

KIC 010034146

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})
010034146-01	OBS	No	0.931971	132.104585	103.1	1.048	9.9	13.3	0.78	5470	0.95	1742.83
010034146-02	OBS	4835.01	0.932002	131.623225	97.8	1.066	9.8	12.8	0.78	5470	0.92	1742.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010034146-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
010034146-02	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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.

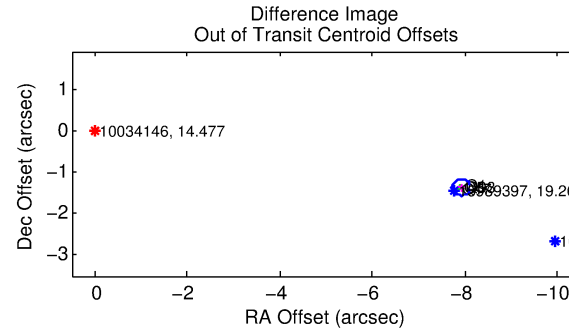
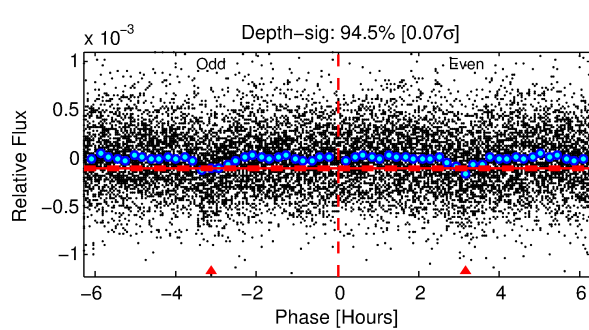
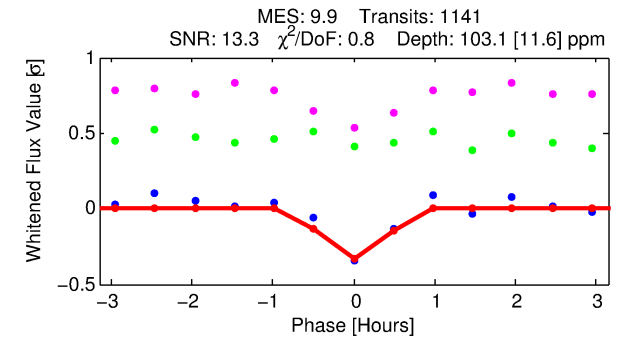
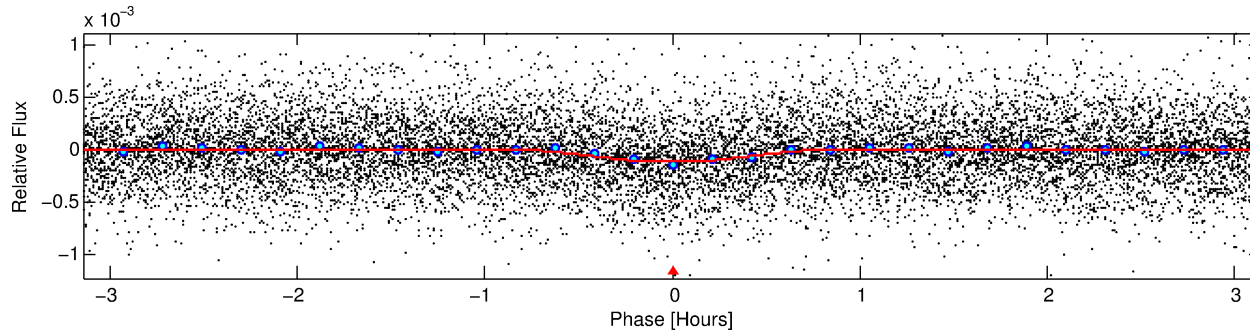
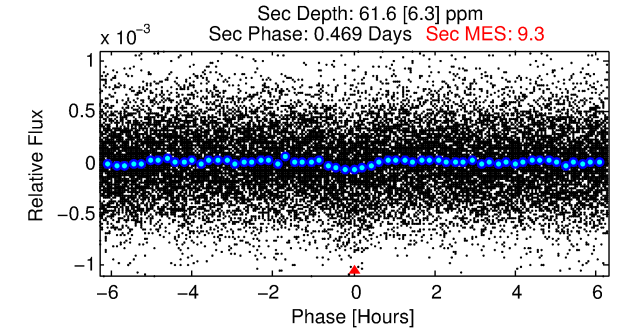
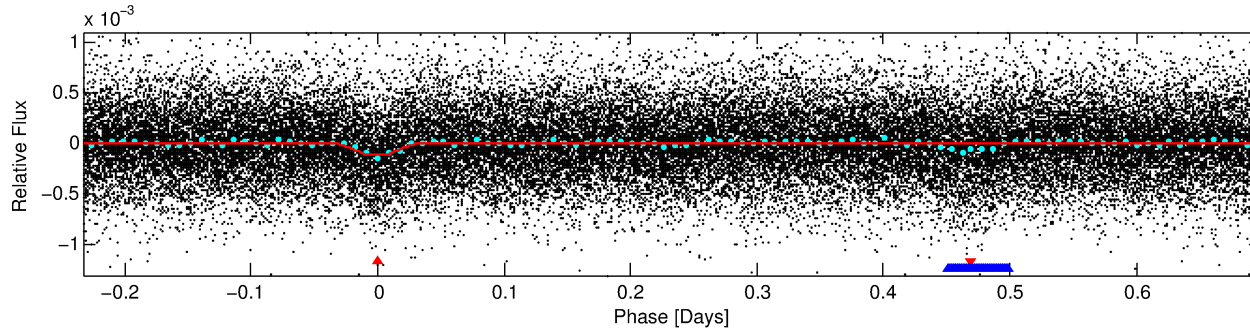
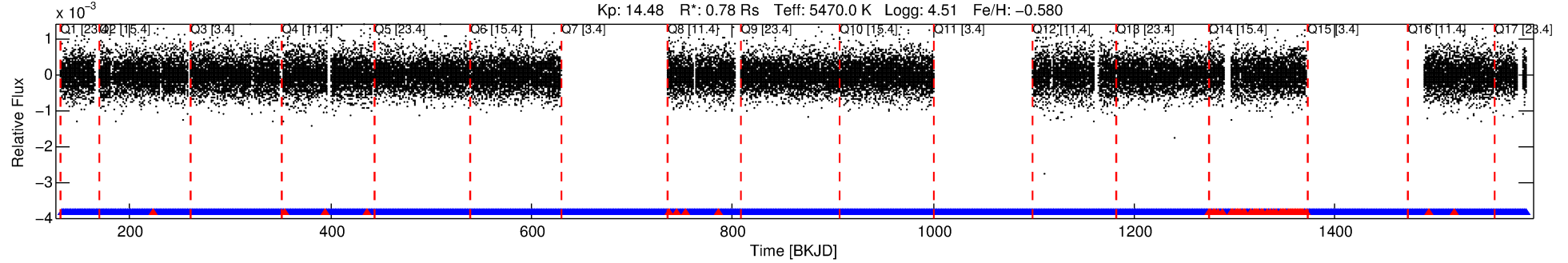
Ephemeris Match Information For 010034146-01

No Significant Match Found

DV One-Page Summary

KIC: 10034146 Candidate: 1 of 2 Period: 0.932 d
KOI: K04835 Corr: No Ephemeris Match

Kp: 14.48 R*: 0.78 Rs Teff: 5470.0 K Logg: 4.51 Fe/H: -0.580



DV Fit Results:

Period = 0.93197 [0.00001] d
Epoch = 132.1046 [0.0014] BKJD
Rp/R* = 0.0112 [0.0067]
a/R* = 3.23 [8.33]
b = 0.90 [0.60]
Seff = 1742.83 [389.41]
Teq = 1648 [92] K
Rp = 0.95 [0.59] Re
a = 0.0167 [0.0021] AU
Ag = 10.45 [12.76] [0.74σ]
Teffp = 4580 [1388] K [2.11σ]

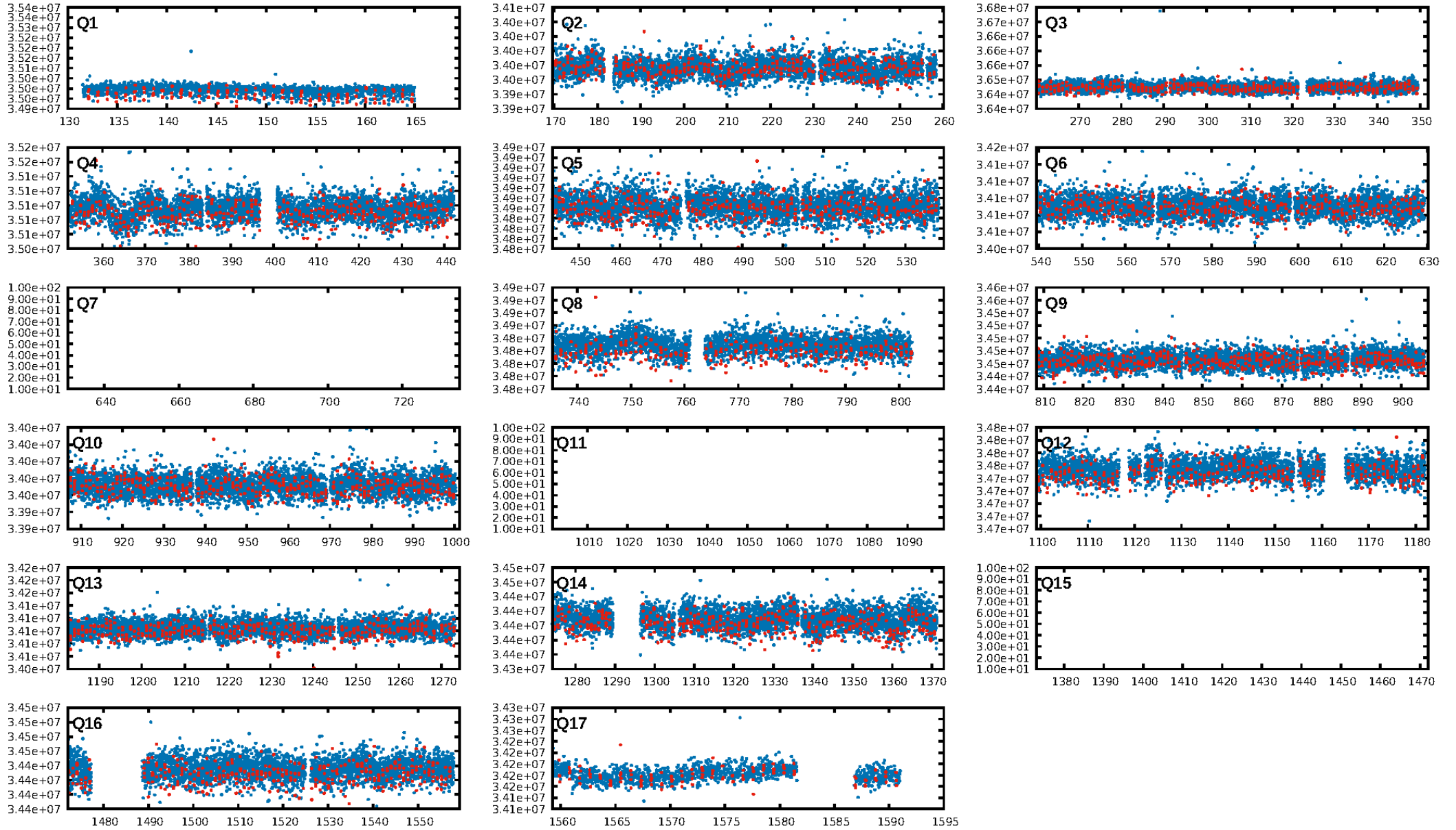
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.71e-23
RollingBand-fgt: 0.95 [1018/1076]
GhostDiagnostic-chr: -0.1565
Centroid-sig: 0.0%
Centroid-so: 51.346 arcsec [53.77σ]
OotOffset-rm: 8.034 arcsec [119.25σ]
KicOffset-rm: 7.984 arcsec [113.94σ]
OotOffset-st: 0/0/0/5 [5]
KicOffset-st: 0/0/0/5 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [14/14]

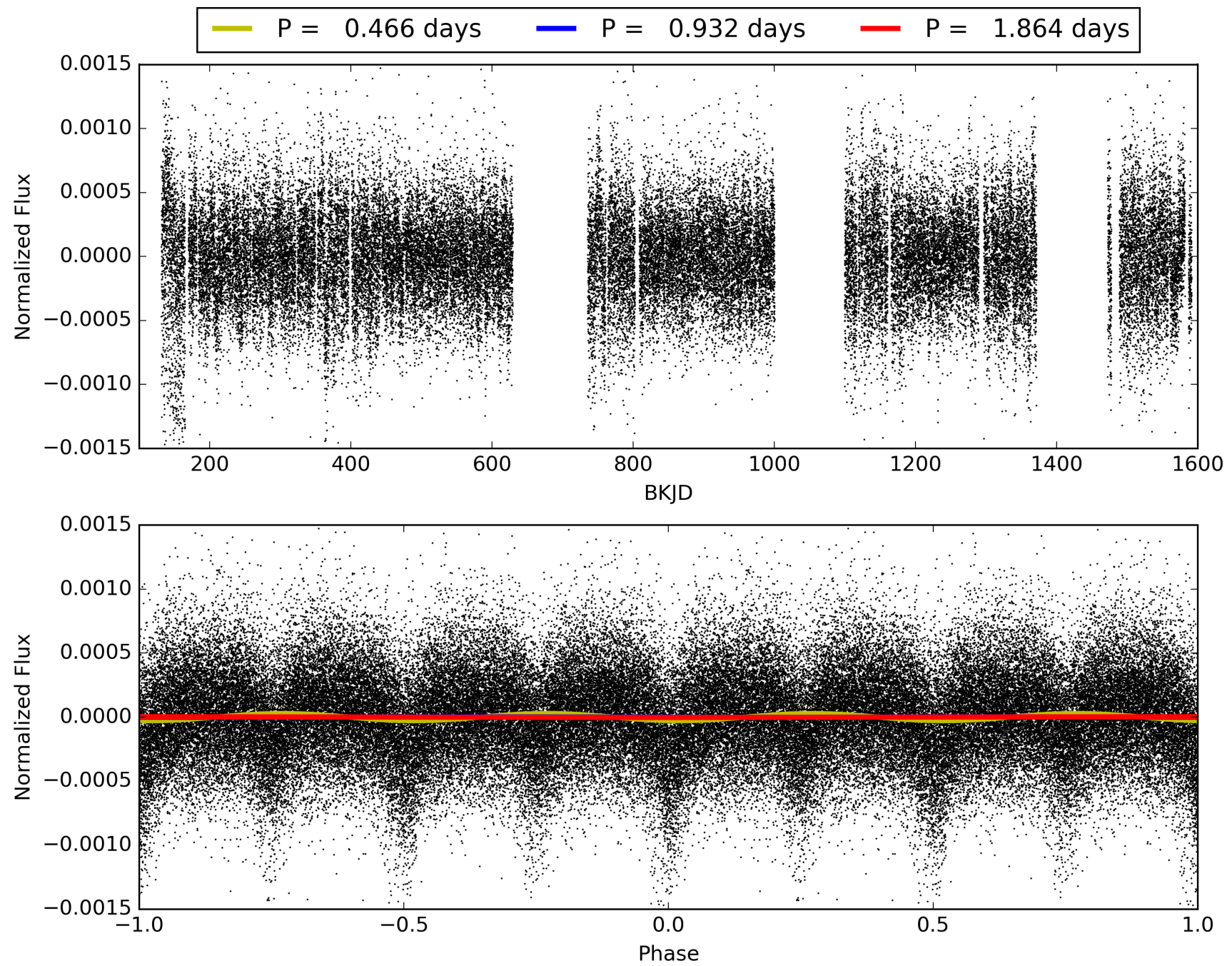
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 010034146-01, PDC Light Curves

