

KIC 008324490

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})
008324490-01	OBS	No	6.162868	133.563234	27.7	20.132	9.7	7.0	4.25	6134	2.43	3638.15
008324490-02	OBS	No	6.162271	135.556839	68.7	15.000	12.4	-1.0	4.25	6134	3.52	3638.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324490-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008324490-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

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

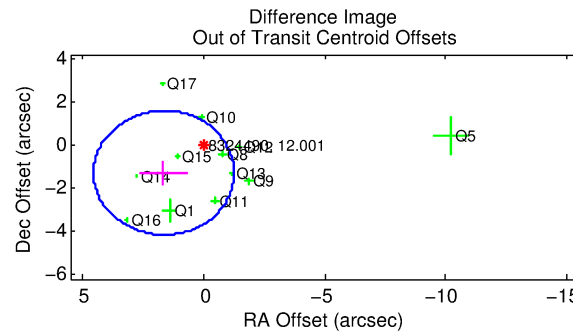
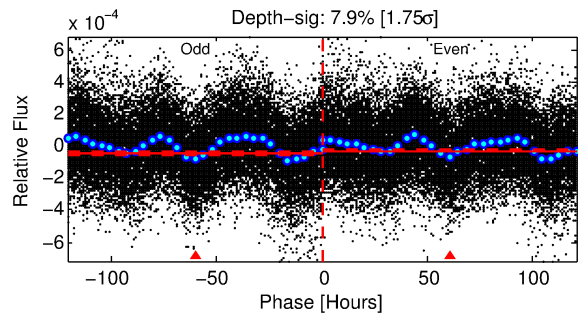
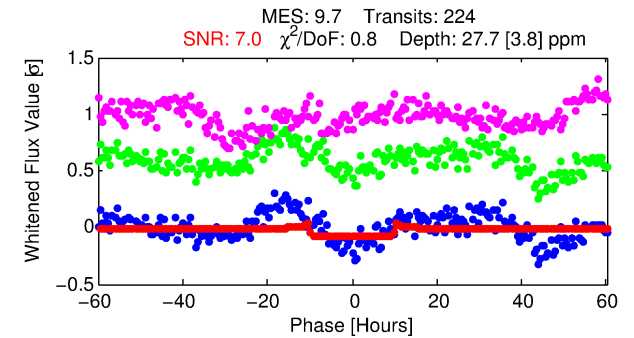
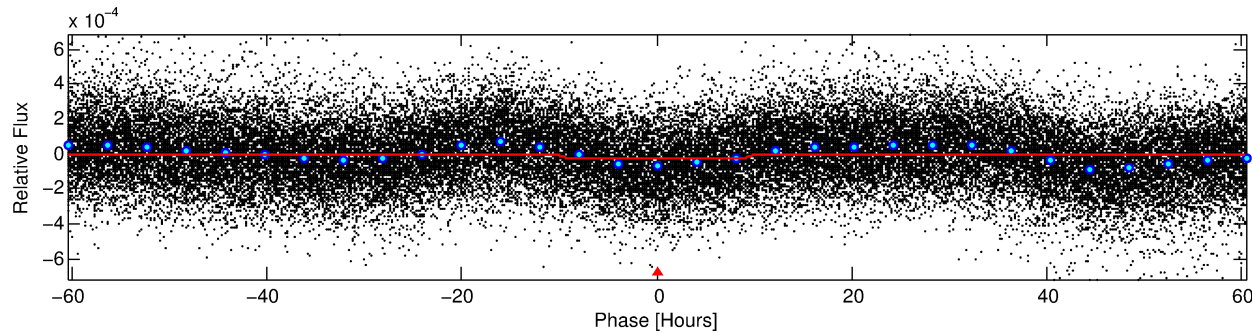
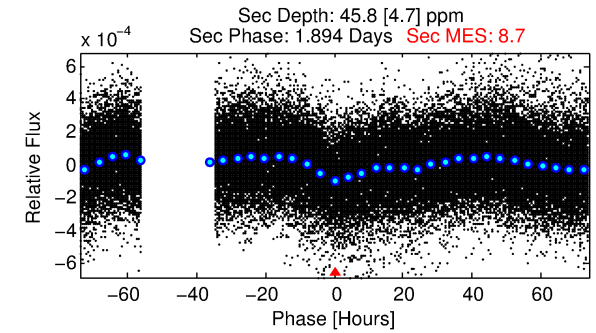
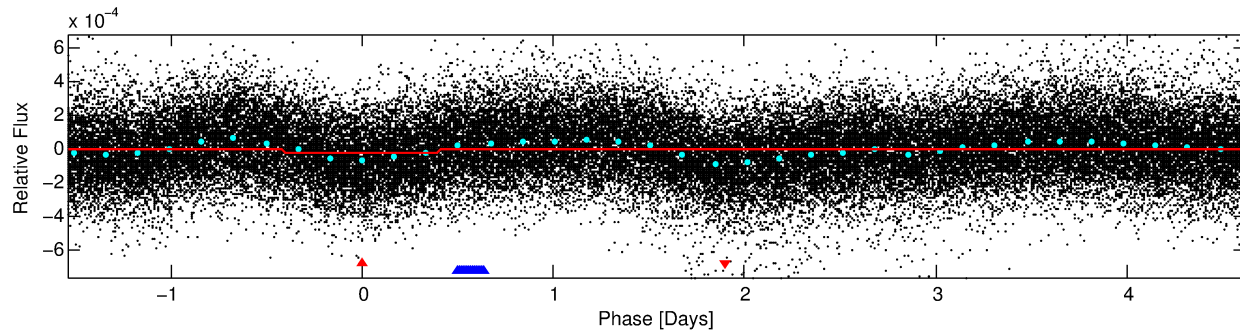
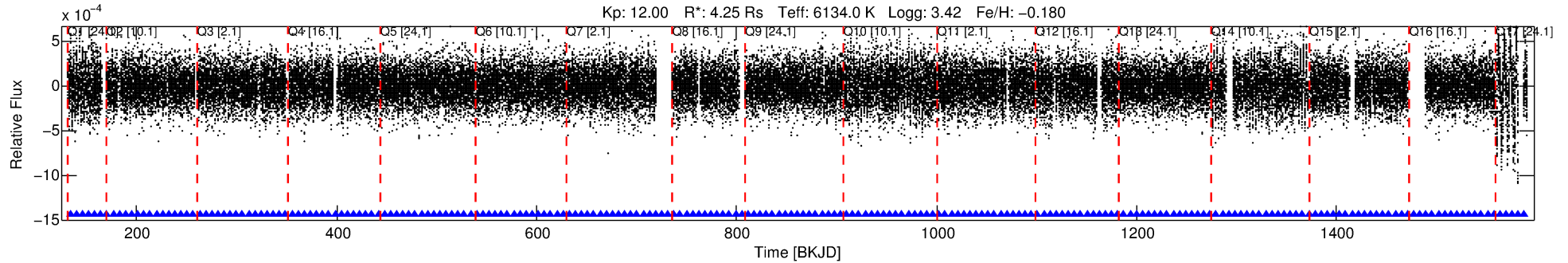
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008324490-01

No Significant Match Found

DV One-Page Summary

KIC: 8324490 Candidate: 1 of 2 Period: 6.163 d



DV Fit Results:

Period = 6.16287 [0.00012] d
Epoch = 133.5632 [0.0138] BKJD
Rp/R* = 0.0052 [0.0011]
a/R* = 1.78 [1.25]
b = 0.75 [0.60]
Seff = 3638.15 [2727.72]
Teq = 1980 [371] K
Rp = 2.43 [1.29] Re
a = 0.0793 [0.0369] AU
Ag = 26.87 [23.00] [1.12σ]
Teffp = 6971 [778] K [5.79σ]

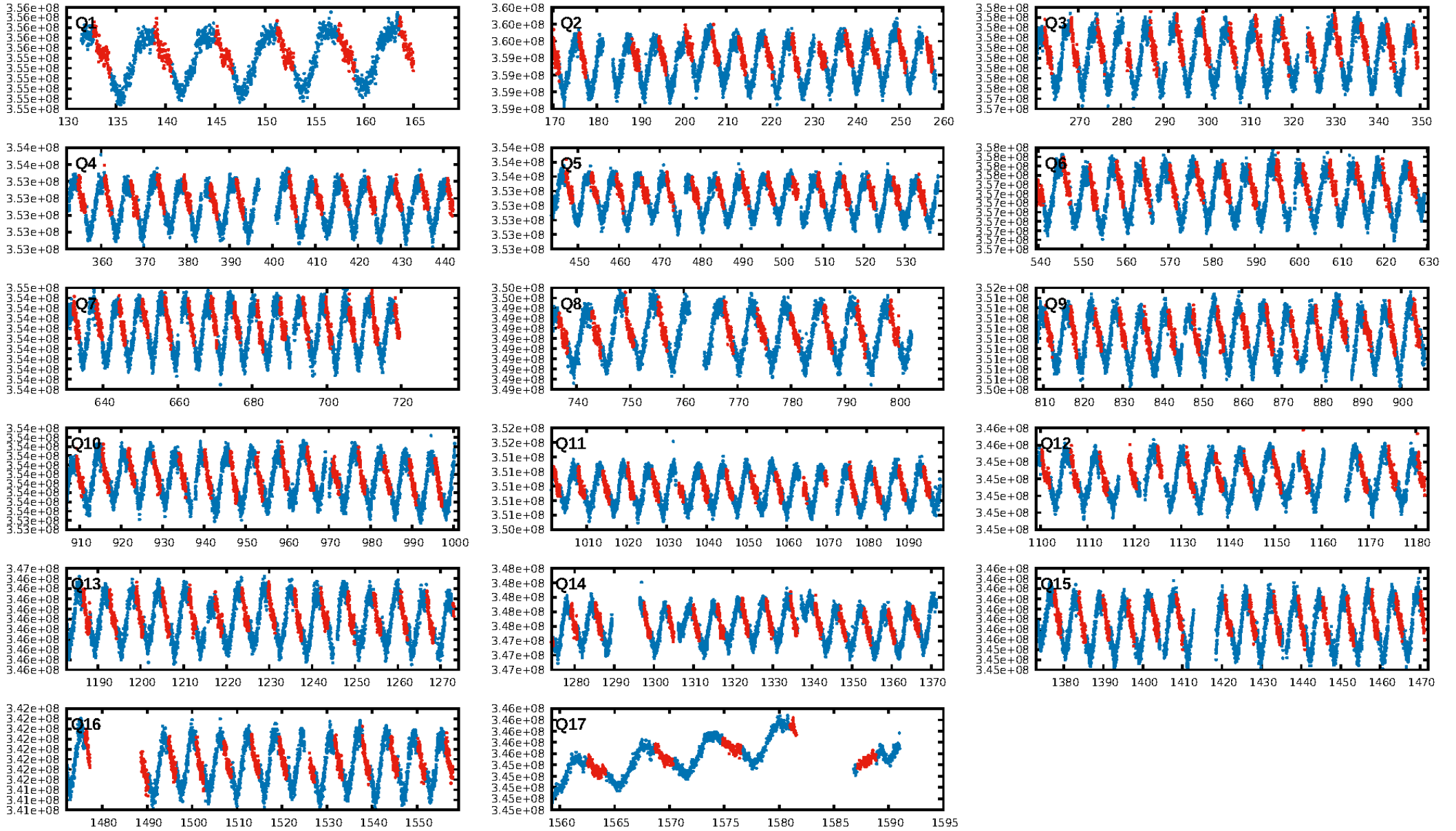
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.71e-11
RollingBand-fgt: 1.00 [213/213]
GhostDiagnostic-chr: 2.272
Centroid-sig: 5.7%
Centroid-so: 0.736 arcsec [0.86σ]
OotOffset-rm: 2.087 arcsec [2.16σ]
KicOffset-rm: 2.152 arcsec [2.40σ]
OotOffset-st: 2/2/3/5 [12]
KicOffset-st: 2/2/3/5 [12]
DiffImageQuality-fgm: 0.50 [6/12]
DiffImageOverlap-fno: 0.00 [0/17]

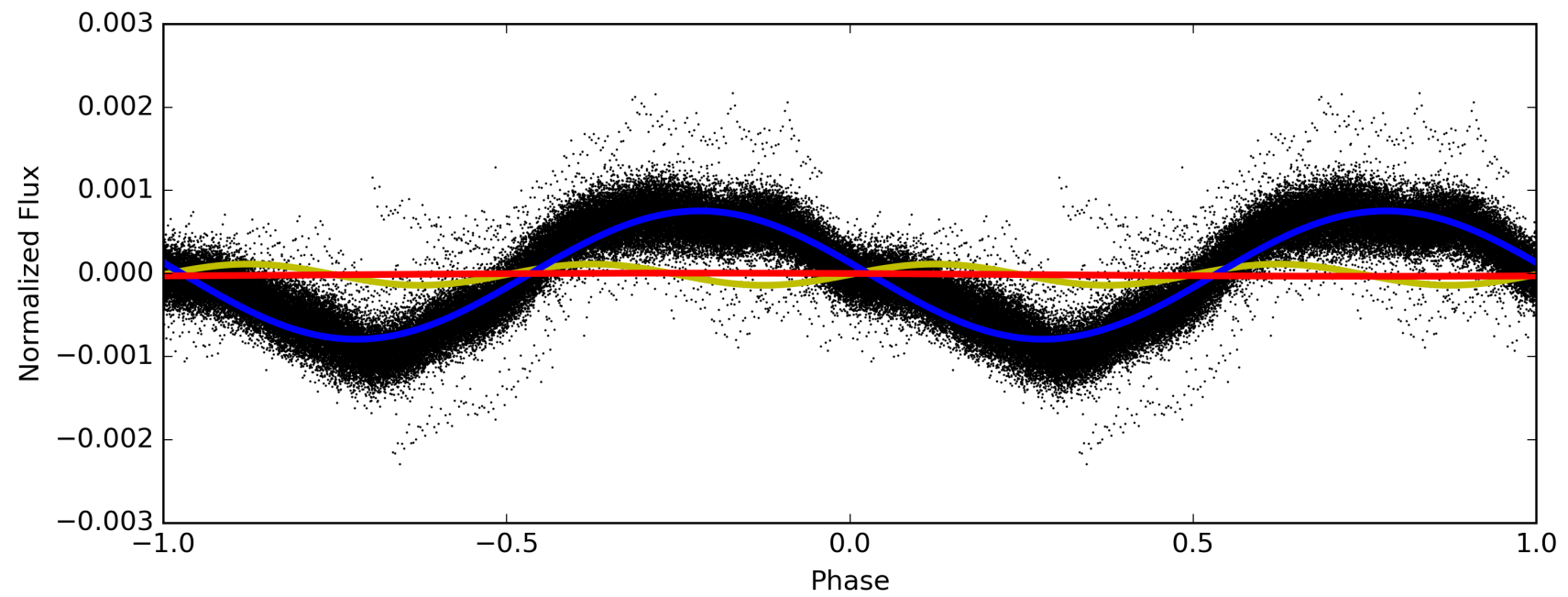
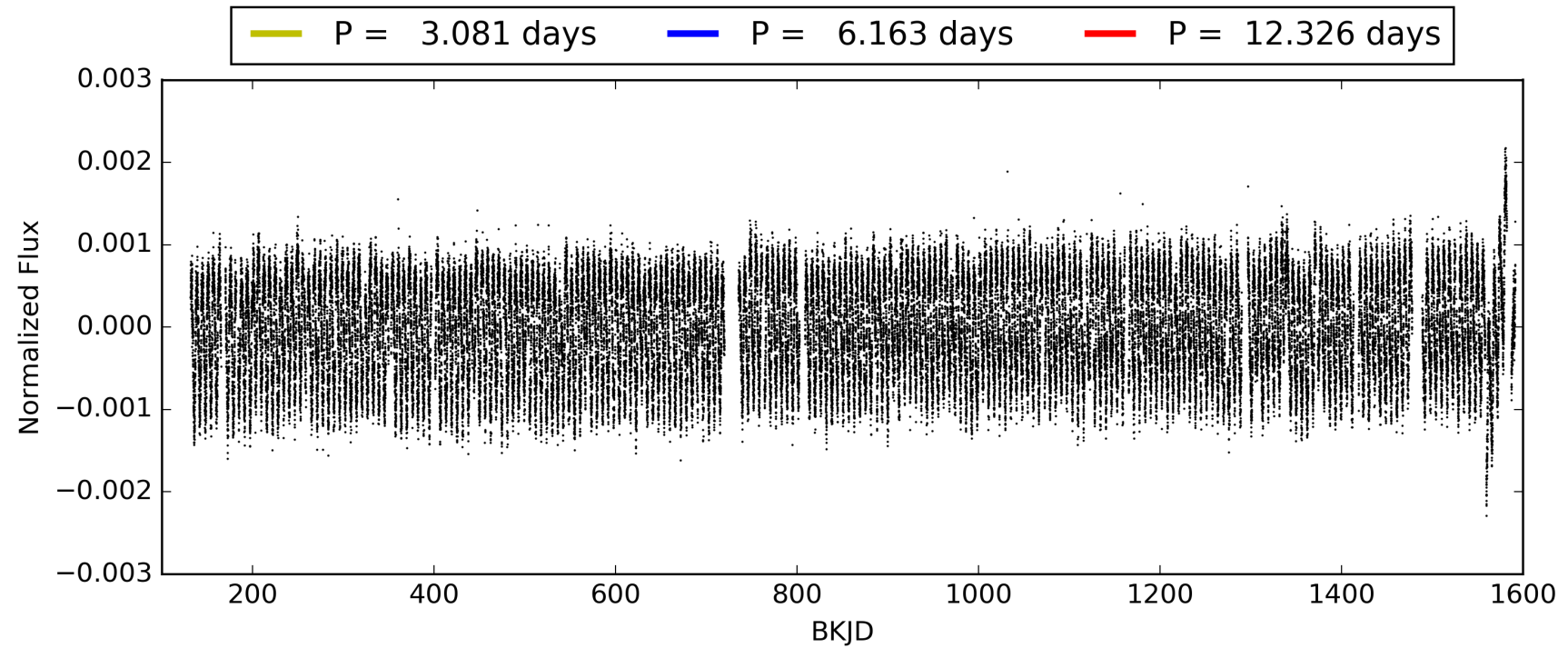
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:58:43 Z

