

KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

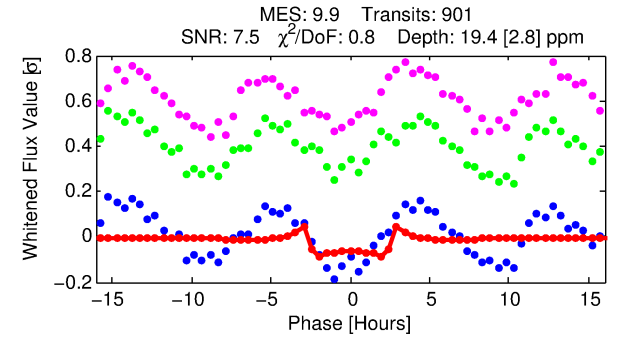
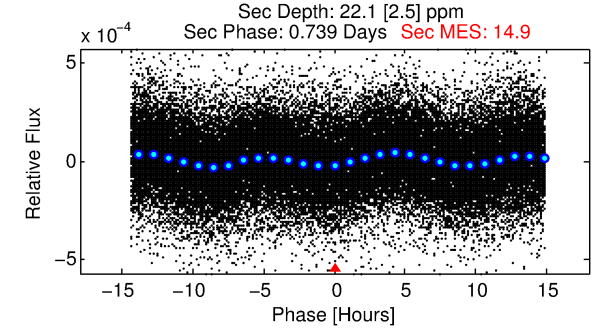
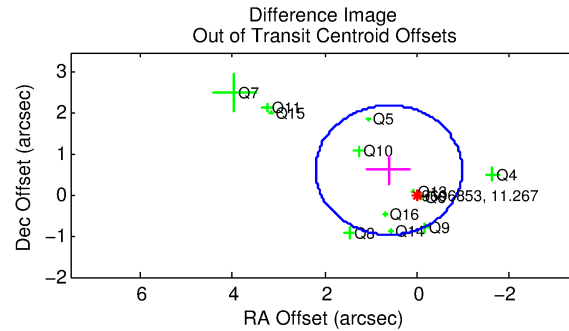
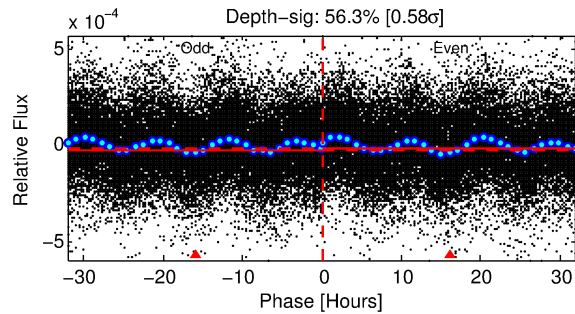
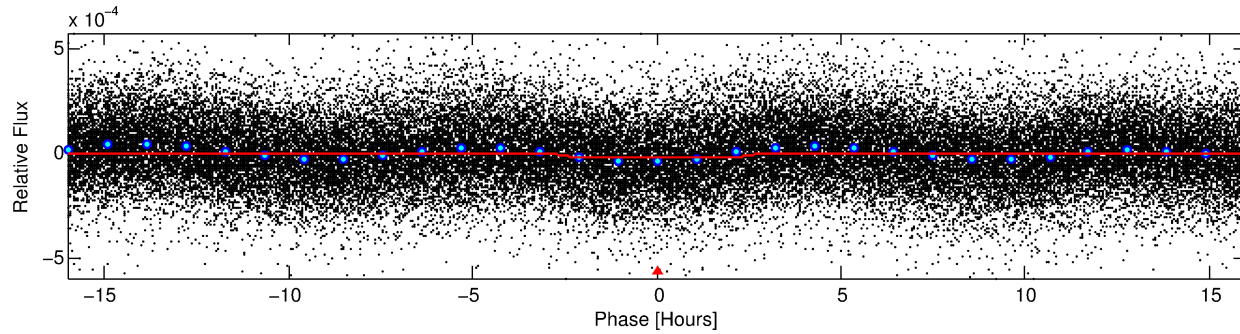
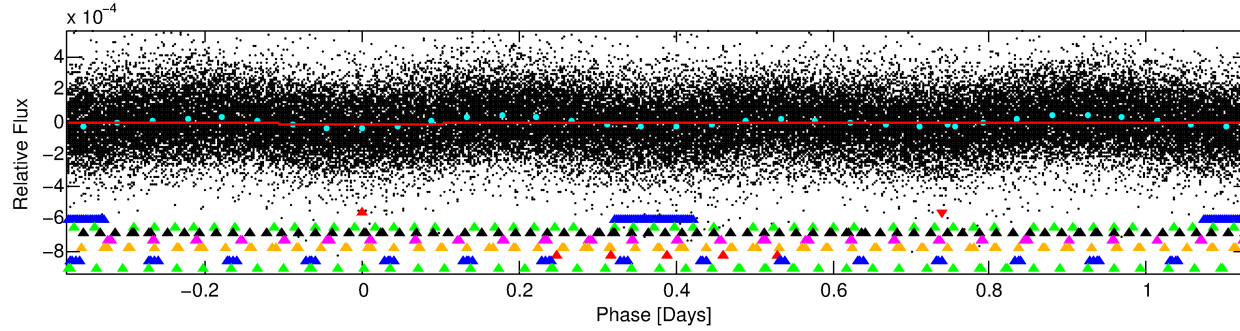
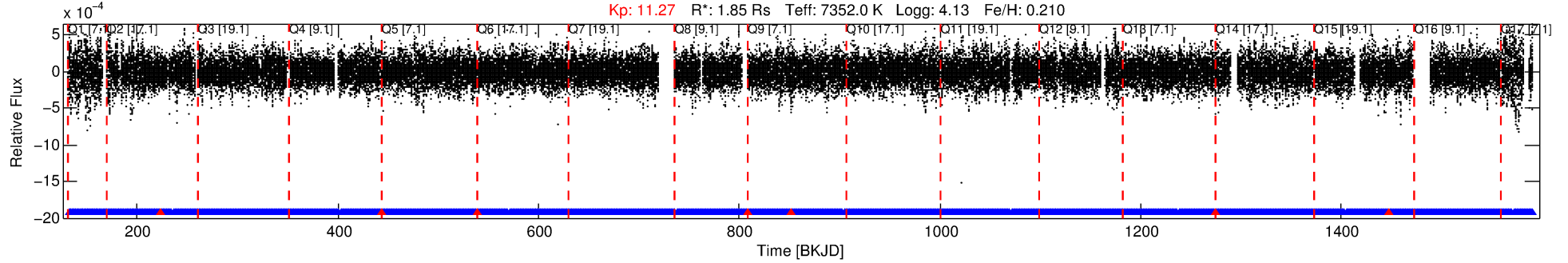
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-01

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 1 of 9 Period: 1.502 d



DV Fit Results:

Period = 1.50226 [0.00002] d
Epoch = 132.5230 [0.0031] BKJD
Rp/R* = 0.0047 [0.0009]
a/R* = 1.32 [0.63]
b = 0.91 [0.22]
Seff = 9582.53 [3945.14]
Teq = 2523 [260] K
Rp = 0.95 [0.34] Re
a = 0.0306 [0.0078] AU
Ag = 12.56 [6.77] [1.71 σ]
Teffp = 7344 [810] K [5.67 σ]

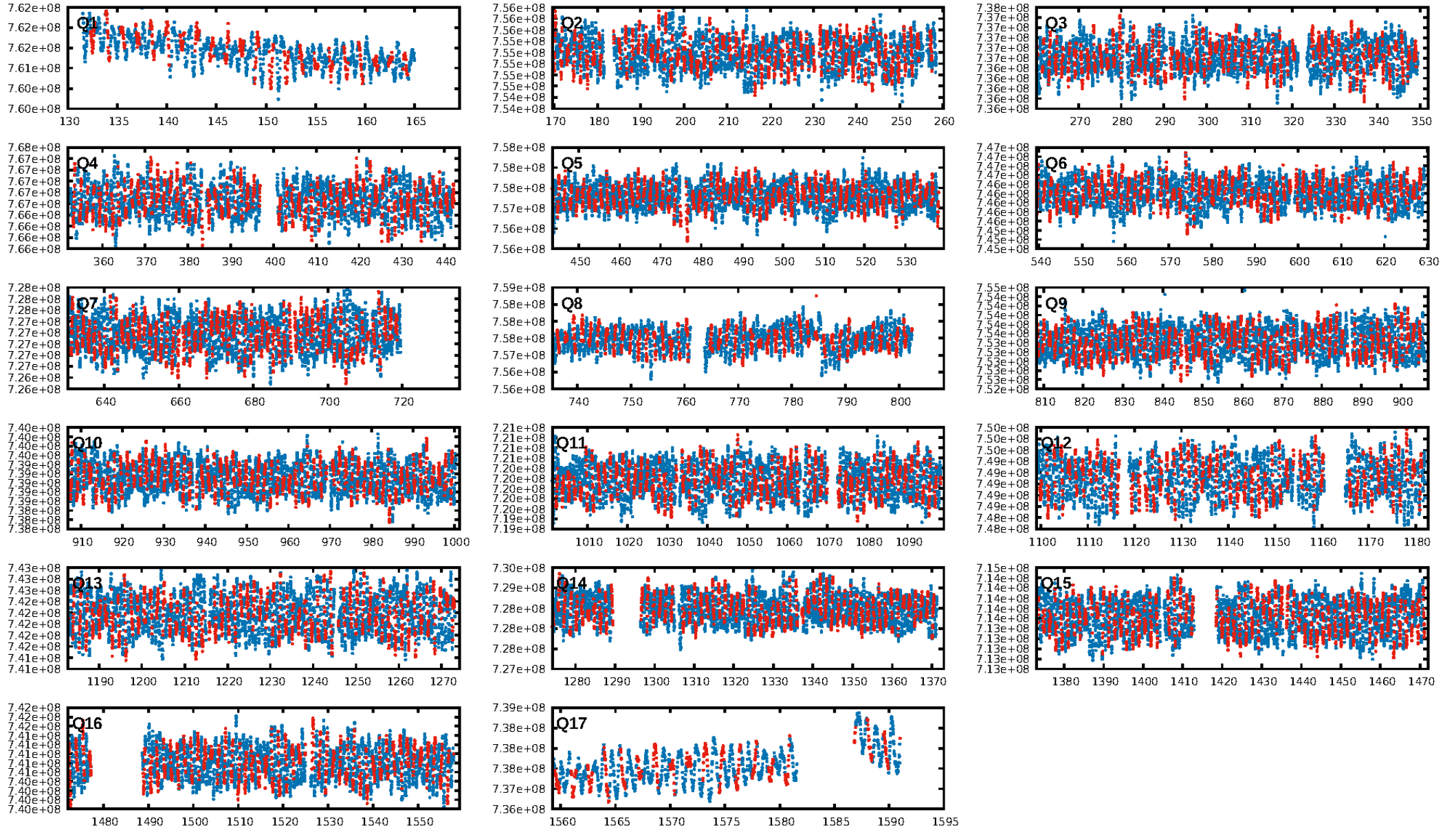
DV Diagnostic Results:

ShortPeriod-sig: 98.7% [2.48 σ]
LongPeriod-sig: 100.0% [69.35 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.99 [854/861]
GhostDiagnostic-chr: 2.162
Centroid-sig: 88.3%
Centroid-so: 0.090 arcsec [0.24 σ]
OotOffset-rm: 0.871 arcsec [1.65 σ]
OotOffset-st: 3/3/3/3 [12]
KicOffset-rm: 0.729 arcsec [1.93 σ]
KicOffset-st: 3/3/3/3 [12]
DiffImageQuality-fgm: 0.67 [8/12]
DiffImageOverlap-fno: 0.00 [0/17]

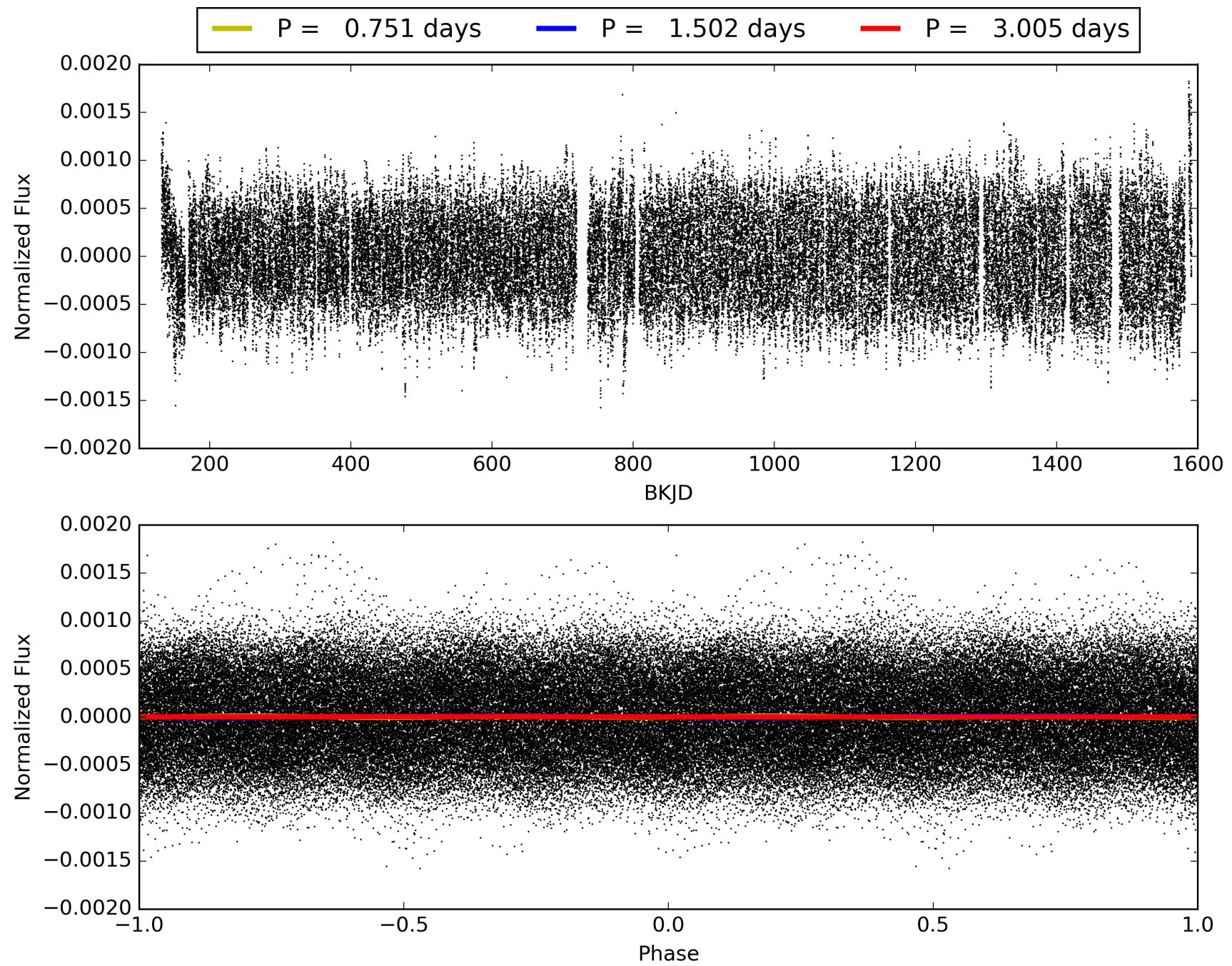
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009696853-01, PDC Light Curves

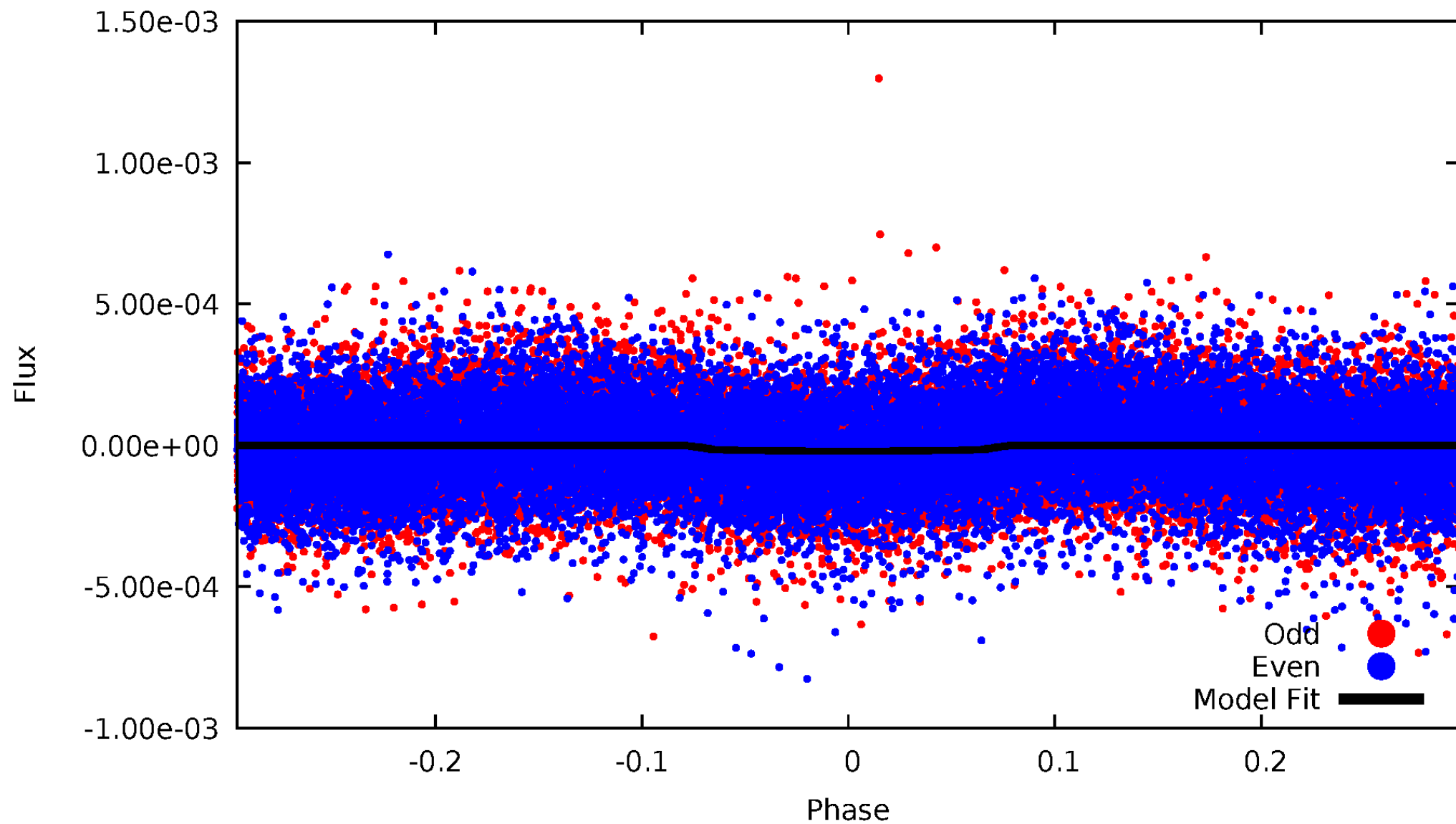


TCE 009696853-01



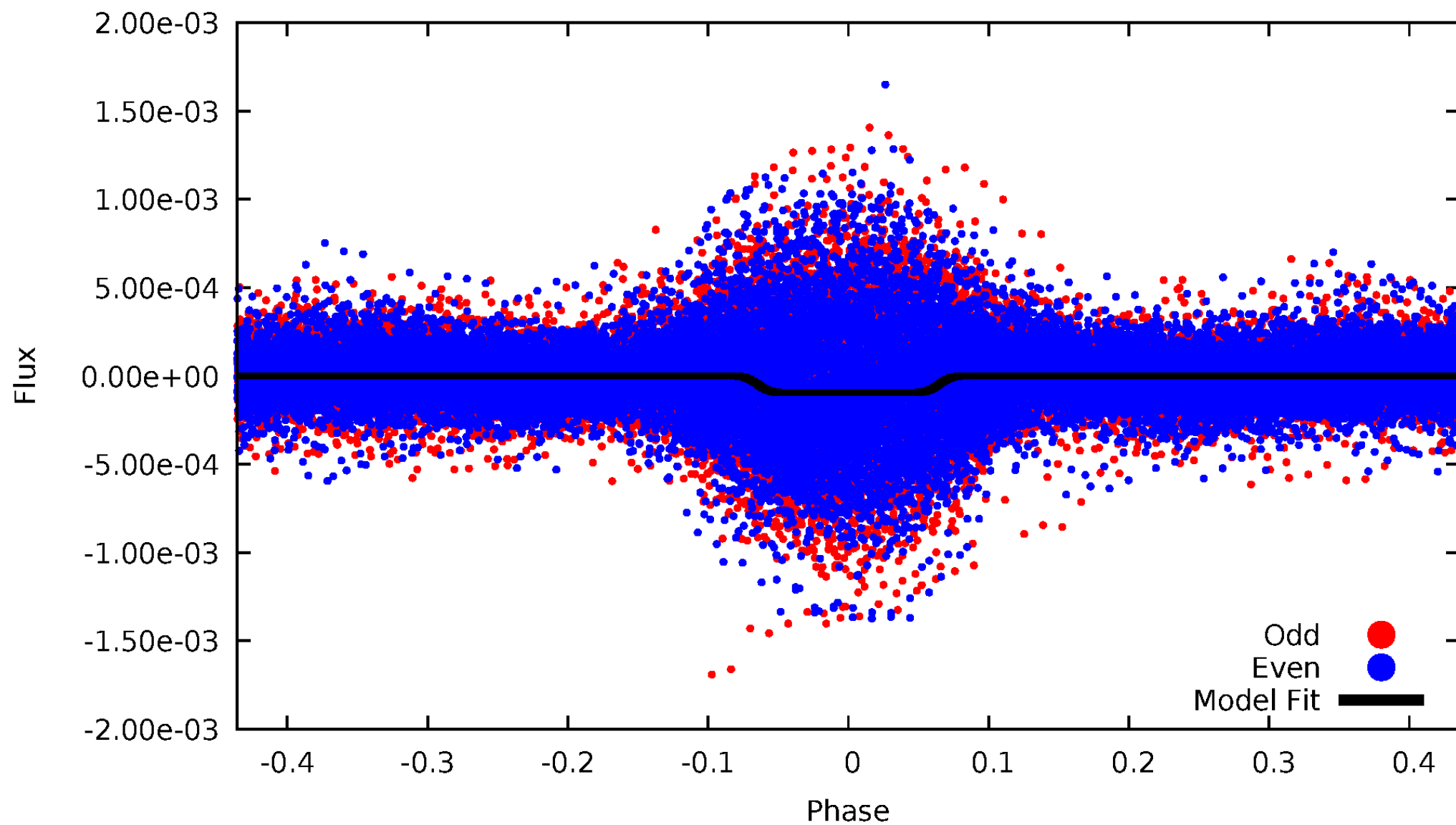
DV Odd/Even

TCE 009696853-01

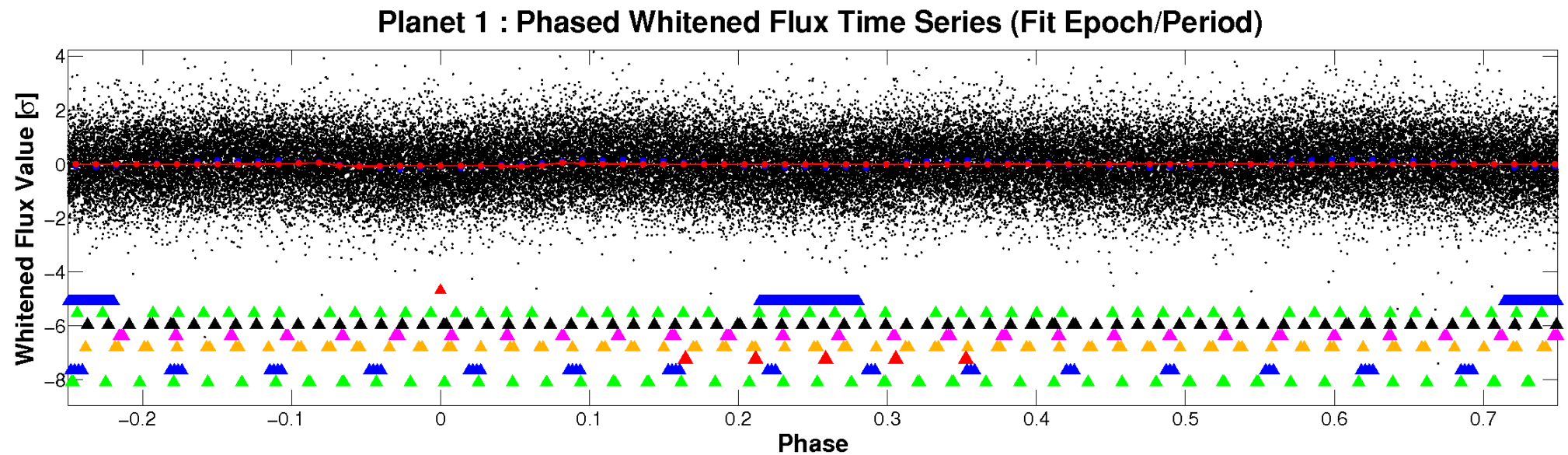
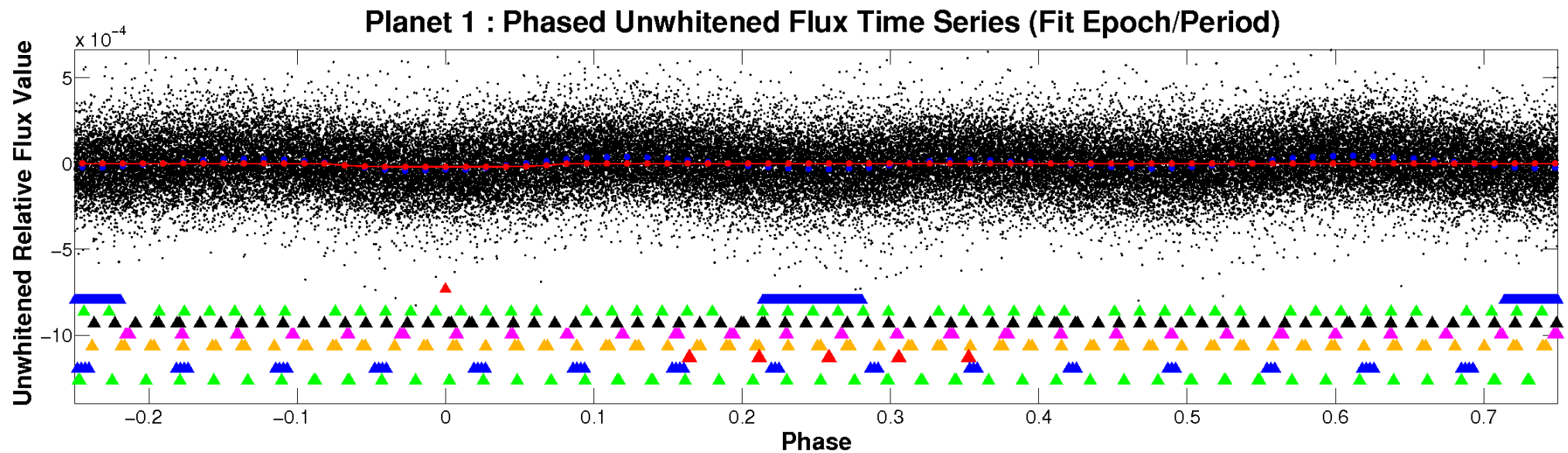


ALT Odd/Even

TCE 009696853-01

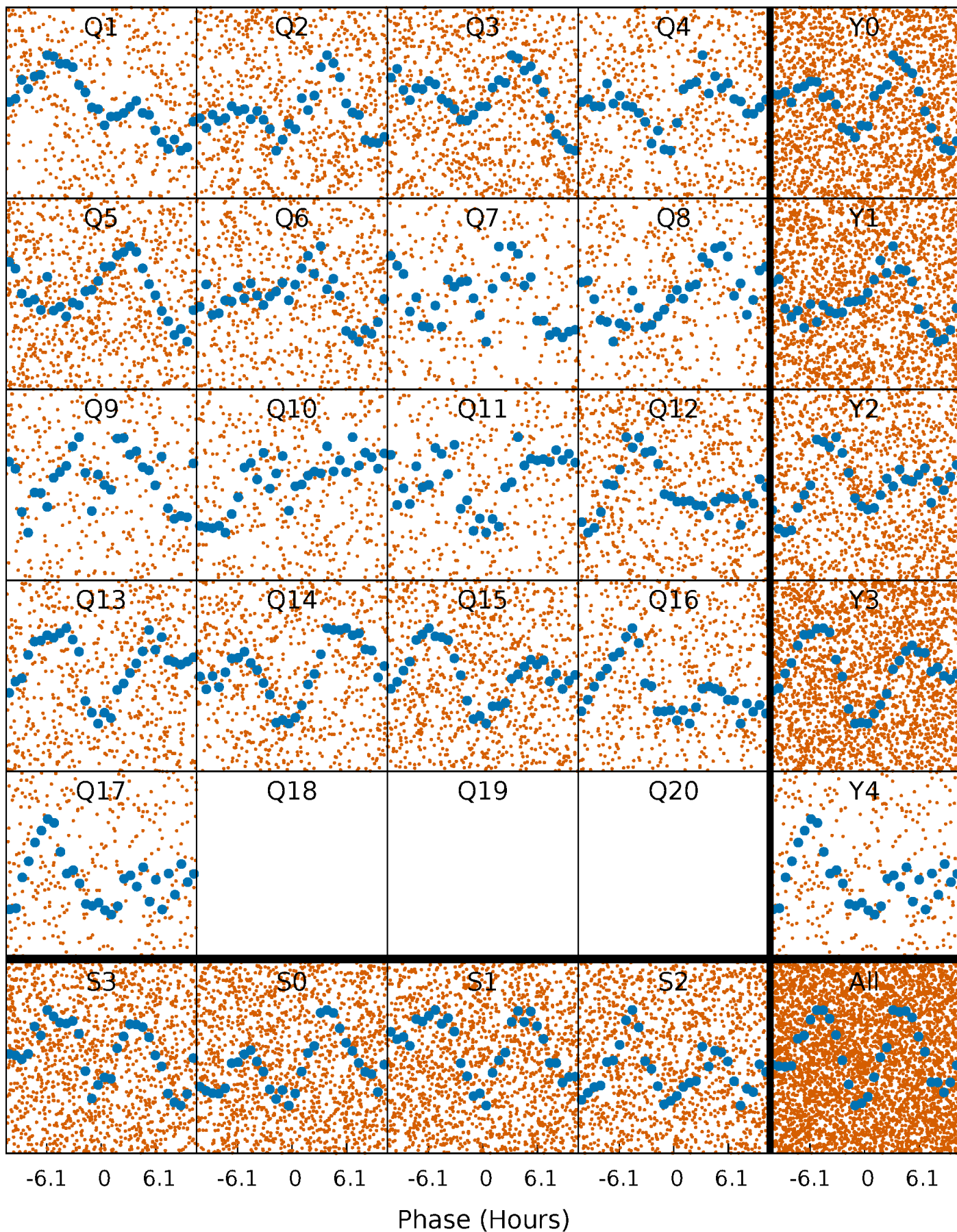


Non-Whitened Vs. Whitened Light Curve



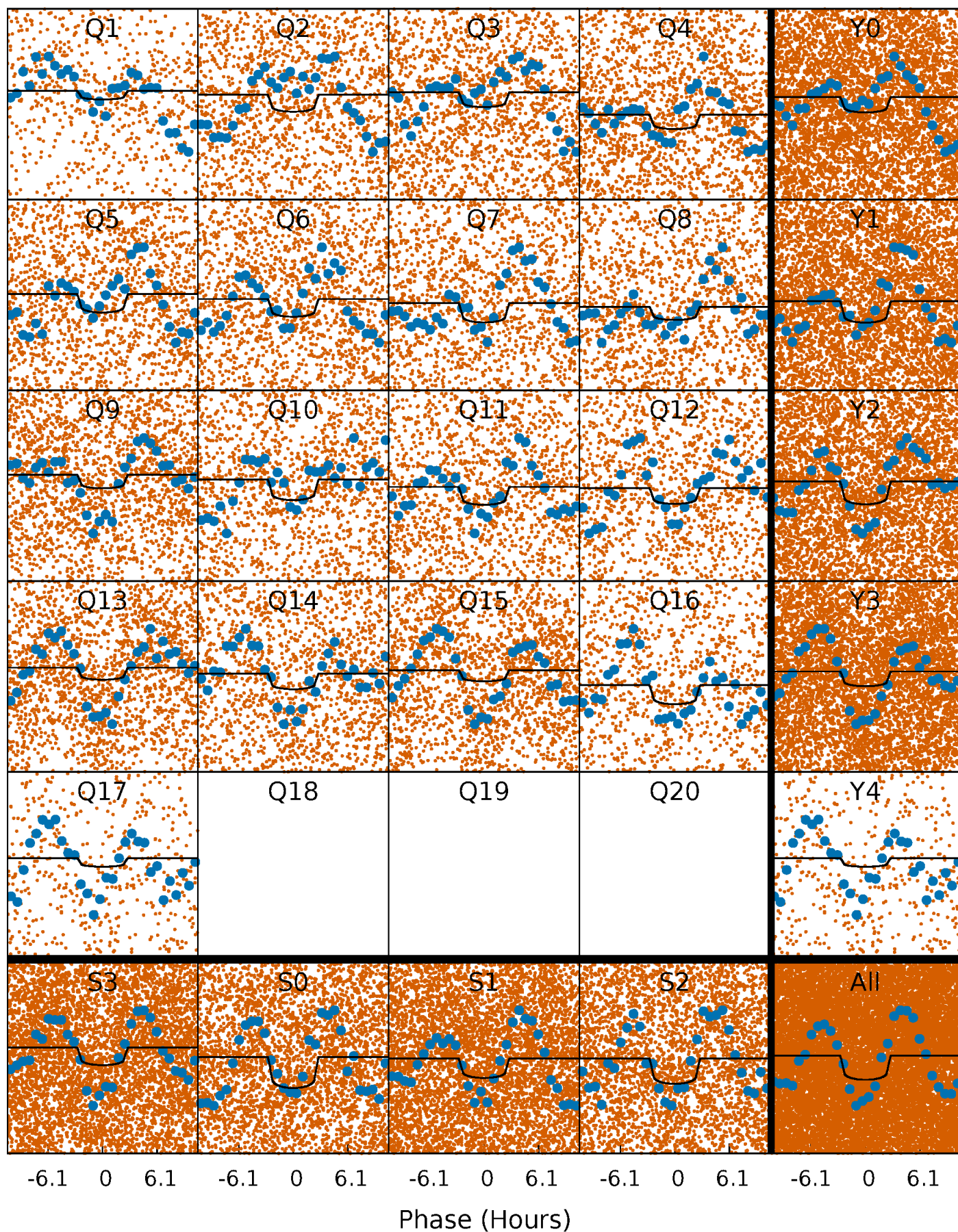
PDC Quarter-Phased Transit Curves

TCE 009696853-01 P= 1.502262 Days $T_0=132.522987$ (BKJD)



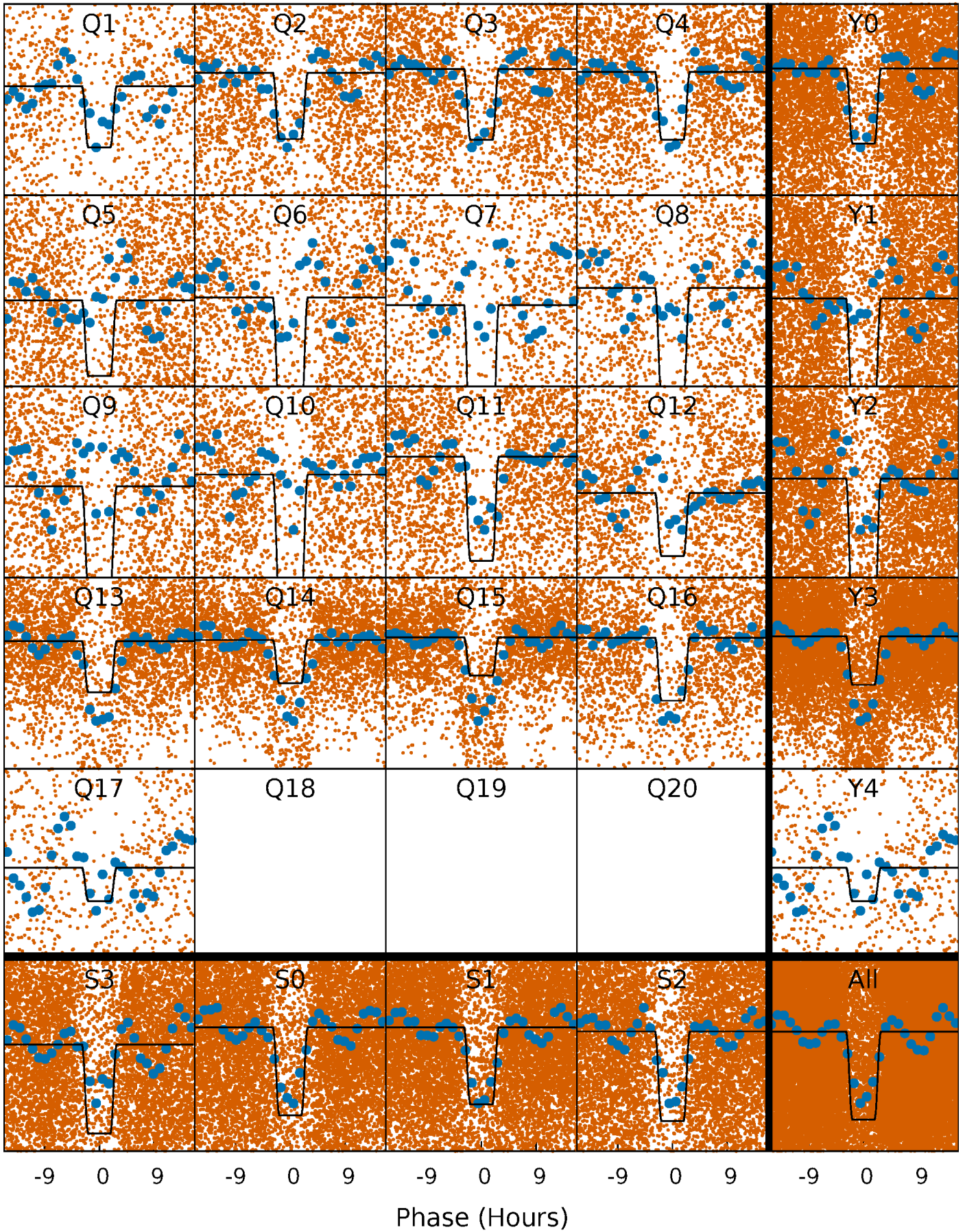
DV Quarter-Phased Transit Curves

TCE 009696853-01 P= 1.502262 Days $T_0=132.522987$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

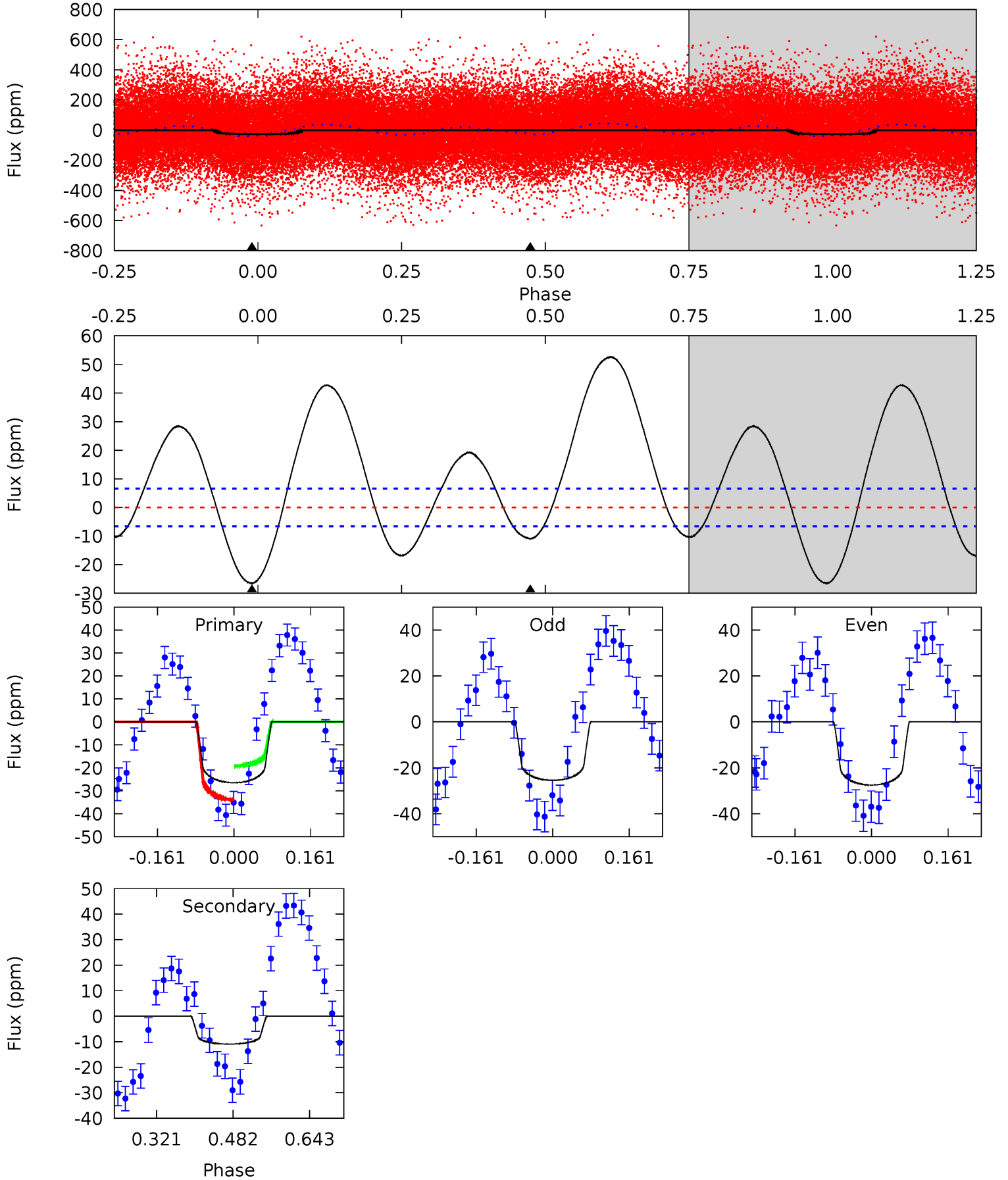
TCE 009696853-01 P= 1.502274 Days $T_0=132.500336$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-01, P = 1.502262 Days, E = 131.020725 Days

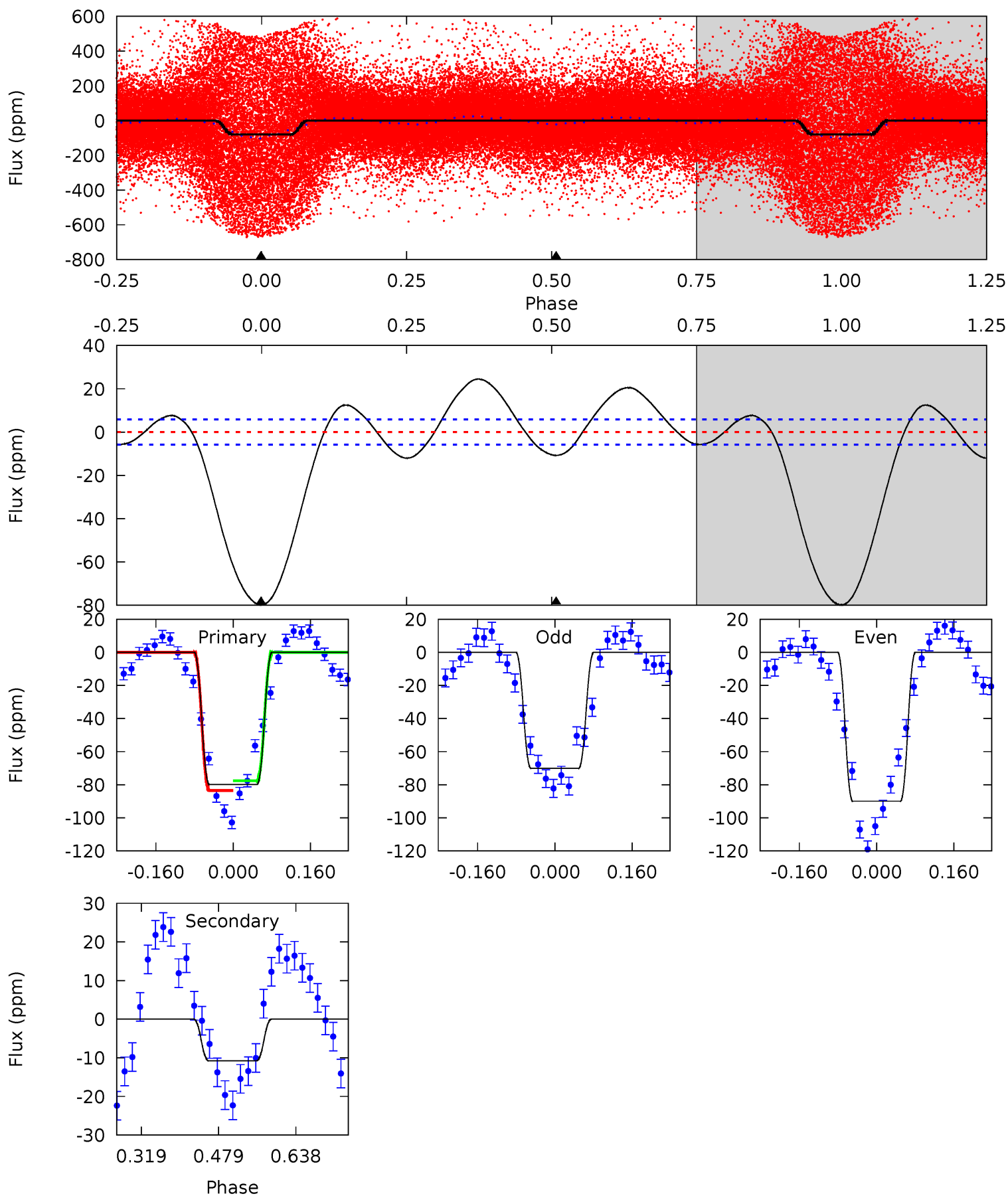
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.9	7.38	0	0	4.46	1.40	11.6	17.9	17.9	7.38	7.38	0.69	0.99	0.66	4.99



Alt Model-Shift Uniqueness Test

009696853-01, P = 1.502274 Days, E = 130.998062 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.1	8.25	0	0	4.47	1.41	6.05	61.1	61.1	8.25	8.25	7.56	0.88	0.23	2.25



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-11 ± 1	$0.97^{+0.24}_{-0.21}$	3555^{+269}_{-194}	6006^{+798}_{-623}	$5.956^{+3.871}_{-2.181}$
Alt.	-11 ± 1	$1.99^{+0.37}_{-0.27}$	3568^{+266}_{-220}	4193^{+255}_{-250}	$1.333^{+0.472}_{-0.356}$

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 $A_{obs} \gg 1.0$

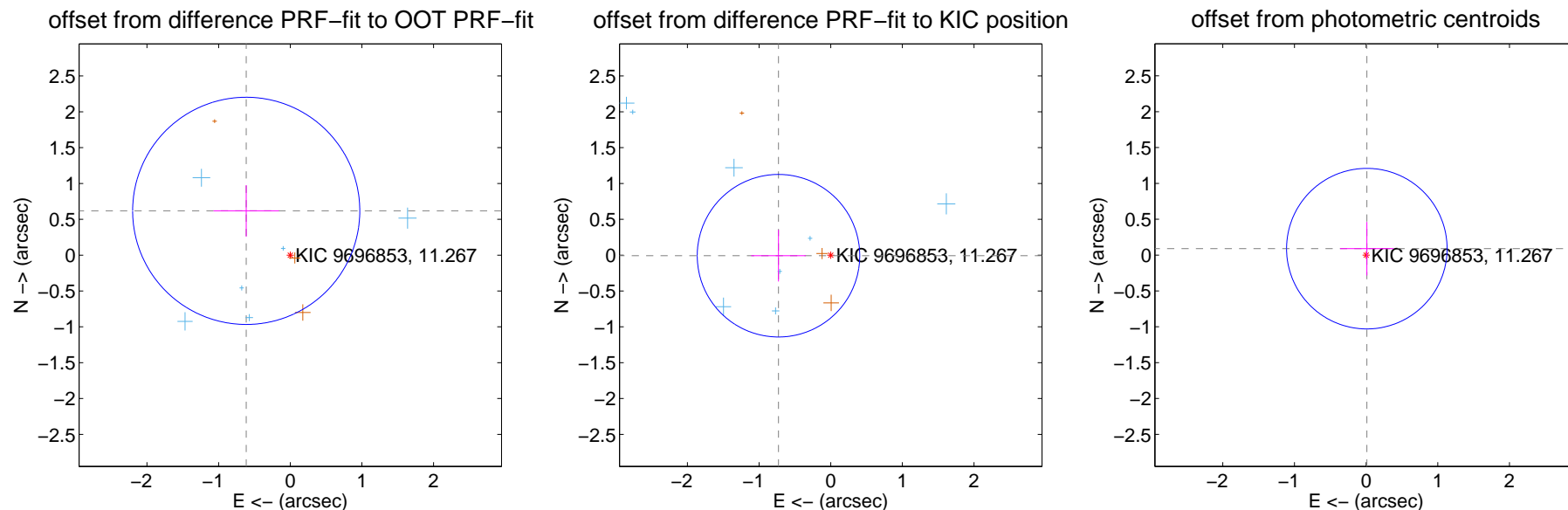
DV Centroid Data

Supplemental centroid analysis for 009696853-01. **Kepler magnitude: 11.27.** Transit SNR 7.47

There are 8 quarters with good PRF difference image offsets

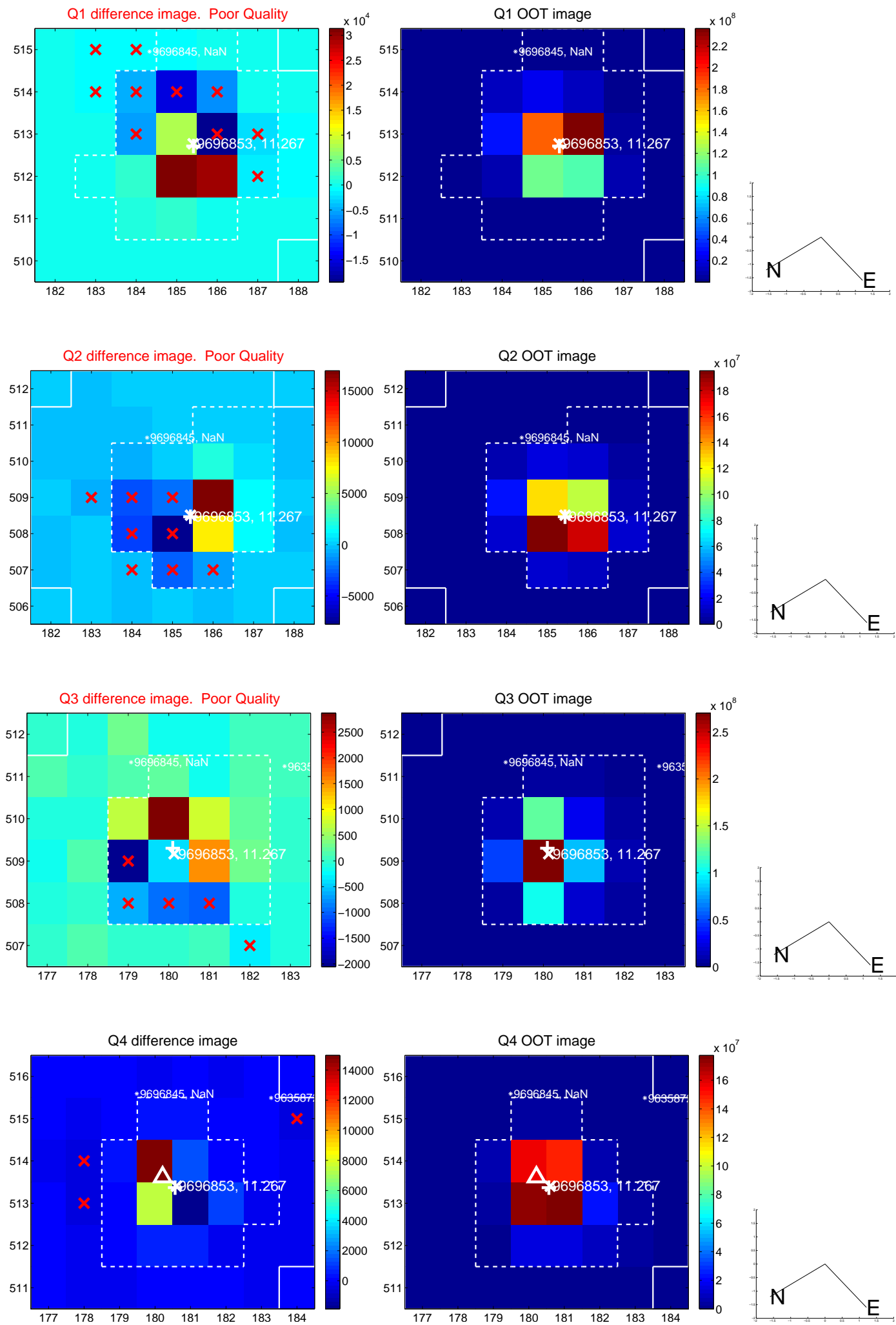
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.871 ± 0.528	1.65	0.615 ± 0.456	0.618 ± 0.360
PRF-fit source offset from KIC position	0.729 ± 0.378	1.93	0.729 ± 0.380	-0.008 ± 0.360
photometric centroid source offset	0.09 ± 0.37	0.24	-0.01 ± 0.37	0.09 ± 0.37

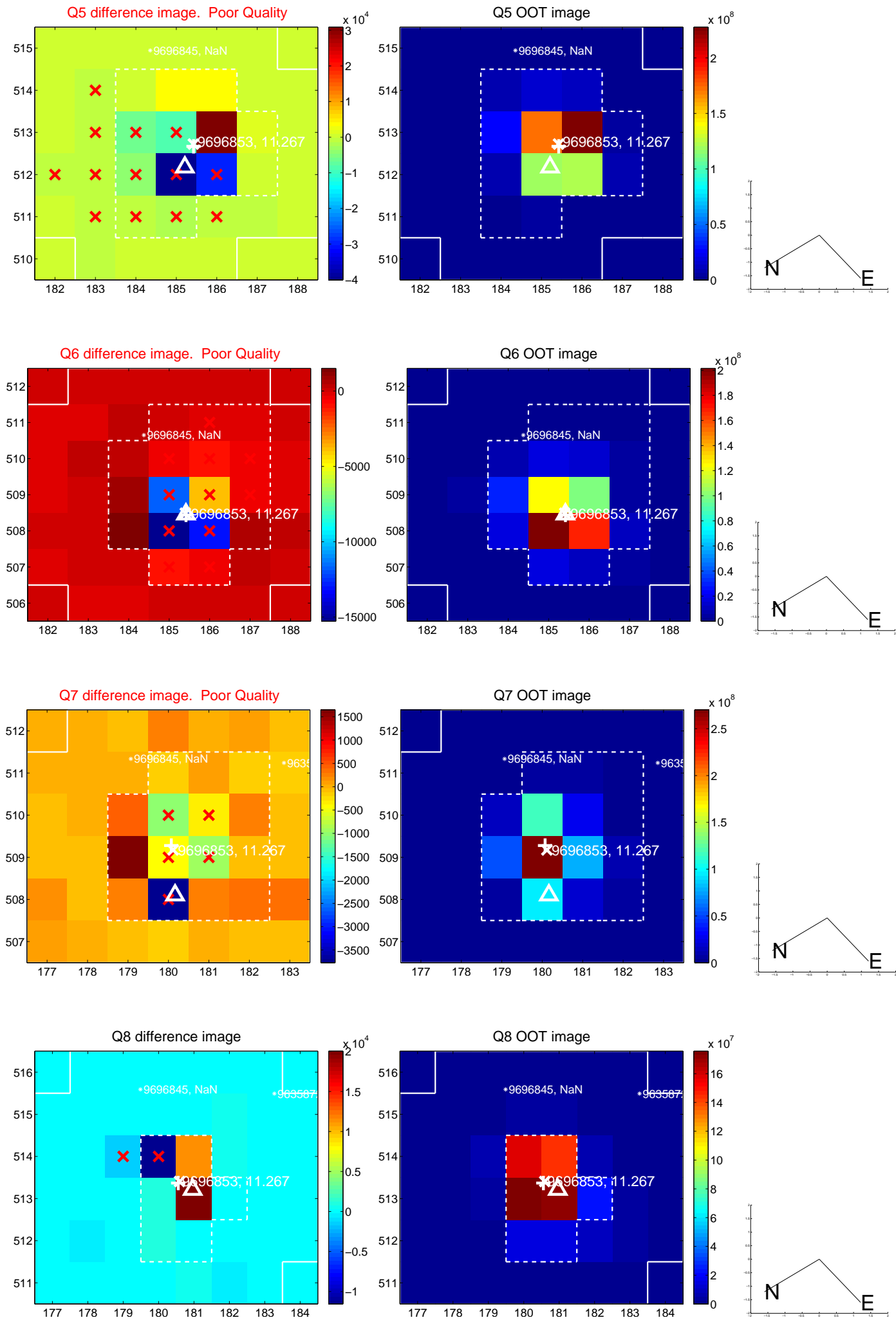


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

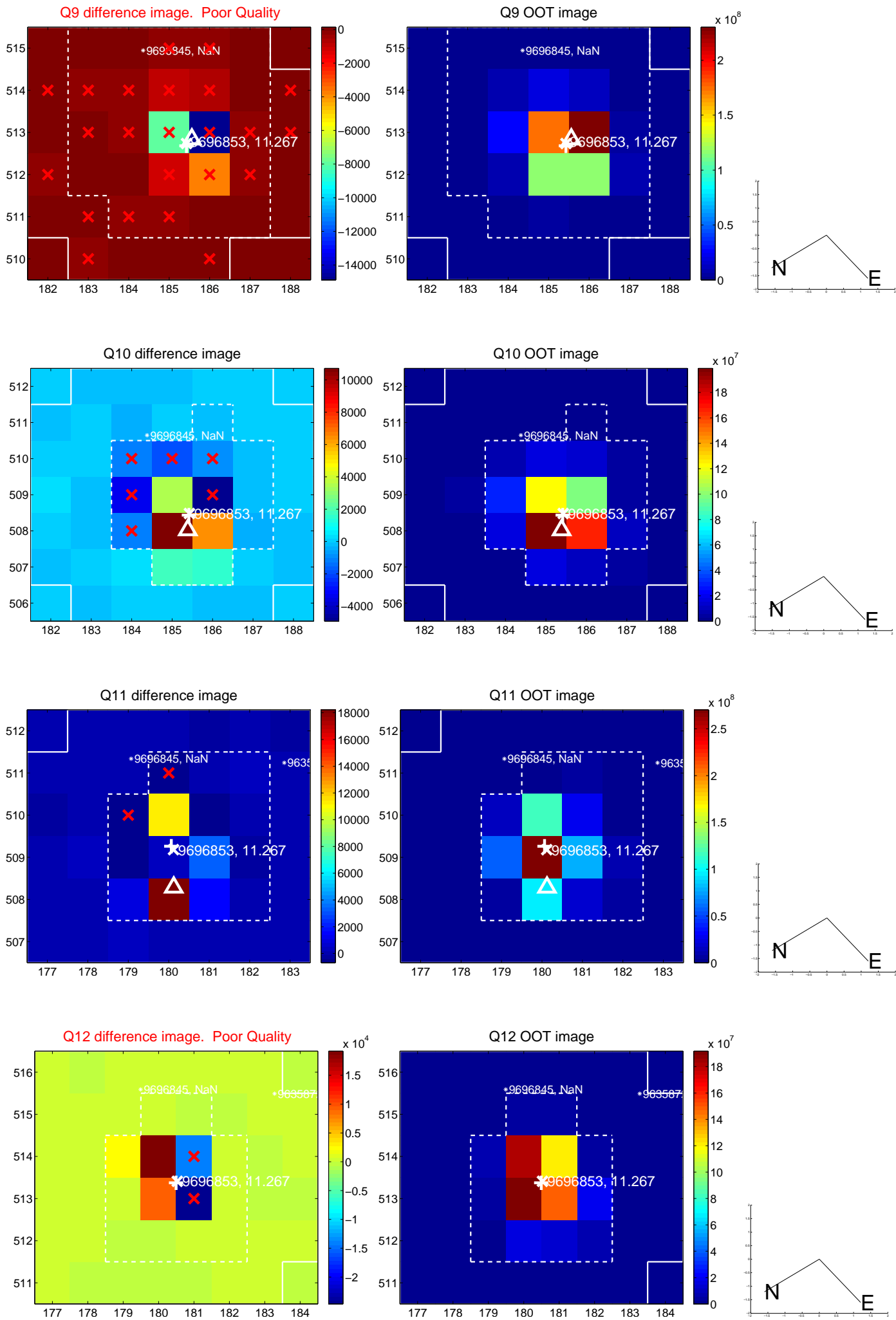
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



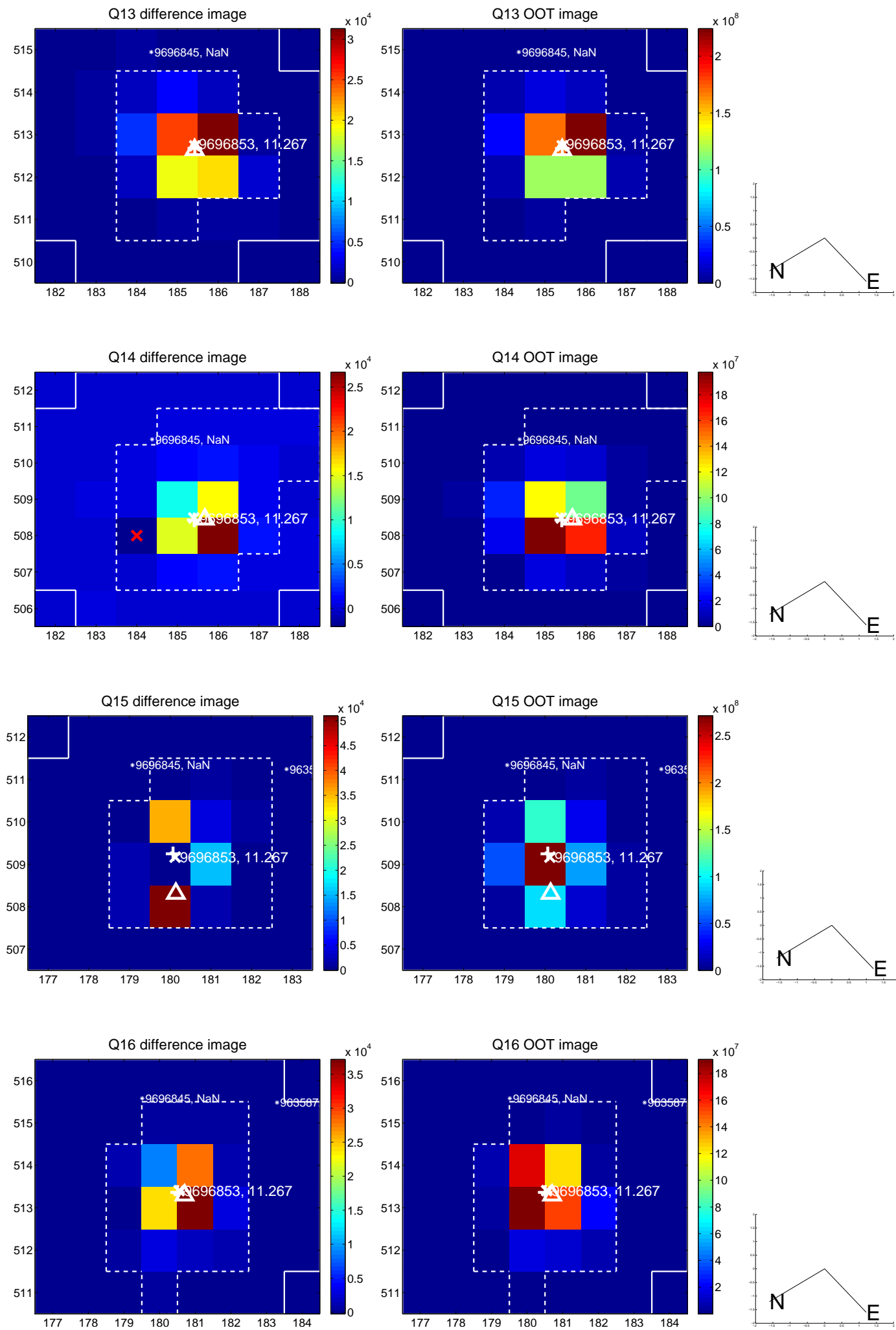
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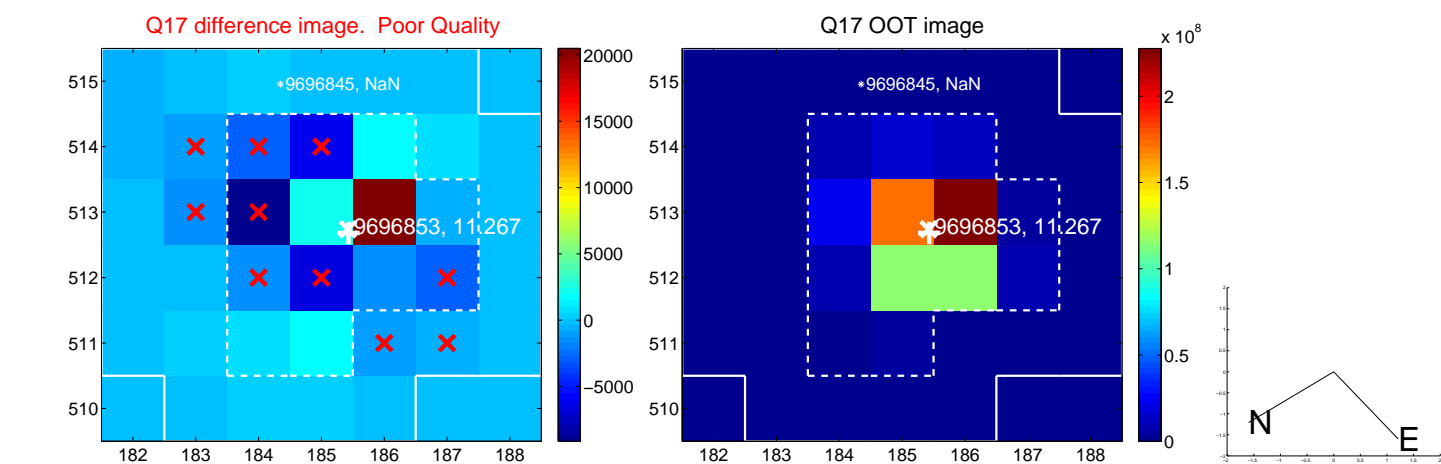
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



