

KIC 011153121

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})
011153121-01	OBS	1647.01	14.970247	134.504998	284.2	6.004	23.4	24.0	1.48	5726	2.79	143.69
011153121-02	OBS	1647.02	32.275768	149.059772	232.5	7.362	11.4	13.1	1.48	5726	2.85	51.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011153121-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011153121-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

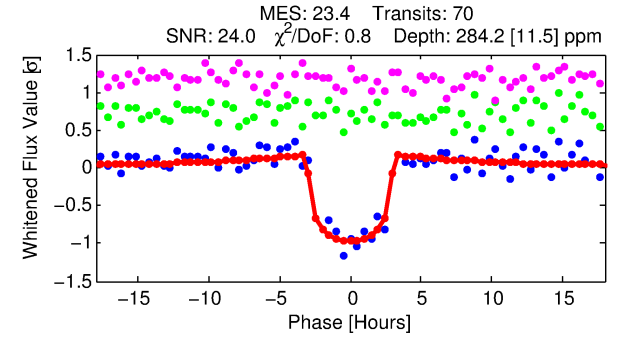
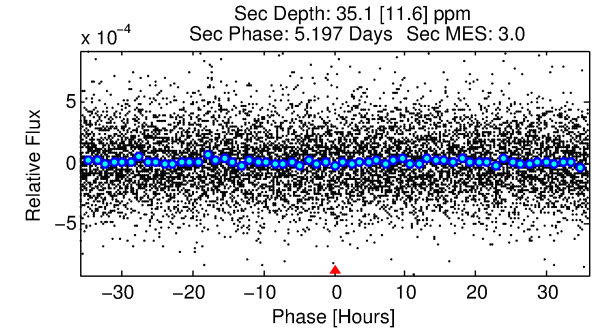
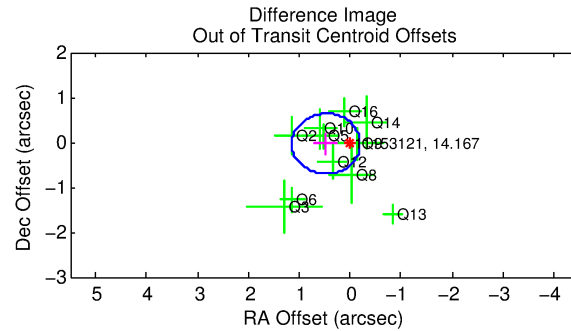
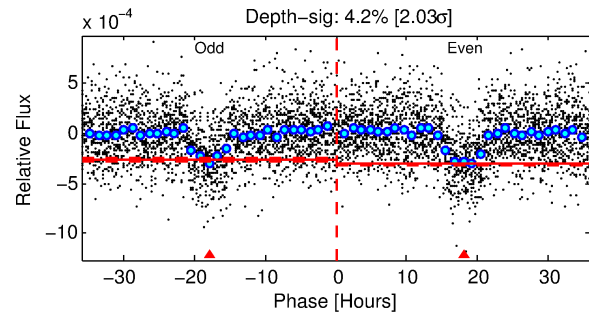
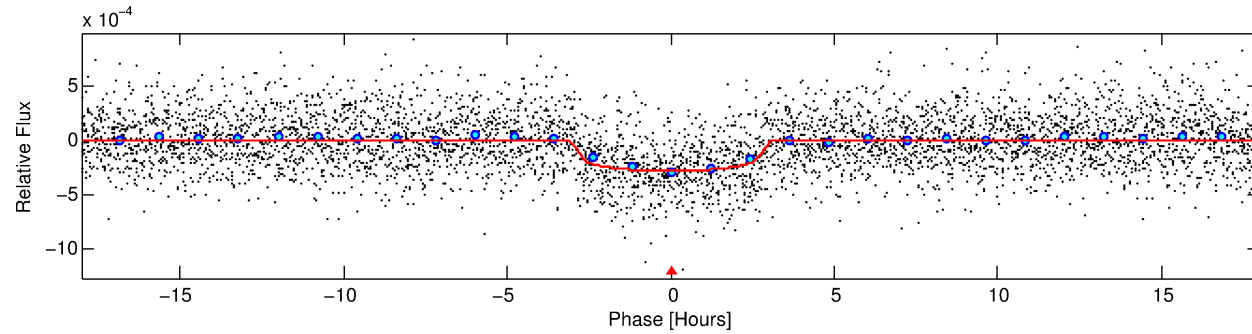
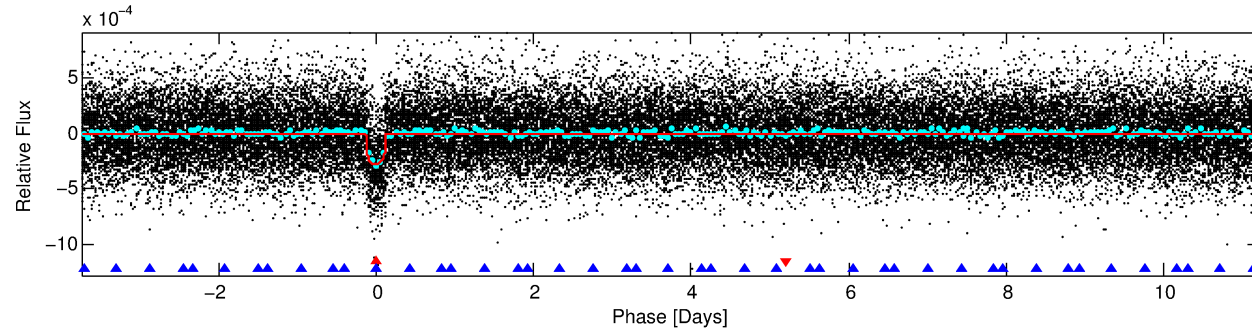
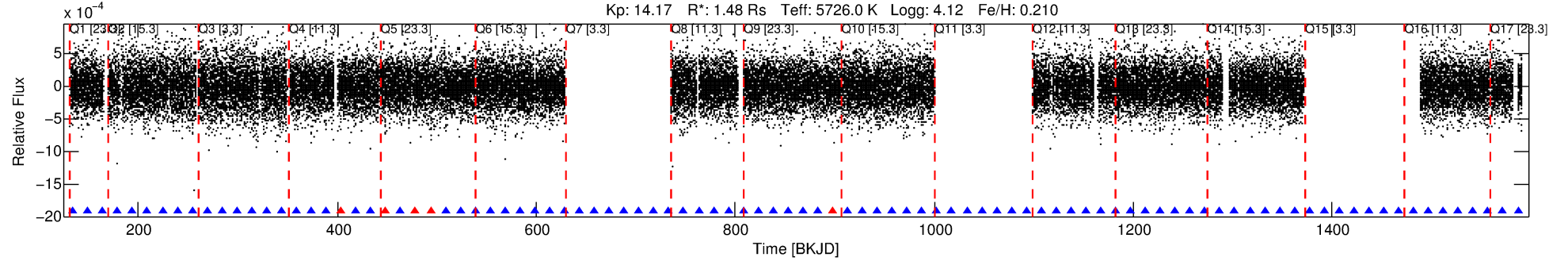
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011153121-01

No Significant Match Found

DV One-Page Summary

KIC: 11153121 Candidate: 1 of 2 Period: 14.970 d
KOI: K01647.01 Name: Kepler-313b Corr: 0.989



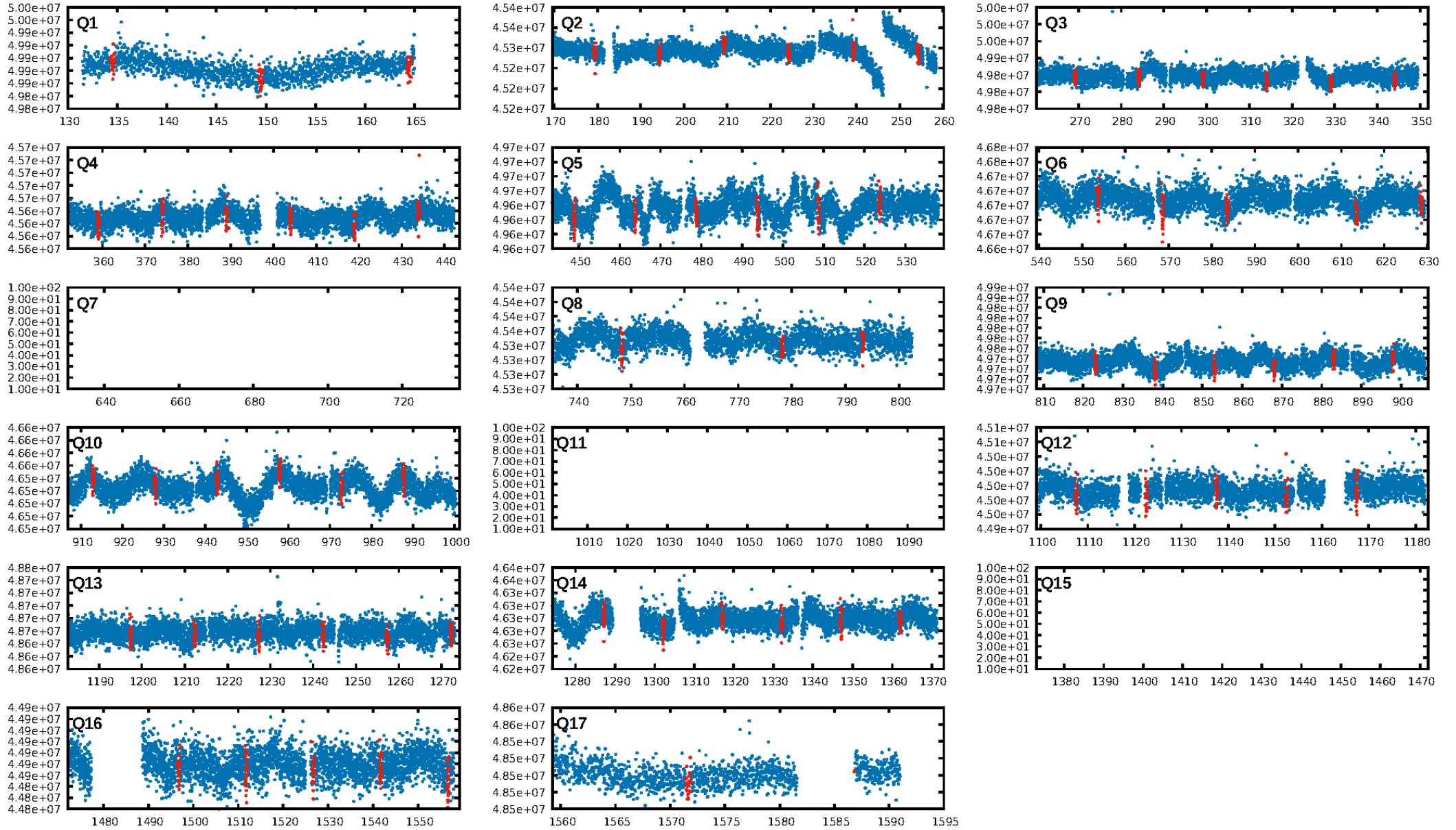
DV Fit Results:

Period = 14.97025 [0.00008] d
Epoch = 134.5050 [0.0041] BKJD
Rp/R* = 0.0172 [0.0038]
a/R* = 11.78 [11.38]
b = 0.81 [0.42]
Seff = 143.69 [46.47]
Teq = 883 [71] K
Rp = 2.79 [0.86] Re
a = 0.1214 [0.0242] AU
Ag = 36.55 [23.27] [1.53σ]
Teffp = 3356 [470] K [5.20σ]

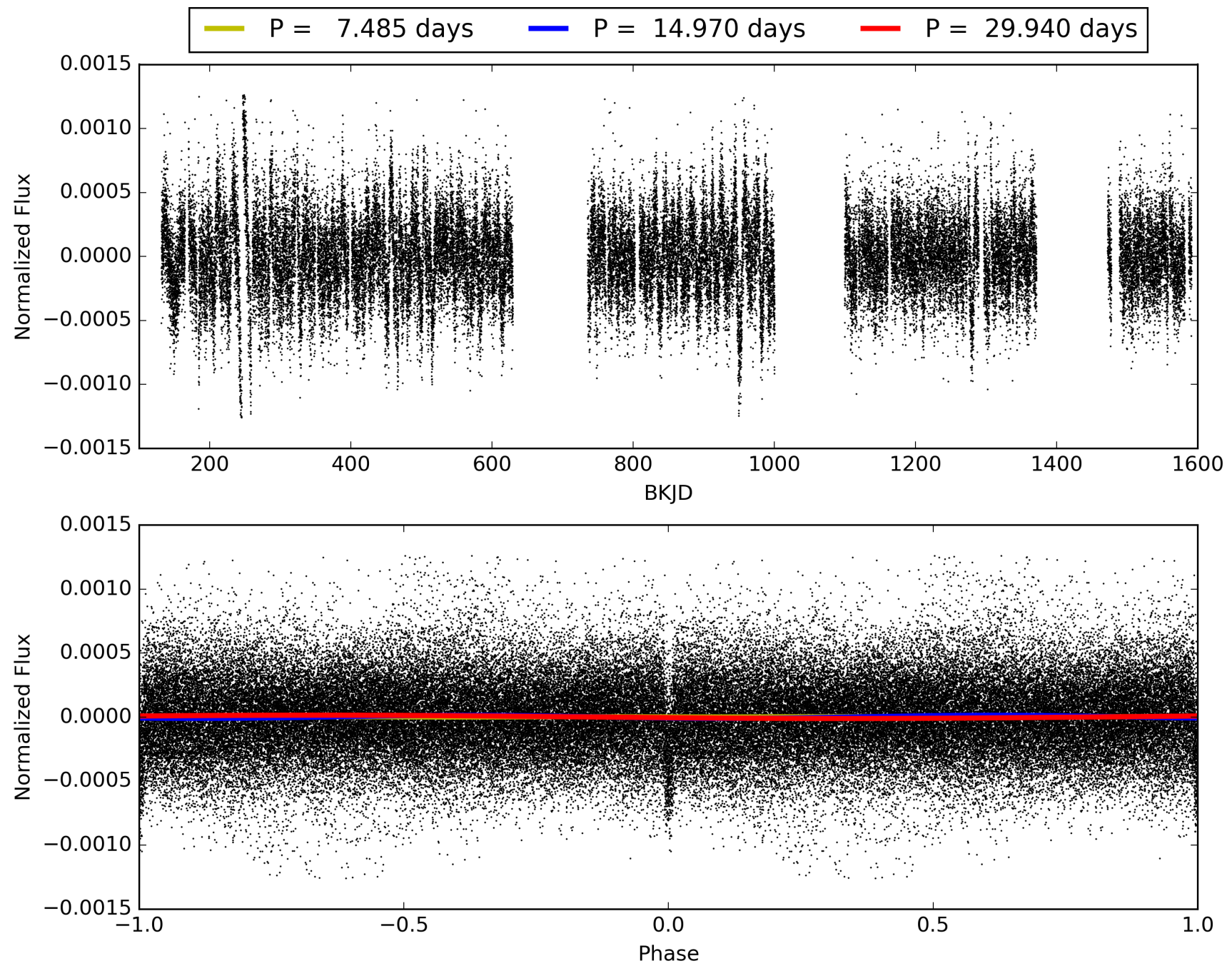
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [43.72σ]
ModelChiSquare2-sig: 97.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.21e-116
RollingBand-fgt: 0.92 [61/66]
GhostDiagnostic-chr: 9.878
Centroid-sig: 0.0%
Centroid-so: 1.189 arcsec [2.12σ]
OotOffset-rm: 0.477 arcsec [2.13σ]
KicOffset-rm: 0.556 arcsec [2.40σ]
OotOffset-st: 4/1/3/3 [11]
KicOffset-st: 4/1/3/3 [11]
DiffImageQuality-fgm: 0.73 [8/11]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 011153121-01, PDC Light Curves

