

KIC 005460900

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})
005460900-01	OBS	No	1.295934	132.506023	54.8	7.242	9.2	11.9	1.76	7115	1.32	10015.13
005460900-02	OBS	No	3.422970	131.715328	118.3	12.630	10.1	11.4	1.76	7115	2.00	2743.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005460900-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005460900-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

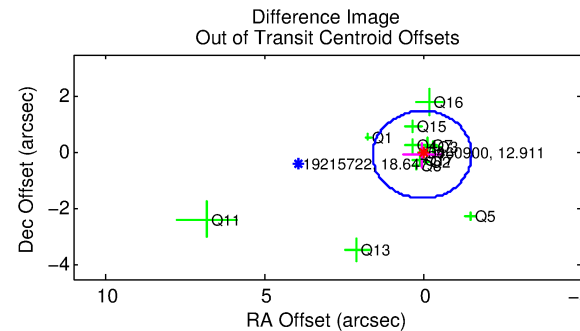
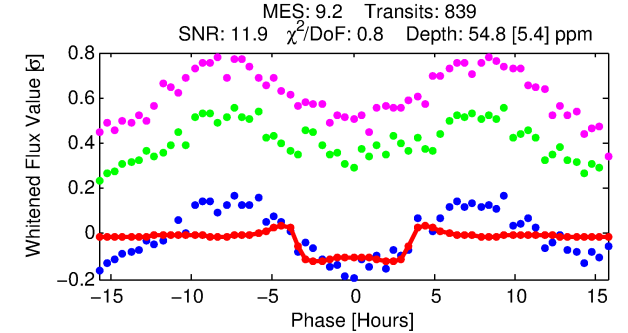
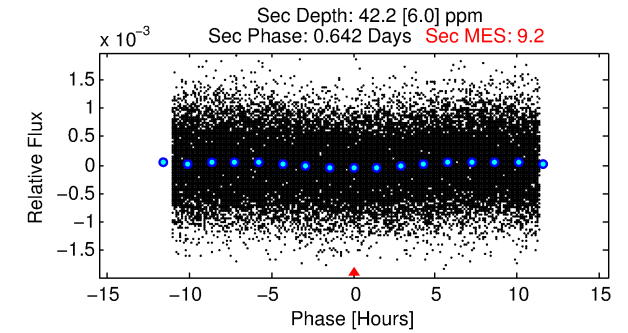
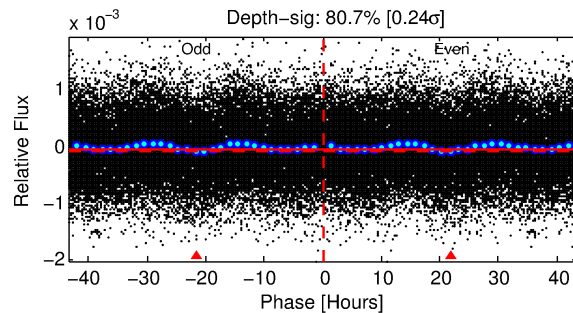
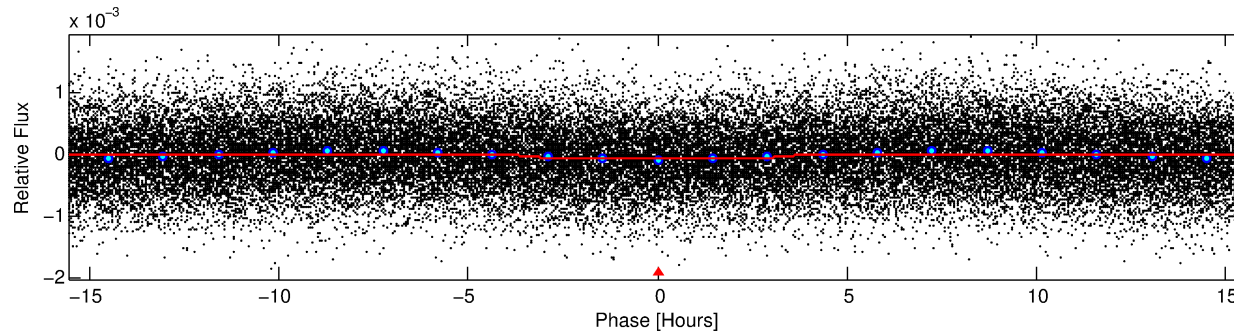
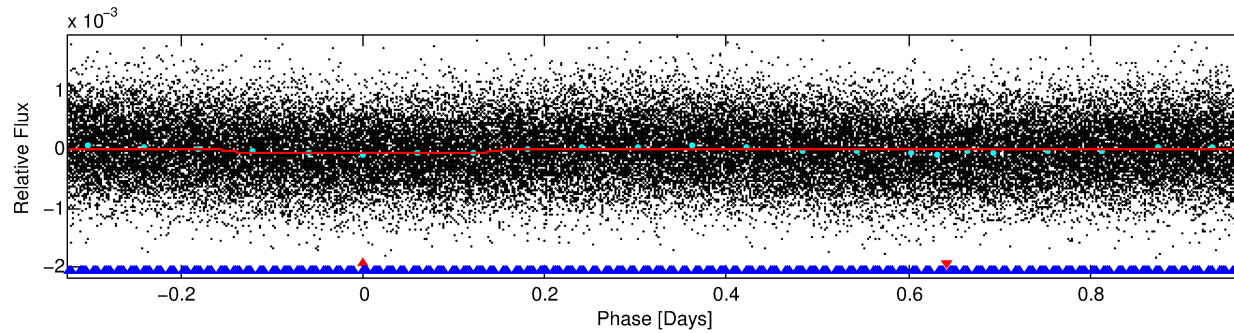
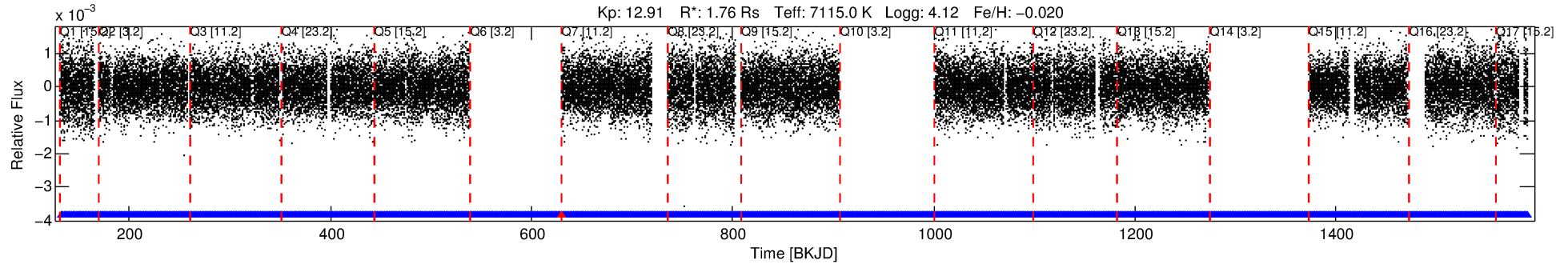
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005460900-01

No Significant Match Found

DV One-Page Summary

KIC: 5460900 Candidate: 1 of 2 Period: 1.296 d



DV Fit Results:

Period = 1.29593 [0.00001] d
Epoch = 132.5060 [0.0047] BKJD
Rp/R* = 0.0069 [0.0052]
a/R* = 1.49 [3.57]
b = 0.22 [19.47]
Seff = 10015.13 [3993.61]
Teff = 2551 [254] K
Rp = 1.32 [1.08] Re
a = 0.0267 [0.0068] AU
Ag = 9.41 [14.71] [0.57 σ]
Teffp = 6908 [2638] K [1.64 σ]

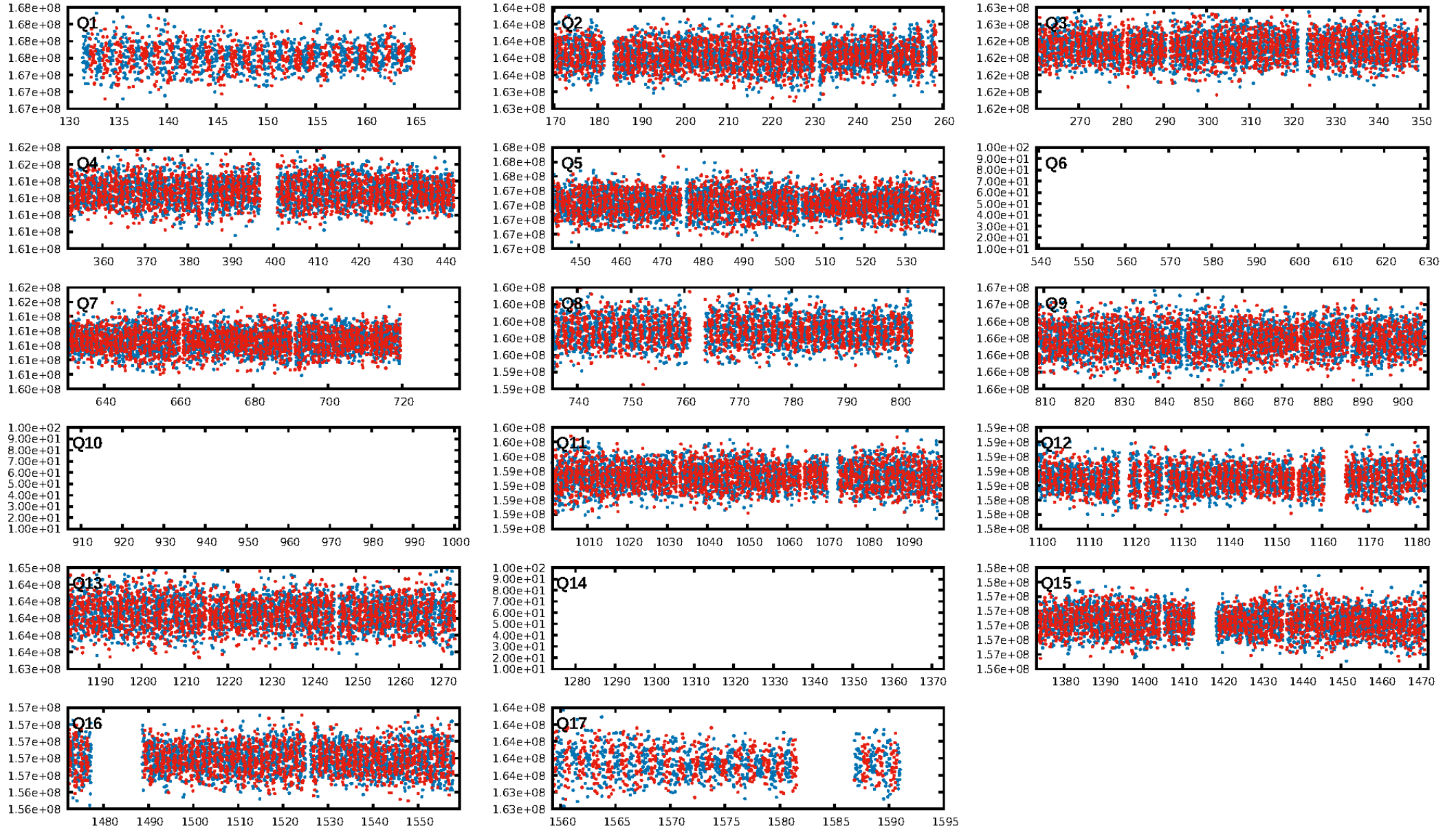
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [3.51 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.31e-14
RollingBand-fgt: 1.00 [791/792]
GhostDiagnostic-chr: 1.246
Centroid-sig: 10.2%
Centroid-so: 0.213 arcsec [0.72 σ]
OotOffset-rm: 0.078 arcsec [0.15 σ]
KicOffset-rm: 0.173 arcsec [0.28 σ]
OotOffset-st: 1/4/3/5 [13]
KicOffset-st: 1/4/3/5 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [14/14]

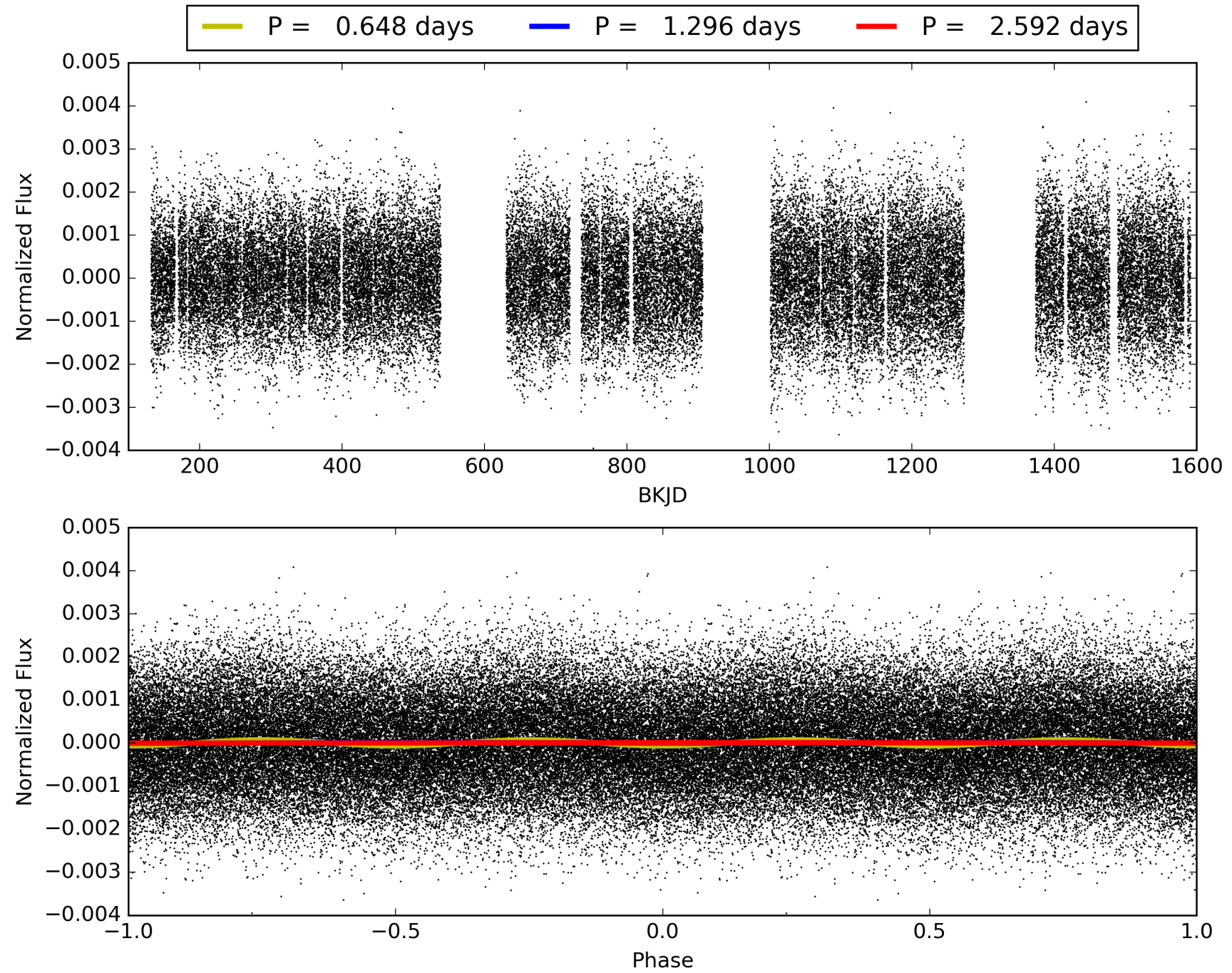
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:20:04 Z

