

KIC 010489206

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})
010489206-01	OBS	0251.01	4.164380	133.609244	2317.1	1.915	142.0	144.9	0.51	3808	2.69	28.77
010489206-02	OBS	0251.02	5.774346	132.974651	258.2	1.782	12.4	13.1	0.51	3808	0.96	18.60

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010489206-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
010489206-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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.

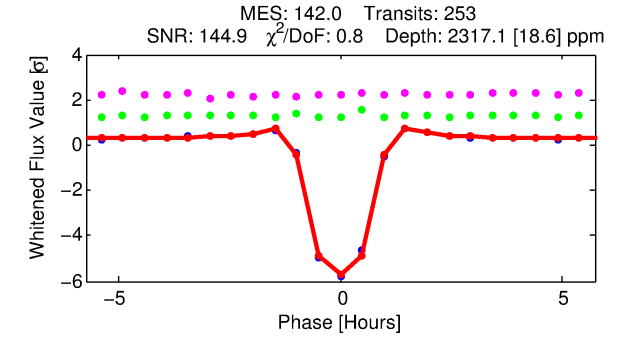
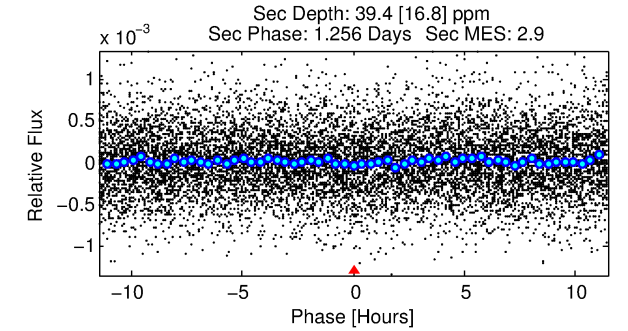
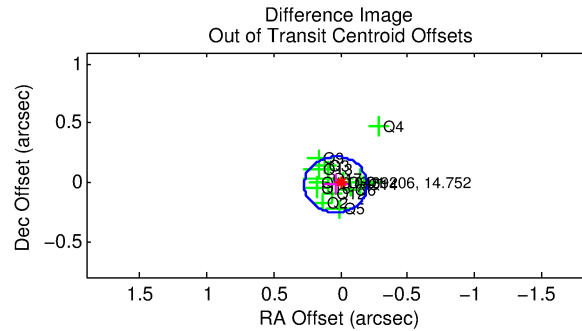
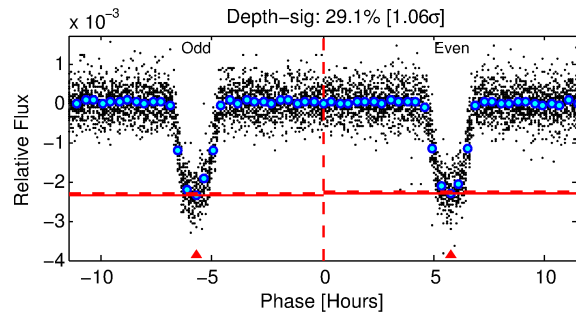
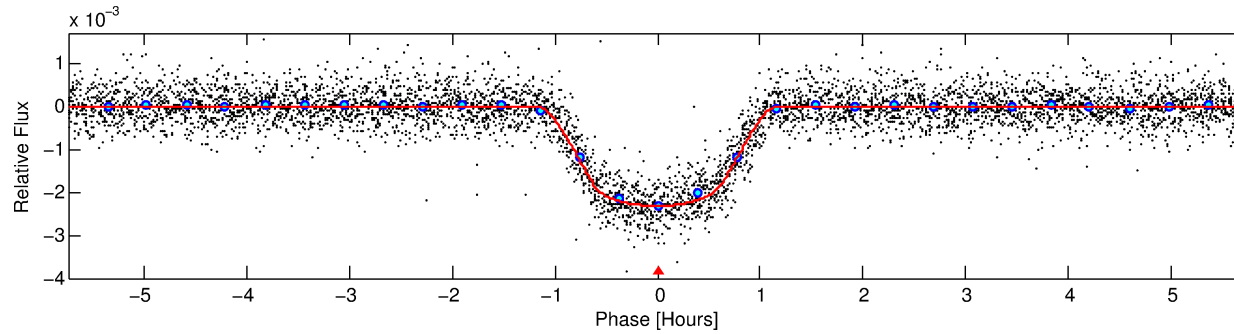
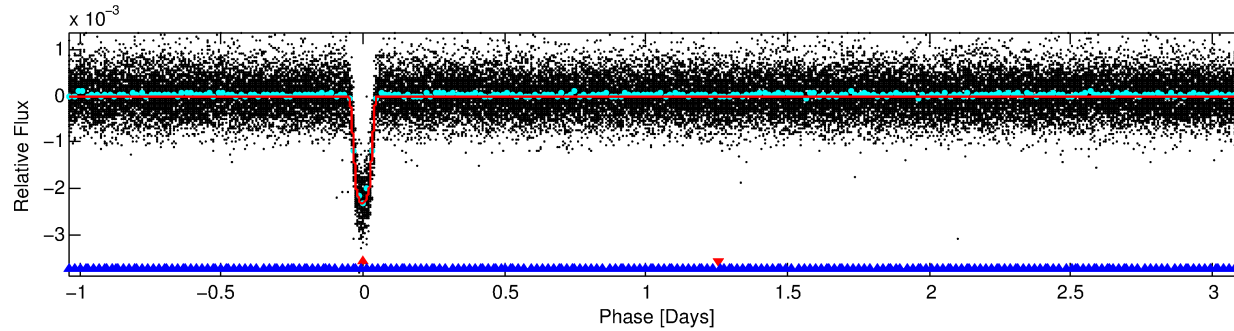
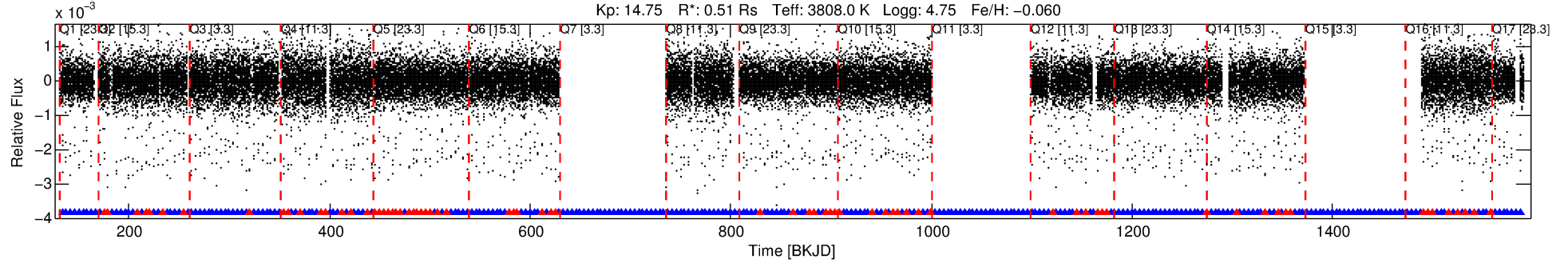
Ephemeris Match Information For 010489206-01

No Significant Match Found

DV One-Page Summary

KIC: 10489206 Candidate: 1 of 2 Period: 4.164 d
KOI: K00251.01 Name: Kepler-125b Corr: 0.981

Kp: 14.75 R*: 0.51 Rs Teff: 3808.0 K Logg: 4.75 Fe/H: -0.060



DV Fit Results:

Period = 4.16438 [0.00000] d
Epoch = 133.6092 [0.0002] BKJD
Rp/R* = 0.0485 [0.0018]
a/R* = 11.82 [1.85]
b = 0.77 [0.08]
Seff = 28.76 [3.39]
Teff = 591 [17] K
Rp = 2.69 [0.24] Re
a = 0.0411 [0.0025] AU
Ag = 5.08 [2.23] [1.83σ]
Teffp = 1371 [151] K [5.13σ]

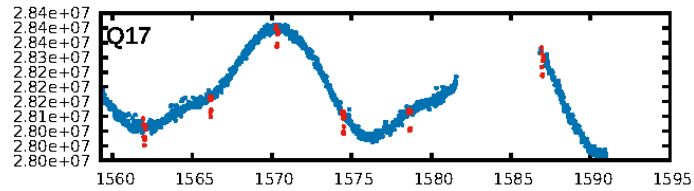
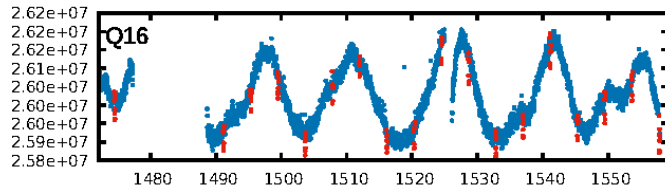
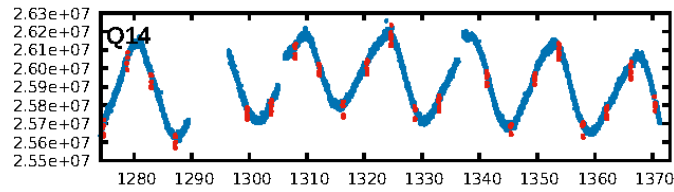
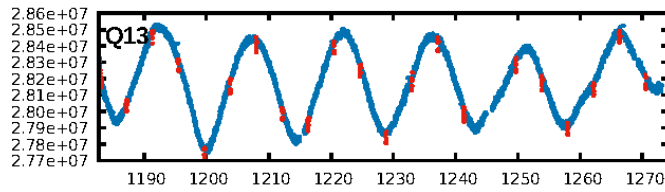
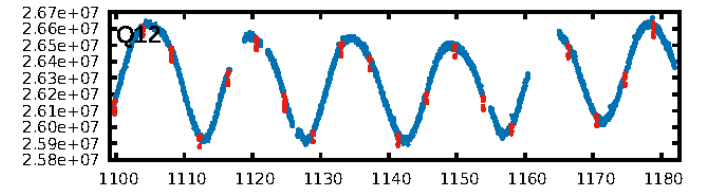
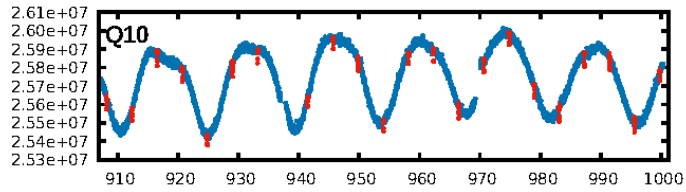
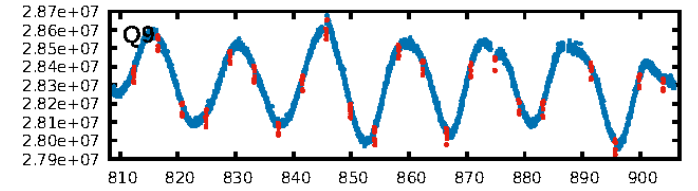
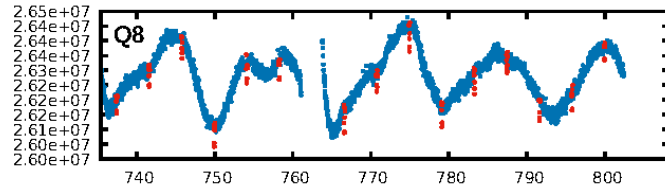
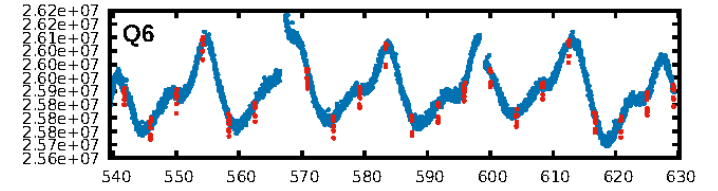
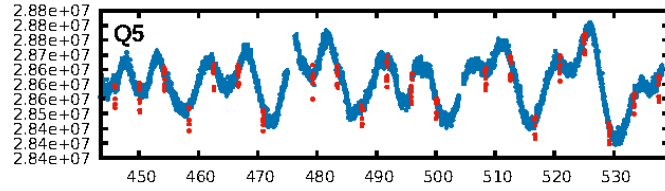
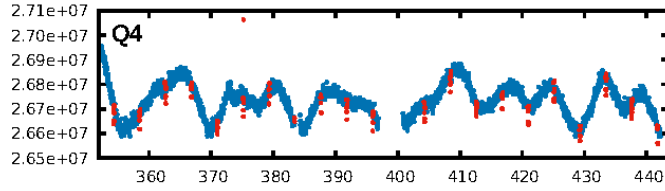
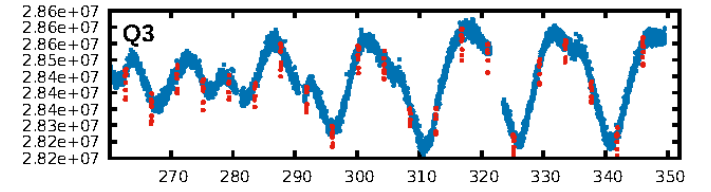
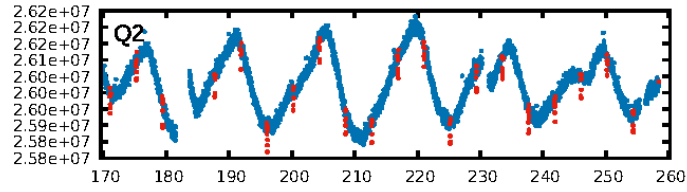
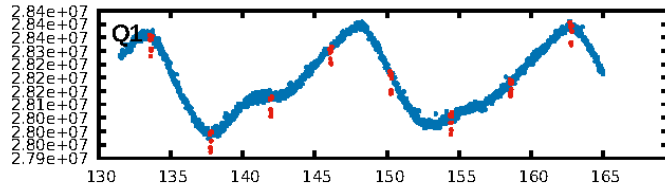
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [14.77σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.70 [167/239]
GhostDiagnostic-chr: 5.77
Centroid-sig: 0.0%
Centroid-so: 0.754 arcsec [8.33σ]
OotOffset-rm: 0.041 arcsec [0.52σ]
KicOffset-rm: 0.200 arcsec [2.36σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

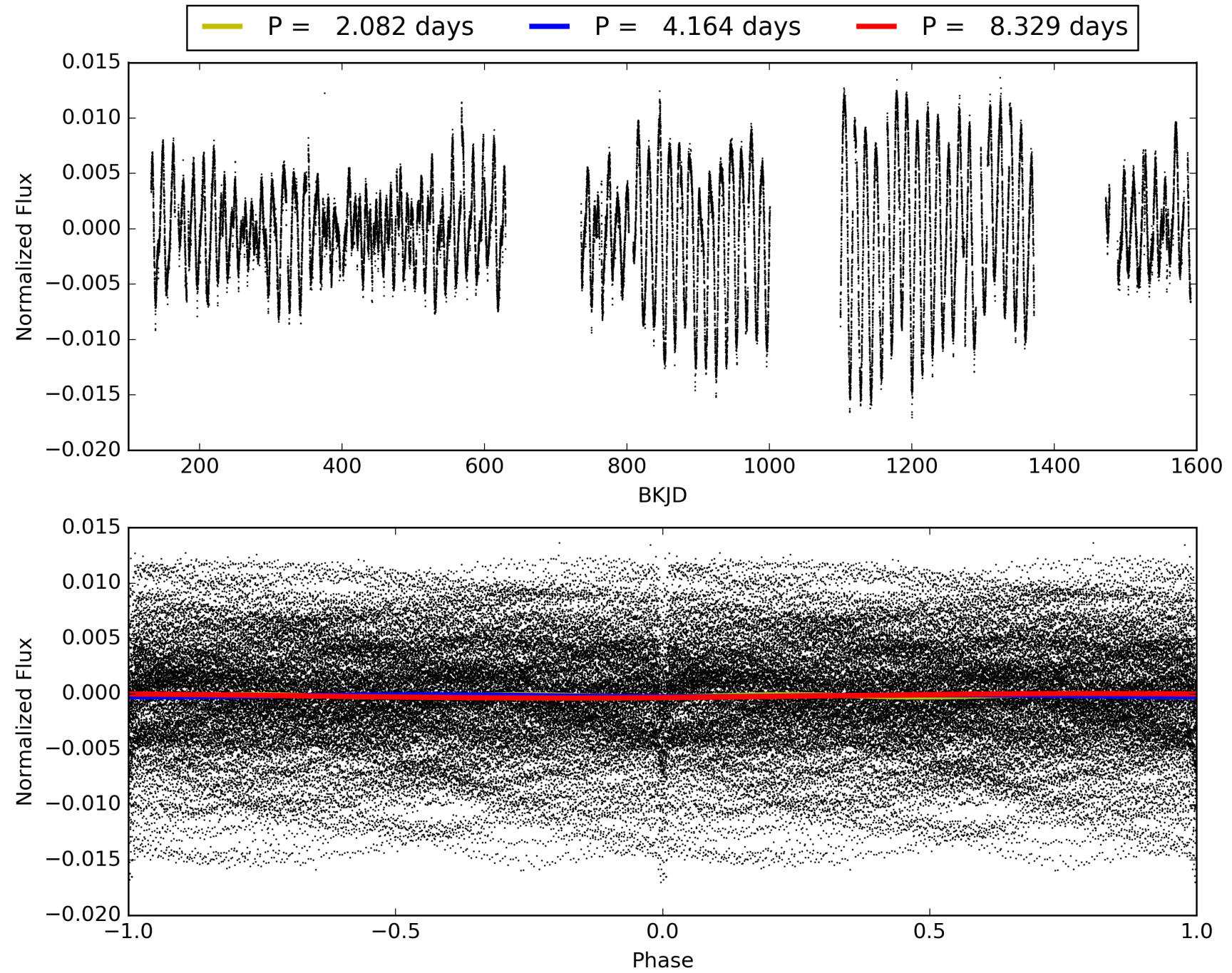
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010489206-01, PDC Light Curves