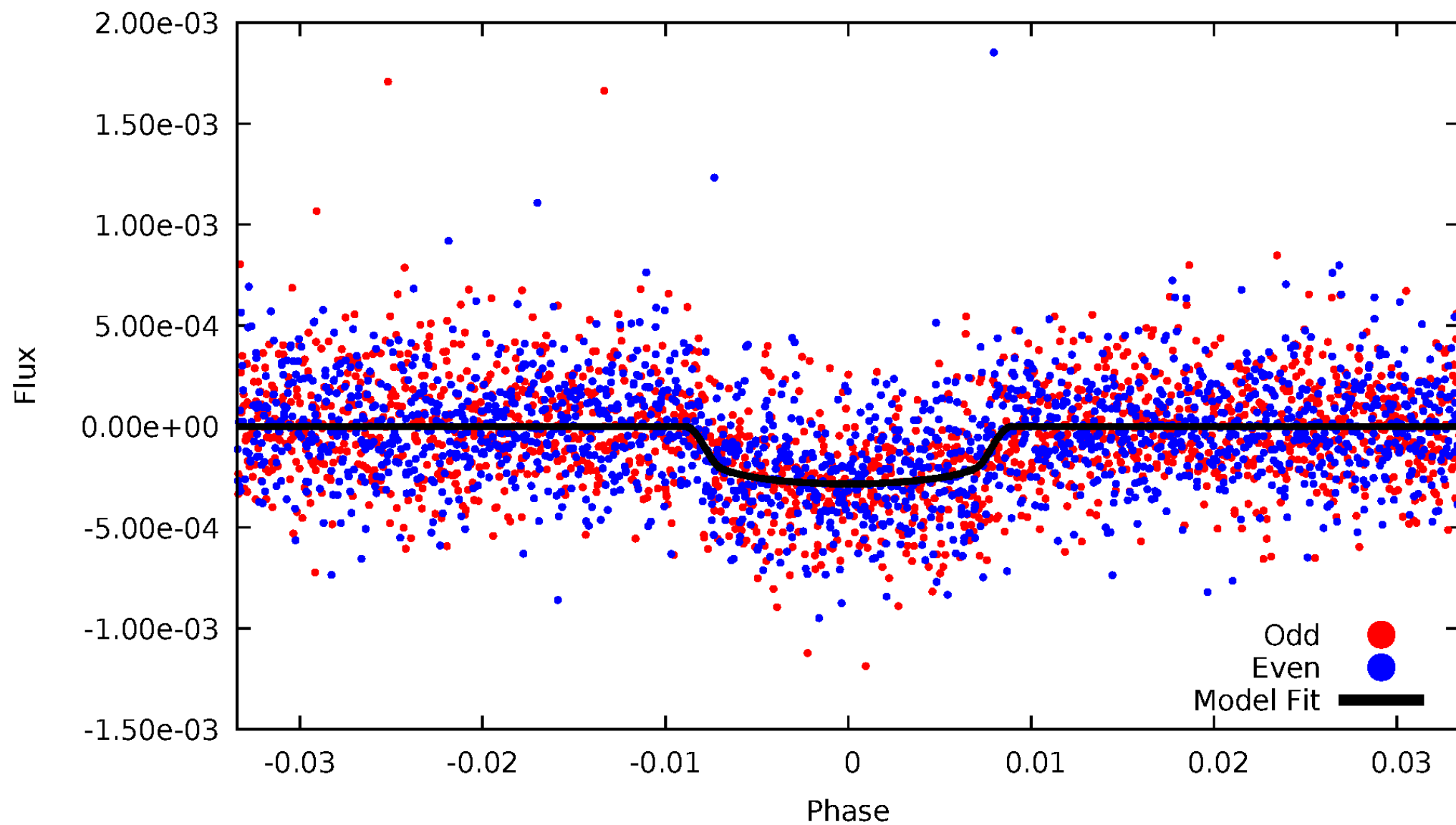


TCE 011153121-01



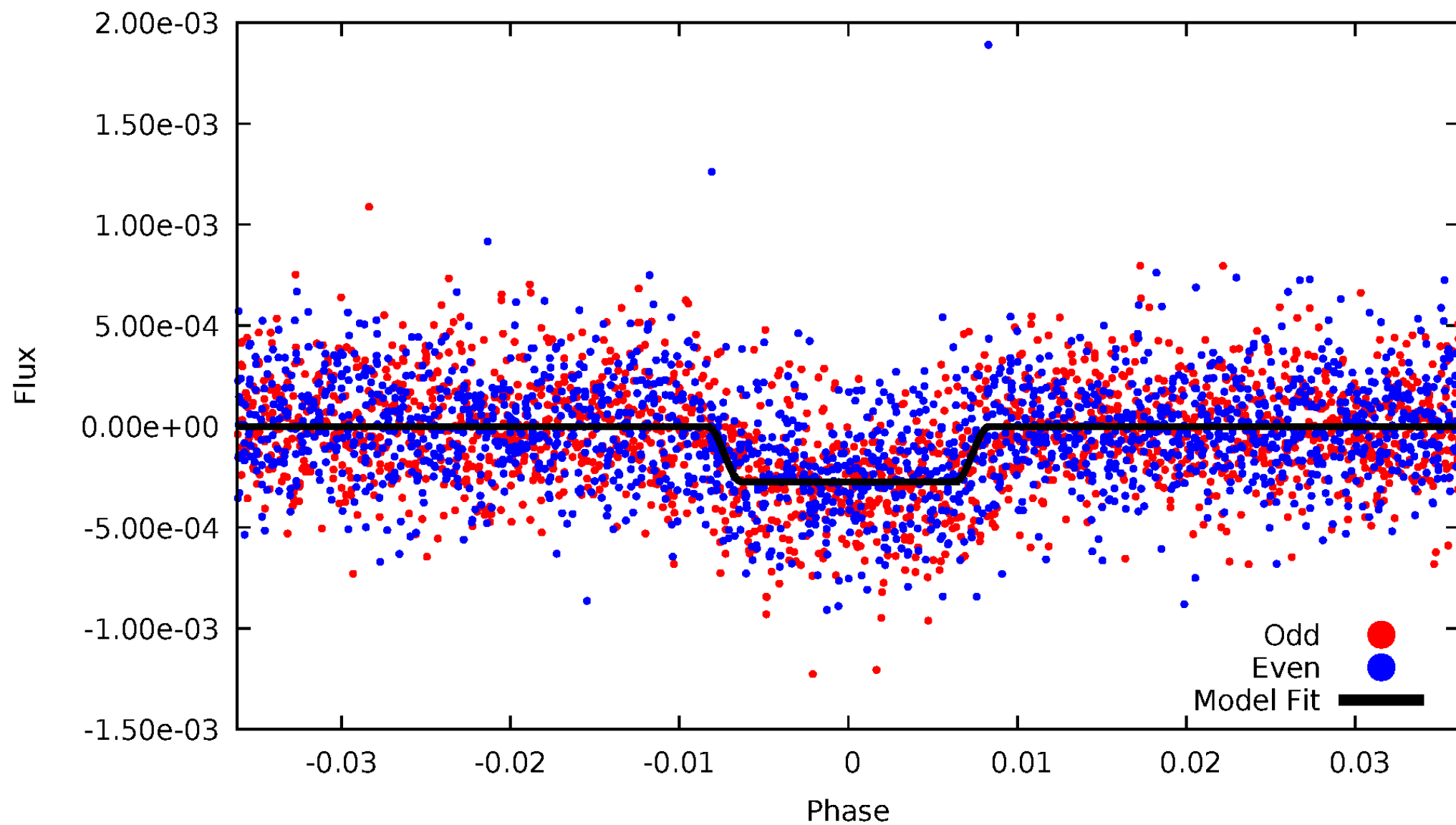
DV Odd/Even

TCE 011153121-01

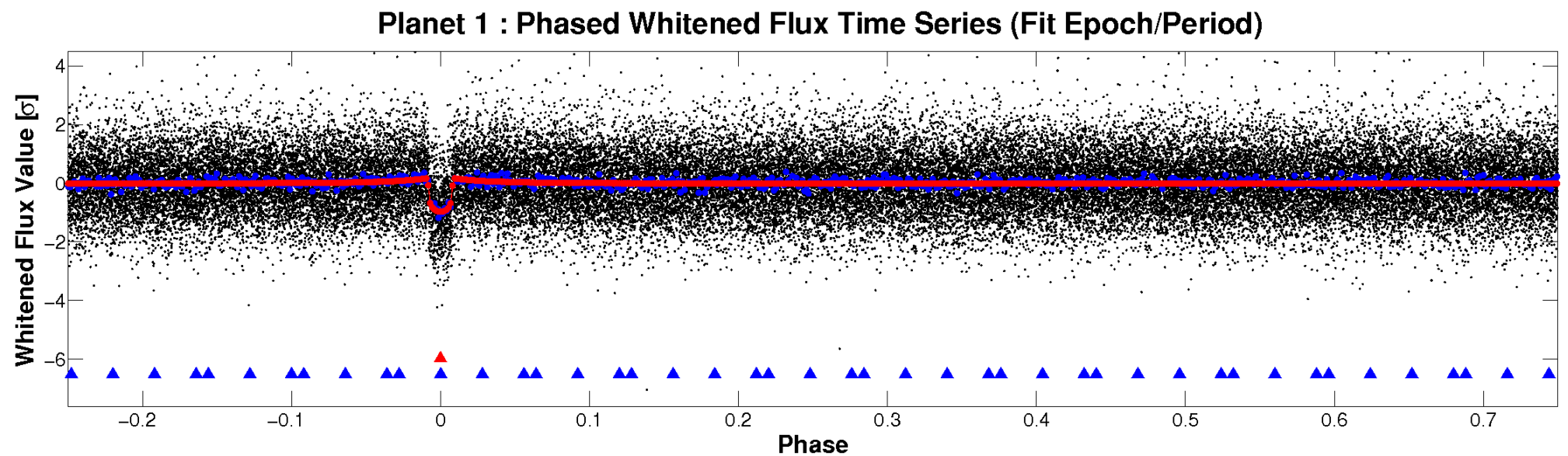
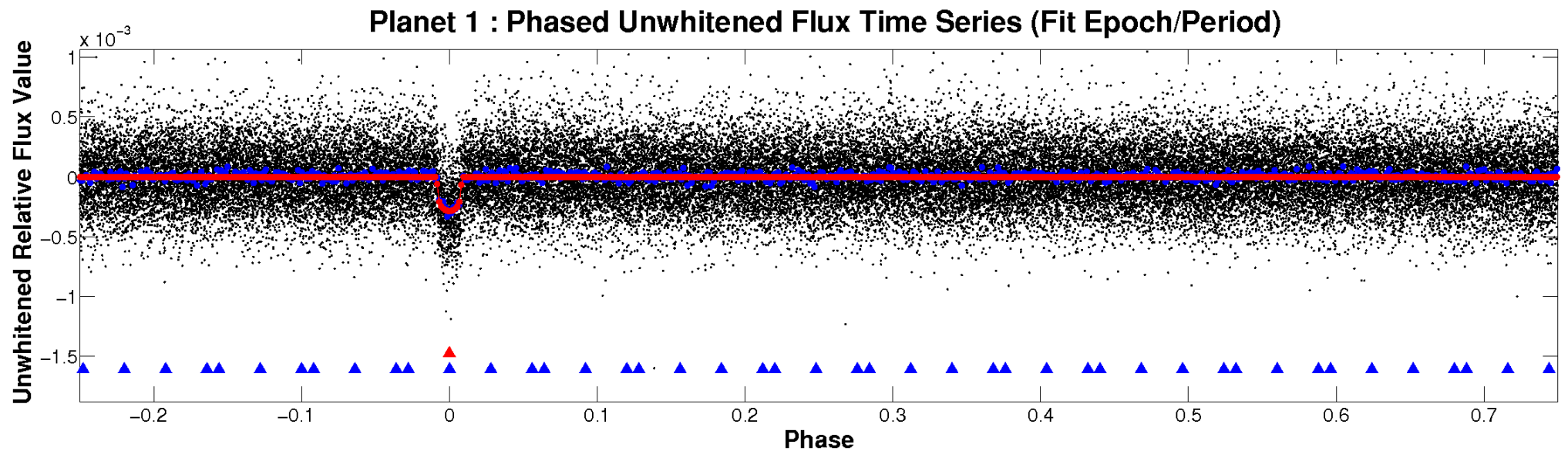


ALT Odd/Even

TCE 011153121-01

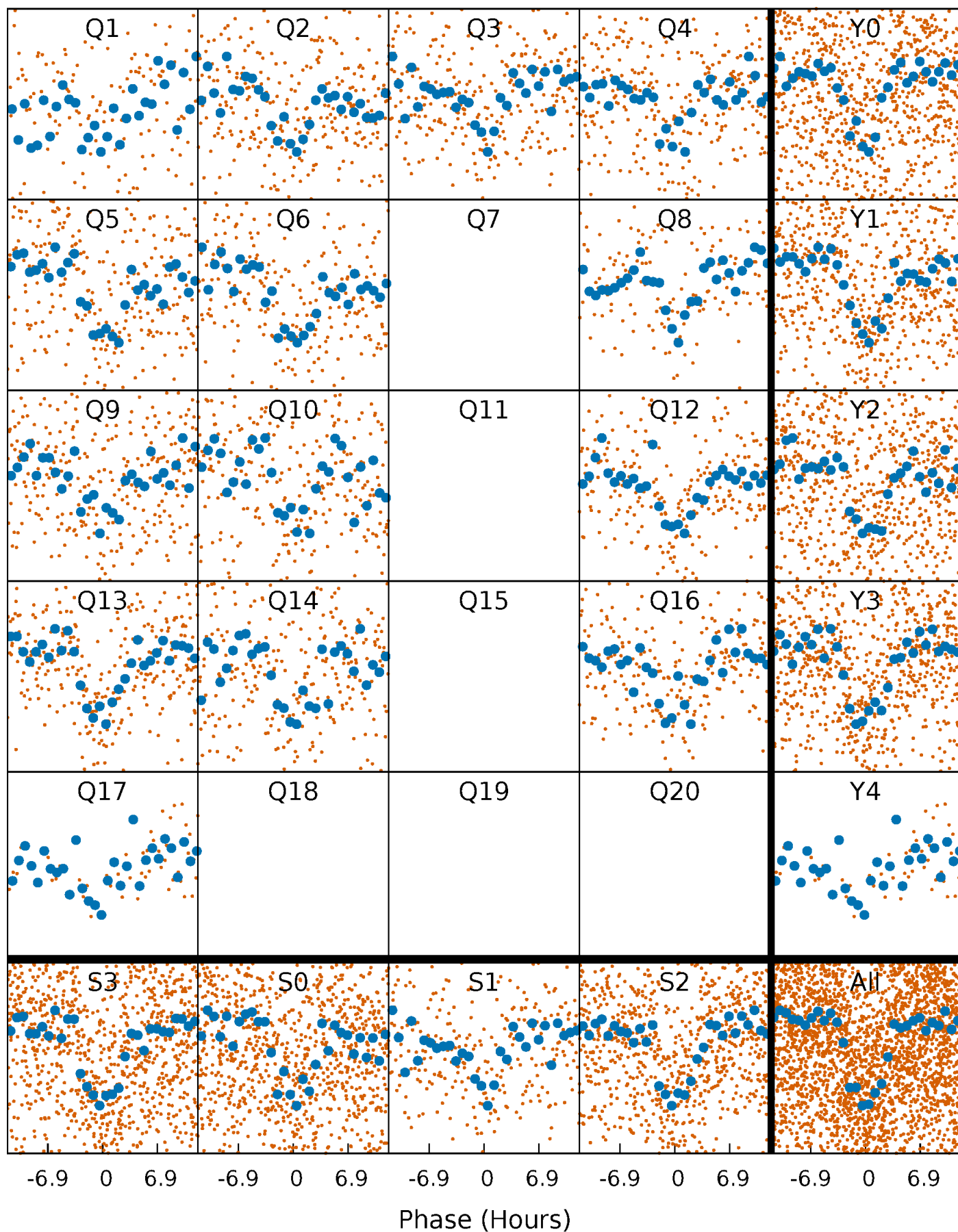


Non-Whitened Vs. Whitened Light Curve



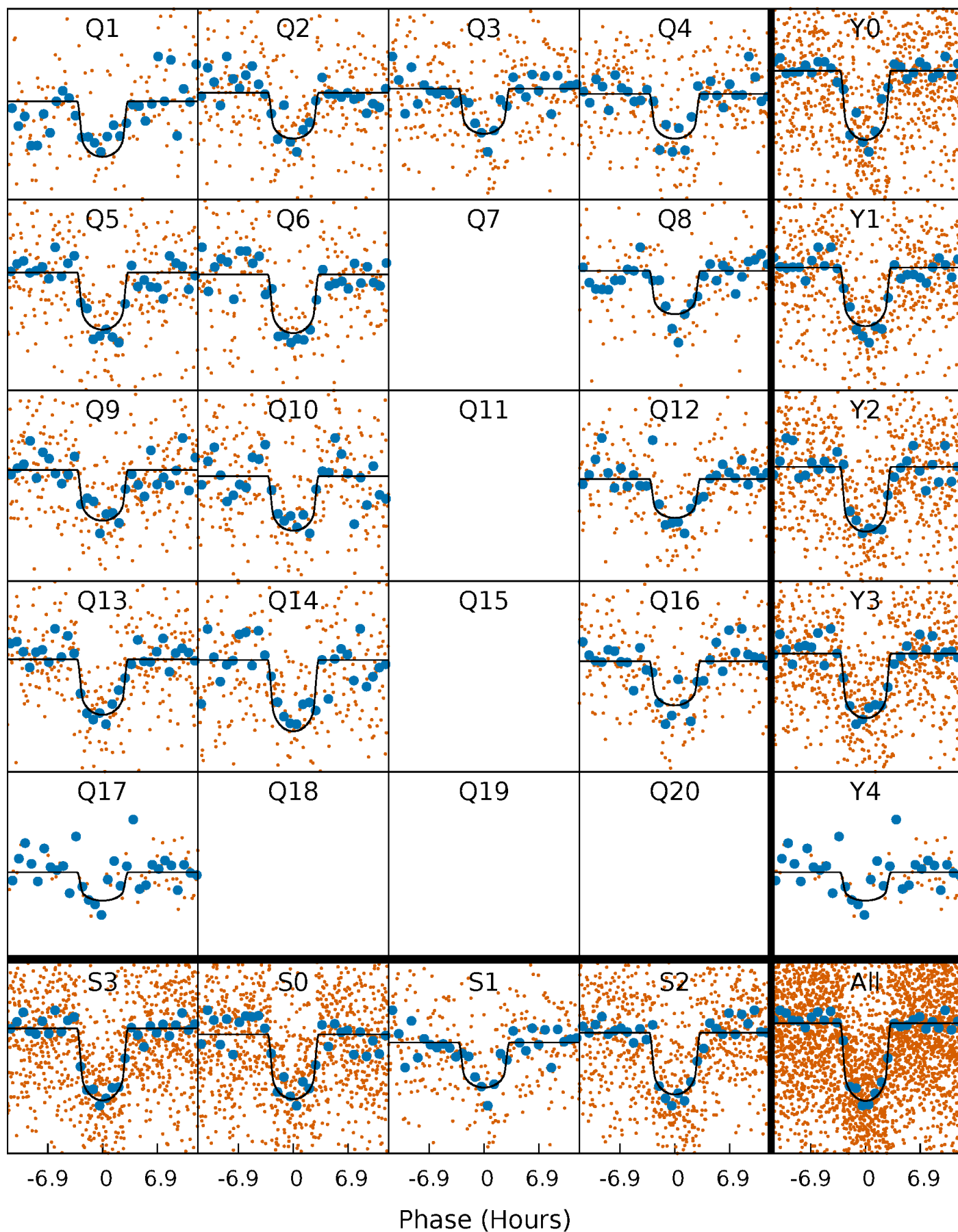
PDC Quarter-Phased Transit Curves

TCE 011153121-01 P= 14.970247 Days $T_0=134.504998$ (BKJD)



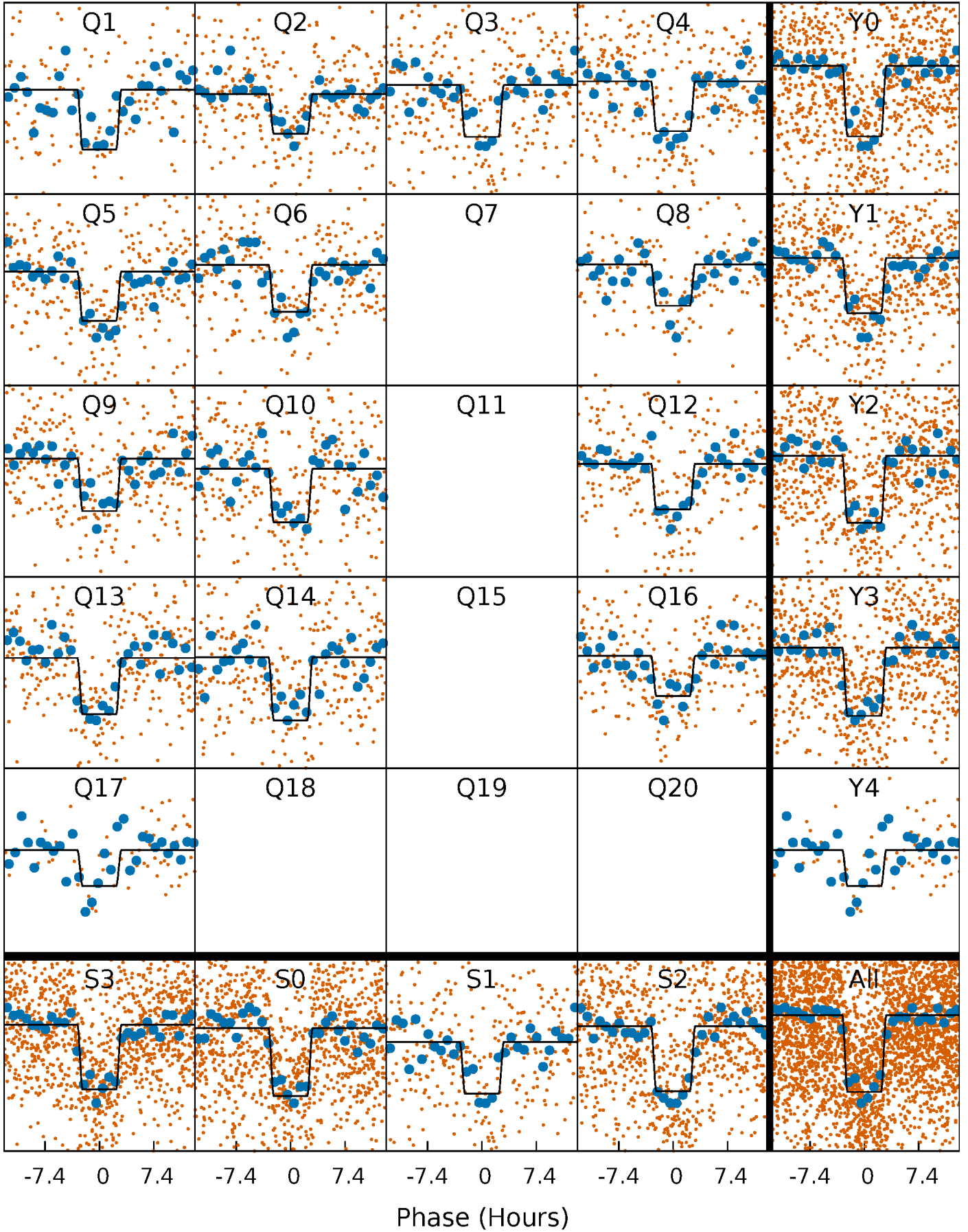
DV Quarter-Phased Transit Curves

TCE 011153121-01 P= 14.970247 Days $T_0=134.504998$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

