

KIC 009955807

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})
009955807-01	OBS	No	8.896552	135.537187	48.4	21.086	9.2	7.0	2.91	6623	2.37	1572.34
009955807-02	OBS	No	8.896972	138.196969	88.7	25.876	7.3	10.1	2.91	6623	3.70	1572.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009955807-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009955807-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

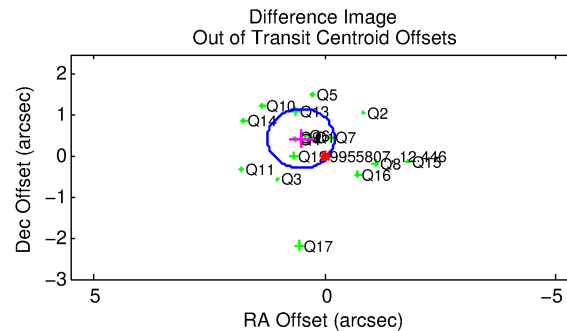
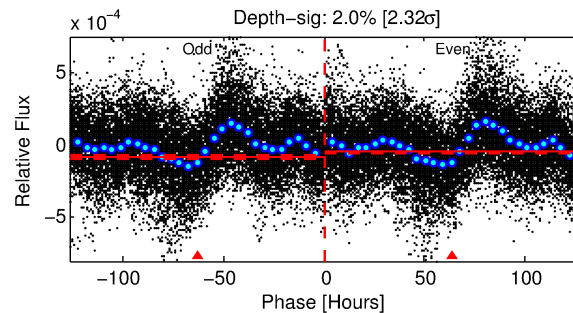
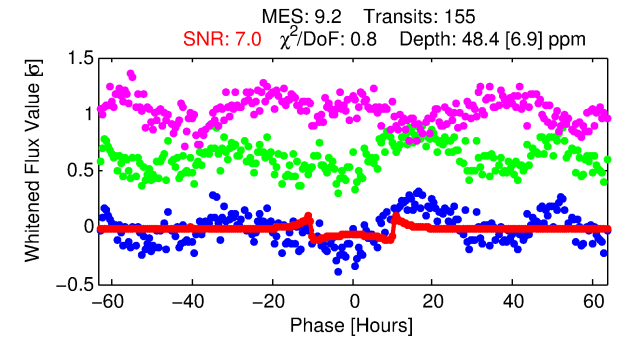
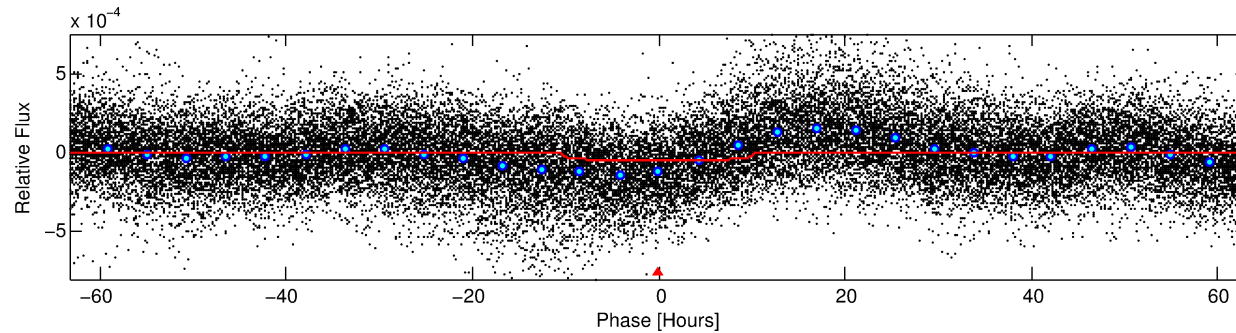
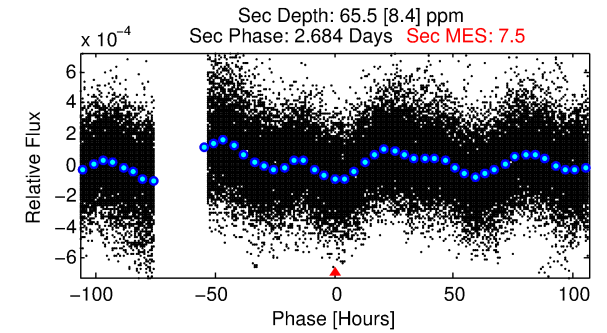
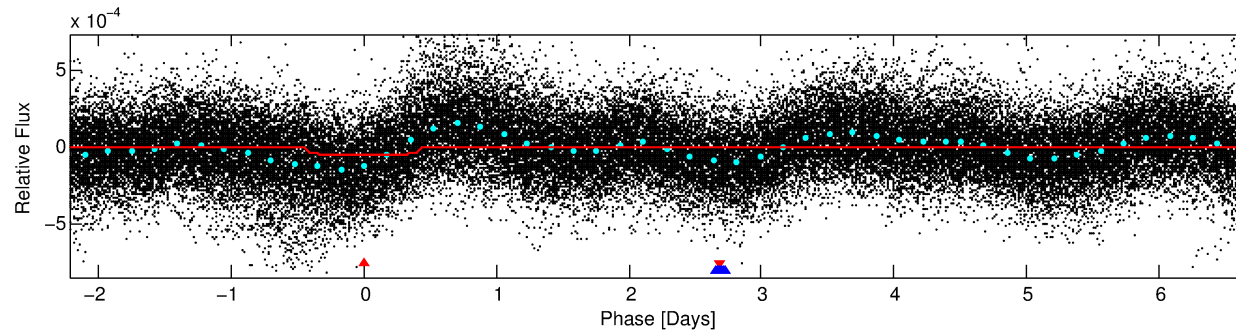
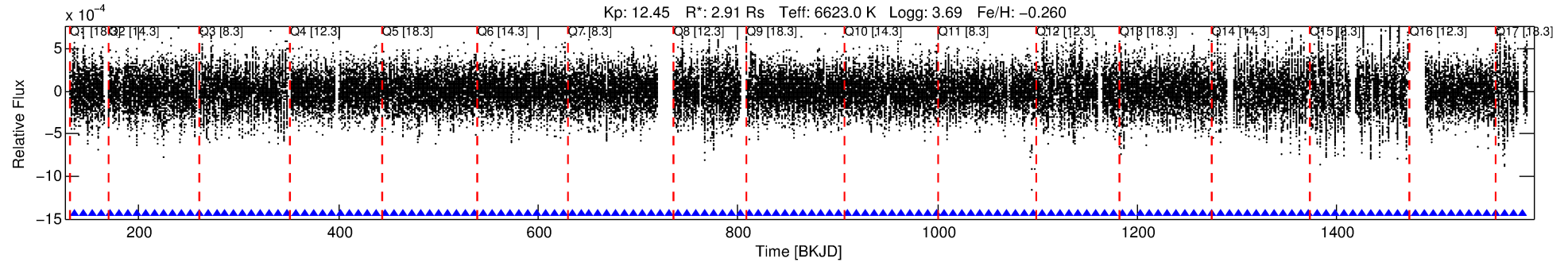
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009955807-01

No Significant Match Found

DV One-Page Summary

KIC: 9955807 Candidate: 1 of 2 Period: 8.897 d



DV Fit Results:

Period = 8.89655 [0.00015] d
Epoch = 135.5372 [0.0126] BKJD
Rp/R* = 0.0075 [0.0007]
a/R* = 1.70 [0.30]
b = 0.91 [0.05]
Seff = 1572.34 [884.86]
Teq = 1606 [226] K
Rp = 2.37 [0.90] Re
a = 0.0963 [0.0335] AU
Ag = 59.51 [35.27] [1.66σ]
Teffp = 6895 [434] K [10.81σ]

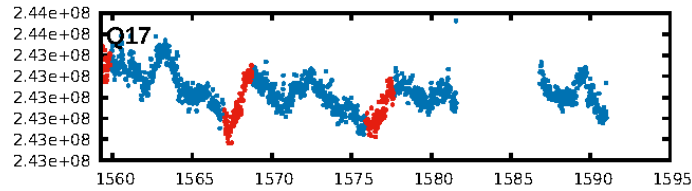
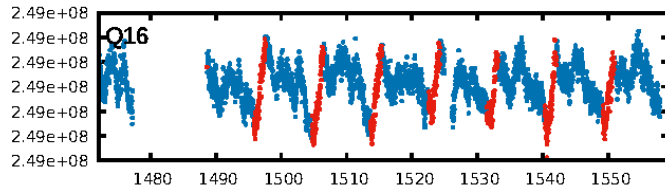
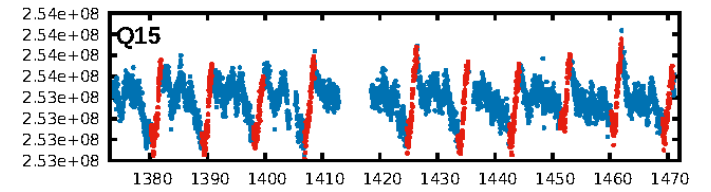
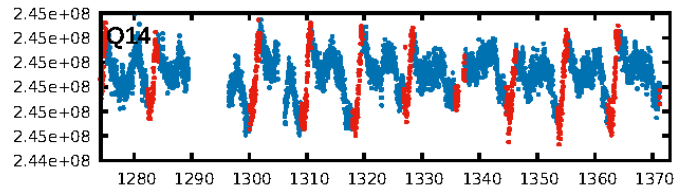
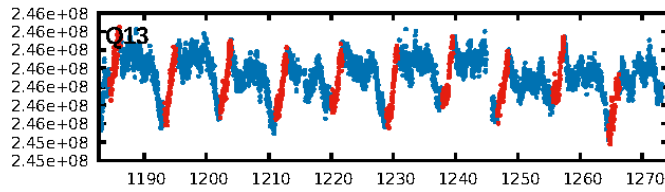
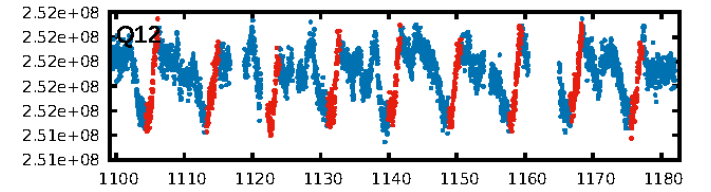
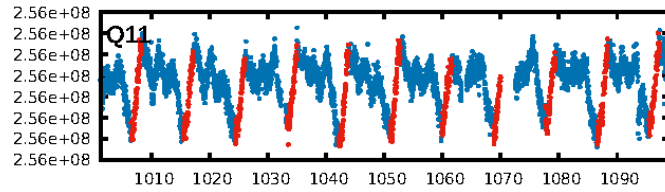
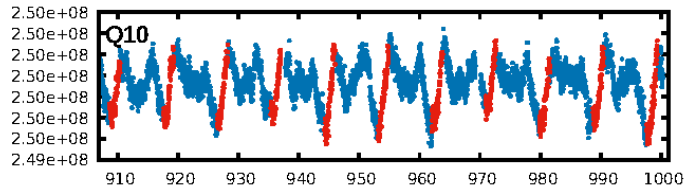
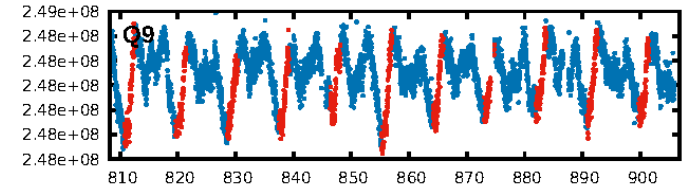
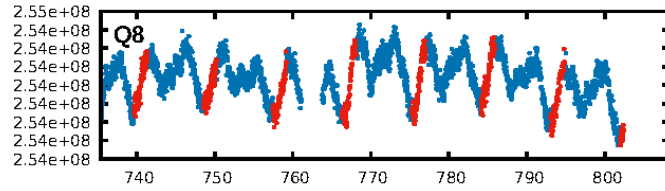
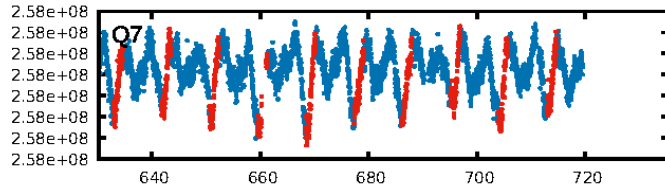
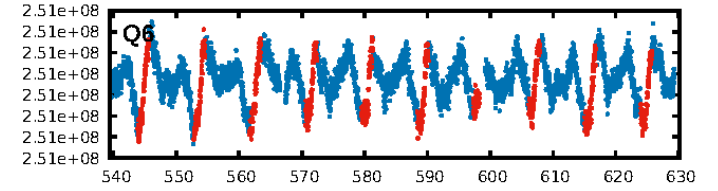
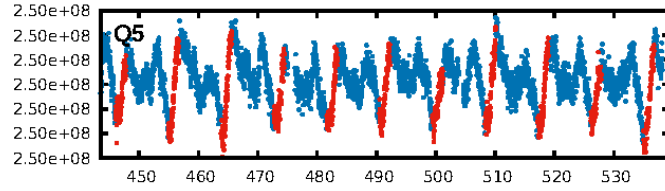
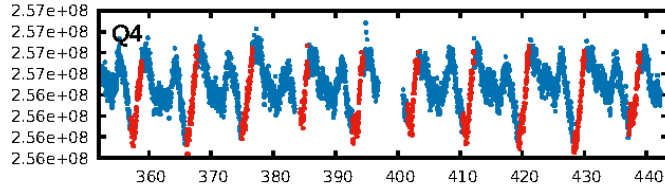
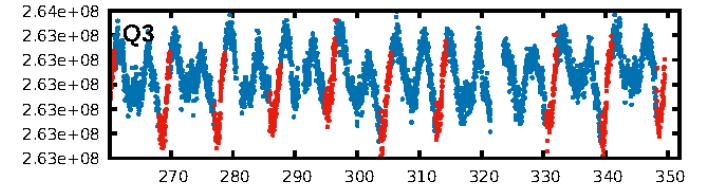
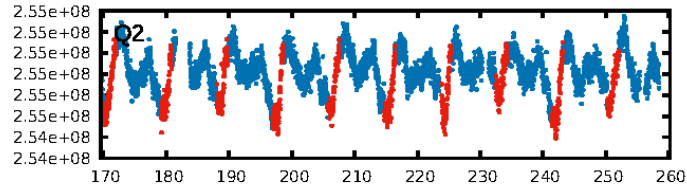
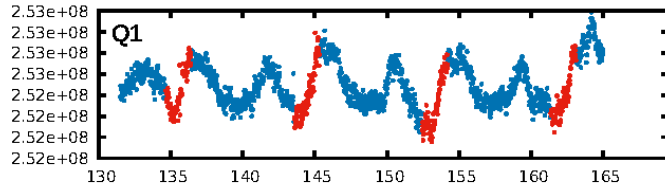
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.41e-18
RollingBand-fgt: 1.00 [148/148]
GhostDiagnostic-chr: 1.538
Centroid-sig: 0.0%
Centroid-so: 1.731 arcsec [3.56σ]
OotOffset-rm: 0.676 arcsec [2.79σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.550 arcsec [2.03σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

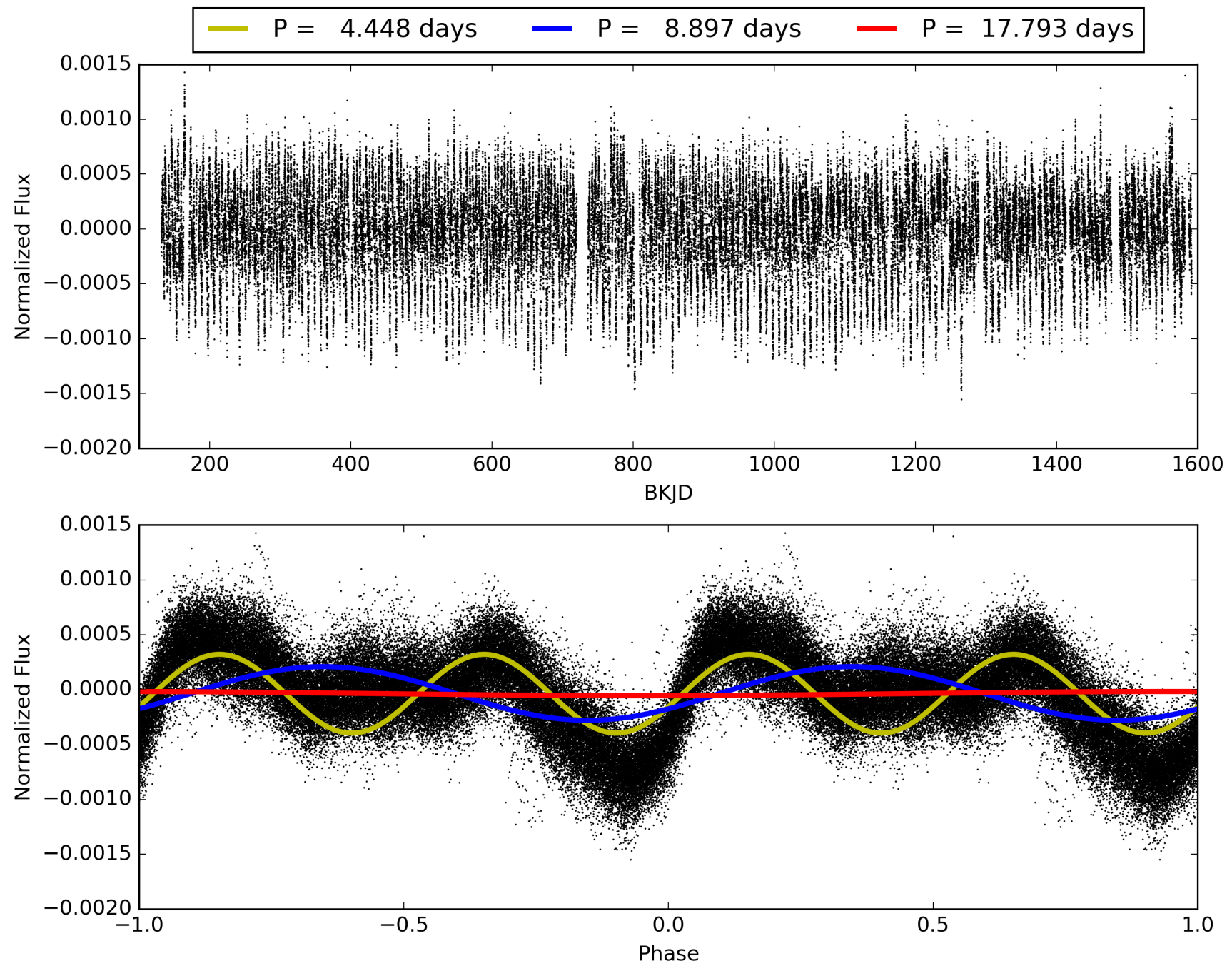
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009955807-01, PDC Light Curves

