

KIC 009835697

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})
009835697-01	OBS	No	3.618553	133.682720	8.6	10.097	8.2	2.3	1.36	7146	0.48	1667.62
009835697-02	OBS	No	3.618405	134.308196	53.9	11.490	8.5	9.9	1.36	7146	1.16	1667.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009835697-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009835697-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

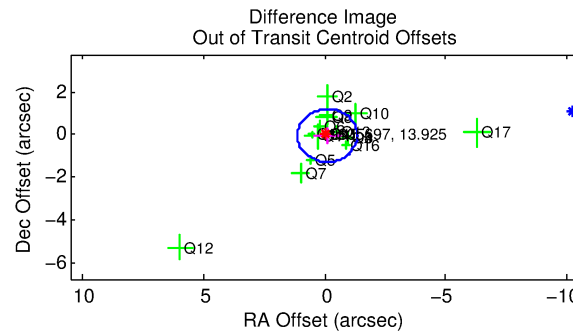
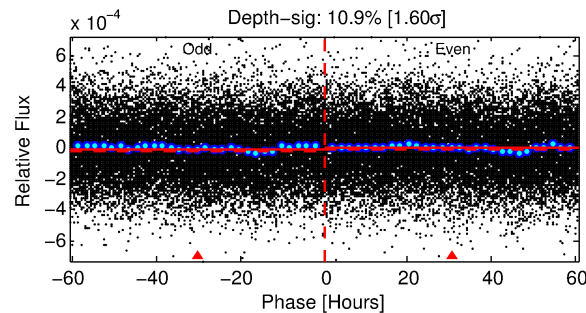
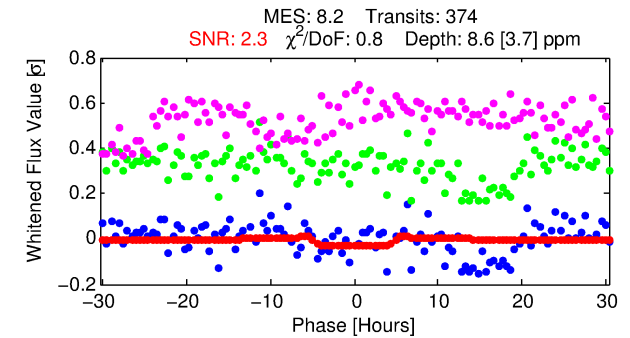
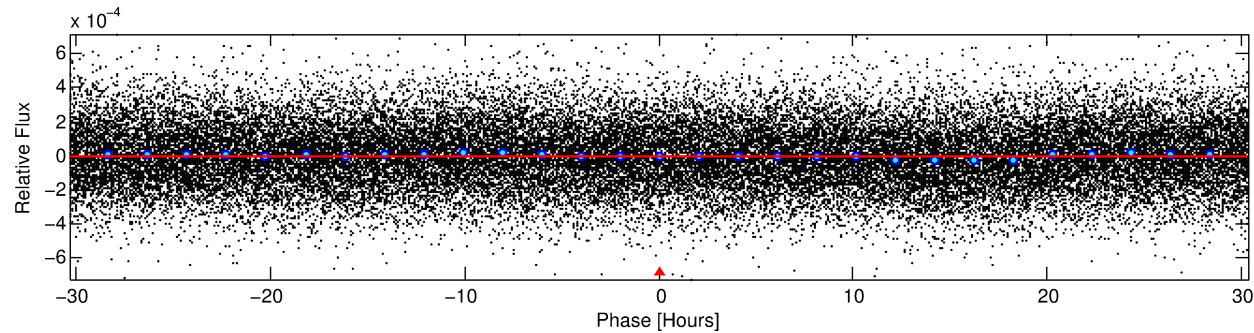
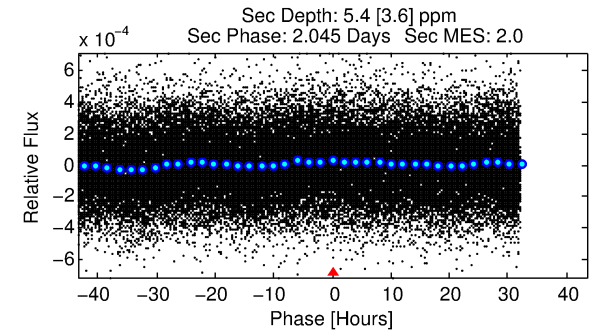
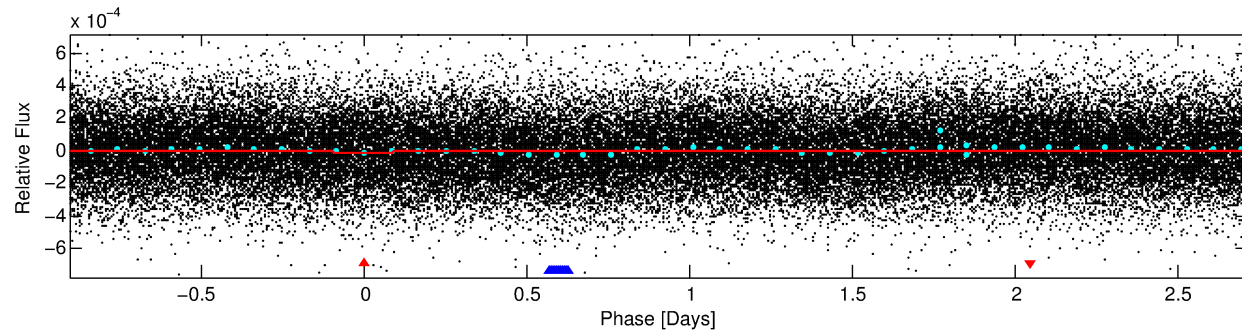
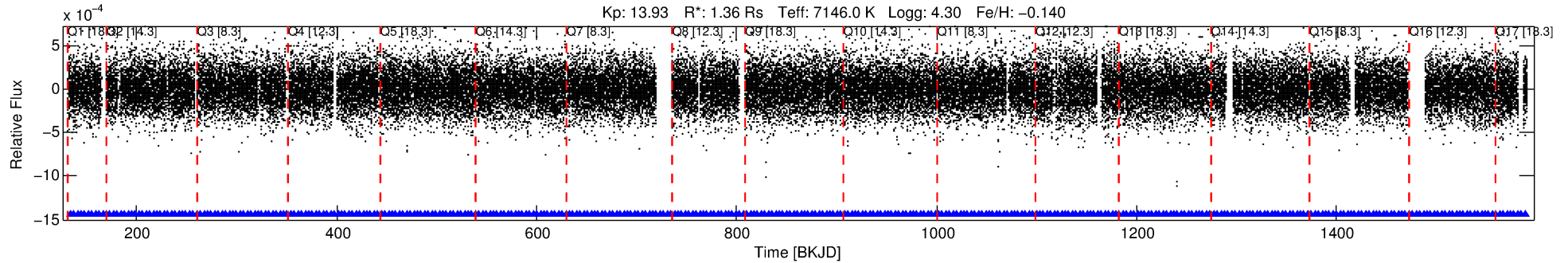
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009835697-01

No Significant Match Found

DV One-Page Summary

KIC: 9835697 Candidate: 1 of 2 Period: 3.619 d



DV Fit Results:

Period = 3.61855 [0.00017] d
Epoch = 133.6827 [0.0301] BKJD
Rp/R* = 0.0032 [0.0017]
a/R* = 1.38 [2.02]
b = 0.94 [0.41]
Seff = 1667.62 [743.41]
Teff = 1629 [182] K
Rp = 0.48 [0.31] Re
a = 0.0510 [0.0151] AU
Ag = 33.51 [43.84] [0.74σ]
Teffp = 6062 [1898] K [2.32σ]

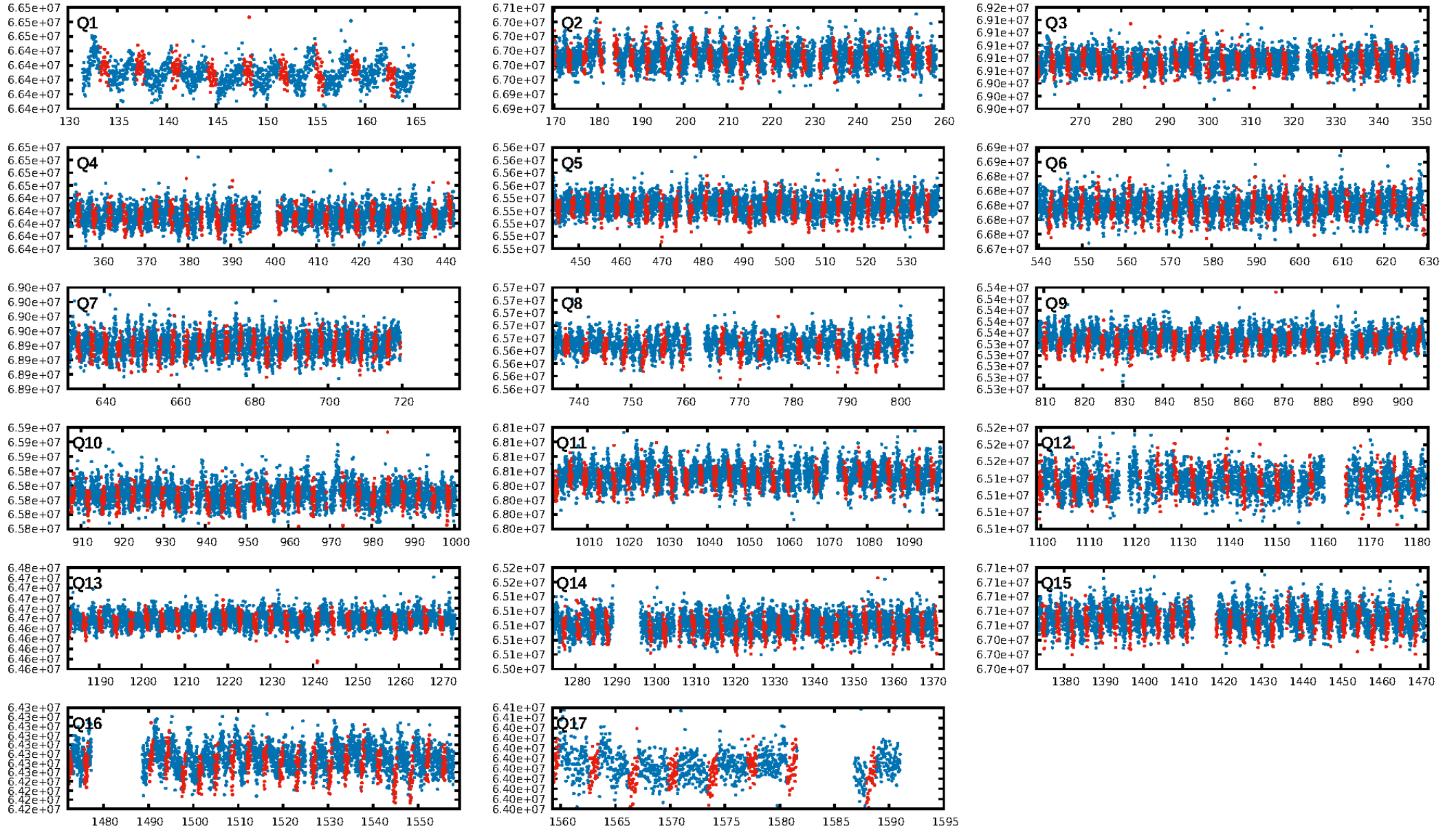
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.12e-12
RollingBand-fgt: 1.00 [357/357]
GhostDiagnostic-chr: 1.082
Centroid-sig: 0.1%
Centroid-so: 6.869 arcsec [2.03σ]
OotOffset-rm: 0.112 arcsec [0.27σ]
KicOffset-rm: 0.200 arcsec [0.36σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.88 [14/16]
DiffImageOverlap-fno: 0.00 [0/17]

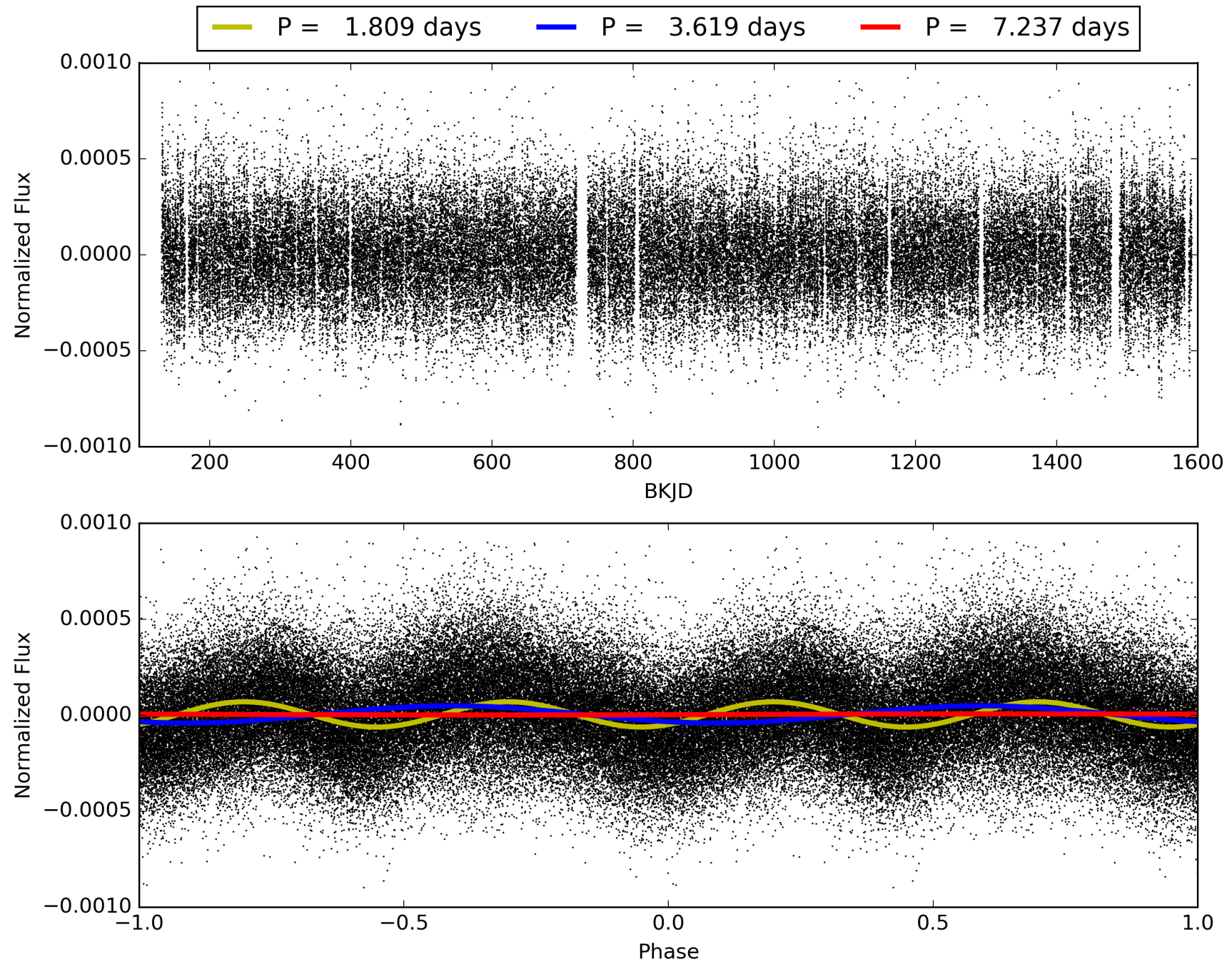
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009835697-01, PDC Light Curves

