

KIC 008526451

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})
008526451-01	OBS	No	5.121559	132.786089	68.0	5.888	10.0	10.3	2.03	7716	1.93	2740.50
008526451-02	OBS	No	0.682761	131.916890	9.5	3.607	8.9	3.0	2.03	7716	0.65	40241.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008526451-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
008526451-02	OBS	FP	0.00	1	0	0	0	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.

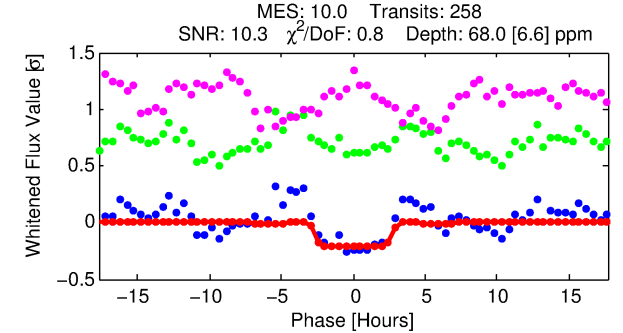
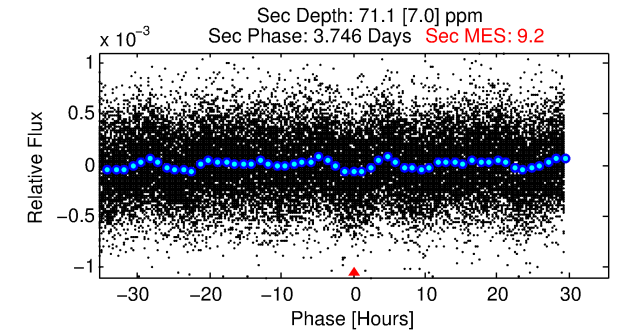
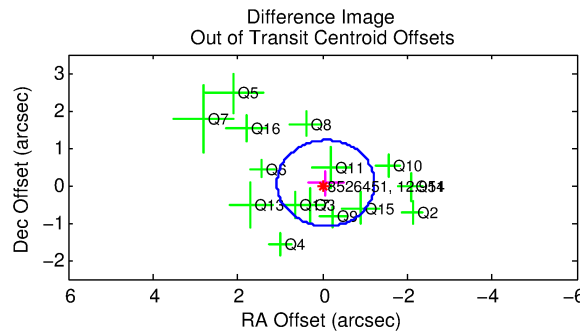
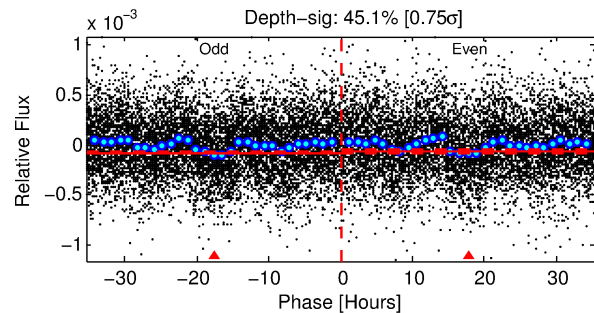
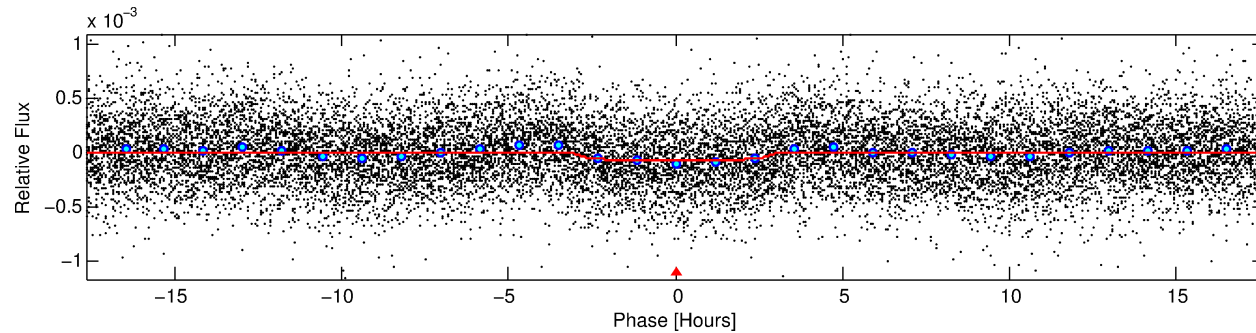
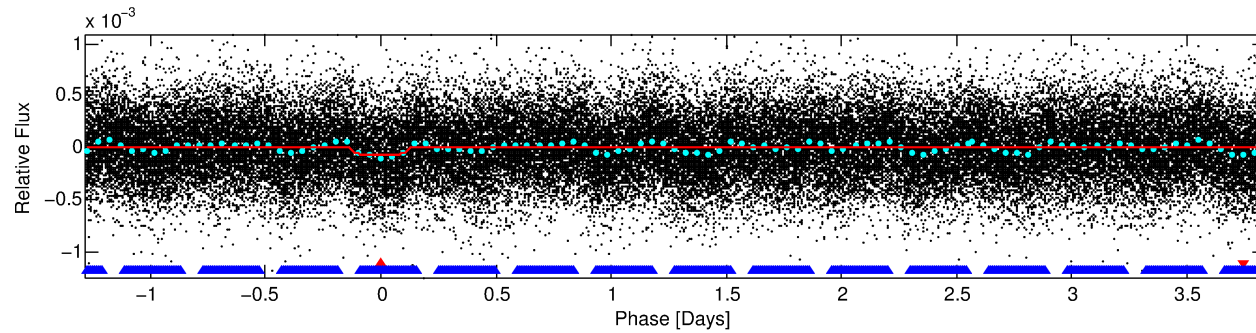
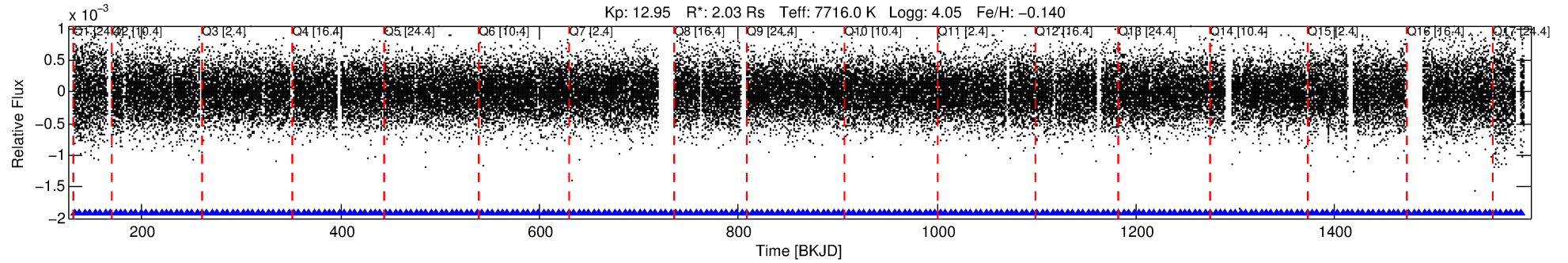
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008526451-01

No Significant Match Found

DV One-Page Summary

KIC: 8526451 Candidate: 1 of 2 Period: 5.122 d



DV Fit Results:

Period = 5.12156 [0.00006] d
Epoch = 132.7861 [0.0076] BKJD
Rp/R* = 0.0087 [0.0027]
a/R* = 3.28 [5.64]
b = 0.89 [0.44]
Seff = 2740.50 [983.15]
Teff = 1845 [165] K
Rp = 1.93 [0.76] Re
a = 0.0690 [0.0149] AU
Ag = 49.93 [35.09] [1.39 σ]
Teffp = 7583 [1217] K [4.67 σ]

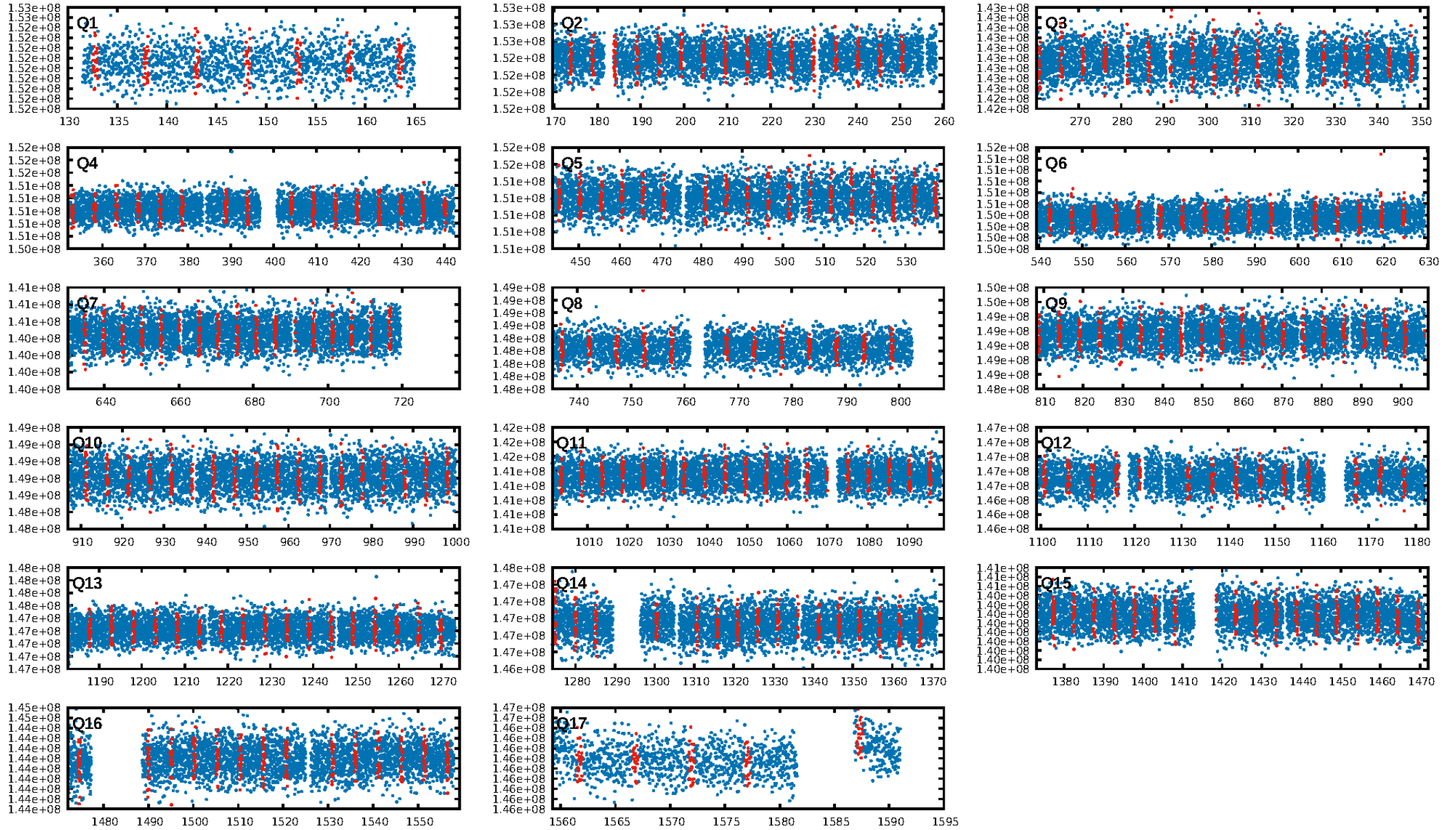
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [15.43 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.56e-14
RollingBand-fgt: 1.00 [246/246]
GhostDiagnostic-chr: 1.376
Centroid-sig: 0.5%
Centroid-so: 1.104 arcsec [1.55 σ]
OotOffset-rm: 0.095 arcsec [0.25 σ]
KicOffset-rm: 0.233 arcsec [0.70 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 0.93 [14/15]
DiffImageOverlap-fno: 0.00 [0/17]

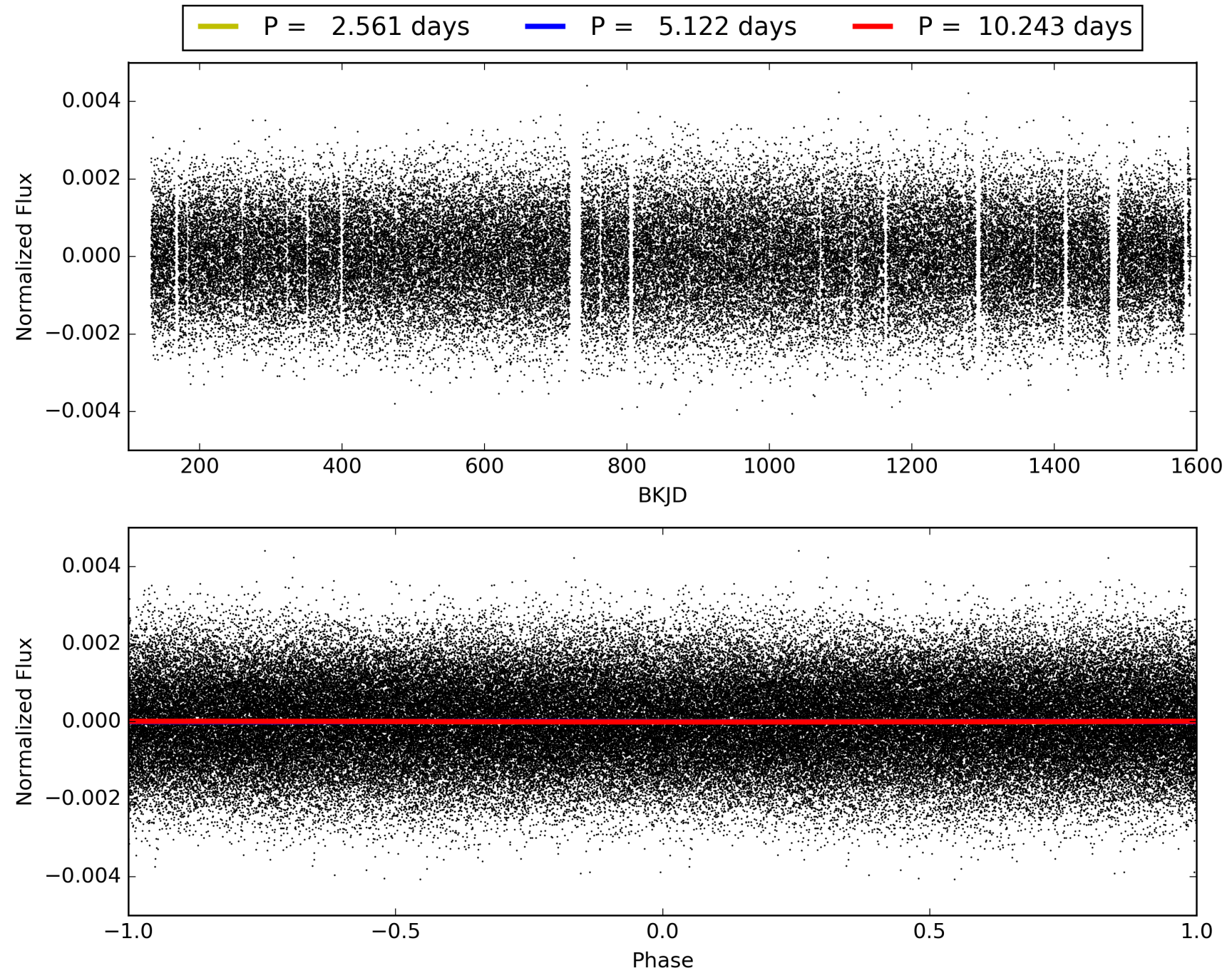
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:14:38 Z

