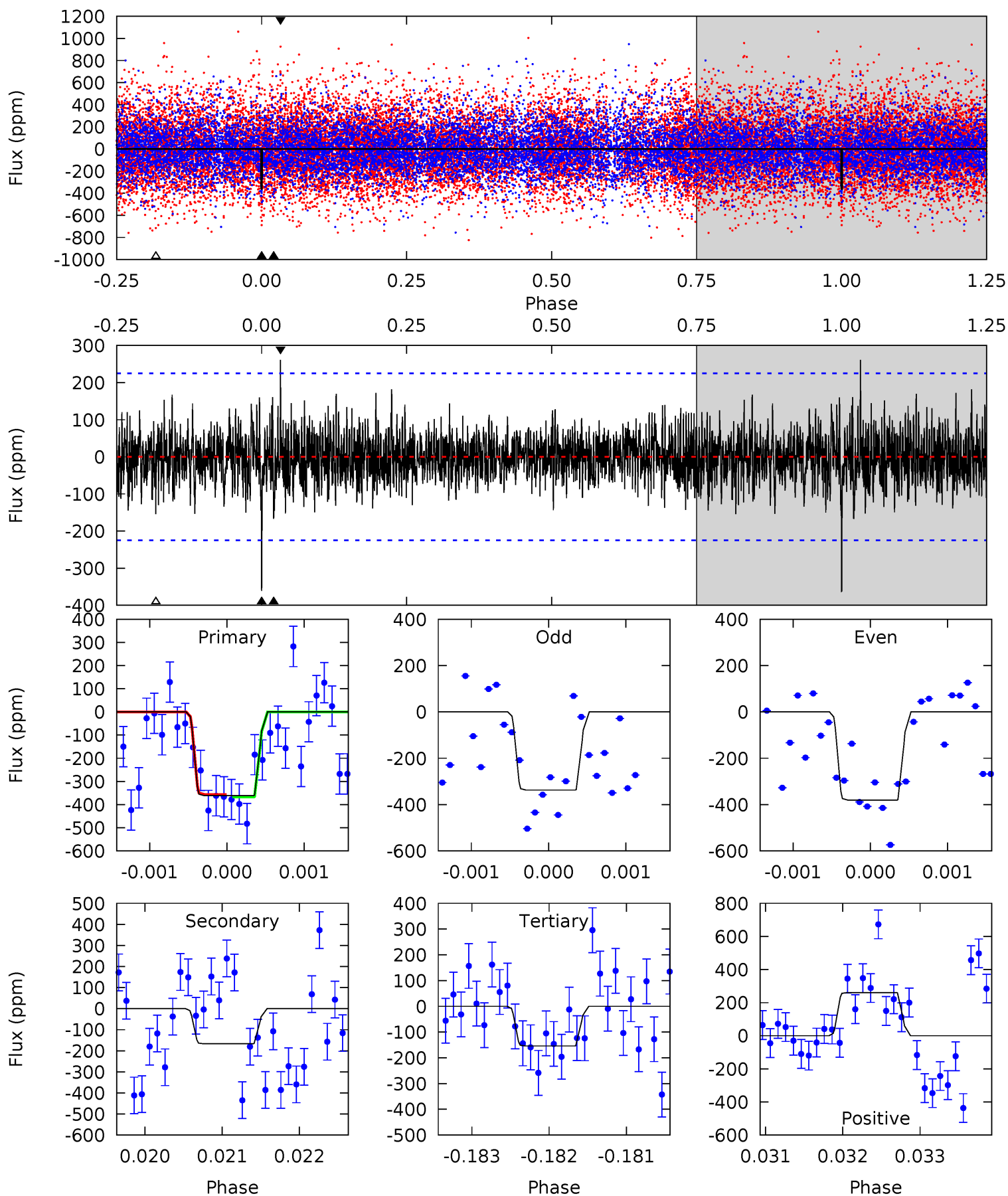
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.97	4.54	4.31	4.56	5.40	3.20	1.28	2.66	2.41	0.22	-0.03	0.12	0.78	0.40	0.00



