

KIC 005300451

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})
005300451-01	OBS	No	0.623504	131.727656	24.3	1.543	8.2	8.9	1.35	6631	0.78	13402.79
005300451-02	OBS	No	0.623485	132.050793	10.6	2.939	7.7	5.1	1.35	6631	0.46	13403.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005300451-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
005300451-02	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.

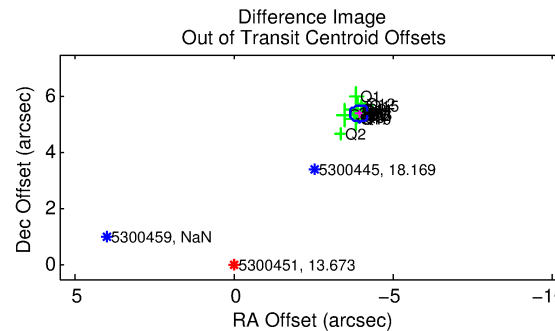
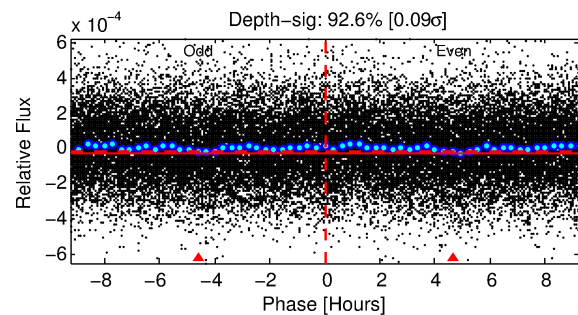
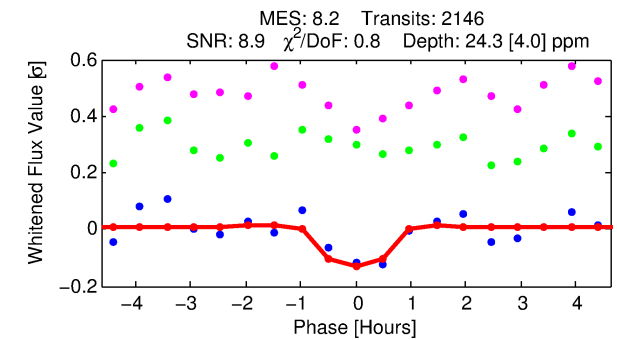
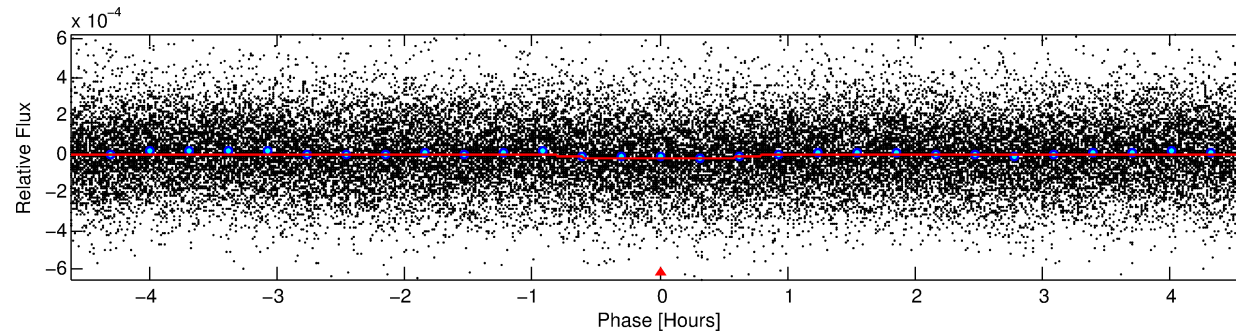
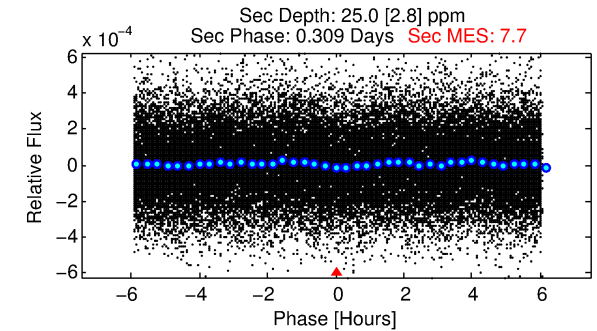
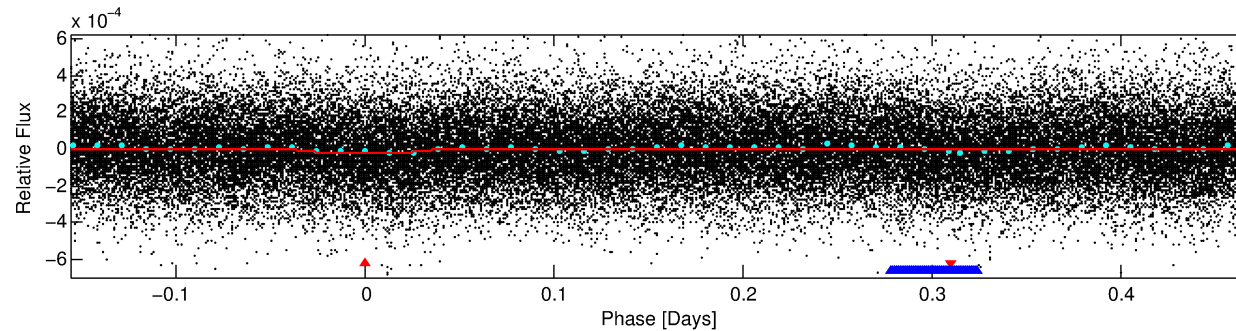
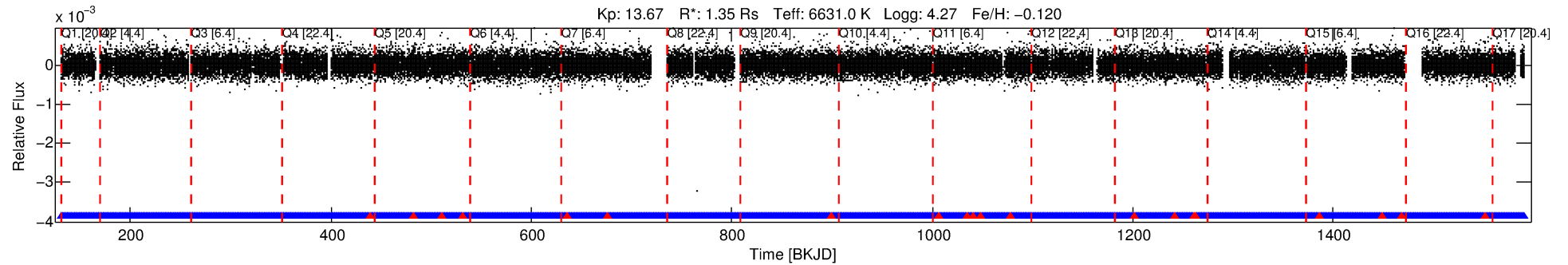
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005300451-01

No Significant Match Found

DV One-Page Summary

KIC: 5300451 Candidate: 1 of 2 Period: 0.624 d



DV Fit Results:

Period = 0.62350 [0.00001] d
Epoch = 131.7277 [0.0024] BKJD
Rp/R* = 0.0053 [0.0014]
a/R* = 1.68 [1.57]
b = 0.90 [0.32]
Seff = 13402.79 [5248.38]
Teq = 2744 [269] K
Rp = 0.78 [0.31] Re
a = 0.0154 [0.0039] AU
Ag = 5.36 [3.44] [1.27 σ]
Teff = 6455 [884] K [4.02 σ]

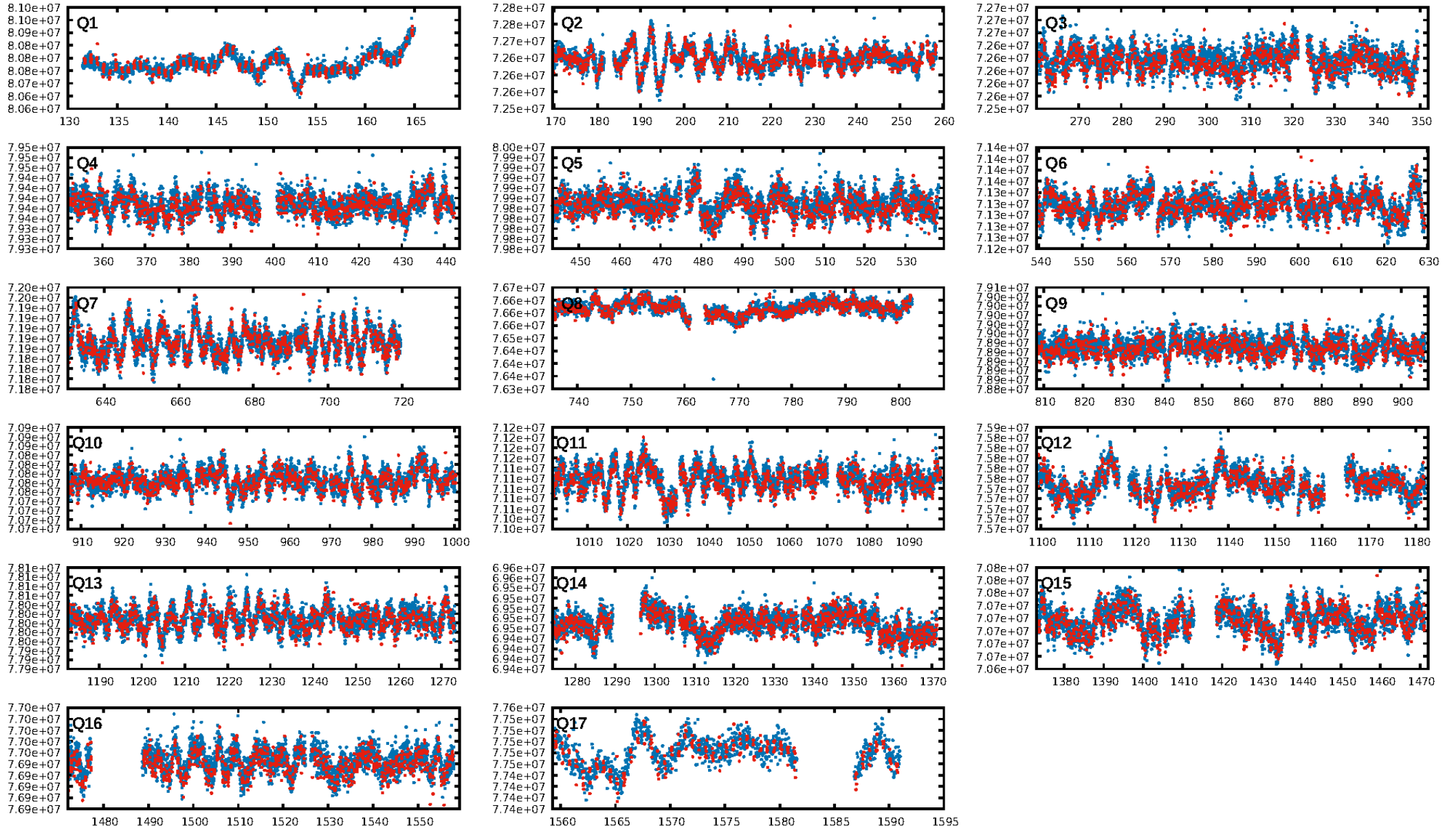
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.11e-14
RollingBand-fgt: 0.99 [2029/2049]
GhostDiagnostic-chr: 0.08909
Centroid-sig: 0.0%
Centroid-so: 4.480 arcsec [3.50 σ]
OotOffset-rm: 6.665 arcsec [67.14 σ]
KicOffset-rm: 6.602 arcsec [65.70 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.88 [15/17]

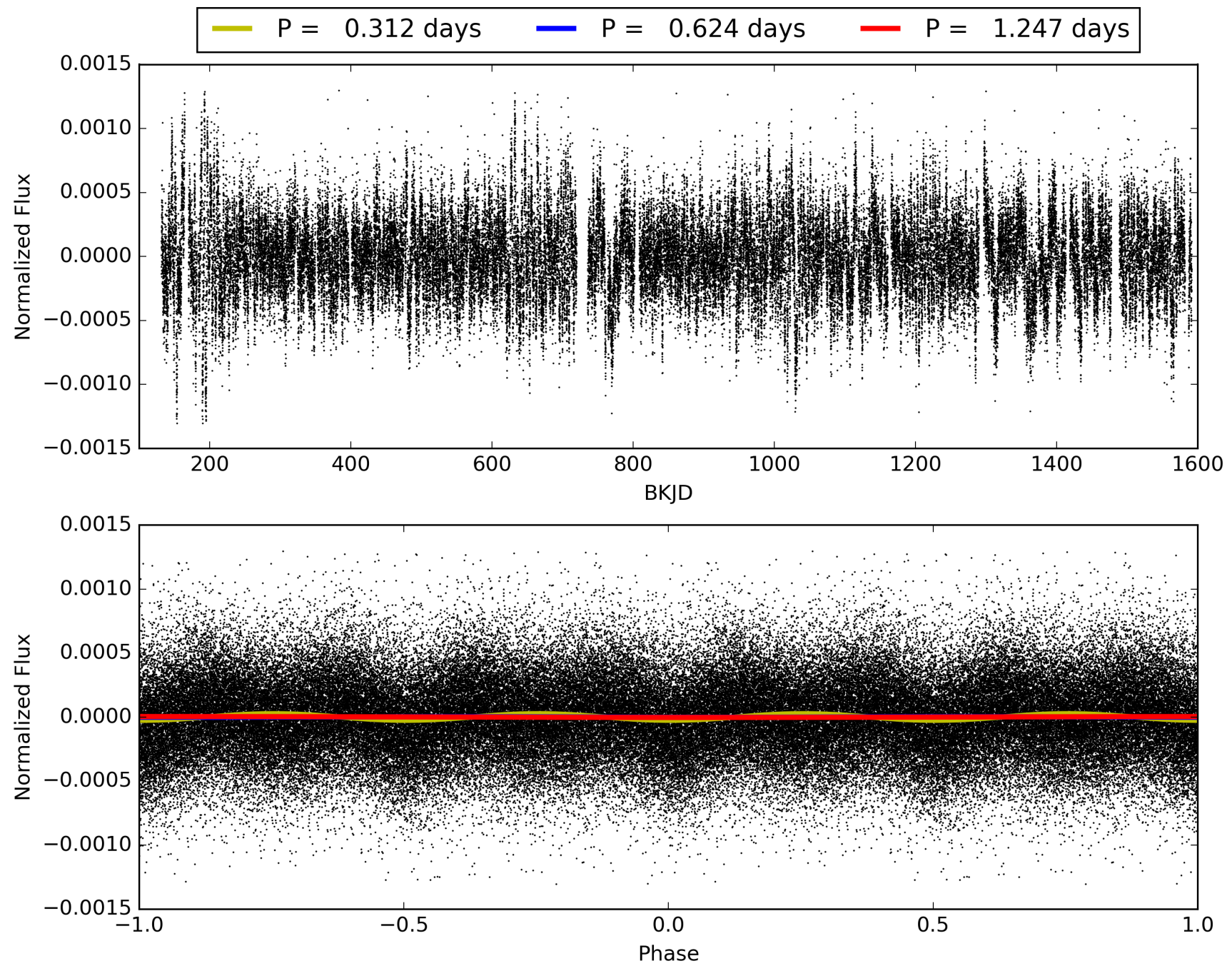
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:40:59 Z