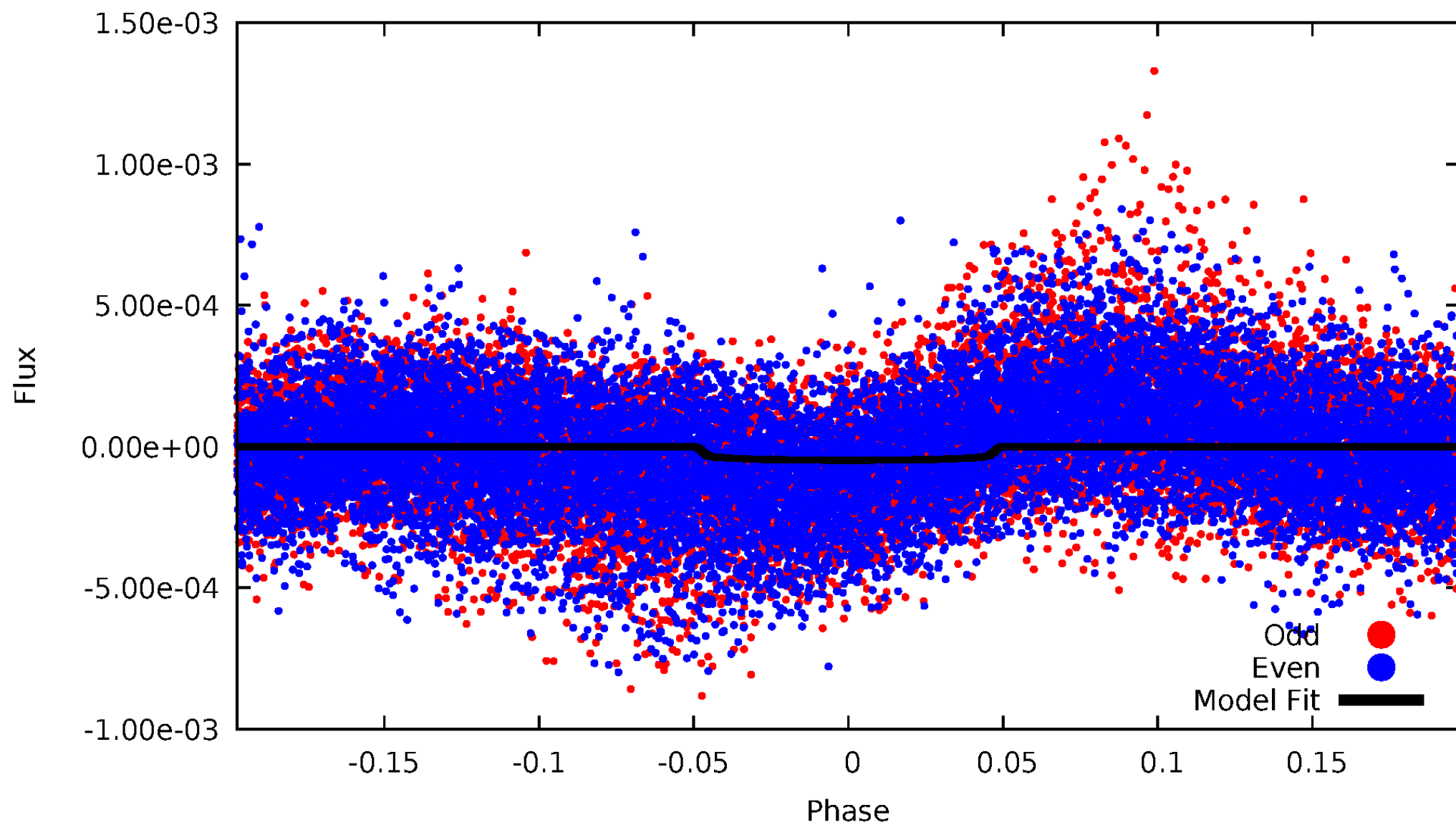


TCE 009955807-01



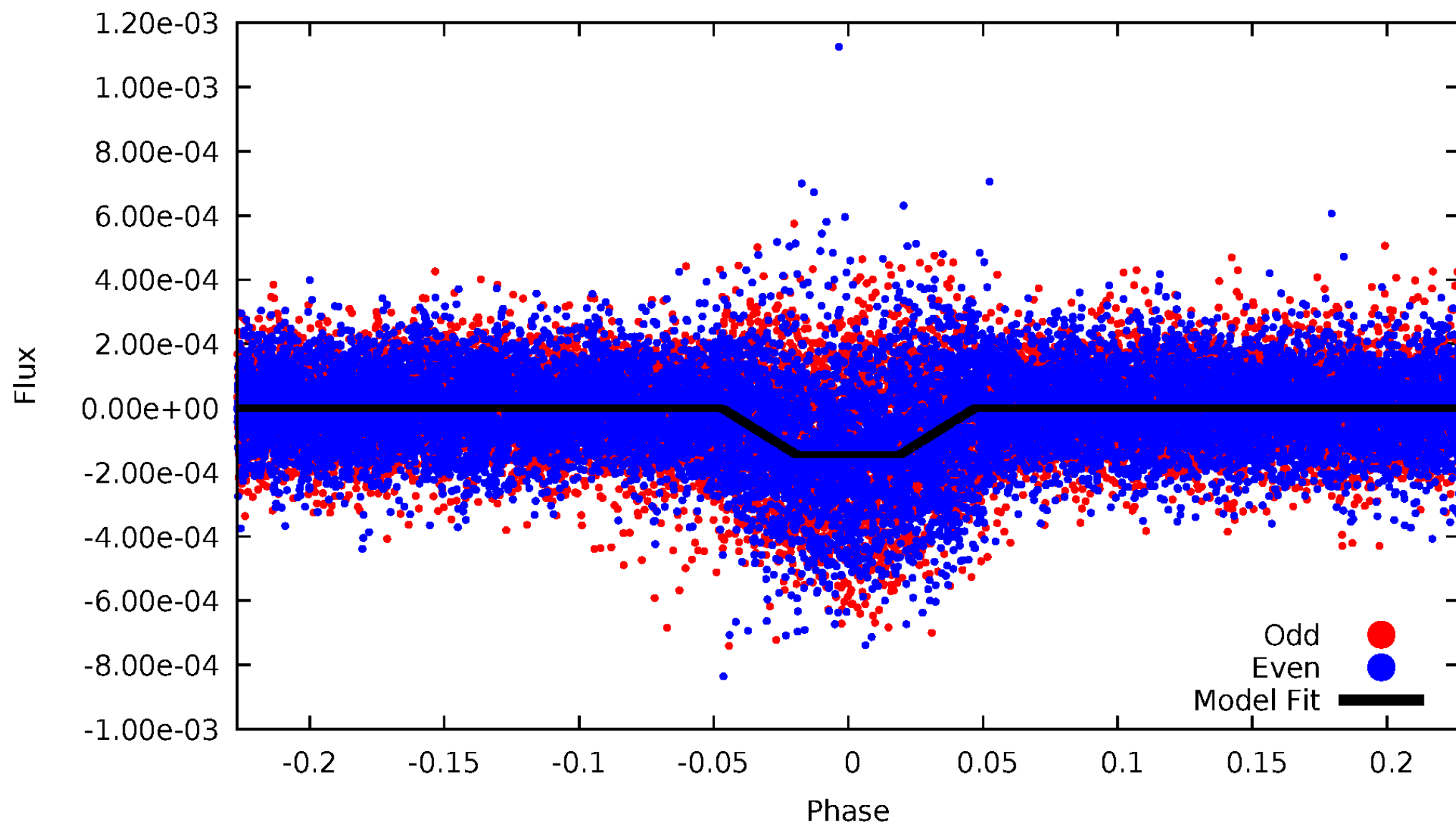
DV Odd/Even

TCE 009955807-01

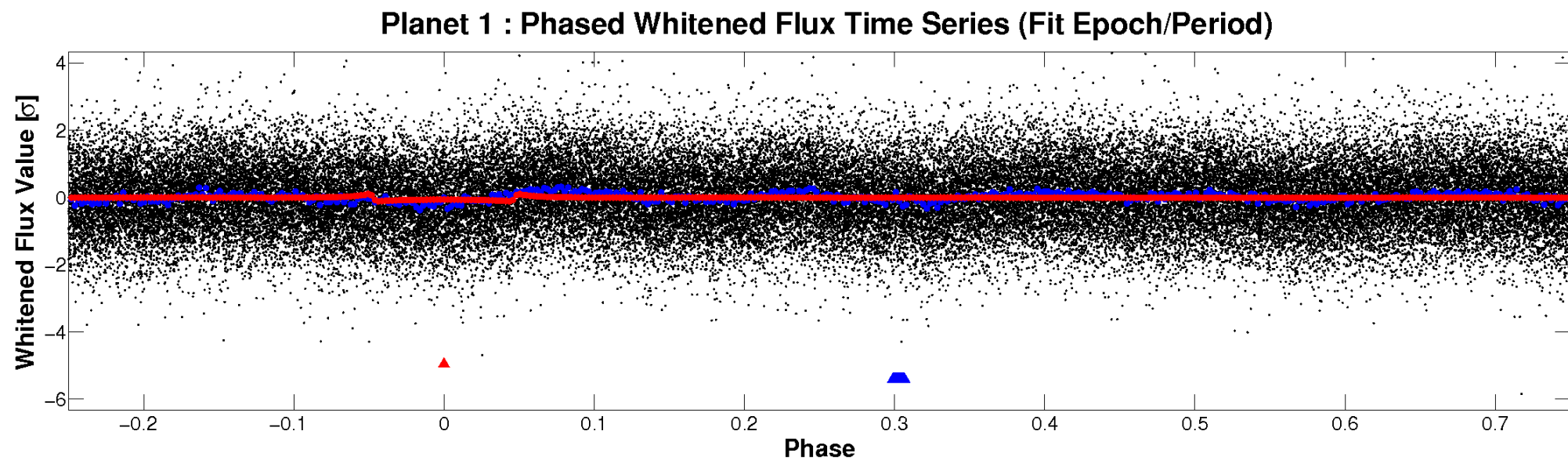
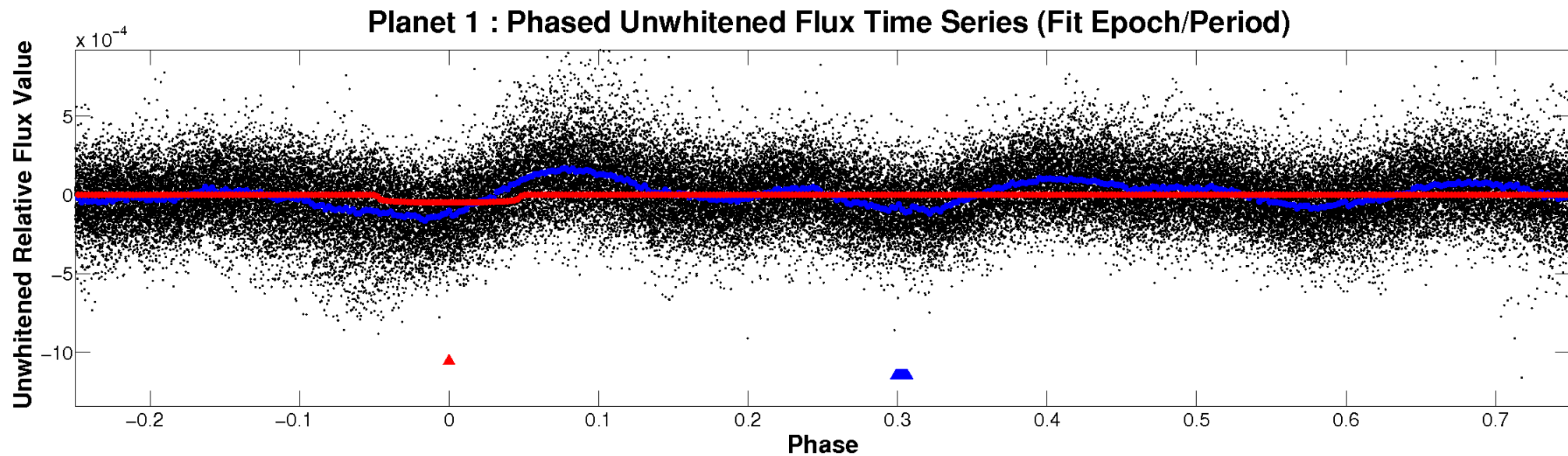


ALT Odd/Even

TCE 009955807-01

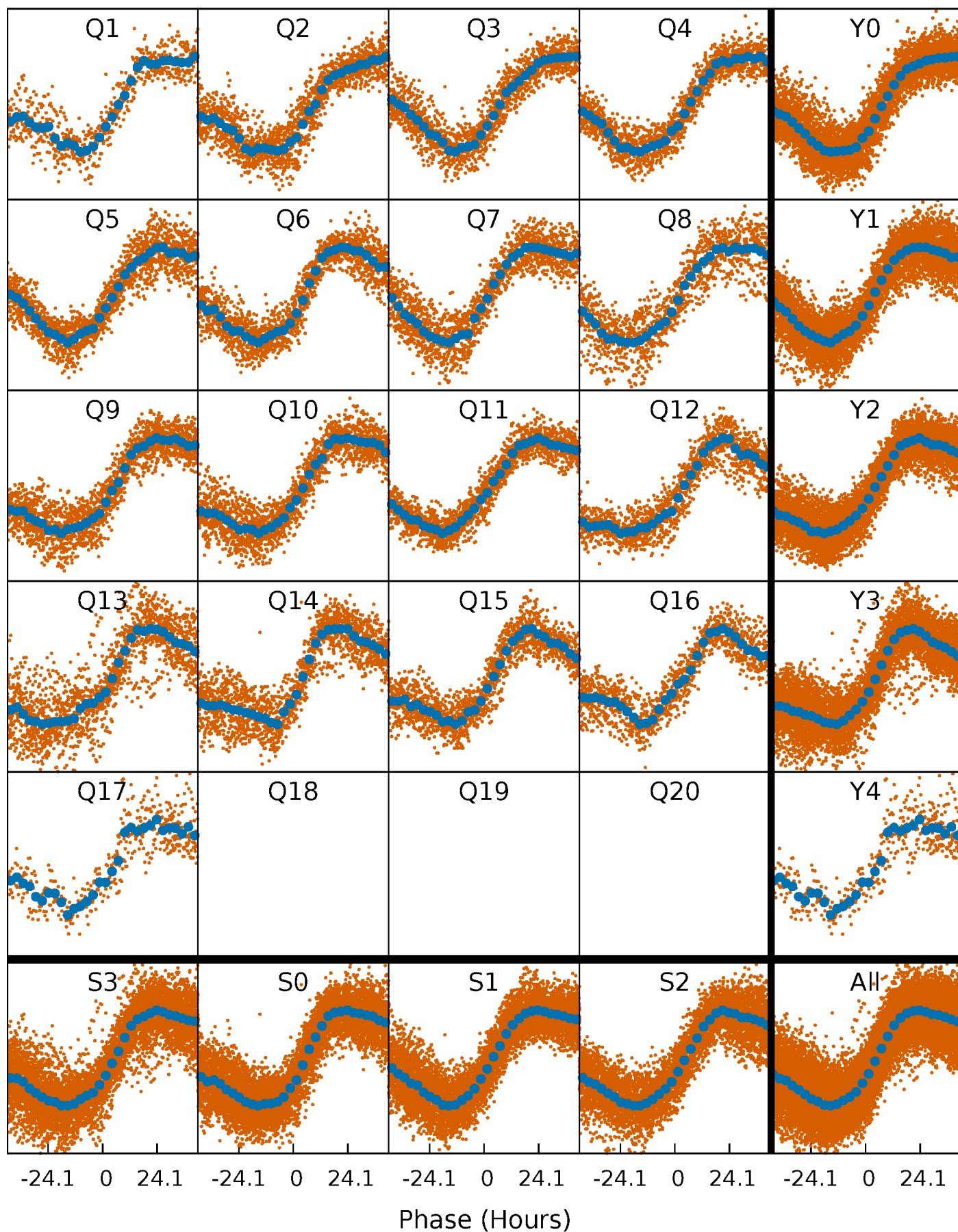


Non-Whitened Vs. Whitened Light Curve



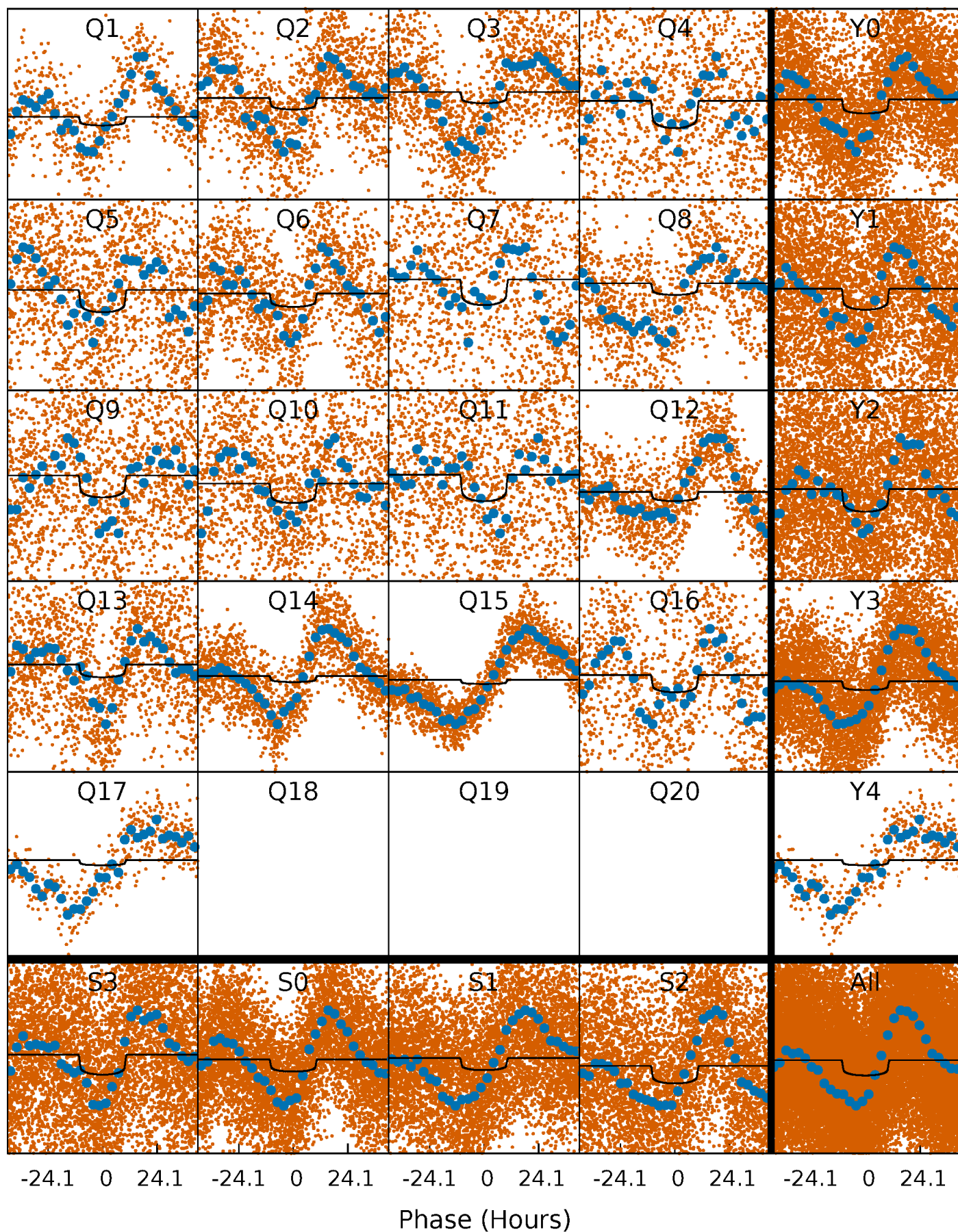
PDC Quarter-Phased Transit Curves

TCE 009955807-01 P= 8.896552 Days $T_0=135.537187$ (BKJD)



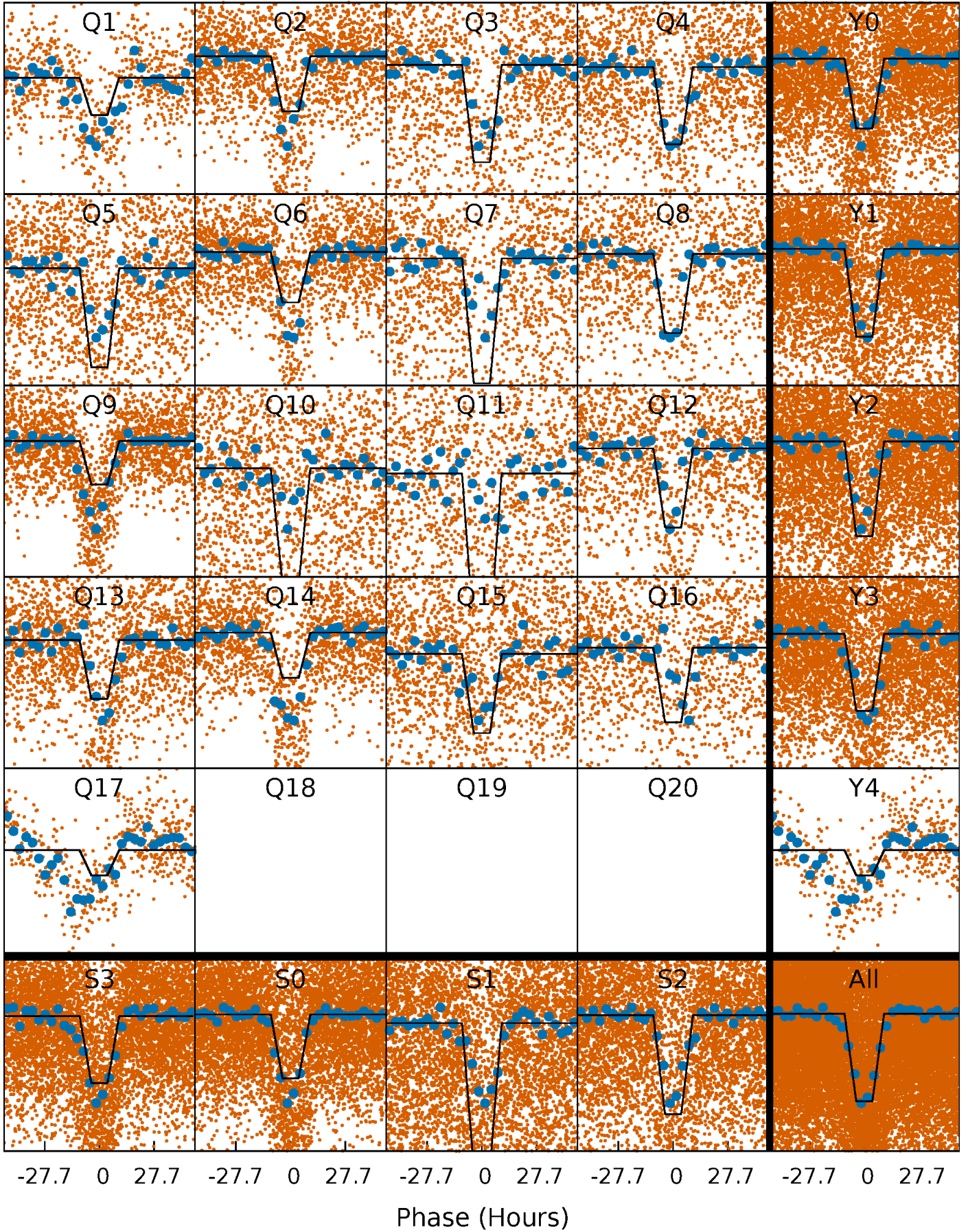
DV Quarter-Phased Transit Curves

TCE 009955807-01 P= 8.896552 Days $T_0=135.537187$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

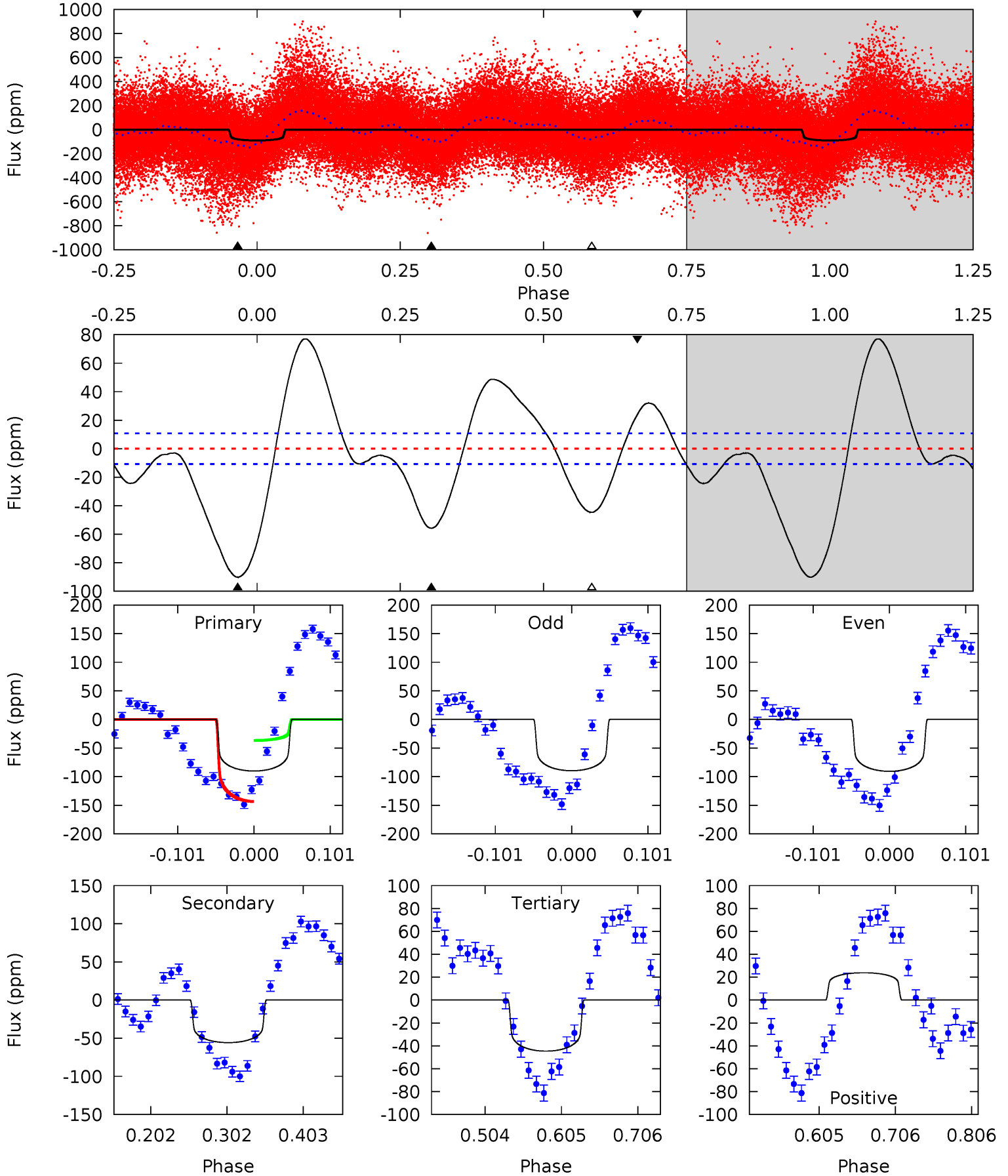
TCE 009955807-01 P= 8.896711 Days $T_0=135.484662$ (BKJD)



