

KIC 003733693

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})
003733693-01	OBS	No	1.501931	131.616567	165.1	5.000	8.8	-1.0	2.45	6426	3.16	11263.28
003733693-02	OBS	No	131.808981	155.806312	167.2	11.023	7.5	6.2	2.45	6426	3.64	28.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003733693-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_NOFITS
003733693-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

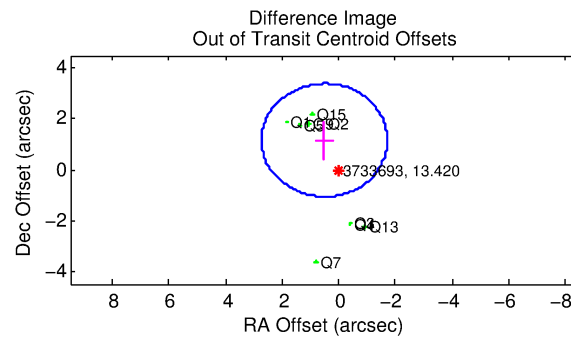
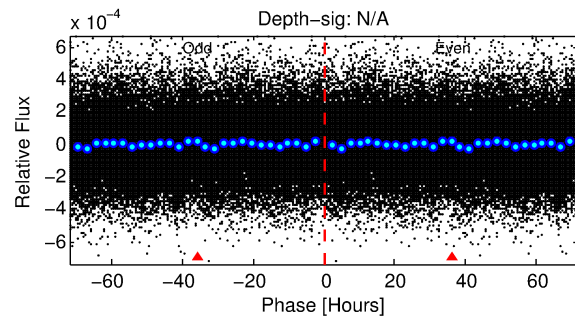
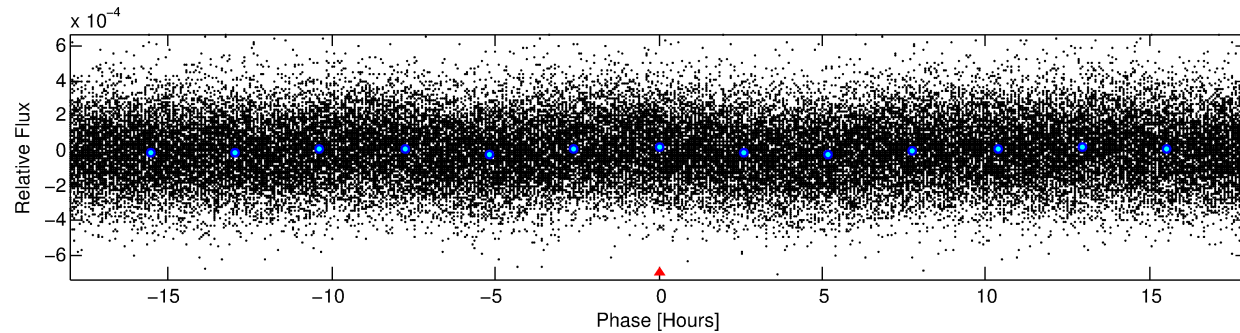
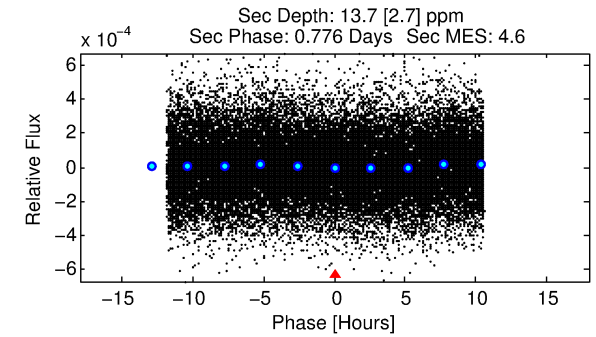
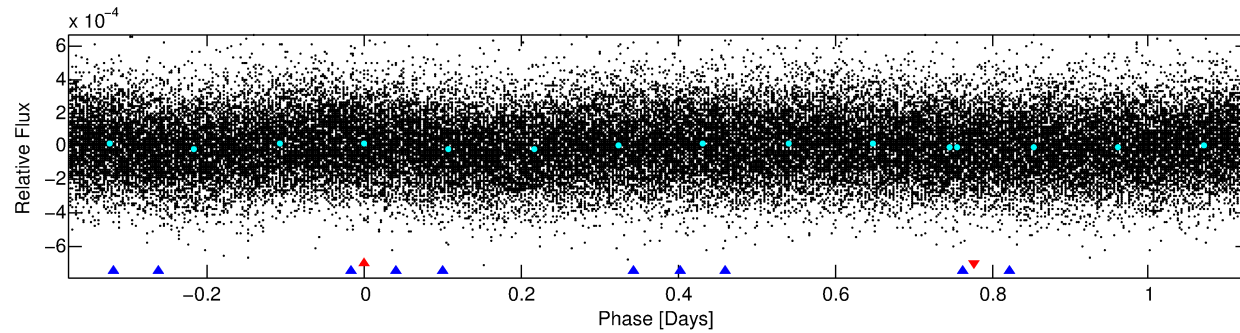
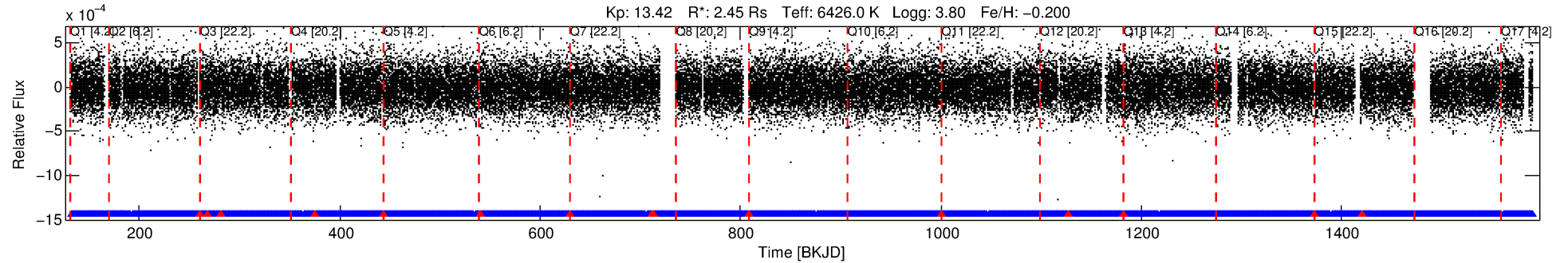
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003733693-01

No Significant Match Found

DV One-Page Summary

KIC: 3733693 Candidate: 1 of 2 Period: 1.502 d



TPS TCE Results:

Period = 1.50193 d
Epoch = 131.6166 BKJD

DV fit results are unavailable

DV Diagnostic Results:

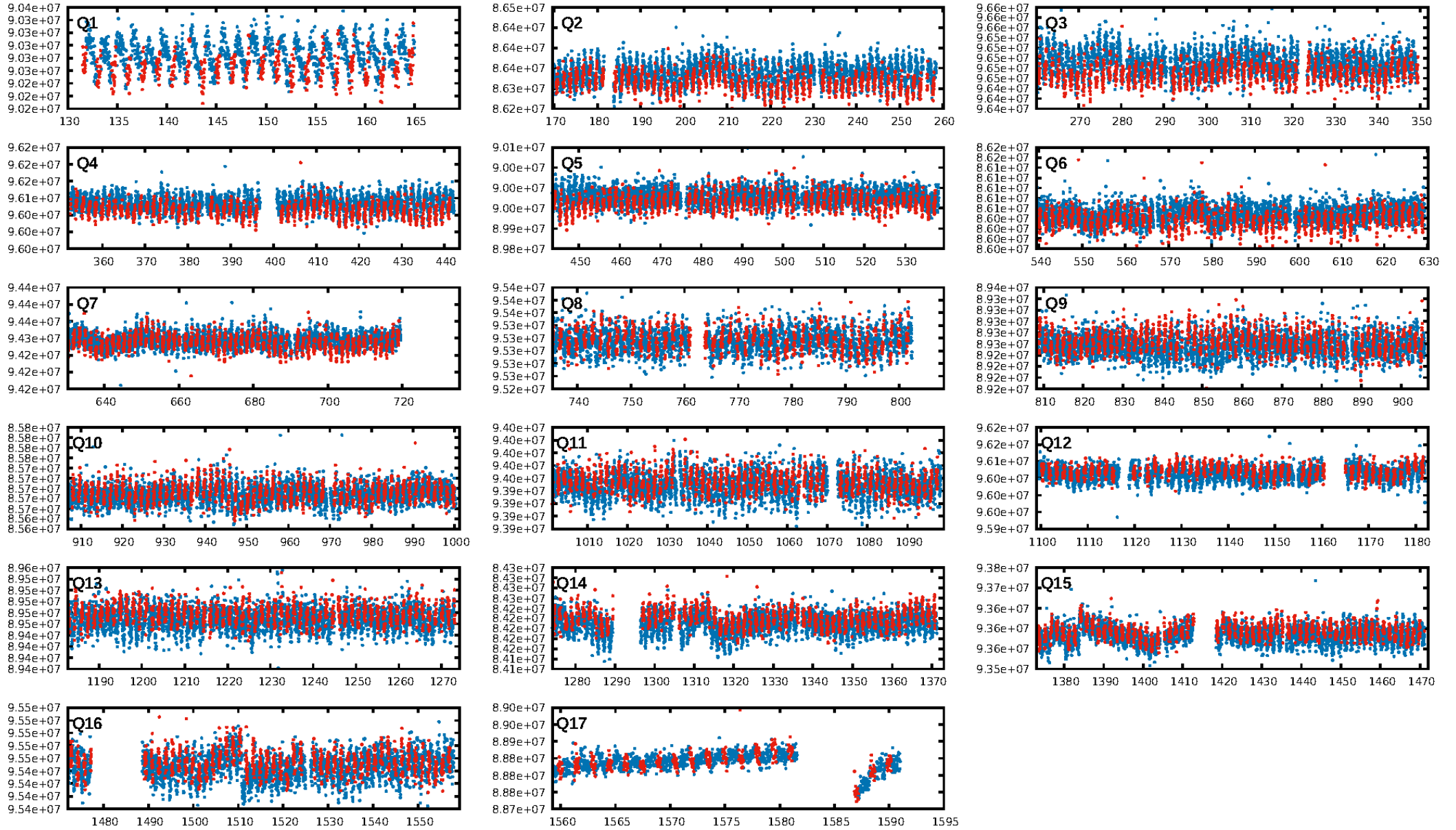
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [258.37σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.10e-15
RollingBand-fgt: 0.98 [856/871]
GhostDiagnostic-chr: 1.354

Centroid-sig: 0.0%
Centroid-so: 0.516 arcsec [1.51σ]
OotOffset-rm: 1.273 arcsec [1.71σ]
KicOffset-rm: 1.163 arcsec [1.46σ]
OotOffset-st: 1/3/1/4 [9]
KicOffset-st: 1/3/1/4 [9]
DiffImageQuality-fgm: 0.67 [6/9]
DiffImageOverlap-fno: 1.00 [17/17]

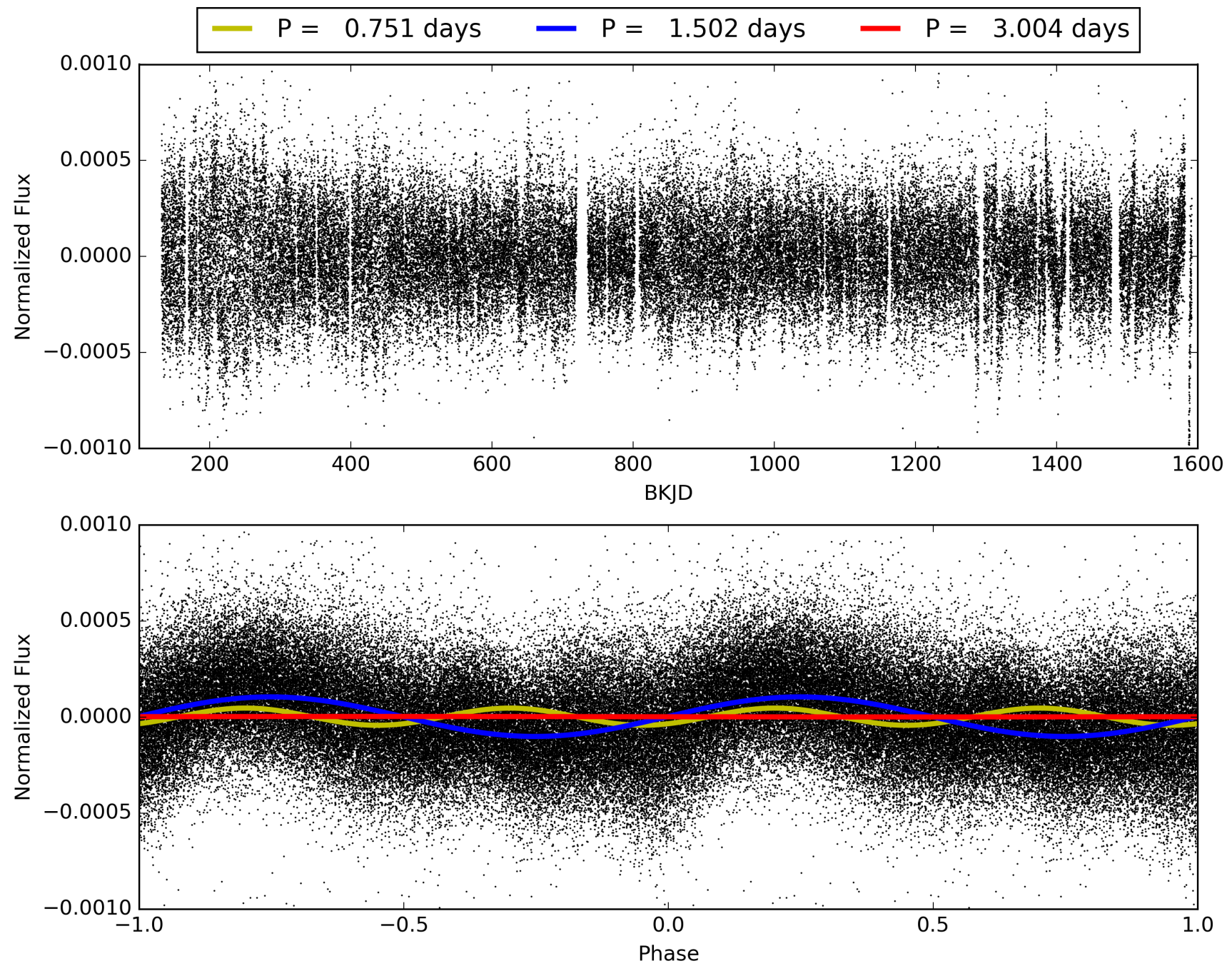
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:38:47 Z

