

KIC 010139691

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})
010139691-01	OBS	No	2.260864	131.743758	52.6	6.775	12.8	14.8	2.72	7071	2.75	10645.11
010139691-02	OBS	No	2.259896	133.107129	8.6	16.762	11.9	4.1	2.72	7071	0.81	10651.19

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010139691-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_ALT
010139691-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

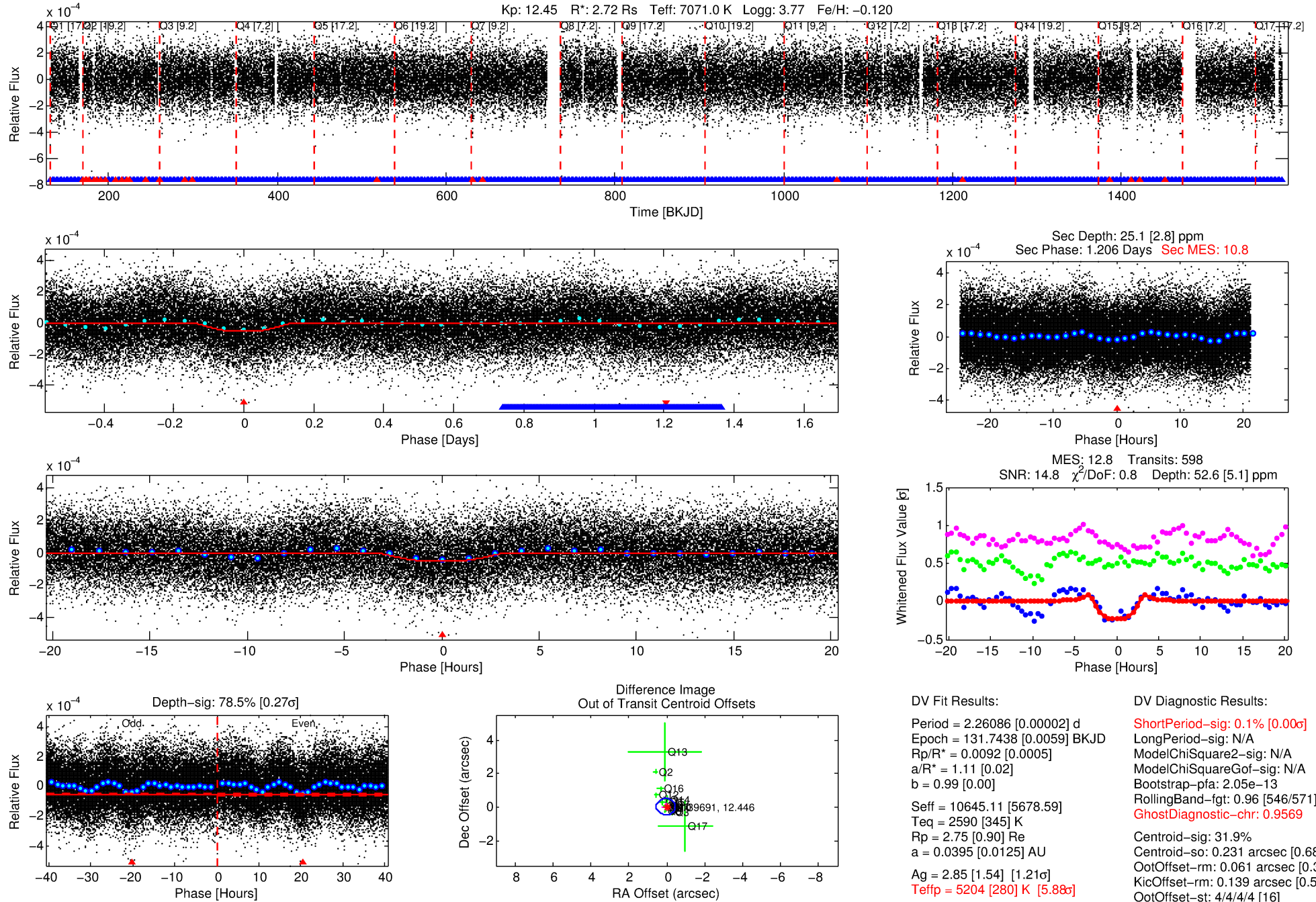
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010139691-01

No Significant Match Found

DV One-Page Summary

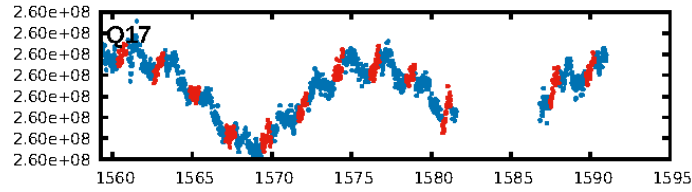
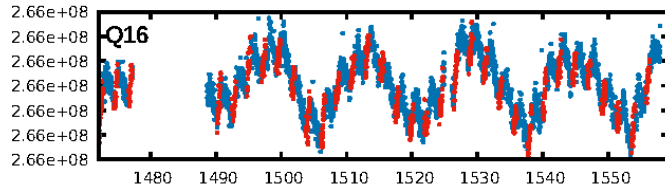
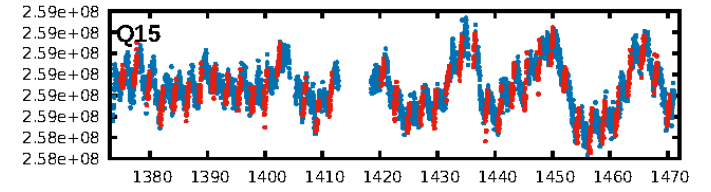
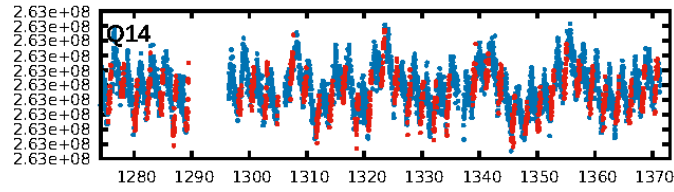
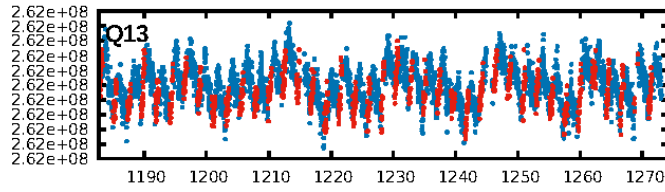
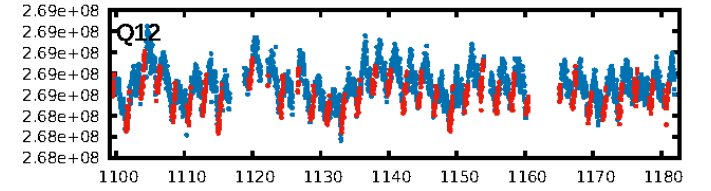
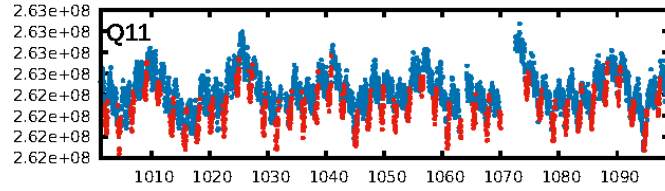
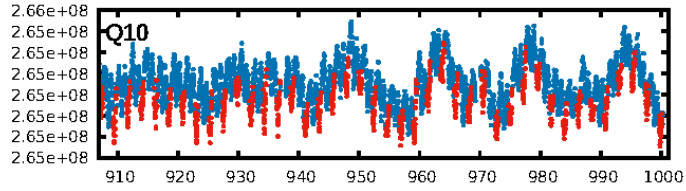
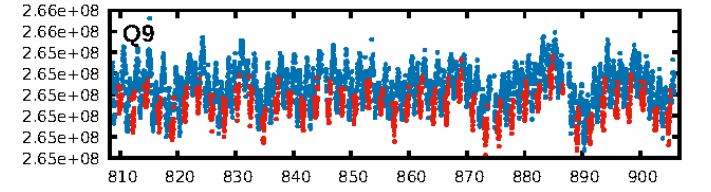
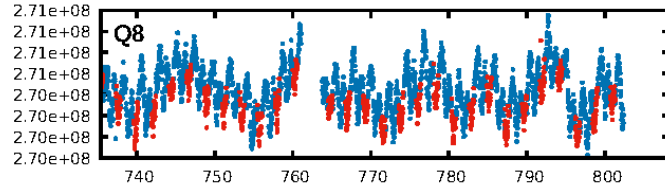
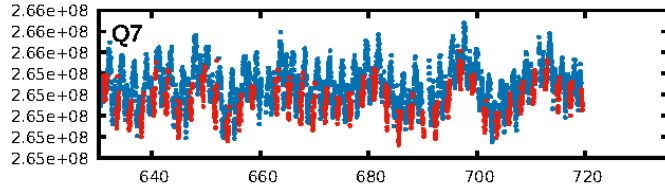
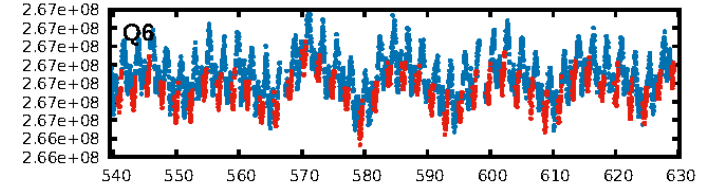
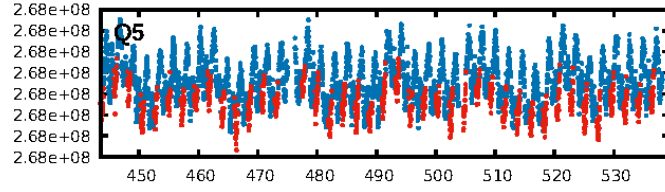
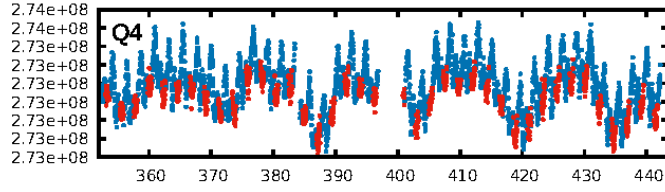
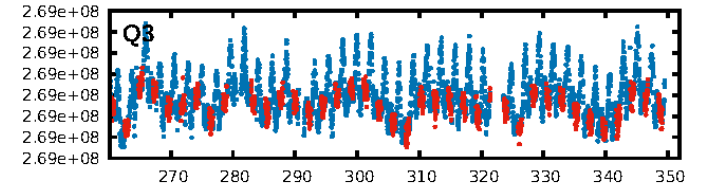
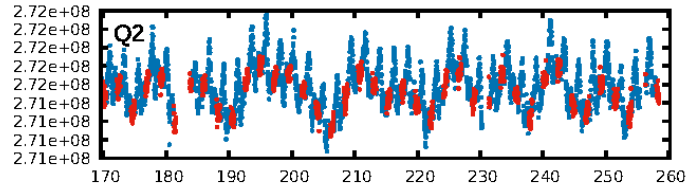
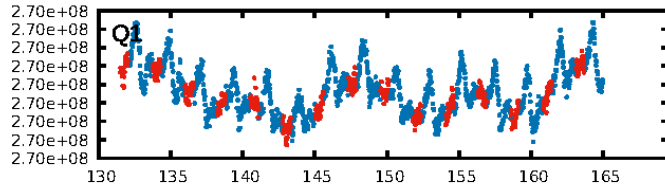
KIC: 10139691 Candidate: 1 of 2 Period: 2.261 d



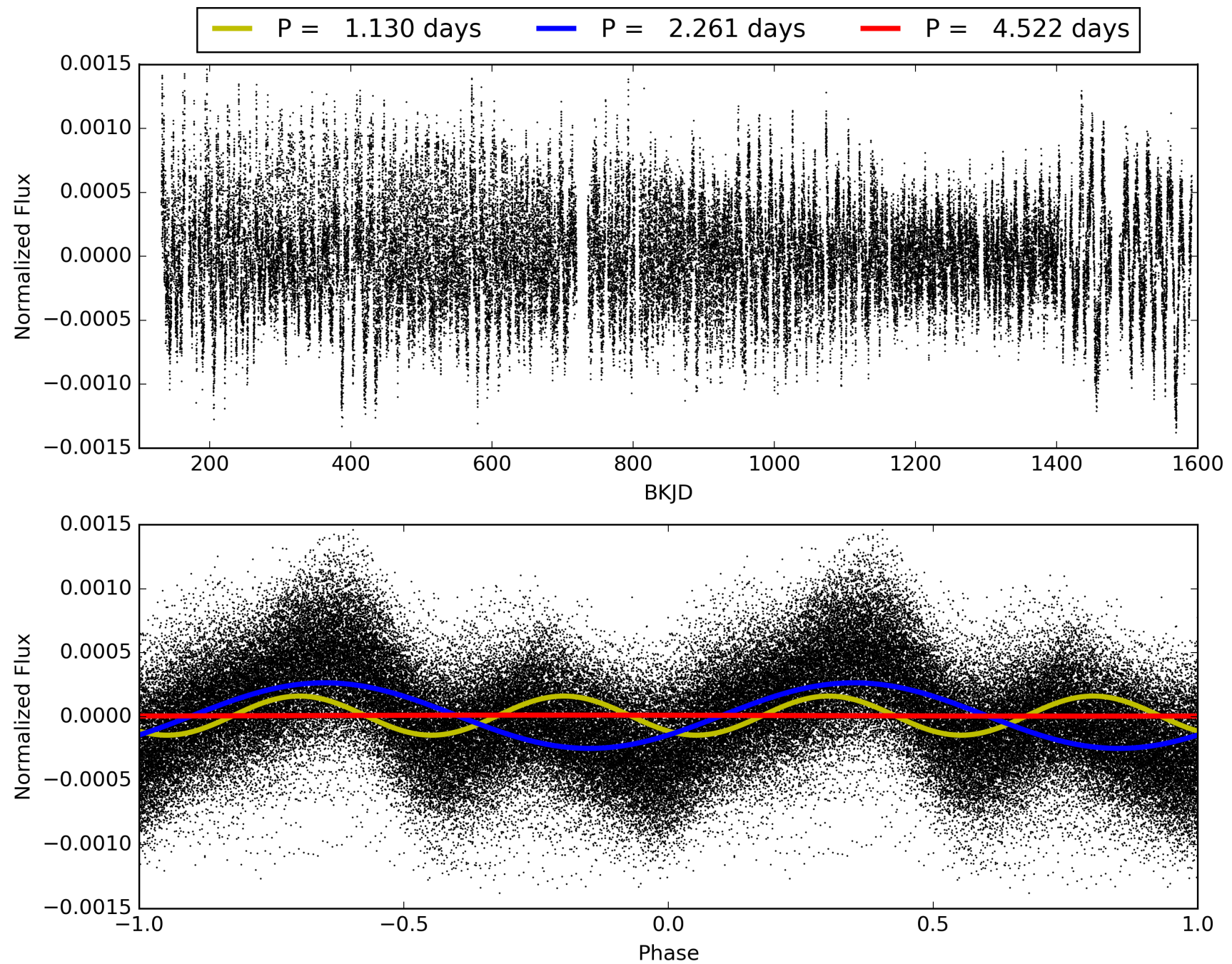
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:44:14 Z

