

KIC 010853783

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})
010853783-01	OBS	No	0.680851	132.136965	23.1	5.004	14.0	12.7	2.70	8064	1.51	78374.28
010853783-02	OBS	No	31.336085	140.165765	55.4	0.923	9.6	1.1	2.70	8064	2.33	475.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010853783-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
010853783-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

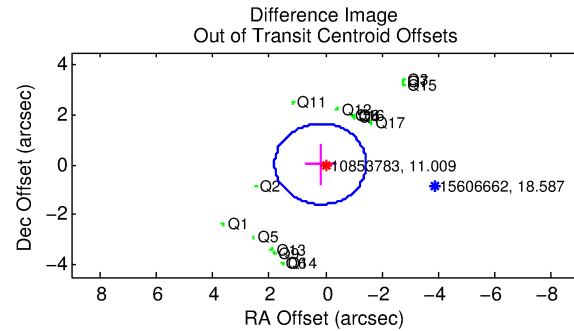
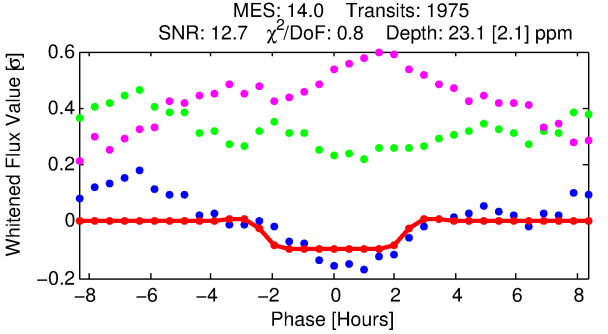
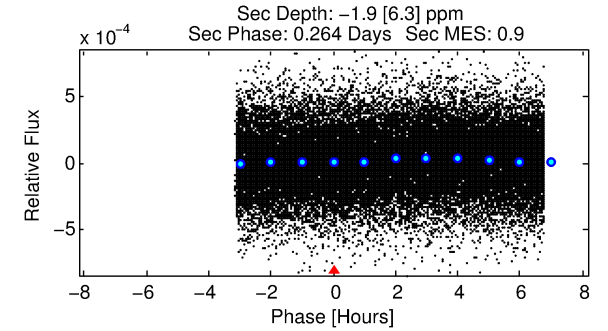
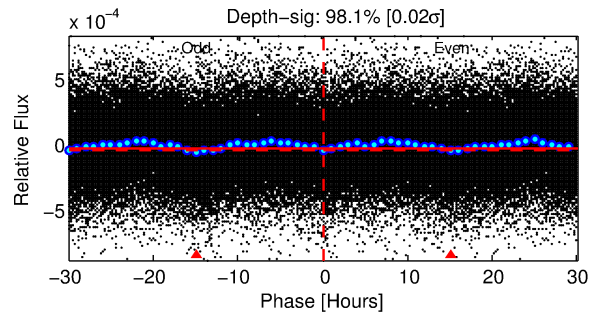
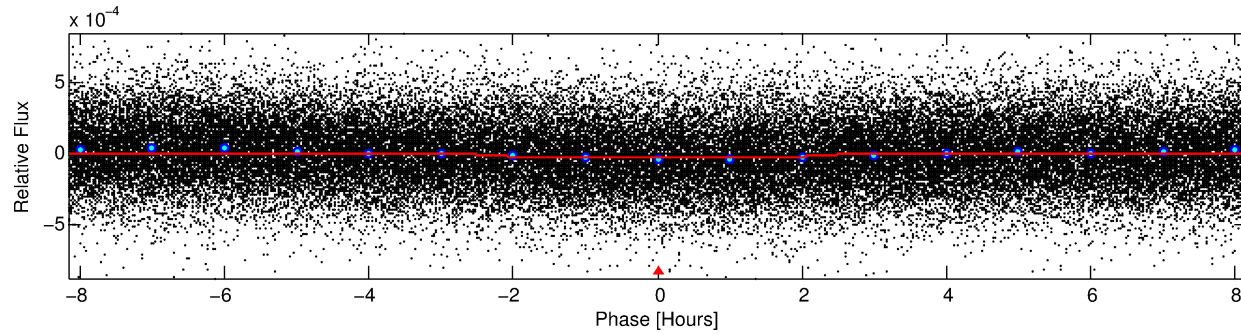
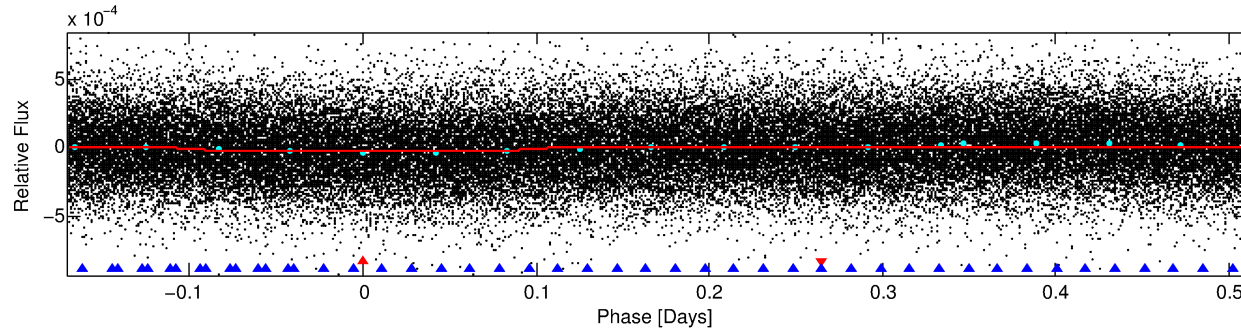
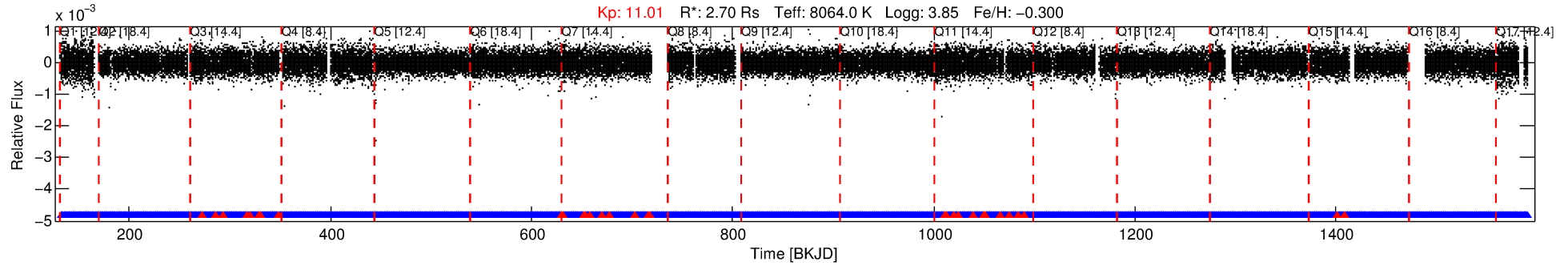
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010853783-01

No Significant Match Found

DV One-Page Summary

KIC: 10853783 Candidate: 1 of 2 Period: 0.681 d



DV Fit Results:

Period = 0.68085 [0.00001] d
Epoch = 132.1370 [0.0040] BKJD
Rp/R* = 0.0051 [0.0023]
a/R* = 1.05 [0.28]
b = 0.90 [0.60]
Seff = 78374.28 [49466.00]
Teq = 4266 [673] K
Rp = 1.51 [0.94] Re
a = 0.0187 [0.0073] AU
Ag = N/A
Teffp = N/A

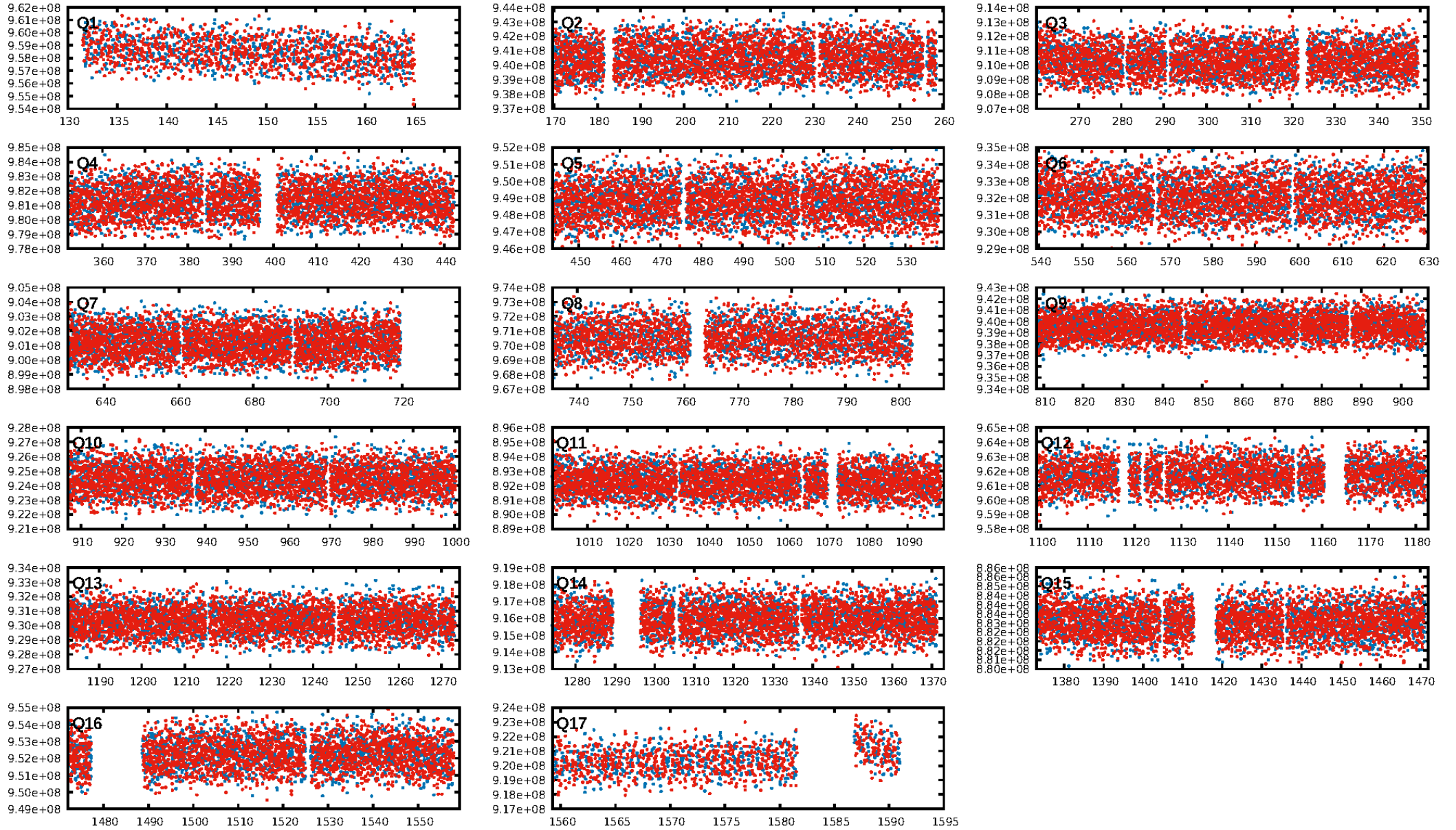
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [144.60 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 5.24e-37
RollingBand-fgt: 0.98 [1854/1885]
GhostDiagnostic-chr: 2.223
Centroid-sig: 0.0%
Centroid-so: 0.792 arcsec [2.53 σ]
OotOffset-rm: 0.179 arcsec [0.33 σ]
KicOffset-rm: 0.436 arcsec [0.54 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.75 [12/16]
DiffImageOverlap-fno: 1.00 [17/17]

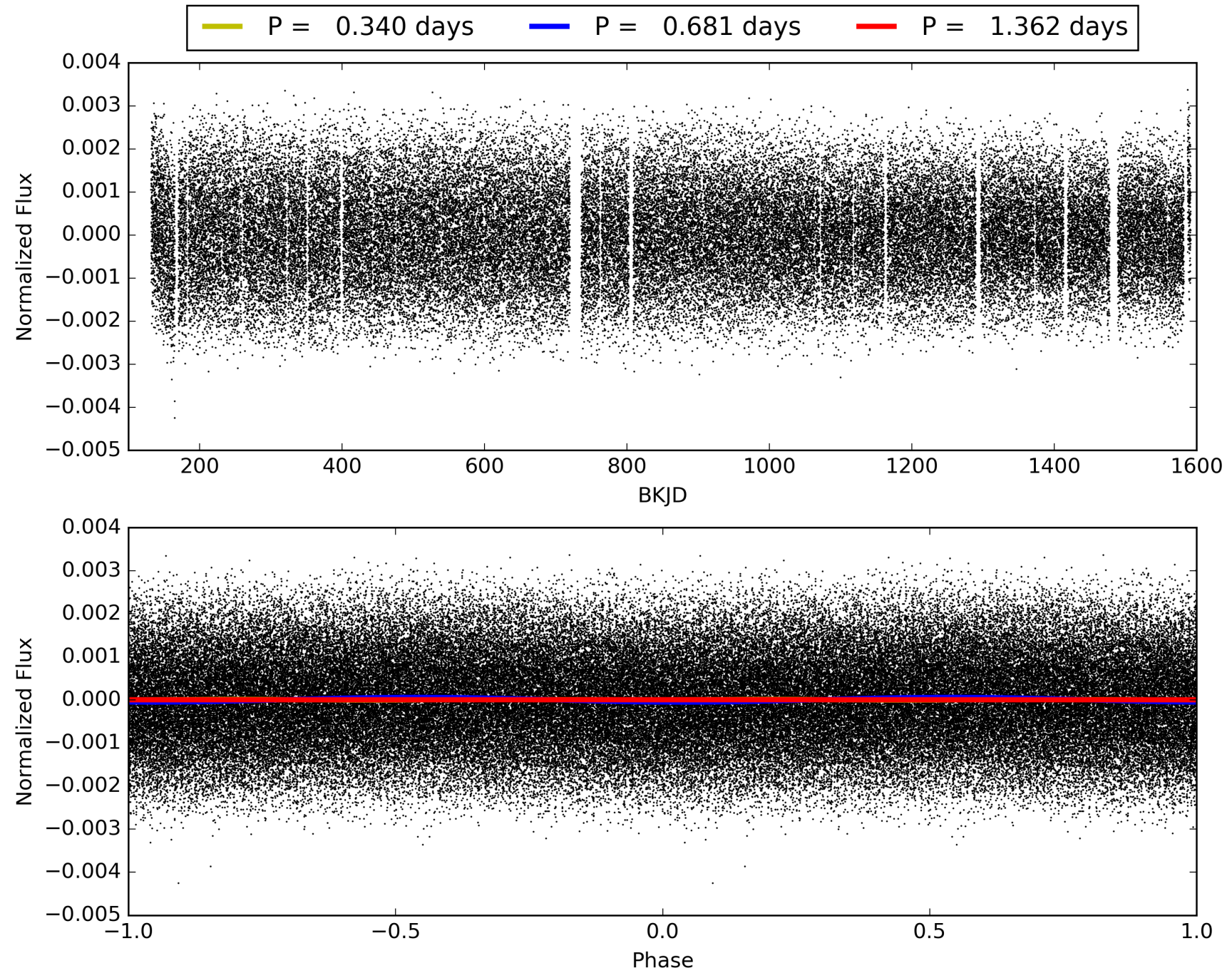
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:01:24 Z