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

TCE 003733693-01, PDC Light Curves

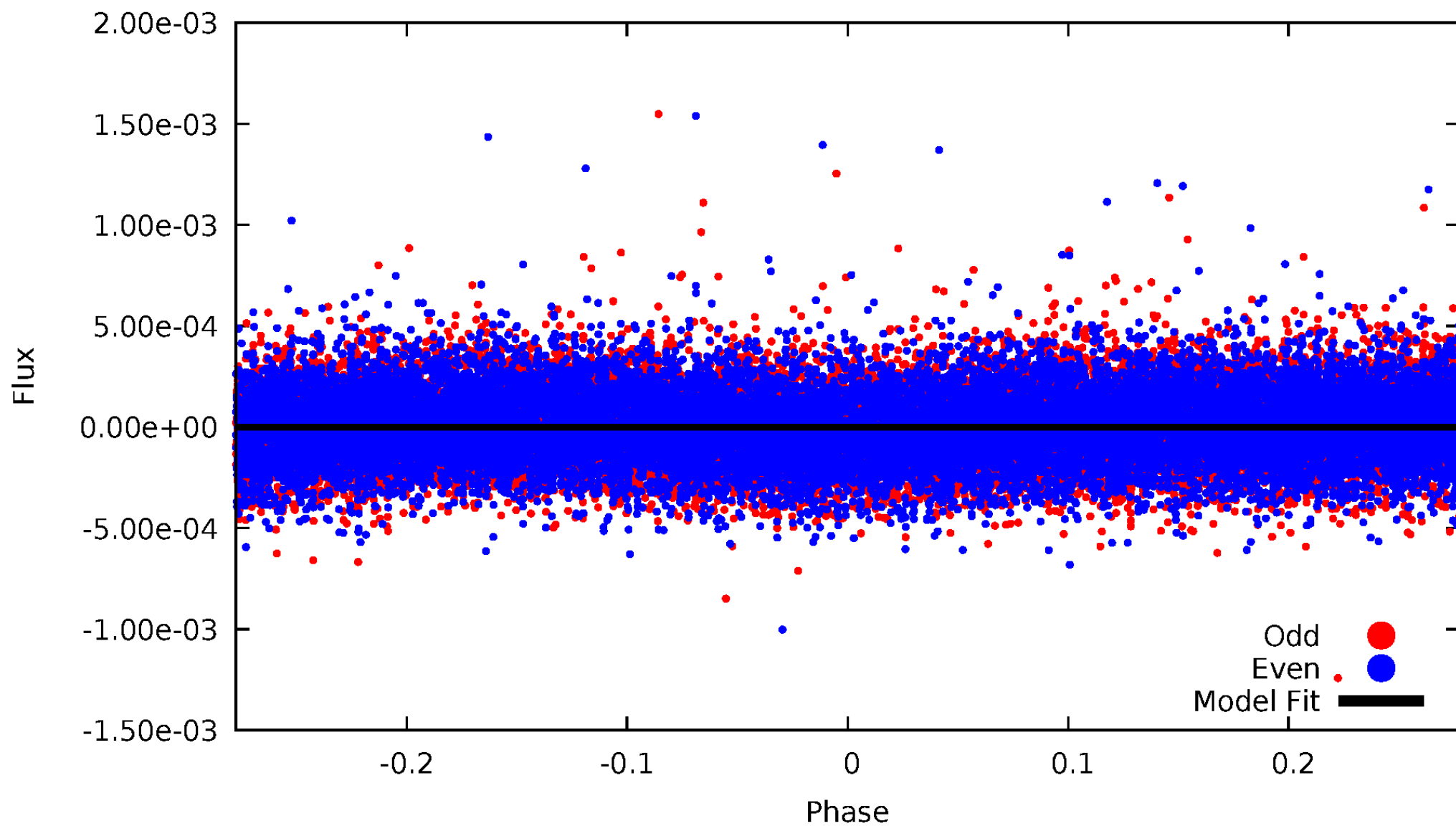


TCE 003733693-01



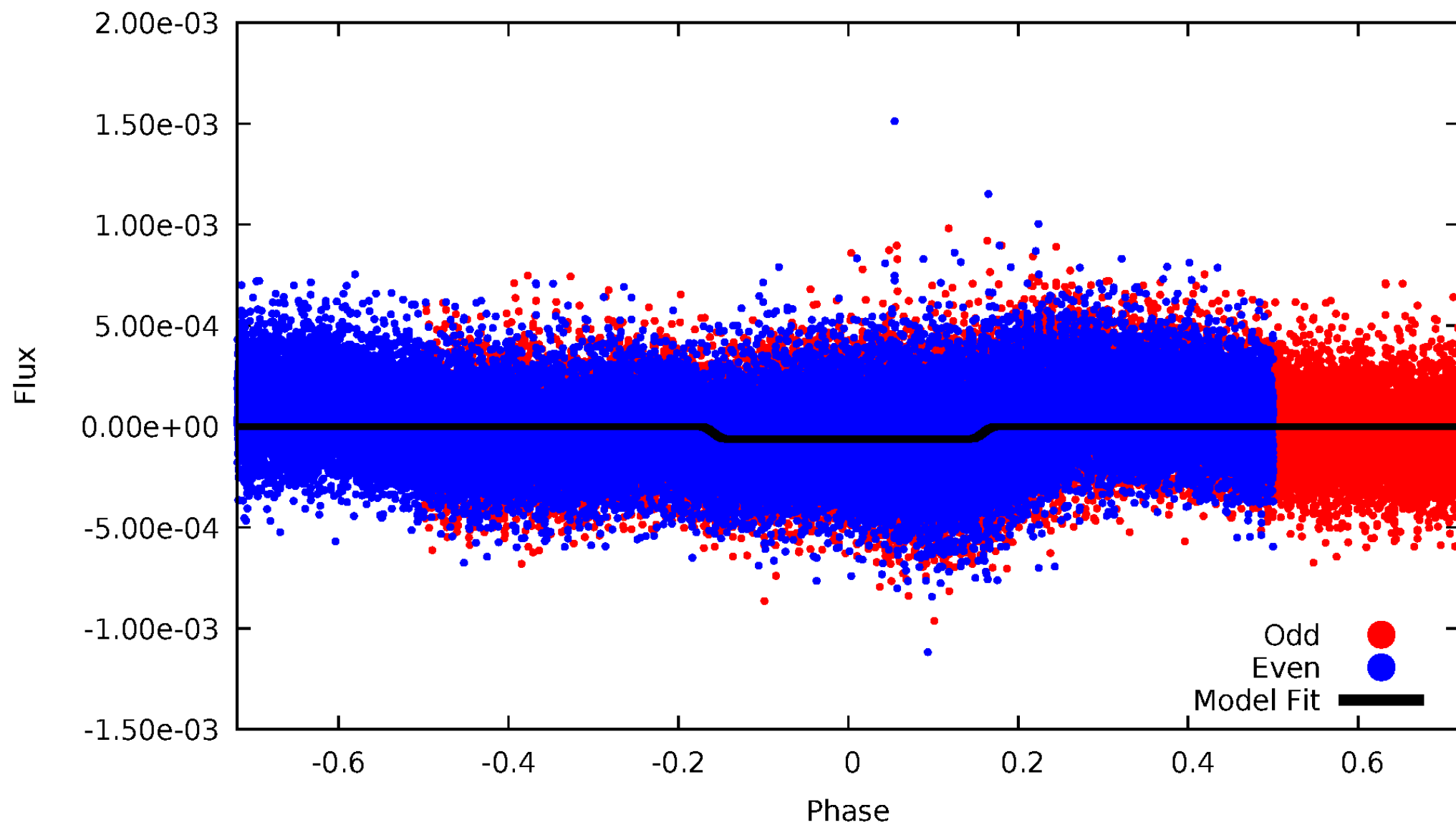
DV Odd/Even

TCE 003733693-01

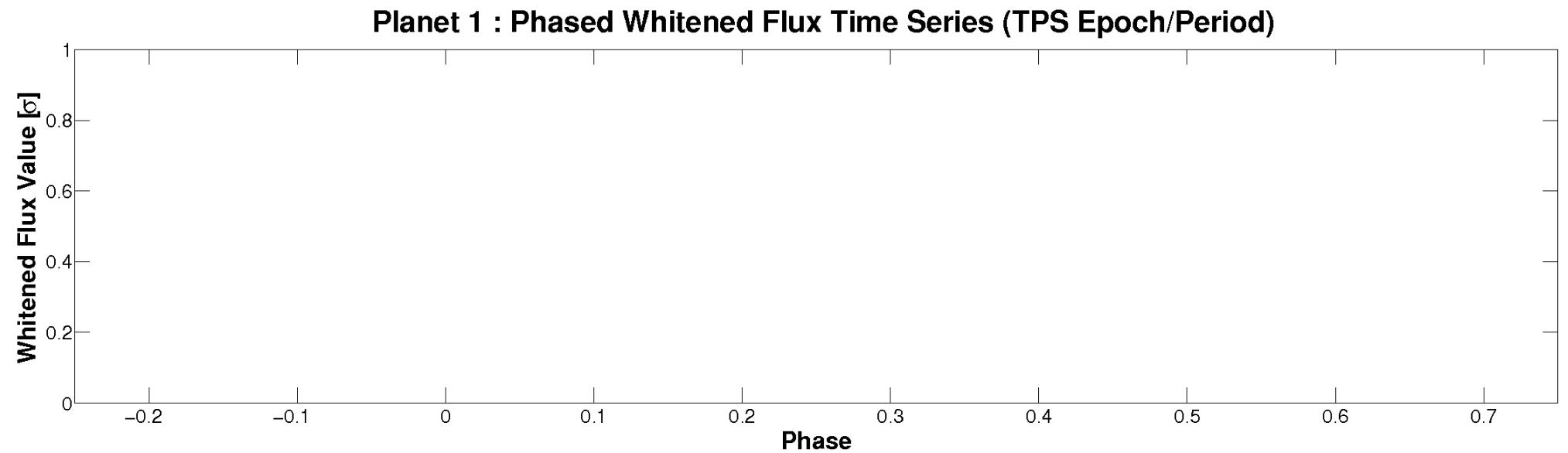
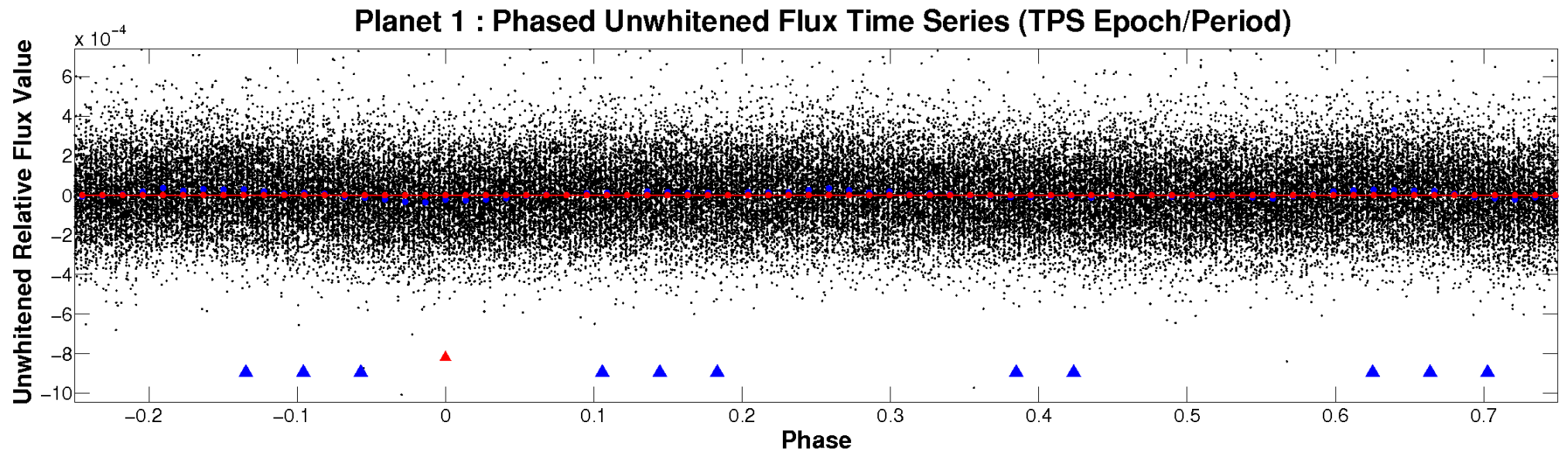


ALT Odd/Even

TCE 003733693-01

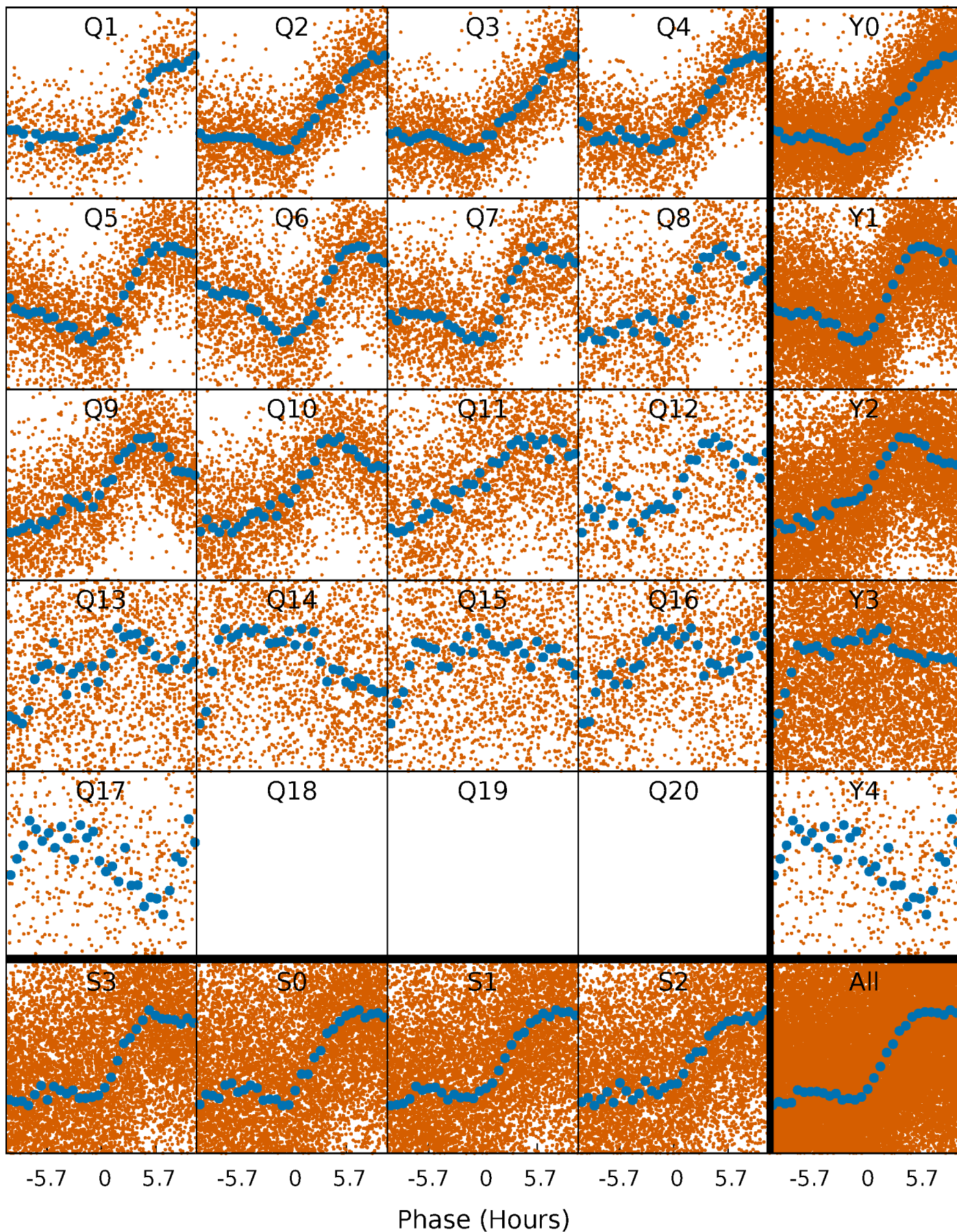


Non-Whitened Vs. Whitened Light Curve



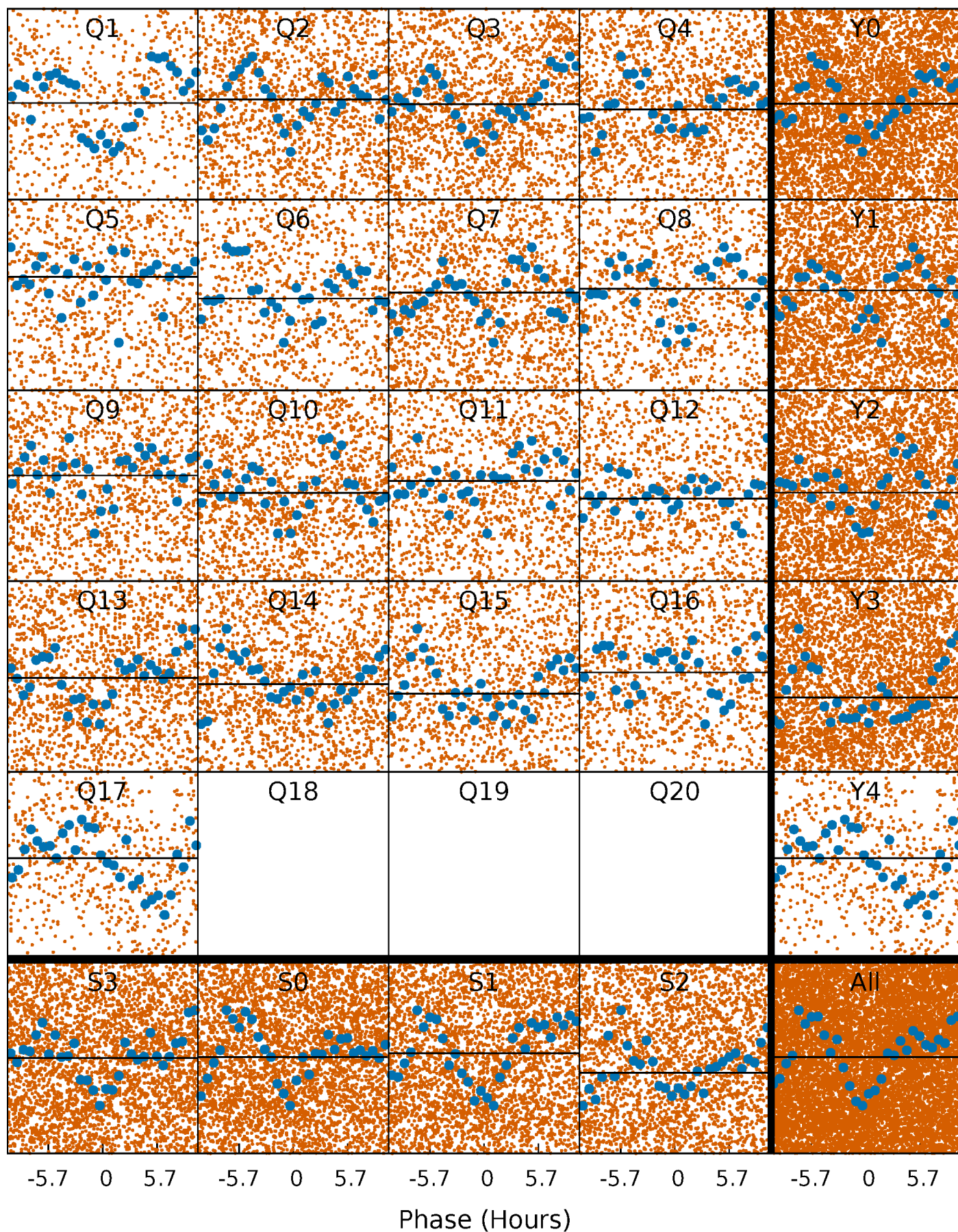
PDC Quarter-Phased Transit Curves

TCE 003733693-01 P= 1.501931 Days $T_0=131.616567$ (BKJD)



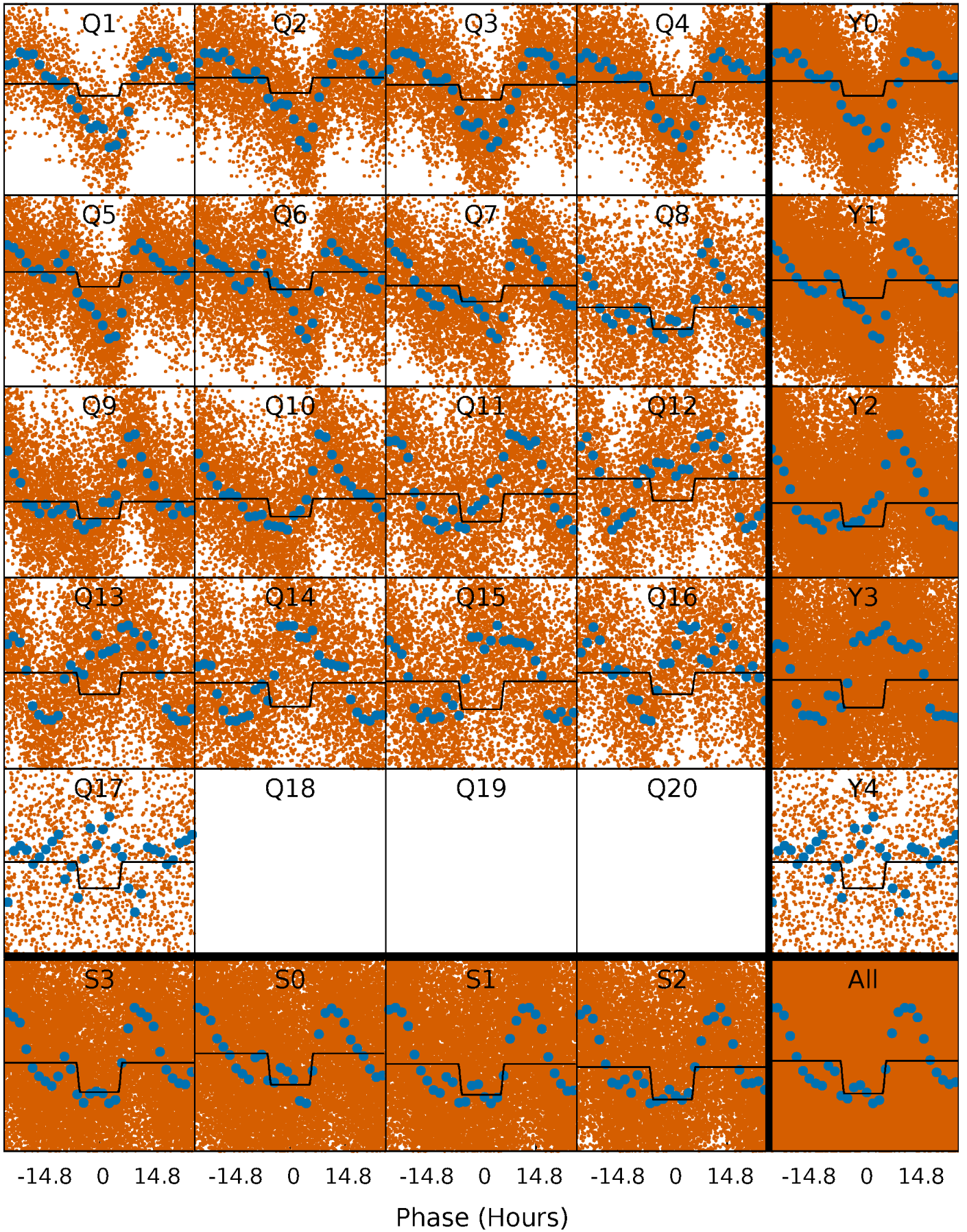
DV Quarter-Phased Transit Curves

TCE 003733693-01 P= 1.501931 Days $T_0=131.616567$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

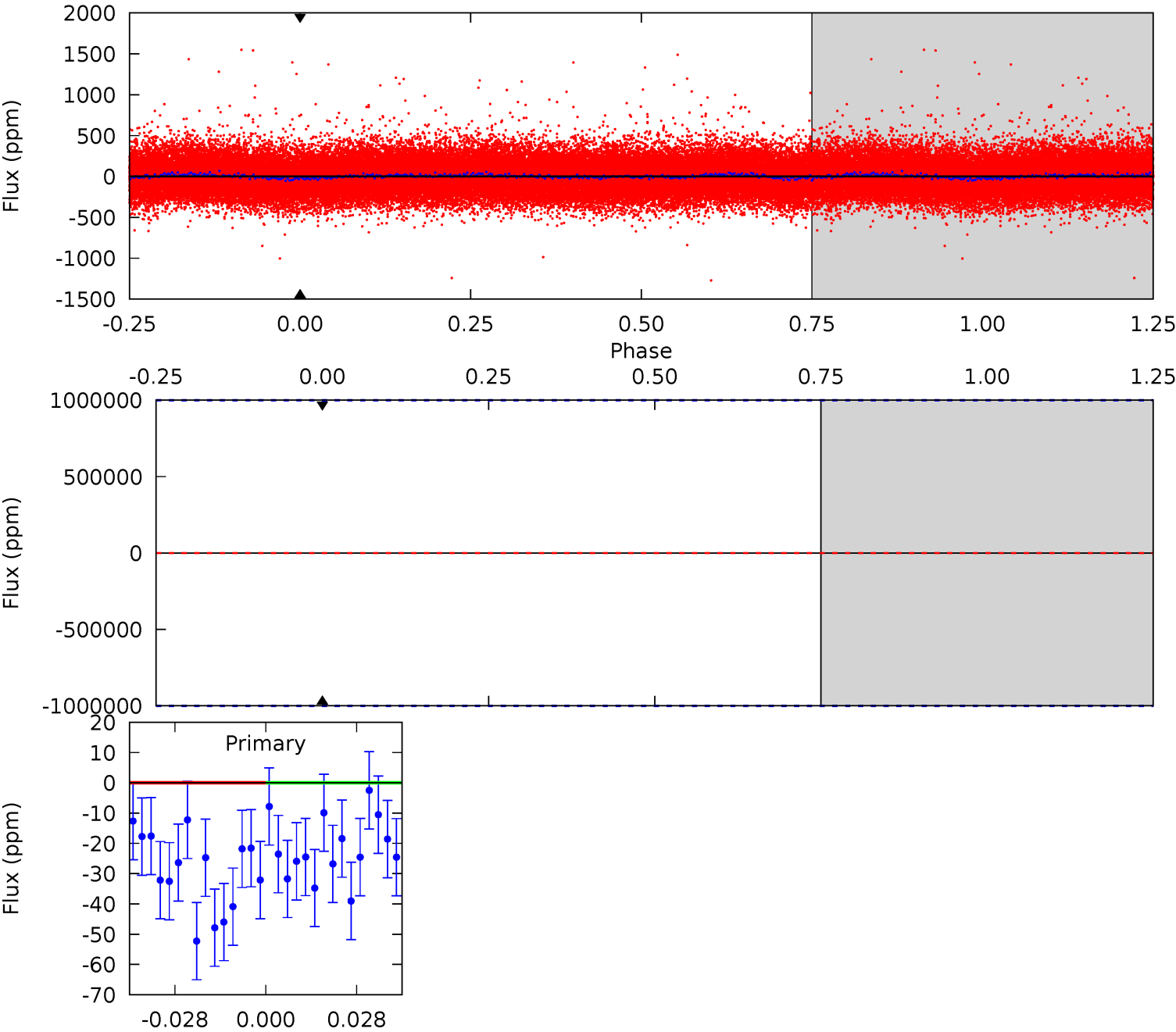
TCE 003733693-01 P= 1.501931 Days $T_0=132.933326$ (BKJD)