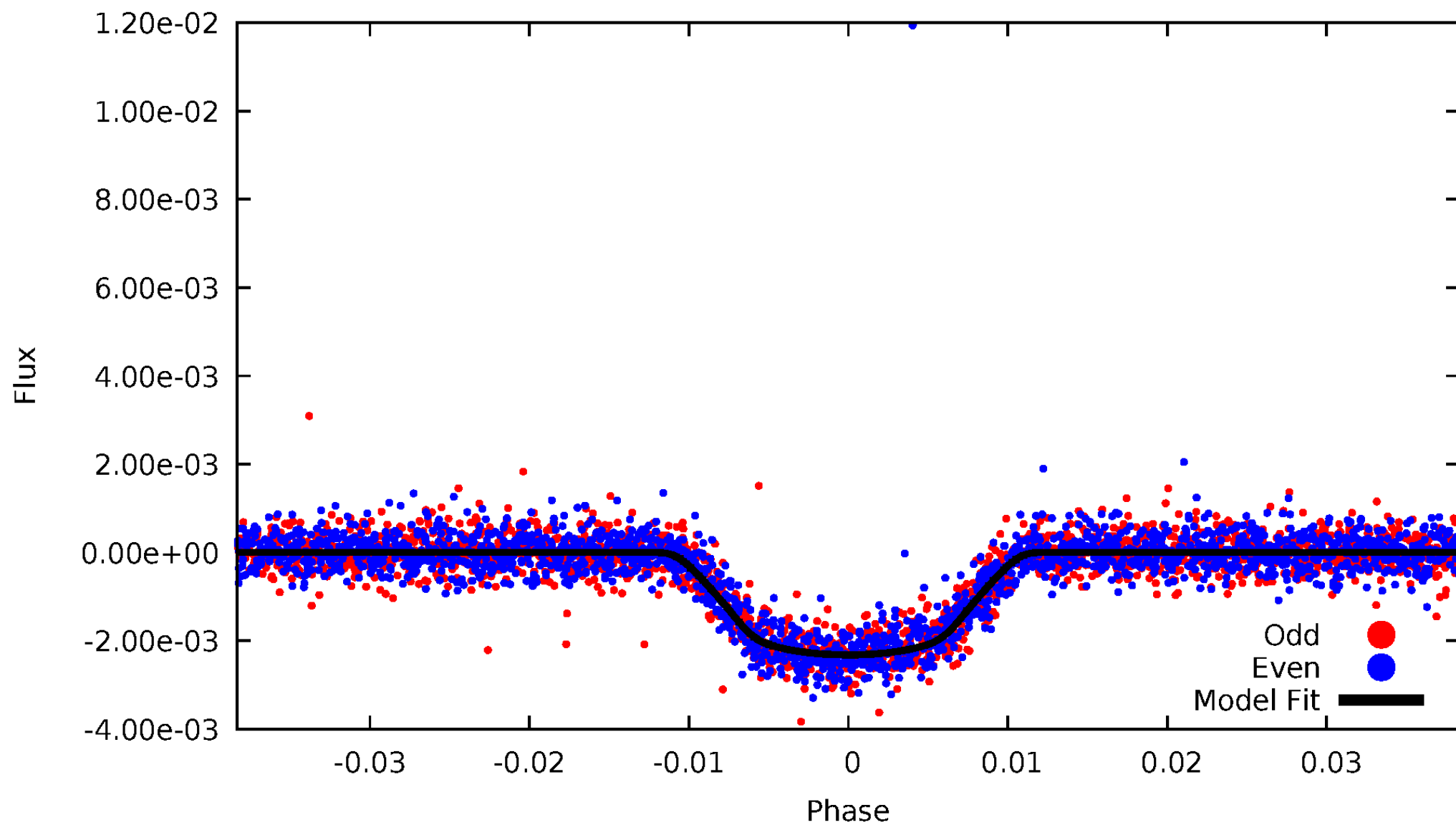


TCE 010489206-01



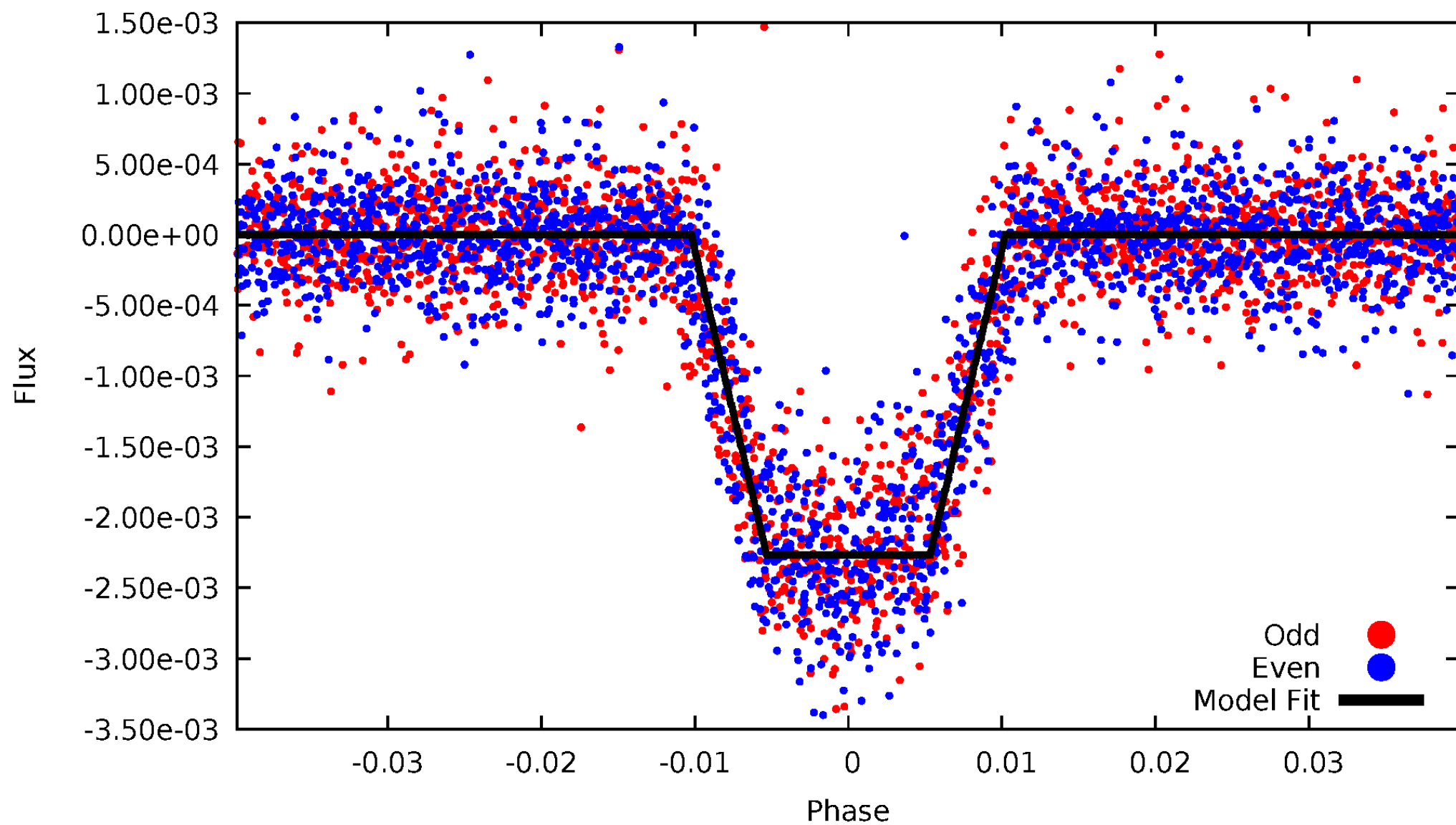
DV Odd/Even

TCE 010489206-01



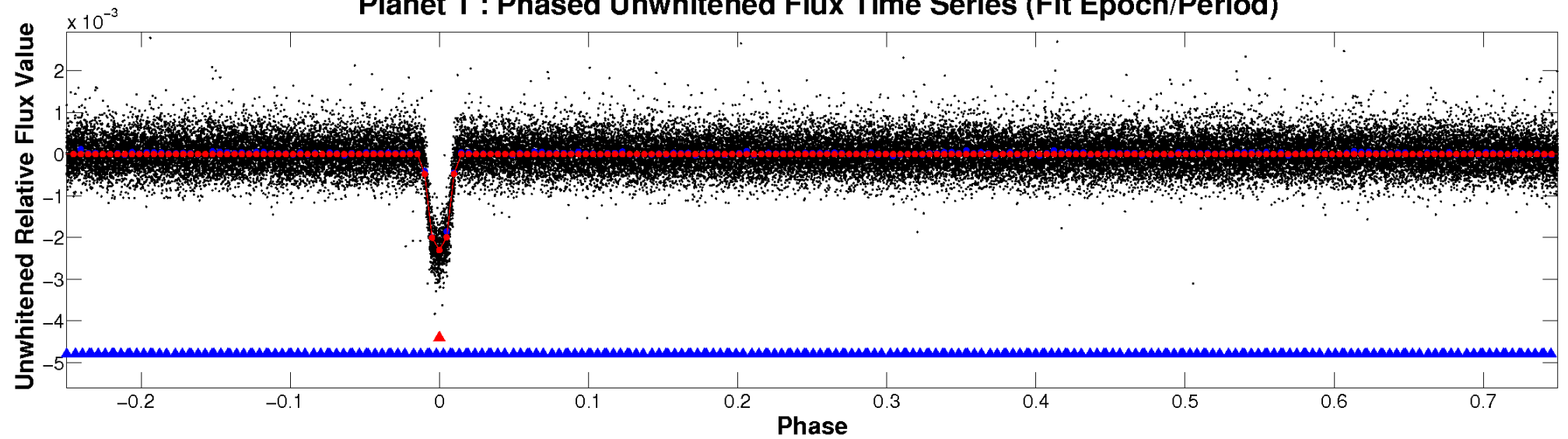
ALT Odd/Even

TCE 010489206-01

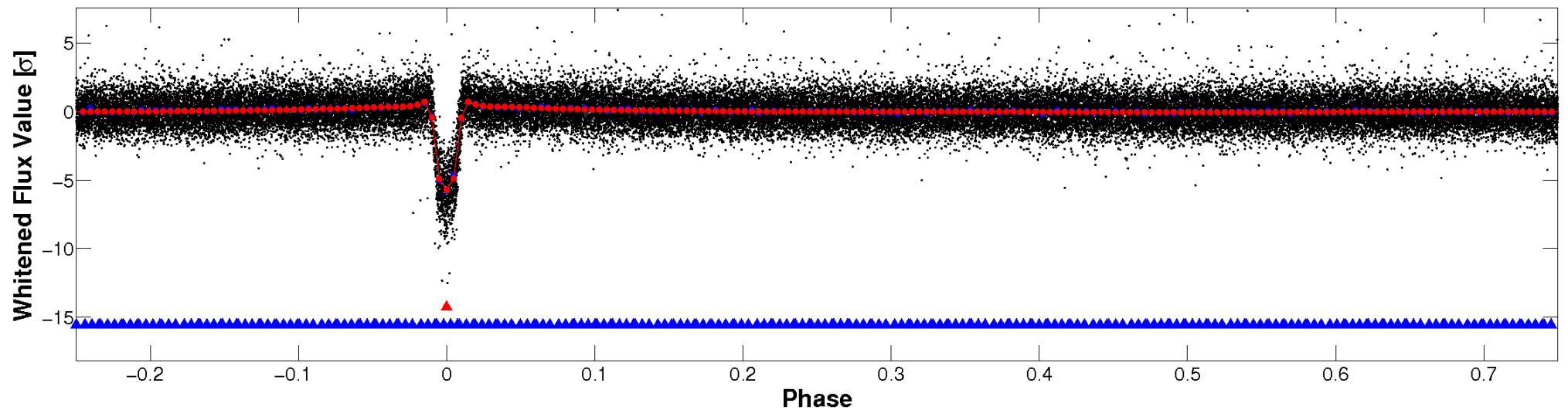


Non-Whitened Vs. Whitened Light Curve

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

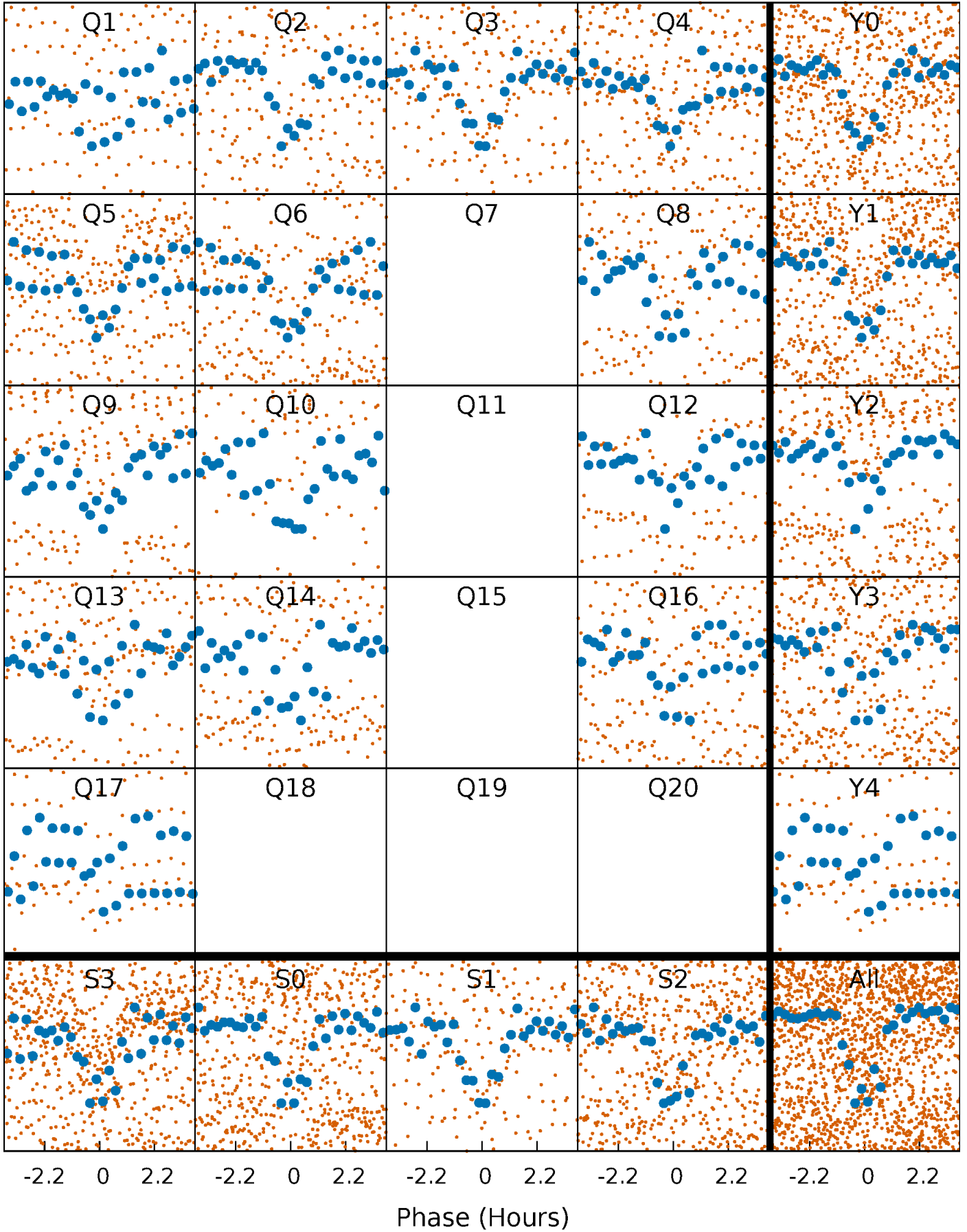


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



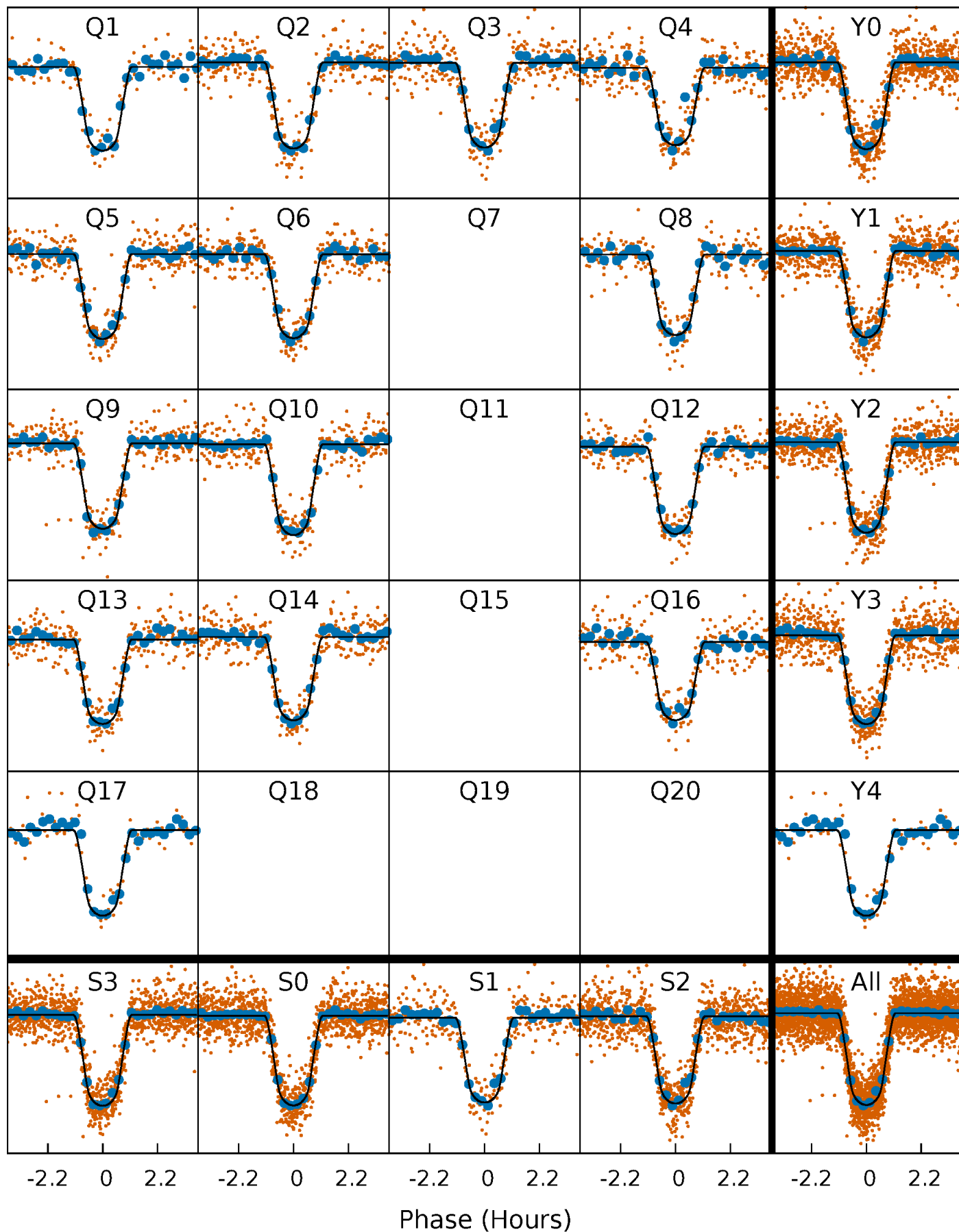
PDC Quarter-Phased Transit Curves

TCE 010489206-01 P= 4.164380 Days $T_0=133.609244$ (BKJD)



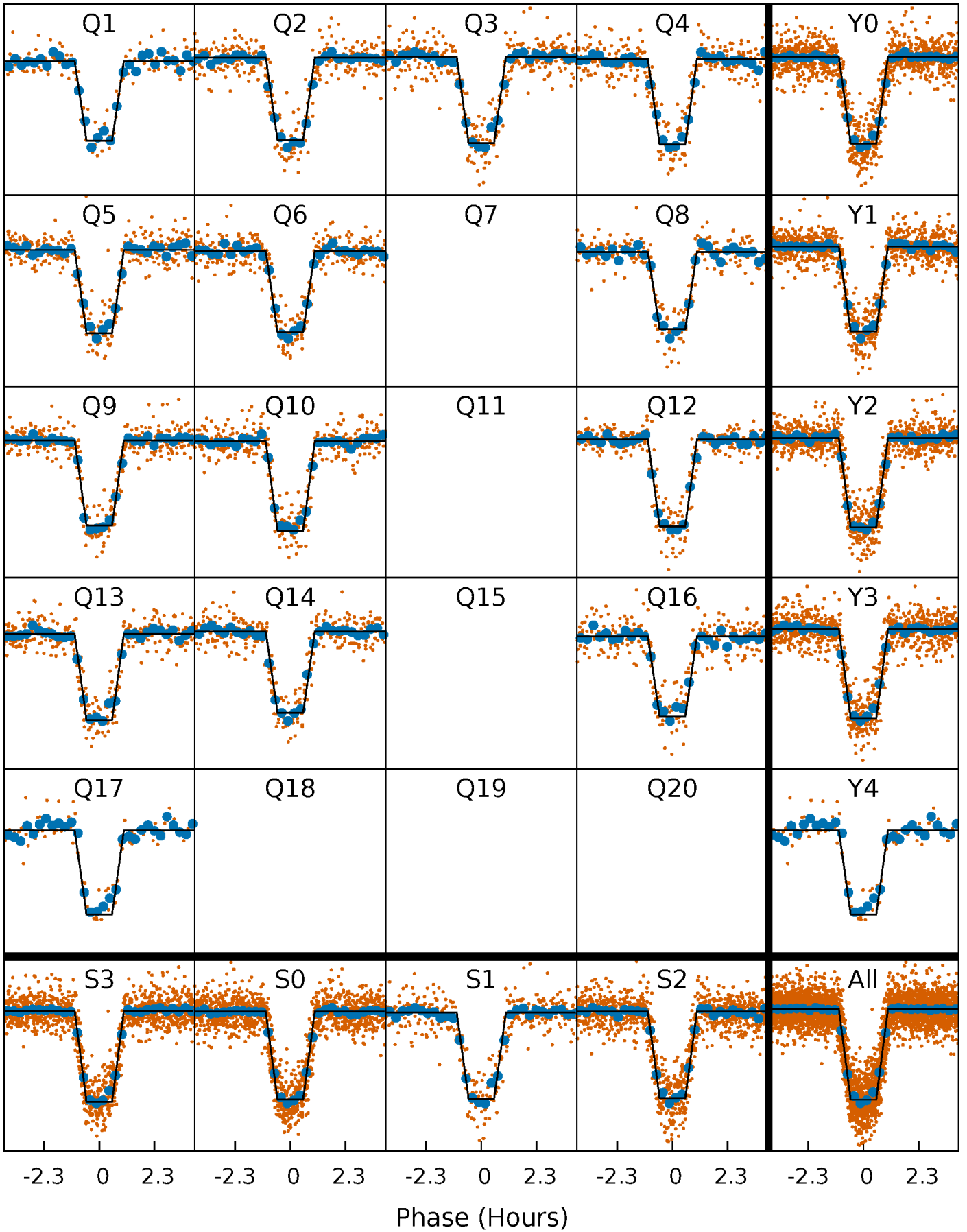
DV Quarter-Phased Transit Curves

TCE 010489206-01 P= 4.164380 Days $T_0=133.609244$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

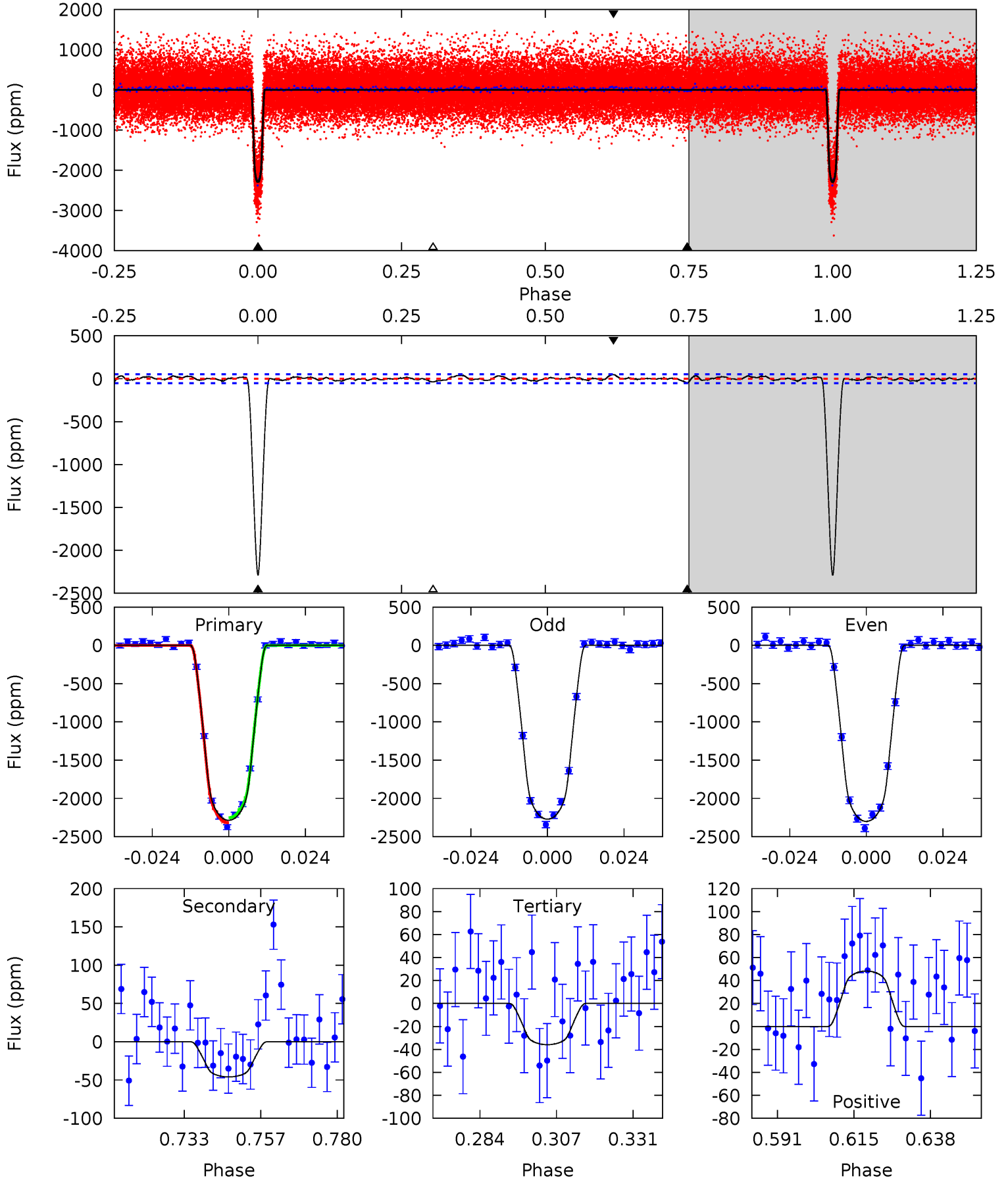
TCE 010489206-01 P= 4.164389 Days $T_0=133.607938$ (BKJD)