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

TCE 010139691-01, PDC Light Curves

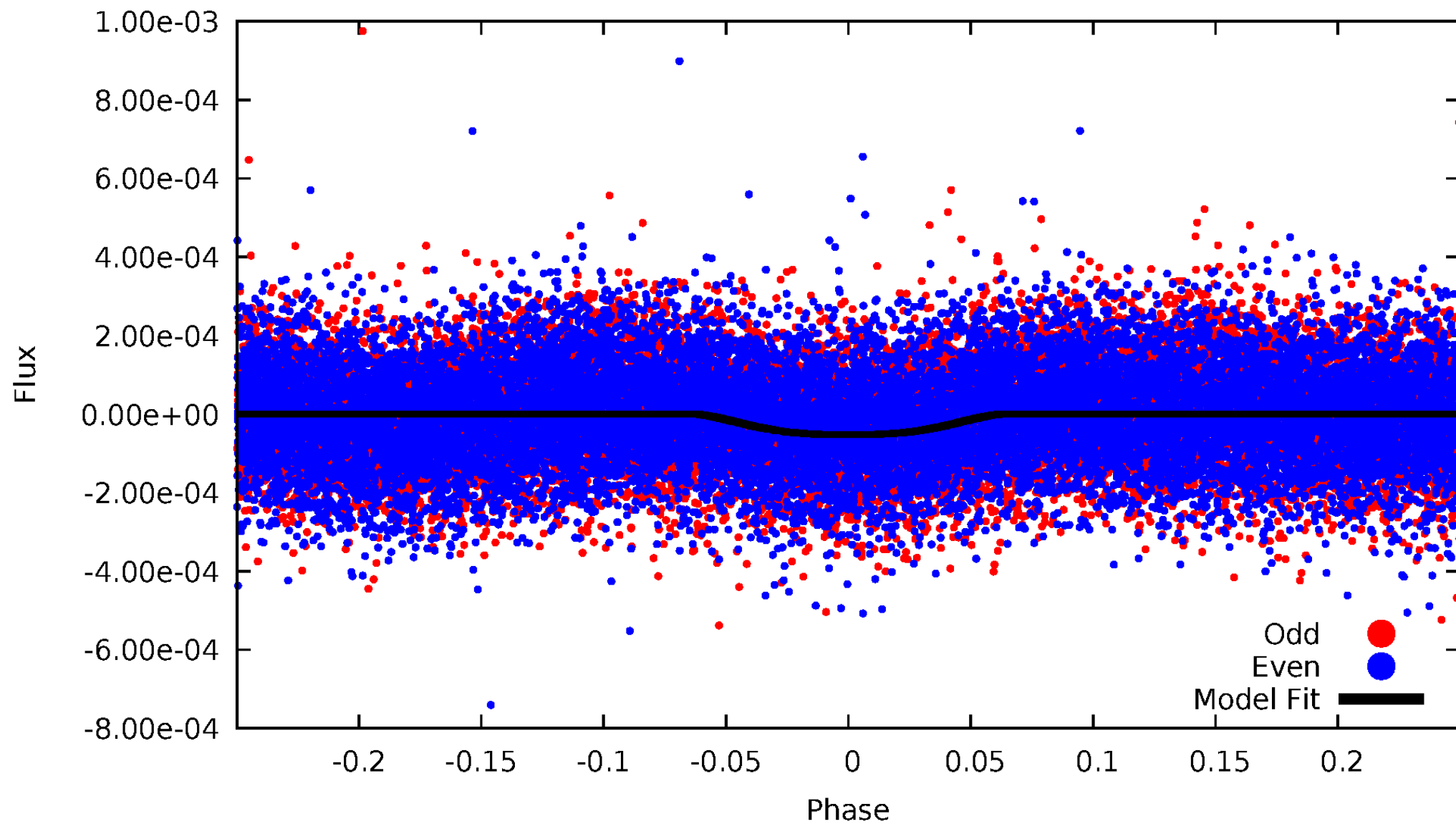


TCE 010139691-01



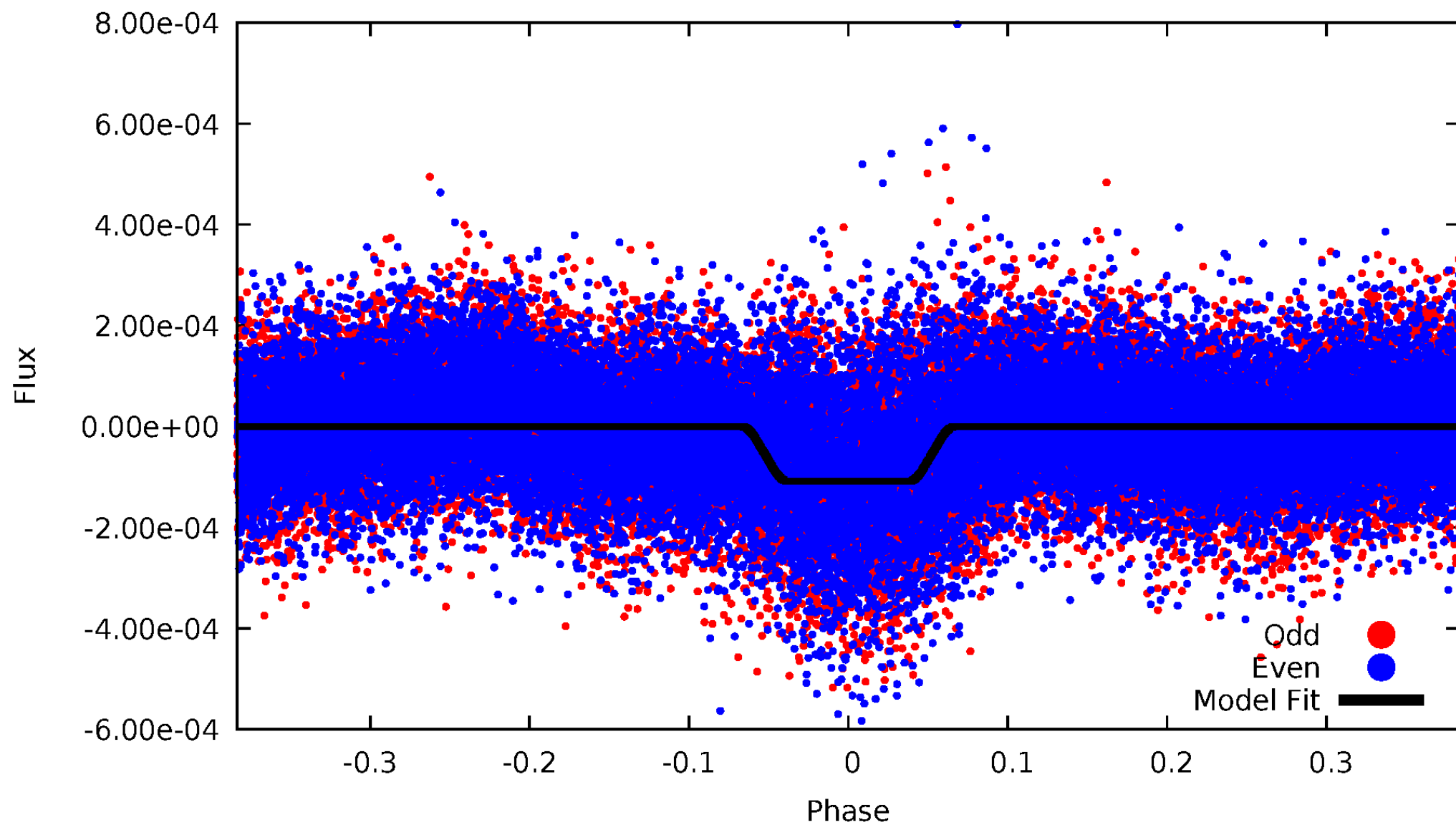
DV Odd/Even

TCE 010139691-01

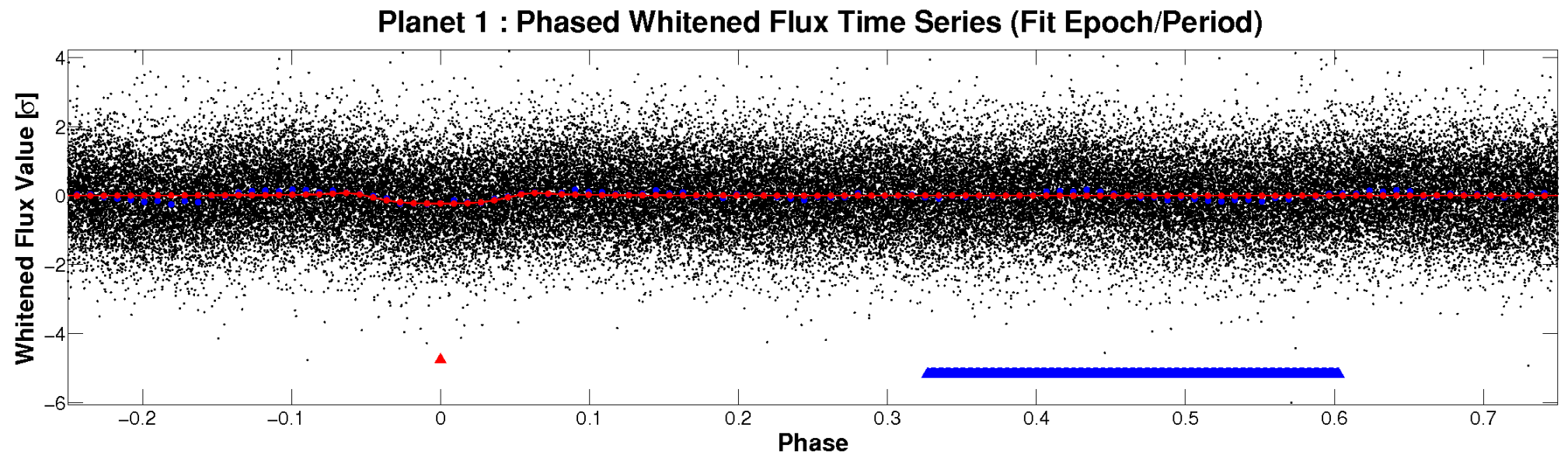
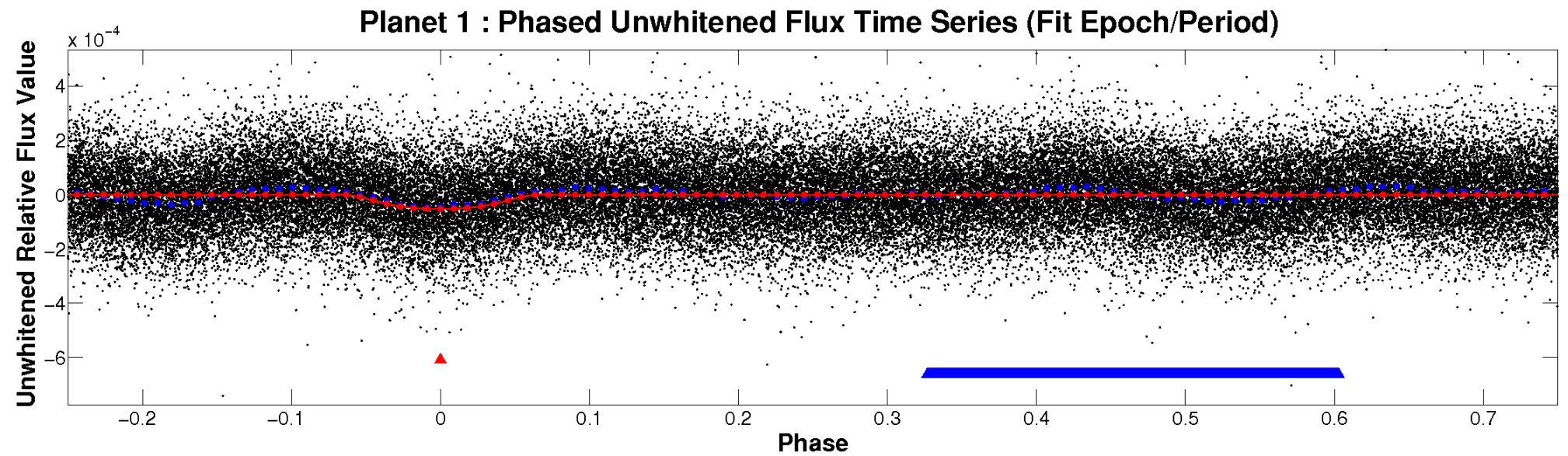


ALT Odd/Even

TCE 010139691-01

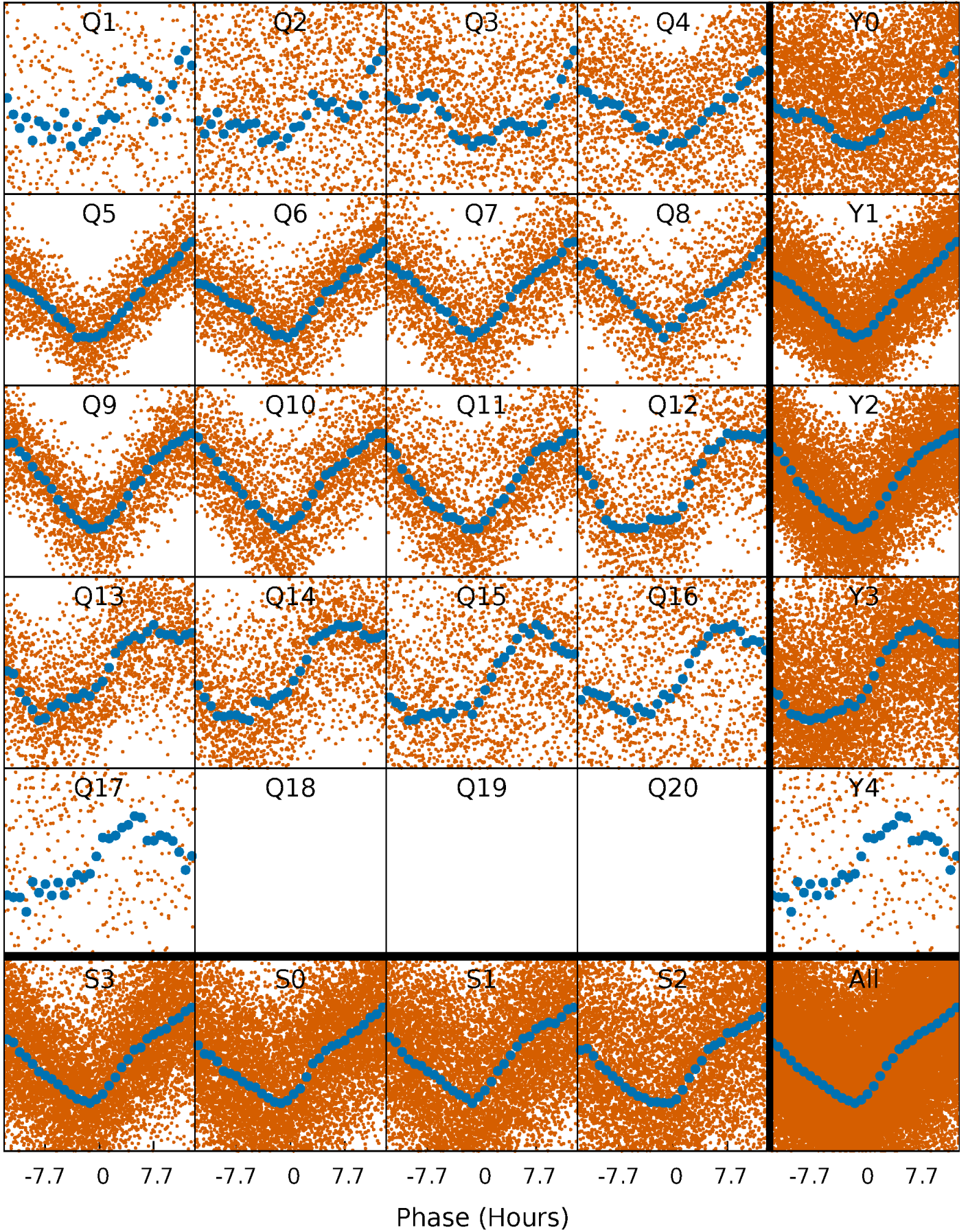


Non-Whitened Vs. Whitened Light Curve



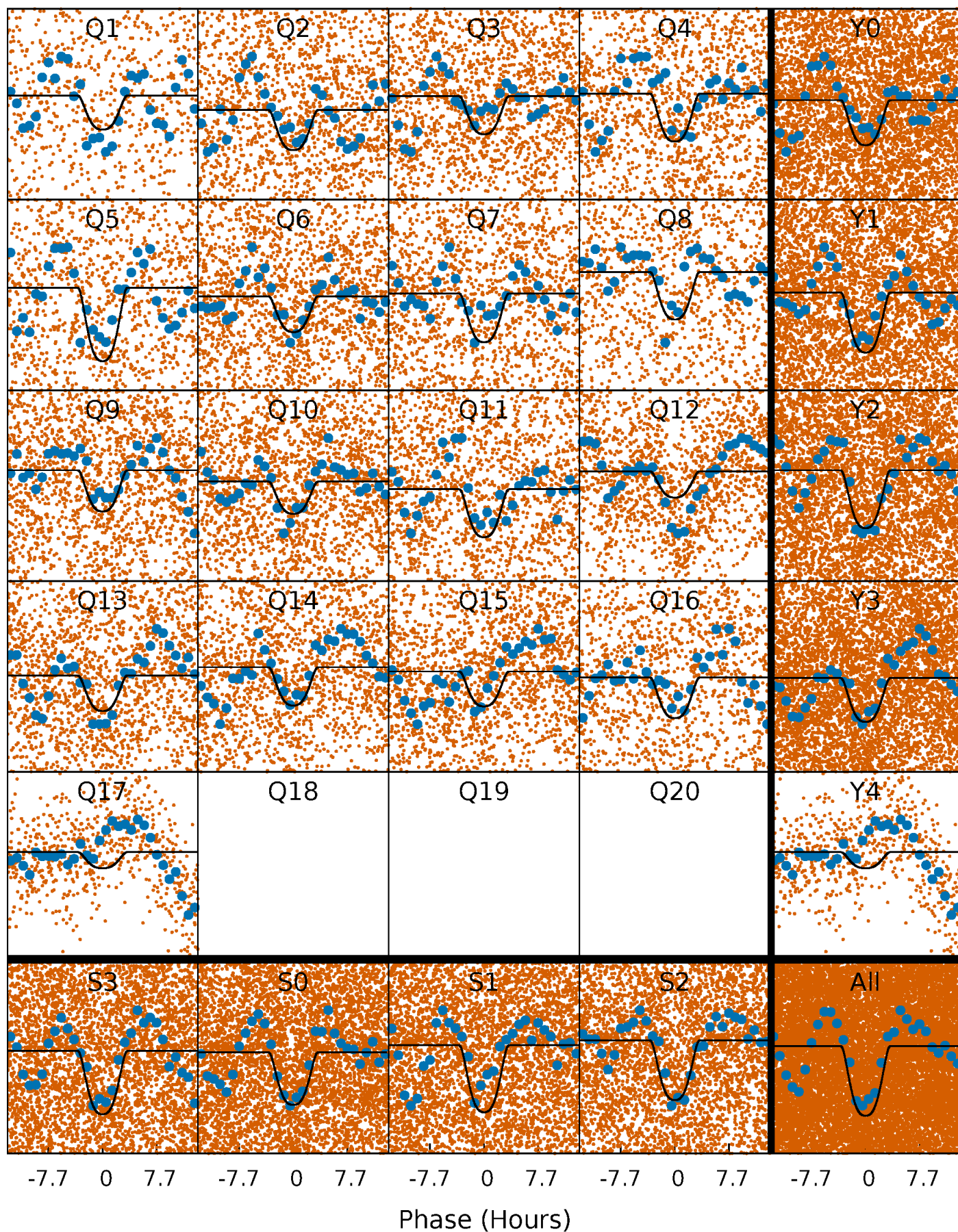
PDC Quarter-Phased Transit Curves

TCE 010139691-01 P= 2.260864 Days $T_0=131.743758$ (BKJD)



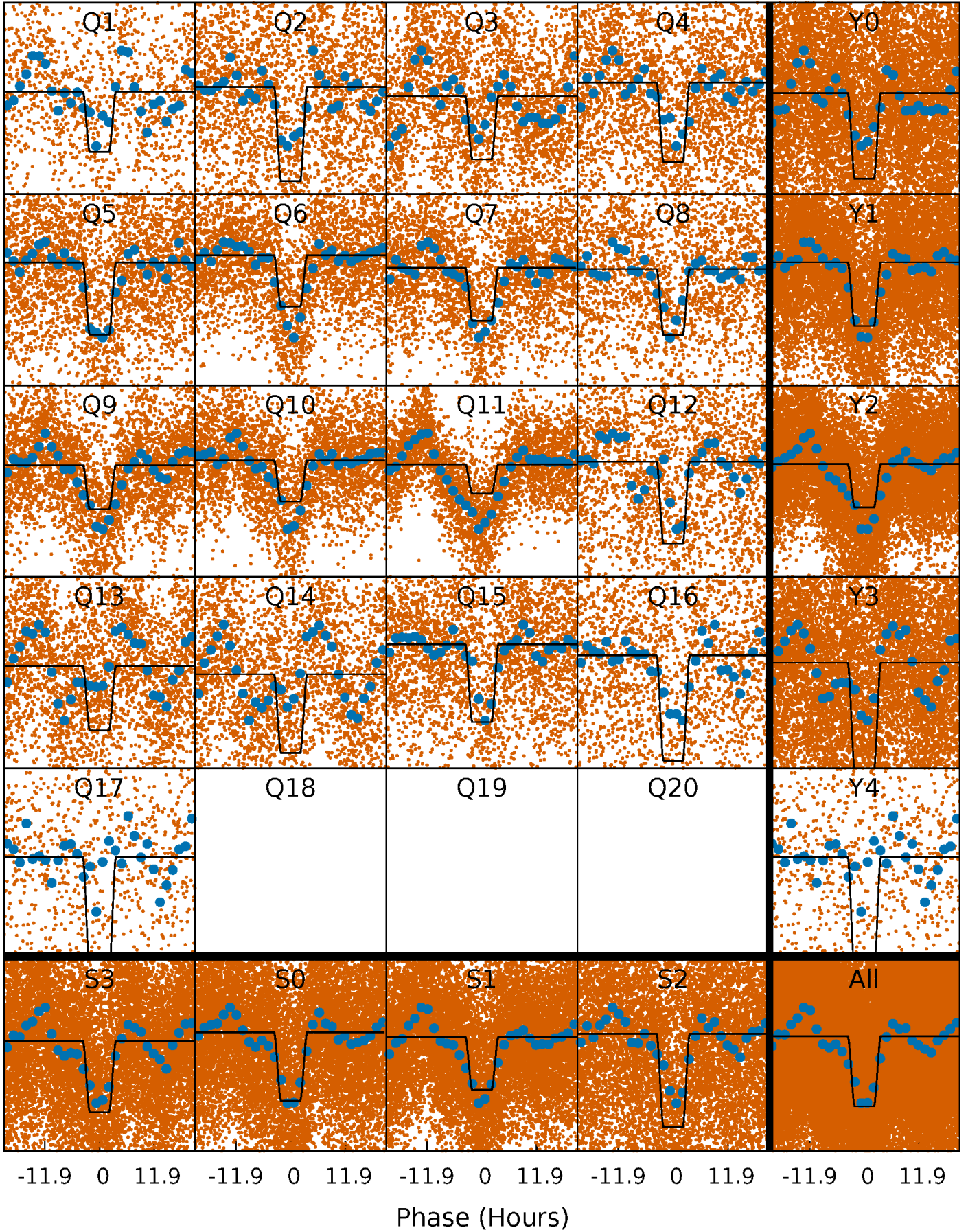
DV Quarter-Phased Transit Curves

TCE 010139691-01 P= 2.260864 Days $T_0=131.743758$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

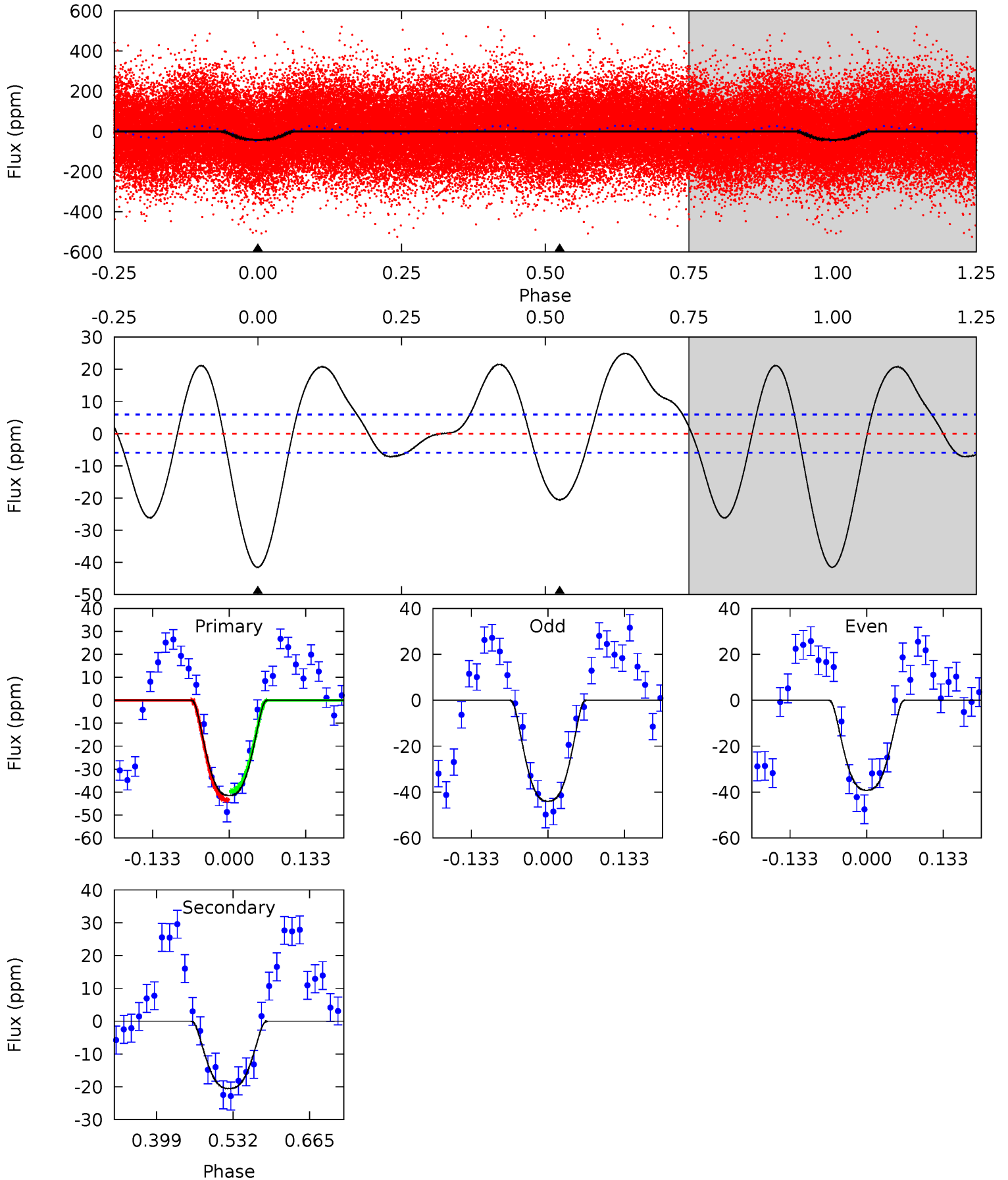
TCE 010139691-01 P= 2.260884 Days $T_0=131.696778$ (BKJD)