DV Model-Shift Uniqueness Test

009955807-01, P = 8.896552 Days, E = 126.640635 Days

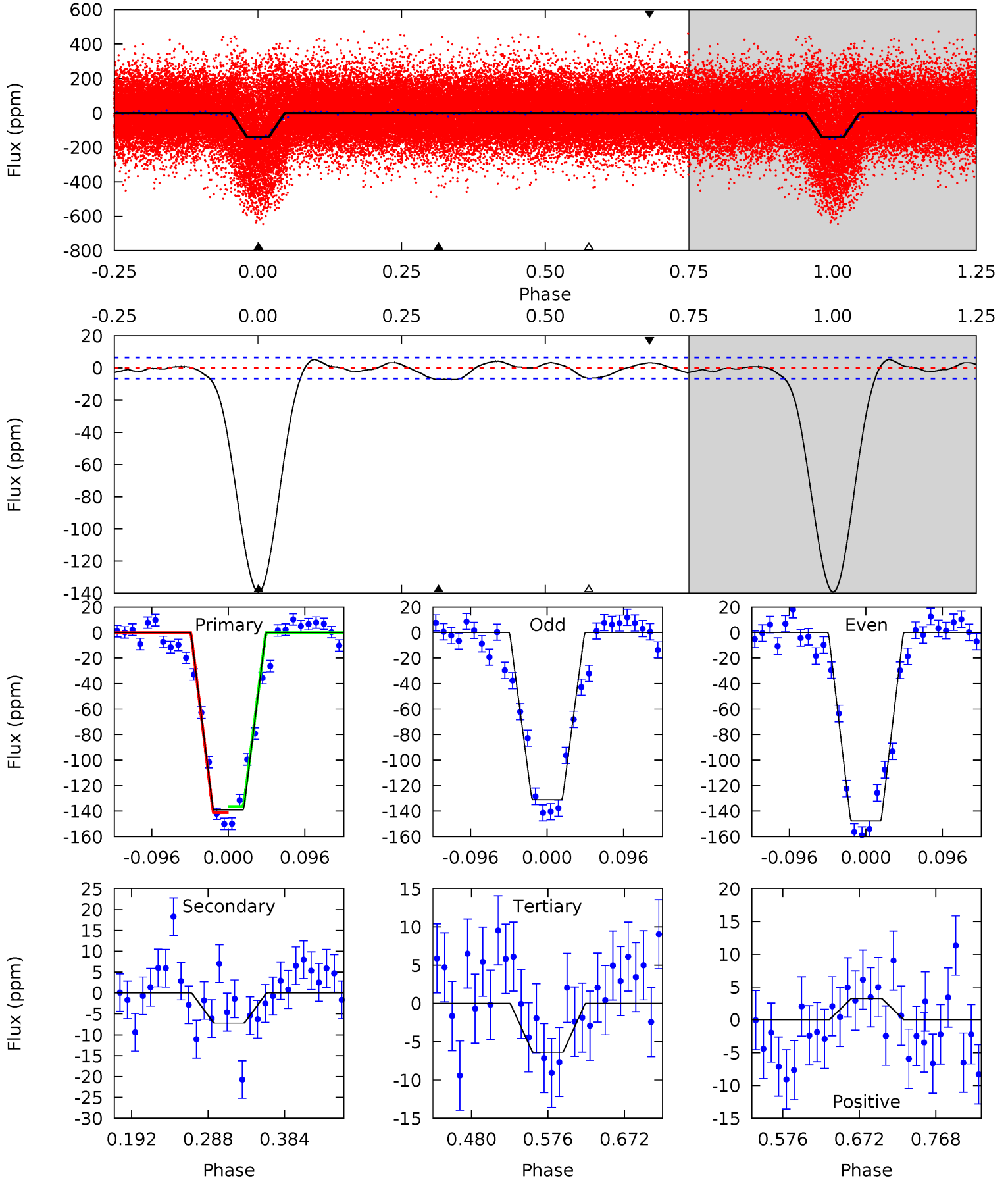
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.3	23.7	18.9	10.1	4.56	1.64	13.0	19.3	28.1	4.73	13.5	0.21	1.02	0.46	22.7



Alt Model-Shift Uniqueness Test

009955807-01, P = 8.896711 Days, E = 126.587951 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.9	5.03	4.45	2.27	4.57	1.66	1.75	92.5	94.7	0.58	2.76	5.77	1.08	0.04	1.74



Stellar Parameters For KIC 009955807

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6623^{+159}_{-199}	$3.688^{+0.320}_{-0.080}$	$-0.260^{+0.300}_{-0.250}$	$2.908^{+0.461}_{-1.077}$	$1.506^{+0.252}_{-0.308}$	$0.086^{+0.185}_{-0.023}$
	+2%/-3%	+9%/-2%	+115%/-96%	+16%/-37%	+17%/-20%	+215%/-27%
Source	PHO1	FLK73	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 009955807-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-56 ± 2	$2.24^{+0.40}_{-0.46}$	2180^{+125}_{-197}	6608^{+416}_{-381}	57^{+30}_{-15}
Alt.	-7 ± 1	$3.72^{+0.49}_{-0.70}$	2191^{+125}_{-195}	3510^{+164}_{-168}	$2.830^{+1.380}_{-0.834}$

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

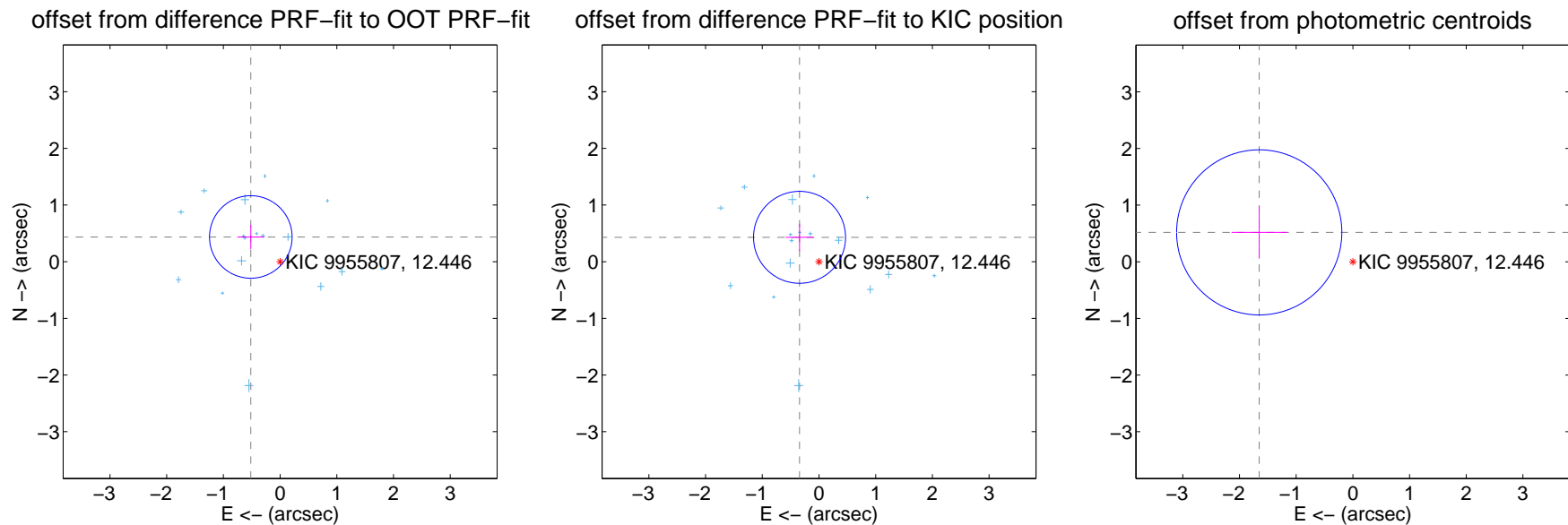
DV Centroid Data

Supplemental centroid analysis for 009955807-01. Kepler magnitude: 12.45. Transit SNR 7.01

There are 17 quarters with good PRF difference image offsets

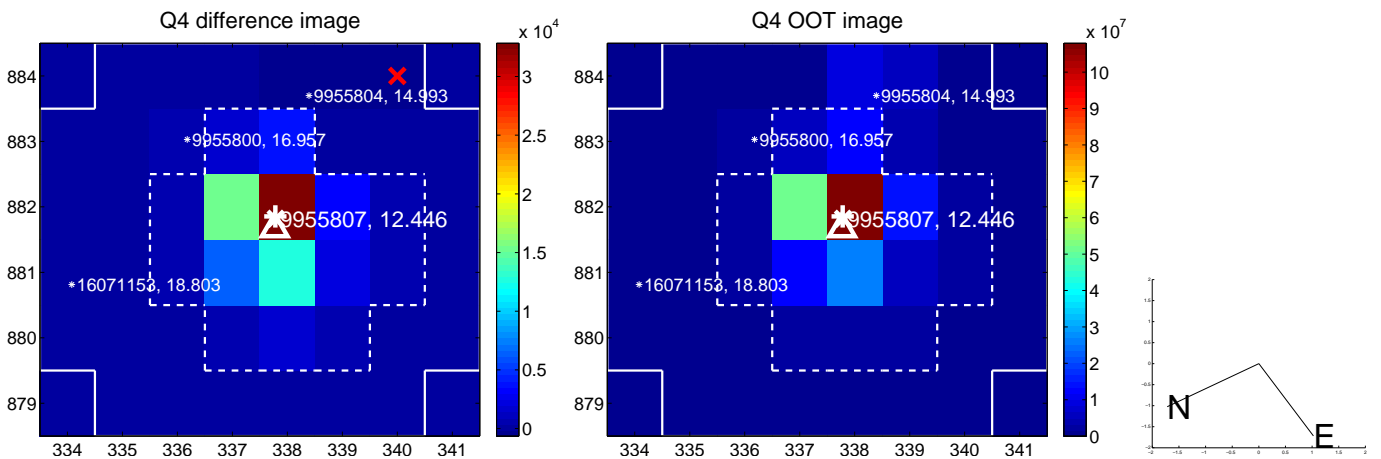
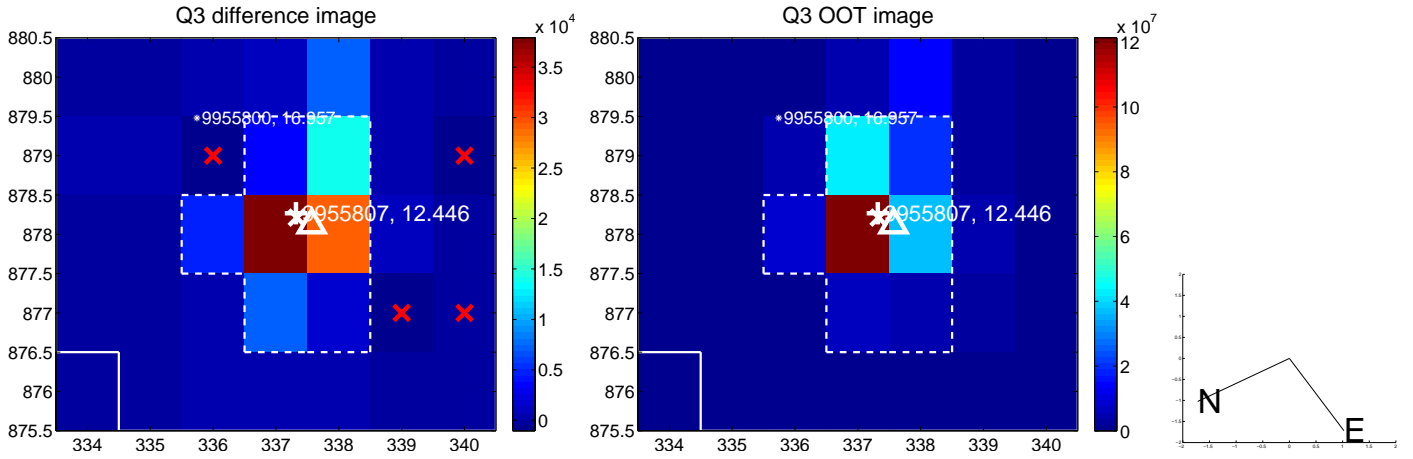
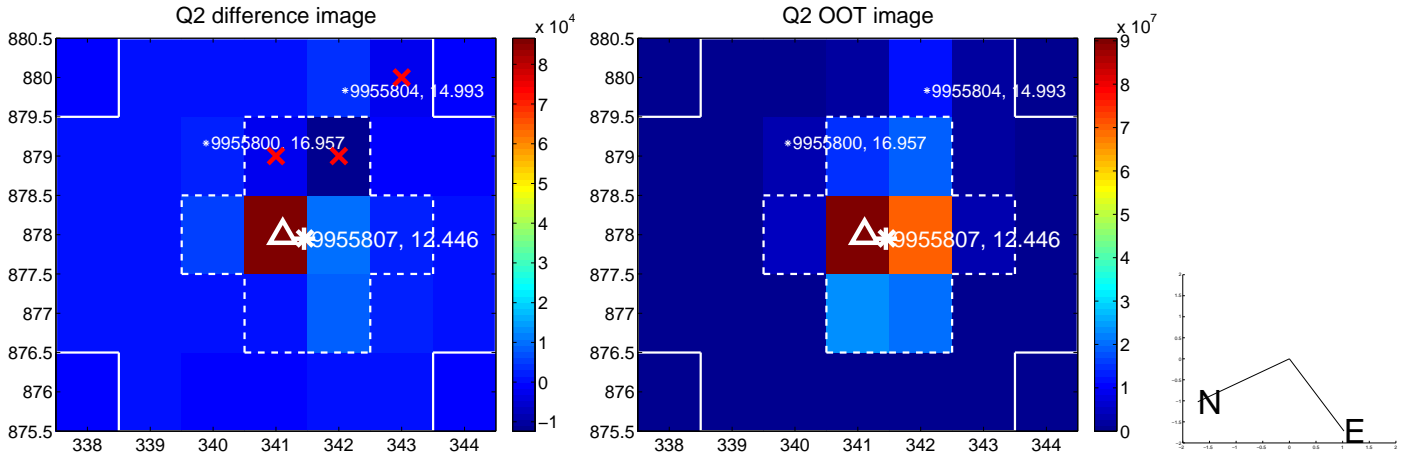
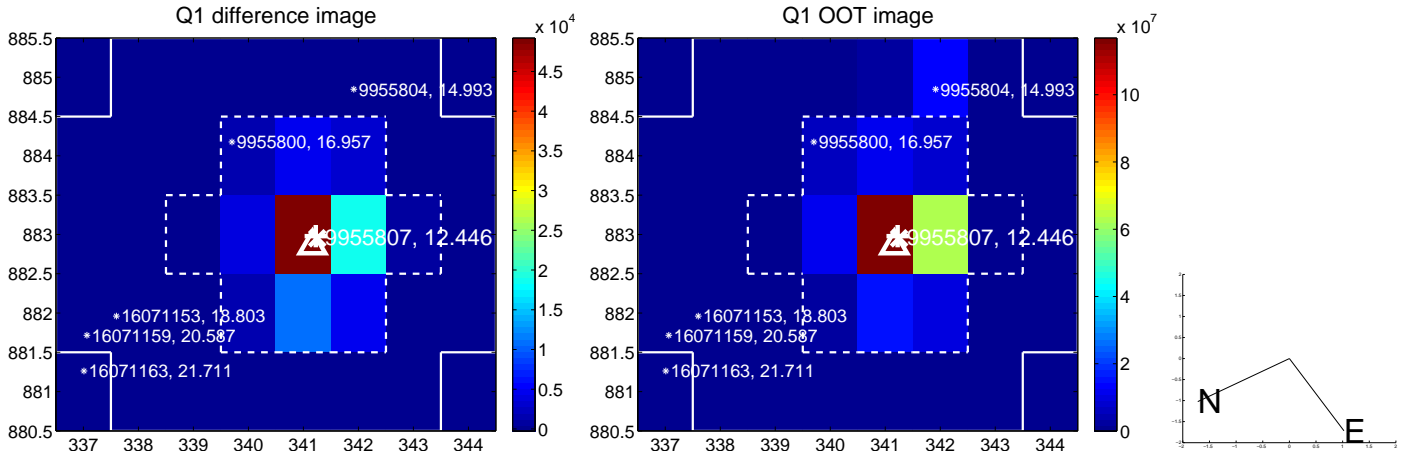
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.676 ± 0.243	2.79	0.517 ± 0.238	0.436 ± 0.212
PRF-fit source offset from KIC position	0.550 ± 0.270	2.03	0.343 ± 0.247	0.430 ± 0.241
photometric centroid source offset	1.73 ± 0.49	3.56	1.65 ± 0.49	0.52 ± 0.46

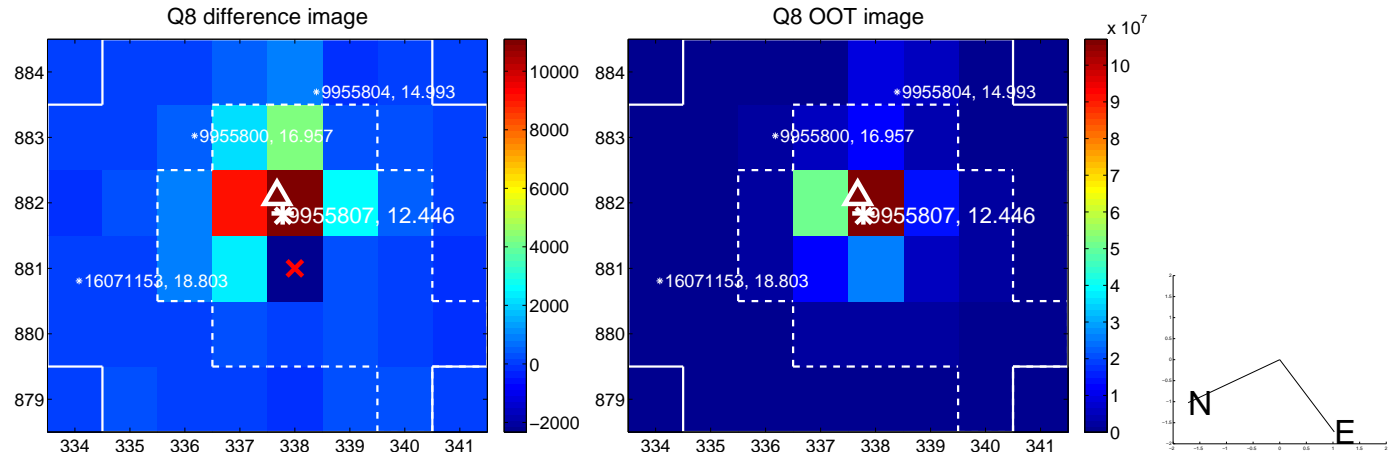
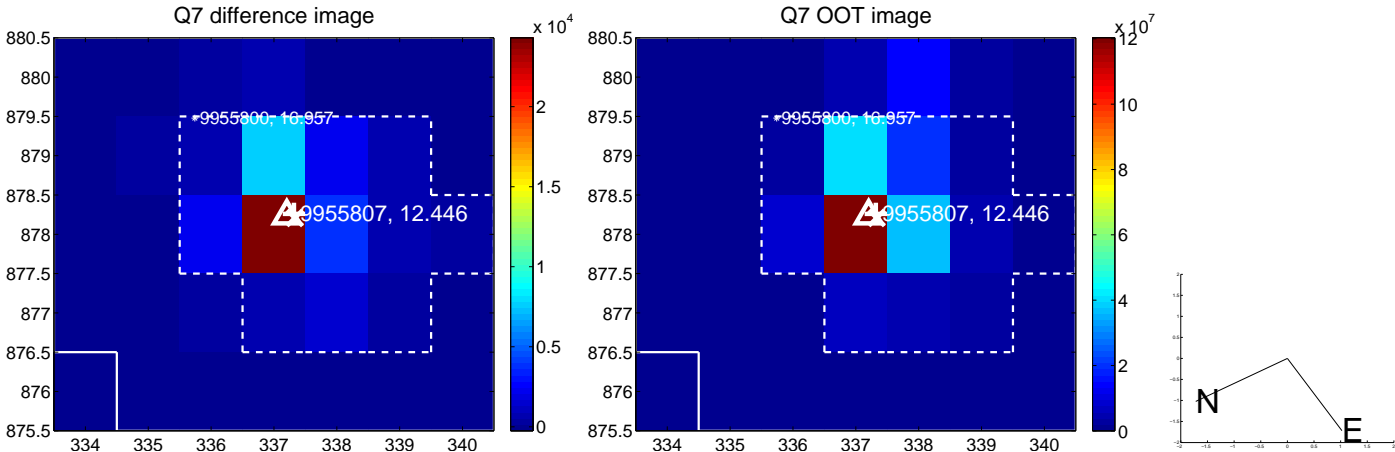
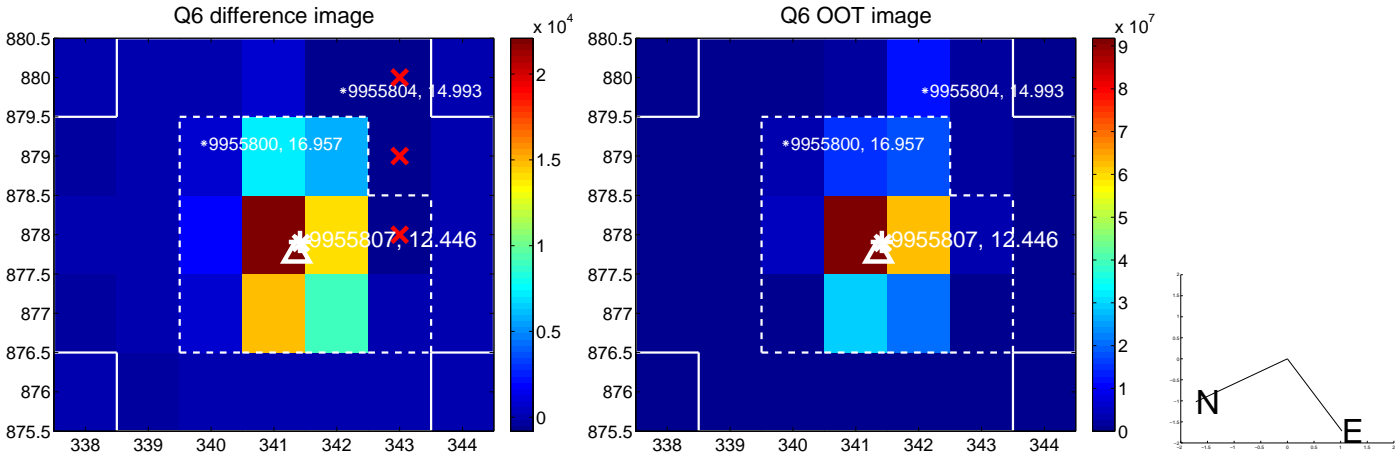
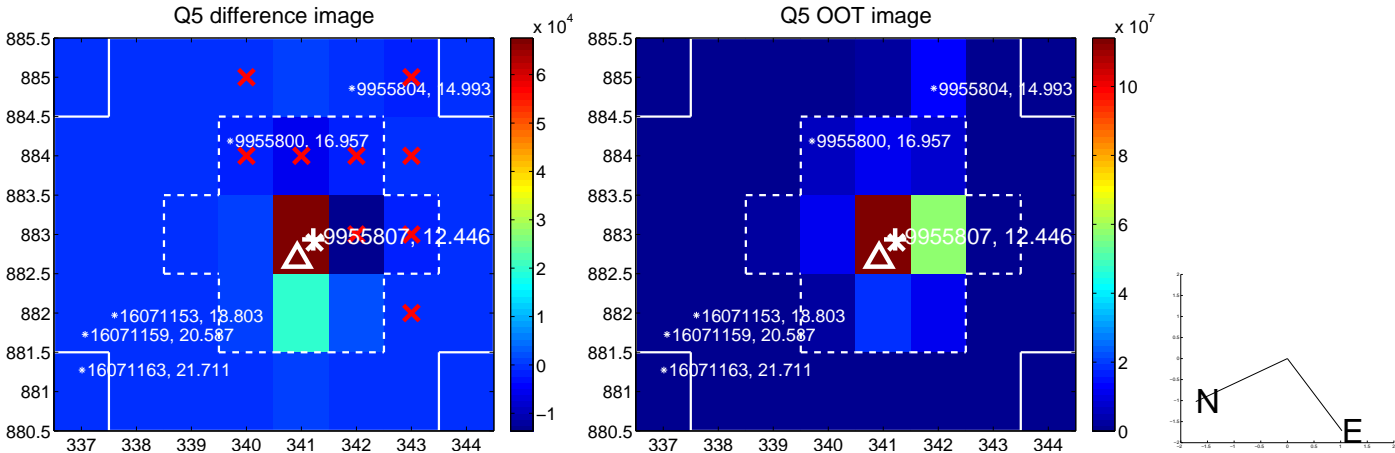