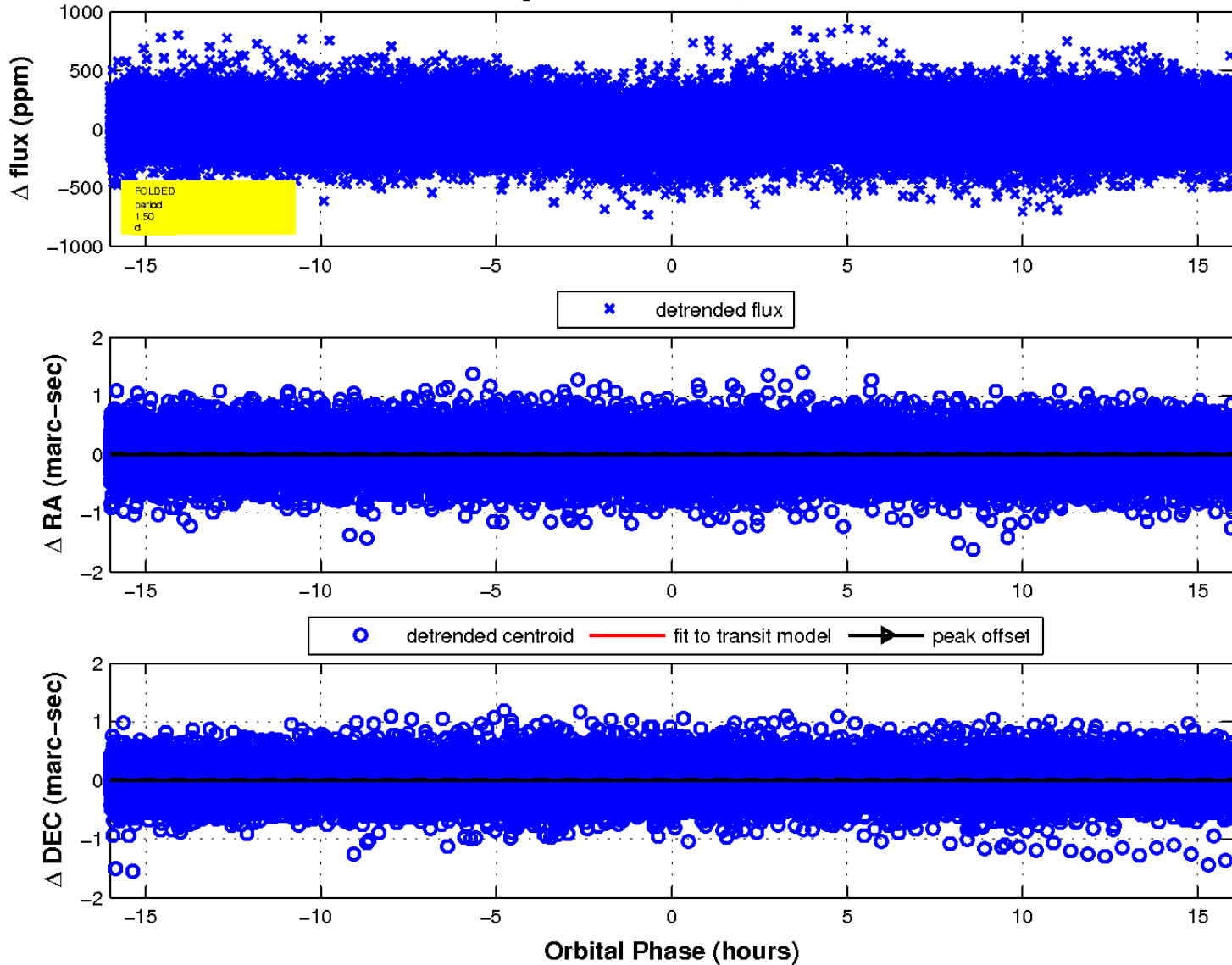
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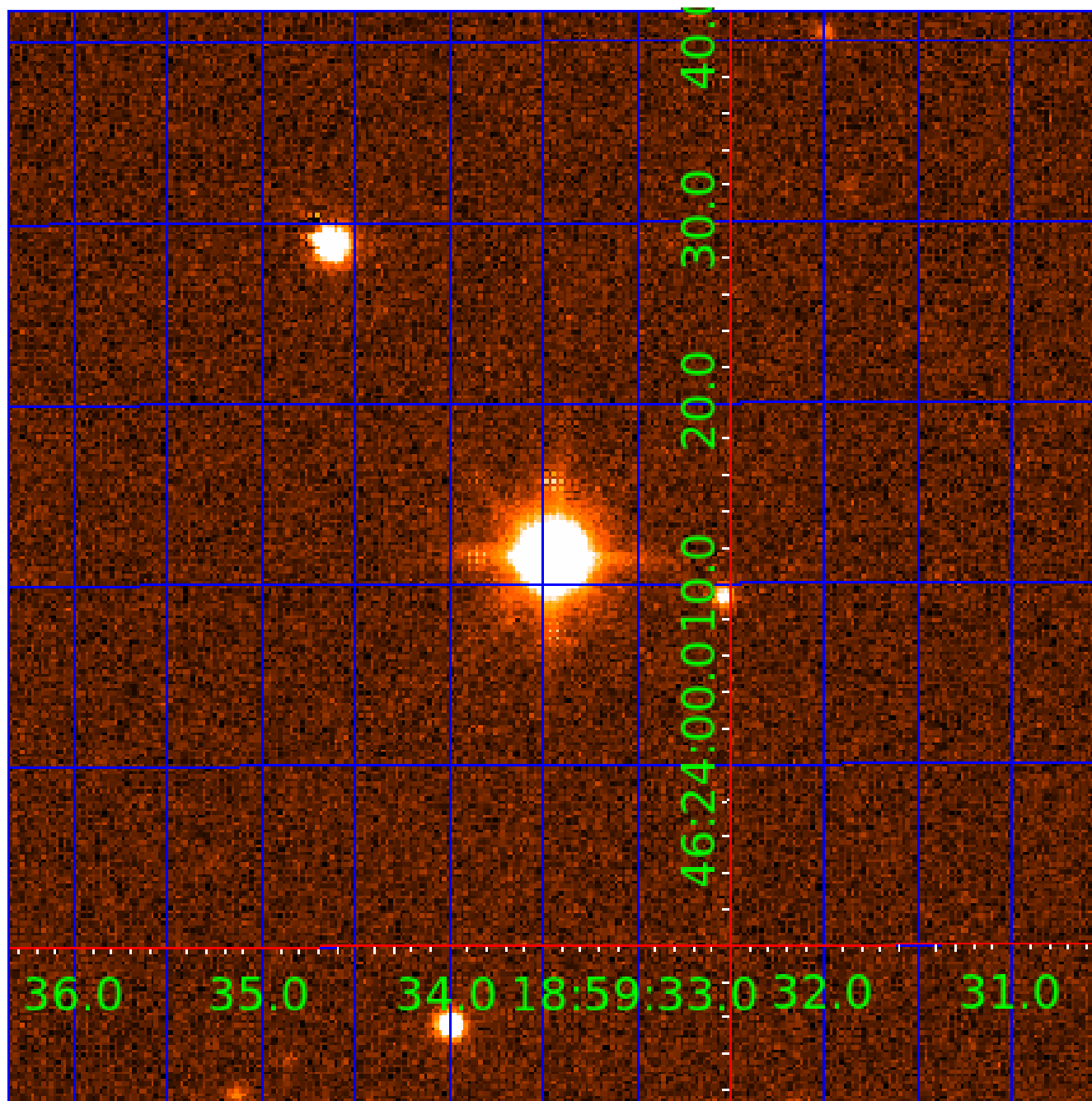


fluxWeightedCentroids, Planet 1 of 9



UKIRT Image

Declination



KIC 009696853

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
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009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

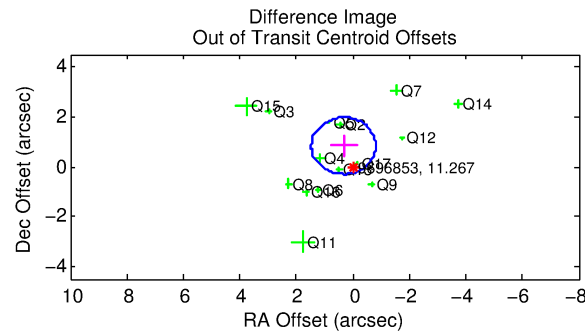
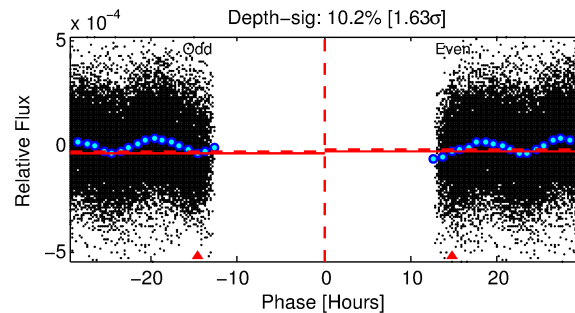
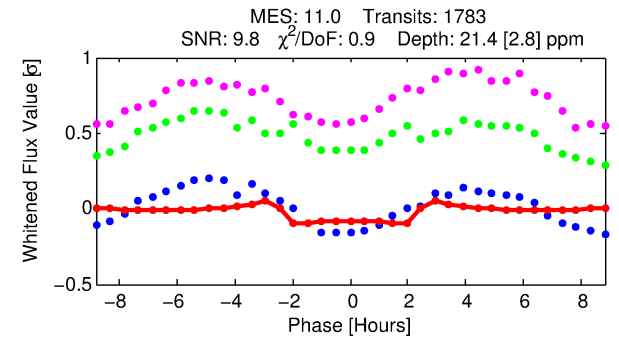
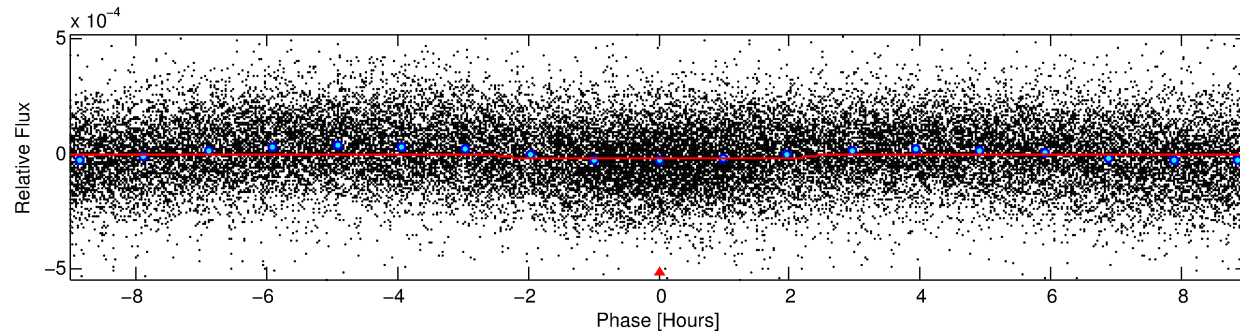
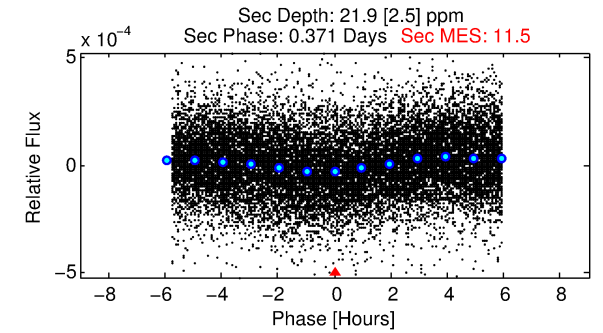
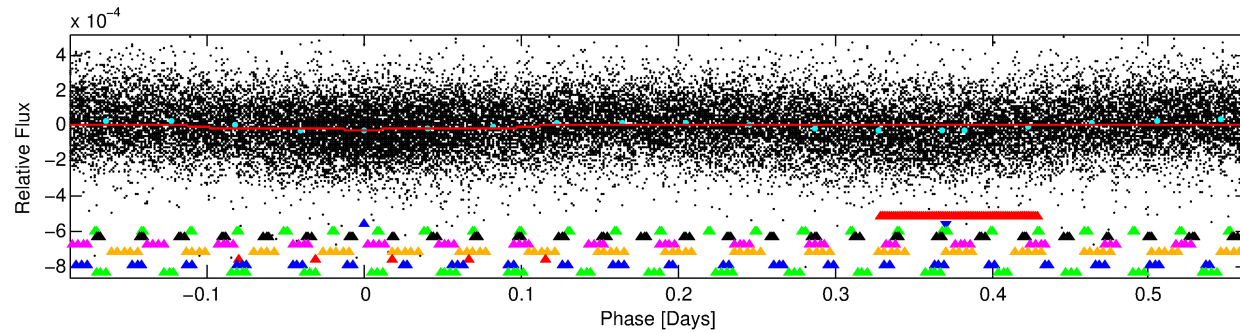
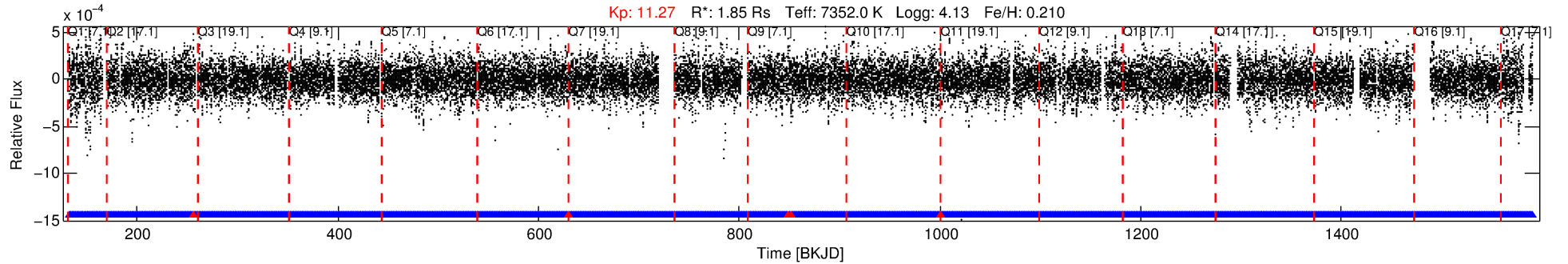
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-02

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 2 of 9 Period: 0.751 d



DV Fit Results:

Period = 0.75108 [0.00001] d
Epoch = 132.1938 [0.0030] BKJD
Rp/R* = 0.0044 [0.0018]
a/R* = 1.28 [1.26]
b = 0.40 [5.31]
Seff = 24148.68 [9942.05]
Teq = 3179 [327] K
Rp = 0.88 [0.45] Re
a = 0.0193 [0.0049] AU
Ag = 5.78 [5.27] [0.91 sigma]
Teffp = 7619 [1635] K [2.66 sigma]

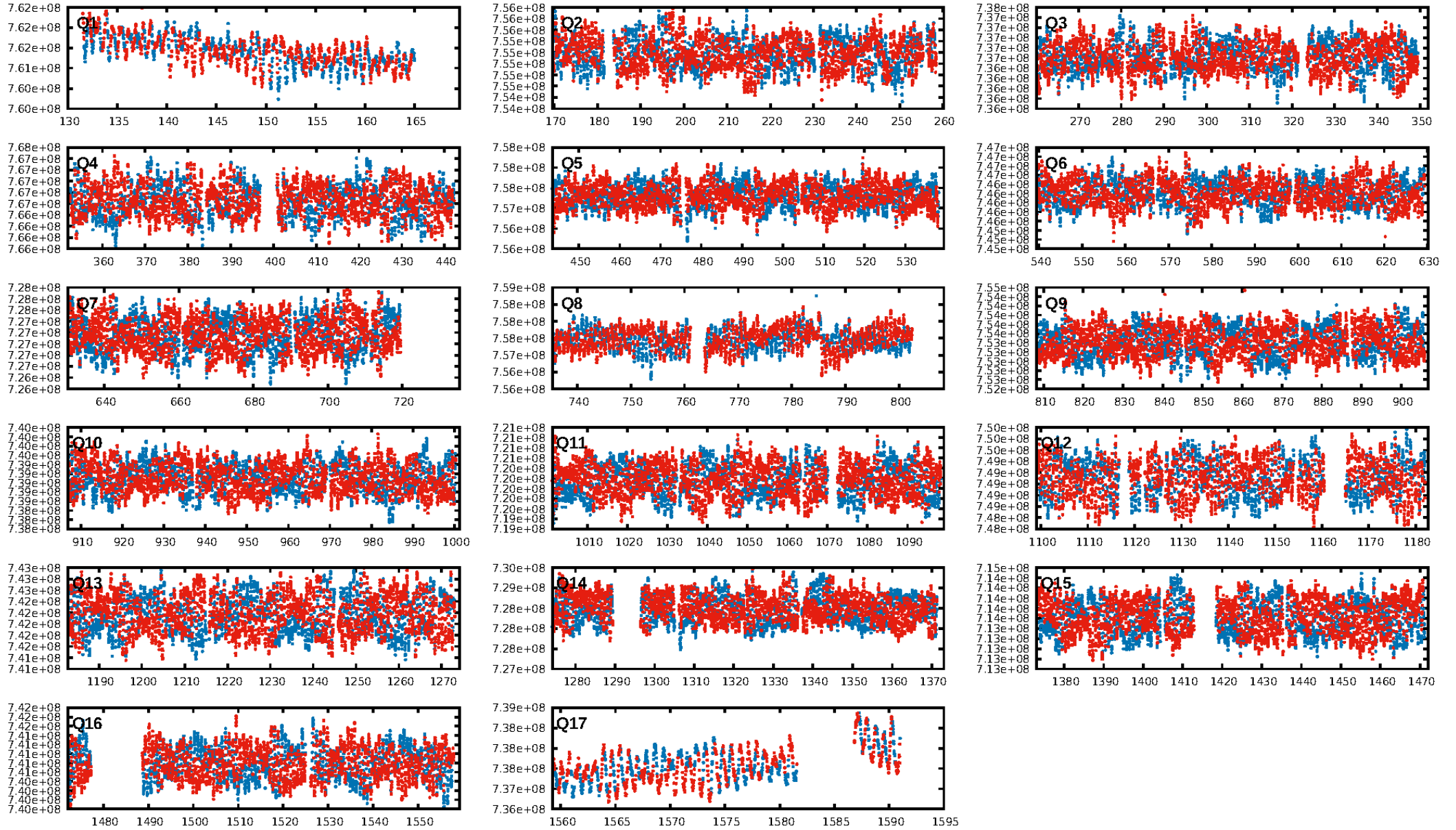
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 98.7% [2.48 sigma]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1697/1702]
GhostDiagnostic-chr: 23.74
Centroid-sig: 32.9%
Centroid-so: 0.349 arcsec [1.45 sigma]
OotOffset-rm: 0.898 arcsec [2.37 sigma]
OotOffset-st: 3/4/4/4 [15]
KicOffset-rm: 1.042 arcsec [2.65 sigma]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.53 [8/15]
DiffImageOverlap-fno: 0.00 [0/17]

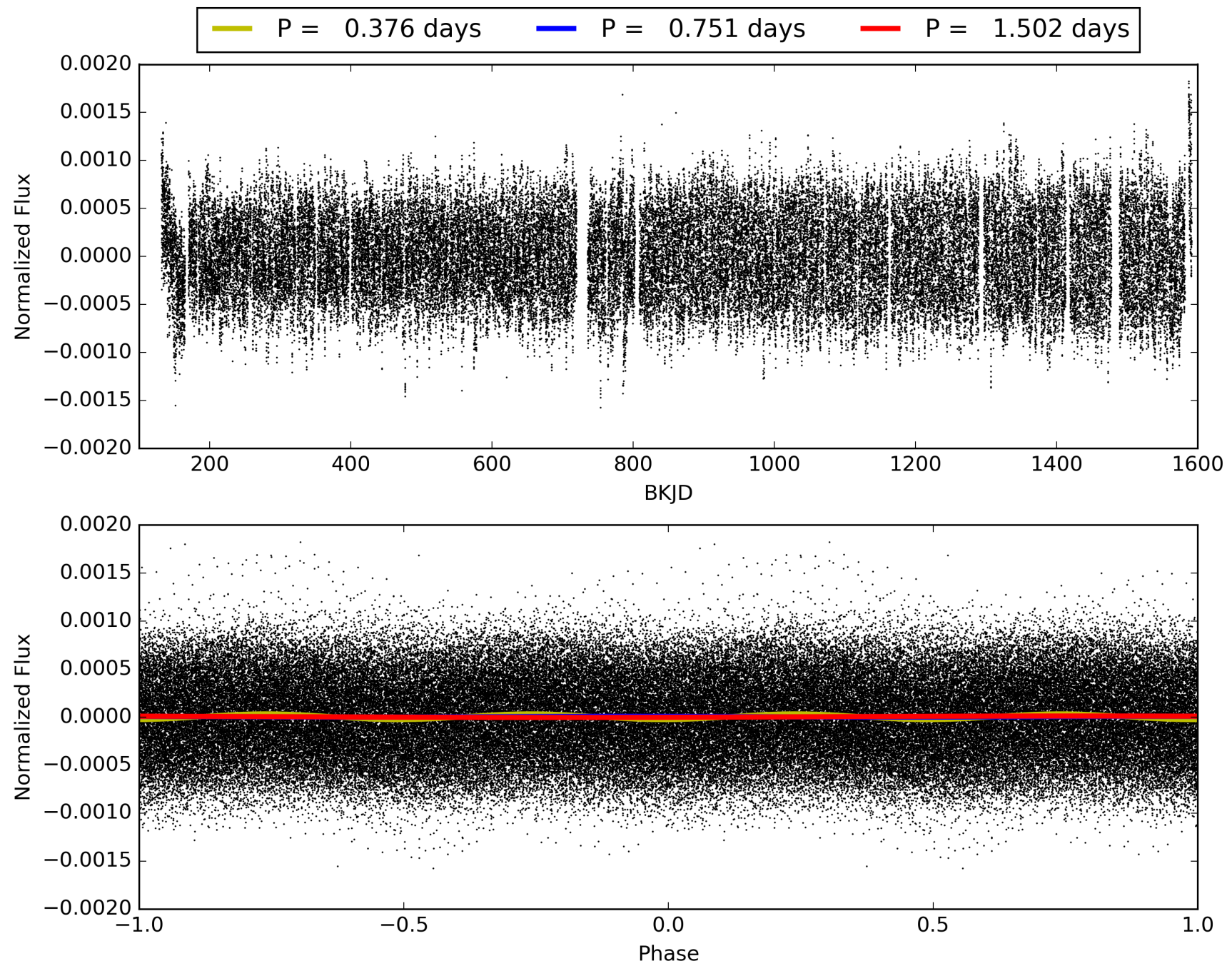
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:38 Z

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

TCE 009696853-02, PDC Light Curves

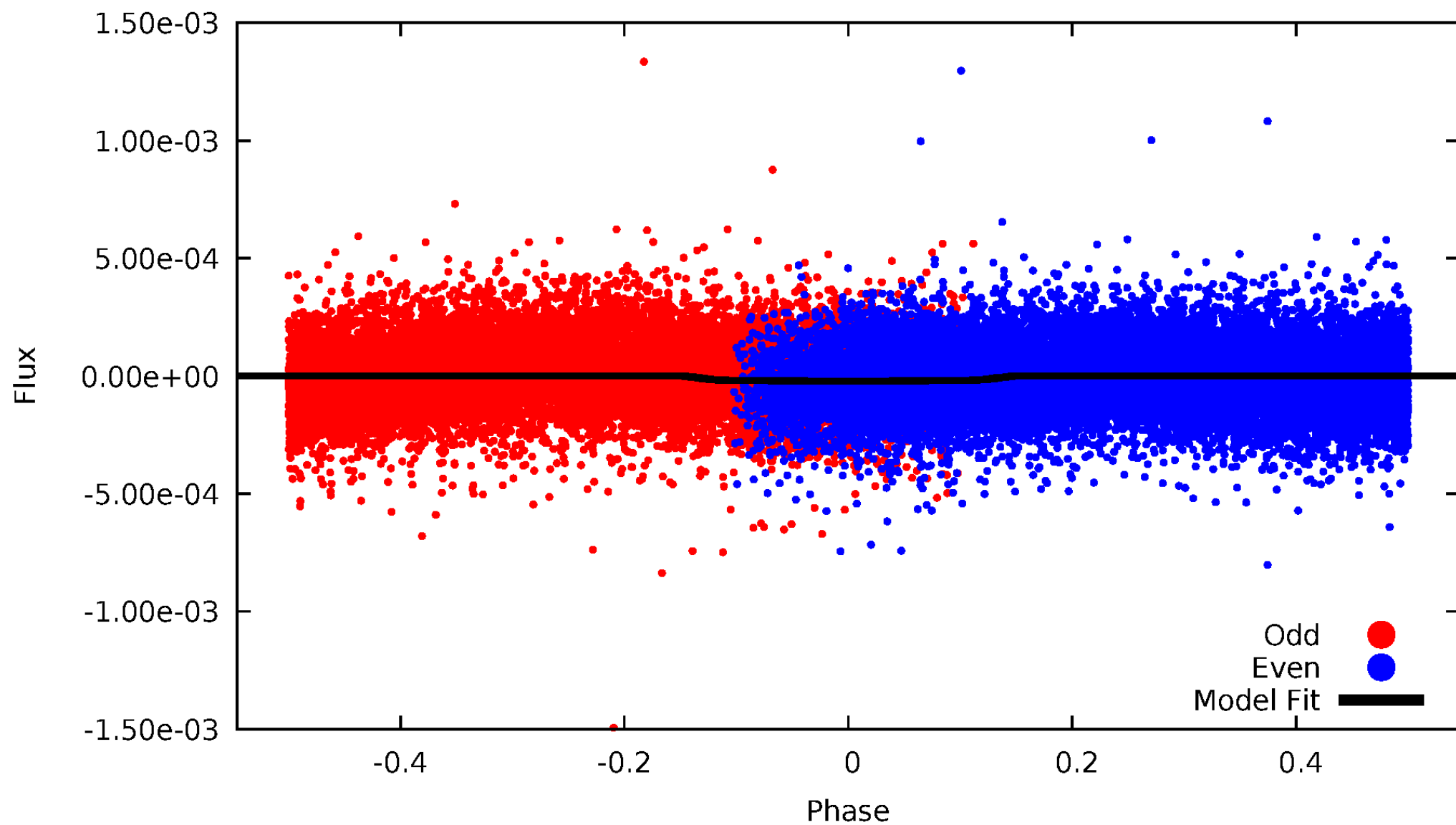


TCE 009696853-02



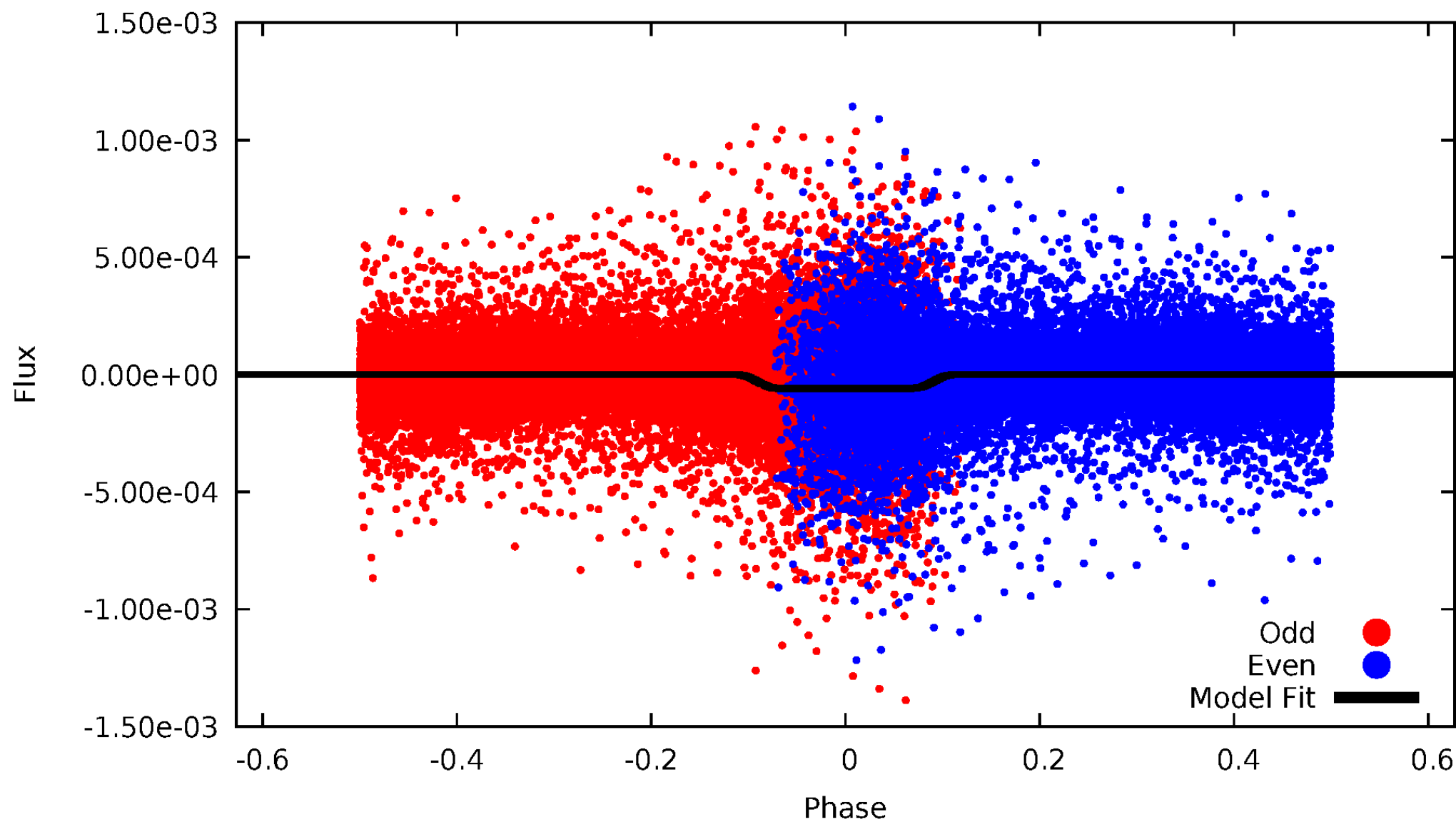
DV Odd/Even

TCE 009696853-02



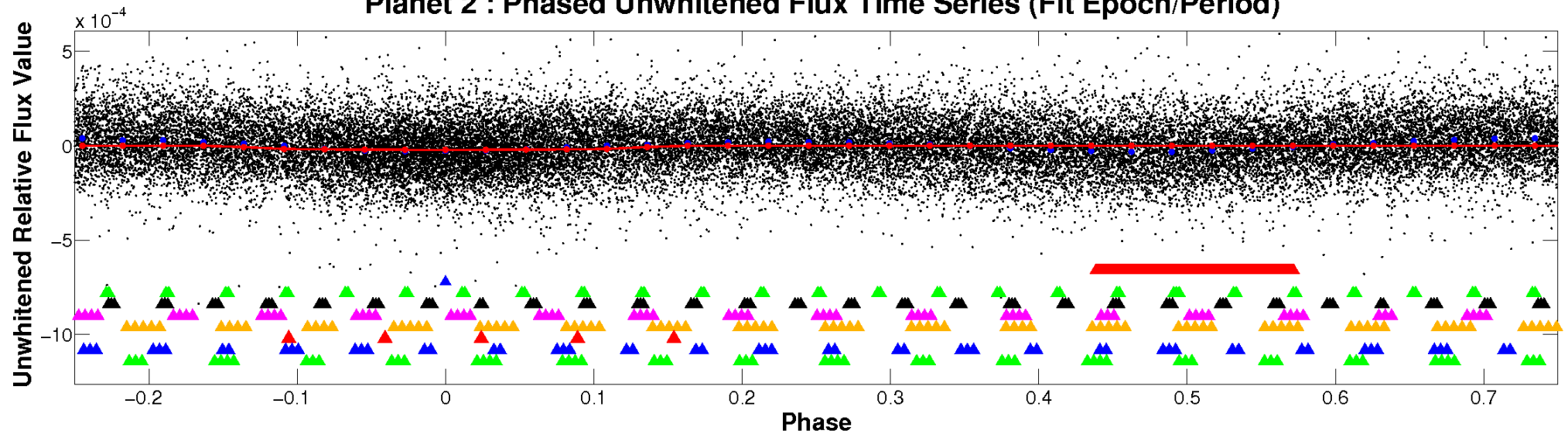
ALT Odd/Even

TCE 009696853-02

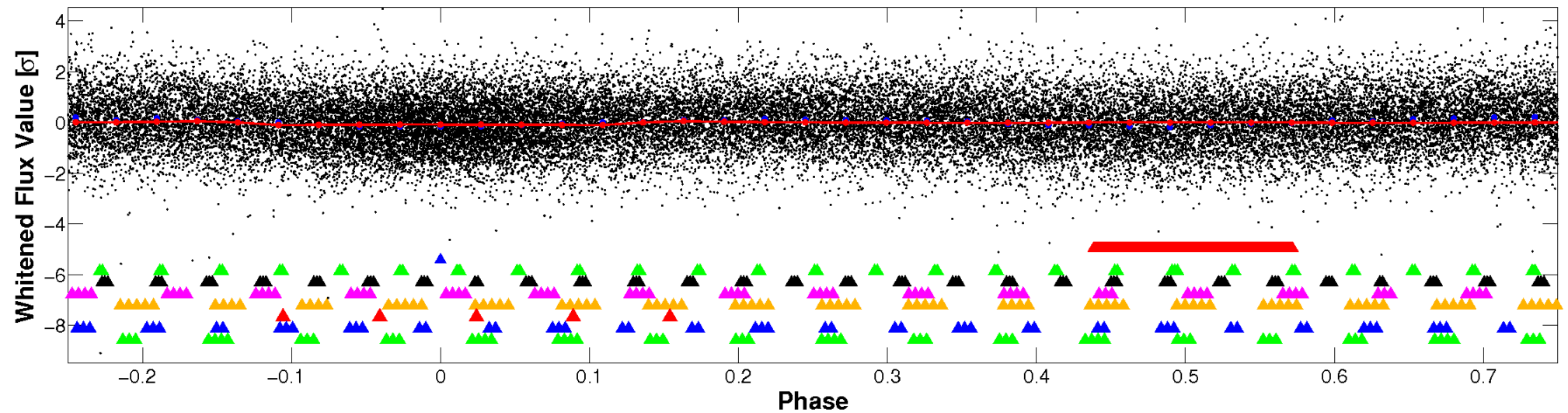


Non-Whitened Vs. Whitened Light Curve

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

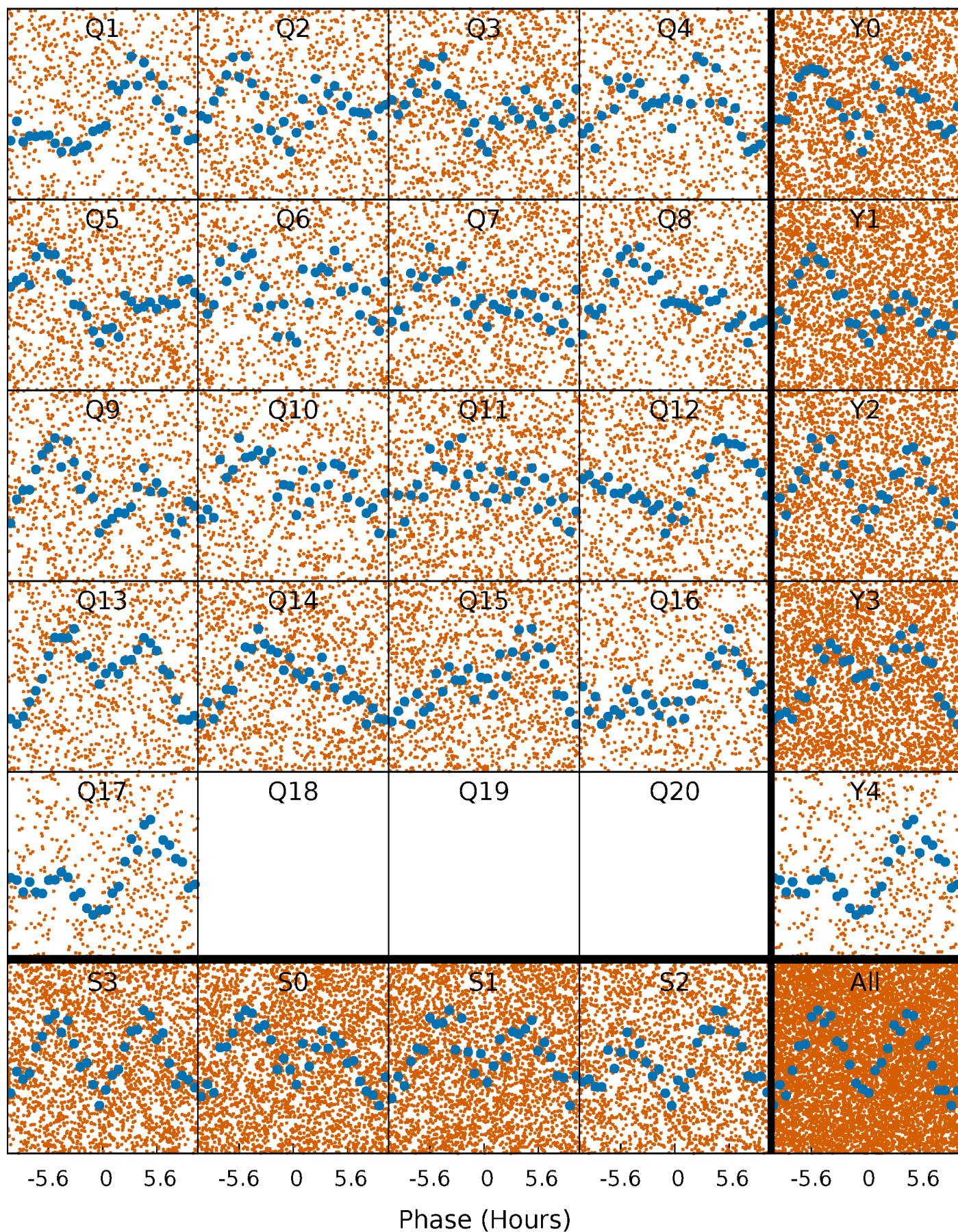


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



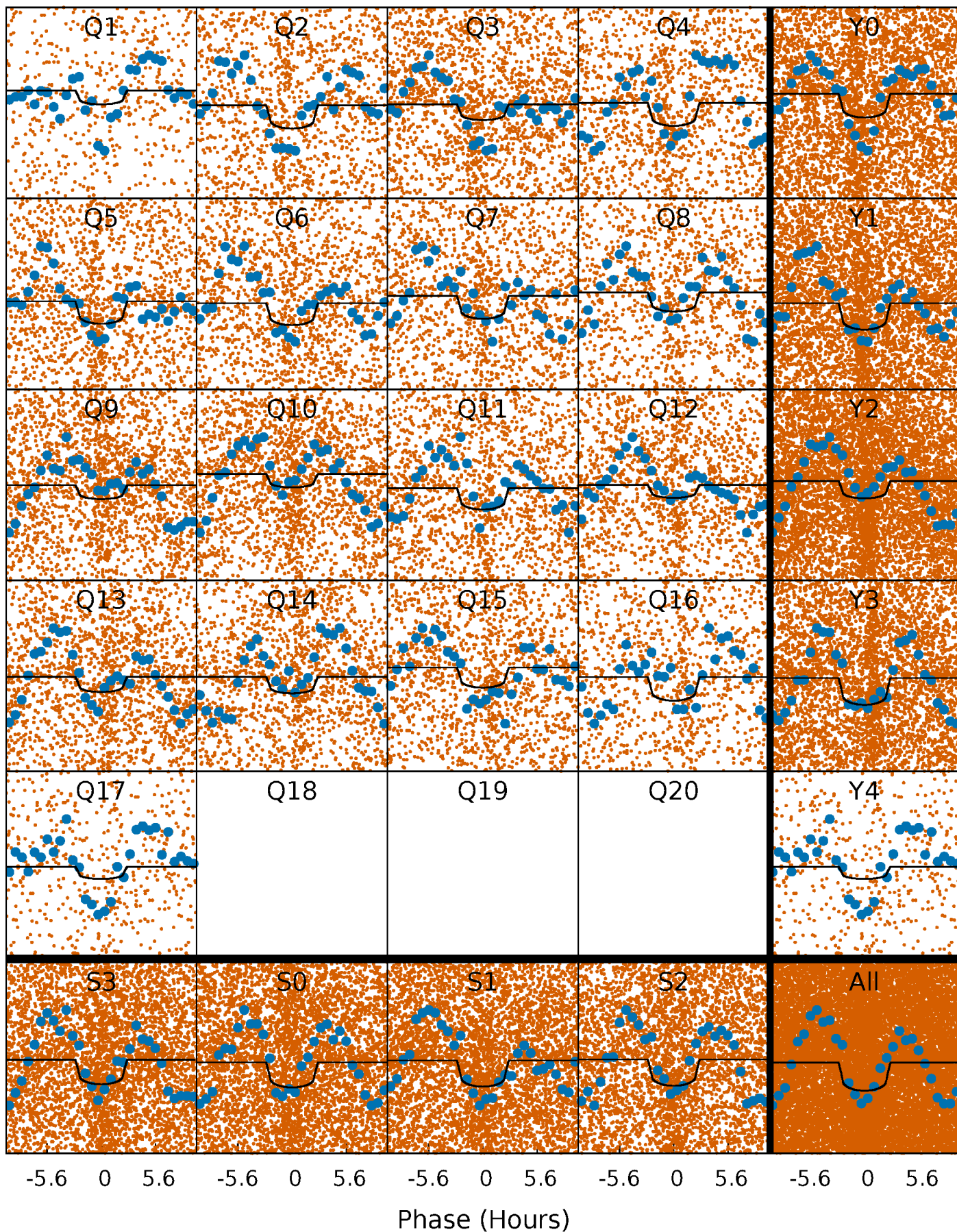
PDC Quarter-Phased Transit Curves

TCE 009696853-02 P= 0.751079 Days $T_0=132.193770$ (BKJD)



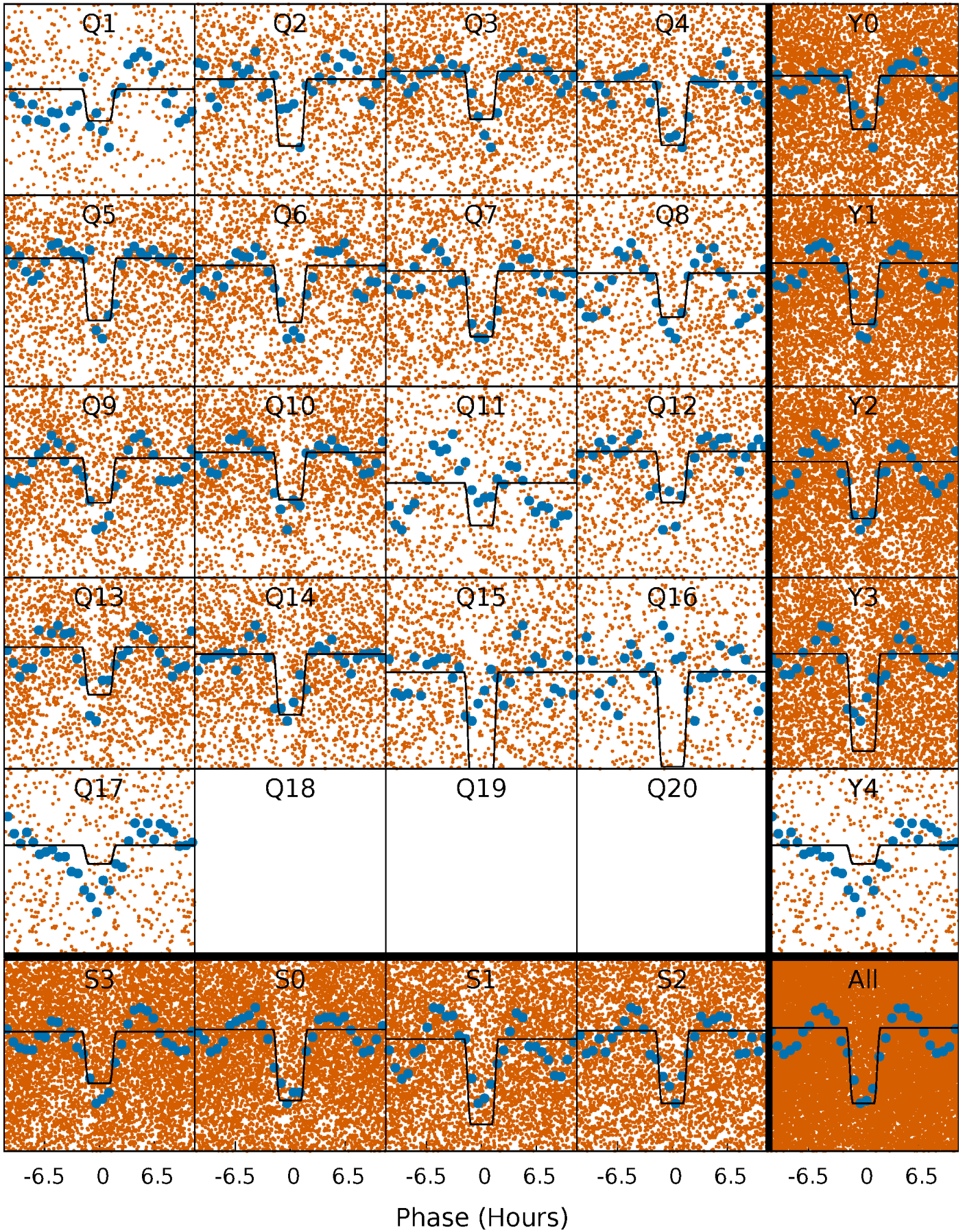
DV Quarter-Phased Transit Curves

TCE 009696853-02 P= 0.751079 Days $T_0=132.193770$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

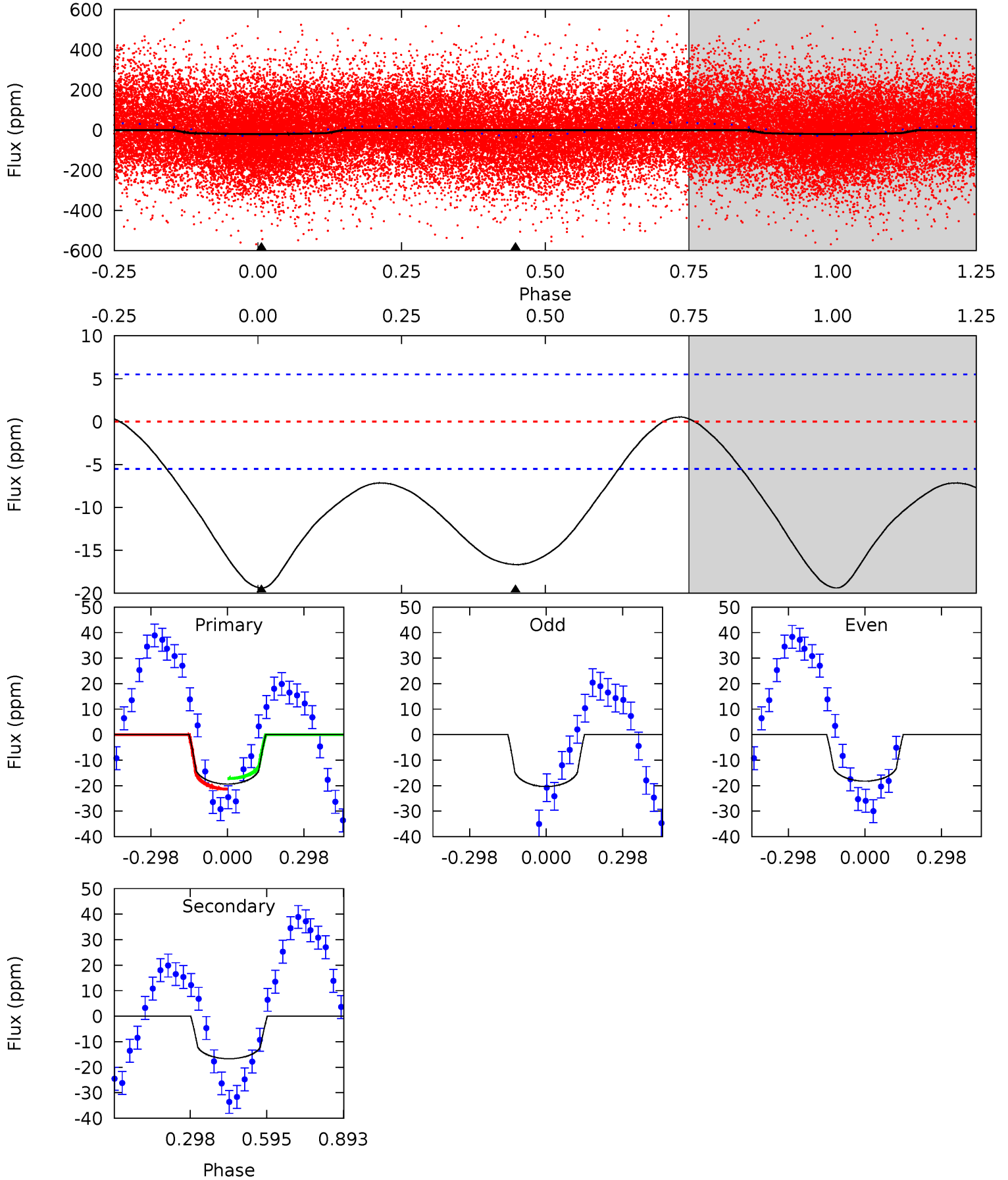
TCE 009696853-02 P= 0.751088 Days $T_0=132.171017$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-02, P = 0.751079 Days, E = 131.442691 Days

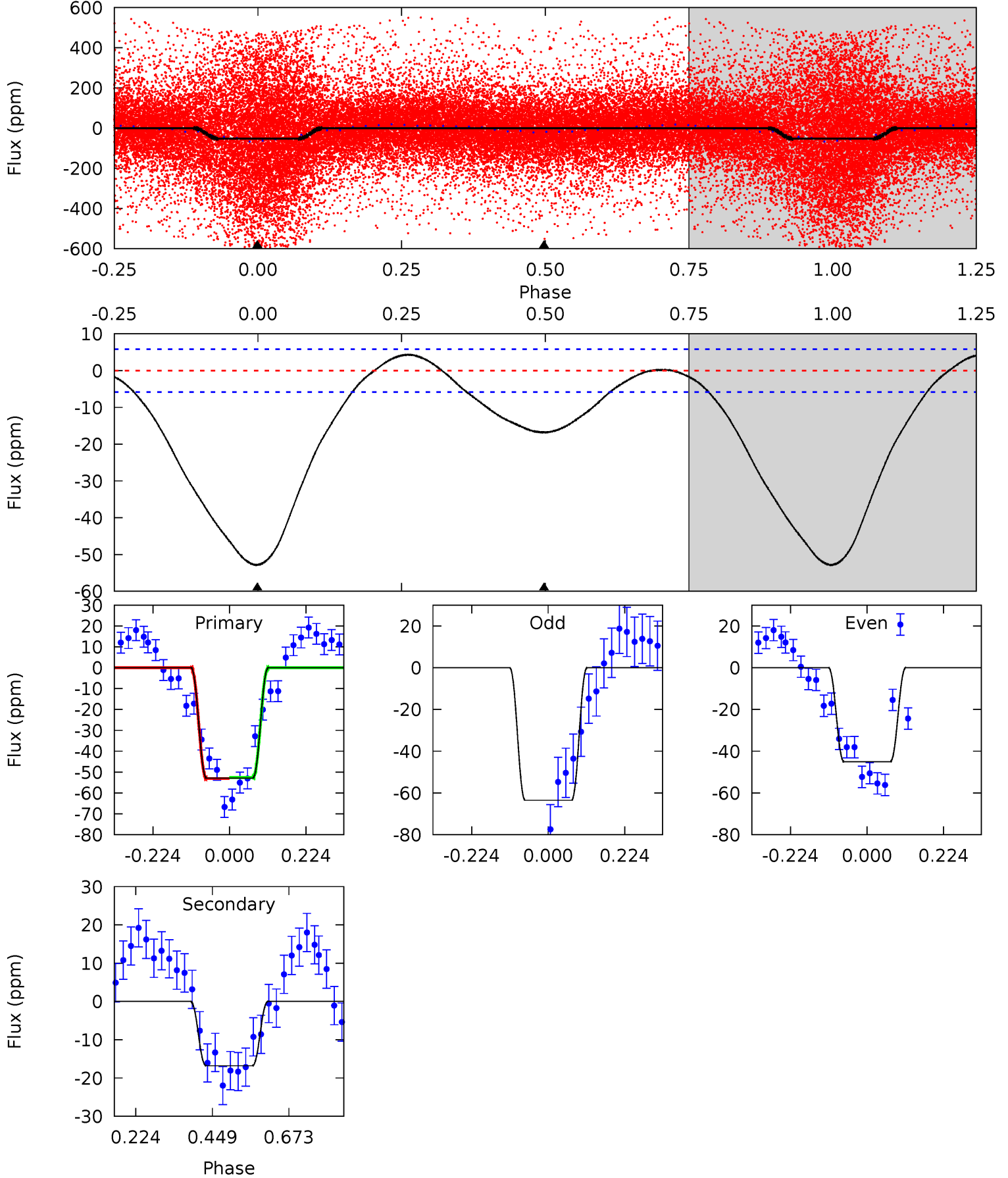
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	13.1	0	0	4.33	1.04	0.50	15.3	15.3	13.1	13.1	0.86	1.05	0.03	1.68



Alt Model-Shift Uniqueness Test

009696853-02, P = 0.751088 Days, E = 131.419929 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.9	12.7	0	0	4.39	1.21	2.23	39.9	39.9	12.7	12.7	7.01	1.04	0.08	0.18



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-17 ± 1	$0.93^{+0.40}_{-0.42}$	4493^{+348}_{-284}	6814^{+2962}_{-1254}	$3.876^{+8.470}_{-1.977}$
Alt.	-17 ± 1	$1.56^{+0.48}_{-0.38}$	4483^{+351}_{-283}	5041^{+802}_{-620}	$1.381^{+0.967}_{-0.568}$

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 $A_{obs} \gg 1.0$

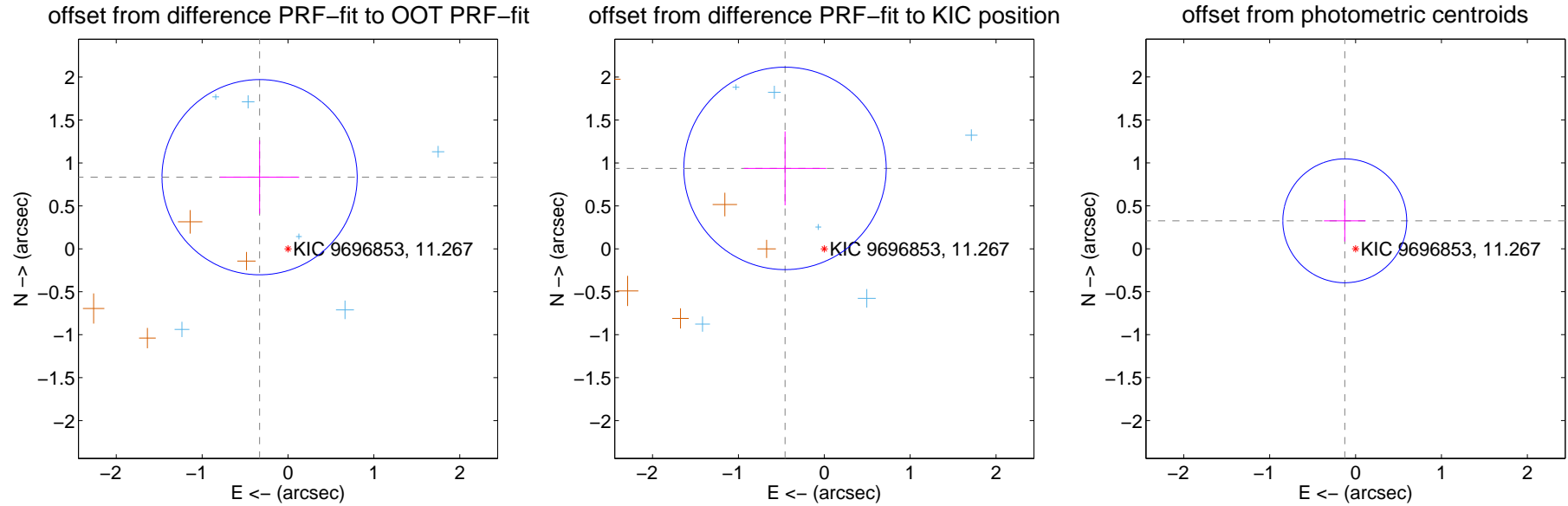
DV Centroid Data

Supplemental centroid analysis for 009696853-02. **Kepler magnitude: 11.27.** Transit SNR 9.77

There are 8 quarters with good PRF difference image offsets

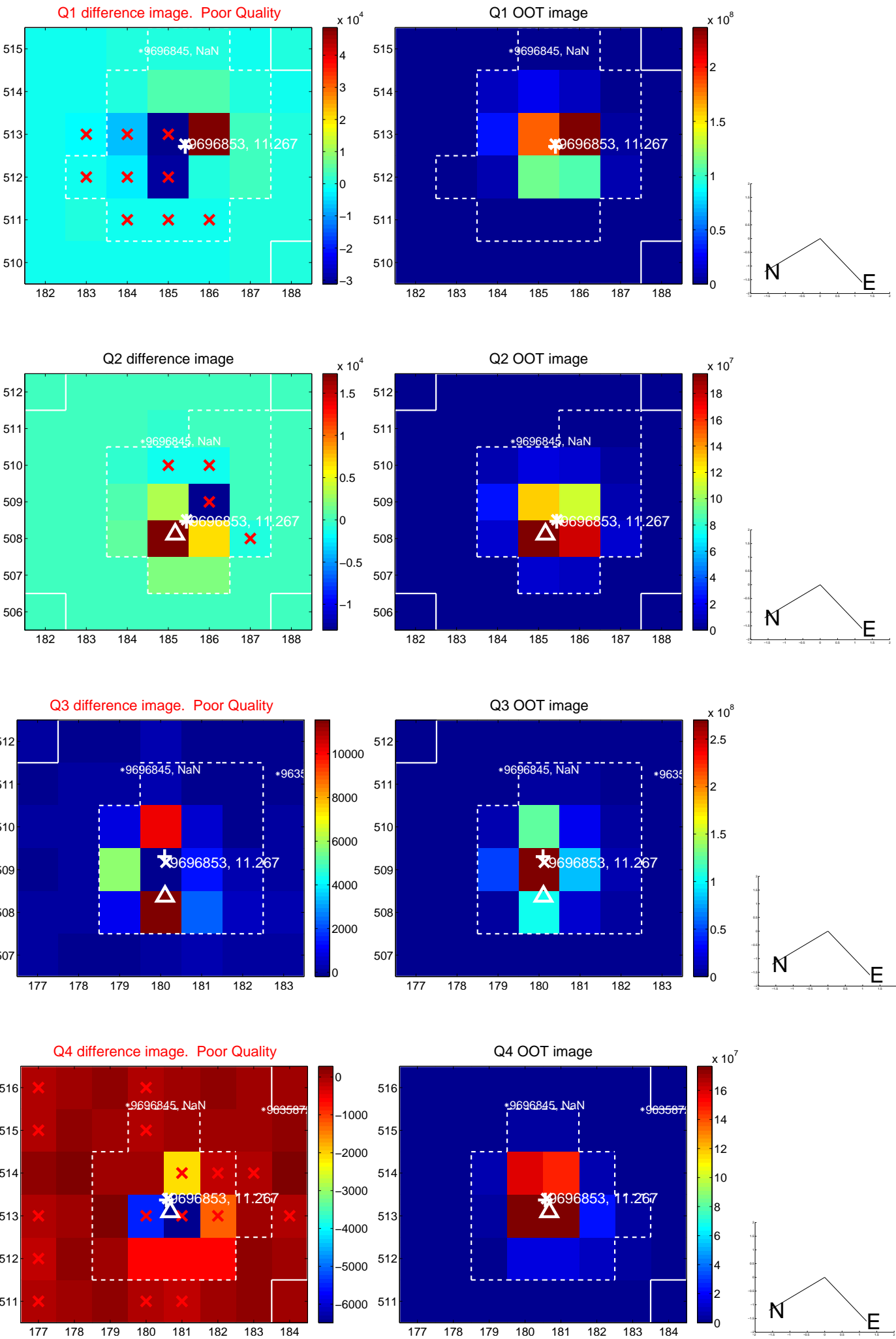
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.898 ± 0.379	2.37	0.331 ± 0.461	0.834 ± 0.425
PRF-fit source offset from KIC position	1.042 ± 0.393	2.65	0.457 ± 0.480	0.936 ± 0.430
photometric centroid source offset	0.35 ± 0.24	1.45	0.13 ± 0.24	0.33 ± 0.24

