

KIC 011152428

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})
011152428-01	OBS	No	2.344952	131.771006	28.6	8.924	9.4	8.4	1.35	6774	0.73	2481.95
011152428-02	OBS	No	2.344856	132.971441	34.1	8.486	8.7	11.2	1.35	6774	0.90	2482.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011152428-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011152428-02	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.

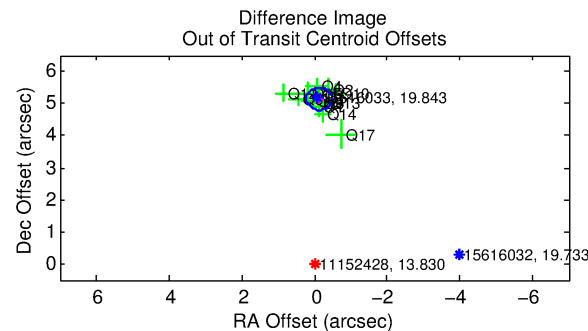
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

Ephemeris Match Information For 011152428-01

No Significant Match Found

KIC: 11152428 Candidate: 1 of 2 Period: 2.345 d

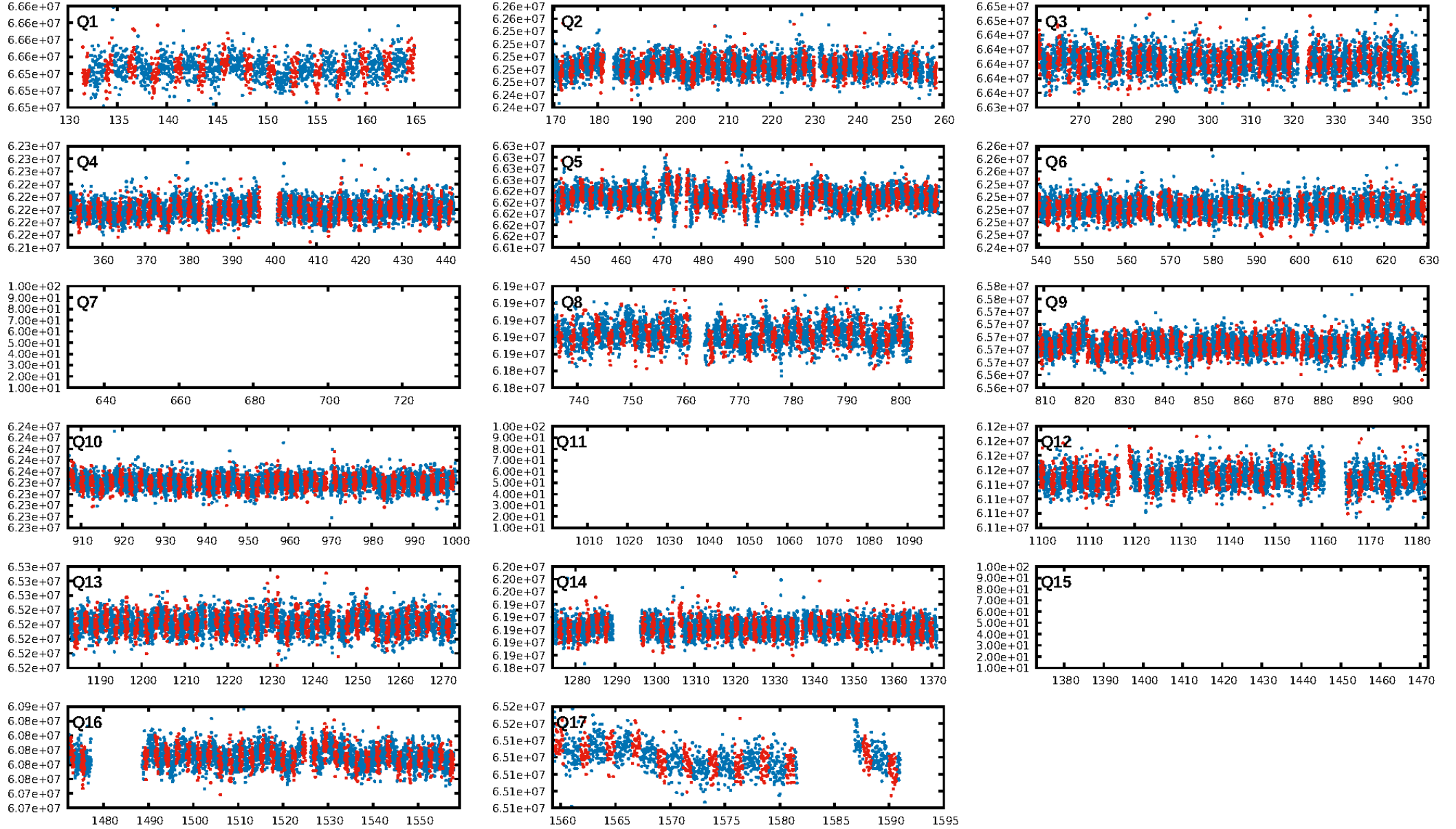


ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.39e-119
RollingBand-fgt: 0.94 [411/436]
GhostDiagnostic-chr: 0.5591

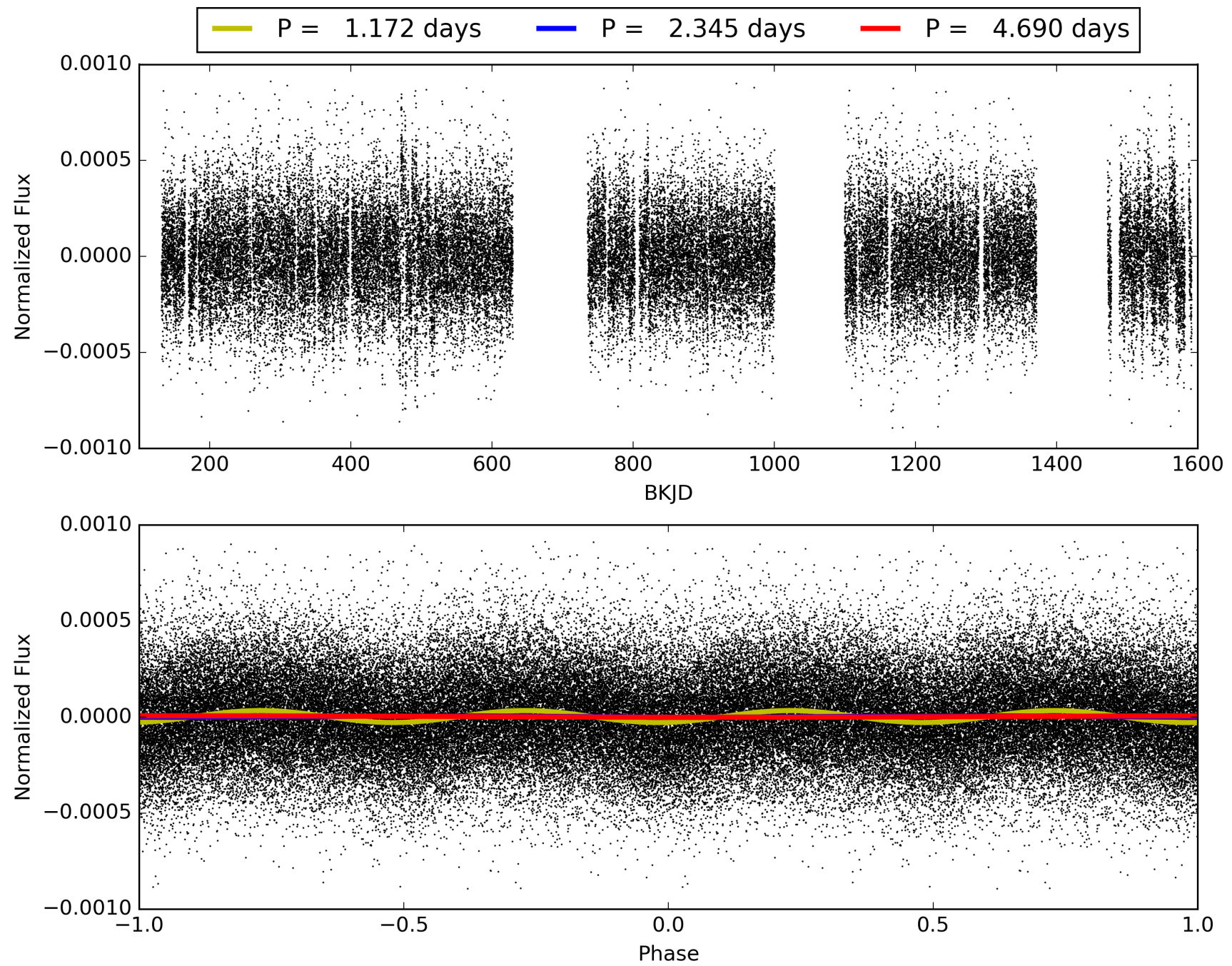
Centroid-sig: 0.0%
Centroid-so: 5.508 arcsec [4.25σ]
OotOffset-rm: 5.149 arcsec [44.26σ]
KicOffset-rm: 5.276 arcsec [44.16σ]
OotOffset-st: 4/1/4/5 [14]
KicOffset-st: 4/1/4/5 [14]
DiffImageQuality-fgm: 0.79 [11/14]
DiffImageOverlap-fno: 1.00 [14/14]

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

TCE 011152428-01, PDC Light Curves

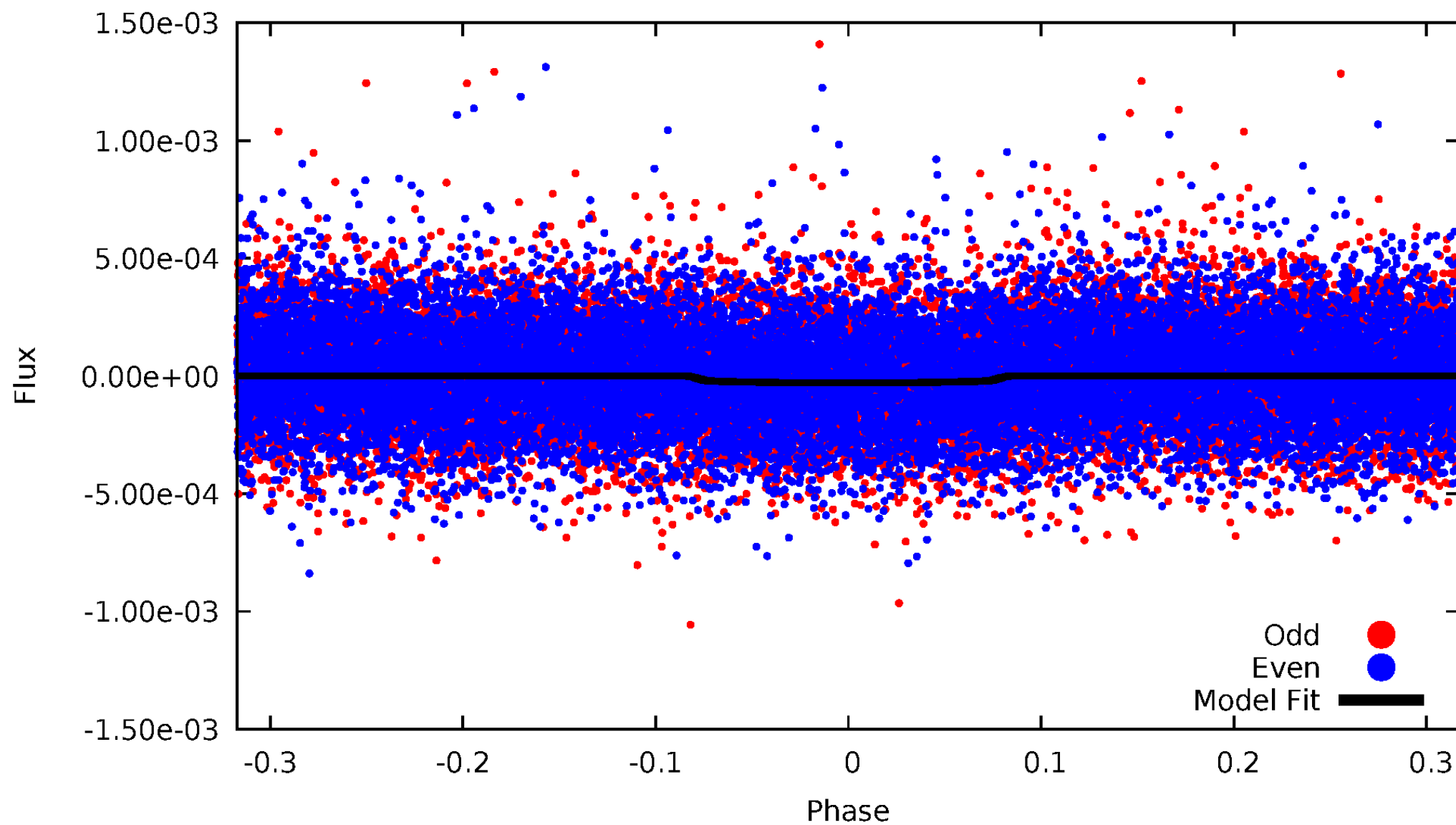


TCE 011152428-01



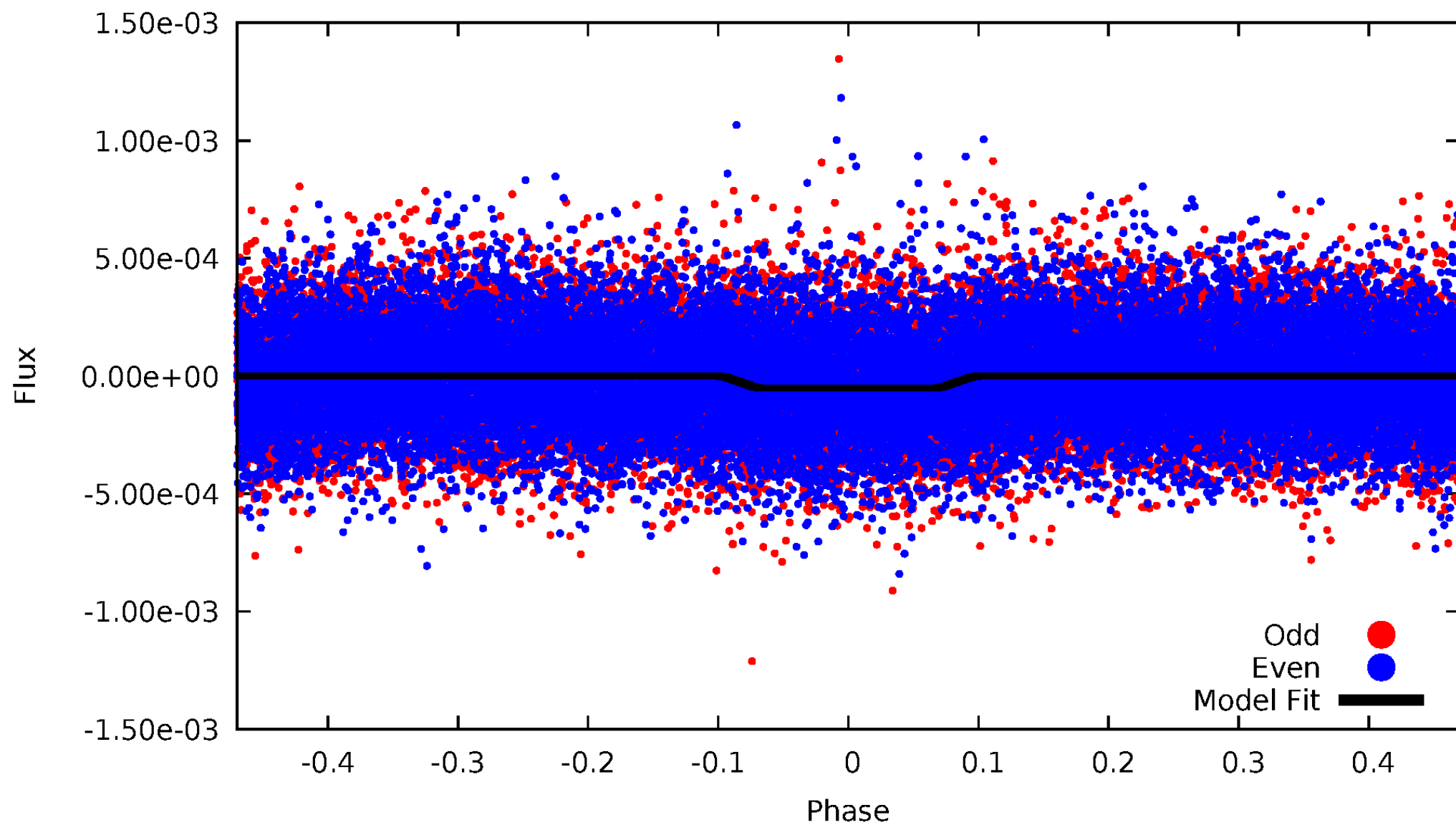
DV Odd/Even

TCE 011152428-01

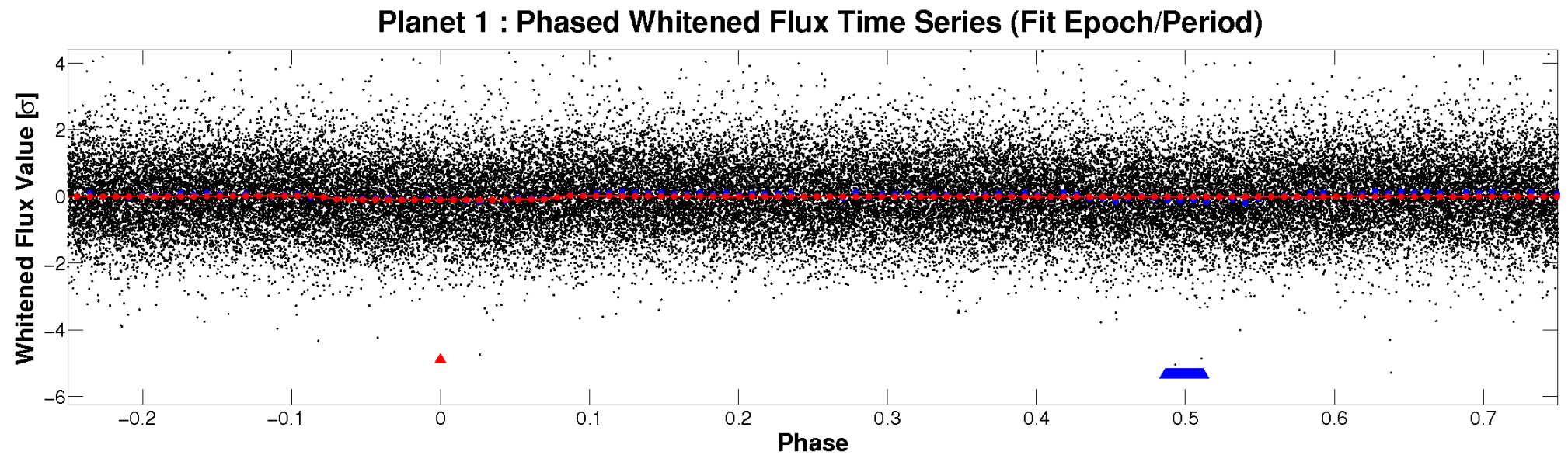
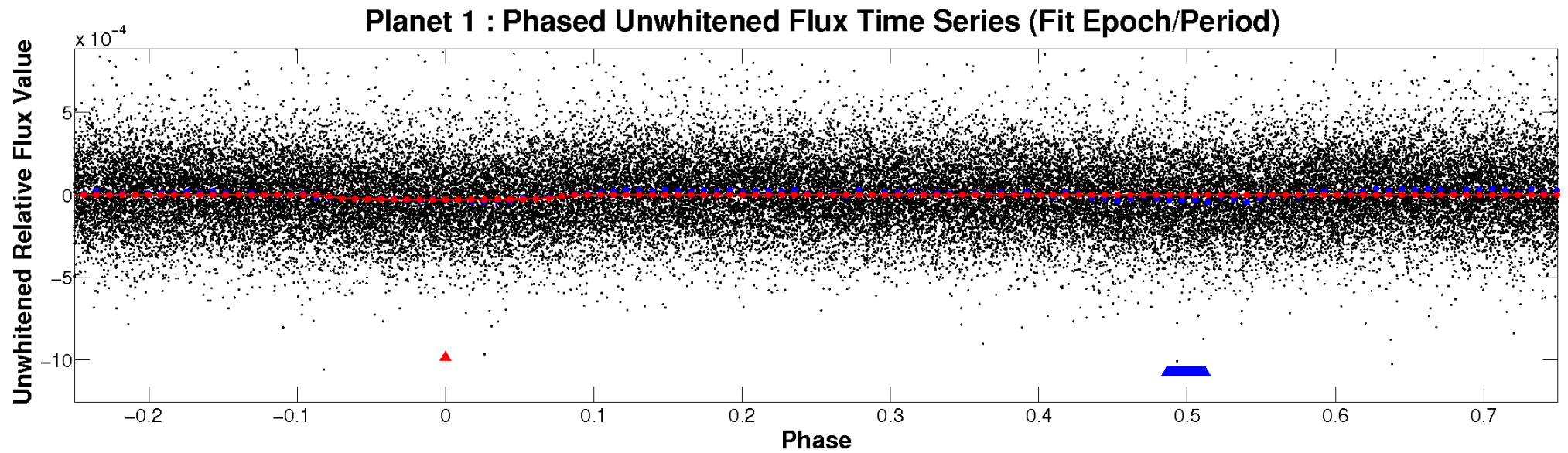