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

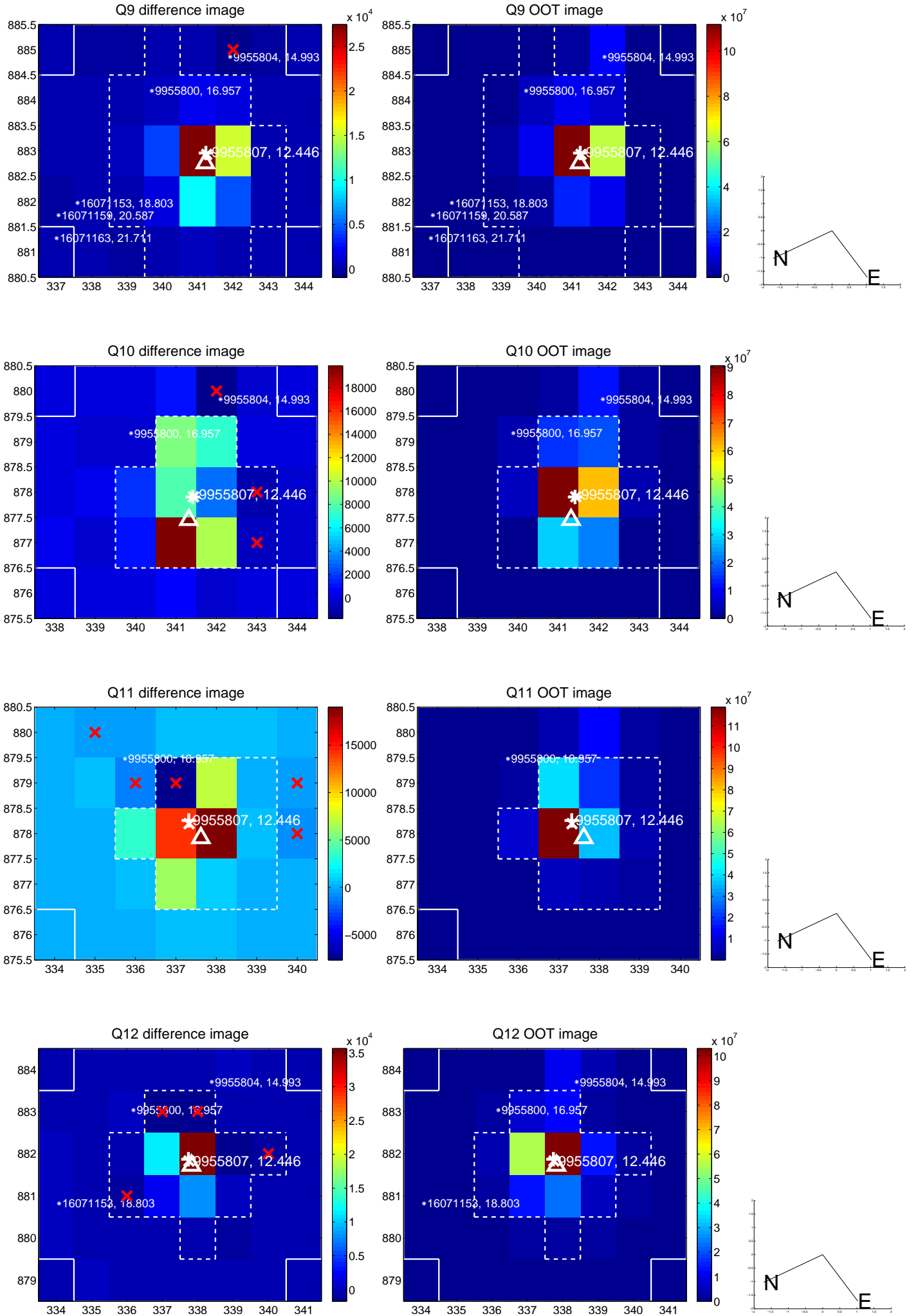
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



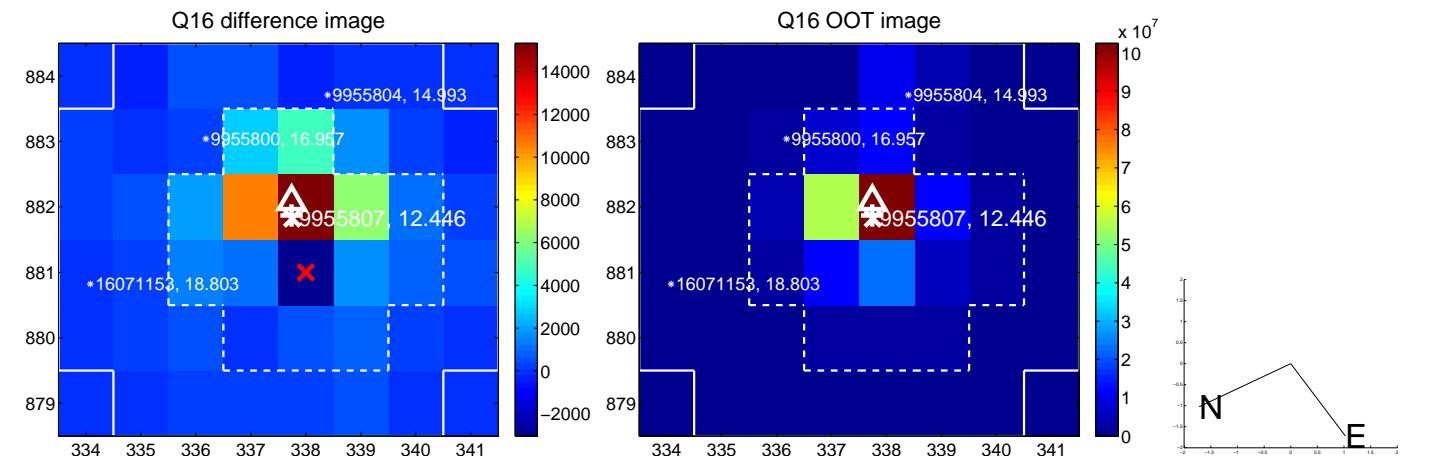
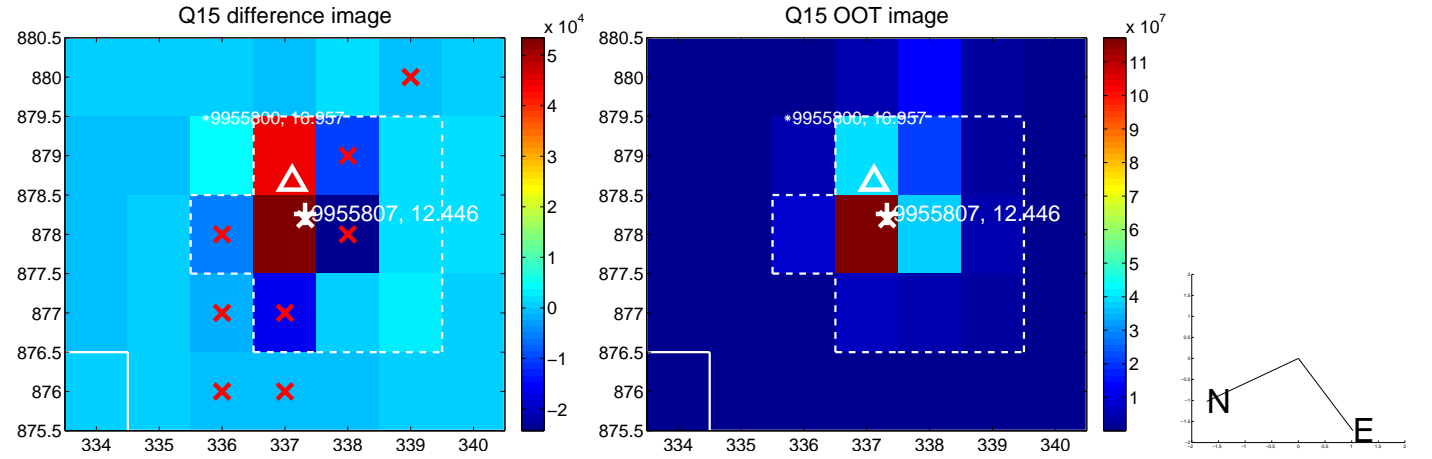
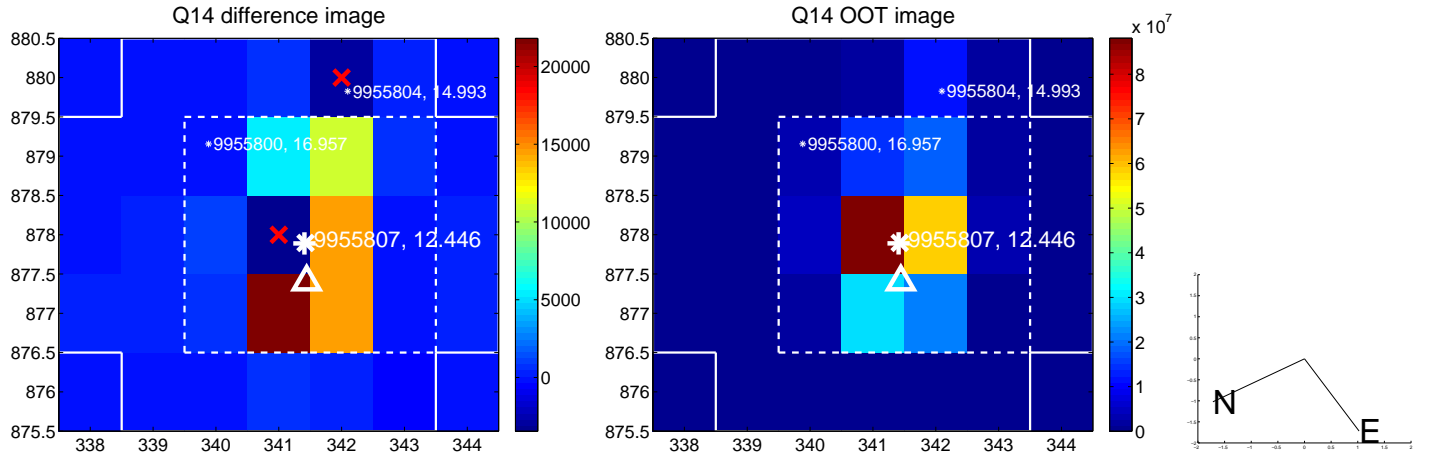
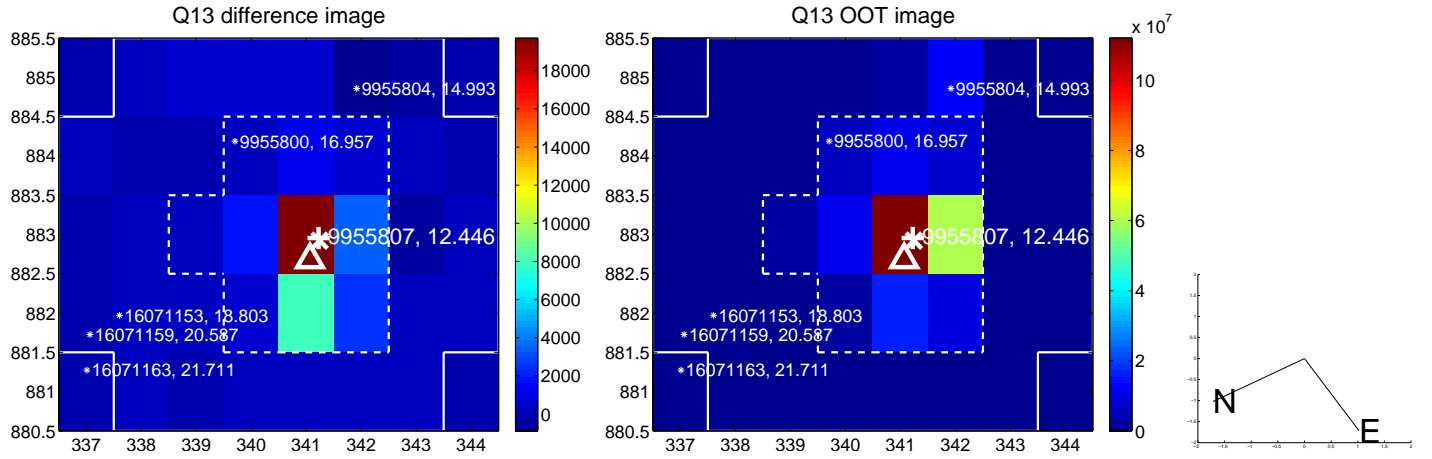
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



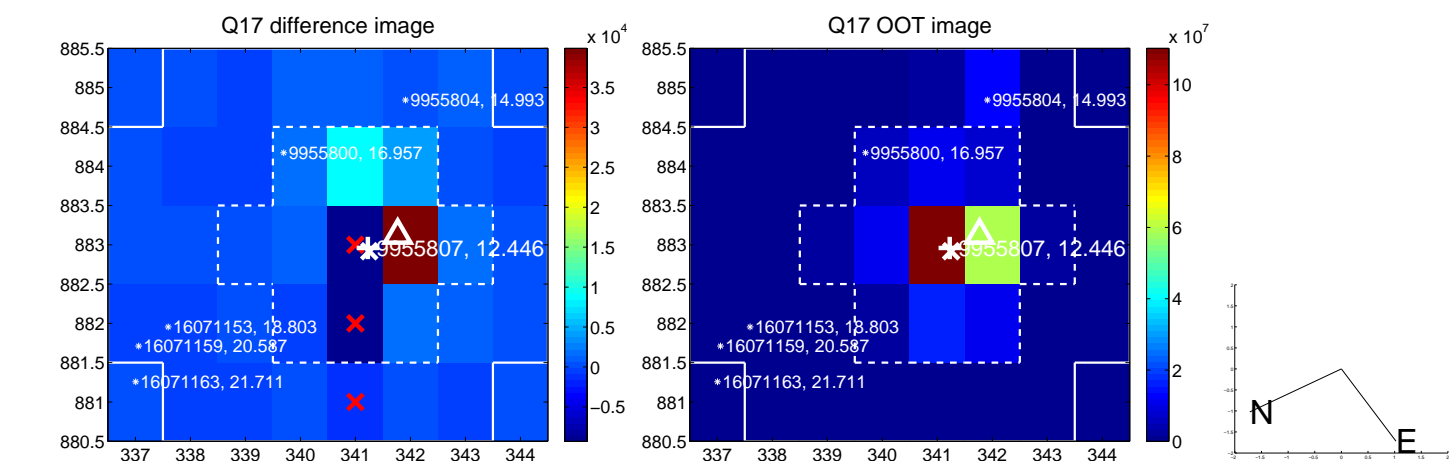
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



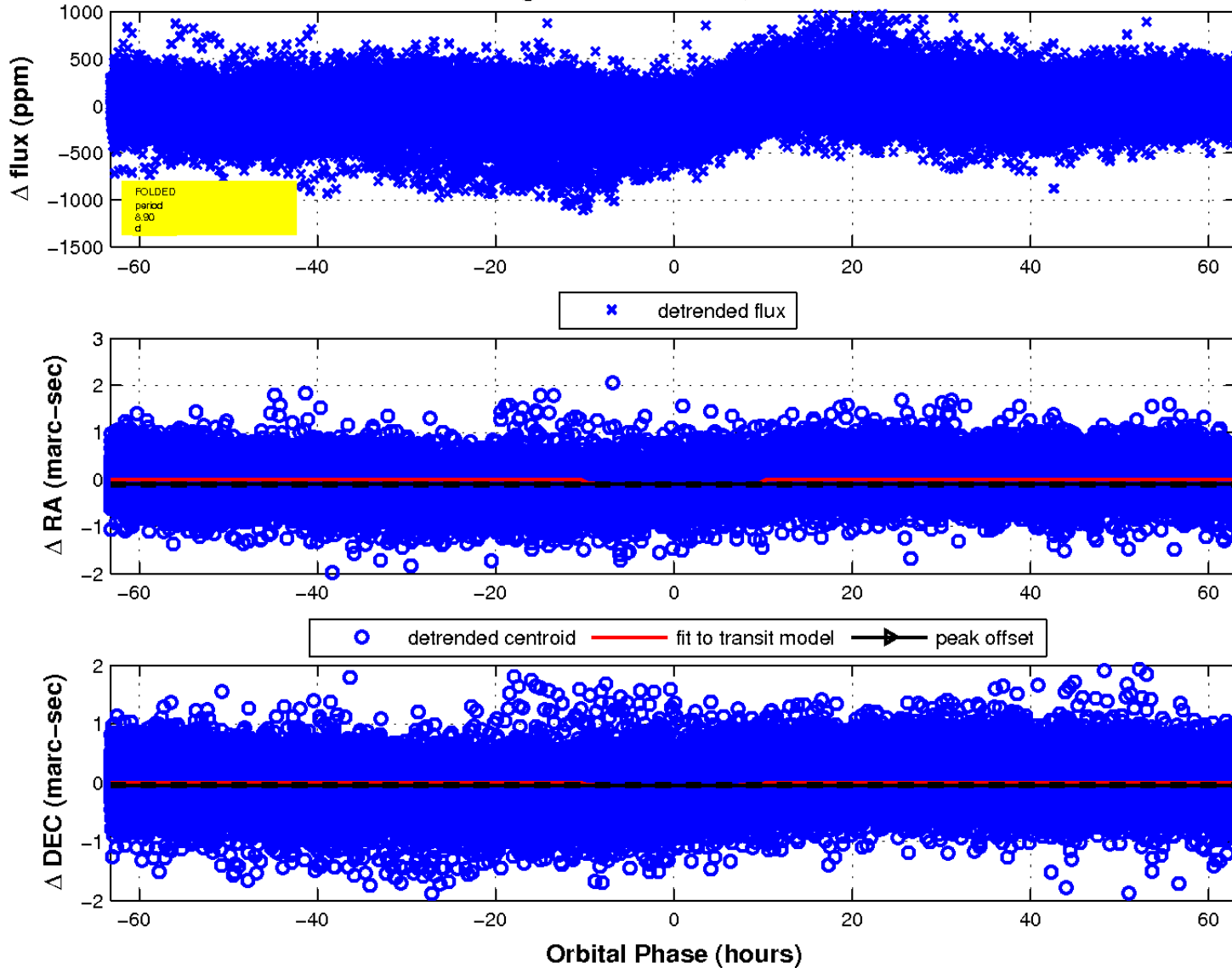
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



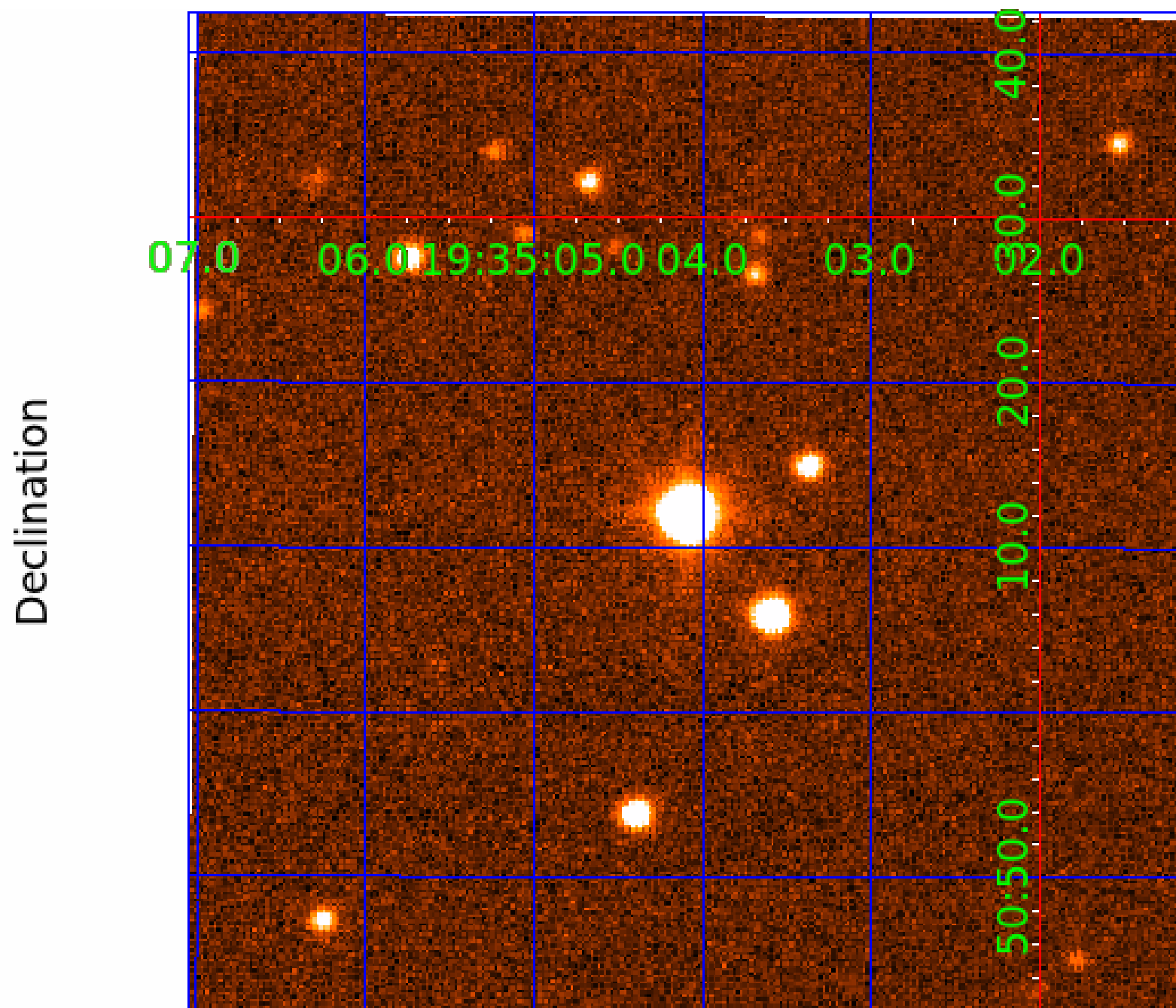
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 2



UKIRT Image



KIC 009955807

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})
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009955807-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
009955807-02	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—SAME_NTL_PERIOD

