

KIC 007551993

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})
007551993-01	OBS	No	0.924370	131.906277	44.8	4.210	10.4	11.0	1.80	6981	1.40	15888.70
007551993-02	OBS	No	18.659210	147.748730	182.1	6.893	9.2	7.7	1.80	6981	2.90	289.08
007551993-03	OBS	No	86.909457	163.411916	599.4	5.431	8.3	8.4	1.80	6981	8.38	37.16
007551993-04	OBS	No	259.943456	133.044345	490.6	3.586	8.3	6.2	1.80	6981	4.52	8.62
007551993-05	OBS	No	176.686697	198.107875	451.9	7.841	8.1	6.1	1.80	6981	4.05	14.43
007551993-06	OBS	No	85.747742	213.425783	391.6	4.346	7.7	6.9	1.80	6981	4.01	37.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

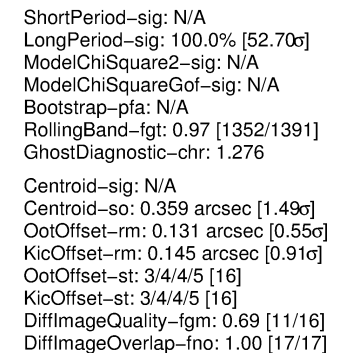
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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

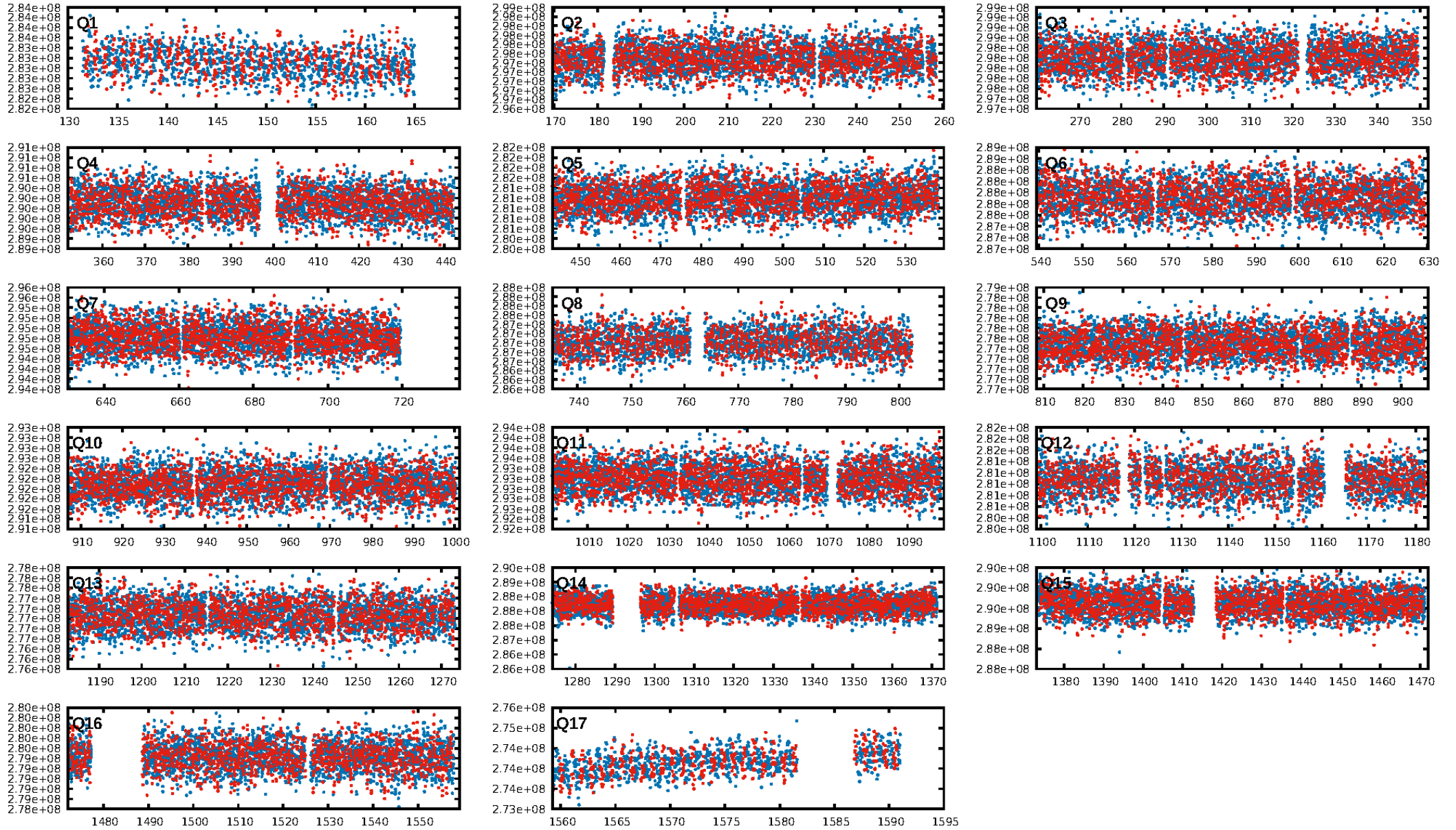
Ephemeris Match Information For 007551993-01

No Significant Match Found

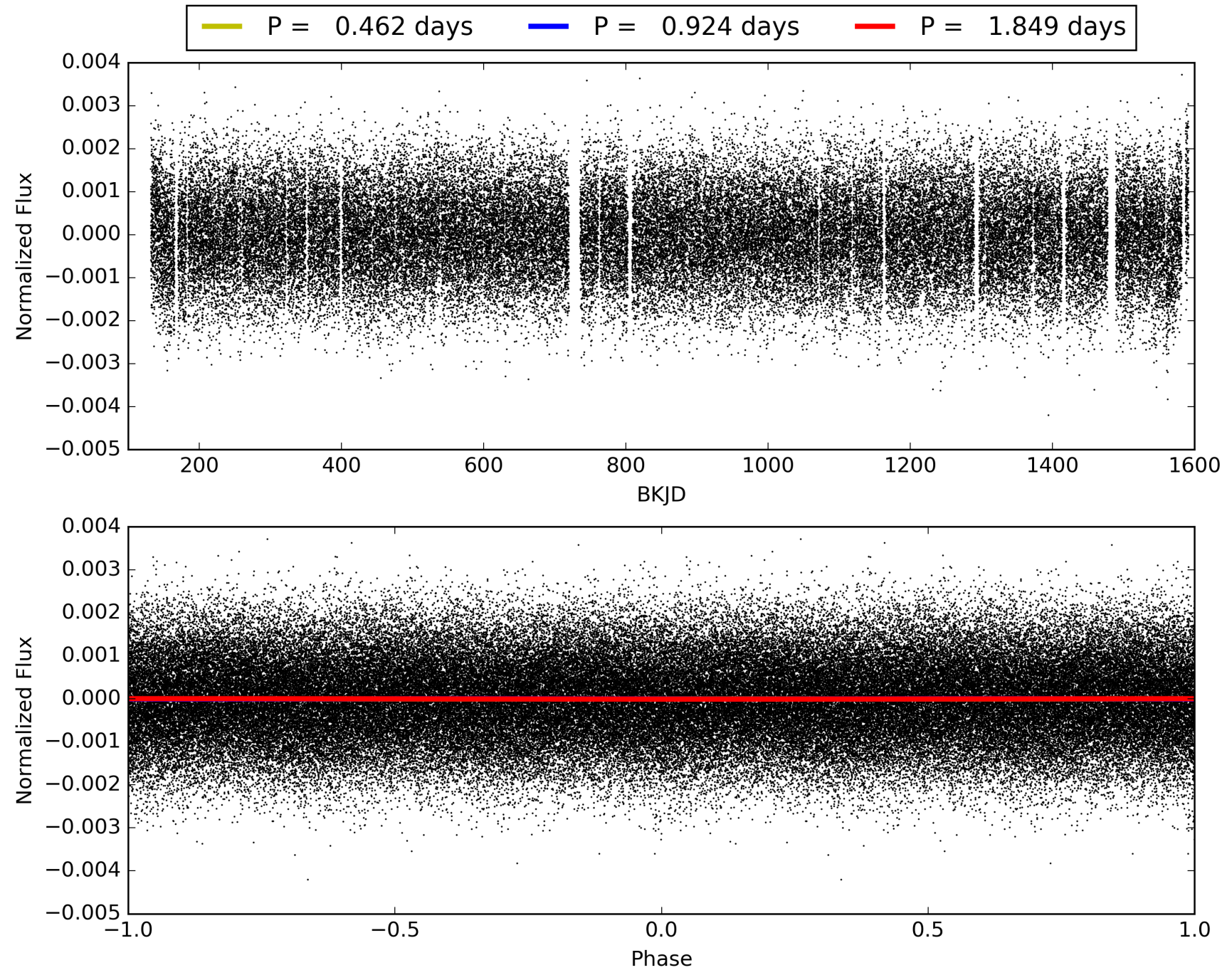
KIC: 7551993 Candidate: 1 of 7 Period: 0.924 d



TCE 007551993-01, PDC Light Curves

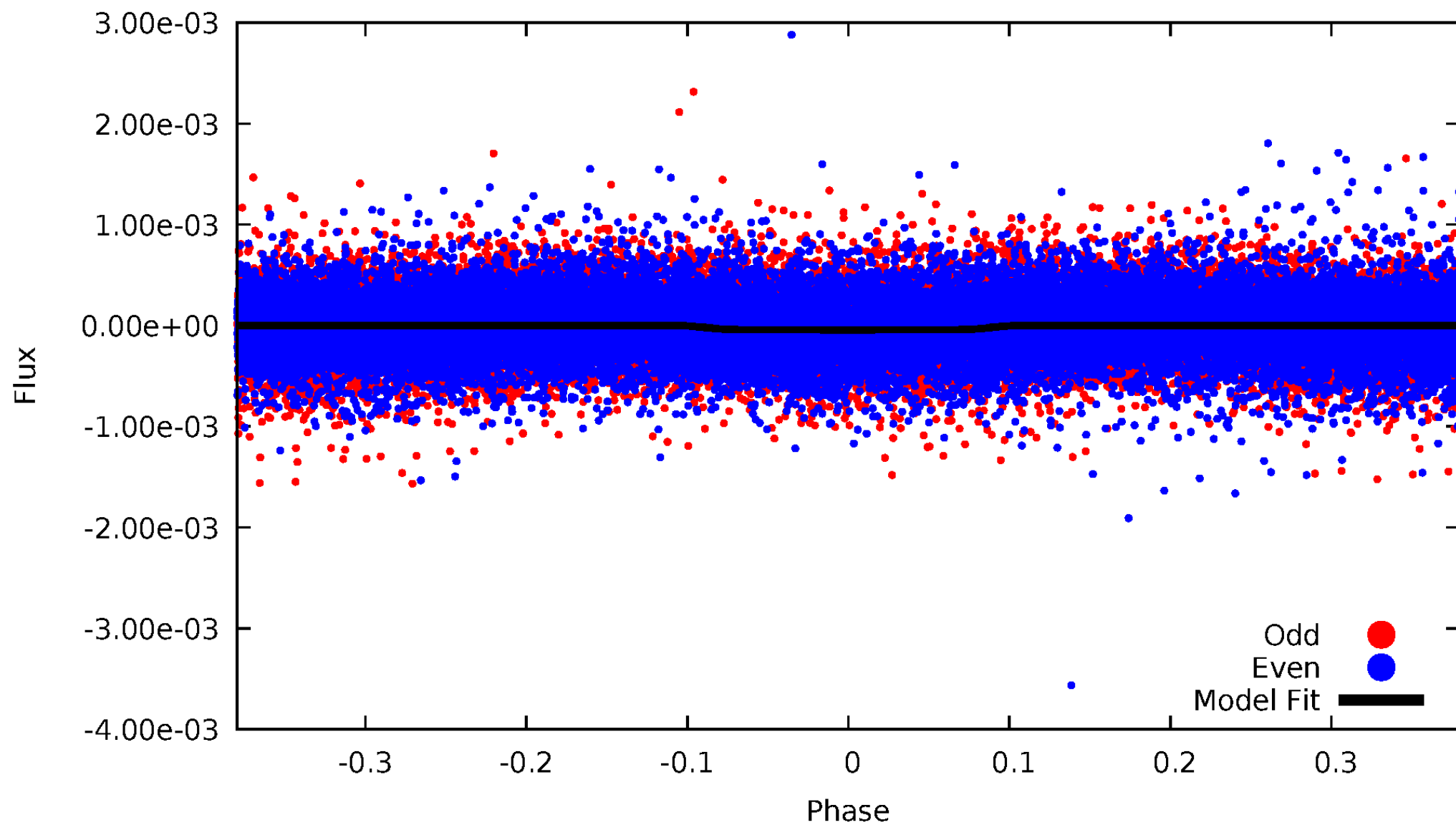


TCE 007551993-01



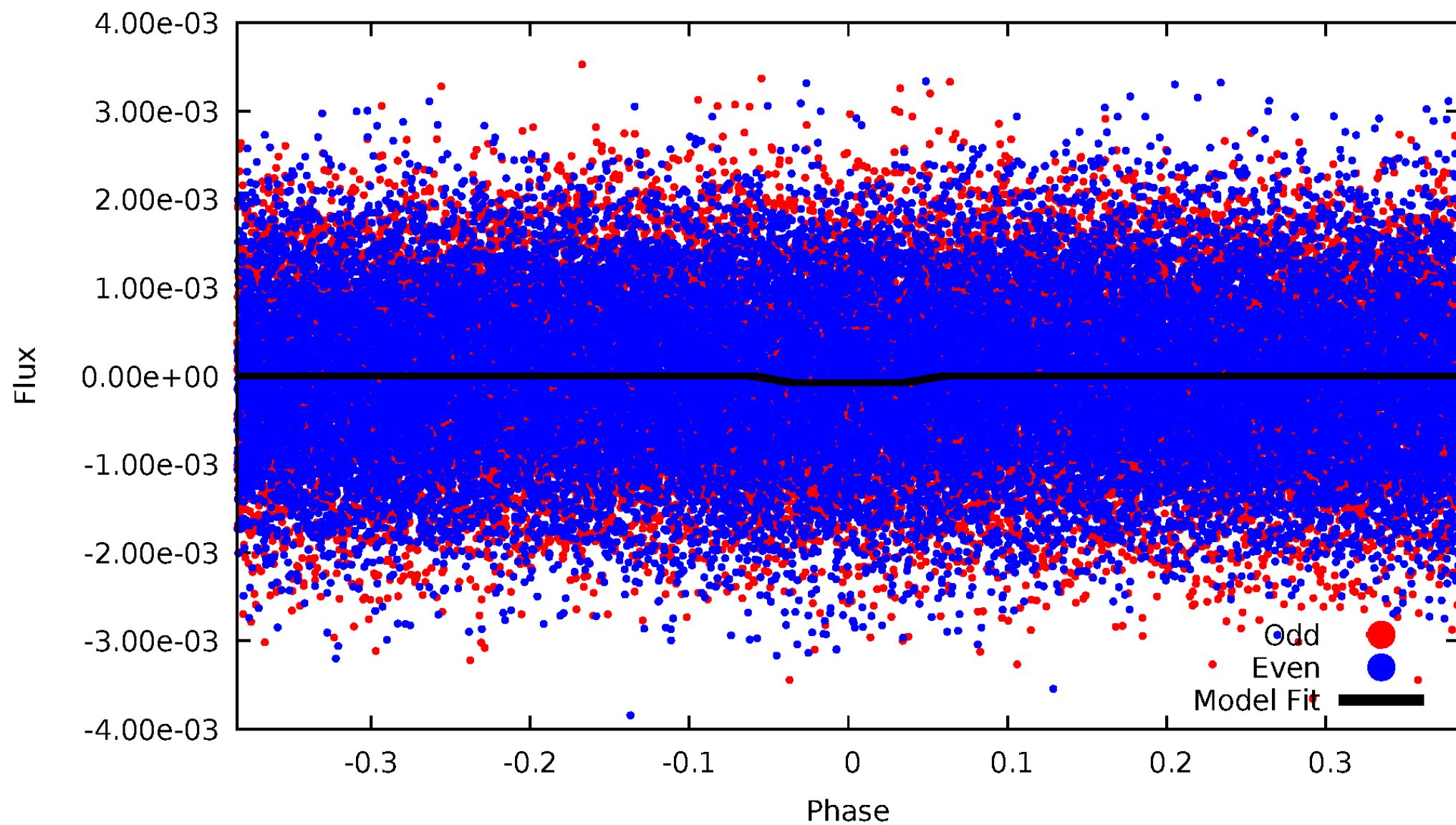
DV Odd/Even

TCE 007551993-01



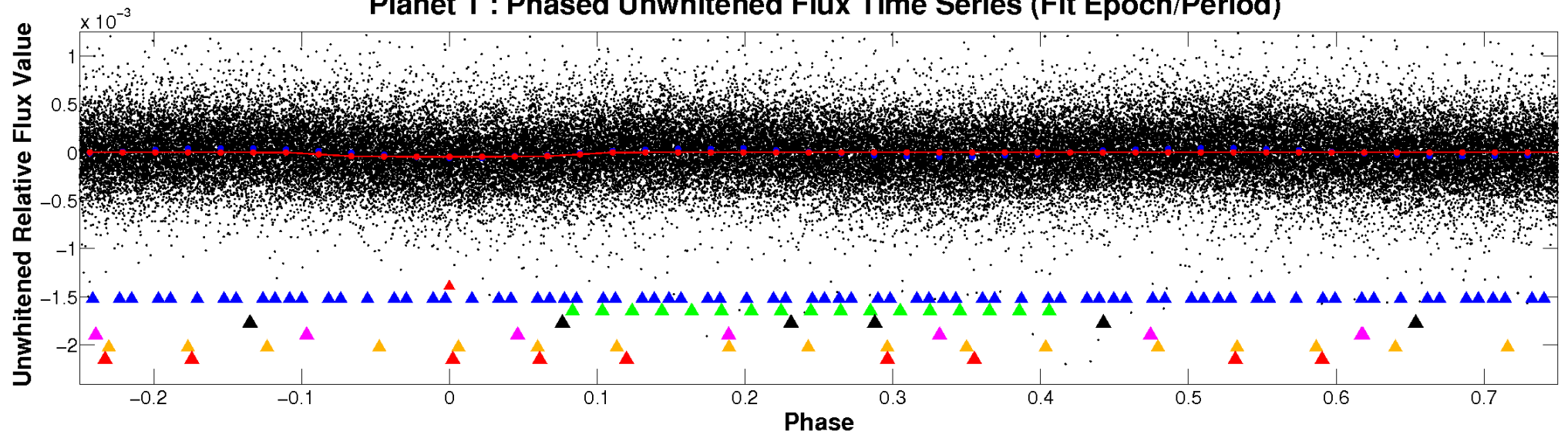
ALT Odd/Even

TCE 007551993-01

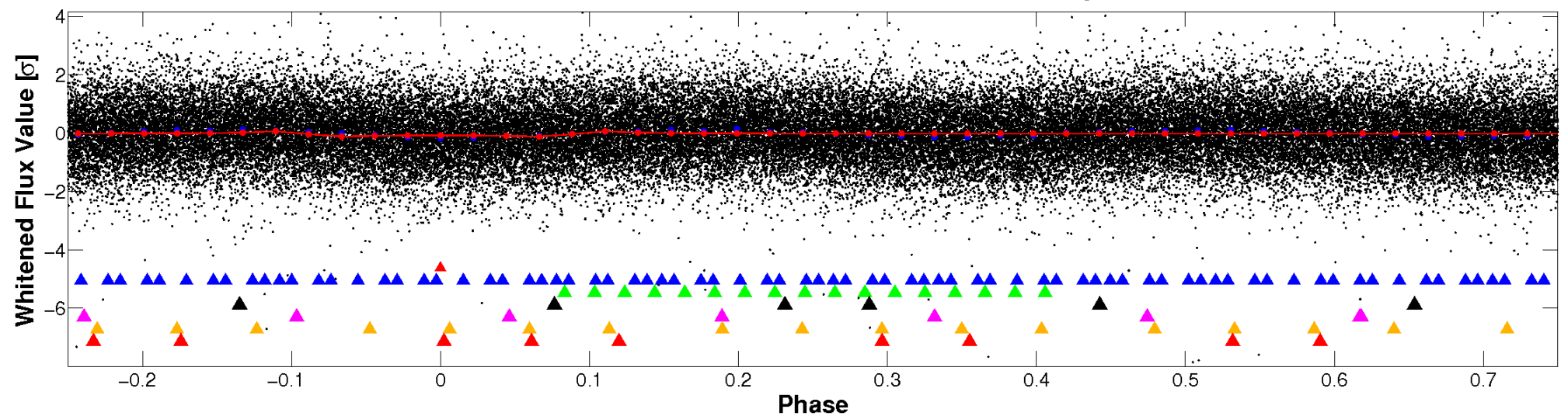


Non-Whitened Vs. Whitened Light Curve

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

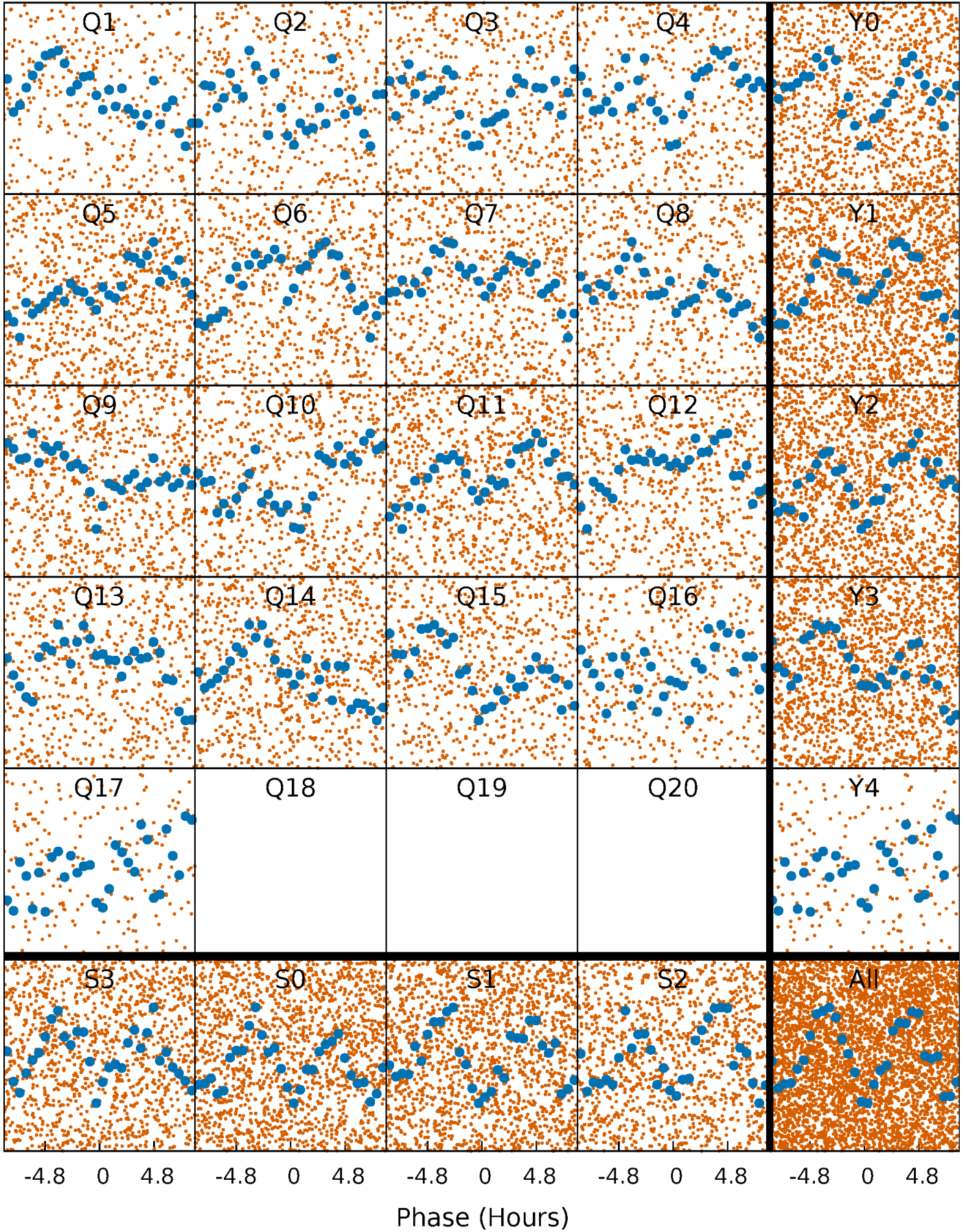


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



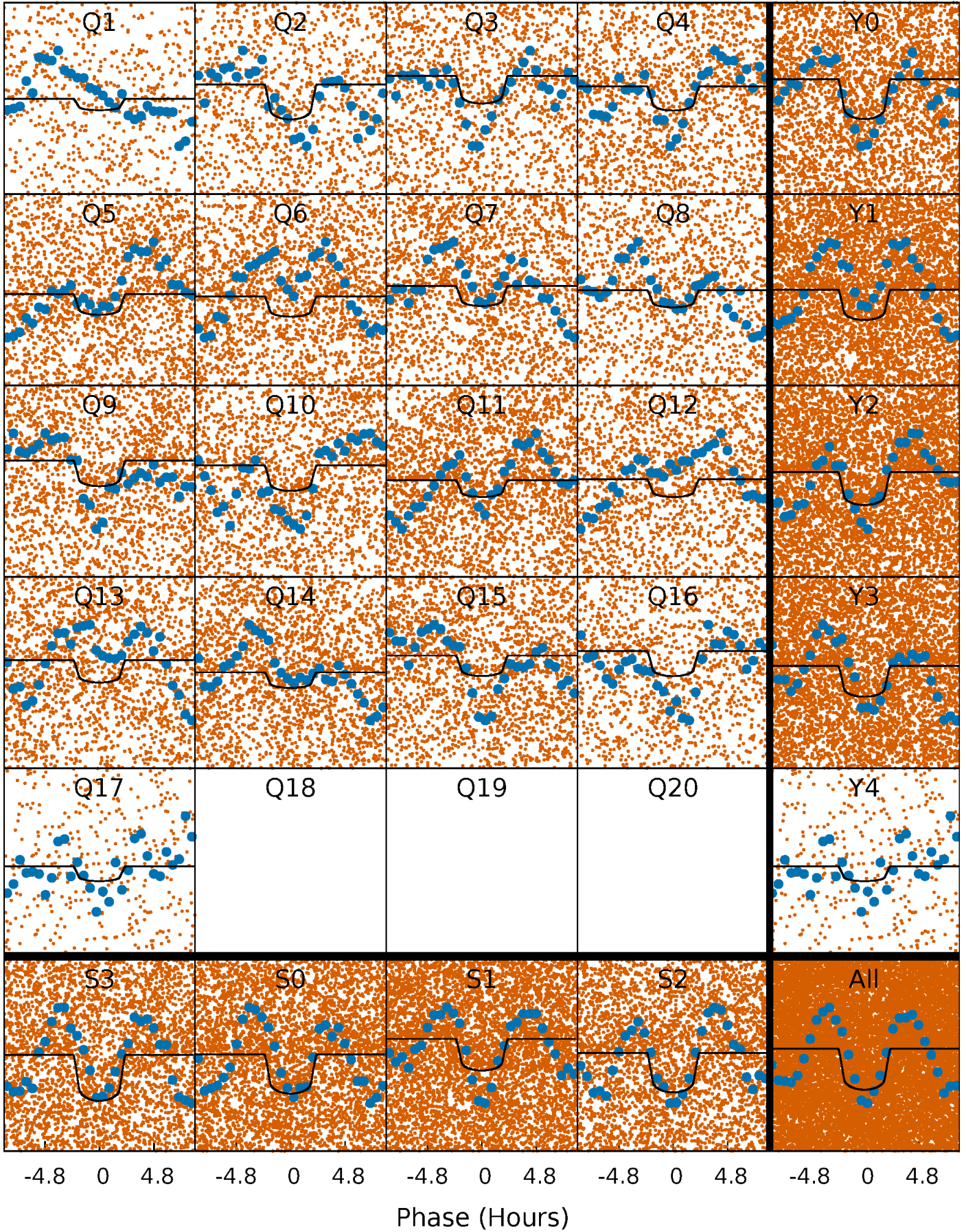
PDC Quarter-Phased Transit Curves

TCE 007551993-01 P= 0.924370 Days $T_0=131.906277$ (BKJD)



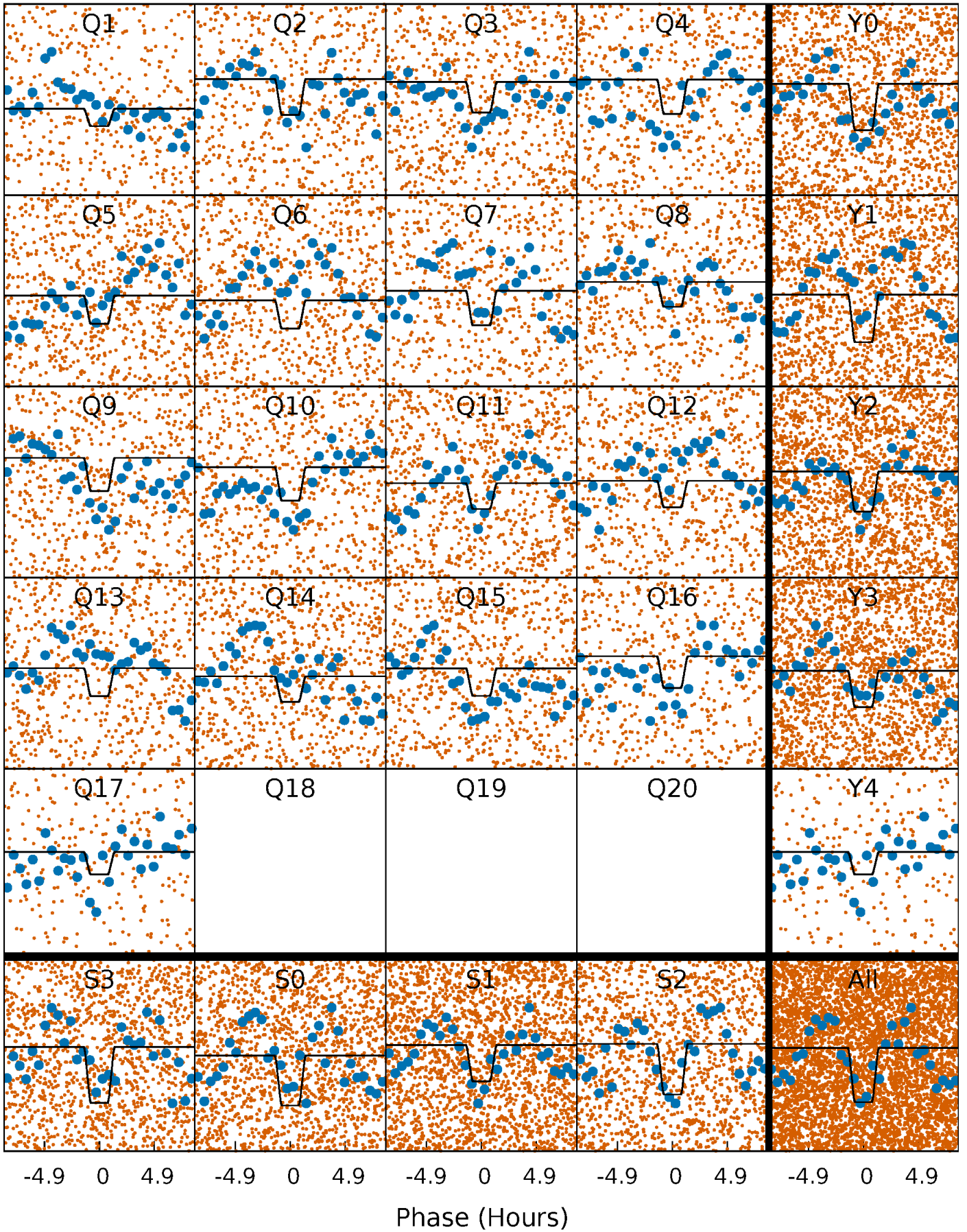
DV Quarter-Phased Transit Curves

TCE 007551993-01 P= 0.924370 Days $T_0=131.906277$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

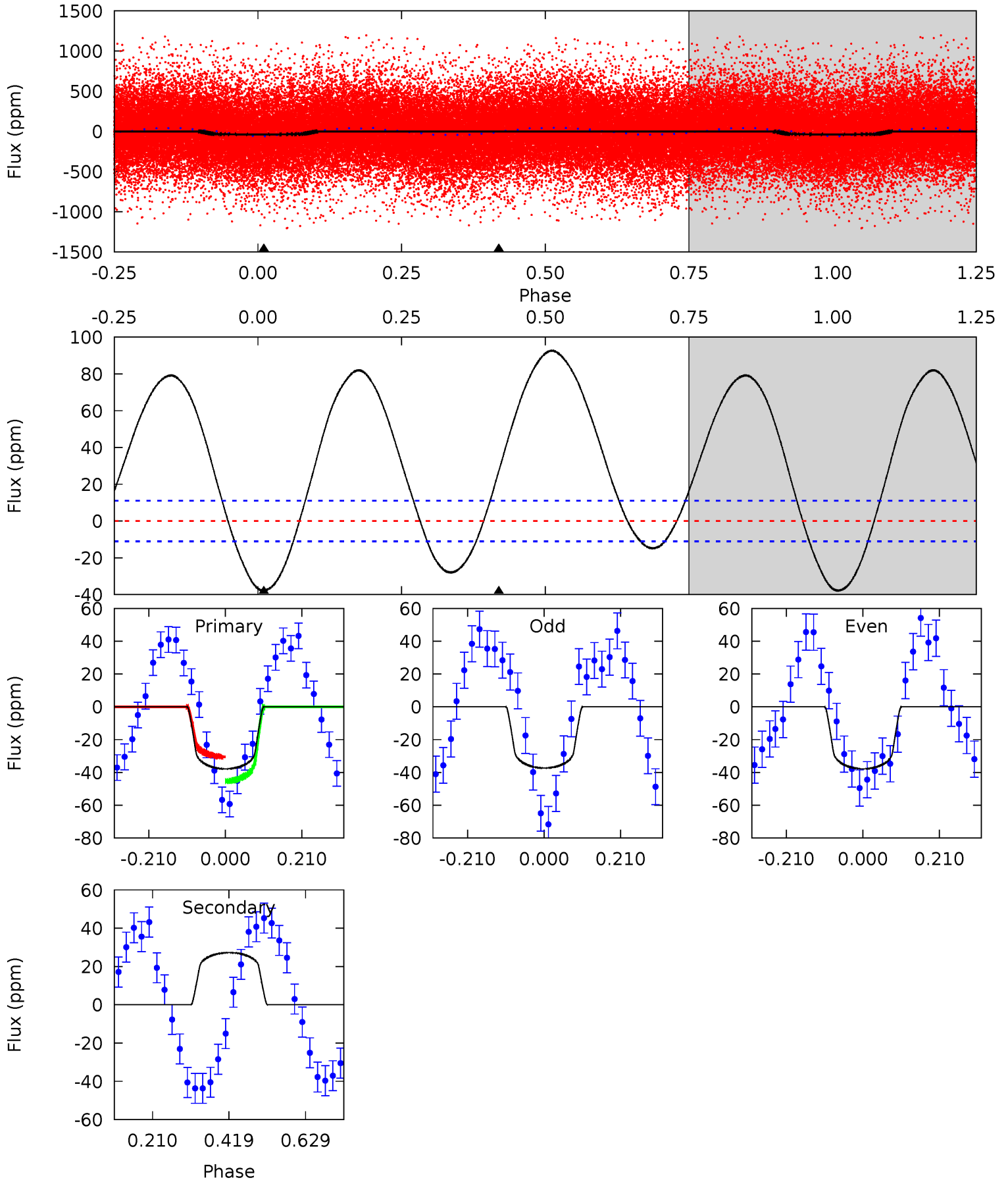
TCE 007551993-01 $P = 0.924386$ Days $T_0 = 131.906232$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-01, P = 0.924370 Days, E = 130.981907 Days

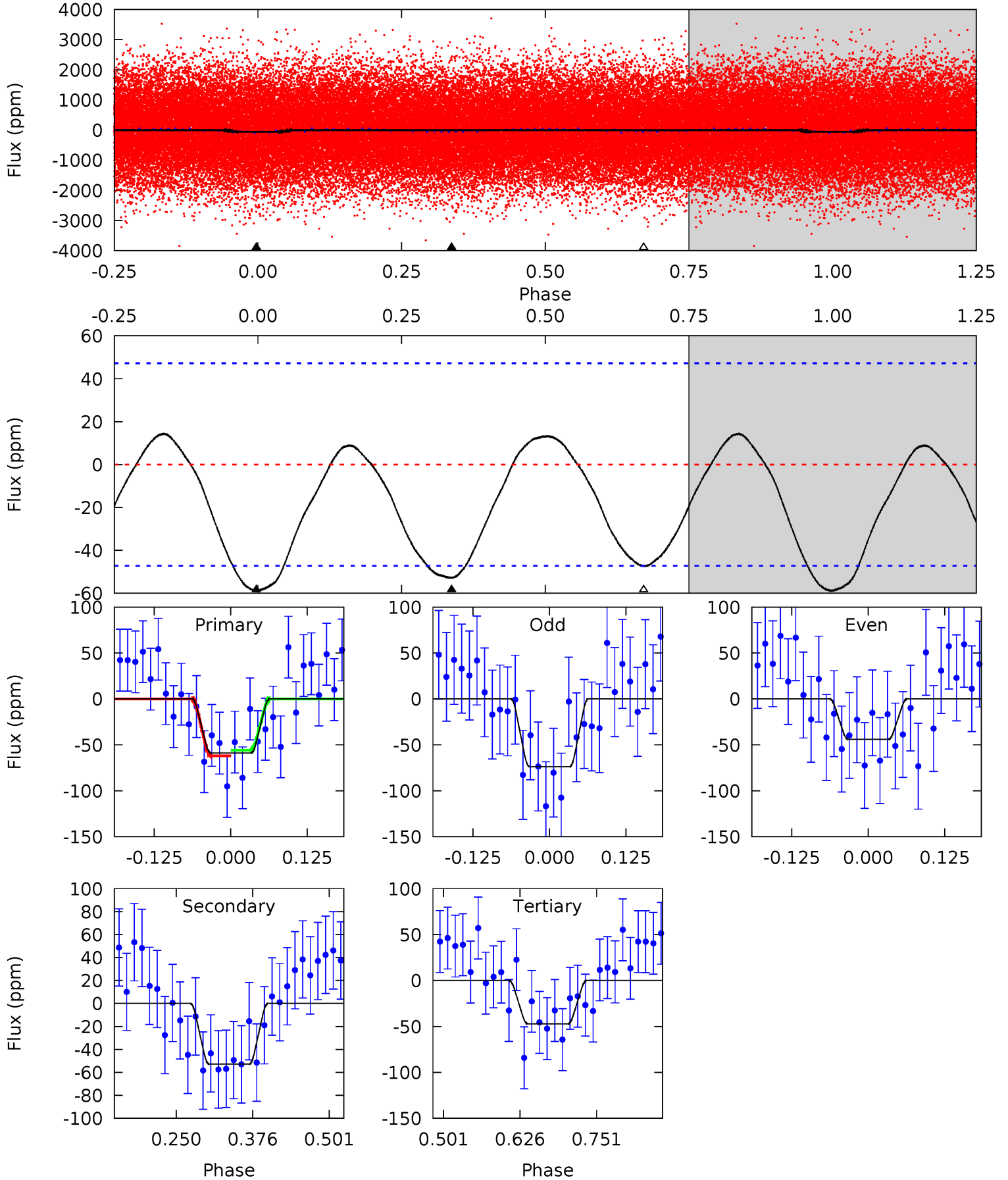
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	-10.8	0	0	4.41	1.25	8.92	15.0	15.0	-10.8	-10.8	0.10	1.18	0.71	2.94



Alt Model-Shift Uniqueness Test

007551993-01, P = 0.924386 Days, E = 130.981846 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	5.05	4.53	0	4.52	1.53	2.00	1.10	5.63	0.52	5.05	1.43	1.26	0.20	0.30



Stellar Parameters For KIC 007551993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	27 ± 3	$1.39^{+0.35}_{-0.32}$	3989^{+297}_{-308}	-6072^{+494}_{-583}	$-3.379^{+1.242}_{-2.289}$
Alt.	-53 ± 10	$1.67^{+0.41}_{-0.32}$	3976^{+296}_{-304}	6192^{+745}_{-556}	$4.531^{+2.531}_{-1.758}$

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 $A_{obs} \gg 1.0$

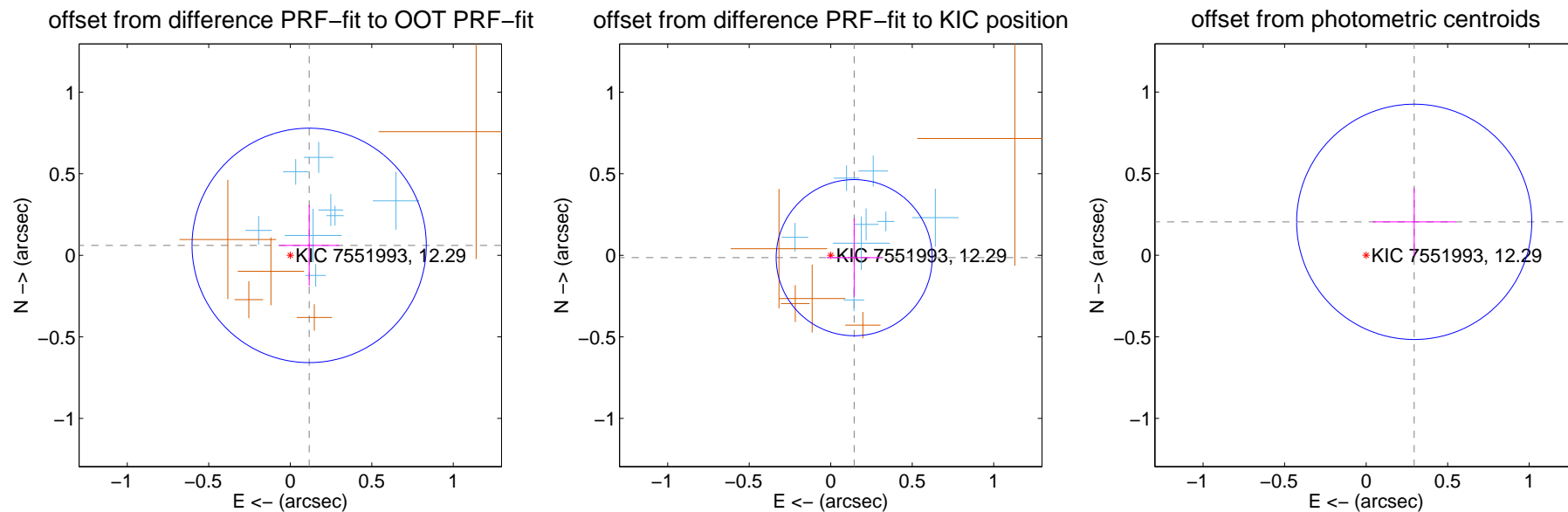
DV Centroid Data

Supplemental centroid analysis for 007551993-01. Kepler magnitude: 12.29. Transit SNR 10.96

There are 11 quarters with good PRF difference image offsets

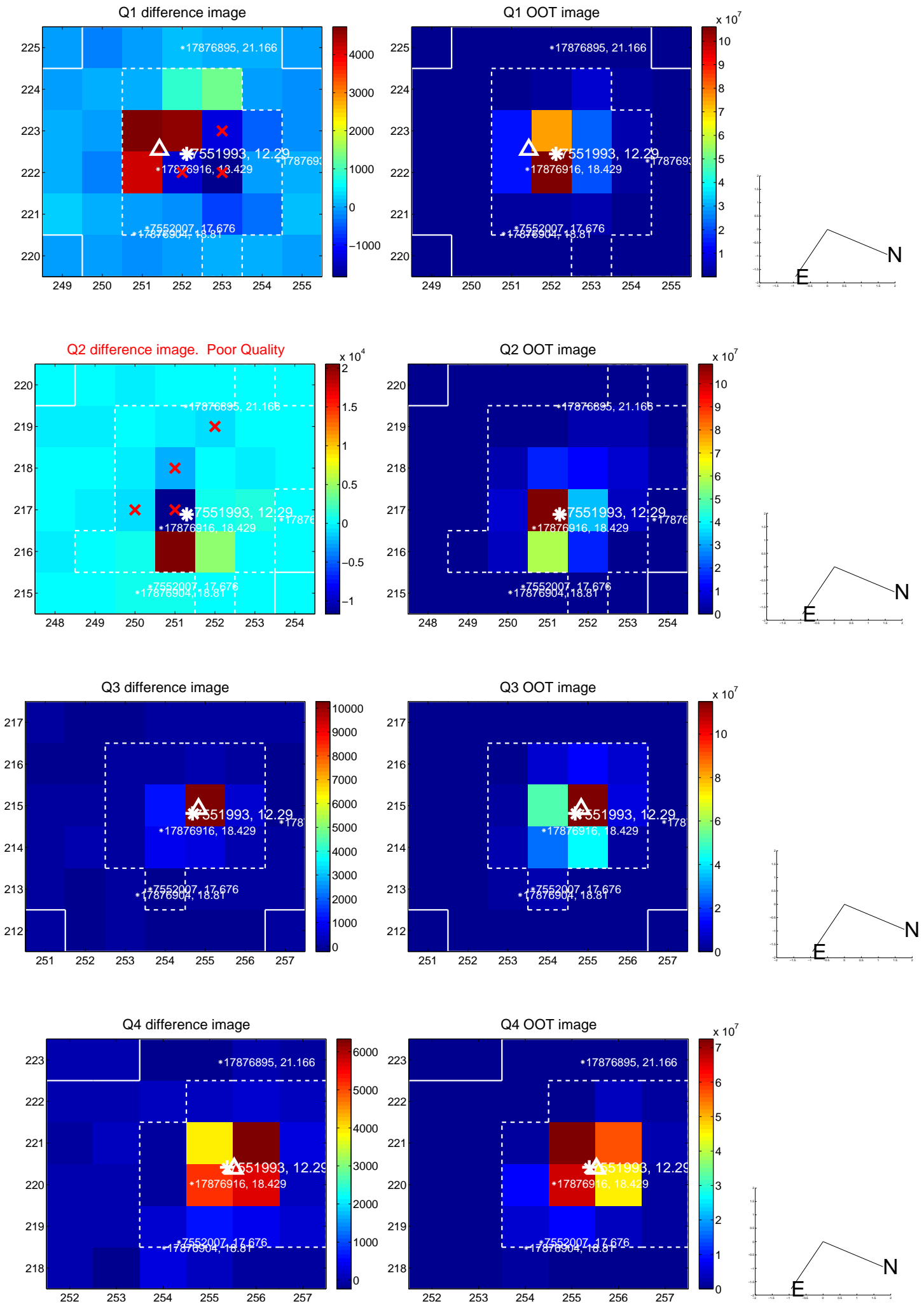
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.131 ± 0.239	0.55	-0.116 ± 0.183	0.061 ± 0.248
PRF-fit source offset from KIC position	0.145 ± 0.160	0.91	-0.144 ± 0.170	-0.015 ± 0.241
photometric centroid source offset	0.36 ± 0.24	1.49	-0.29 ± 0.25	0.20 ± 0.21

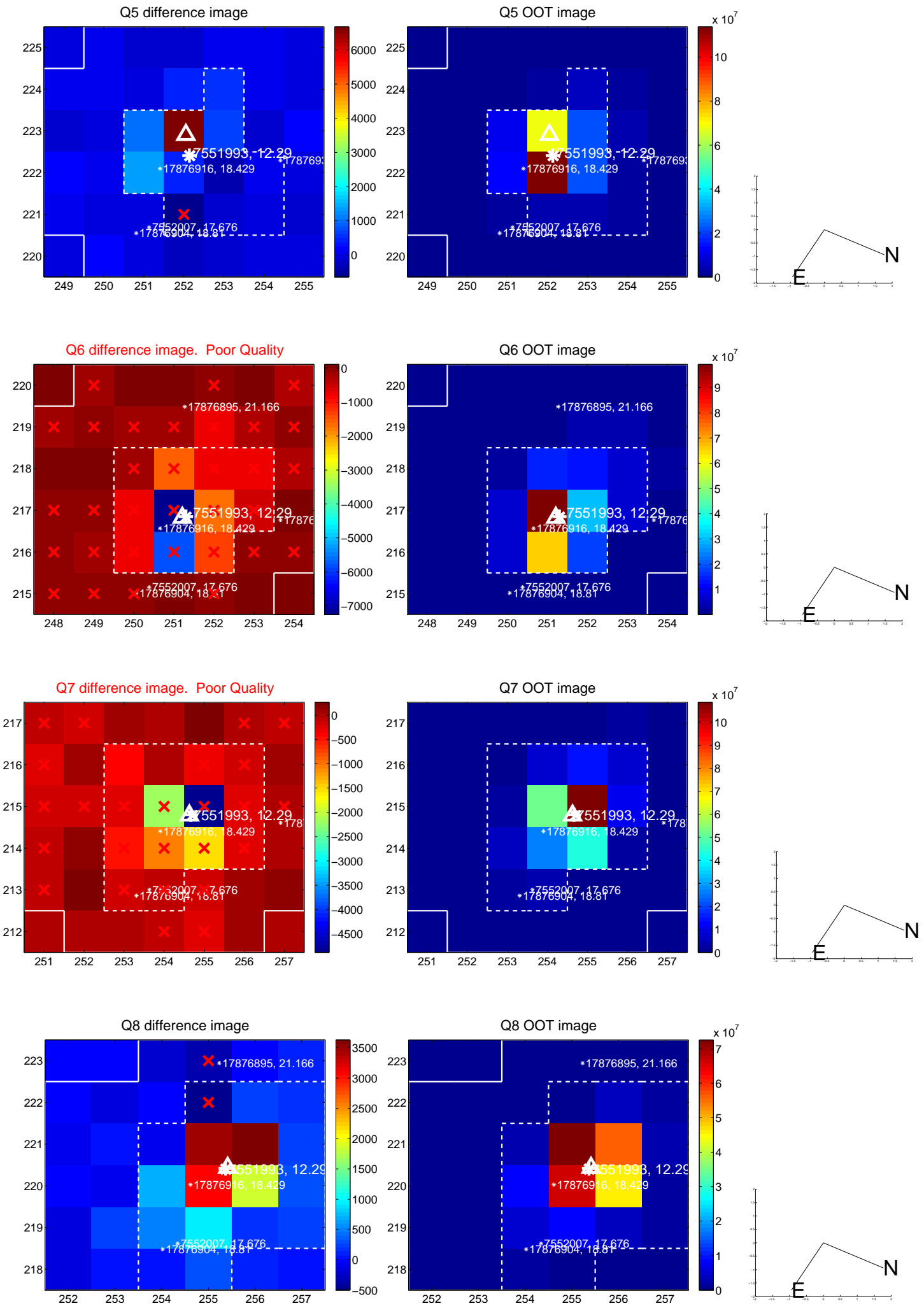


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

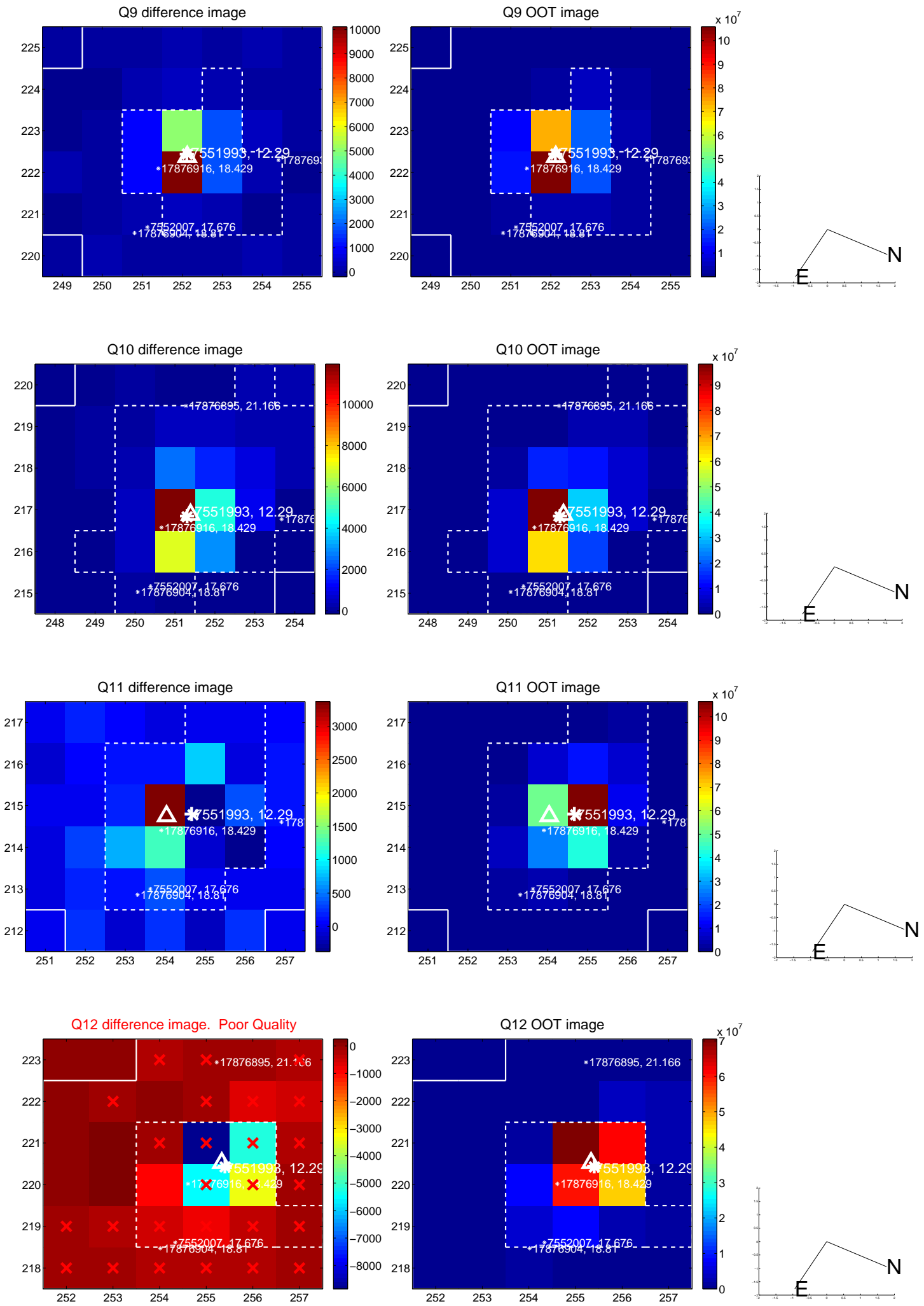
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