Alt Model-Shift Uniqueness Test

005802398-02, P = 216.936295 Days, E = 198.088521 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.76	4.04	3.73	6.32	5.45	3.28	1.26	5.03	2.44	0.31	-2.28	0.52	0.95	0.42	0.13



Stellar Parameters For KIC 005802398

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6638^{+158}_{-238}	$4.340^{+0.098}_{-0.182}$	$-0.480^{+0.250}_{-0.300}$	$1.161^{+0.322}_{-0.173}$	$1.076^{+0.152}_{-0.124}$	$0.969^{+0.500}_{-0.446}$
	+2%/-4%	+2%/-4%	+52%/-62%	+28%/-15%	+14%/-12%	+52%/-46%
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 005802398-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-134 ± 30	$2.31^{+1.44}_{-1.37}$	522^{+34}_{-29}	5391^{+3271}_{-1015}	7286^{+36147}_{-4639}
Alt.	-167 ± 41	$2.66^{+1.48}_{-1.45}$	521^{+34}_{-29}	5278^{+2371}_{-895}	6516^{+23214}_{-3782}

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

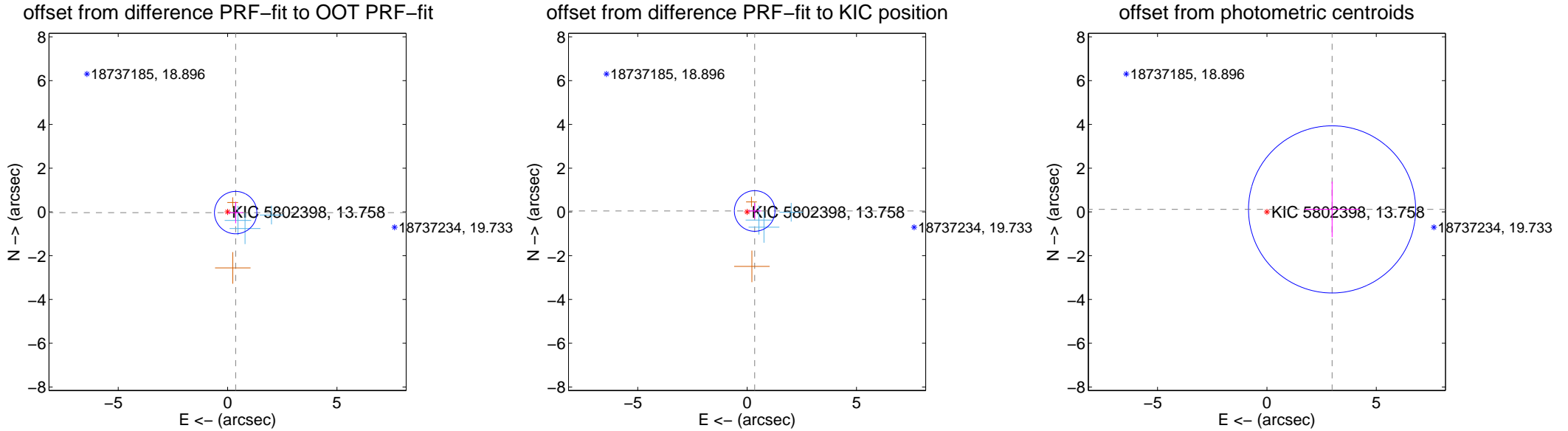
DV Centroid Data

Supplemental centroid analysis for 005802398-02. Kepler magnitude: 13.76. Transit SNR 7.26