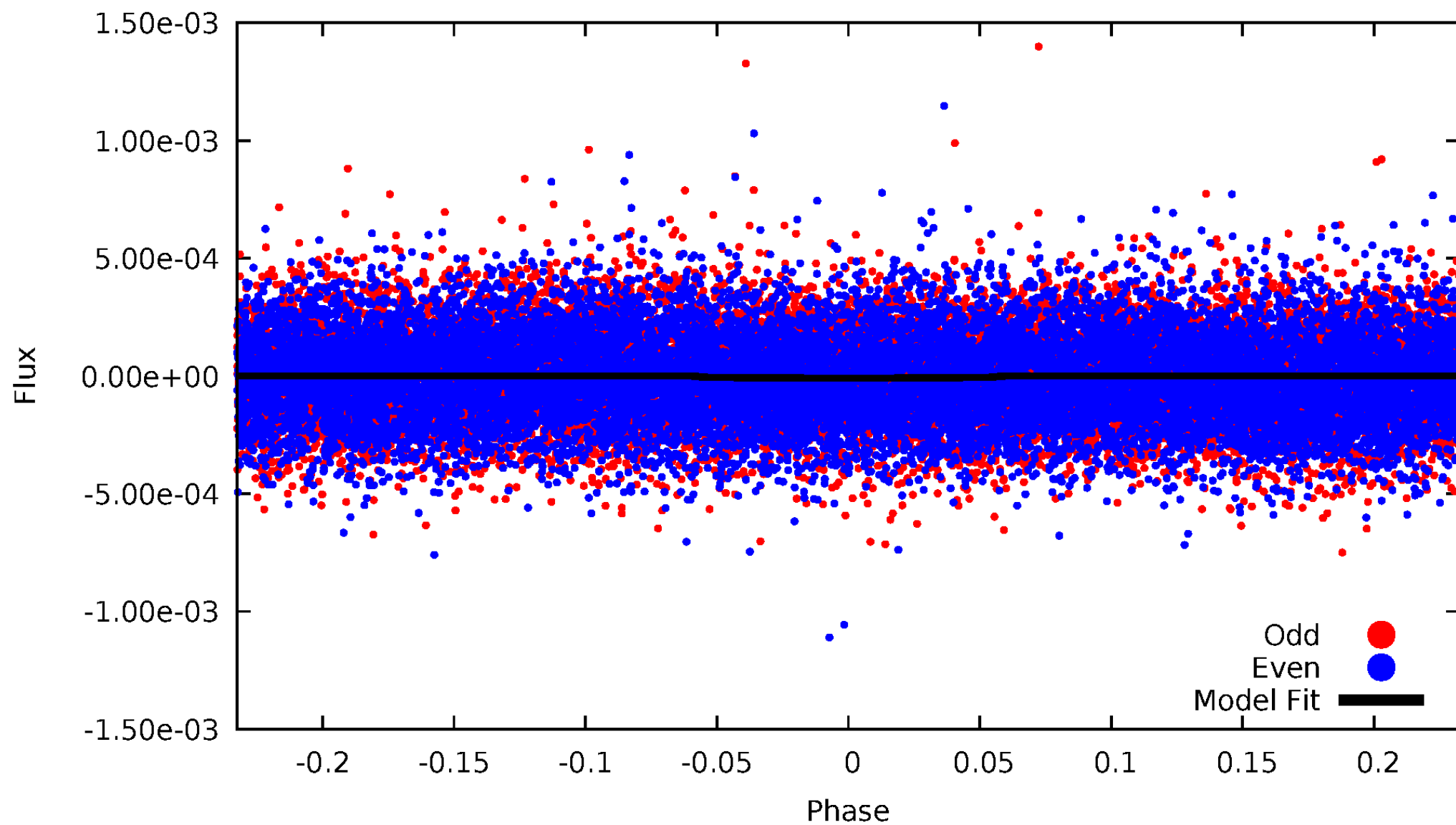


TCE 009835697-01



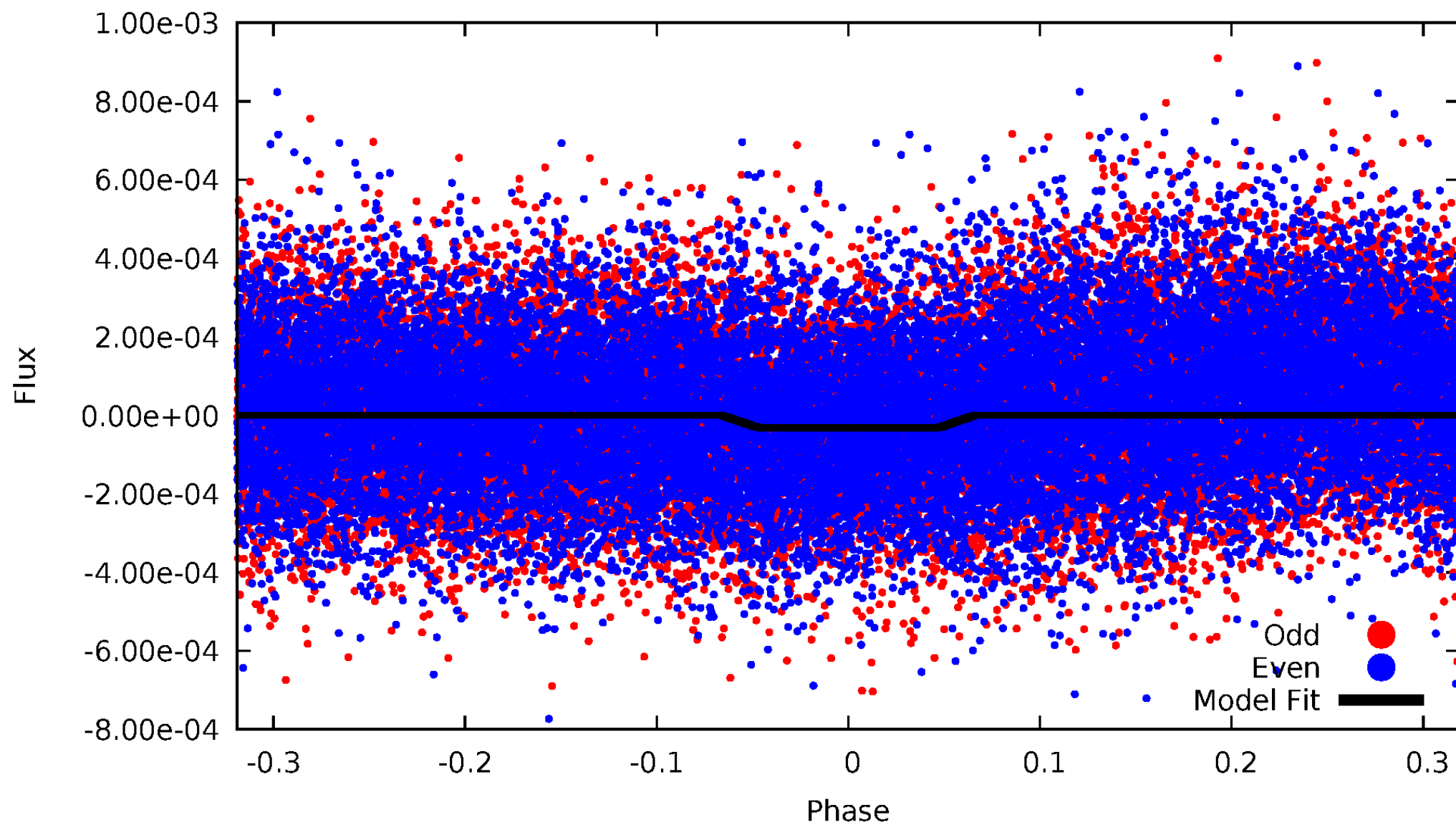
DV Odd/Even

TCE 009835697-01

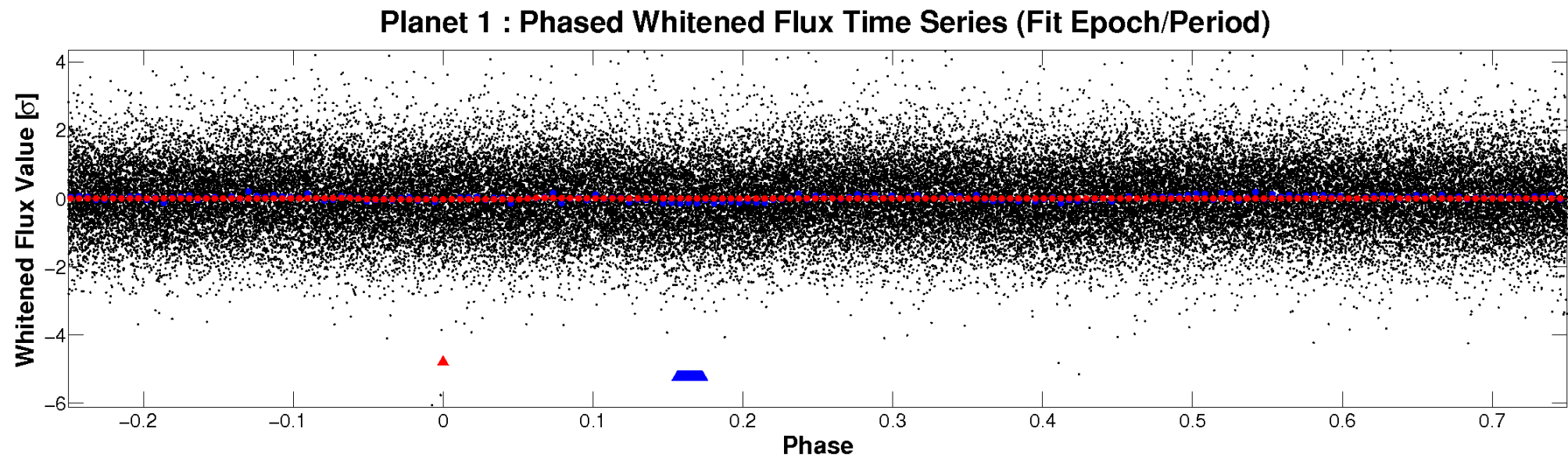
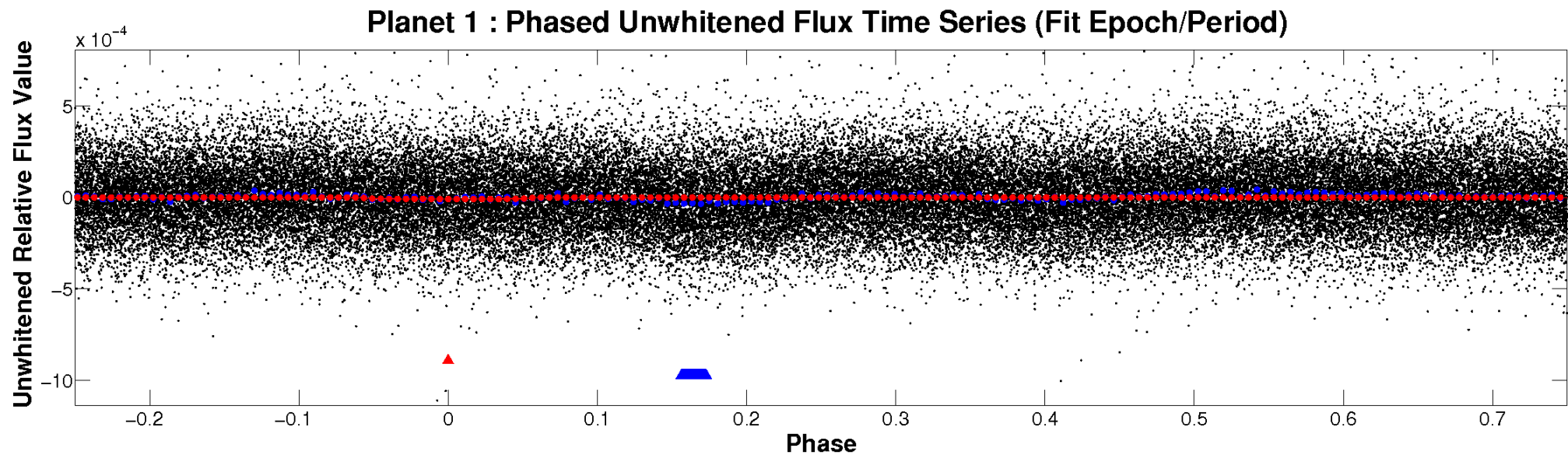


ALT Odd/Even

TCE 009835697-01

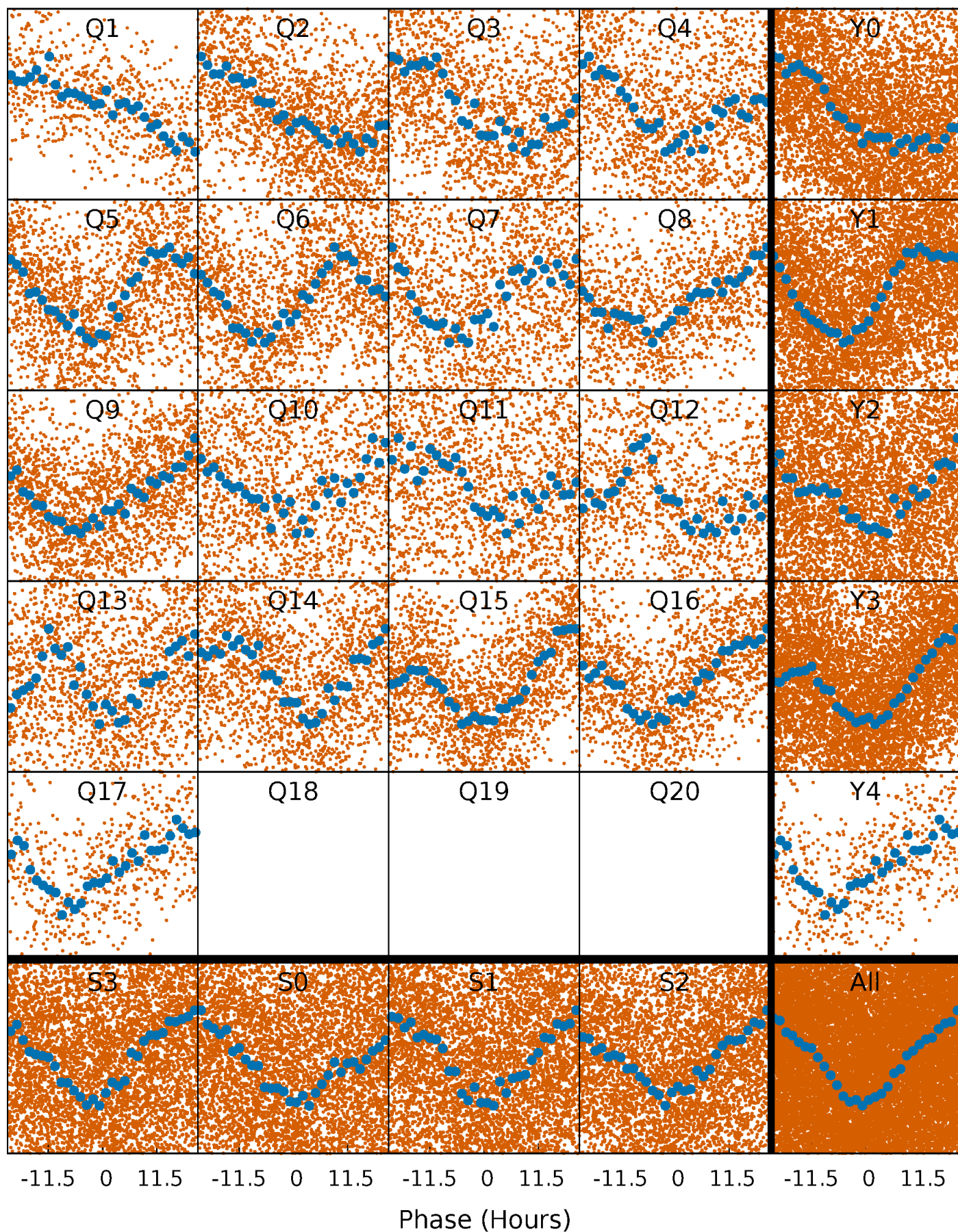


Non-Whitened Vs. Whitened Light Curve



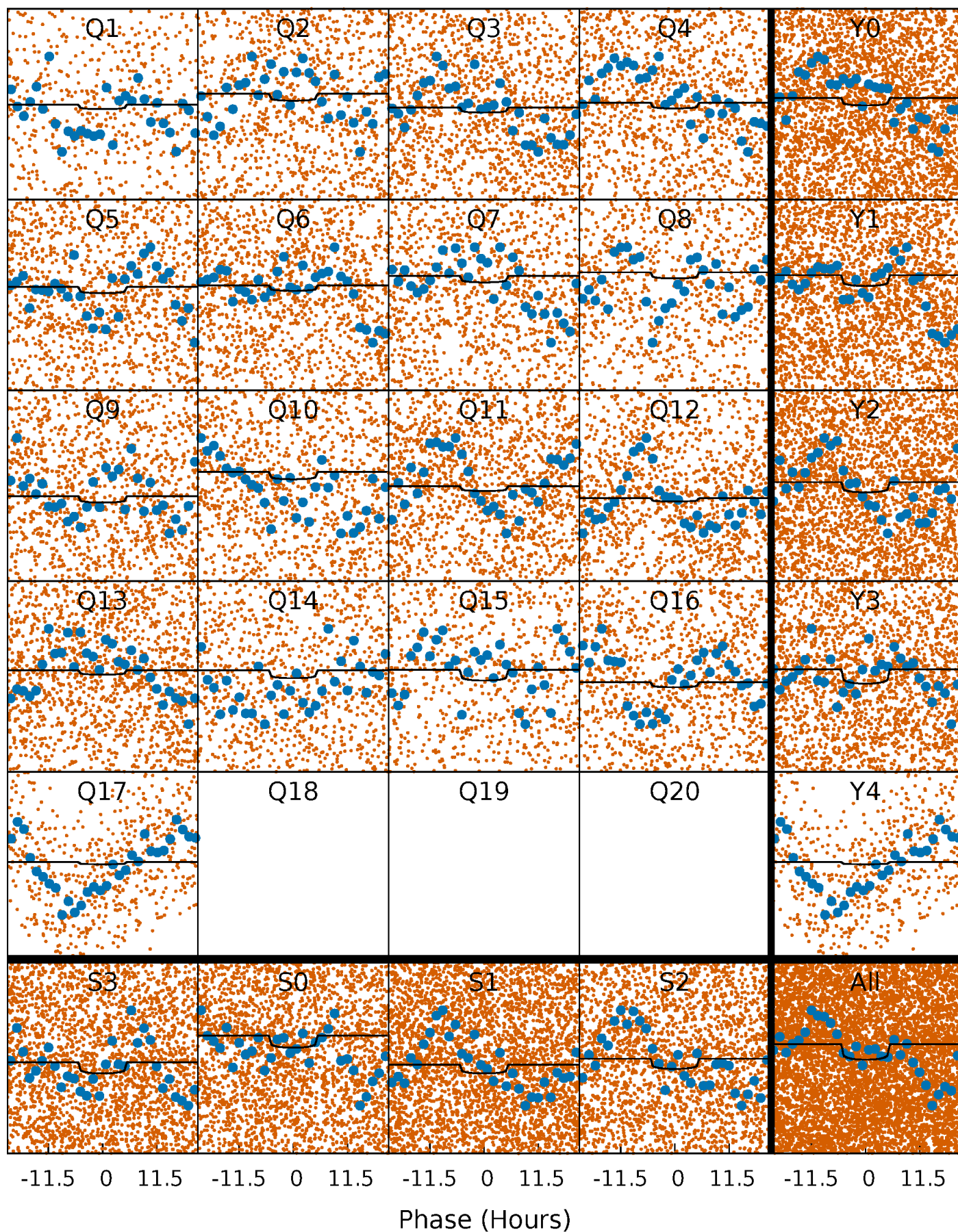
PDC Quarter-Phased Transit Curves

TCE 009835697-01 P= 3.618553 Days $T_0=133.682720$ (BKJD)



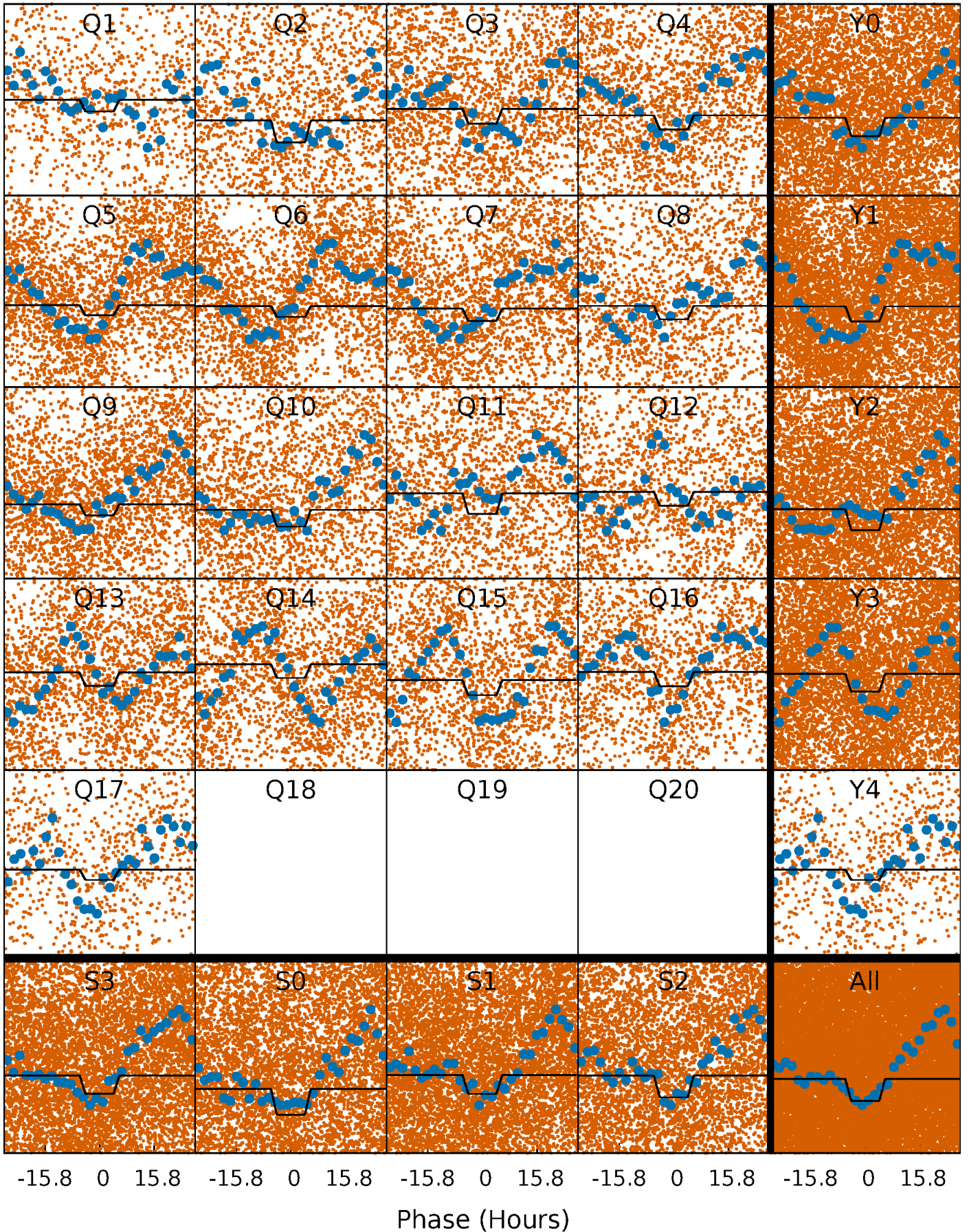
DV Quarter-Phased Transit Curves

TCE 009835697-01 P= 3.618553 Days $T_0=133.682720$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

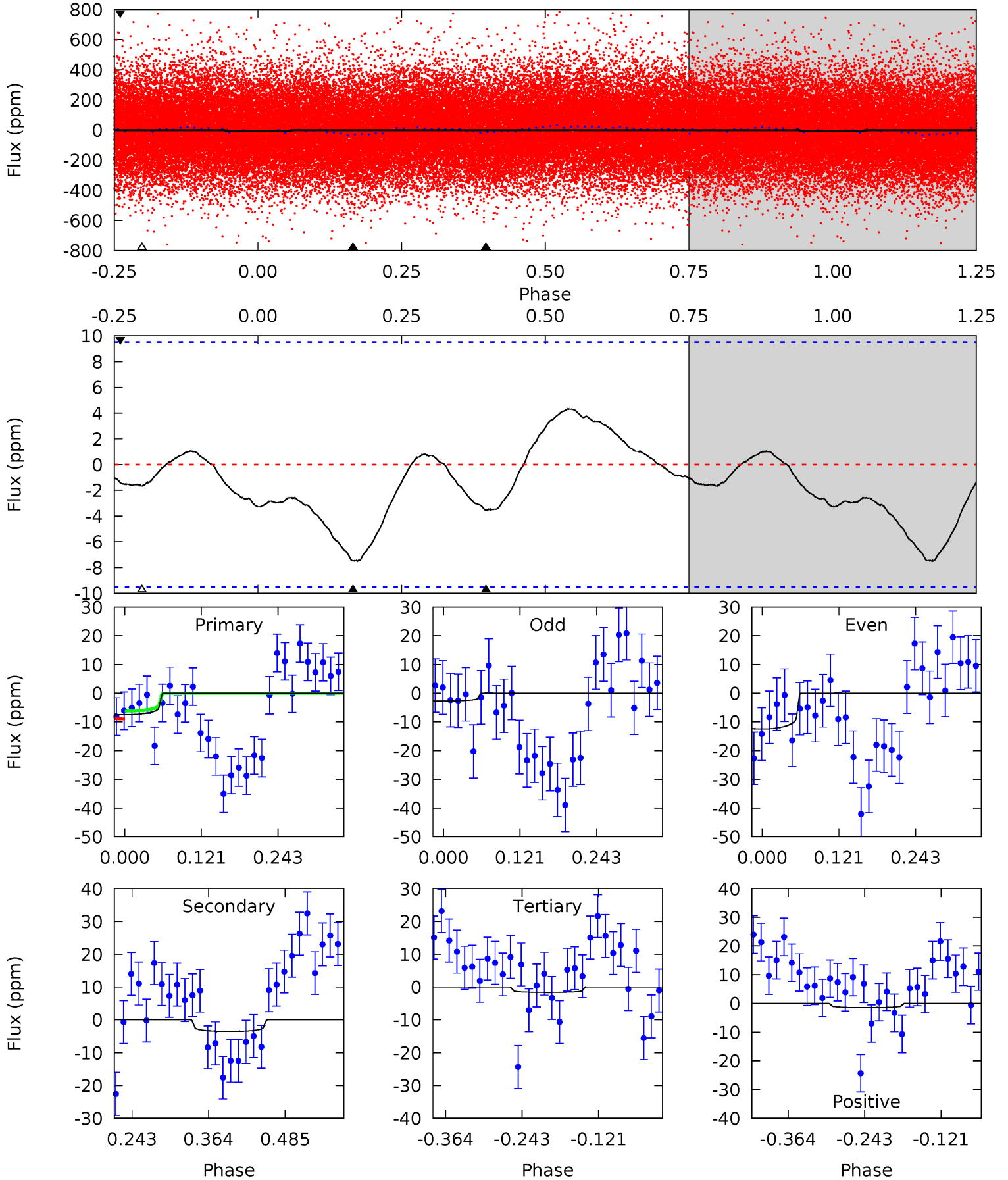
TCE 009835697-01 P= 3.618019 Days $T_0=133.737040$ (BKJD)