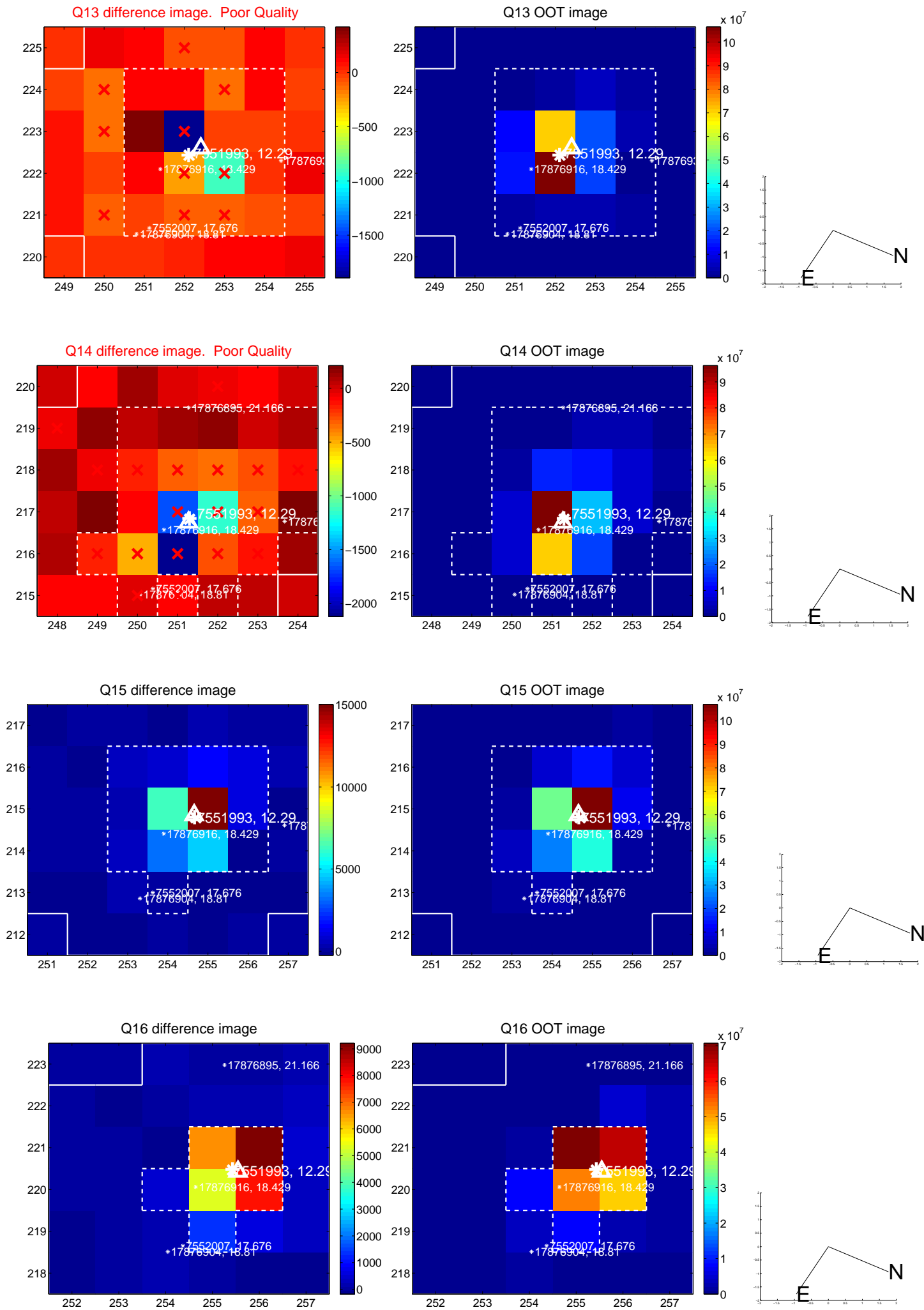
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



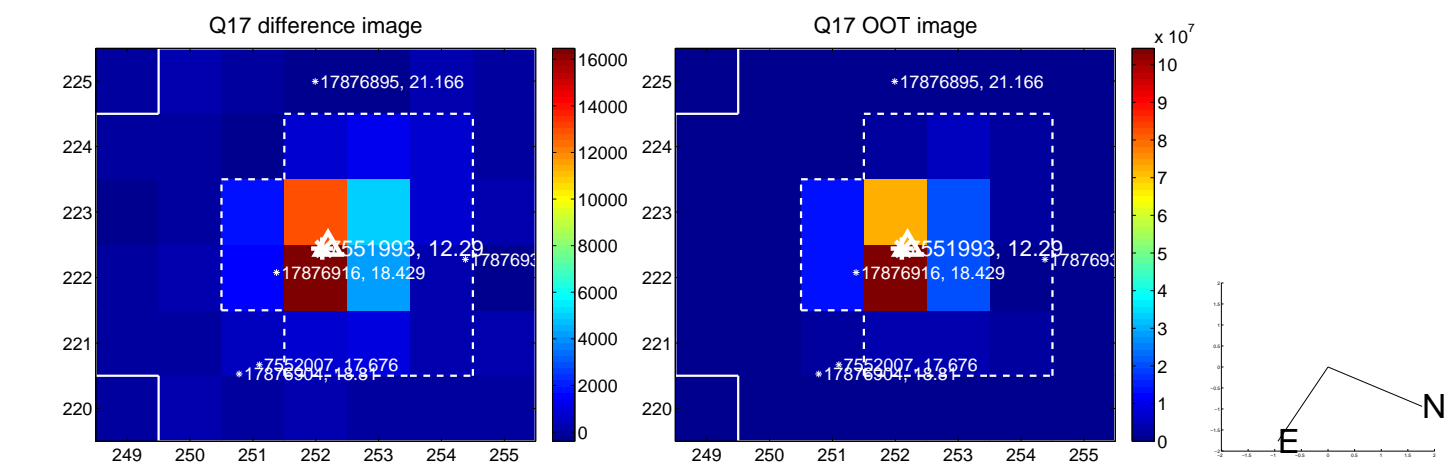
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



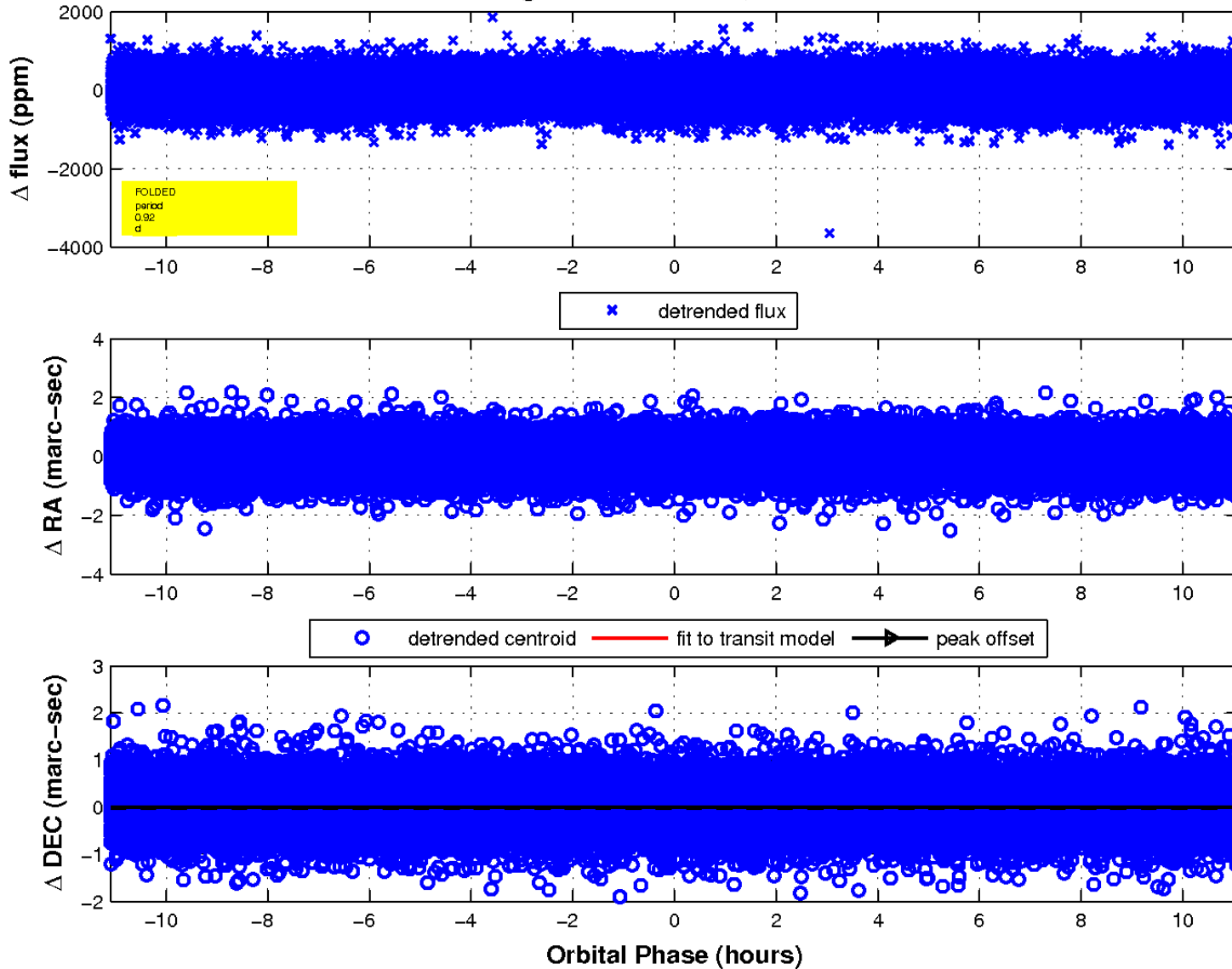
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

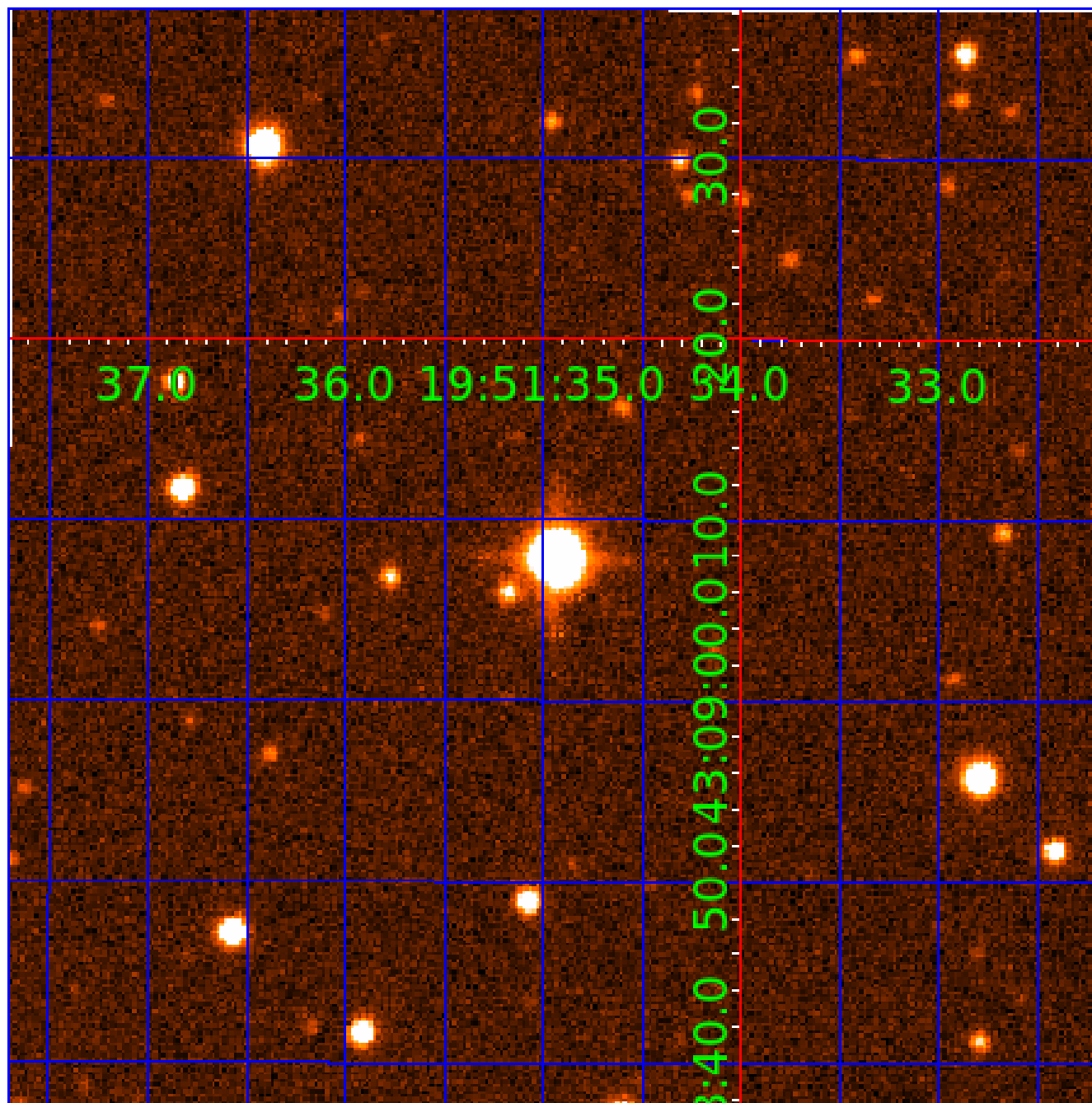


fluxWeightedCentroids, Planet 1 of 7



UKIRT Image

Declination



KIC 007551993

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})
007551993-01	OBS	No	0.924370	131.906277	44.8	4.210	10.4	11.0	1.80	6981	1.40	15888.70
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

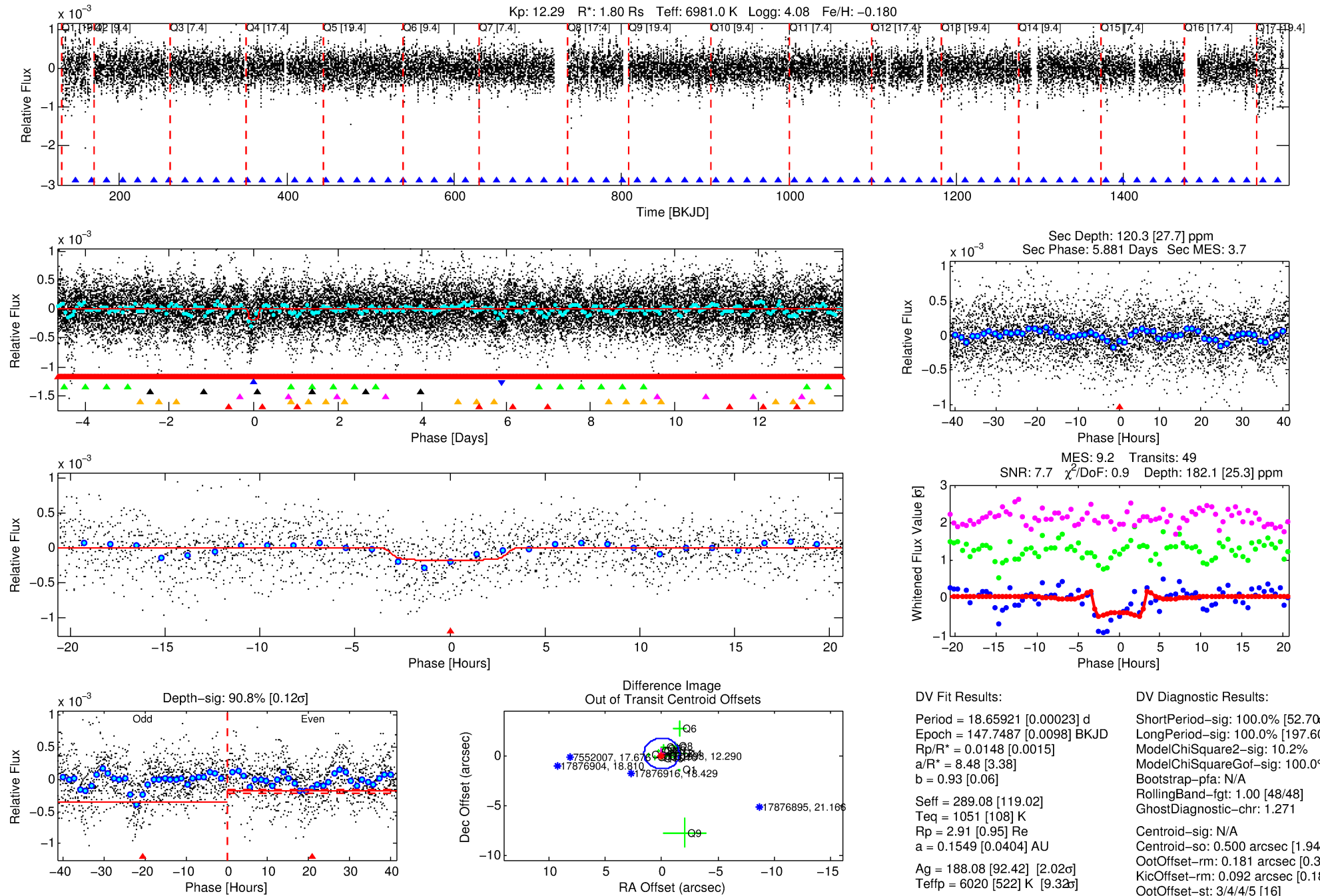
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007551993-02

No Significant Match Found

DV One-Page Summary

KIC: 7551993 Candidate: 2 of 7 Period: 18.659 d



DV Fit Results:

Period = 18.65921 [0.00023] d
Epoch = 147.7487 [0.0098] BKJD
Rp/R* = 0.0148 [0.0015]
a/R* = 8.48 [3.38]
b = 0.93 [0.06]
Seff = 289.08 [119.02]
Teff = 1051 [108] K
Rp = 2.91 [0.95] Re
a = 0.1549 [0.0404] AU
Ag = 188.08 [92.42] [2.02 σ]
Teffp = 6020 [522] K [9.32 σ]

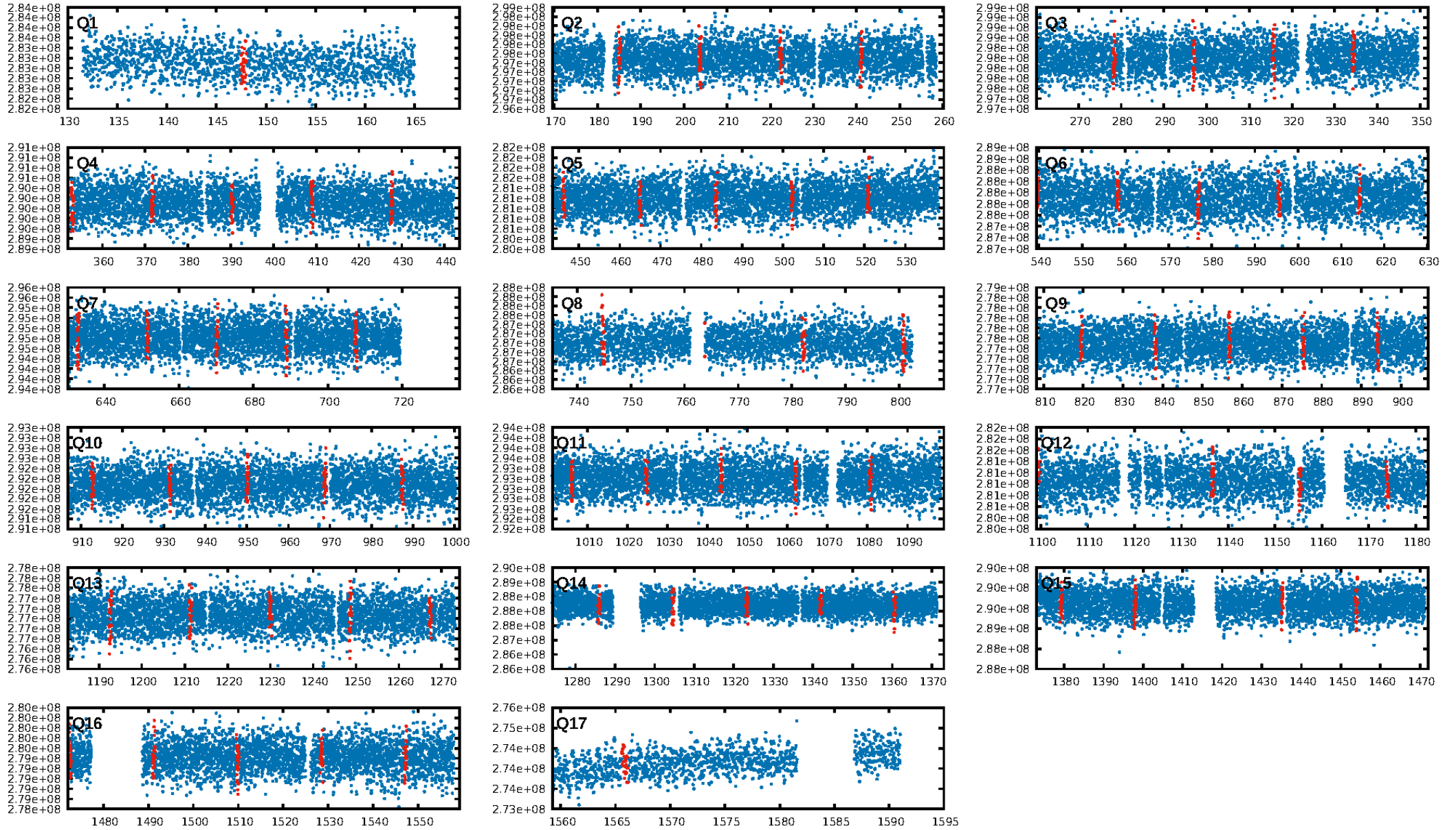
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [52.70 σ]
LongPeriod-sig: 100.0% [197.60 σ]
ModelChiSquare2-sig: 10.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [48/48]
GhostDiagnostic-chr: 1.271
Centroid-sig: N/A
Centroid-so: 0.500 arcsec [1.94 σ]
OotOffset-rm: 0.181 arcsec [0.35 σ]
KicOffset-rm: 0.092 arcsec [0.18 σ]
OotOffset-st: 3/4/4/5 [16]
KicOffset-st: 3/4/4/5 [16]
DiffImageQuality-fgm: 0.62 [10/16]
DiffImageOverlap-fno: 0.00 [0/17]

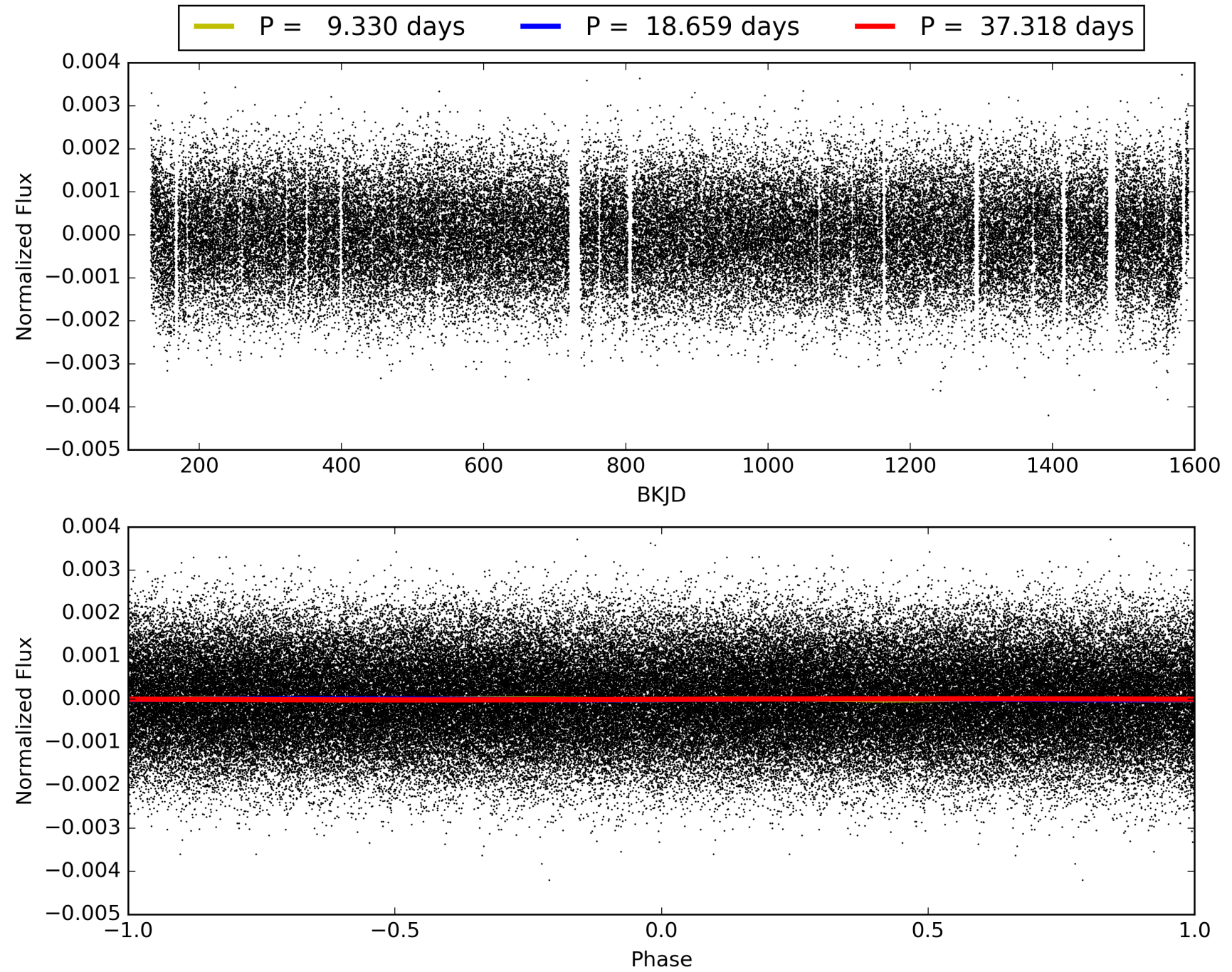
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:58:50 Z

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

TCE 007551993-02, PDC Light Curves

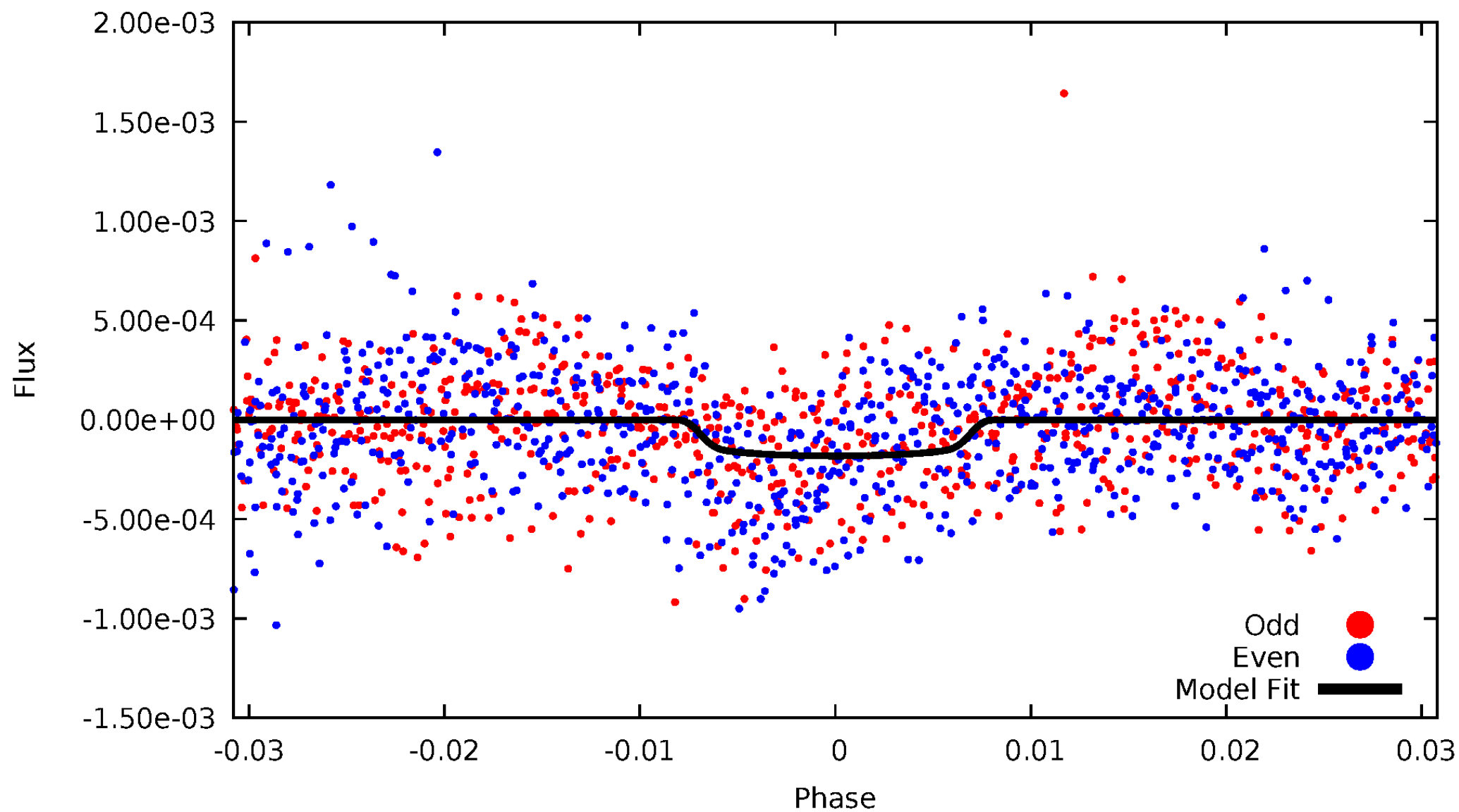


TCE 007551993-02



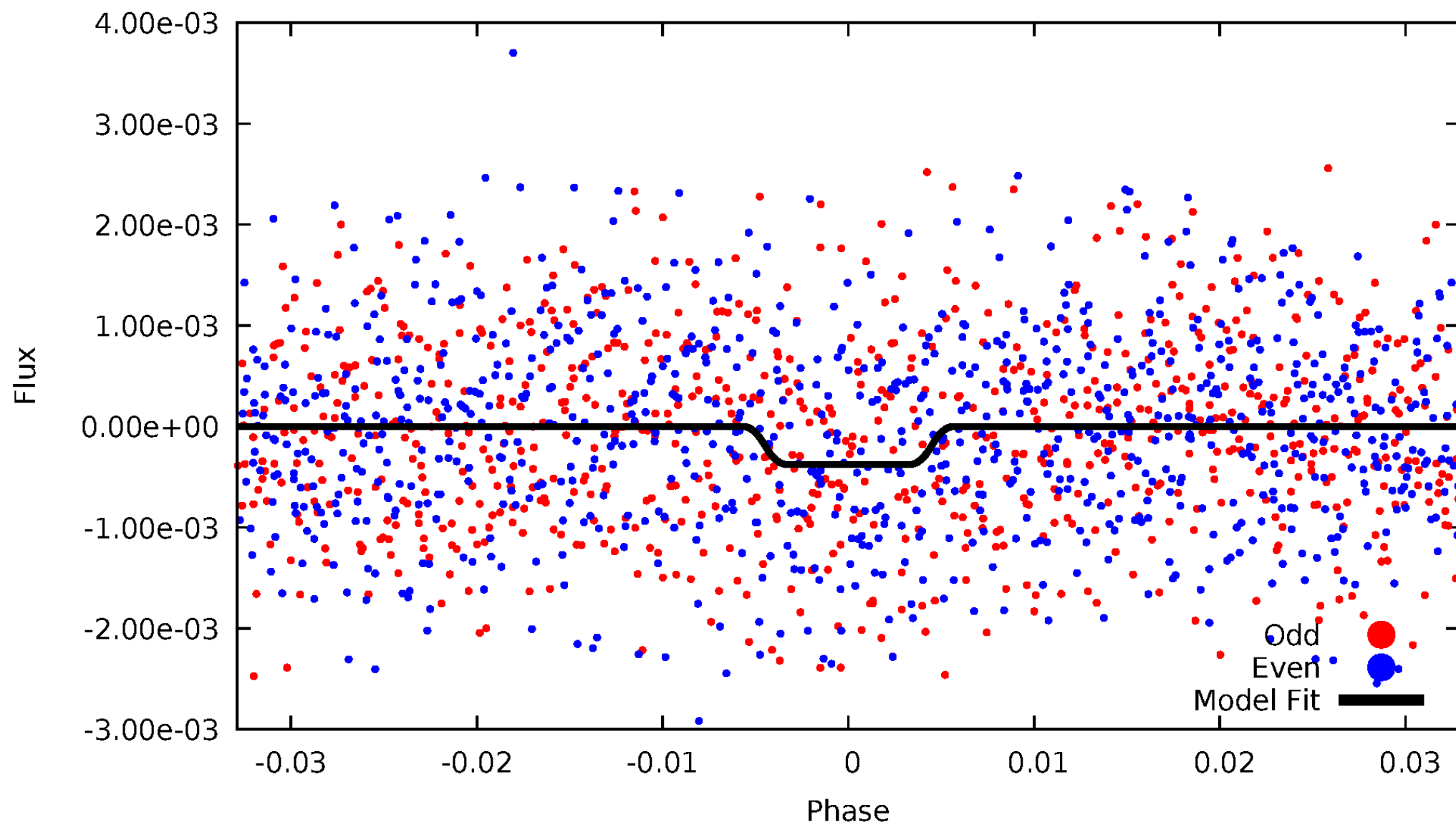
DV Odd/Even

TCE 007551993-02



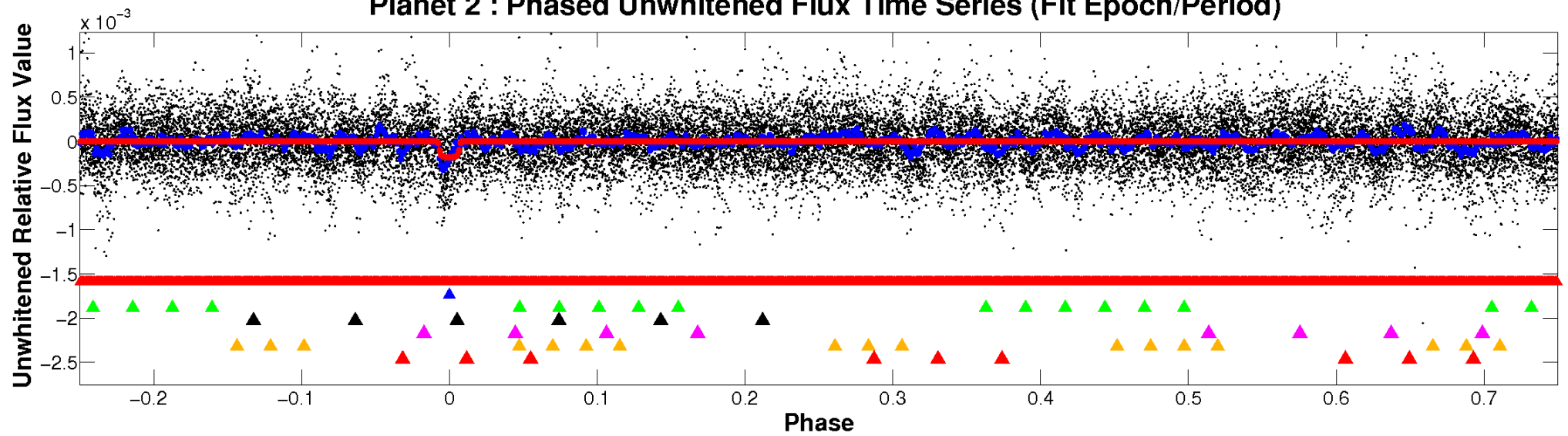
ALT Odd/Even

TCE 007551993-02

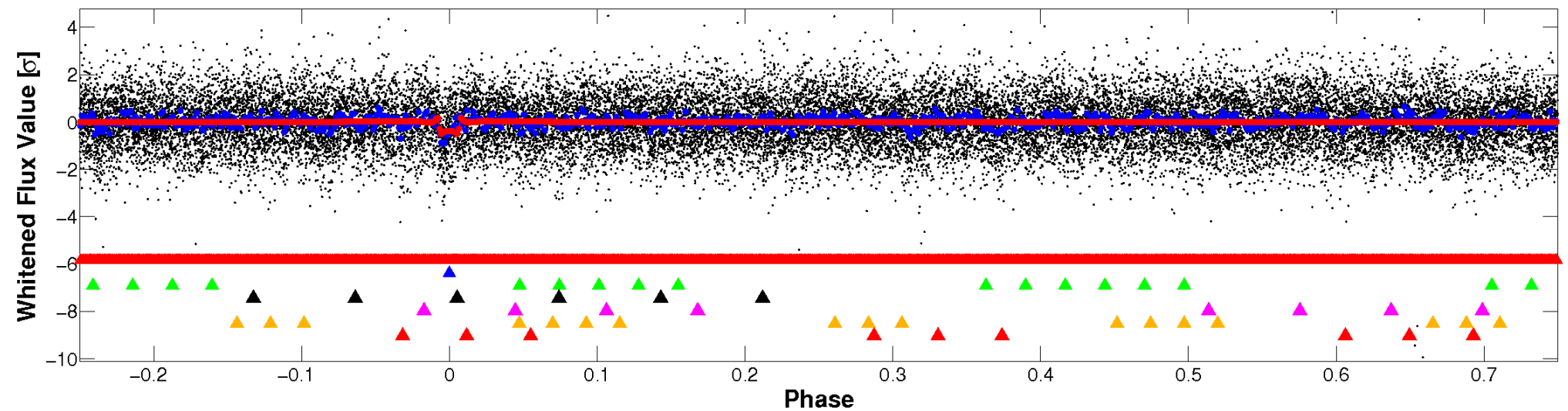


Non-Whitened Vs. Whitened Light Curve

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

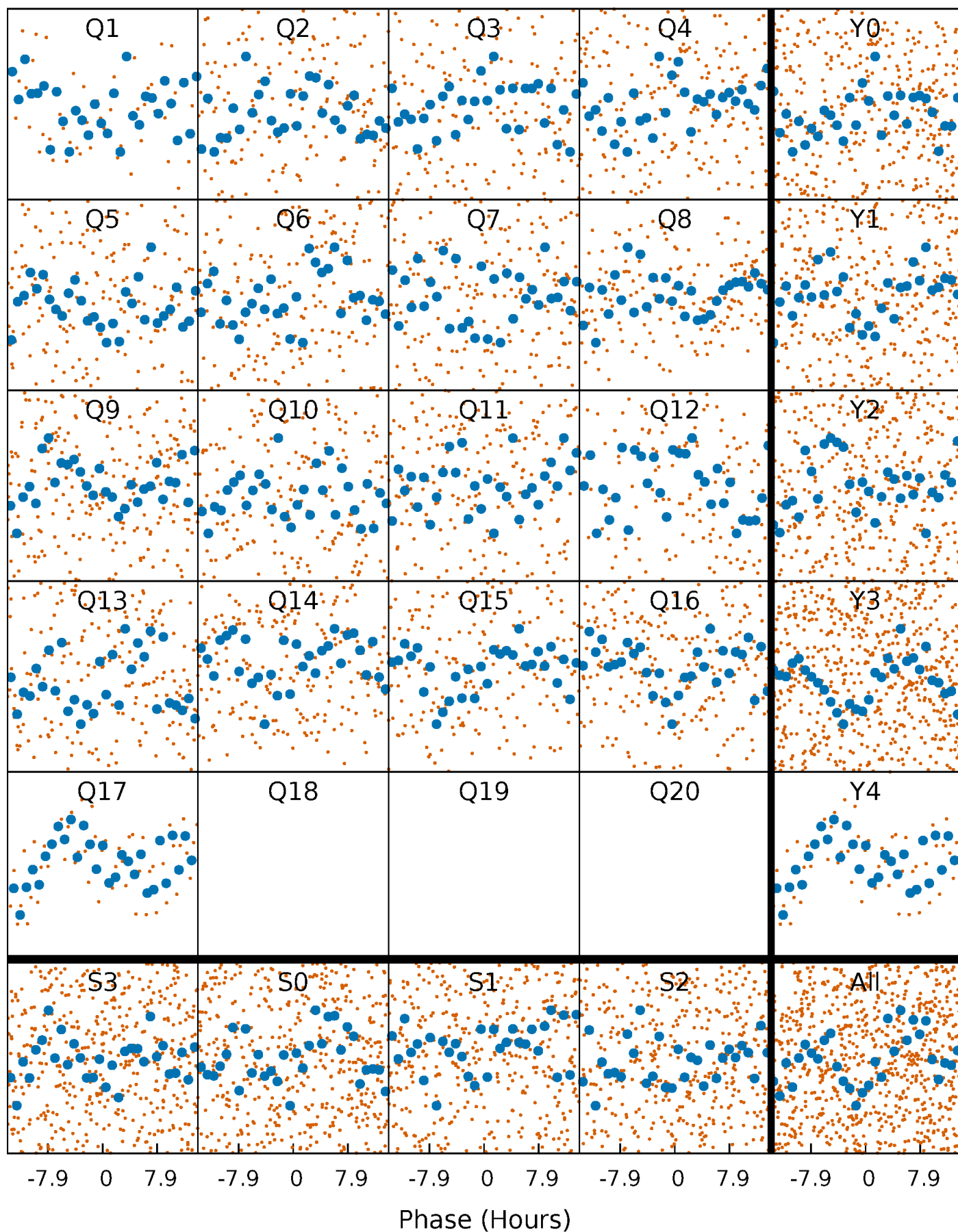


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



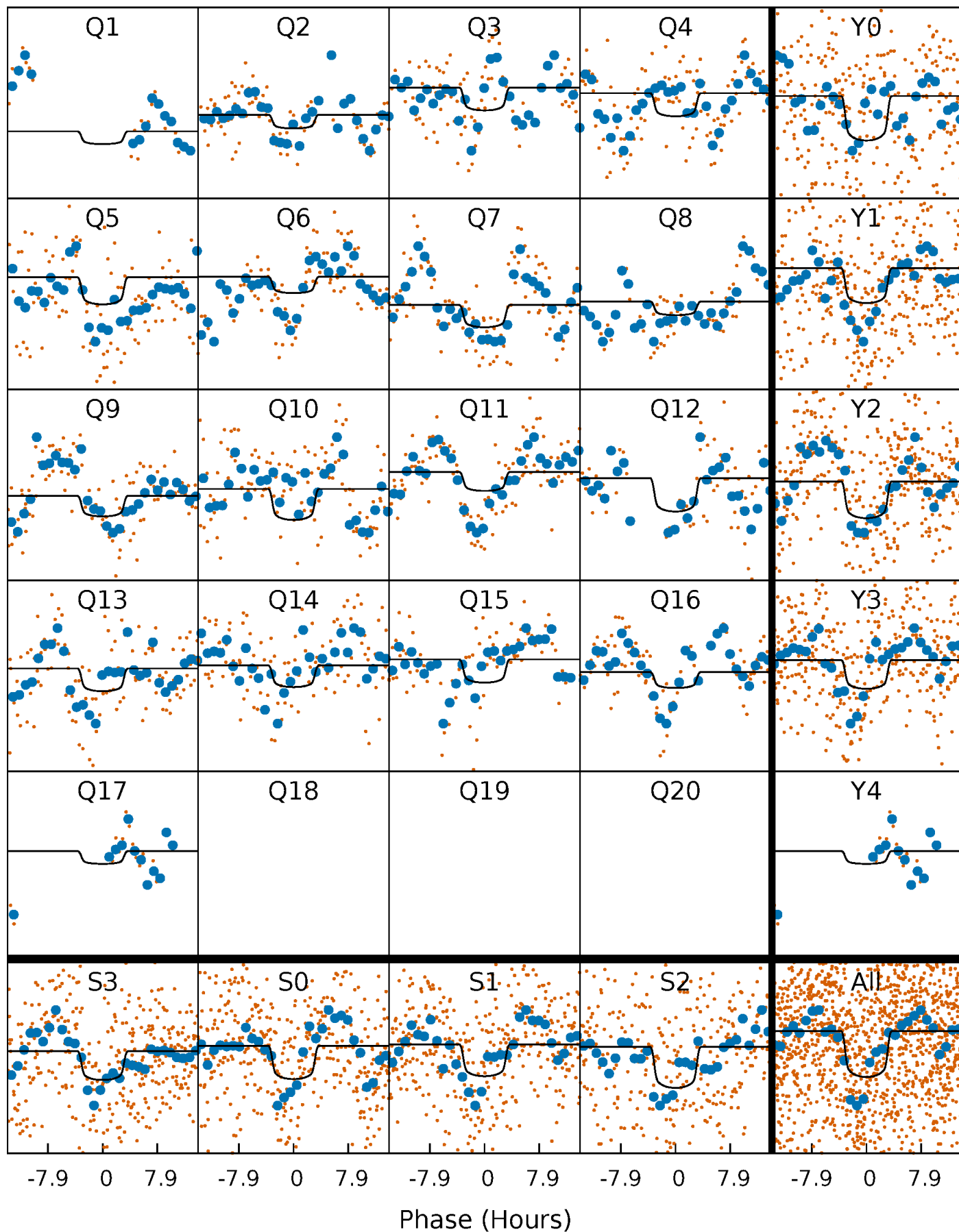
PDC Quarter-Phased Transit Curves

TCE 007551993-02 P= 18.659210 Days $T_0=147.748730$ (BKJD)



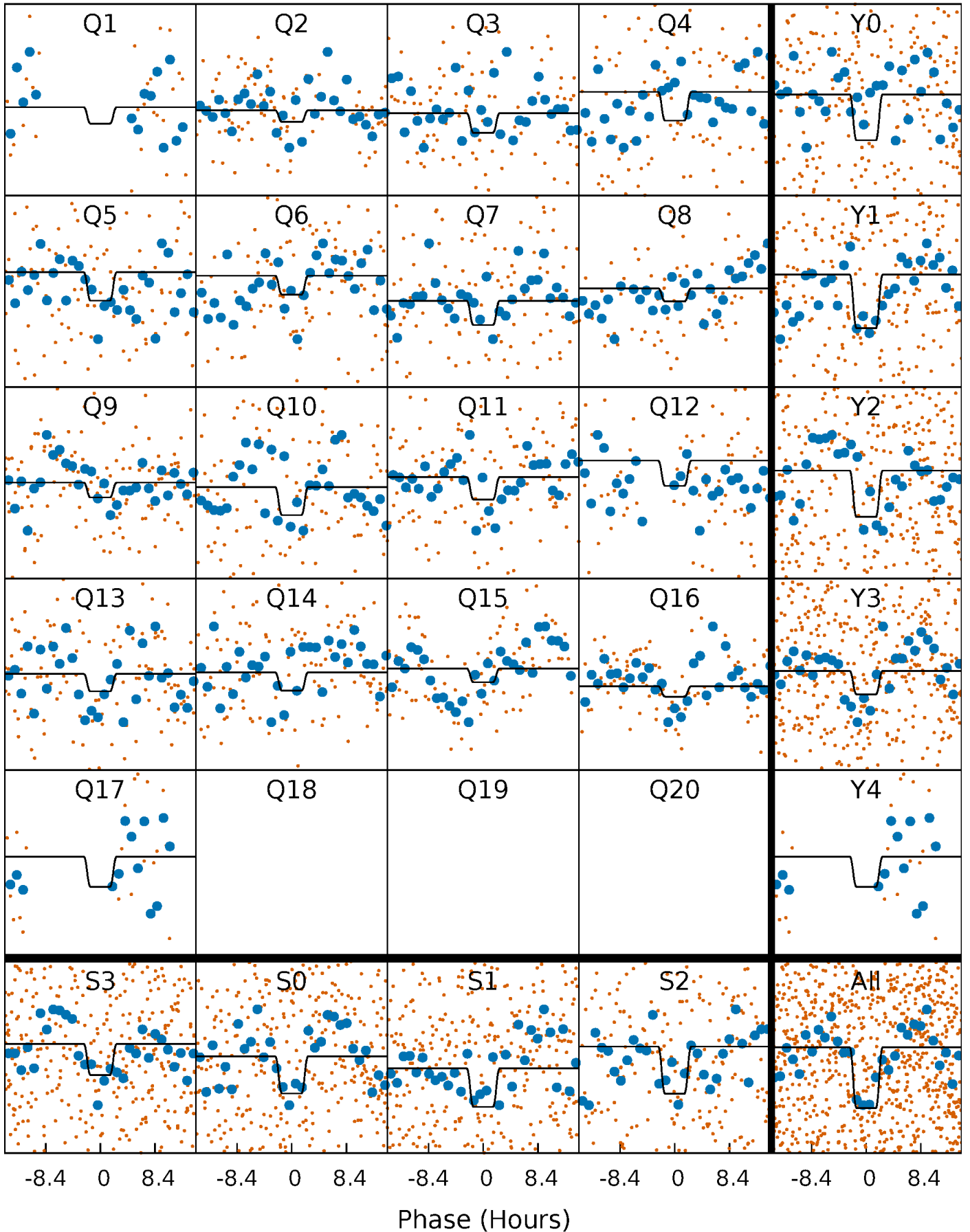
DV Quarter-Phased Transit Curves

TCE 007551993-02 P= 18.659210 Days $T_0=147.748730$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

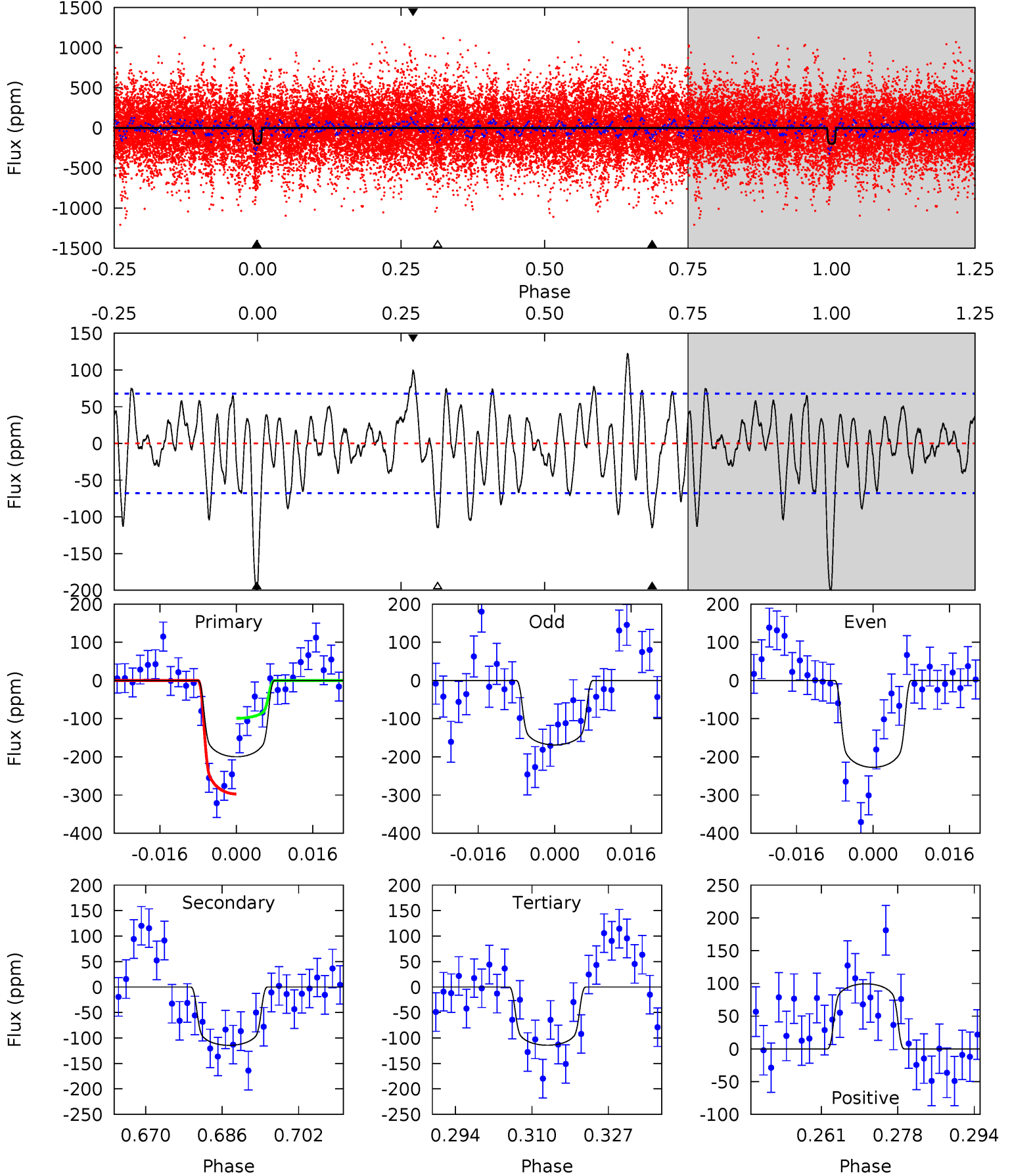
TCE 007551993-02 P= 18.658808 Days $T_0=147.719828$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-02, P = 18.659210 Days, E = 129.089520 Days

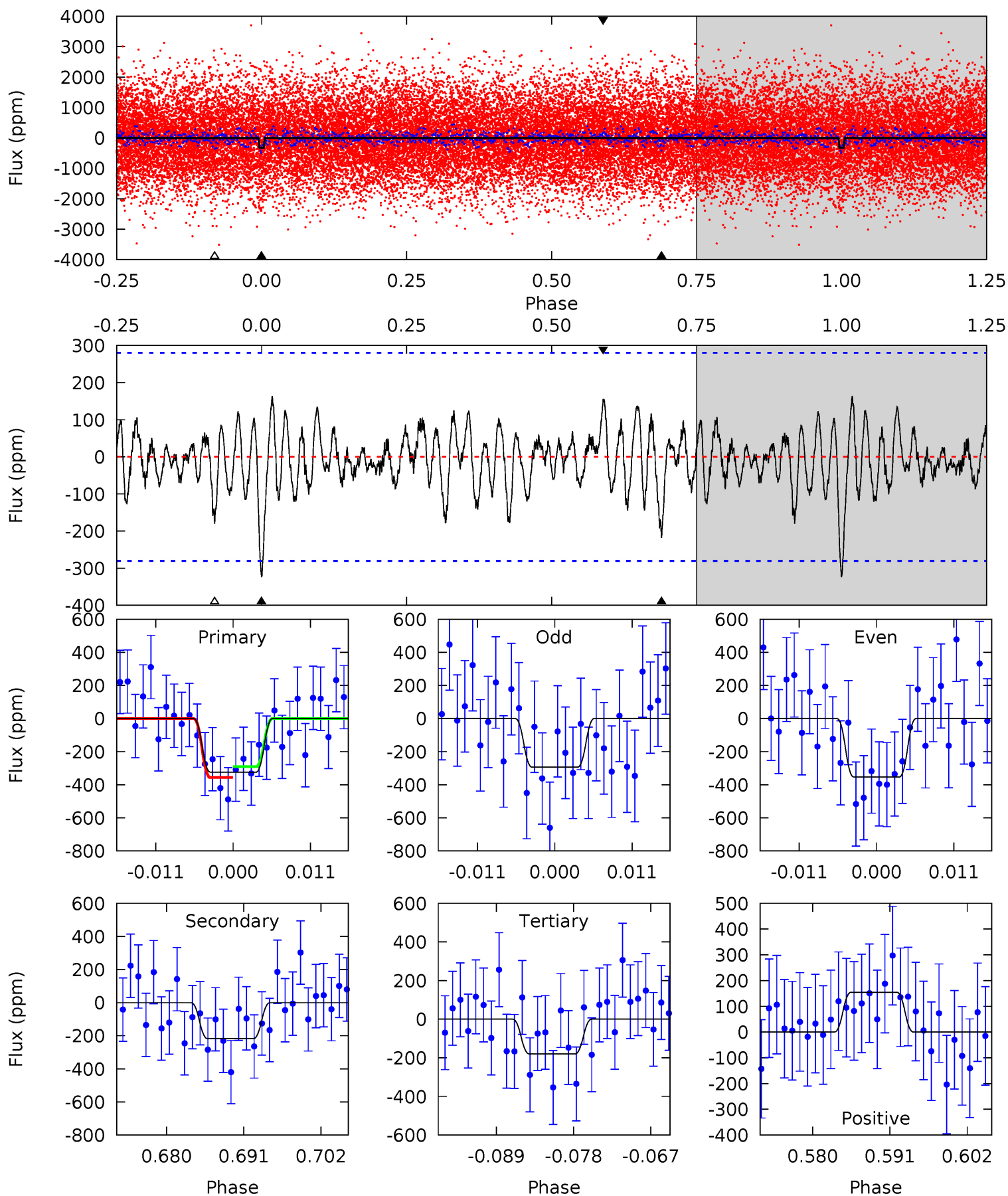
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	8.31	8.30	7.22	4.93	2.40	3.07	6.22	7.30	0.01	1.10	2.14	0.86	0.38	7.22



Alt Model-Shift Uniqueness Test

007551993-02, P = 18.658808 Days, E = 129.061020 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.79	3.89	3.21	2.76	5.01	2.54	1.15	2.58	3.02	0.68	1.13	0.53	0.71	0.34	0.58



Stellar Parameters For KIC 007551993

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-114 ± 14	$2.86^{+0.59}_{-0.52}$	1457^{+112}_{-119}	5882^{+391}_{-346}	186^{+90}_{-59}
Alt.	-218 ± 56	$3.81^{+0.67}_{-0.63}$	1469^{+107}_{-114}	6022^{+482}_{-515}	198^{+88}_{-74}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