DV Model-Shift Uniqueness Test

003733693-01, P = 1.501931 Days, E = 130.114636 Days

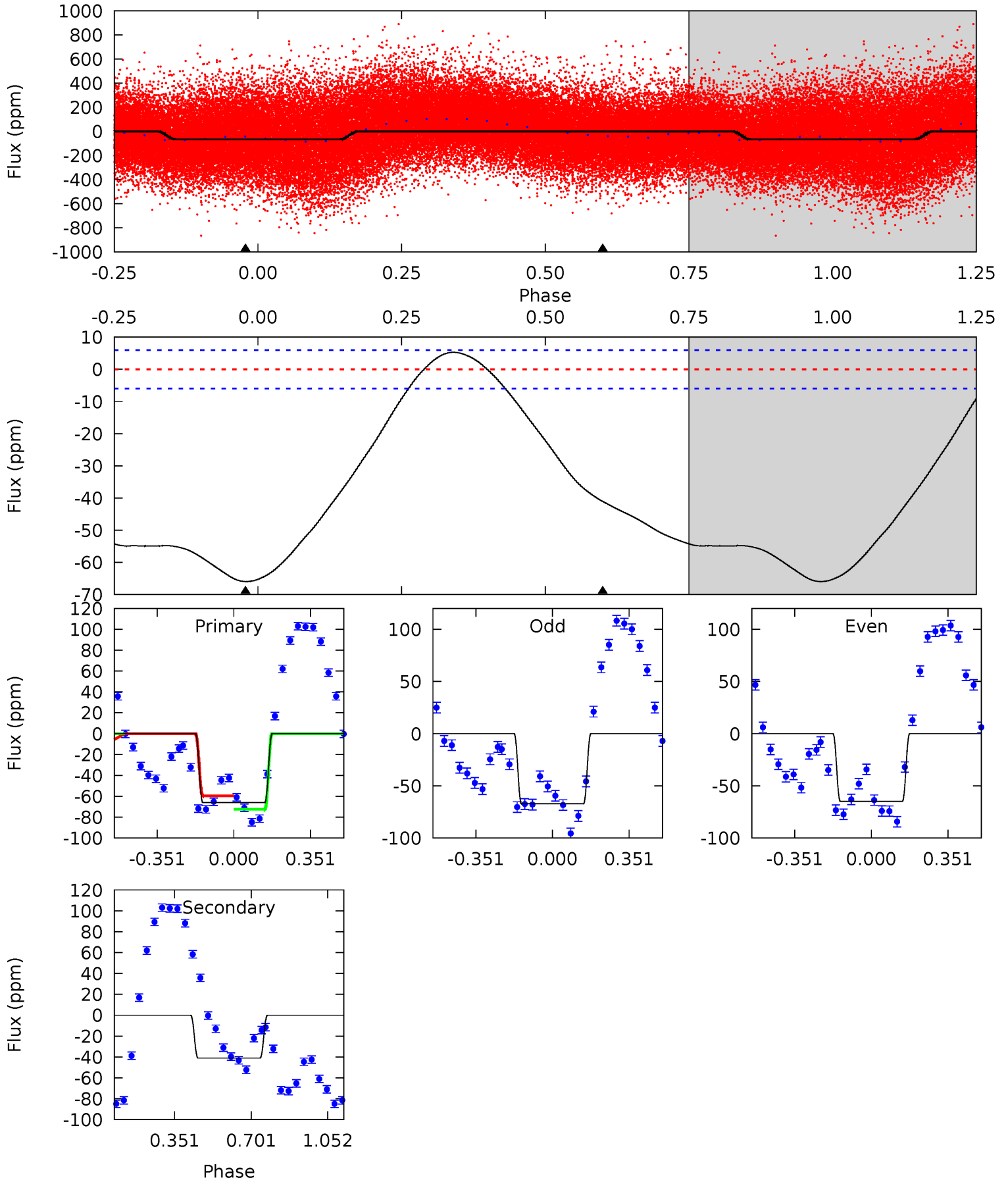
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

003733693-01, P = 1.501931 Days, E = 131.431395 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
47.5	29.6	0	0	4.29	0.93	3.96	47.5	47.5	29.6	29.6	0.84	0.99	0.07	5.06



Stellar Parameters For KIC 003733693

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6426^{+181}_{-227}	$3.797^{+0.472}_{-0.118}$	$-0.200^{+0.250}_{-0.300}$	$2.448^{+0.516}_{-1.289}$	$1.373^{+0.197}_{-0.310}$	$0.132^{+0.692}_{-0.050}$
	+3%/-4%	+12%/-3%	+125%/-150%	+21%/-53%	+14%/-23%	+525%/-38%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003733693-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$17.56^{+19.29}_{-11.53}$	3564^{+281}_{-453}	-6069^{+30547}_{-18395}	$-5.147^{+231.187}_{-236.690}$
Alt.	-41 ± 1	$16.32^{+20.72}_{-11.75}$	3576^{+276}_{-465}	-3170^{+6884}_{-319}	$0.067^{+0.818}_{-0.054}$

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

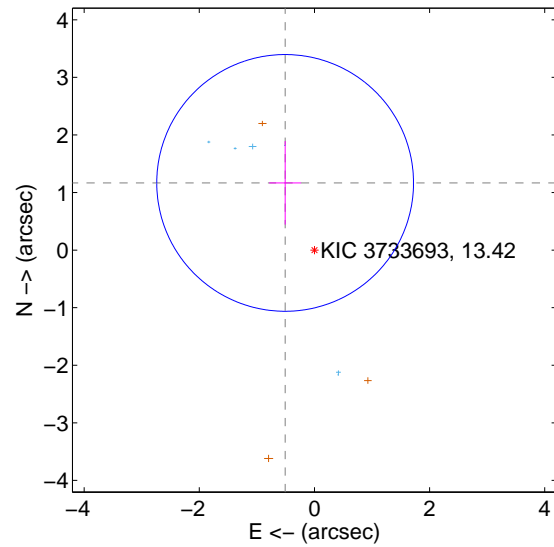
Supplemental centroid analysis for 003733693-01. Kepler magnitude: 13.42. Transit SNR -1.00

There are 6 quarters with good PRF difference image offsets

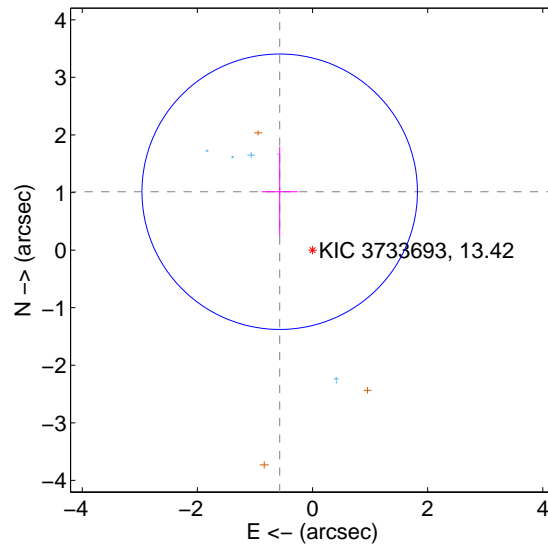
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.273 ± 0.743	1.71	0.509 ± 0.278	1.167 ± 0.725
PRF-fit source offset from KIC position	1.163 ± 0.797	1.46	0.570 ± 0.315	1.014 ± 0.779
photometric centroid source offset	0.52 ± 0.34	1.51	-0.14 ± 0.28	0.50 ± 0.35

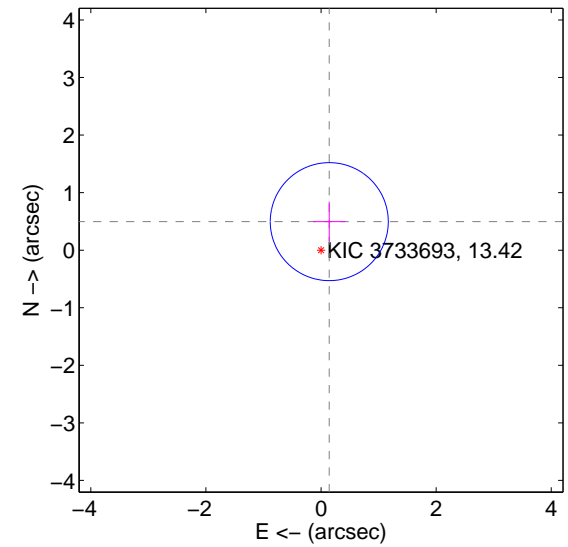
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

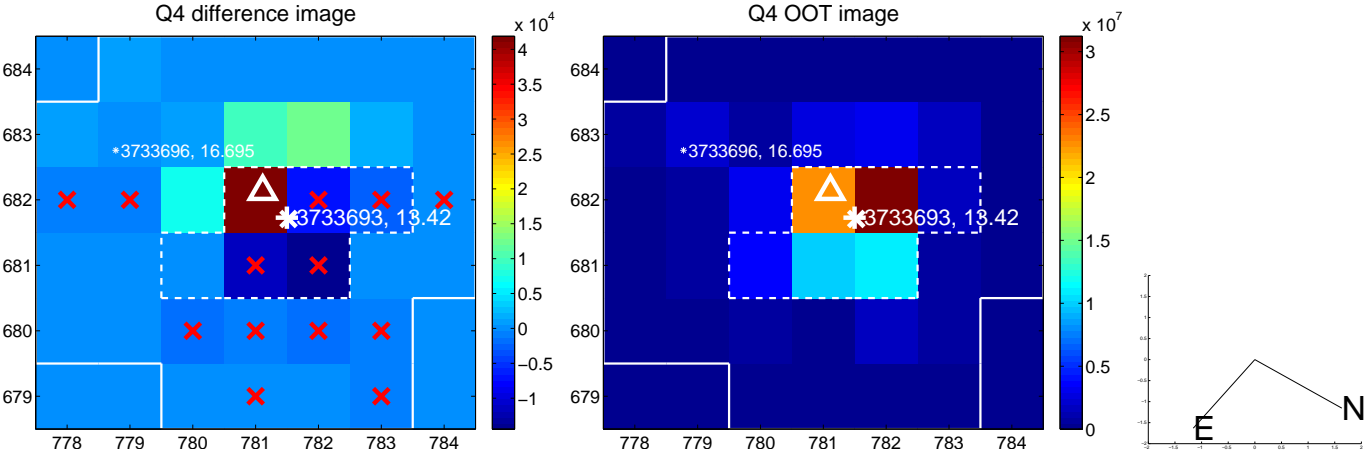
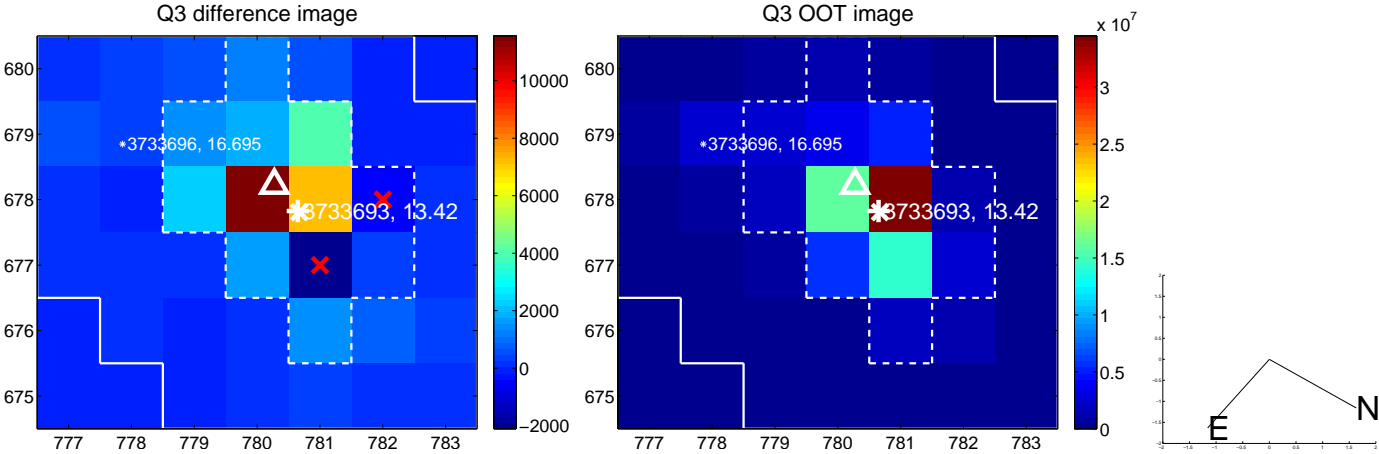
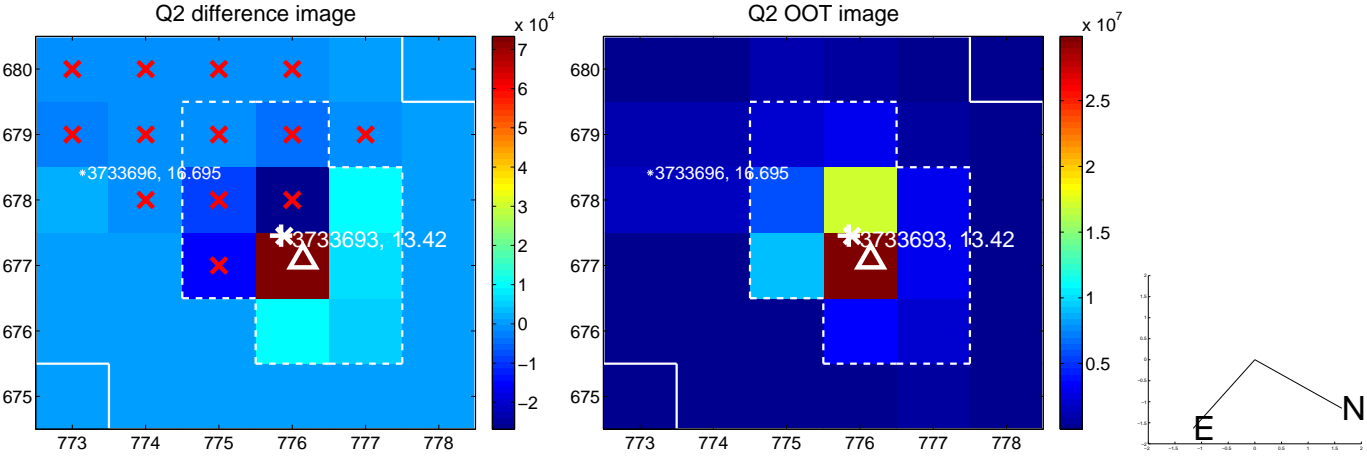
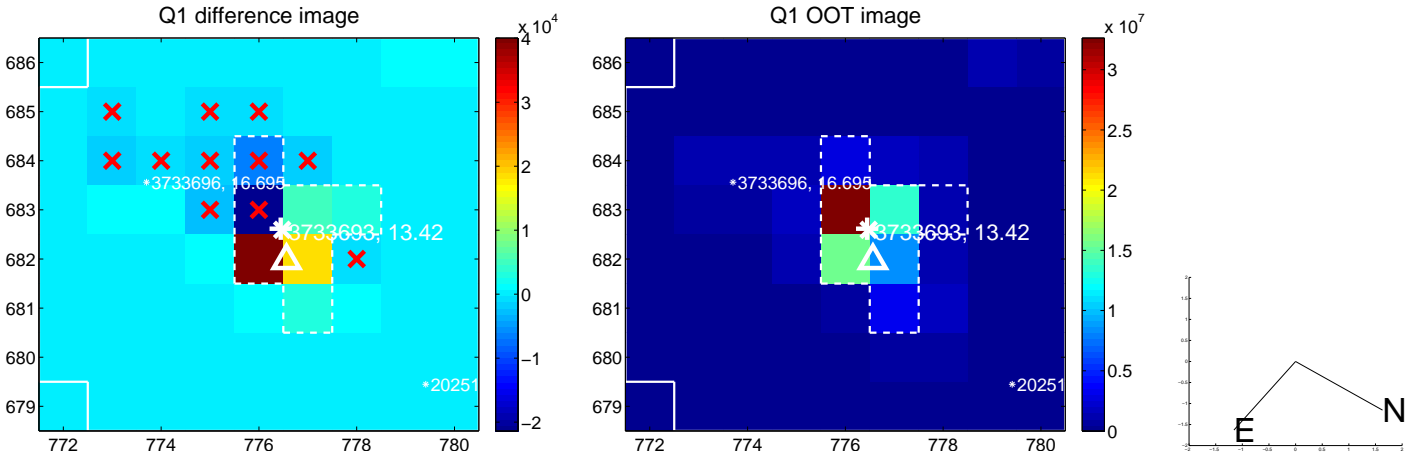