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

TCE 005300451-01, PDC Light Curves

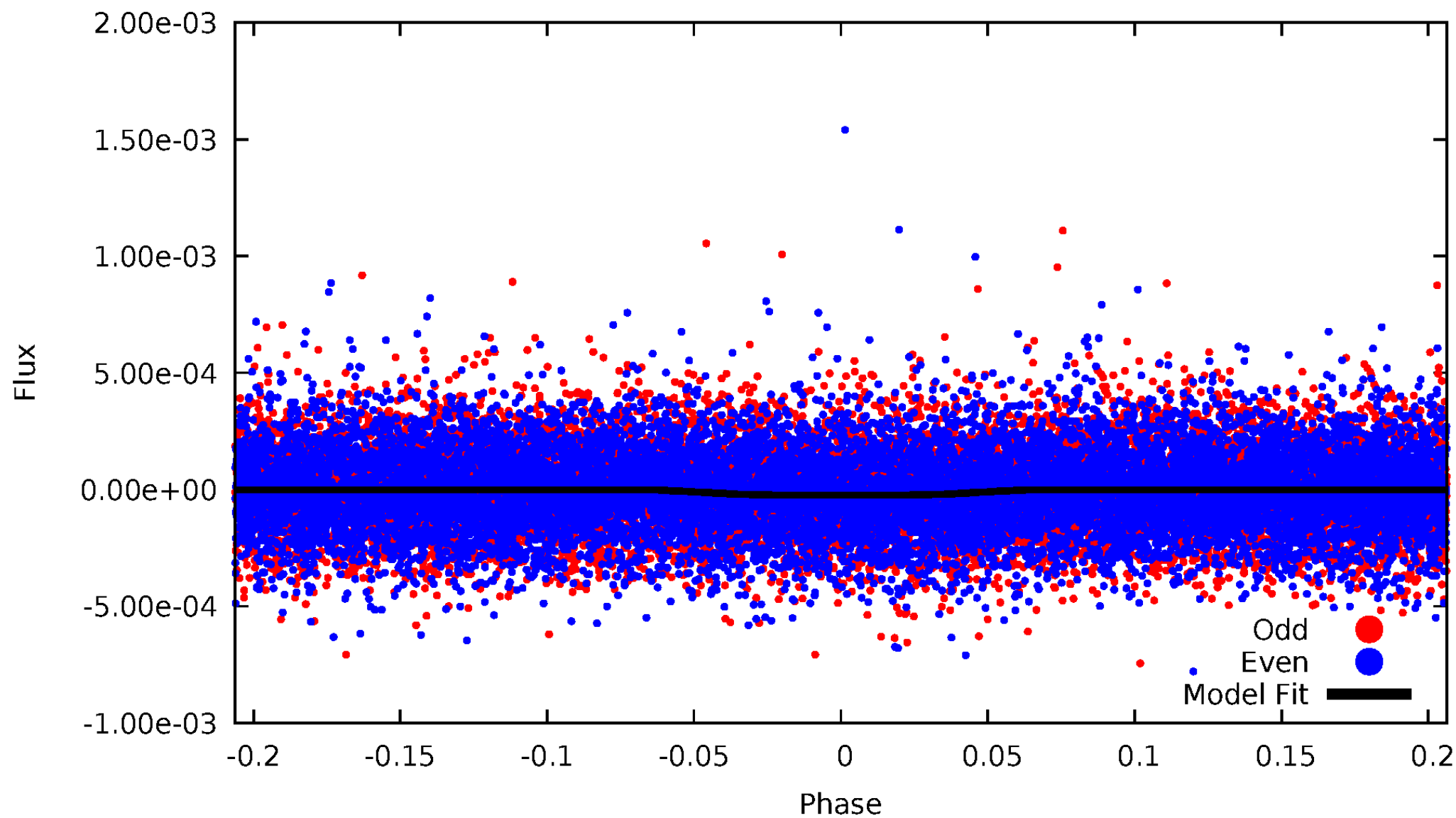


TCE 005300451-01



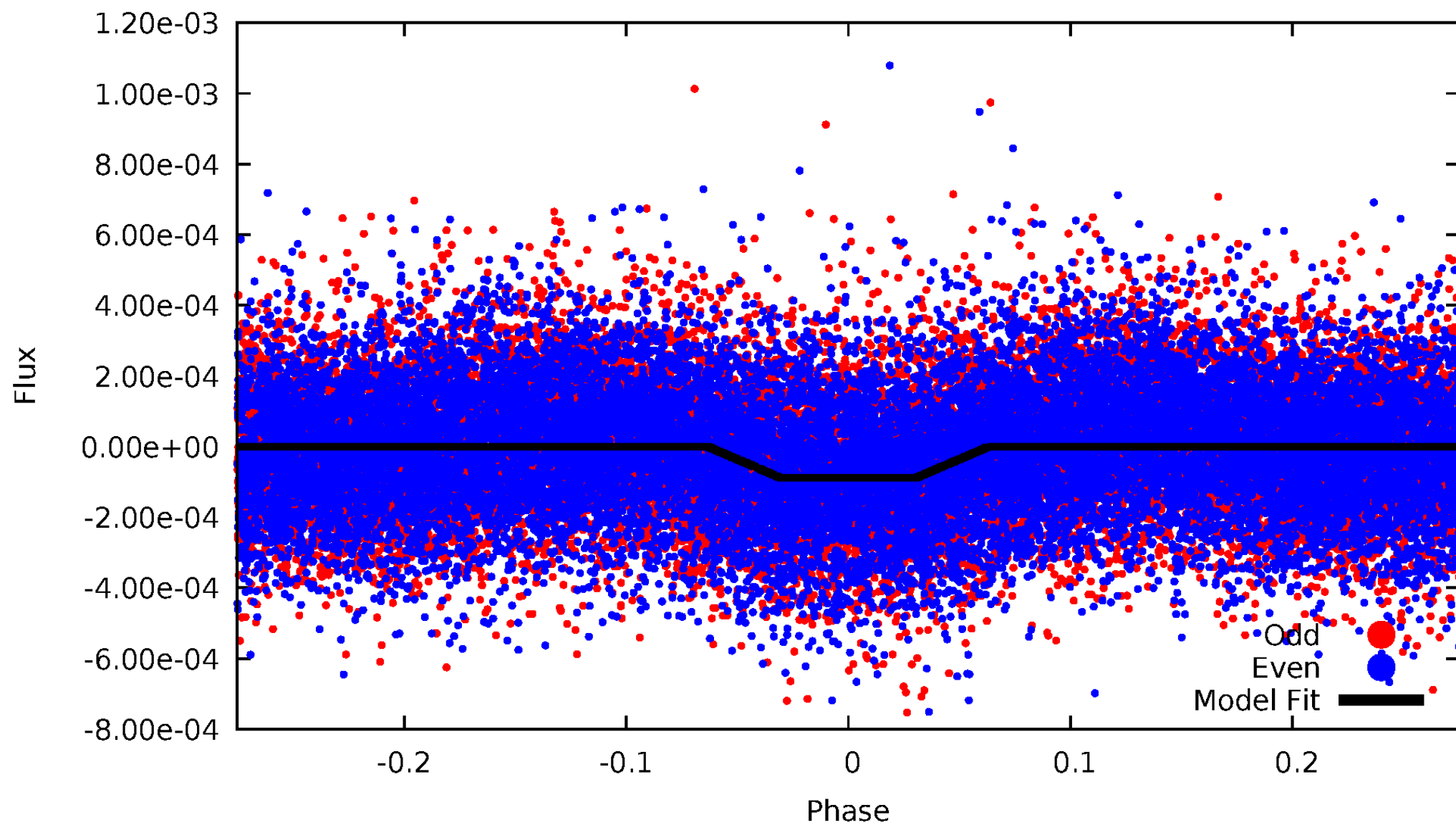
DV Odd/Even

TCE 005300451-01



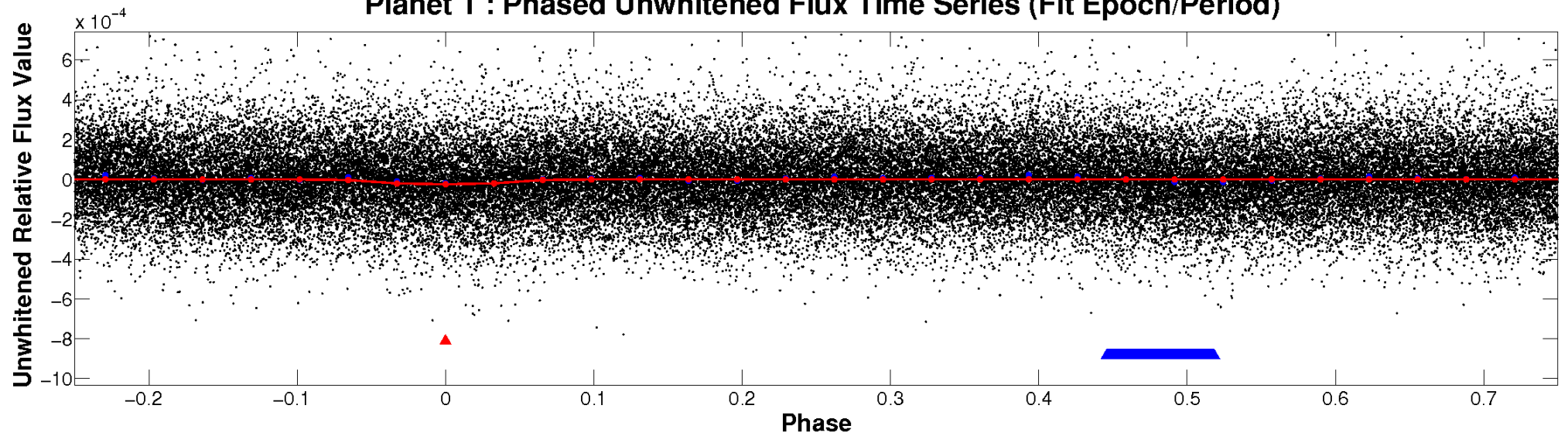
ALT Odd/Even

TCE 005300451-01

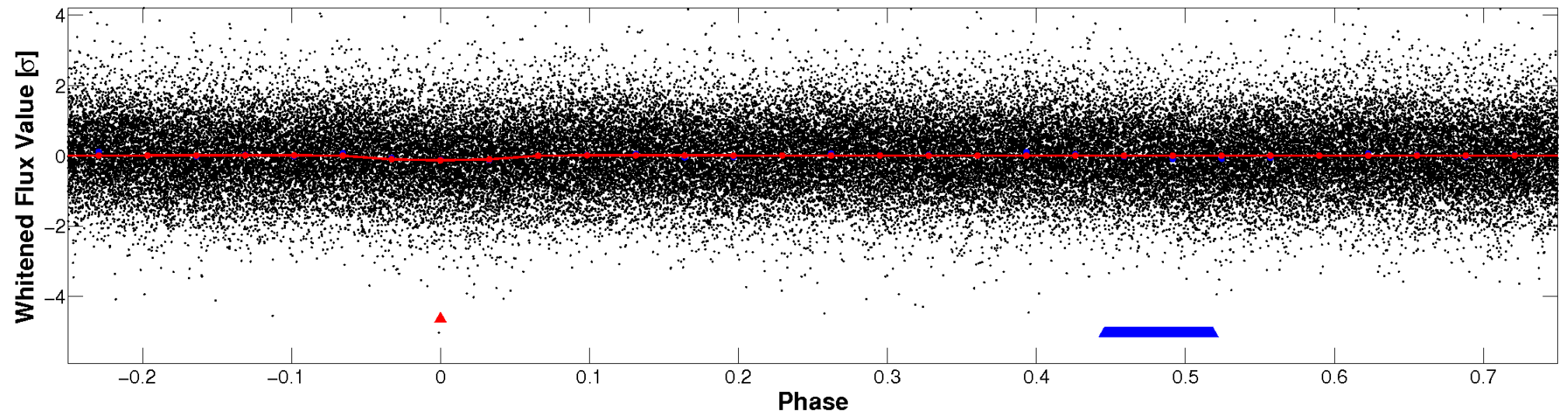


Non-Whitened Vs. Whitened Light Curve

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

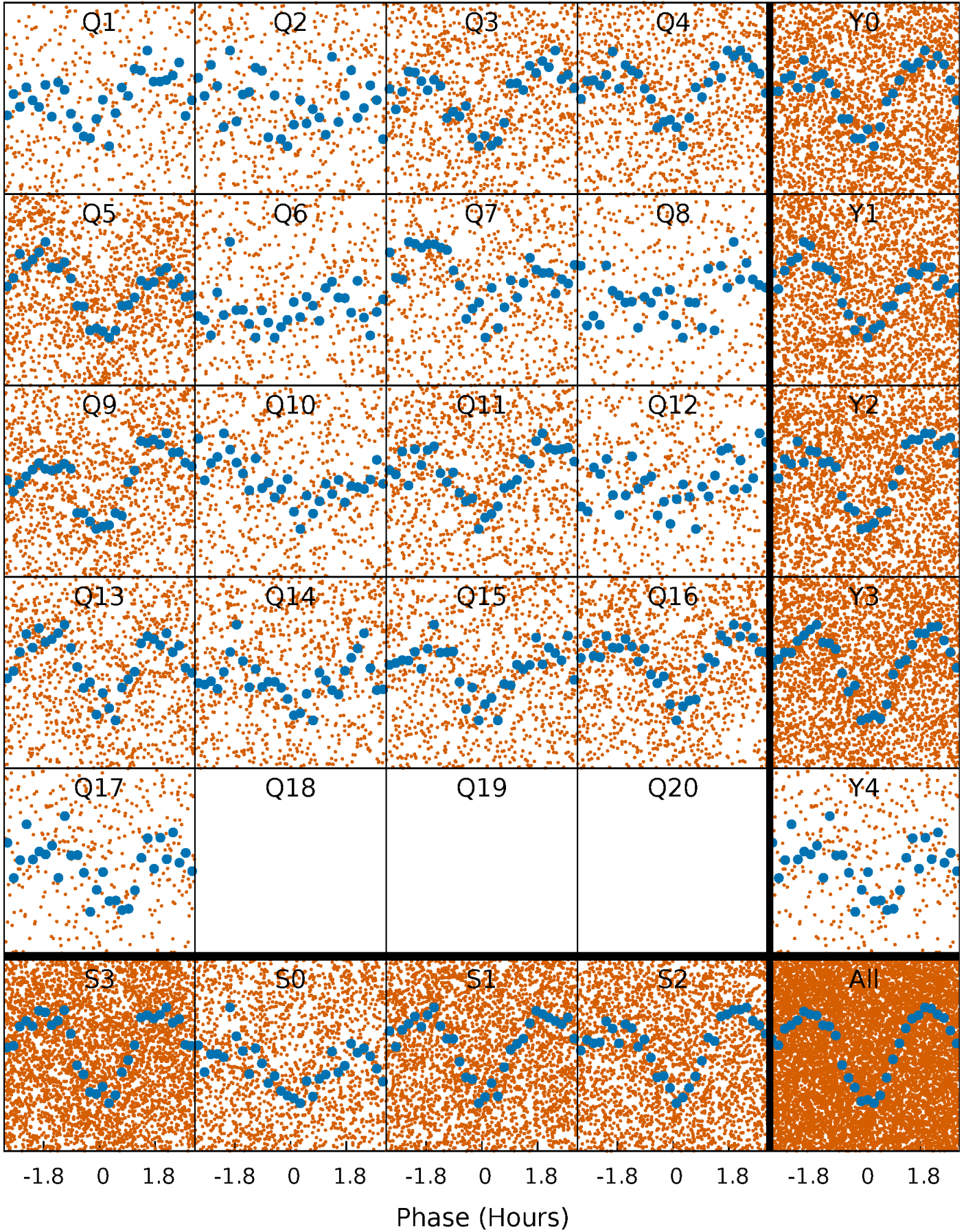


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



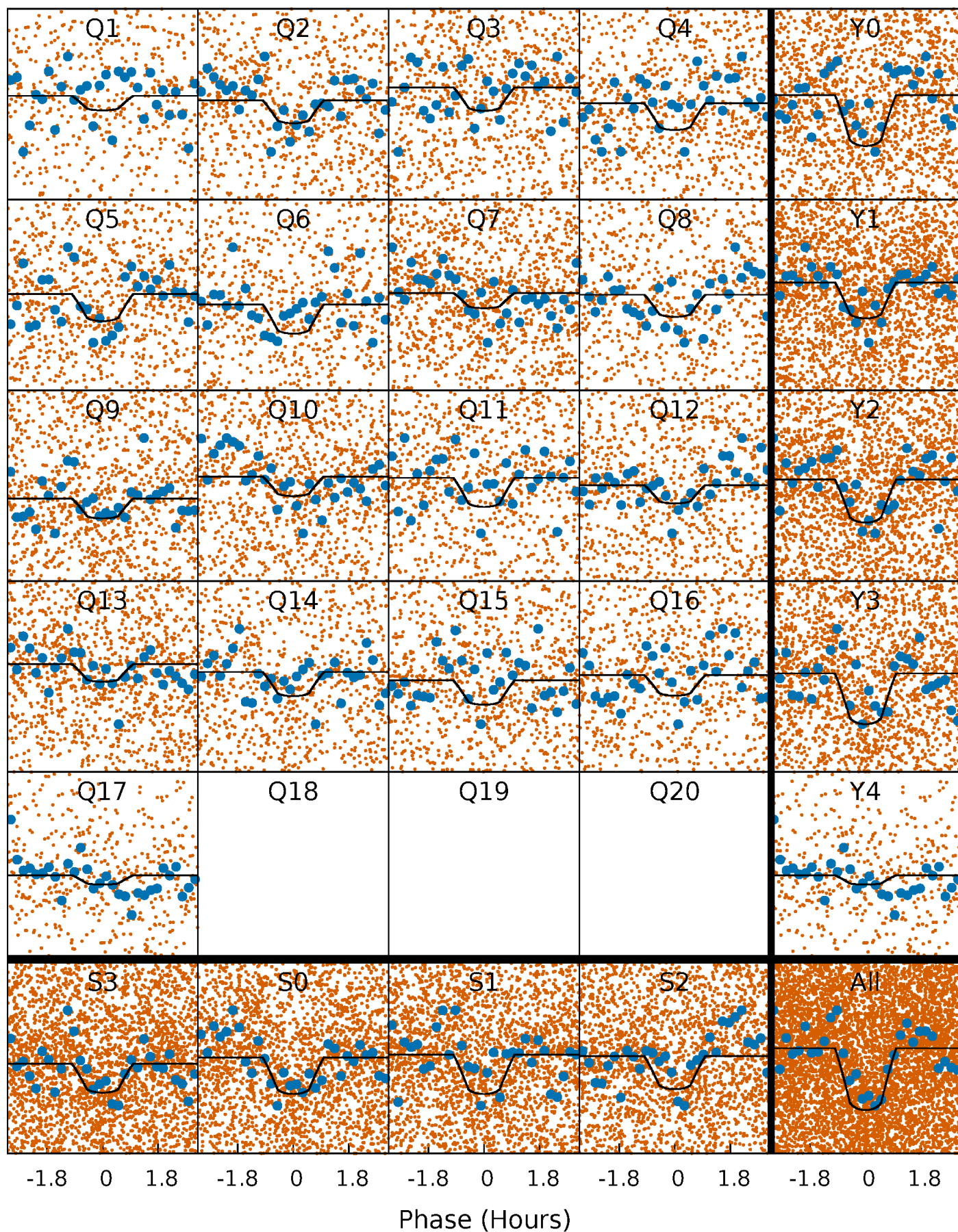
PDC Quarter-Phased Transit Curves

TCE 005300451-01 P= 0.623504 Days $T_0=131.727656$ (BKJD)



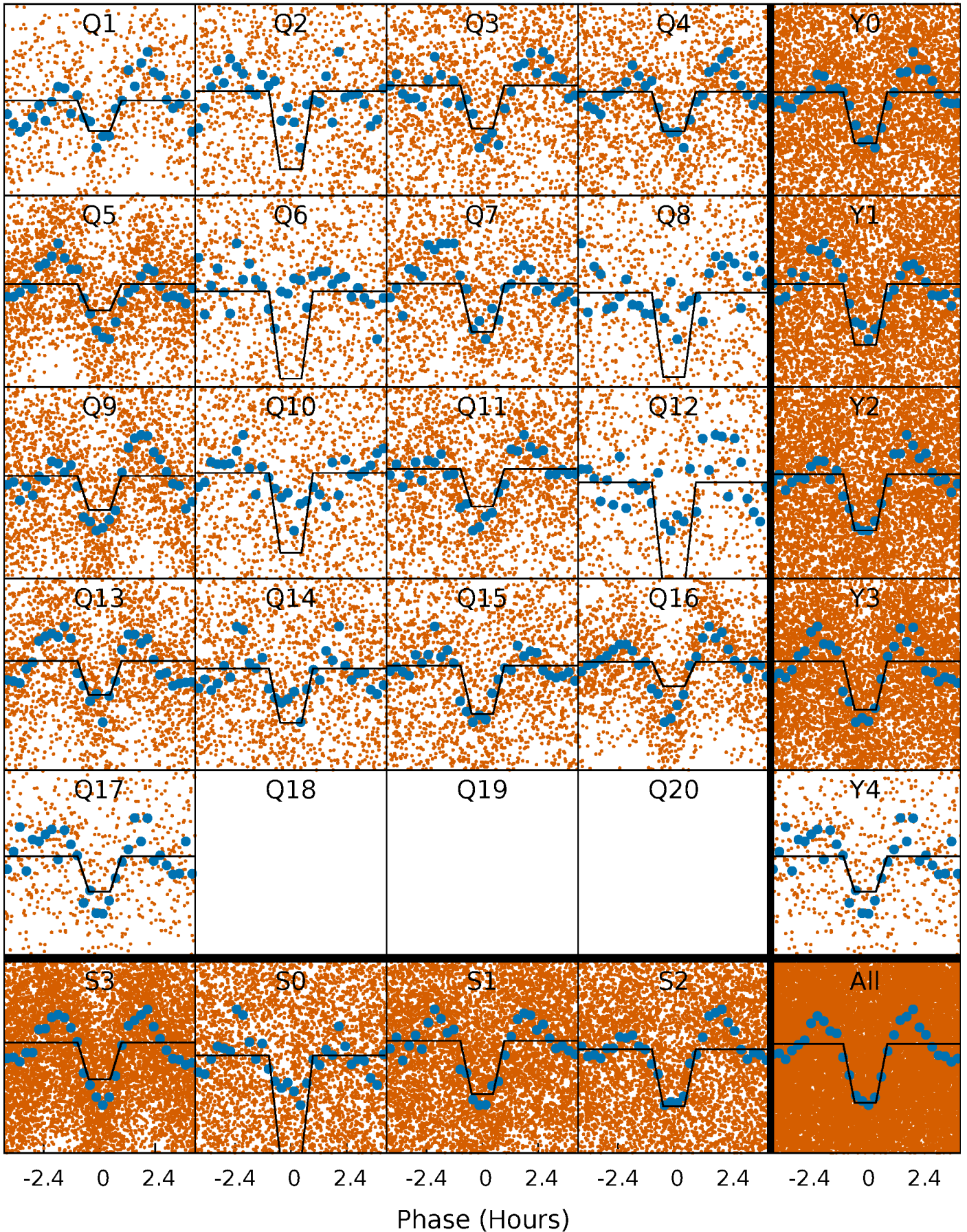
DV Quarter-Phased Transit Curves

TCE 005300451-01 P= 0.623504 Days $T_0=131.727656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

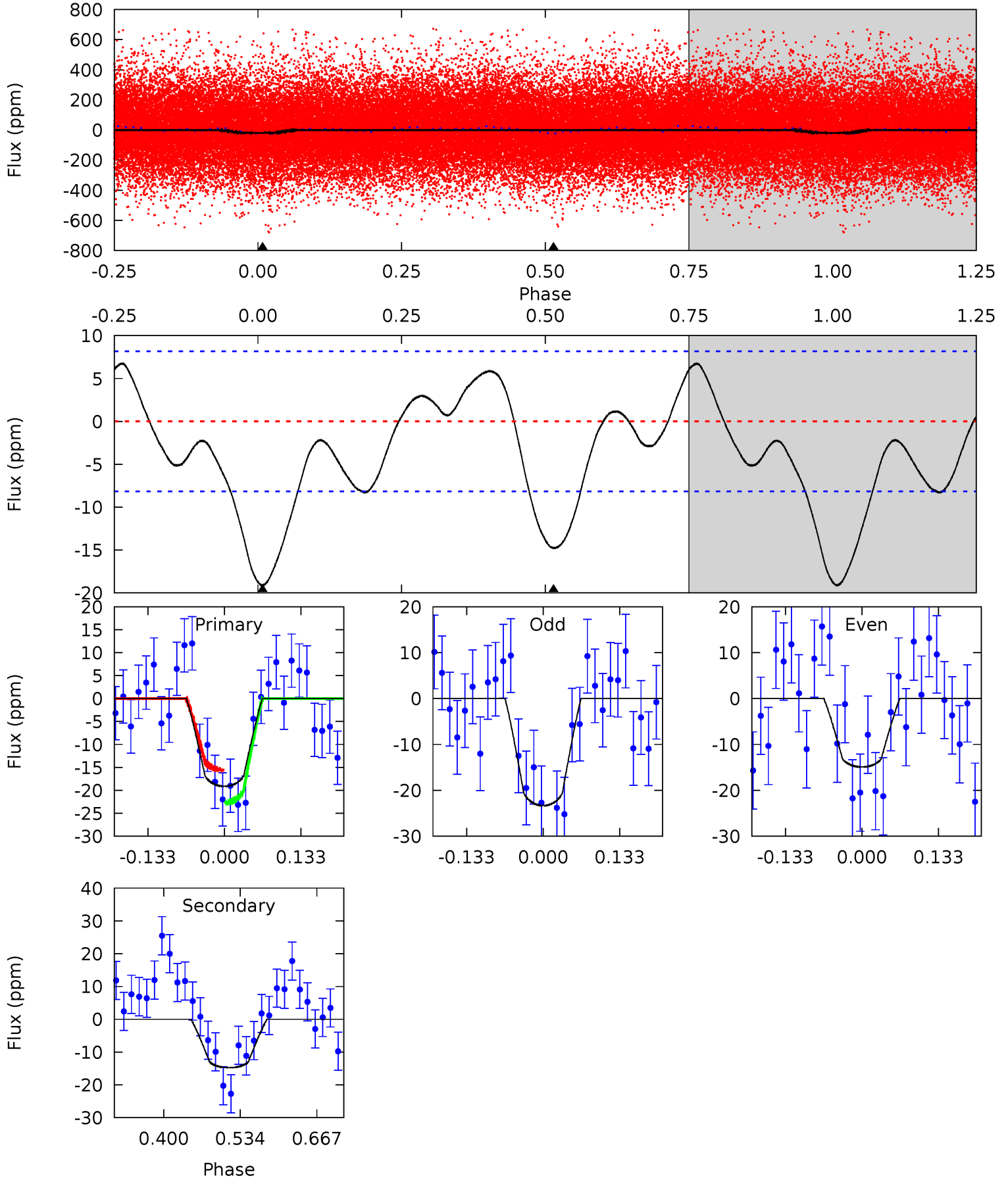
TCE 005300451-01 P= 0.623517 Days $T_0=131.716835$ (BKJD)