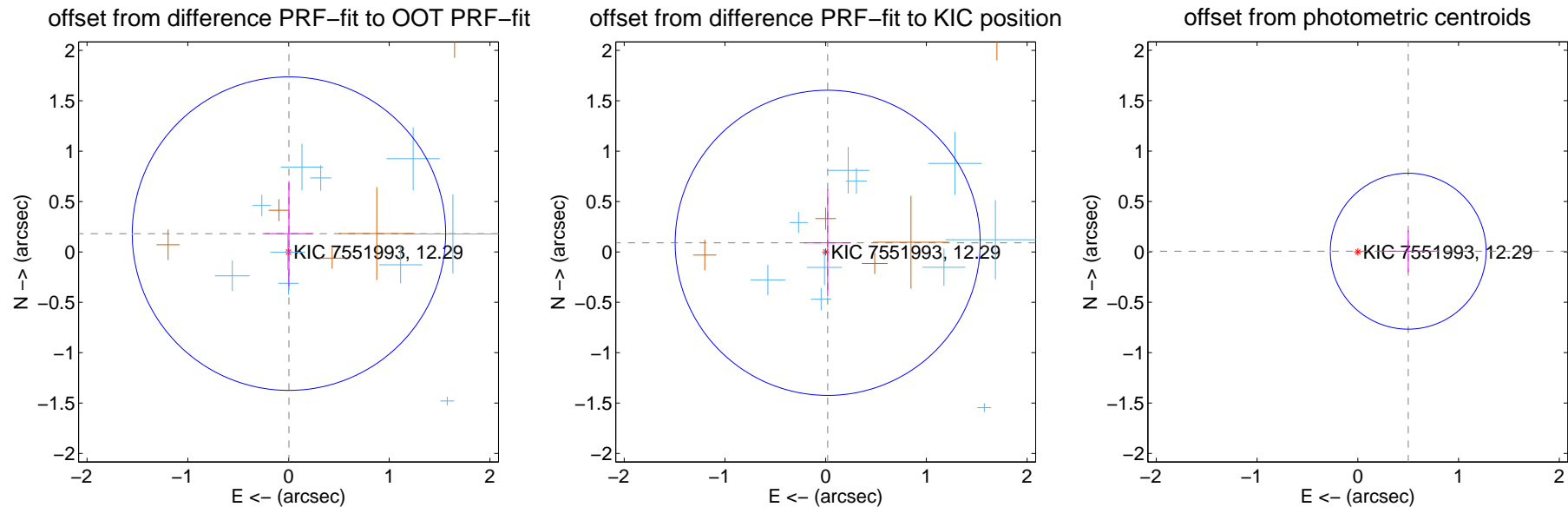
DV Centroid Data

Supplemental centroid analysis for 007551993-02. Kepler magnitude: 12.29. Transit SNR 7.72

There are 10 quarters with good PRF difference image offsets

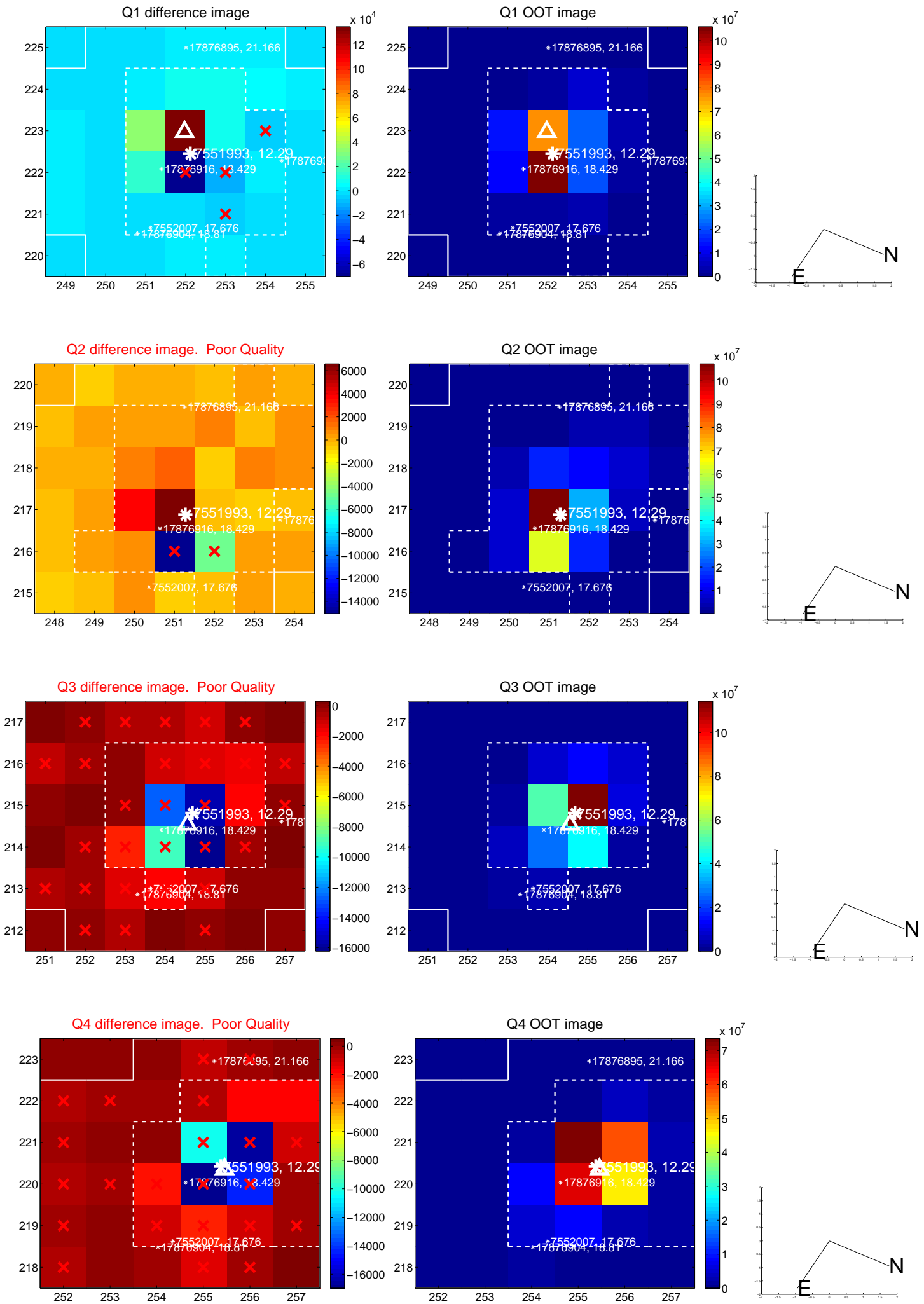
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.181 ± 0.519	0.35	-0.004 ± 0.243	0.181 ± 0.521
PRF-fit source offset from KIC position	0.092 ± 0.505	0.18	-0.020 ± 0.233	0.090 ± 0.532
photometric centroid source offset	0.50 ± 0.26	1.94	-0.50 ± 0.26	0.01 ± 0.21

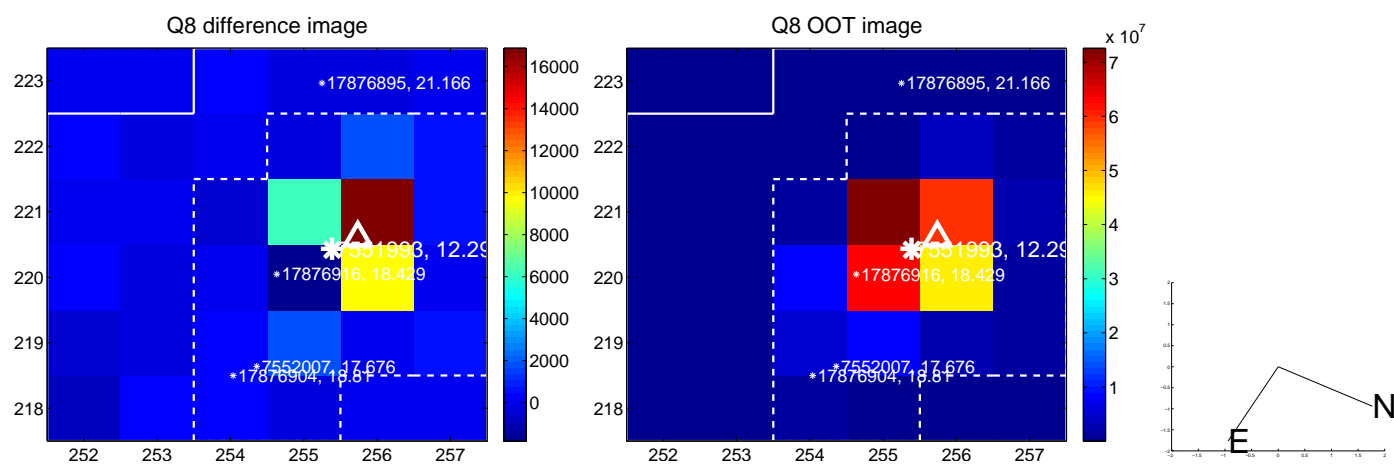
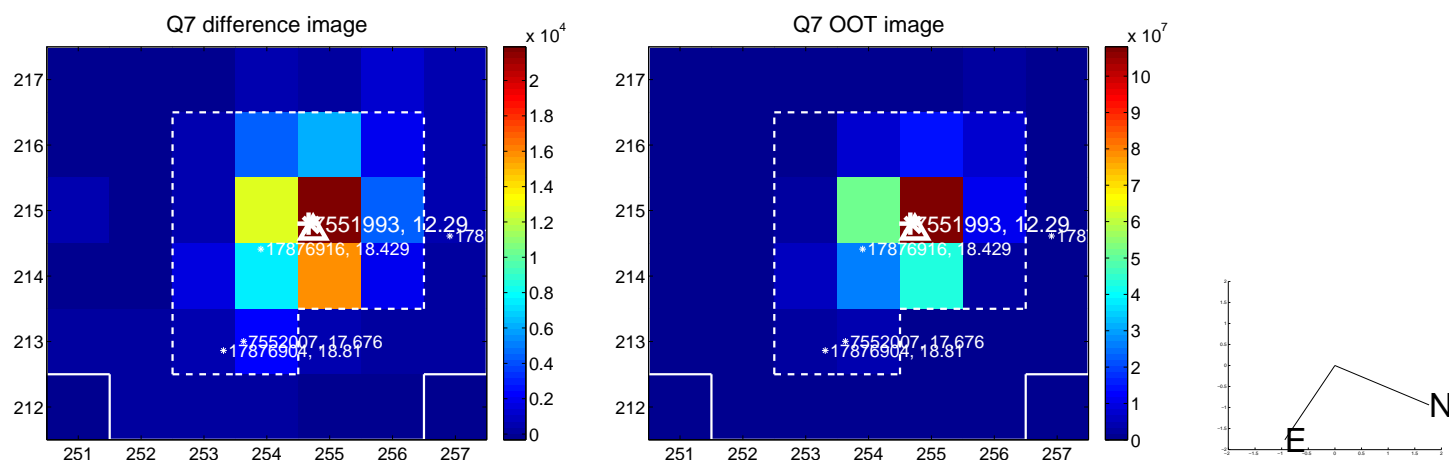
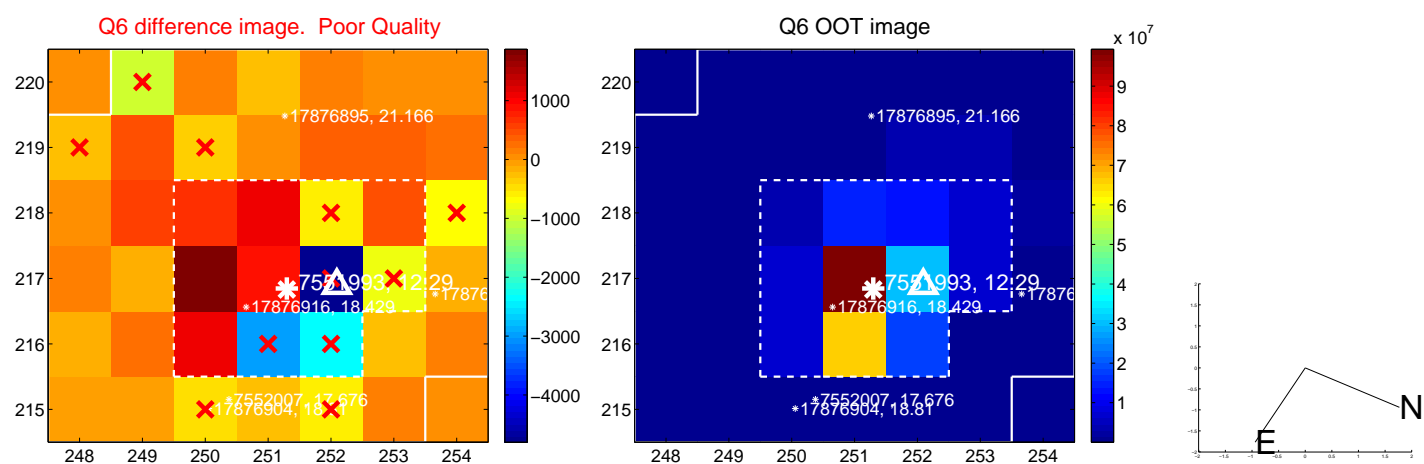
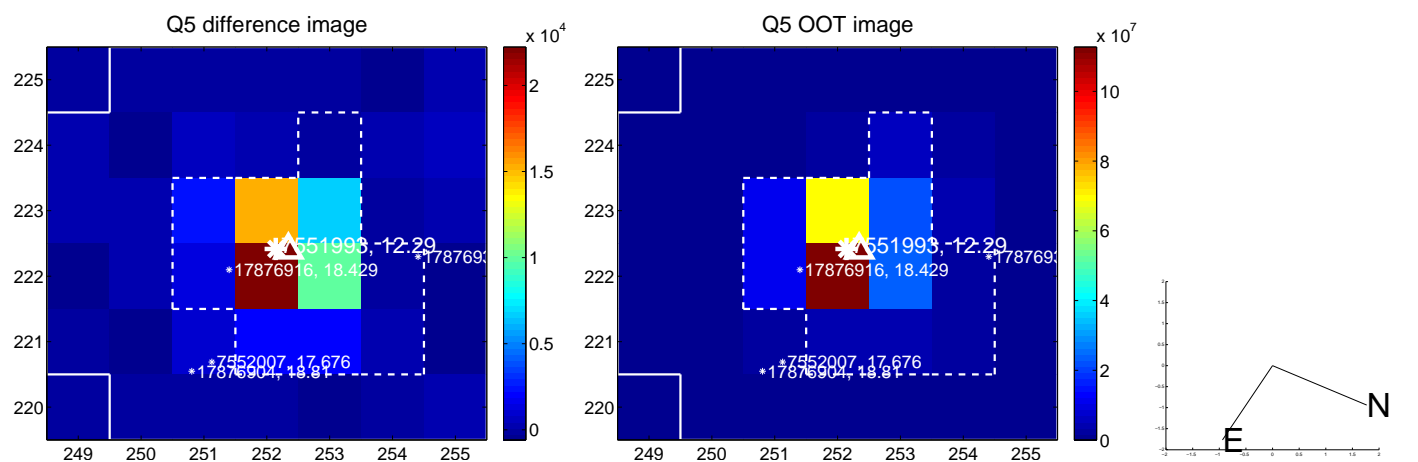


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

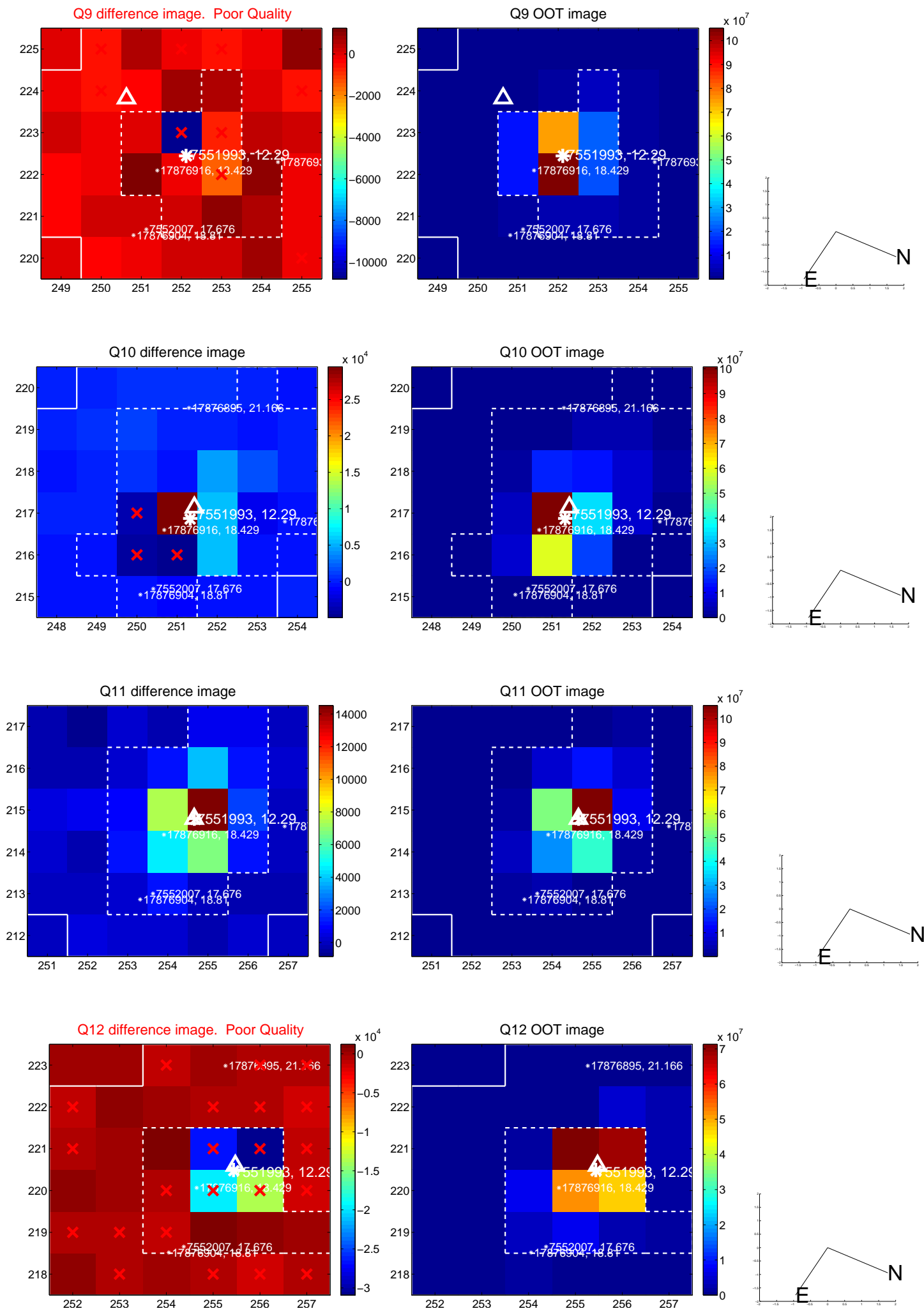
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



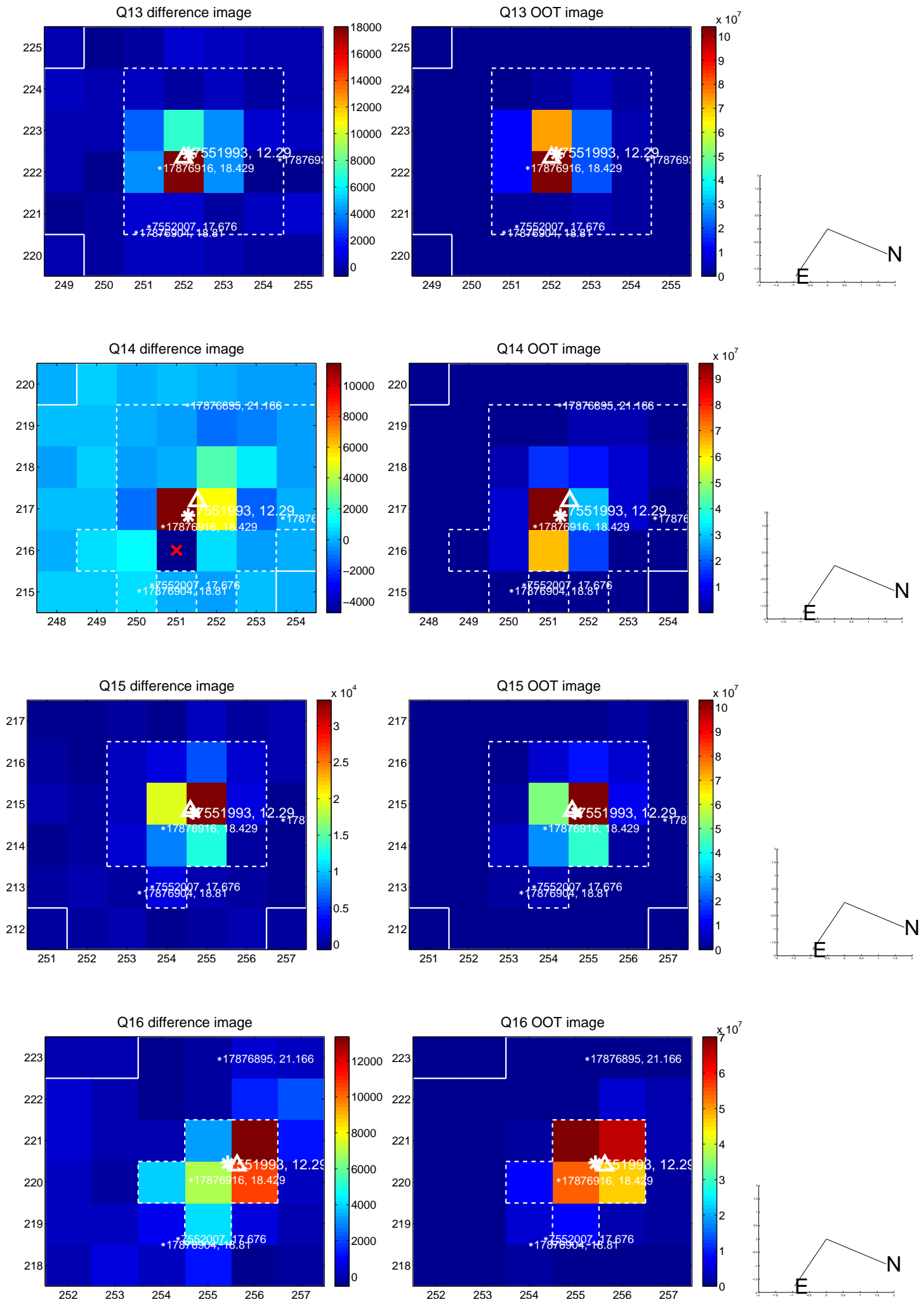
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



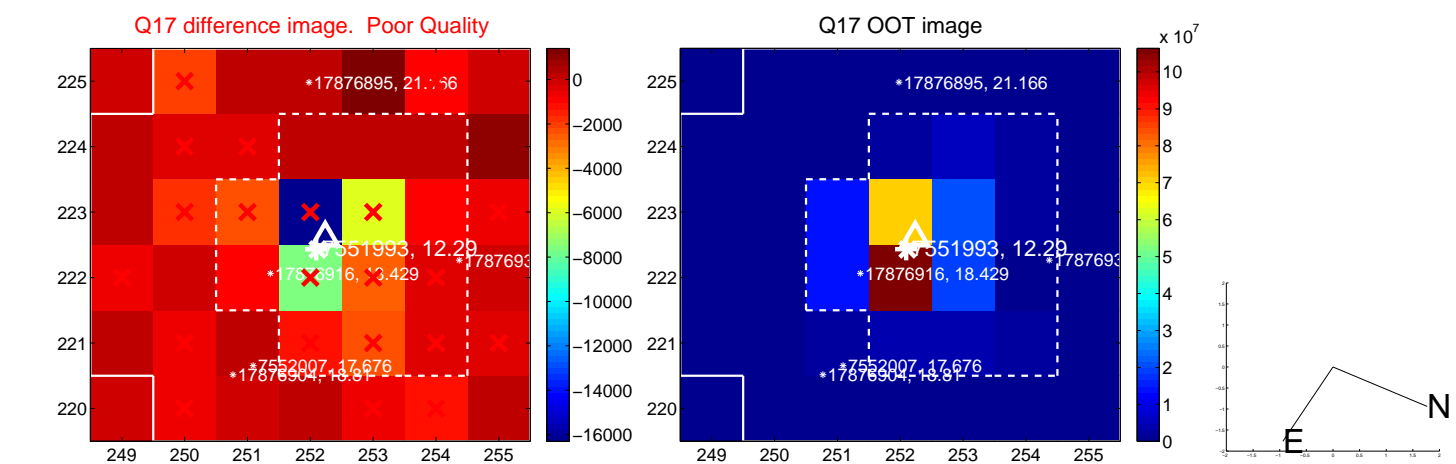
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



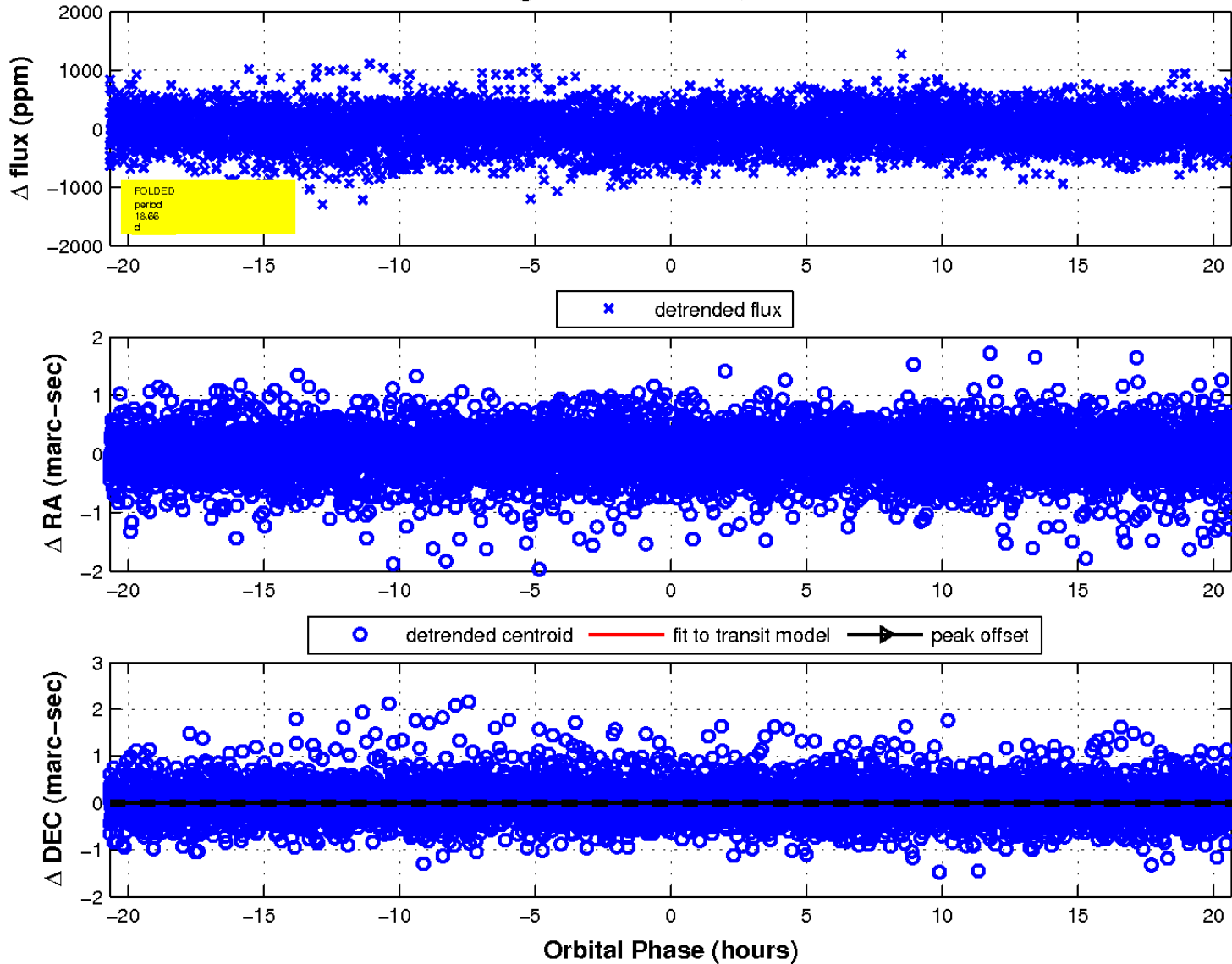
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

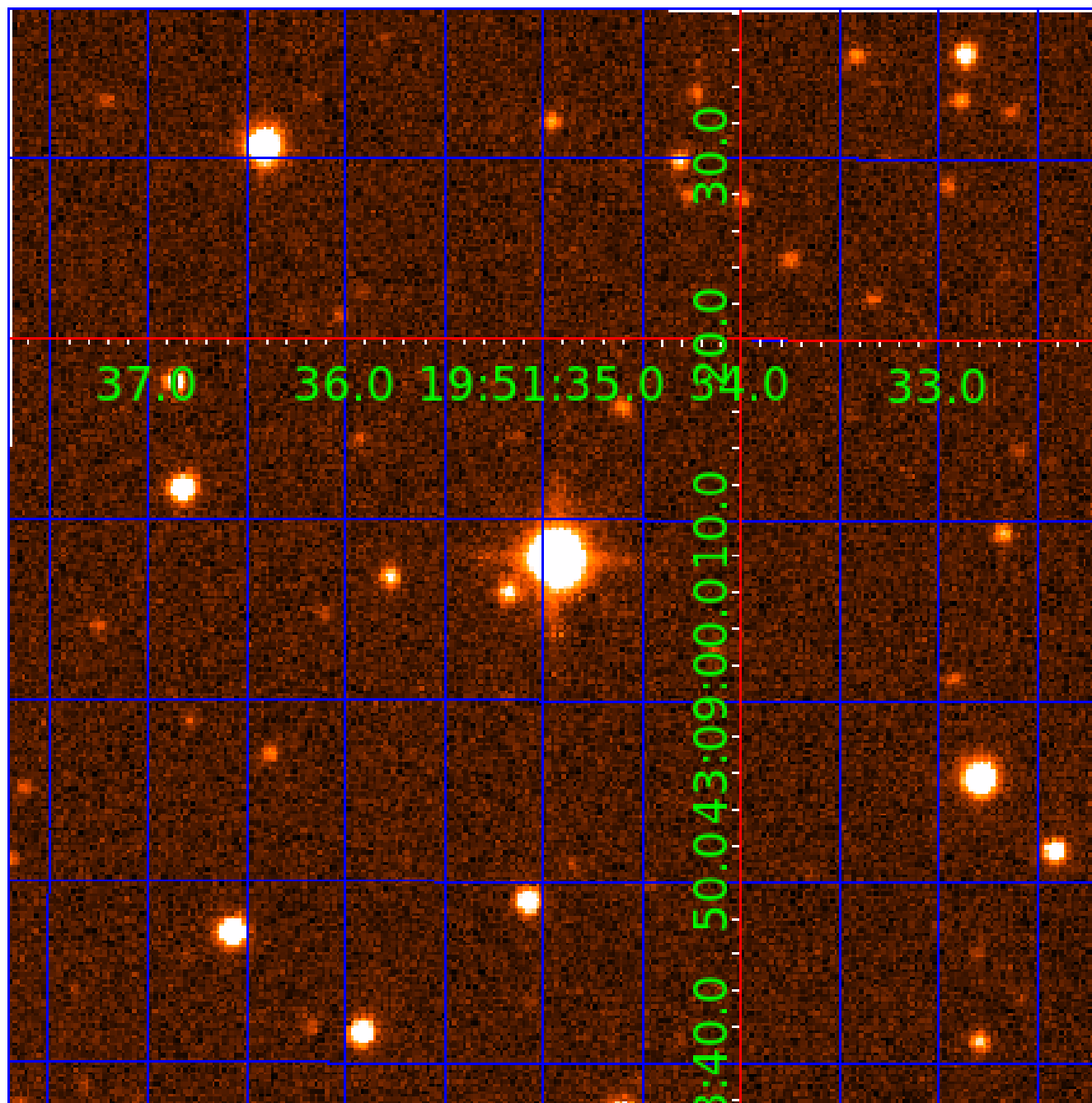


fluxWeightedCentroids, Planet 2 of 7



UKIRT Image

Declination



KIC 007551993

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})
007551993-01	OBS	No	0.924370	131.906277	44.8	4.210	10.4	11.0	1.80	6981	1.40	15888.70
007551993-02	OBS	No	18.659210	147.748730	182.1	6.893	9.2	7.7	1.80	6981	2.90	289.08
007551993-03	OBS	No	86.909457	163.411916	599.4	5.431	8.3	8.4	1.80	6981	8.38	37.16
007551993-04	OBS	No	259.943456	133.044345	490.6	3.586	8.3	6.2	1.80	6981	4.52	8.62
007551993-05	OBS	No	176.686697	198.107875	451.9	7.841	8.1	6.1	1.80	6981	4.05	14.43
007551993-06	OBS	No	85.747742	213.425783	391.6	4.346	7.7	6.9	1.80	6981	4.01	37.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

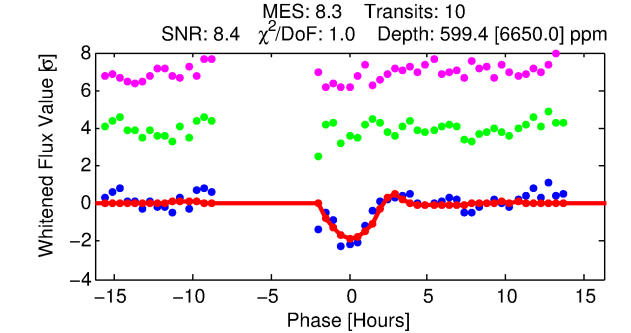
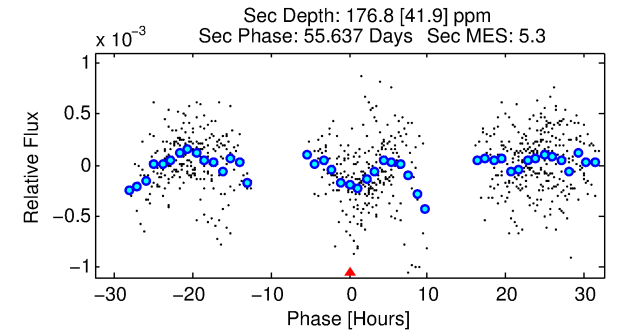
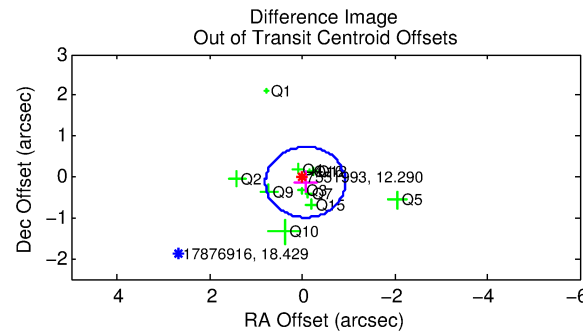
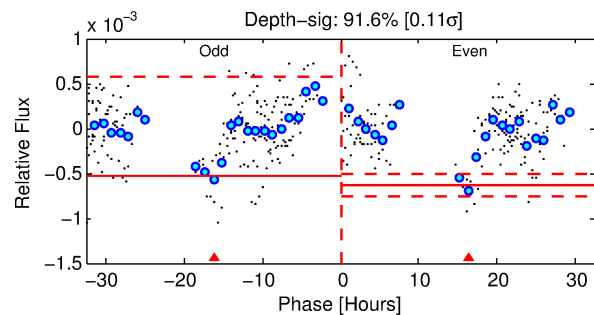
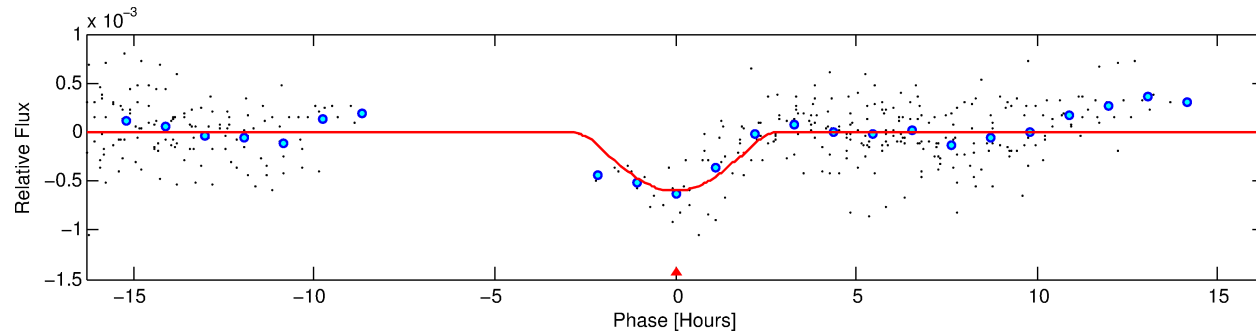
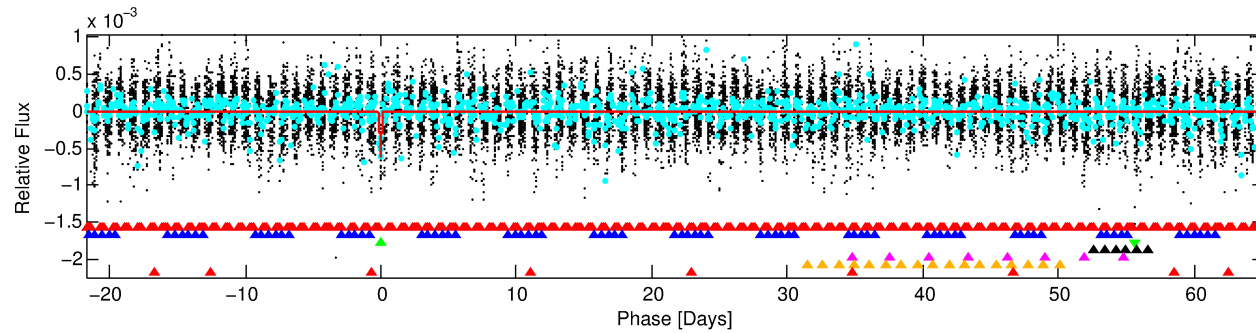
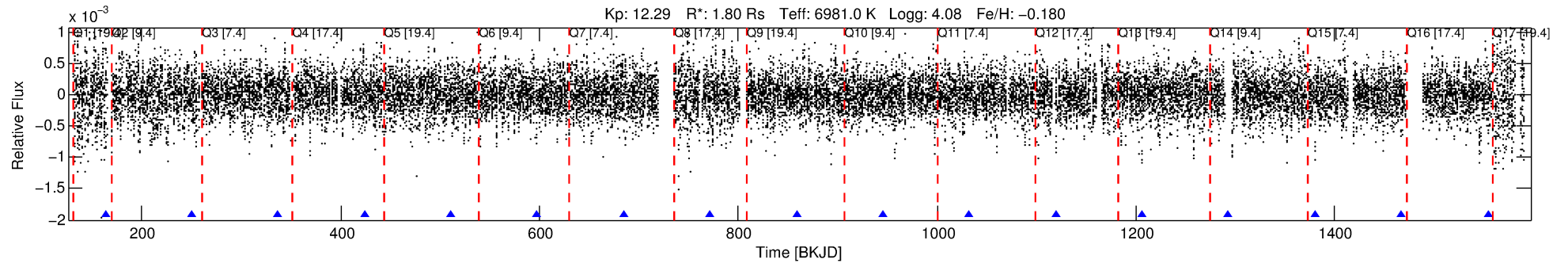
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007551993-03

No Significant Match Found

DV One-Page Summary

KIC: 7551993 Candidate: 3 of 7 Period: 86.909 d



DV Fit Results:

Period = 86.90946 [0.00207] d
Epoch = 163.4119 [0.0289] BKJD
Rp/R* = 0.0425 [0.1064]
a/R* = 36.05 [23.60]
b = 1.00 [0.48]
Seff = 37.16 [15.30]
Teff = 630 [65] K
Rp = 8.38 [21.11] Re
a = 0.4319 [0.1128] AU
Ag = 258.36 [1296.94] [0.20 σ]
Teffp = 3903 [4886] K [0.67 σ]

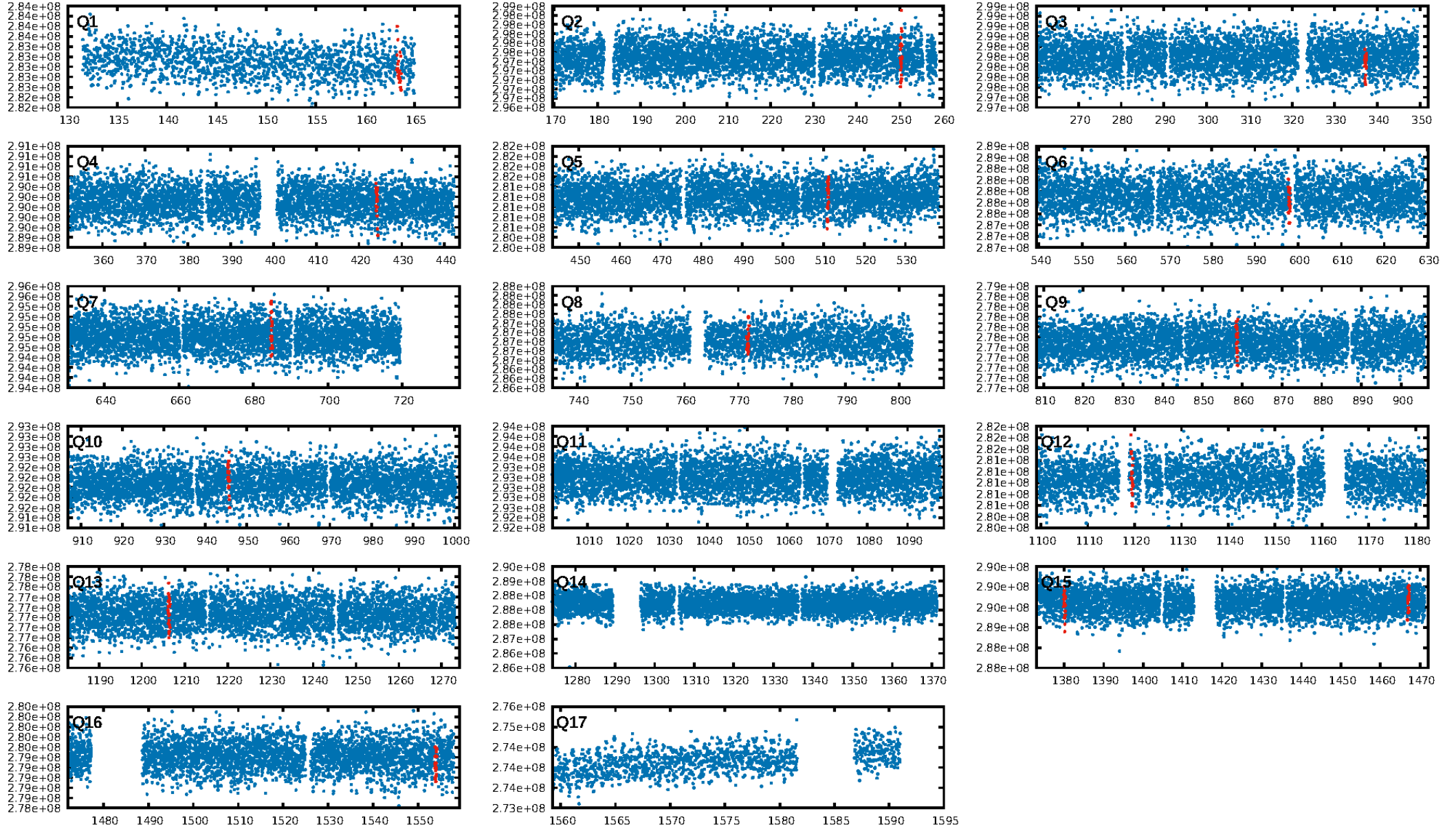
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [4.01 σ]
LongPeriod-sig: 100.0% [278.53 σ]
ModelChiSquare2-sig: 5.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [10/10]
GhostDiagnostic-chr: 1.523
Centroid-sig: N/A
Centroid-so: 0.318 arcsec [1.46 σ]
OotOffset-rm: 0.146 arcsec [0.51 σ]
KicOffset-rm: 0.243 arcsec [0.90 σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-st: 2/3/3/3 [11]
DiffImageQuality-fgm: 0.55 [6/11]
DiffImageOverlap-fno: 0.00 [0/12]

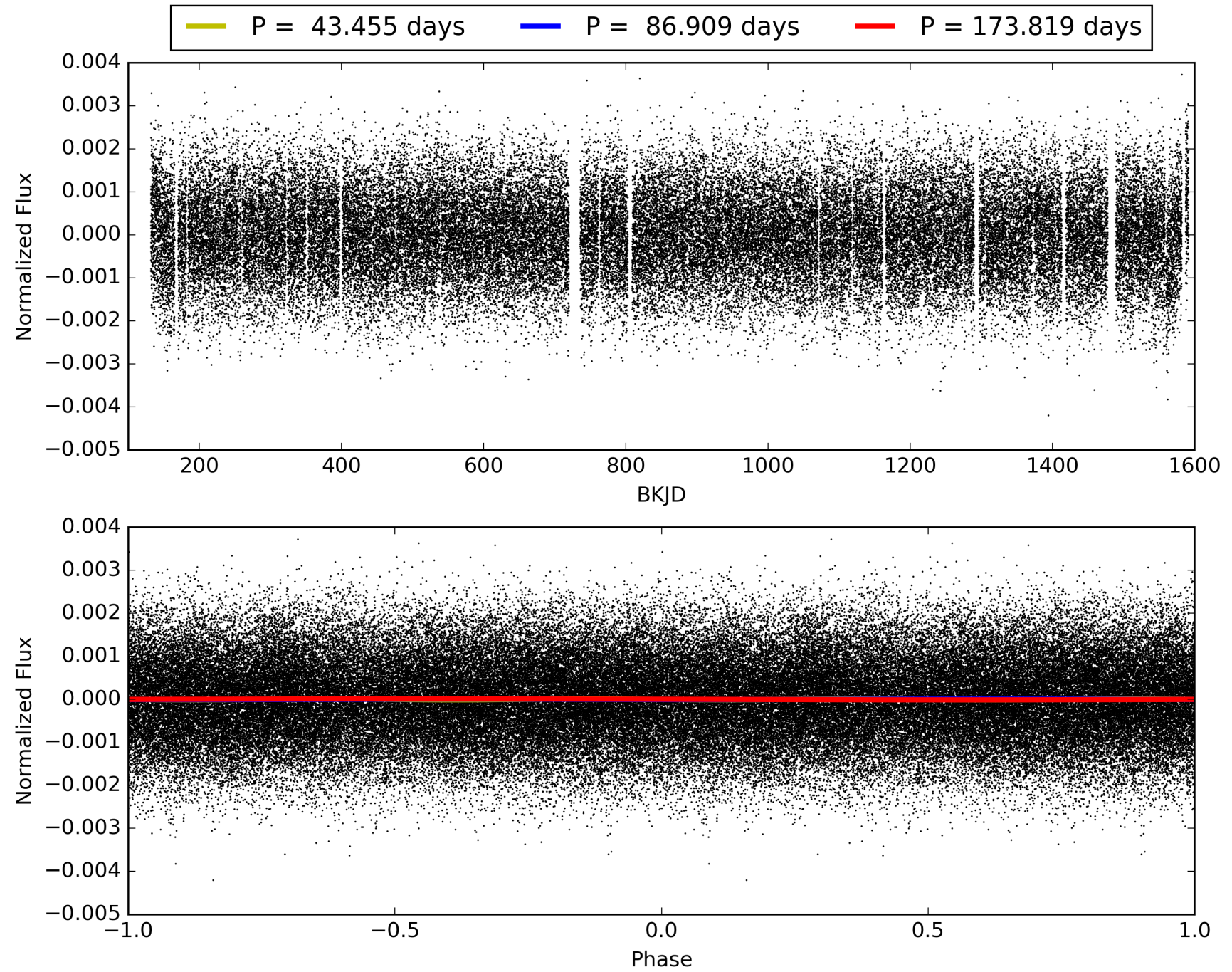
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:58:55 Z