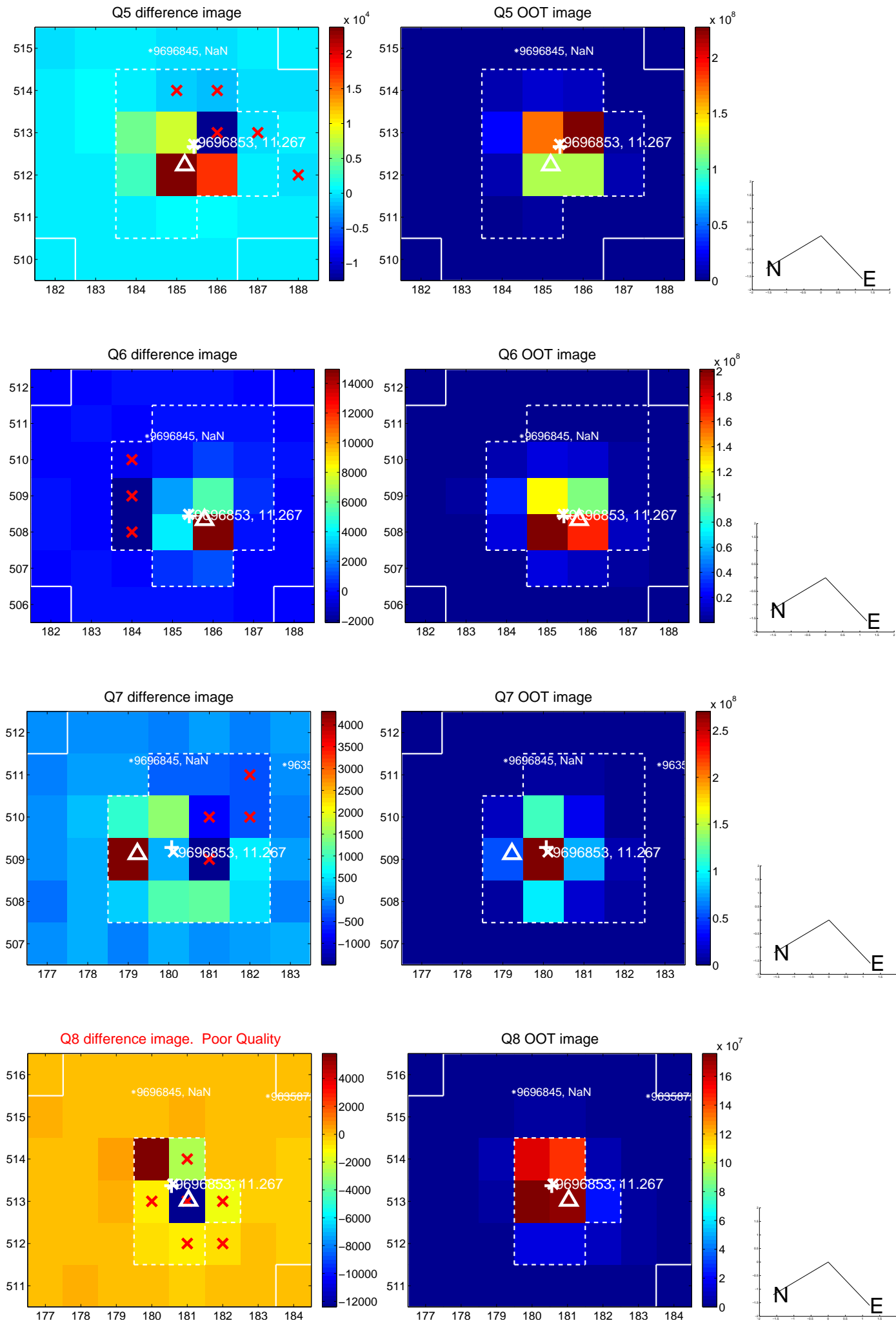


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

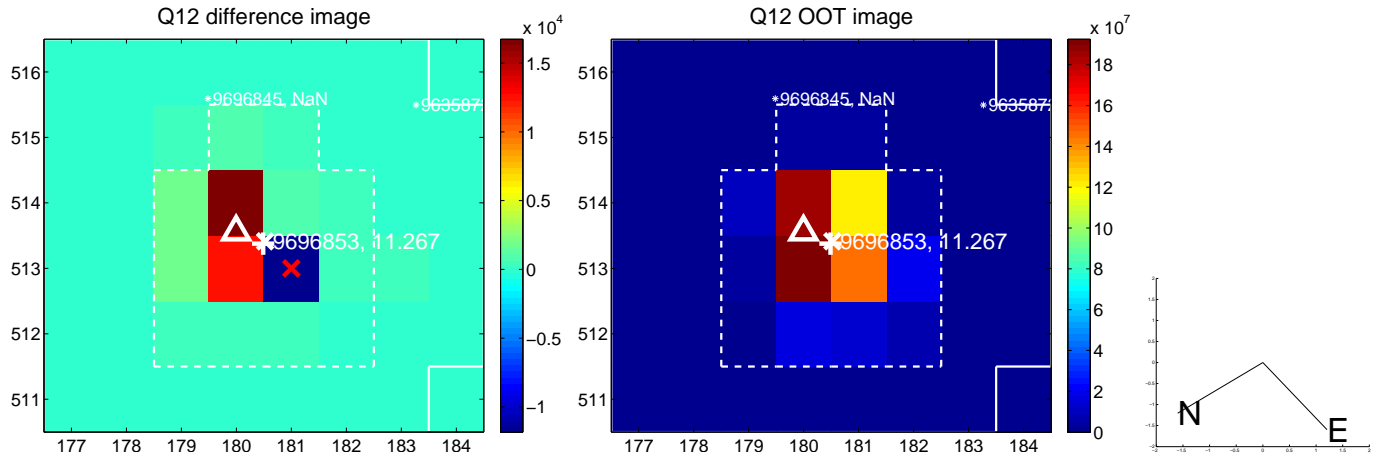
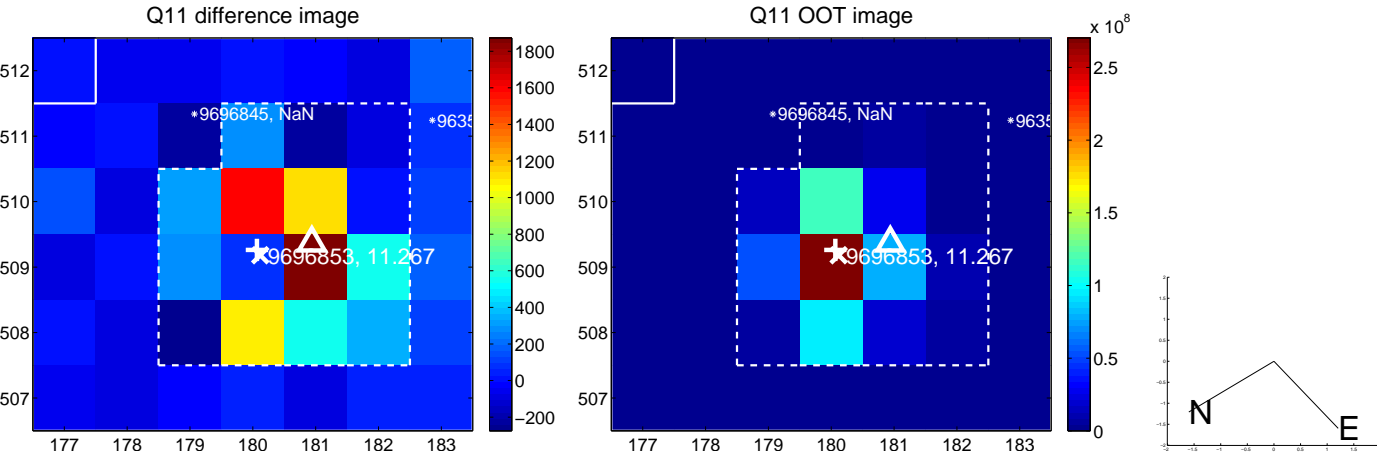
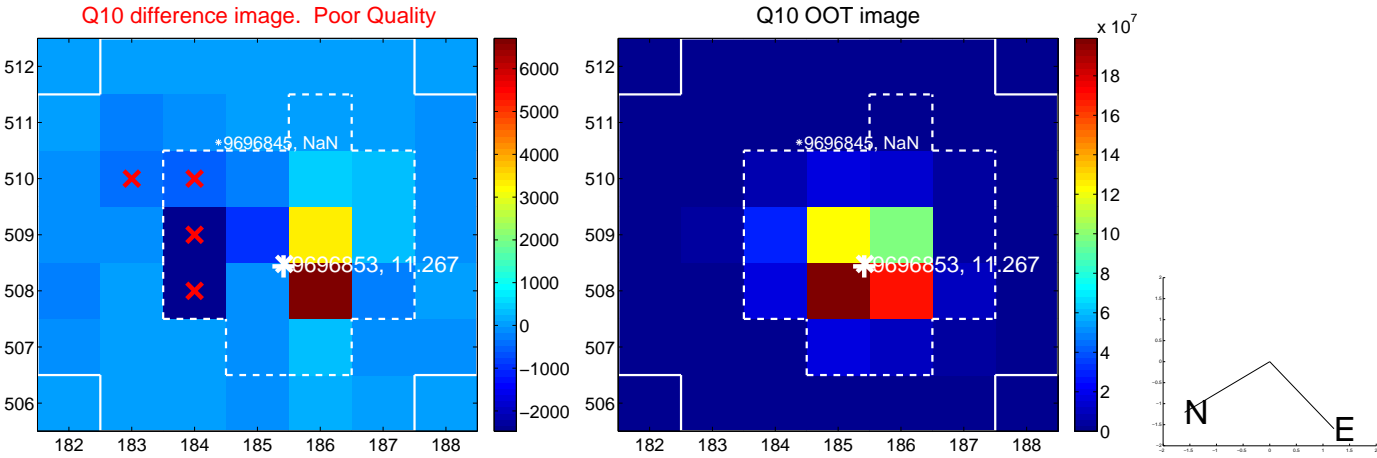
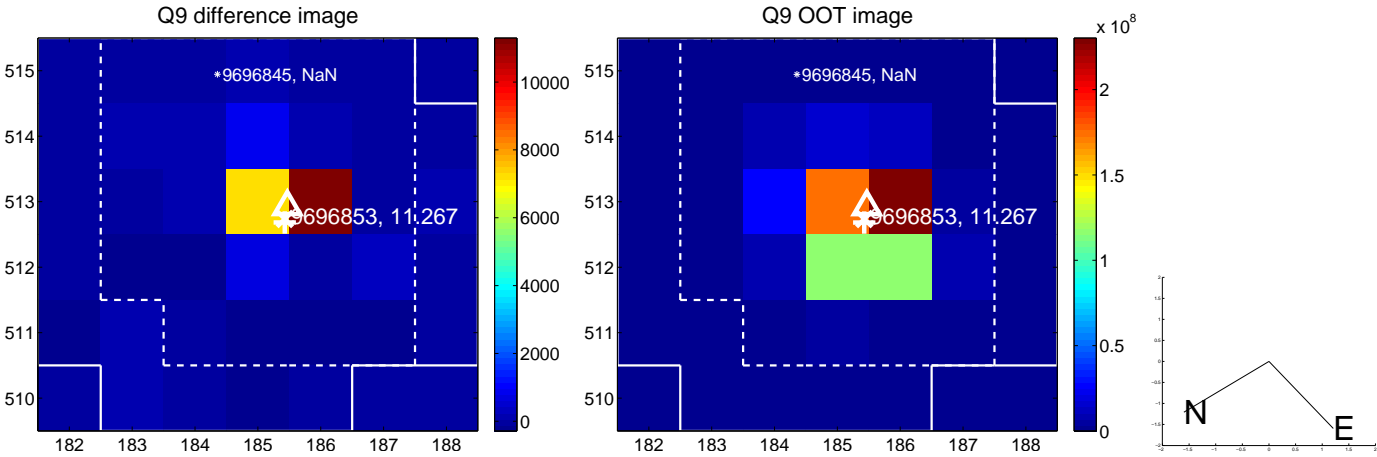
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



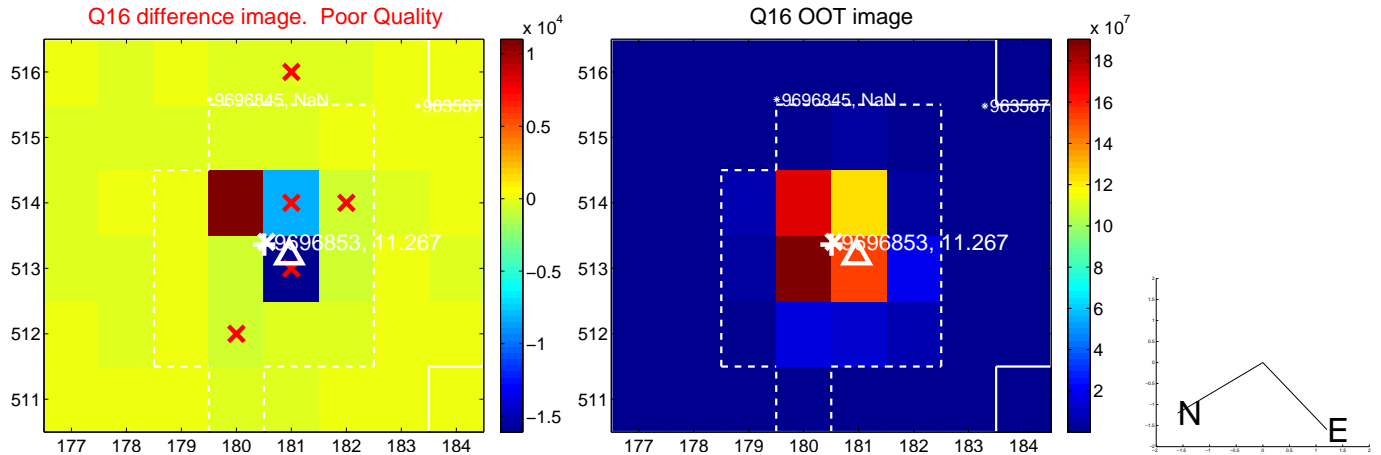
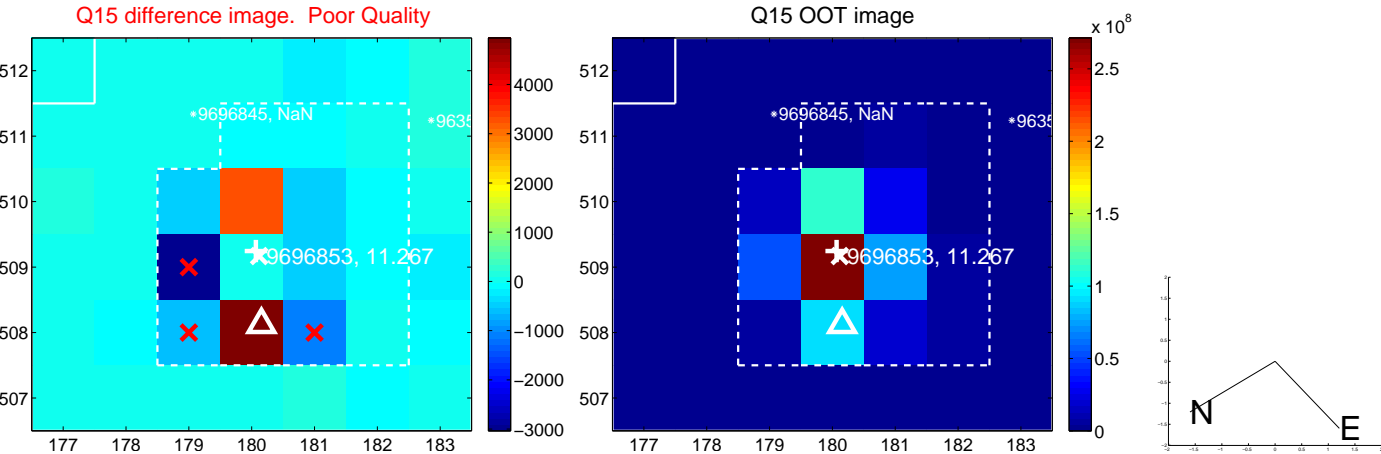
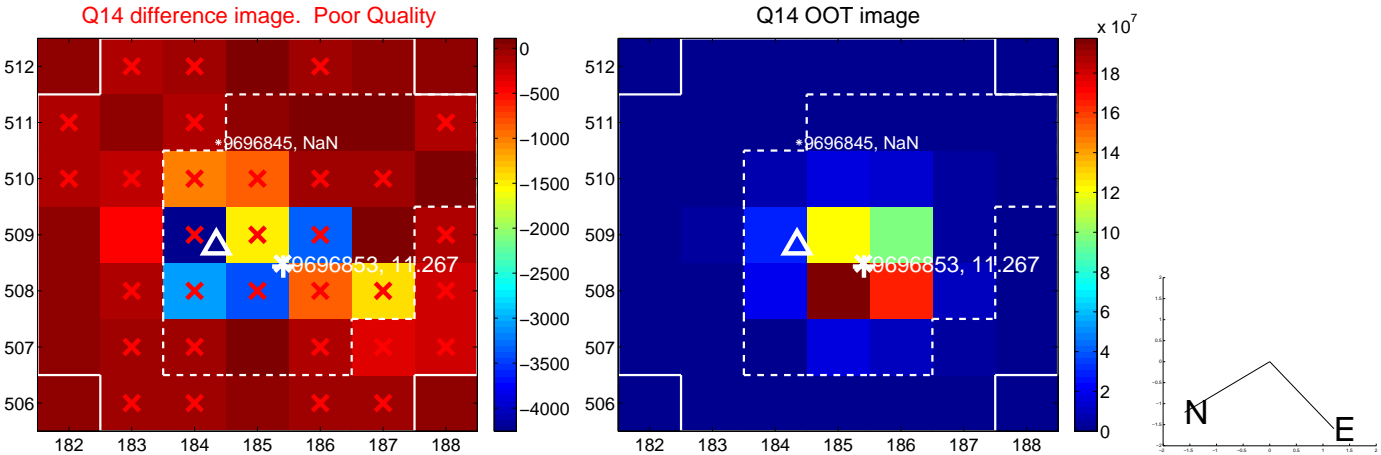
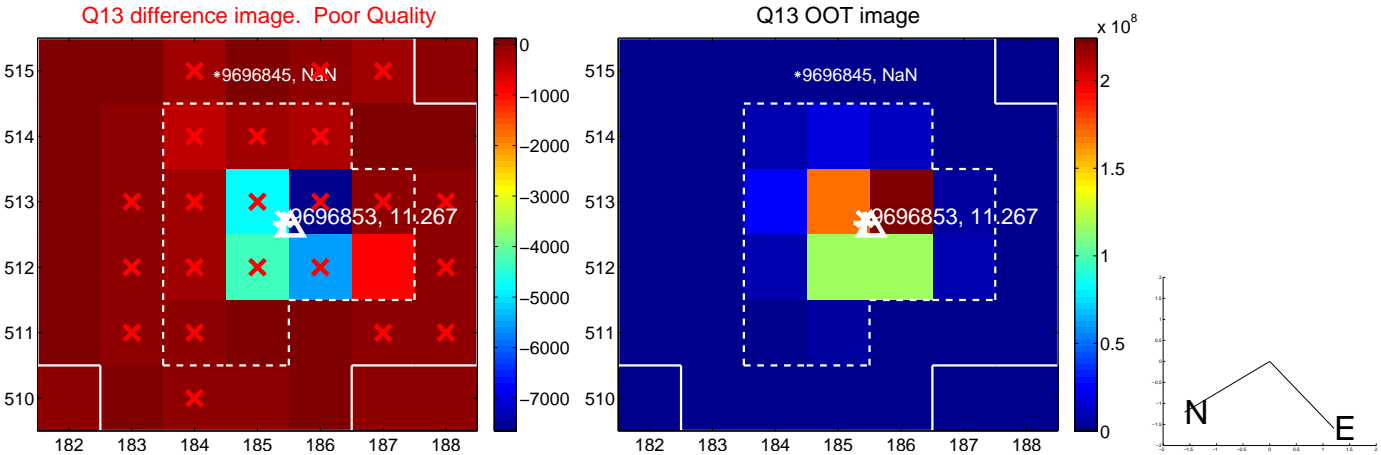
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



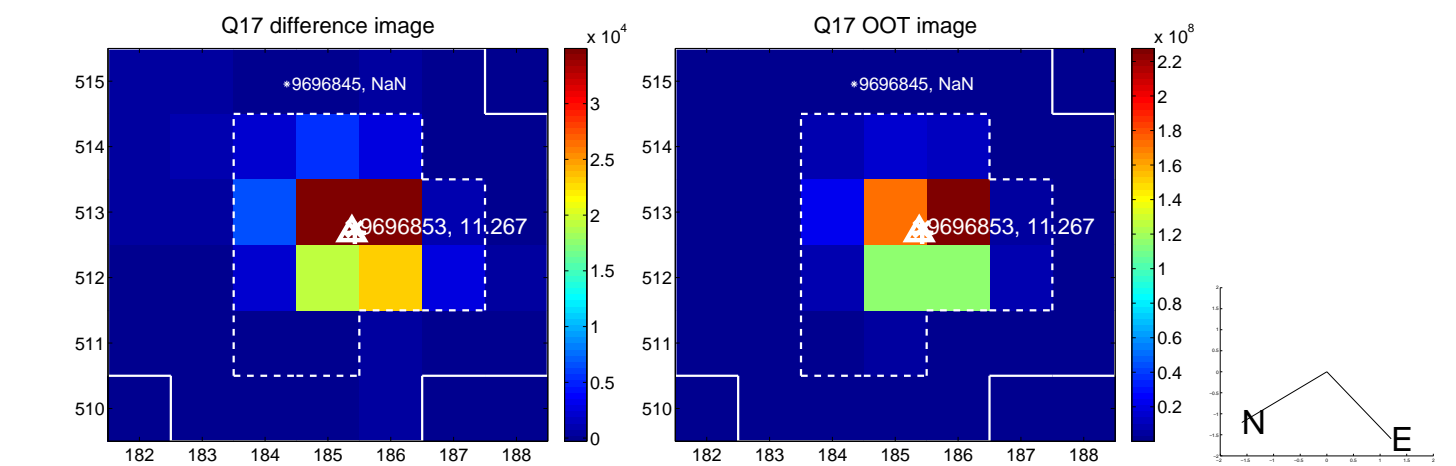
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



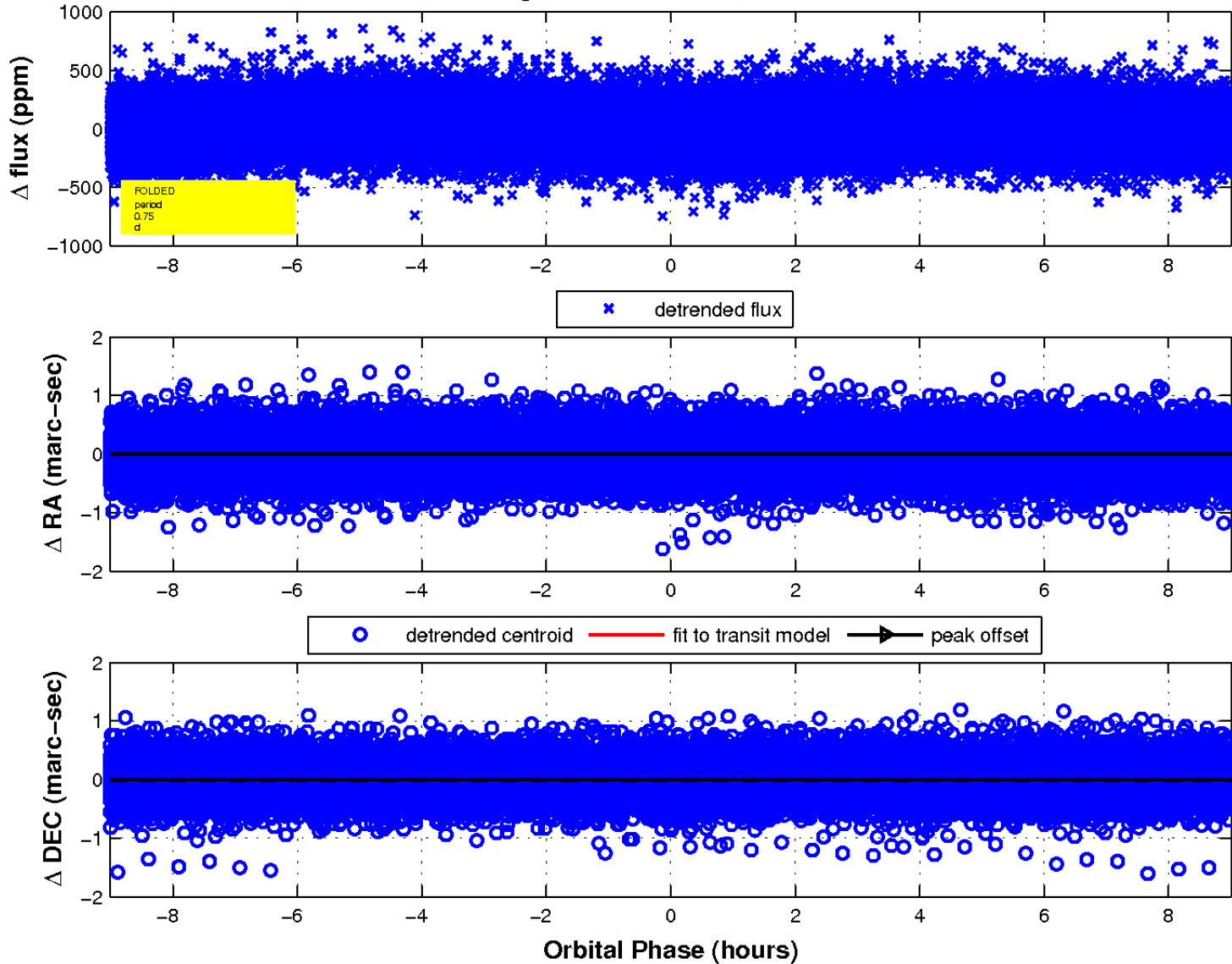
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

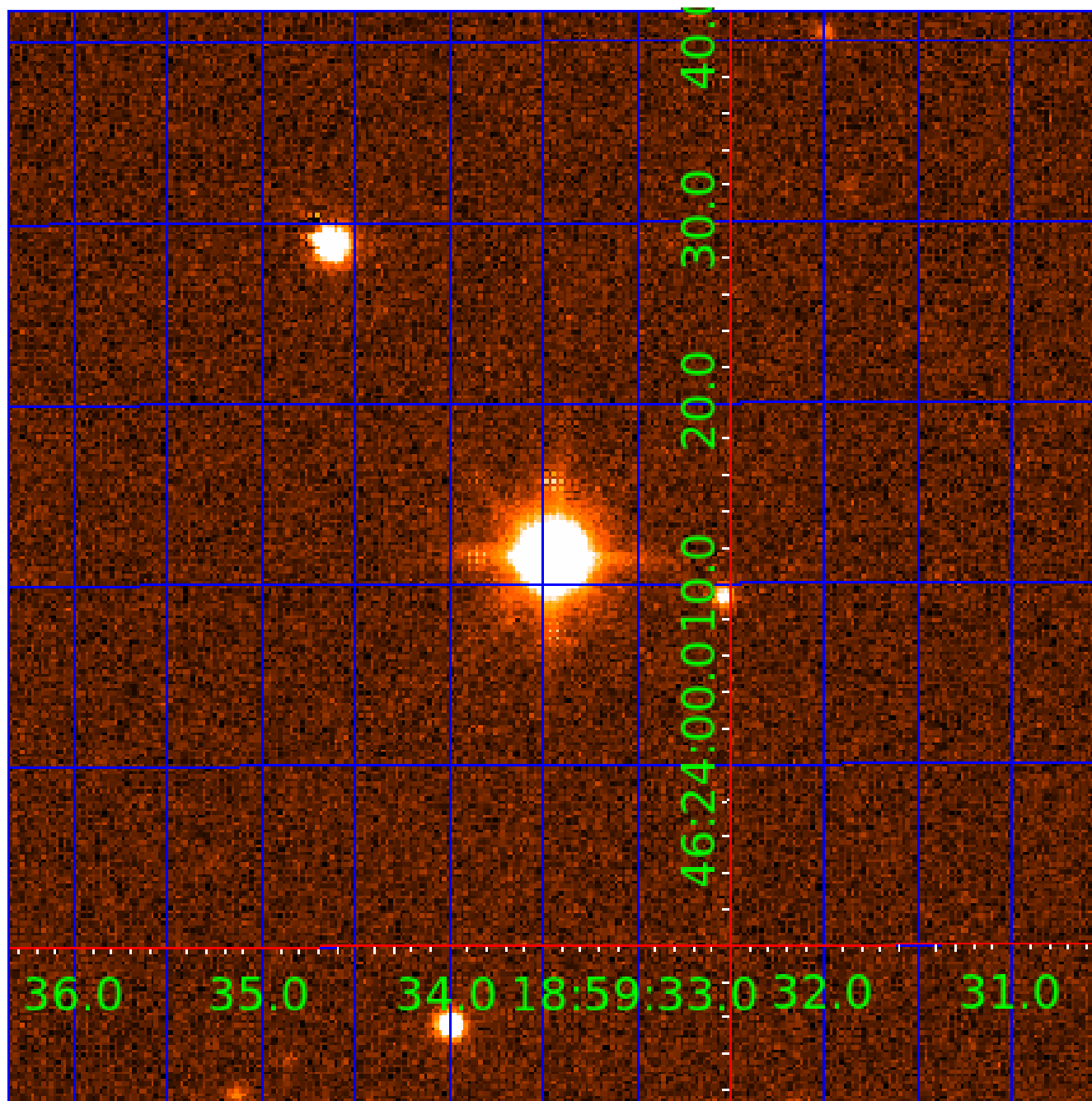


fluxWeightedCentroids, Planet 2 of 9



UKIRT Image

Declination



KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

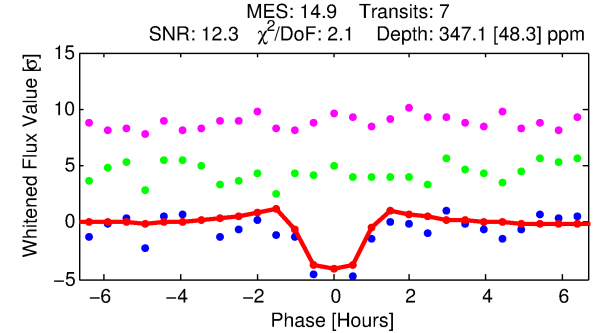
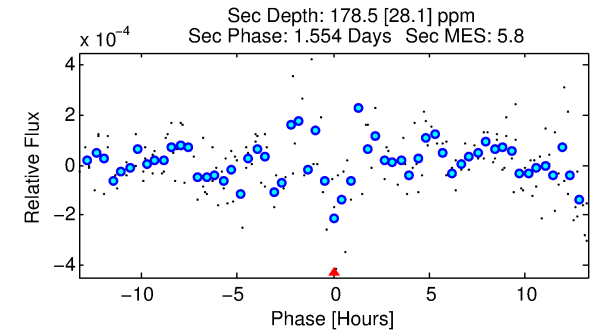
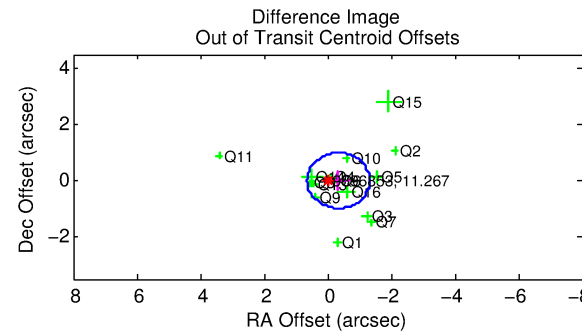
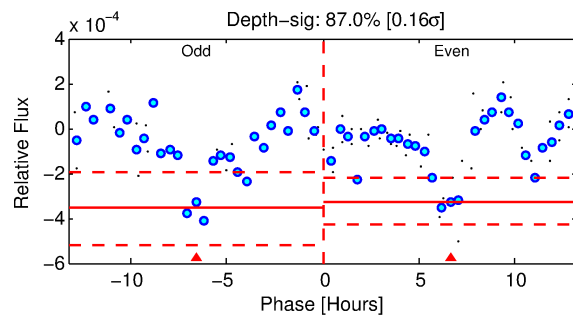
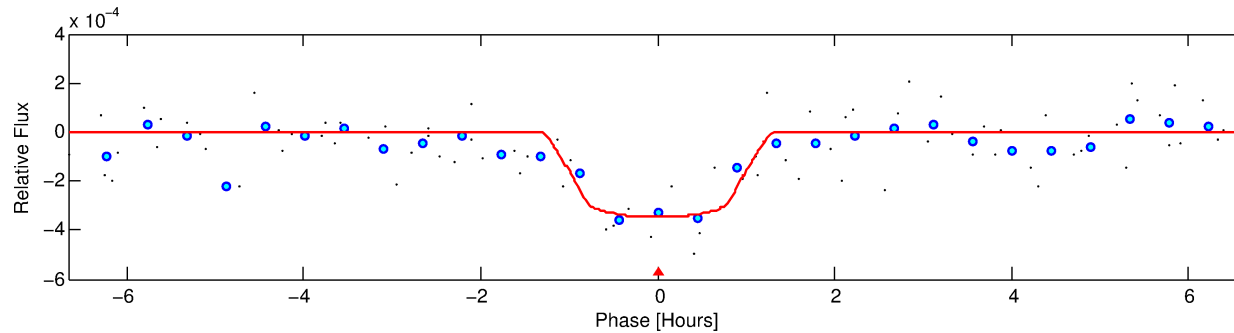
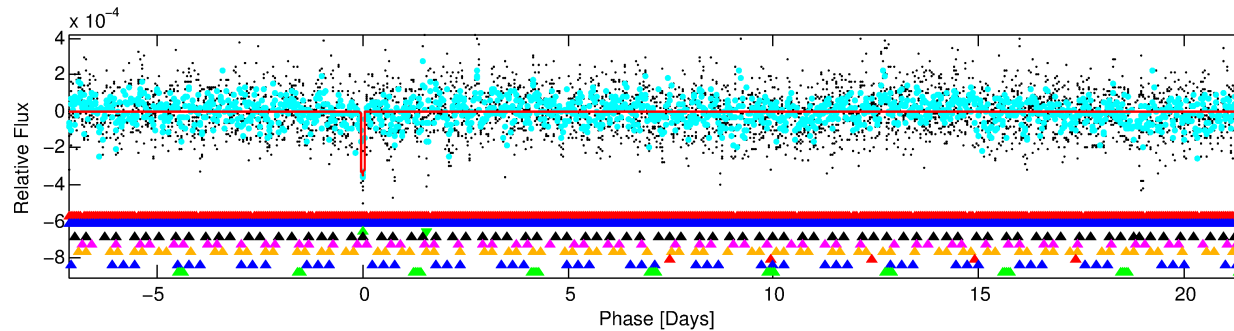
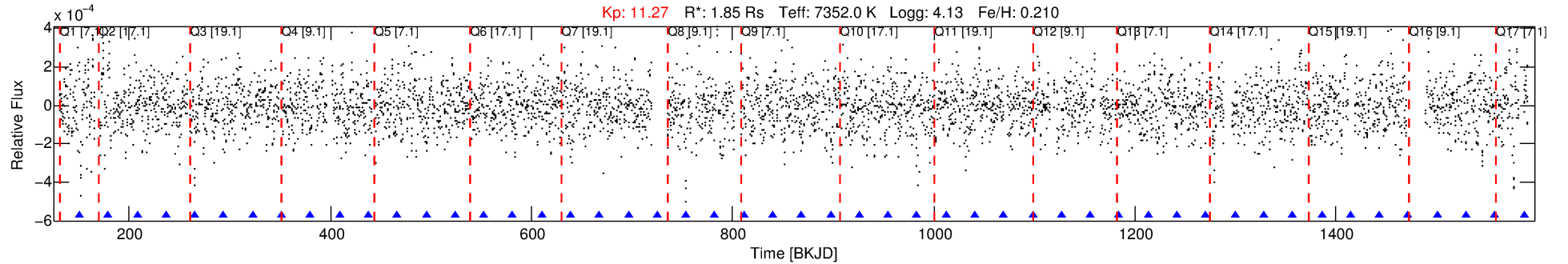
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-03

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 3 of 9 Period: 28.721 d



DV Fit Results:

Period = 28.72121 [0.00028] d
Epoch = 150.5913 [0.0061] BKJD
Rp/R* = 0.0193 [0.0264]
a/R* = 55.10 [477.65]
b = 0.85 [2.80]
Seff = 187.44 [77.17]
Teq = 944 [97] K
Rp = 3.88 [5.46] Re
a = 0.2185 [0.0556] AU
Ag = 310.56 [860.52] [0.36 σ]
Teffp = 6124 [4216] K [1.23 σ]

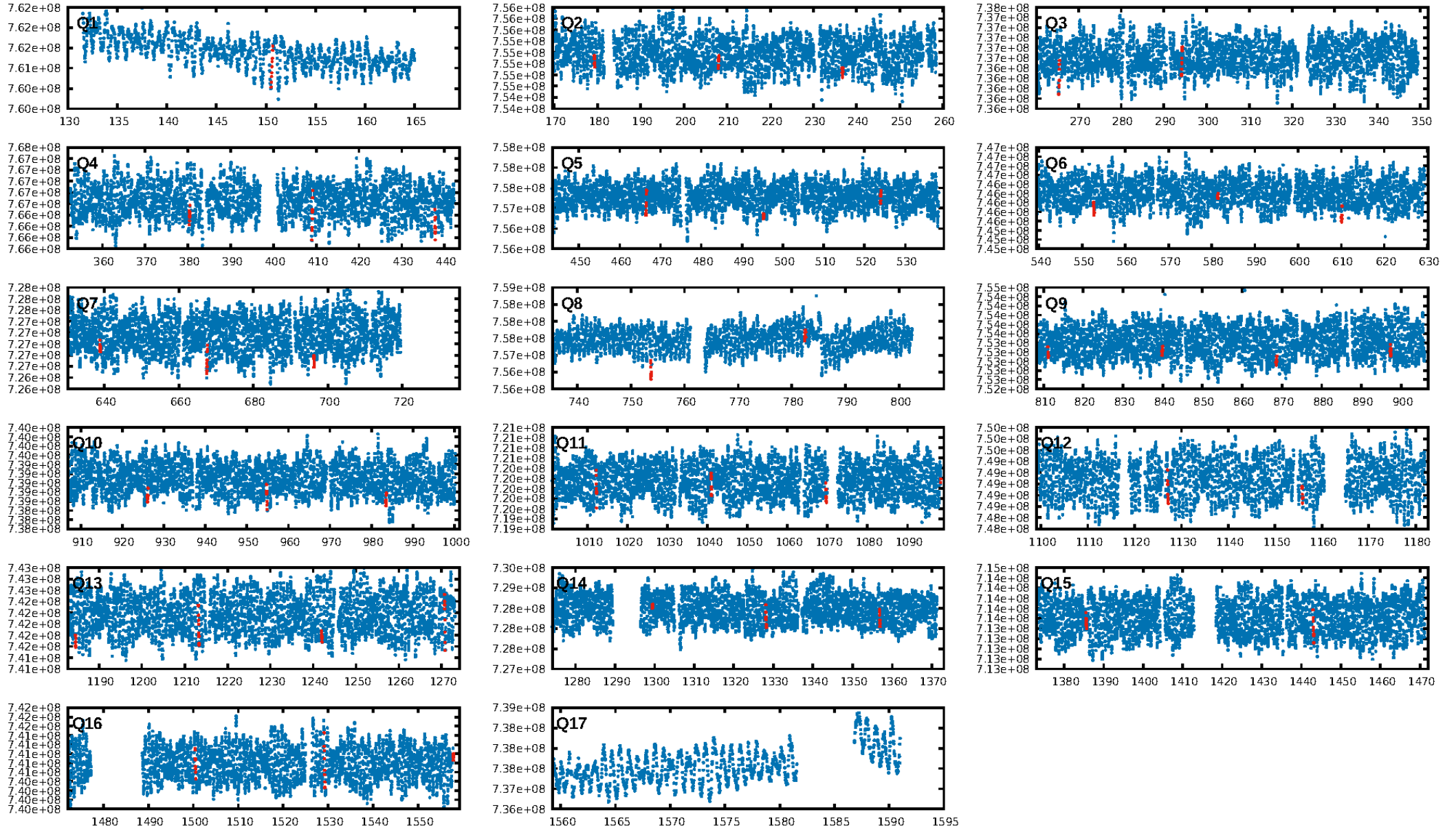
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.00 σ]
LongPeriod-sig: 100.0% [132.21 σ]
ModelChiSquare2-sig: 52.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [7/7]
GhostDiagnostic-chr: -2.499
Centroid-sig: 0.1%
Centroid-so: 0.323 arcsec [2.47 σ]
OotOffset-rm: 0.339 arcsec [1.03 σ]
KicOffset-rm: 0.327 arcsec [0.93 σ]
OotOffset-st: 4/4/3/4 [15]
KicOffset-st: 4/4/3/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 0.00 [0/15]

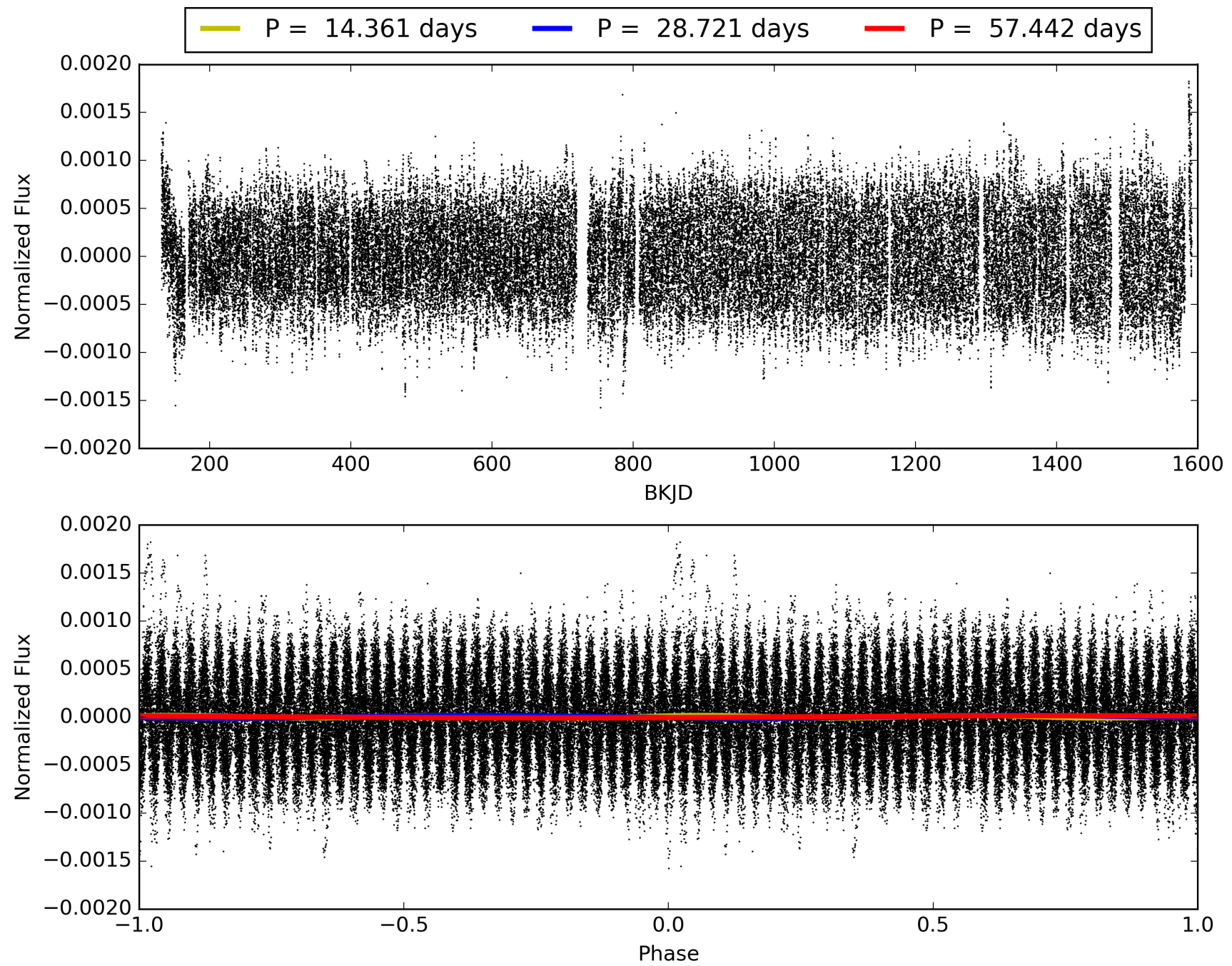
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:45 Z

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

TCE 009696853-03, PDC Light Curves

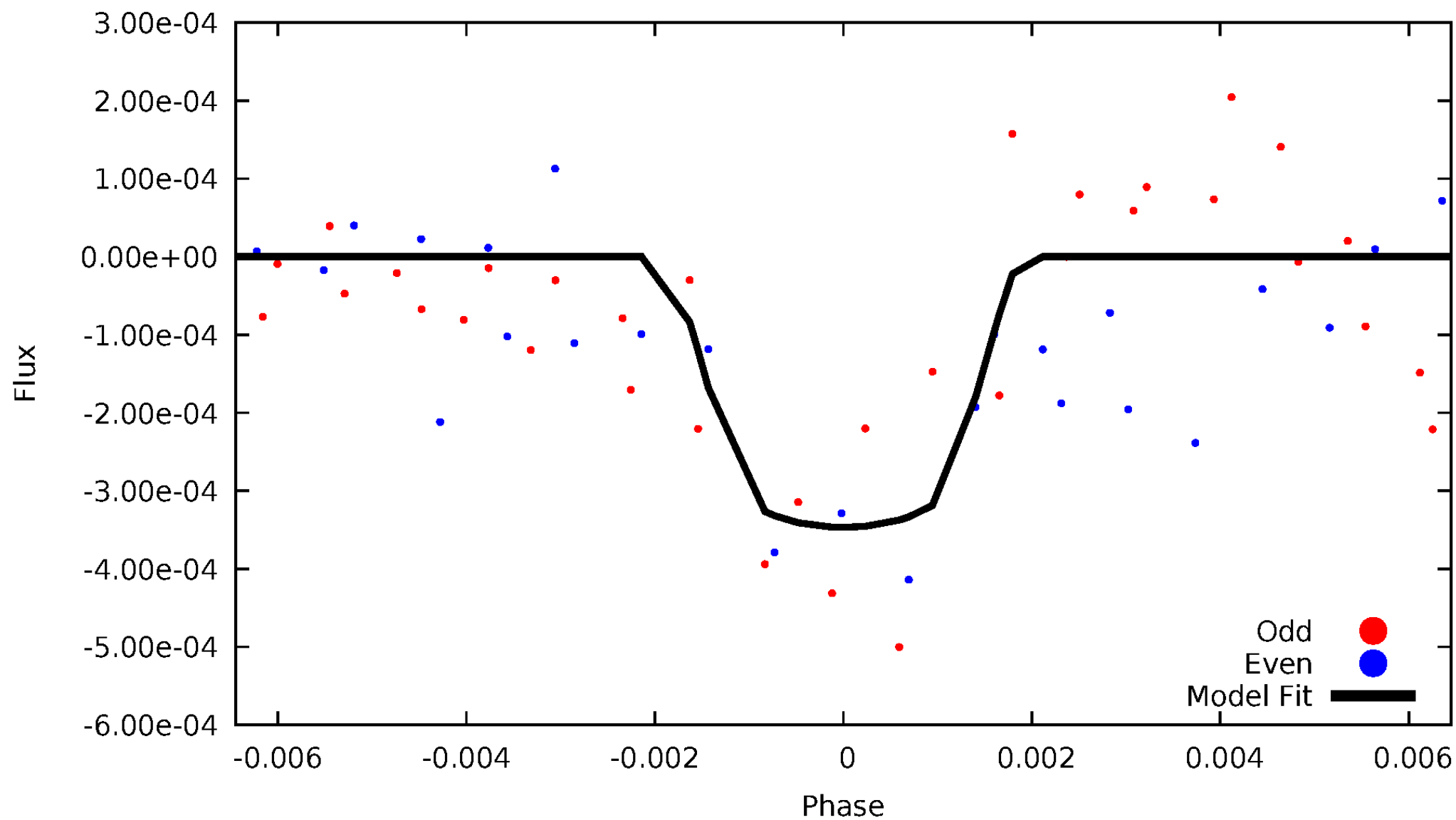


TCE 009696853-03



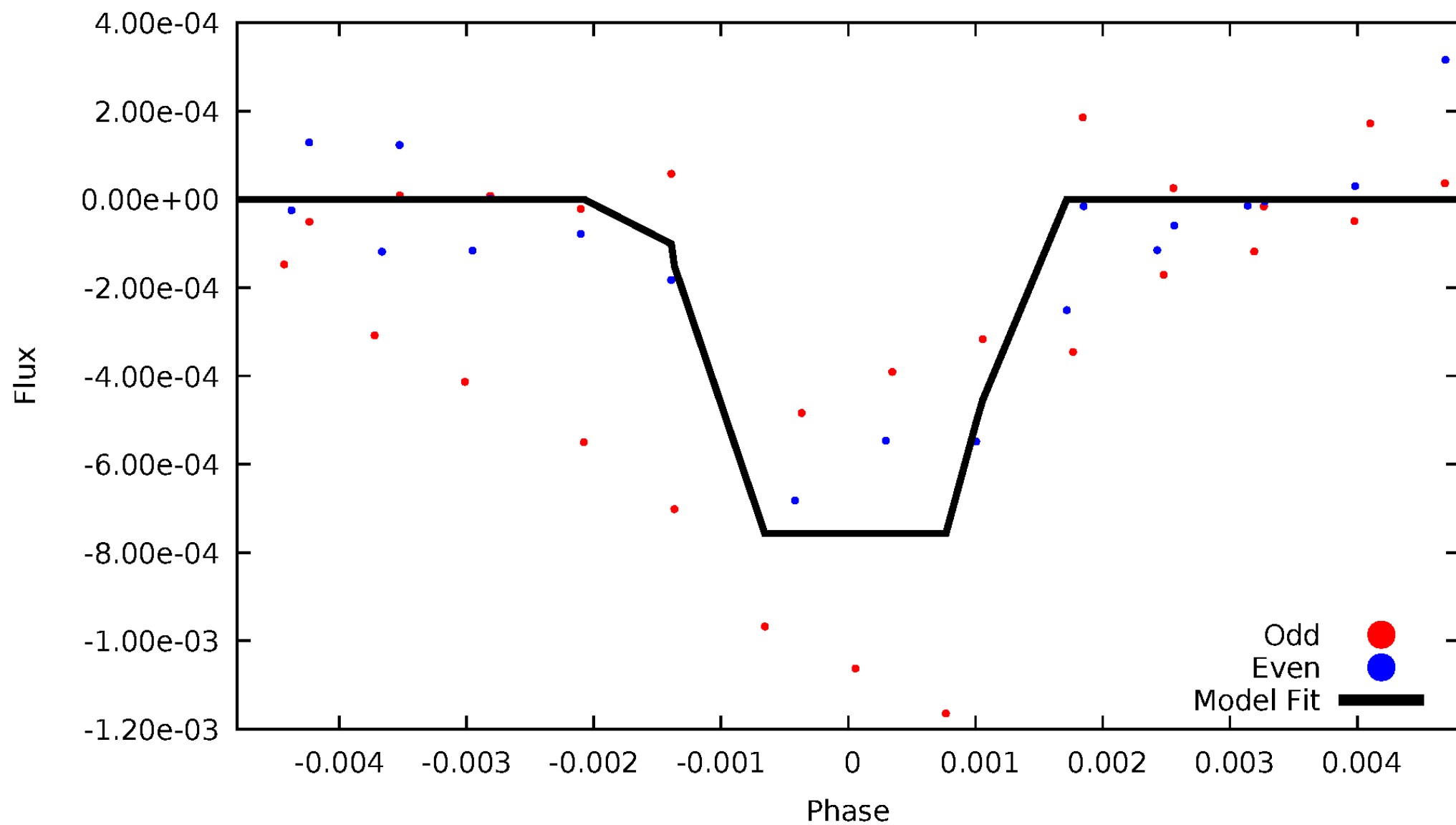
DV Odd/Even

TCE 009696853-03



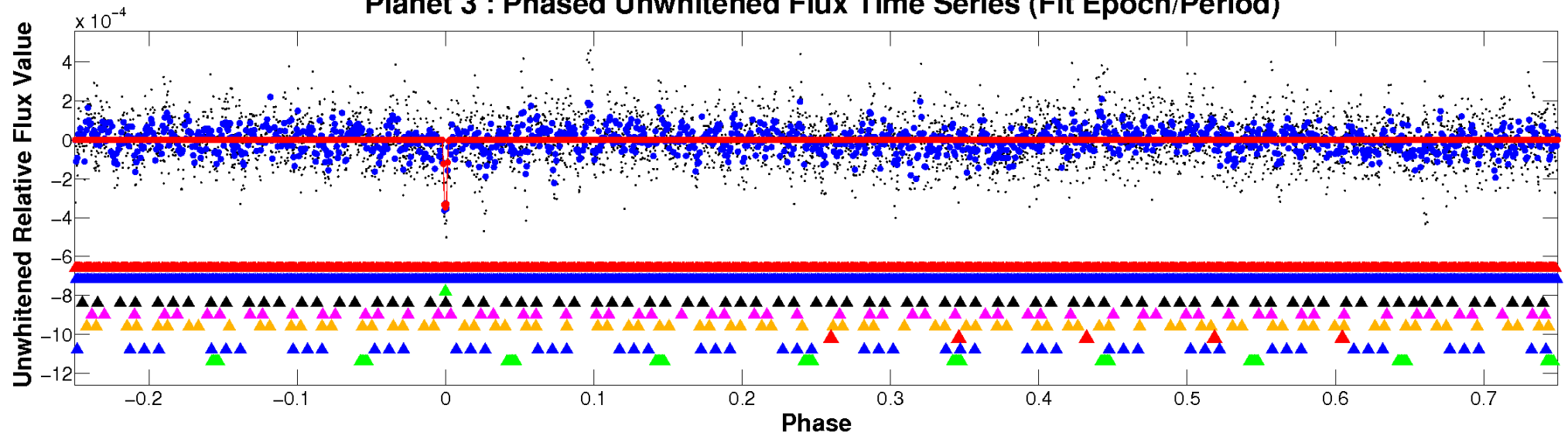
ALT Odd/Even

TCE 009696853-03

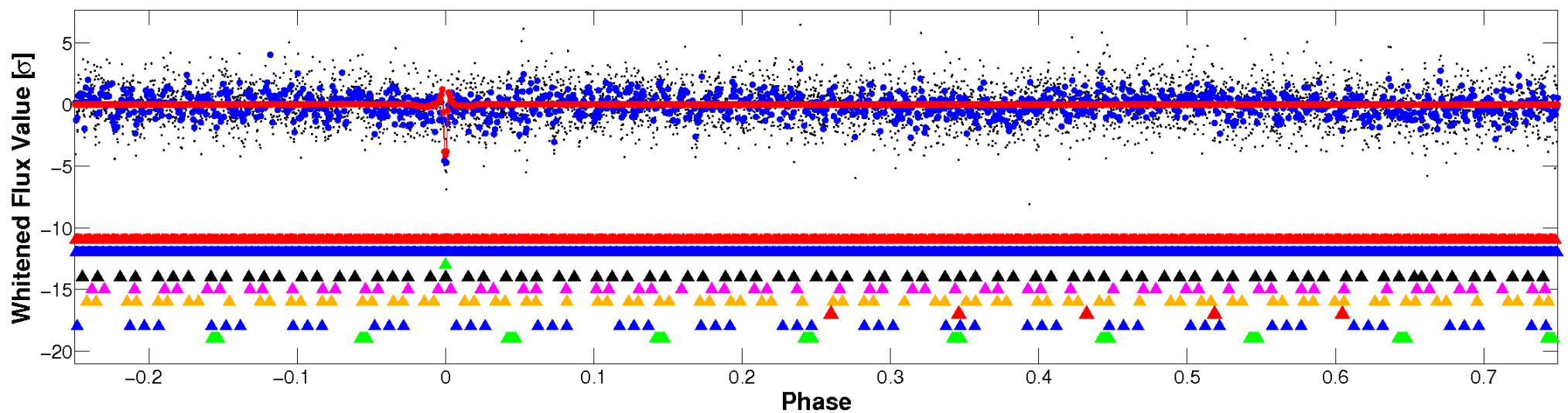


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

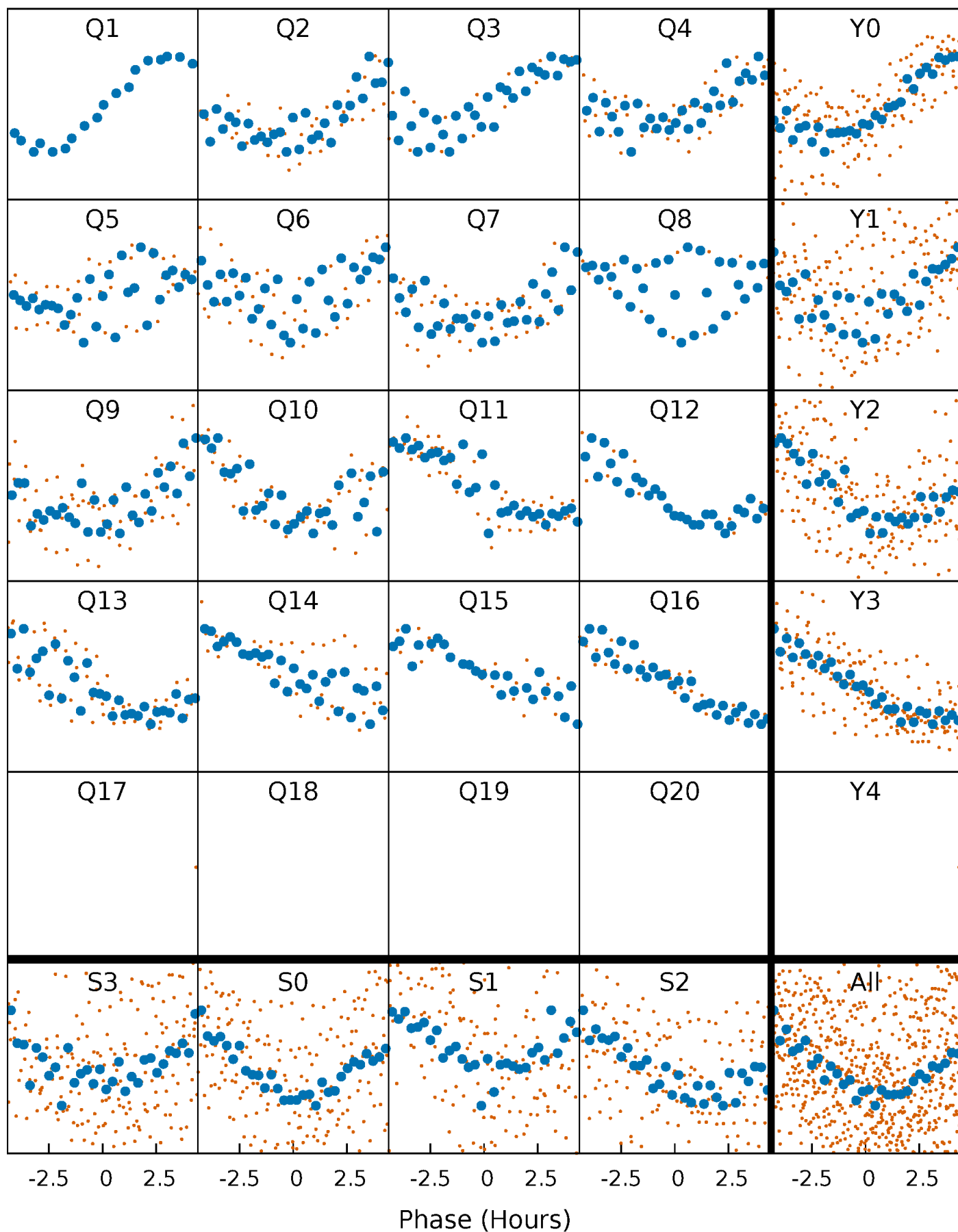


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



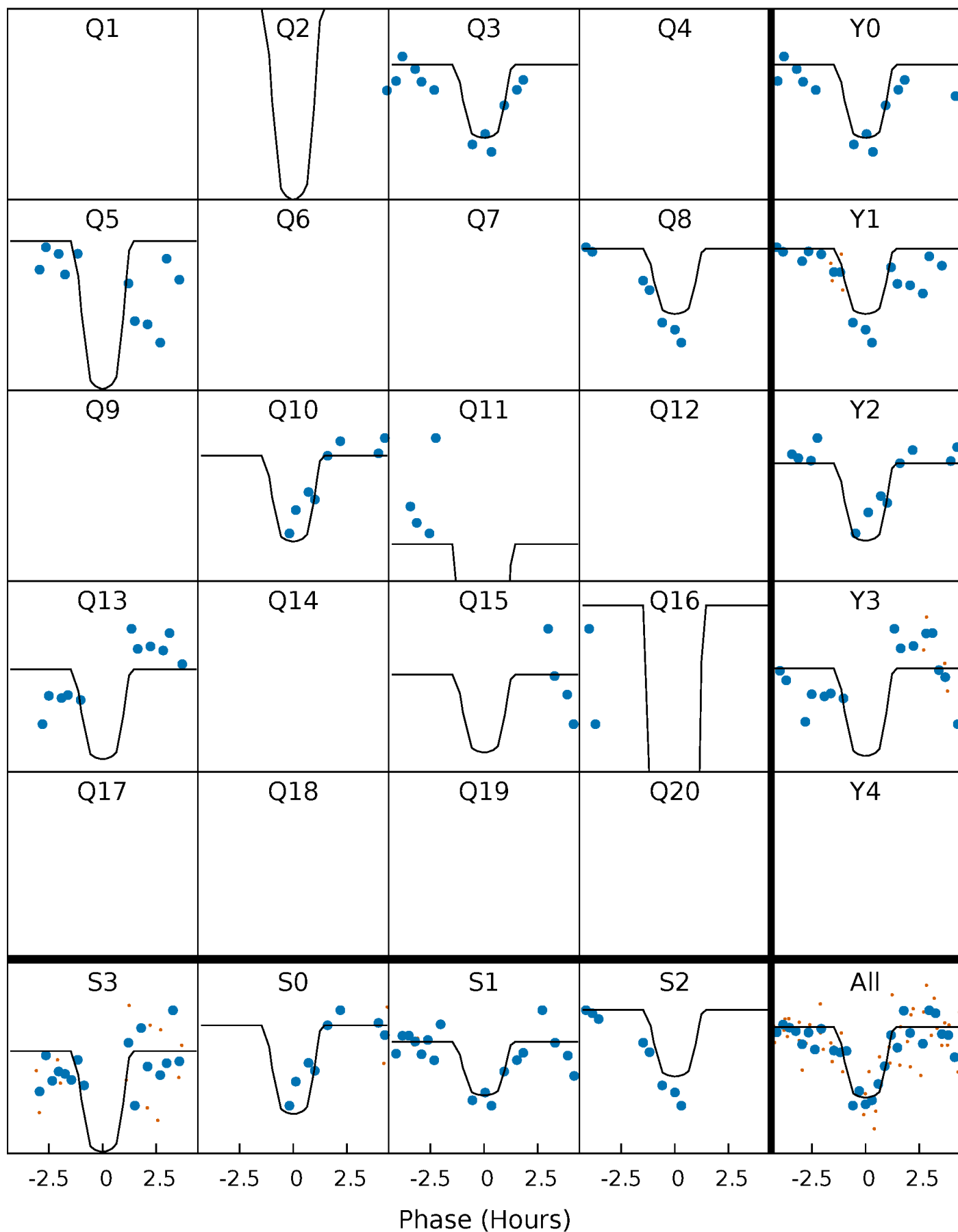
PDC Quarter-Phased Transit Curves

TCE 009696853-03 P= 28.721206 Days $T_0=150.591253$ (BKJD)



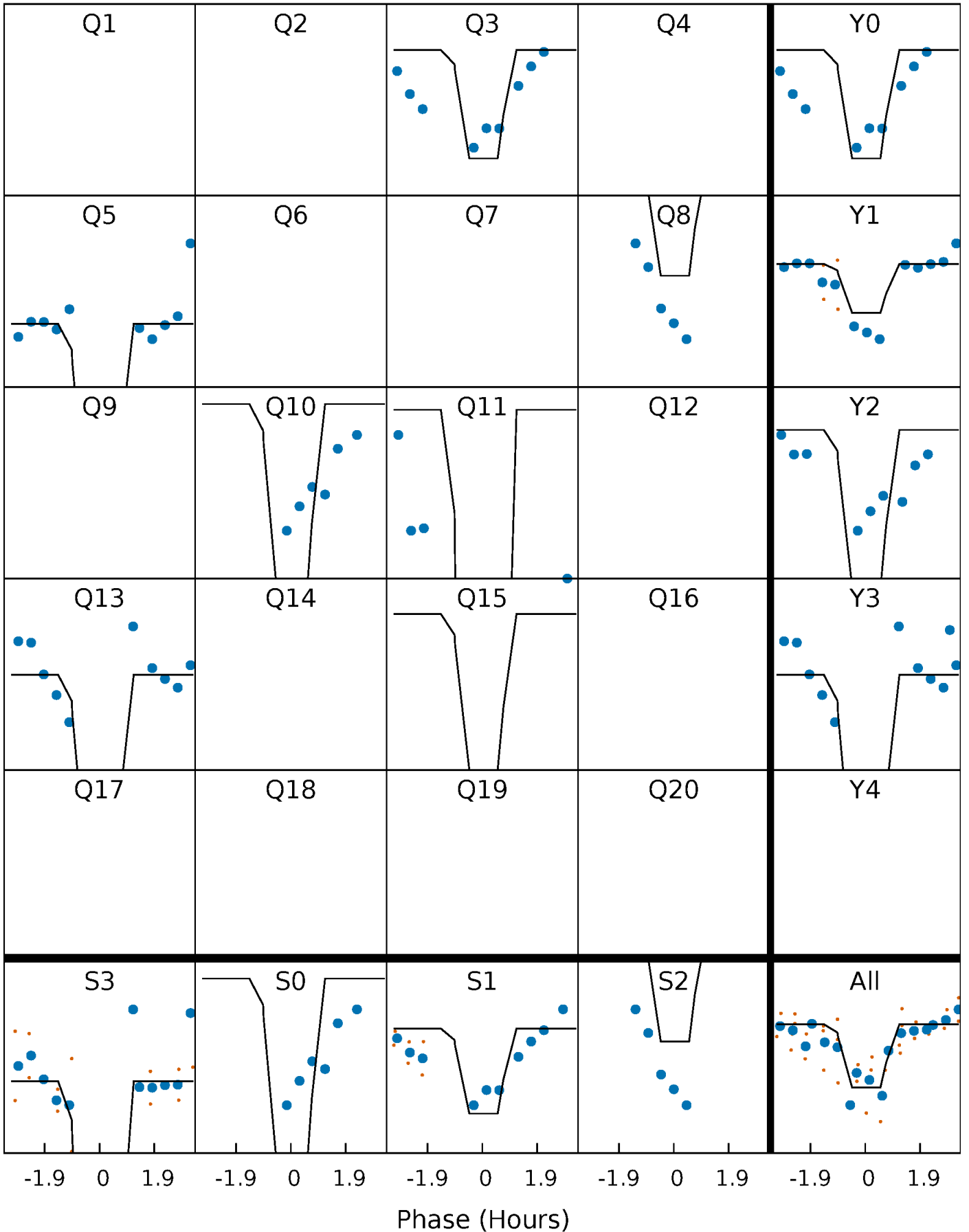
DV Quarter-Phased Transit Curves

TCE 009696853-03 P= 28.721206 Days $T_0=150.591253$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