DV Model-Shift Uniqueness Test

009835697-01, P = 3.618553 Days, E = 130.064167 Days

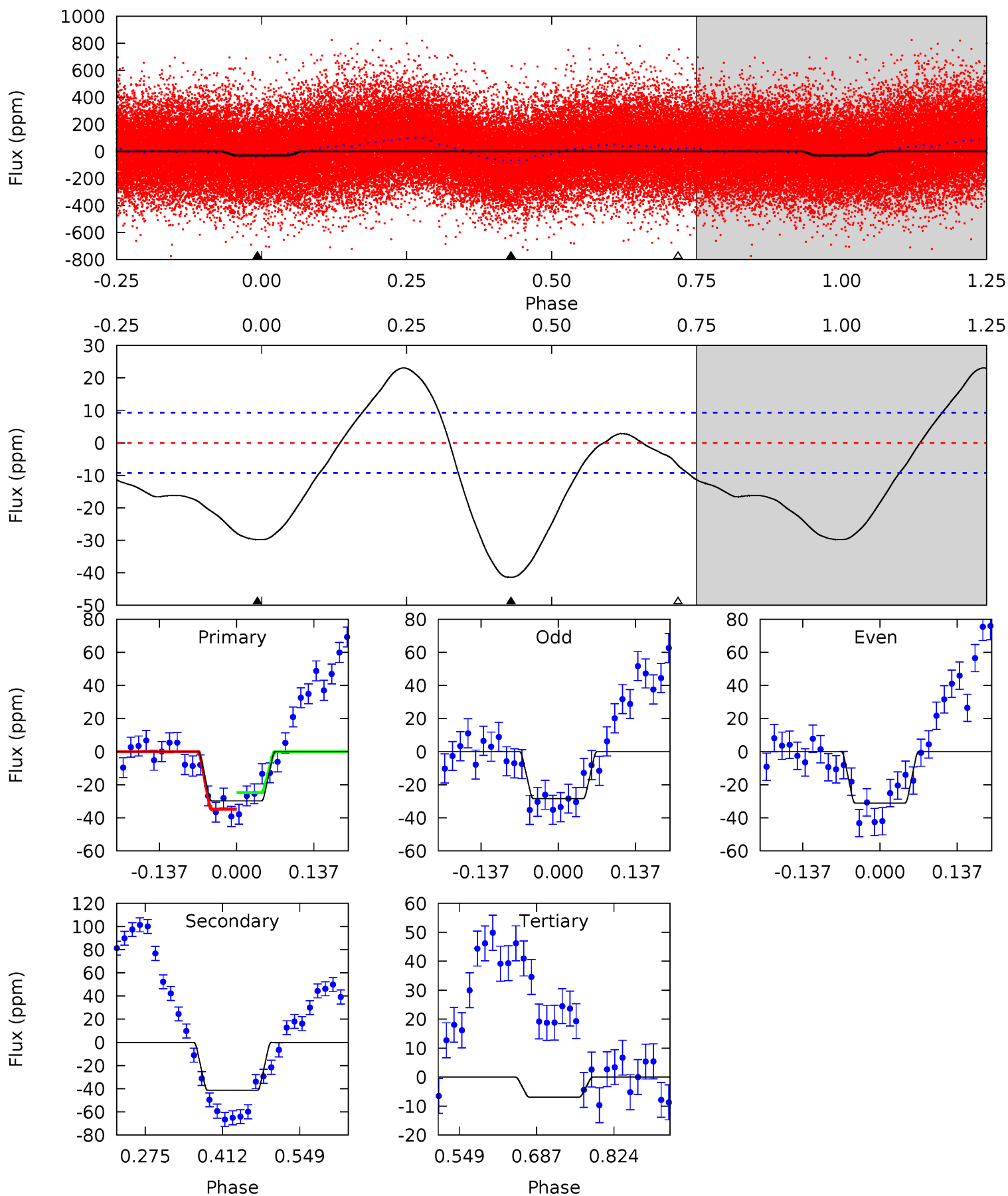
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.55	1.69	0.79	-0.67	4.52	1.55	1.03	2.76	4.23	0.90	2.36	2.31	0.97	0.37	0.64



Alt Model-Shift Uniqueness Test

009835697-01, P = 3.618019 Days, E = 130.119021 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.4	20.0	3.34	0	4.50	1.49	6.03	11.1	14.4	16.7	20.0	0.65	0.98	0.36	2.38



Stellar Parameters For KIC 009835697

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7146^{+200}_{-300}	$4.300^{+0.072}_{-0.217}$	$-0.140^{+0.250}_{-0.400}$	$1.363^{+0.499}_{-0.166}$	$1.362^{+0.223}_{-0.183}$	$0.758^{+0.242}_{-0.428}$
	+3%/-4%	+2%/-5%	+179%/-286%	+37%/-12%	+16%/-13%	+32%/-56%
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 009835697-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-4 ± 2	$0.53^{+0.27}_{-0.25}$	2314^{+189}_{-129}	5167^{+2069}_{-1078}	16^{+46}_{-11}
Alt.	-41 ± 2	$0.90^{+0.29}_{-0.29}$	2322^{+176}_{-129}	7633^{+1945}_{-1000}	72^{+81}_{-29}

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 $A_{obs} \gg 1.0$

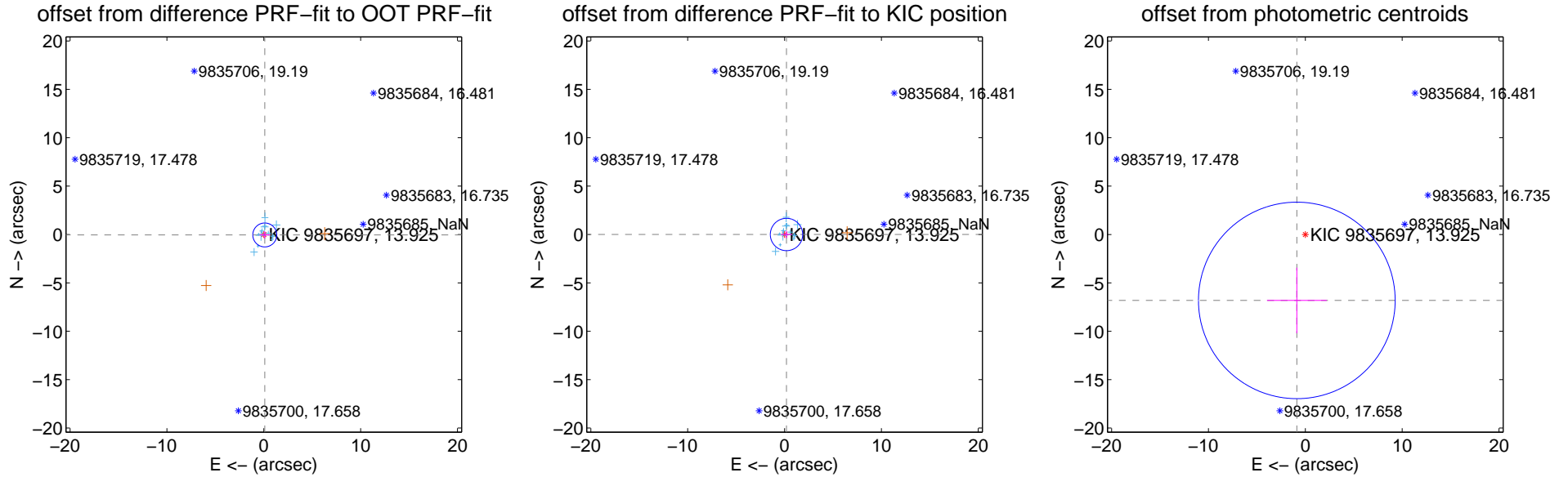
DV Centroid Data

Supplemental centroid analysis for 009835697-01. Kepler magnitude: 13.93. Transit SNR 2.31

There are 14 quarters with good PRF difference image offsets

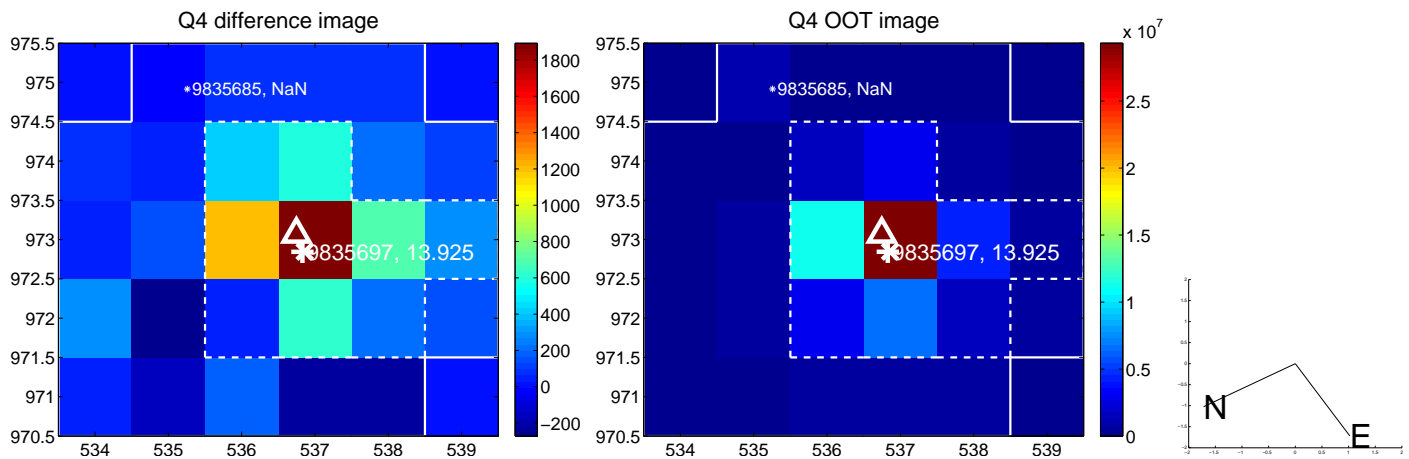
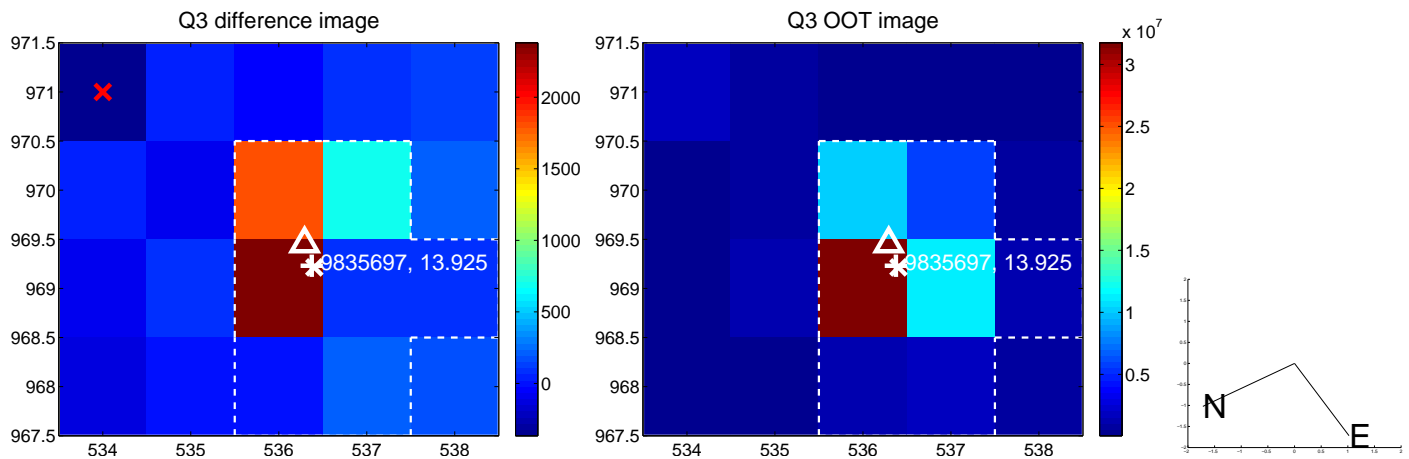
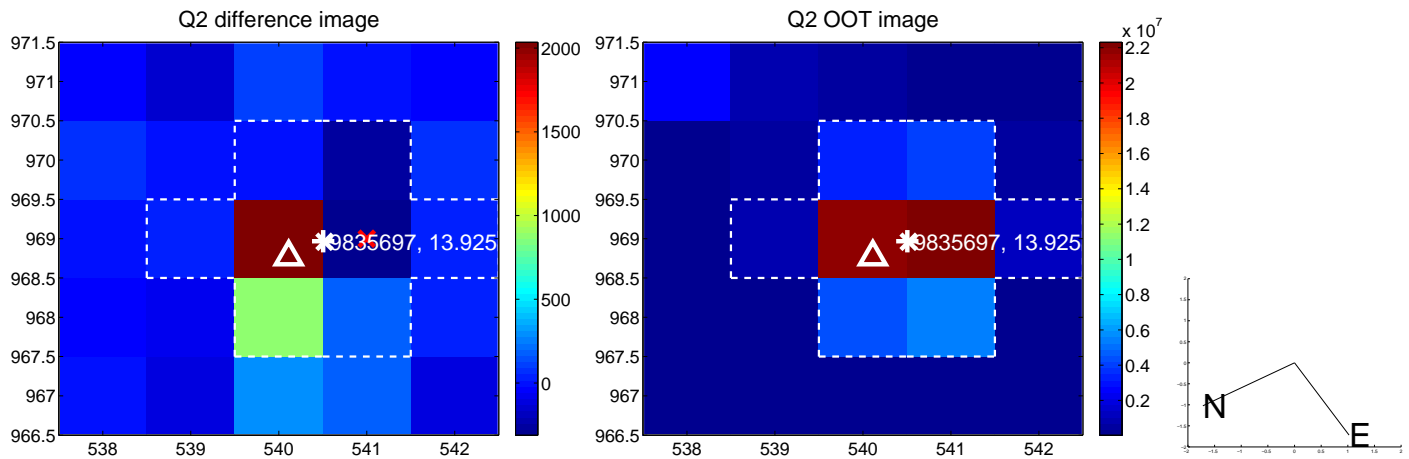
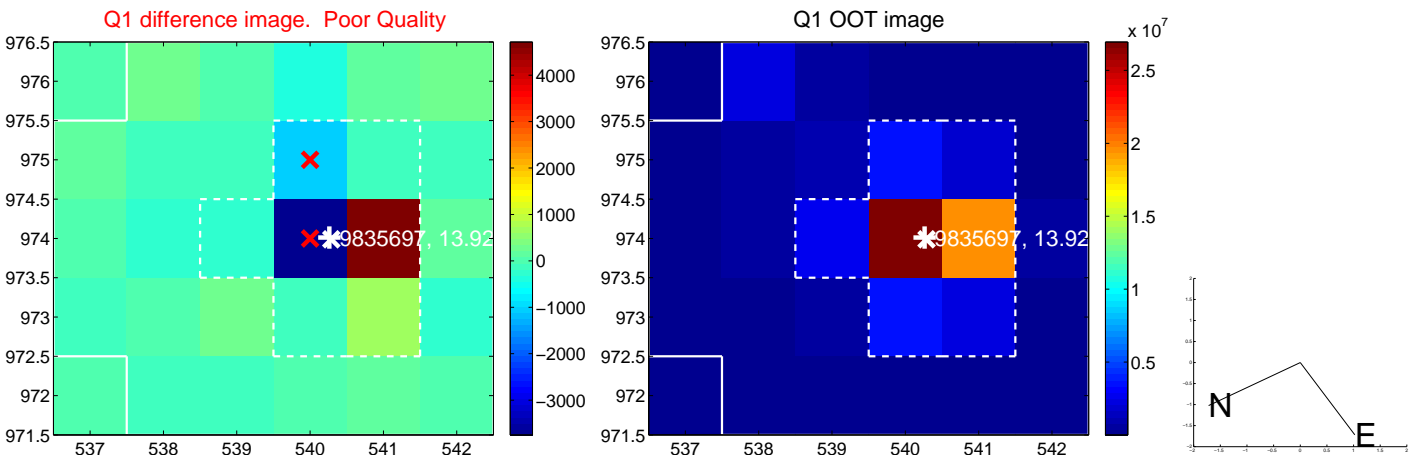
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.112 ± 0.412	0.27	-0.101 ± 0.545	-0.047 ± 0.378
PRF-fit source offset from KIC position	0.200 ± 0.557	0.36	-0.200 ± 0.556	0.001 ± 0.387
photometric centroid source offset	6.87 ± 3.38	2.03	0.88 ± 3.08	-6.81 ± 3.39