There are 3 quarters with good PRF difference image offsets

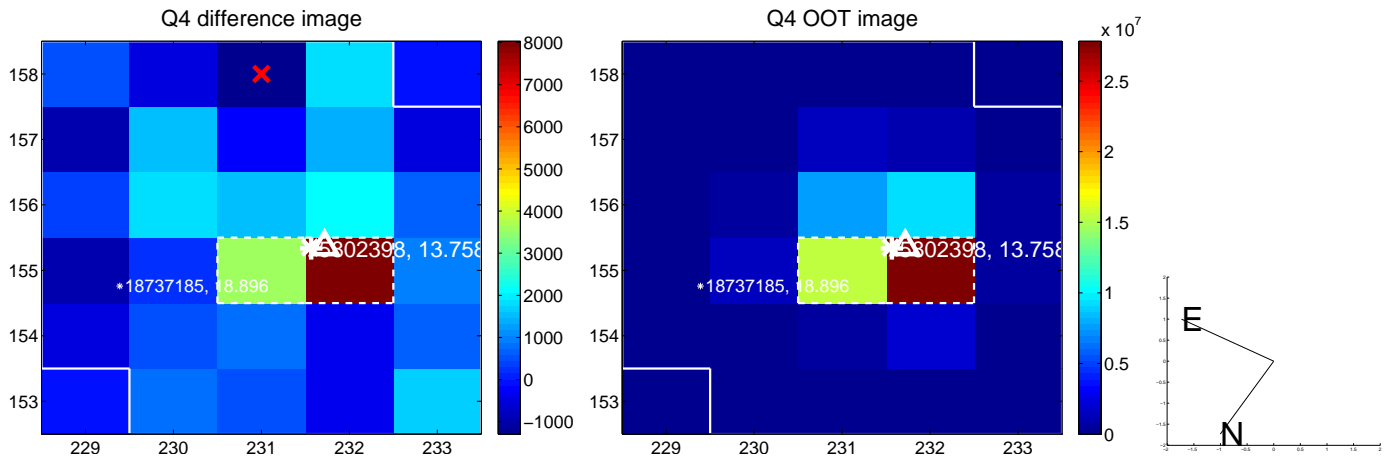
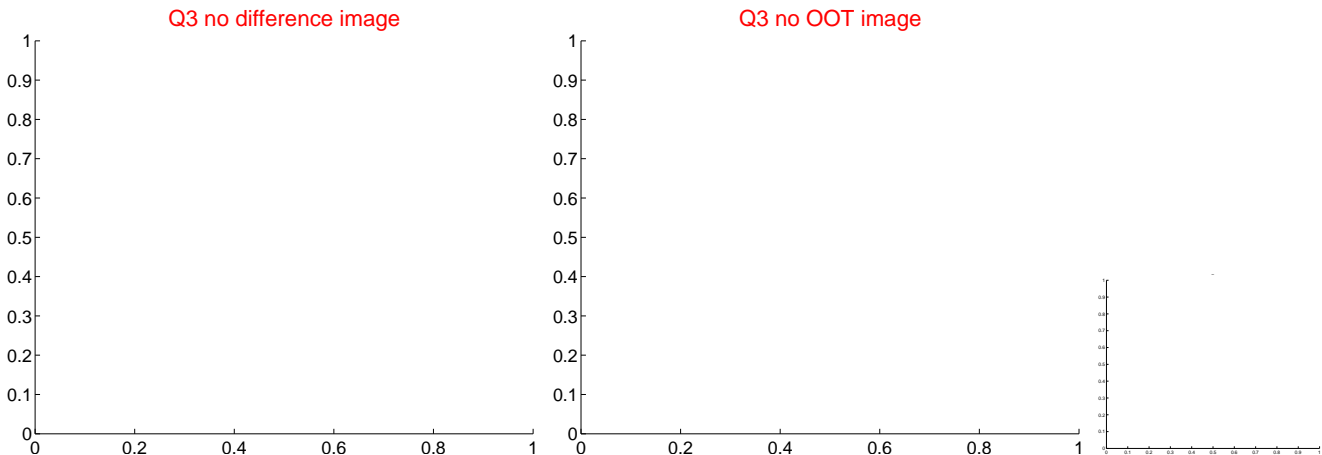
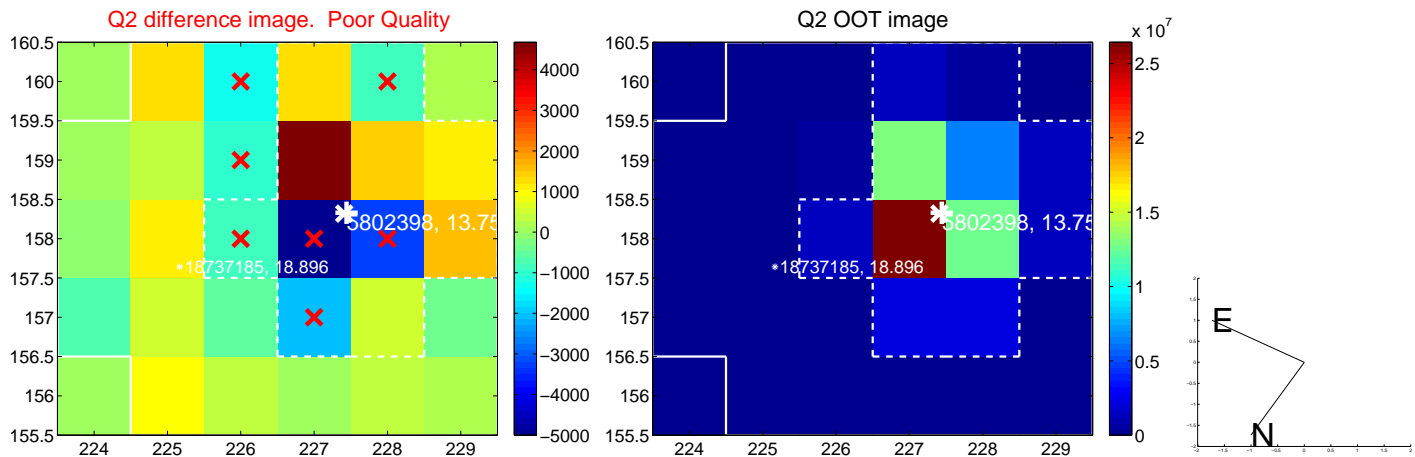
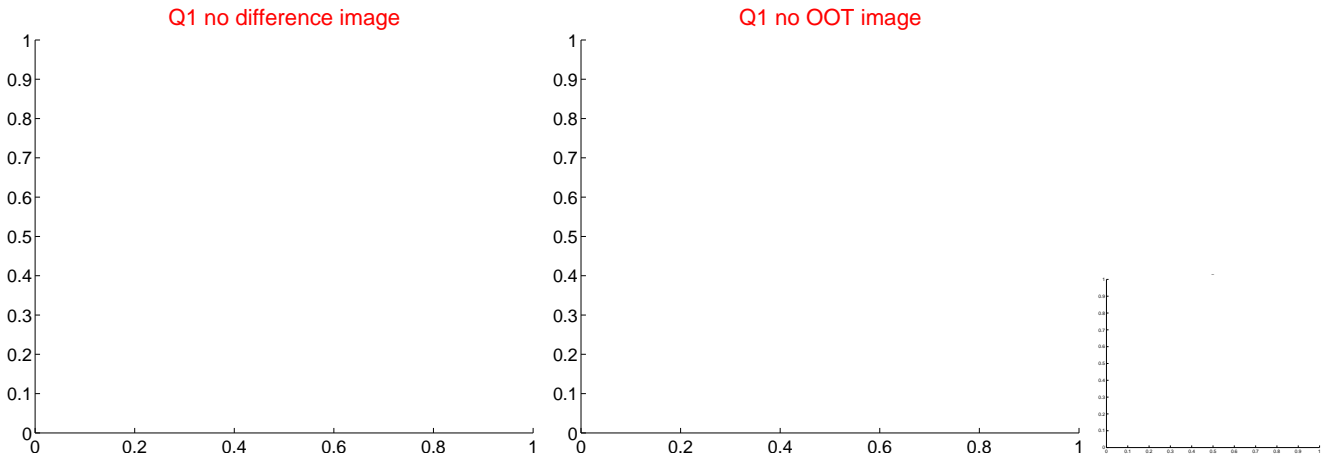
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.370 ± 0.323	1.15	-0.368 ± 0.344	-0.031 ± 0.489
PRF-fit source offset from KIC position	0.347 ± 0.309	1.12	-0.345 ± 0.297	0.043 ± 0.357
photometric centroid source offset	2.98 ± 1.27	2.34	-2.98 ± 1.27	0.12 ± 1.27



