

KIC 009369047

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})
009369047-01	OBS	No	0.903389	132.409605	163.7	1.465	10.6	5.8	3.39	6648	5.01	42776.58
009369047-02	OBS	No	1.793543	132.211765	231.6	5.568	8.5	9.3	3.39	6648	6.25	17143.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009369047-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009369047-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

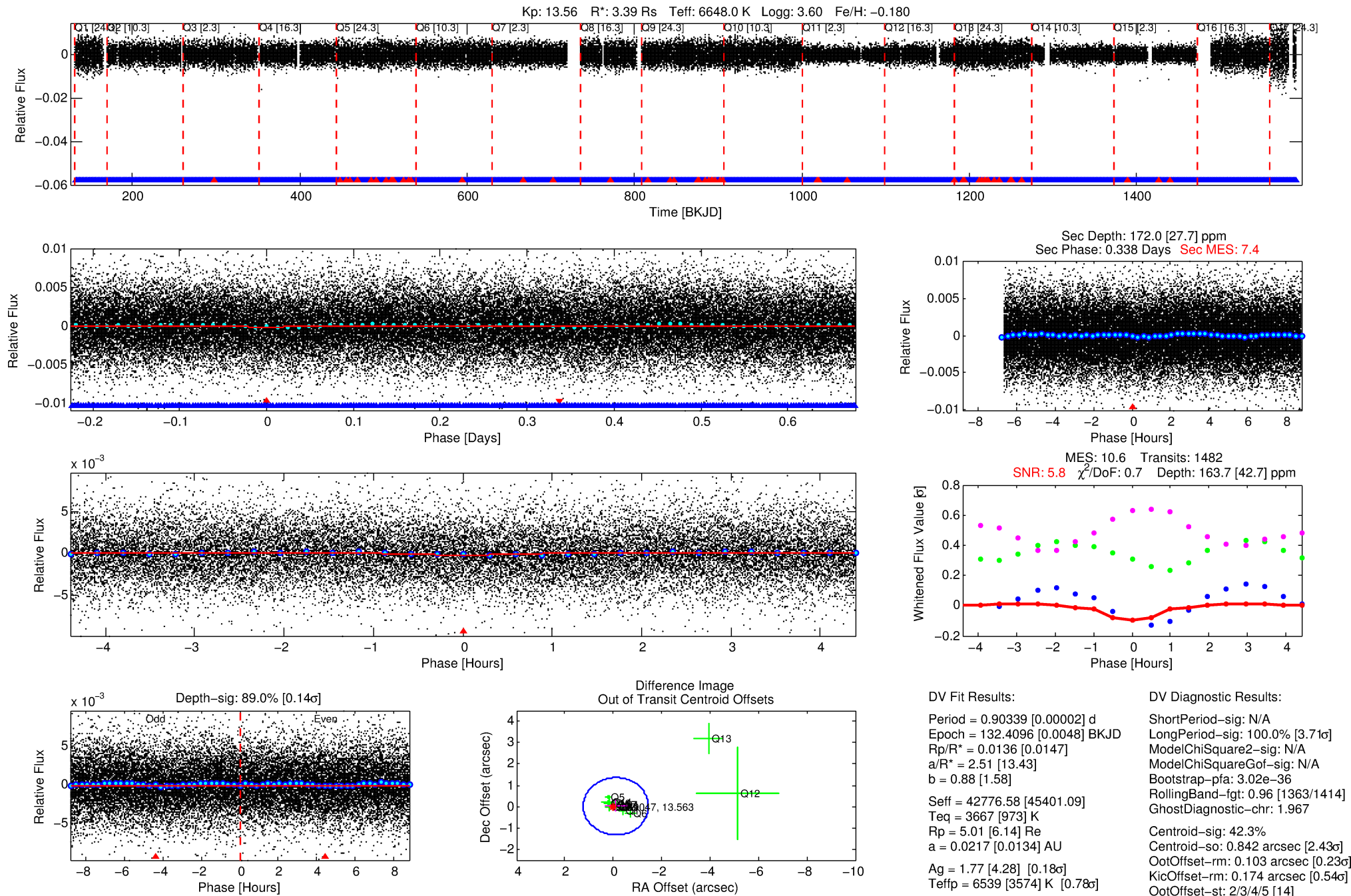
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009369047-01

No Significant Match Found

DV One-Page Summary

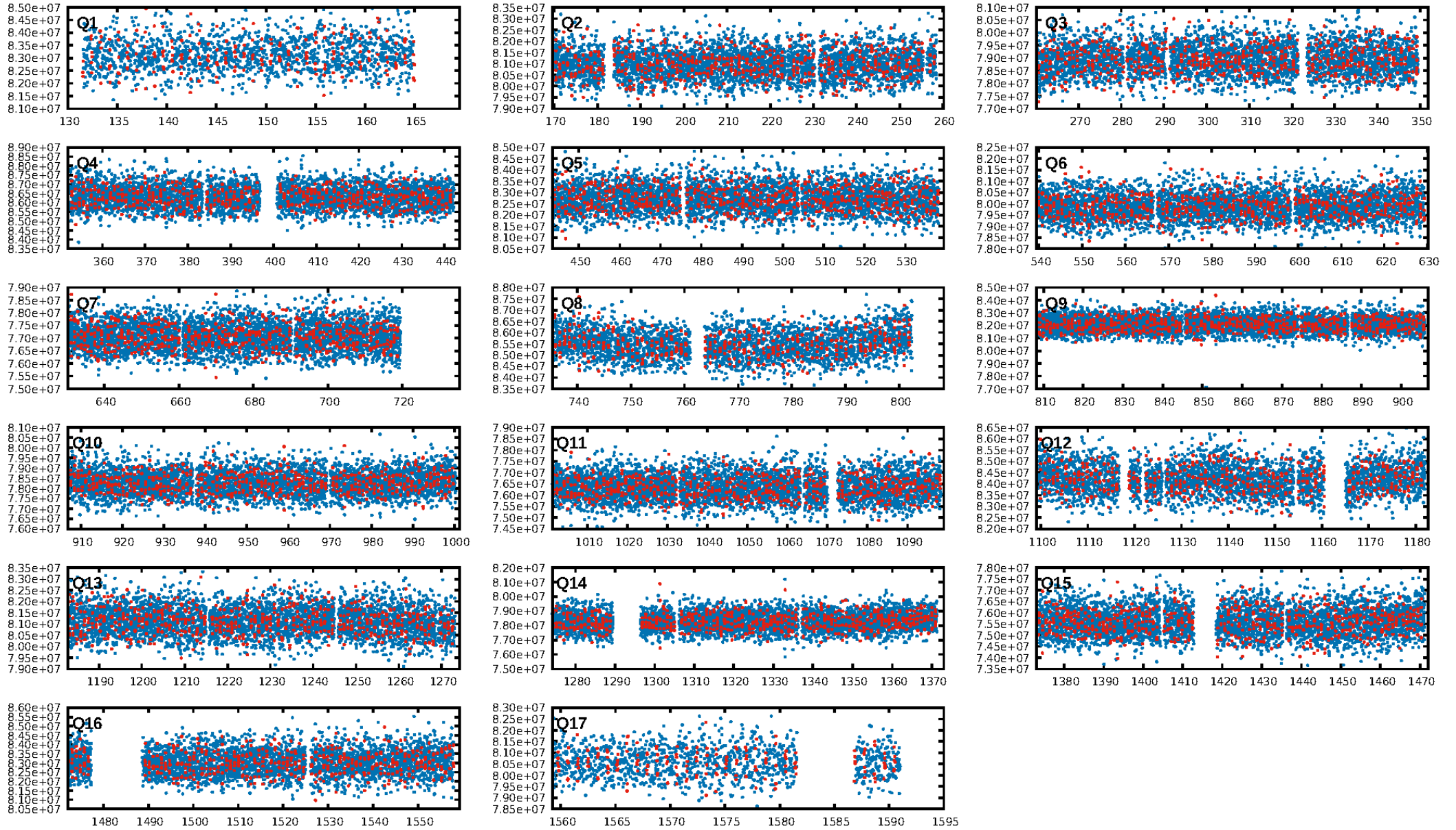
KIC: 9369047 Candidate: 1 of 2 Period: 0.903 d



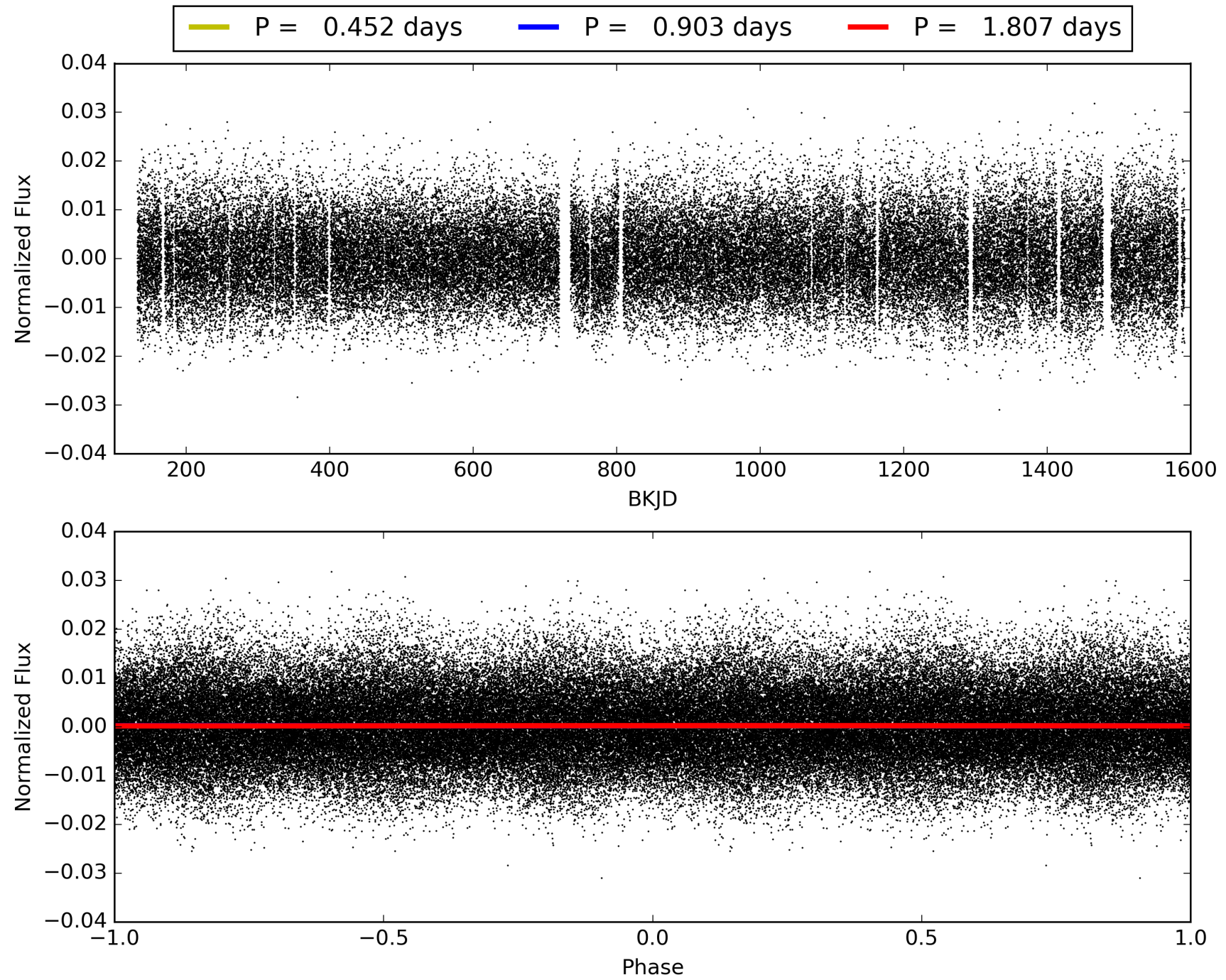
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:58:19 Z