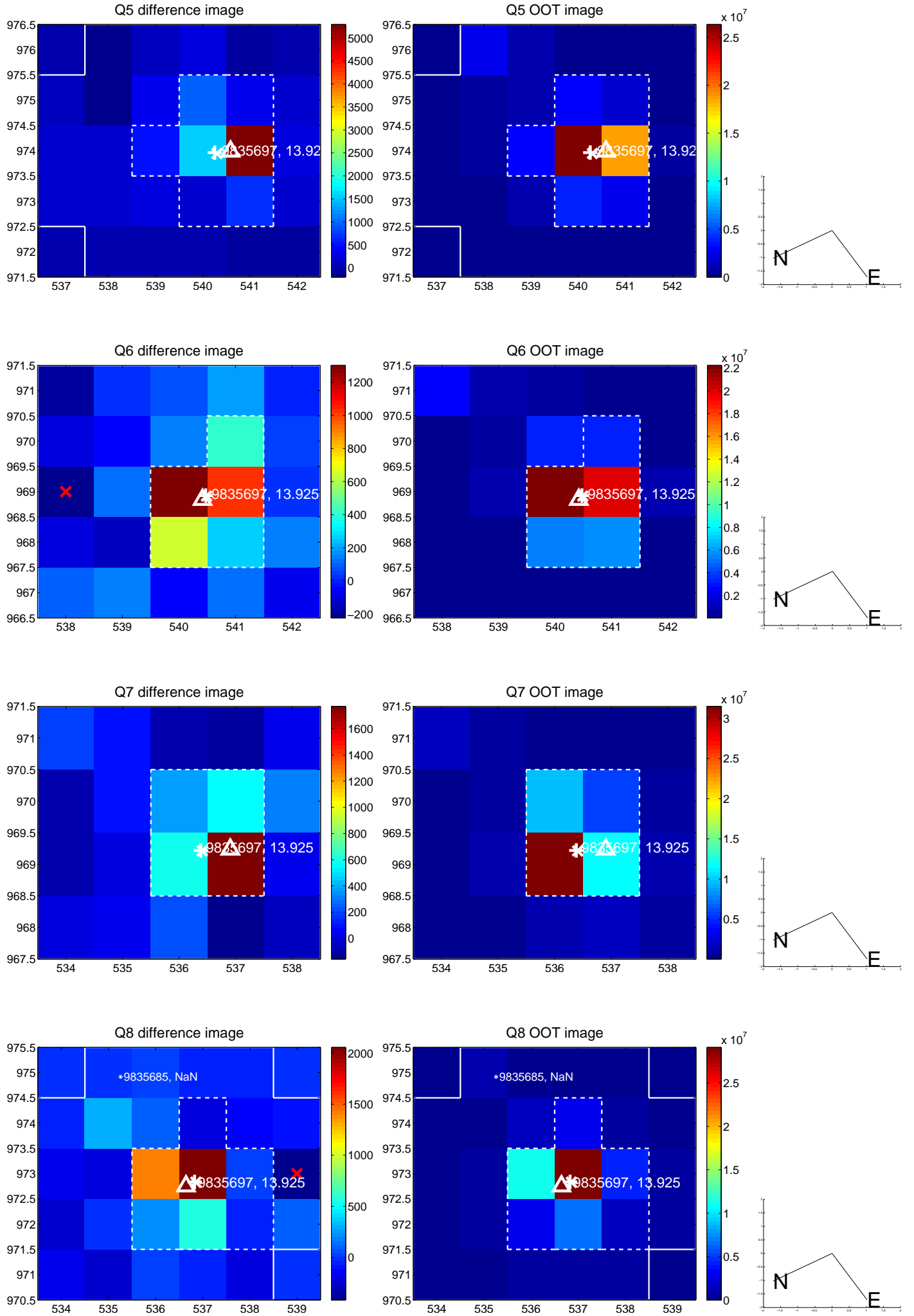


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

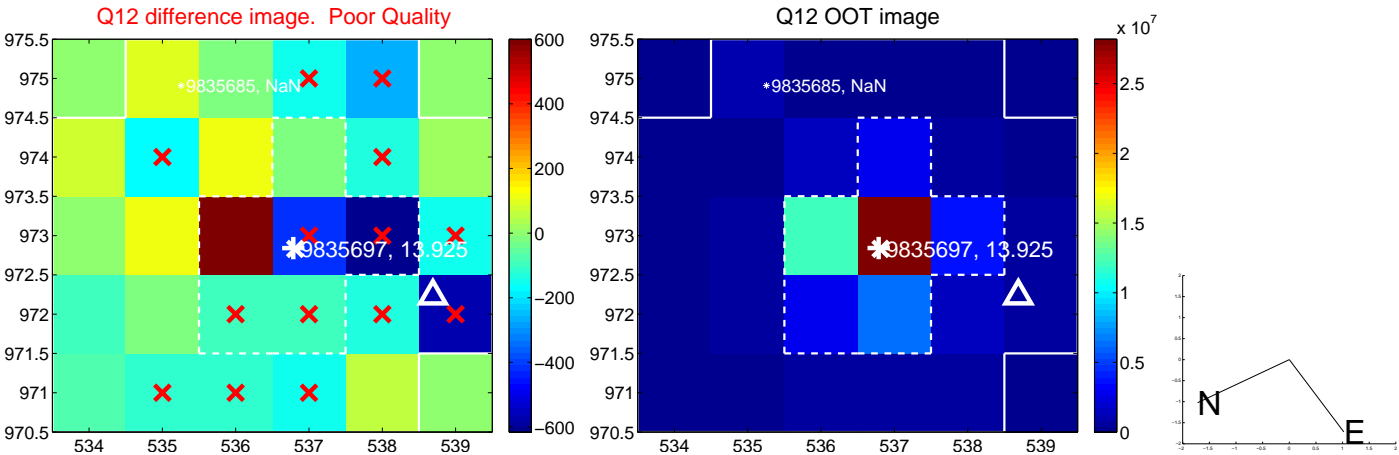
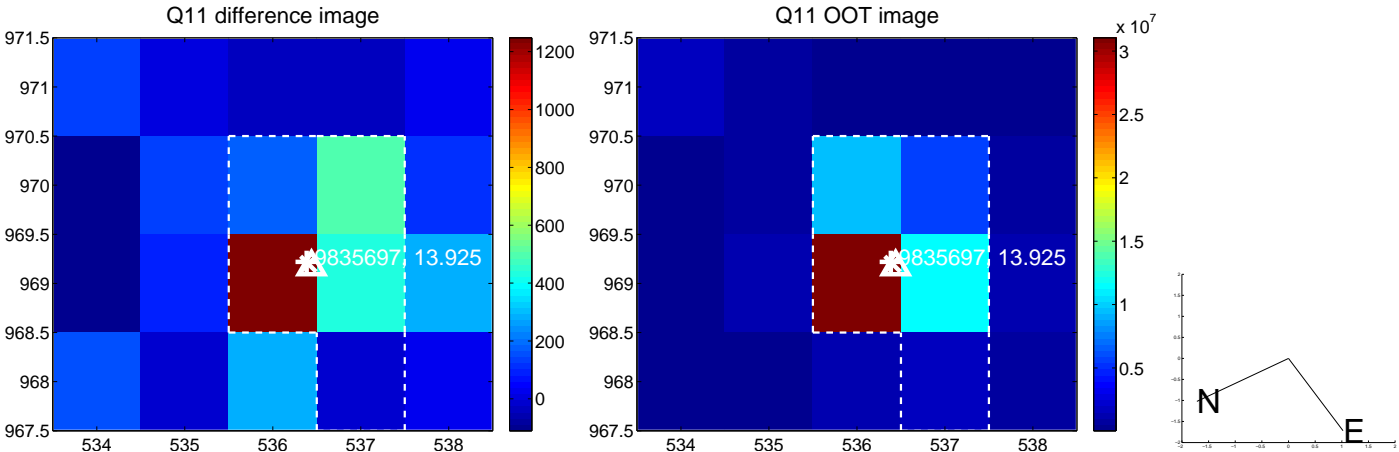
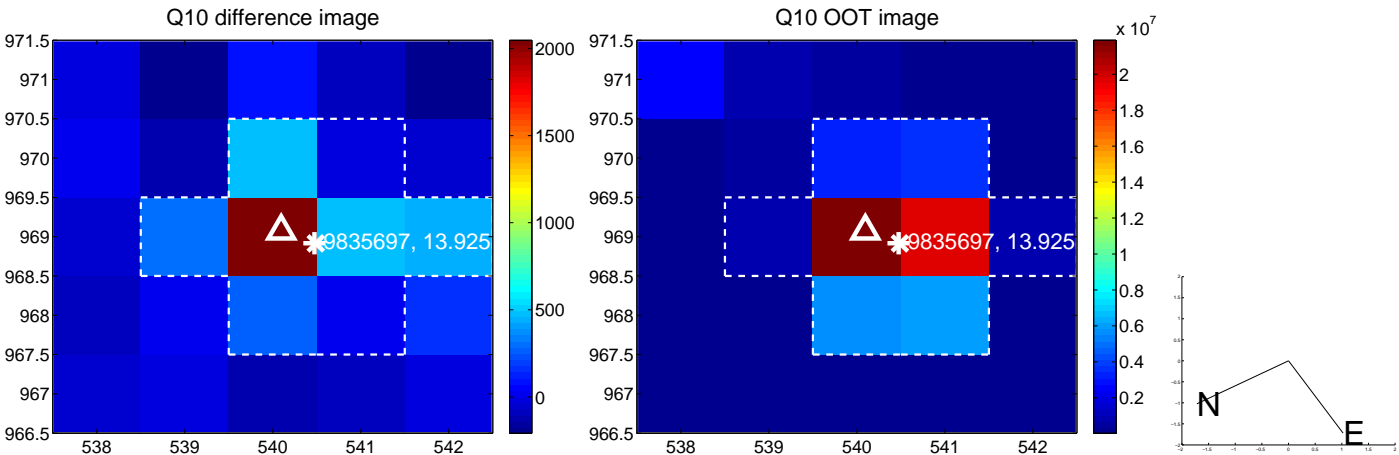
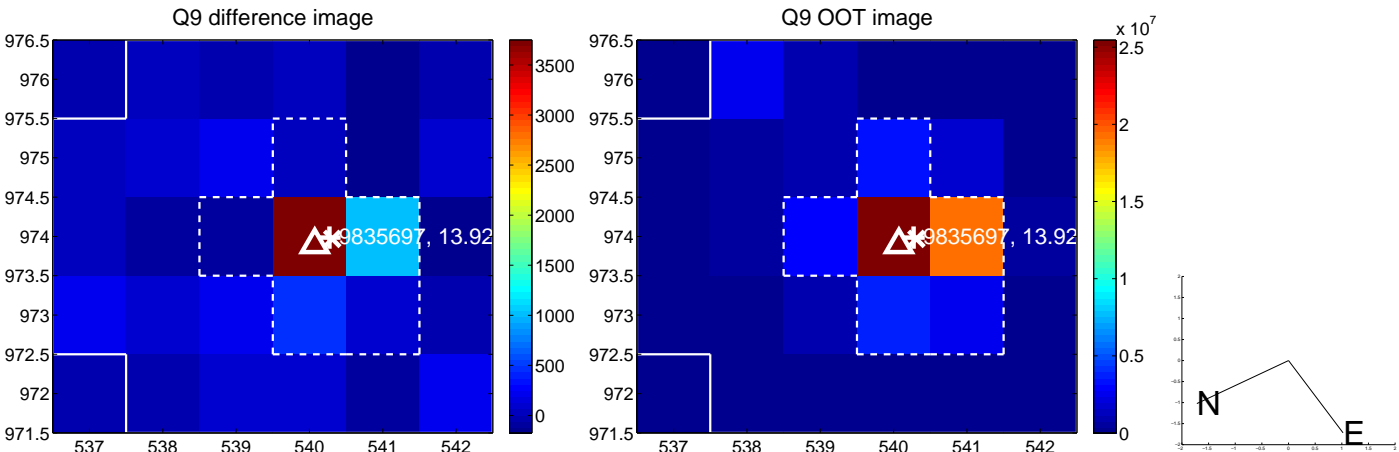
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



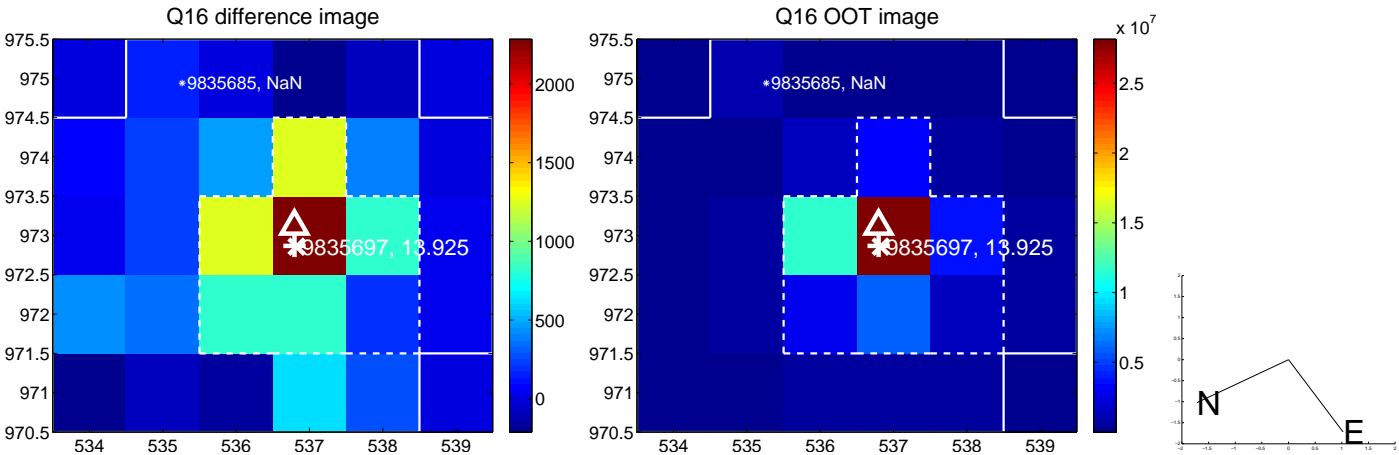
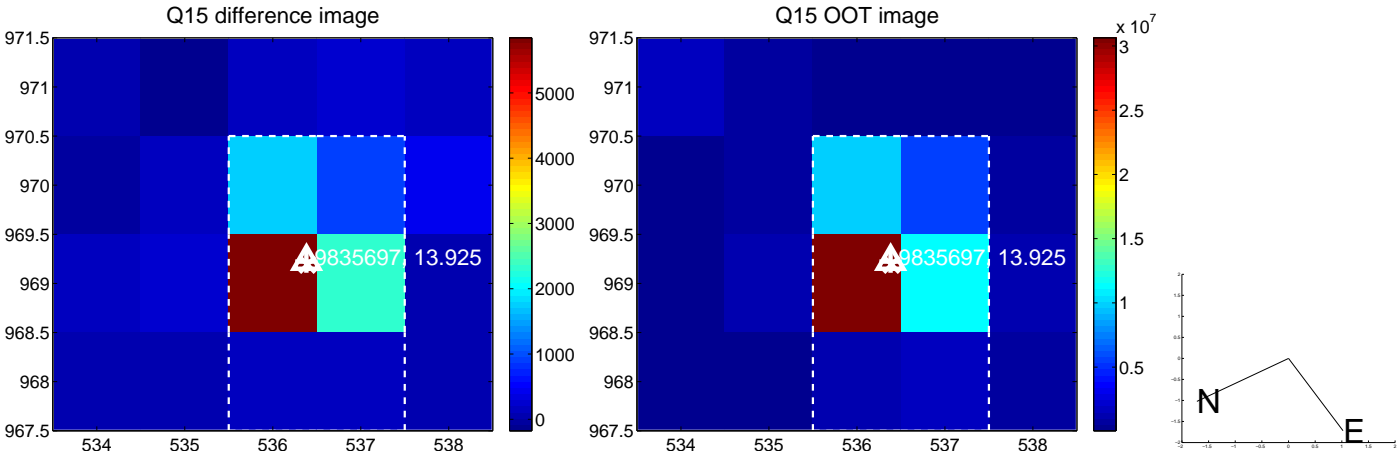
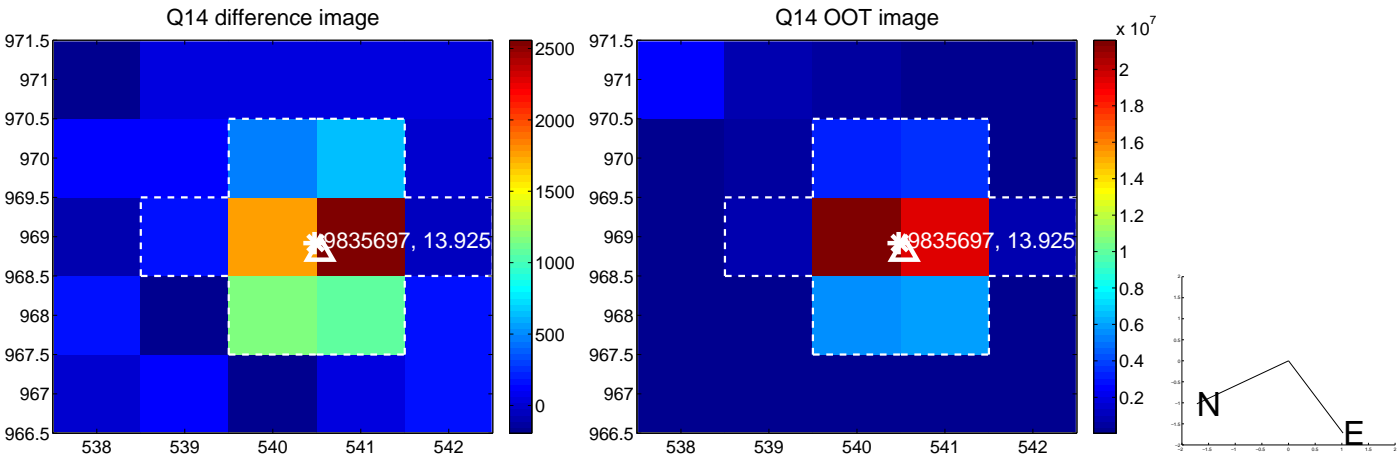
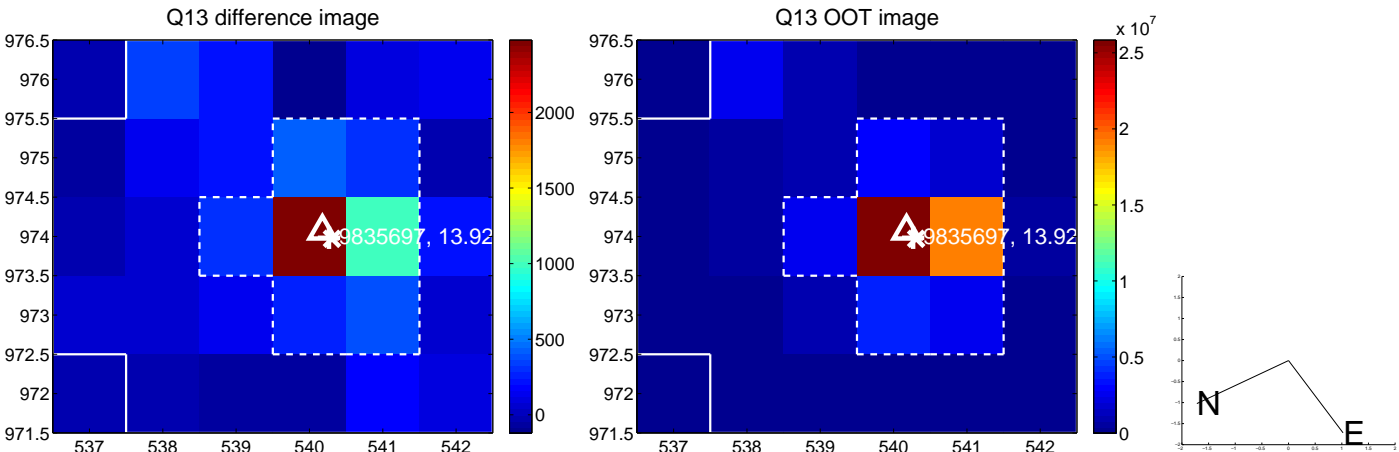
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



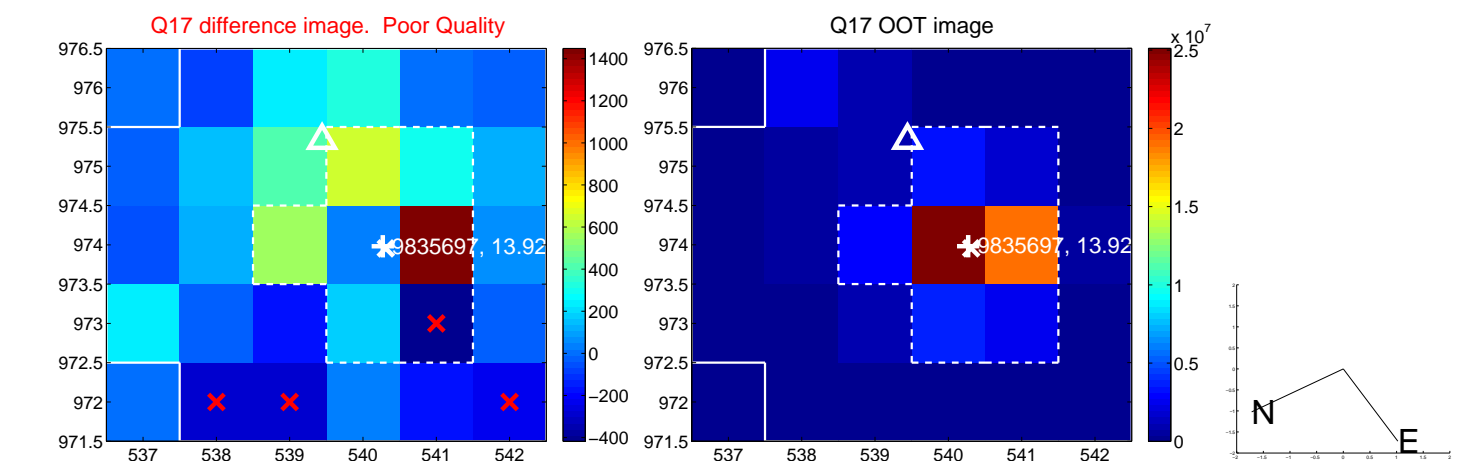
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



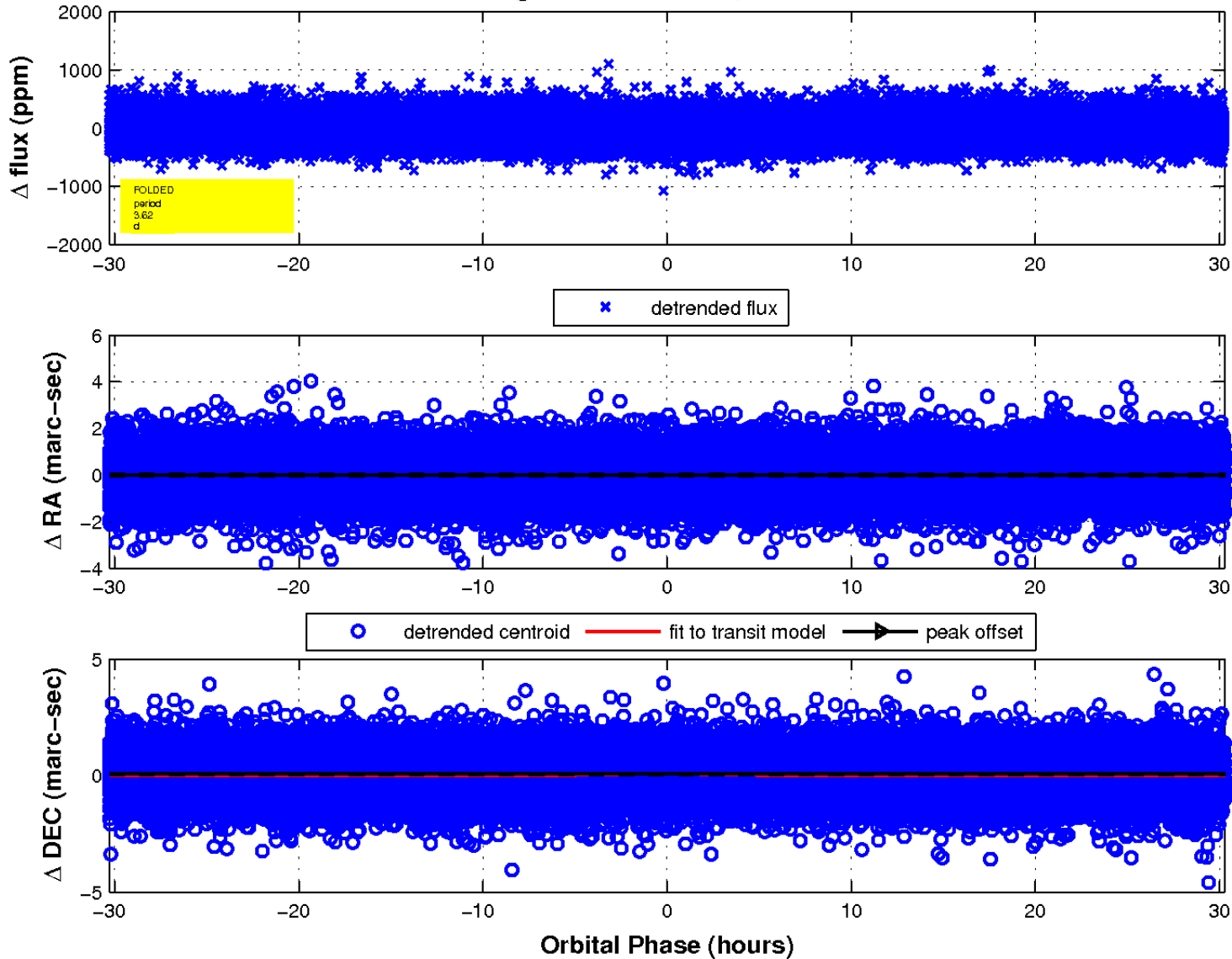
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

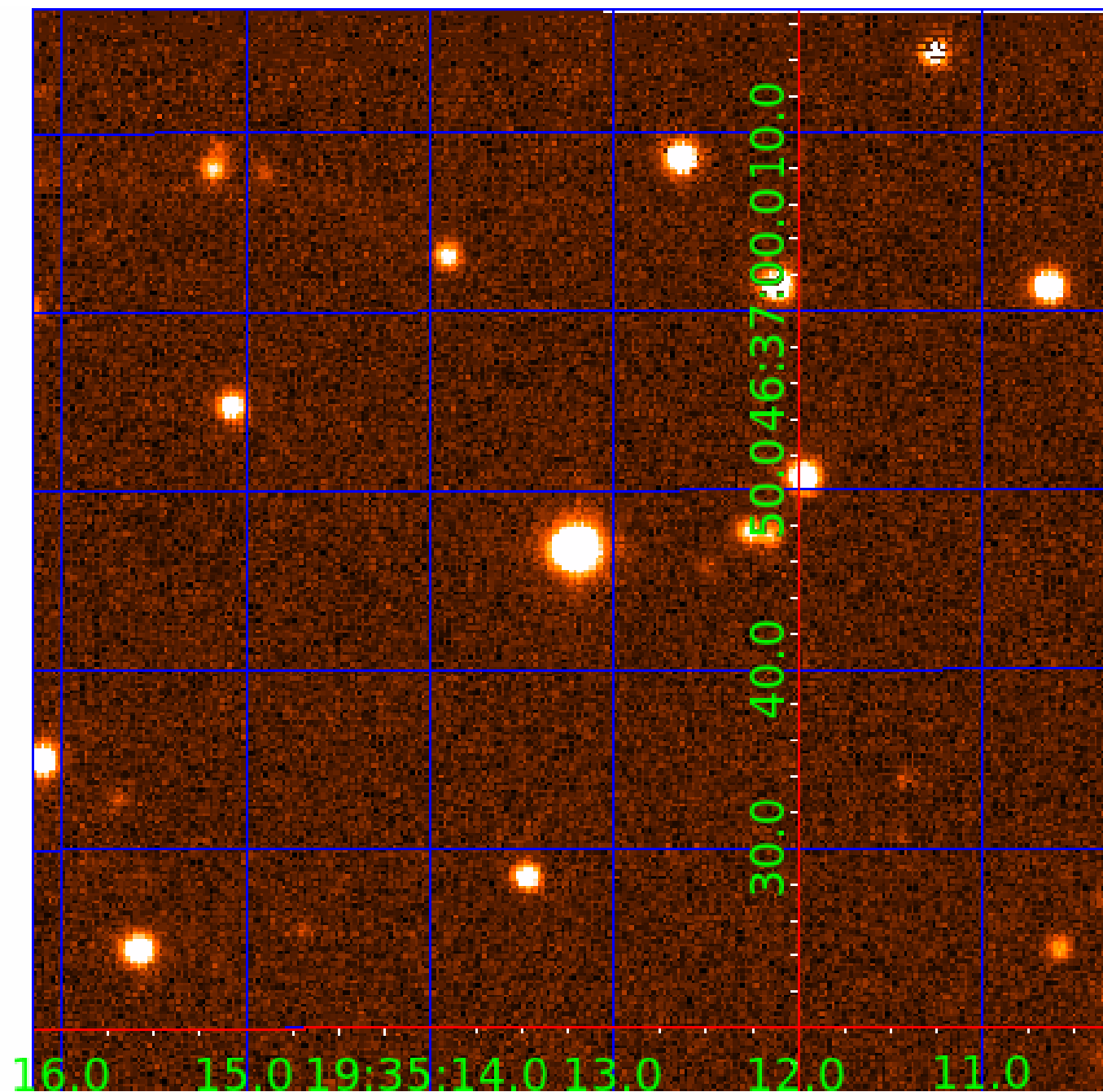


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 009835697

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})
009835697-01	OBS	No	3.618553	133.682720	8.6	10.097	8.2	2.3	1.36	7146	0.48	1667.62
009835697-02	OBS	No	3.618405	134.308196	53.9	11.490	8.5	9.9	1.36	7146	1.16	1667.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009835697-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
009835697-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