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

TCE 008526451-01, PDC Light Curves

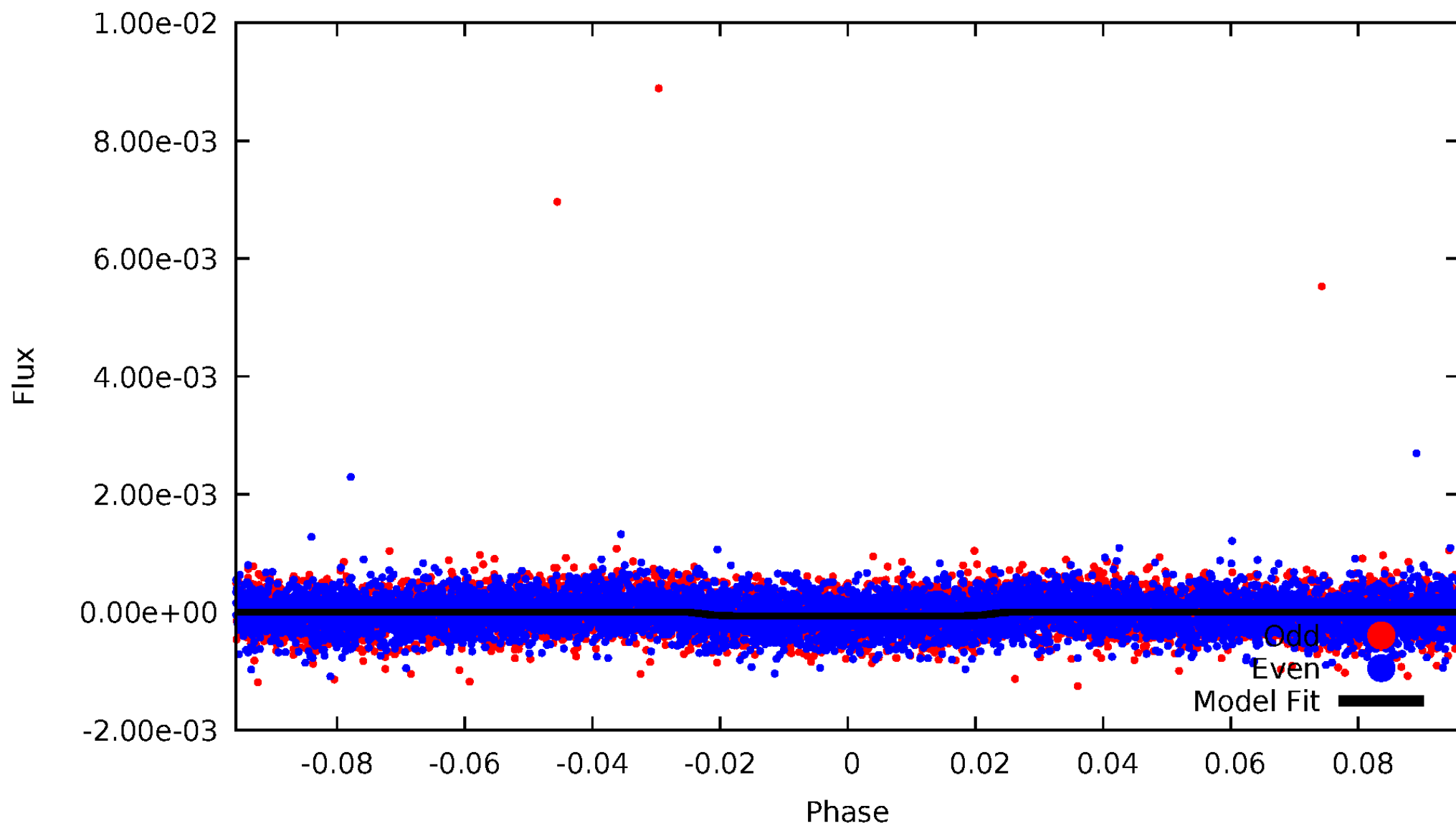


TCE 008526451-01



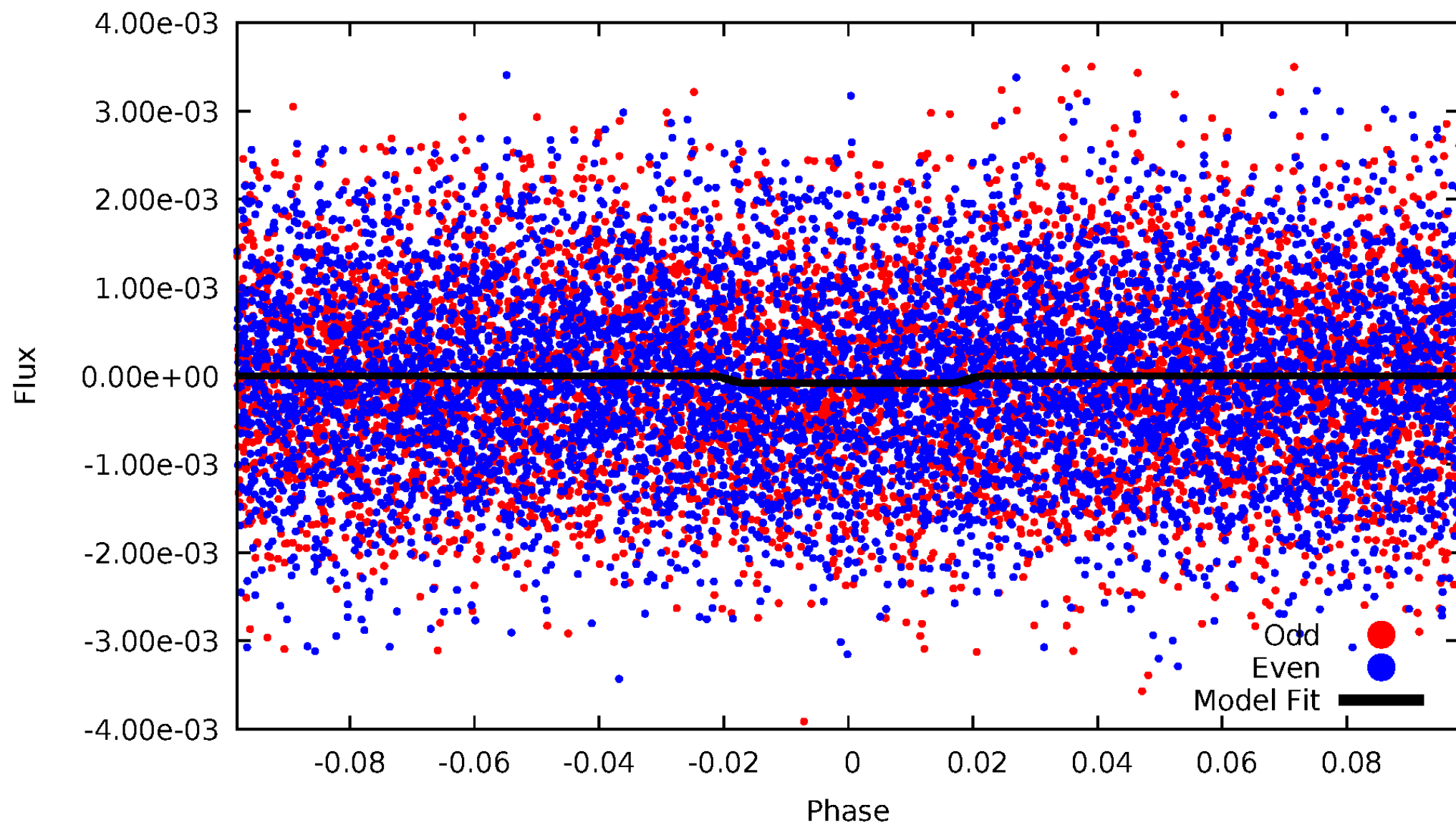
DV Odd/Even

TCE 008526451-01



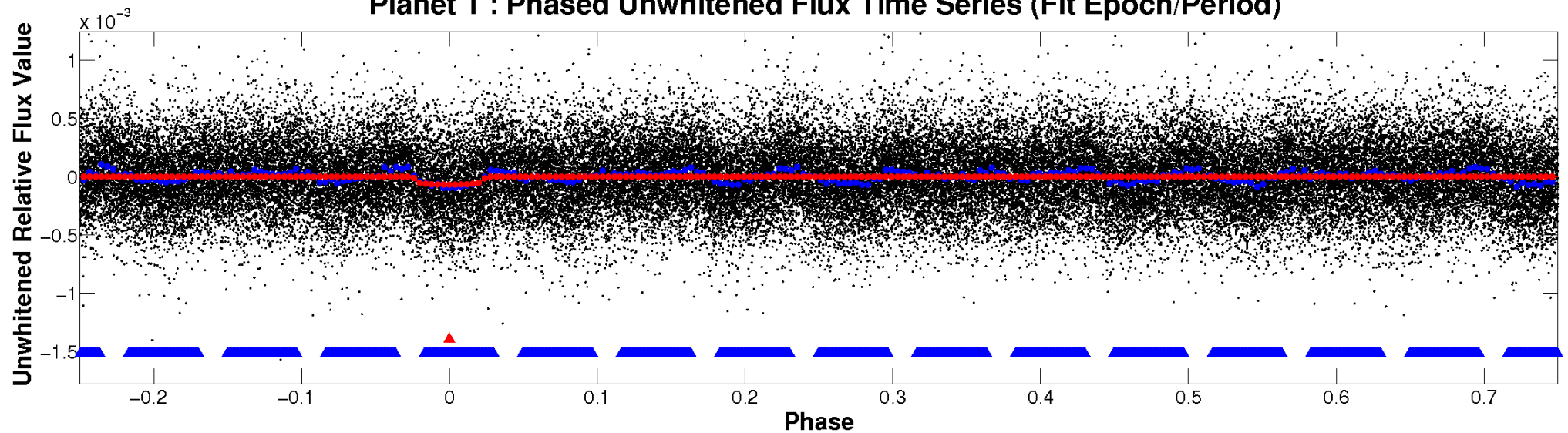
ALT Odd/Even

TCE 008526451-01

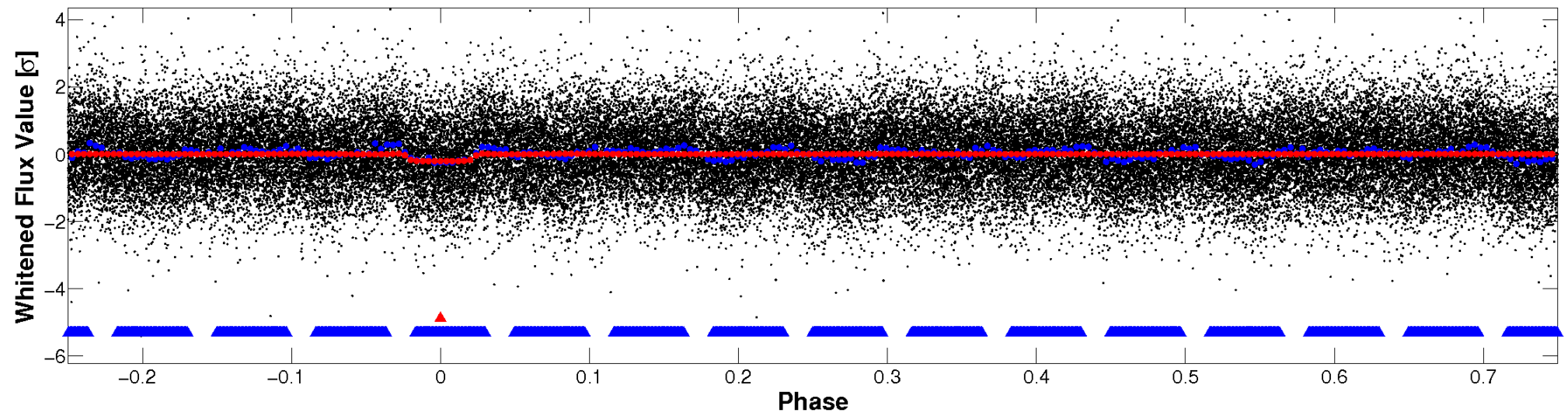


Non-Whitened Vs. Whitened Light Curve

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

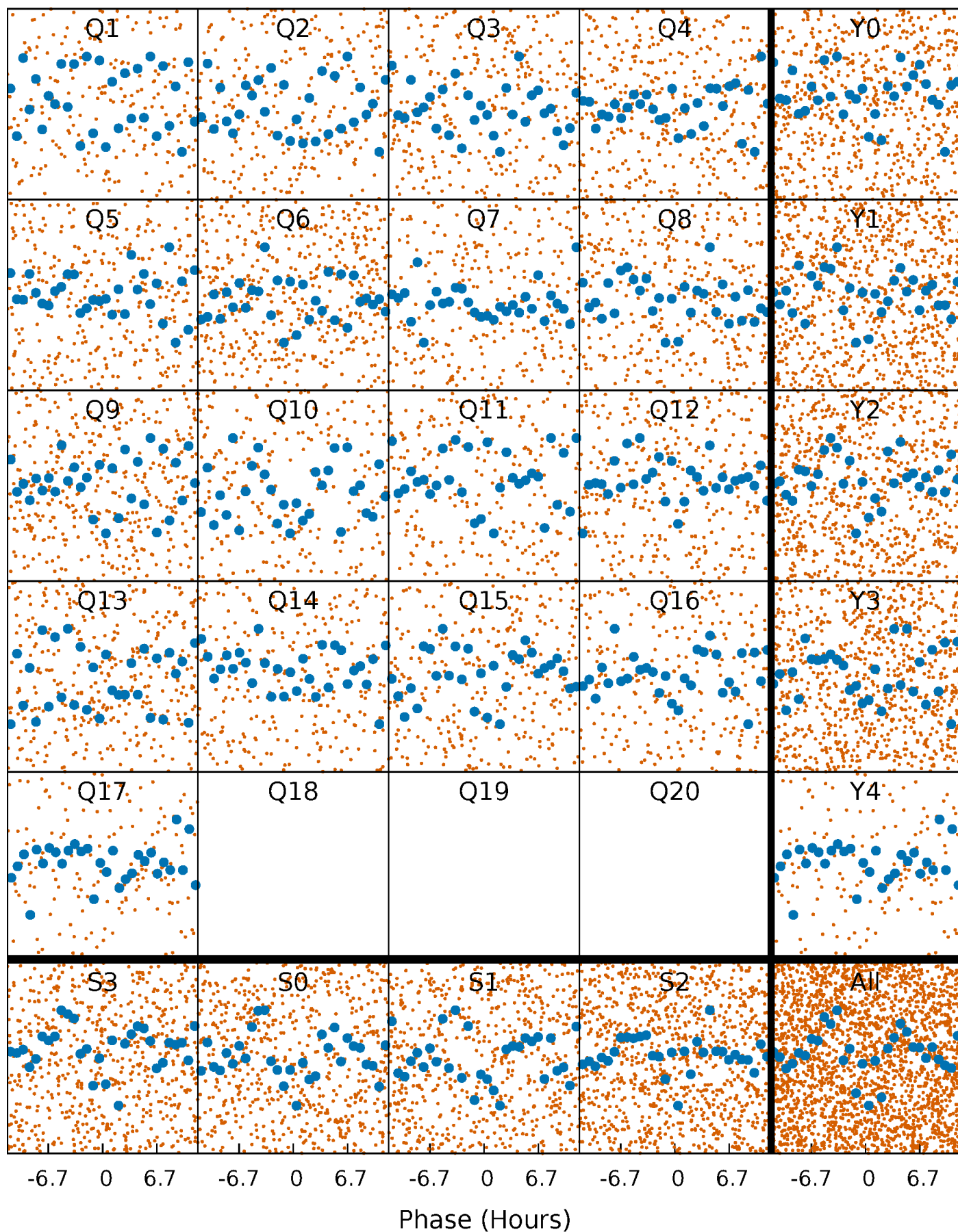


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



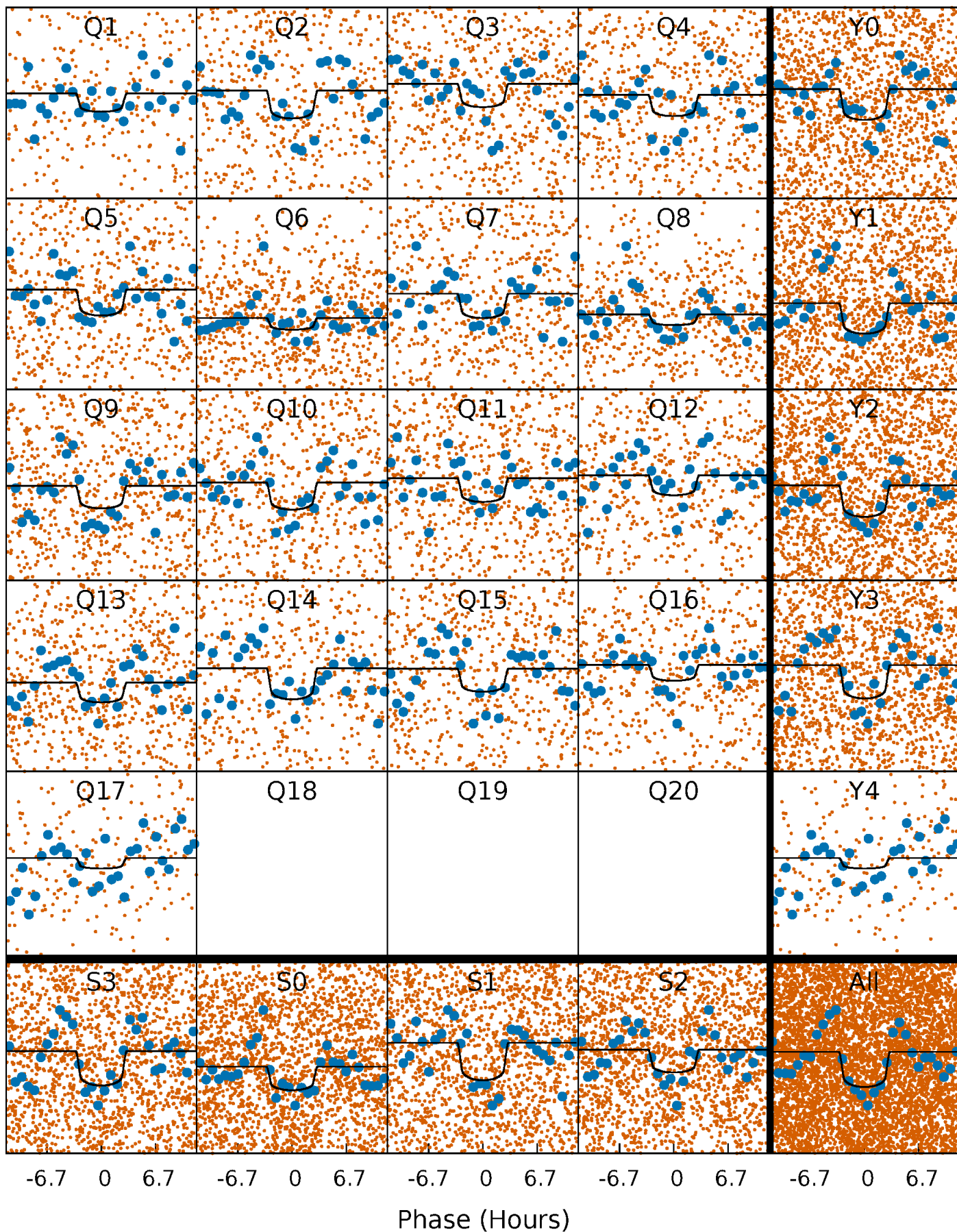
PDC Quarter-Phased Transit Curves

TCE 008526451-01 P= 5.121559 Days $T_0=132.786089$ (BKJD)



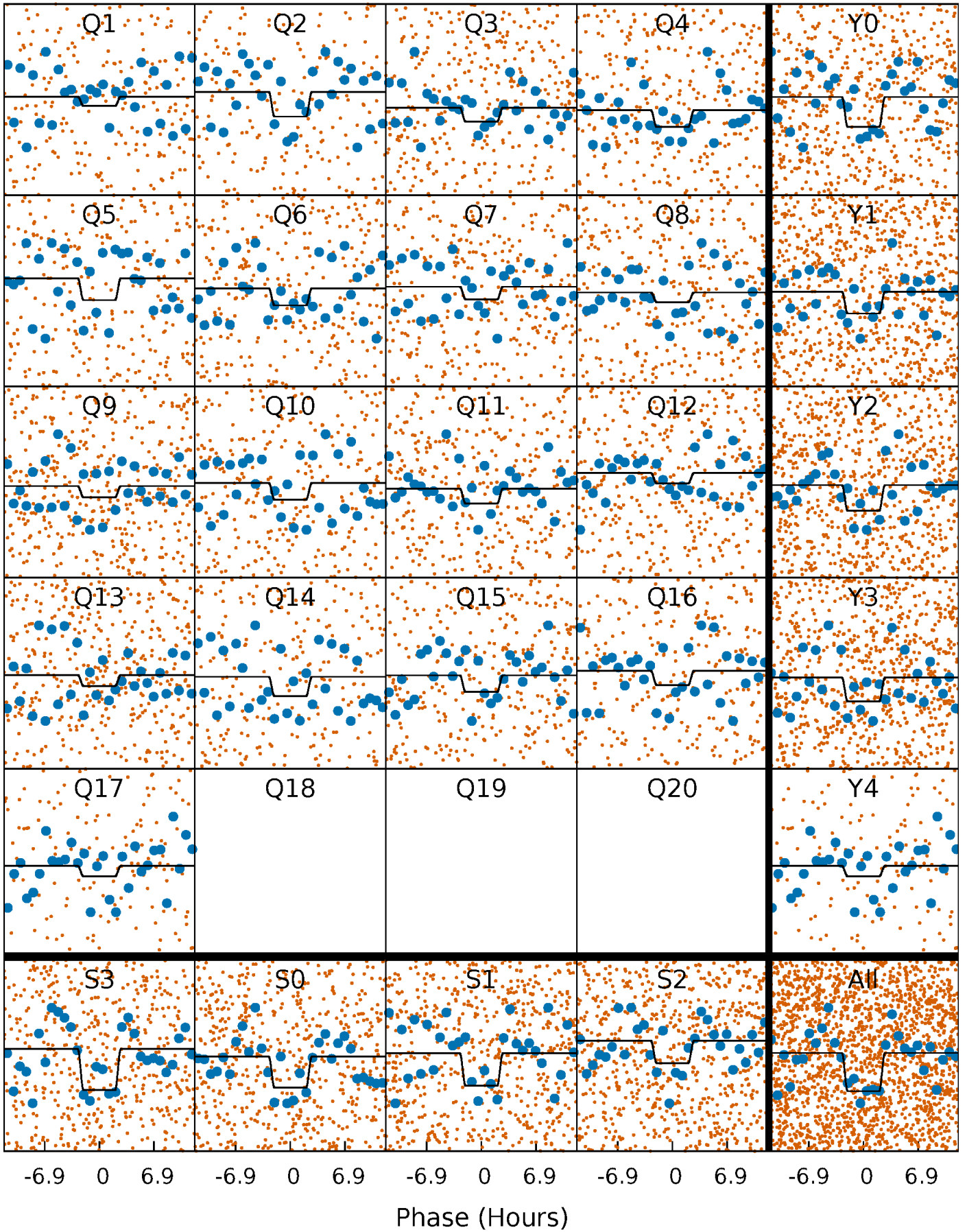
DV Quarter-Phased Transit Curves

TCE 008526451-01 P= 5.121559 Days $T_0=132.786089$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

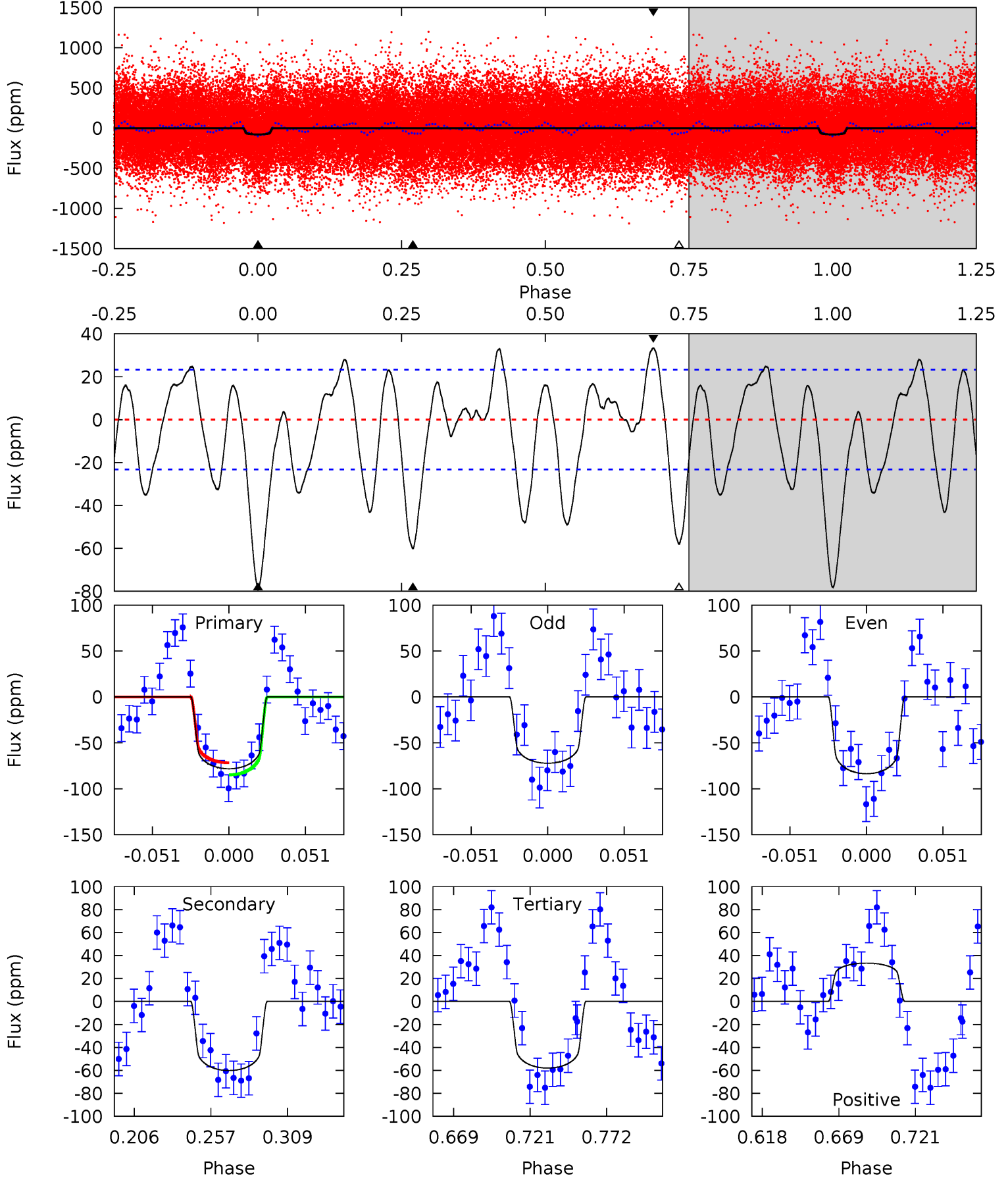
TCE 008526451-01 P= 5.121497 Days $T_0=132.807690$ (BKJD)