DV Model-Shift Uniqueness Test

010139691-01, P = 2.260864 Days, E = 129.482894 Days

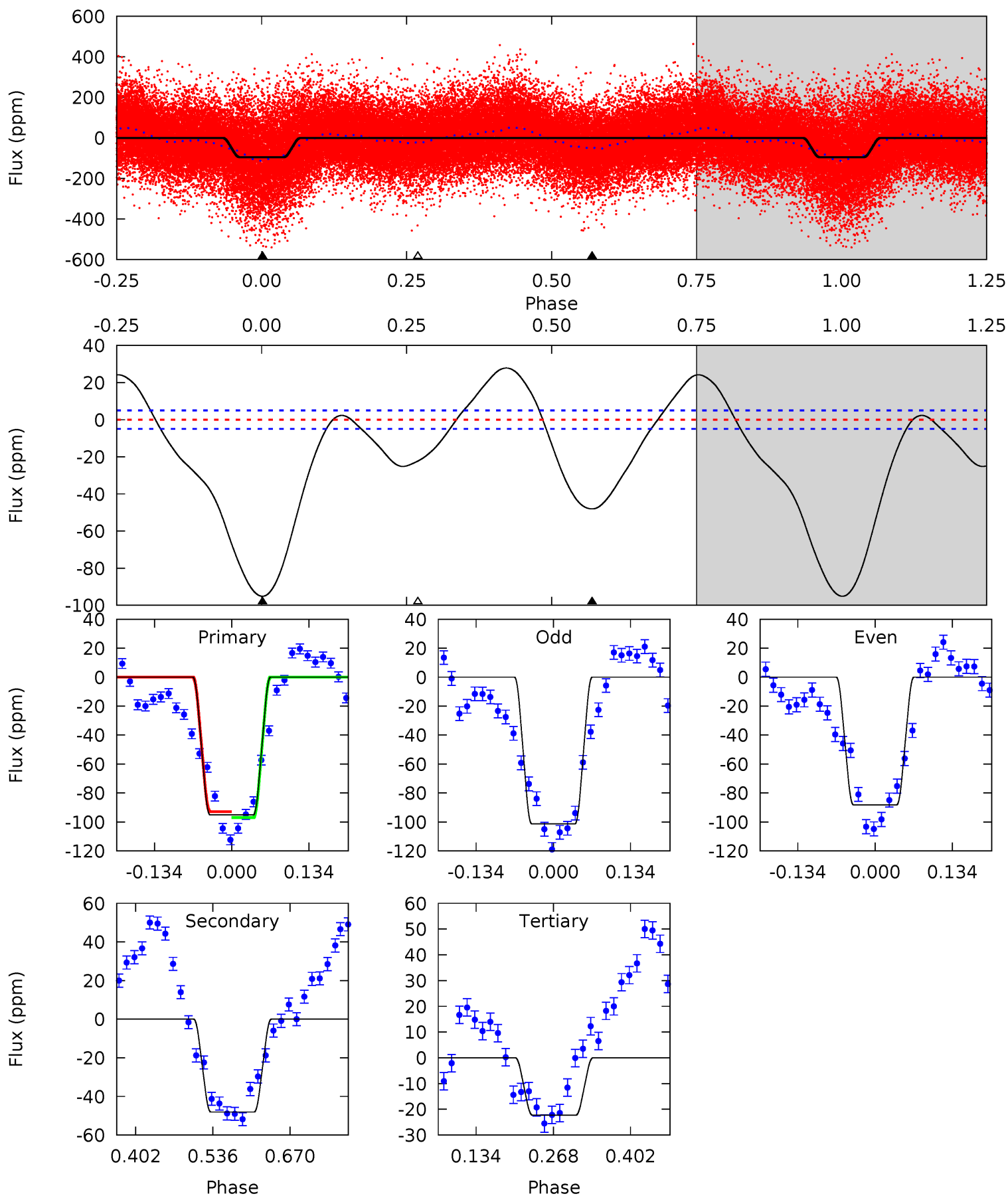
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	15.5	0	0	4.50	1.50	8.63	31.4	31.4	15.5	15.5	1.81	0.98	0.38	1.45



Alt Model-Shift Uniqueness Test

010139691-01, P = 2.260884 Days, E = 129.435894 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
86.3	43.6	20.2	0	4.50	1.50	15.6	66.1	86.3	23.4	43.6	5.94	1.06	0.23	1.85



Stellar Parameters For KIC 010139691

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7071^{+190}_{-253}	$3.774^{+0.304}_{-0.095}$	$-0.120^{+0.300}_{-0.300}$	$2.723^{+0.473}_{-0.879}$	$1.607^{+0.221}_{-0.246}$	$0.112^{+0.213}_{-0.033}$
	+3%/-4%	+8%/-3%	+250%/-250%	+17%/-32%	+14%/-15%	+190%/-30%
Source	PHO1	FLK73	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 010139691-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 1	$2.65^{+0.39}_{-0.51}$	3552^{+211}_{-343}	4867^{+206}_{-185}	$2.540^{+1.233}_{-0.569}$
Alt.	-48 ± 1	$2.98^{+0.43}_{-0.50}$	3526^{+214}_{-288}	5632^{+223}_{-210}	$4.758^{+1.839}_{-1.008}$

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

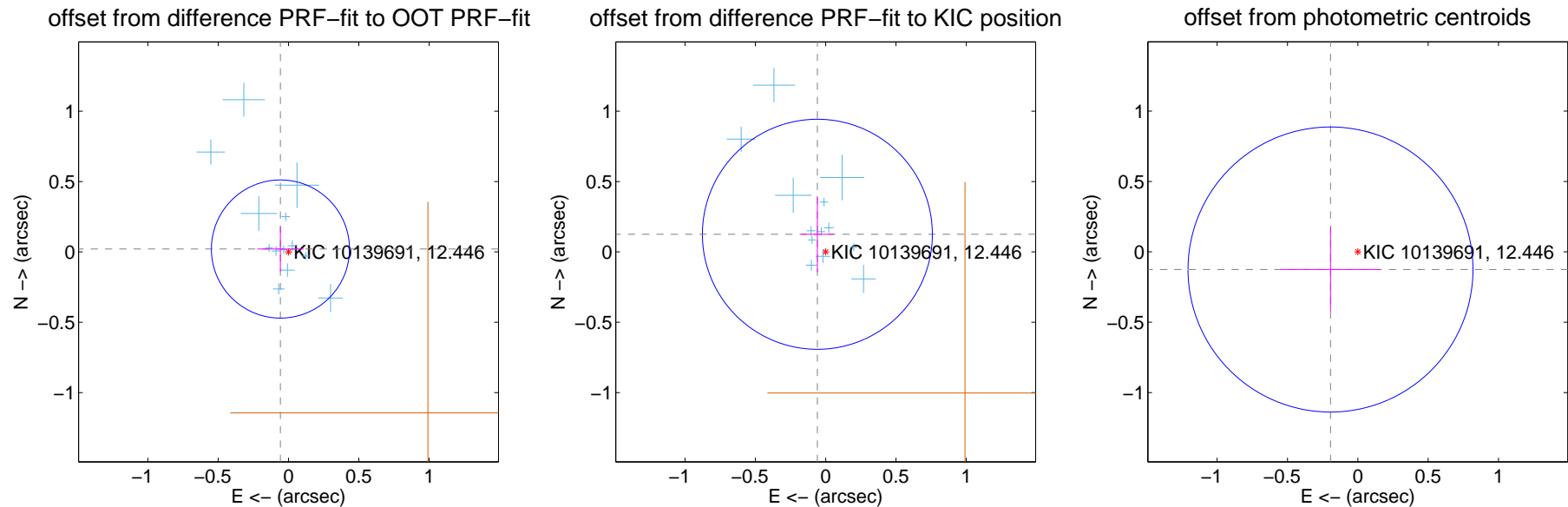
DV Centroid Data

Supplemental centroid analysis for 010139691-01. Kepler magnitude: 12.45. Transit SNR 14.76

There are 14 quarters with good PRF difference image offsets

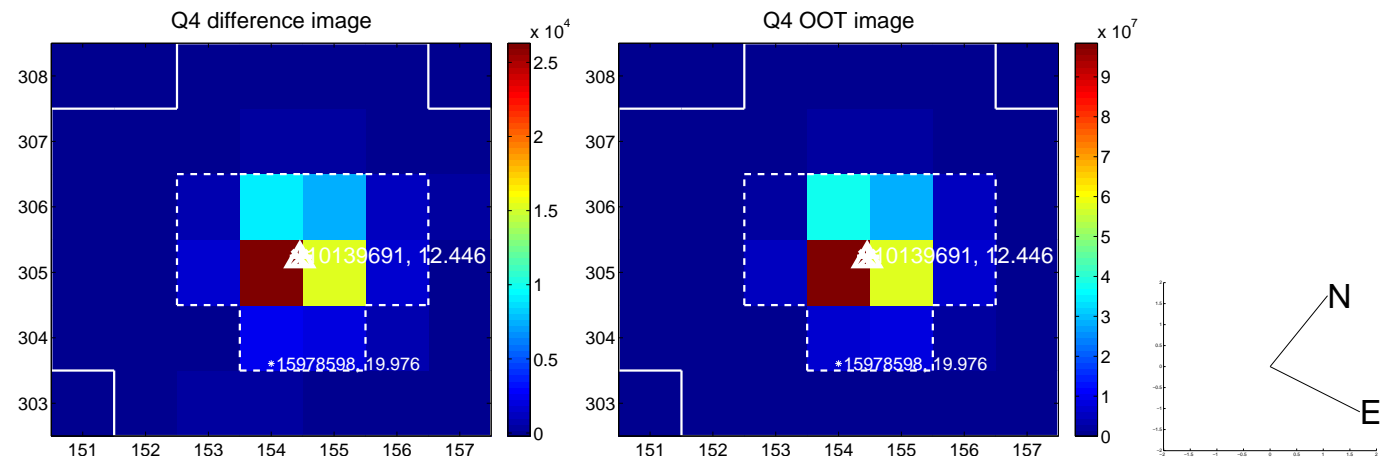
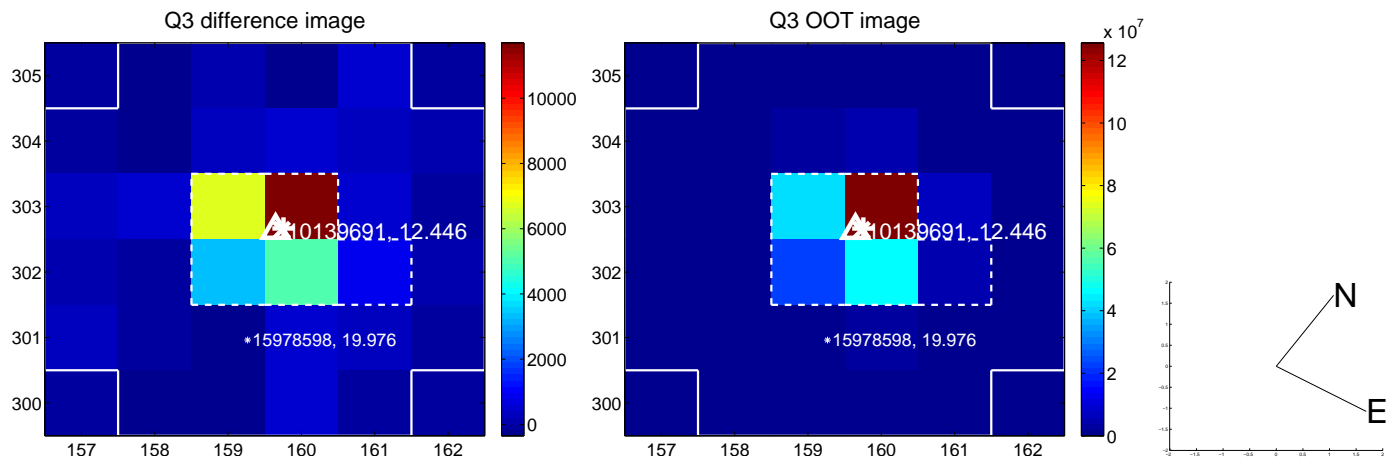
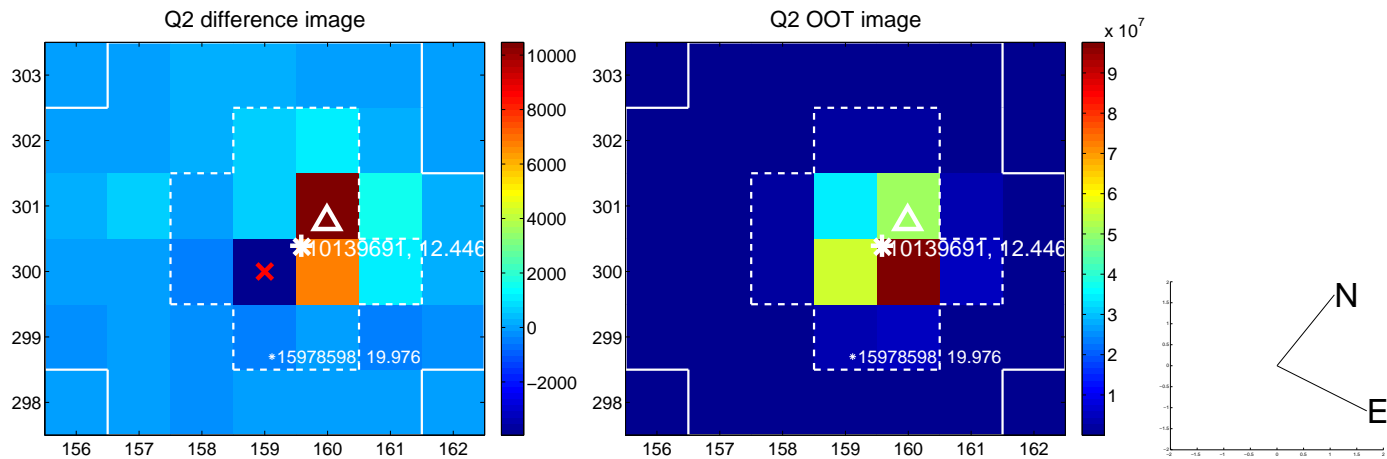
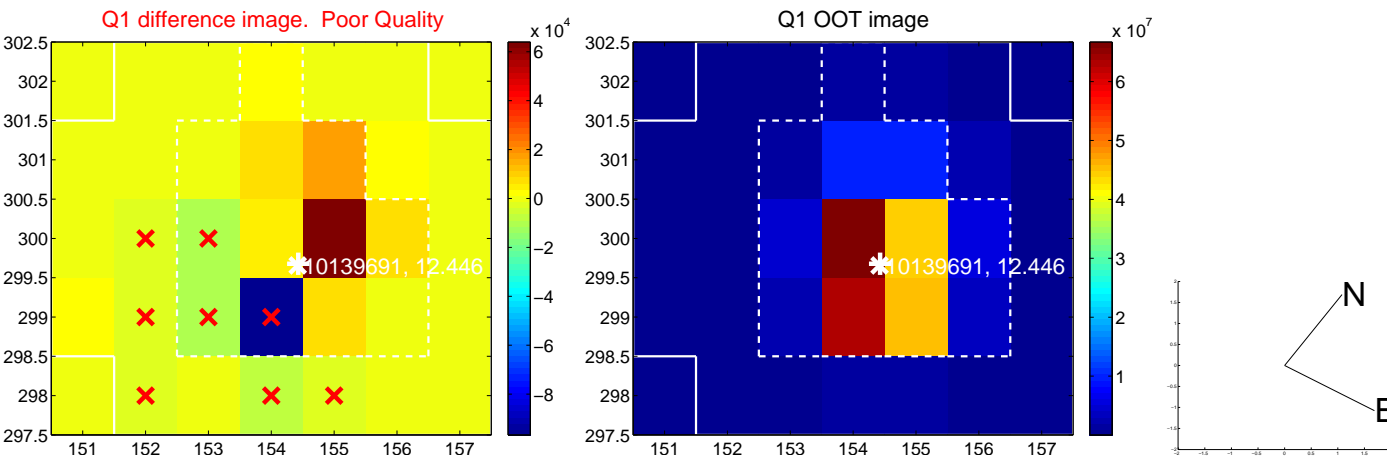
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.061 ± 0.164	0.37	0.057 ± 0.164	0.021 ± 0.159
PRF-fit source offset from KIC position	0.139 ± 0.273	0.51	0.059 ± 0.118	0.125 ± 0.270
photometric centroid source offset	0.23 ± 0.34	0.68	0.19 ± 0.35	-0.13 ± 0.30

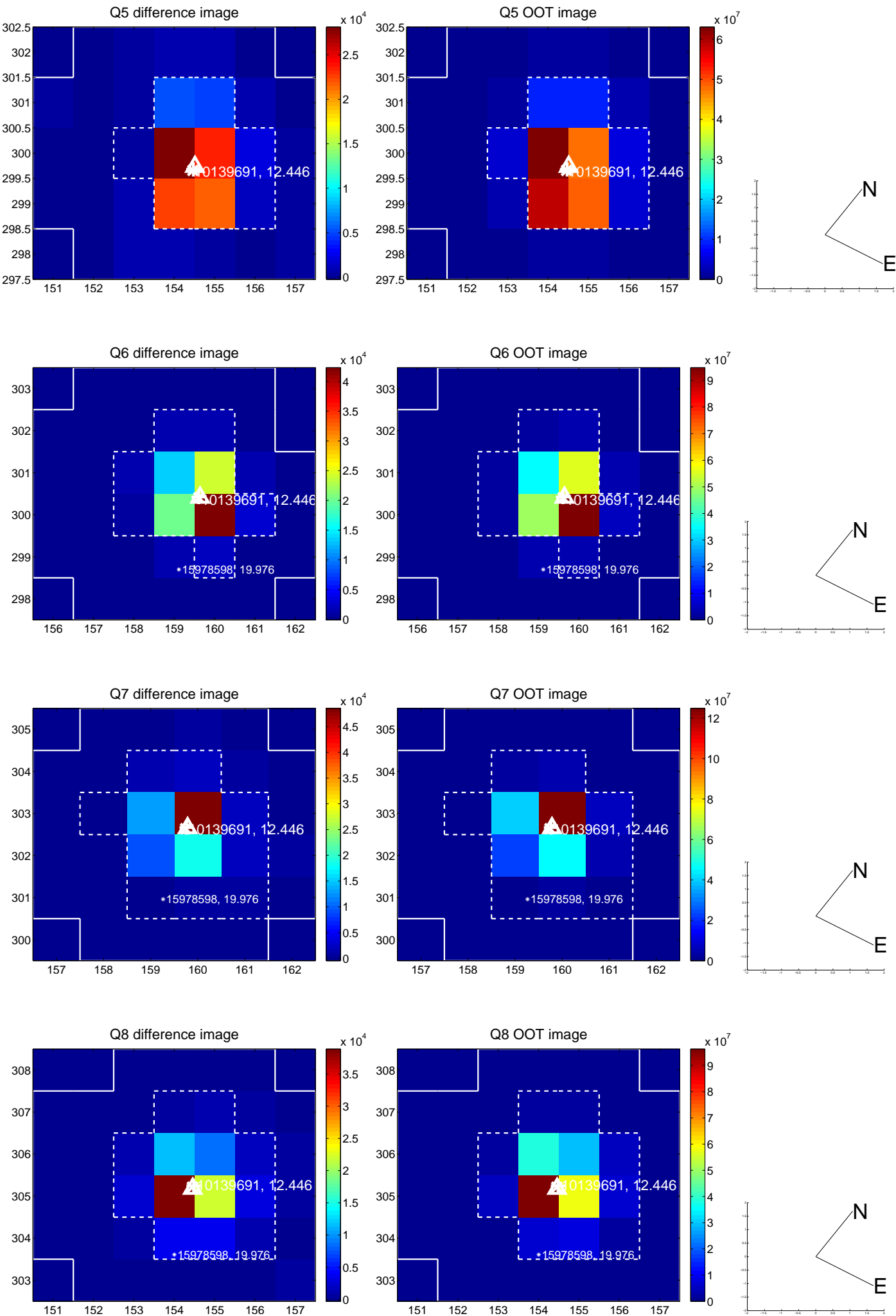


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

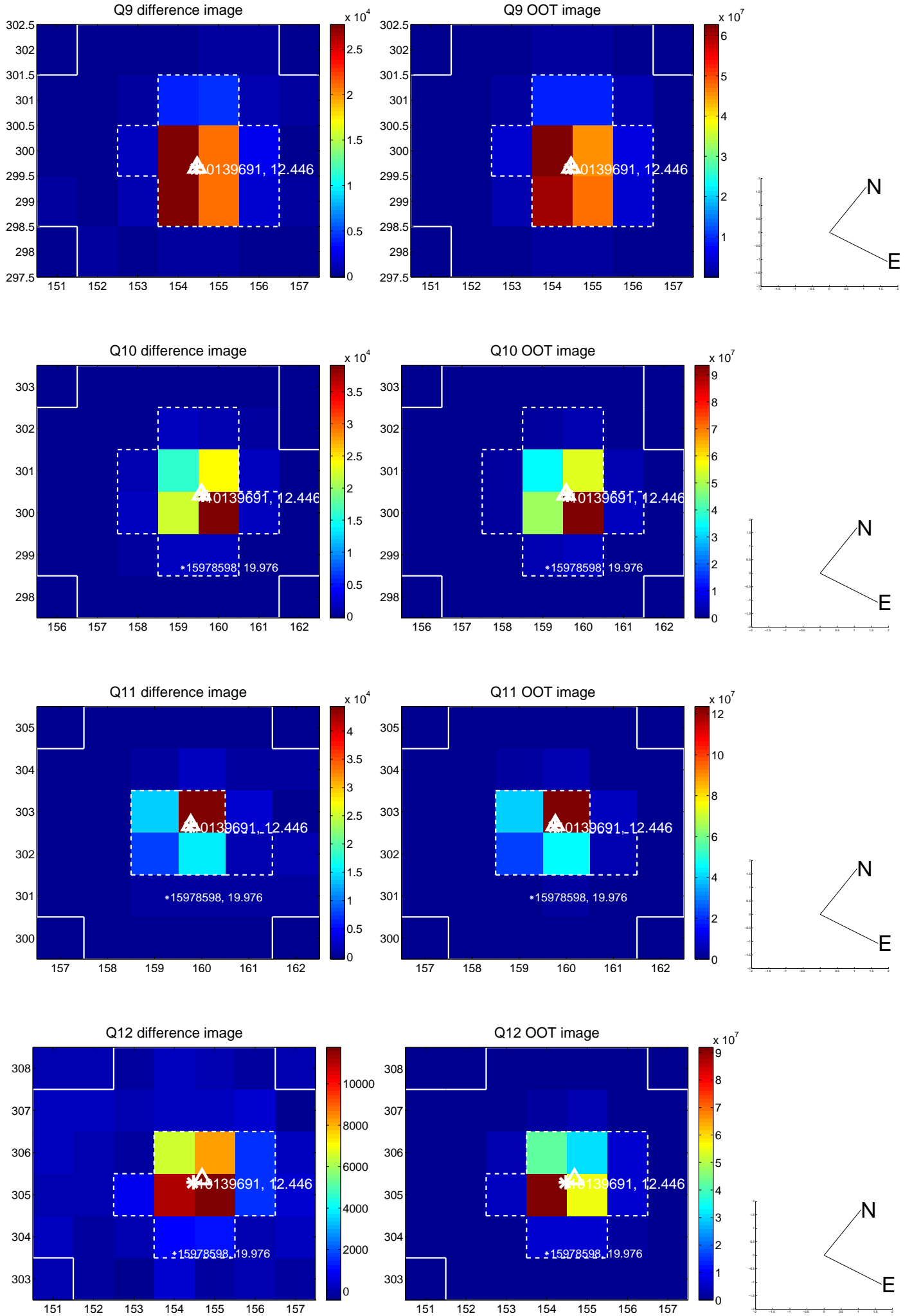
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