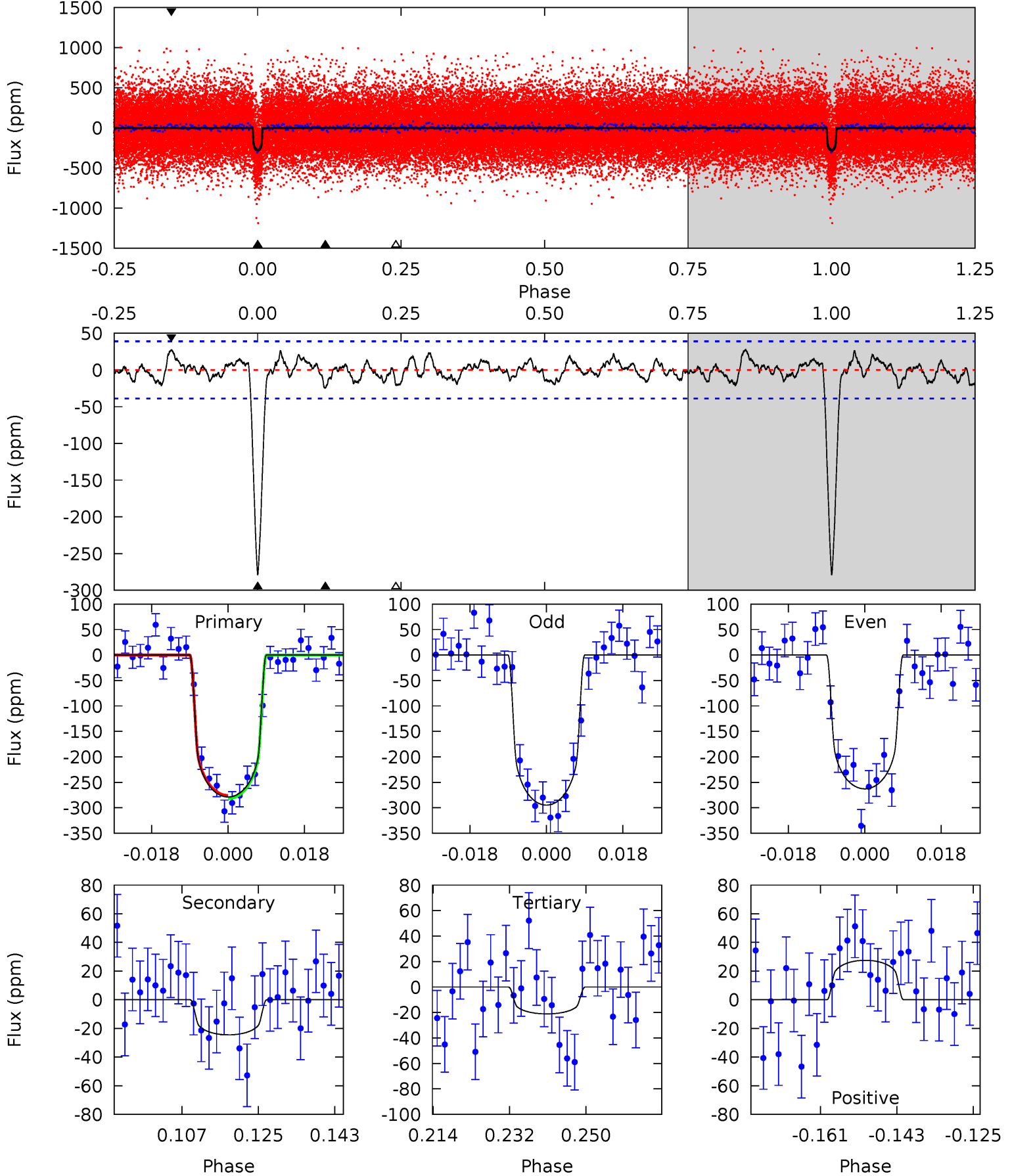
TCE 011153121-01 P= 14.970585 Days $T_0=134.493305$ (BKJD)



DV Model-Shift Uniqueness Test

011153121-01, $P = 14.970247$ Days, $E = 119.534751$ Days

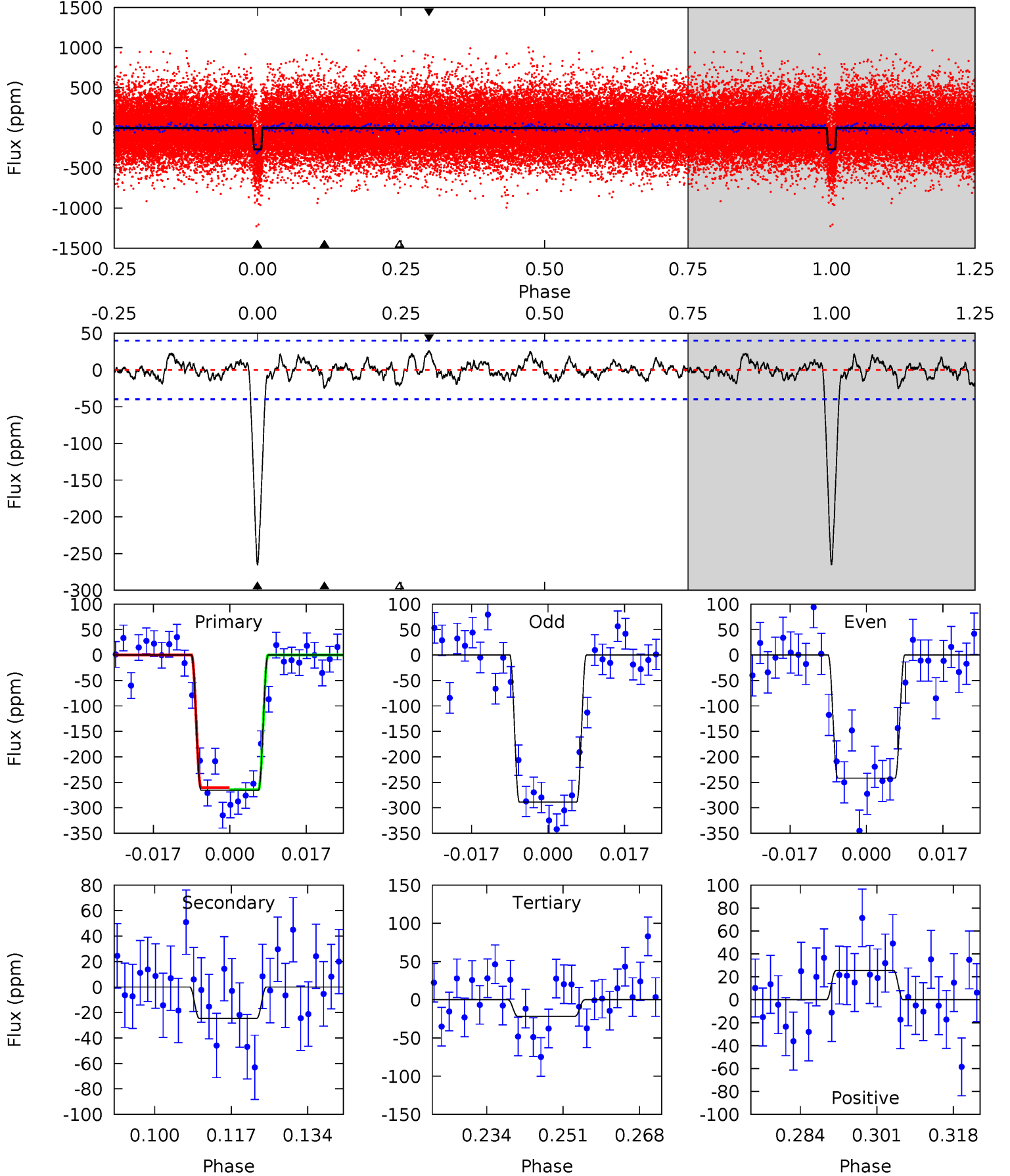
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.2	3.09	2.66	3.47	4.91	2.37	1.25	32.5	31.7	0.43	-0.38	2.02	1.05	0.09	0.38



Alt Model-Shift Uniqueness Test

011153121-01, $P = 14.970585$ Days, $E = 119.522720$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.7	3.03	2.65	3.15	4.93	2.39	1.10	30.0	29.5	0.38	-0.12	2.90	1.08	0.09	0.27



Stellar Parameters For KIC 011153121

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5726^{+114}_{-103}	$4.123^{+0.182}_{-0.098}$	$0.210^{+0.150}_{-0.150}$	$1.483^{+0.230}_{-0.316}$	$1.066^{+0.115}_{-0.086}$	$0.460^{+0.435}_{-0.138}$
	+2%/-2%	+4%/-2%	+71%/-71%	+16%/-21%	+11%/-8%	+95%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011153121-01 / KOI 1647.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 8	$2.75^{+0.70}_{-0.69}$	1226^{+57}_{-68}	3518^{+355}_{-319}	26^{+24}_{-12}
Alt.	-25 ± 8	$2.61^{+0.72}_{-0.68}$	1224^{+57}_{-70}	3581^{+408}_{-344}	29^{+28}_{-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 $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

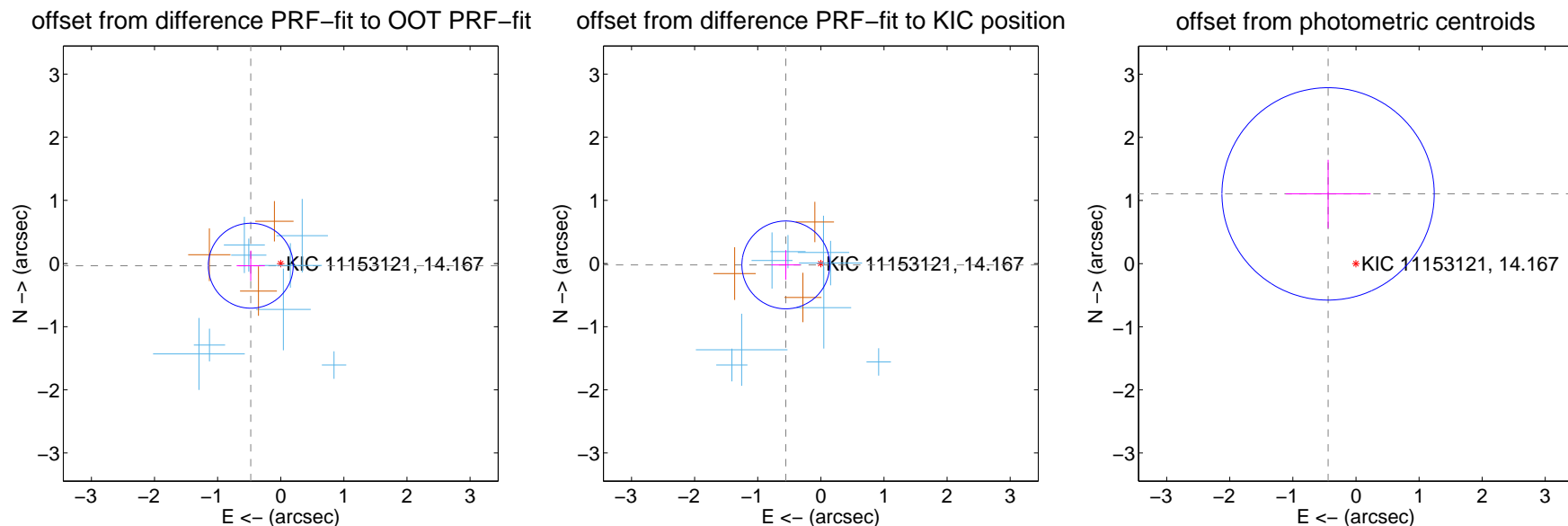
DV Centroid Data

Supplemental centroid analysis for 011153121-01. Kepler magnitude: 14.17. Transit SNR 23.99

There are 8 quarters with good PRF difference image offsets

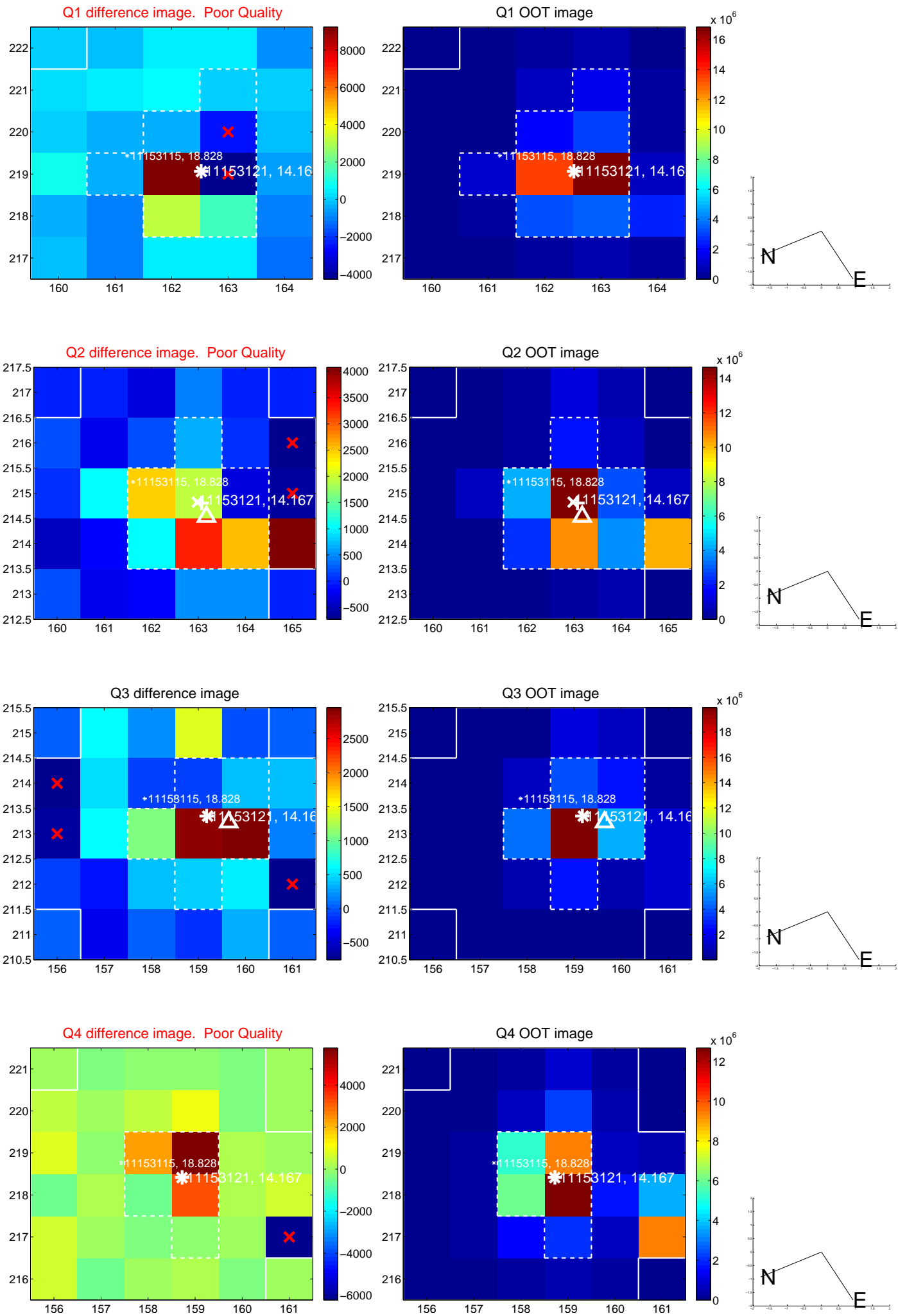
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.477 ± 0.224	2.13	0.475 ± 0.224	-0.034 ± 0.239
PRF-fit source offset from KIC position	0.556 ± 0.232	2.40	0.556 ± 0.230	-0.022 ± 0.235
photometric centroid source offset	1.19 ± 0.56	2.12	0.44 ± 0.67	1.10 ± 0.54

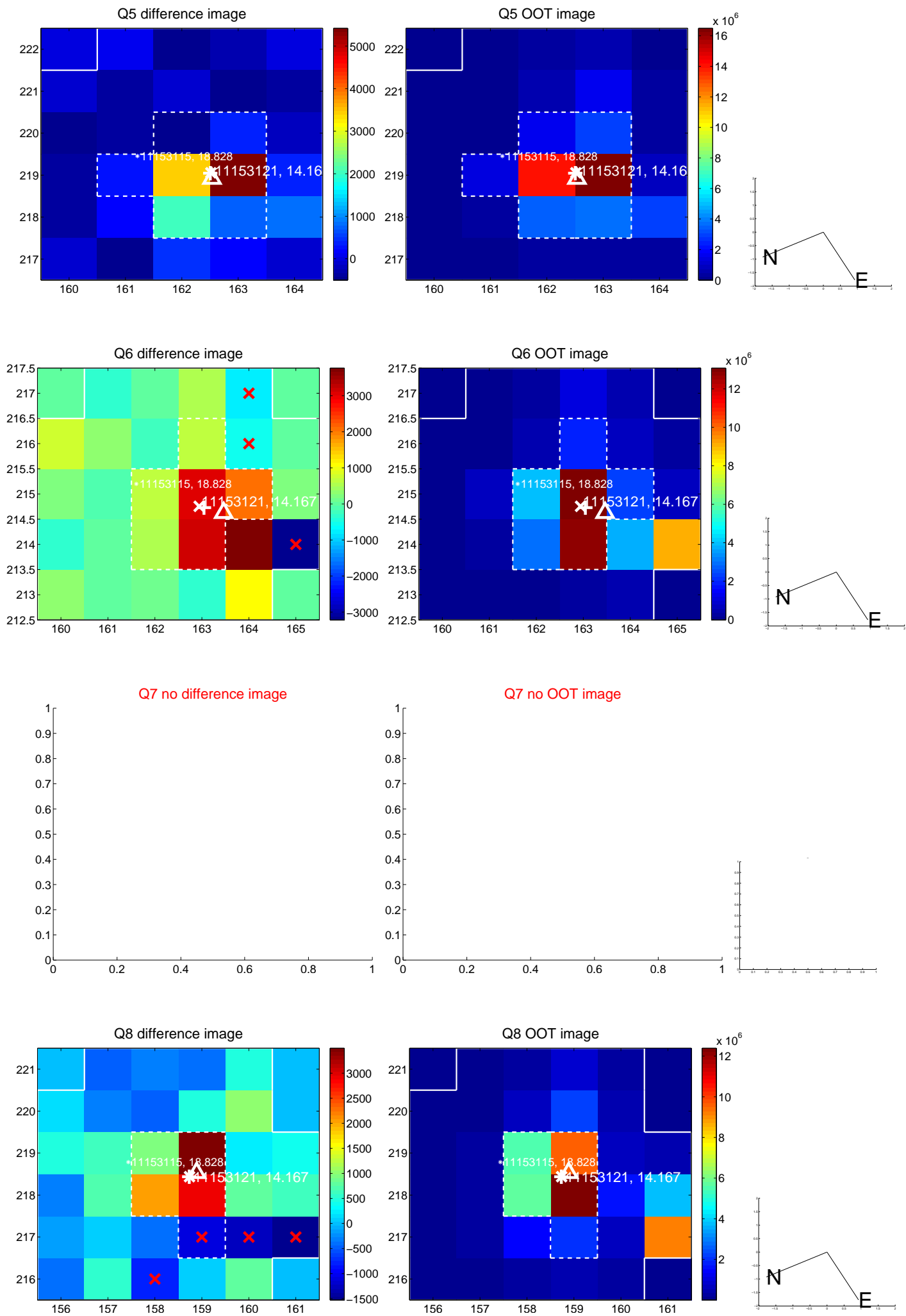


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

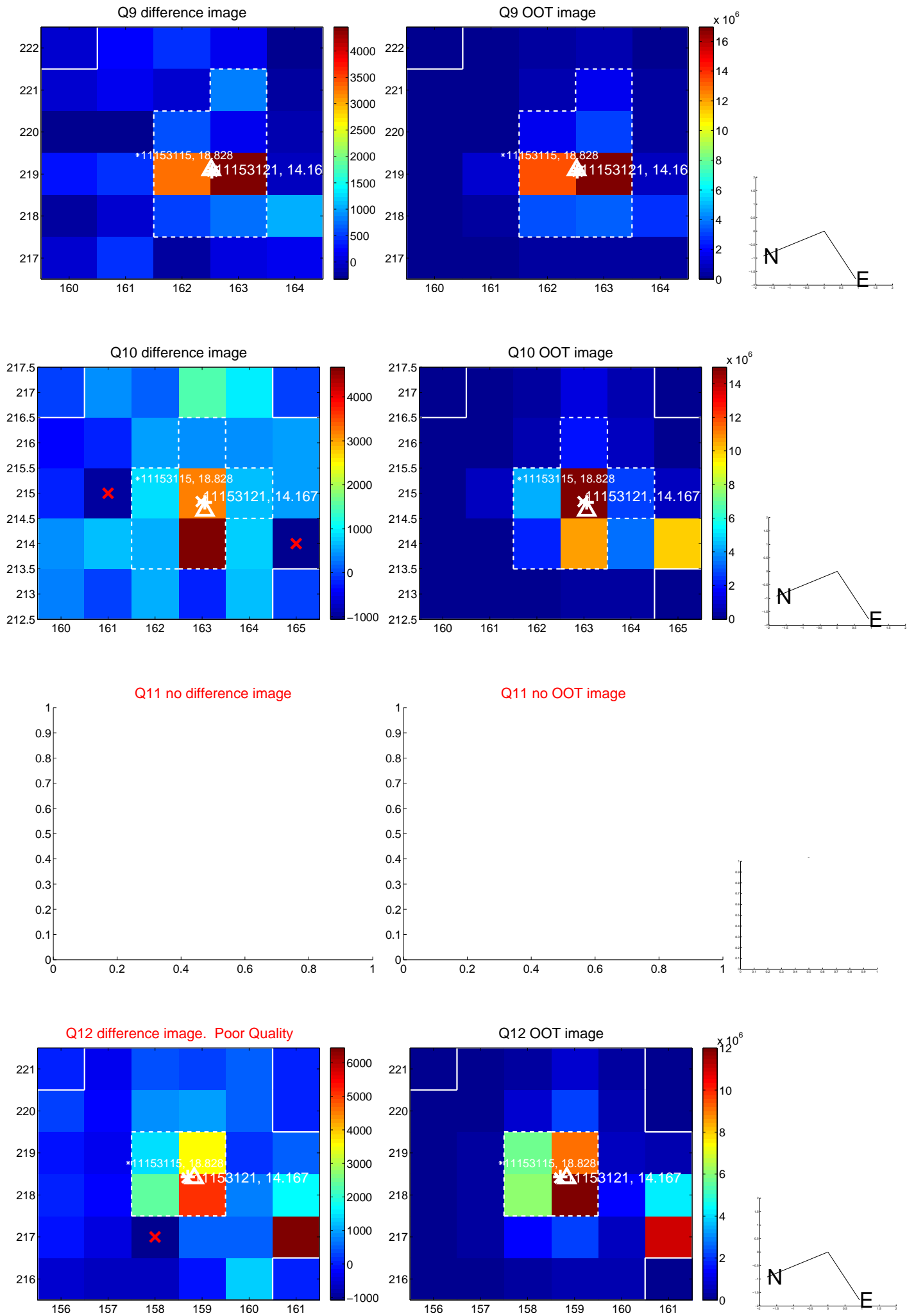
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