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

TCE 010853783-01, PDC Light Curves

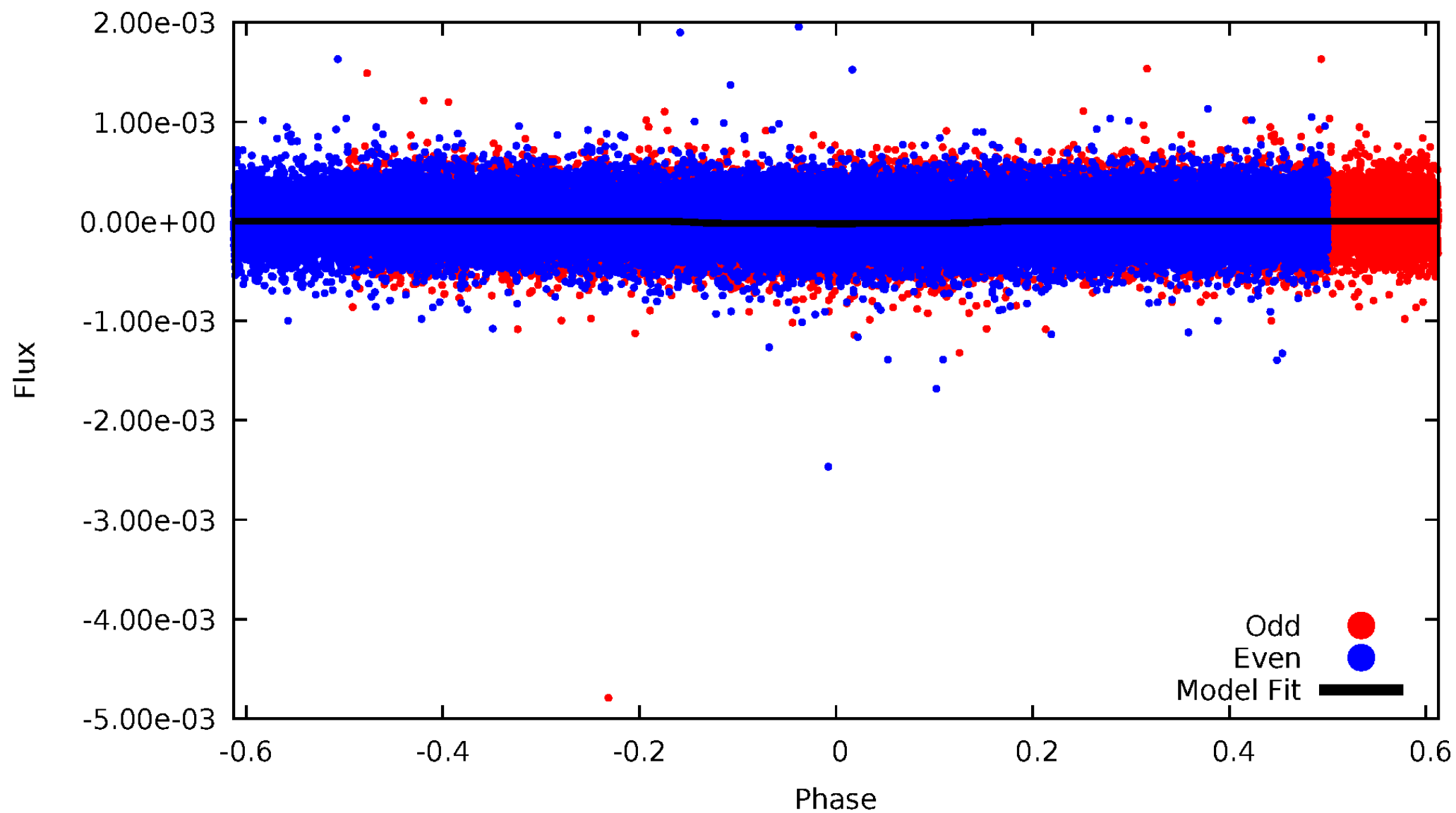


TCE 010853783-01



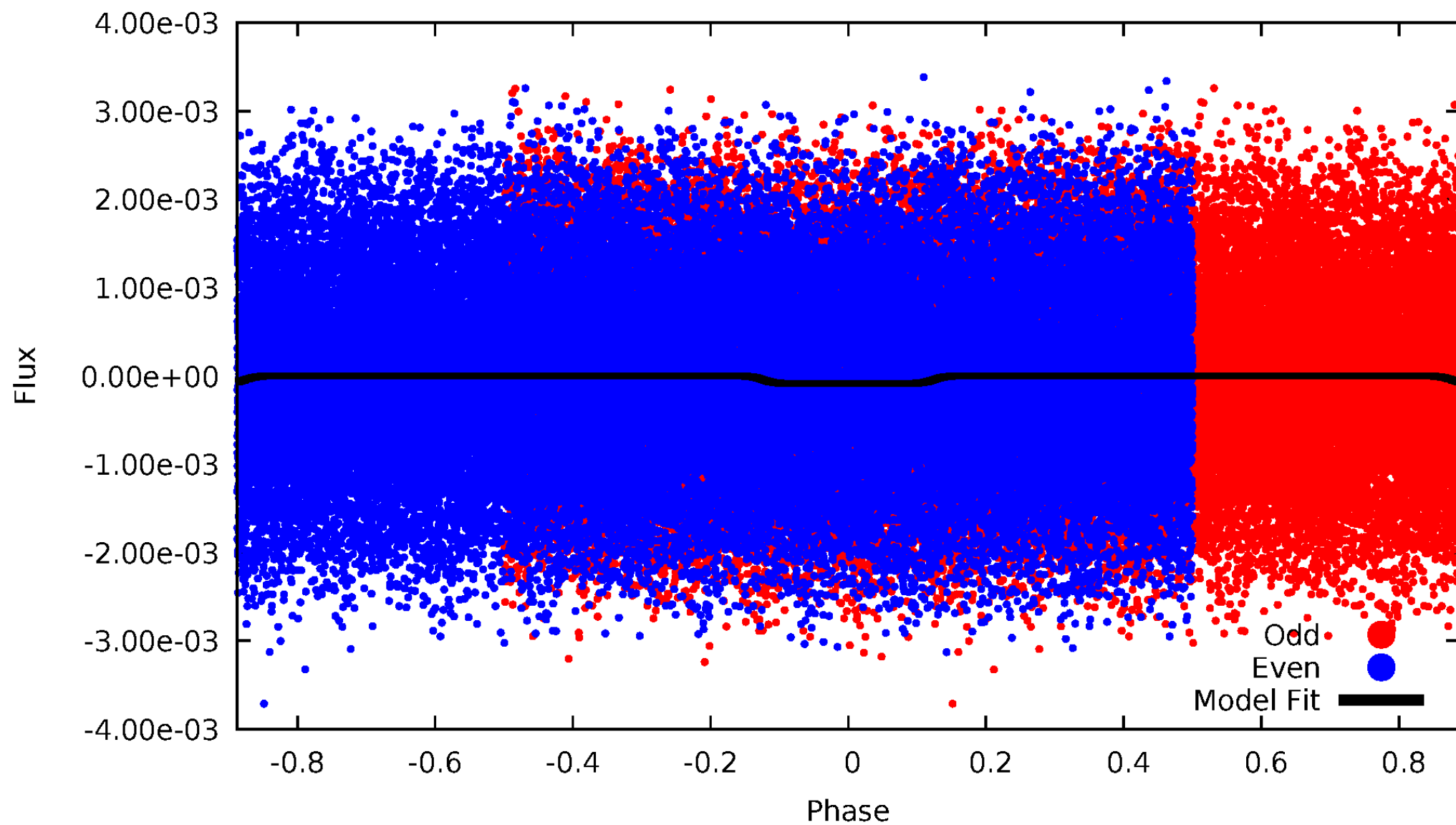
DV Odd/Even

TCE 010853783-01

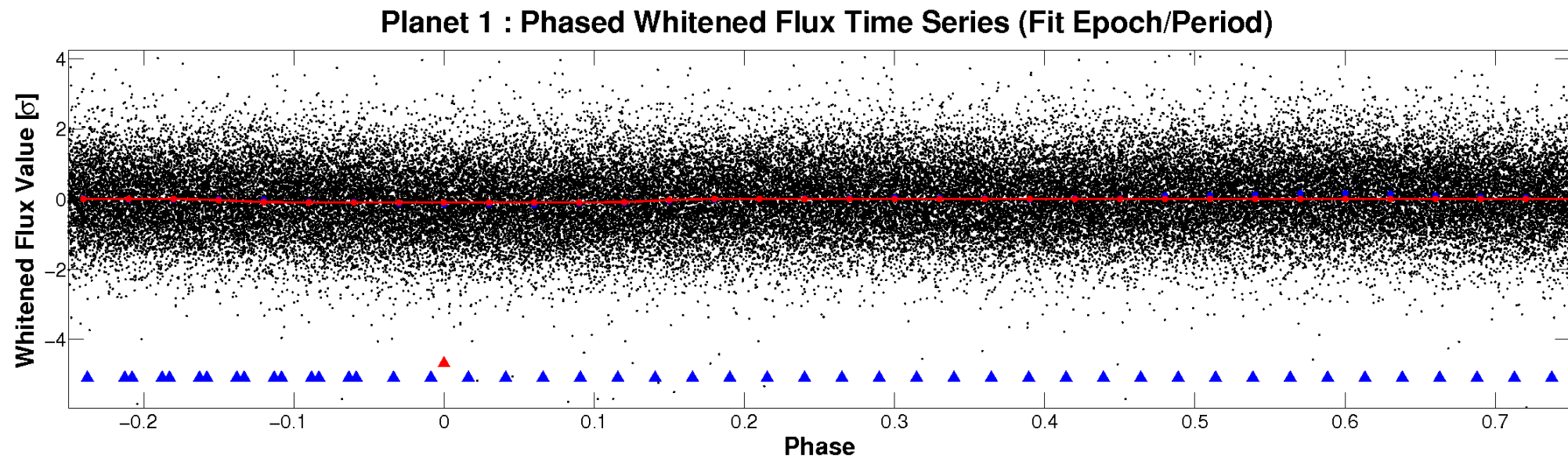
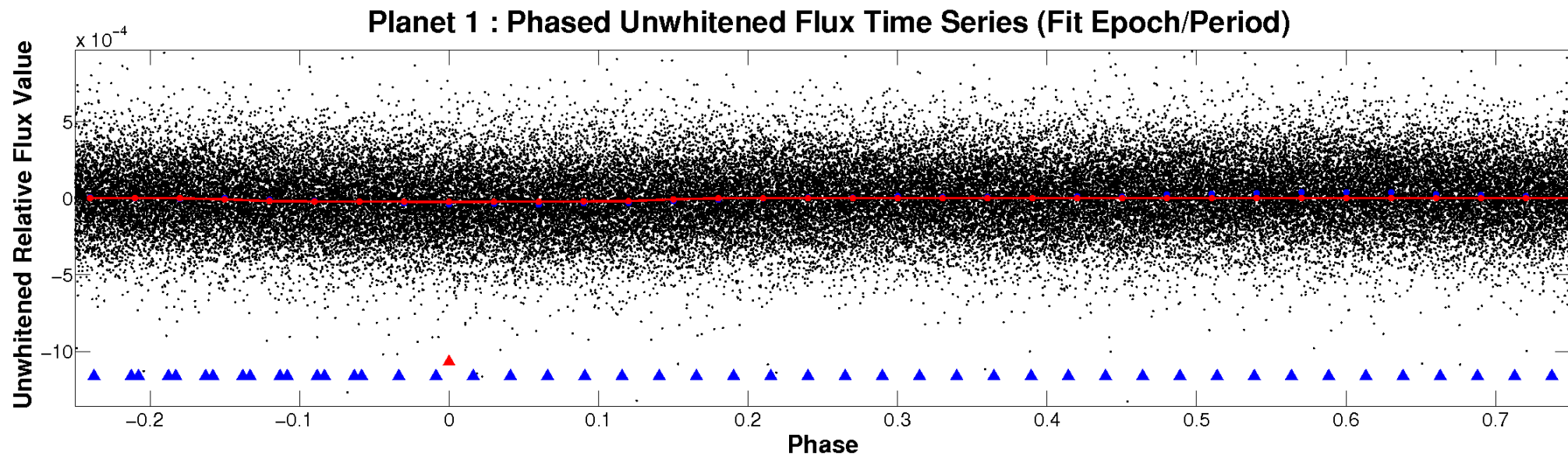


ALT Odd/Even

TCE 010853783-01

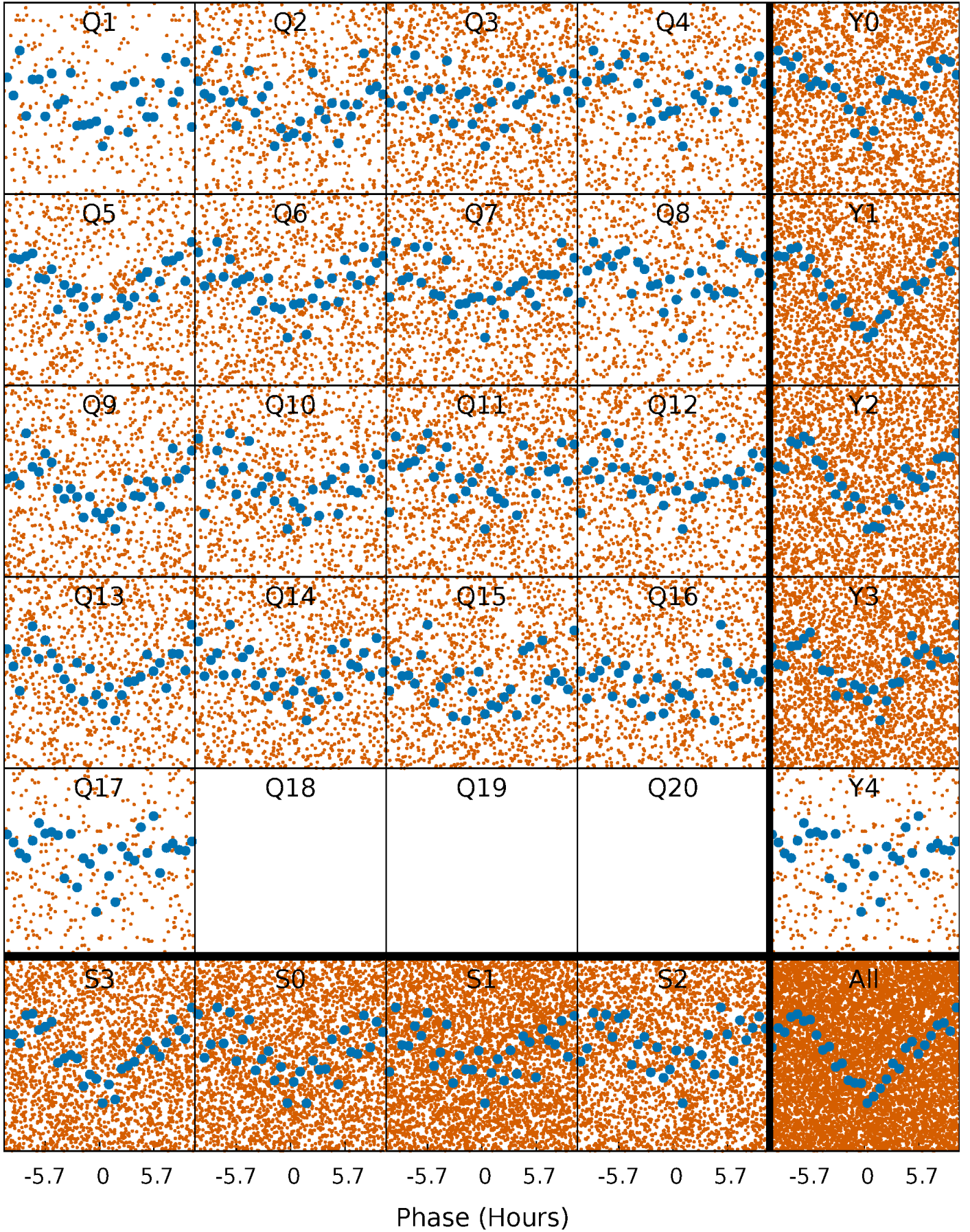


Non-Whitened Vs. Whitened Light Curve



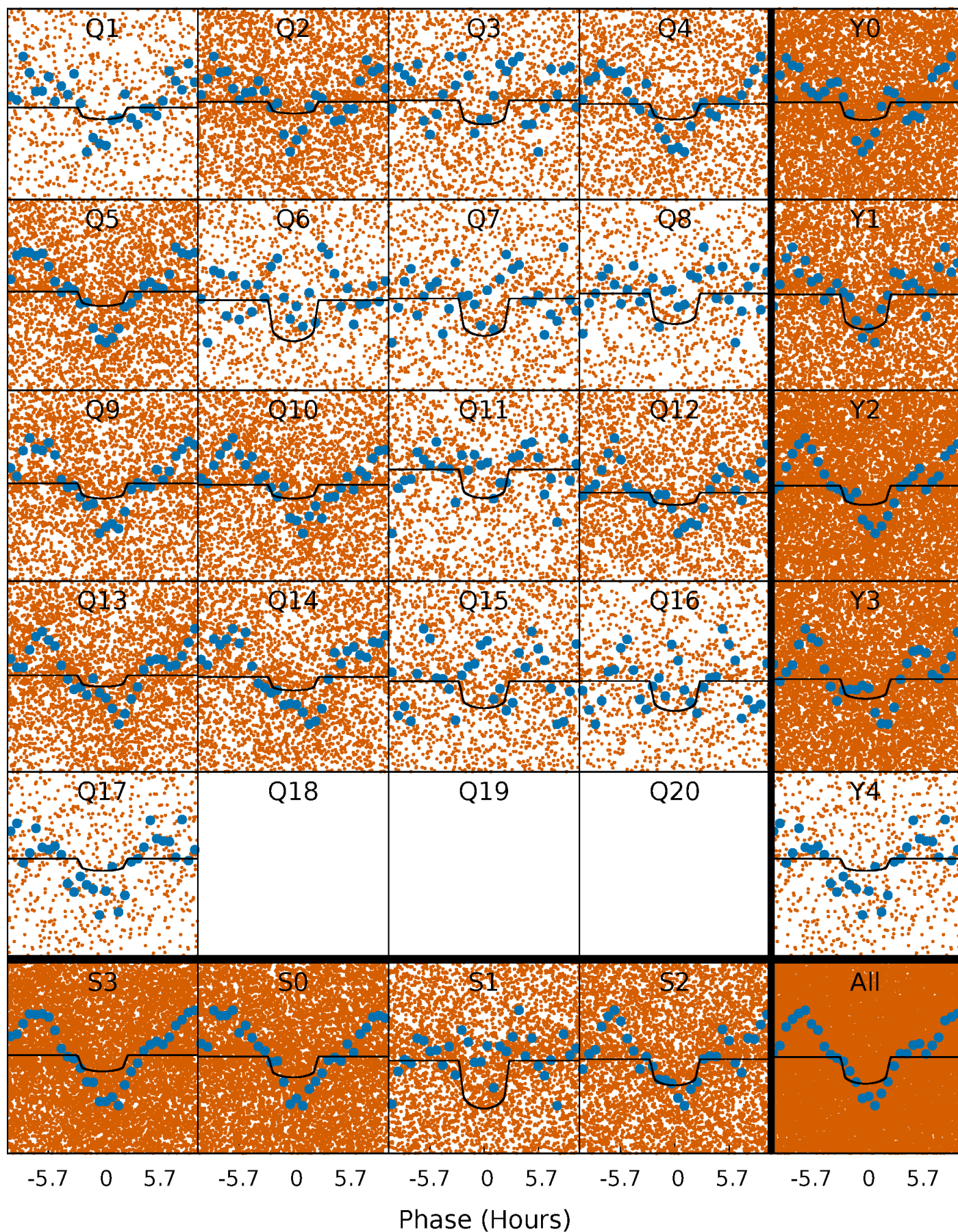
PDC Quarter-Phased Transit Curves

TCE 010853783-01 P= 0.680851 Days $T_0=132.136965$ (BKJD)



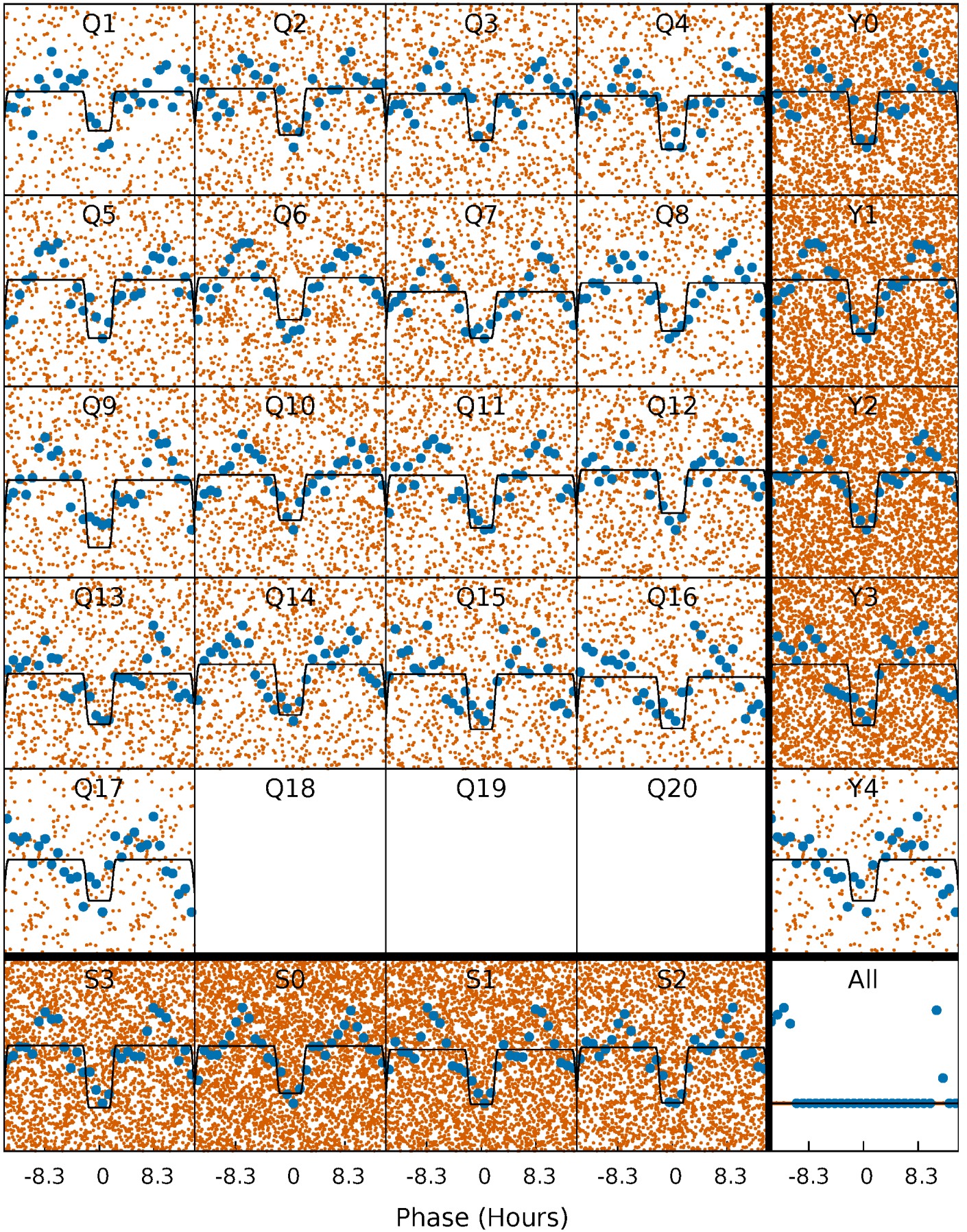
DV Quarter-Phased Transit Curves

TCE 010853783-01 P= 0.680851 Days $T_0=132.136965$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

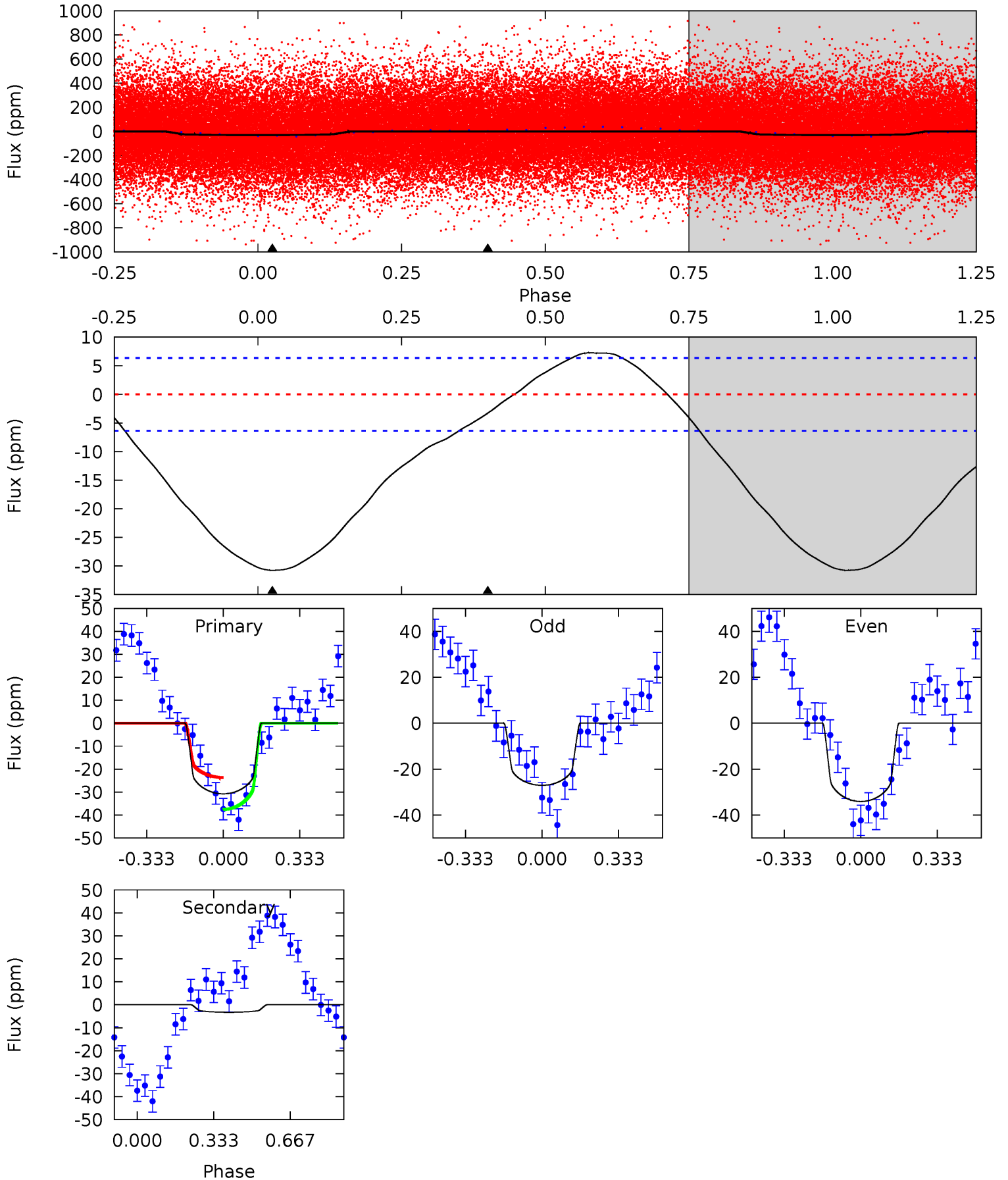
TCE 010853783-01 P= 0.680908 Days $T_0=132.094631$ (BKJD)



DV Model-Shift Uniqueness Test

010853783-01, P = 0.680851 Days, E = 131.456114 Days

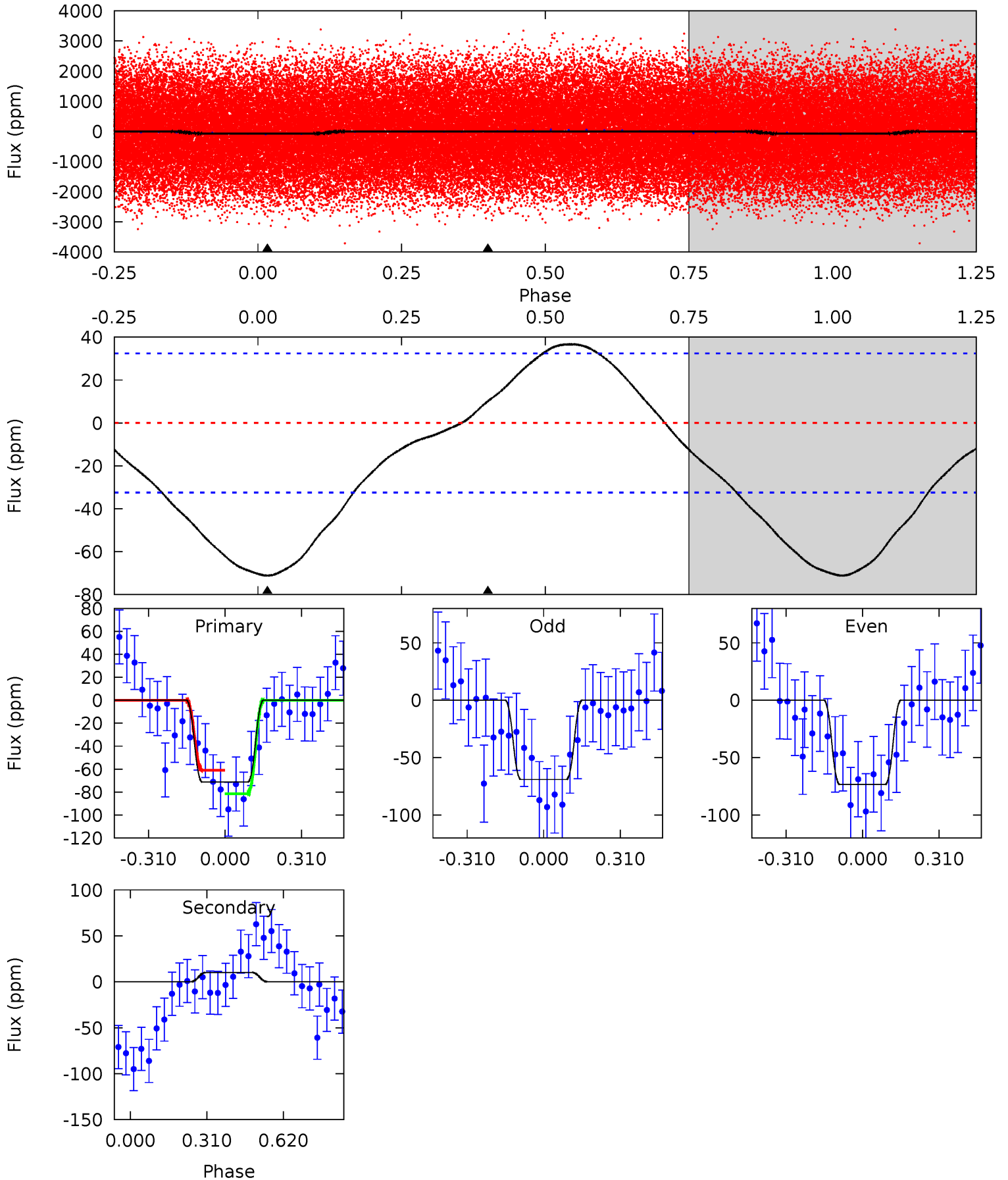
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	2.22	0	0	4.31	0.97	2.00	20.8	20.8	2.22	2.22	2.39	1.07	0.19	4.67



