

KIC 005560556

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})
005560556-01	OBS	No	0.593068	131.661125	45.0	1.613	10.8	13.3	1.69	7607	1.31	32989.13
005560556-02	OBS	No	0.772698	132.253036	20.6	5.258	8.2	7.3	1.69	7607	0.80	23182.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005560556-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005560556-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—HALO_GHOST

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

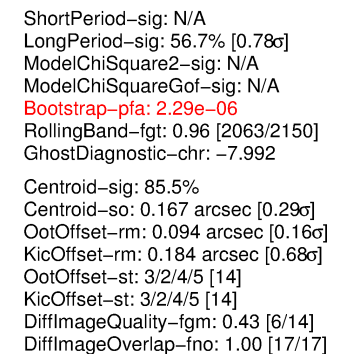
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

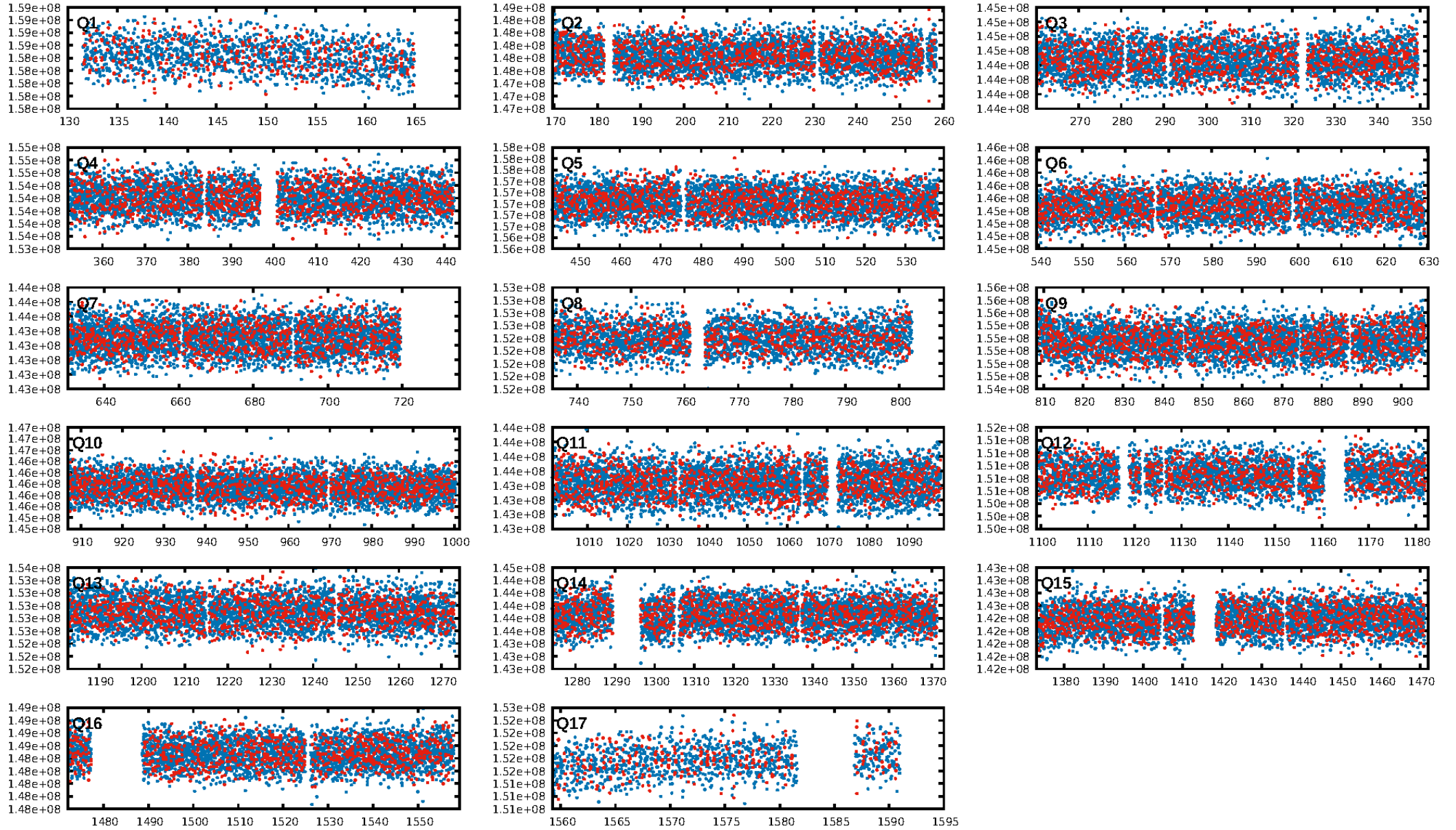
Ephemeris Match Information For 005560556-01

No Significant Match Found

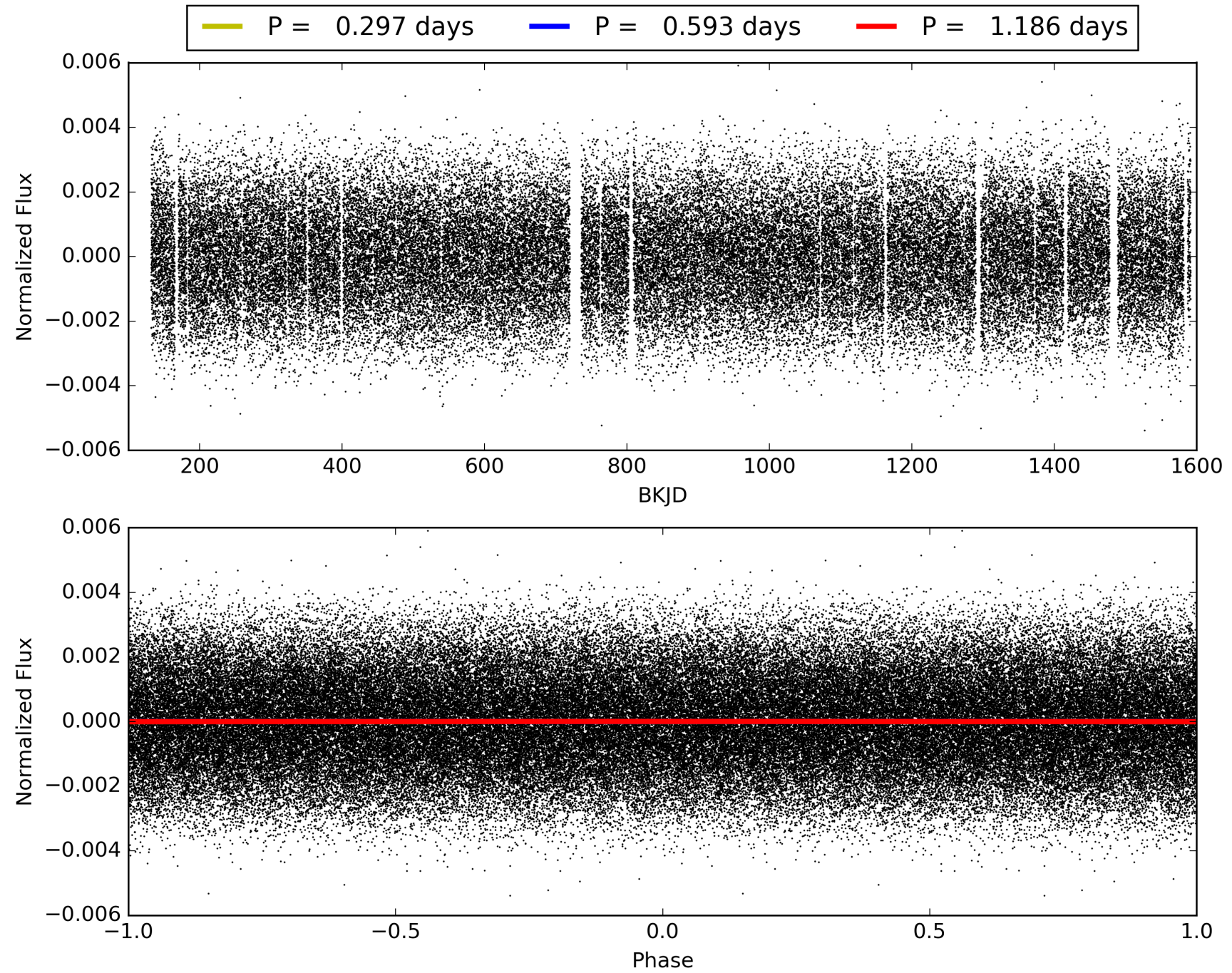
KIC: 5560556 Candidate: 1 of 2 Period: 0.593 d