offset from photometric centroids

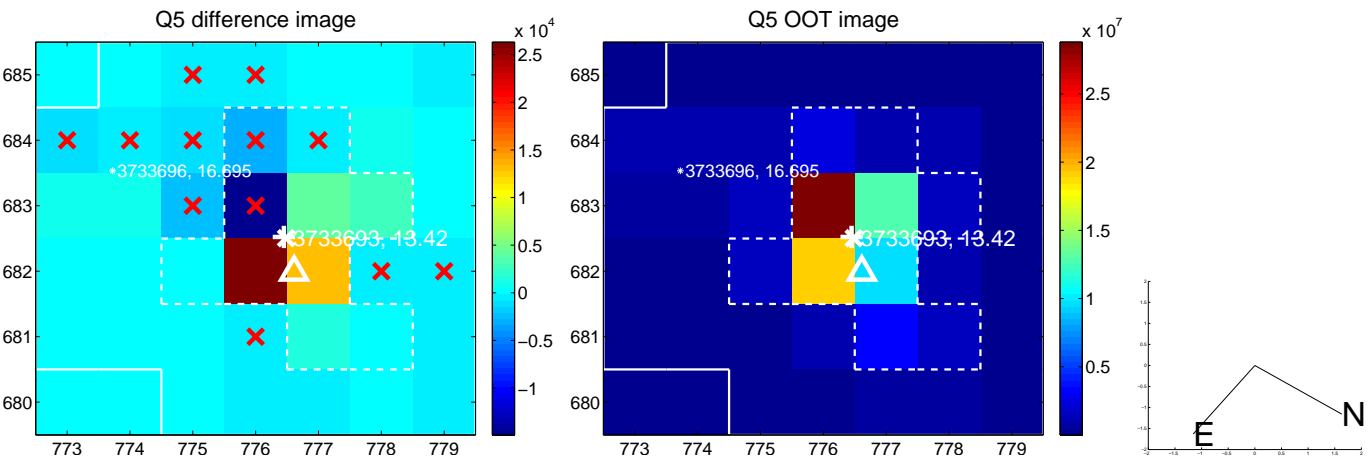


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

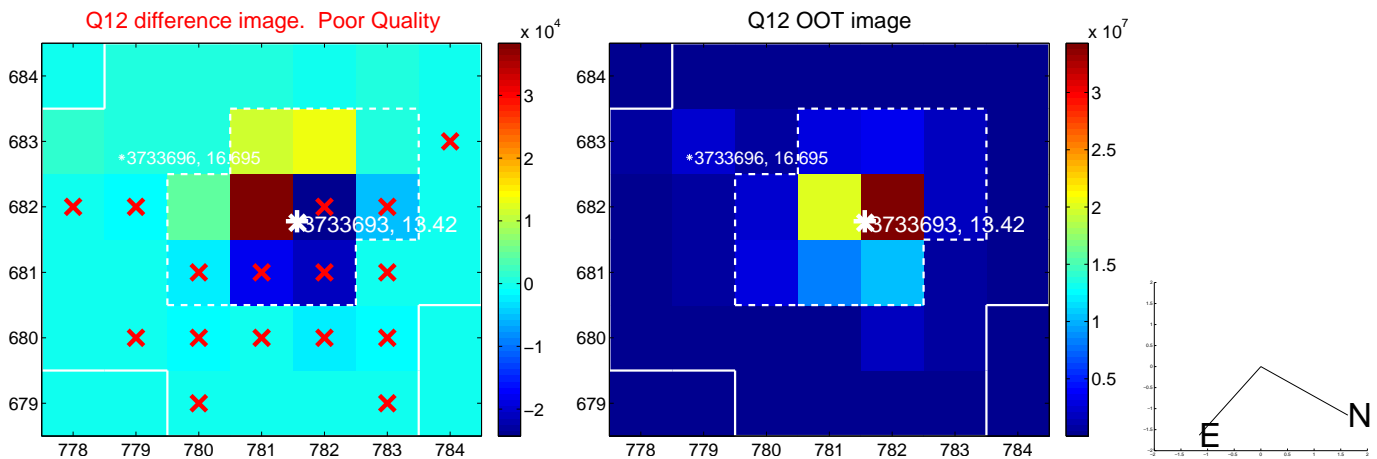
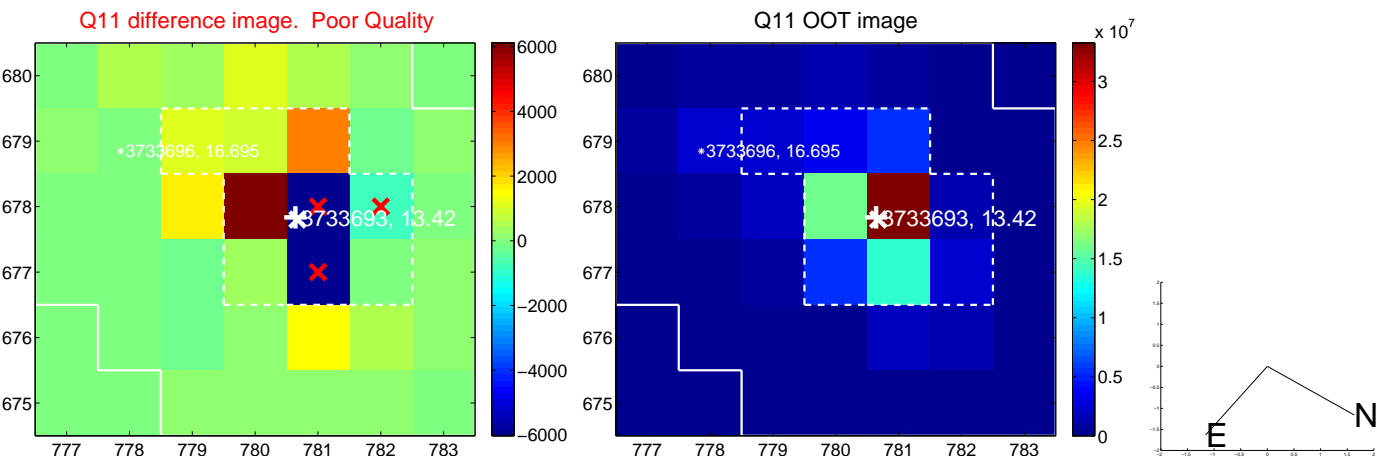
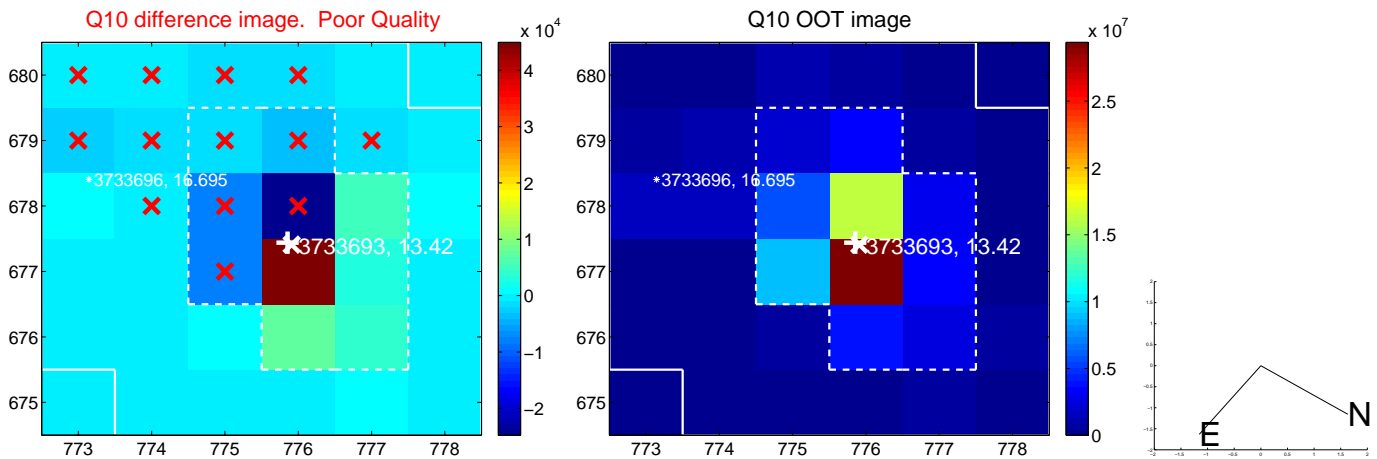
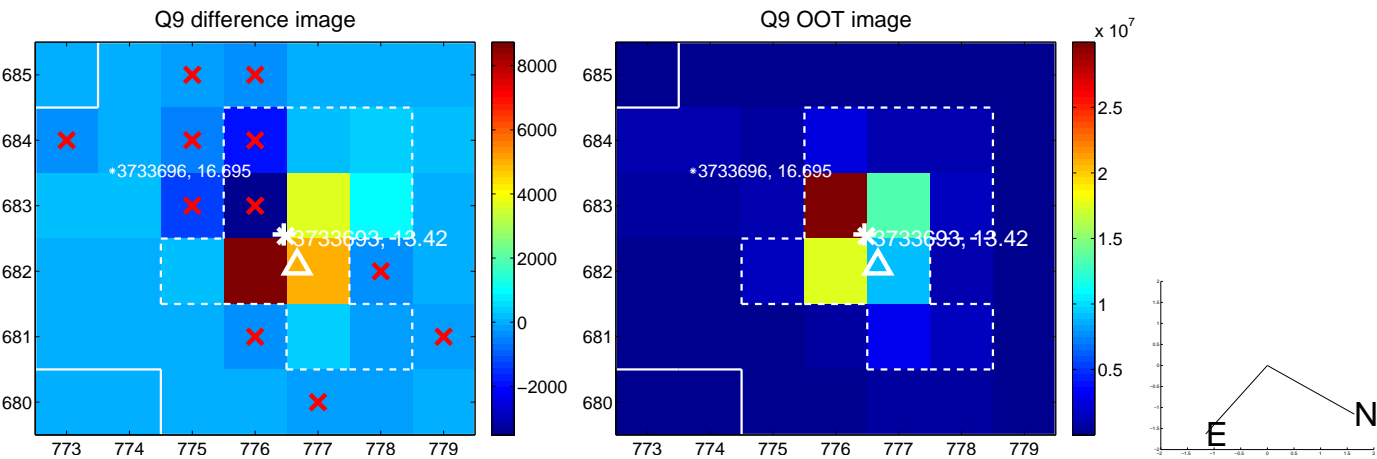
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



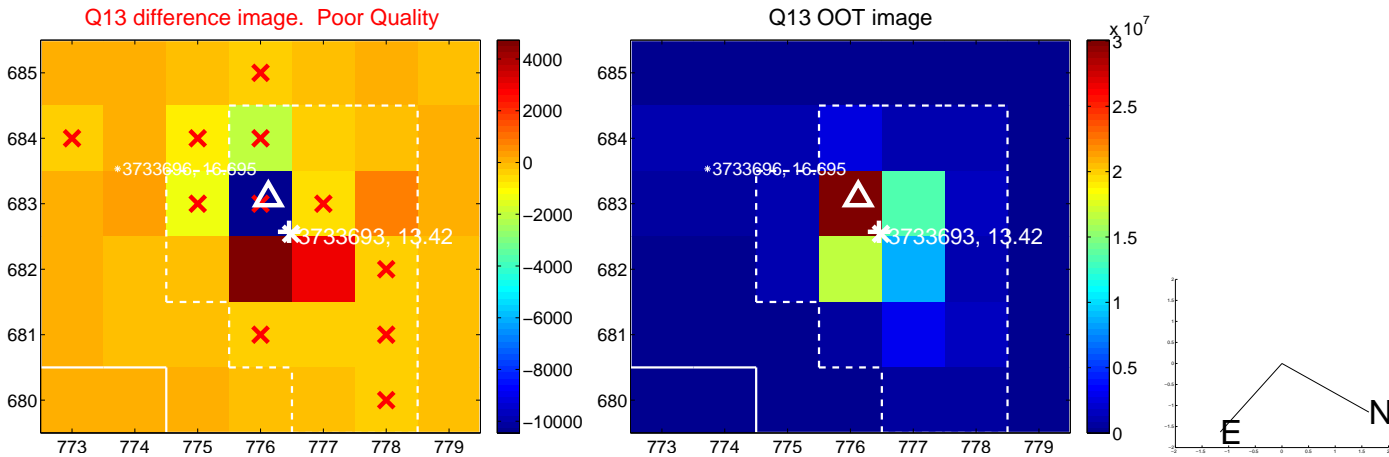
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



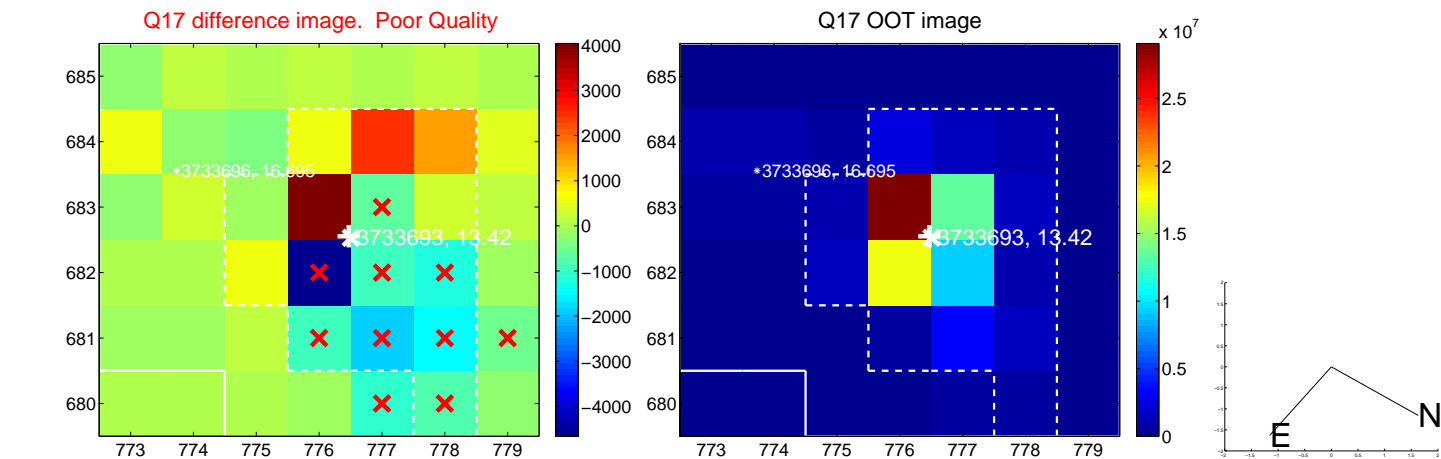
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



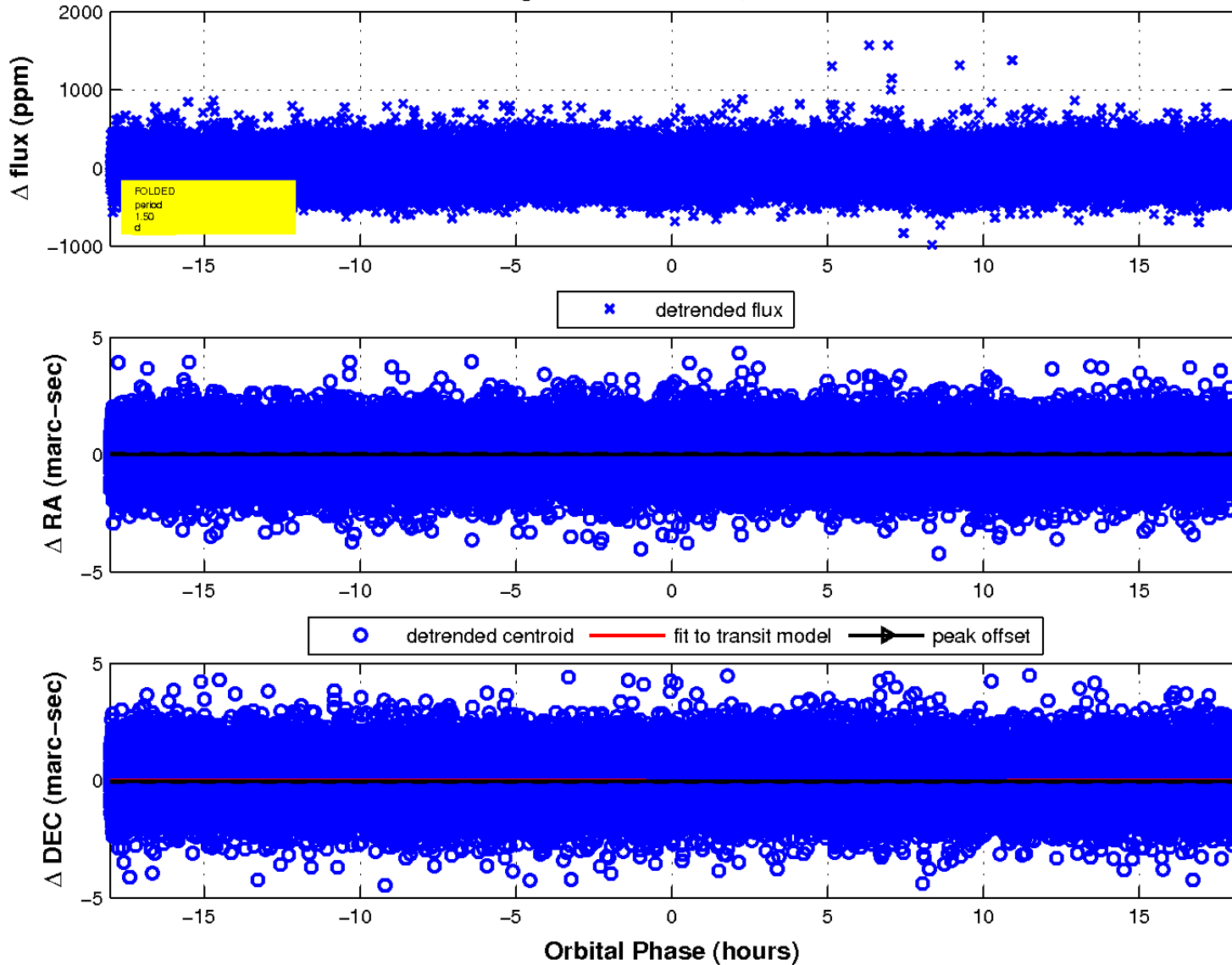
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

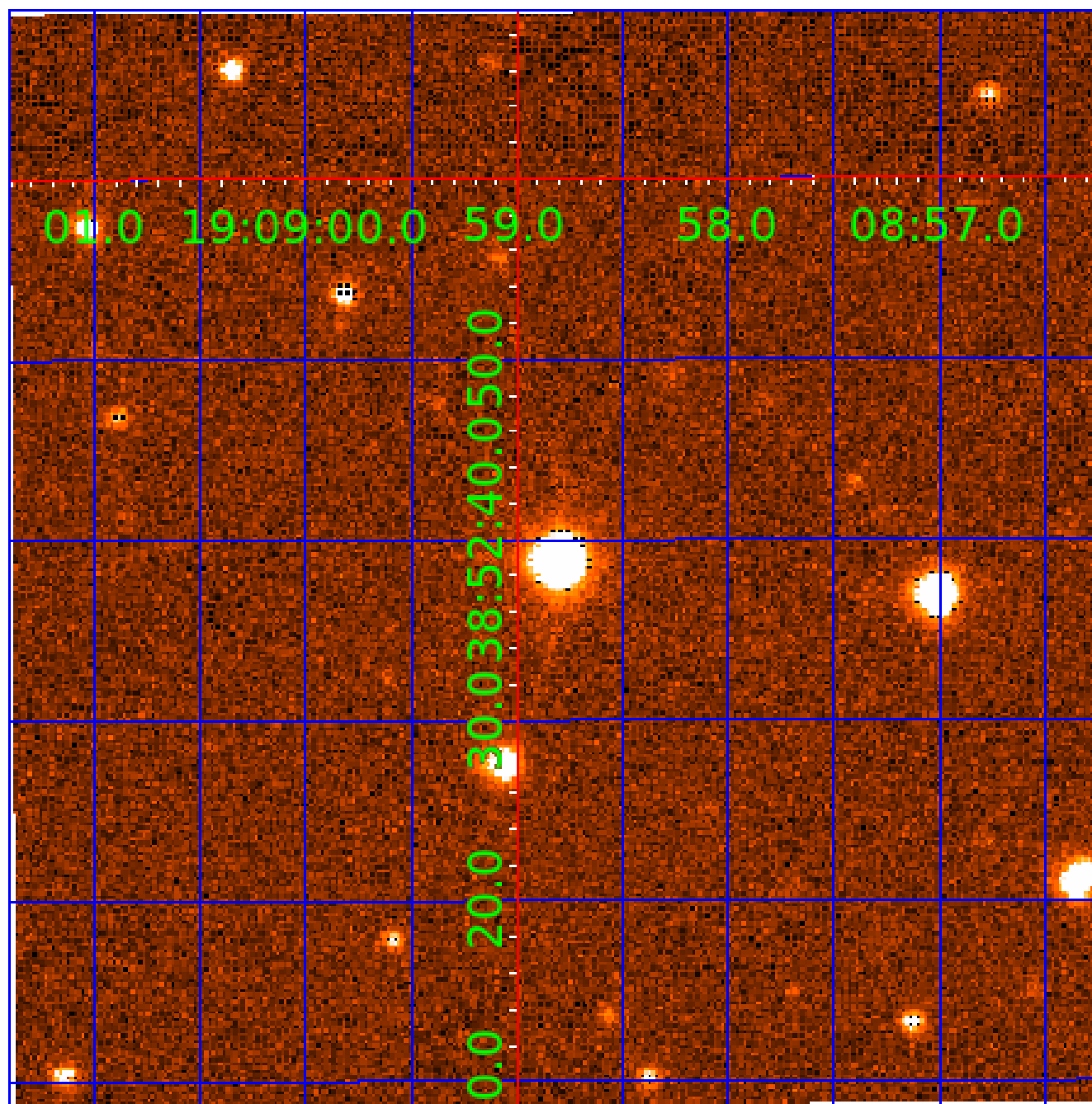


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003733693

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})
003733693-01	OBS	No	1.501931	131.616567	165.1	5.000	8.8	-1.0	2.45	6426	3.16	11263.28
003733693-02	OBS	No	131.808981	155.806312	167.2	11.023	7.5	6.2	2.45	6426	3.64	28.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003733693-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_NOFITS
003733693-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS