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

TCE 009369047-01, PDC Light Curves

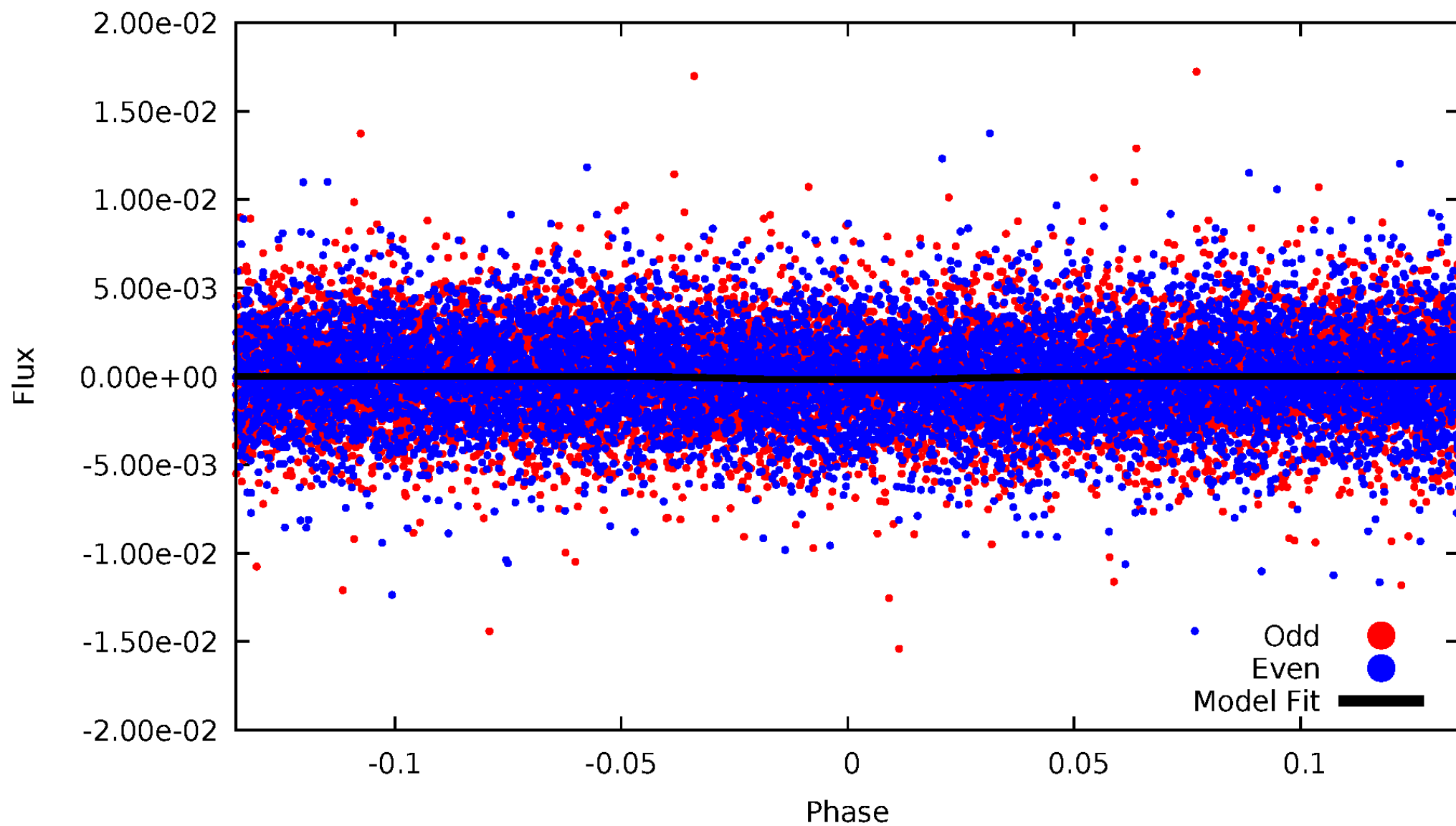


TCE 009369047-01



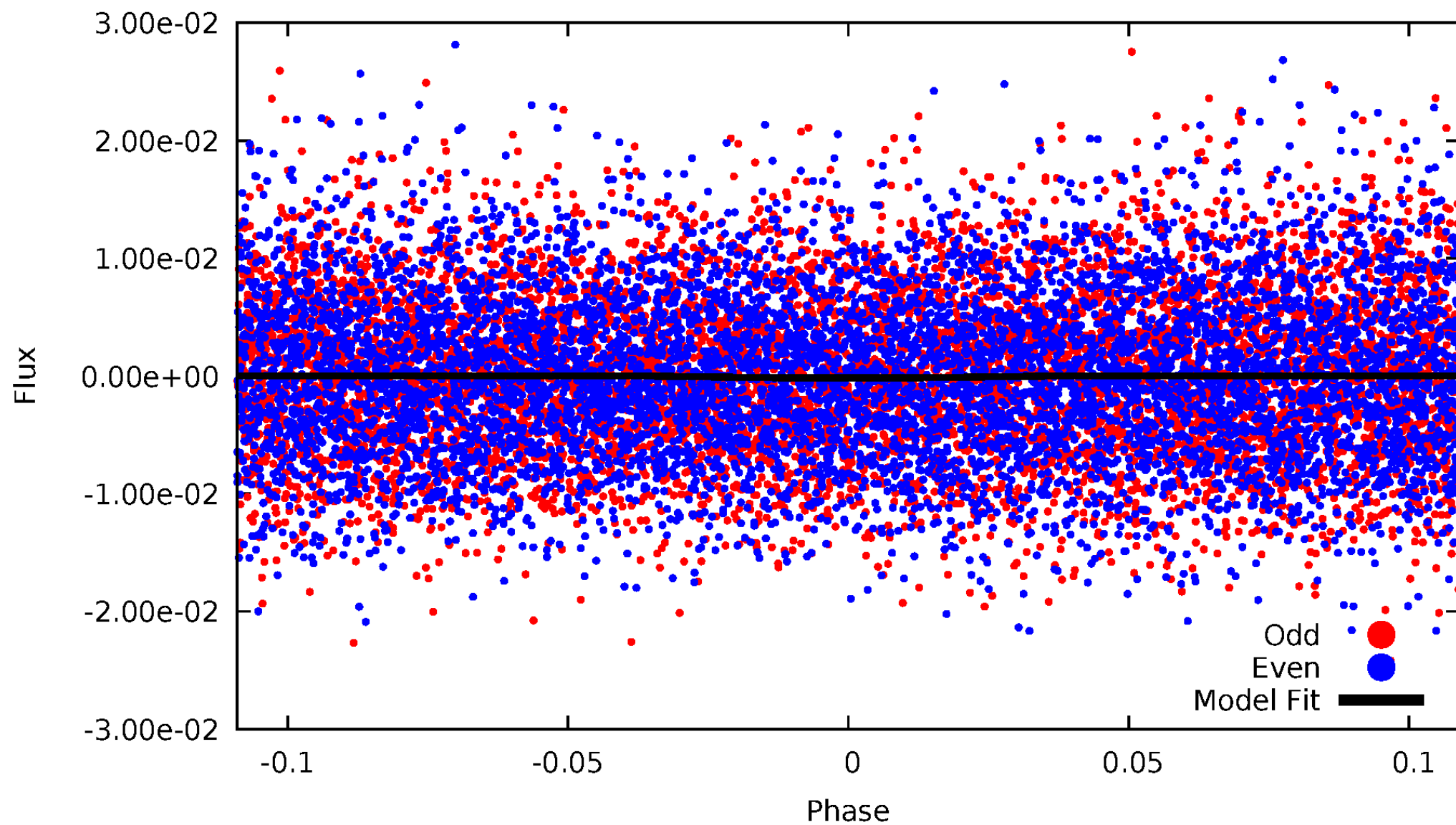
DV Odd/Even

TCE 009369047-01



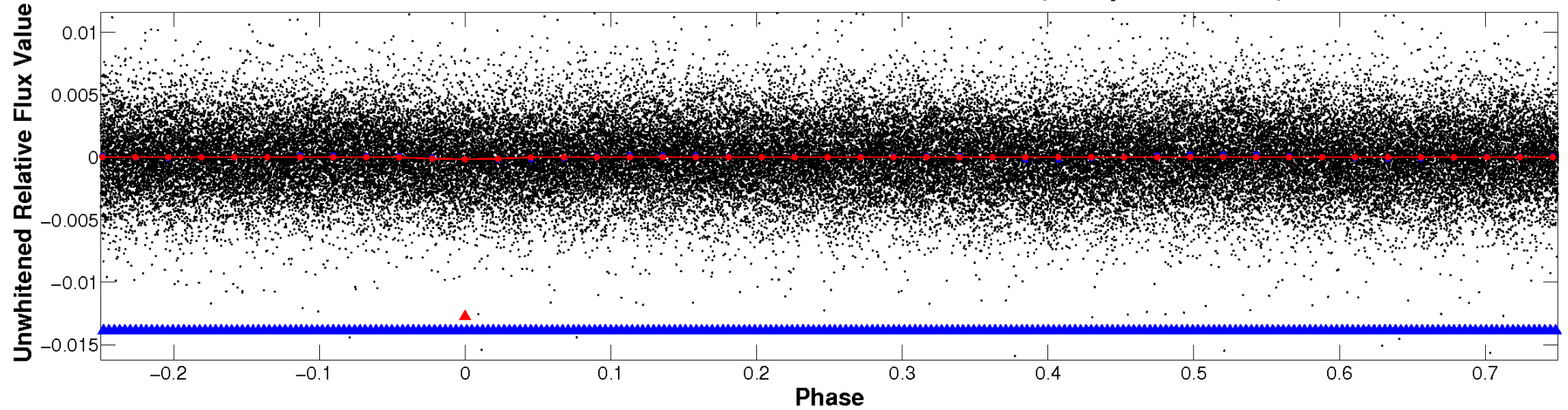
ALT Odd/Even

TCE 009369047-01

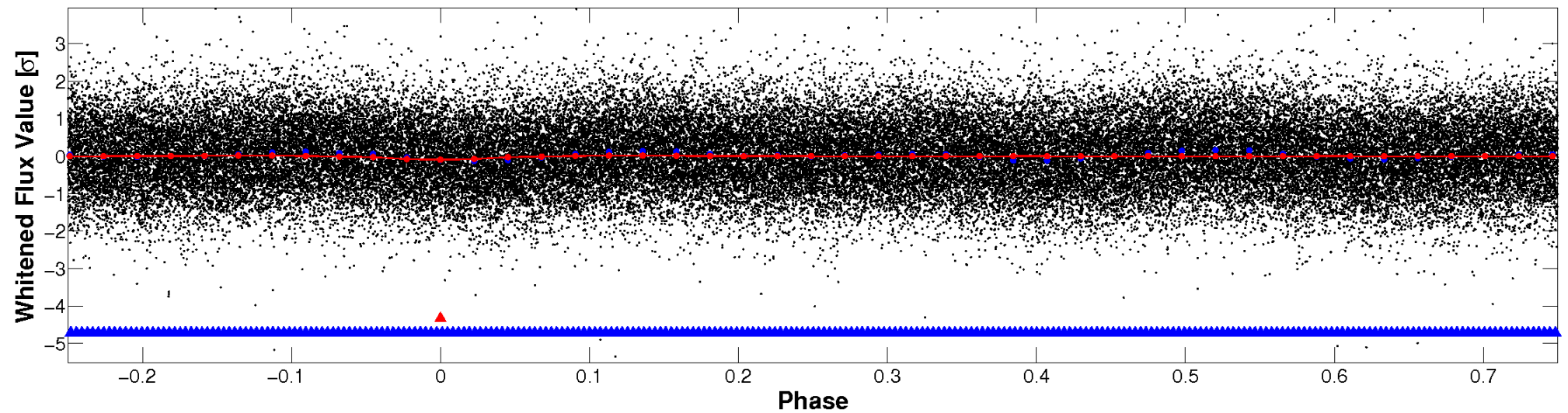


Non-Whitened Vs. Whitened Light Curve

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

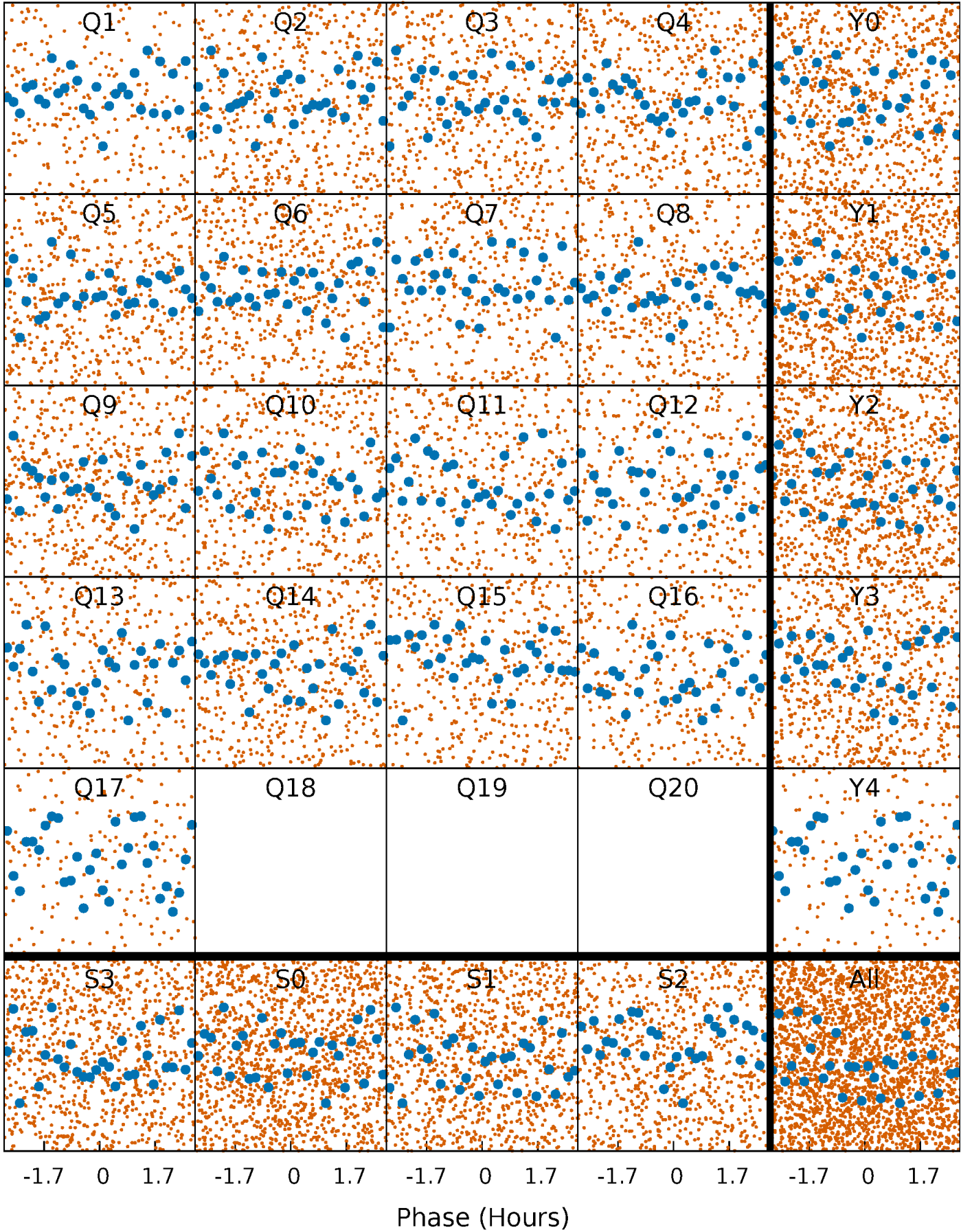


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



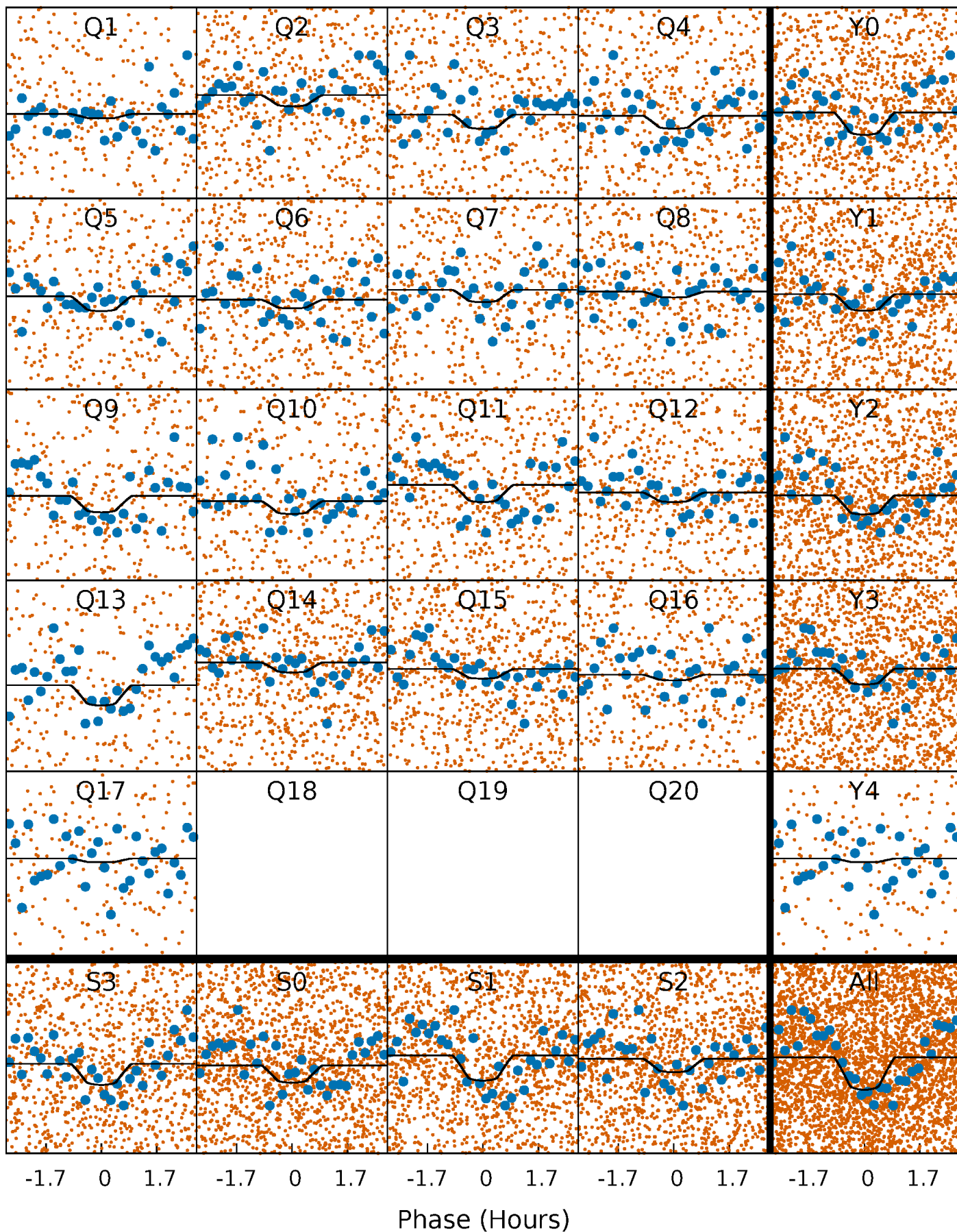
PDC Quarter-Phased Transit Curves

TCE 009369047-01 P= 0.903389 Days $T_0=132.409605$ (BKJD)



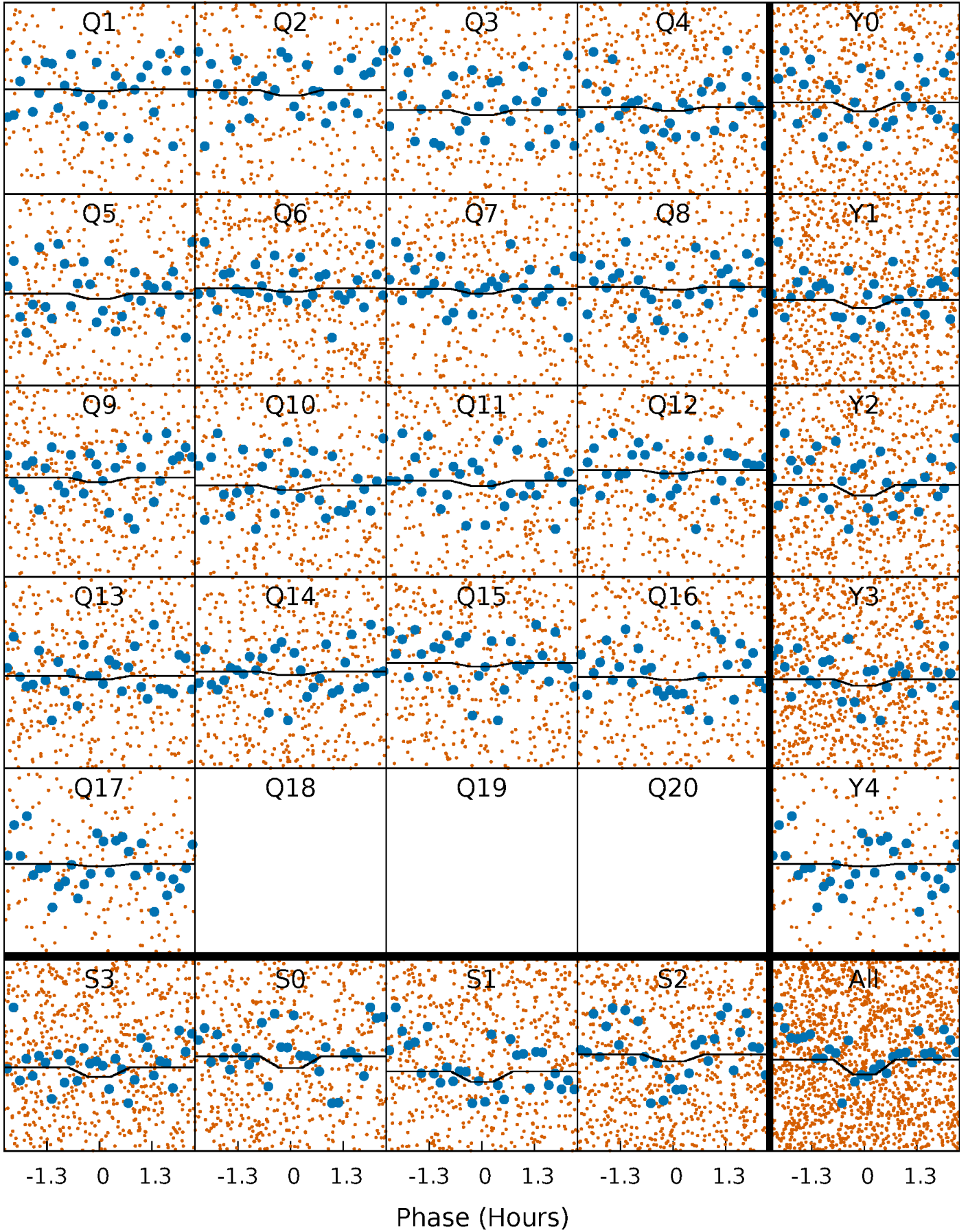
DV Quarter-Phased Transit Curves

TCE 009369047-01 P= 0.903389 Days $T_0=132.409605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

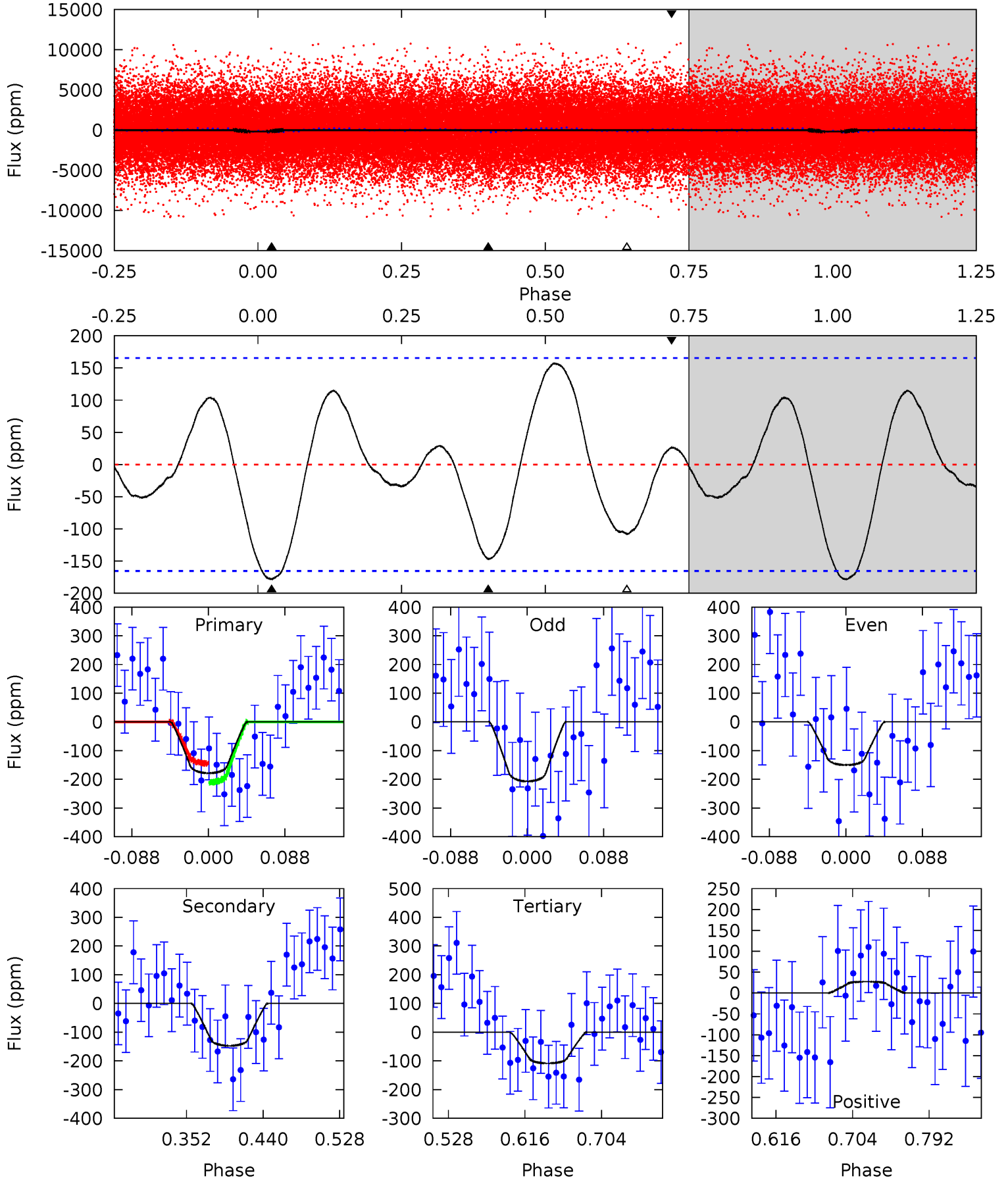
TCE 009369047-01 P= 0.903408 Days $T_0=132.403586$ (BKJD)



DV Model-Shift Uniqueness Test

009369047-01, P = 0.903389 Days, E = 131.506216 Days

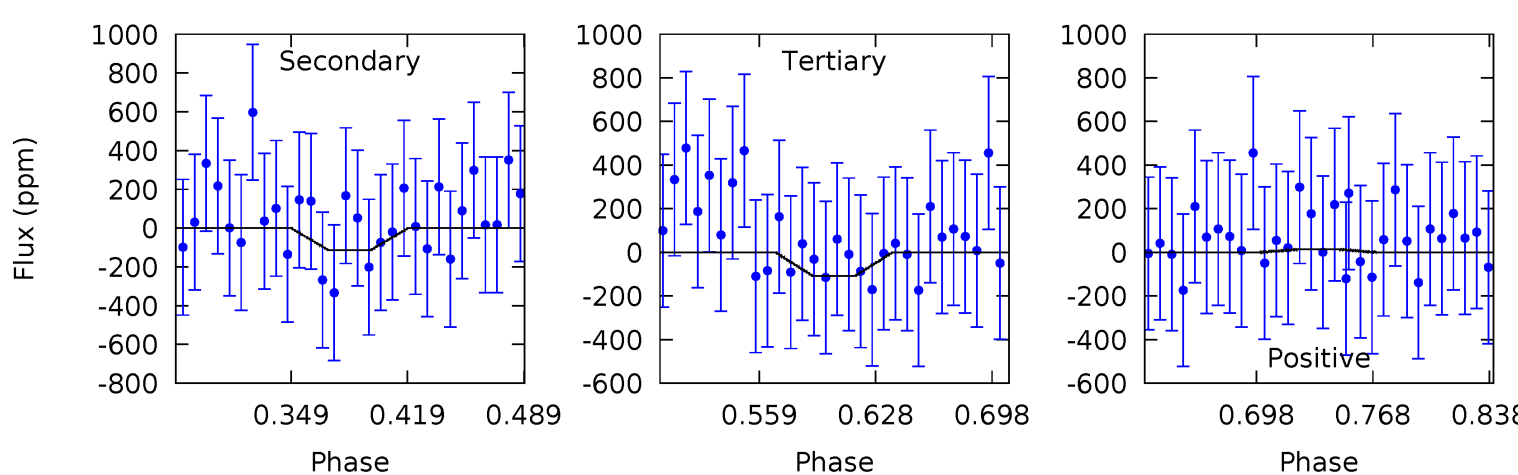
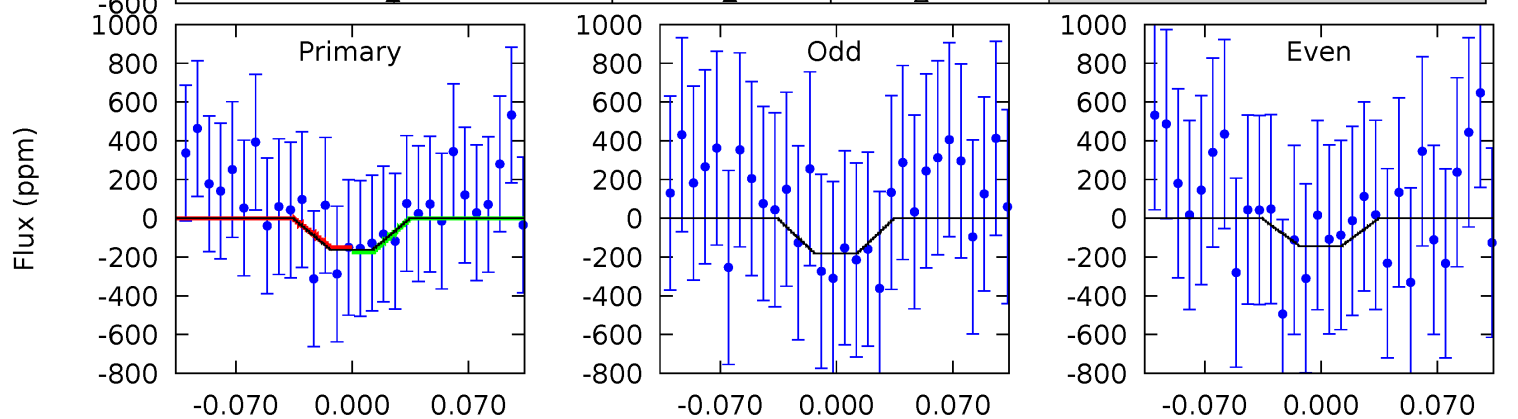
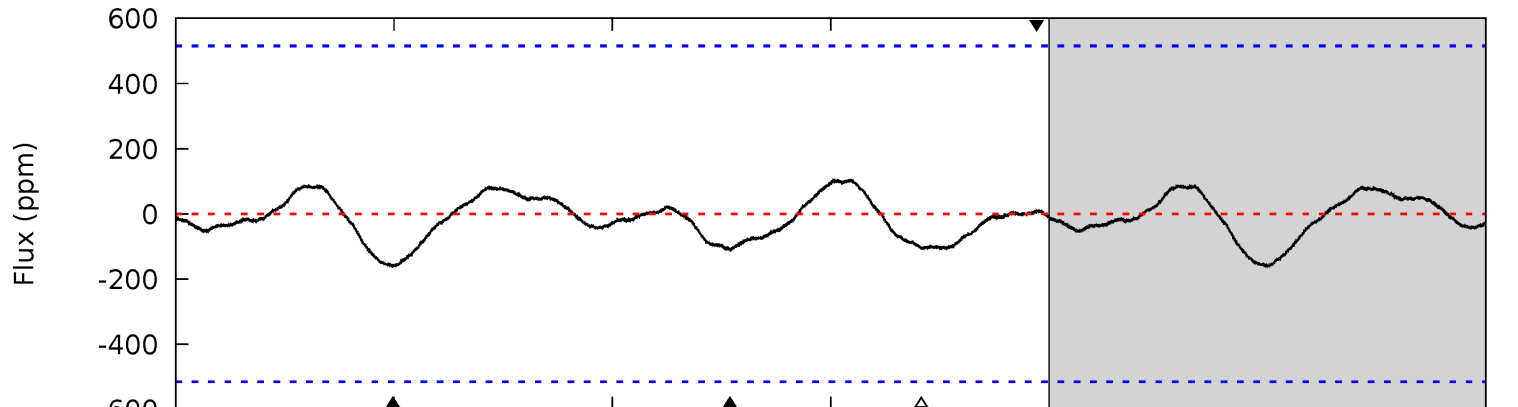
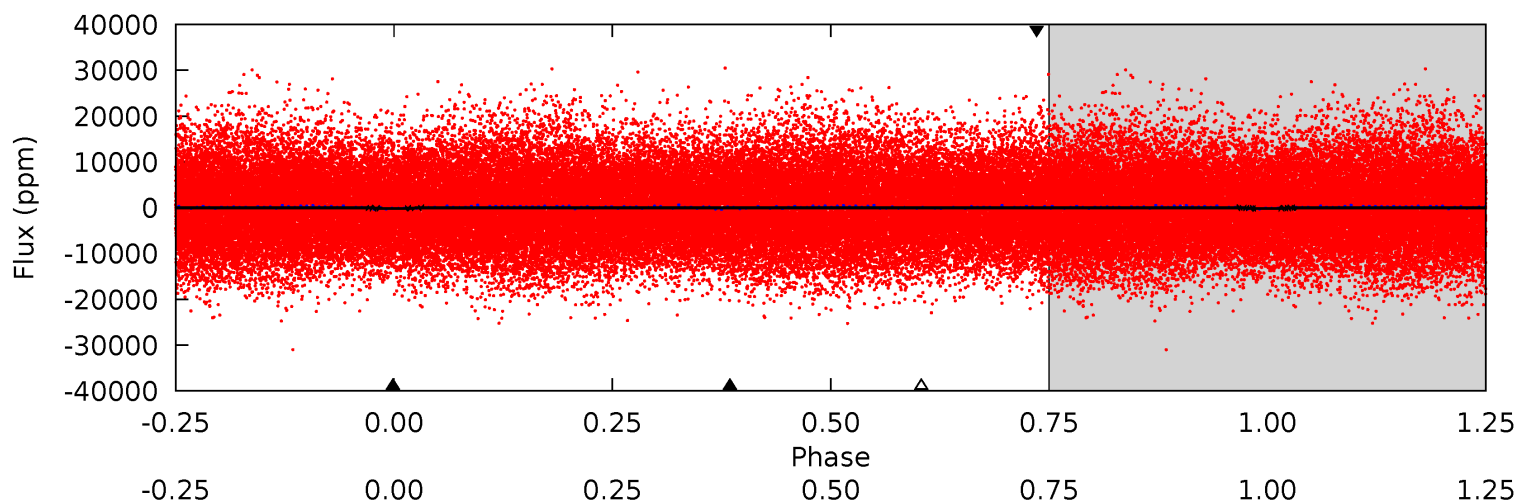
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.96	4.09	3.01	0.75	4.59	1.71	1.95	1.95	4.21	1.08	3.34	0.79	0.85	0.47	0.92