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

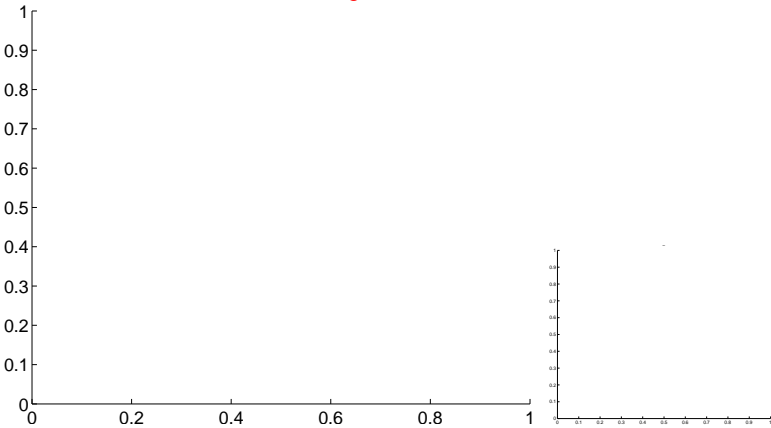


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q5 no difference image



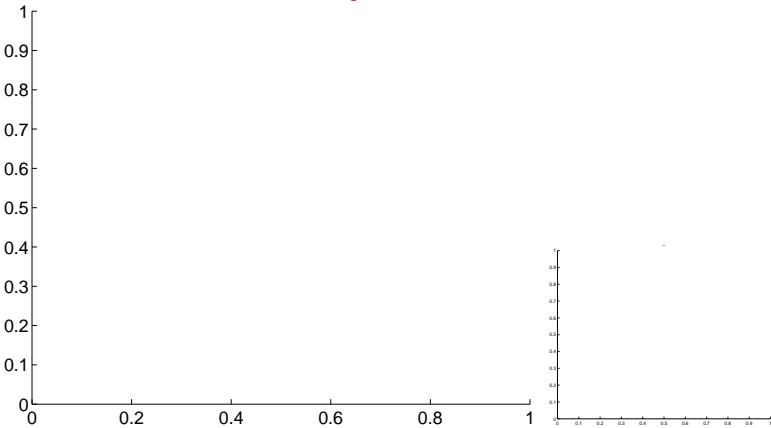
Q5 no OOT image



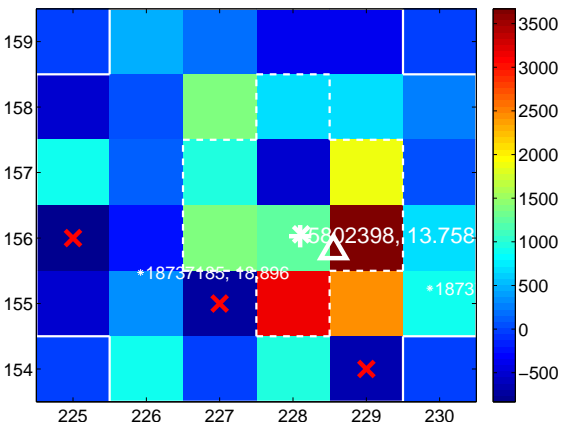
Q6 no difference image



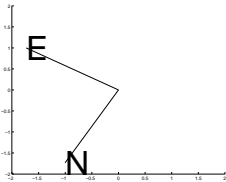
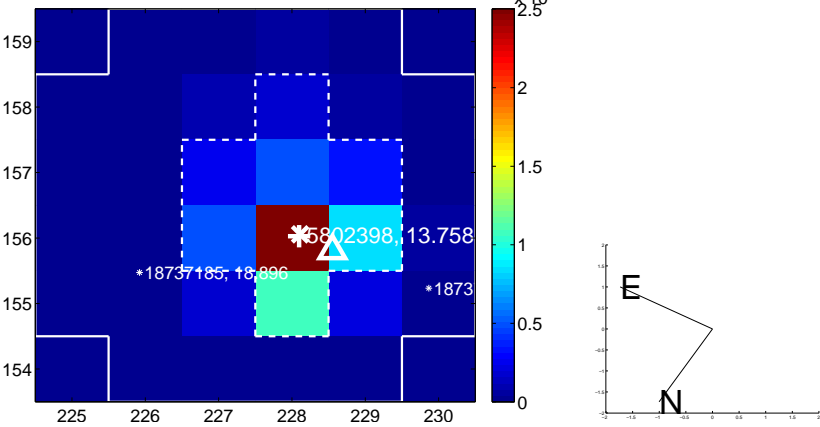
Q6 no OOT image