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

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

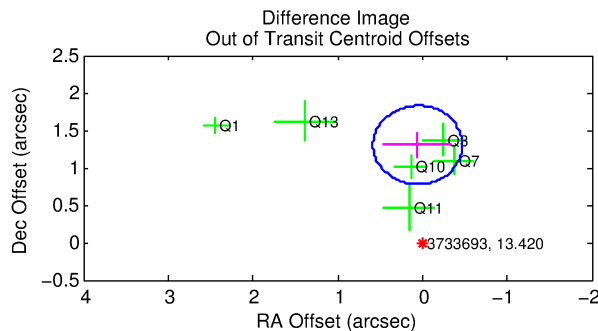
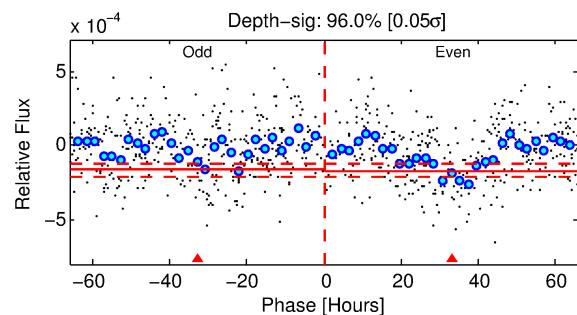
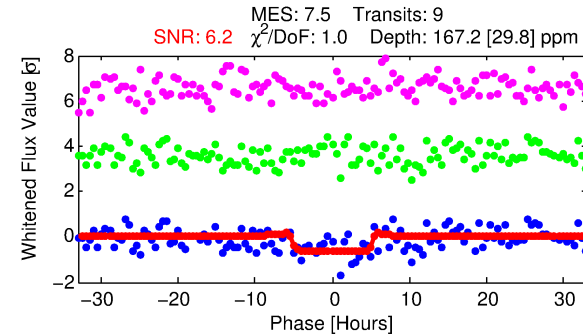
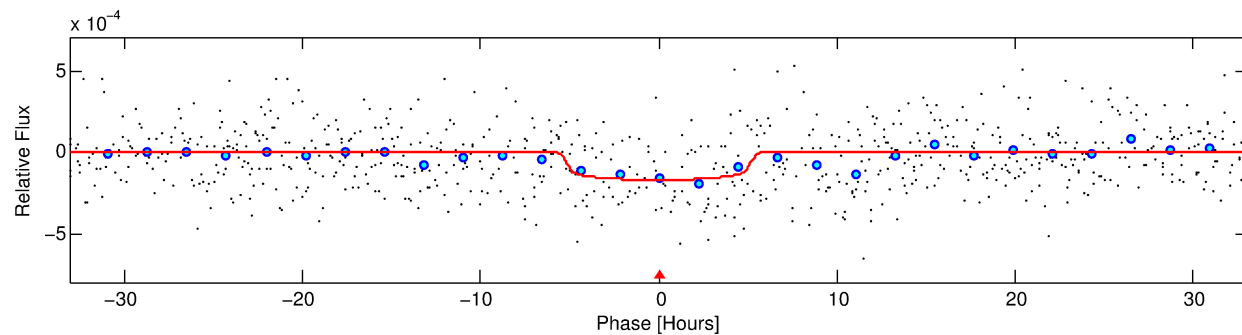
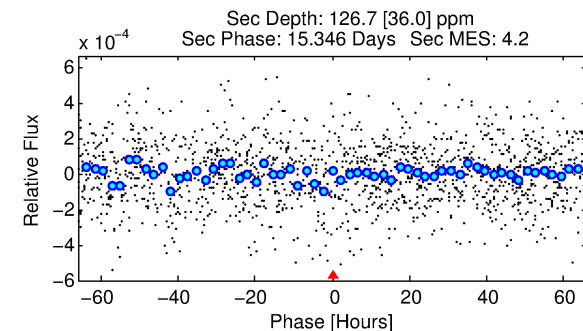
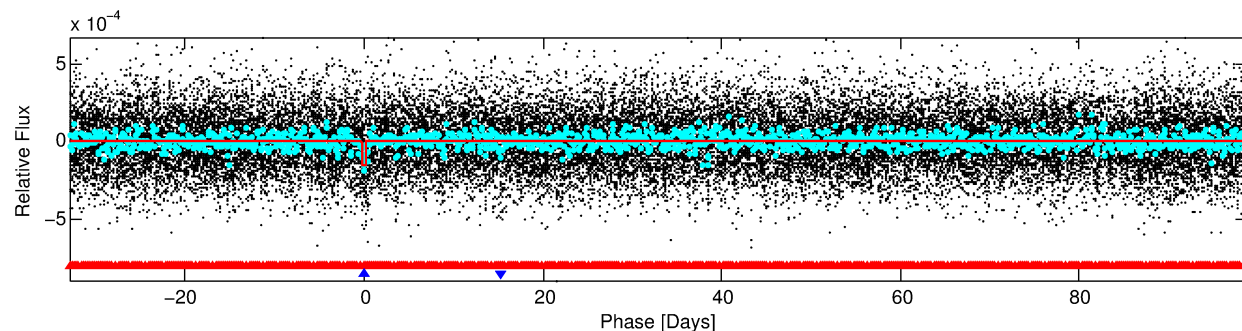
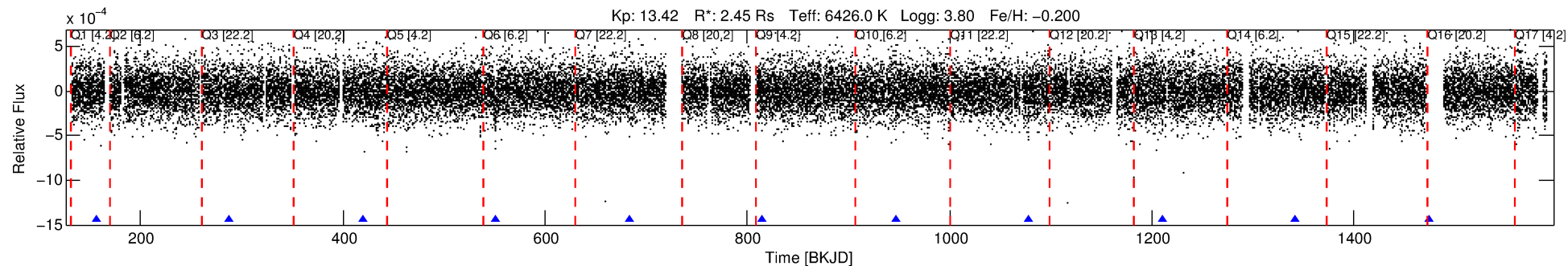
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003733693-02

No Significant Match Found

DV One-Page Summary

KIC: 3733693 Candidate: 2 of 2 Period: 131.809 d



DV Fit Results:

Period = 131.80898 [0.00491] d
Epoch = 155.8063 [0.0213] BKJD
Rp/R* = 0.0136 [0.0033]
a/R* = 46.23 [57.06]
b = 0.88 [0.32]
Seff = 28.88 [23.61]
Teff = 591 [121] K
Rp = 3.64 [2.11] Re
a = 0.5630 [0.2840] AU
Ag = 1666.96 [1633.47] [1.02σ]
Teffp = 5840 [841] K [6.18σ]

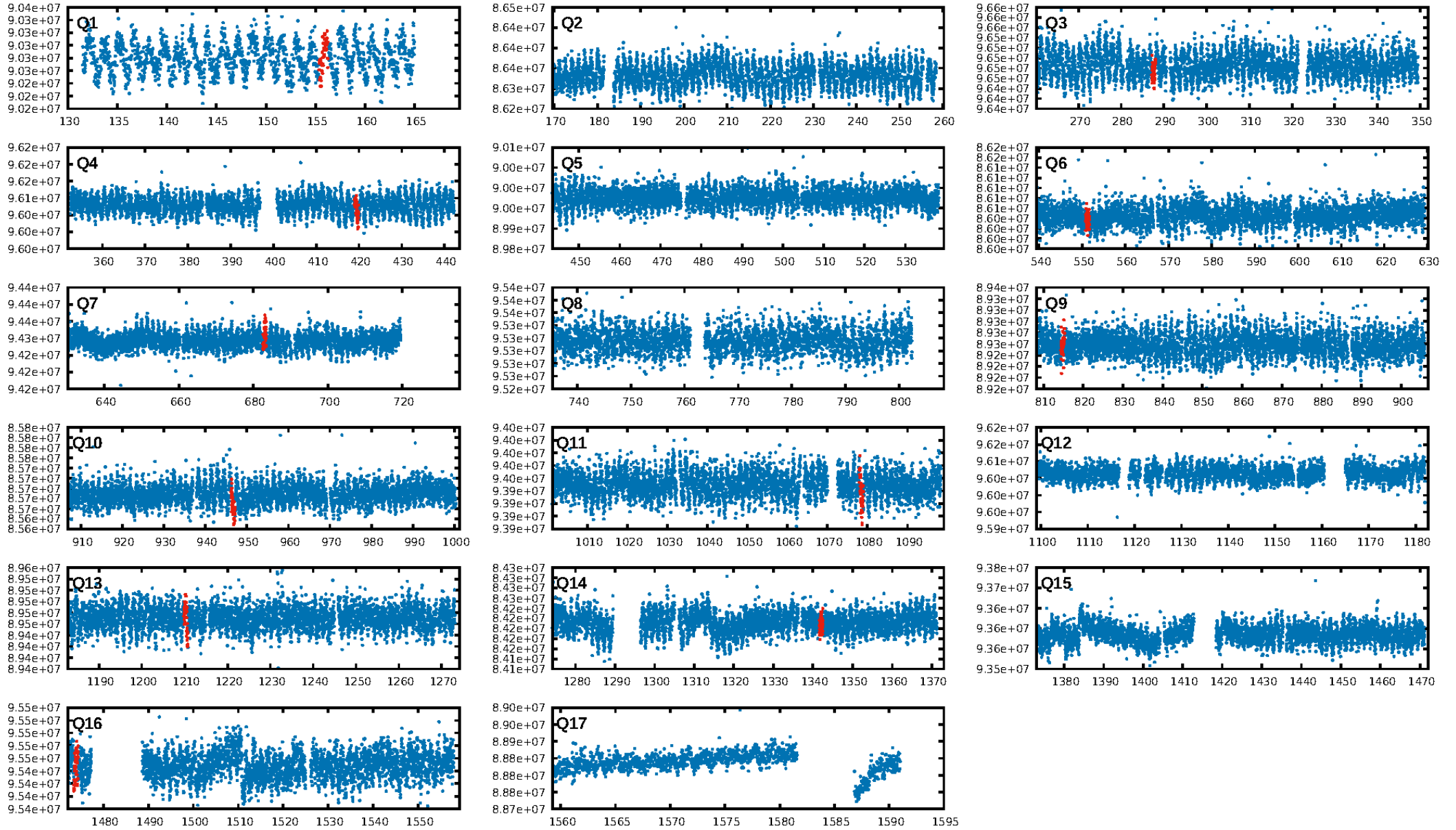
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [258.37σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 21.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.28e-10
RollingBand-fgt: 1.00 [8/8]
GhostDiagnostic-chr: 0.3802
Centroid-sig: 6.7%
Centroid-so: 1.334 arcsec [0.97σ]
OotOffset-rm: 1.303 arcsec [7.44σ]
KicOffset-rm: 1.144 arcsec [5.89σ]
OotOffset-st: 1/3/0/2 [6]
KicOffset-st: 1/3/0/2 [6]
DiffImageQuality-fgm: 0.50 [3/6]
DiffImageOverlap-fno: 0.00 [0/10]

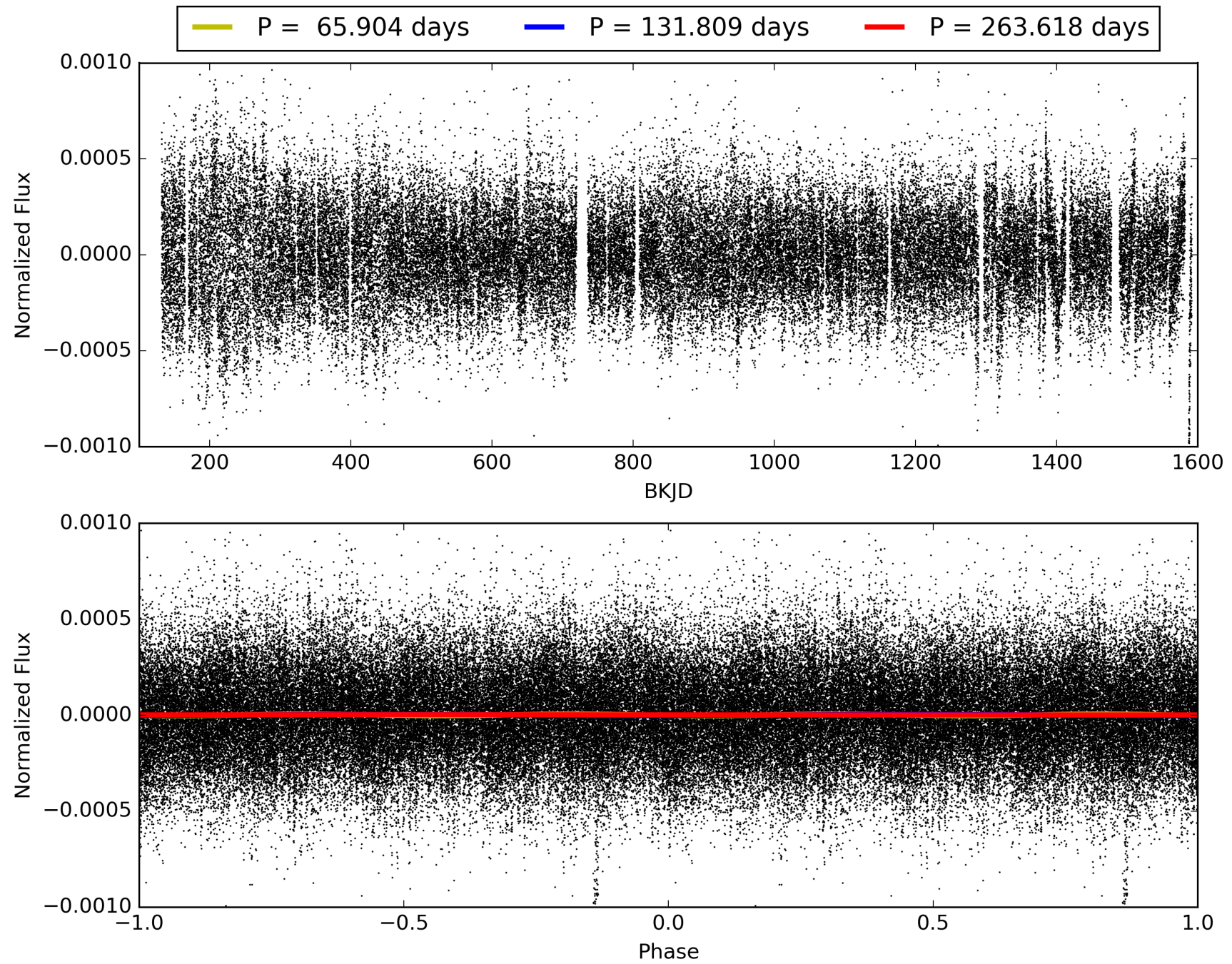
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:38:59 Z