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

TCE 008324490-01, PDC Light Curves

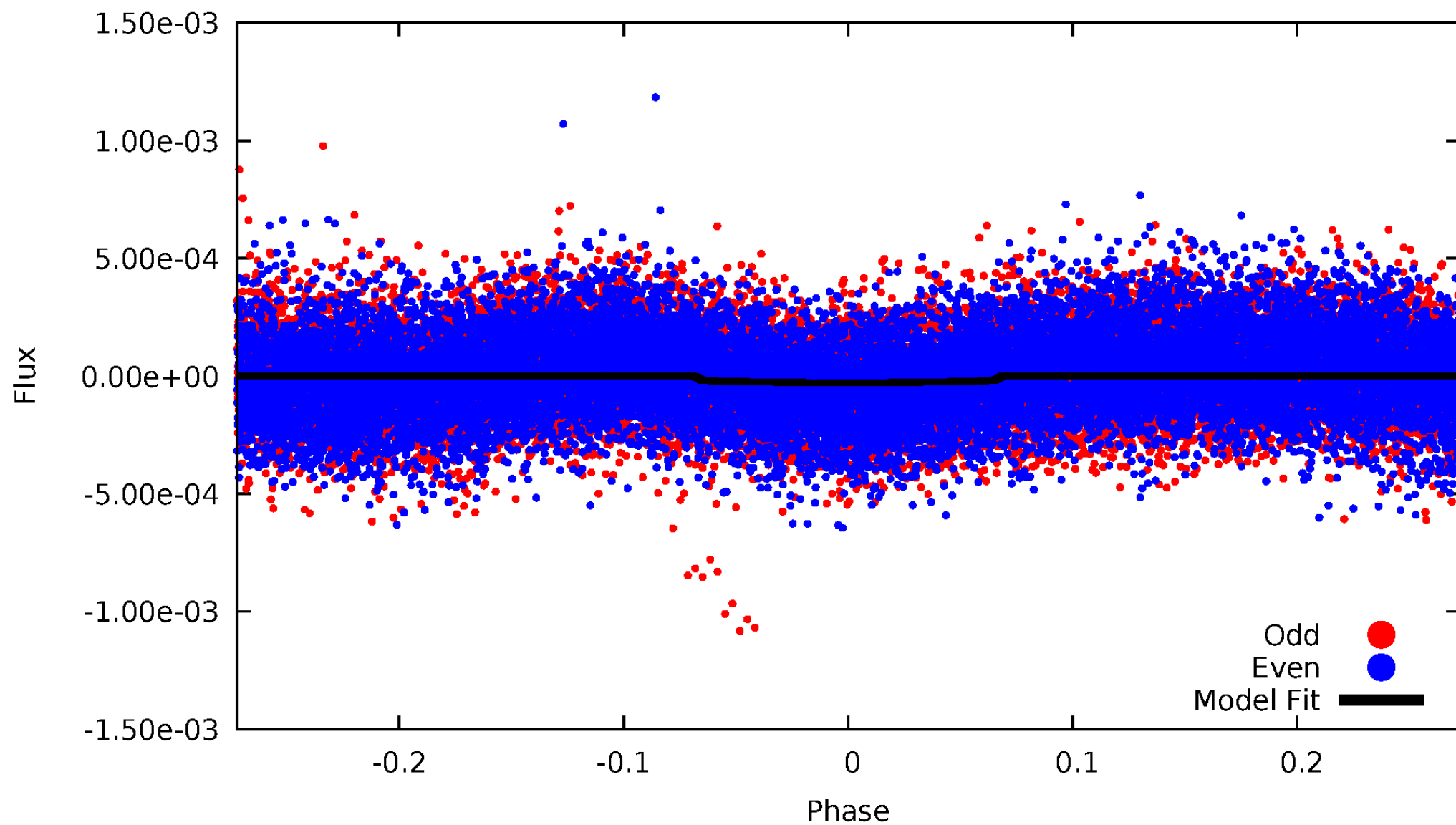


TCE 008324490-01



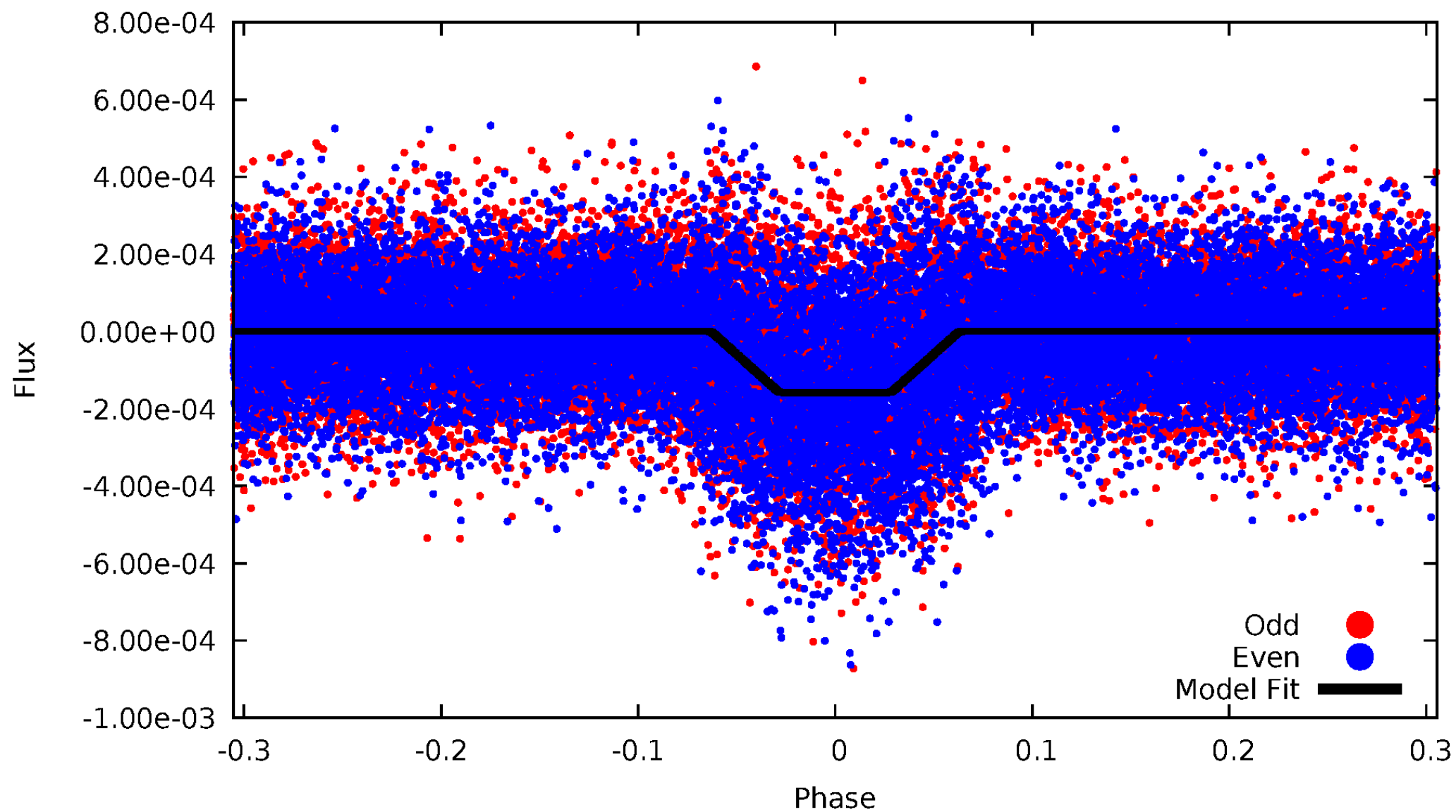
DV Odd/Even

TCE 008324490-01

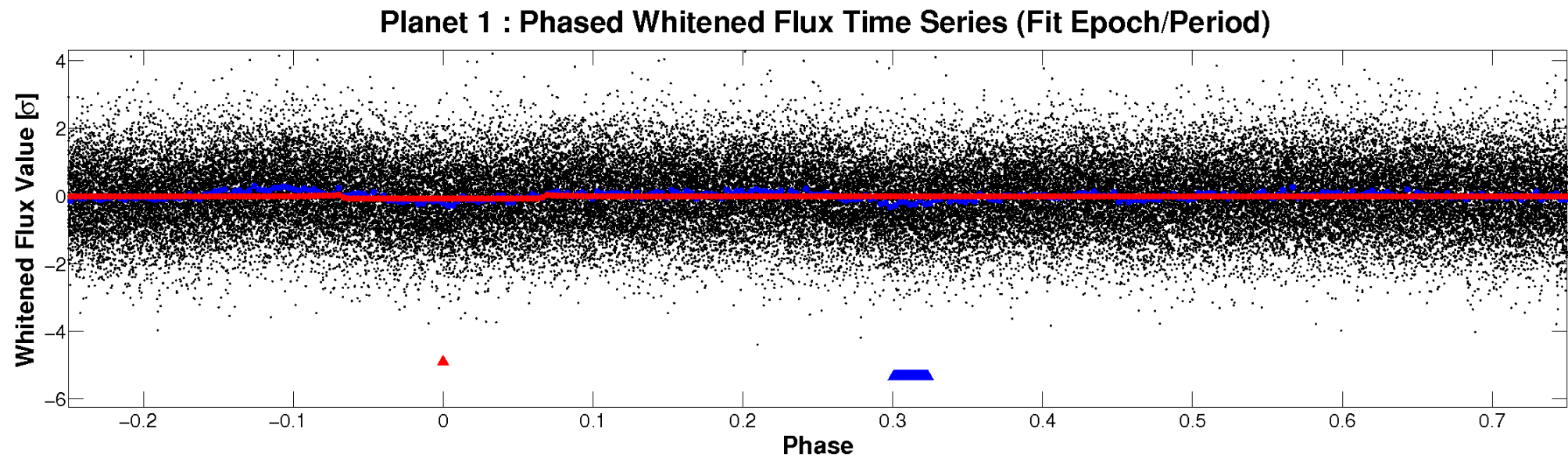
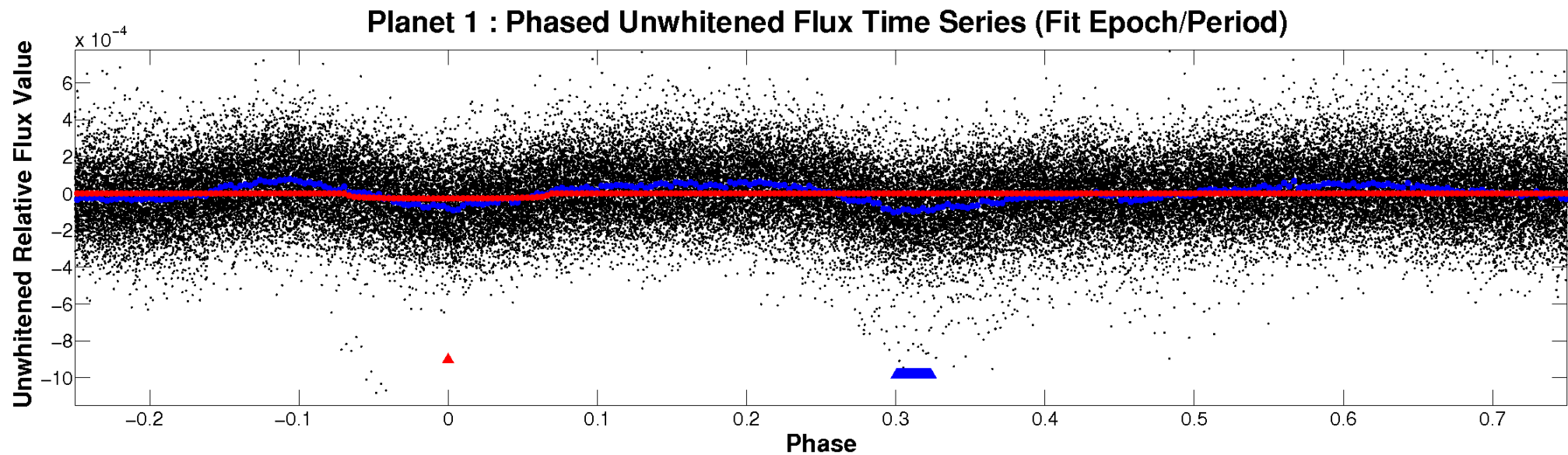


ALT Odd/Even

TCE 008324490-01

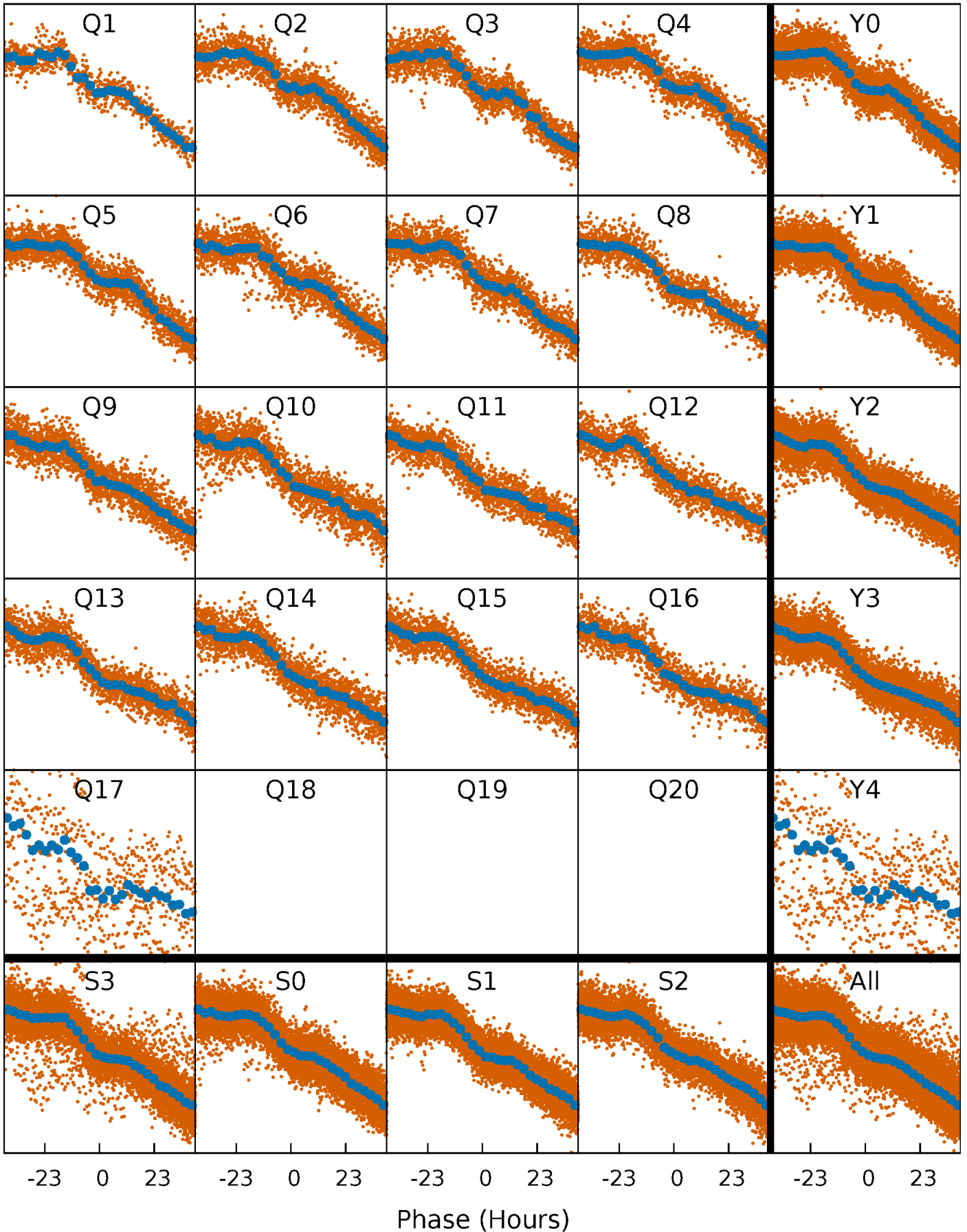


Non-Whitened Vs. Whitened Light Curve



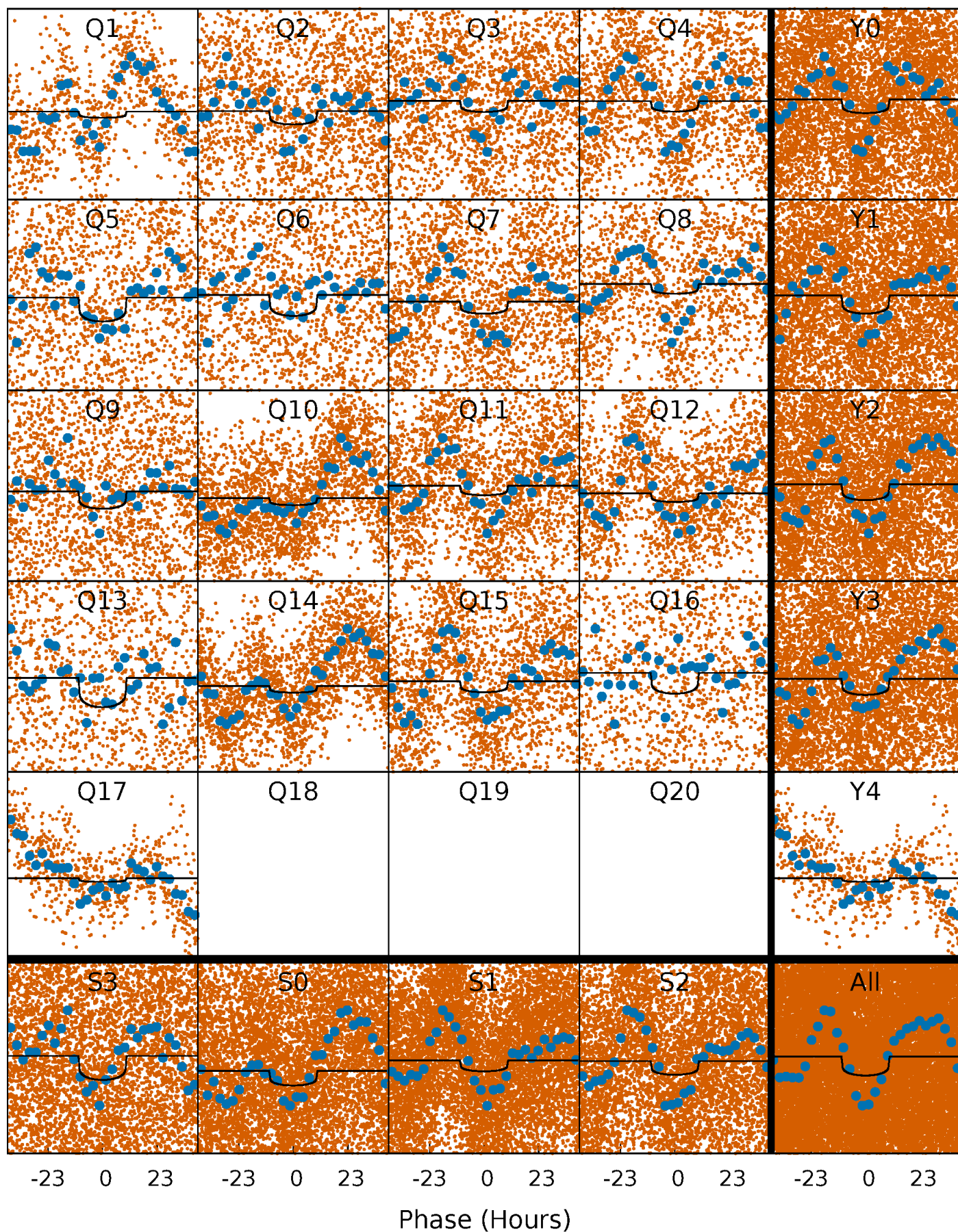
PDC Quarter-Phased Transit Curves

TCE 008324490-01 P= 6.162868 Days $T_0=133.563234$ (BKJD)



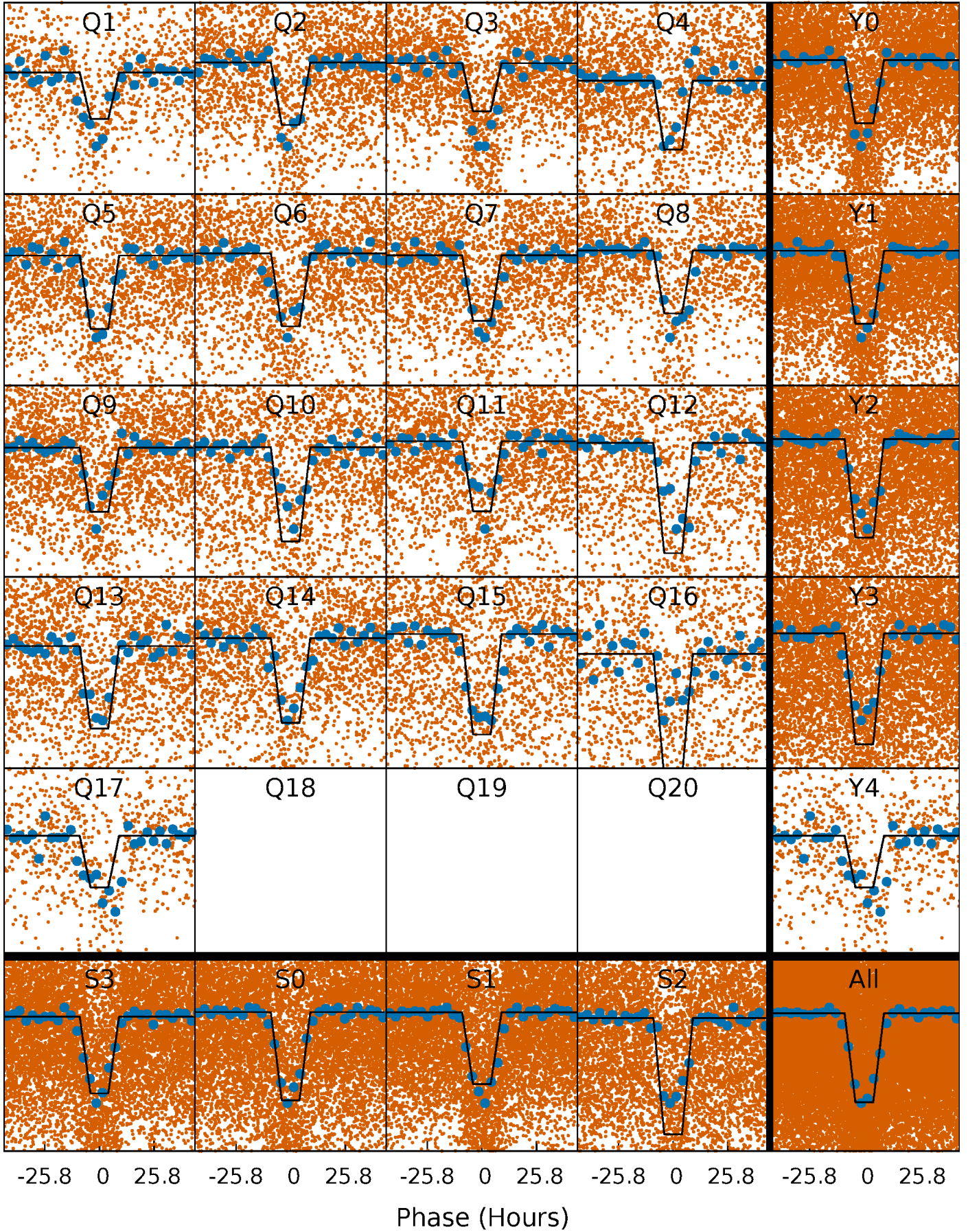
DV Quarter-Phased Transit Curves

TCE 008324490-01 P= 6.162868 Days $T_0=133.563234$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