DV Model-Shift Uniqueness Test

008526451-01, P = 5.121559 Days, E = 127.664530 Days

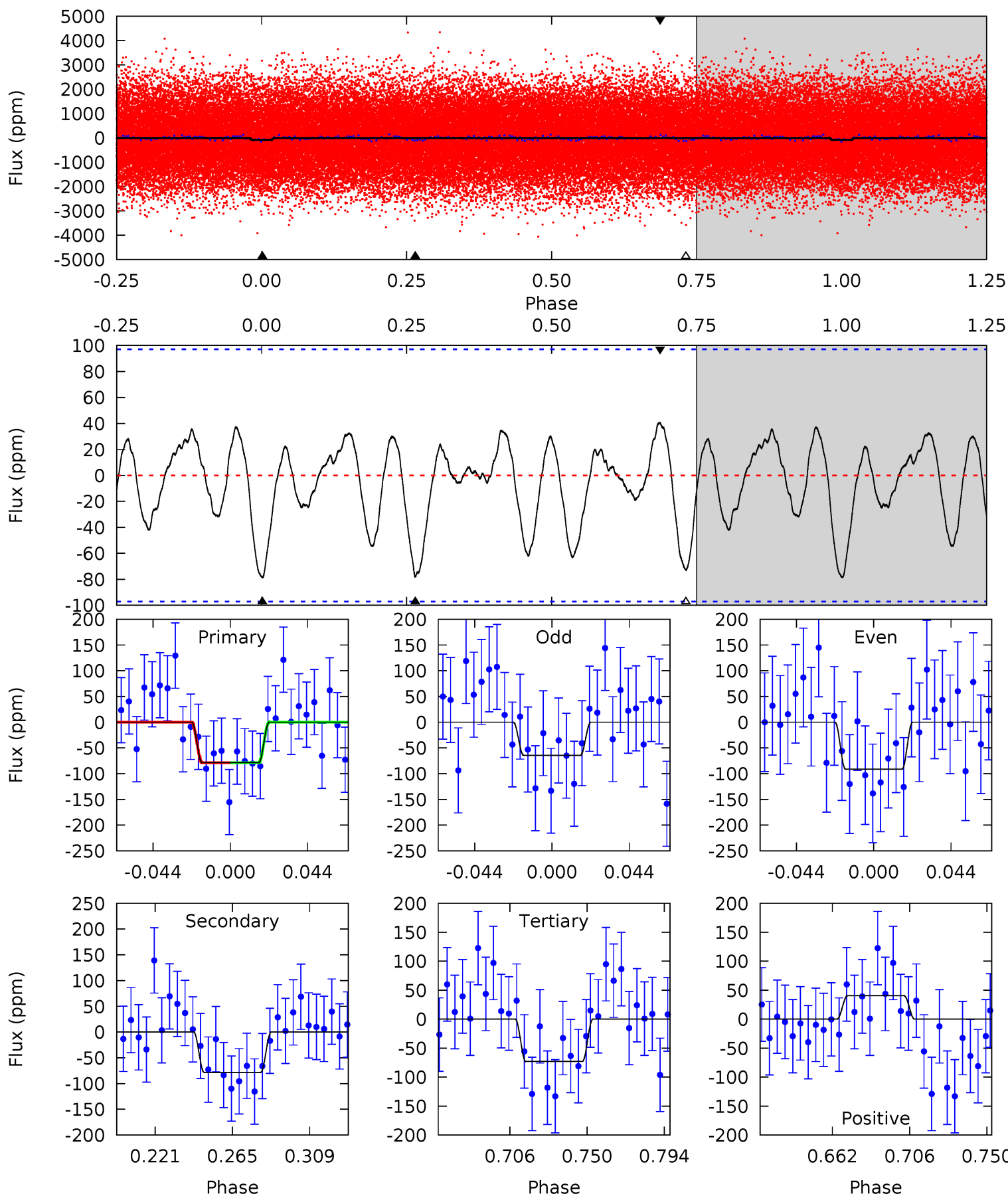
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	12.2	11.7	6.76	4.70	1.95	4.36	4.09	9.08	0.44	5.43	1.16	1.06	0.30	1.33



Alt Model-Shift Uniqueness Test

008526451-01, P = 5.121497 Days, E = 127.686193 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.83	3.81	3.56	1.97	4.73	2.01	1.28	0.27	1.86	0.26	1.84	0.64	0.95	0.34	0.00



Stellar Parameters For KIC 008526451

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7716^{+241}_{-295}	$4.047^{+0.182}_{-0.149}$	$-0.140^{+0.200}_{-0.300}$	$2.027^{+0.502}_{-0.502}$	$1.669^{+0.218}_{-0.267}$	$0.282^{+0.271}_{-0.118}$
	+3%/-4%	+4%/-4%	+143%/-214%	+25%/-25%	+13%/-16%	+96%/-42%
Source	KIC0	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 008526451-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-60 ± 5	$1.88^{+0.66}_{-0.65}$	2568^{+201}_{-194}	7303^{+1804}_{-1147}	45^{+58}_{-21}
Alt.	-78 ± 21	$1.95^{+0.71}_{-0.61}$	2569^{+182}_{-177}	7690^{+1929}_{-1335}	53^{+63}_{-26}

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

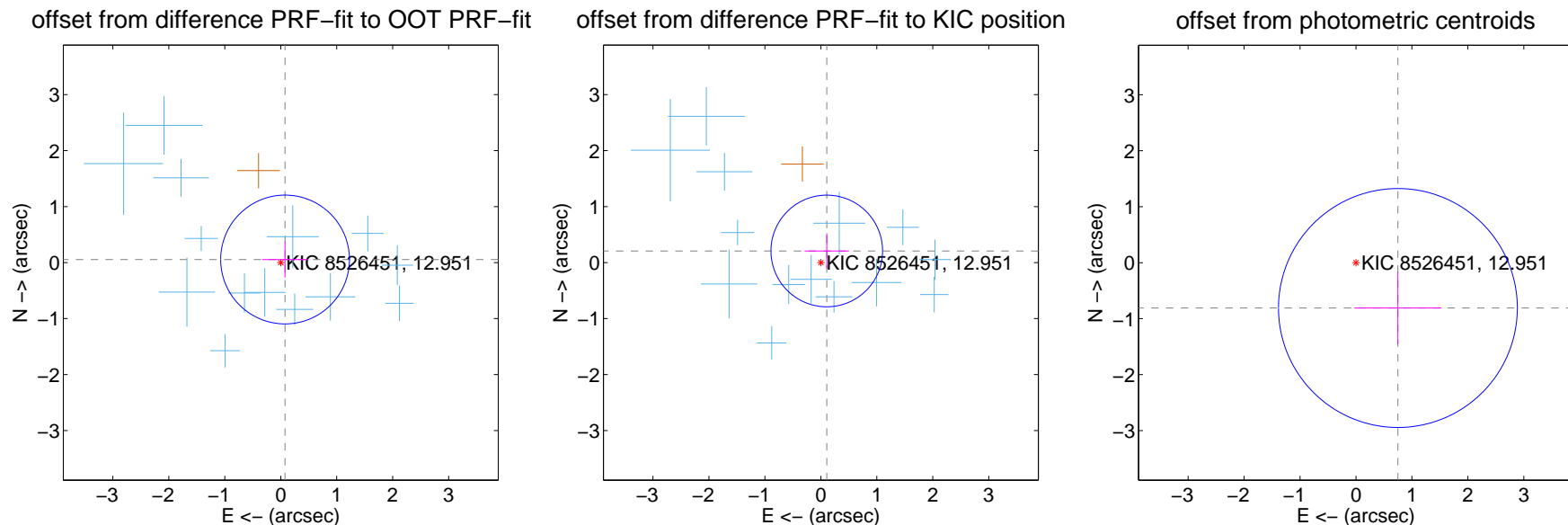
DV Centroid Data

Supplemental centroid analysis for 008526451-01. Kepler magnitude: 12.95. Transit SNR 10.34

There are 14 quarters with good PRF difference image offsets

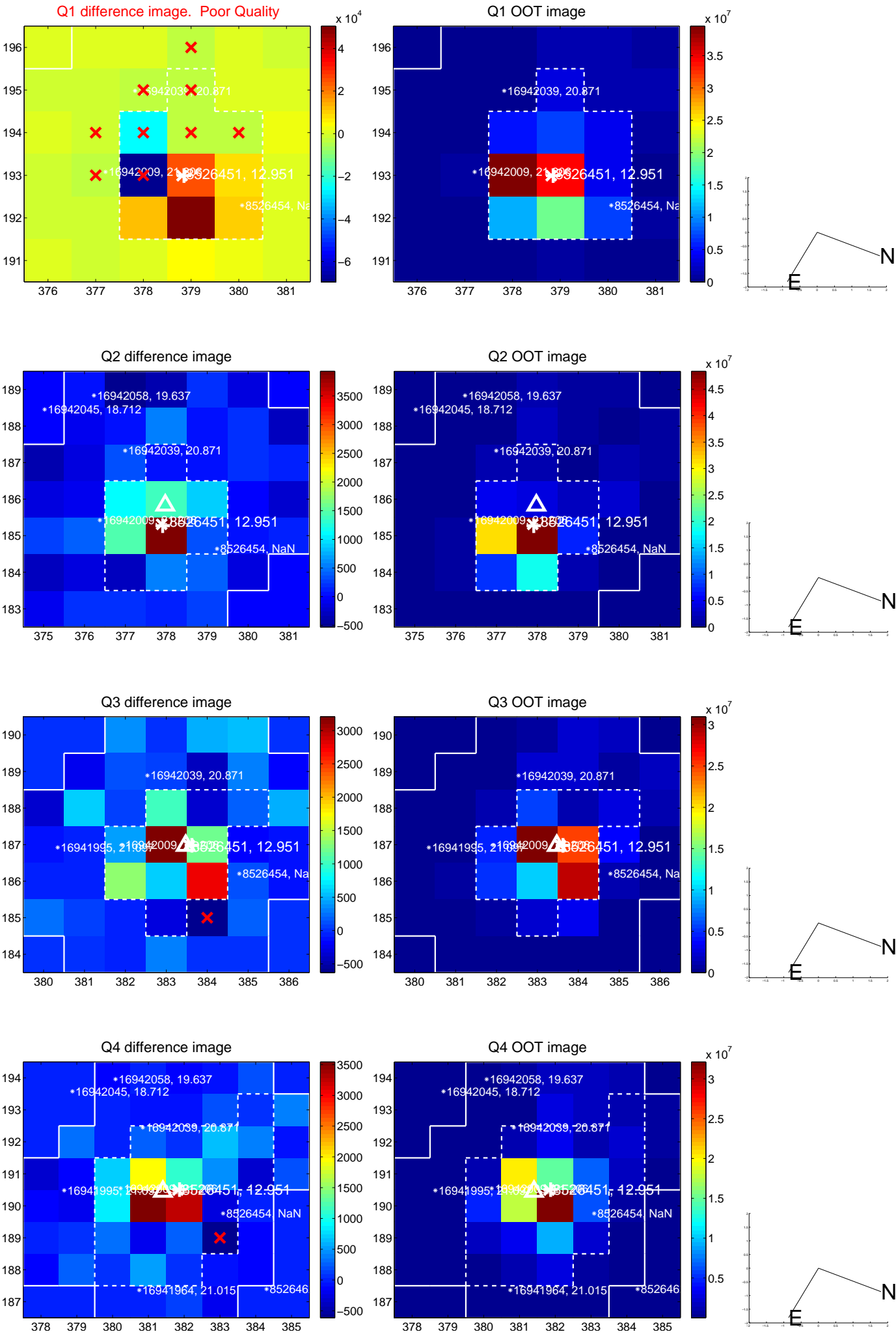
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.095 ± 0.383	0.25	-0.077 ± 0.412	0.055 ± 0.321
PRF-fit source offset from KIC position	0.233 ± 0.332	0.70	-0.105 ± 0.398	0.208 ± 0.313
photometric centroid source offset	1.10 ± 0.71	1.55	-0.75 ± 0.78	-0.81 ± 0.65

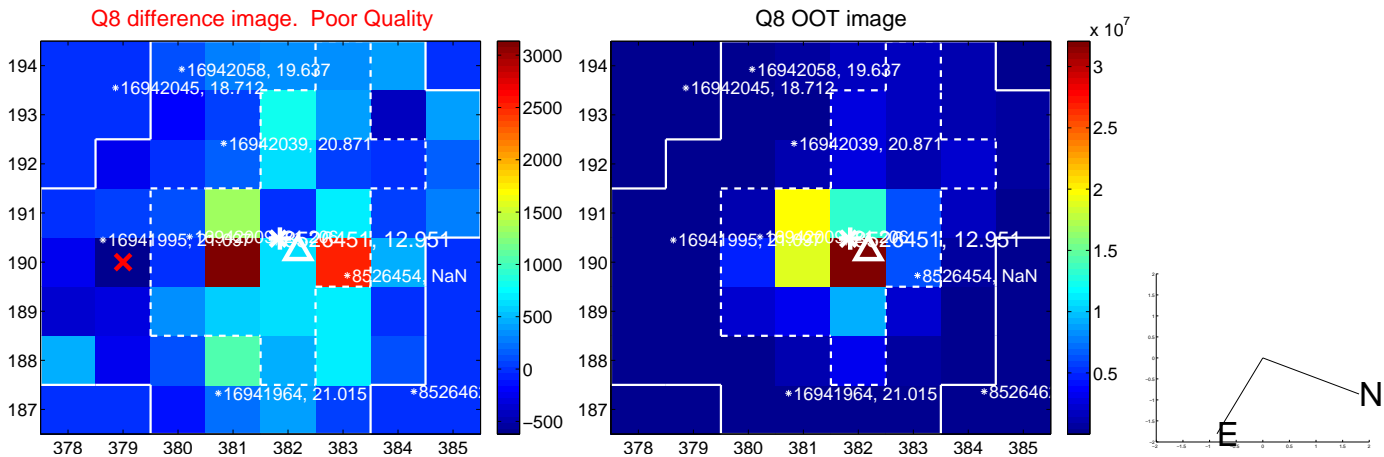
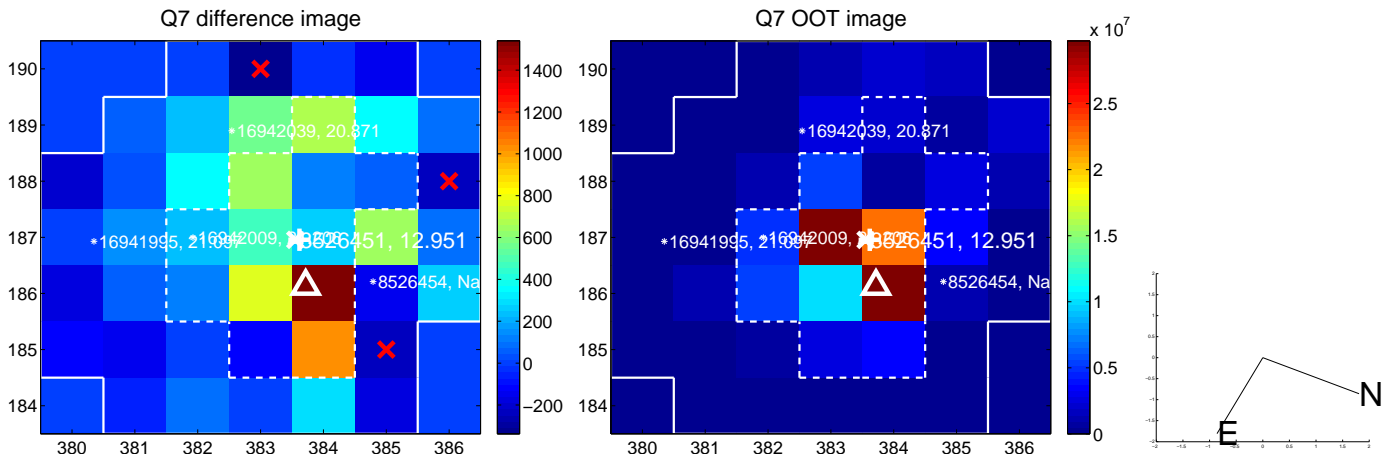
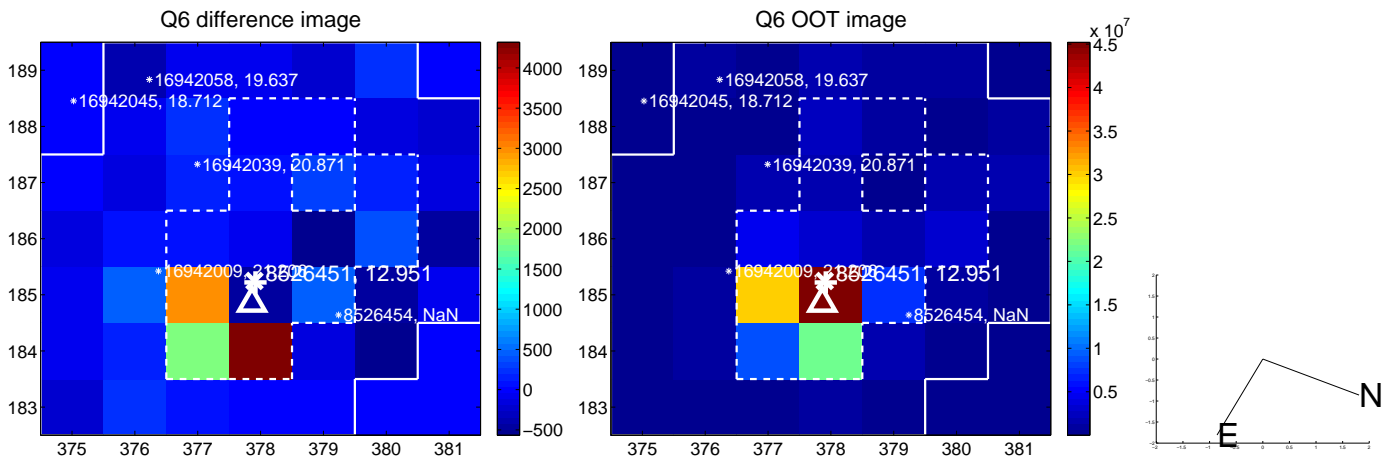
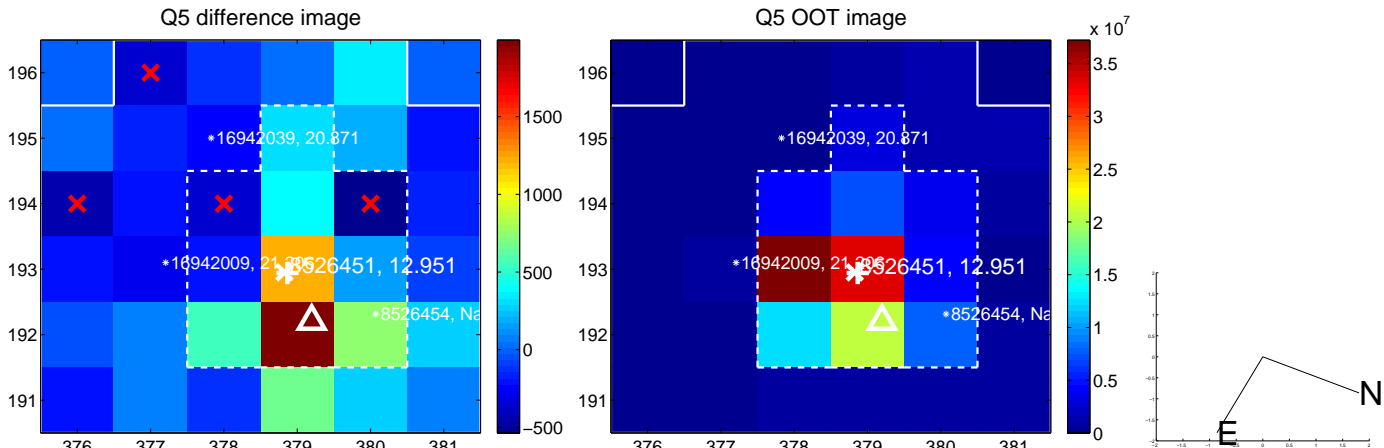