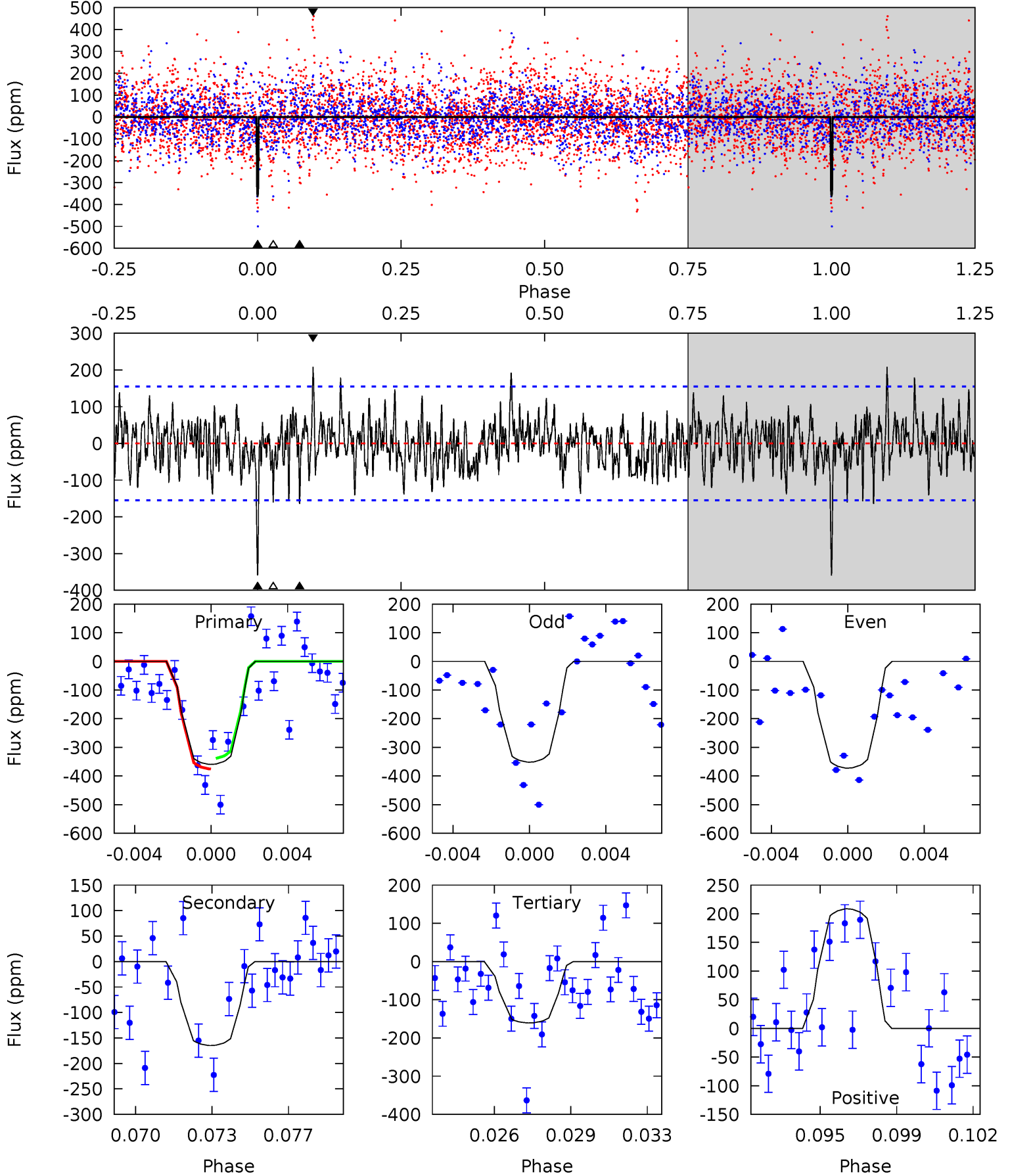
TCE 009696853-03 P= 28.721436 Days $T_0=150.581387$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-03, P = 28.721206 Days, E = 121.870047 Days

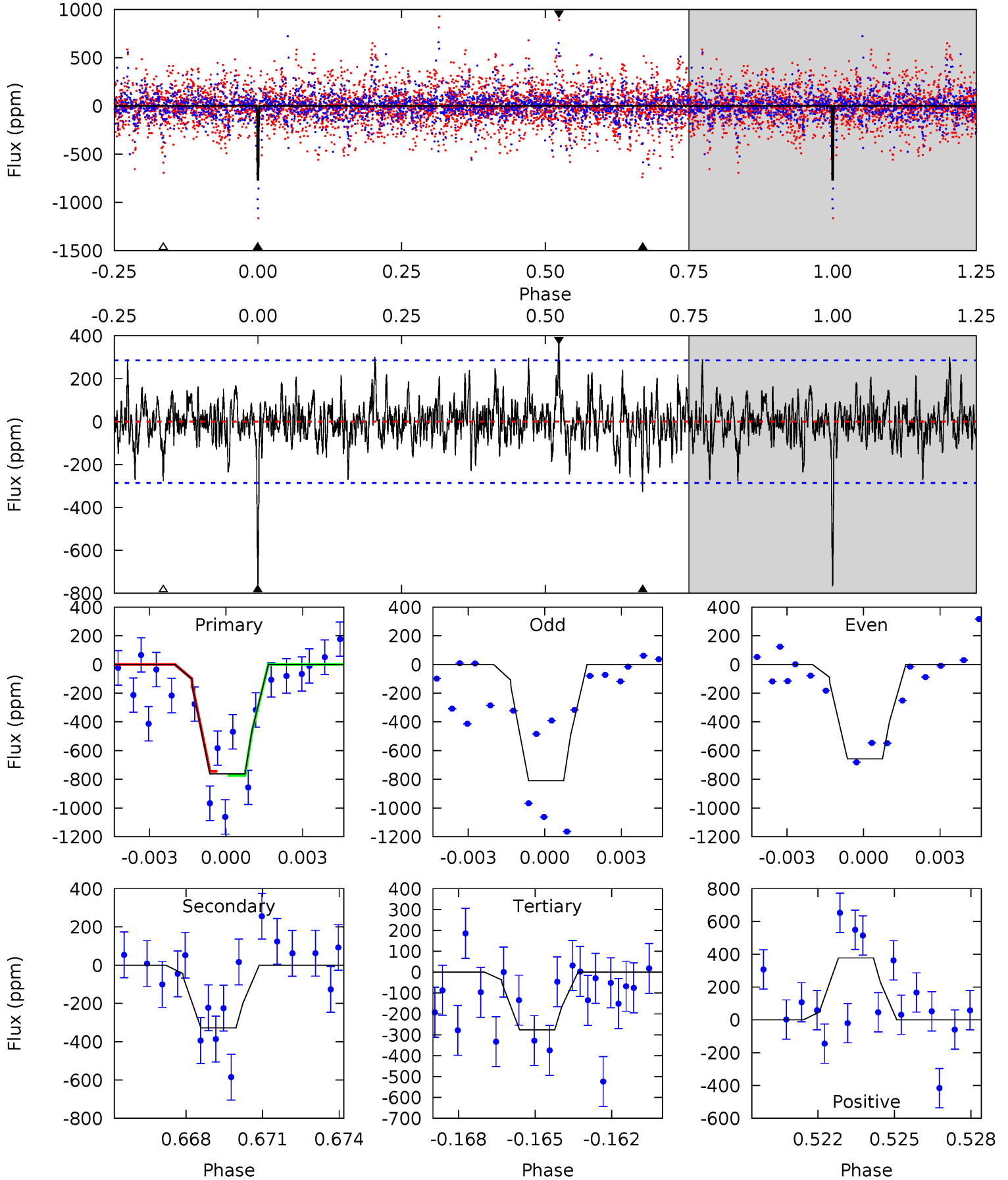
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	5.55	5.40	7.02	5.22	2.91	1.77	6.70	5.08	0.14	-1.47	0.35	0.95	0.37	0.62



Alt Model-Shift Uniqueness Test

009696853-03, P = 28.721436 Days, E = 121.859951 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	6.02	5.08	6.93	5.25	2.96	1.49	8.94	7.09	0.94	-0.91	1.20	1.12	0.33	0.27



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-165 ± 30	$6.00^{+5.46}_{-4.02}$	1337^{+100}_{-84}	4930^{+3835}_{-1019}	116^{+995}_{-82}
Alt.	-328 ± 54	$6.60^{+5.19}_{-4.00}$	1337^{+101}_{-88}	5462^{+3736}_{-1162}	189^{+1107}_{-130}

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 $A_{obs} \gg 1.0$

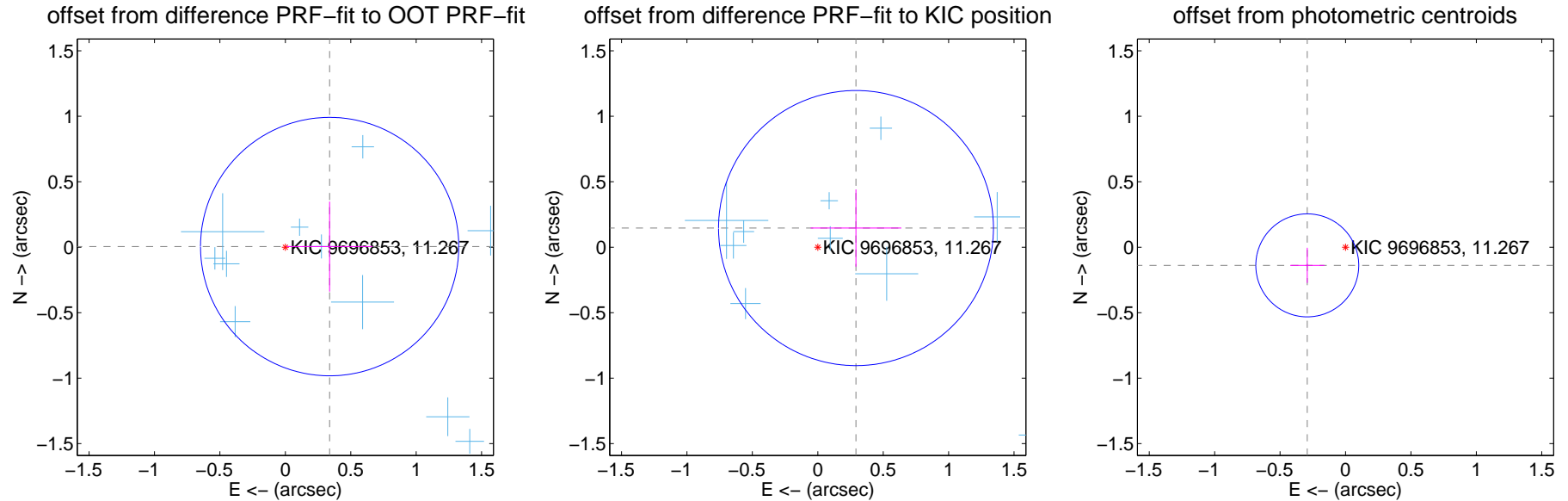
DV Centroid Data

Supplemental centroid analysis for 009696853-03. **Kepler magnitude: 11.27.** Transit SNR 12.34

There are 15 quarters with good PRF difference image offsets

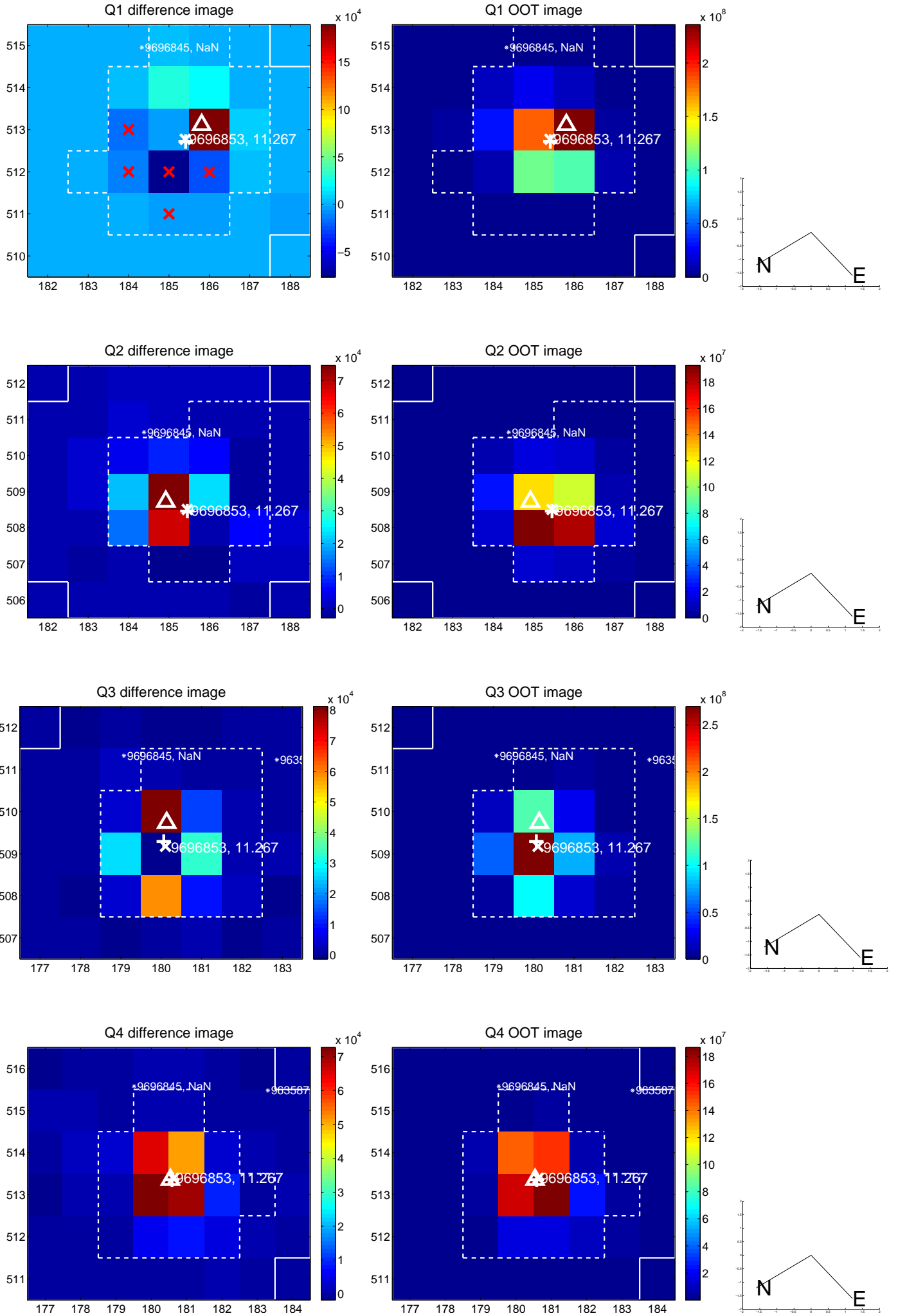
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.339 ± 0.329	1.03	-0.339 ± 0.328	0.005 ± 0.344
PRF-fit source offset from KIC position	0.327 ± 0.350	0.93	-0.292 ± 0.346	0.146 ± 0.295
photometric centroid source offset	0.32 ± 0.13	2.47	0.29 ± 0.13	-0.14 ± 0.13

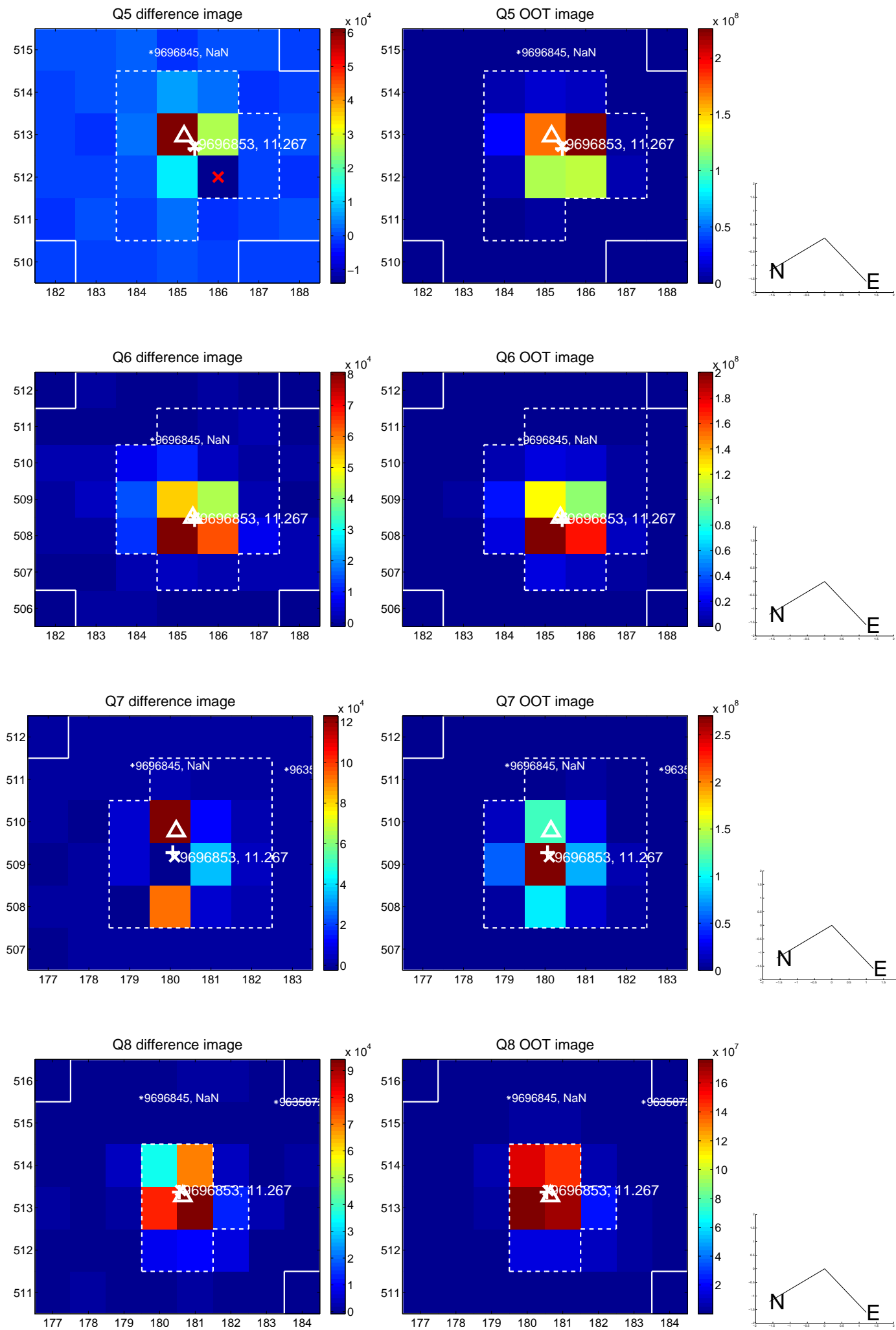


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

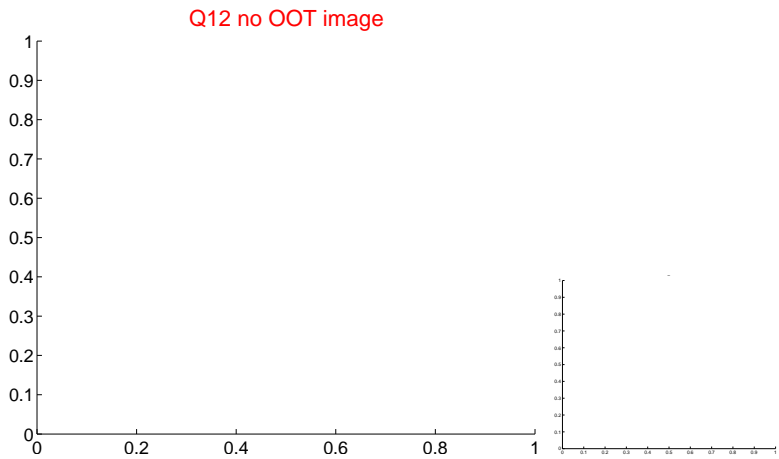
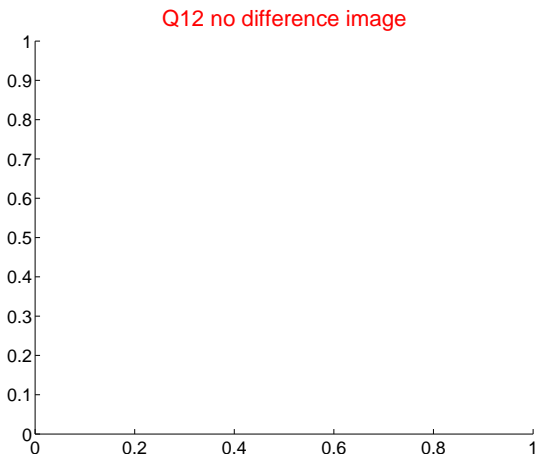
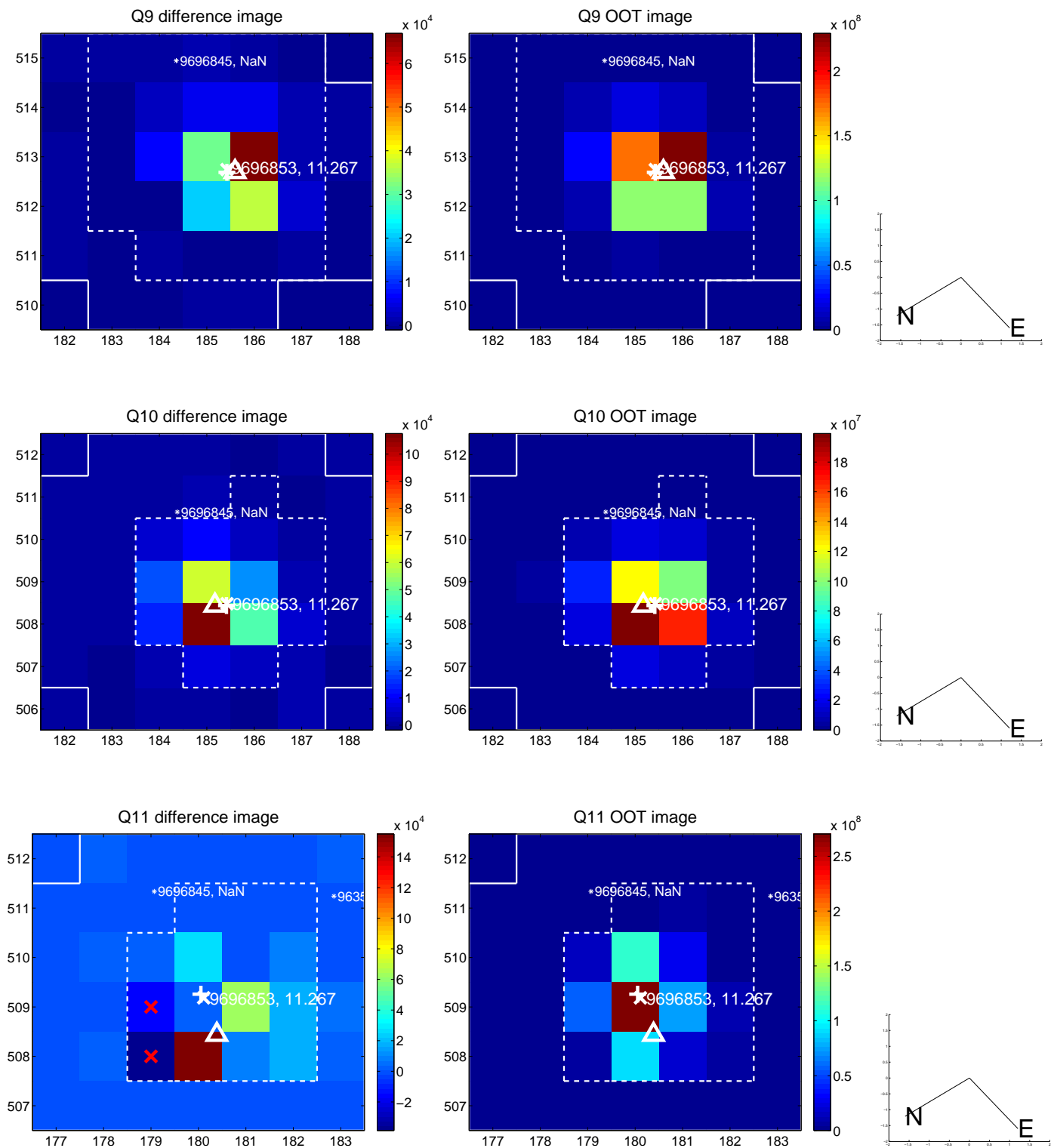
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



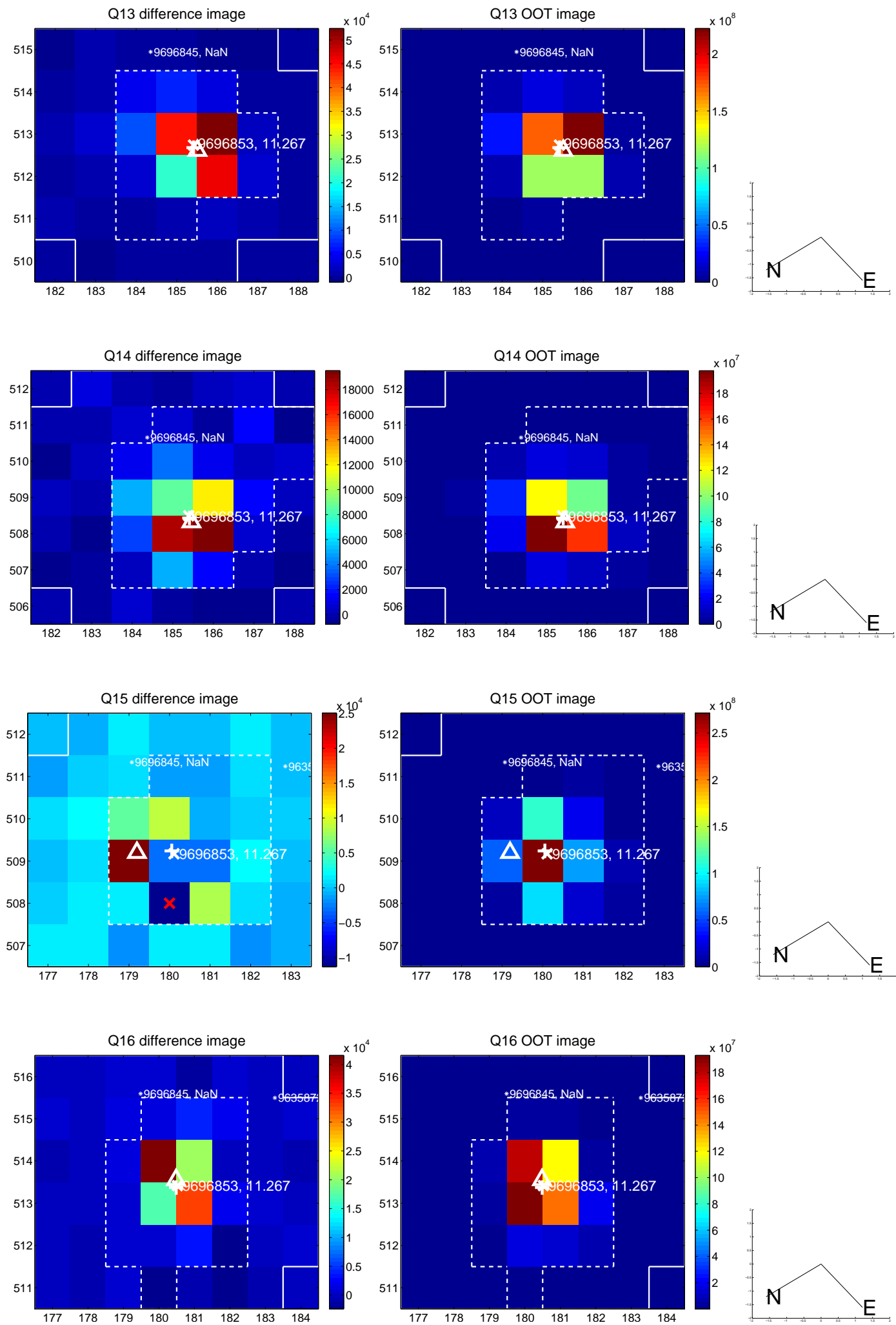
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



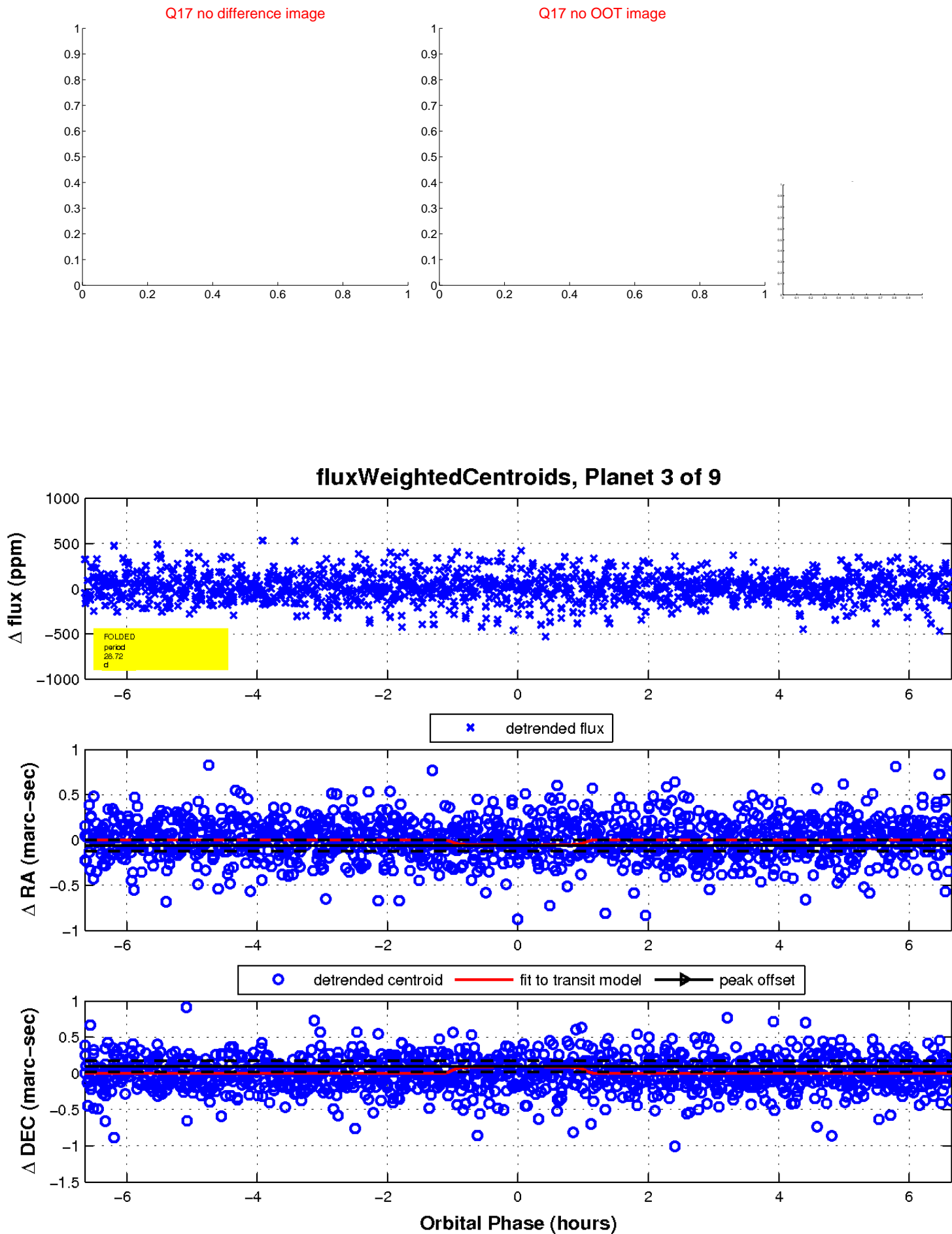
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

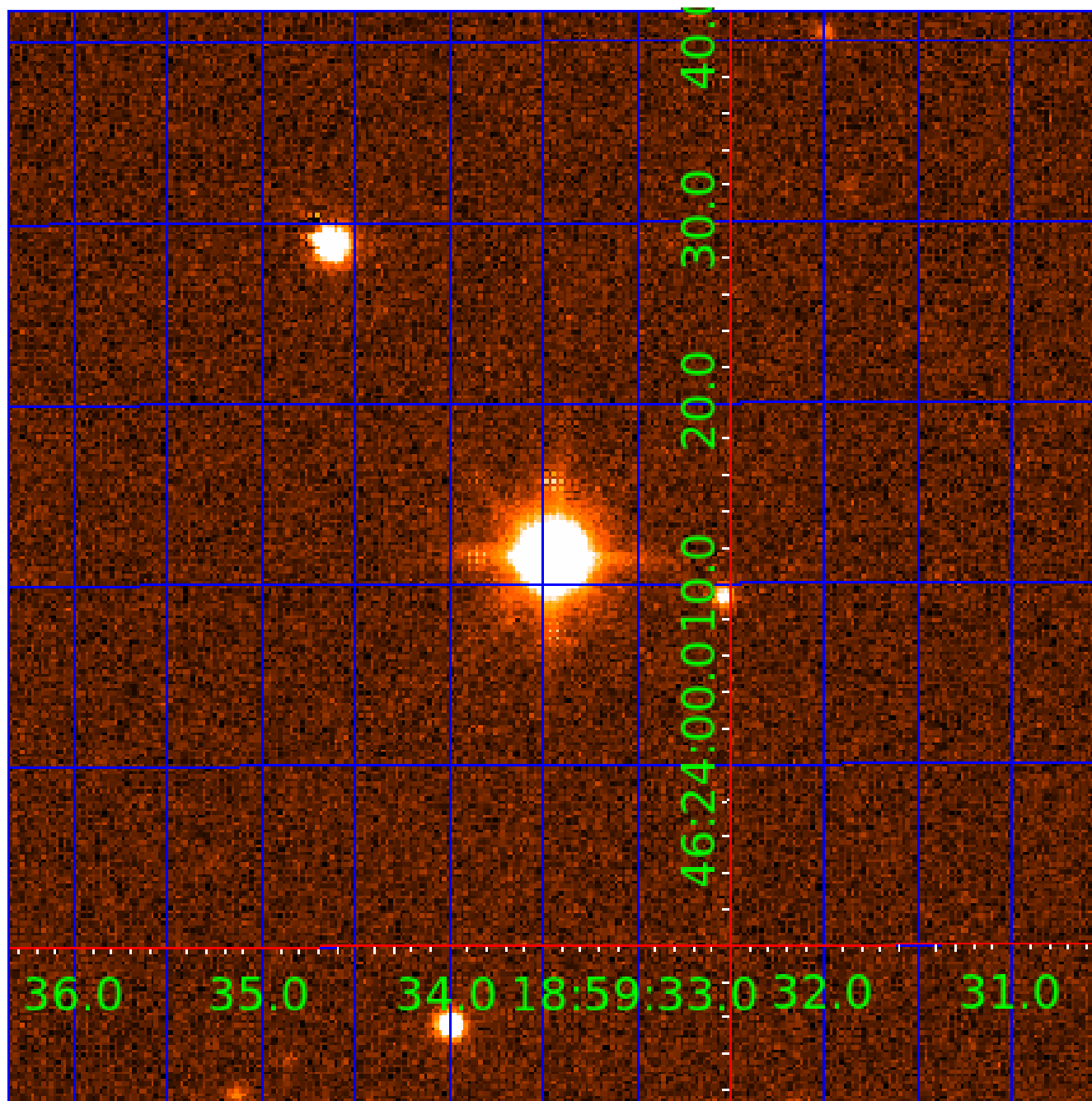


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

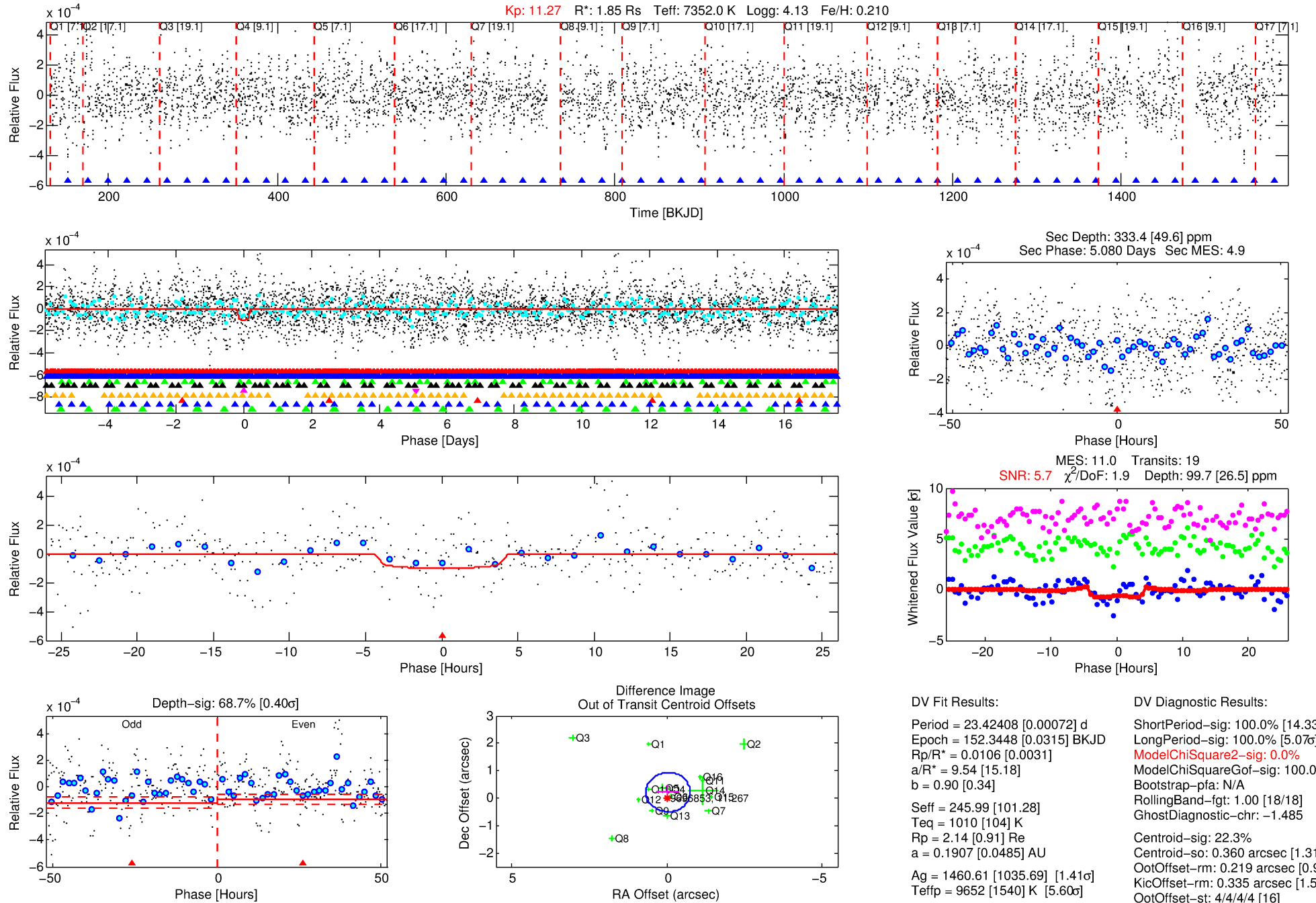
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-05

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 5 of 9 Period: 23.424 d



DV Fit Results:

Period = 23.42408 [0.00072] d
Epoch = 152.3448 [0.0315] BKJD
Rp/R* = 0.0106 [0.0031]
a/R* = 9.54 [15.18]
b = 0.90 [0.34]
Seff = 245.99 [101.28]
Teq = 1010 [104] K
Rp = 2.14 [0.91] Re
a = 0.1907 [0.0485] AU
Ag = 1460.61 [1035.69] [1.41 σ]
Teffp = 9652 [1540] K [5.60 σ]

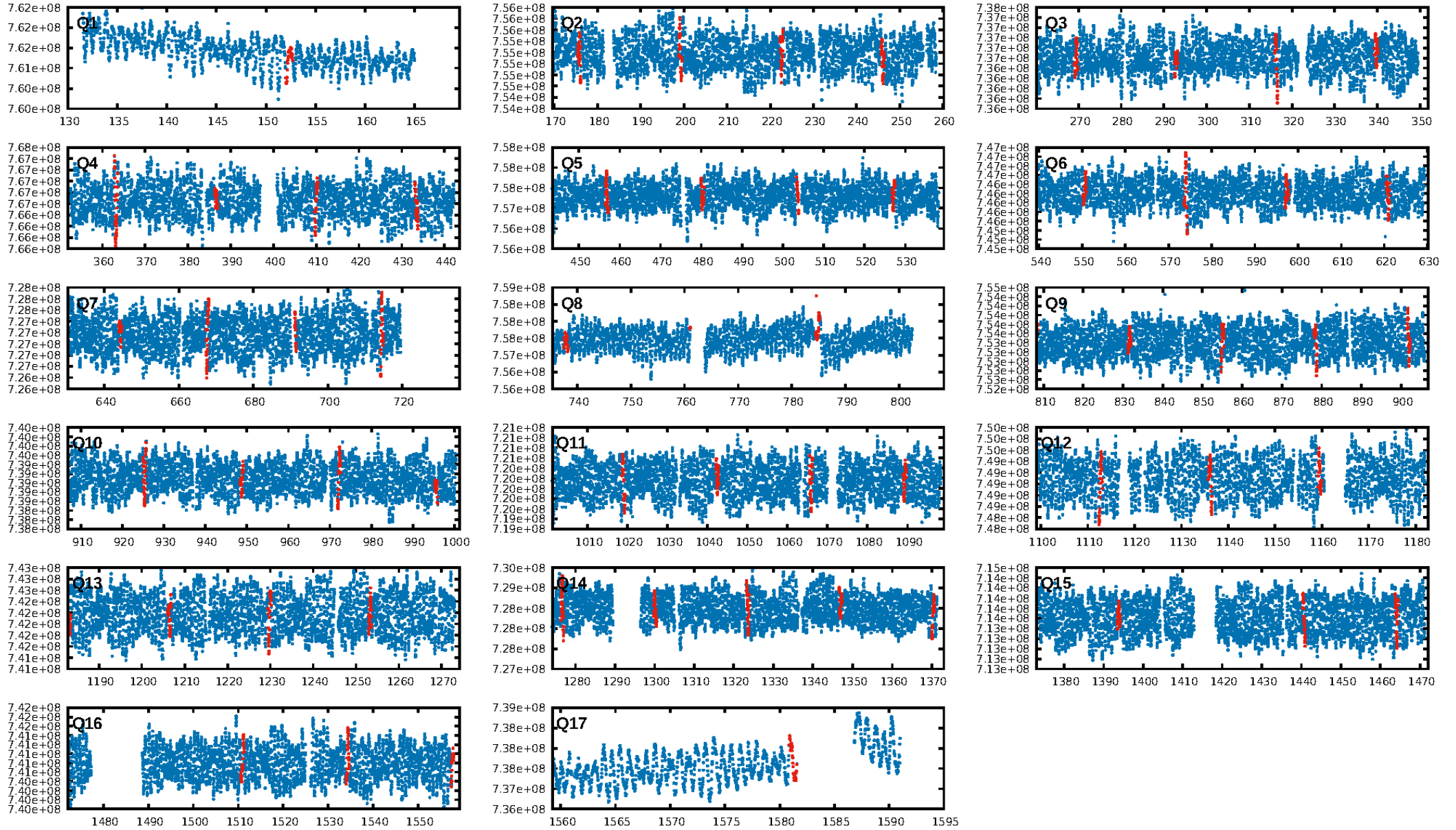
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [14.33 σ]
LongPeriod-sig: 100.0% [5.07 σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: -1.485
Centroid-sig: 22.3%
Centroid-so: 0.360 arcsec [1.31 σ]
OotOffset-rm: 0.219 arcsec [0.92 σ]
KicOffset-rm: 0.335 arcsec [1.51 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.25 [4/16]
DiffImageOverlap-fno: 0.00 [0/16]

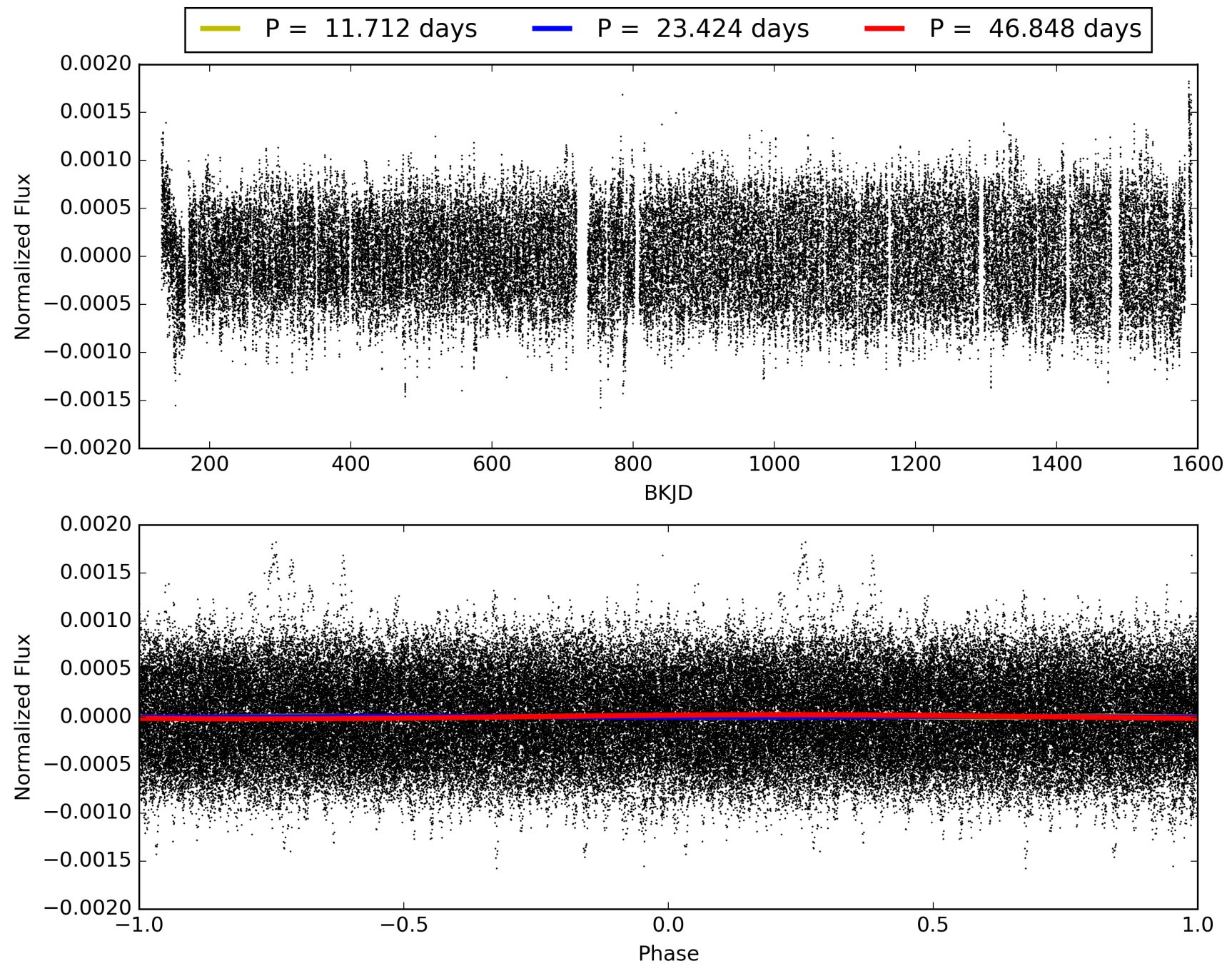
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:52 Z

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

TCE 009696853-05, PDC Light Curves

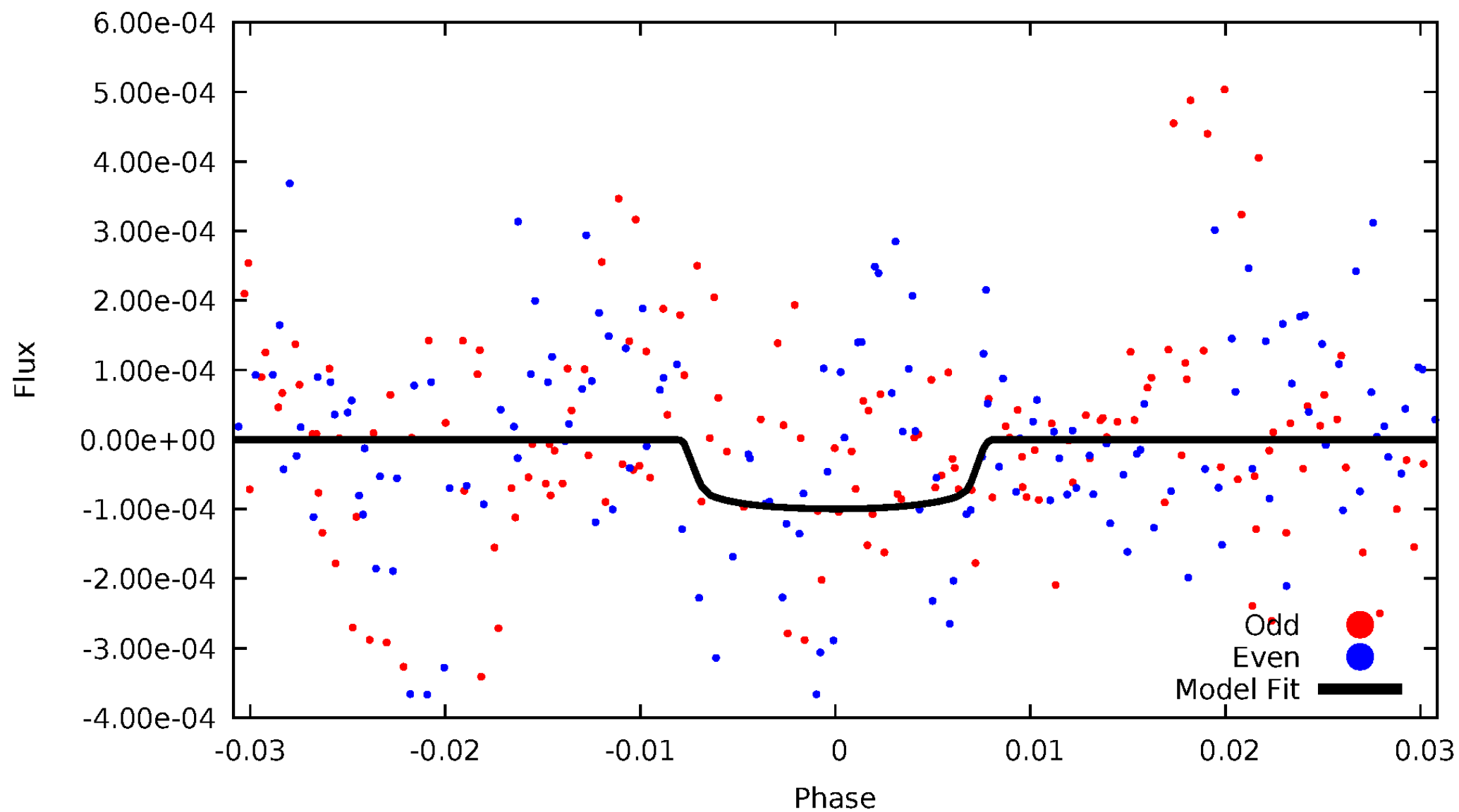


TCE 009696853-05



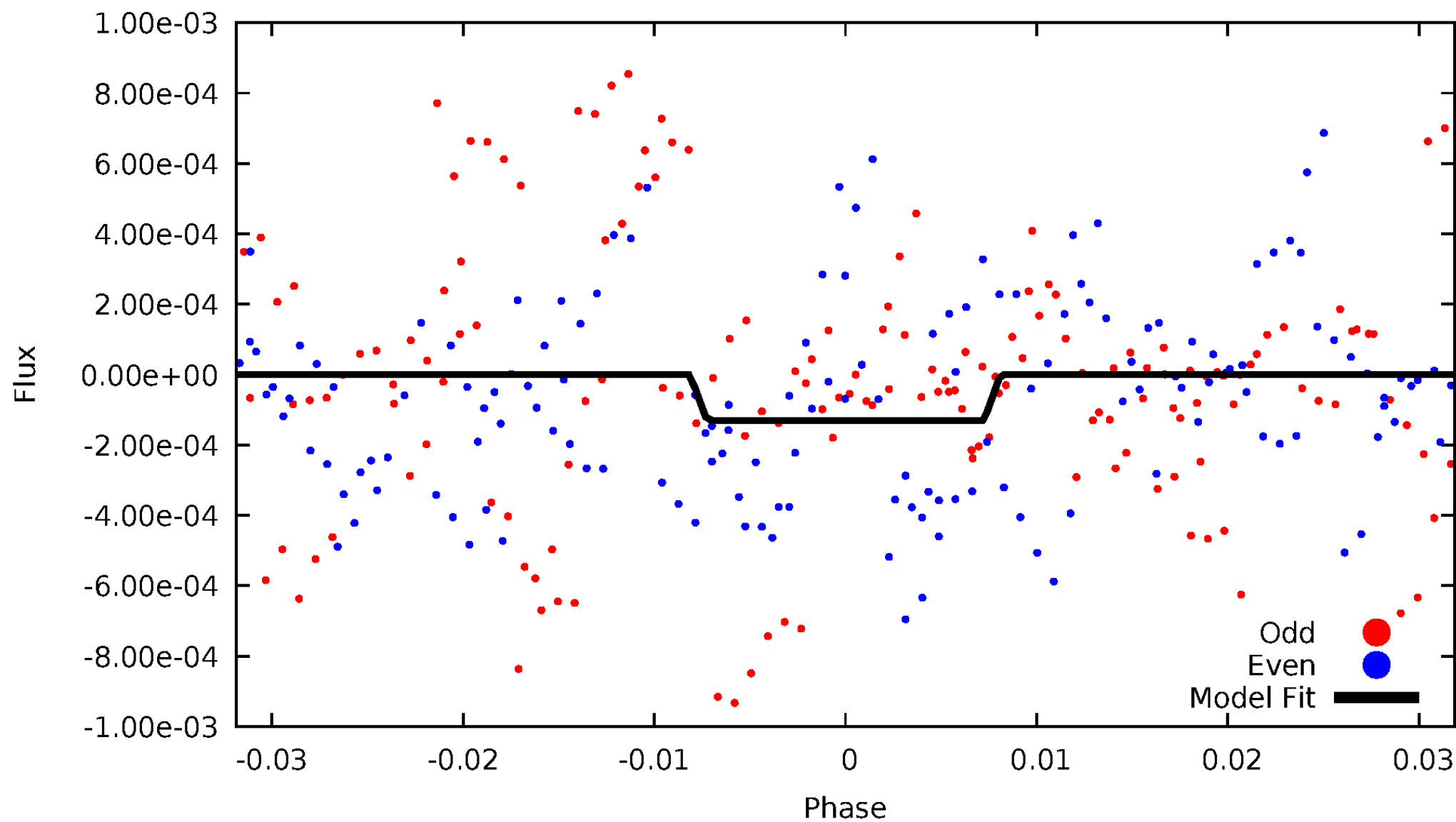
DV Odd/Even

TCE 009696853-05

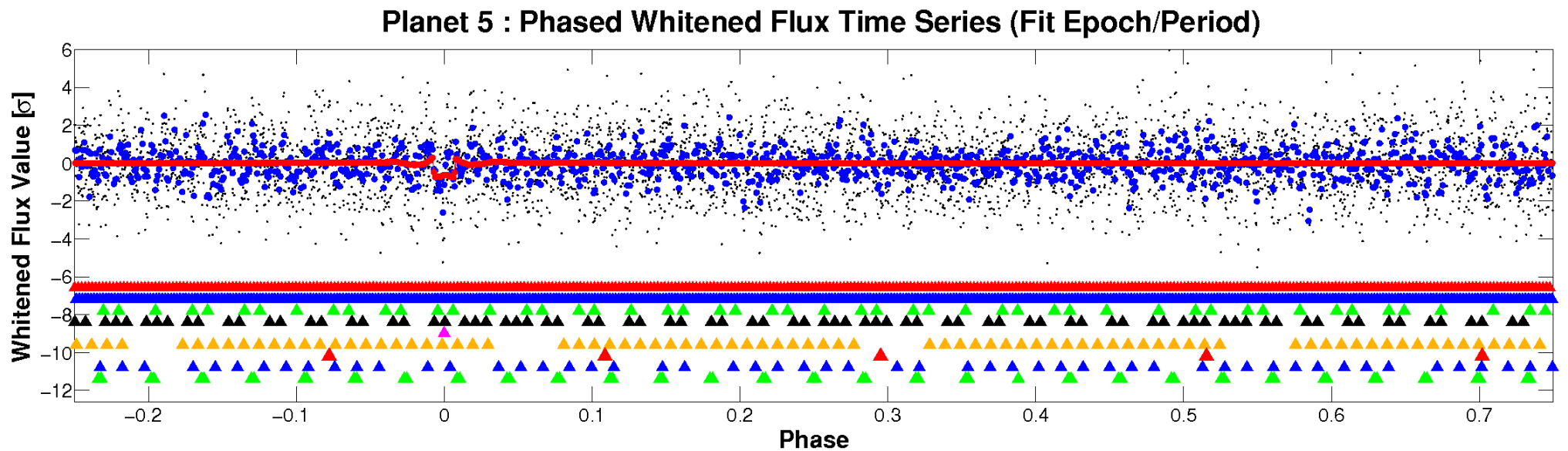
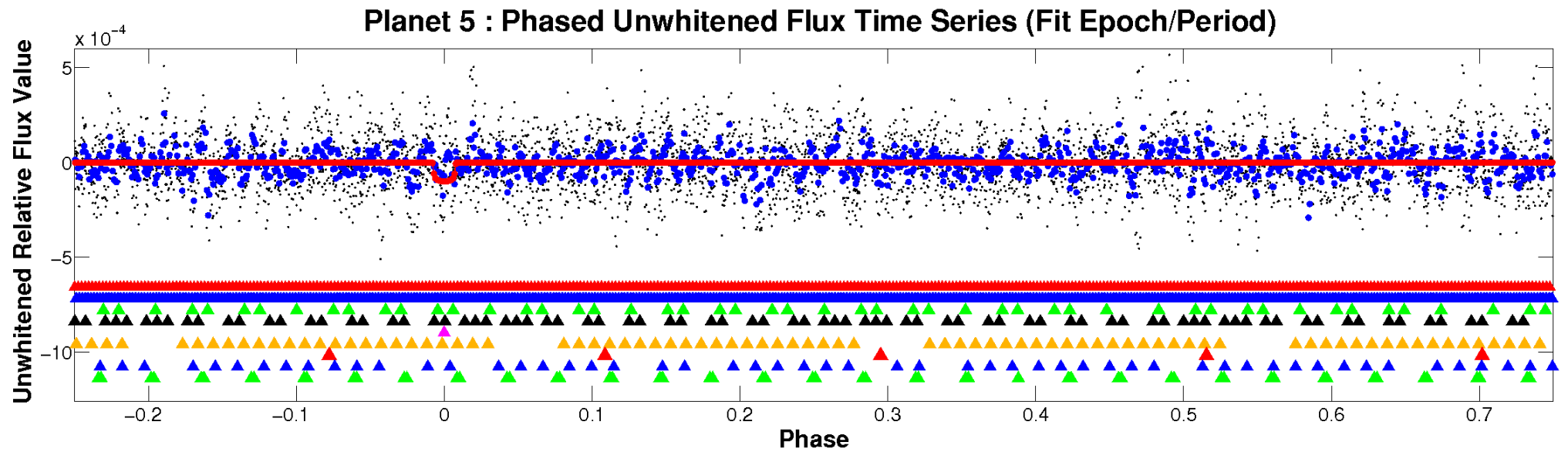


ALT Odd/Even

TCE 009696853-05

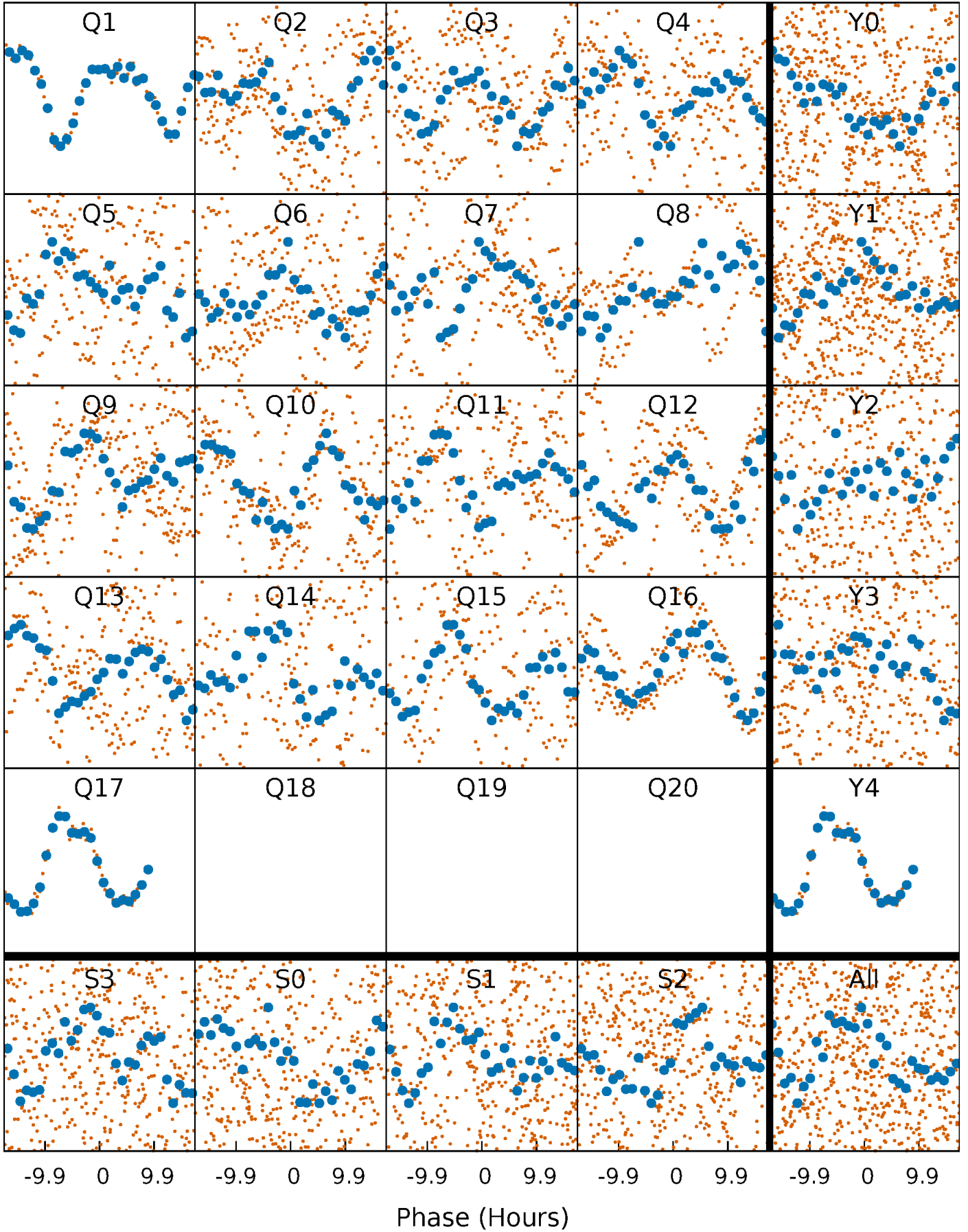


Non-Whitened Vs. Whitened Light Curve



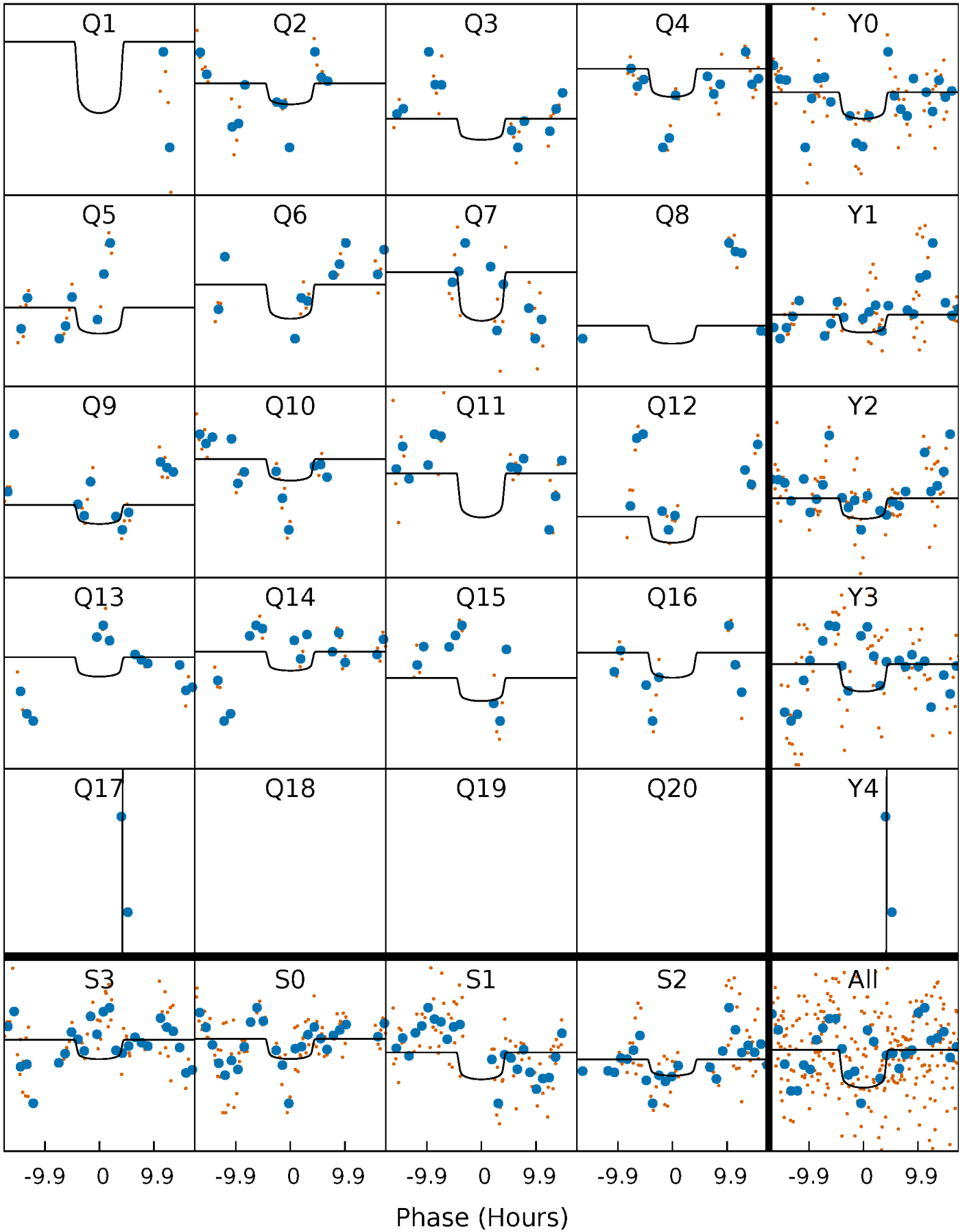
PDC Quarter-Phased Transit Curves

TCE 009696853-05 P= 23.424075 Days $T_0=152.344817$ (BKJD)