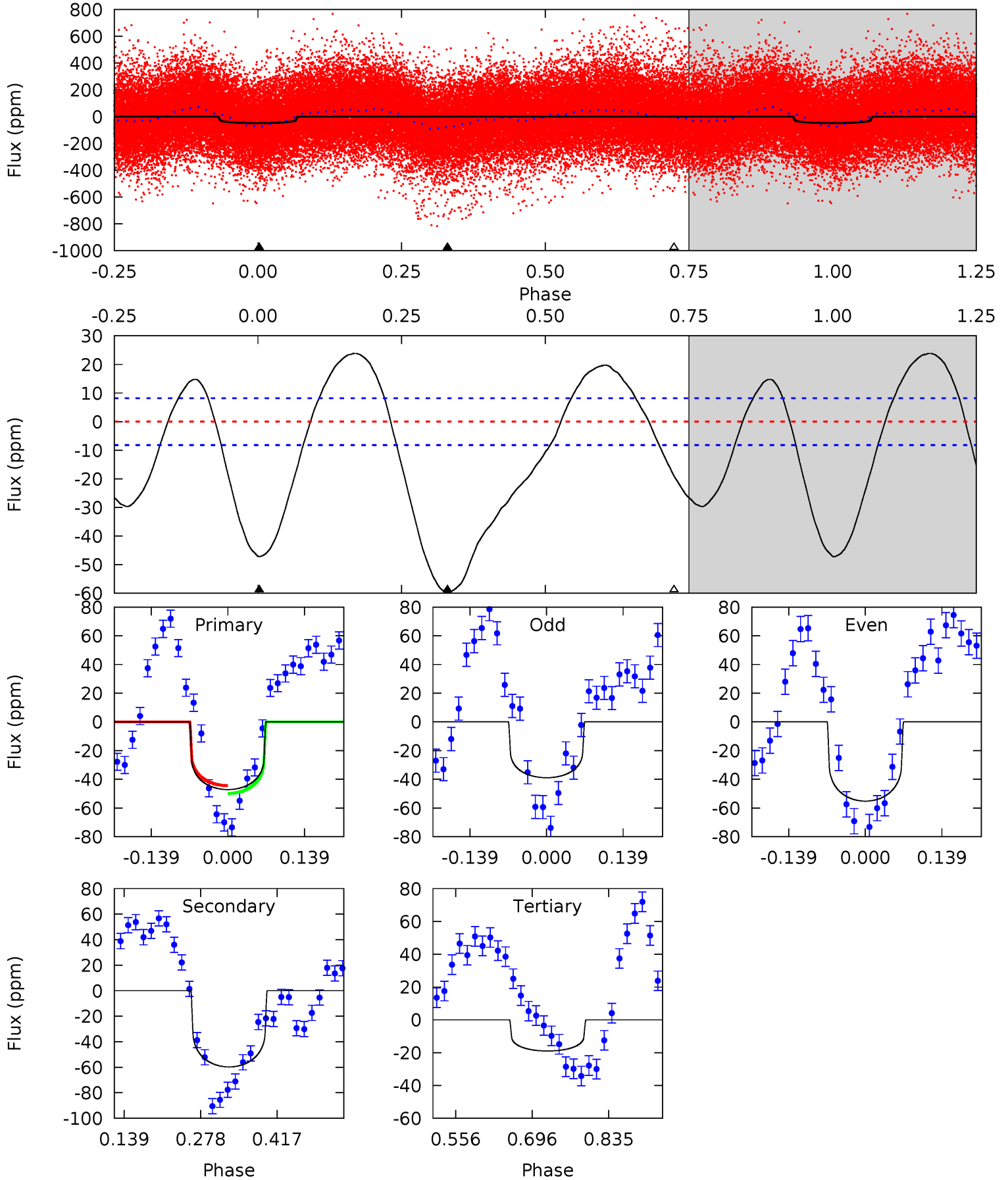
TCE 008324490-01 P= 6.162798 Days $T_0=133.580823$ (BKJD)



DV Model-Shift Uniqueness Test

008324490-01, P = 6.162868 Days, E = 127.400366 Days

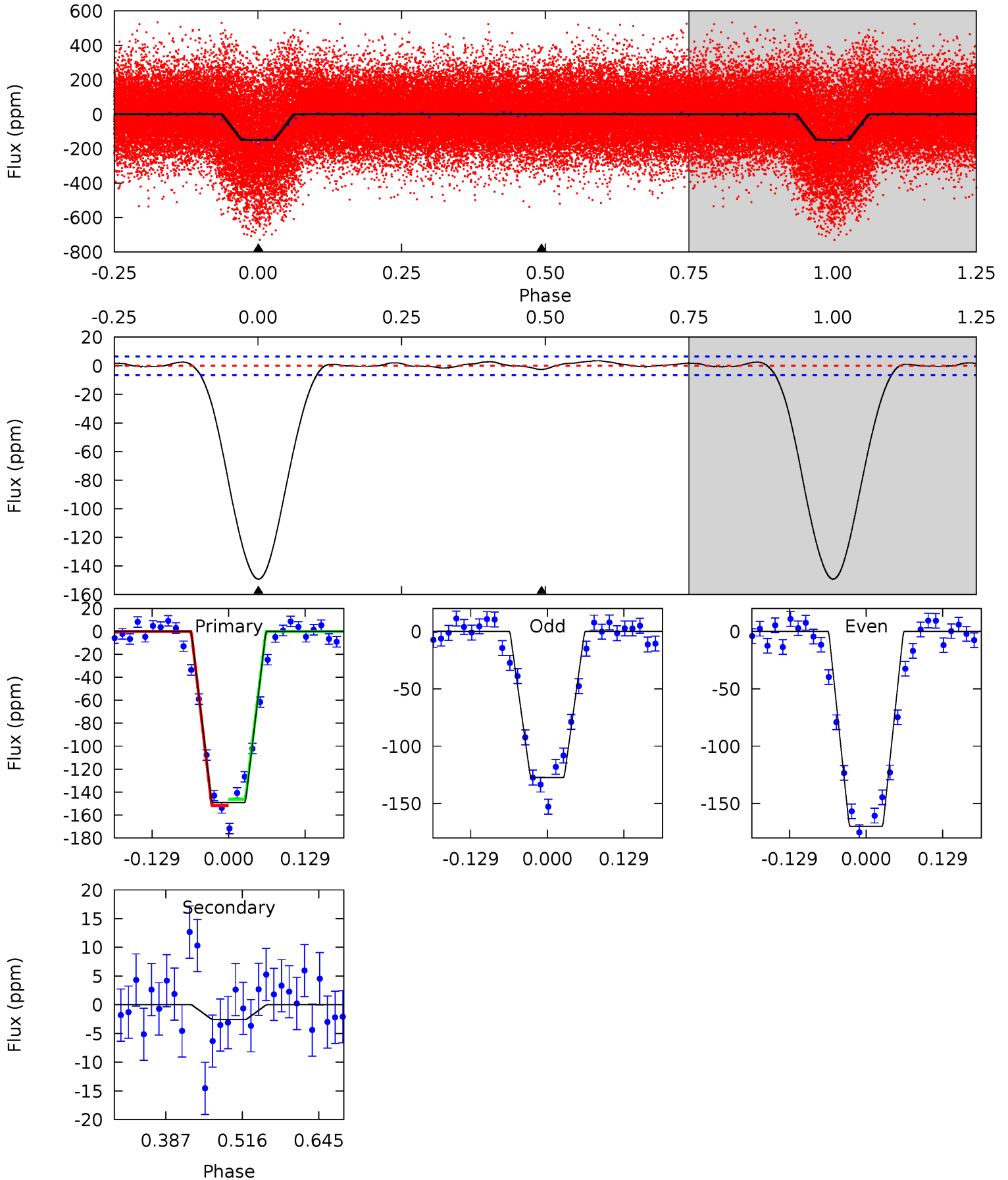
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.9	32.8	10.4	0	4.50	1.48	9.50	15.5	25.9	22.4	32.8	4.48	1.09	0.29	1.53



Alt Model-Shift Uniqueness Test

008324490-01, P = 6.162798 Days, E = 127.418025 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
105.3	1.83	0	0	4.51	1.52	0.68	105.3	105.3	1.83	1.83	15.0	1.13	0.02	1.92



Stellar Parameters For KIC 008324490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6134^{+183}_{-183}	$3.425^{+0.433}_{-0.076}$	$-0.180^{+0.350}_{-0.300}$	$4.247^{+0.519}_{-2.075}$	$1.753^{+0.129}_{-0.515}$	$0.032^{+0.134}_{-0.008}$
	+3%/-3%	+13%/-2%	+194%/-167%	+12%/-49%	+7%/-29%	+415%/-25%
Source	PHO1	FLK73	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 008324490-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-60 ± 2	$2.20^{+0.67}_{-0.68}$	2692^{+168}_{-320}	7619^{+1191}_{-853}	42^{+42}_{-17}
Alt.	-3 ± 1	$5.48^{+0.91}_{-1.27}$	2706^{+176}_{-283}	-1758^{+4521}_{-980}	$0.297^{+0.260}_{-0.168}$

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 $A_{\text{obs}} \gg 1.0$

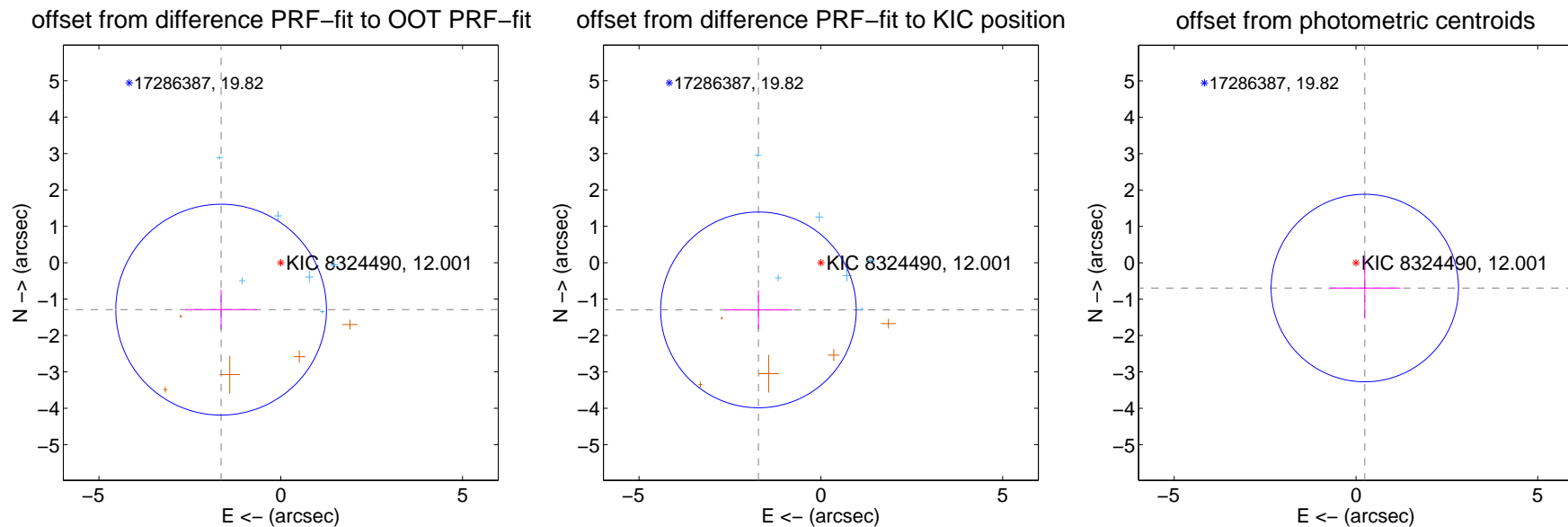
DV Centroid Data

Supplemental centroid analysis for 008324490-01. Kepler magnitude: 12.00. Transit SNR 6.98

There are 6 quarters with good PRF difference image offsets

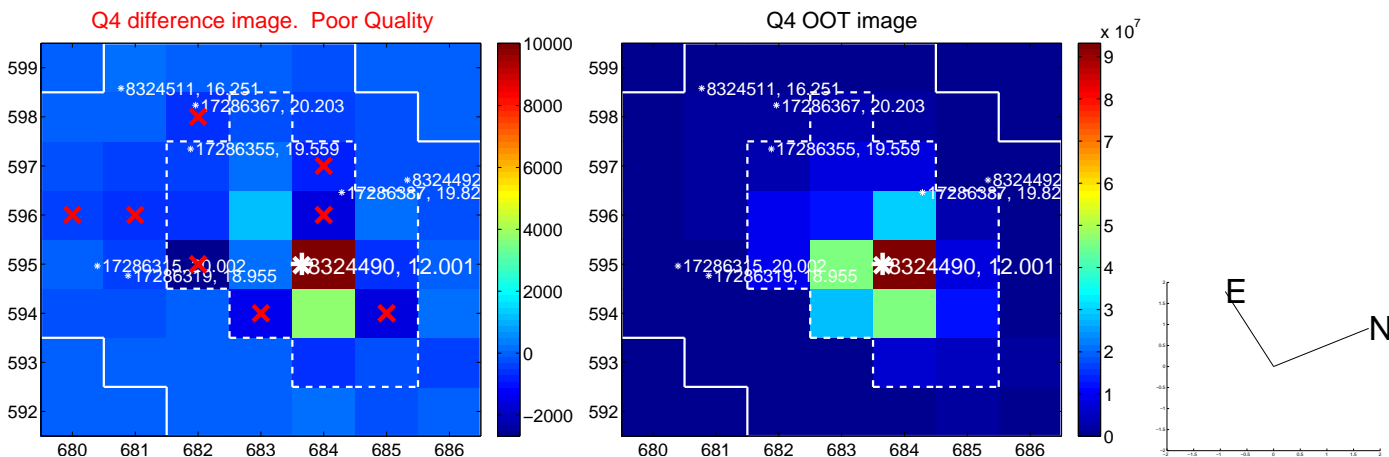
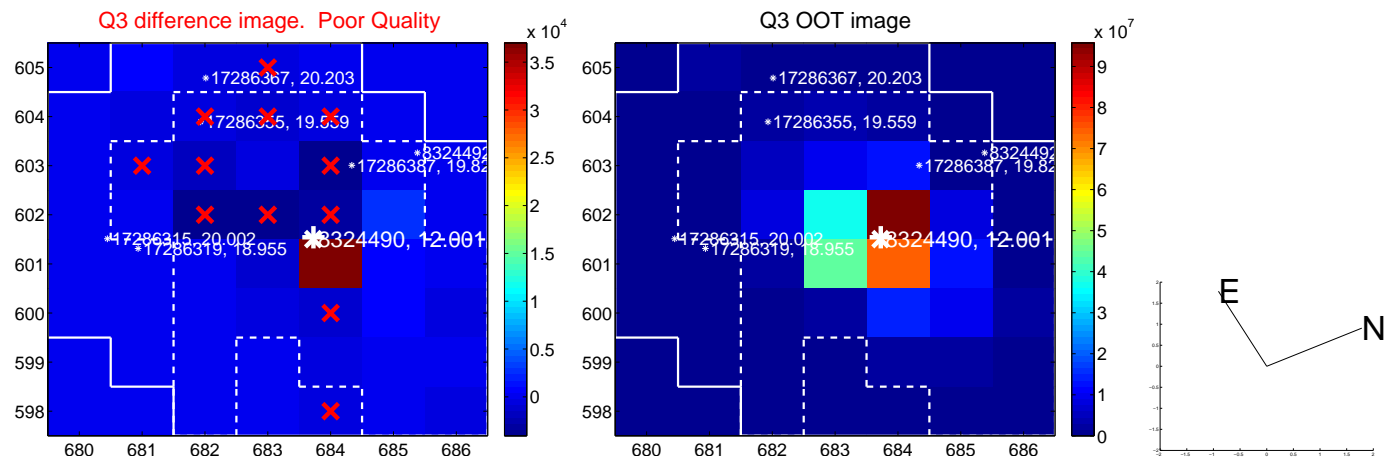
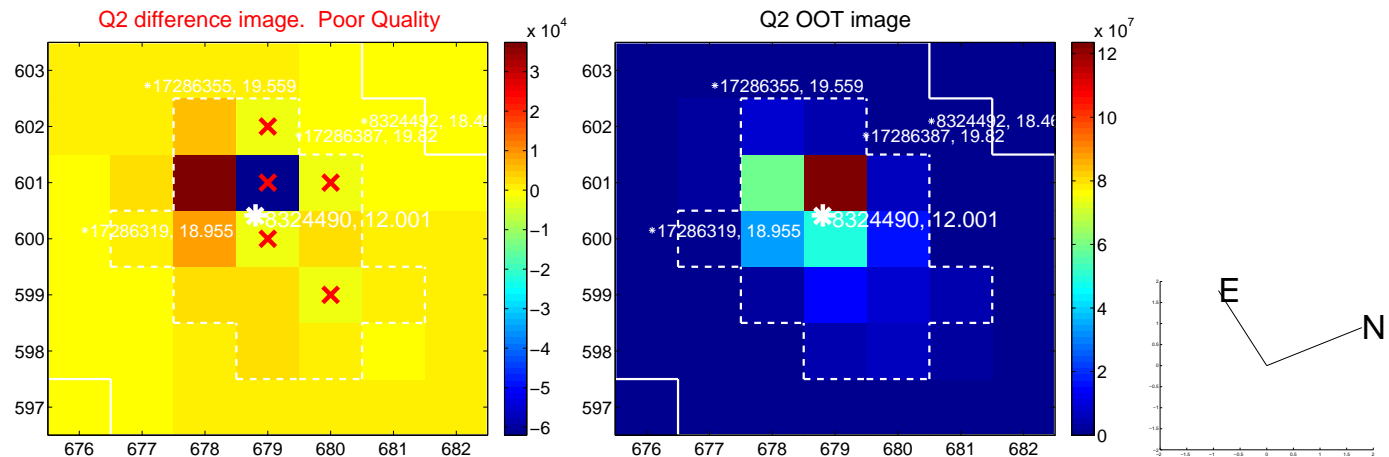
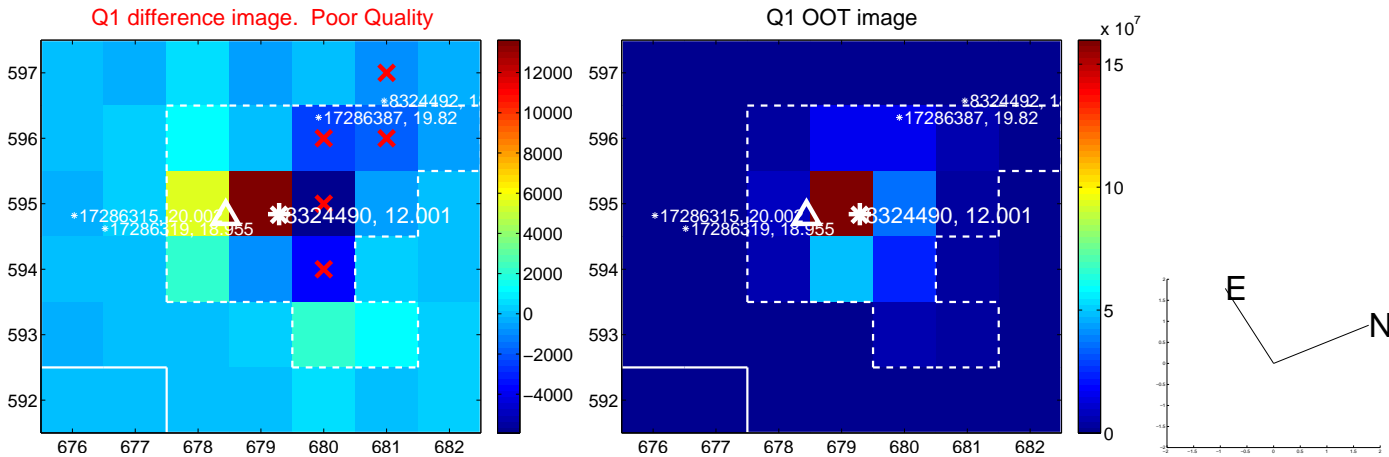
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.087 ± 0.966	2.16	1.640 ± 0.982	-1.291 ± 0.544
PRF-fit source offset from KIC position	2.152 ± 0.897	2.40	1.717 ± 0.936	-1.297 ± 0.536
photometric centroid source offset	0.74 ± 0.86	0.86	-0.24 ± 0.98	-0.69 ± 0.84