Alt Model-Shift Uniqueness Test

009369047-01, P = 0.903408 Days, E = 131.500178 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.46	1.02	0.98	0.12	4.64	1.81	0.49	0.49	1.35	0.05	0.91	0.17	0.37	0.40	0.11



Stellar Parameters For KIC 009369047

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6648^{+210}_{-256}	$3.599^{+0.639}_{-0.107}$	$-0.180^{+0.250}_{-0.300}$	$3.389^{+0.477}_{-1.906}$	$1.664^{+0.209}_{-0.522}$	$0.060^{+0.523}_{-0.013}$
	+3%/-4%	+18%/-3%	+139%/-167%	+14%/-56%	+13%/-31%	+869%/-22%
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 009369047-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-147 ± 36	$5.64^{+5.42}_{-3.59}$	4988^{+366}_{-784}	5024^{+4235}_{-2517}	$1.095^{+7.329}_{-0.788}$
Alt.	-114 ± 111	$5.29^{+4.62}_{-3.52}$	4976^{+372}_{-759}	4529^{+4182}_{-8823}	$0.764^{+6.351}_{-0.759}$

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 $A_{obs} \gg 1.0$

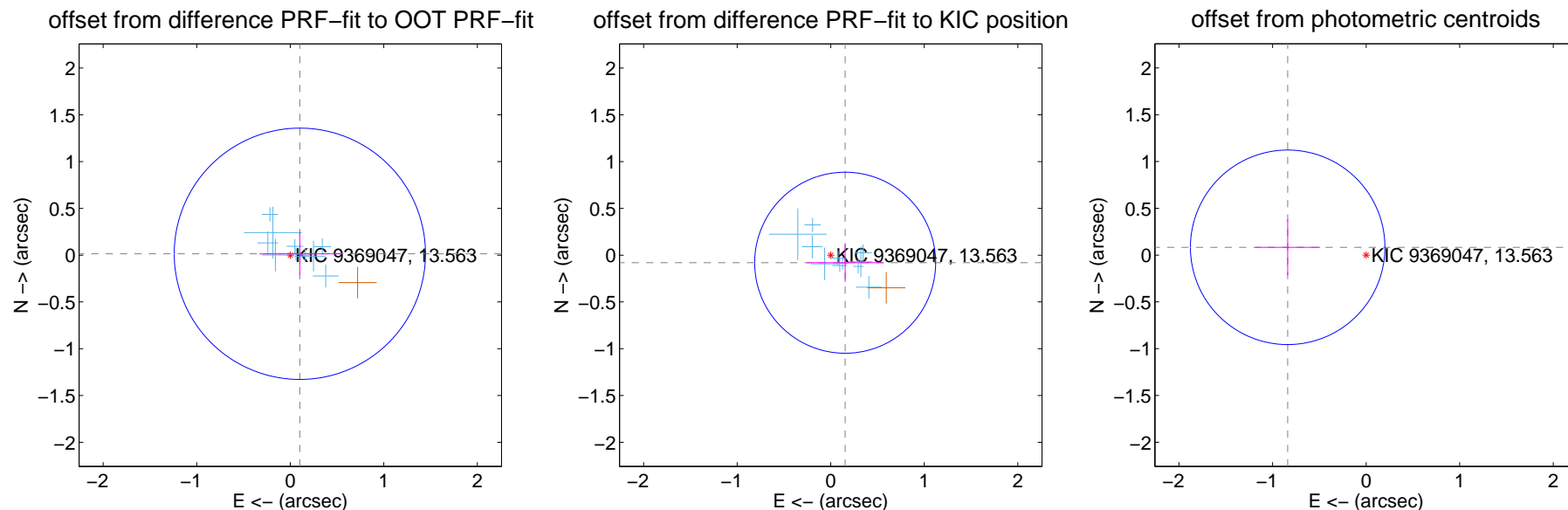
DV Centroid Data

Supplemental centroid analysis for 009369047-01. Kepler magnitude: 13.56. Transit SNR 5.78

There are 11 quarters with good PRF difference image offsets

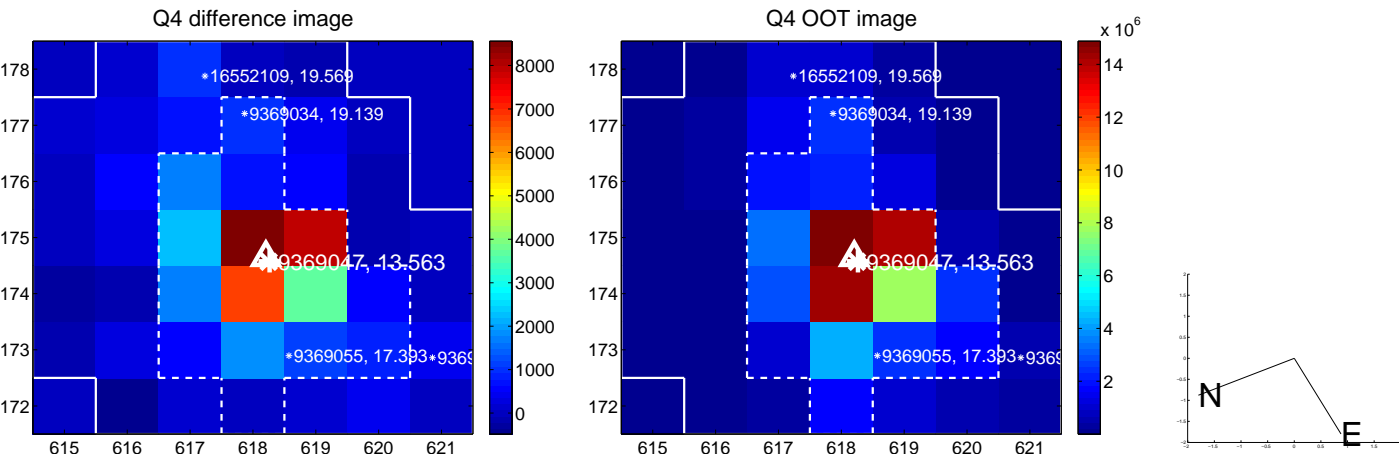
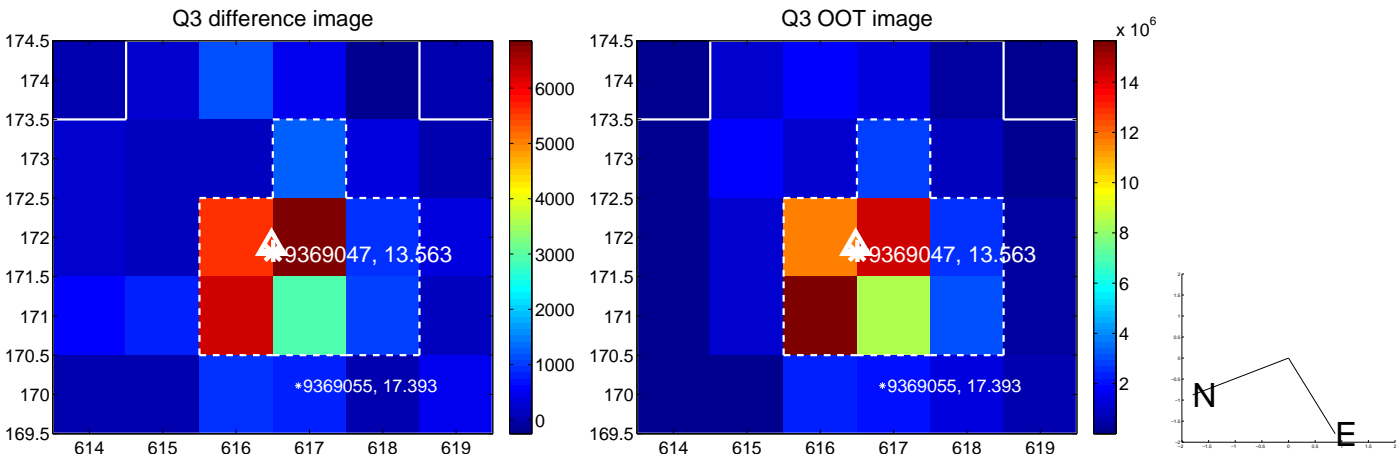
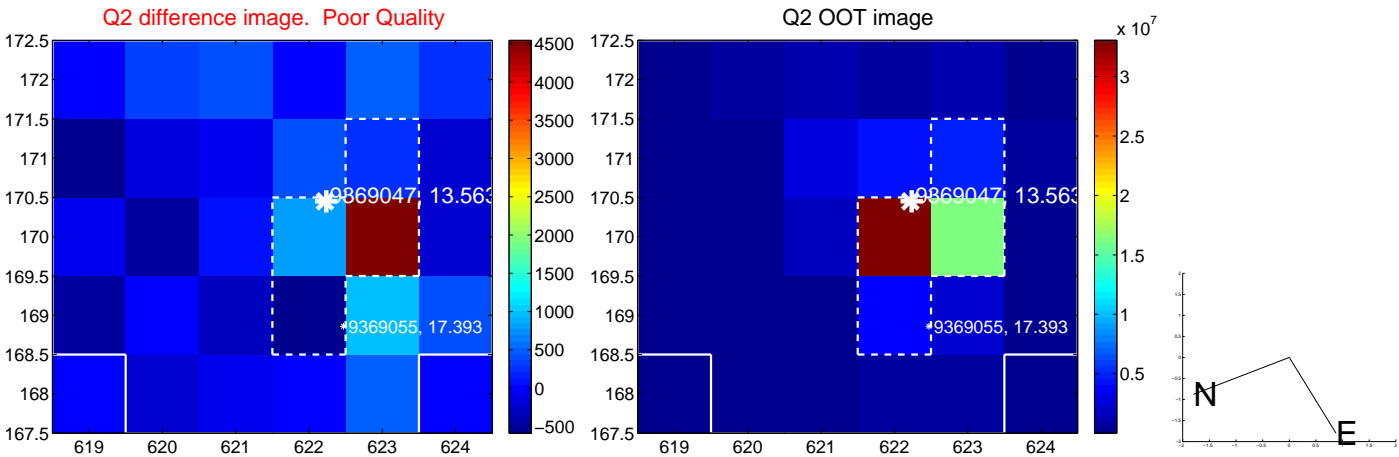
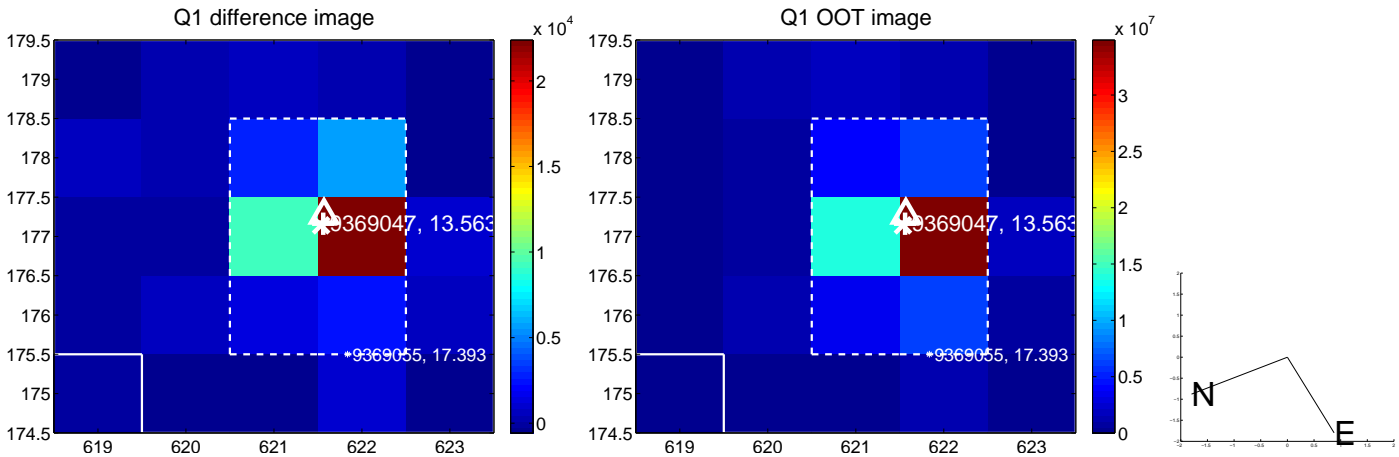
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.103 ± 0.448	0.23	-0.102 ± 0.433	0.015 ± 0.232
PRF-fit source offset from KIC position	0.174 ± 0.322	0.54	-0.154 ± 0.411	-0.081 ± 0.205
photometric centroid source offset	0.84 ± 0.35	2.43	0.84 ± 0.35	0.08 ± 0.30

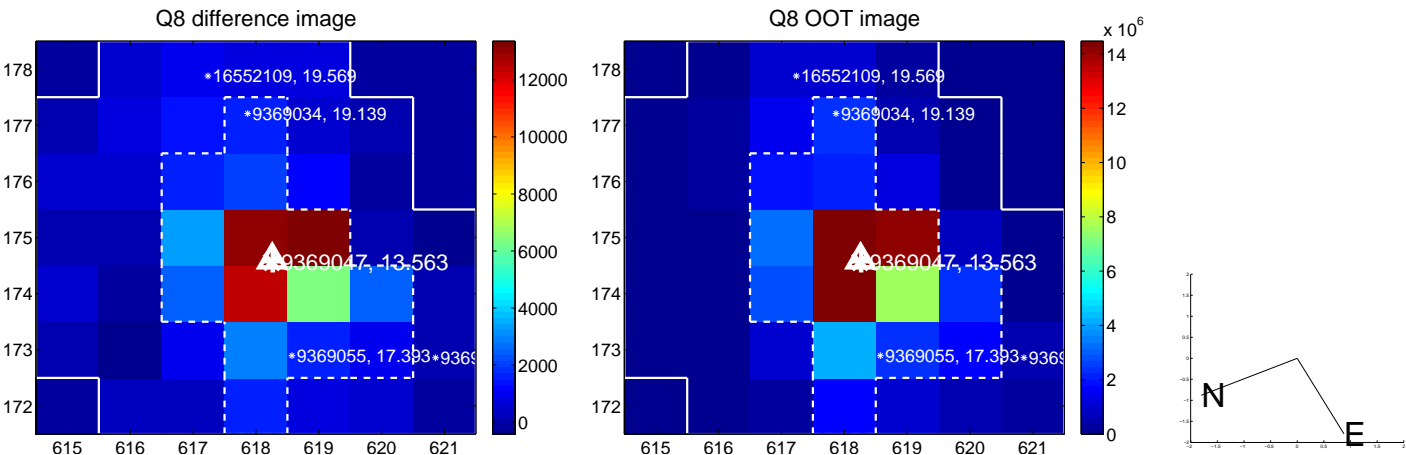
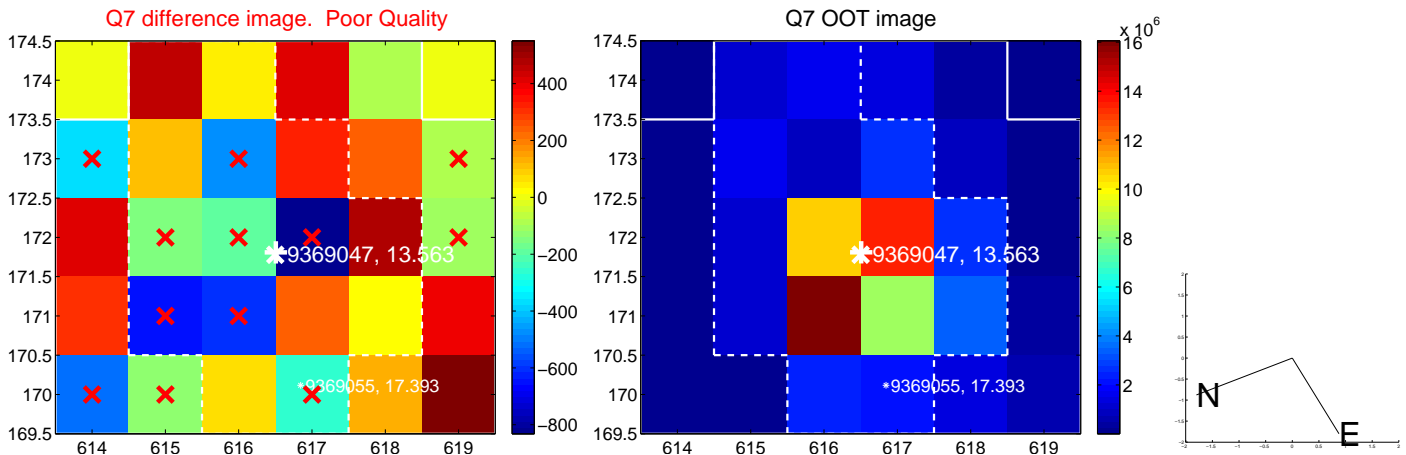
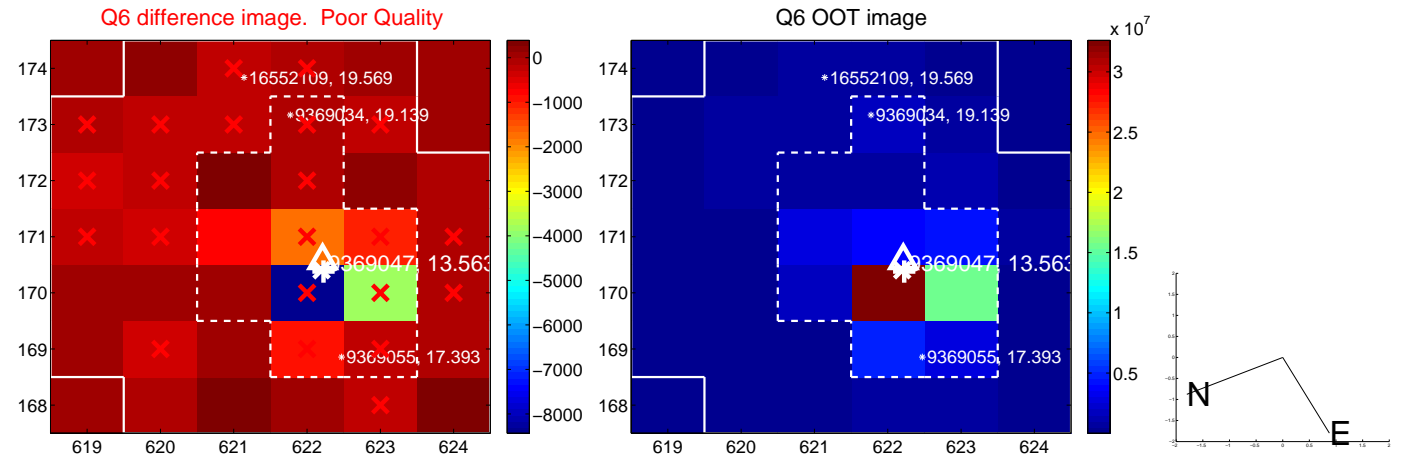
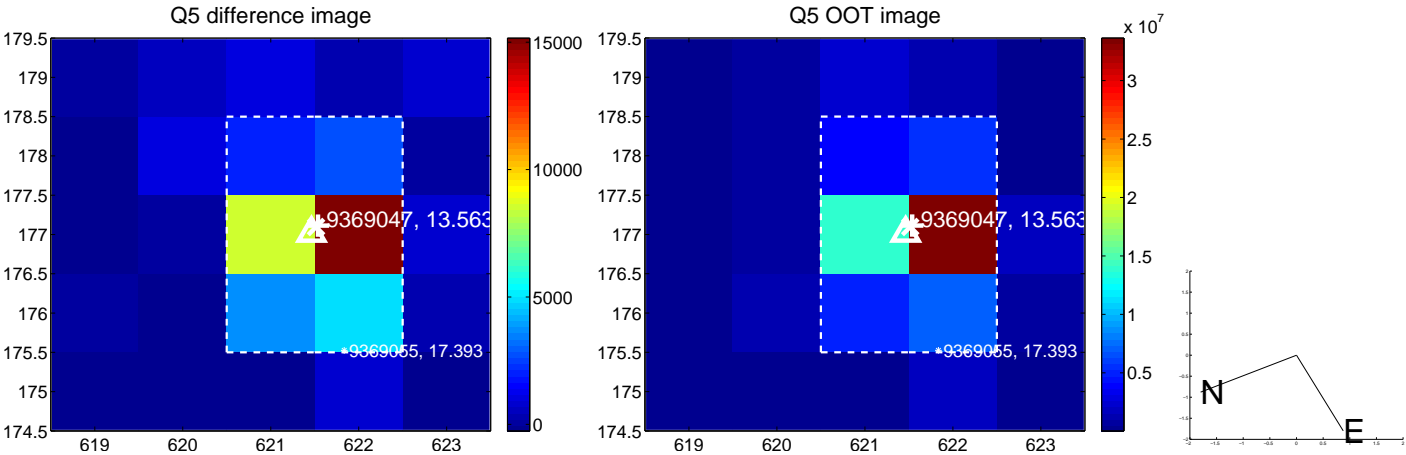