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

TCE 007551993-03, PDC Light Curves

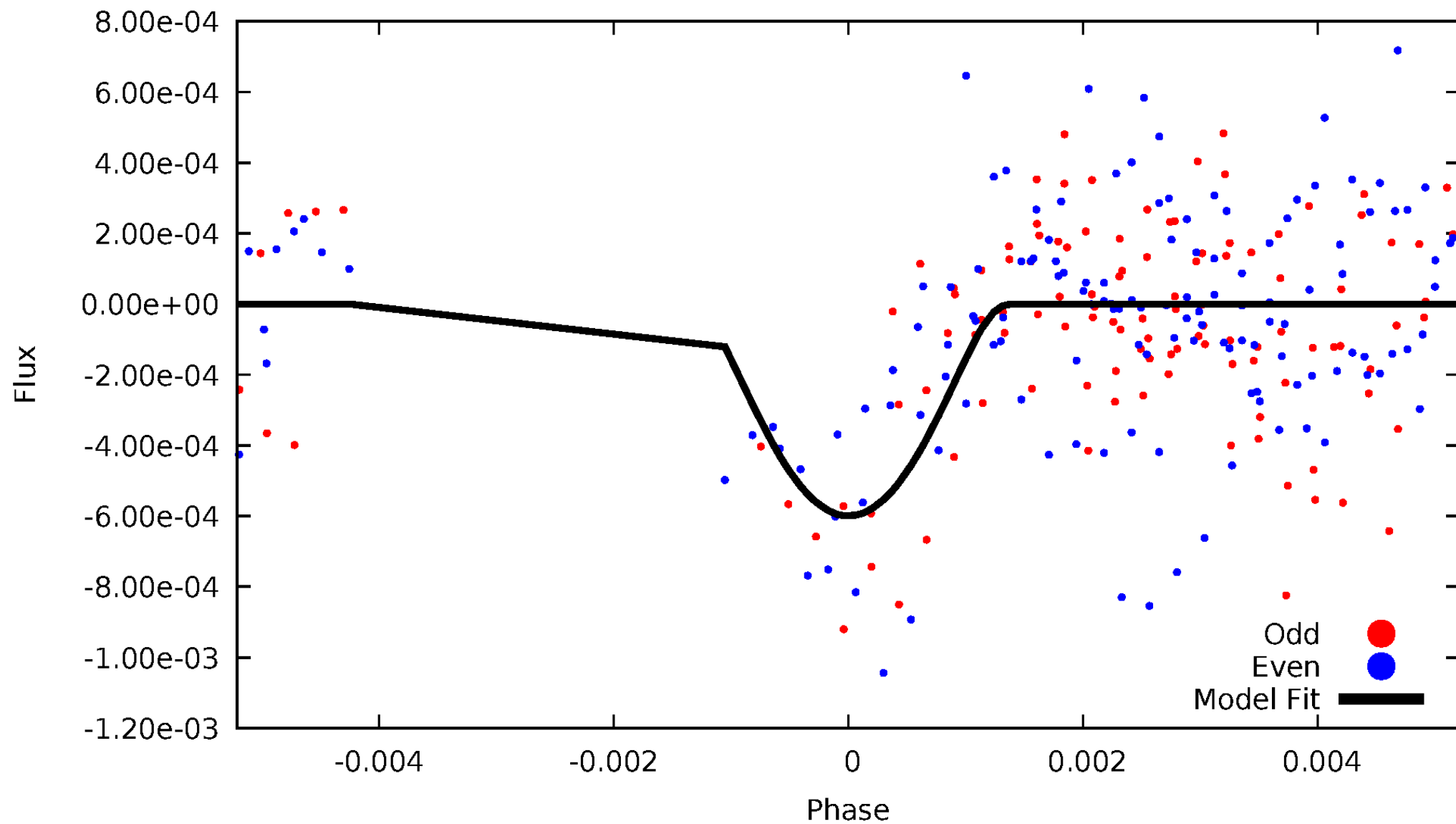


TCE 007551993-03



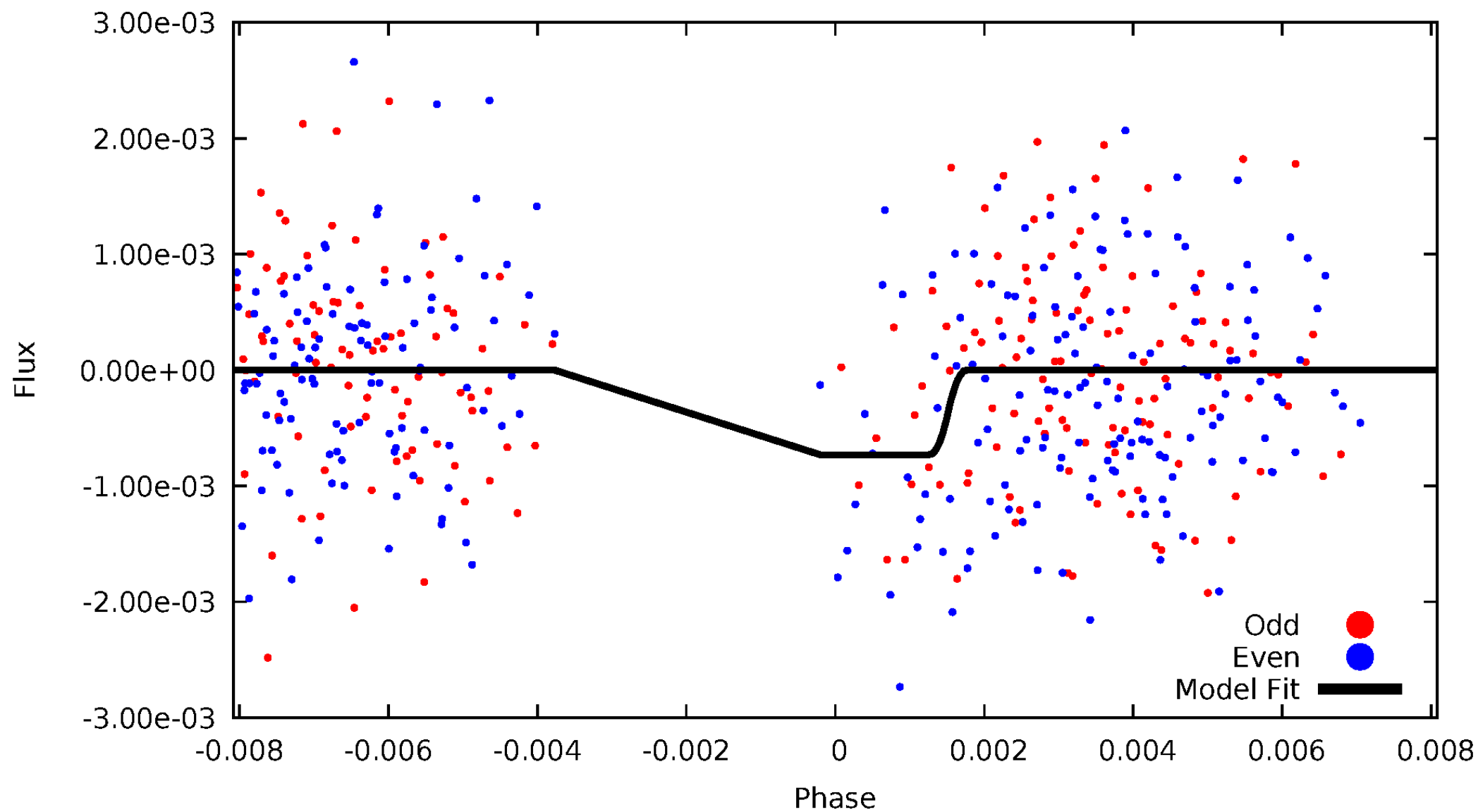
DV Odd/Even

TCE 007551993-03



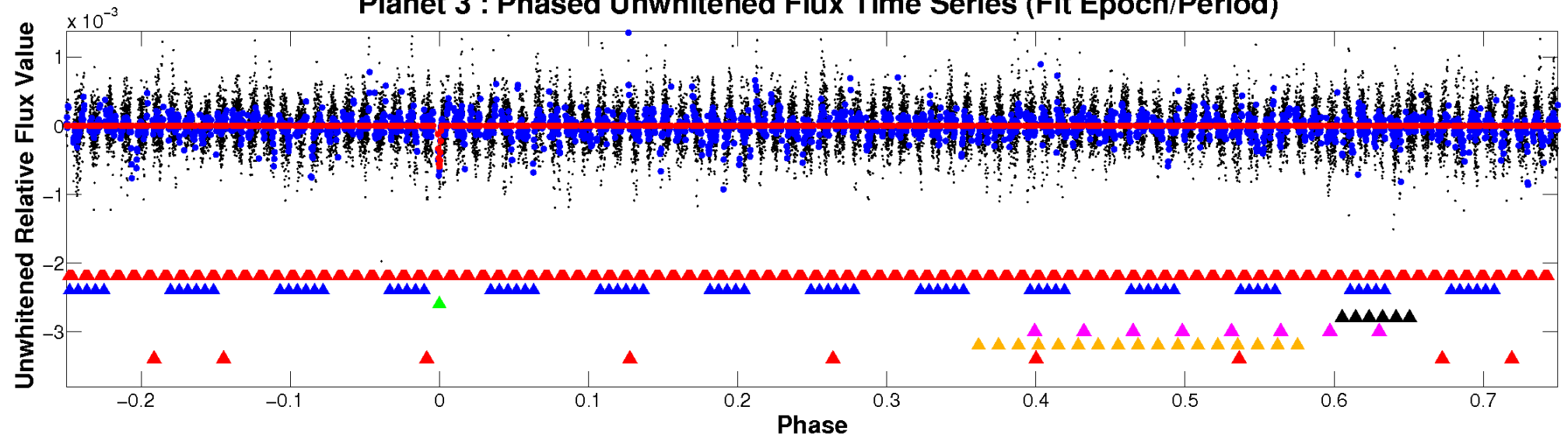
ALT Odd/Even

TCE 007551993-03

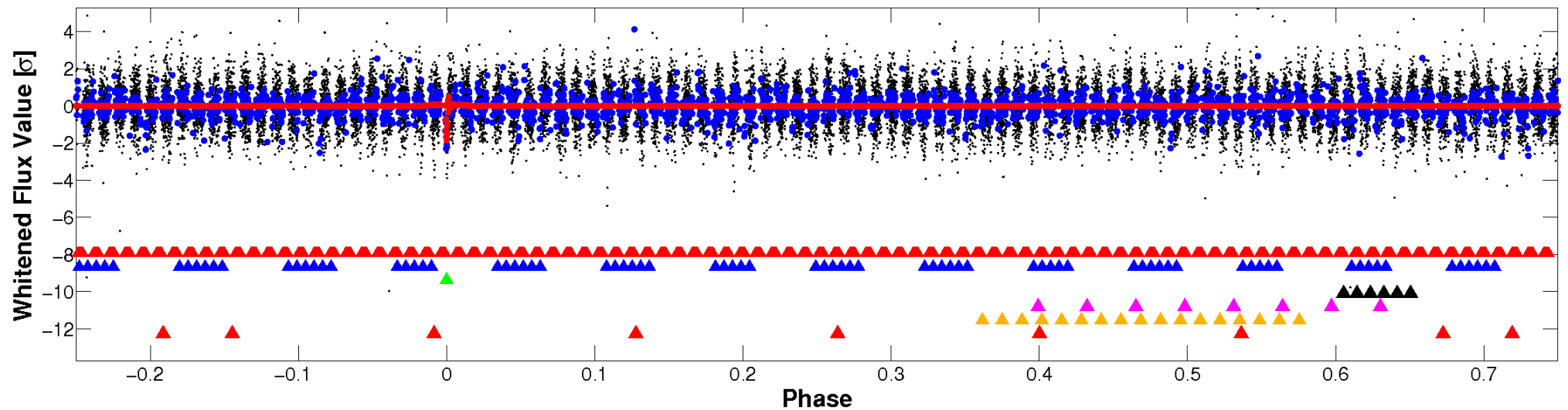


Non-Whitened Vs. Whitened Light Curve

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

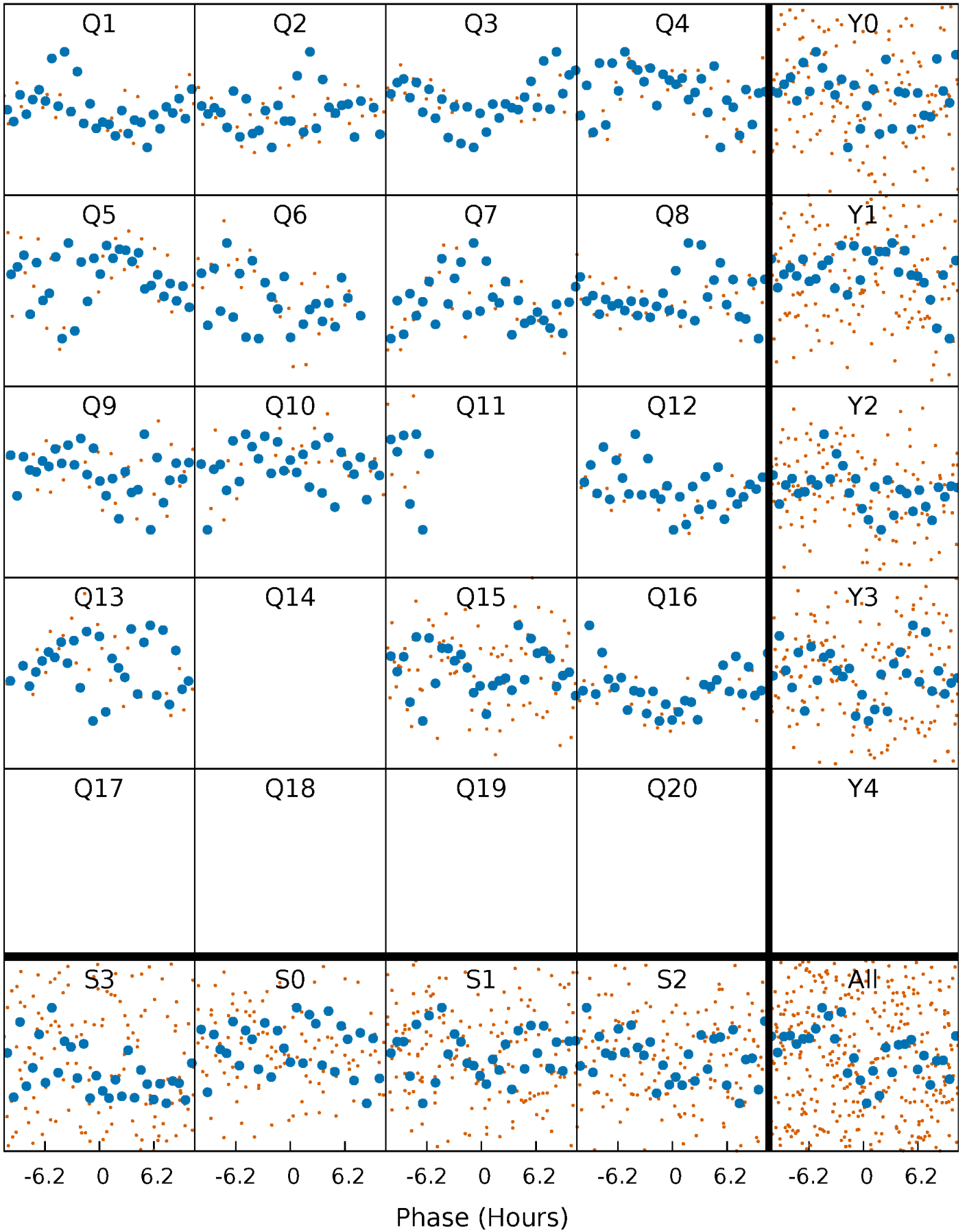


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



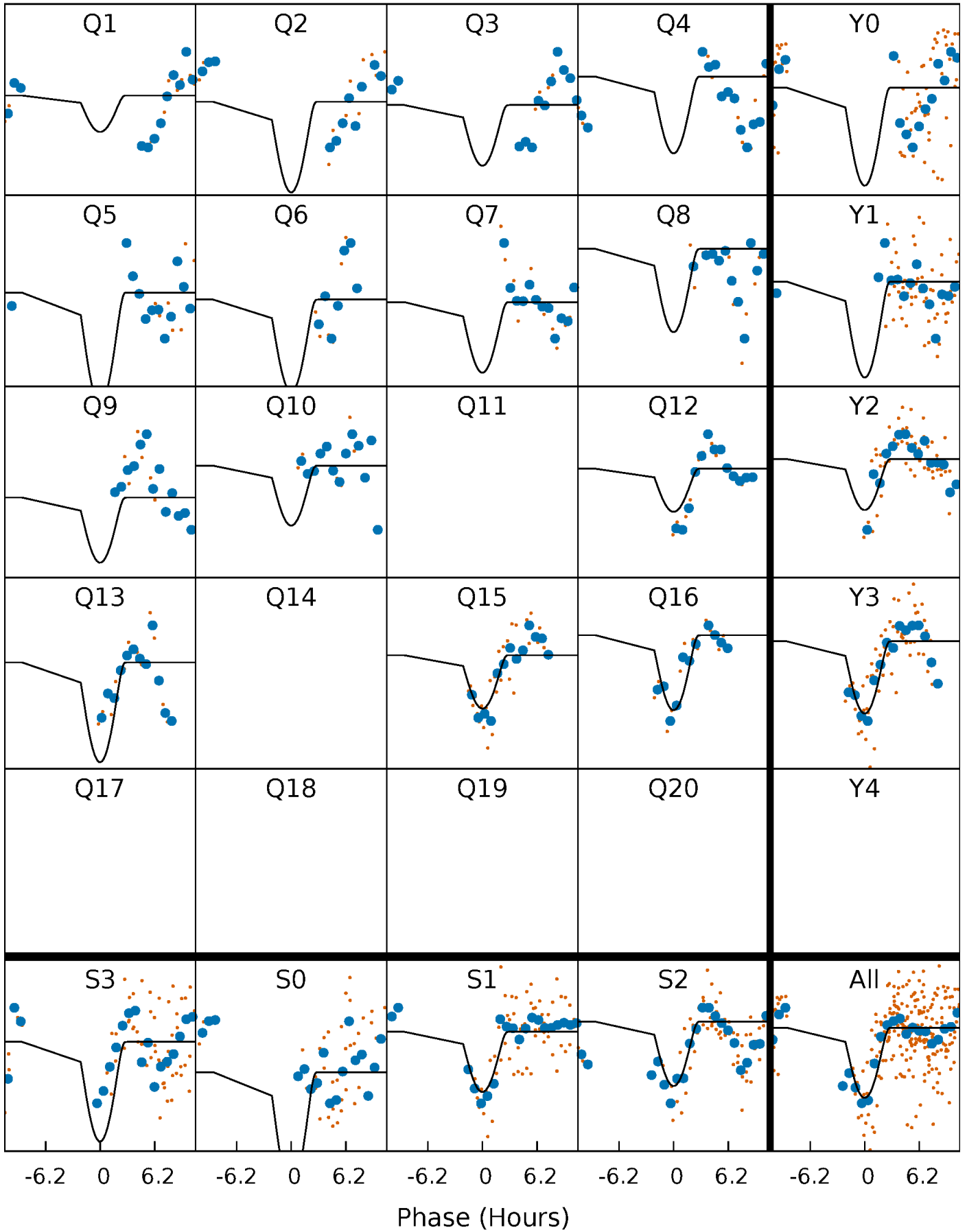
PDC Quarter-Phased Transit Curves

TCE 007551993-03 P= 86.909457 Days $T_0=163.411915$ (BKJD)



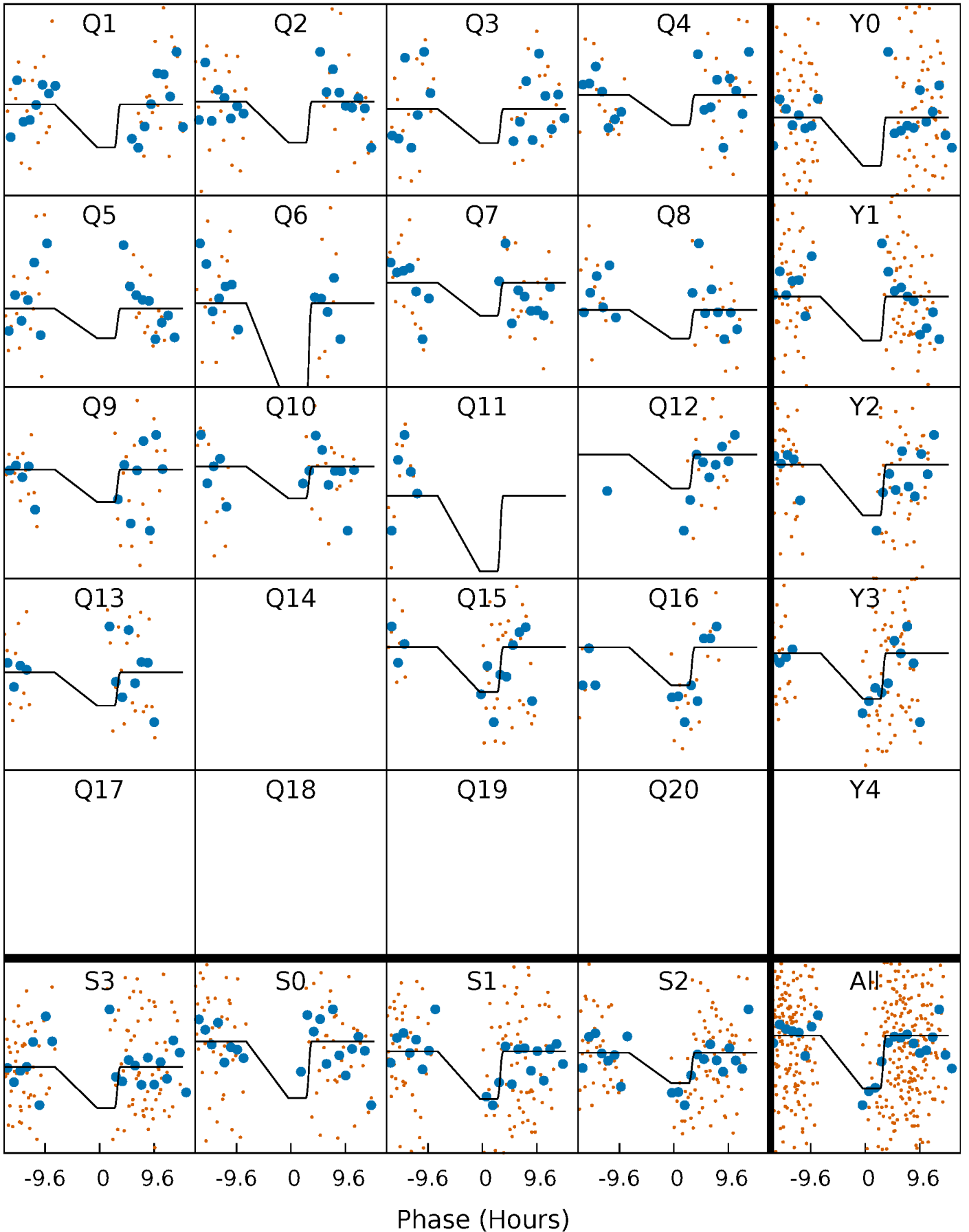
DV Quarter-Phased Transit Curves

TCE 007551993-03 P= 86.909457 Days $T_0=163.411915$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

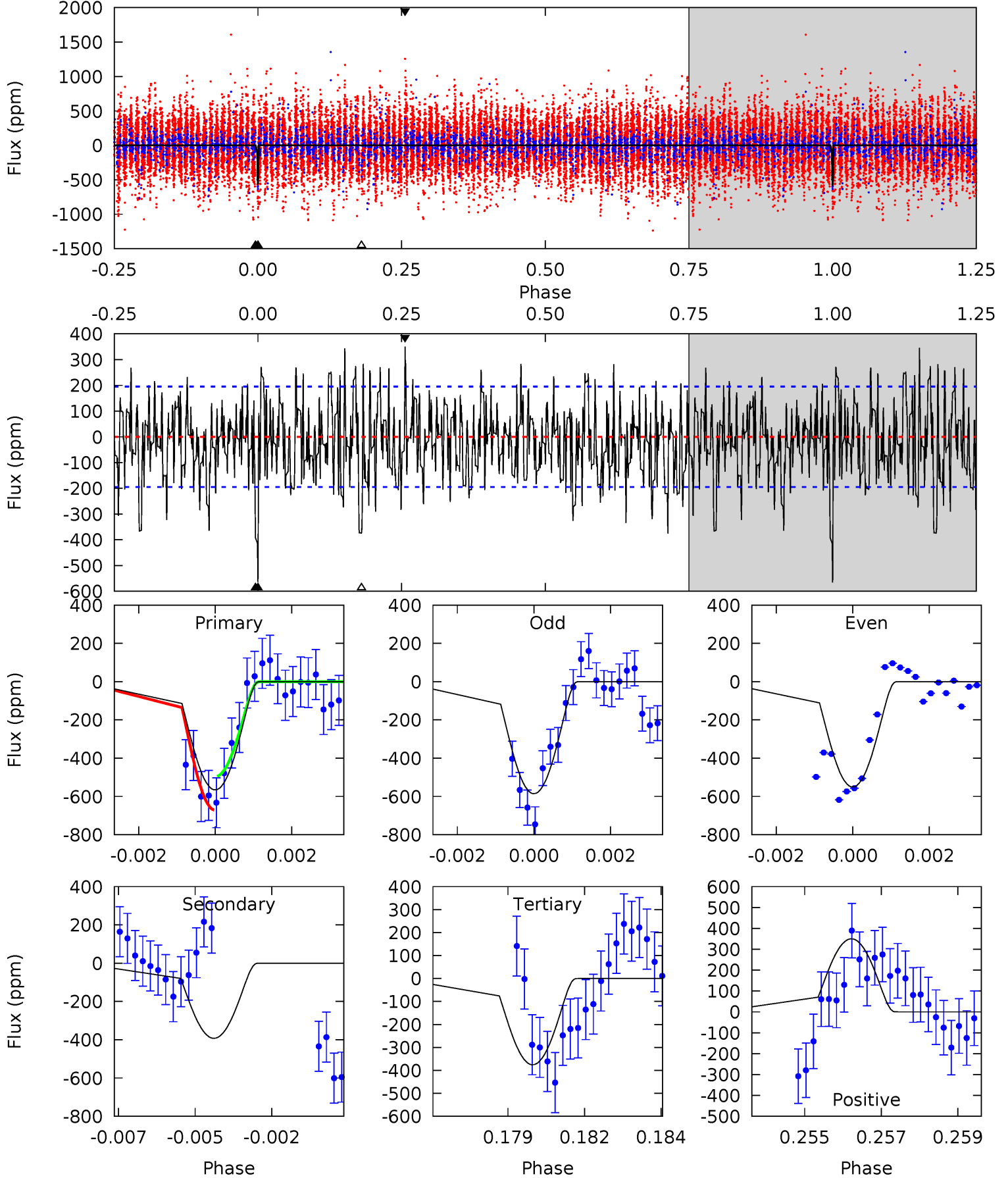
TCE 007551993-03 P= 86.907474 Days $T_0=163.369776$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-03, P = 86.909457 Days, E = 76.502458 Days

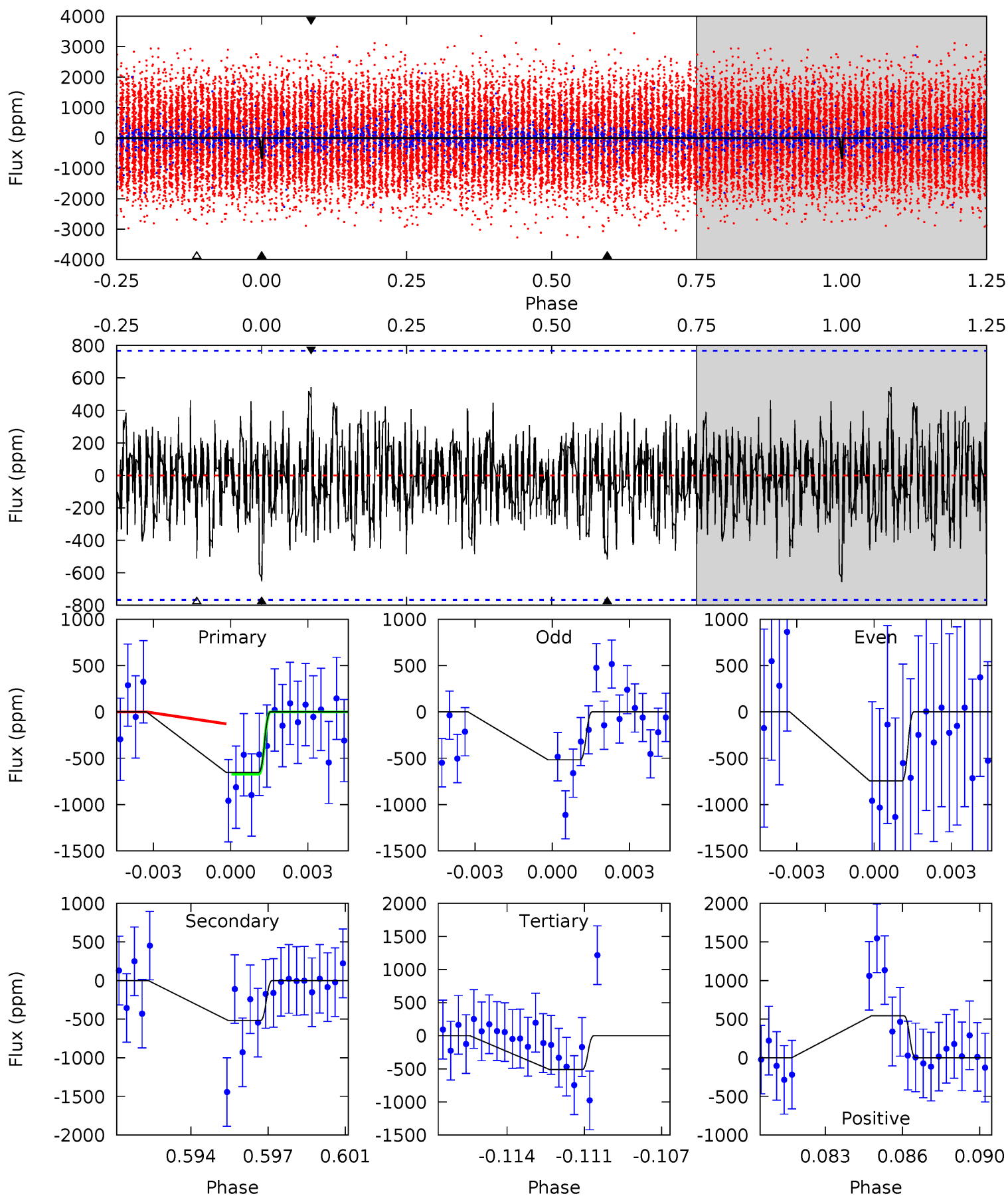
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	10.6	10.2	9.49	5.29	3.03	3.04	5.15	5.85	0.46	1.16	0.47	0.18	0.38	2.03



Alt Model-Shift Uniqueness Test

007551993-03, P = 86.907474 Days, E = 76.462302 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.45	3.52	3.49	3.70	5.23	2.92	1.02	0.96	0.75	0.03	-0.18	0.76	1.03	0.45	0.57



Stellar Parameters For KIC 007551993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-392 ± 37	$16.49^{+16.07}_{-11.23}$	877^{+72}_{-70}	3752^{+2035}_{-723}	150^{+1328}_{-114}
Alt.	-517 ± 147	$16.84^{+16.13}_{-11.46}$	876^{+68}_{-72}	3904^{+2360}_{-774}	193^{+1569}_{-146}

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 $A_{obs} \gg 1.0$

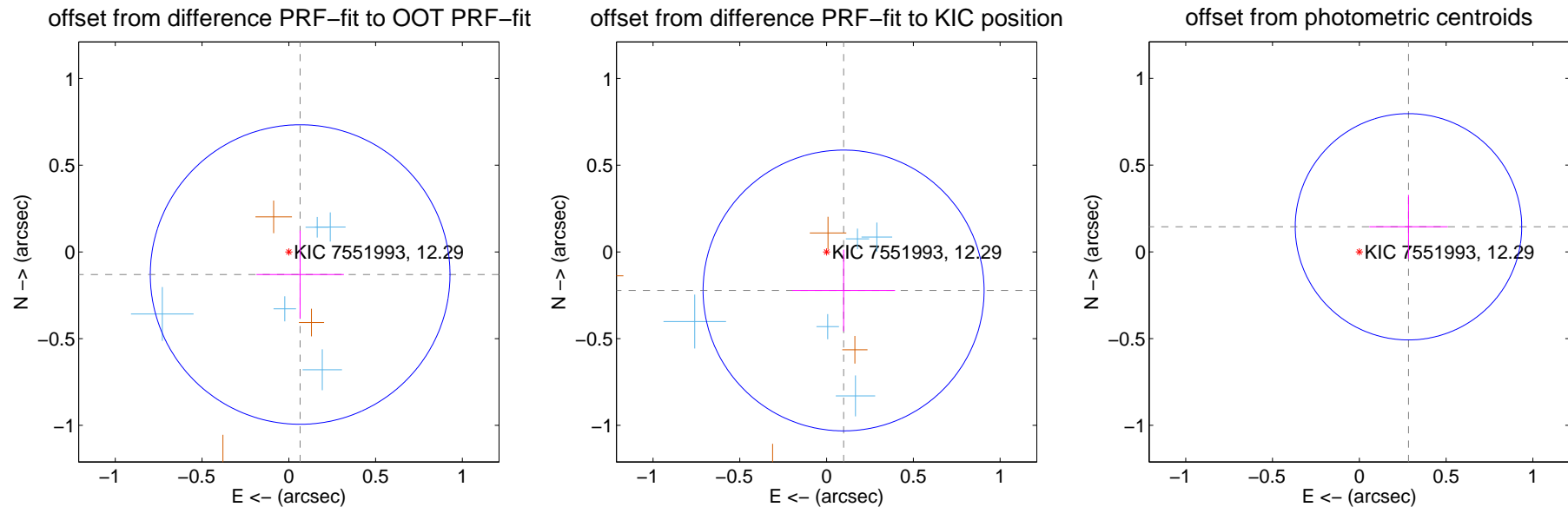
DV Centroid Data

Supplemental centroid analysis for 007551993-03. Kepler magnitude: 12.29. Transit SNR 8.38

There are 6 quarters with good PRF difference image offsets

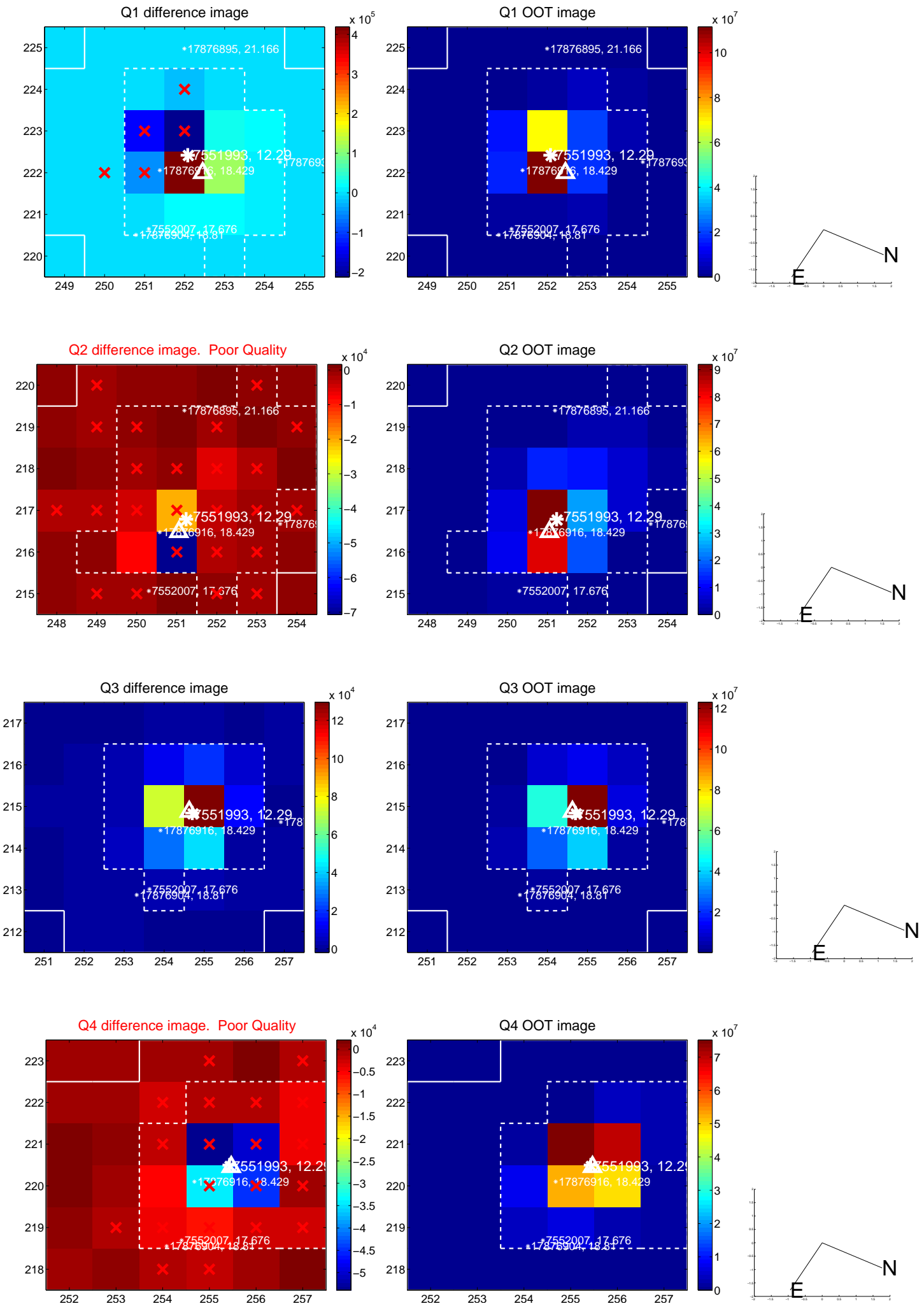
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.146 ± 0.288	0.51	-0.065 ± 0.252	-0.130 ± 0.254
PRF-fit source offset from KIC position	0.243 ± 0.270	0.90	-0.098 ± 0.297	-0.222 ± 0.235
photometric centroid source offset	0.32 ± 0.22	1.46	-0.28 ± 0.23	0.14 ± 0.18

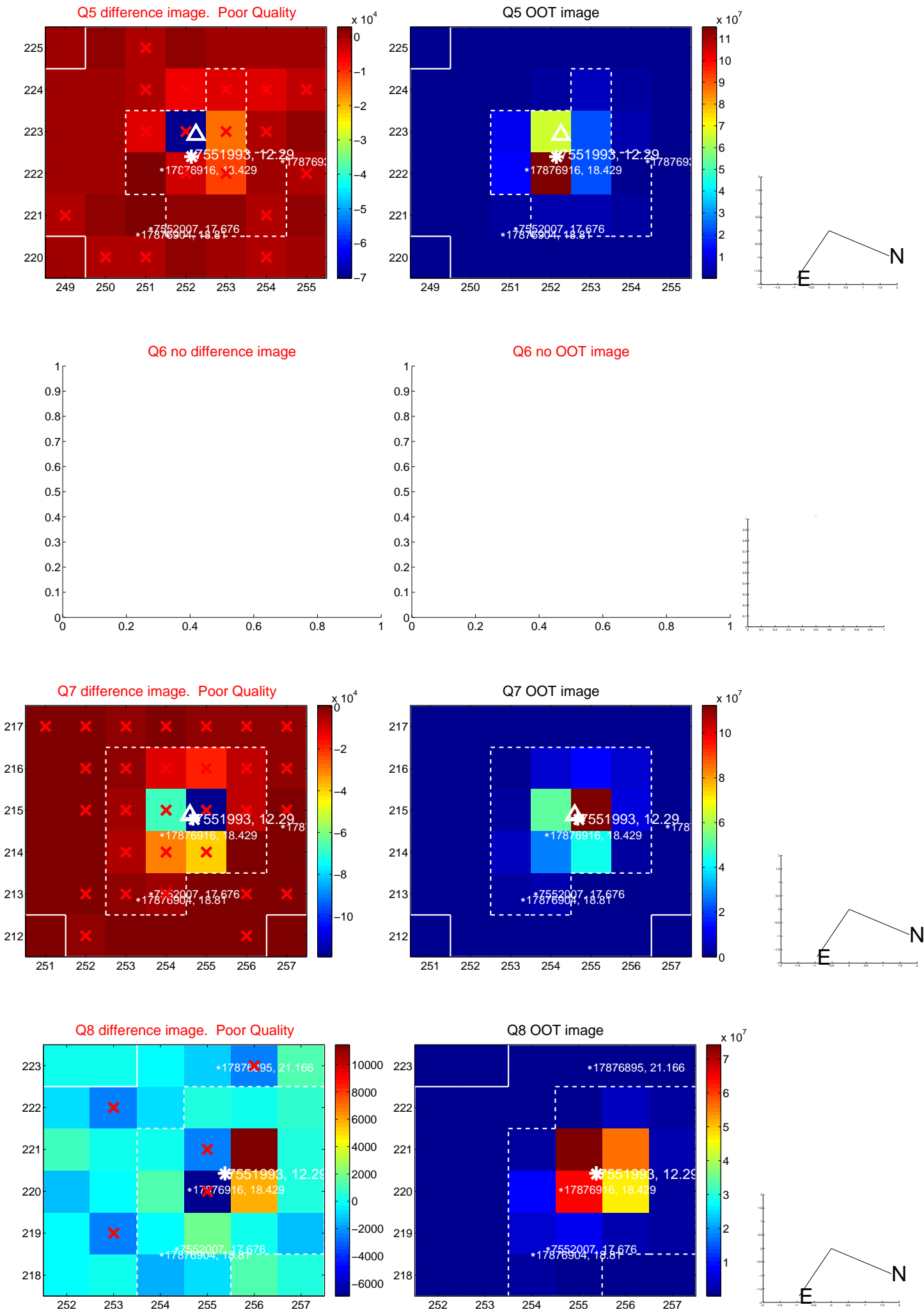


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

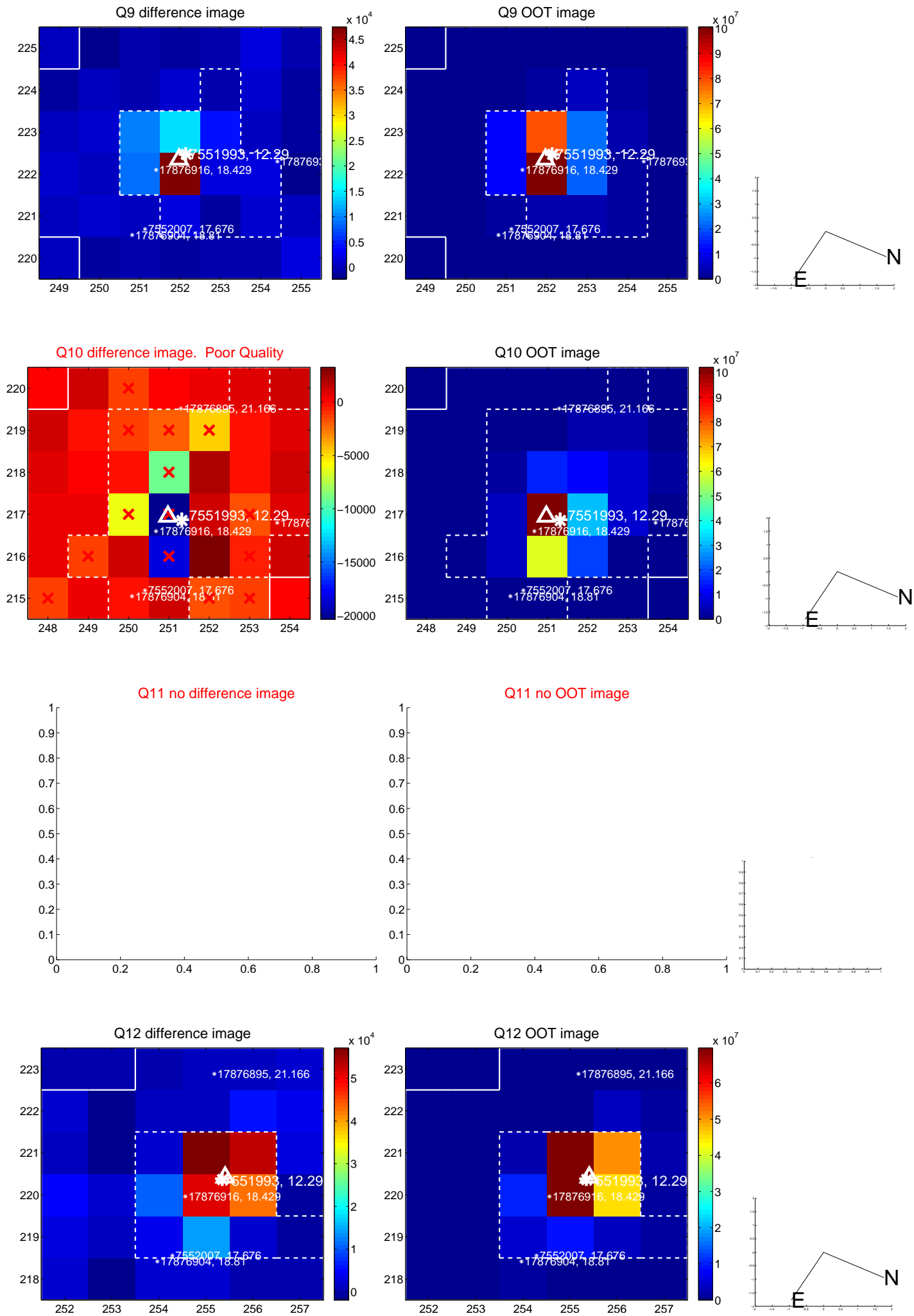
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

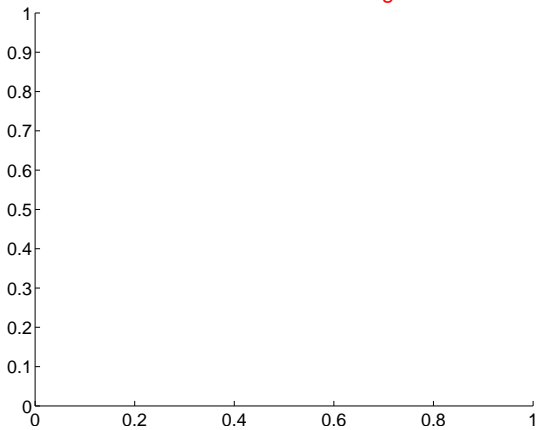


white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

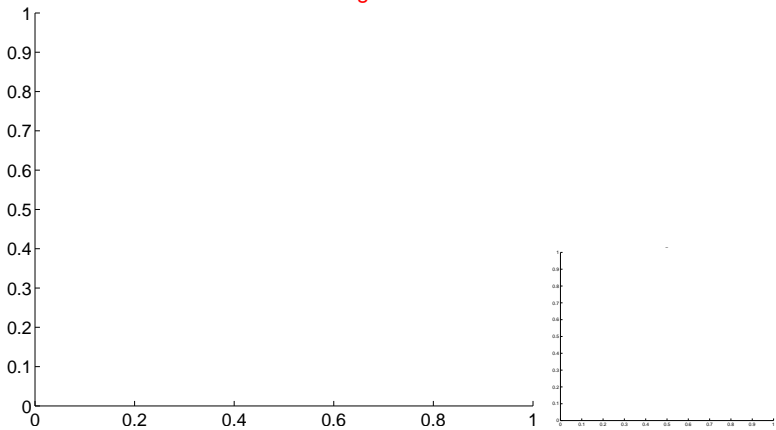


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

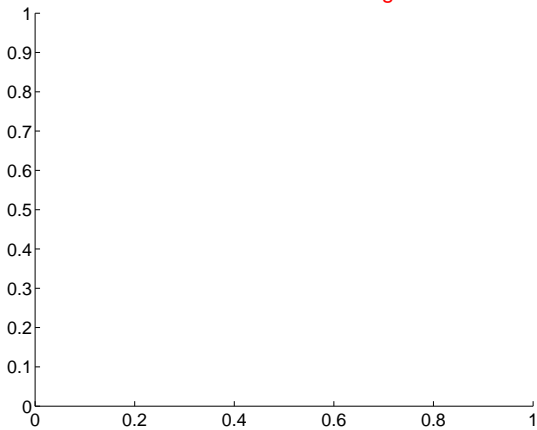
Q13 no difference image



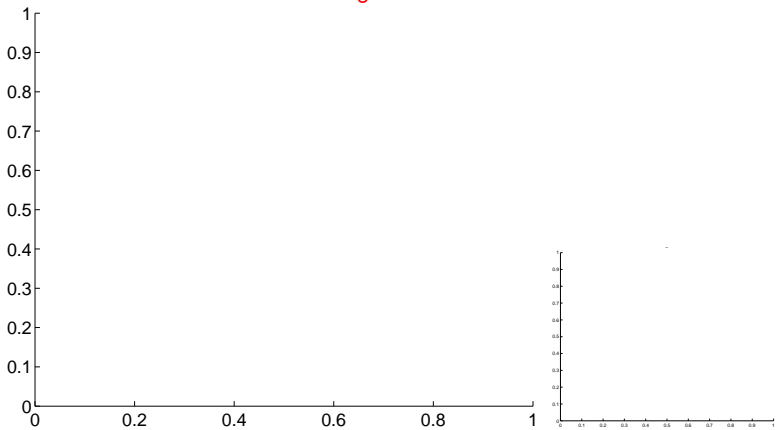
Q13 no OOT image



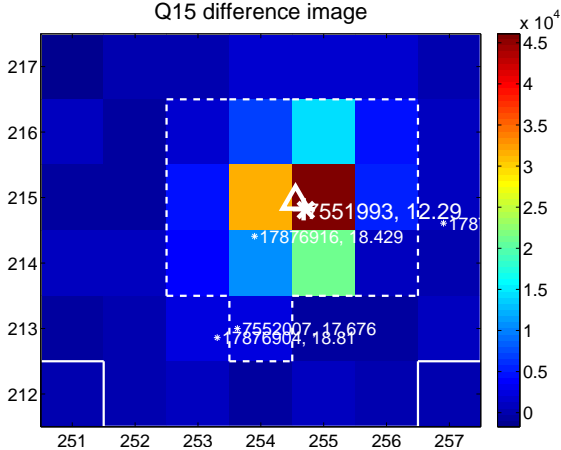
Q14 no difference image



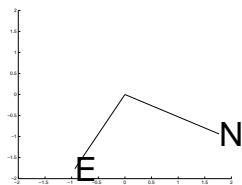
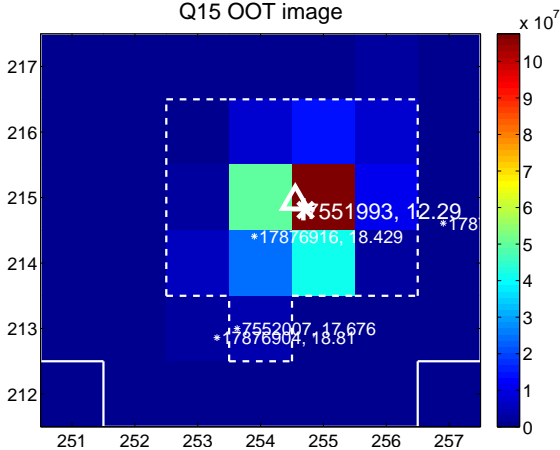
Q14 no OOT image



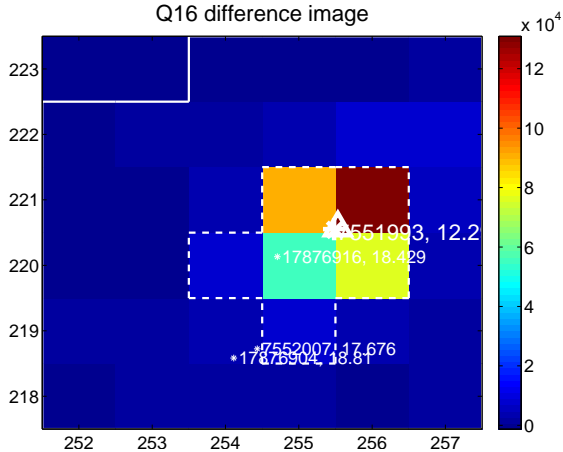
Q15 difference image



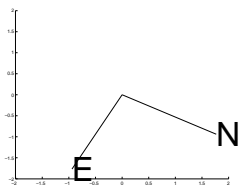
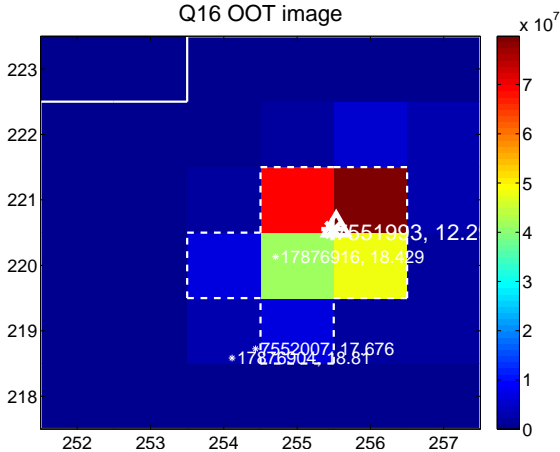
Q15 OOT image



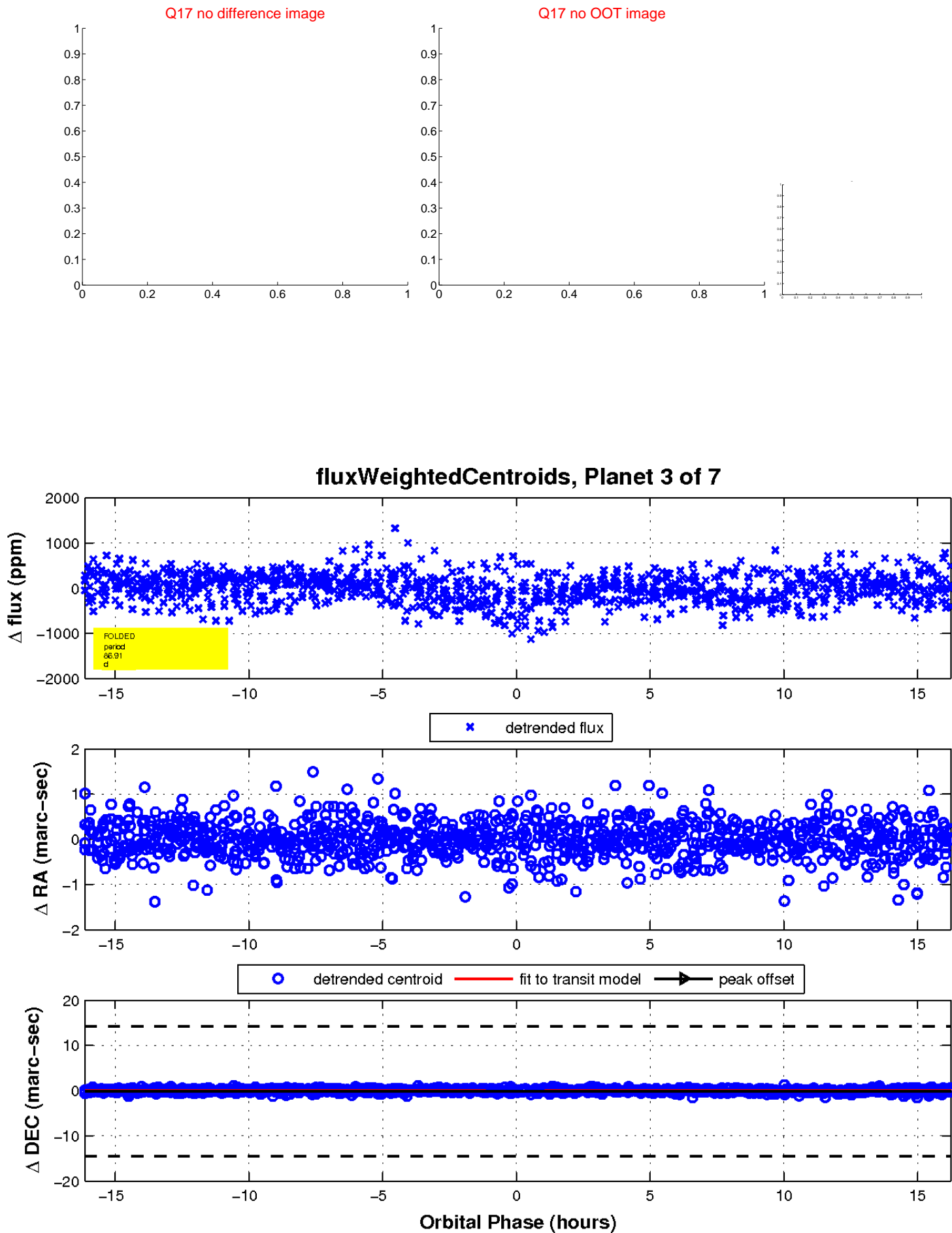
Q16 difference image



Q16 OOT image

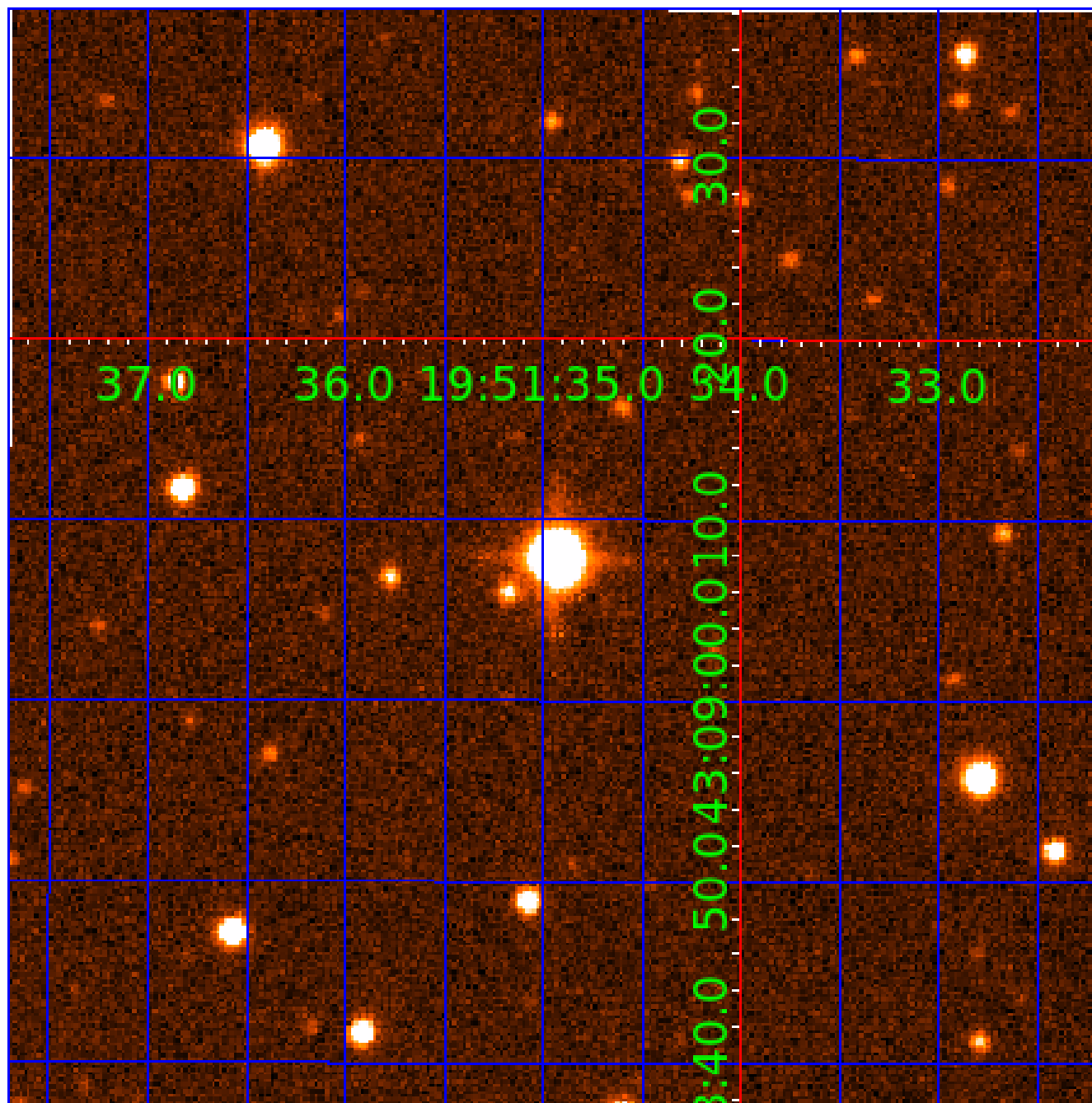


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007551993

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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007551993-02	OBS	No	18.659210	147.748730	182.1	6.893	9.2	7.7	1.80	6981	2.90	289.08
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007551993-06	OBS	No	85.747742	213.425783	391.6	4.346	7.7	6.9	1.80	6981	4.01	37.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

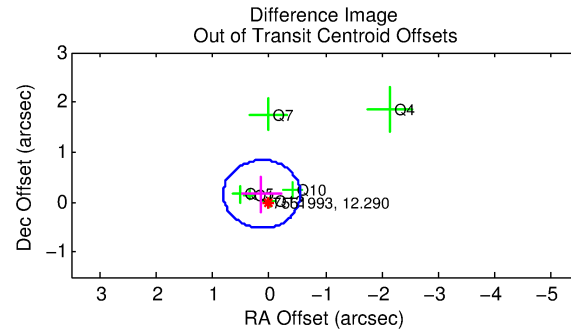
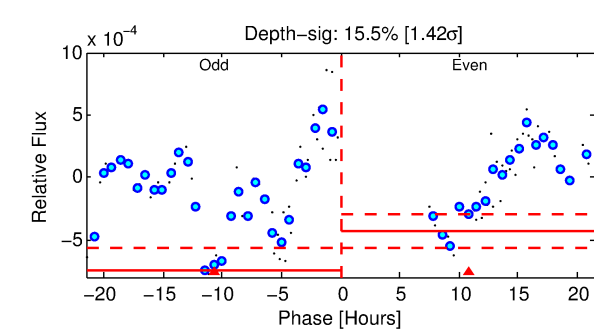
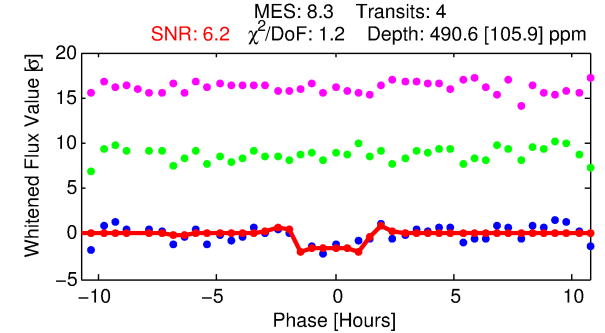
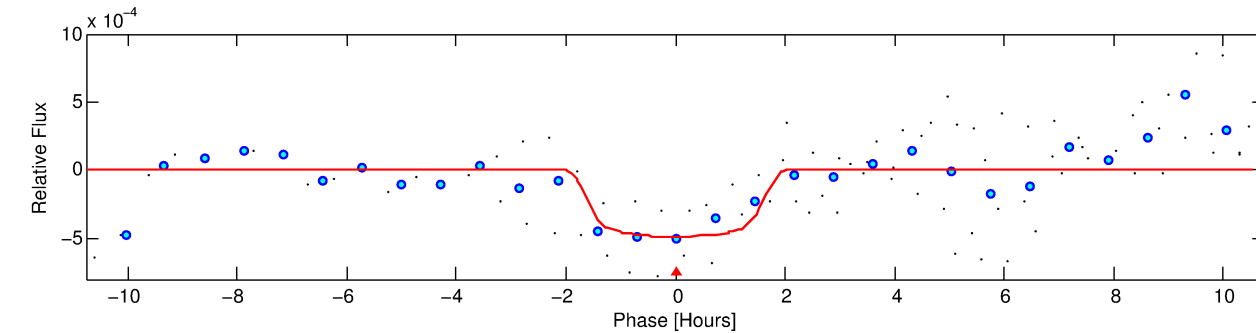
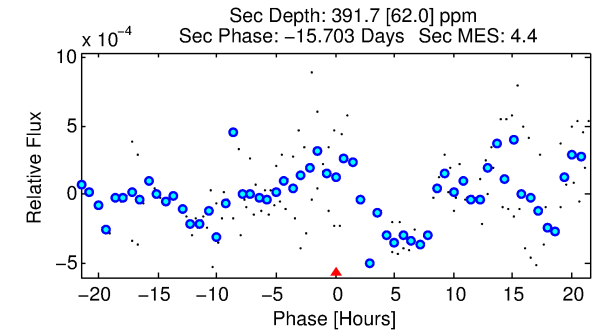
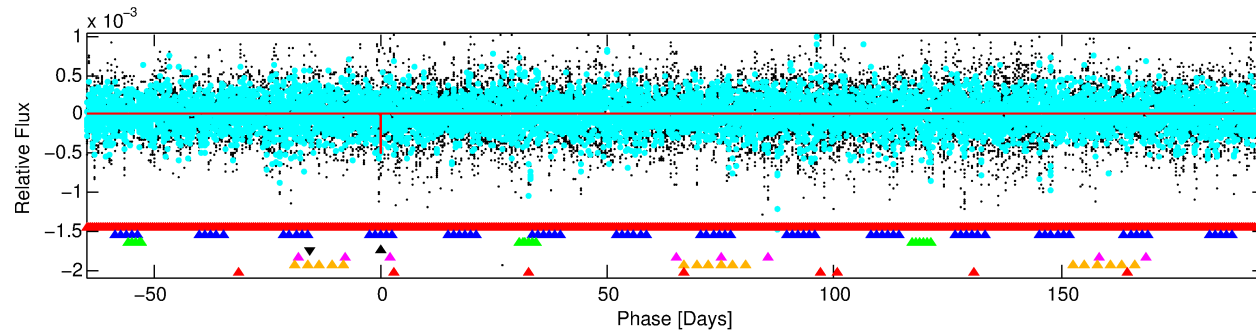
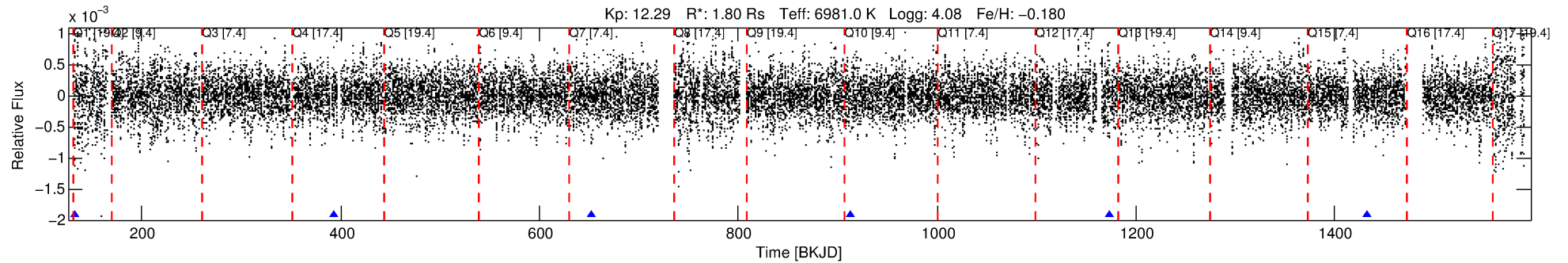
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007551993-04