Alt Model-Shift Uniqueness Test

010853783-01, P = 0.680908 Days, E = 131.413723 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.49	-1.35	0	0	4.32	1.02	1.19	9.49	9.49	-1.35	-1.35	0.29	1.04	0.34	1.36



Stellar Parameters For KIC 010853783

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8064^{+223}_{-335}	$3.854^{+0.352}_{-0.088}$	$-0.300^{+0.200}_{-0.300}$	$2.696^{+0.355}_{-1.135}$	$1.894^{+0.055}_{-0.464}$	$0.136^{+0.414}_{-0.038}$
	+3%/-4%	+9%/-2%	+67%/-100%	+13%/-42%	+3%/-24%	+304%/-28%
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 010853783-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3 ± 1	$1.34^{+0.76}_{-0.62}$	5783^{+397}_{-588}	2782^{+3003}_{-7204}	$0.311^{+0.803}_{-0.206}$
Alt.	10 ± 8	$2.42^{+0.78}_{-0.73}$	5792^{+382}_{-599}	-5478^{+592}_{-682}	$-0.298^{+0.215}_{-0.473}$

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 $A_{obs} \gg 1.0$

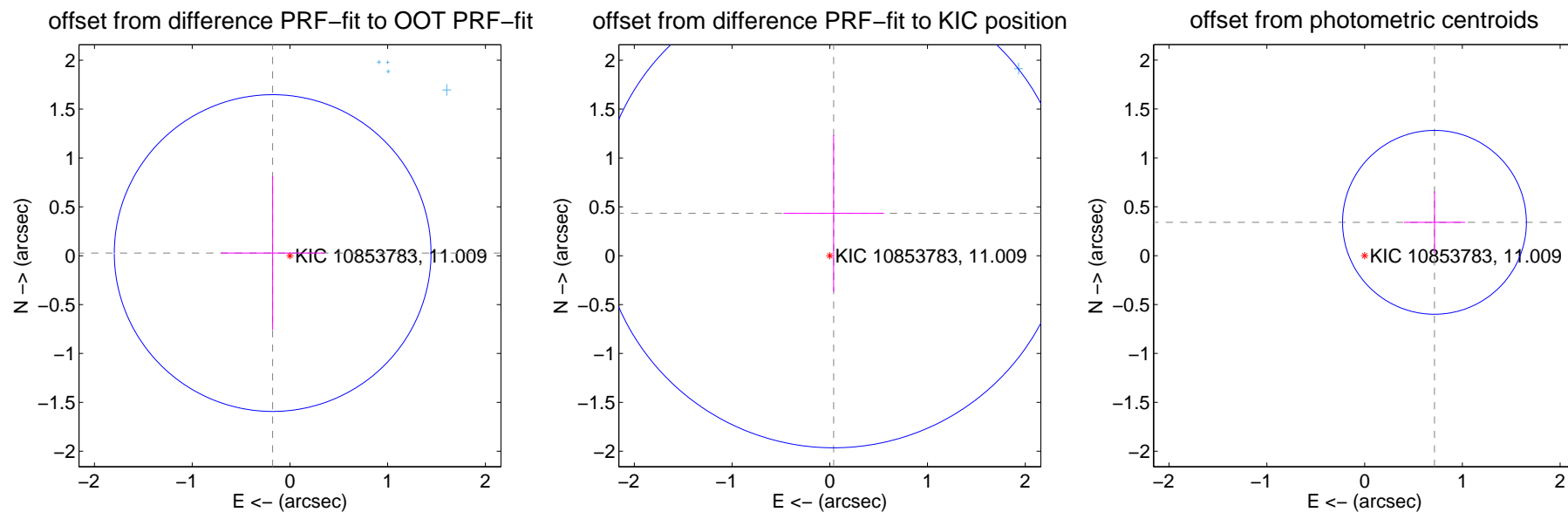
DV Centroid Data

Supplemental centroid analysis for 010853783-01. **Kepler magnitude: 11.01.** Transit SNR 12.69

There are 12 quarters with good PRF difference image offsets

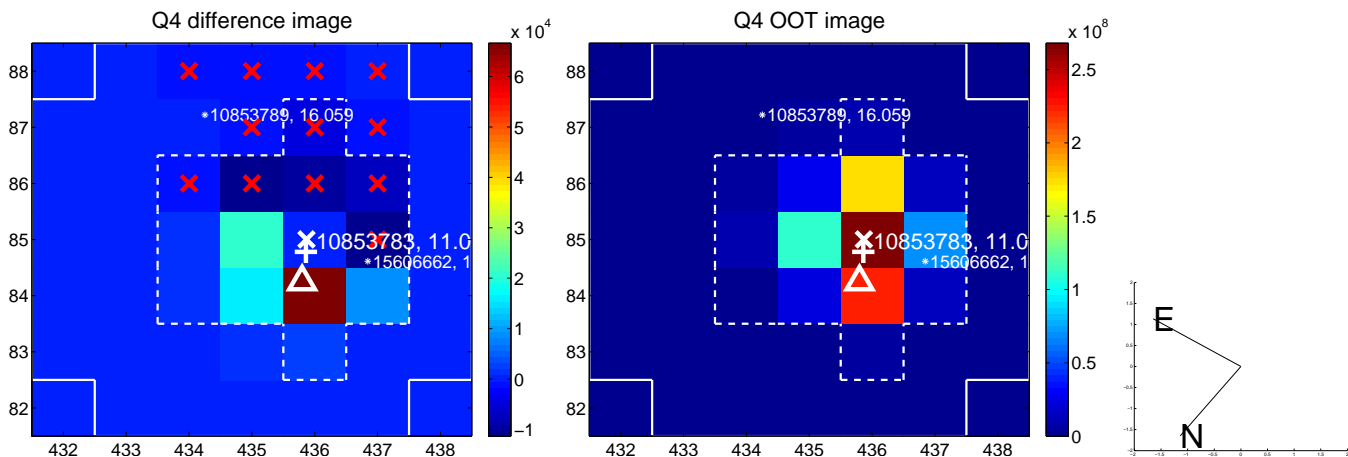
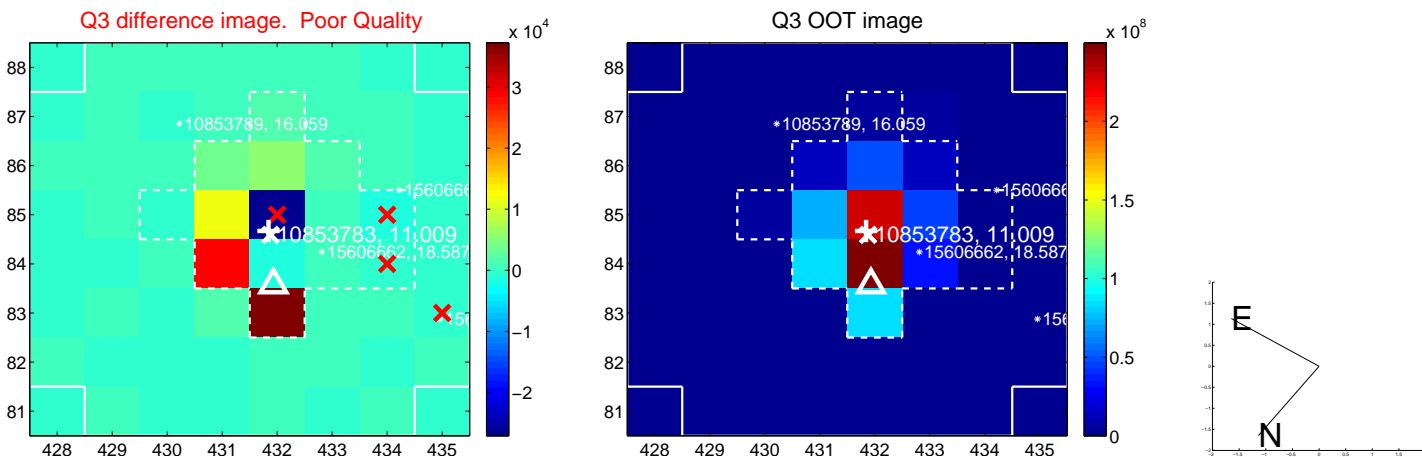
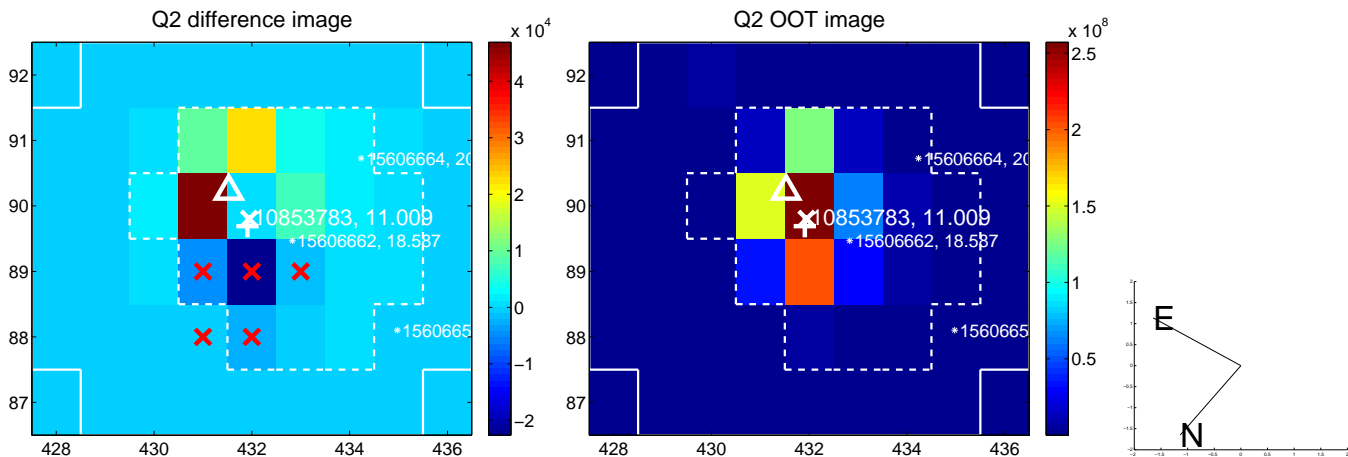
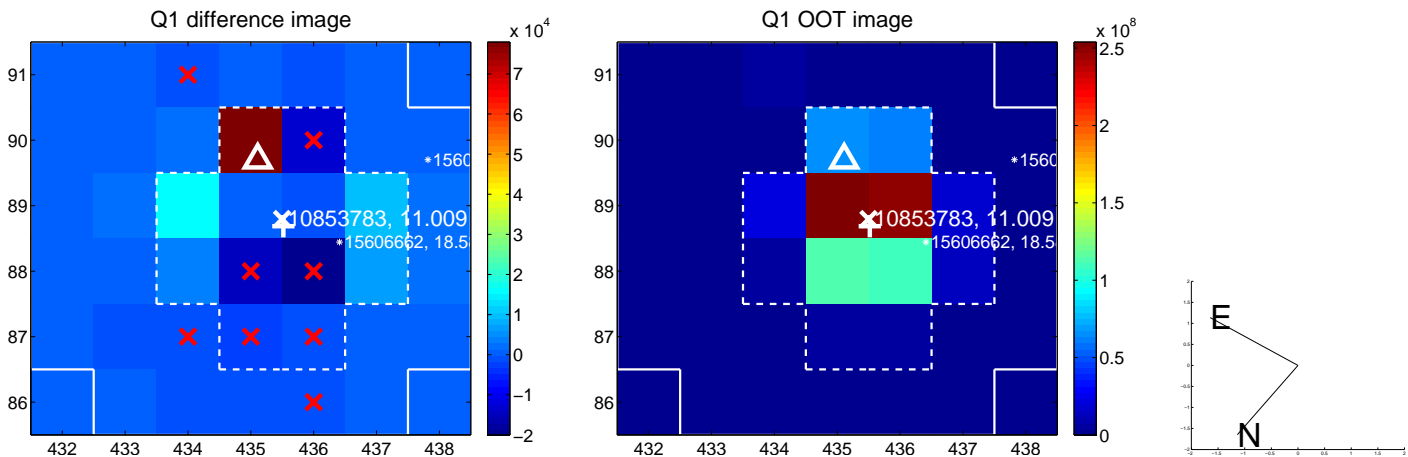
The direct PRF centroid is offset from the target star catalog position by about 0.39 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.179 ± 0.540	0.33	0.177 ± 0.533	0.027 ± 0.785
PRF-fit source offset from KIC position	0.436 ± 0.799	0.54	-0.040 ± 0.514	0.434 ± 0.801
photometric centroid source offset	0.79 ± 0.31	2.53	-0.71 ± 0.31	0.34 ± 0.32

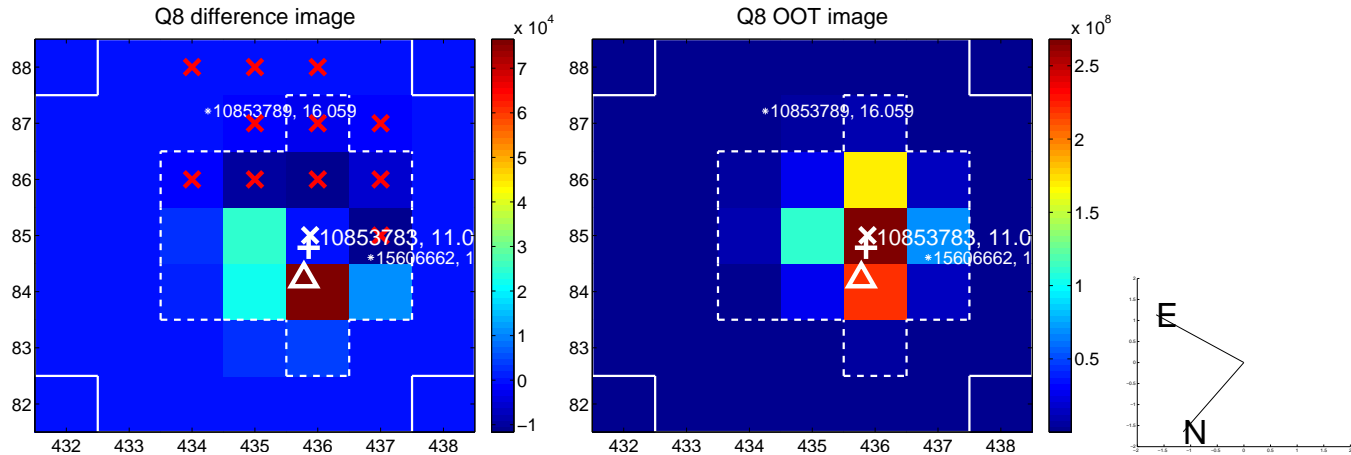
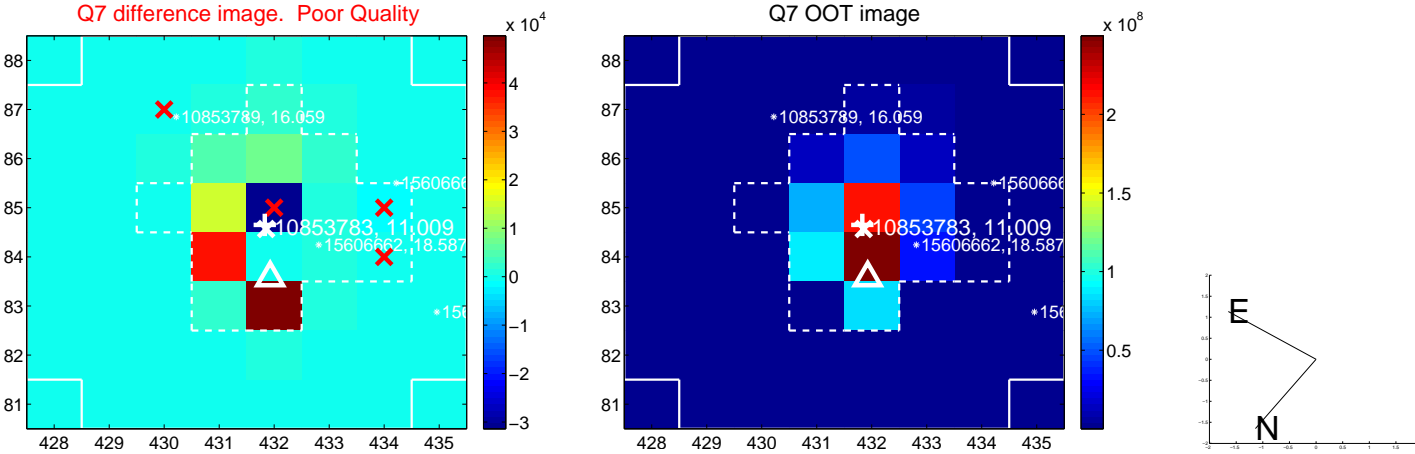
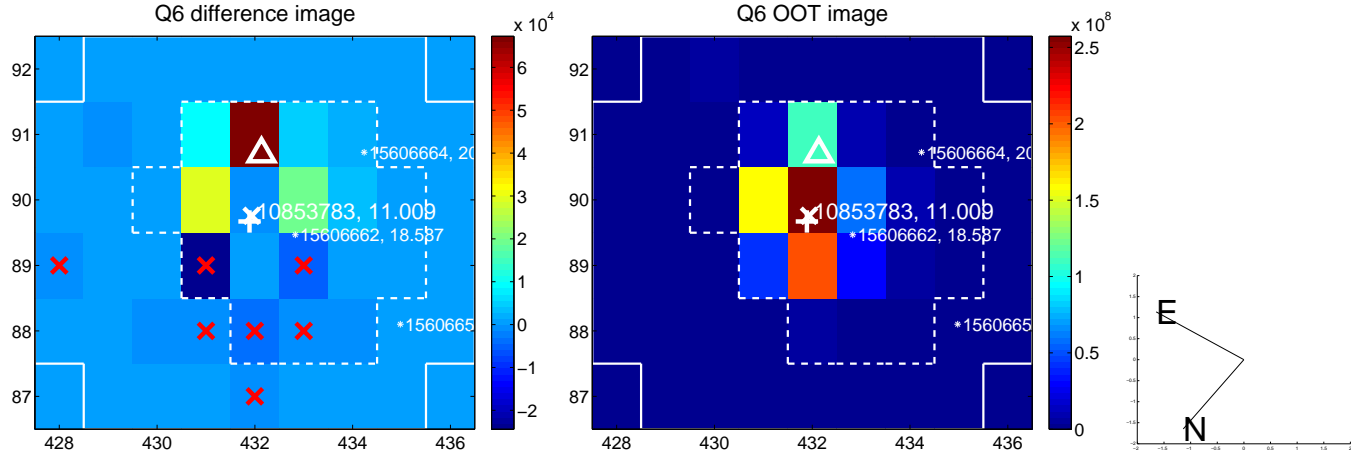
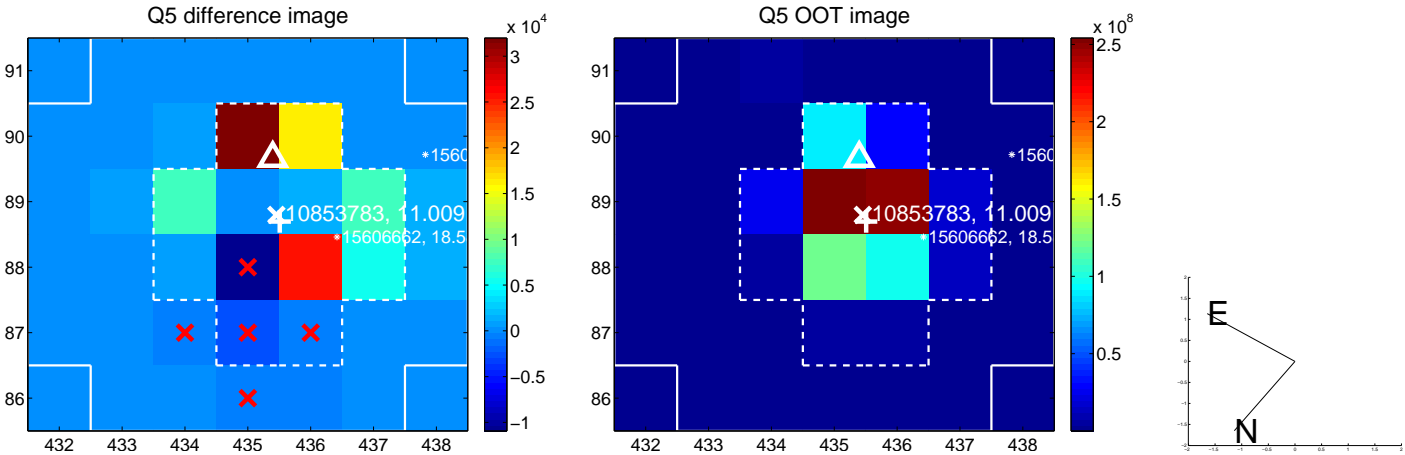