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

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

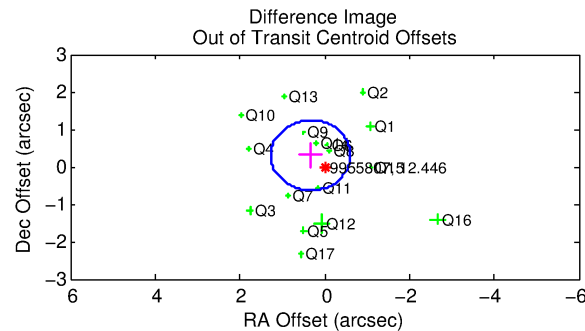
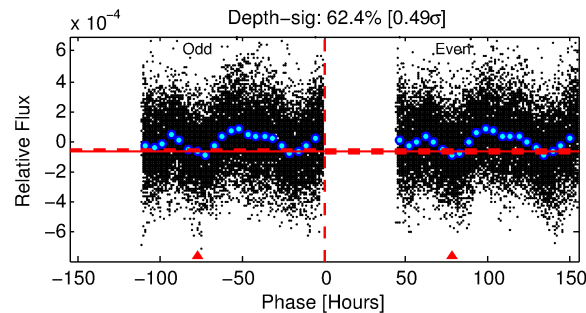
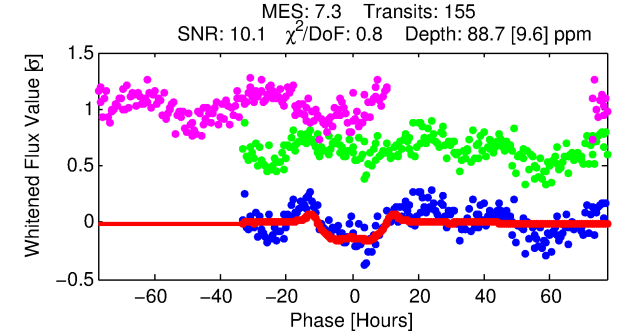
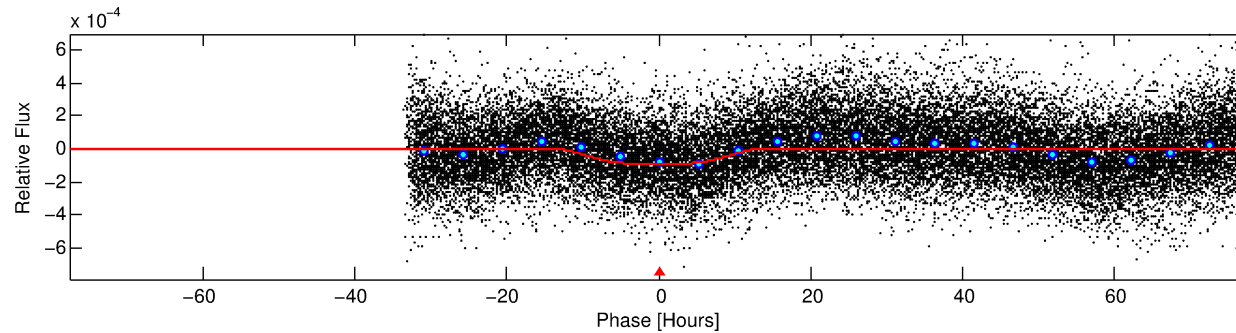
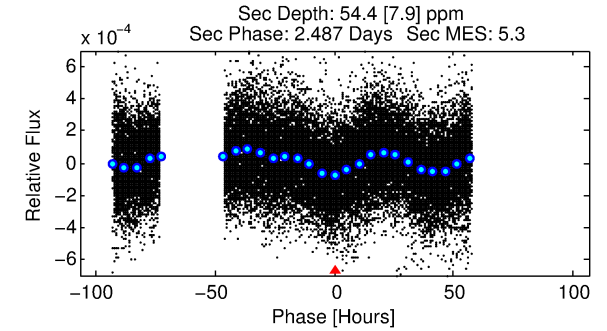
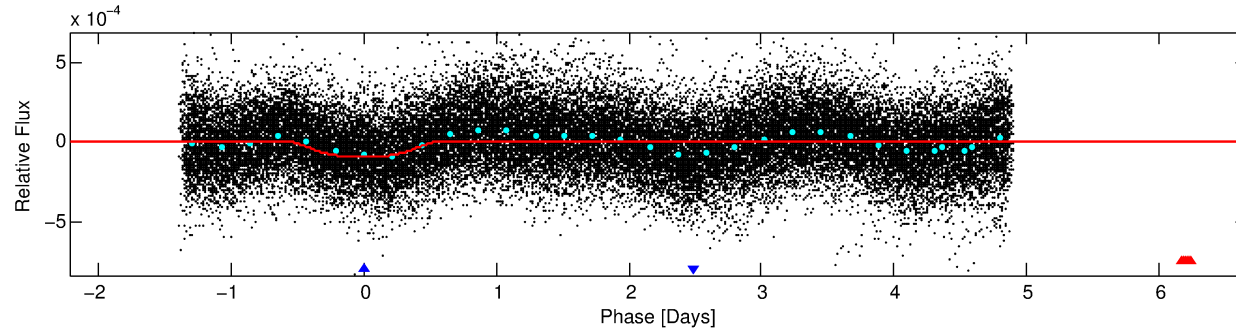
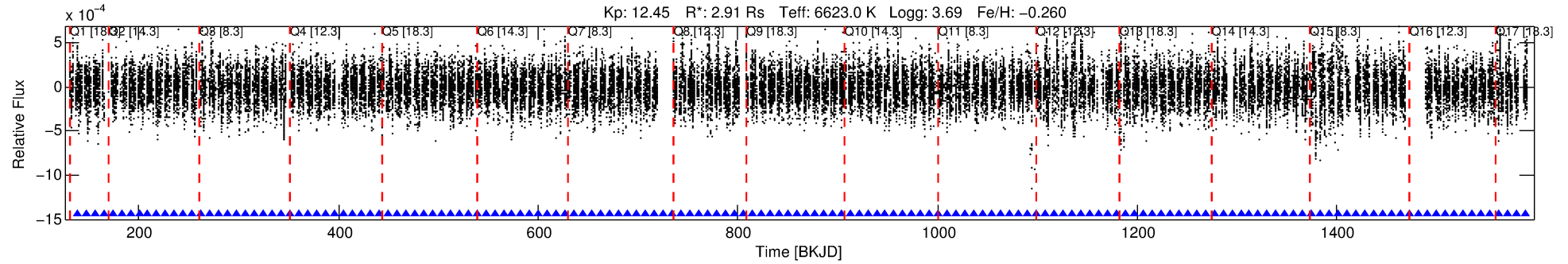
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009955807-02

No Significant Match Found

DV One-Page Summary

KIC: 9955807 Candidate: 2 of 2 Period: 8.897 d



DV Fit Results:

Period = 8.89697 [0.00038] d
Epoch = 138.1970 [0.0348] BKJD
Rp/R* = 0.0117 [0.0007]
a/R* = 1.16 [0.02]
b = 0.99 [0.00]
Seff = 1572.24 [884.80]
Teq = 1606 [226] K
Rp = 3.70 [1.39] Re
a = 0.0963 [0.0335] AU
Ag = 20.28 [11.78] [1.64σ]
Teffp = 5268 [293] K [9.90σ]

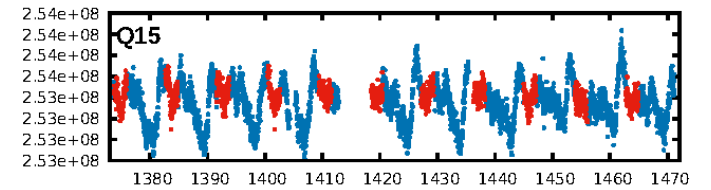
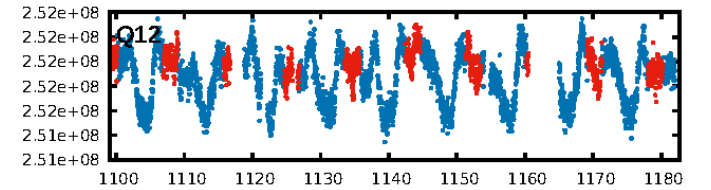
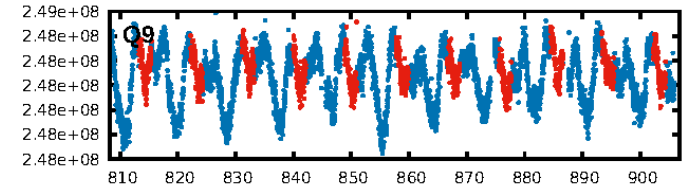
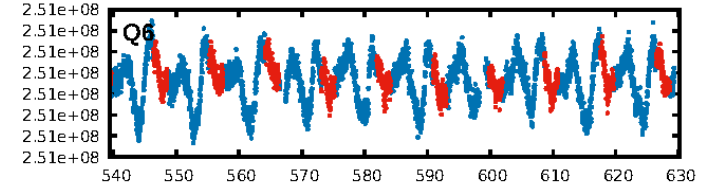
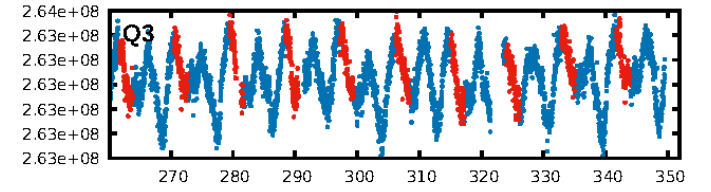
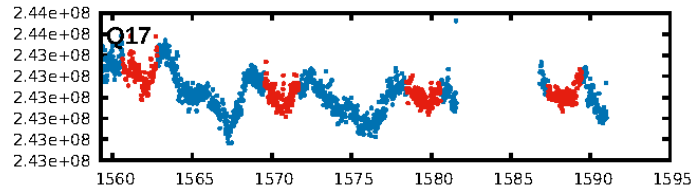
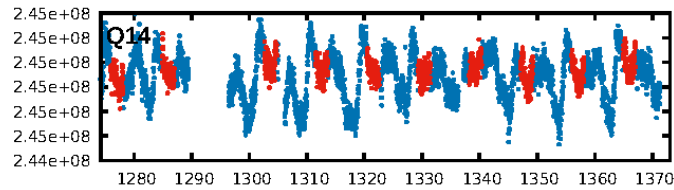
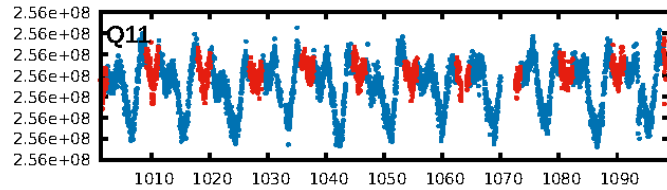
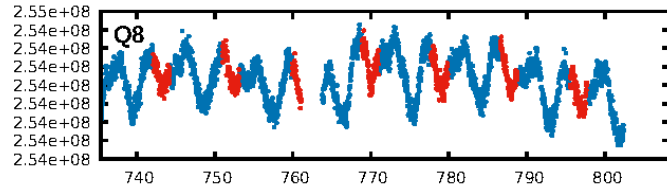
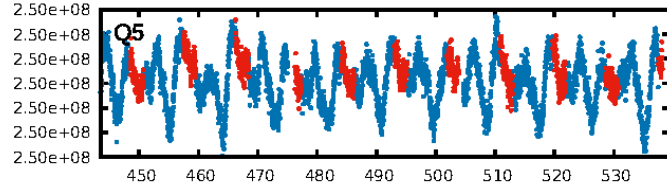
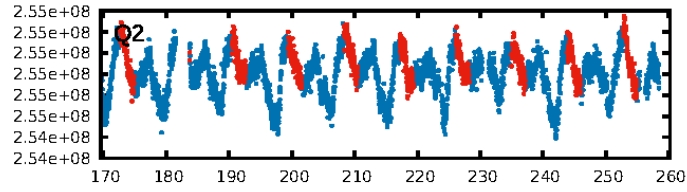
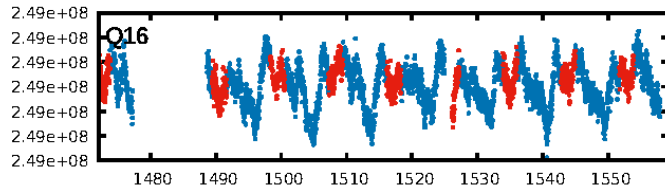
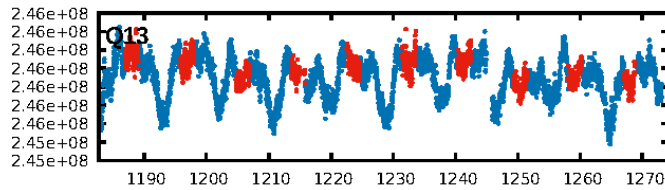
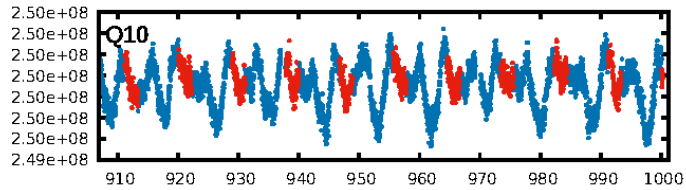
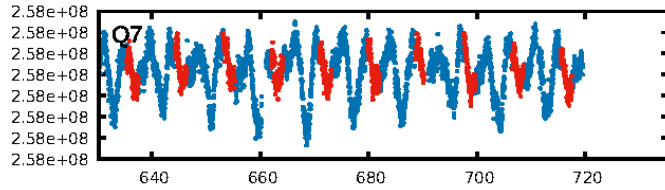
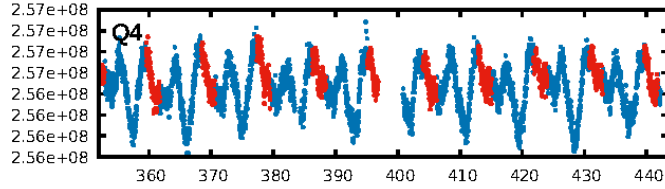
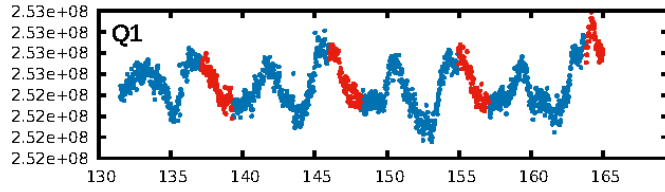
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.38e-12
RollingBand-fgt: 1.00 [147/147]
GhostDiagnostic-chr: 2.667
Centroid-sig: 58.9%
Centroid-so: 0.447 arcsec [1.55σ]
OotOffset-rm: 0.452 arcsec [1.45σ]
KicOffset-rm: 0.345 arcsec [1.05σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

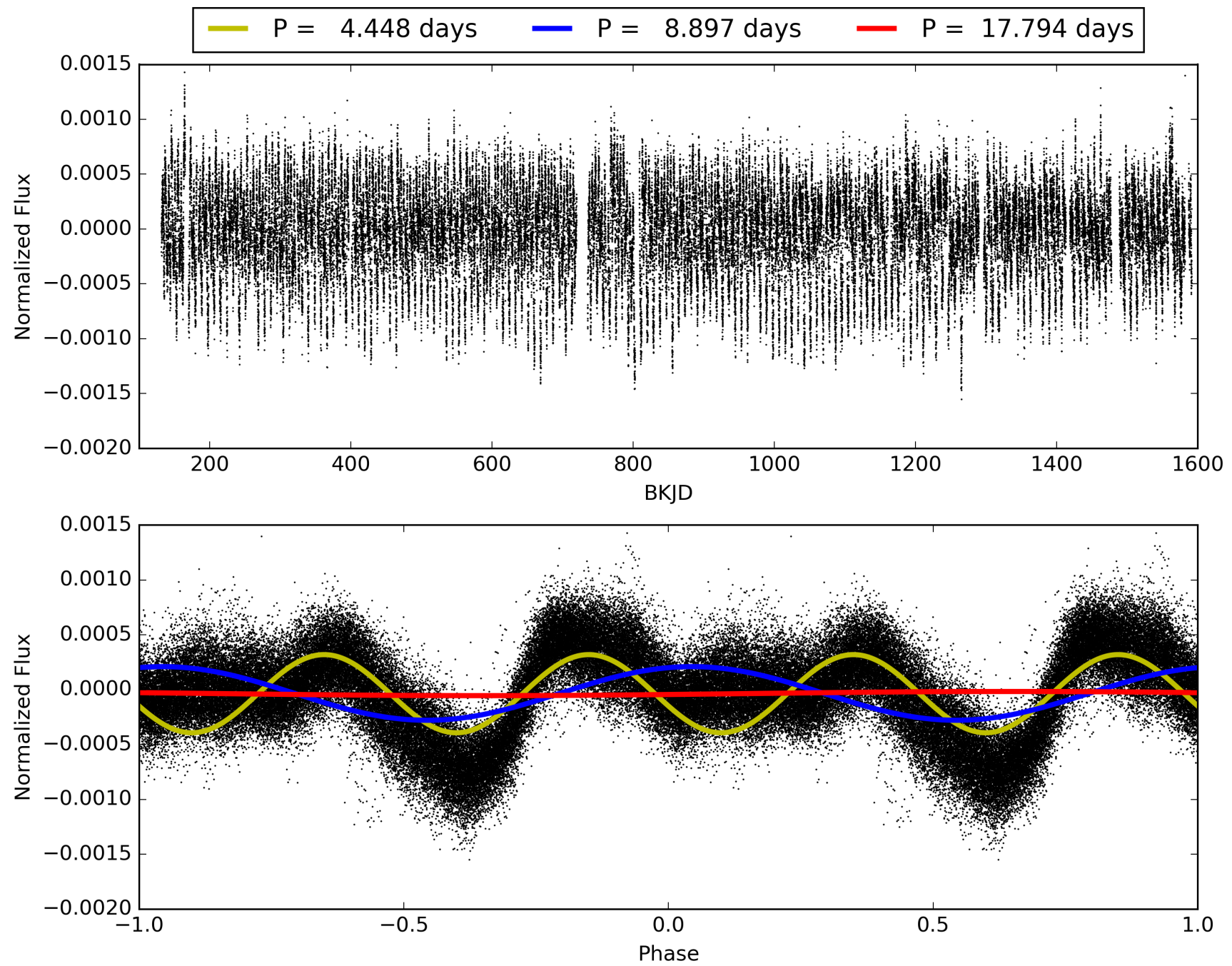
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:42:27 Z