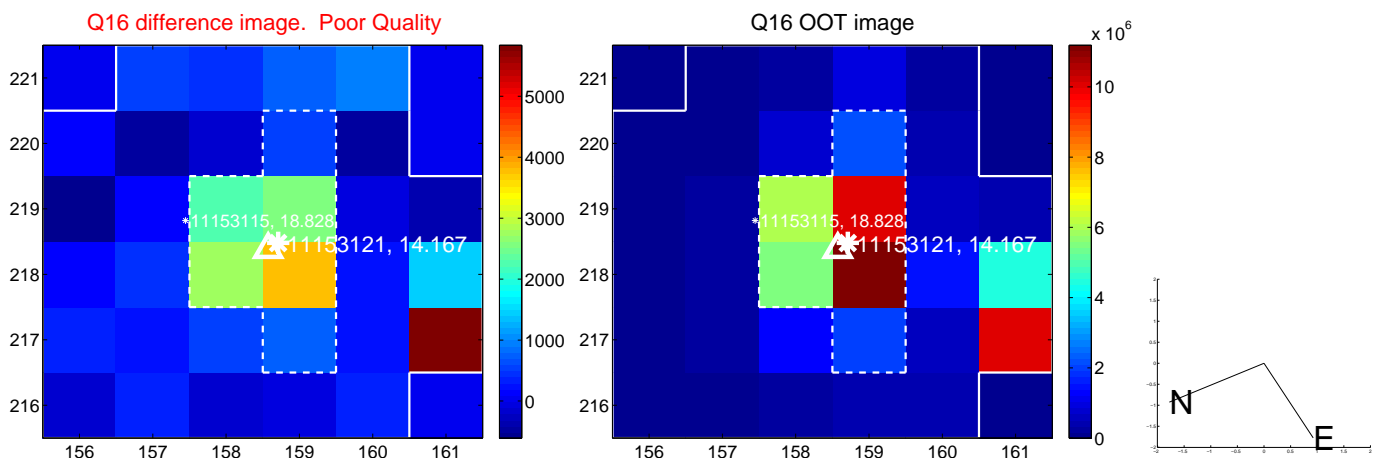
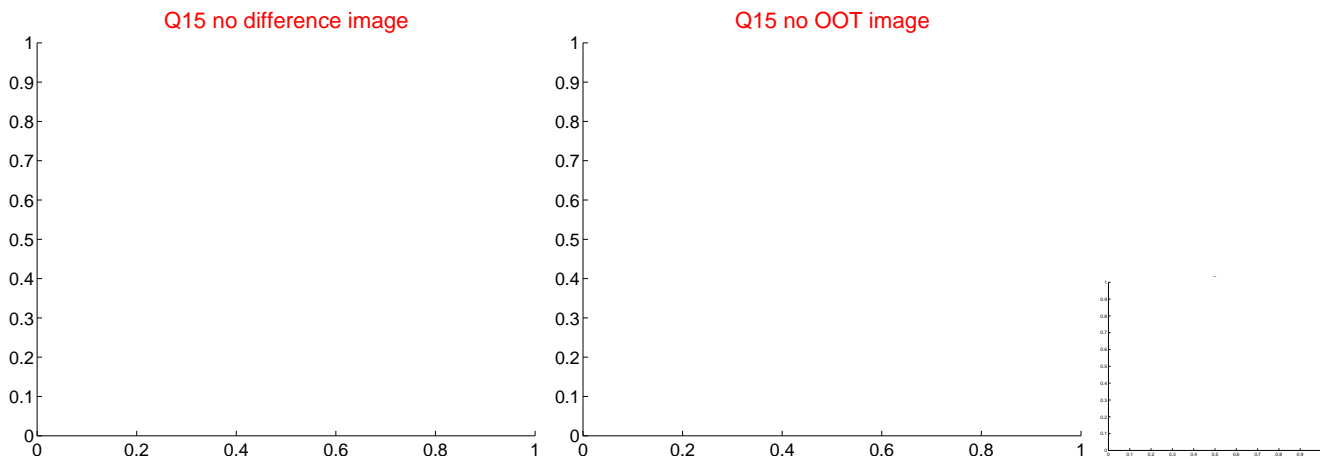
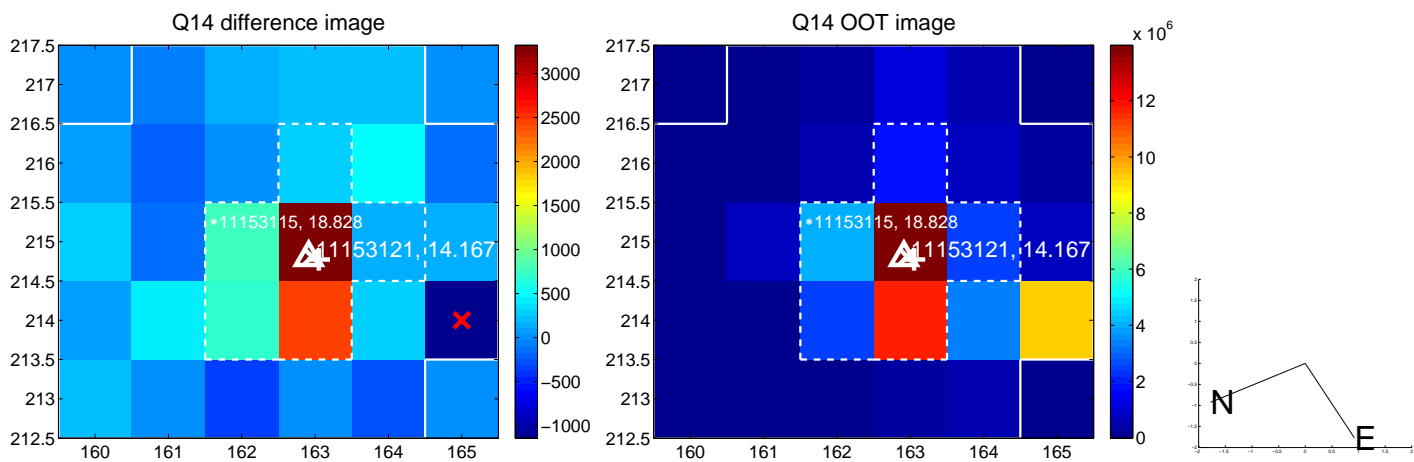
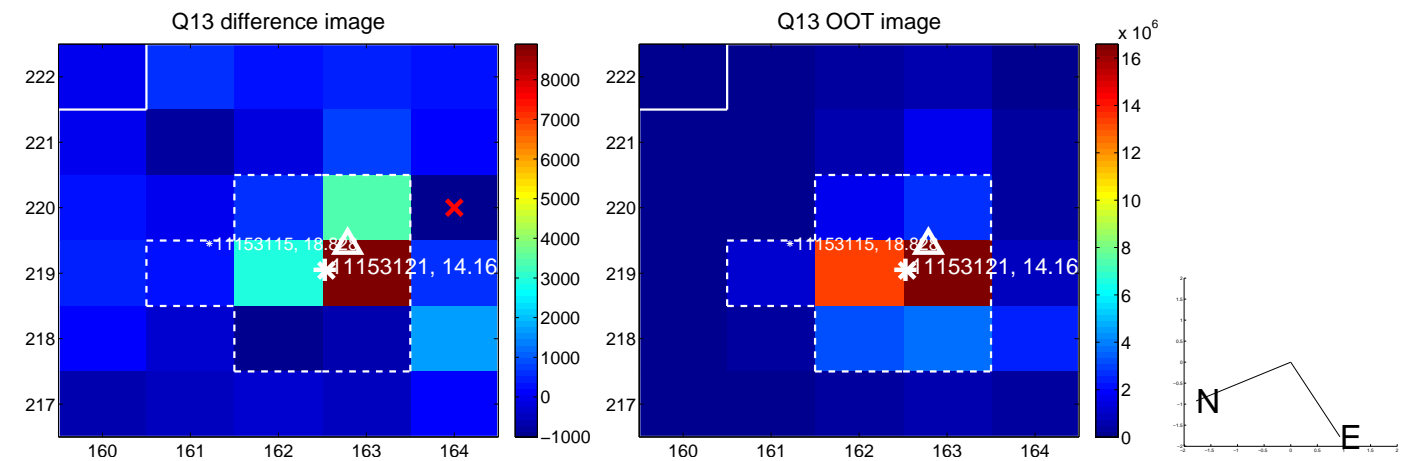
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



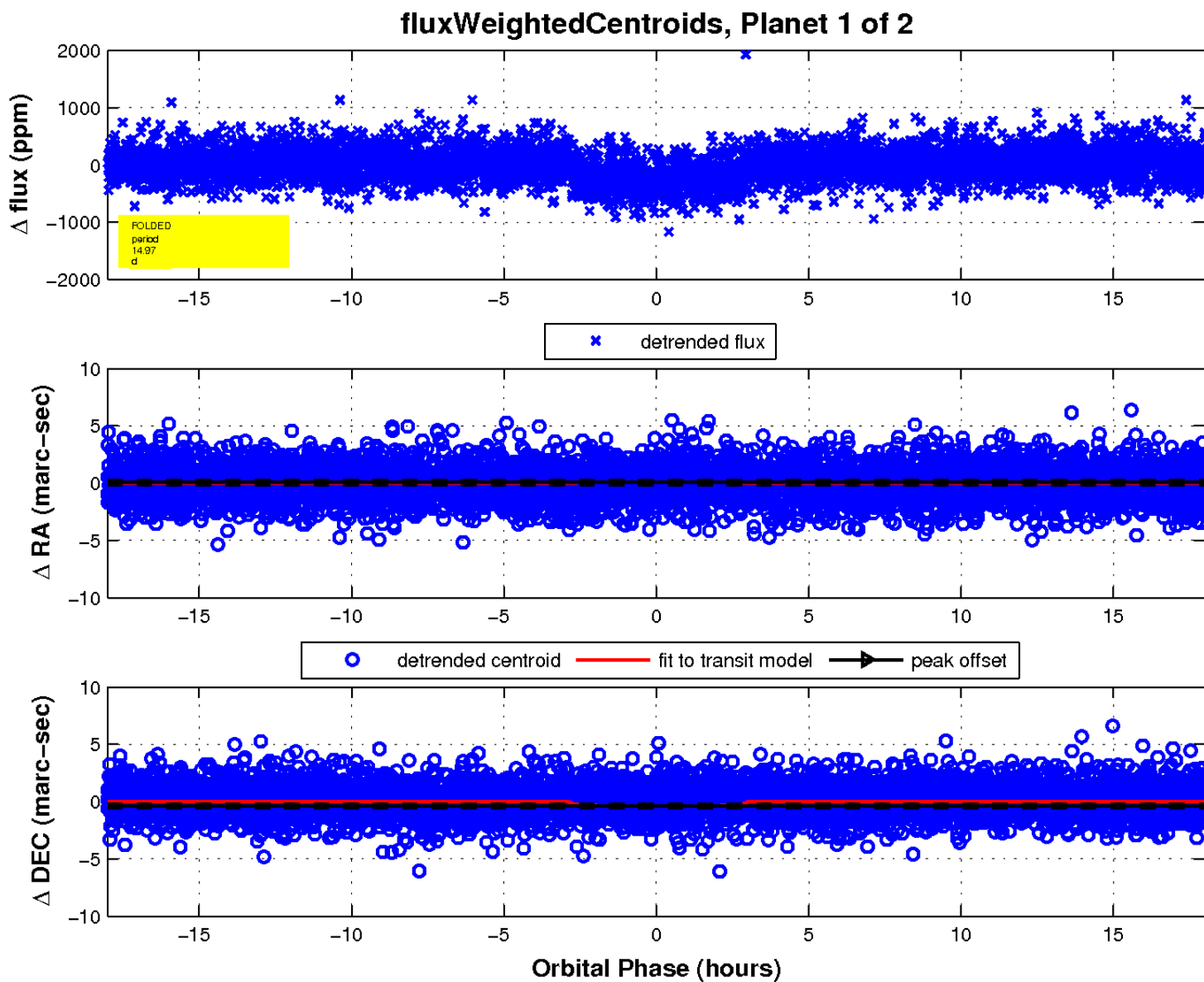
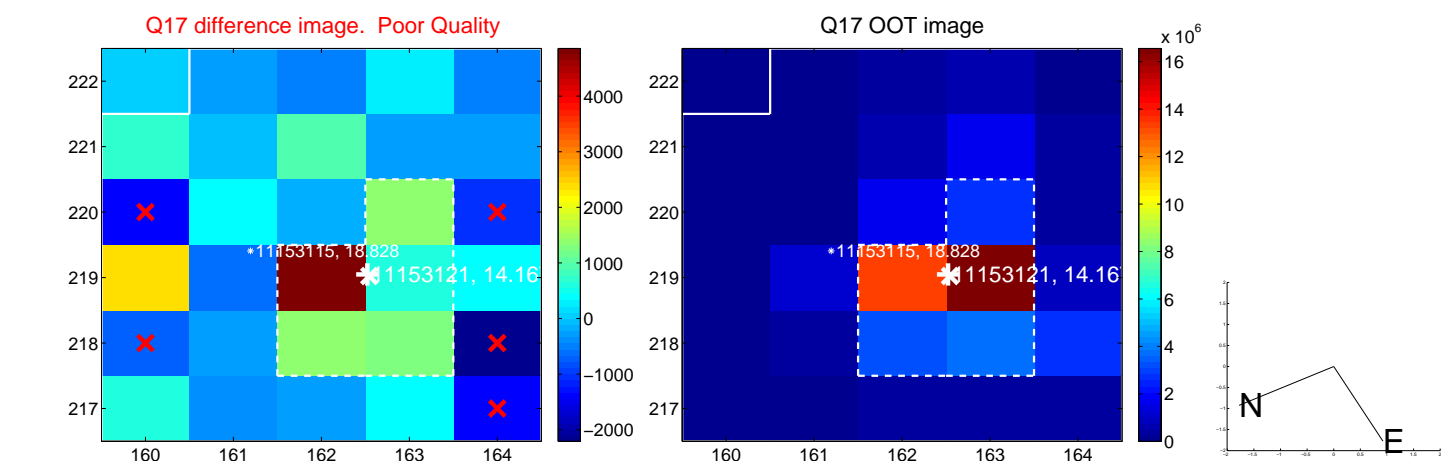
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

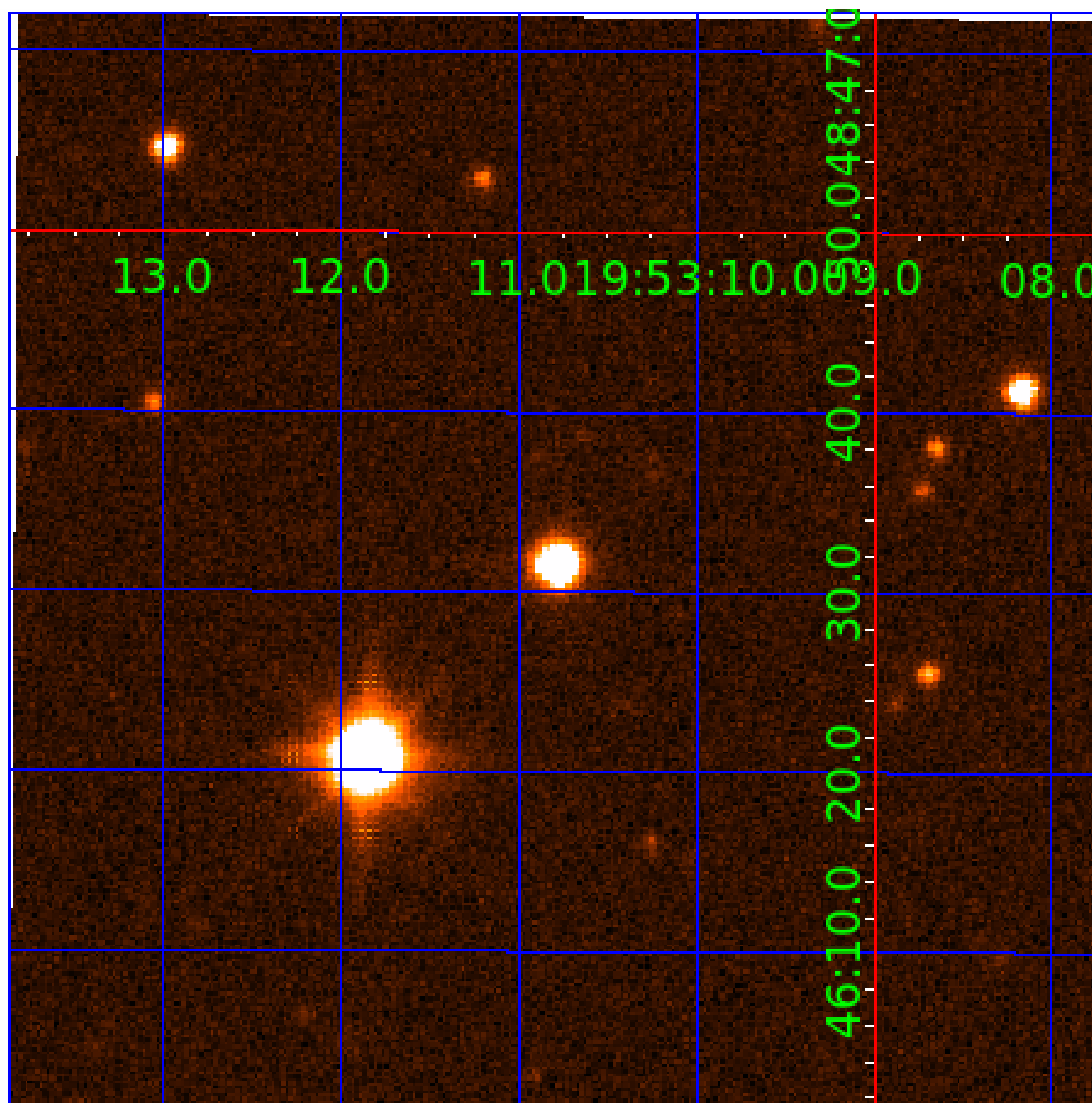


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 011153121

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})
011153121-01	OBS	1647.01	14.970247	134.504998	284.2	6.004	23.4	24.0	1.48	5726	2.79	143.69
011153121-02	OBS	1647.02	32.275768	149.059772	232.5	7.362	11.4	13.1	1.48	5726	2.85	51.59