Q7 difference image



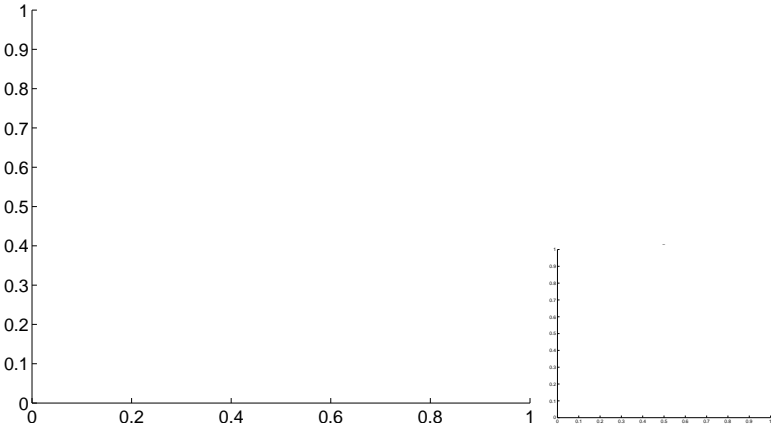
Q7 OOT image



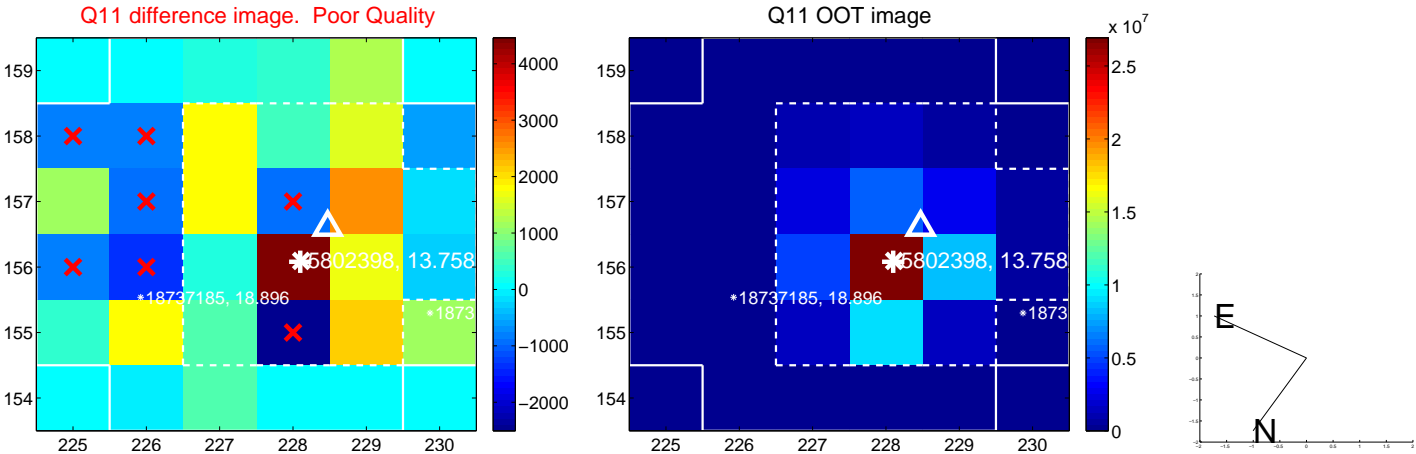
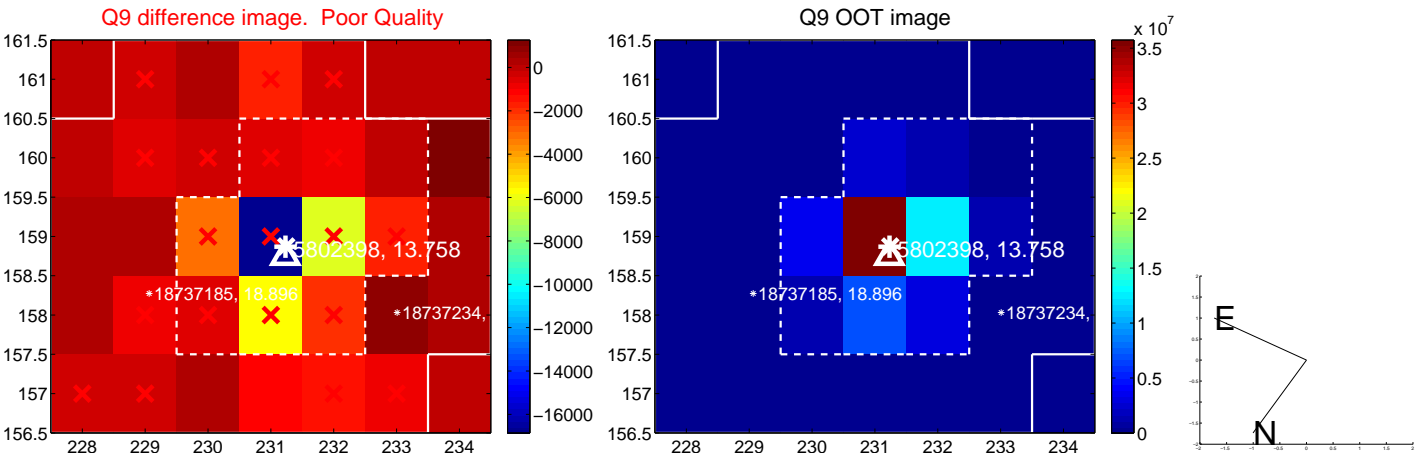
Q8 no difference image