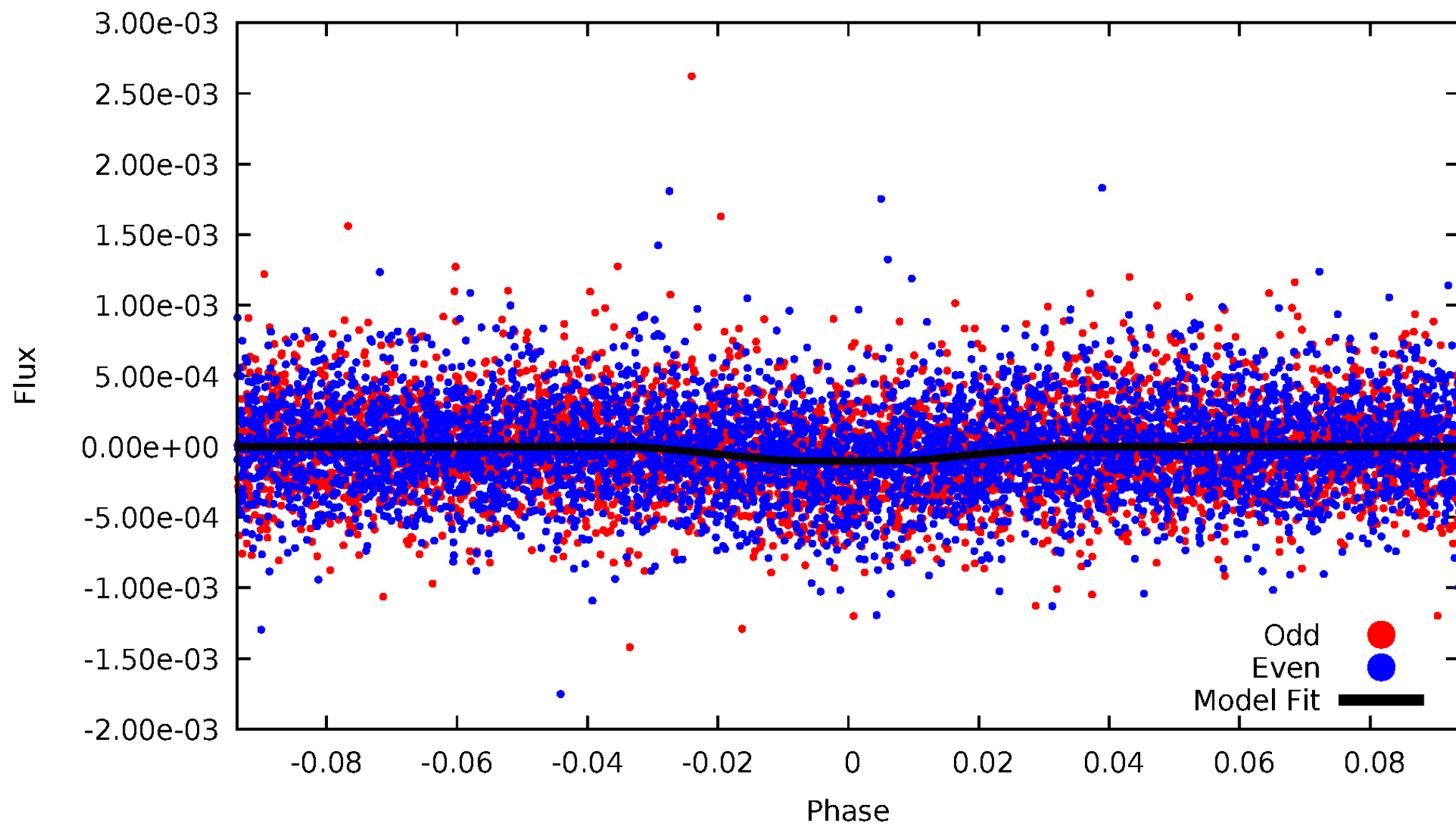


TCE 010034146-01



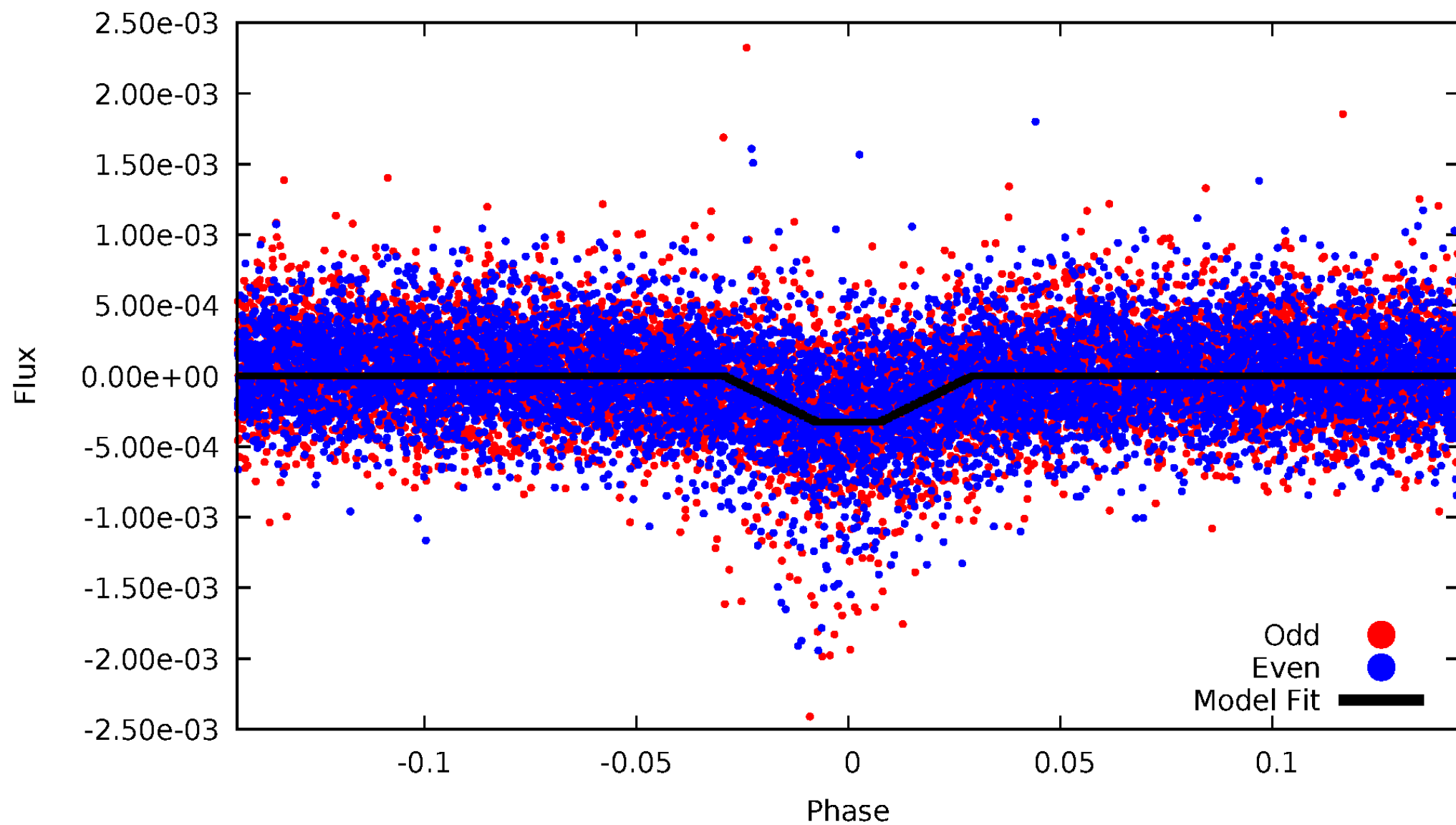
DV Odd/Even

TCE 010034146-01

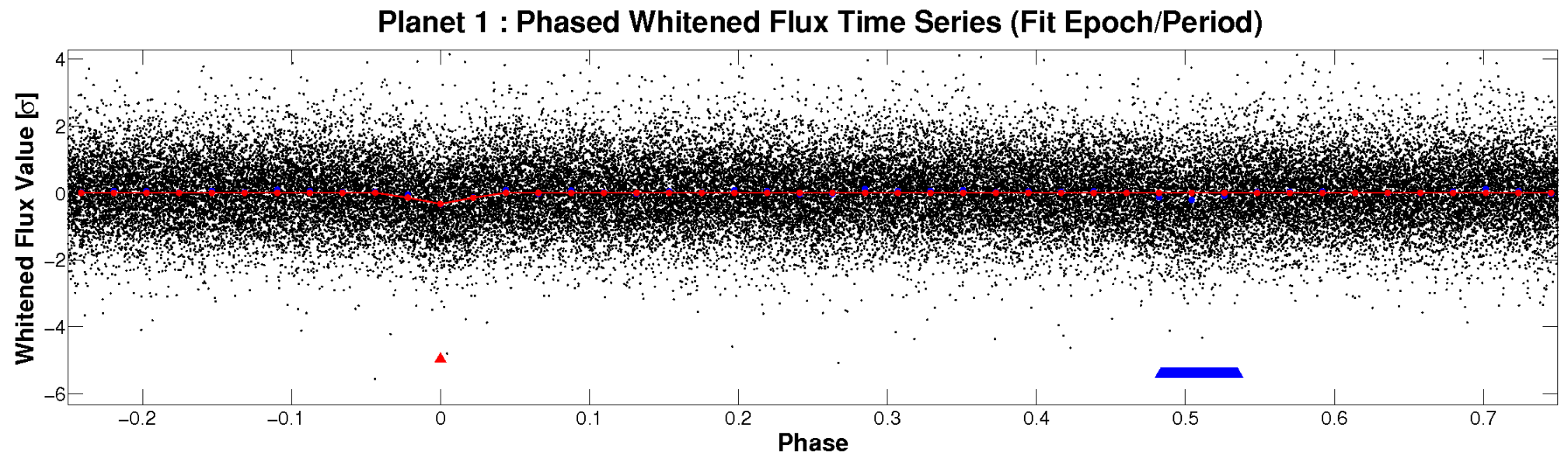
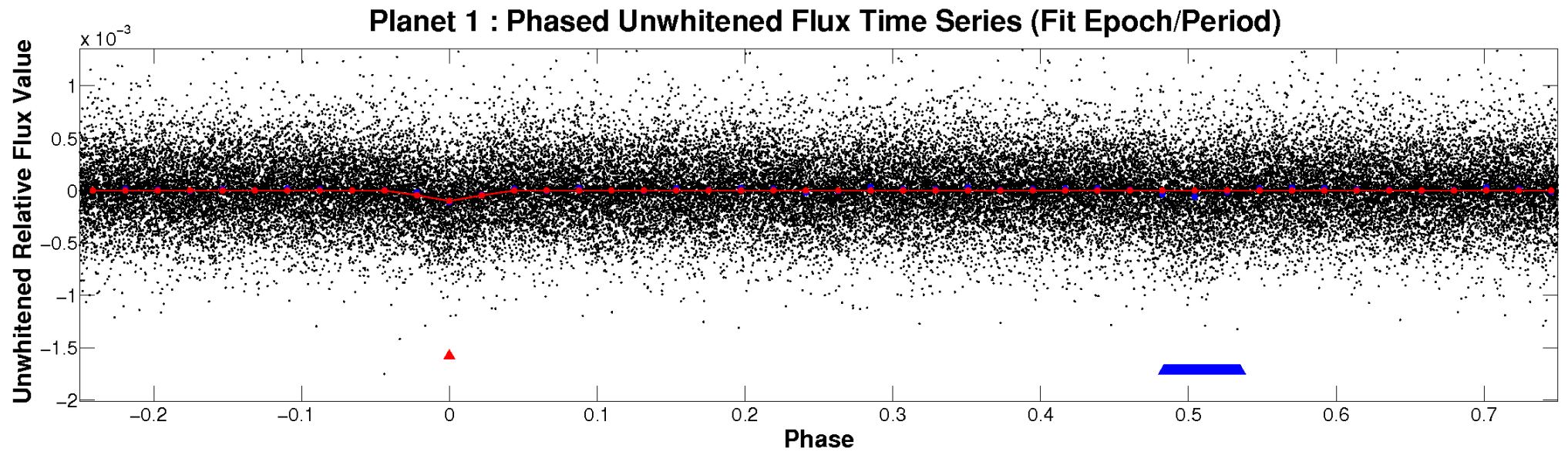


ALT Odd/Even

TCE 010034146-01

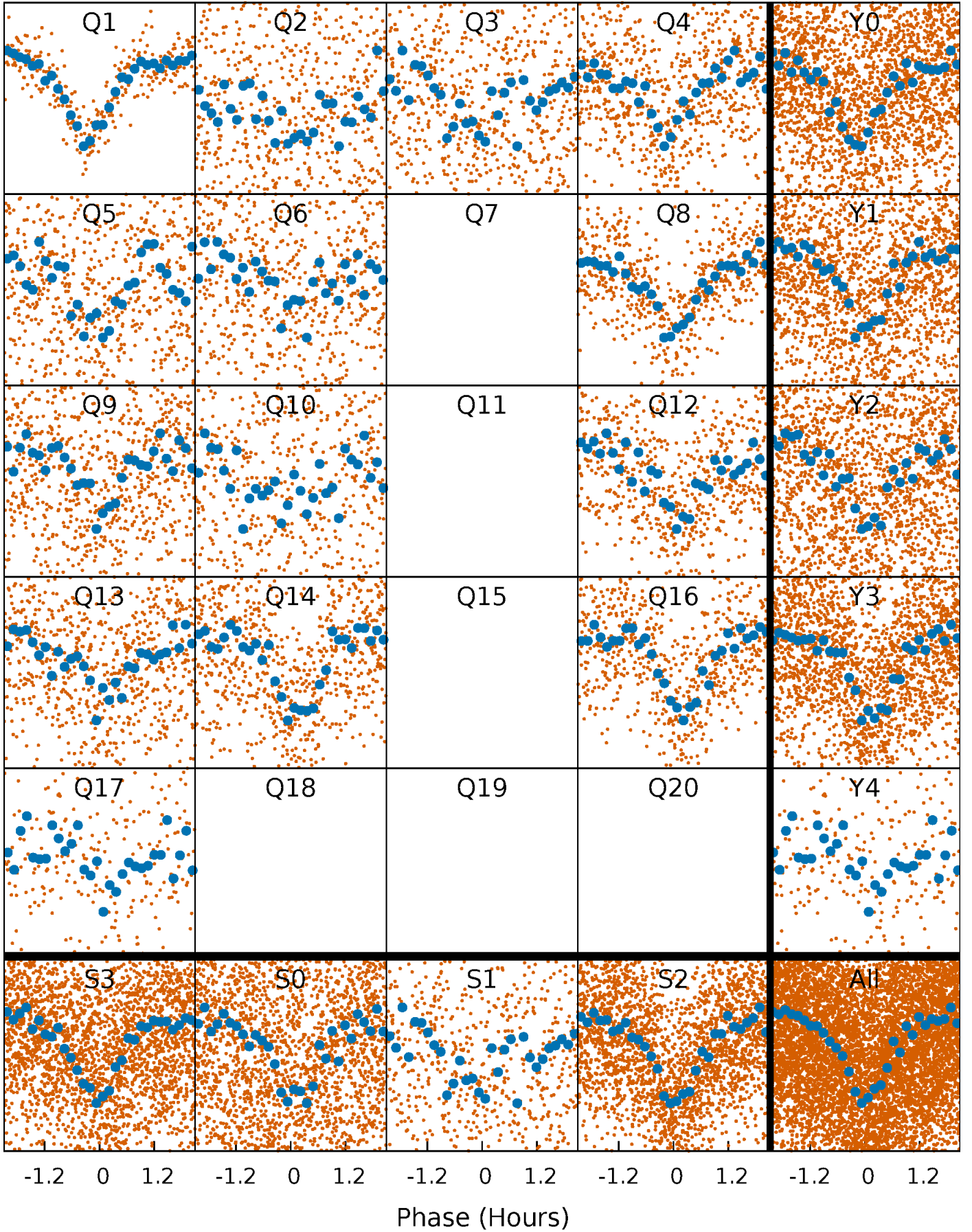


Non-Whitened Vs. Whitened Light Curve



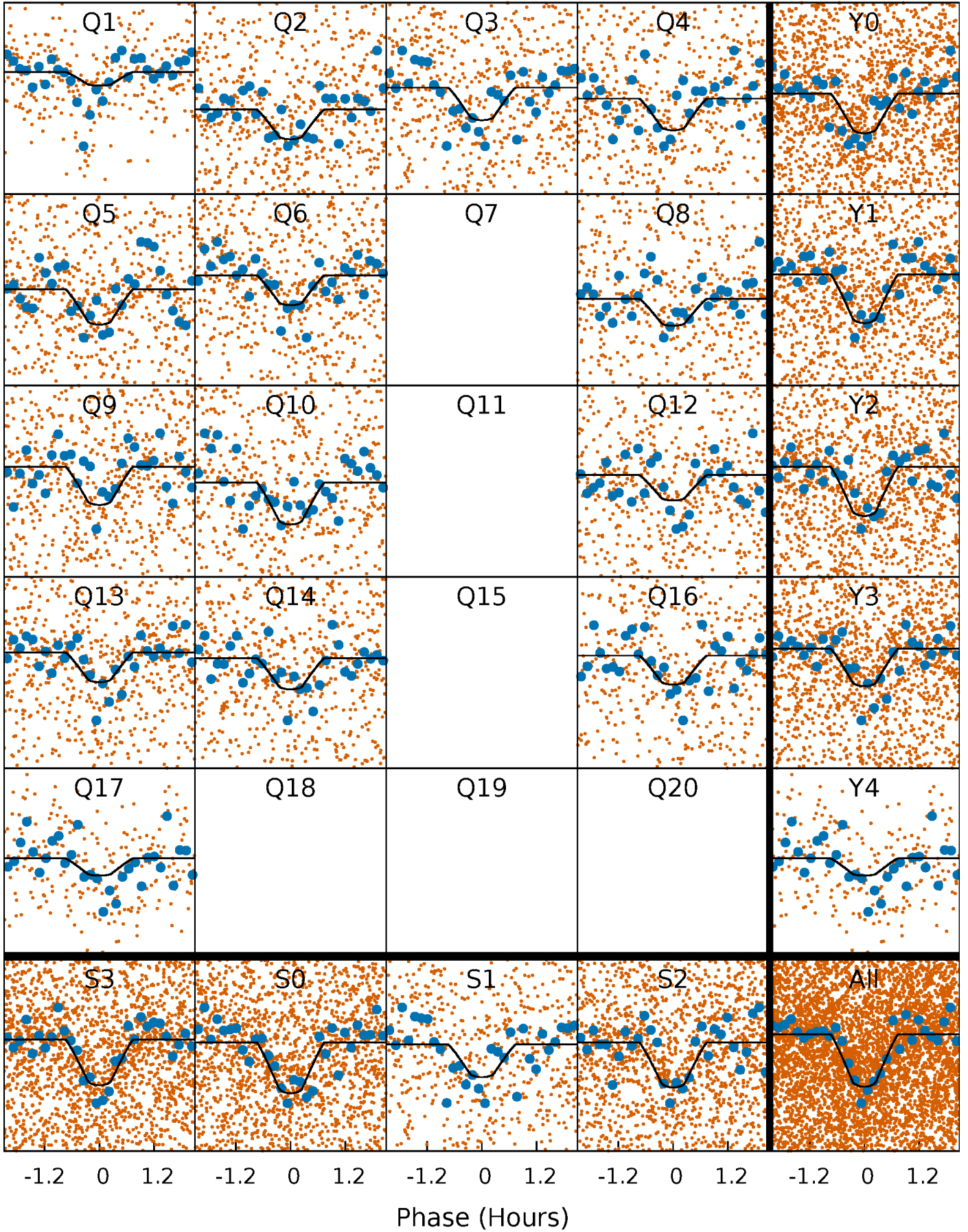
PDC Quarter-Phased Transit Curves

TCE 010034146-01 P= 0.931971 Days $T_0=132.104585$ (BKJD)



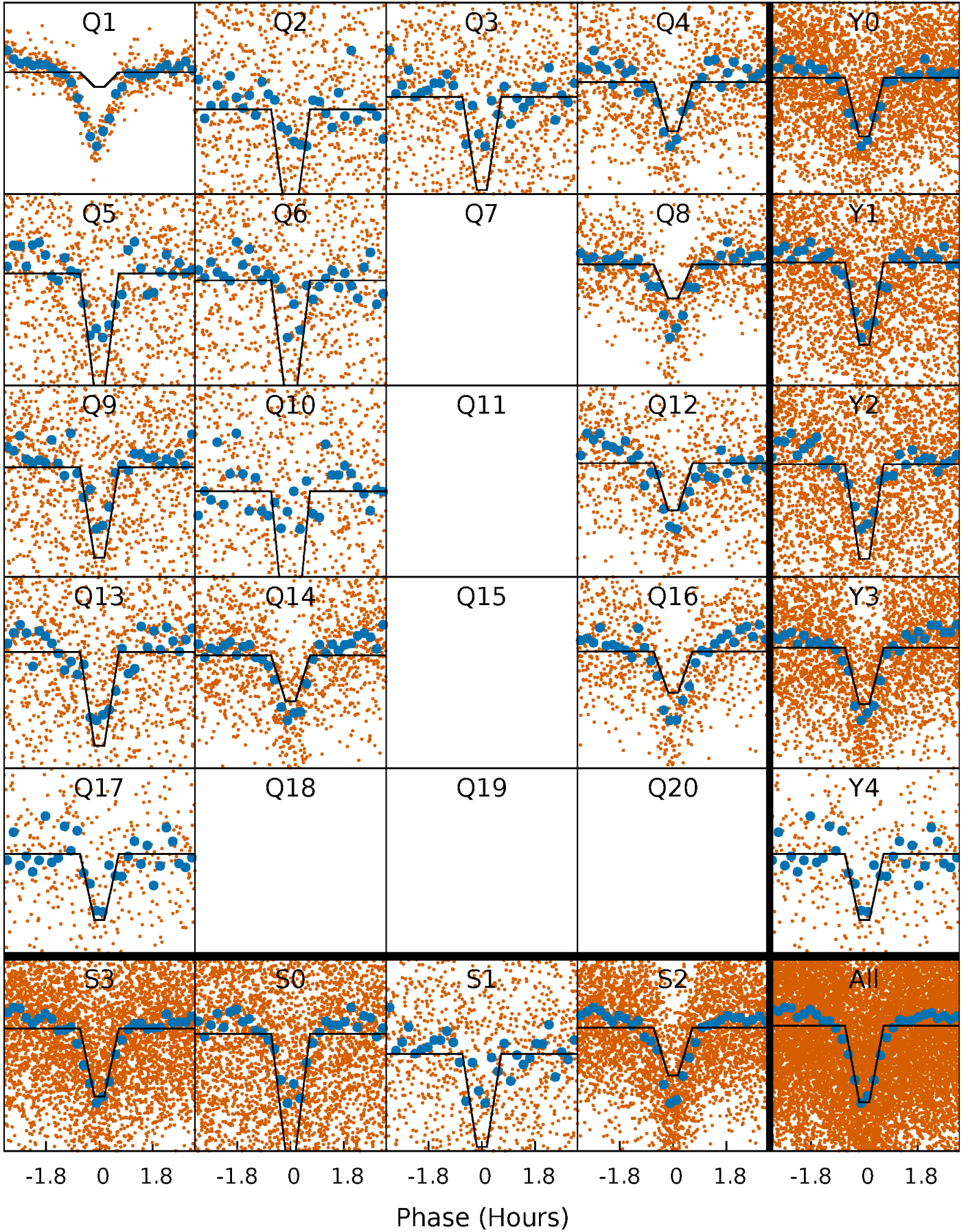
DV Quarter-Phased Transit Curves

TCE 010034146-01 P= 0.931971 Days $T_0=132.104585$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

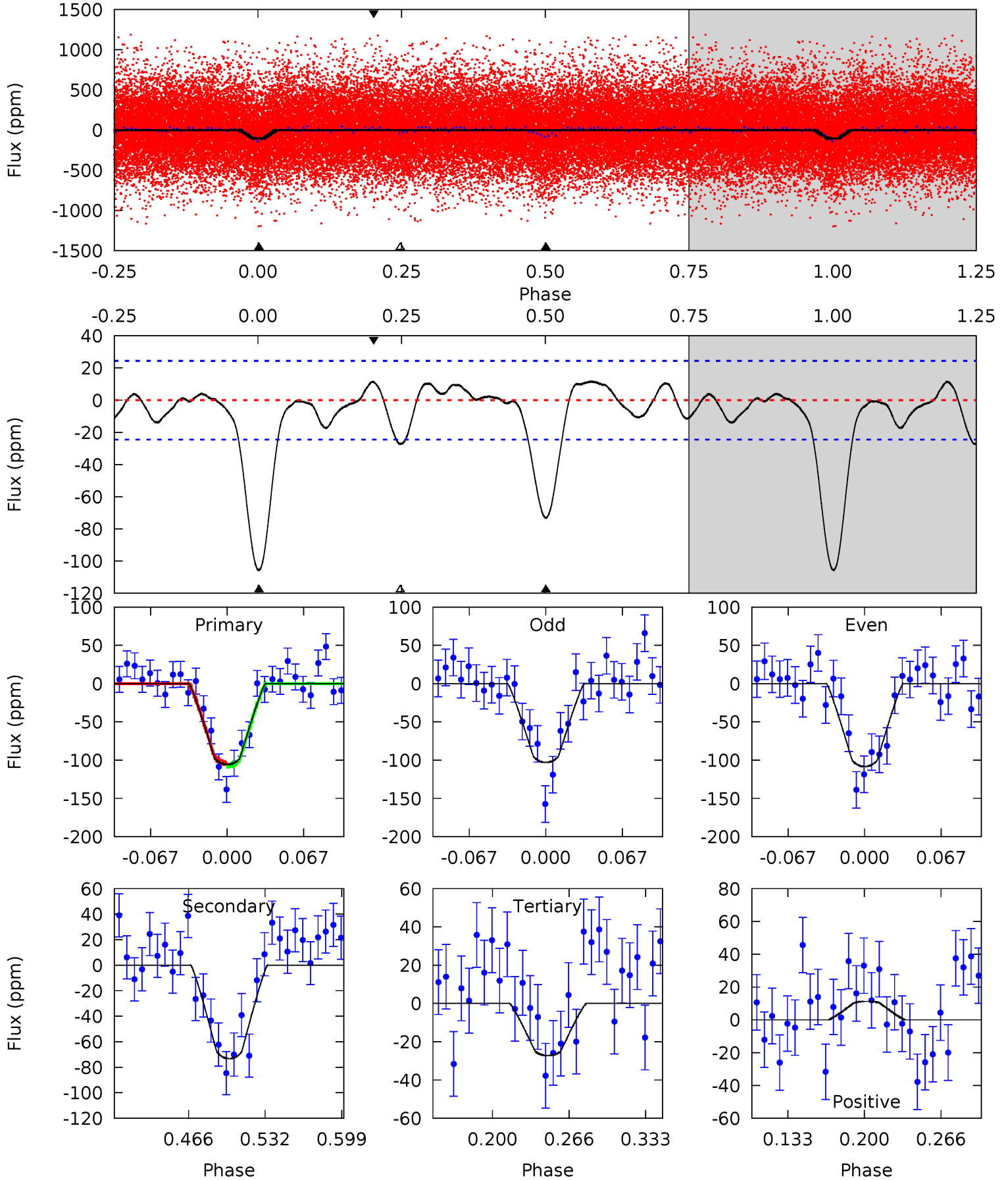
TCE 010034146-01 P= 0.931982 Days $T_0=132.097712$ (BKJD)