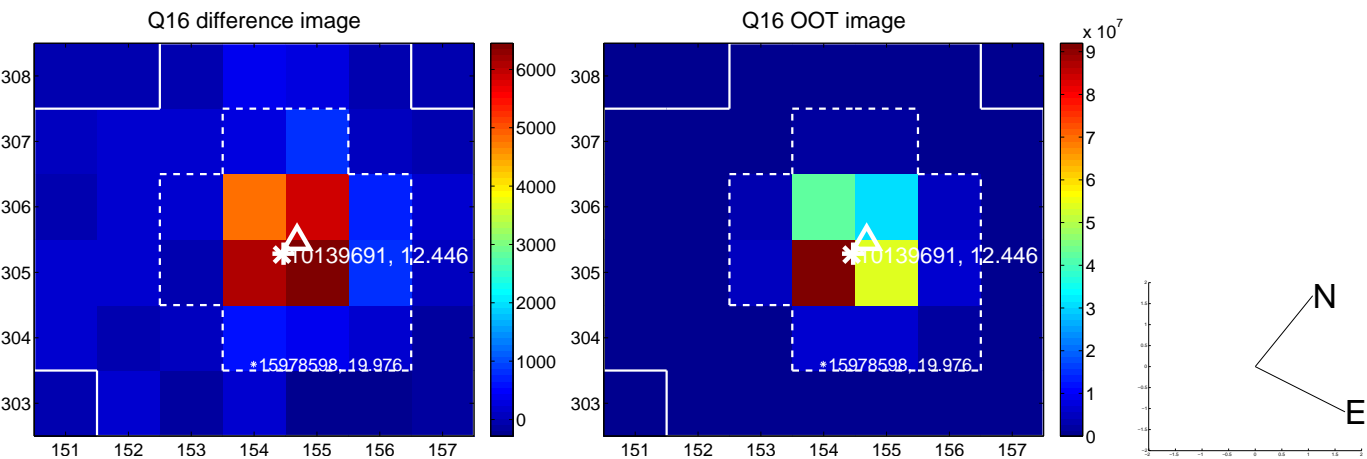
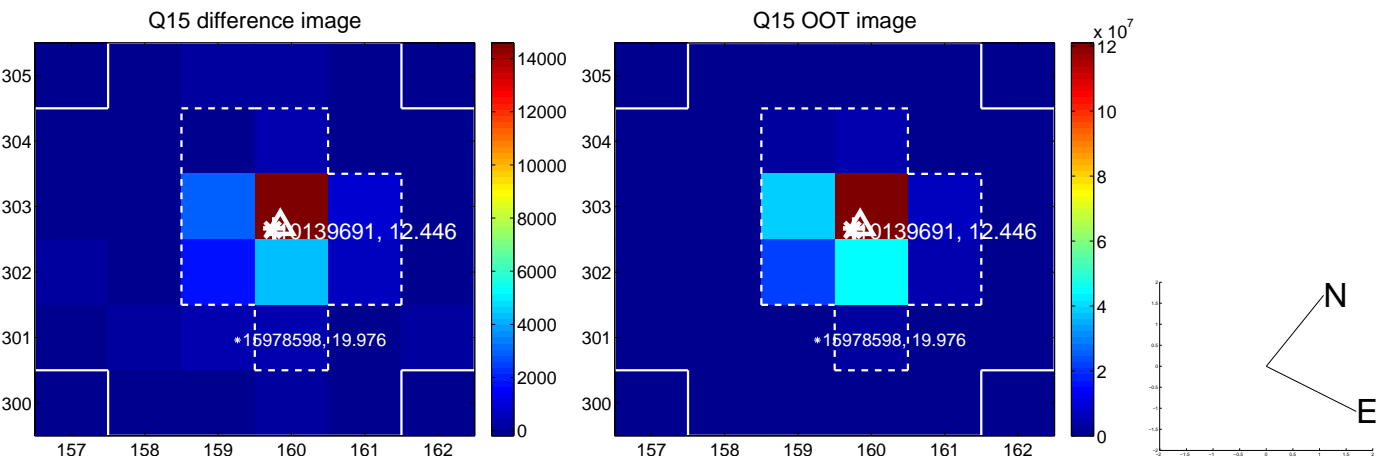
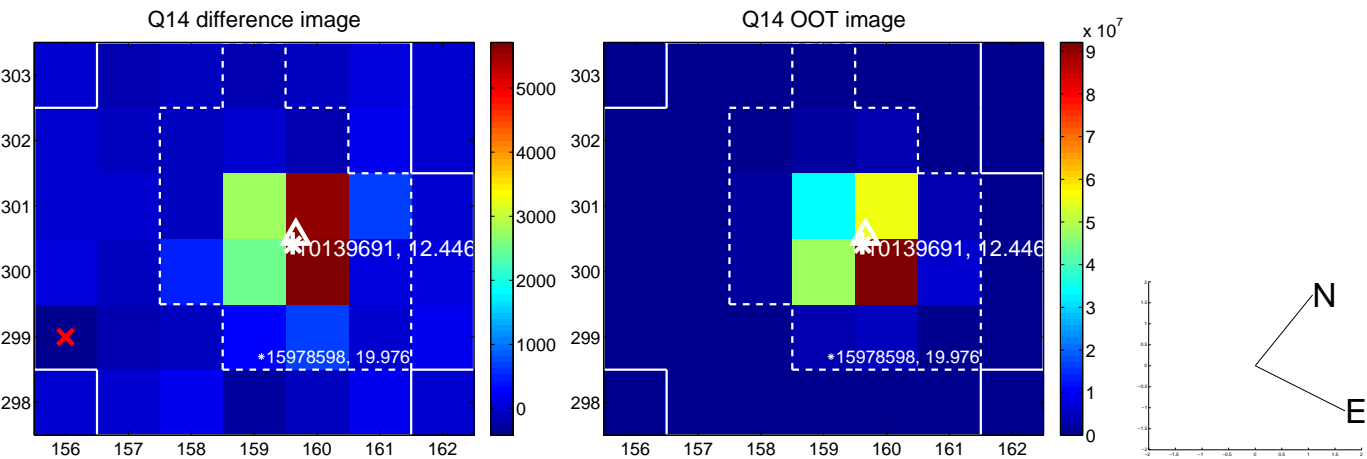
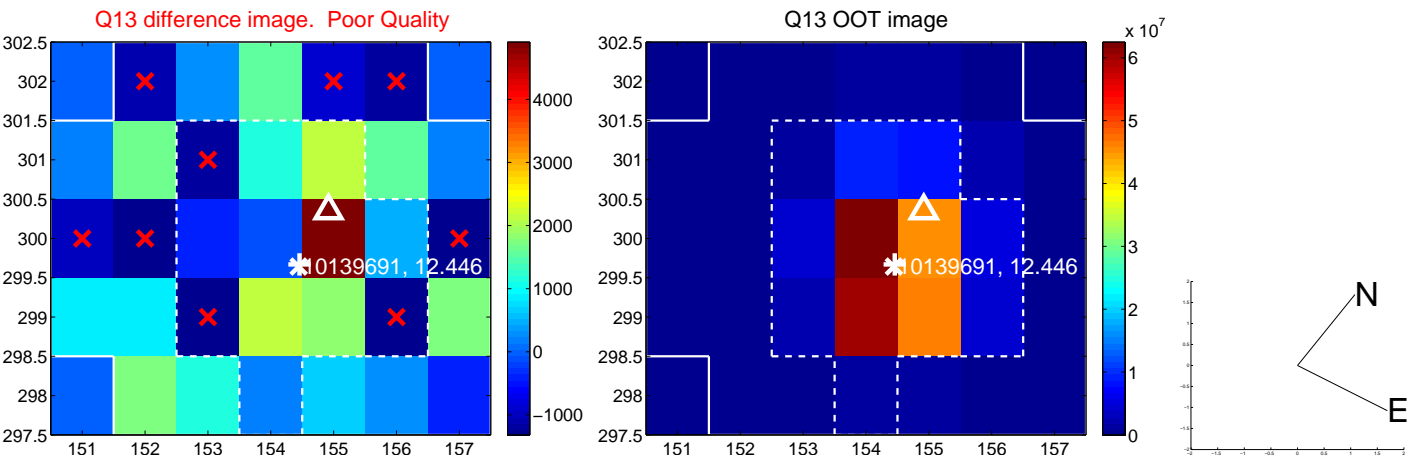
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



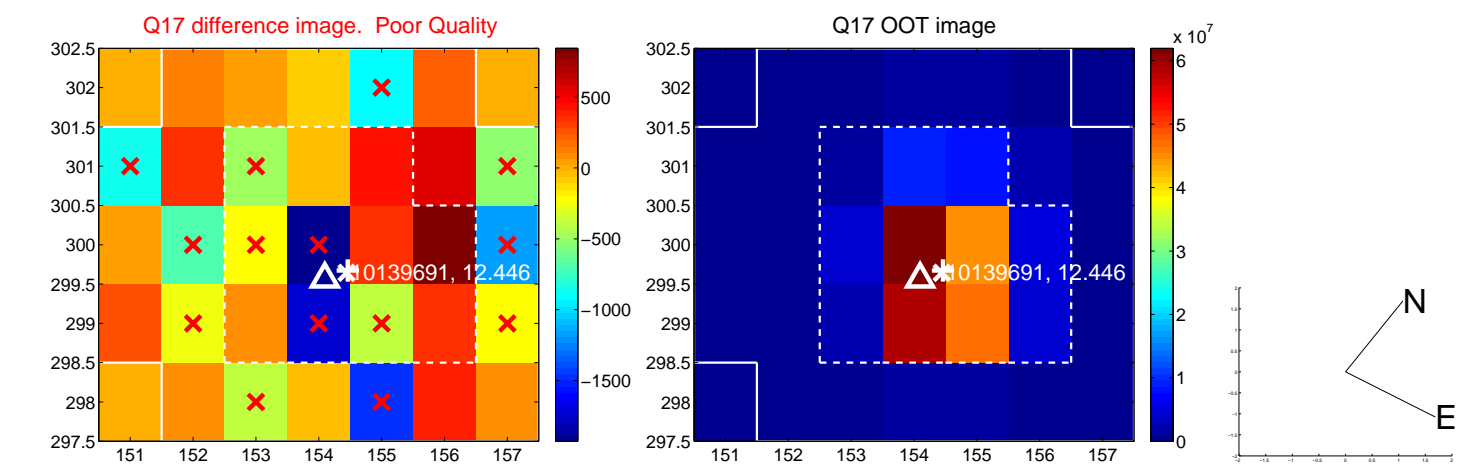
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



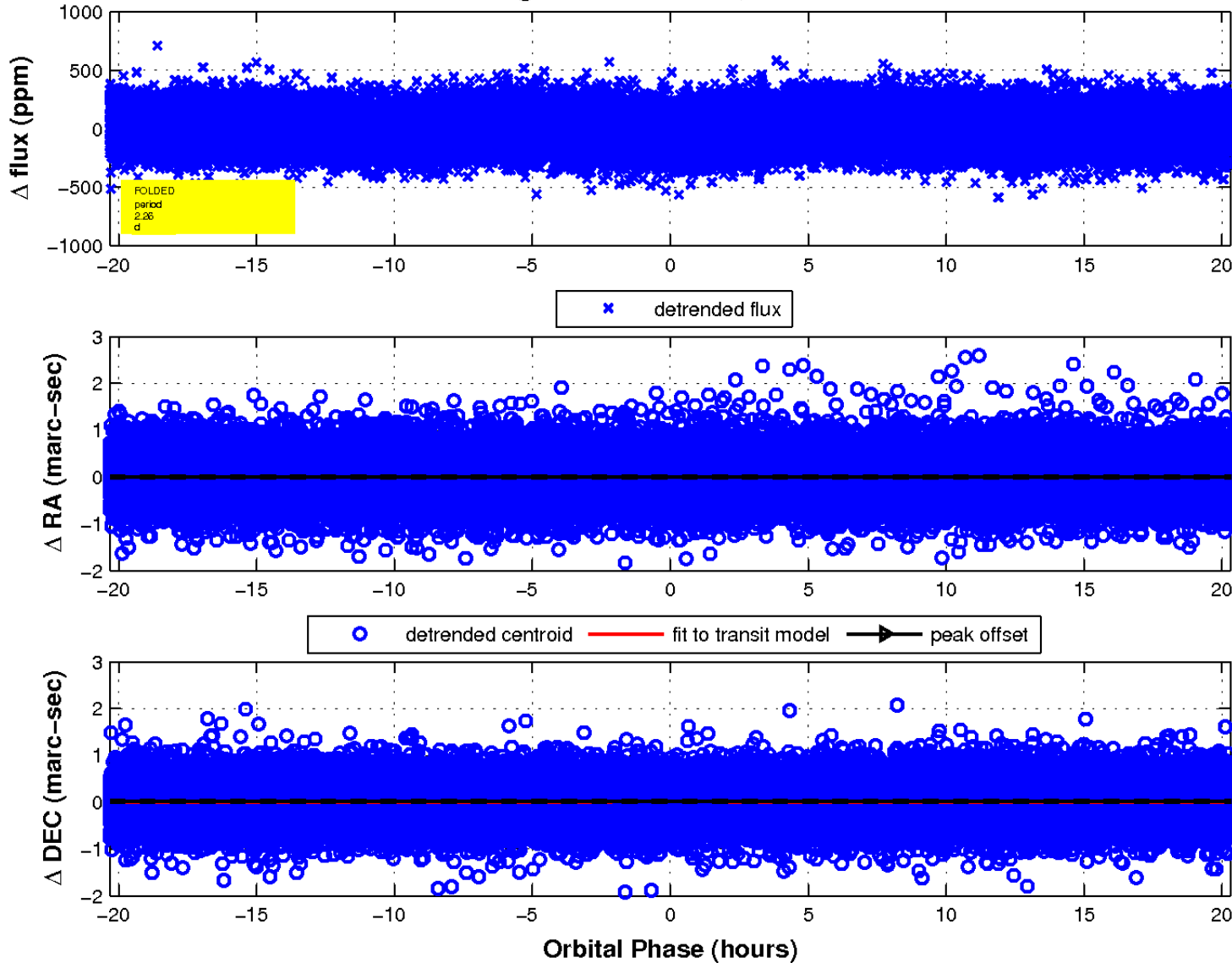
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



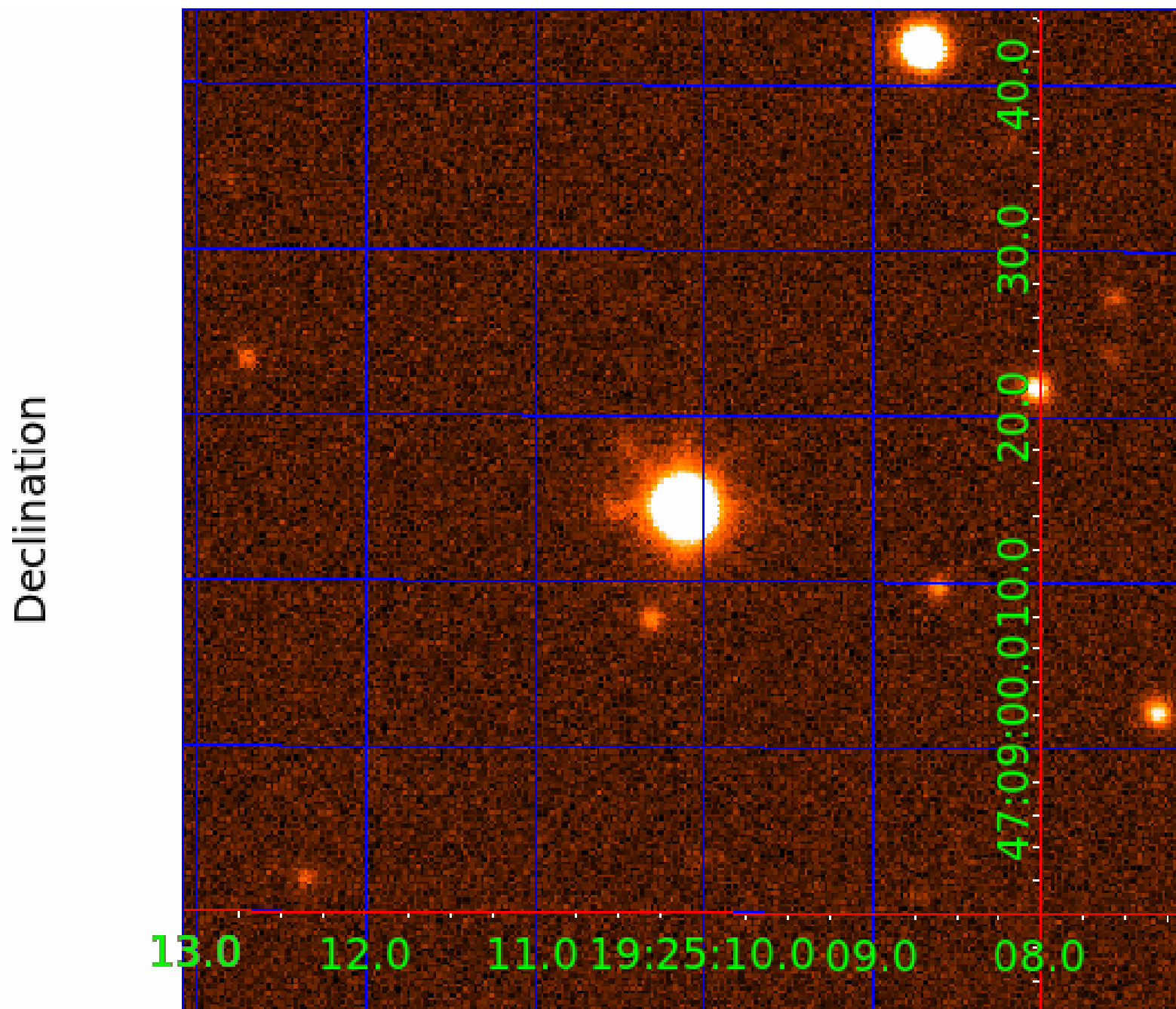
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 010139691

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

TCE	Run Type	Disp	Score	N	S	C	E	Comments
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010139691-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_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.