DV Model-Shift Uniqueness Test

010489206-01, P = 4.164380 Days, E = 129.444864 Days

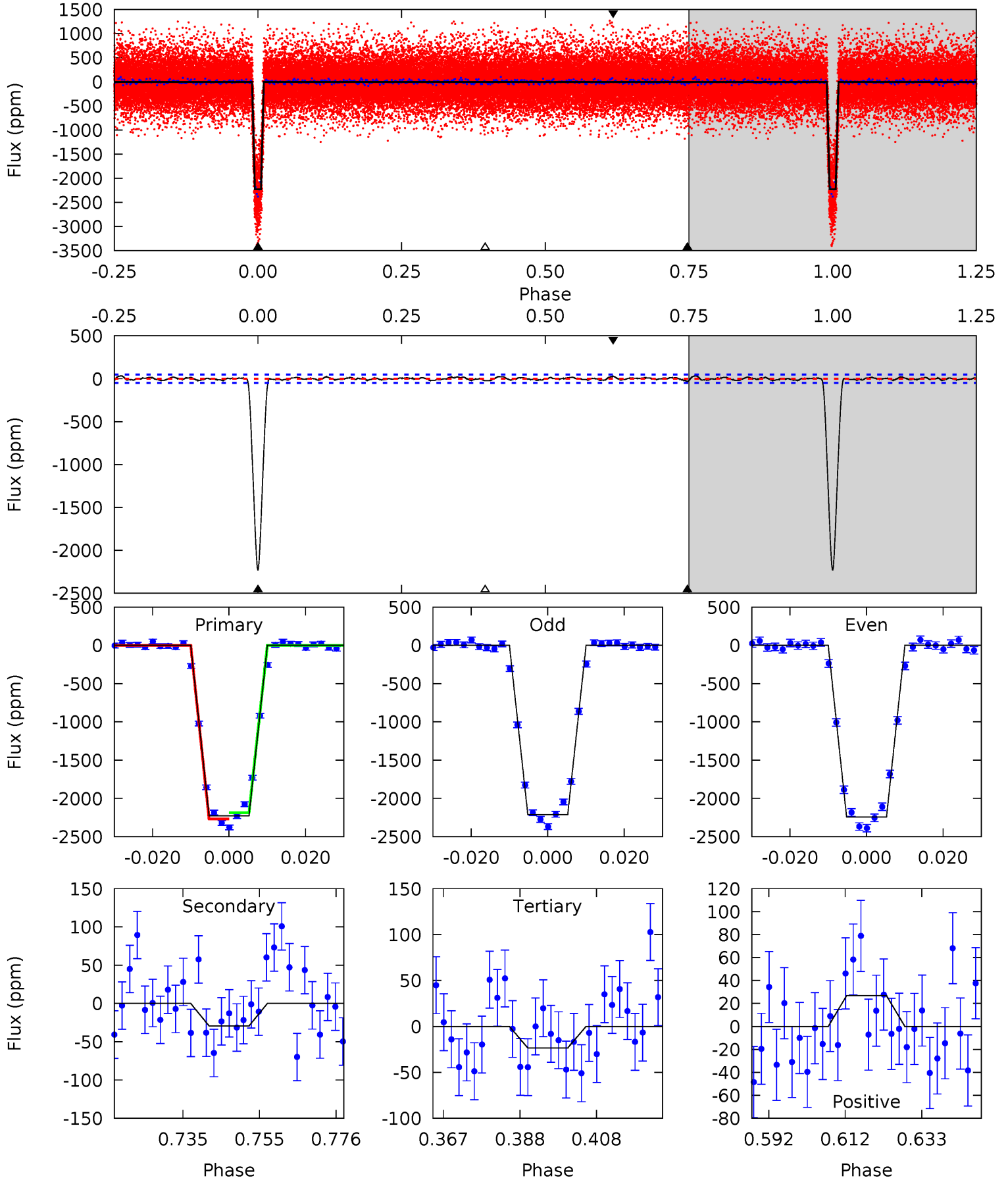
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
215.1	4.32	3.38	4.54	4.86	2.26	1.41	211.7	210.6	0.94	-0.22	1.35	1.00	0.02	3.06



Alt Model-Shift Uniqueness Test

010489206-01, P = 4.164389 Days, E = 129.443549 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
224.8	2.96	2.37	2.70	4.89	2.32	1.05	222.4	222.1	0.60	0.26	1.49	0.98	0.02	4.20



Stellar Parameters For KIC 010489206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3808^{+76}_{-84}	$4.754^{+0.036}_{-0.036}$	$-0.060^{+0.150}_{-0.150}$	$0.508^{+0.037}_{-0.042}$	$0.534^{+0.035}_{-0.042}$	$5.741^{+0.999}_{-0.851}$
	+2%/-2%	+1%/-1%	+250%/-250%	+7%/-8%	+7%/-8%	+17%/-15%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010489206-01 / KOI 0251.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-46 ± 11	$2.69^{+0.16}_{-0.15}$	826^{+20}_{-22}	2209^{+72}_{-70}	$5.862^{+1.651}_{-1.462}$
Alt.	-29 ± 10	$2.63^{+0.16}_{-0.14}$	825^{+20}_{-23}	2110^{+82}_{-92}	$4.007^{+1.403}_{-1.293}$

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

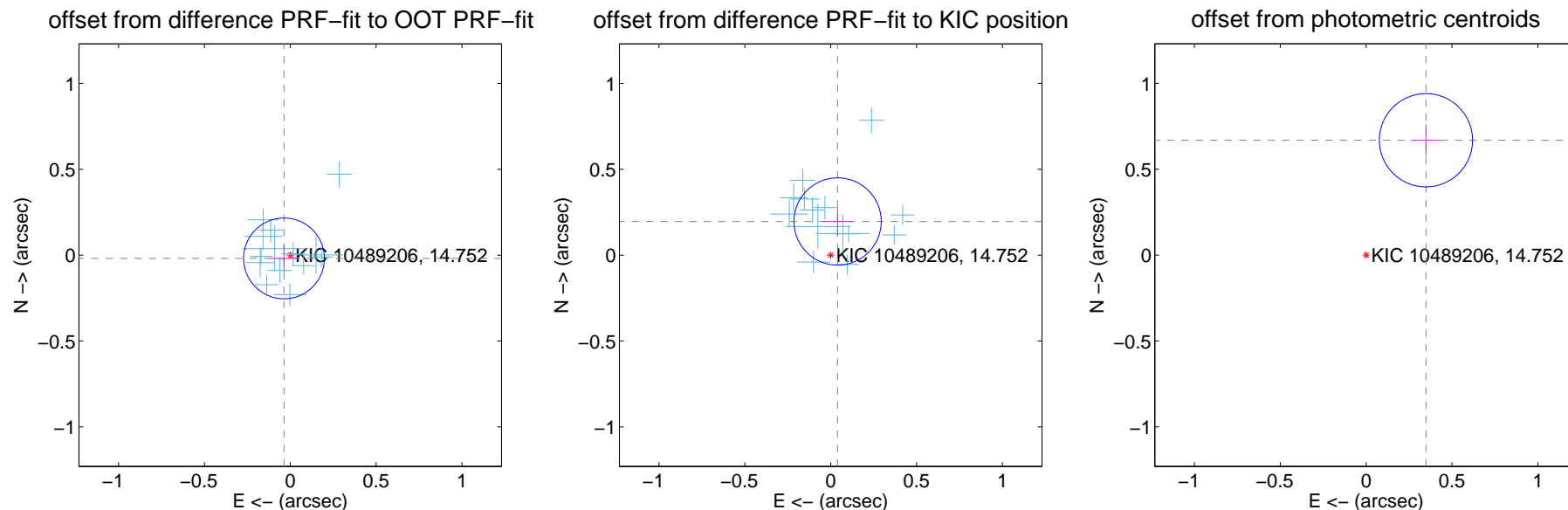
DV Centroid Data

Supplemental centroid analysis for 010489206-01. Kepler magnitude: 14.75. Transit SNR 144.89

There are 14 quarters with good PRF difference image offsets

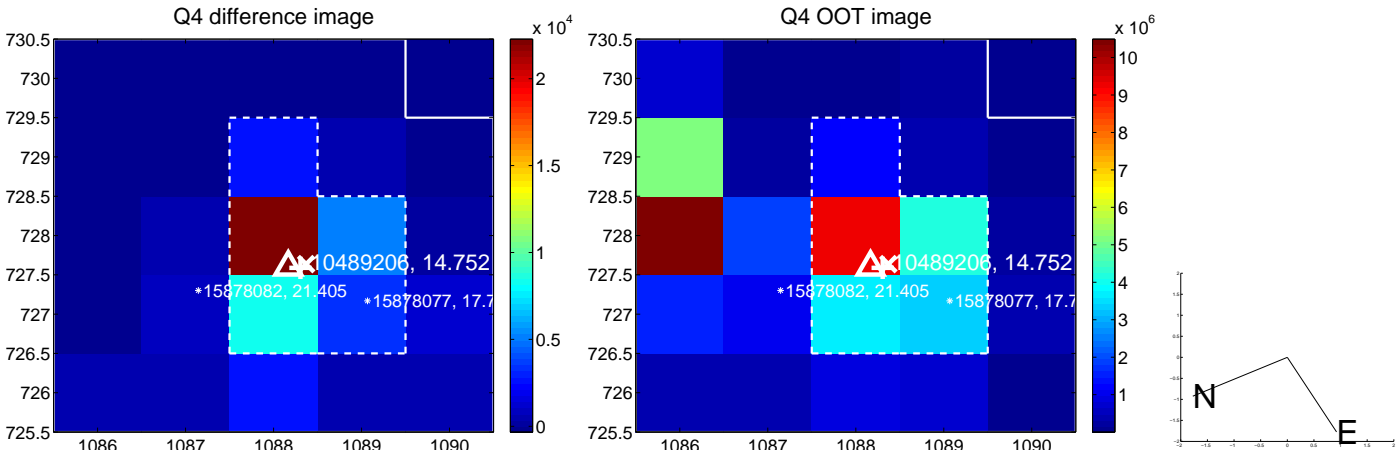
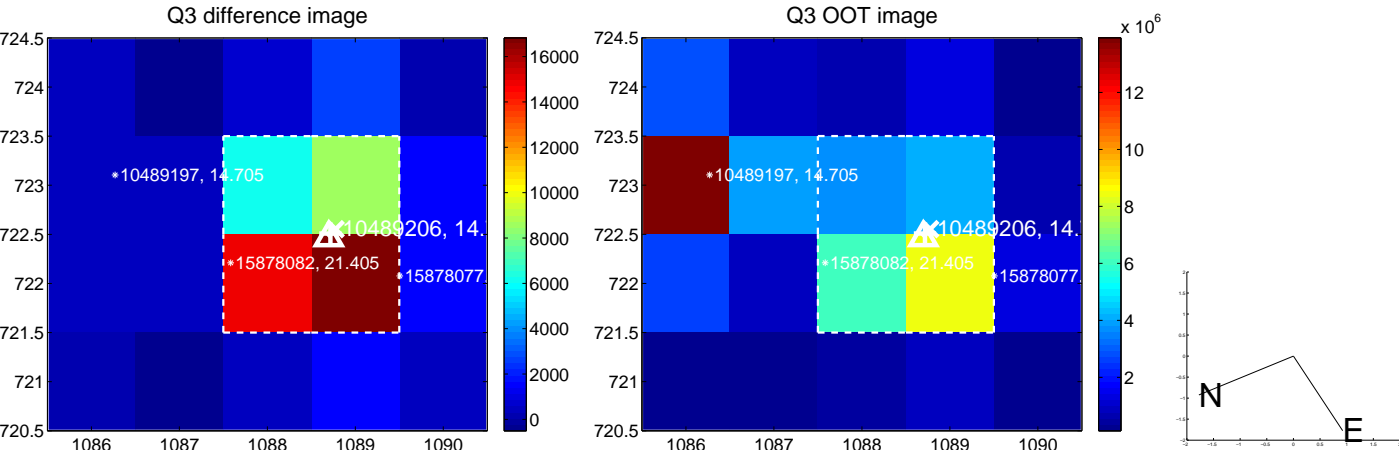
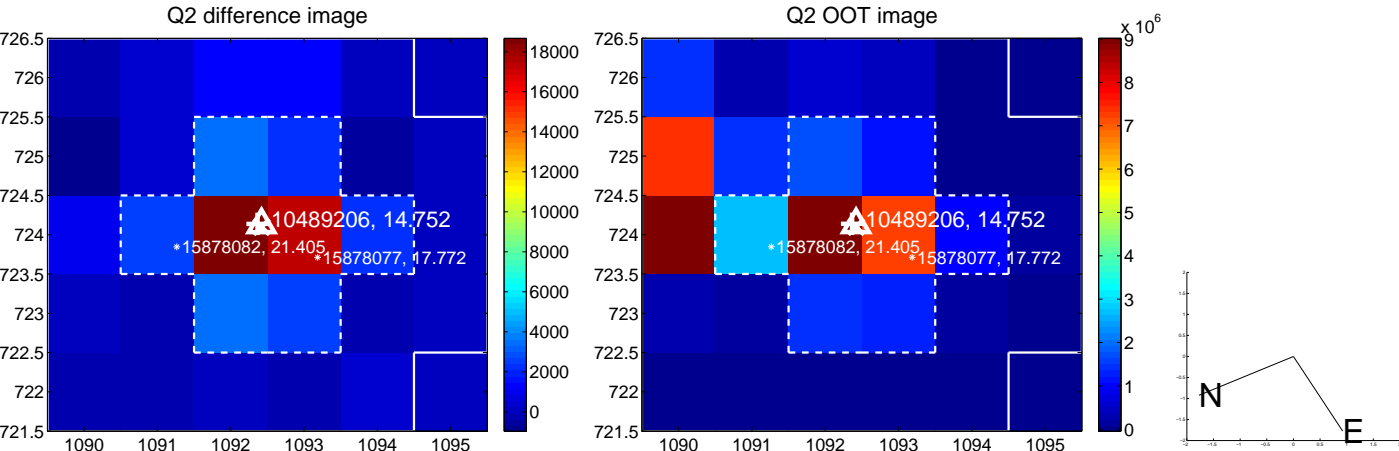
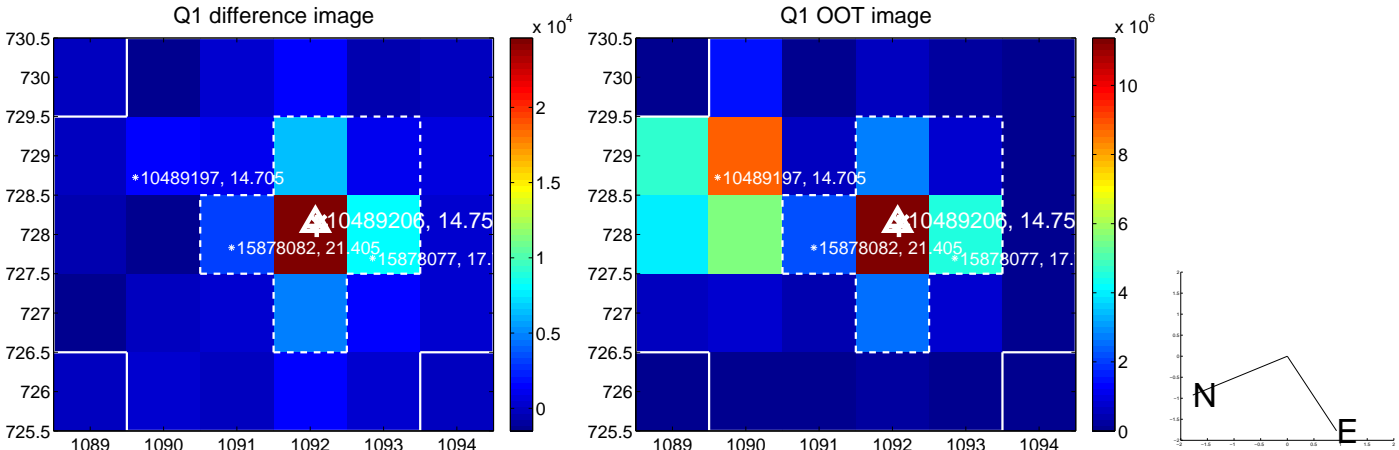
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.041 ± 0.078	0.52	0.036 ± 0.079	-0.019 ± 0.077
PRF-fit source offset from KIC position	0.200 ± 0.085	2.36	-0.040 ± 0.086	0.196 ± 0.085
photometric centroid source offset	0.75 ± 0.09	8.33	-0.35 ± 0.09	0.67 ± 0.09

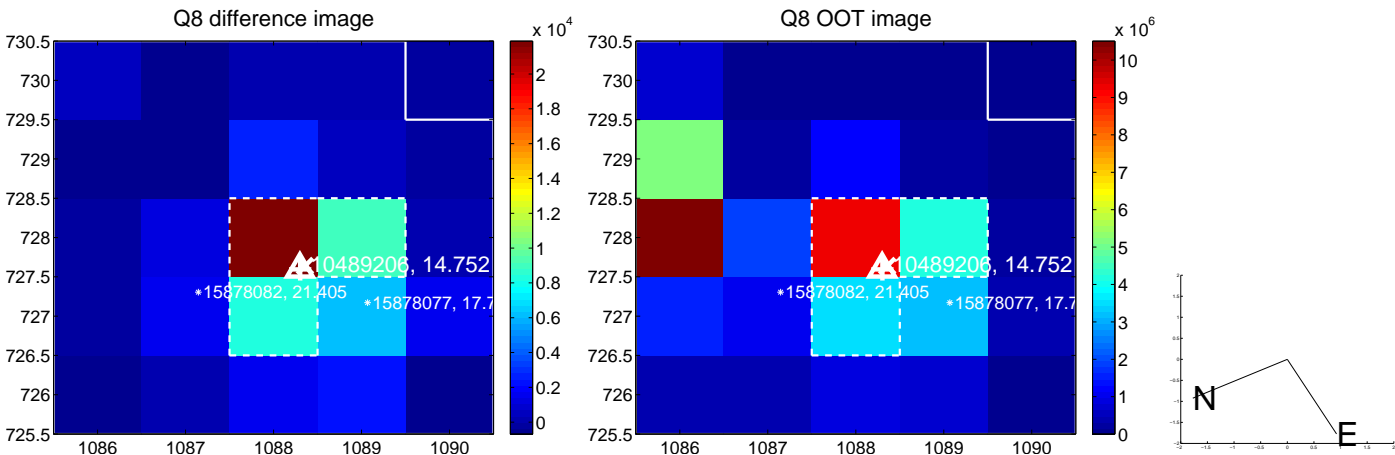
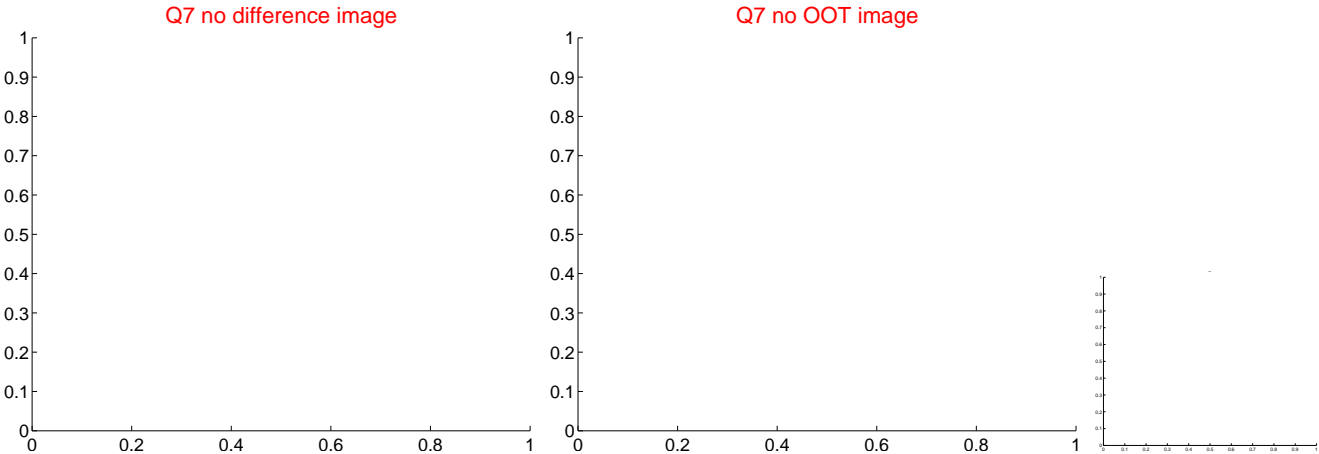
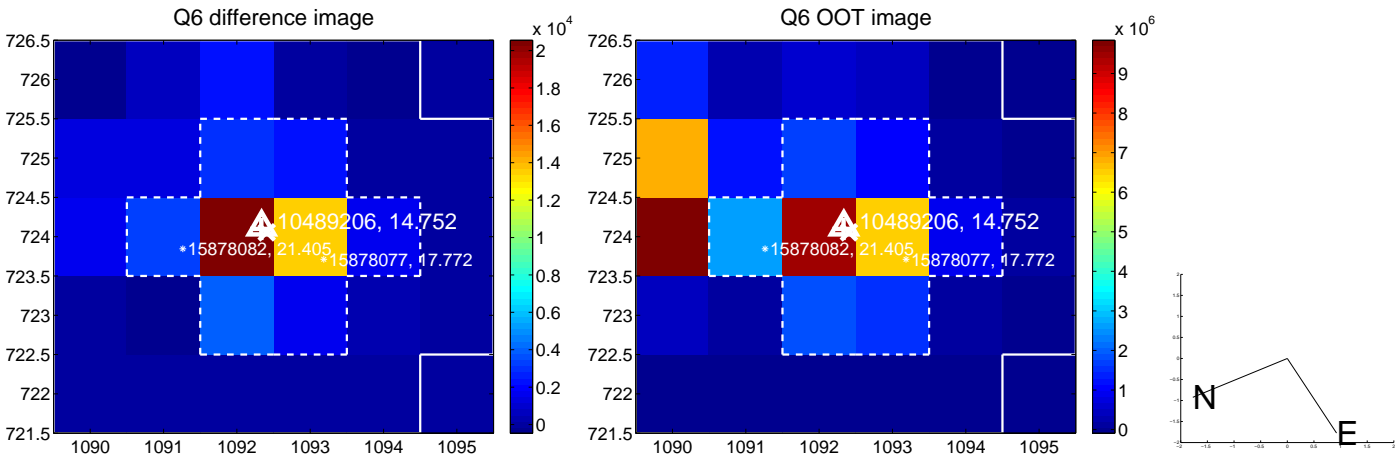
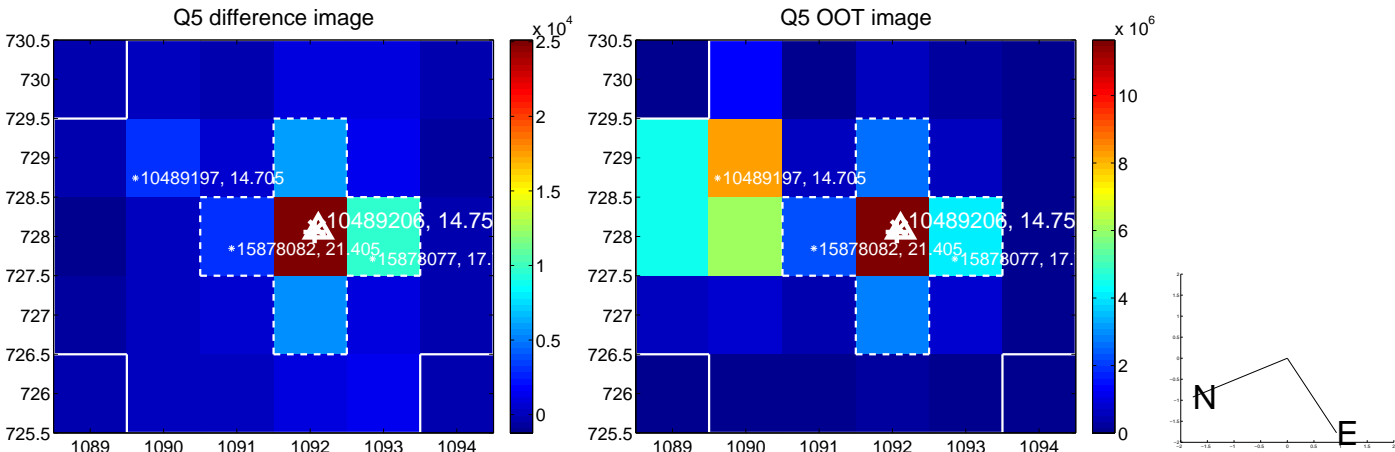