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

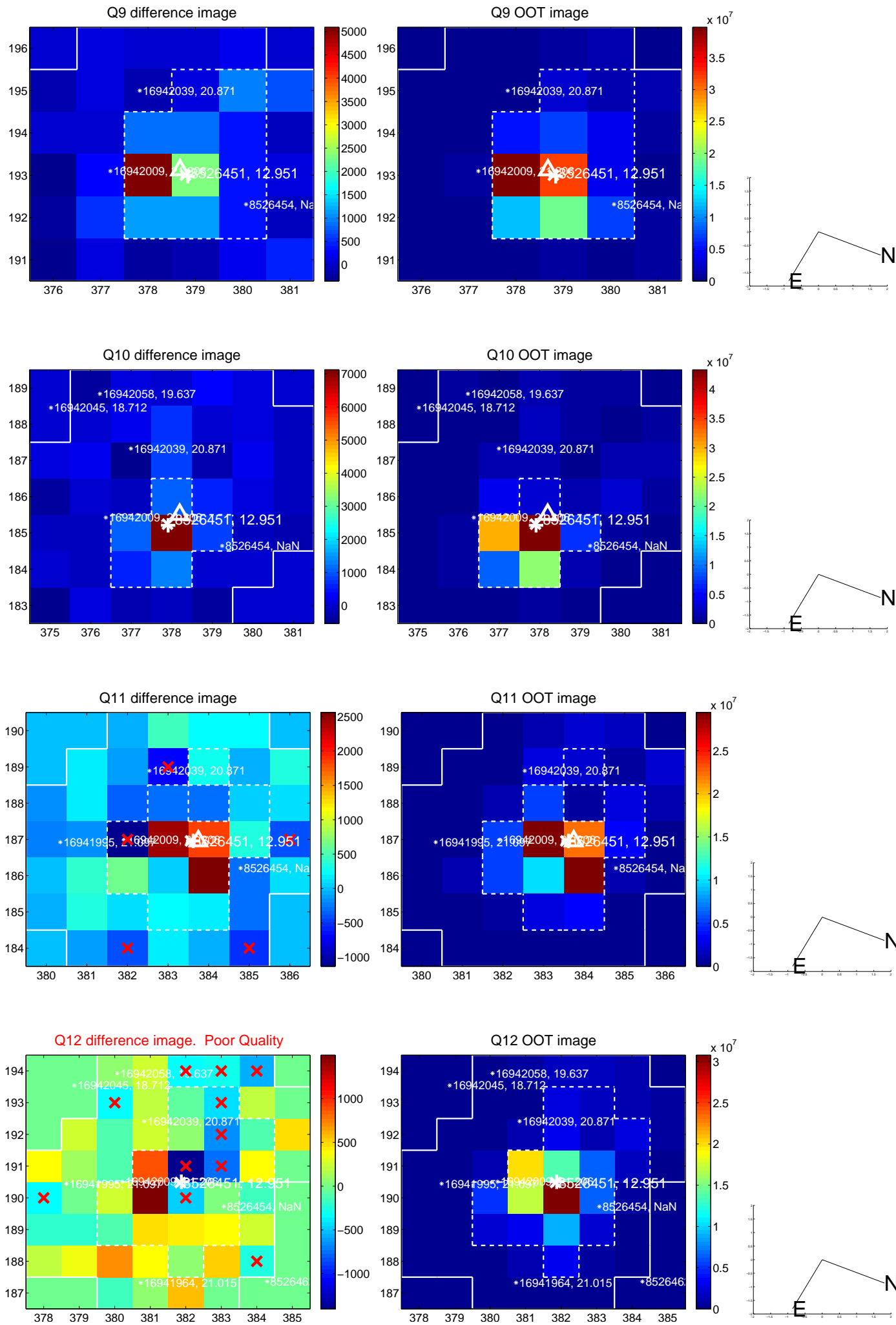
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



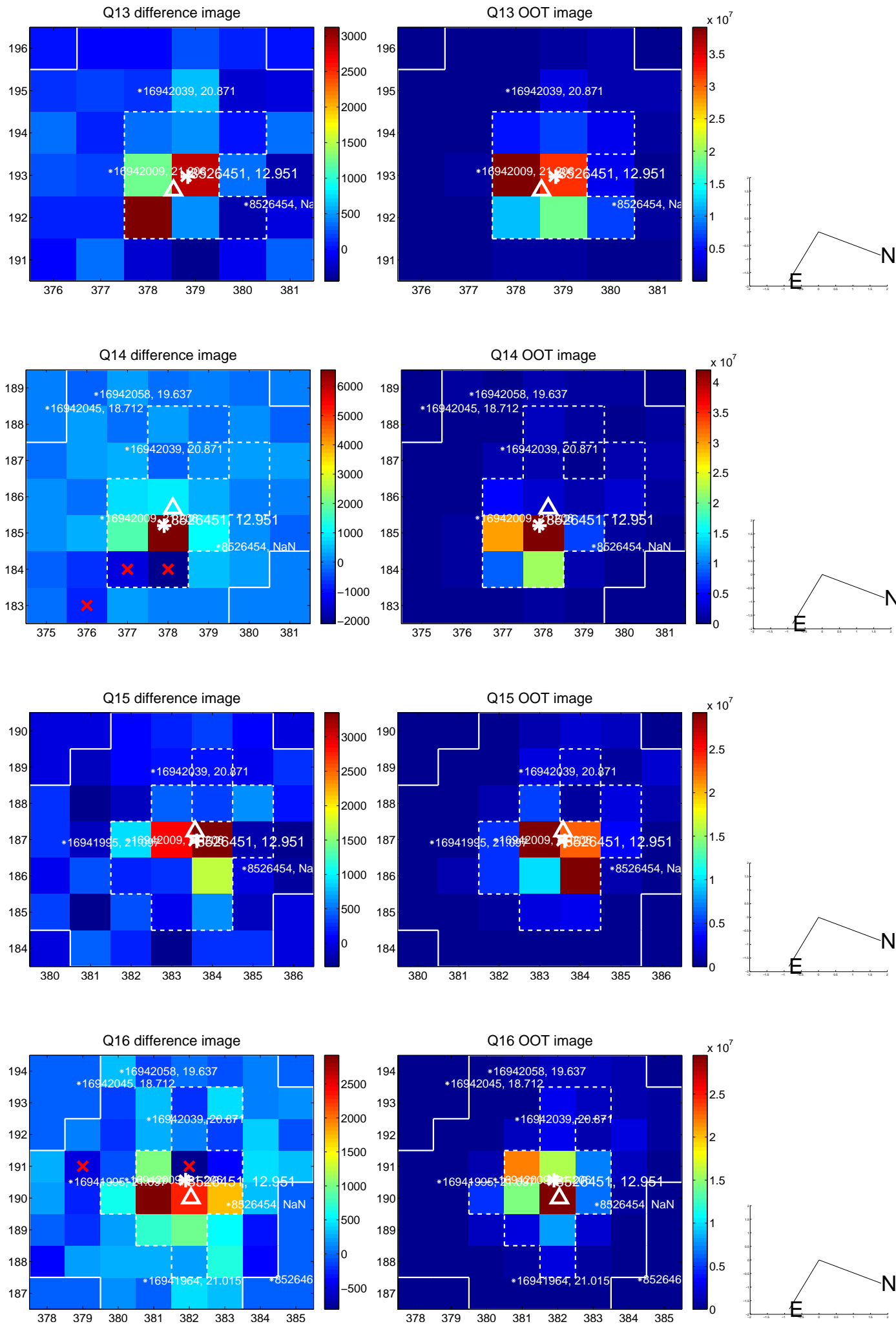
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



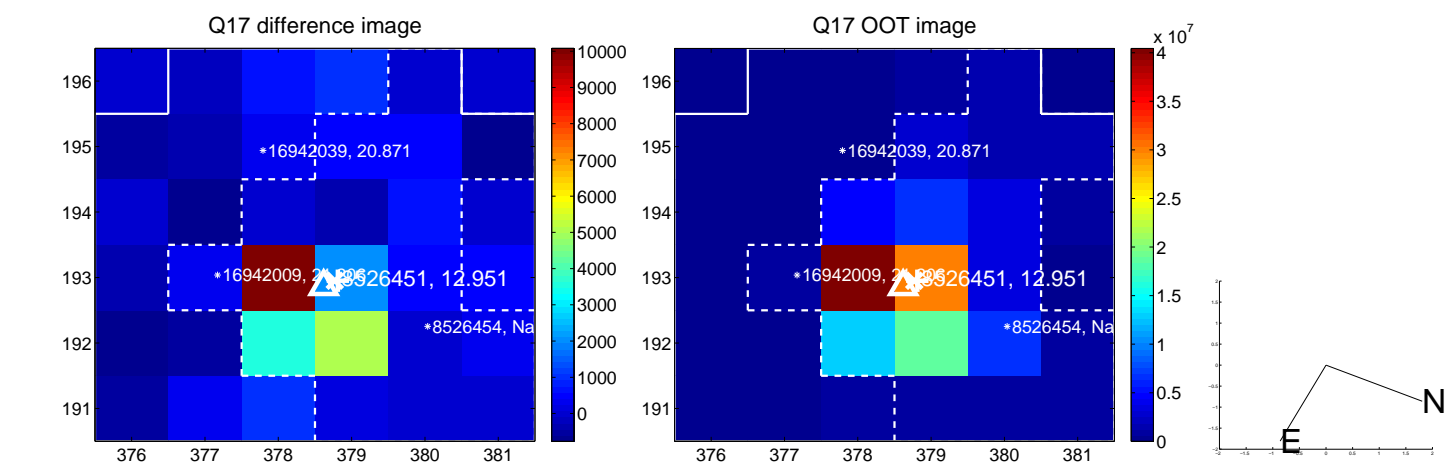
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



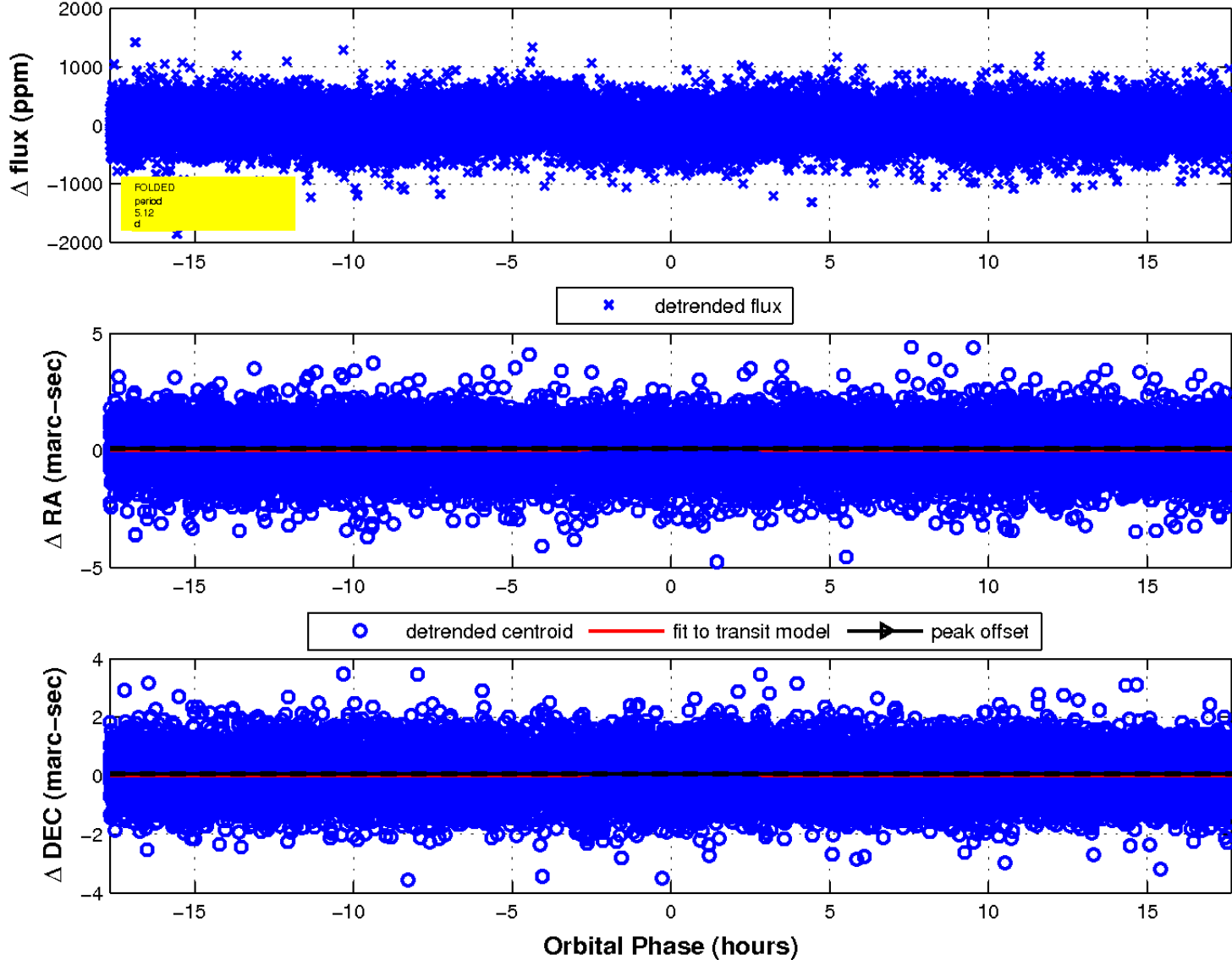
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

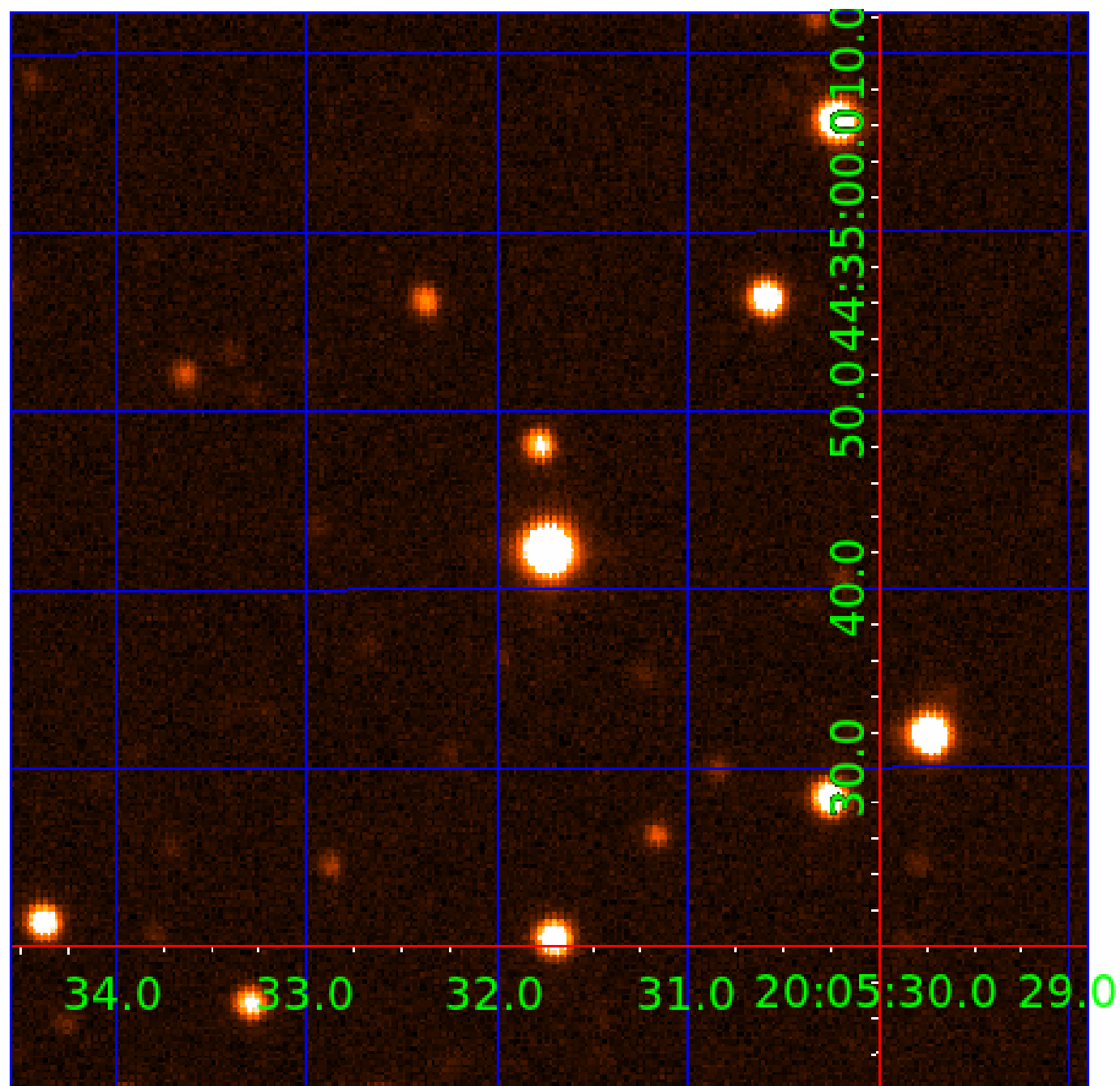


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 008526451

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})
008526451-01	OBS	No	5.121559	132.786089	68.0	5.888	10.0	10.3	2.03	7716	1.93	2740.50
008526451-02	OBS	No	0.682761	131.916890	9.5	3.607	8.9	3.0	2.03	7716	0.65	40241.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008526451-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
008526451-02	OBS	FP	0.00	1	0	0	0	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.