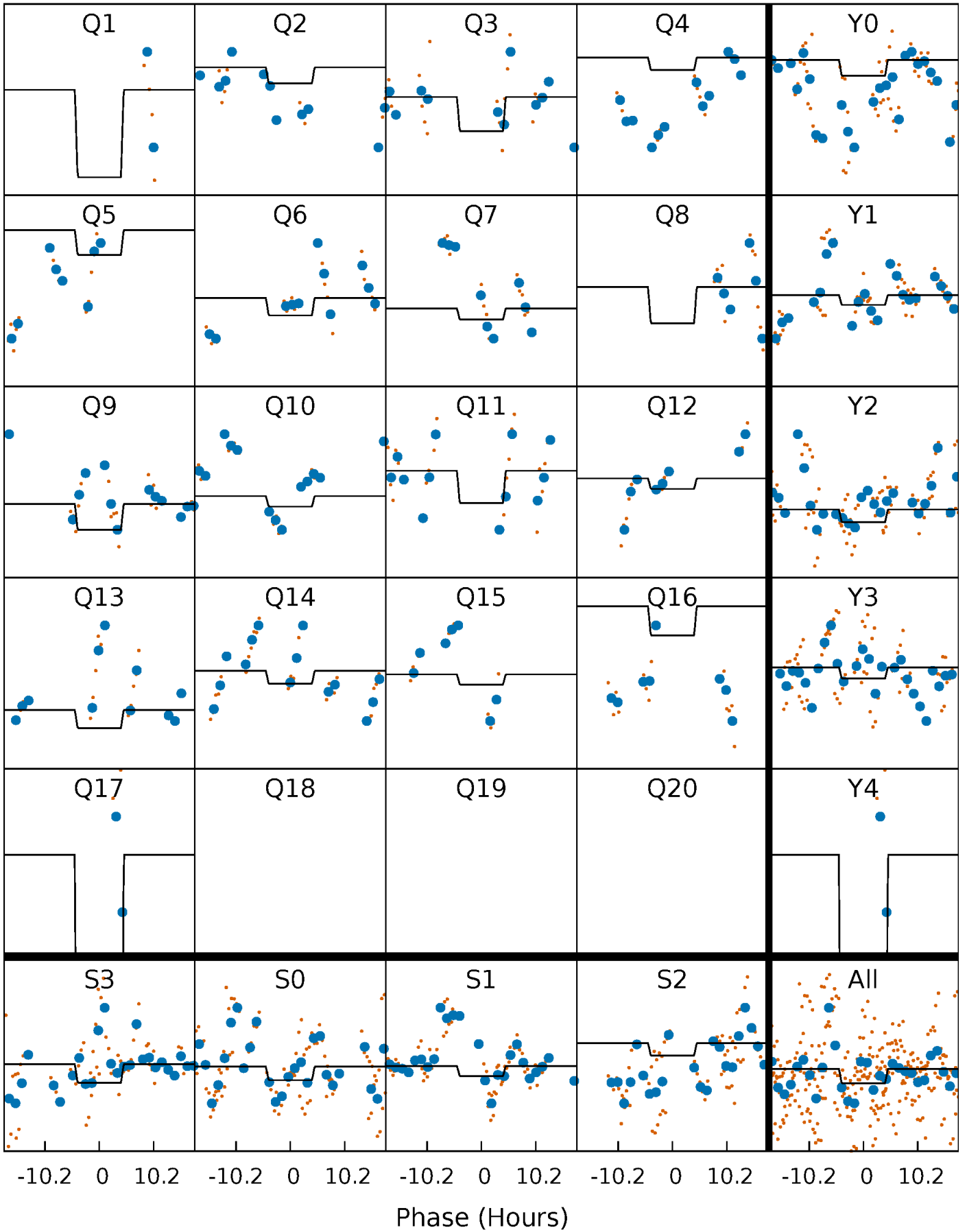
DV Quarter-Phased Transit Curves

TCE 009696853-05 $P = 23.424075$ Days $T_0 = 152.344817$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

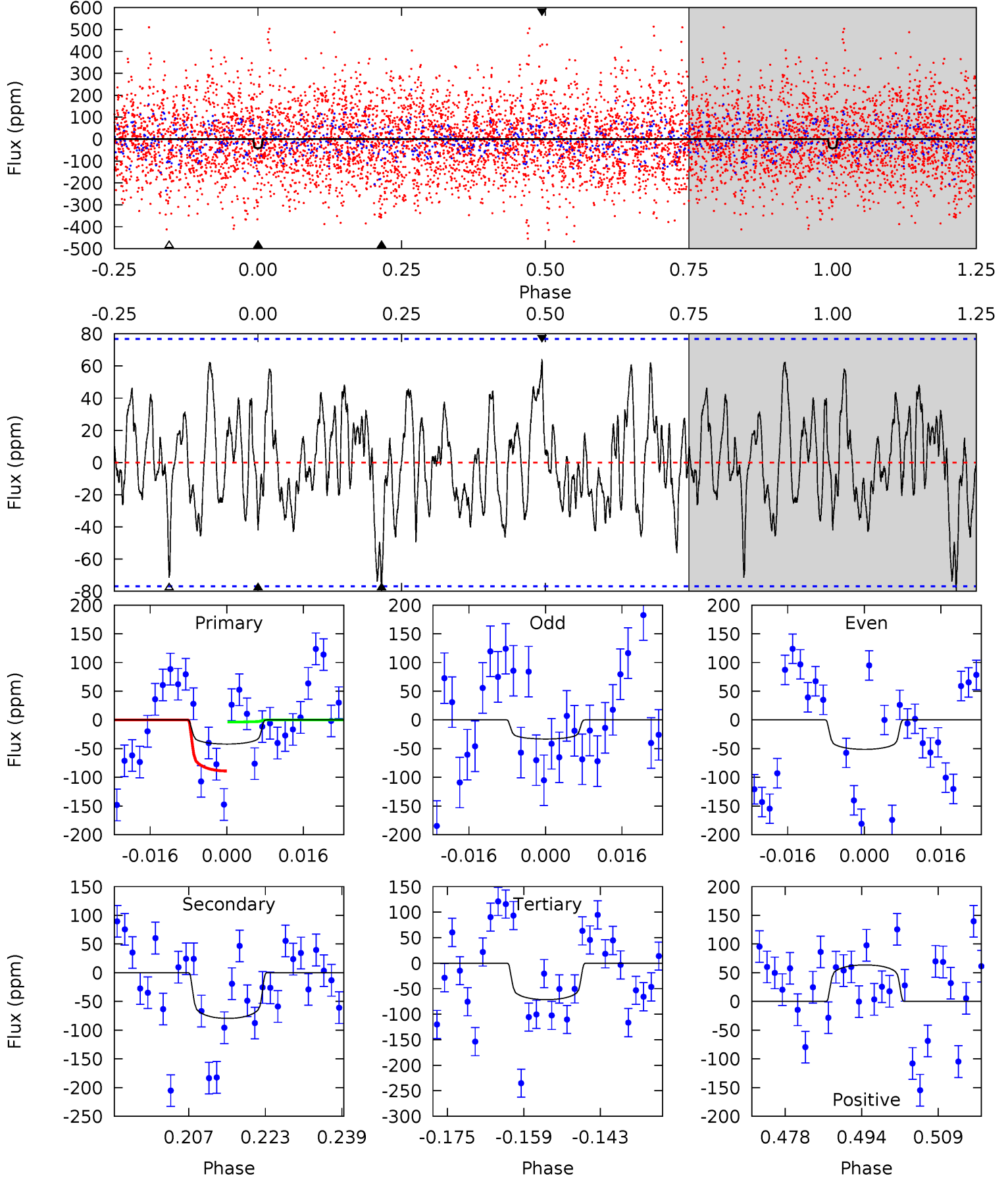
TCE 009696853-05 P= 23.422884 Days $T_0=152.454564$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-05, P = 23.424075 Days, E = 128.920742 Days

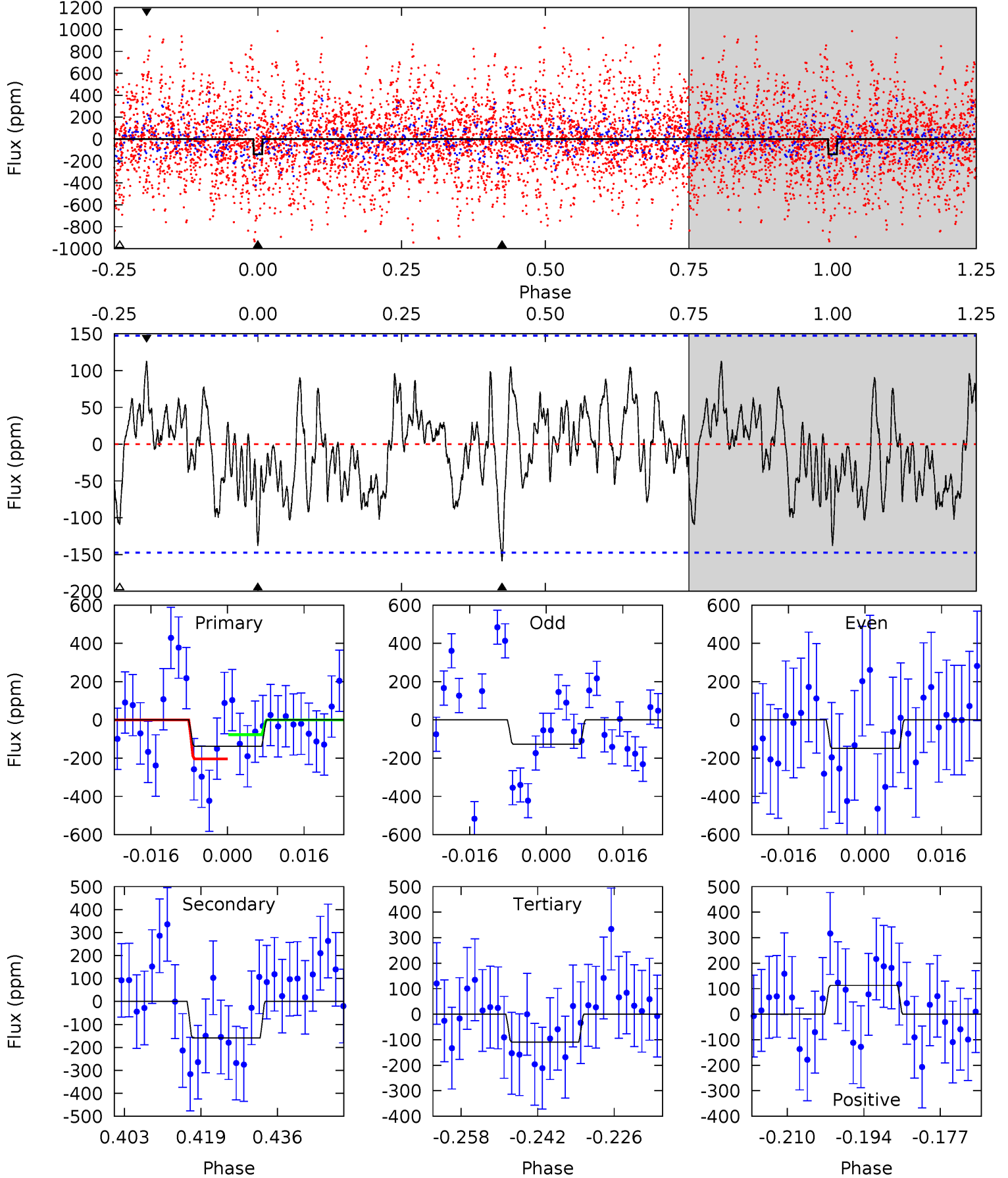
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.70	5.11	4.59	4.09	4.94	2.41	1.60	-1.89	-1.39	0.52	1.02	0.58	0.47	0.44	2.74



Alt Model-Shift Uniqueness Test

009696853-05, $P = 23.422884$ Days, $E = 129.031680$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.63	5.33	3.66	3.78	4.93	2.41	1.54	0.96	0.85	1.67	1.55	0.36	1.14	0.41	2.12



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-80 ± 16	$2.21^{+0.76}_{-0.68}$	1428^{+105}_{-85}	6532^{+1653}_{-756}	310^{+345}_{-132}
Alt.	-159 ± 30	$2.41^{+0.74}_{-0.73}$	1432^{+103}_{-85}	7670^{+1918}_{-1110}	530^{+543}_{-225}

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

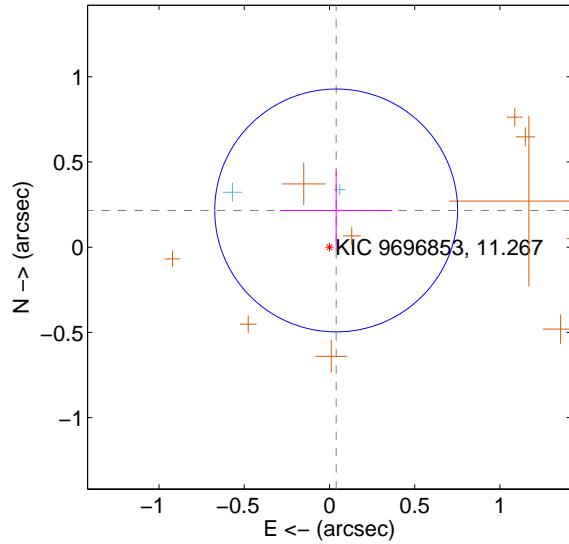
Supplemental centroid analysis for 009696853-05. **Kepler magnitude: 11.27.** Transit SNR 5.65

There are 4 quarters with good PRF difference image offsets

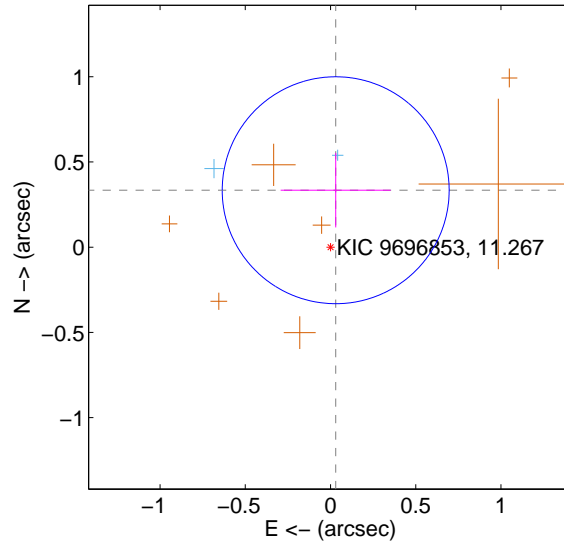
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.219 ± 0.238	0.92	-0.039 ± 0.329	0.215 ± 0.233
PRF-fit source offset from KIC position	0.335 ± 0.222	1.51	-0.030 ± 0.323	0.334 ± 0.218
photometric centroid source offset	0.36 ± 0.27	1.31	-0.08 ± 0.27	0.35 ± 0.27

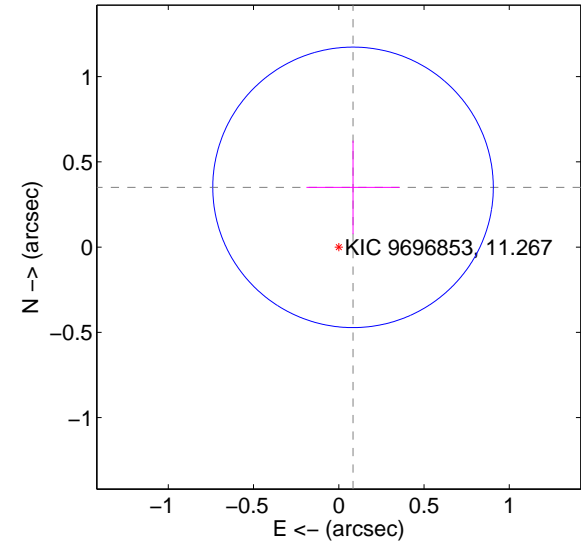
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

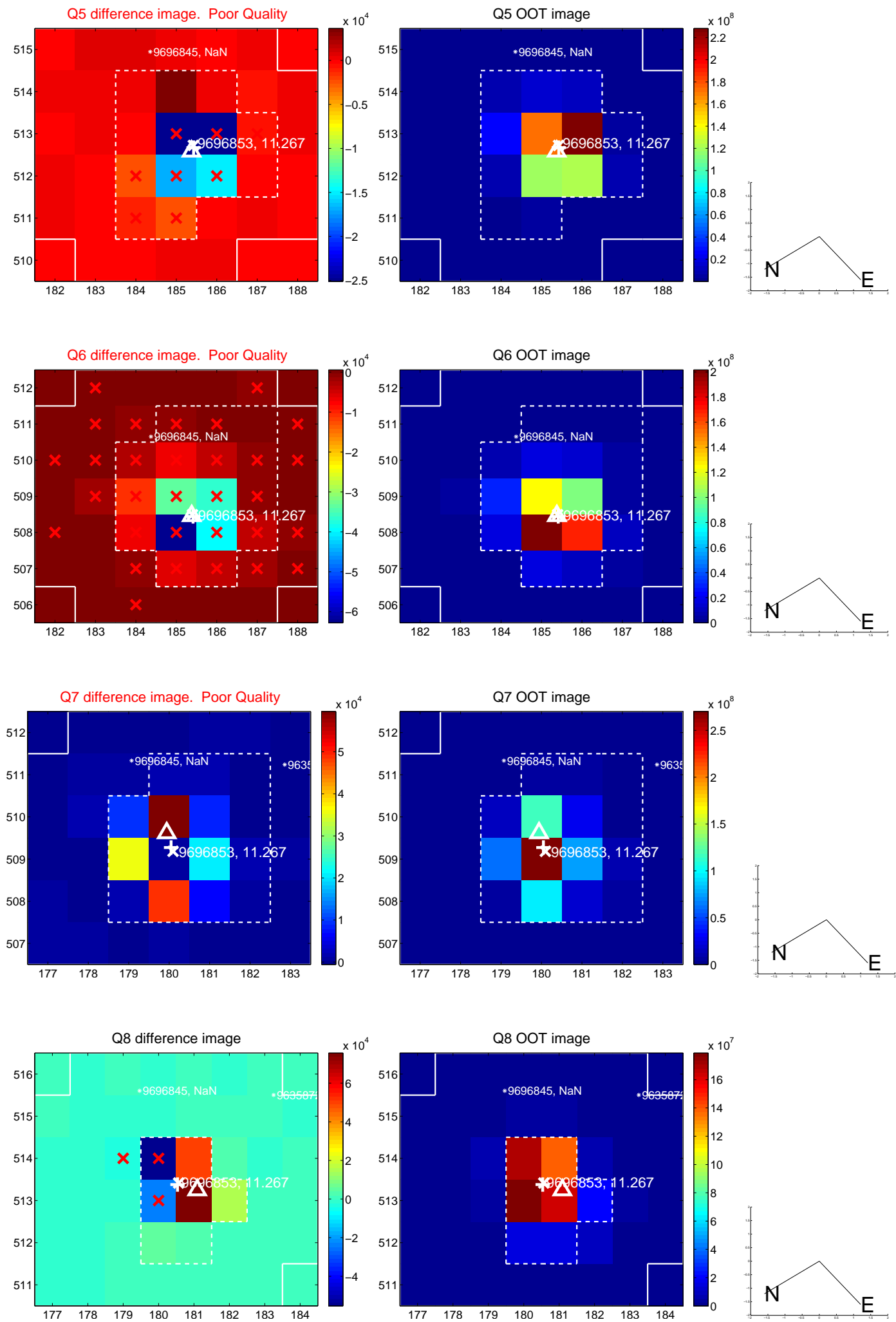


offset from photometric centroids

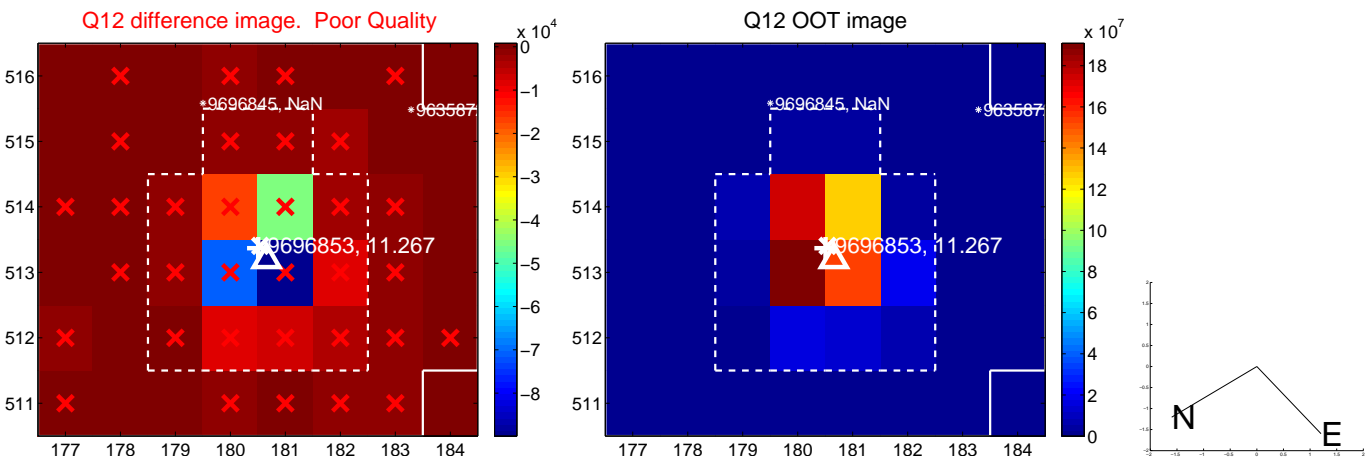
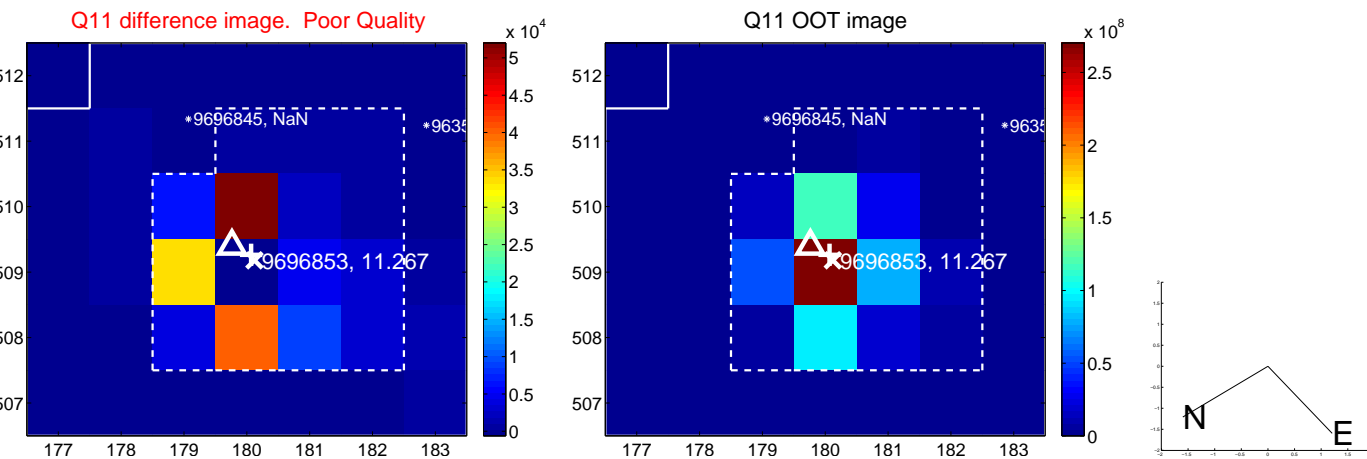
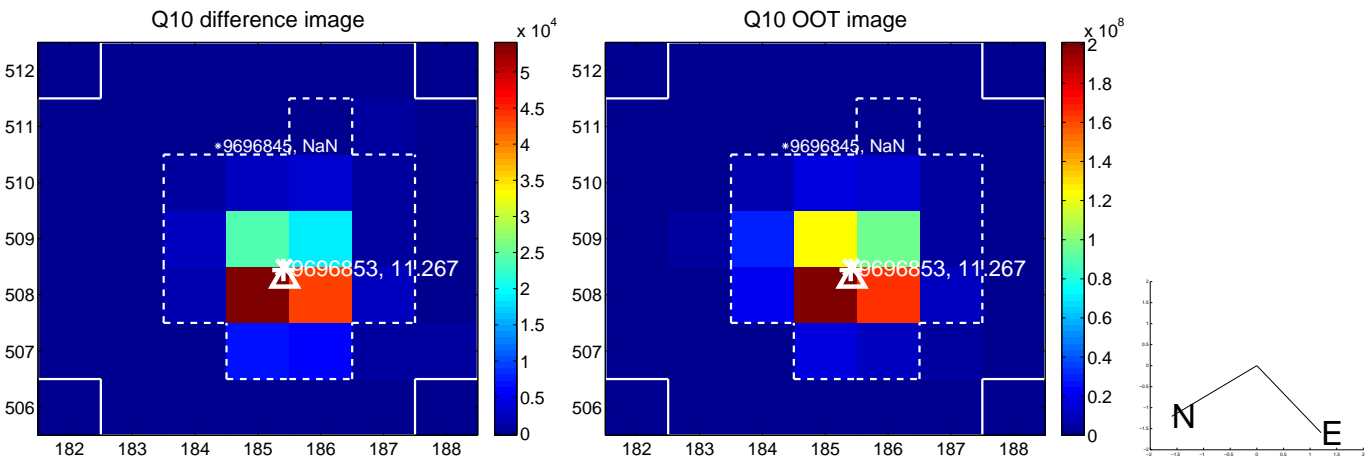
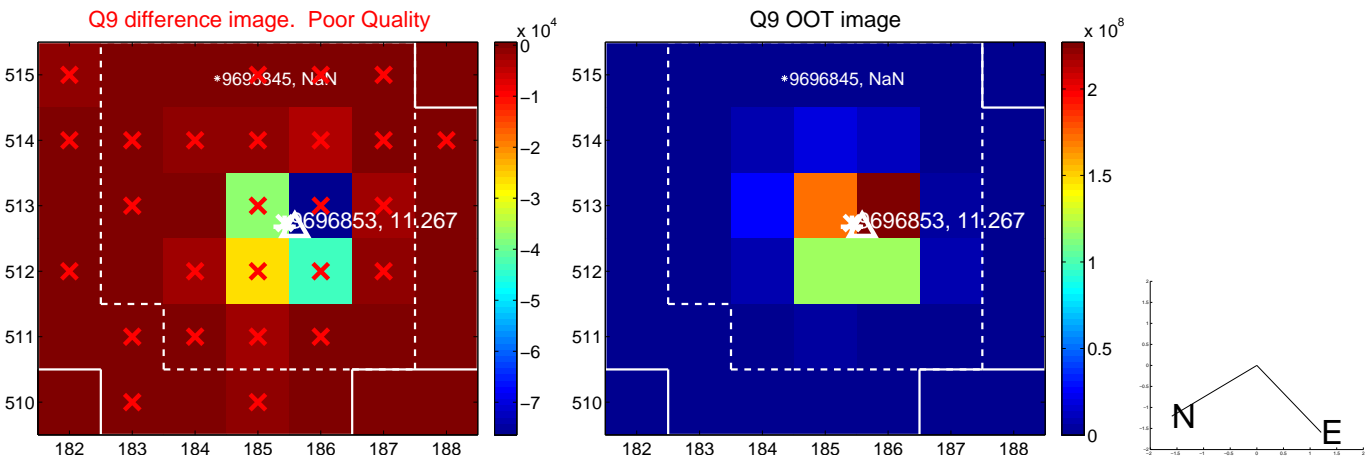


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

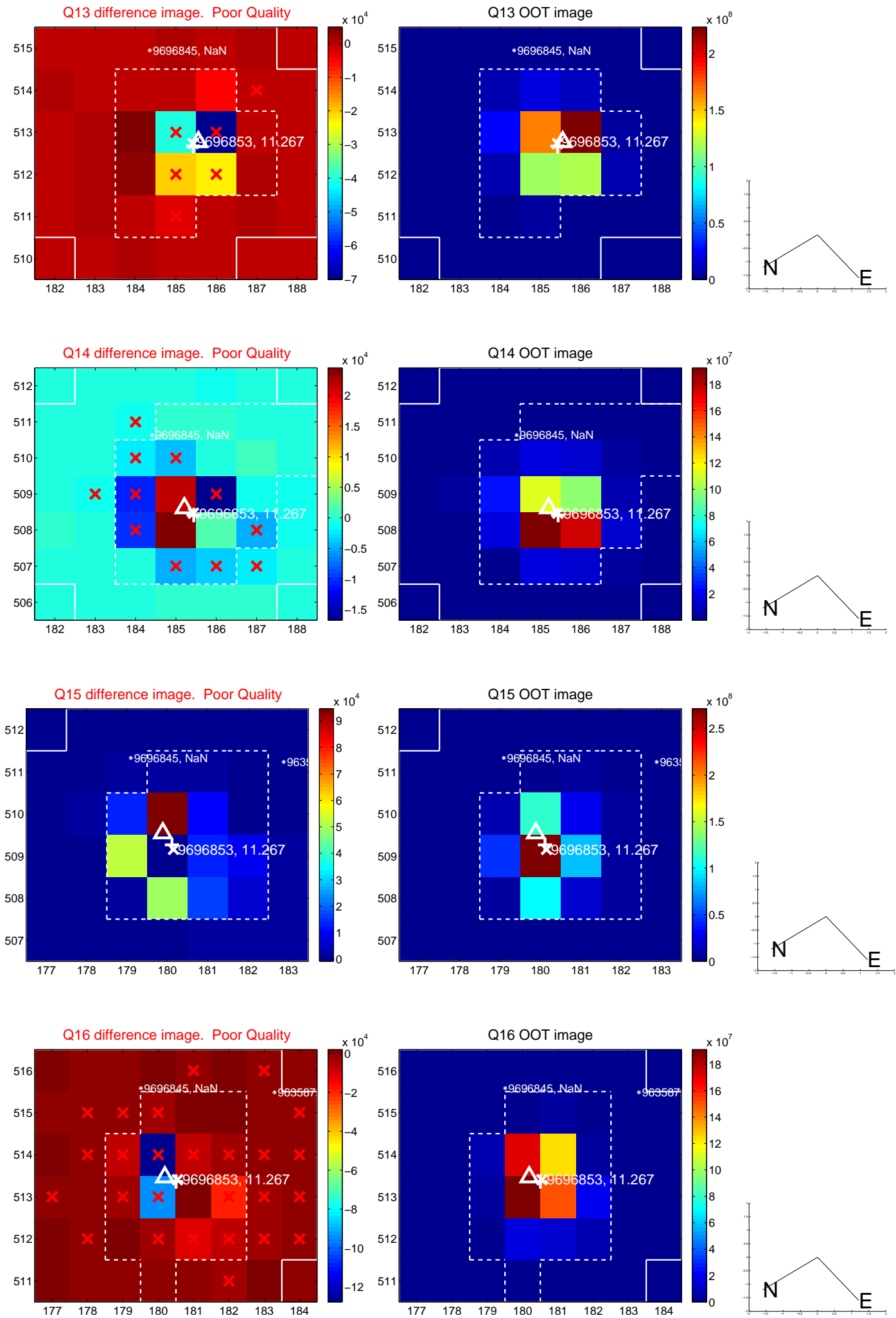
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



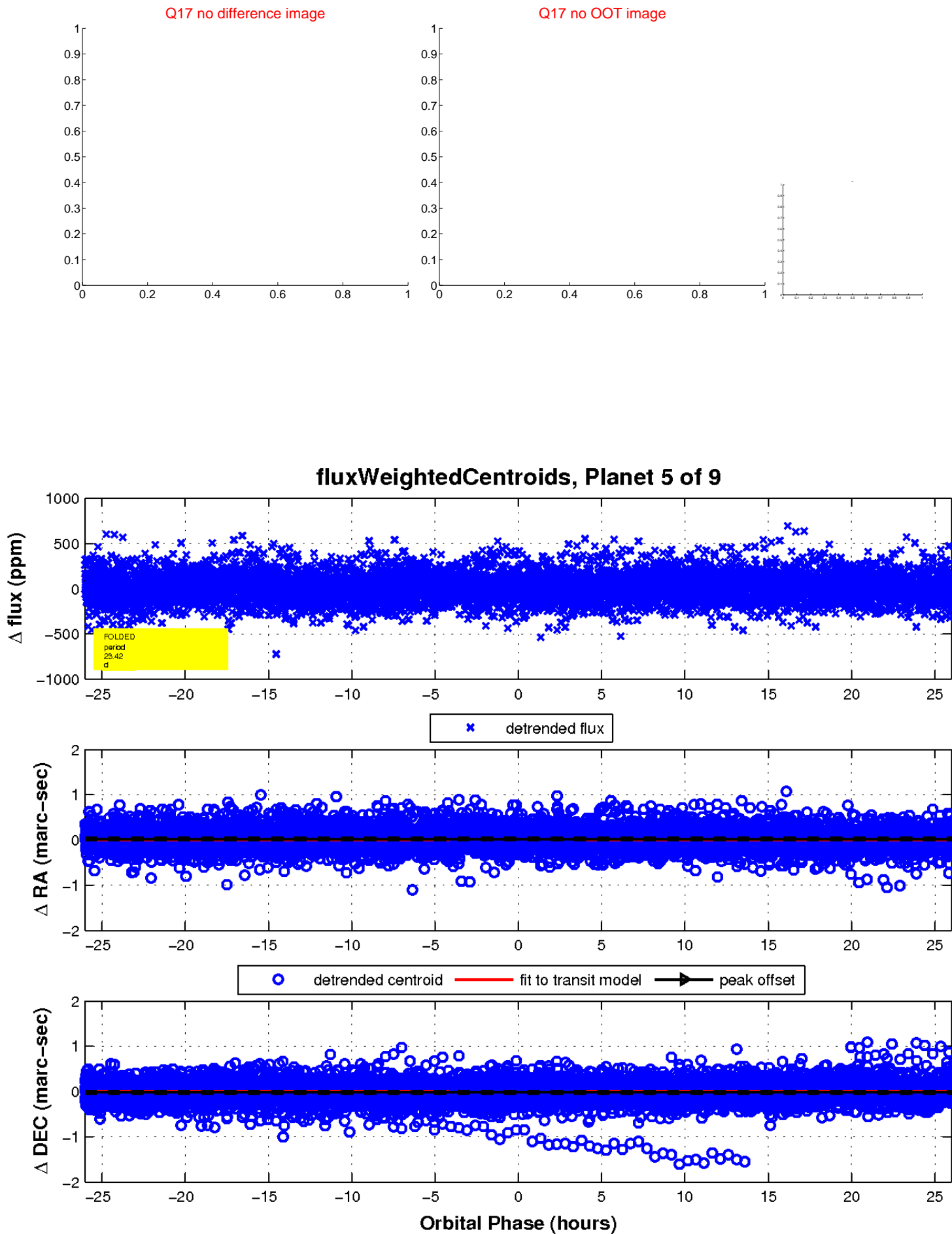
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

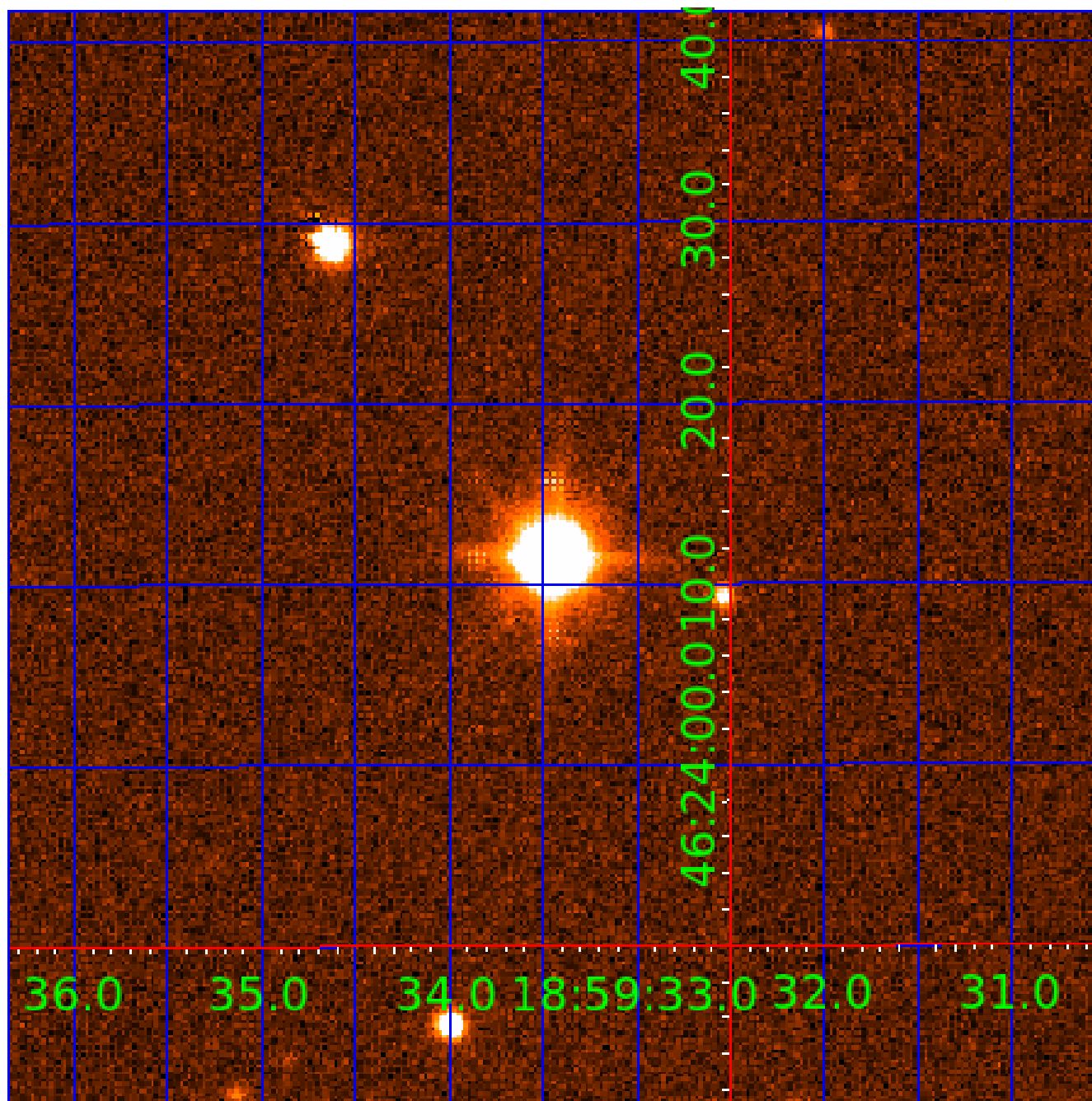


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

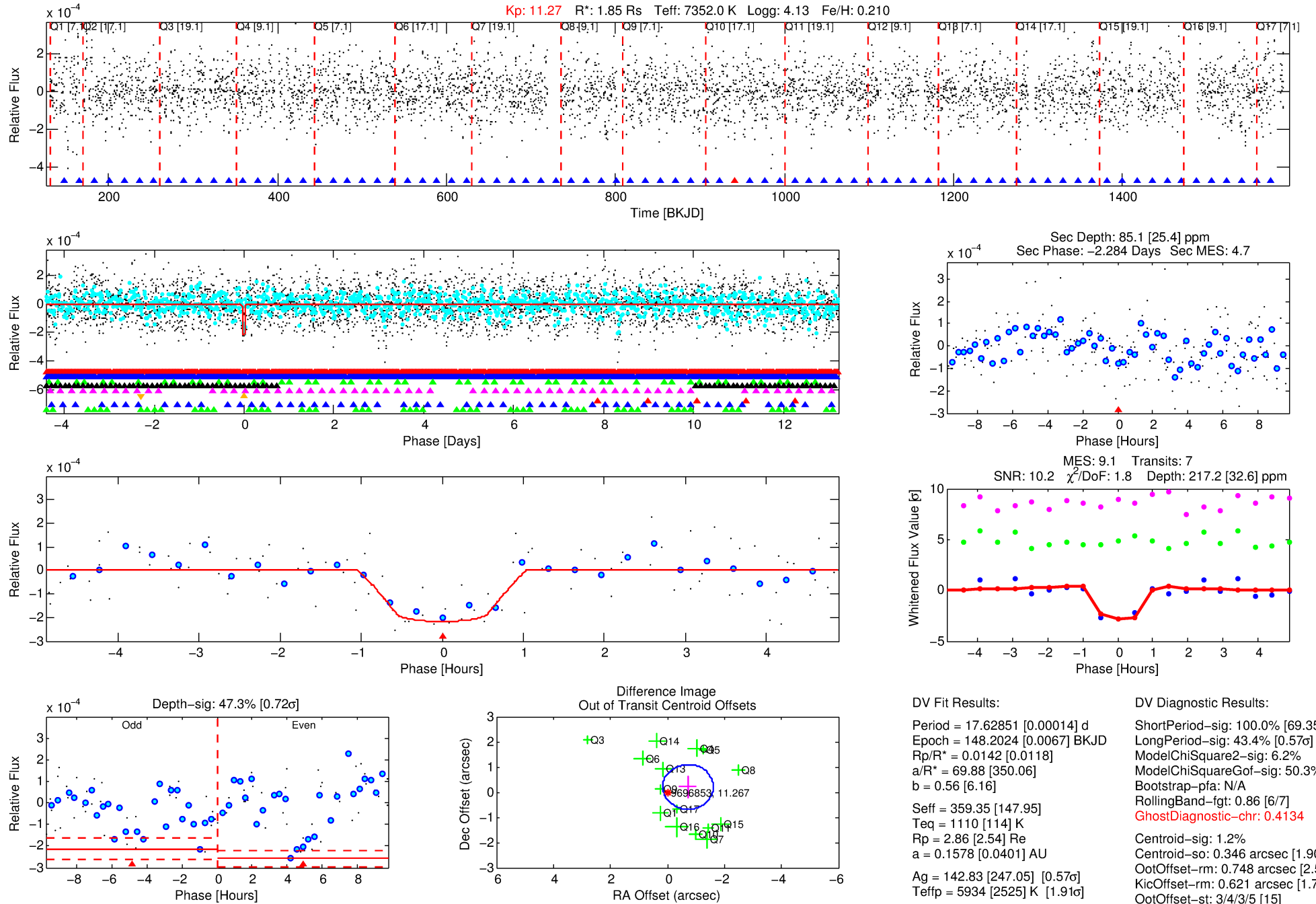
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-06

No Significant Match Found

DV One-Page Summary

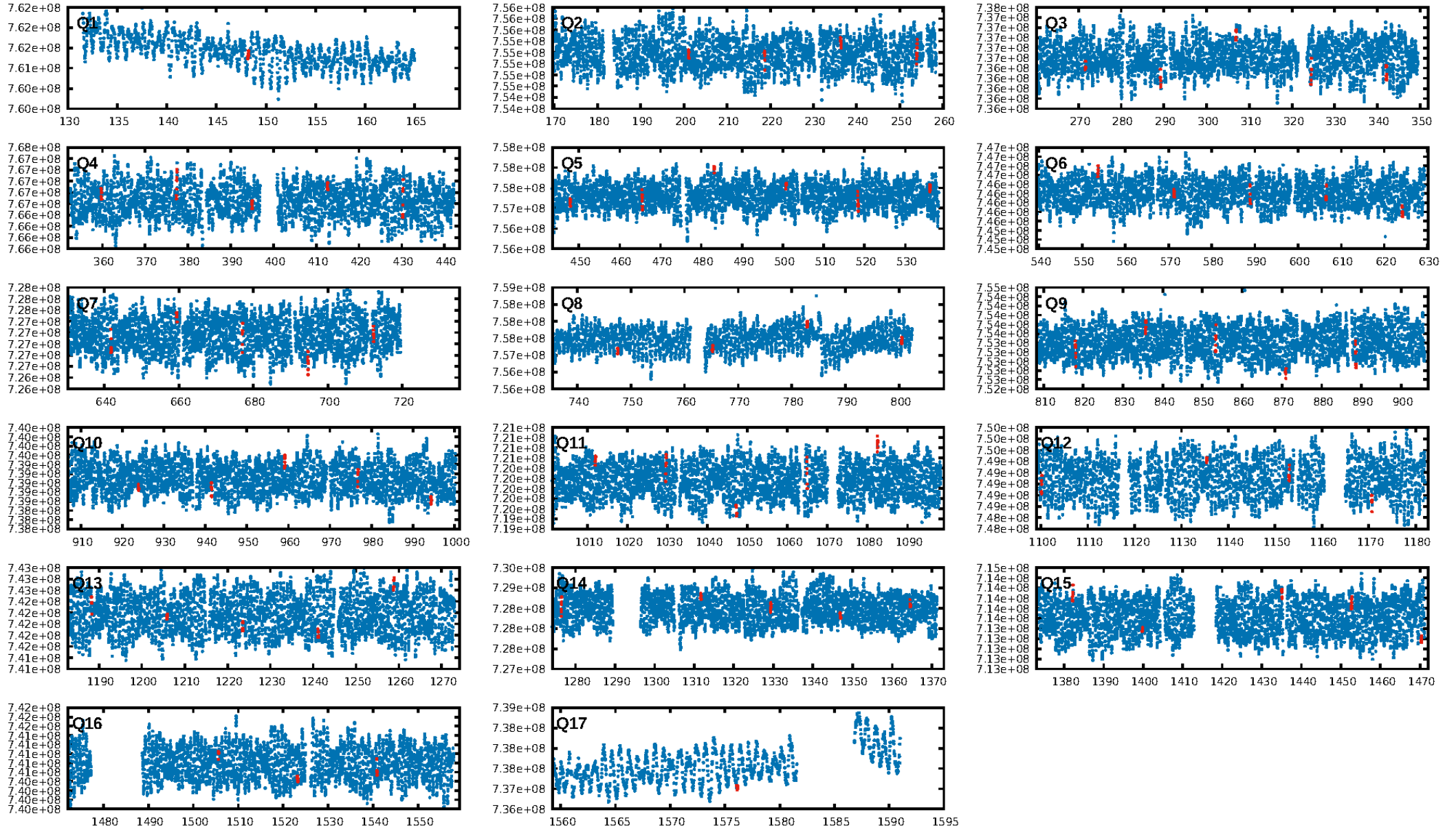
KIC: 9696853 Candidate: 6 of 9 Period: 17.629 d



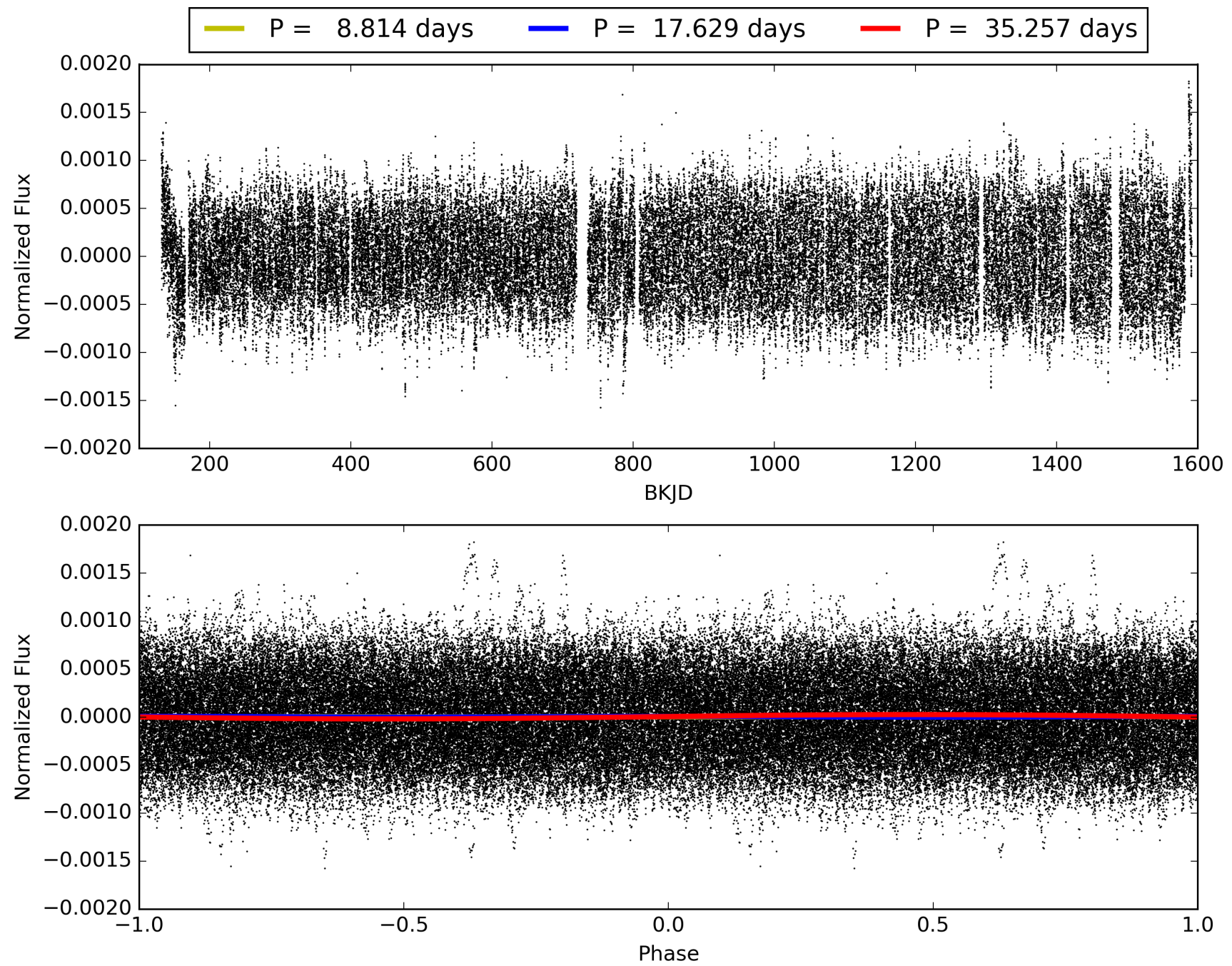
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:26:55 Z

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

TCE 009696853-06, PDC Light Curves

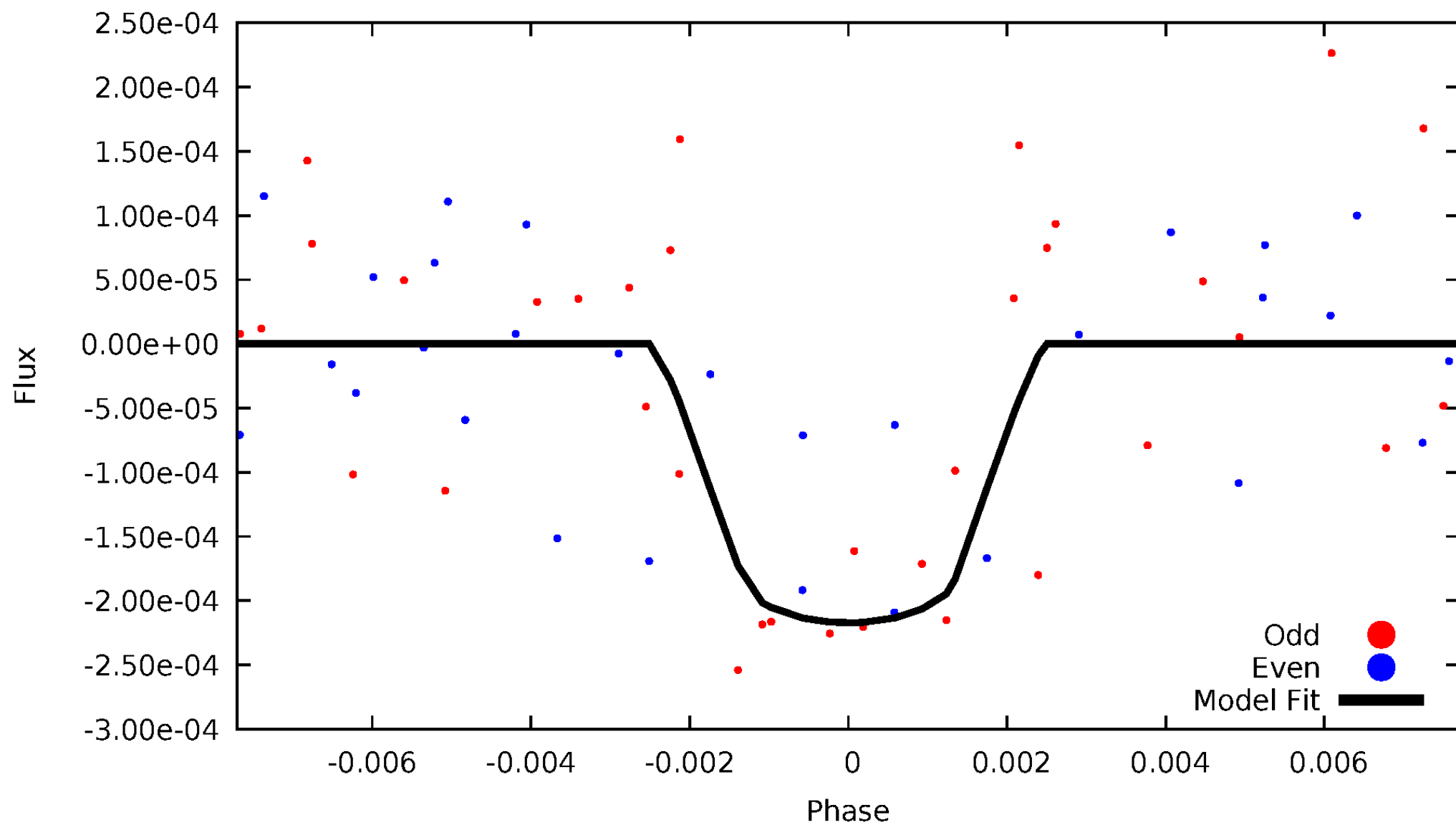


TCE 009696853-06



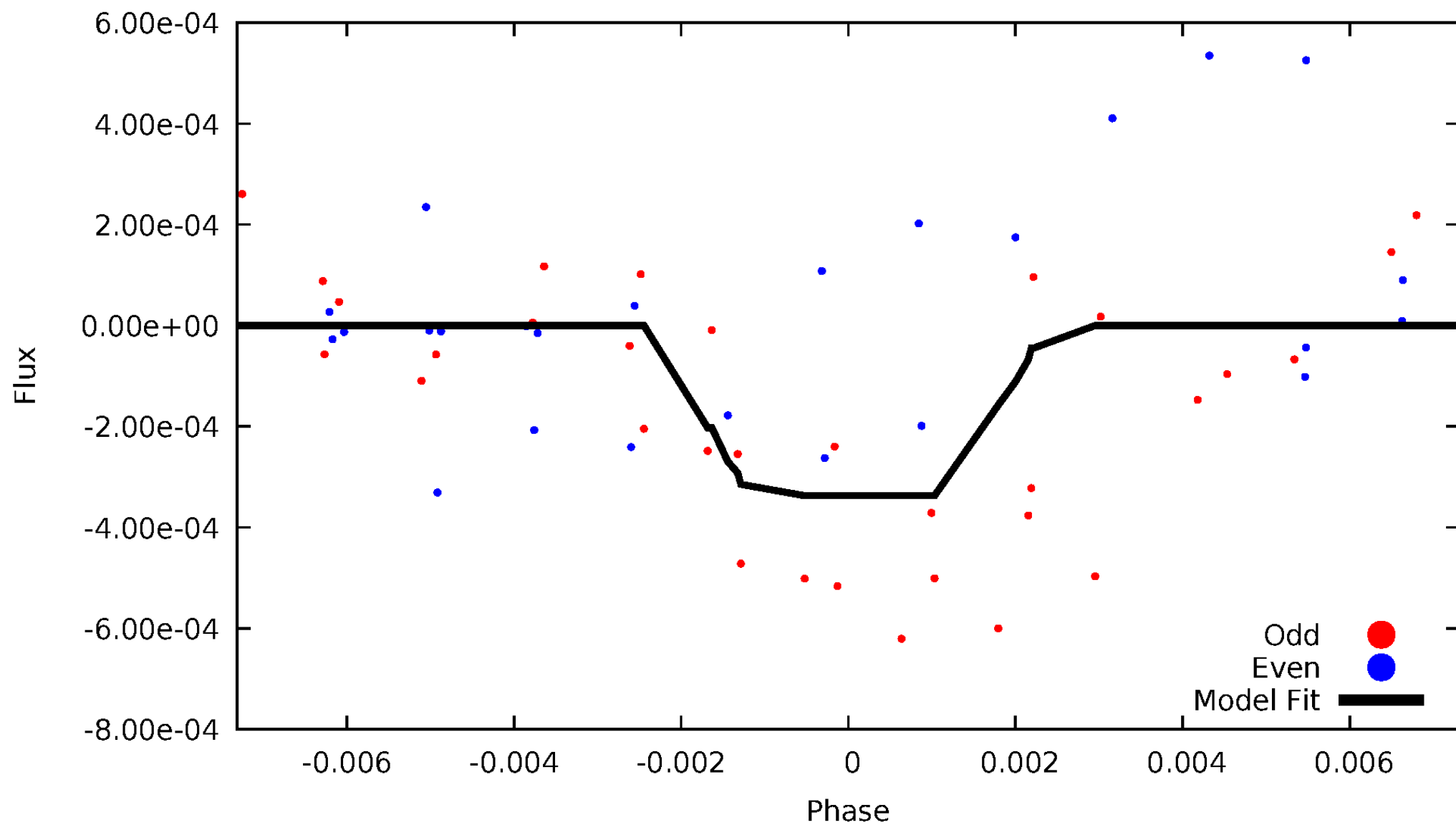
DV Odd/Even

TCE 009696853-06



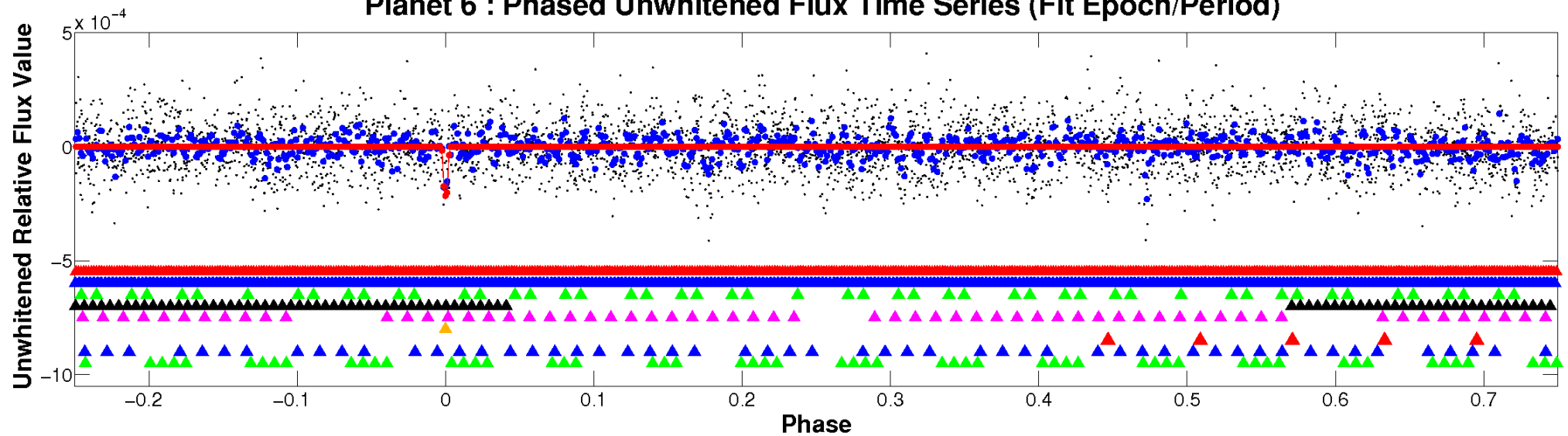
ALT Odd/Even

TCE 009696853-06

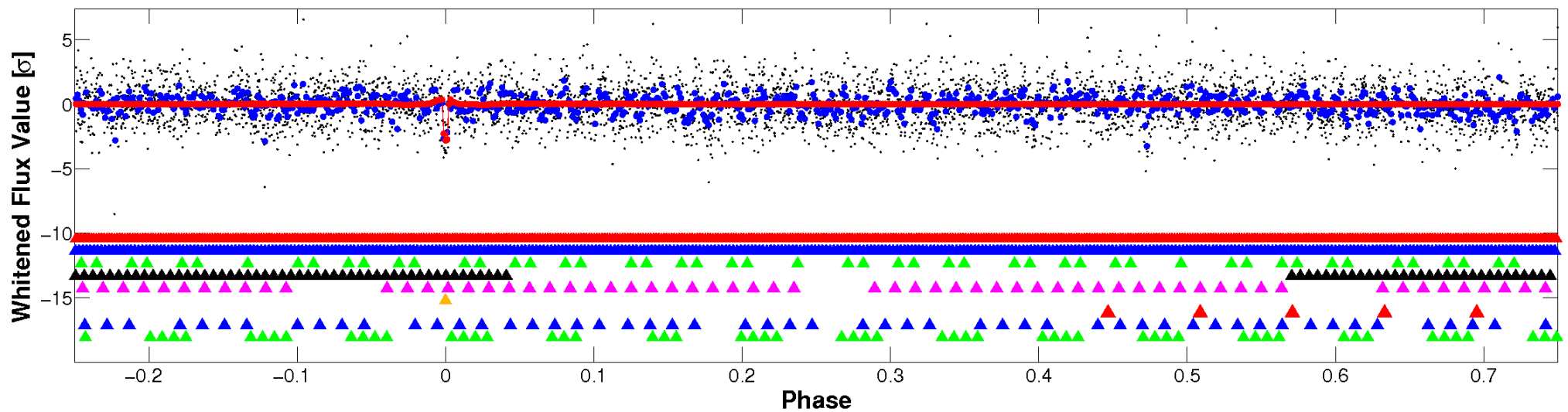


Non-Whitened Vs. Whitened Light Curve

Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

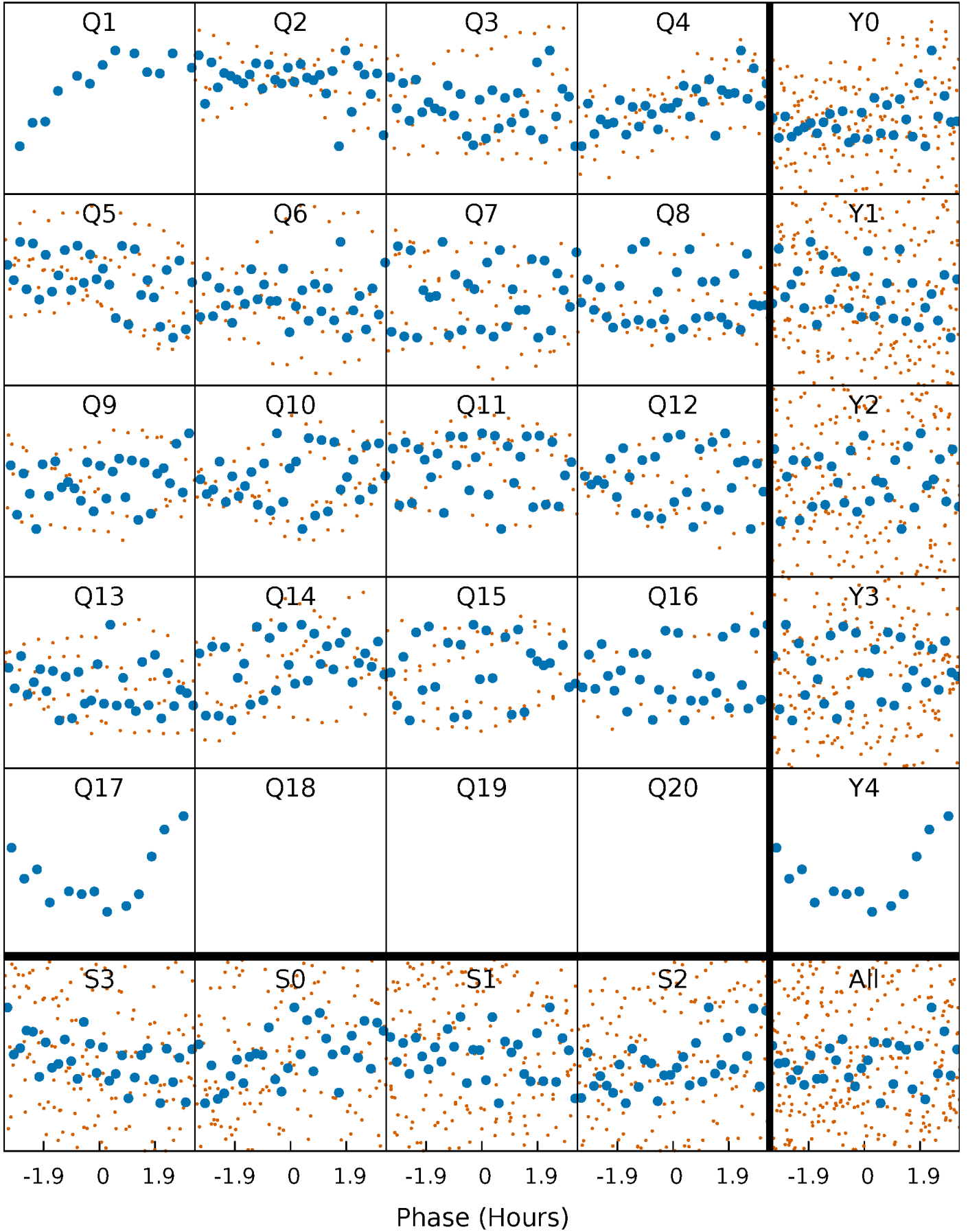


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



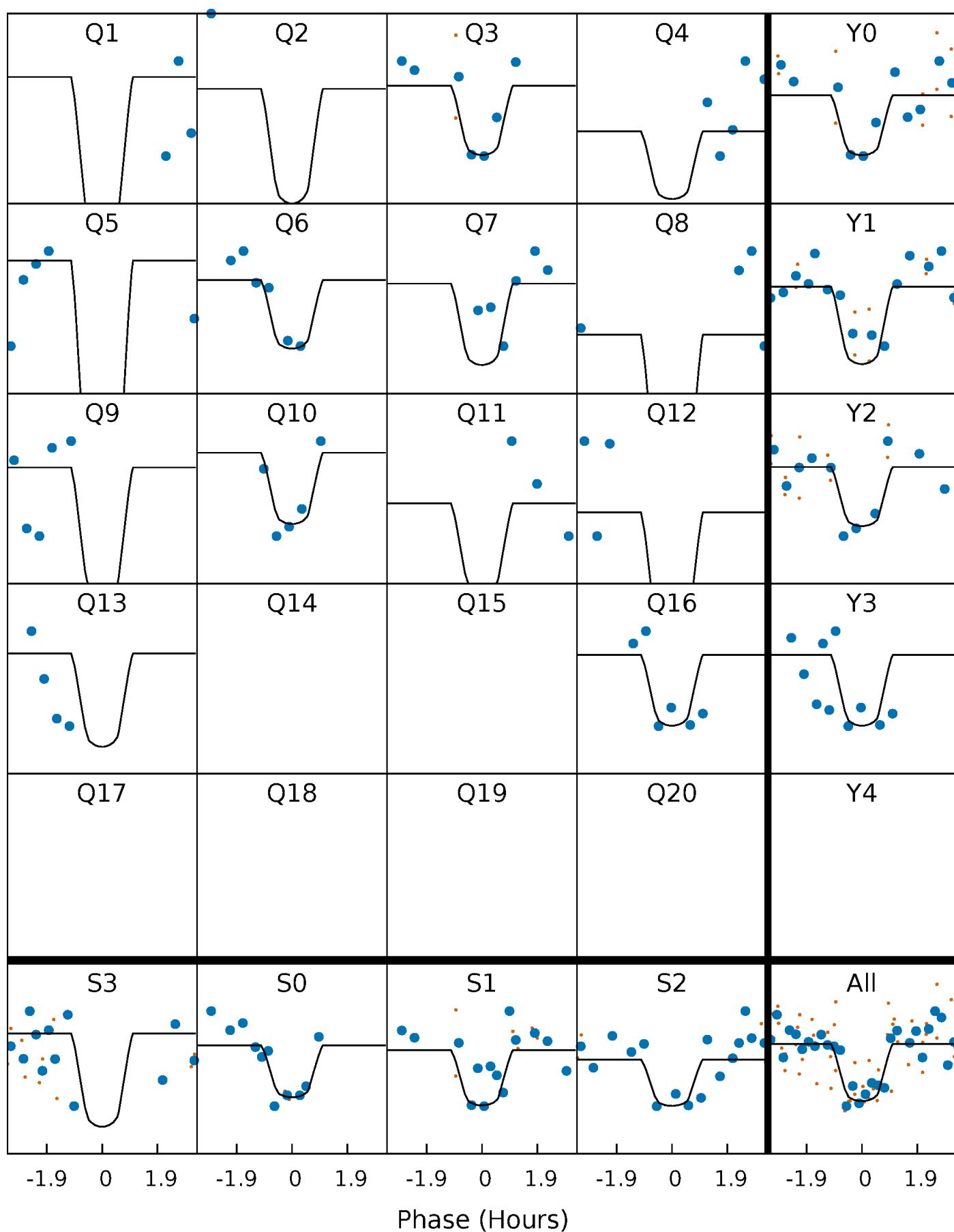
PDC Quarter-Phased Transit Curves

TCE 009696853-06 P= 17.628512 Days $T_0=148.202405$ (BKJD)