TCE 005560556-01, PDC Light Curves

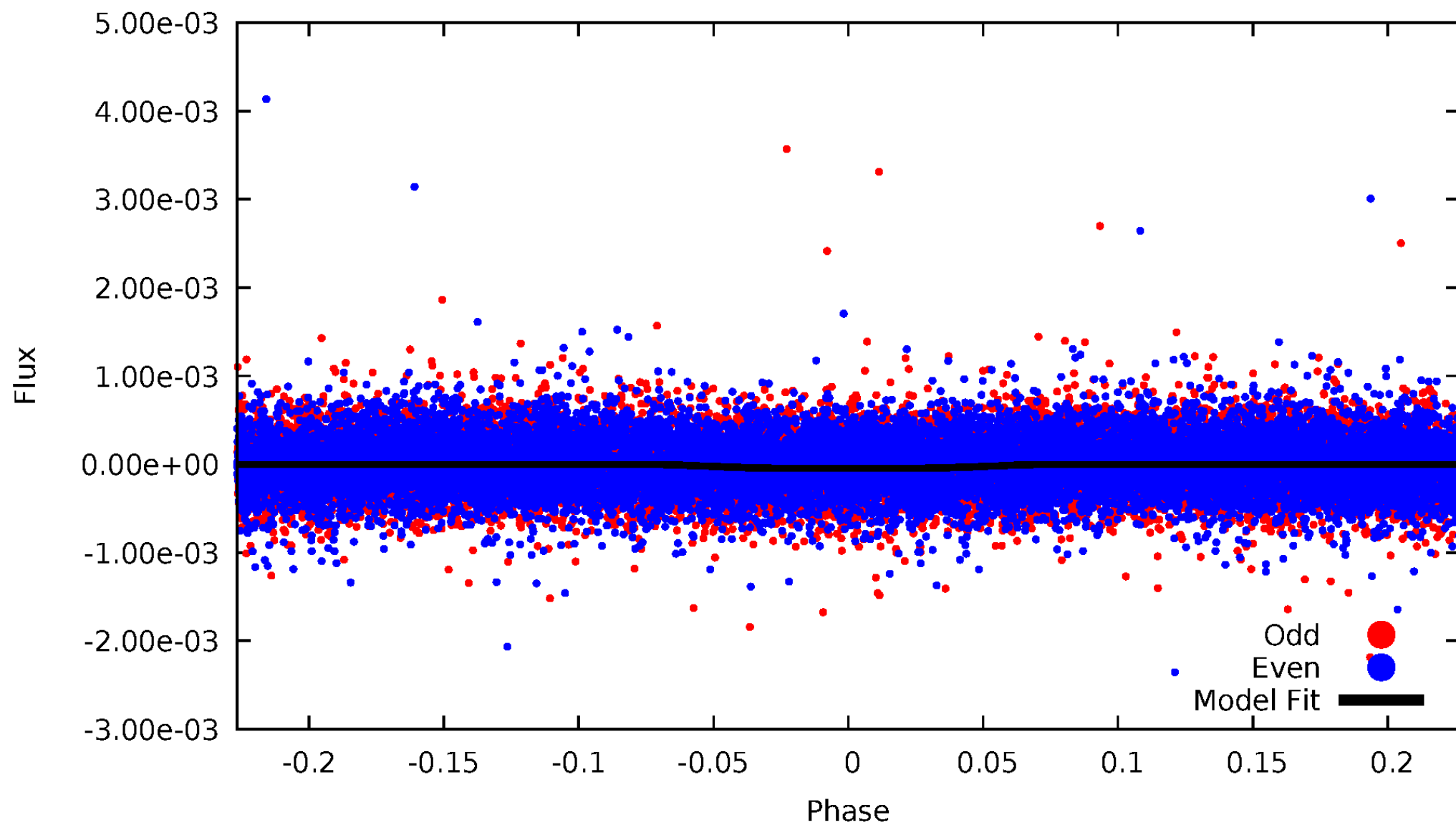


TCE 005560556-01



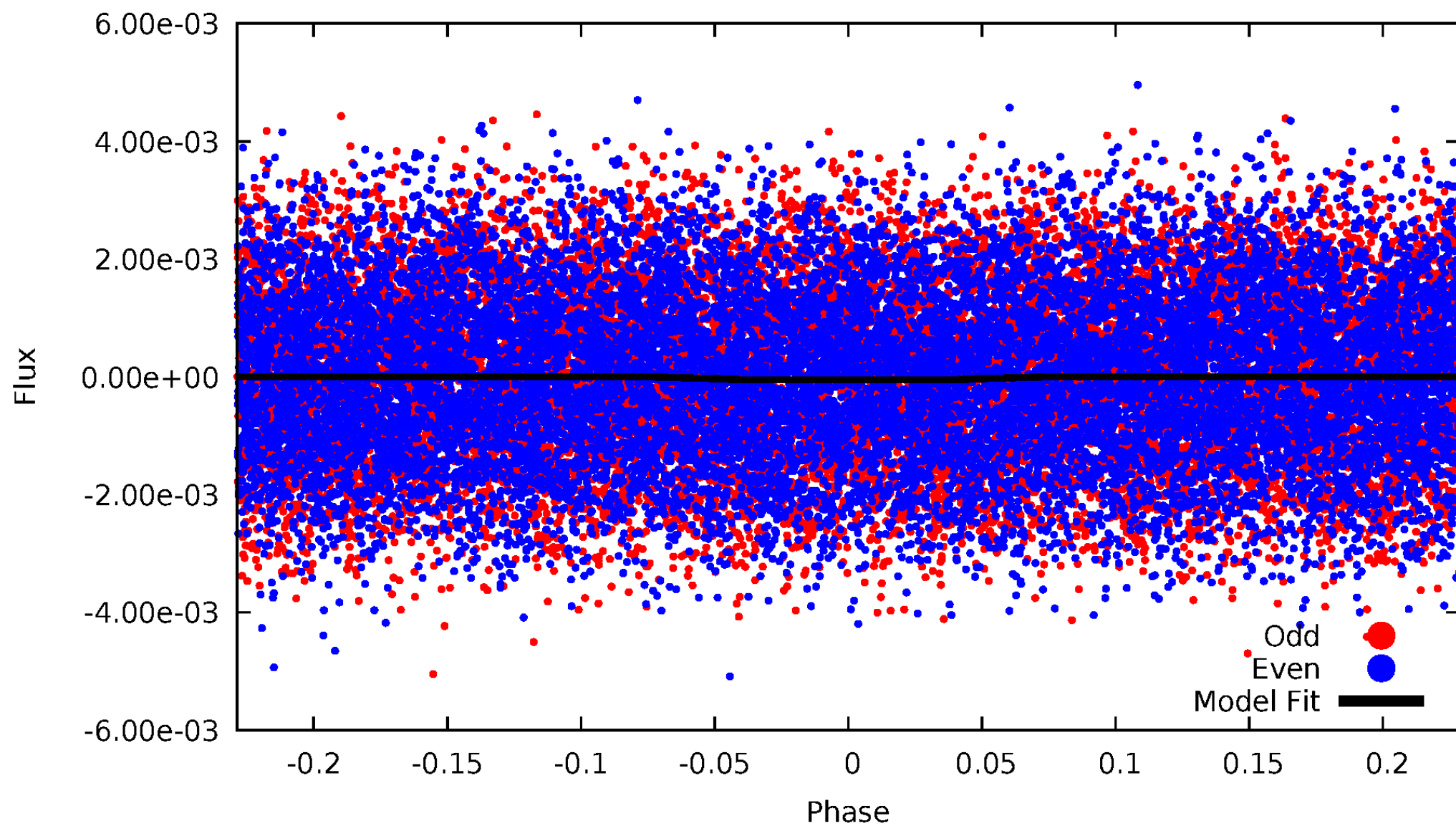
DV Odd/Even

TCE 005560556-01



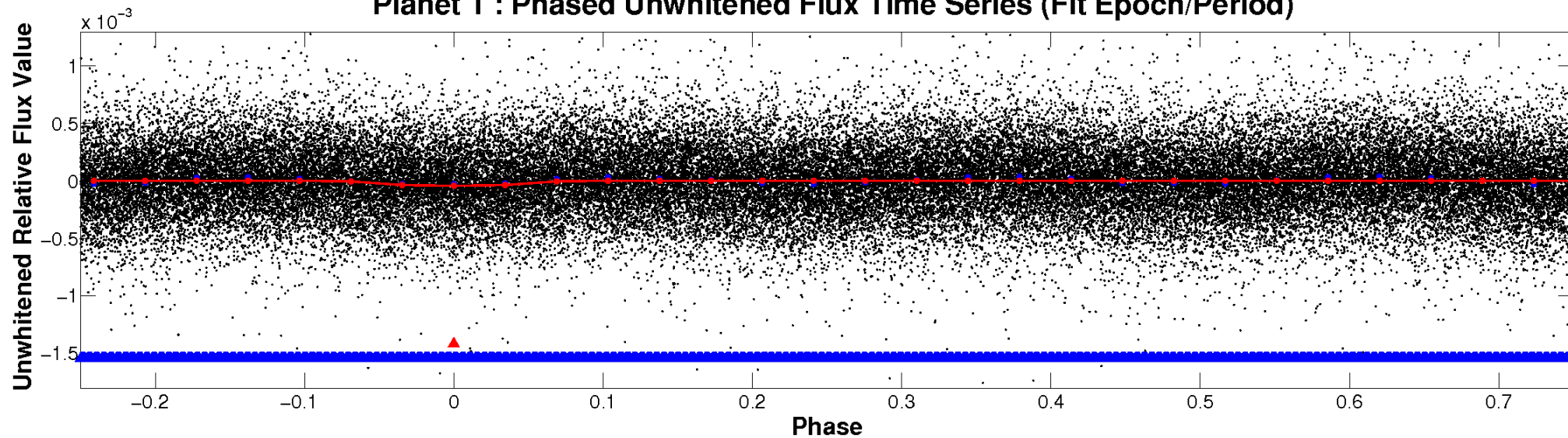
ALT Odd/Even

TCE 005560556-01

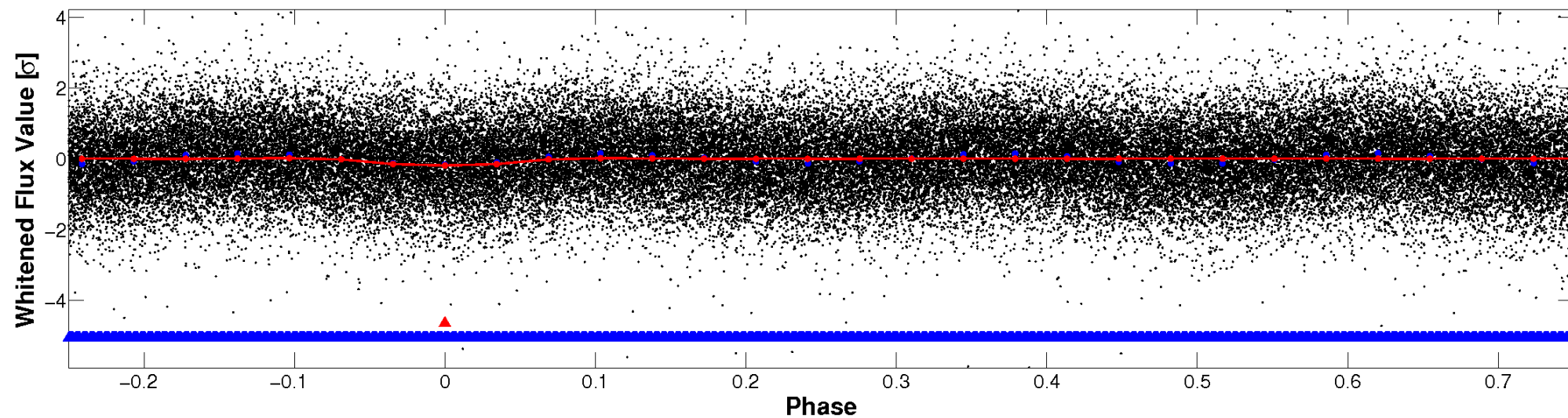


Non-Whitened Vs. Whitened Light Curve

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

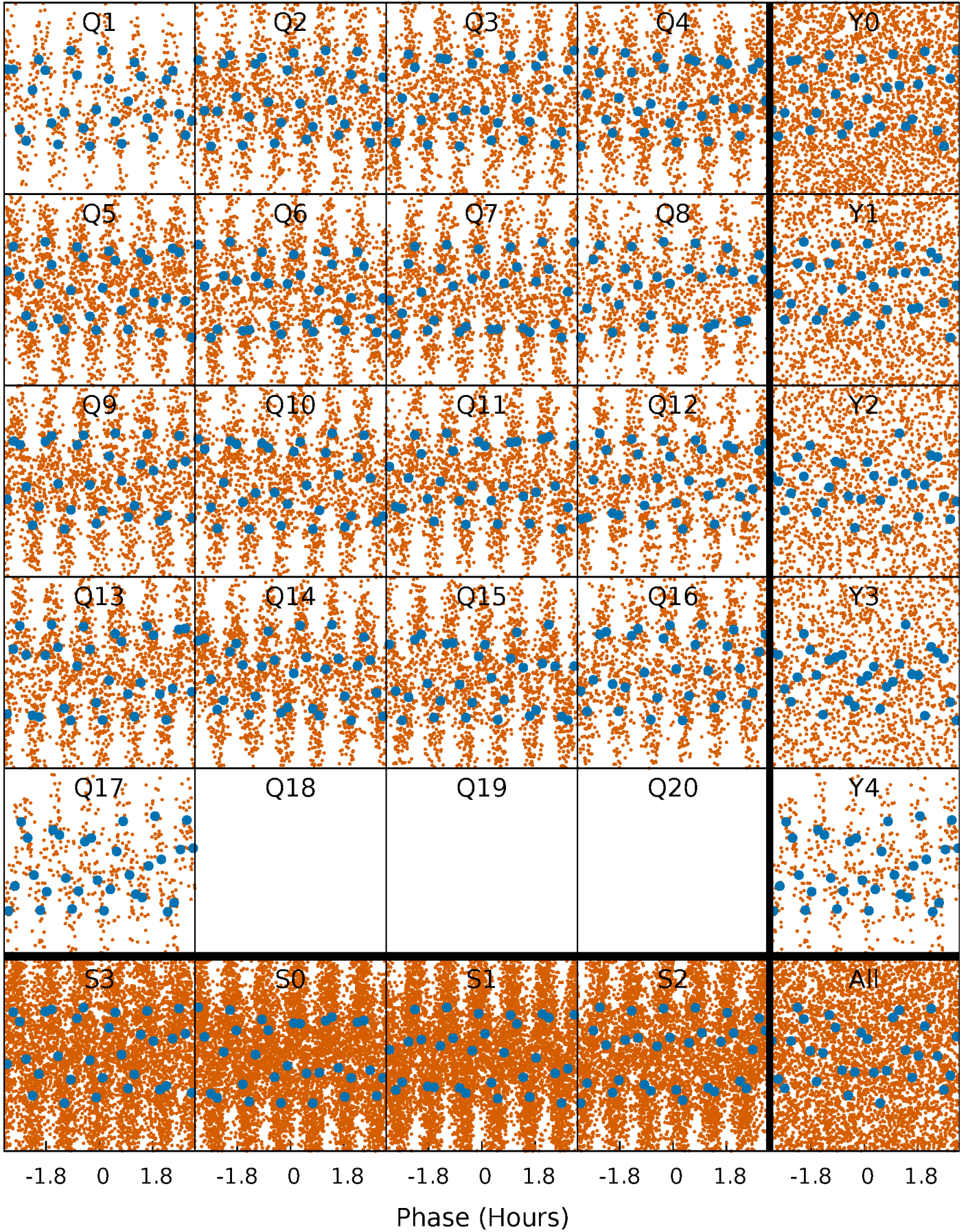


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



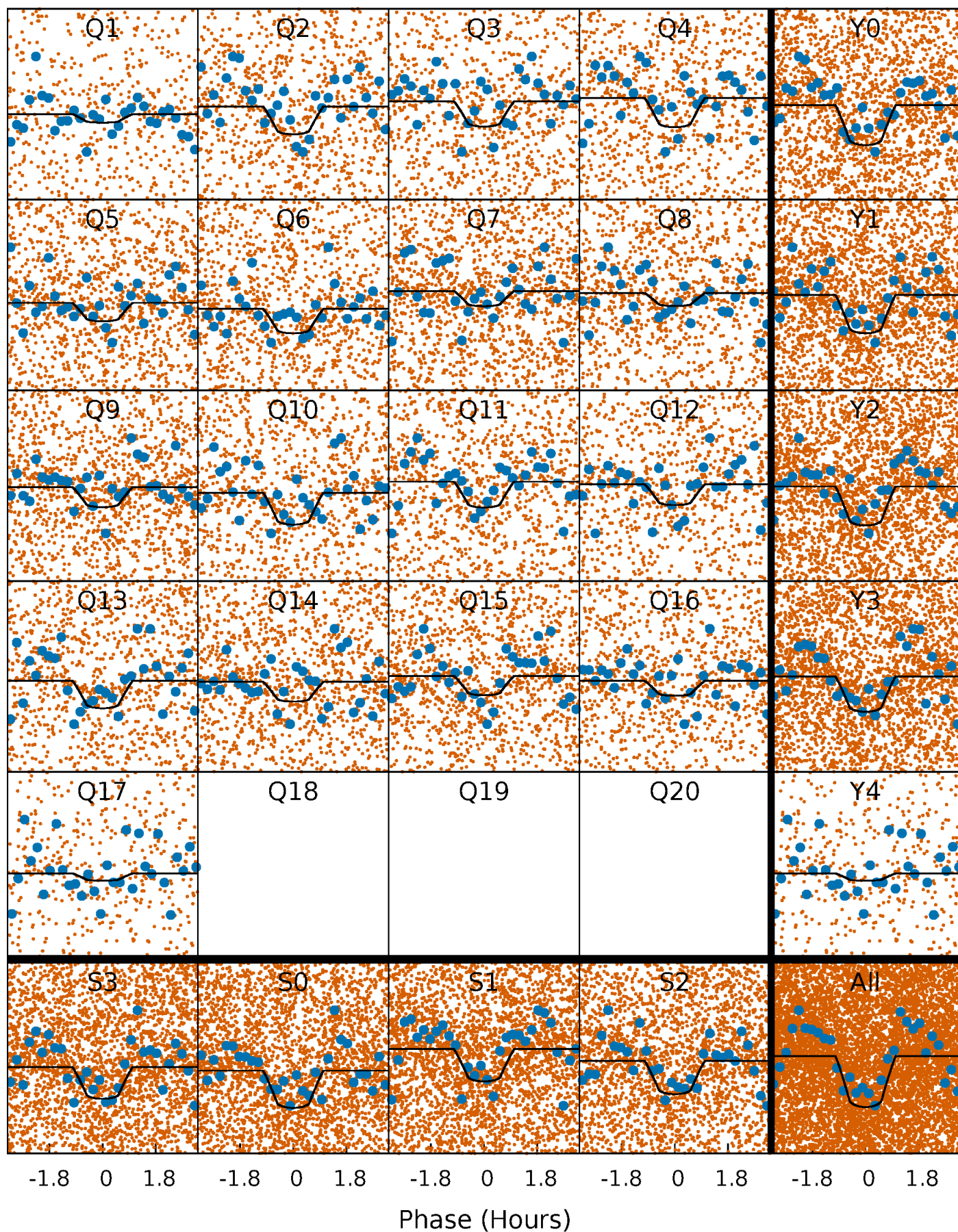
PDC Quarter-Phased Transit Curves

TCE 005560556-01 P= 0.593068 Days $T_0=131.661125$ (BKJD)



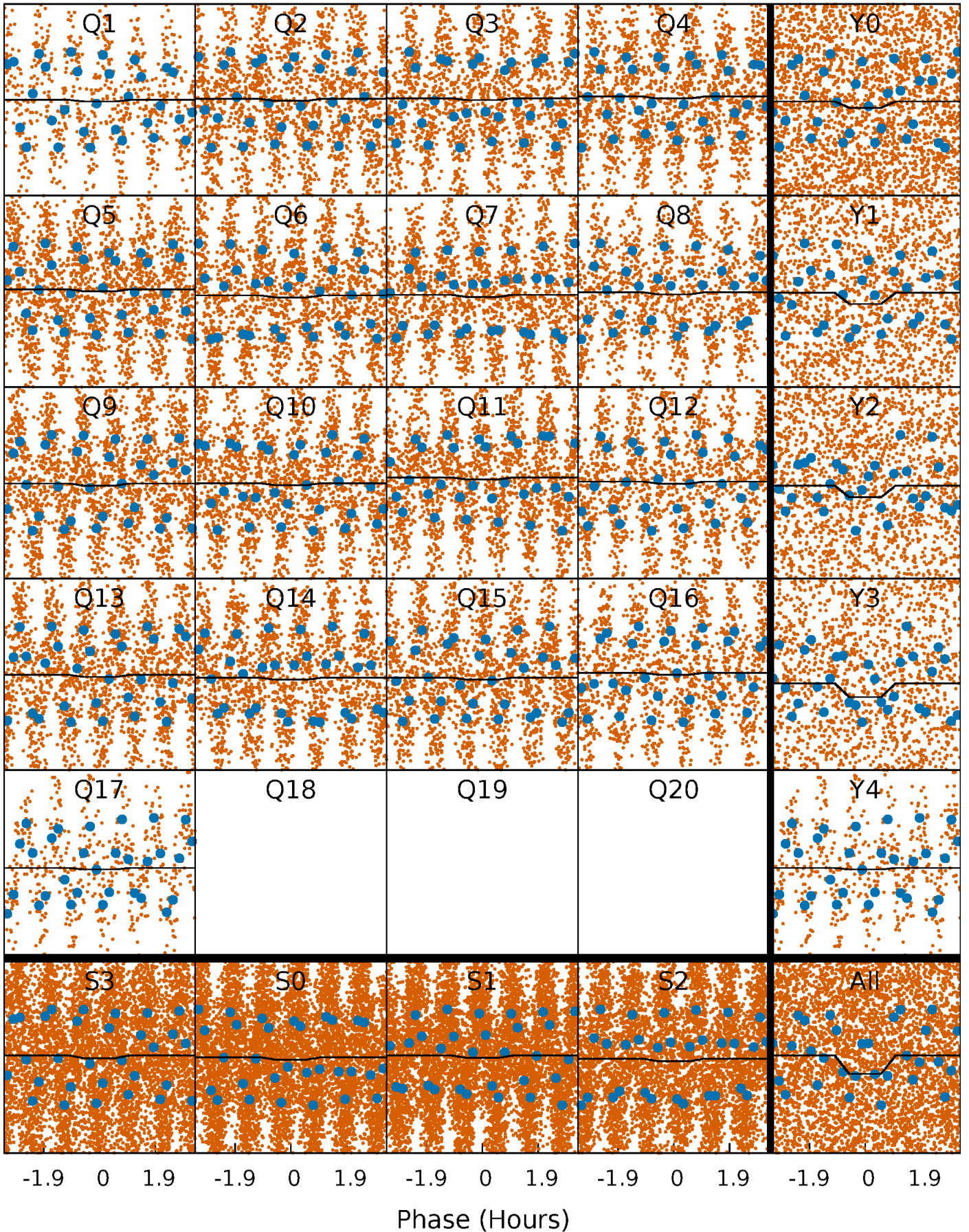
DV Quarter-Phased Transit Curves

TCE 005560556-01 P= 0.593068 Days $T_0=131.661125$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

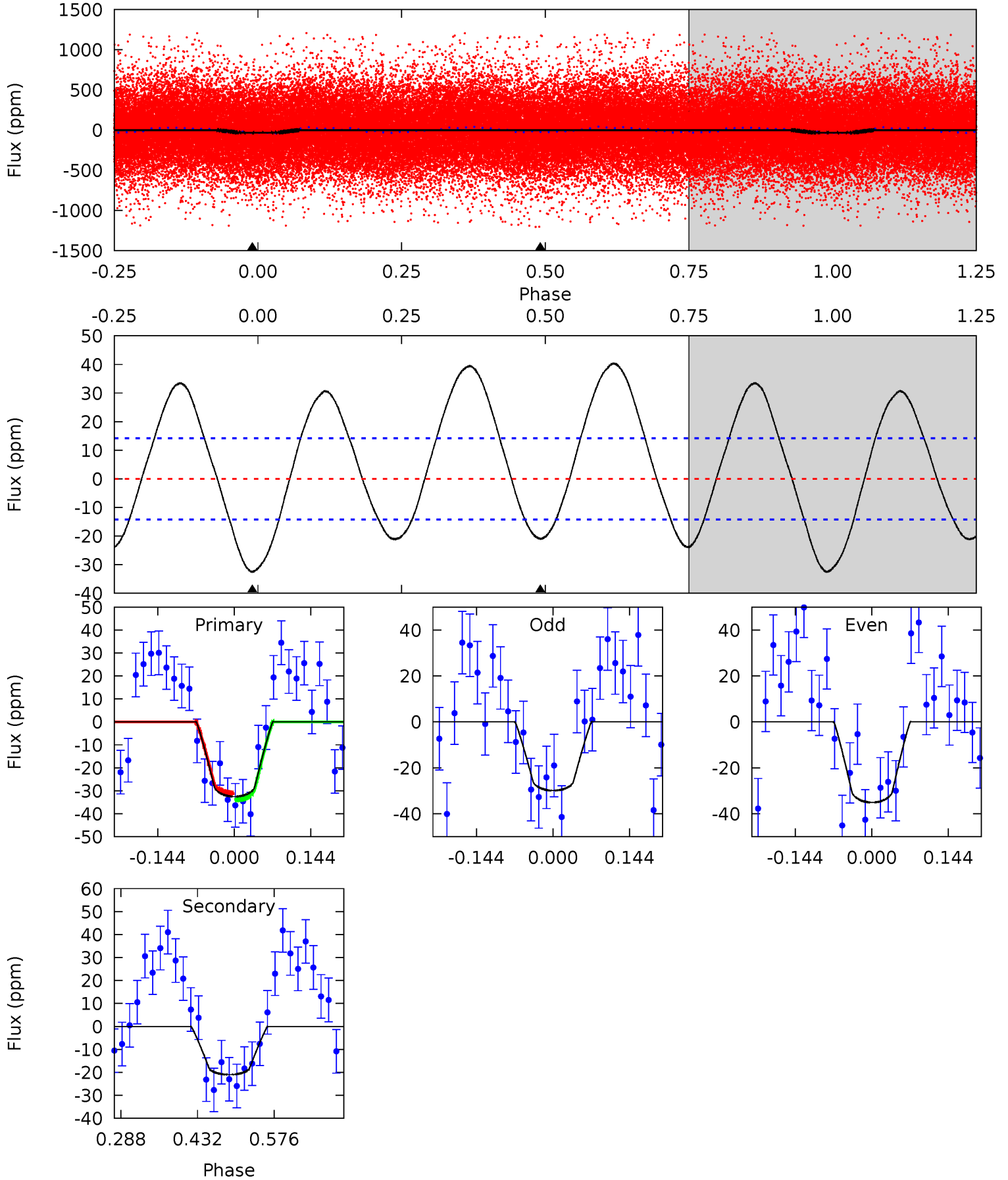
TCE 005560556-01 P= 0.593068 Days $T_0=131.661125$ (BKJD)