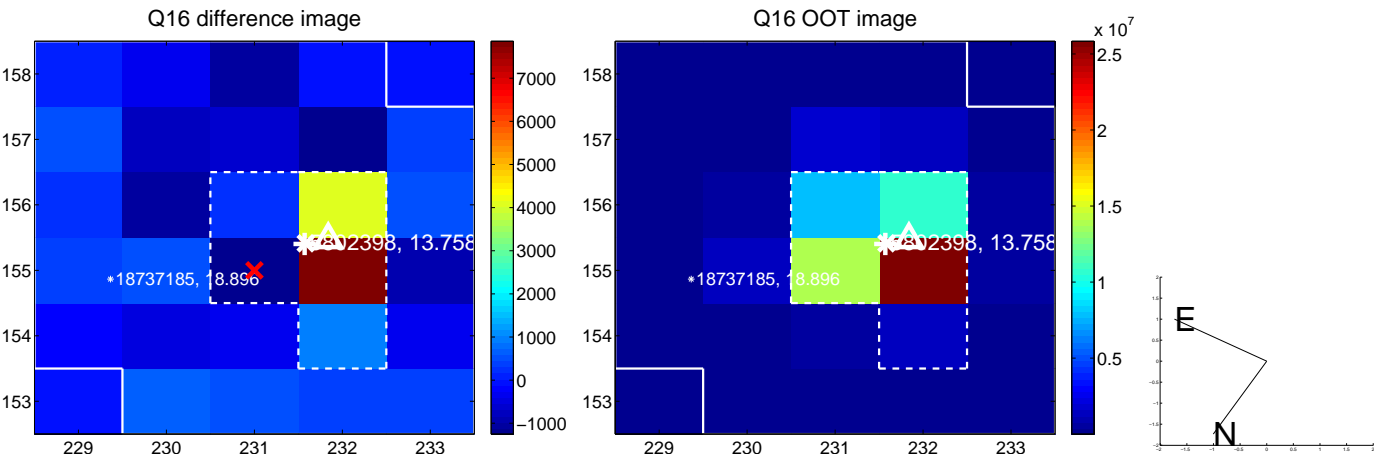
Q8 no OOT image