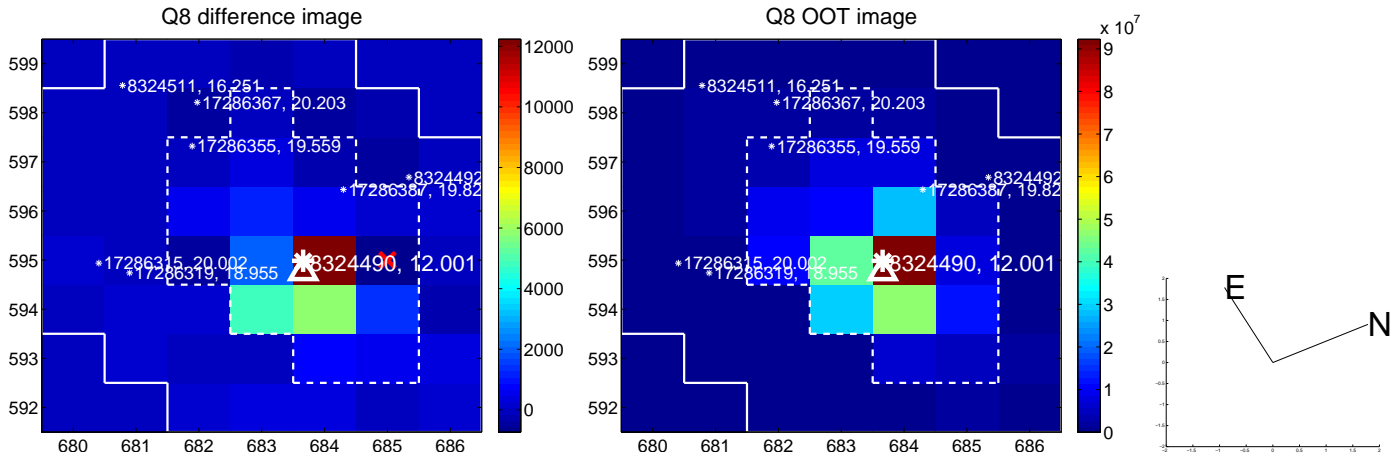
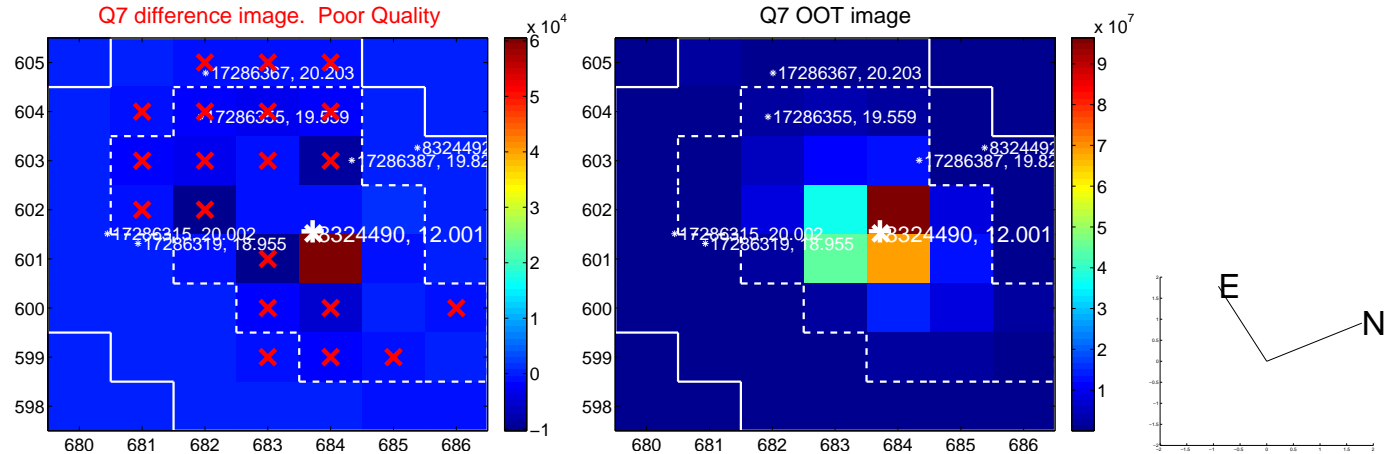
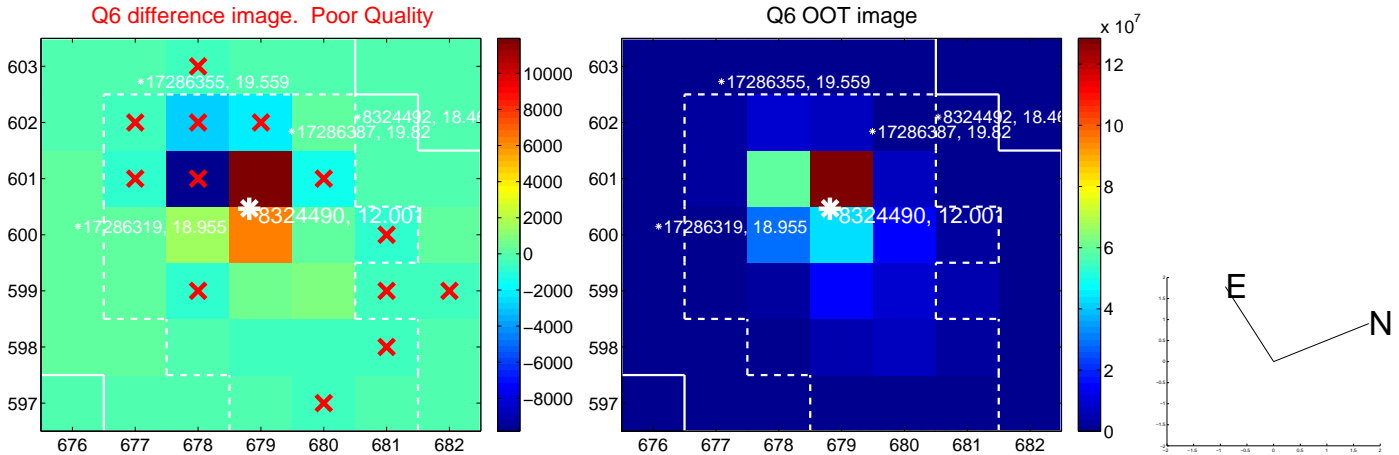
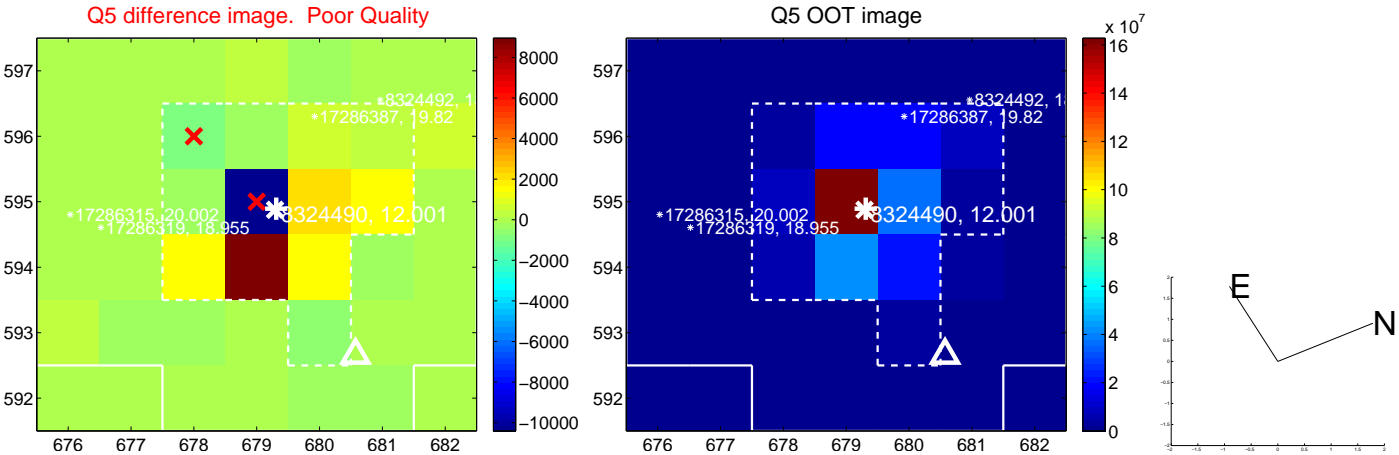


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

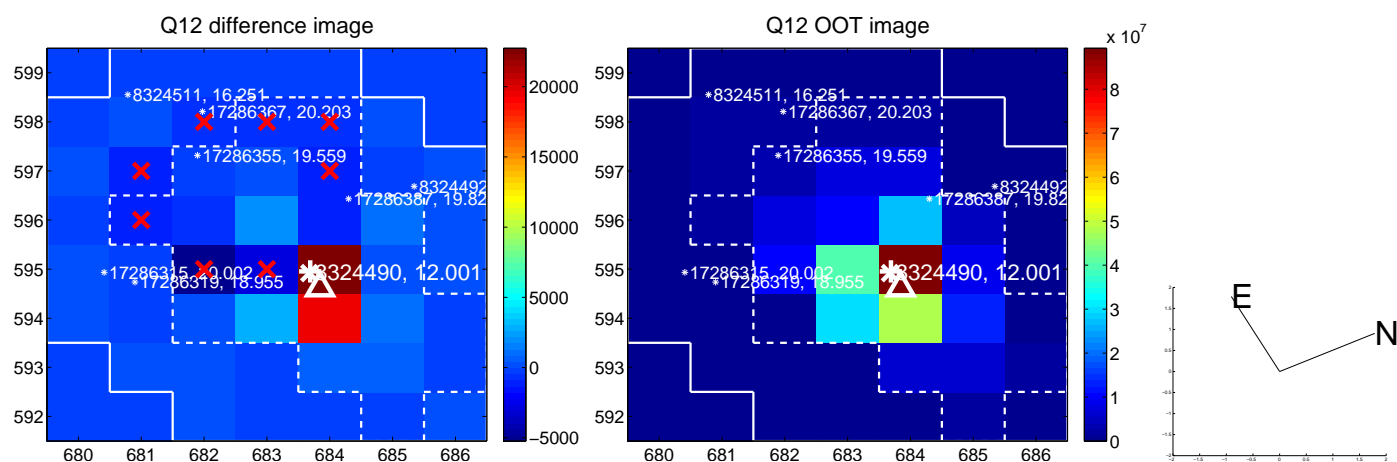
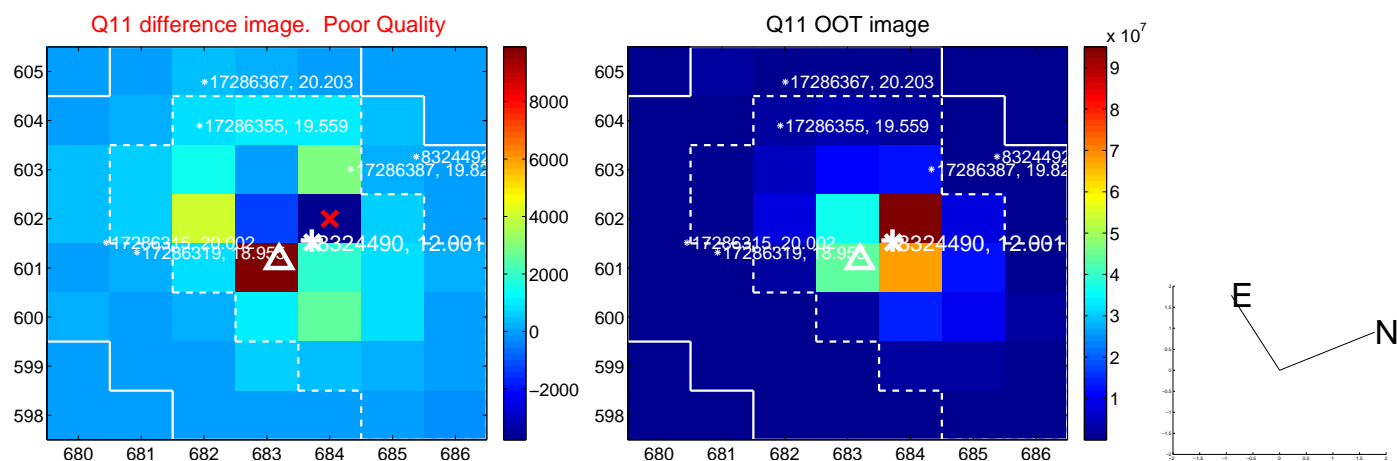
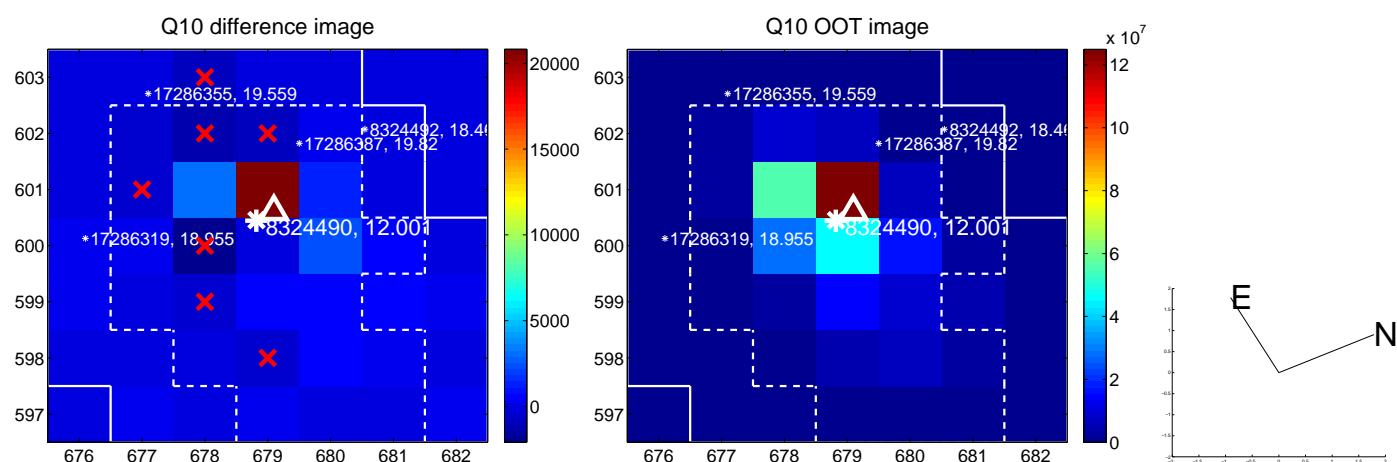
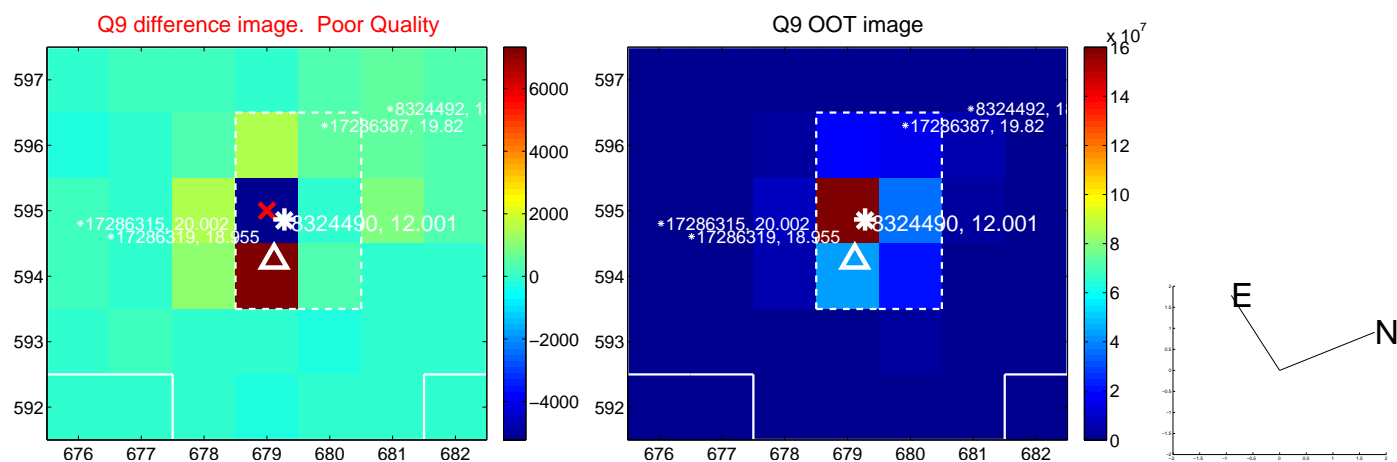
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



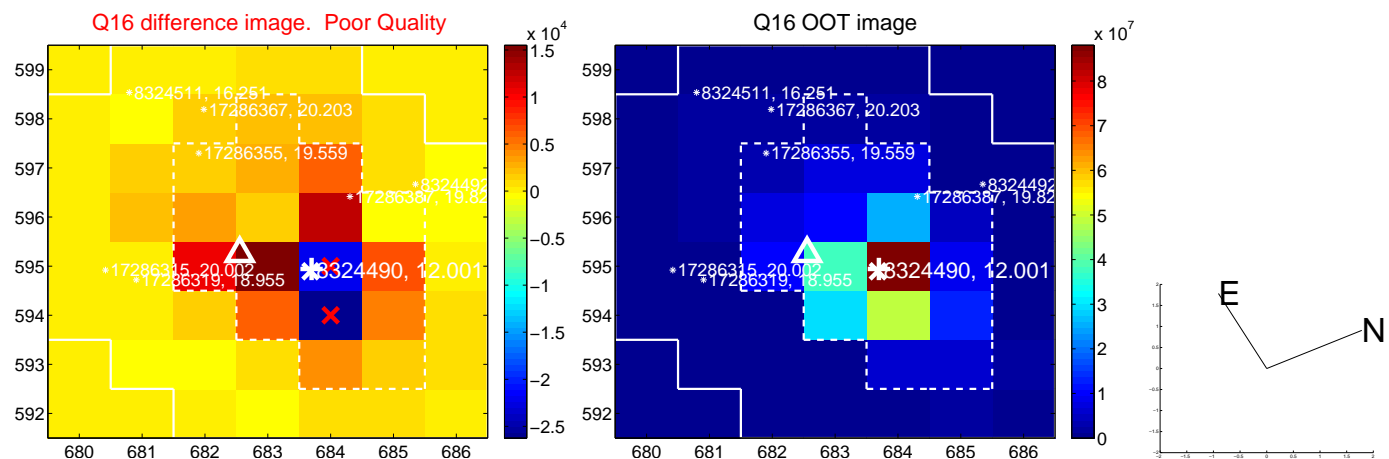
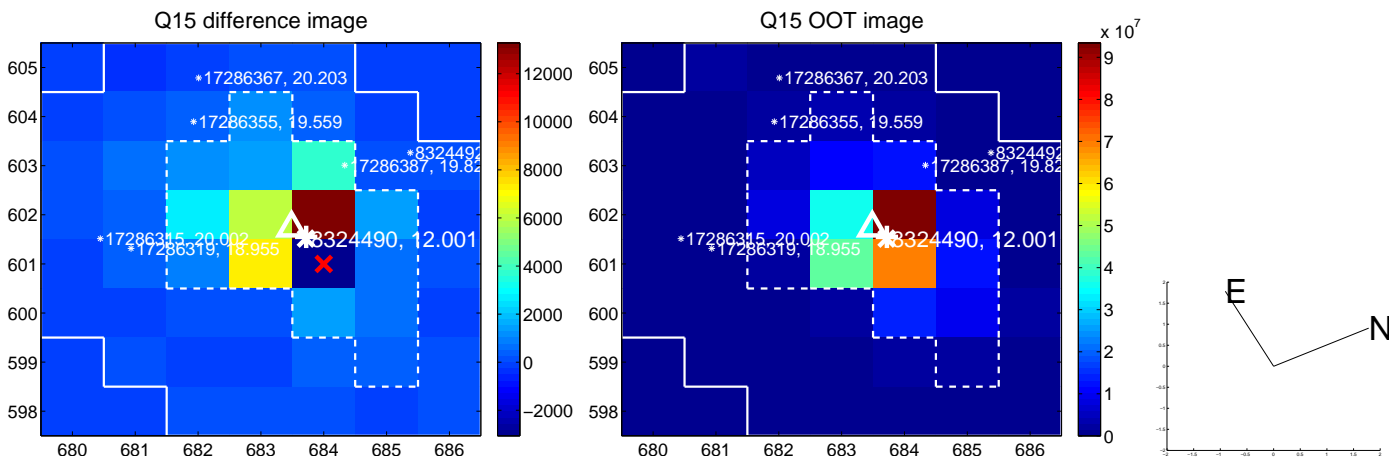
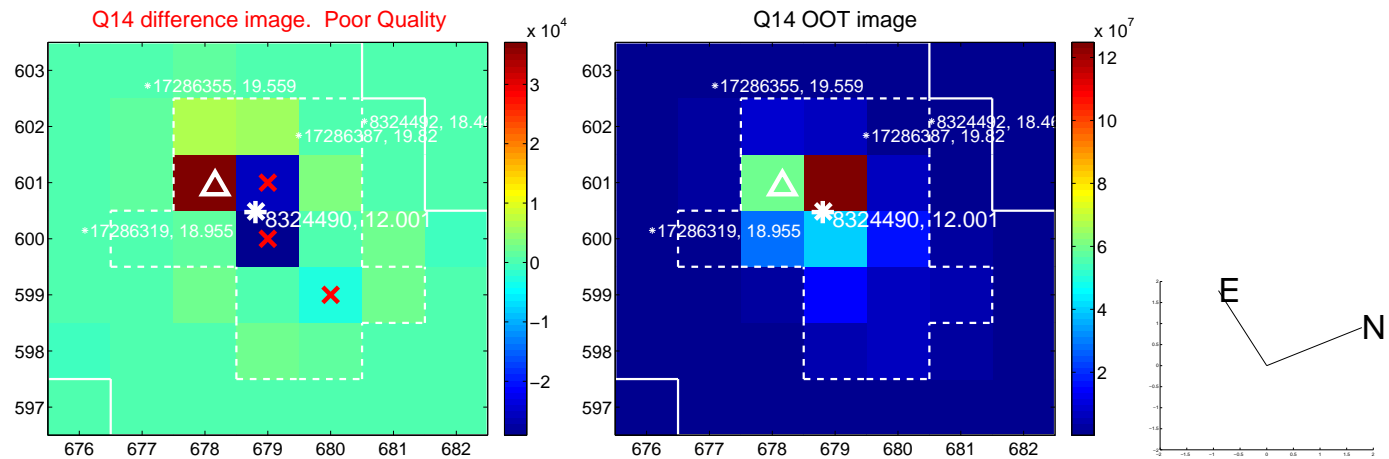
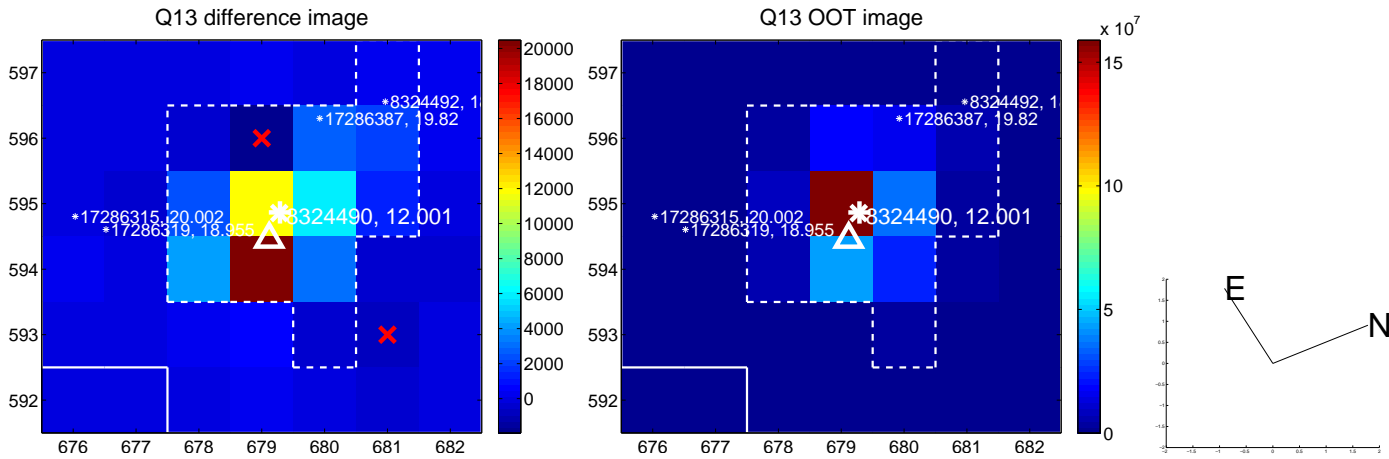
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