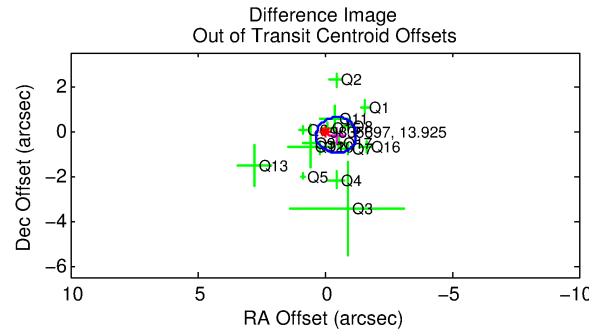
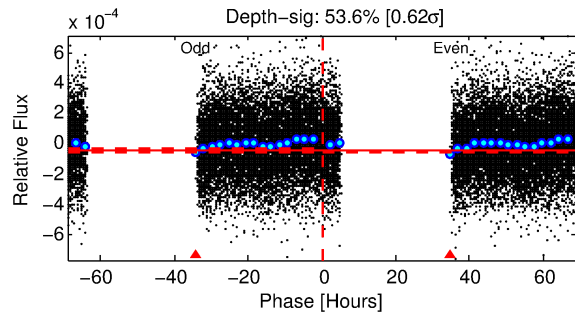
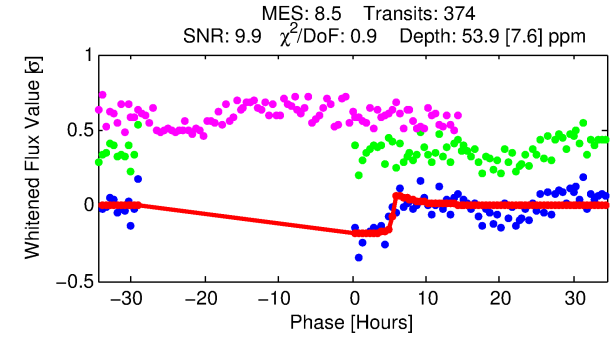
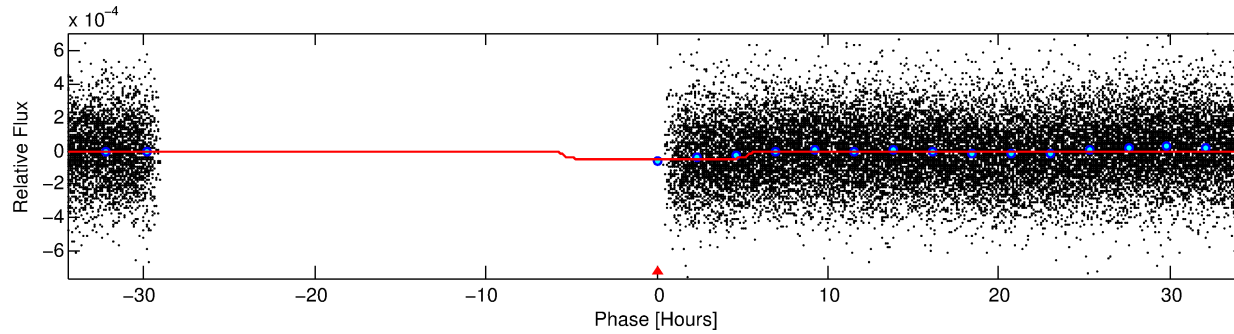
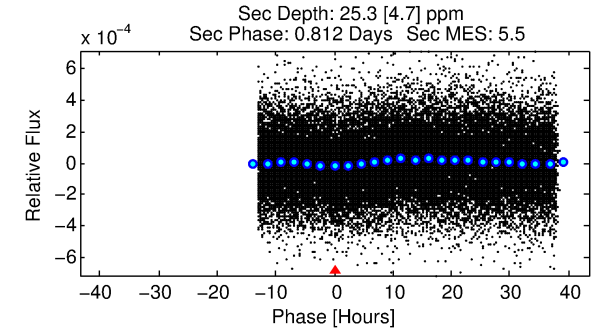
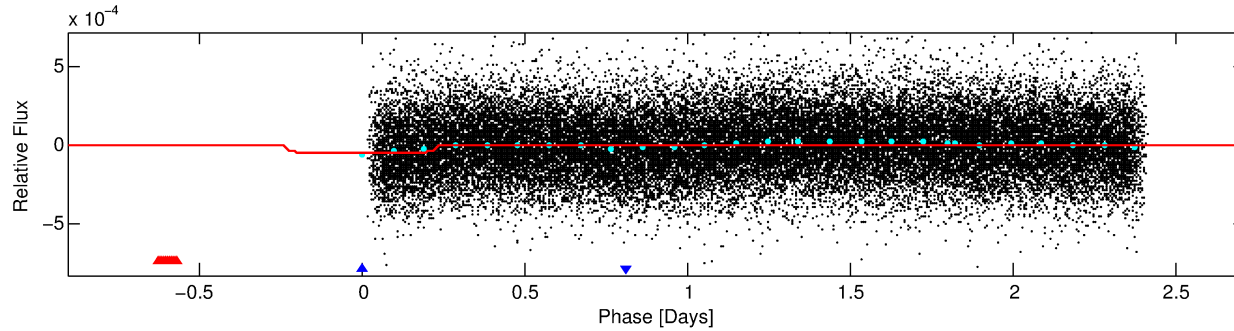
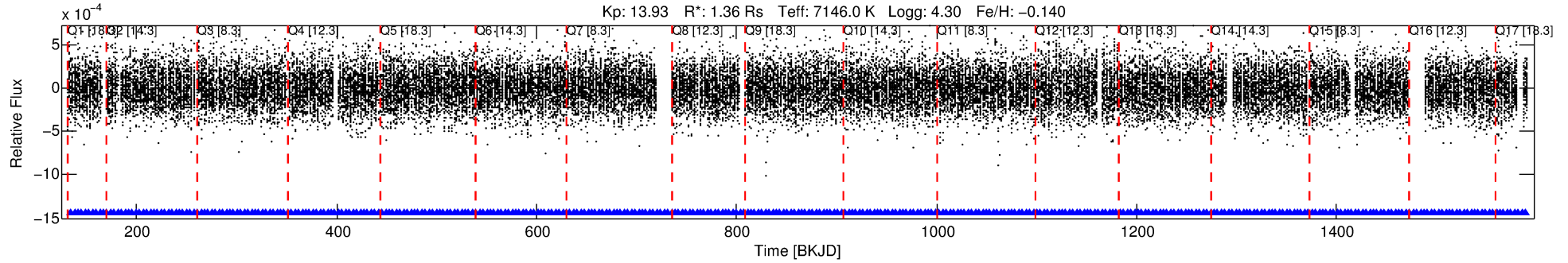
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009835697-02

No Significant Match Found

DV One-Page Summary

KIC: 9835697 Candidate: 2 of 2 Period: 3.618 d



DV Fit Results:

Period = 3.61841 [0.00005] d
Epoch = 134.3082 [0.0880] BKJD
Rp/R* = 0.0078 [0.0024]
a/R* = 1.44 [1.50]
b = 0.90 [0.35]
Seff = 1667.71 [743.45]
Teq = 1630 [182] K
Rp = 1.16 [0.55] Re
a = 0.0510 [0.0151] AU
Ag = 26.90 [20.39] [1.27σ]
Teffp = 5738 [943] K [4.28σ]

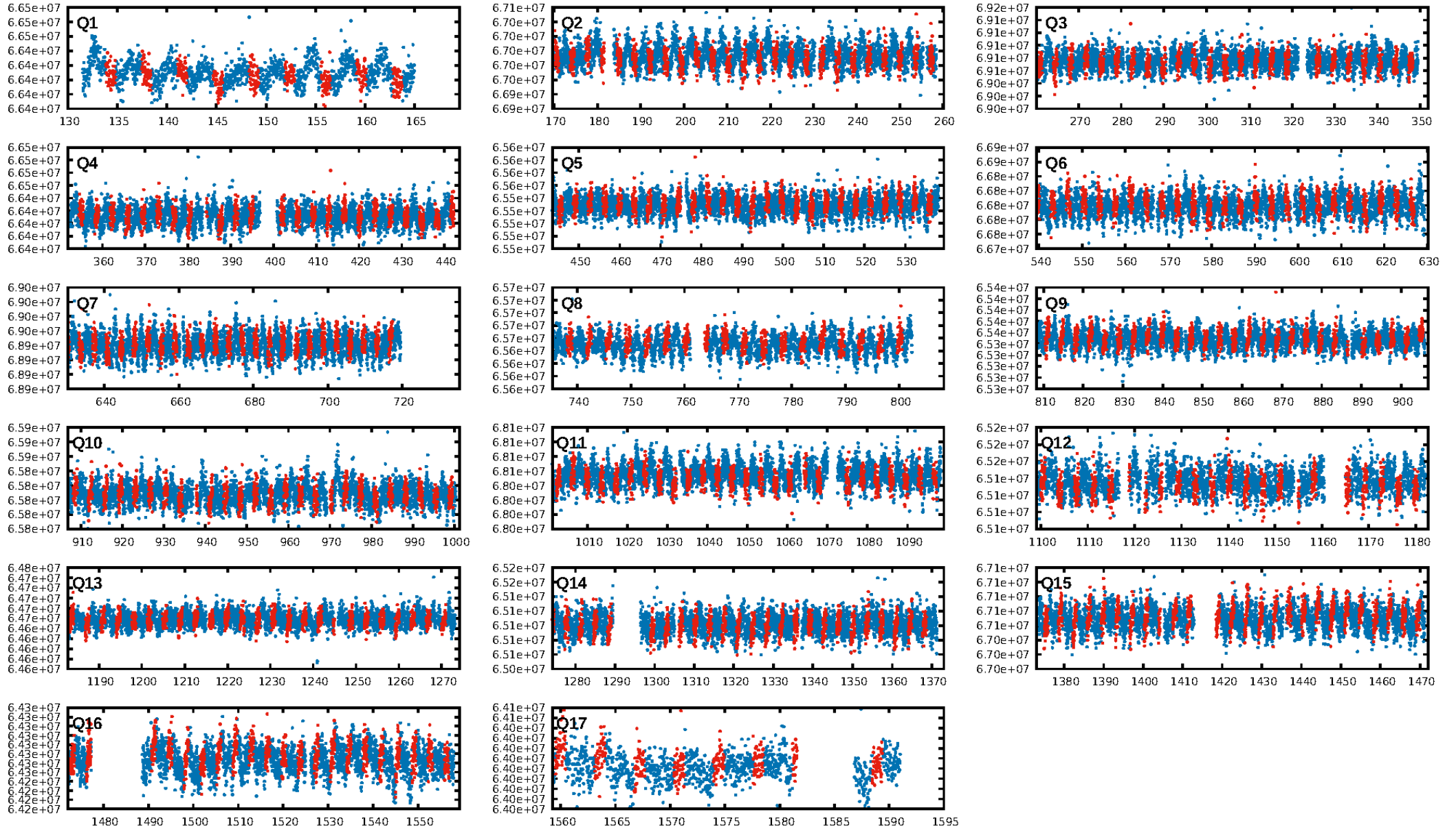
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.66e-13
RollingBand-fgt: 1.00 [358/358]
GhostDiagnostic-chr: 1.9
Centroid-sig: 69.7%
Centroid-so: 0.459 arcsec [0.98σ]
OotOffset-rm: 0.491 arcsec [1.86σ]
KicOffset-rm: 0.587 arcsec [2.33σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.19 [3/16]
DiffImageOverlap-fno: 0.00 [0/17]

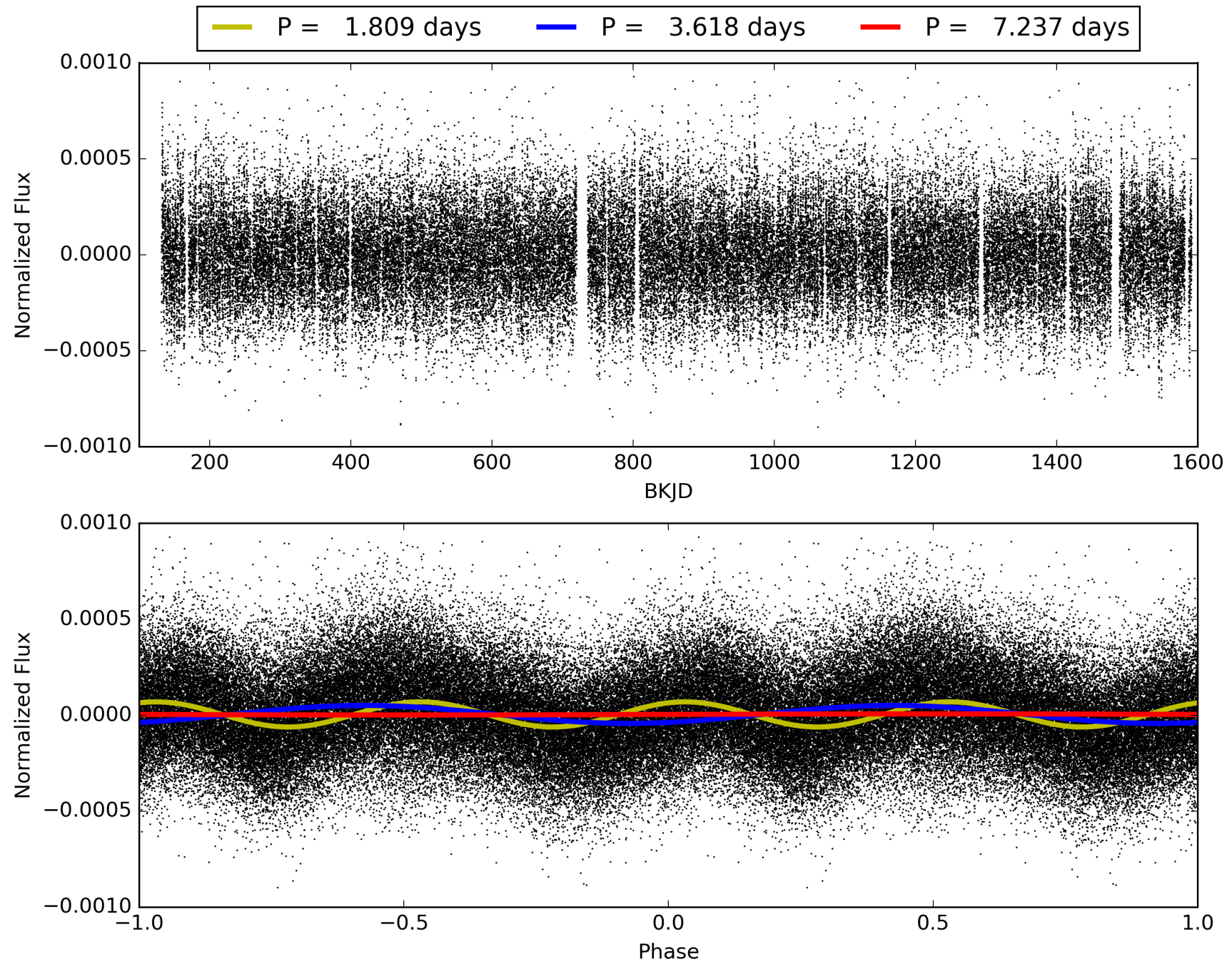
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 21:44:15 Z