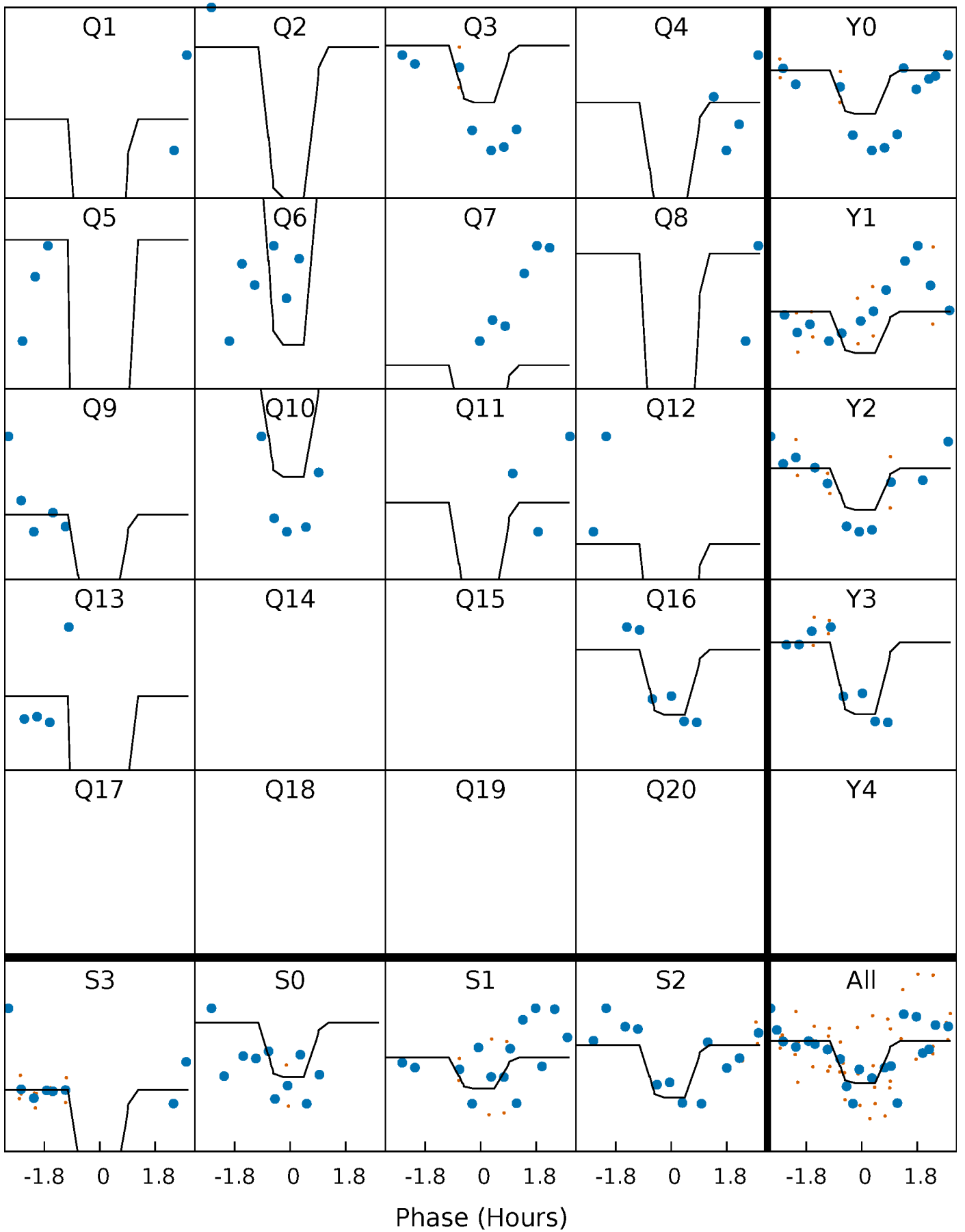
DV Quarter-Phased Transit Curves

TCE 009696853-06 P= 17.628512 Days $T_0=148.202405$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

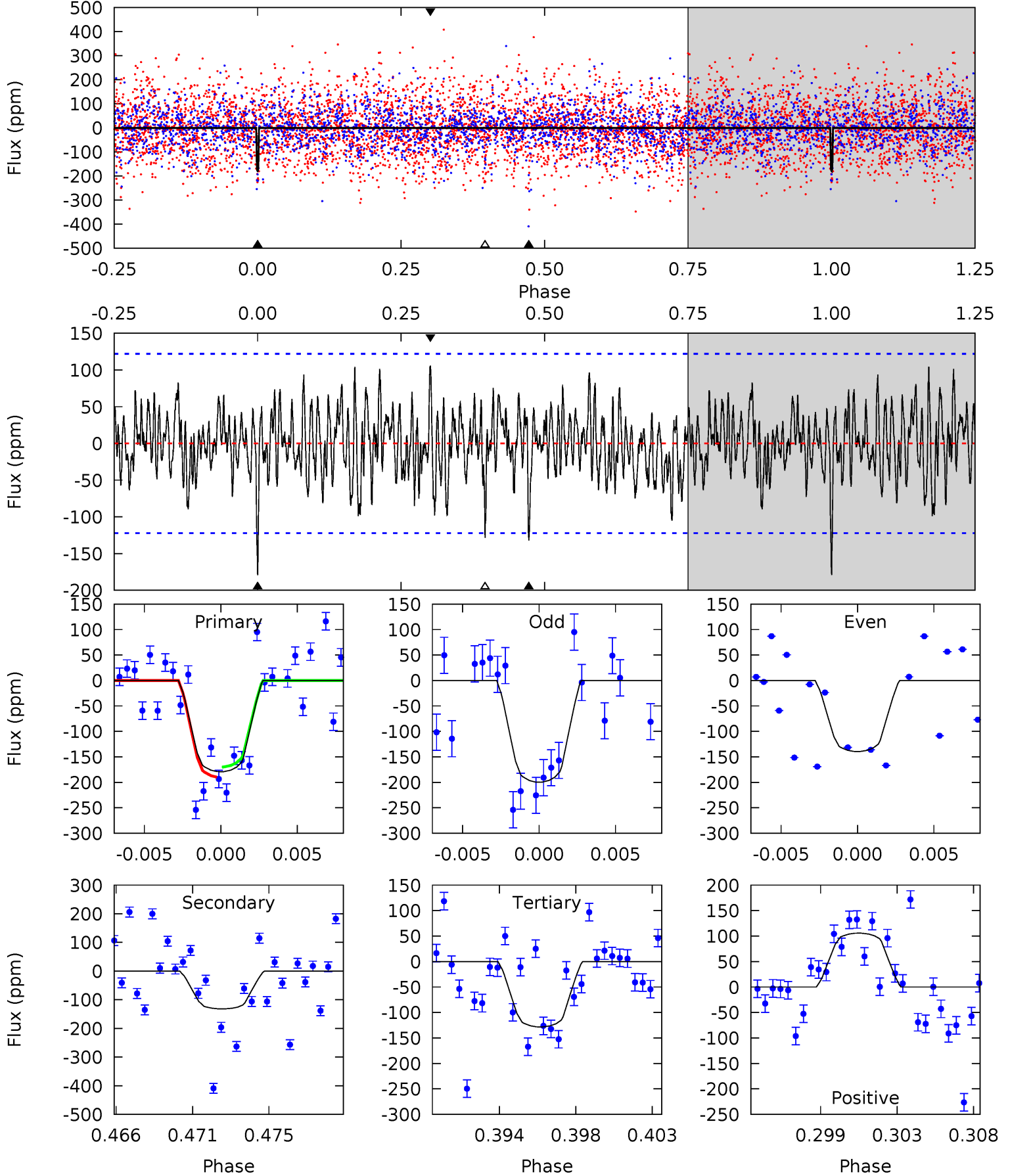
TCE 009696853-06 P= 17.628691 Days $T_0=148.192531$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-06, P = 17.628512 Days, E = 130.573893 Days

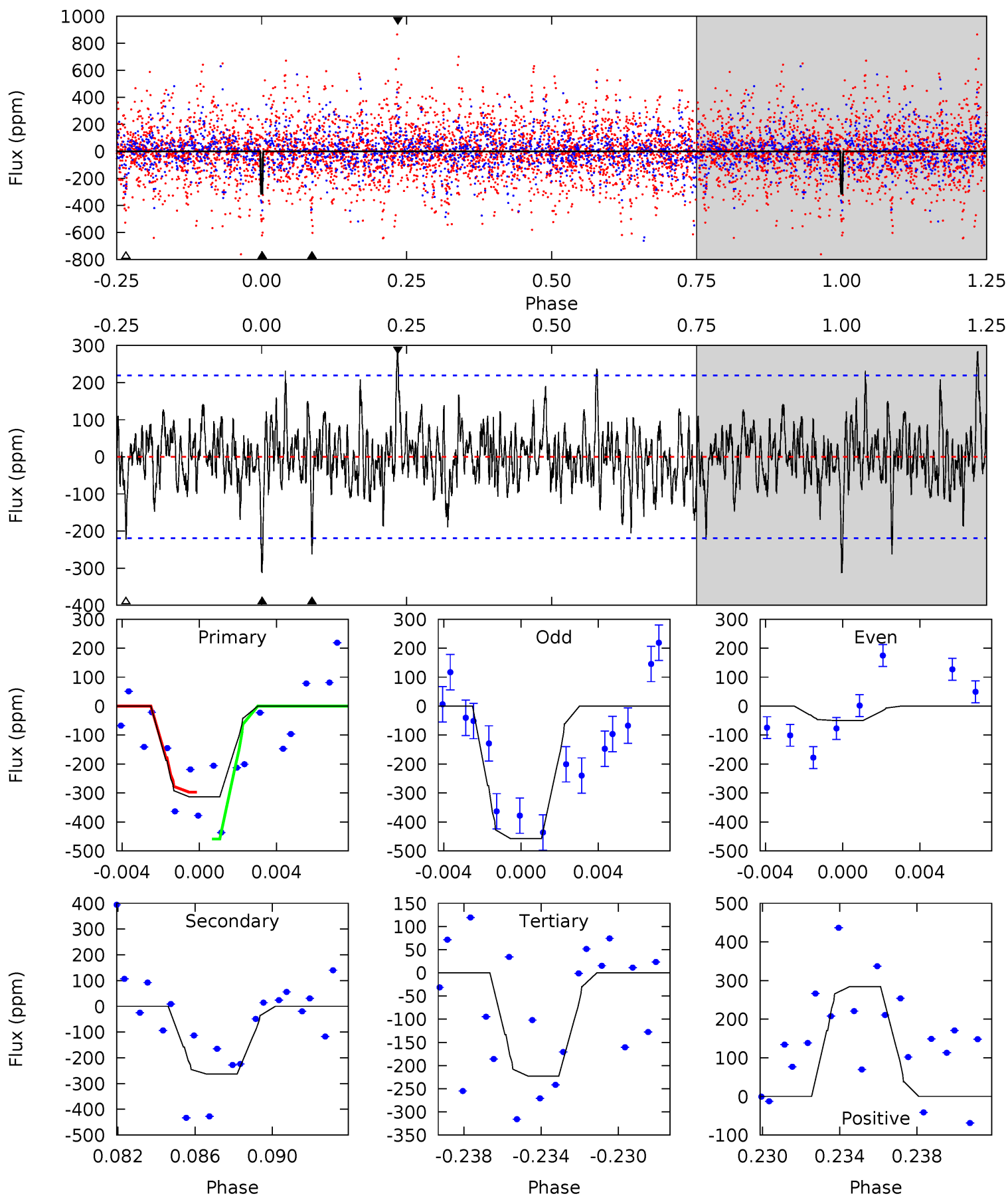
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.60	5.60	5.44	4.49	5.18	2.84	1.60	2.16	3.12	0.15	1.11	1.21	0.91	0.37	0.42



Alt Model-Shift Uniqueness Test

009696853-06, P = 17.628691 Days, E = 130.563840 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.43	6.24	5.29	6.75	5.20	2.89	1.57	2.14	0.67	0.95	-0.52	4.29	0.92	0.48	1.89



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-132 ± 24	$3.21^{+2.49}_{-1.91}$	1571^{+109}_{-97}	6179^{+4376}_{-1346}	167^{+813}_{-112}
Alt.	-263 ± 42	$4.11^{+2.38}_{-2.20}$	1573^{+106}_{-91}	6605^{+3983}_{-1354}	215^{+732}_{-135}

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 $A_{obs} \gg 1.0$

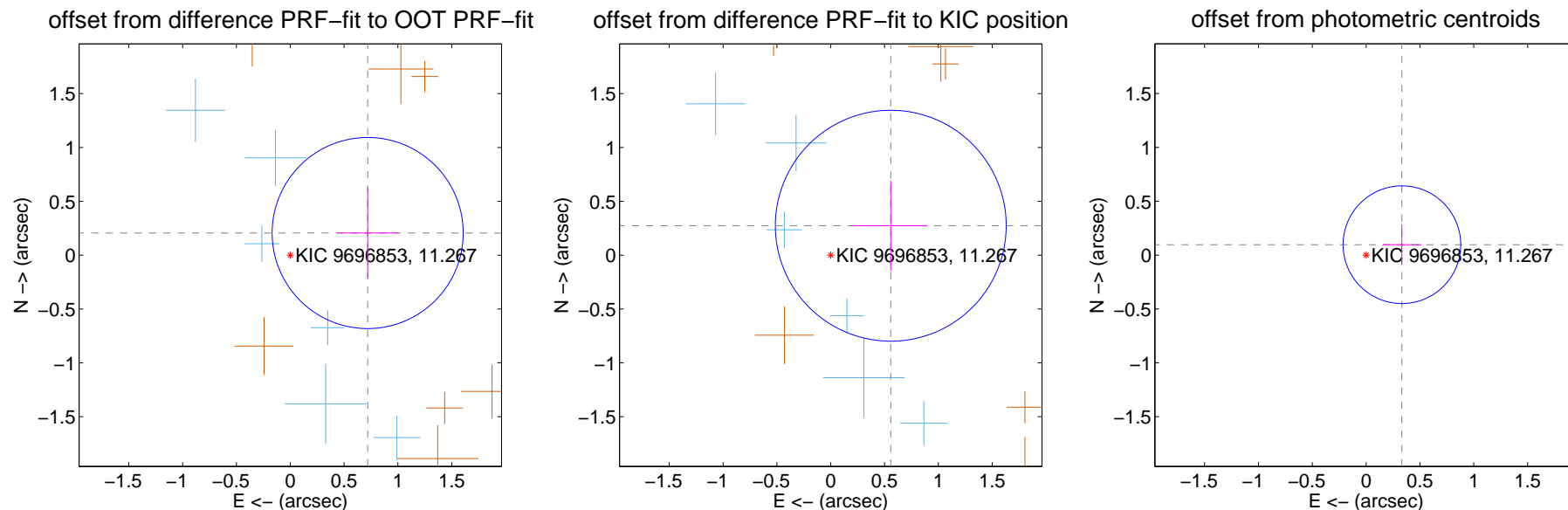
DV Centroid Data

Supplemental centroid analysis for 009696853-06. **Kepler magnitude: 11.27.** Transit SNR 10.23

There are 7 quarters with good PRF difference image offsets

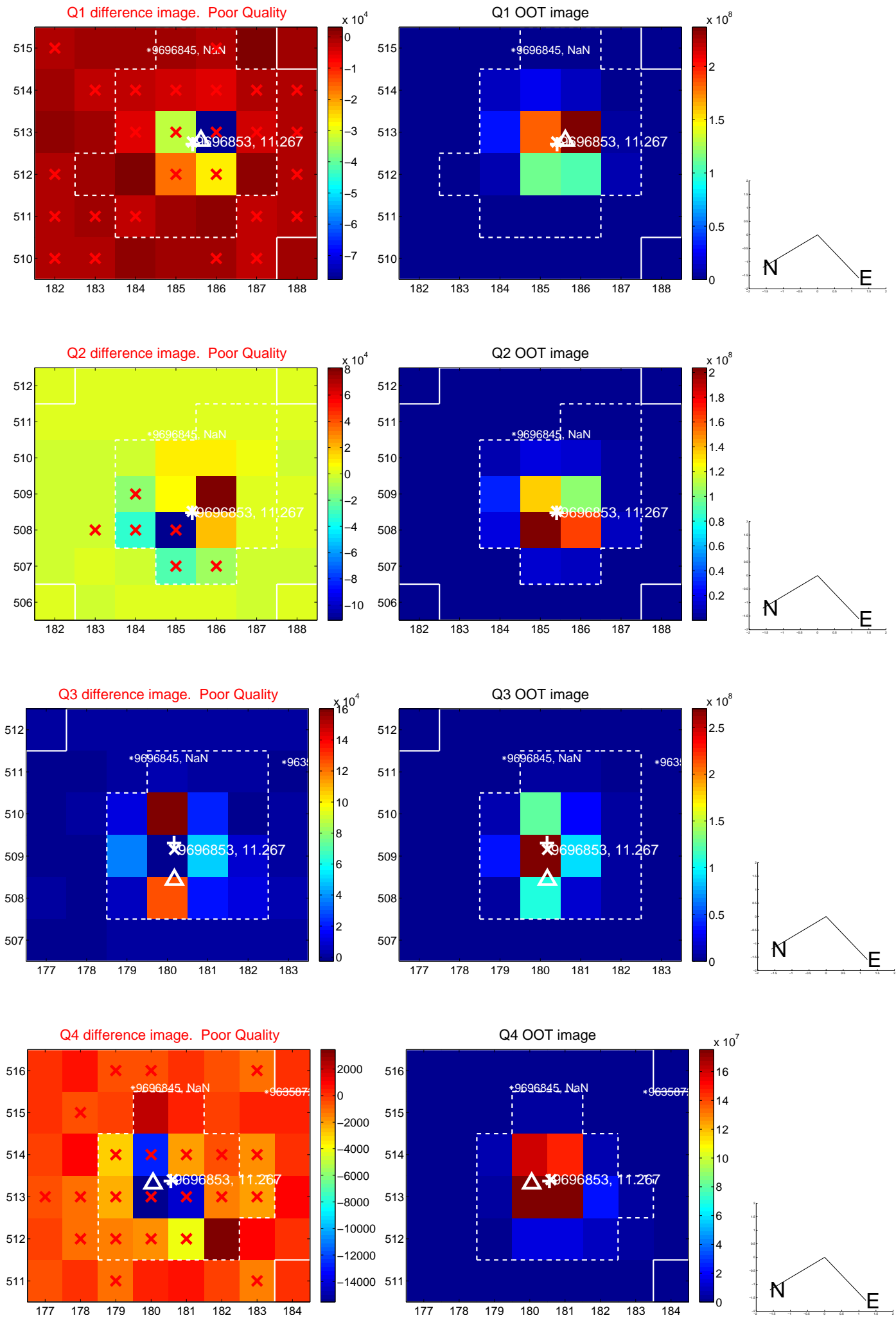
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.748 ± 0.296	2.53	-0.719 ± 0.283	0.206 ± 0.419
PRF-fit source offset from KIC position	0.621 ± 0.357	1.74	-0.558 ± 0.342	0.273 ± 0.416
photometric centroid source offset	0.35 ± 0.18	1.90	-0.33 ± 0.18	0.10 ± 0.19

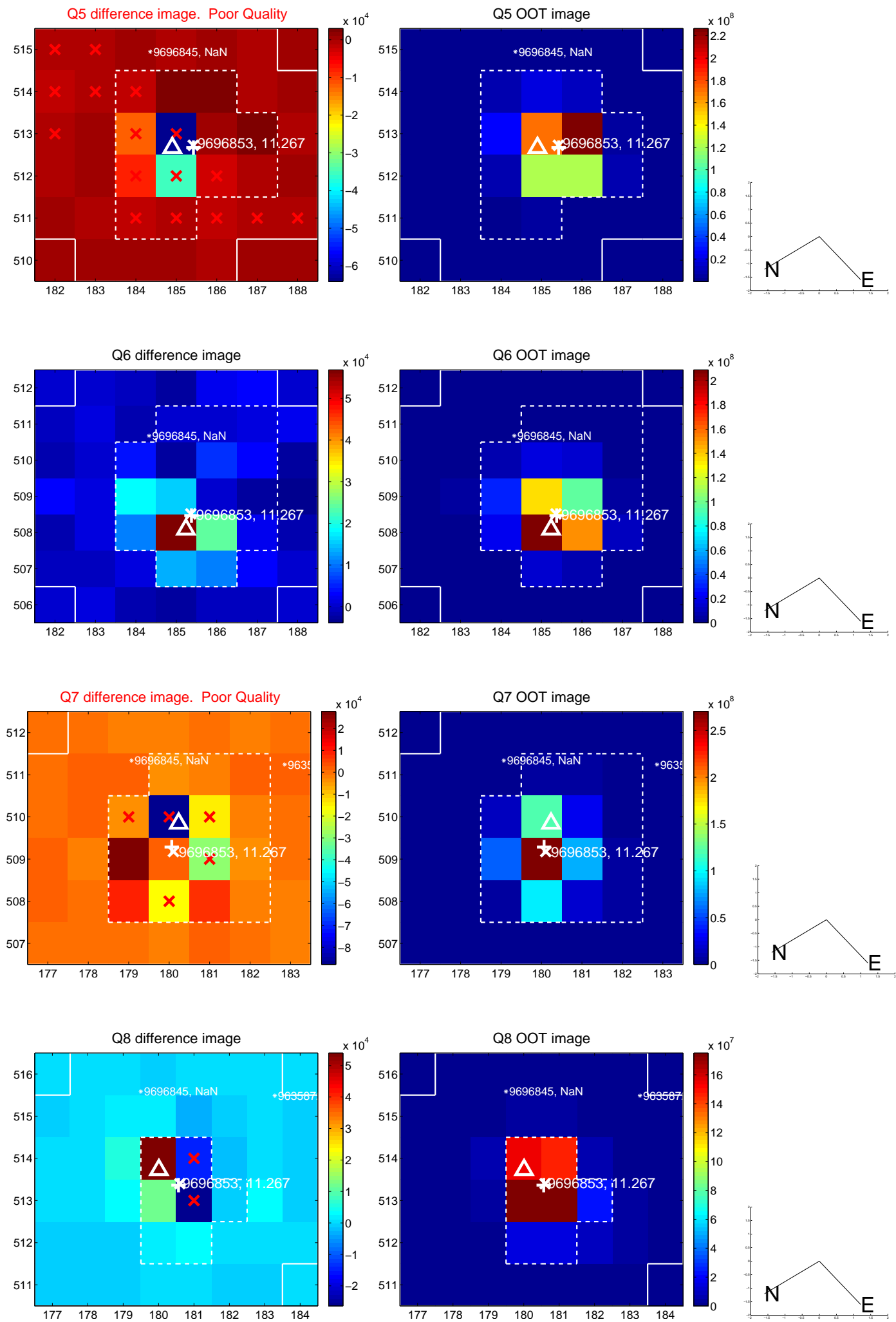


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

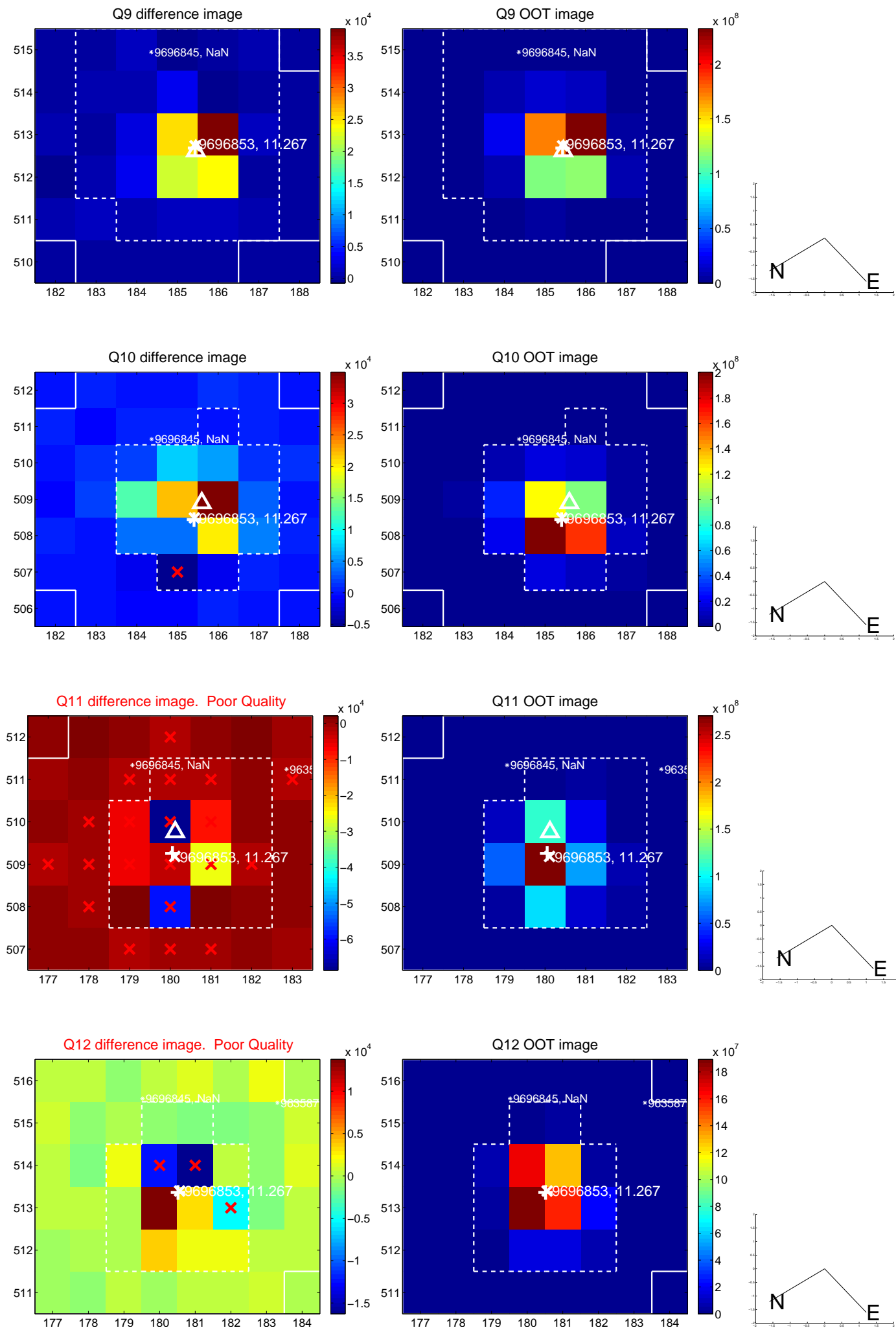
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



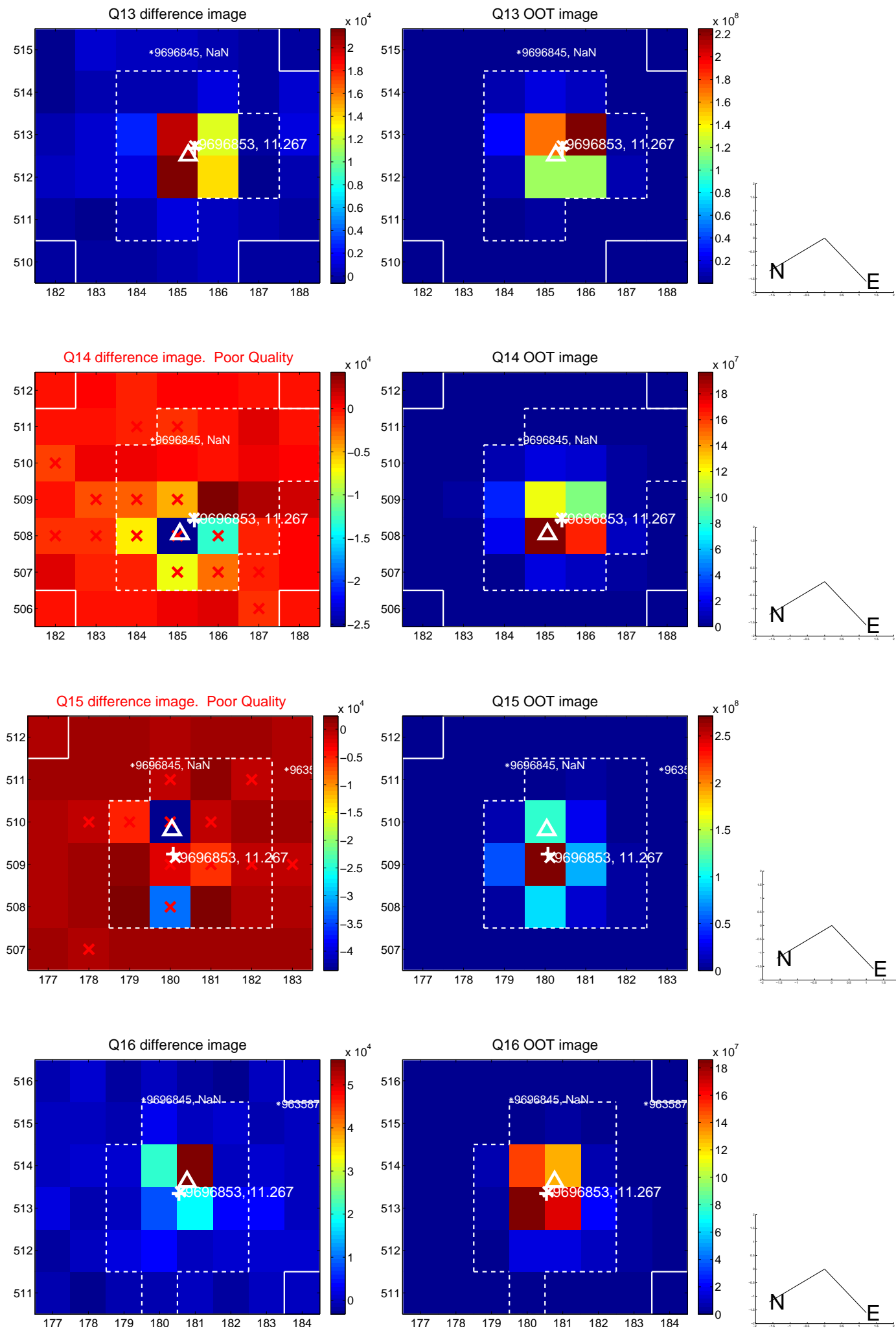
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



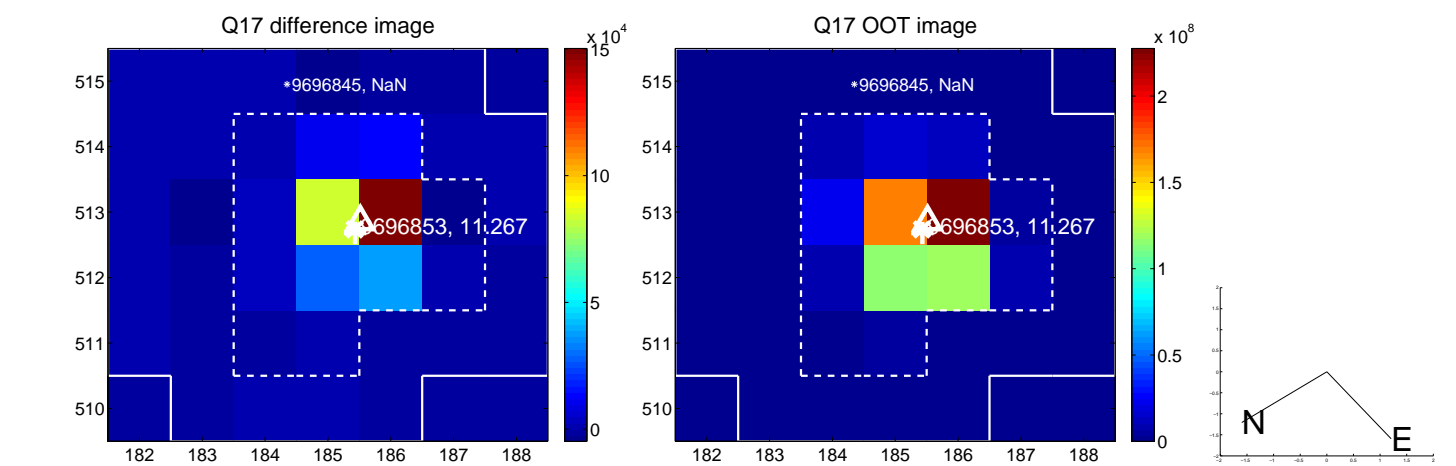
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



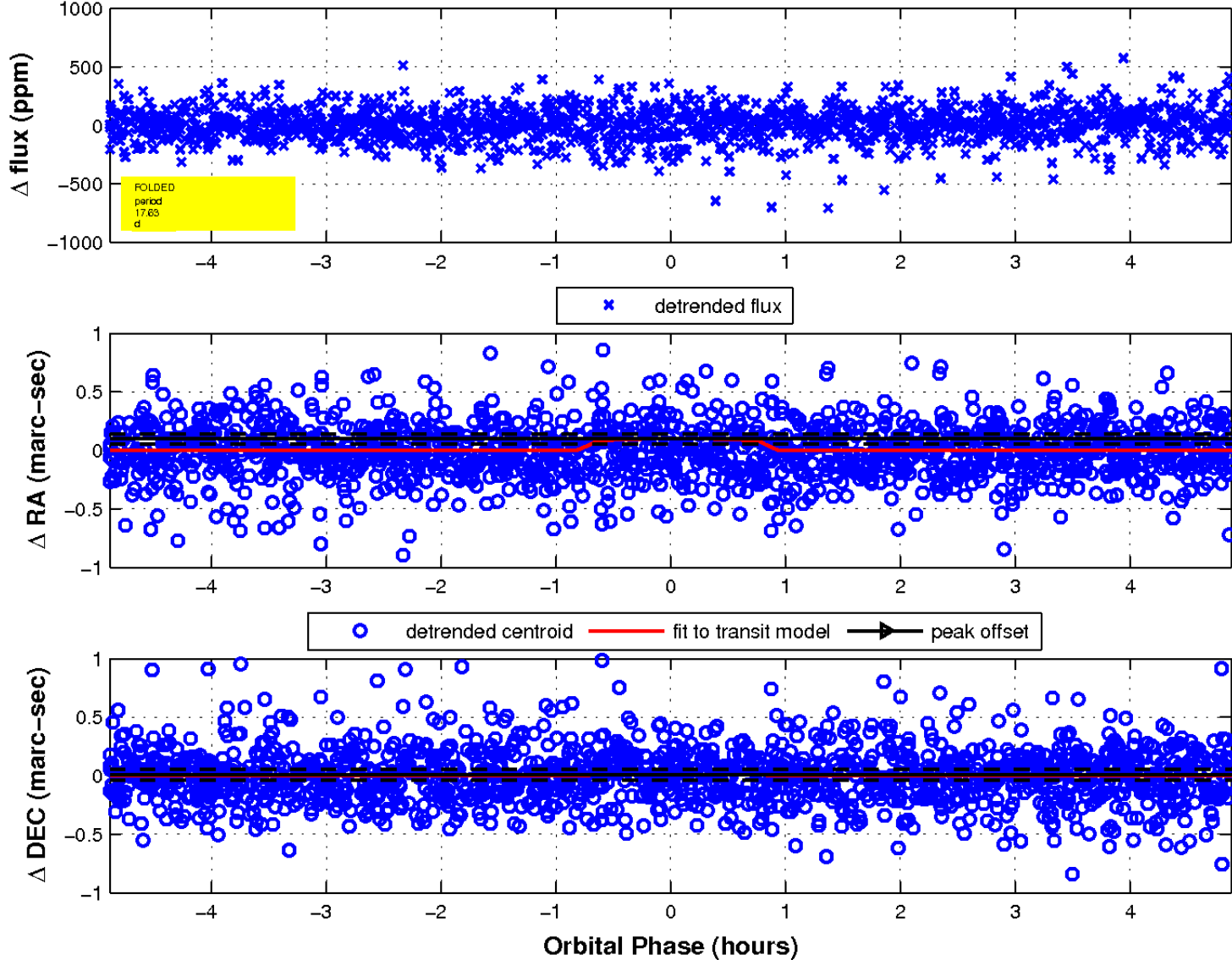
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

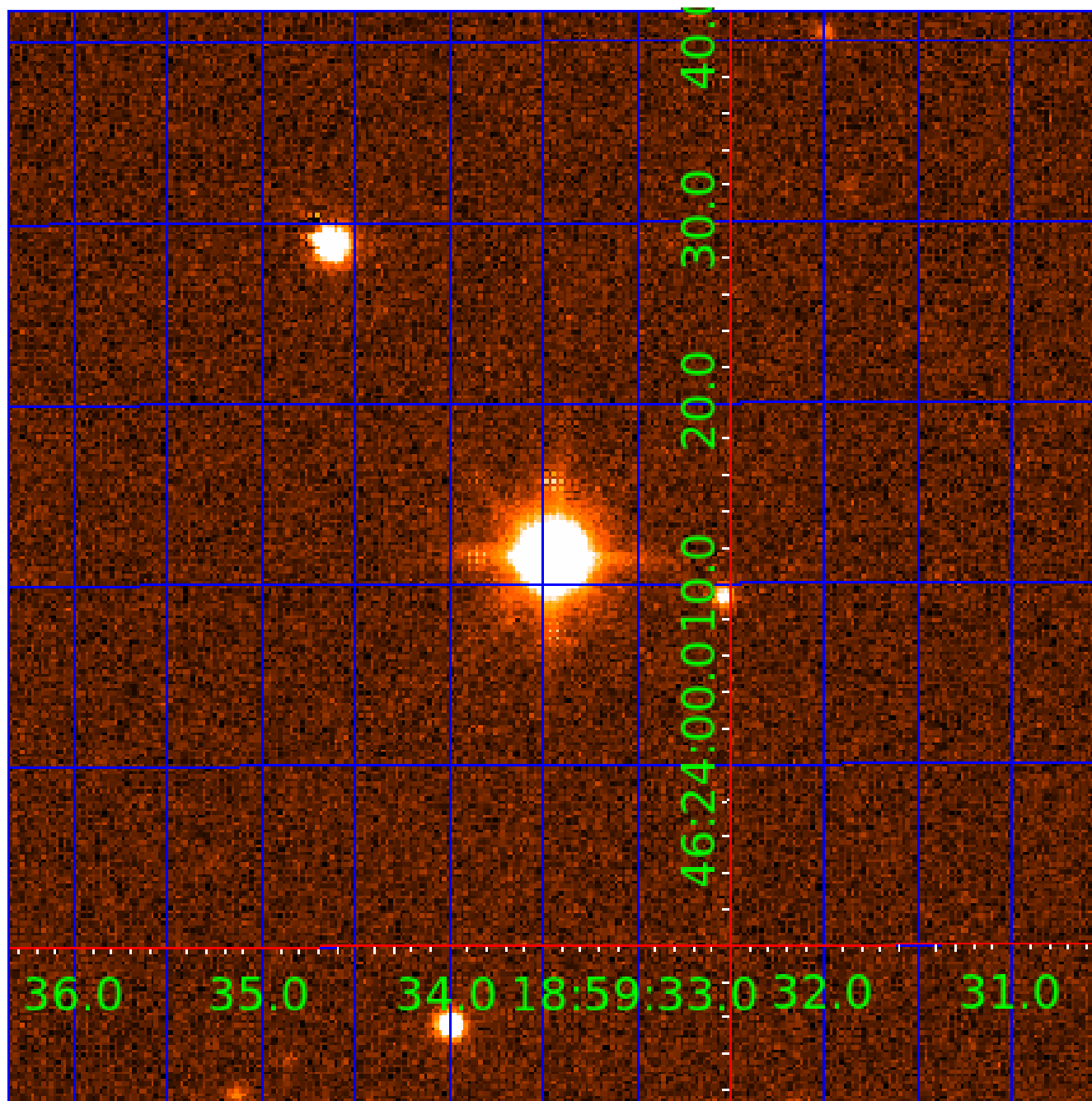


fluxWeightedCentroids, Planet 6 of 9



UKIRT Image

Declination



KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

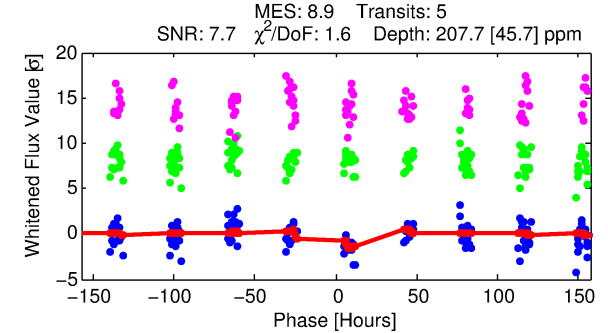
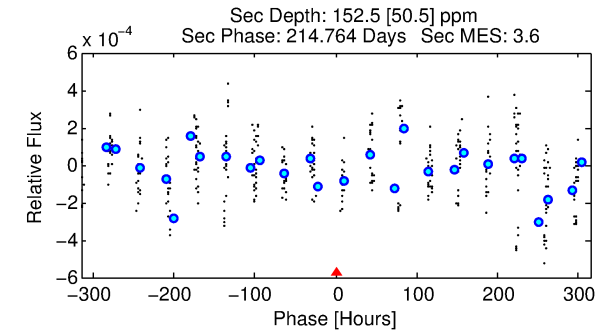
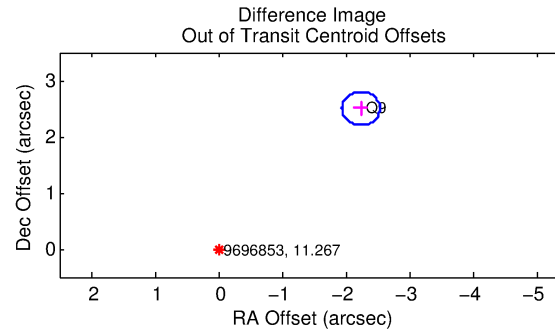
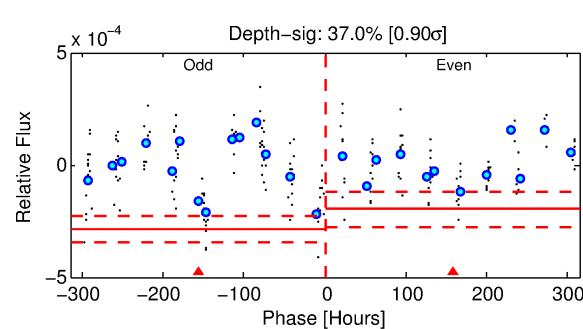
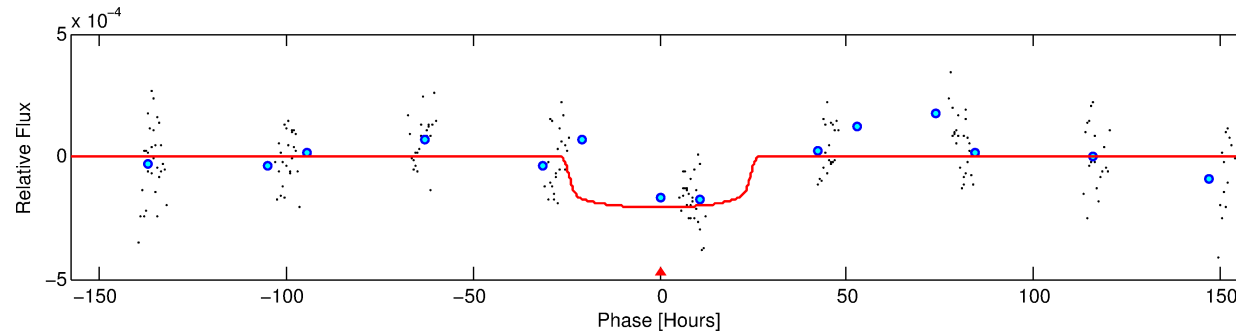
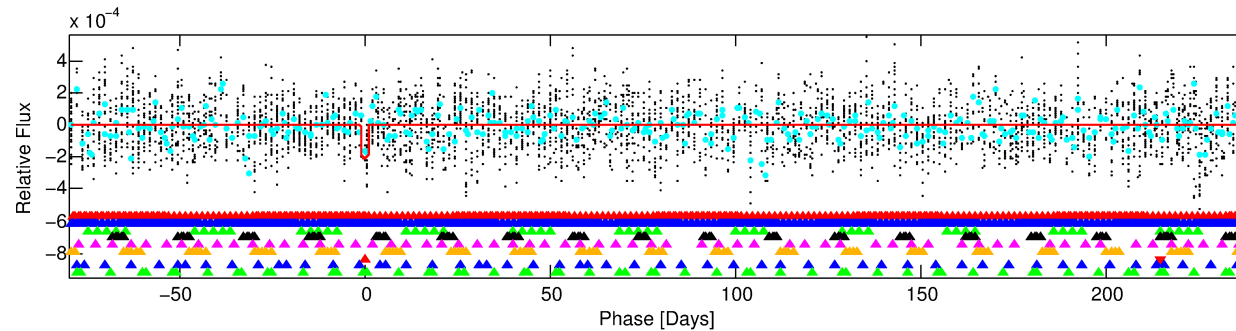
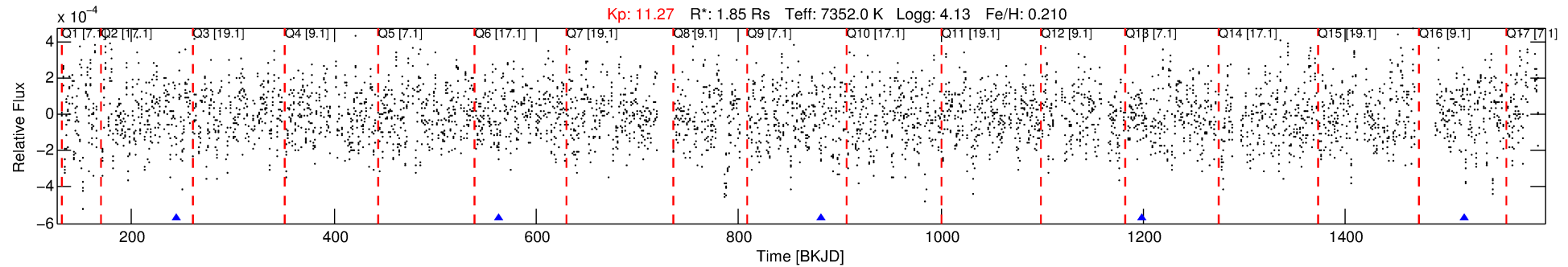
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-07

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 7 of 9 Period: 318.409 d



DV Fit Results:

Period = 318.40876 [0.08092] d
Epoch = 244.2202 [0.4208] BKJD
Rp/R* = 0.0153 [0.0026]
a/R* = 21.78 [14.34]
b = 0.90 [0.15]
Seff = 7.58 [3.12]
Teq = 423 [44] K
Rp = 3.09 [1.09] Re
a = 1.0864 [0.2764] AU
Ag = 10397.53 [6228.02] [1.67 σ]
Teff = 6606 [847] K [7.29 σ]

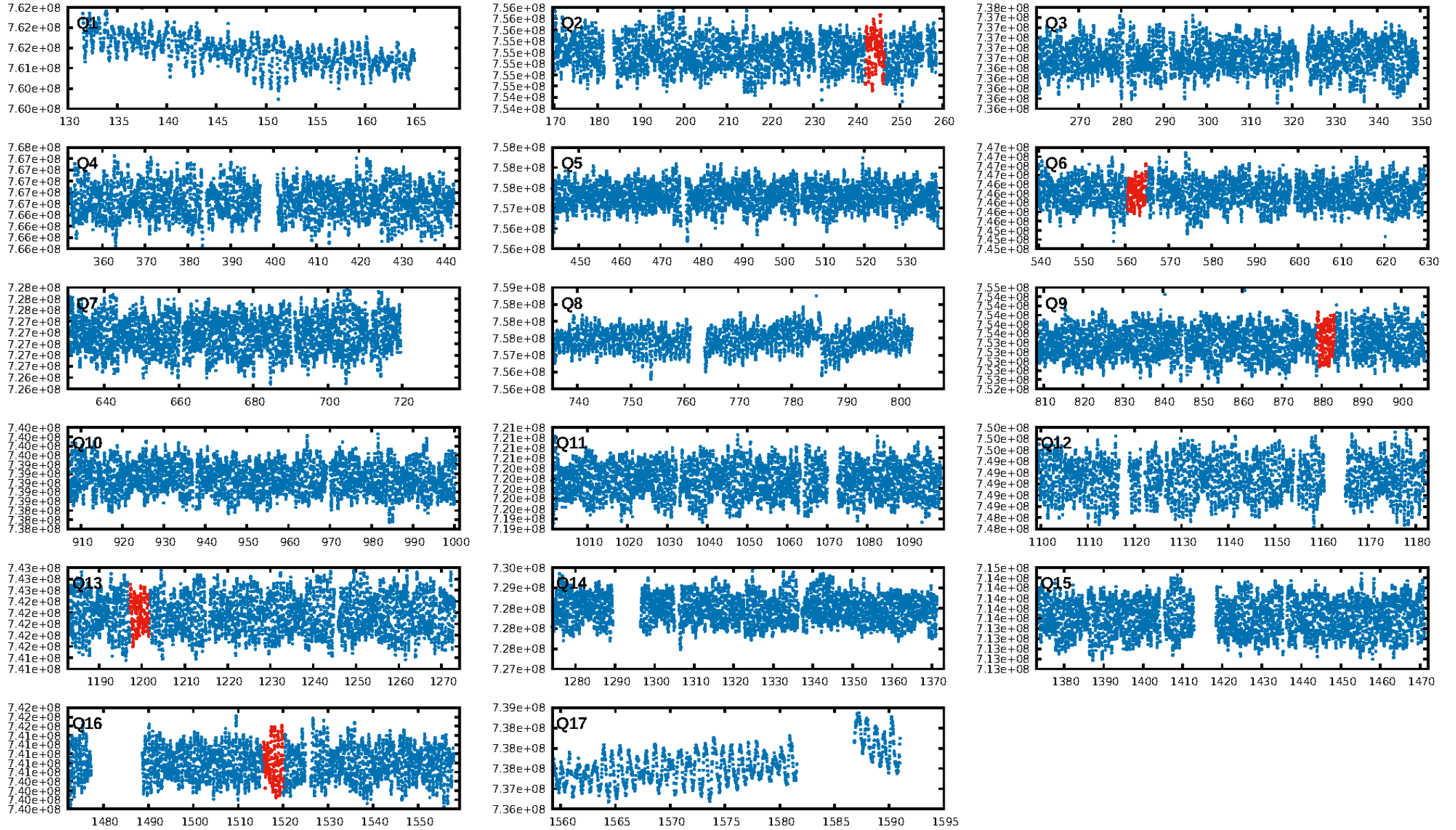
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [132.21 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 0.03844
Centroid-sig: 0.2%
Centroid-so: 0.446 arcsec [1.52 σ]
OotOffset-rm: 3.356 arcsec [33.71 σ]
KicOffset-rm: 3.345 arcsec [33.31 σ]
OotOffset-st: 0/0/0/1 [1]
KicOffset-st: 0/0/0/1 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 0.00 [0/2]

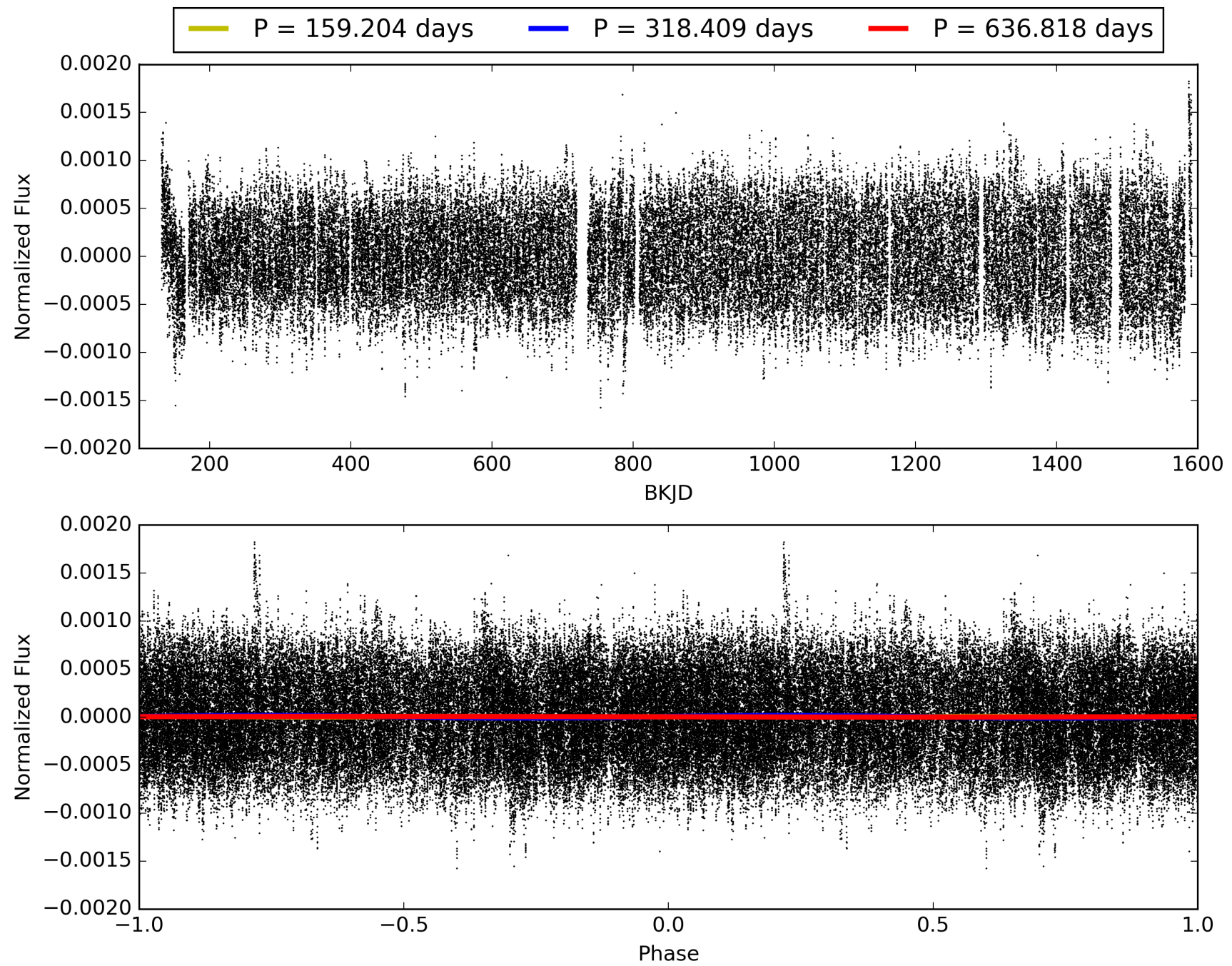
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:00 Z