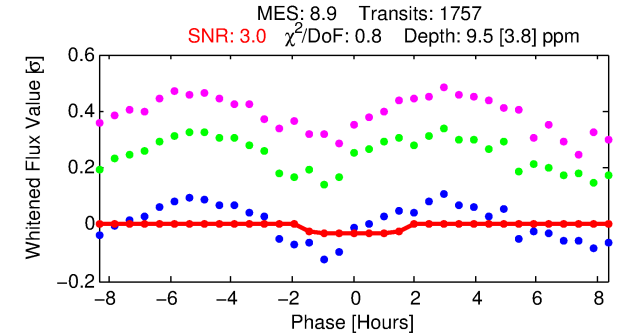
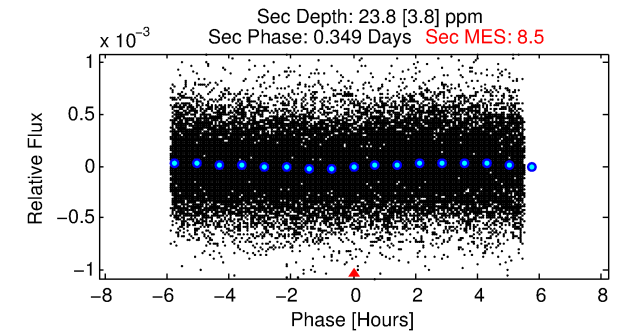
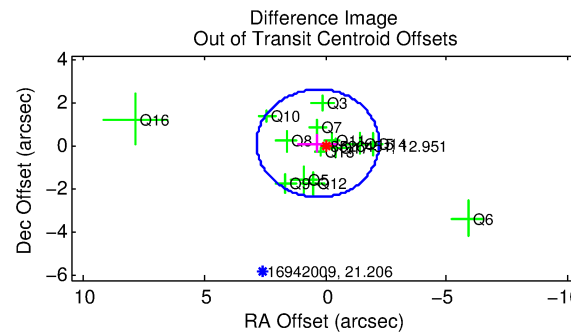
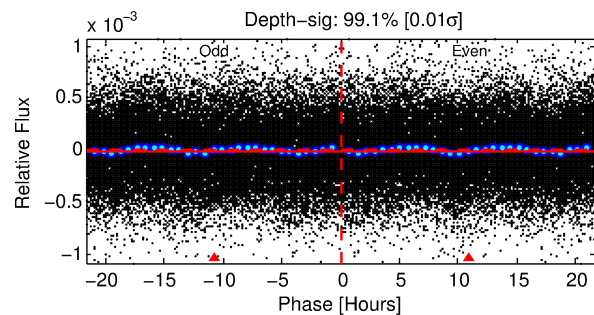
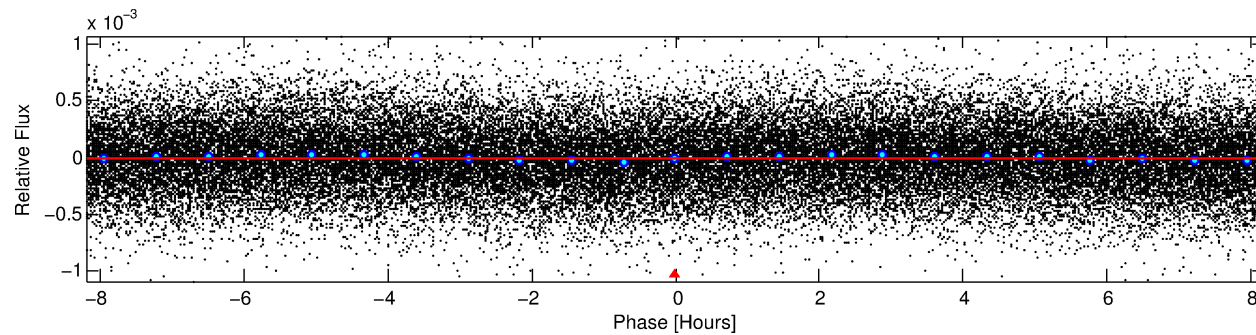
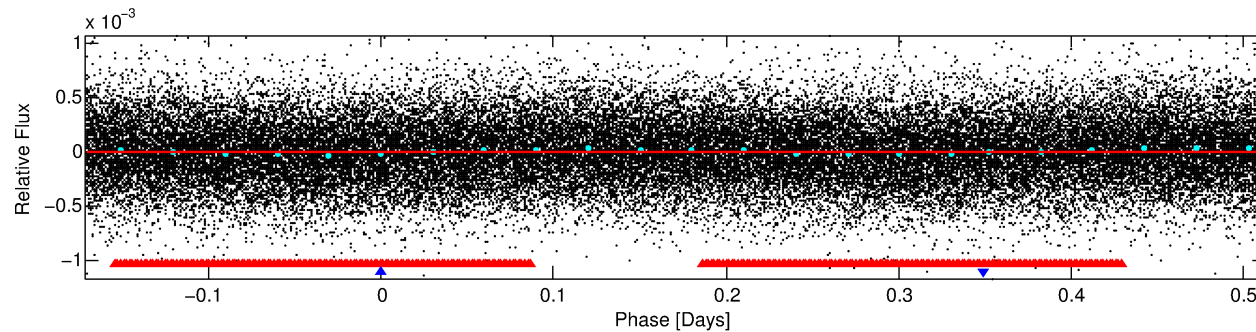
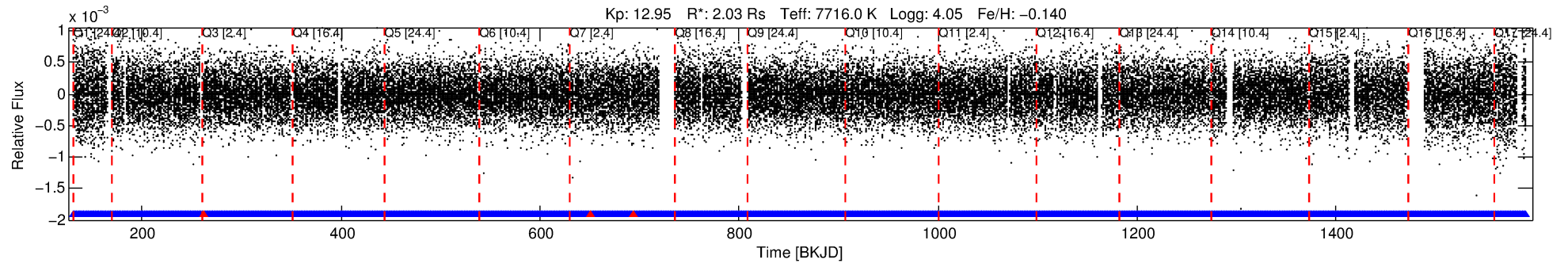
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008526451-02

No Significant Match Found

DV One-Page Summary

KIC: 8526451 Candidate: 2 of 2 Period: 0.683 d



DV Fit Results:

Period = 0.68276 [0.00003] d
Epoch = 131.9169 [0.0132] BKJD
Rp/R* = 0.0029 [0.0028]
a/R* = 1.45 [4.09]
b = 0.50 [8.06]
Seff = 40241.52 [14436.56]
Teq = 3612 [324] K
Rp = 0.65 [0.63] Re
a = 0.0180 [0.0039] AU
Ag = 10.13 [19.44] [0.47 σ]
Teff = 9961 [4726] K [1.34 σ]

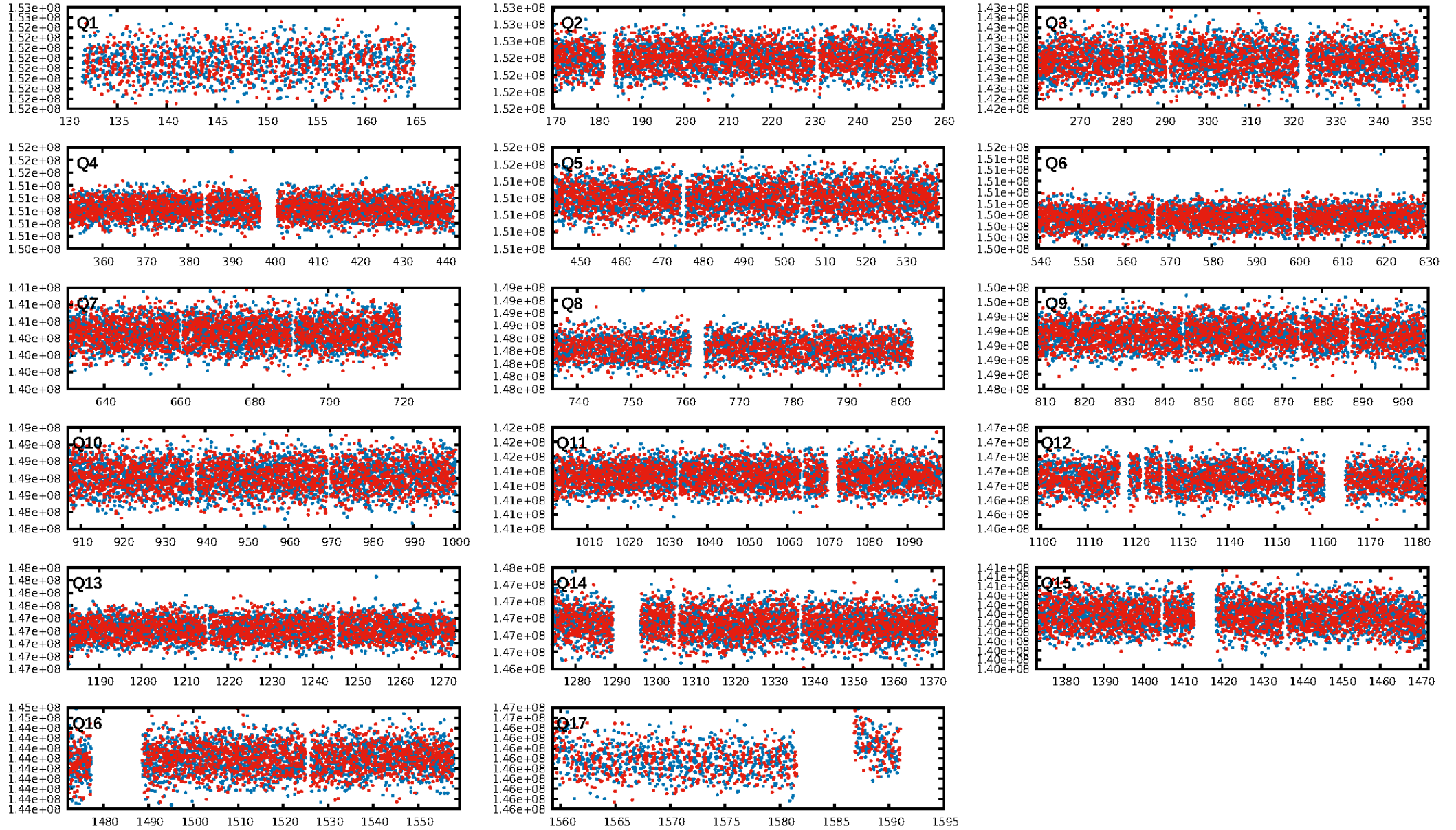
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [15.43 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.06e-11
RollingBand-fgt: 1.00 [1677/1680]
GhostDiagnostic-chr: 1.785
Centroid-sig: 0.8%
Centroid-so: 4.939 arcsec [2.05 σ]
OotOffset-rm: 0.339 arcsec [0.40 σ]
KicOffset-rm: 0.392 arcsec [0.55 σ]
OotOffset-st: 3/4/3/4 [14]
KicOffset-st: 3/4/3/4 [14]
DiffImageQuality-fgm: 0.57 [8/14]
DiffImageOverlap-fno: 1.00 [17/17]

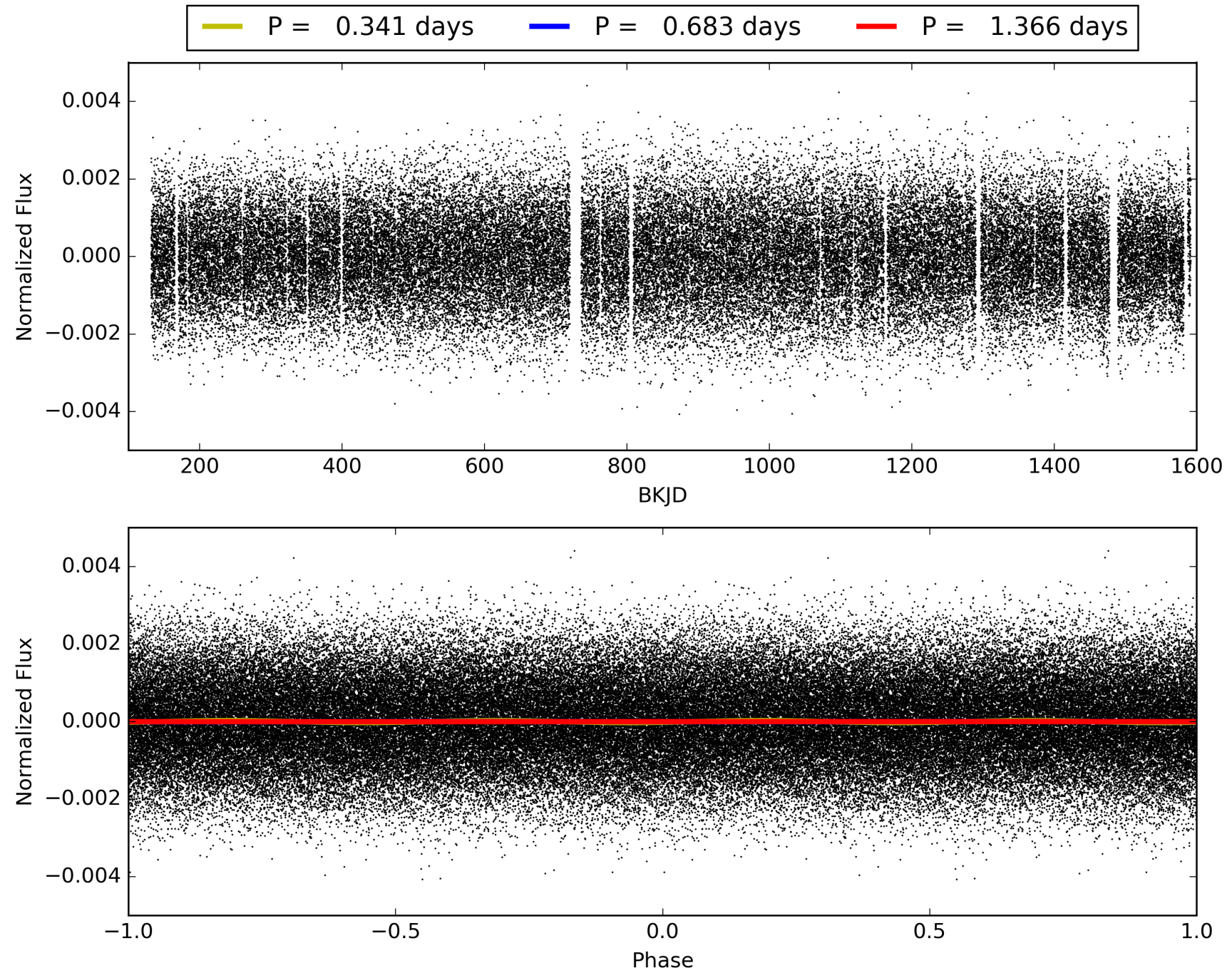
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 10:14:49 Z