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

TCE 009955807-02, PDC Light Curves

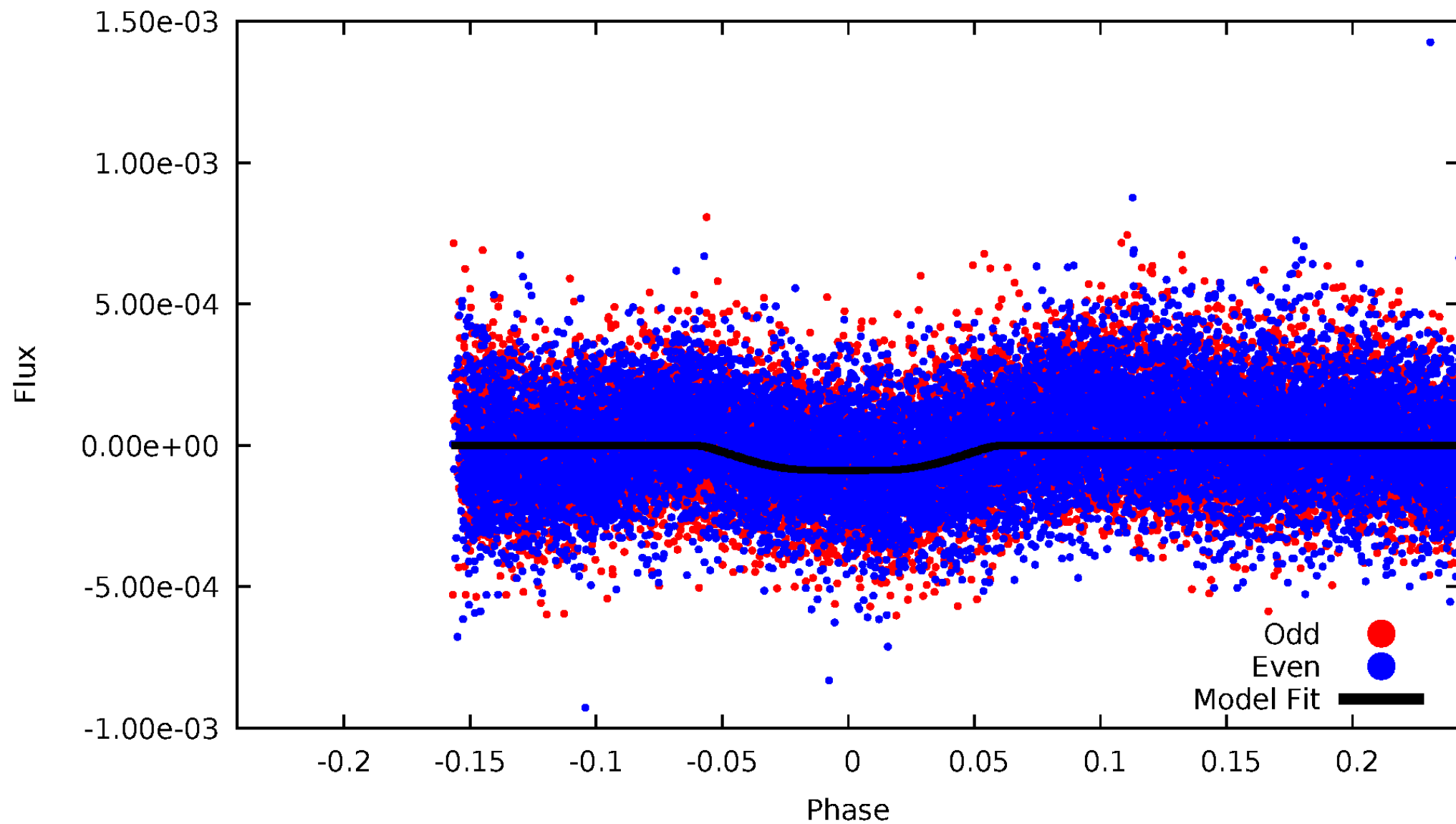


TCE 009955807-02



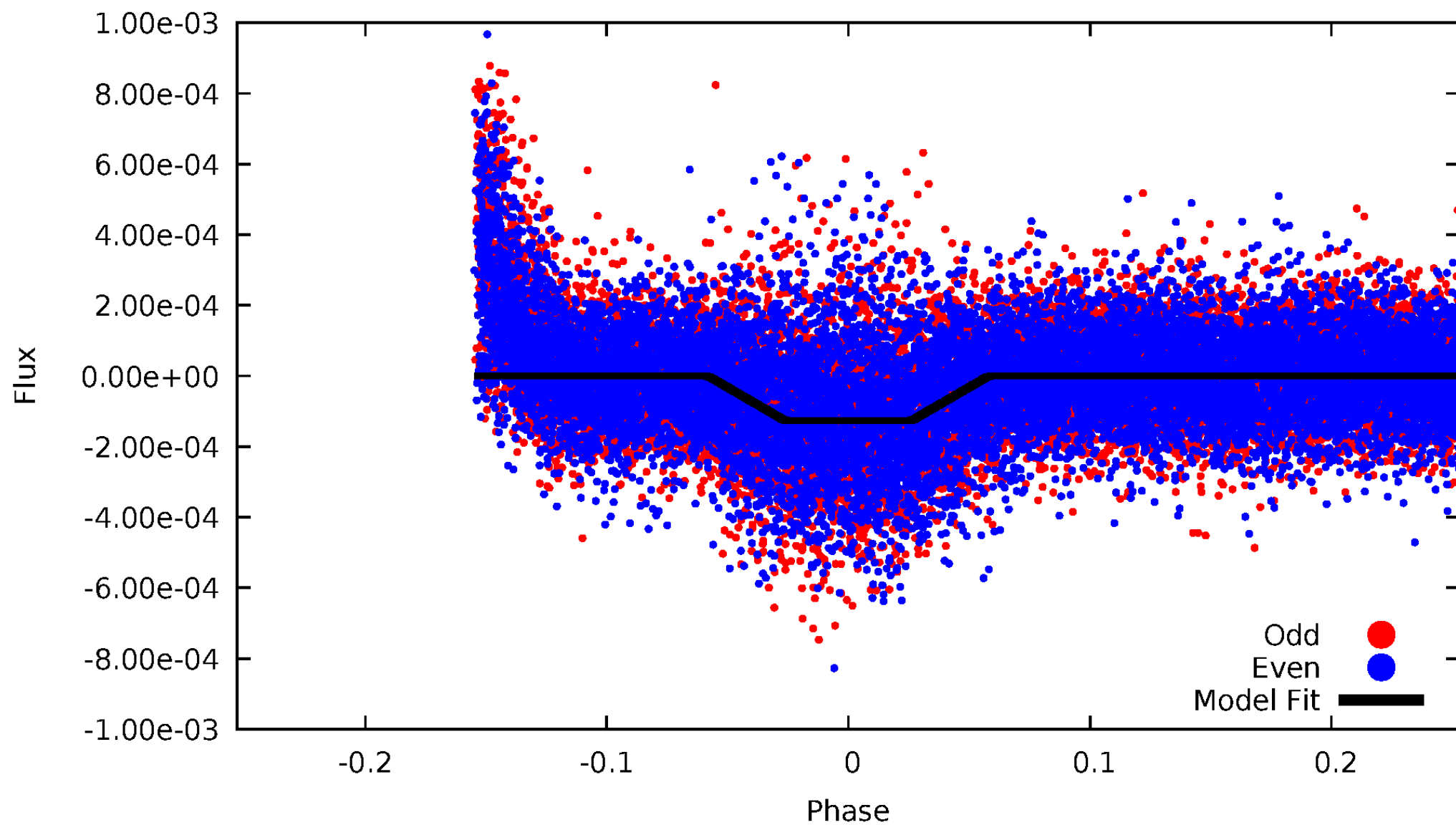
DV Odd/Even

TCE 009955807-02



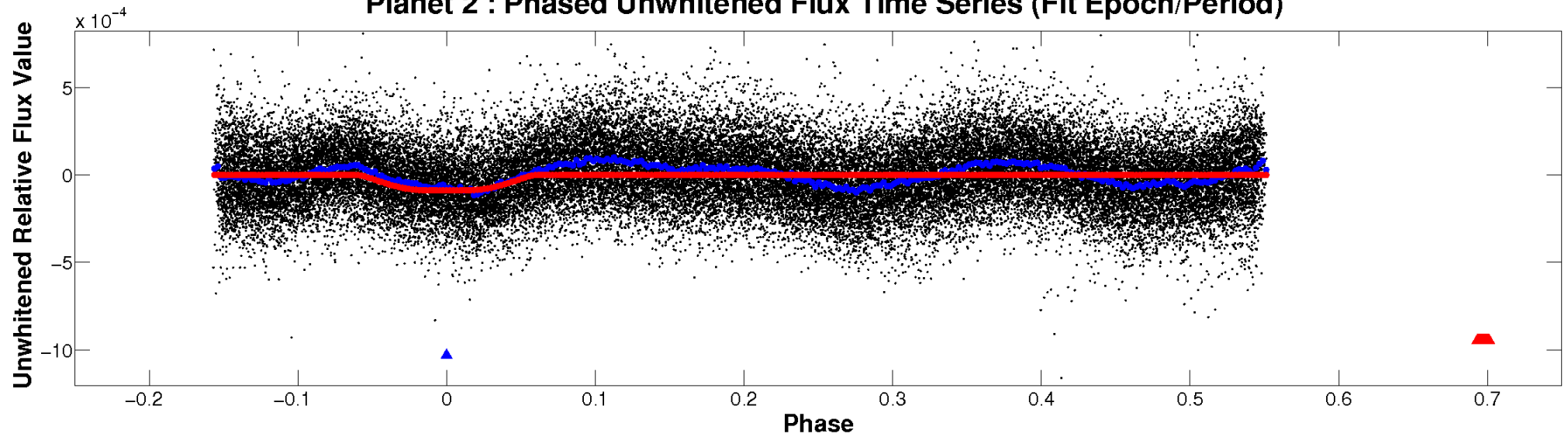
ALT Odd/Even

TCE 009955807-02

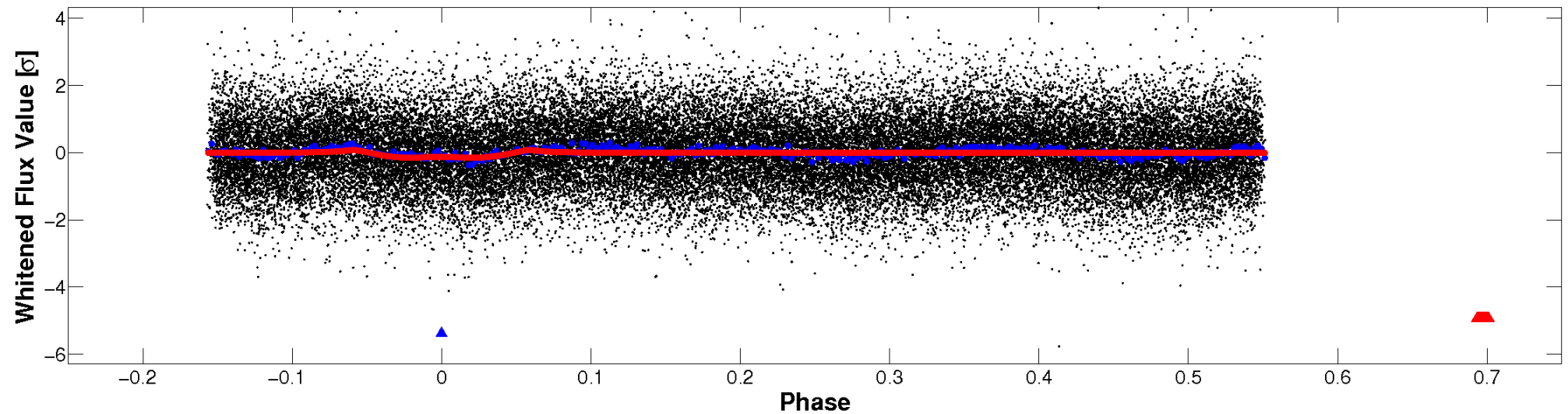


Non-Whitened Vs. Whitened Light Curve

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

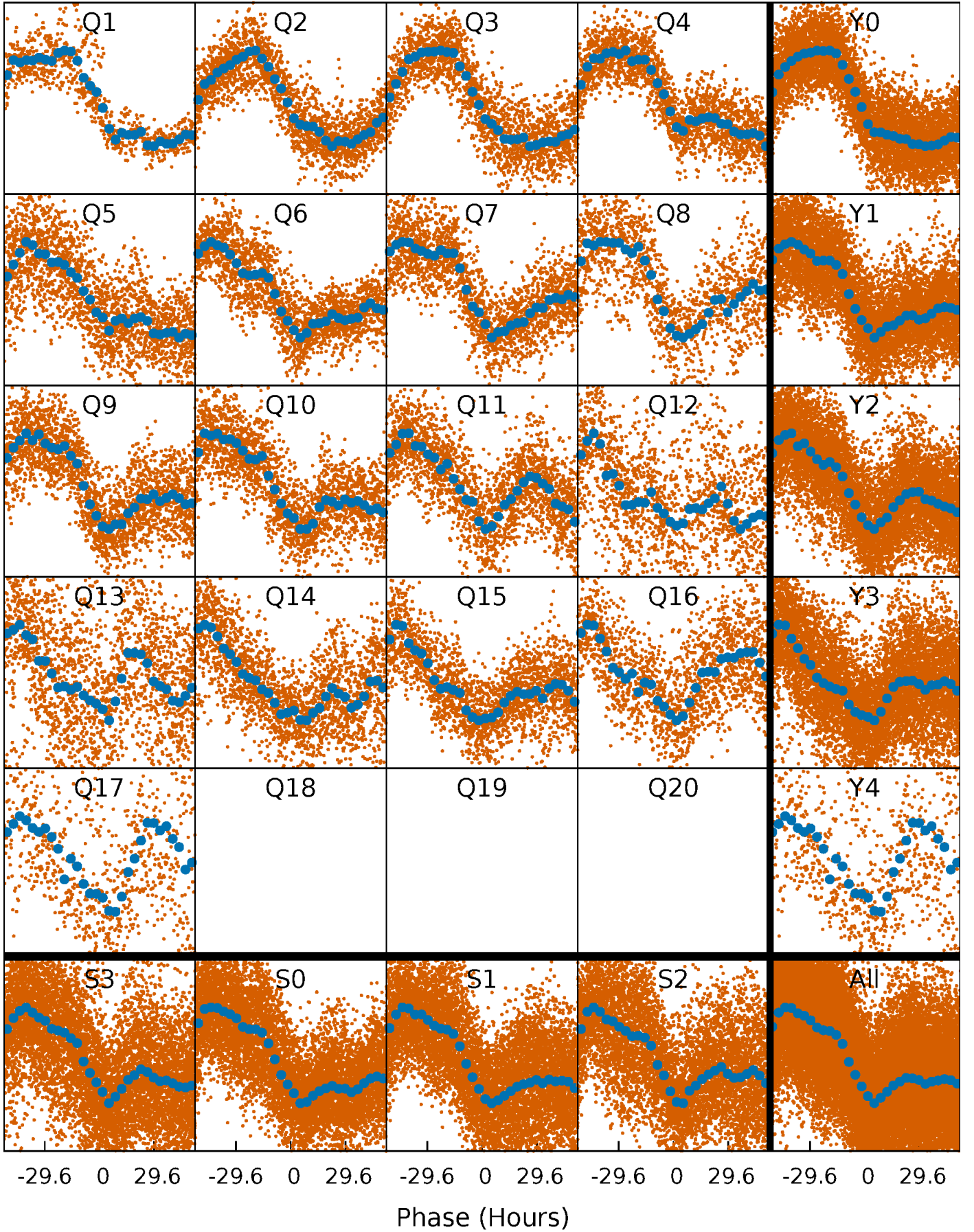


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



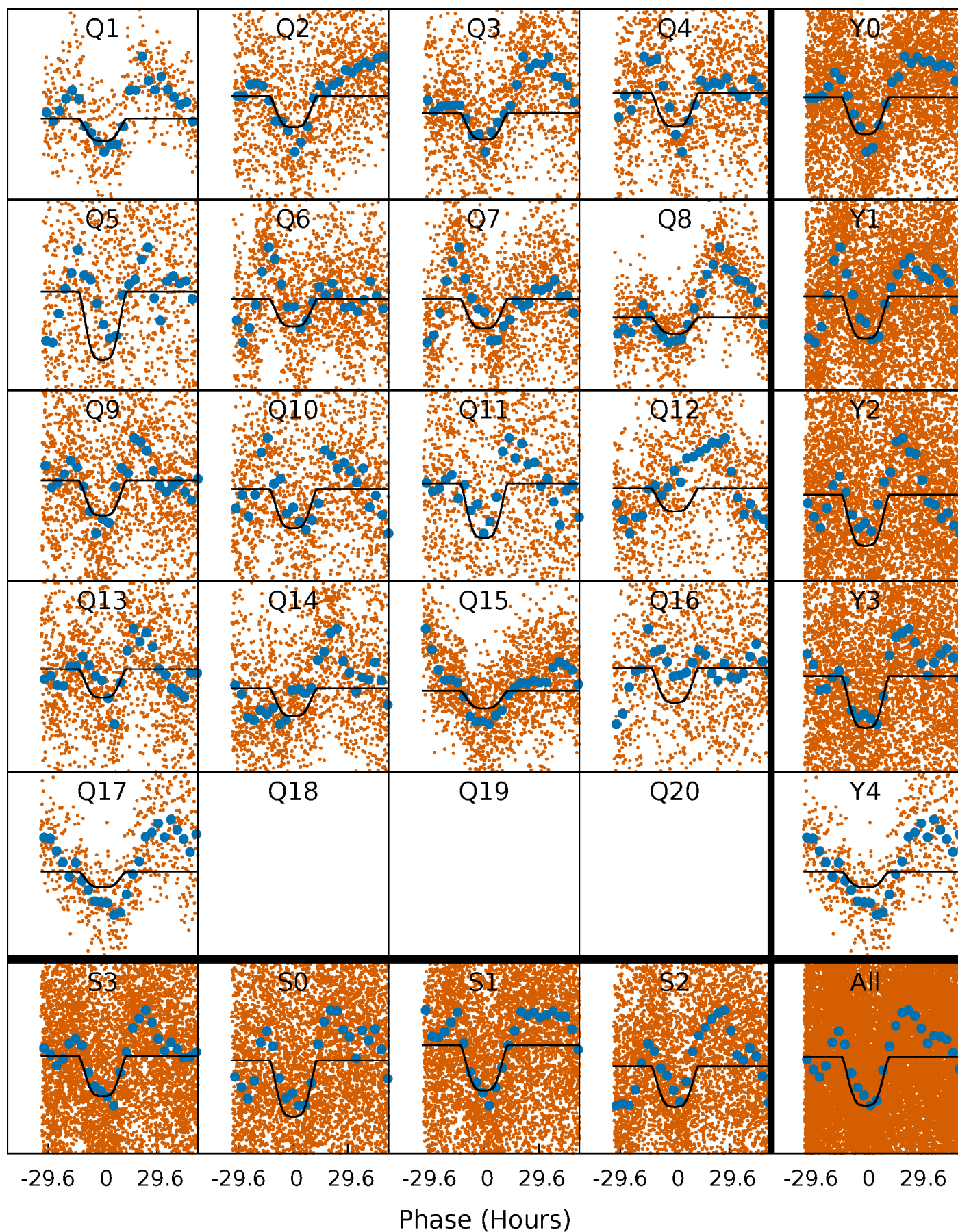
PDC Quarter-Phased Transit Curves

TCE 009955807-02 $P = 8.896972$ Days $T_0 = 138.196969$ (BKJD)



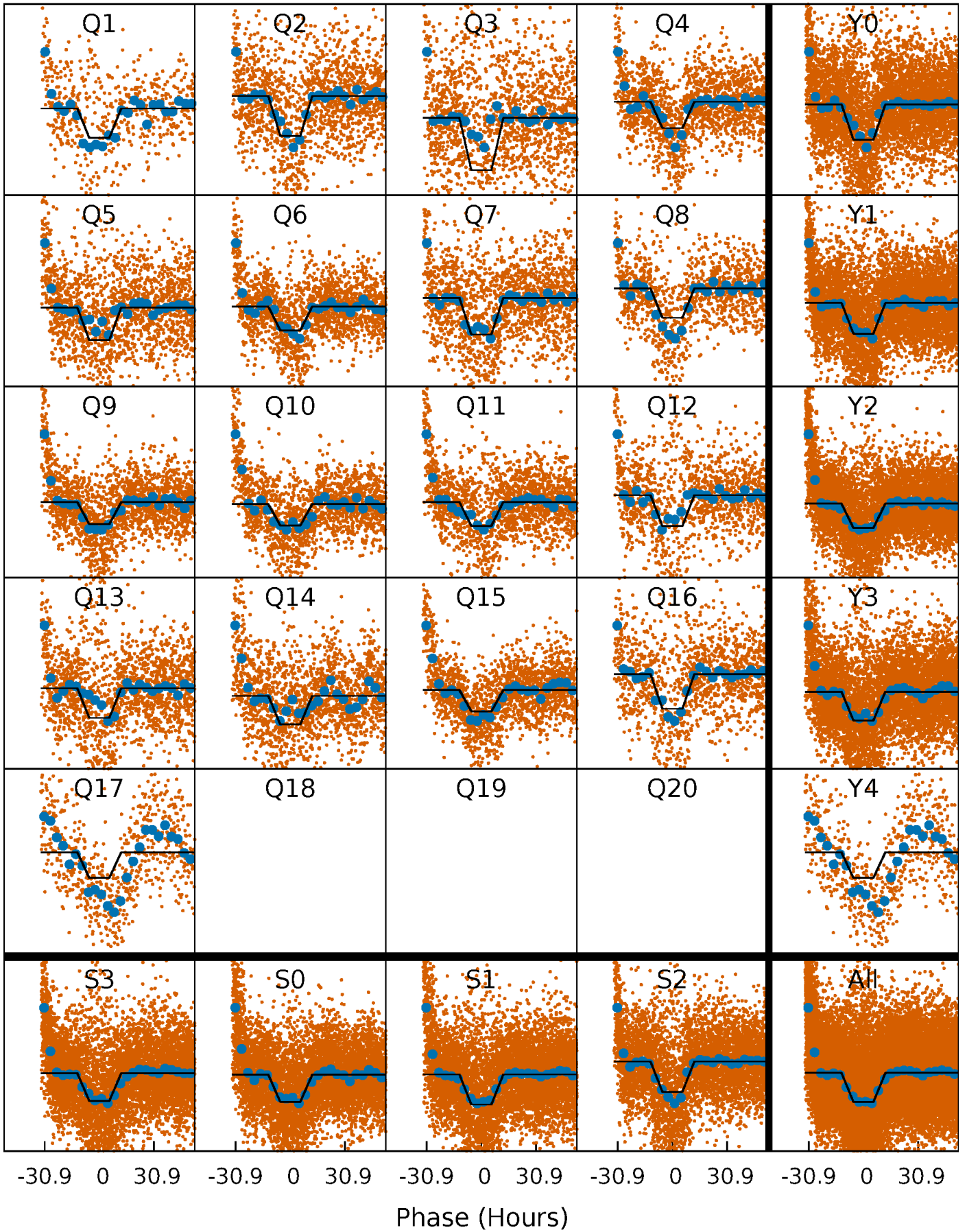
DV Quarter-Phased Transit Curves

TCE 009955807-02 P= 8.896972 Days $T_0=138.196969$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

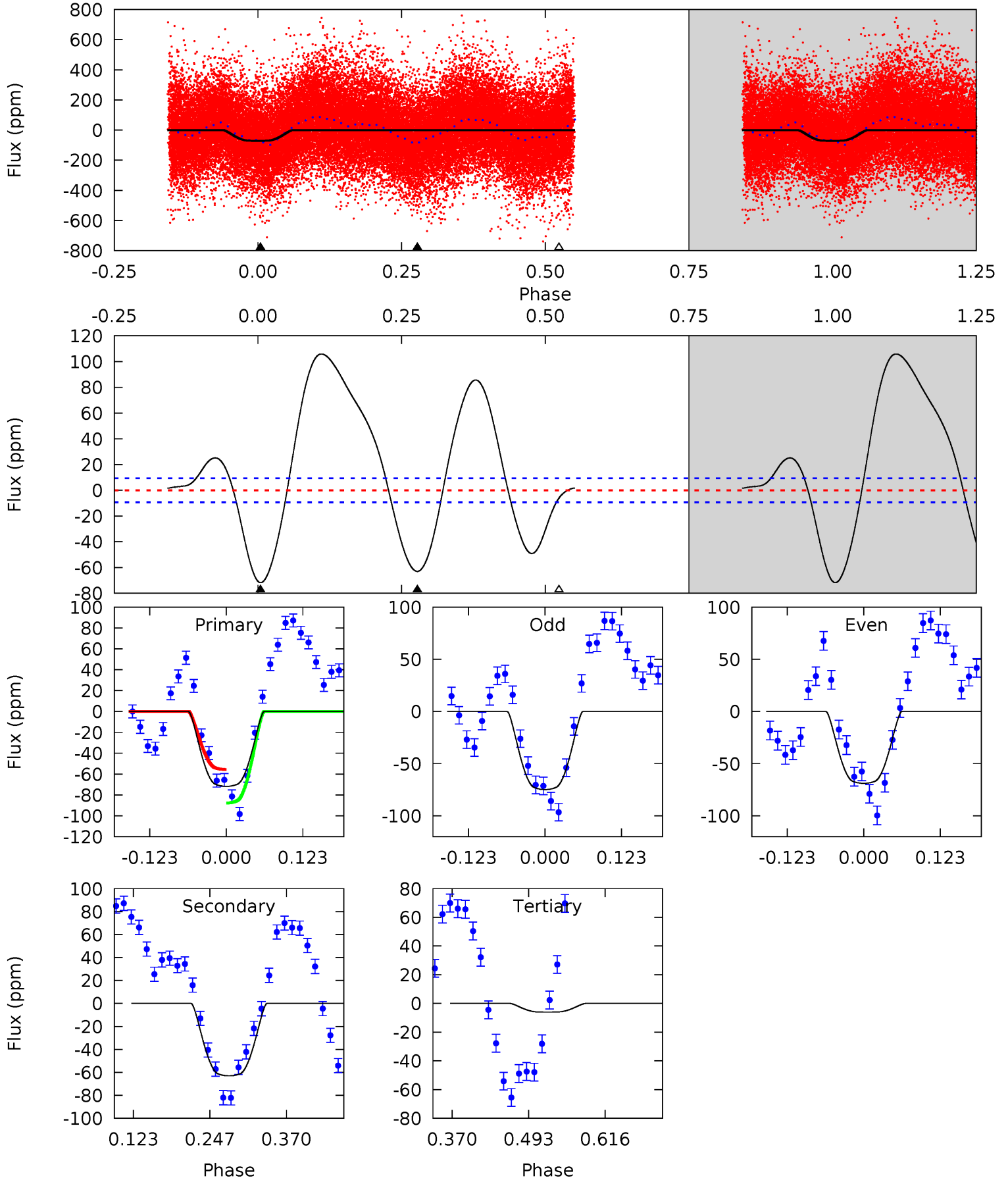
TCE 009955807-02 P= 8.896711 Days $T_0=138.217332$ (BKJD)