DV Model-Shift Uniqueness Test

005560556-01, P = 0.593068 Days, E = 131.068057 Days

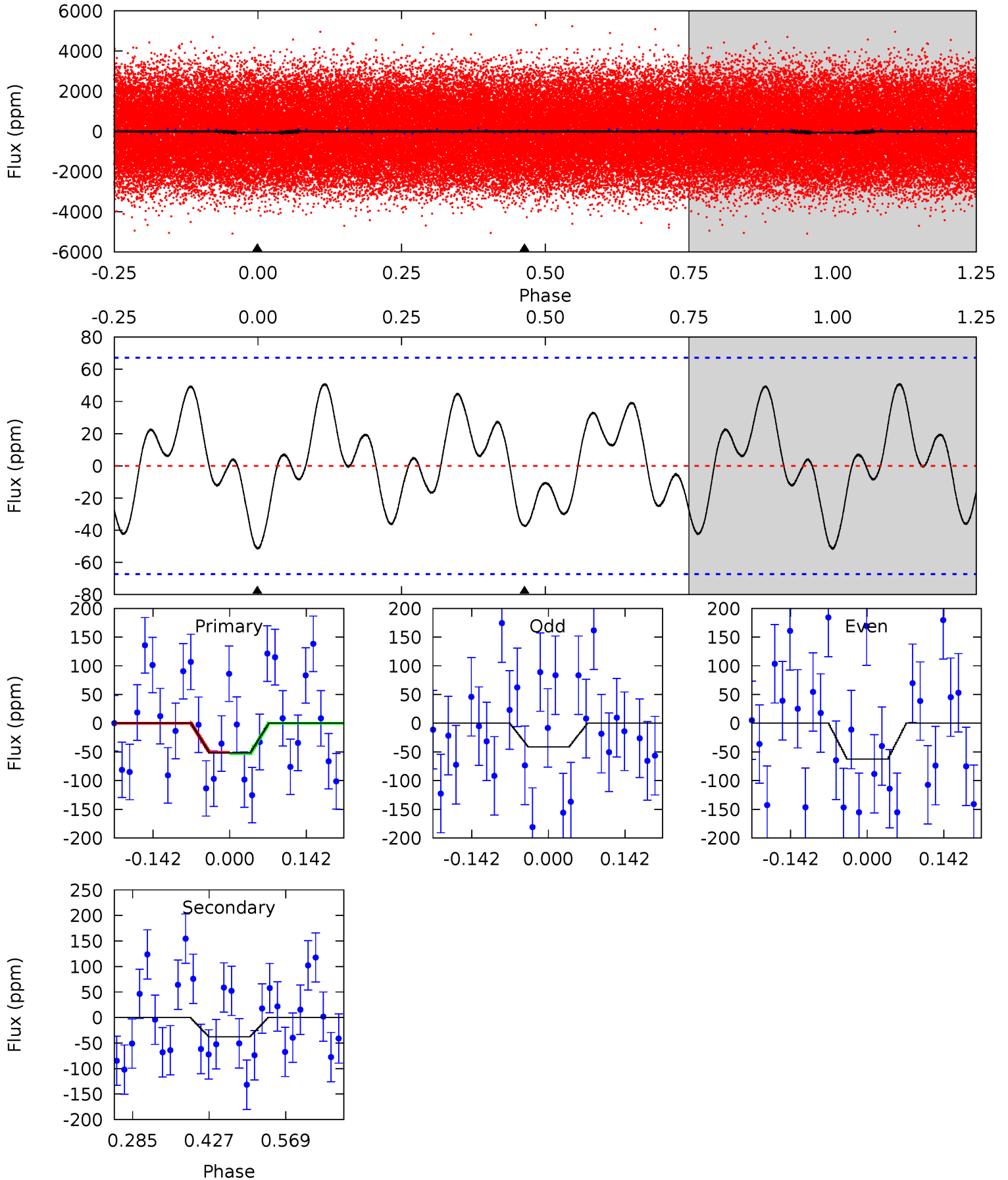
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	6.64	0	0	4.49	1.46	5.68	10.3	10.3	6.64	6.64	0.82	0.96	0.55	0.40



Alt Model-Shift Uniqueness Test

005560556-01, P = 0.593068 Days, E = 131.068057 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.46	2.53	0	0	4.49	1.47	1.34	3.46	3.46	2.53	2.53	0.71	0.96	0.50	0.07



Stellar Parameters For KIC 005560556

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7607^{+211}_{-317}	$4.183^{+0.101}_{-0.188}$	$-0.040^{+0.200}_{-0.350}$	$1.691^{+0.514}_{-0.277}$	$1.589^{+0.199}_{-0.243}$	$0.463^{+0.218}_{-0.239}$
	+3%/-4%	+2%/-4%	+500%/-875%	+30%/-16%	+13%/-15%	+47%/-52%
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 005560556-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-21 ± 3	$1.34^{+0.56}_{-0.54}$	4827^{+361}_{-264}	5677^{+2106}_{-1075}	$1.672^{+3.128}_{-0.861}$
Alt.	-38 ± 15	$1.32^{+0.62}_{-0.52}$	4837^{+354}_{-311}	6705^{+2585}_{-1450}	$2.884^{+5.360}_{-1.664}$

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 $A_{obs} \gg 1.0$

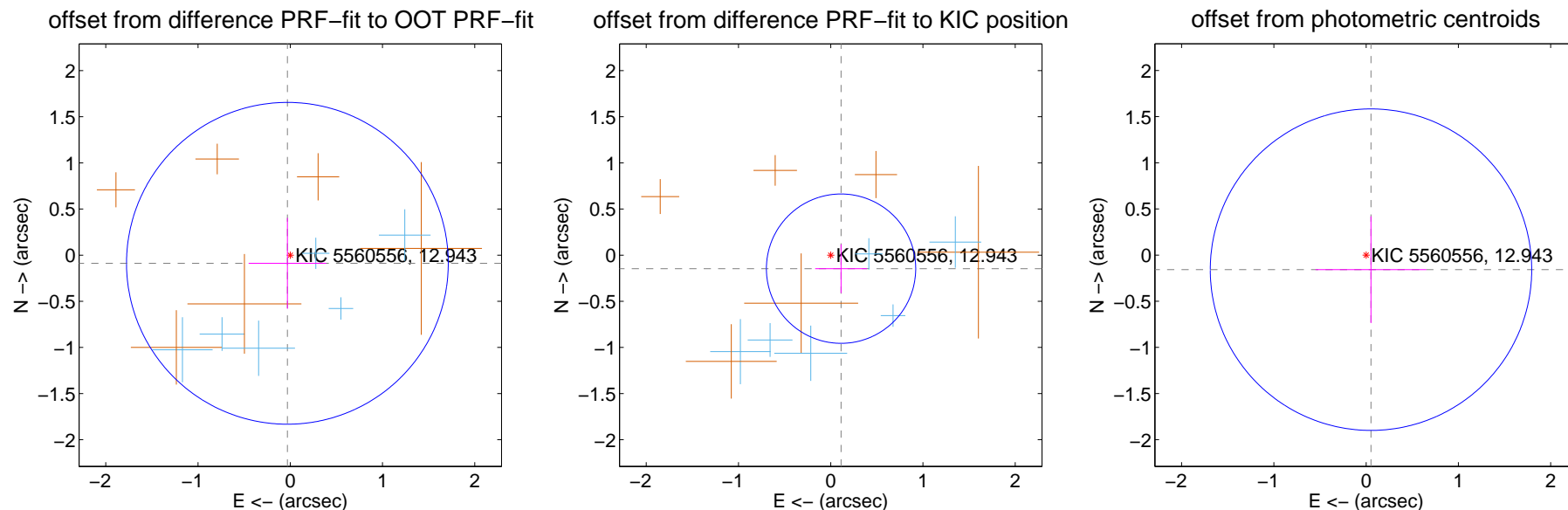
DV Centroid Data

Supplemental centroid analysis for 005560556-01. Kepler magnitude: 12.94. Transit SNR 13.30

There are 6 quarters with good PRF difference image offsets

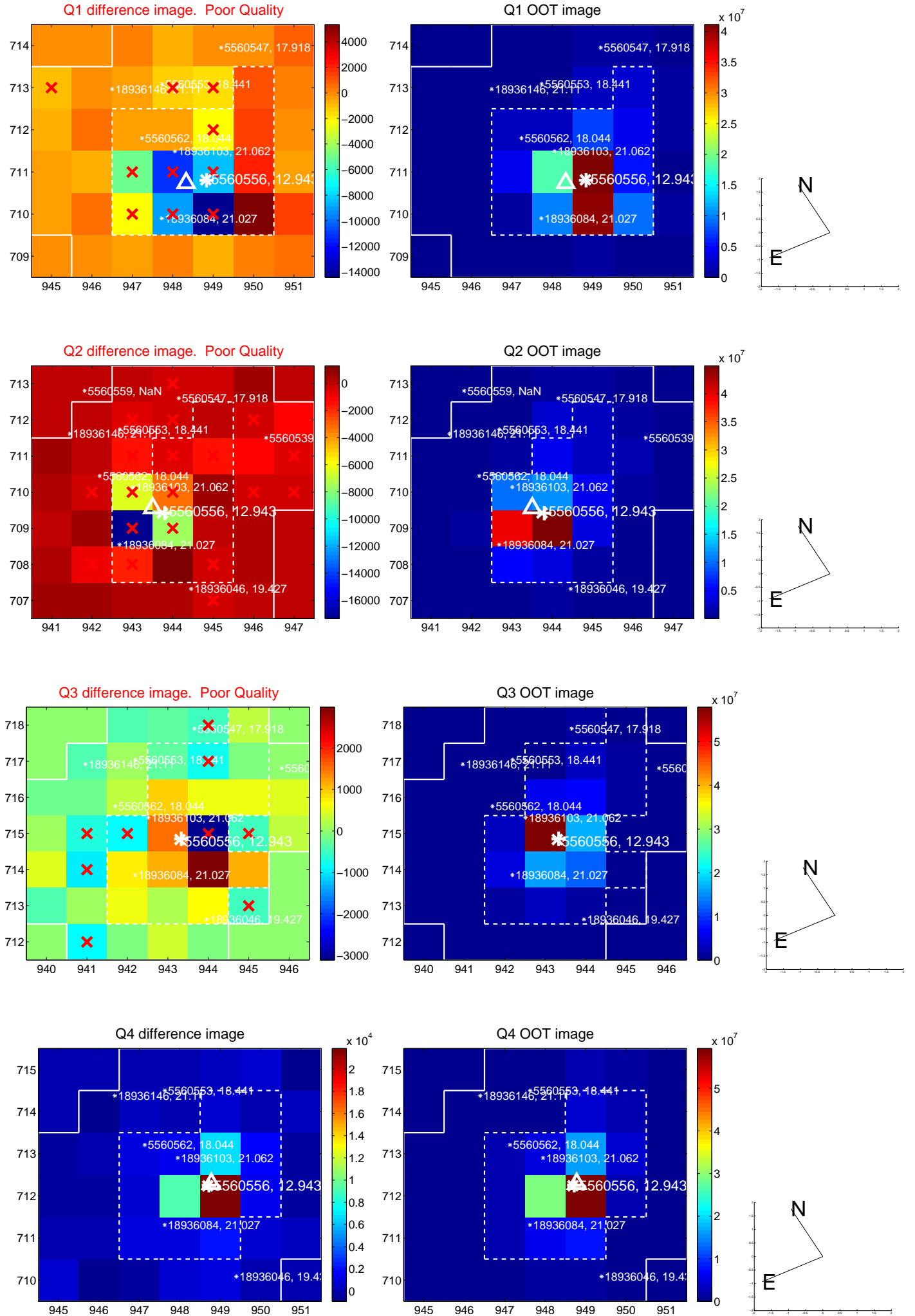
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.094 ± 0.581	0.16	0.031 ± 0.420	-0.088 ± 0.492
PRF-fit source offset from KIC position	0.184 ± 0.270	0.68	-0.112 ± 0.280	-0.146 ± 0.263
photometric centroid source offset	0.17 ± 0.58	0.29	-0.05 ± 0.60	-0.16 ± 0.58