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

TCE 008526451-02, PDC Light Curves

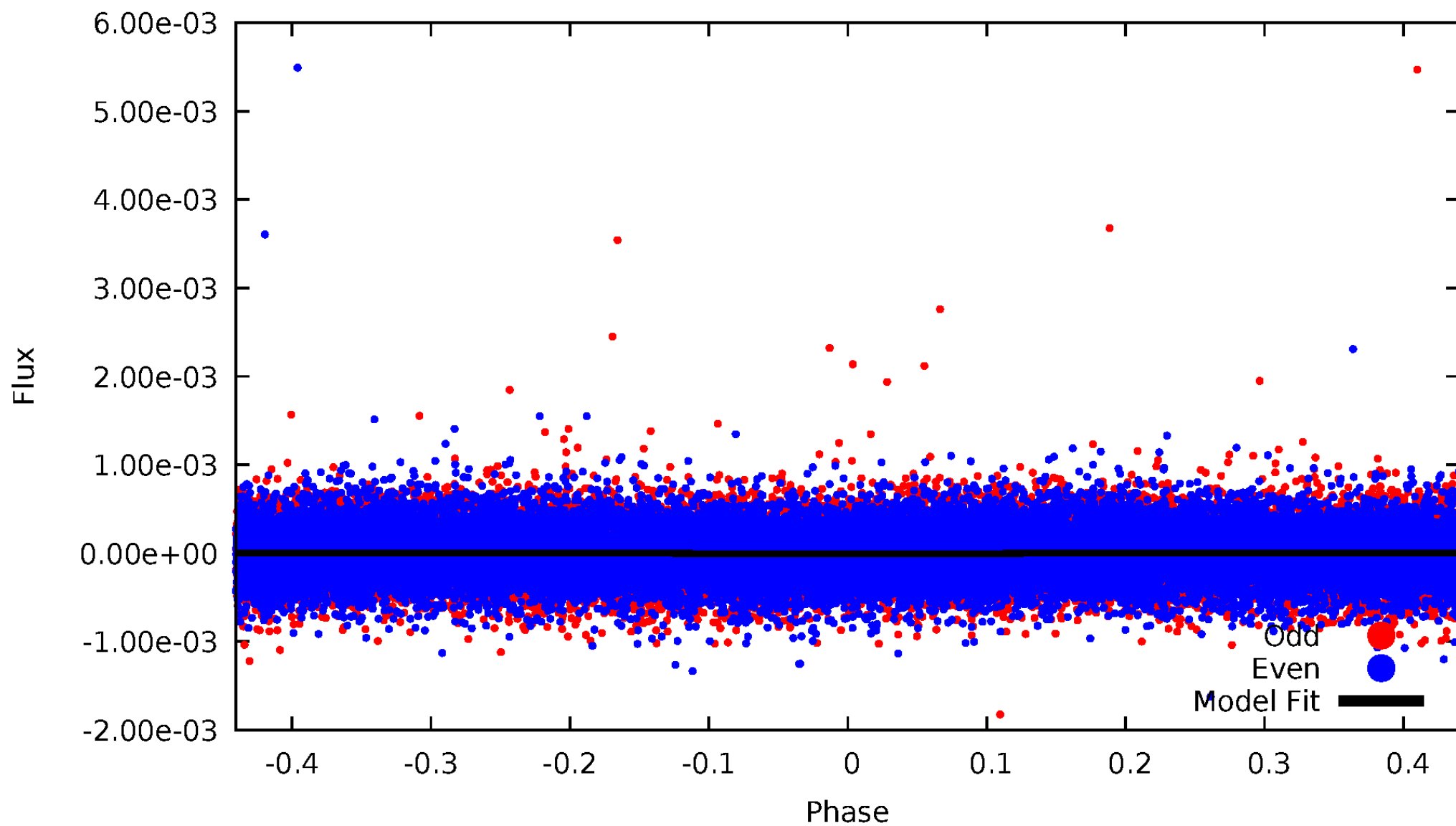


TCE 008526451-02



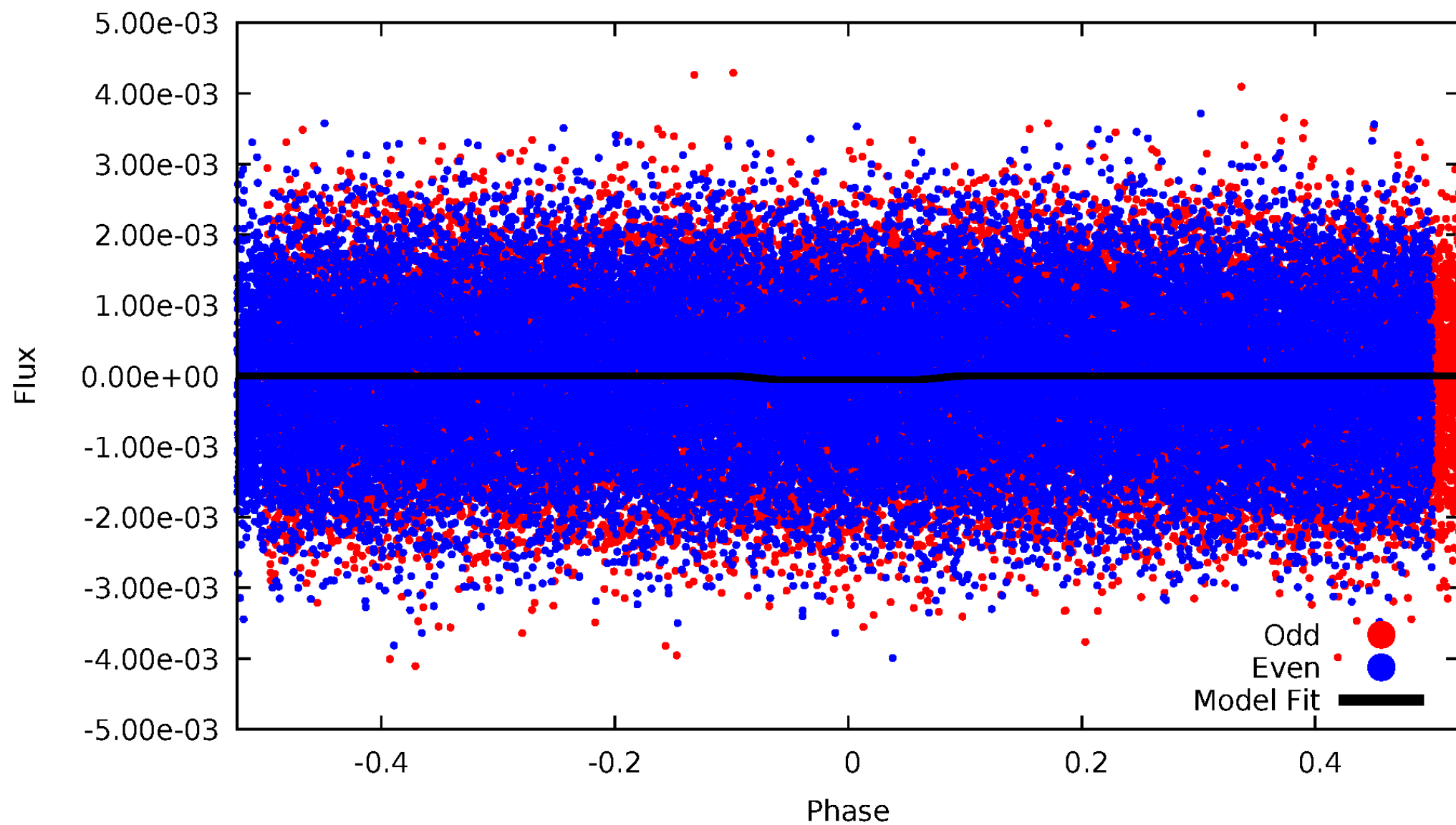
DV Odd/Even

TCE 008526451-02



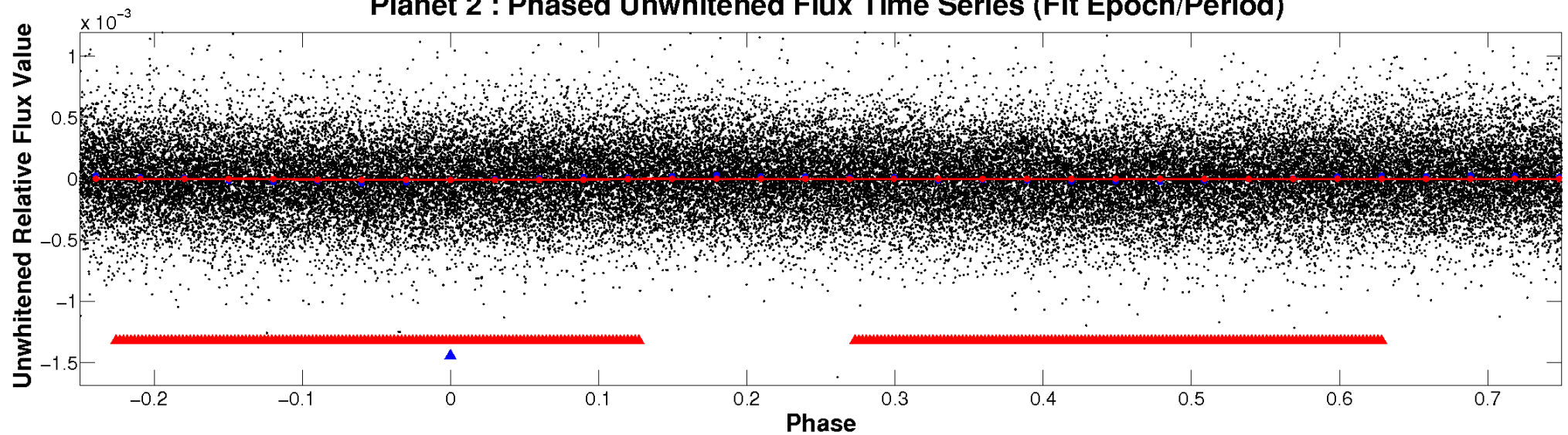
ALT Odd/Even

TCE 008526451-02

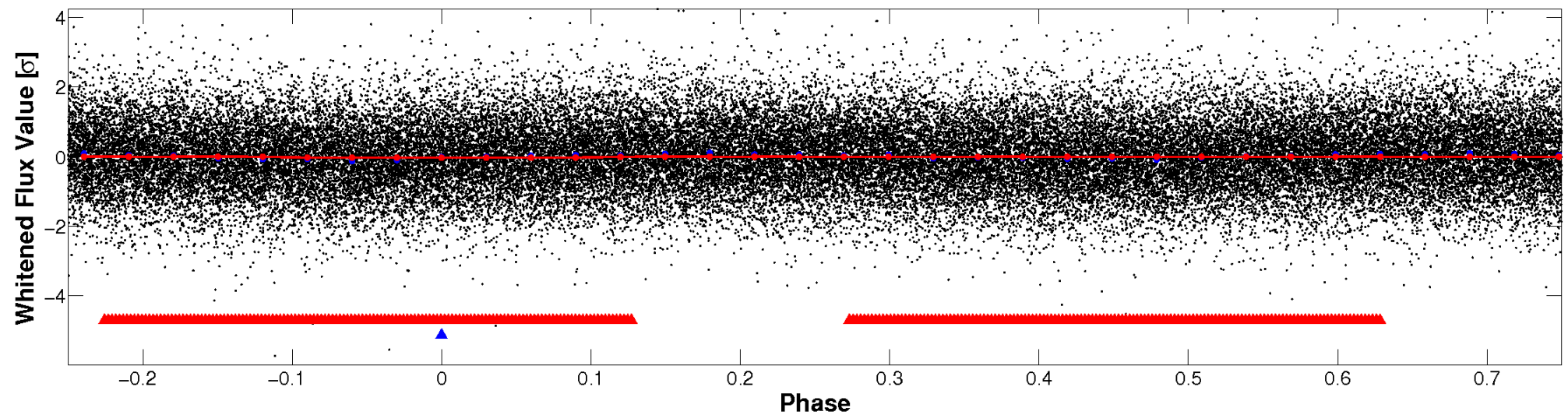


Non-Whitened Vs. Whitened Light Curve

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

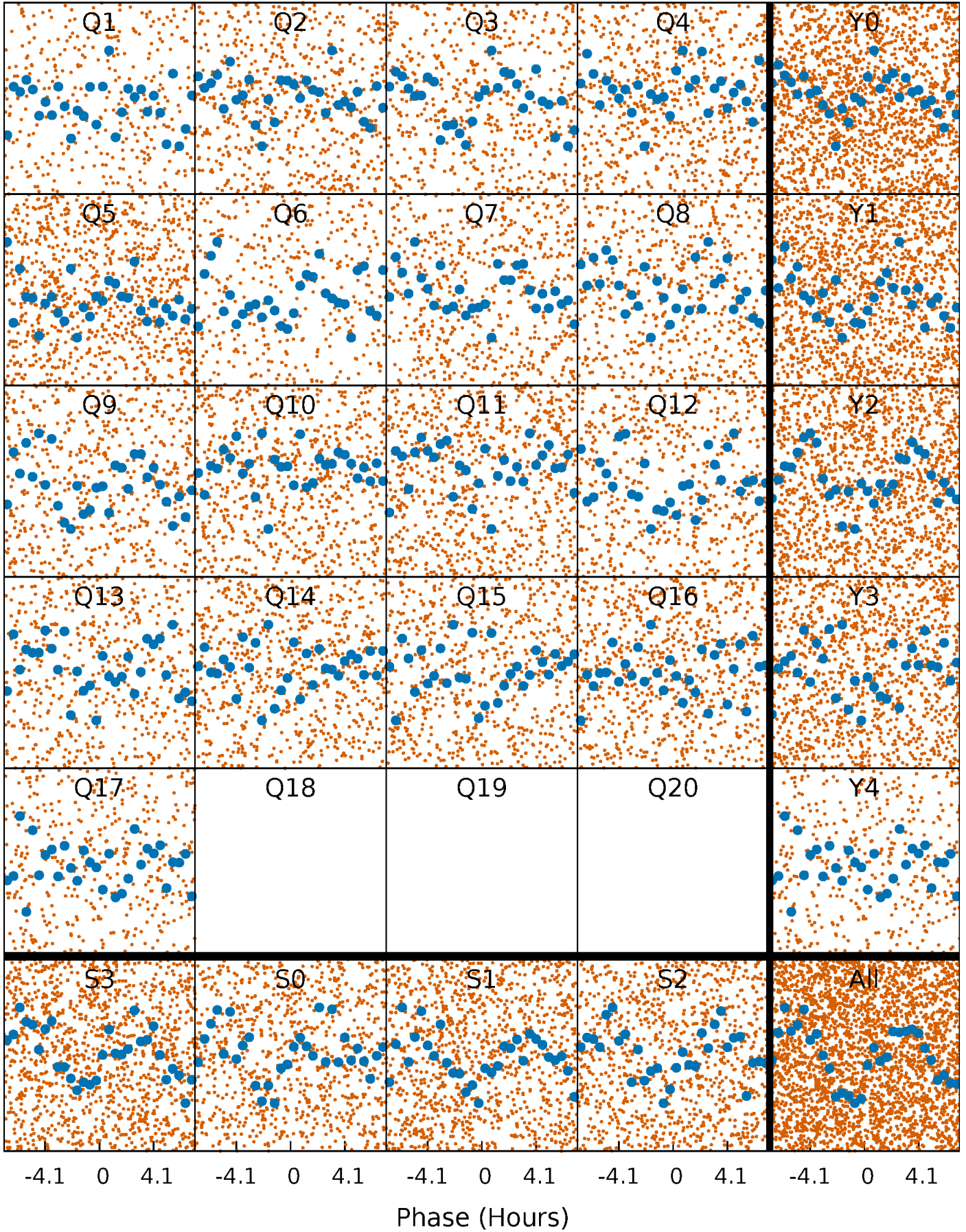


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



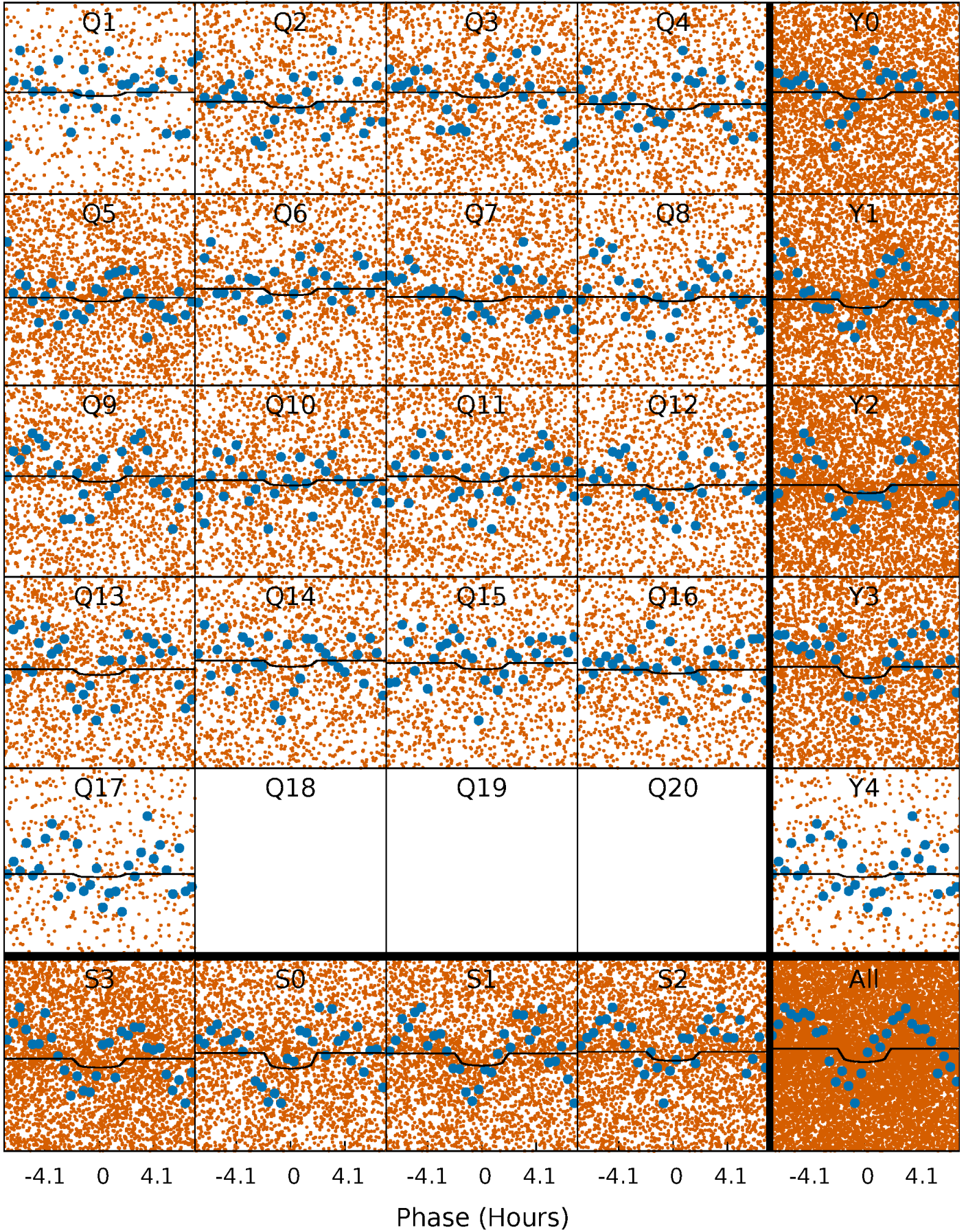
PDC Quarter-Phased Transit Curves

TCE 008526451-02 P= 0.682761 Days $T_0=131.916890$ (BKJD)



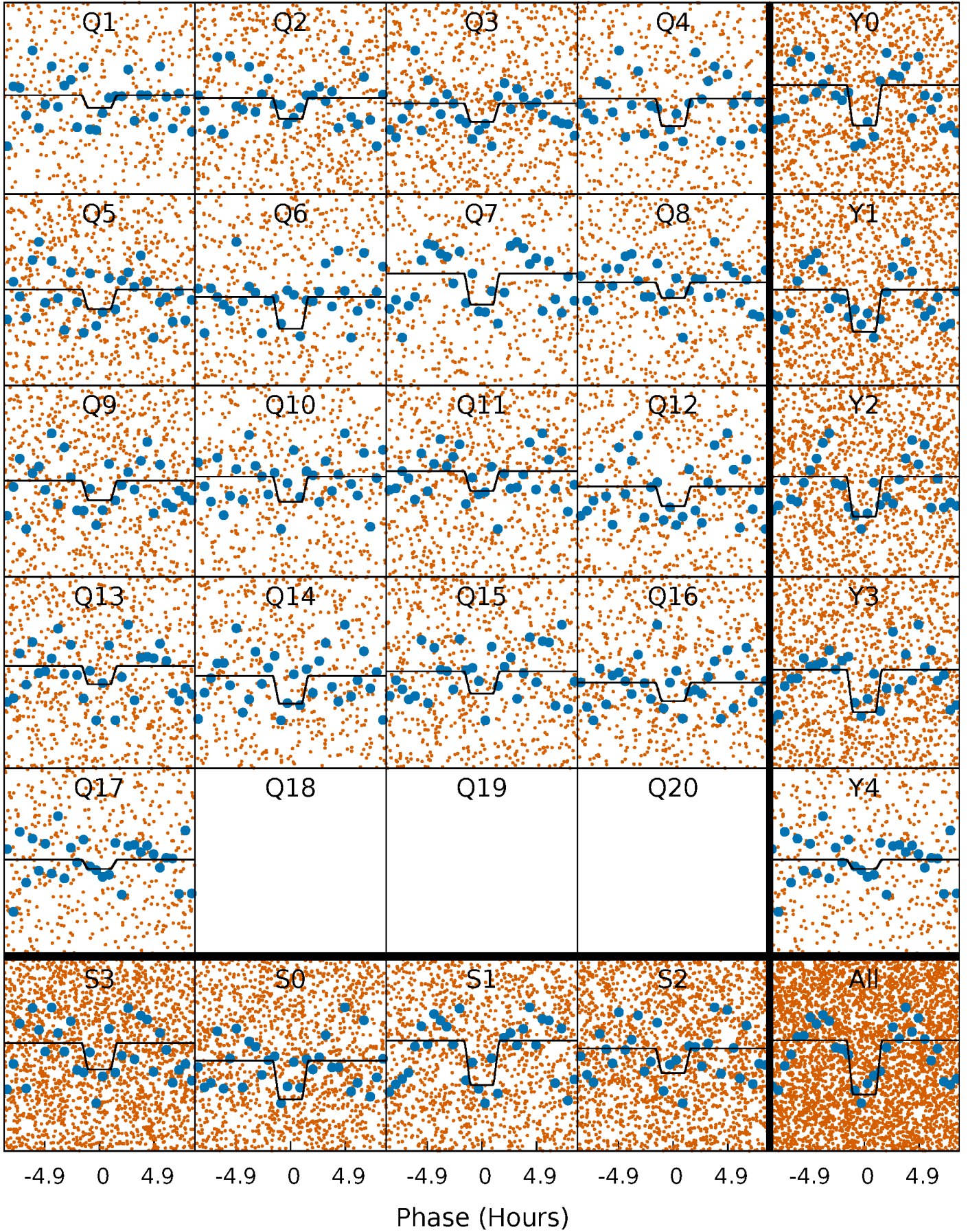
DV Quarter-Phased Transit Curves

TCE 008526451-02 P= 0.682761 Days $T_0=131.916890$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

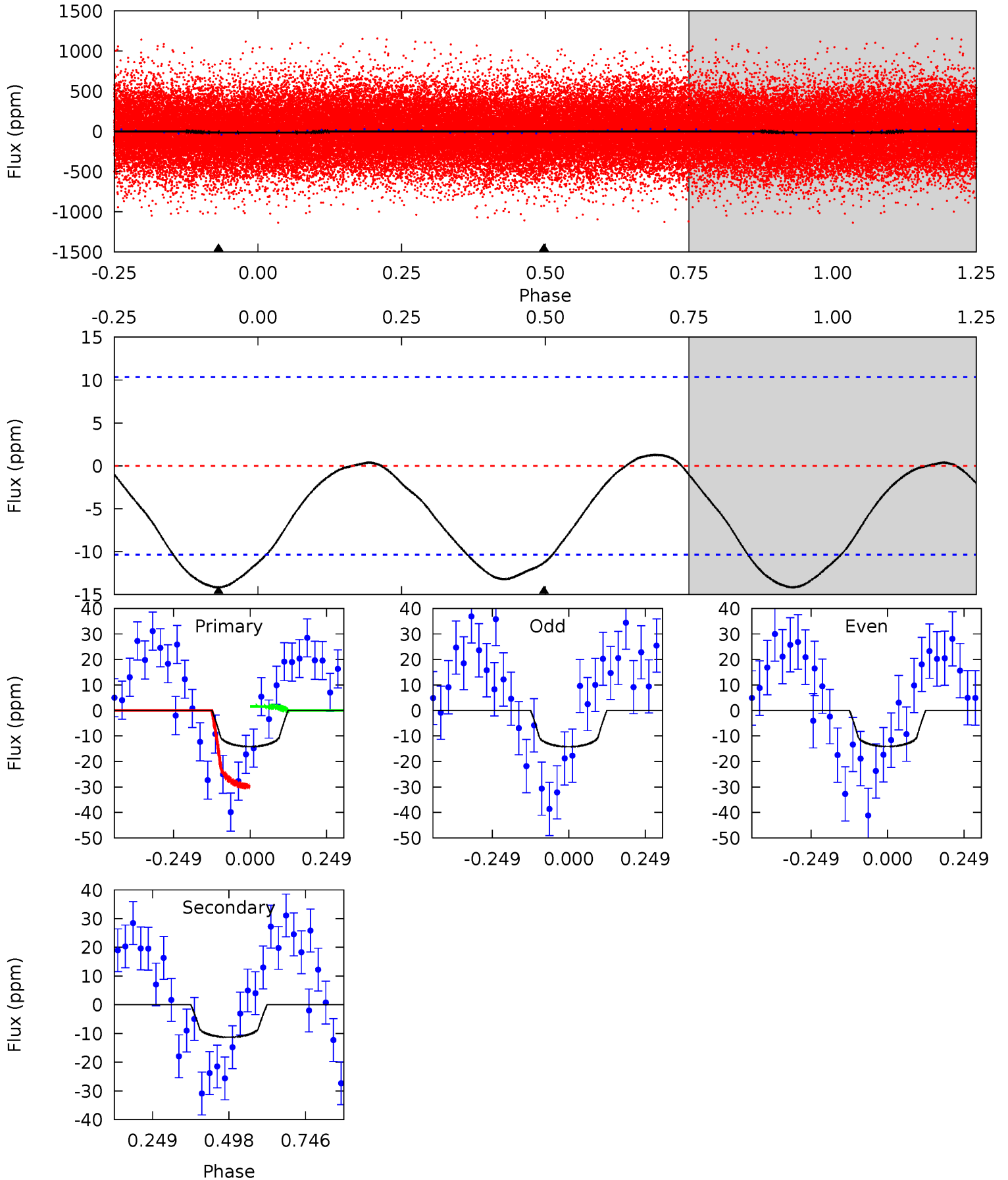
TCE 008526451-02 P= 0.682796 Days $T_0=131.839749$ (BKJD)