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

TCE 005460900-01, PDC Light Curves

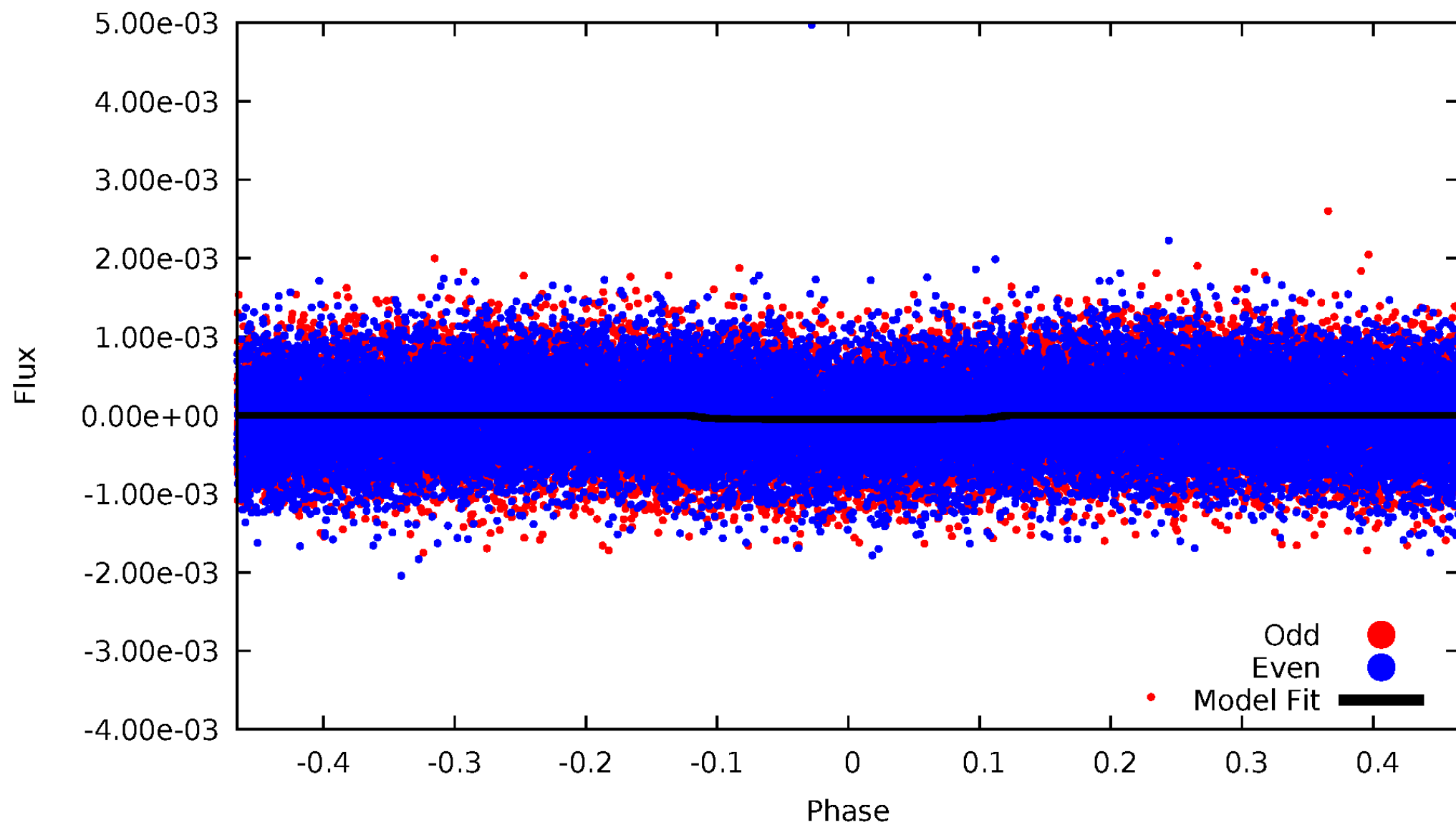


TCE 005460900-01



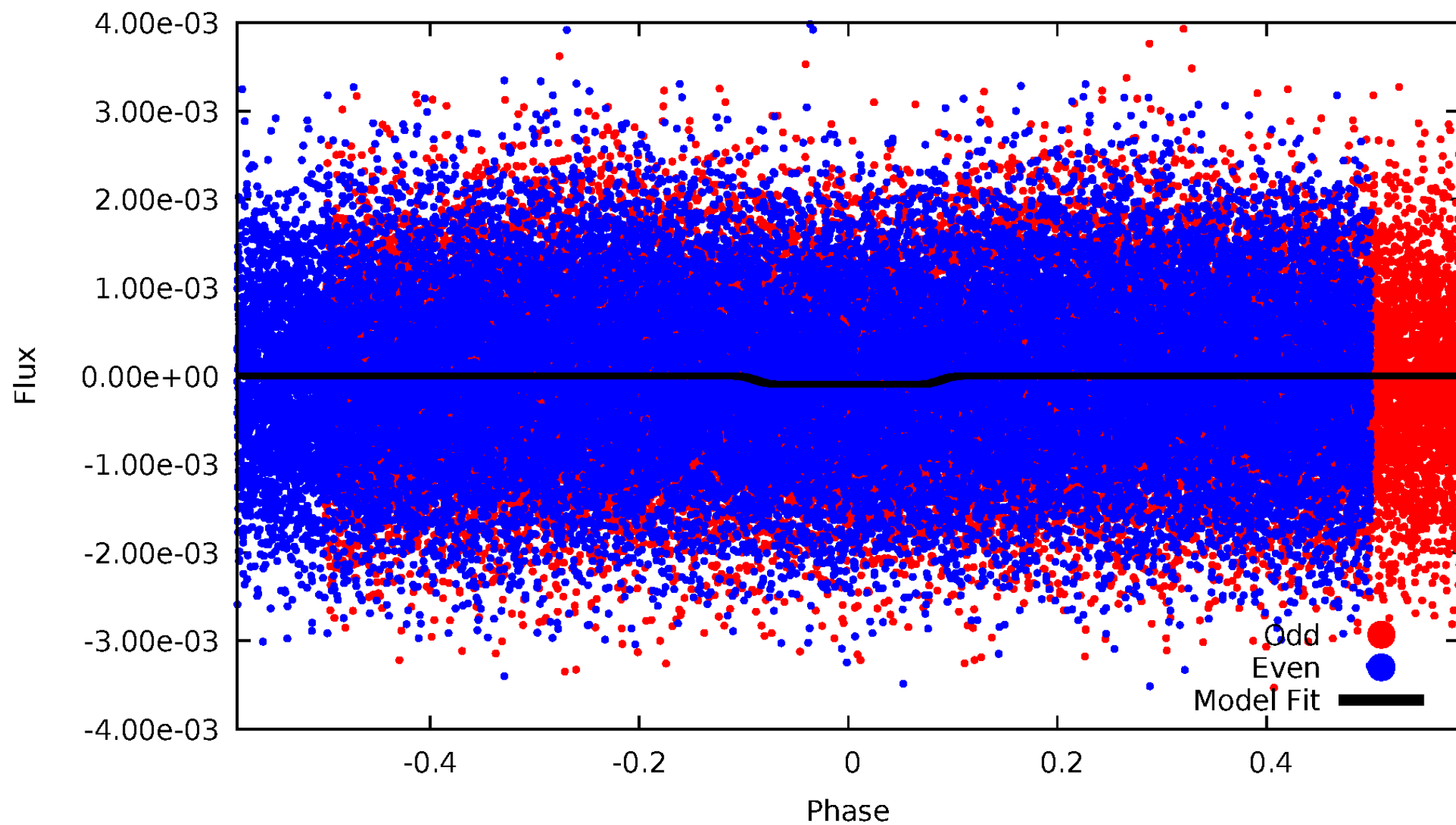
DV Odd/Even

TCE 005460900-01



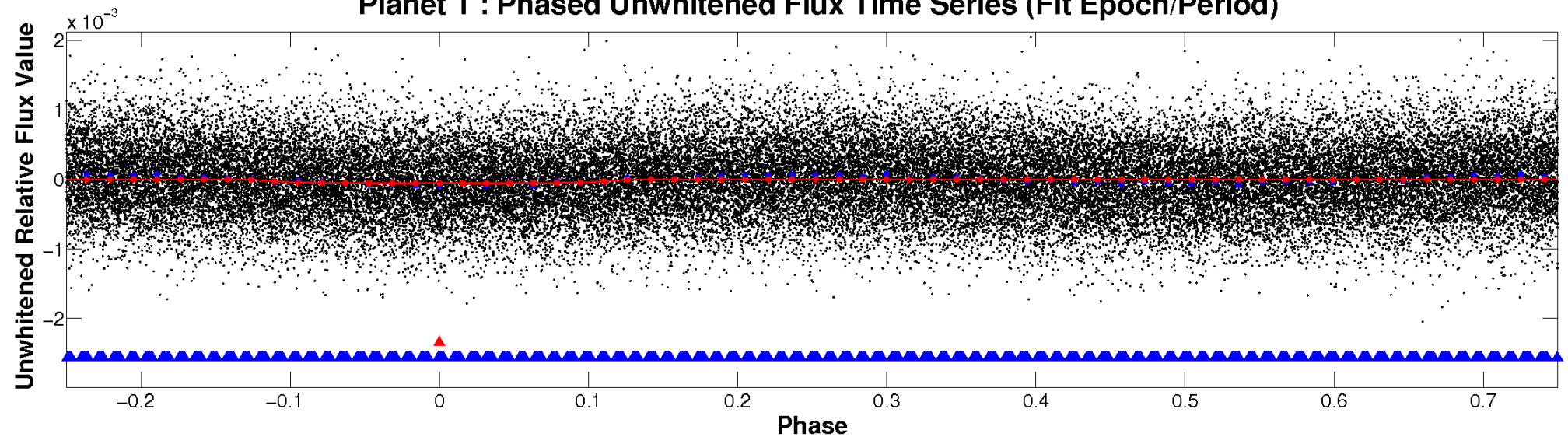
ALT Odd/Even

TCE 005460900-01

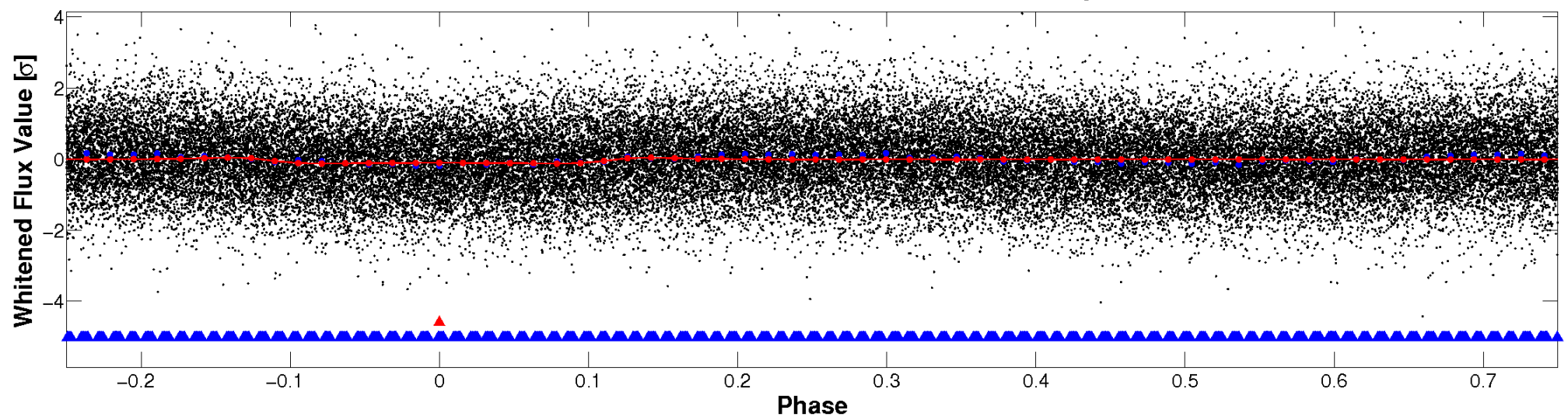


Non-Whitened Vs. Whitened Light Curve

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

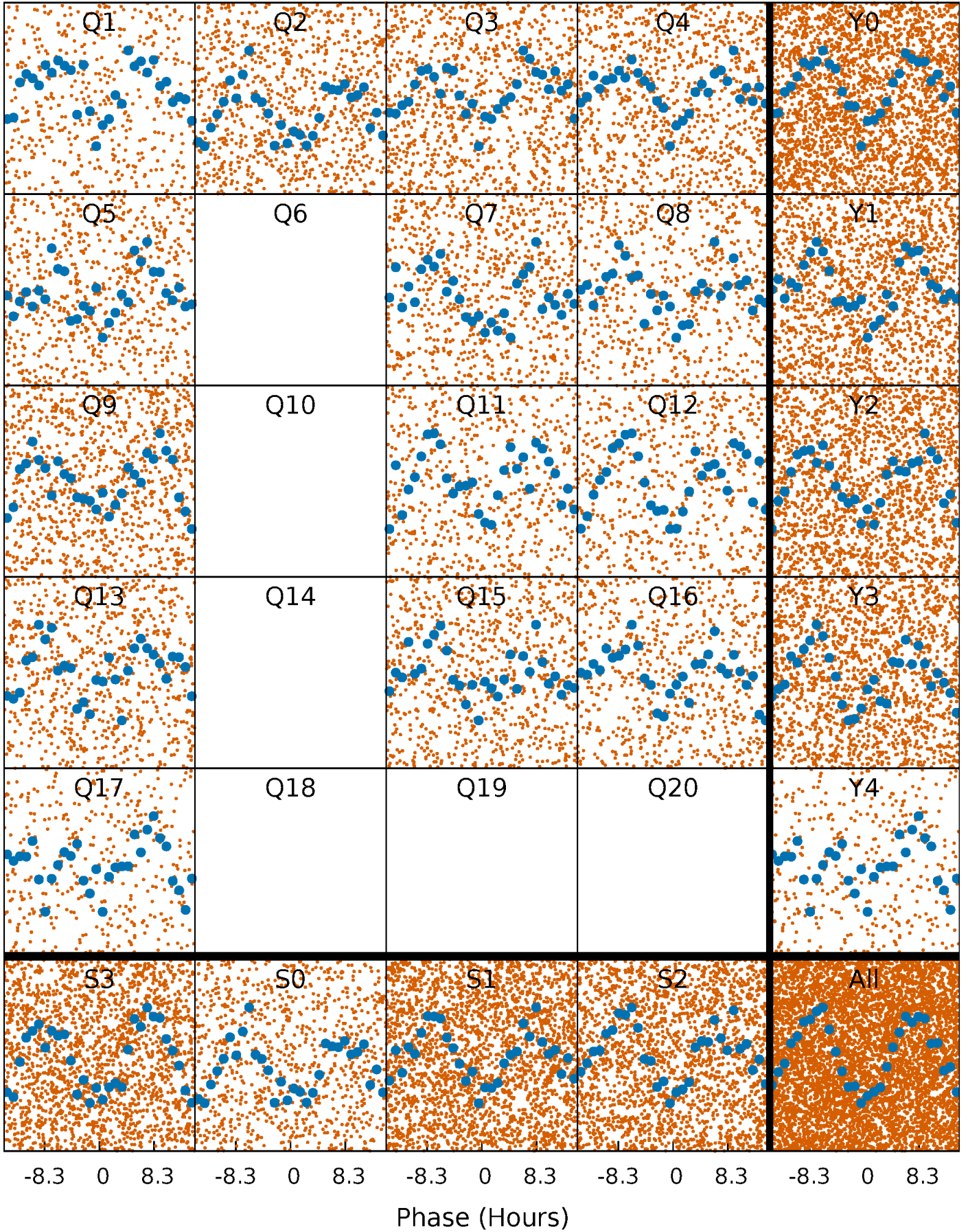


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



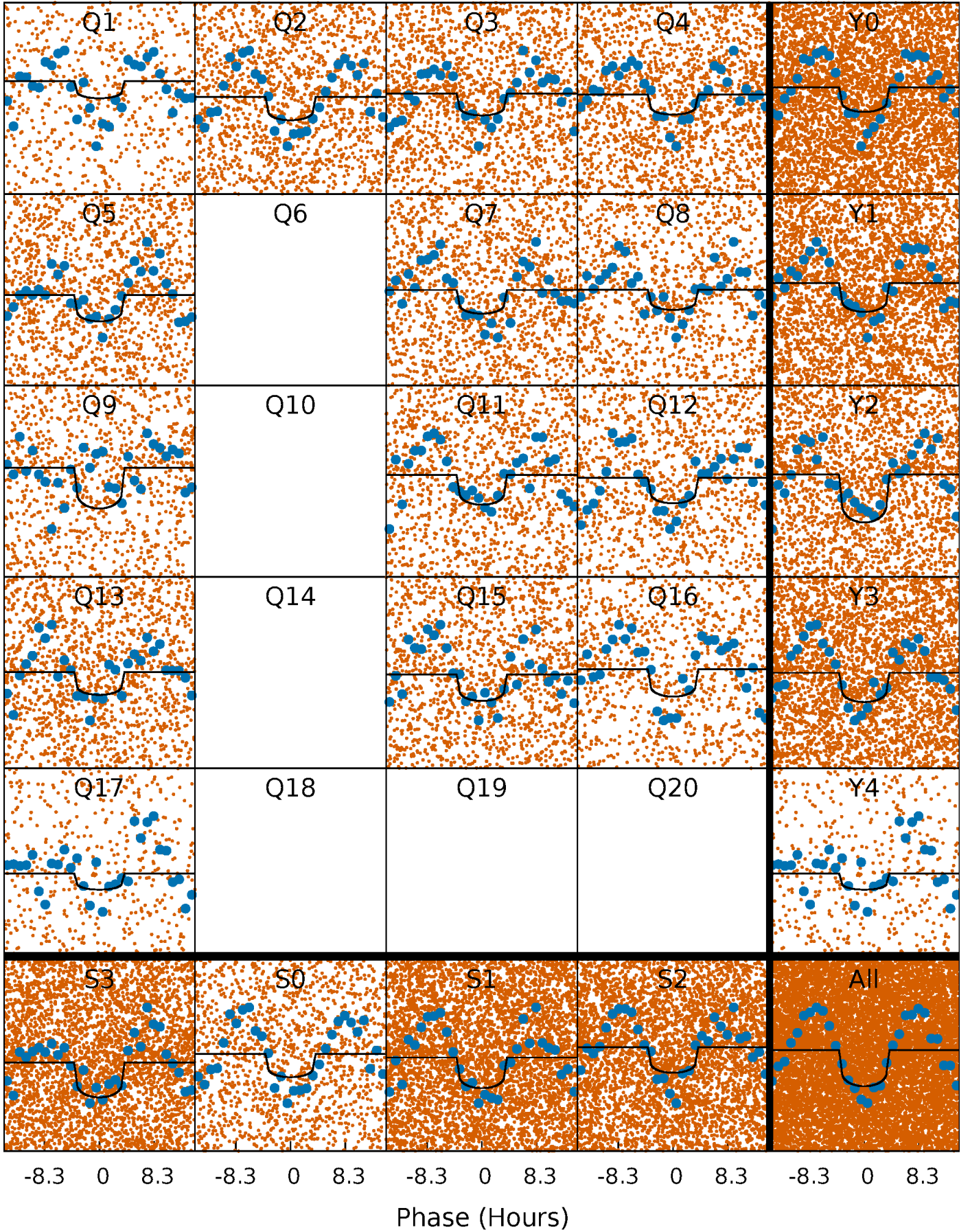
PDC Quarter-Phased Transit Curves

TCE 005460900-01 P= 1.295934 Days $T_0=132.506023$ (BKJD)



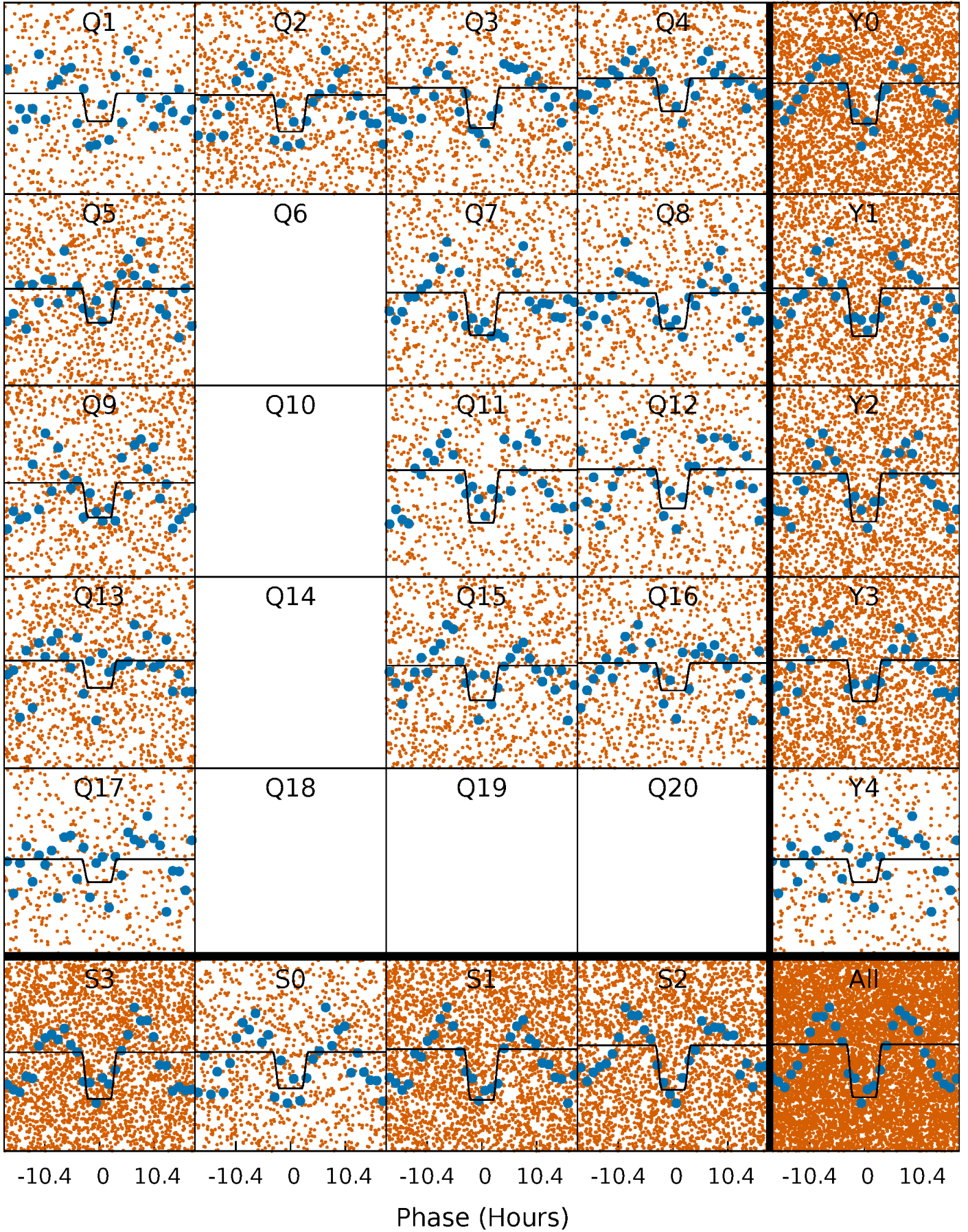
DV Quarter-Phased Transit Curves

TCE 005460900-01 P= 1.295934 Days $T_0=132.506023$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

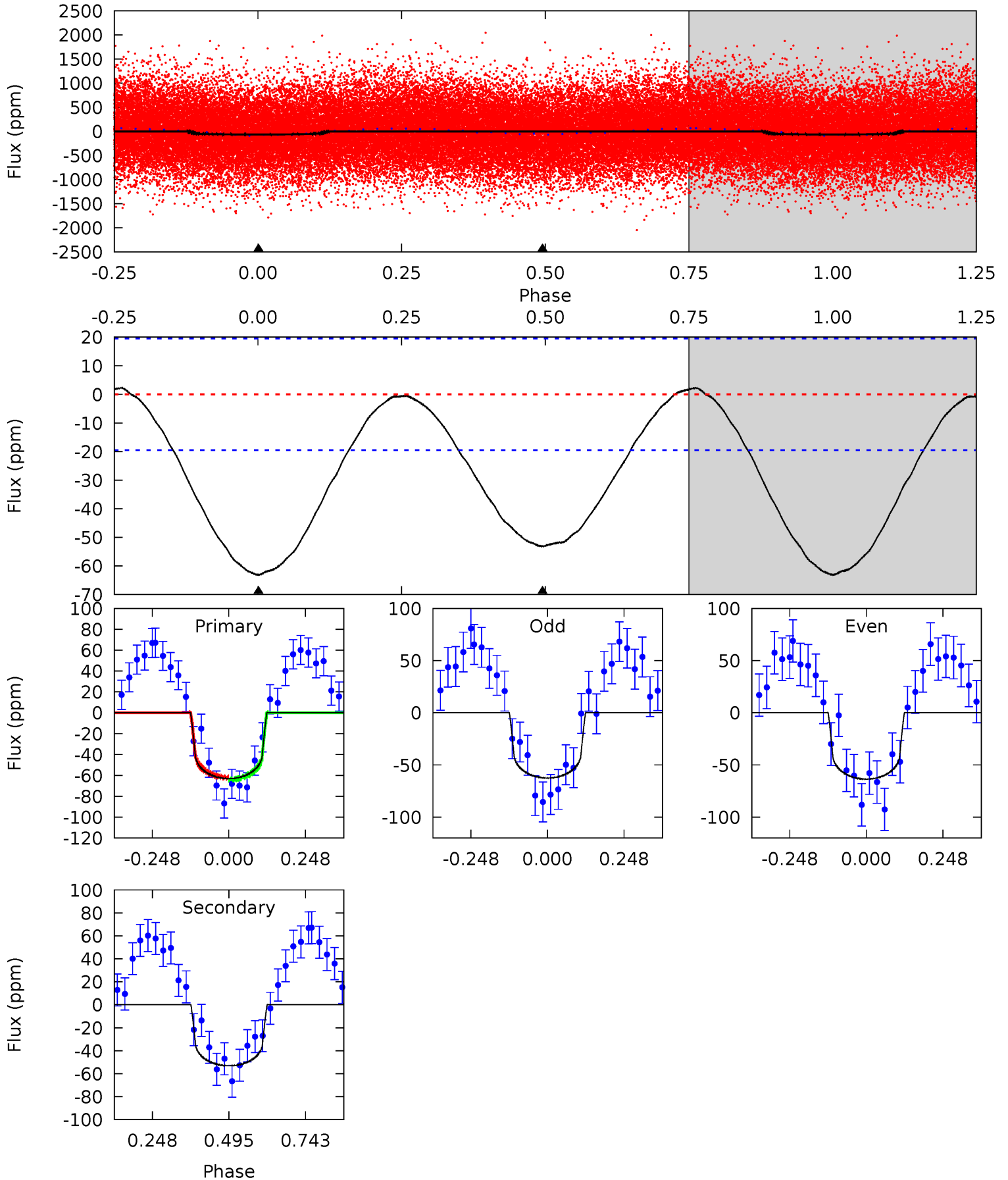
TCE 005460900-01 P= 1.295897 Days $T_0=132.526836$ (BKJD)