DV Model-Shift Uniqueness Test

005300451-01, P = 0.623504 Days, E = 131.104152 Days

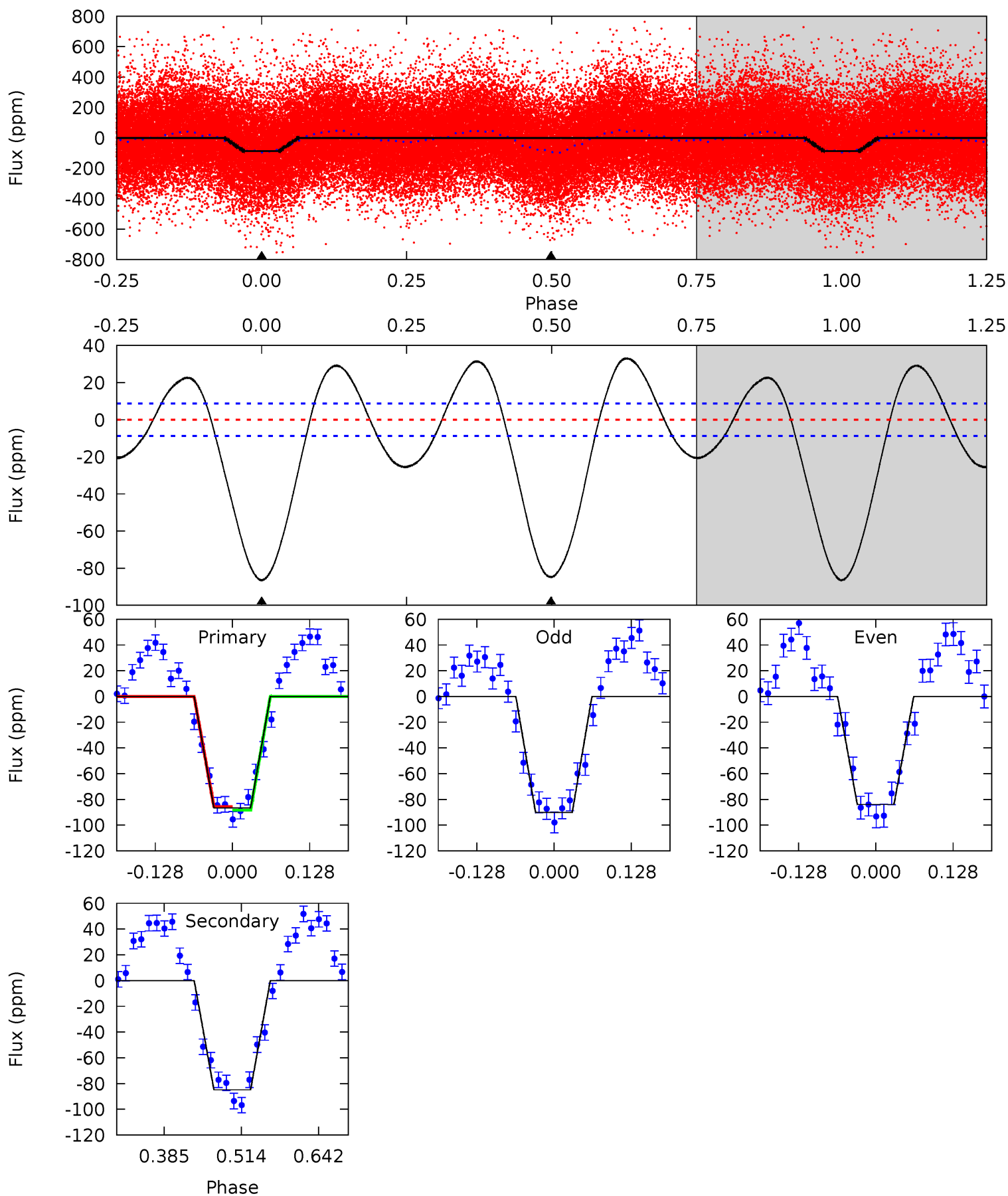
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	8.14	0	0	4.50	1.50	2.28	10.5	10.5	8.14	8.14	2.32	0.93	0.26	1.96



Alt Model-Shift Uniqueness Test

005300451-01, P = 0.623517 Days, E = 131.093318 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
44.6	43.7	0	0	4.51	1.52	9.61	44.6	44.6	43.7	43.7	1.59	0.95	0.28	0.76



Stellar Parameters For KIC 005300451

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6631^{+159}_{-239}	$4.271^{+0.105}_{-0.195}$	$-0.120^{+0.250}_{-0.300}$	$1.351^{+0.420}_{-0.226}$	$1.247^{+0.186}_{-0.186}$	$0.712^{+0.395}_{-0.360}$
	+2%/-4%	+2%/-5%	+208%/-250%	+31%/-17%	+15%/-15%	+56%/-51%
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 005300451-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-15 ± 2	$0.79^{+0.26}_{-0.22}$	3884^{+292}_{-246}	5480^{+1024}_{-633}	$2.965^{+2.711}_{-1.278}$
Alt.	-85 ± 2	$1.43^{+0.28}_{-0.28}$	3859^{+279}_{-214}	6417^{+656}_{-487}	$5.312^{+2.782}_{-1.610}$

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

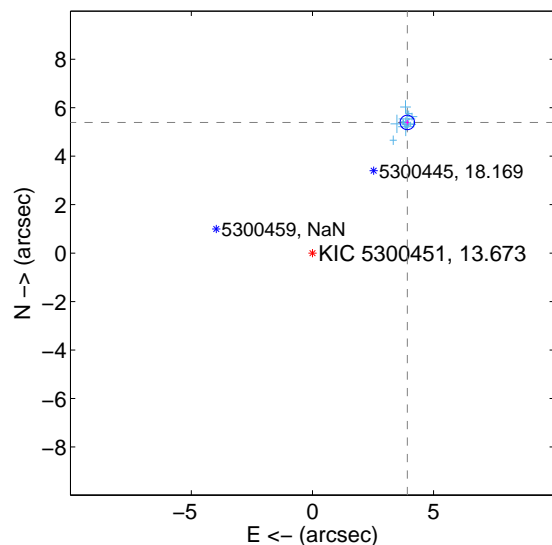
Supplemental centroid analysis for 005300451-01. Kepler magnitude: 13.67. Transit SNR 8.93

There are 17 quarters with good PRF difference image offsets

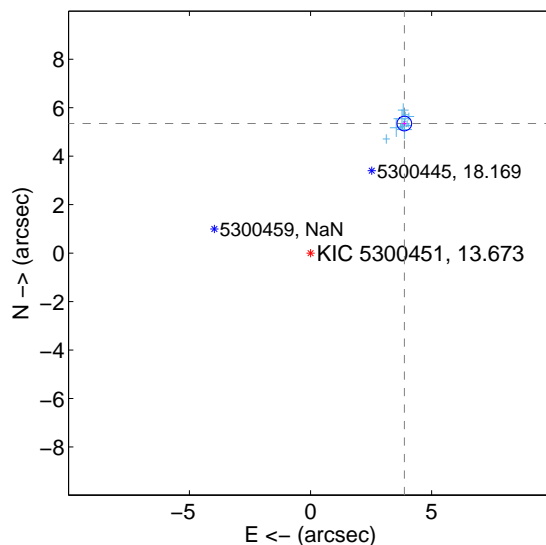
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.665 ± 0.099	67.14	-3.916 ± 0.081	5.393 ± 0.097
PRF-fit source offset from KIC position	6.602 ± 0.100	65.70	-3.872 ± 0.083	5.347 ± 0.094
photometric centroid source offset	4.48 ± 1.28	3.50	-3.26 ± 1.33	3.07 ± 1.22

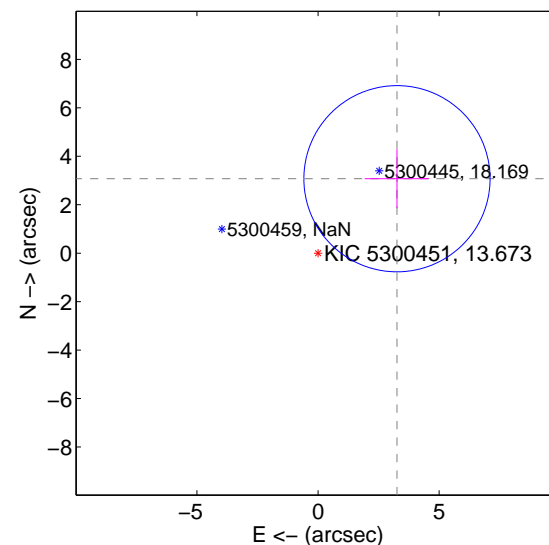
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

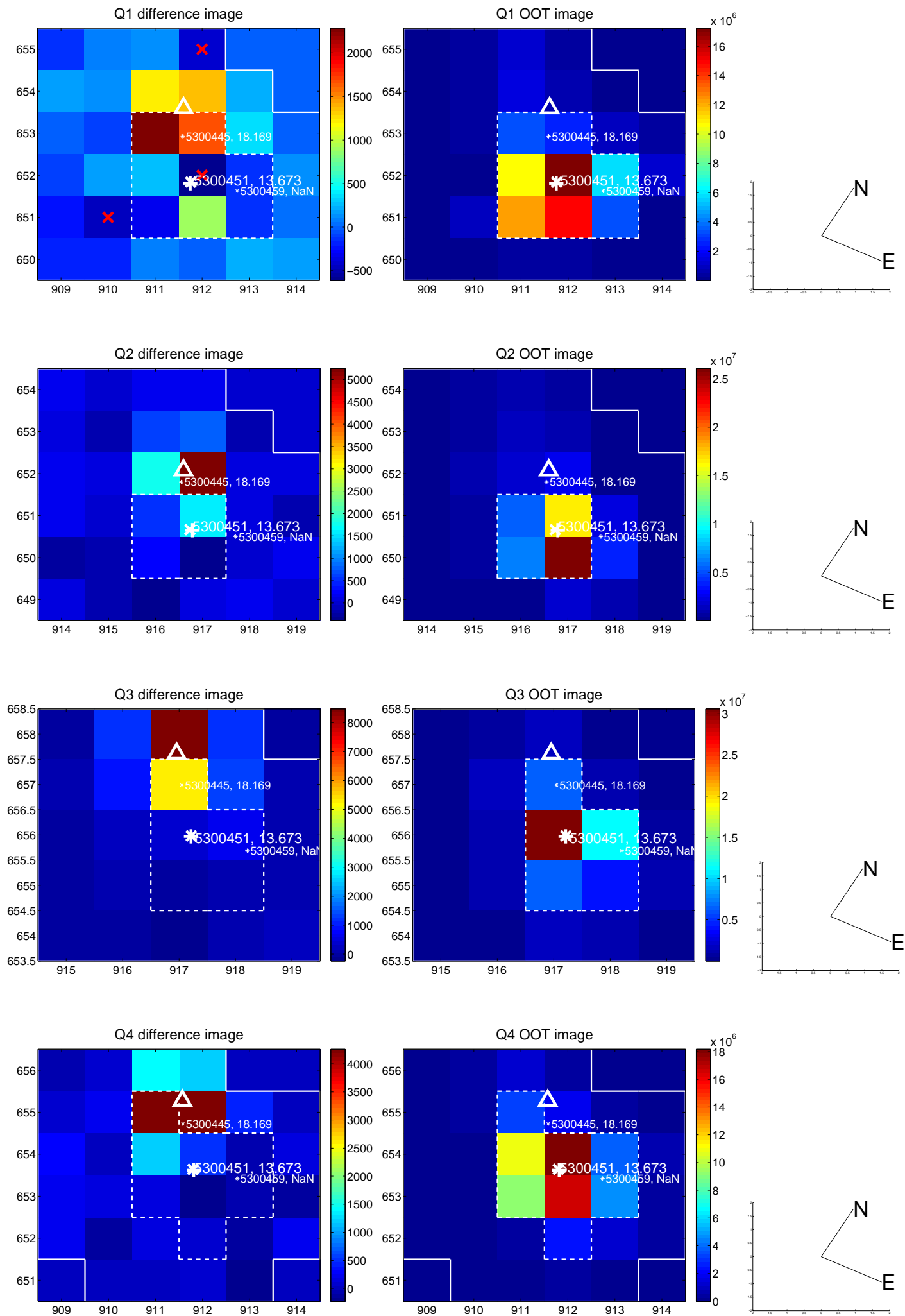


offset from photometric centroids

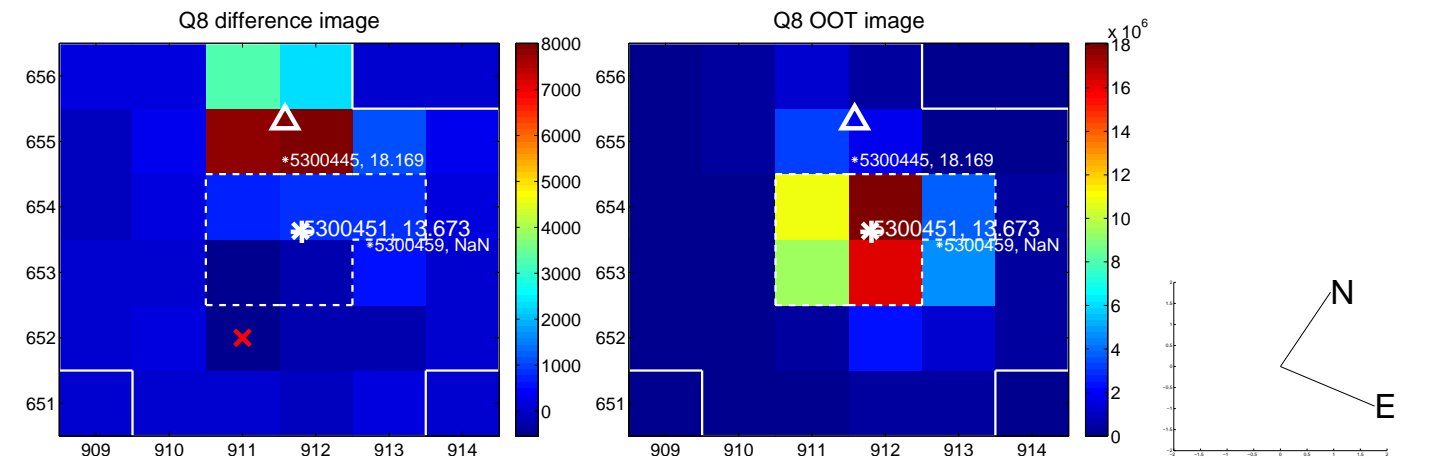
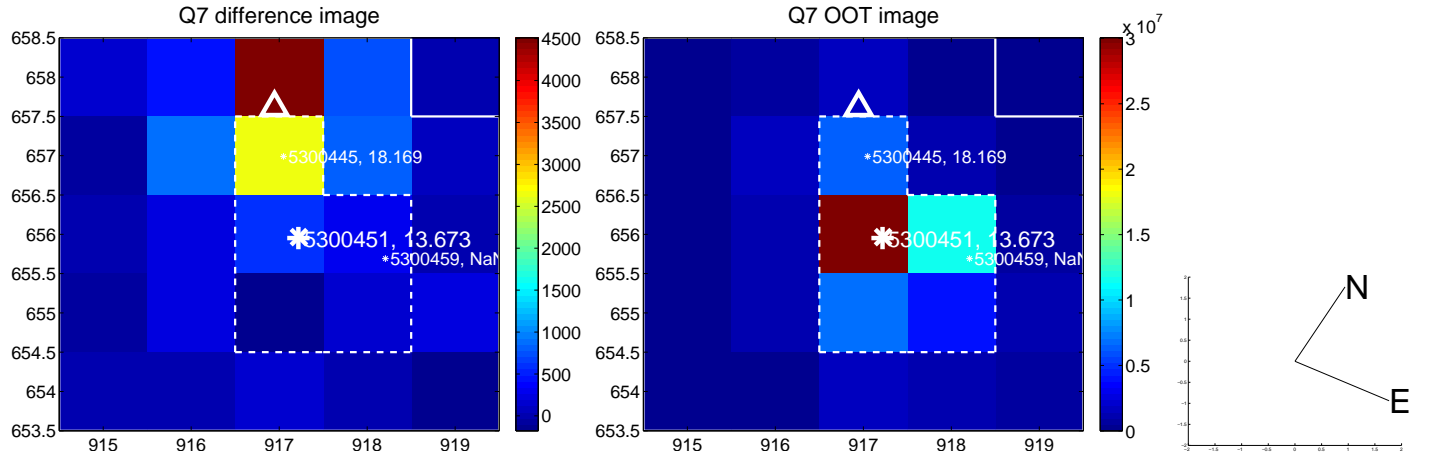
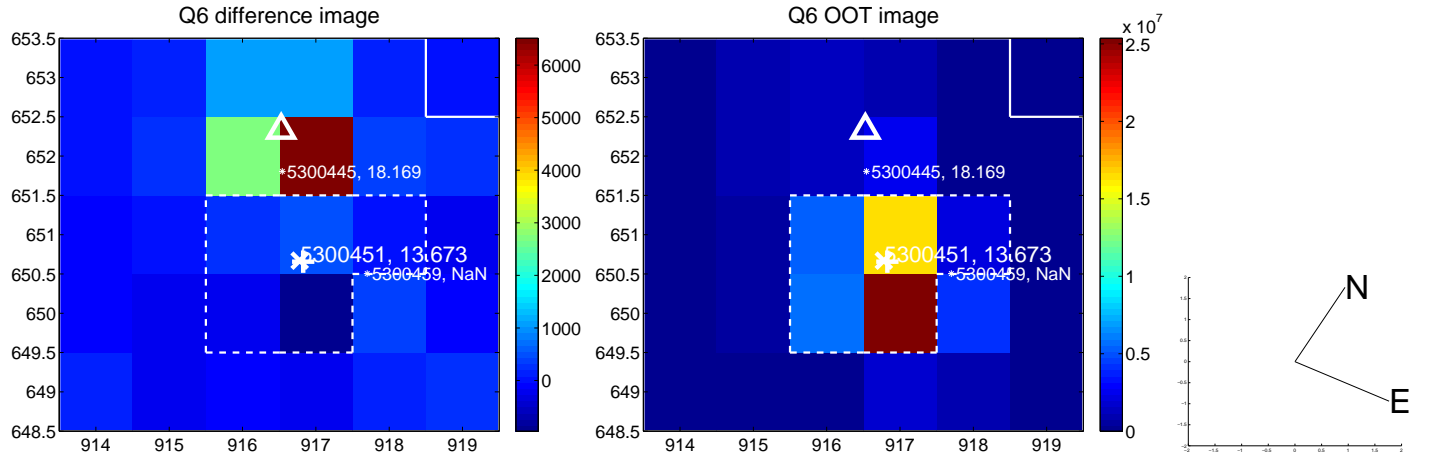
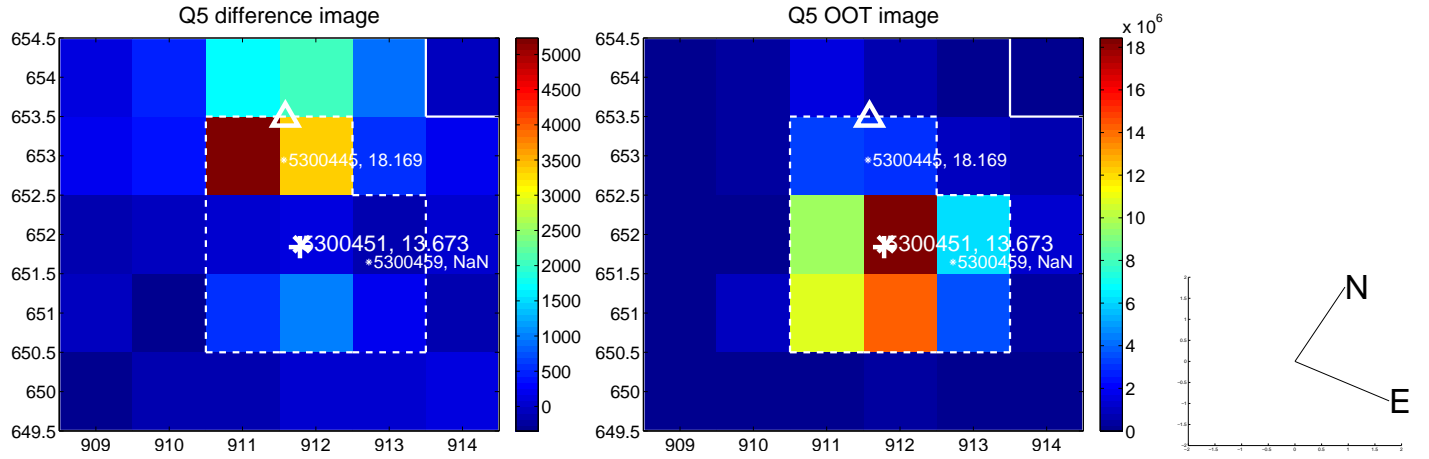