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

TCE 003733693-02, PDC Light Curves

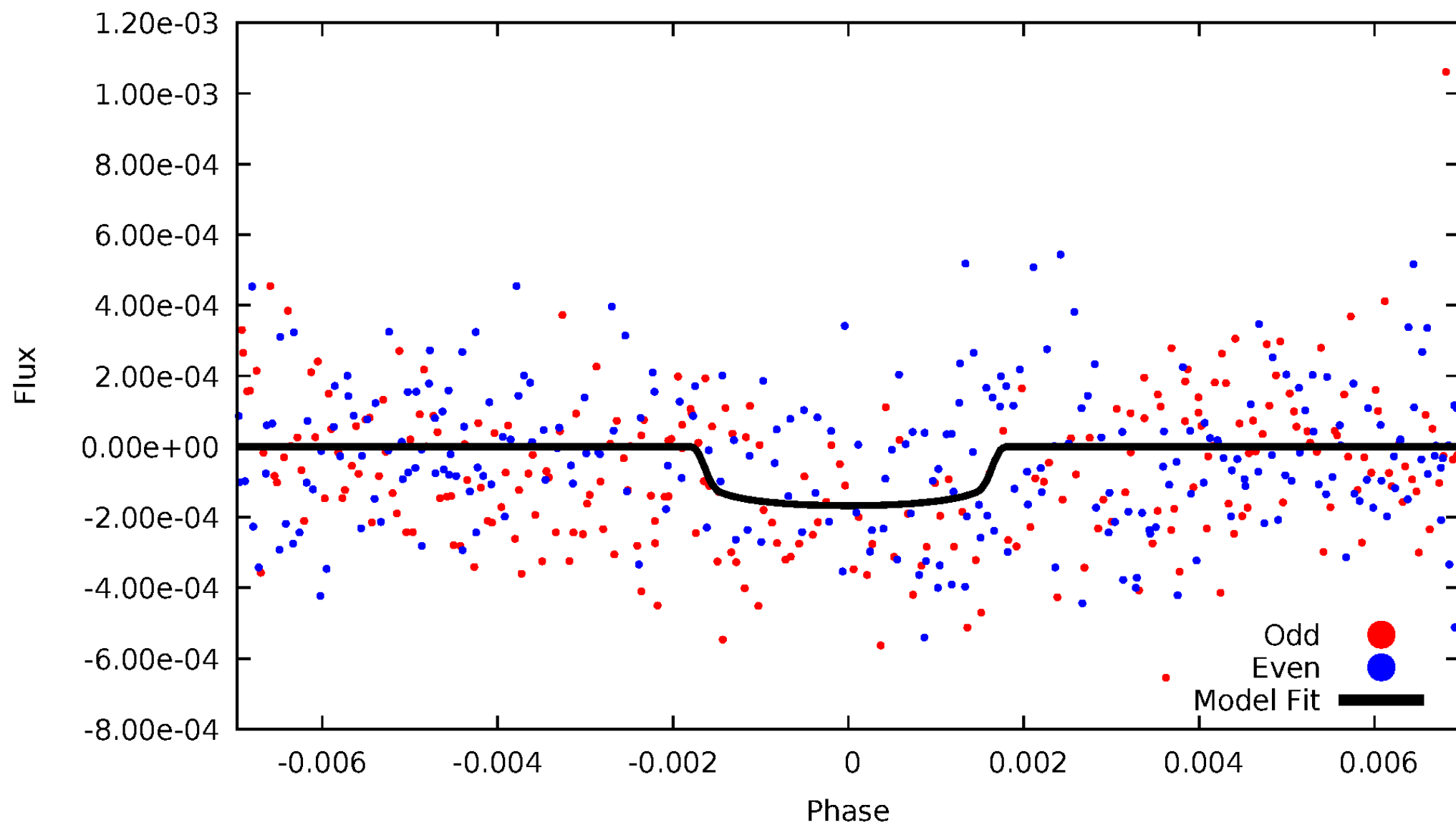


TCE 003733693-02



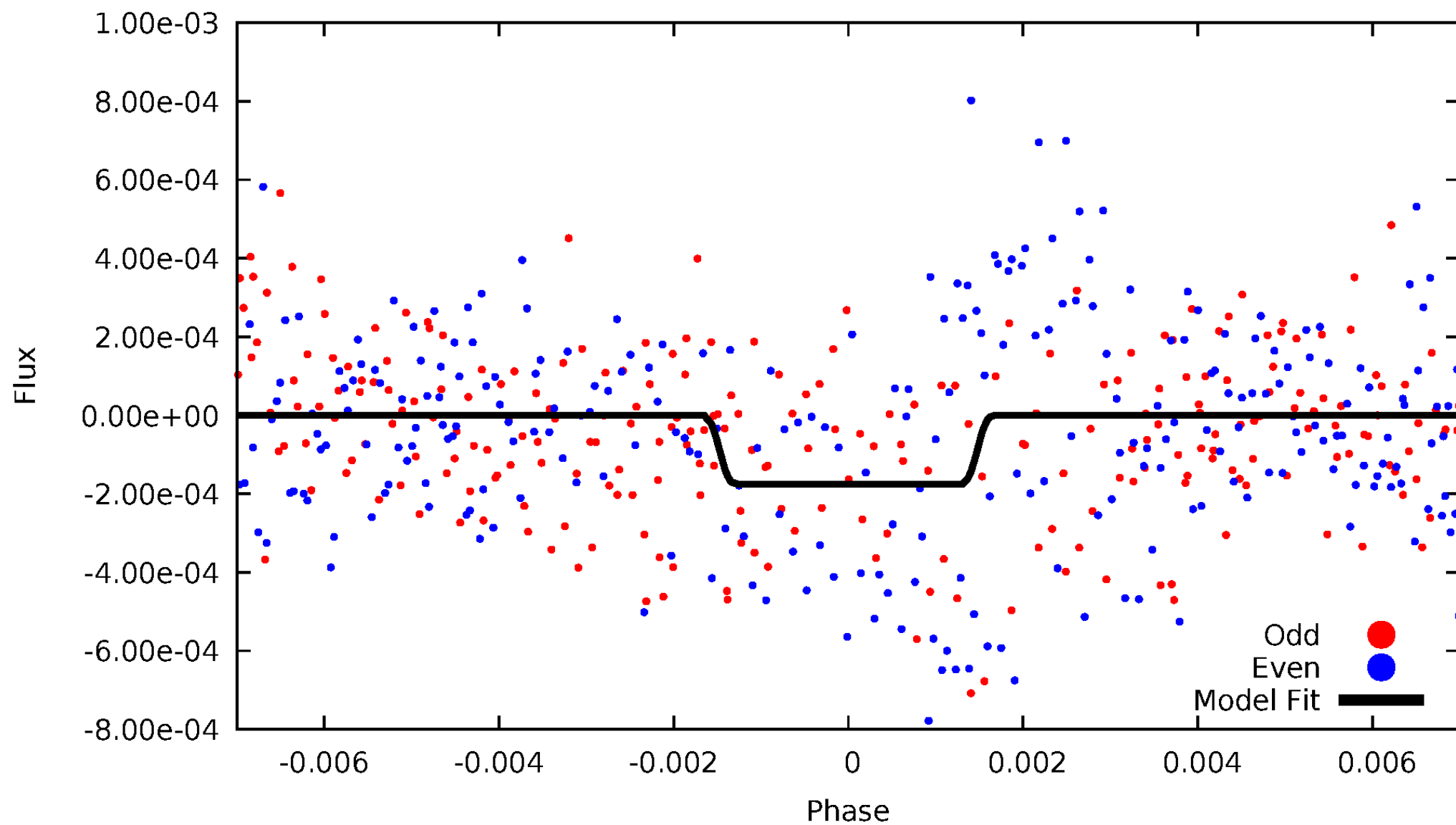
DV Odd/Even

TCE 003733693-02



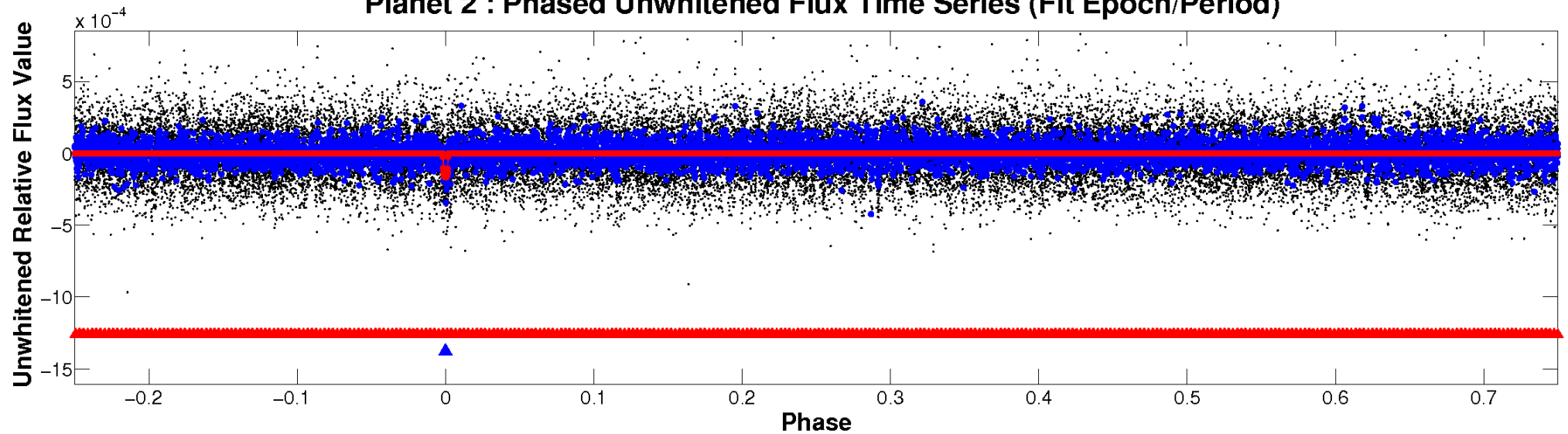
ALT Odd/Even

TCE 003733693-02

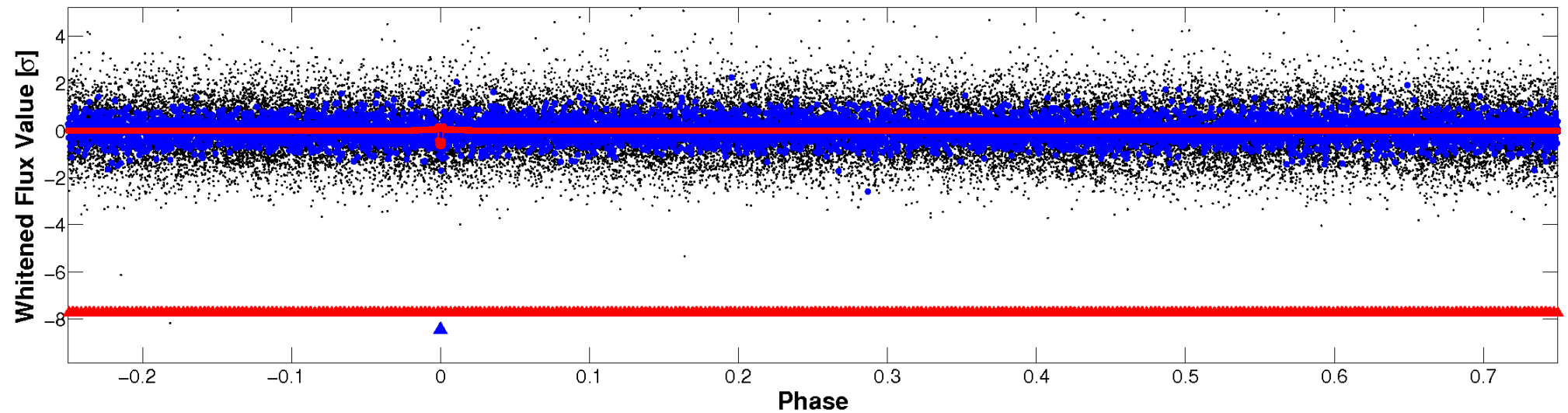


Non-Whitened Vs. Whitened Light Curve

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

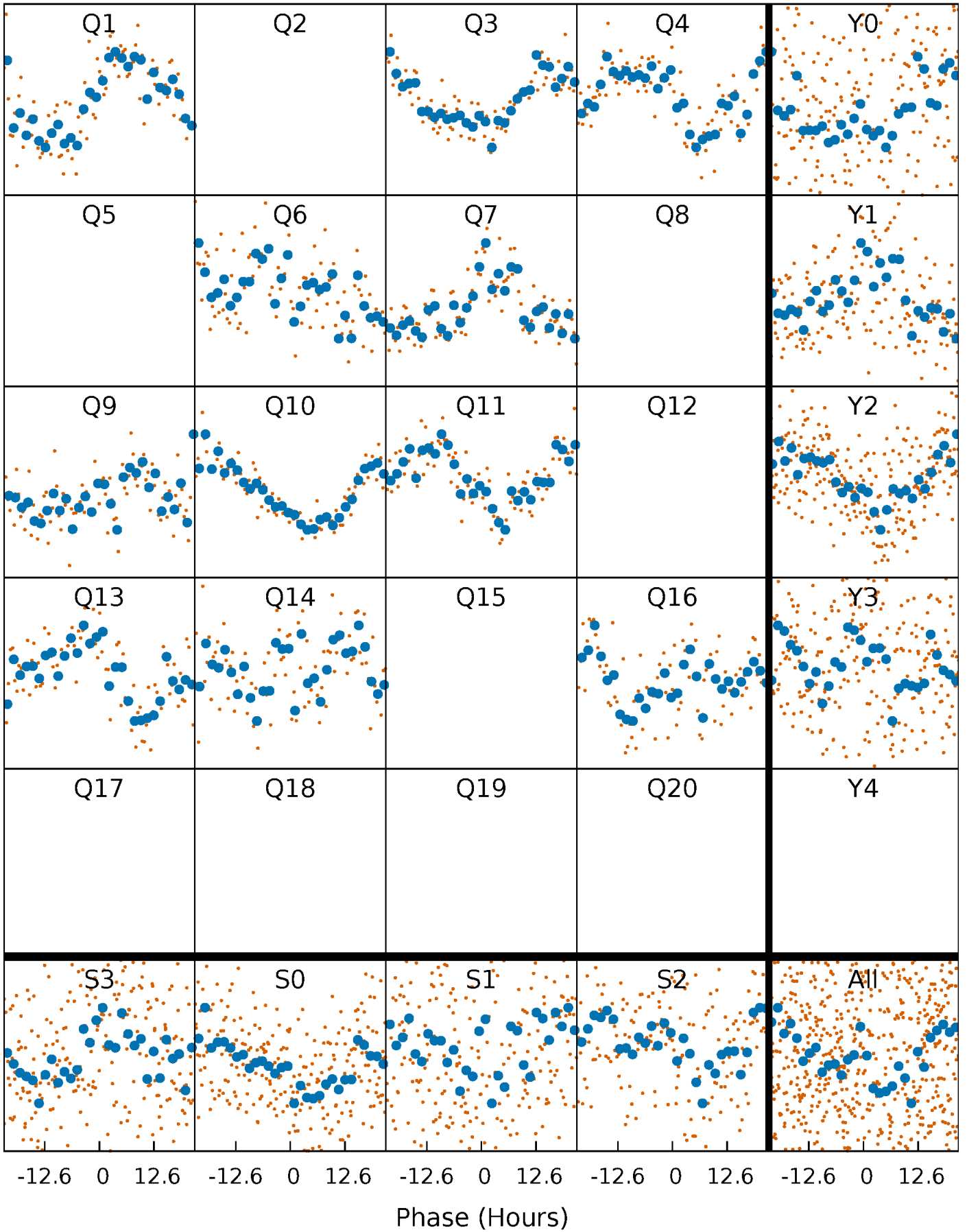


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



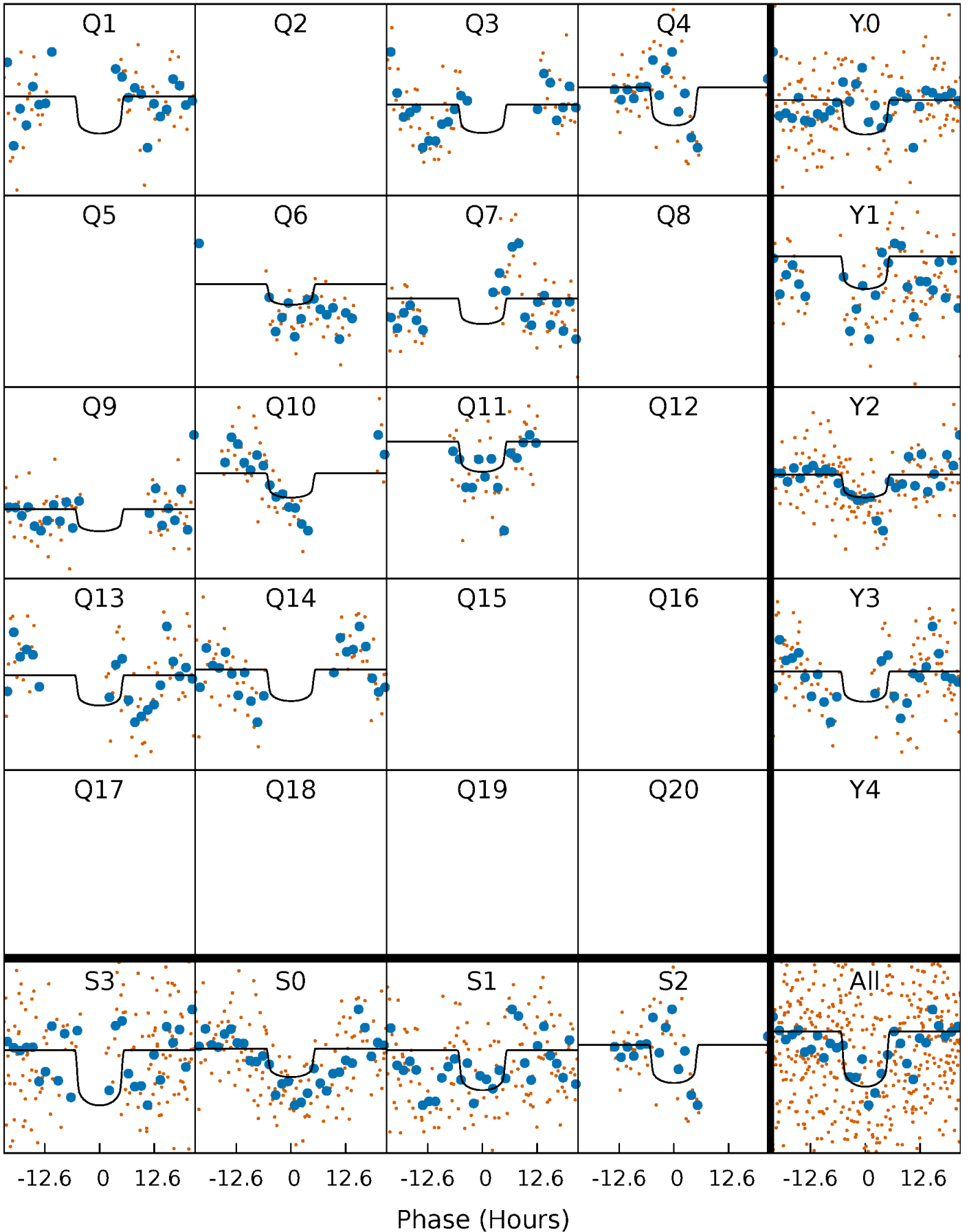
PDC Quarter-Phased Transit Curves

TCE 003733693-02 P=131.808981 Days $T_0=155.806312$ (BKJD)



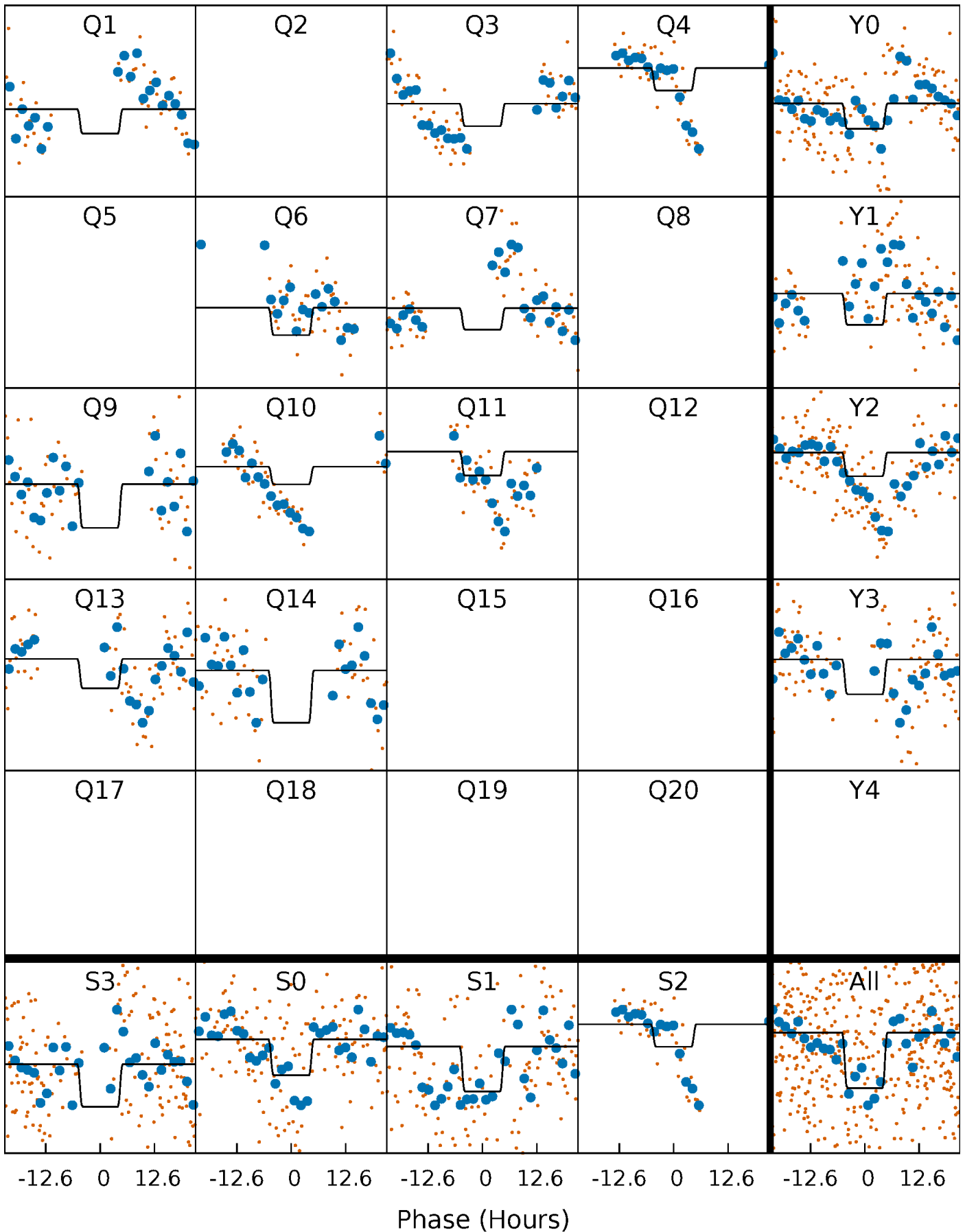
DV Quarter-Phased Transit Curves

TCE 003733693-02 $P=131.808981$ Days $T_0=155.806312$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

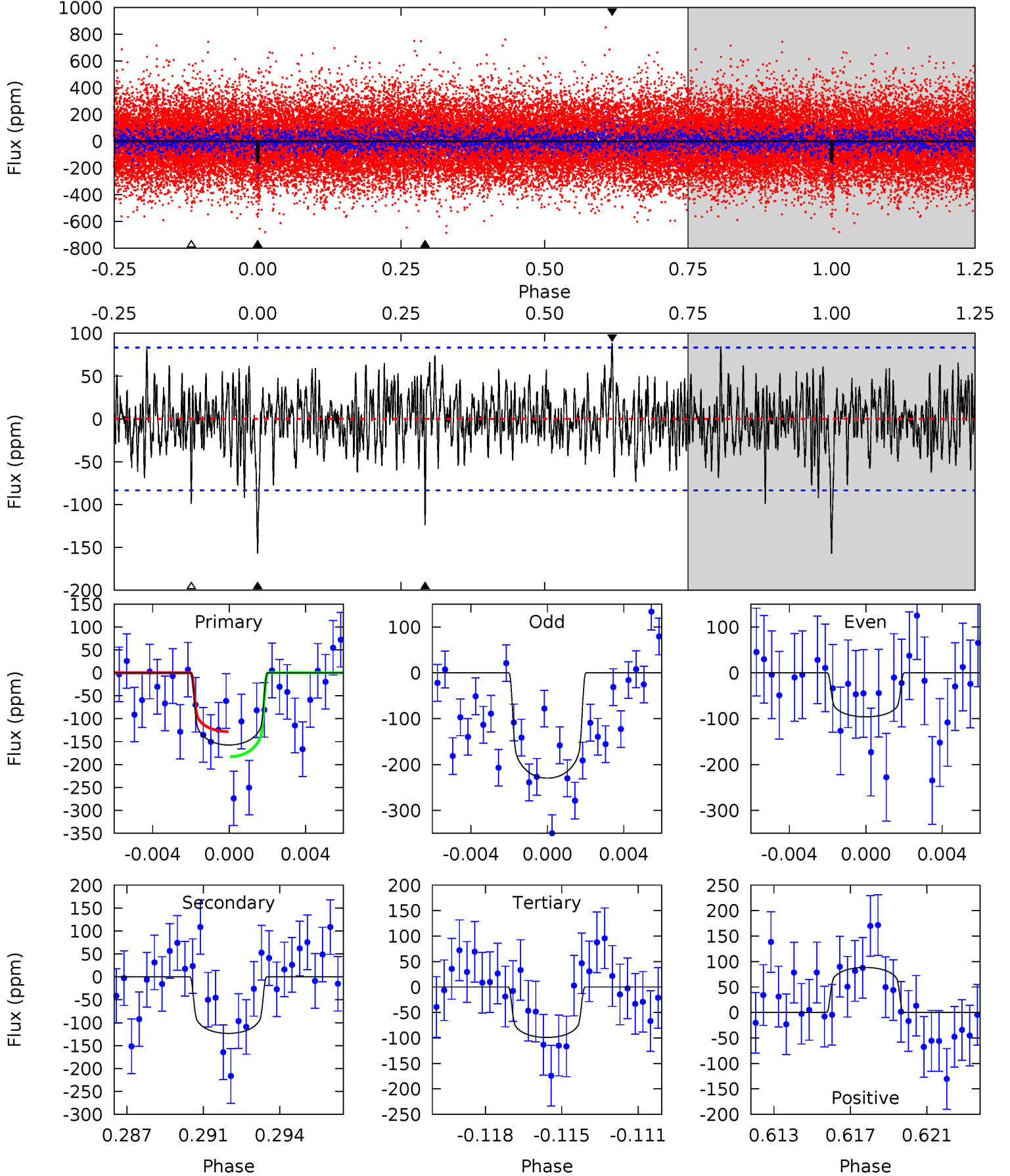
TCE 003733693-02 P=131.810084 Days $T_0=155.792856$ (BKJD)



DV Model-Shift Uniqueness Test

003733693-02, P = 131.808981 Days, E = 23.997331 Days

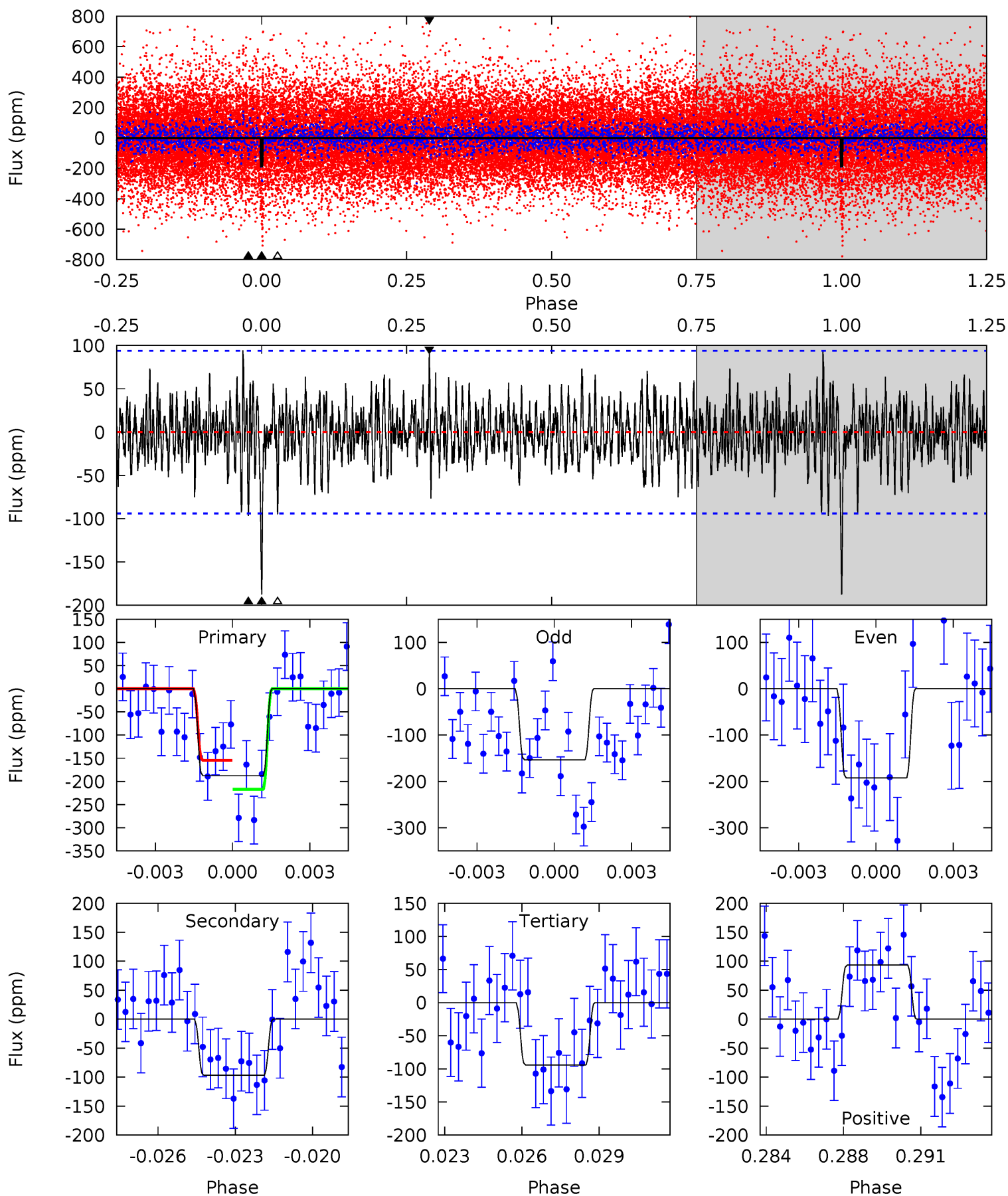
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.87	7.73	6.21	5.54	5.22	2.91	1.63	3.66	4.32	1.52	2.19	4.18	3.56	0.36	1.71