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011153121-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
011153121-02	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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

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

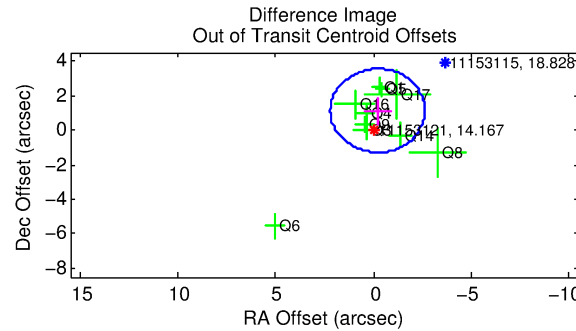
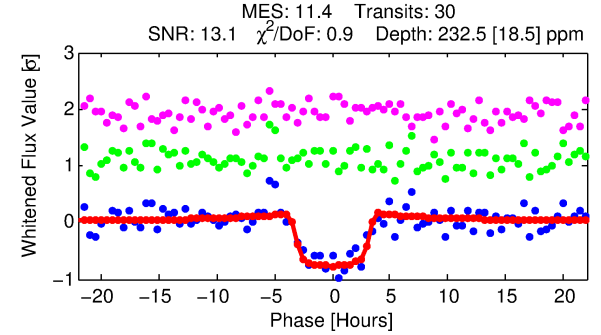
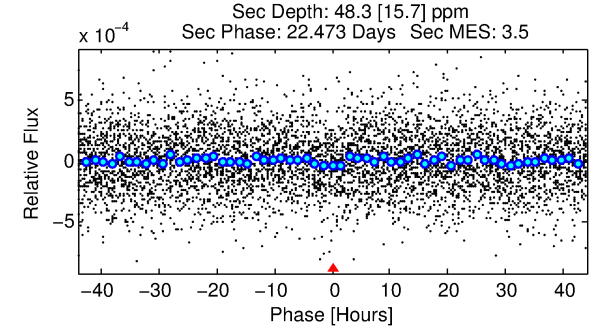
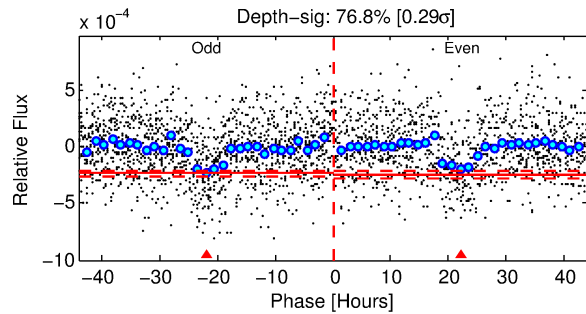
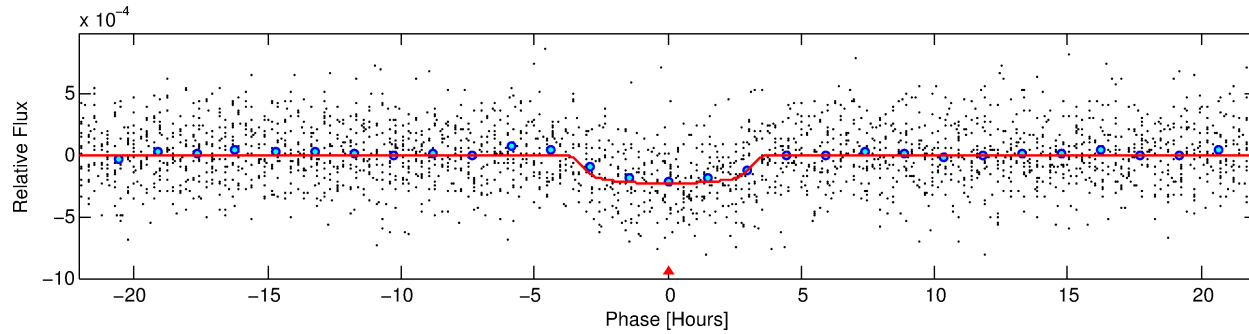
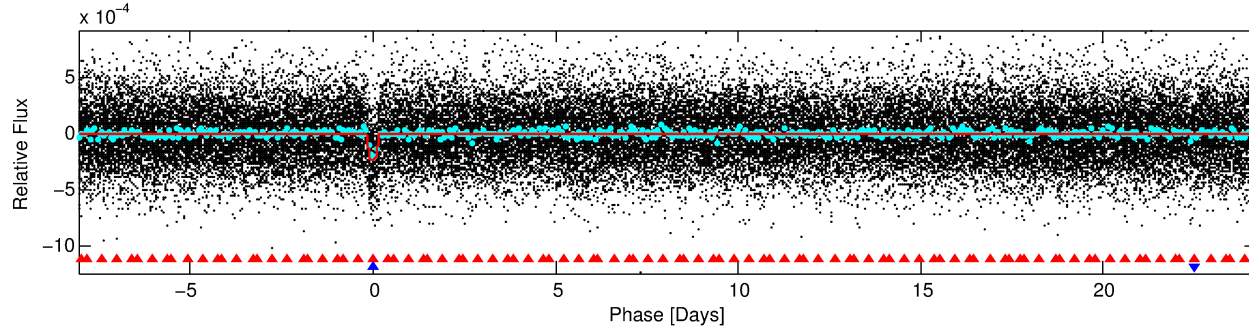
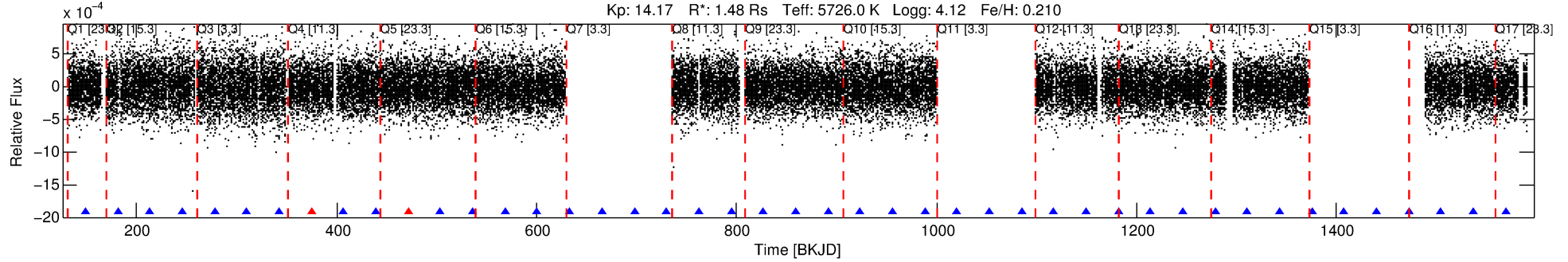
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011153121-02

No Significant Match Found

DV One-Page Summary

KIC: 11153121 Candidate: 2 of 2 Period: 32.276 d
KOI: K01647.02 Name: Kepler-313c Corr: 0.967



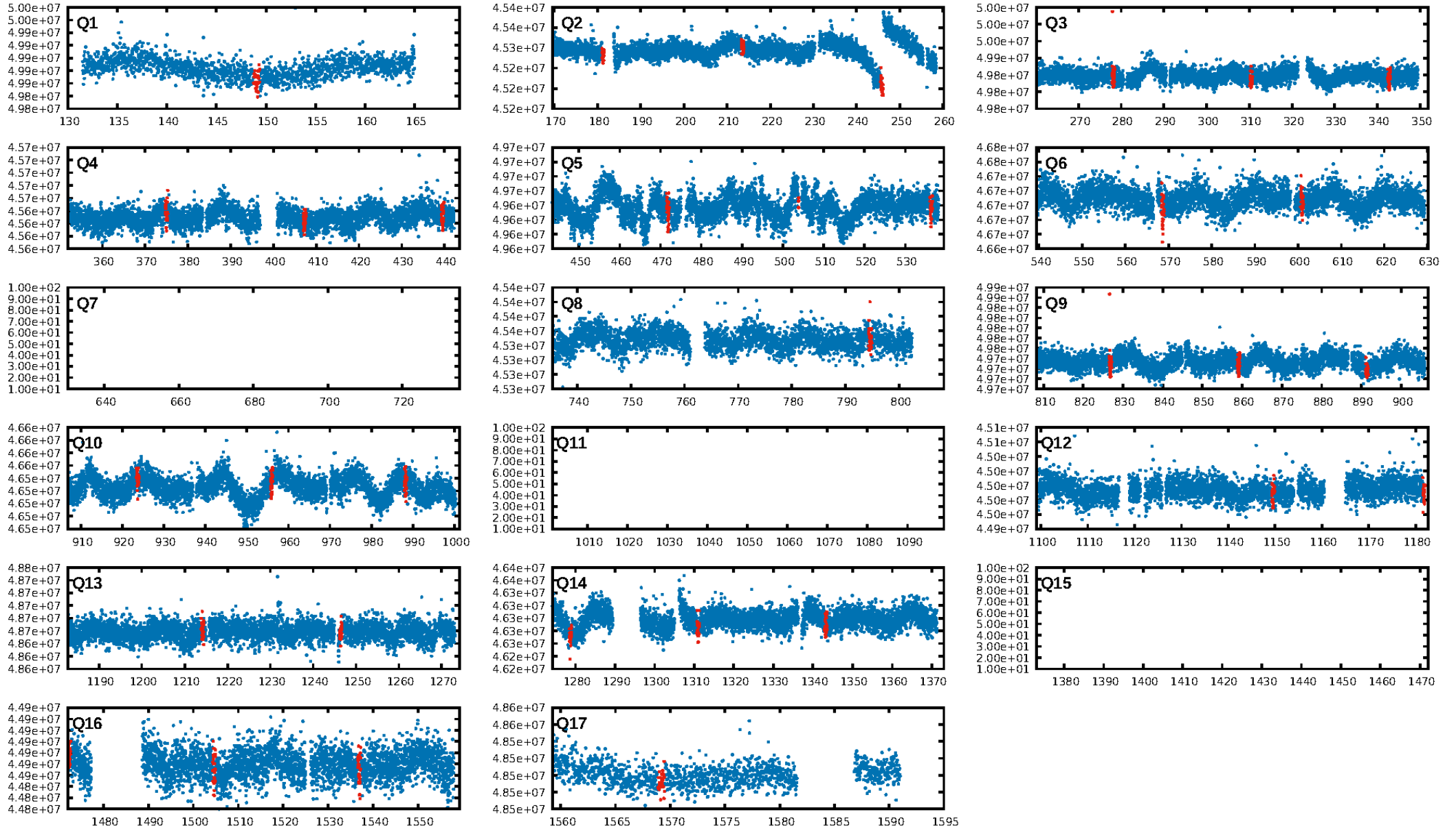
DV Fit Results:

Period = 32.27577 [0.00037] d
Epoch = 149.0598 [0.0095] BKJD
Rp/R* = 0.0176 [0.0015]
a/R* = 12.94 [4.41]
b = 0.94 [0.04]
Seff = 51.59 [16.68]
Teff = 683 [55] K
Rp = 2.85 [0.65] Re
a = 0.2026 [0.0404] AU
Ag = 134.66 [65.03] [2.06σ]
Teffp = 3599 [338] K [8.51σ]

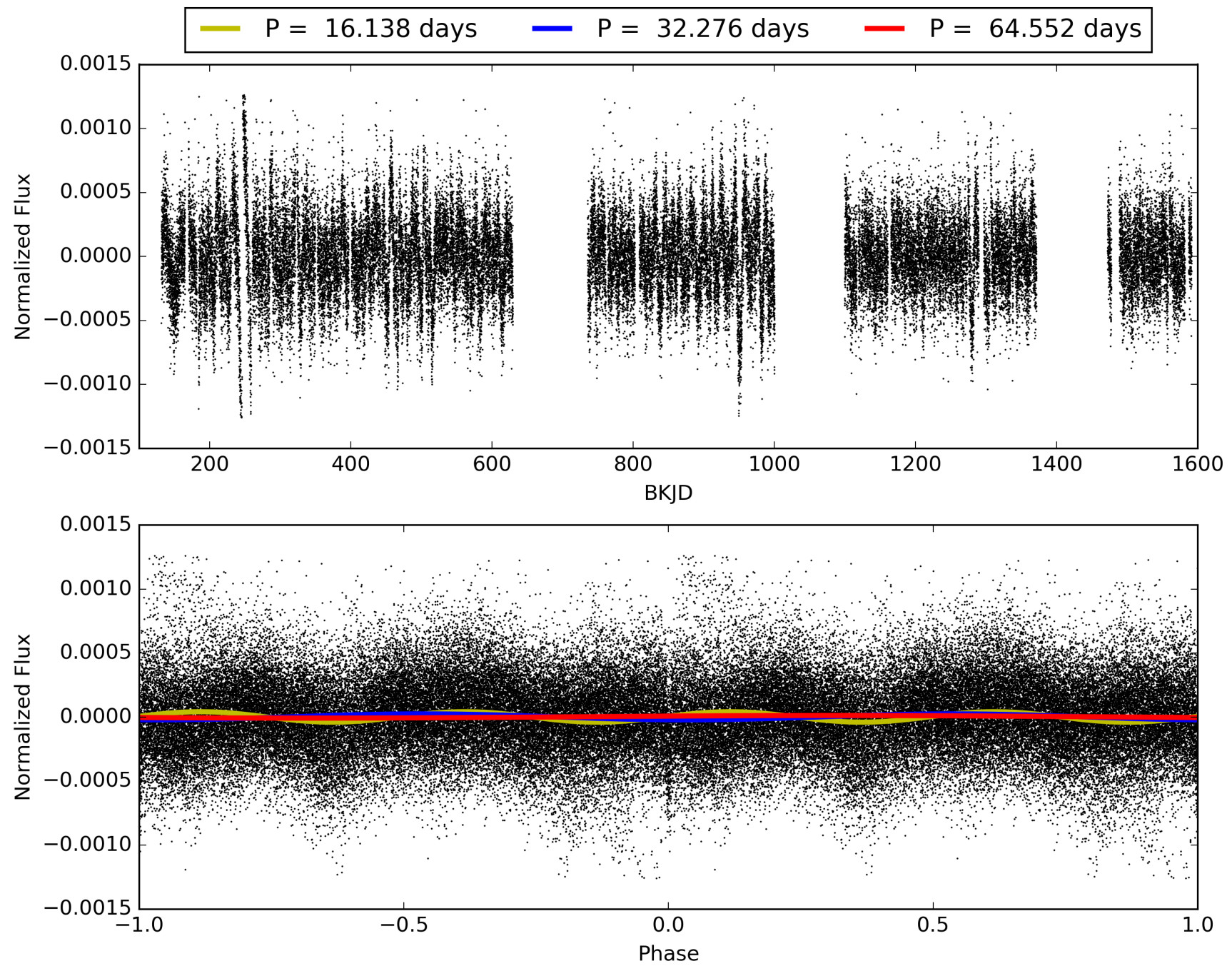
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [43.72σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 87.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.81e-29
RollingBand-fgt: 0.93 [26/28]
GhostDiagnostic-chr: 6.212
Centroid-sig: 0.0%
Centroid-so: 2.874 arcsec [2.95σ]
OotOffset-rm: 1.146 arcsec [1.42σ]
KicOffset-rm: 1.176 arcsec [1.56σ]
OotOffset-st: 2/1/3/4 [10]
KicOffset-st: 2/1/3/4 [10]
DiffImageQuality-fgm: 0.80 [8/10]
DiffImageOverlap-fno: 0.93 [13/14]