No Significant Match Found

DV One-Page Summary

KIC: 7551993 Candidate: 4 of 7 Period: 259.943 d



DV Fit Results:

Period = 259.94346 [0.00227] d
Epoch = 133.0443 [0.0058] BKJD
Rp/R* = 0.0230 [0.0123]
a/R* = 309.16 [927.22]
b = 0.86 [0.94]
Seff = 8.62 [3.55]
Teff = 437 [45] K
Rp = 4.52 [2.79] Re
a = 0.8966 [0.2342] AU
Ag = 8465.58 [9693.20] [0.87 σ]
Teffp = 6481 [1767] K [3.42 σ]

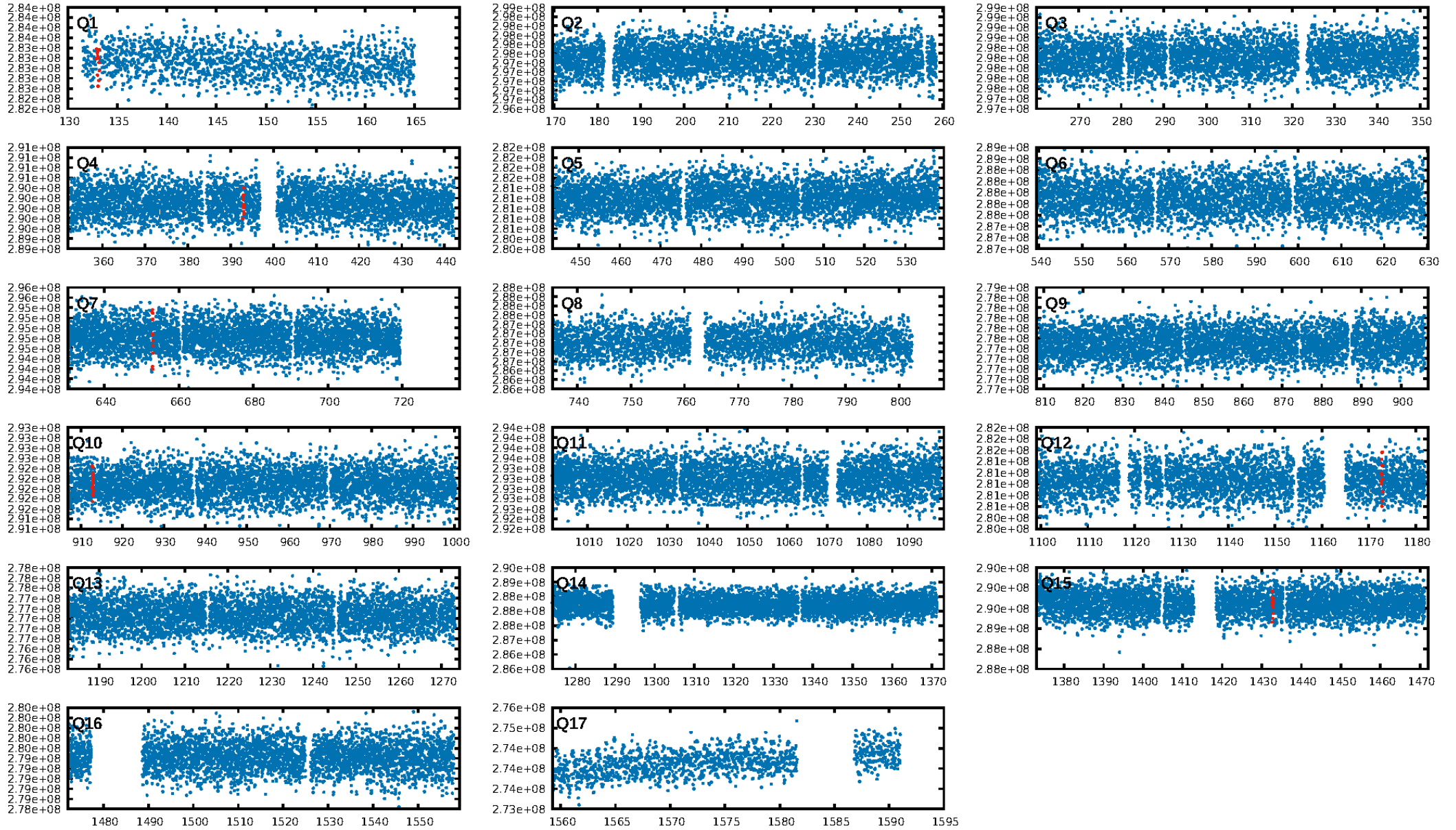
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [231.74 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 23.3%
ModelChiSquareGof-sig: 99.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -32.01
Centroid-sig: N/A
Centroid-so: 0.201 arcsec [0.56 σ]
OotOffset-rm: 0.204 arcsec [0.90 σ]
KicOffset-rm: 0.152 arcsec [0.56 σ]
OotOffset-st: 1/2/2/1 [6]
KicOffset-st: 1/2/2/1 [6]
DiffImageQuality-fgm: 0.33 [2/6]
DiffImageOverlap-fno: 0.00 [0/6]

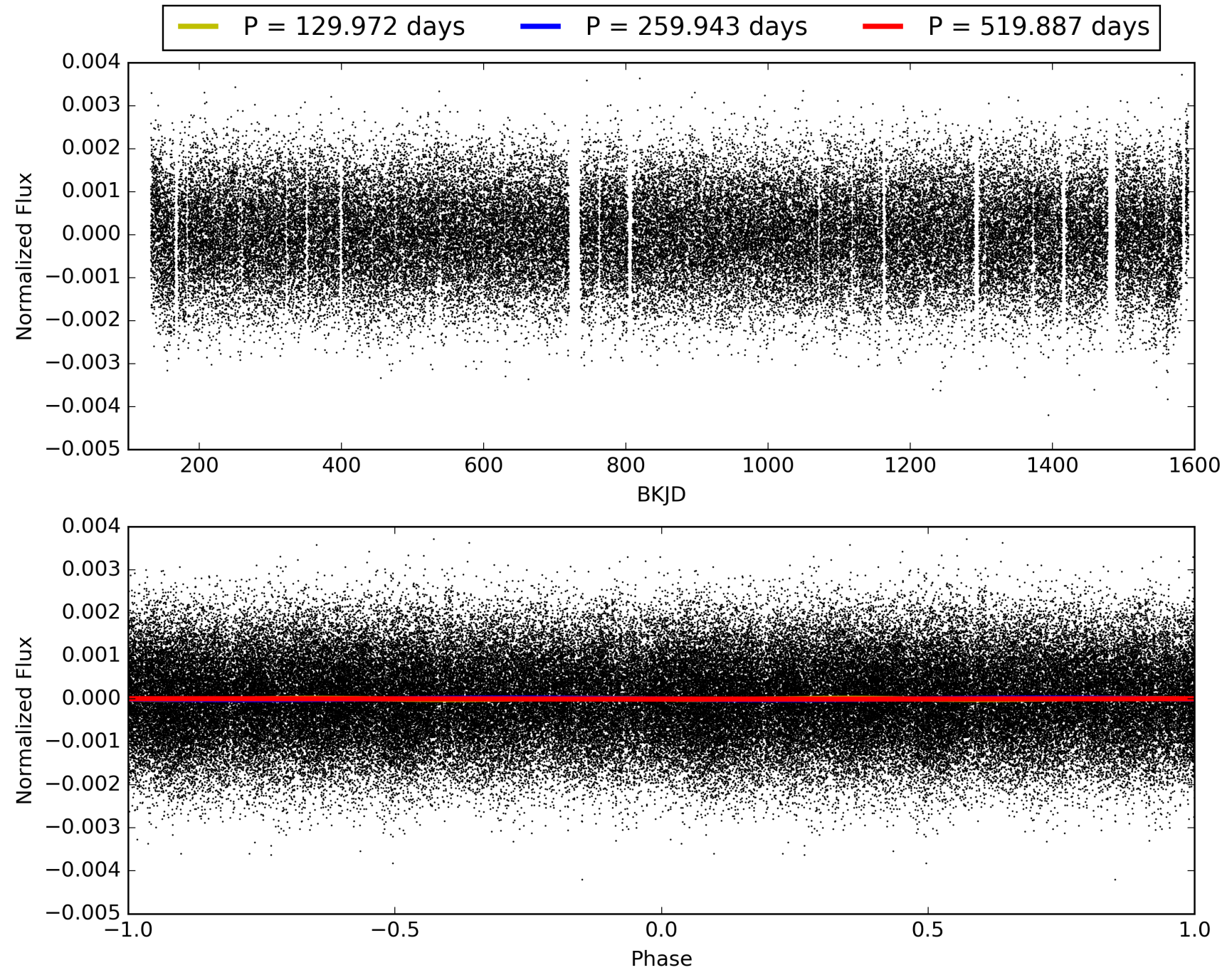
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:59:02 Z

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

TCE 007551993-04, PDC Light Curves

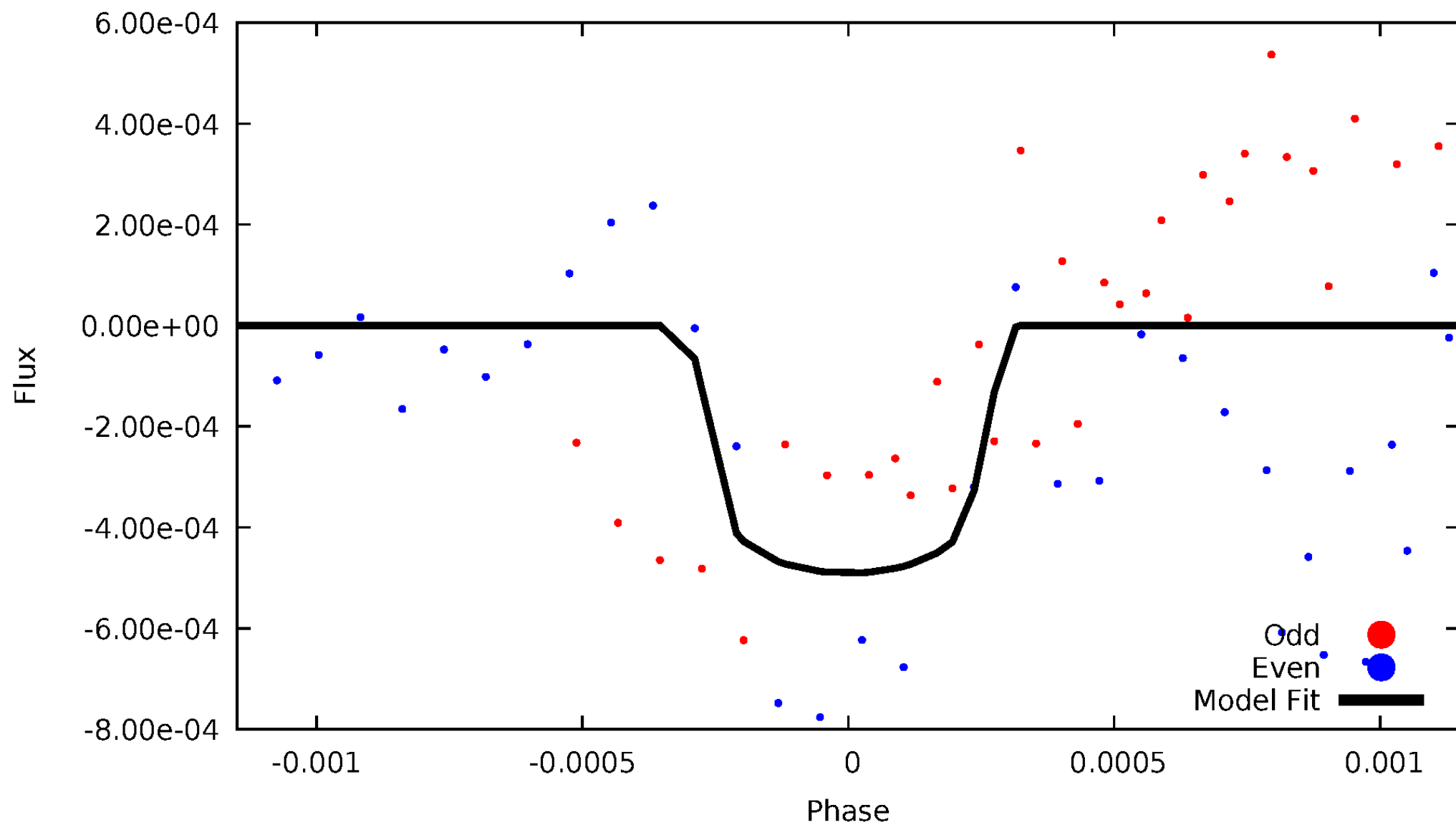


TCE 007551993-04



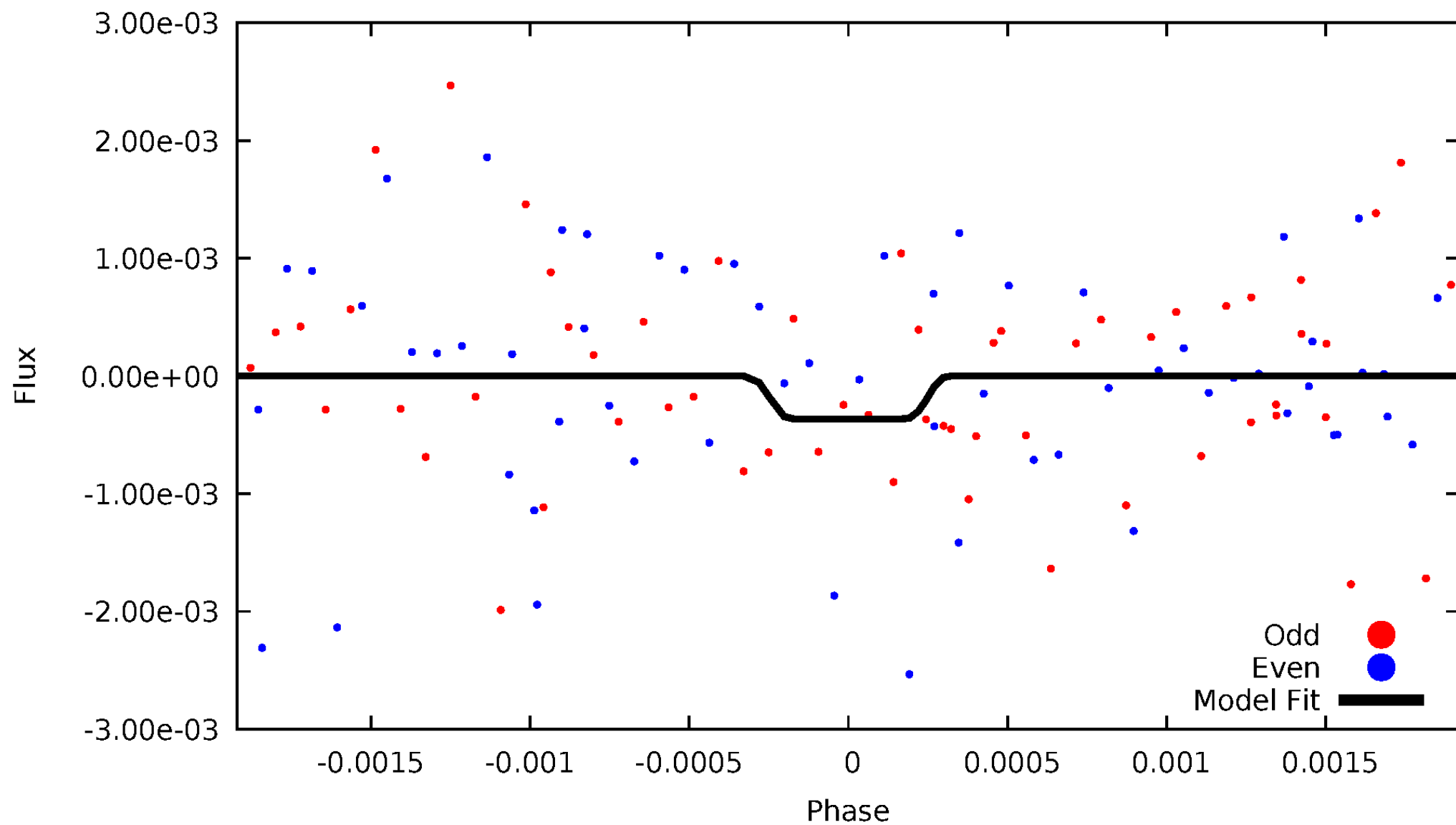
DV Odd/Even

TCE 007551993-04



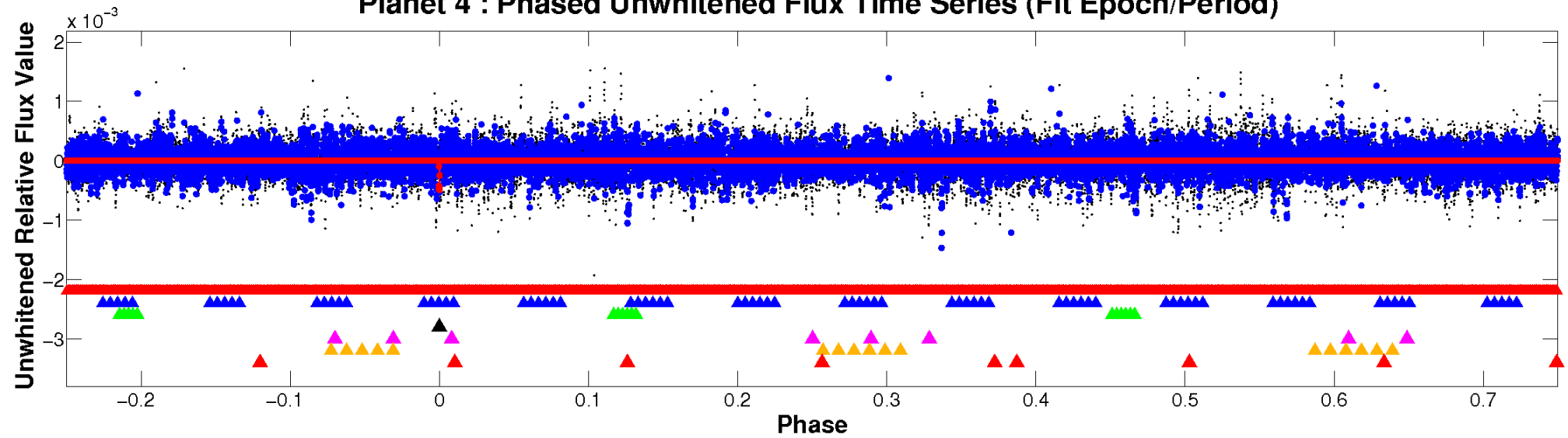
ALT Odd/Even

TCE 007551993-04

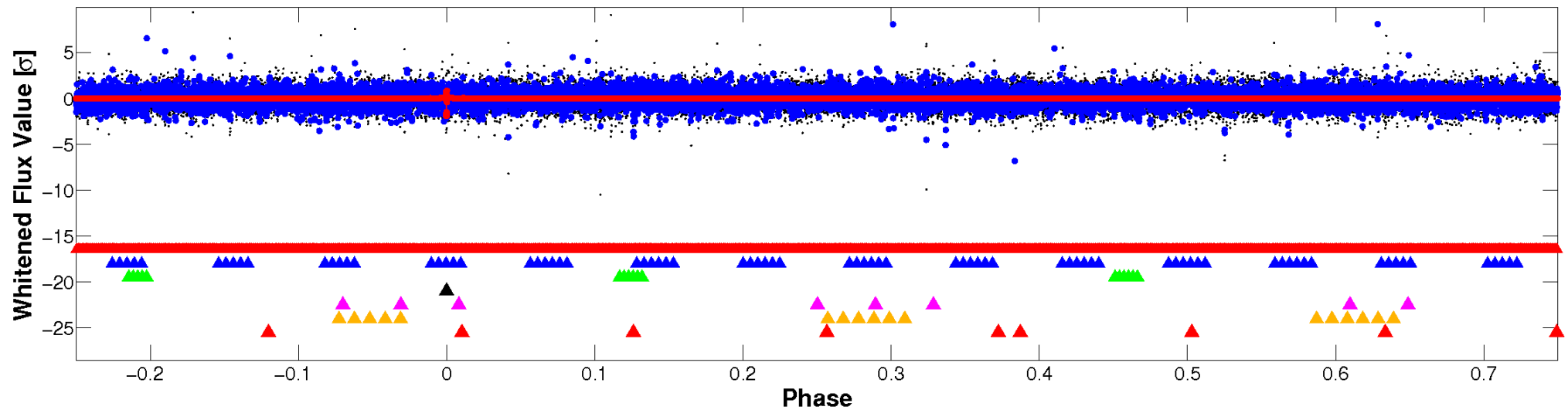


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

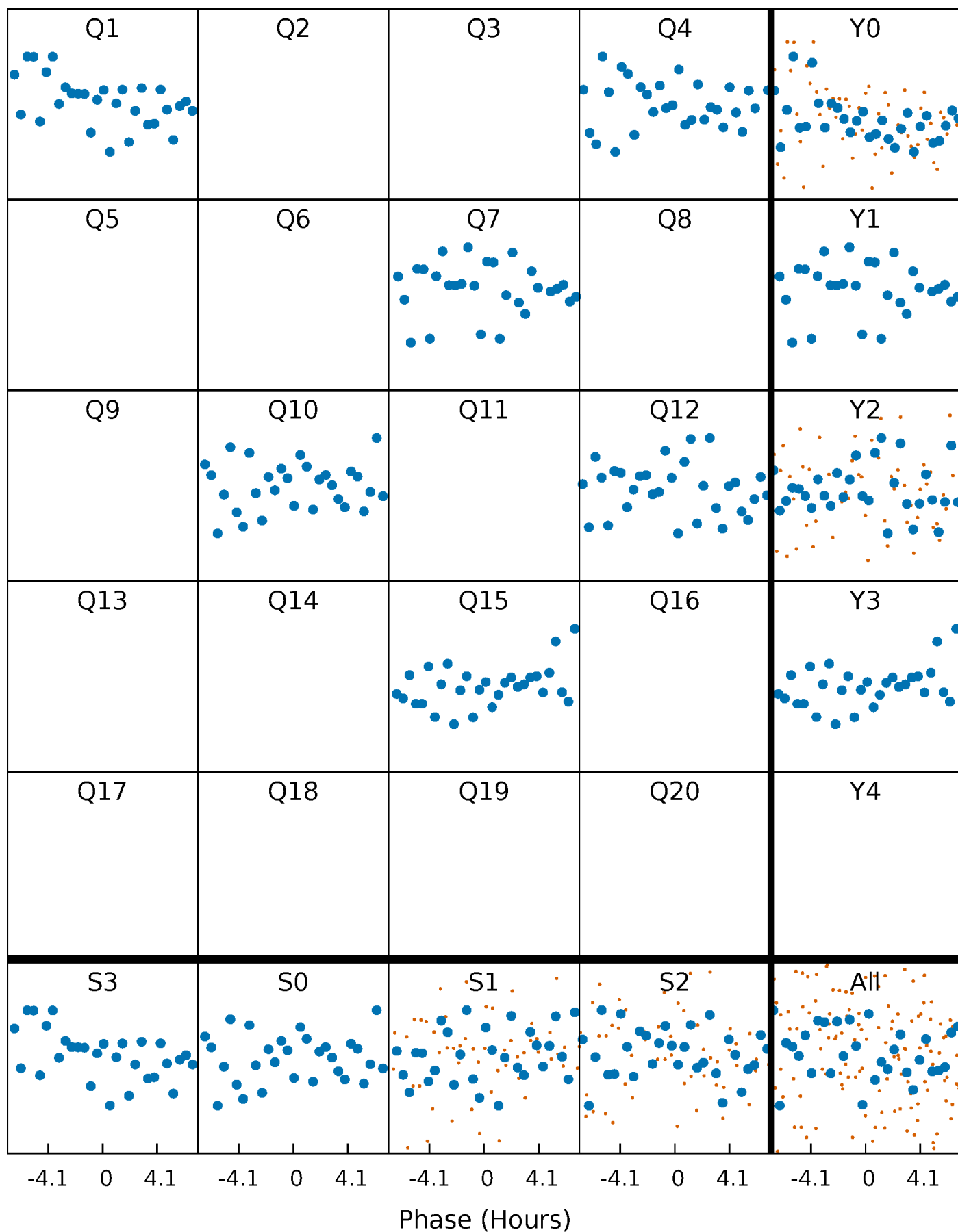


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



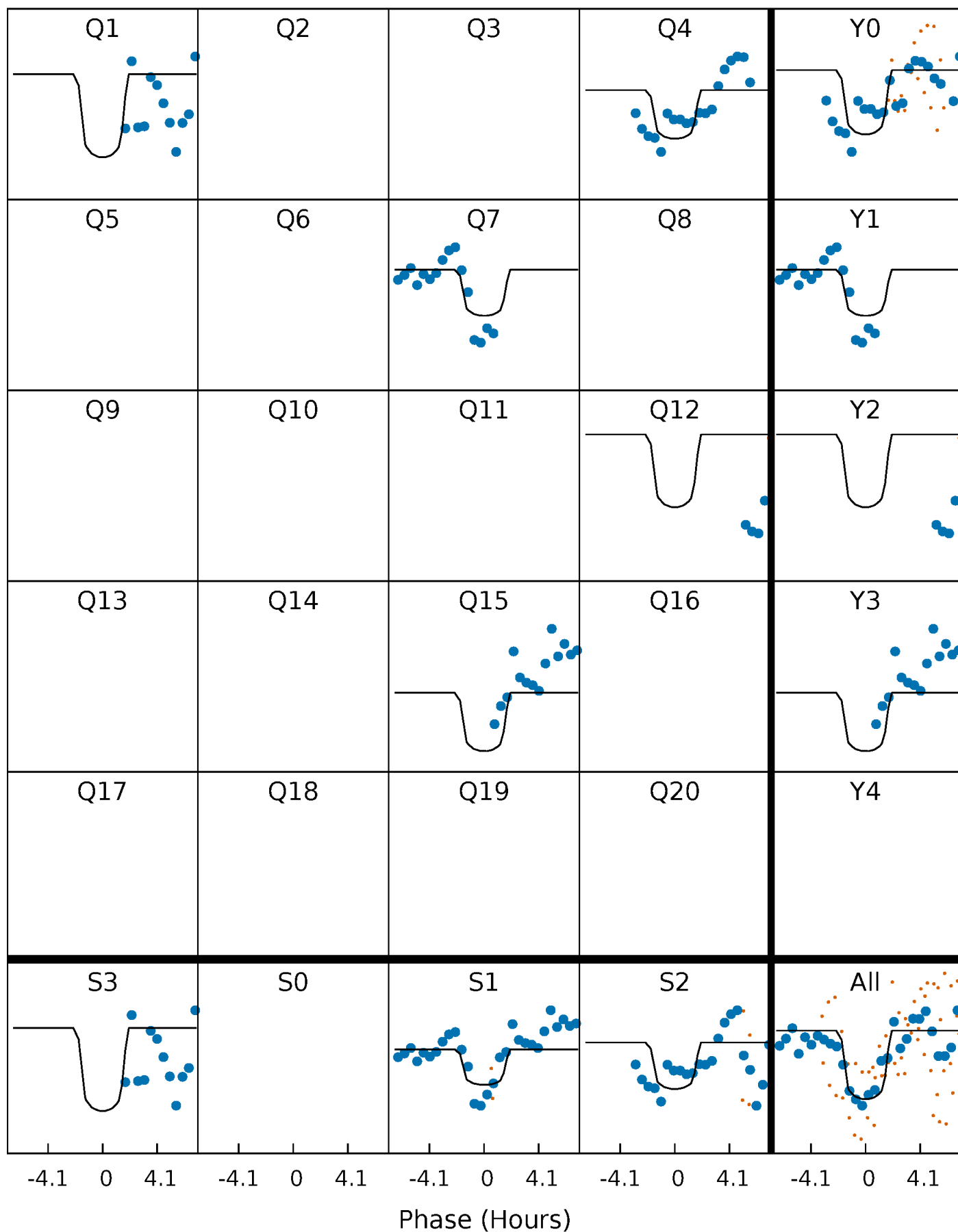
PDC Quarter-Phased Transit Curves

TCE 007551993-04 P=259.943456 Days $T_0=133.044345$ (BKJD)



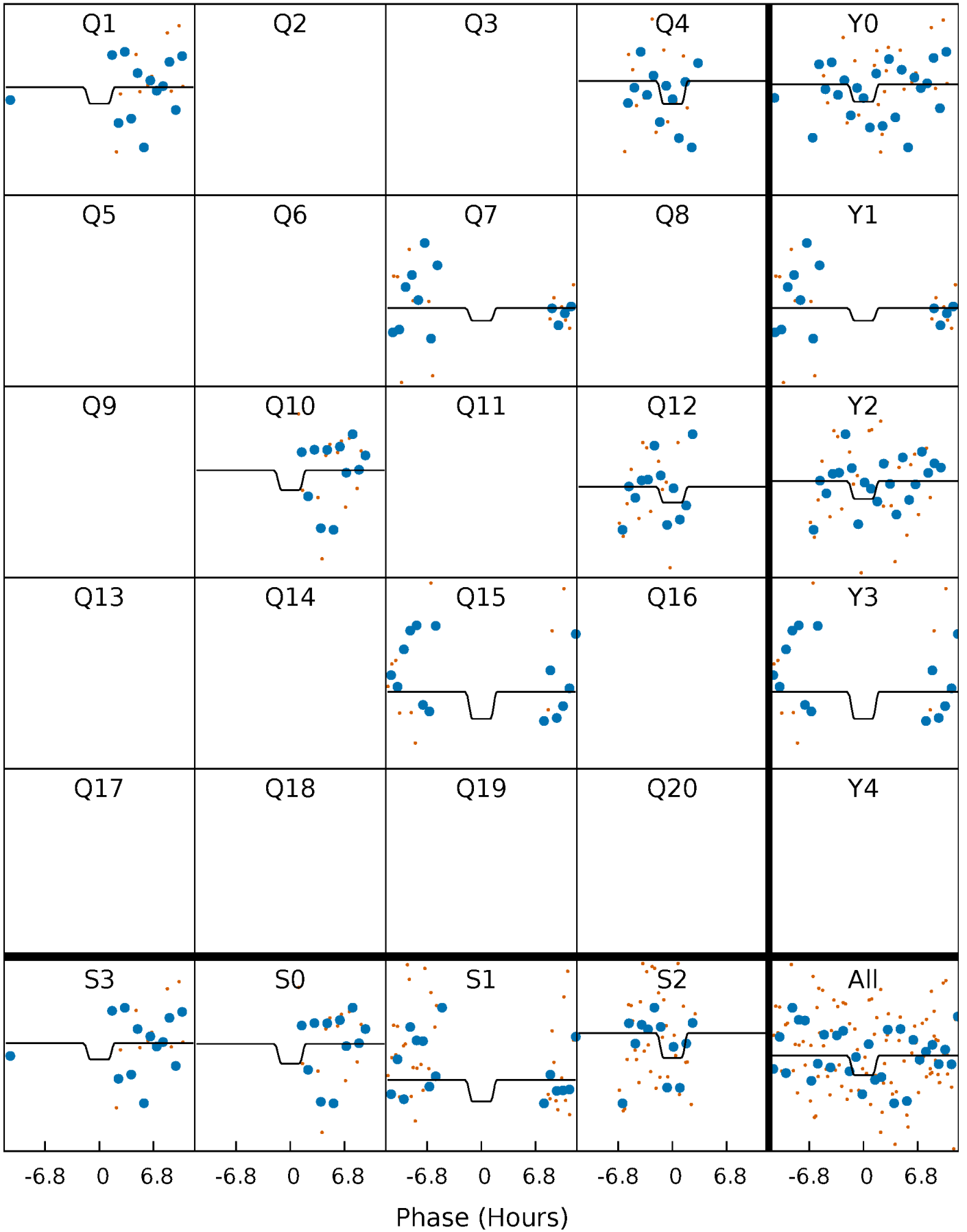
DV Quarter-Phased Transit Curves

TCE 007551993-04 P=259.943456 Days $T_0=133.044345$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

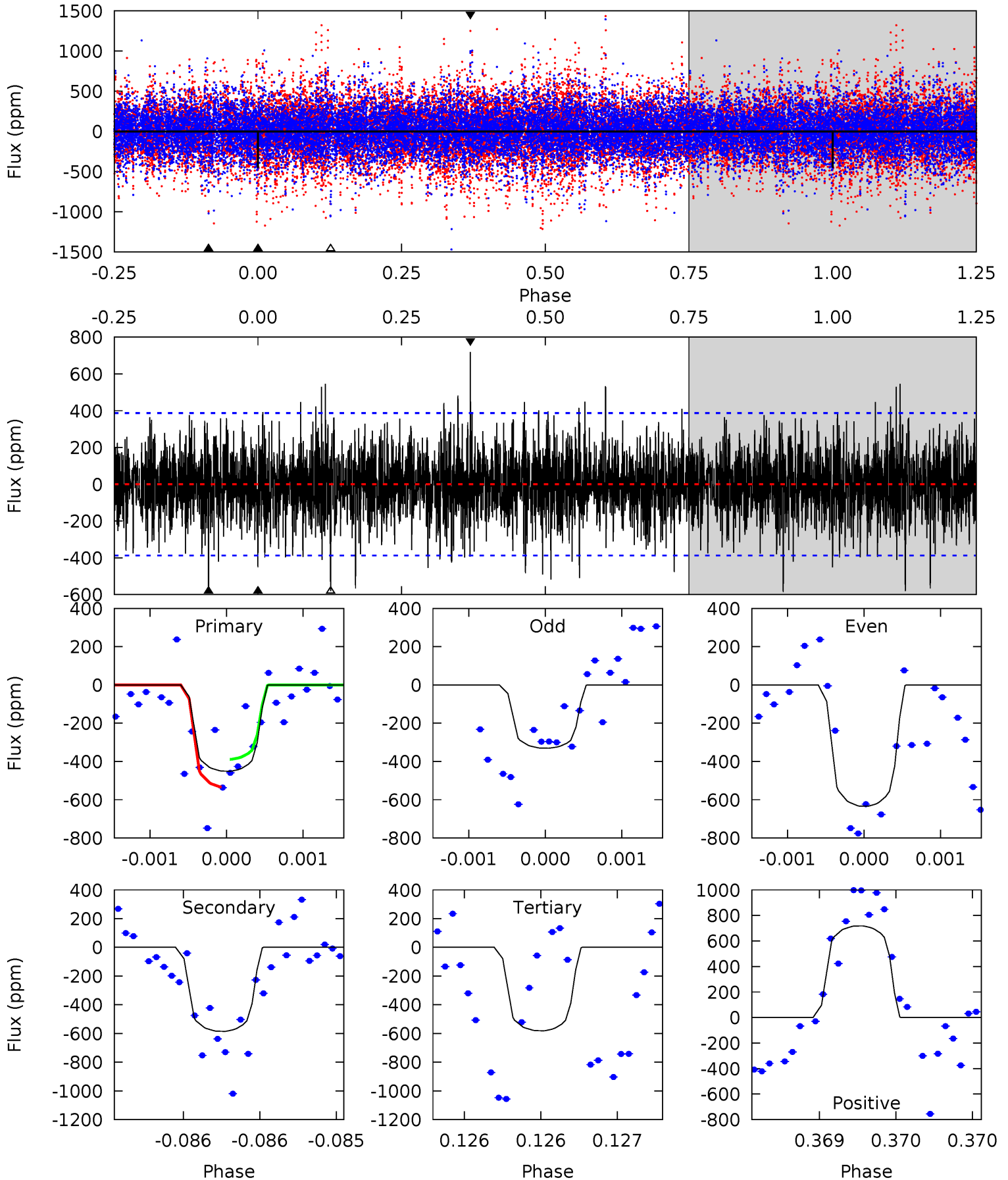
TCE 007551993-04 $P=260.067805$ Days $T_0=133.036108$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-04, P = 259.943456 Days, E = 133.044345 Days

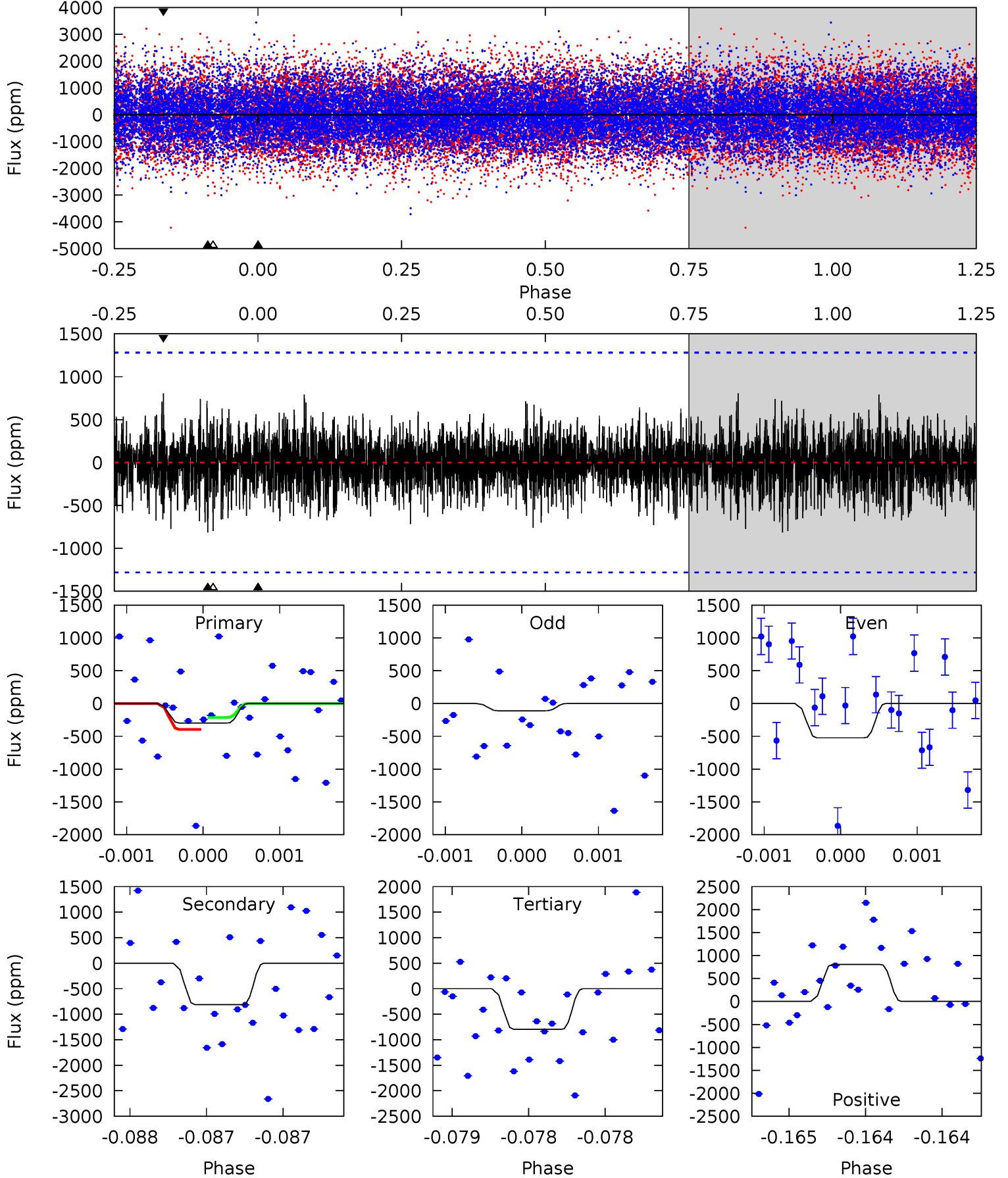
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.46	8.38	8.32	10.3	5.54	3.44	2.03	-1.86	-3.82	0.06	-1.90	2.15	0.98	0.55	1.01



Alt Model-Shift Uniqueness Test

007551993-04, P = 260.067805 Days, E = 133.036108 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.29	3.53	3.46	3.50	5.56	3.46	1.03	-2.17	-2.21	0.07	0.03	0.89	0.24	0.50	0.38



Stellar Parameters For KIC 007551993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-585 ± 70	$4.58^{+2.56}_{-2.21}$	603^{+51}_{-43}	7008^{+3584}_{-1330}	12474^{+32678}_{-7356}
Alt.	-813 ± 230	$3.89^{+2.52}_{-2.15}$	607^{+47}_{-47}	8428^{+7605}_{-1970}	23467^{+93704}_{-14950}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

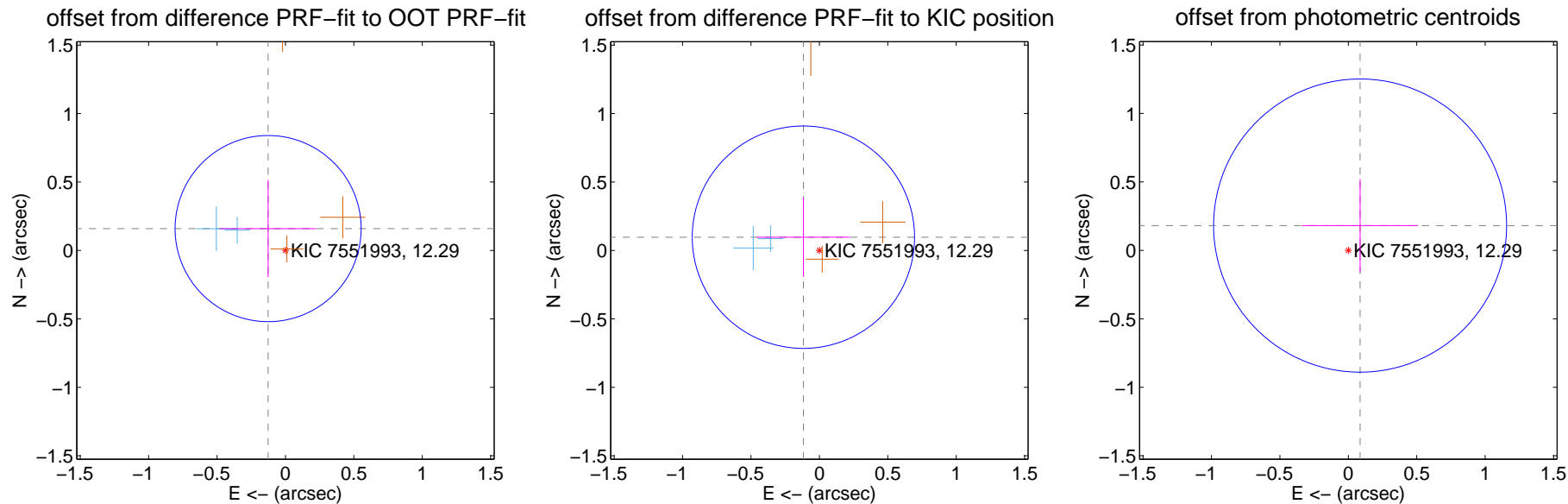
DV Centroid Data

Supplemental centroid analysis for 007551993-04. Kepler magnitude: 12.29. Transit SNR 6.19

There are 2 quarters with good PRF difference image offsets

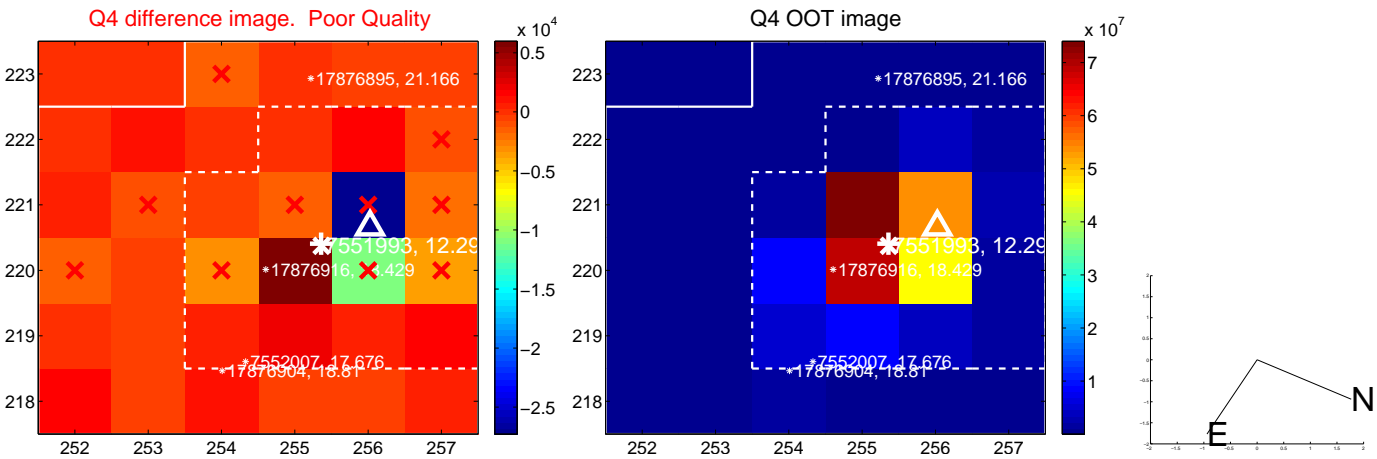
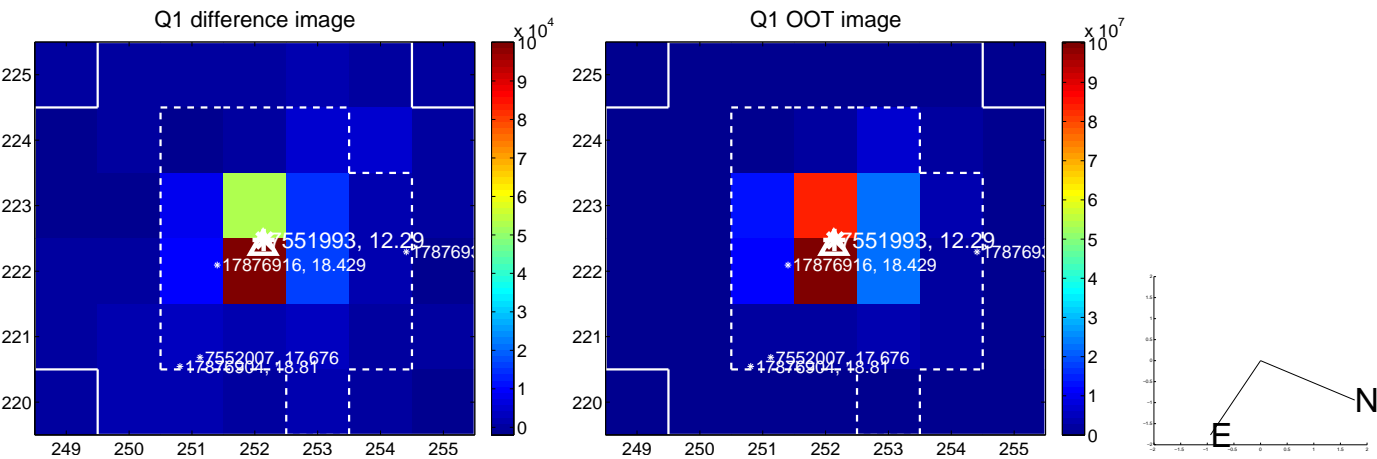
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.204 ± 0.227	0.90	0.127 ± 0.350	0.160 ± 0.355
PRF-fit source offset from KIC position	0.152 ± 0.271	0.56	0.117 ± 0.340	0.097 ± 0.290
photometric centroid source offset	0.20 ± 0.36	0.56	-0.09 ± 0.43	0.18 ± 0.34



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.