DV Model-Shift Uniqueness Test

005460900-01, P = 1.295934 Days, E = 131.210089 Days

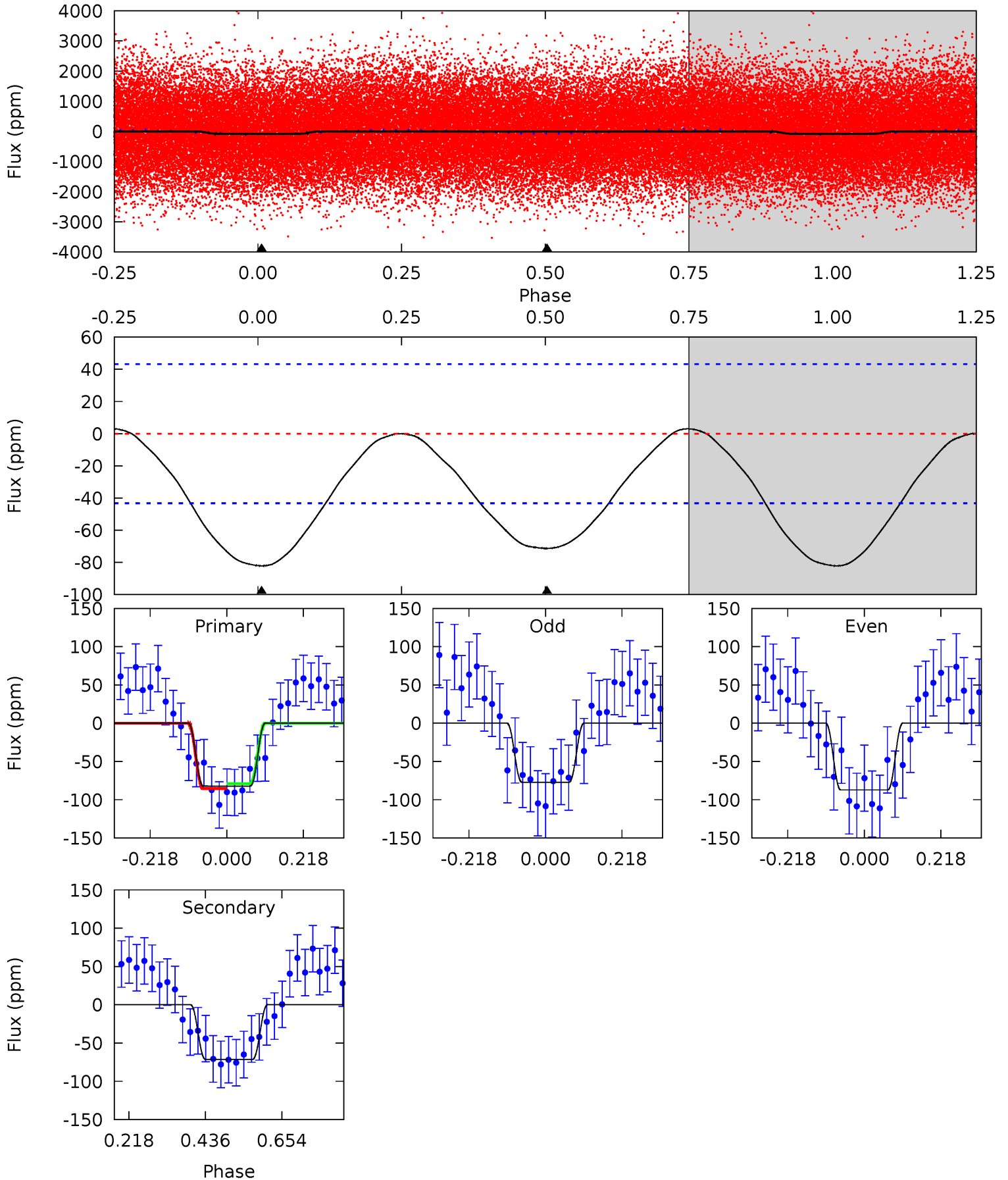
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.1	11.9	0	0	4.37	1.16	0.28	14.1	14.1	11.9	11.9	0.12	0.91	0.03	0.22



Alt Model-Shift Uniqueness Test

005460900-01, P = 1.295897 Days, E = 131.230939 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.36	7.26	0	0	4.40	1.23	0.18	8.36	8.36	7.26	7.26	0.51	1.02	0.04	0.34



Stellar Parameters For KIC 005460900

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7115^{+200}_{-275}	$4.124^{+0.132}_{-0.198}$	$-0.020^{+0.250}_{-0.350}$	$1.761^{+0.546}_{-0.364}$	$1.504^{+0.209}_{-0.255}$	$0.388^{+0.297}_{-0.194}$
	+3%/-4%	+3%/-5%	+1250%/-1750%	+31%/-21%	+14%/-17%	+77%/-50%
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 005460900-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-53 ± 4	$1.43^{+0.97}_{-0.84}$	3602^{+287}_{-240}	6952^{+5450}_{-1614}	10^{+47}_{-7}
Alt.	-71 ± 10	$1.97^{+1.07}_{-0.92}$	3600^{+272}_{-257}	6348^{+2841}_{-1185}	$7.021^{+16.590}_{-3.938}$

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 $A_{obs} \gg 1.0$

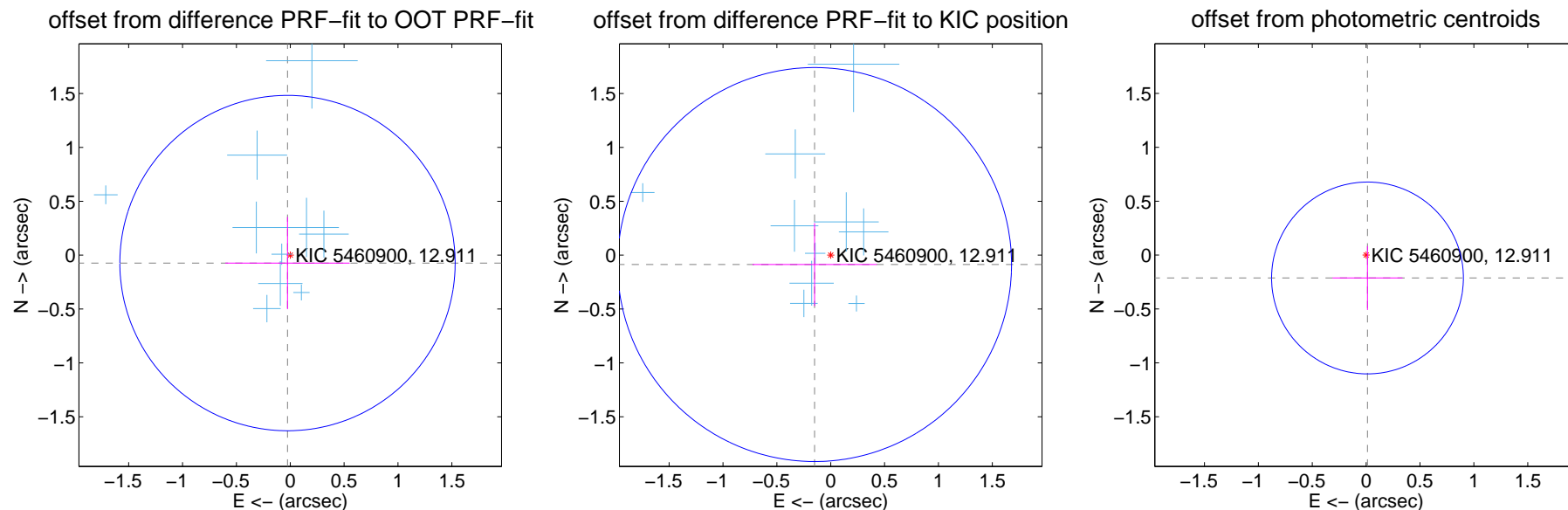
DV Centroid Data

Supplemental centroid analysis for 005460900-01. Kepler magnitude: 12.91. Transit SNR 11.89

There are 11 quarters with good PRF difference image offsets

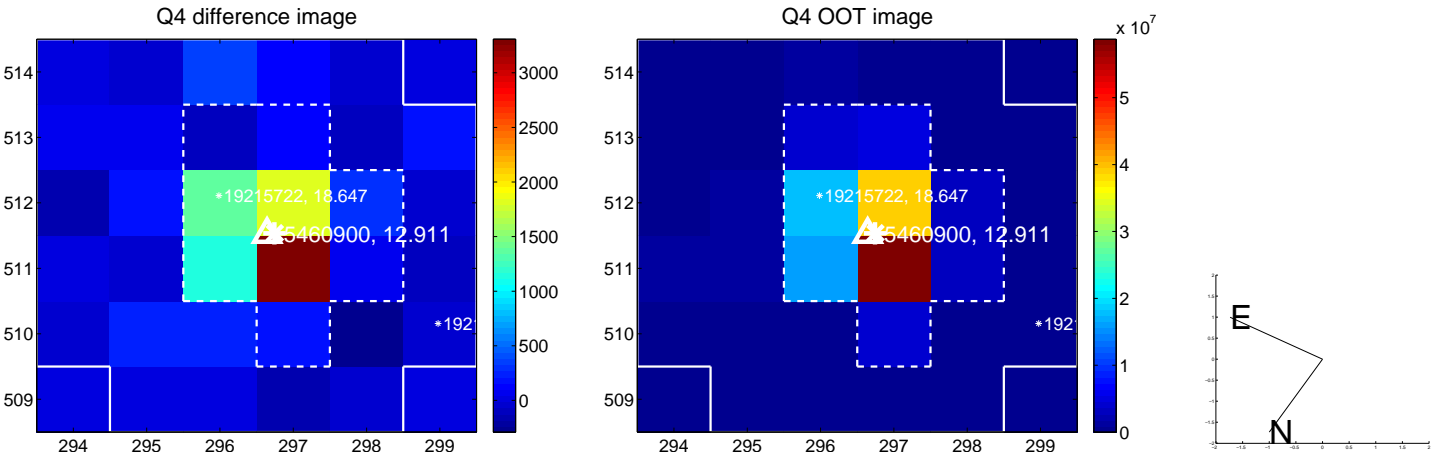
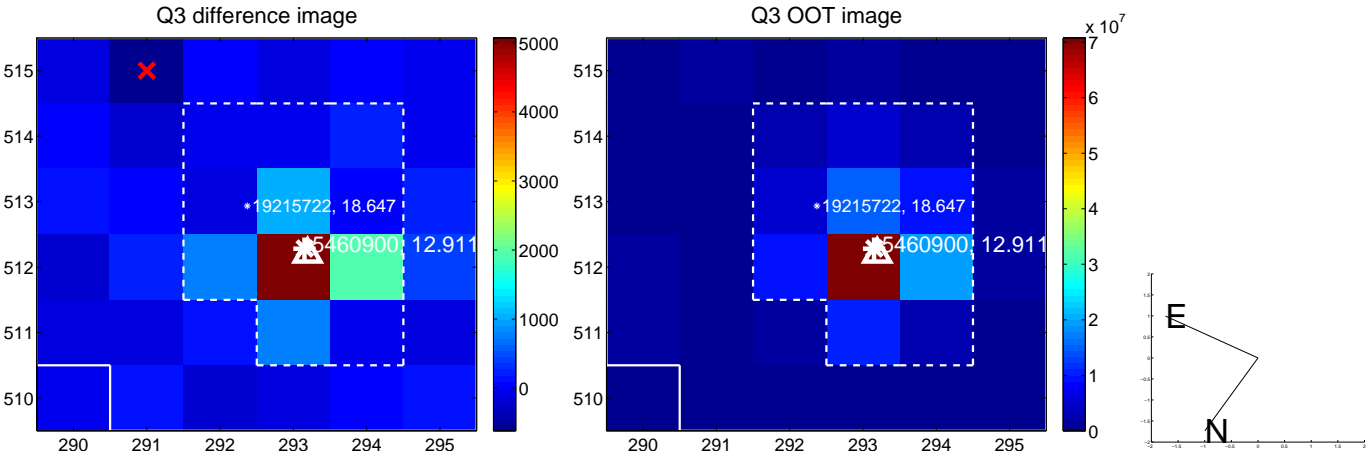
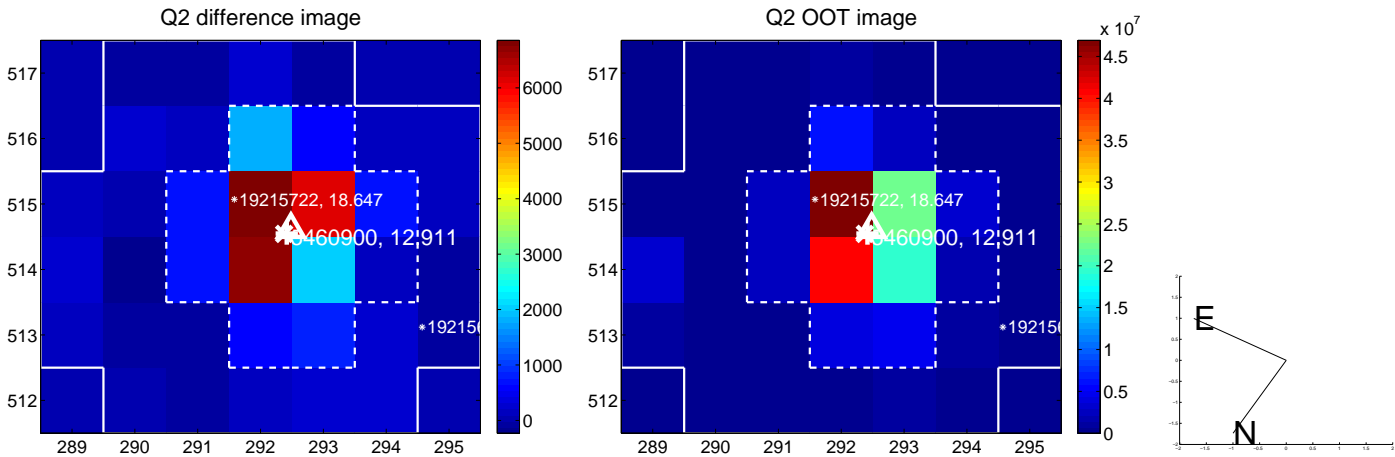
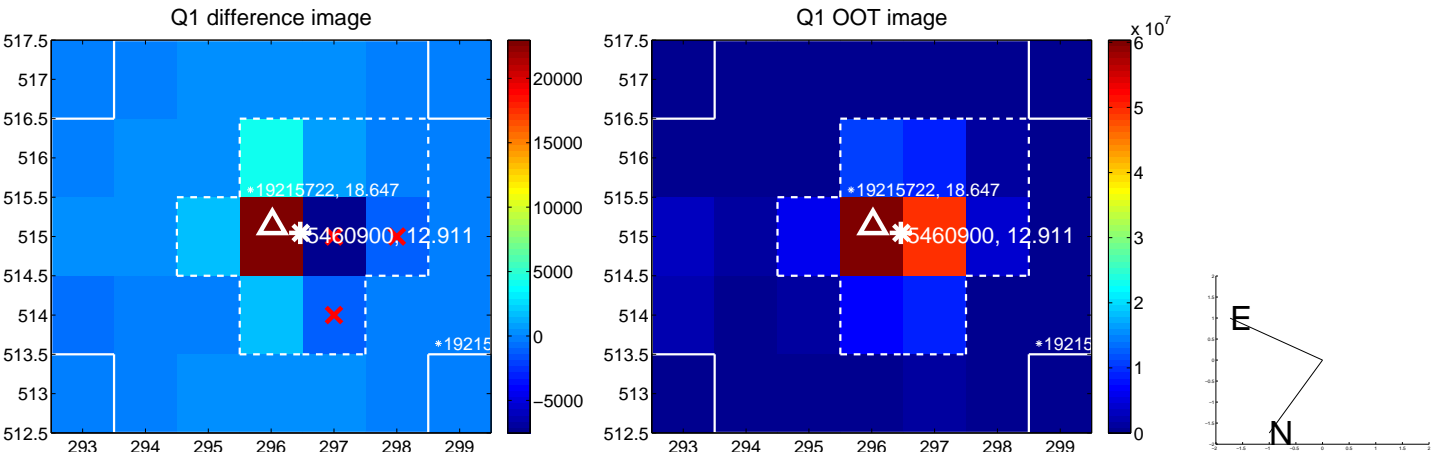
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.078 ± 0.519	0.15	0.026 ± 0.577	-0.073 ± 0.428
PRF-fit source offset from KIC position	0.173 ± 0.609	0.28	0.150 ± 0.577	-0.087 ± 0.385
photometric centroid source offset	0.21 ± 0.30	0.72	-0.01 ± 0.32	-0.21 ± 0.30

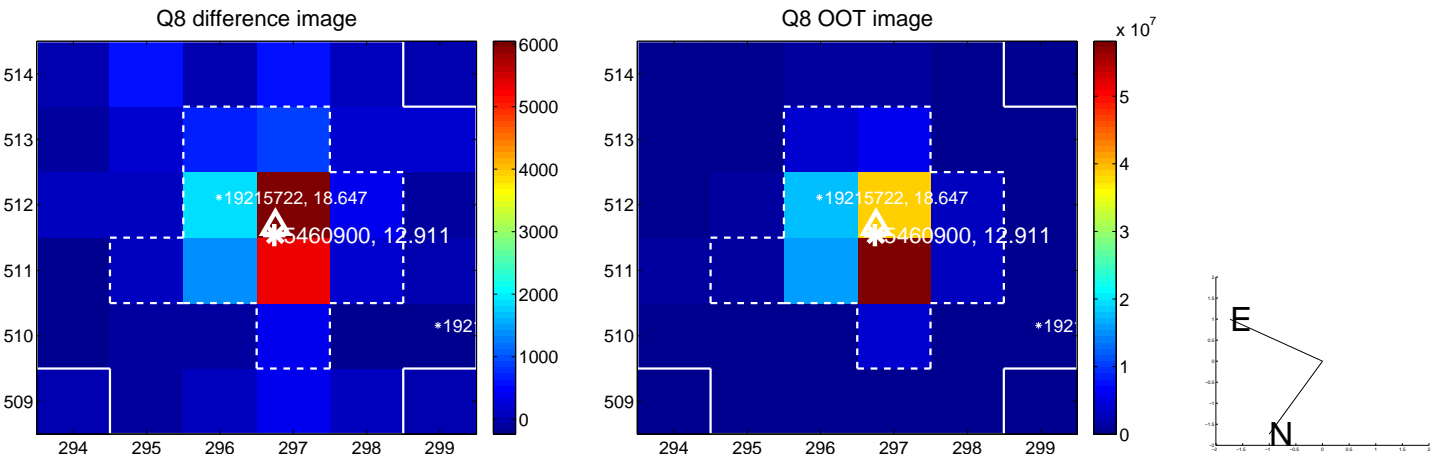
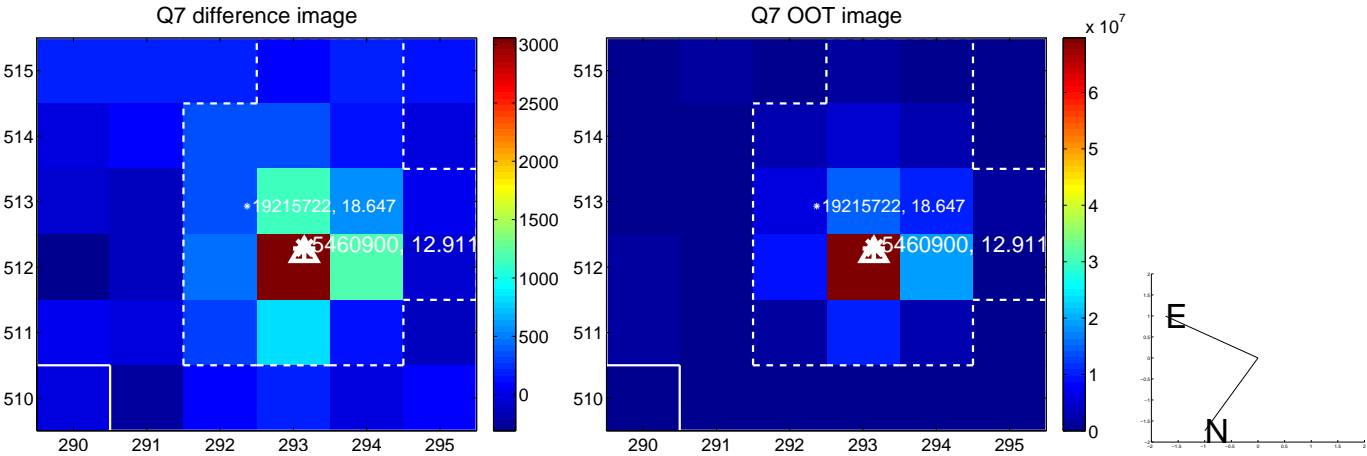
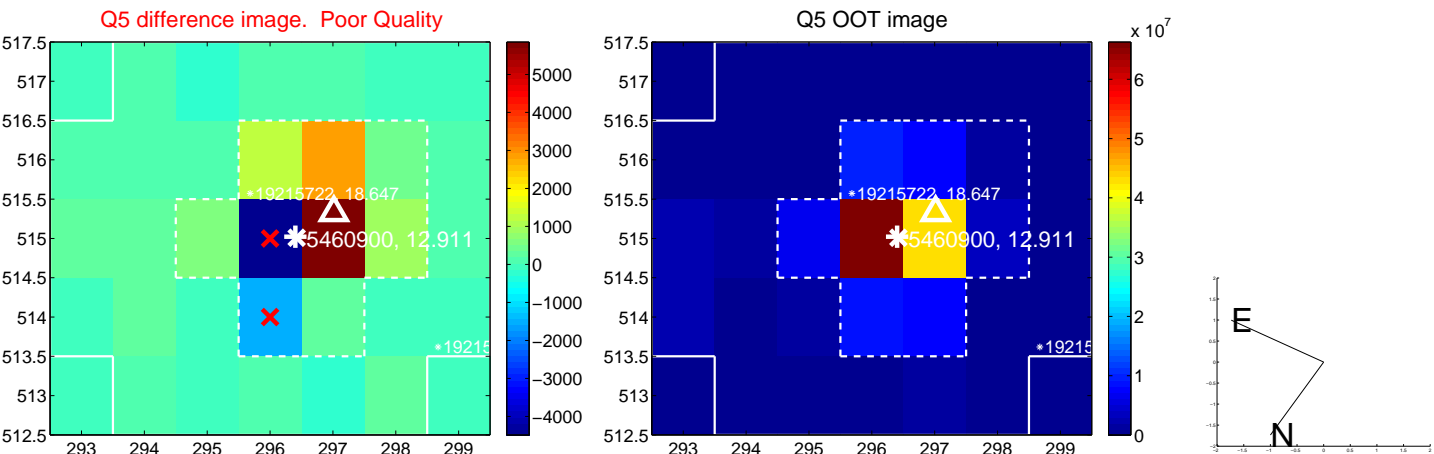