DV Model-Shift Uniqueness Test

010034146-01, P = 0.931971 Days, E = 131.172614 Days

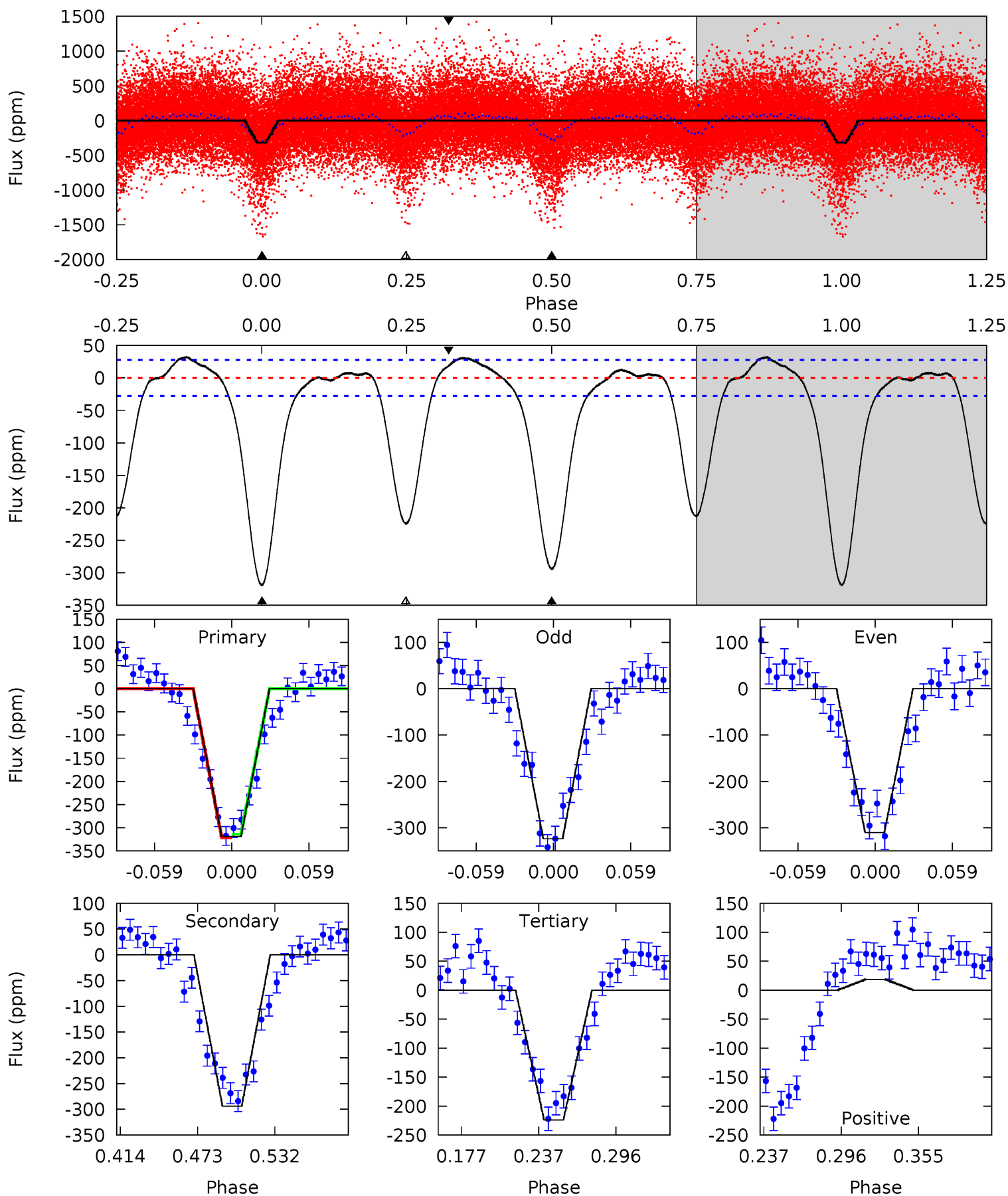
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	13.9	5.17	2.14	4.65	1.83	1.62	14.9	17.9	8.74	11.8	0.52	1.01	0.10	0.32



Alt Model-Shift Uniqueness Test

010034146-01, P = 0.931982 Days, E = 131.165730 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
53.6	49.4	37.7	3.15	4.67	1.89	11.3	15.9	50.4	11.7	46.3	1.14	1.16	0.09	0.61



Stellar Parameters For KIC 010034146

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5470^{+163}_{-163}	$4.509^{+0.105}_{-0.105}$	$-0.580^{+0.350}_{-0.300}$	$0.777^{+0.115}_{-0.105}$	$0.710^{+0.103}_{-0.037}$	$2.135^{+1.004}_{-0.687}$
	+3%/-3%	+2%/-2%	+60%/-52%	+15%/-14%	+15%/-5%	+47%/-32%
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 010034146-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-73 ± 5	$0.99^{+0.57}_{-0.52}$	2307^{+114}_{-117}	4795^{+2034}_{-817}	12^{+38}_{-7}
Alt.	-294 ± 6	$1.56^{+0.62}_{-0.55}$	2306^{+113}_{-110}	5290^{+1286}_{-668}	19^{+26}_{-9}

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 $A_{obs} \gg 1.0$

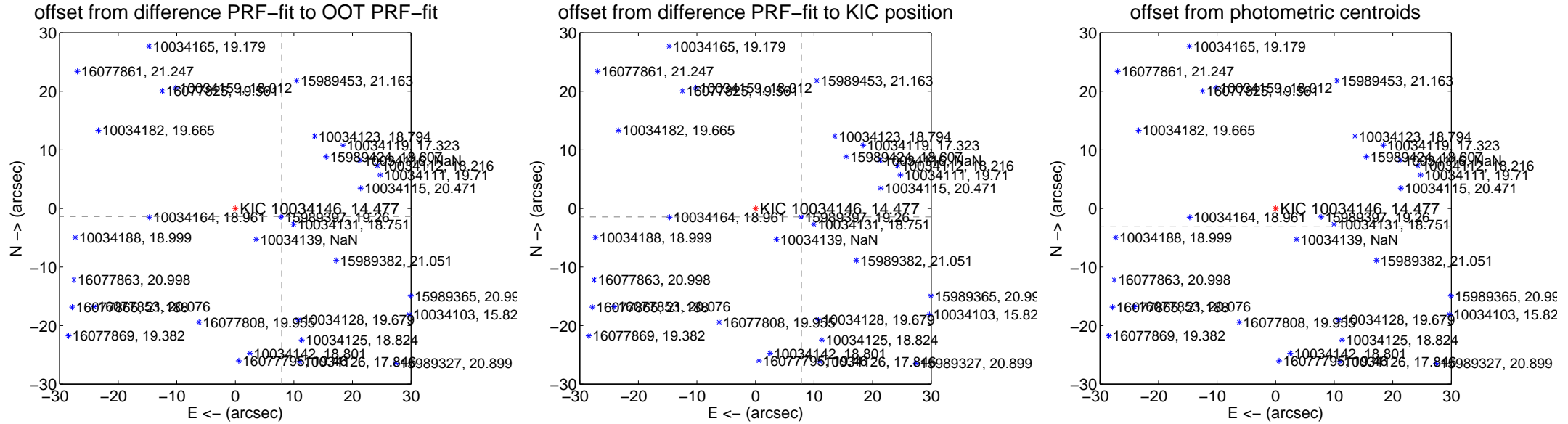
DV Centroid Data

Supplemental centroid analysis for 010034146-01. Kepler magnitude: 14.48. Transit SNR 13.30

There are 5 quarters with good PRF difference image offsets

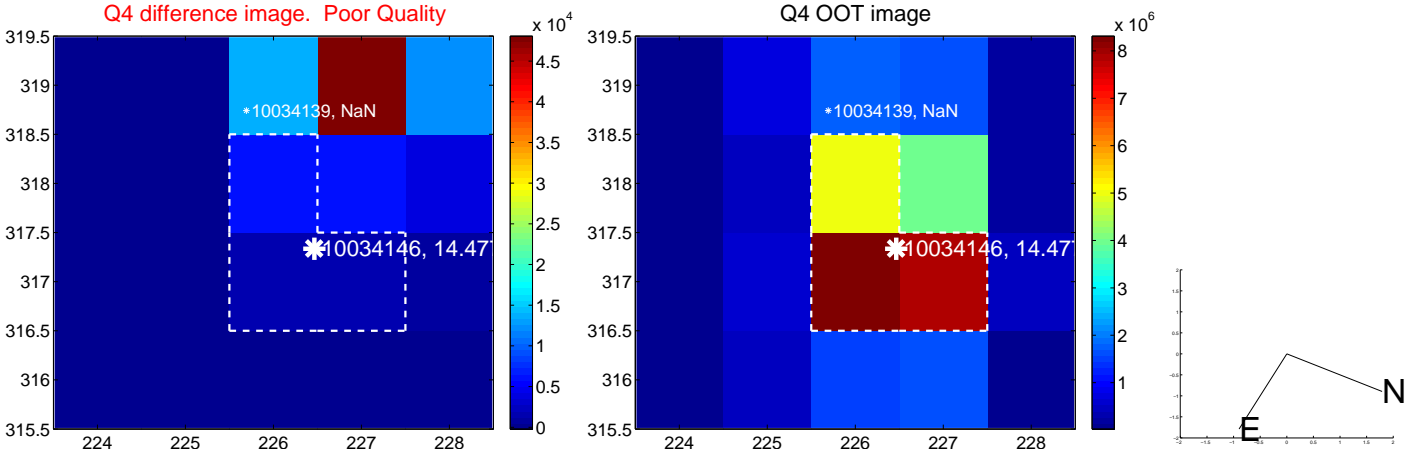
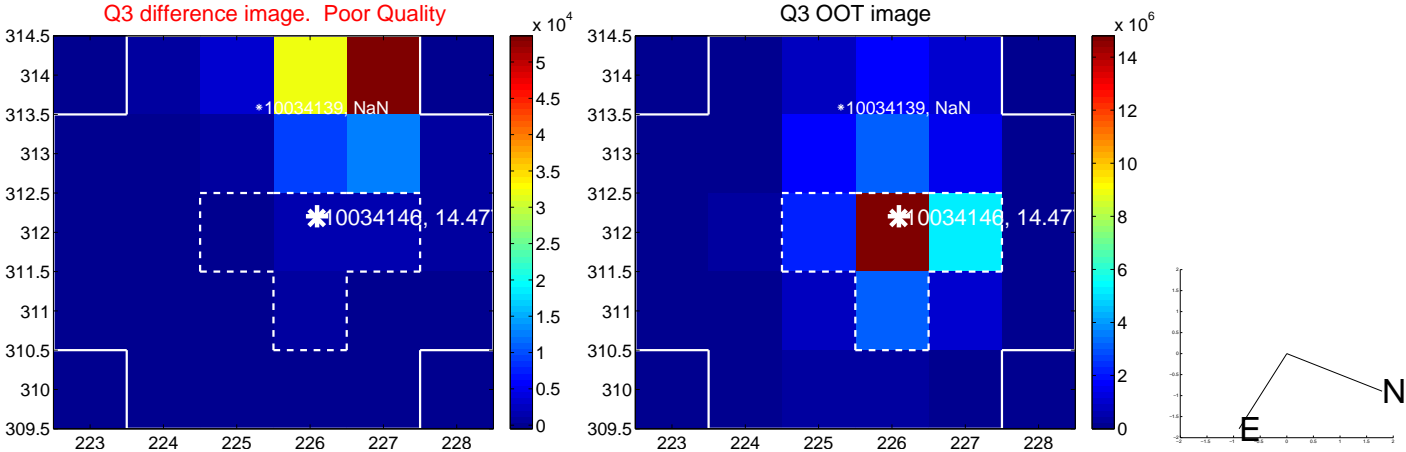
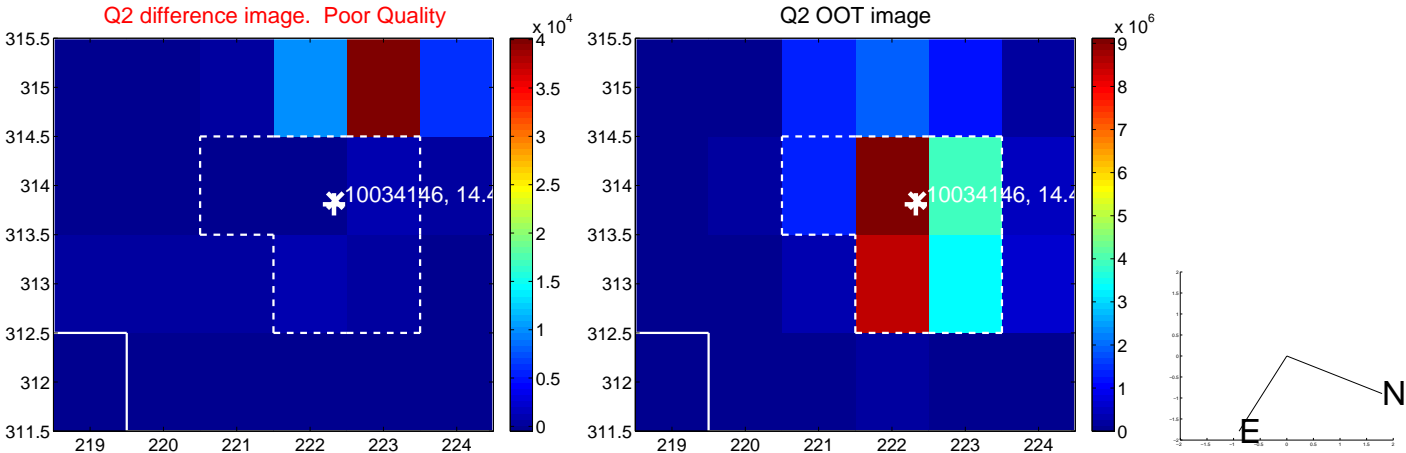
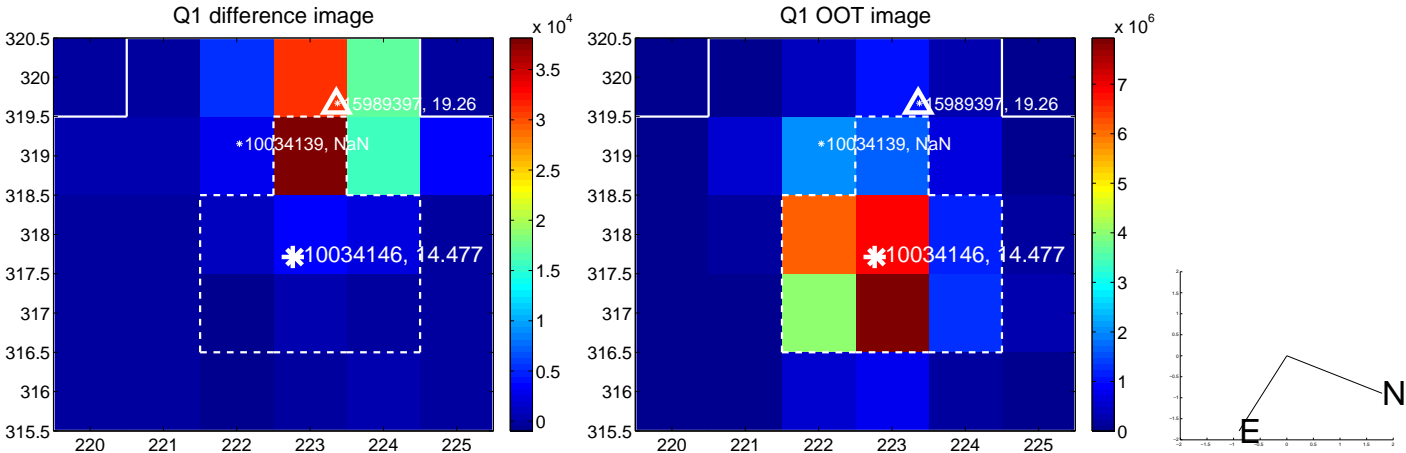
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.034 ± 0.067	119.25	-7.915 ± 0.068	-1.378 ± 0.068
PRF-fit source offset from KIC position	7.984 ± 0.070	113.94	-7.850 ± 0.070	-1.455 ± 0.067
photometric centroid source offset	51.35 ± 0.95	53.77	-51.25 ± 0.95	-3.13 ± 1.02

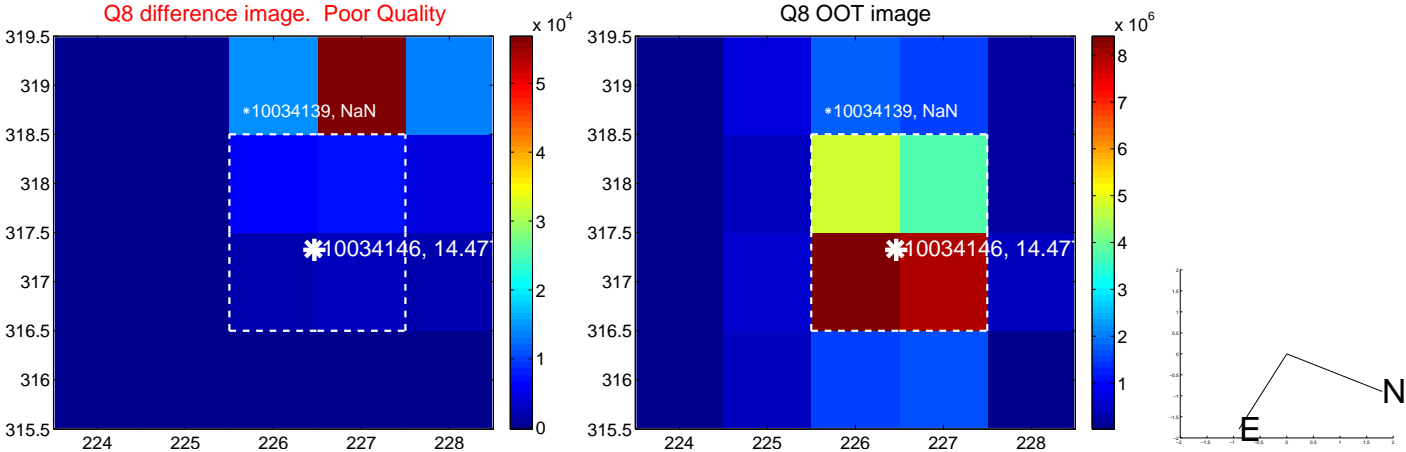
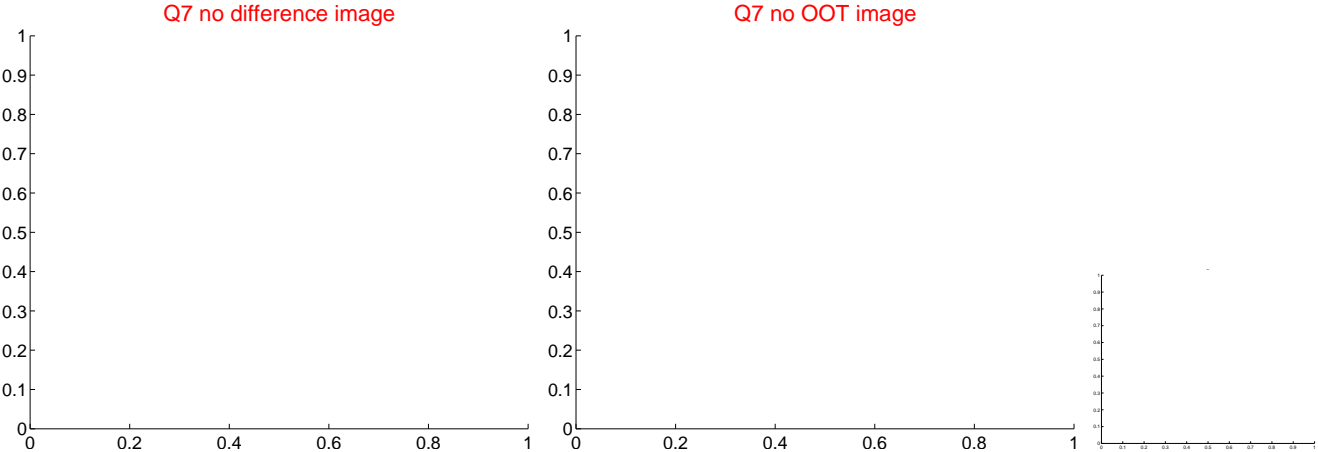
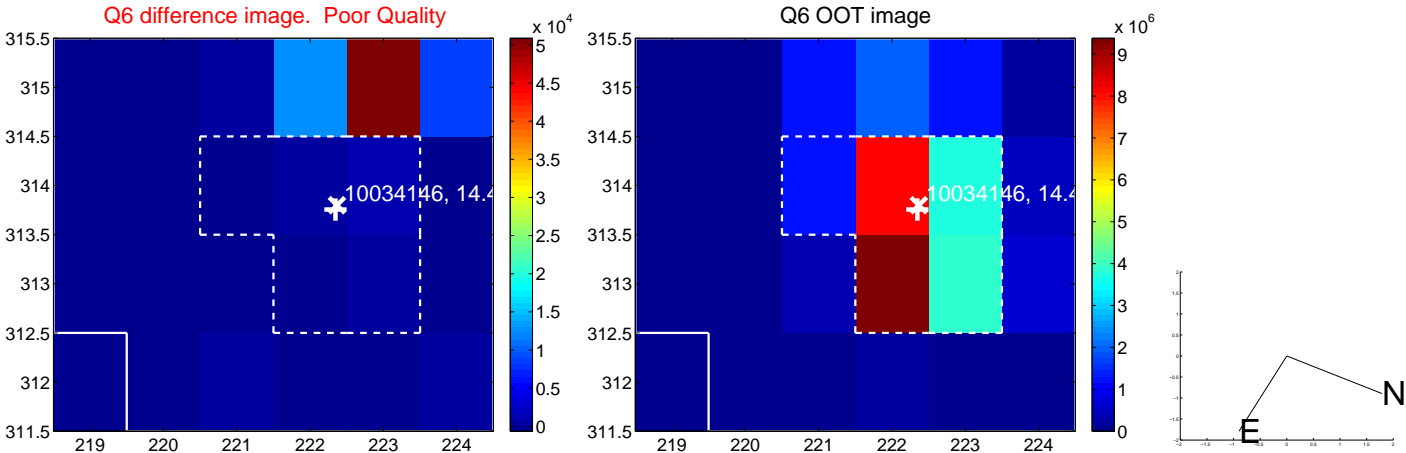
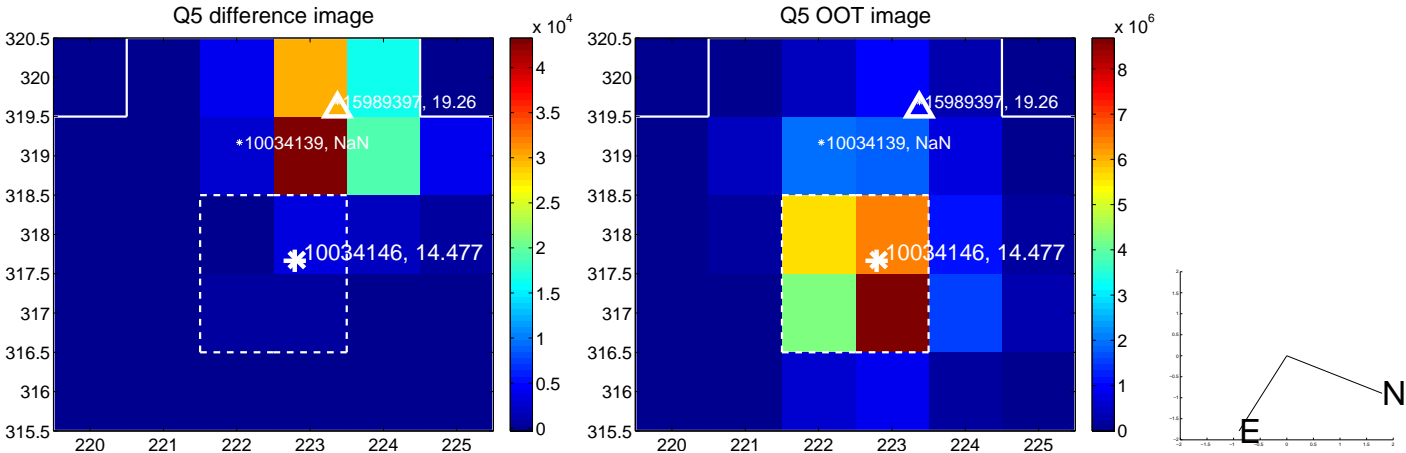