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

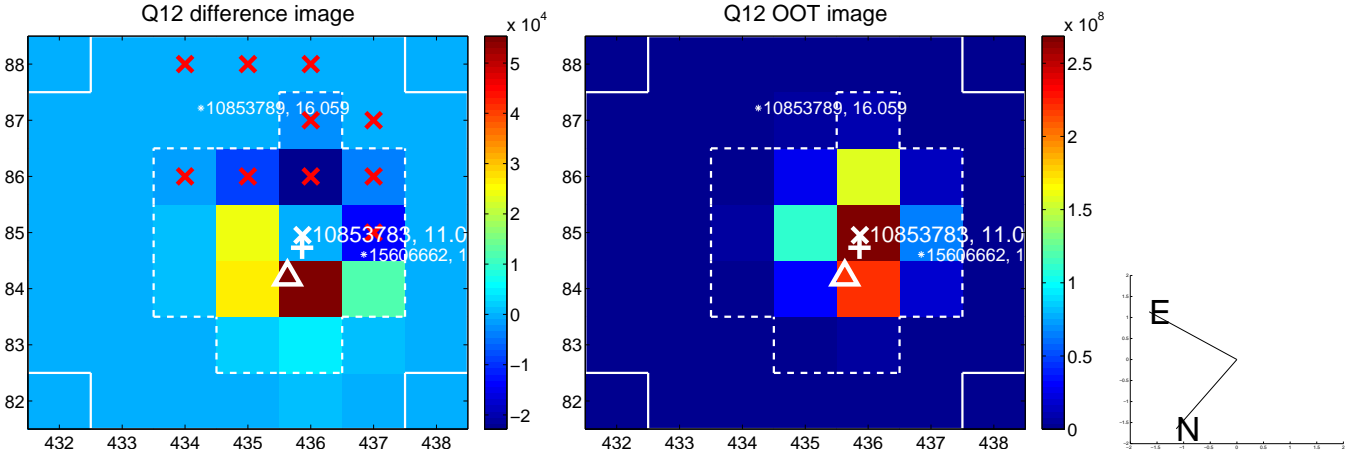
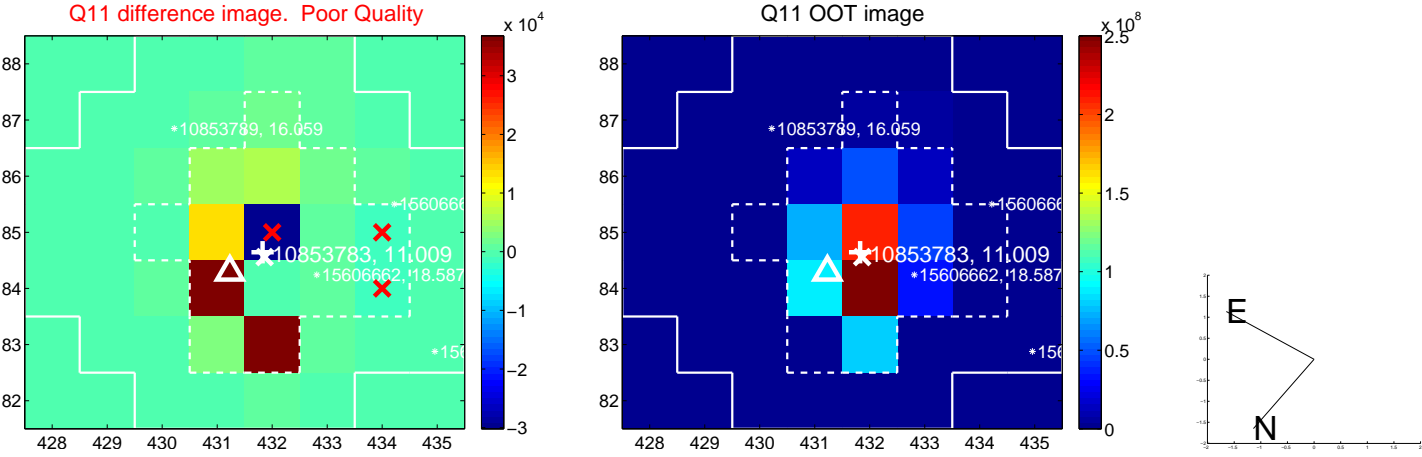
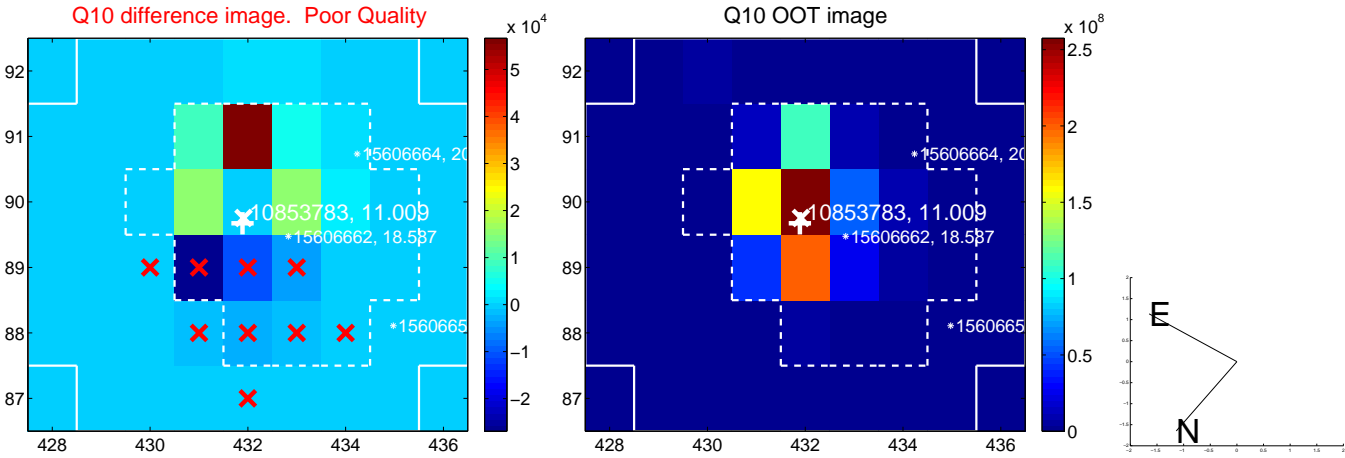
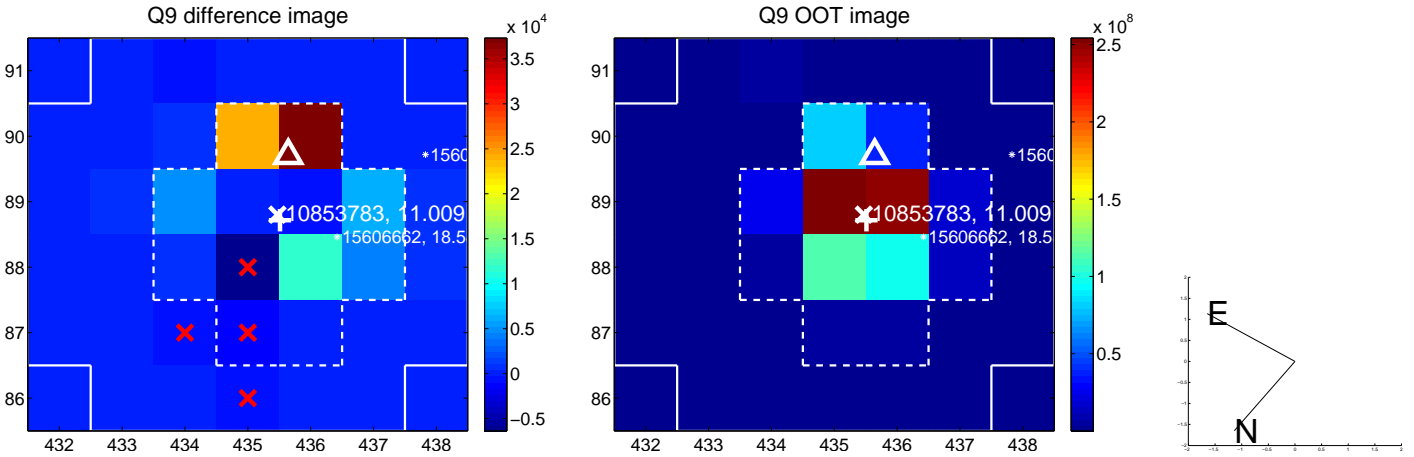
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



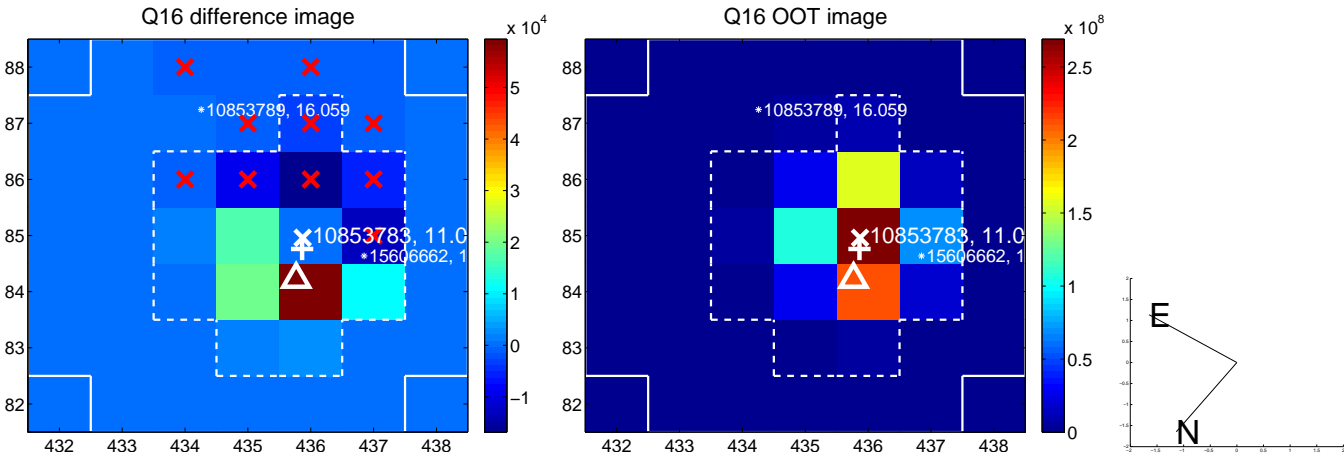
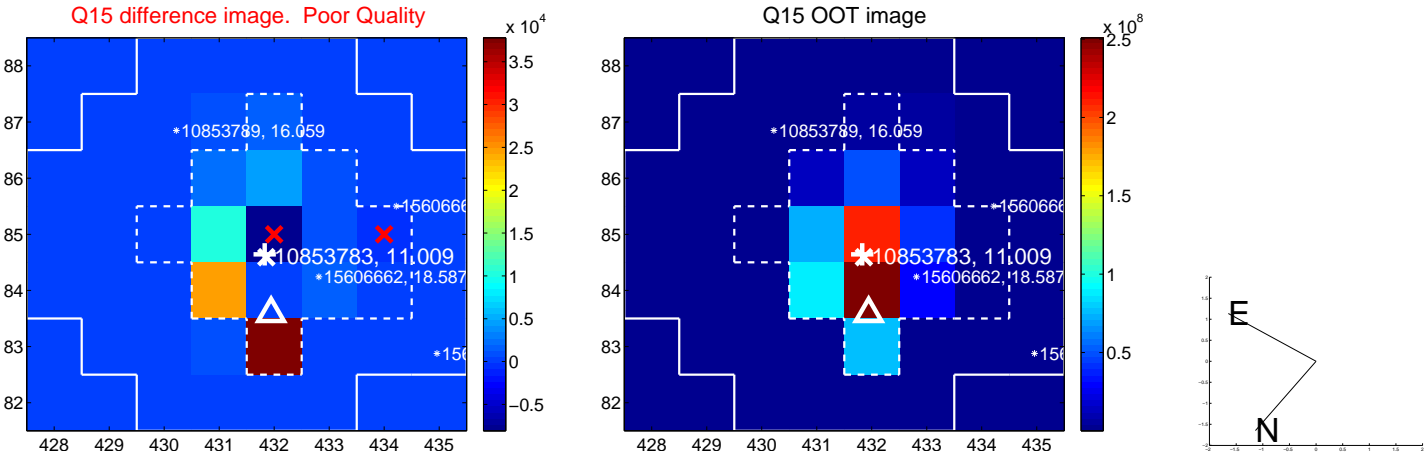
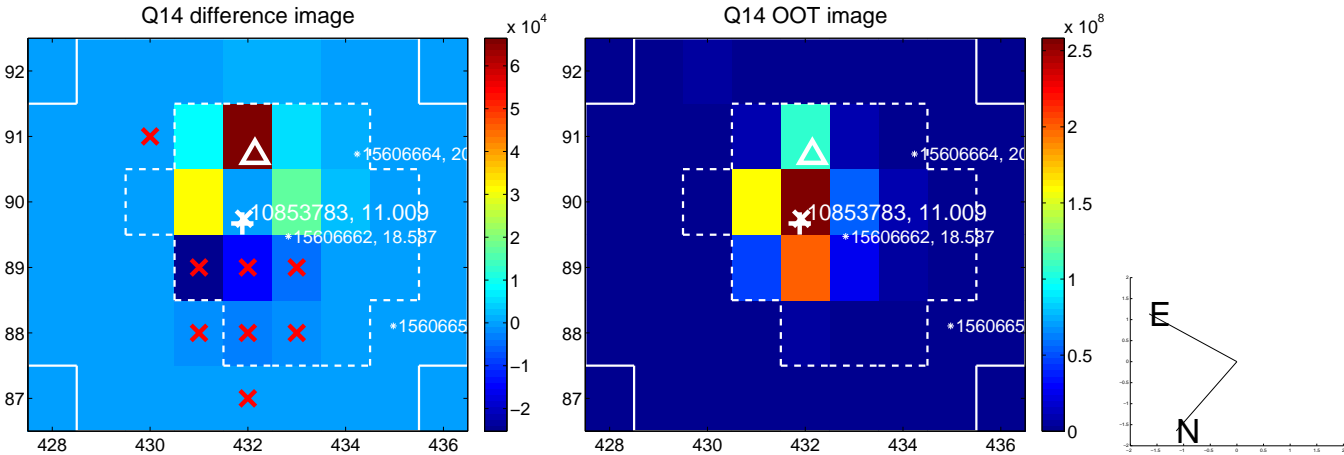
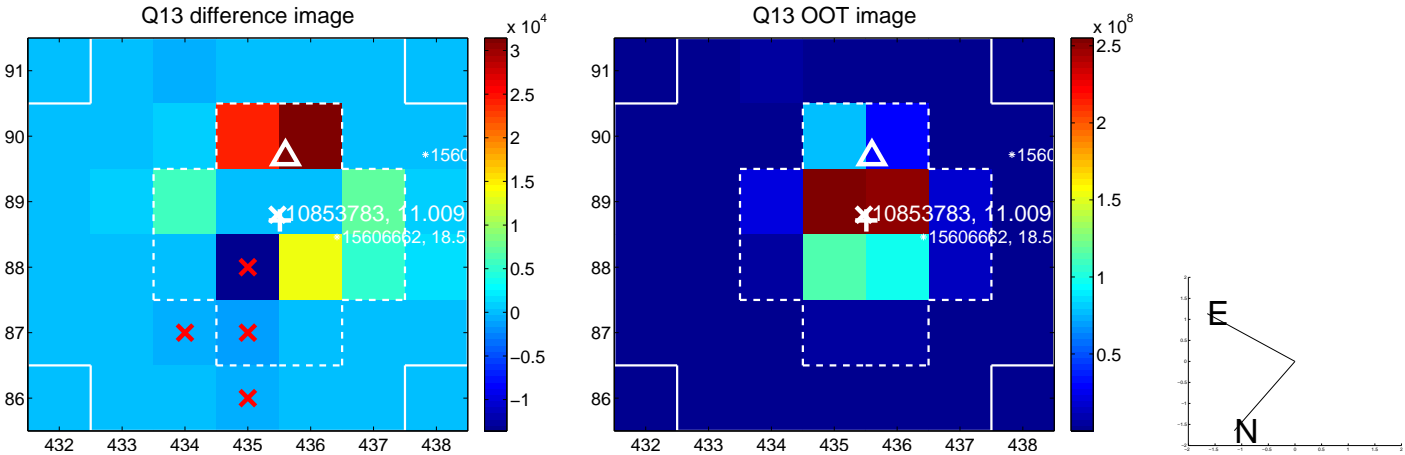
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



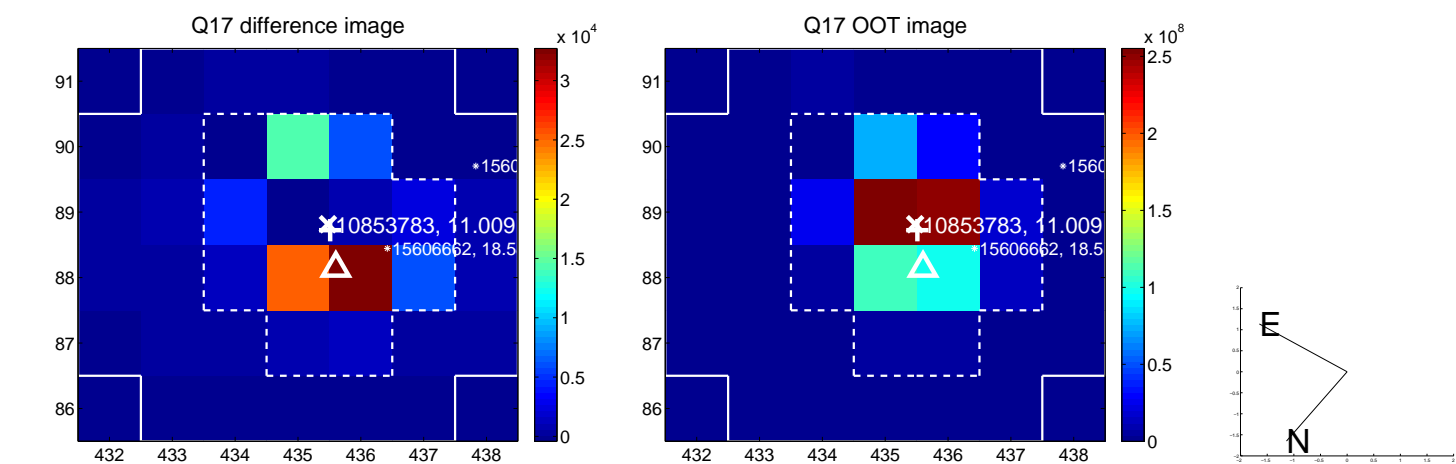
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



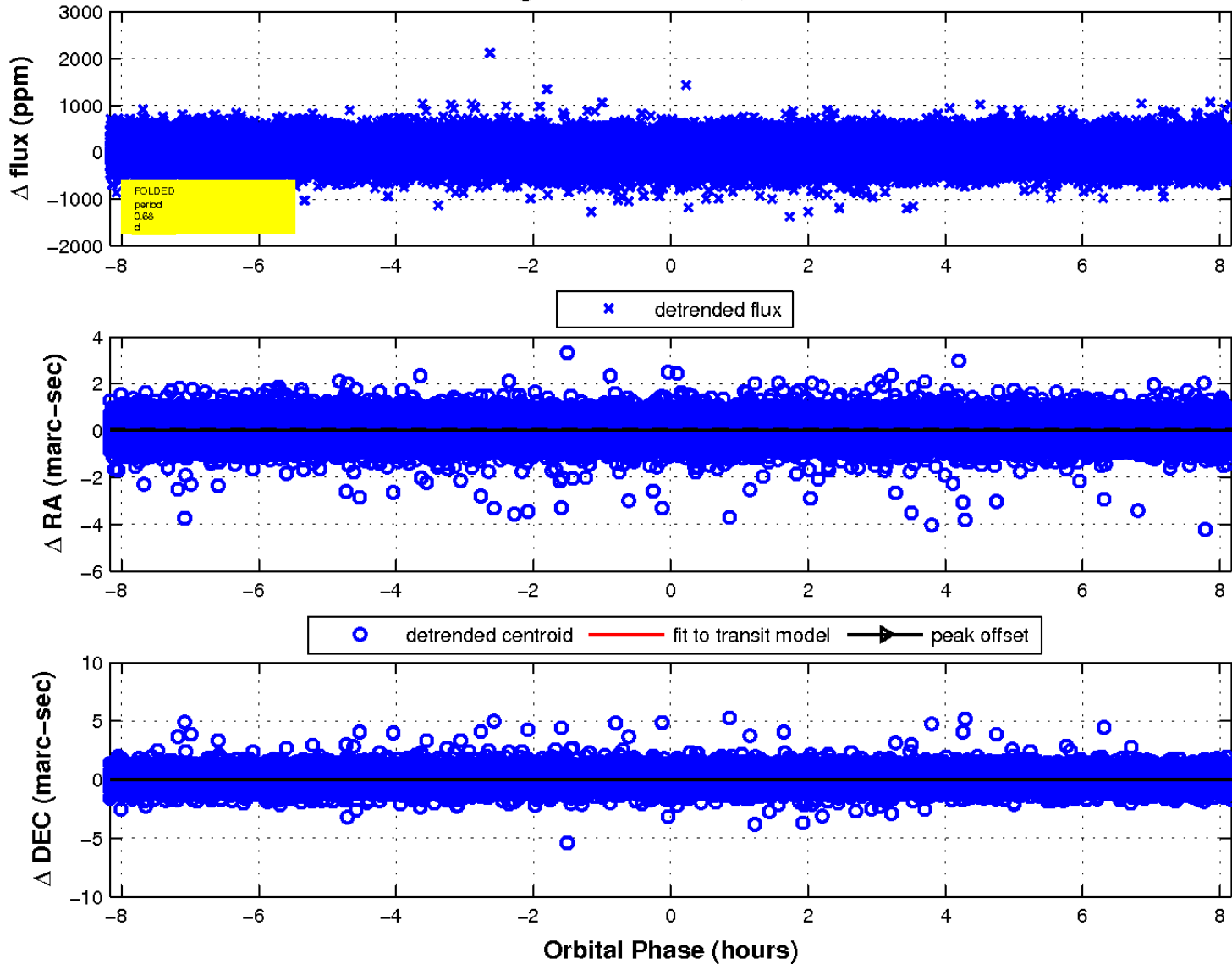
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