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

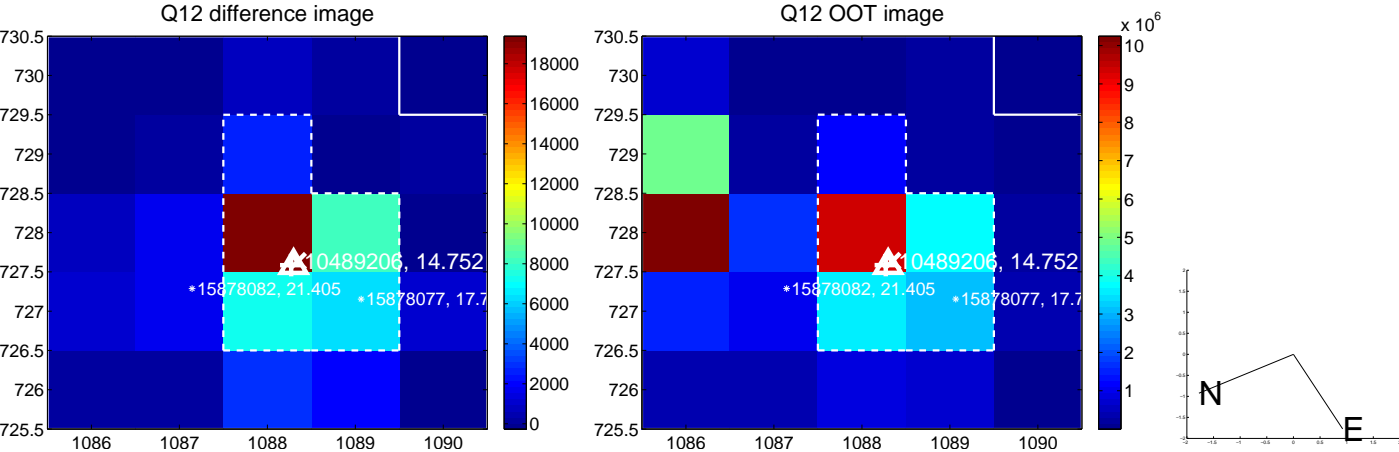
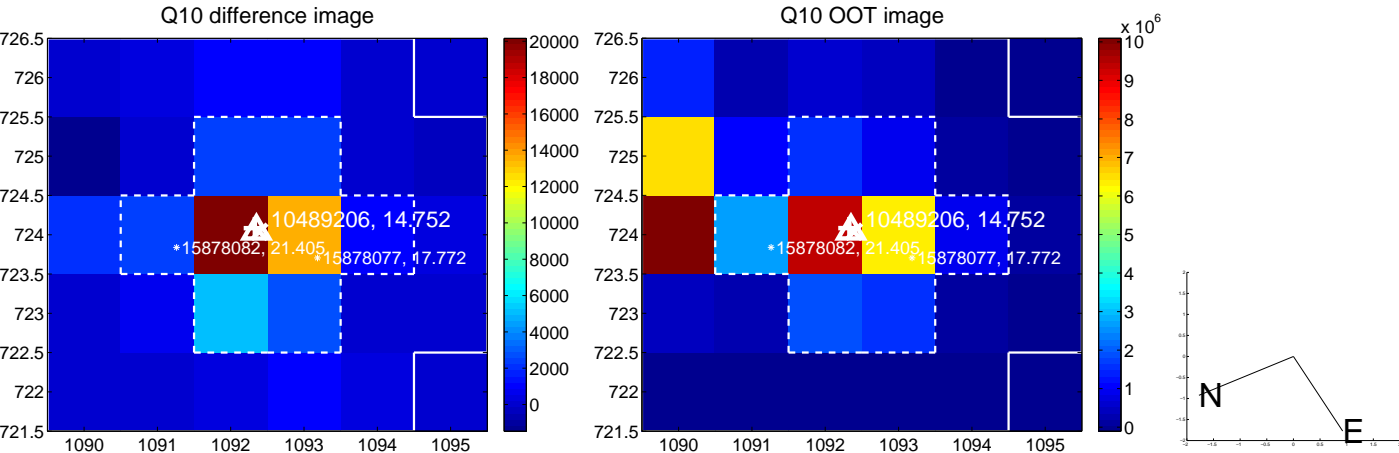
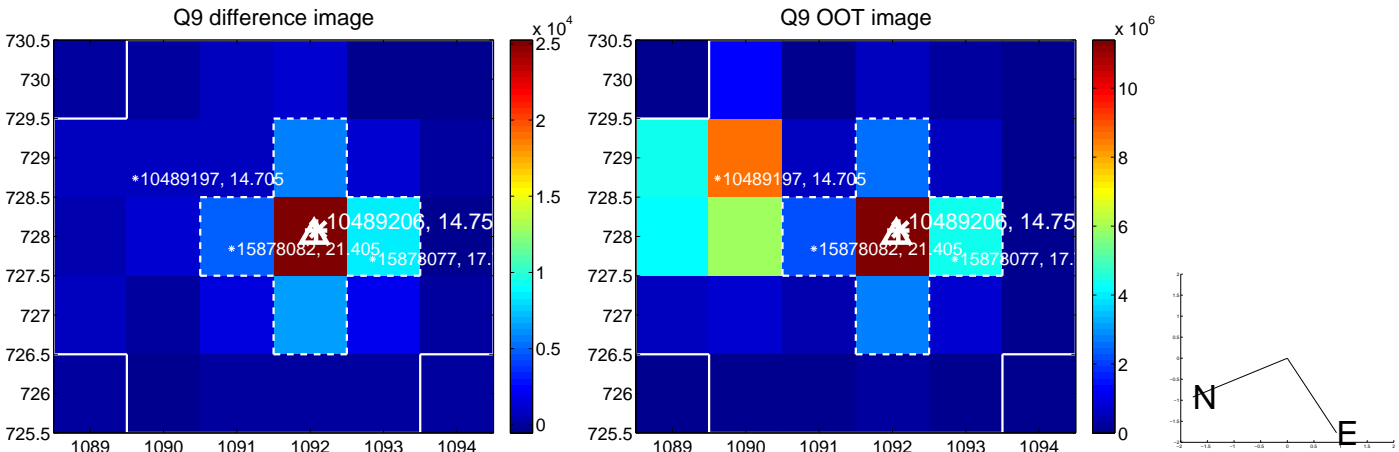
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



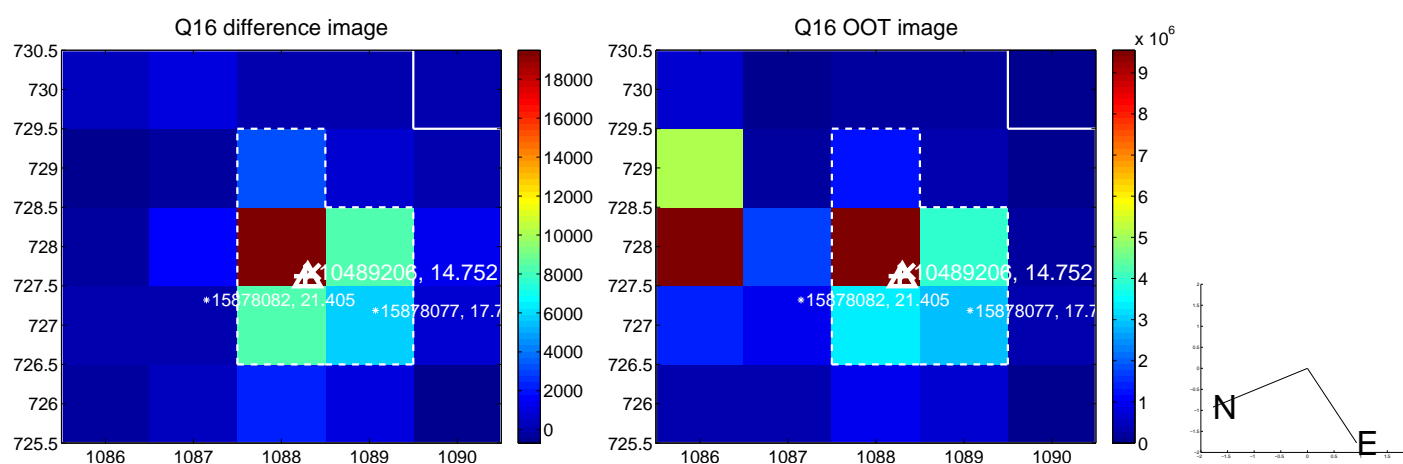
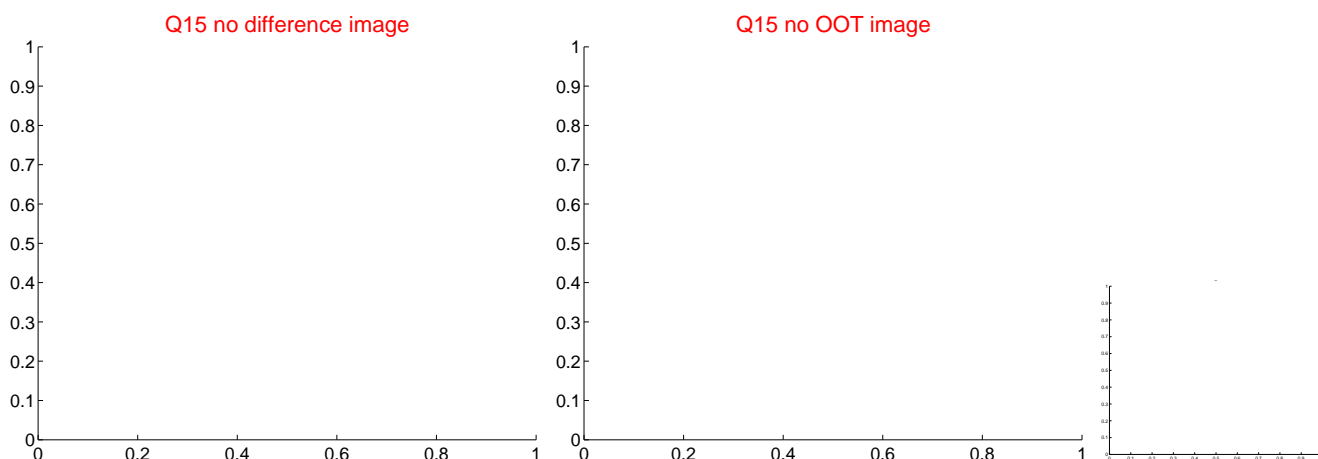
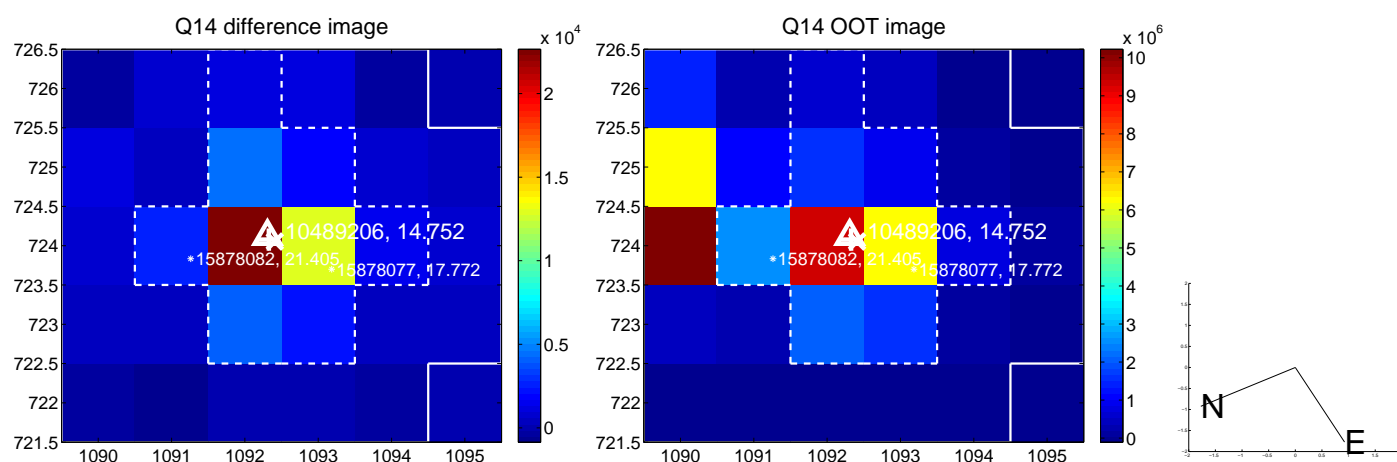
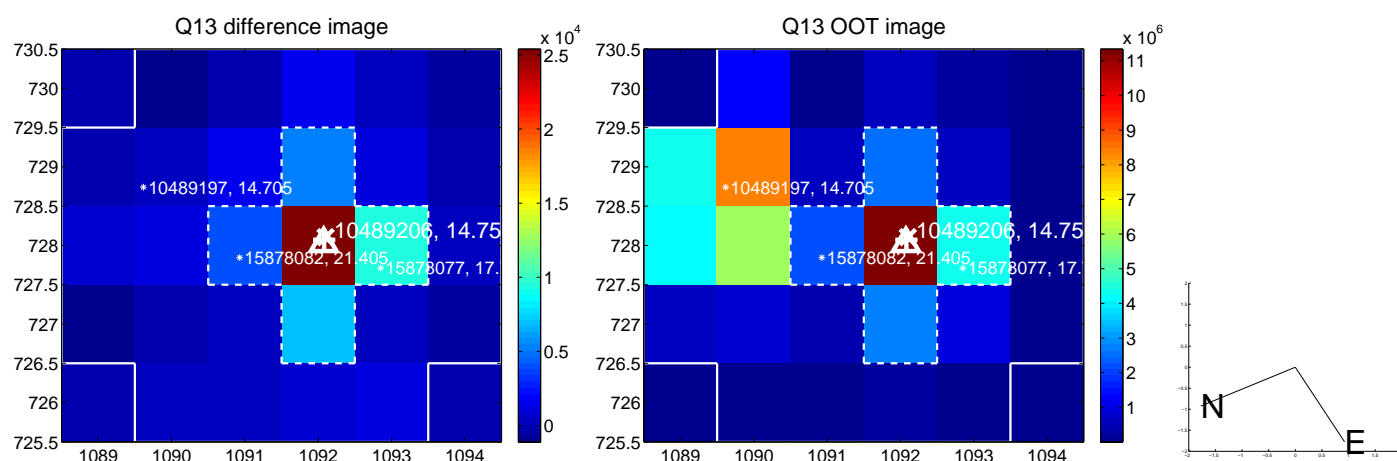
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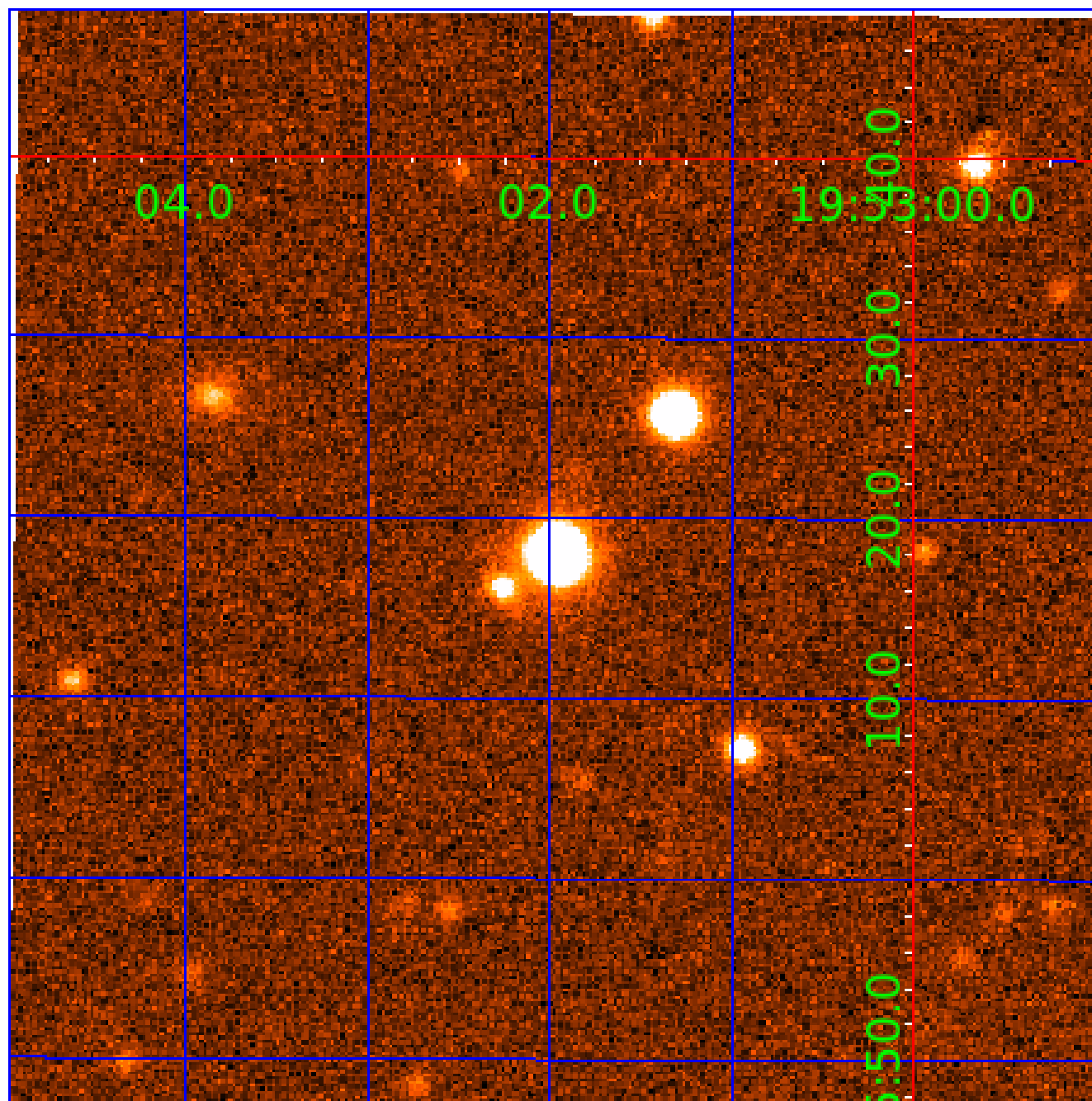


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UKIRT Image

Declination



KIC 010489206

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})
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Robovetter Results

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010489206-02	OBS	PC	1.00	0	0	0	0	NO_COMMENT