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

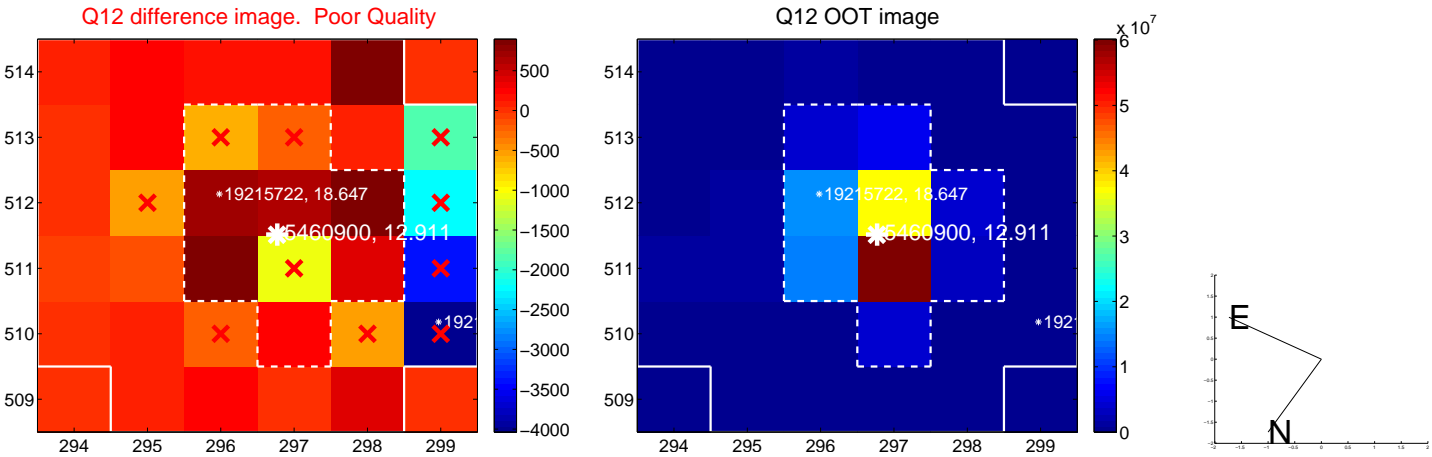
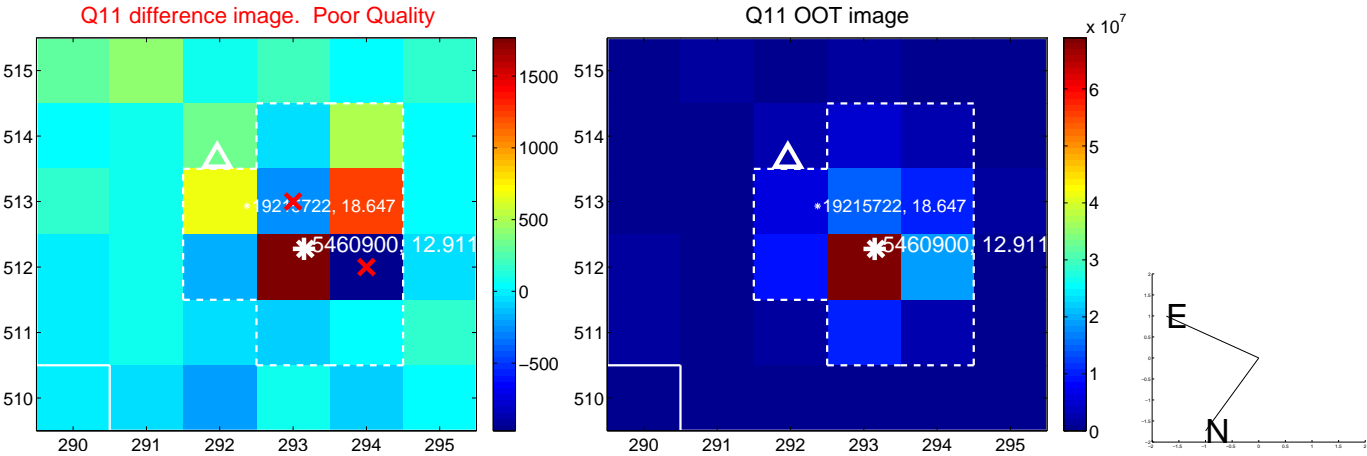
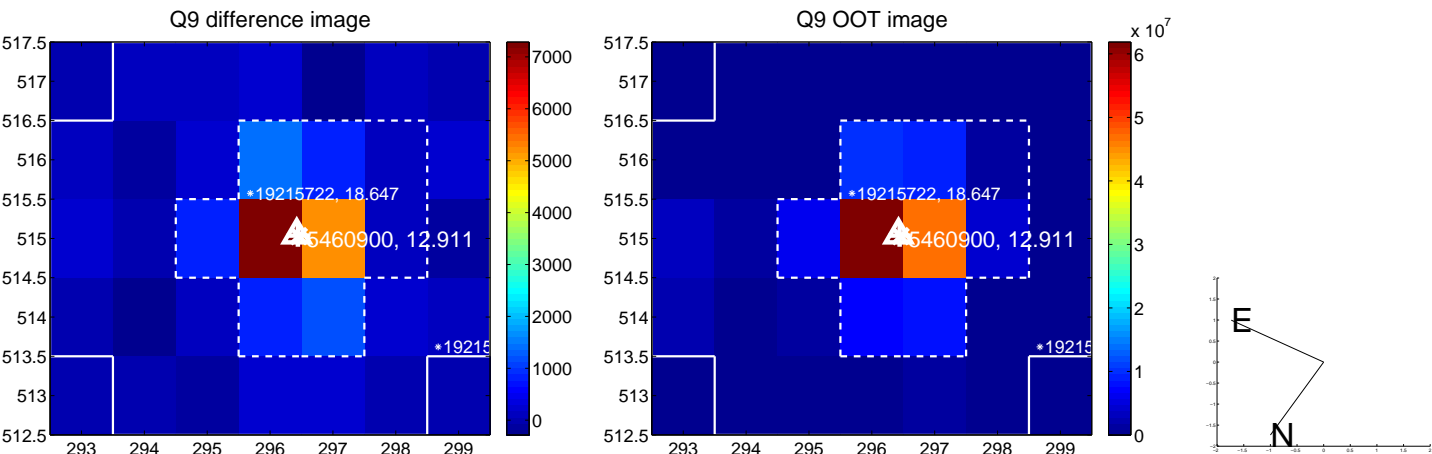
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



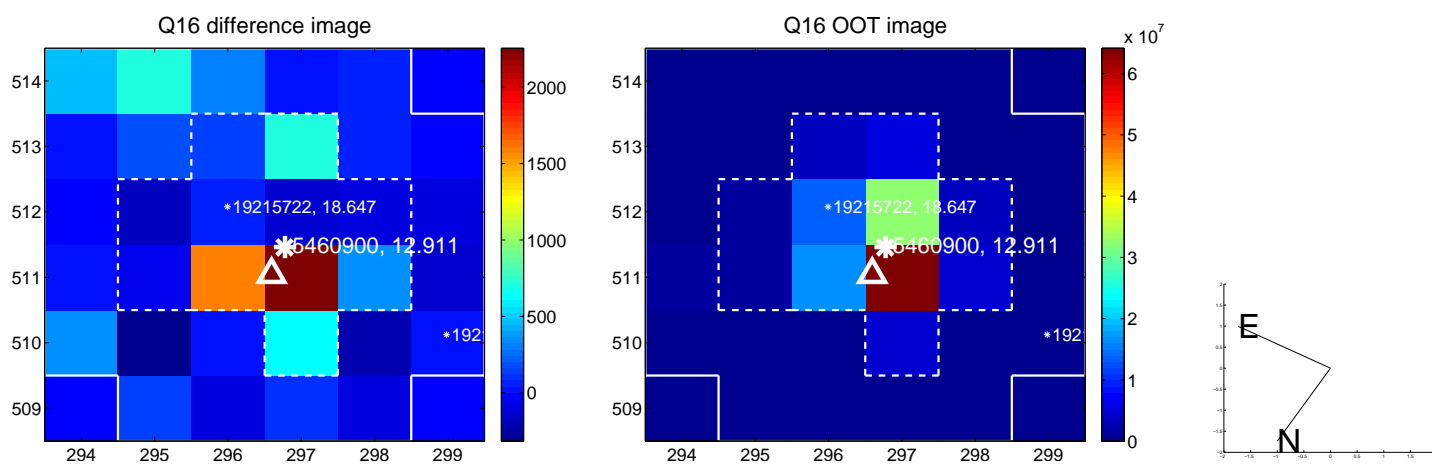
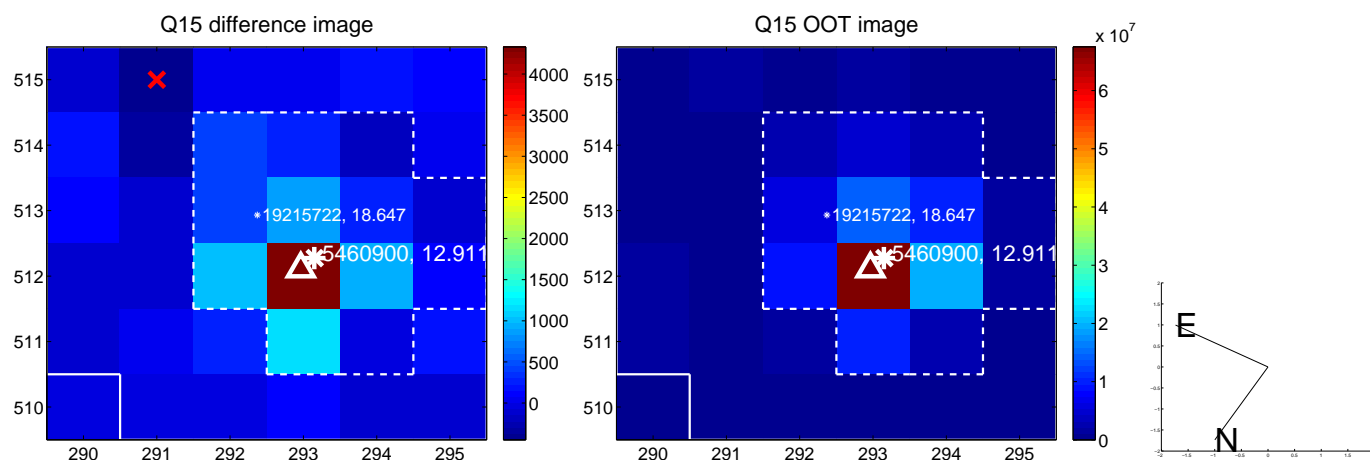
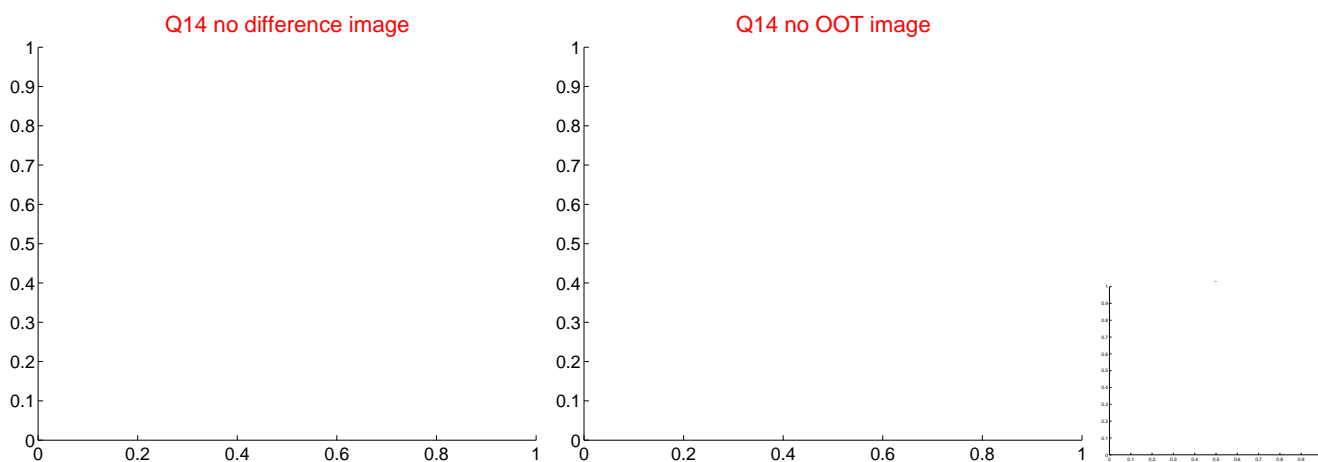
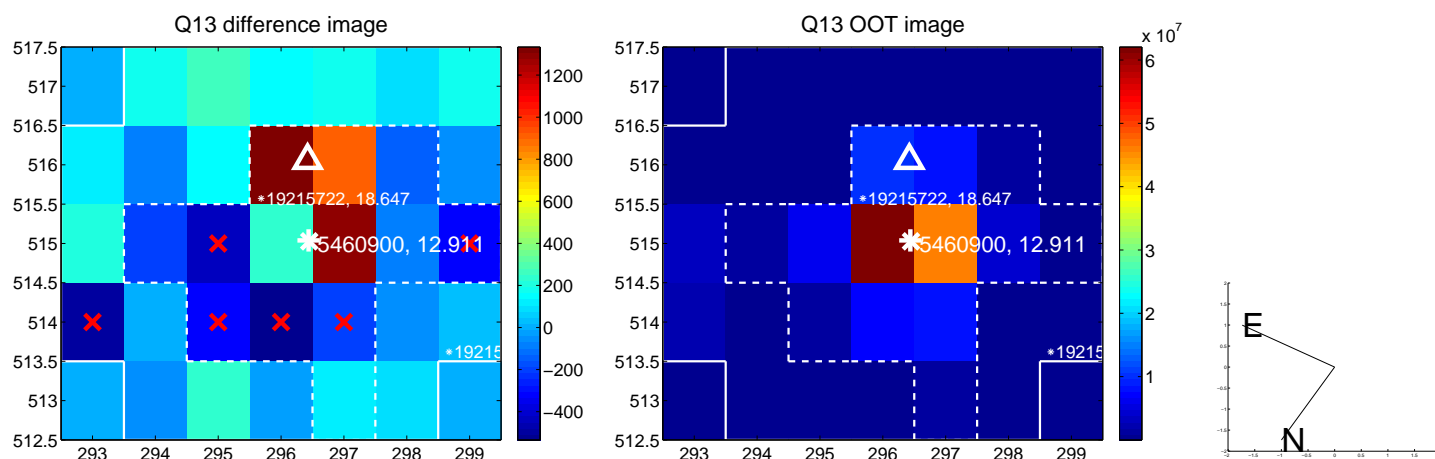
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



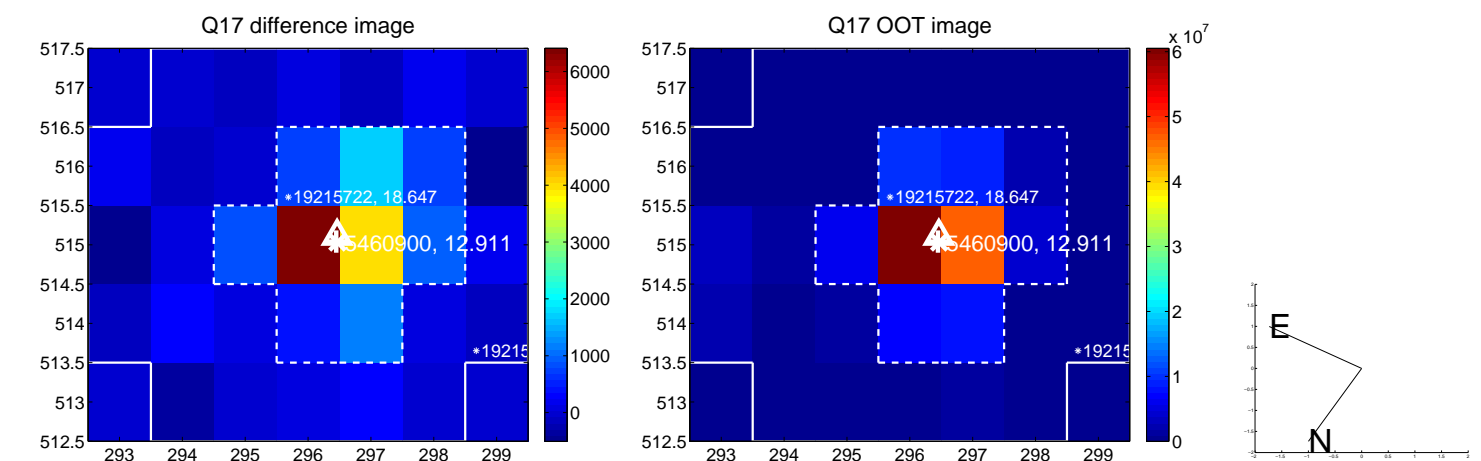
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



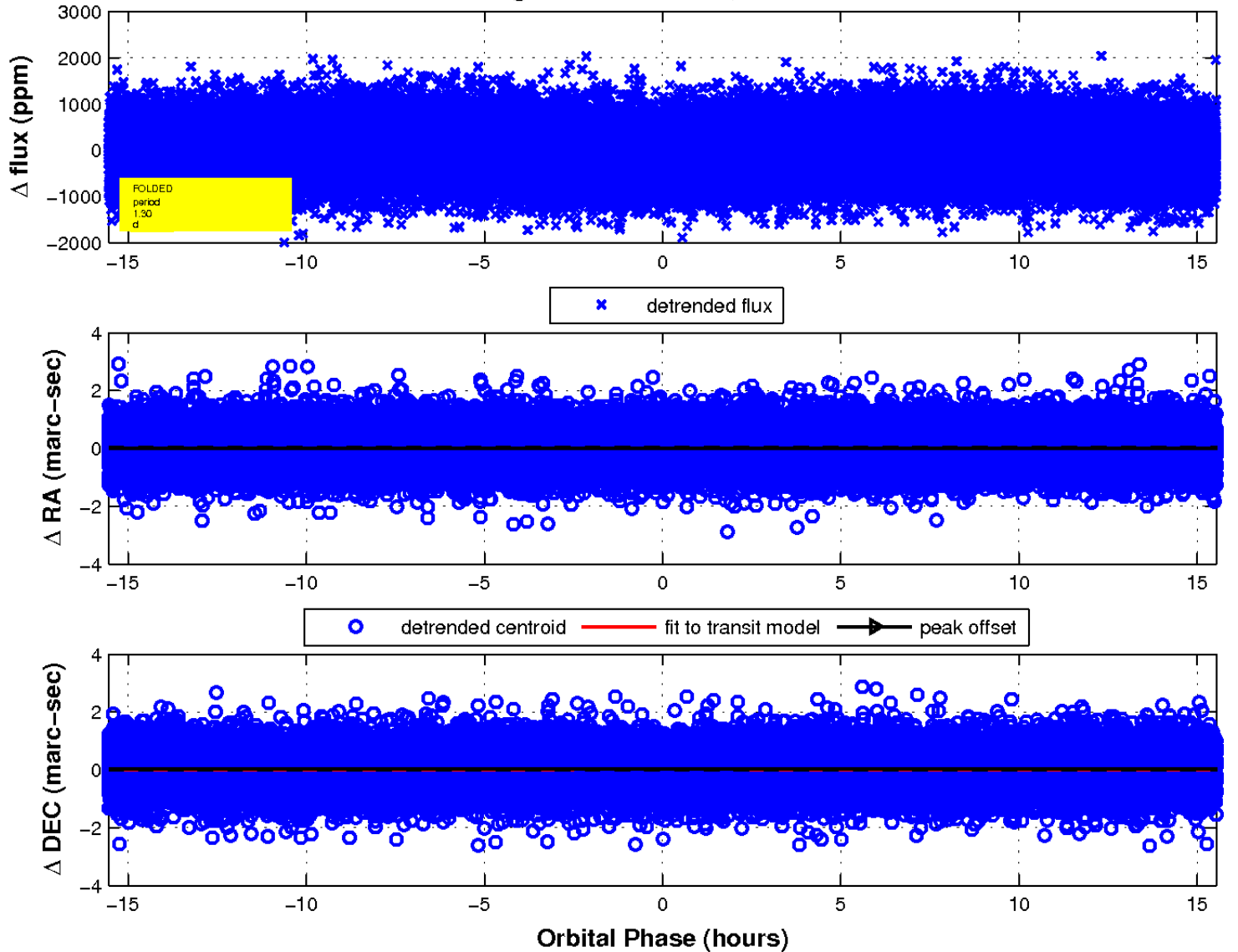
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