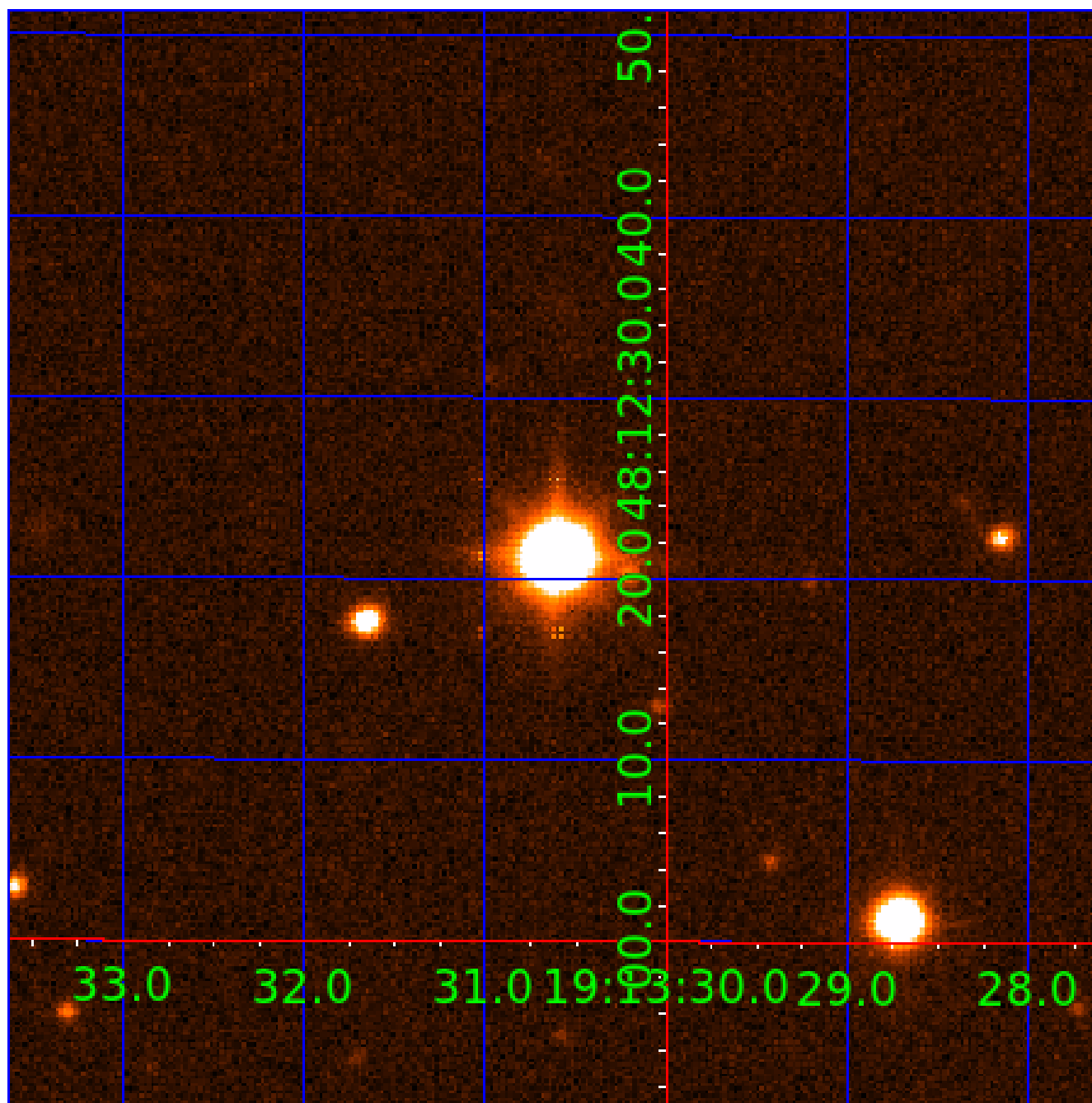


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 010853783

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})
010853783-01	OBS	No	0.680851	132.136965	23.1	5.004	14.0	12.7	2.70	8064	1.51	78374.28
010853783-02	OBS	No	31.336085	140.165765	55.4	0.923	9.6	1.1	2.70	8064	2.33	475.17

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010853783-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
010853783-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

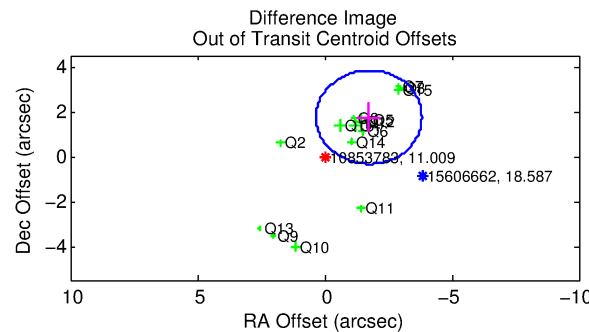
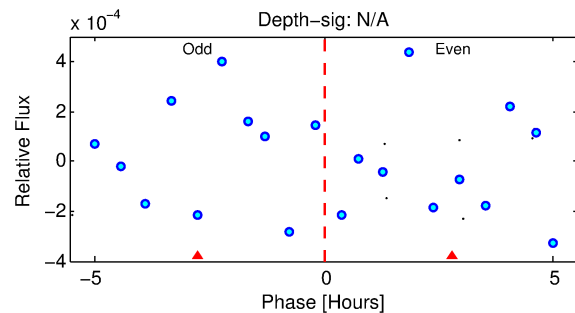
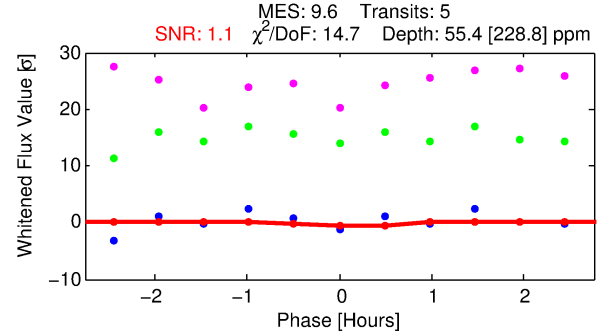
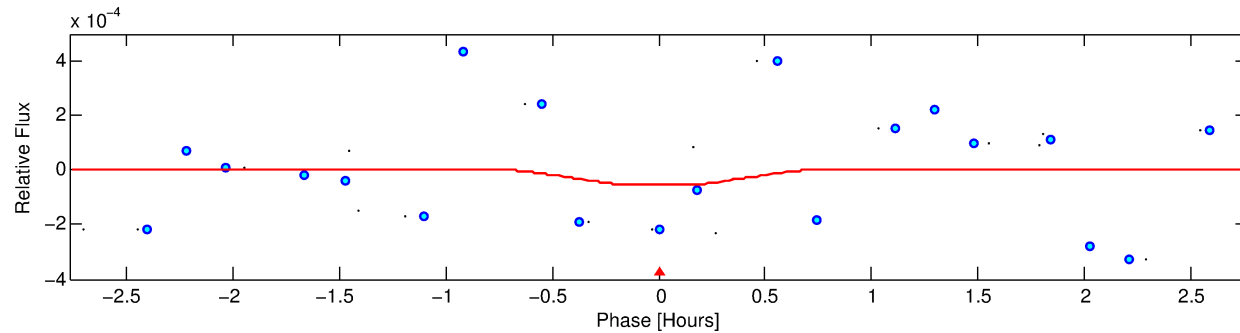
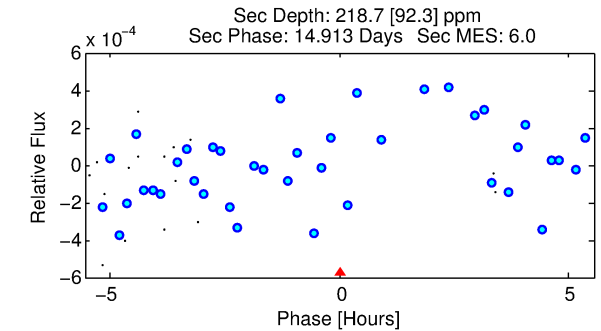
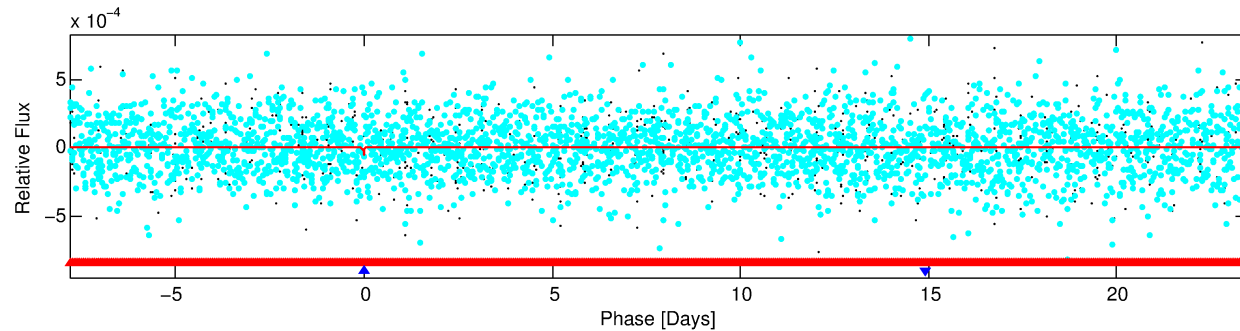
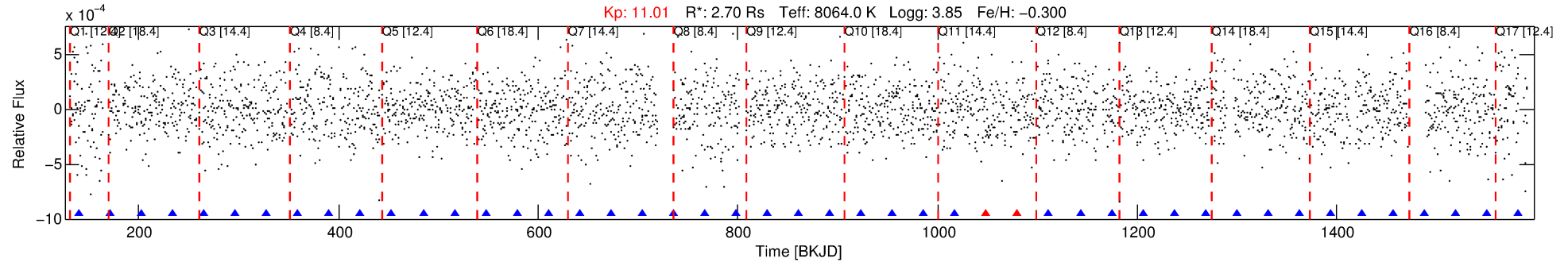
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010853783-02

No Significant Match Found

DV One-Page Summary

KIC: 10853783 Candidate: 2 of 2 Period: 31.336 d



DV Fit Results:

Period = 31.33608 [0.00870] d
Epoch = 140.1658 [0.2812] BKJD
Rp/R* = 0.0079 [0.1103]
a/R* = 126.65 [11041.78]
b = 0.88 [22.41]
Seff = 475.17 [299.90]
Teq = 1191 [188] K
Rp = 2.33 [32.46] Re
a = 0.2407 [0.0938] AU
Ag = 1283.42 [35747.90] [0.04] σ
Teffp = 11017 [76701] K [0.13] σ

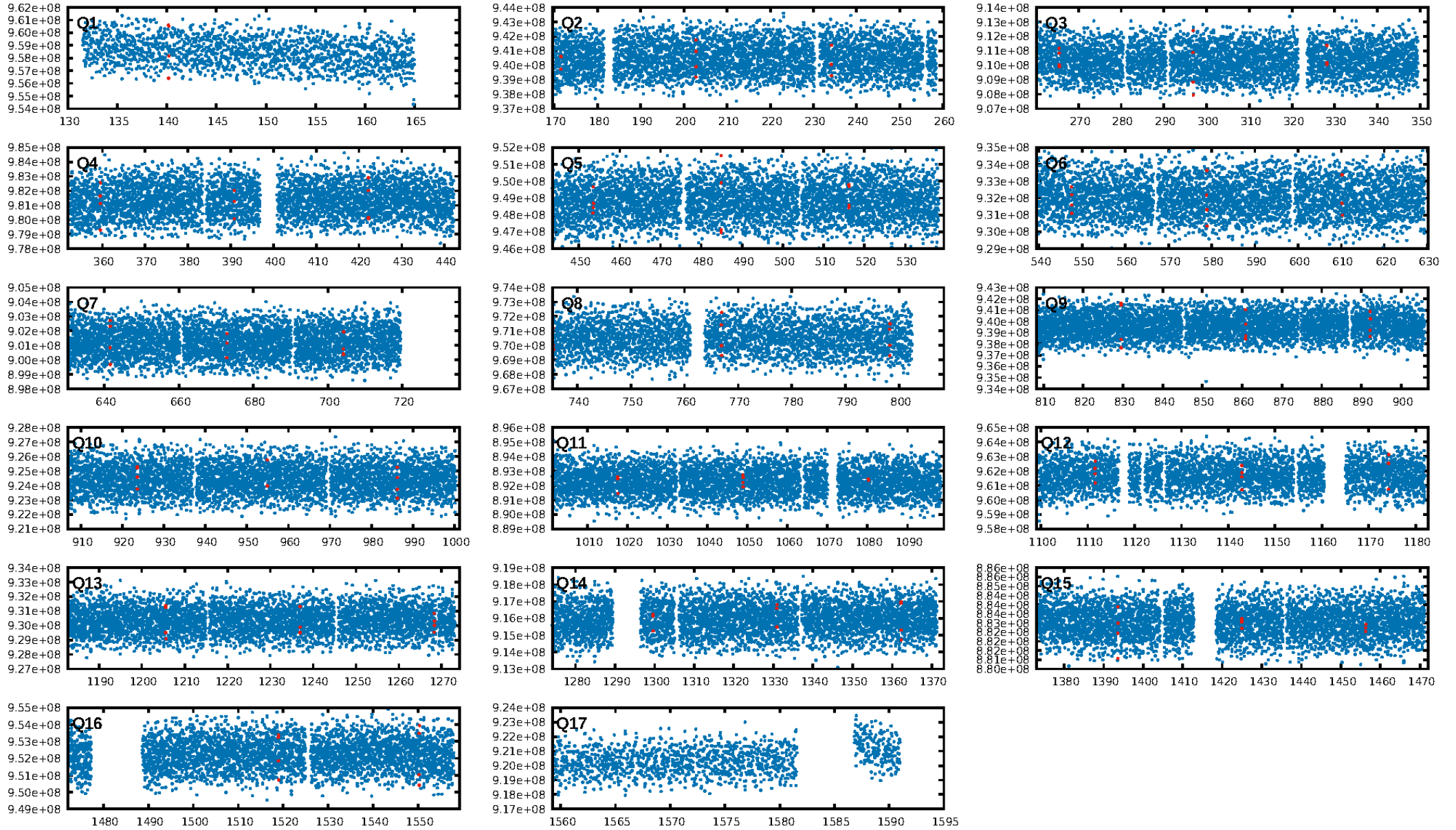
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [144.60 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.6%
Bootstrap-pfa: 9.60e-14
RollingBand-fgt: 0.60 [3/5]
GhostDiagnostic-chr: -1.769
Centroid-sig: 32.3%
Centroid-so: 1.581 arcsec [0.90 σ]
OotOffset-rm: 2.466 arcsec [3.55 σ]
KicOffset-rm: 2.798 arcsec [4.02 σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.27 [4/15]
DiffImageOverlap-fno: 0.06 [1/16]

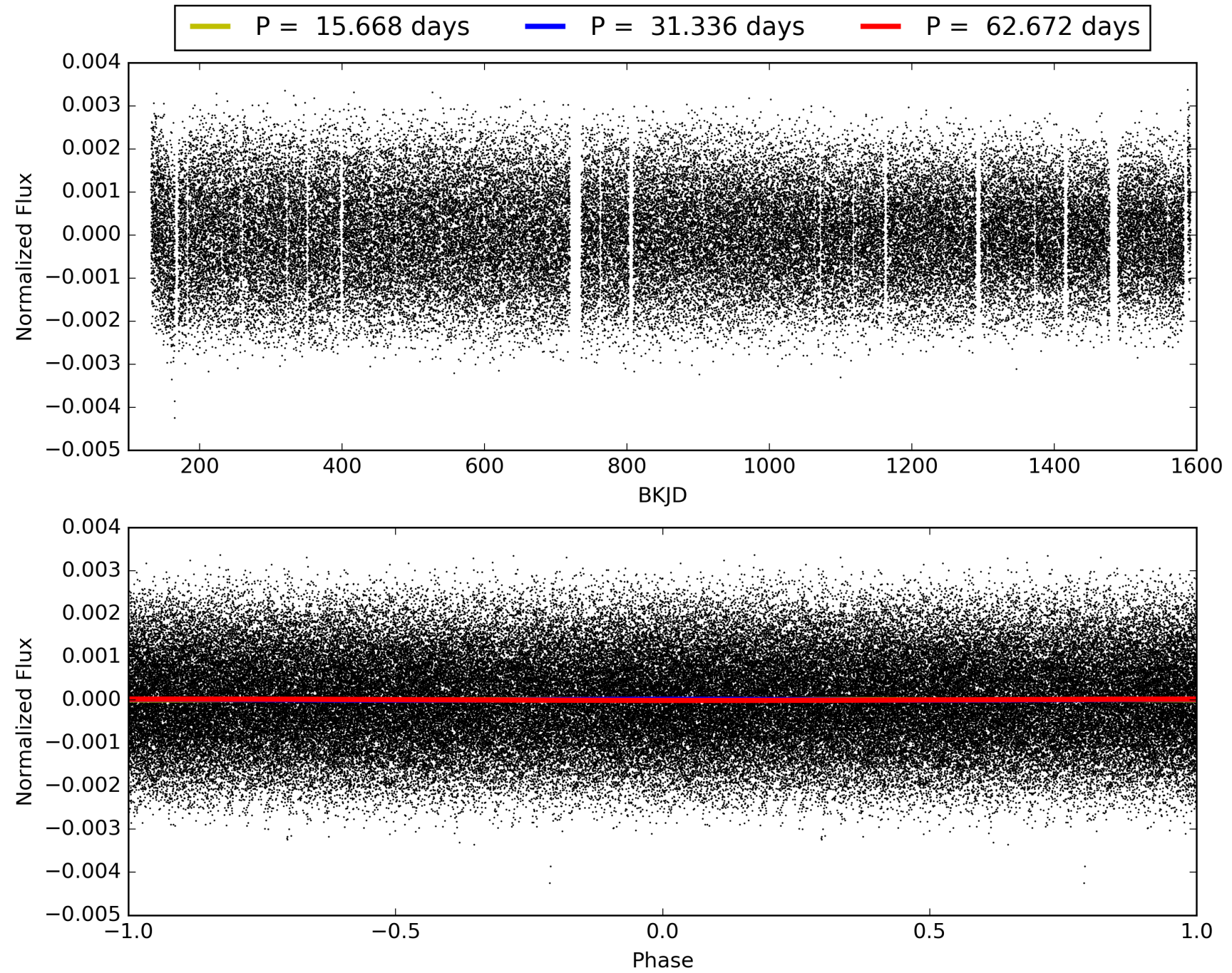
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:01:36 Z