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

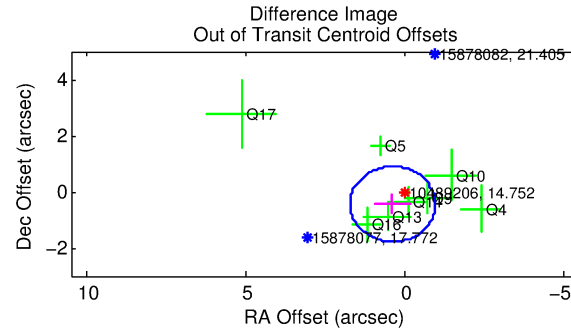
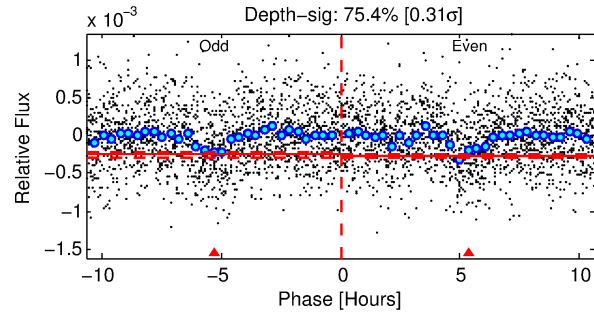
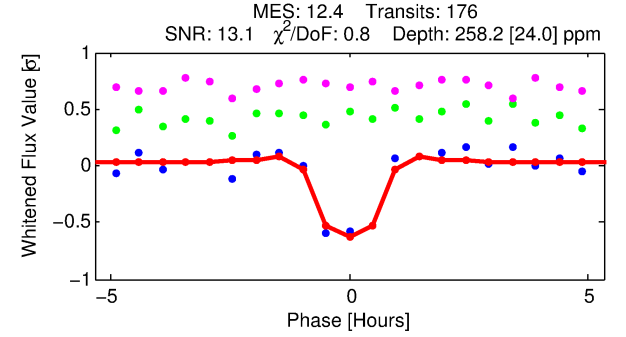
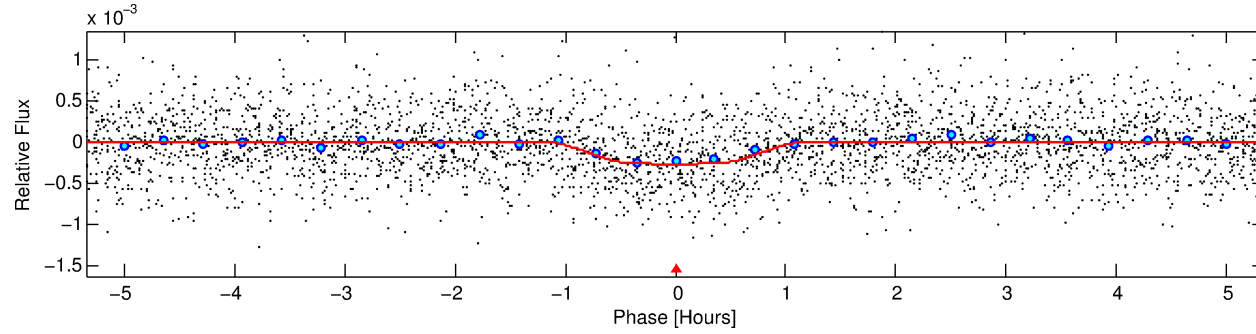
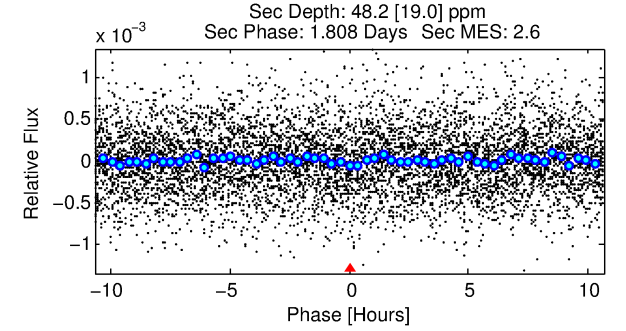
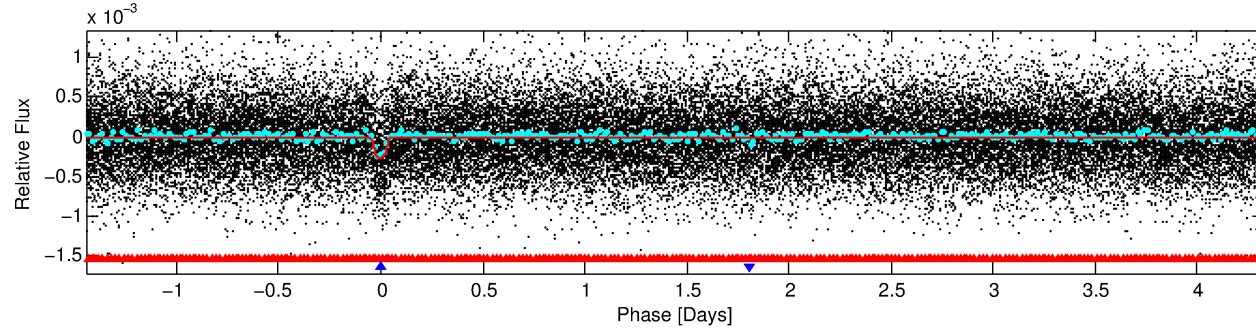
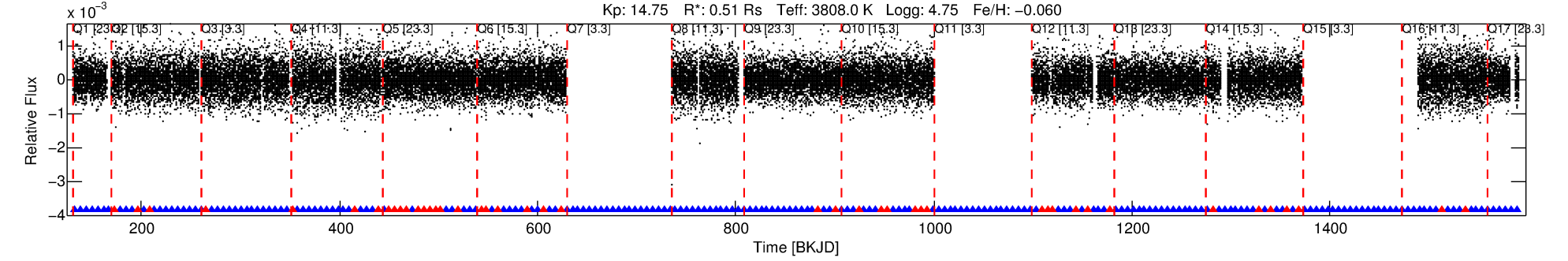
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010489206-02

No Significant Match Found

DV One-Page Summary

KIC: 10489206 Candidate: 2 of 2 Period: 5.774 d
KOI: K00251.02 Name: Kepler-125c Corr: 0.935



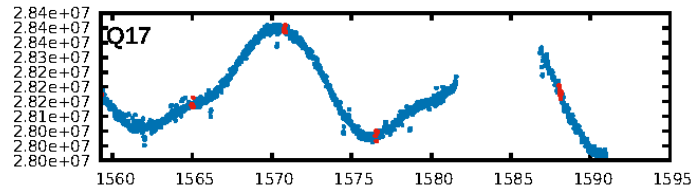
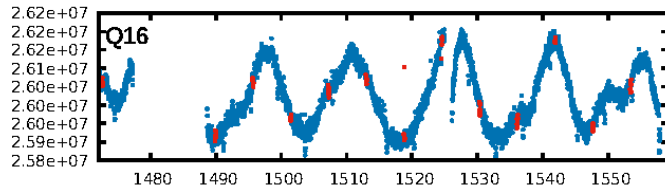
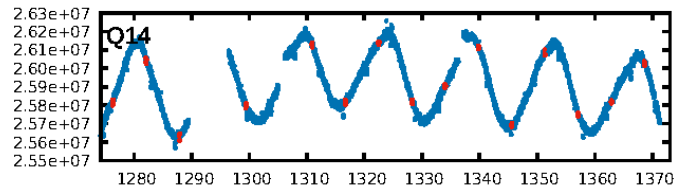
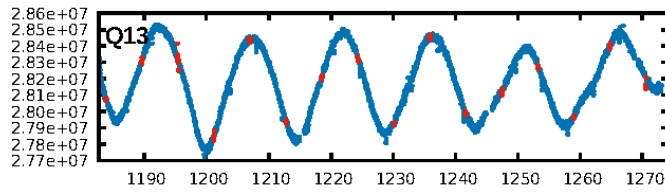
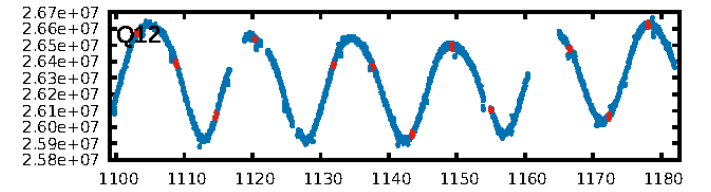
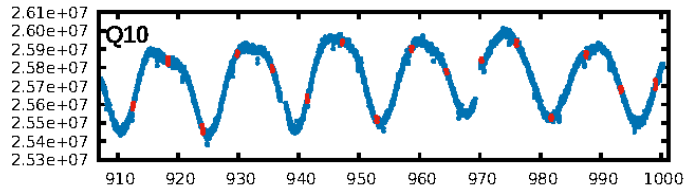
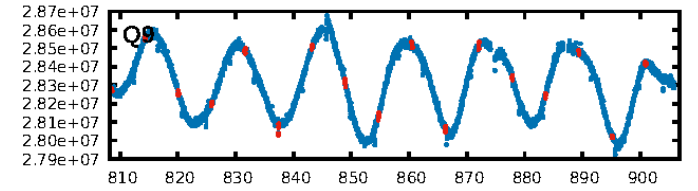
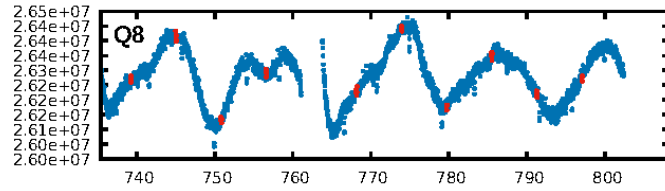
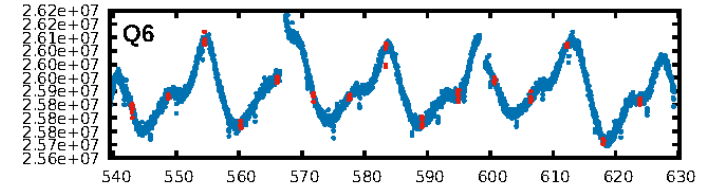
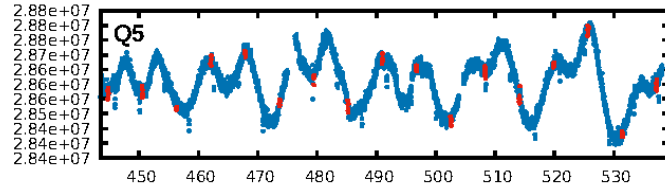
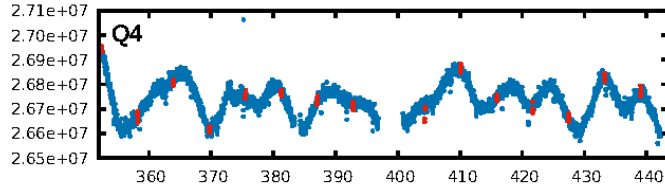
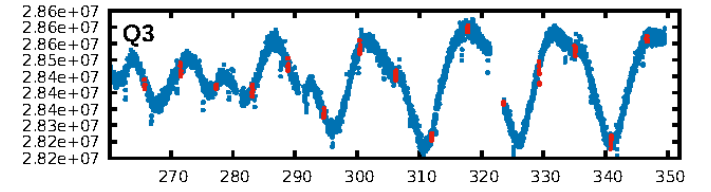
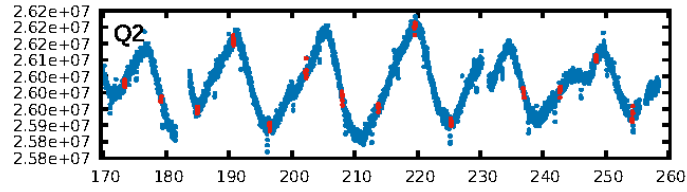
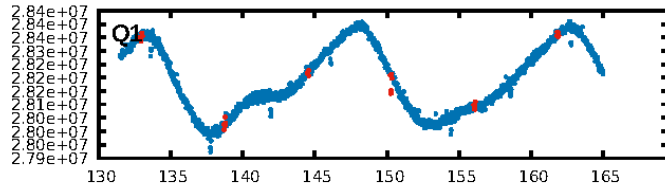
DV Fit Results:

Period = 5.77435 [0.00002] d
Epoch = 132.9747 [0.0026] BKJD
Rp/R* = 0.0172 [0.0120]
a/R* = 12.72 [38.89]
b = 0.88 [0.81]
Seff = 18.60 [2.19]
Teq = 530 [16] K
Rp = 0.96 [0.67] Re
a = 0.0511 [0.0032] AU
Ag = 75.84 [109.77] [0.68σ]
Teffp = 2416 [875] K [2.16σ]

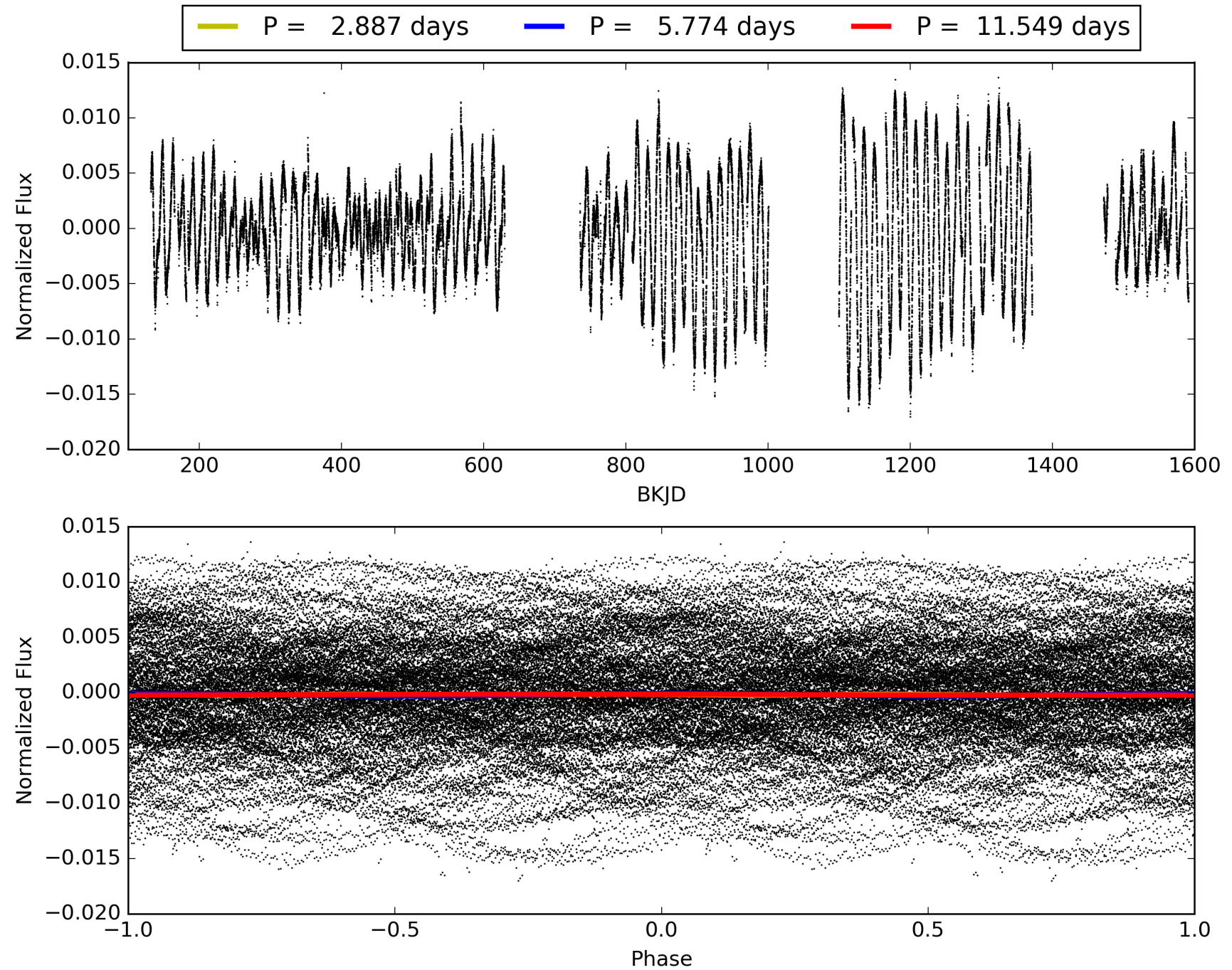
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.77σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 5.80e-34
RollingBand-fgt: 0.73 [122/166]
GhostDiagnostic-chr: -3.812
Centroid-sig: 0.0%
Centroid-so: 0.840 arcsec [0.87σ]
OotOffset-rm: 0.587 arcsec [1.31σ]
KicOffset-rm: 0.464 arcsec [0.79σ]
OotOffset-st: 2/0/2/4 [8]
KicOffset-st: 2/0/2/4 [8]
DiffImageQuality-fgm: 0.62 [5/8]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010489206-02, PDC Light Curves