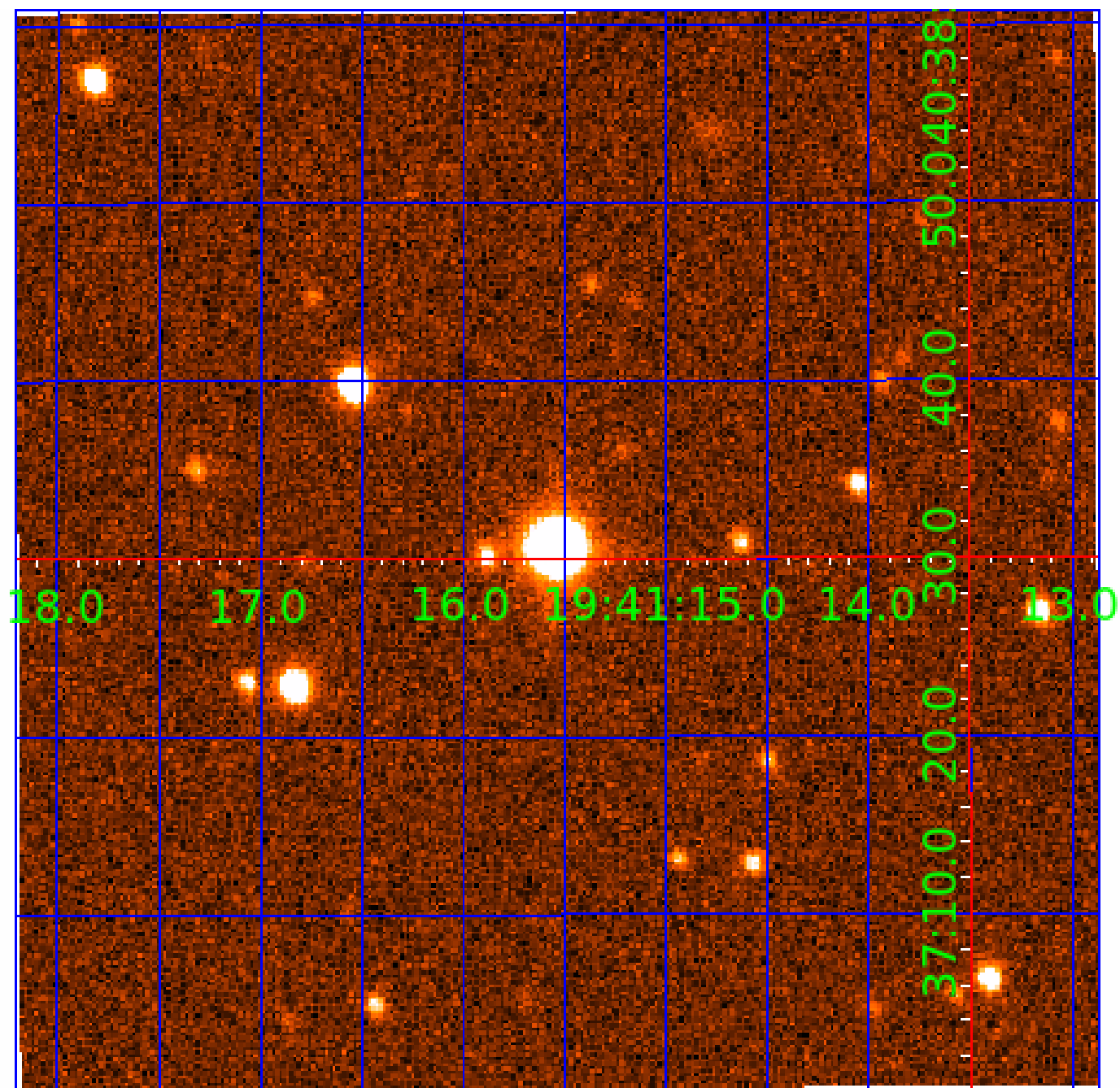


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005460900

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})
005460900-01	OBS	No	1.295934	132.506023	54.8	7.242	9.2	11.9	1.76	7115	1.32	10015.13
005460900-02	OBS	No	3.422970	131.715328	118.3	12.630	10.1	11.4	1.76	7115	2.00	2743.02

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005460900-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT
005460900-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT

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

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

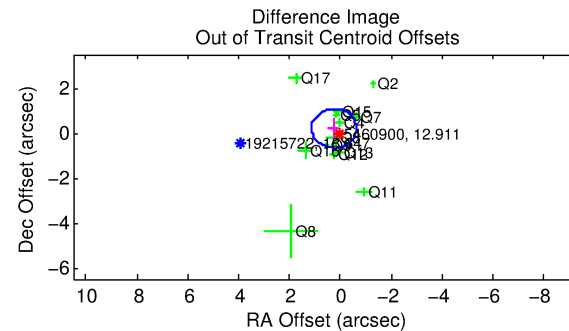
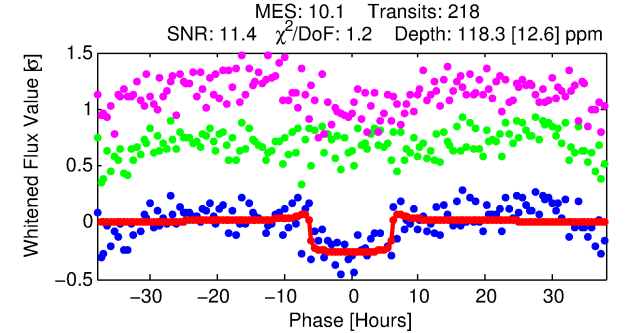
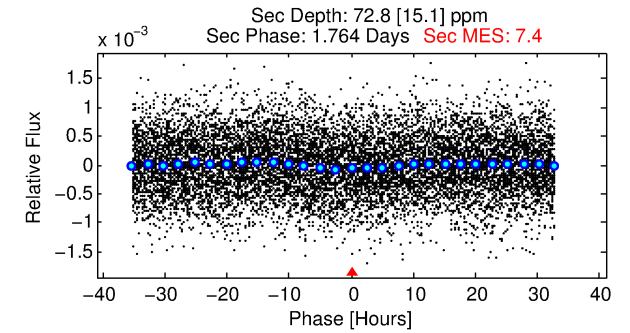
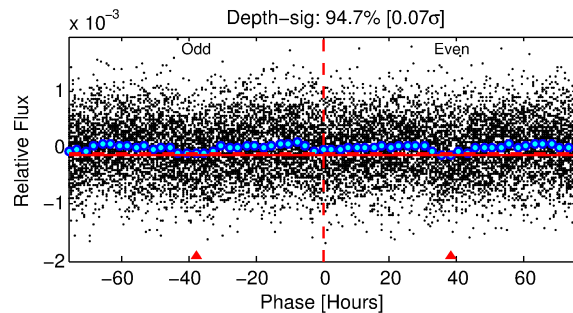
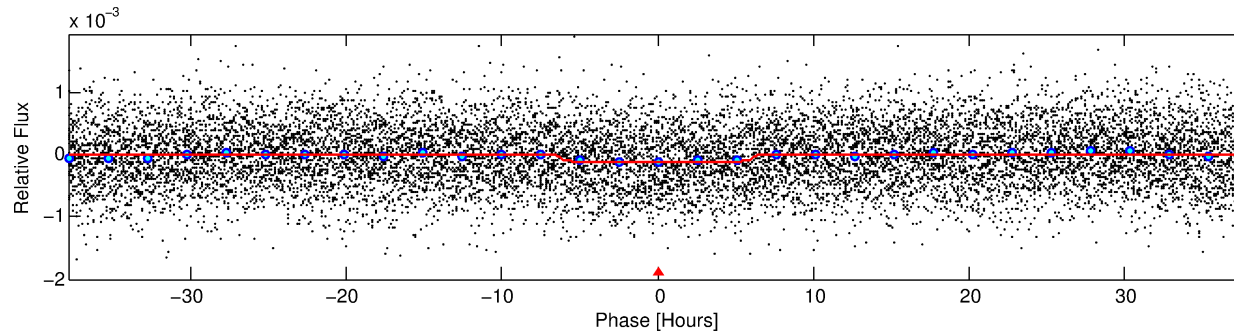
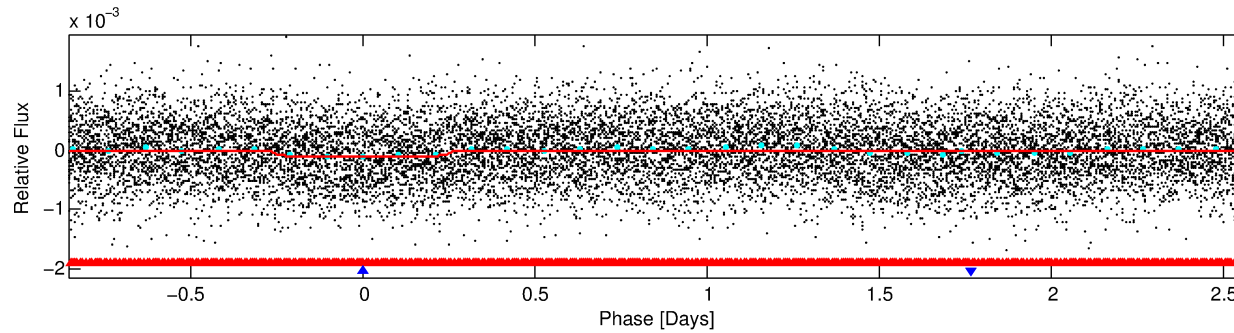
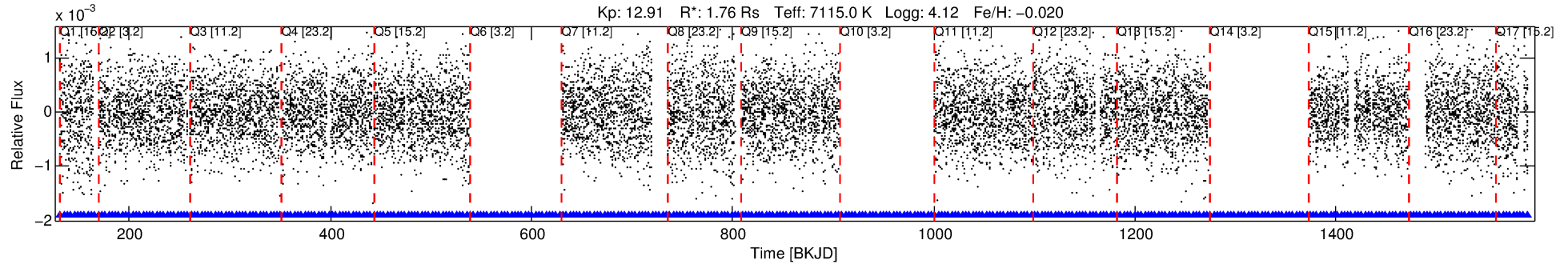
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005460900-02

No Significant Match Found

DV One-Page Summary

KIC: 5460900 Candidate: 2 of 2 Period: 3.423 d



DV Fit Results:

Period = 3.42297 [0.00006] d
Epoch = 131.7153 [0.0112] BKJD
Rp/R* = 0.0104 [0.0077]
a/R* = 1.88 [5.98]
b = 0.57 [5.23]
Seff = 2743.02 [1093.80]
Teq = 1845 [184] K
Rp = 2.00 [1.61] Re
a = 0.0509 [0.0131] AU
Ag = 25.89 [39.93] [0.62 σ]
Teffp = 6436 [2423] K [1.89 σ]

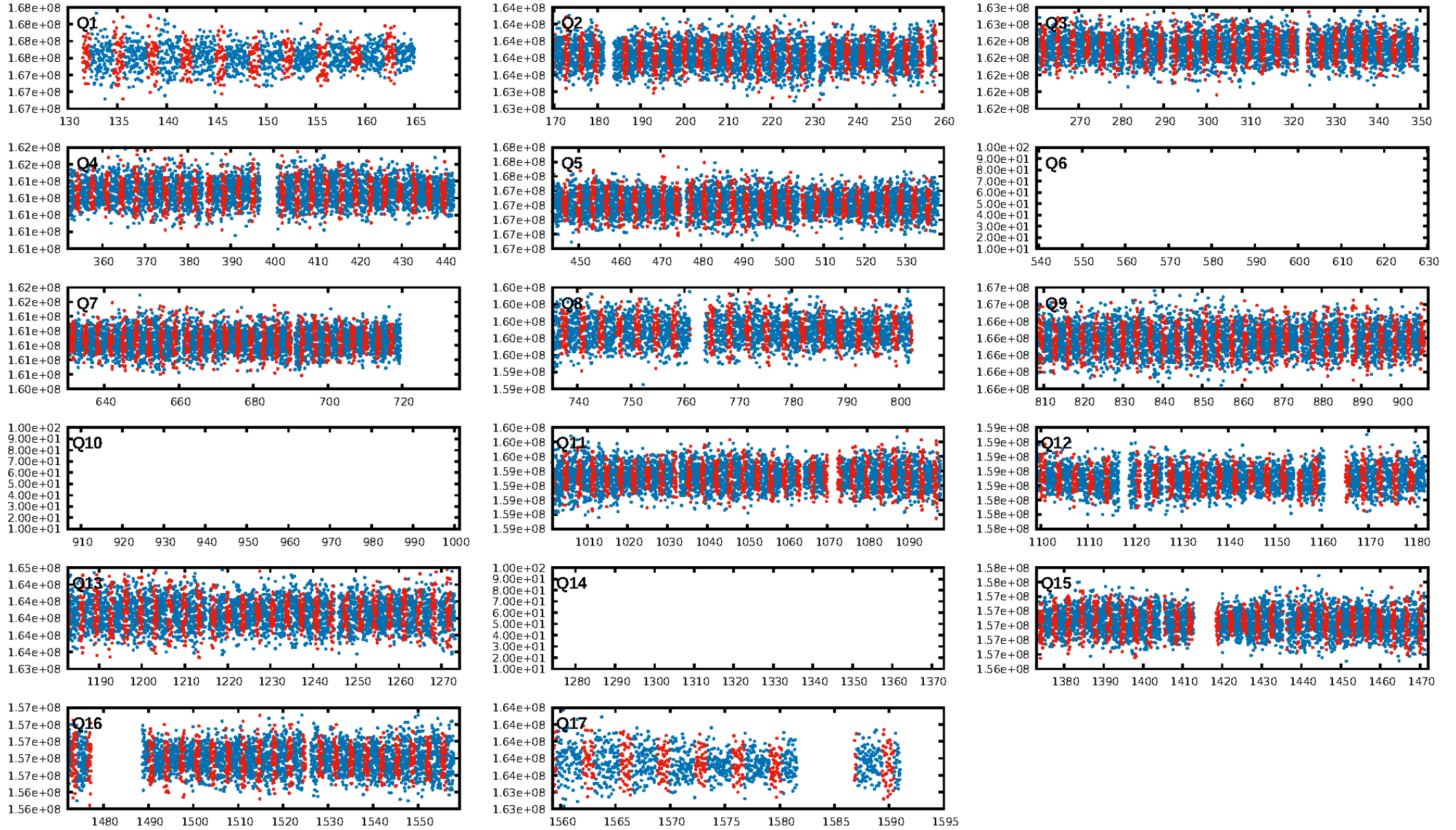
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [3.51 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.70e-21
RollingBand-fgt: 1.00 [206/206]
GhostDiagnostic-chr: 0.91
Centroid-sig: 2.6%
Centroid-so: 0.405 arcsec [2.05 σ]
OotOffset-rm: 0.325 arcsec [1.11 σ]
KicOffset-rm: 0.376 arcsec [1.23 σ]
OotOffset-st: 1/4/4/4 [13]
KicOffset-st: 1/4/4/4 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 0.00 [0/14]

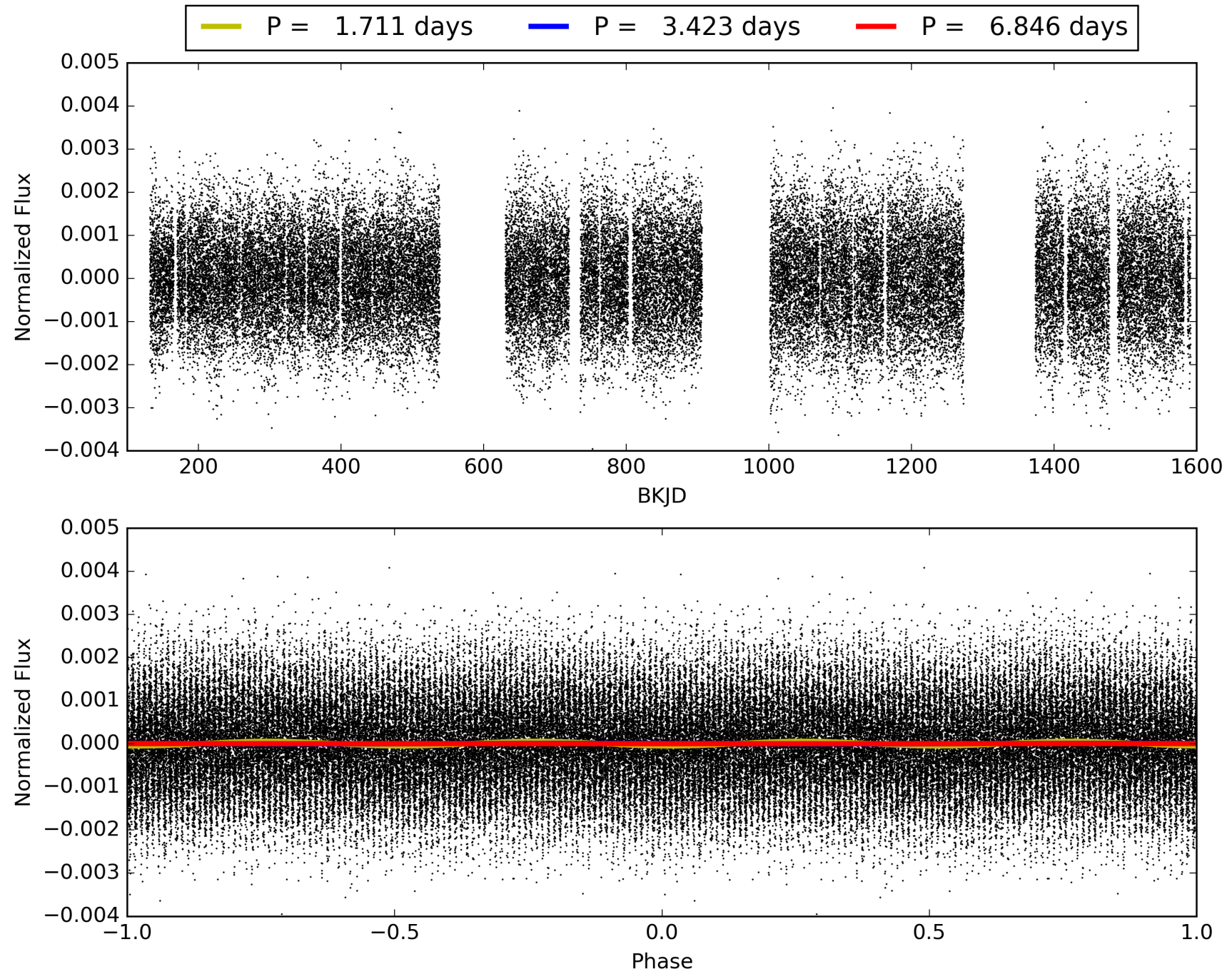
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:20:15 Z