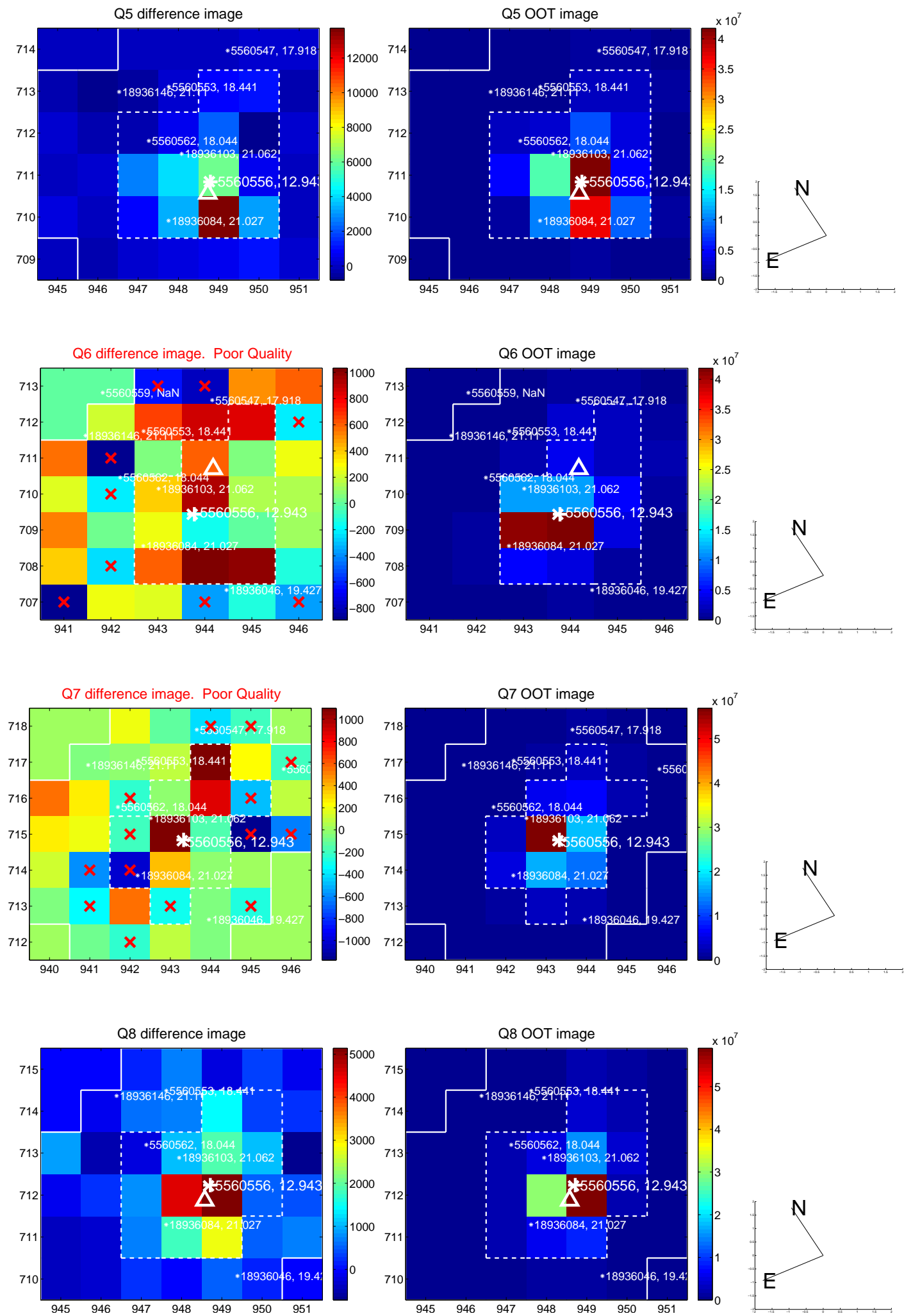


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

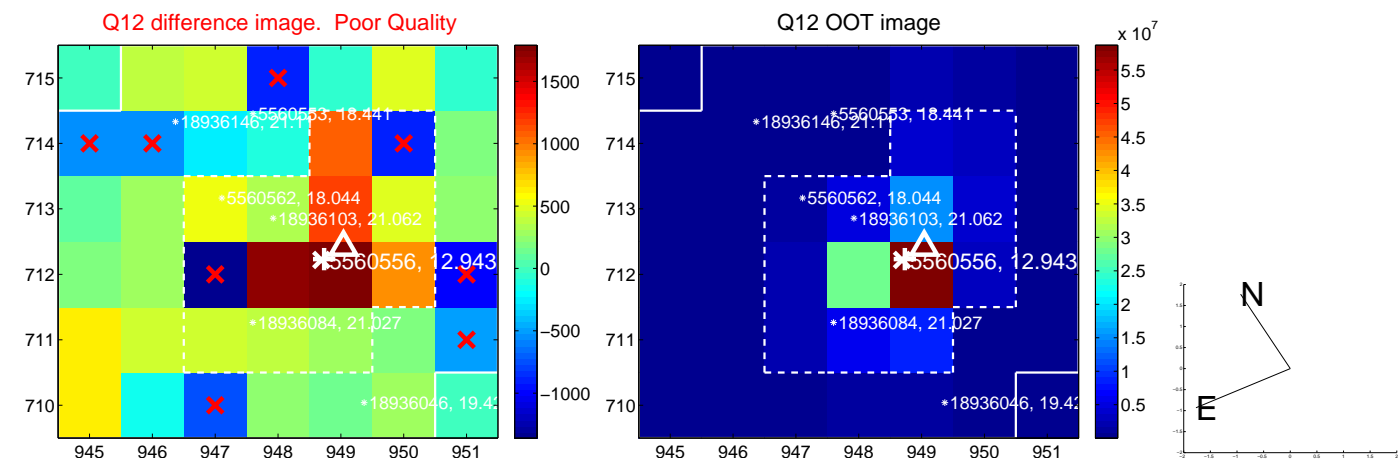
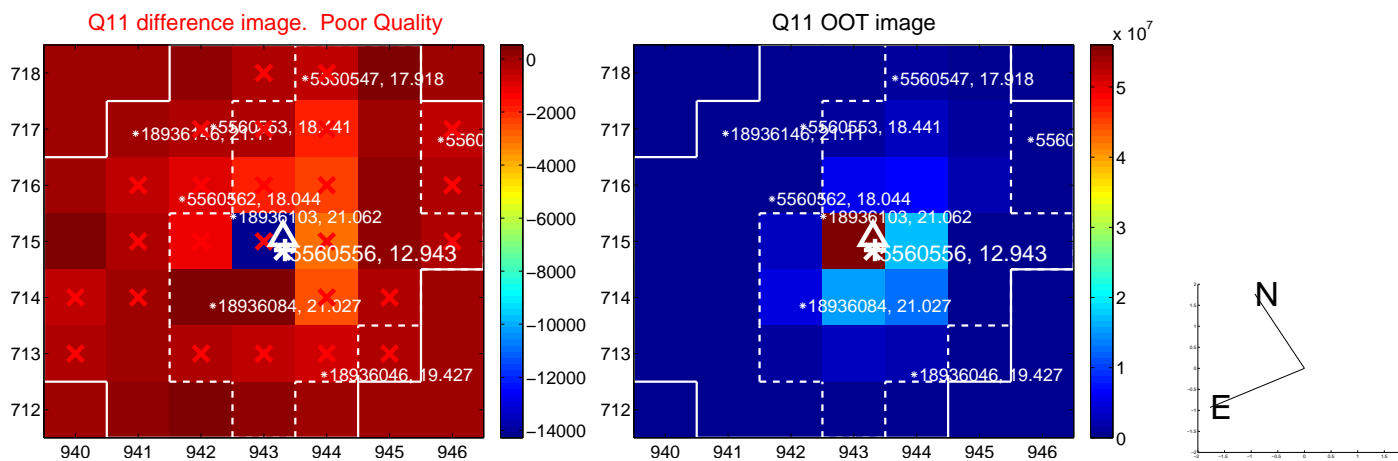
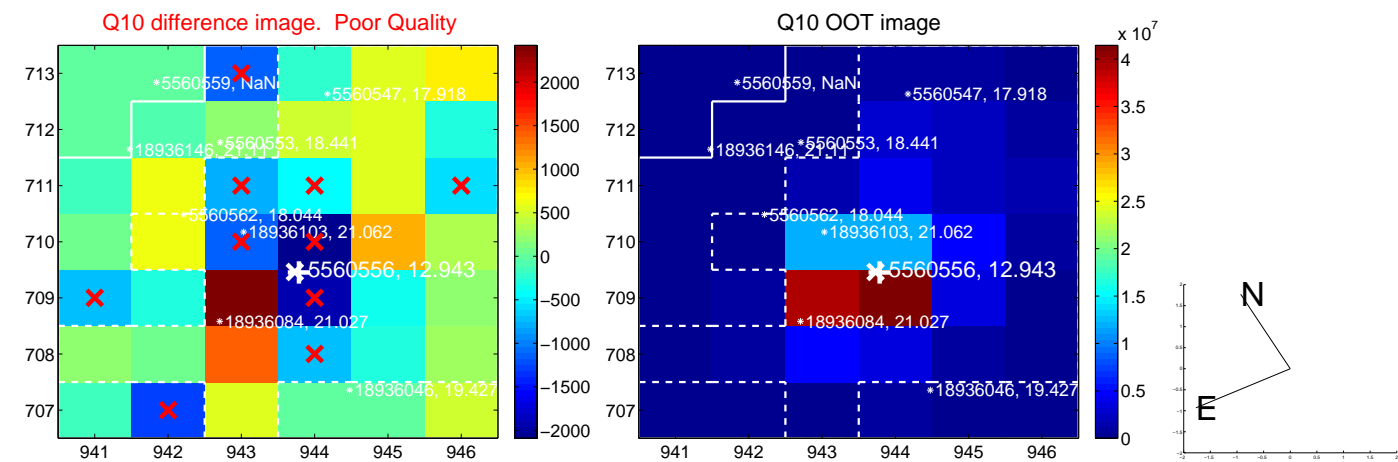
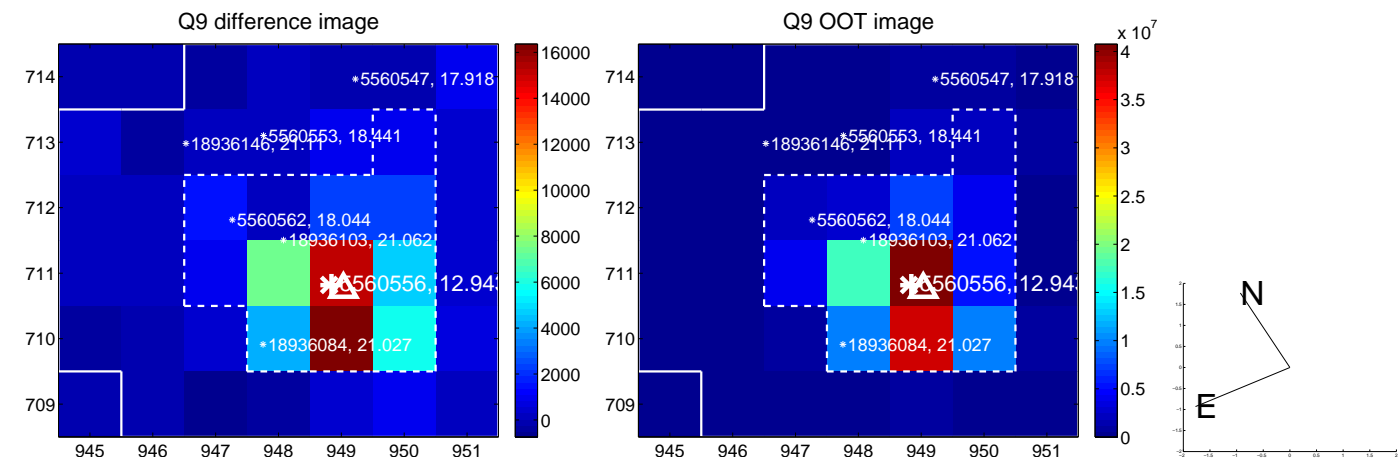
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



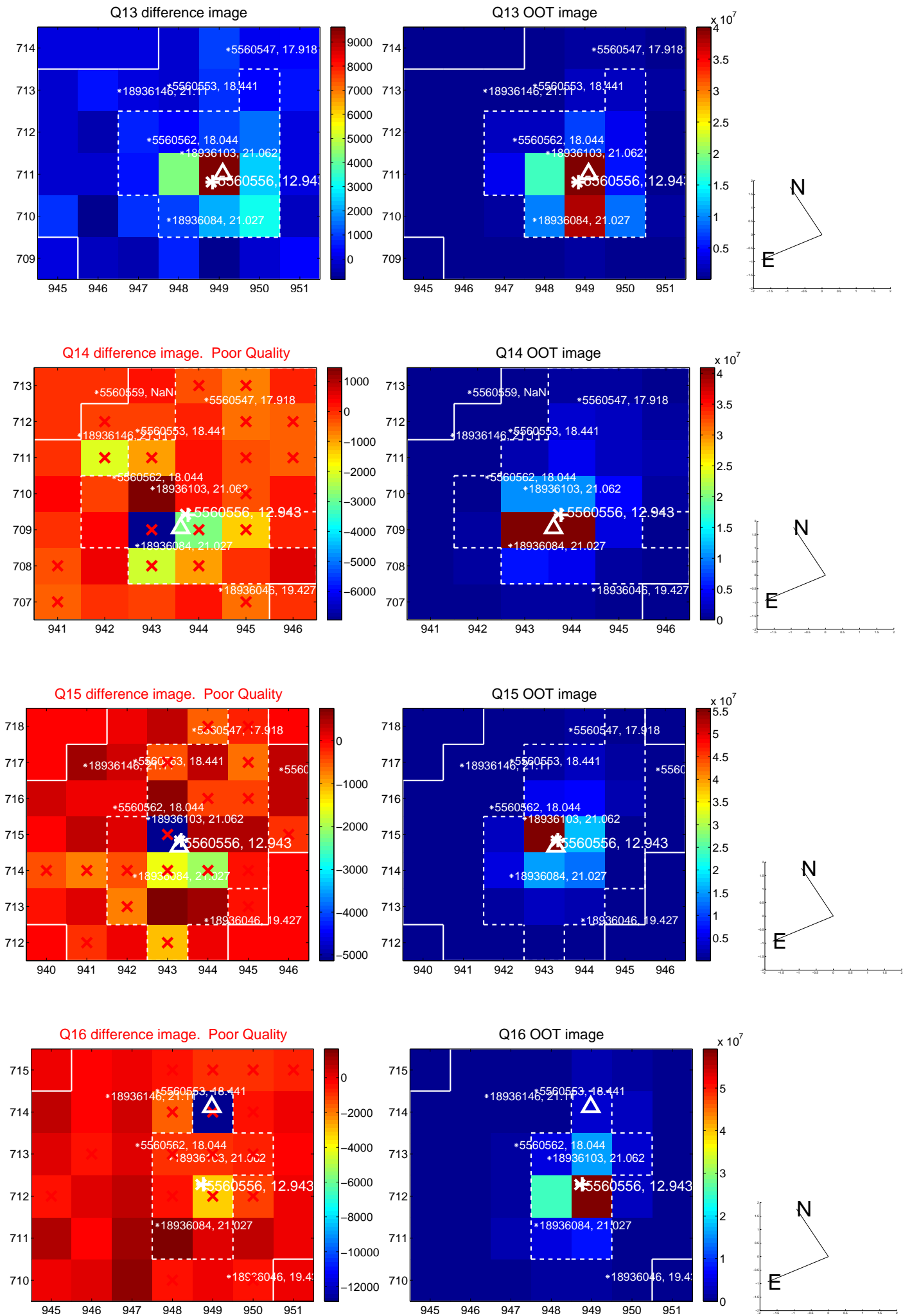
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



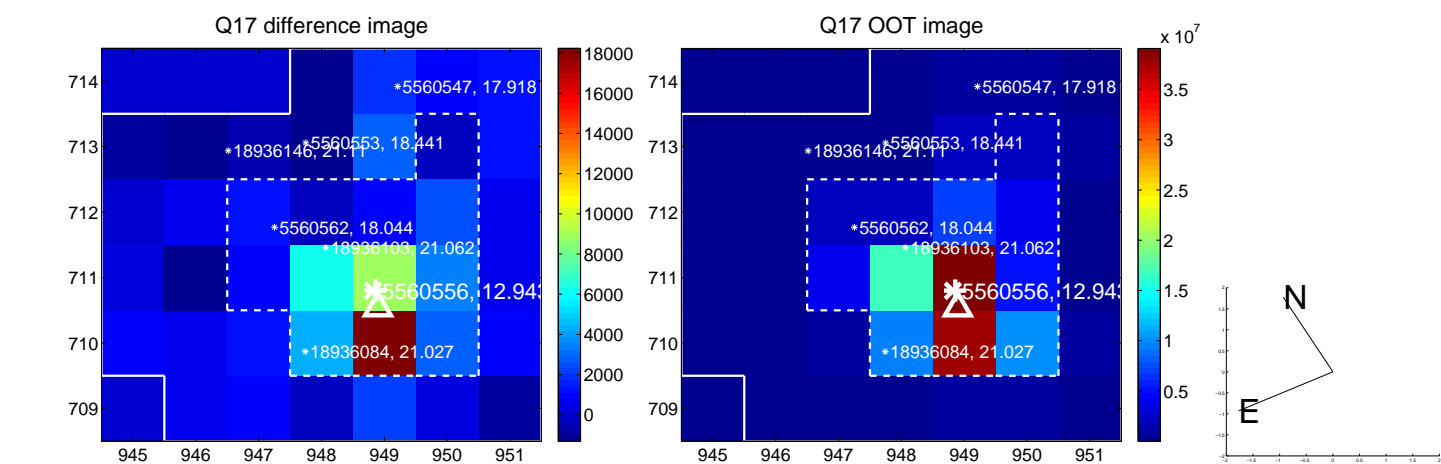
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



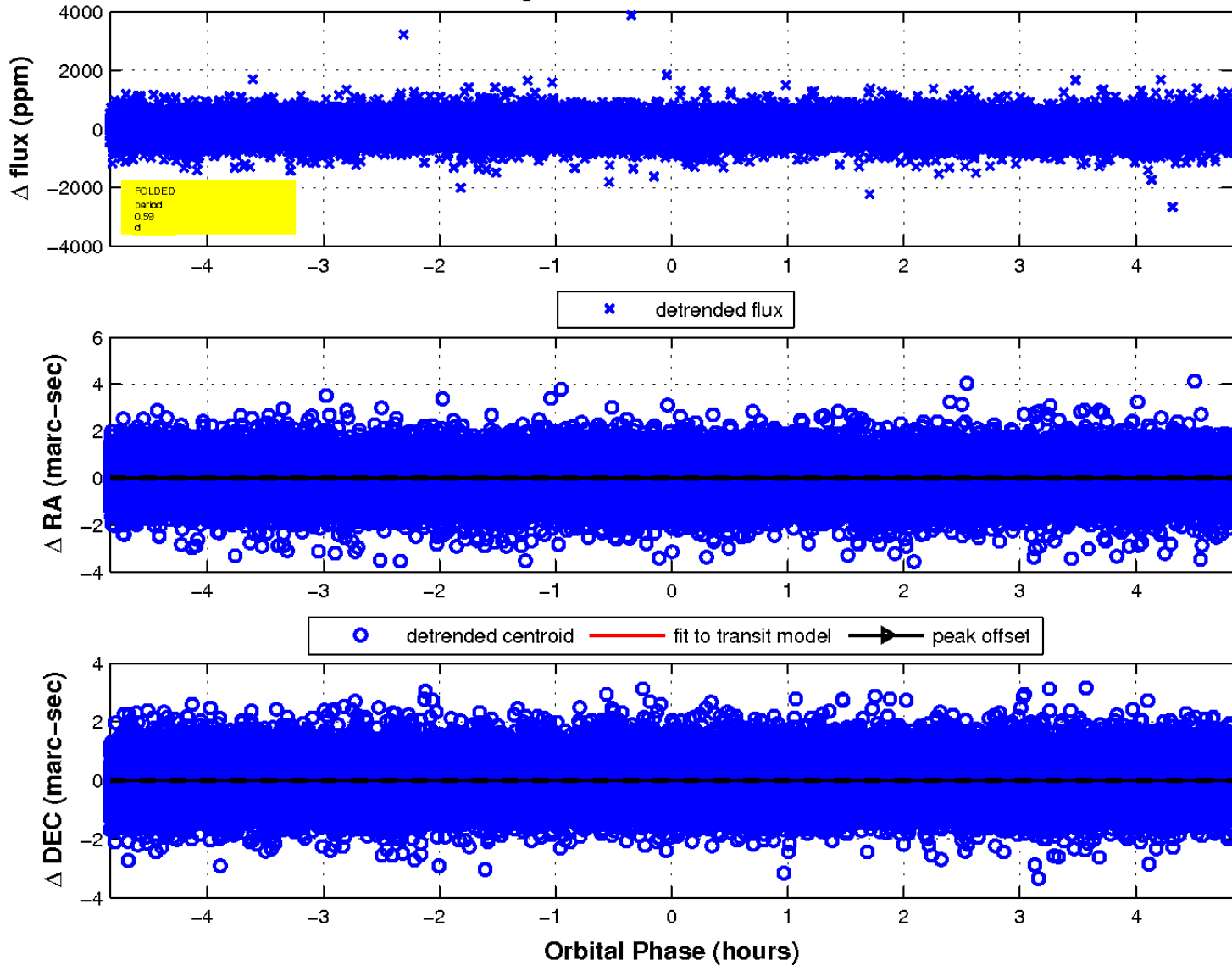
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

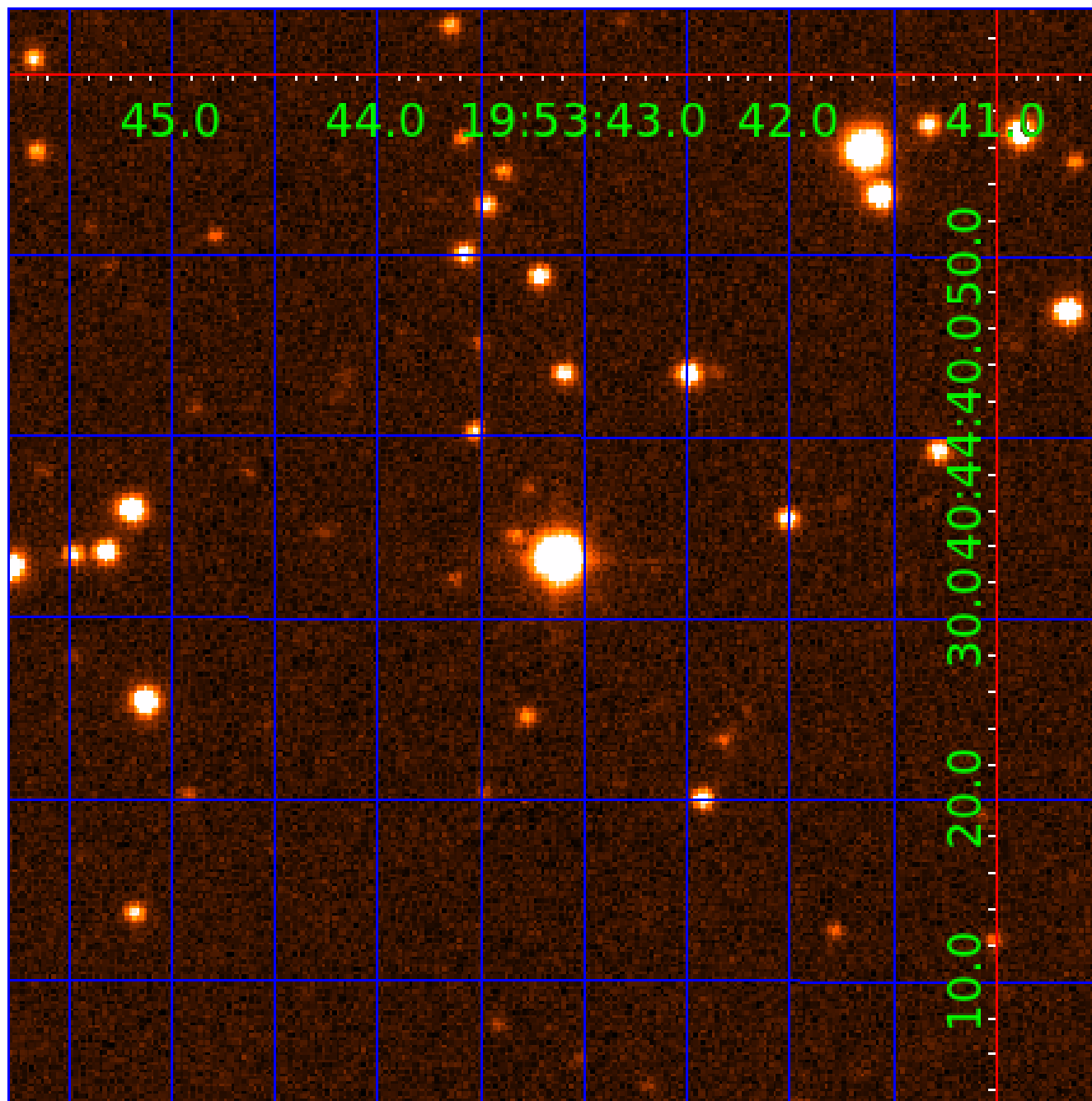


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 005560556

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})
005560556-01	OBS	No	0.593068	131.661125	45.0	1.613	10.8	13.3	1.69	7607	1.31	32989.13
005560556-02	OBS	No	0.772698	132.253036	20.6	5.258	8.2	7.3	1.69	7607	0.80	23182.68