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

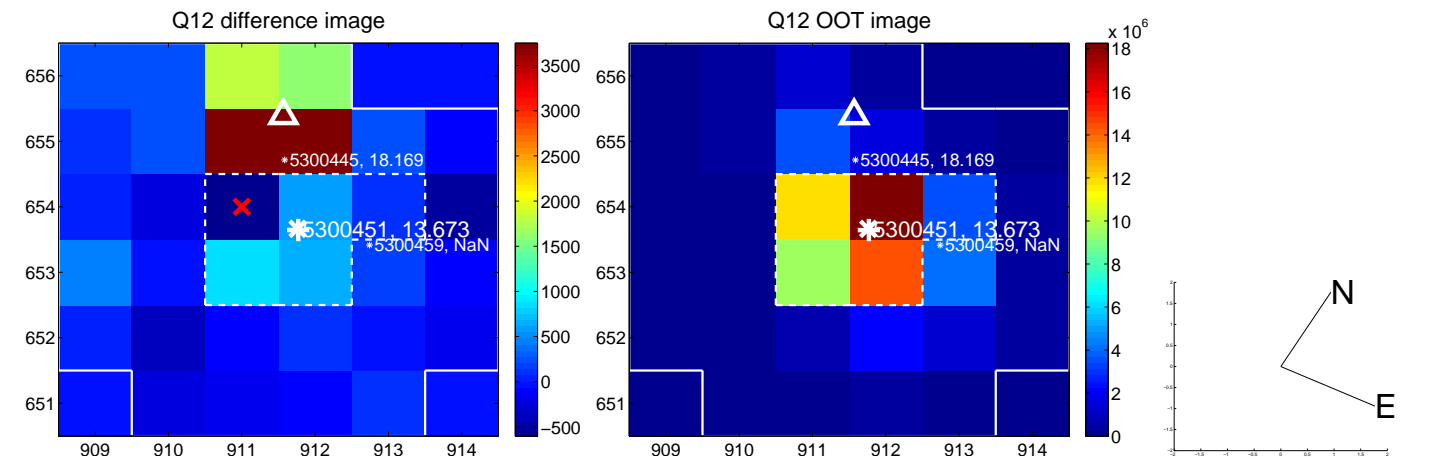
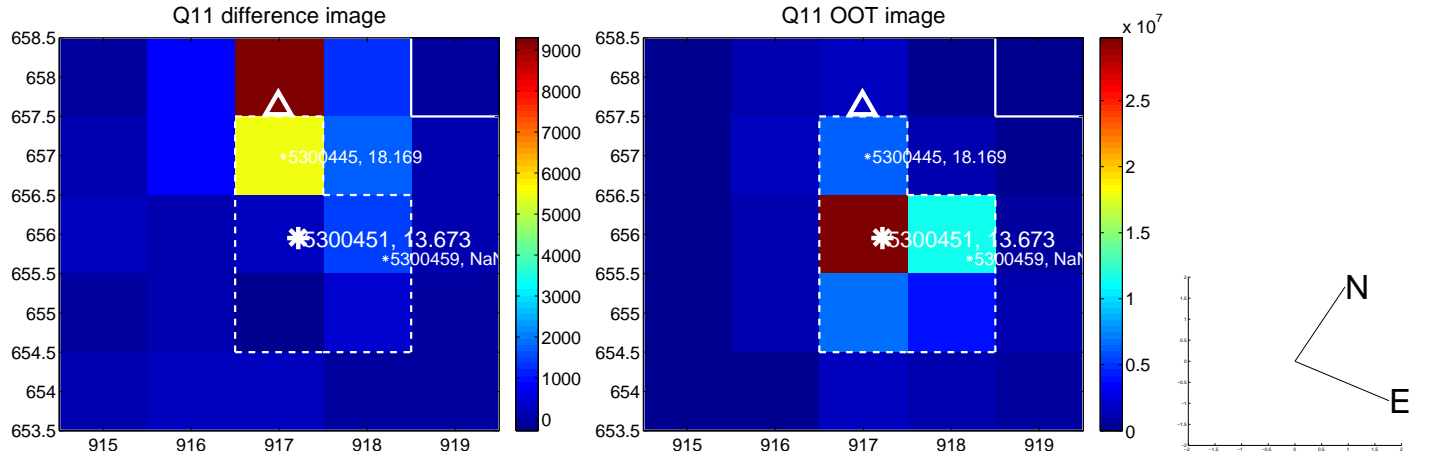
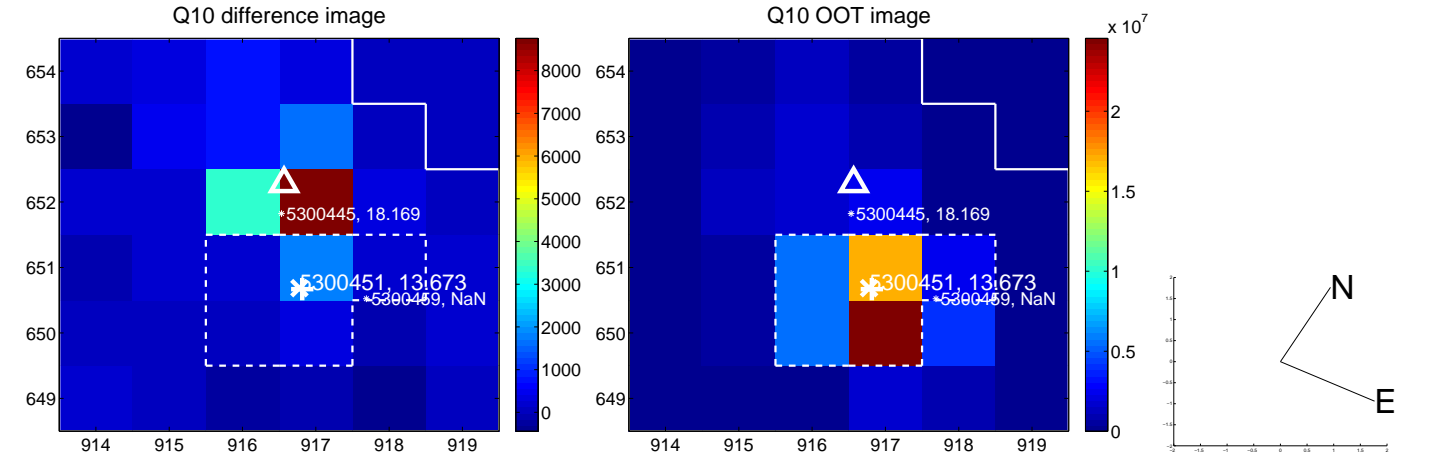
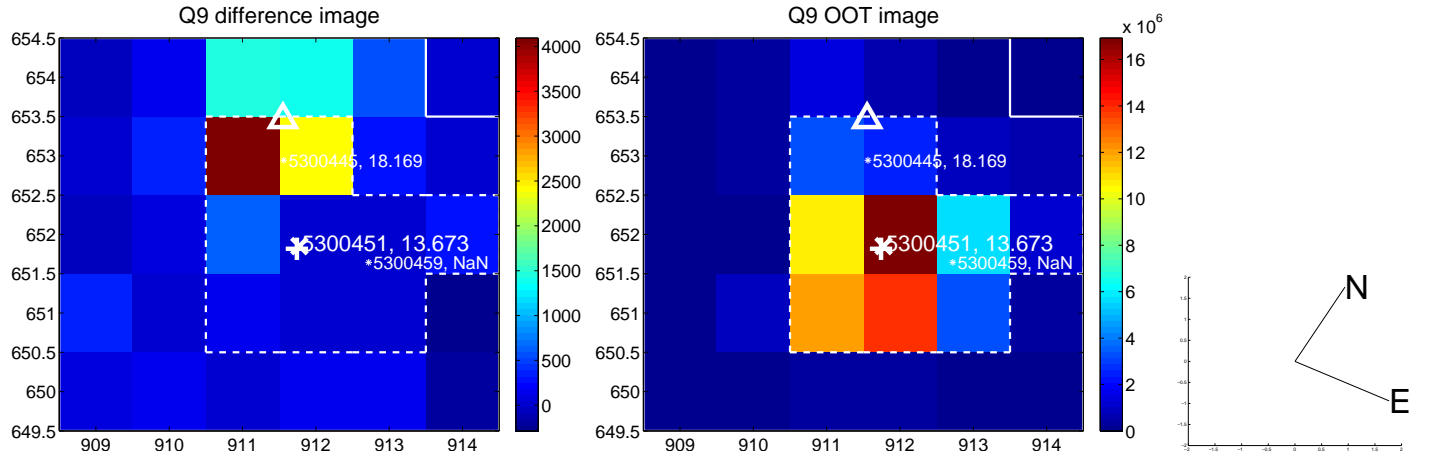
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



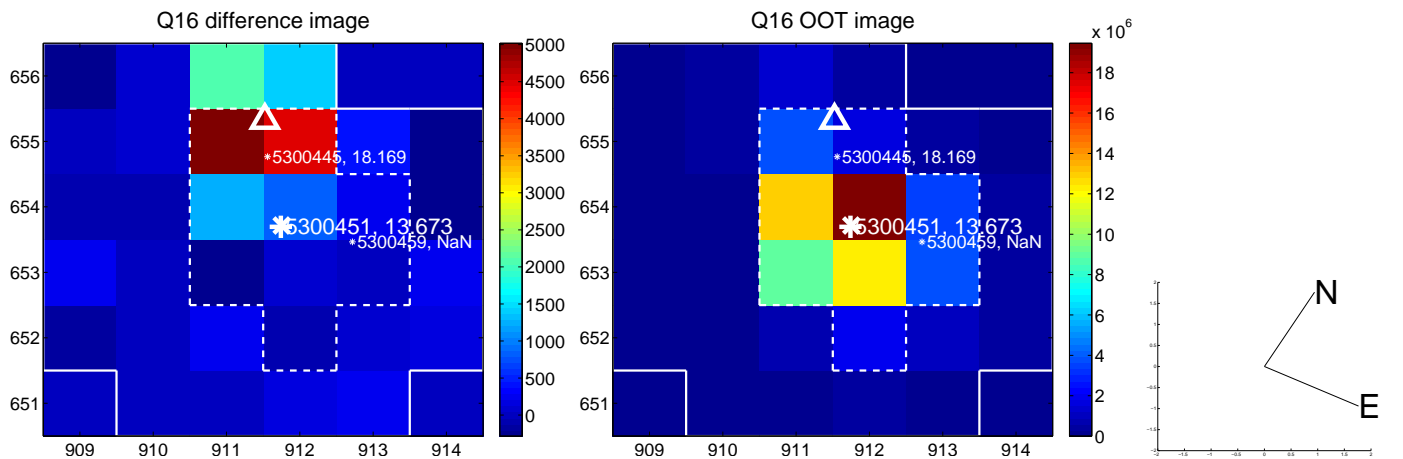
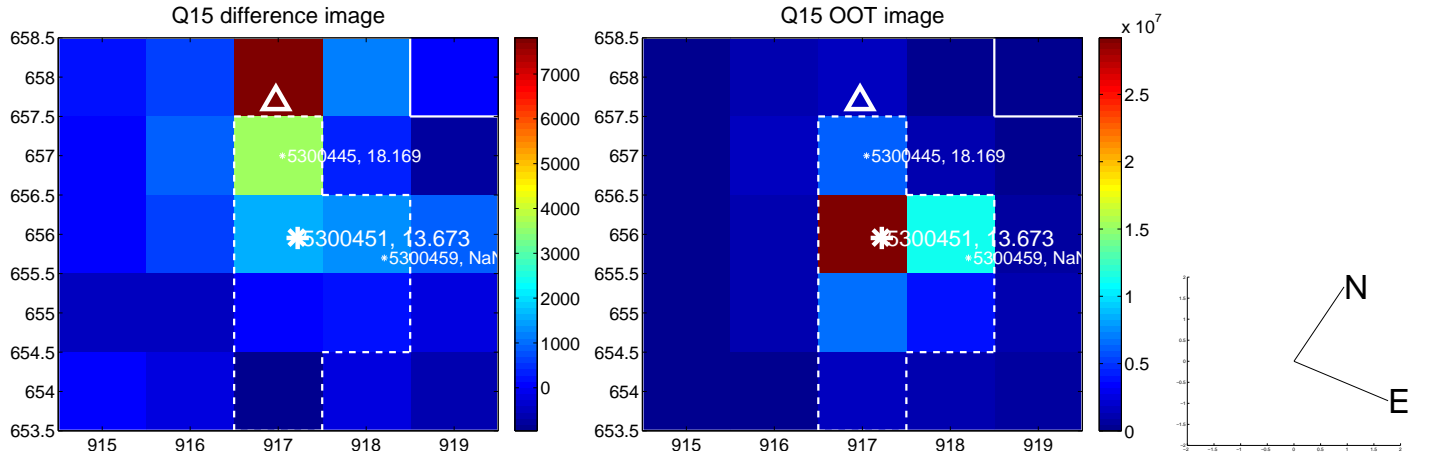
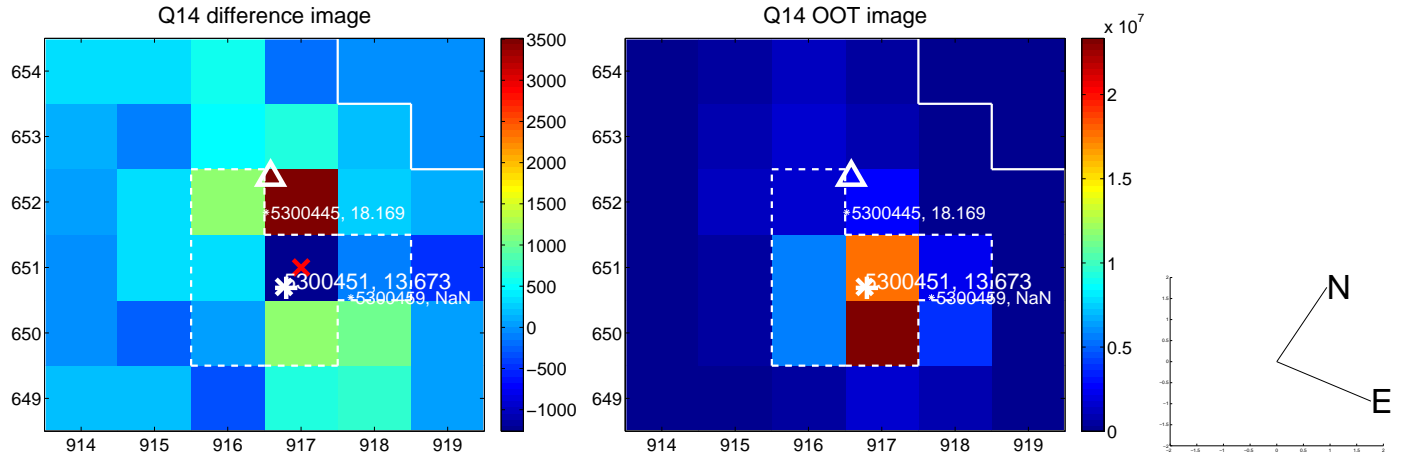
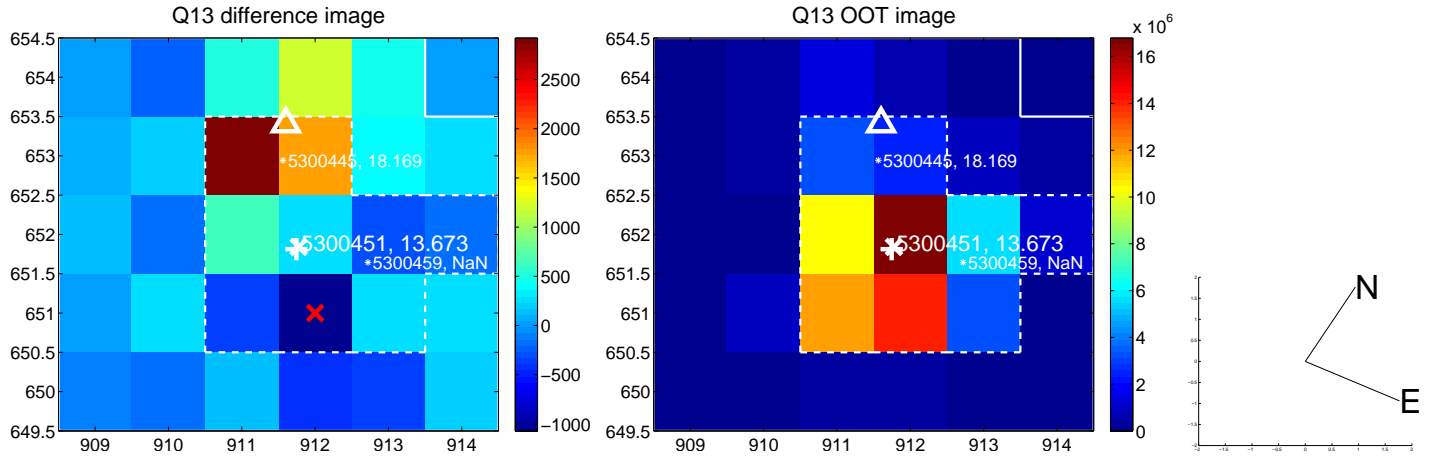
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



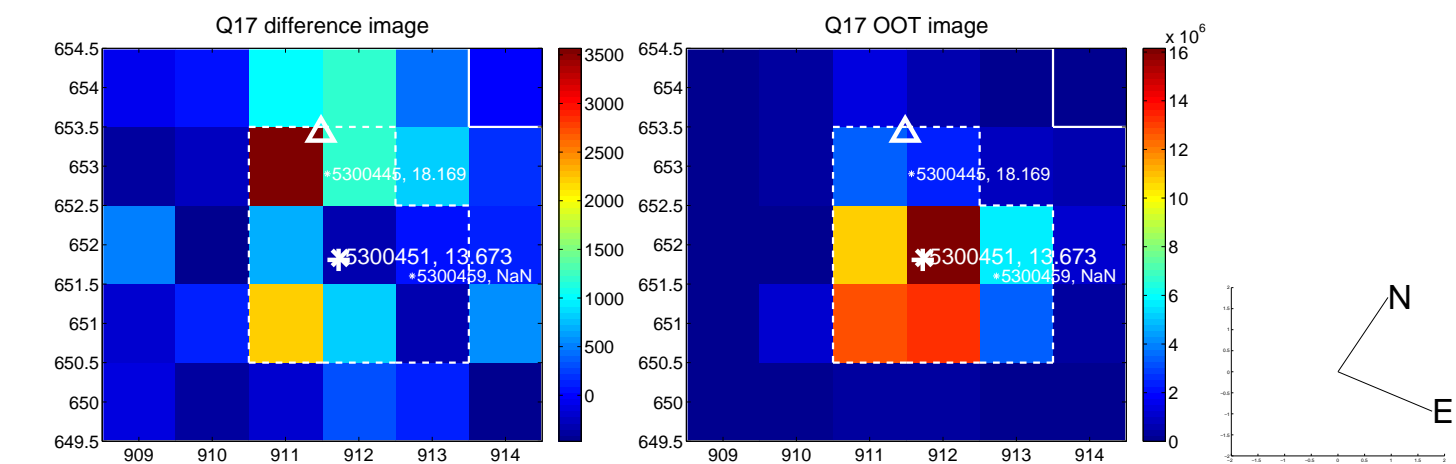
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



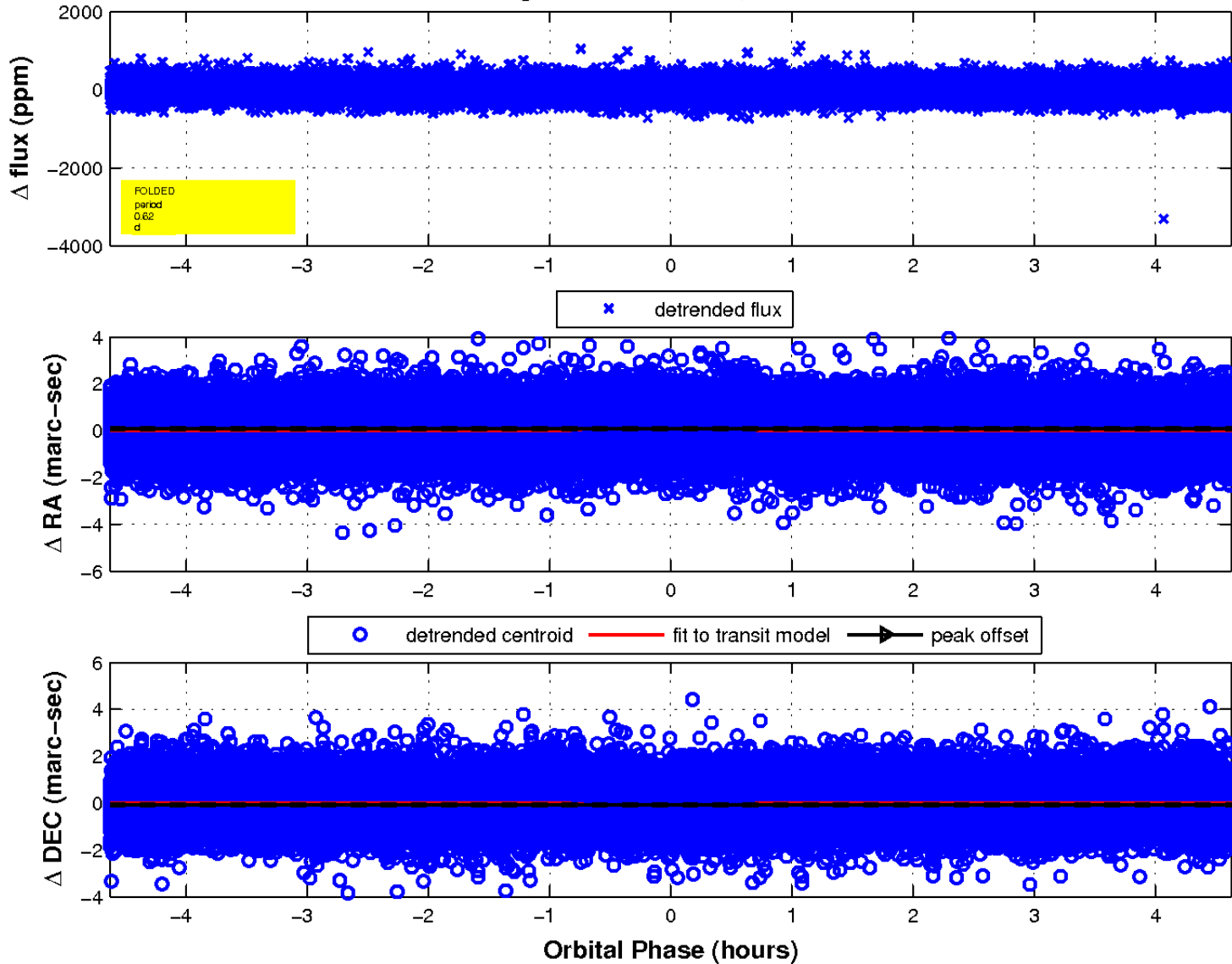
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