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

TCE 005460900-02, PDC Light Curves

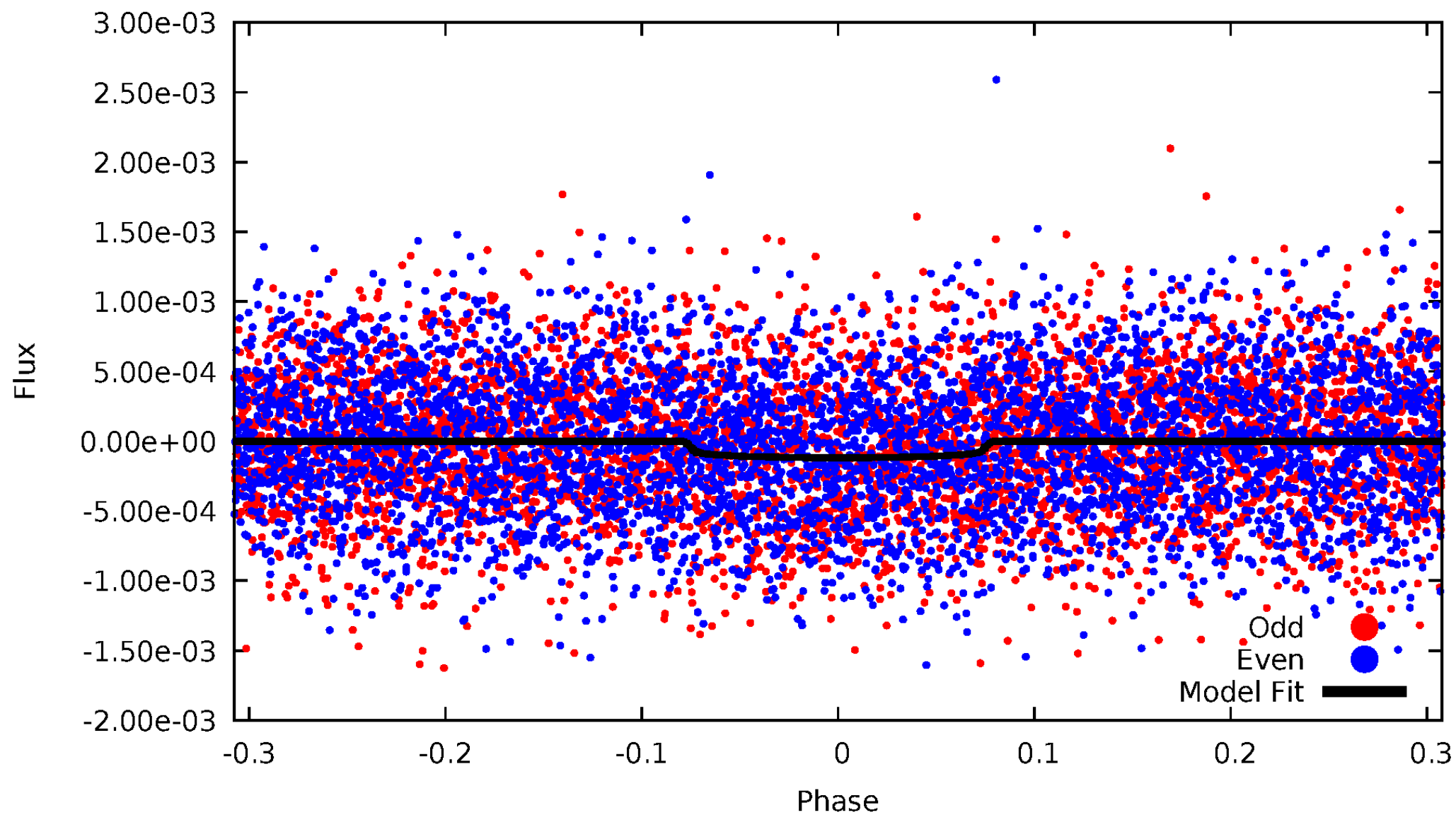


TCE 005460900-02



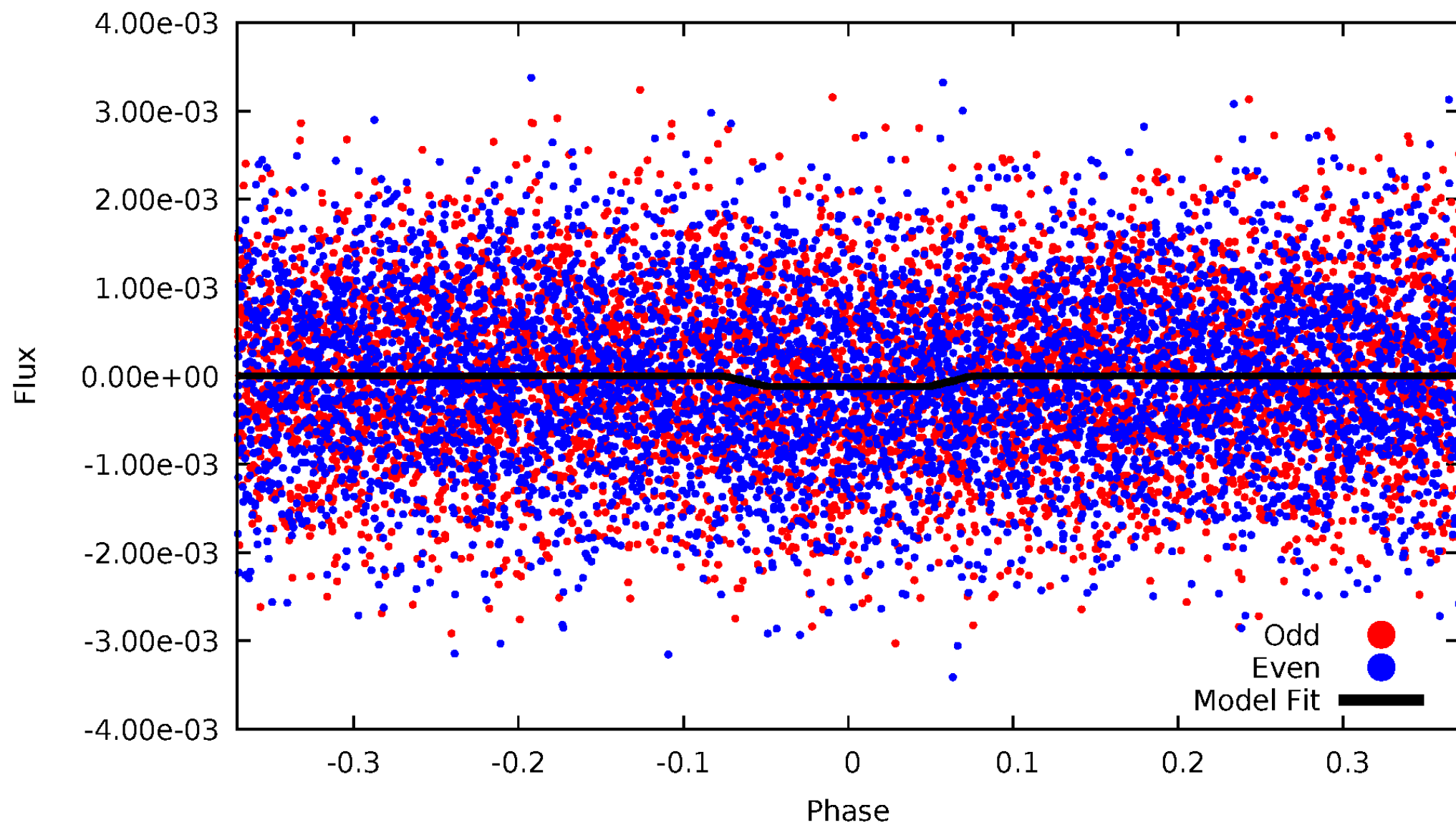
DV Odd/Even

TCE 005460900-02



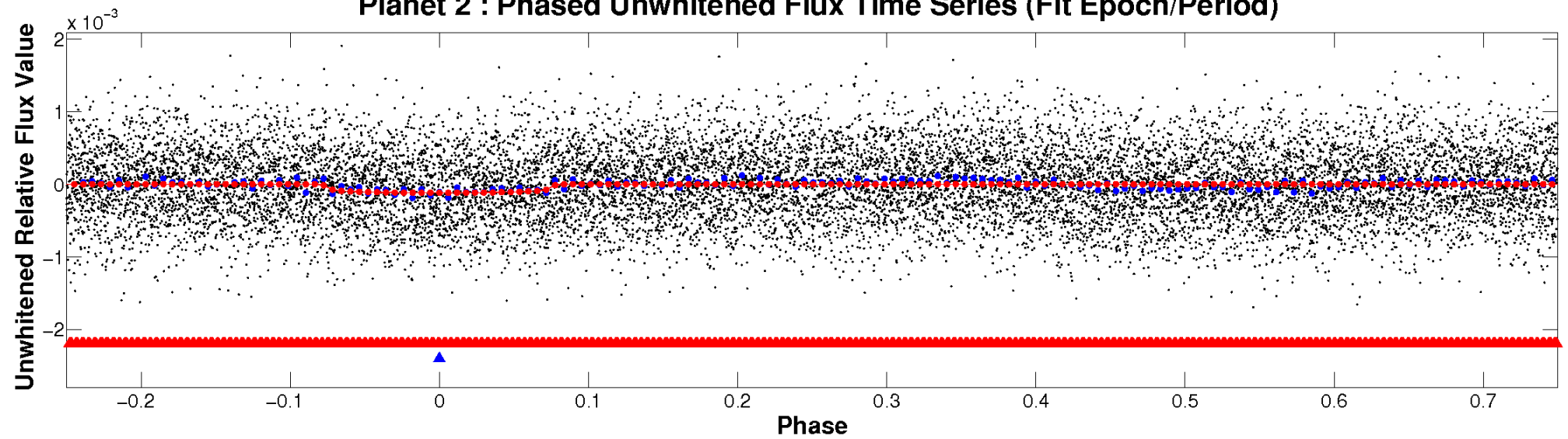
ALT Odd/Even

TCE 005460900-02

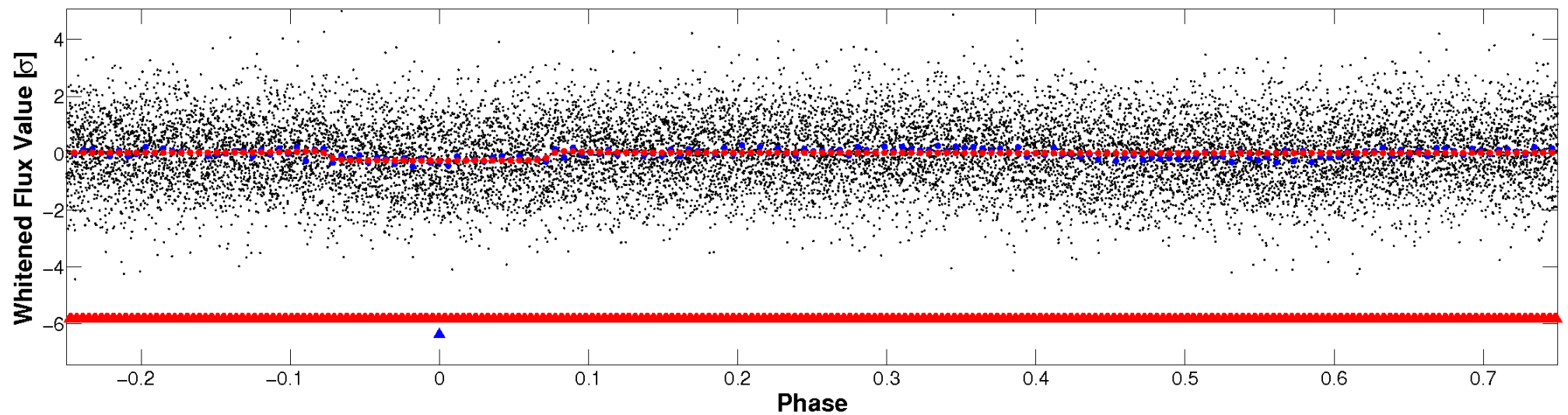


Non-Whitened Vs. Whitened Light Curve

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

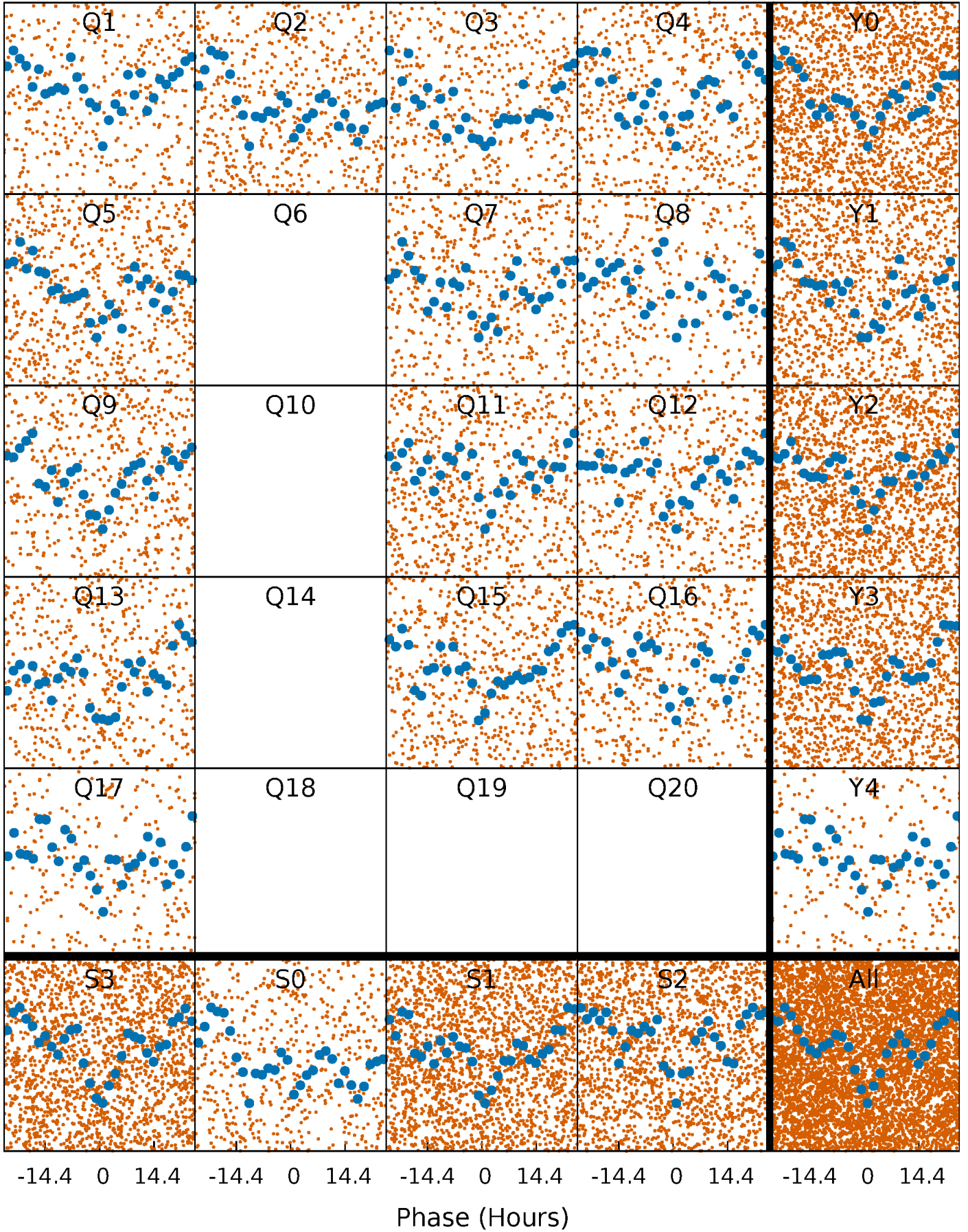


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



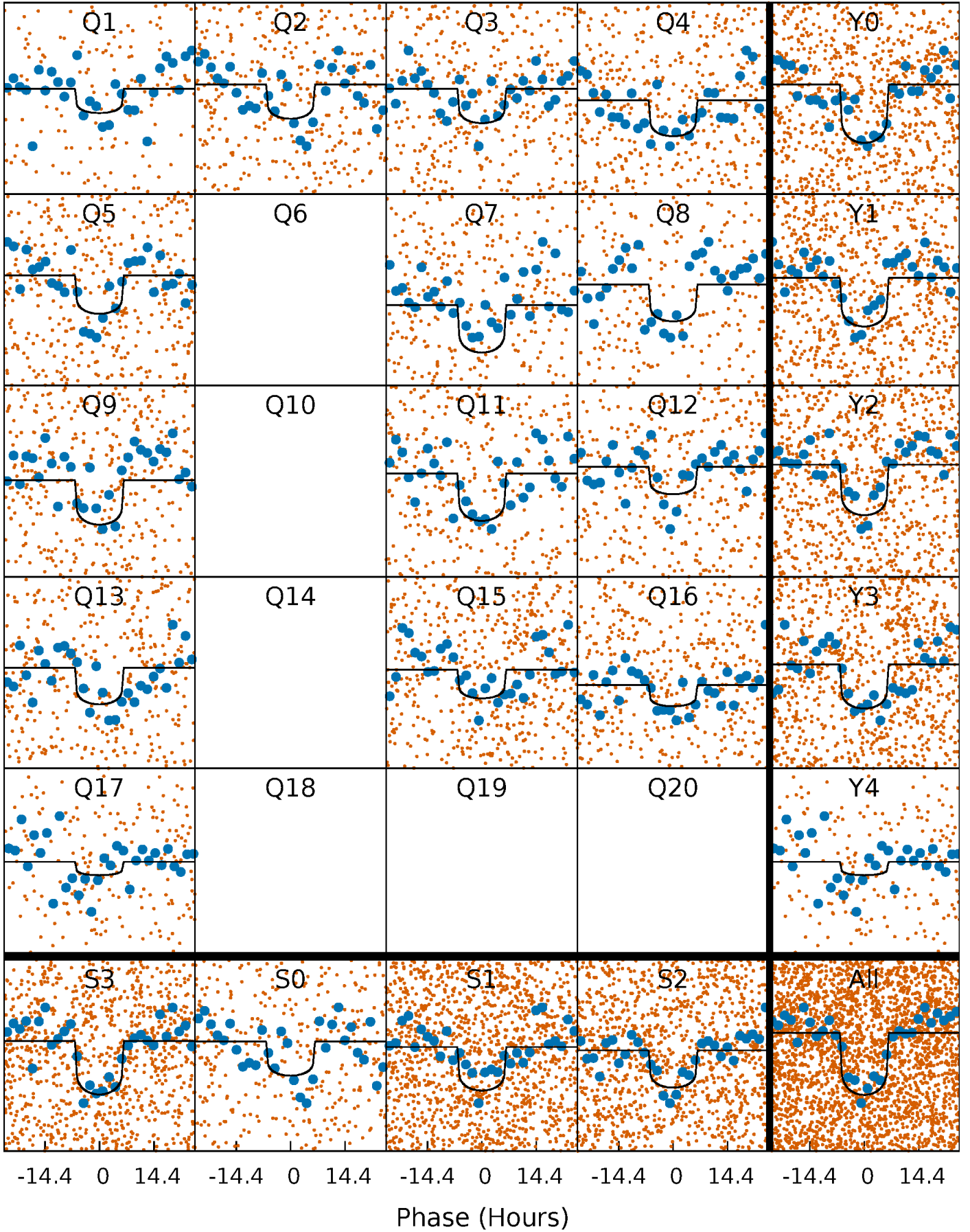
PDC Quarter-Phased Transit Curves

TCE 005460900-02 $P = 3.422970$ Days $T_0 = 131.715328$ (BKJD)



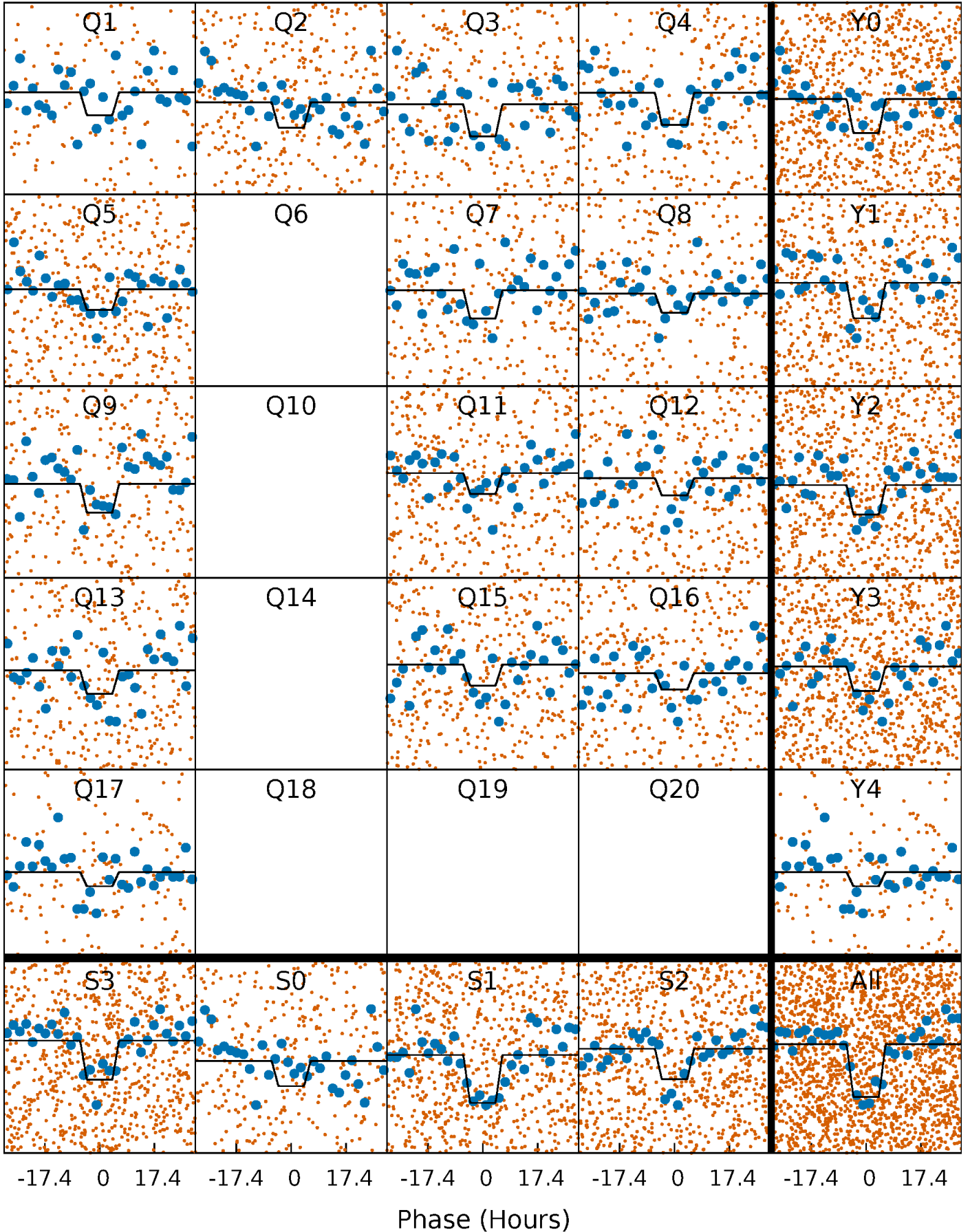
DV Quarter-Phased Transit Curves

TCE 005460900-02 $P = 3.422970$ Days $T_0 = 131.715328$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