ALT Odd/Even

TCE 011152428-01

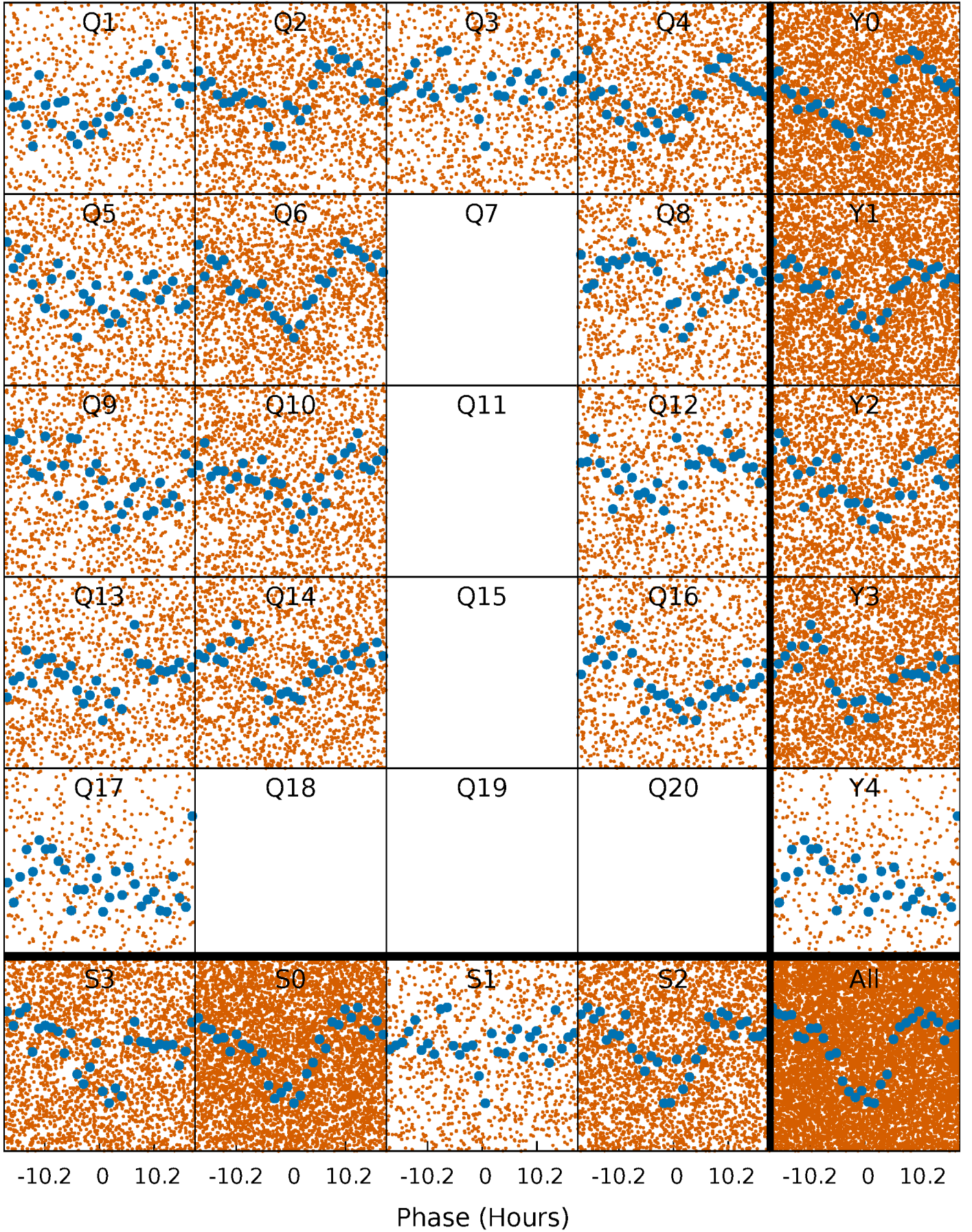


Non-Whitened Vs. Whitened Light Curve



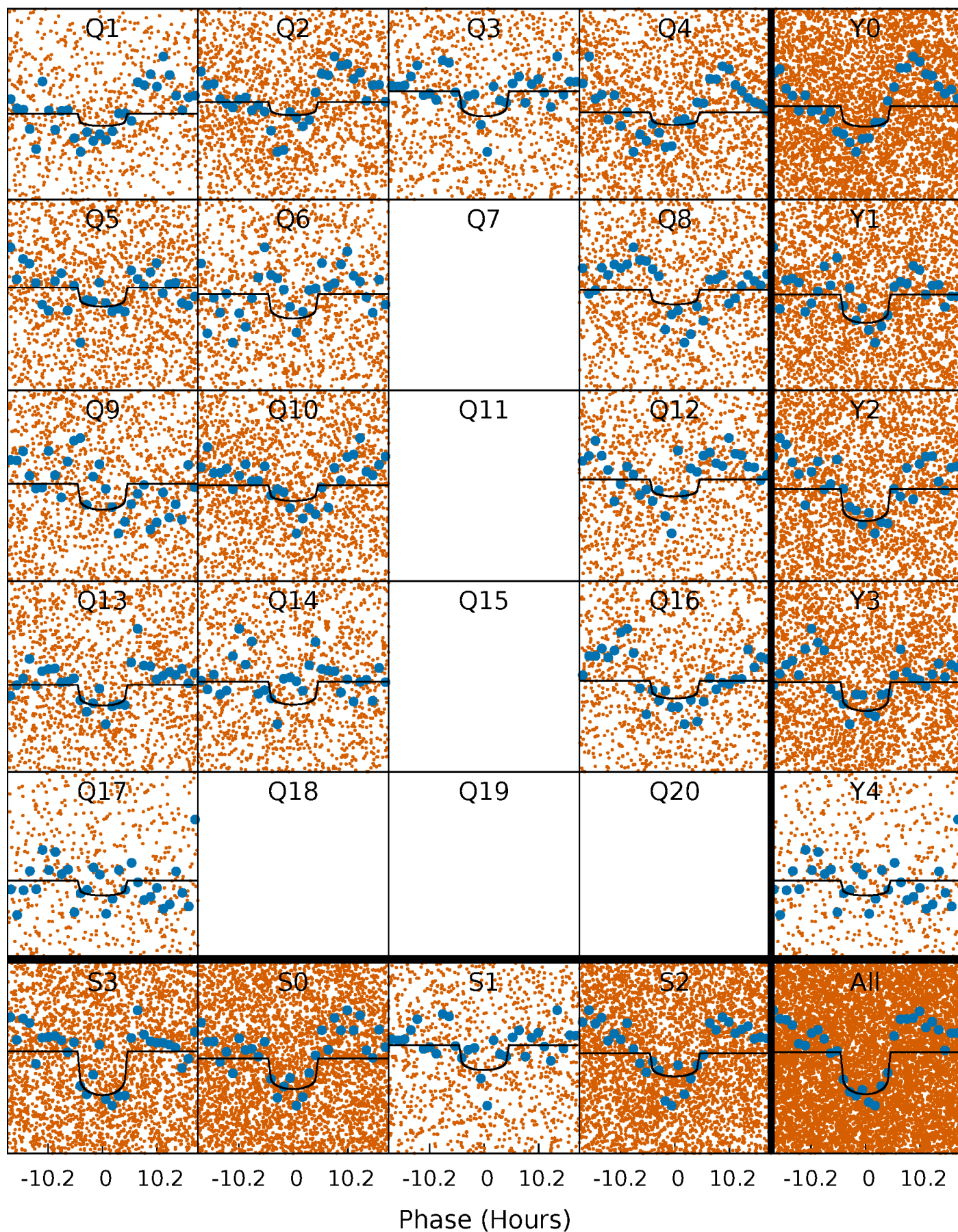
PDC Quarter-Phased Transit Curves

TCE 011152428-01 P= 2.344952 Days $T_0=131.771006$ (BKJD)



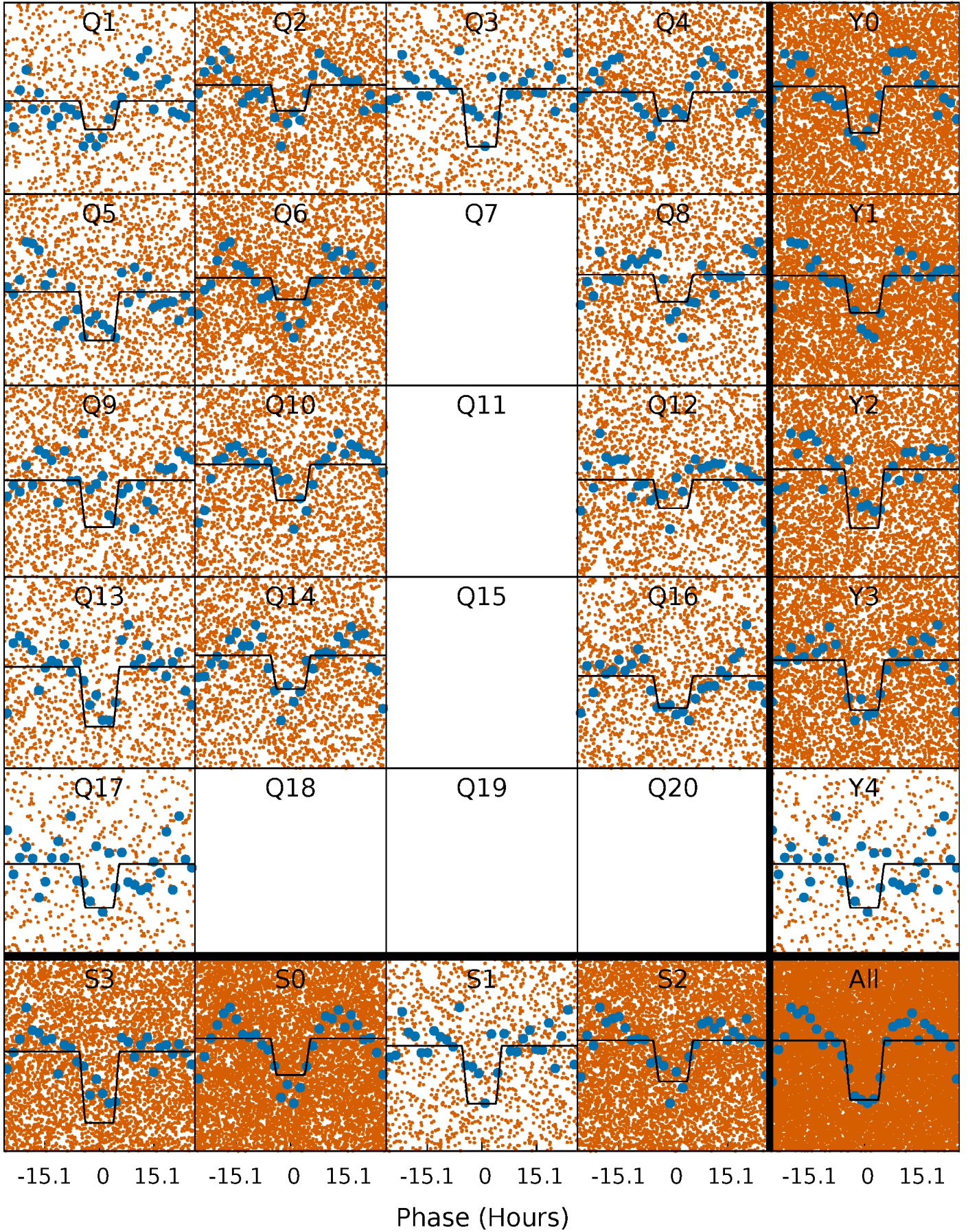
DV Quarter-Phased Transit Curves

TCE 011152428-01 P= 2.344952 Days $T_0=131.771006$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

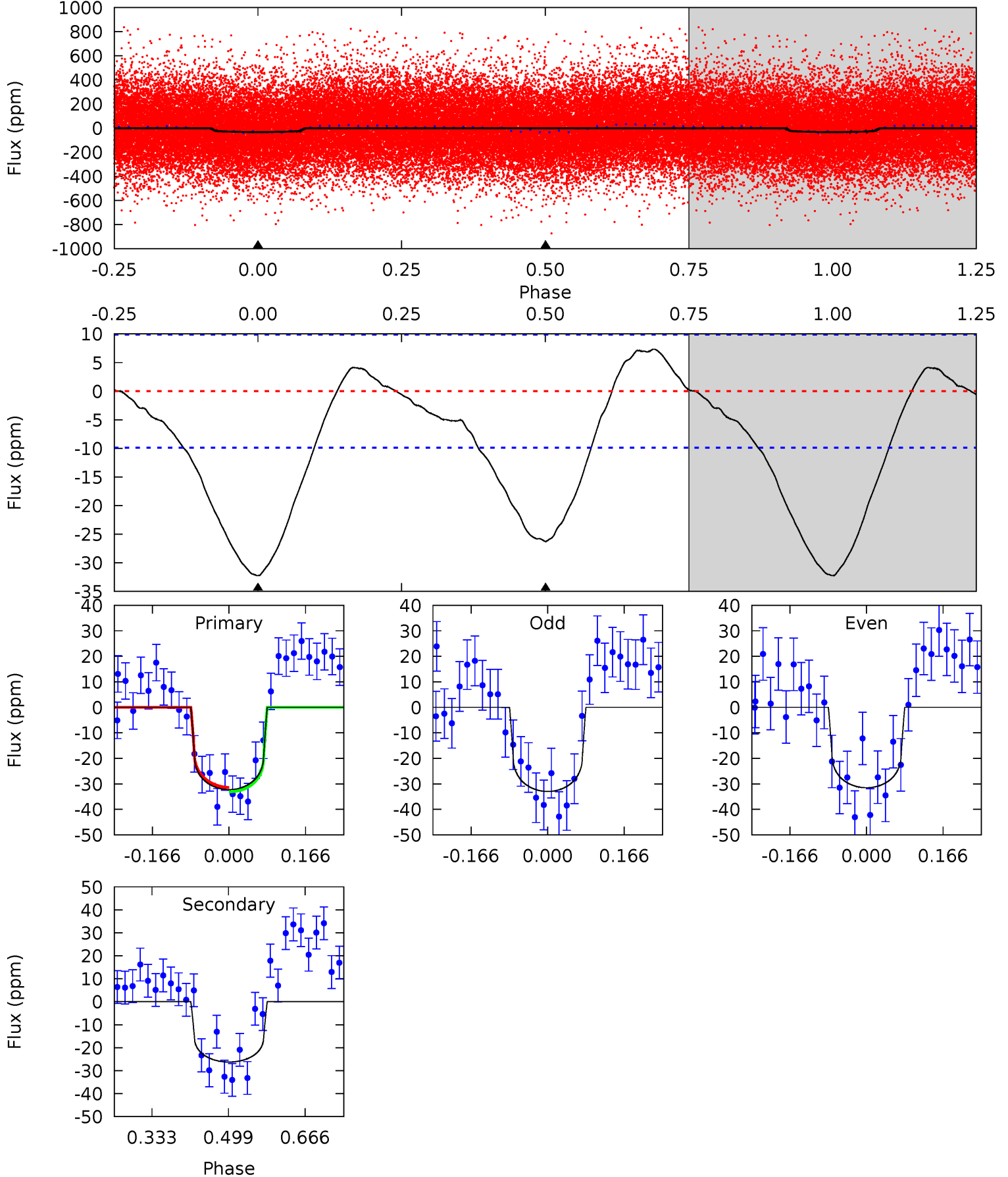
TCE 011152428-01 P= 2.344954 Days $T_0=131.752015$ (BKJD)



DV Model-Shift Uniqueness Test

011152428-01, P = 2.344952 Days, E = 129.426054 Days

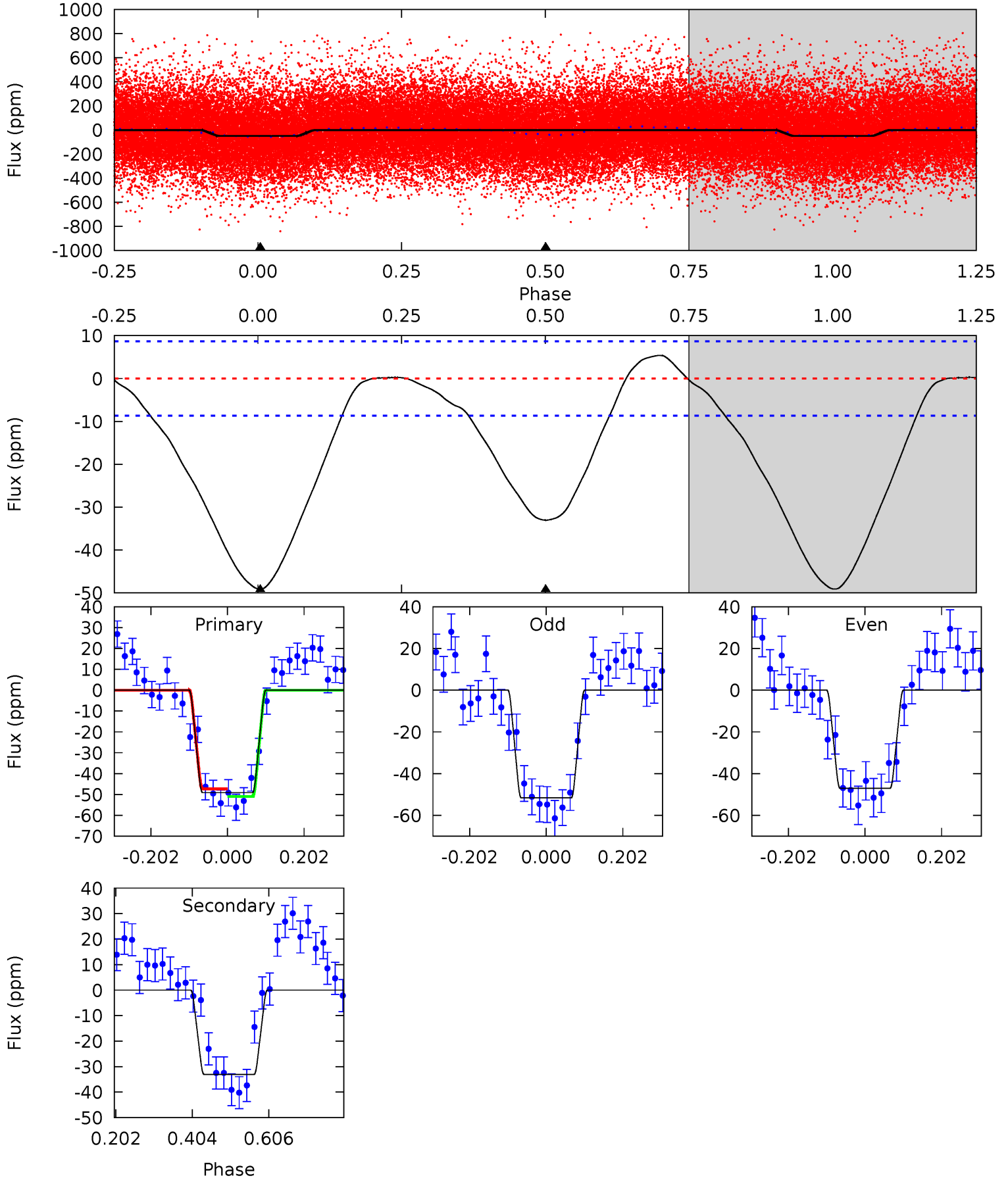
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.6	11.9	0	0	4.46	1.38	1.69	14.6	14.6	11.9	11.9	0.33	1.07	0.19	0.38