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

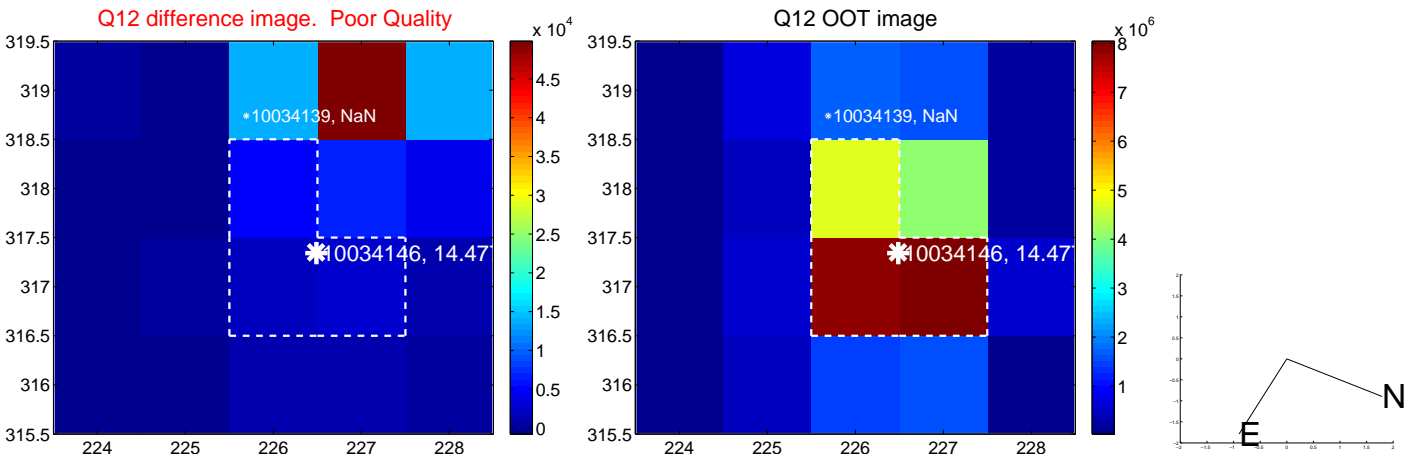
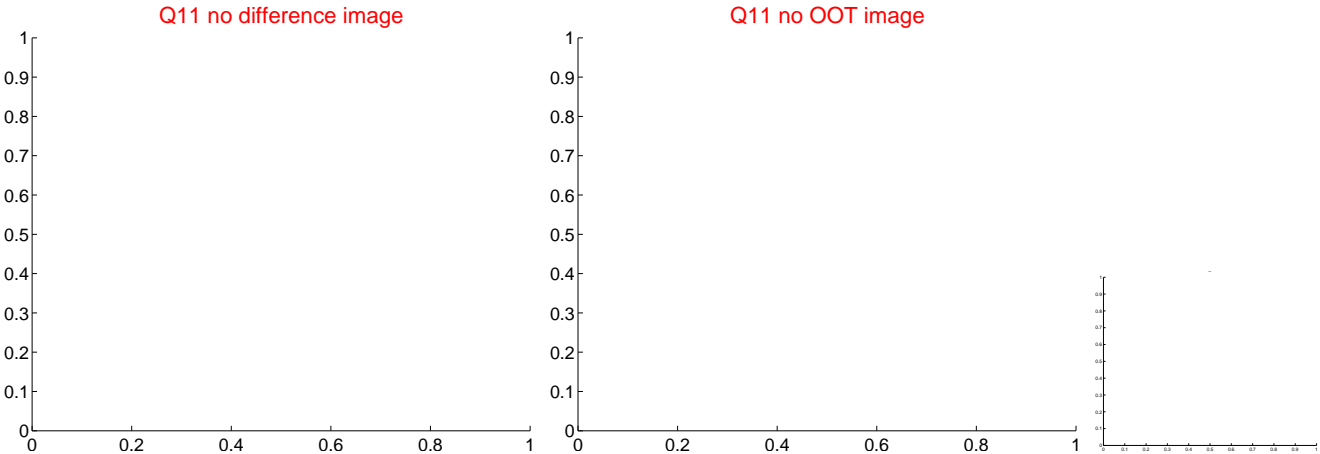
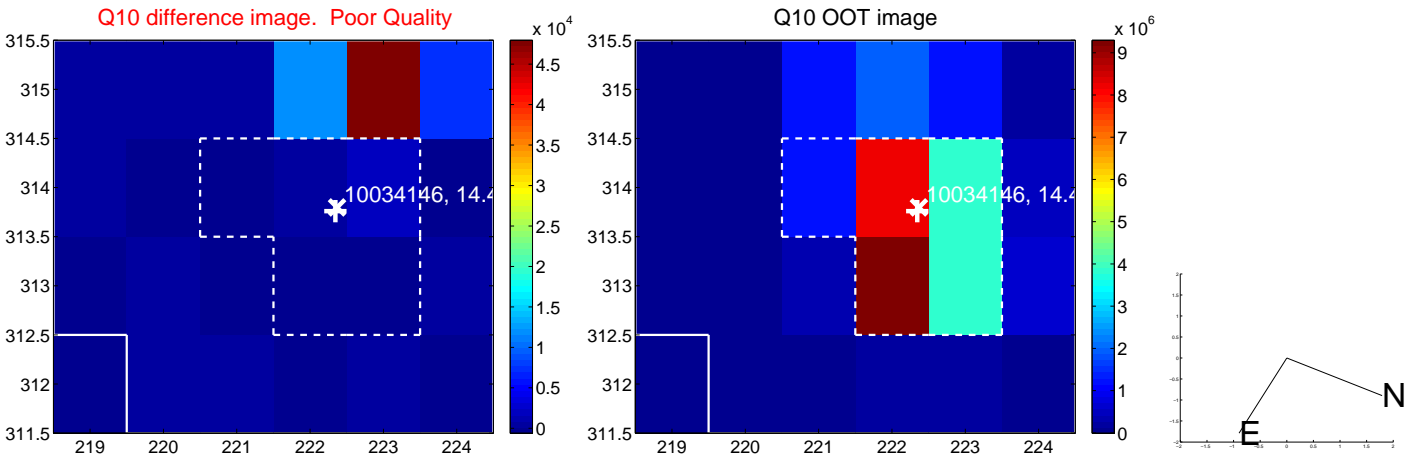
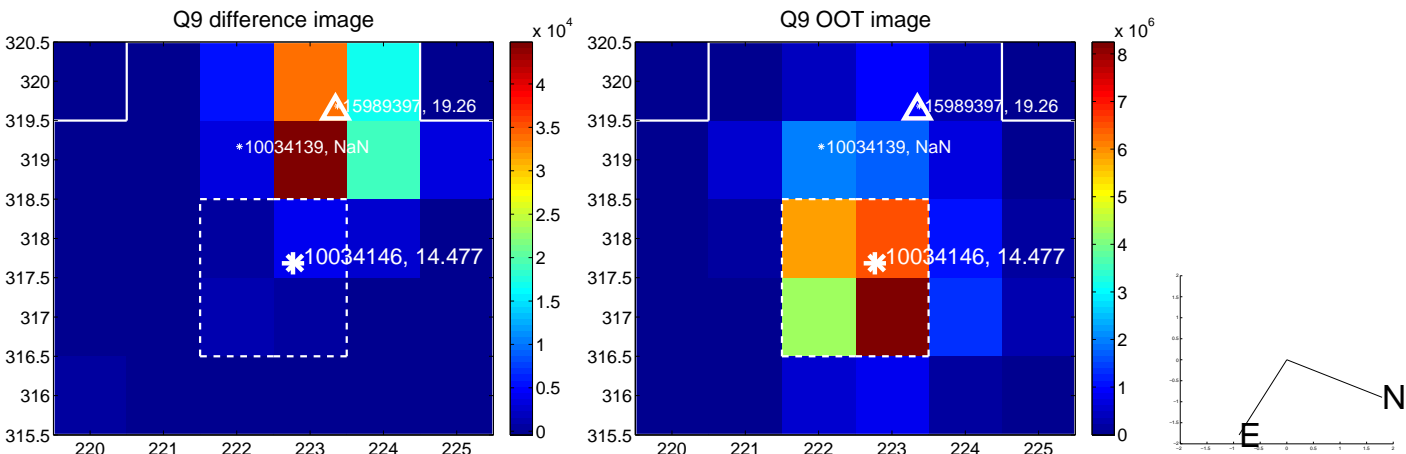
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



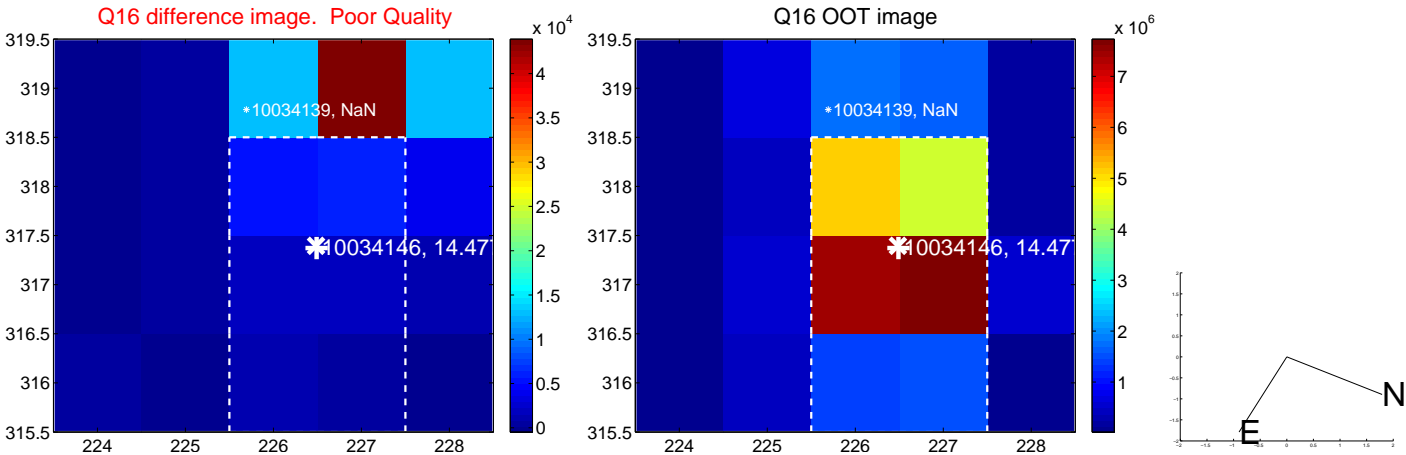
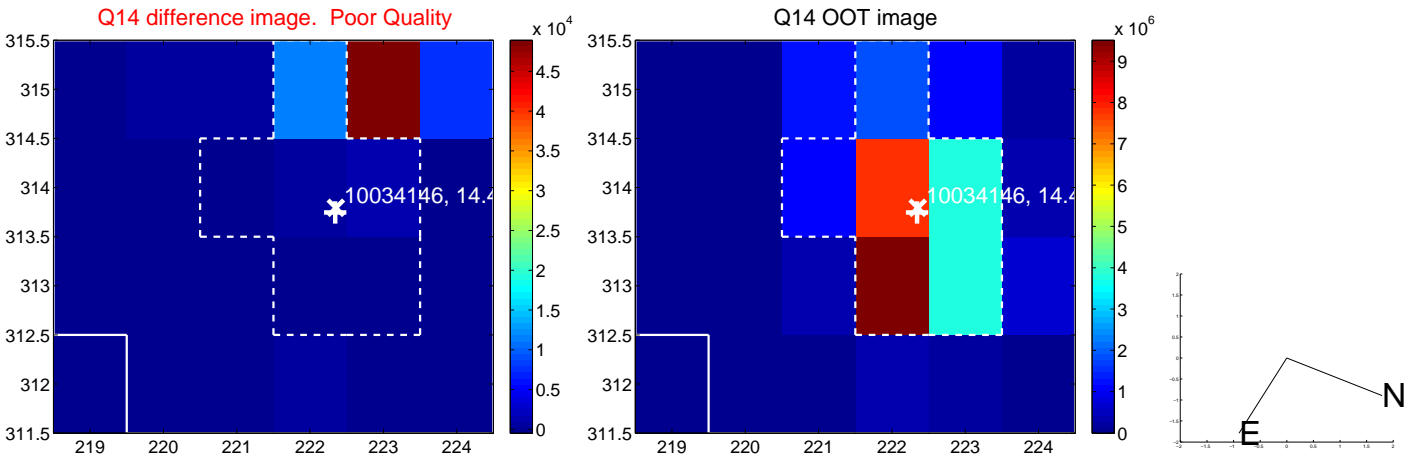
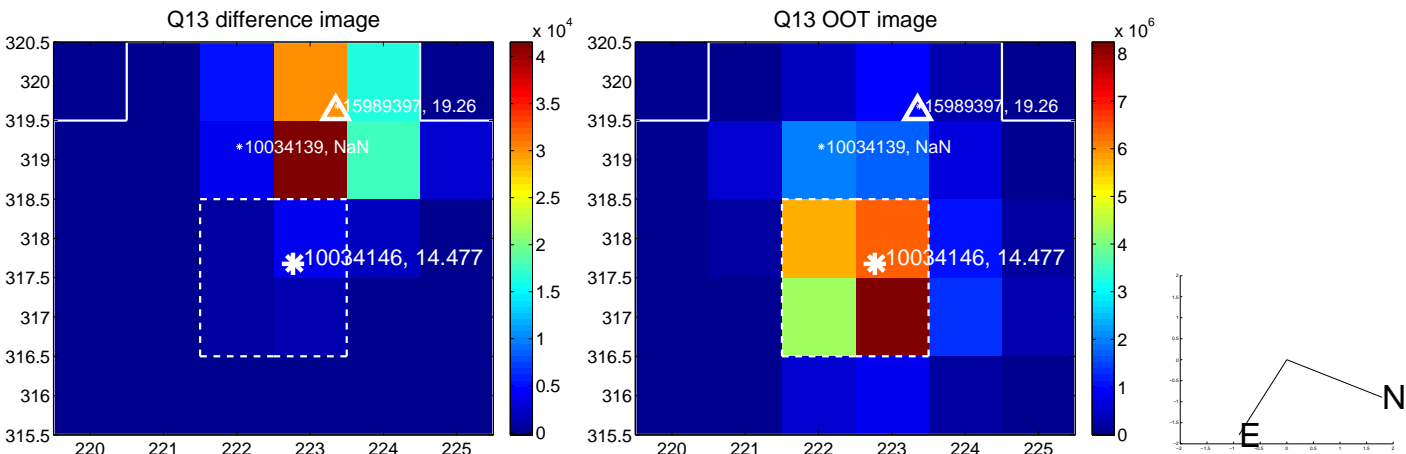
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



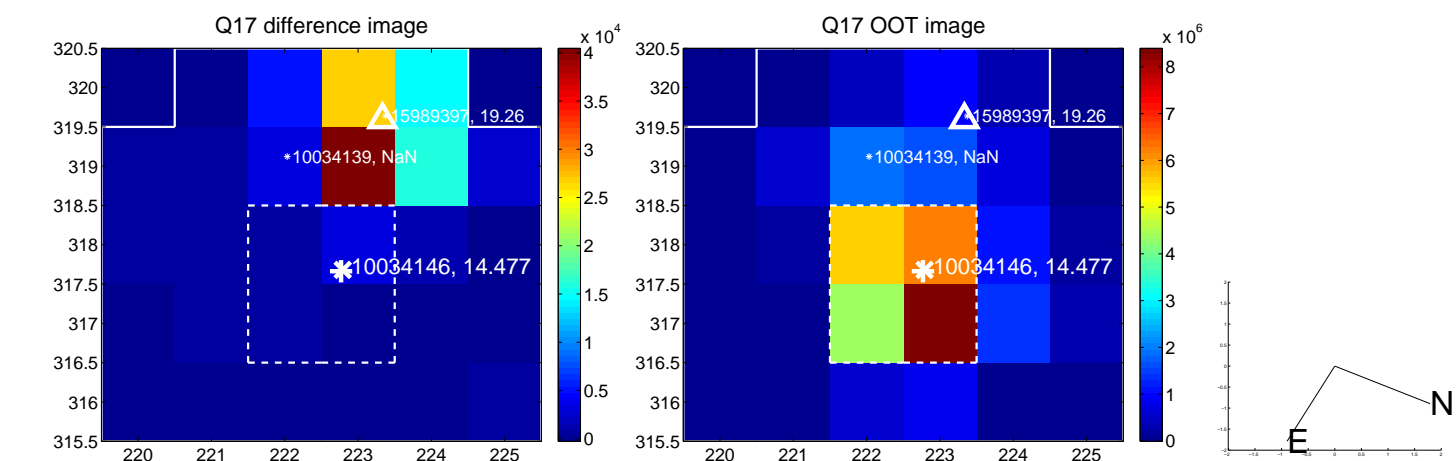
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



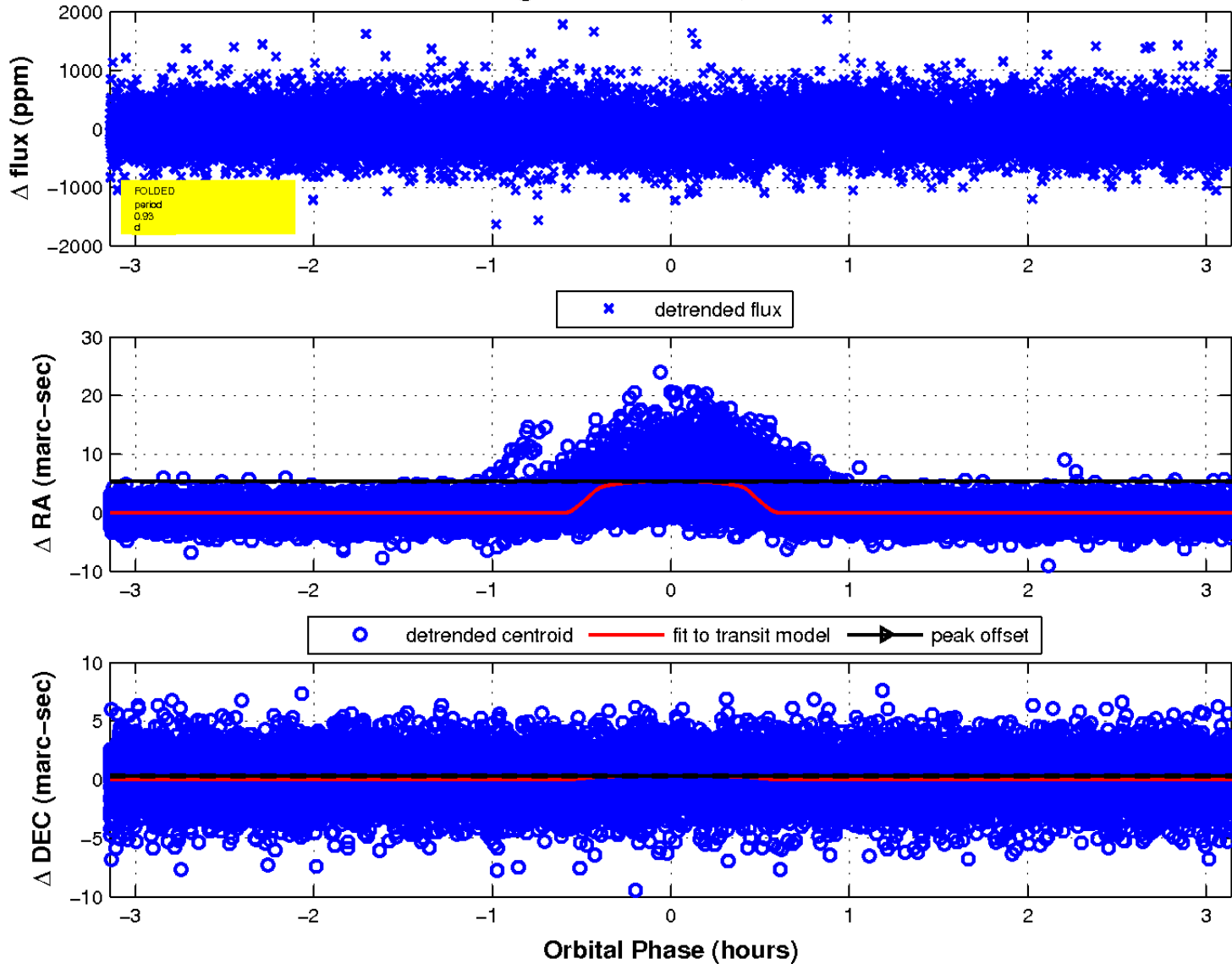
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

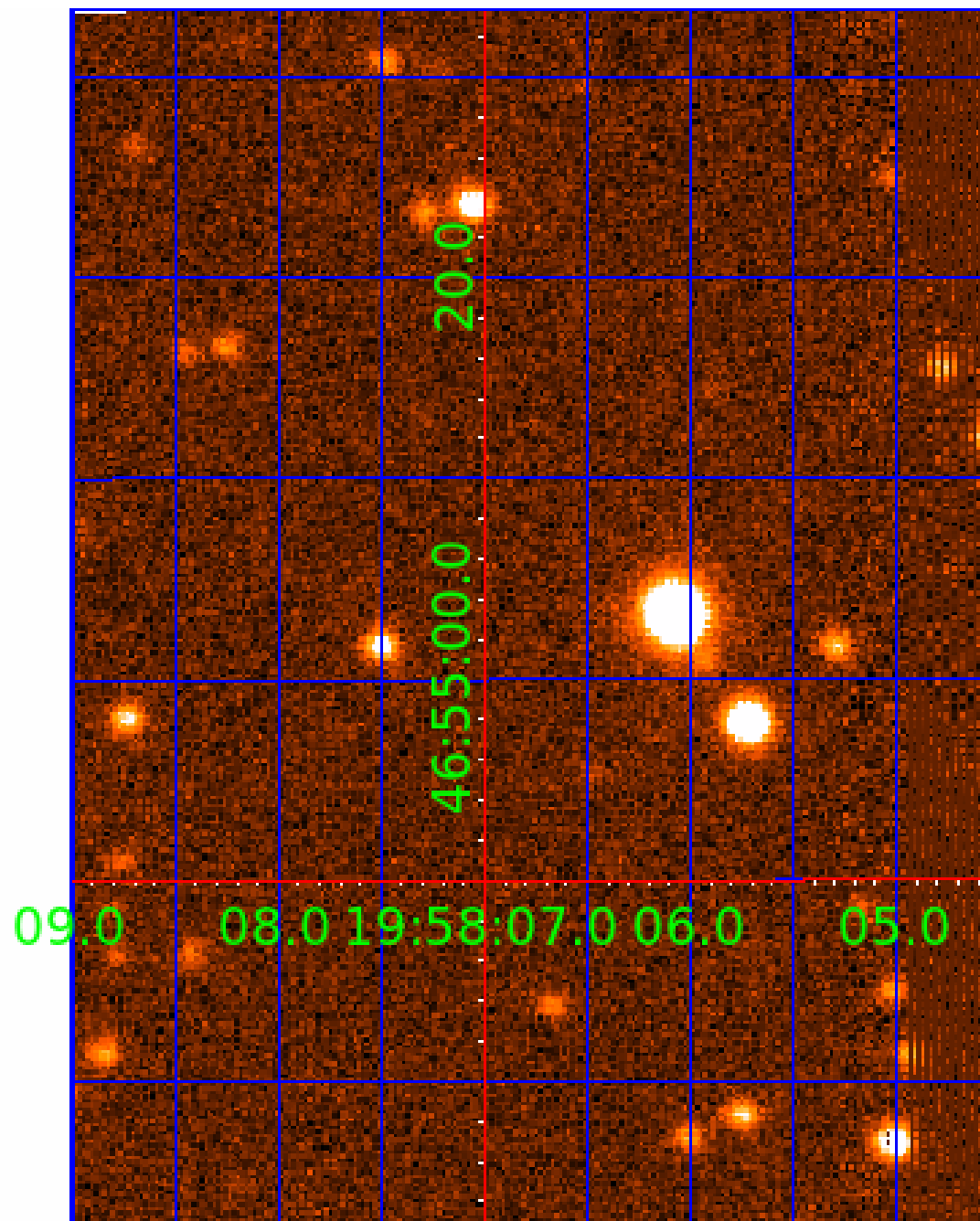


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010034146

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})
010034146-01	OBS	No	0.931971	132.104585	103.1	1.048	9.9	13.3	0.78	5470	0.95	1742.83
010034146-02	OBS	4835.01	0.932002	131.623225	97.8	1.066	9.8	12.8	0.78	5470	0.92	1742.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010034146-01	OBS	FP	0.00	1	0	1	0	MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
010034146-02	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_ALT—SAME_NTL_PERIOD—CENT_RESOLVED_OFFSET

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.