DV Model-Shift Uniqueness Test

008526451-02, P = 0.682761 Days, E = 131.234129 Days

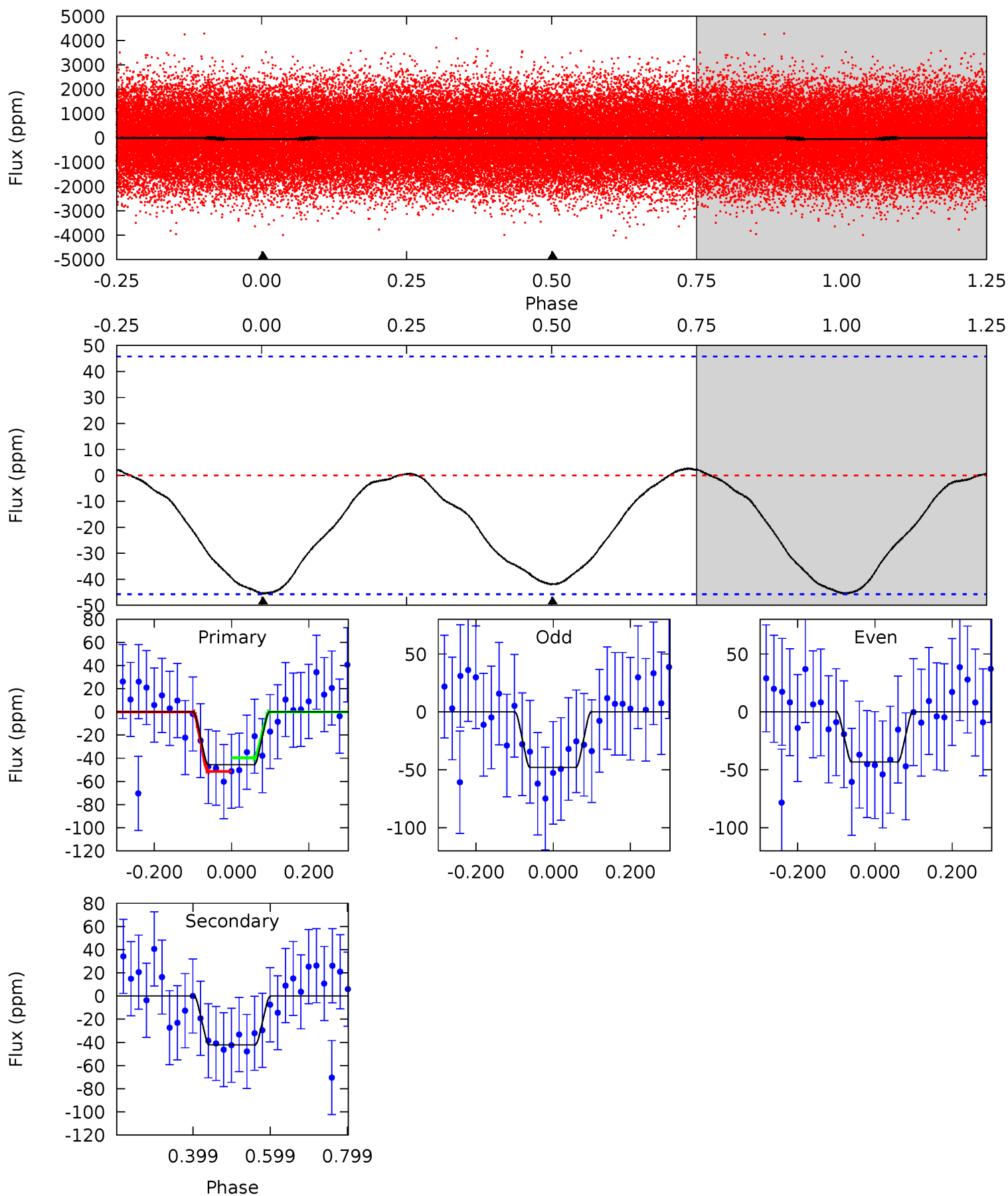
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.98	4.76	0	0	4.37	1.15	0.42	5.98	5.98	4.76	4.76	0.02	1.21	0.08	5.80



Alt Model-Shift Uniqueness Test

008526451-02, P = 0.682796 Days, E = 131.156953 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.40	4.06	0	0	4.42	1.28	0.19	4.40	4.40	4.06	4.06	0.22	1.10	0.06	0.57



Stellar Parameters For KIC 008526451

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7716^{+241}_{-295}	$4.047^{+0.182}_{-0.149}$	$-0.140^{+0.200}_{-0.300}$	$2.027^{+0.502}_{-0.502}$	$1.669^{+0.218}_{-0.267}$	$0.282^{+0.271}_{-0.118}$
	+3%/-4%	+4%/-4%	+143%/-214%	+25%/-25%	+13%/-16%	+96%/-42%
Source	KIC0	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 008526451-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 2	$0.75^{+0.61}_{-0.46}$	5011^{+342}_{-325}	7214^{+7848}_{-2045}	$3.310^{+20.001}_{-2.241}$
Alt.	-42 ± 10	$1.57^{+0.66}_{-0.63}$	5025^{+373}_{-350}	7006^{+2949}_{-1302}	$3.033^{+5.138}_{-1.624}$

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 $A_{obs} \gg 1.0$

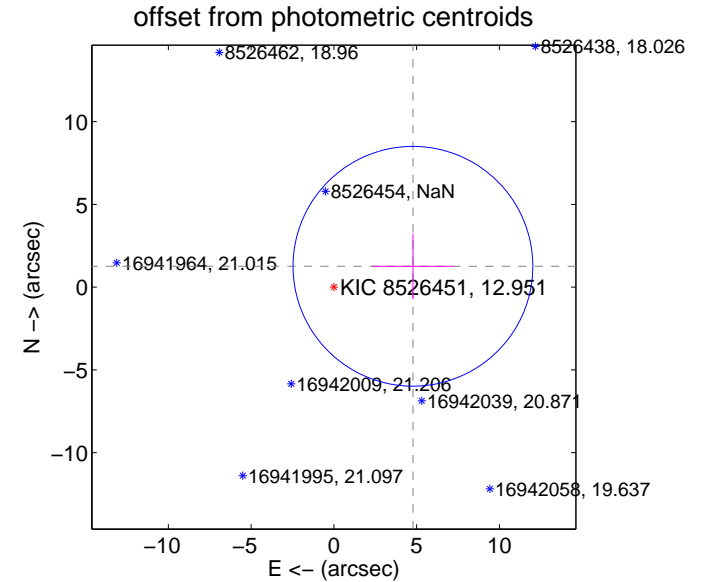
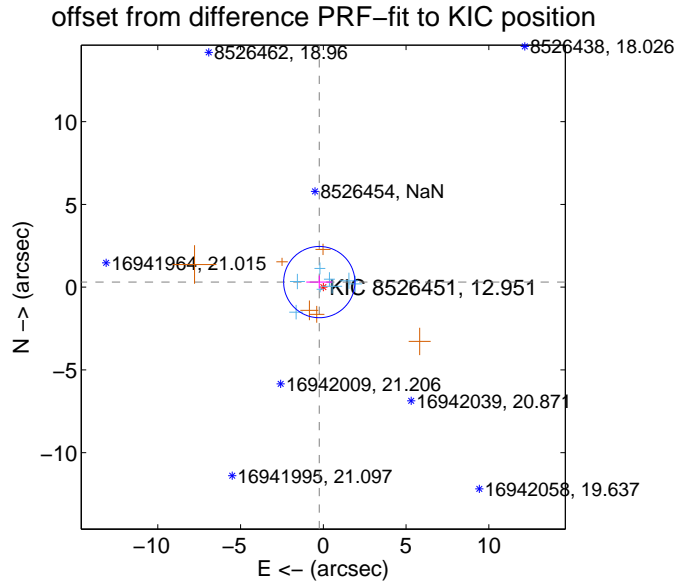
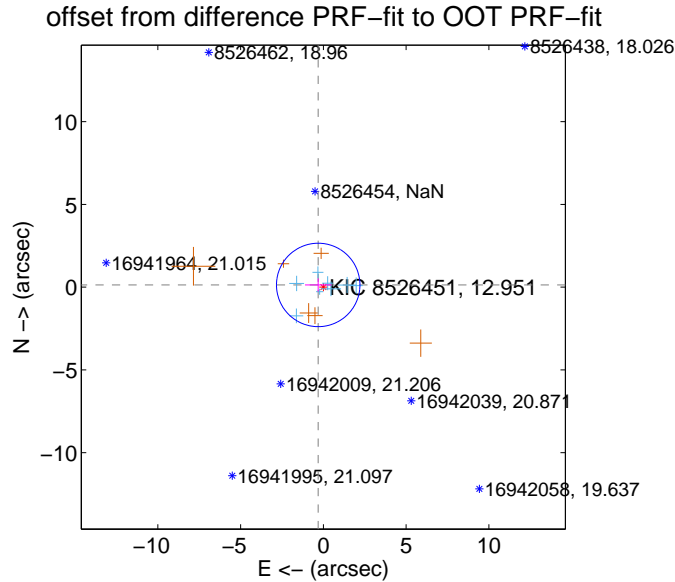
DV Centroid Data

Supplemental centroid analysis for 008526451-02. Kepler magnitude: 12.95. Transit SNR 2.99

There are 8 quarters with good PRF difference image offsets

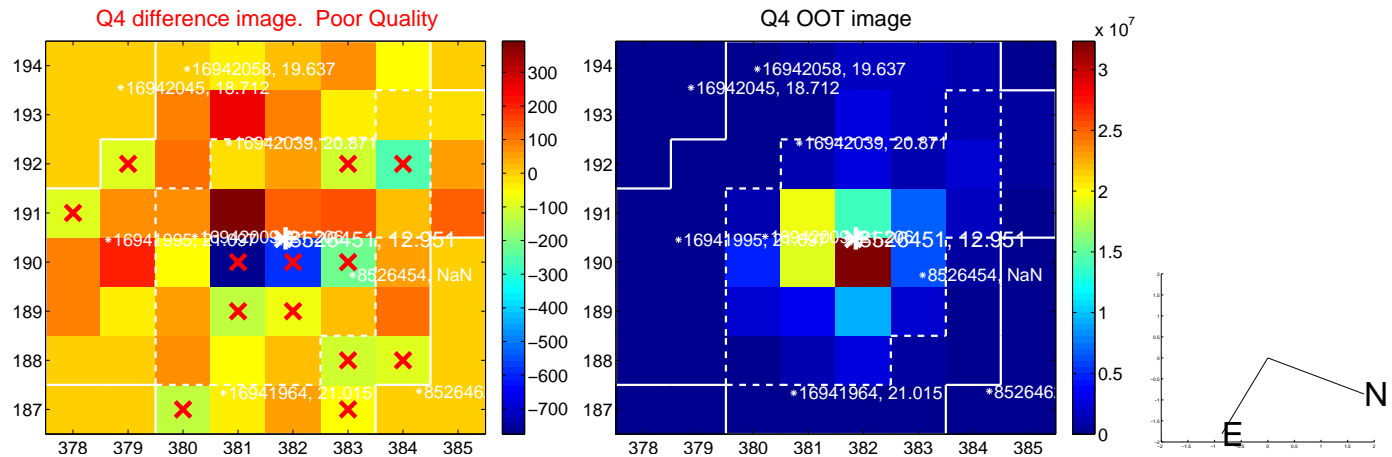
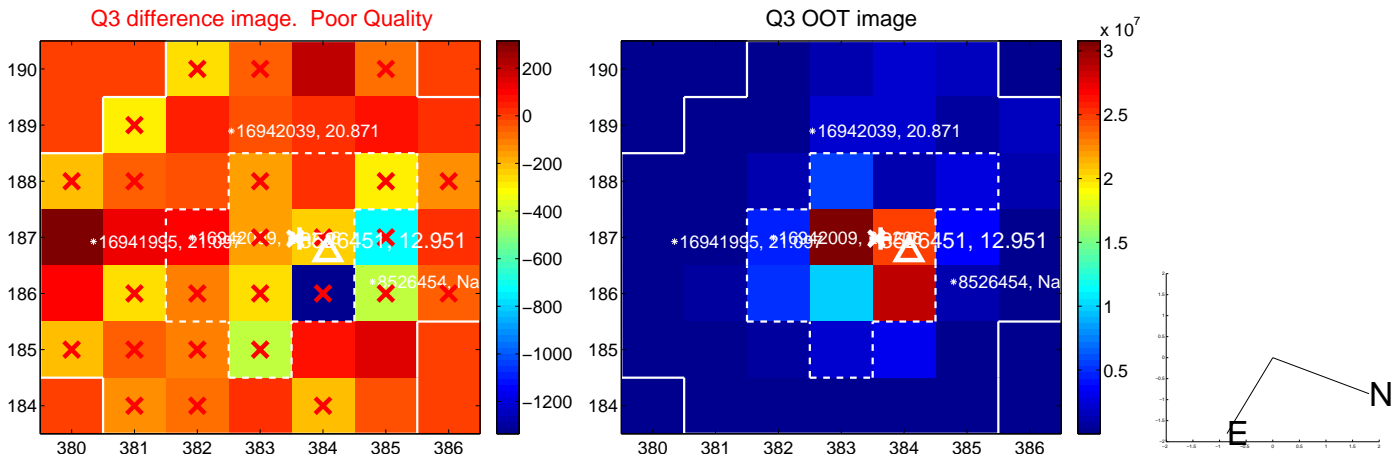
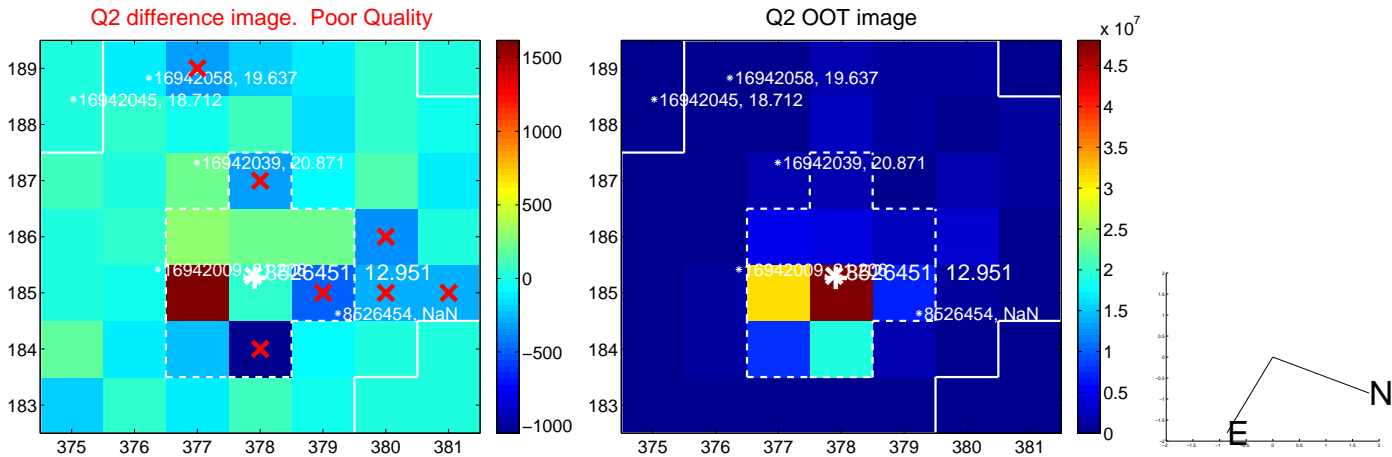
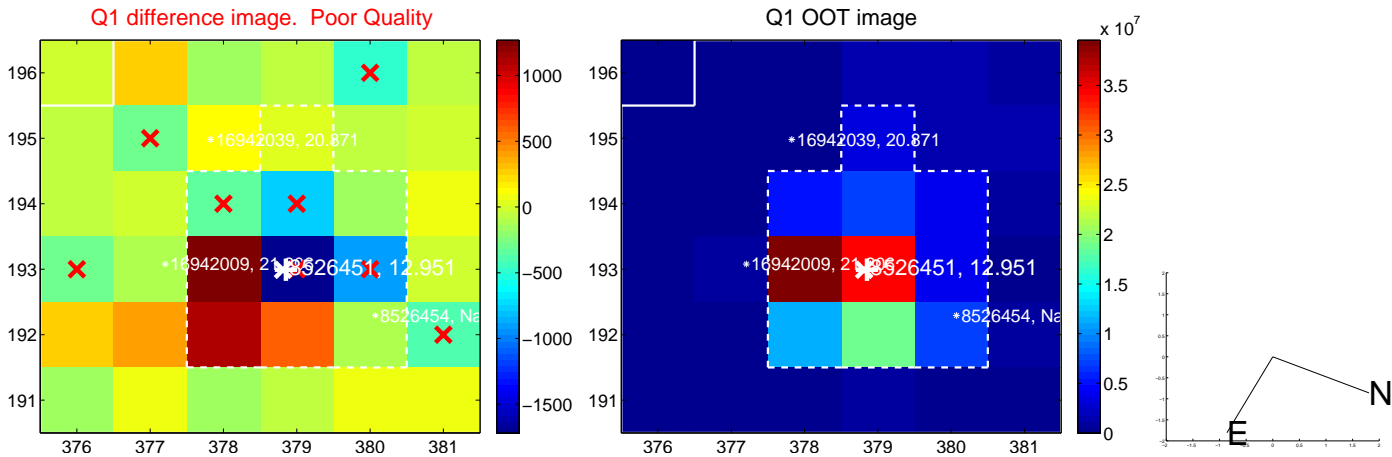
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.339 ± 0.840	0.40	0.311 ± 0.800	0.134 ± 0.396
PRF-fit source offset from KIC position	0.392 ± 0.717	0.55	0.244 ± 0.786	0.306 ± 0.394
photometric centroid source offset	4.94 ± 2.41	2.05	-4.77 ± 2.44	1.26 ± 1.98