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

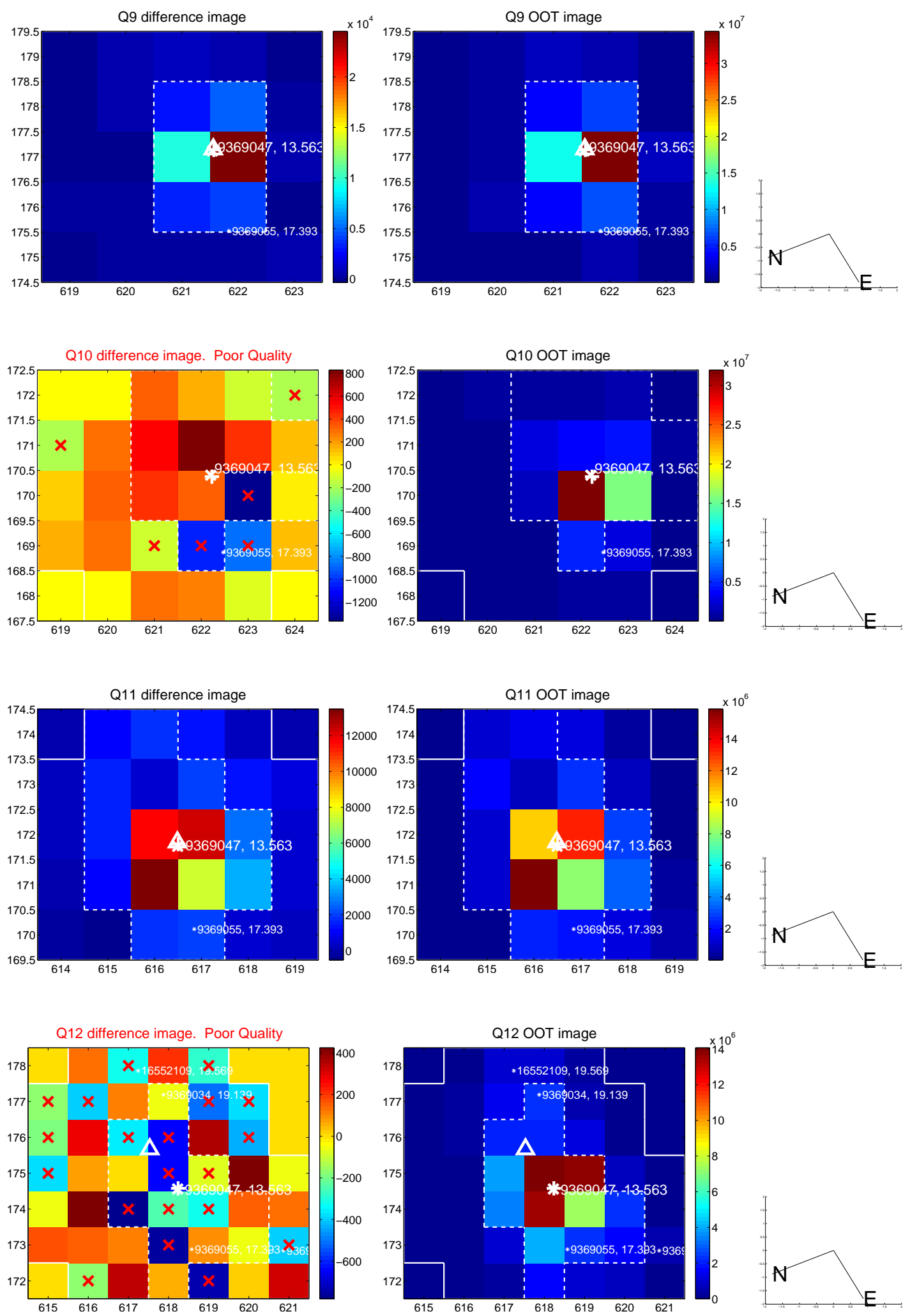
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



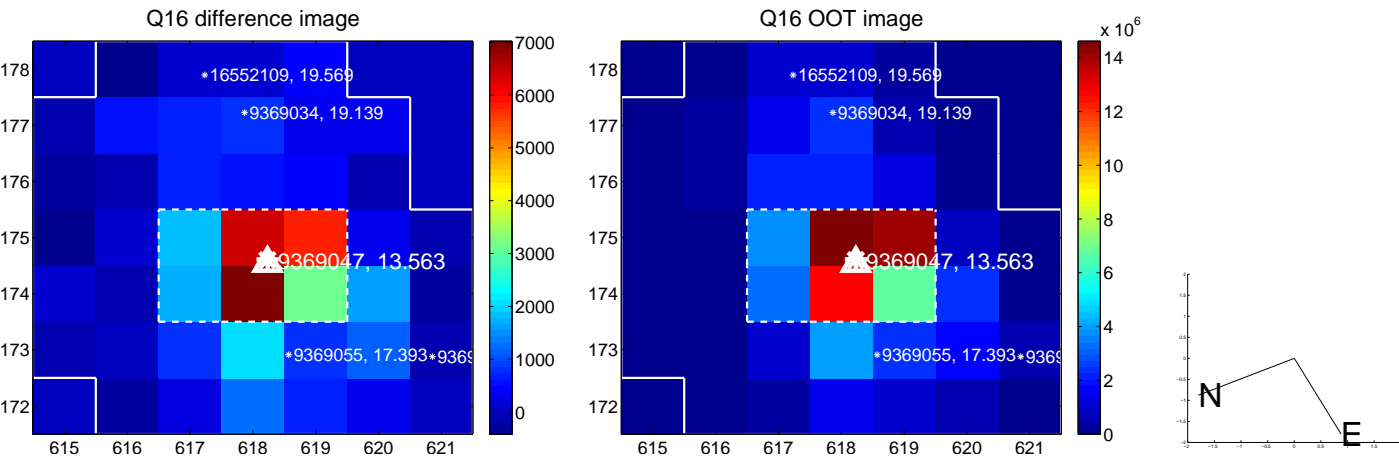
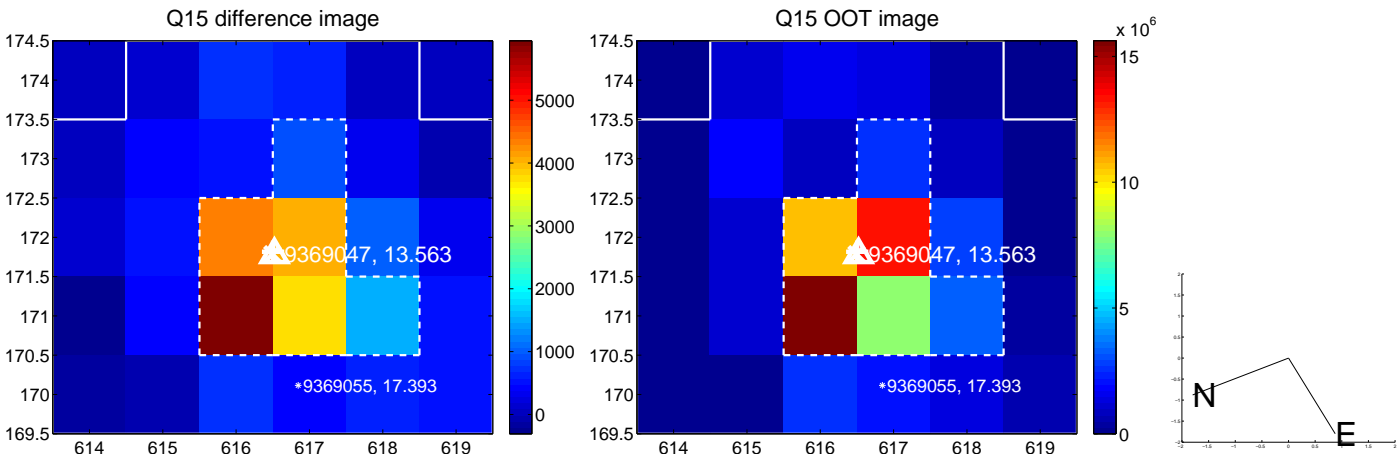
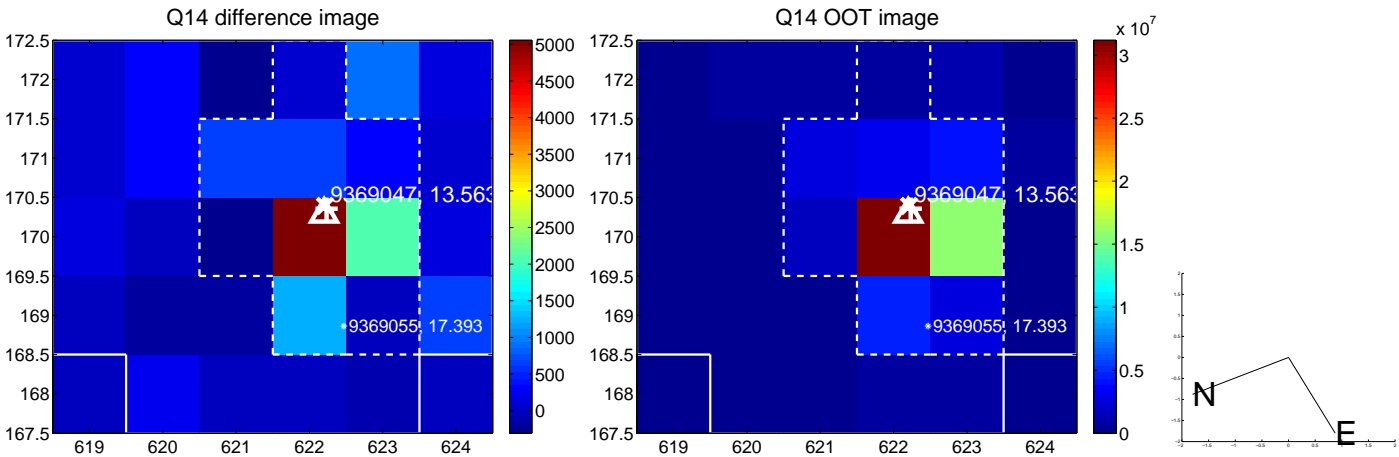
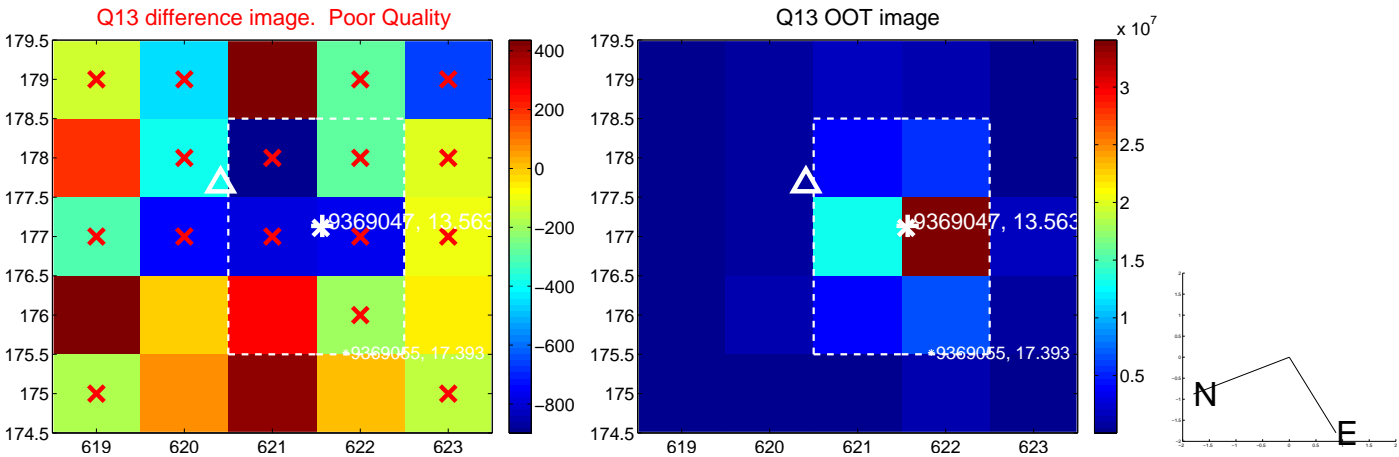
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



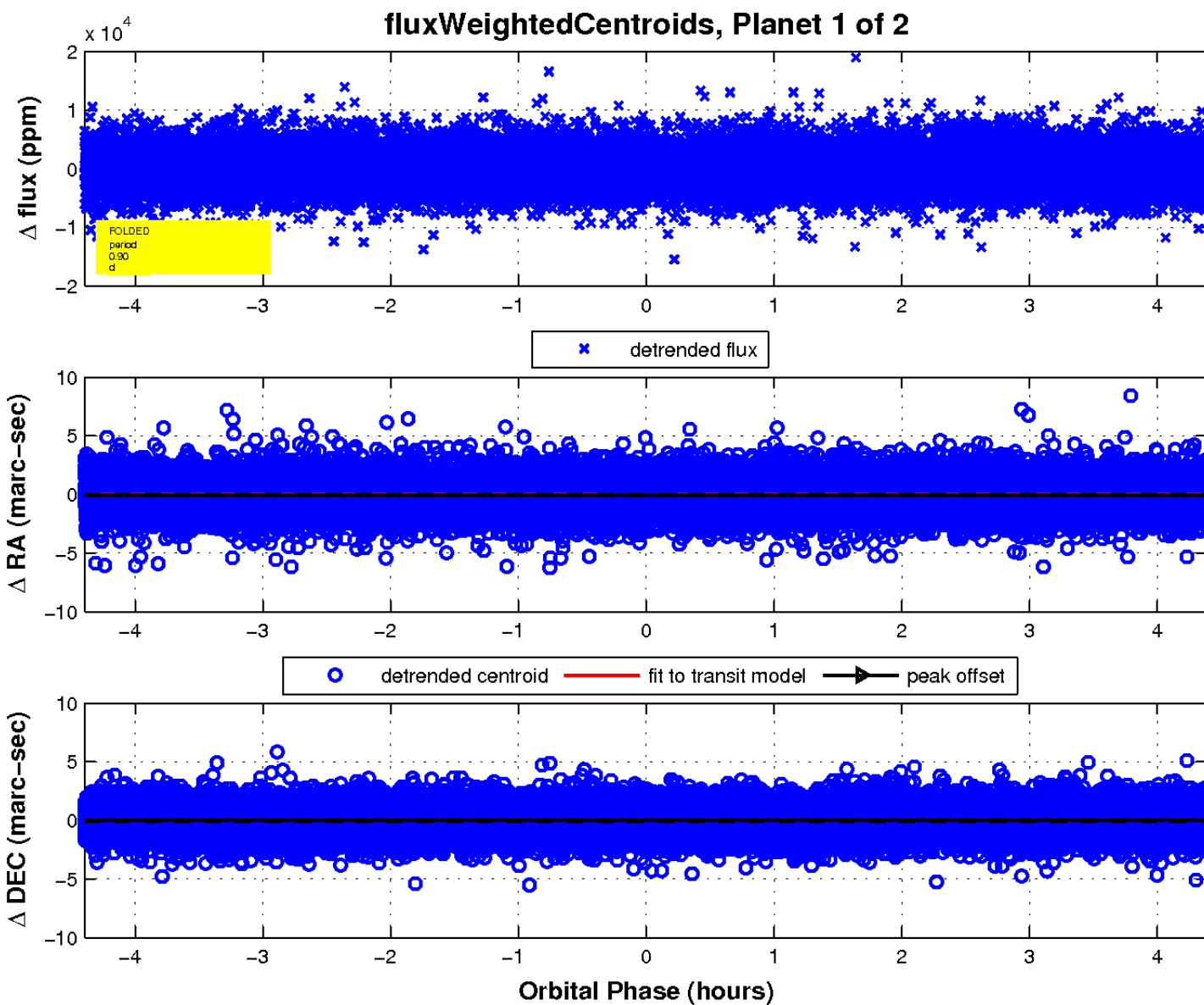
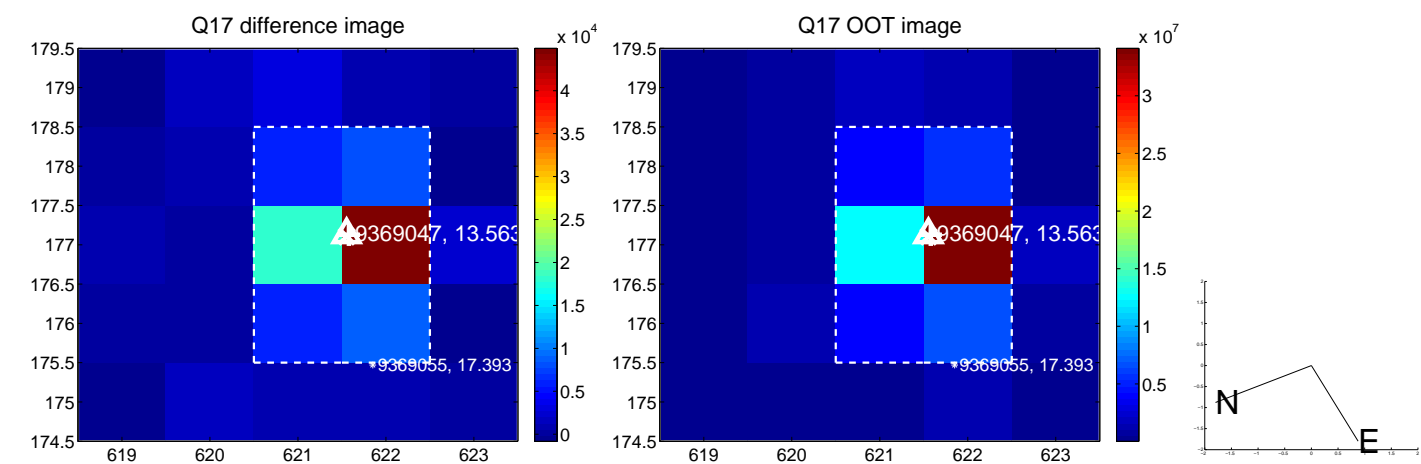
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