TCE 011153121-02, PDC Light Curves

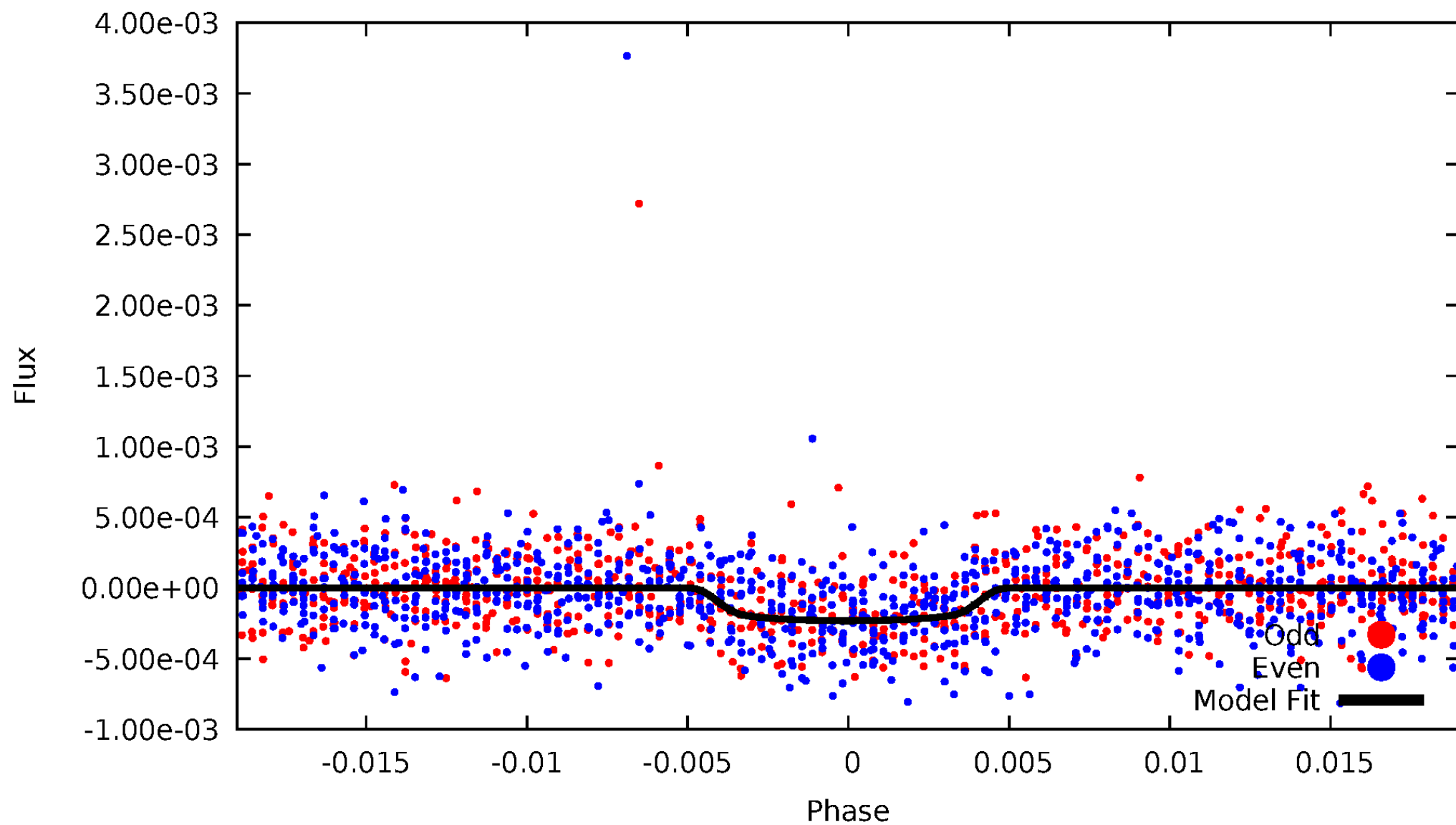


TCE 011153121-02



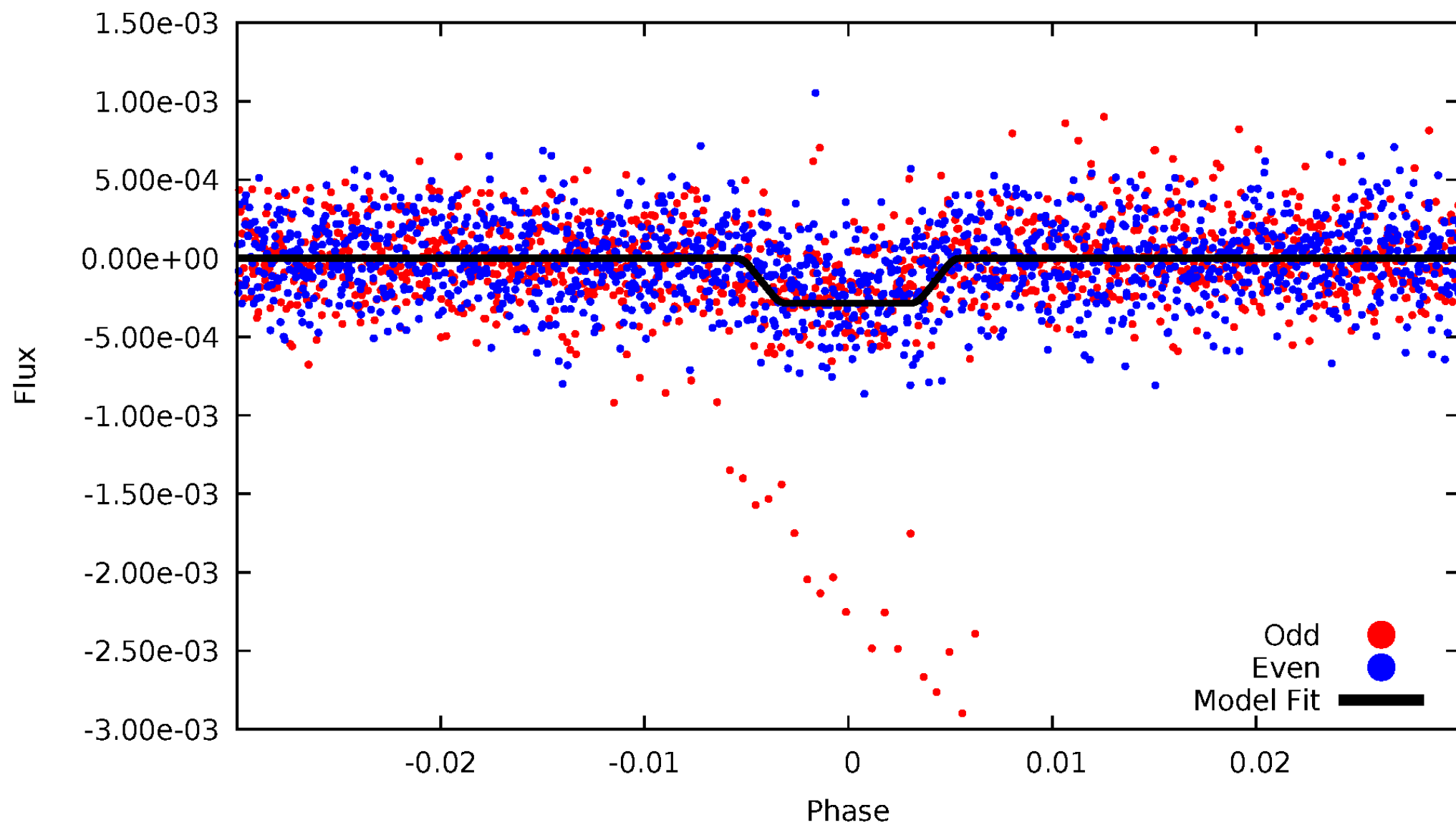
DV Odd/Even

TCE 011153121-02



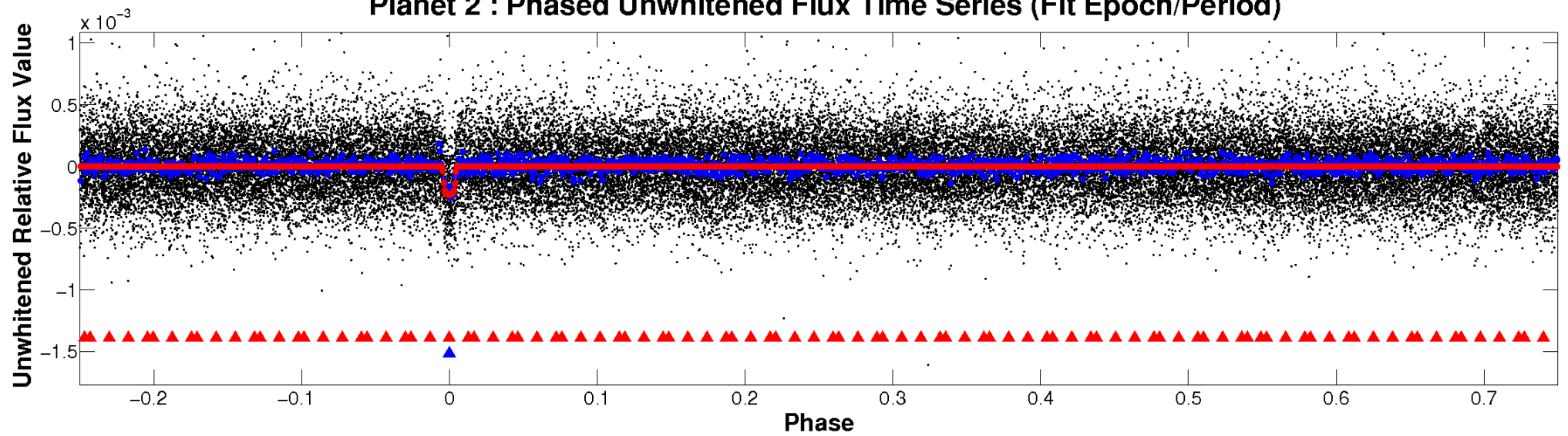
ALT Odd/Even

TCE 011153121-02

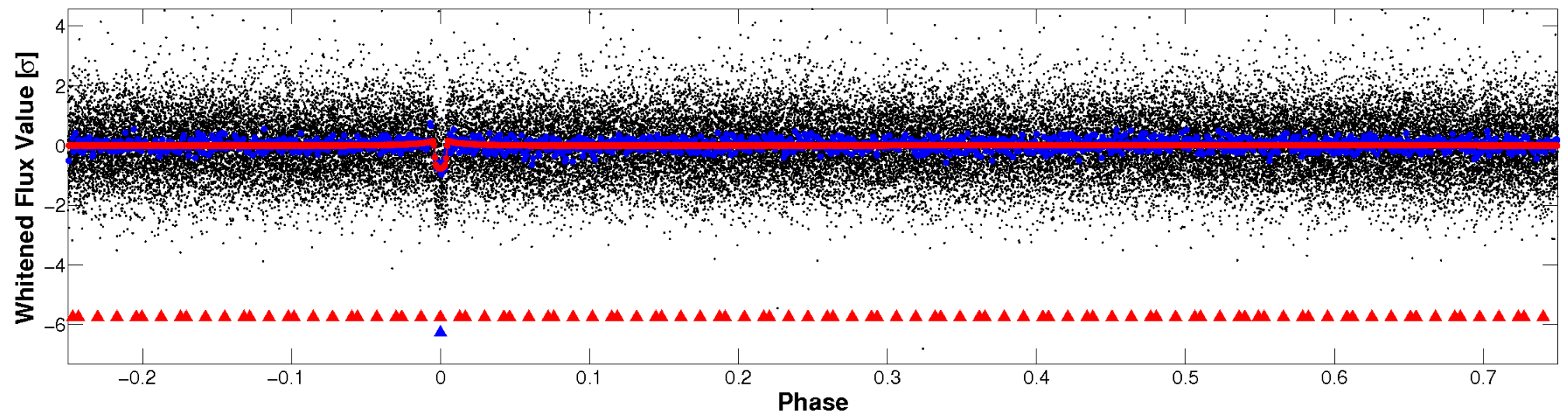


Non-Whitened Vs. Whitened Light Curve

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

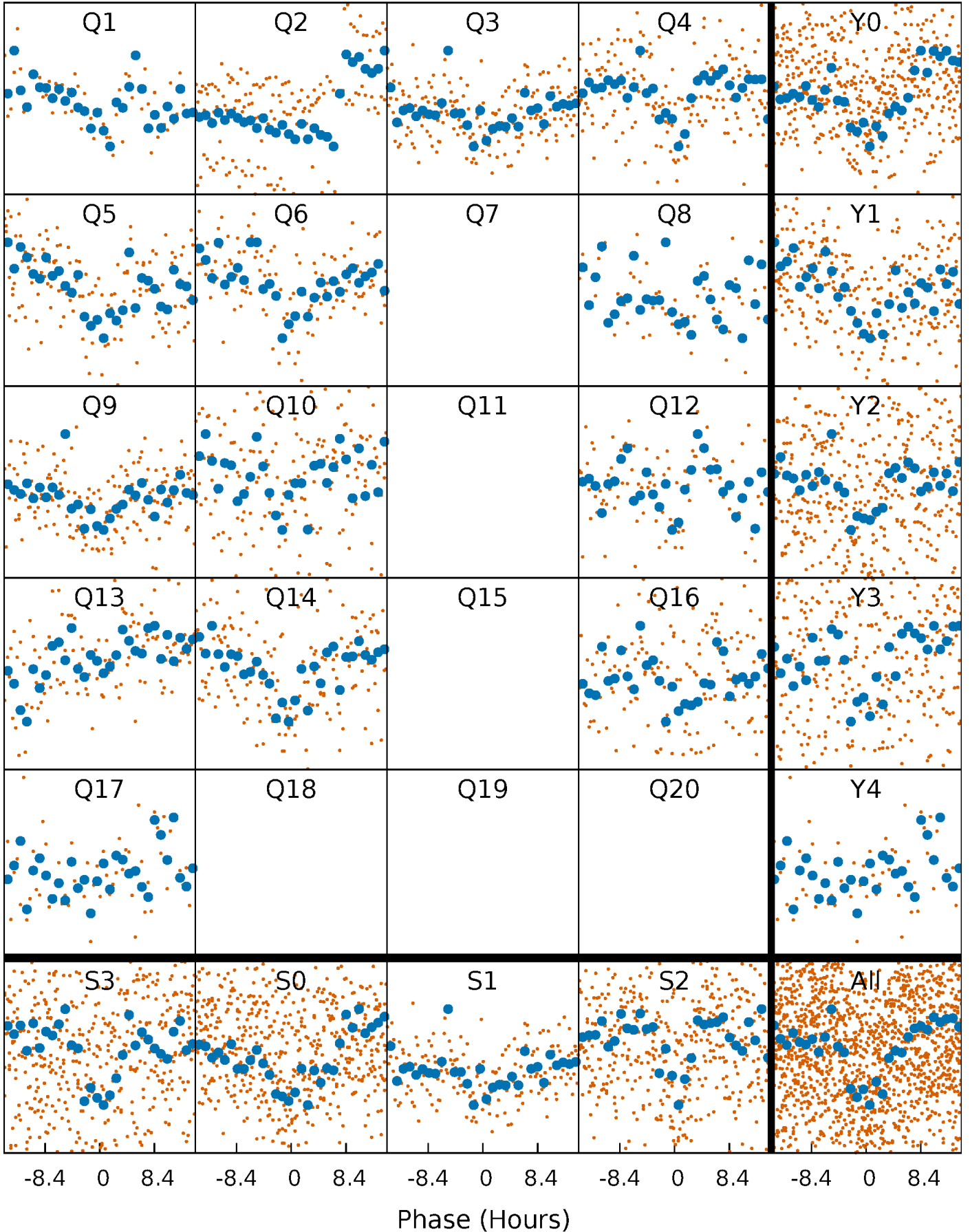


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



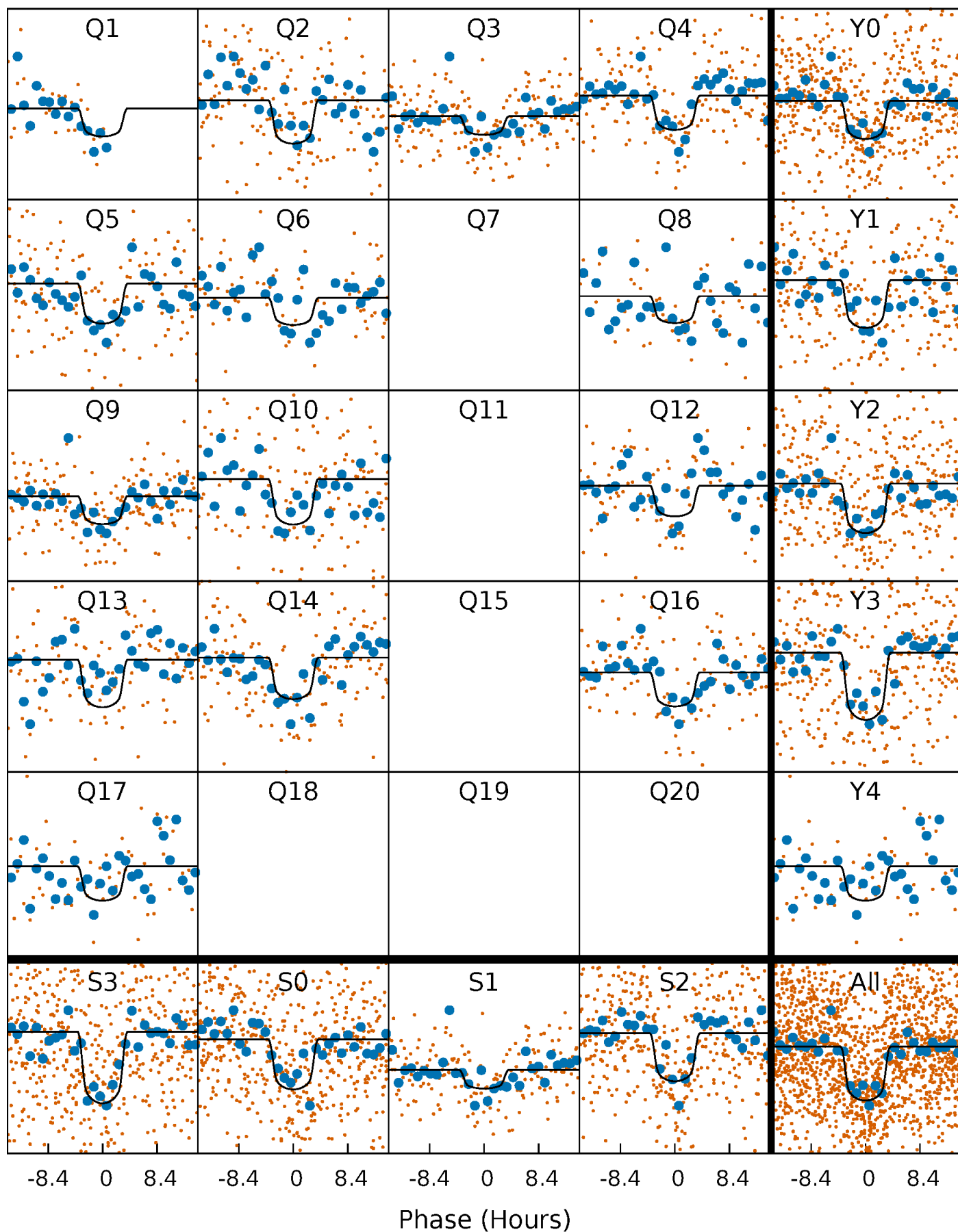
PDC Quarter-Phased Transit Curves

TCE 011153121-02 P= 32.275768 Days $T_0=149.059773$ (BKJD)



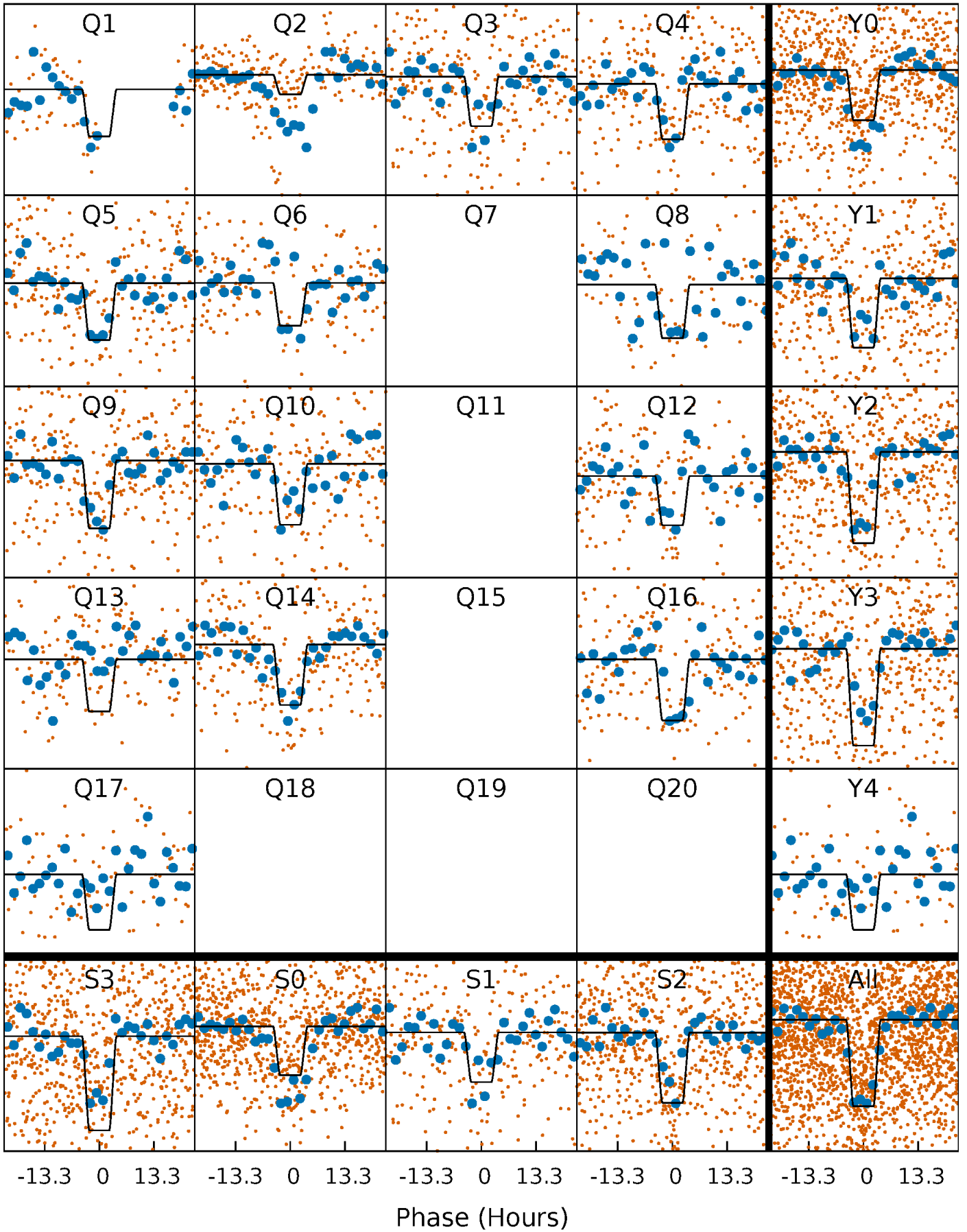
DV Quarter-Phased Transit Curves

TCE 011153121-02 P= 32.275768 Days $T_0=149.059773$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