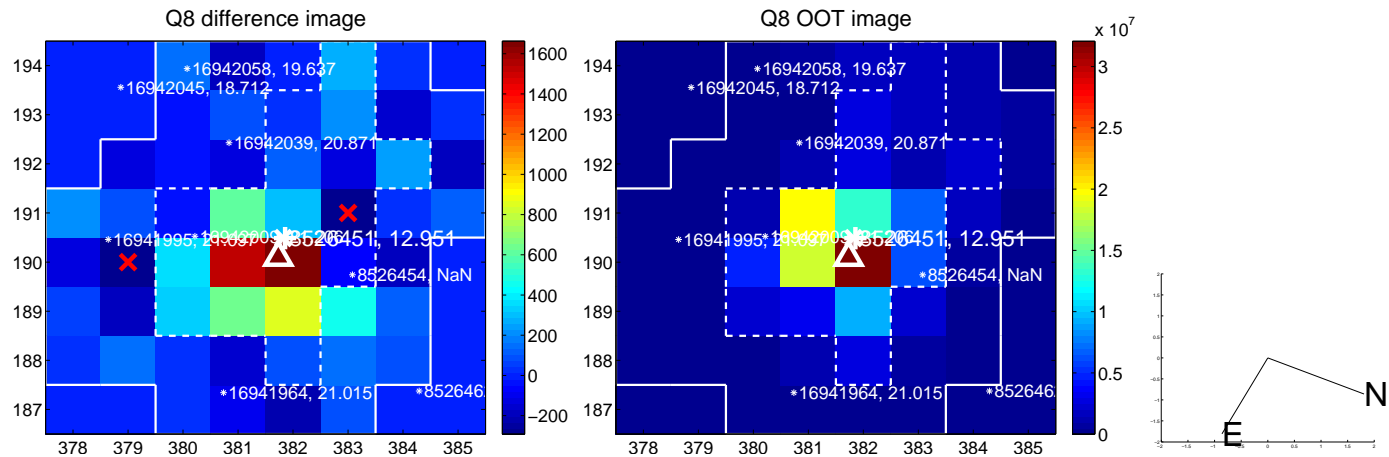
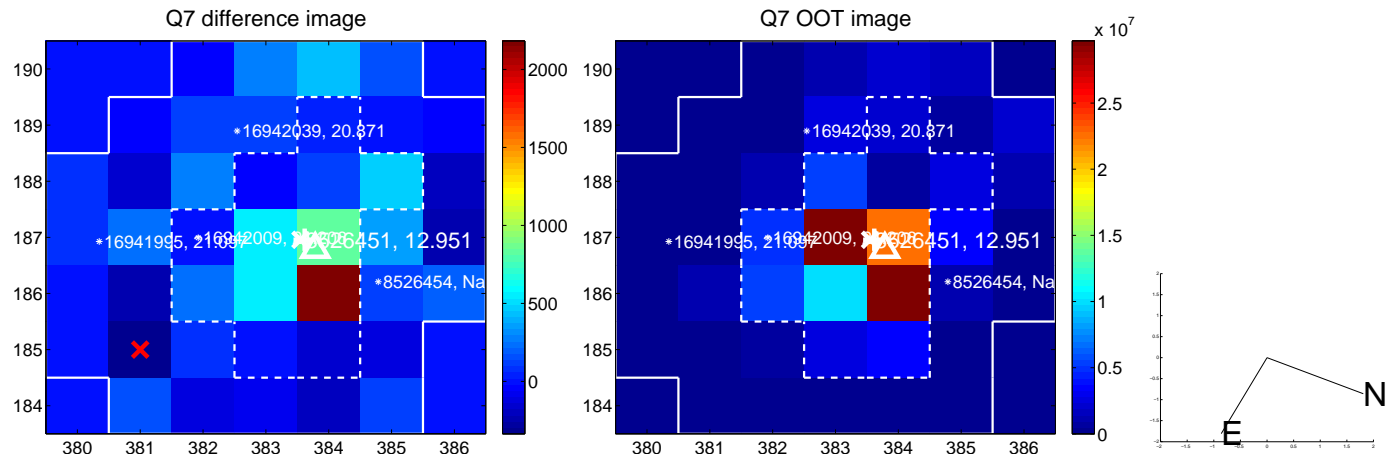
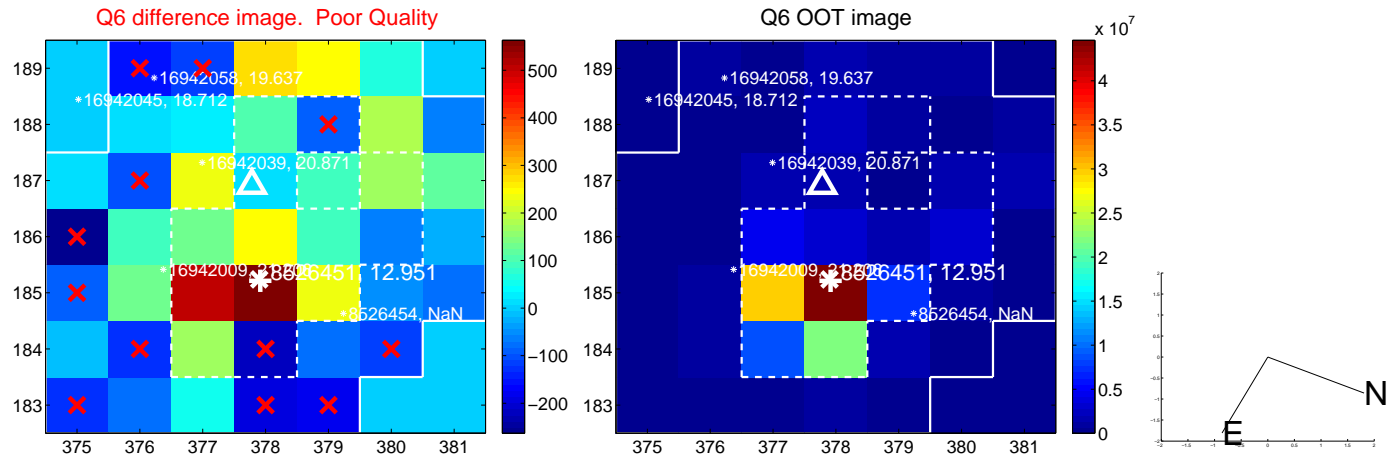
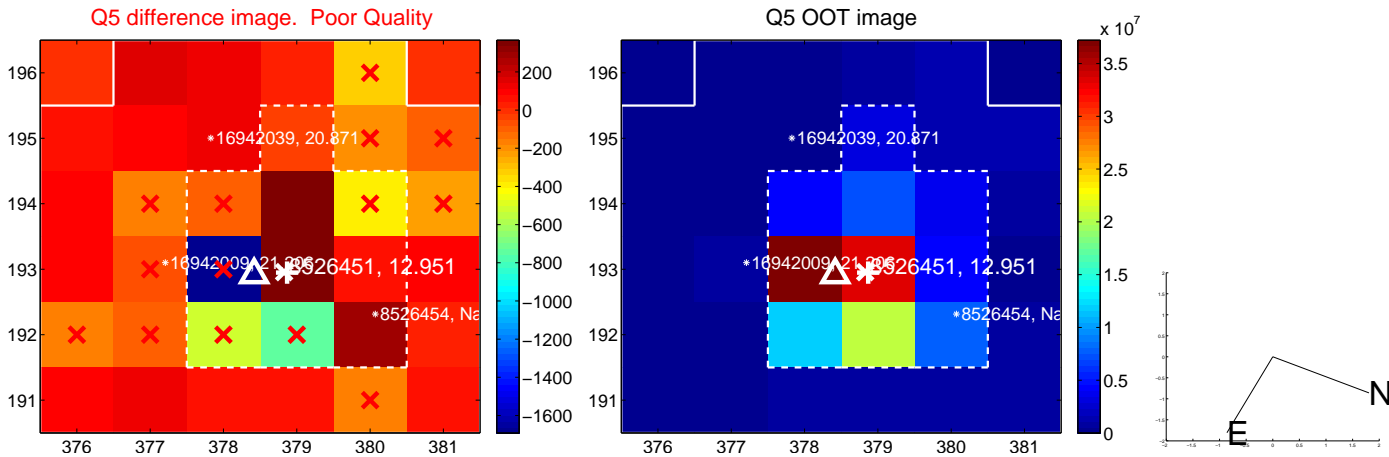


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

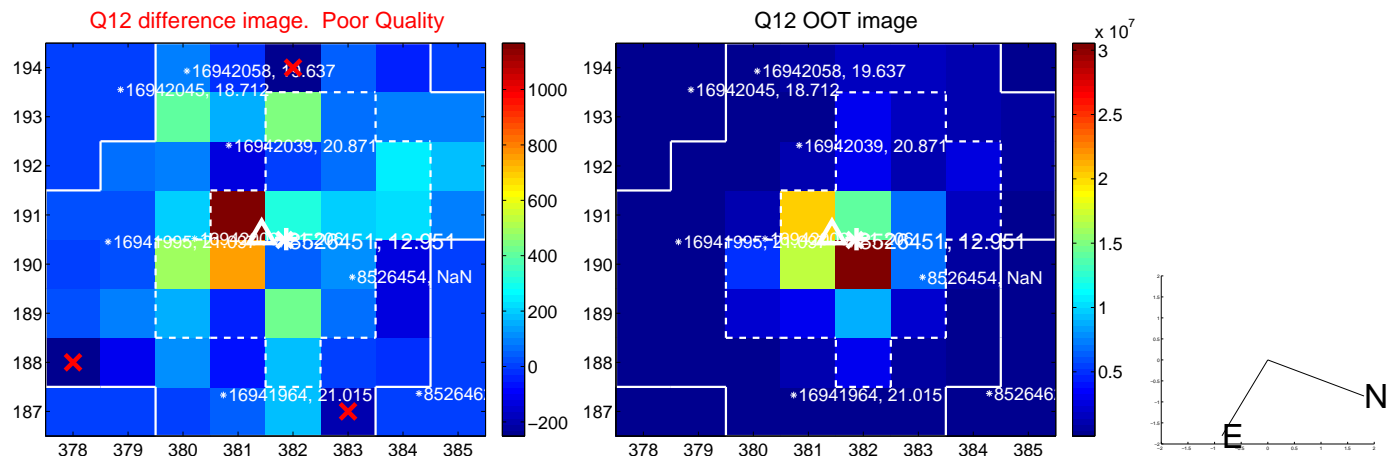
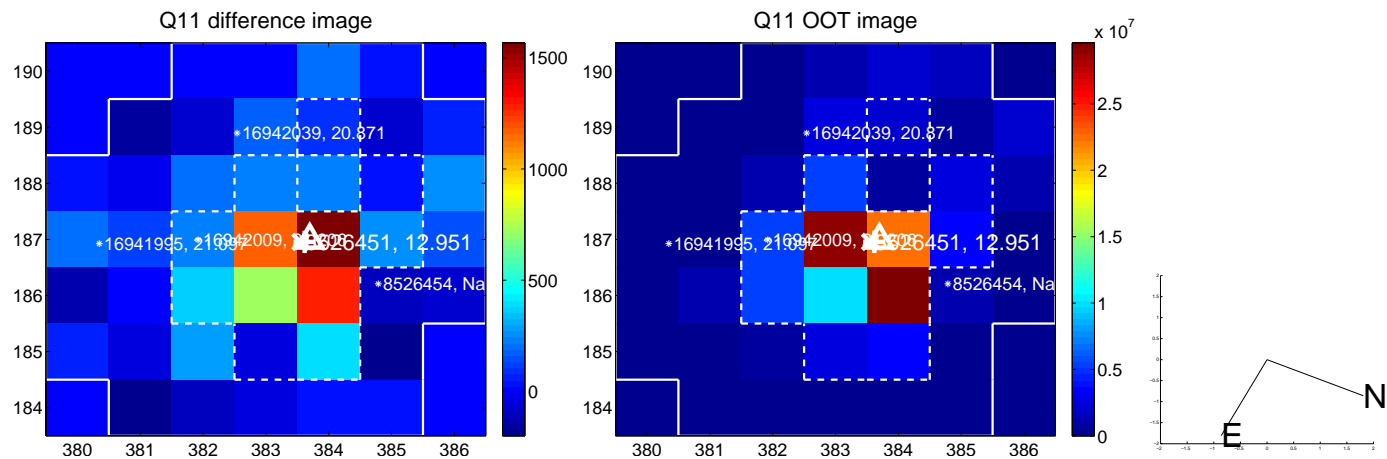
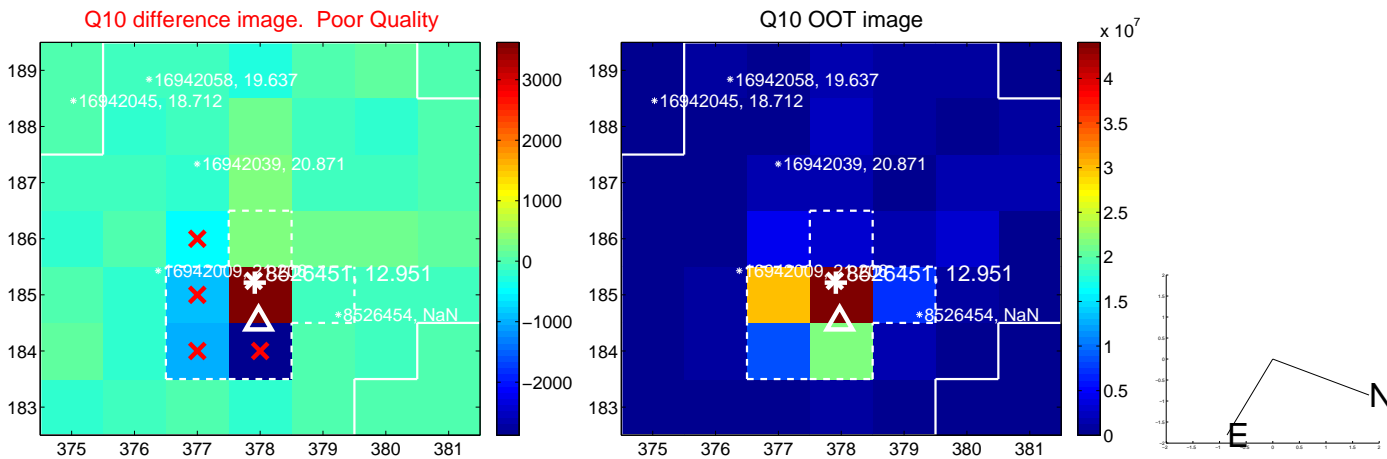
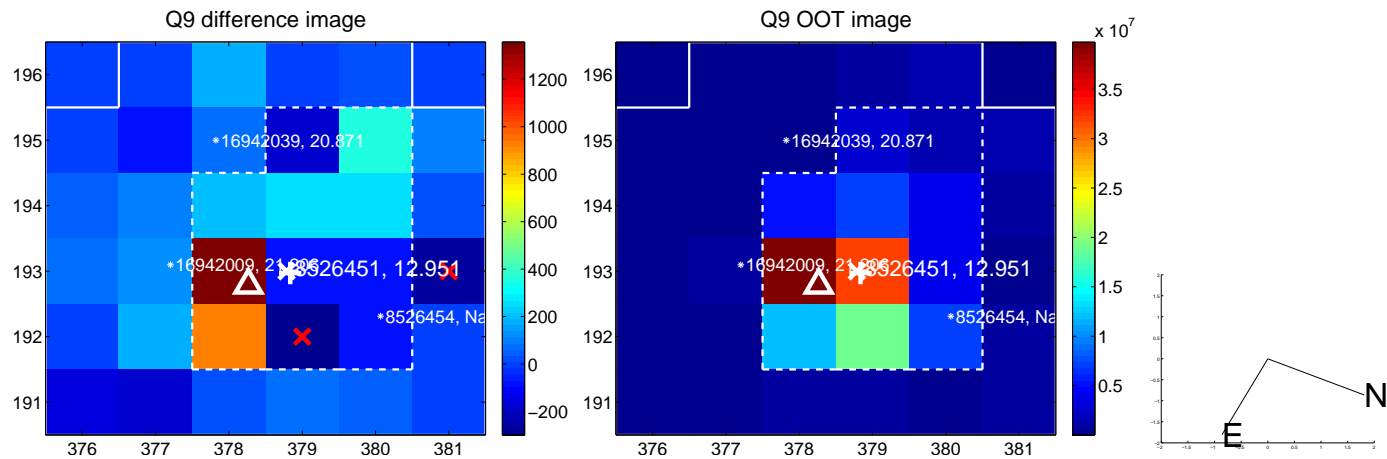
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



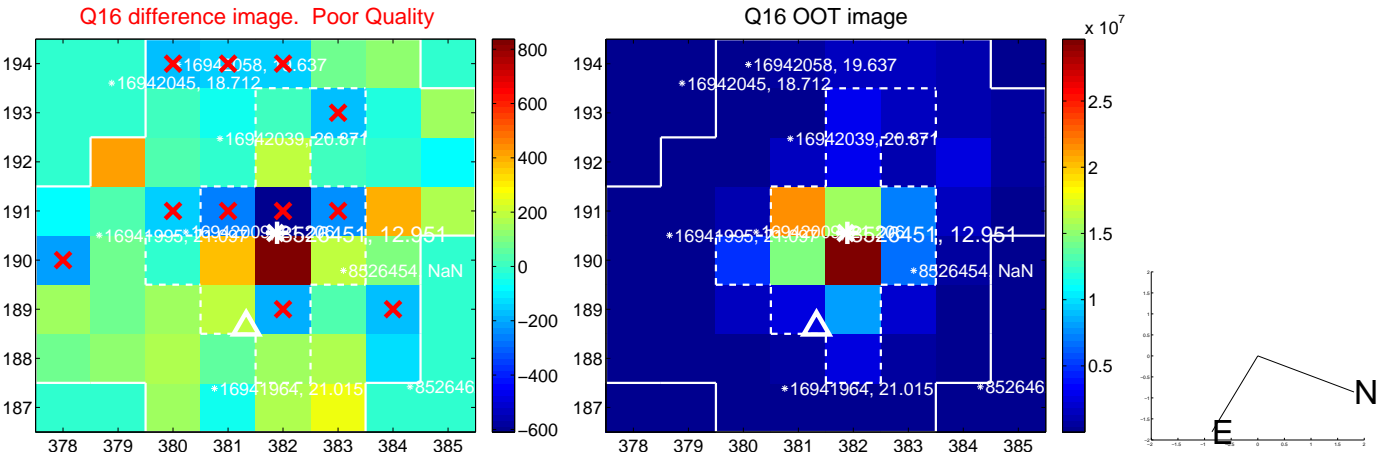
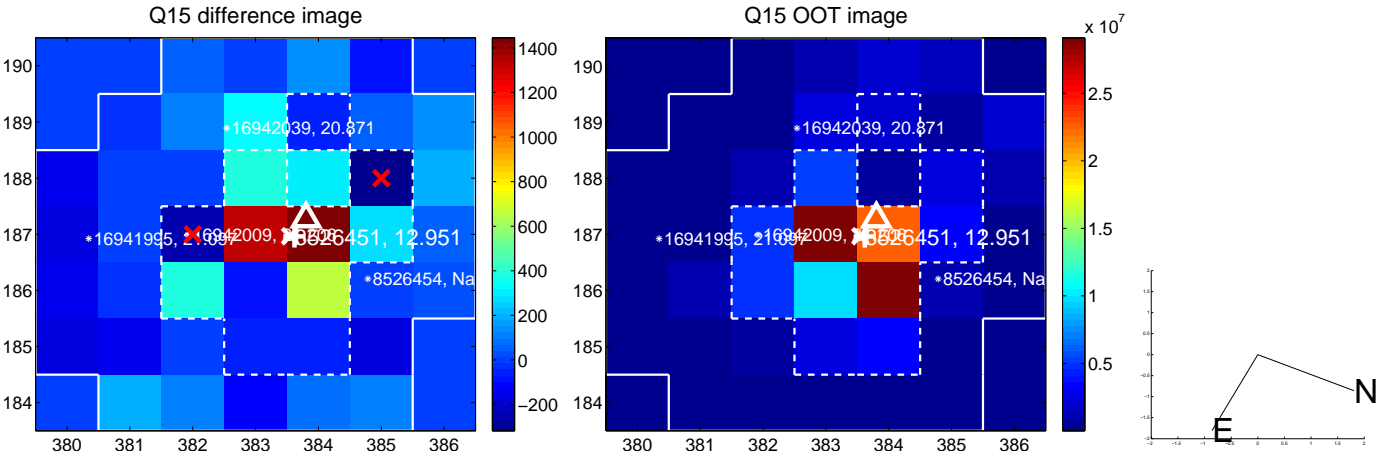
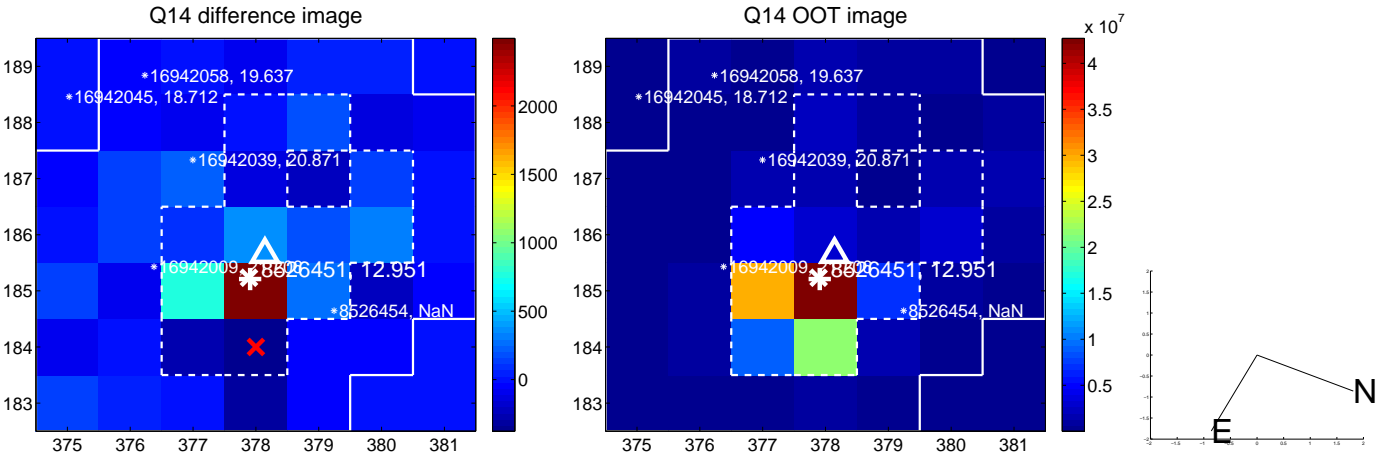
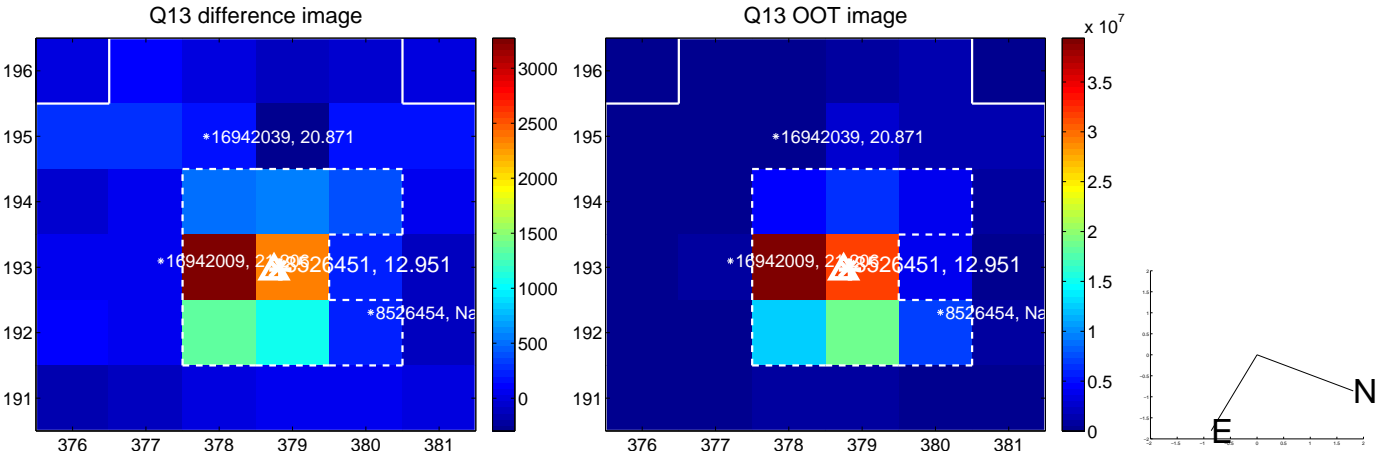
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