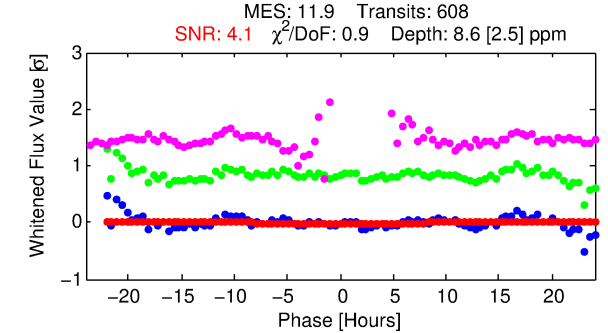
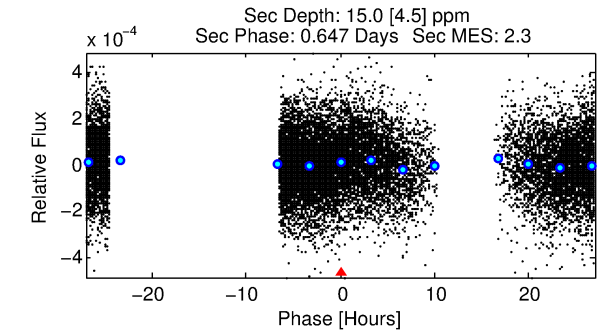
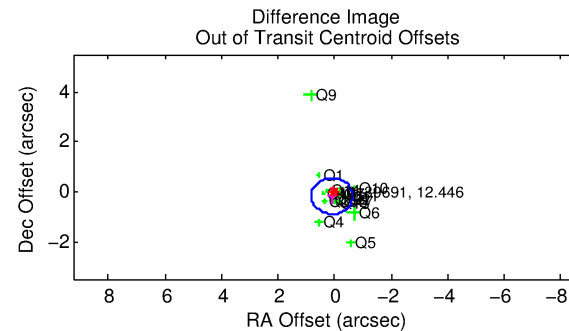
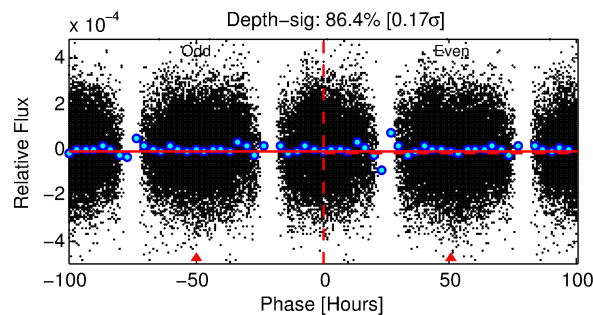
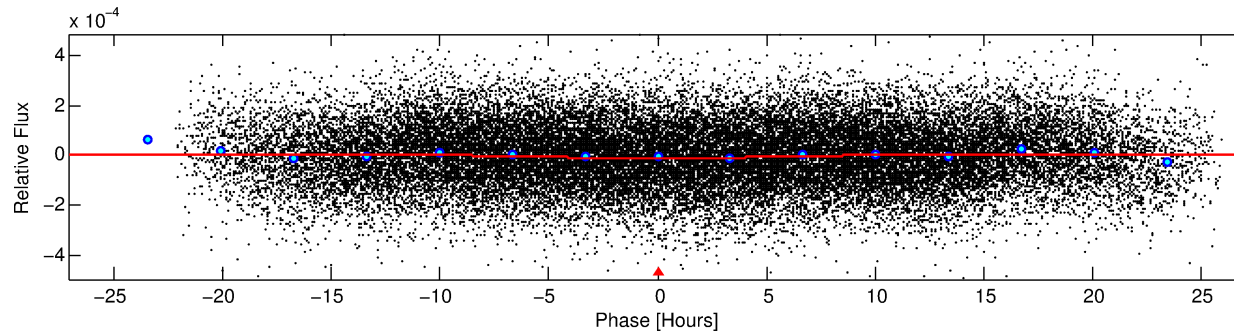
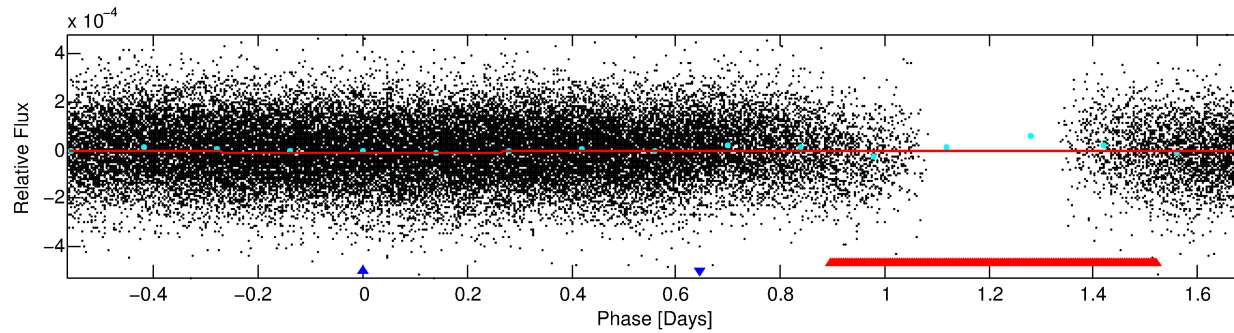
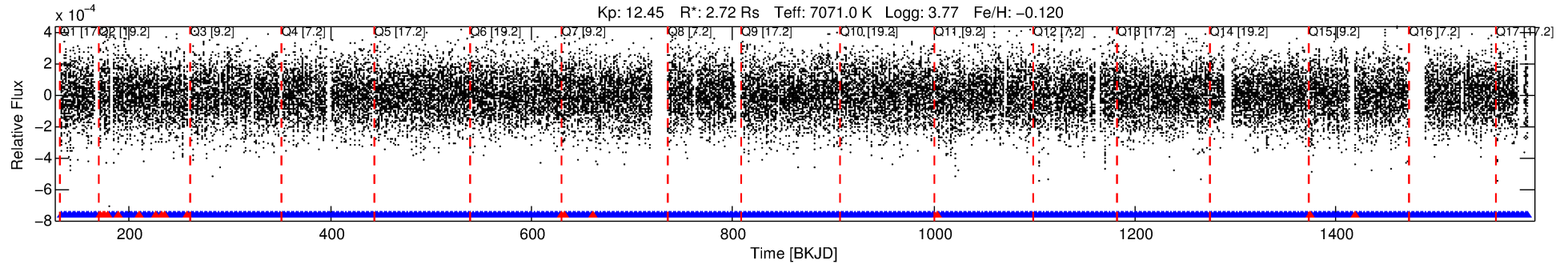
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010139691-02

No Significant Match Found

DV One-Page Summary

KIC: 10139691 Candidate: 2 of 2 Period: 2.260 d



DV Fit Results:

Period = 2.25990 [0.00007] d
Epoch = 133.1071 [0.0147] BKJD
Rp/R* = 0.0027 [0.0037]
a/R* = 1.21 [2.98]
b = 0.01 [1507.95]
Seff = 10651.19 [5681.84]
Teff = 2590 [345] K
Rp = 0.81 [1.13] Re
a = 0.0395 [0.0125] AU
Ag = 19.78 [55.09] [0.34 σ]
Teffp = 8447 [5788] K [1.01 σ]

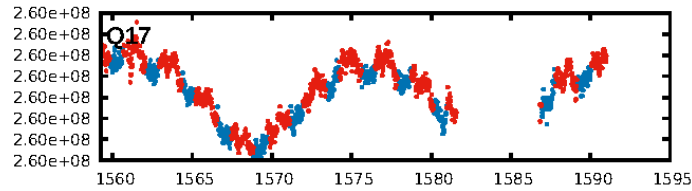
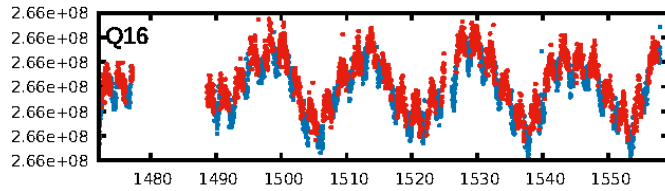
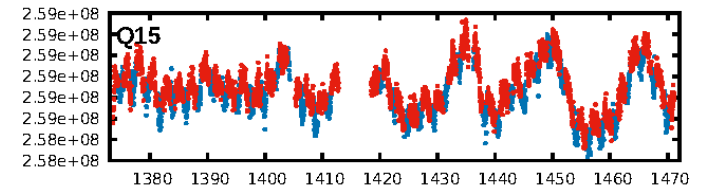
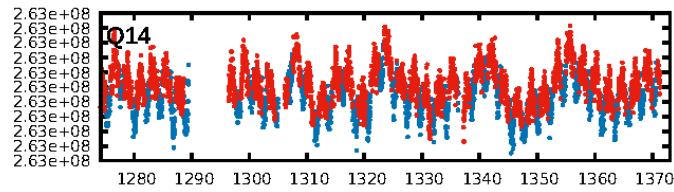
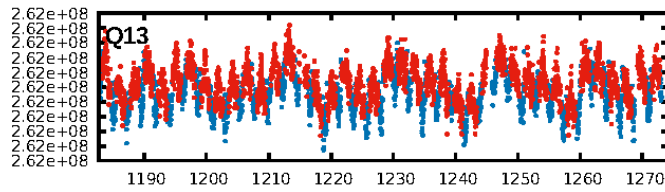
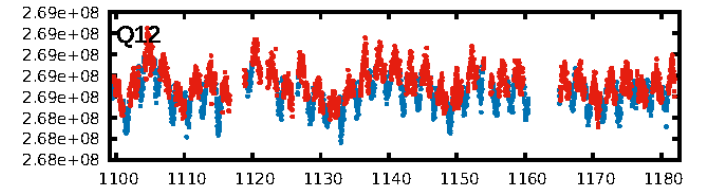
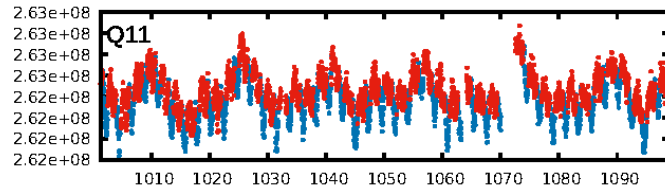
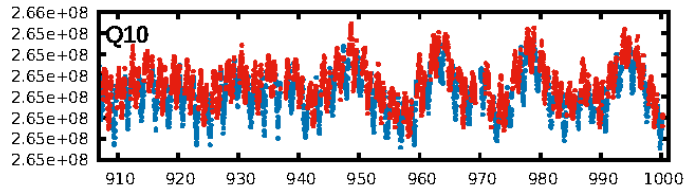
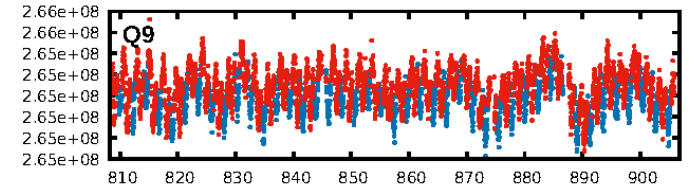
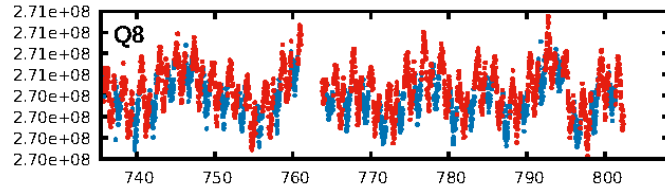
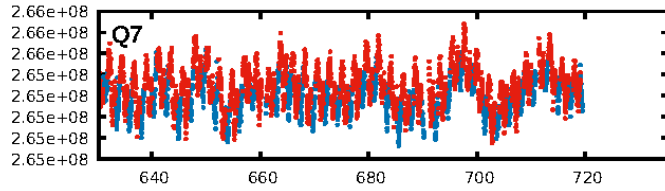
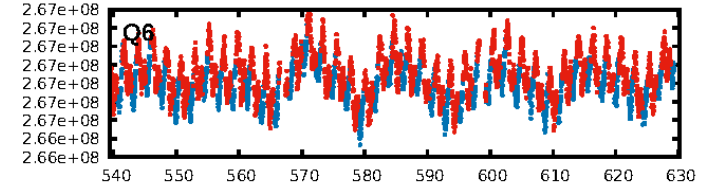
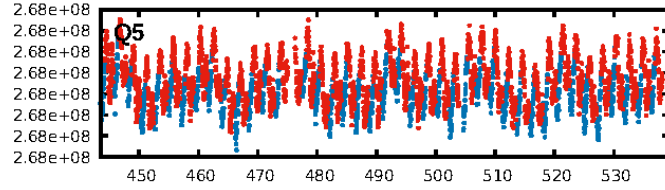
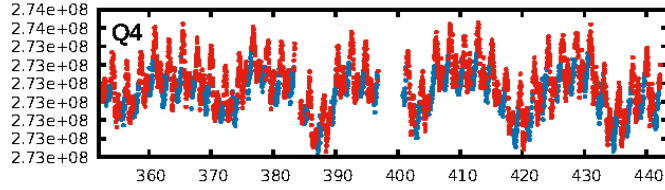
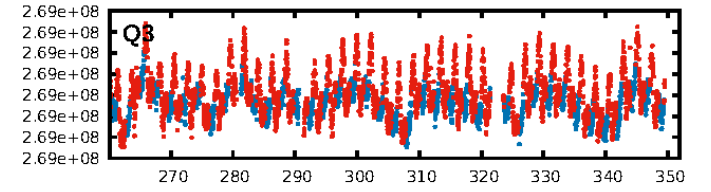
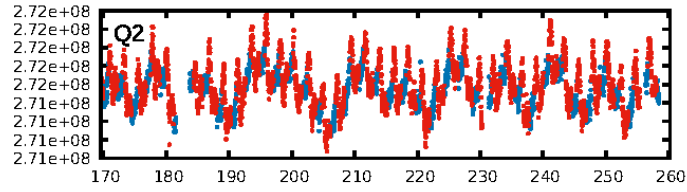
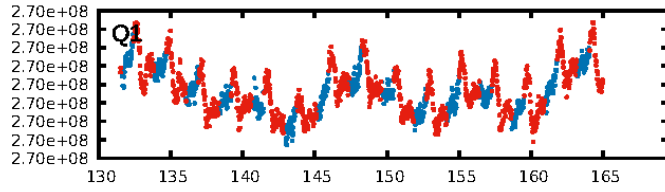
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.1% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.53e-15
RollingBand-fgt: 0.97 [564/580]
GhostDiagnostic-chr: 0.7926
Centroid-sig: 0.2%
Centroid-so: 2.024 arcsec [1.87 σ]
OotOffset-rm: 0.206 arcsec [0.85 σ]
KicOffset-rm: 0.090 arcsec [0.30 σ]
OotOffset-st: 4/4/3/5 [16]
KicOffset-st: 4/4/3/5 [16]
DiffImageQuality-fgm: 0.38 [6/16]
DiffImageOverlap-fno: 0.00 [0/17]

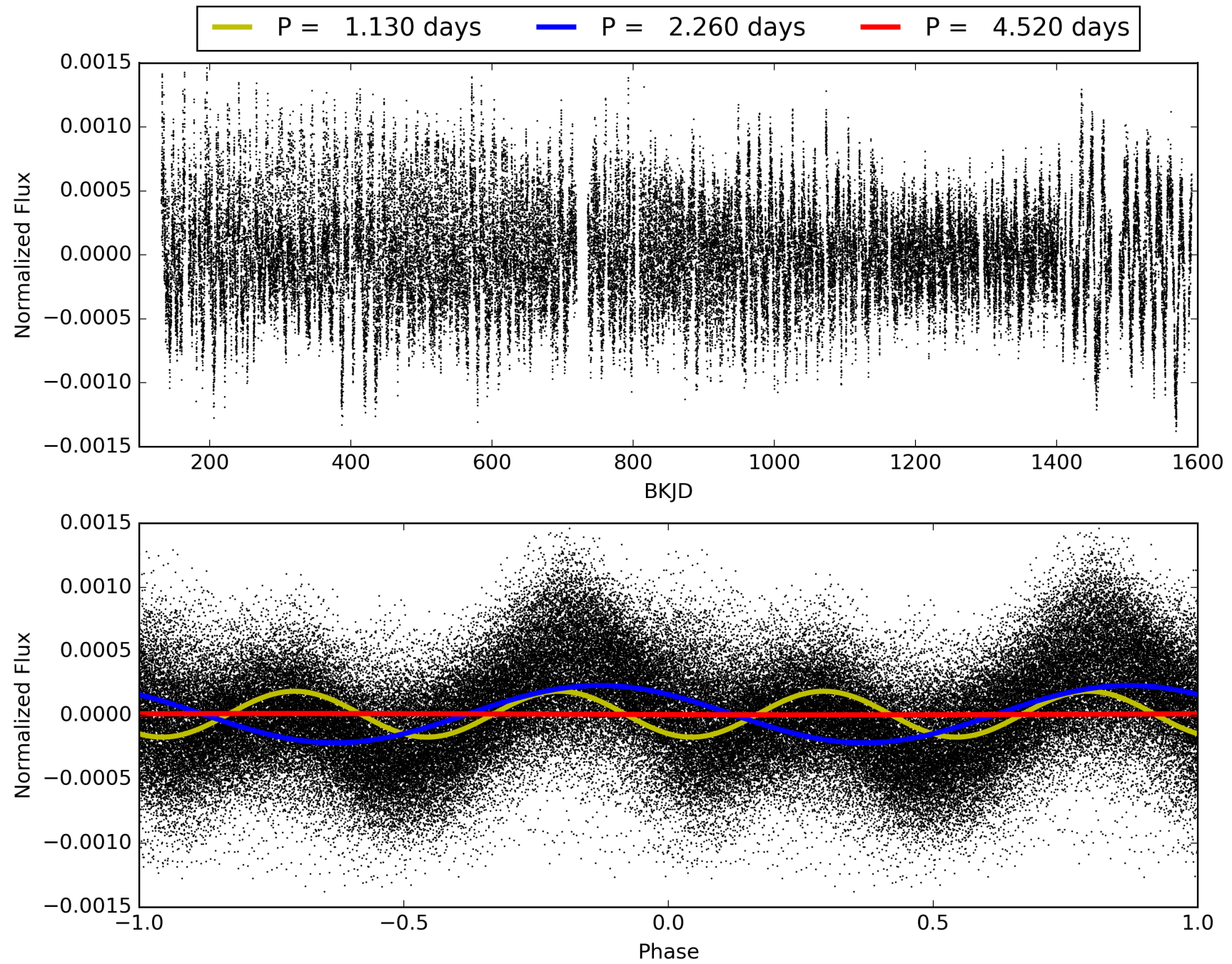
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:44:28 Z