Alt Model-Shift Uniqueness Test

011152428-01, P = 2.344954 Days, E = 129.407061 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.1	16.9	0	0	4.42	1.28	1.31	25.1	25.1	16.9	16.9	1.17	0.98	0.10	0.95



Stellar Parameters For KIC 011152428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6774^{+189}_{-260}	$4.273^{+0.105}_{-0.195}$	$-0.260^{+0.250}_{-0.300}$	$1.346^{+0.412}_{-0.222}$	$1.246^{+0.189}_{-0.189}$	$0.720^{+0.355}_{-0.381}$
	+3%/-4%	+2%/-5%	+96%/-115%	+31%/-16%	+15%/-15%	+49%/-53%
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 011152428-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-26 ± 2	$0.85^{+0.57}_{-0.49}$	2543^{+186}_{-147}	6376^{+4514}_{-1351}	26^{+119}_{-16}
Alt.	-33 ± 2	$1.10^{+0.60}_{-0.48}$	2548^{+185}_{-163}	5935^{+2236}_{-992}	20^{+44}_{-12}

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 $A_{obs} \gg 1.0$

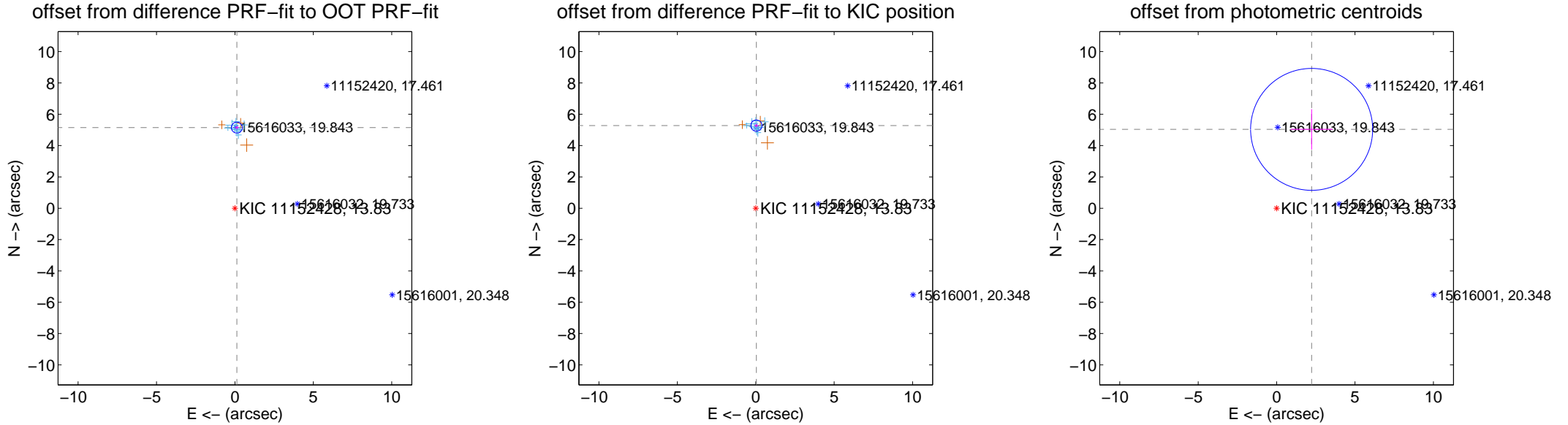
DV Centroid Data

Supplemental centroid analysis for 011152428-01. Kepler magnitude: 13.83. Transit SNR 8.41

There are 11 quarters with good PRF difference image offsets

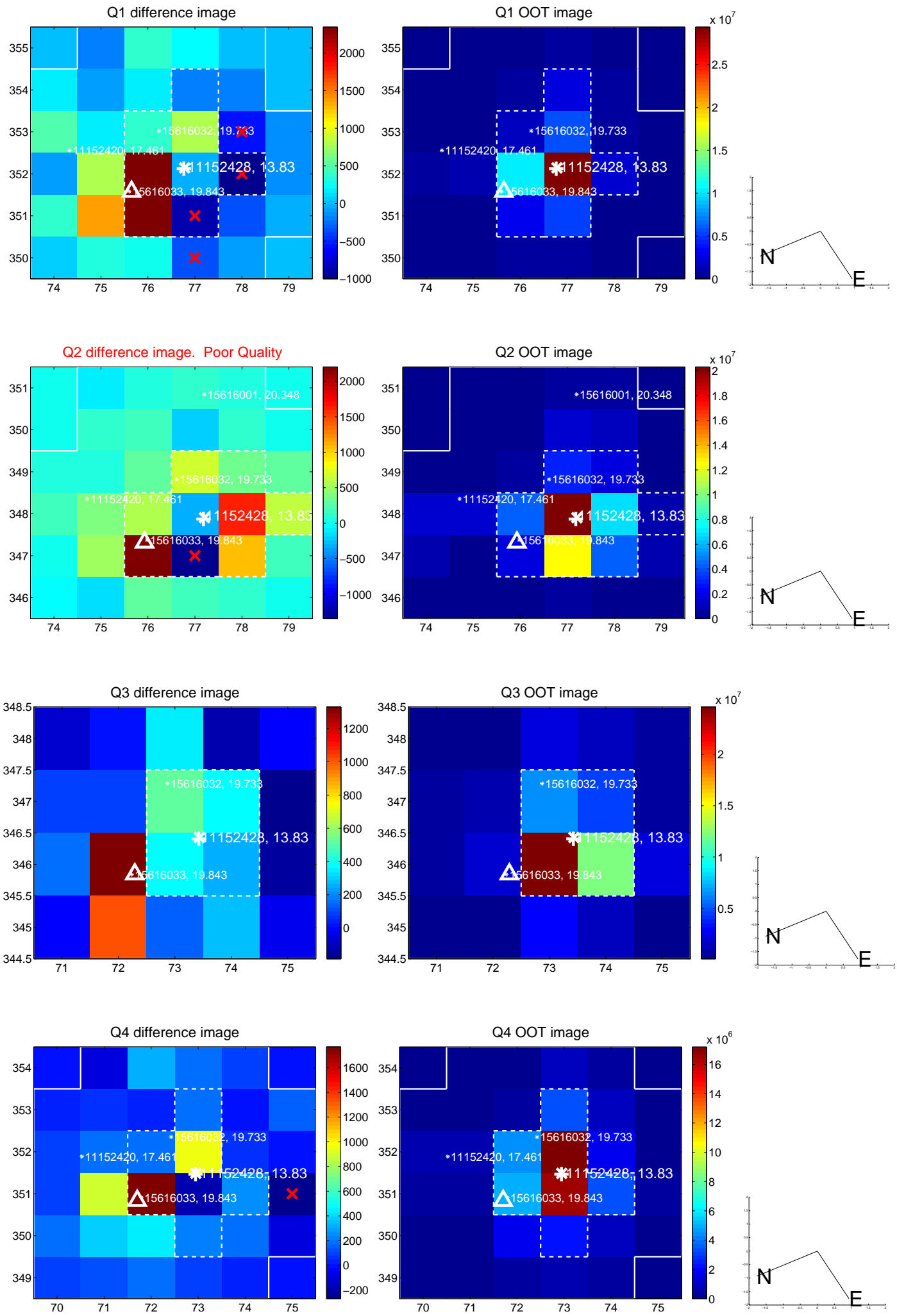
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.149 \pm 0.116	44.26	-0.124 \pm 0.122	5.148 \pm 0.117
PRF-fit source offset from KIC position	5.276 \pm 0.119	44.16	-0.040 \pm 0.123	5.275 \pm 0.120
photometric centroid source offset	5.51 \pm 1.30	4.25	-2.23 \pm 1.33	5.03 \pm 1.29

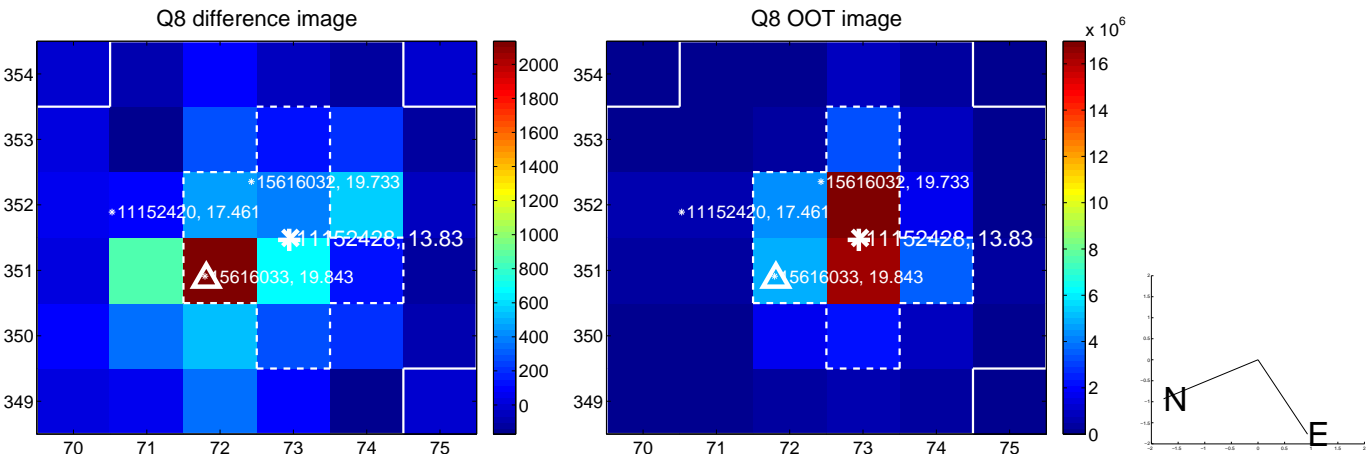
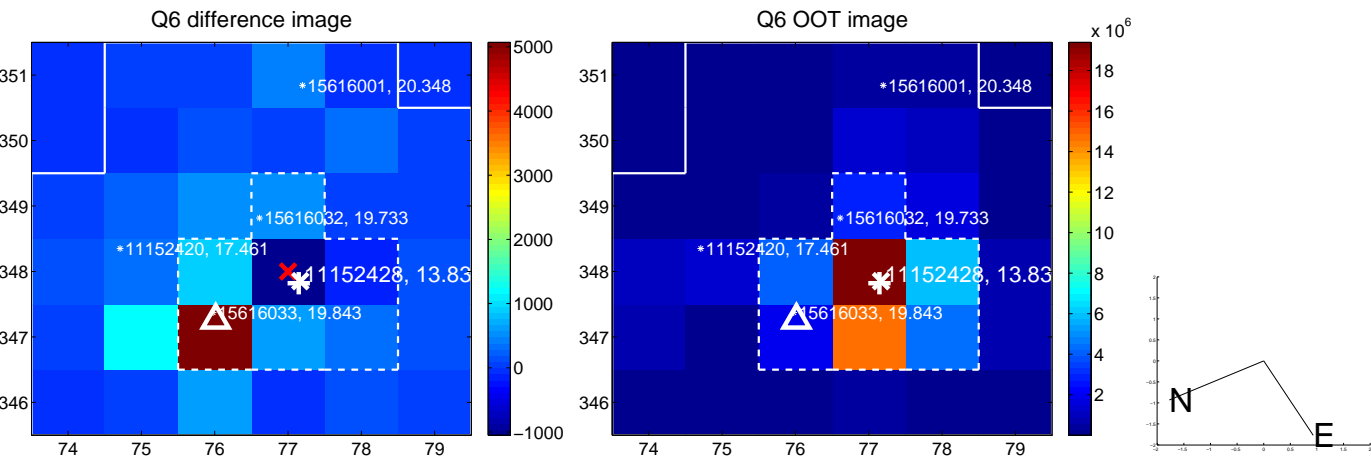
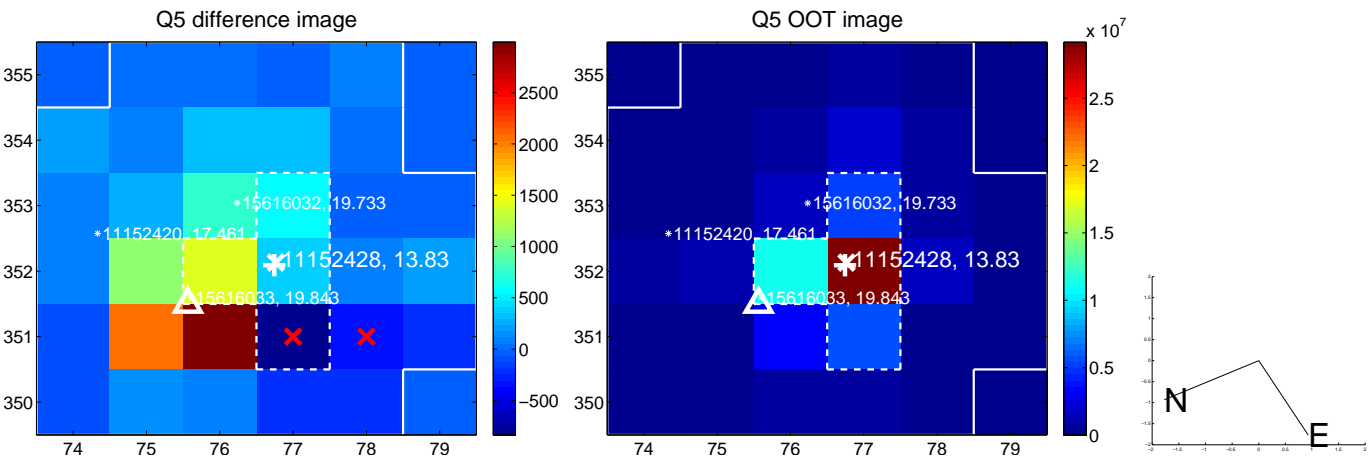


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

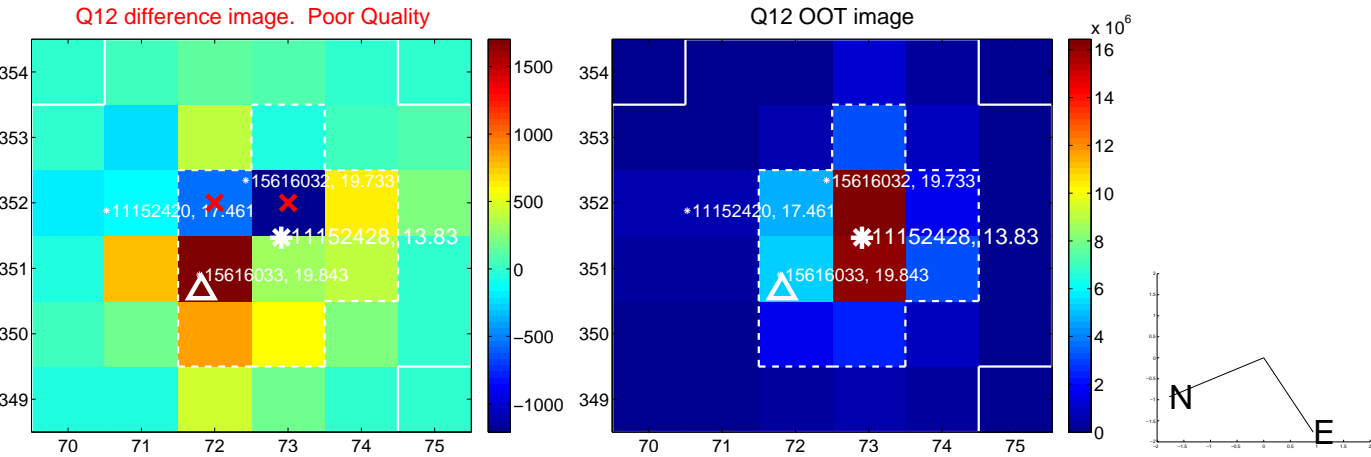
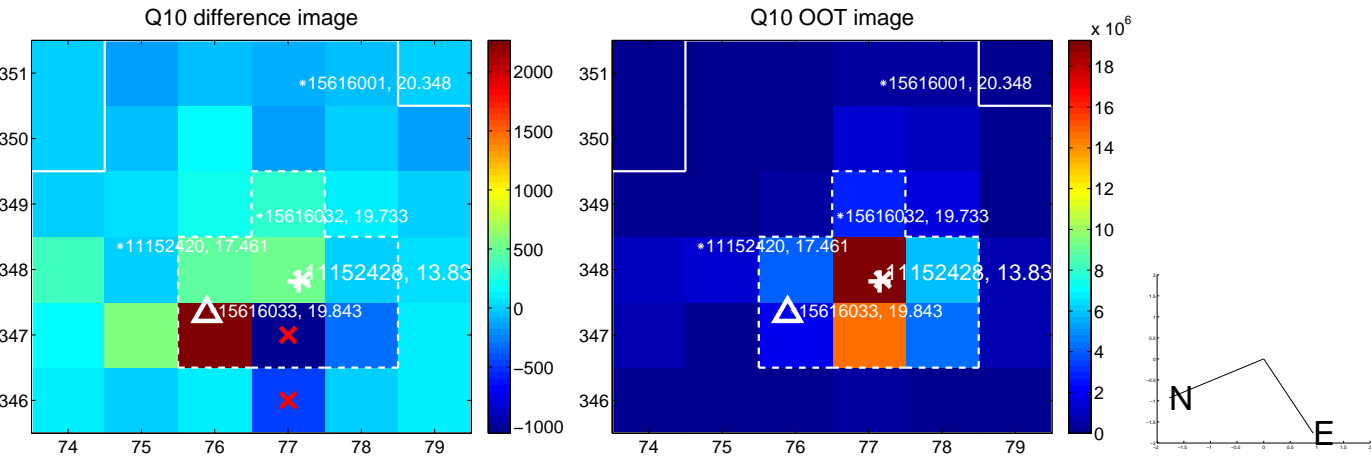
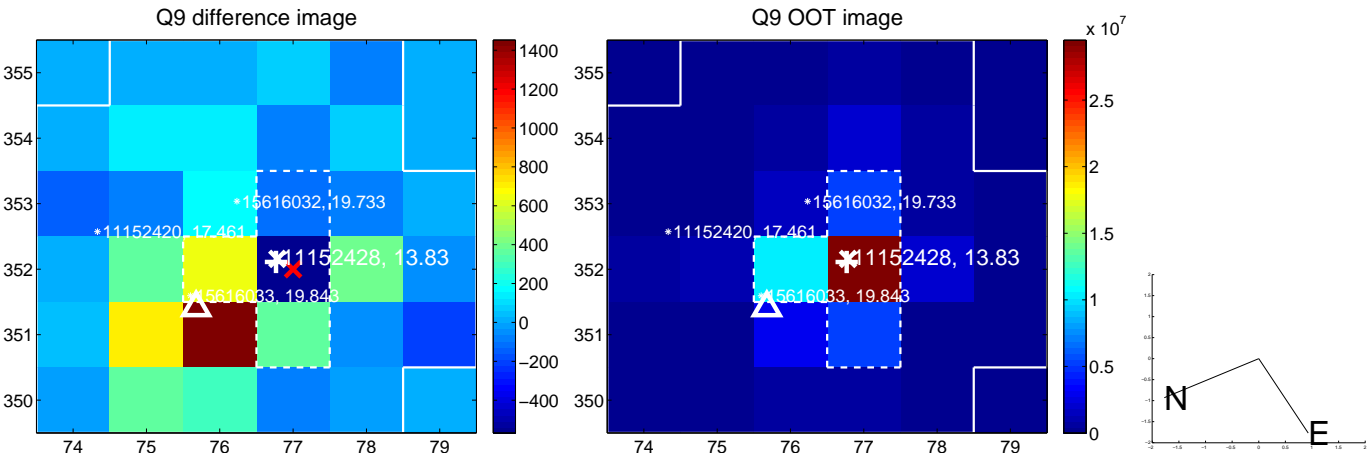
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