Alt Model-Shift Uniqueness Test

003733693-02, P = 131.810084 Days, E = 23.982772 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	5.40	5.25	5.21	5.24	2.94	1.46	5.22	5.25	0.15	0.19	1.09	12.3	0.33	1.75



Stellar Parameters For KIC 003733693

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6426^{+181}_{-227}	$3.797^{+0.472}_{-0.118}$	$-0.200^{+0.250}_{-0.300}$	$2.448^{+0.516}_{-1.289}$	$1.373^{+0.197}_{-0.310}$	$0.132^{+0.692}_{-0.050}$
	+3%/-4%	+12%/-3%	+125%/-150%	+21%/-53%	+14%/-23%	+525%/-38%
Source	PHO54	PHO54	PHO54	DSEP		

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

Secondary Eclipse Parameters for KIC 003733693-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-123 ± 16	$3.34^{+1.21}_{-1.01}$	810^{+56}_{-109}	5775^{+813}_{-602}	1920^{+2041}_{-865}
Alt.	-97 ± 18	$3.31^{+1.04}_{-1.09}$	807^{+60}_{-99}	5523^{+828}_{-584}	1538^{+1651}_{-677}

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 $A_{obs} \gg 1.0$

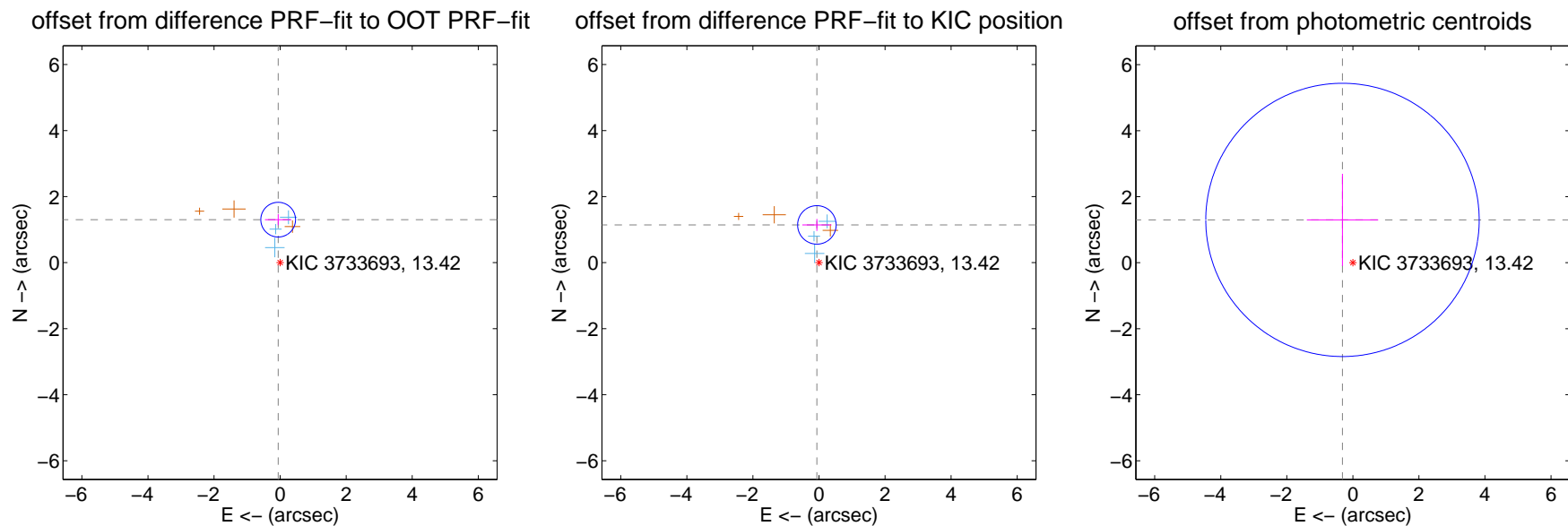
DV Centroid Data

Supplemental centroid analysis for 003733693-02. Kepler magnitude: 13.42. Transit SNR 6.19

There are 3 quarters with good PRF difference image offsets

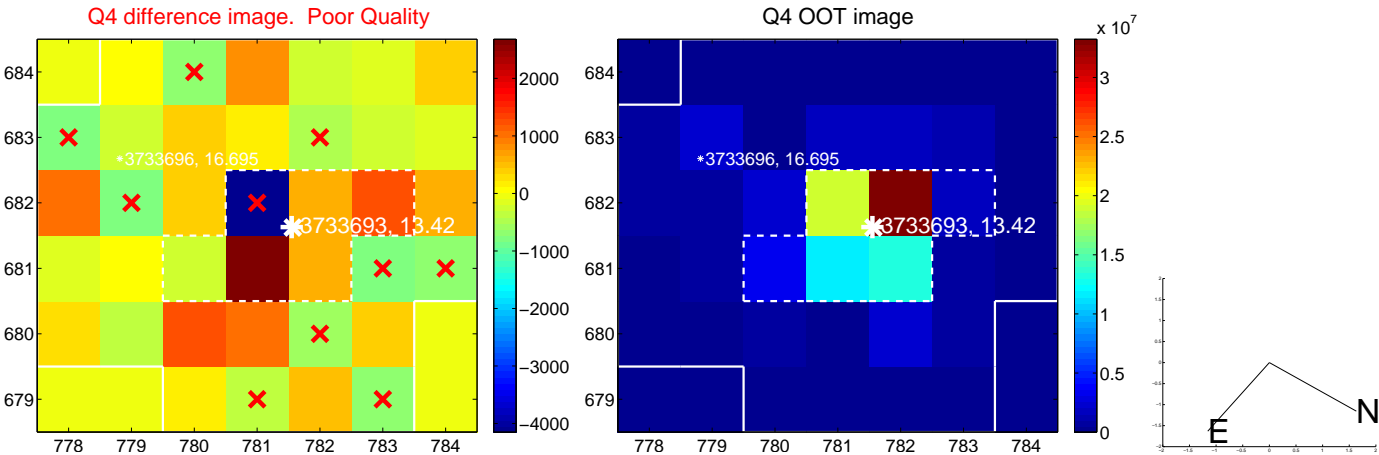
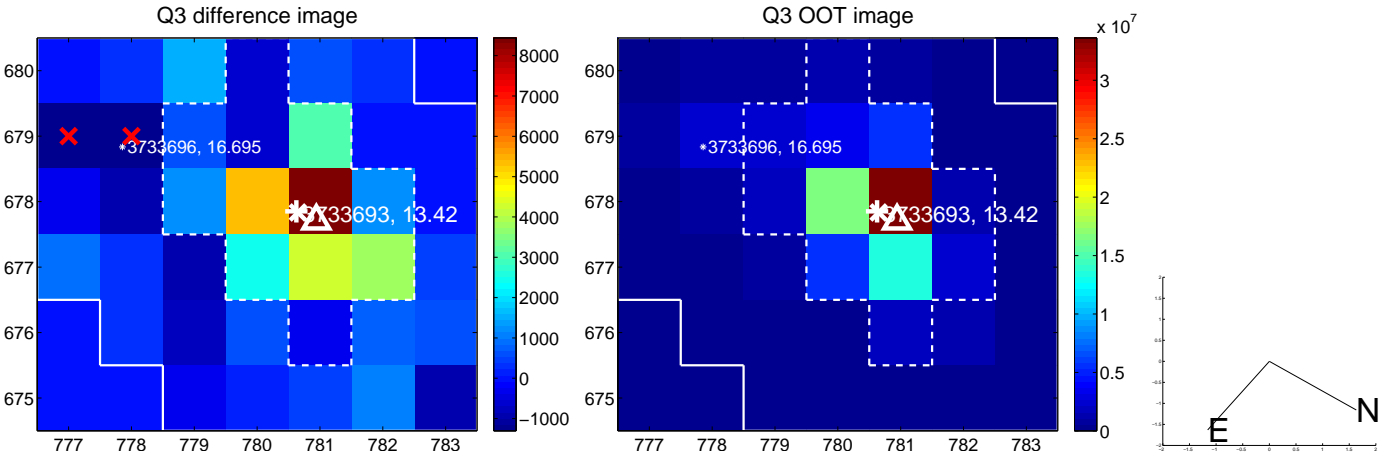
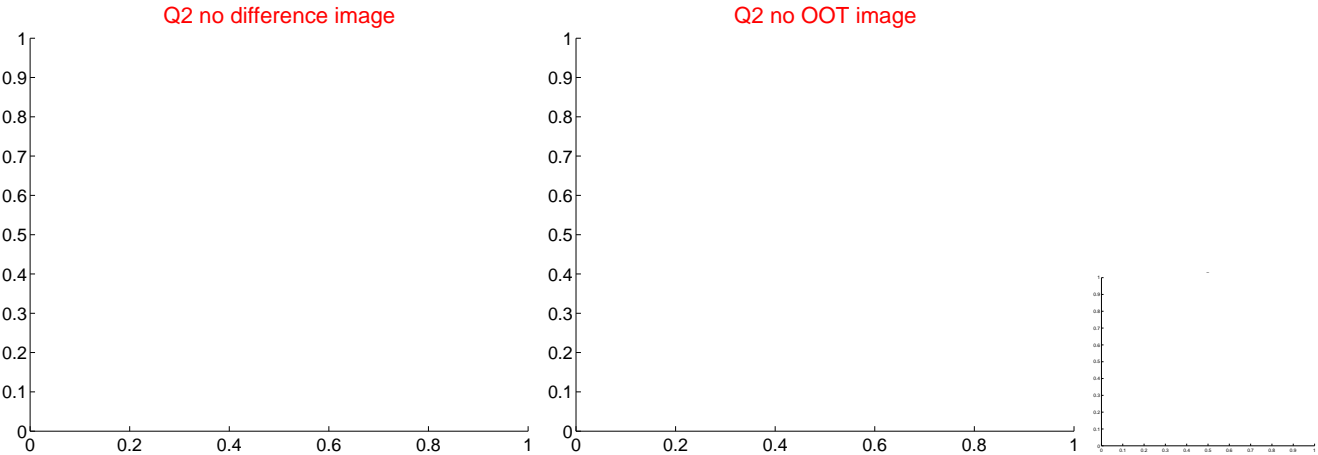
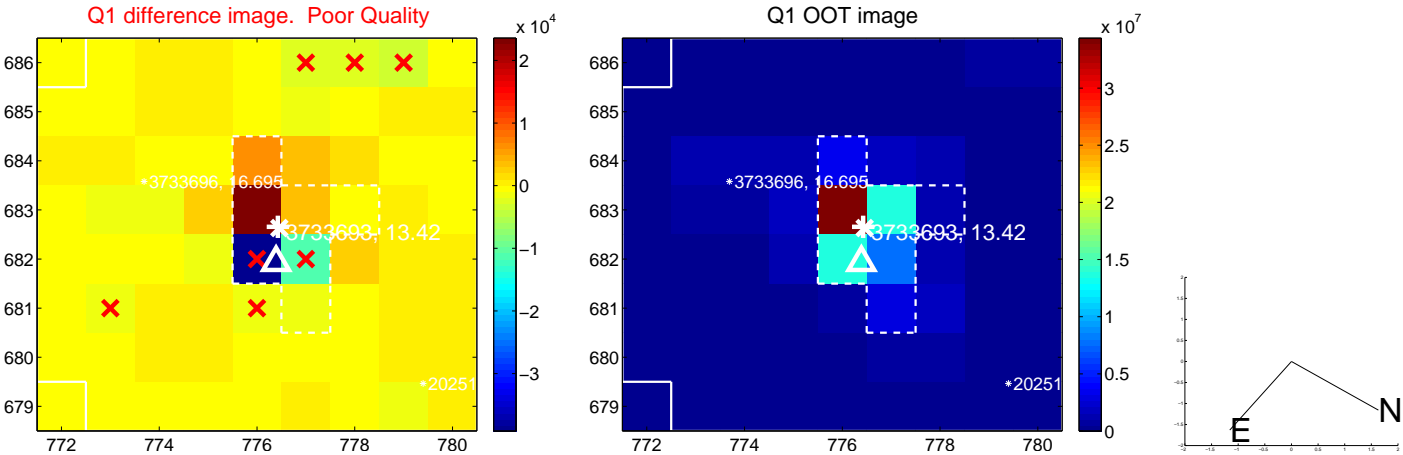
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.303 ± 0.175	7.44	0.058 ± 0.400	1.302 ± 0.165
PRF-fit source offset from KIC position	1.144 ± 0.194	5.89	0.063 ± 0.442	1.143 ± 0.181
photometric centroid source offset	1.33 ± 1.38	0.97	0.31 ± 1.08	1.30 ± 1.40

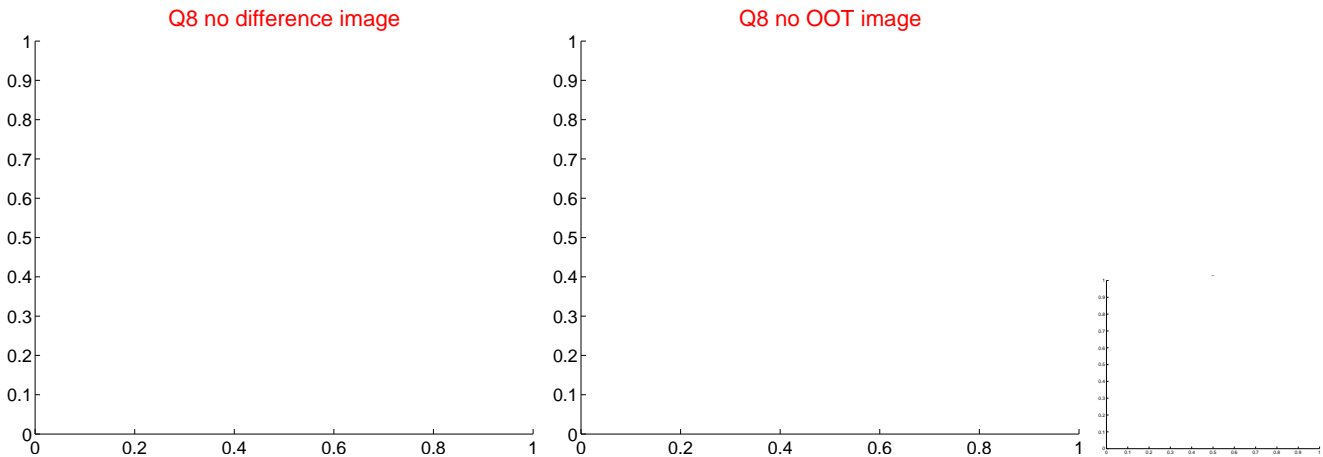
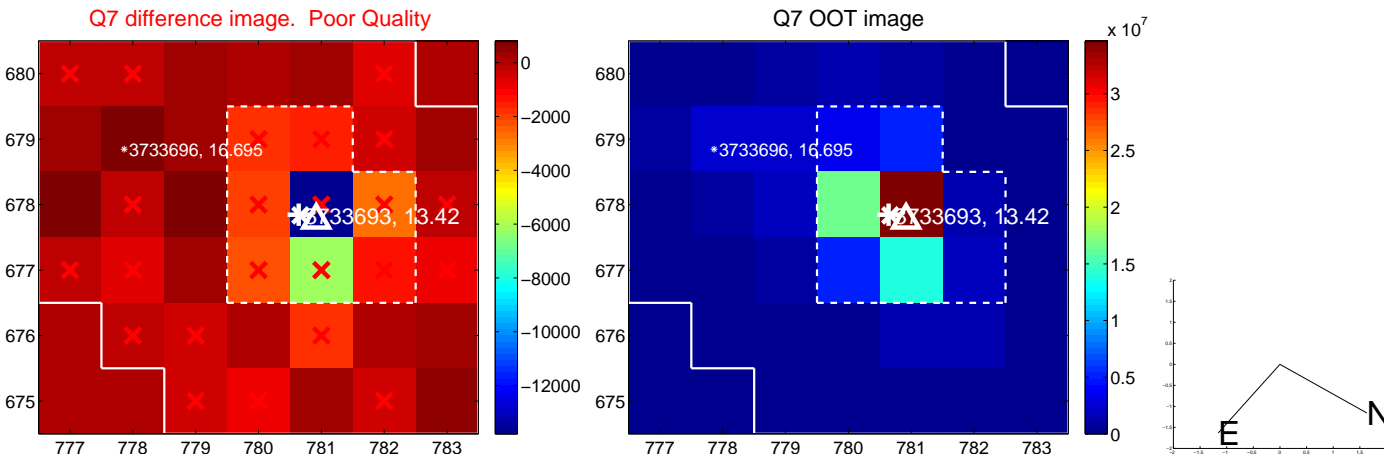
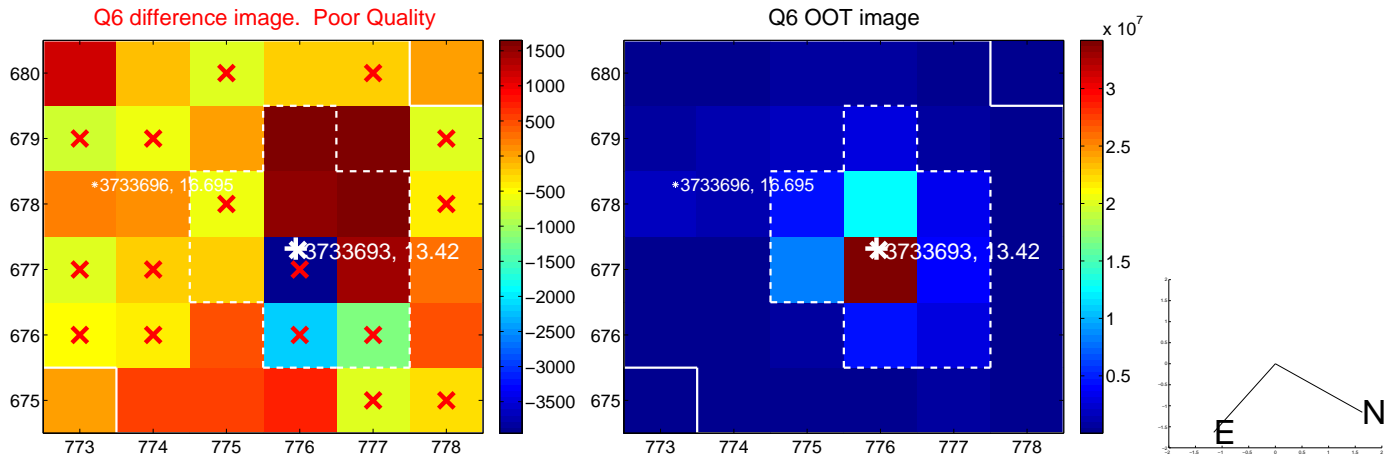
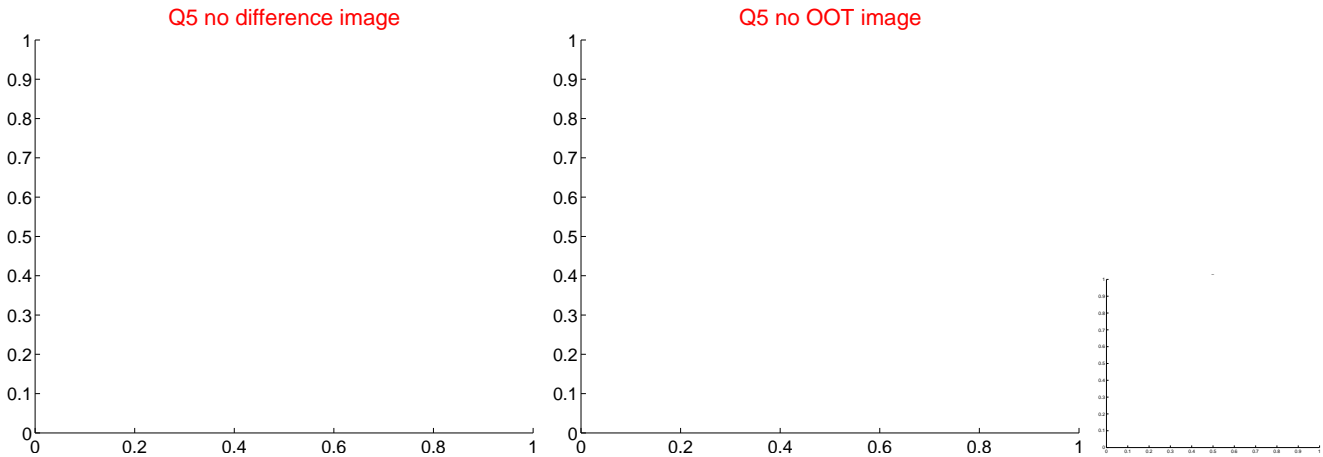