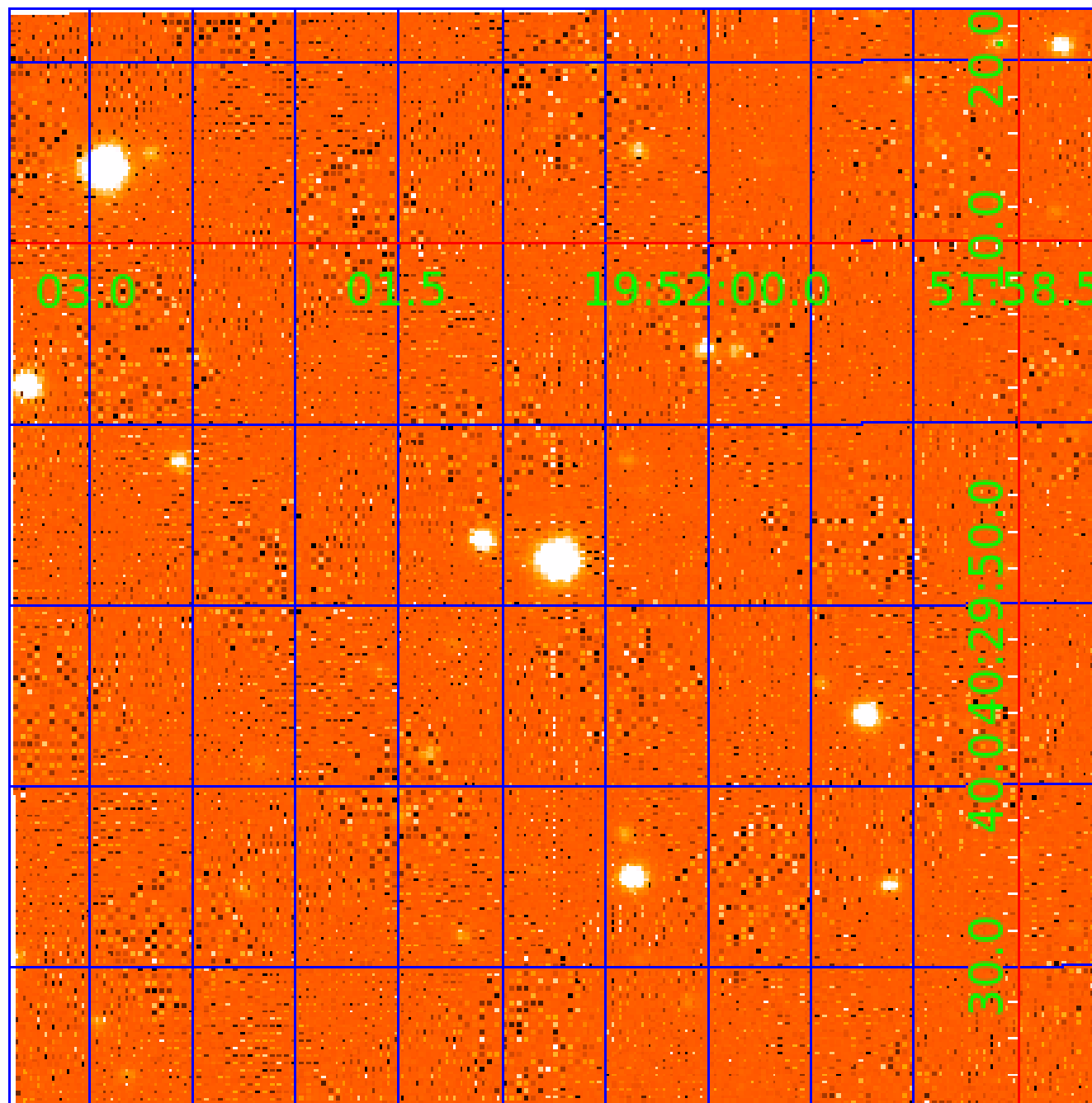


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005300451

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})
005300451-01	OBS	No	0.623504	131.727656	24.3	1.543	8.2	8.9	1.35	6631	0.78	13402.79
005300451-02	OBS	No	0.623485	132.050793	10.6	2.939	7.7	5.1	1.35	6631	0.46	13403.34

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005300451-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST
005300451-02	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.

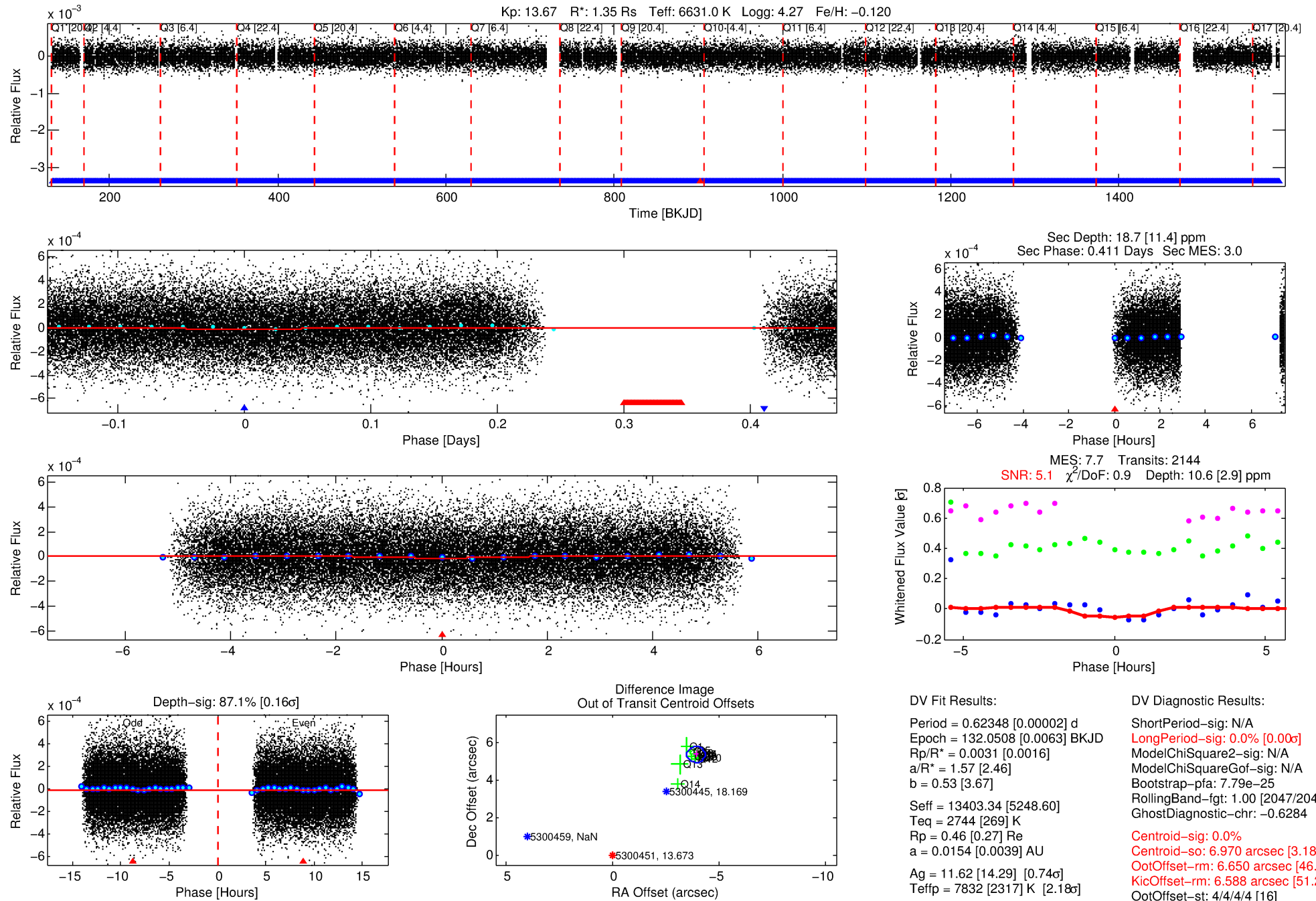
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005300451-02

No Significant Match Found

DV One-Page Summary

KIC: 5300451 Candidate: 2 of 2 Period: 0.623 d



DV Fit Results:

Period = 0.62348 [0.00002] d
Epoch = 132.0508 [0.0063] BKJD
Rp/R* = 0.0031 [0.0016]
a/R* = 1.57 [2.46]
b = 0.53 [3.67]
Seff = 13403.34 [5248.60]
Teq = 2744 [269] K
Rp = 0.46 [0.27] Re
a = 0.0154 [0.0039] AU
Ag = 11.62 [14.29] [0.74 σ]
Teff = 7832 [2317] K [2.18 σ]

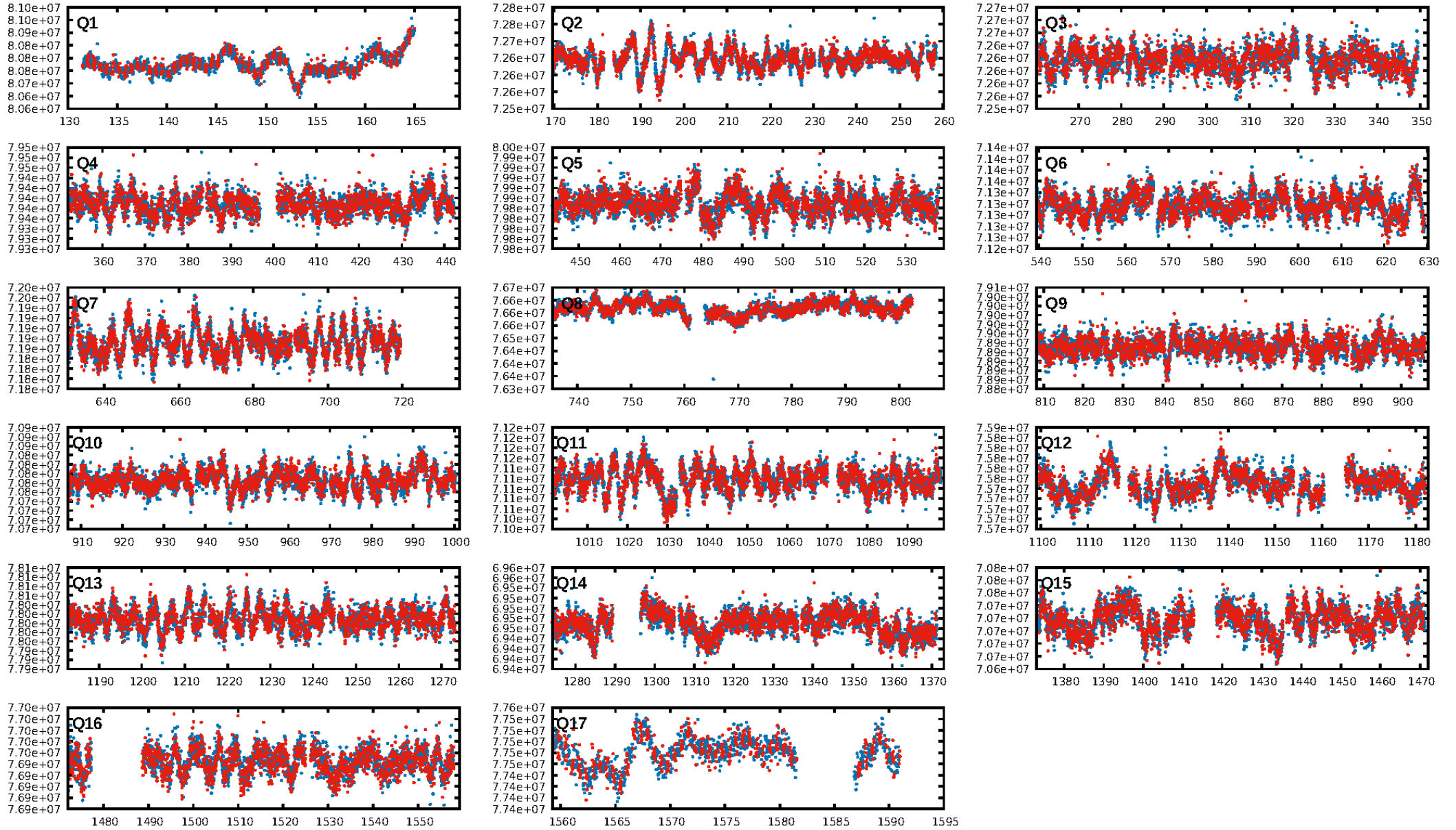
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.79e-25
RollingBand-fgt: 1.00 [2047/2048]
GhostDiagnostic-chr: -0.6284
Centroid-sig: 0.0%
Centroid-so: 6.970 arcsec [3.18 σ]
OotOffset-rm: 6.650 arcsec [46.92 σ]
KicOffset-rm: 6.588 arcsec [51.28 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.94 [15/16]
DiffImageOverlap-fno: 0.00 [0/17]

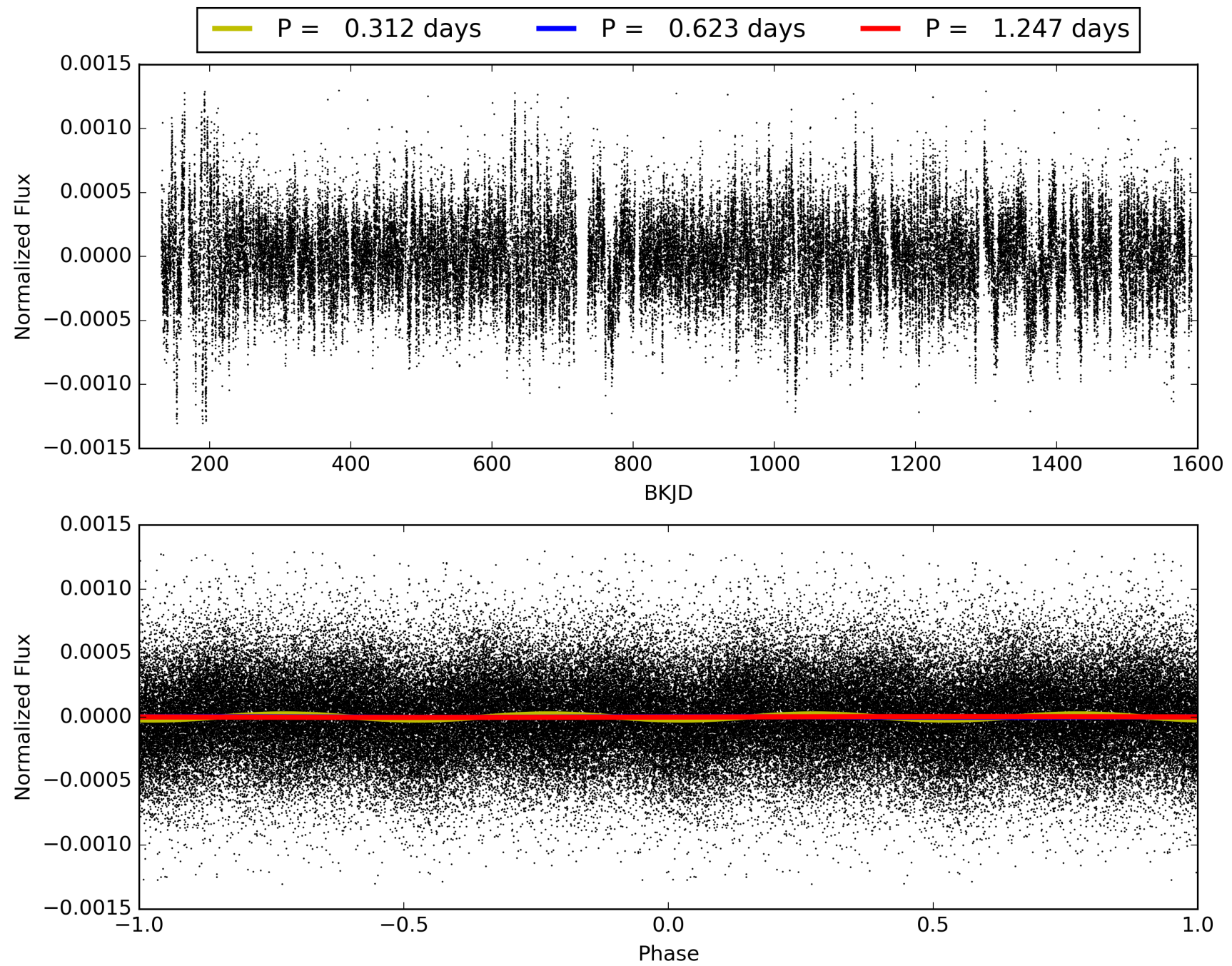
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 23:41:11 Z