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

TCE 010139691-02, PDC Light Curves

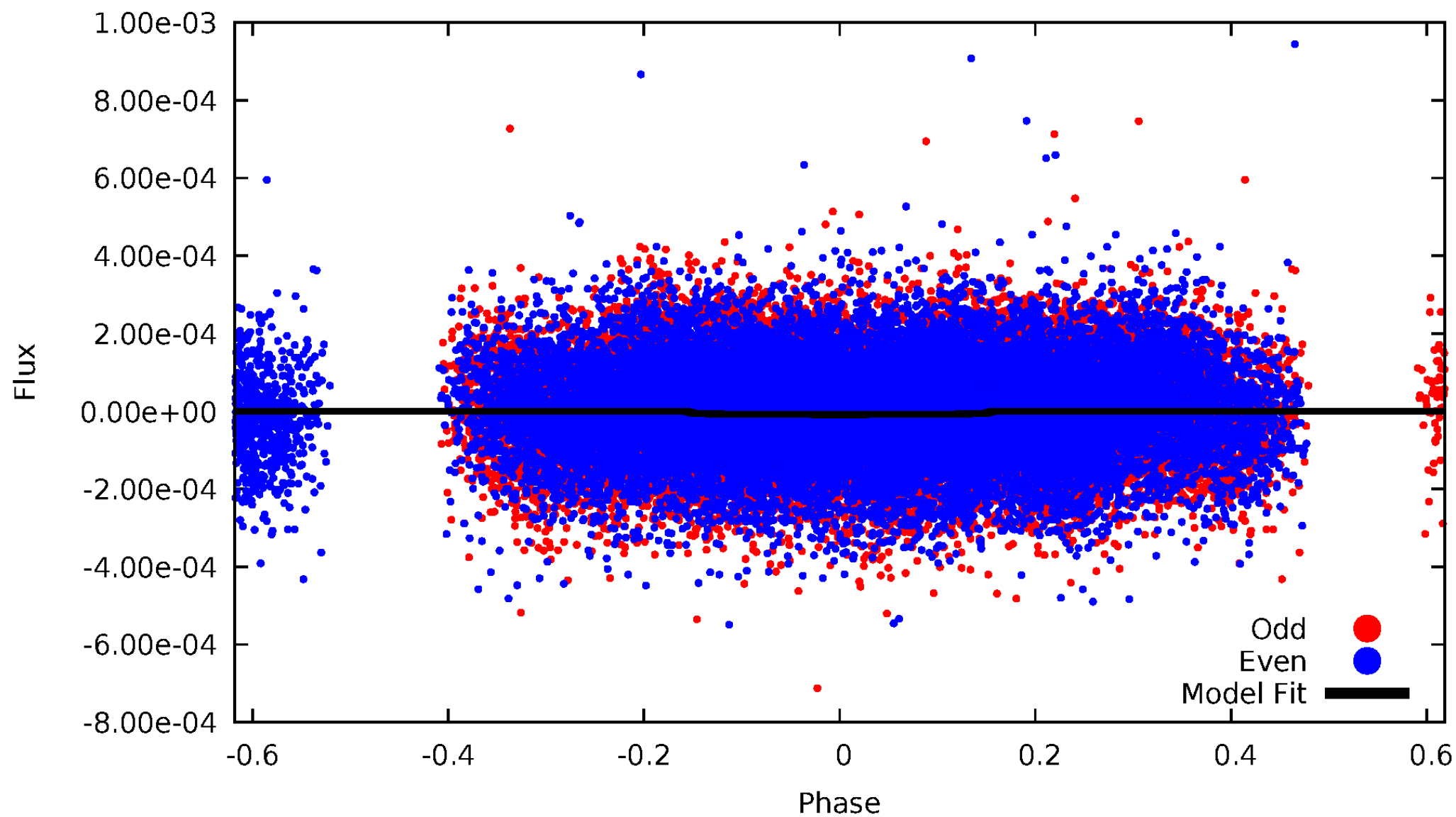


TCE 010139691-02



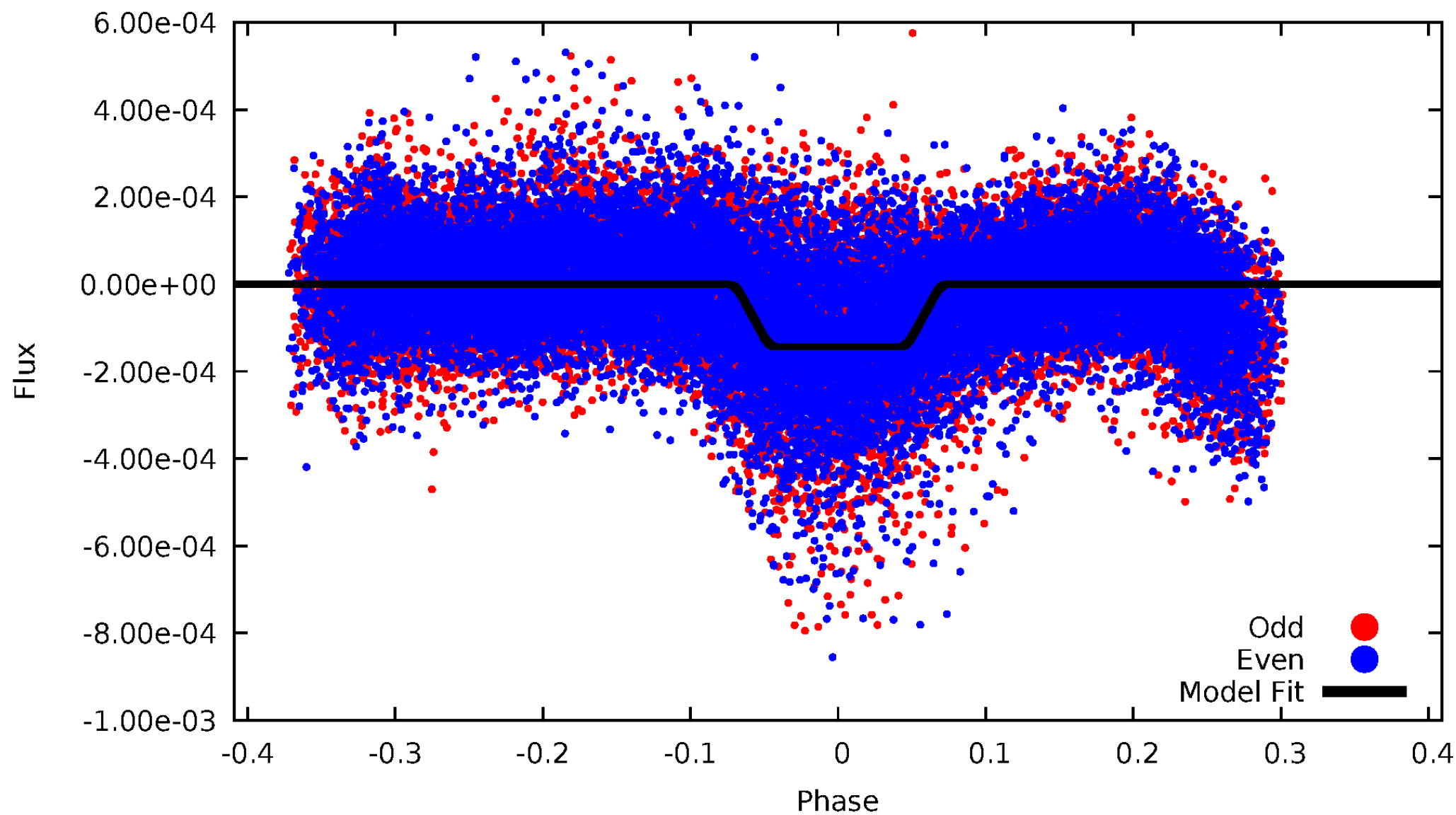
DV Odd/Even

TCE 010139691-02



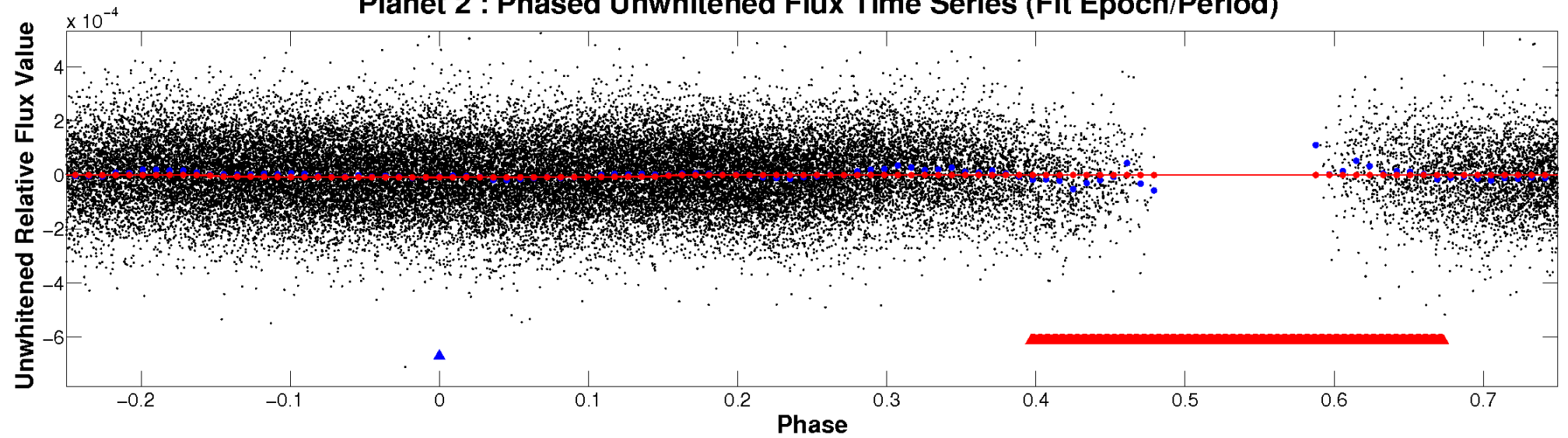
ALT Odd/Even

TCE 010139691-02

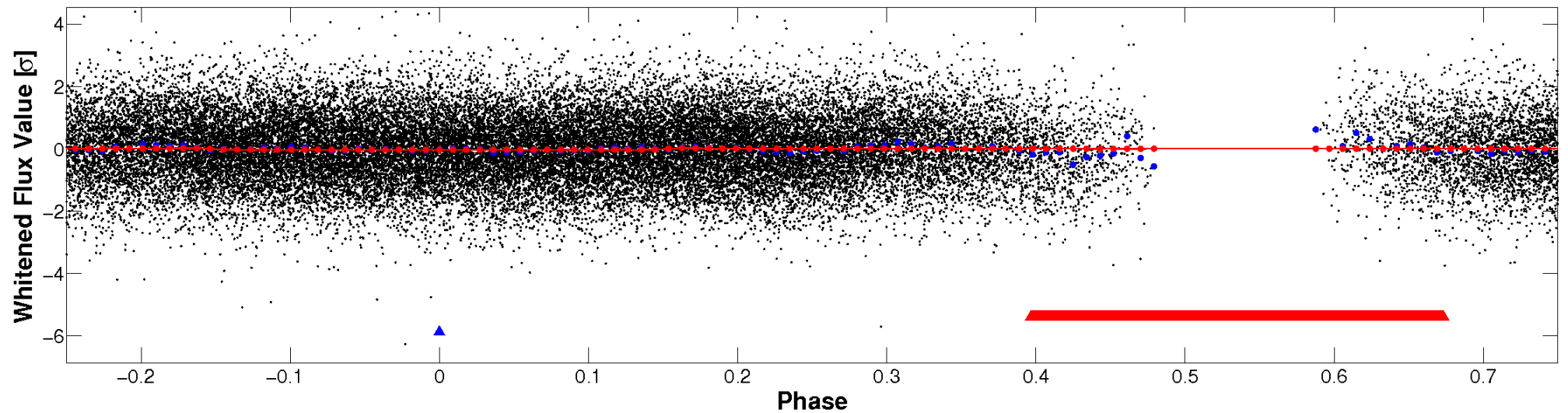


Non-Whitened Vs. Whitened Light Curve

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

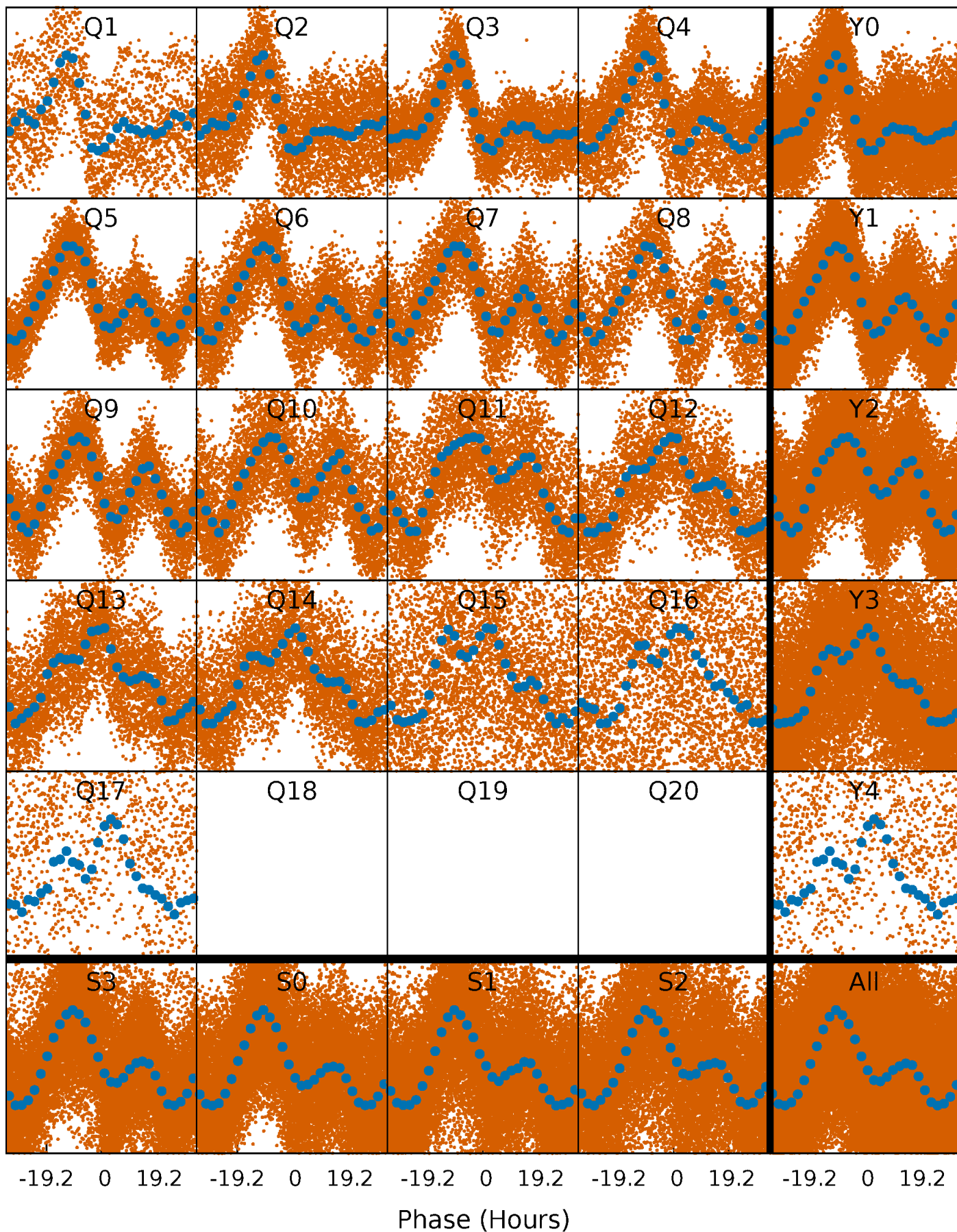


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



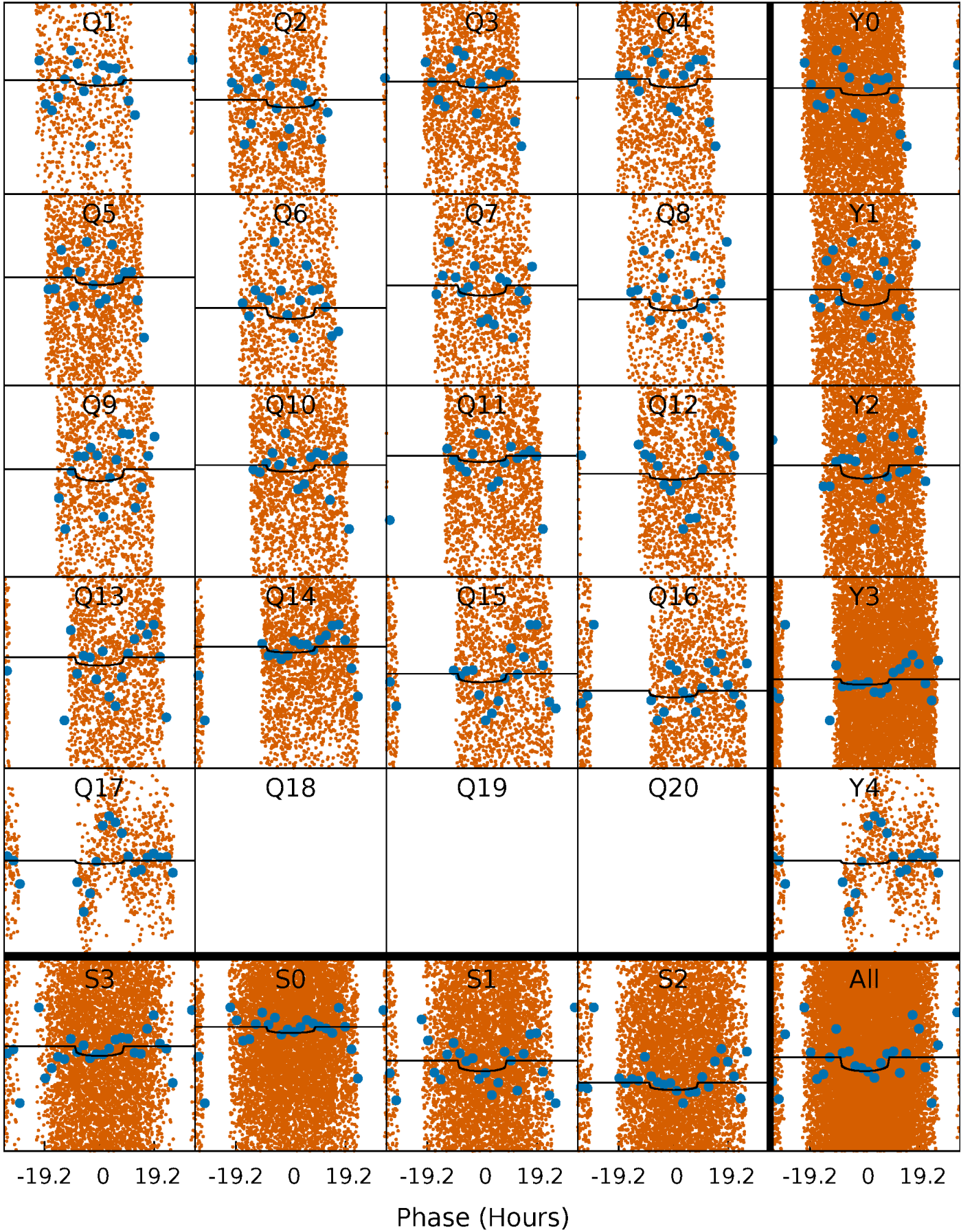
PDC Quarter-Phased Transit Curves

TCE 010139691-02 P= 2.259896 Days $T_0=133.107129$ (BKJD)



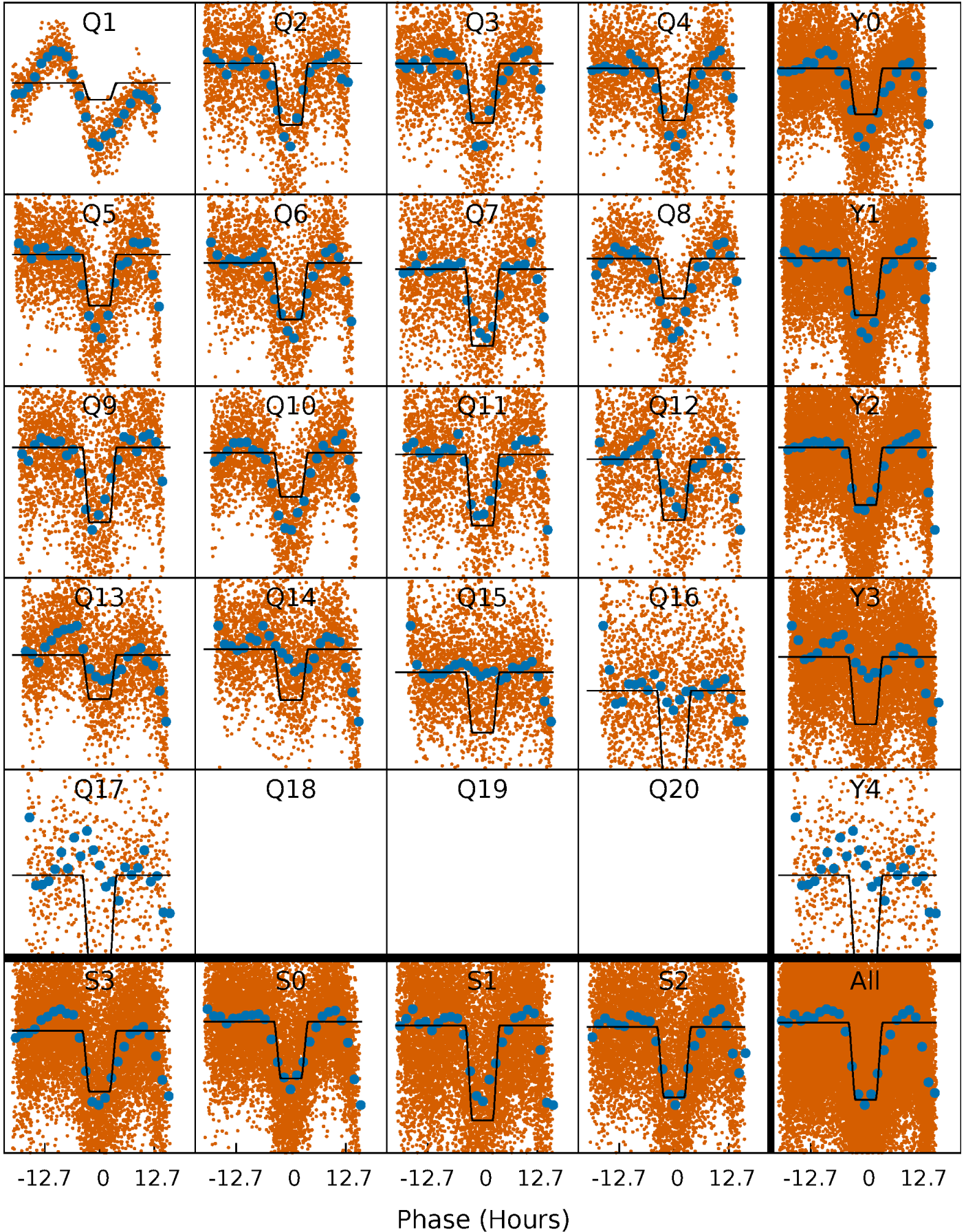
DV Quarter-Phased Transit Curves

TCE 010139691-02 P= 2.259896 Days $T_0=133.107129$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

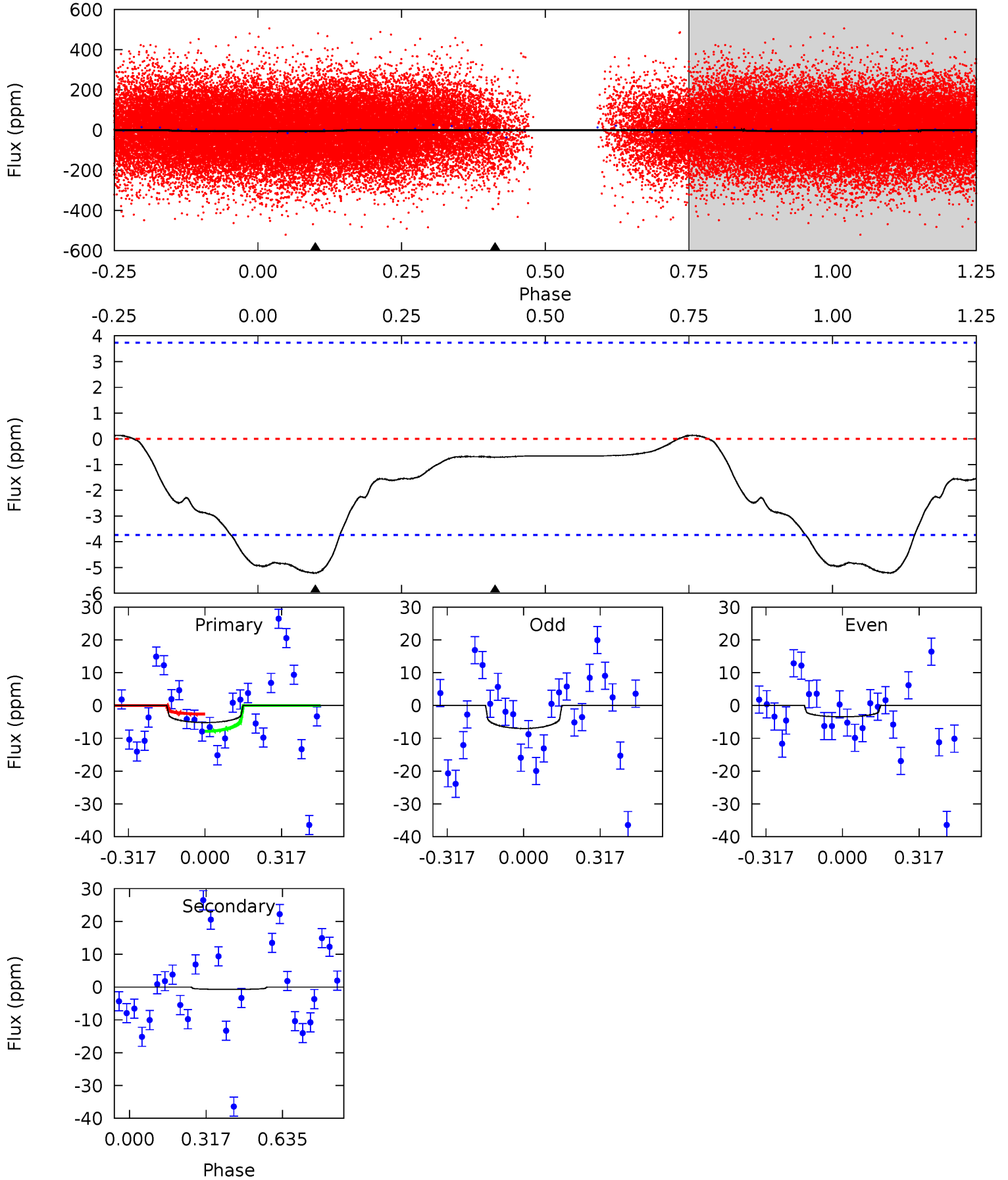
TCE 010139691-02 P= 2.260651 Days $T_0=133.021055$ (BKJD)