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

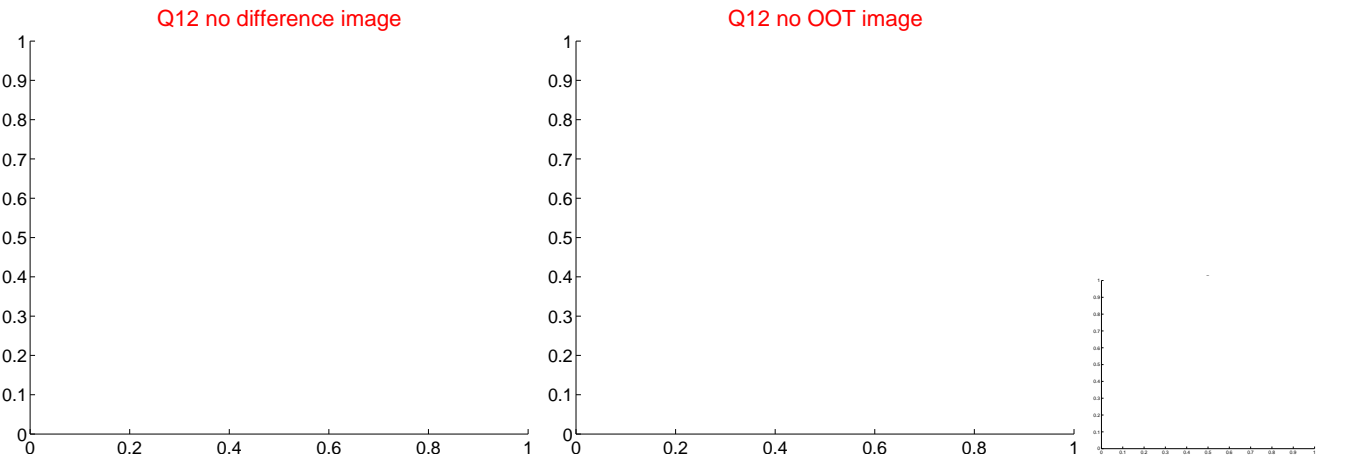
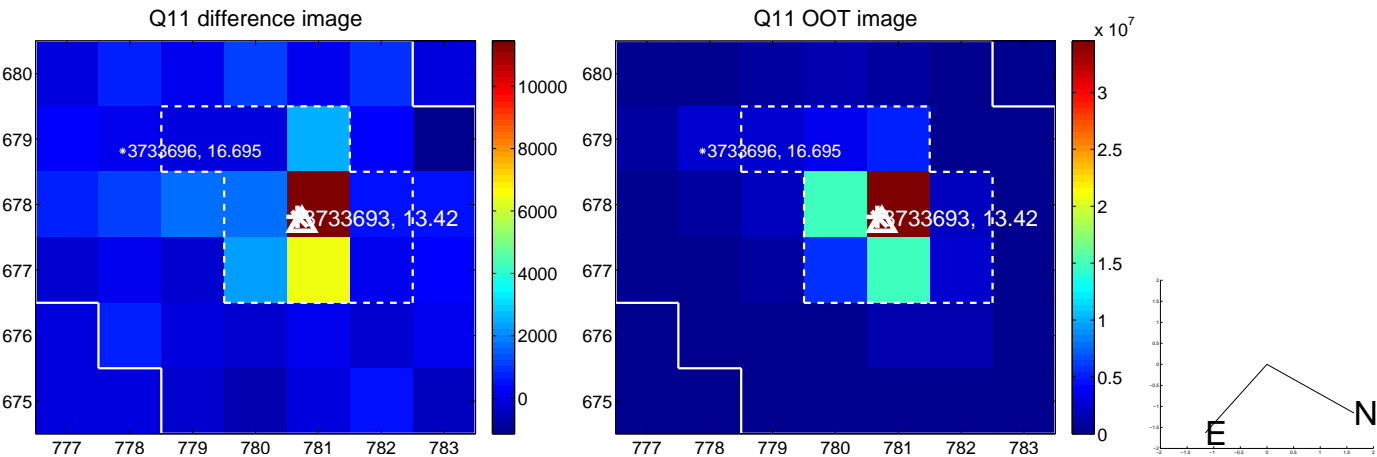
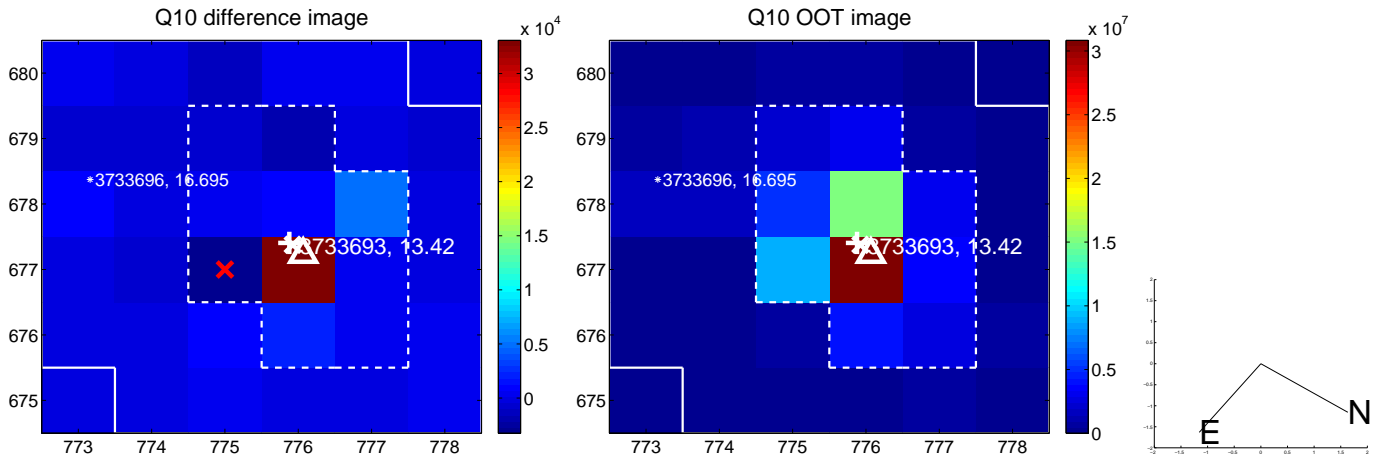
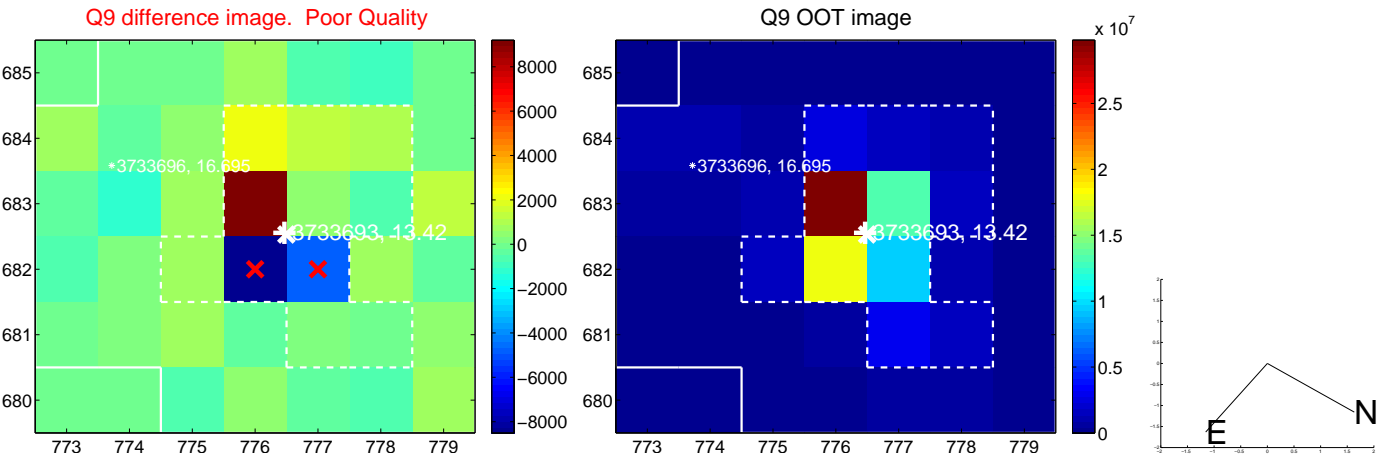
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



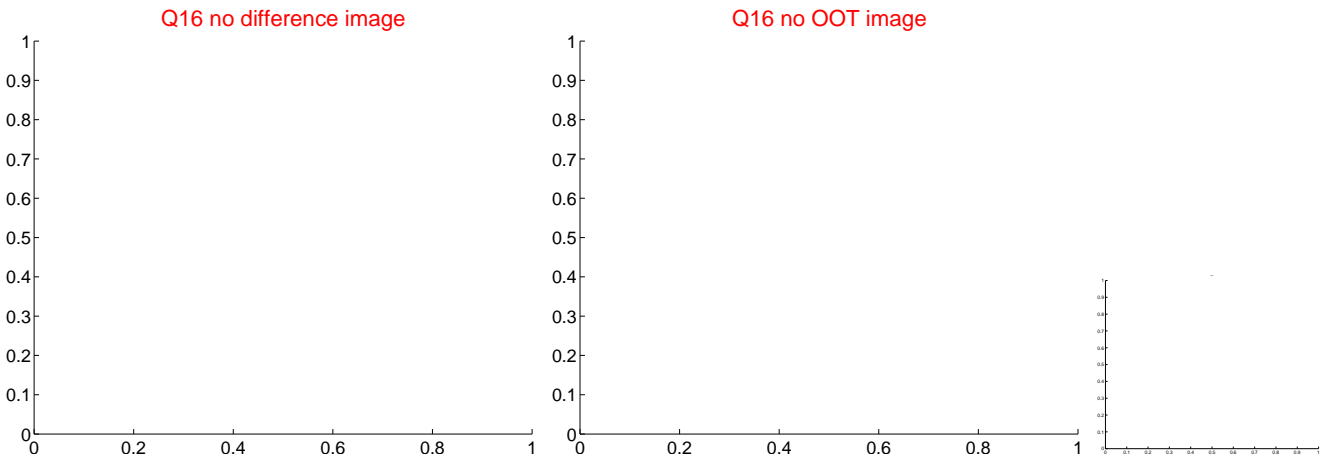
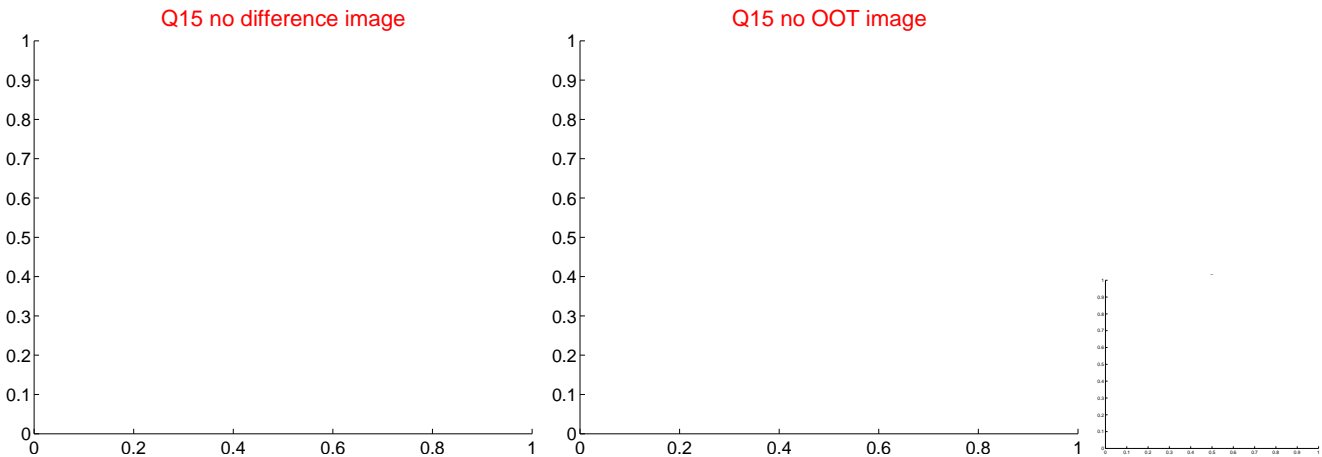
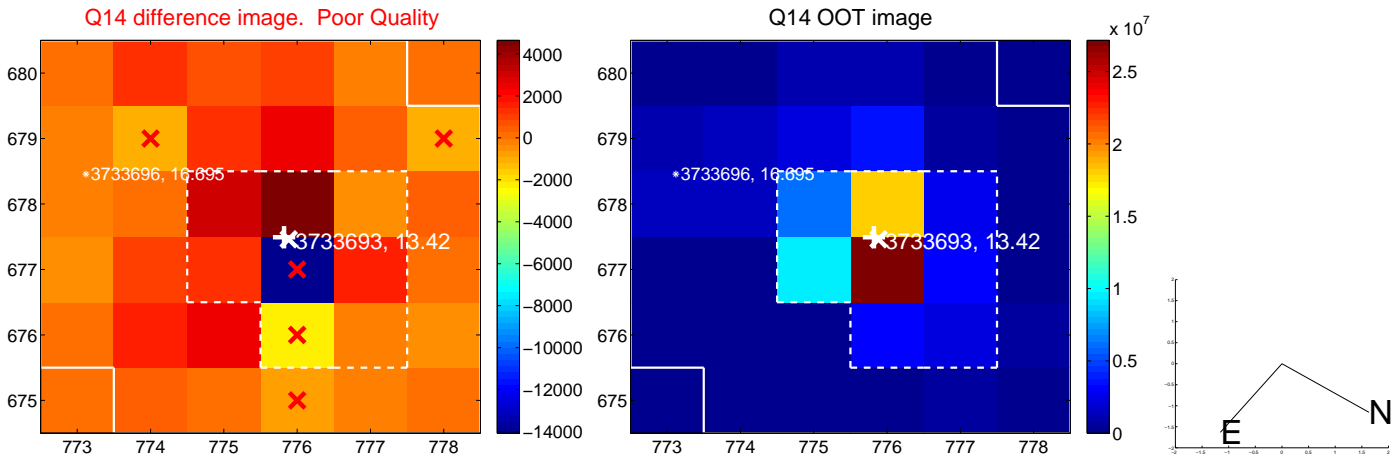
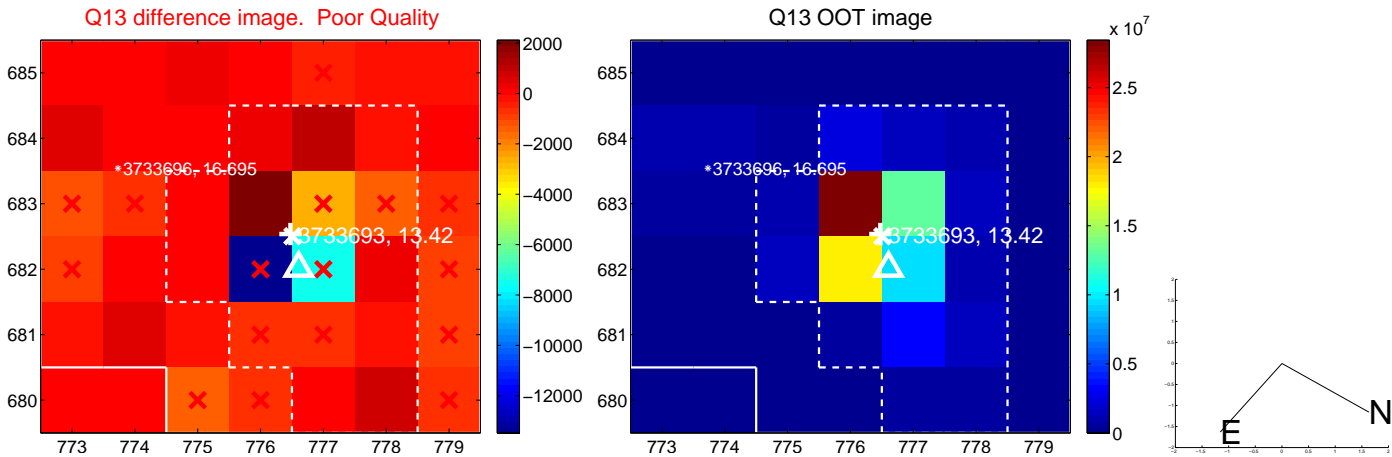
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



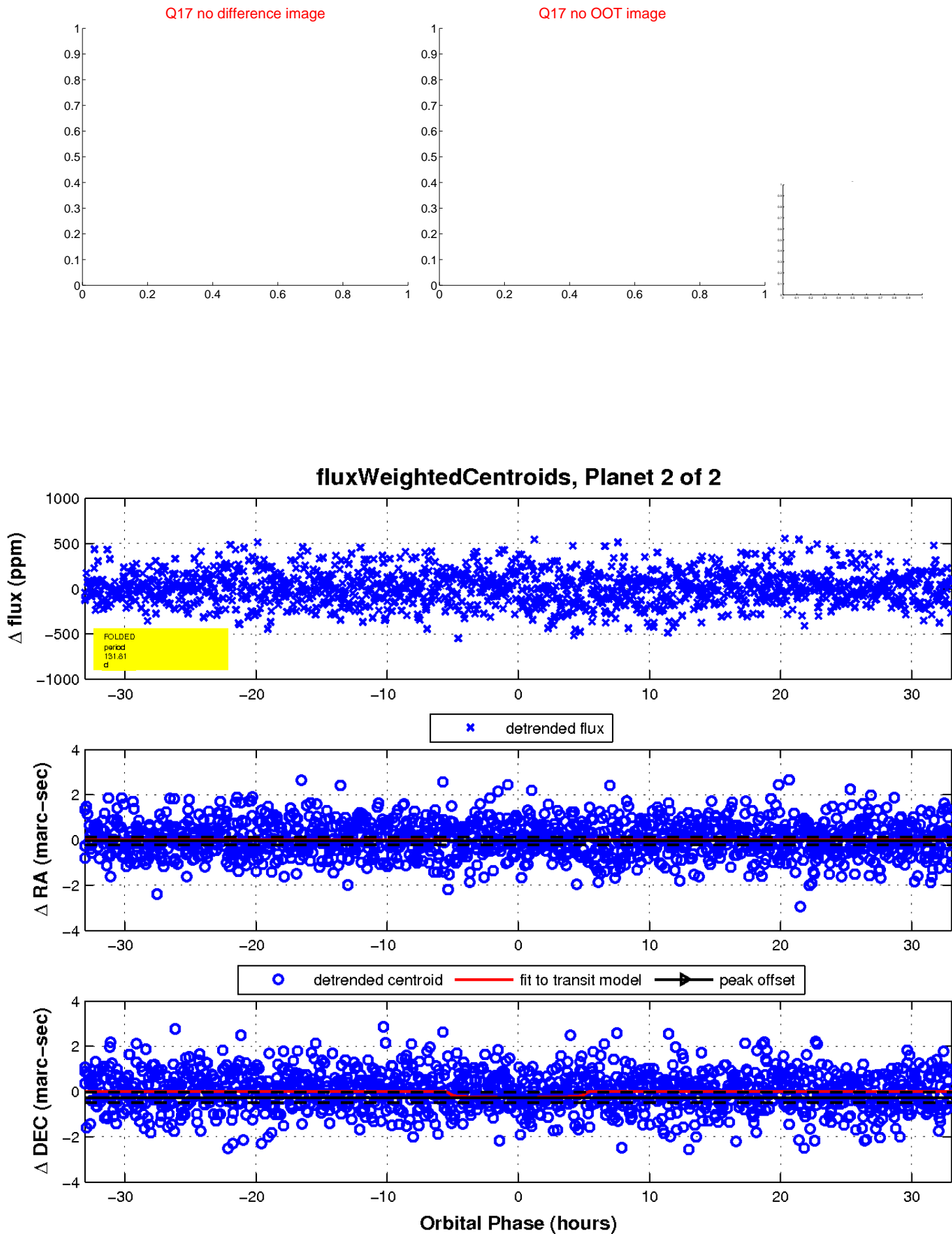
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



UKIRT Image

Declination