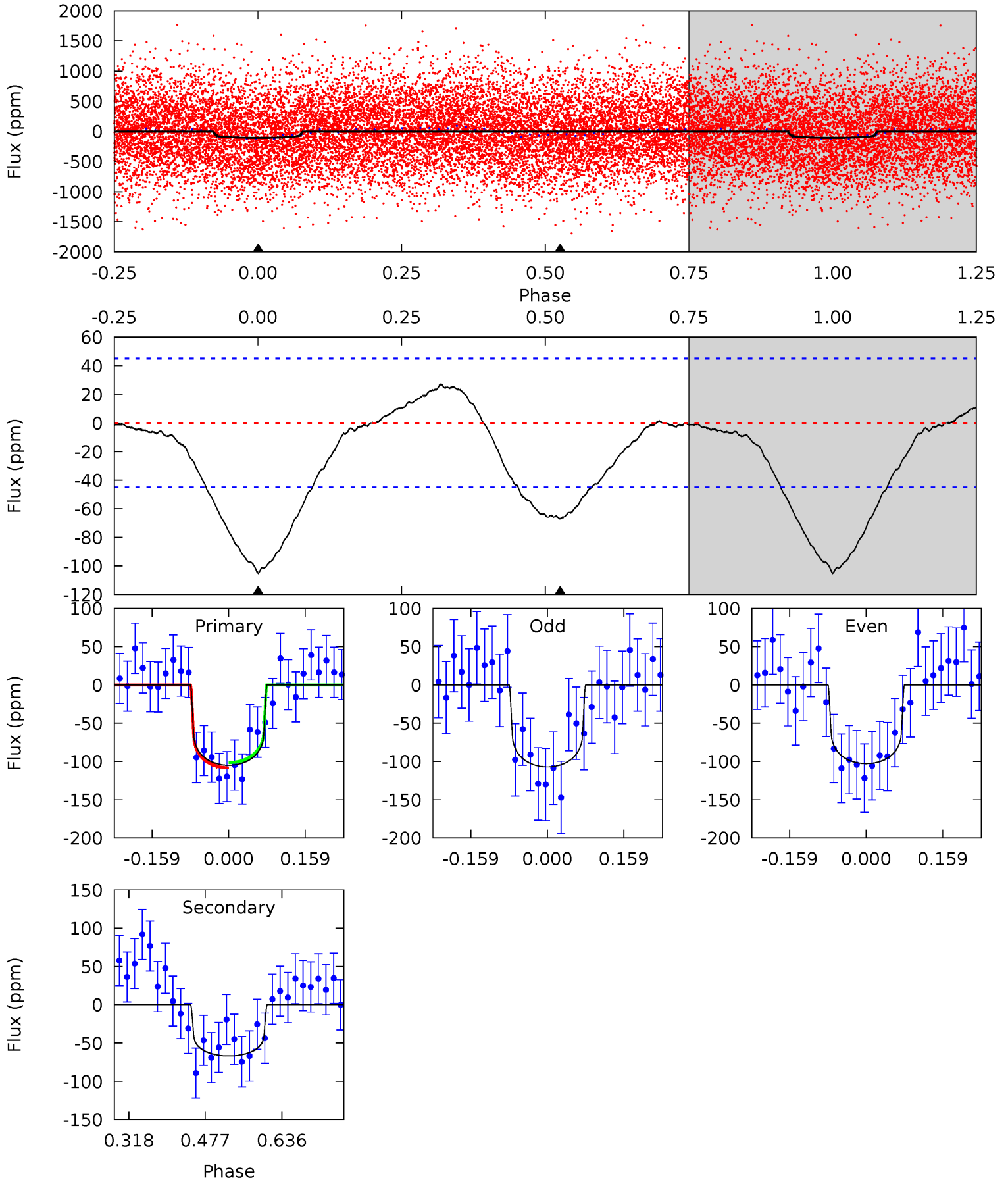
TCE 005460900-02 P= 3.422871 Days $T_0=131.735268$ (BKJD)



DV Model-Shift Uniqueness Test

005460900-02, P = 3.422970 Days, E = 128.292358 Days

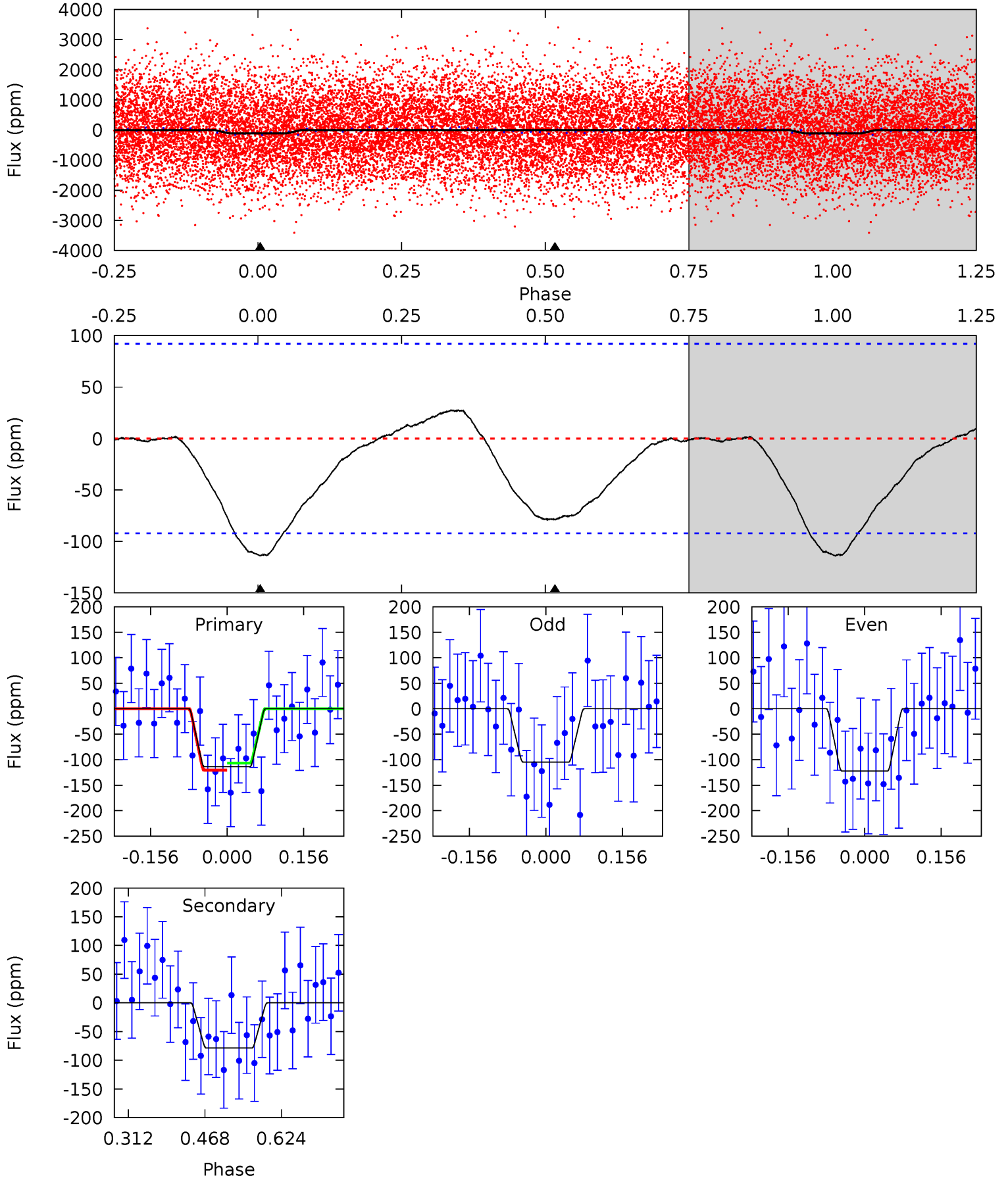
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	6.63	0	0	4.47	1.41	1.09	10.4	10.4	6.63	6.63	0.21	0.66	0.21	0.33



Alt Model-Shift Uniqueness Test

005460900-02, P = 3.422871 Days, E = 128.312397 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.52	3.82	0	0	4.47	1.42	0.54	5.52	5.52	3.82	3.82	0.43	0.17	0.19	0.33



Stellar Parameters For KIC 005460900

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7115^{+200}_{-275}	$4.124^{+0.132}_{-0.198}$	$-0.020^{+0.250}_{-0.350}$	$1.761^{+0.546}_{-0.364}$	$1.504^{+0.209}_{-0.255}$	$0.388^{+0.297}_{-0.194}$
	+3%/-4%	+3%/-5%	+1250%/-1750%	+31%/-21%	+14%/-17%	+77%/-50%
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 005460900-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-67 ± 10	$2.22^{+1.46}_{-1.20}$	2603^{+200}_{-169}	5921^{+3345}_{-1180}	19^{+71}_{-12}
Alt.	-79 ± 21	$2.23^{+1.62}_{-1.28}$	2591^{+213}_{-159}	6089^{+4193}_{-1290}	22^{+100}_{-14}

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

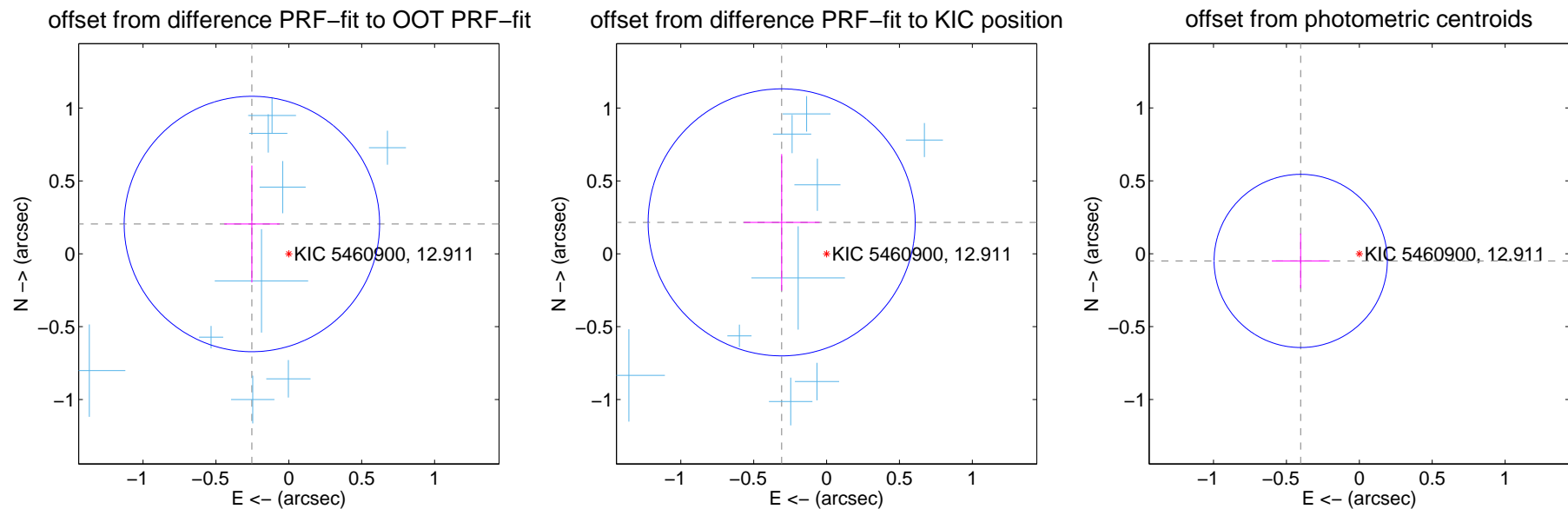
DV Centroid Data

Supplemental centroid analysis for 005460900-02. Kepler magnitude: 12.91. Transit SNR 11.42

There are 11 quarters with good PRF difference image offsets

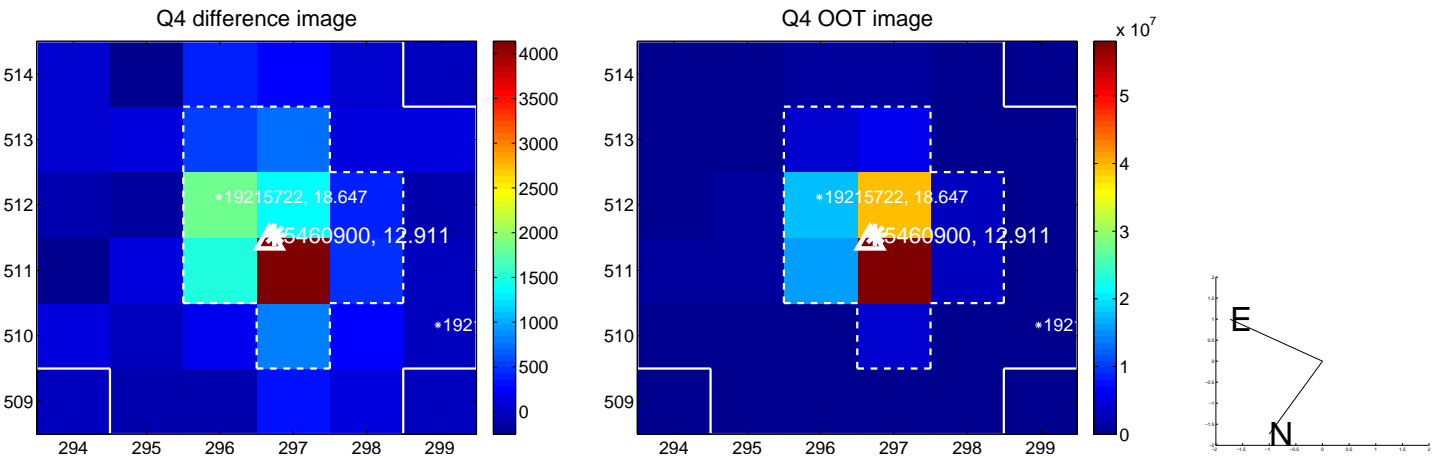
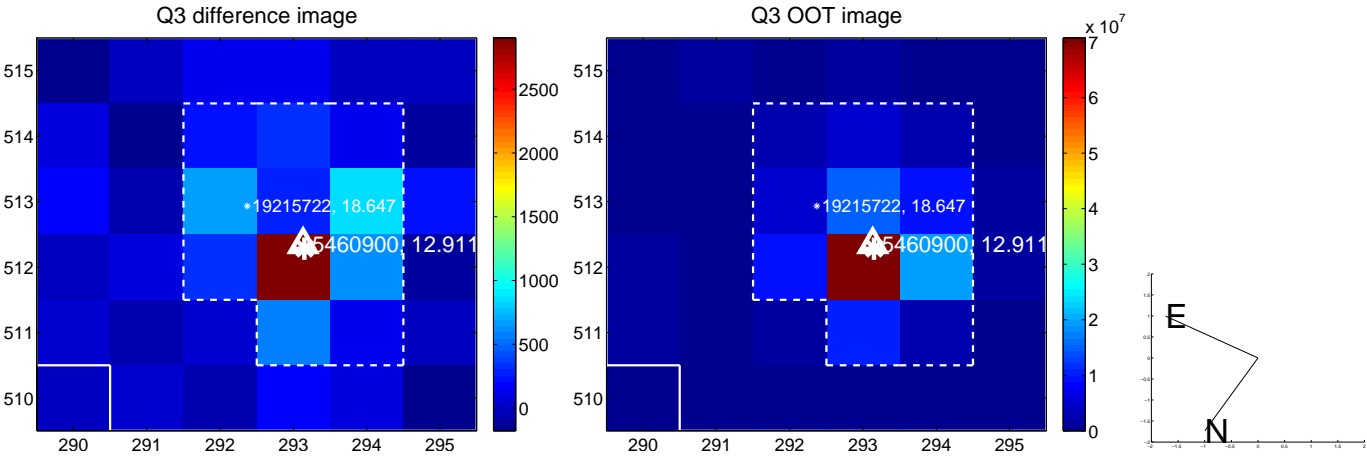
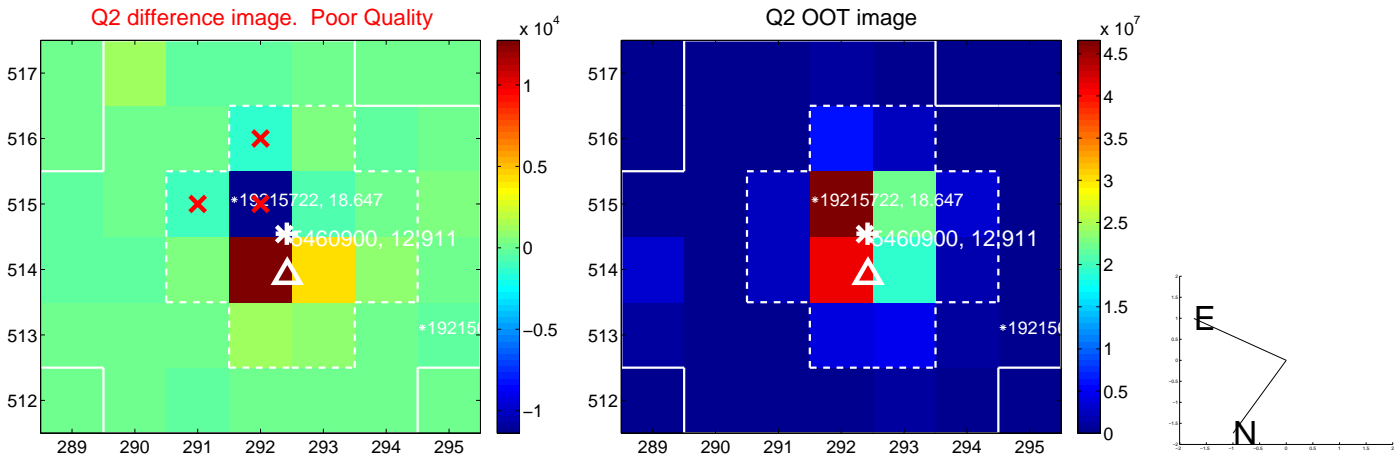
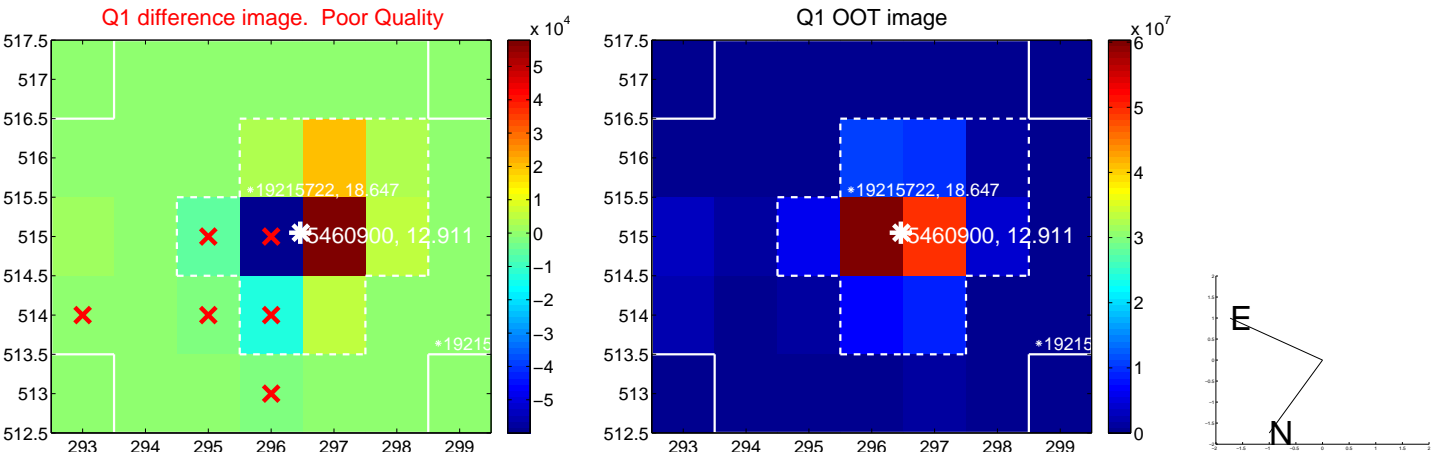
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.325 ± 0.292	1.11	0.253 ± 0.190	0.204 ± 0.401
PRF-fit source offset from KIC position	0.376 ± 0.305	1.23	0.308 ± 0.260	0.216 ± 0.468
photometric centroid source offset	0.40 ± 0.20	2.05	0.40 ± 0.20	-0.05 ± 0.19