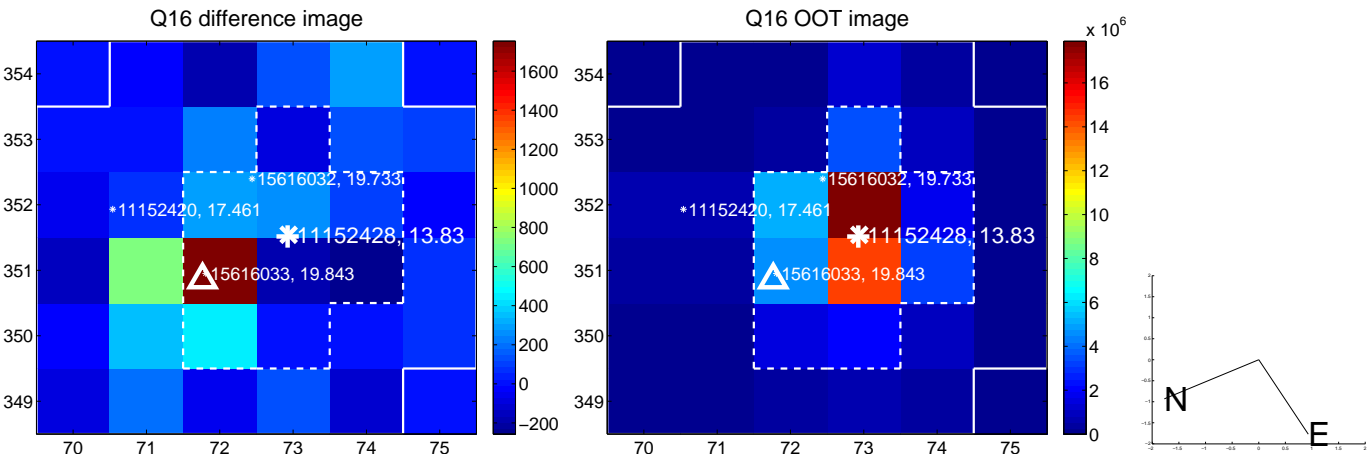
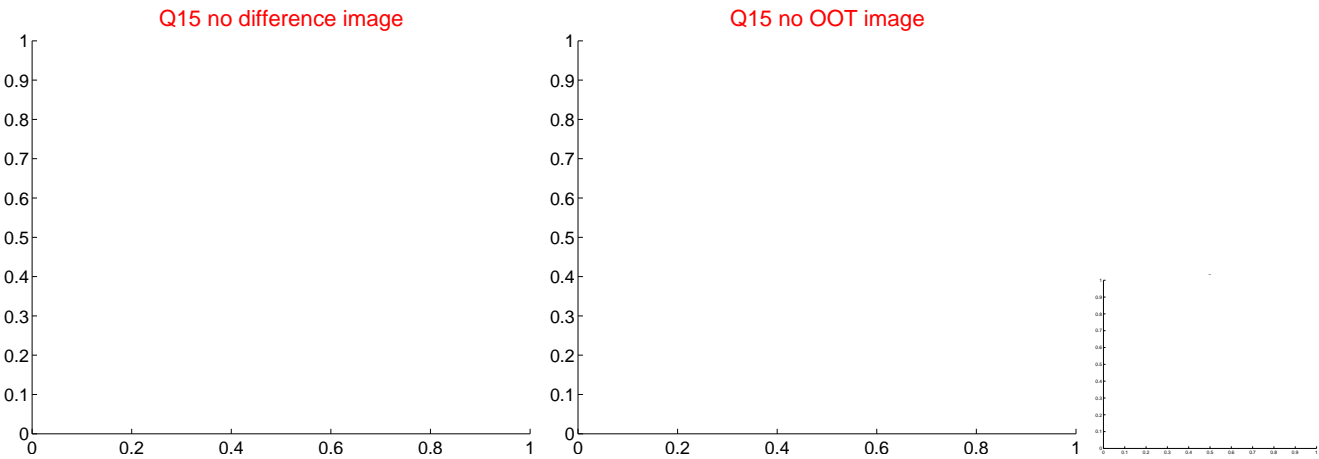
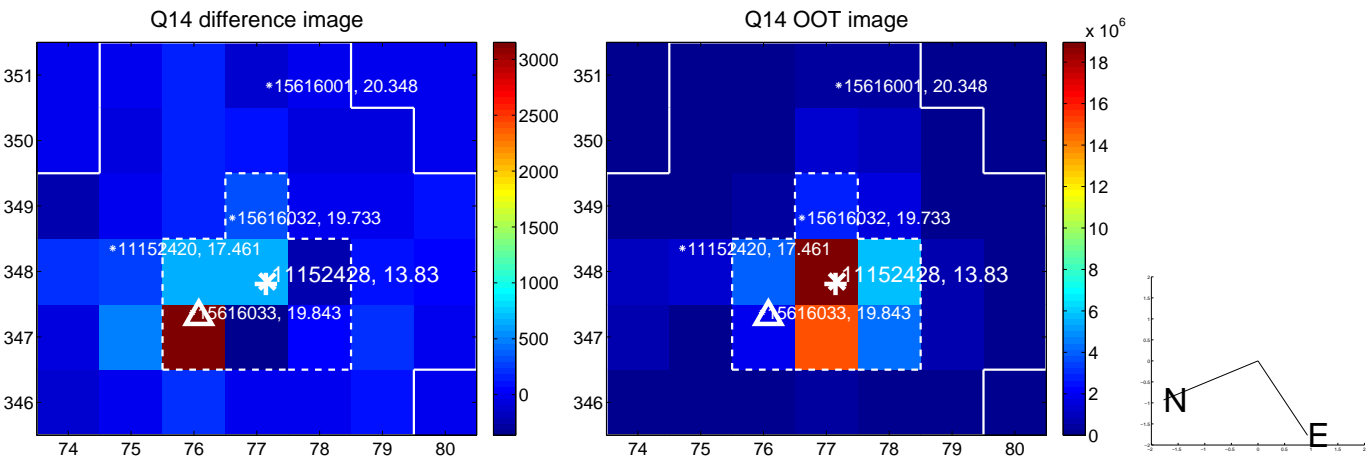
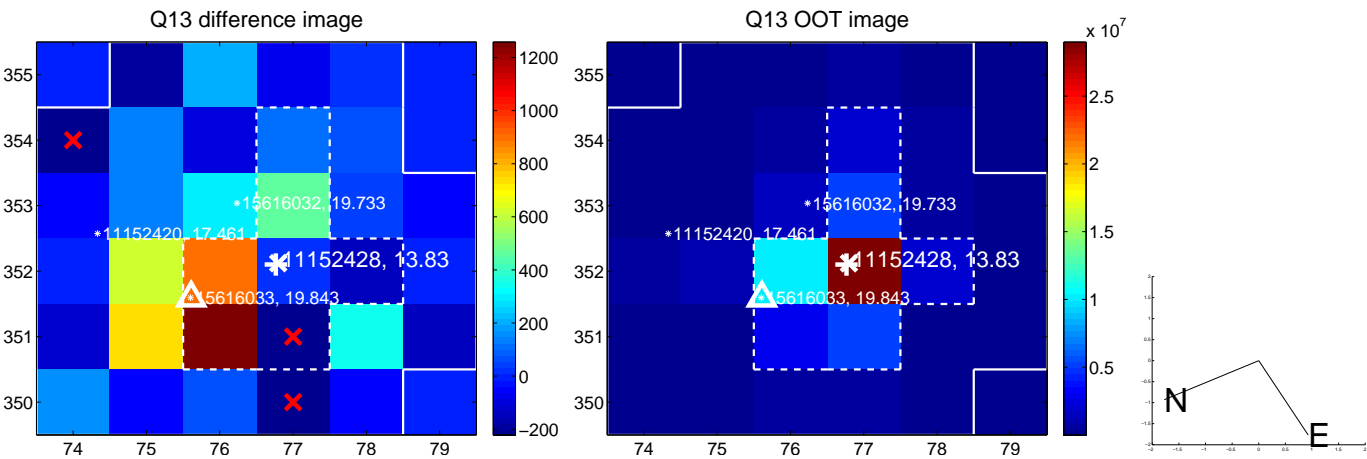
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



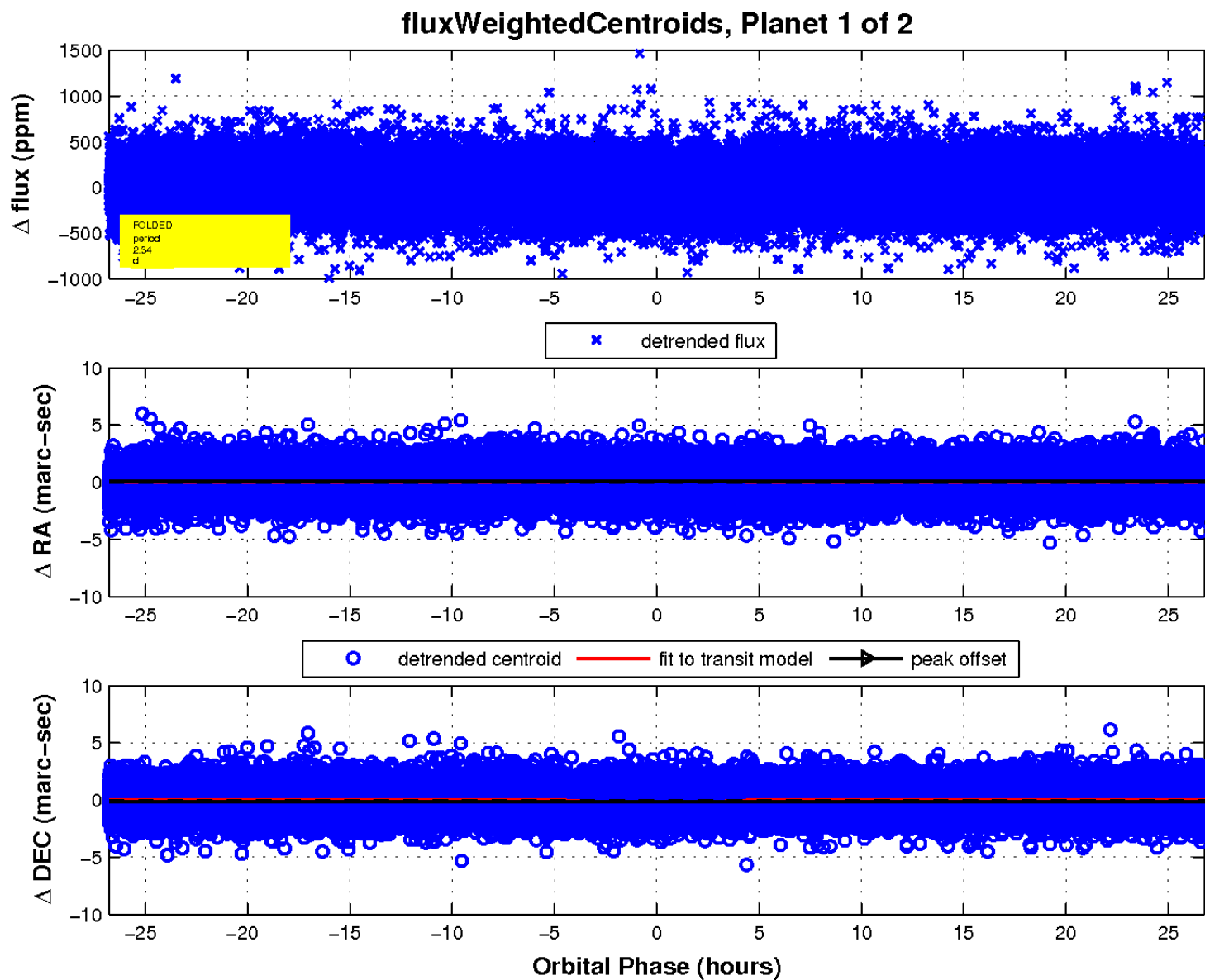
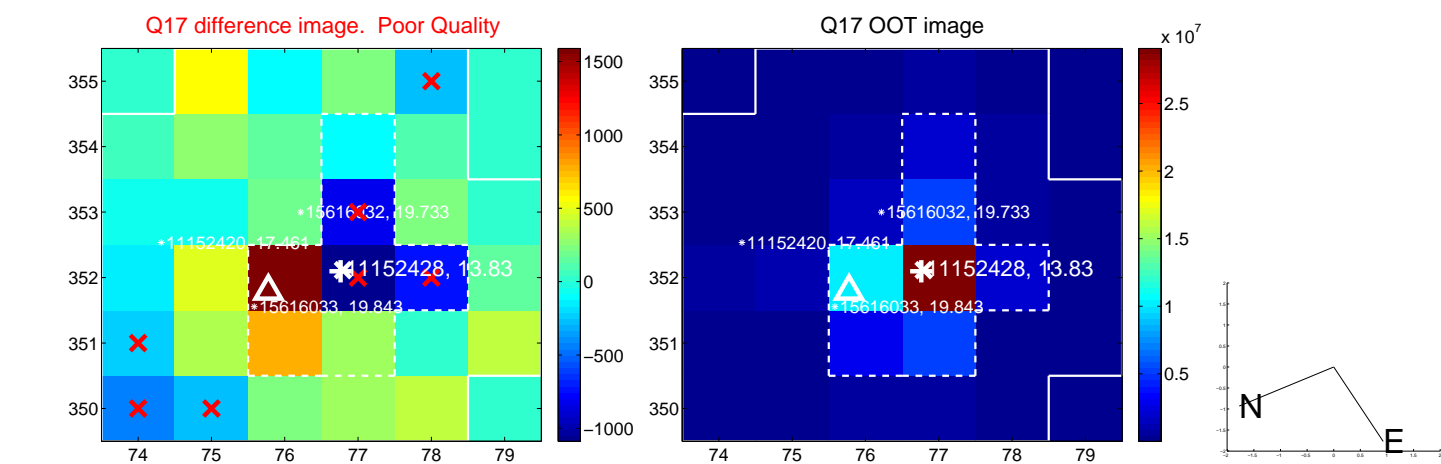
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

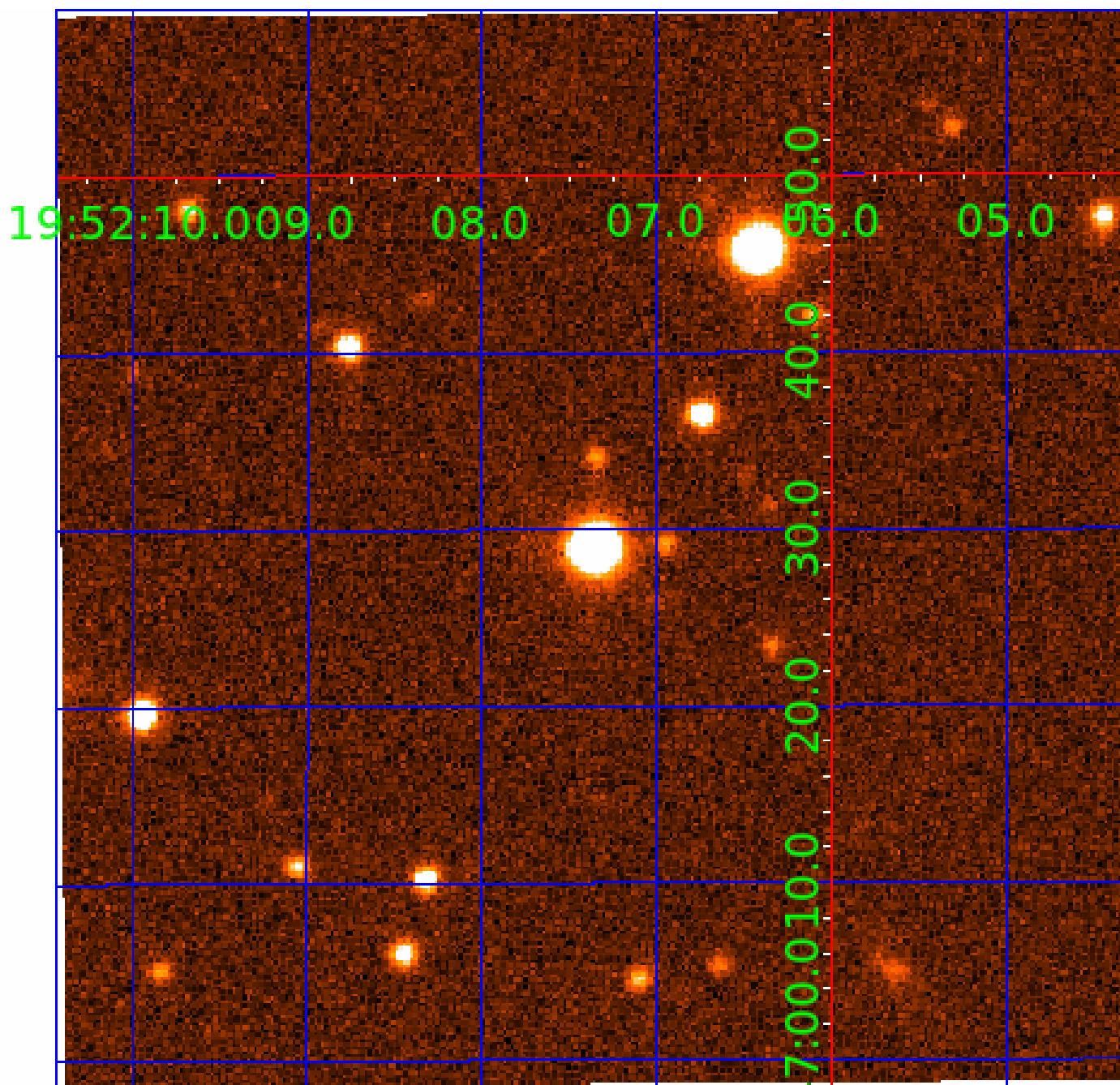


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011152428

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})
011152428-01	OBS	No	2.344952	131.771006	28.6	8.924	9.4	8.4	1.35	6774	0.73	2481.95
011152428-02	OBS	No	2.344856	132.971441	34.1	8.486	8.7	11.2	1.35	6774	0.90	2482.09

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011152428-01	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET
011152428-02	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.