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

TCE 010853783-02, PDC Light Curves

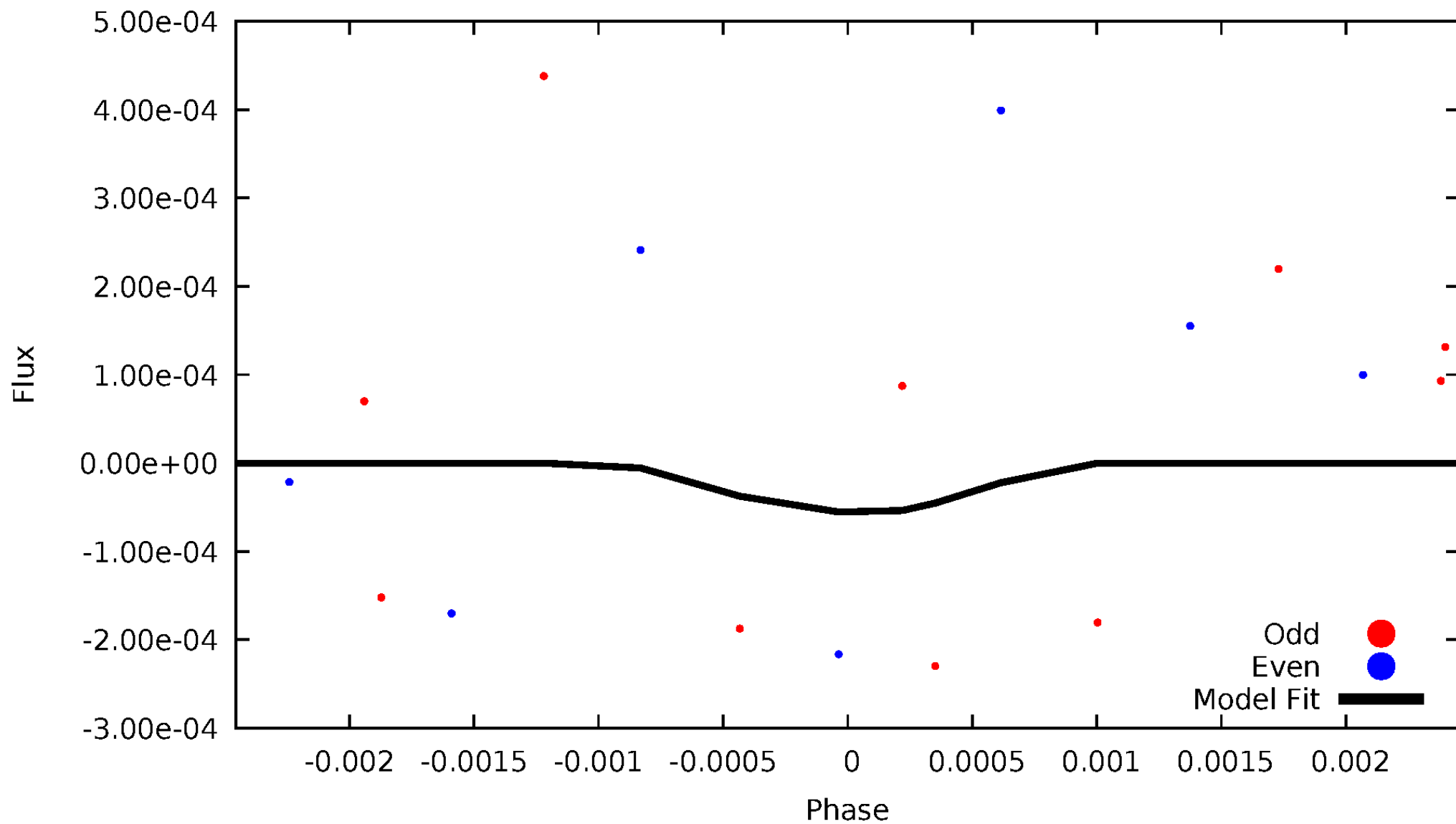


TCE 010853783-02



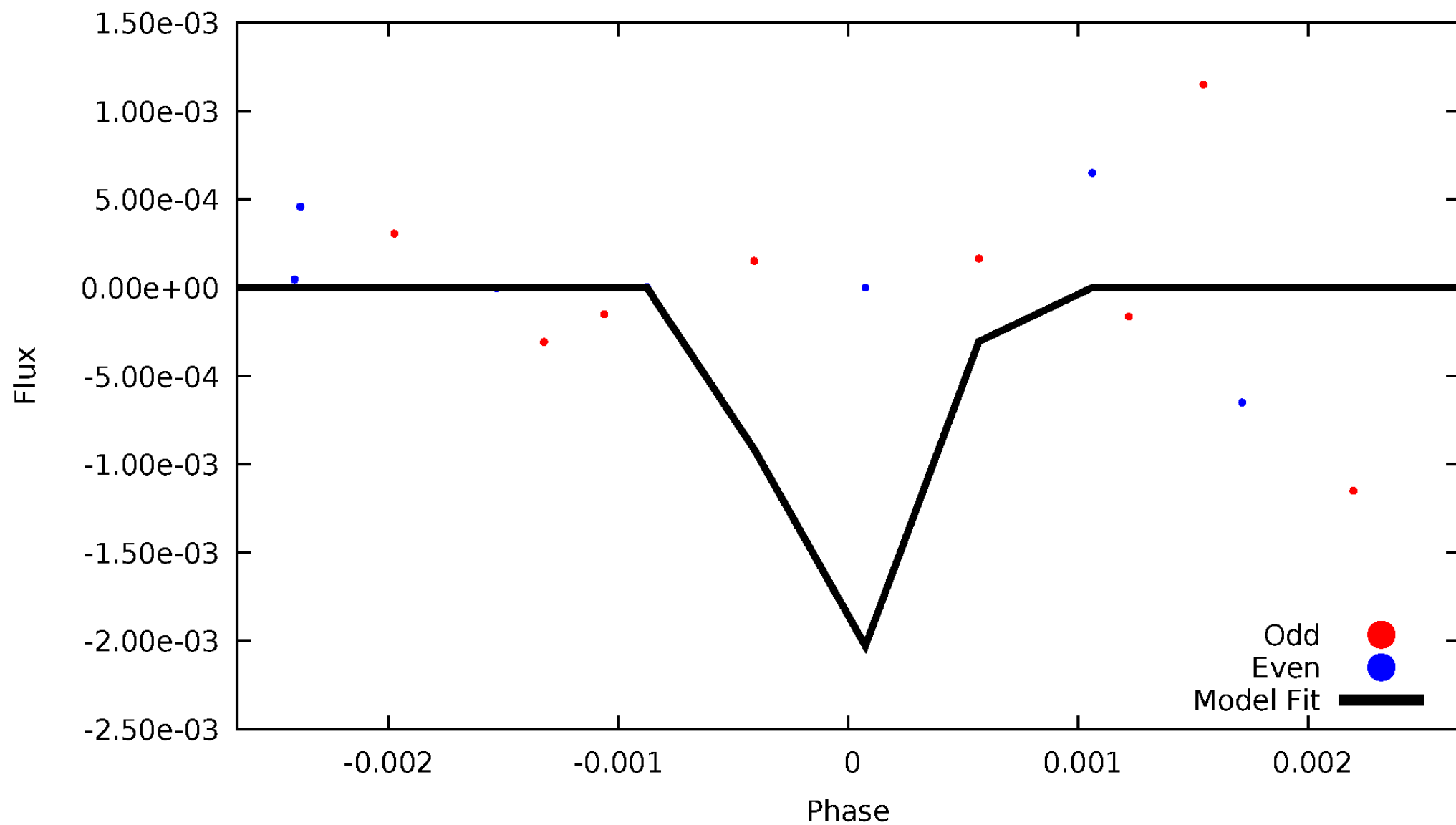
DV Odd/Even

TCE 010853783-02



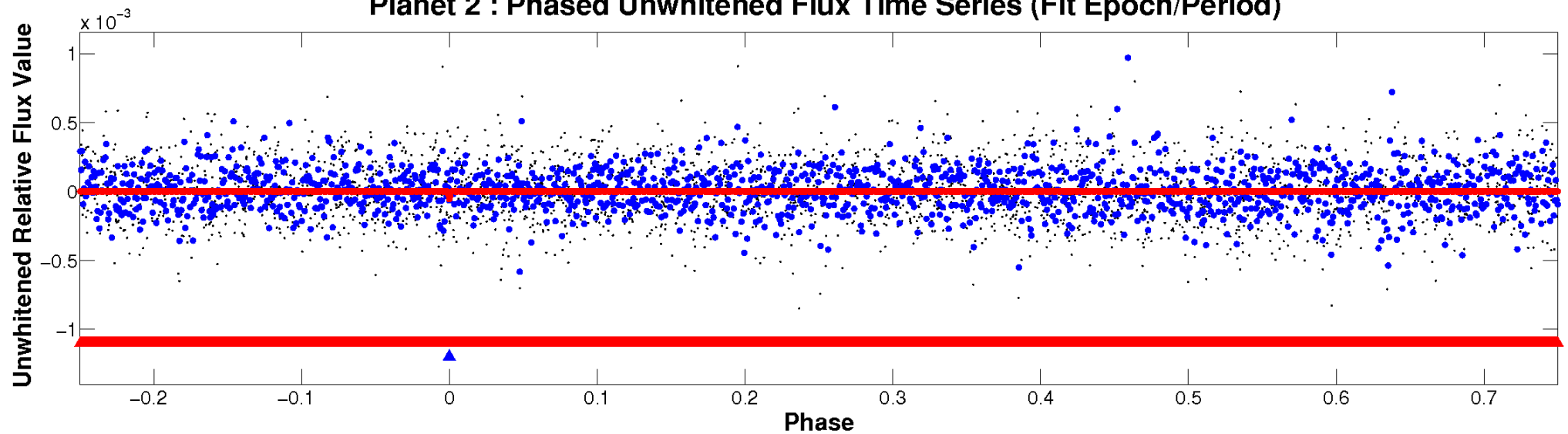
ALT Odd/Even

TCE 010853783-02

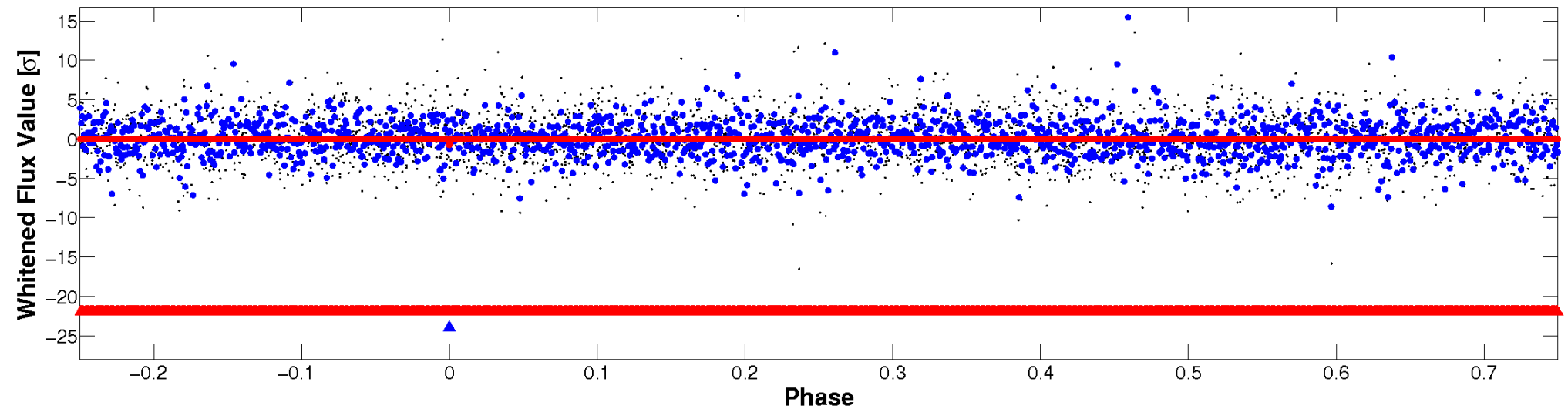


Non-Whitened Vs. Whitened Light Curve

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

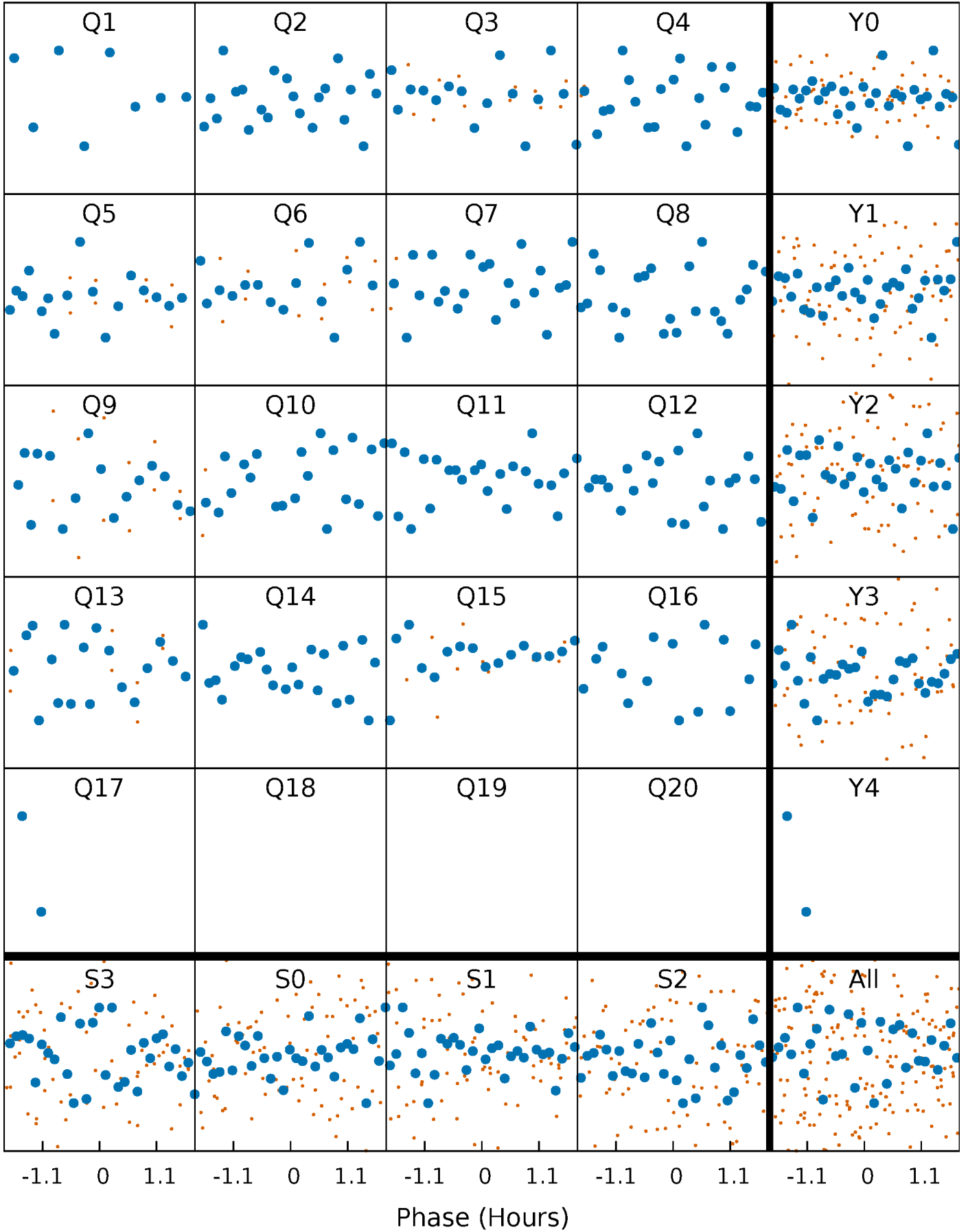


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



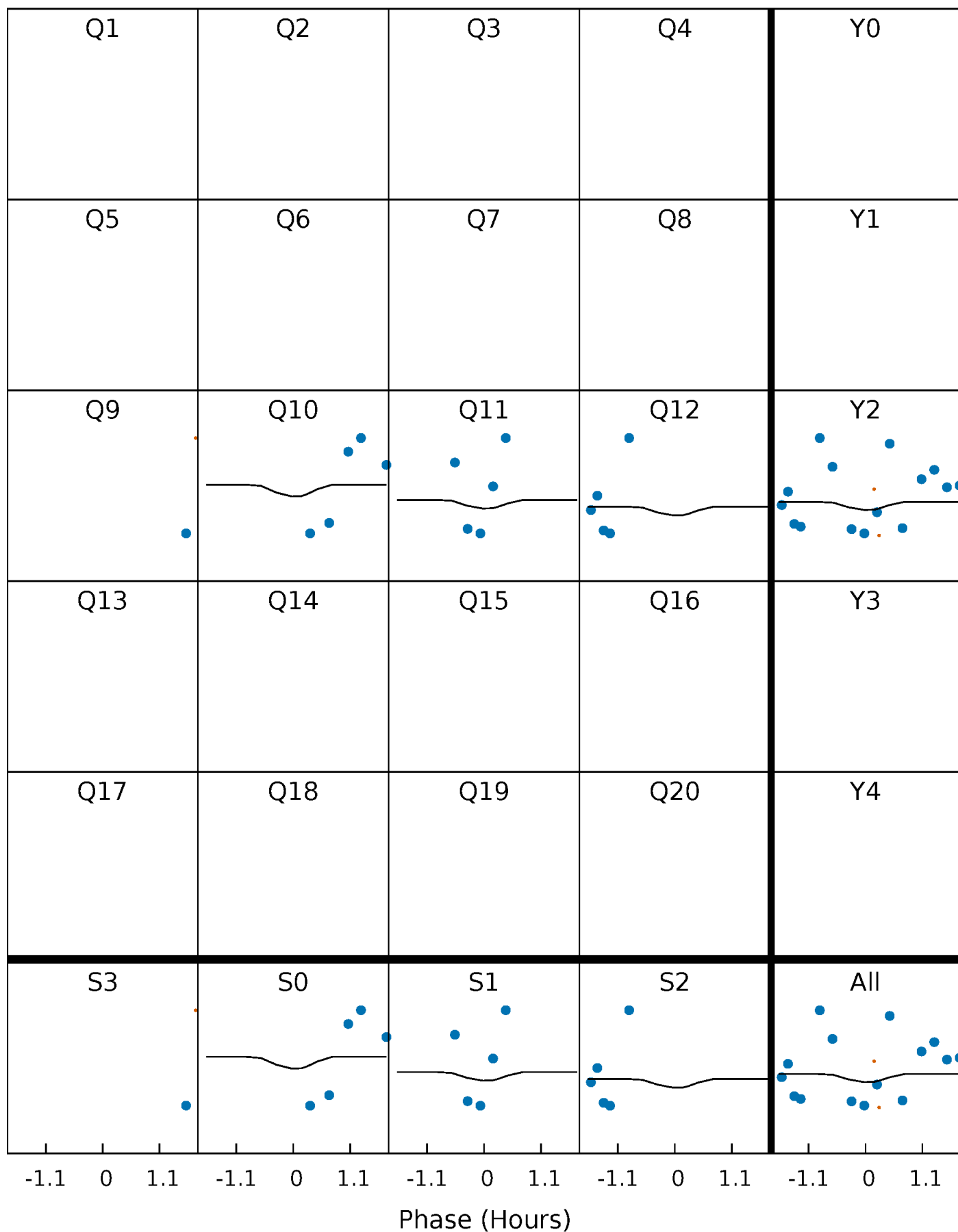
PDC Quarter-Phased Transit Curves

TCE 010853783-02 P= 31.336085 Days $T_0=140.165765$ (BKJD)



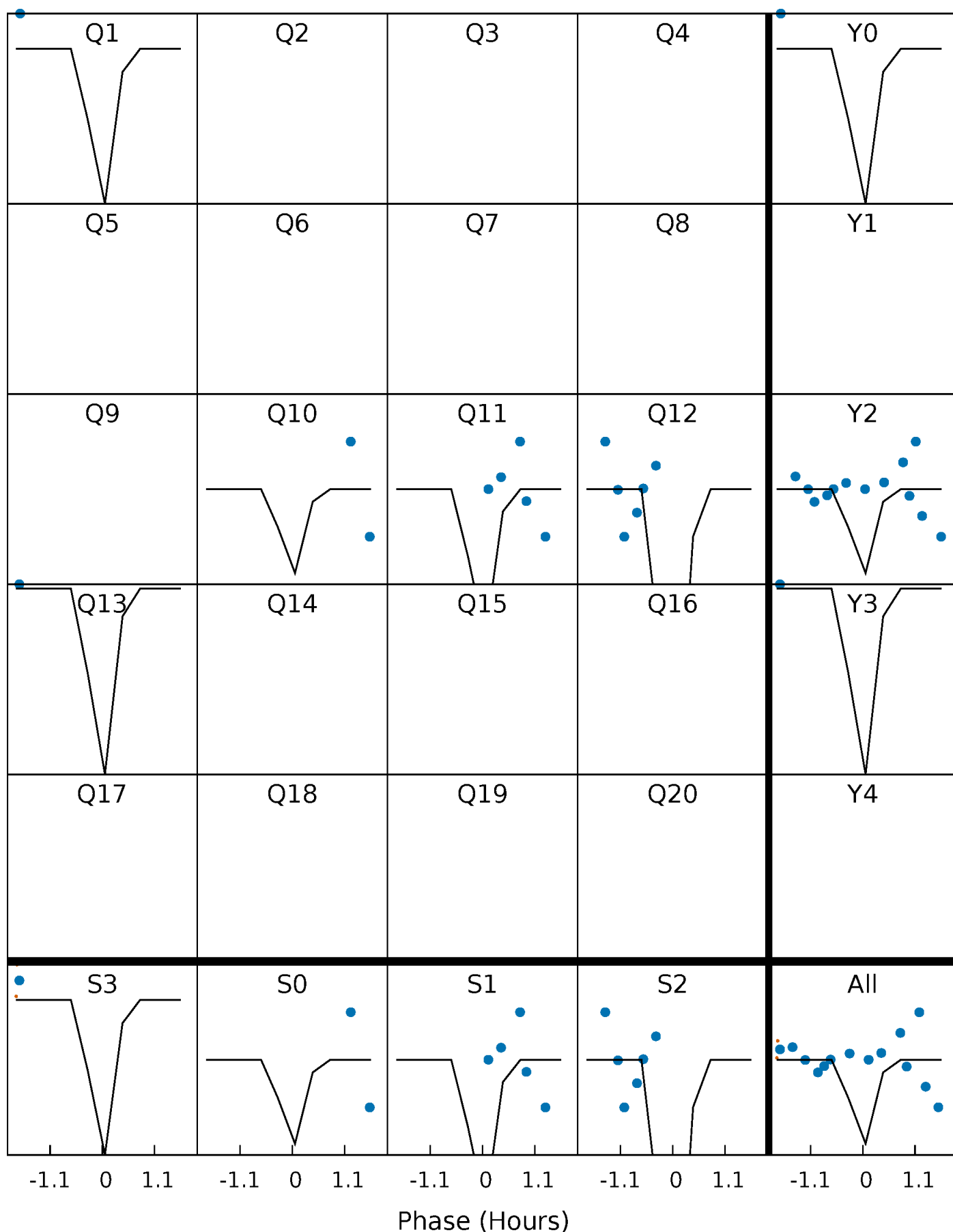
DV Quarter-Phased Transit Curves

TCE 010853783-02 $P = 31.336085$ Days $T_0 = 140.165765$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

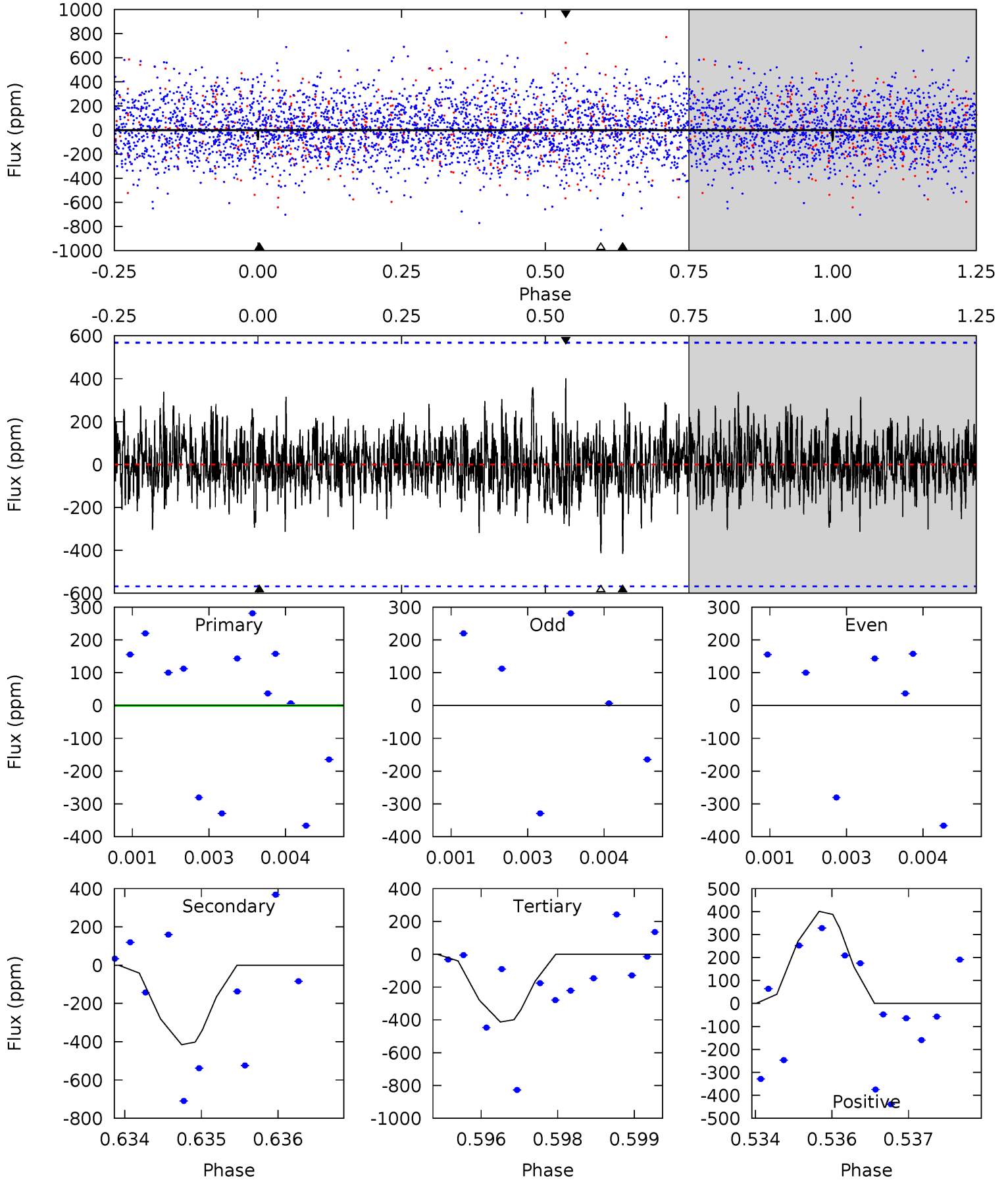
TCE 010853783-02 P= 31.339104 Days $T_0=140.046793$ (BKJD)