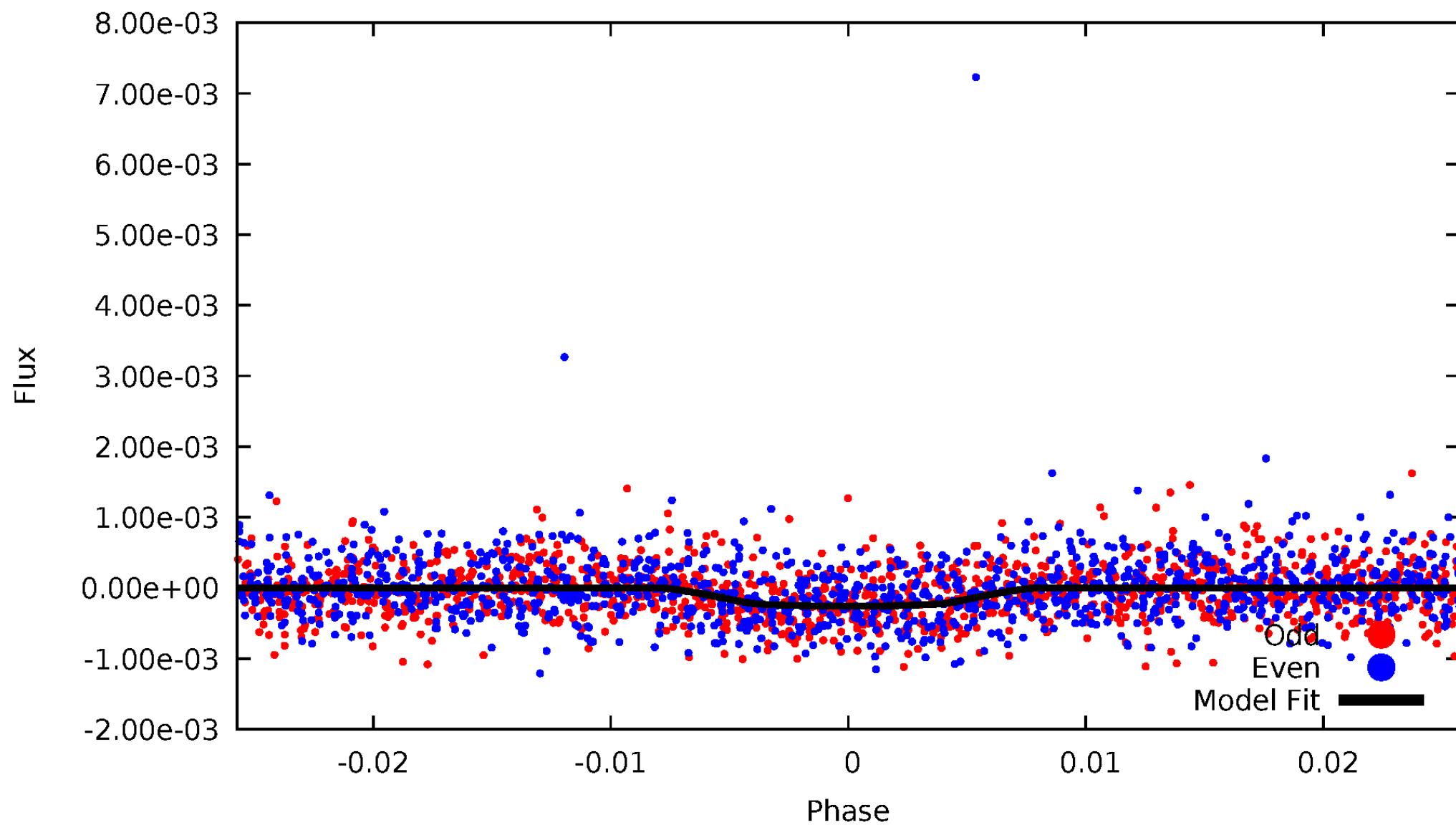


TCE 010489206-02



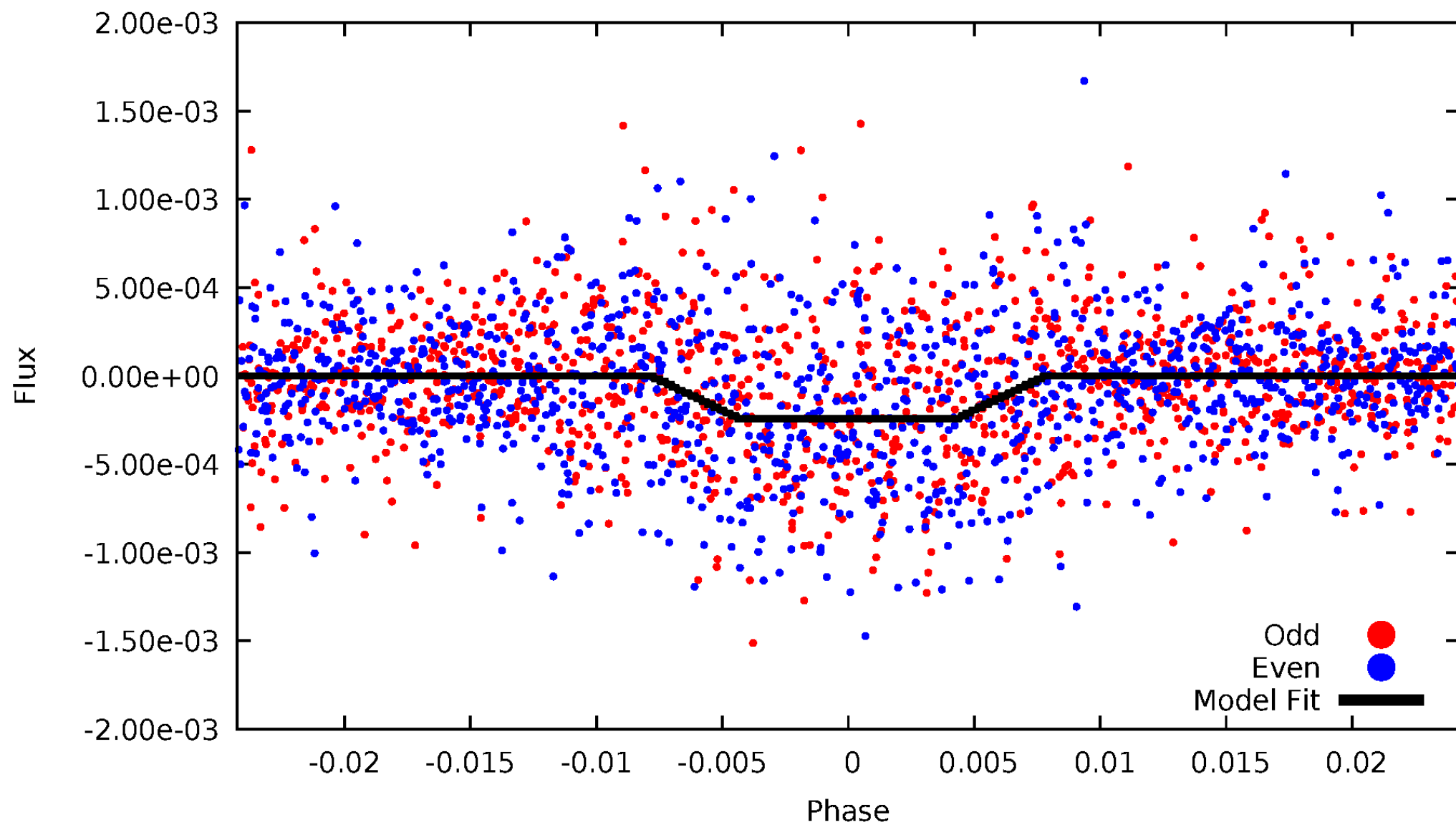
DV Odd/Even

TCE 010489206-02



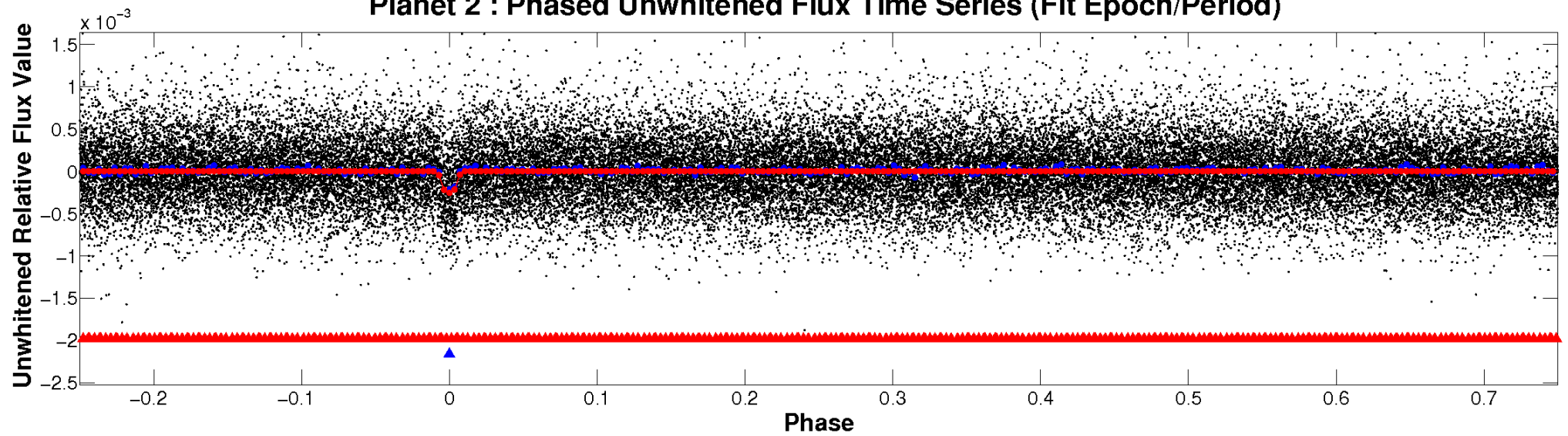
ALT Odd/Even

TCE 010489206-02

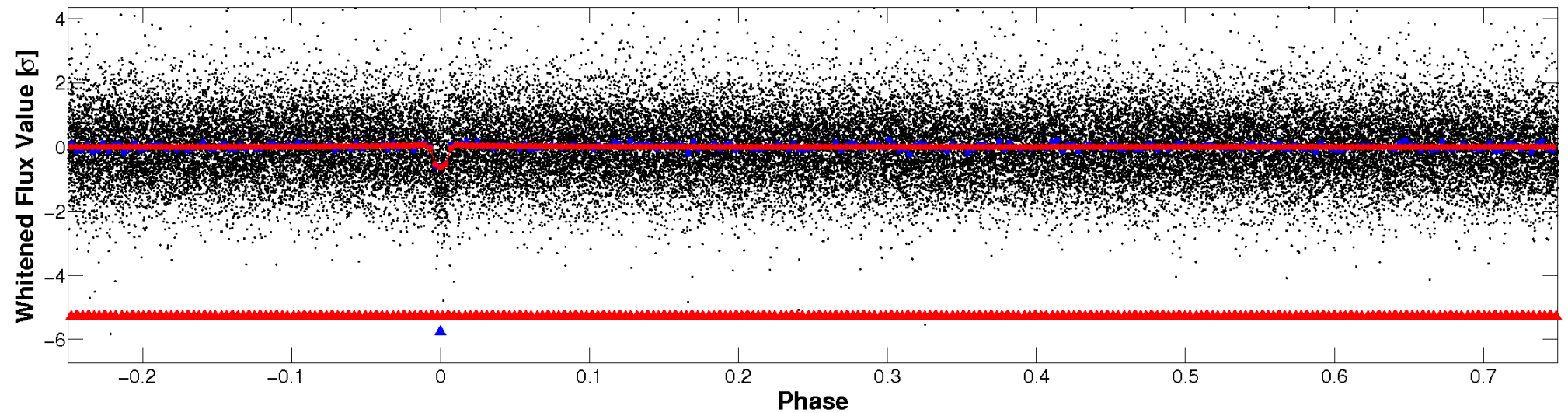


Non-Whitened Vs. Whitened Light Curve

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

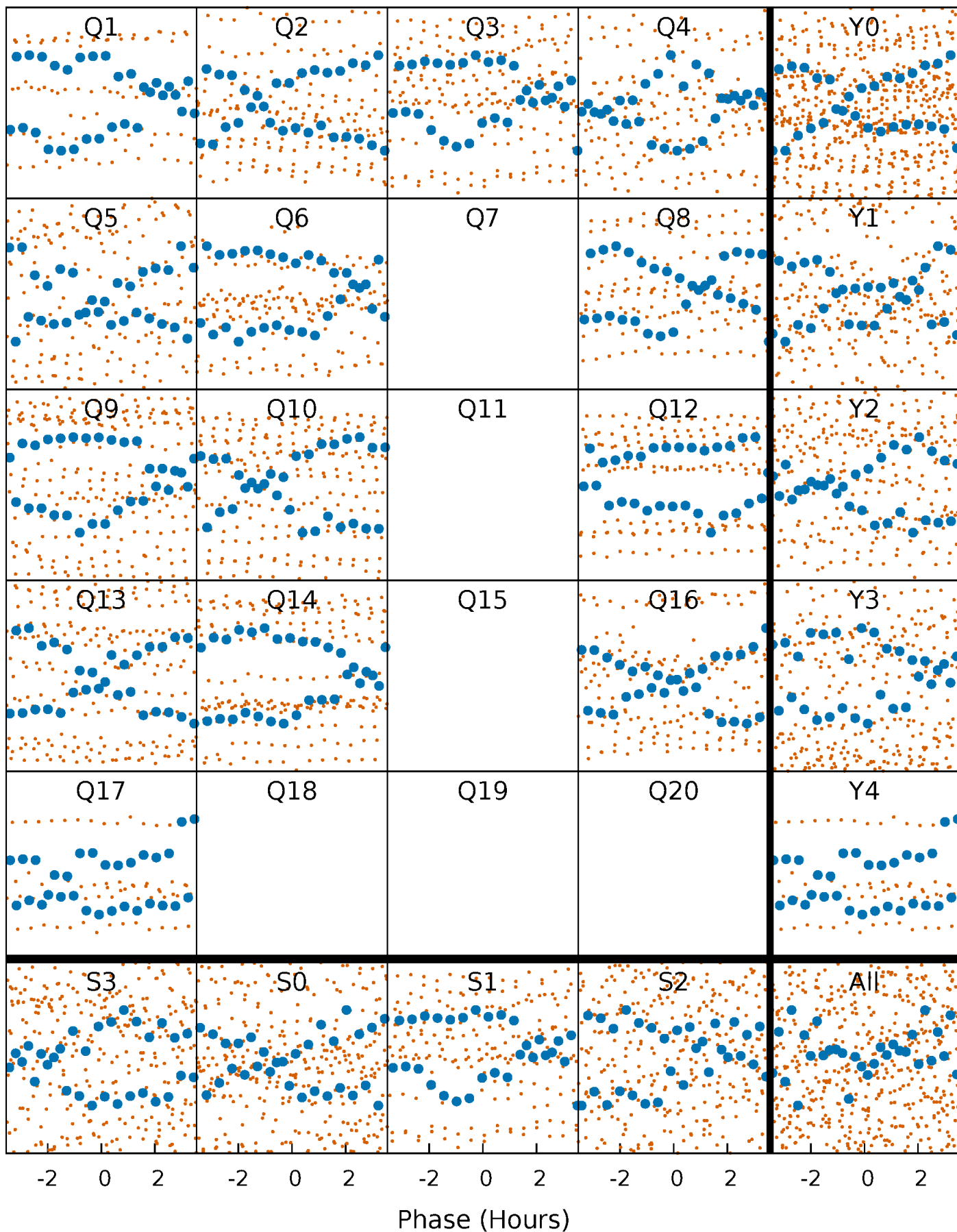


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



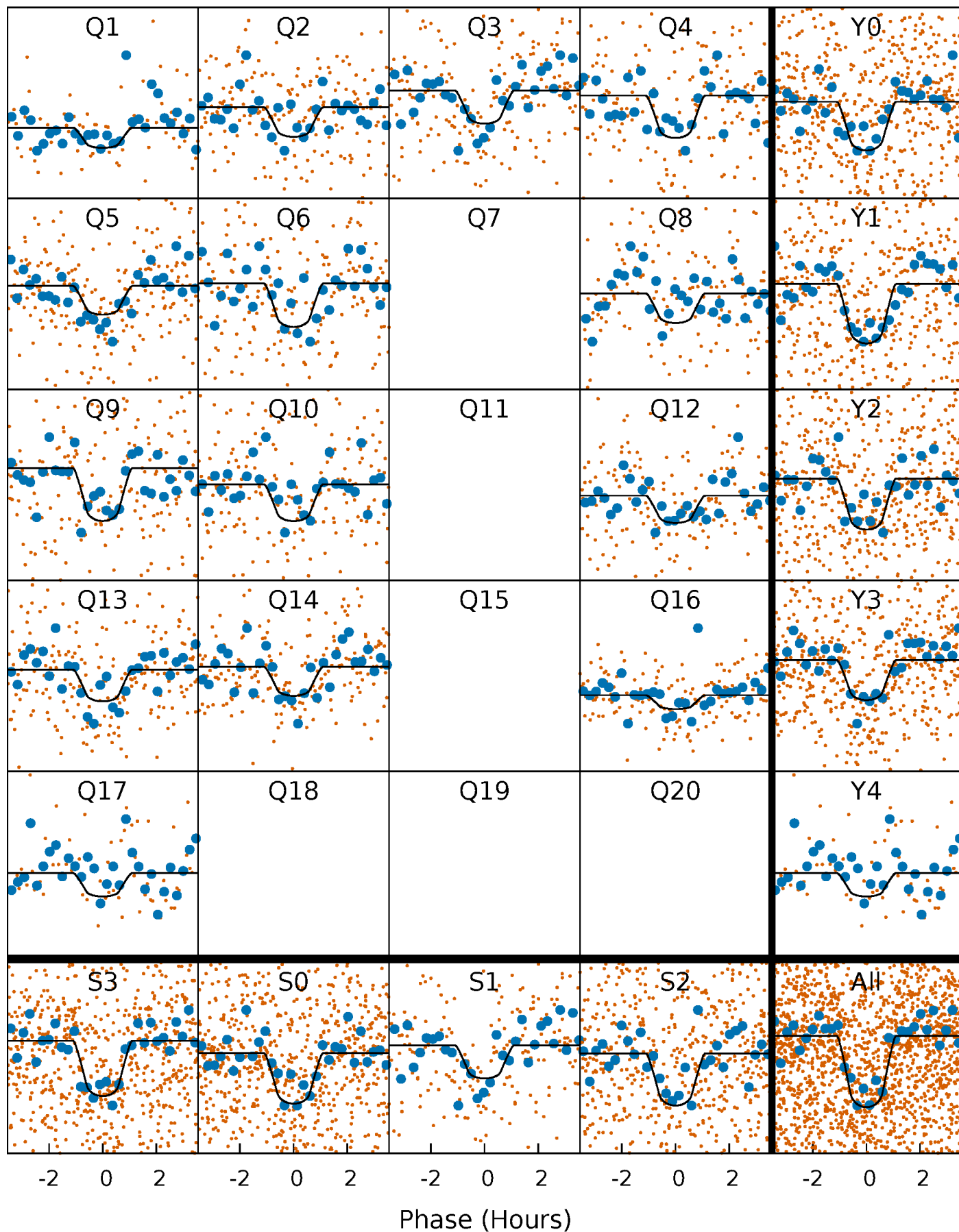
PDC Quarter-Phased Transit Curves

TCE 010489206-02 P= 5.774346 Days $T_0=132.974651$ (BKJD)



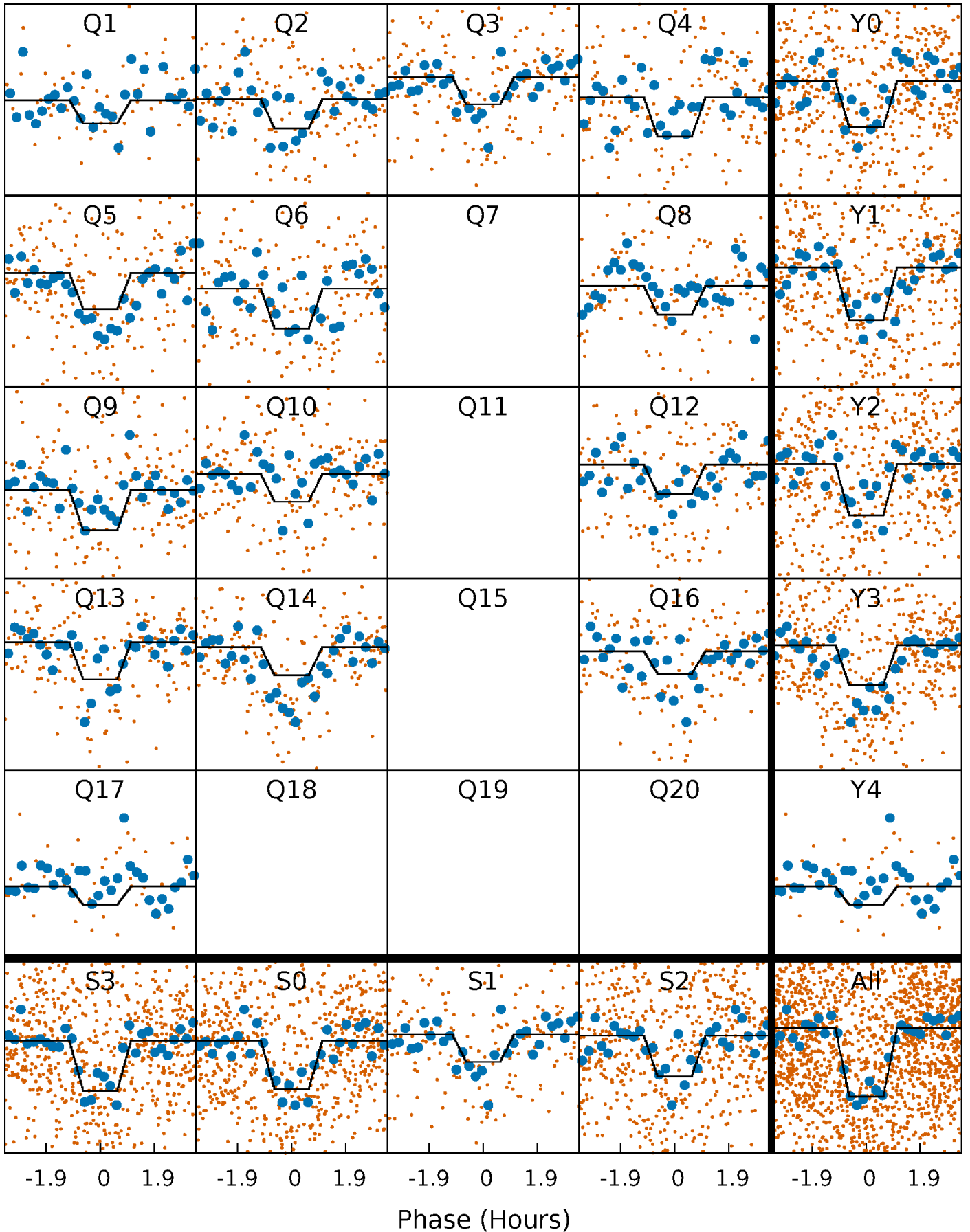
DV Quarter-Phased Transit Curves

TCE 010489206-02 P= 5.774346 Days $T_0=132.974651$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

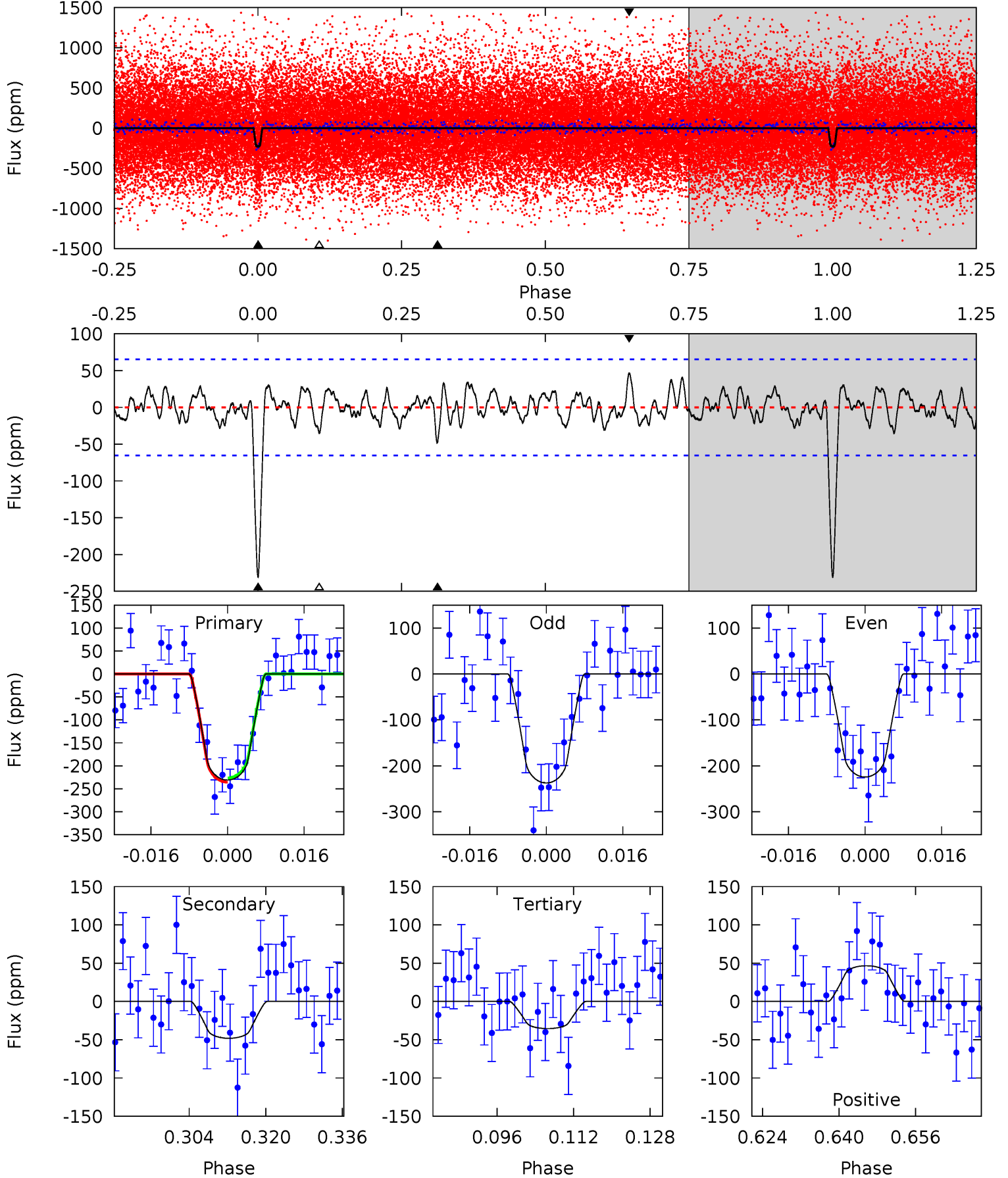
TCE 010489206-02 P= 5.774385 Days $T_0=132.969632$ (BKJD)