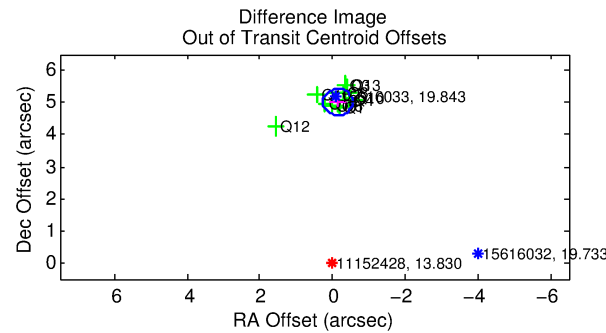
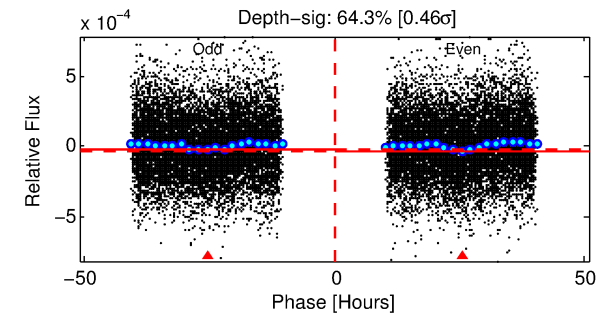
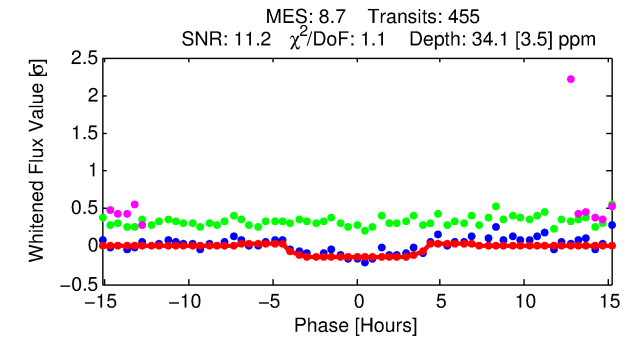
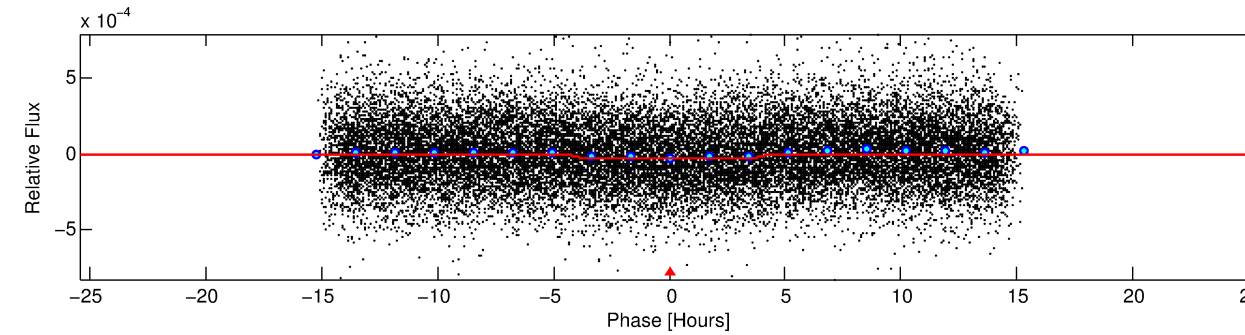
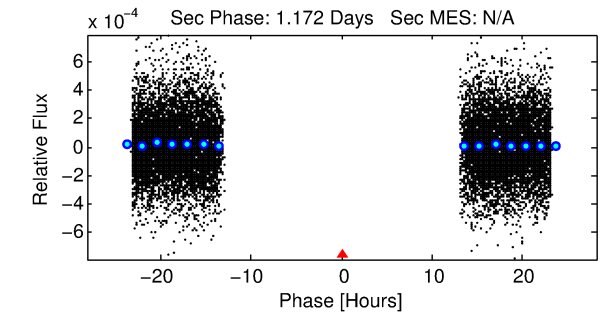
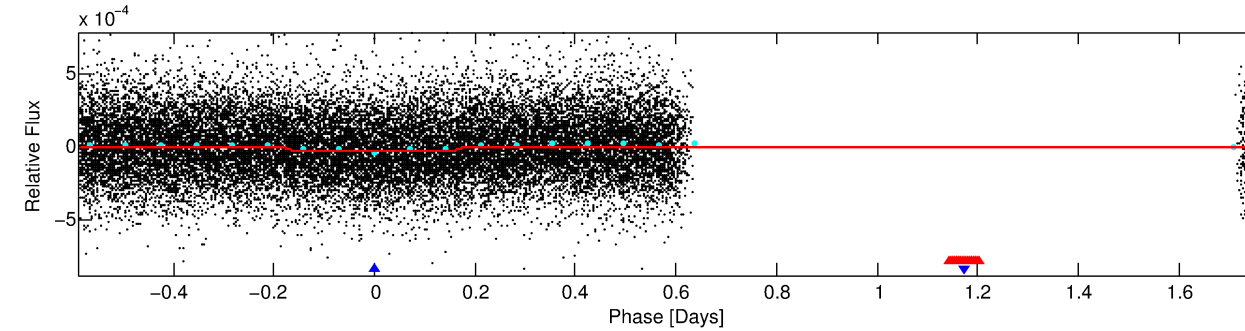
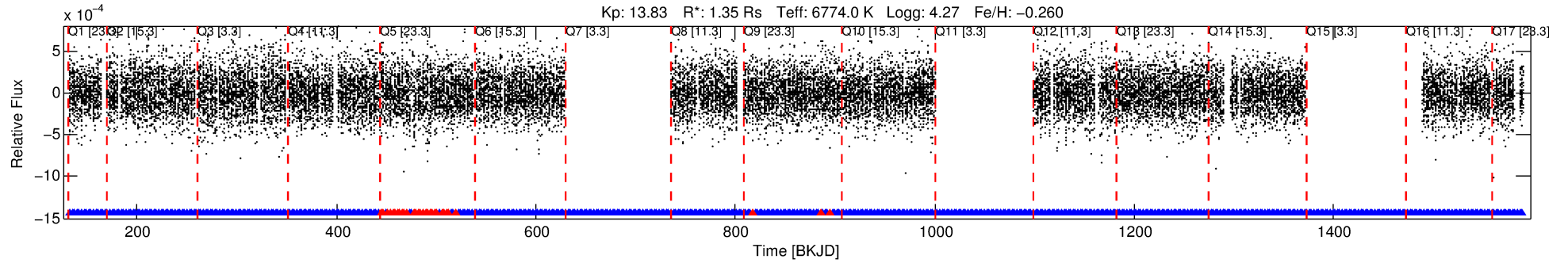
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011152428-02

No Significant Match Found

DV One-Page Summary

KIC: 11152428 Candidate: 2 of 2 Period: 2.345 d



DV Fit Results:

Period = 2.34486 [0.00003] d
Epoch = 132.9714 [0.0071] BKJD
Rp/R* = 0.0061 [0.0018]
a/R* = 1.40 [1.22]
b = 0.88 [0.48]
Seff = 2482.09 [976.61]
Teq = 1800 [177] K
Rp = 0.90 [0.39] Re
a = 0.0371 [0.0094] AU

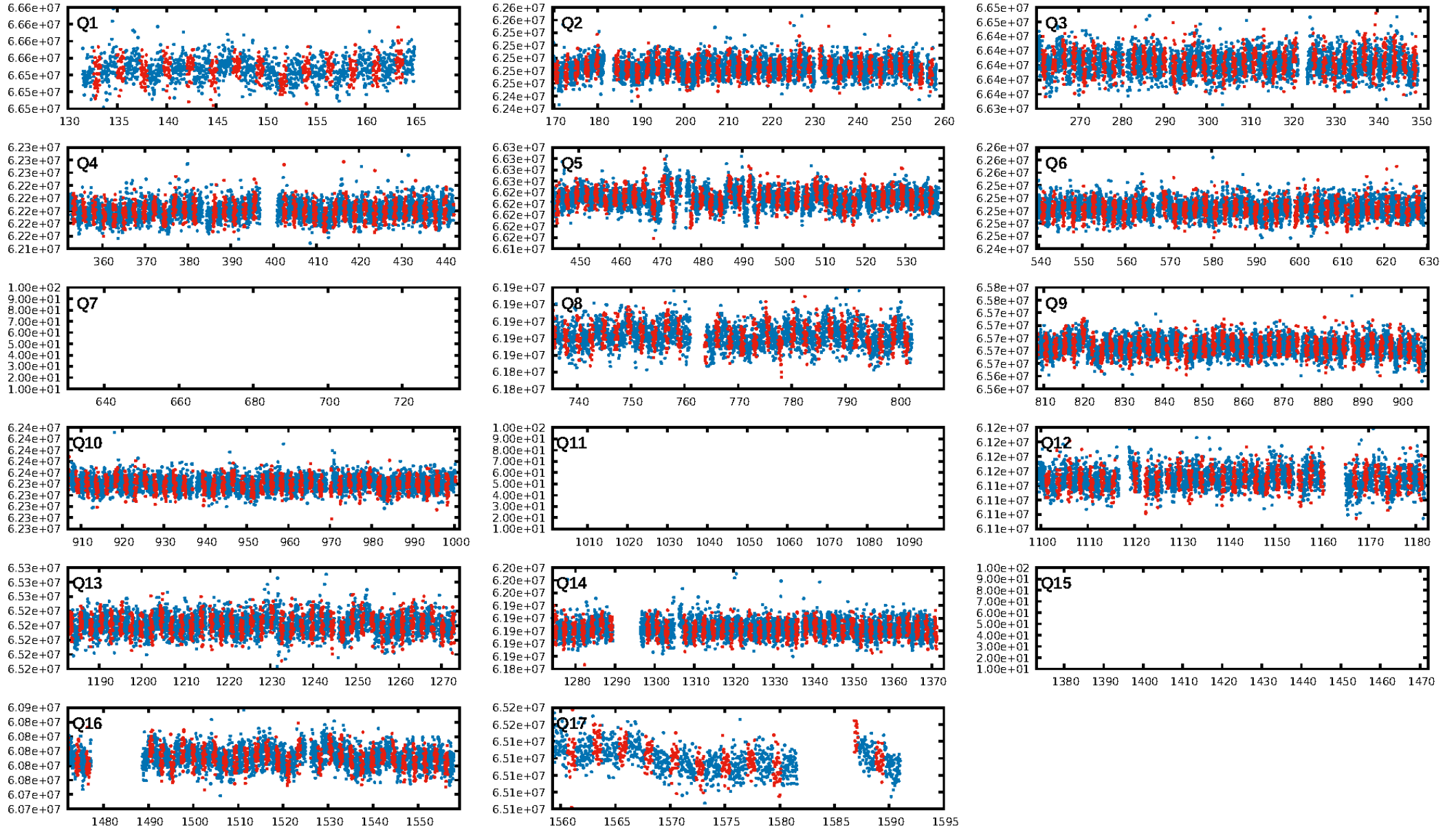
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.73e-73
RollingBand-fgt: 0.93 [400/430]
GhostDiagnostic-chr: 0.9193
Centroid-sig: 0.0%
Centroid-so: 3.771 arcsec [3.30σ]
OotOffset-rm: 5.014 arcsec [36.83σ]
KicOffset-rm: 5.139 arcsec [39.51σ]
OotOffset-st: 3/1/4/3 [11]
KicOffset-st: 3/1/4/3 [11]
DiffImageQuality-fgm: 1.00 [11/11]
DiffImageOverlap-fno: 1.00 [14/14]

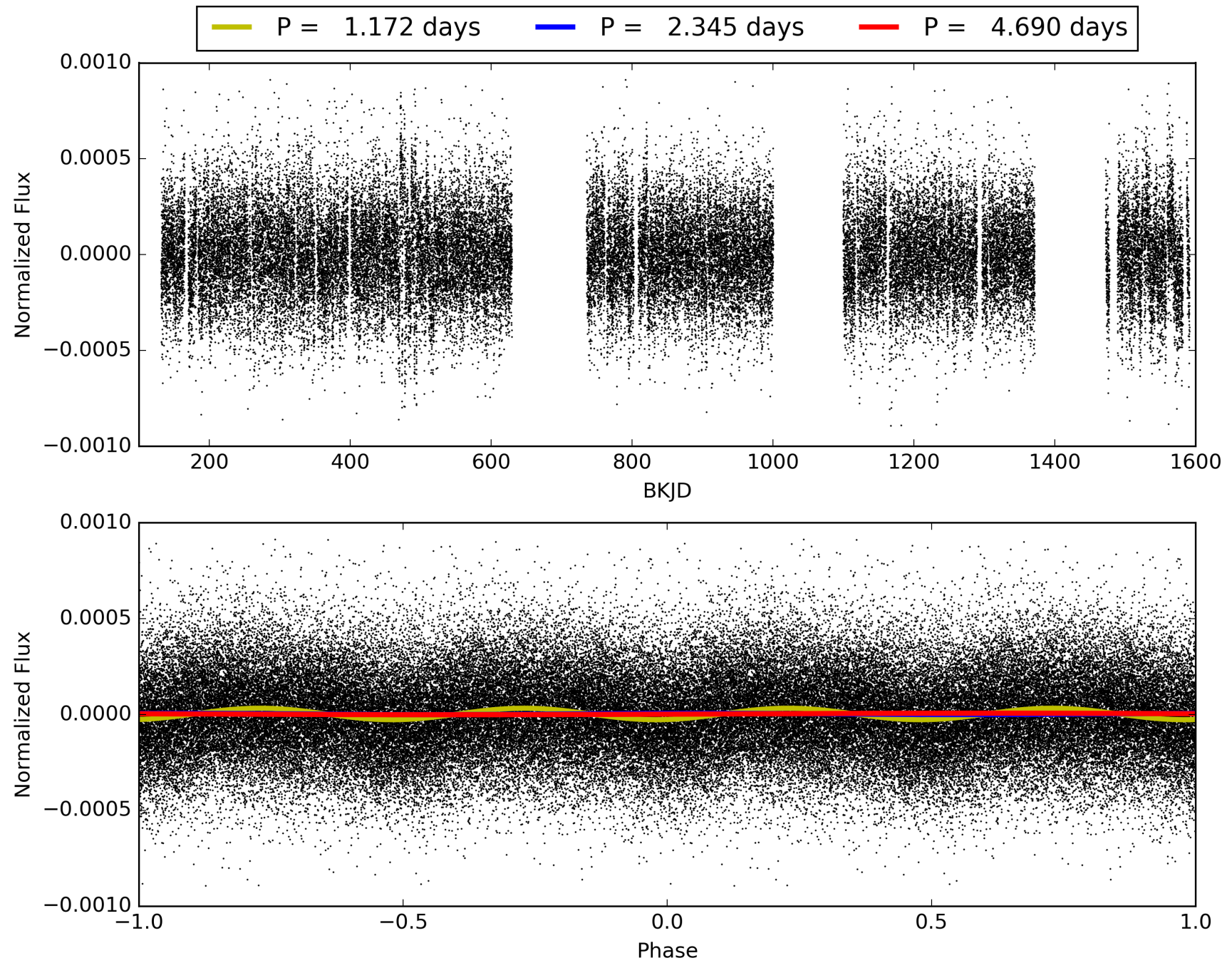
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:27:51 Z