DV Model-Shift Uniqueness Test

010853783-02, P = 31.336085 Days, E = 108.829680 Days

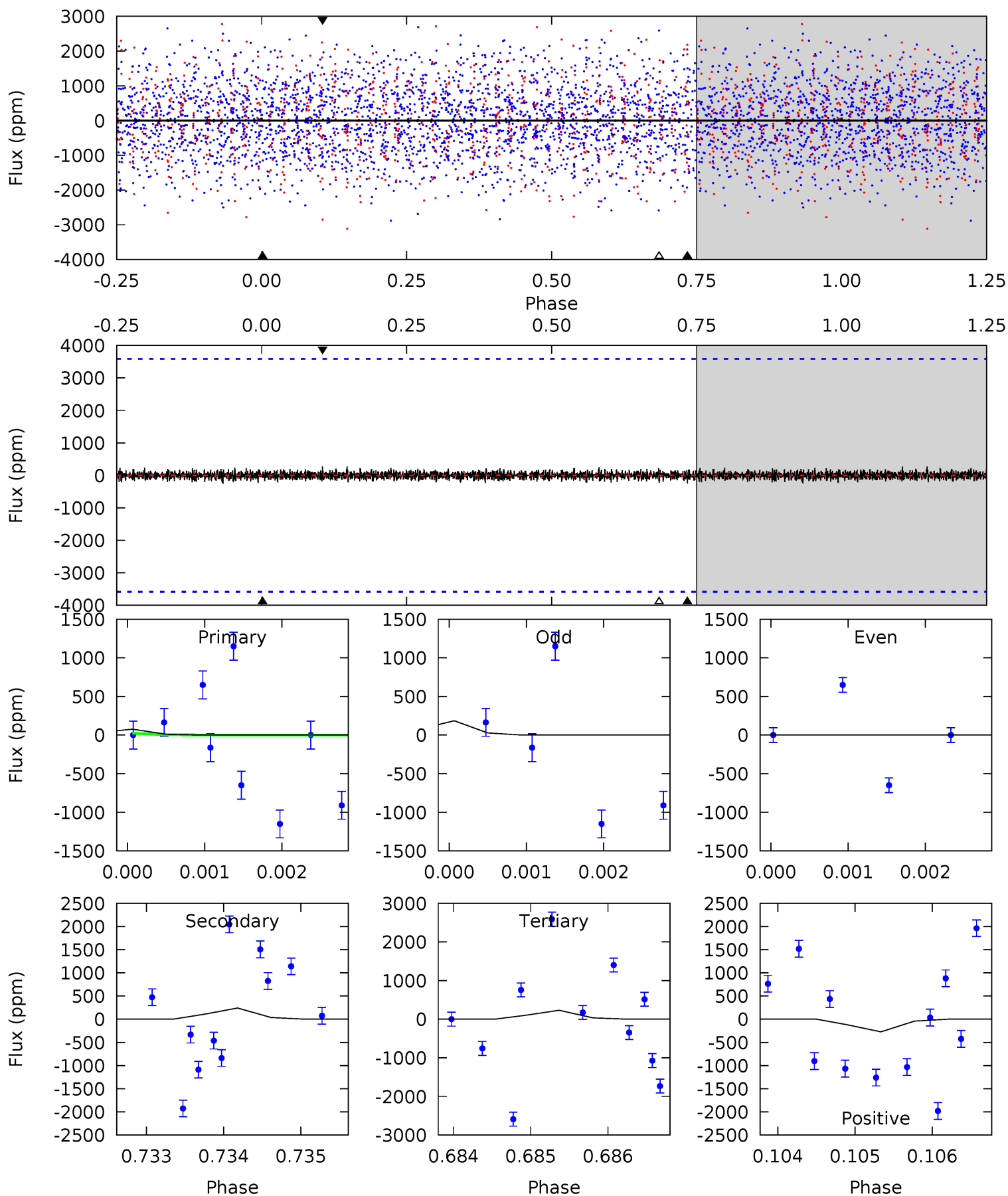
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.77	3.94	3.92	3.80	5.39	3.19	1.00	-3.15	-3.03	0.03	0.14	0.38	1.00	0.49	0.76



Alt Model-Shift Uniqueness Test

010853783-02, $P = 31.339104$ Days, $E = 108.707689$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.11	0.36	0.35	0.41	5.43	3.25	0.12	-0.23	-0.30	0.02	-0.05	0	0	0.53	0.10



Stellar Parameters For KIC 010853783

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	8064^{+223}_{-335}	$3.854^{+0.352}_{-0.088}$	$-0.300^{+0.200}_{-0.300}$	$2.696^{+0.355}_{-1.135}$	$1.894^{+0.055}_{-0.464}$	$0.136^{+0.414}_{-0.038}$
	+3%/-4%	+9%/-2%	+67%/-100%	+13%/-42%	+3%/-24%	+304%/-28%
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 010853783-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-415±105	$19.60^{+23.82}_{-14.22}$	1616^{+107}_{-174}	4254^{+3467}_{-1004}	31^{+400}_{-24}
Alt.	-241±661	$24.59^{+24.71}_{-15.97}$	1625^{+106}_{-174}	3237^{+2138}_{-7414}	$6.056^{+89.804}_{-35.703}$

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 $A_{obs} \gg 1.0$

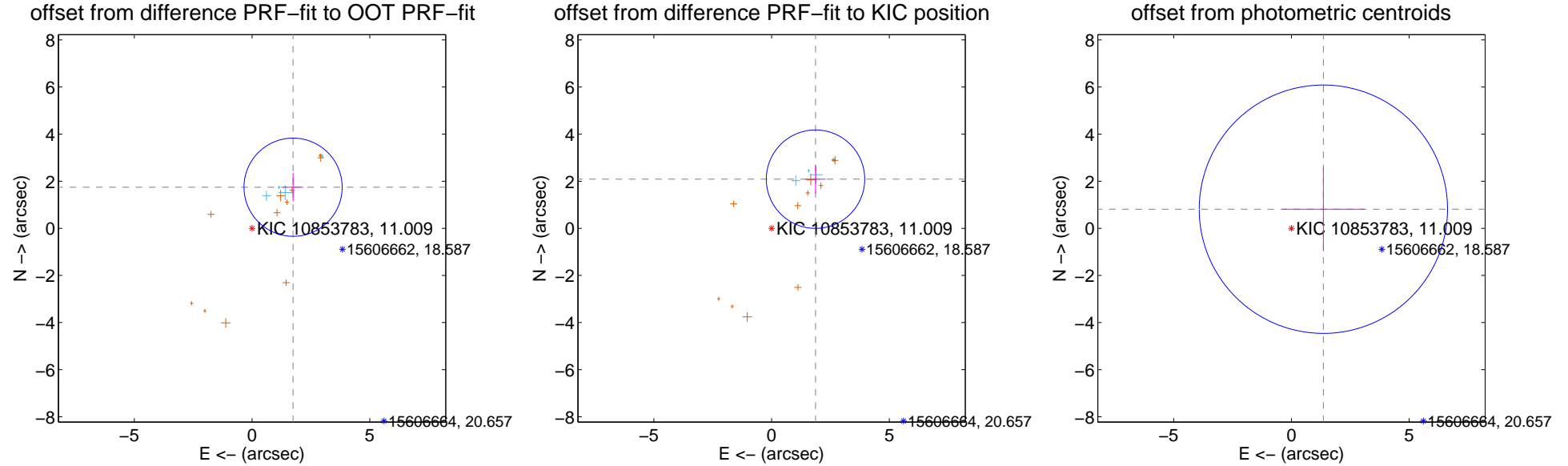
DV Centroid Data

Supplemental centroid analysis for 010853783-02. **Kepler magnitude: 11.01.** Transit SNR 1.10

There are 4 quarters with good PRF difference image offsets

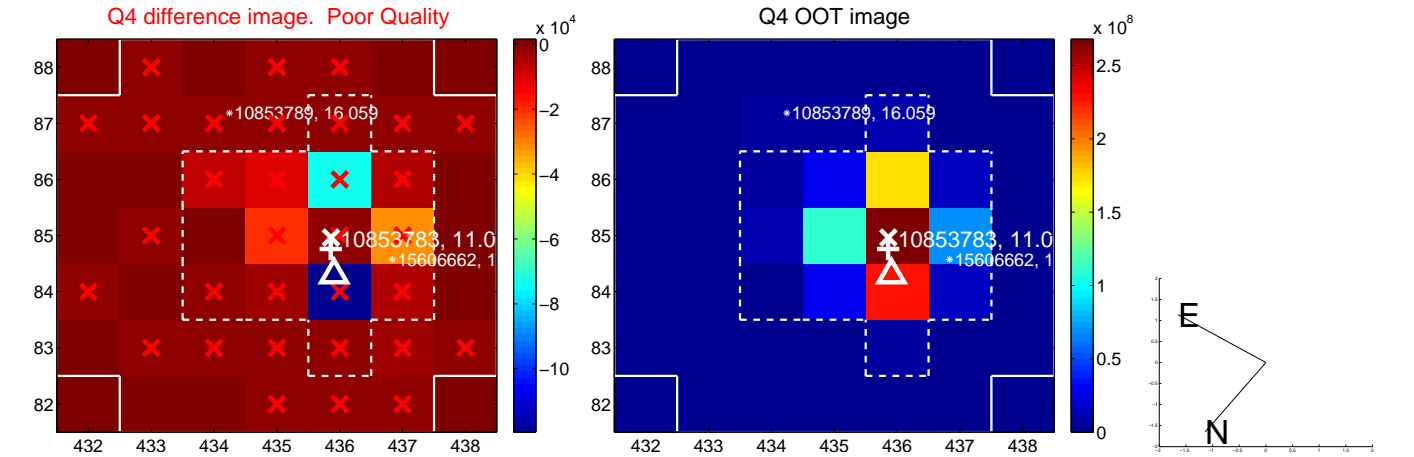
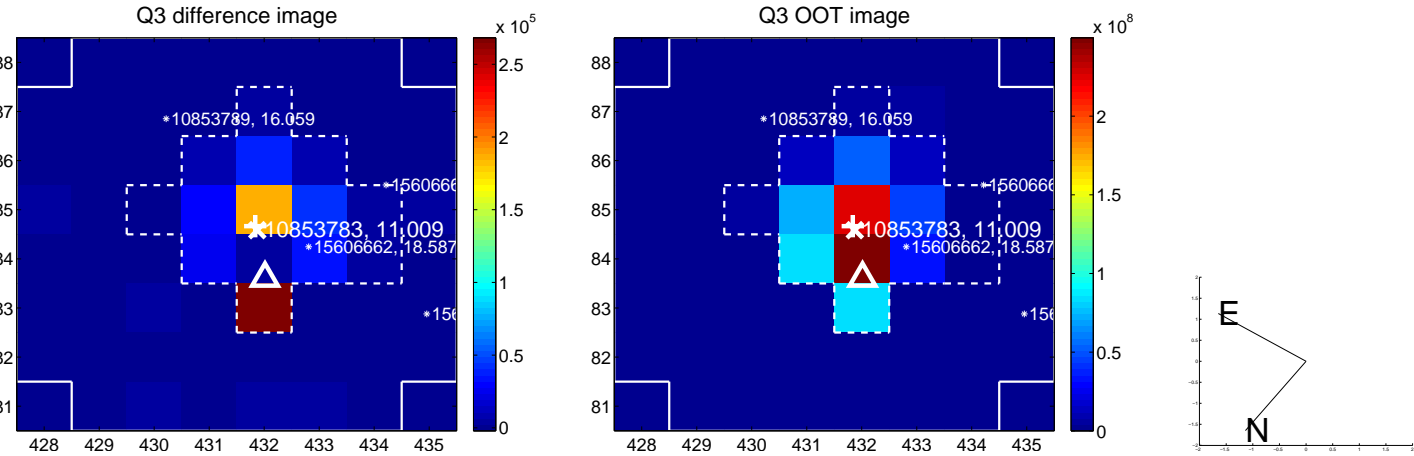
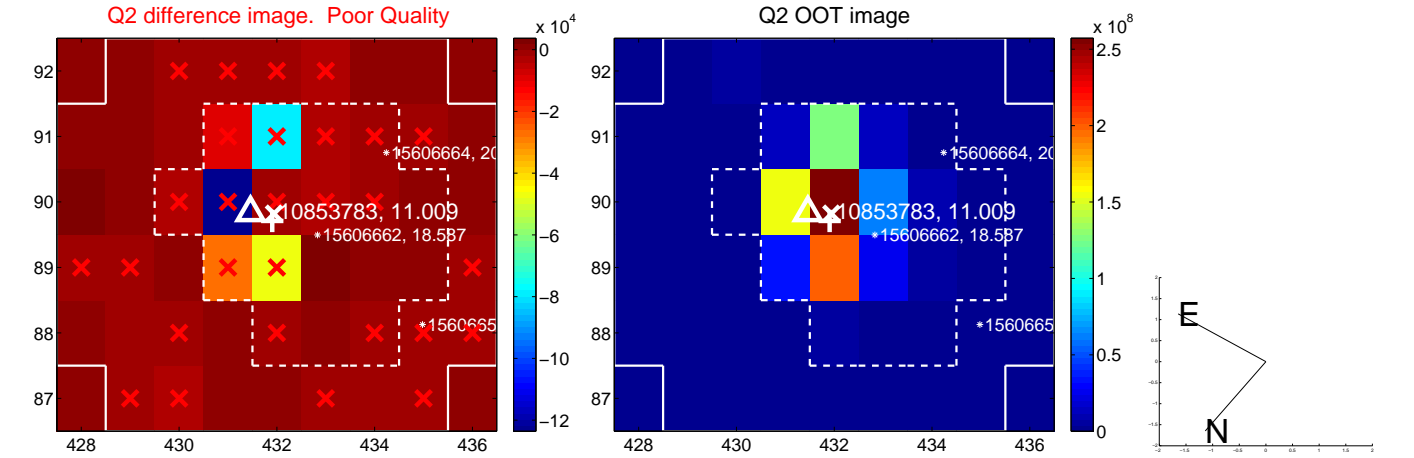
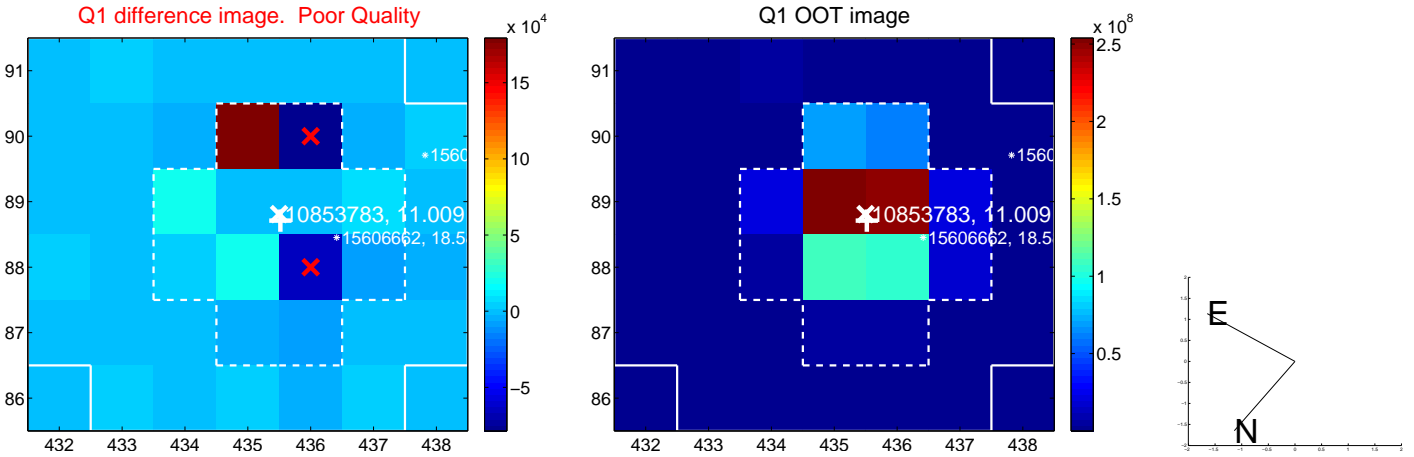
The direct PRF centroid is offset from the target star catalog position by about 0.77 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.466 ± 0.695	3.55	-1.742 ± 0.434	1.745 ± 0.612
PRF-fit source offset from KIC position	2.798 ± 0.696	4.02	-1.865 ± 0.435	2.086 ± 0.594
photometric centroid source offset	1.58 ± 1.76	0.90	-1.36 ± 1.75	0.81 ± 1.77

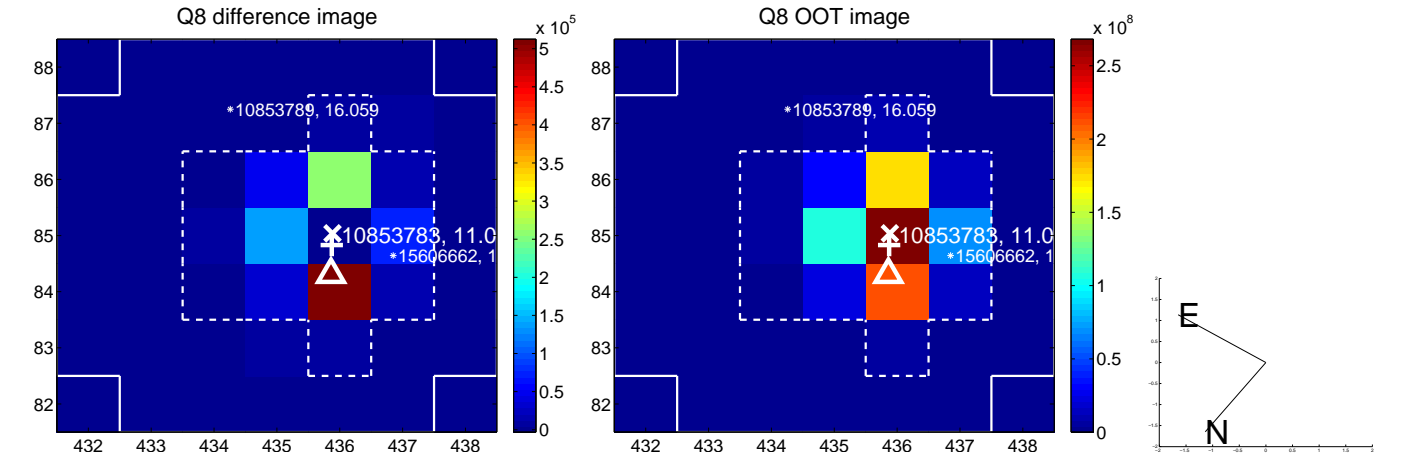
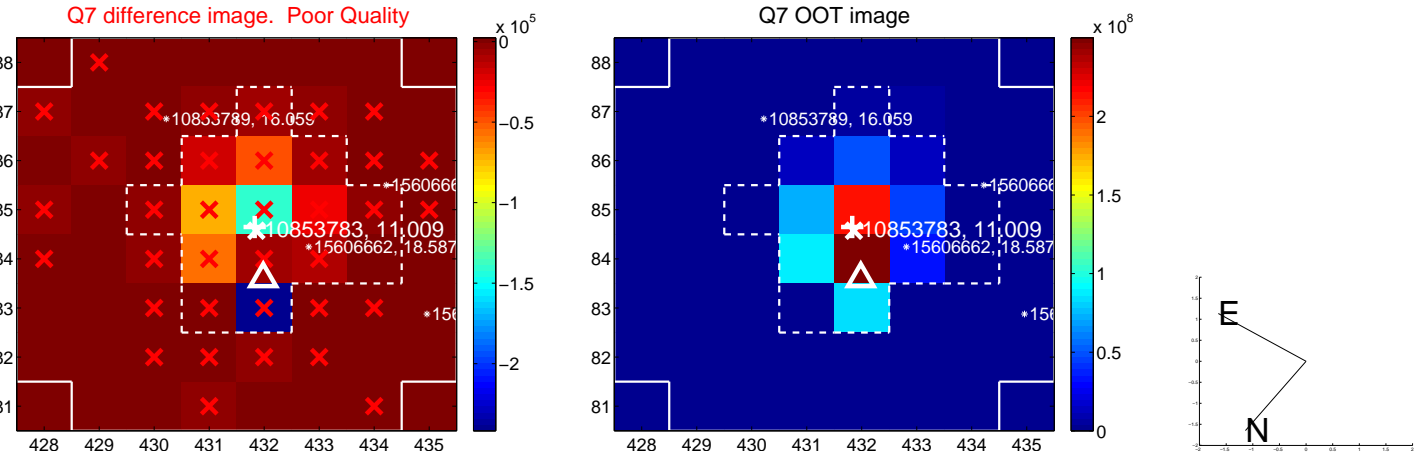
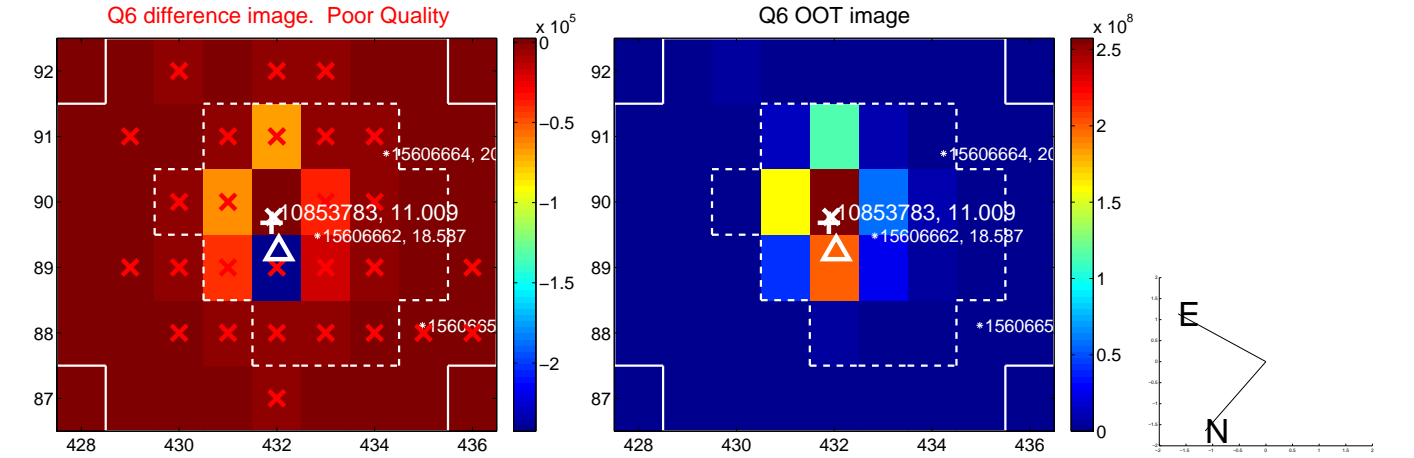
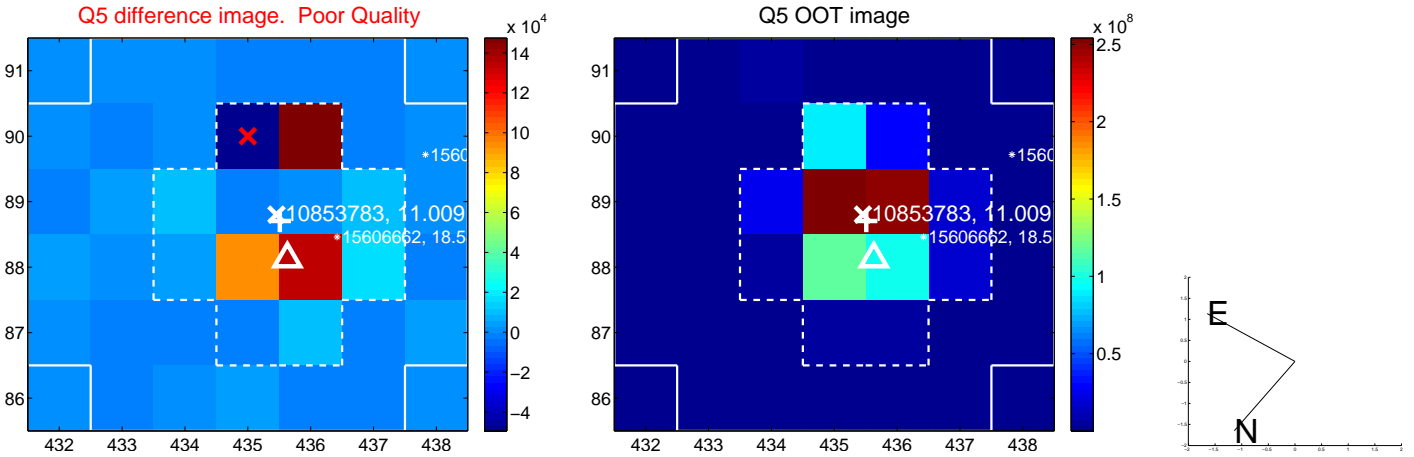