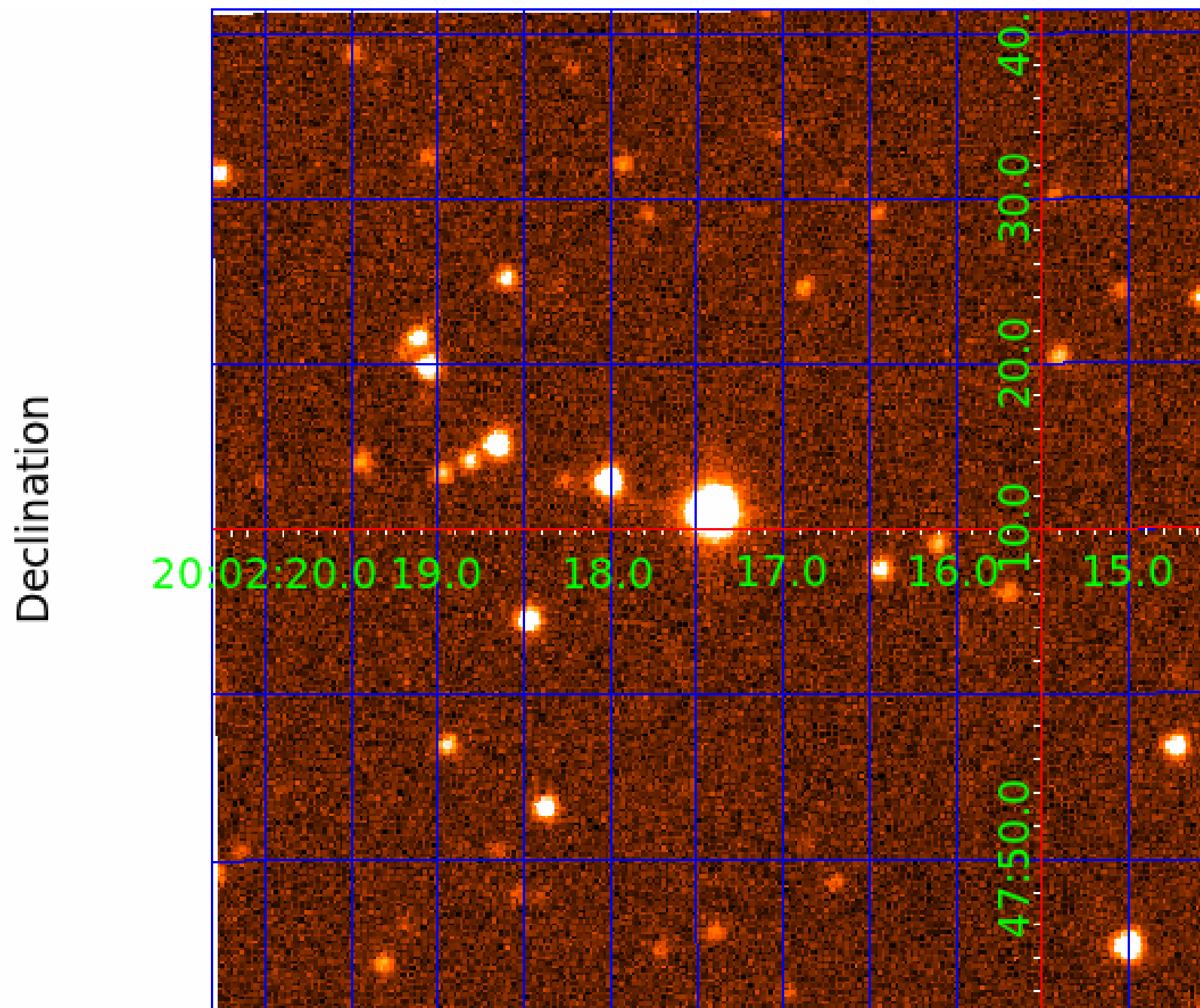
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 009369047

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})
009369047-01	OBS	No	0.903389	132.409605	163.7	1.465	10.6	5.8	3.39	6648	5.01	42776.58
009369047-02	OBS	No	1.793543	132.211765	231.6	5.568	8.5	9.3	3.39	6648	6.25	17143.14

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009369047-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT
009369047-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

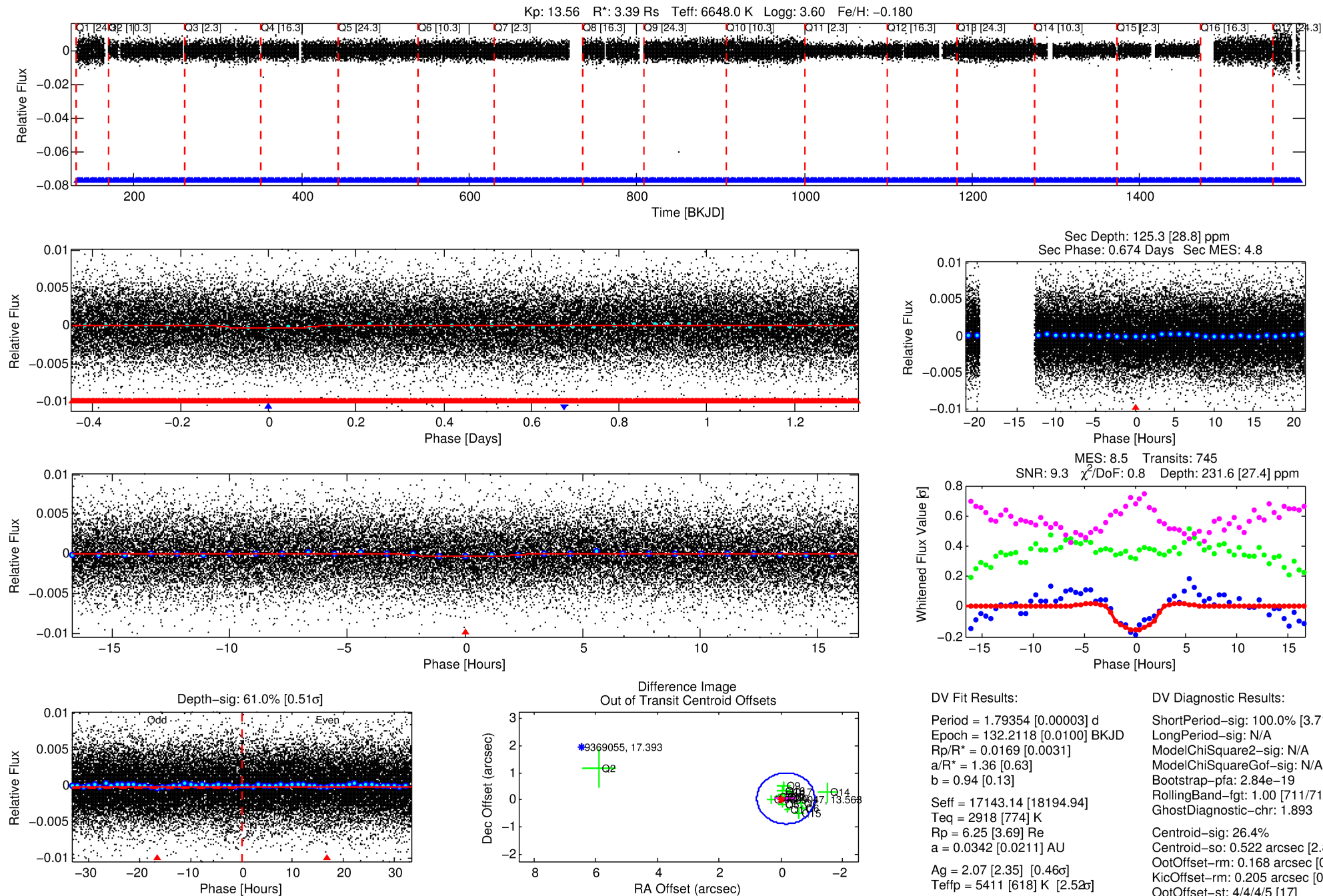
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009369047-02

No Significant Match Found

DV One-Page Summary

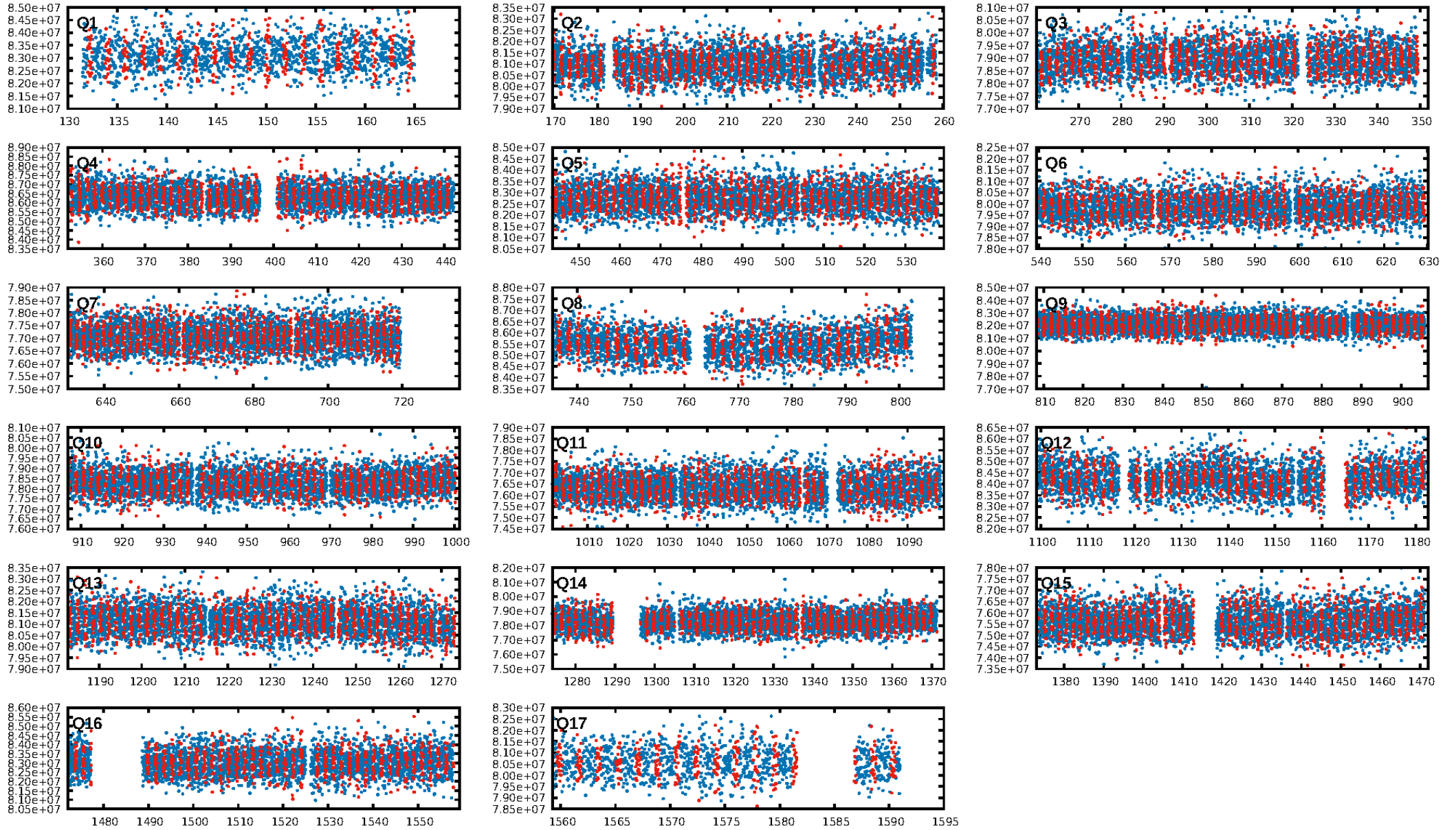
KIC: 9369047 Candidate: 2 of 2 Period: 1.794 d



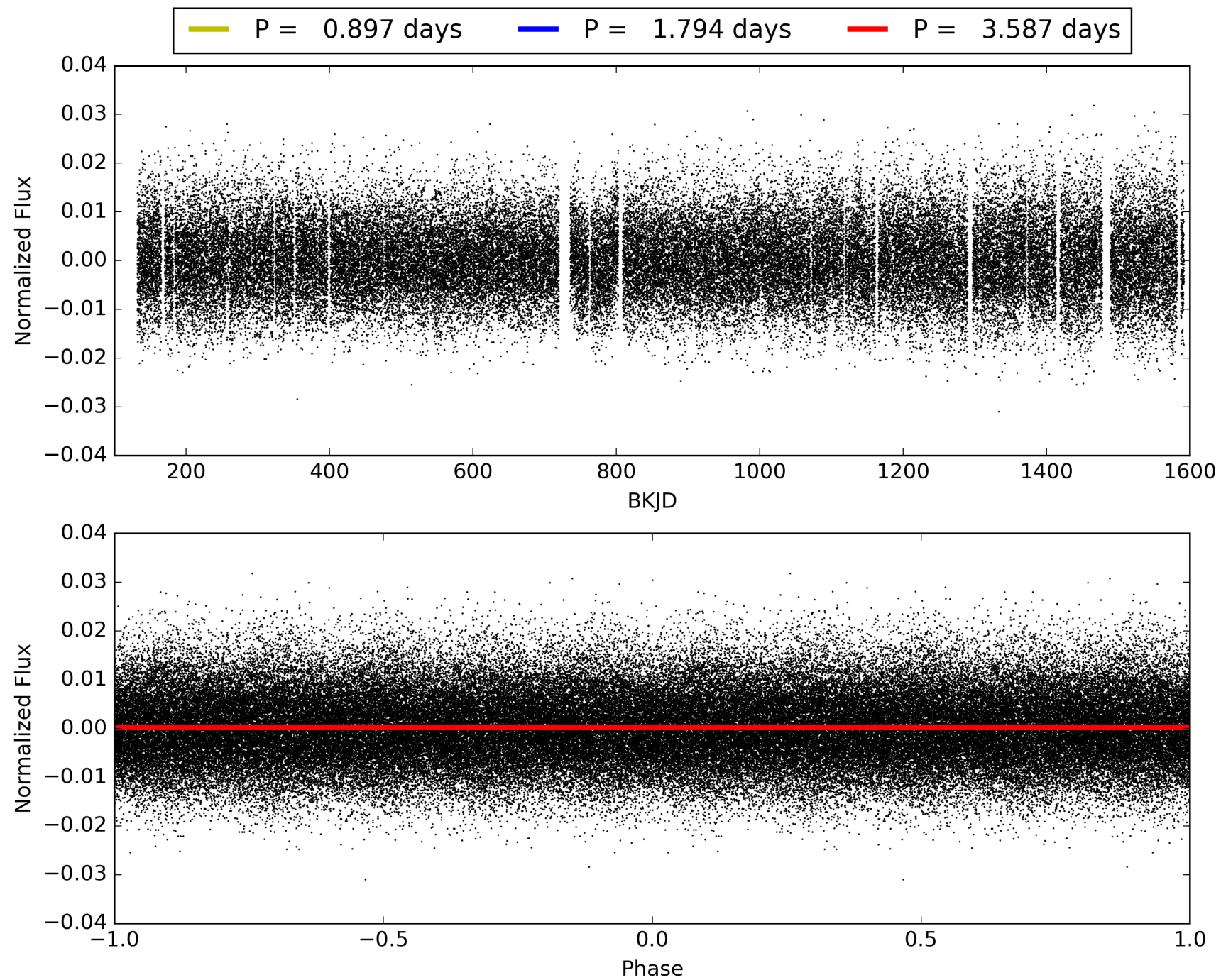
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:58:29 Z