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005560556-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
005560556-02	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—HALO_GHOST

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

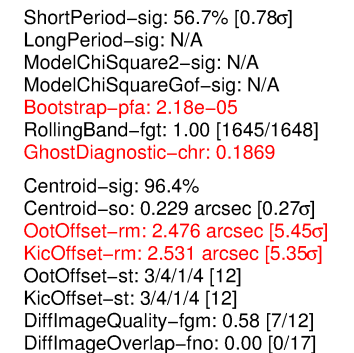
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

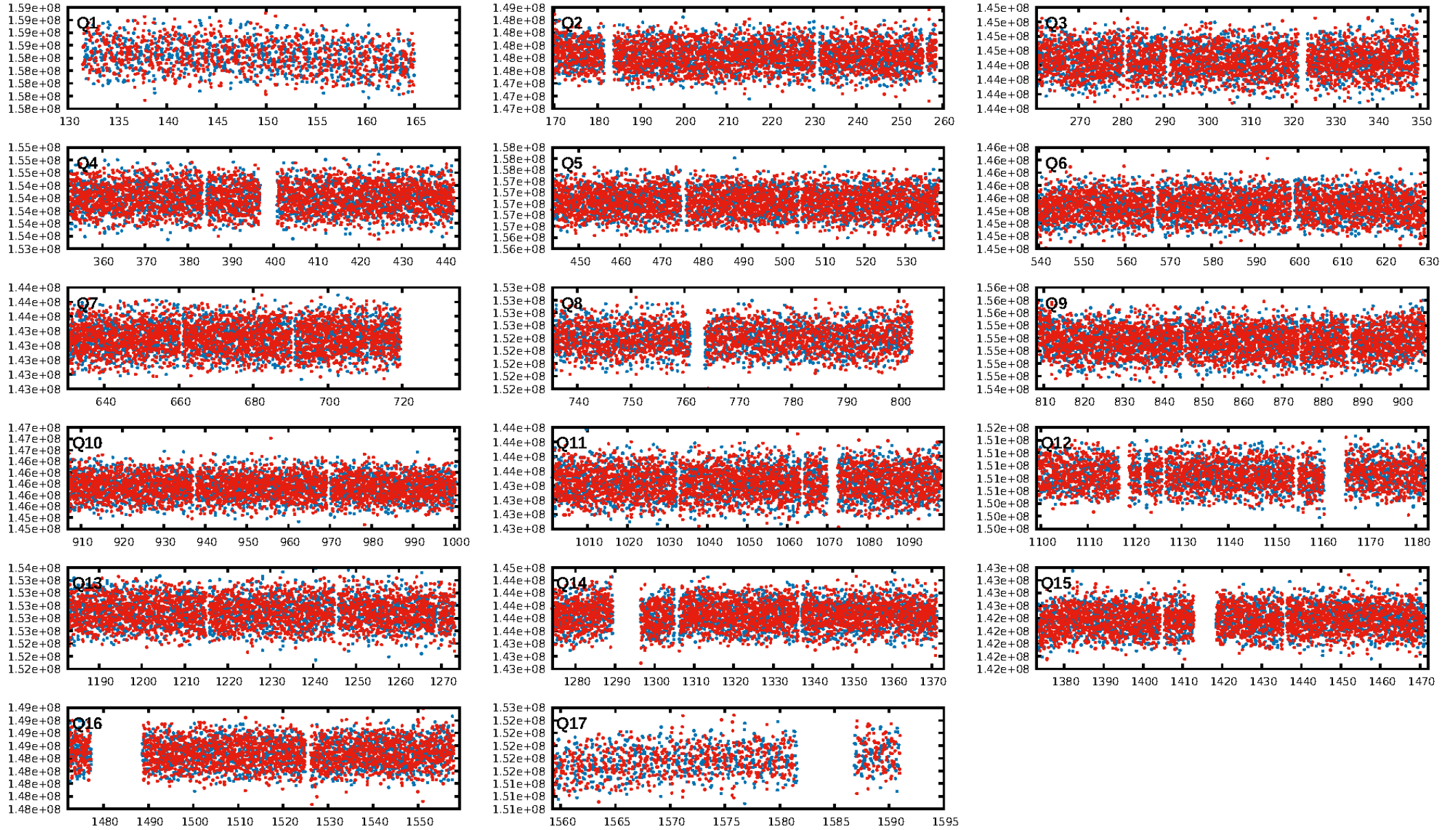
Ephemeris Match Information For 005560556-02

No Significant Match Found

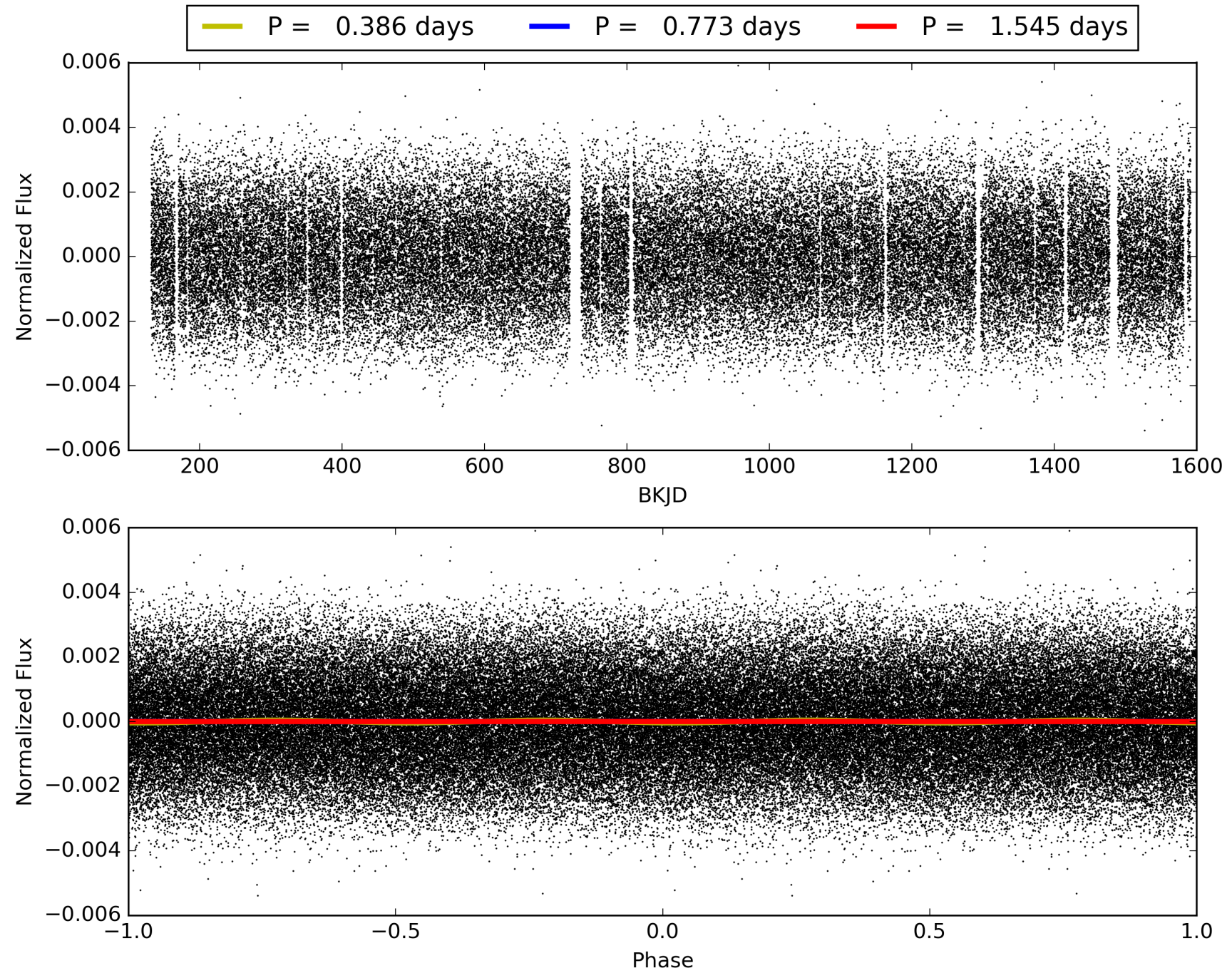
KIC: 5560556 Candidate: 2 of 2 Period: 0.773 d