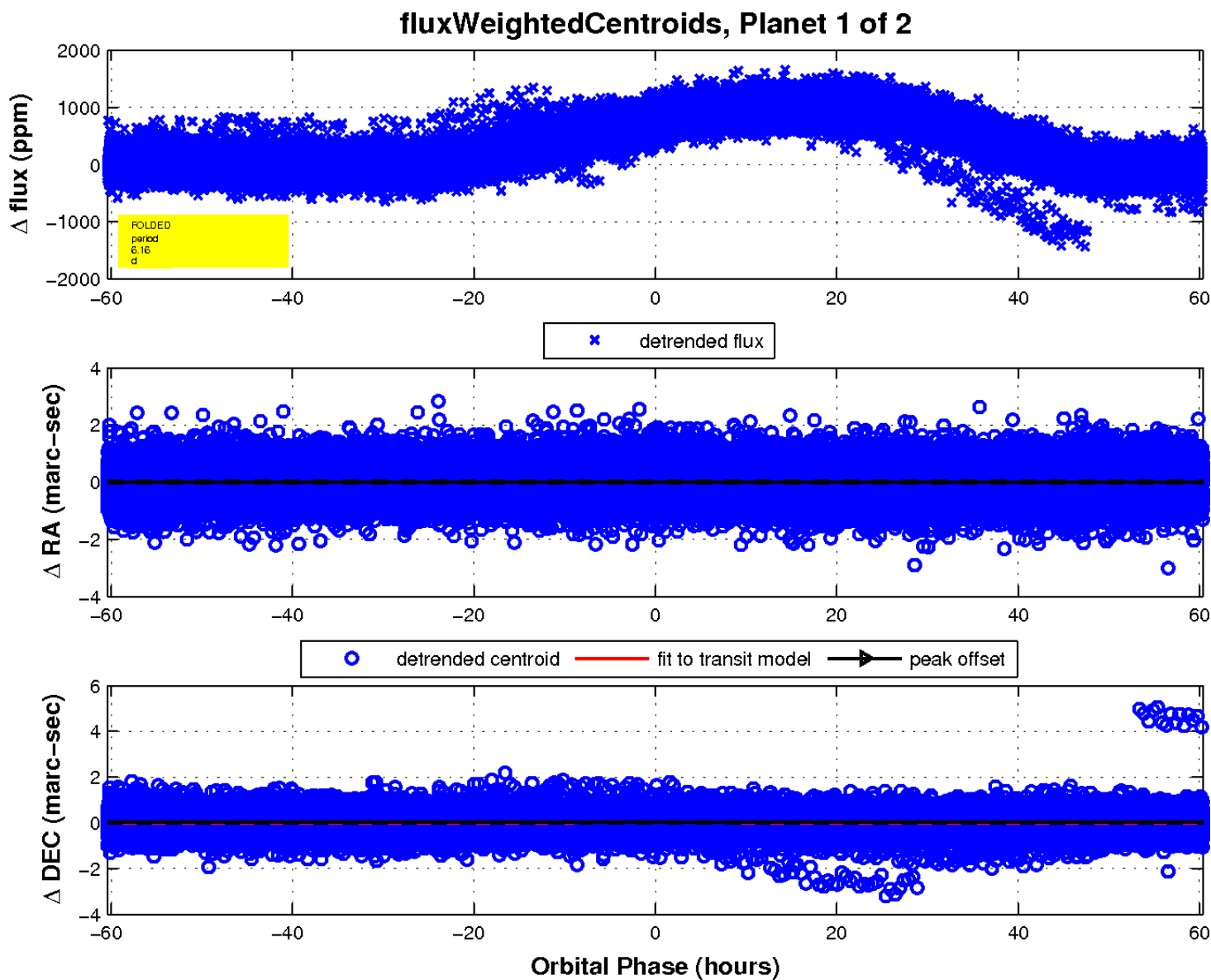
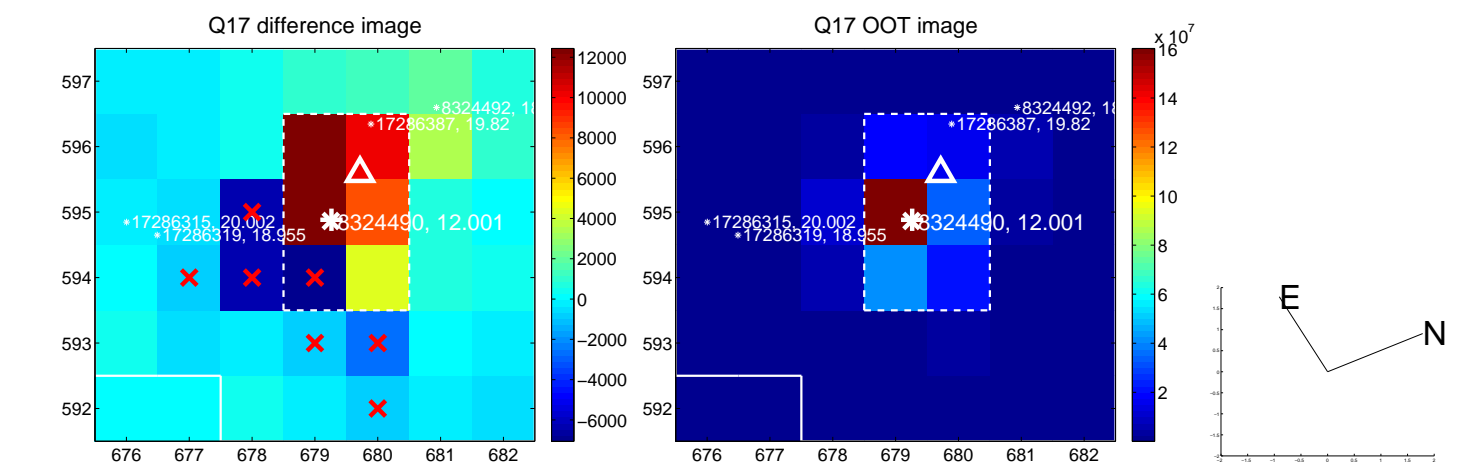
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

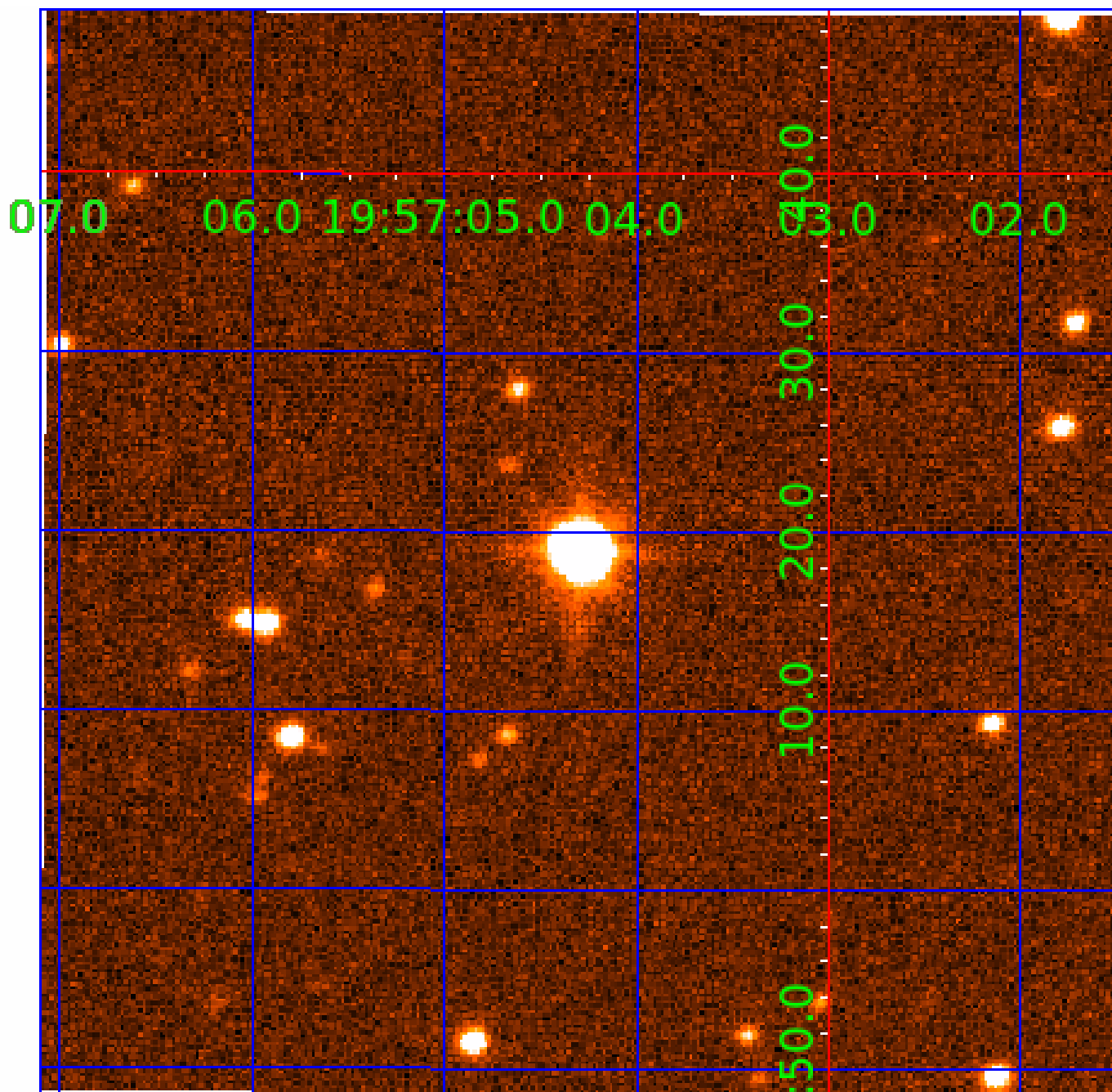


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008324490

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})
008324490-01	OBS	No	6.162868	133.563234	27.7	20.132	9.7	7.0	4.25	6134	2.43	3638.15
008324490-02	OBS	No	6.162271	135.556839	68.7	15.000	12.4	-1.0	4.25	6134	3.52	3638.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008324490-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
008324490-02	OBS	FP	0.00	1	0	0	0	LPP_DV—SAME_NTL_PERIOD—CENT_NOFITS

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

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

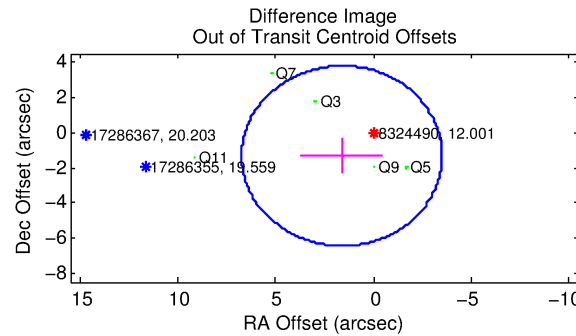
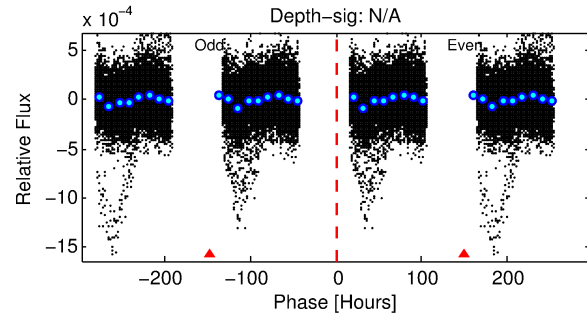
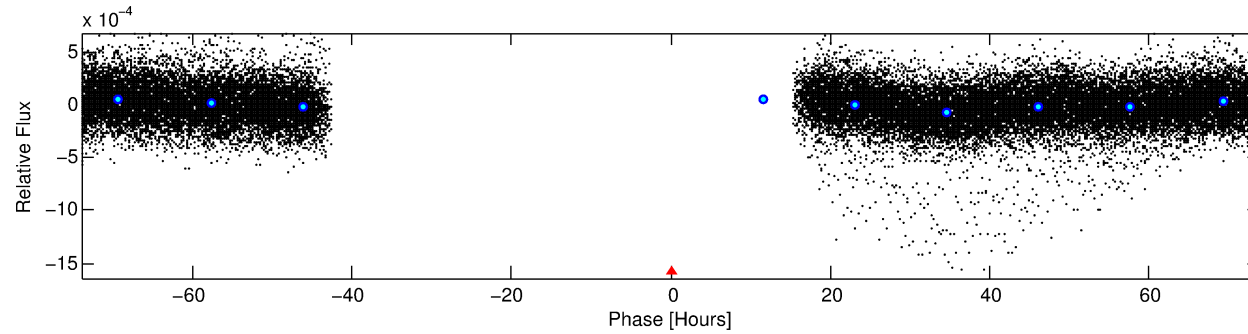
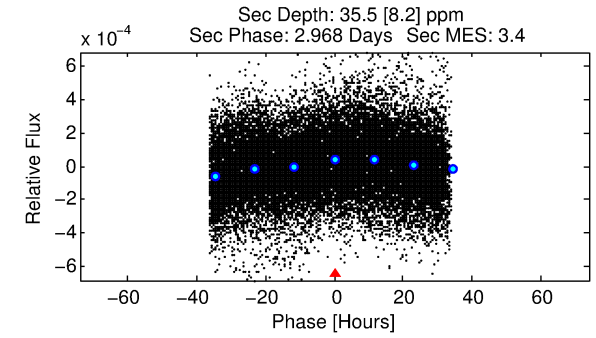
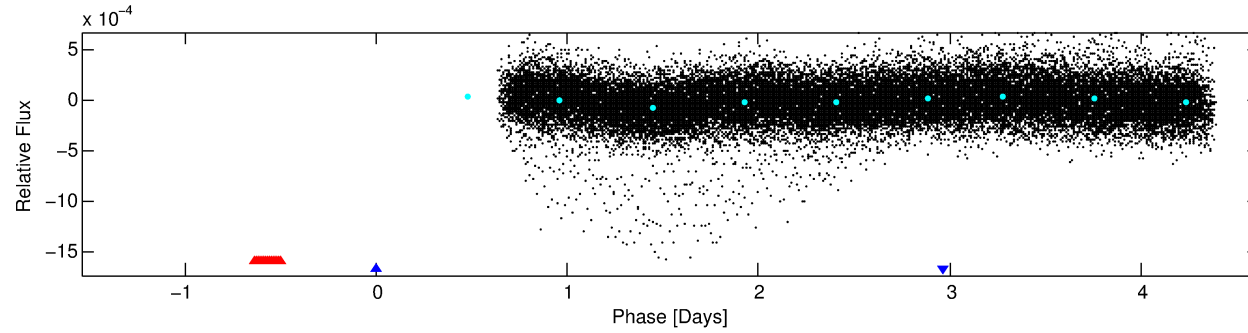
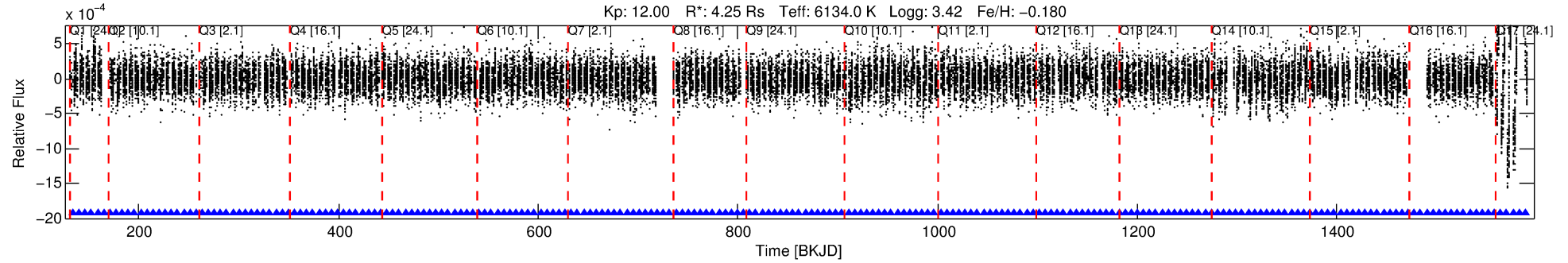
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008324490-02

No Significant Match Found

DV One-Page Summary

KIC: 8324490 Candidate: 2 of 2 Period: 6.162 d



TPS TCE Results:

Period = 6.16227 d
Epoch = 135.5568 BKJD

DV fit results are unavailable

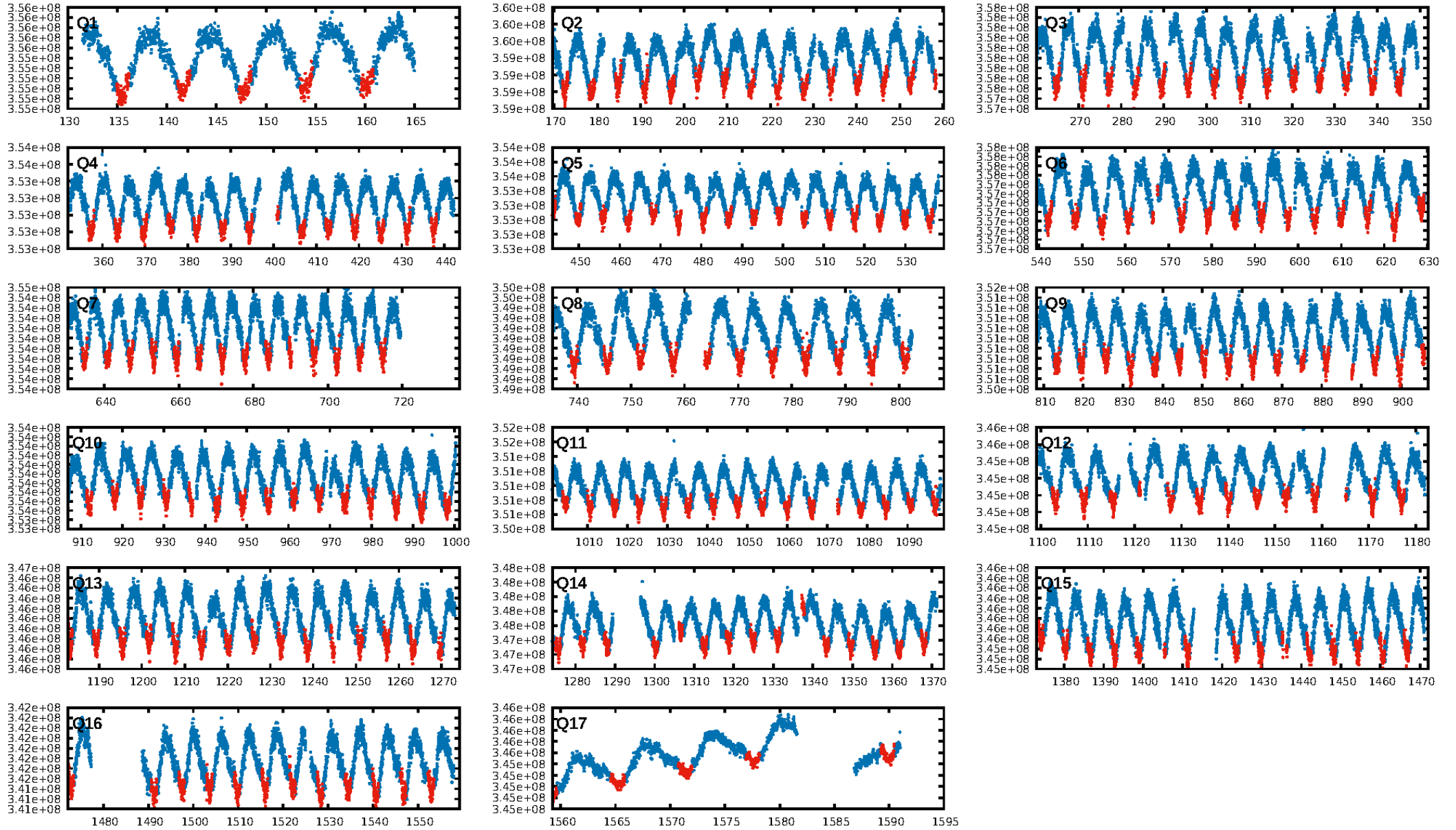
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.07e-16
RollingBand-fgt: 1.00 [209/209]
GhostDiagnostic-chr: -0.4987
Centroid-sig: 87.6%
Centroid-so: 0.168 arcsec [8.91 σ]
OotOffset-rm: 2.093 arcsec [1.23 σ]
KicOffset-rm: 2.127 arcsec [1.20 σ]
OotOffset-st: 0/3/0/2 [5]
KicOffset-st: 0/3/0/2 [5]
DiffImageQuality-fgm: 0.40 [2/5]
DiffImageOverlap-fno: 0.00 [0/17]