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

TCE 011152428-02, PDC Light Curves

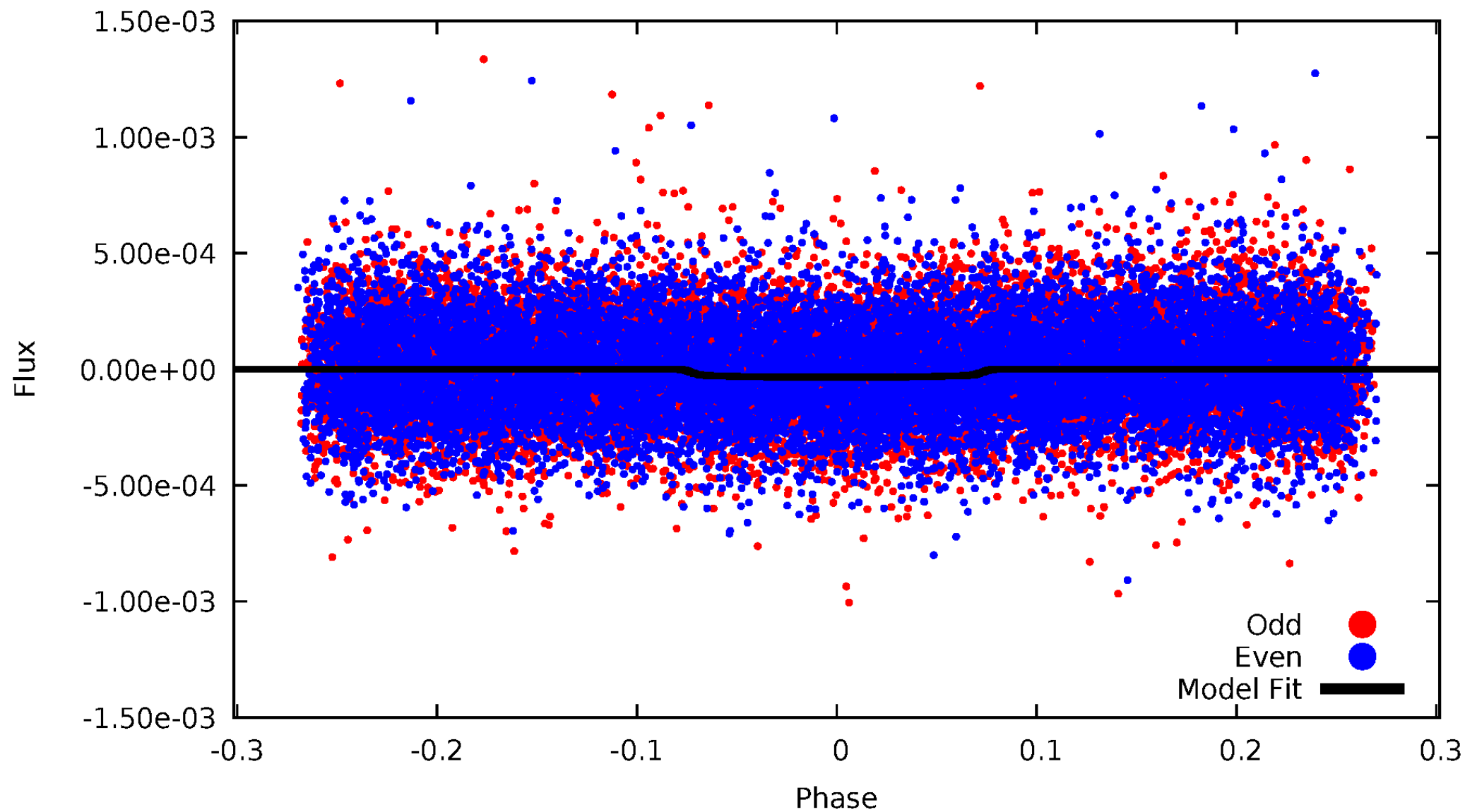


TCE 011152428-02



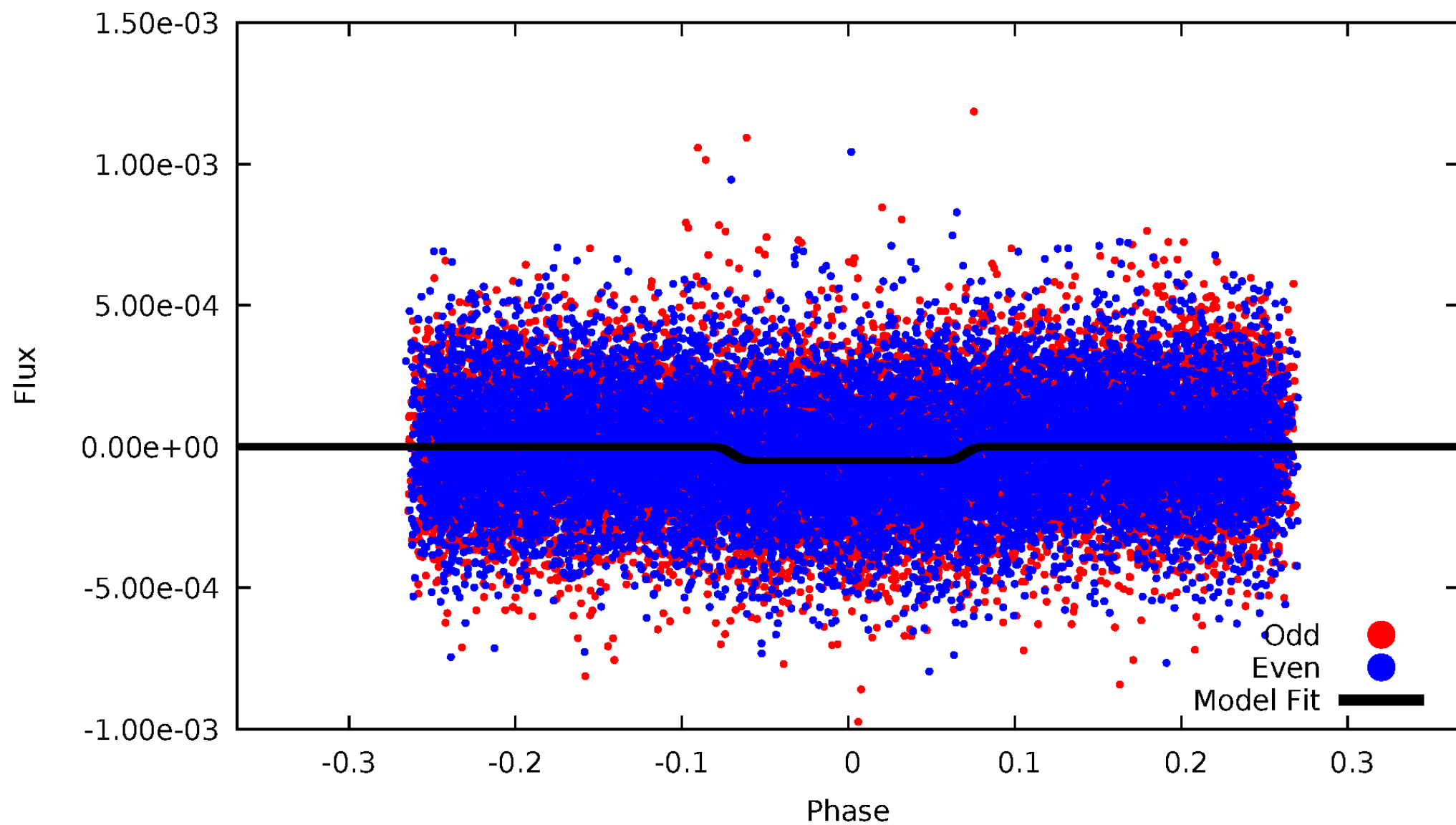
DV Odd/Even

TCE 011152428-02



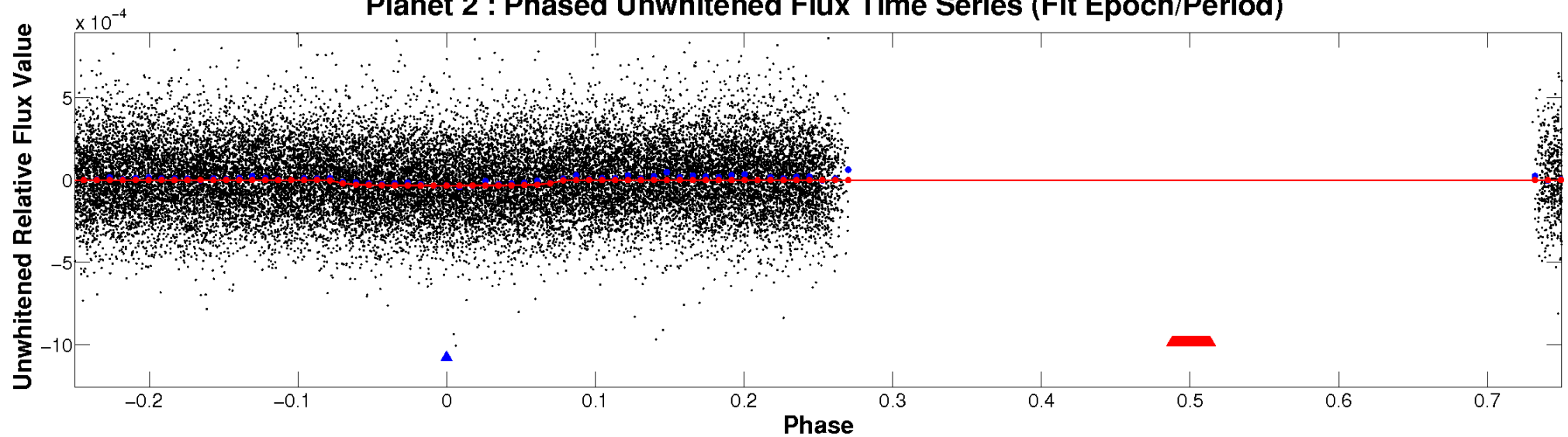
ALT Odd/Even

TCE 011152428-02

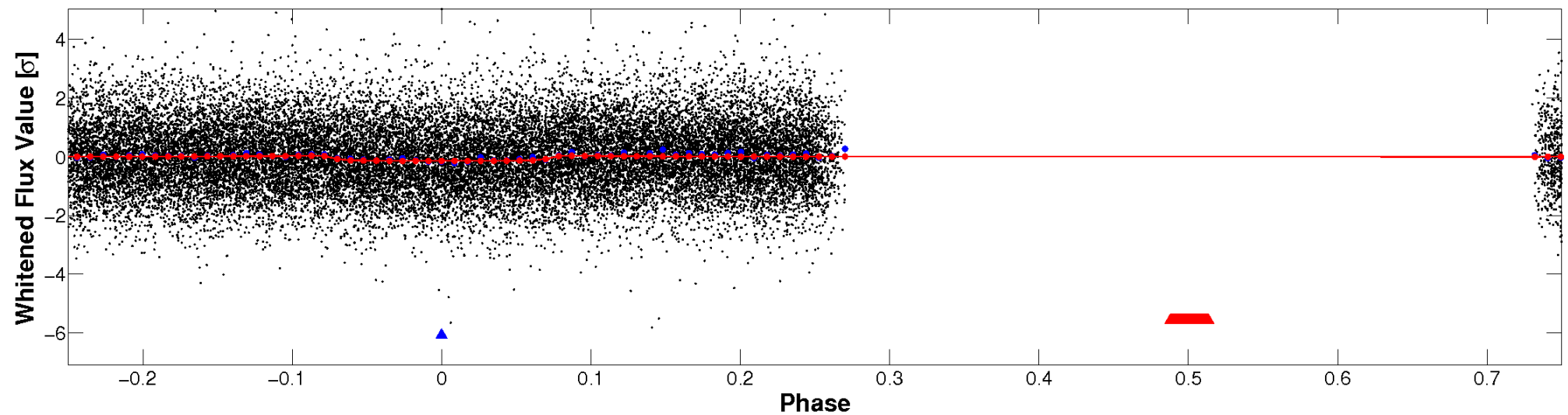


Non-Whitened Vs. Whitened Light Curve

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

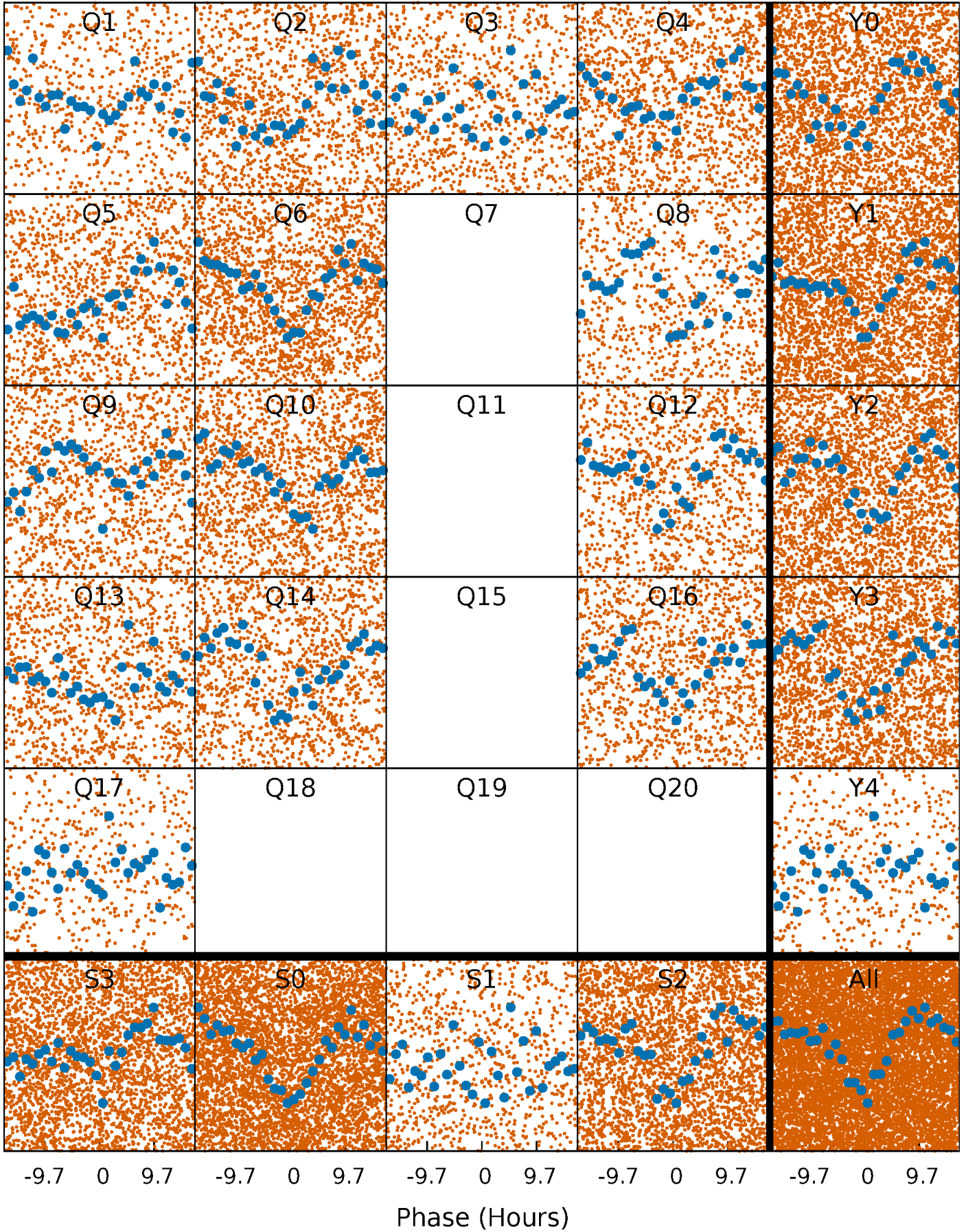


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



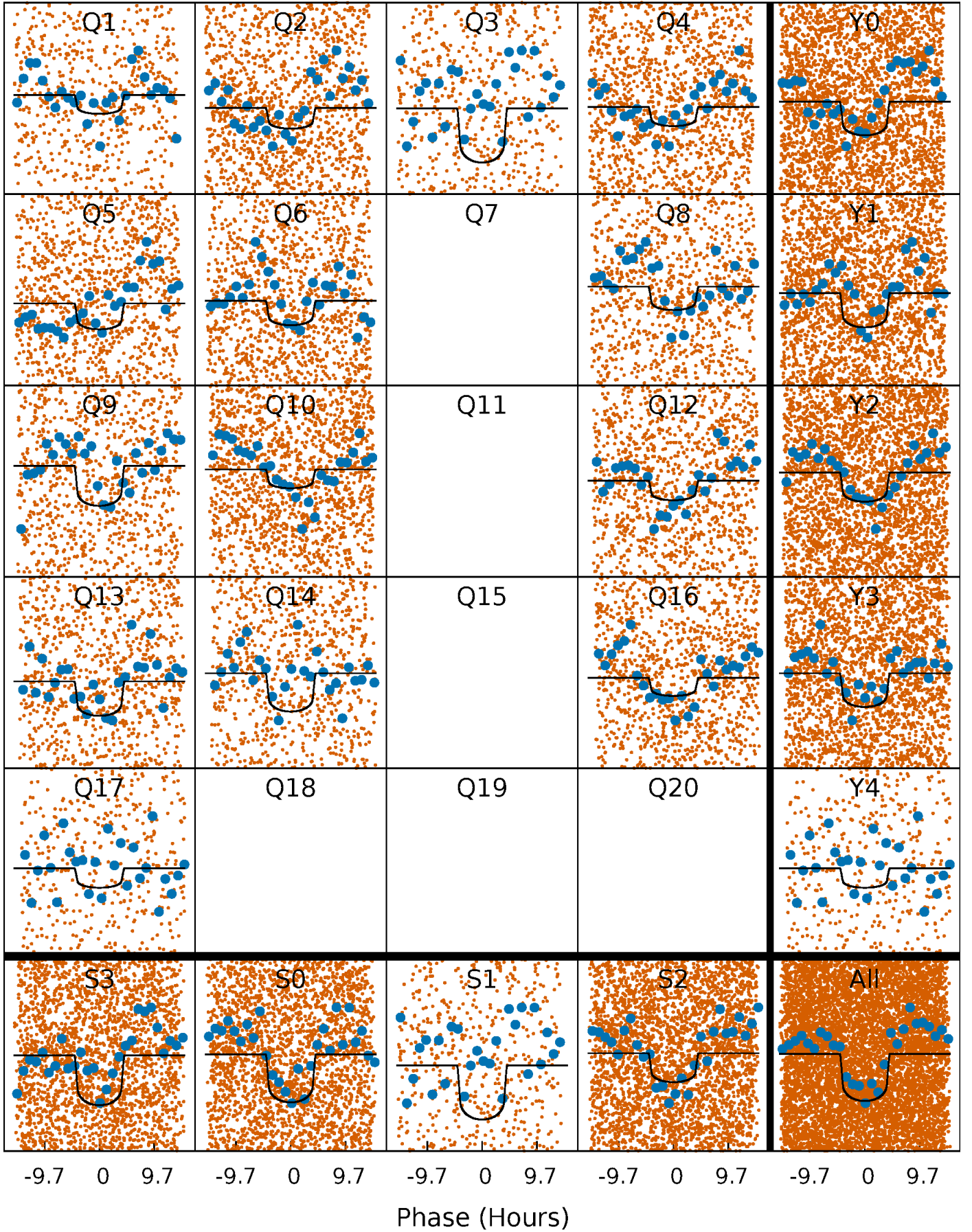
PDC Quarter-Phased Transit Curves

TCE 011152428-02 P= 2.344856 Days $T_0=132.971441$ (BKJD)



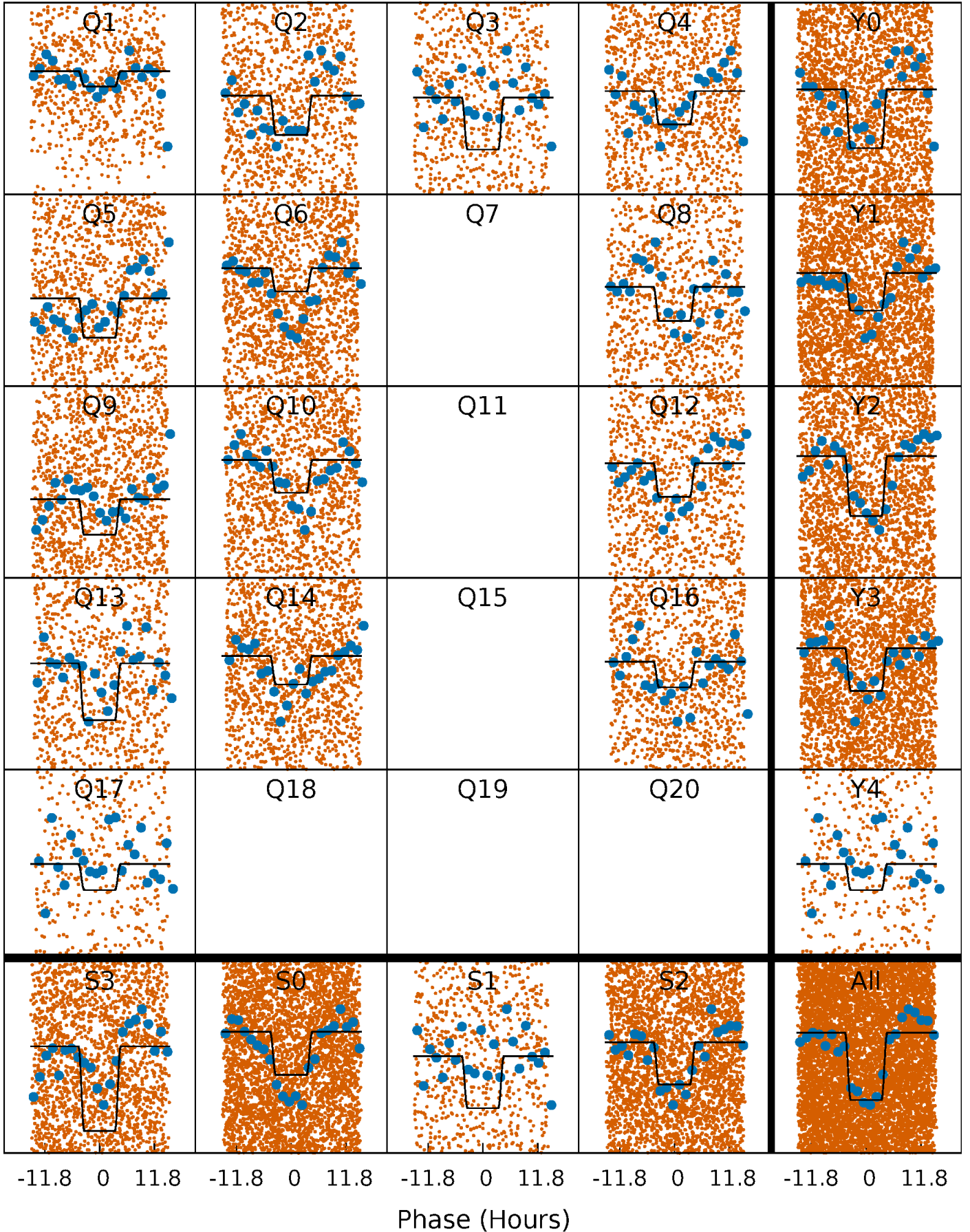
DV Quarter-Phased Transit Curves

TCE 011152428-02 P= 2.344856 Days $T_0=132.971441$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

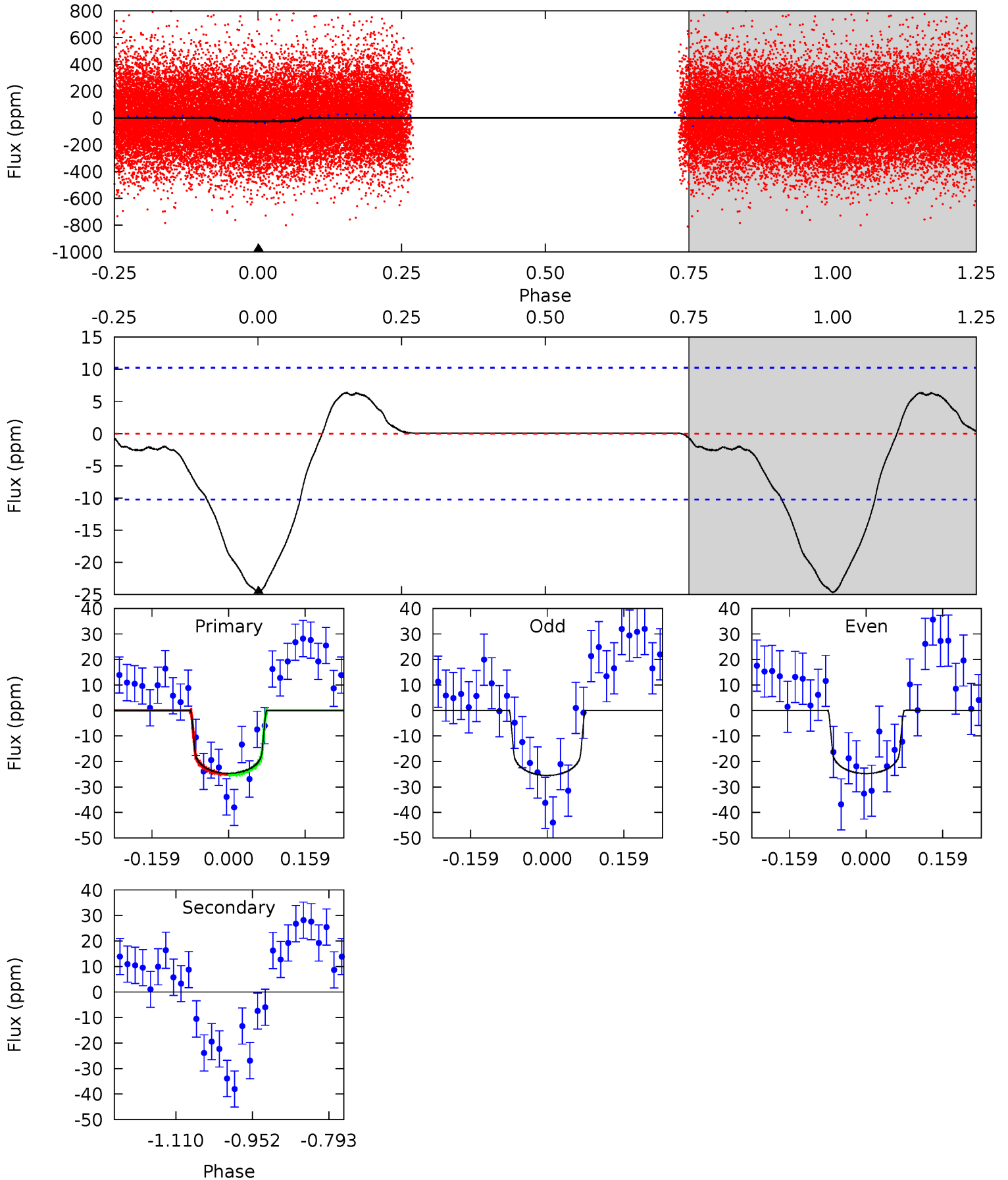
TCE 011152428-02 P= 2.344872 Days $T_0=132.962254$ (BKJD)