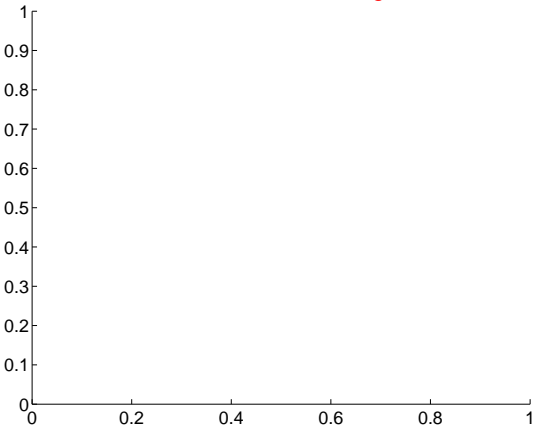
Q5 no difference image



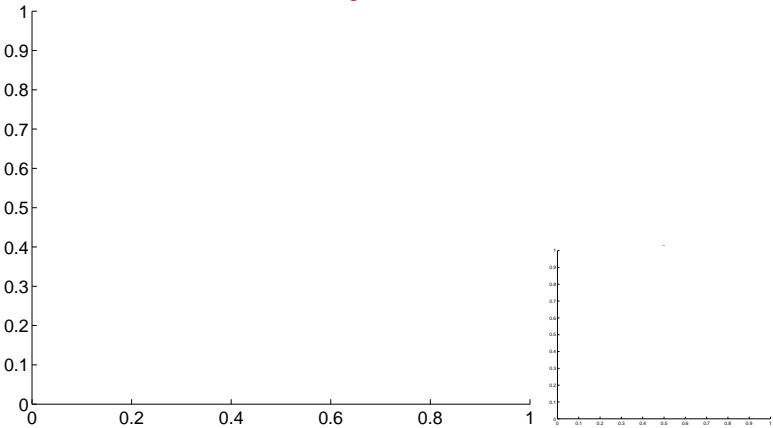
Q5 no OOT image



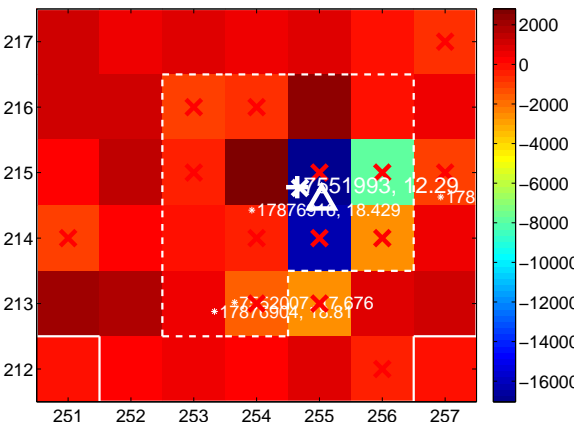
Q6 no difference image



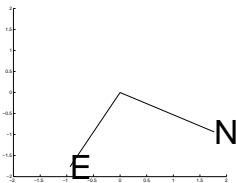
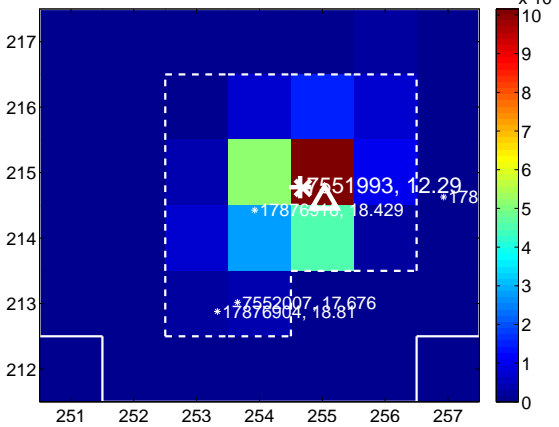
Q6 no OOT image



Q7 difference image. Poor Quality



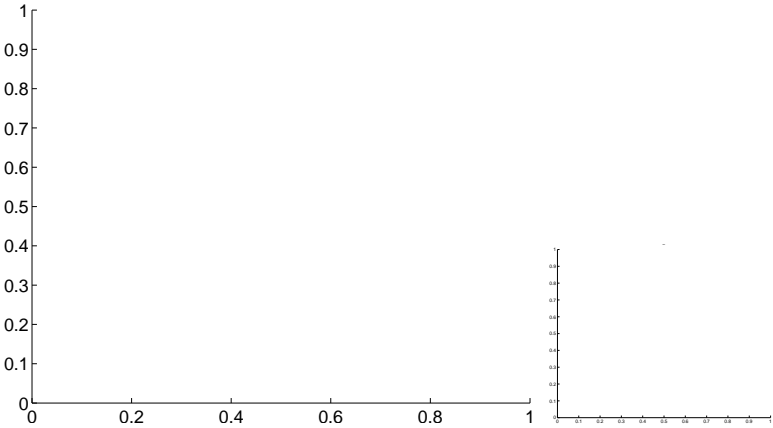
Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

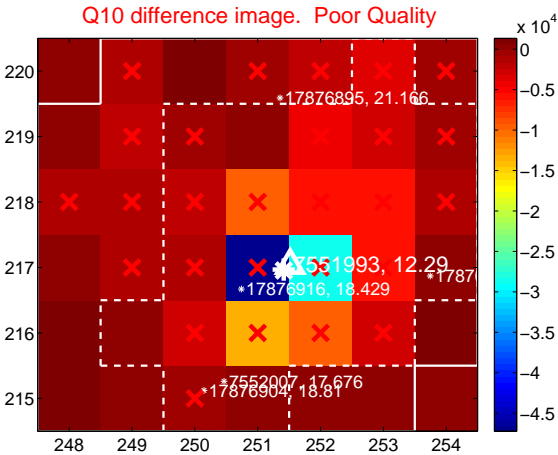
Q9 no difference image



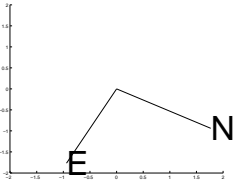
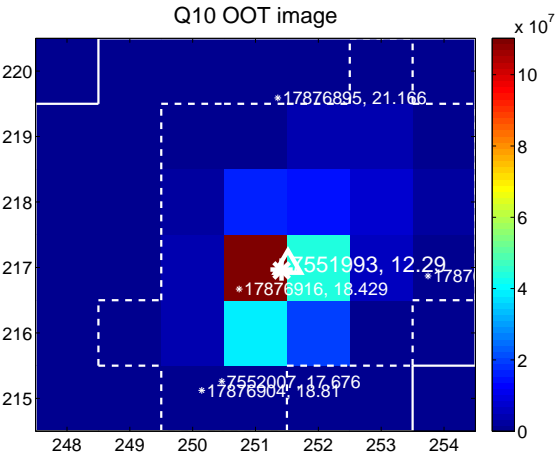
Q9 no OOT image



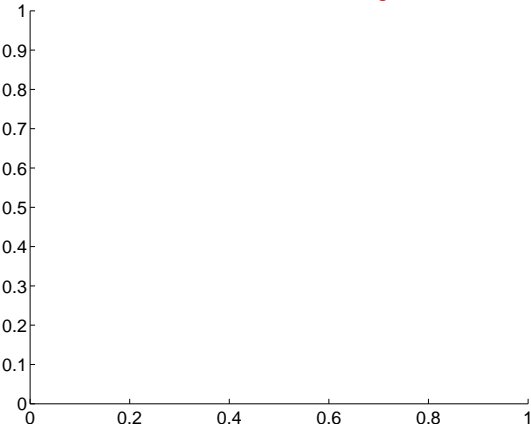
Q10 difference image. Poor Quality



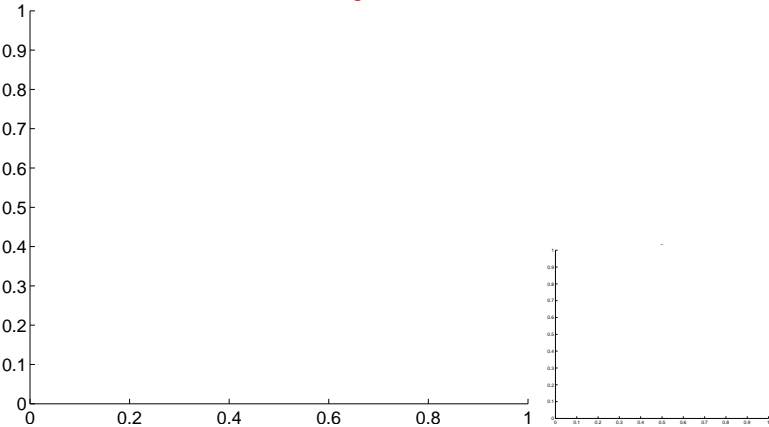
Q10 OOT image



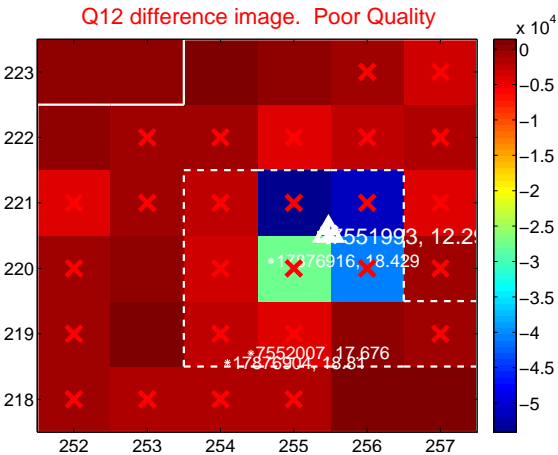
Q11 no difference image



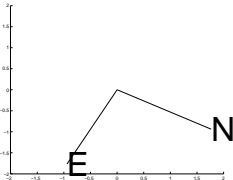
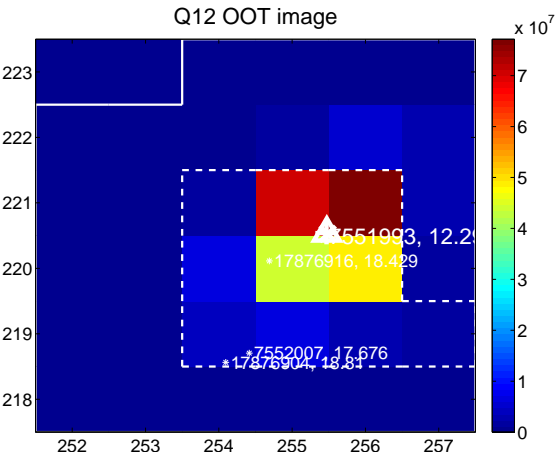
Q11 no OOT image



Q12 difference image. Poor Quality



Q12 OOT image

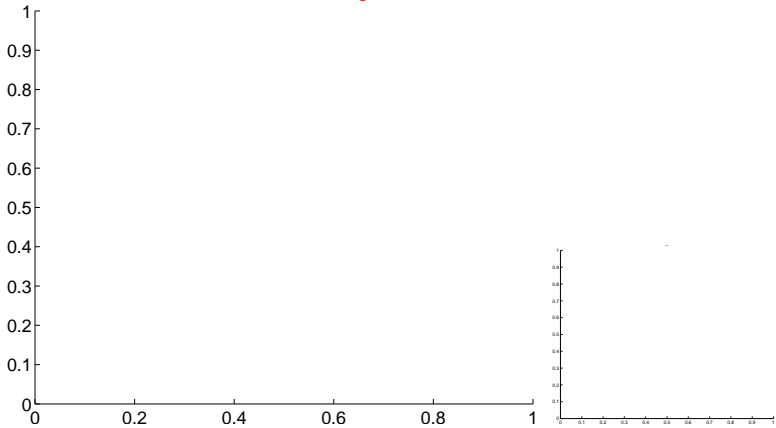


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



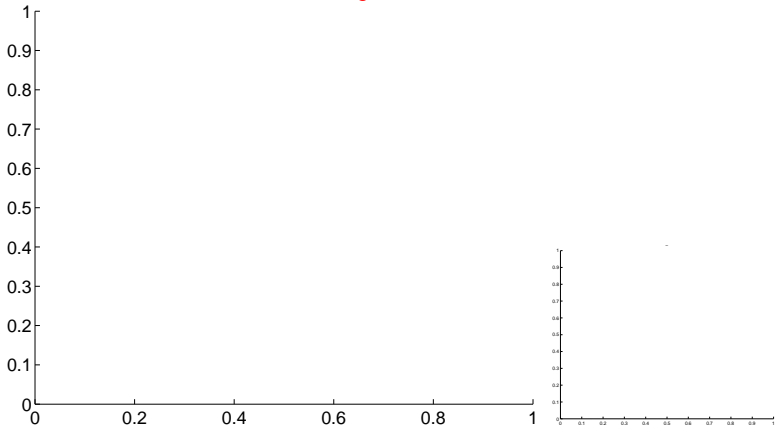
Q13 no OOT image



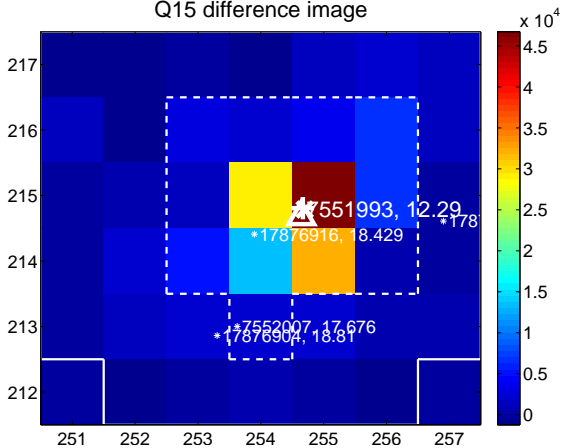
Q14 no difference image



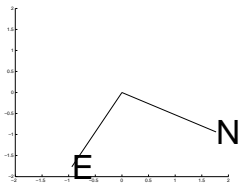
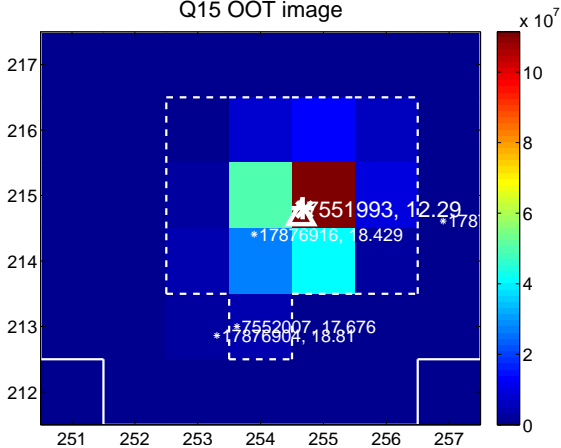
Q14 no OOT image



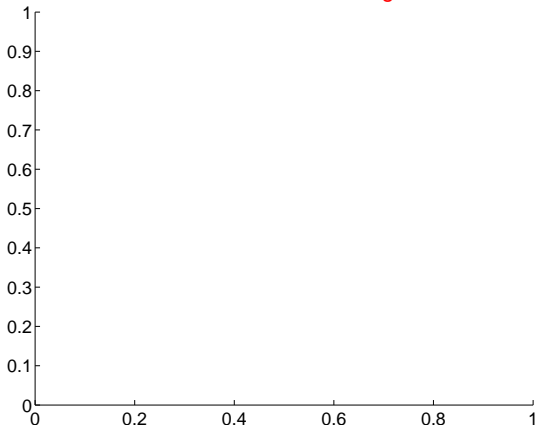
Q15 difference image



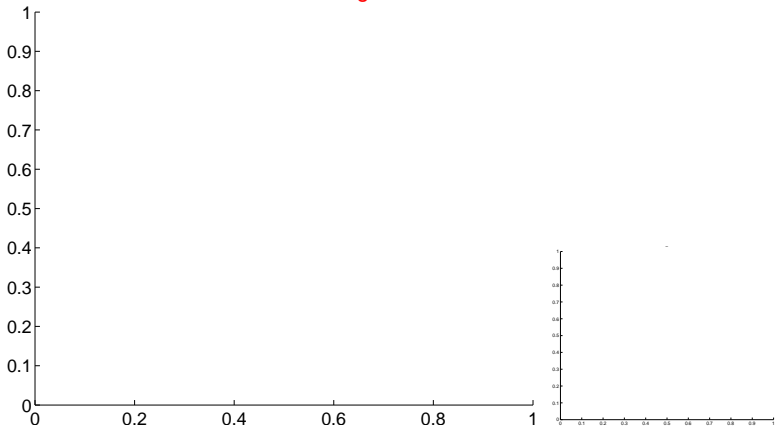
Q15 OOT image



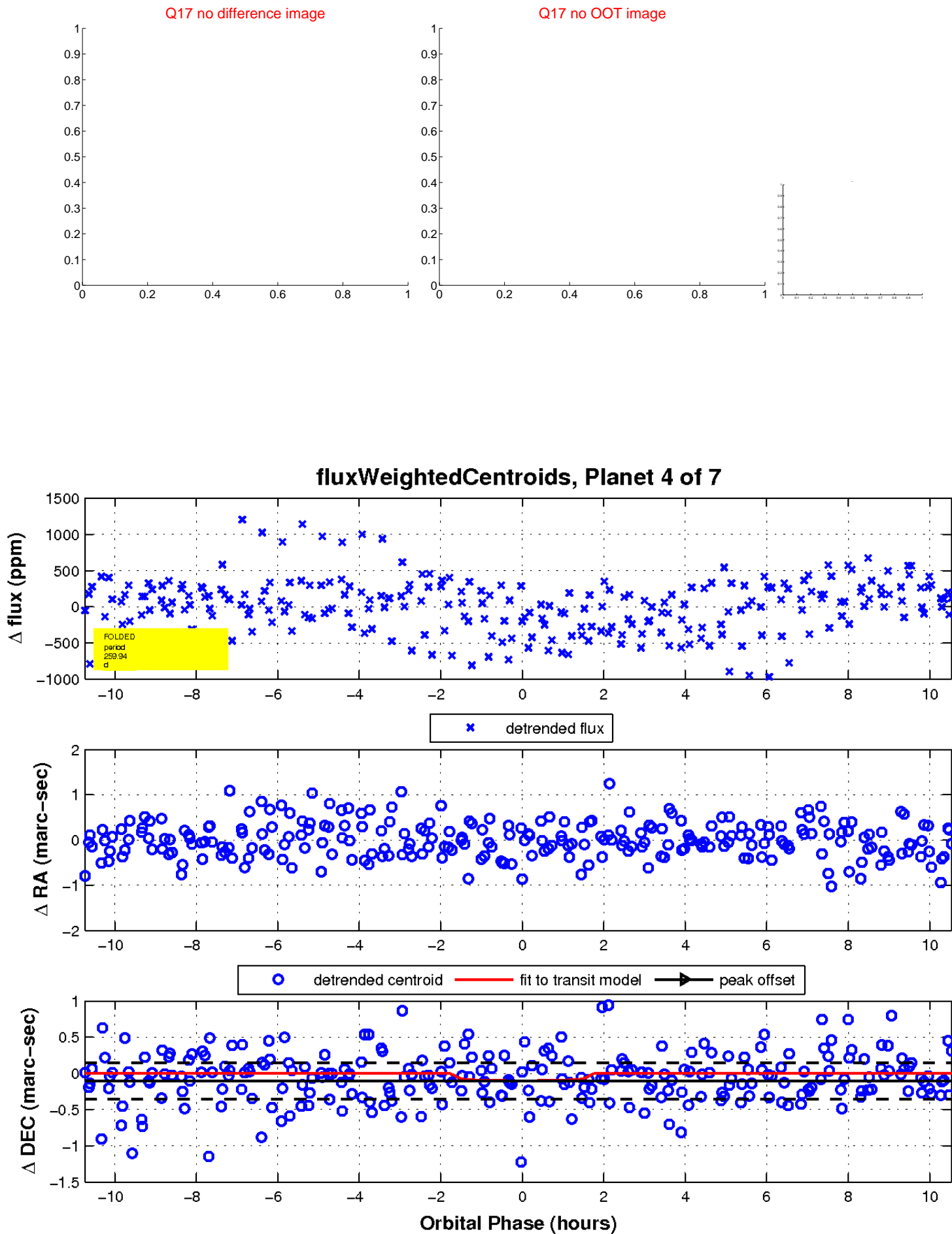
Q16 no difference image



Q16 no OOT image

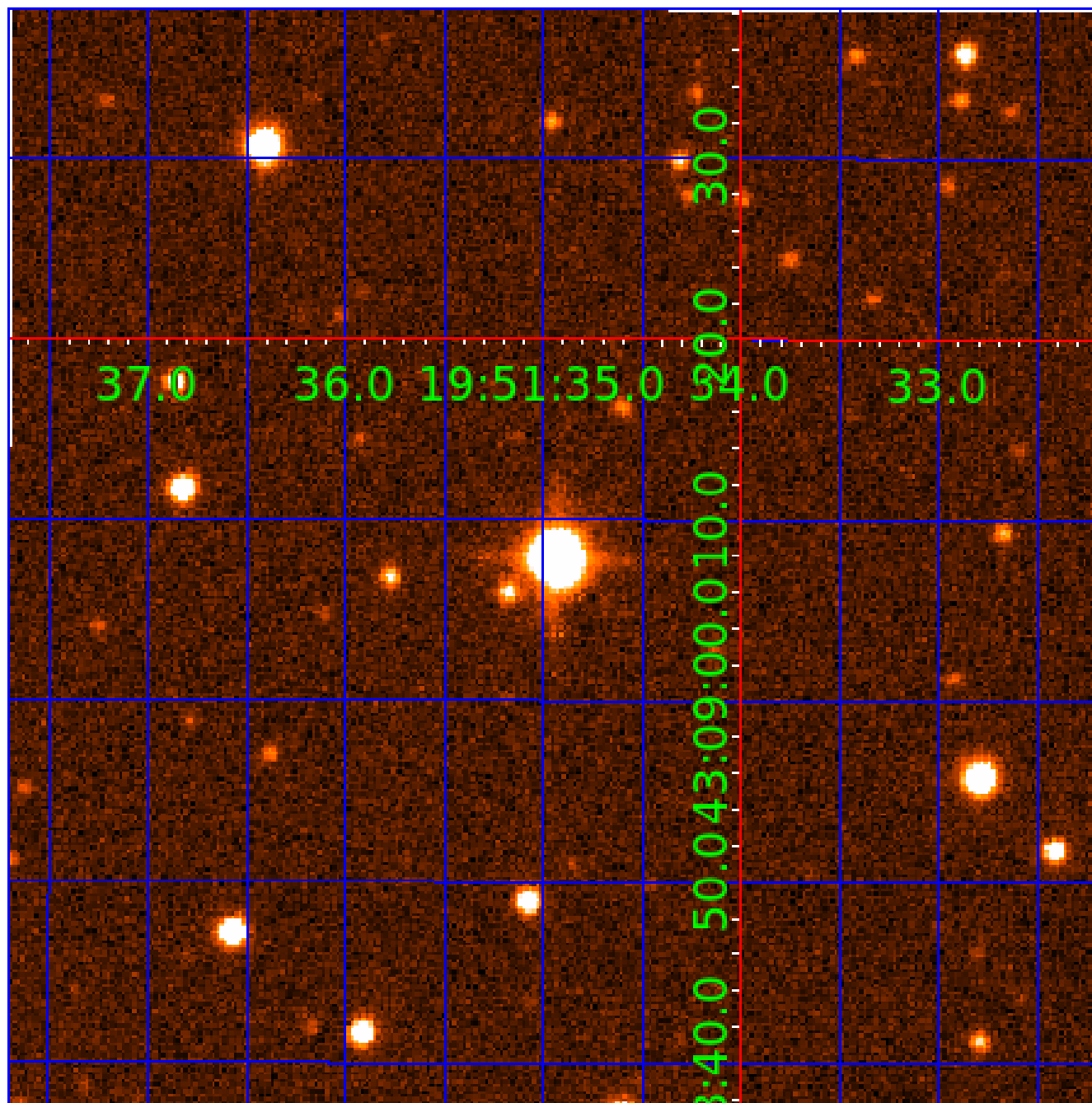


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007551993

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})
007551993-01	OBS	No	0.924370	131.906277	44.8	4.210	10.4	11.0	1.80	6981	1.40	15888.70
007551993-02	OBS	No	18.659210	147.748730	182.1	6.893	9.2	7.7	1.80	6981	2.90	289.08
007551993-03	OBS	No	86.909457	163.411916	599.4	5.431	8.3	8.4	1.80	6981	8.38	37.16
007551993-04	OBS	No	259.943456	133.044345	490.6	3.586	8.3	6.2	1.80	6981	4.52	8.62
007551993-05	OBS	No	176.686697	198.107875	451.9	7.841	8.1	6.1	1.80	6981	4.05	14.43
007551993-06	OBS	No	85.747742	213.425783	391.6	4.346	7.7	6.9	1.80	6981	4.01	37.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

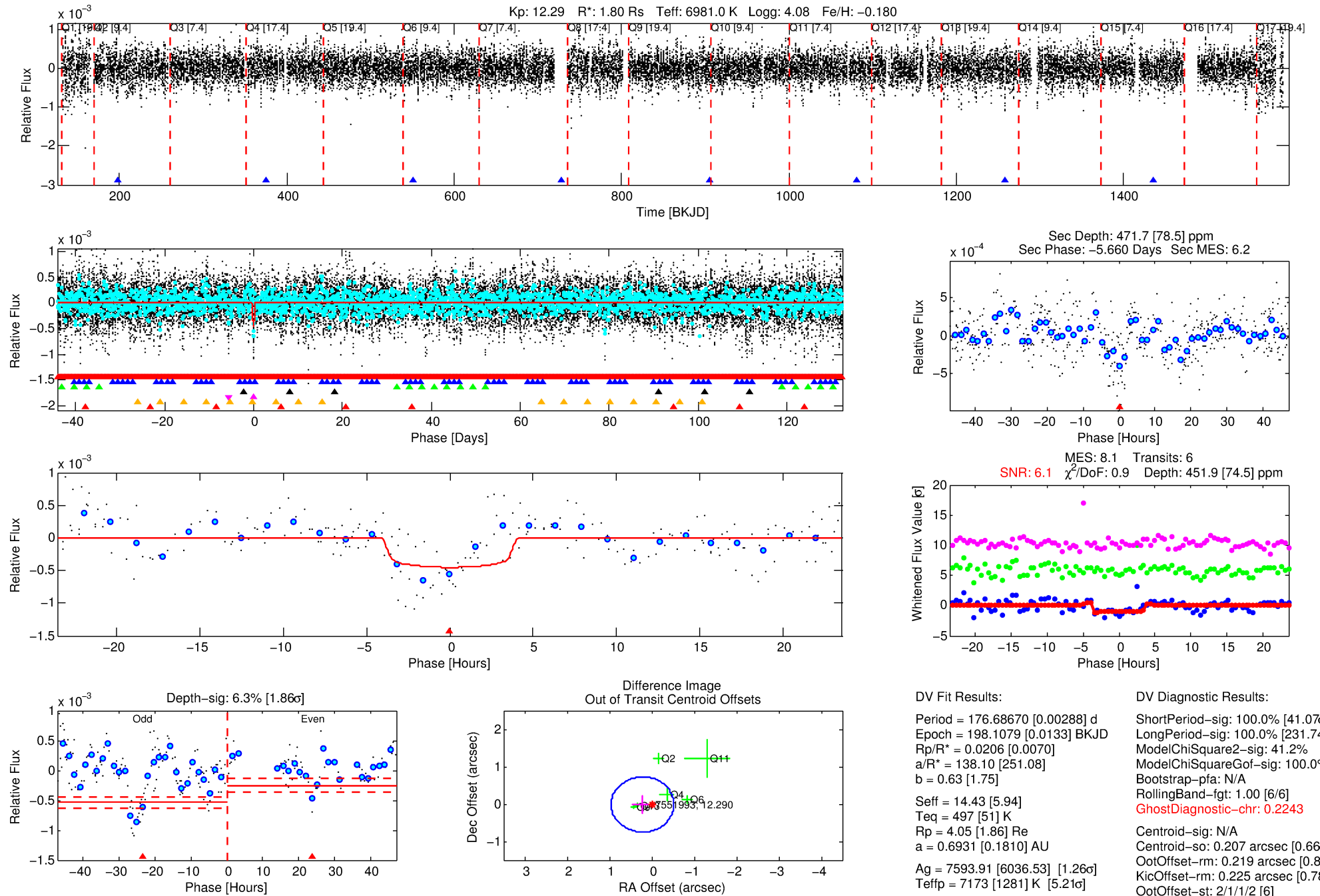
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007551993-05

No Significant Match Found

DV One-Page Summary

KIC: 7551993 Candidate: 5 of 7 Period: 176.687 d



DV Fit Results:

Period = 176.68670 [0.00288] d
Epoch = 198.1079 [0.0133] BKJD
Rp/R* = 0.0206 [0.0070]
a/R* = 138.10 [251.08]
b = 0.63 [1.75]
Seff = 14.43 [5.94]
Teff = 497 [51] K
Rp = 4.05 [1.86] Re
a = 0.6931 [0.1810] AU
Ag = 7593.91 [6036.53] [1.26 σ]
Teffp = 7173 [1281] K [5.21 σ]

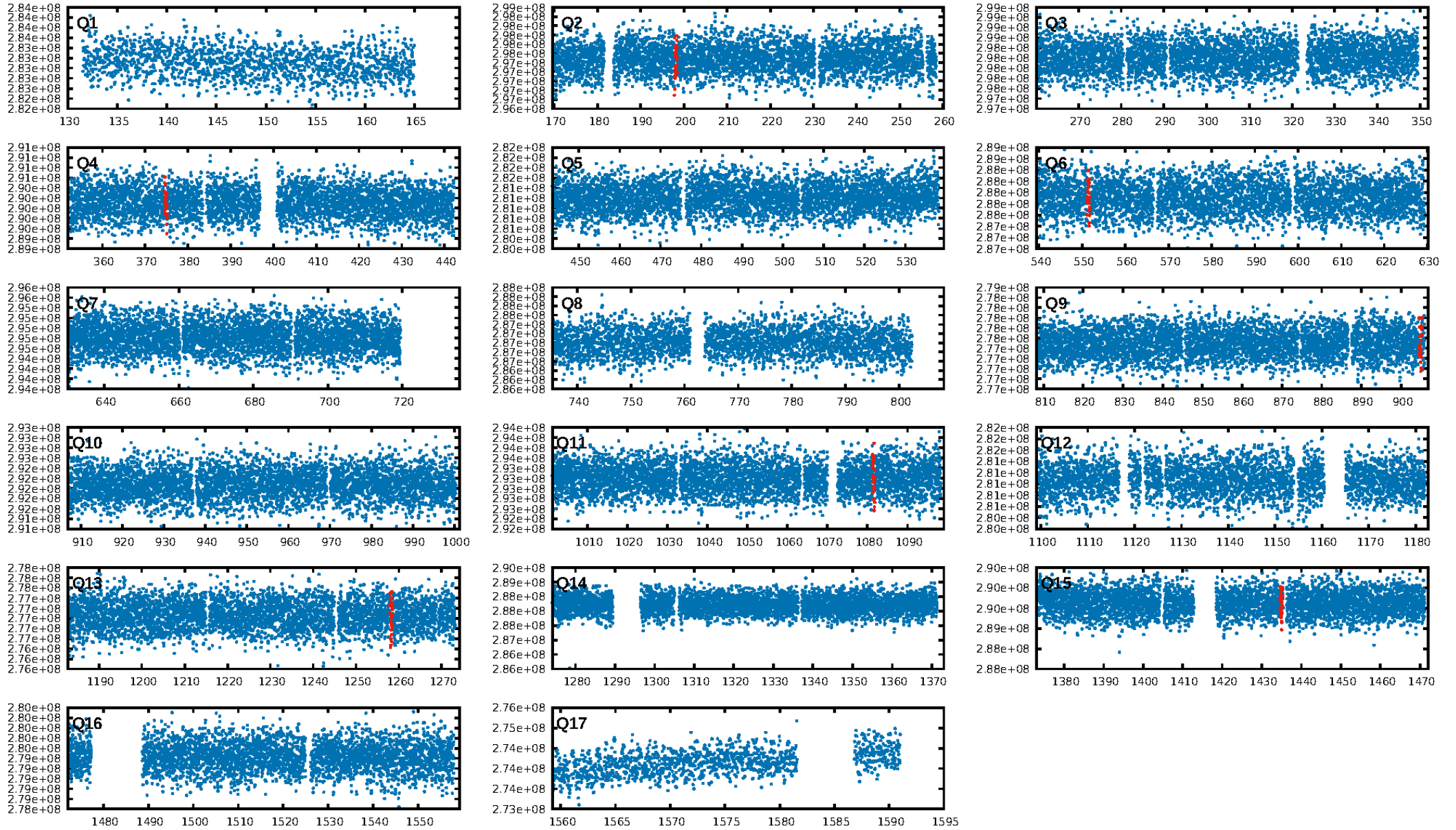
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [41.07 σ]
LongPeriod-sig: 100.0% [231.74 σ]
ModelChiSquare2-sig: 41.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.2243
Centroid-sig: N/A
Centroid-so: 0.207 arcsec [0.66 σ]
OotOffset-rm: 0.219 arcsec [0.89 σ]
KicOffset-rm: 0.225 arcsec [0.78 σ]
OotOffset-st: 2/1/1/2 [6]
KicOffset-st: 2/1/1/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/6]

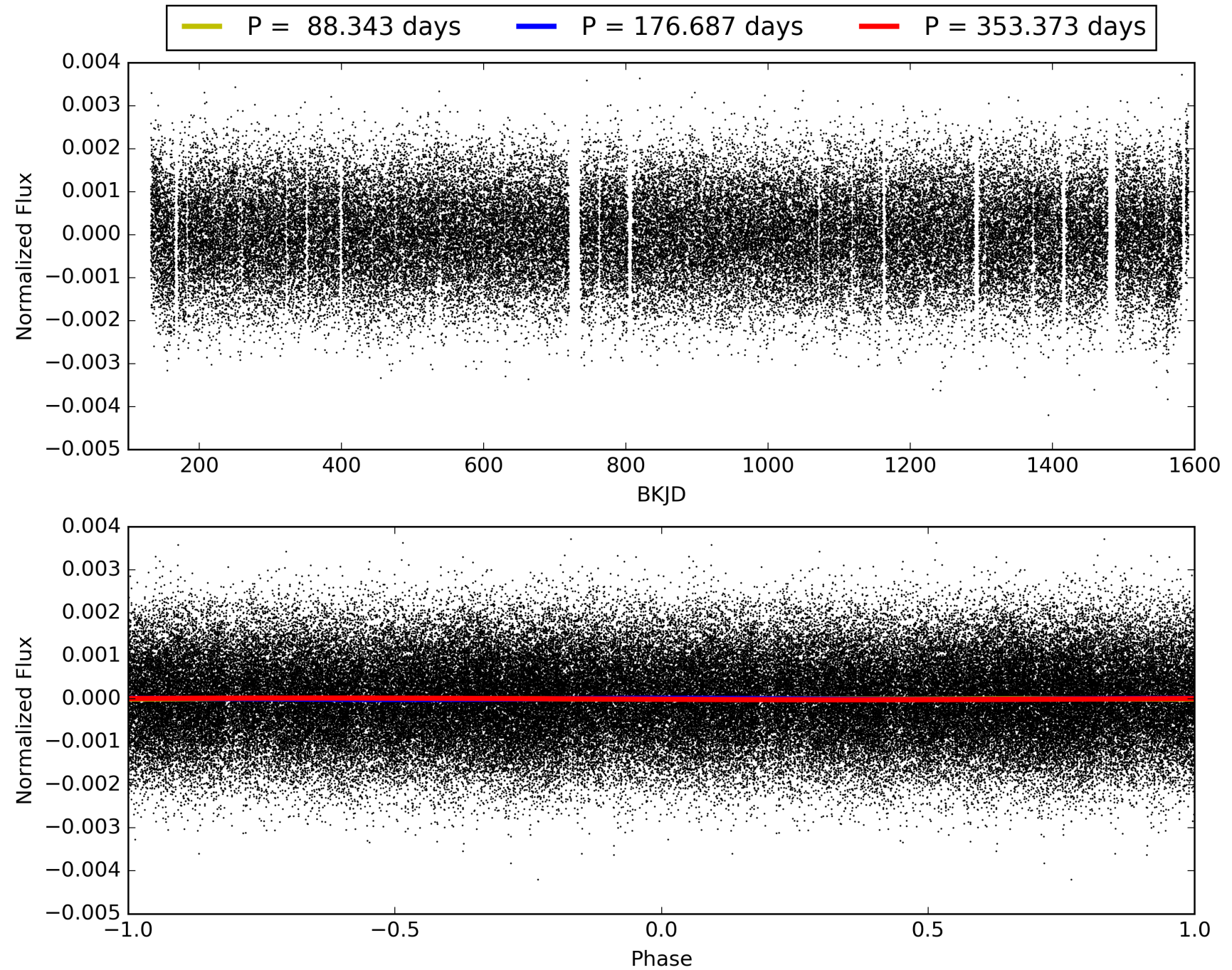
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:59:07 Z

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

TCE 007551993-05, PDC Light Curves

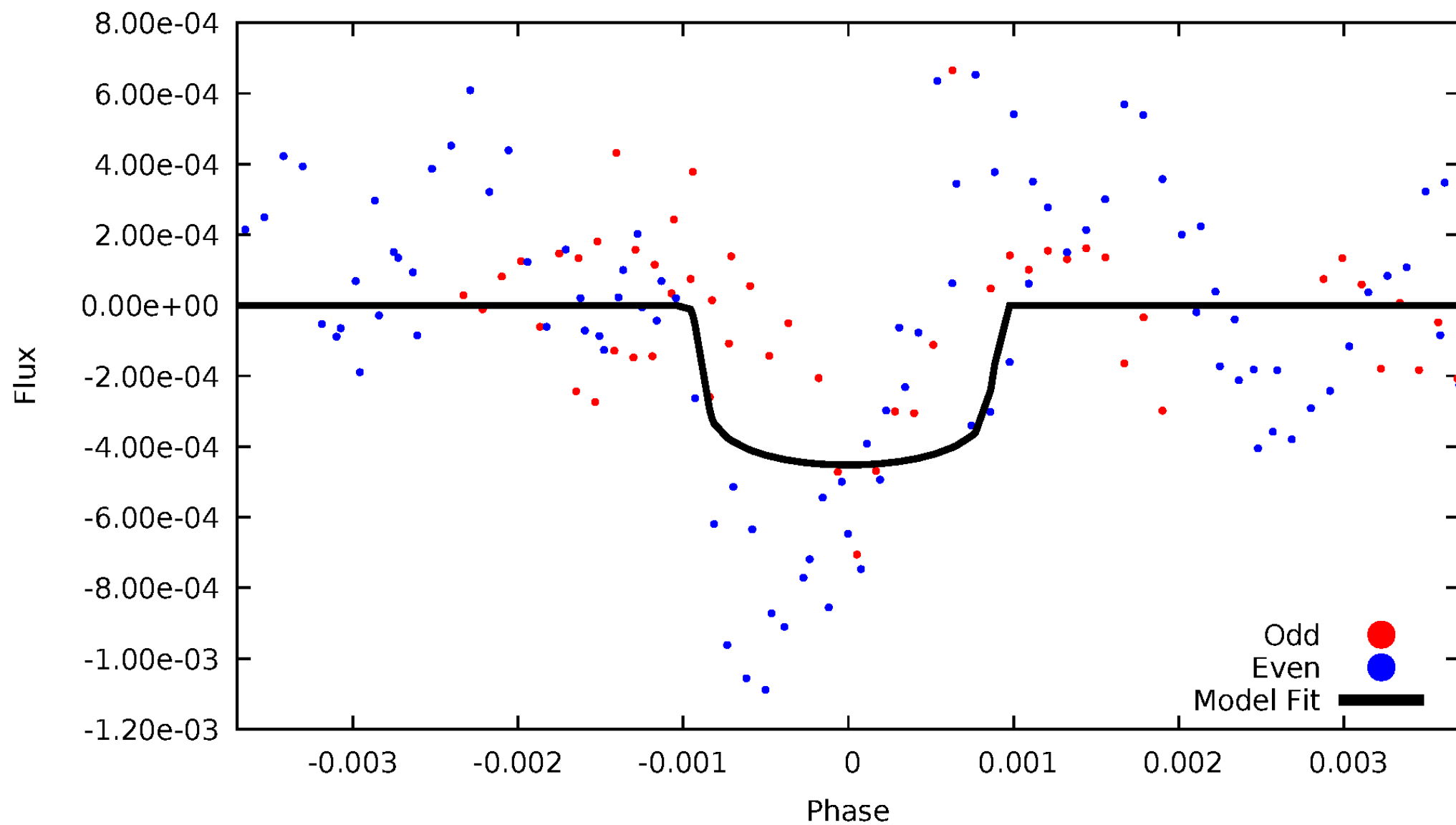


TCE 007551993-05



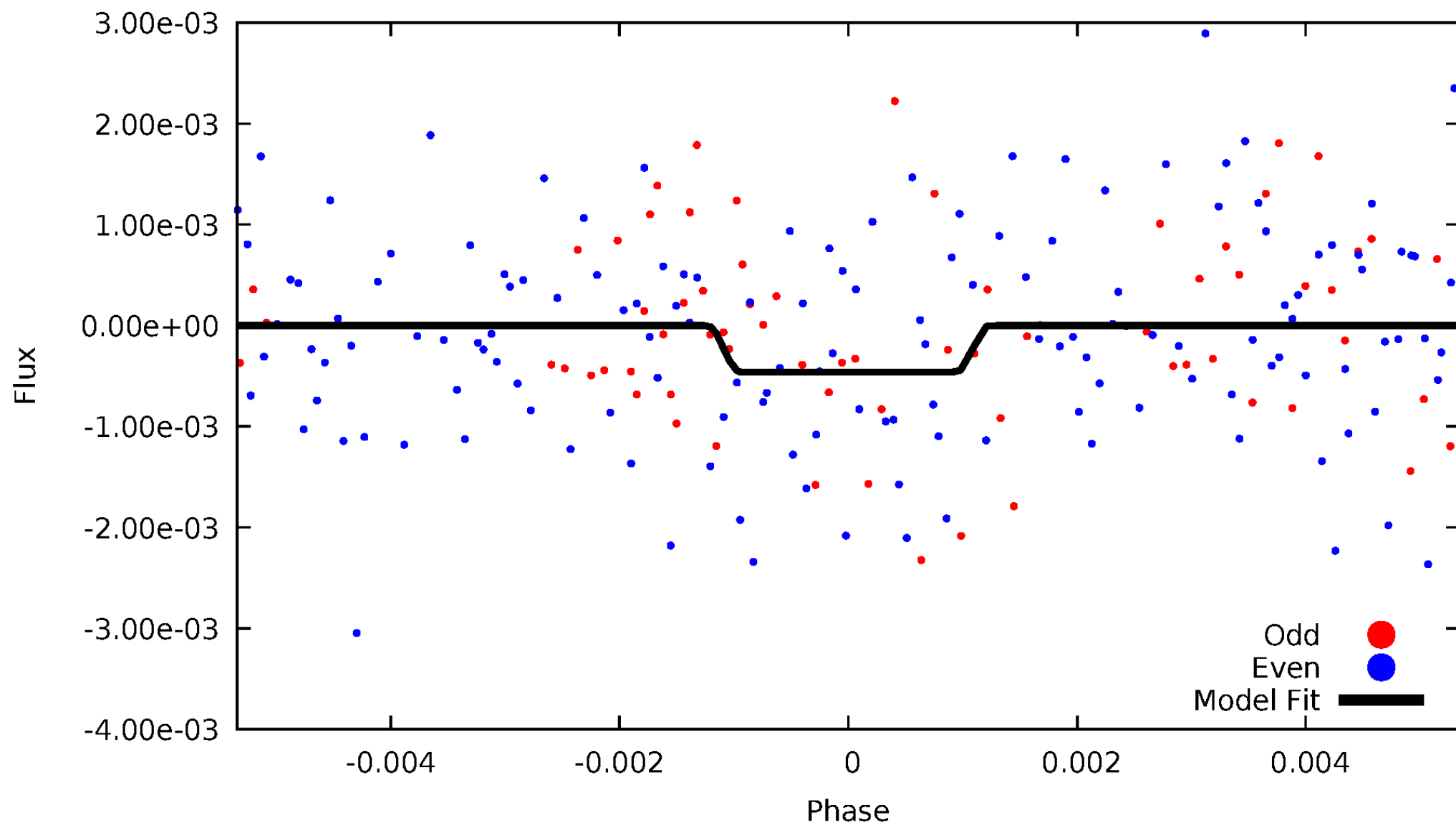
DV Odd/Even

TCE 007551993-05



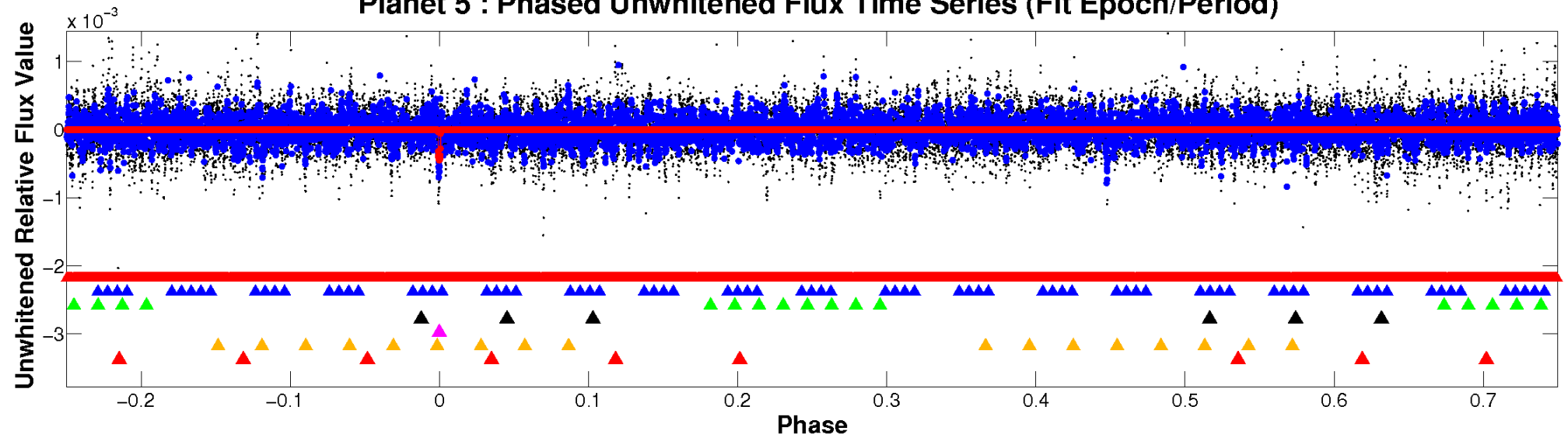
ALT Odd/Even

TCE 007551993-05

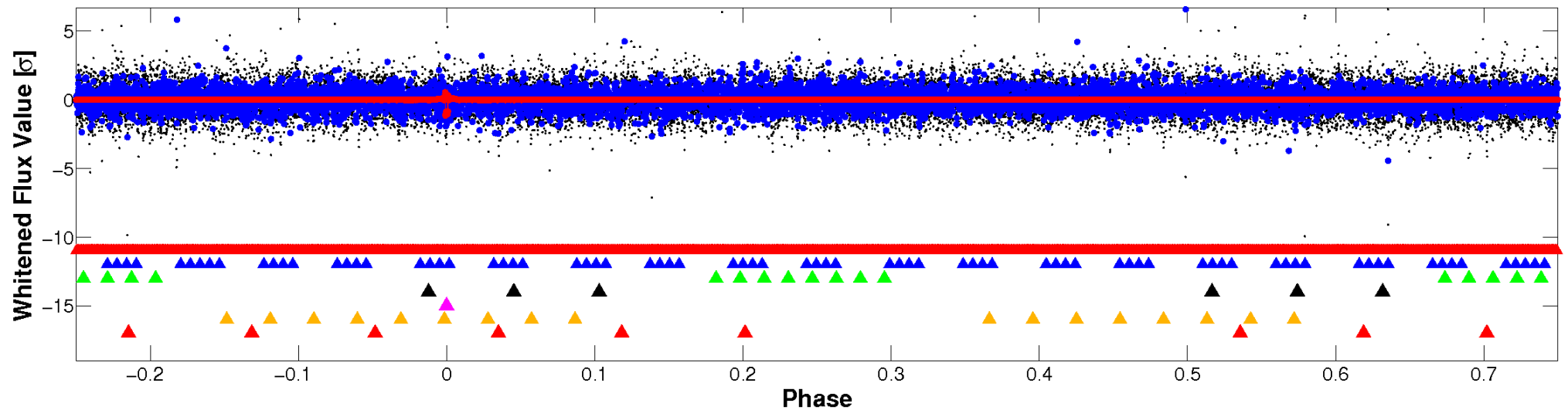


Non-Whitened Vs. Whitened Light Curve

Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

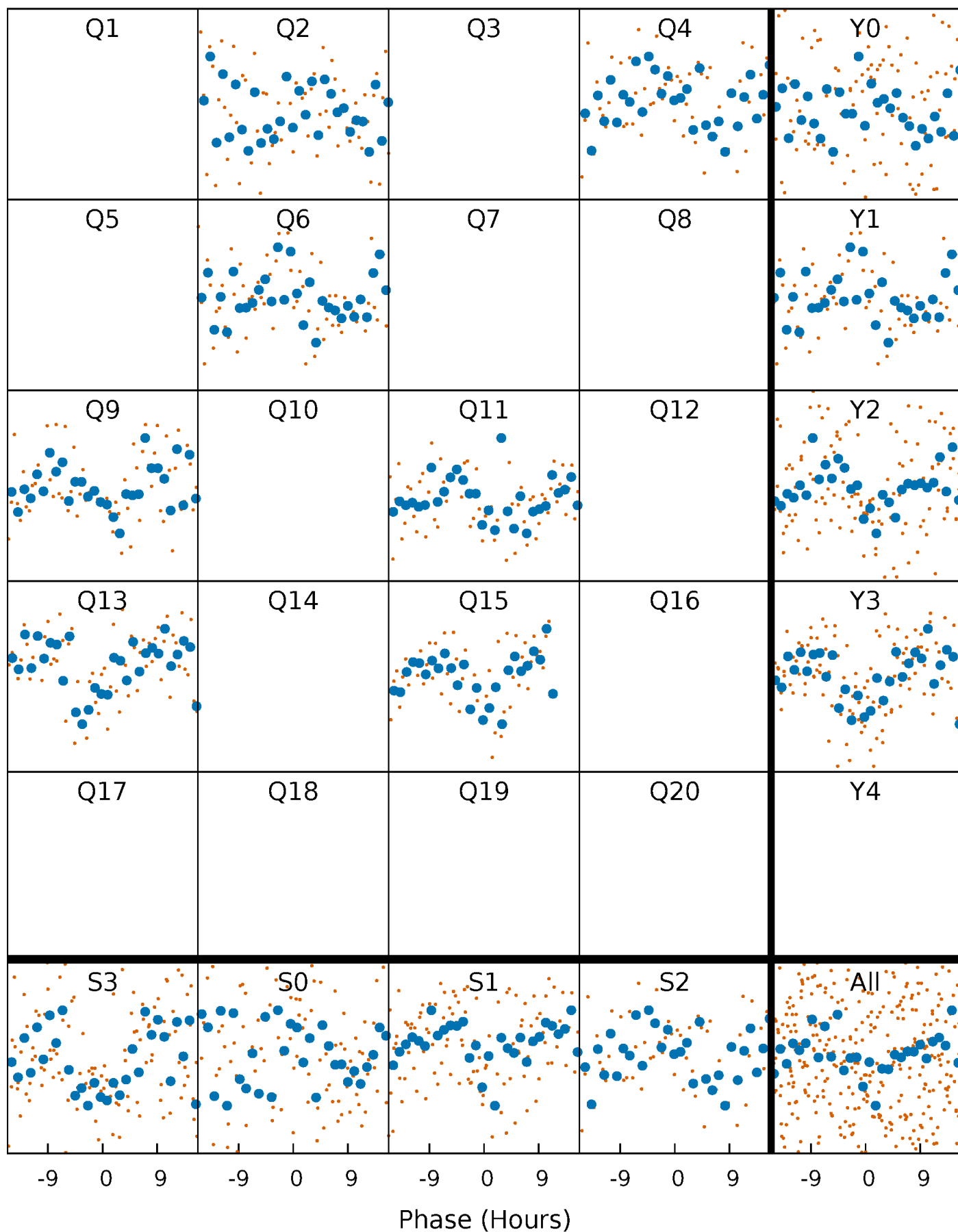


Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



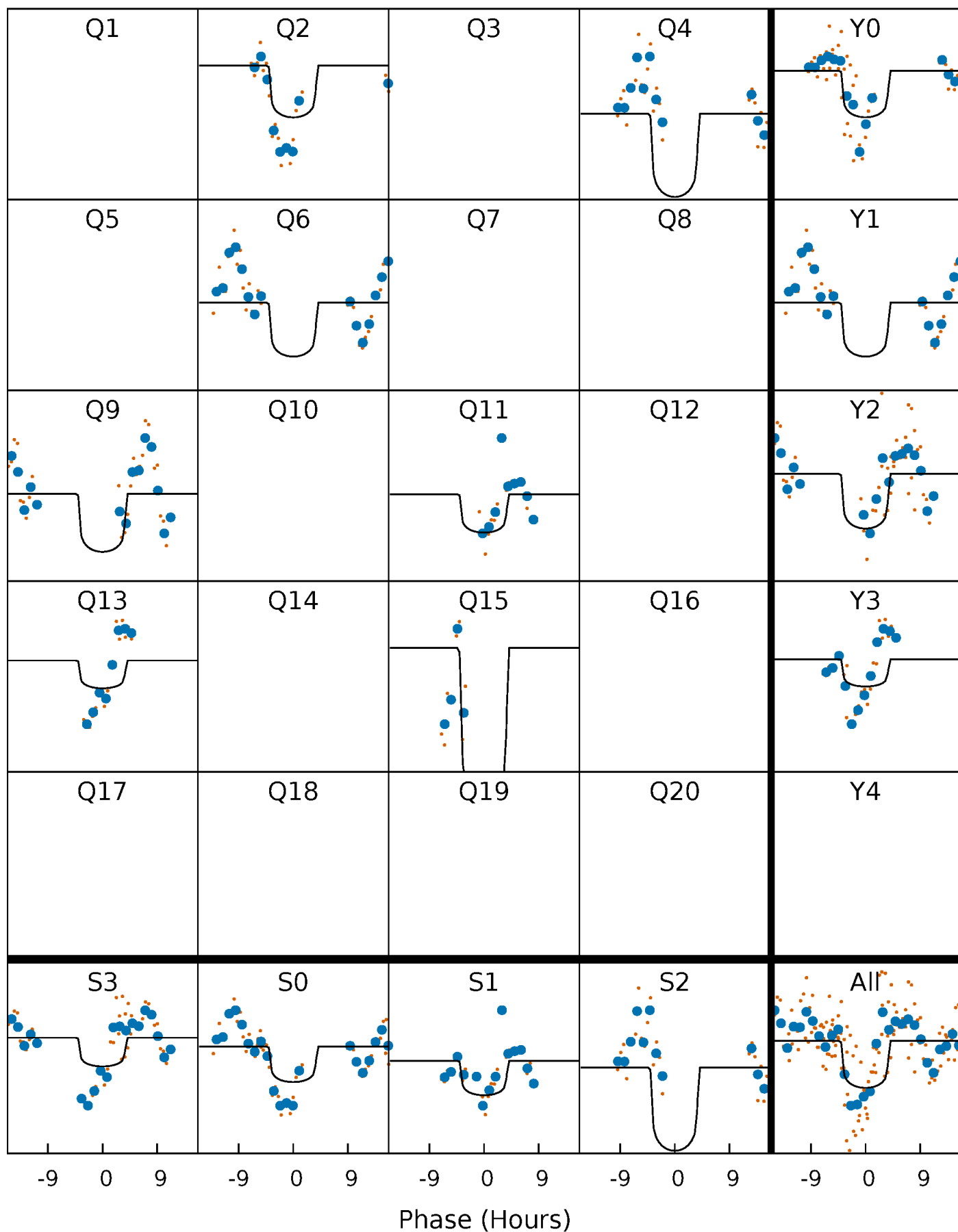
PDC Quarter-Phased Transit Curves

TCE 007551993-05 P=176.686697 Days $T_0=198.107875$ (BKJD)



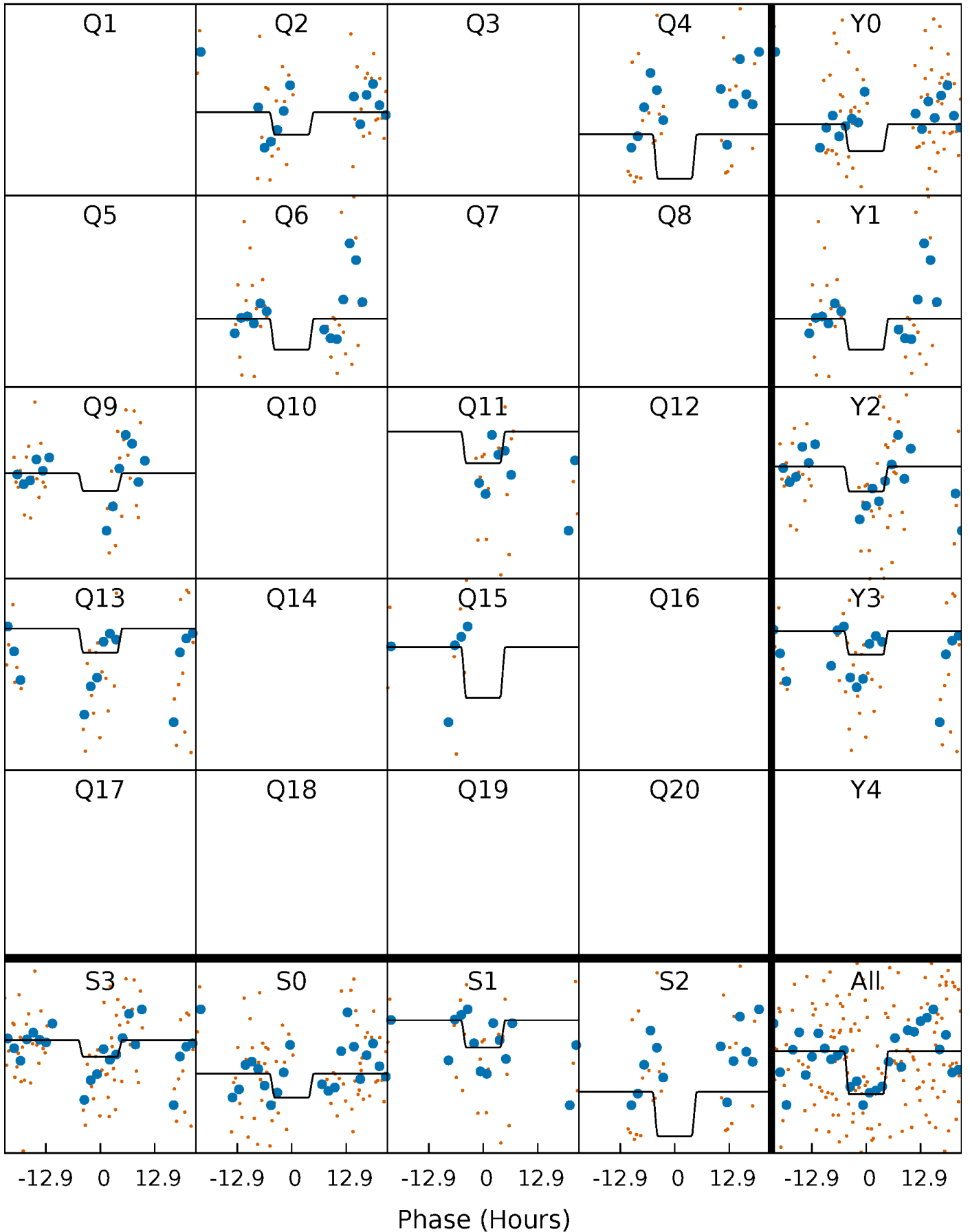
DV Quarter-Phased Transit Curves

TCE 007551993-05 P=176.686697 Days $T_0=198.107875$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

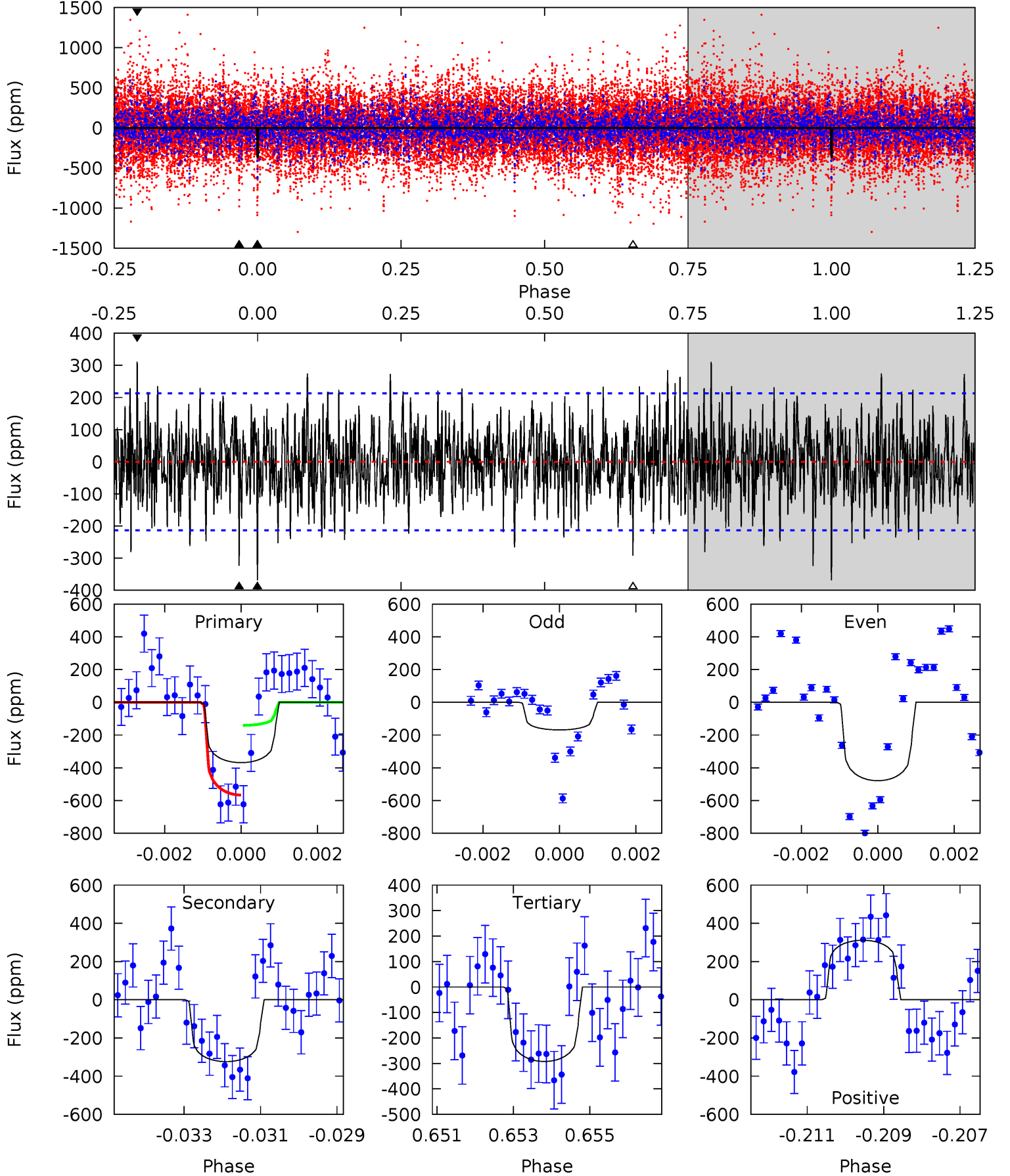
TCE 007551993-05 $P=176.684760$ Days $T_0=198.156976$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-05, $P = 176.686697$ Days, $E = 21.421178$ Days