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

TCE 009369047-02, PDC Light Curves

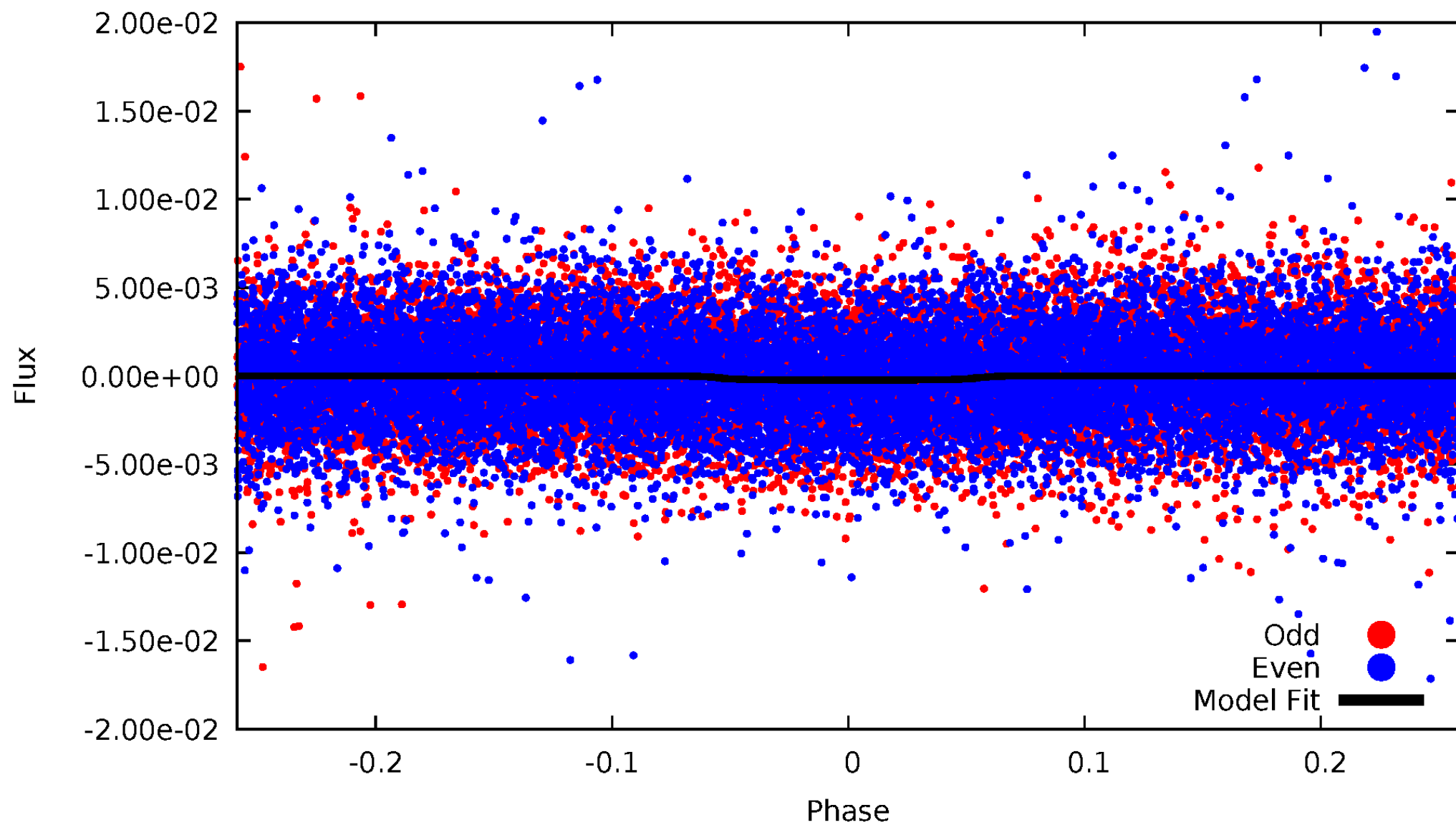


TCE 009369047-02



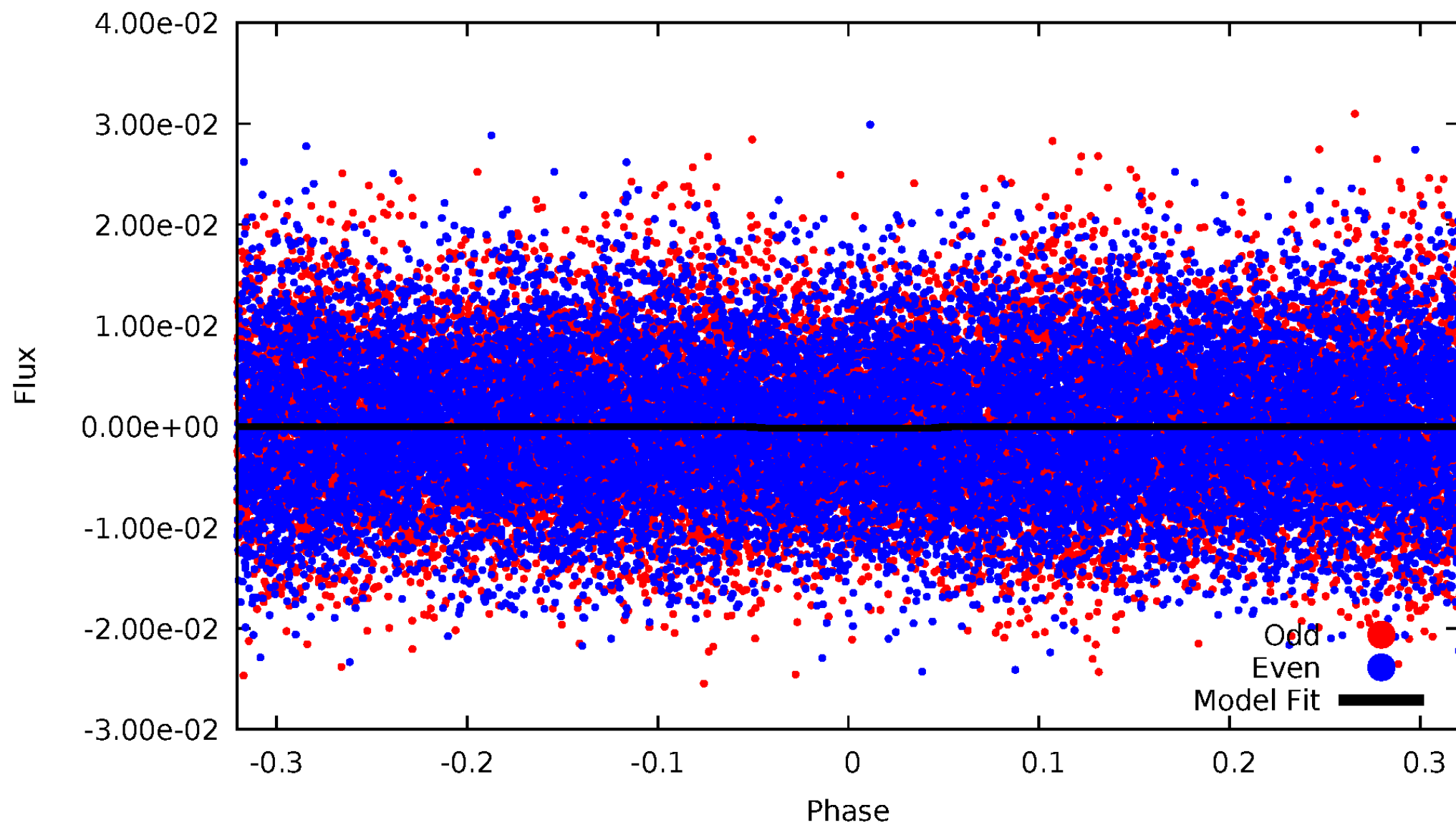
DV Odd/Even

TCE 009369047-02



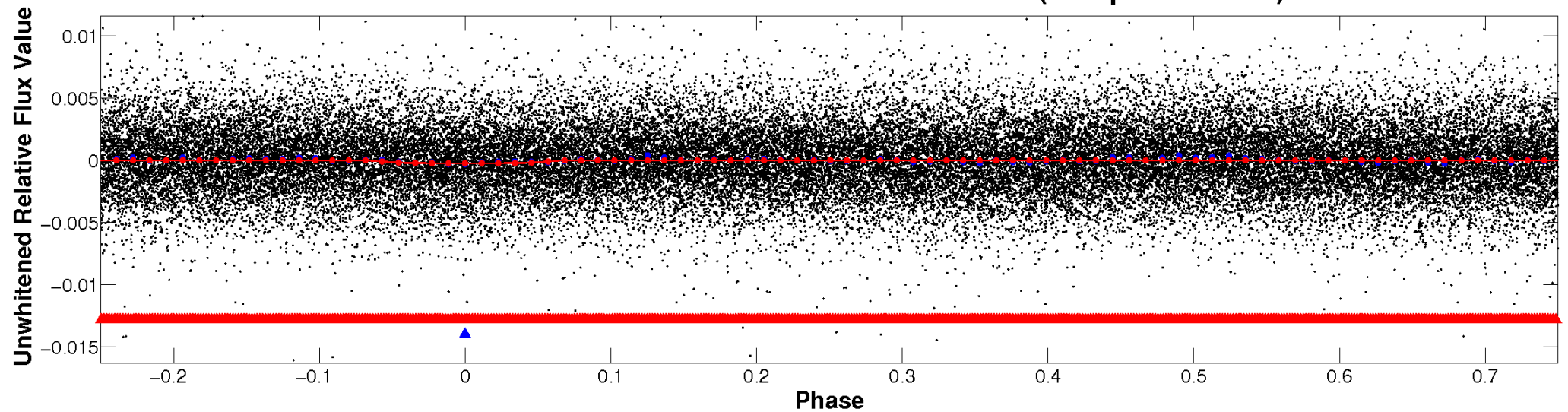
ALT Odd/Even

TCE 009369047-02

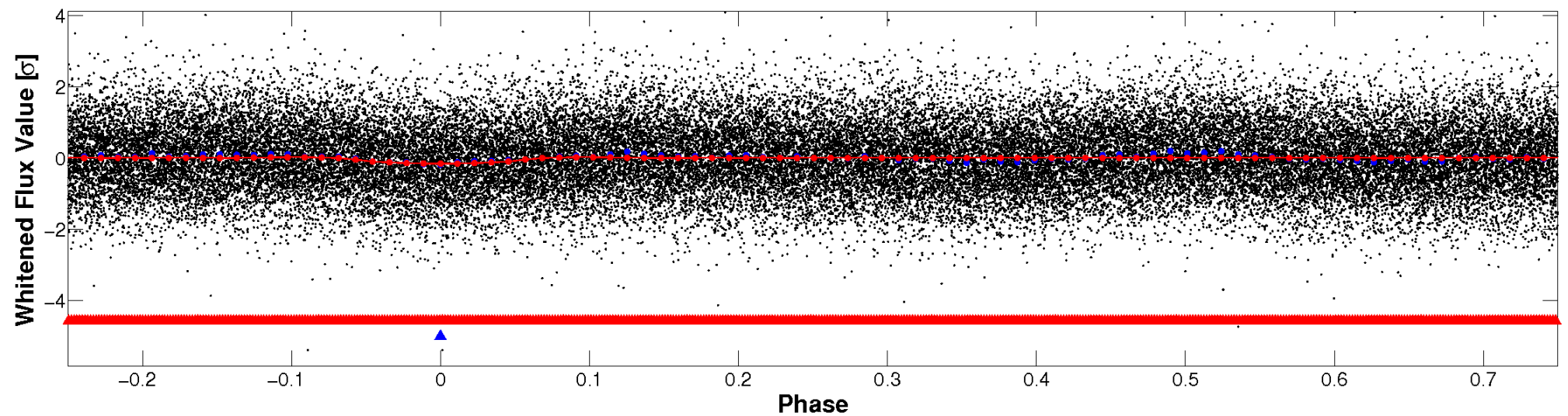


Non-Whitened Vs. Whitened Light Curve

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

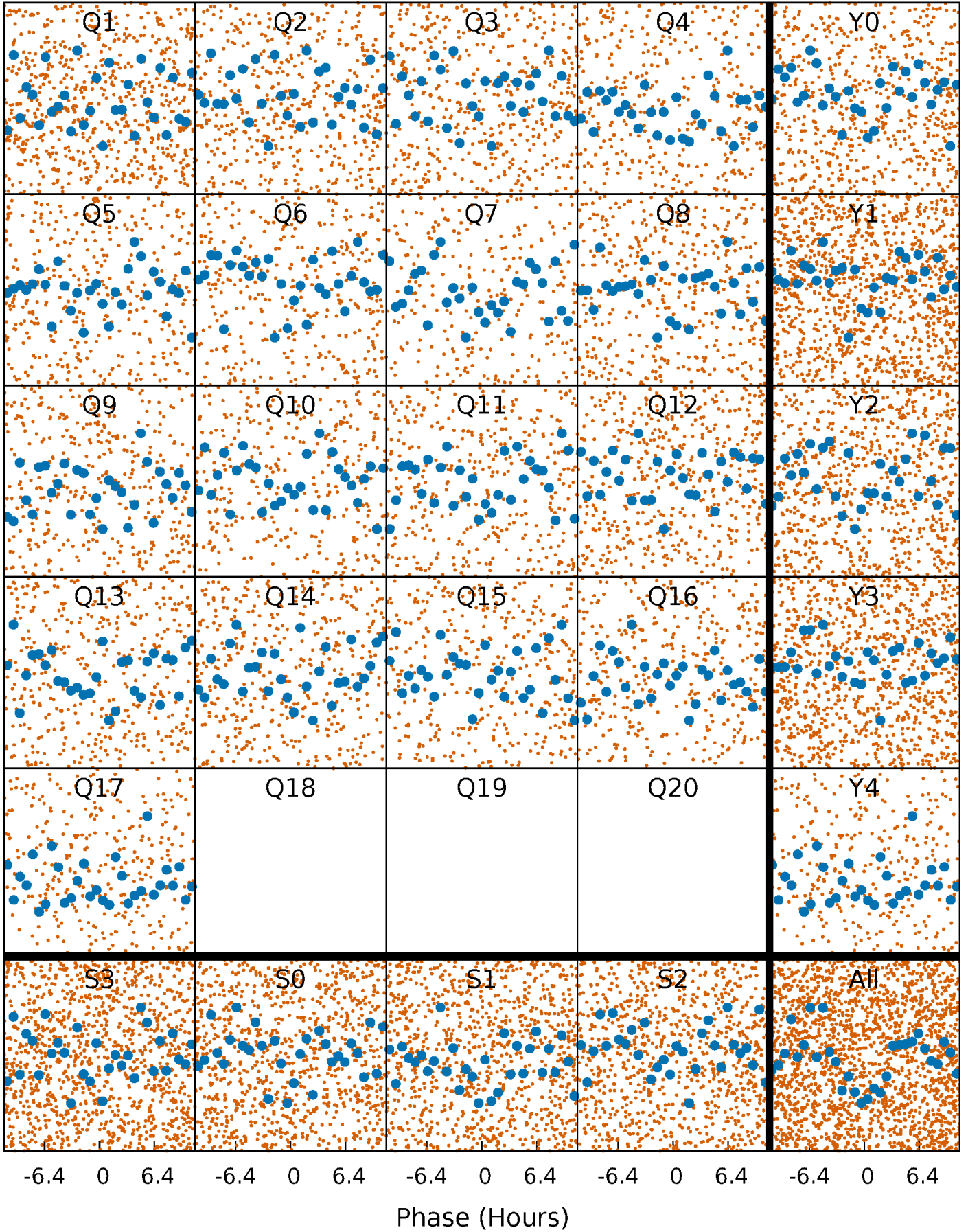


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



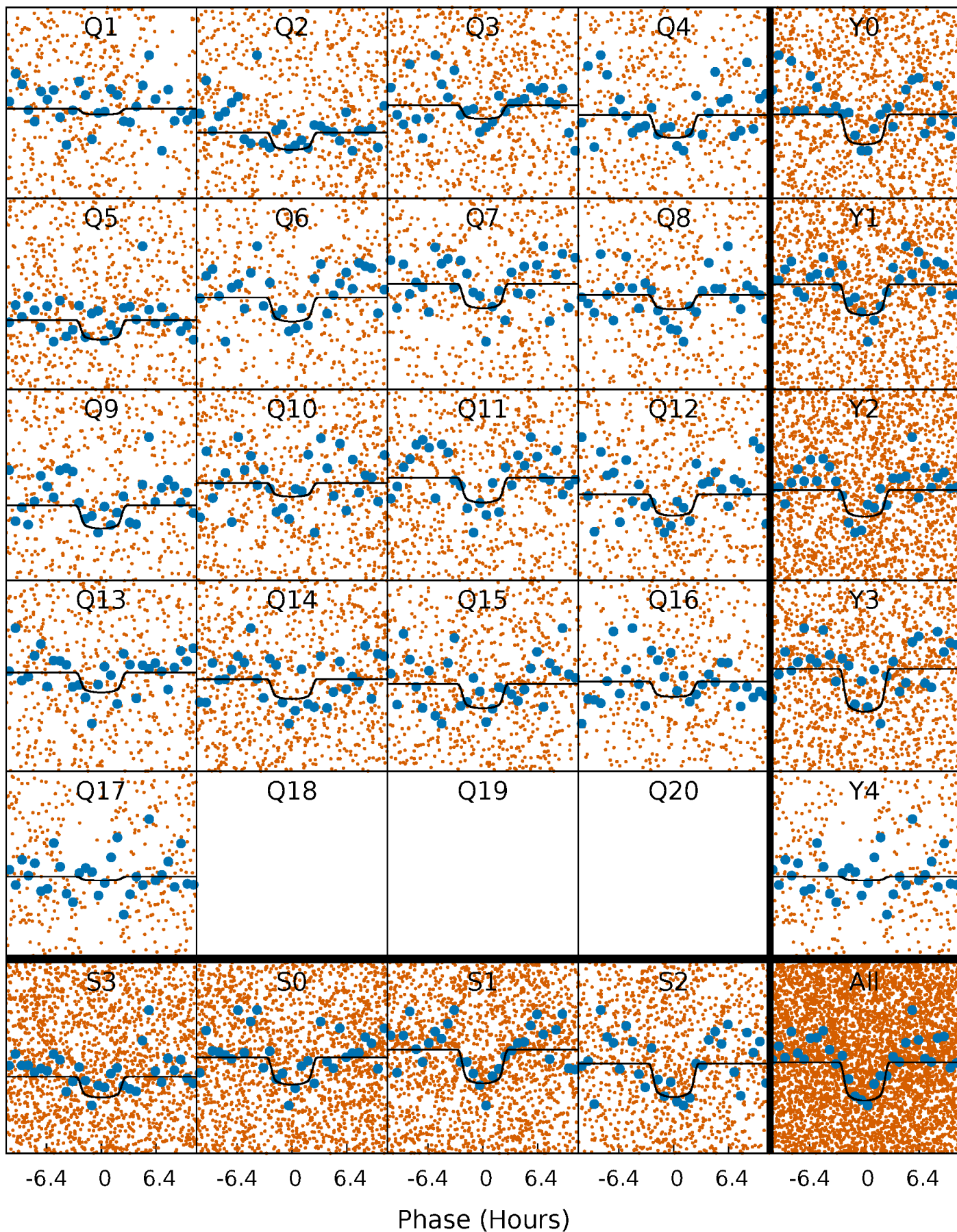
PDC Quarter-Phased Transit Curves

TCE 009369047-02 P= 1.793543 Days $T_0=132.211765$ (BKJD)



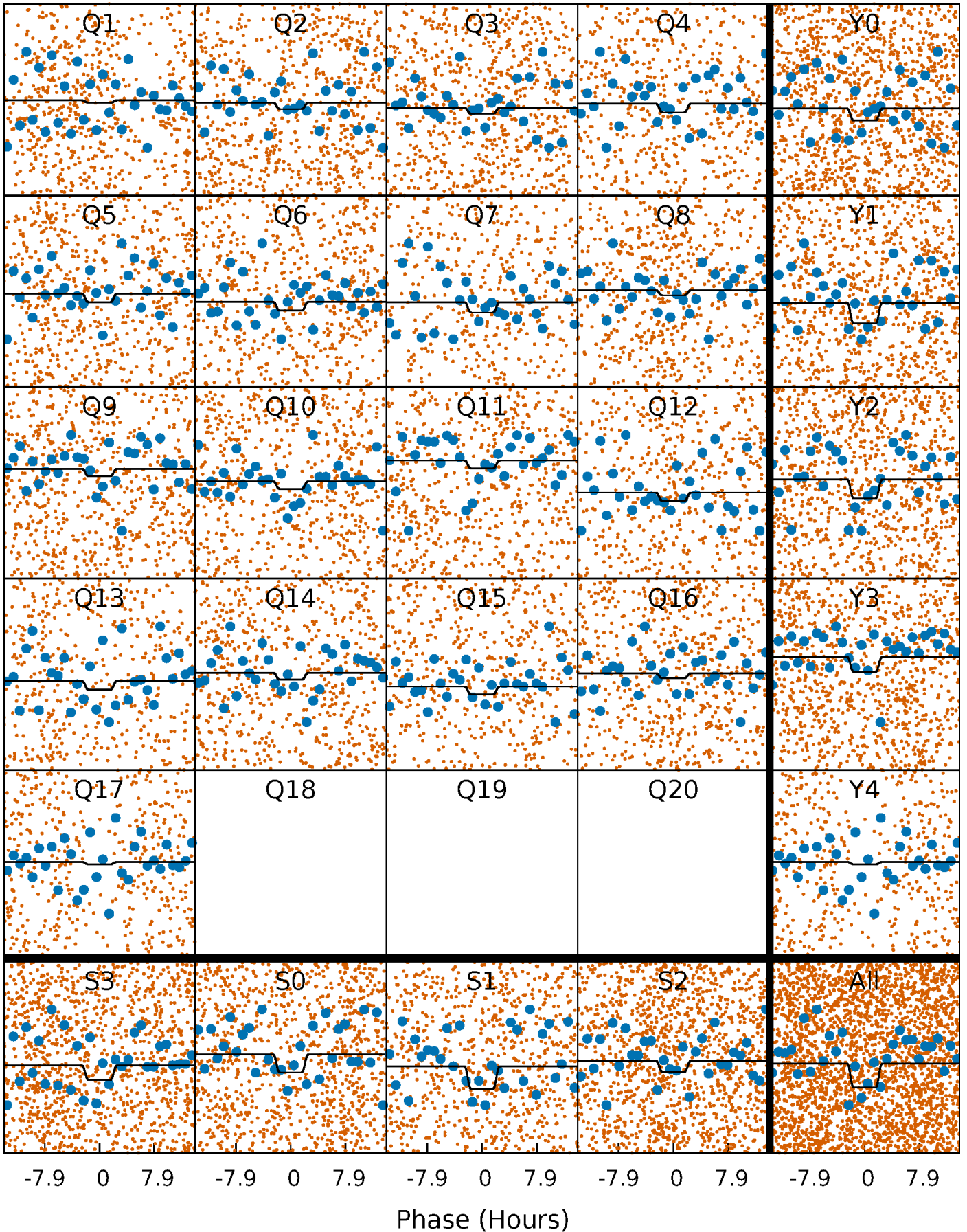
DV Quarter-Phased Transit Curves

TCE 009369047-02 P= 1.793543 Days $T_0=132.211765$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

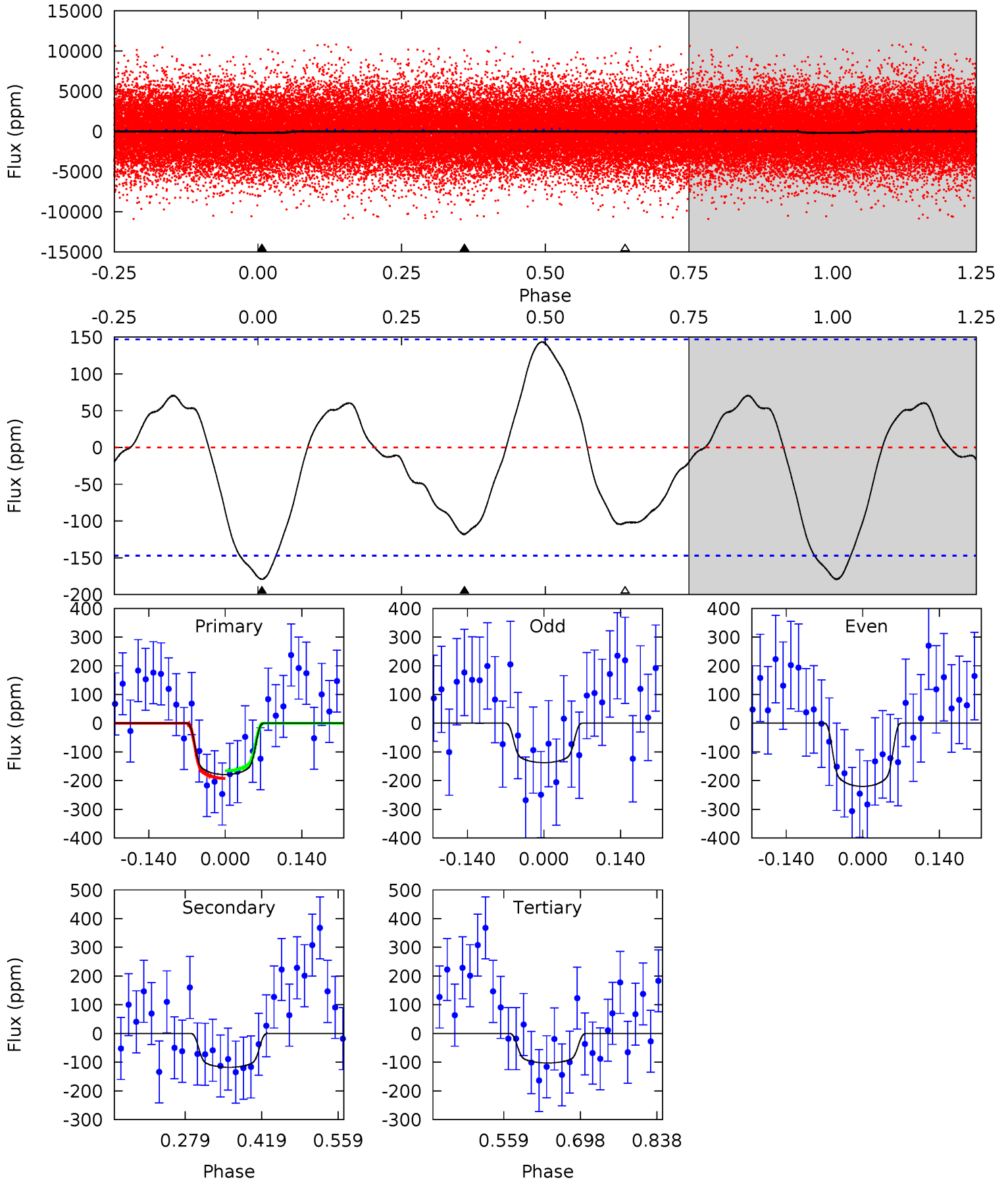
TCE 009369047-02 P= 1.793490 Days $T_0=132.233401$ (BKJD)



DV Model-Shift Uniqueness Test

009369047-02, P = 1.793543 Days, E = 130.418222 Days

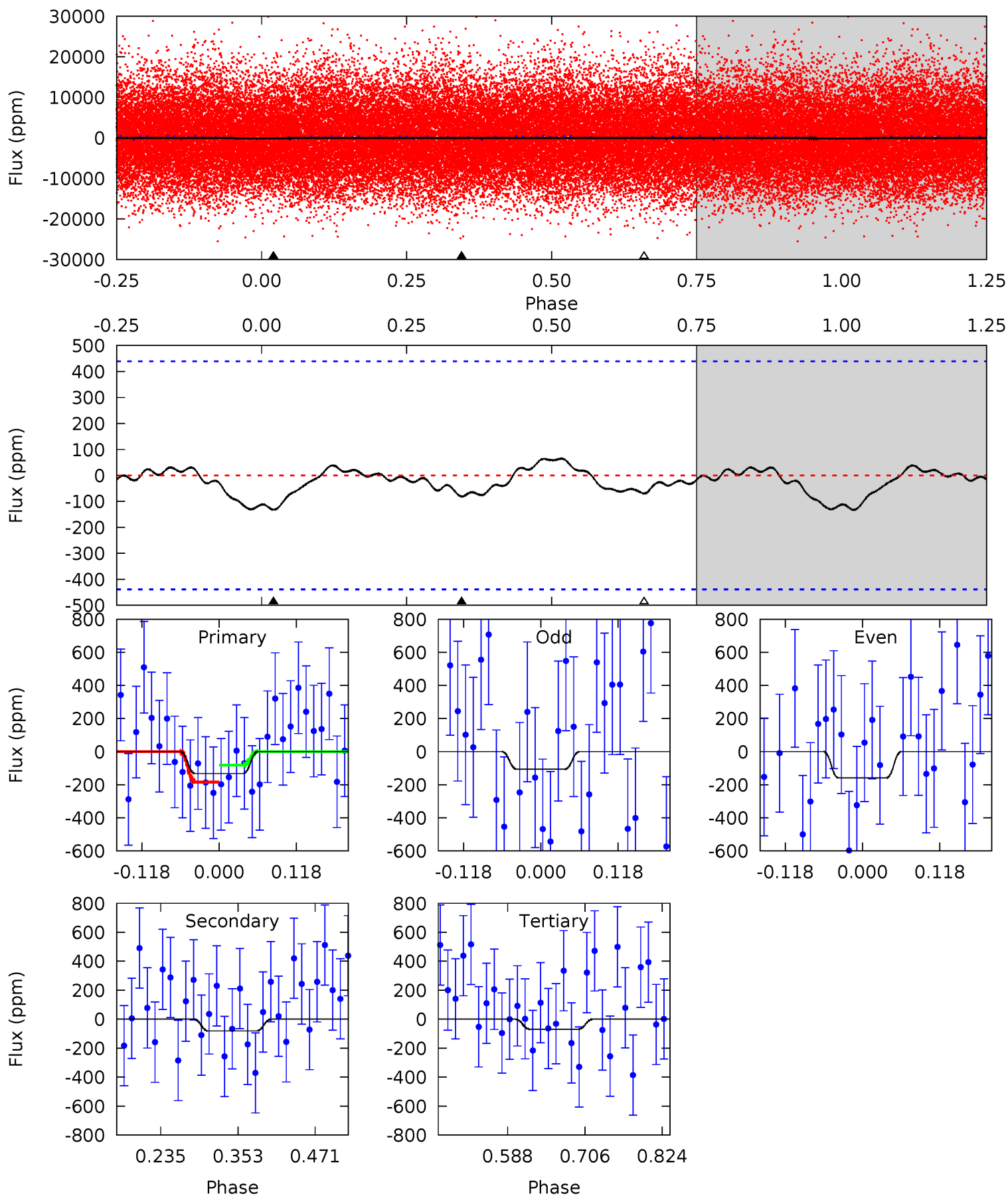
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.48	3.60	3.14	0	4.49	1.48	2.10	2.34	5.48	0.47	3.60	1.27	1.01	0.44	0.40