DV Model-Shift Uniqueness Test

009955807-02, P = 8.896972 Days, E = 129.299997 Days

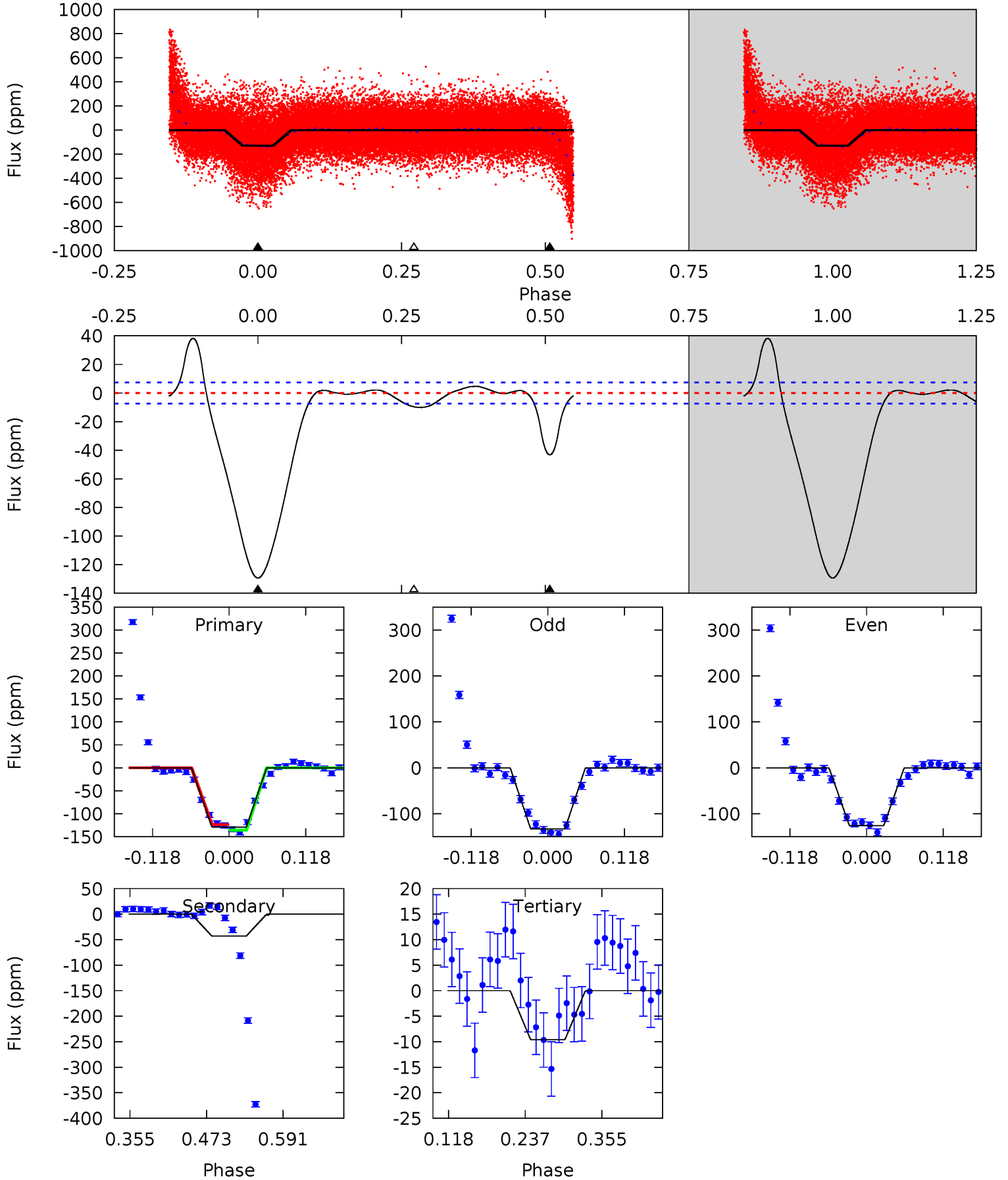
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.9	30.6	2.94	0	4.52	1.54	20.5	31.9	34.9	27.7	30.6	1.46	0.85	0.60	7.68



Alt Model-Shift Uniqueness Test

009955807-02, P = 8.896711 Days, E = 129.320621 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
79.3	26.4	5.89	0	4.53	1.56	4.60	73.4	79.3	20.6	26.4	2.17	0.91	0.23	3.49



Stellar Parameters For KIC 009955807

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6623^{+159}_{-199}	$3.688^{+0.320}_{-0.080}$	$-0.260^{+0.300}_{-0.250}$	$2.908^{+0.461}_{-1.077}$	$1.506^{+0.252}_{-0.308}$	$0.086^{+0.185}_{-0.023}$
	+2%/-3%	+9%/-2%	+115%/-96%	+16%/-37%	+17%/-20%	+215%/-27%
Source	PHO1	FLK73	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 009955807-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-63 ± 2	$3.59^{+0.50}_{-0.68}$	2193^{+121}_{-200}	5466^{+204}_{-211}	26^{+13}_{-5}
Alt.	-43 ± 2	$3.45^{+0.48}_{-0.71}$	2203^{+115}_{-206}	5113^{+183}_{-175}	19^{+8}_{-4}

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 $A_{obs} \gg 1.0$

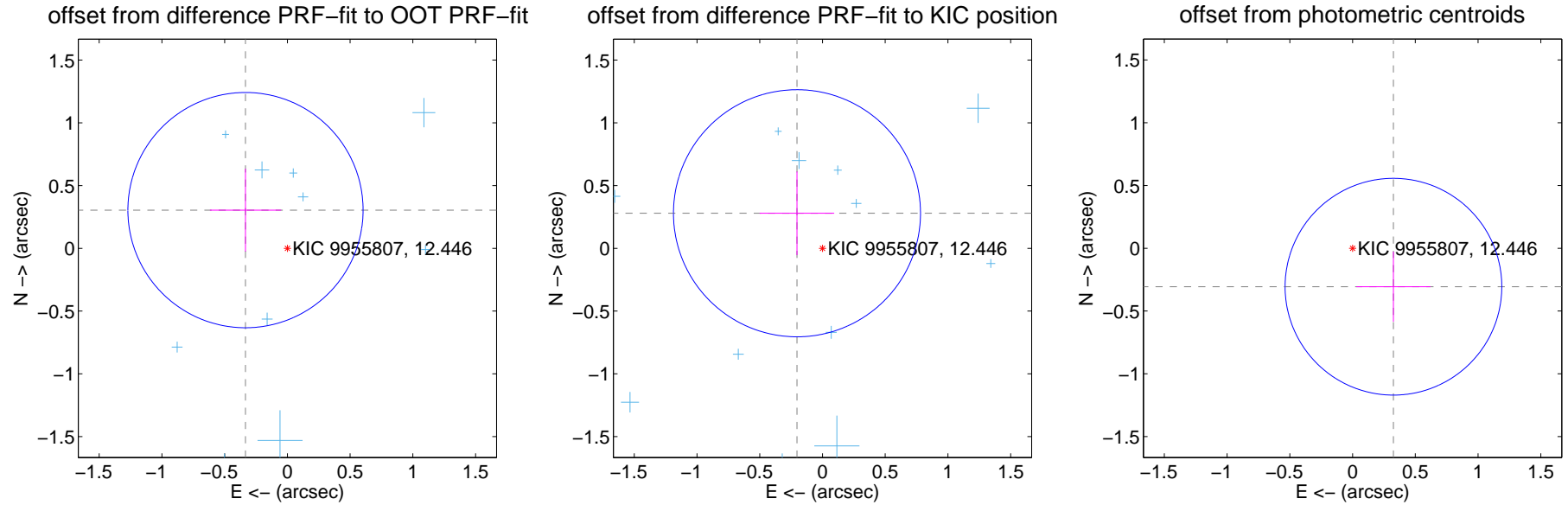
DV Centroid Data

Supplemental centroid analysis for 009955807-02. Kepler magnitude: 12.45. Transit SNR 10.13

There are 15 quarters with good PRF difference image offsets

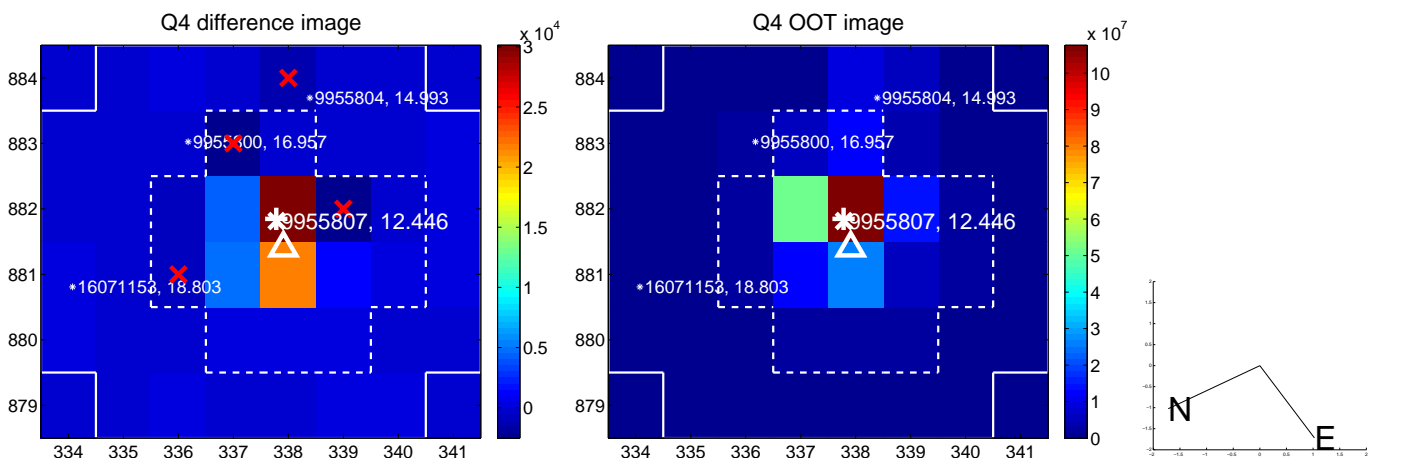
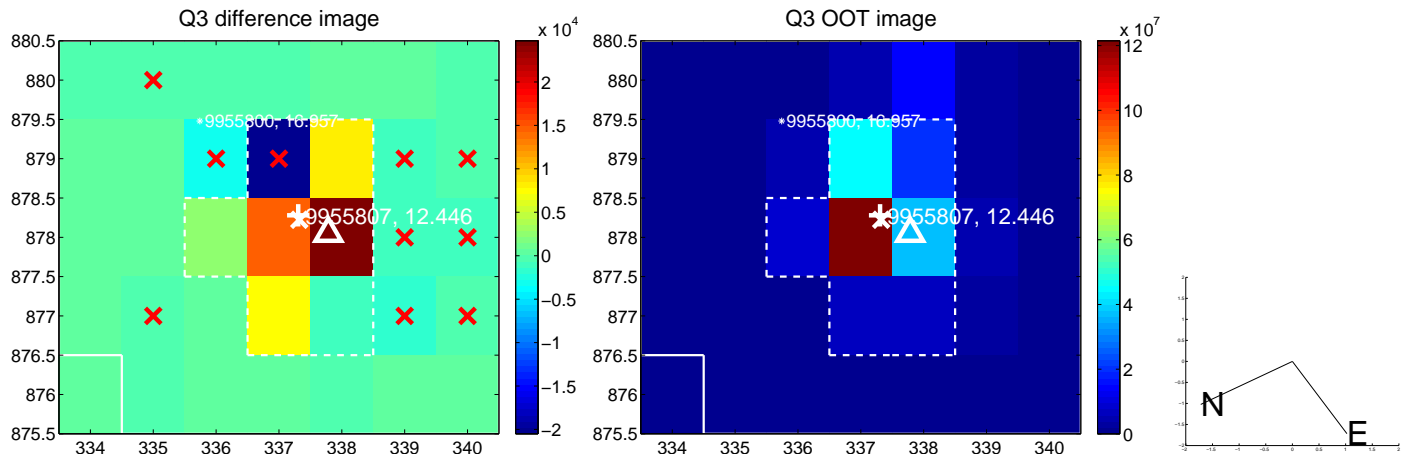
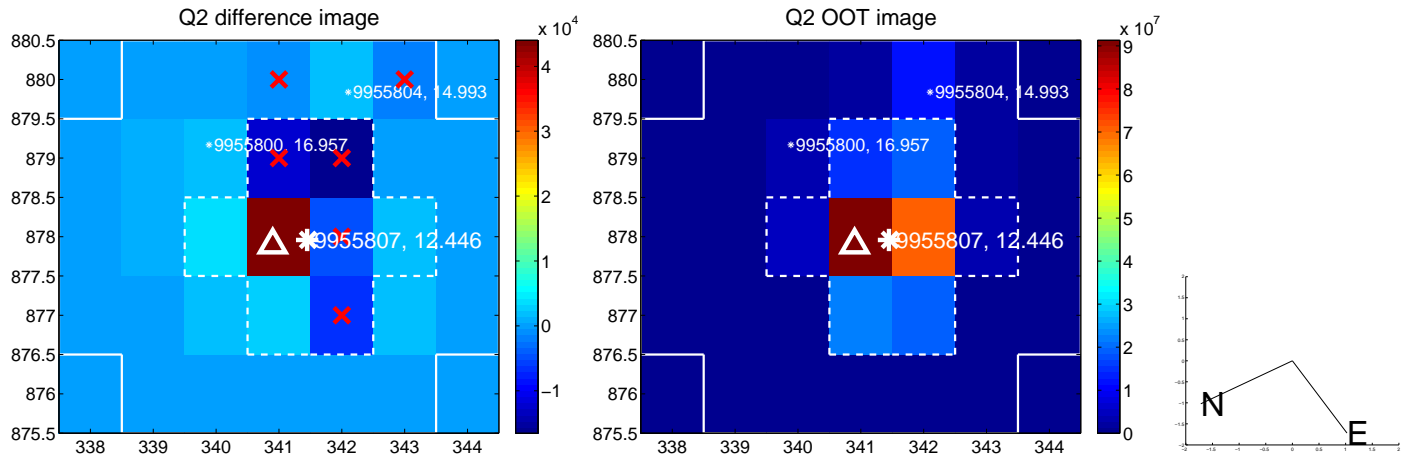
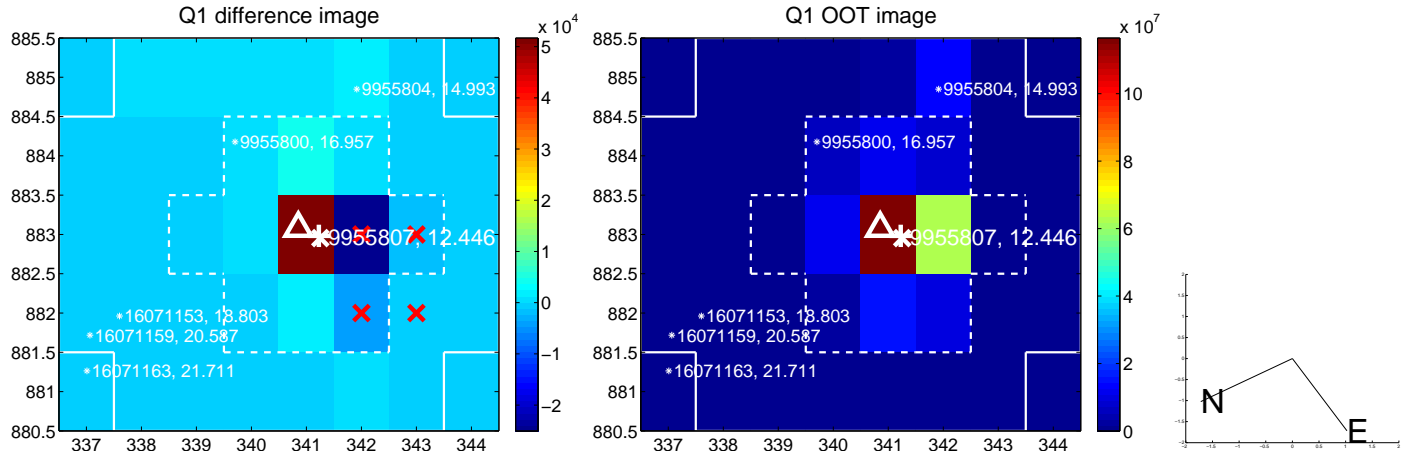
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.452 ± 0.312	1.45	0.334 ± 0.284	0.304 ± 0.330
PRF-fit source offset from KIC position	0.345 ± 0.328	1.05	0.203 ± 0.297	0.279 ± 0.333
photometric centroid source offset	0.45 ± 0.29	1.55	-0.33 ± 0.30	-0.31 ± 0.28

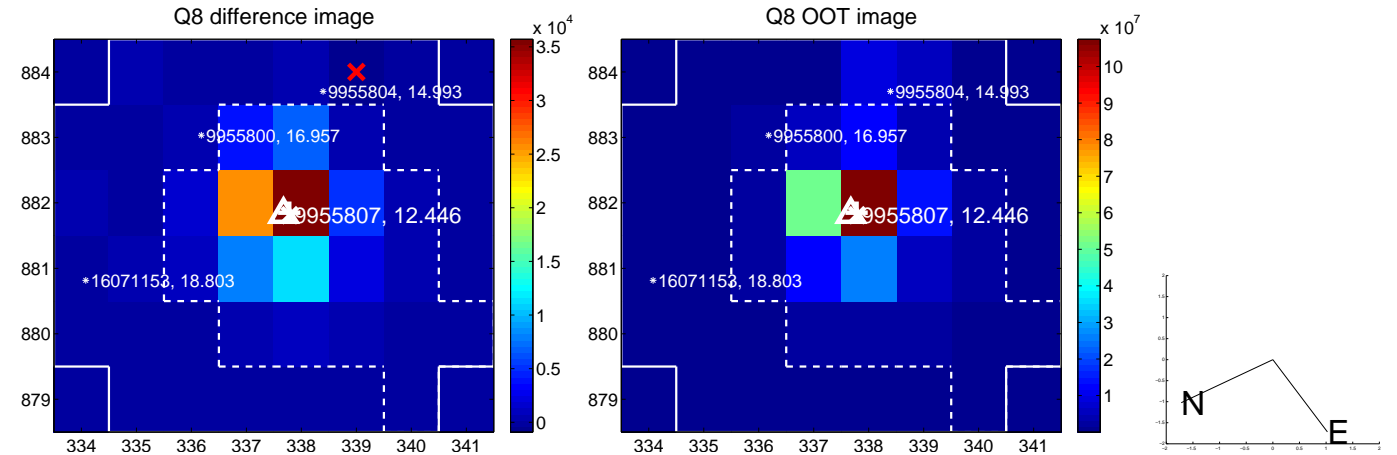
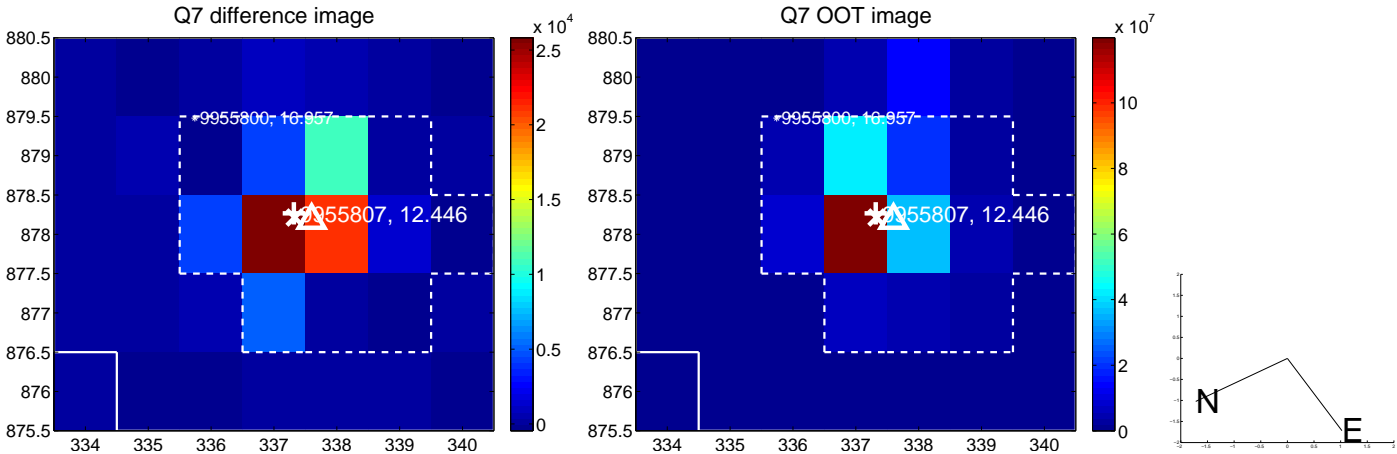
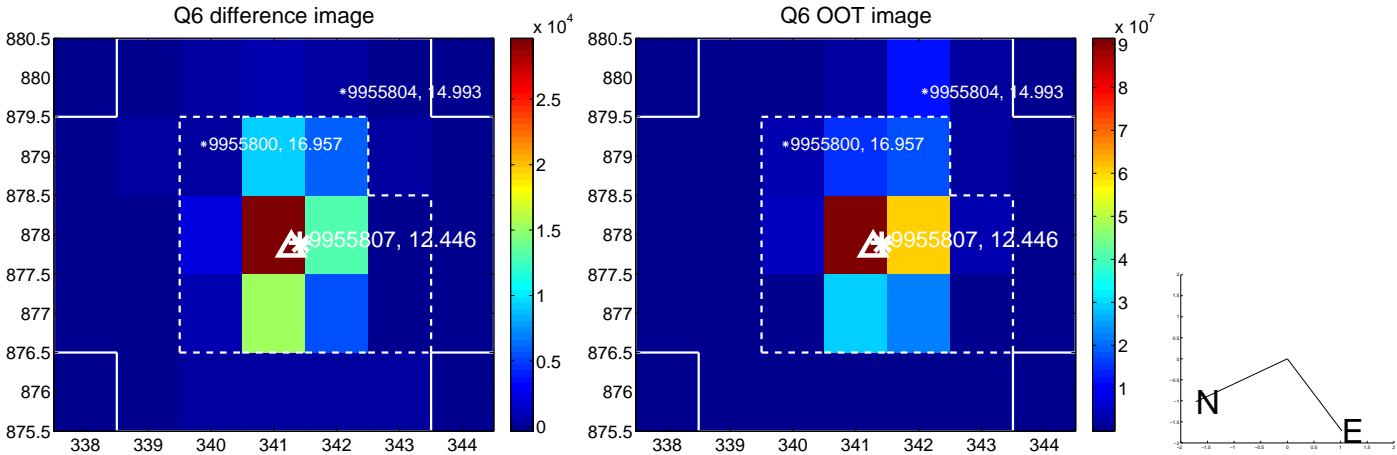
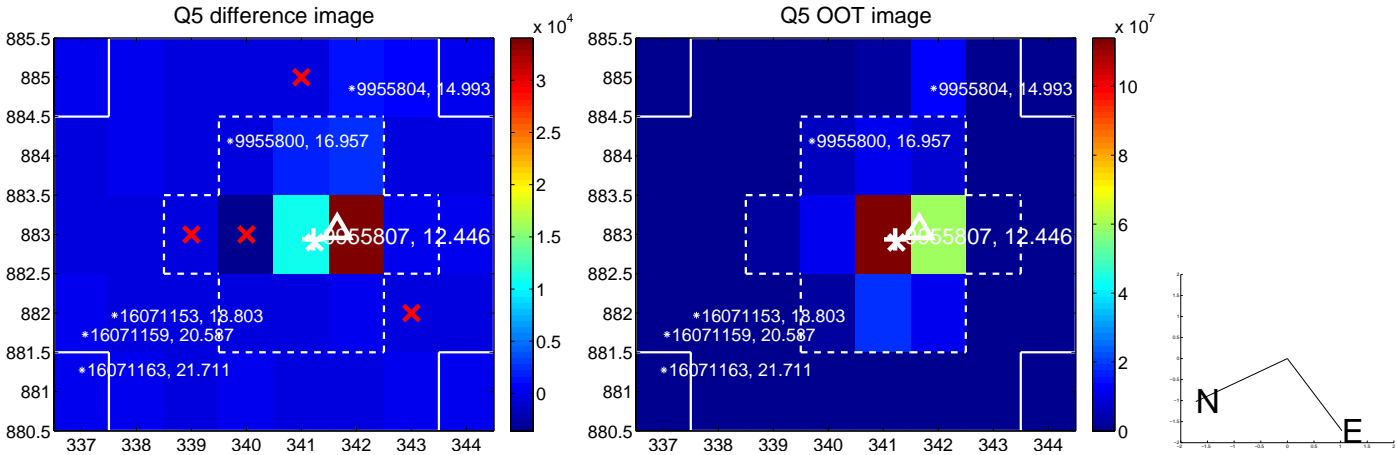