TCE 005560556-02, PDC Light Curves

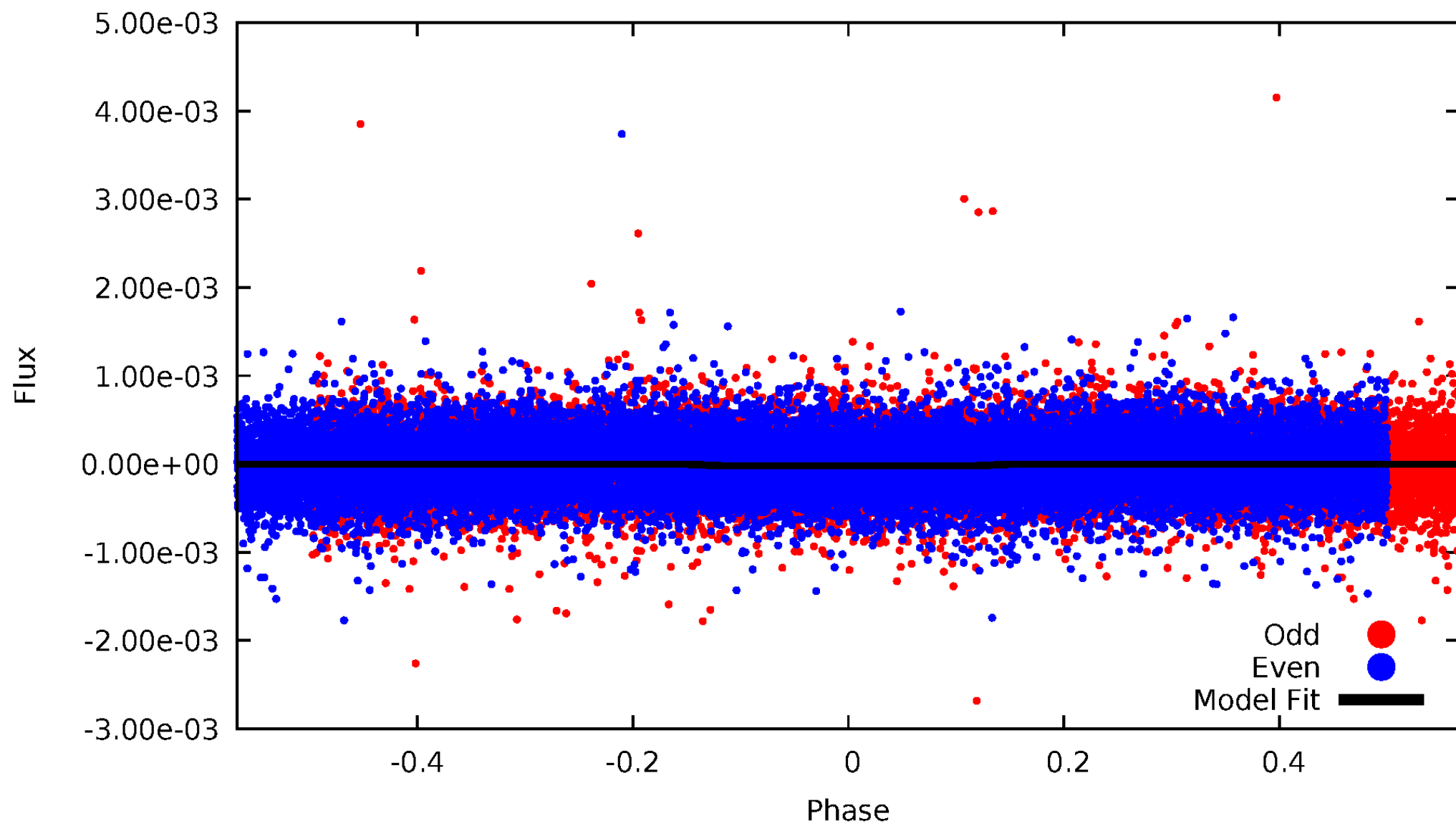


TCE 005560556-02



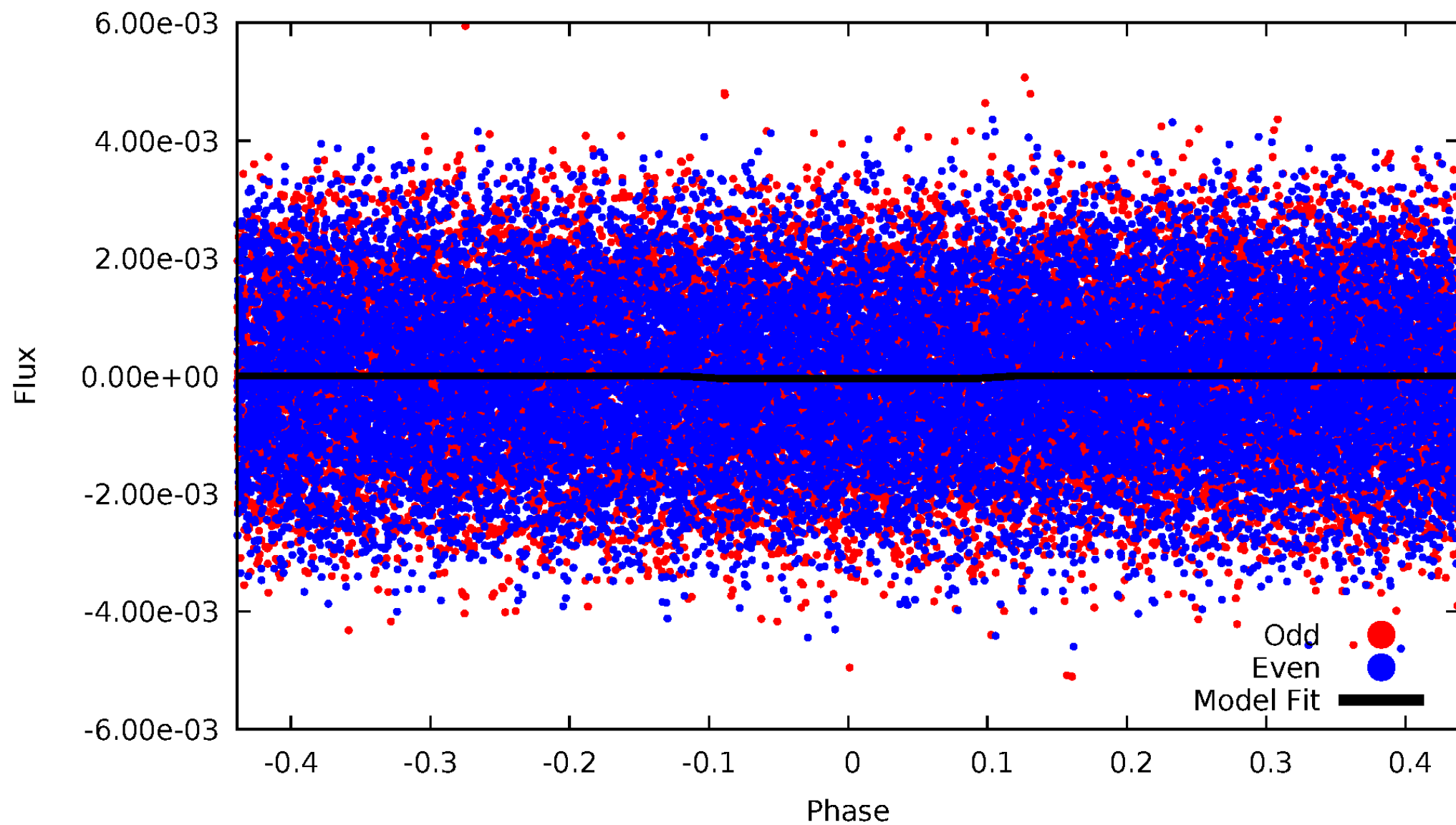
DV Odd/Even

TCE 005560556-02



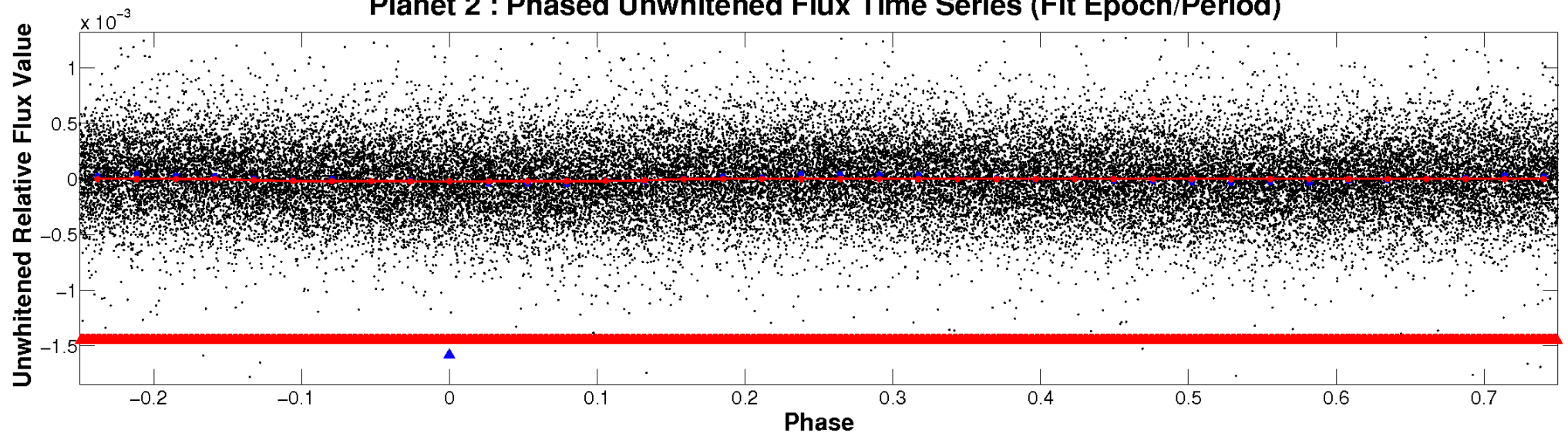
ALT Odd/Even

TCE 005560556-02

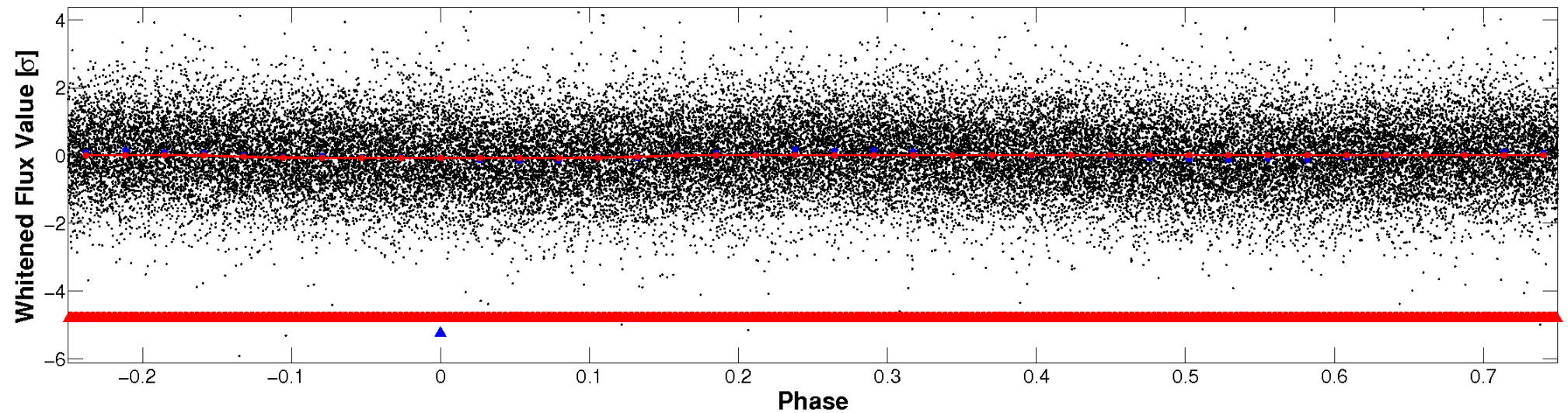


Non-Whitened Vs. Whitened Light Curve

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

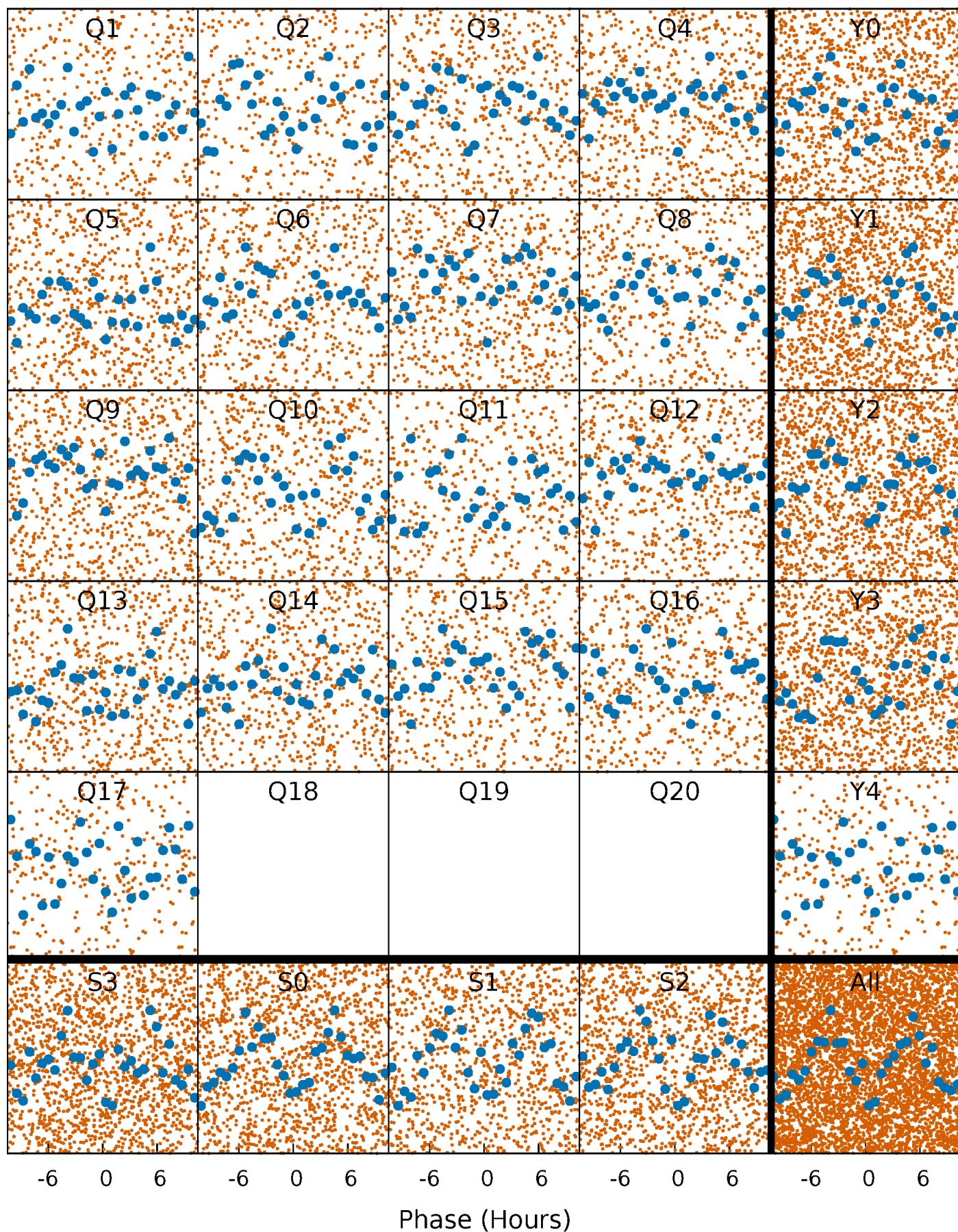


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



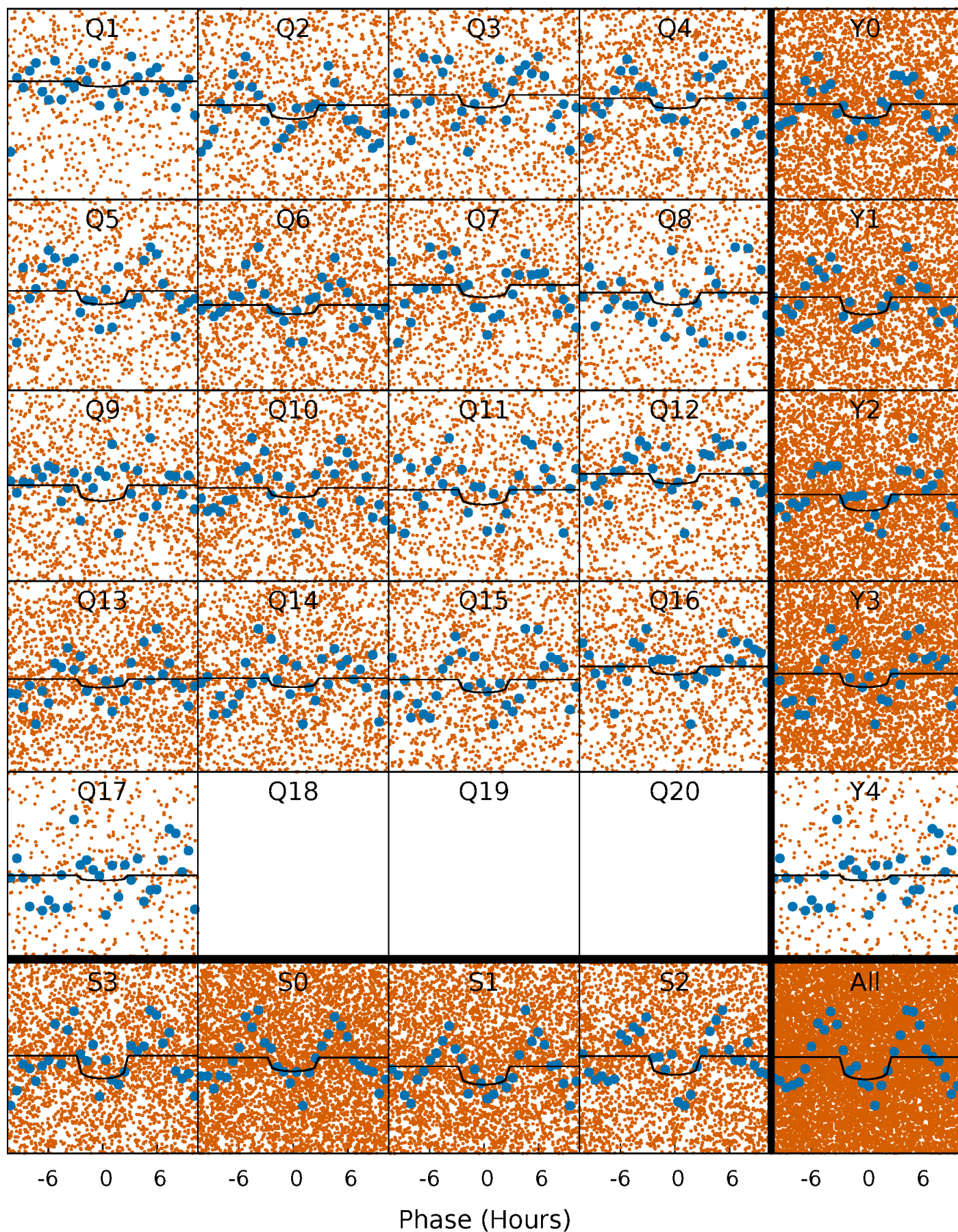
PDC Quarter-Phased Transit Curves

TCE 005560556-02 P= 0.772698 Days $T_0=132.253036$ (BKJD)



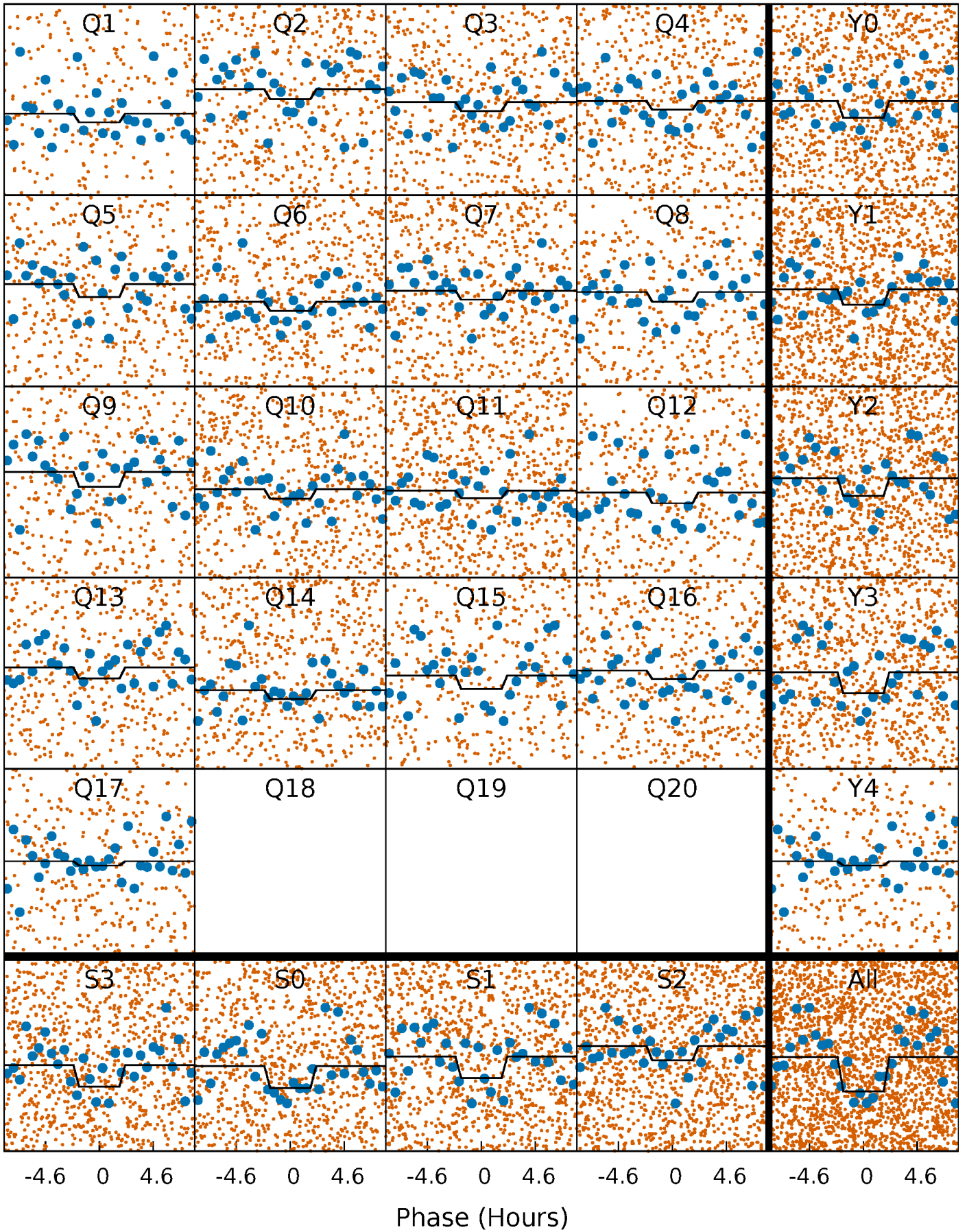
DV Quarter-Phased Transit Curves

TCE 005560556-02 P= 0.772698 Days $T_0=132.253036$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

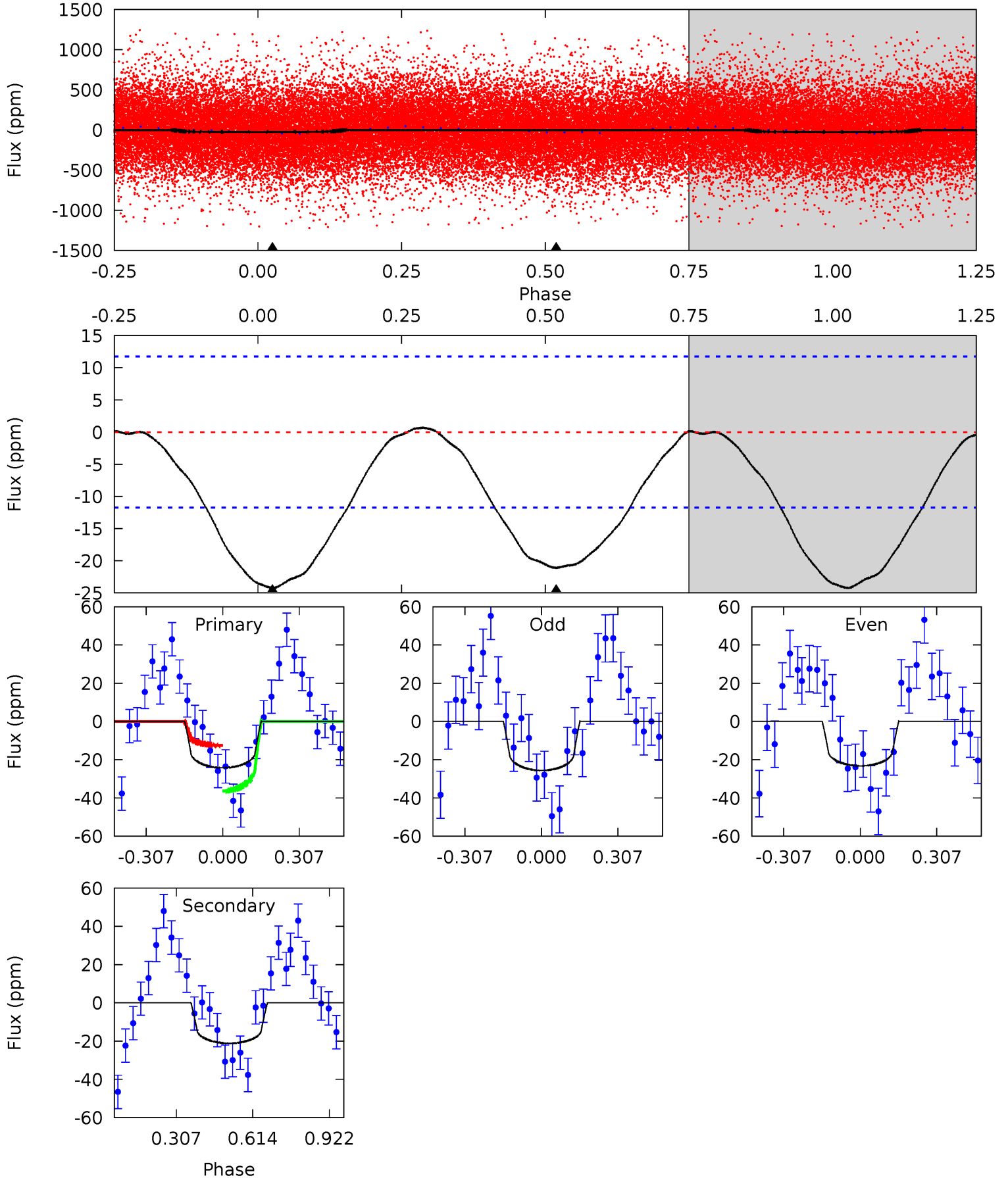
TCE 005560556-02 P= 0.772746 Days $T_0=132.230735$ (BKJD)