Alt Model-Shift Uniqueness Test

009369047-02, P = 1.793490 Days, E = 130.439911 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.37	0.84	0.72	0	4.53	1.56	0.37	0.65	1.37	0.12	0.84	0.27	1.55	0.33	0.53



Stellar Parameters For KIC 009369047

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6648^{+210}_{-256}	$3.599^{+0.639}_{-0.107}$	$-0.180^{+0.250}_{-0.300}$	$3.389^{+0.477}_{-1.906}$	$1.664^{+0.209}_{-0.522}$	$0.060^{+0.523}_{-0.013}$
	+3%/-4%	+18%/-3%	+139%/-167%	+14%/-56%	+13%/-31%	+869%/-22%
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 009369047-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-118 ± 33	$5.67^{+1.74}_{-1.87}$	3933^{+307}_{-576}	5144^{+693}_{-583}	$2.309^{+2.540}_{-1.047}$
Alt.	-81 ± 97	$4.70^{+1.53}_{-1.49}$	3955^{+295}_{-577}	5206^{+1554}_{-9437}	$2.409^{+5.066}_{-2.762}$

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 $A_{obs} \gg 1.0$

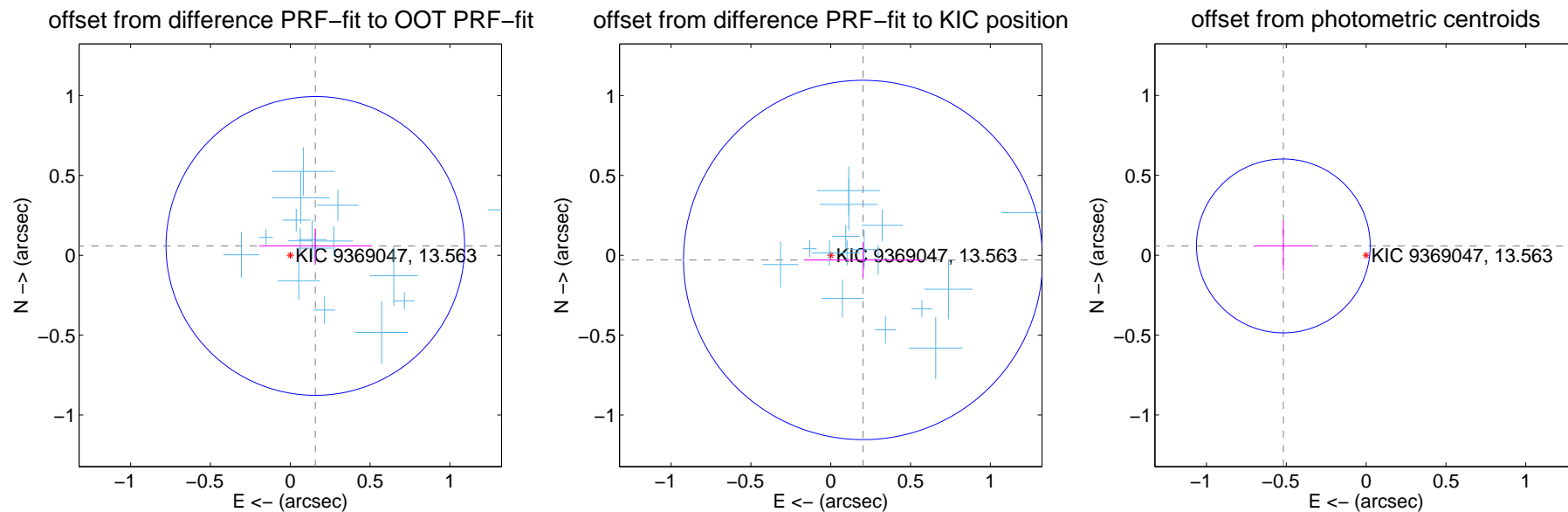
DV Centroid Data

Supplemental centroid analysis for 009369047-02. Kepler magnitude: 13.56. Transit SNR 9.32

There are 16 quarters with good PRF difference image offsets

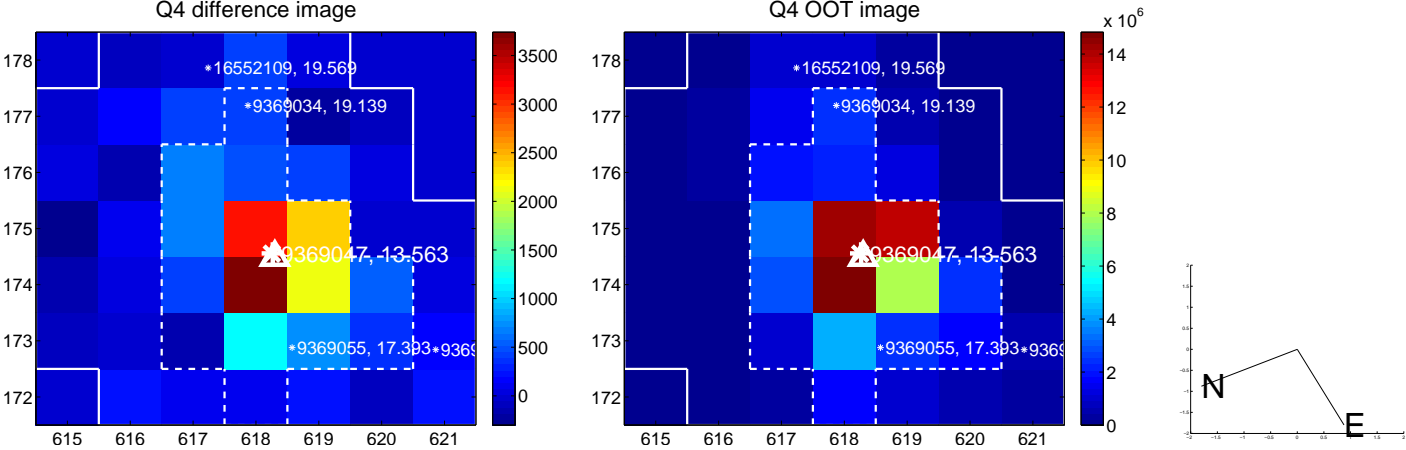
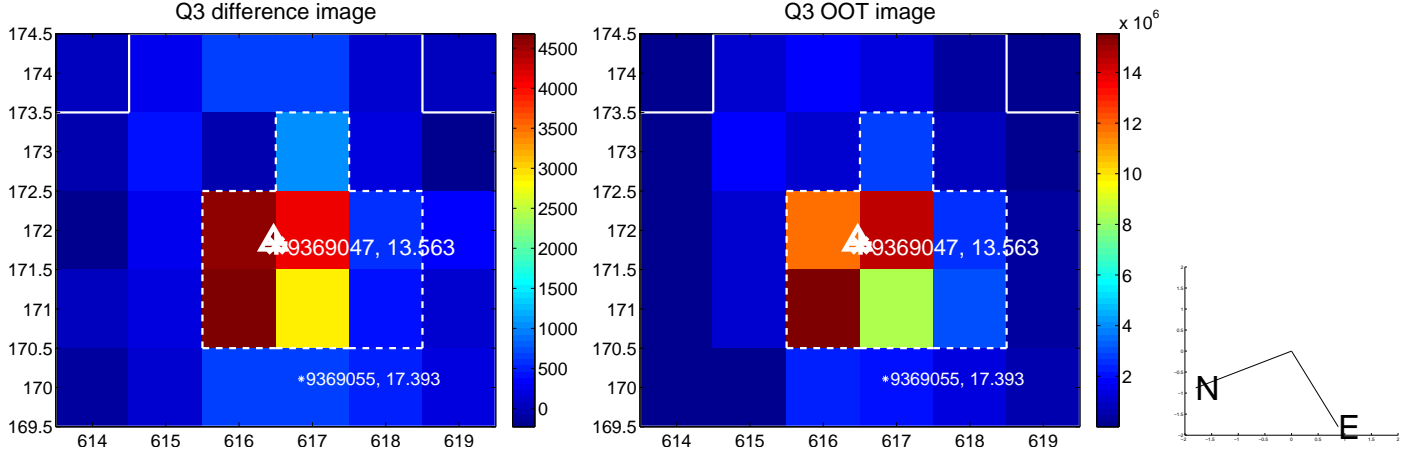
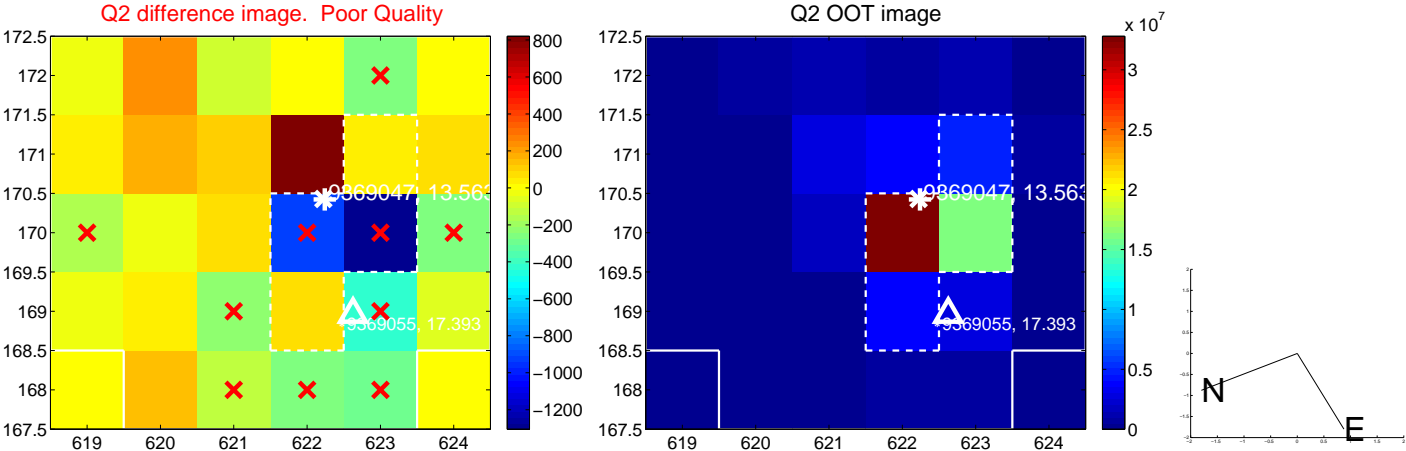
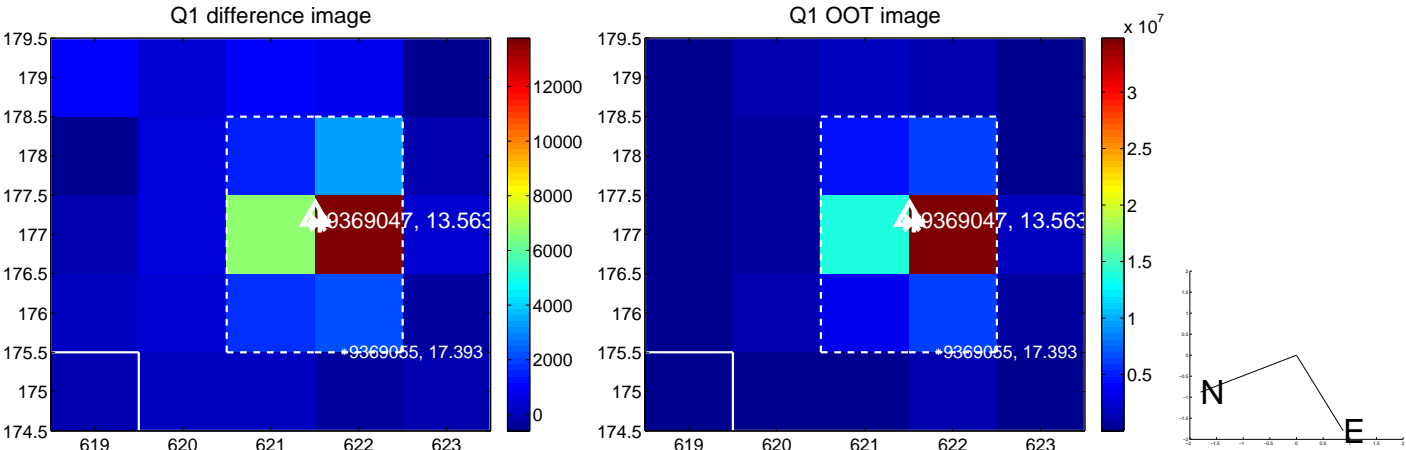
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.168 ± 0.312	0.54	-0.157 ± 0.352	0.059 ± 0.110
PRF-fit source offset from KIC position	0.205 ± 0.375	0.55	-0.203 ± 0.370	-0.029 ± 0.111
photometric centroid source offset	0.52 ± 0.18	2.88	0.52 ± 0.18	0.06 ± 0.16

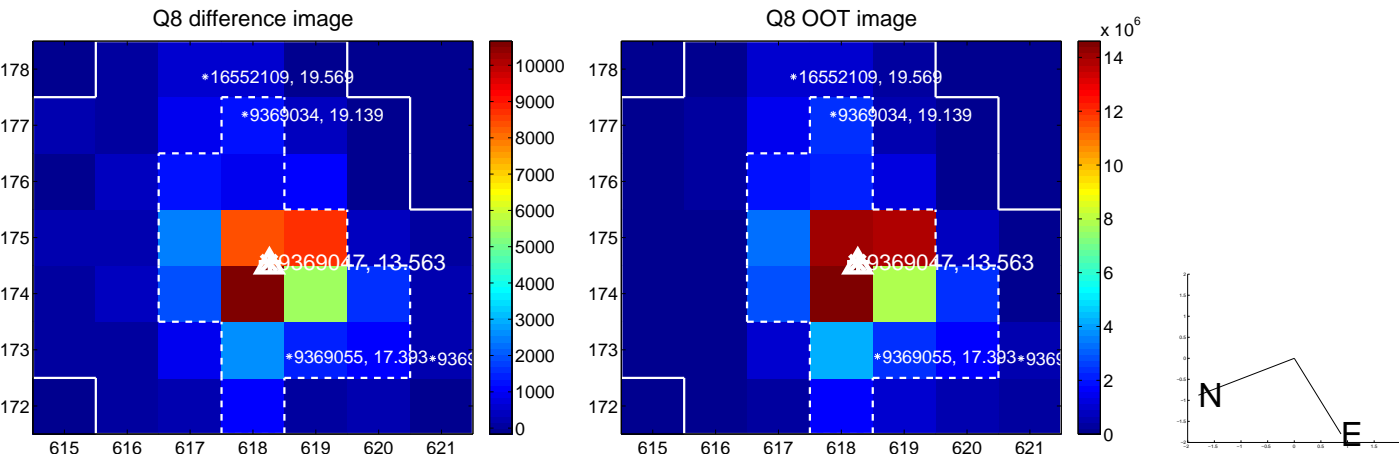
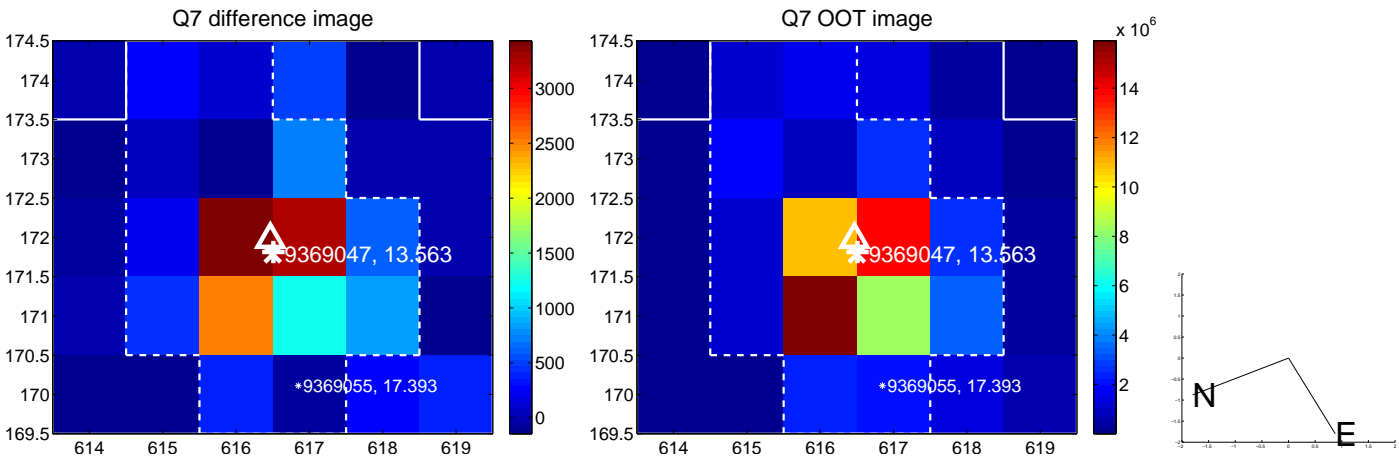
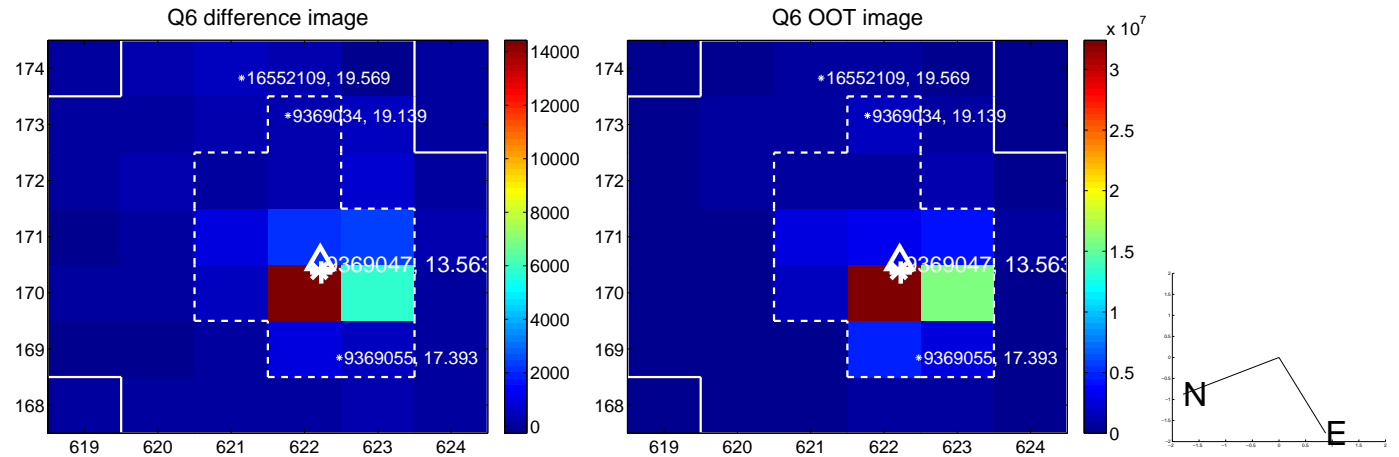
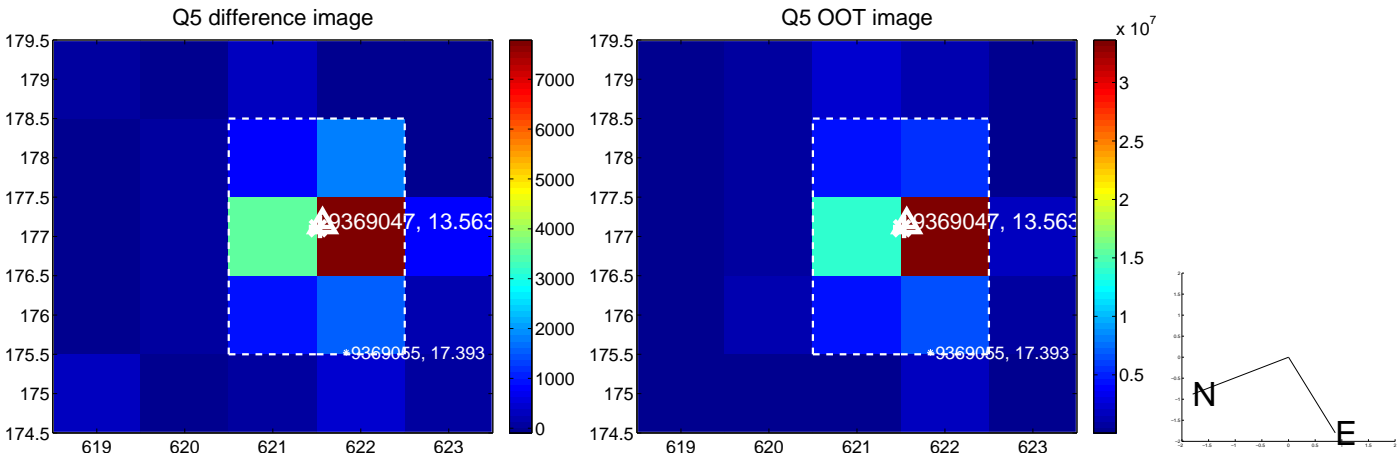