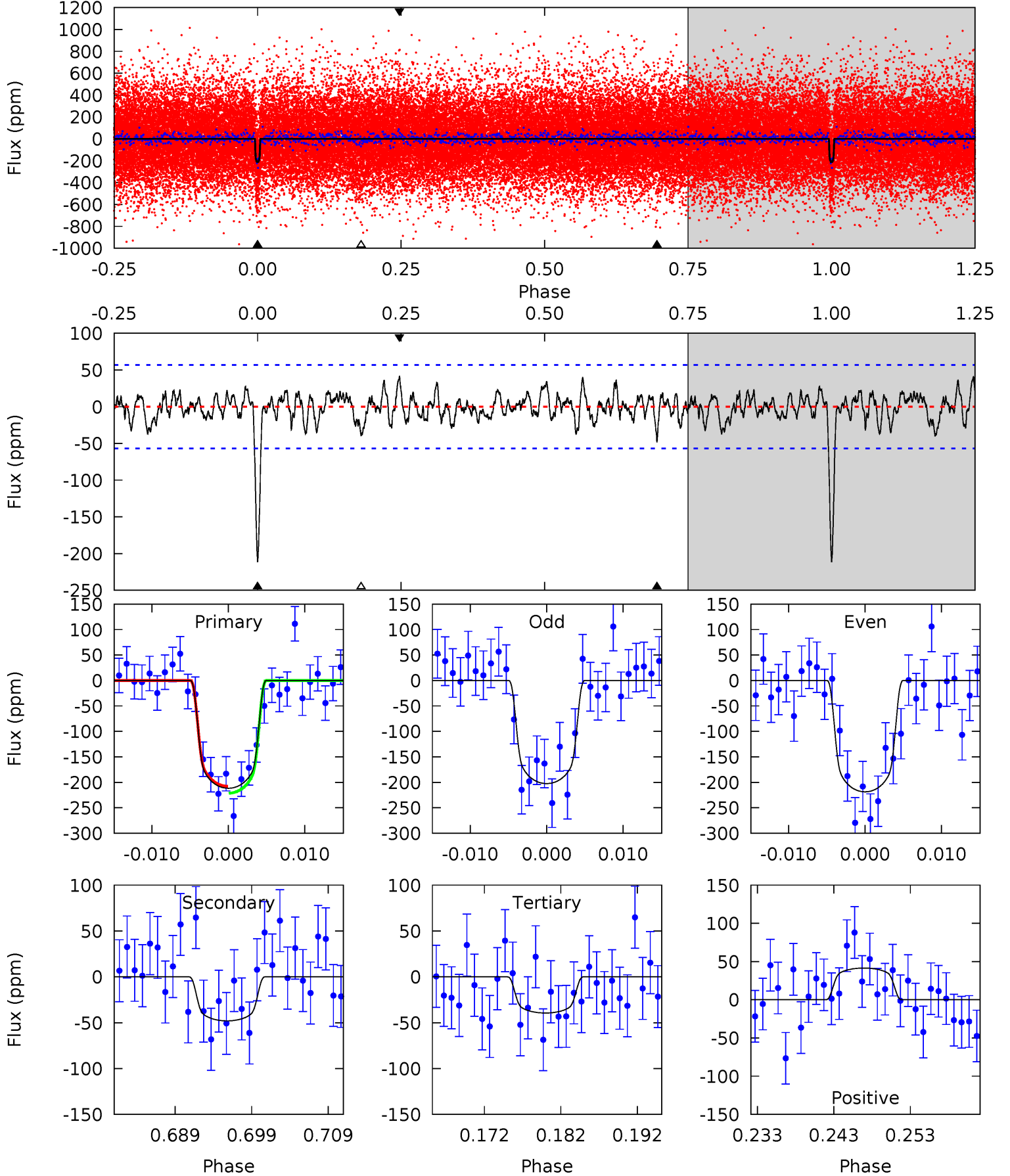
TCE 011153121-02 P= 32.274446 Days $T_0=149.101851$ (BKJD)



DV Model-Shift Uniqueness Test

011153121-02, P = 32.275768 Days, E = 116.784005 Days

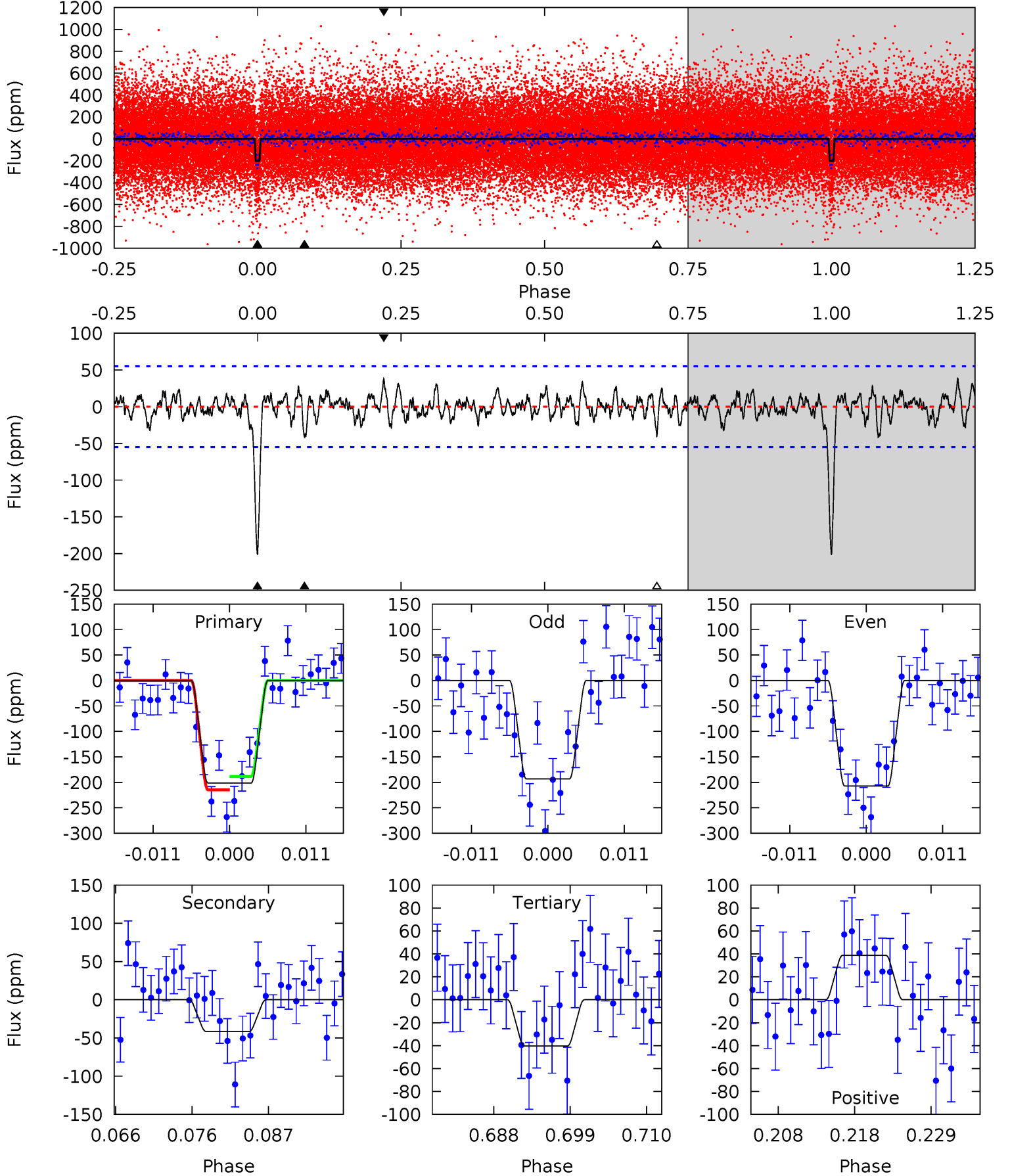
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.7	4.25	3.49	3.67	5.02	2.57	1.27	15.2	15.0	0.76	0.58	0.71	0.94	0.16	0.60



Alt Model-Shift Uniqueness Test

011153121-02, $P = 32.274446$ Days, $E = 116.827405$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.3	3.77	3.67	3.53	5.01	2.55	1.09	14.7	14.8	0.11	0.25	0.62	1.34	0.16	1.20



Stellar Parameters For KIC 011153121

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5726^{+114}_{-103}	$4.123^{+0.182}_{-0.098}$	$0.210^{+0.150}_{-0.150}$	$1.483^{+0.230}_{-0.316}$	$1.066^{+0.115}_{-0.086}$	$0.460^{+0.435}_{-0.138}$
	+2%/-2%	+4%/-2%	+71%/-71%	+16%/-21%	+11%/-8%	+95%/-30%
Source	SPE58	SPE58	SPE58	DSEP		

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

Secondary Eclipse Parameters for KIC 011153121-02 / KOI 1647.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48 ± 11	$2.84^{+0.36}_{-0.41}$	951^{+44}_{-55}	3912^{+215}_{-219}	135^{+62}_{-43}
Alt.	-41 ± 11	$2.72^{+0.33}_{-0.39}$	949^{+45}_{-51}	3872^{+236}_{-232}	129^{+55}_{-43}

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

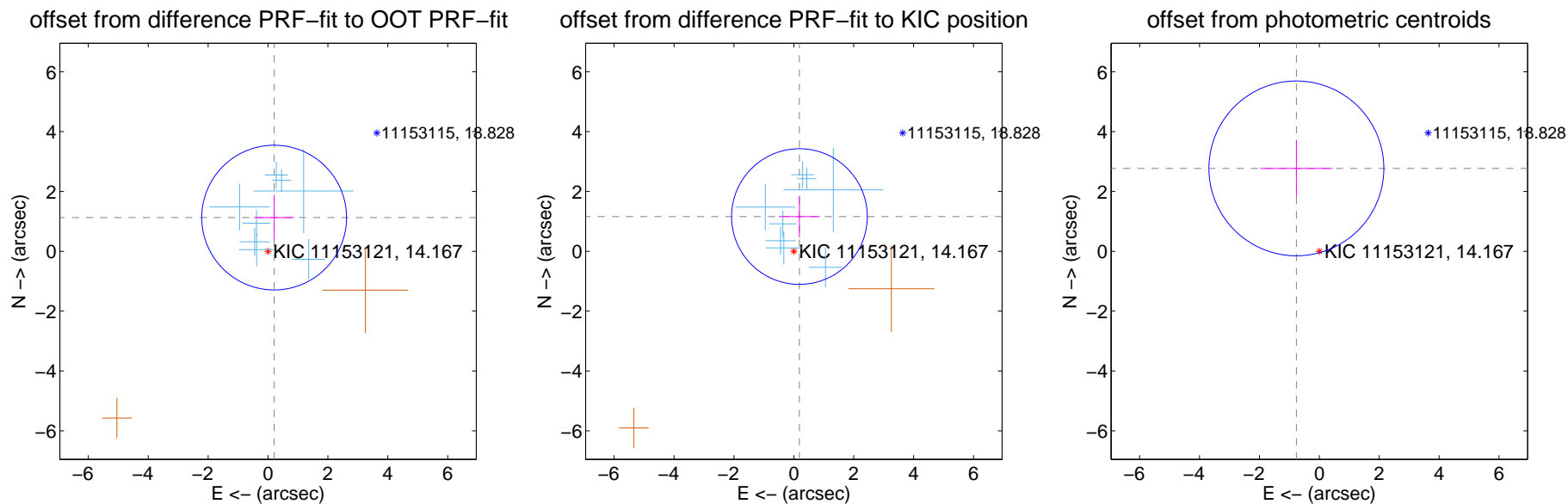
DV Centroid Data

Supplemental centroid analysis for 011153121-02. Kepler magnitude: 14.17. Transit SNR 13.05

There are 8 quarters with good PRF difference image offsets

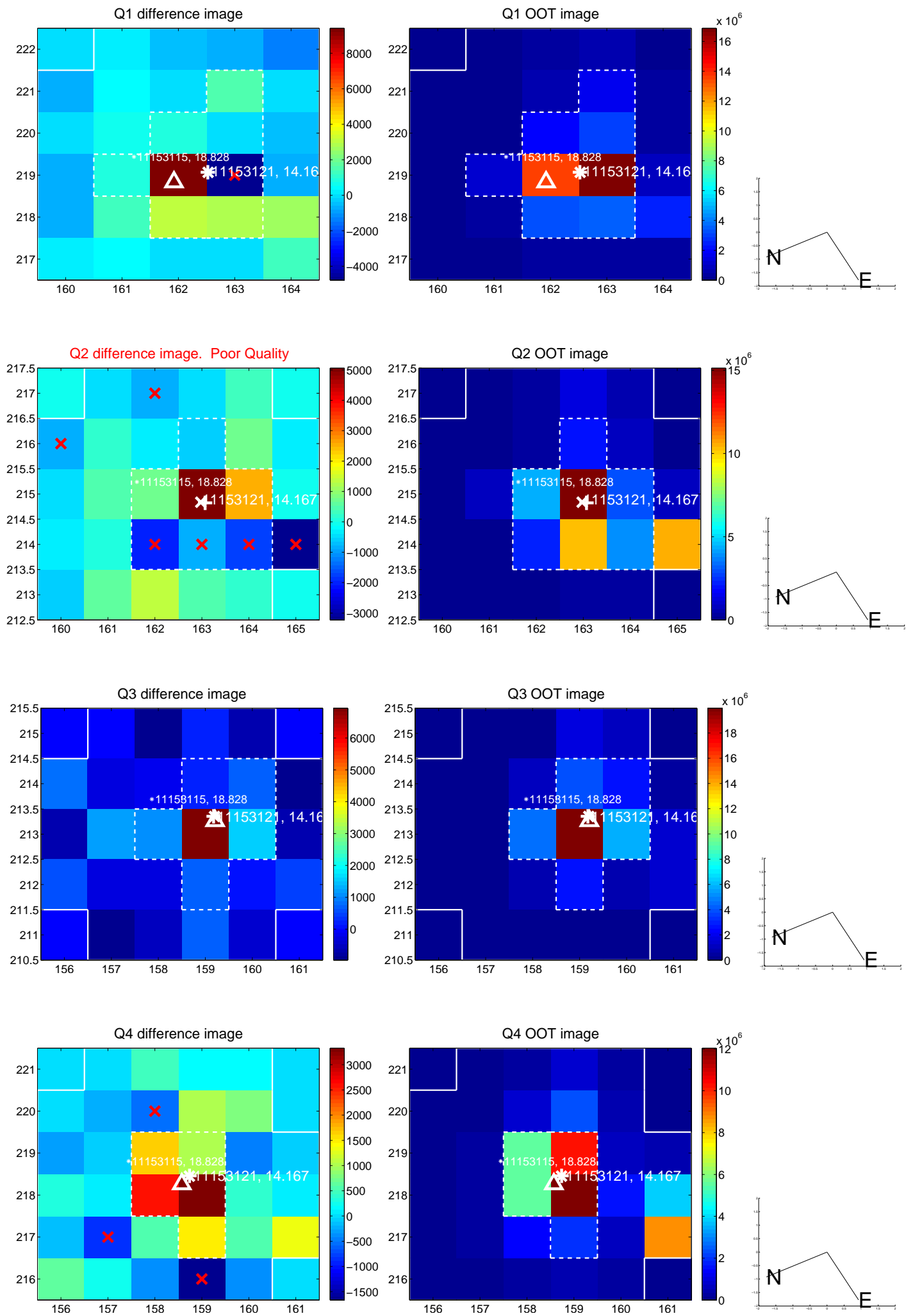
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.146 ± 0.806	1.42	-0.205 ± 0.672	1.127 ± 0.746
PRF-fit source offset from KIC position	1.176 ± 0.755	1.56	-0.187 ± 0.682	1.161 ± 0.698
photometric centroid source offset	2.87 ± 0.97	2.95	0.77 ± 1.21	2.77 ± 0.95

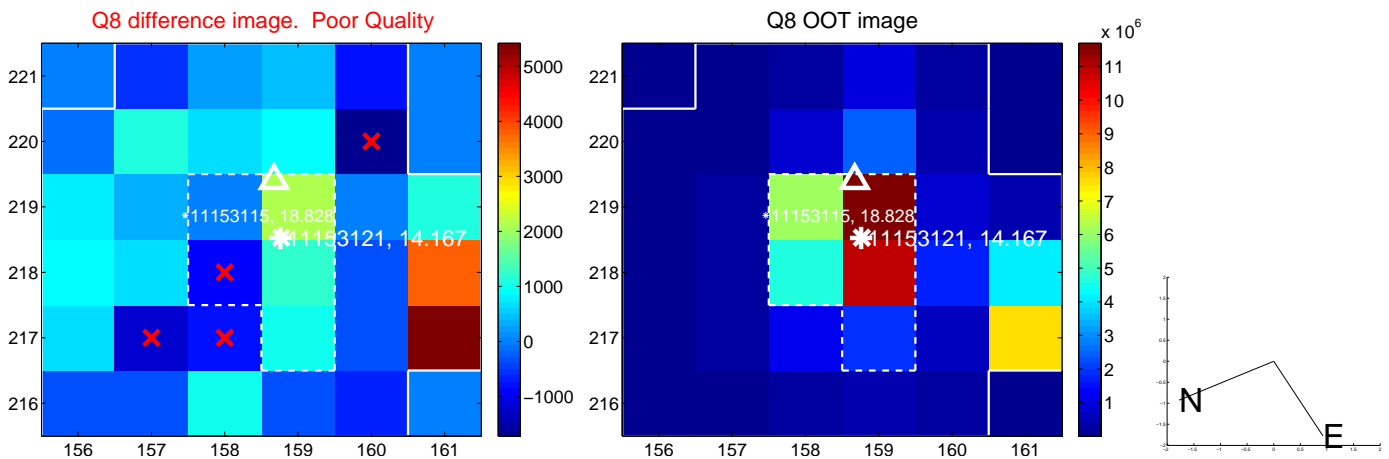
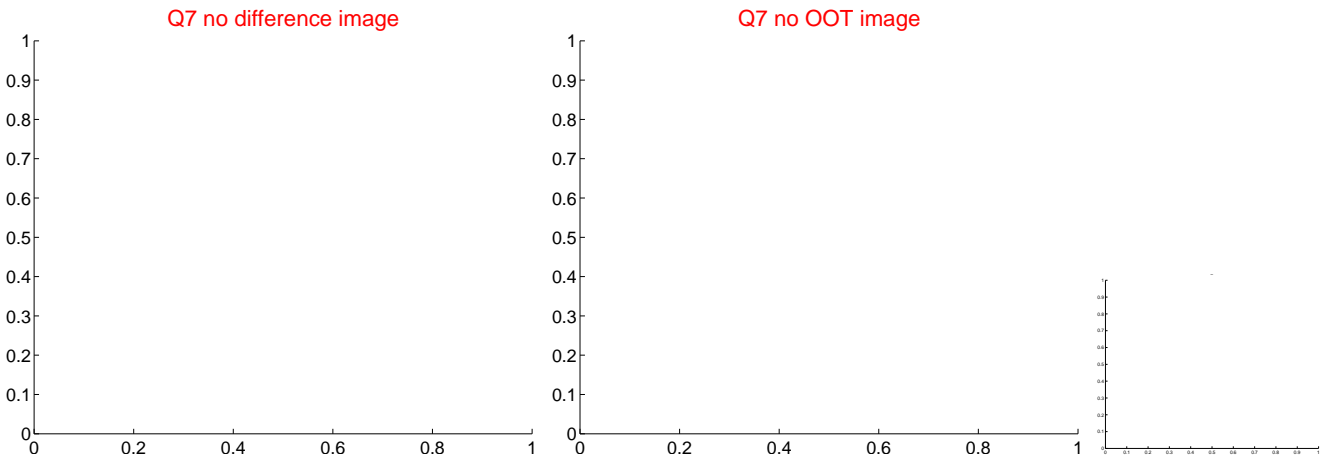
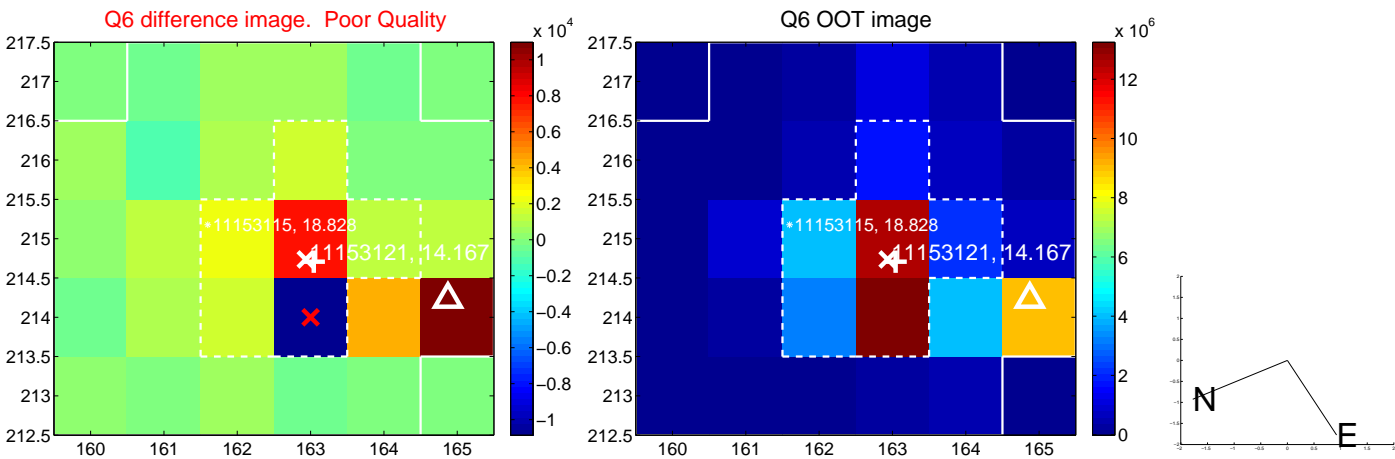
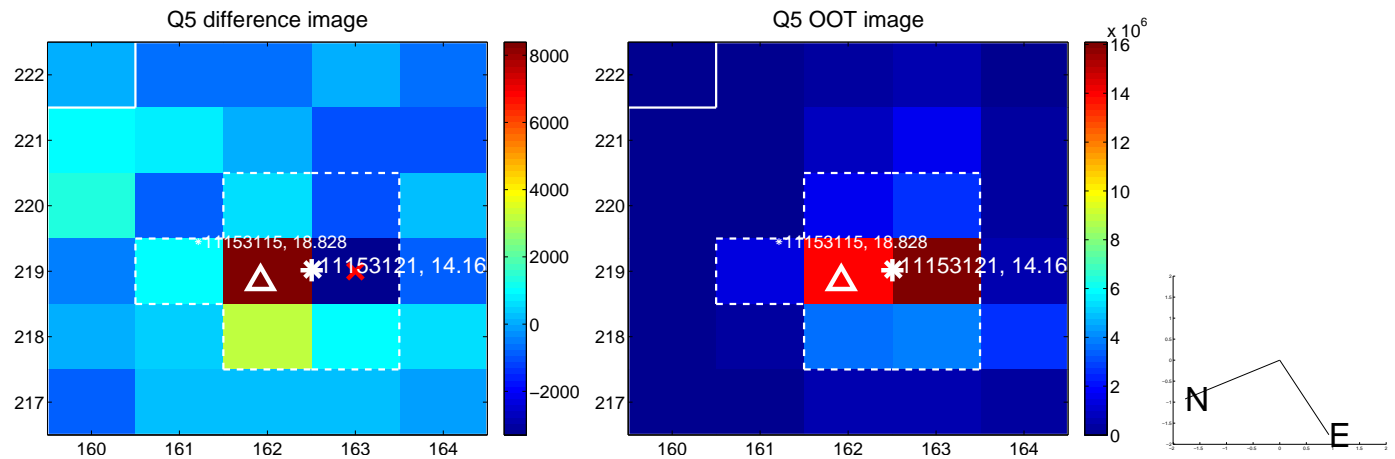