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

TCE 009835697-02, PDC Light Curves

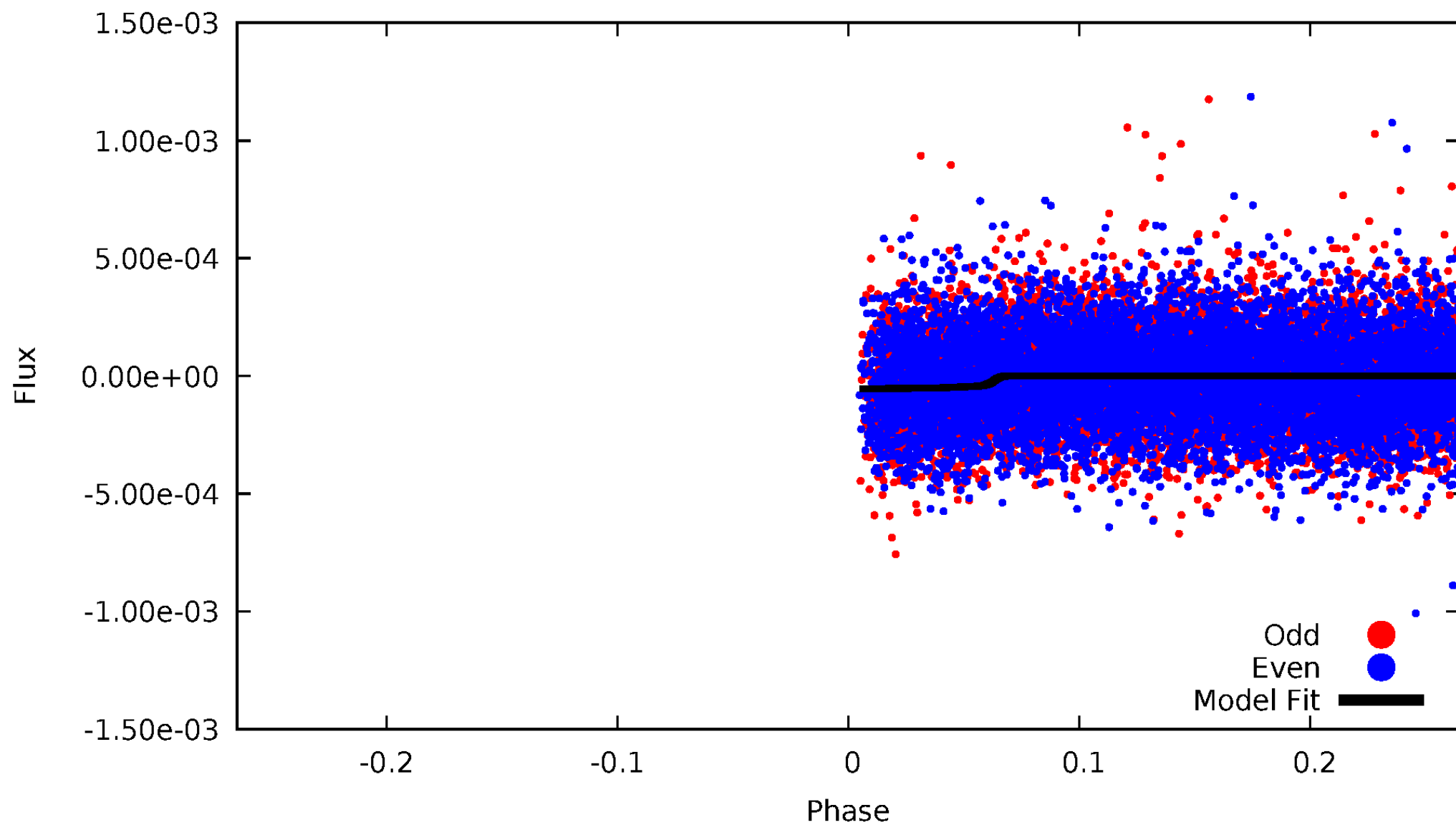


TCE 009835697-02



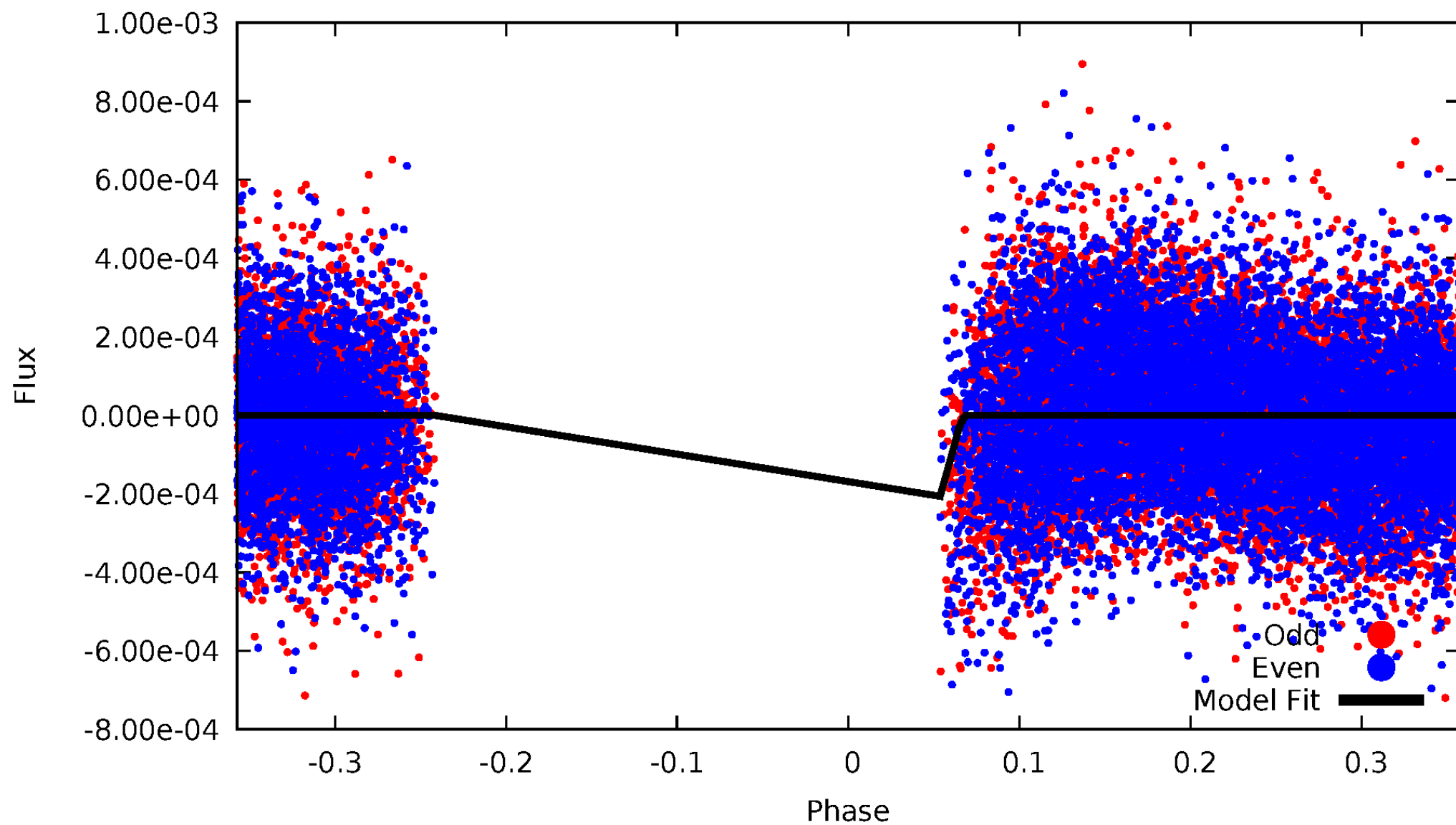
DV Odd/Even

TCE 009835697-02



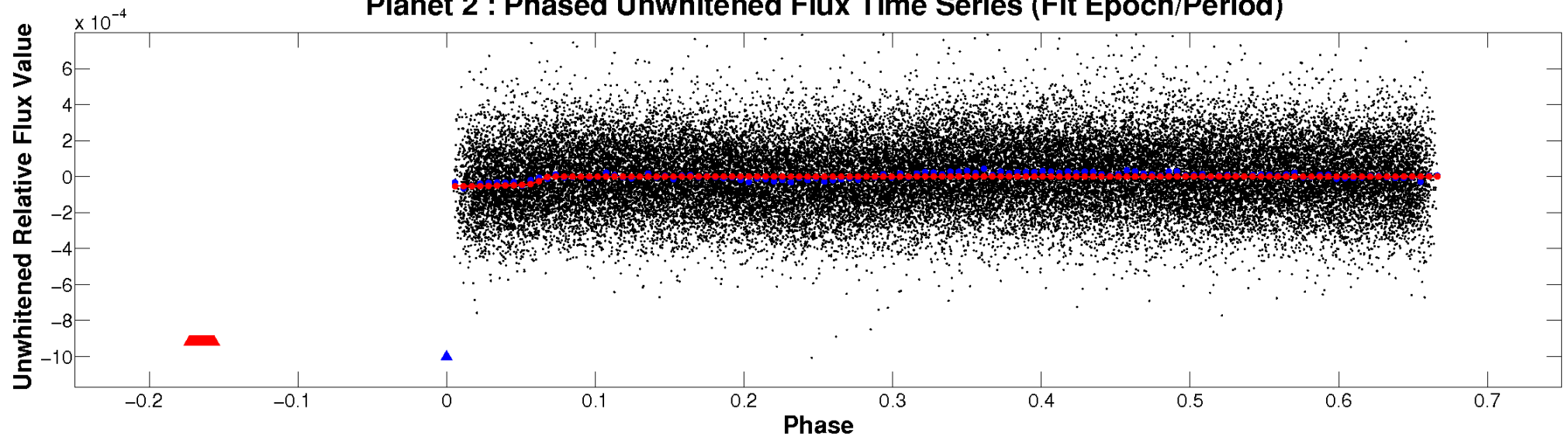
ALT Odd/Even

TCE 009835697-02

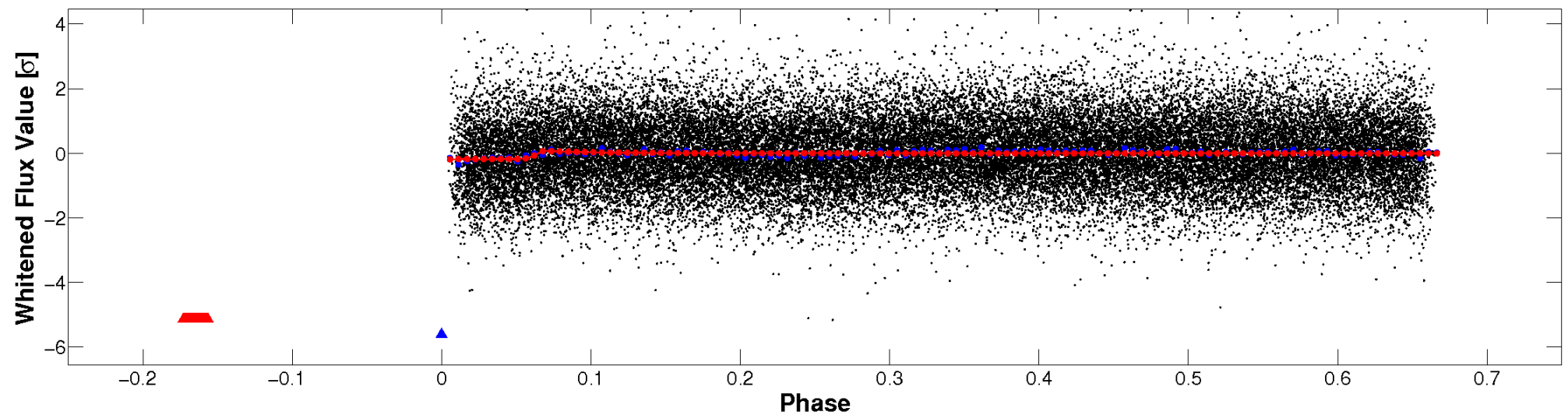


Non-Whitened Vs. Whitened Light Curve

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

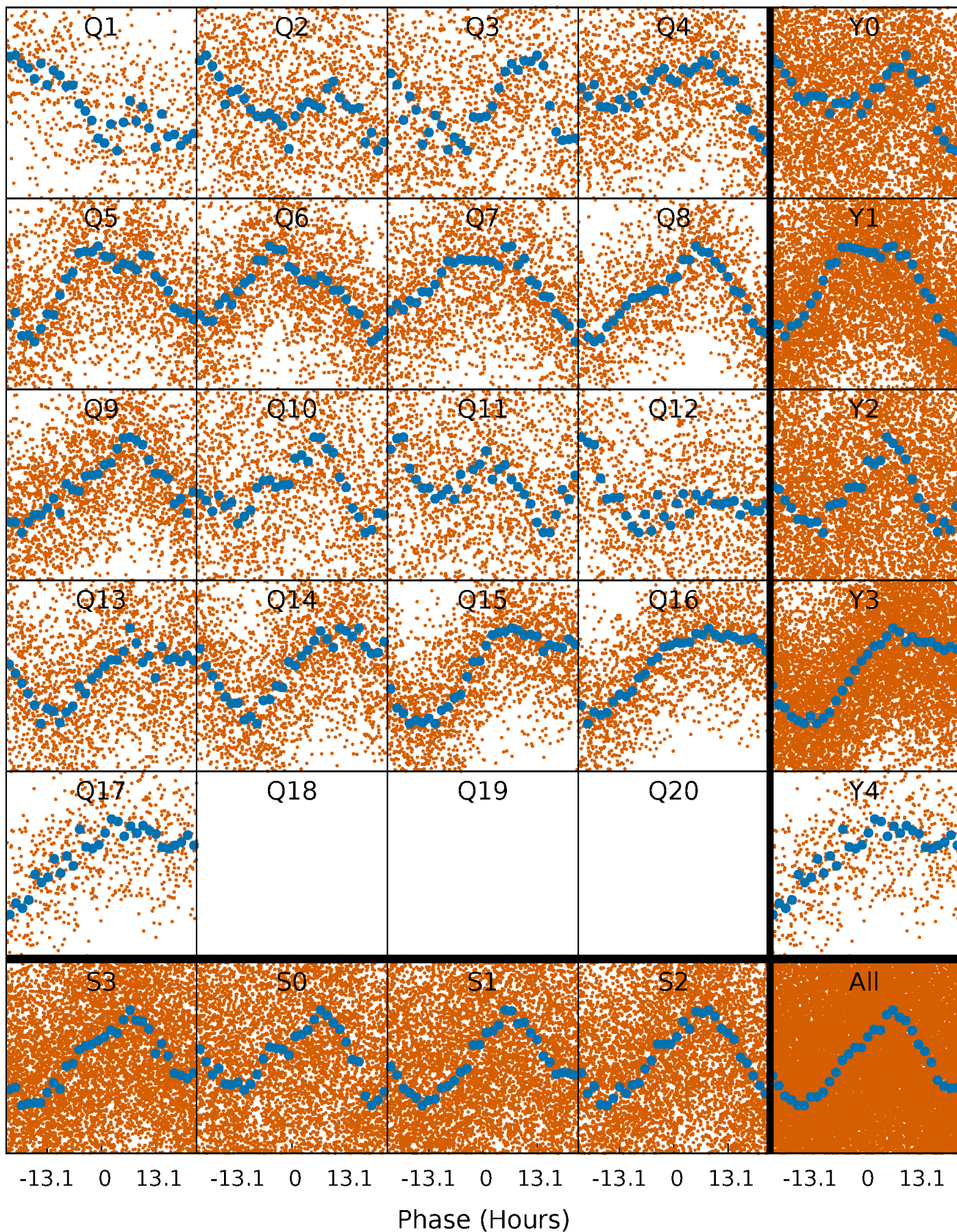


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



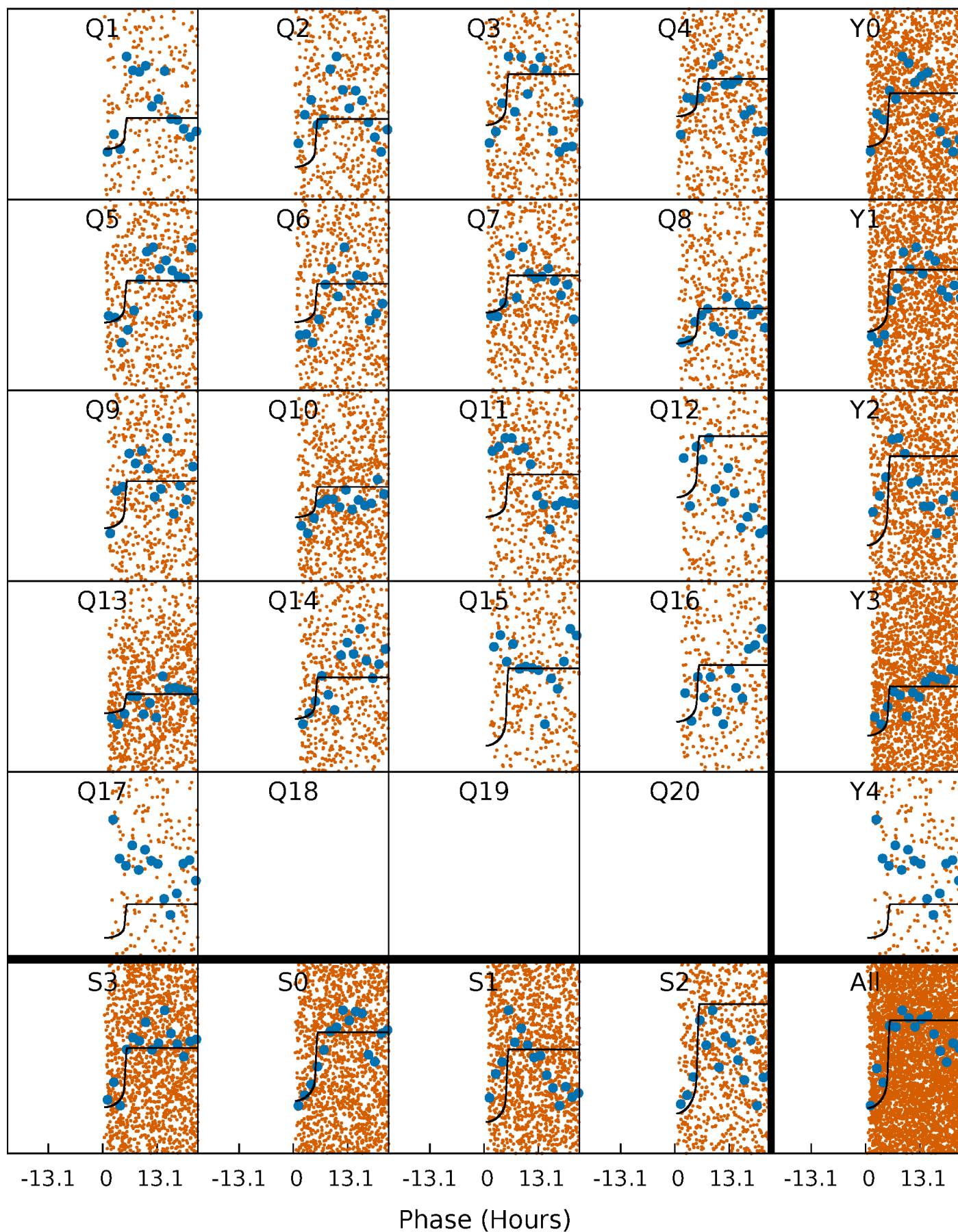
PDC Quarter-Phased Transit Curves

TCE 009835697-02 P= 3.618405 Days $T_0=134.308196$ (BKJD)



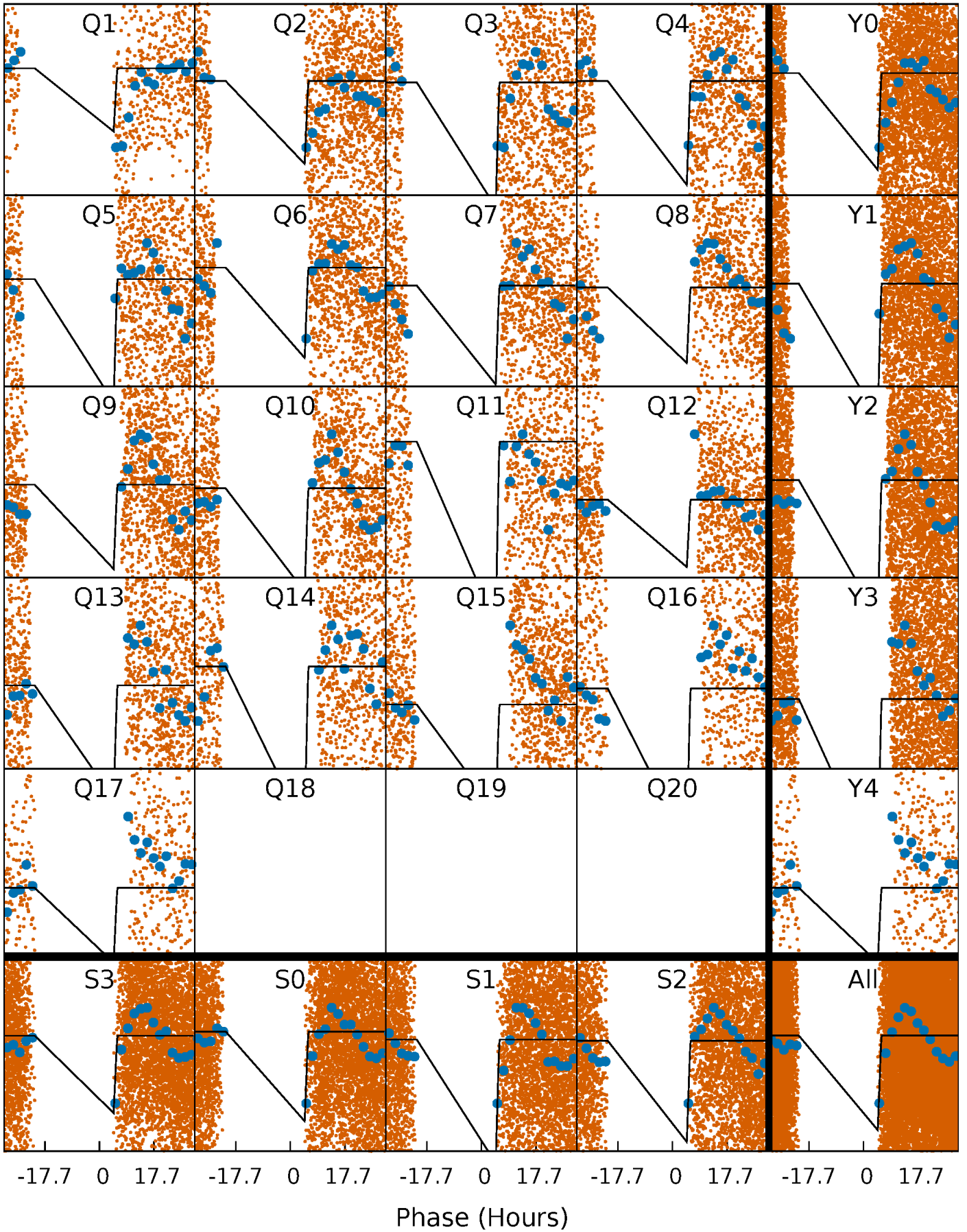
DV Quarter-Phased Transit Curves

TCE 009835697-02 P= 3.618405 Days $T_0=134.308196$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

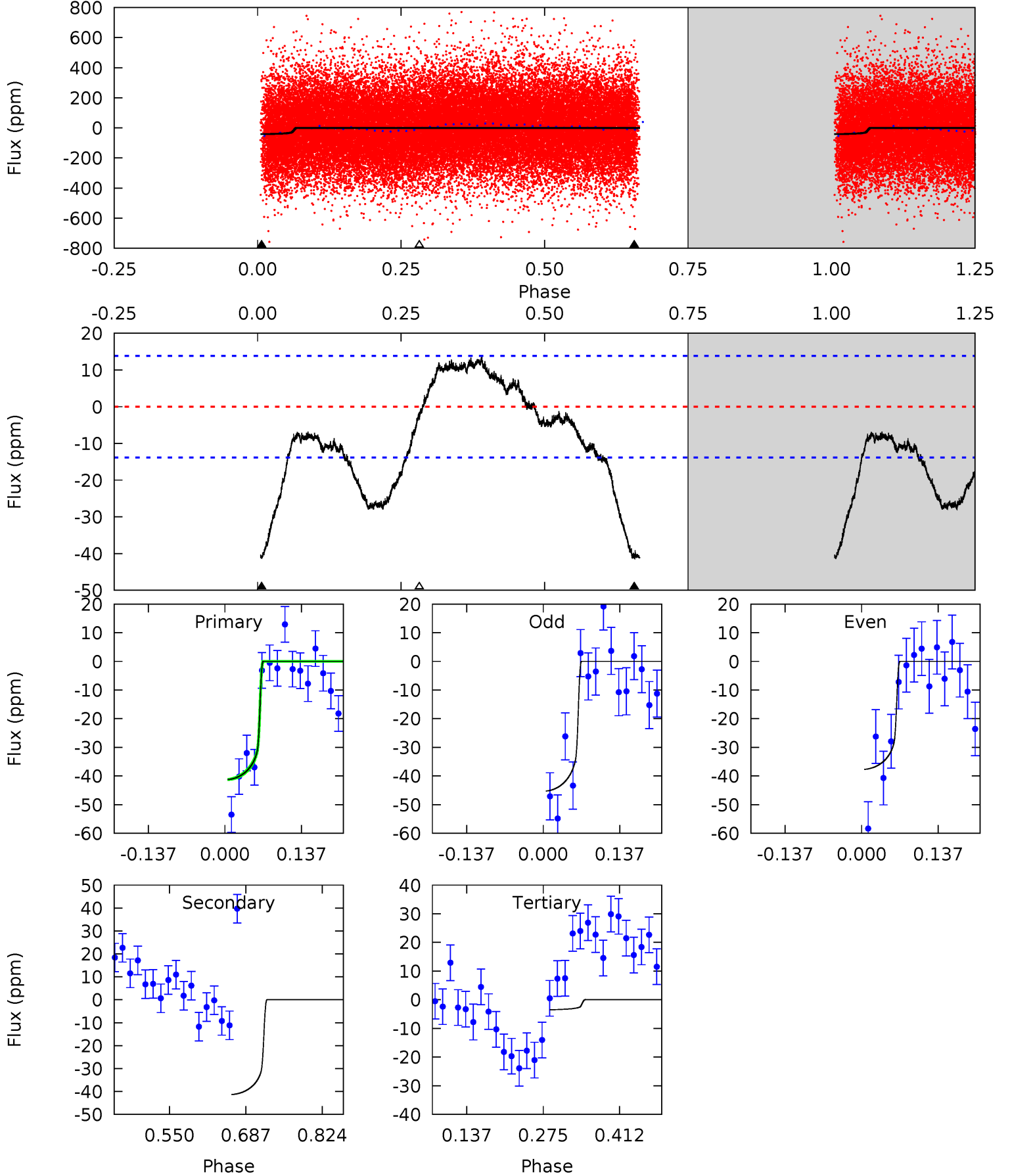
TCE 009835697-02 P= 3.618003 Days $T_0=134.133395$ (BKJD)



DV Model-Shift Uniqueness Test

009835697-02, P = 3.618405 Days, E = 130.689791 Days

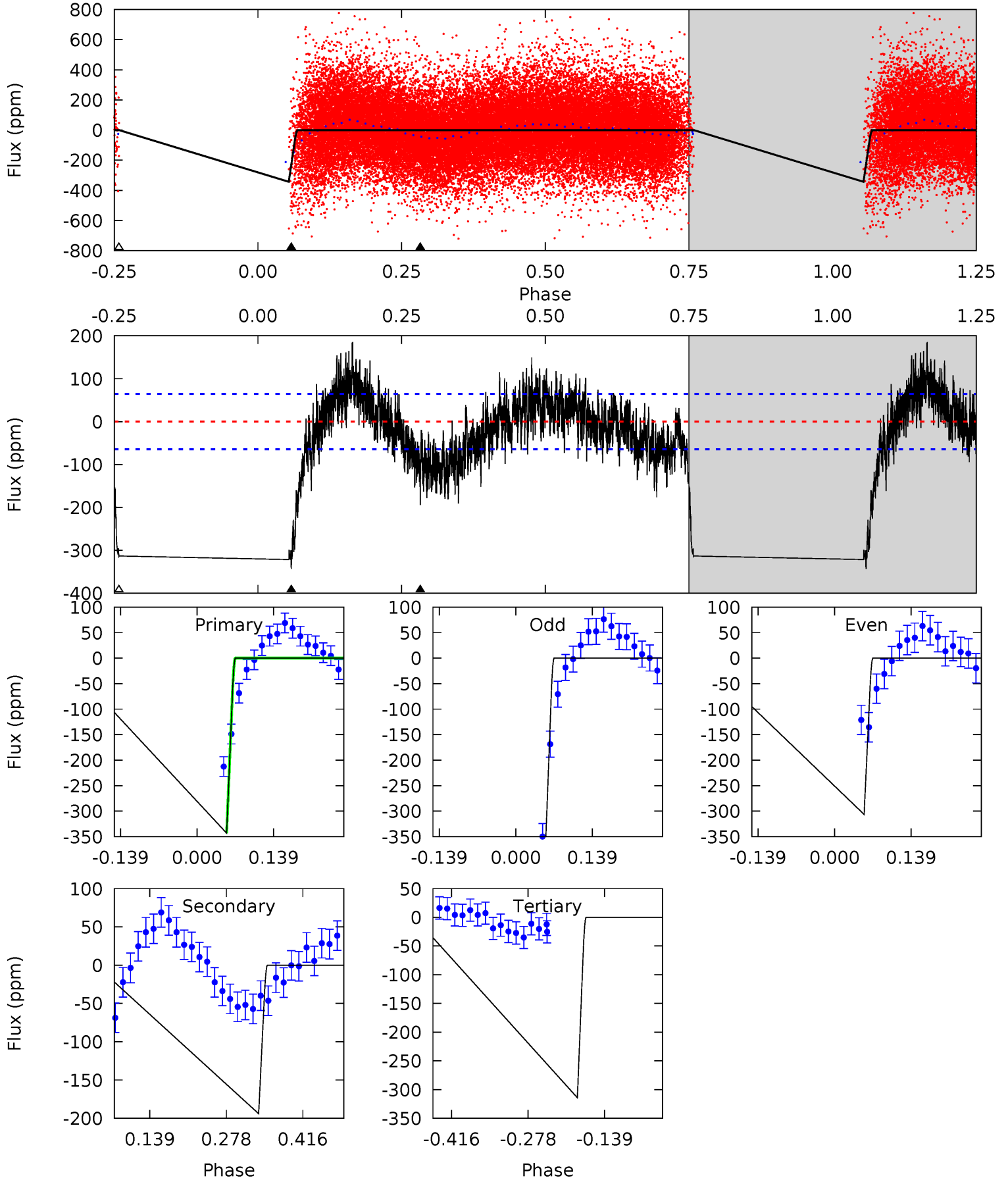
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.4	13.4	1.13	0	4.50	1.49	4.37	12.3	13.4	12.3	13.4	1.23	0.85	0.25	0