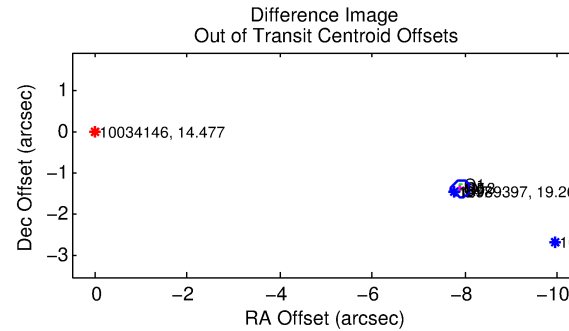
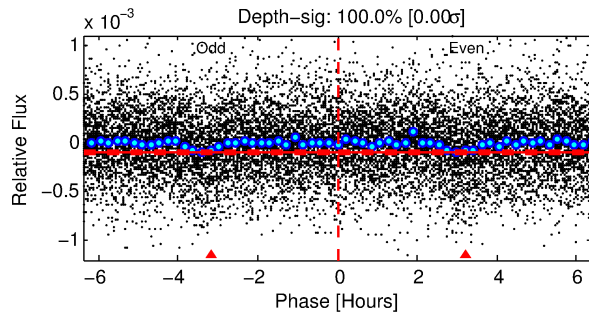
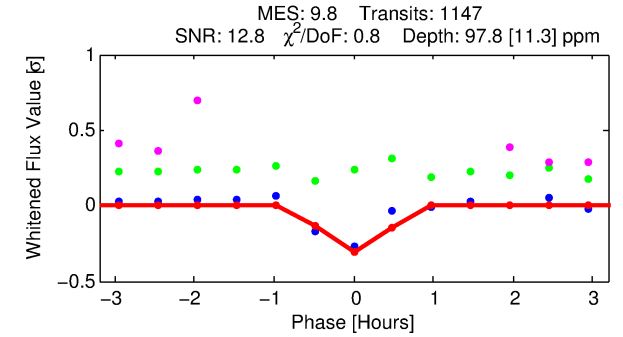
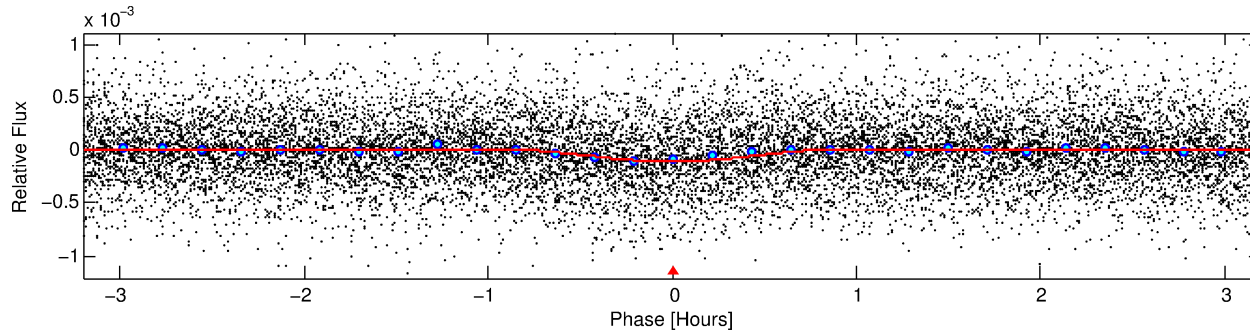
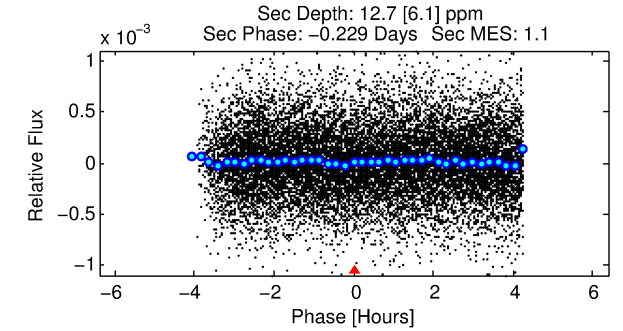
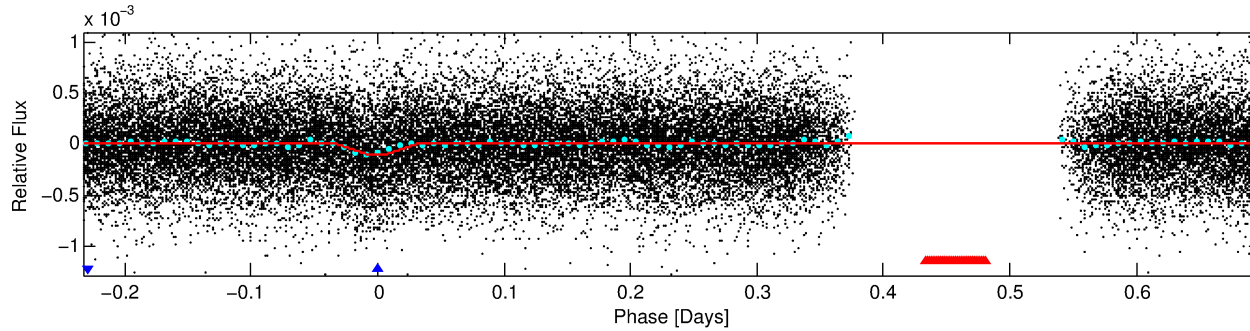
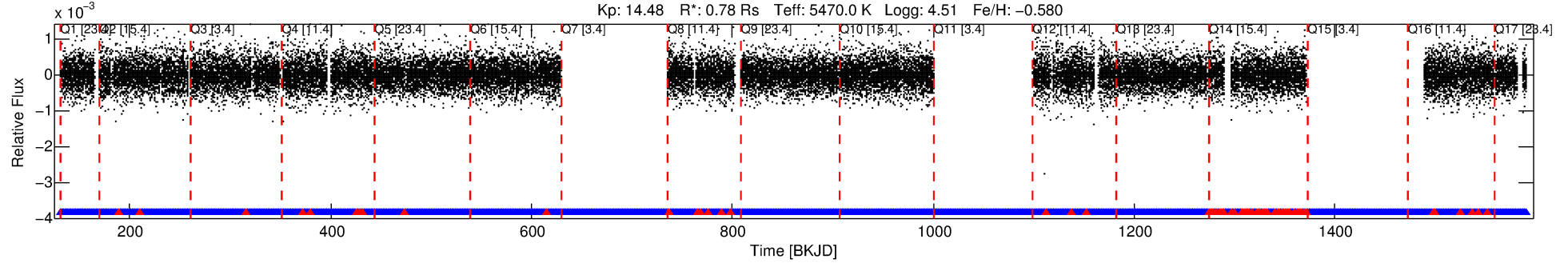
Ephemeris Match Information For 010034146-02

No Significant Match Found

DV One-Page Summary

KIC: 10034146 Candidate: 2 of 2 Period: 0.932 d
KOI: K04835 Corr: No Ephemeris Match

Kp: 14.48 R*: 0.78 Rs Teff: 5470.0 K Logg: 4.51 Fe/H: -0.580



DV Fit Results:

Period = 0.93200 [0.00001] d
Epoch = 131.6232 [0.0014] BKJD
Rp/R* = 0.0109 [0.0064]
a/R* = 3.21 [8.13]
b = 0.90 [0.61]
Seff = 1742.75 [389.39]
Teq = 1648 [92] K
Rp = 0.92 [0.56] Re
a = 0.0167 [0.0021] AU
Ag = 2.29 [2.95] [0.44σ]
Teffp = 3133 [1005] K [1.47σ]

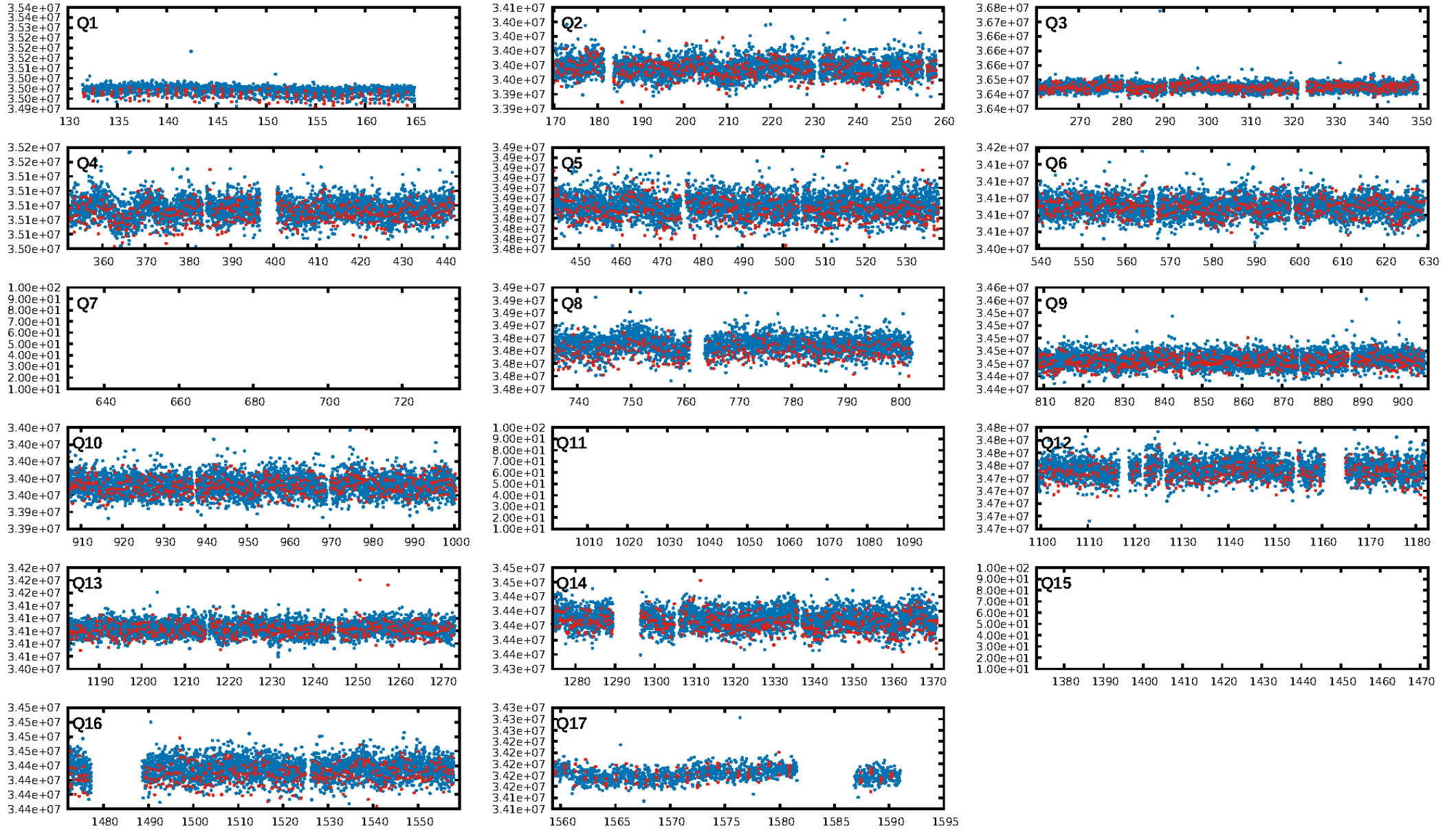
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.38e-22
RollingBand-fgt: 0.93 [1003/1083]
GhostDiagnostic-chr: -0.2782
Centroid-sig: 0.0%
Centroid-so: 38.672 arcsec [38.12σ]
OotOffset-rm: 8.027 arcsec [119.44σ]
KicOffset-rm: 7.977 arcsec [117.16σ]
OotOffset-st: 0/0/0/5 [5]
KicOffset-st: 0/0/0/5 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [14/14]

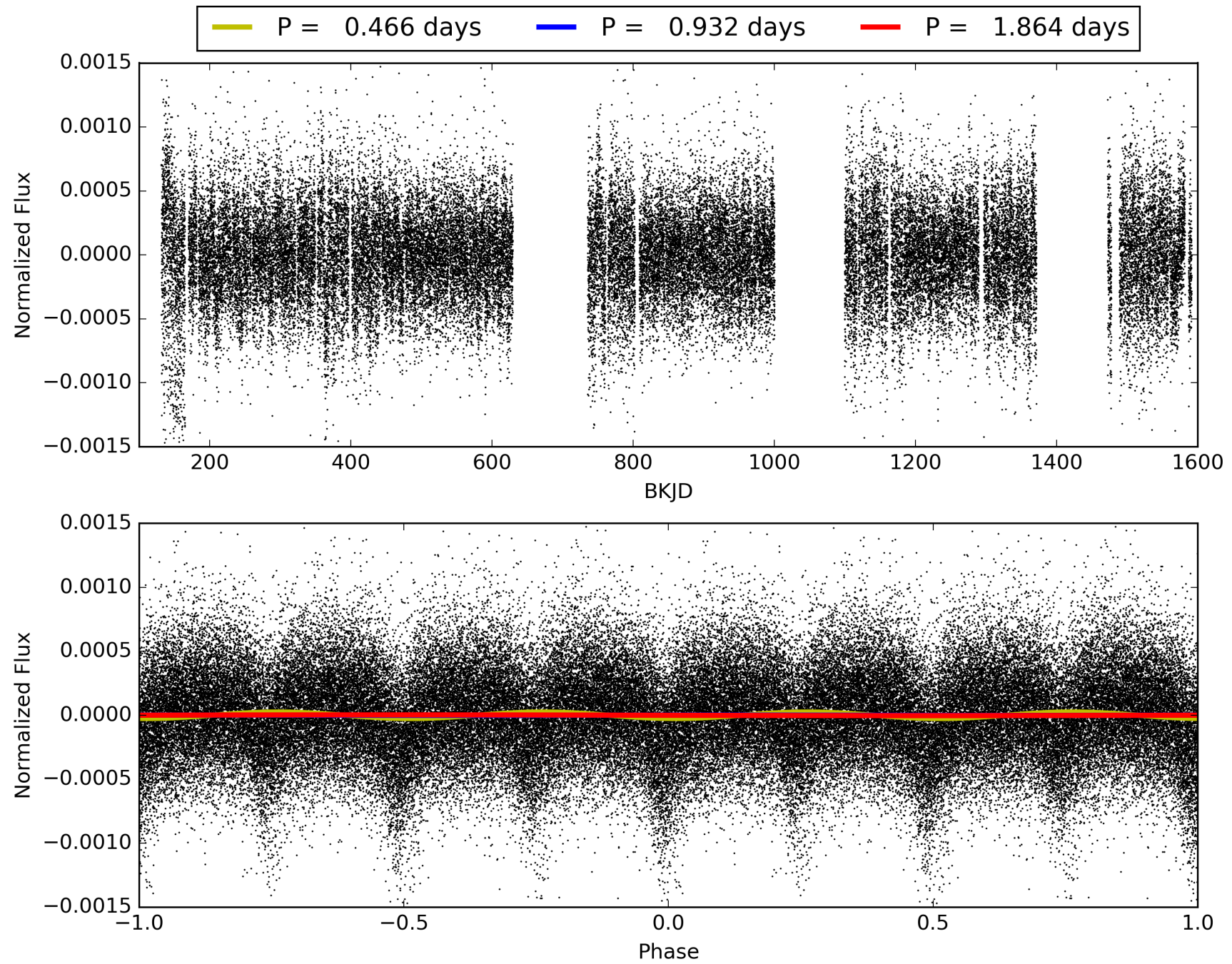
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:42:21 Z