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

TCE 005300451-02, PDC Light Curves

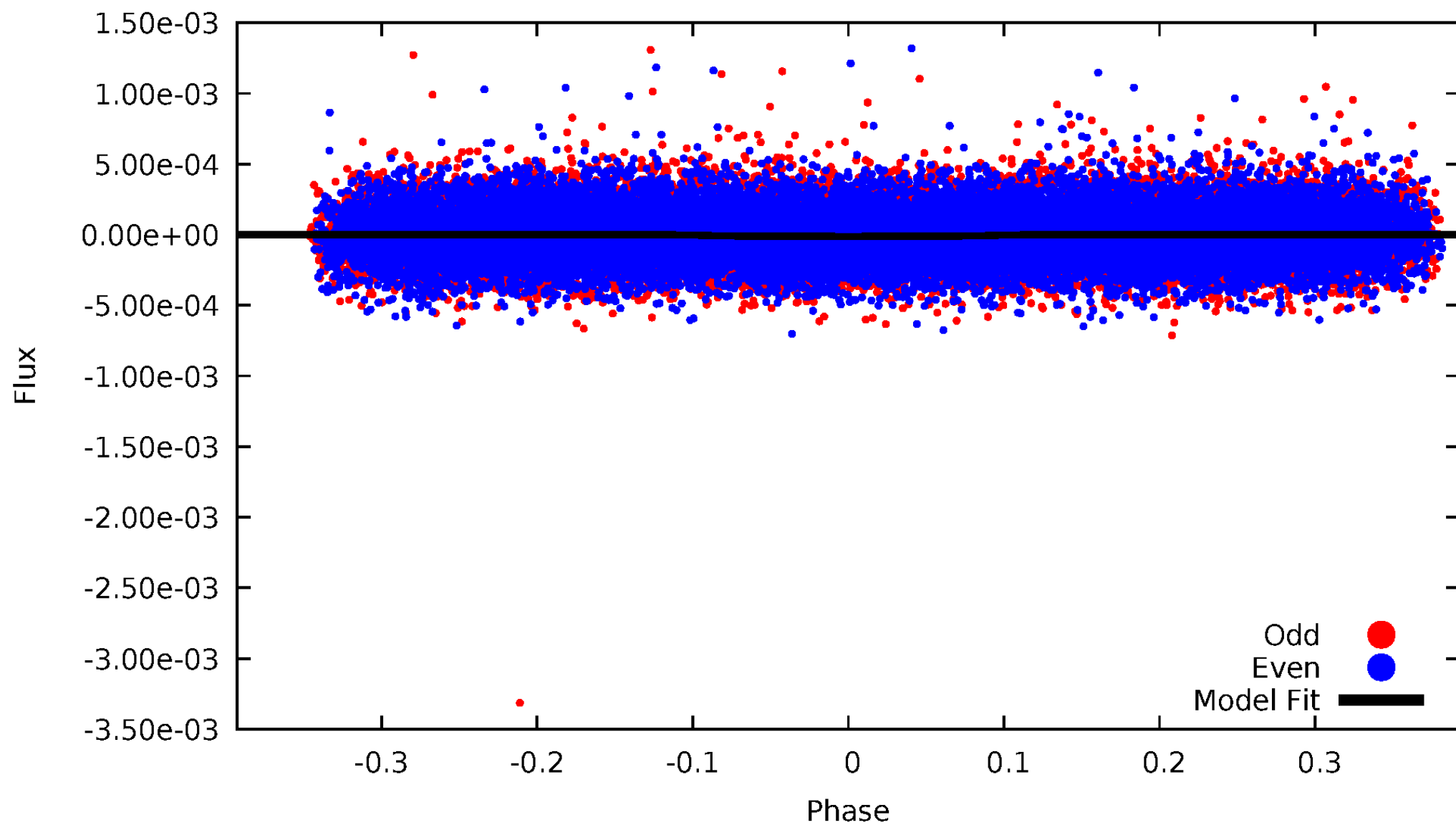


TCE 005300451-02



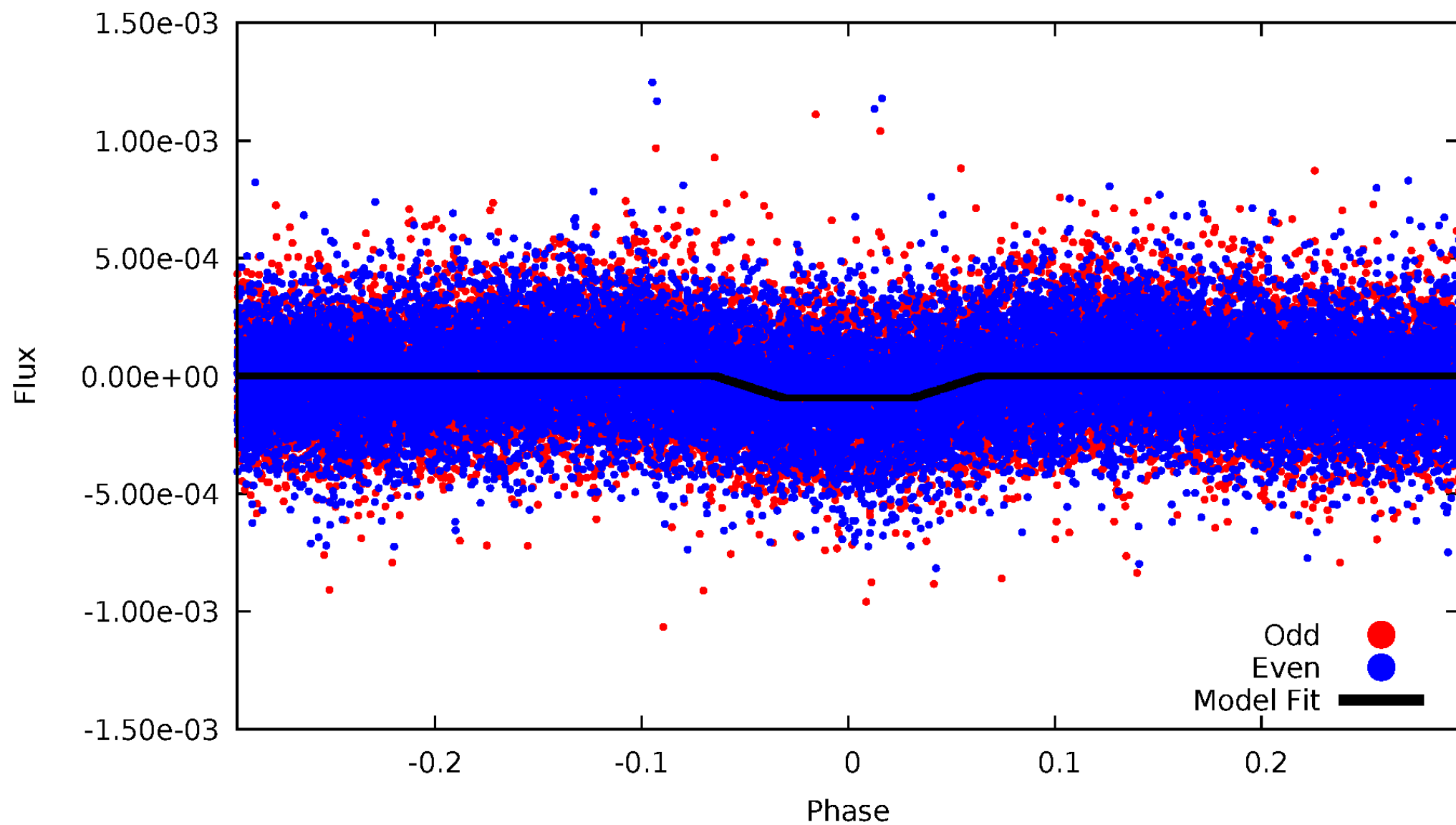
DV Odd/Even

TCE 005300451-02



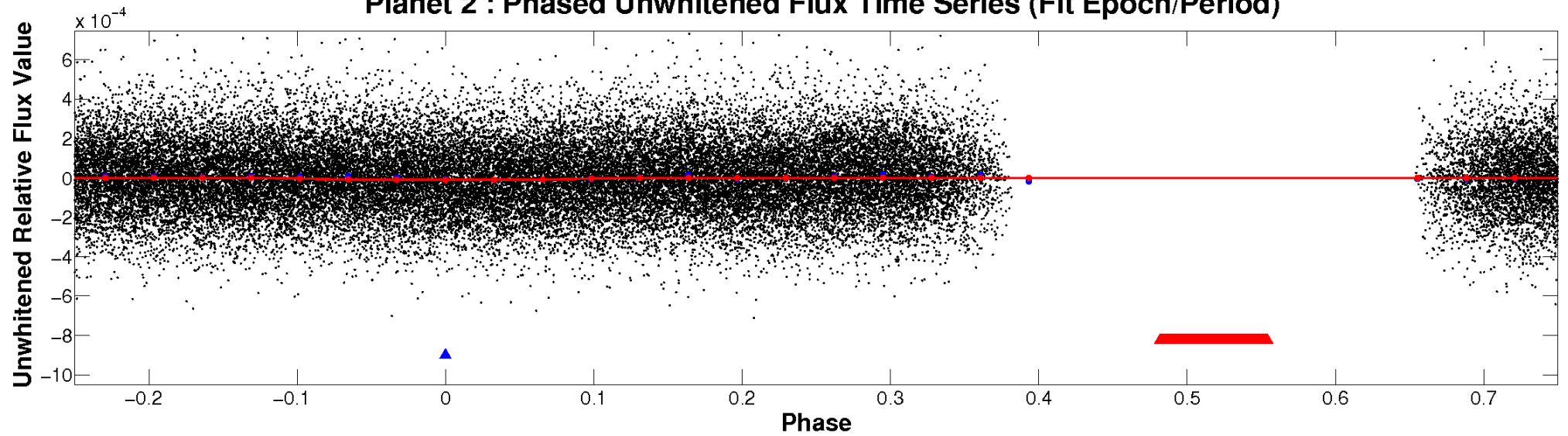
ALT Odd/Even

TCE 005300451-02

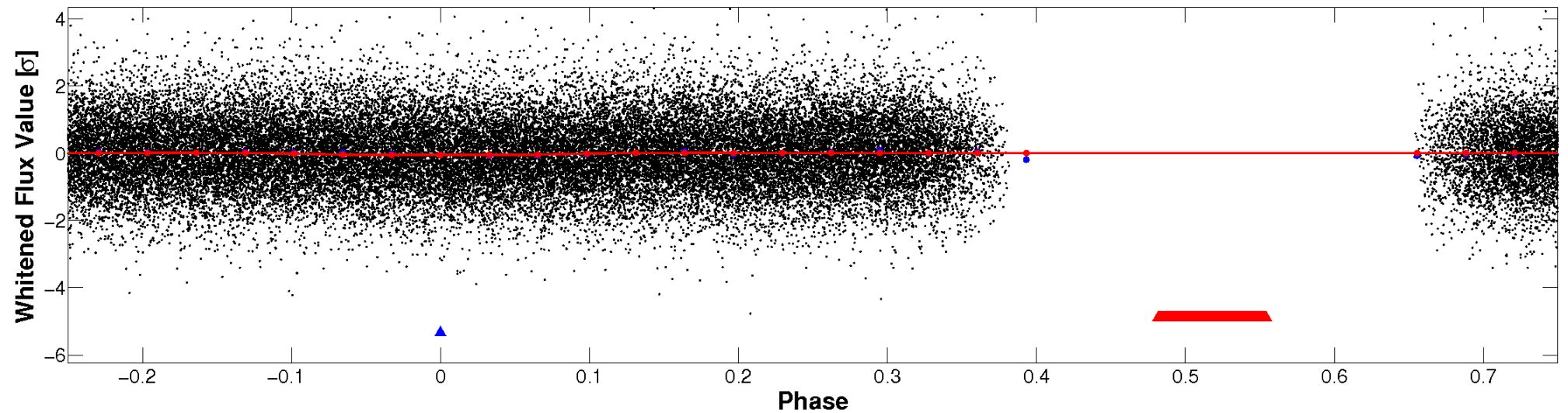


Non-Whitened Vs. Whitened Light Curve

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

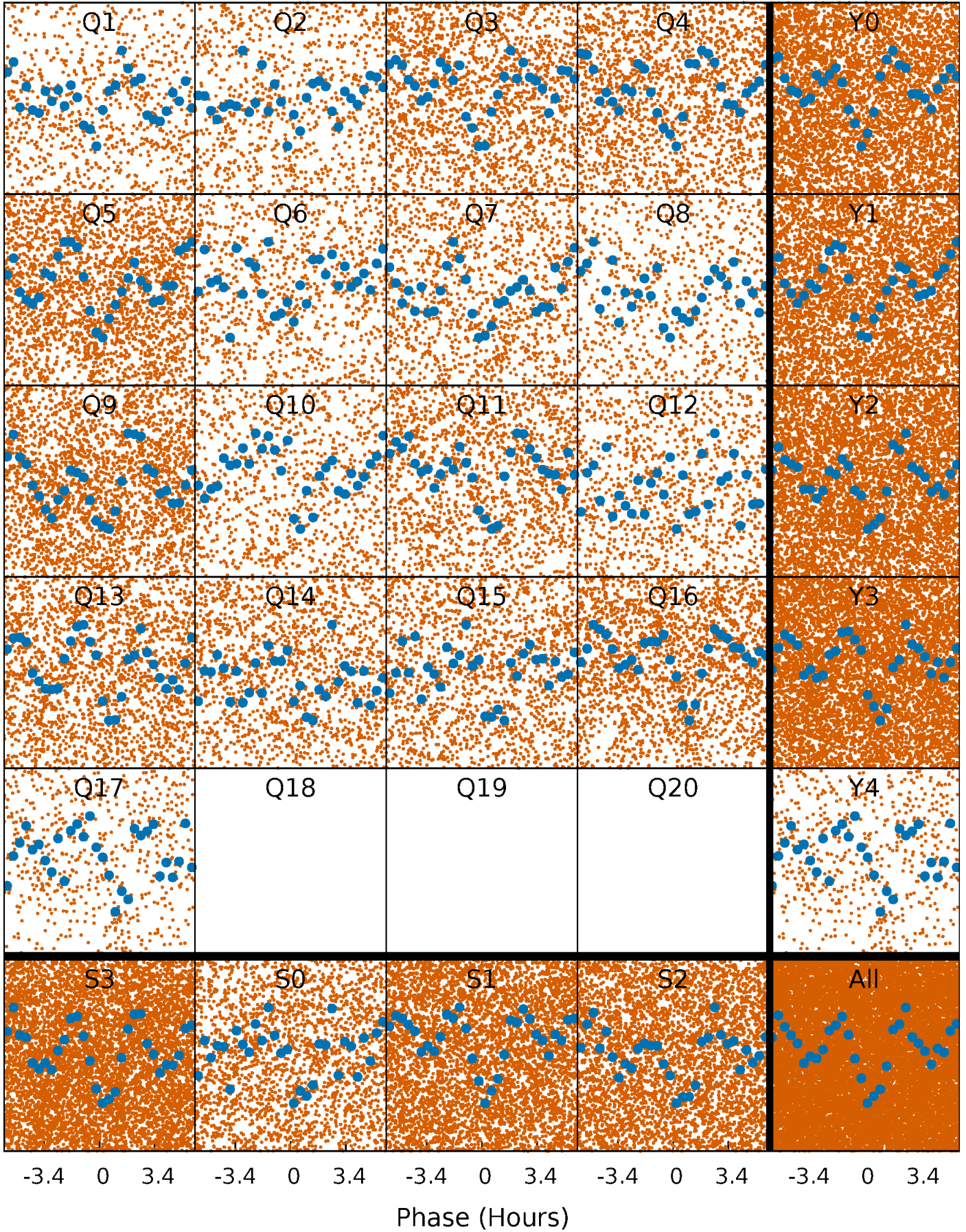


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



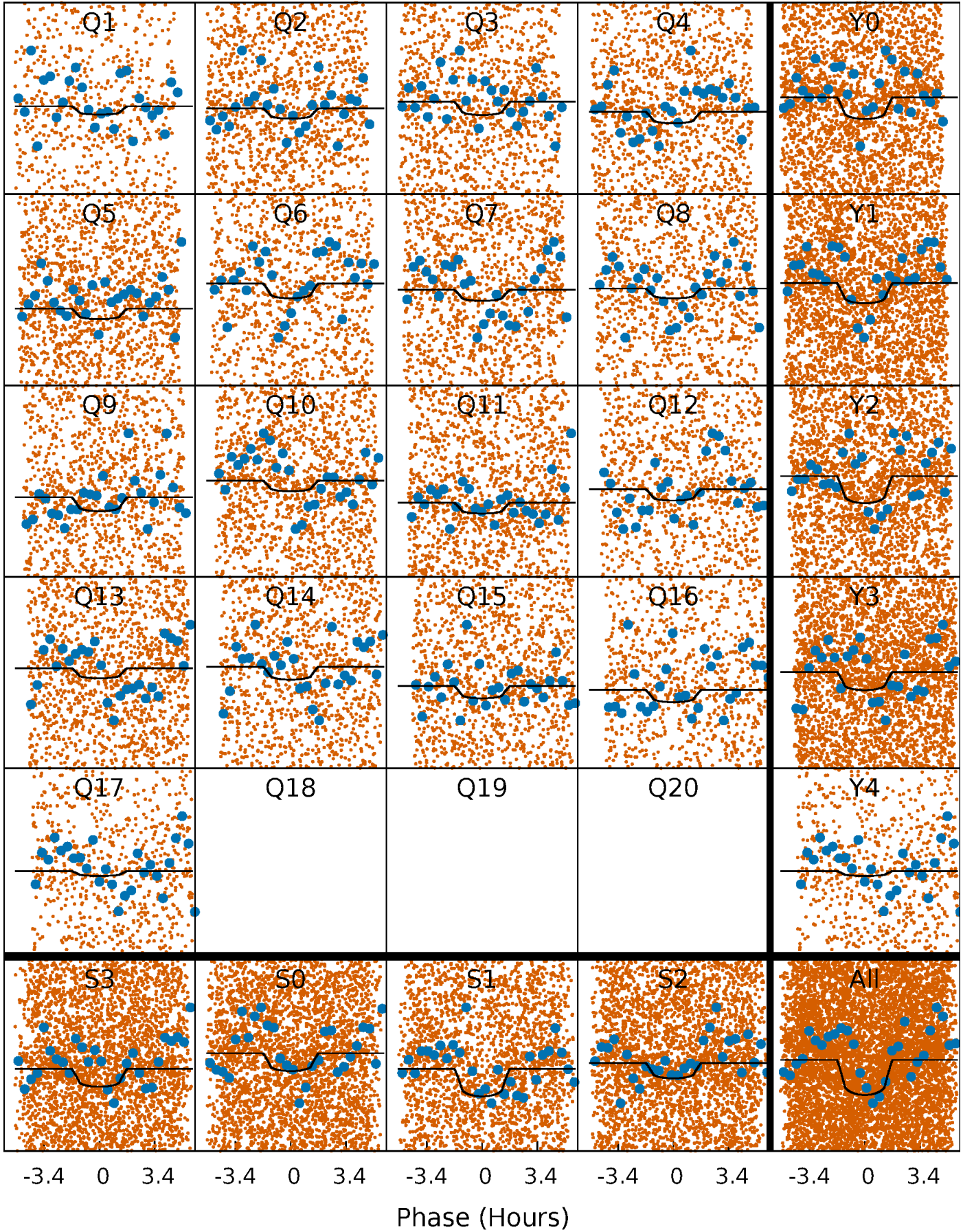
PDC Quarter-Phased Transit Curves

TCE 005300451-02 P= 0.623485 Days $T_0=132.050793$ (BKJD)



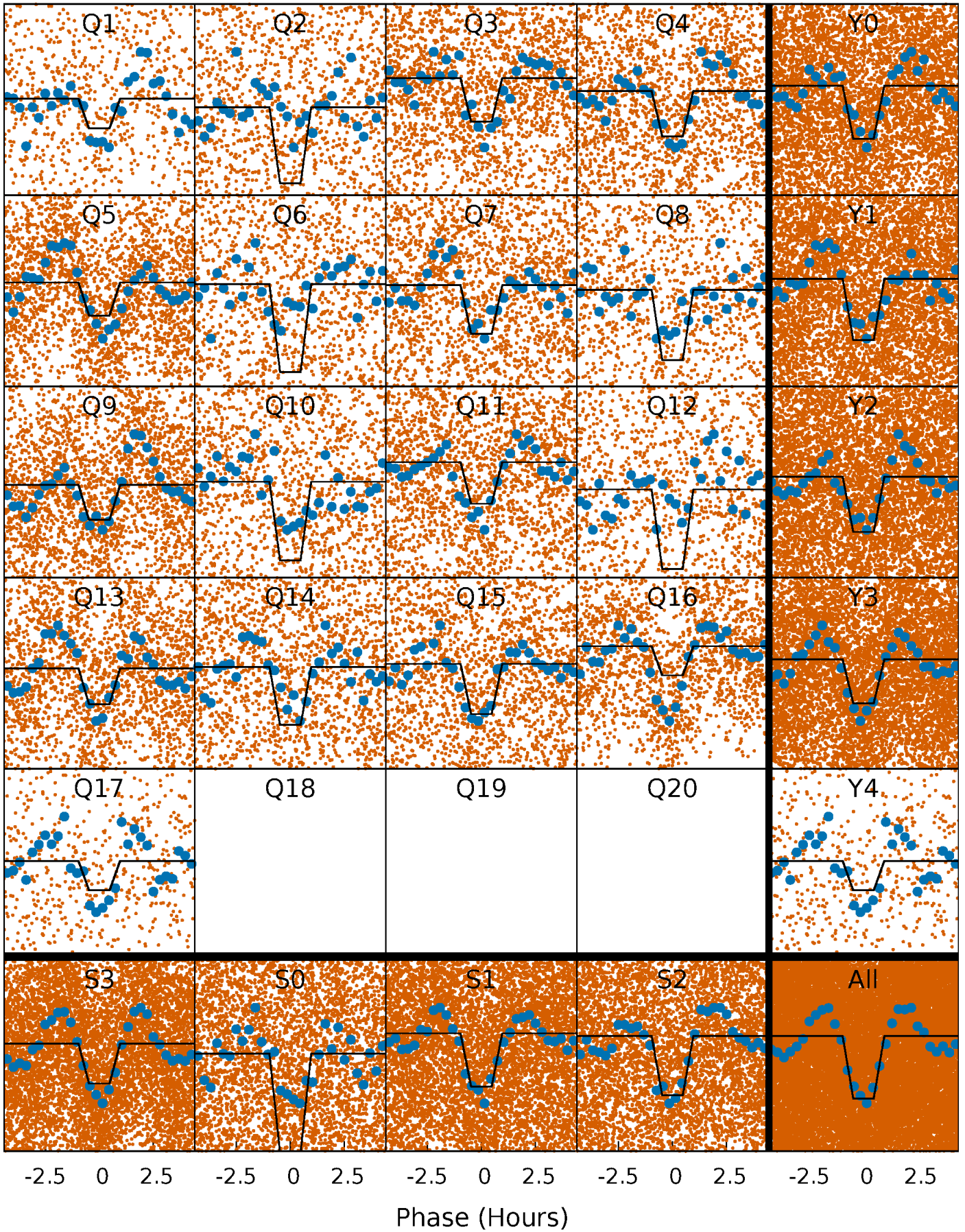
DV Quarter-Phased Transit Curves

TCE 005300451-02 P= 0.623485 Days $T_0=132.050793$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