Alt Model-Shift Uniqueness Test

009835697-02, P = 3.618003 Days, E = 130.515392 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.9	13.5	21.9	0	4.50	1.48	3.49	2.01	23.9	-8.37	13.5	2.52	1.03	0.35	0



Stellar Parameters For KIC 009835697

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7146^{+200}_{-300}	$4.300^{+0.072}_{-0.217}$	$-0.140^{+0.250}_{-0.400}$	$1.363^{+0.499}_{-0.166}$	$1.362^{+0.223}_{-0.183}$	$0.758^{+0.242}_{-0.428}$
	+3%/-4%	+2%/-5%	+179%/-286%	+37%/-12%	+16%/-13%	+32%/-56%
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 009835697-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-41 ± 3	$1.19^{+0.45}_{-0.38}$	2313^{+172}_{-139}	6423^{+1470}_{-811}	41^{+48}_{-19}
Alt.	-194 ± 14	$3.22^{+0.69}_{-0.45}$	2304^{+171}_{-132}	5722^{+379}_{-340}	26^{+9}_{-8}

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 $A_{obs} \gg 1.0$

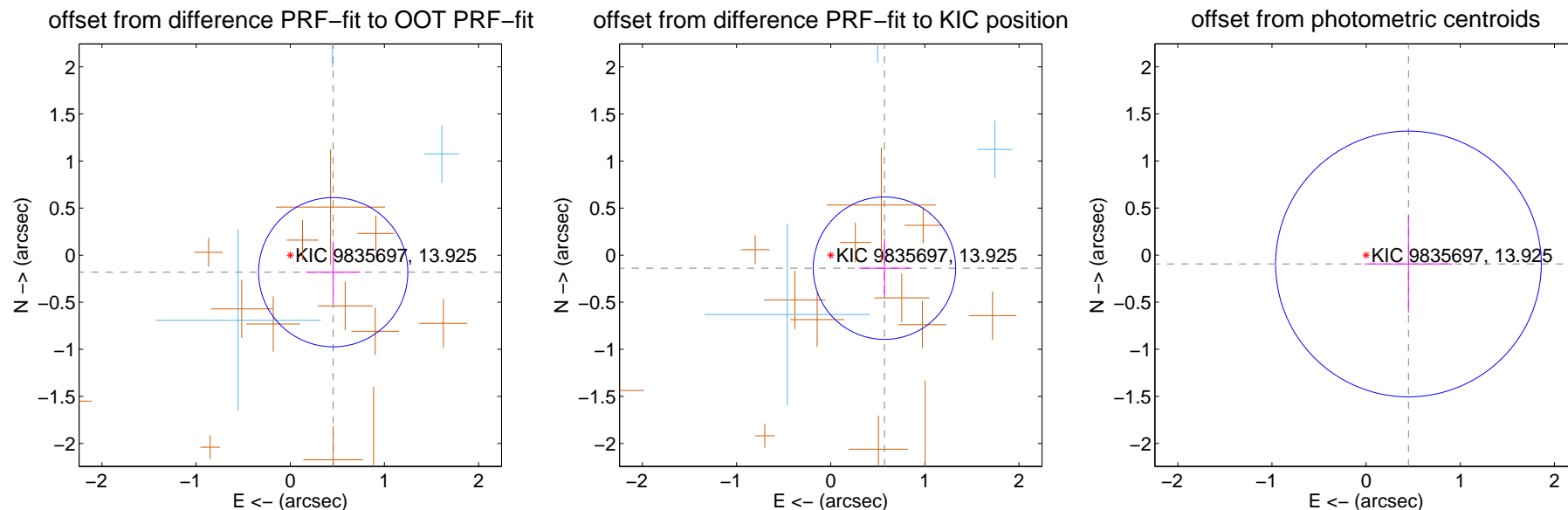
DV Centroid Data

Supplemental centroid analysis for 009835697-02. Kepler magnitude: 13.93. Transit SNR 9.88

There are 3 quarters with good PRF difference image offsets

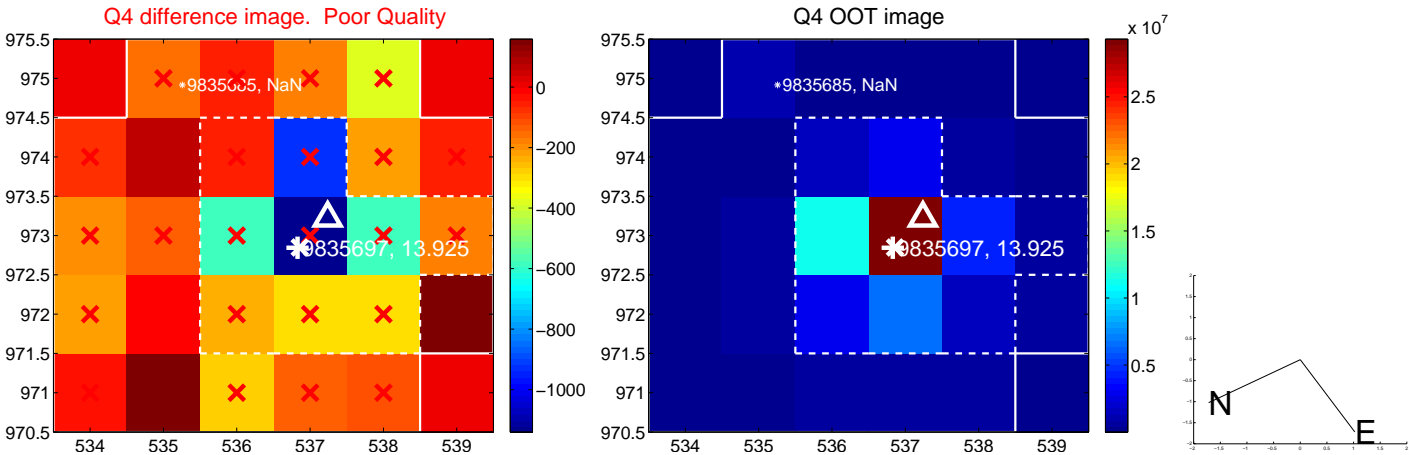
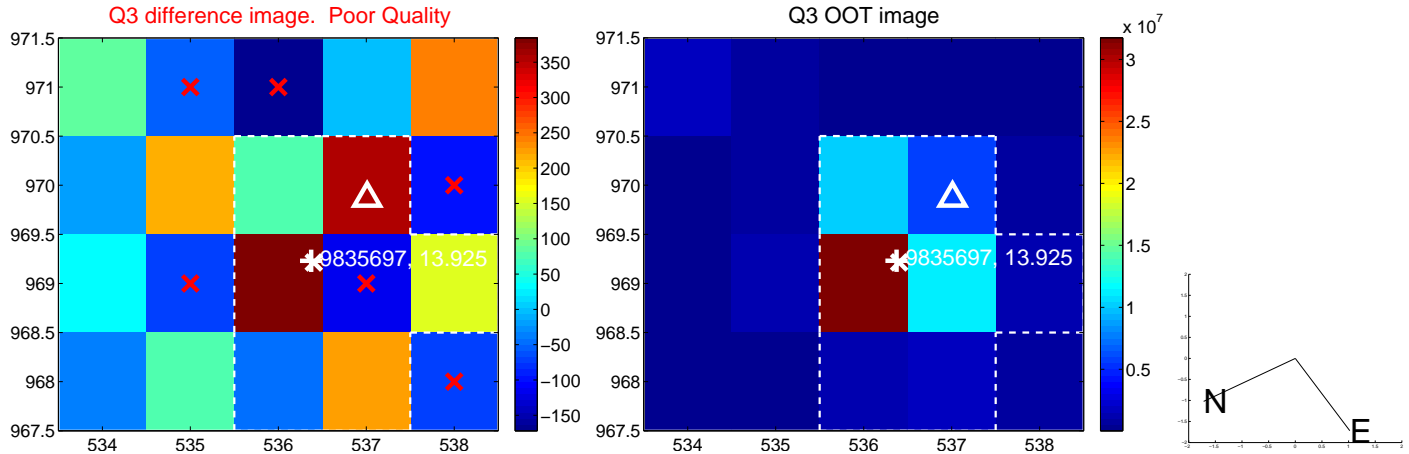
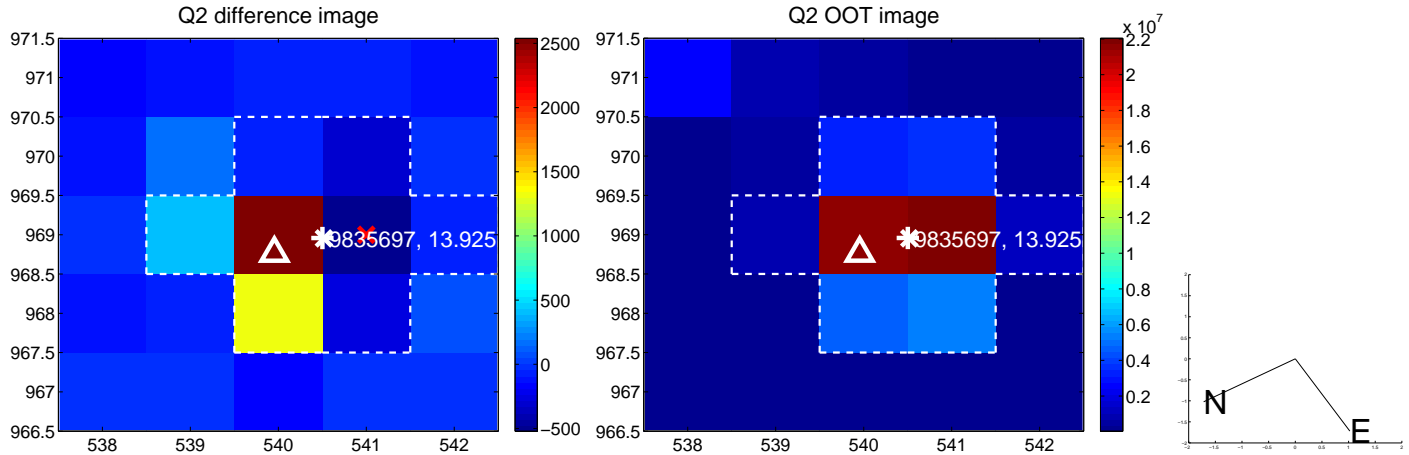
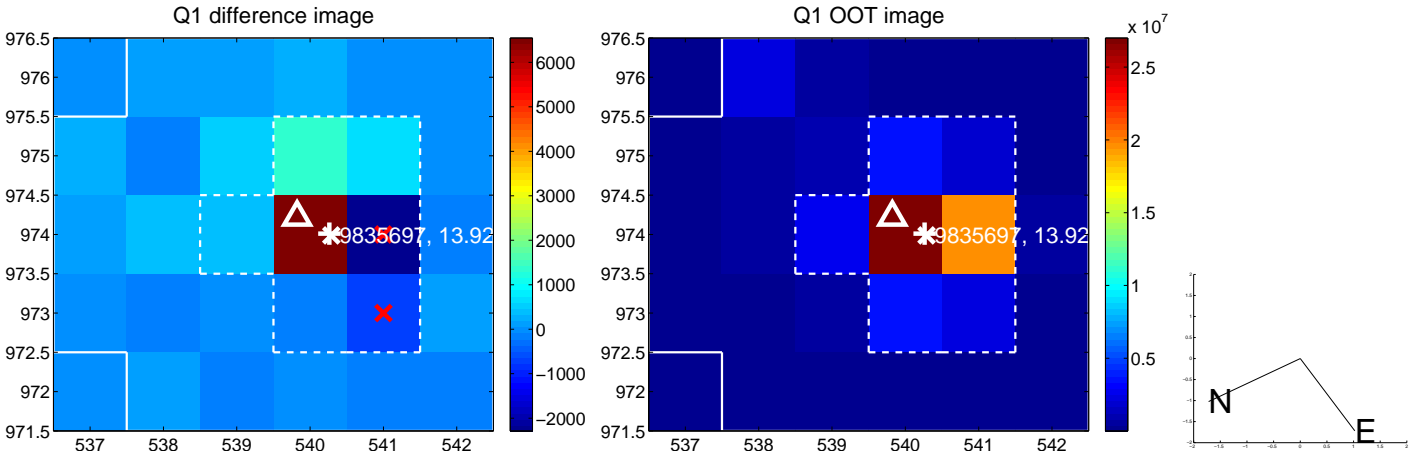
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.491 ± 0.264	1.86	-0.456 ± 0.290	-0.181 ± 0.326
PRF-fit source offset from KIC position	0.587 ± 0.252	2.33	-0.571 ± 0.268	-0.138 ± 0.315
photometric centroid source offset	0.46 ± 0.47	0.98	-0.45 ± 0.47	-0.09 ± 0.52

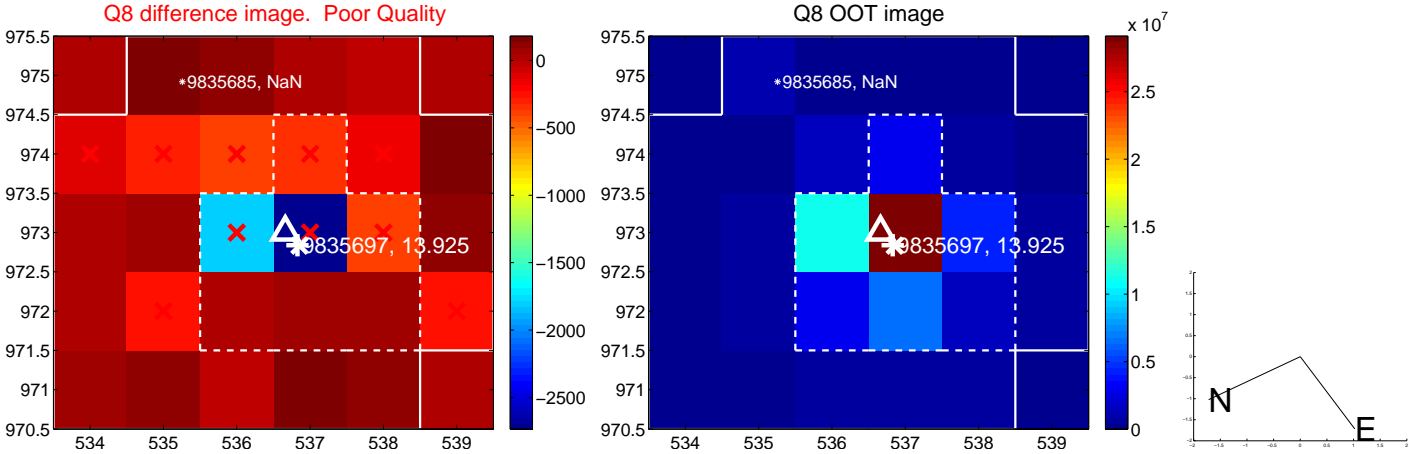
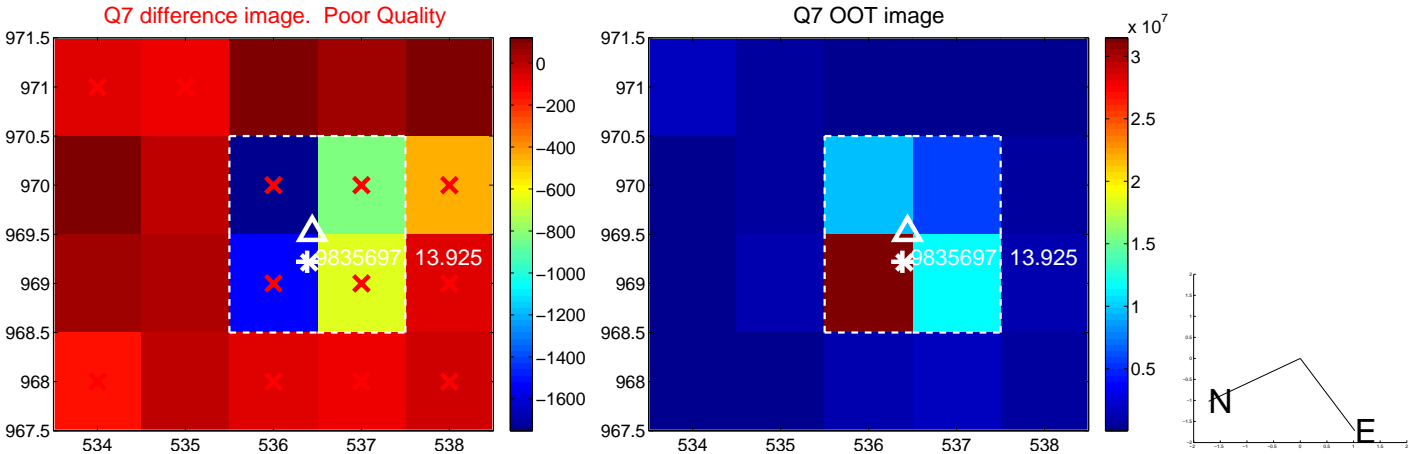
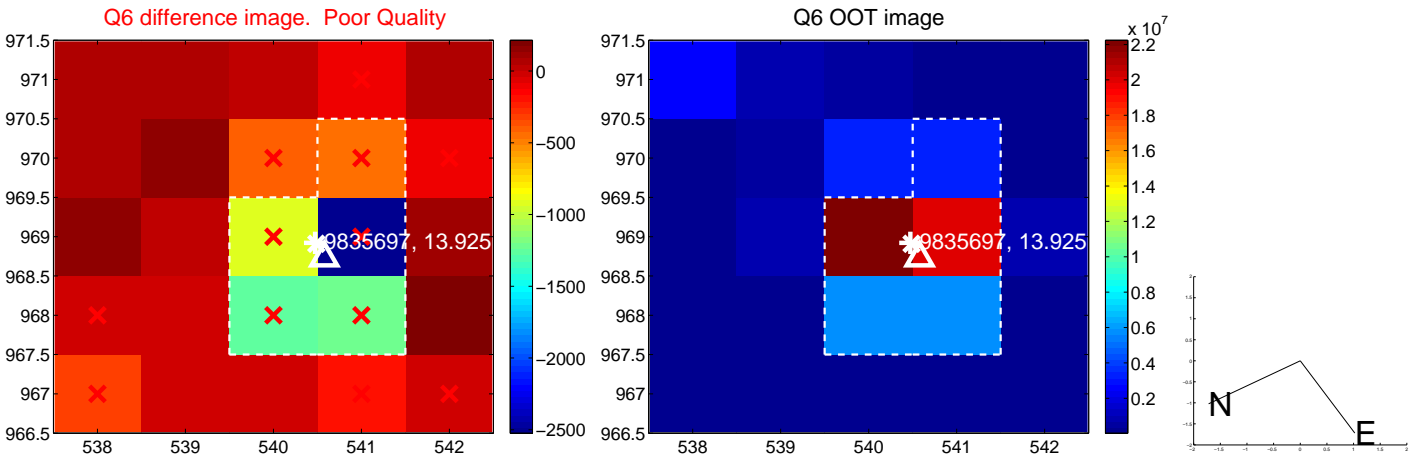
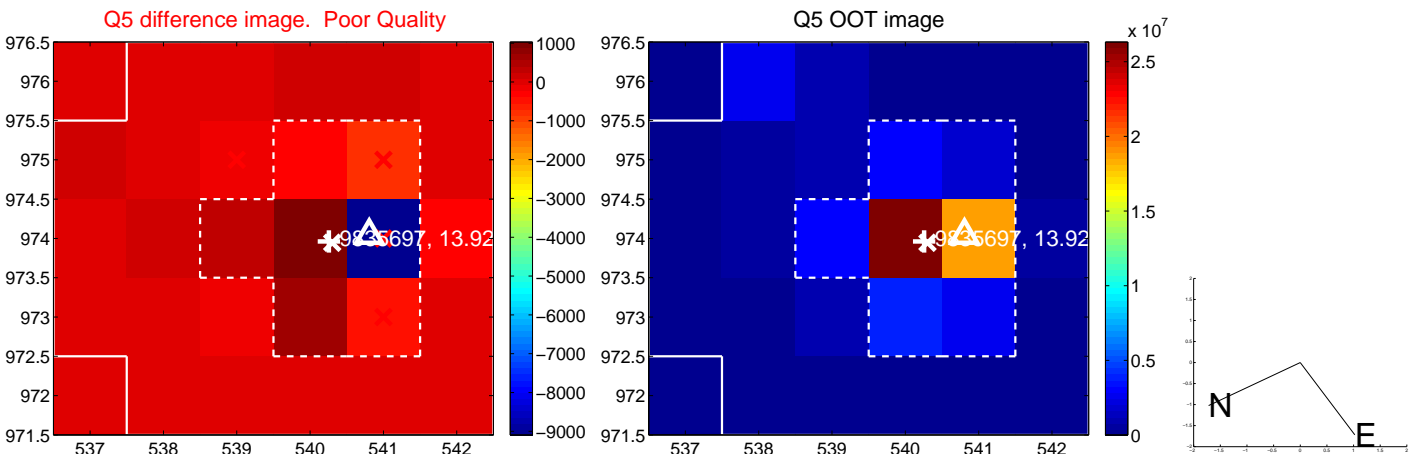