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

TCE 010034146-02, PDC Light Curves

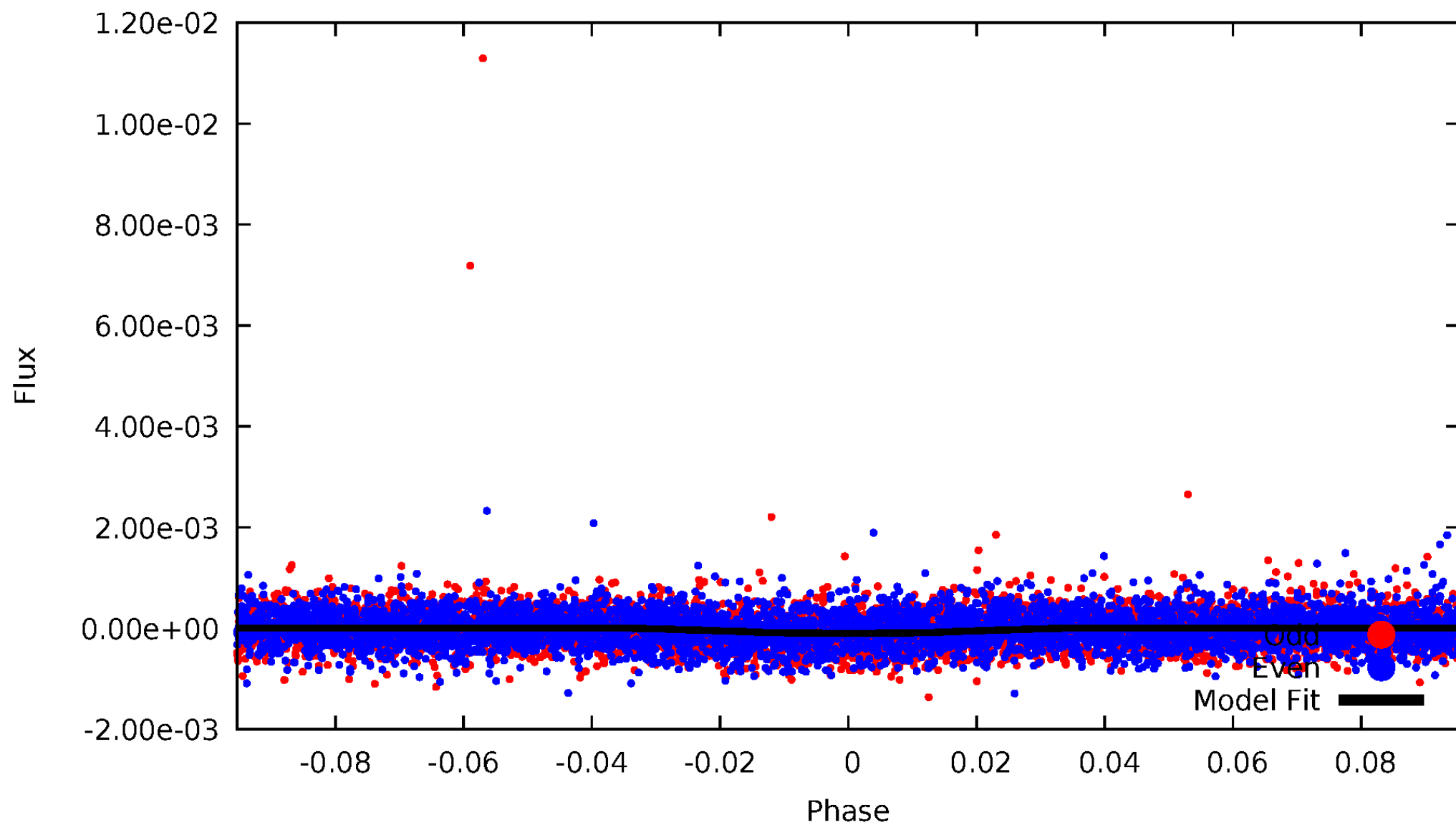


TCE 010034146-02



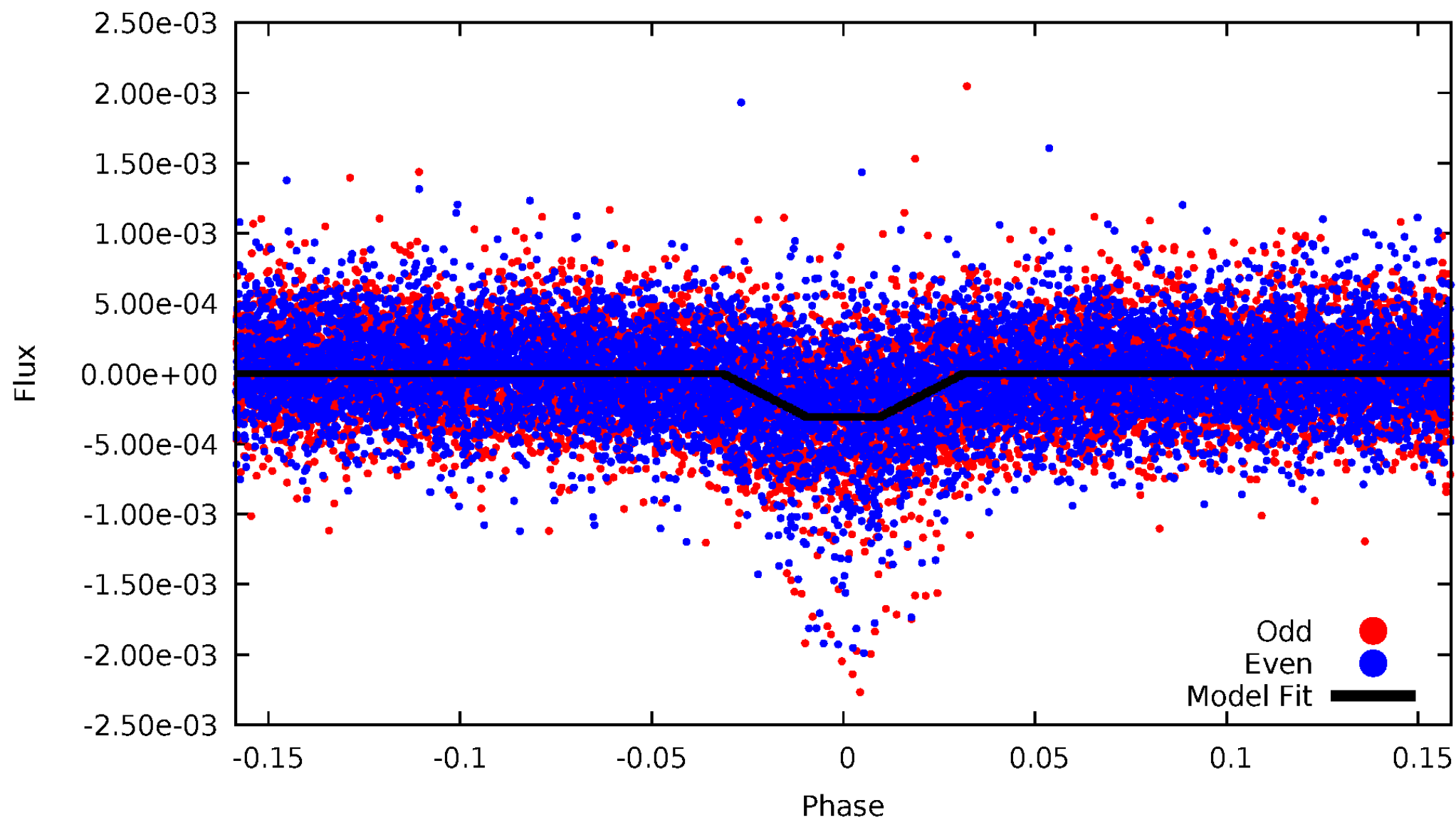
DV Odd/Even

TCE 010034146-02



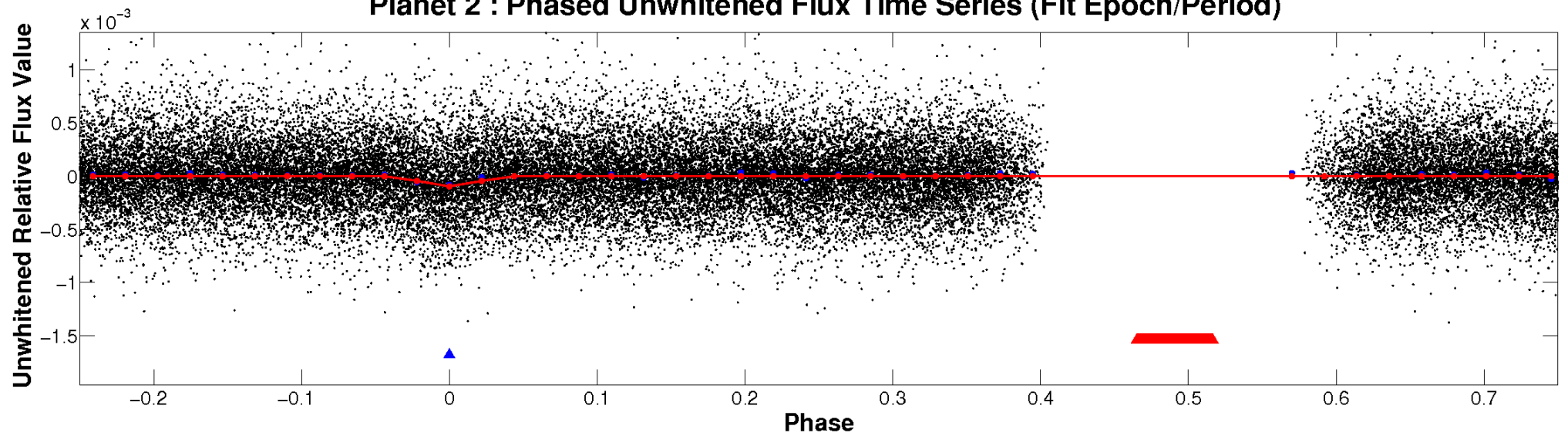
ALT Odd/Even

TCE 010034146-02

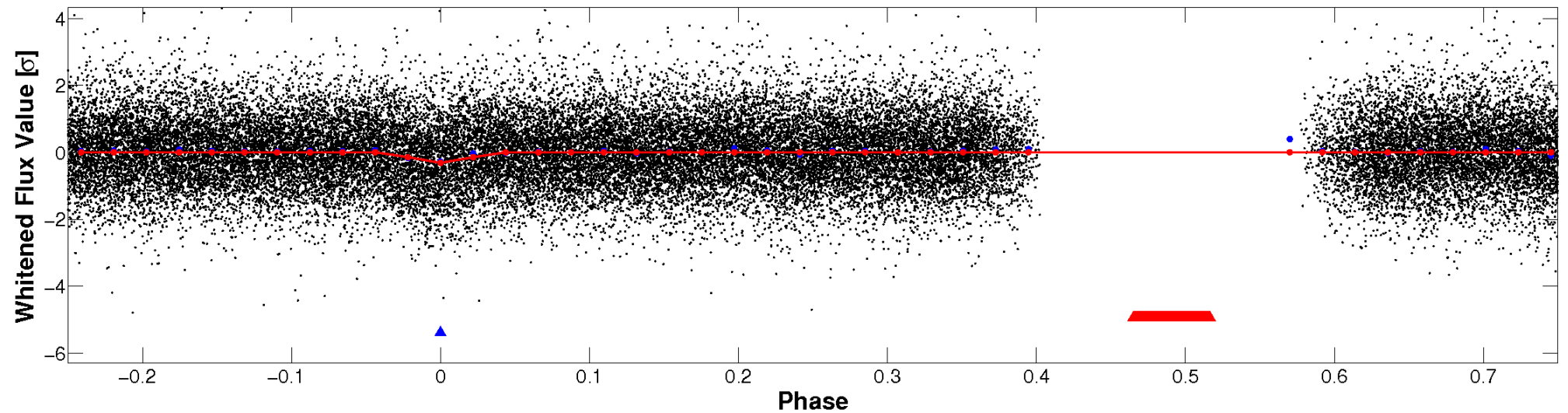


Non-Whitened Vs. Whitened Light Curve

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

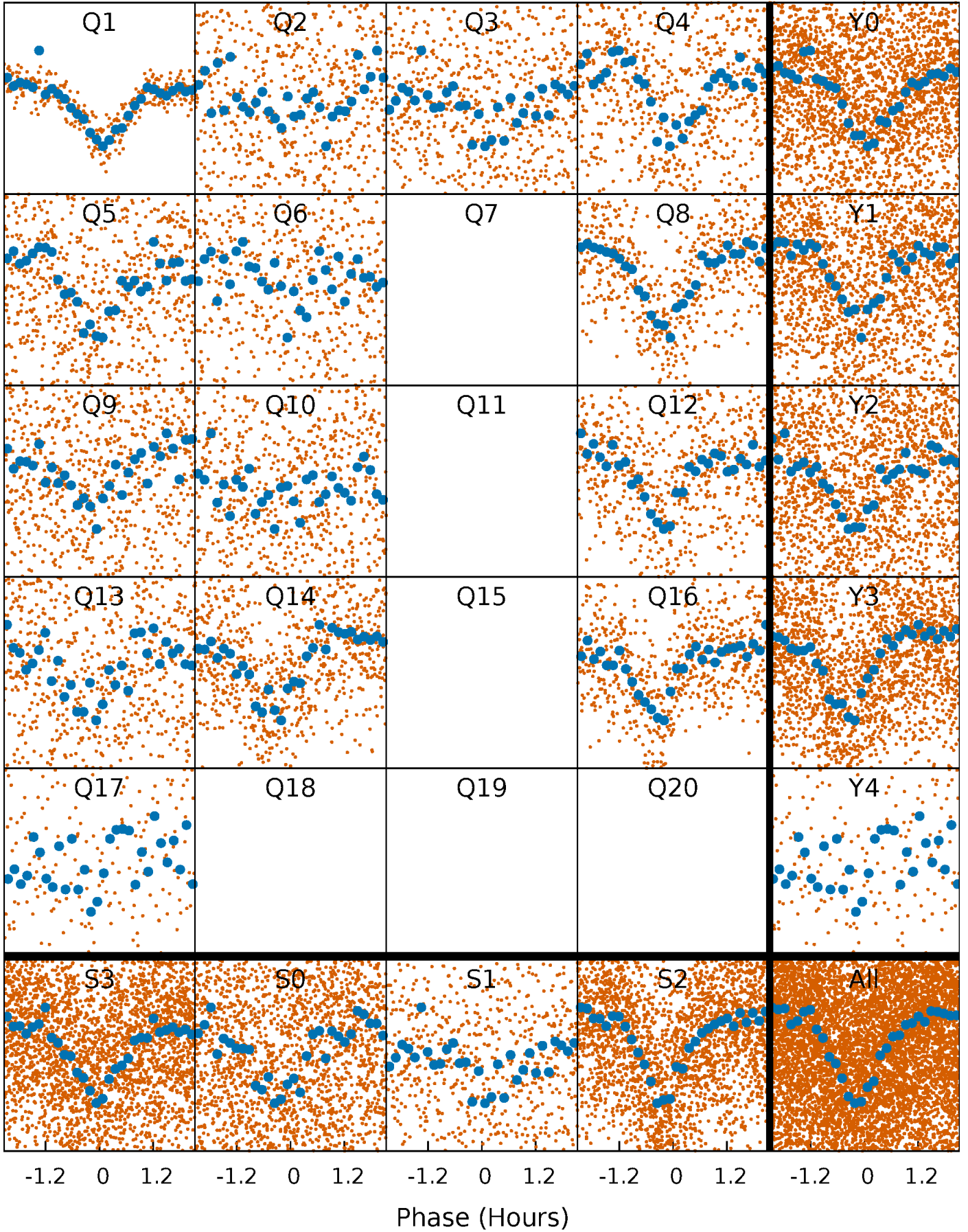


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



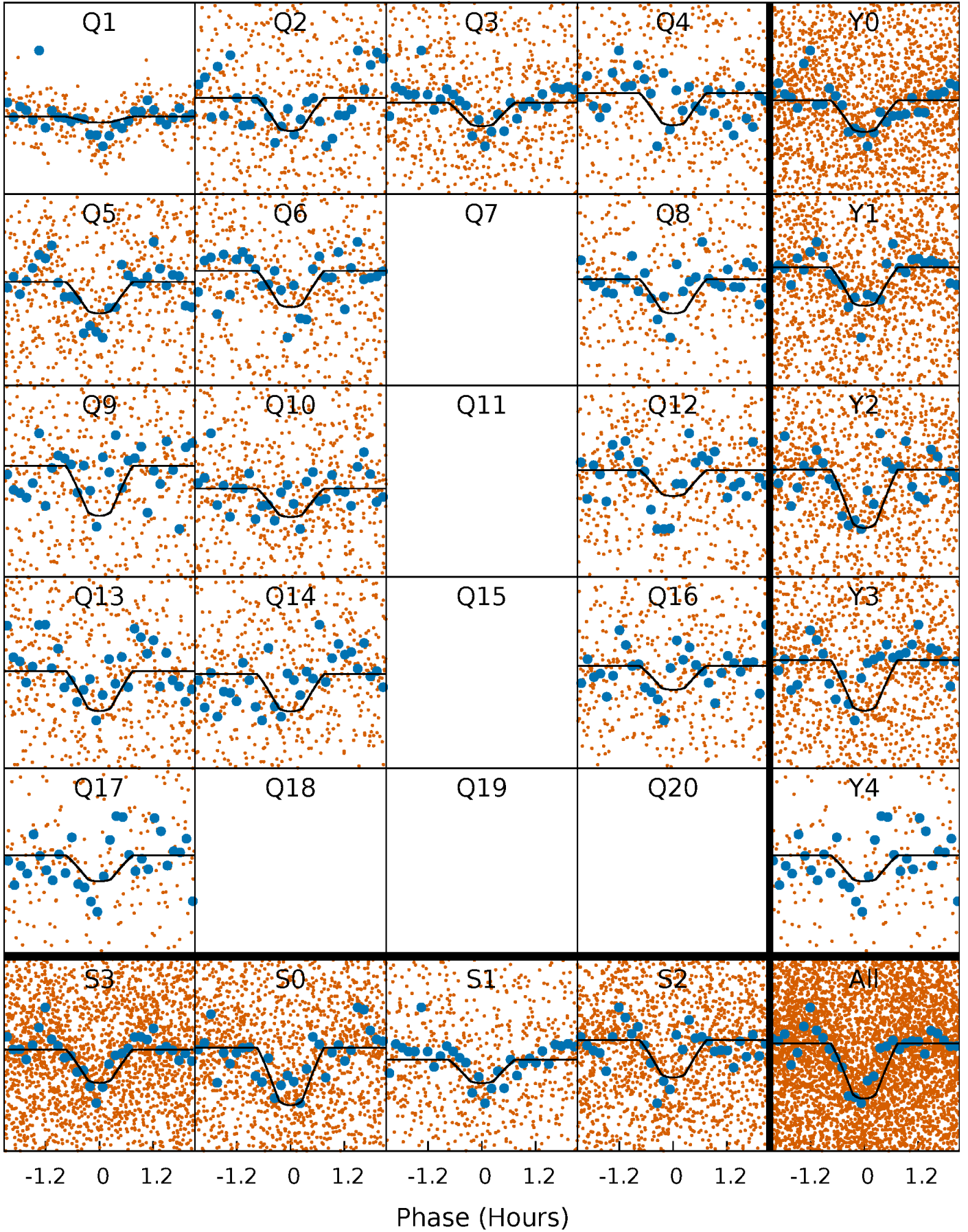
PDC Quarter-Phased Transit Curves

TCE 010034146-02 P= 0.932002 Days $T_0=131.623225$ (BKJD)



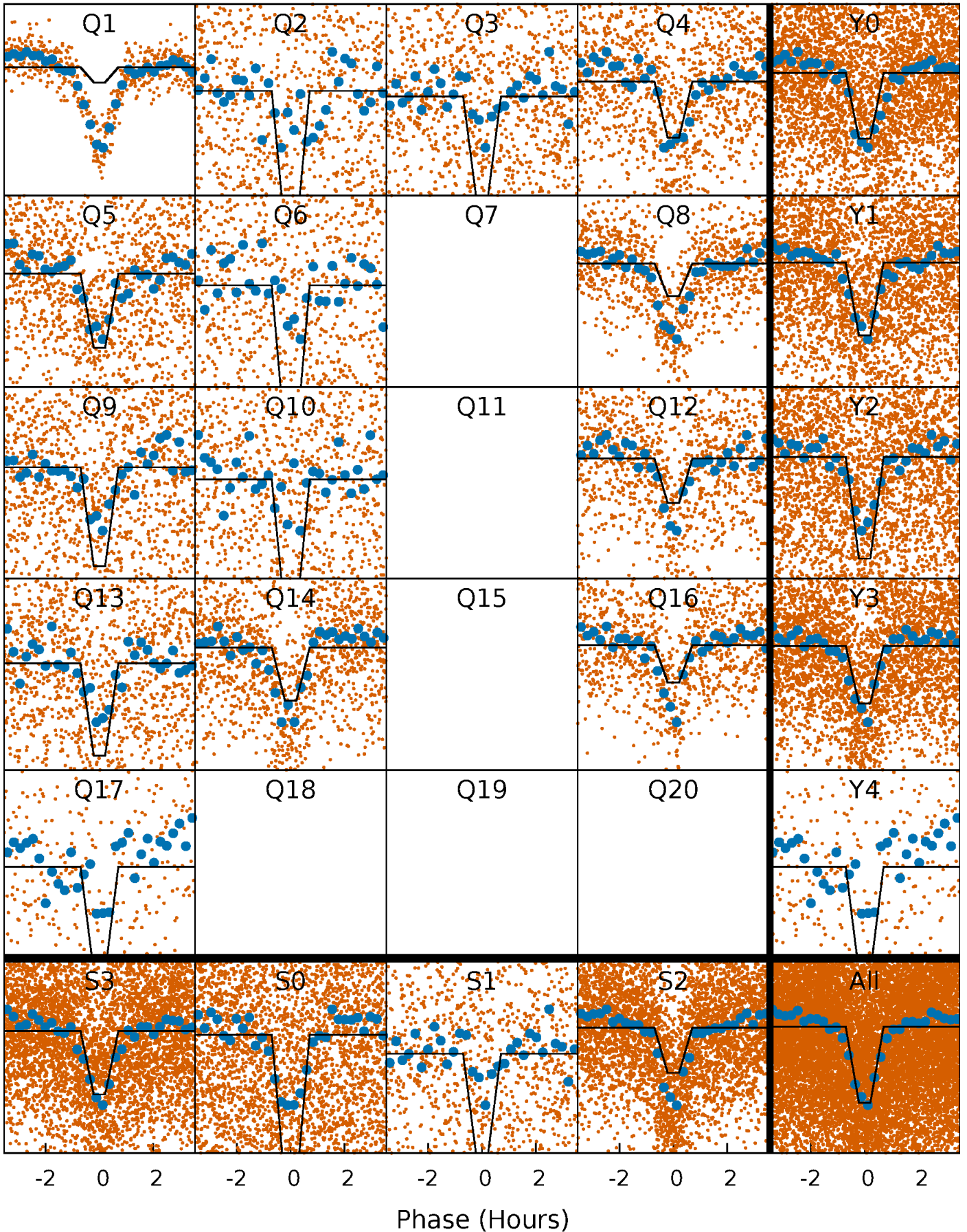
DV Quarter-Phased Transit Curves

TCE 010034146-02 P= 0.932002 Days $T_0=131.623225$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

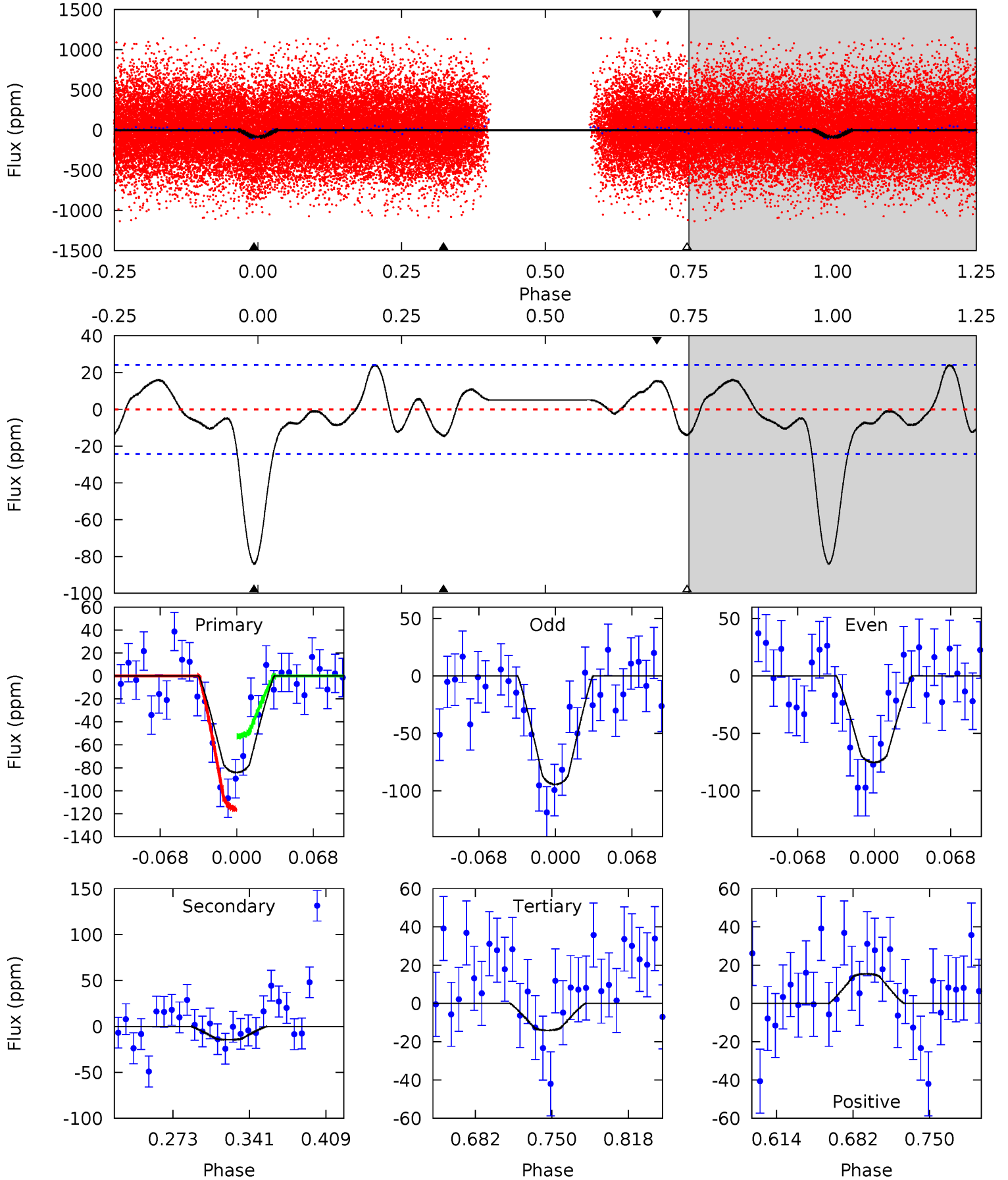
TCE 010034146-02 P= 0.931990 Days $T_0=131.625696$ (BKJD)