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

TCE 009696853-07, PDC Light Curves

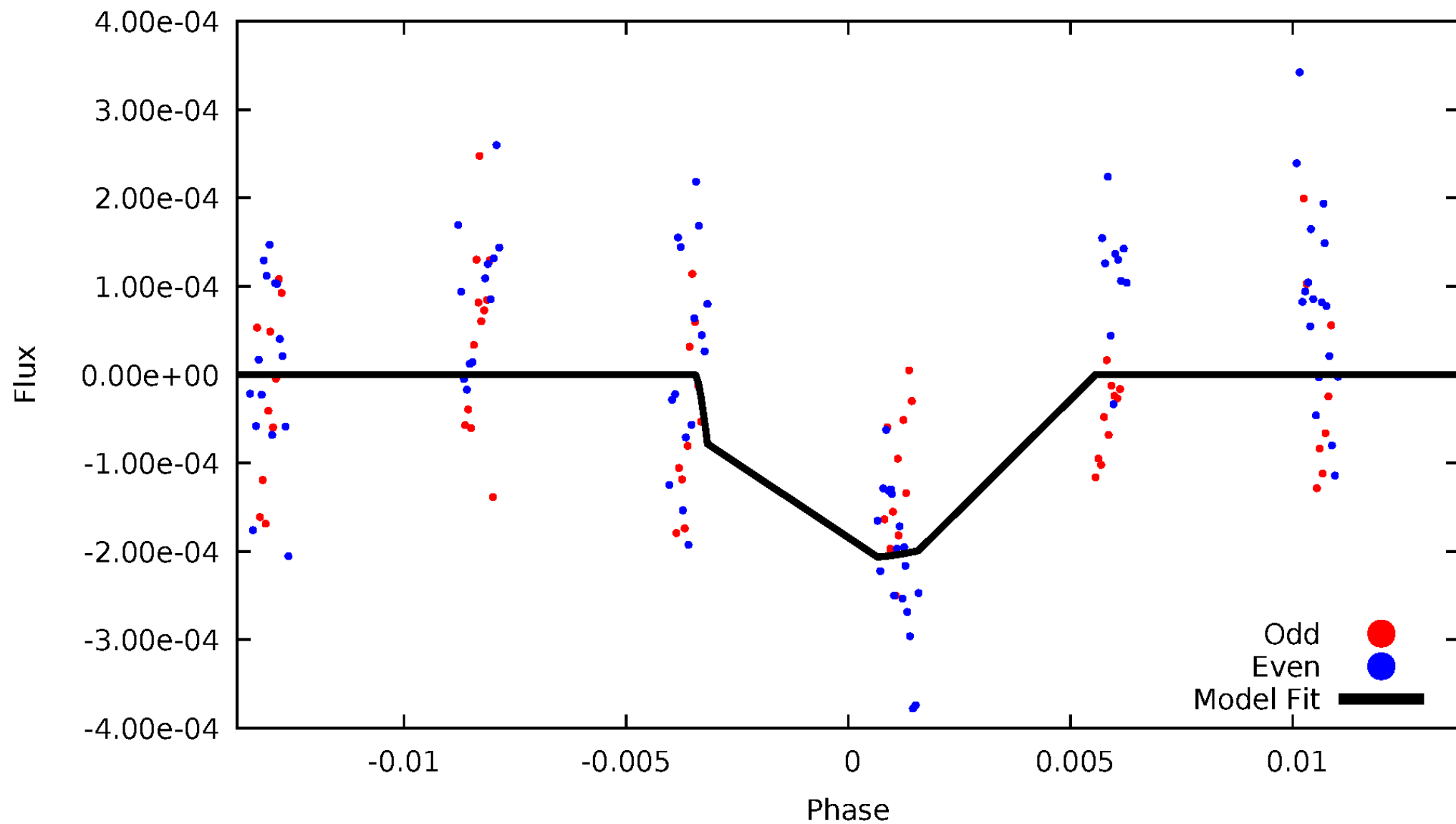


TCE 009696853-07



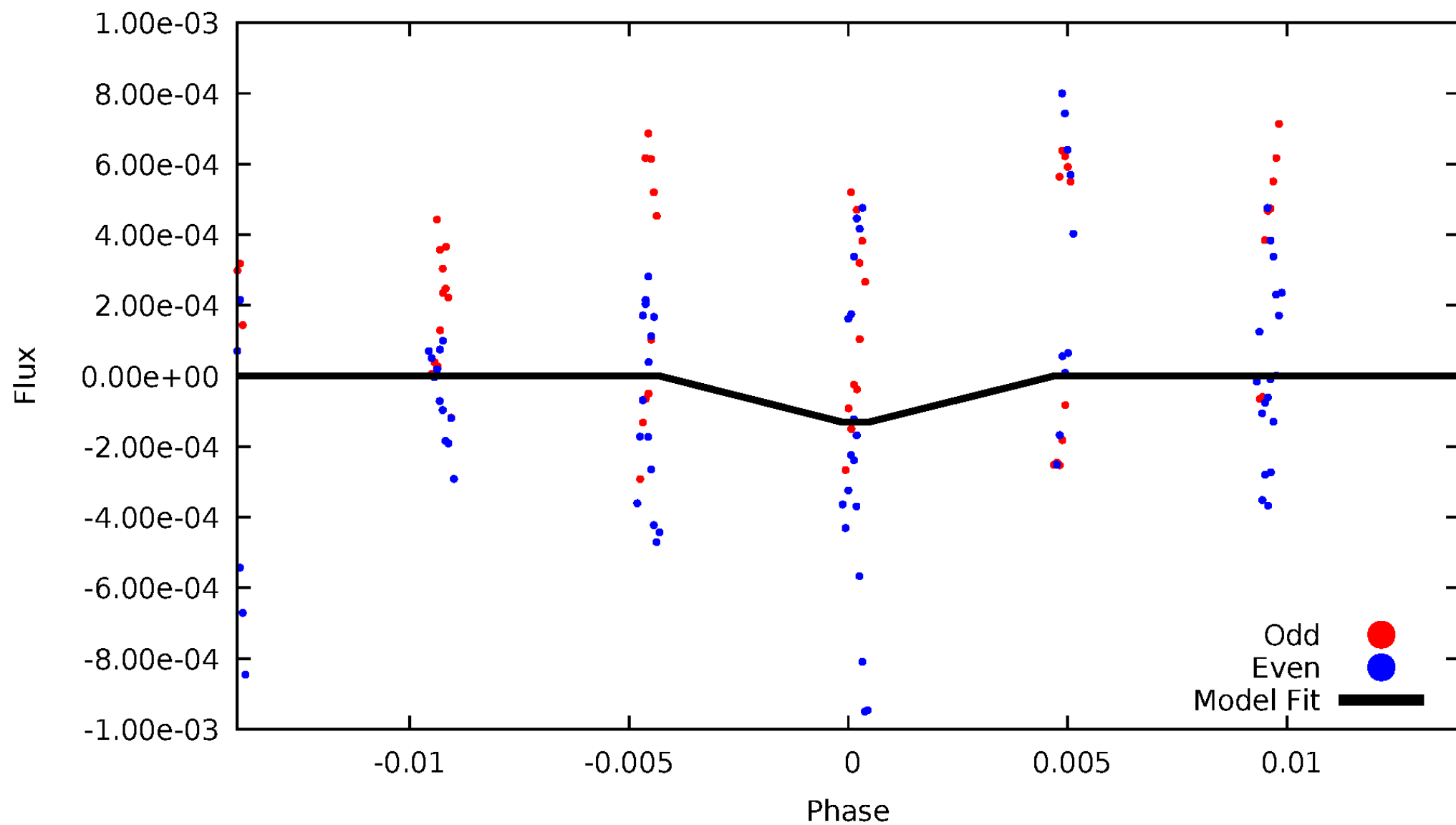
DV Odd/Even

TCE 009696853-07



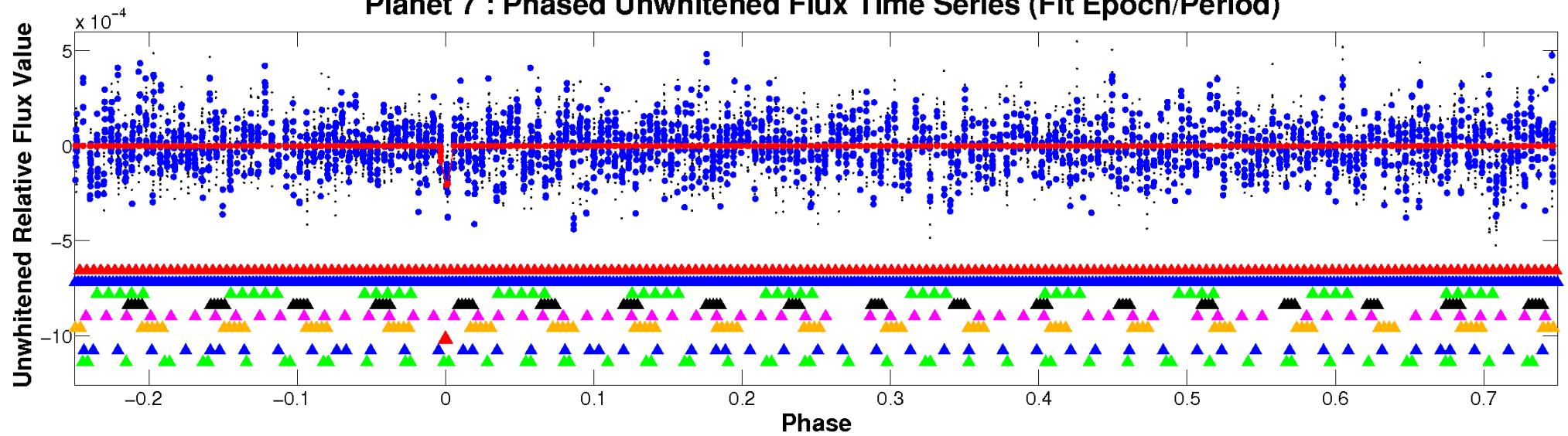
ALT Odd/Even

TCE 009696853-07

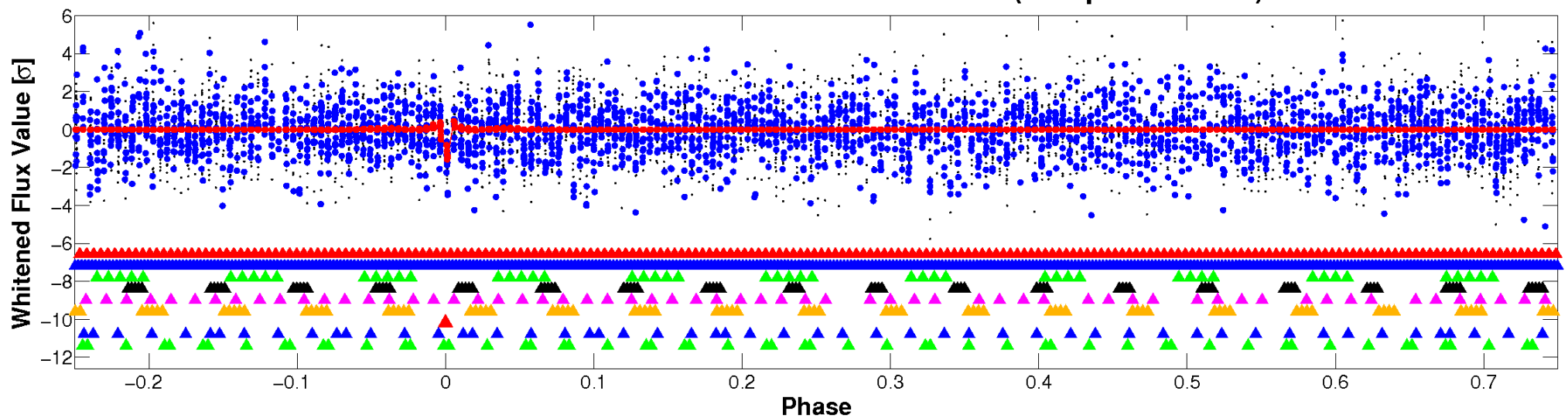


Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)



Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



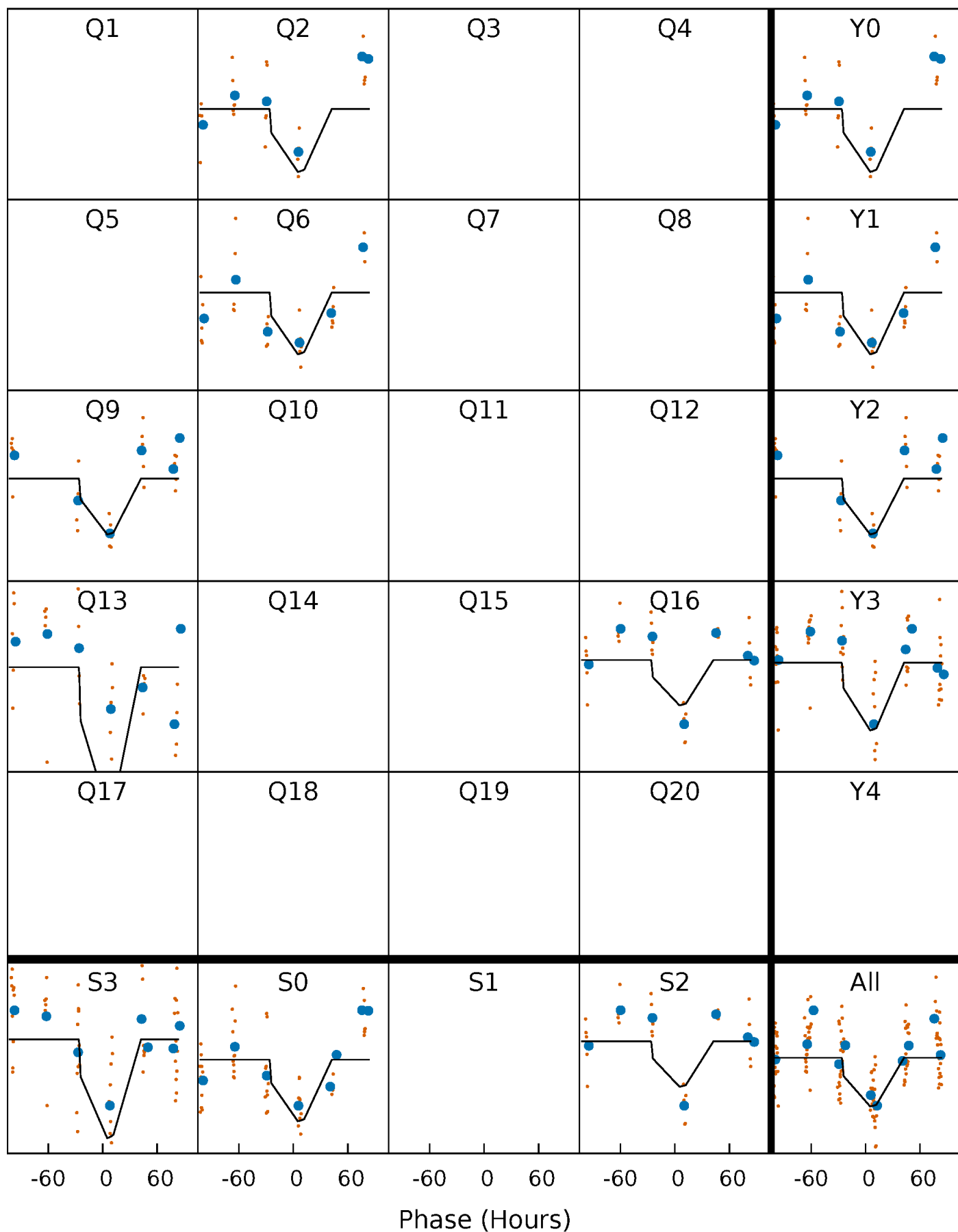
PDC Quarter-Phased Transit Curves

TCE 009696853-07 P=318.408757 Days $T_0=244.220215$ (BKJD)



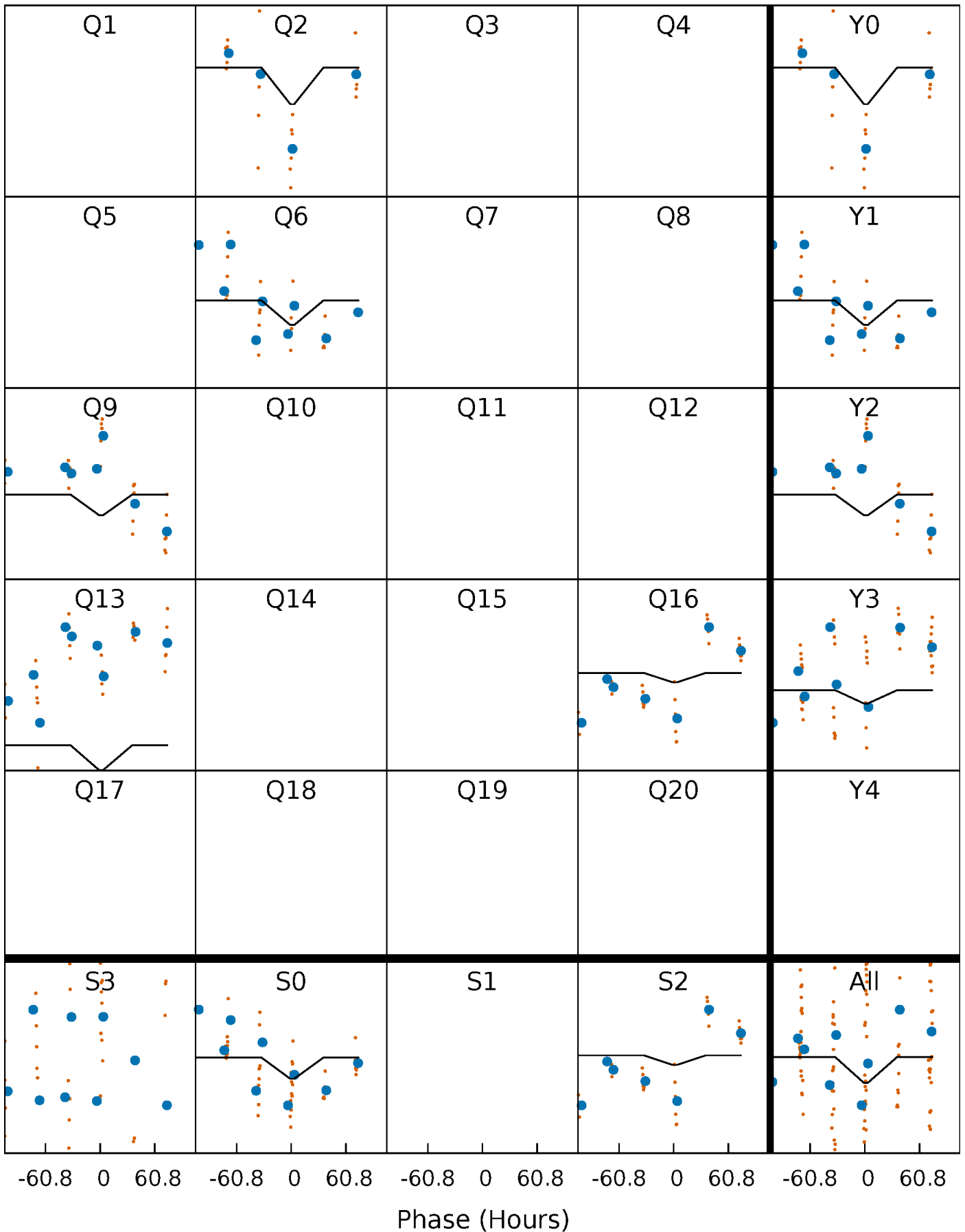
DV Quarter-Phased Transit Curves

TCE 009696853-07 P=318.408757 Days $T_0=244.220215$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

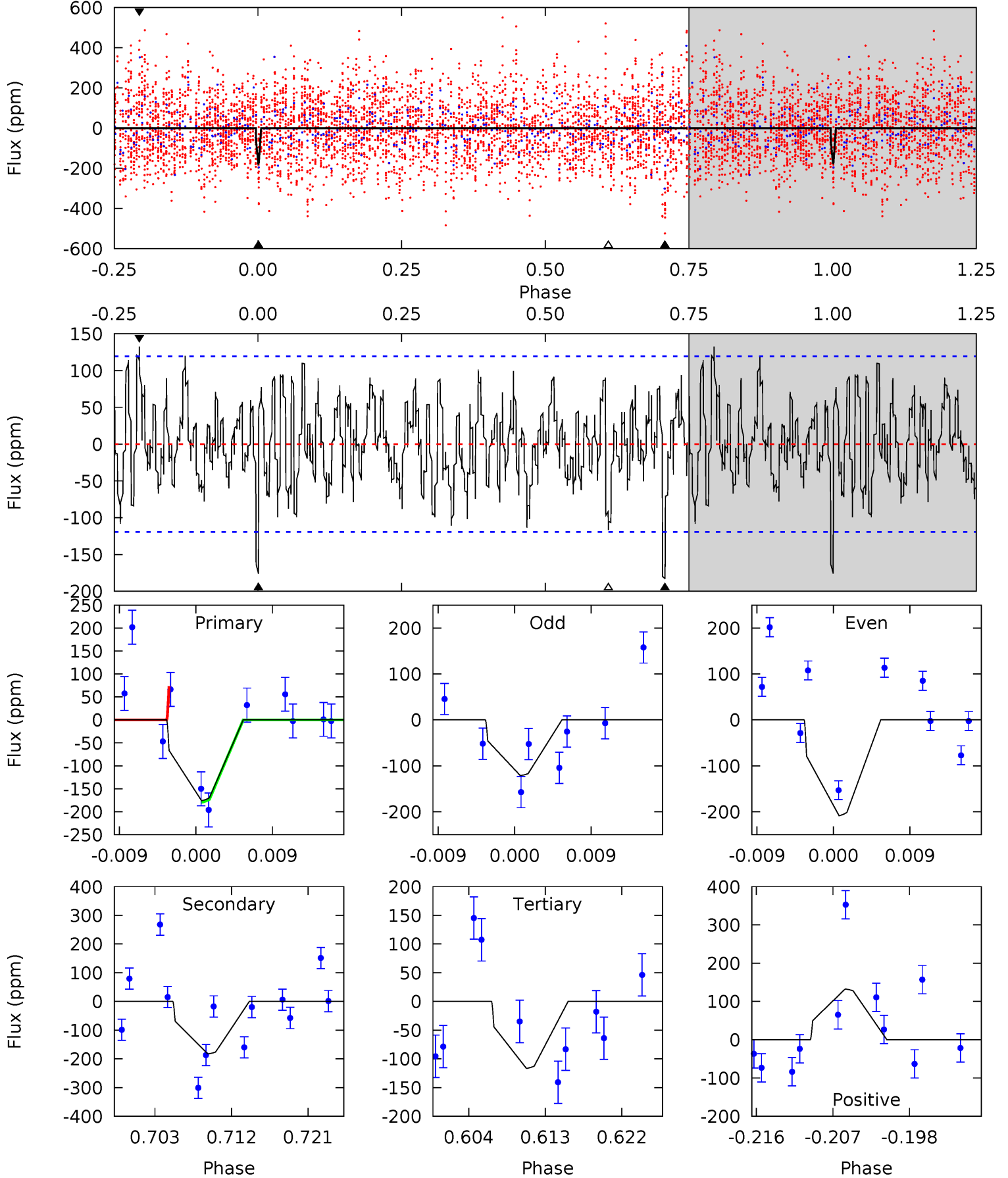
TCE 009696853-07 P=318.436599 Days $T_0=244.470513$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-07, P = 318.408757 Days, E = 244.220215 Days

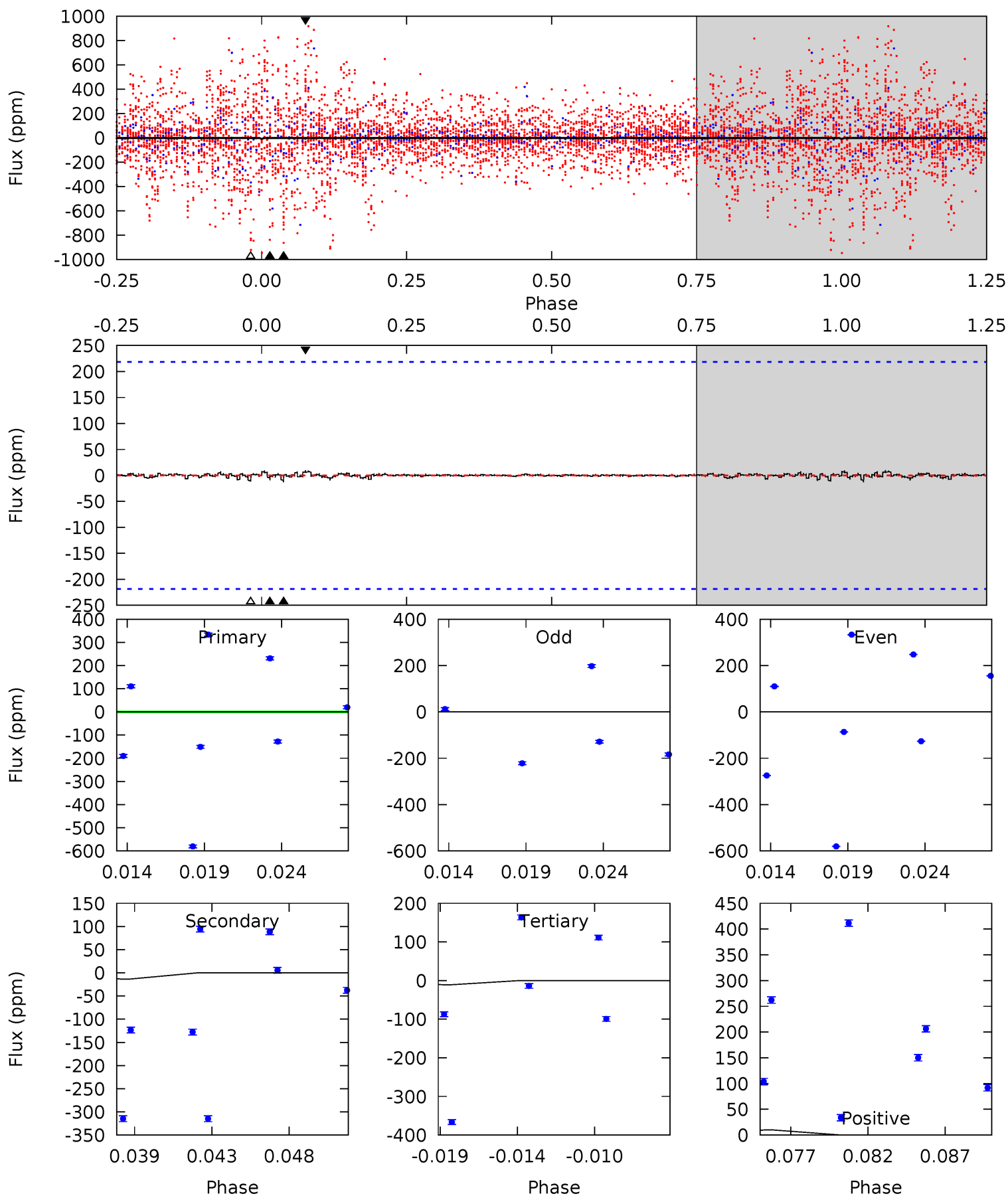
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.44	7.73	4.93	5.60	5.05	2.61	1.92	2.51	1.83	2.79	2.12	1.81	1.02	0.42	1.76



Alt Model-Shift Uniqueness Test

009696853-07, P = 318.436599 Days, E = 244.470513 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.19	0.32	0.25	0.23	5.16	2.82	0.05	-0.07	-0.04	0.06	0.08	1.55	0.69	0.42	2.39



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-183 ± 24	$3.17^{+0.74}_{-0.64}$	598^{+46}_{-32}	6833^{+938}_{-676}	11591^{+6798}_{-4190}
Alt.	-13 ± 42	$2.33^{+0.72}_{-0.54}$	599^{+41}_{-36}	4423^{+1601}_{-9497}	1579^{+5809}_{-5001}

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 $A_{obs} \gg 1.0$

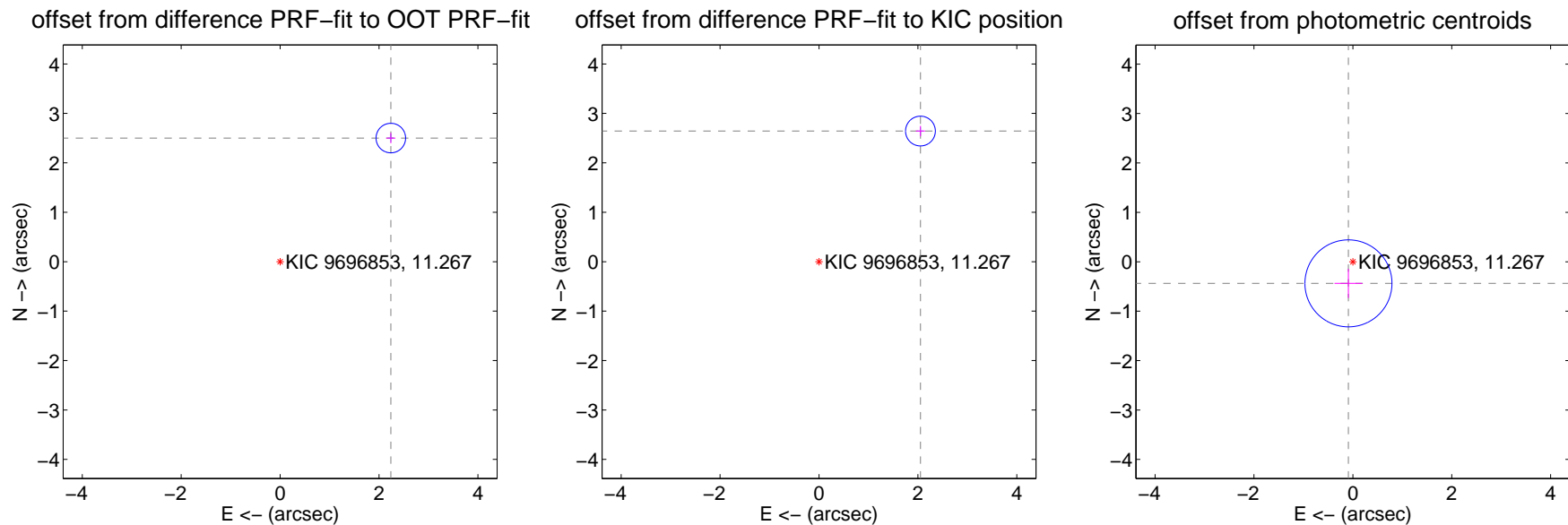
DV Centroid Data

Supplemental centroid analysis for 009696853-07. **Kepler magnitude: 11.27.** Transit SNR 7.75

There are 1 quarters with good PRF difference image offsets

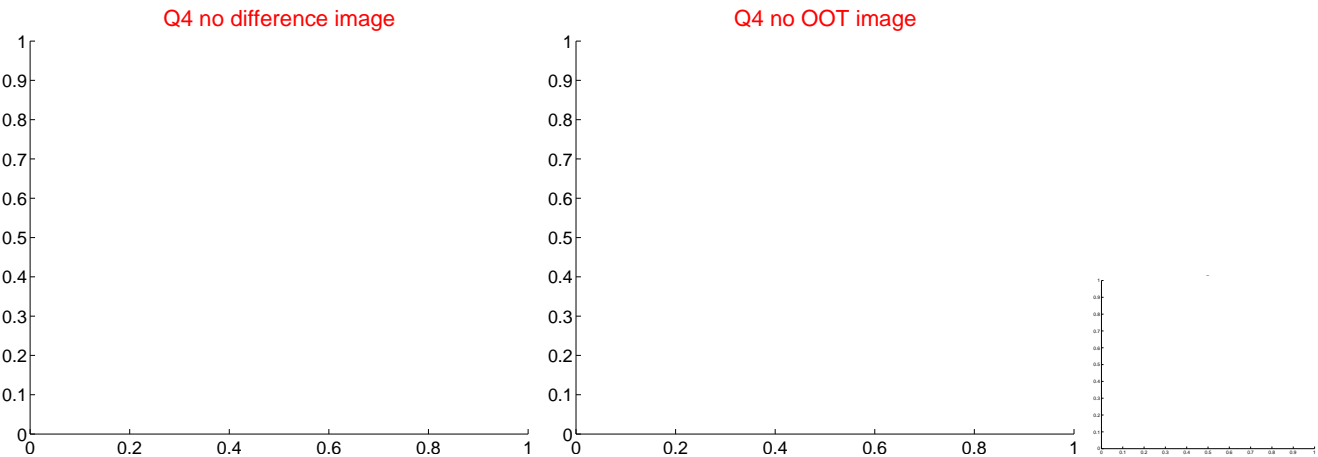
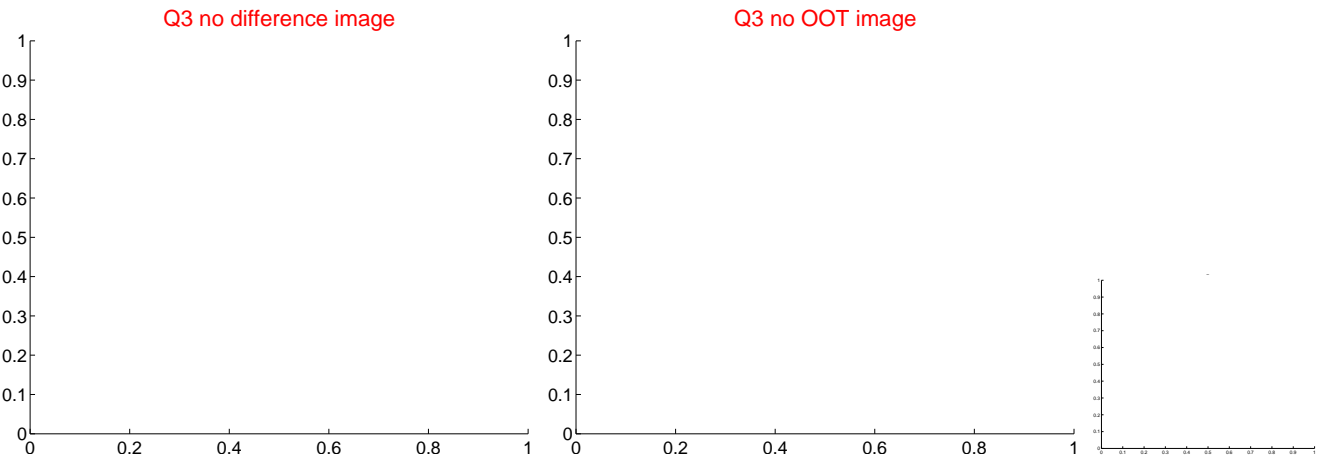
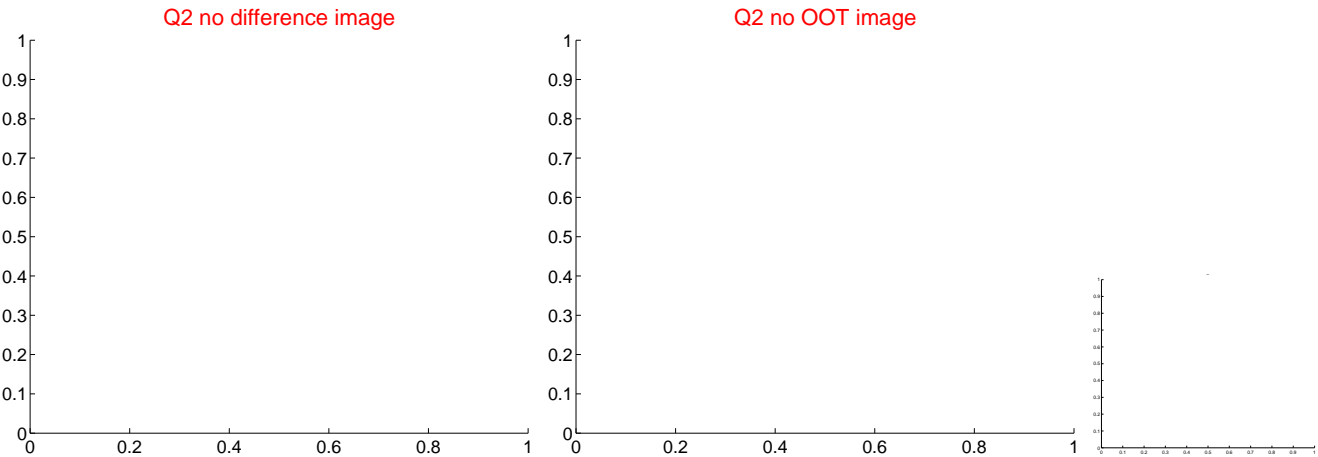
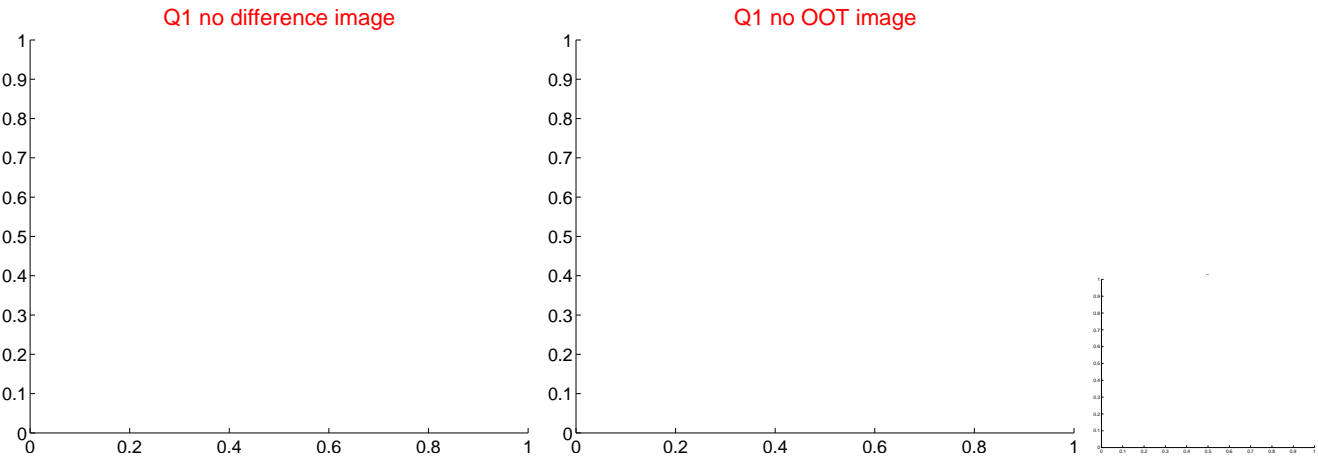
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.356 ± 0.100	33.71	-2.238 ± 0.092	2.501 ± 0.105
PRF-fit source offset from KIC position	3.345 ± 0.100	33.31	-2.051 ± 0.092	2.643 ± 0.105
photometric centroid source offset	0.45 ± 0.29	1.52	0.09 ± 0.28	-0.44 ± 0.29

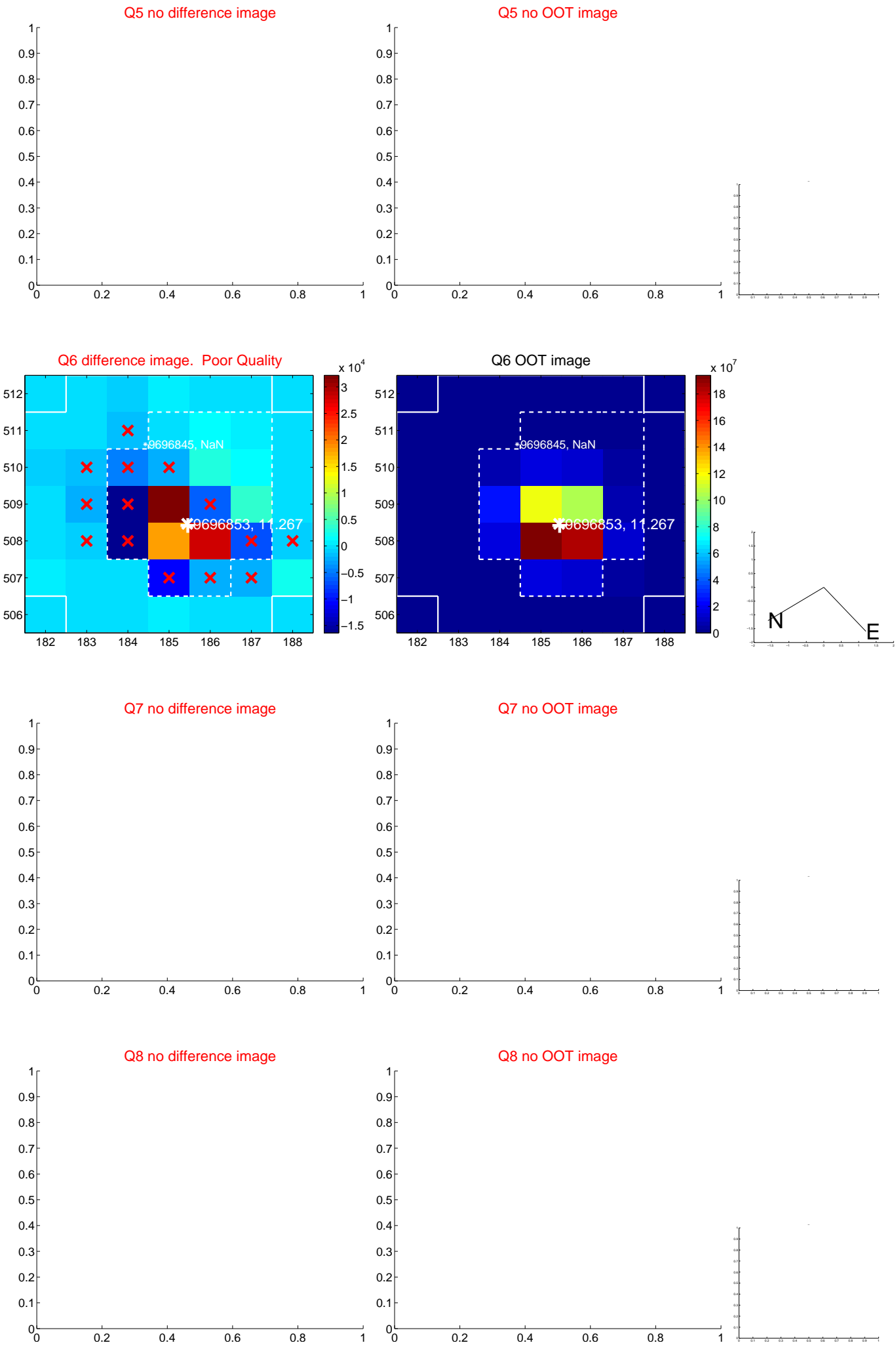


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

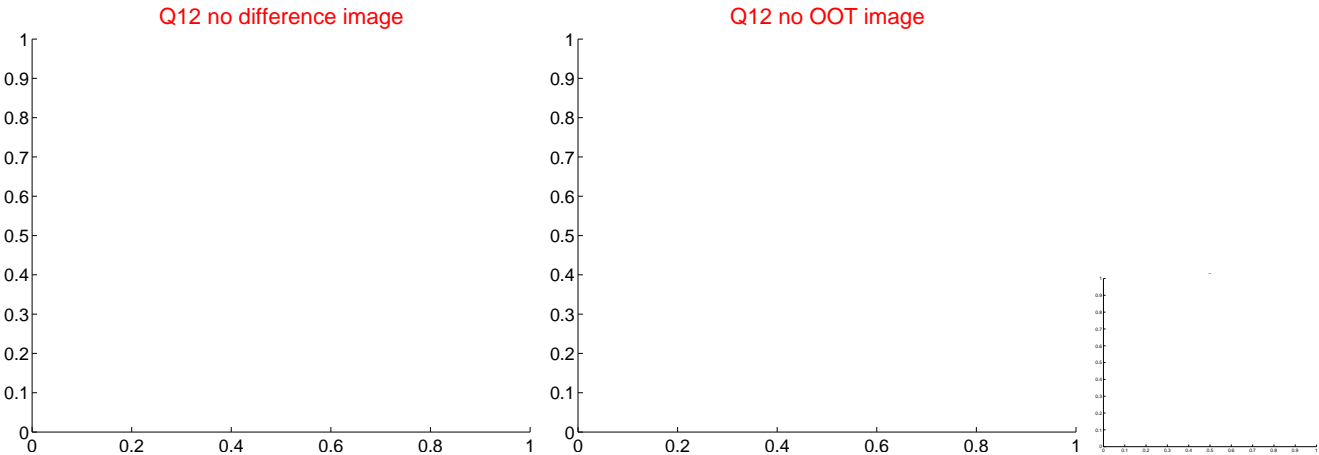
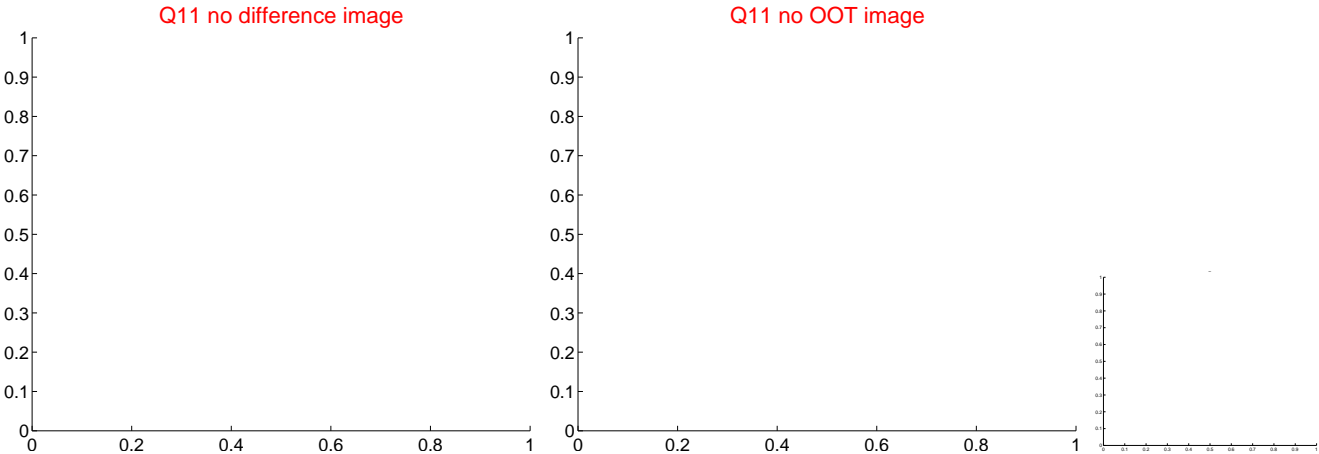
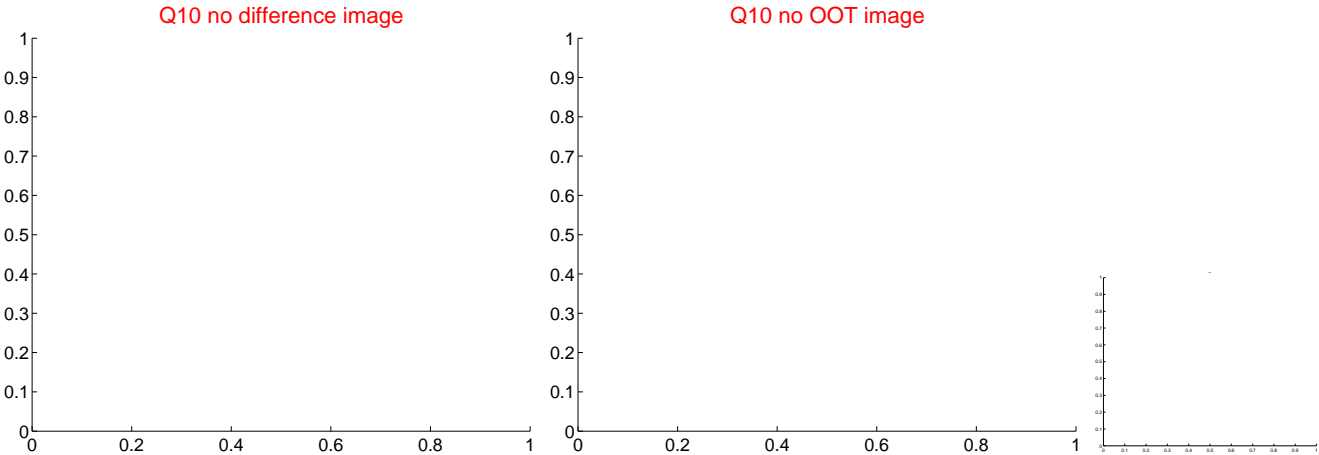
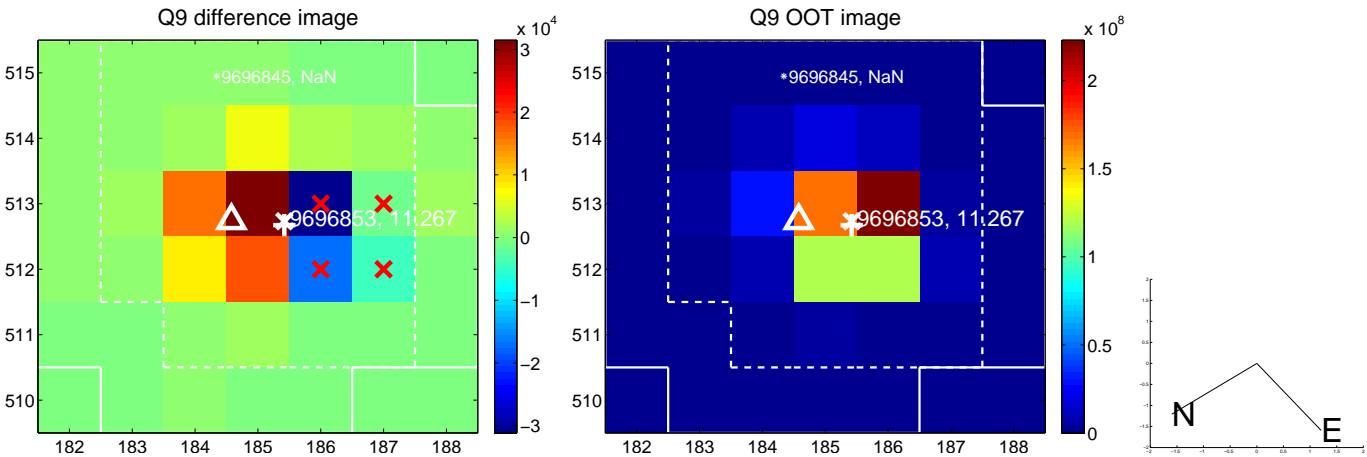
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



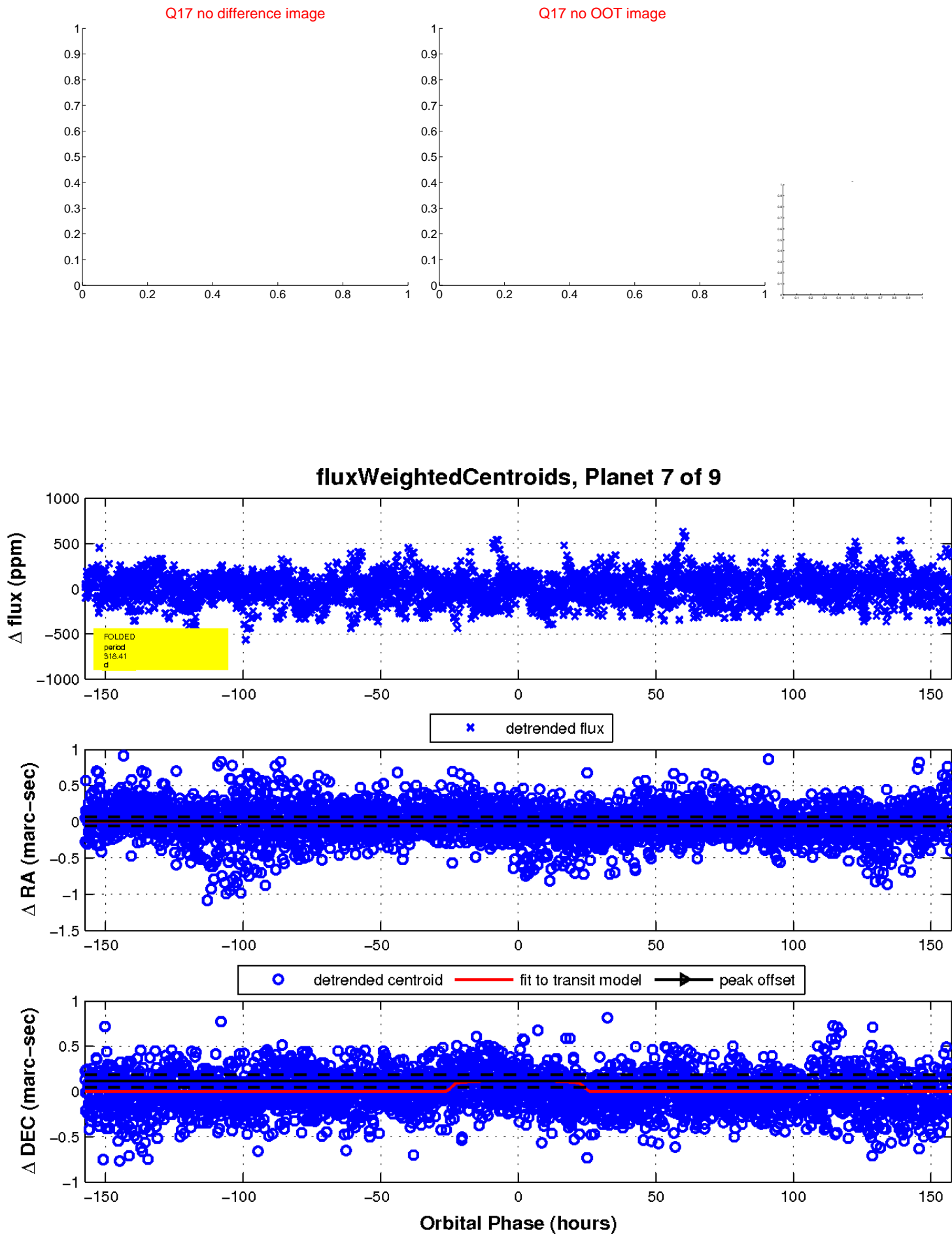
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

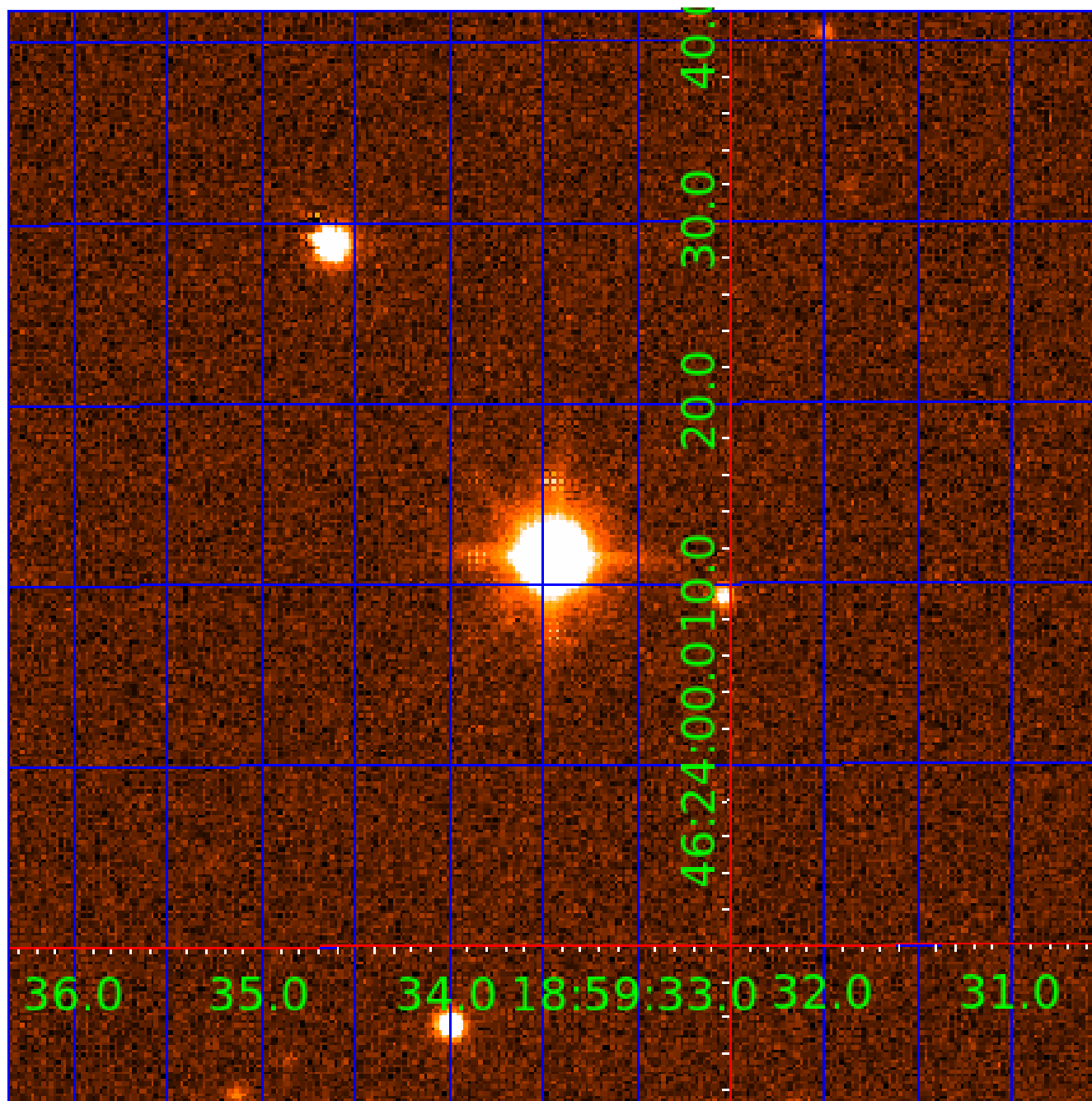


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009696853

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})
009696853-01	OBS	No	1.502262	132.522986	19.4	5.338	9.9	7.5	1.85	7352	0.95	9582.53
009696853-02	OBS	No	0.751079	132.193770	21.4	4.919	11.0	9.8	1.85	7352	0.88	24148.68
009696853-03	OBS	No	28.721206	150.591253	347.1	2.222	14.9	12.3	1.85	7352	3.88	187.44
009696853-05	OBS	No	23.424075	152.344817	99.7	8.672	11.0	5.7	1.85	7352	2.14	245.99
009696853-06	OBS	No	17.628512	148.202405	217.2	1.629	9.1	10.2	1.85	7352	2.86	359.35
009696853-07	OBS	No	318.408757	244.220215	207.7	52.541	8.9	7.7	1.85	7352	3.09	7.58
009696853-09	OBS	No	25.845765	140.481327	49.6	7.500	7.4	-1.0	1.85	7352	1.32	215.75

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009696853-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
009696853-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—LPP_DV—SAME_NTL_PERIOD—CENT_SATURATED
009696853-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_SATURATED
009696853-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—CENT_SATURATED
009696853-07	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED—HALO_GHOST
009696853-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_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.

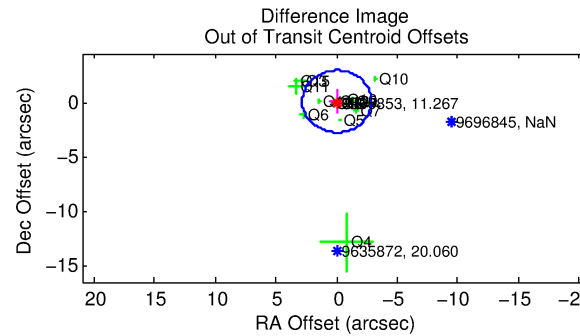
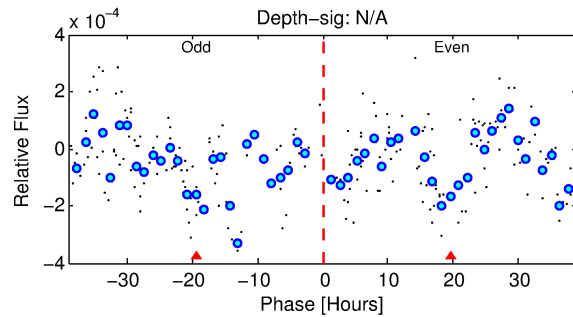
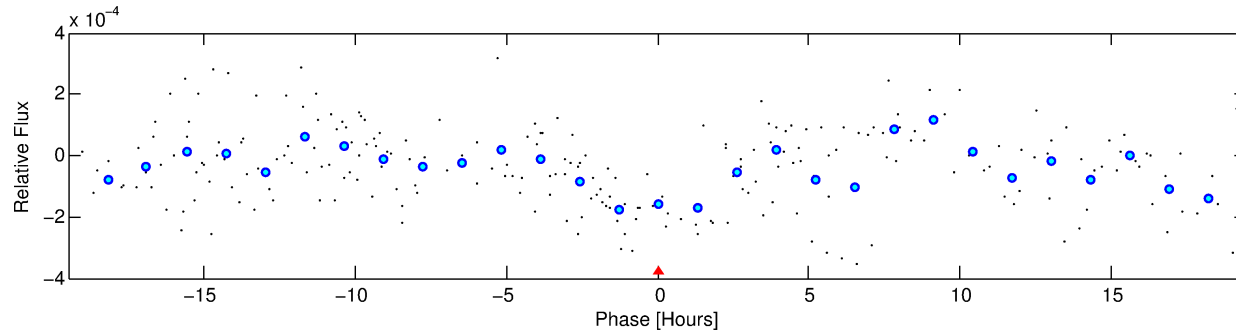
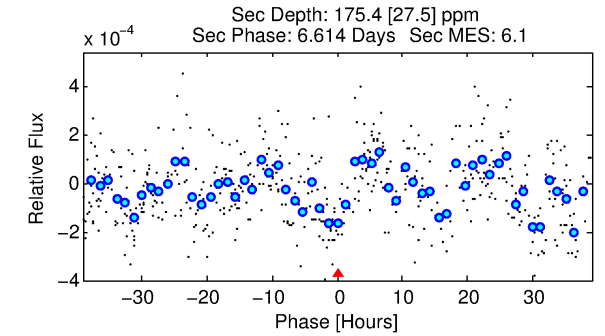
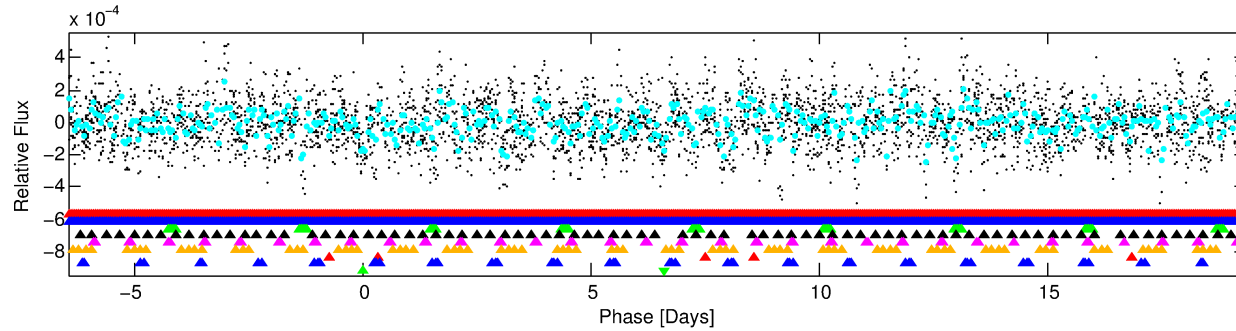
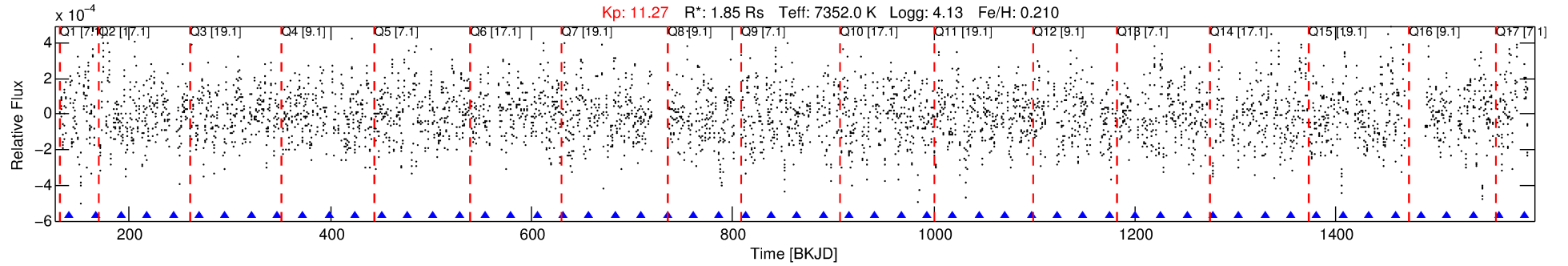
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009696853-09

No Significant Match Found

DV One-Page Summary

KIC: 9696853 Candidate: 9 of 9 Period: 25.846 d



TPS TCE Results:

Period = 25.84577 d
Epoch = 140.4813 BKJD

DV fit results are unavailable

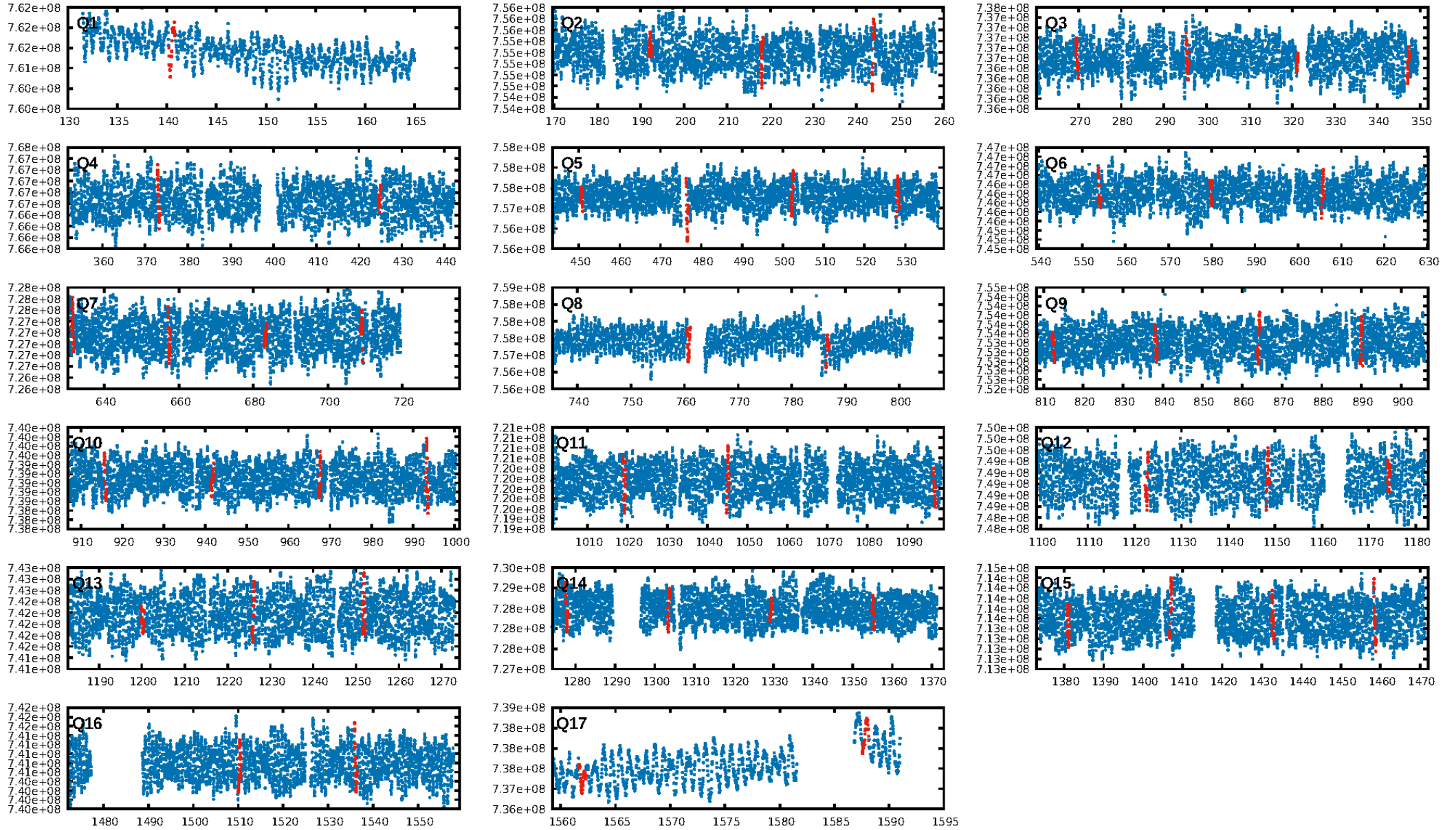
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [5.07 σ]
LongPeriod-sig: 100.0% [3.74 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [14/14]
GhostDiagnostic-chr: 1.01
Centroid-sig: 12.1%
Centroid-so: 0.133 arcsec [1.44 σ]
OotOffset-rm: 0.105 arcsec [0.11 σ]
KicOffset-rm: 0.299 arcsec [0.36 σ]
OotOffset-st: 3/4/4/4 [15]
KicOffset-st: 3/4/4/4 [15]
DiffImageQuality-fgm: 0.33 [5/15]
DiffImageOverlap-fno: 0.00 [0/17]