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

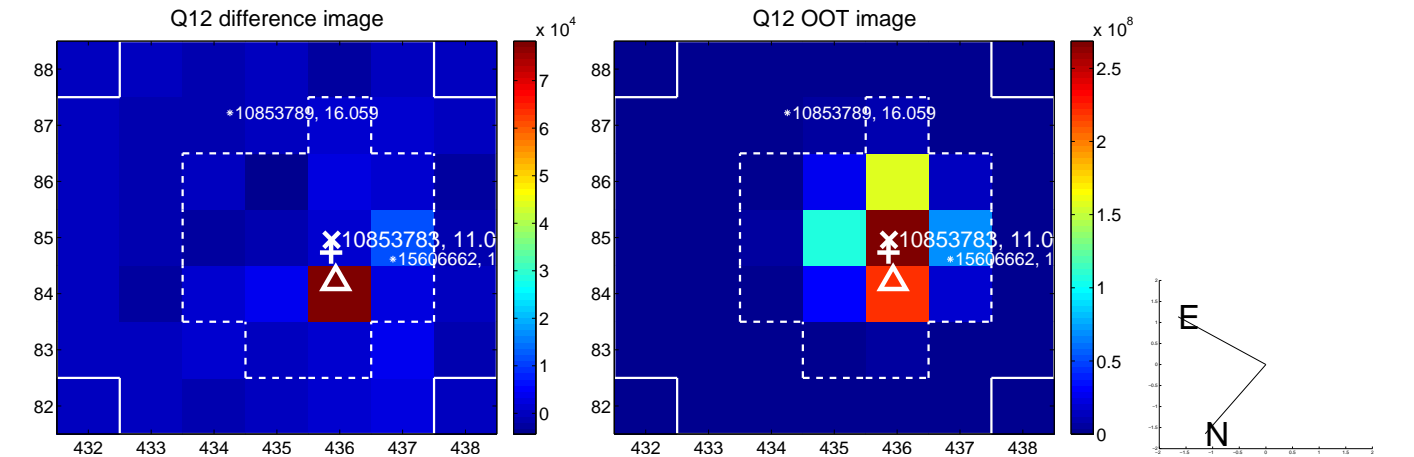
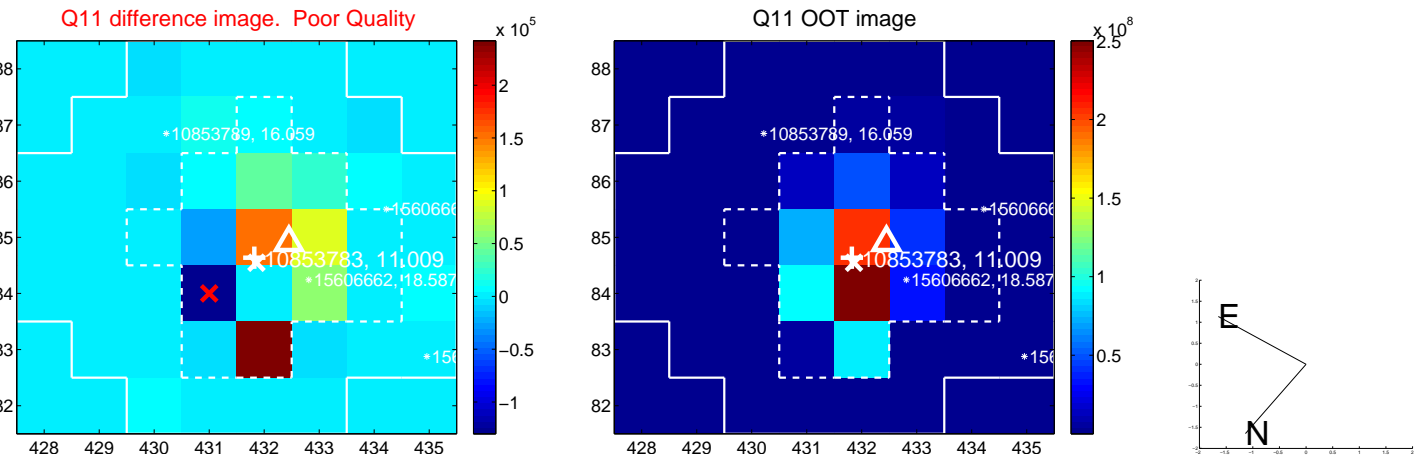
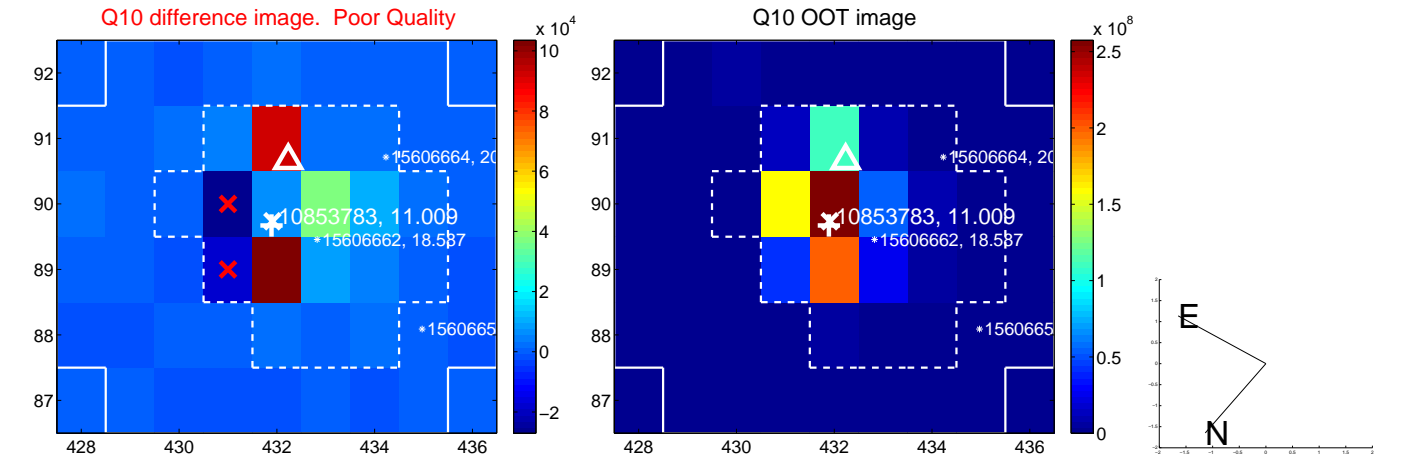
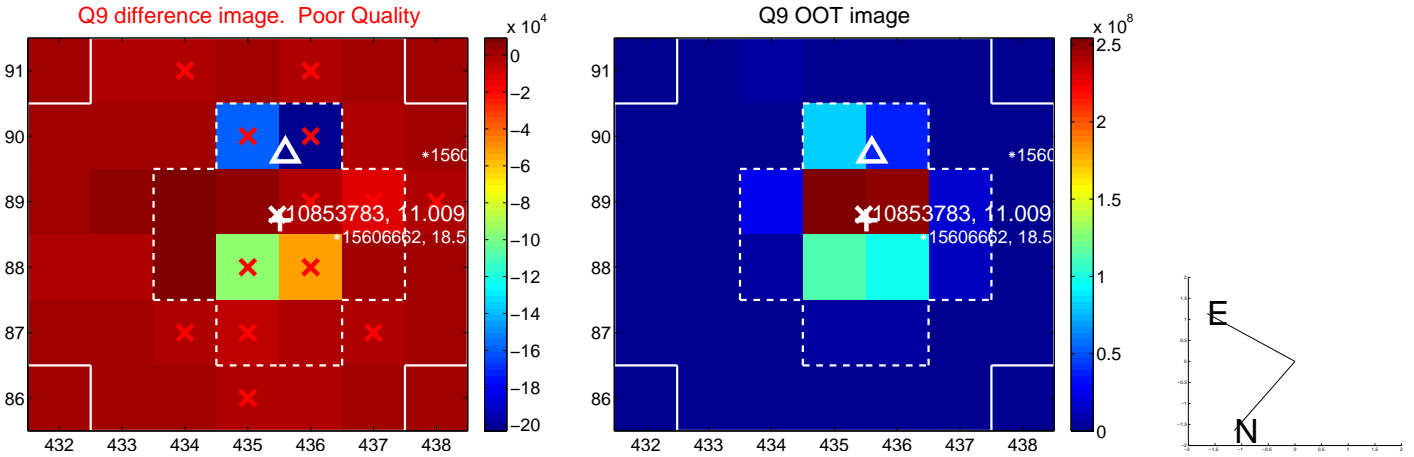
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



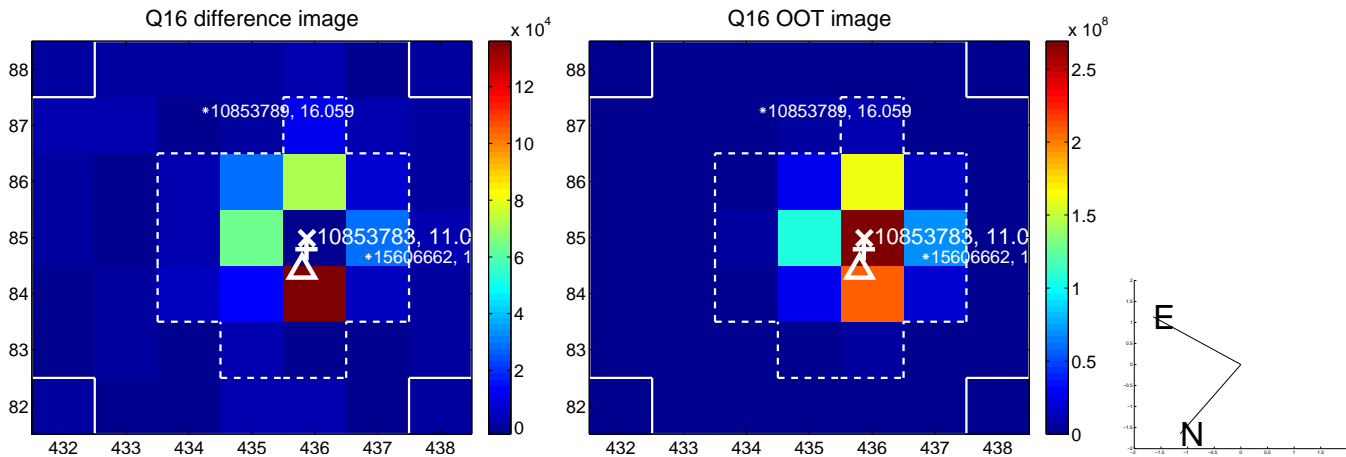
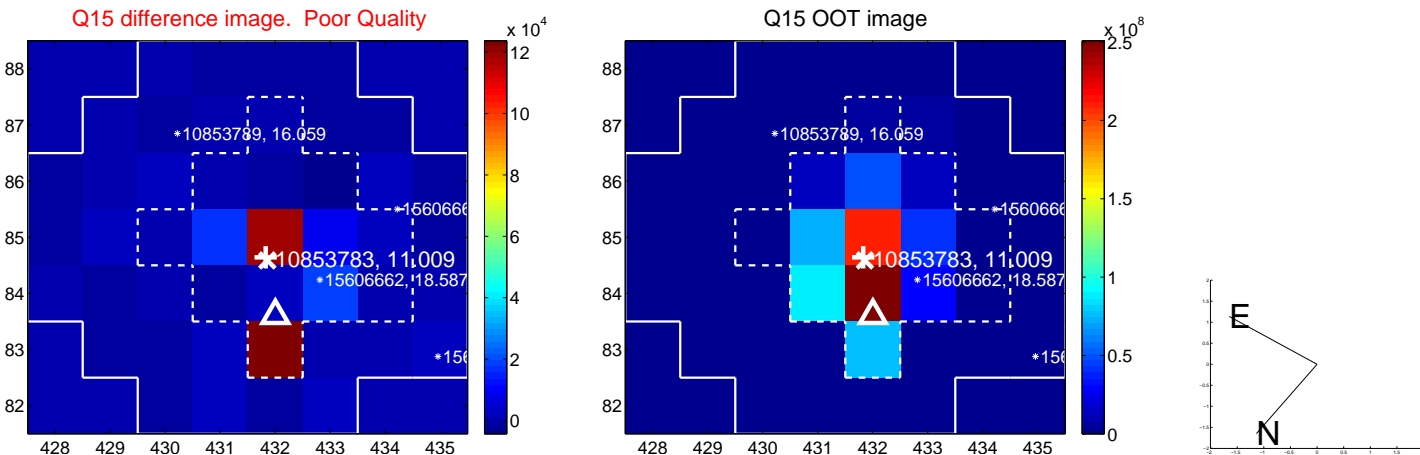
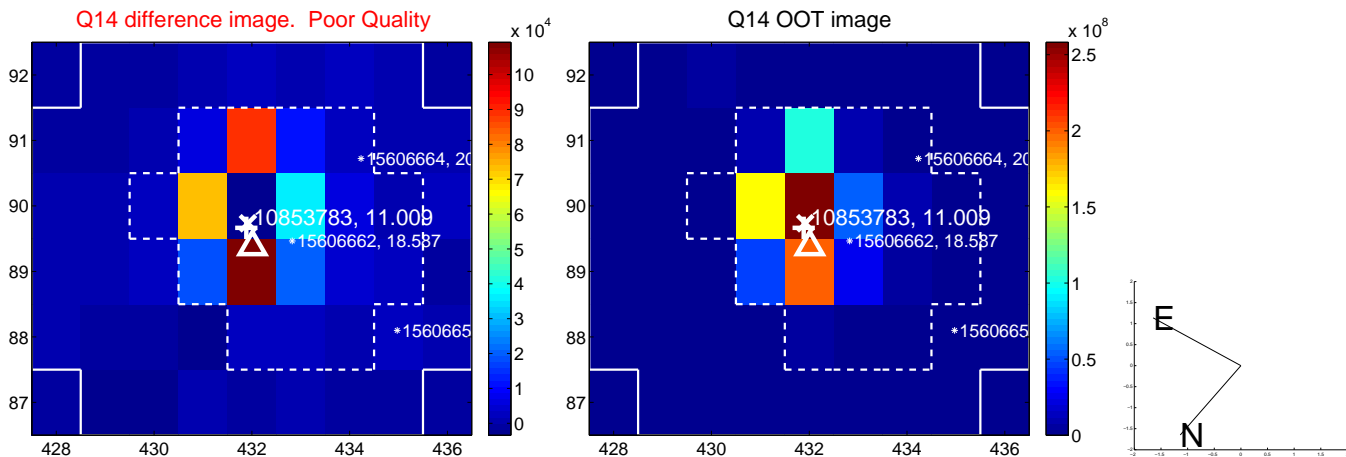
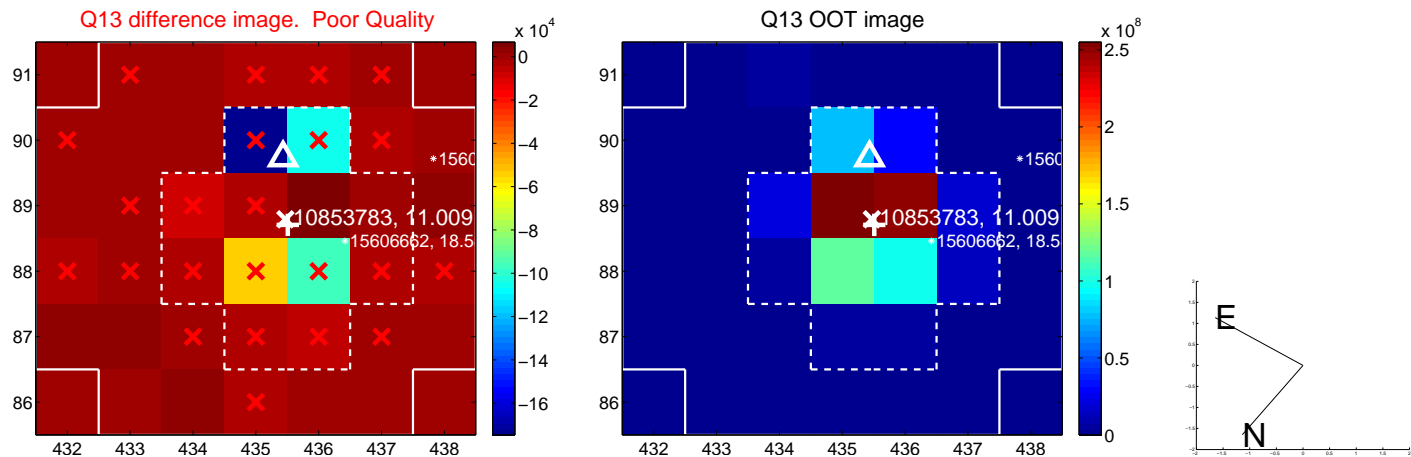
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



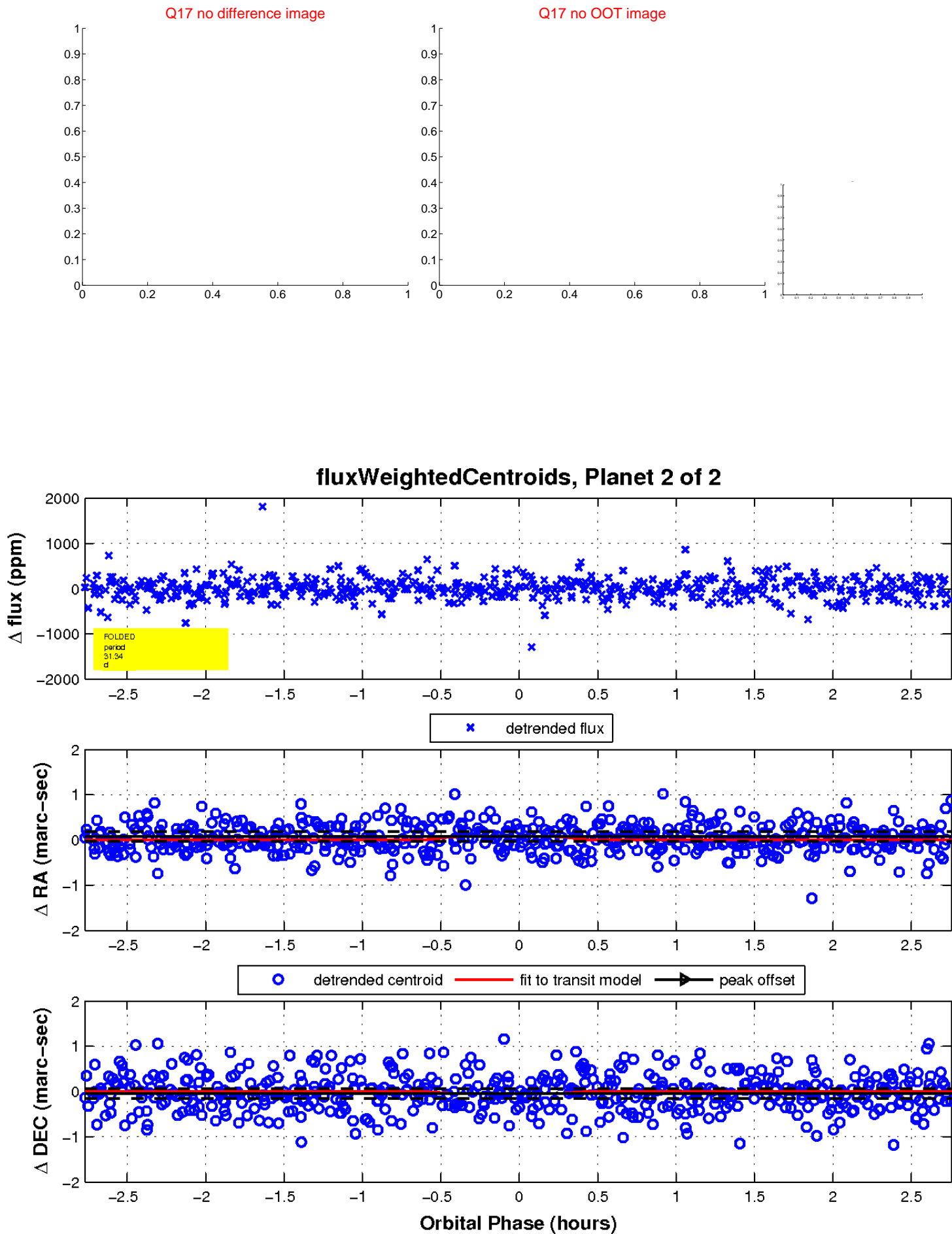
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