DV Model-Shift Uniqueness Test

005560556-02, P = 0.772698 Days, E = 131.480338 Days

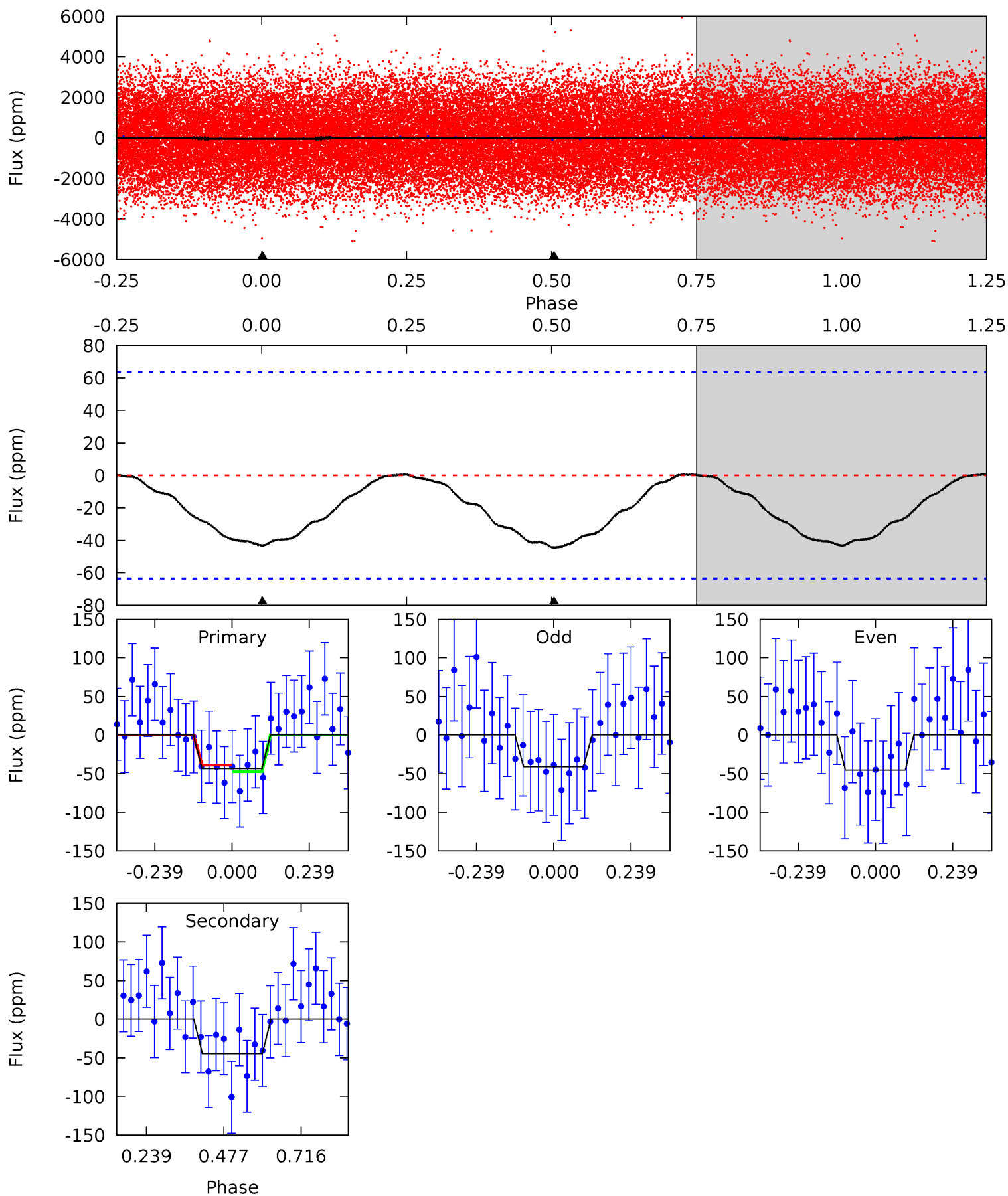
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.92	7.77	0	0	4.32	1.02	0.12	8.92	8.92	7.77	7.77	0.44	0.75	0.03	4.33



Alt Model-Shift Uniqueness Test

005560556-02, P = 0.772746 Days, E = 131.457989 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.98	3.06	0	0	4.38	1.18	0.05	2.98	2.98	3.06	3.06	0.15	0.96	0.01	0.30



Stellar Parameters For KIC 005560556

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7607^{+211}_{-317}	$4.183^{+0.101}_{-0.188}$	$-0.040^{+0.200}_{-0.350}$	$1.691^{+0.514}_{-0.277}$	$1.589^{+0.199}_{-0.243}$	$0.463^{+0.218}_{-0.239}$
	+3%/-4%	+2%/-4%	+500%/-875%	+30%/-16%	+13%/-15%	+47%/-52%
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 005560556-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-21 ± 3	$0.93^{+0.73}_{-0.59}$	4428^{+345}_{-261}	7162^{+7739}_{-2031}	$5.085^{+32.327}_{-3.606}$
Alt.	-45 ± 15	$1.33^{+0.79}_{-0.68}$	4427^{+347}_{-266}	7189^{+4959}_{-1797}	$4.993^{+17.283}_{-3.198}$

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

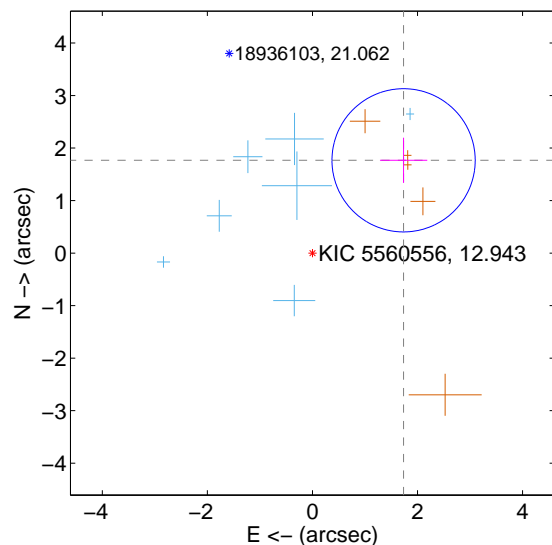
Supplemental centroid analysis for 005560556-02. Kepler magnitude: 12.94. Transit SNR 7.25

There are 7 quarters with good PRF difference image offsets

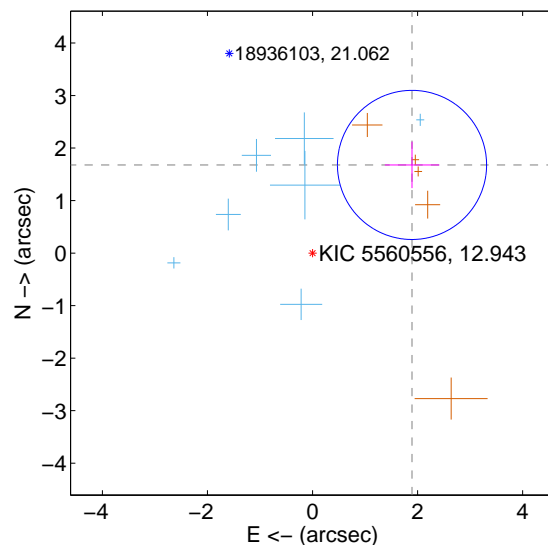
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.476 ± 0.454	5.45	-1.735 ± 0.450	1.766 ± 0.431
PRF-fit source offset from KIC position	2.531 ± 0.473	5.35	-1.894 ± 0.518	1.679 ± 0.441
photometric centroid source offset	0.23 ± 0.84	0.27	-0.21 ± 0.84	0.08 ± 0.81

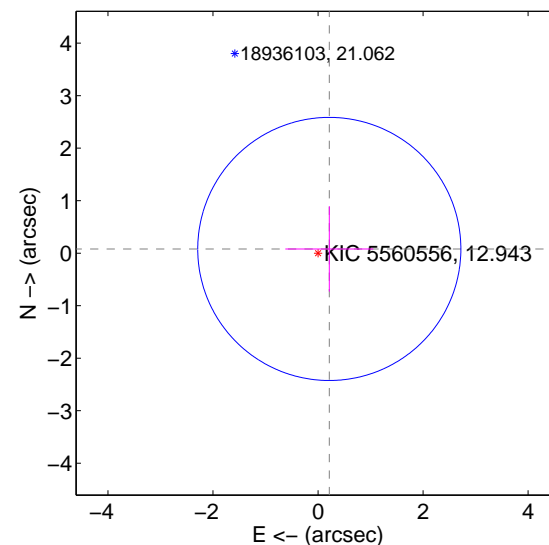
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

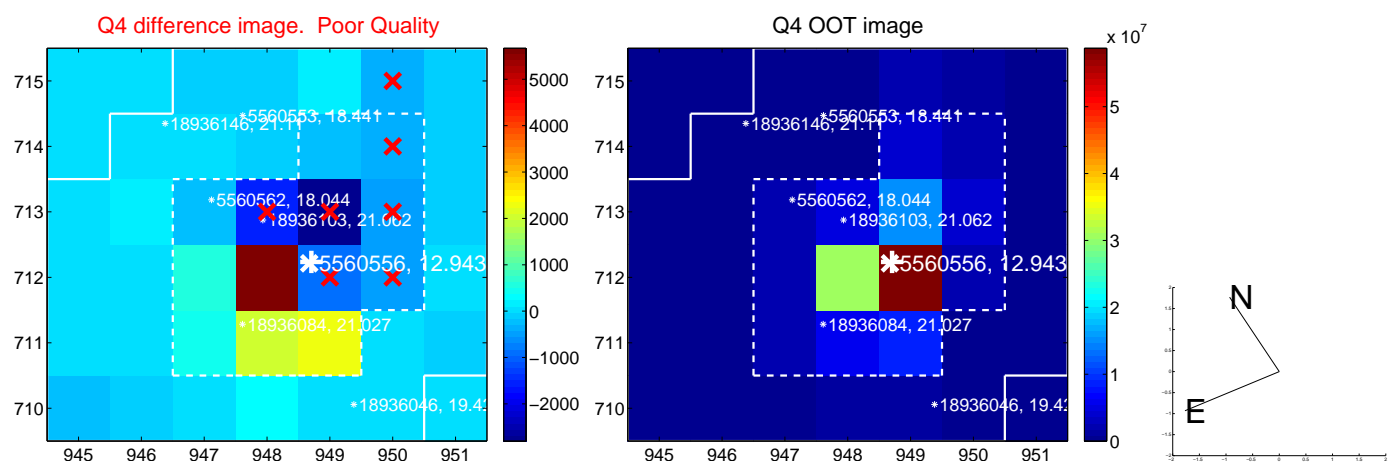
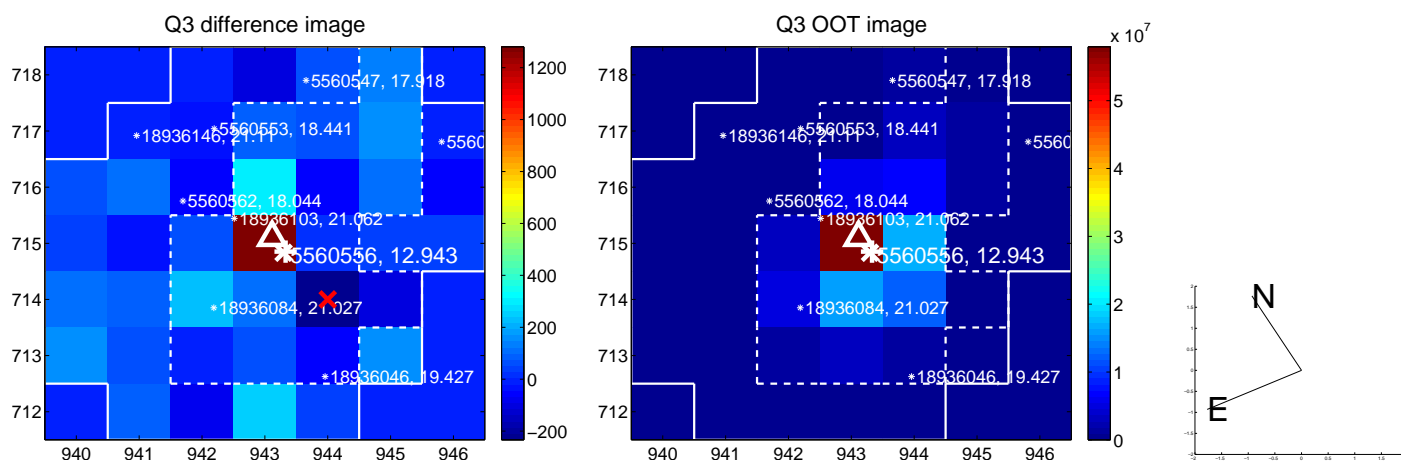
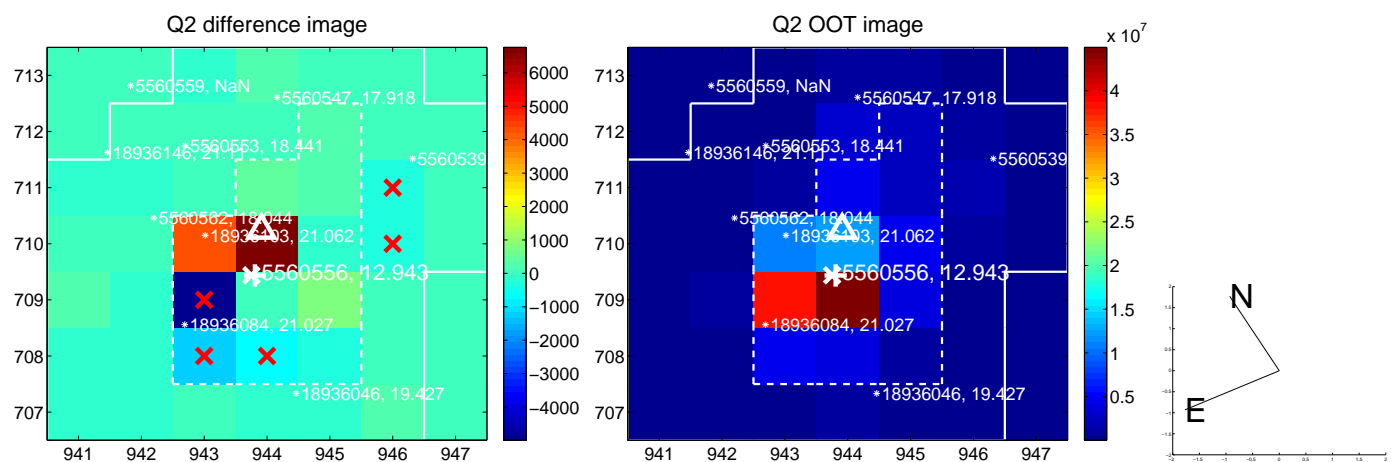
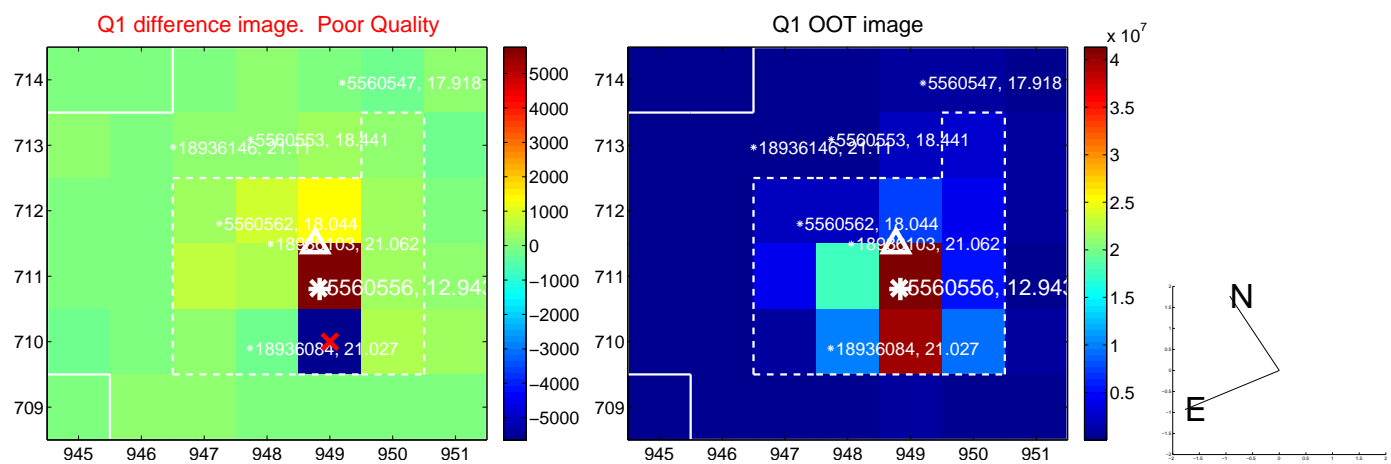