DV Model-Shift Uniqueness Test

010034146-02, P = 0.932002 Days, E = 130.691223 Days

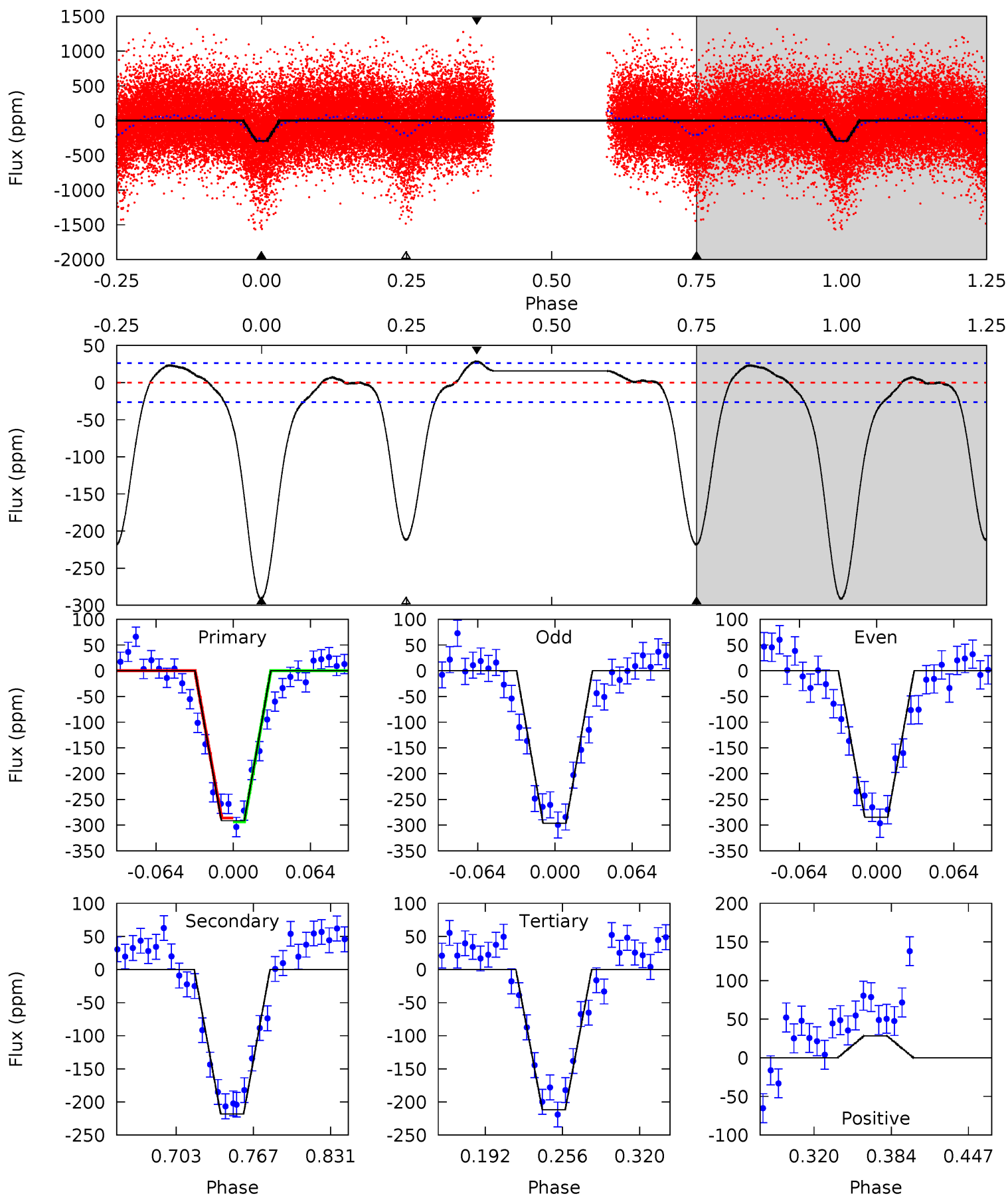
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	2.79	2.70	2.97	4.64	1.82	1.85	13.4	13.2	0.09	-0.18	1.86	0.93	0.22	6.11



Alt Model-Shift Uniqueness Test

010034146-02, P = 0.931990 Days, E = 130.693706 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.6	38.6	37.5	5.03	4.66	1.85	10.2	14.1	46.6	1.13	33.6	1.02	1.17	0.09	0.66



Stellar Parameters For KIC 010034146

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5470^{+163}_{-163}	$4.509^{+0.105}_{-0.105}$	$-0.580^{+0.350}_{-0.300}$	$0.777^{+0.115}_{-0.105}$	$0.710^{+0.103}_{-0.037}$	$2.135^{+1.004}_{-0.687}$
	+3%/-3%	+2%/-2%	+60%/-52%	+15%/-14%	+15%/-5%	+47%/-32%
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 010034146-02 / KOI 4835.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-15 ± 5	$0.95^{+0.55}_{-0.50}$	2295^{+116}_{-103}	3513^{+1167}_{-591}	$2.397^{+7.967}_{-1.496}$
Alt.	-218 ± 6	$1.55^{+0.53}_{-0.62}$	2303^{+120}_{-102}	4995^{+1383}_{-578}	14^{+25}_{-6}

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 $A_{obs} \gg 1.0$

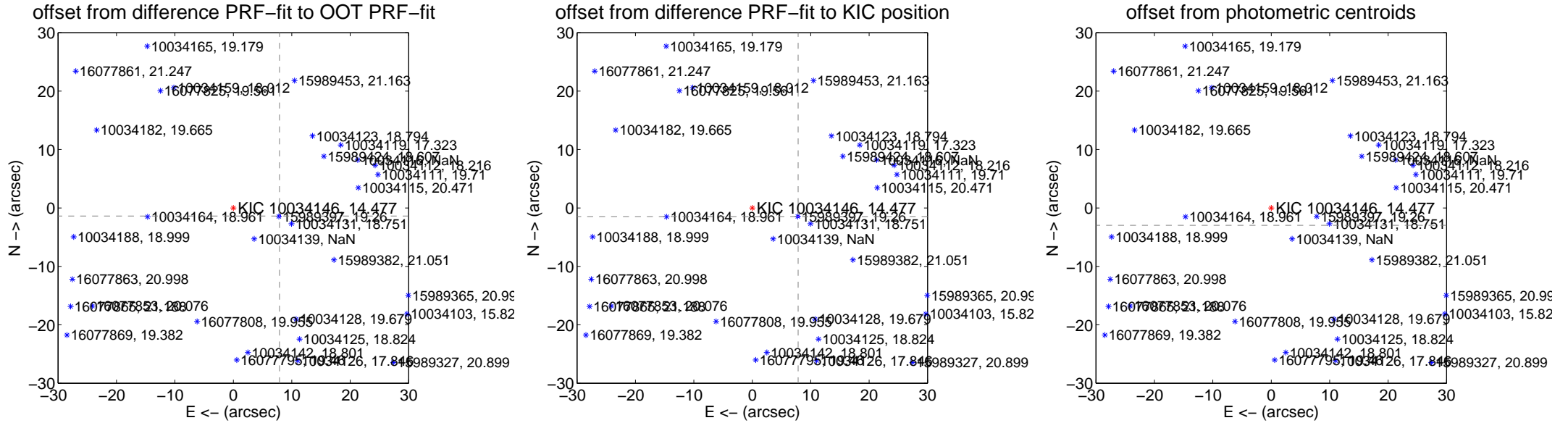
DV Centroid Data

Supplemental centroid analysis for 010034146-02. Kepler magnitude: 14.48. Transit SNR 12.80

There are 5 quarters with good PRF difference image offsets

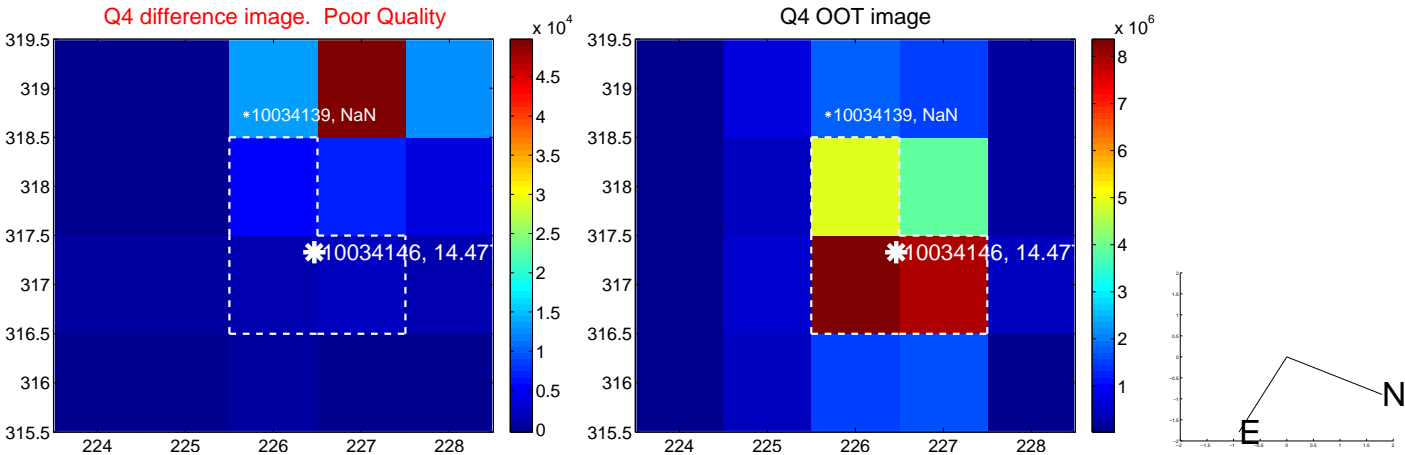
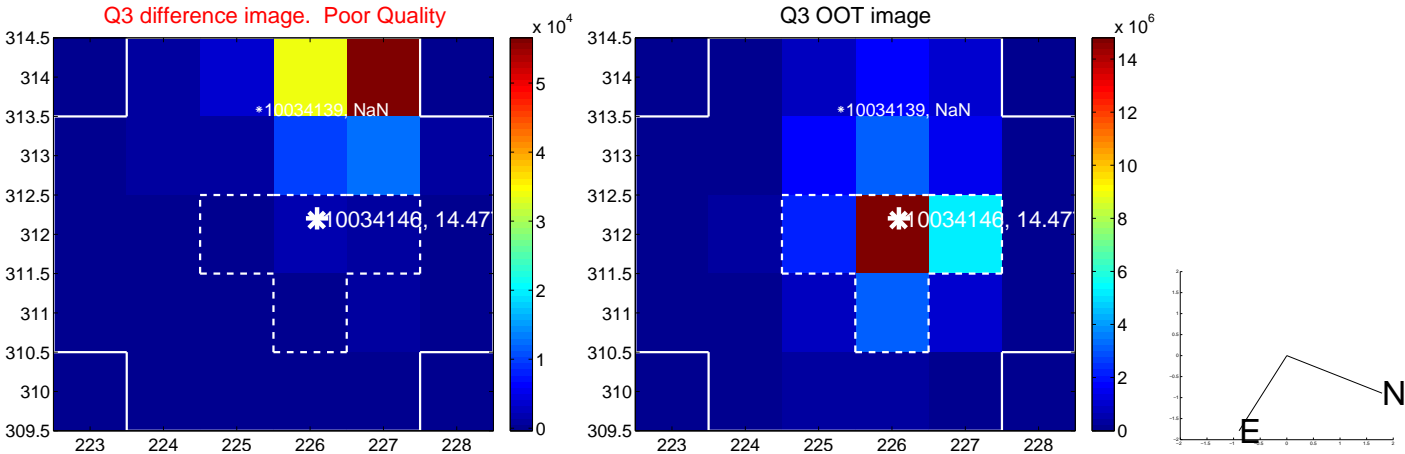
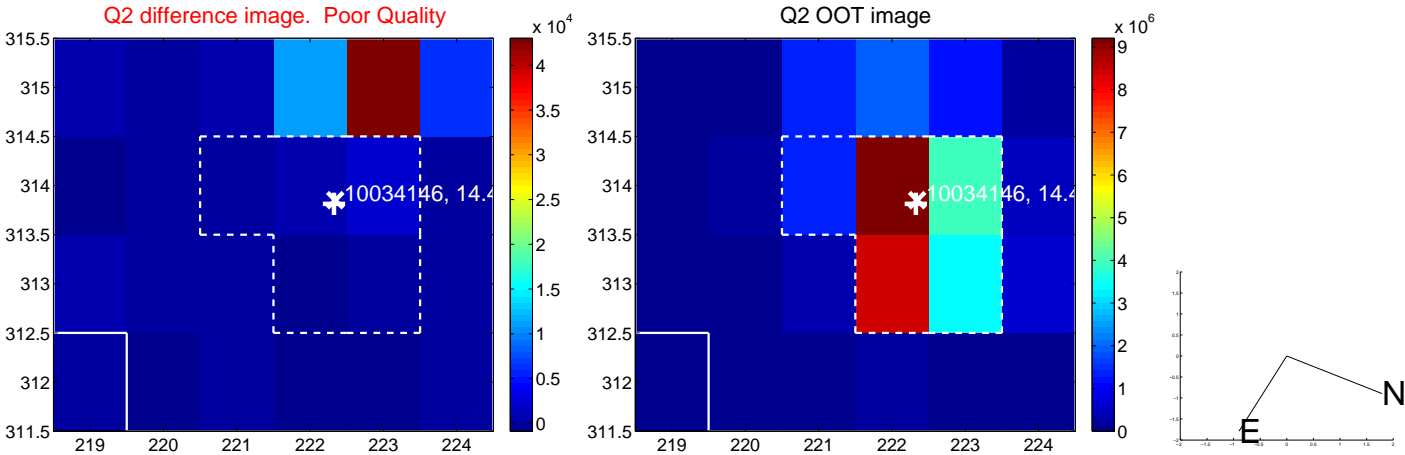
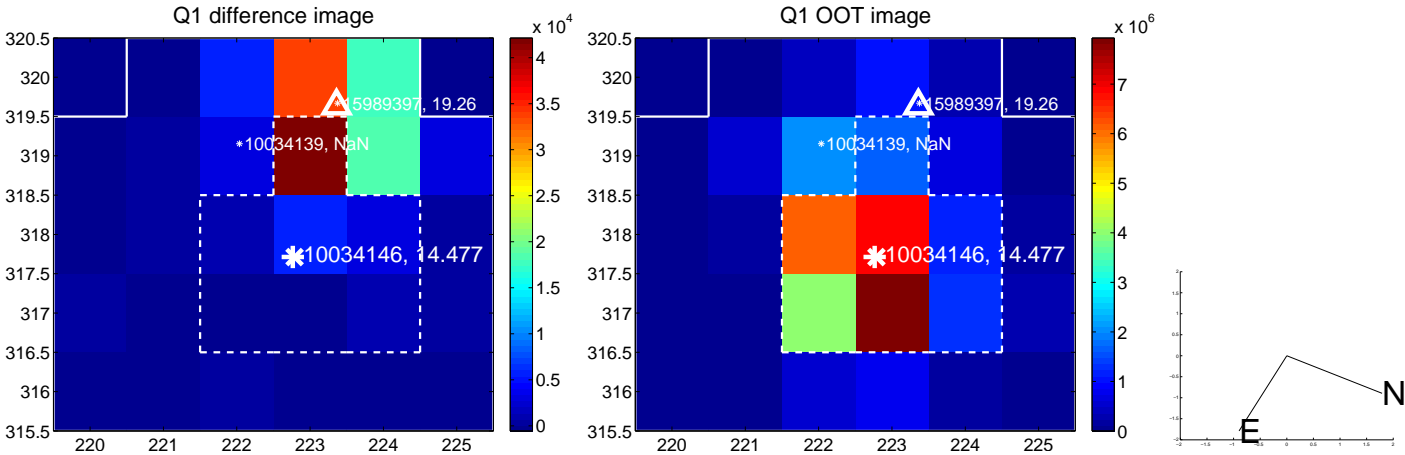
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.027 ± 0.067	119.44	-7.907 ± 0.067	-1.387 ± 0.067
PRF-fit source offset from KIC position	7.977 ± 0.068	117.16	-7.842 ± 0.069	-1.464 ± 0.070
photometric centroid source offset	38.67 ± 1.01	38.12	-38.56 ± 1.01	-2.98 ± 1.06

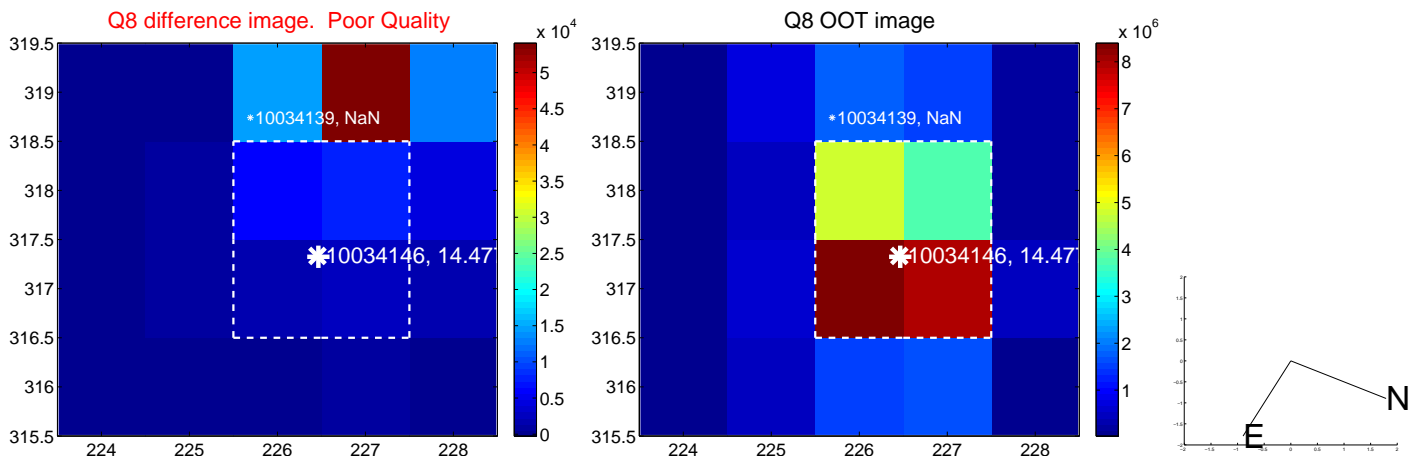
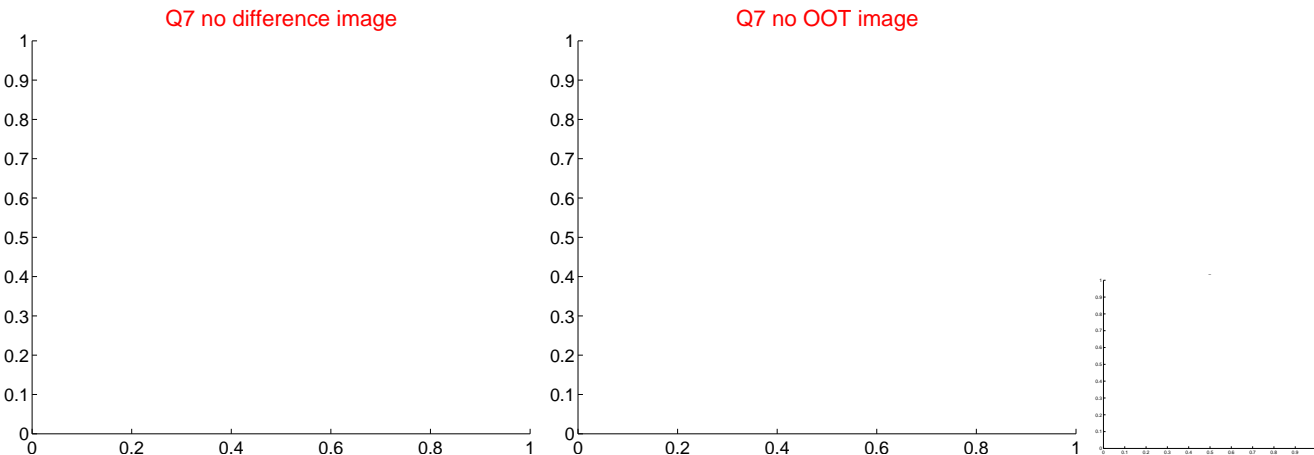
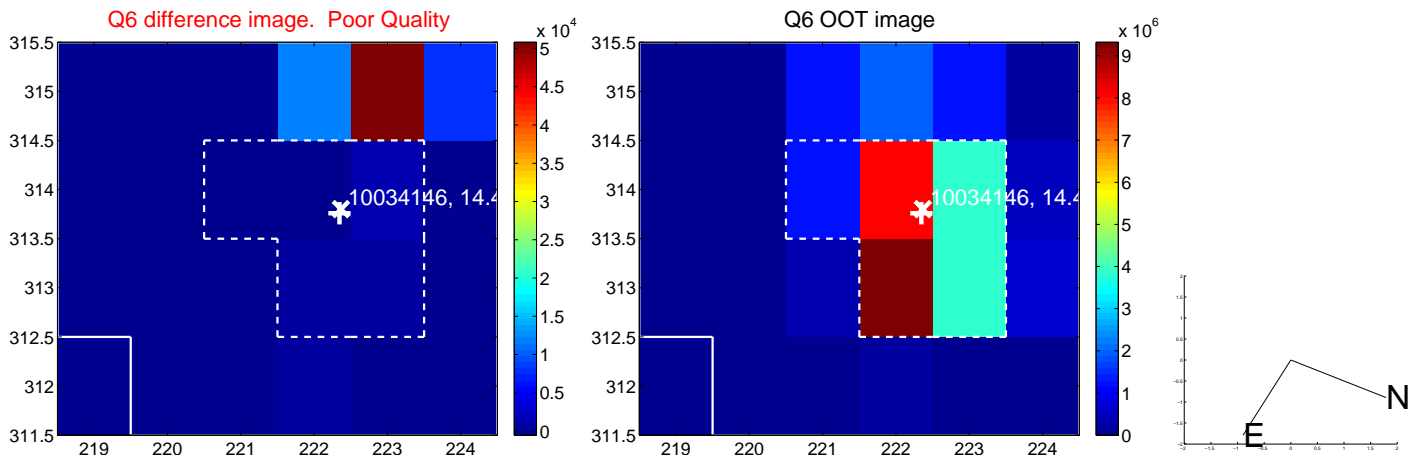
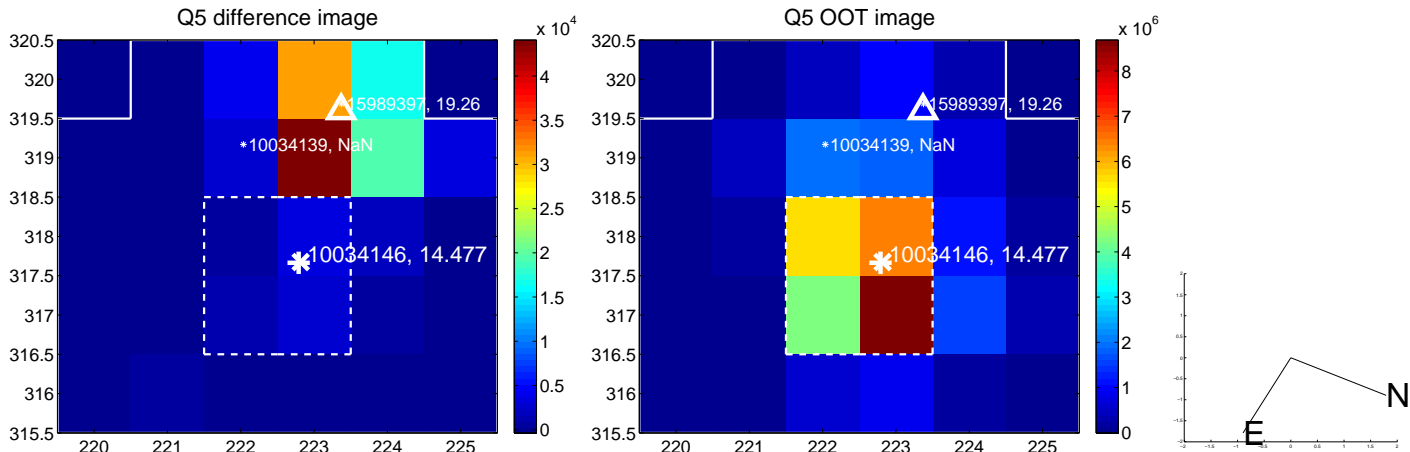