DV Model-Shift Uniqueness Test

010489206-02, P = 5.774346 Days, E = 127.200305 Days

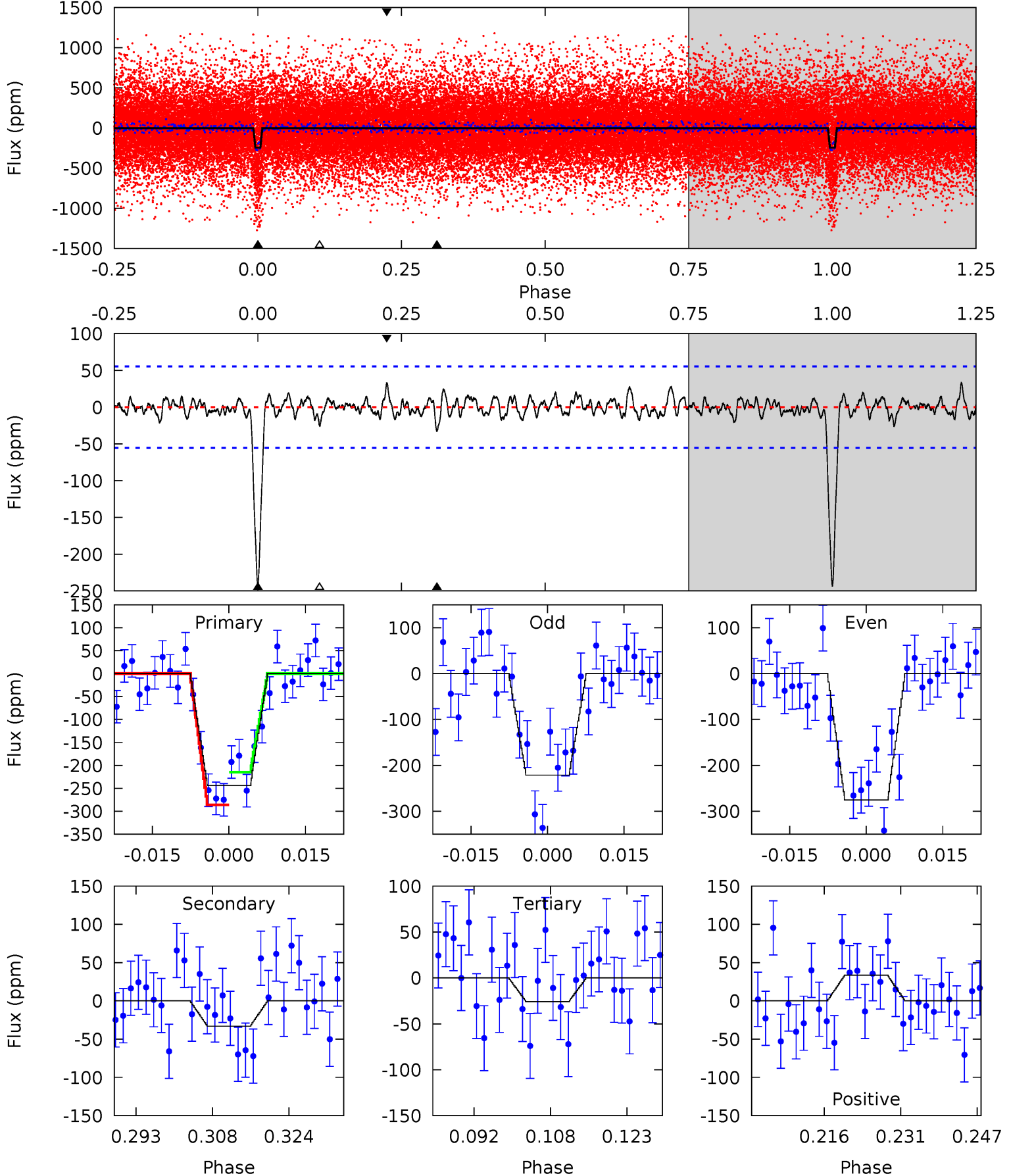
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.4	3.63	2.68	3.52	4.94	2.41	1.16	14.8	13.9	0.96	0.11	0.49	0.95	0.17	0



Alt Model-Shift Uniqueness Test

010489206-02, P = 5.774385 Days, E = 127.195247 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.8	2.95	2.30	3.00	4.94	2.42	0.82	19.5	18.8	0.65	-0.04	2.42	0.98	0.12	3.20



Stellar Parameters For KIC 010489206

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3808^{+76}_{-84}	$4.754^{+0.036}_{-0.036}$	$-0.060^{+0.150}_{-0.150}$	$0.508^{+0.037}_{-0.042}$	$0.534^{+0.035}_{-0.042}$	$5.741^{+0.999}_{-0.851}$
	+2%/-2%	+1%/-1%	+250%/-250%	+7%/-8%	+7%/-8%	+17%/-15%
Source	SPE70	SPE60	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 010489206-02 / KOI 0251.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-48 ± 13	$1.01^{+0.57}_{-0.51}$	740^{+20}_{-21}	2827^{+634}_{-335}	65^{+193}_{-39}
Alt.	-33 ± 11	$0.89^{+0.59}_{-0.52}$	739^{+20}_{-20}	2773^{+825}_{-382}	57^{+291}_{-40}

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 $A_{obs} \gg 1.0$

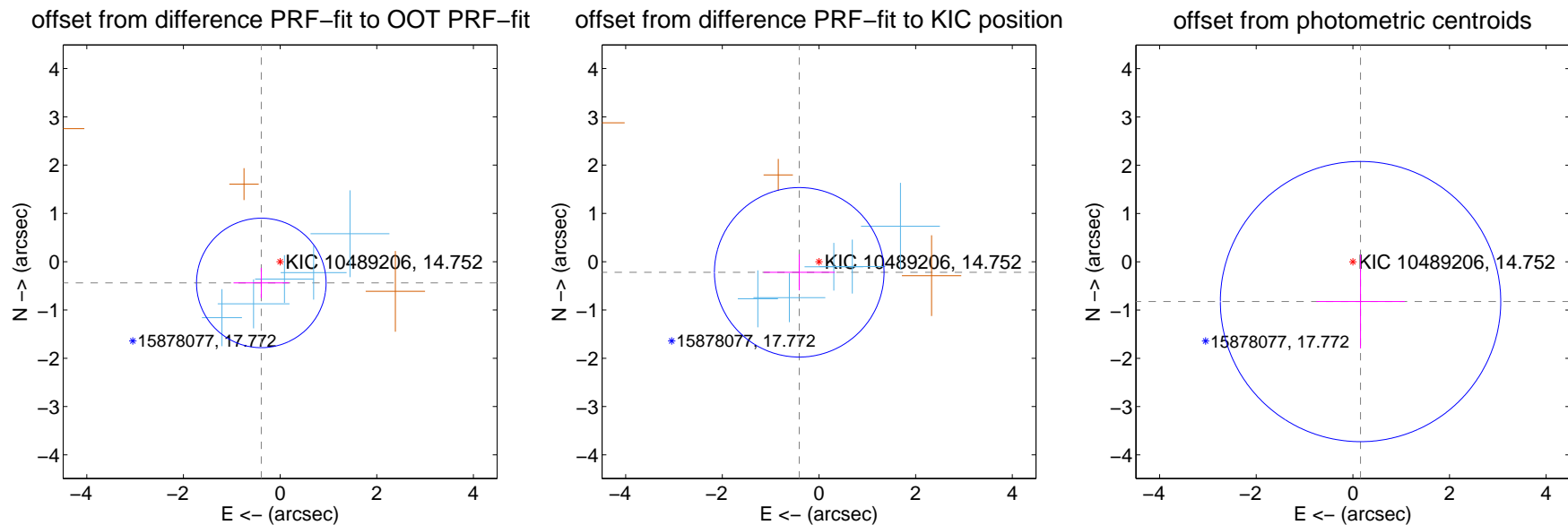
DV Centroid Data

Supplemental centroid analysis for 010489206-02. Kepler magnitude: 14.75. Transit SNR 13.08

There are 5 quarters with good PRF difference image offsets

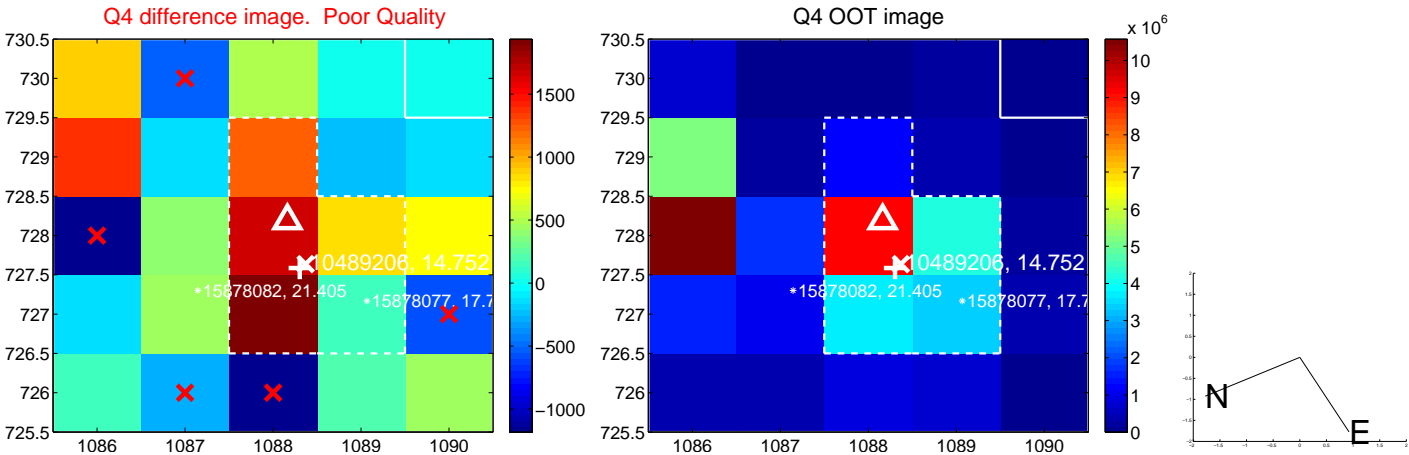
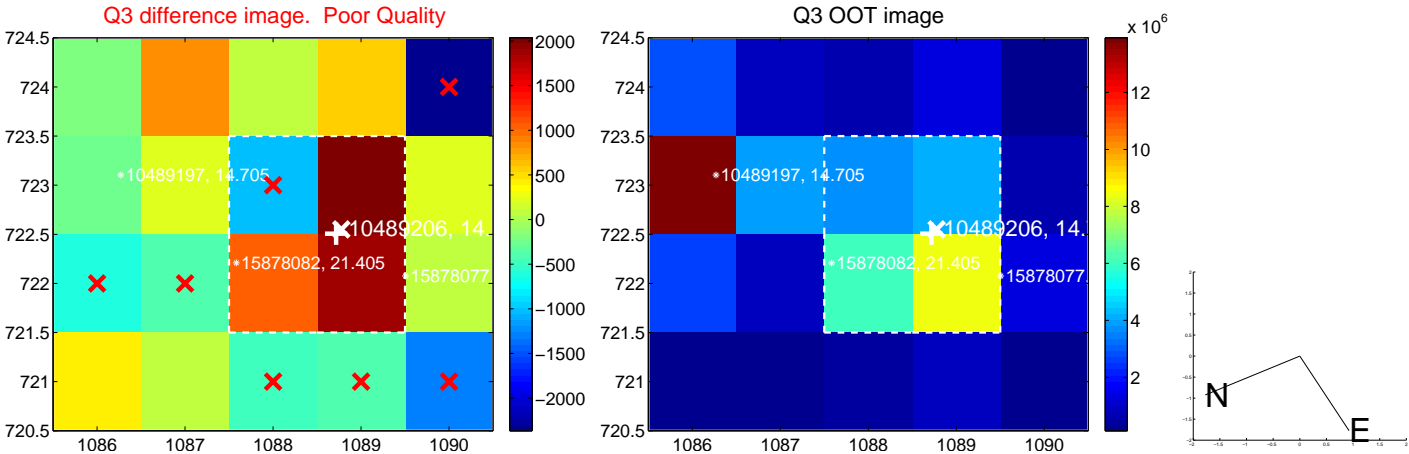
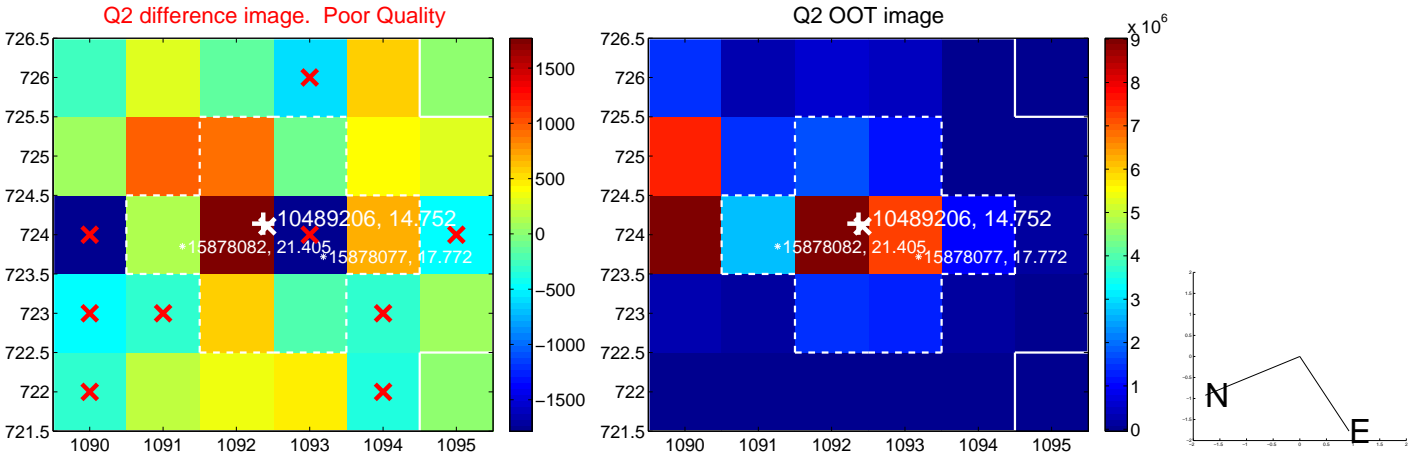
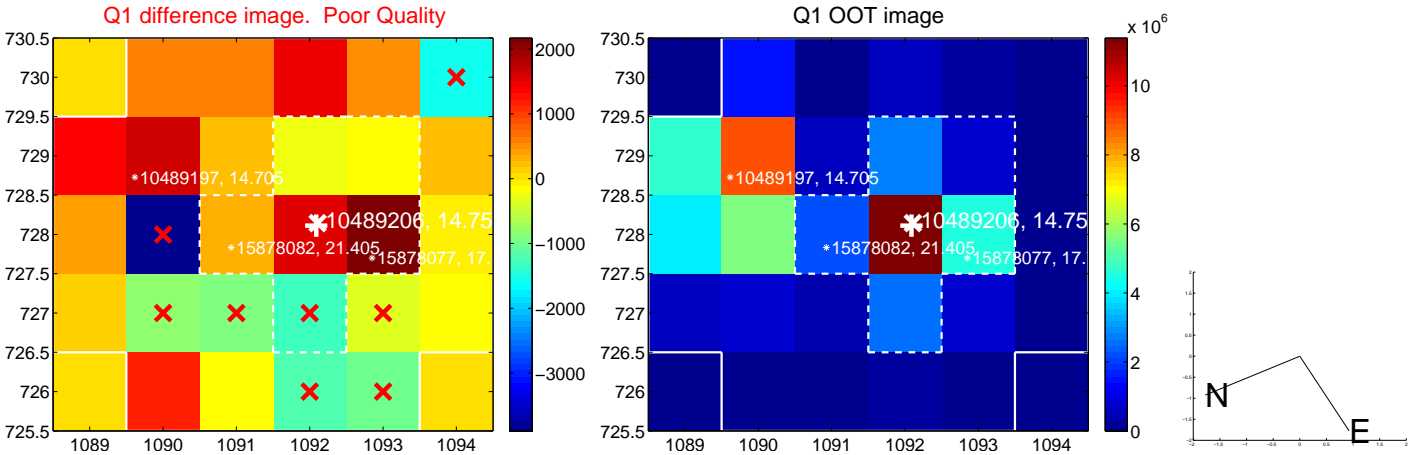
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.587 ± 0.447	1.31	0.389 ± 0.576	-0.440 ± 0.311
PRF-fit source offset from KIC position	0.464 ± 0.585	0.79	0.409 ± 0.737	-0.220 ± 0.373
photometric centroid source offset	0.84 ± 0.97	0.87	-0.16 ± 0.91	-0.82 ± 0.97

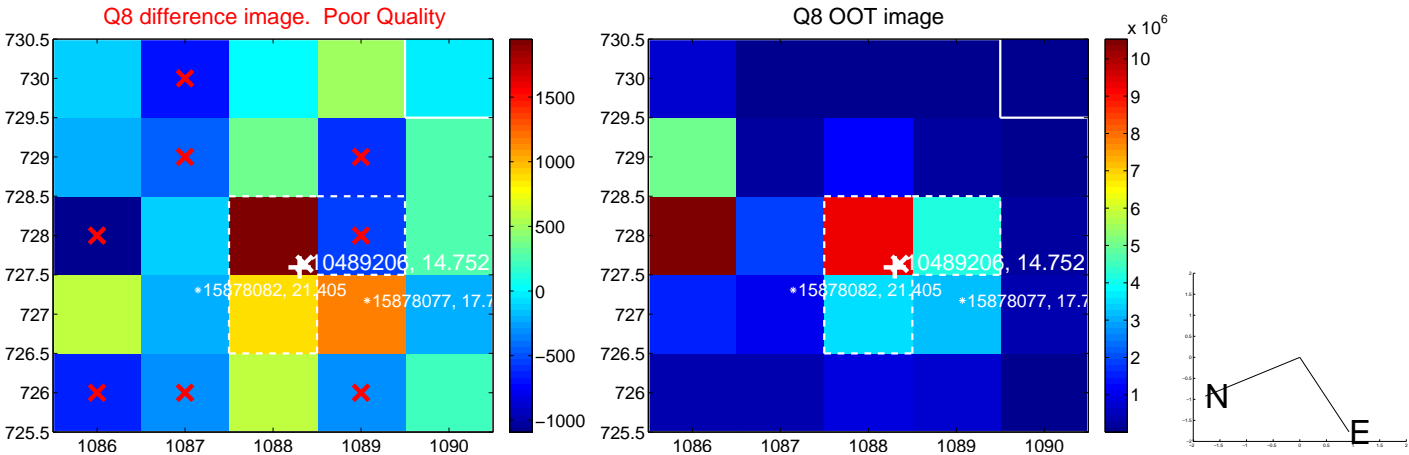
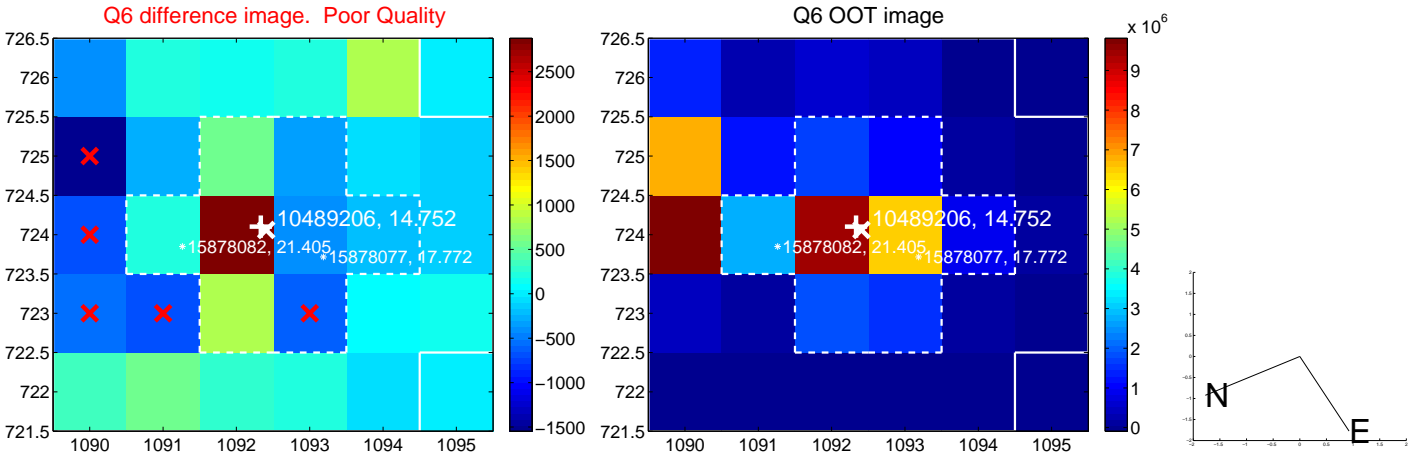
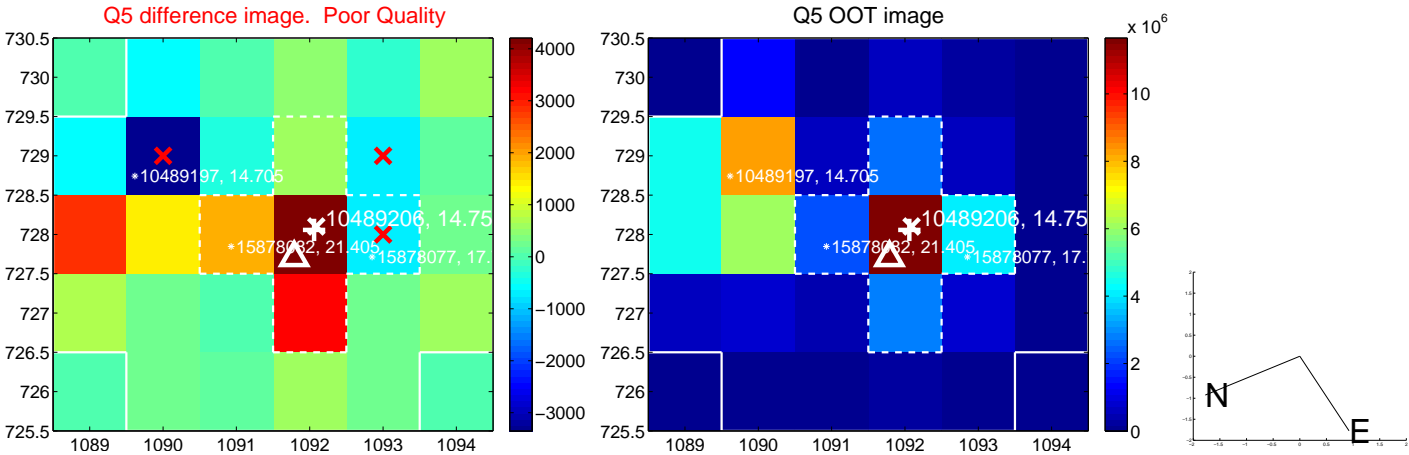