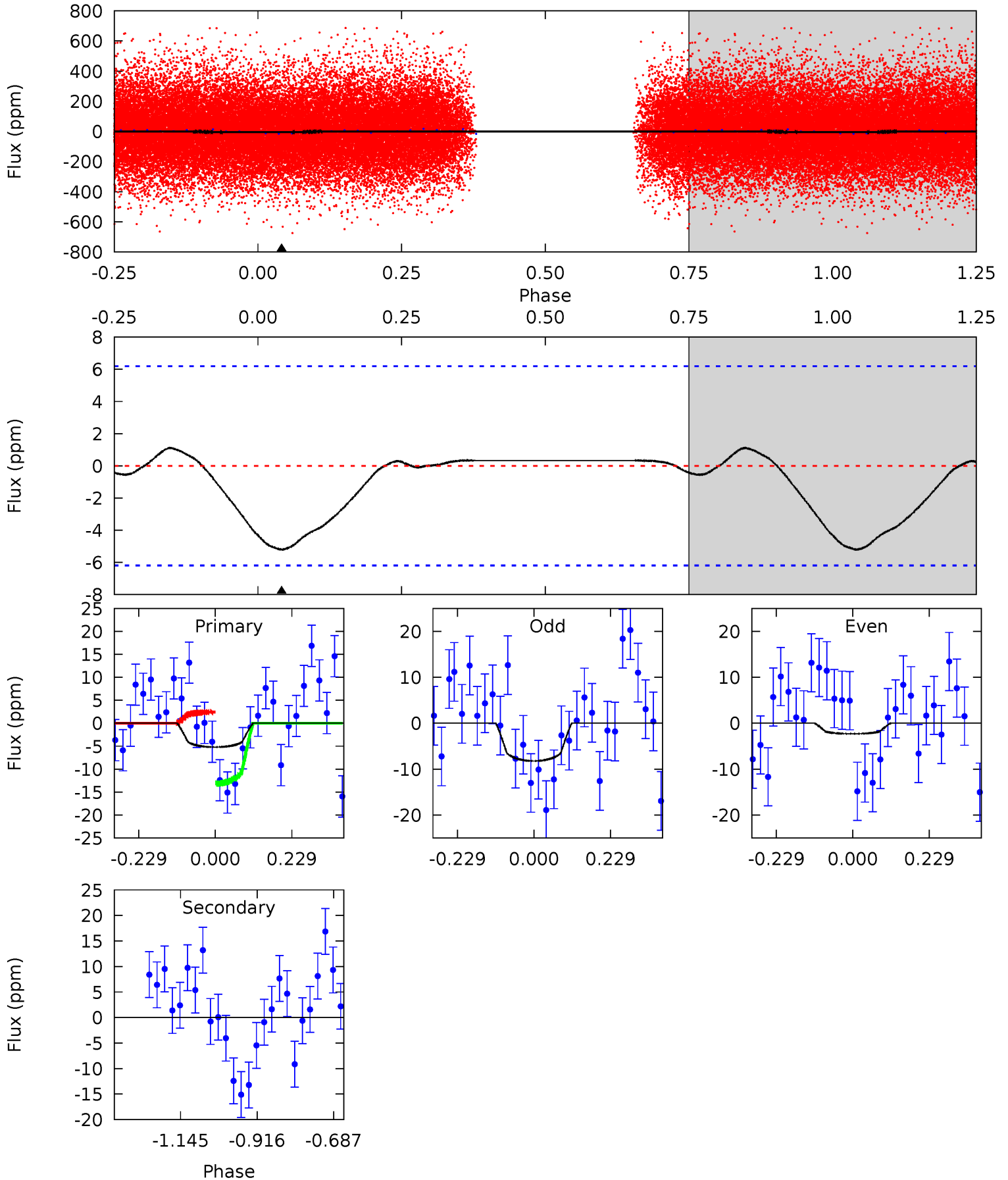
TCE 005300451-02 P= 0.623516 Days $T_0=132.029035$ (BKJD)



DV Model-Shift Uniqueness Test

005300451-02, P = 0.623485 Days, E = 131.427308 Days

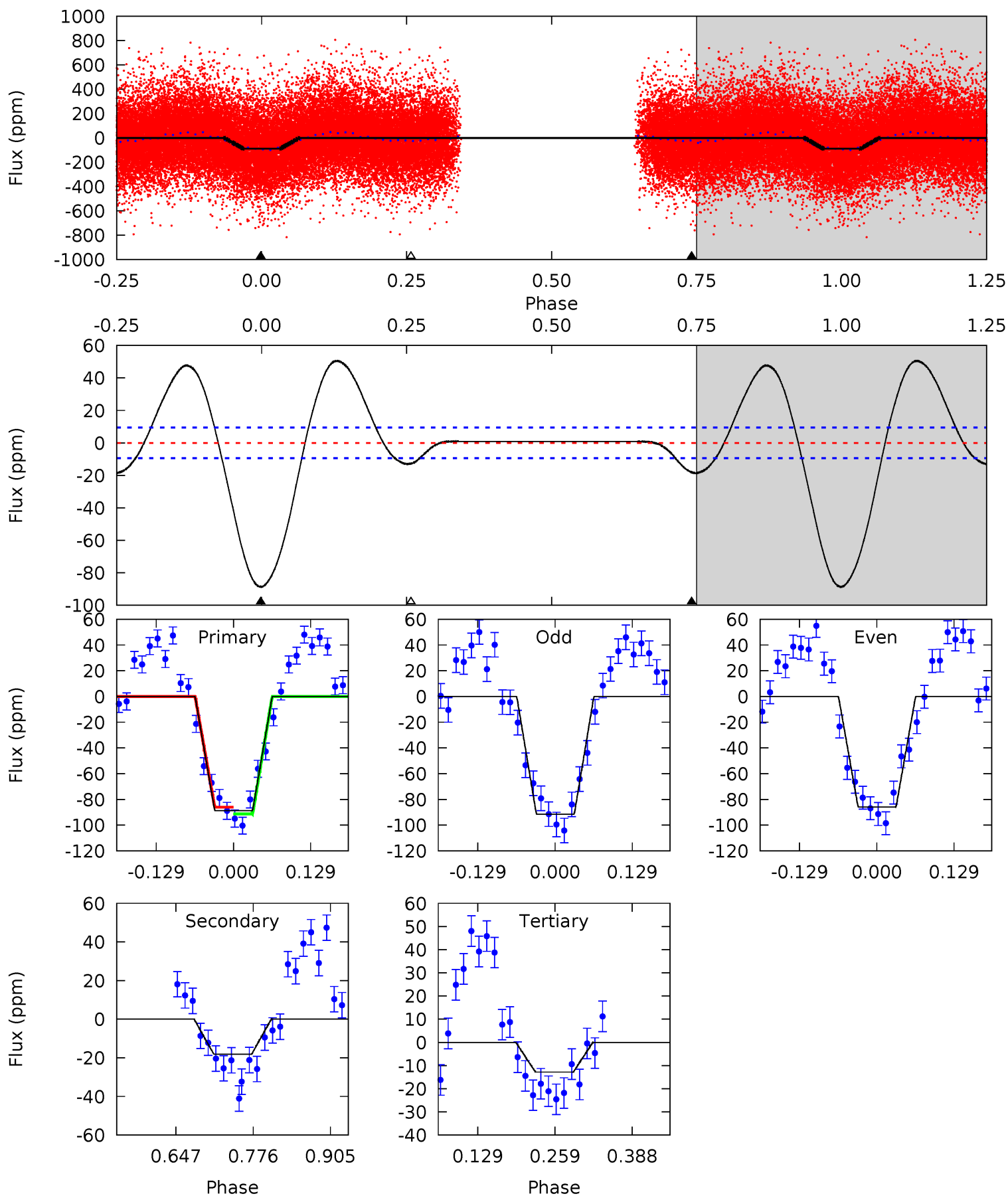
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.69	0	0	0	4.39	1.20	0.19	3.69	3.69	0	0	2.10	0.77	0.18	3.80



Alt Model-Shift Uniqueness Test

005300451-02, P = 0.623516 Days, E = 131.405519 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.4	8.66	6.13	0	4.51	1.52	10.2	36.3	42.4	2.53	8.66	1.30	0.97	0.36	1.24



Stellar Parameters For KIC 005300451

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6631^{+159}_{-239}	$4.271^{+0.105}_{-0.195}$	$-0.120^{+0.250}_{-0.300}$	$1.351^{+0.420}_{-0.226}$	$1.247^{+0.186}_{-0.186}$	$0.712^{+0.395}_{-0.360}$
	+2%/-4%	+2%/-5%	+208%/-250%	+31%/-17%	+15%/-15%	+56%/-51%
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 005300451-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	0 ± 1	$0.50^{+0.26}_{-0.25}$	3870^{+298}_{-228}	-3596^{+7610}_{-1180}	$0.023^{+0.906}_{-1.044}$
Alt.	-18 ± 2	$1.45^{+0.32}_{-0.26}$	3871^{+284}_{-205}	4304^{+375}_{-403}	$1.119^{+0.517}_{-0.393}$

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

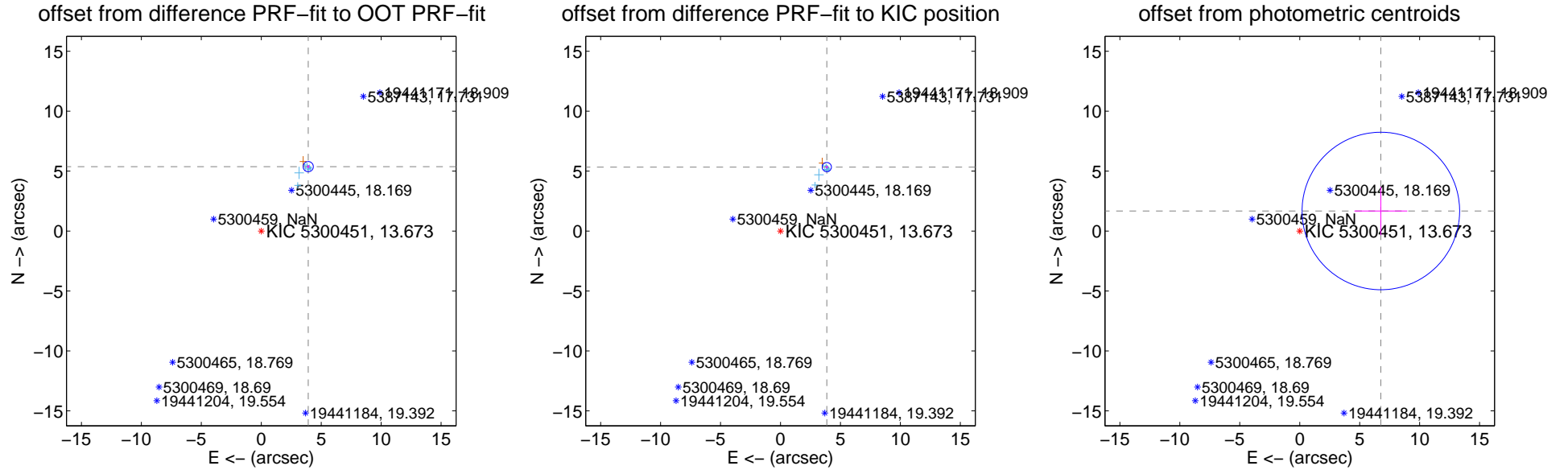
DV Centroid Data

Supplemental centroid analysis for 005300451-02. Kepler magnitude: 13.67. Transit SNR 5.12

There are 15 quarters with good PRF difference image offsets

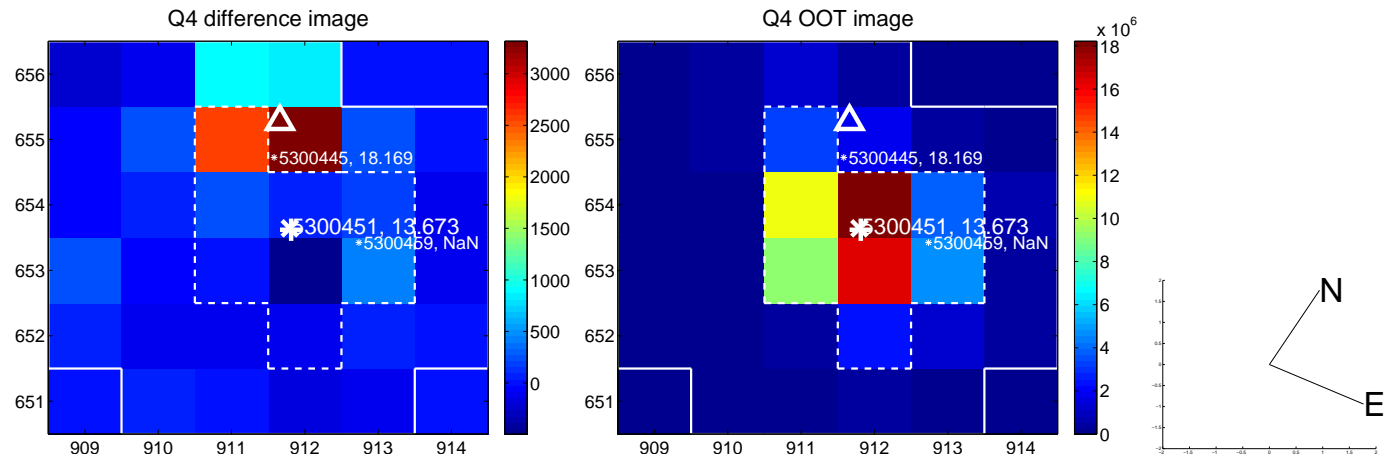
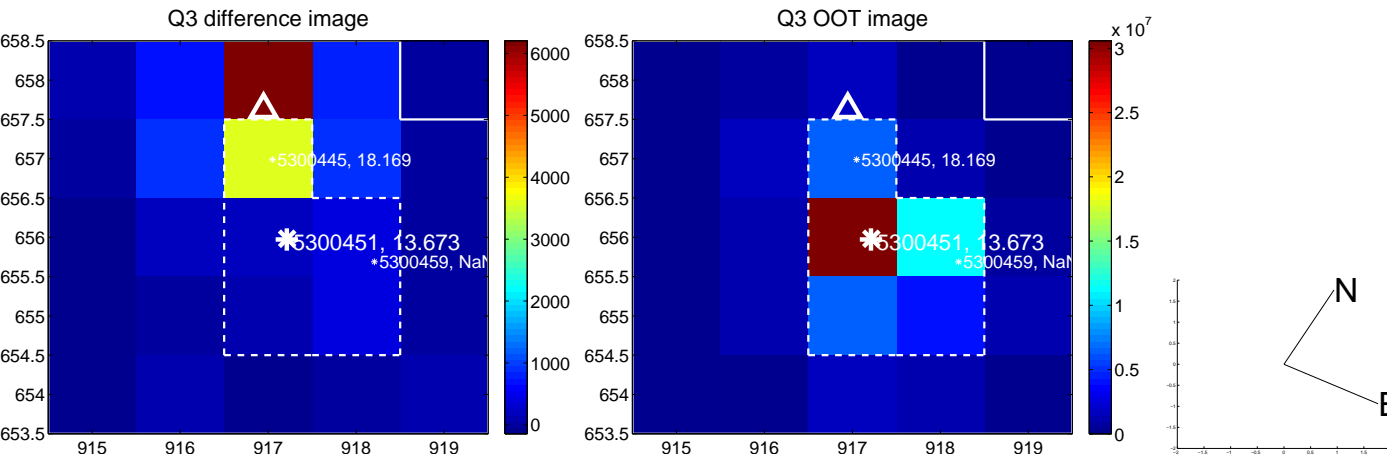
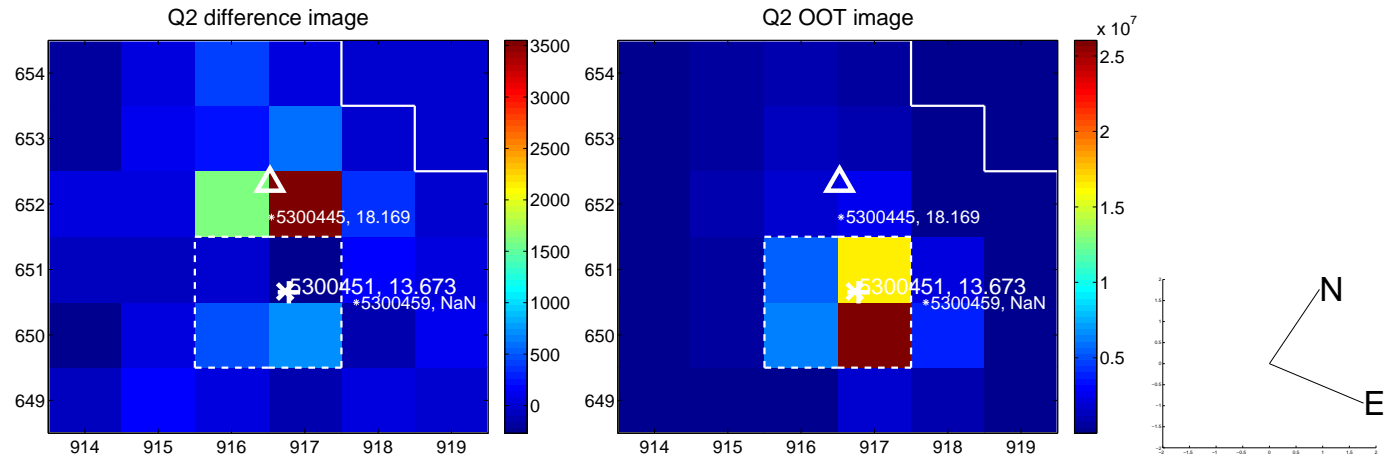
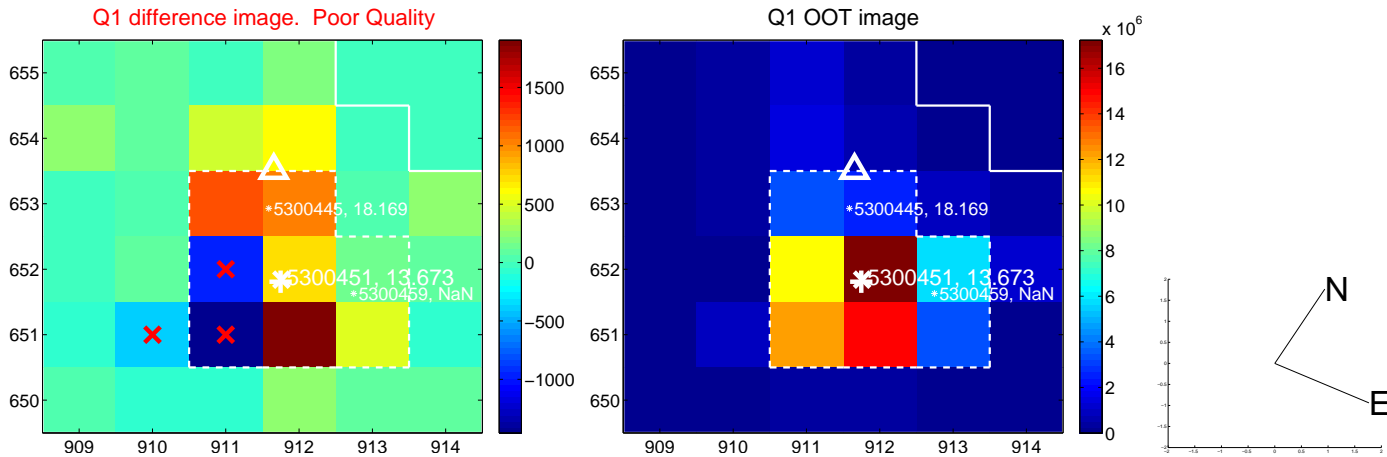
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.650 ± 0.142	46.92	-3.916 ± 0.102	5.375 ± 0.131
PRF-fit source offset from KIC position	6.588 ± 0.128	51.28	-3.863 ± 0.099	5.336 ± 0.115
photometric centroid source offset	6.97 ± 2.19	3.18	-6.77 ± 2.20	1.67 ± 2.02