DV Model-Shift Uniqueness Test

011152428-02, P = 2.344856 Days, E = 130.626585 Days

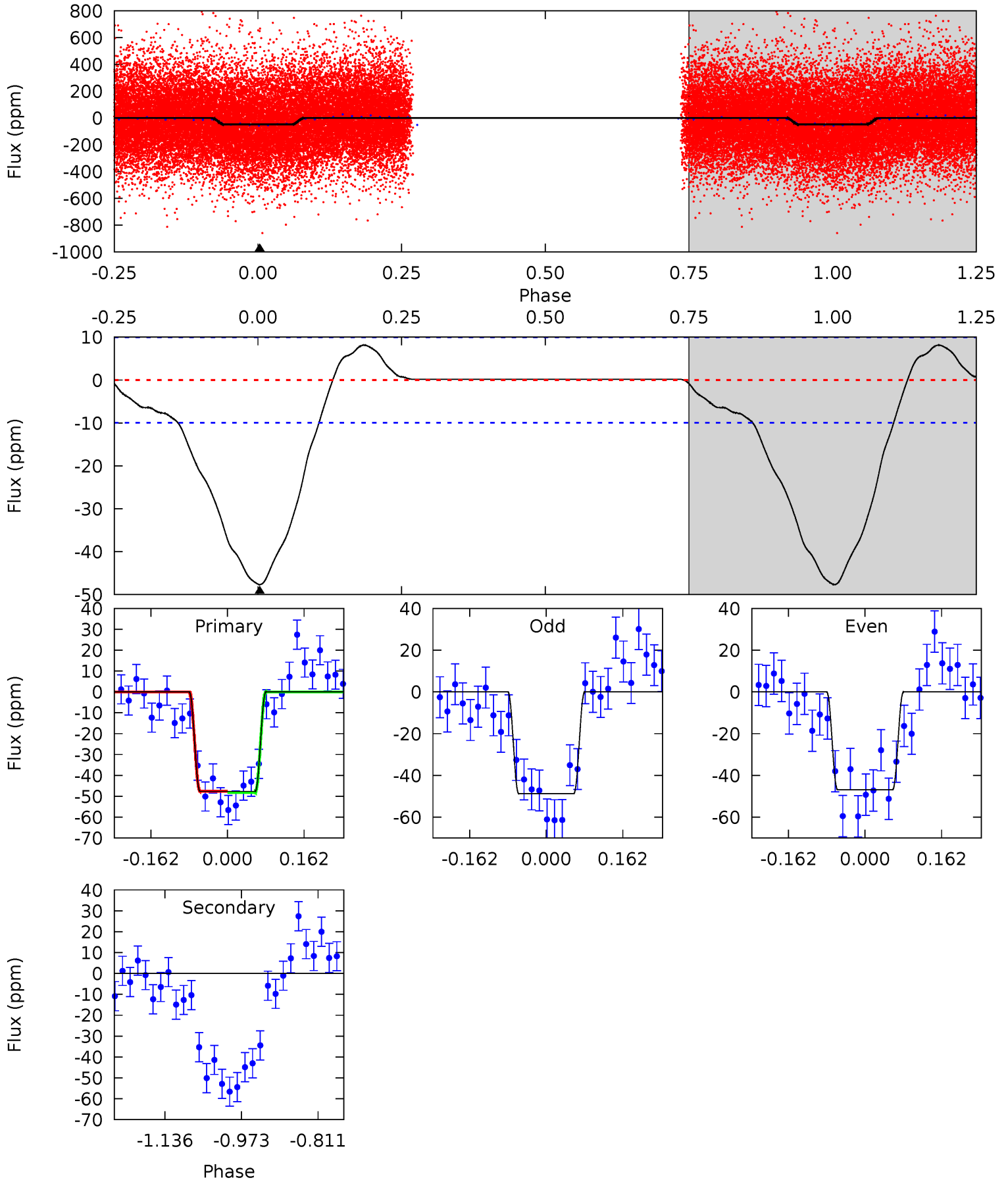
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	0	0	0	4.47	1.41	1.42	10.8	10.8	0	0	0.16	0.98	0.20	0.04



Alt Model-Shift Uniqueness Test

011152428-02, P = 2.344872 Days, E = 130.617382 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	0	0	0	4.46	1.40	2.49	21.4	21.4	0	0	0.43	0.97	0.15	0.15



Stellar Parameters For KIC 011152428

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6774^{+189}_{-260}	$4.273^{+0.105}_{-0.195}$	$-0.260^{+0.250}_{-0.300}$	$1.346^{+0.412}_{-0.222}$	$1.246^{+0.189}_{-0.189}$	$0.720^{+0.355}_{-0.381}$
	+3%/-4%	+2%/-5%	+96%/-115%	+31%/-16%	+15%/-15%	+49%/-53%
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 011152428-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 2	$0.92^{+0.30}_{-0.28}$	2549^{+184}_{-154}	-2858^{+6548}_{-1009}	$-0.034^{+2.214}_{-1.980}$
Alt.	0 ± 2	$1.08^{+0.36}_{-0.30}$	2538^{+205}_{-145}	-2938^{+6362}_{-786}	$-0.095^{+1.494}_{-1.502}$

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

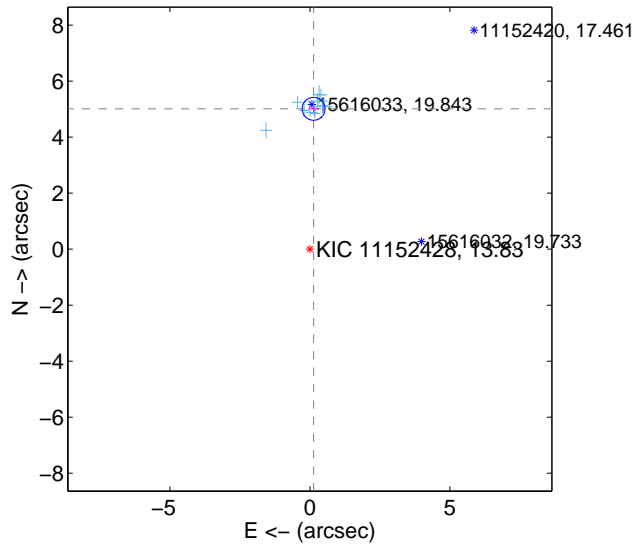
Supplemental centroid analysis for 011152428-02. Kepler magnitude: 13.83. Transit SNR 11.15

There are 11 quarters with good PRF difference image offsets

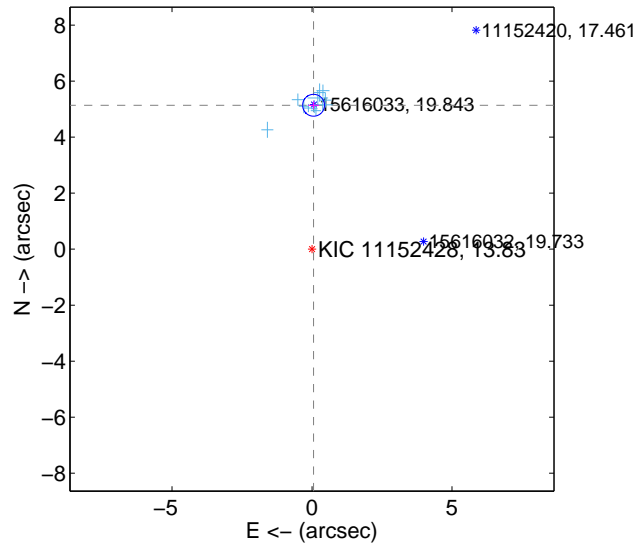
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.014 ± 0.136	36.83	-0.131 ± 0.199	5.012 ± 0.133
PRF-fit source offset from KIC position	5.139 ± 0.130	39.51	-0.055 ± 0.194	5.138 ± 0.129
photometric centroid source offset	3.77 ± 1.14	3.30	-3.32 ± 1.15	1.79 ± 1.12

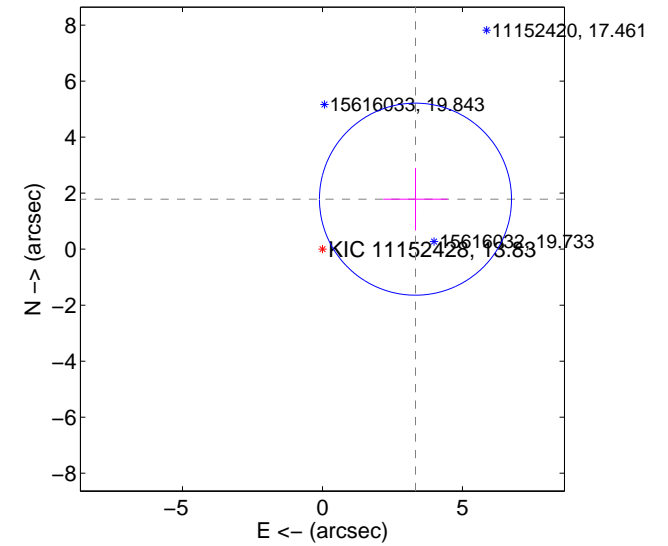
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

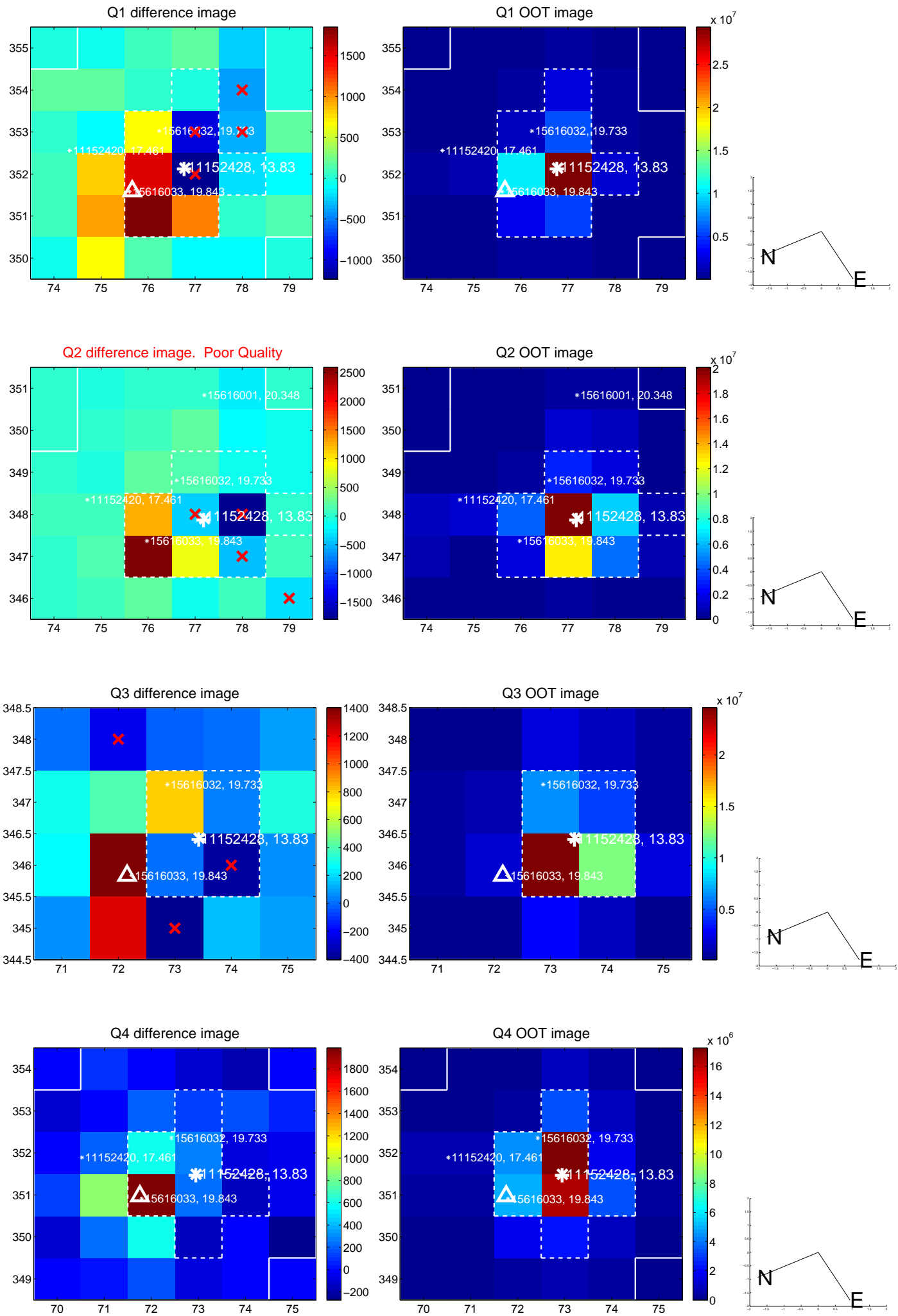


offset from photometric centroids

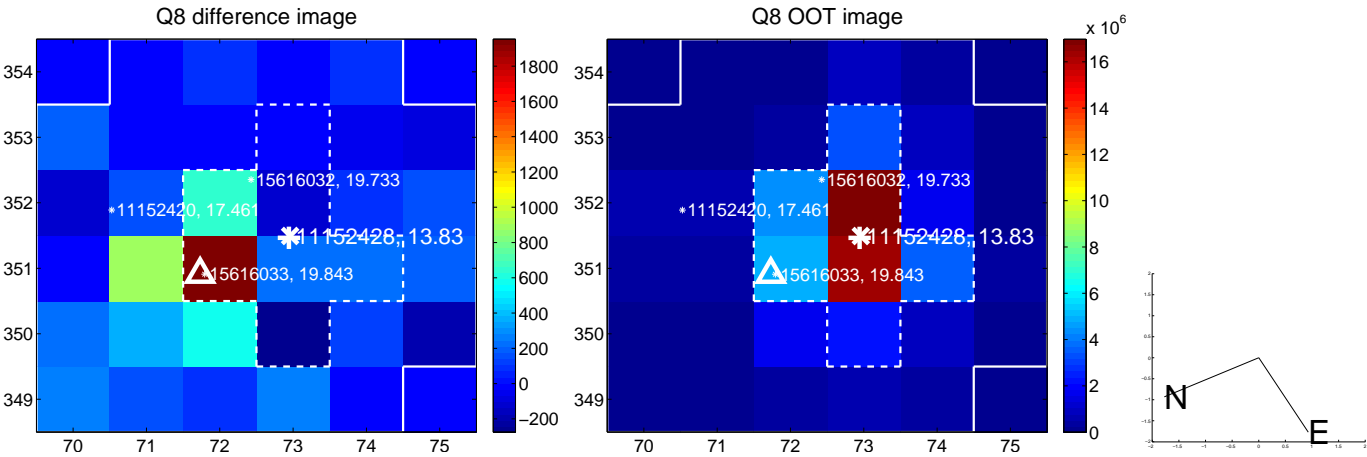
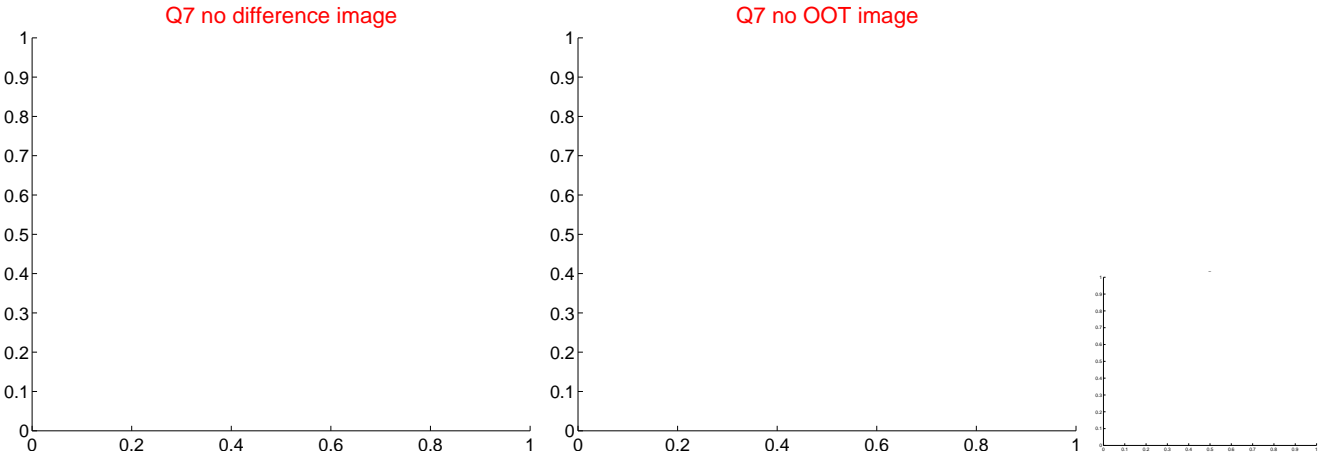
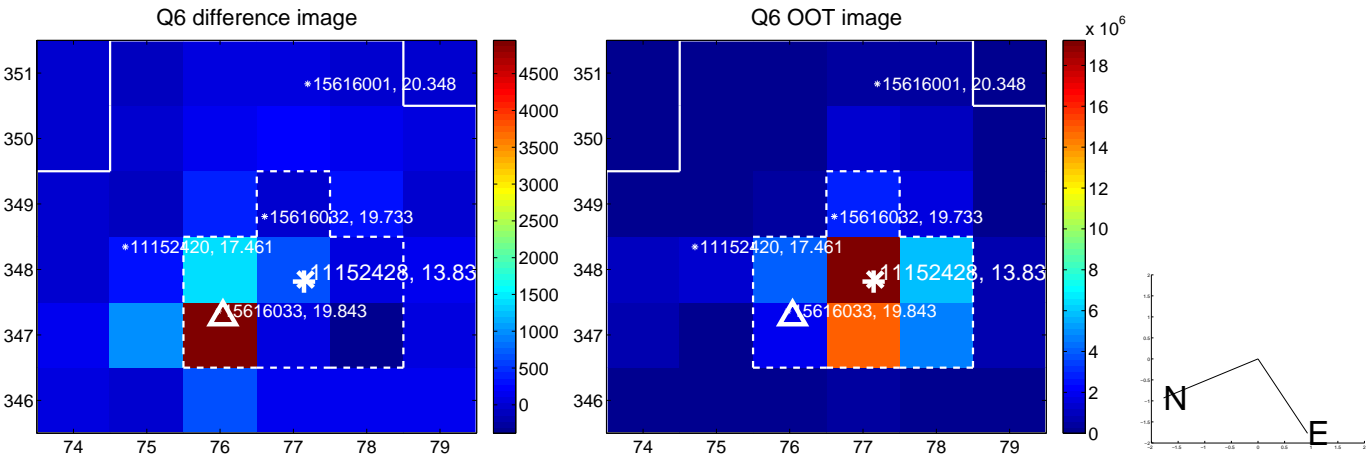
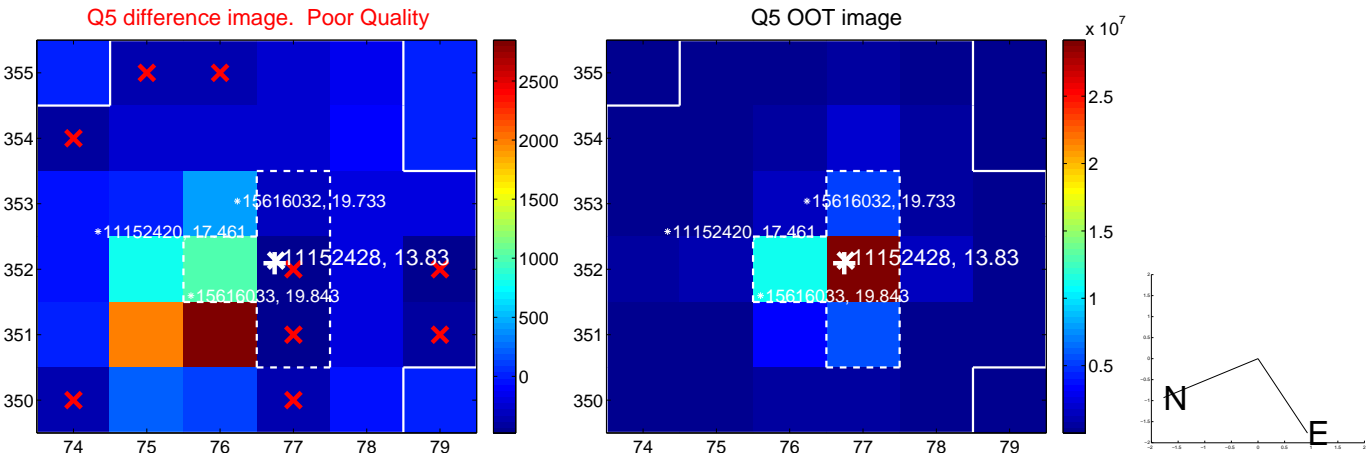