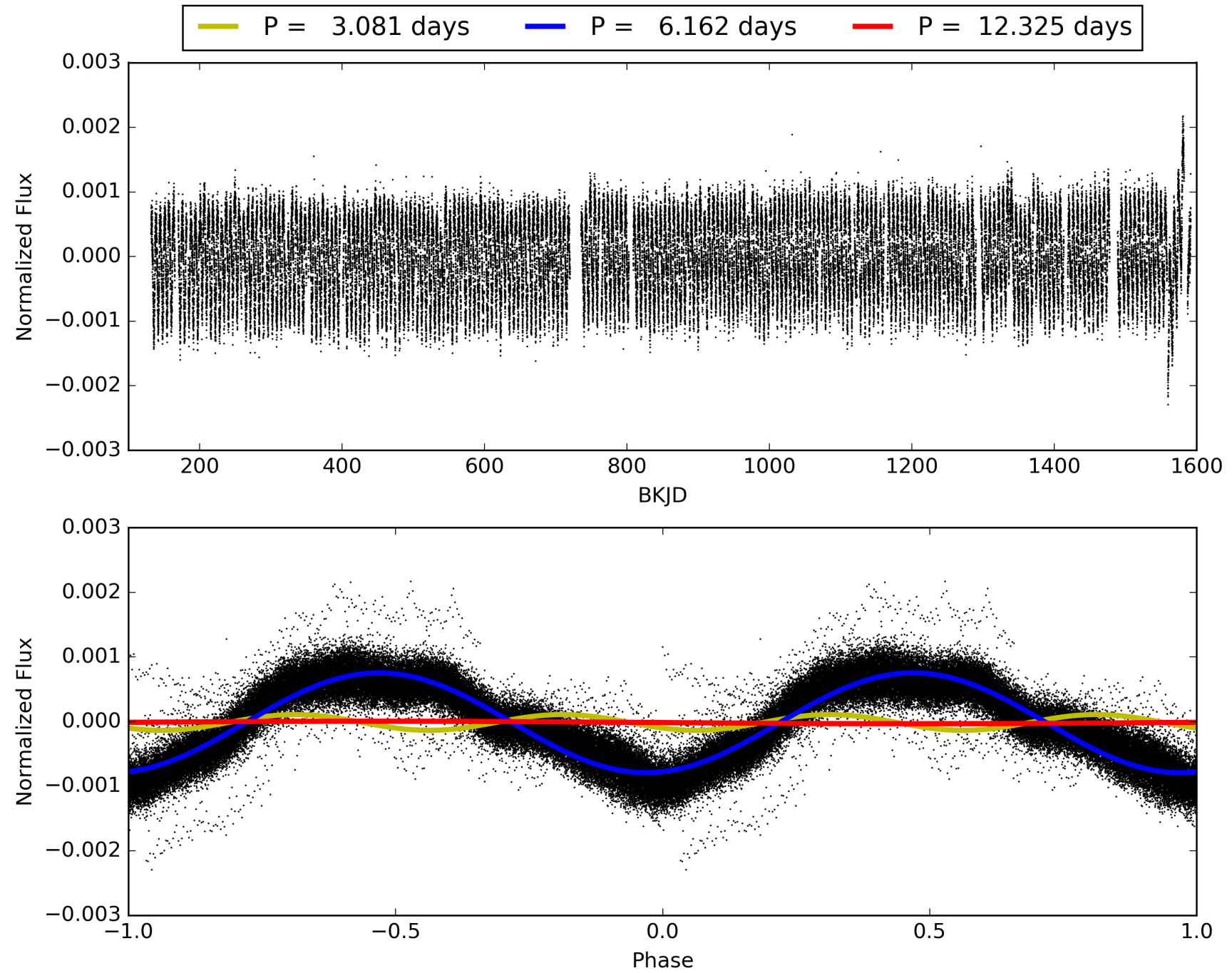
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:59:00 Z

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

TCE 008324490-02, PDC Light Curves

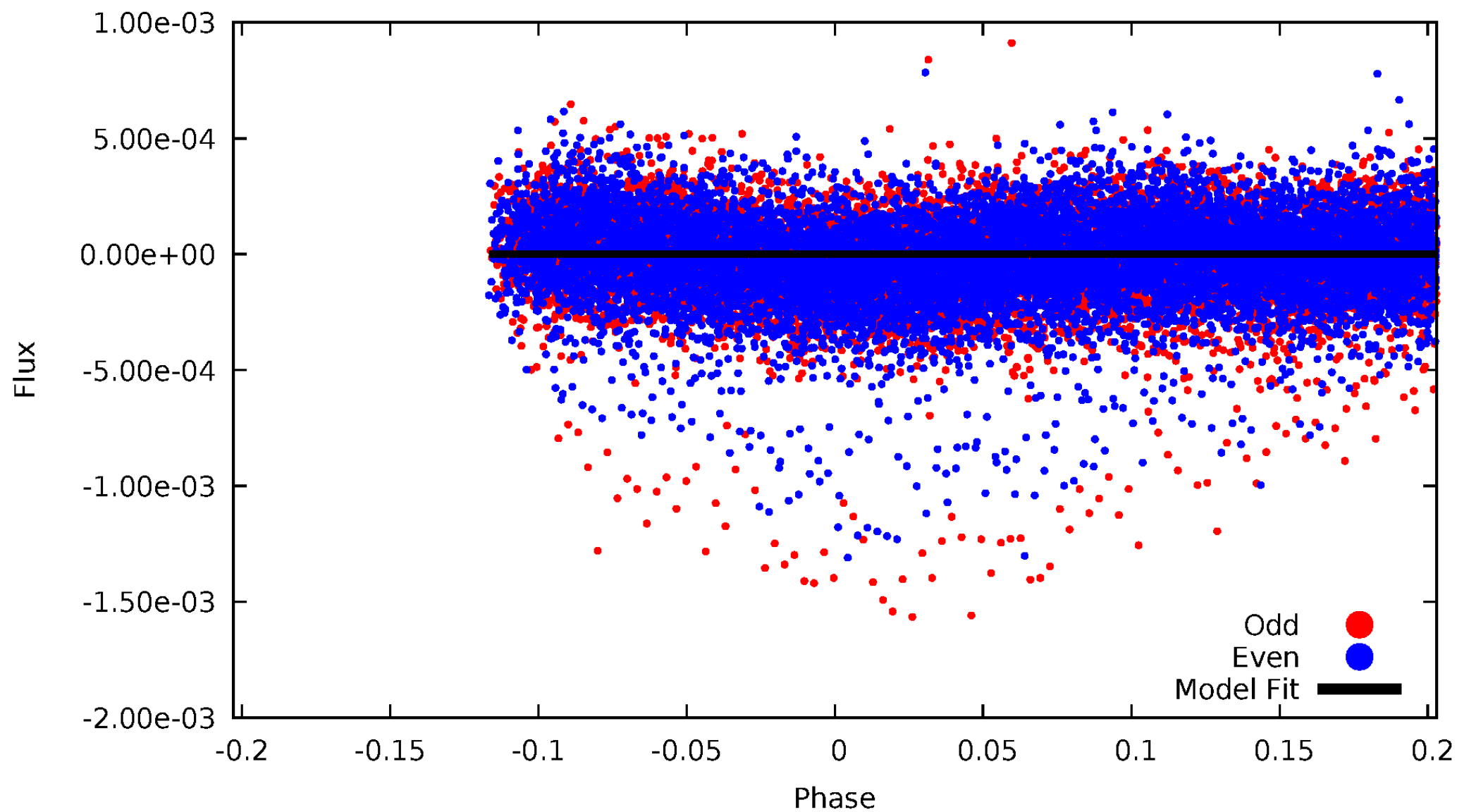


TCE 008324490-02



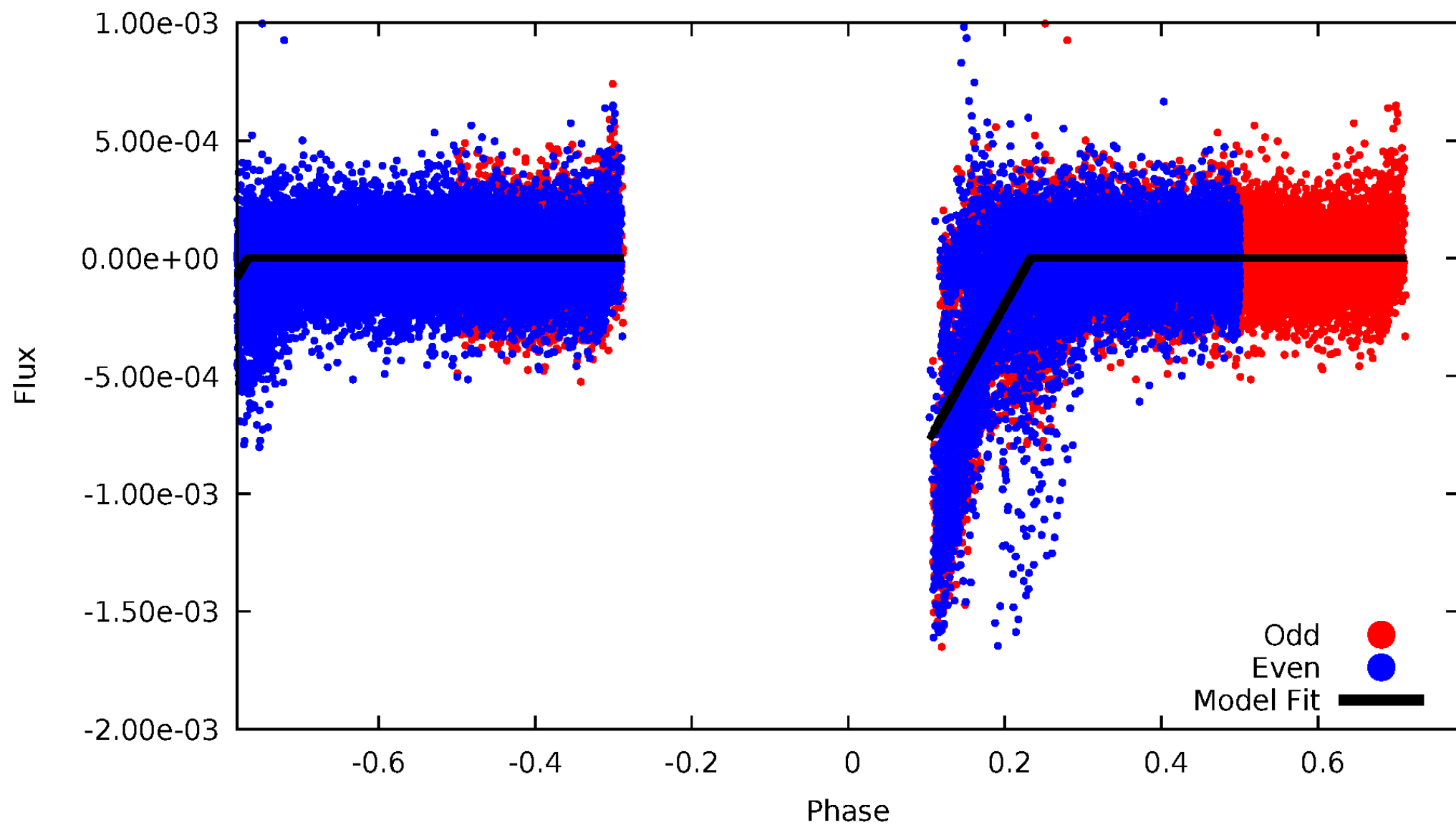
DV Odd/Even

TCE 008324490-02



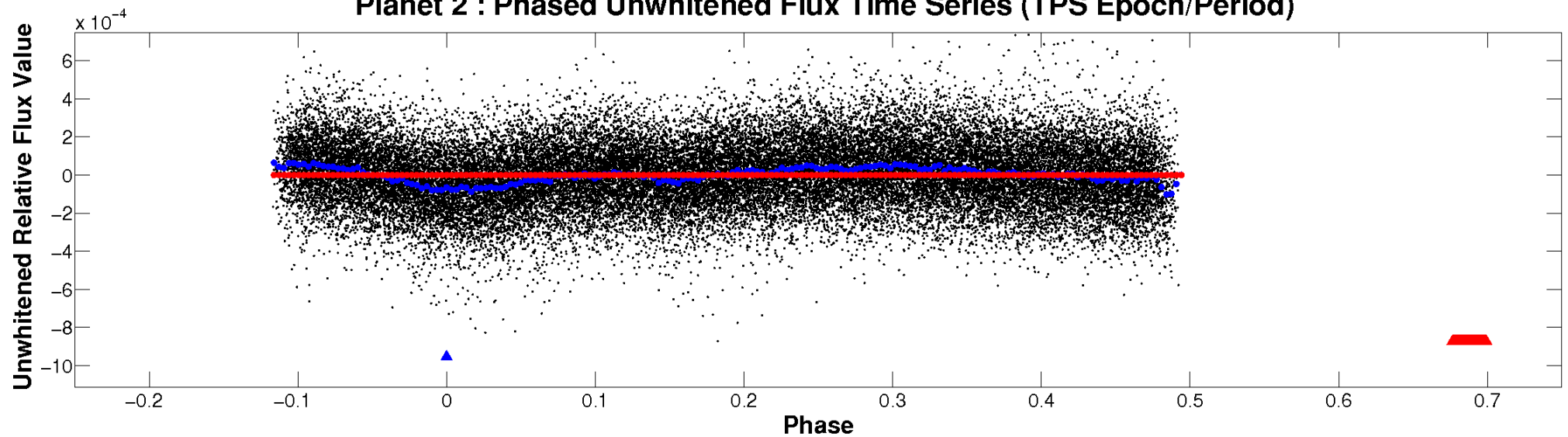
ALT Odd/Even

TCE 008324490-02

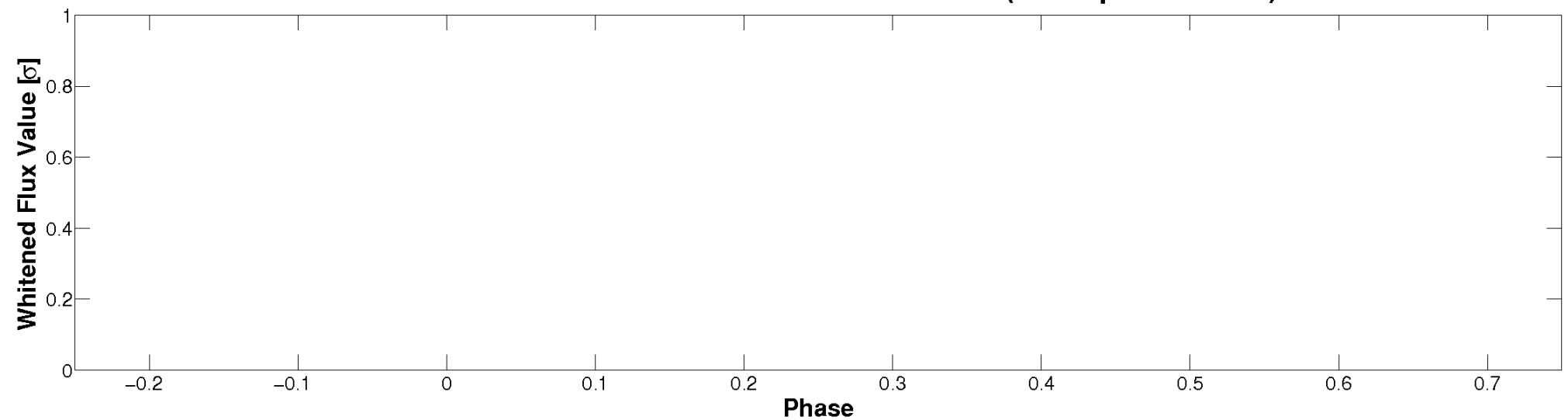


Non-Whitened Vs. Whitened Light Curve

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

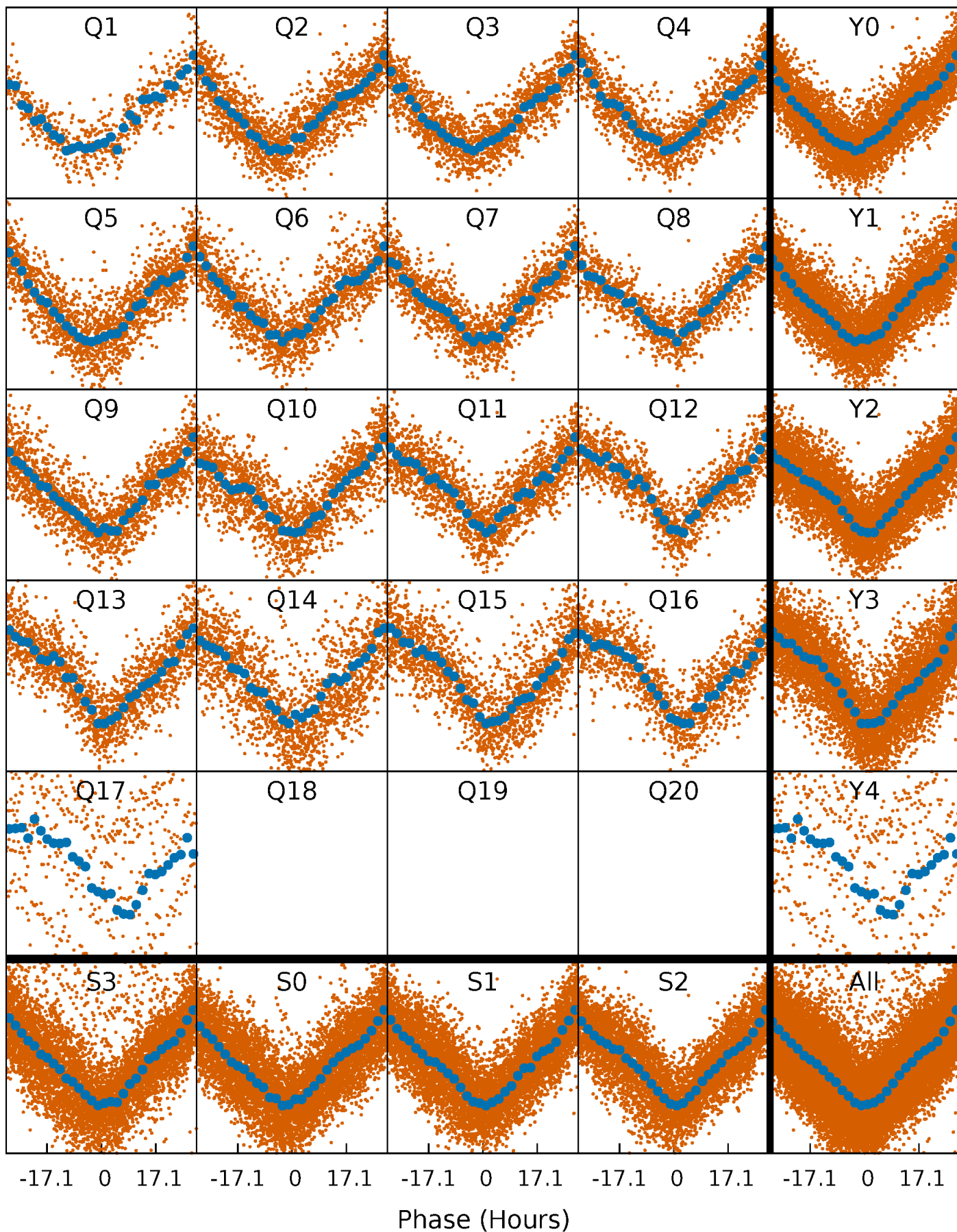


Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)