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

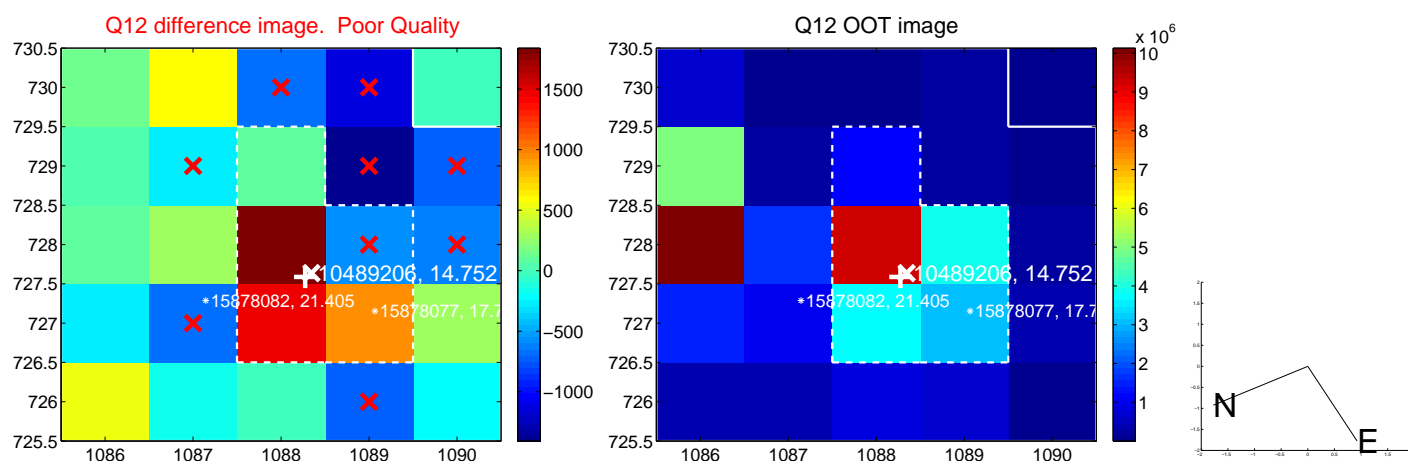
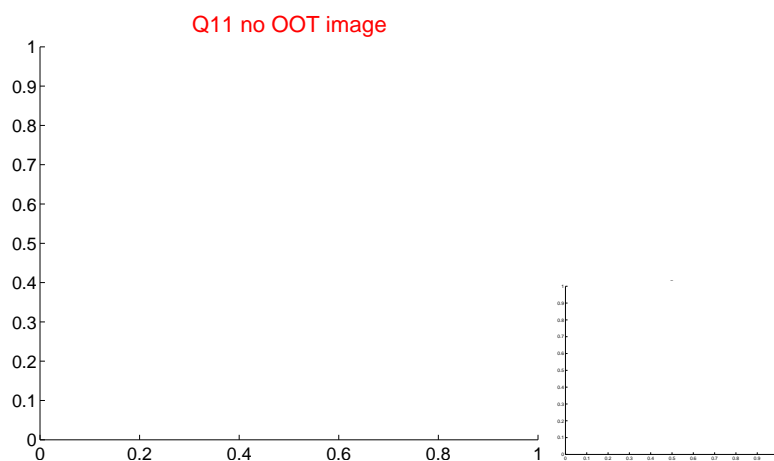
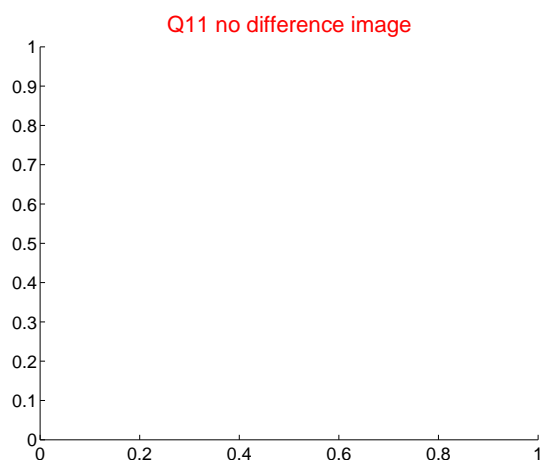
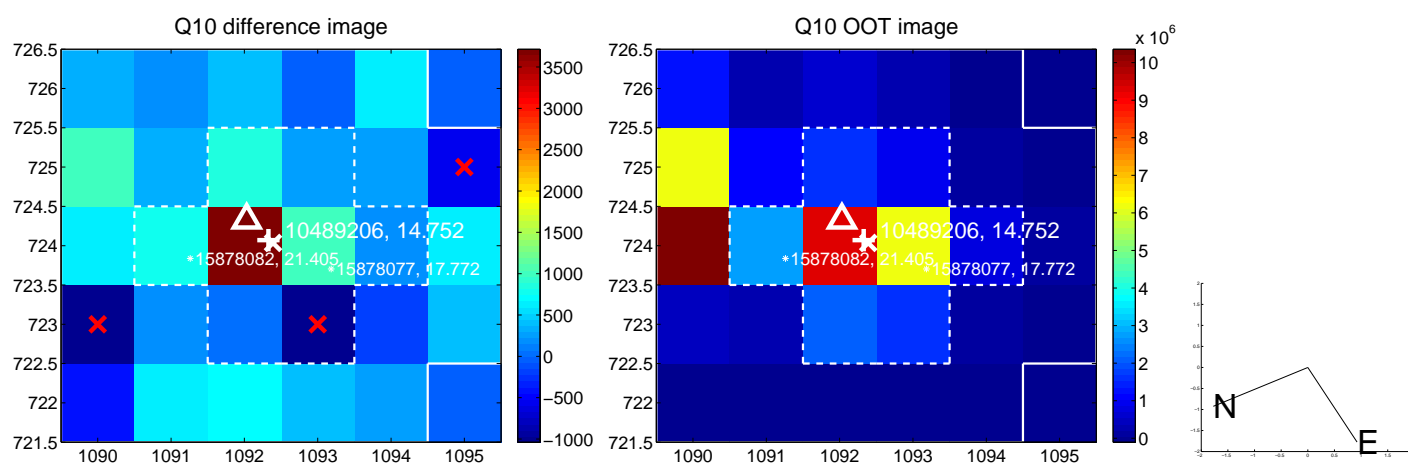
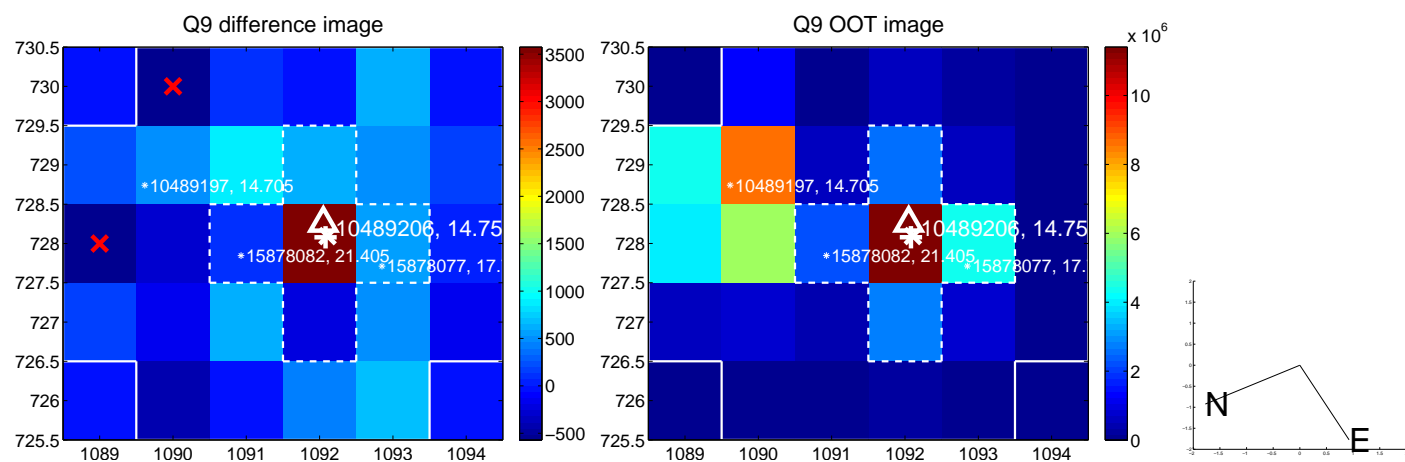
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



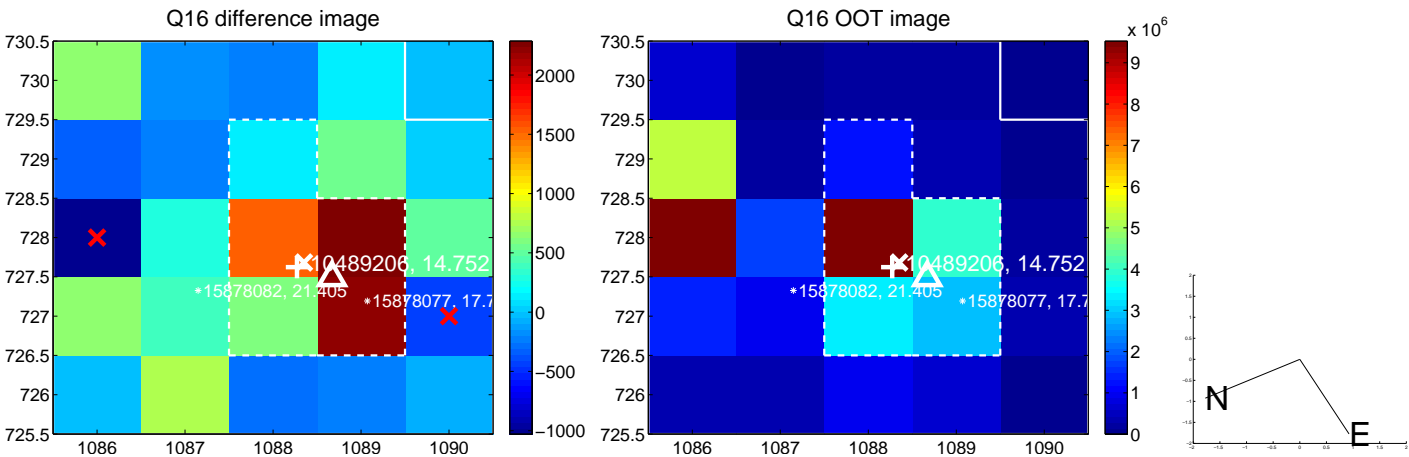
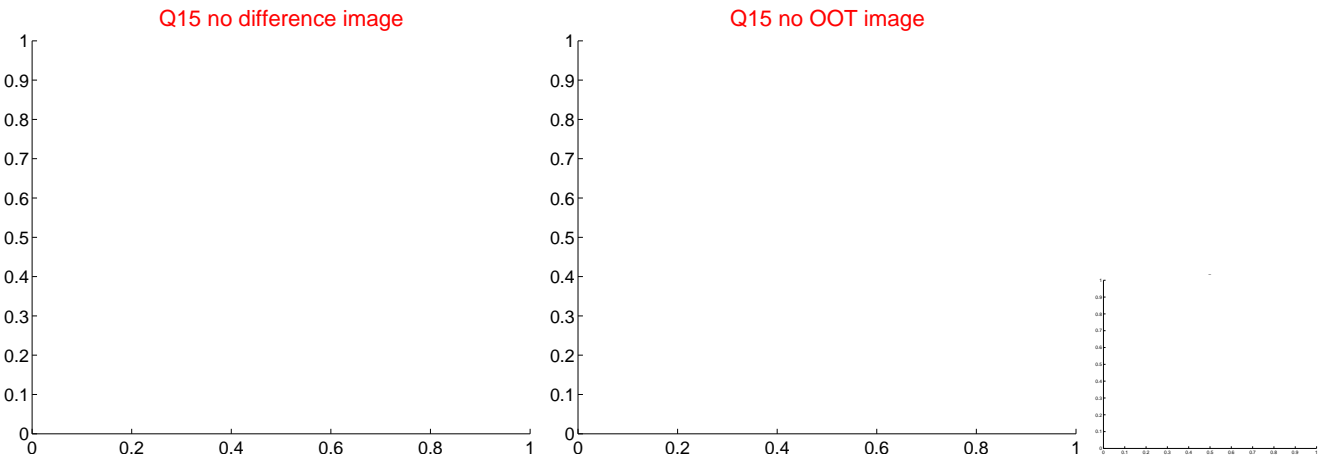
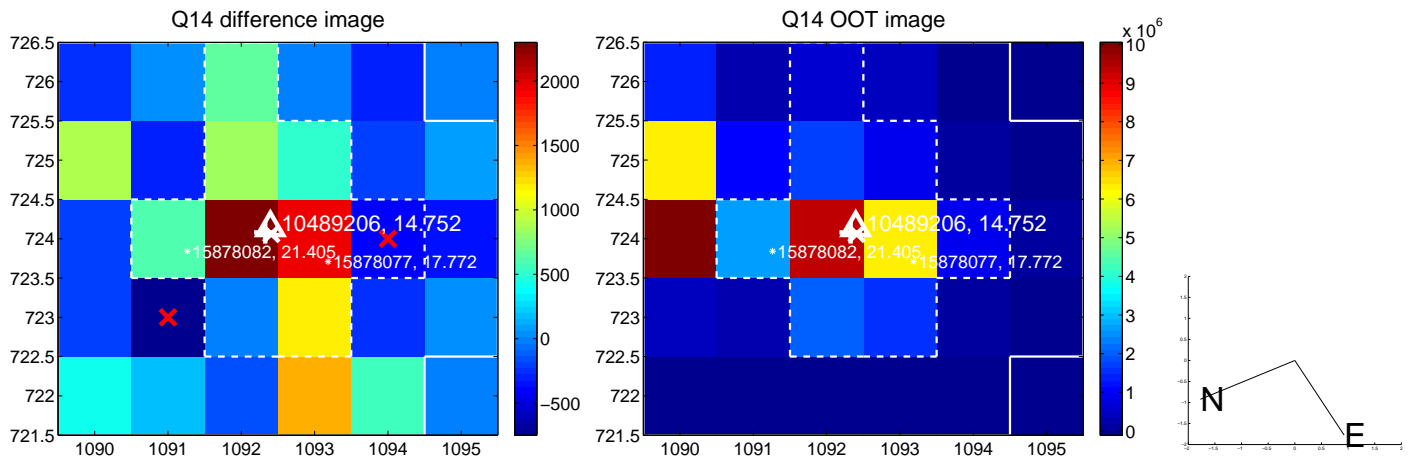
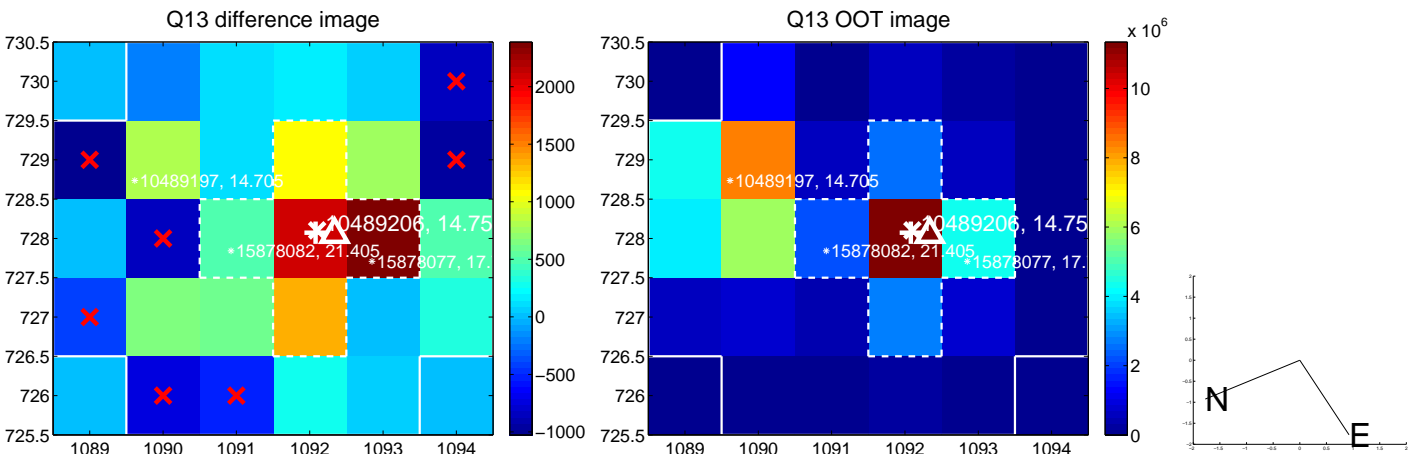
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



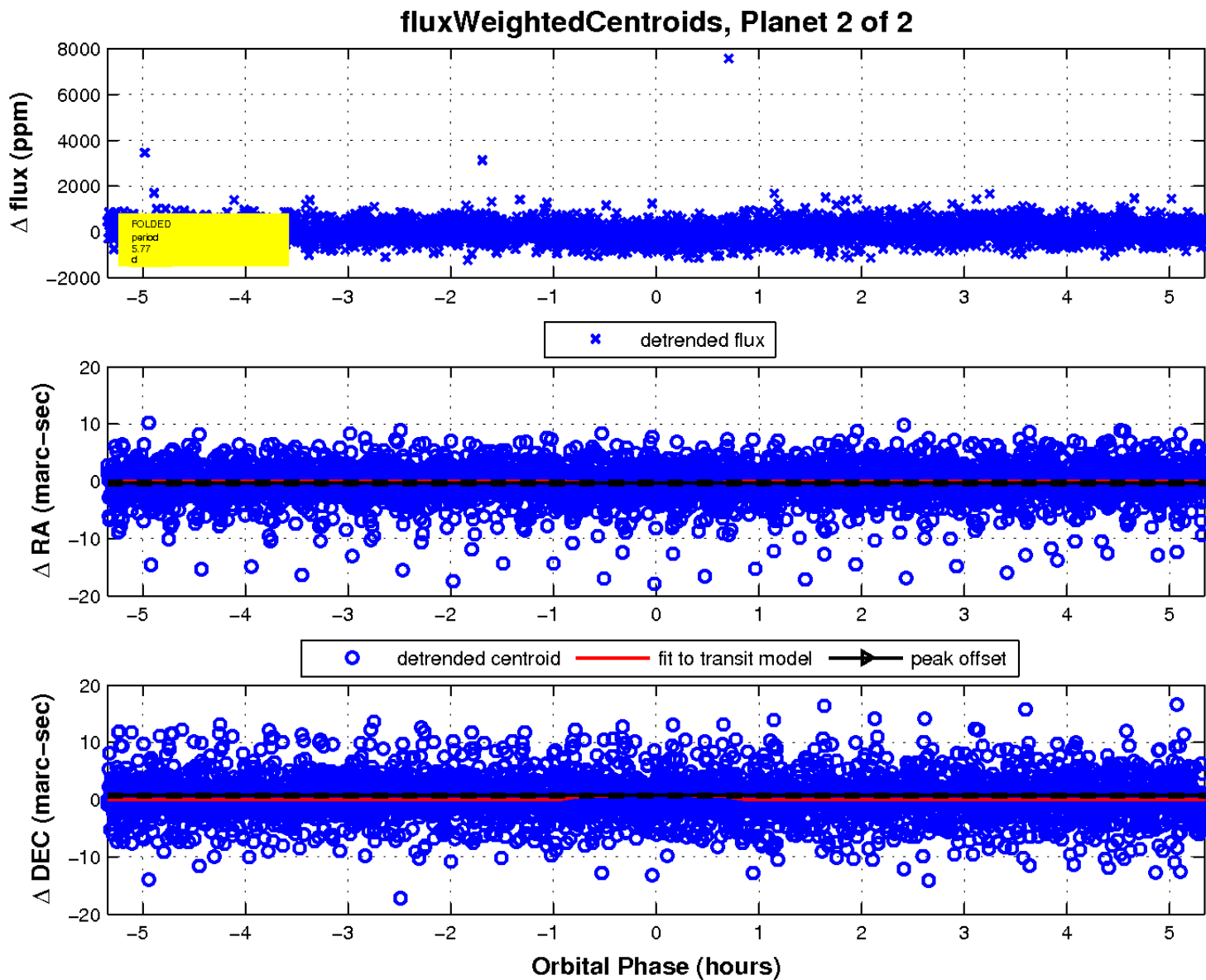
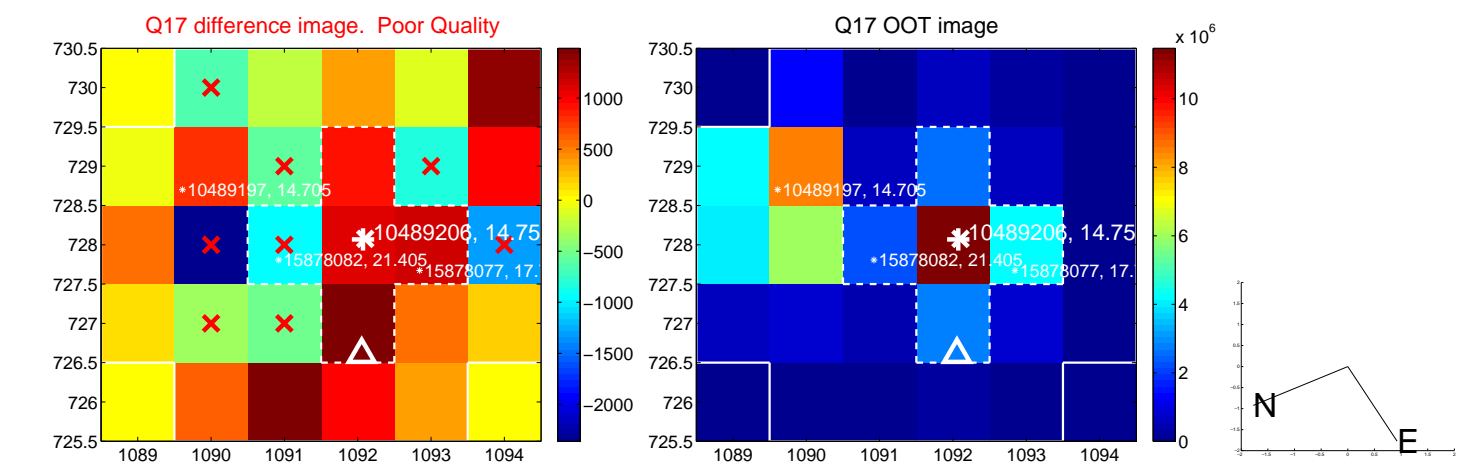
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