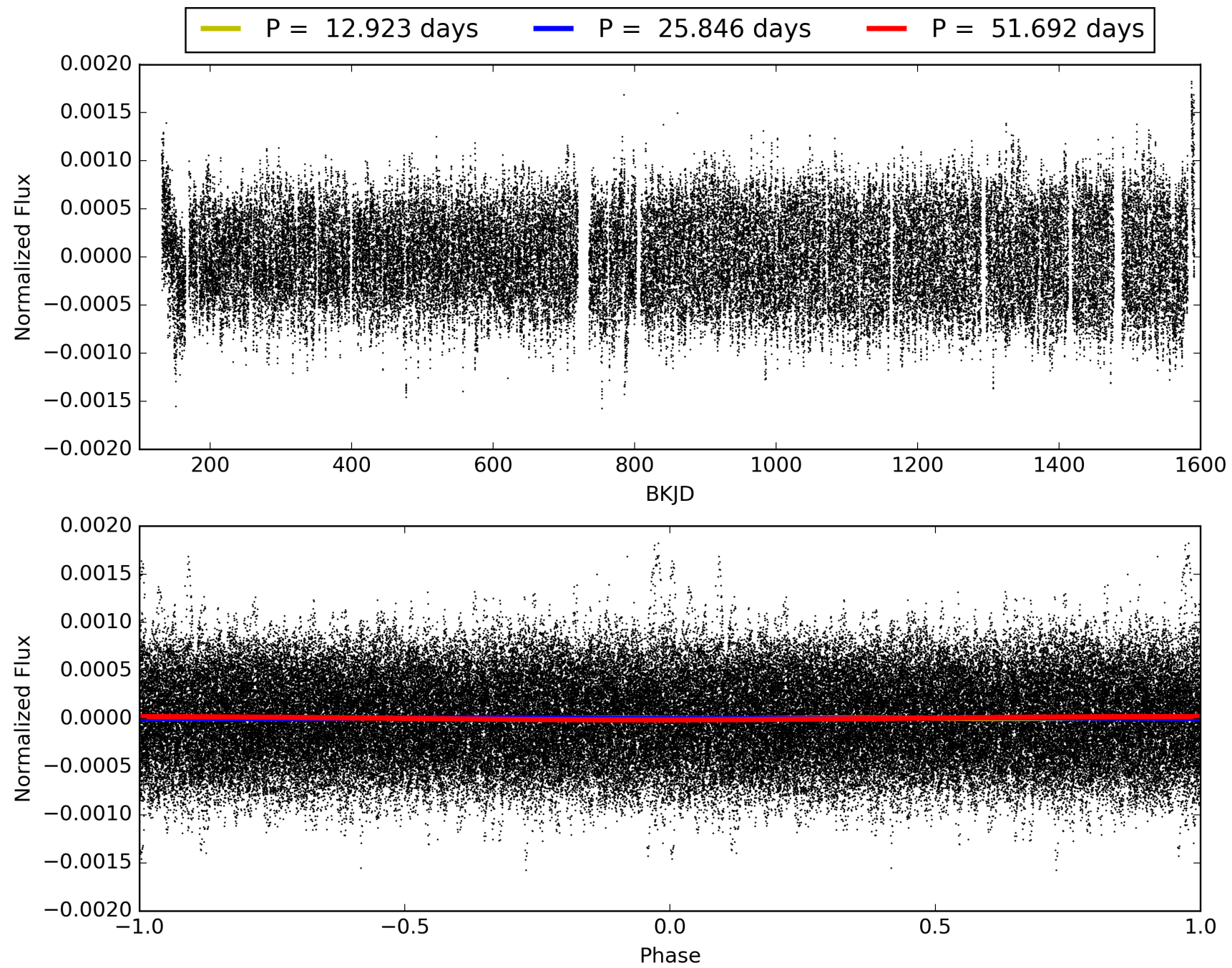
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 06:27:05 Z

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

TCE 009696853-09, PDC Light Curves

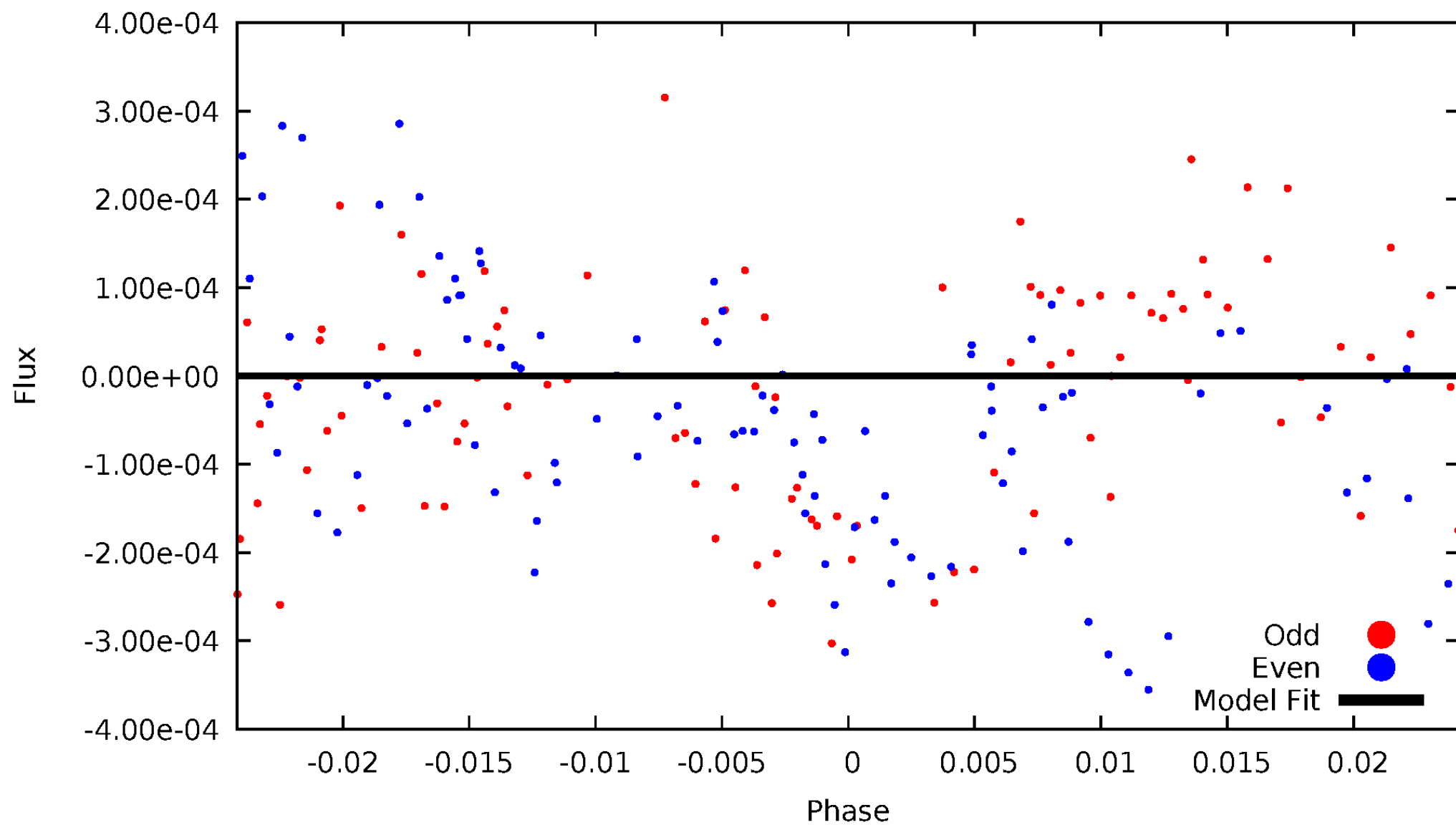


TCE 009696853-09



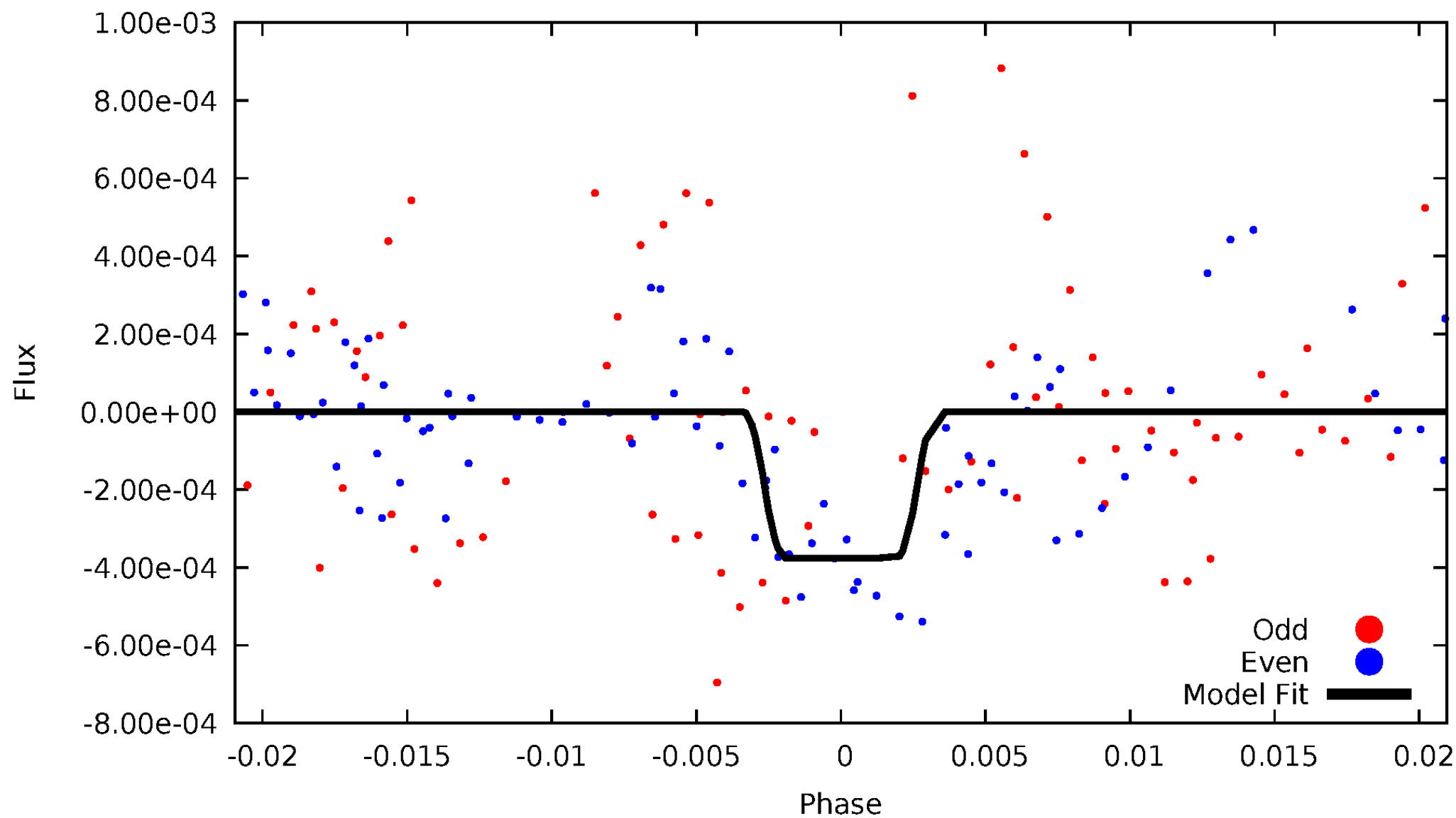
DV Odd/Even

TCE 009696853-09

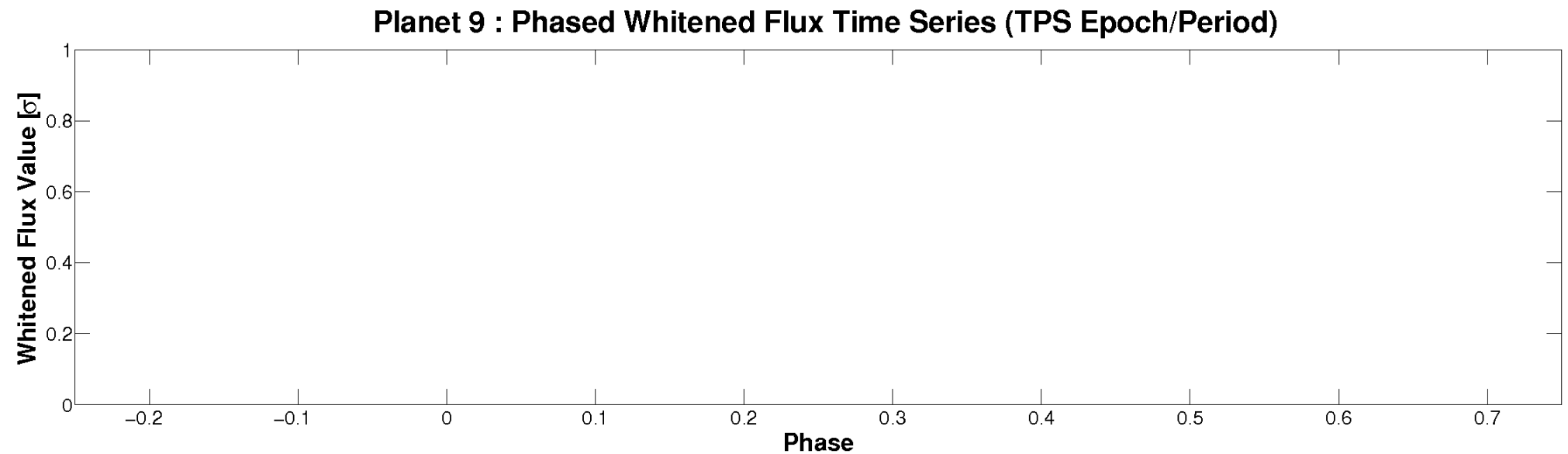
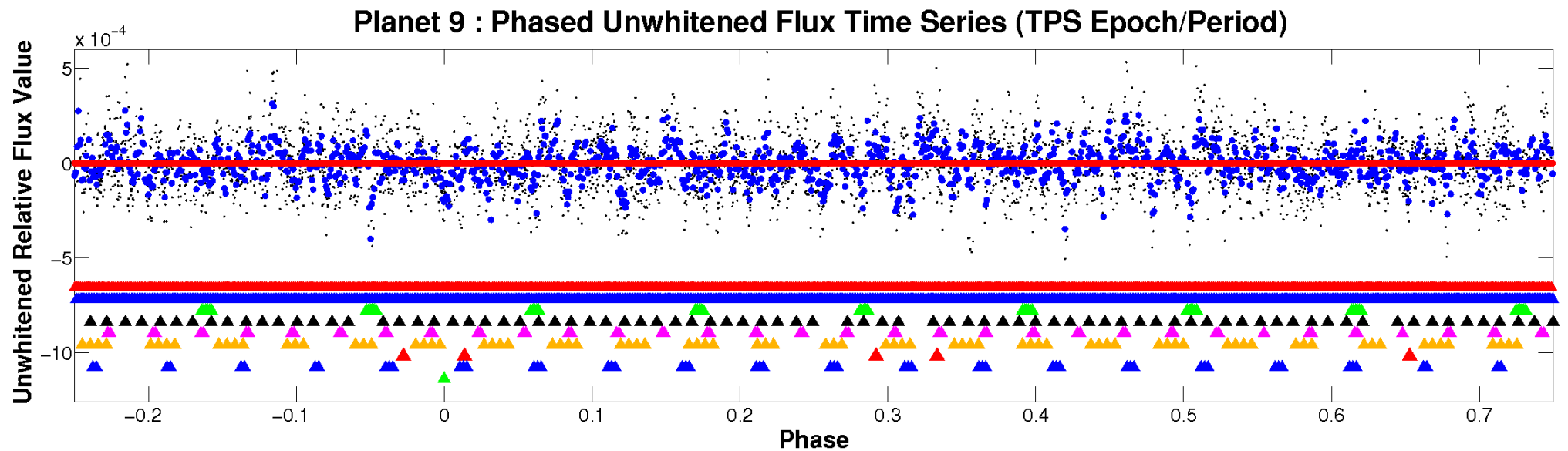


ALT Odd/Even

TCE 009696853-09

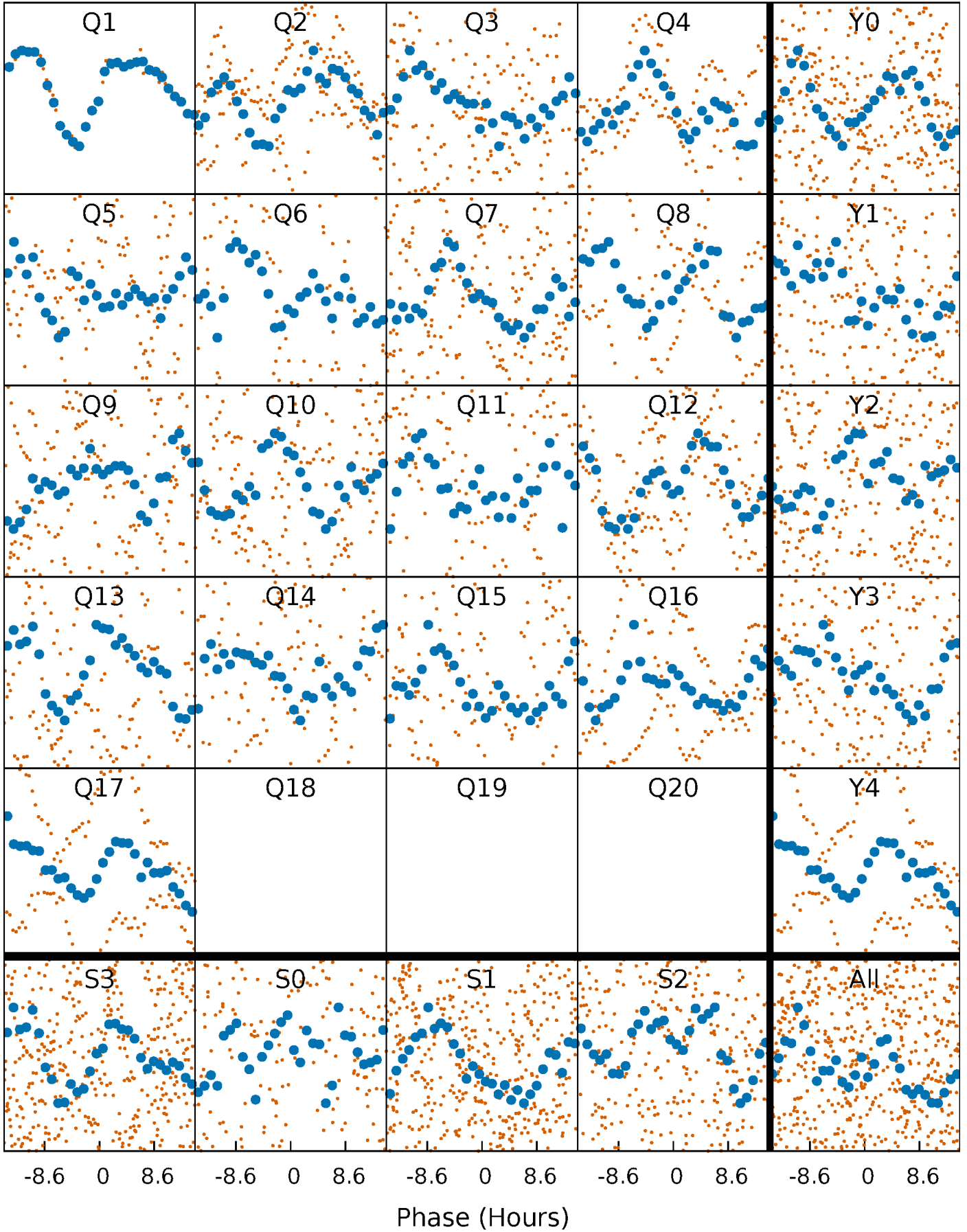


Non-Whitened Vs. Whitened Light Curve



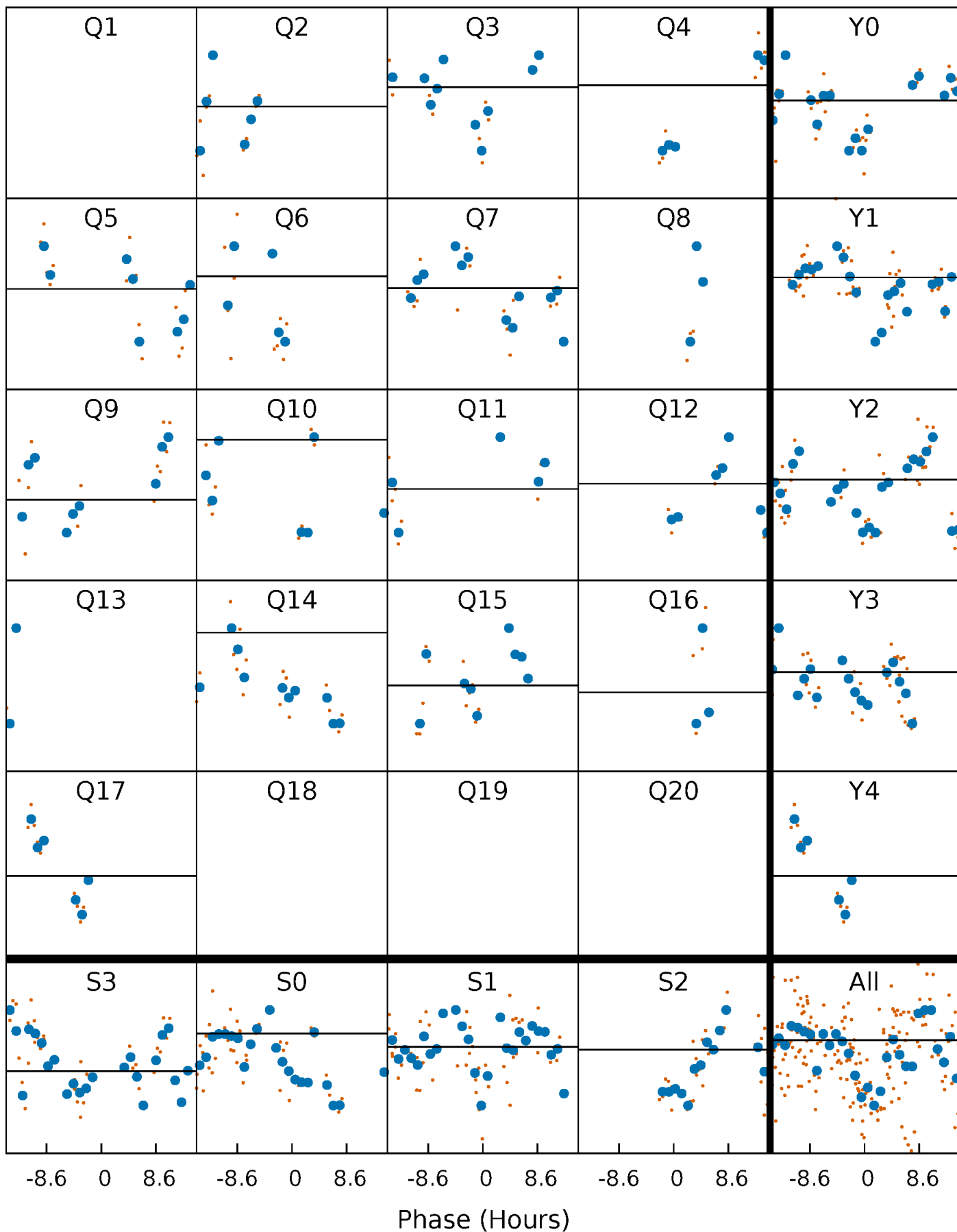
PDC Quarter-Phased Transit Curves

TCE 009696853-09 P= 25.845765 Days $T_0=140.481327$ (BKJD)



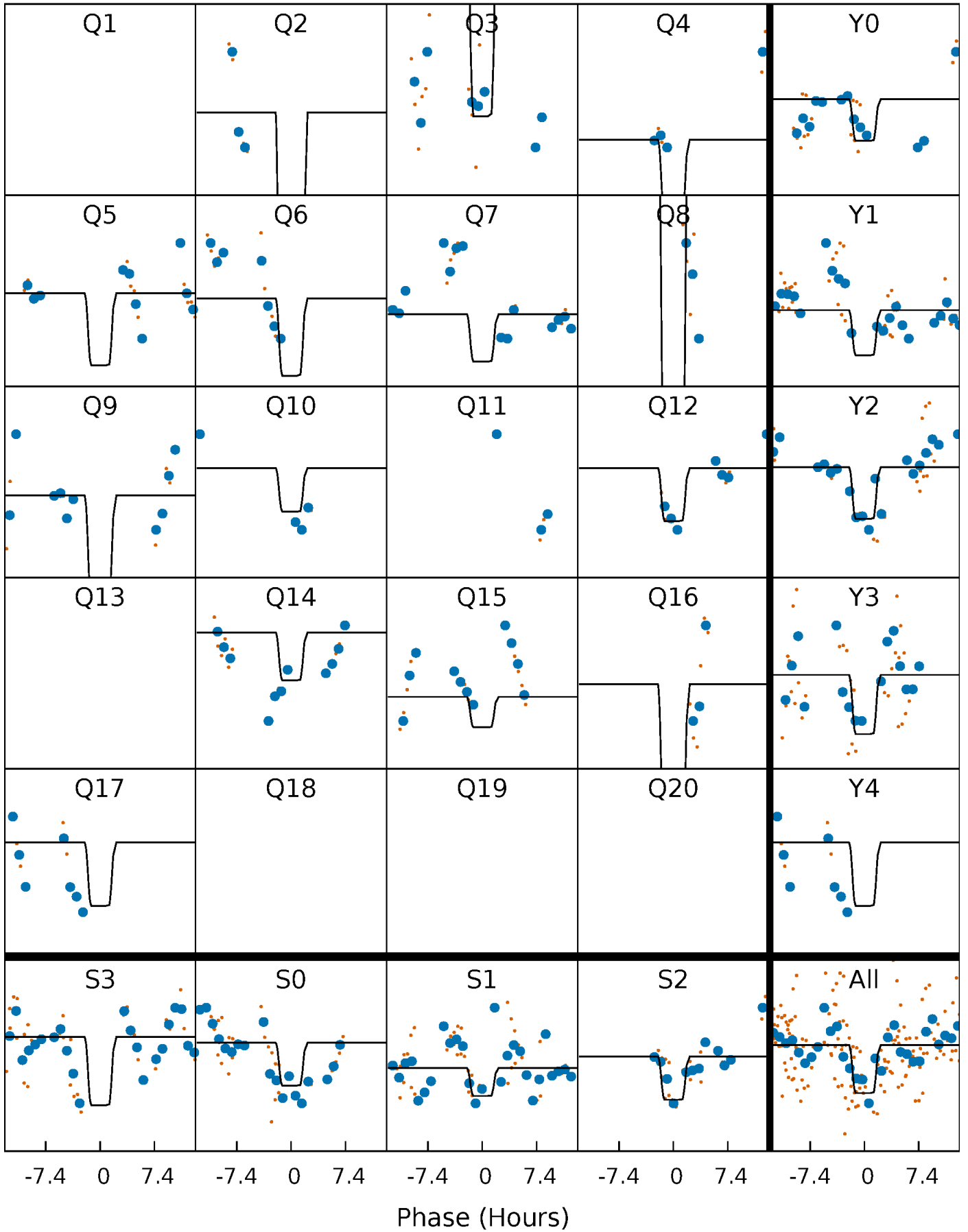
DV Quarter-Phased Transit Curves

TCE 009696853-09 $P = 25.845765$ Days $T_0 = 140.481327$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

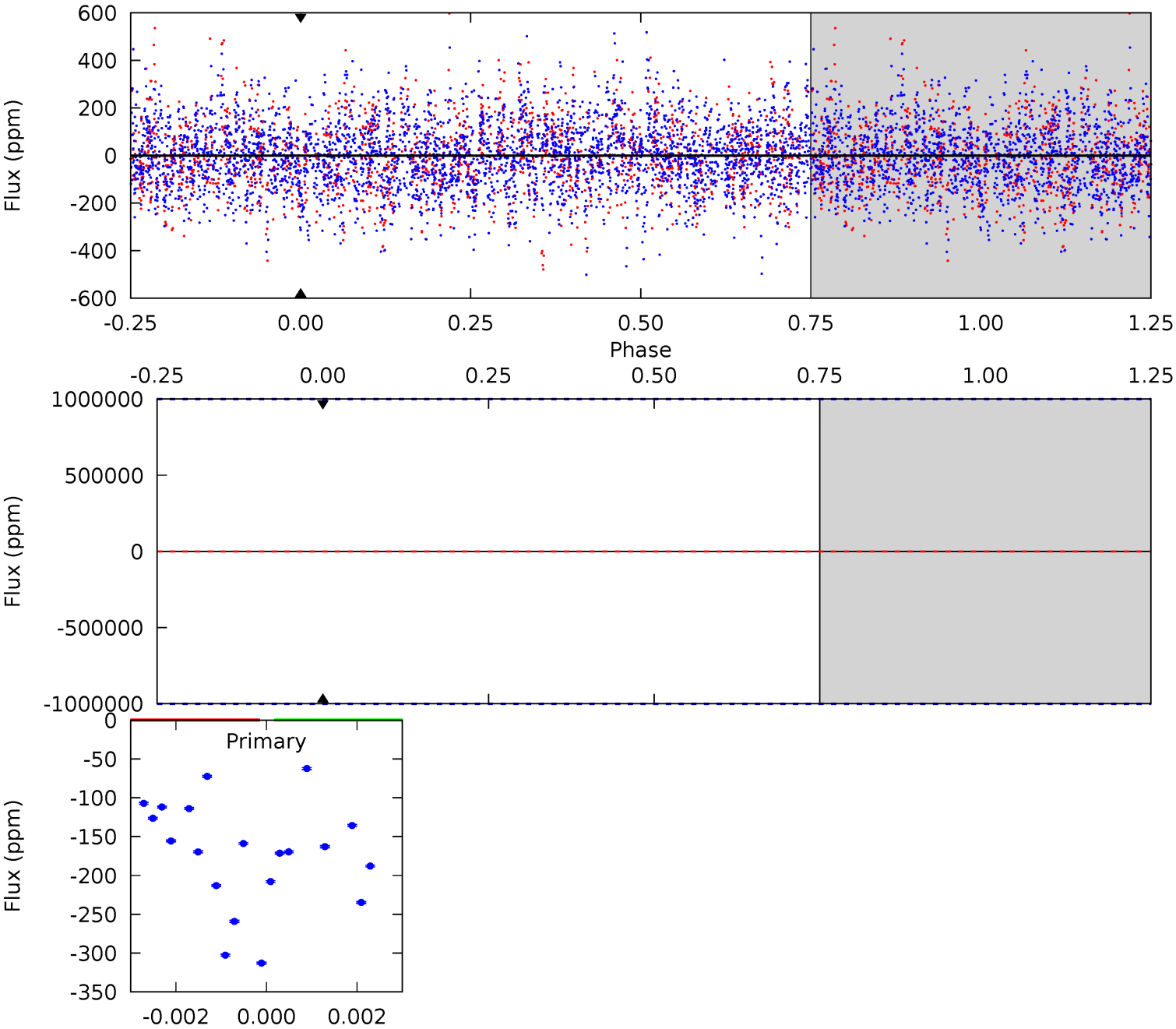
TCE 009696853-09 P= 25.845765 Days $T_0=140.513809$ (BKJD)



DV Model-Shift Uniqueness Test

009696853-09, P = 25.845765 Days, E = 114.635562 Days

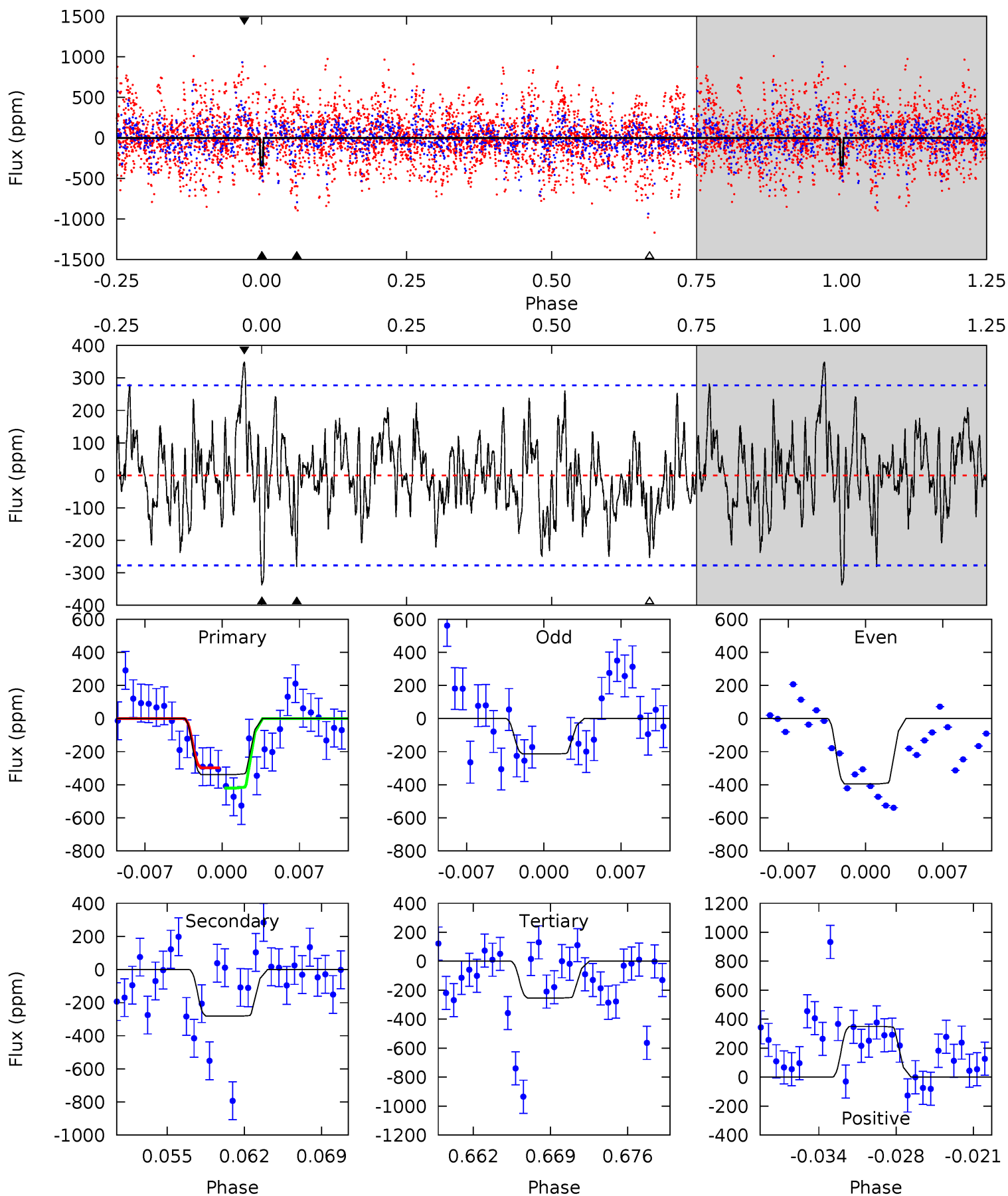
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009696853-09, P = 25.845765 Days, E = 114.668044 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.22	5.18	4.66	6.43	5.10	2.70	1.81	1.56	-0.21	0.51	-1.25	1.52	0.78	0.51	1.08



Stellar Parameters For KIC 009696853

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7352^{+206}_{-353}	$4.131^{+0.084}_{-0.196}$	$0.210^{+0.150}_{-0.350}$	$1.849^{+0.569}_{-0.306}$	$1.686^{+0.214}_{-0.235}$	$0.376^{+0.175}_{-0.192}$
	+3%/-5%	+2%/-5%	+71%/-167%	+31%/-17%	+13%/-14%	+47%/-51%
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 009696853-09 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$14.55^{+15.80}_{-10.27}$	1384^{+107}_{-85}	6712^{+38895}_{-39497}	369^{+20757}_{-15270}
Alt.	-282 ± 54	$15.89^{+15.75}_{-11.21}$	1386^{+99}_{-82}	3798^{+2477}_{-770}	26^{+287}_{-20}

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 $A_{obs} \gg 1.0$

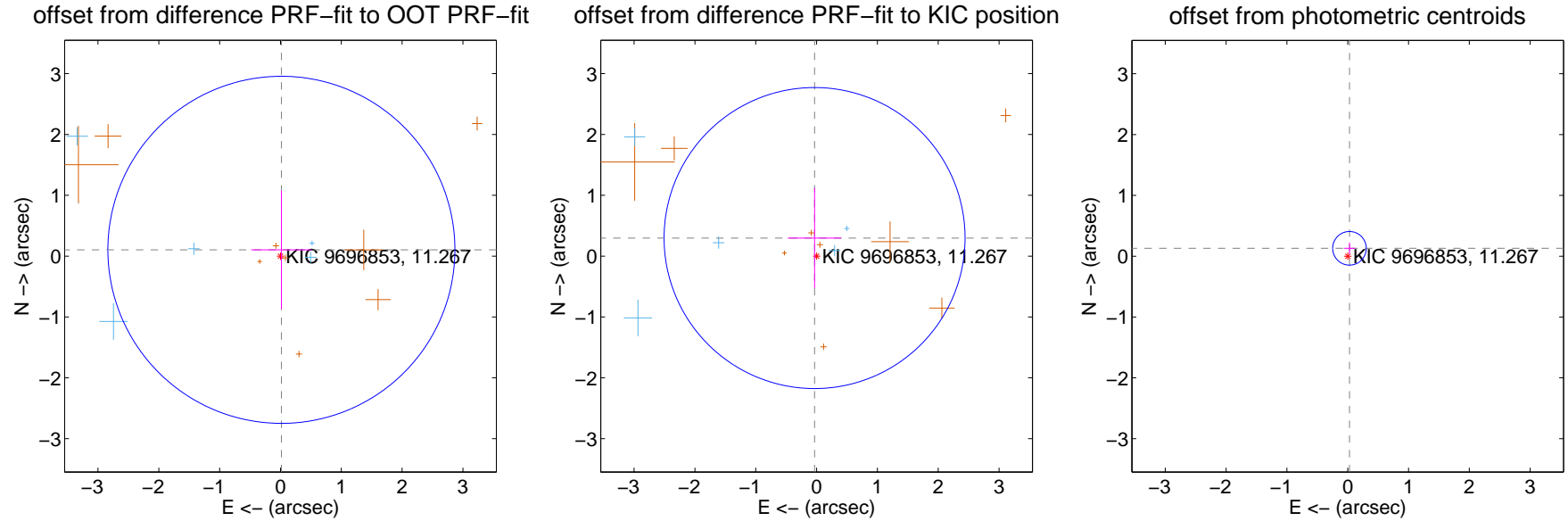
DV Centroid Data

Supplemental centroid analysis for 009696853-09. **Kepler magnitude: 11.27.** Transit SNR -1.00

There are 5 quarters with good PRF difference image offsets

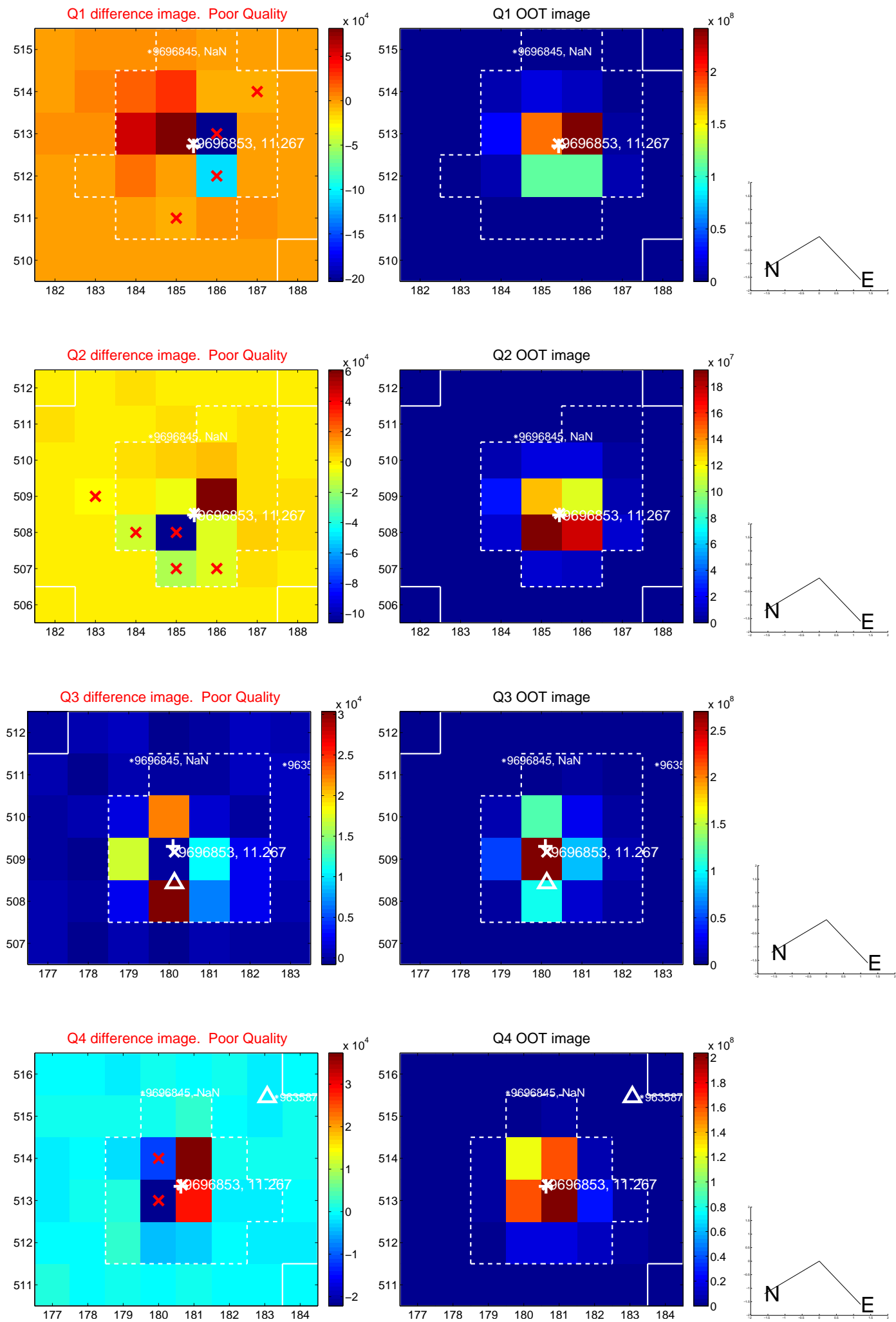
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.105 ± 0.951	0.11	-0.015 ± 0.497	0.104 ± 0.976
PRF-fit source offset from KIC position	0.299 ± 0.825	0.36	0.033 ± 0.442	0.297 ± 0.824
photometric centroid source offset	0.13 ± 0.09	1.44	-0.03 ± 0.09	0.13 ± 0.09

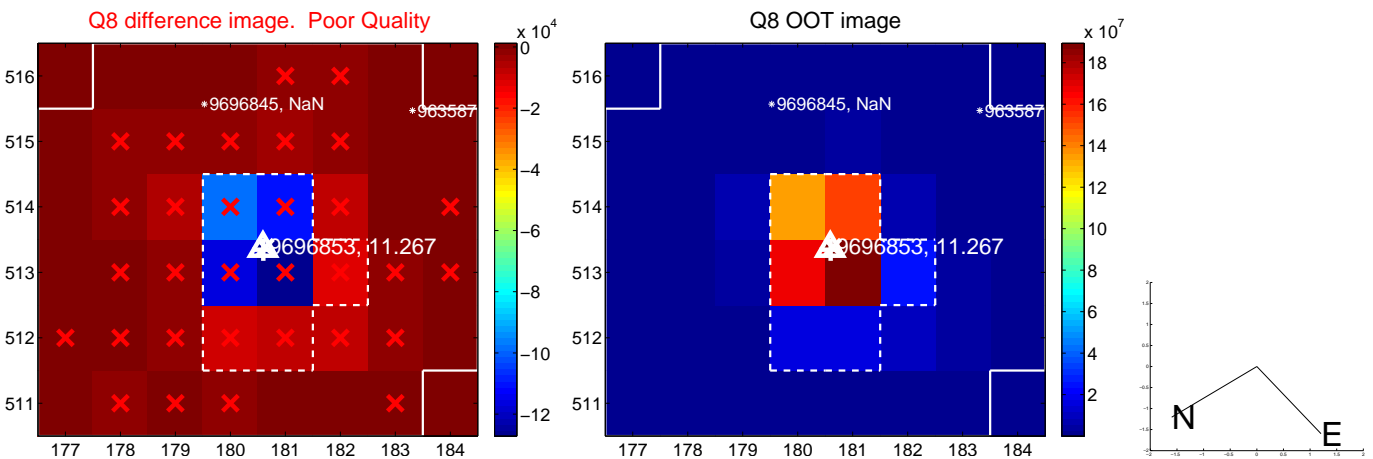
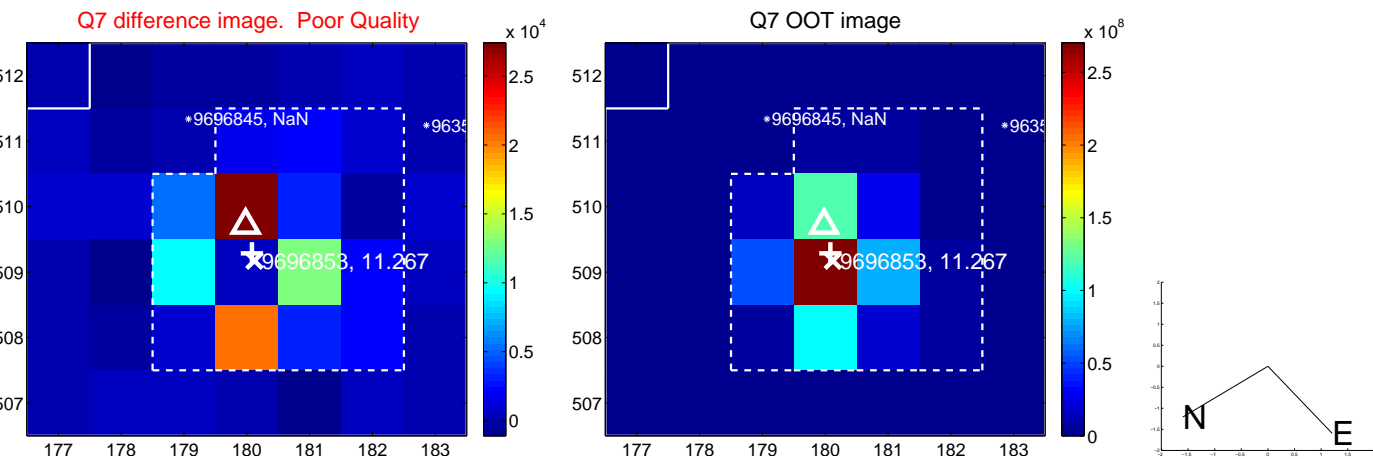
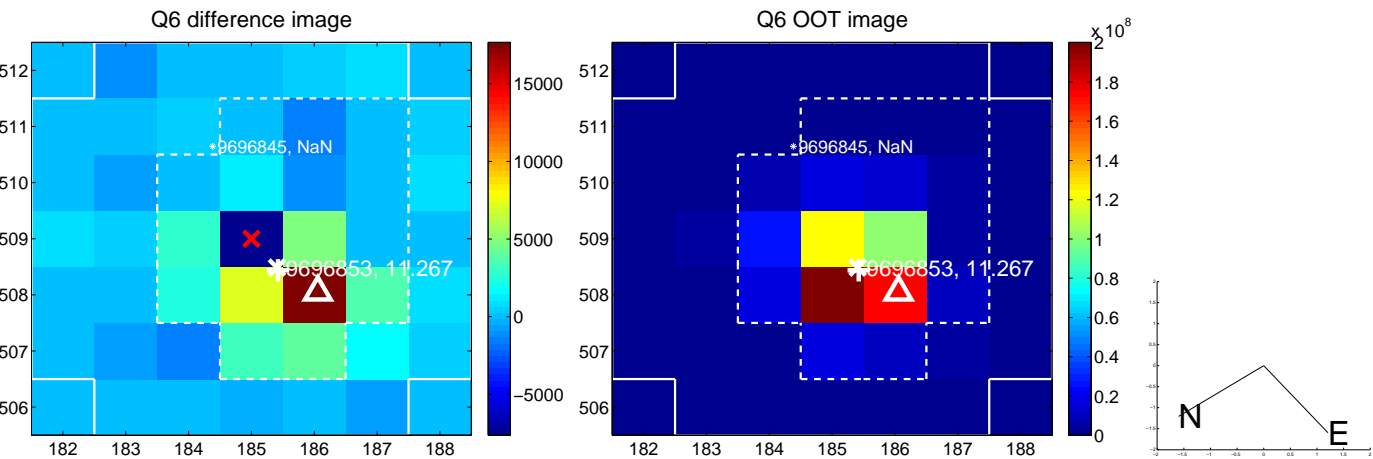
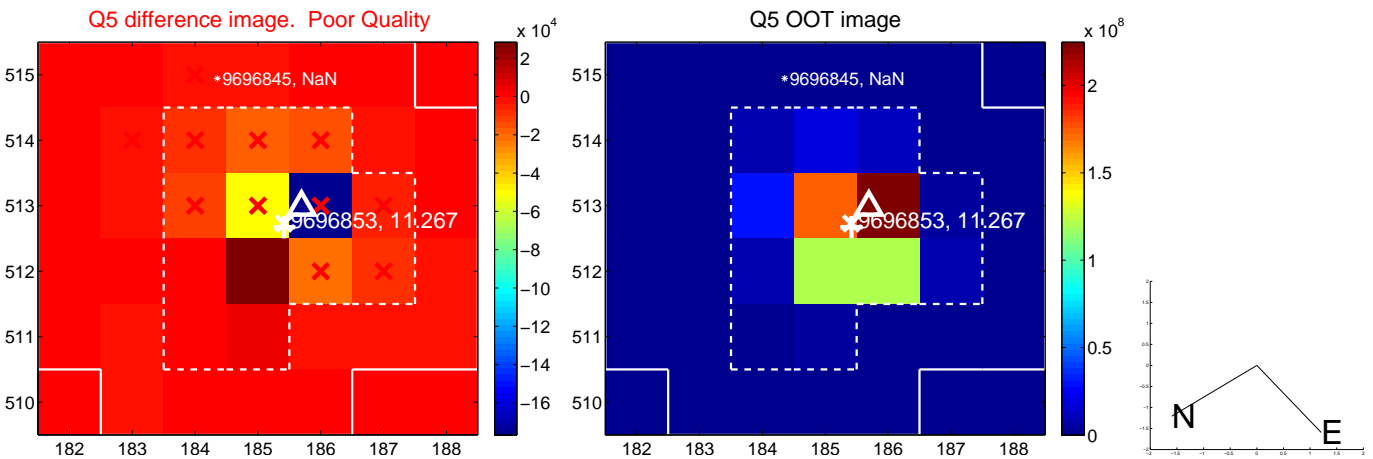


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

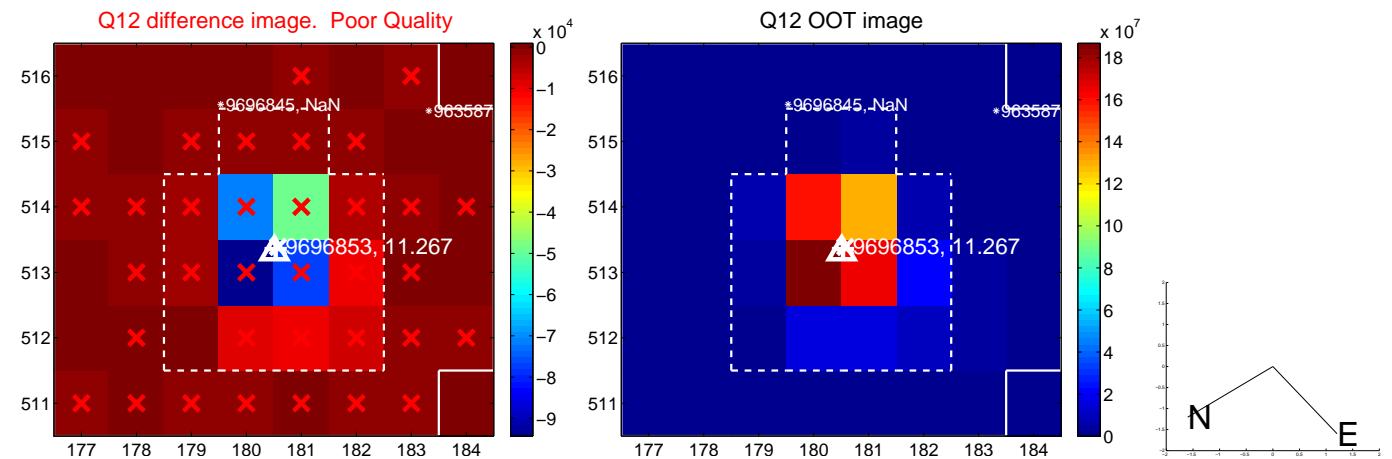
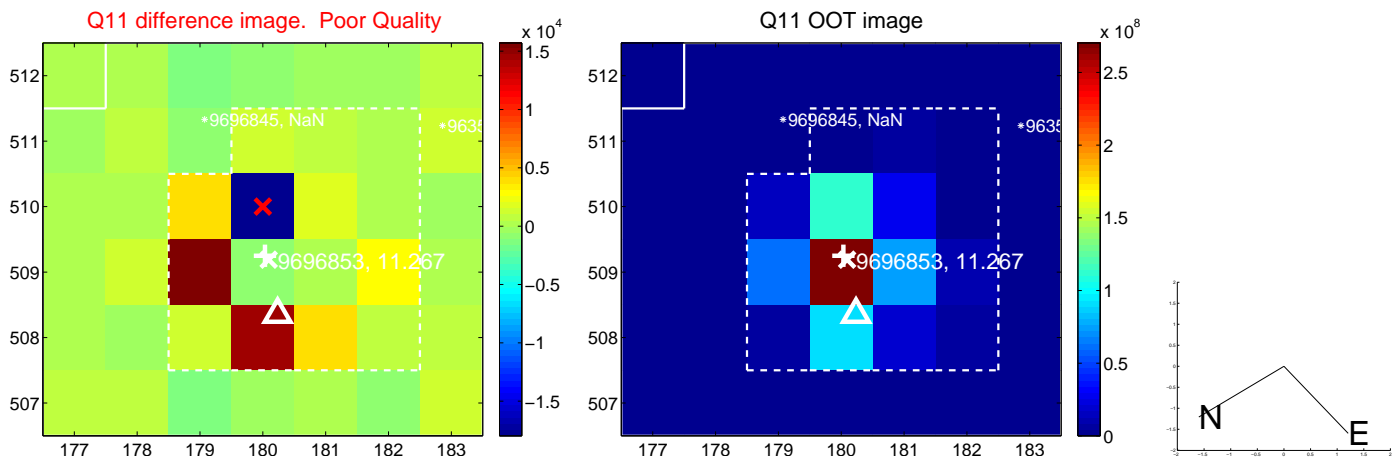
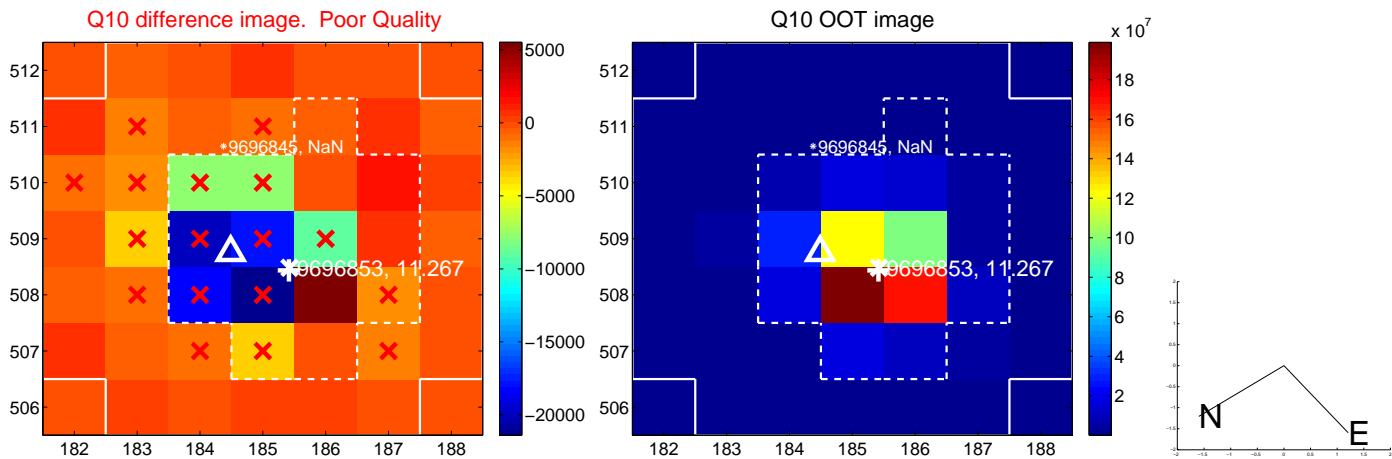
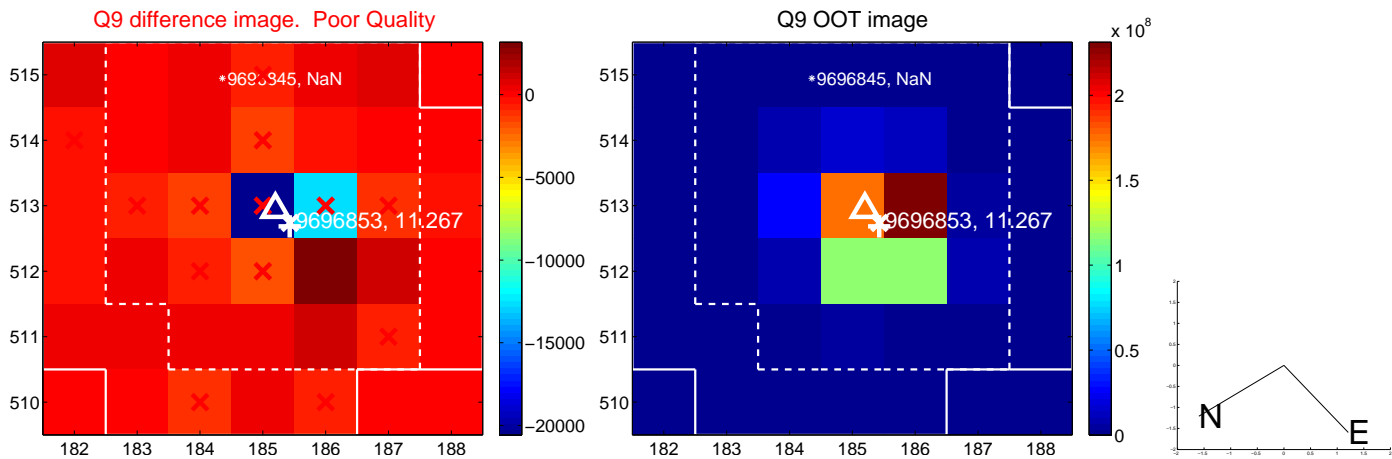
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



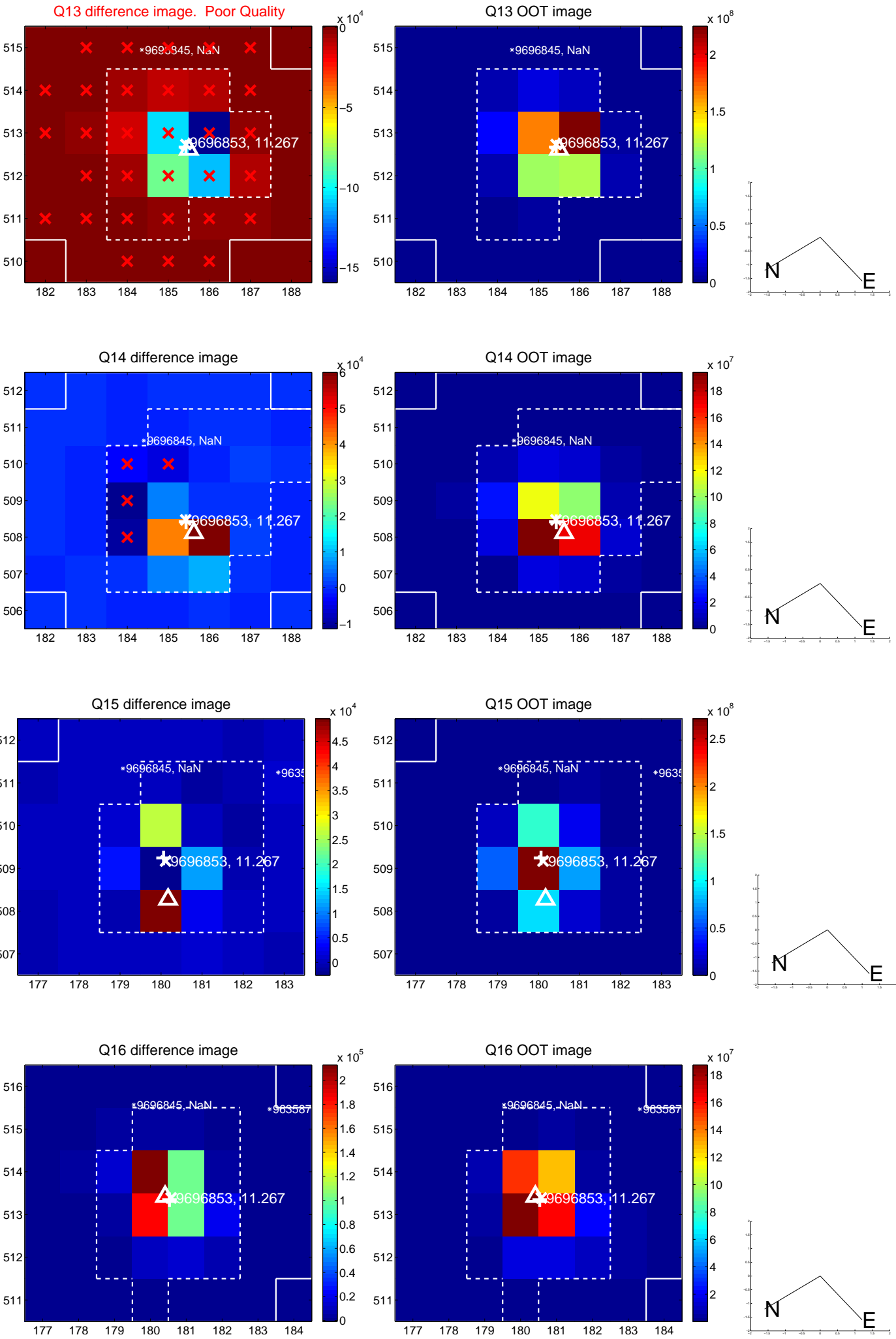
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



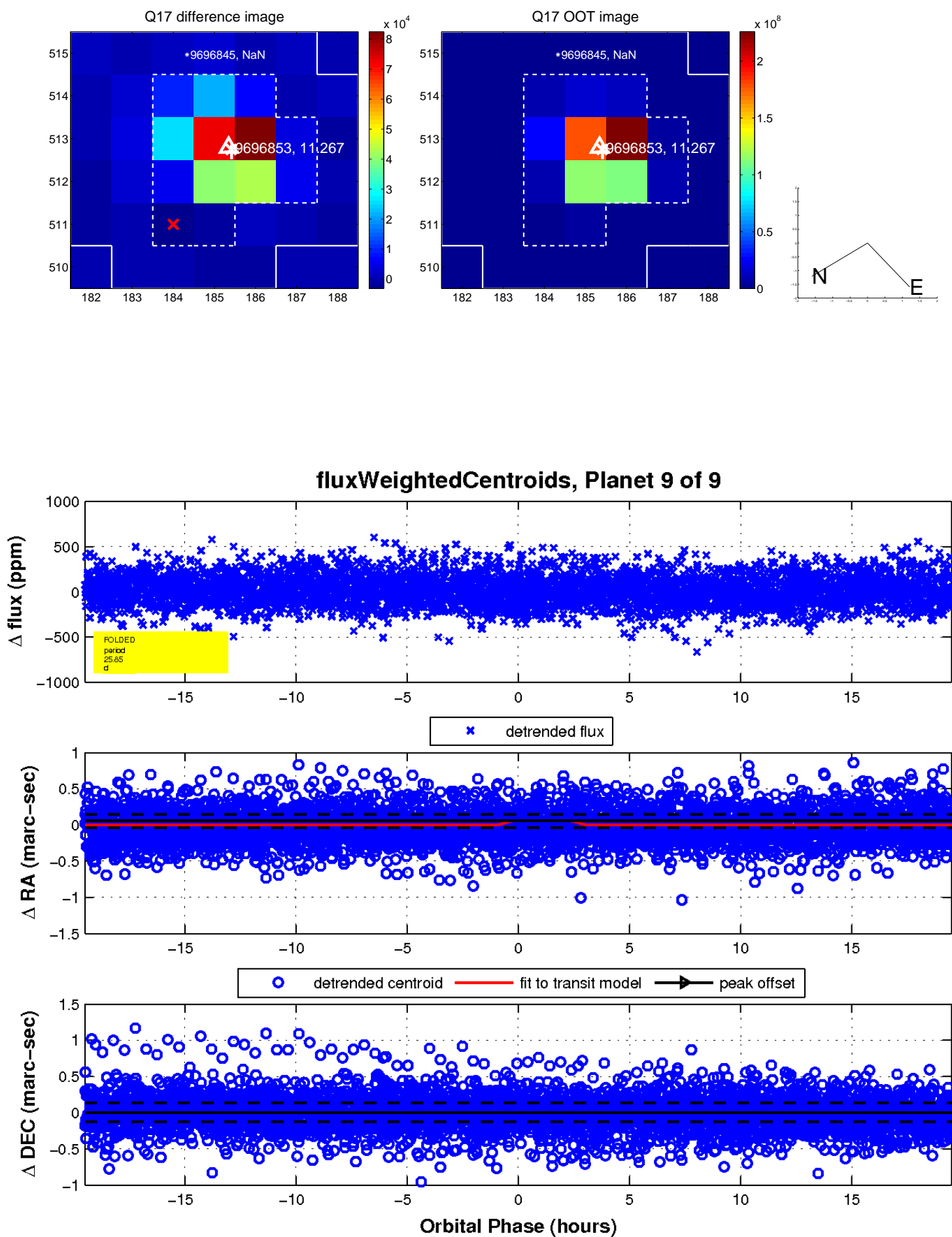
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