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

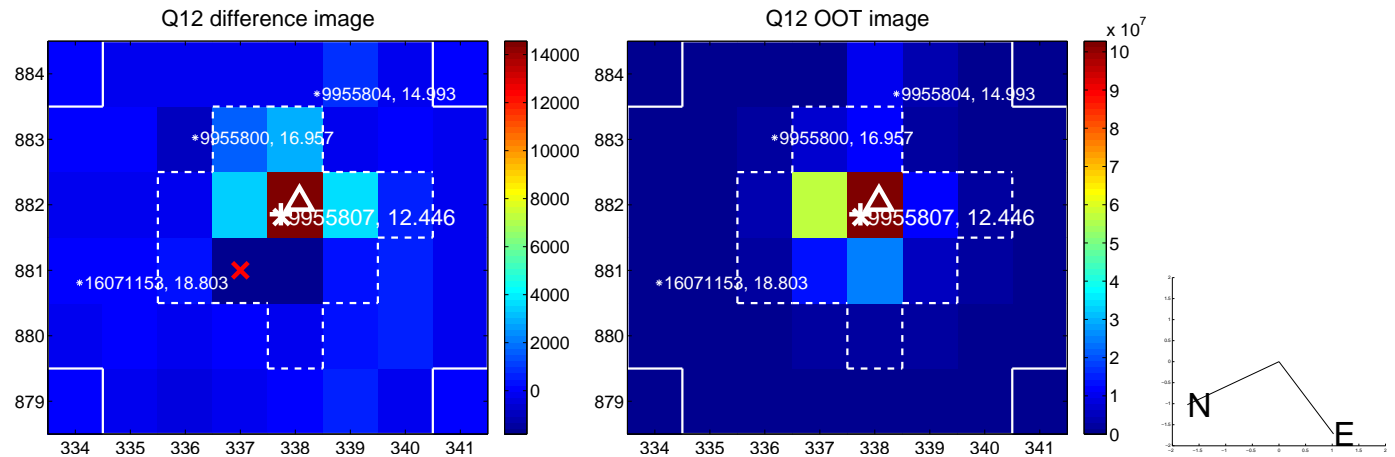
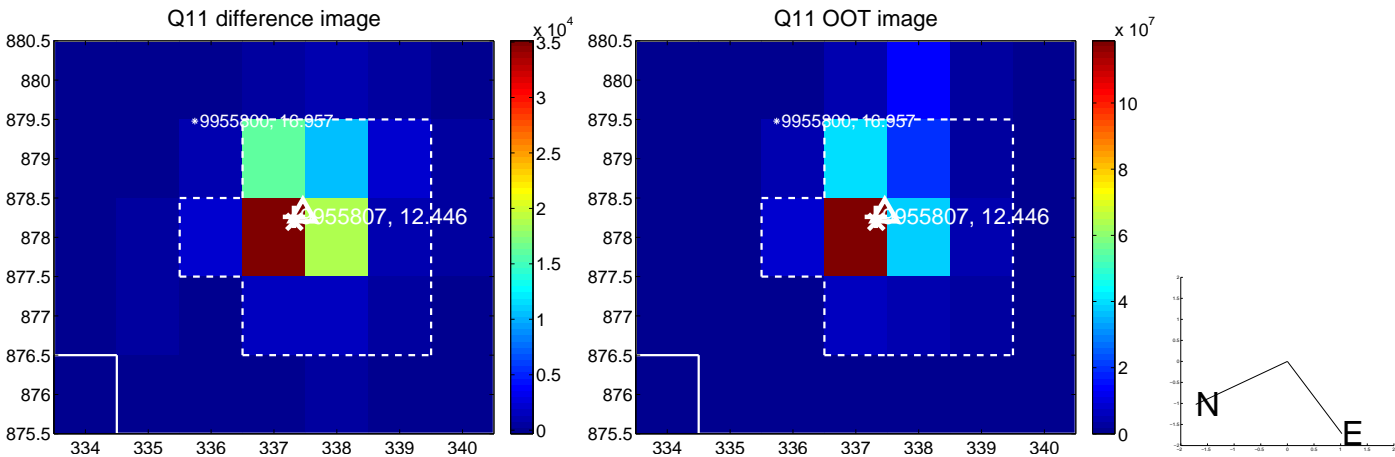
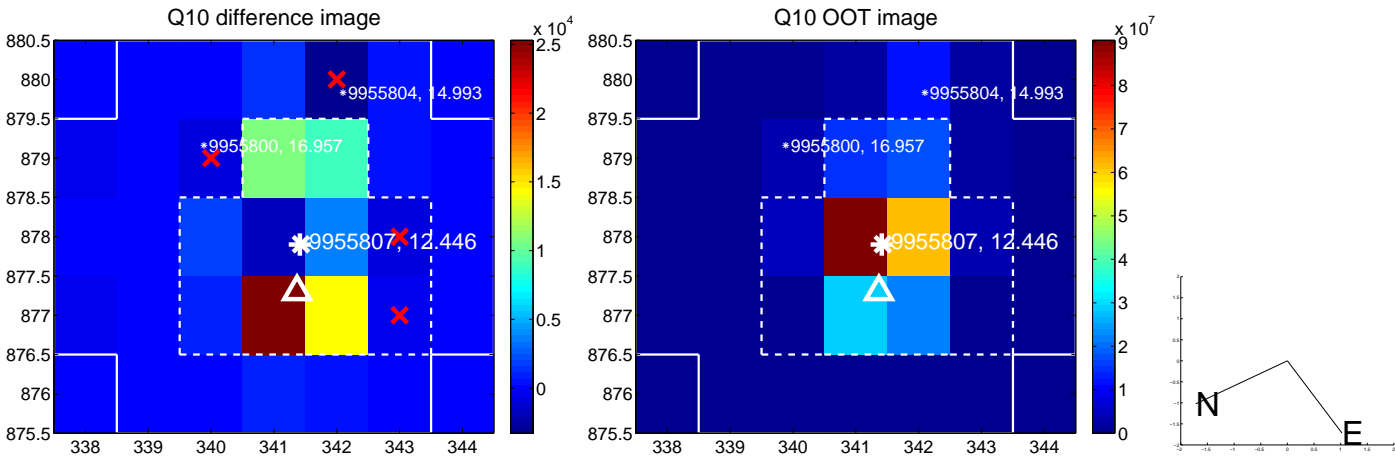
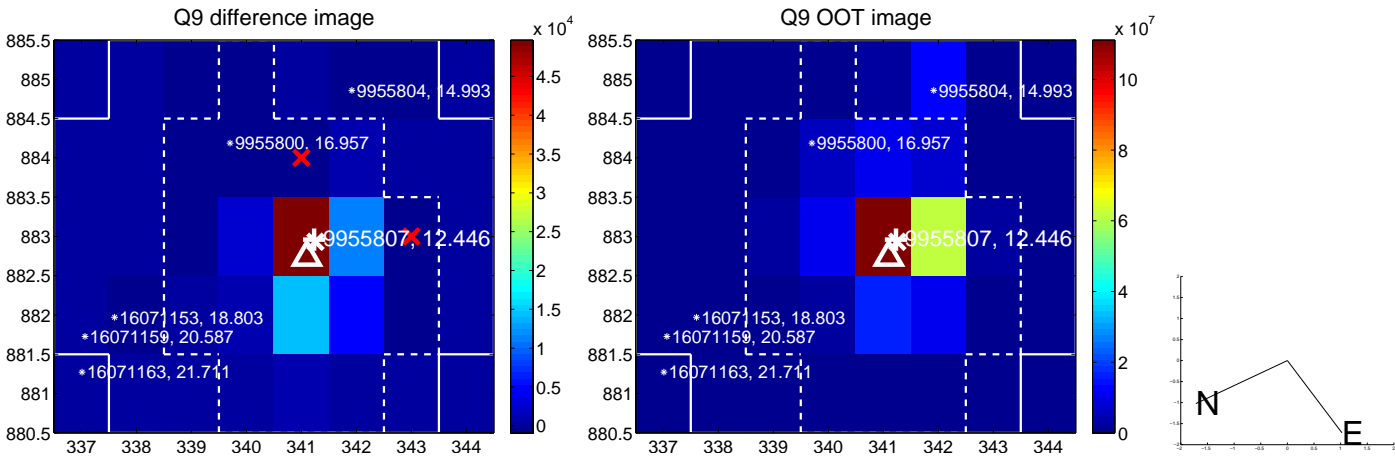
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



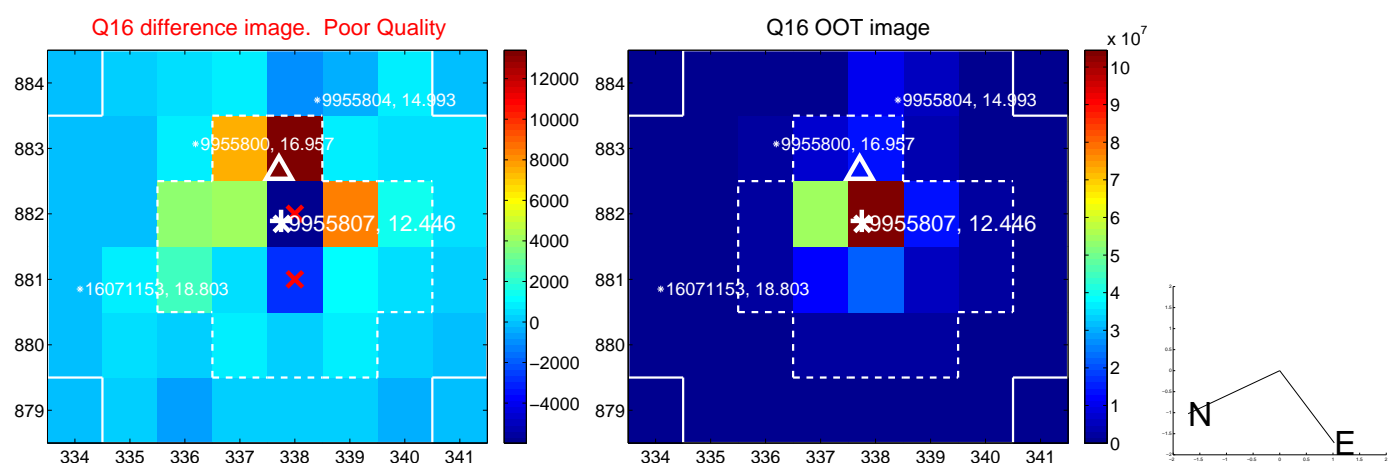
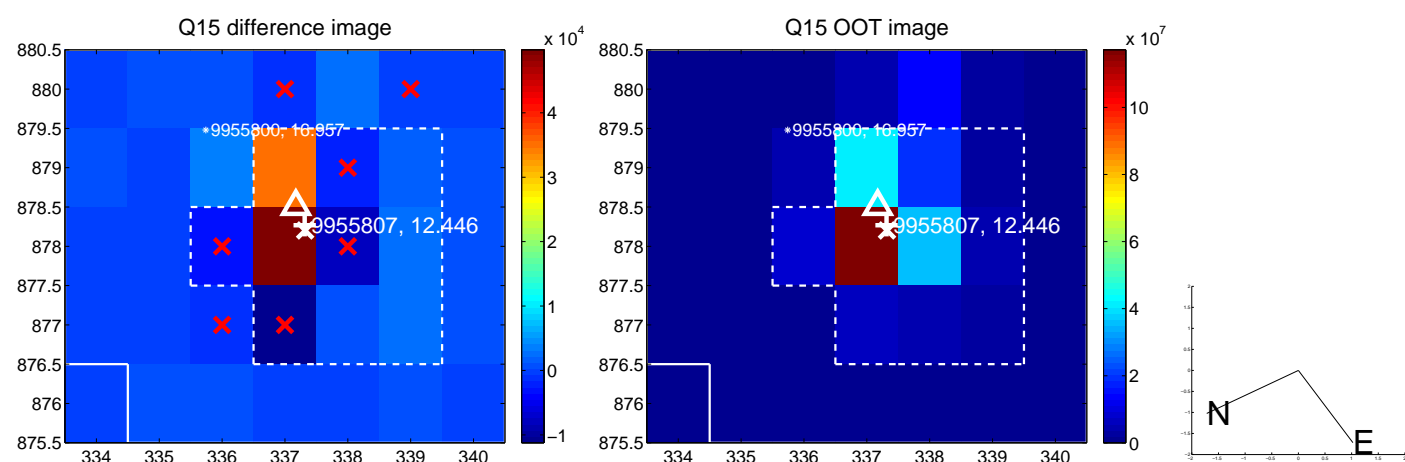
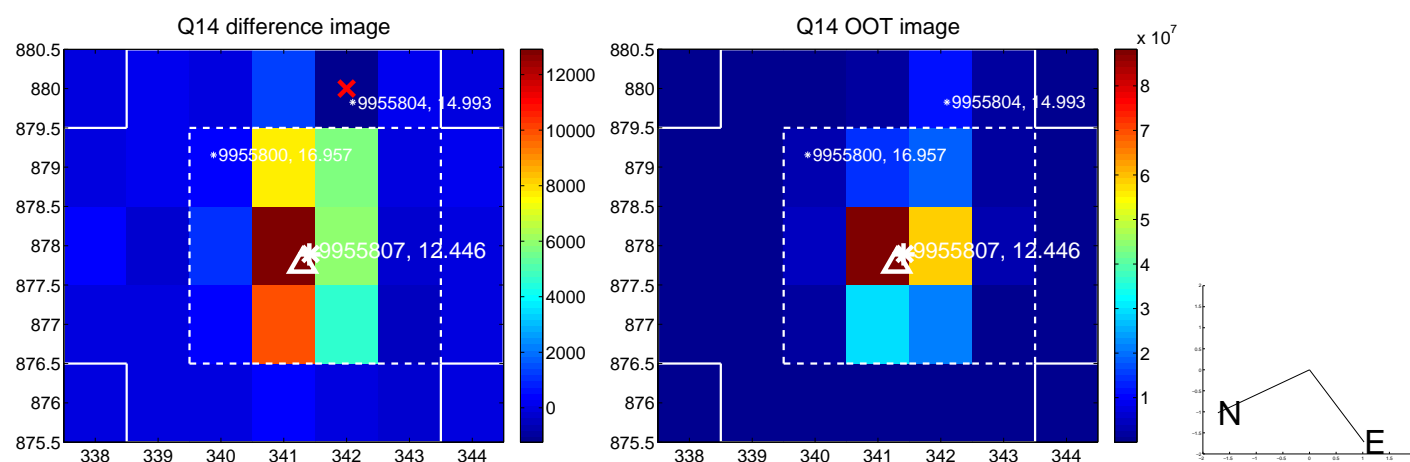
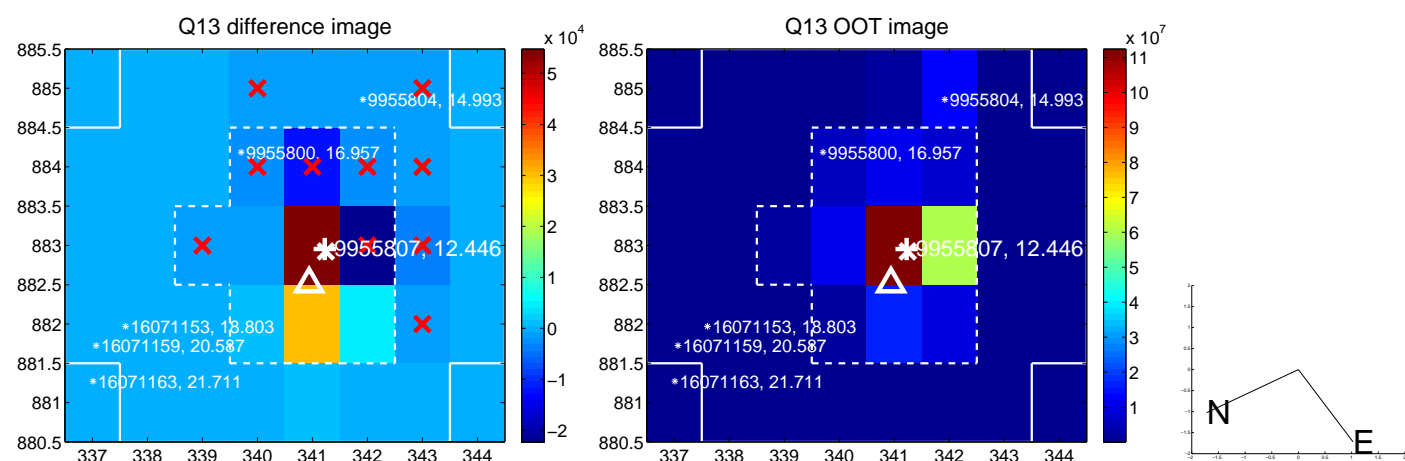
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



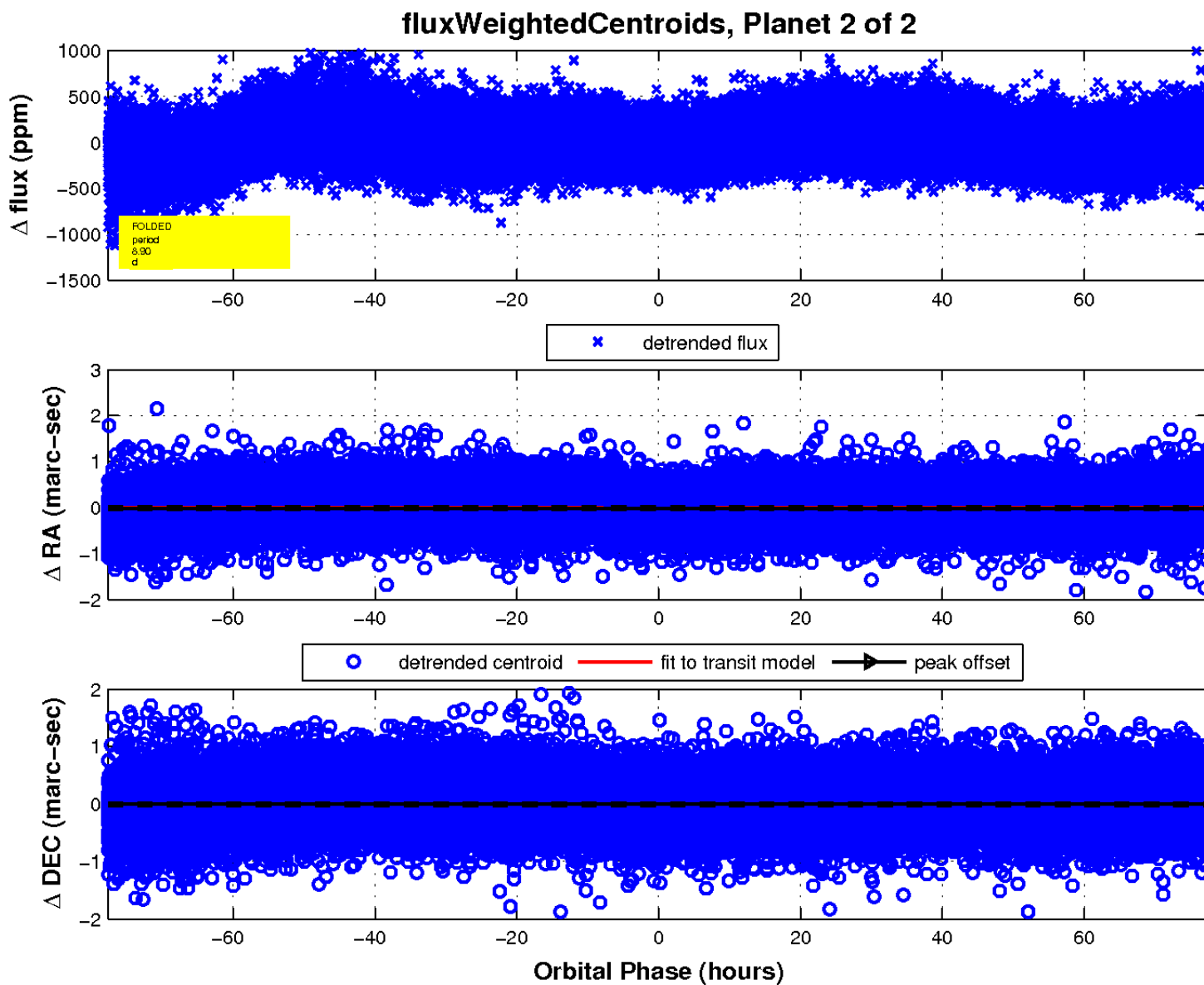
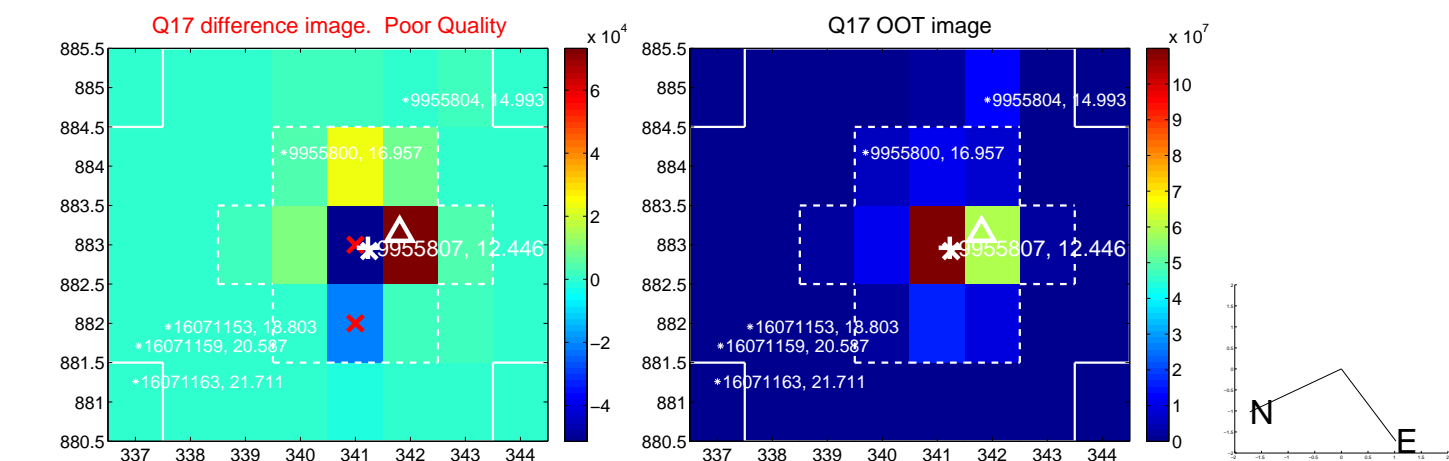
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