DV Model-Shift Uniqueness Test

010139691-02, P = 2.259896 Days, E = 130.847233 Days

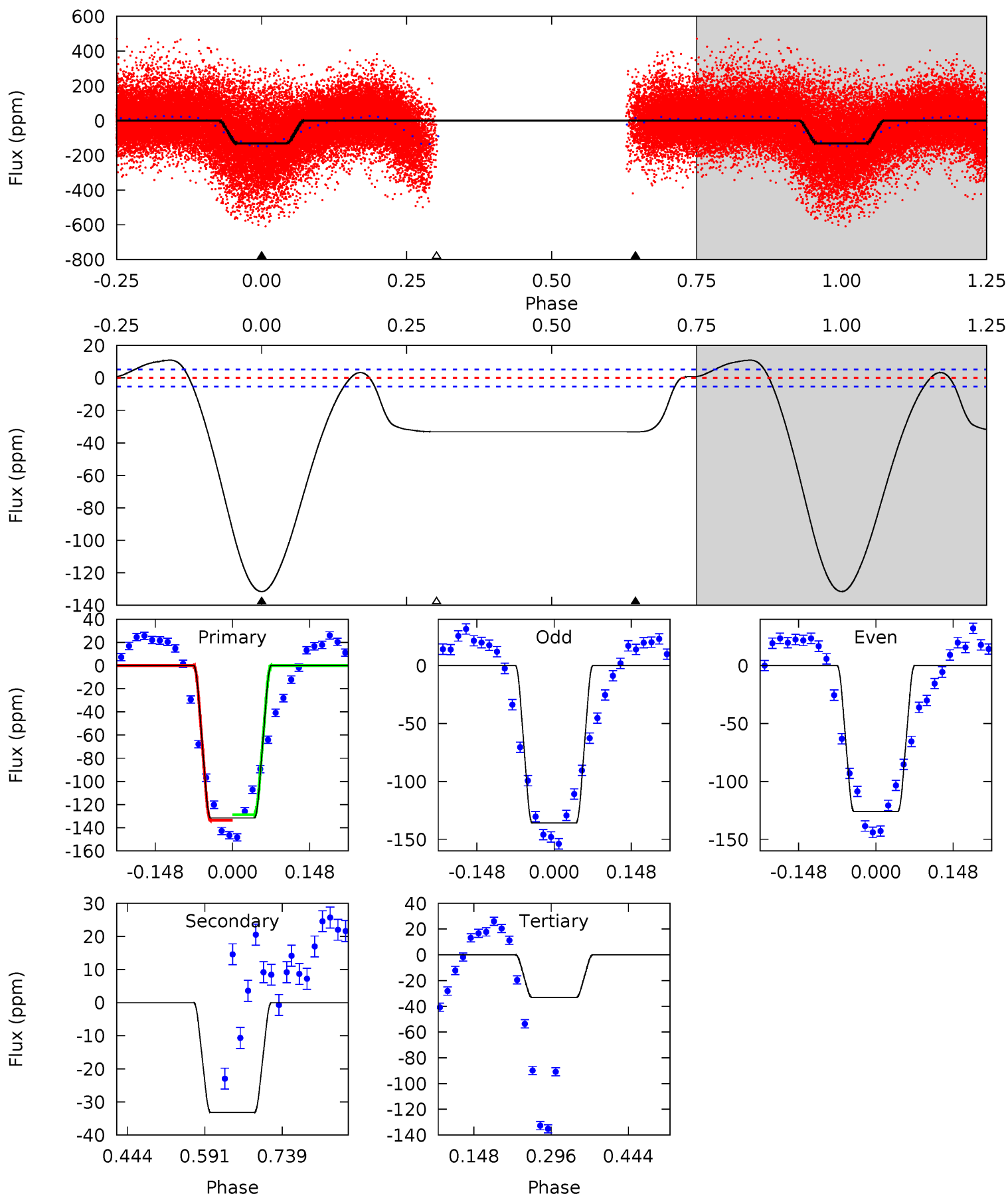
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.03	0.83	0	0	4.32	1.00	0.21	6.03	6.03	0.83	0.83	2.05	3.02	0.03	3.00



Alt Model-Shift Uniqueness Test

010139691-02, P = 2.260651 Days, E = 130.760404 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
112.2	28.3	28.3	0	4.48	1.45	14.6	83.9	112.2	0.04	28.3	4.21	1.08	0.08	1.99



Stellar Parameters For KIC 010139691

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7071^{+190}_{-253}	$3.774^{+0.304}_{-0.095}$	$-0.120^{+0.300}_{-0.300}$	$2.723^{+0.473}_{-0.879}$	$1.607^{+0.221}_{-0.246}$	$0.112^{+0.213}_{-0.033}$
	+3%/-4%	+8%/-3%	+250%/-250%	+17%/-32%	+14%/-15%	+190%/-30%
Source	PHO1	FLK73	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 010139691-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1 ± 1	$1.02^{+1.03}_{-0.65}$	3536^{+231}_{-334}	2884^{+2544}_{-6362}	$0.408^{+3.859}_{-0.445}$
Alt.	-33 ± 1	$3.31^{+1.12}_{-1.08}$	3545^{+216}_{-304}	4851^{+930}_{-559}	$2.648^{+3.074}_{-1.166}$

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

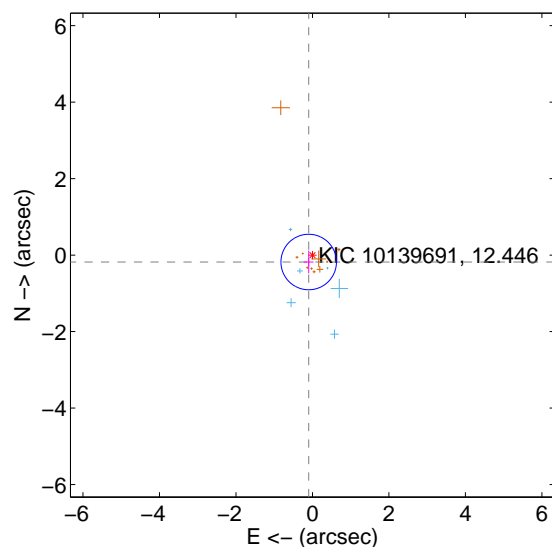
Supplemental centroid analysis for 010139691-02. Kepler magnitude: 12.45. Transit SNR 4.06

There are 6 quarters with good PRF difference image offsets

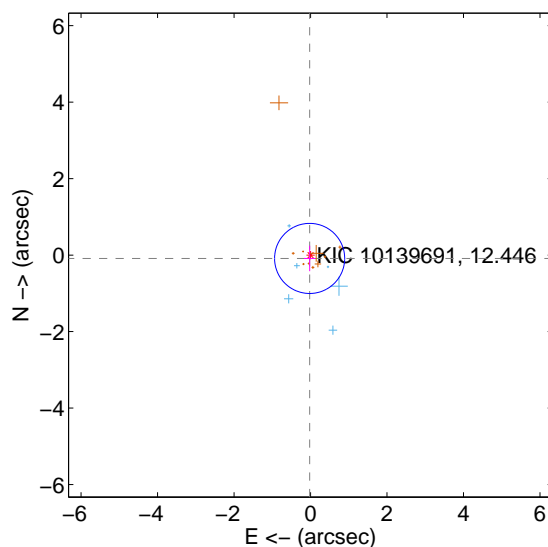
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.206 ± 0.242	0.85	0.098 ± 0.127	-0.181 ± 0.298
PRF-fit source offset from KIC position	0.090 ± 0.305	0.30	0.023 ± 0.149	-0.087 ± 0.335
photometric centroid source offset	2.02 ± 1.08	1.87	-0.14 ± 1.23	-2.02 ± 1.08

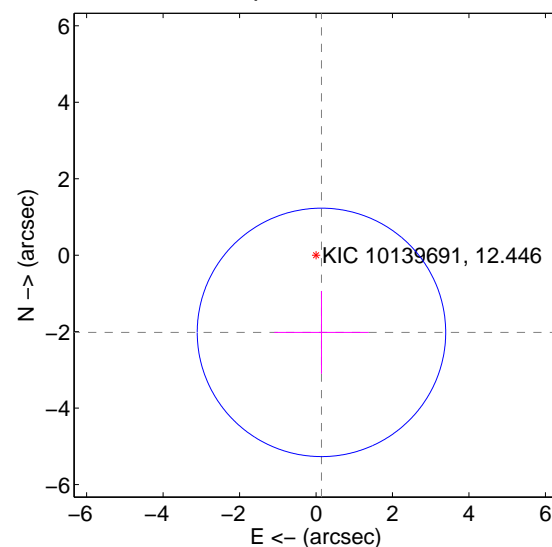
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

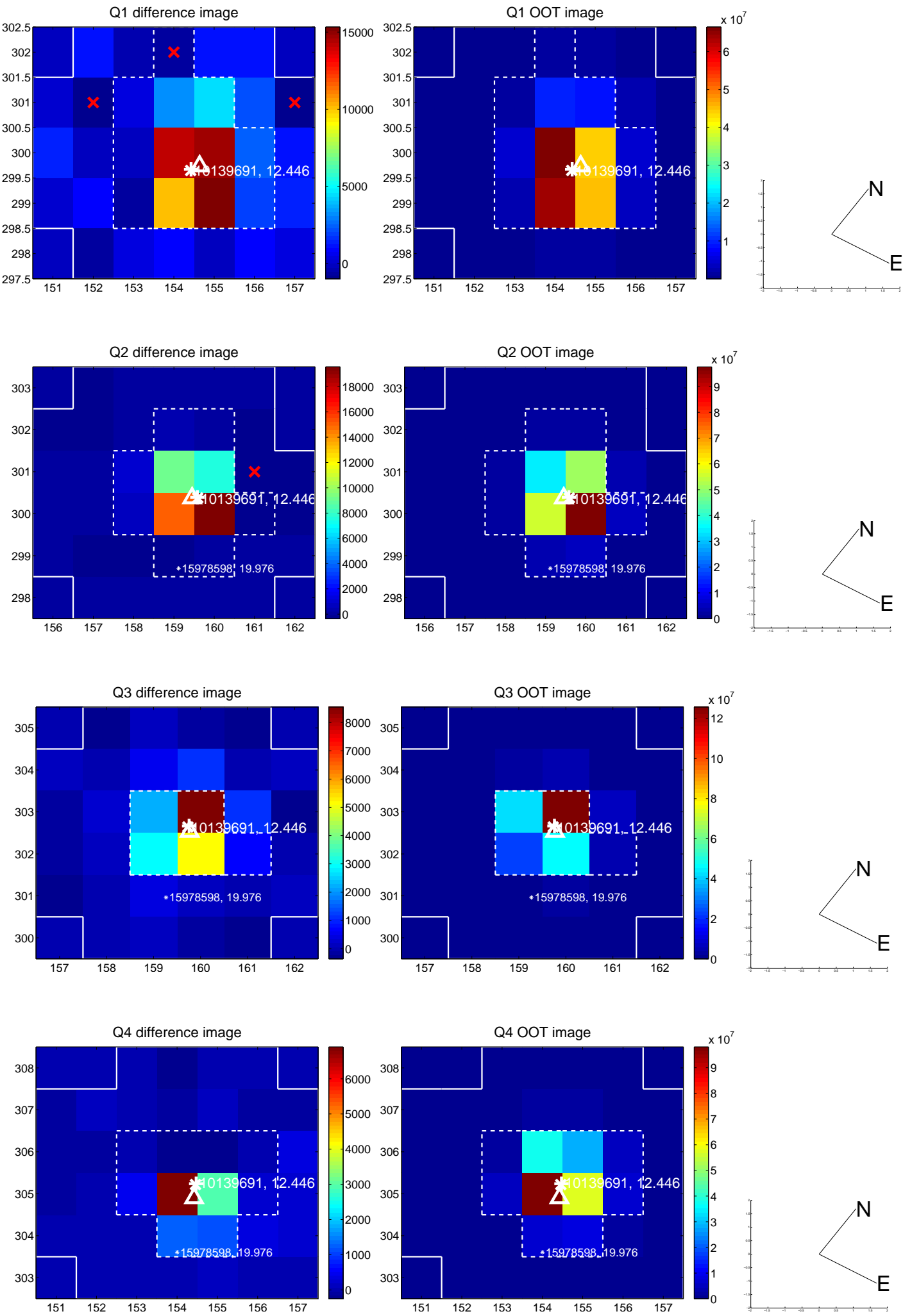


offset from photometric centroids

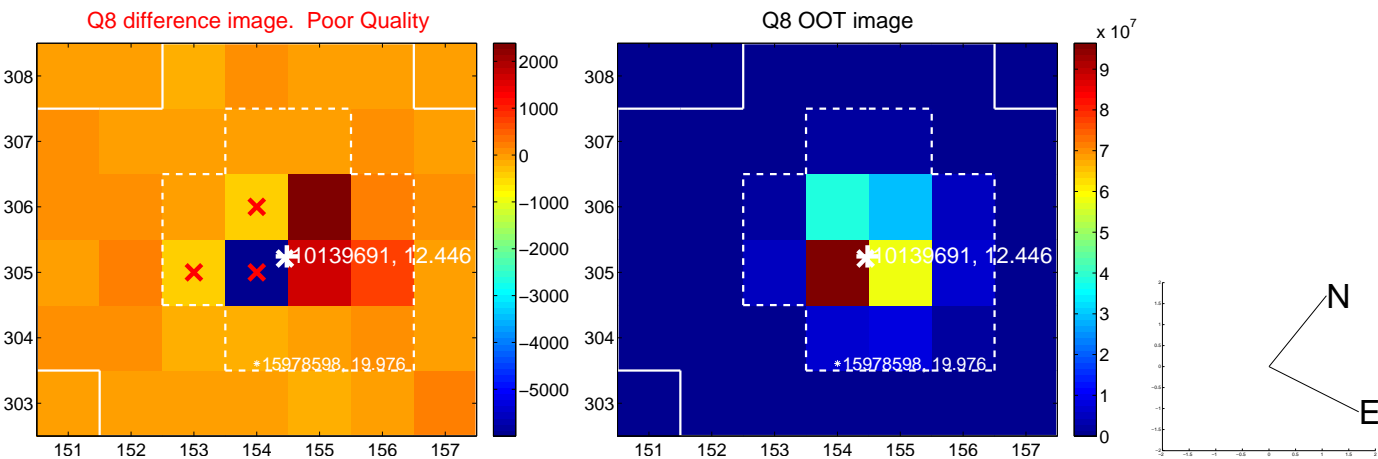
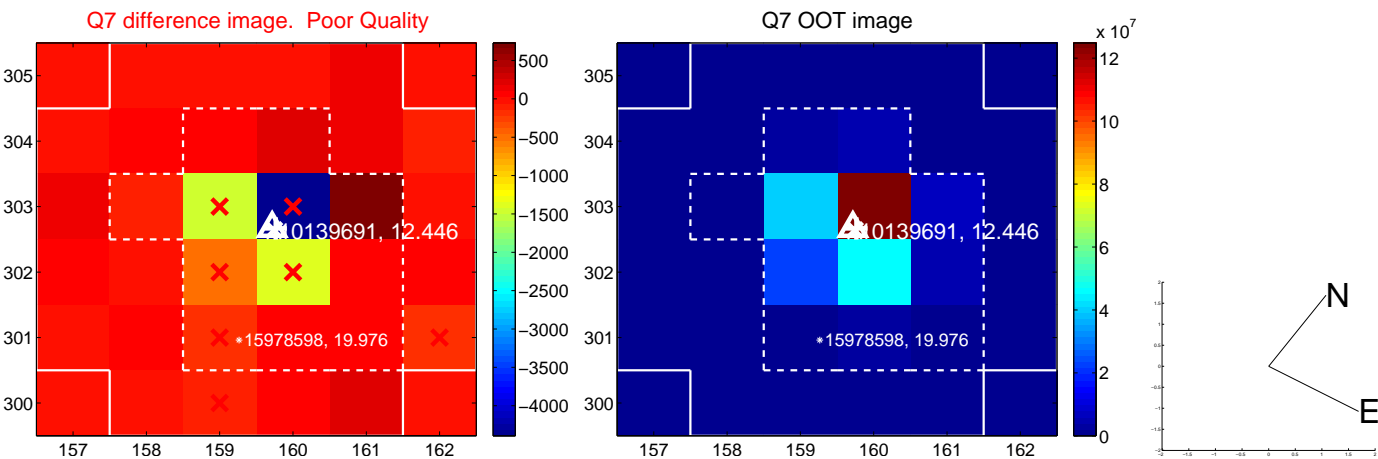
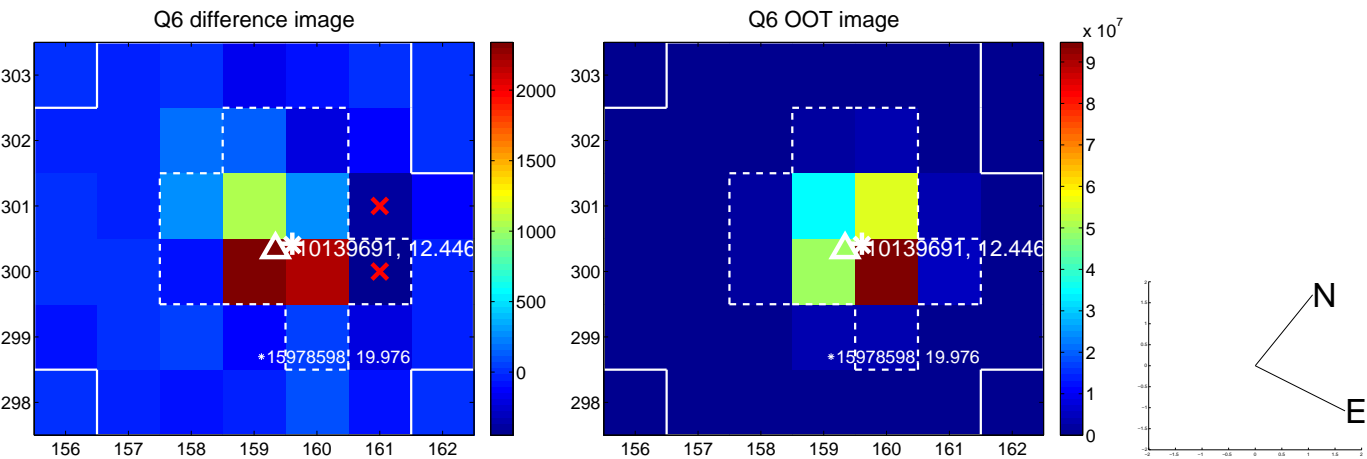
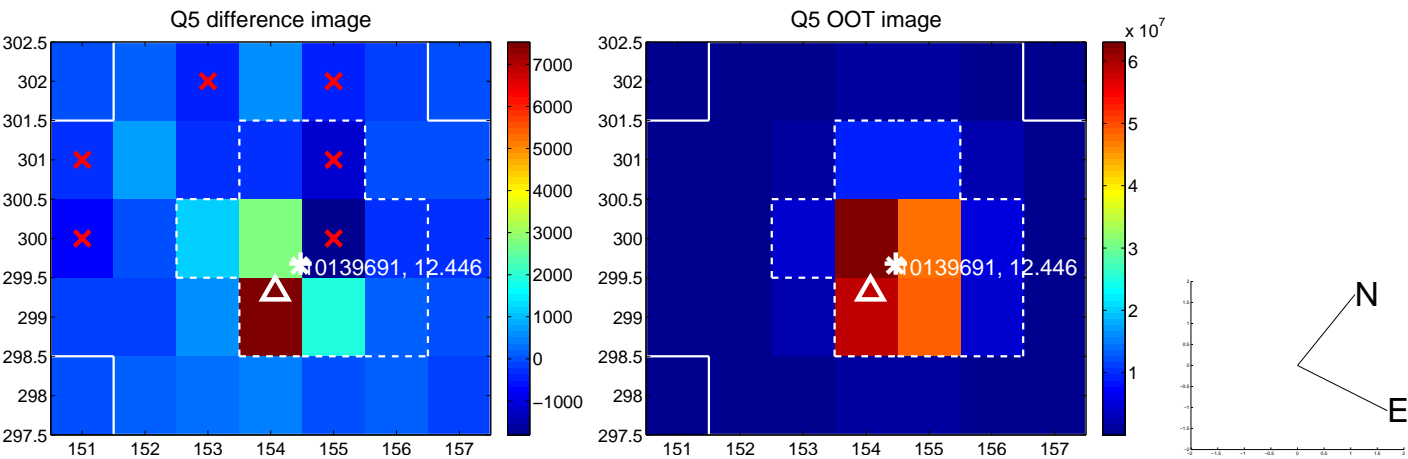