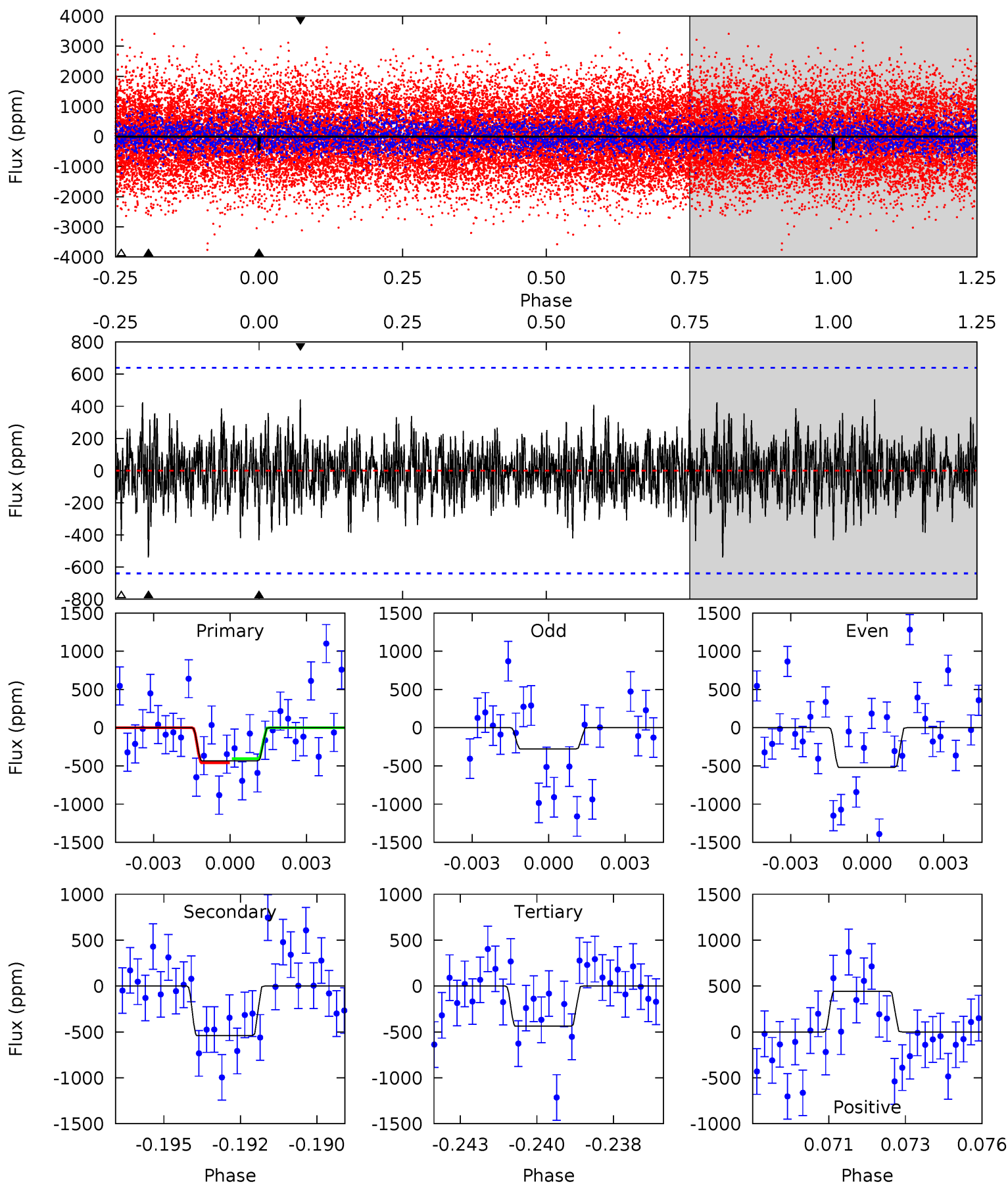
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.21	8.09	7.30	7.78	5.33	3.10	2.20	1.90	1.42	0.79	0.31	3.78	1.21	0.46	5.33



Alt Model-Shift Uniqueness Test

007551993-05, $P = 176.684760$ Days, $E = 21.472216$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.57	4.46	3.61	3.65	5.28	3.02	1.09	-0.04	-0.08	0.85	0.81	0.97	0.89	0.45	0.22



Stellar Parameters For KIC 007551993

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-324 ± 40	$3.97^{+1.52}_{-1.43}$	691^{+54}_{-54}	6500^{+1844}_{-975}	5484^{+7413}_{-2718}
Alt.	-540 ± 121	$4.17^{+1.50}_{-1.38}$	689^{+51}_{-56}	7227^{+1982}_{-1064}	8155^{+10483}_{-4016}

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 $A_{obs} \gg 1.0$

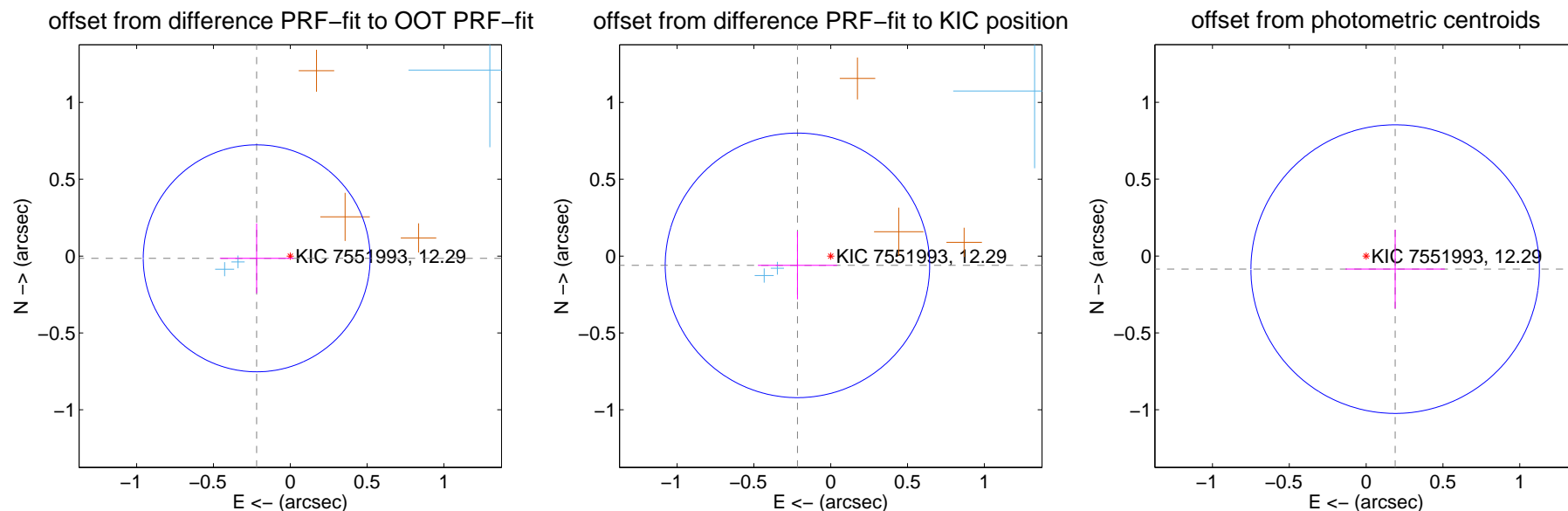
DV Centroid Data

Supplemental centroid analysis for 007551993-05. Kepler magnitude: 12.29. Transit SNR 6.09

There are 3 quarters with good PRF difference image offsets

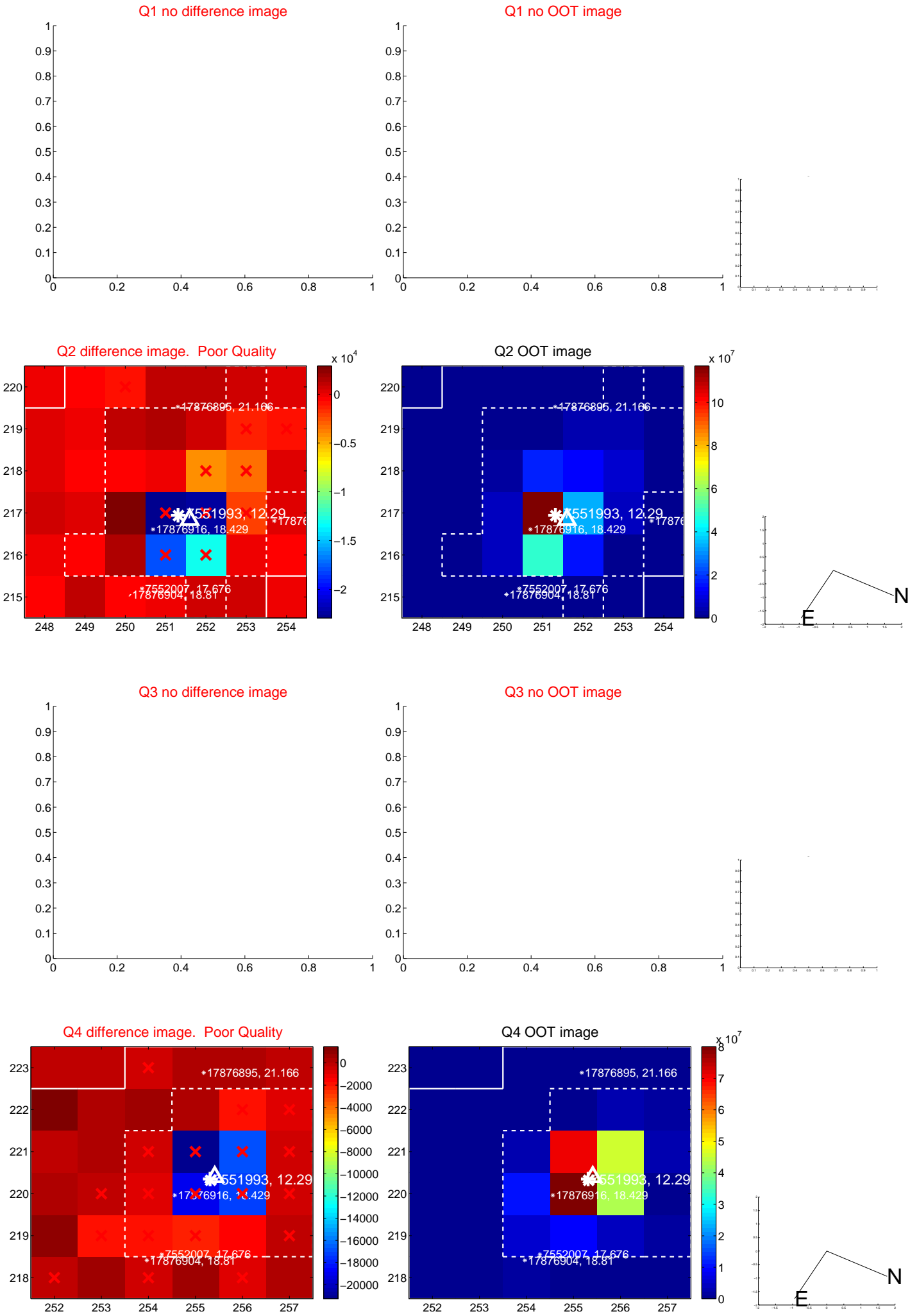
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.219 ± 0.246	0.89	0.219 ± 0.240	-0.015 ± 0.227
PRF-fit source offset from KIC position	0.225 ± 0.287	0.78	0.217 ± 0.258	-0.060 ± 0.221
photometric centroid source offset	0.21 ± 0.31	0.66	-0.19 ± 0.32	-0.09 ± 0.26



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.

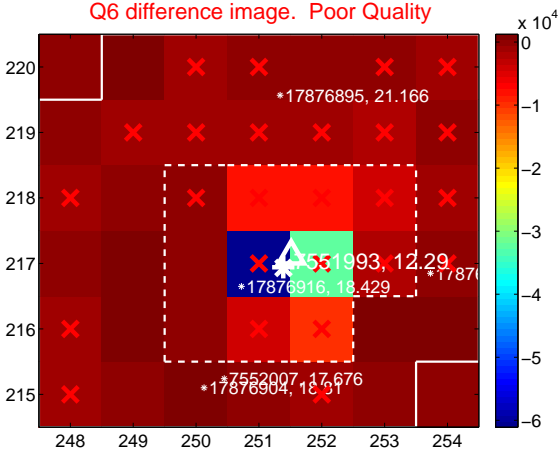
Q5 no difference image



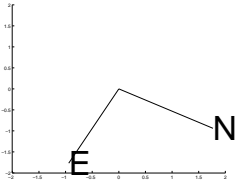
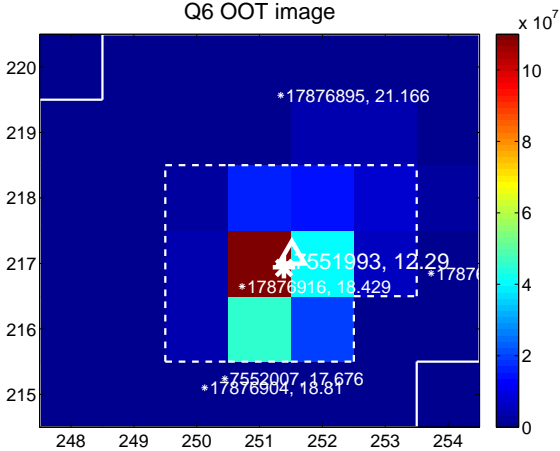
Q5 no OOT image



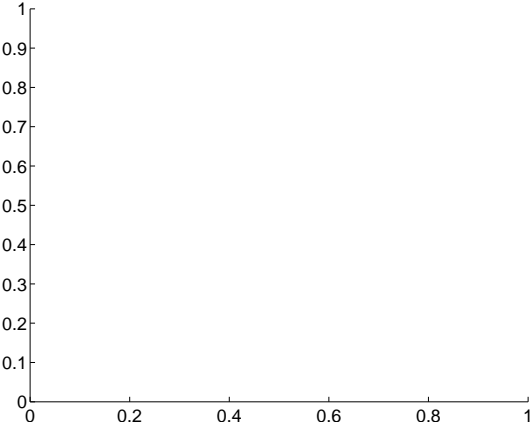
Q6 difference image. Poor Quality



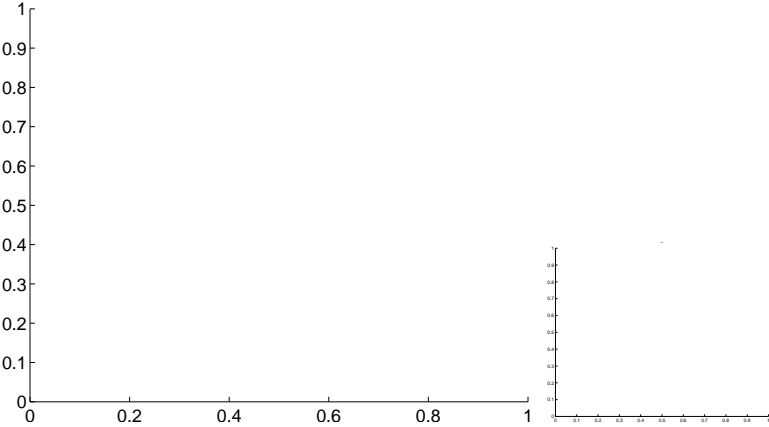
Q6 OOT image



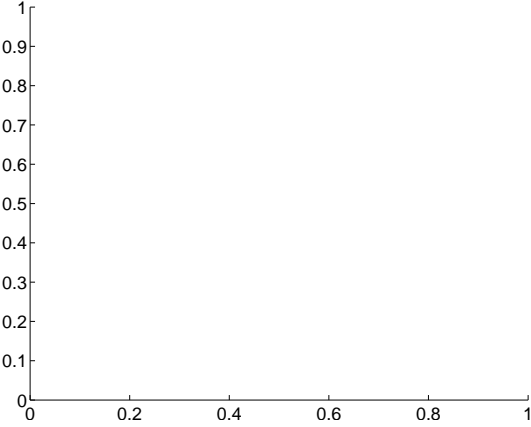
Q7 no difference image



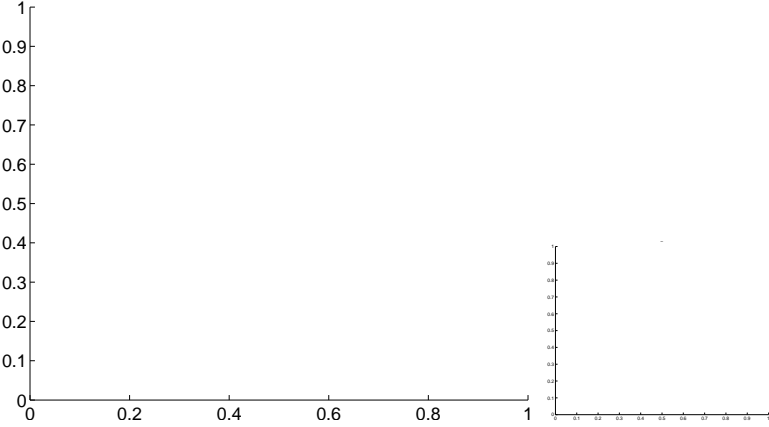
Q7 no OOT image



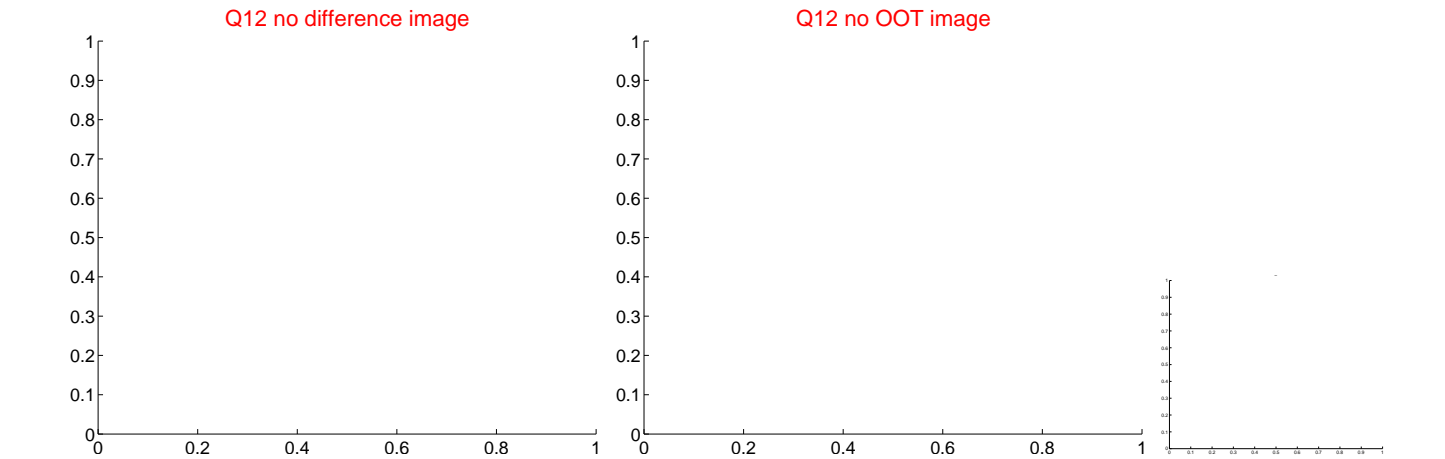
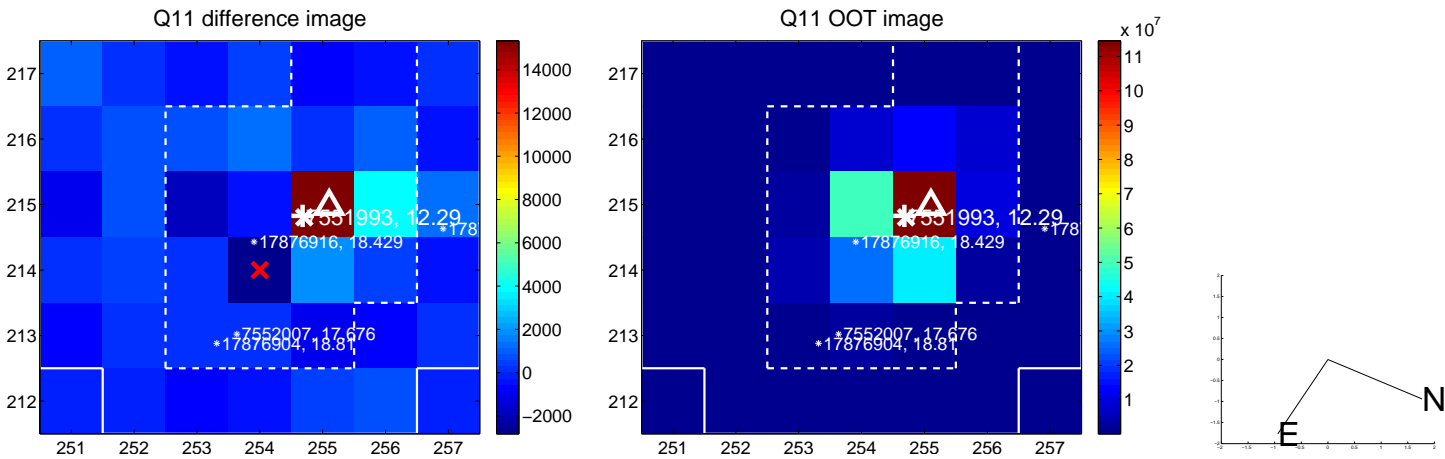
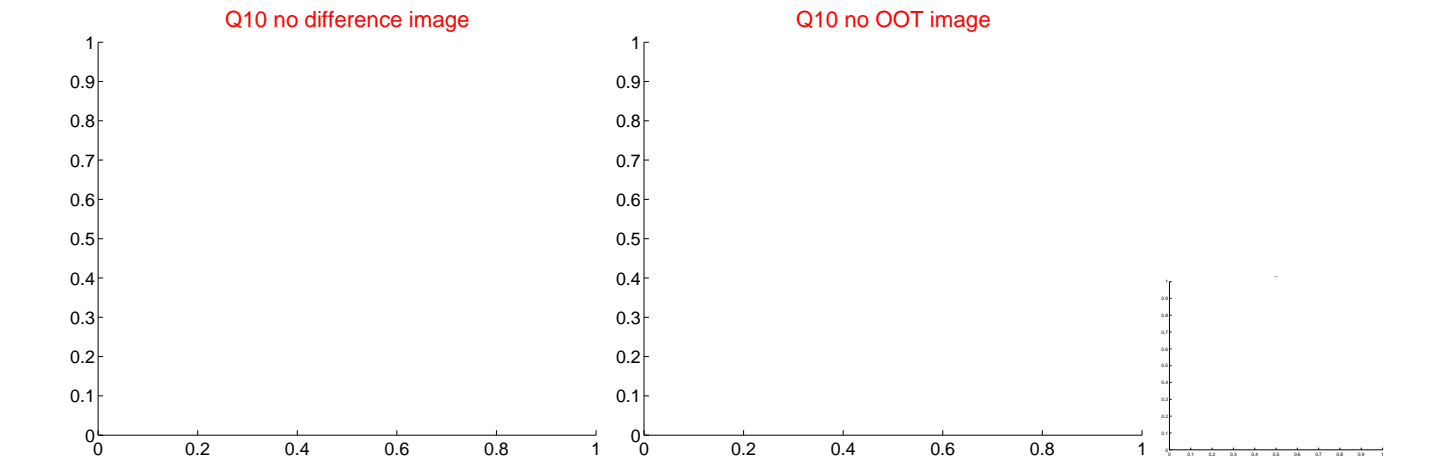
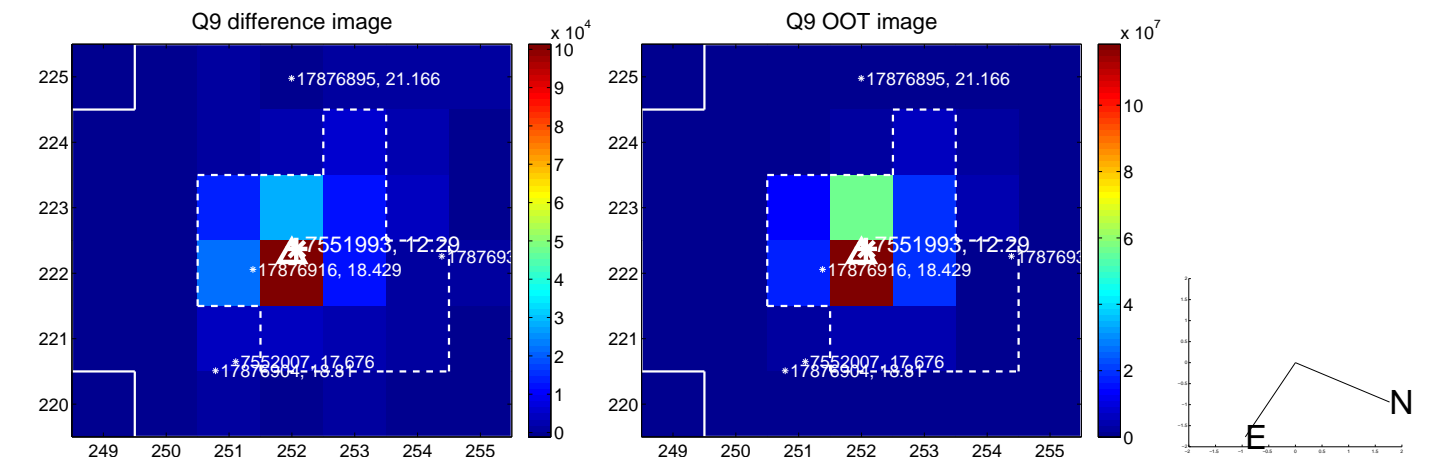
Q8 no difference image



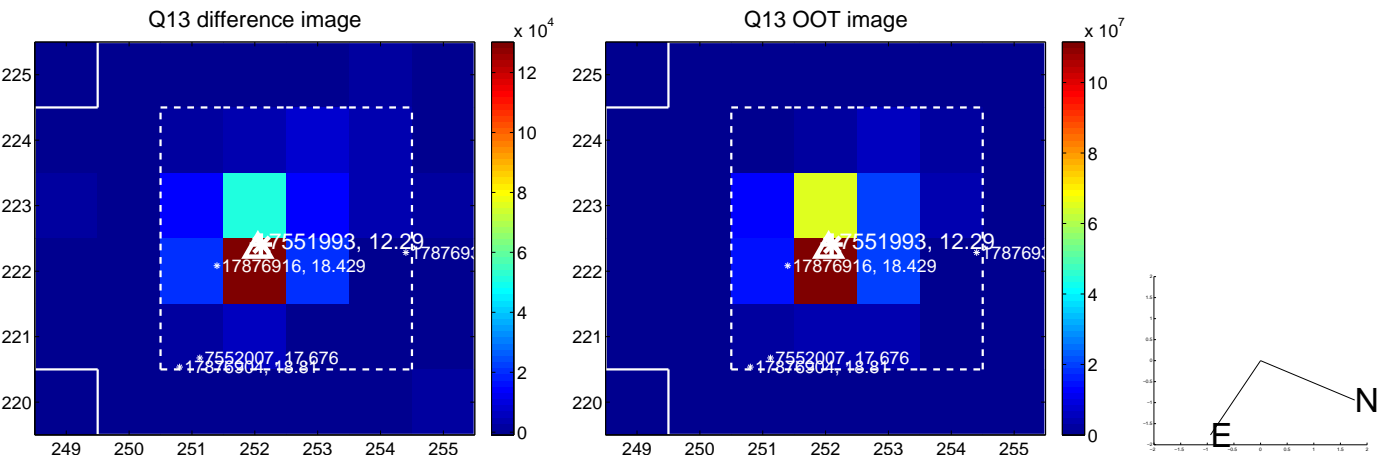
Q8 no OOT image



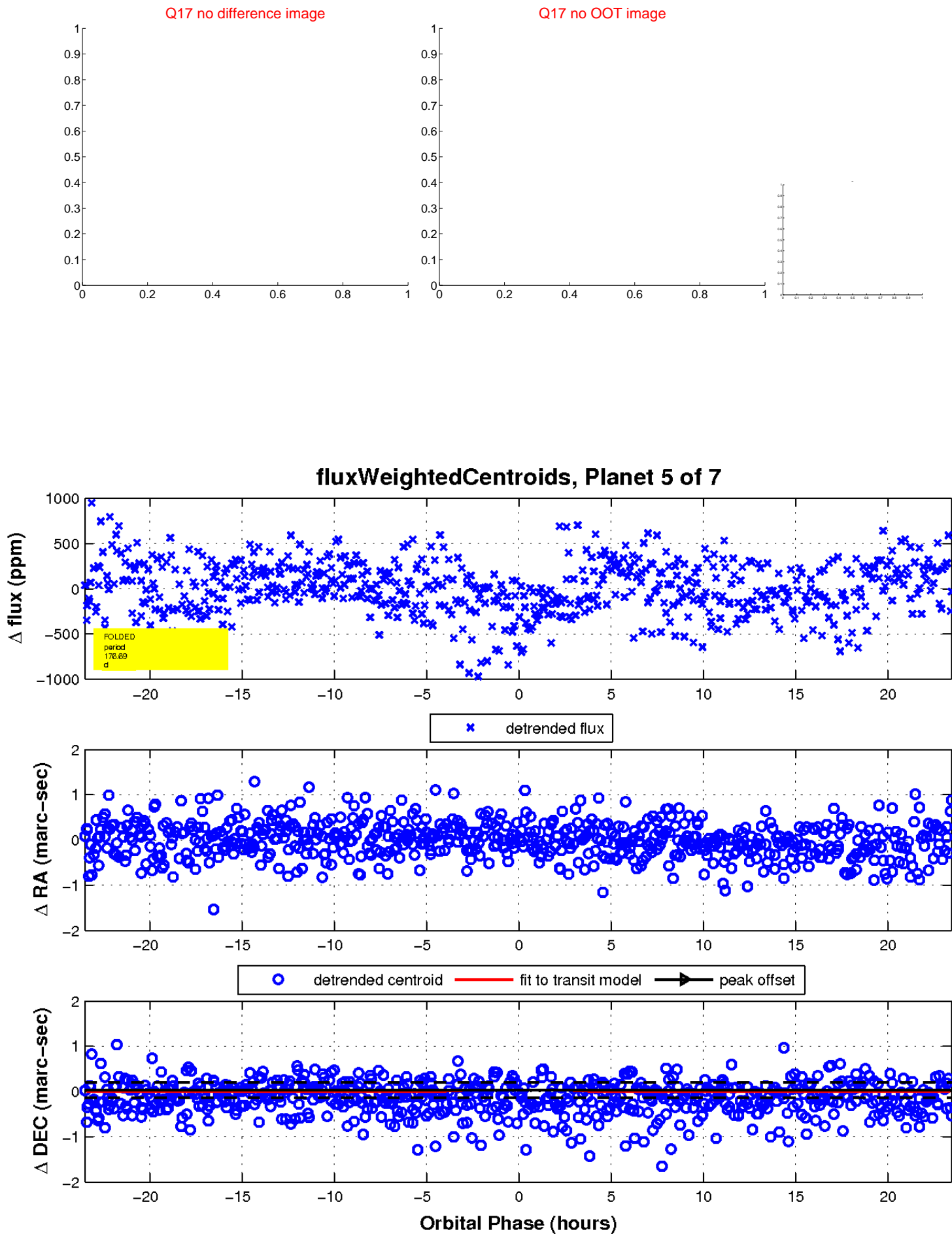
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

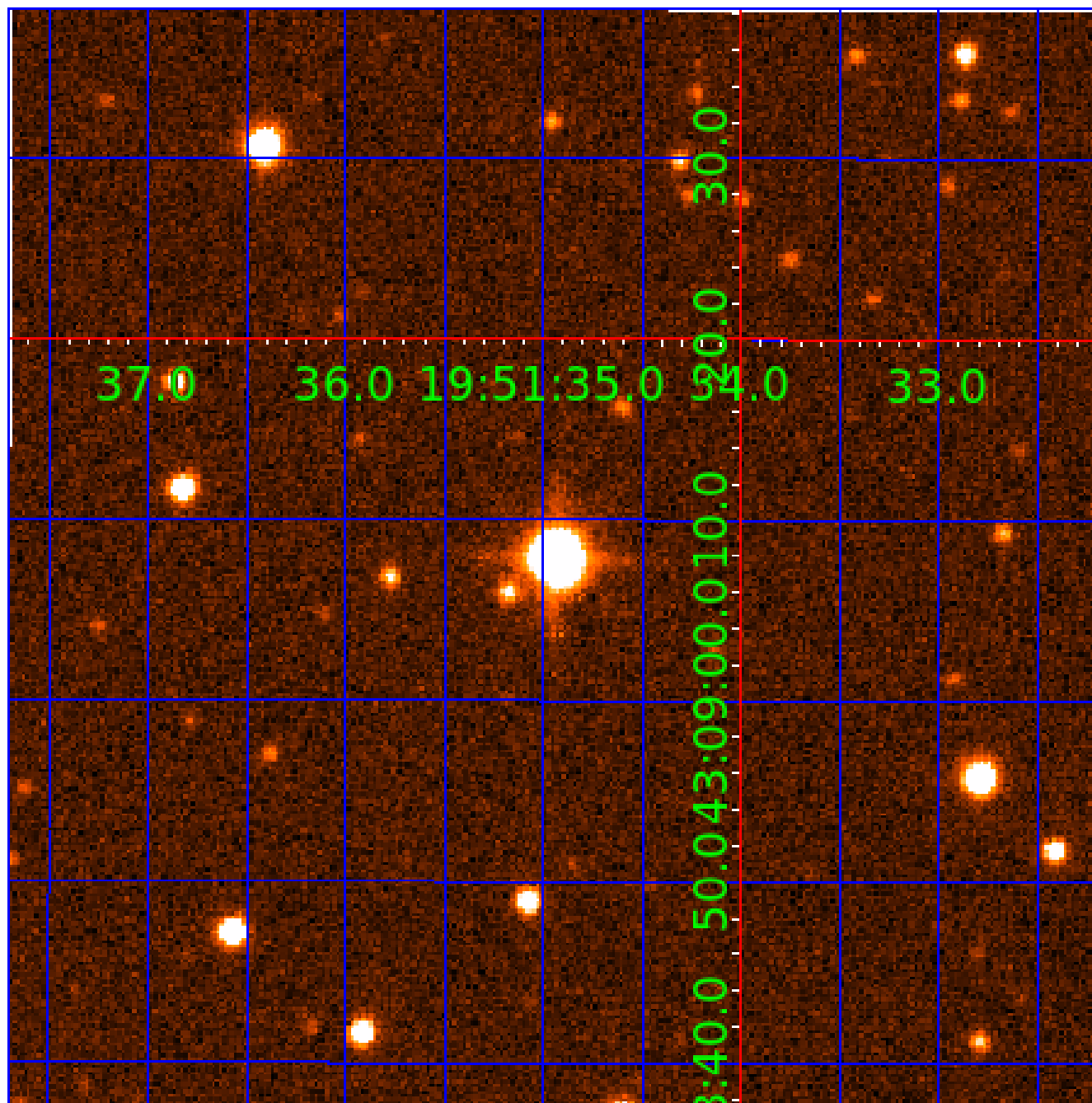


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007551993

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})
007551993-01	OBS	No	0.924370	131.906277	44.8	4.210	10.4	11.0	1.80	6981	1.40	15888.70
007551993-02	OBS	No	18.659210	147.748730	182.1	6.893	9.2	7.7	1.80	6981	2.90	289.08
007551993-03	OBS	No	86.909457	163.411916	599.4	5.431	8.3	8.4	1.80	6981	8.38	37.16
007551993-04	OBS	No	259.943456	133.044345	490.6	3.586	8.3	6.2	1.80	6981	4.52	8.62
007551993-05	OBS	No	176.686697	198.107875	451.9	7.841	8.1	6.1	1.80	6981	4.05	14.43
007551993-06	OBS	No	85.747742	213.425783	391.6	4.346	7.7	6.9	1.80	6981	4.01	37.84

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007551993-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
007551993-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
007551993-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_TRACKER—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
007551993-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—HALO_GHOST
007551993-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

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

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

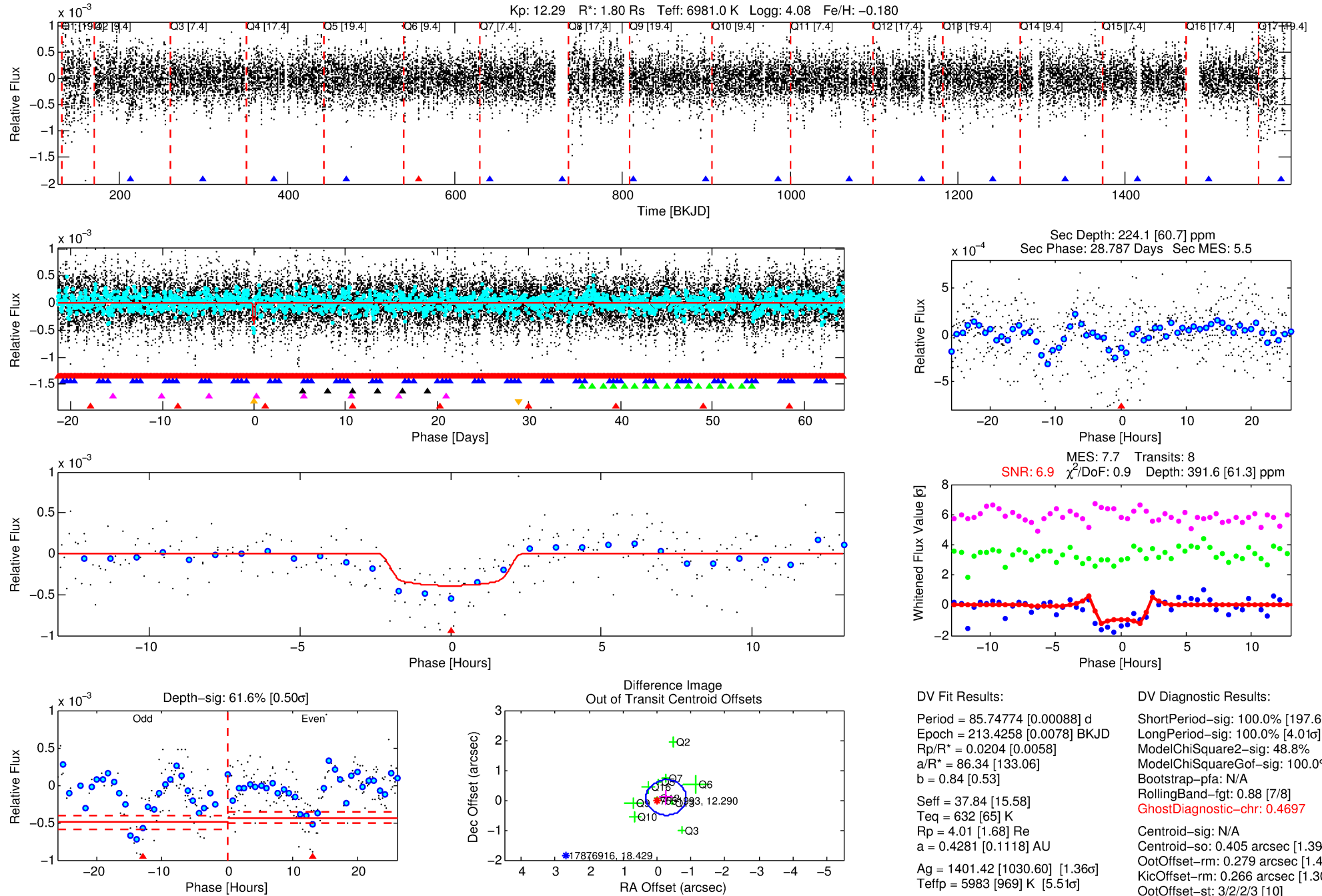
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007551993-06

No Significant Match Found

DV One-Page Summary

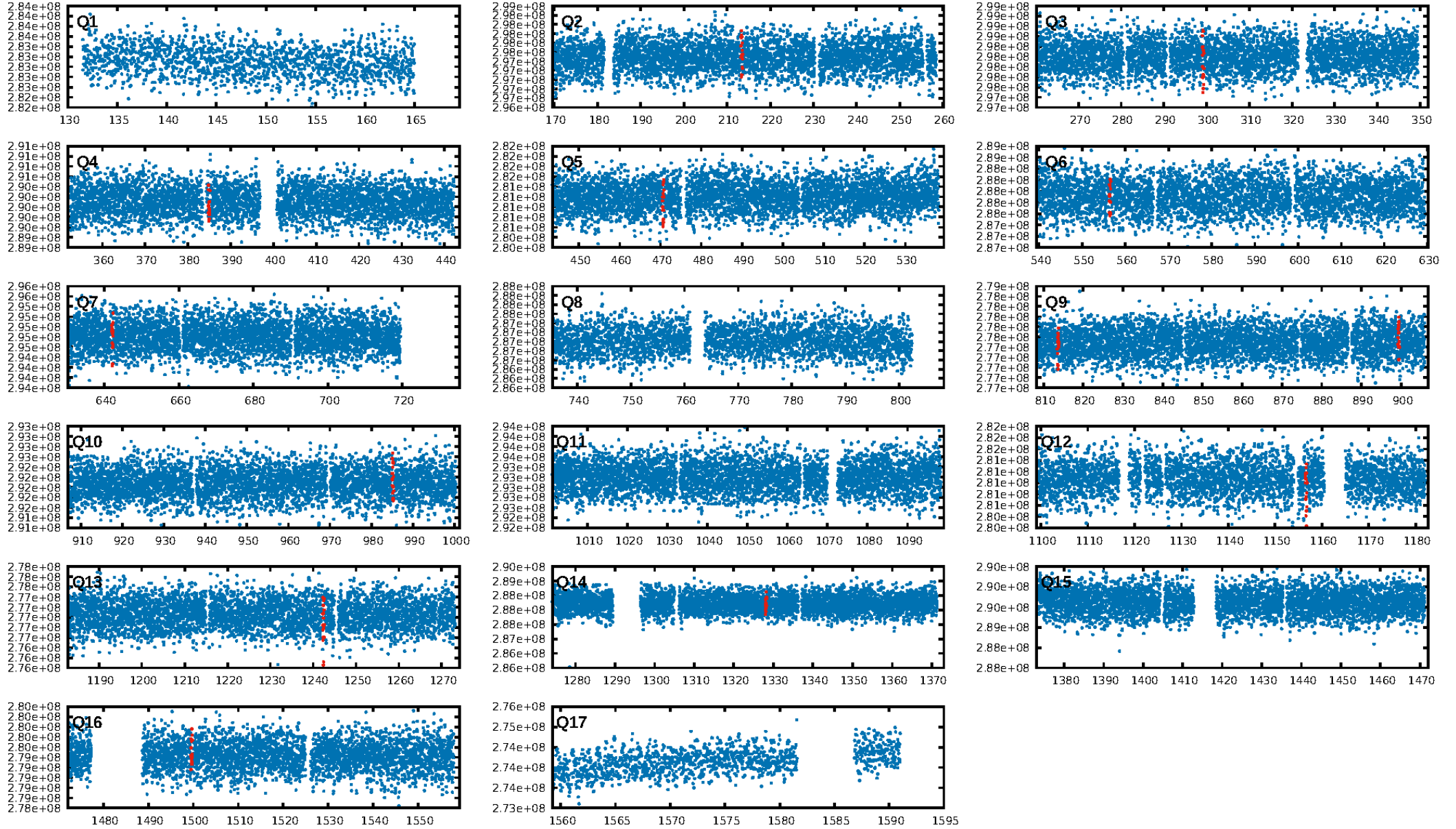
KIC: 7551993 Candidate: 6 of 7 Period: 85.748 d



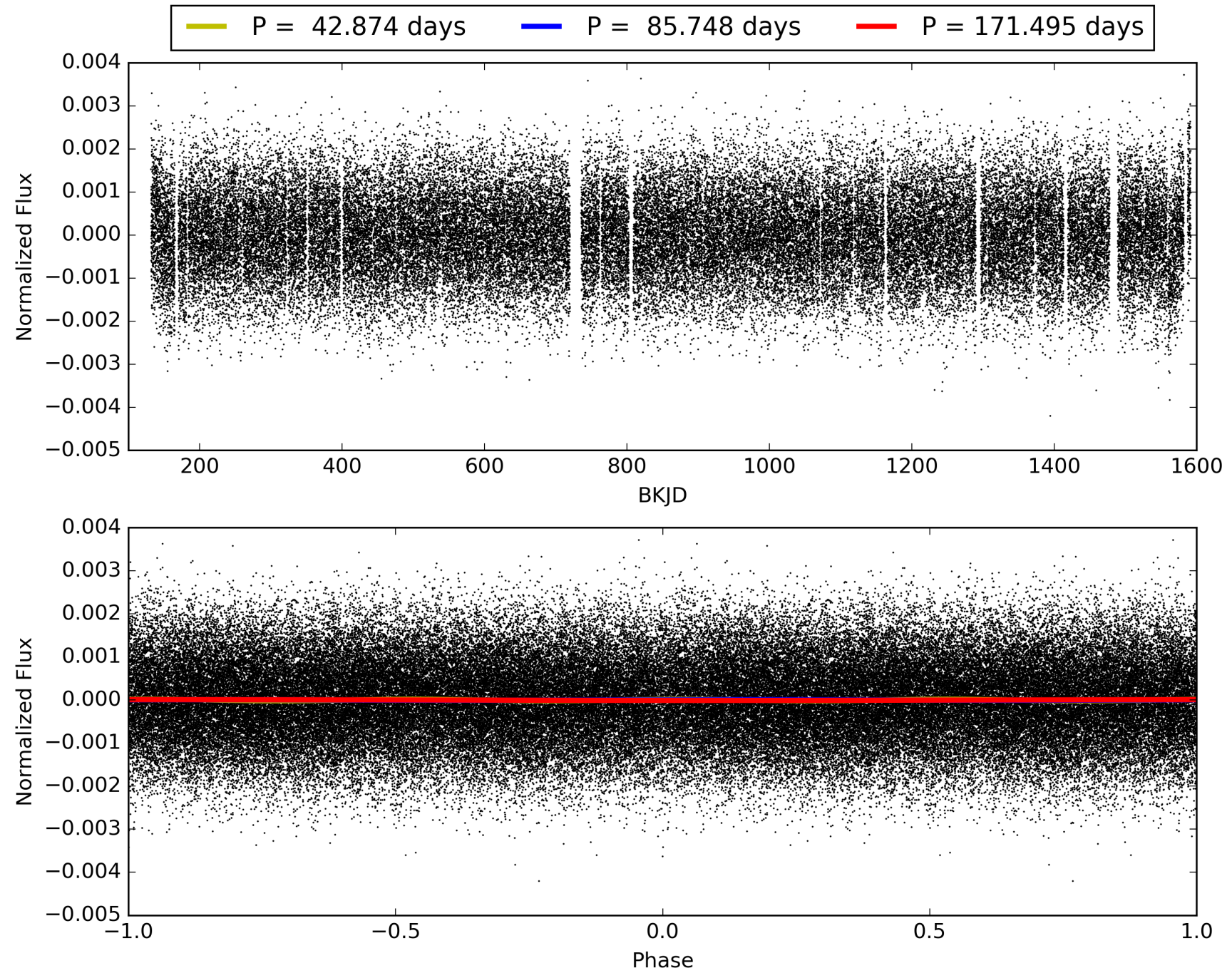
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 06:59:13 Z