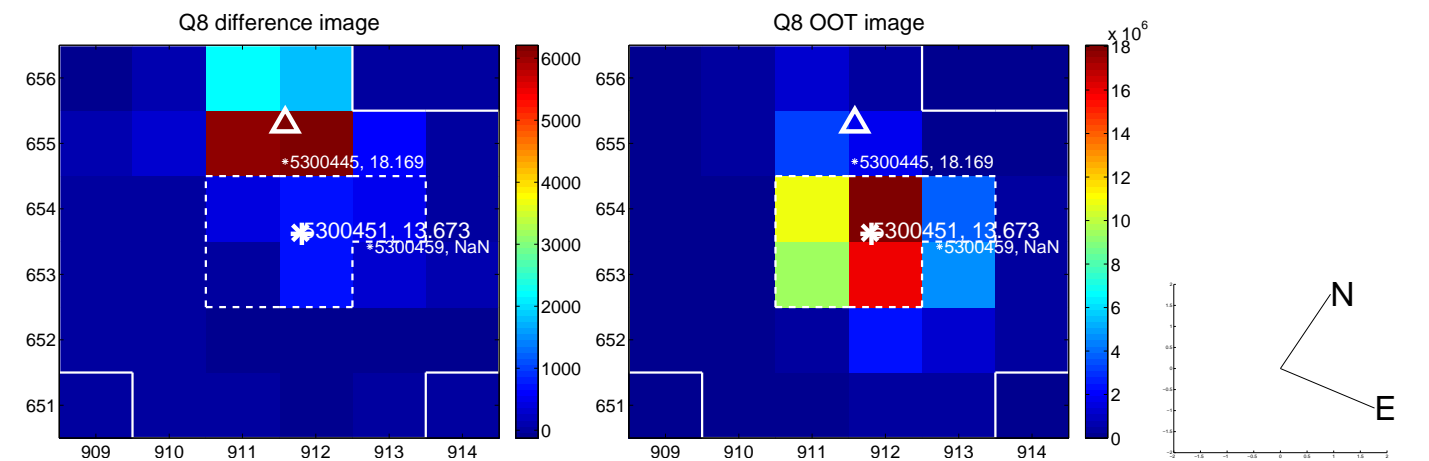
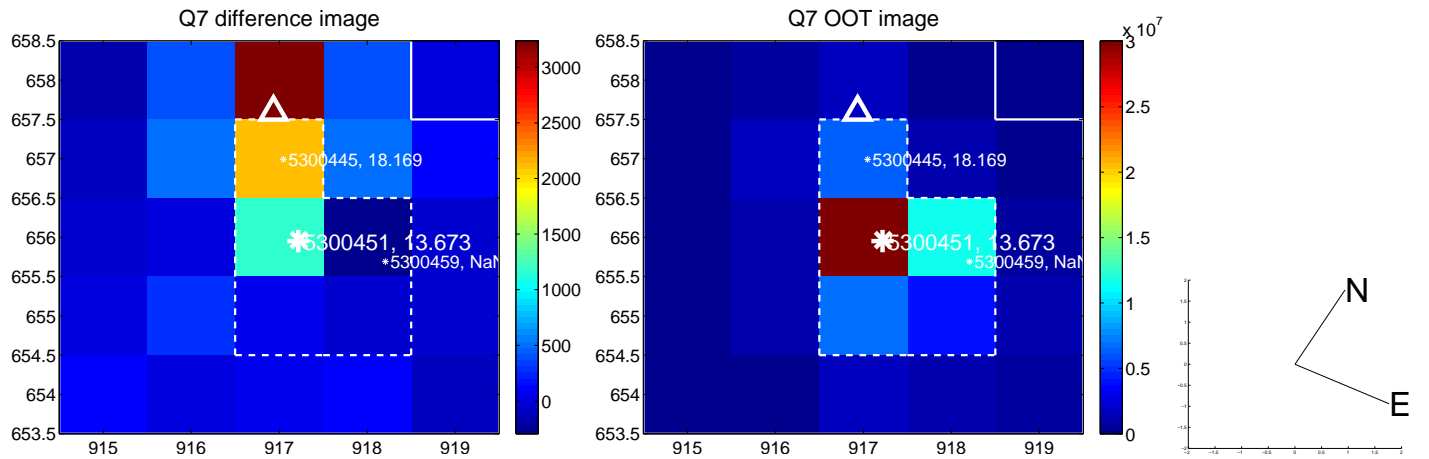
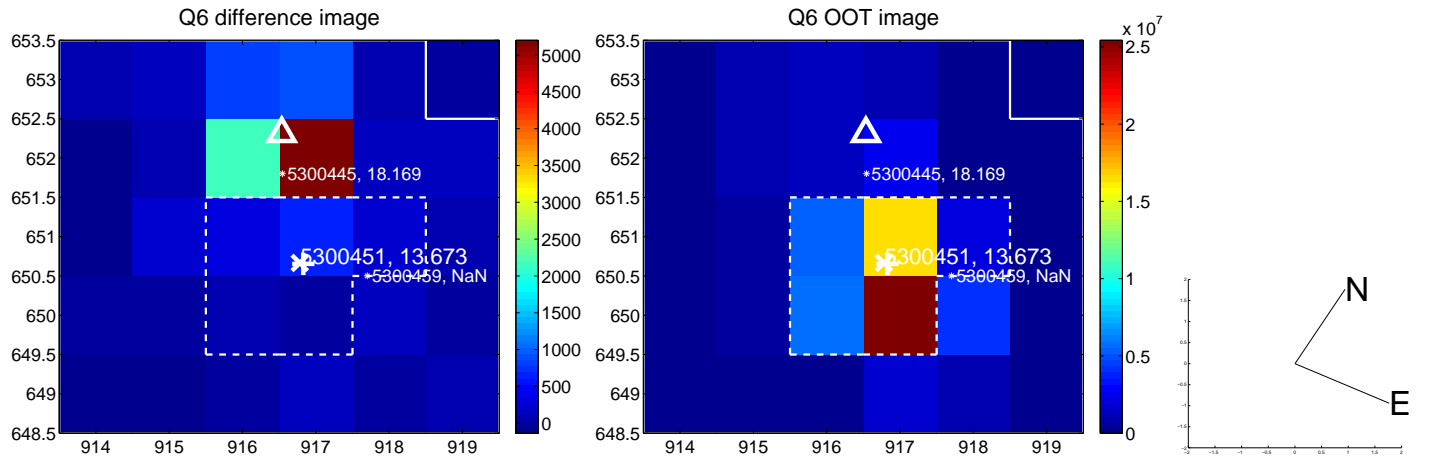
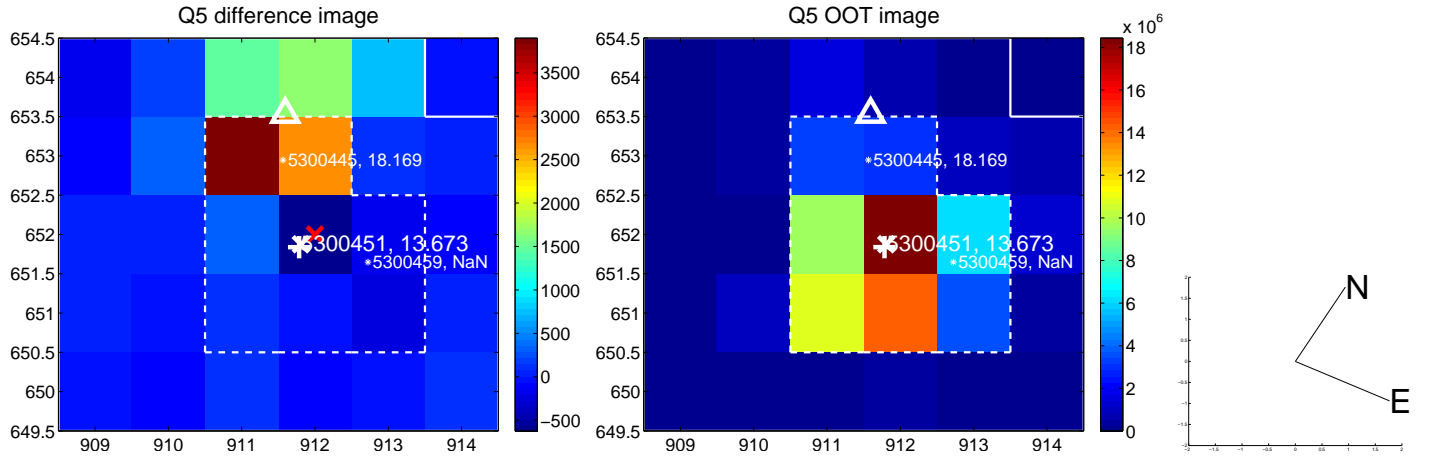


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

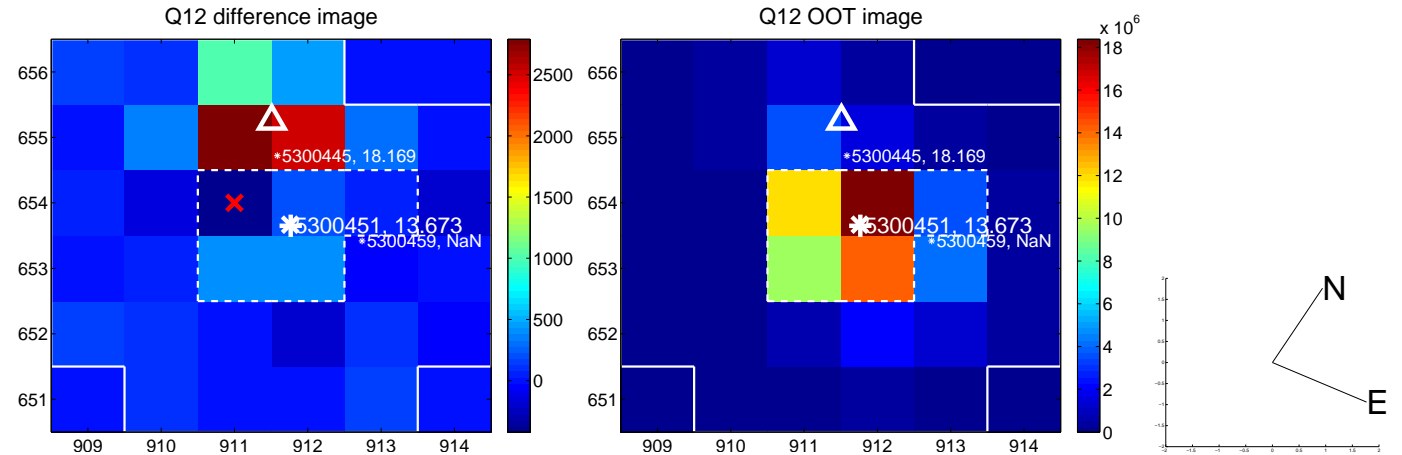
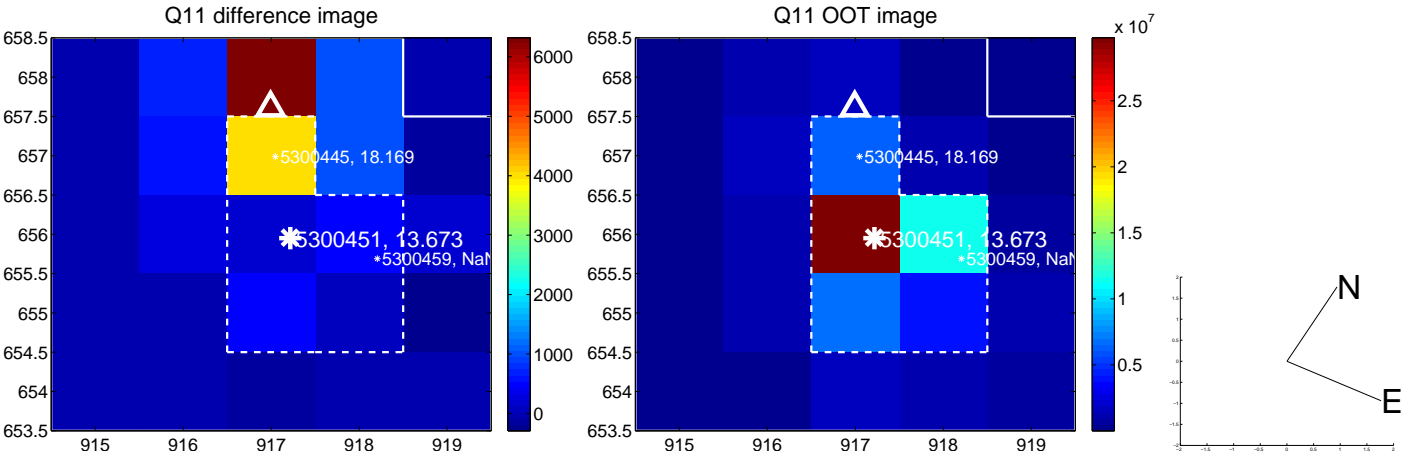
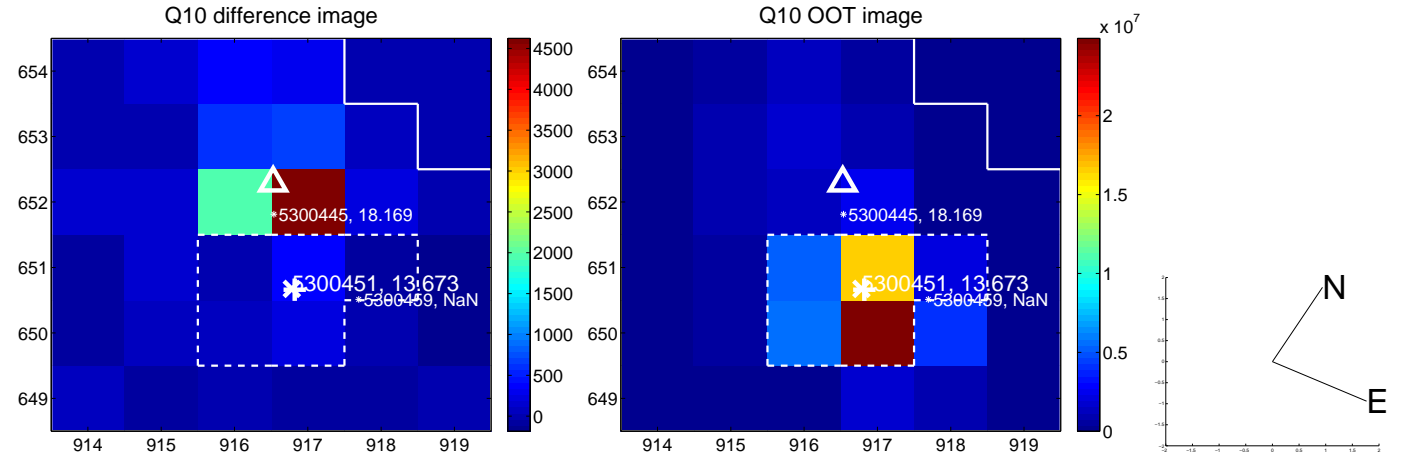
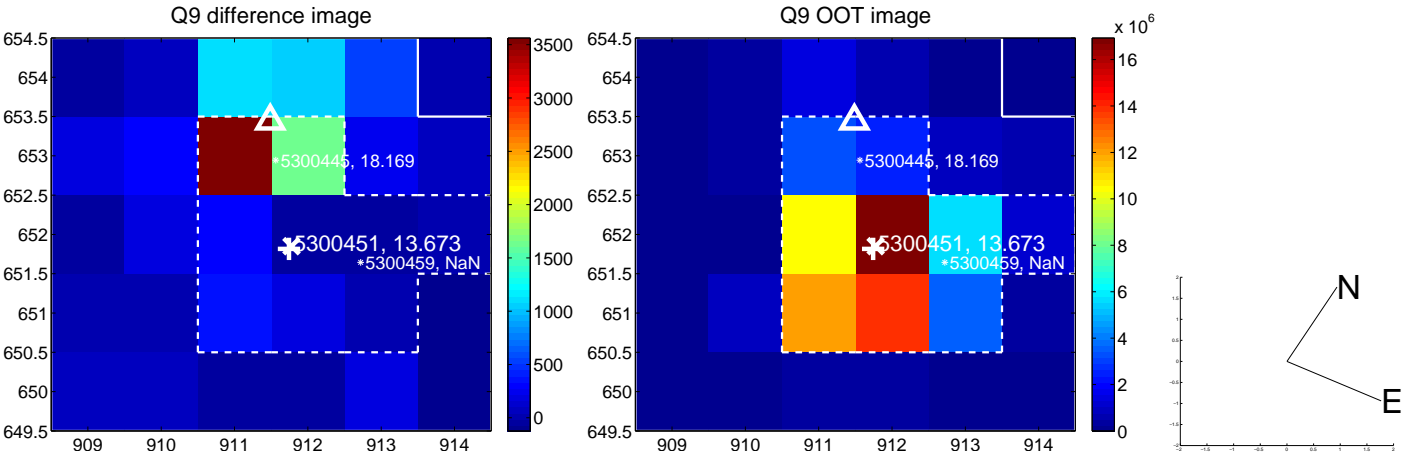
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



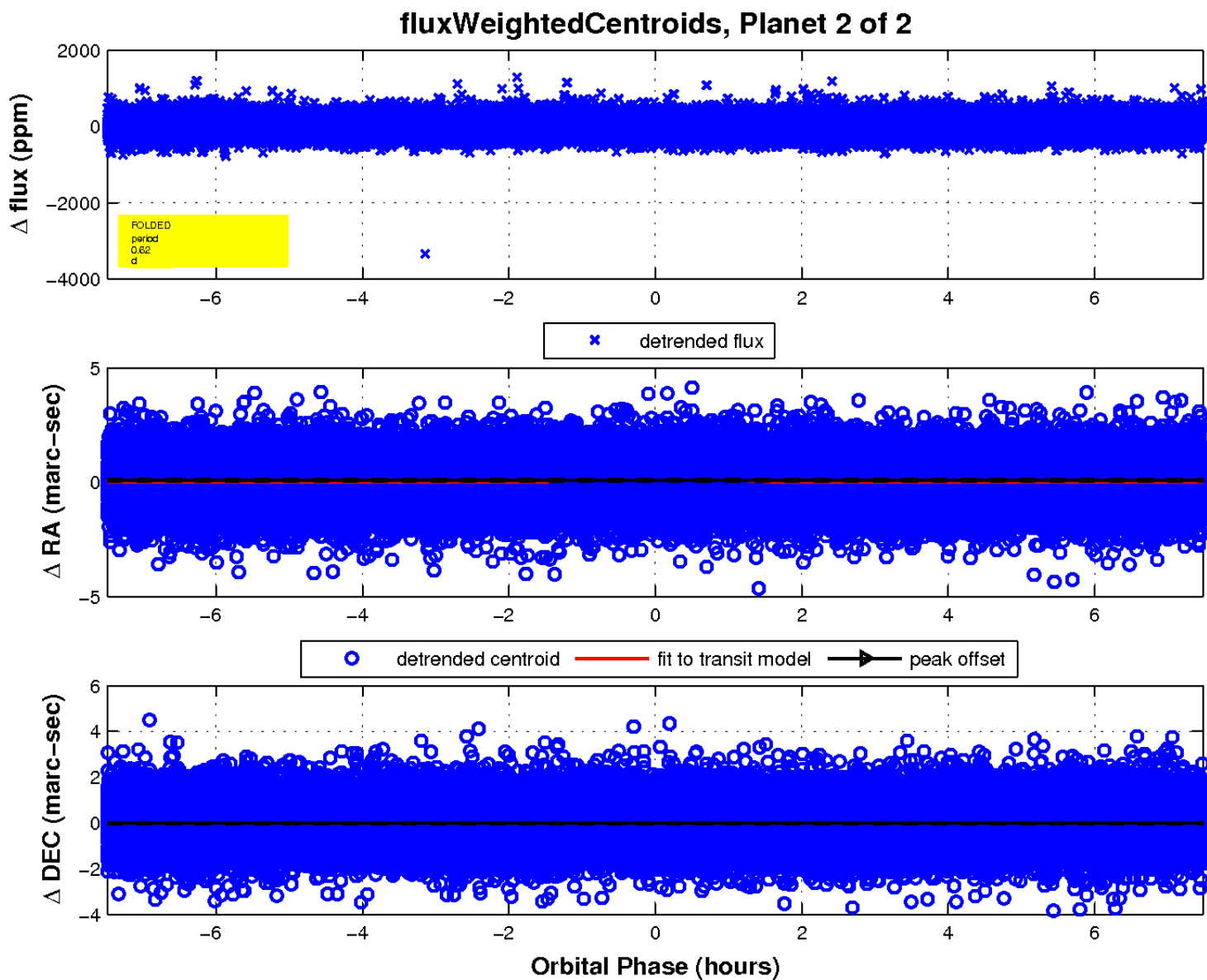
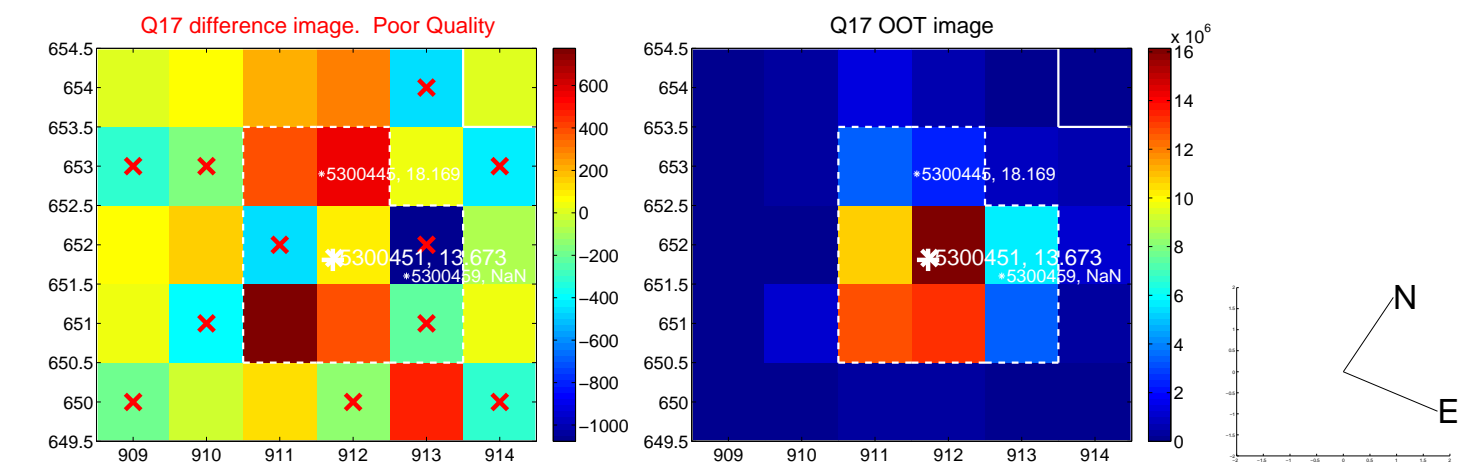
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



UKIRT Image

Declination