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

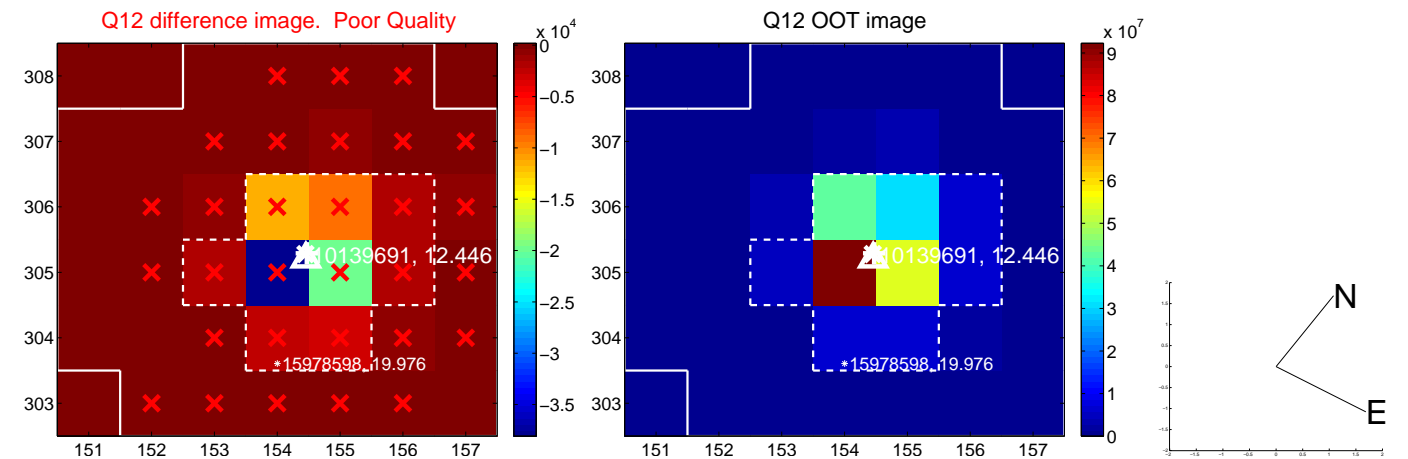
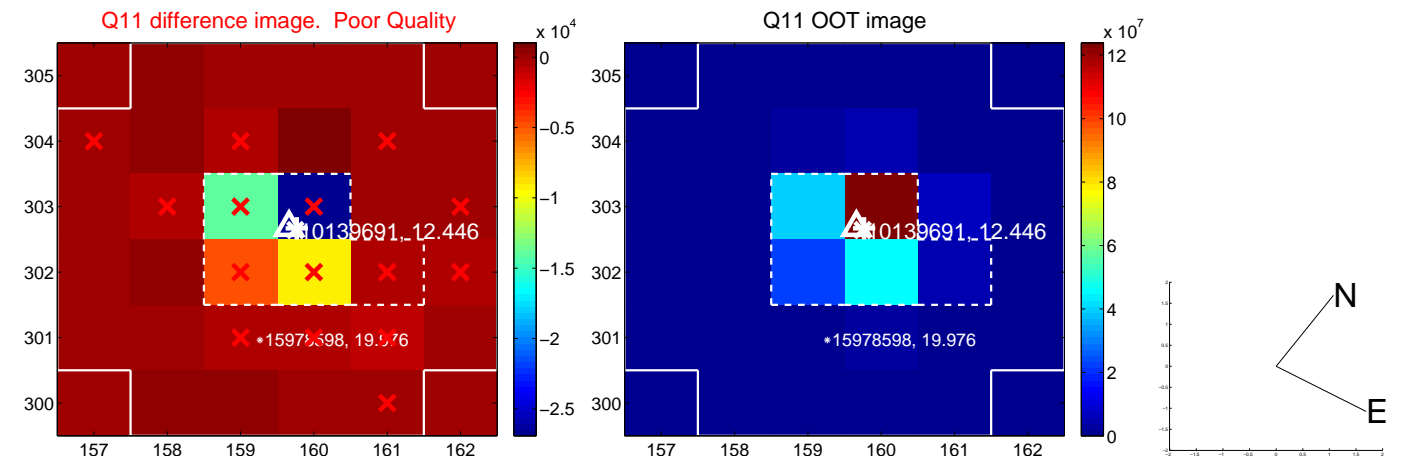
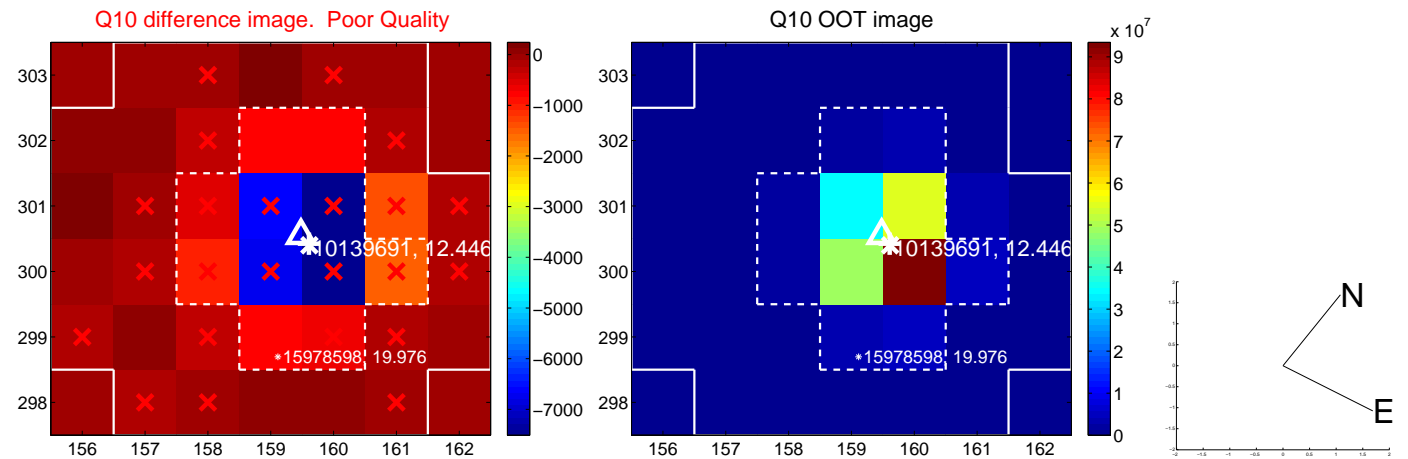
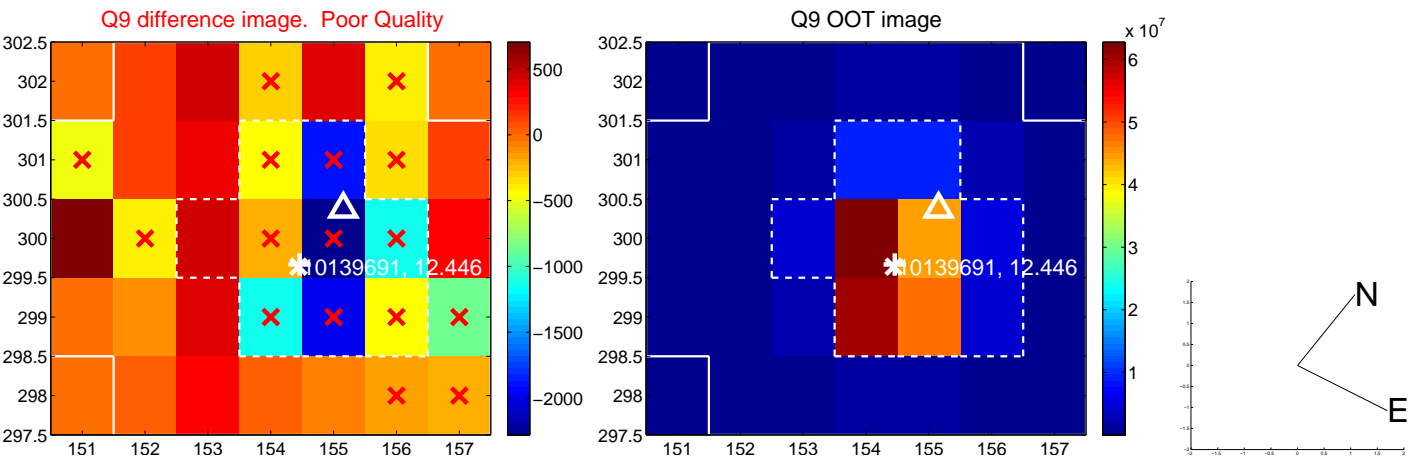
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



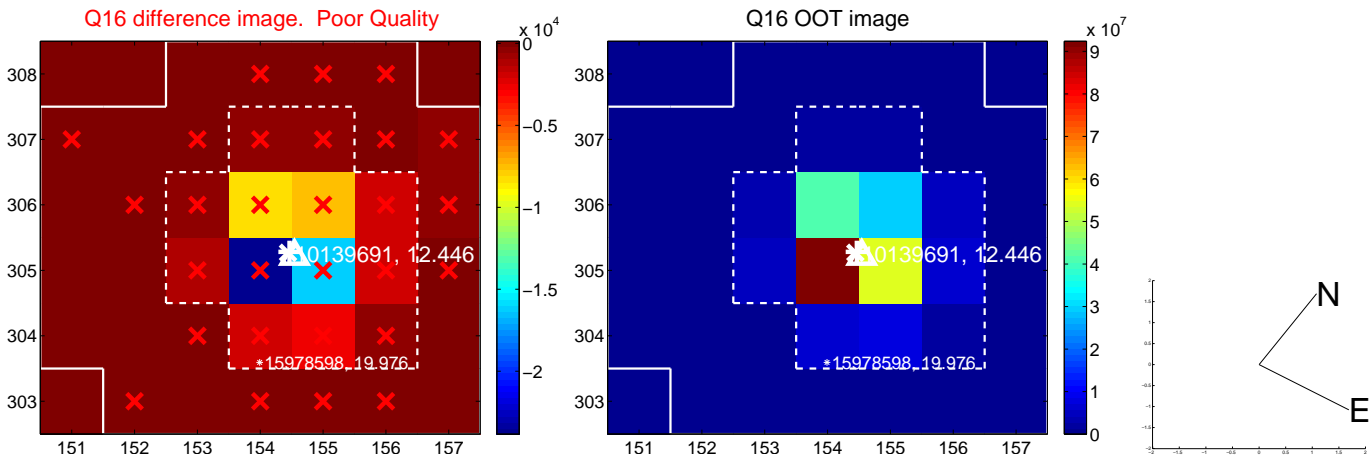
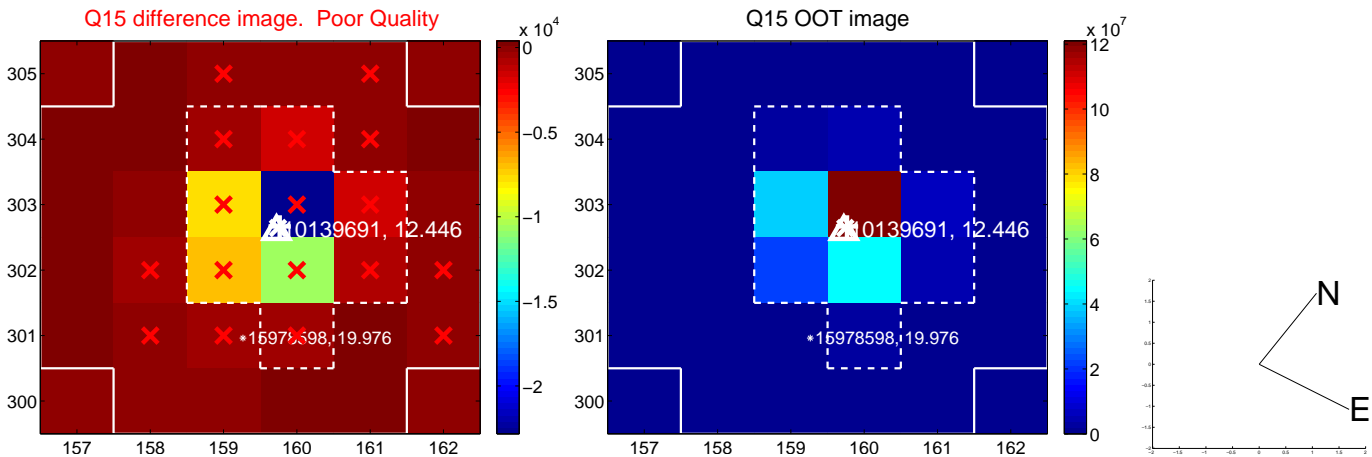
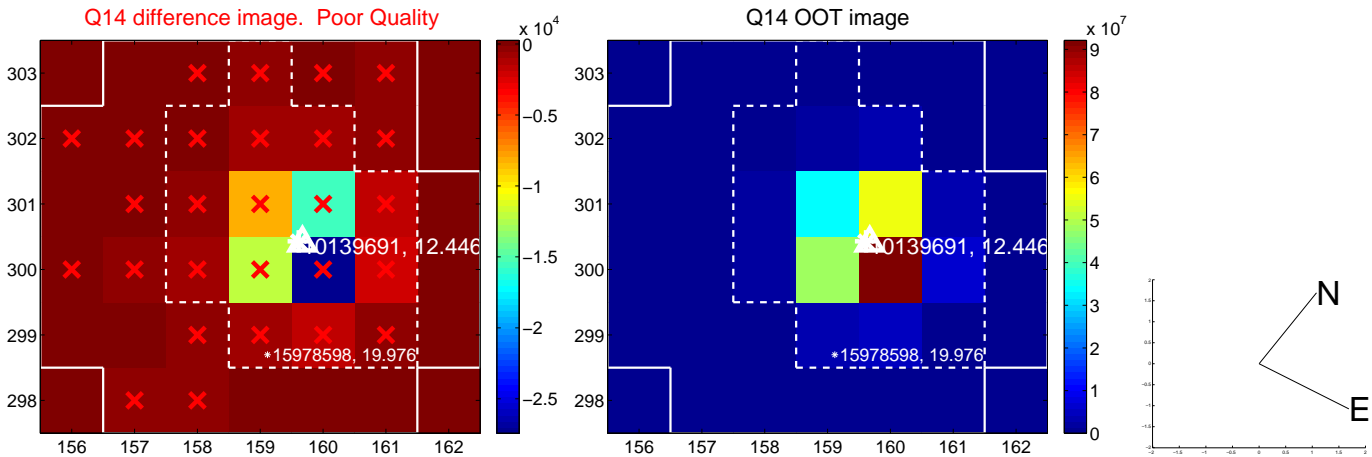
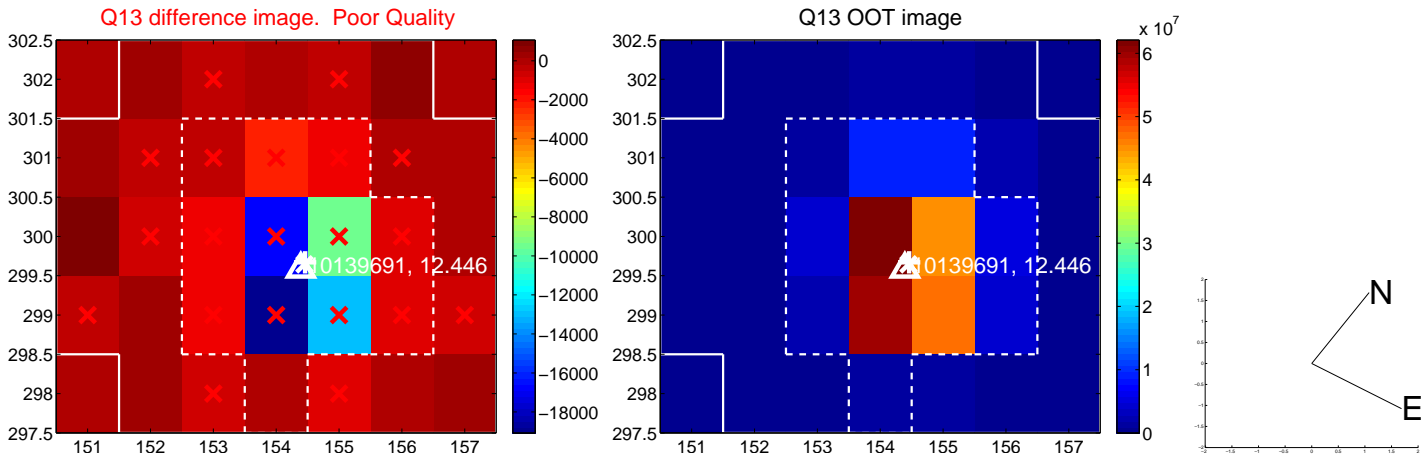
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



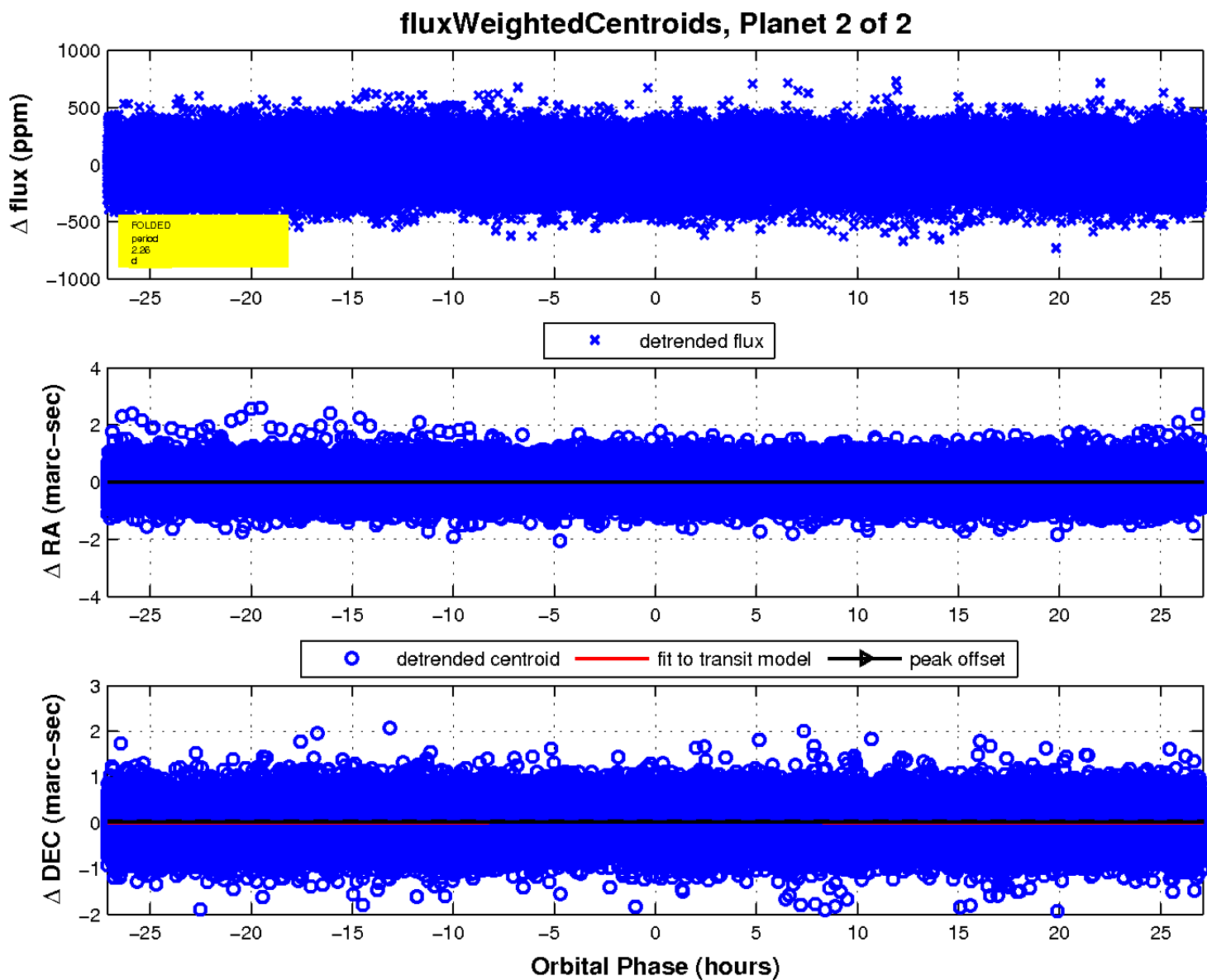
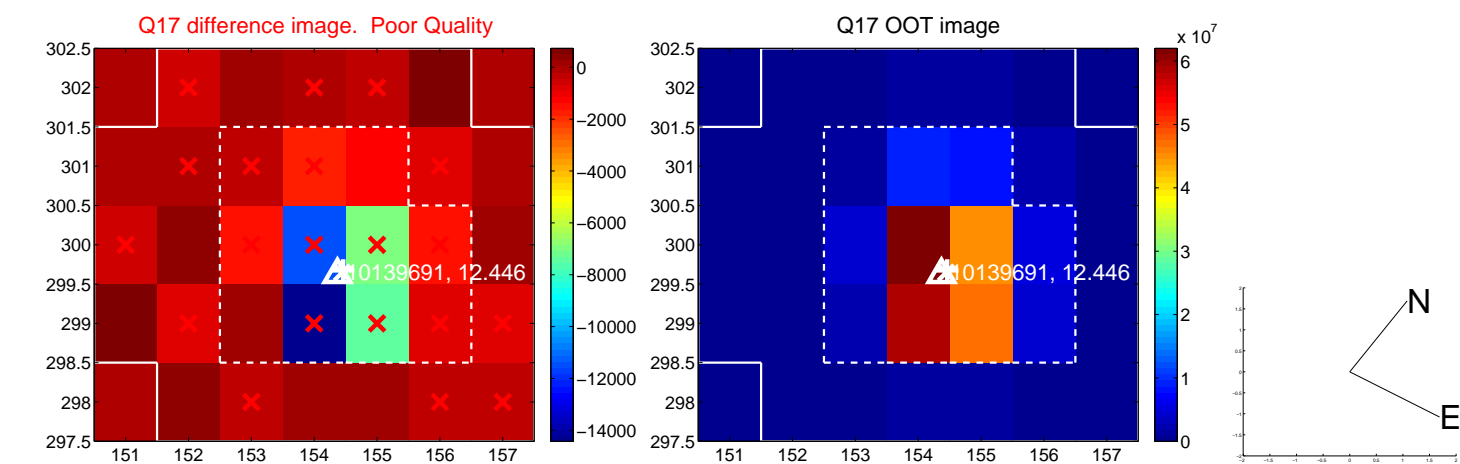
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