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

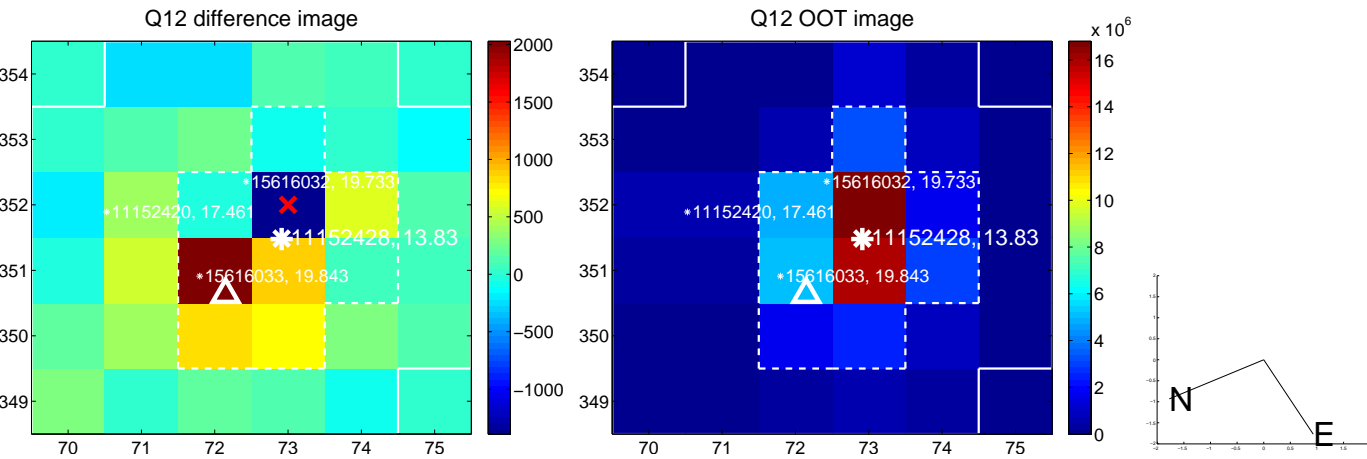
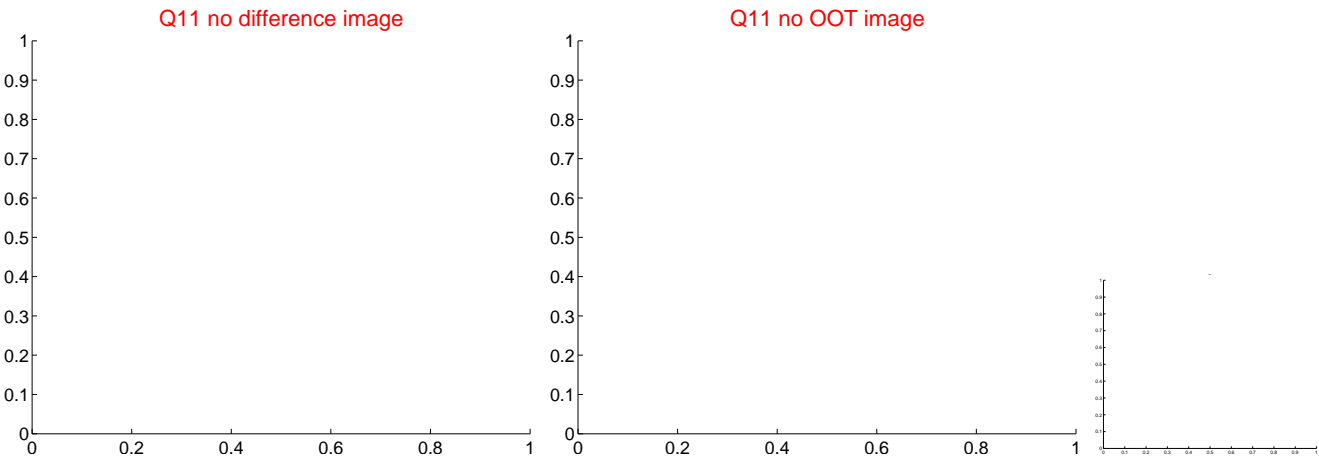
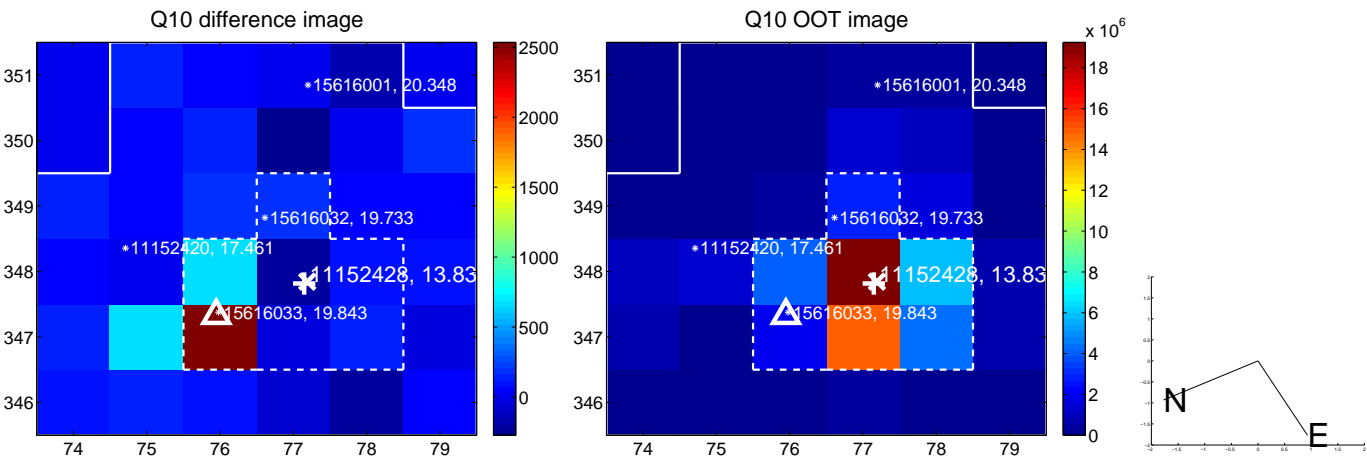
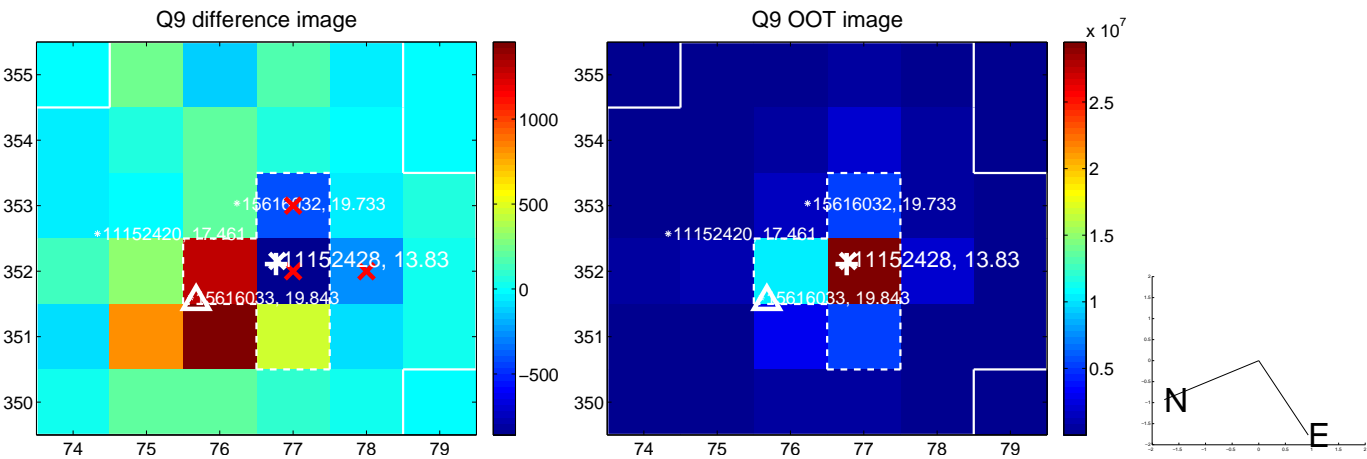
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



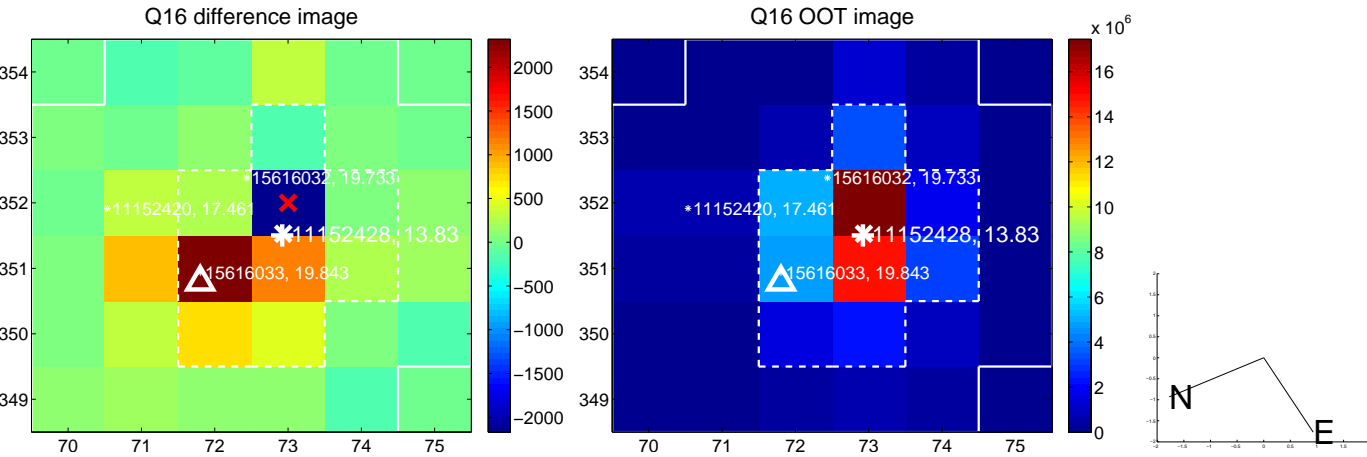
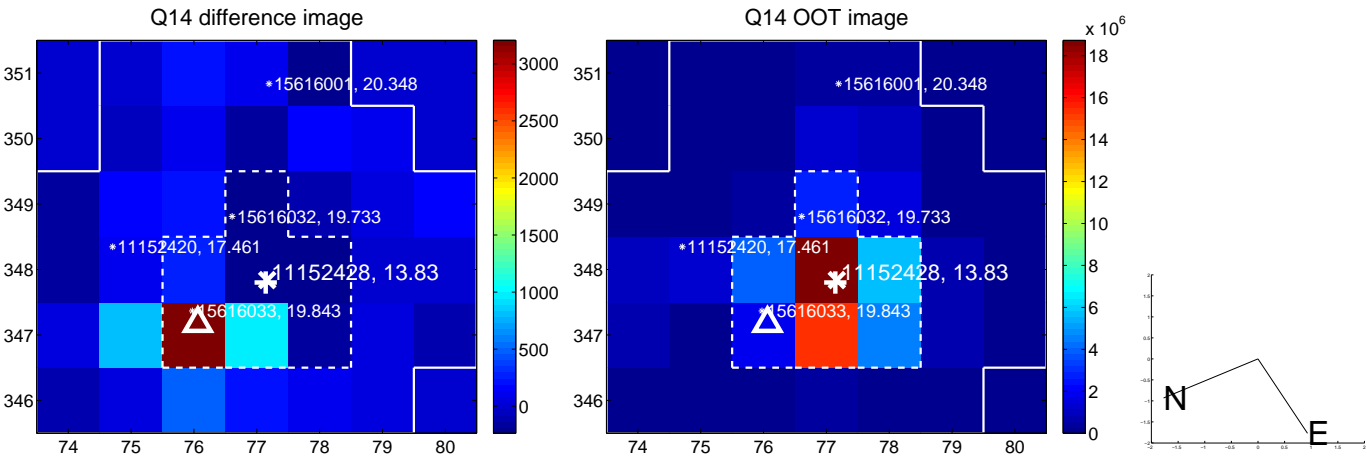
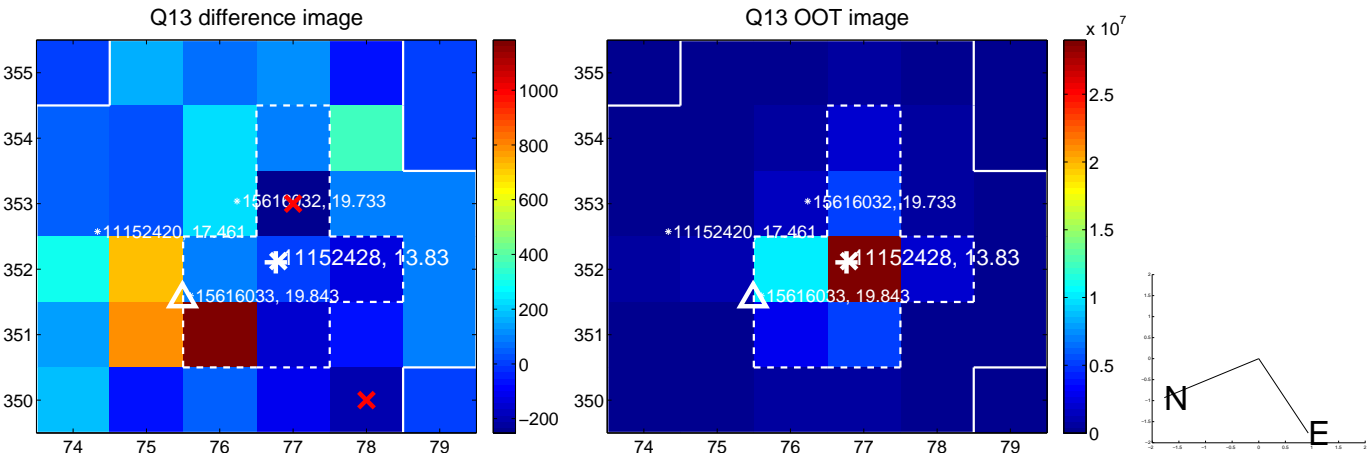
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



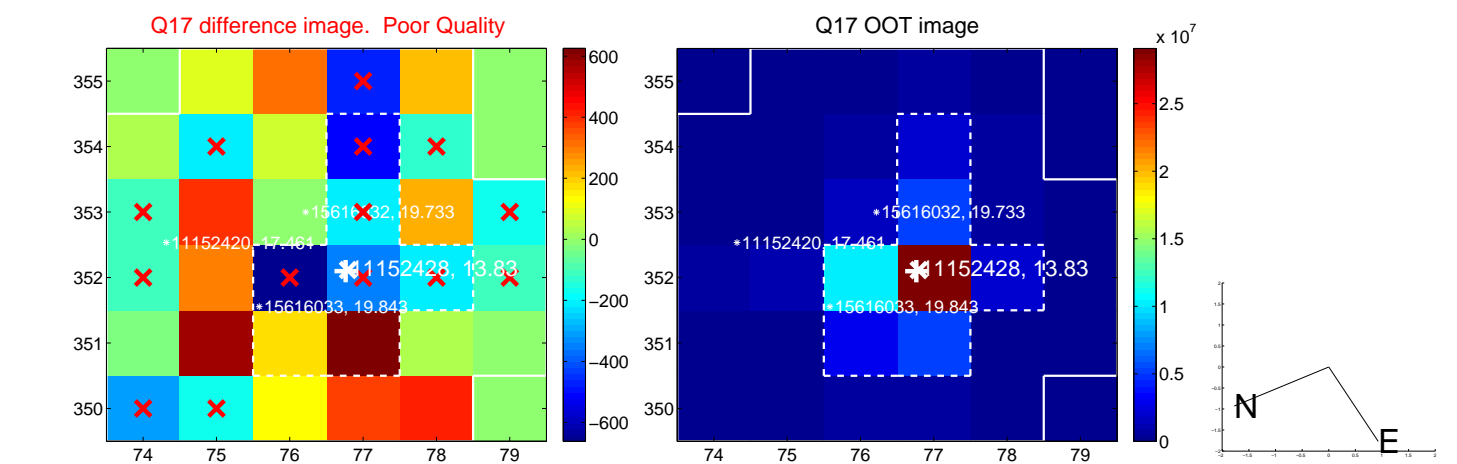
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



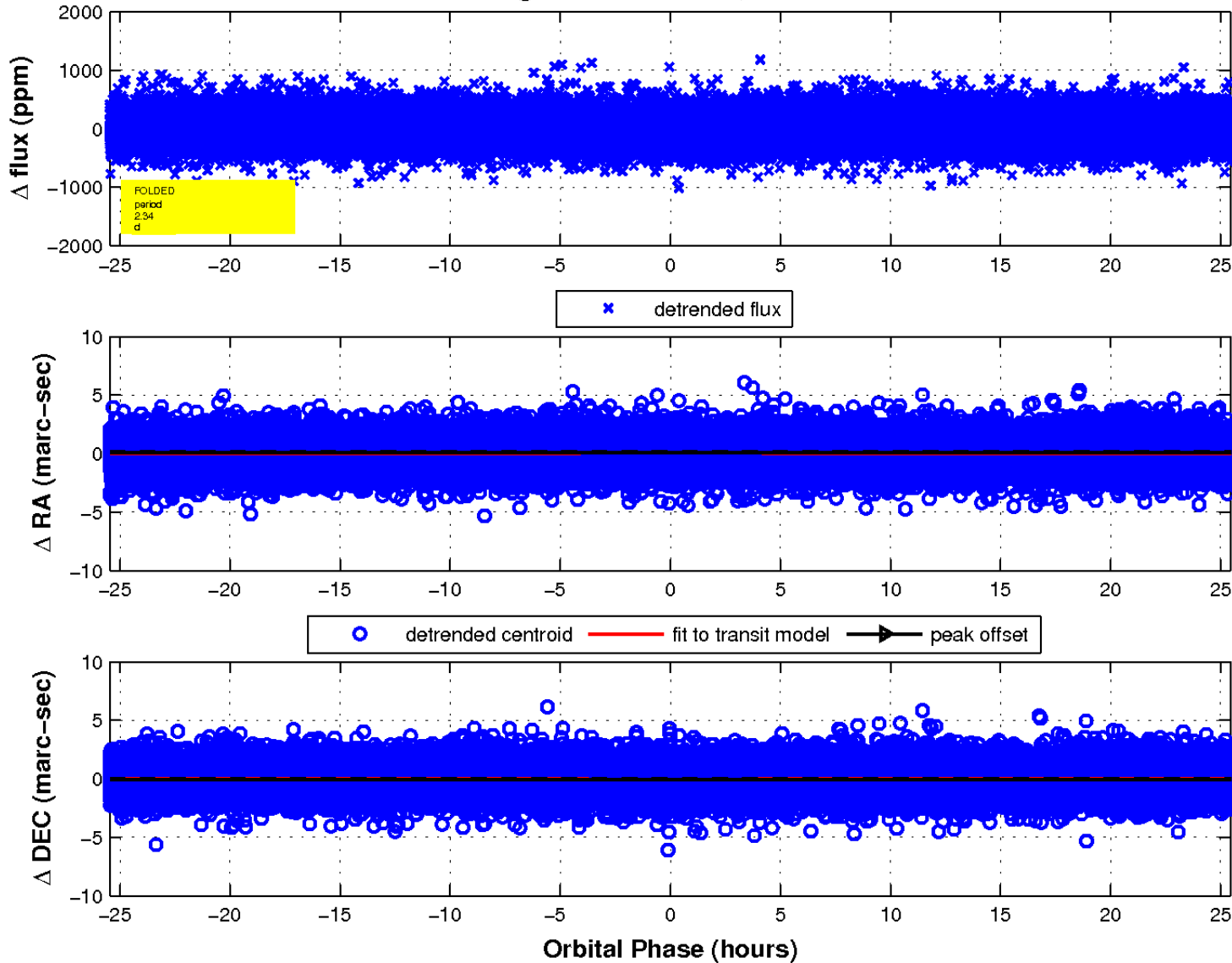
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