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

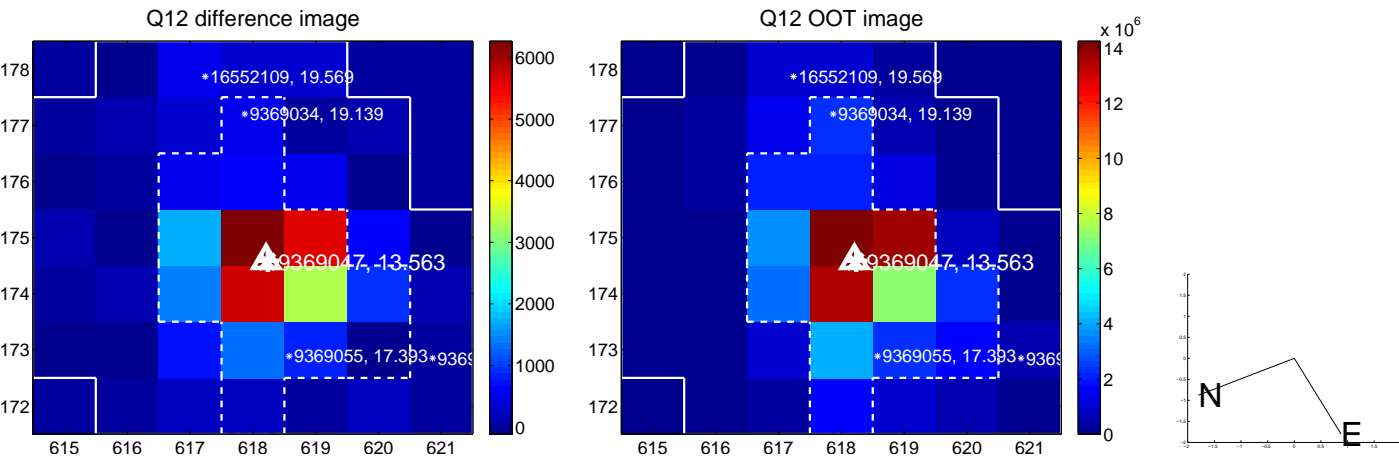
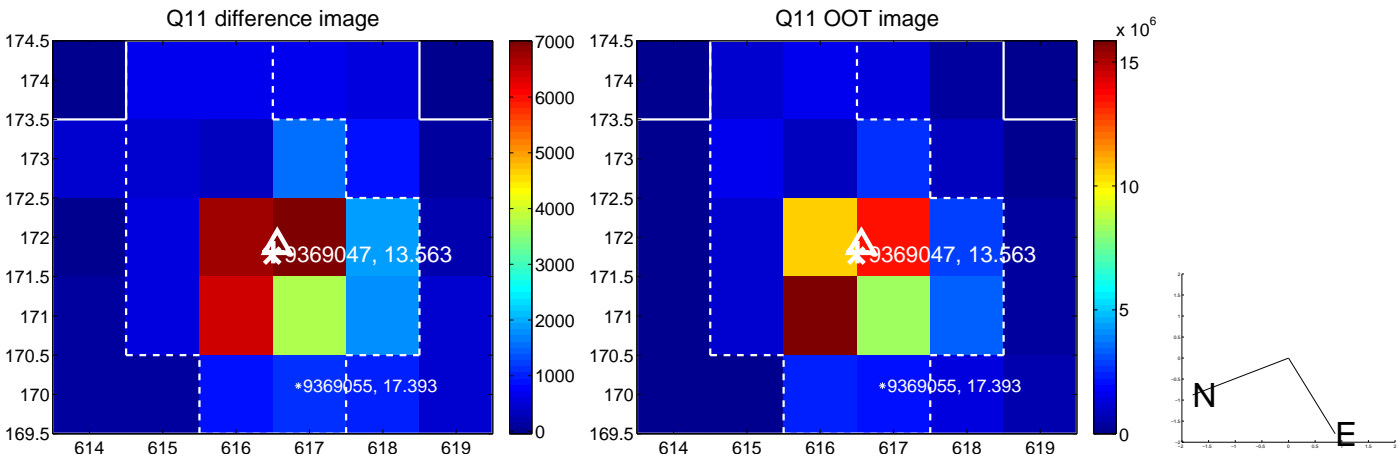
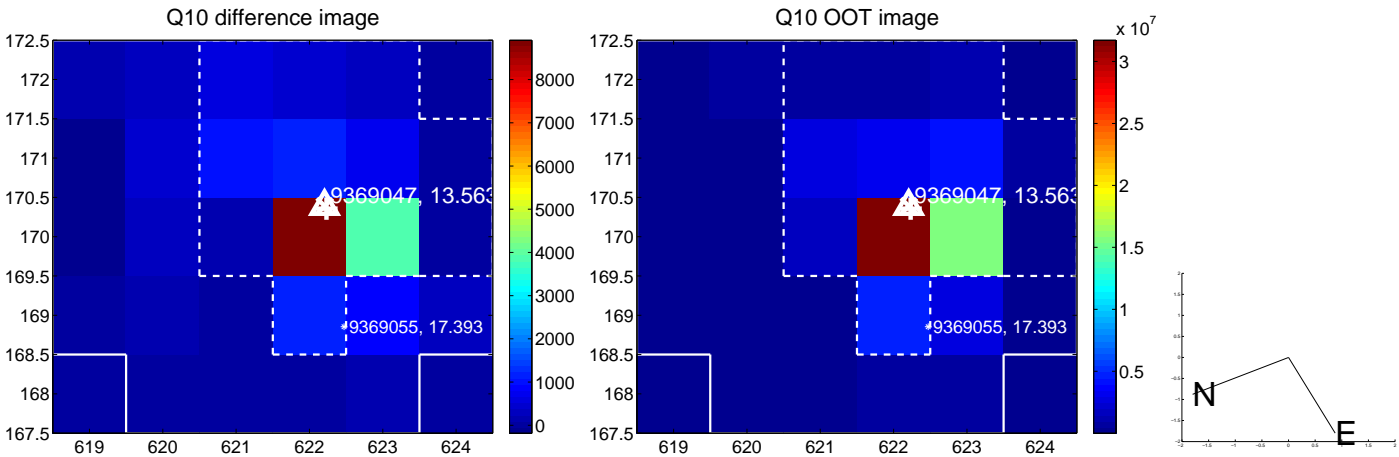
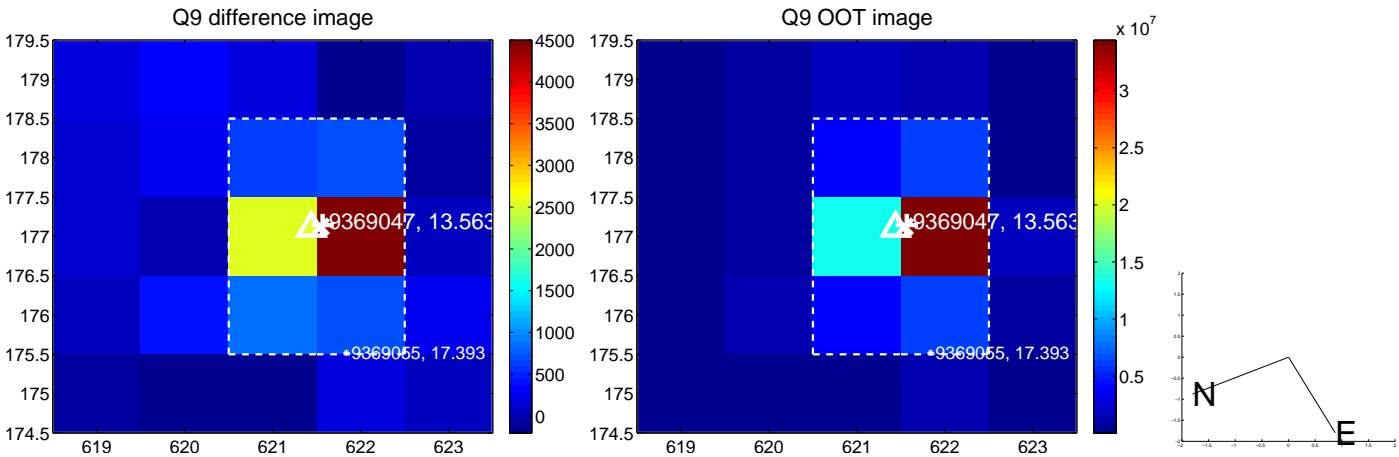
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



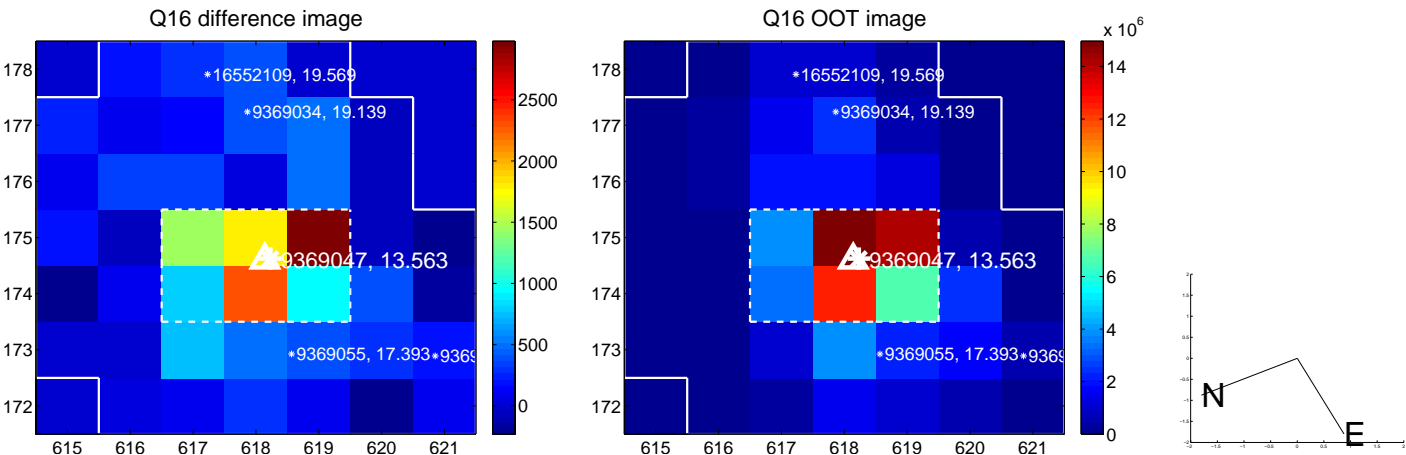
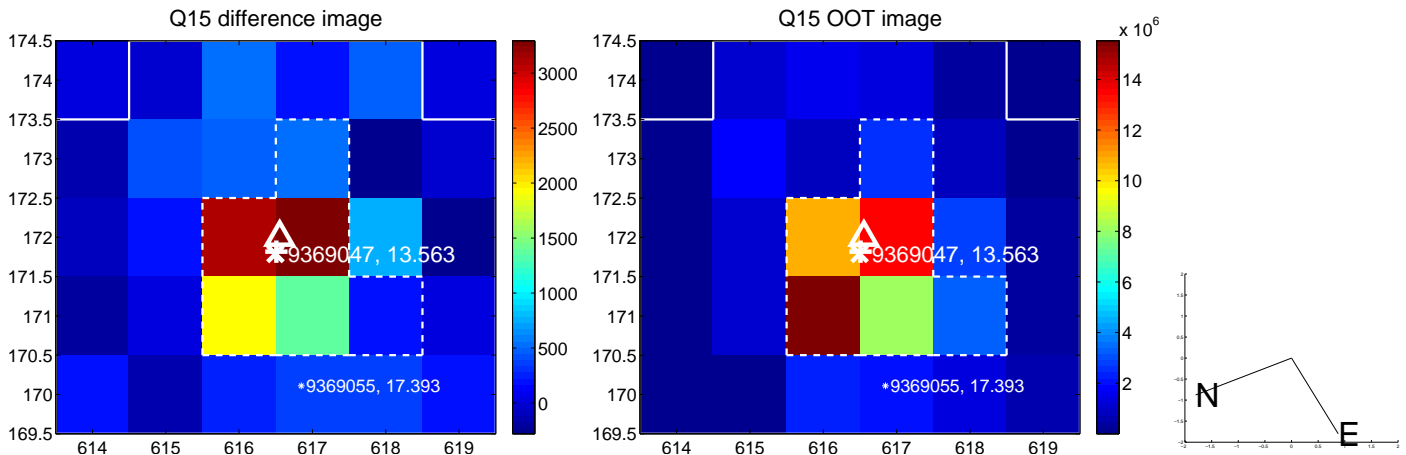
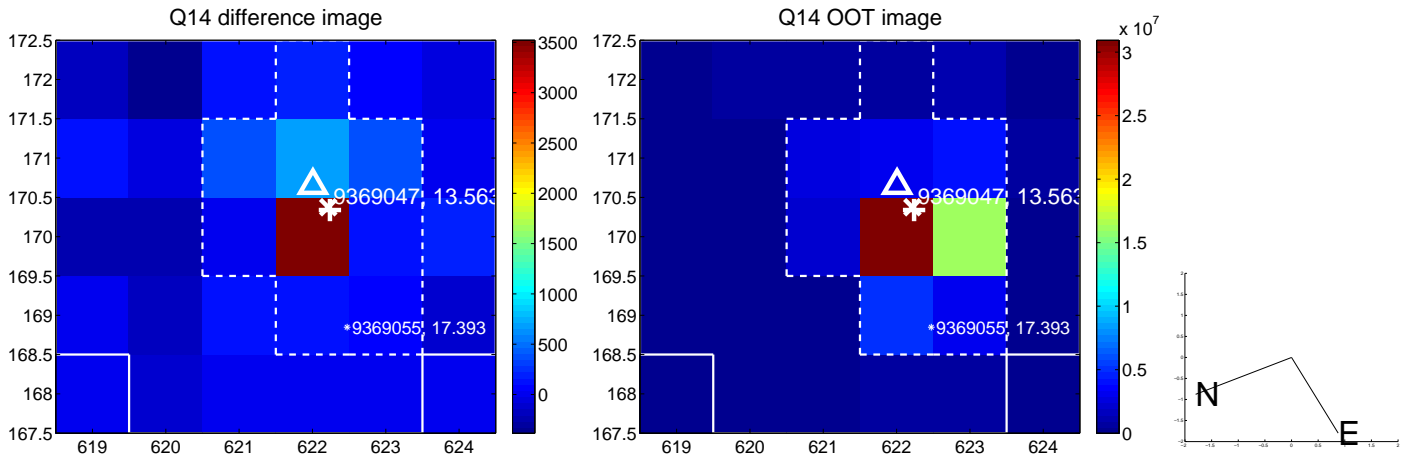
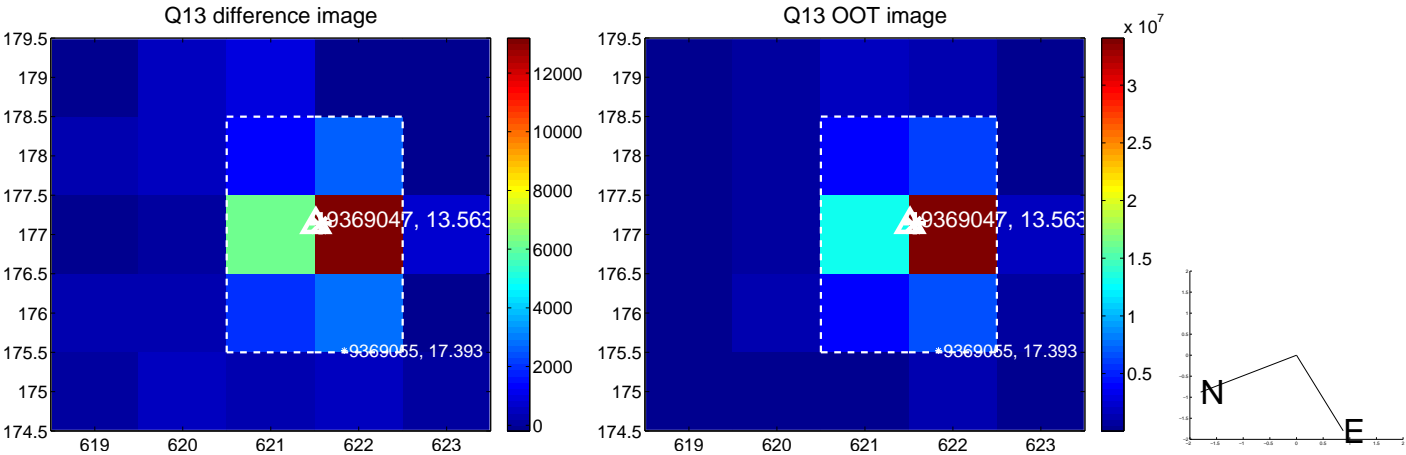
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



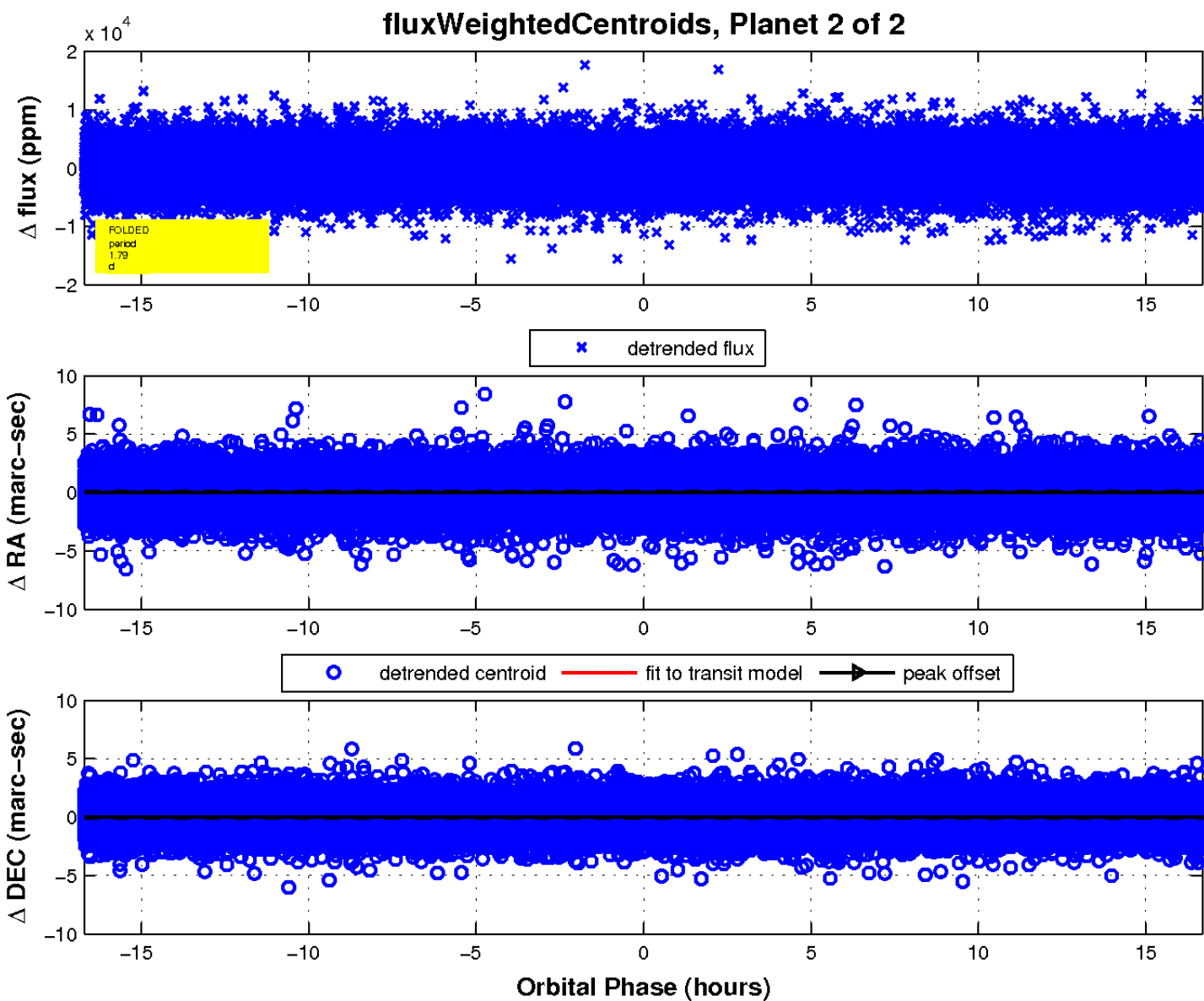
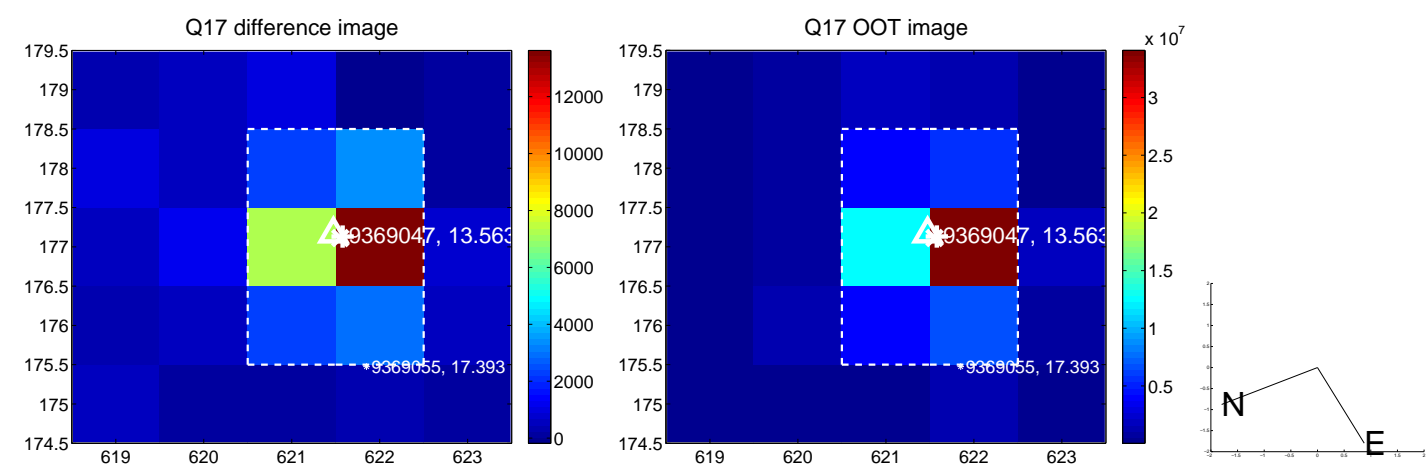
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