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

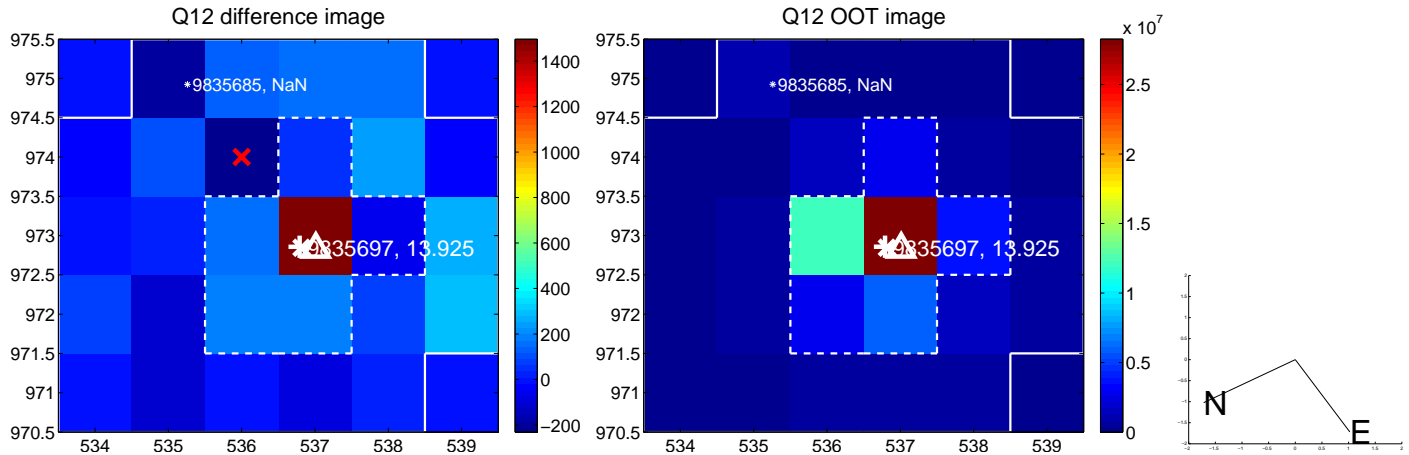
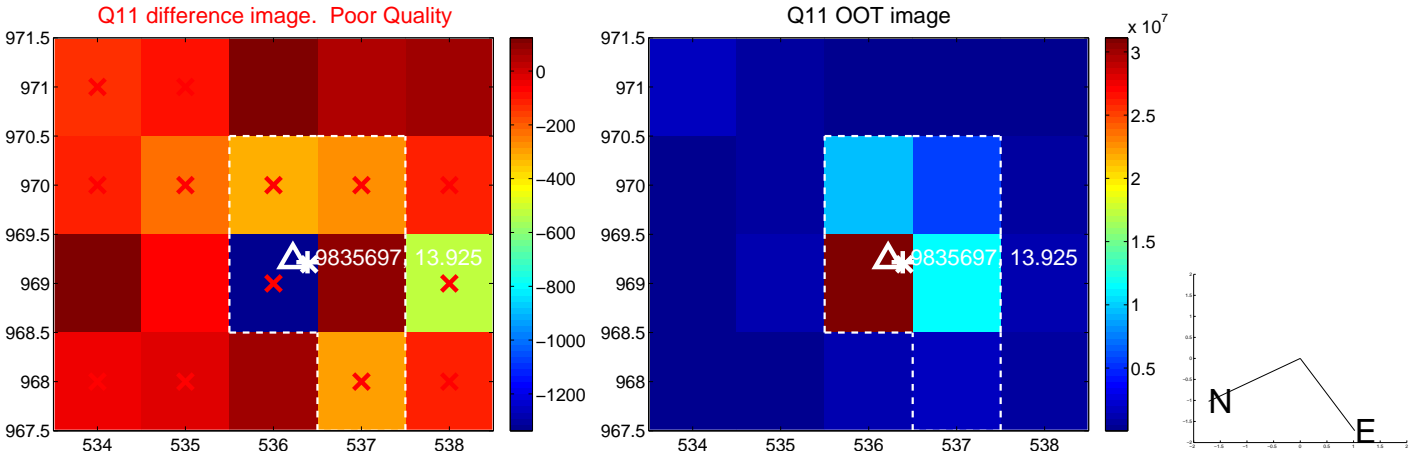
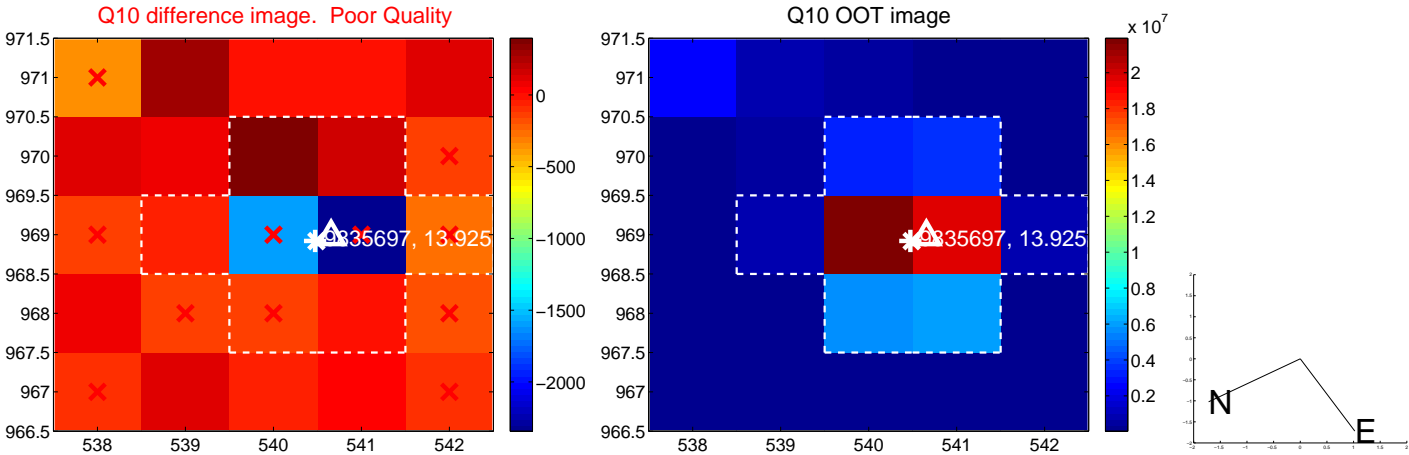
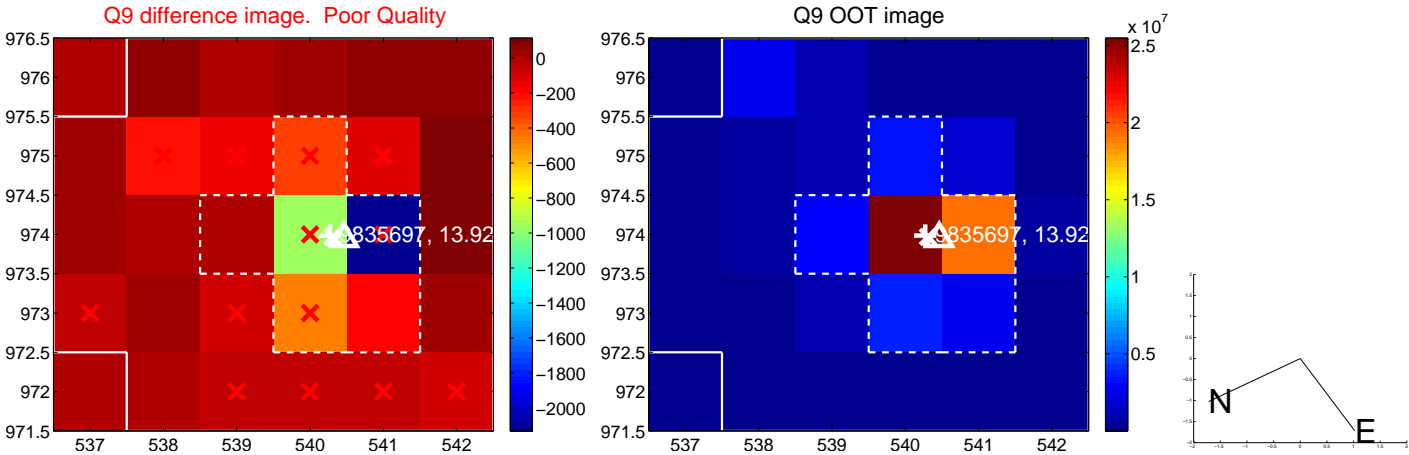
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



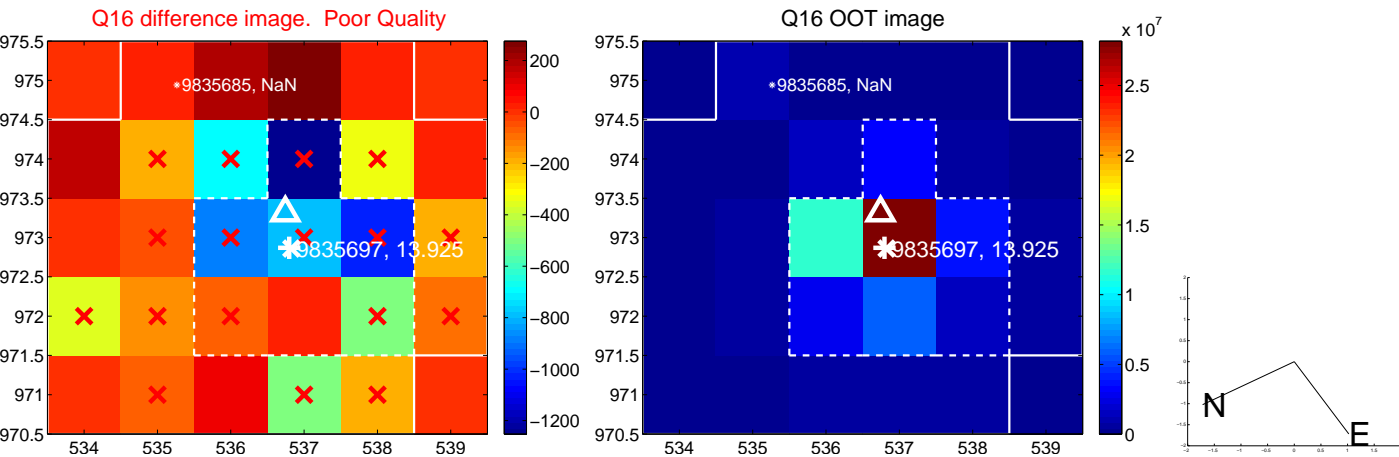
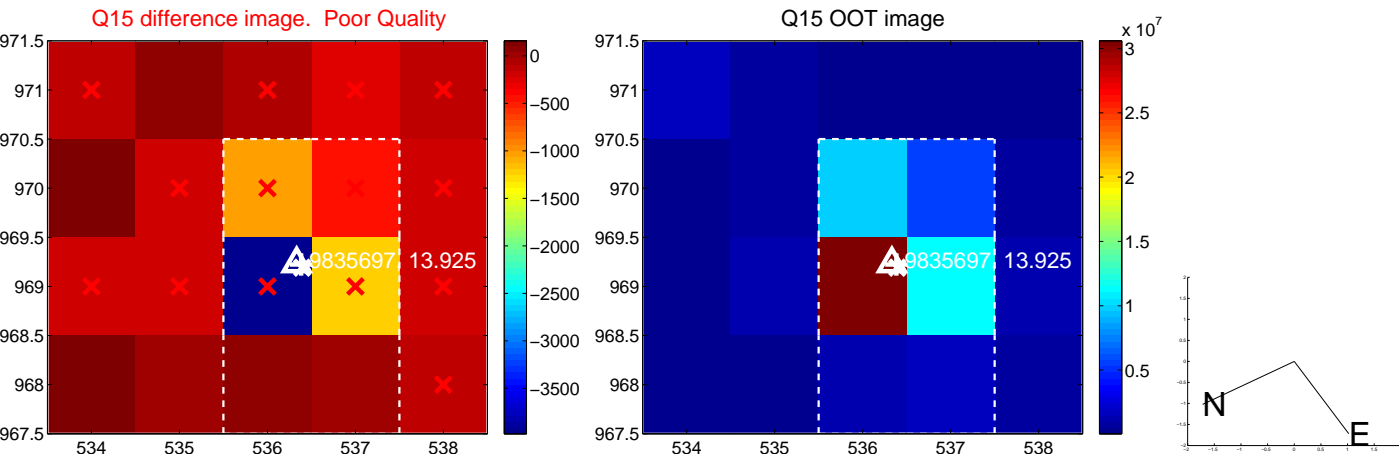
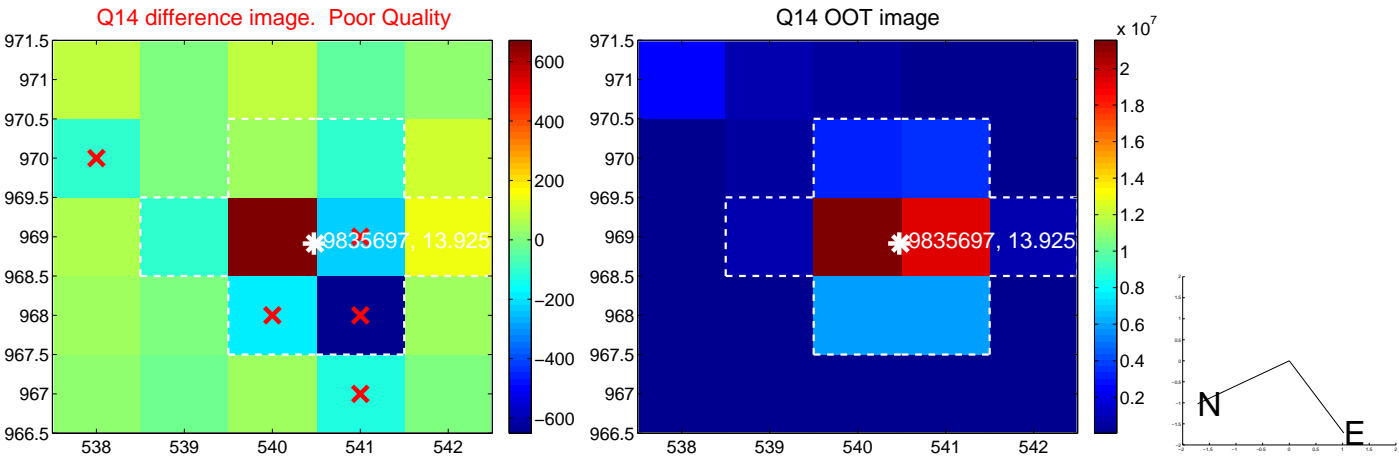
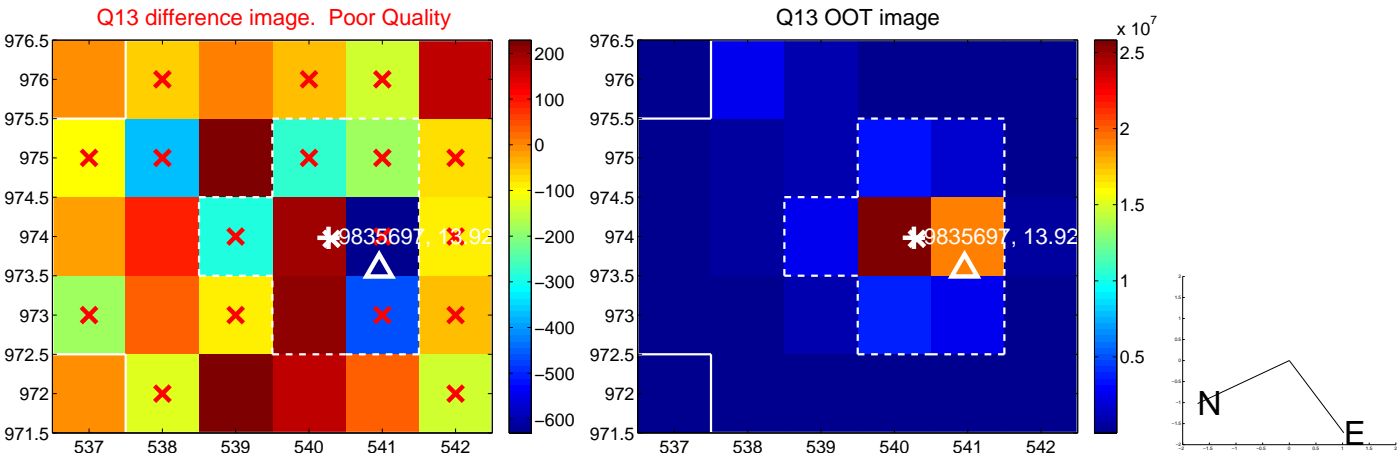
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



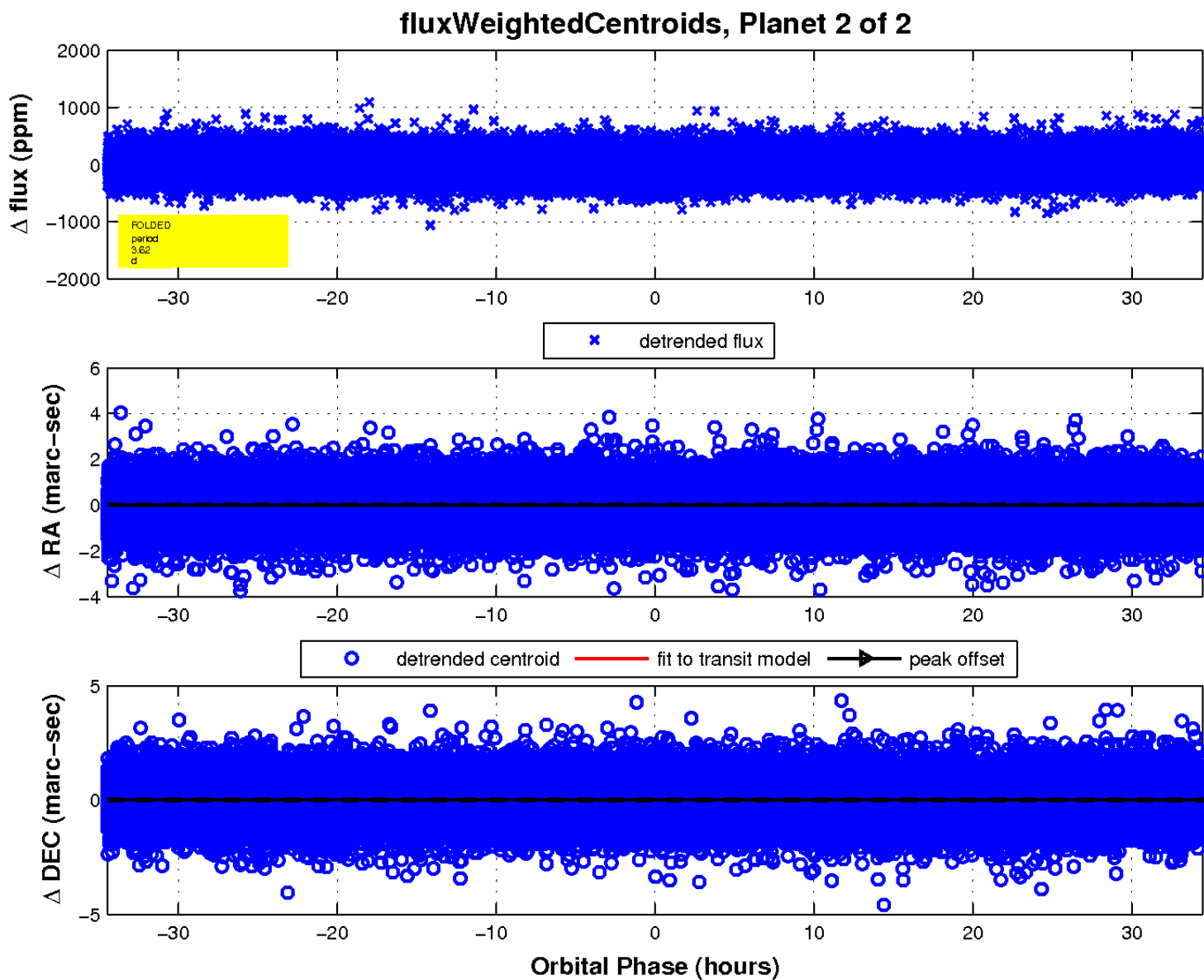
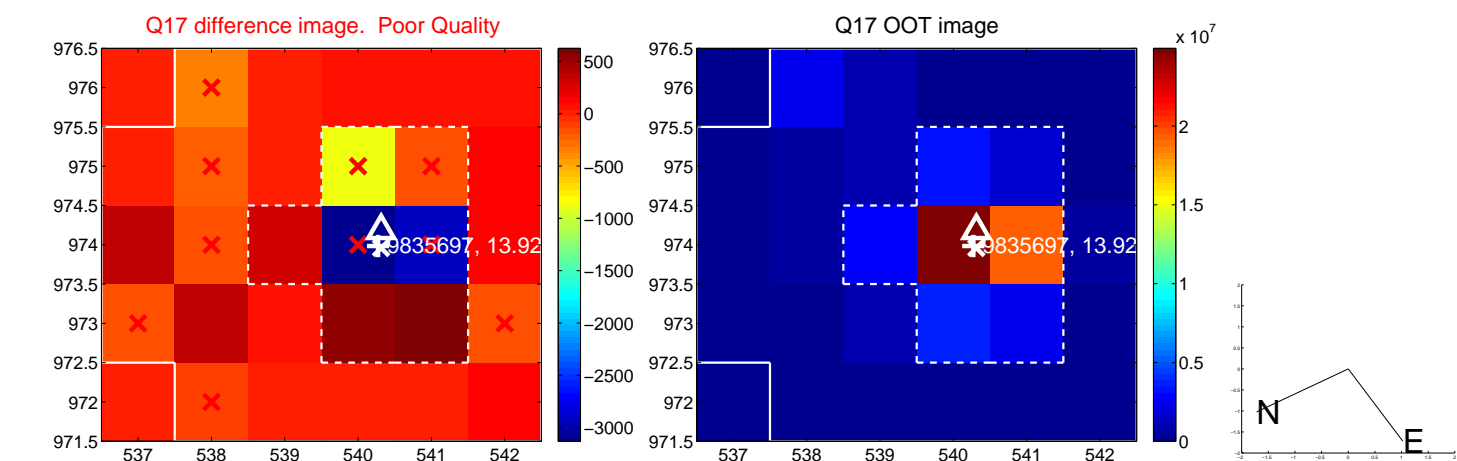
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

Declination