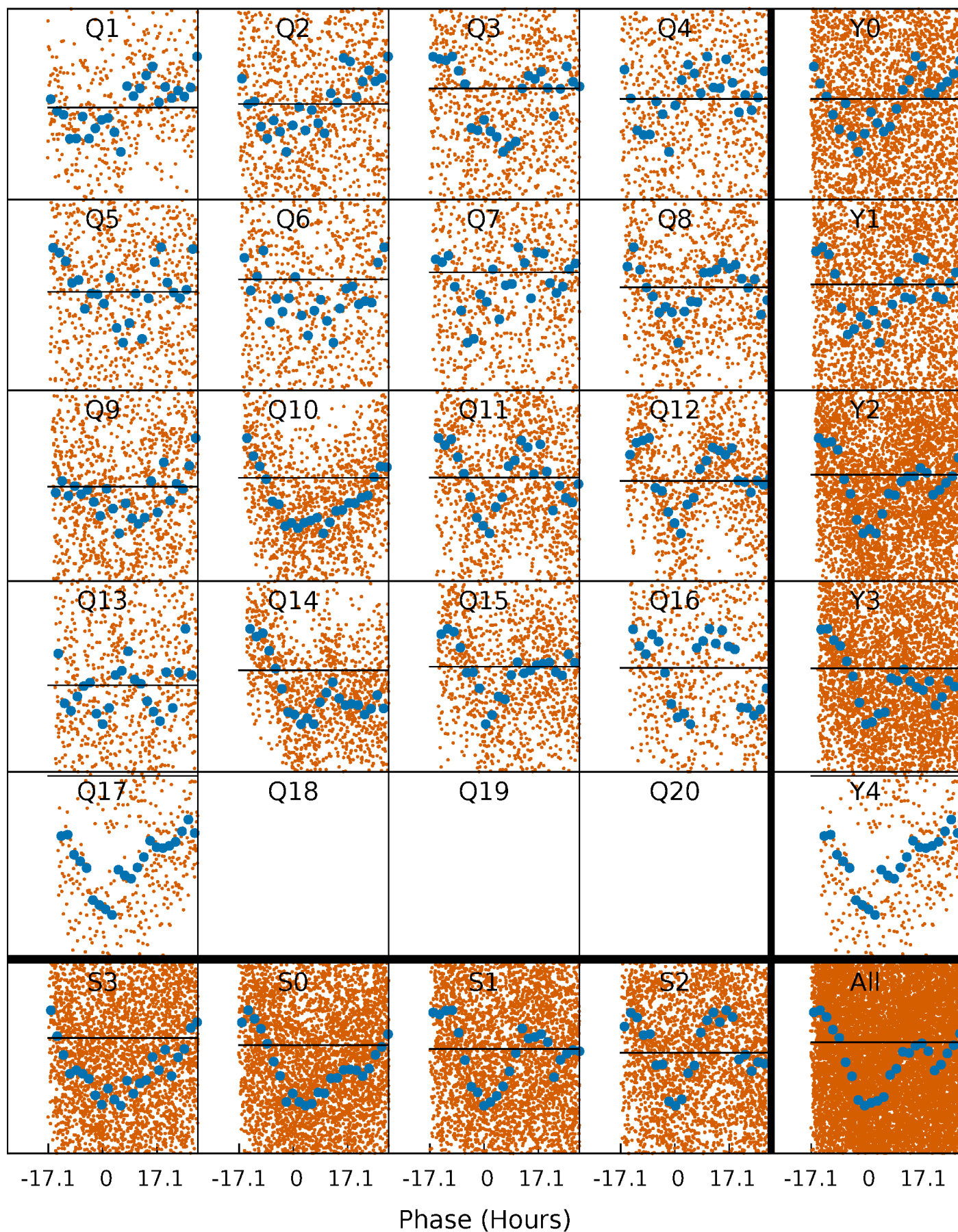
PDC Quarter-Phased Transit Curves

TCE 008324490-02 P= 6.162271 Days $T_0=135.556839$ (BKJD)



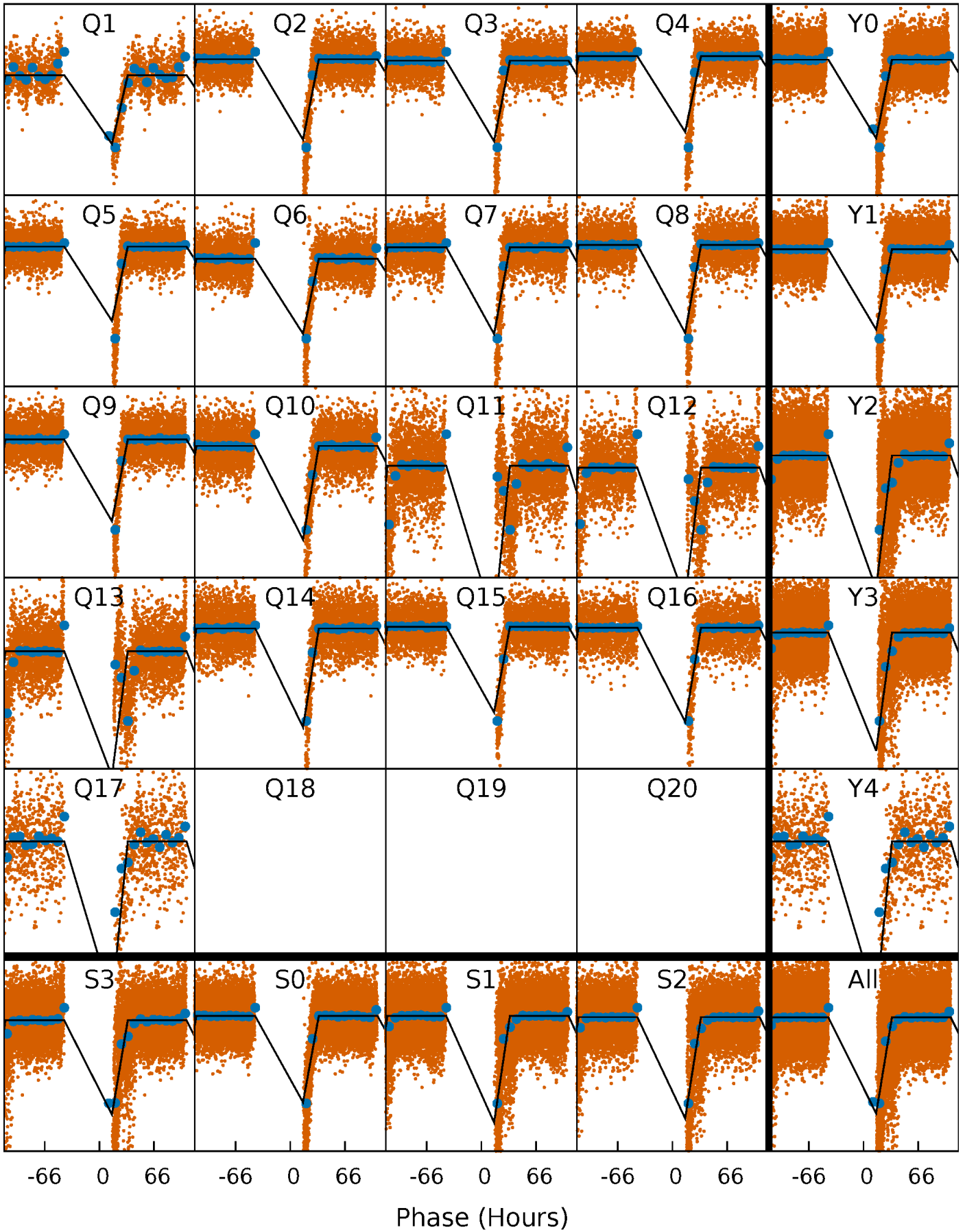
DV Quarter-Phased Transit Curves

TCE 008324490-02 P= 6.162271 Days $T_0=135.556839$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

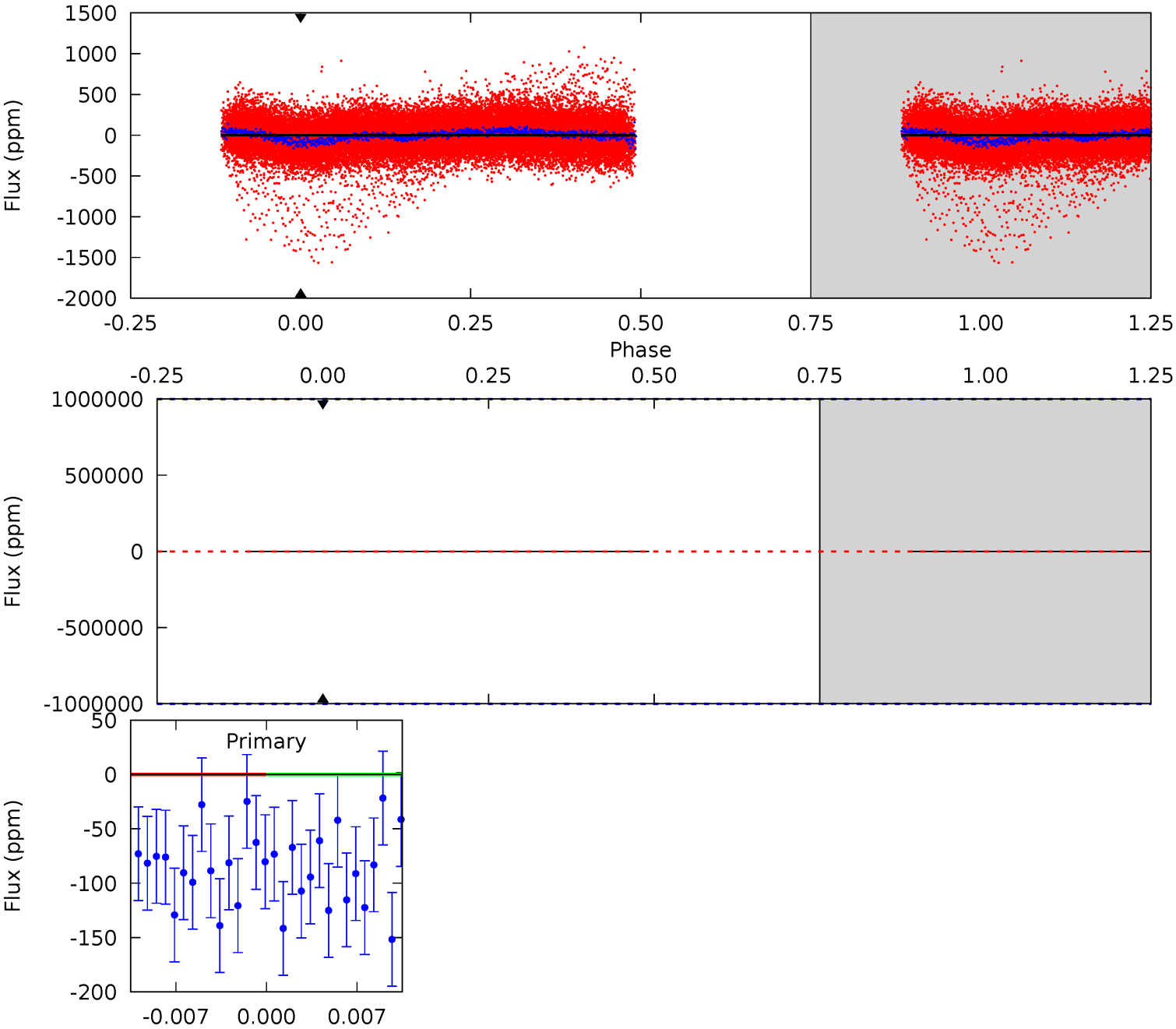
TCE 008324490-02 $P = 6.162271$ Days $T_0 = 134.201243$ (BKJD)



DV Model-Shift Uniqueness Test

008324490-02, P = 6.162271 Days, E = 129.394568 Days

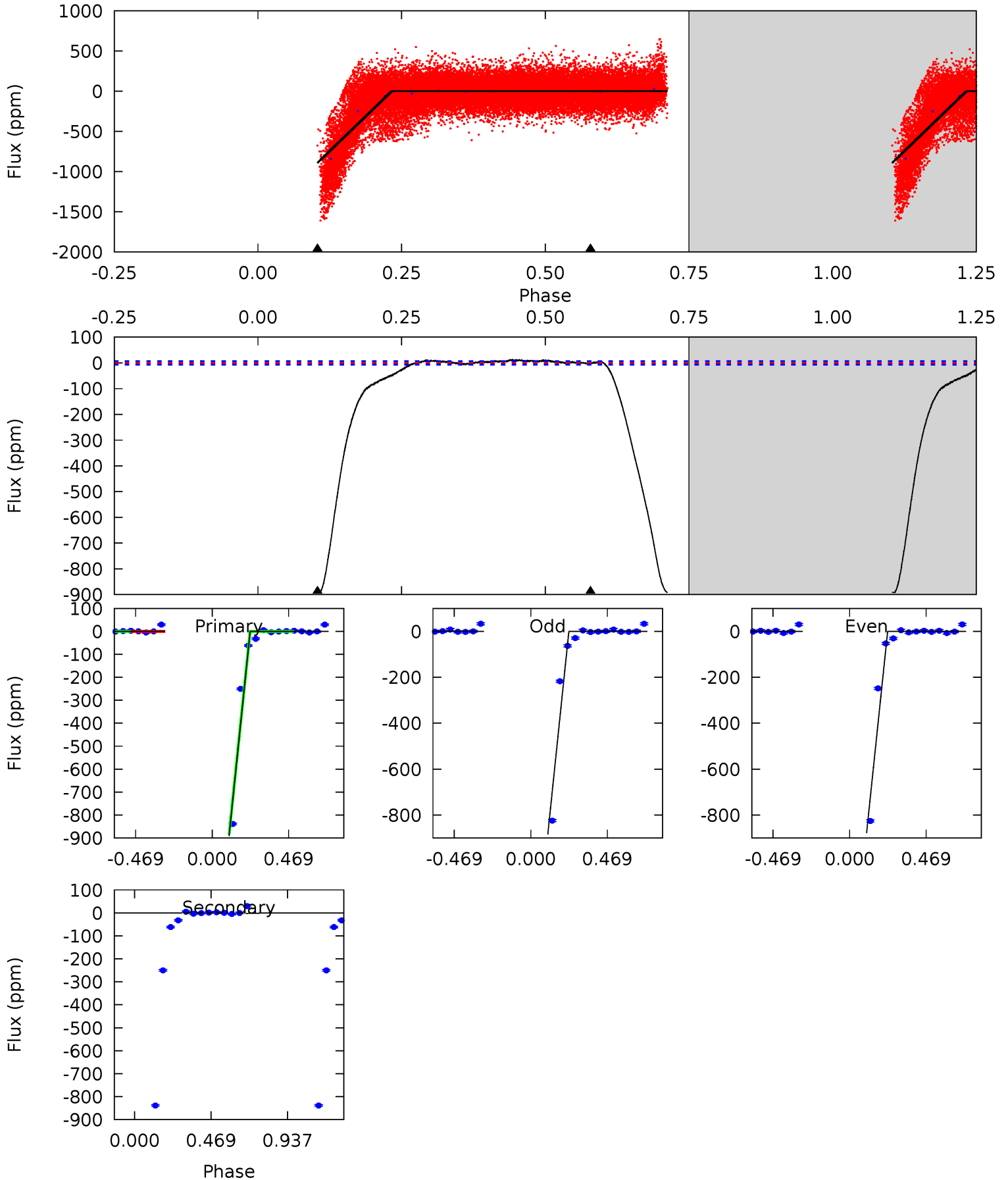
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

008324490-02, P = 6.162271 Days, E = 128.038972 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
589.2	1.71	0	0	4.23	0.72	2.41	589.2	589.2	1.71	1.71	2.14	0.88	0.01	0



Stellar Parameters For KIC 008324490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6134^{+183}_{-183}	$3.425^{+0.433}_{-0.076}$	$-0.180^{+0.350}_{-0.300}$	$4.247^{+0.519}_{-2.075}$	$1.753^{+0.129}_{-0.515}$	$0.032^{+0.134}_{-0.008}$
	+3%/-3%	+13%/-2%	+194%/-167%	+12%/-49%	+7%/-29%	+415%/-25%
Source	PHO1	FLK73	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 008324490-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$29.98^{+30.86}_{-21.43}$	2698^{+169}_{-315}	2517^{+22044}_{-26695}	$0.396^{+691.076}_{-647.377}$
Alt.	-3 ± 2	$33.97^{+33.55}_{-23.87}$	2671^{+193}_{-318}	-2856^{+273}_{-138}	$0.007^{+0.064}_{-0.005}$

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

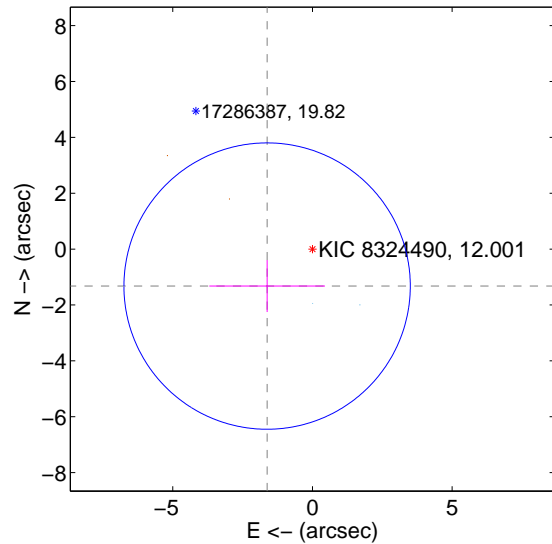
Supplemental centroid analysis for 008324490-02. Kepler magnitude: 12.00. Transit SNR -1.00

There are 2 quarters with good PRF difference image offsets

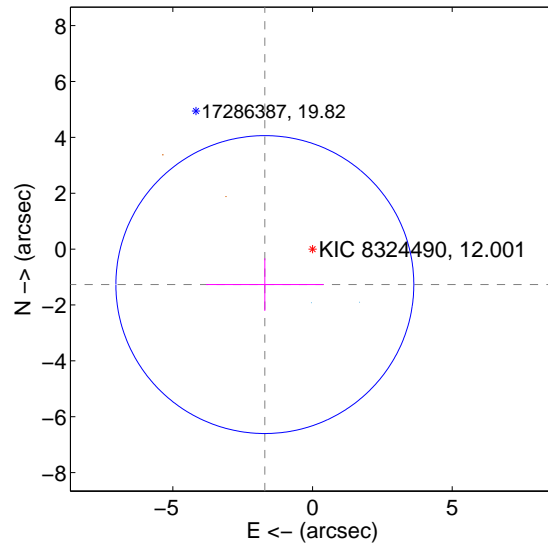
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.093 ± 1.708	1.23	1.622 ± 2.070	-1.323 ± 0.927
PRF-fit source offset from KIC position	2.127 ± 1.777	1.20	1.706 ± 2.101	-1.270 ± 0.942
photometric centroid source offset	0.17 ± 0.02	8.91	0.15 ± 0.02	0.07 ± 0.02

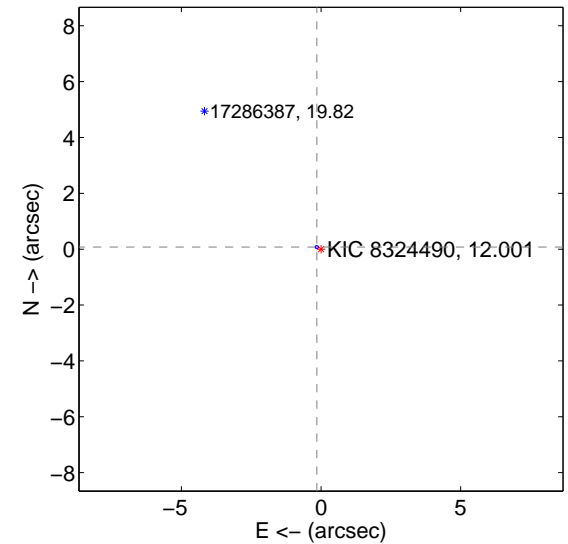
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