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

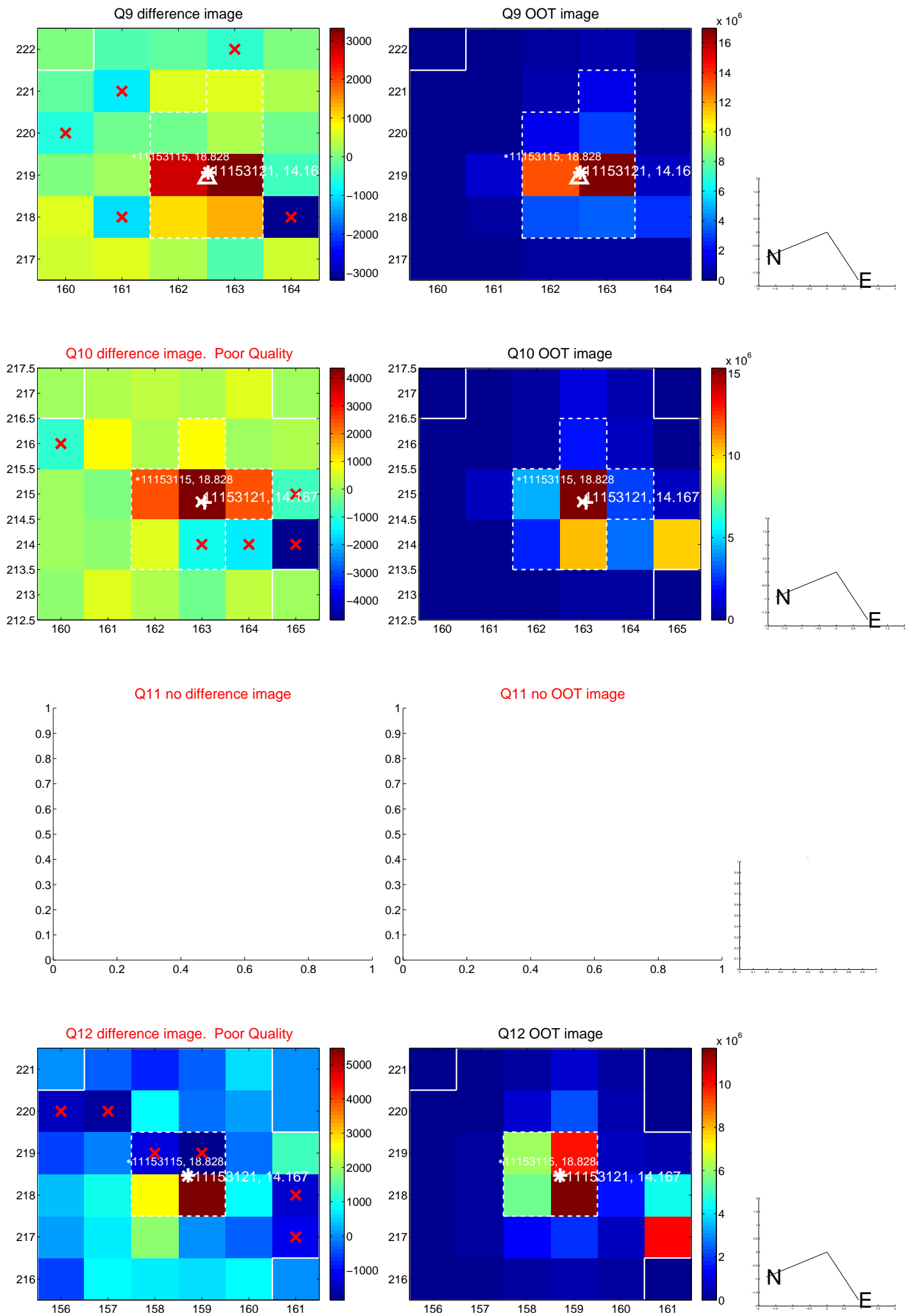
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



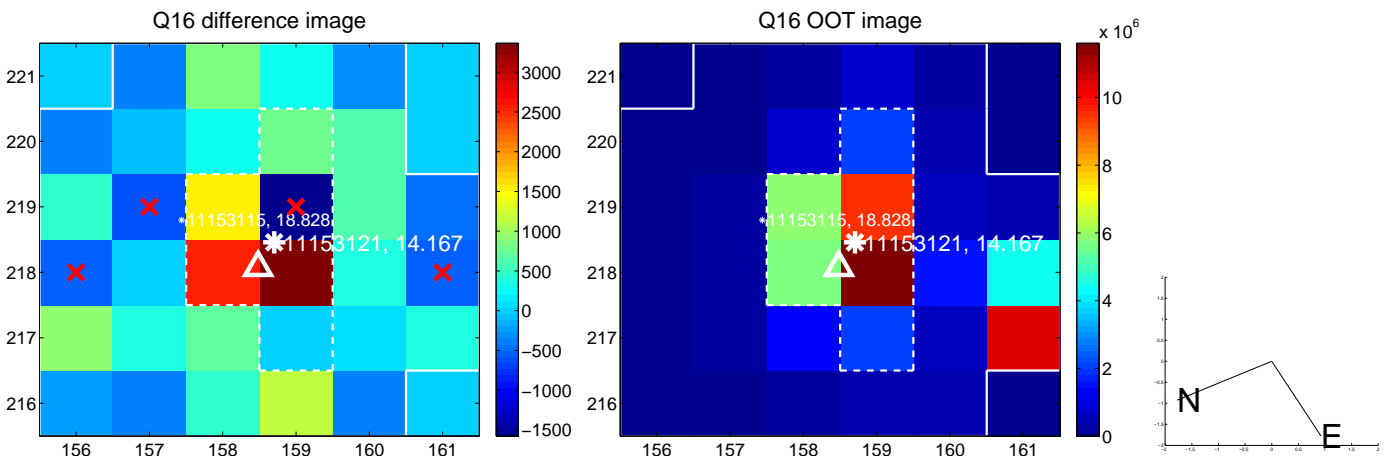
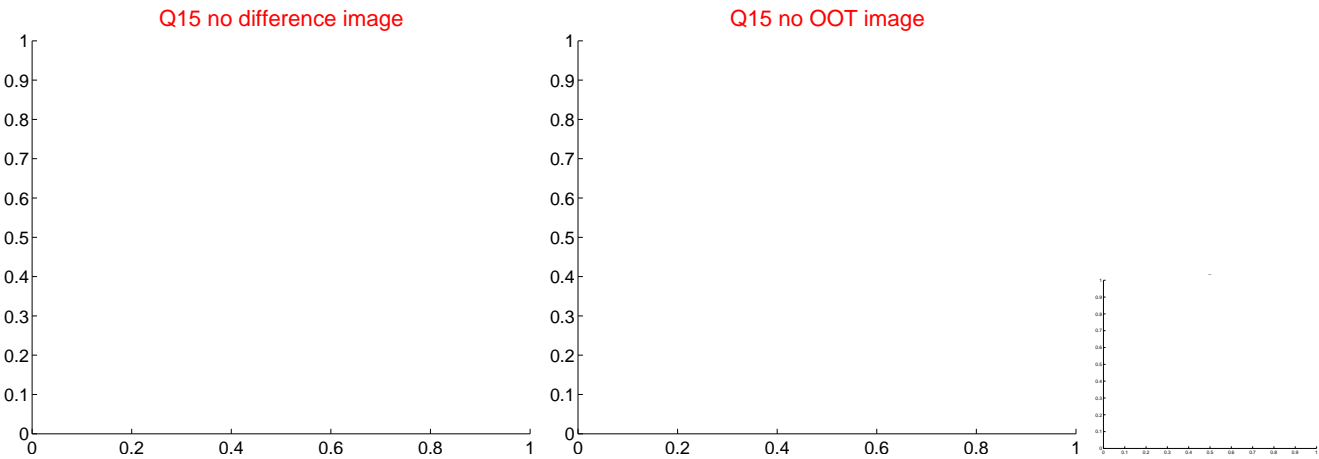
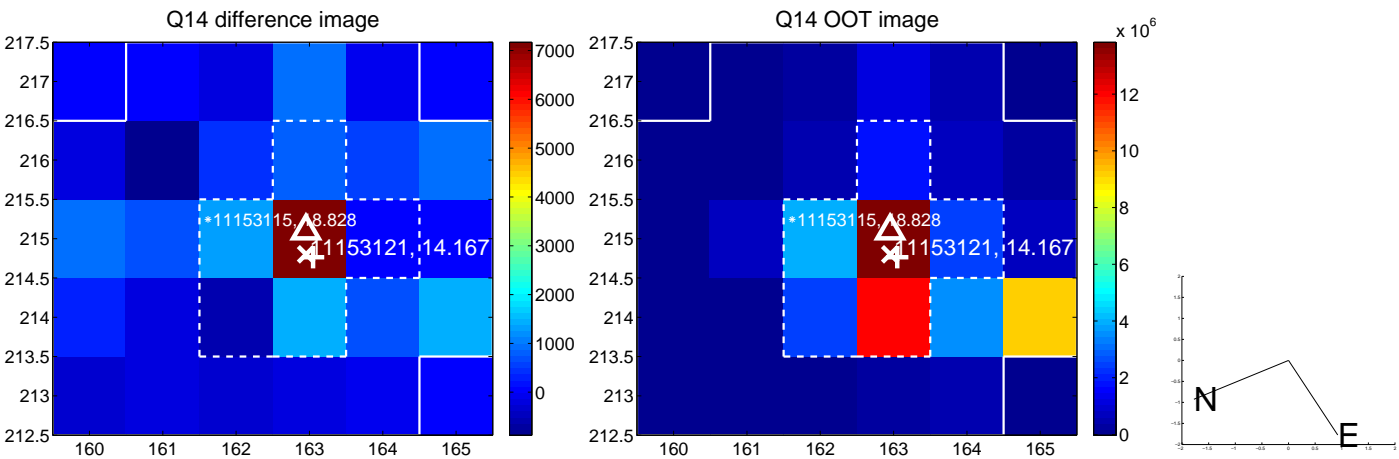
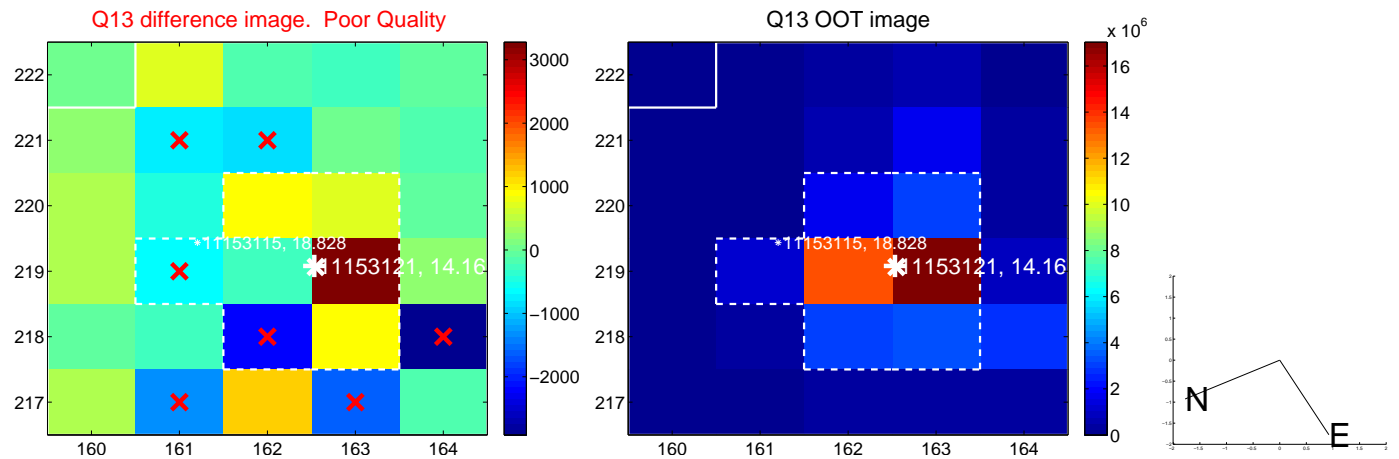
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



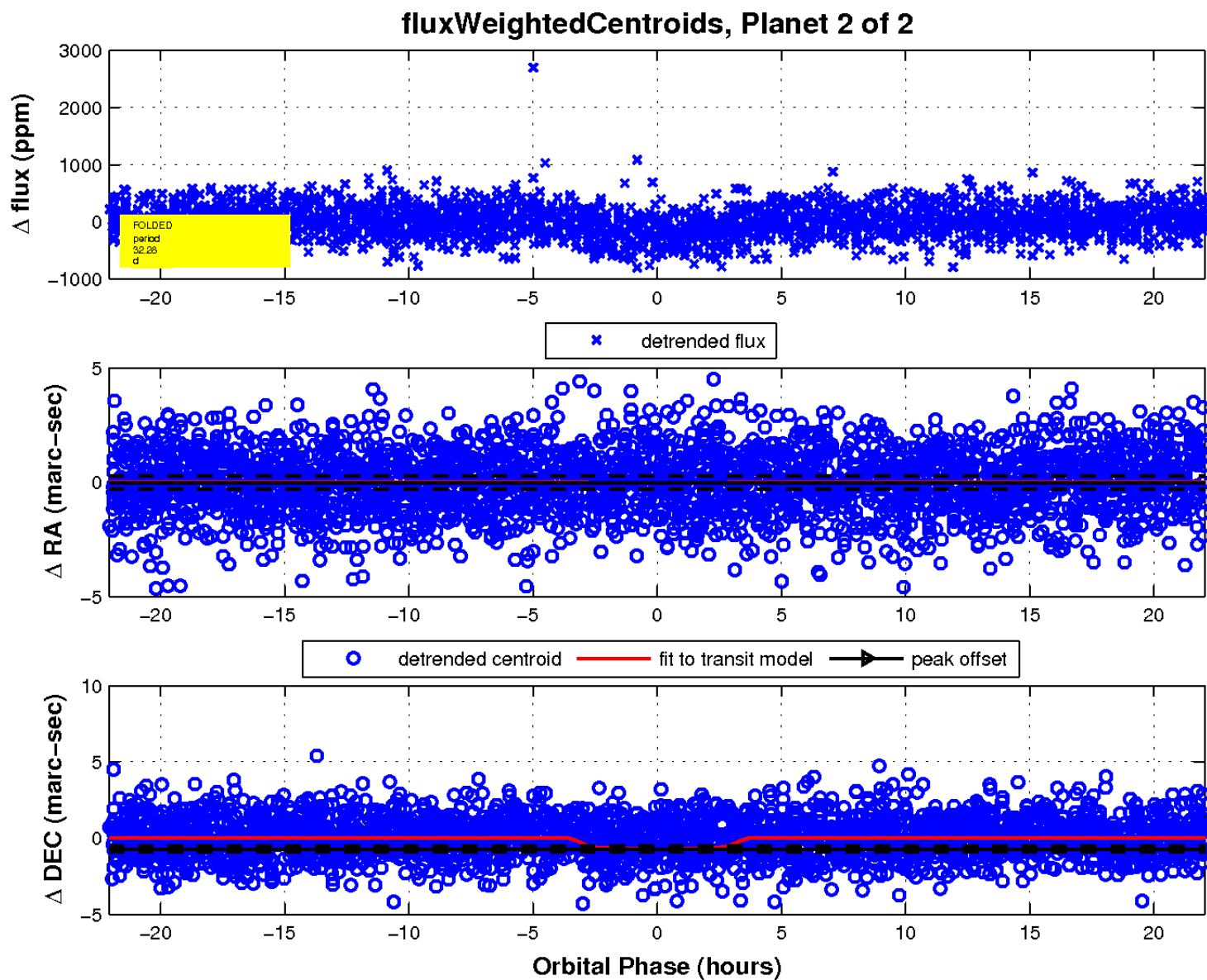
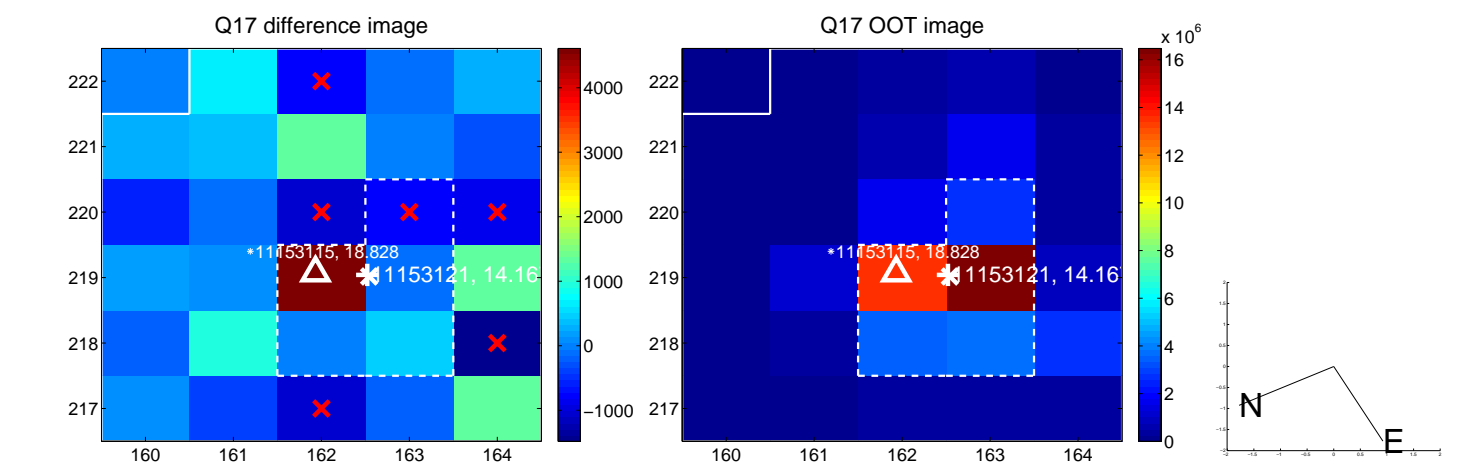
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