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

TCE 007551993-06, PDC Light Curves

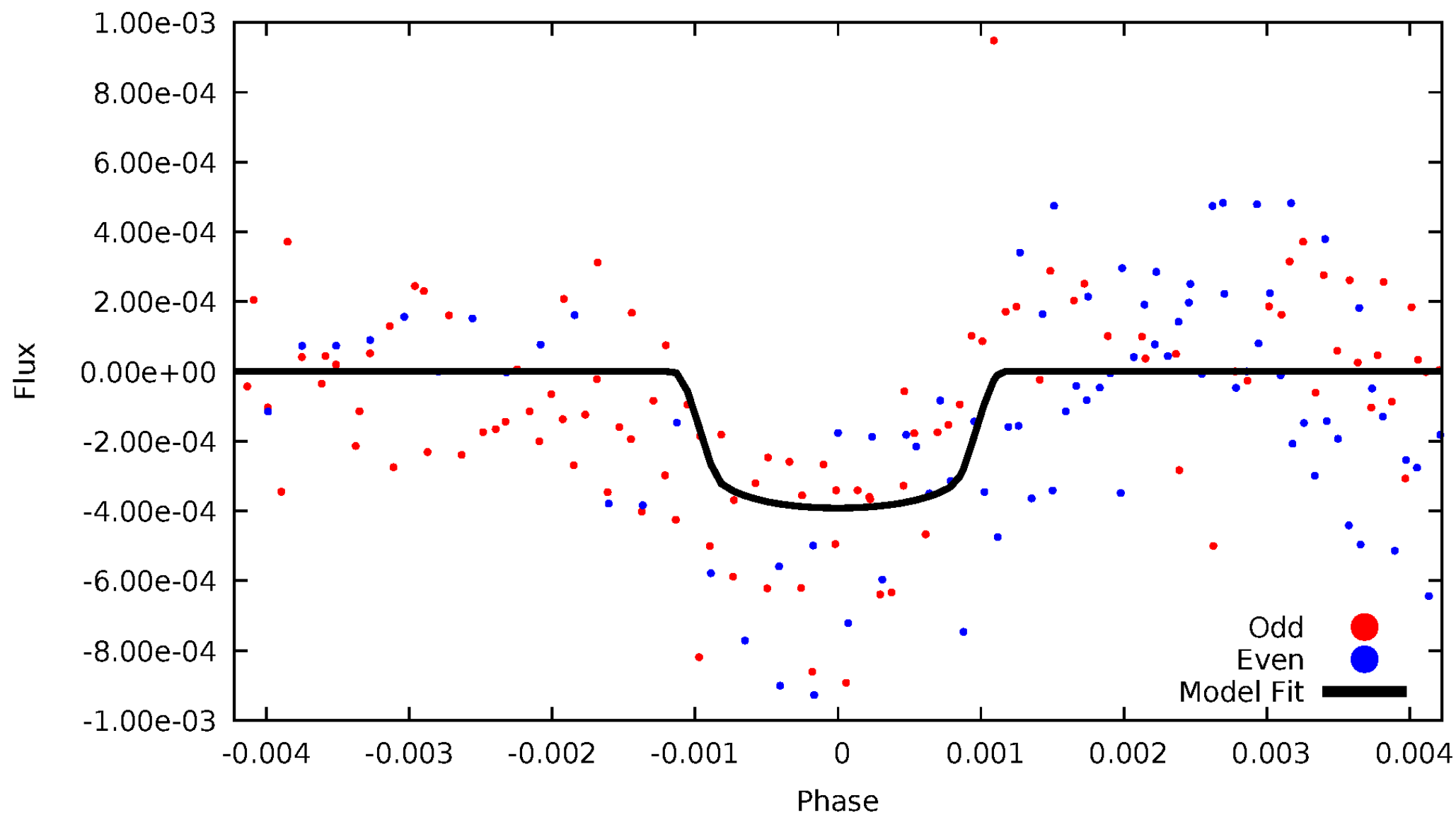


TCE 007551993-06



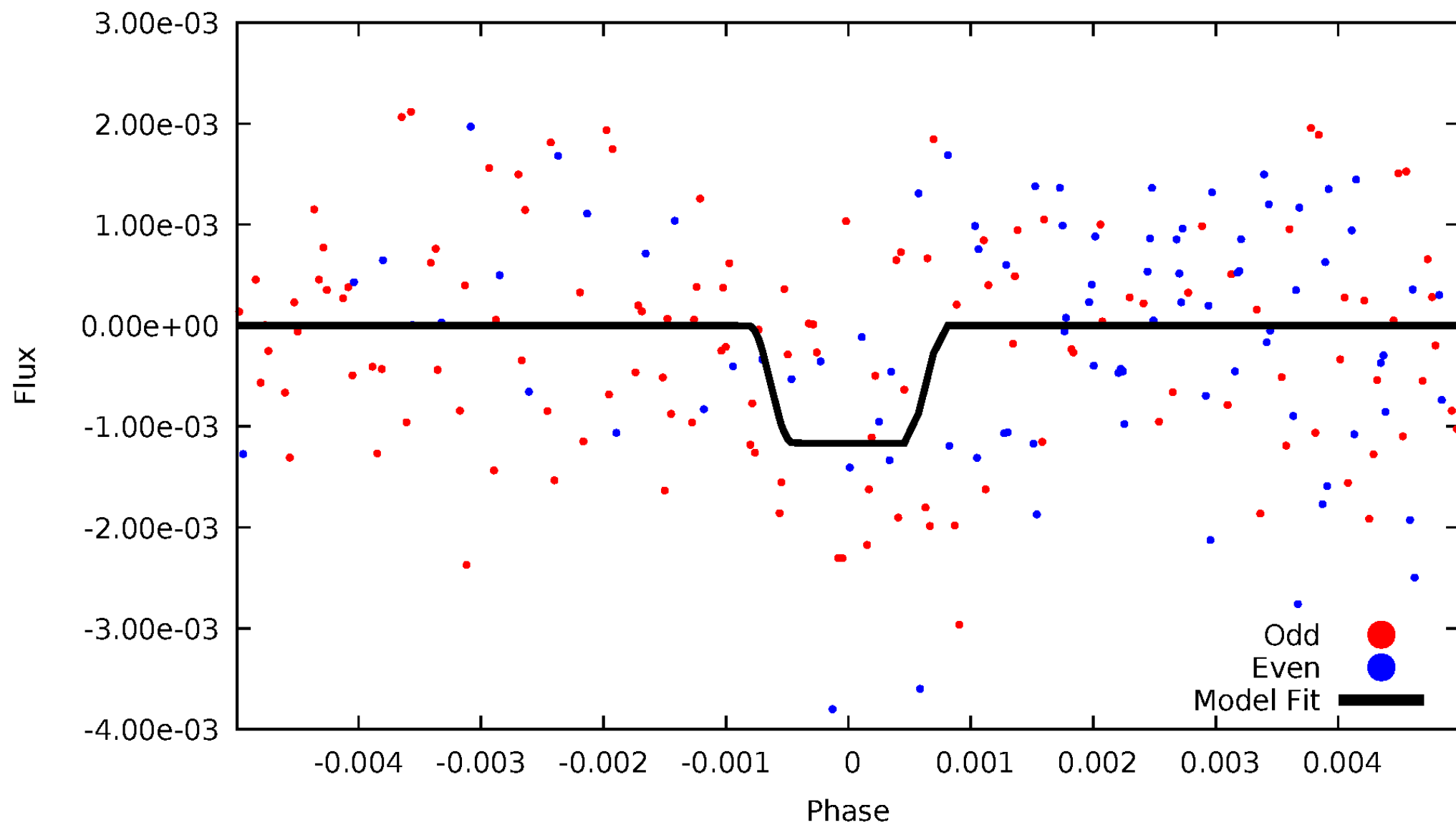
DV Odd/Even

TCE 007551993-06



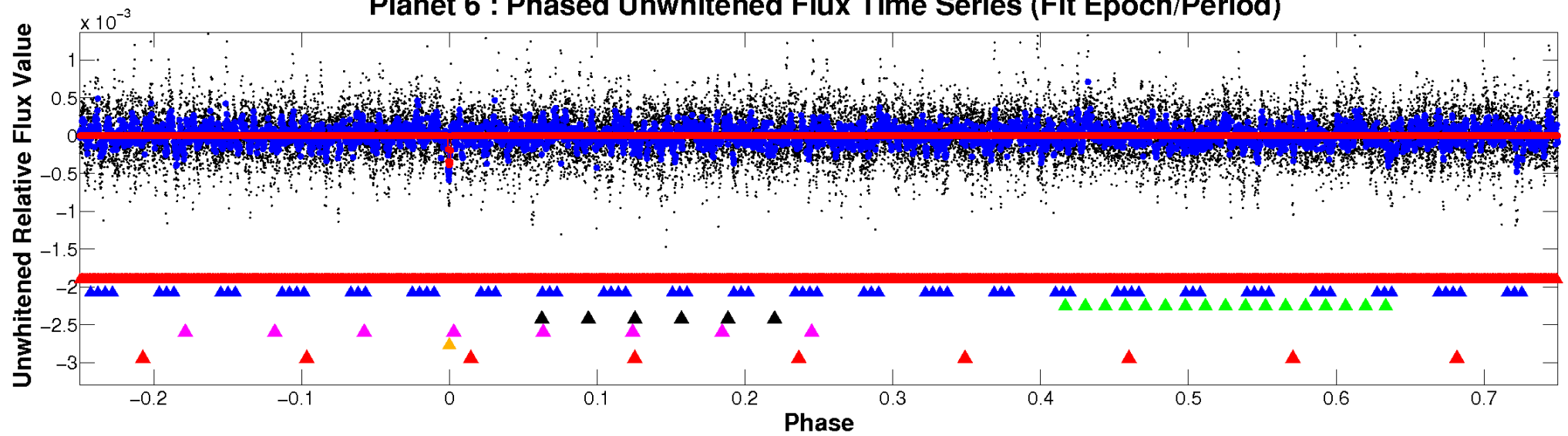
ALT Odd/Even

TCE 007551993-06

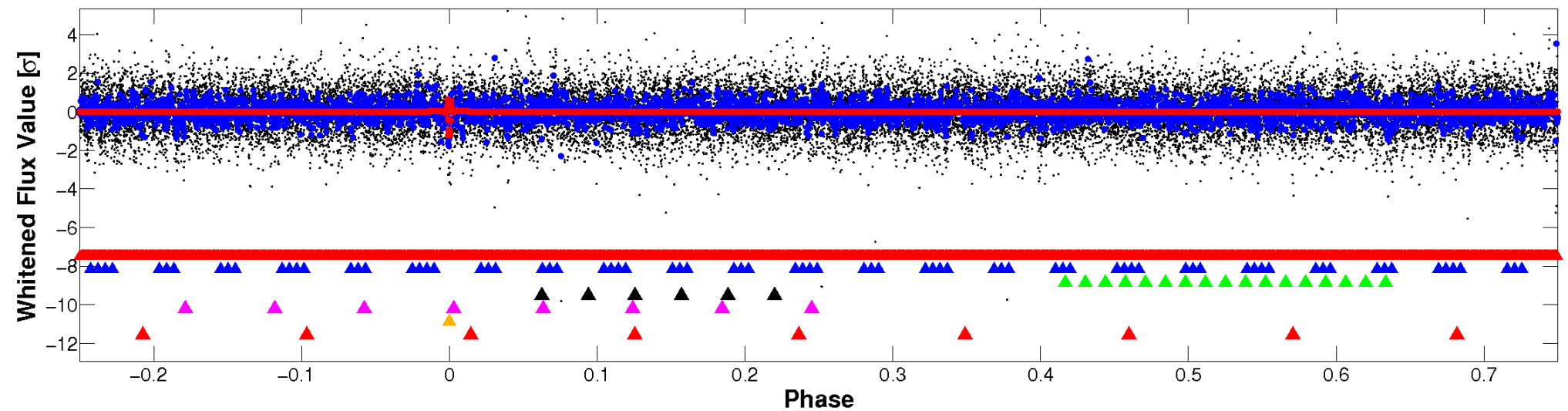


Non-Whitened Vs. Whitened Light Curve

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

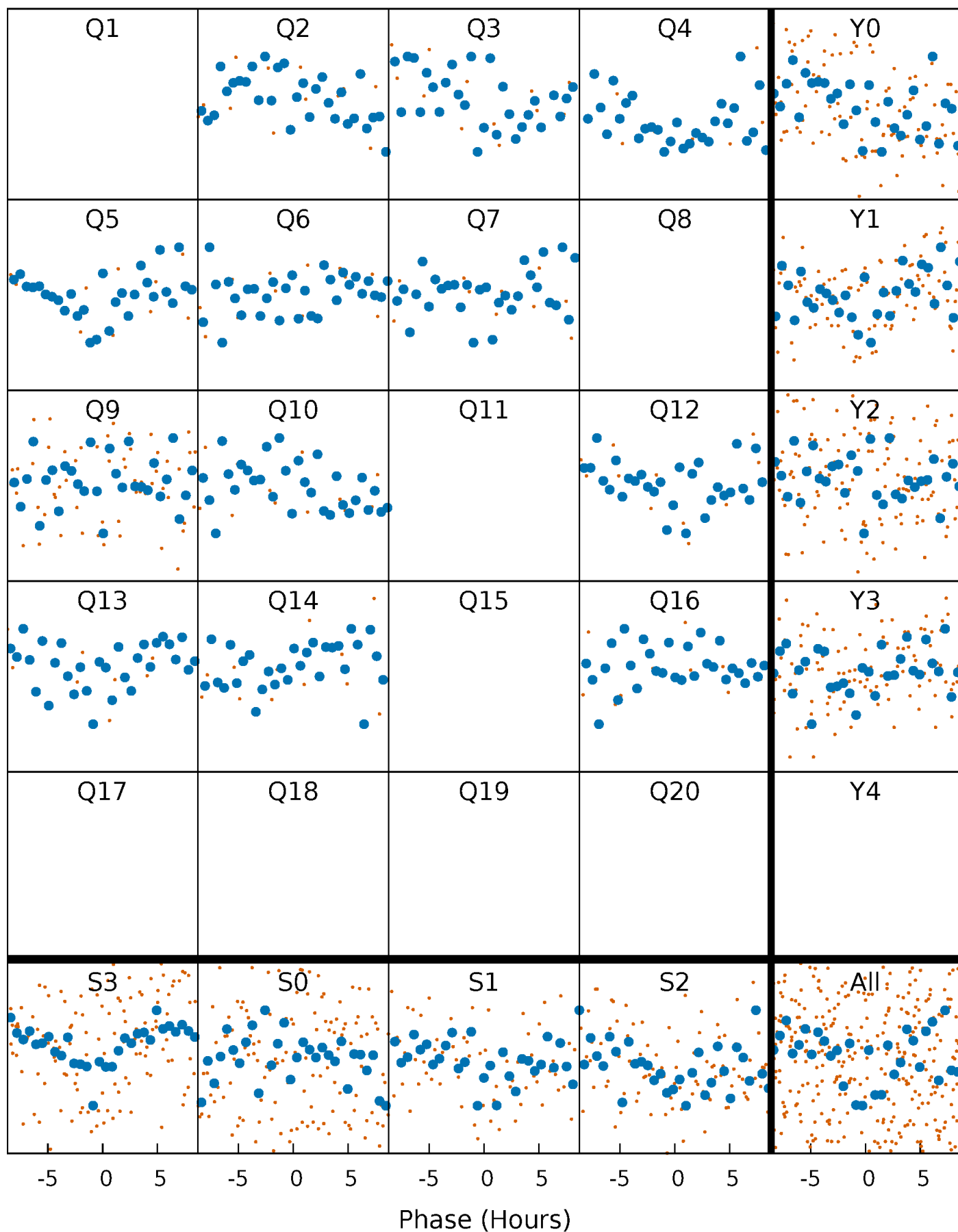


Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



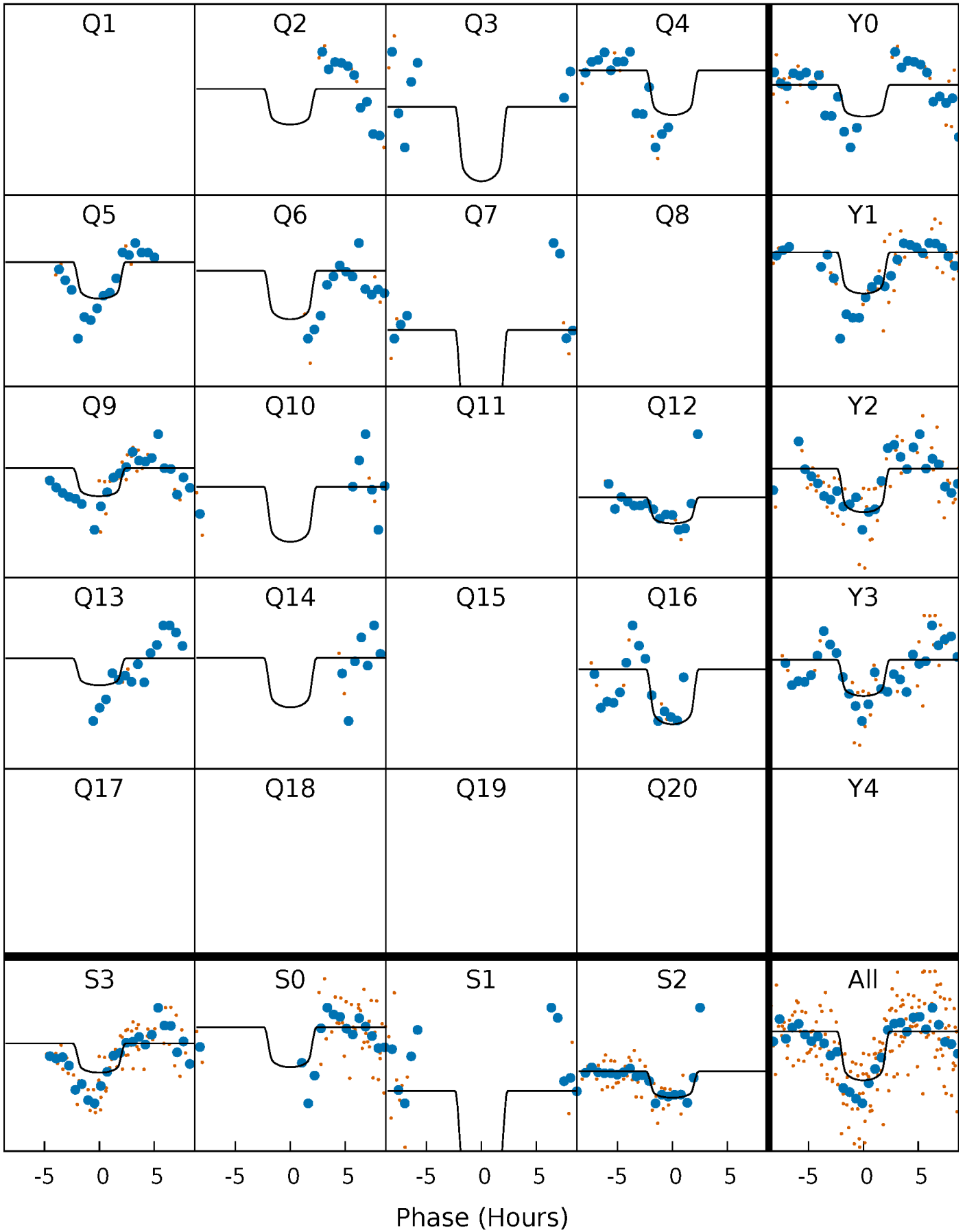
PDC Quarter-Phased Transit Curves

TCE 007551993-06 P= 85.747742 Days $T_0=213.425783$ (BKJD)



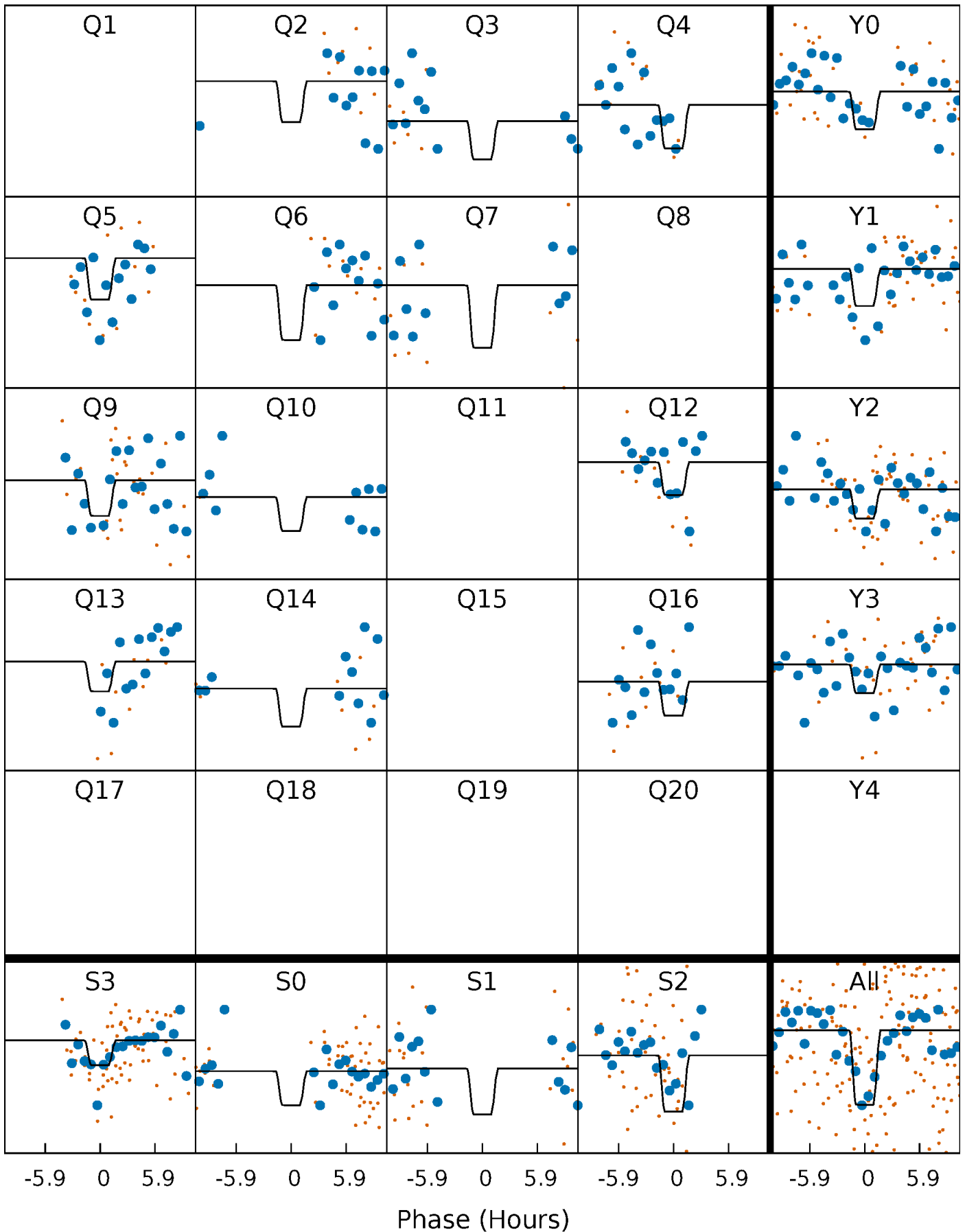
DV Quarter-Phased Transit Curves

TCE 007551993-06 P= 85.747742 Days $T_0=213.425783$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

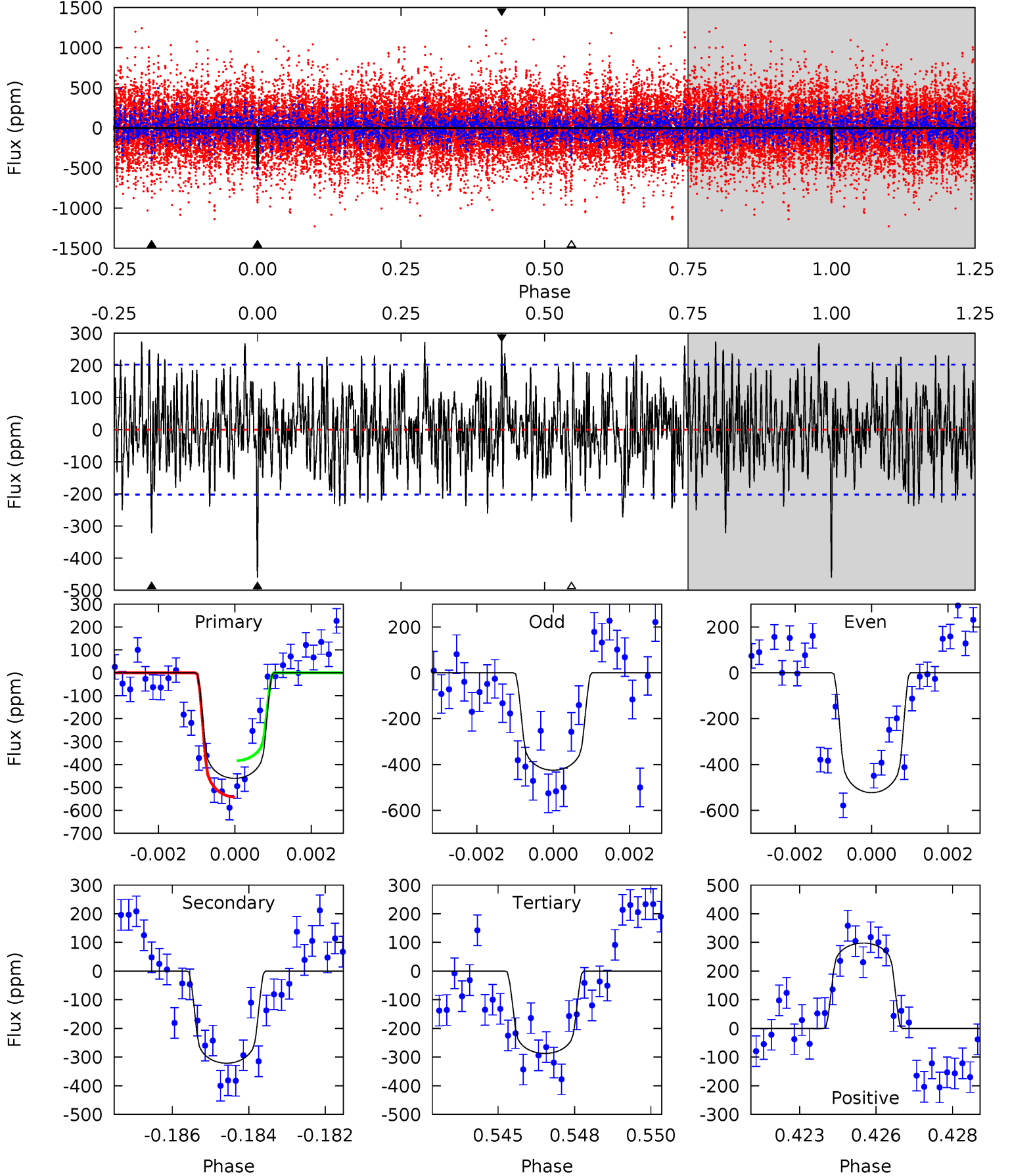
TCE 007551993-06 P= 85.749018 Days $T_0=213.386738$ (BKJD)



DV Model-Shift Uniqueness Test

007551993-06, $P = 85.747742$ Days, $E = 127.678041$ Days

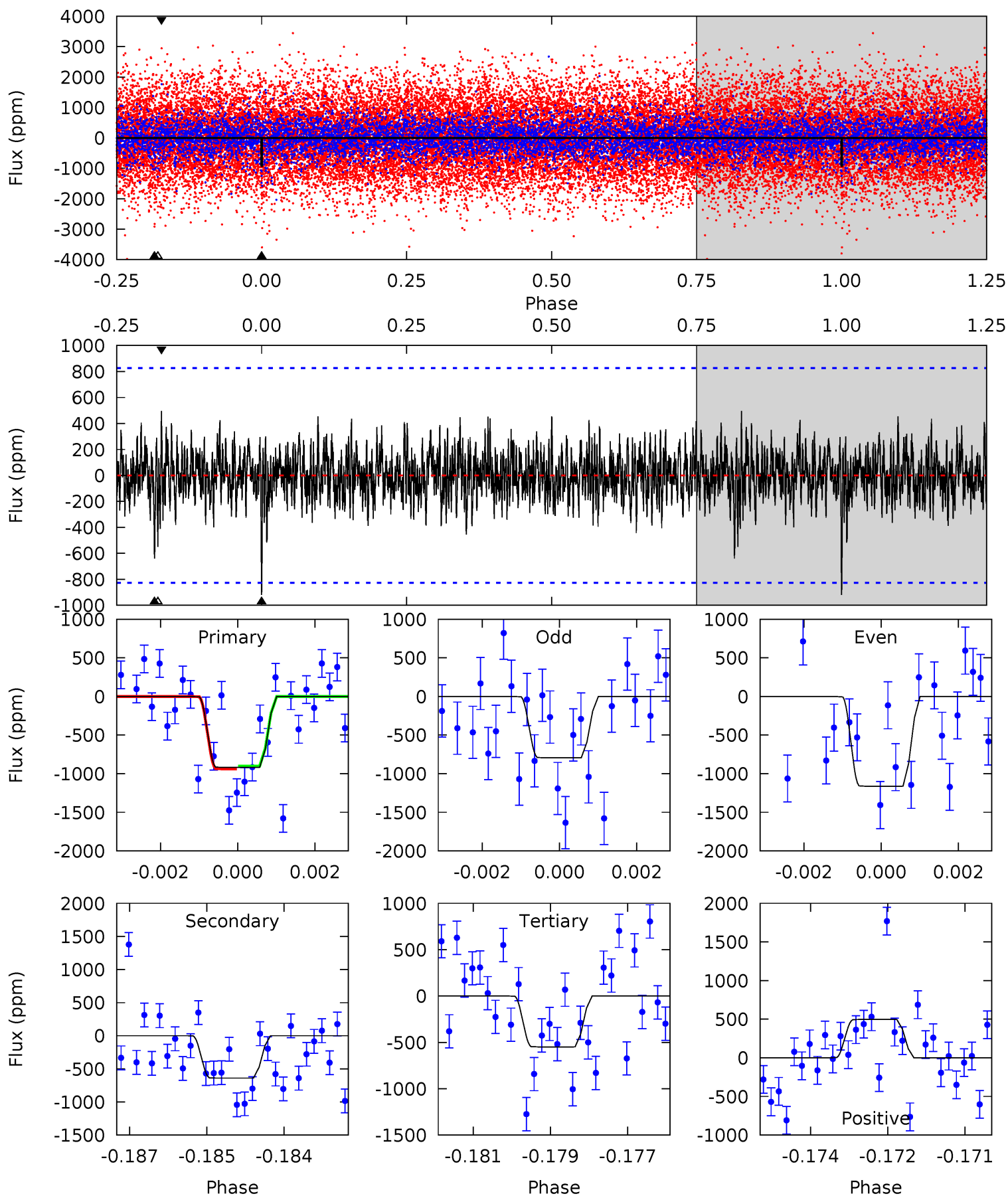
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	8.42	7.53	7.81	5.30	3.05	2.45	4.54	4.26	0.89	0.62	1.23	0.90	0.39	2.07



Alt Model-Shift Uniqueness Test

007551993-06, P = 85.749018 Days, E = 127.637720 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.97	4.15	3.56	3.22	5.37	3.15	0.98	2.40	2.74	0.59	0.93	1.10	1.14	0.35	0.12



Stellar Parameters For KIC 007551993

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6981^{+197}_{-271}	$4.078^{+0.209}_{-0.171}$	$-0.180^{+0.250}_{-0.350}$	$1.805^{+0.558}_{-0.507}$	$1.425^{+0.208}_{-0.255}$	$0.341^{+0.371}_{-0.167}$
	+3%/-4%	+5%/-4%	+139%/-194%	+31%/-28%	+15%/-18%	+109%/-49%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 007551993-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-321 ± 38	$3.83^{+1.46}_{-1.15}$	879^{+70}_{-67}	6577^{+1417}_{-859}	2116^{+2373}_{-943}
Alt.	-639 ± 154	$6.55^{+1.61}_{-1.39}$	871^{+76}_{-65}	5927^{+736}_{-564}	1468^{+959}_{-593}

T_{max} = Theoretical Maximum Planetary Temperature
 T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)
 A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

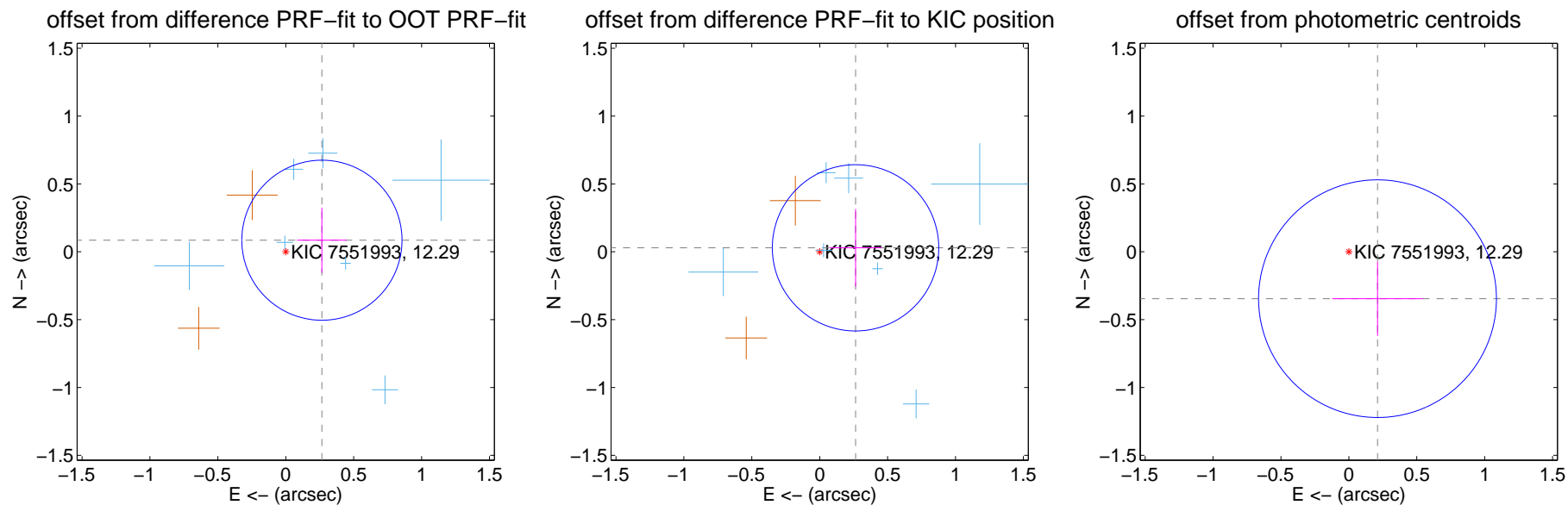
DV Centroid Data

Supplemental centroid analysis for 007551993-06. Kepler magnitude: 12.29. Transit SNR 6.91

There are 7 quarters with good PRF difference image offsets

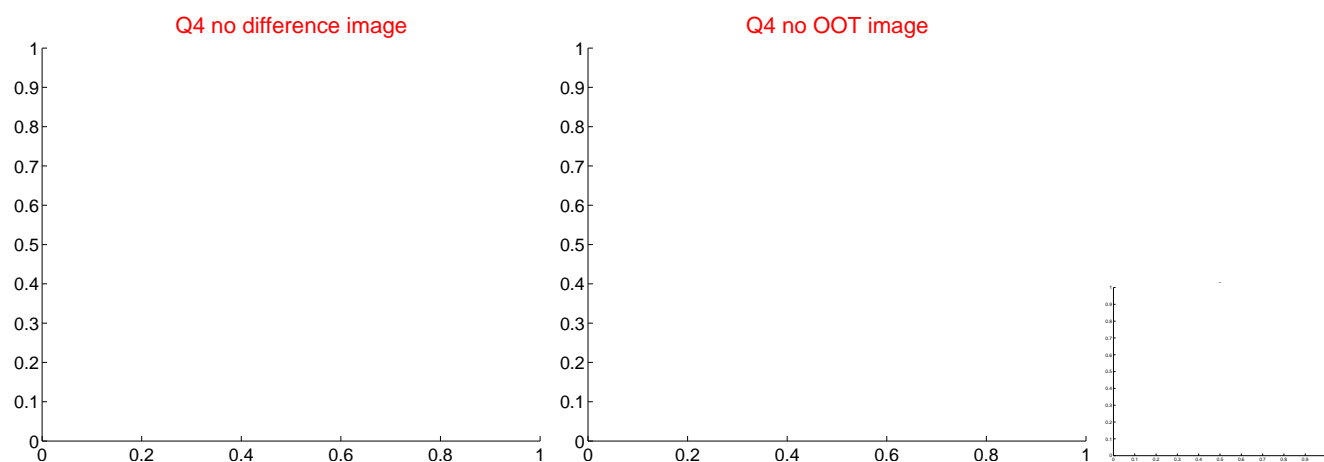
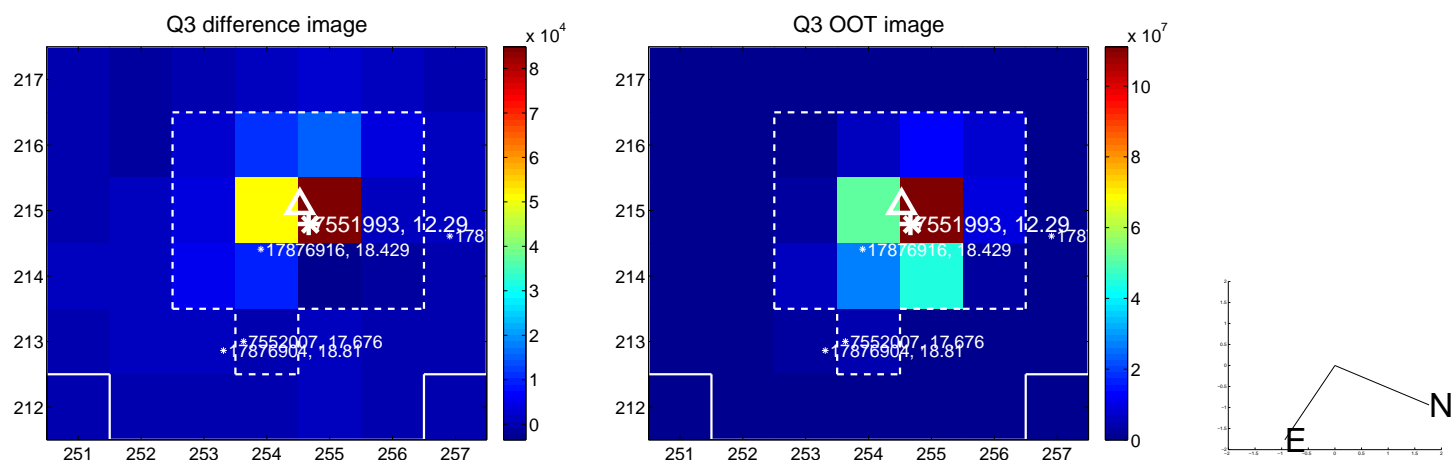
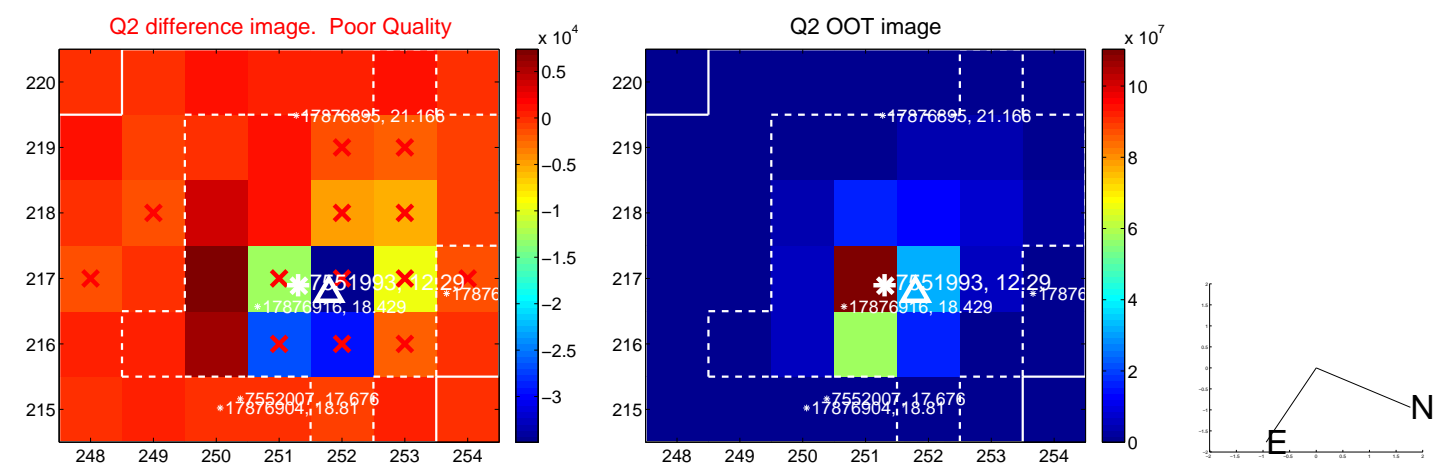
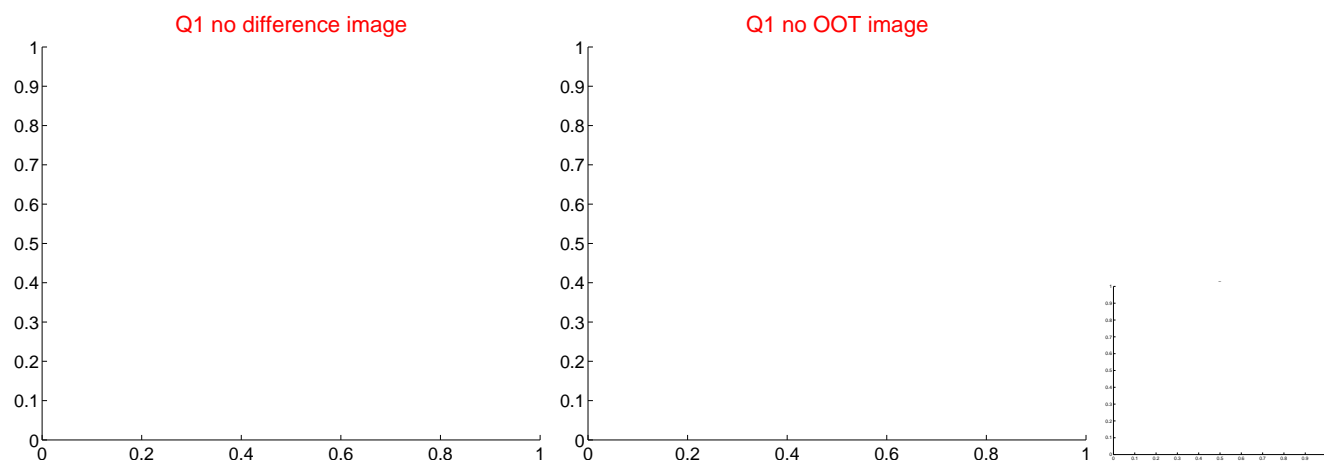
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.279 ± 0.197	1.42	-0.266 ± 0.182	0.085 ± 0.240
PRF-fit source offset from KIC position	0.266 ± 0.204	1.30	-0.264 ± 0.191	0.029 ± 0.286
photometric centroid source offset	0.40 ± 0.29	1.39	-0.21 ± 0.33	-0.35 ± 0.27

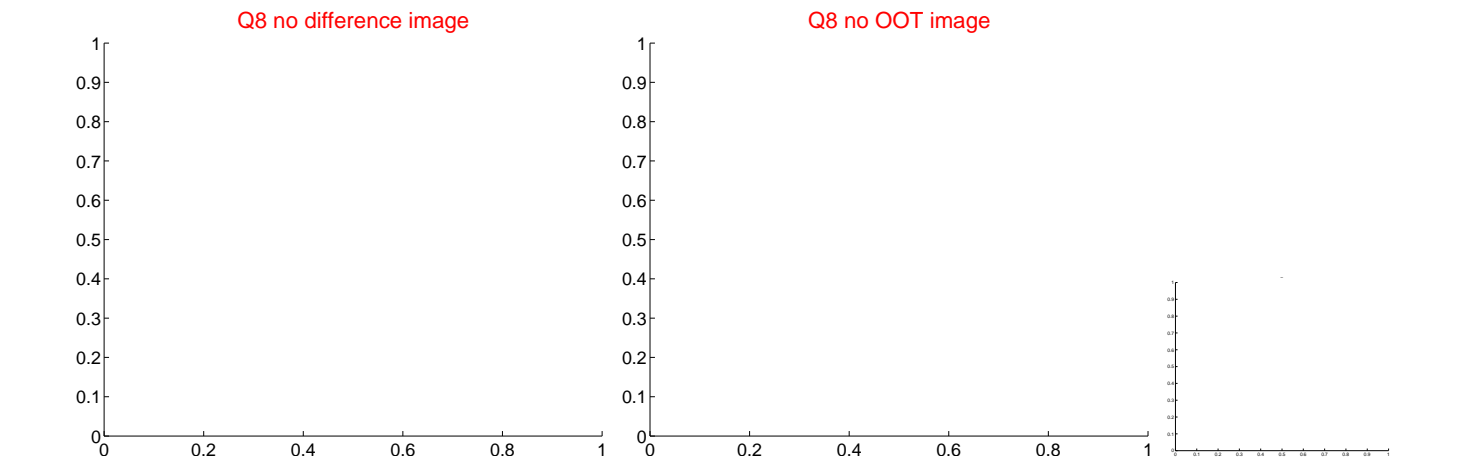
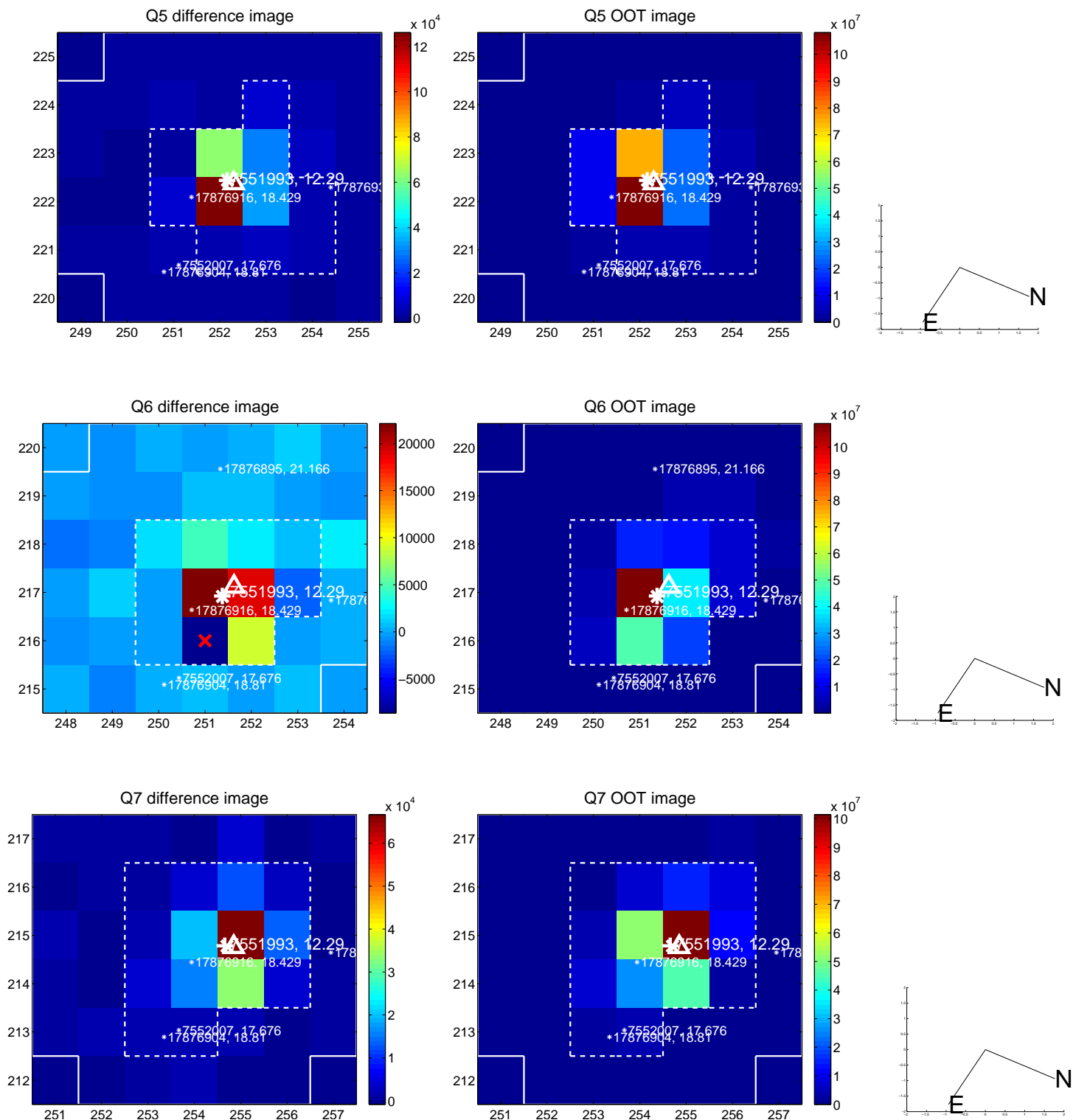


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

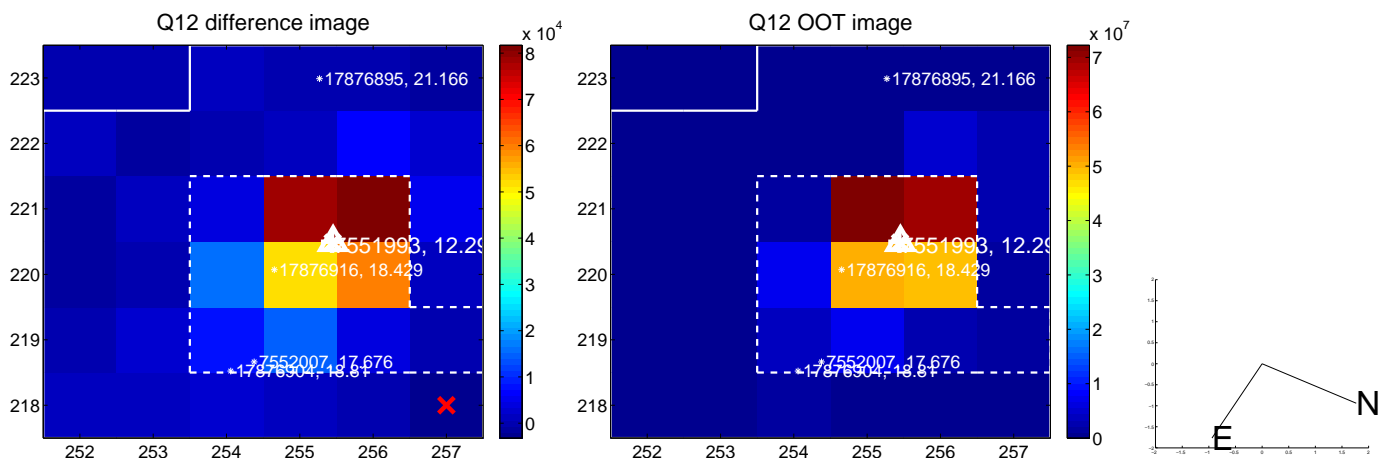
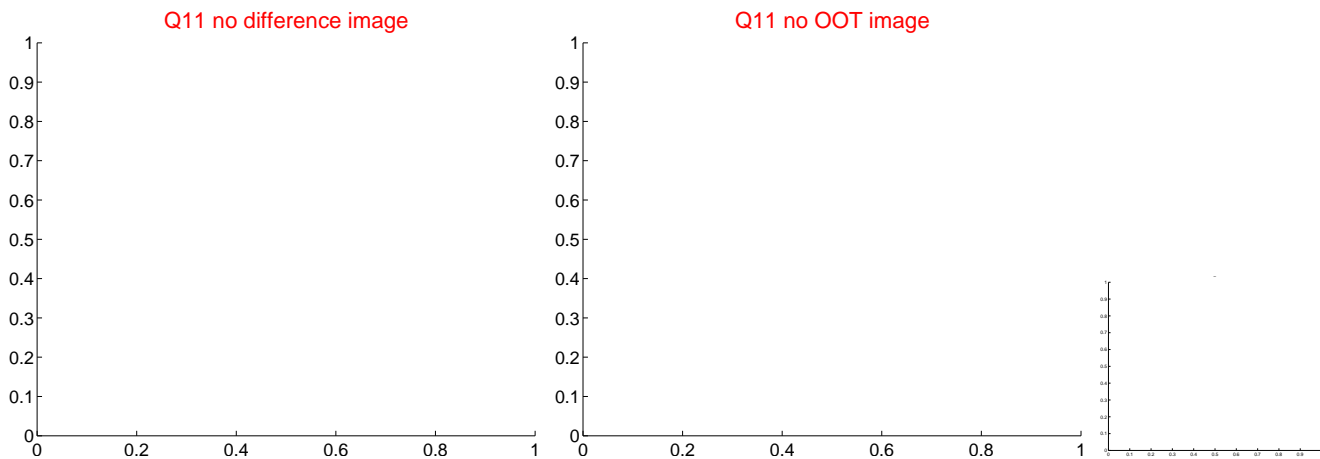
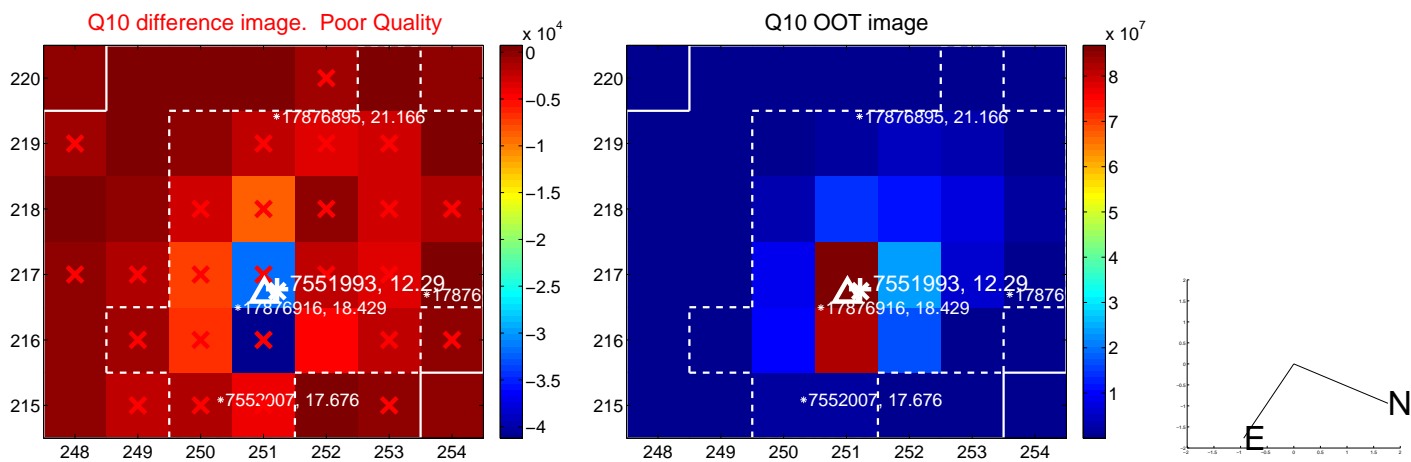
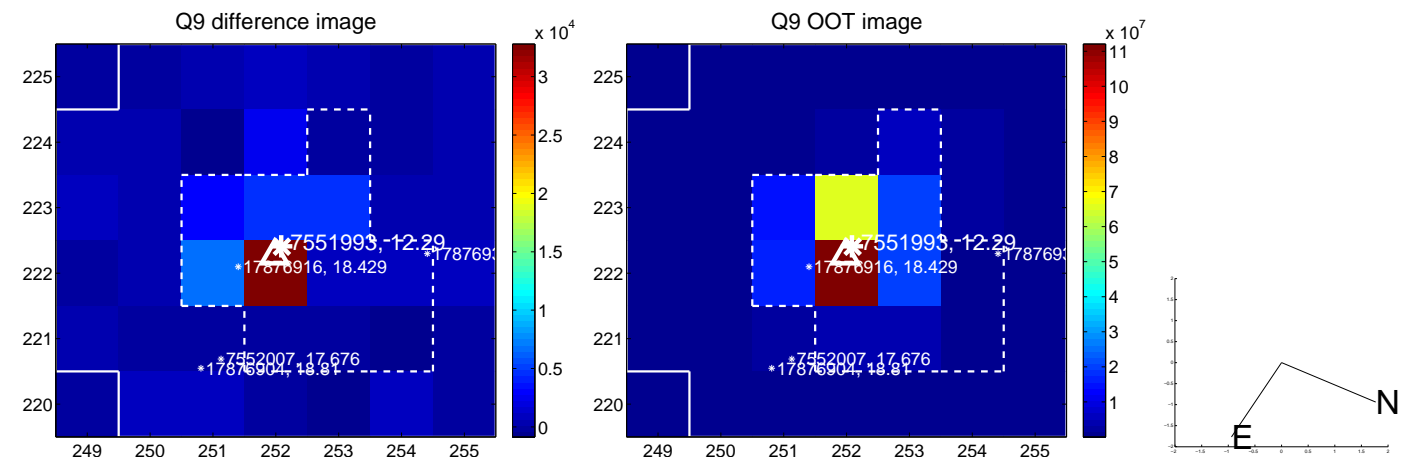
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



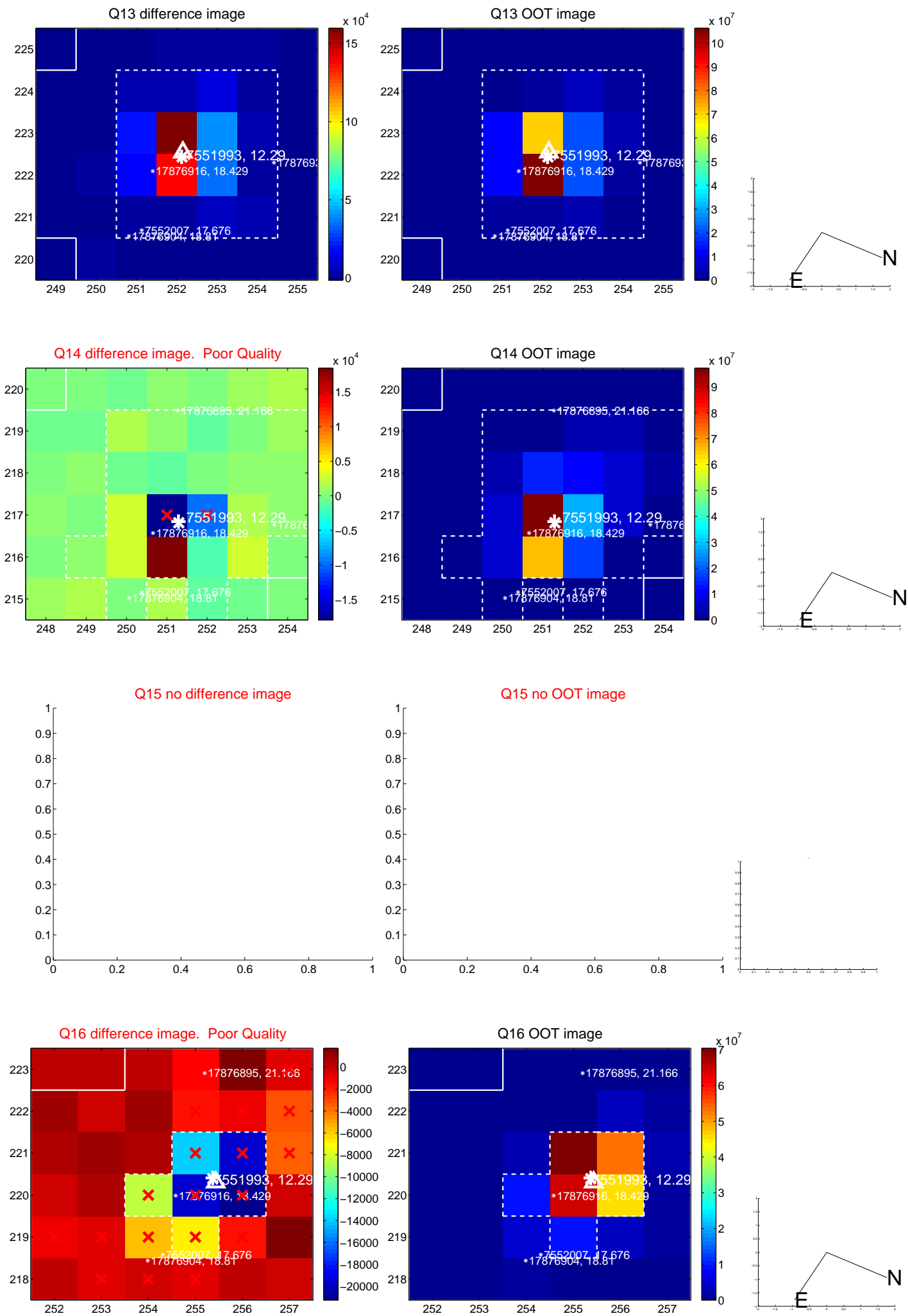
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



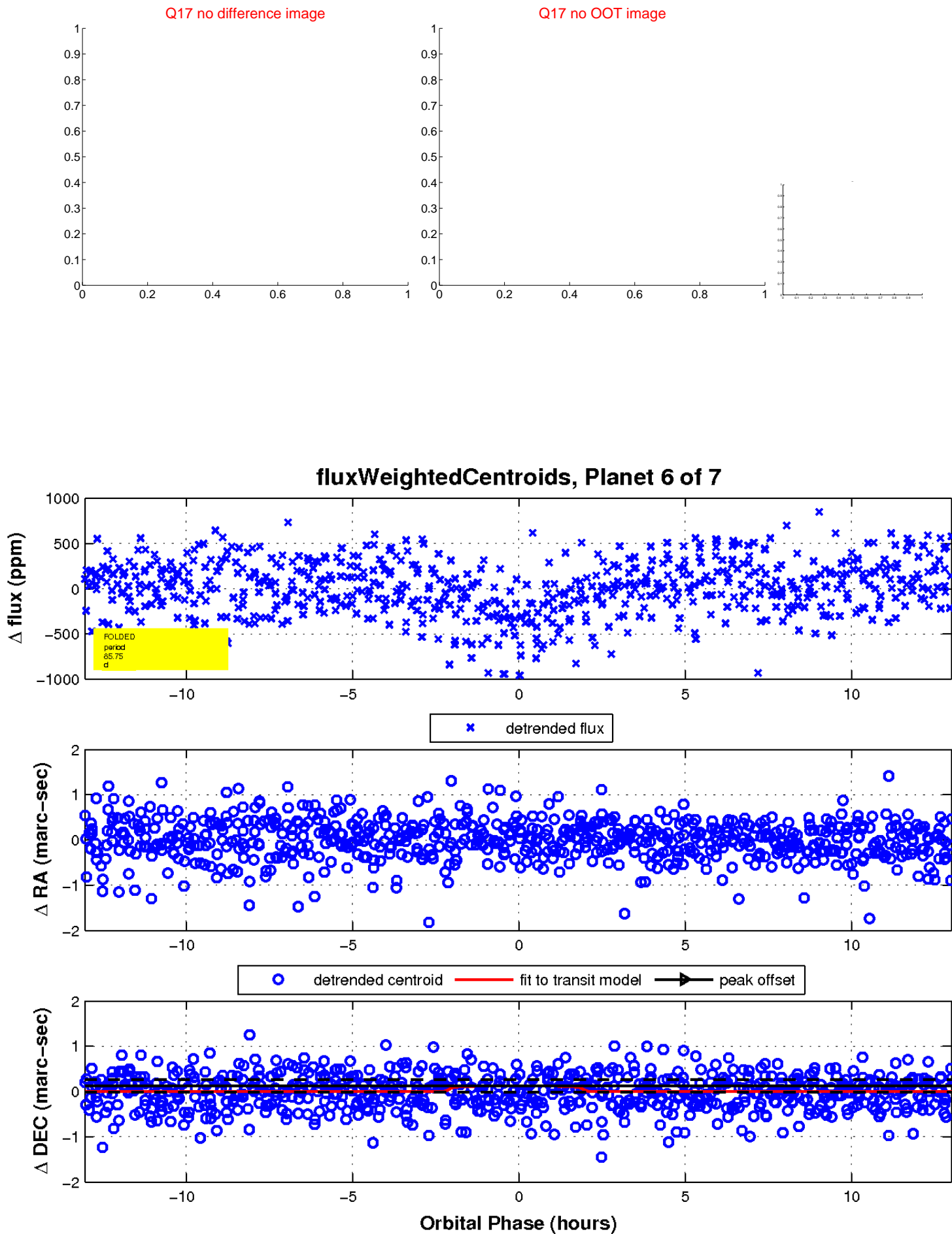
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