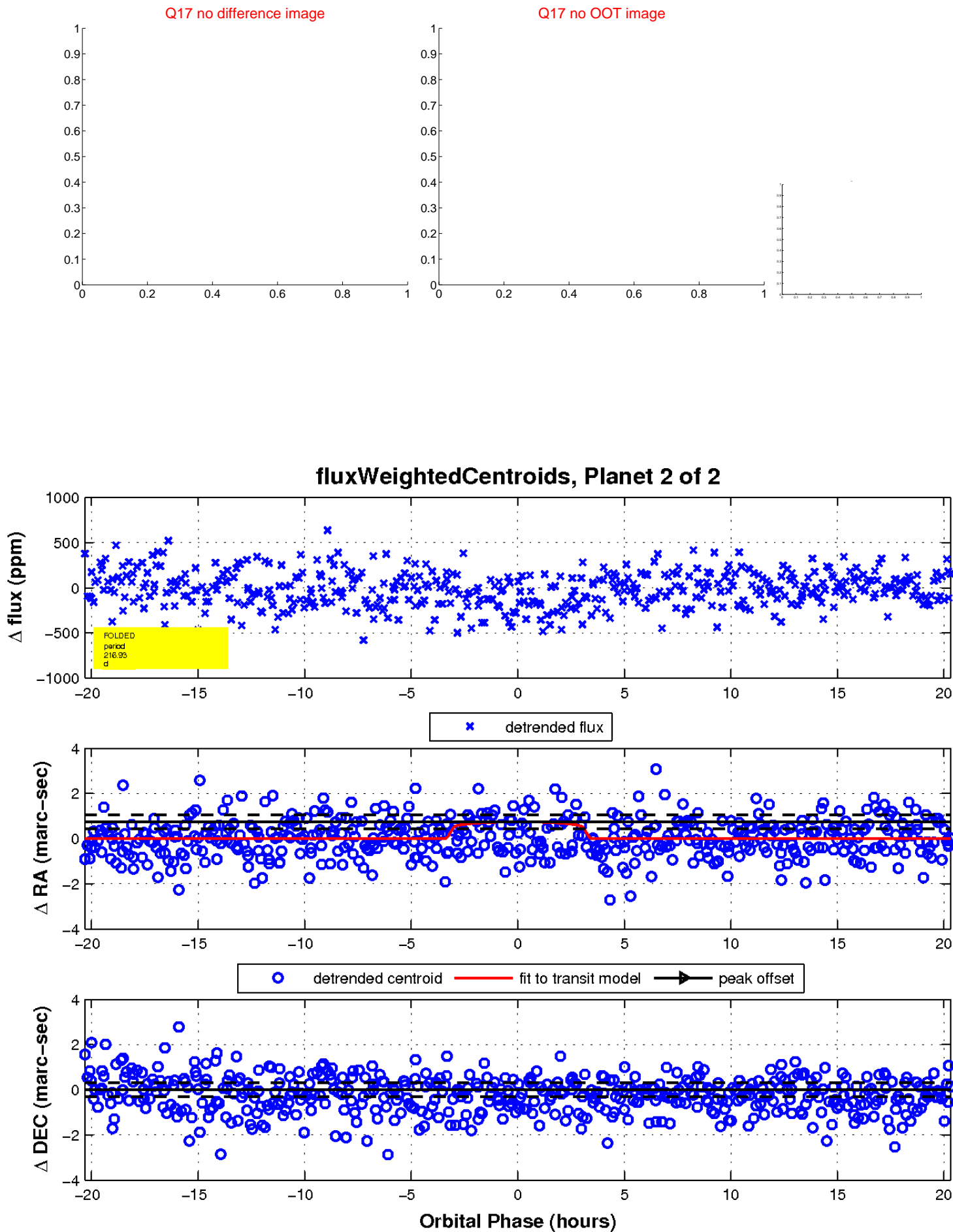
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