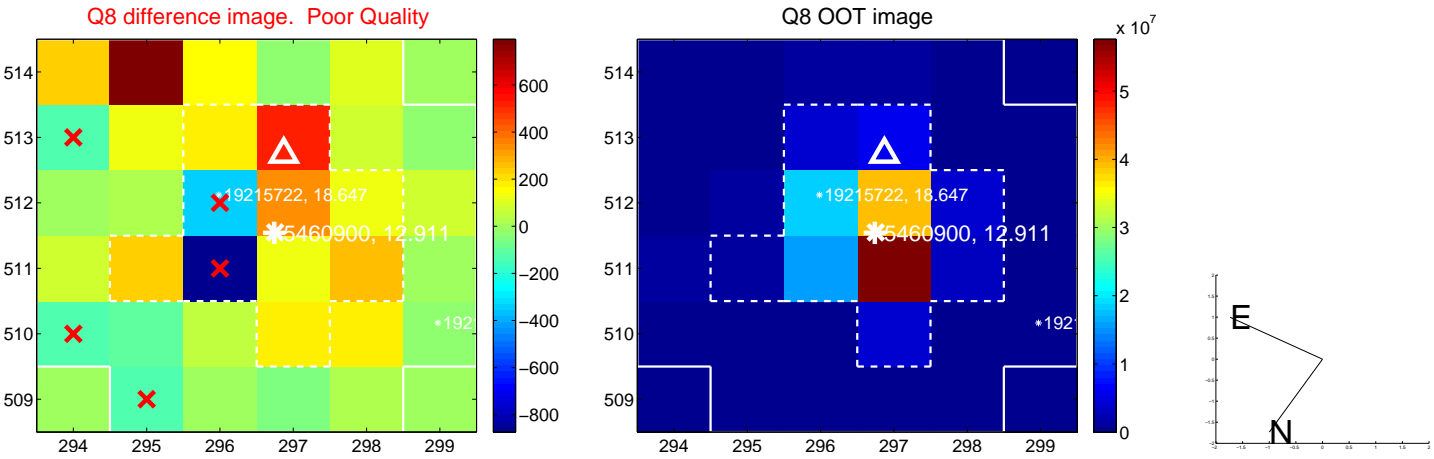
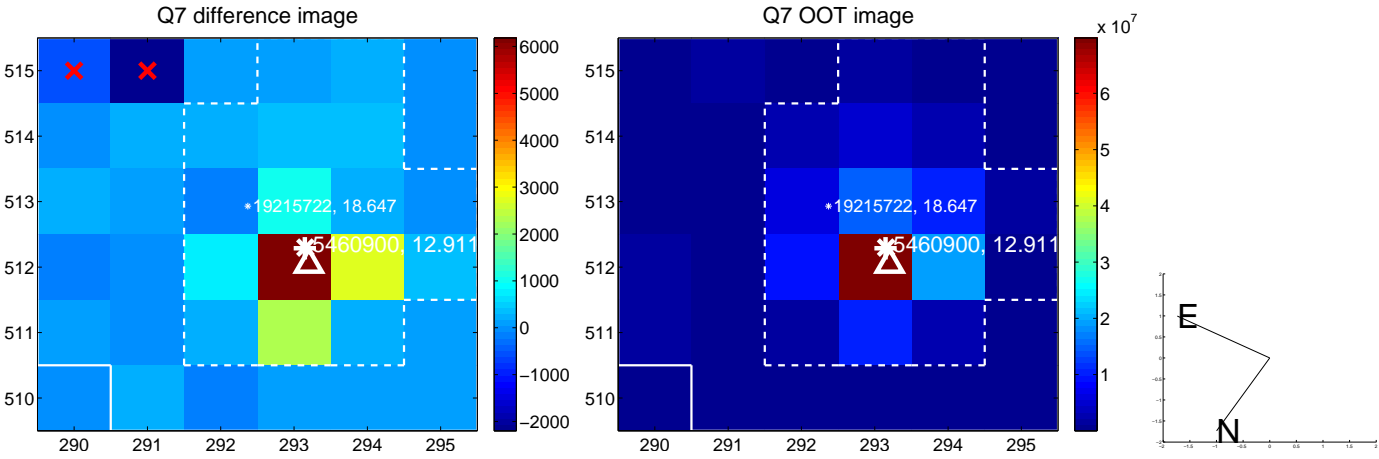
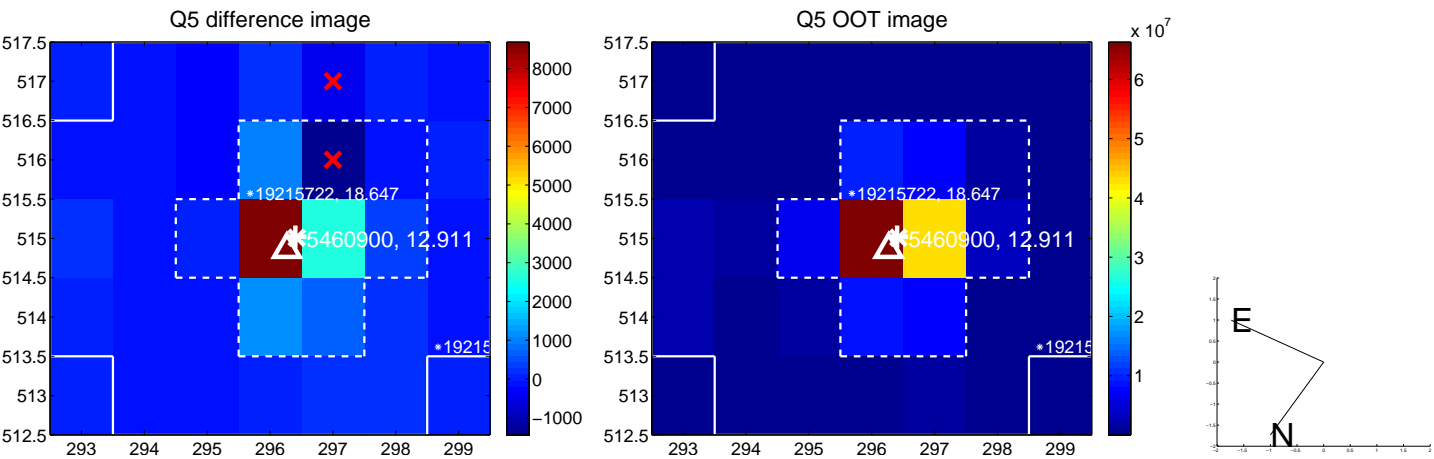


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

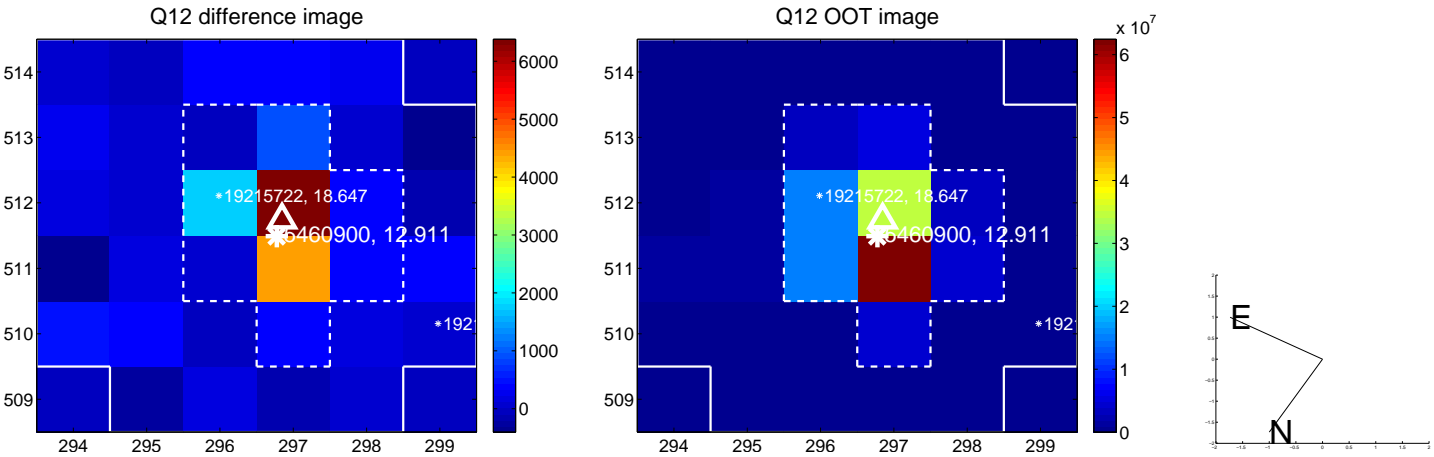
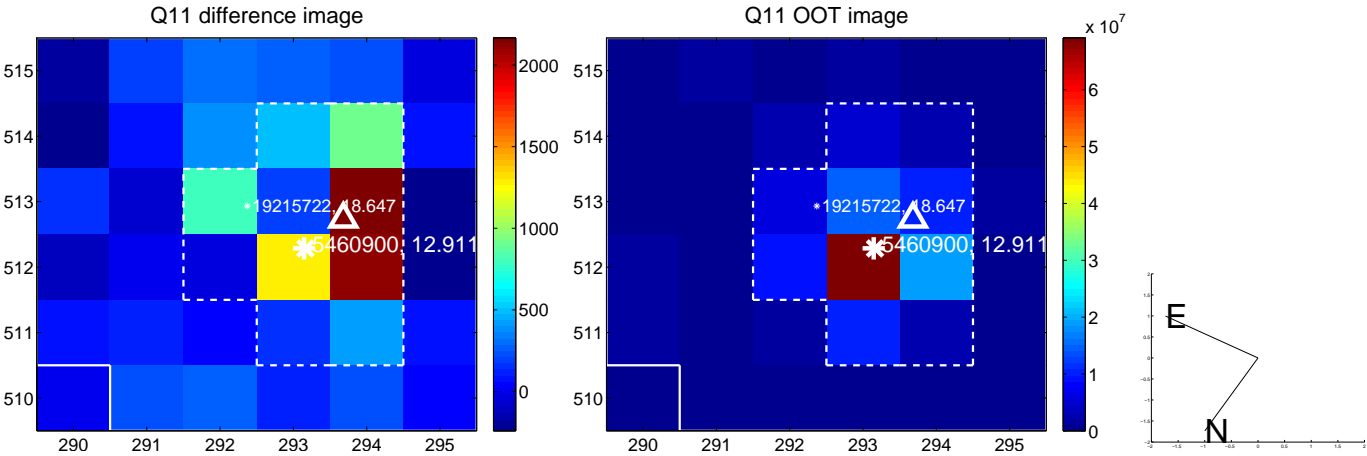
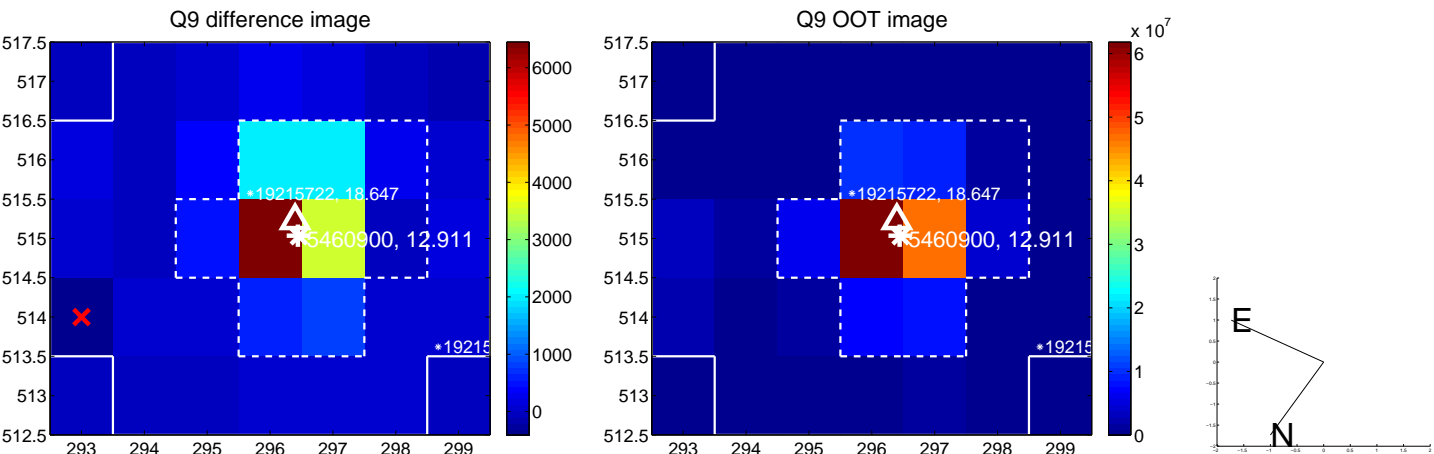
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



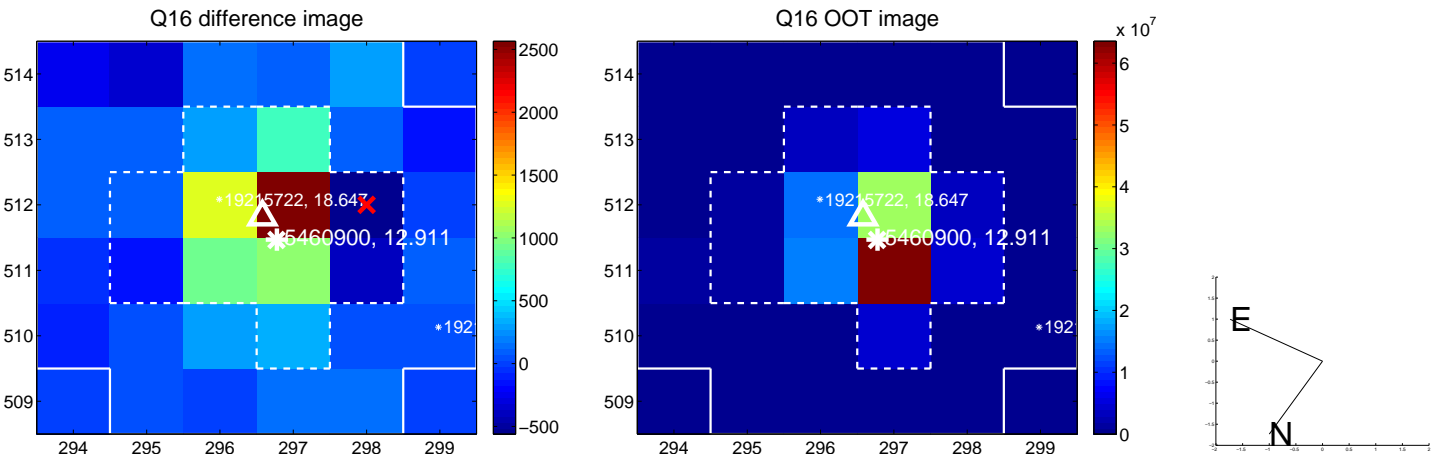
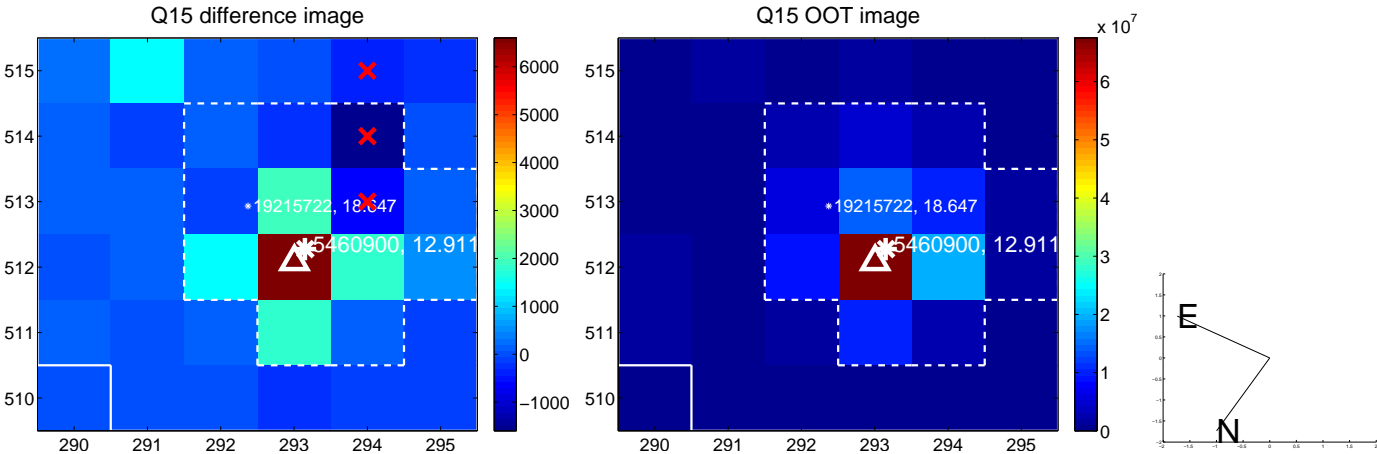
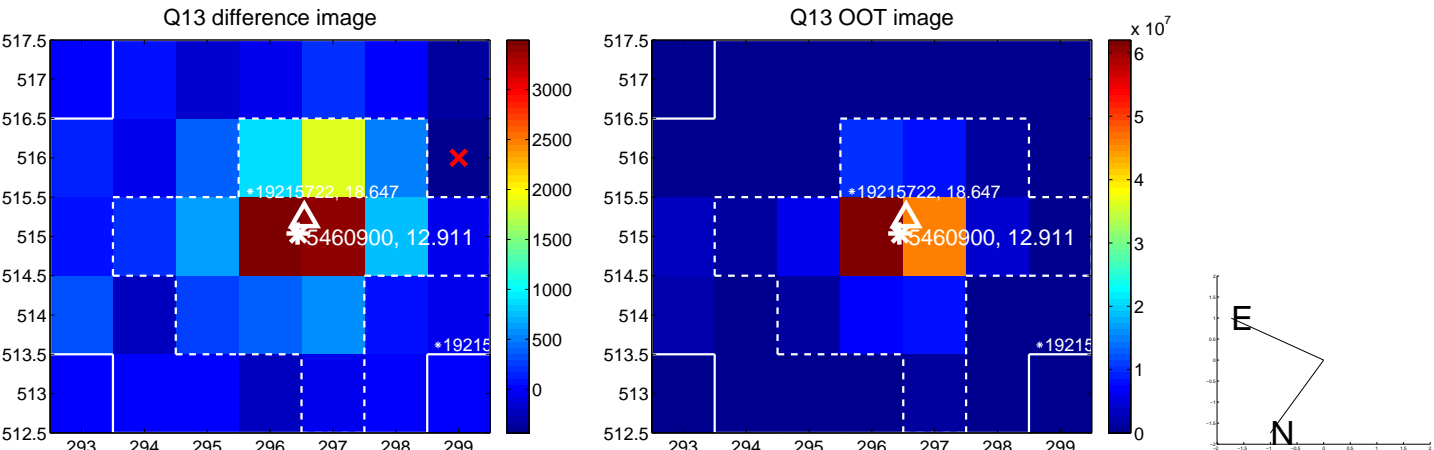
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



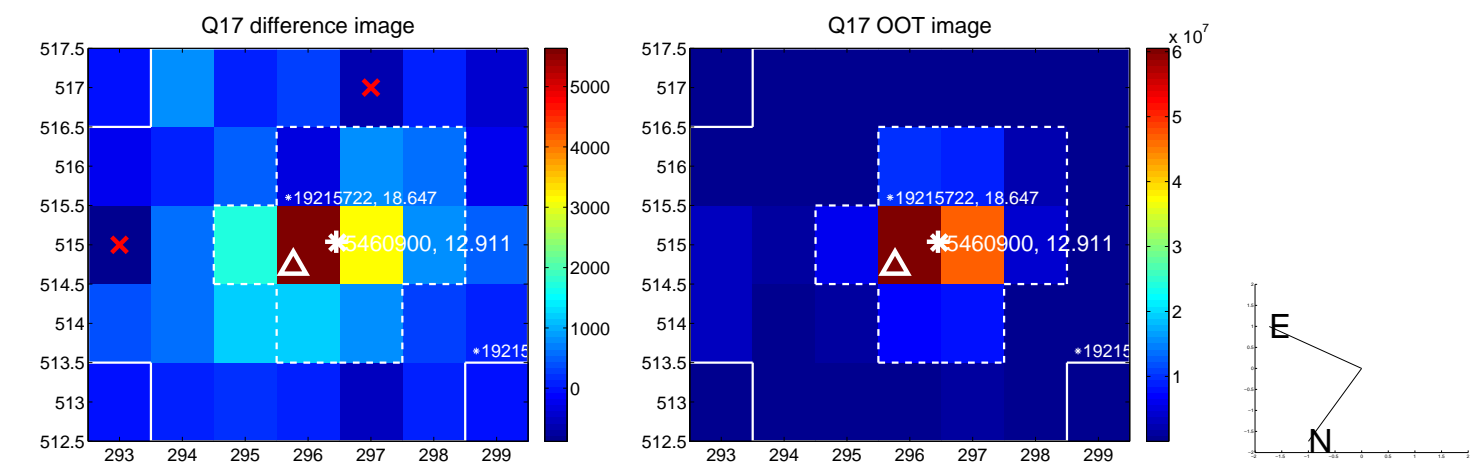
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



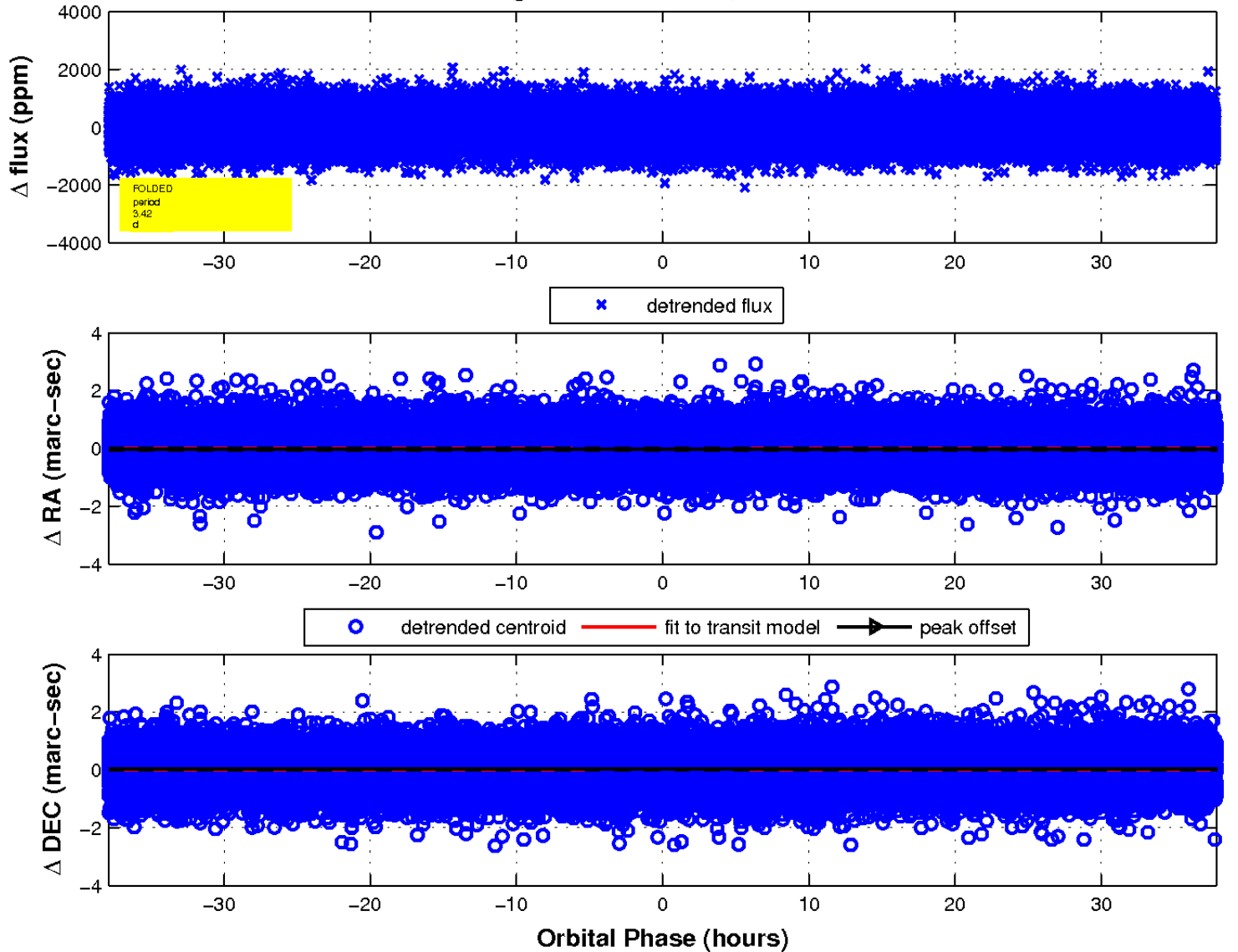
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