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

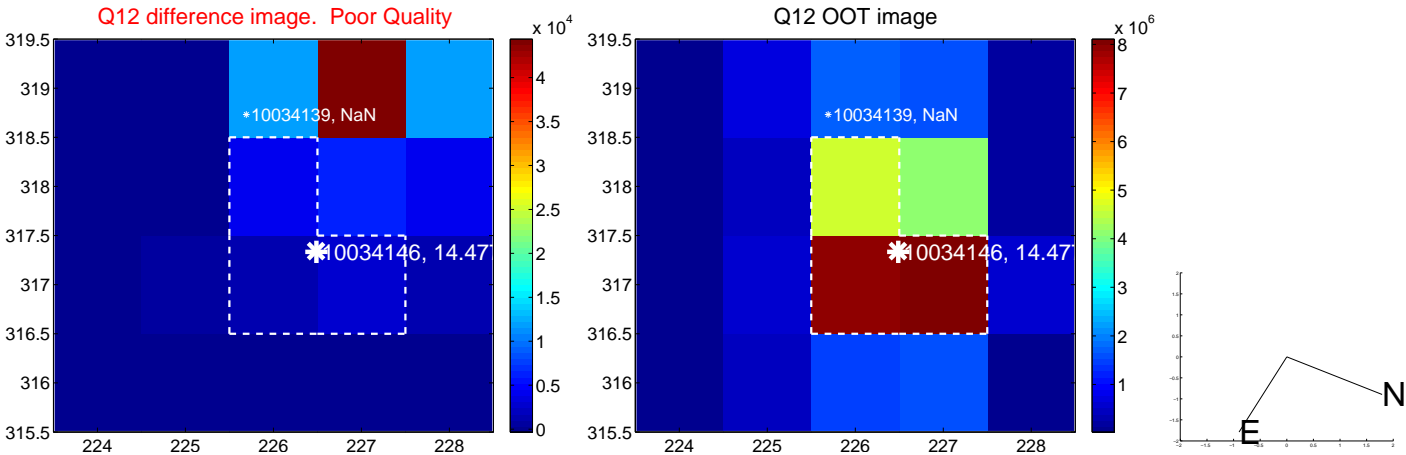
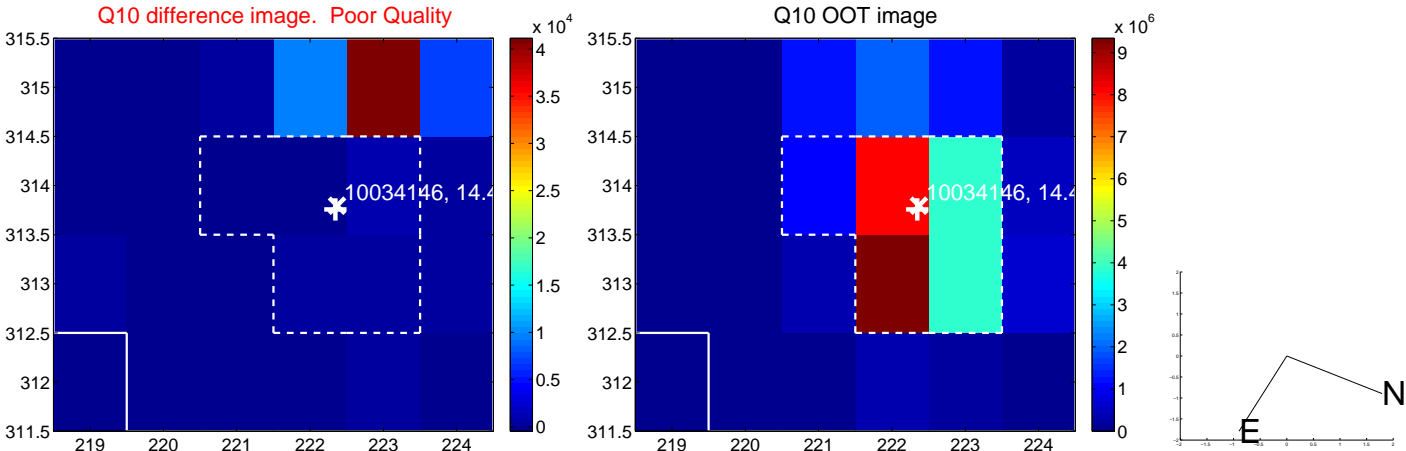
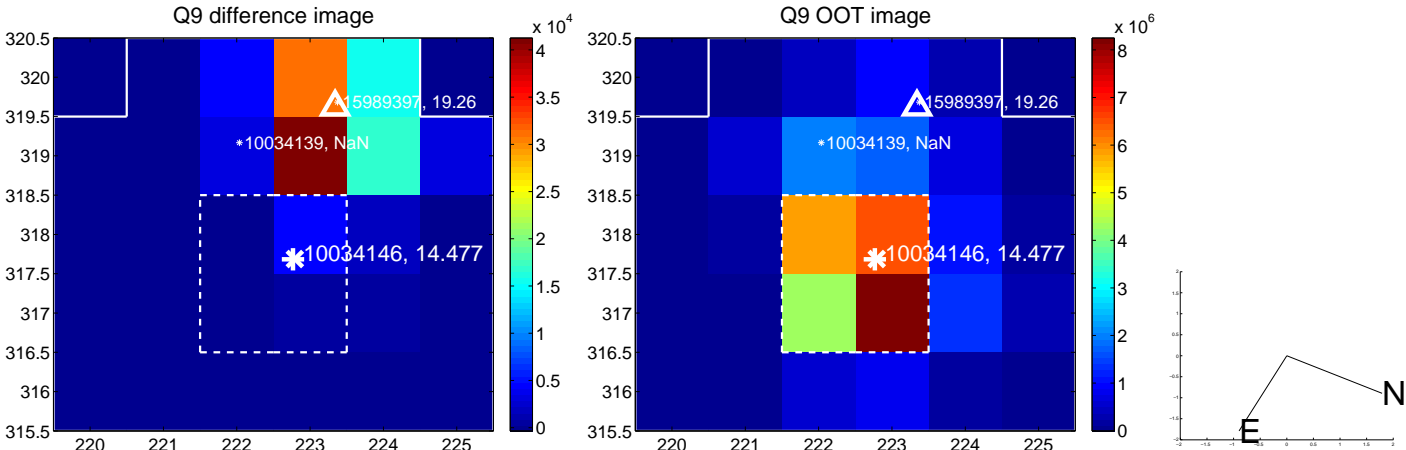
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



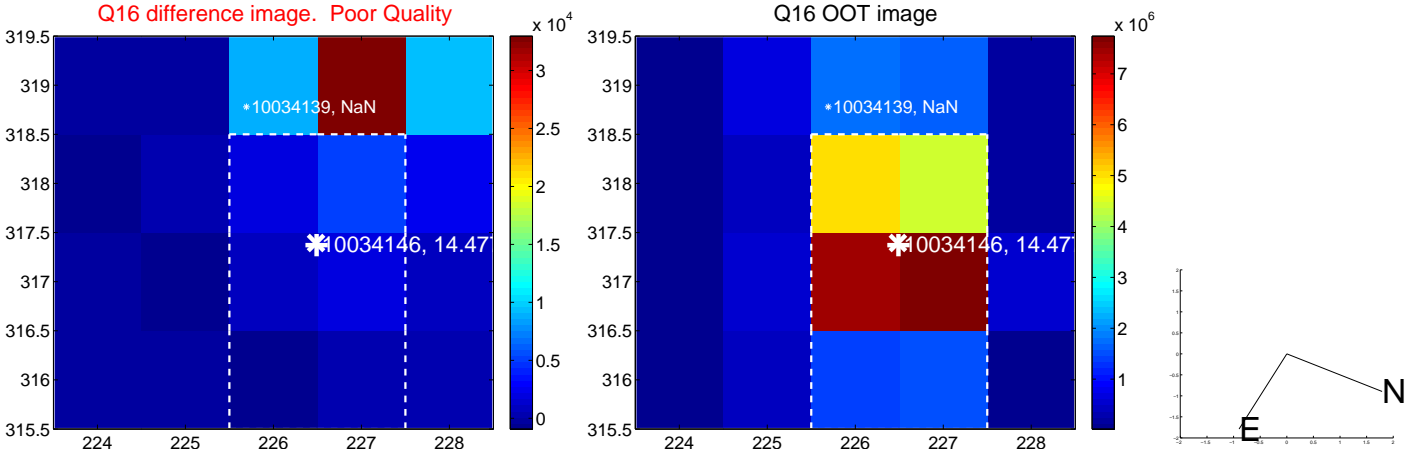
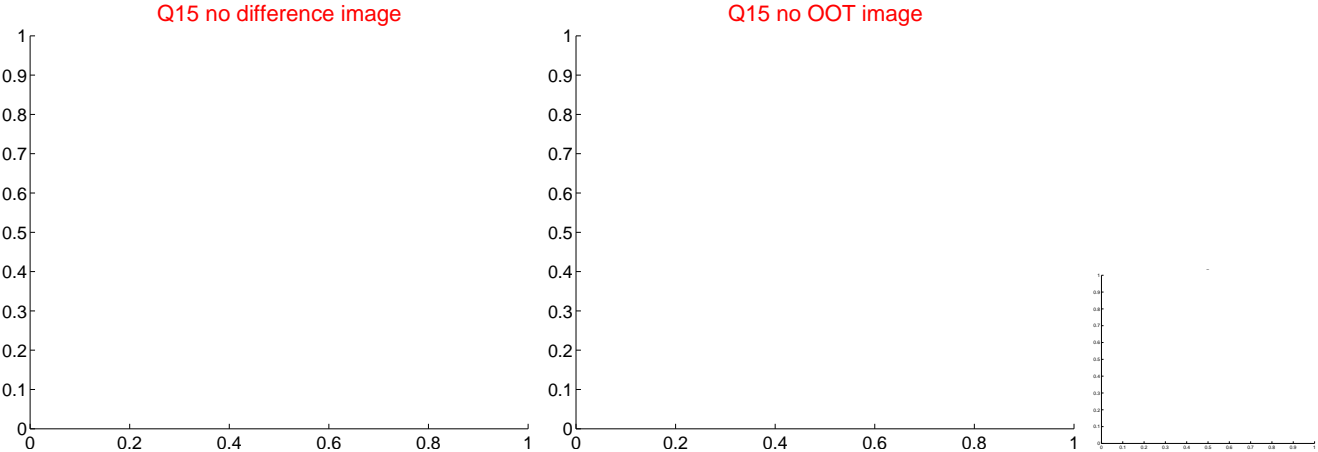
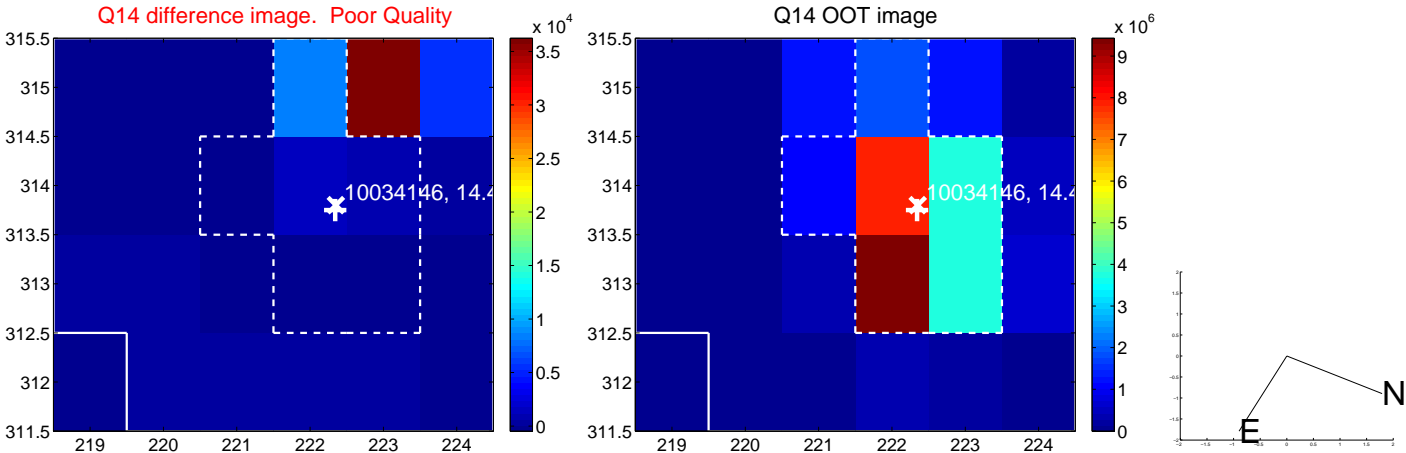
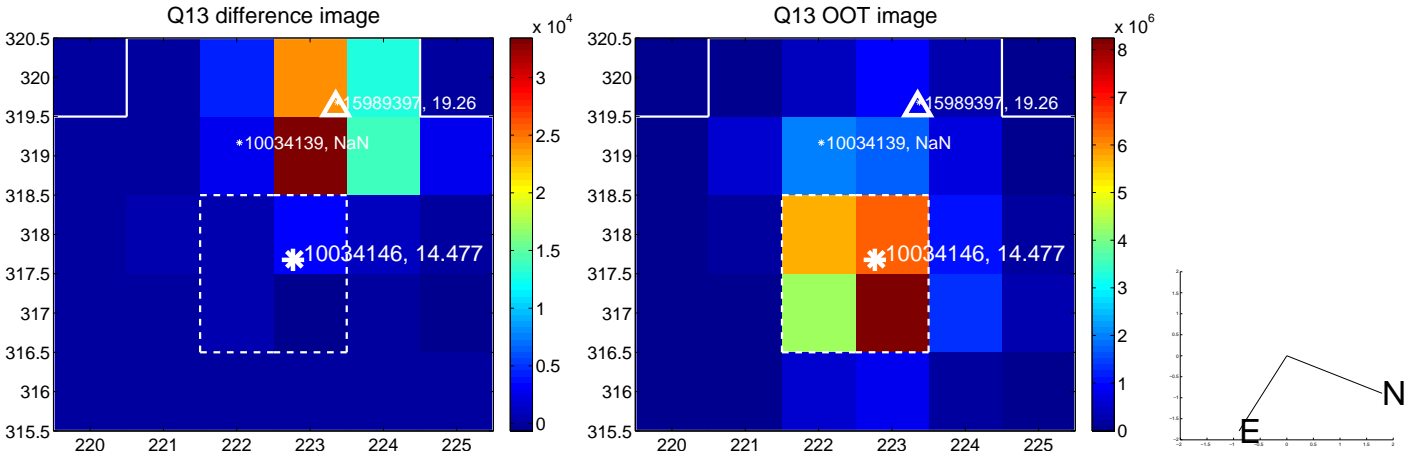
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



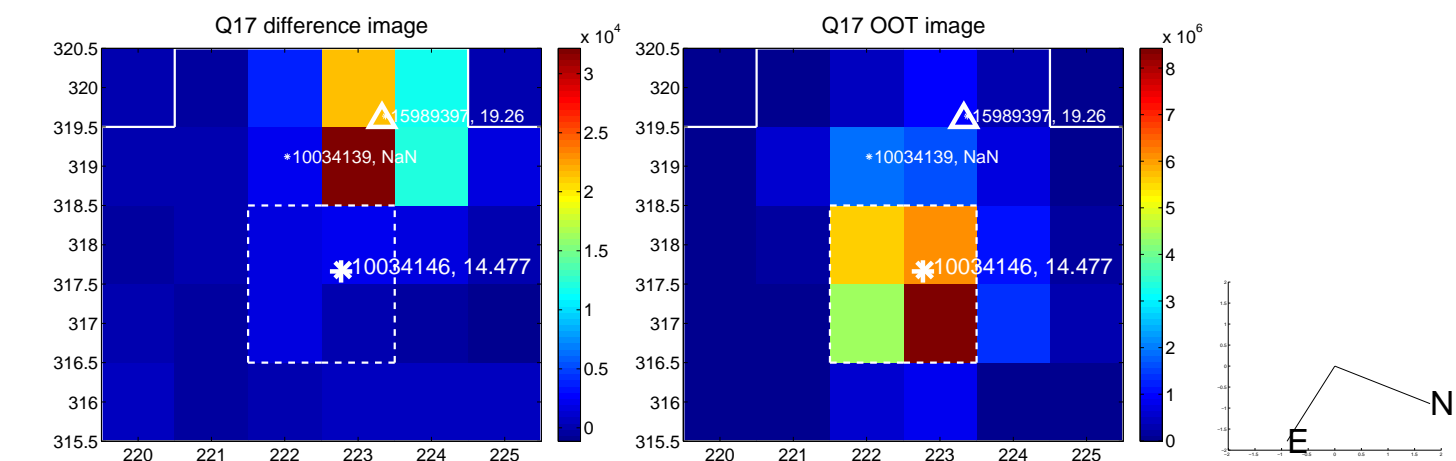
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



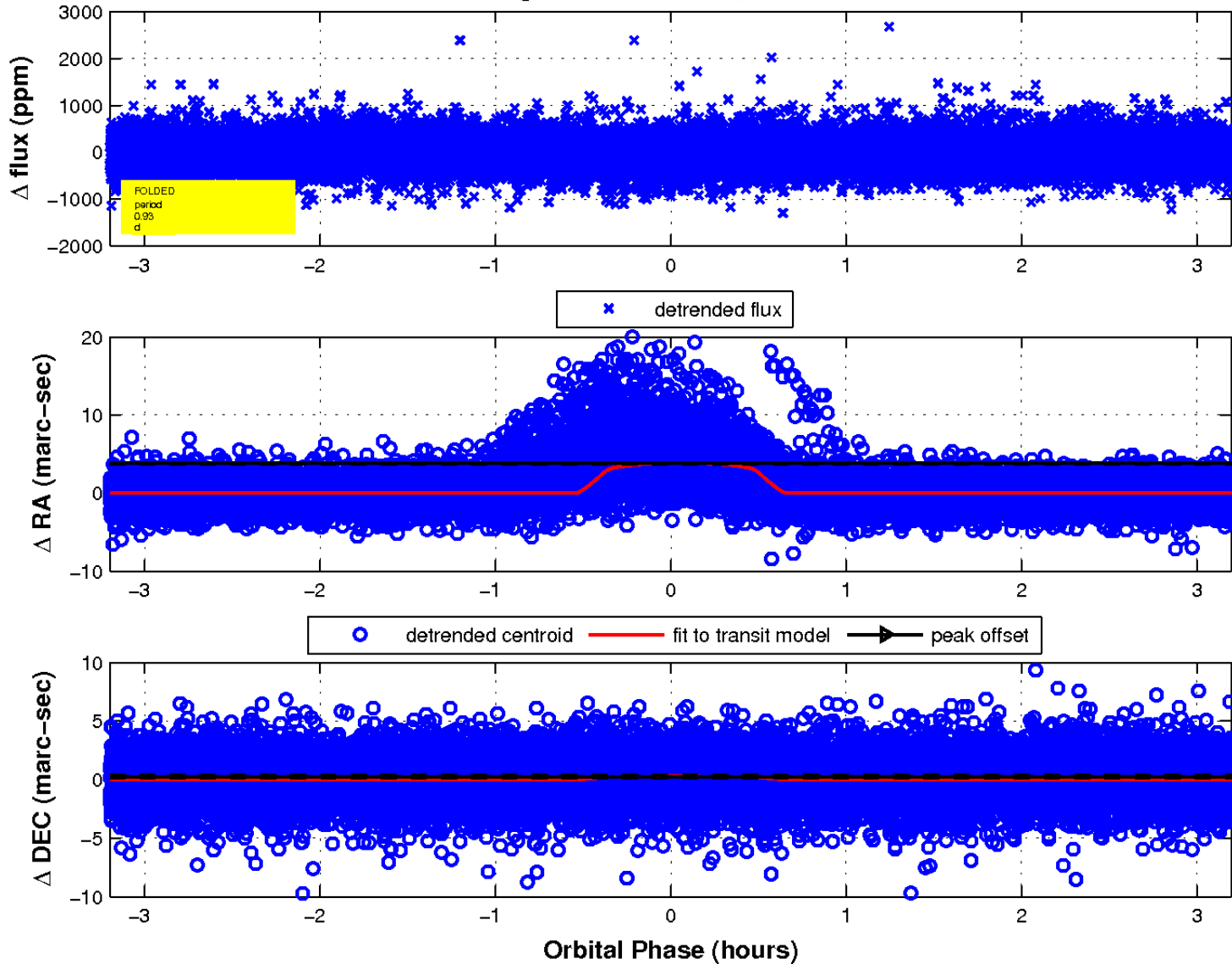
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