offset from photometric centroids

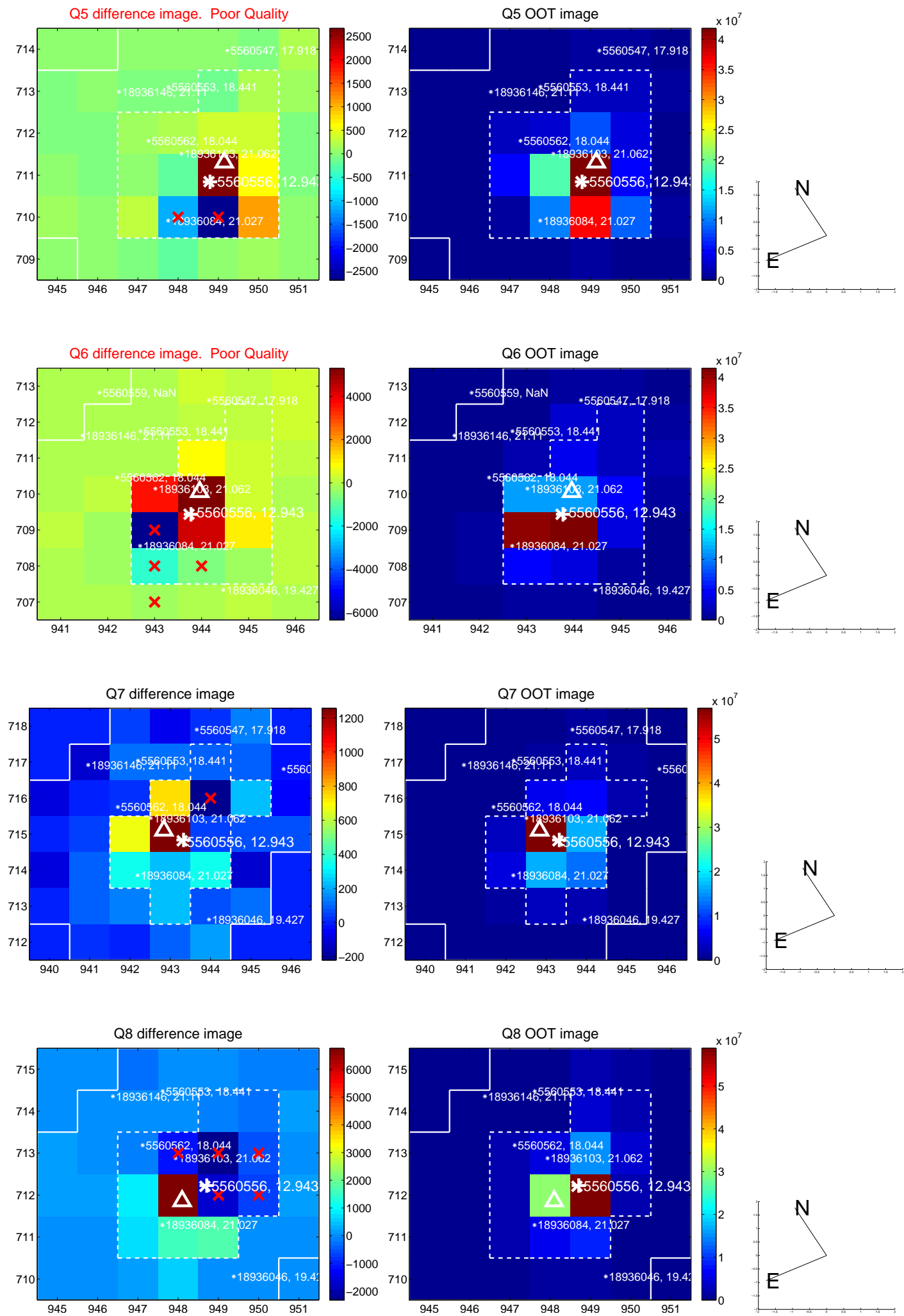


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

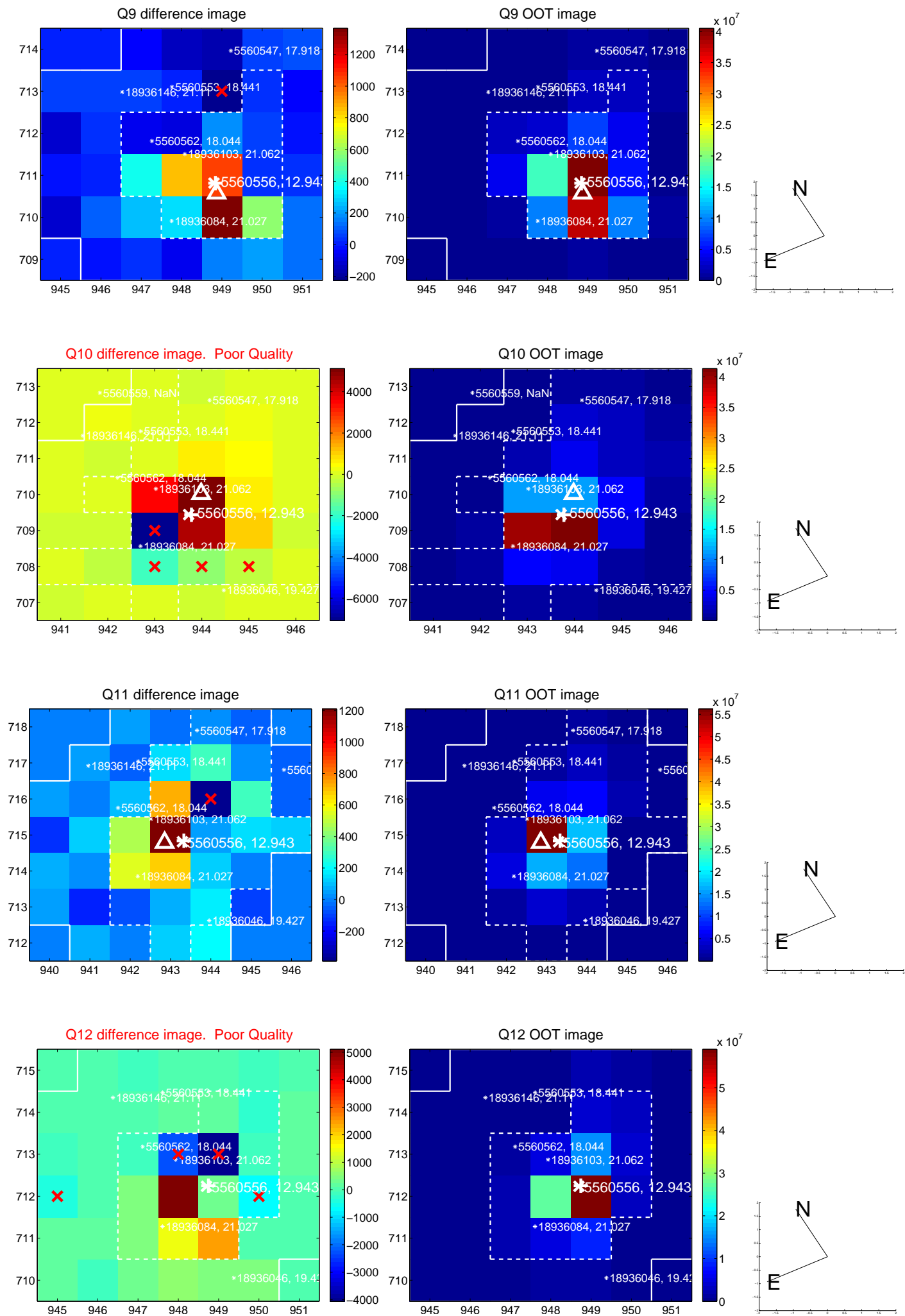
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



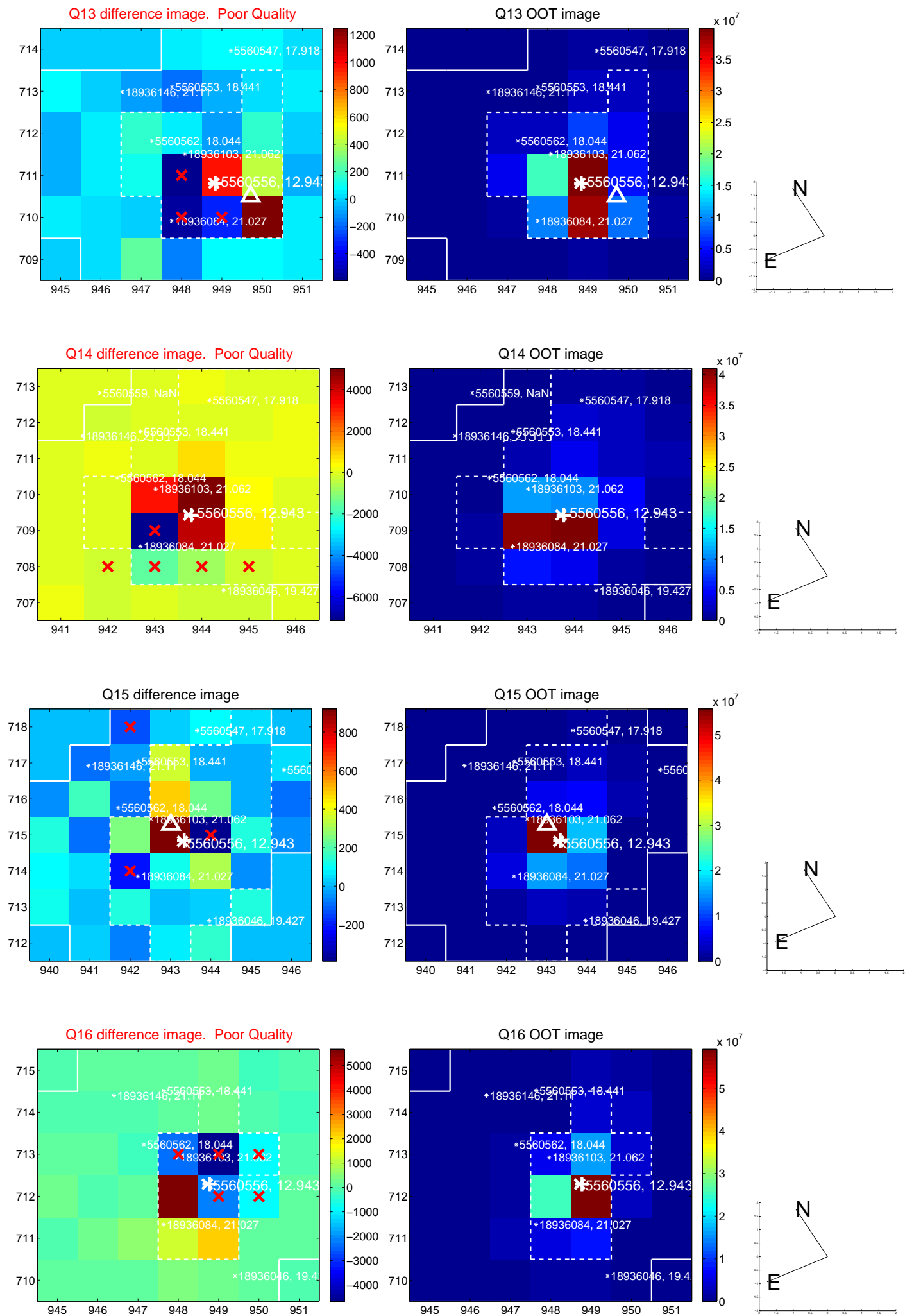
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



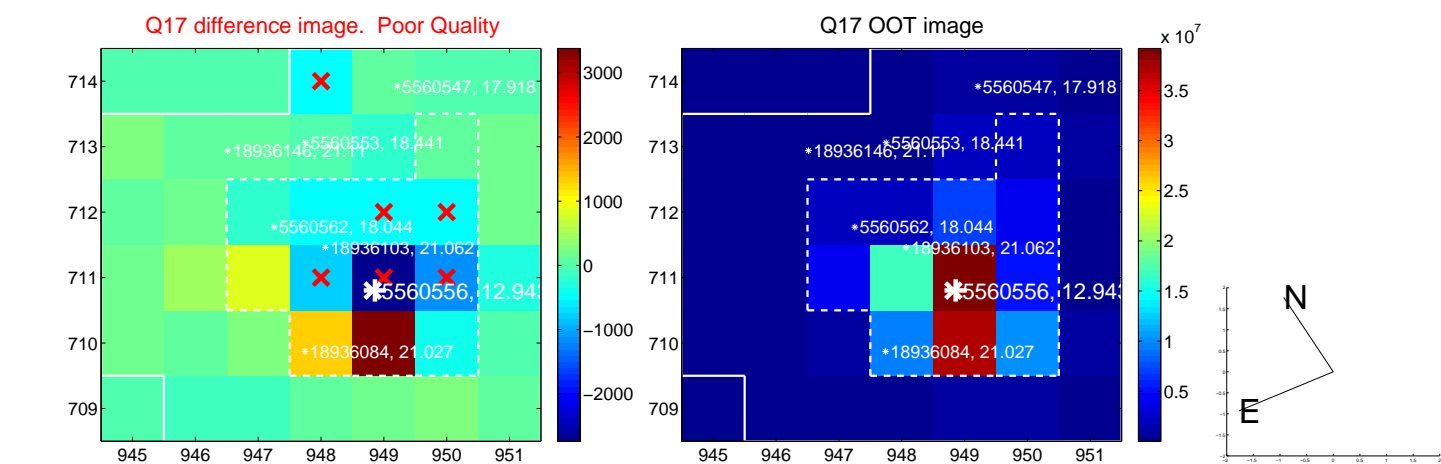
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



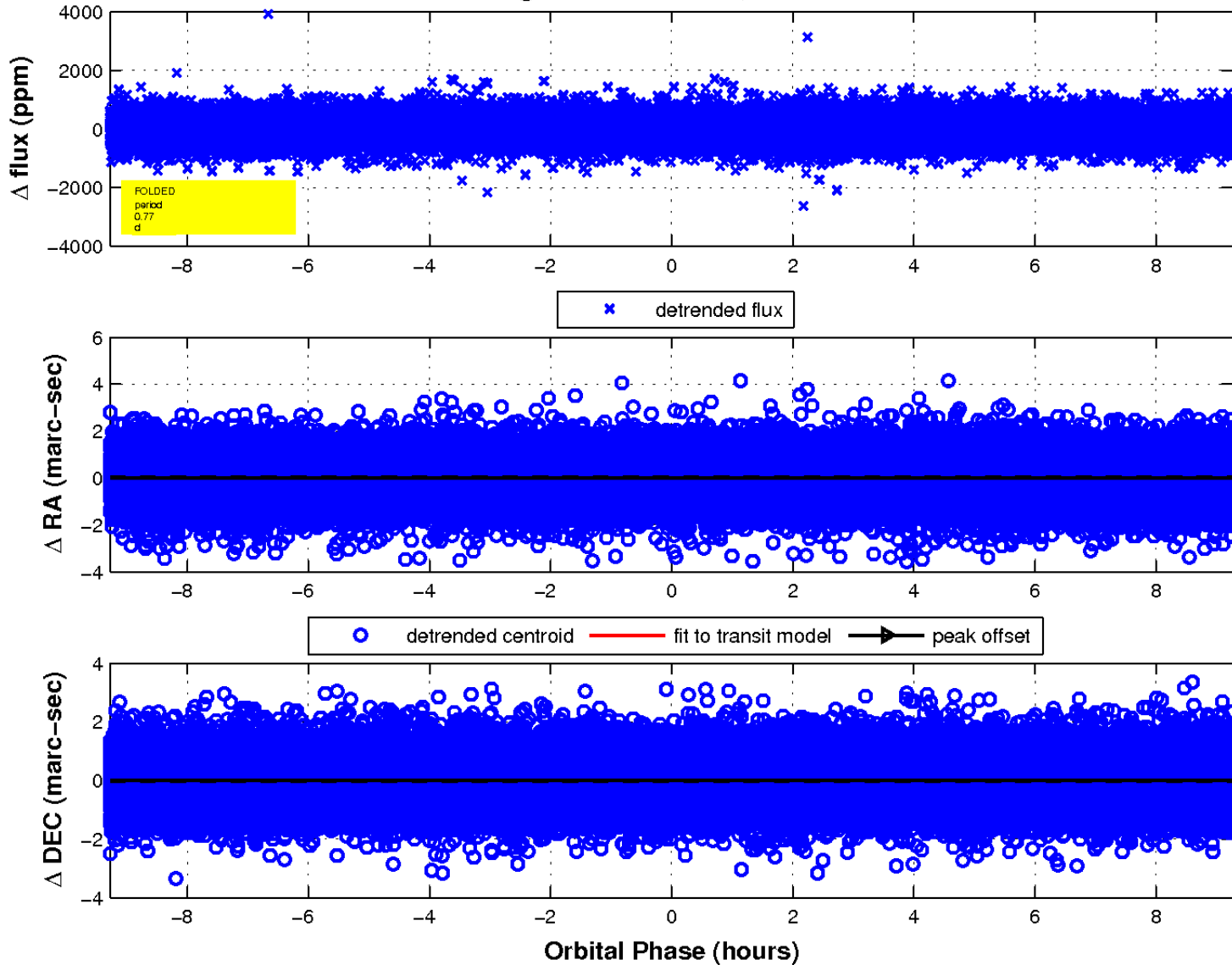
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