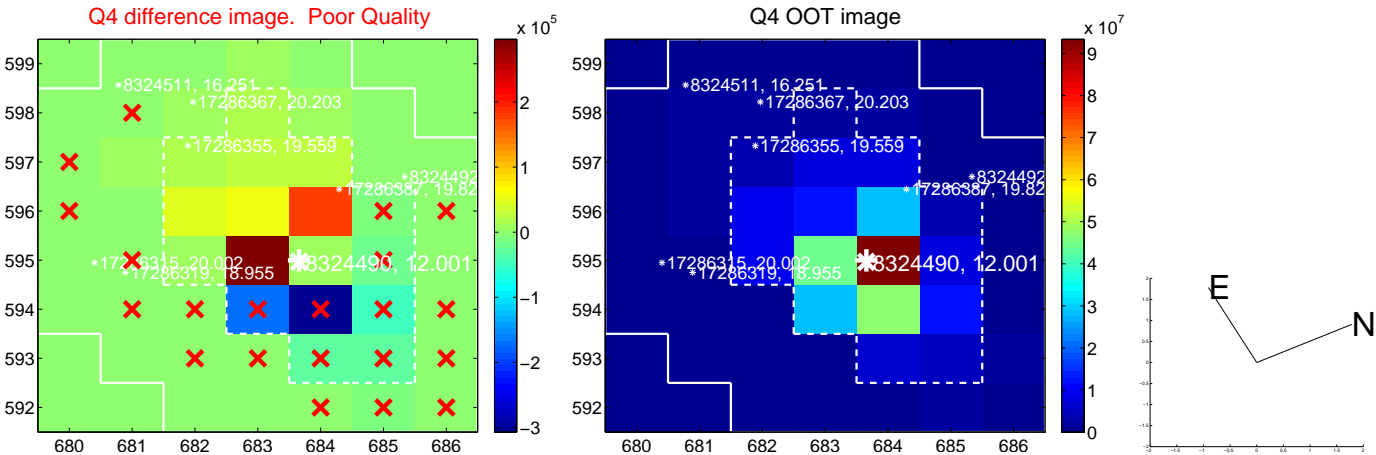
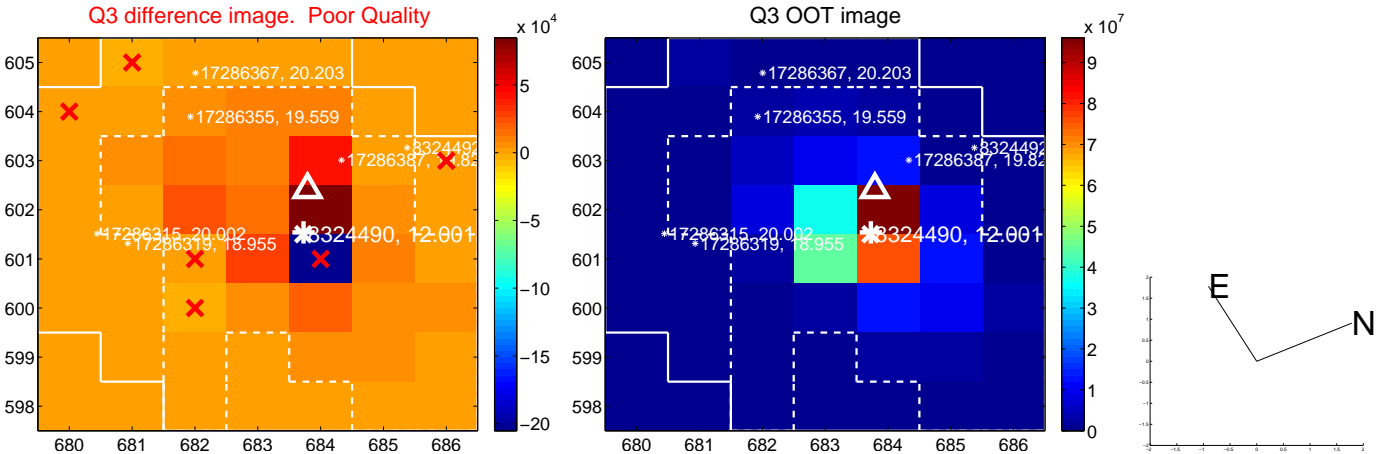
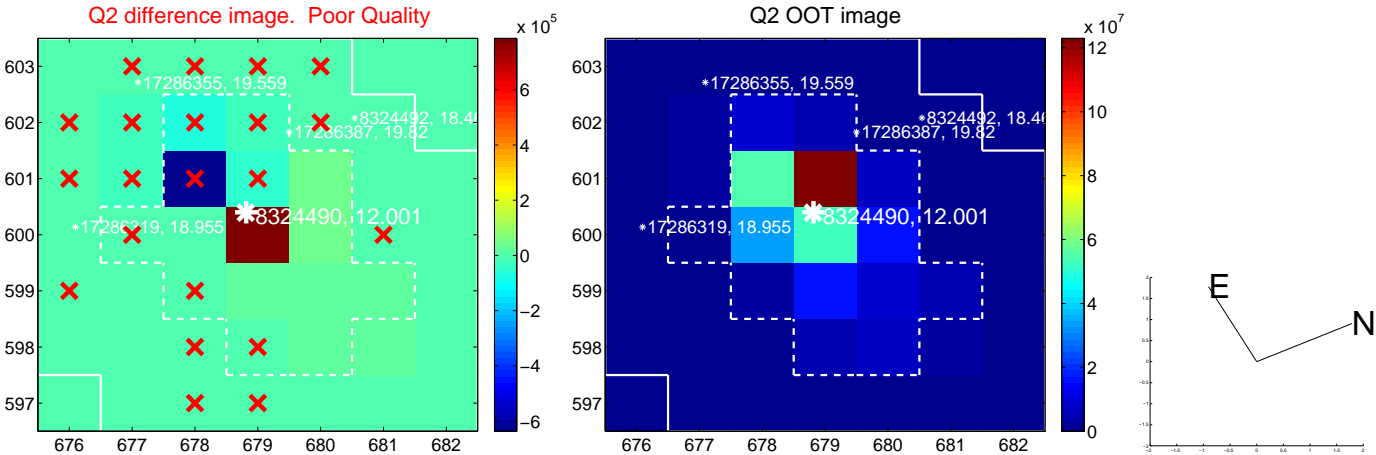
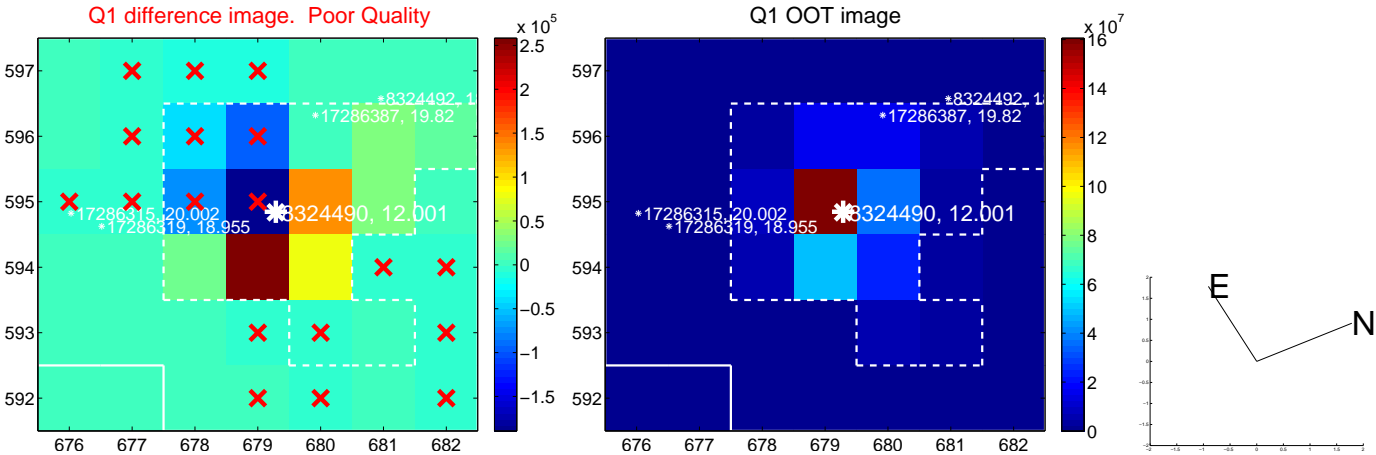


offset from photometric centroids

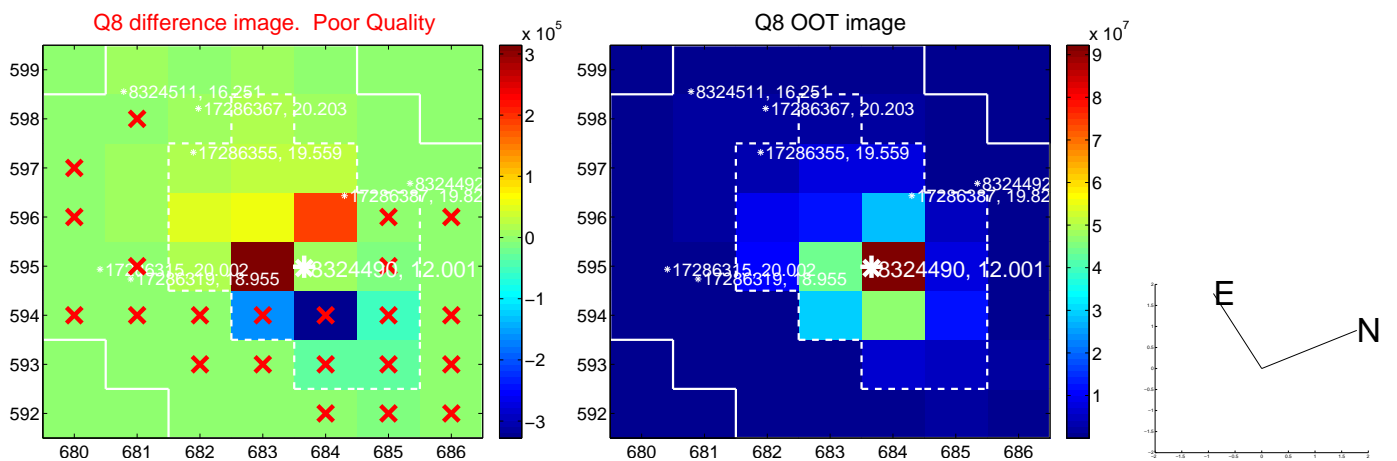
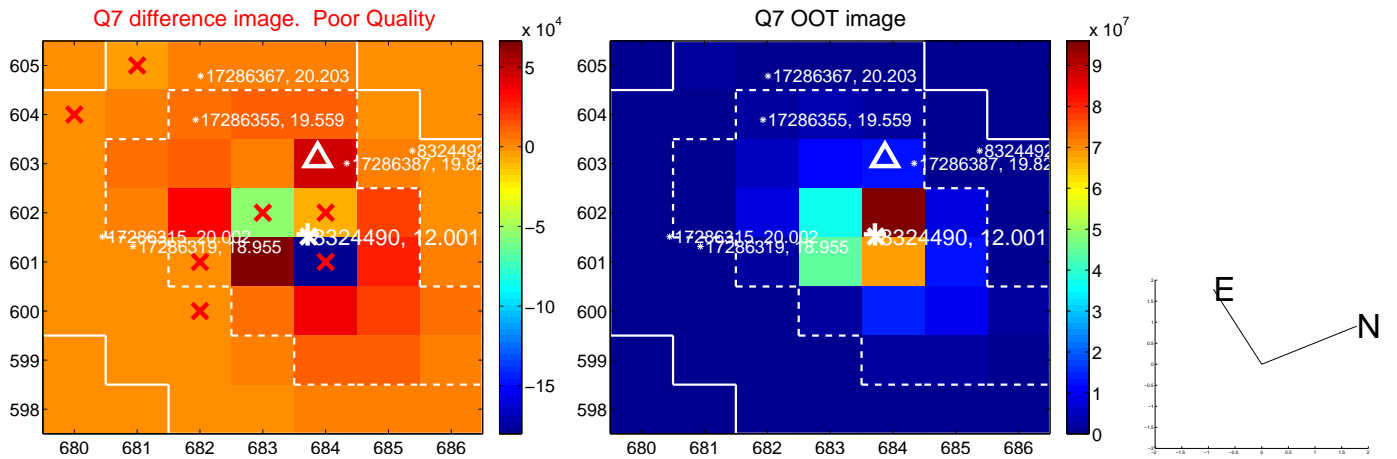
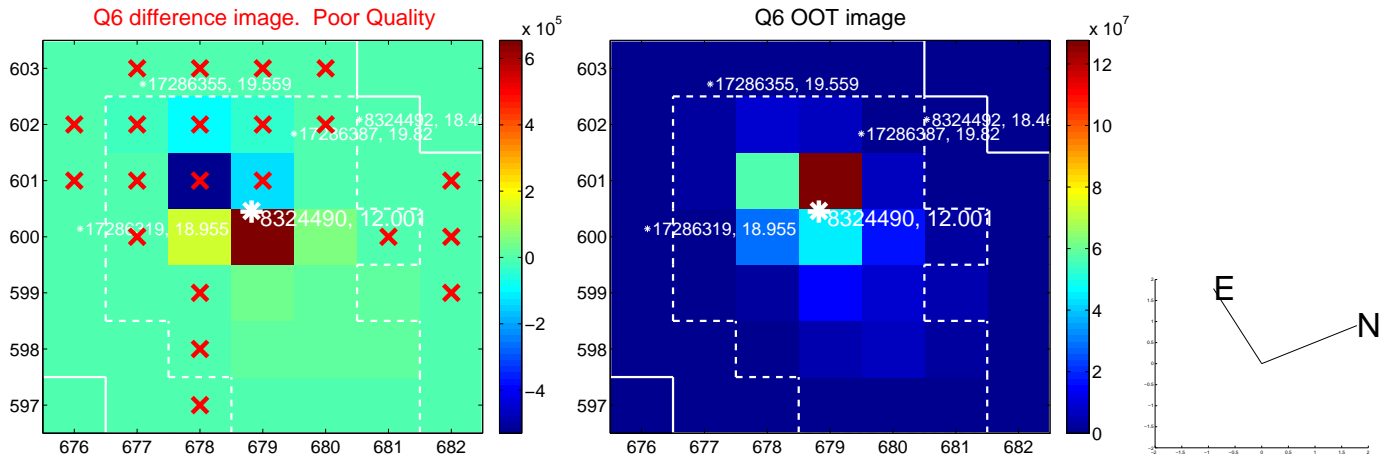
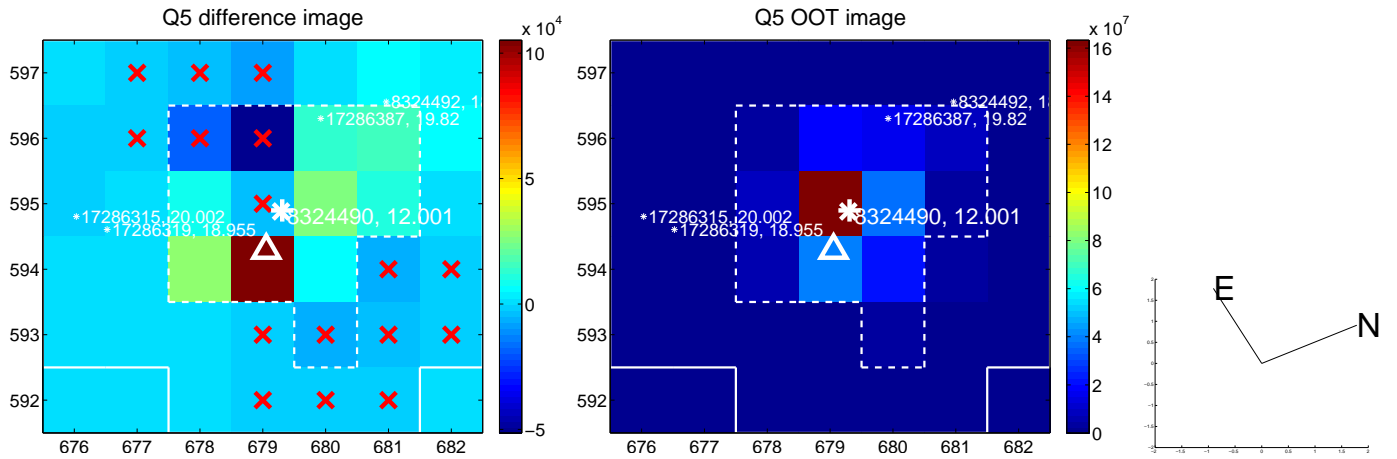


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

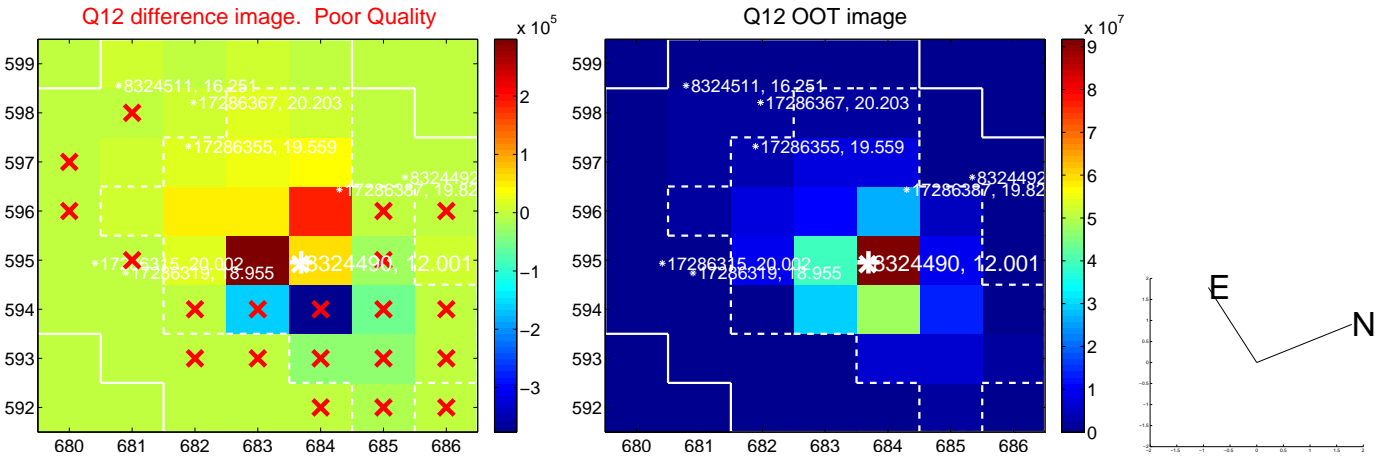
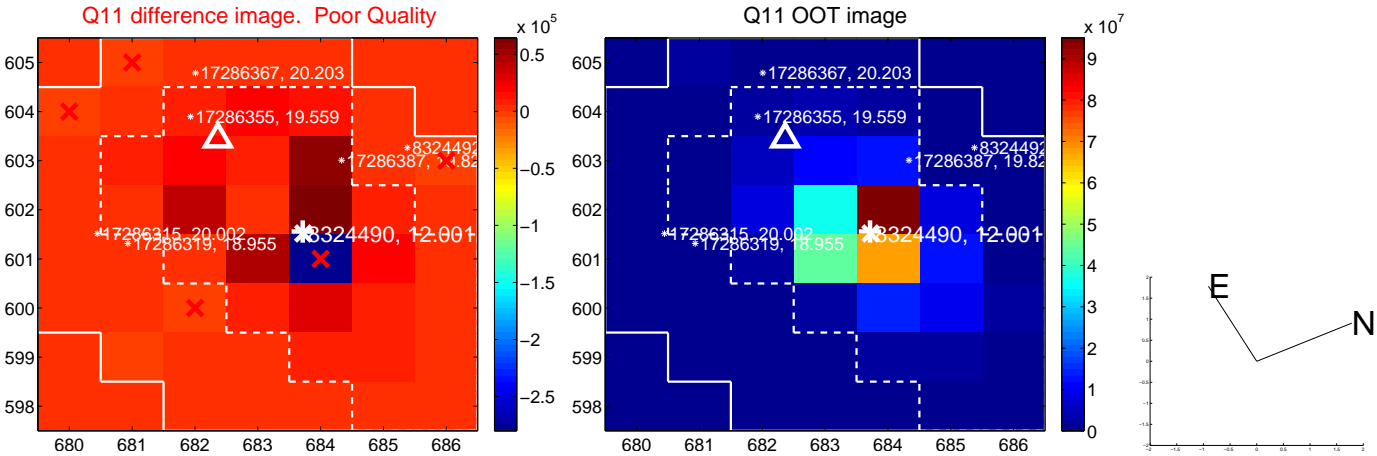
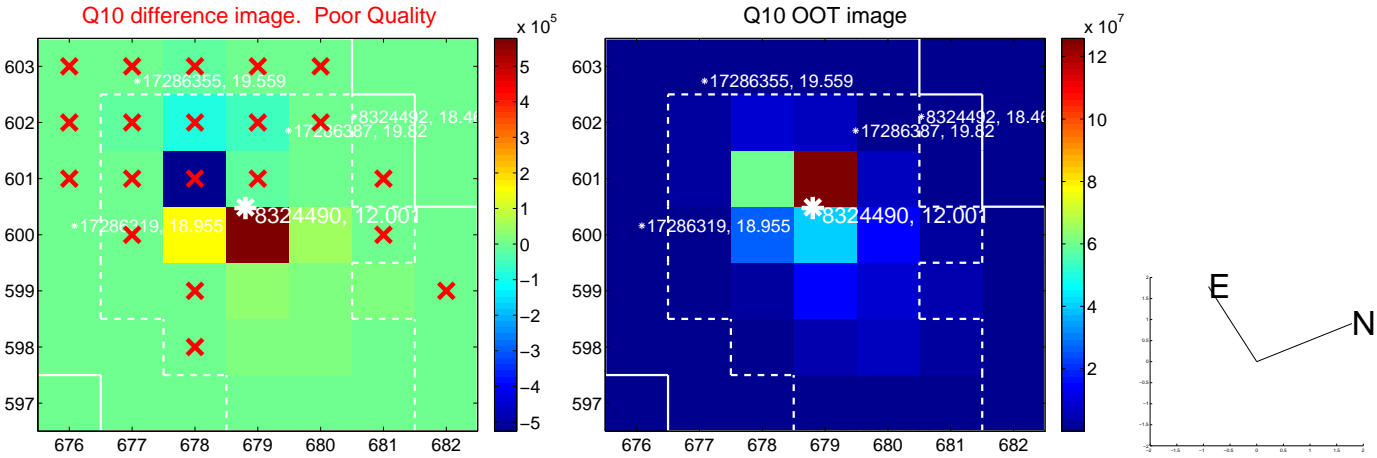
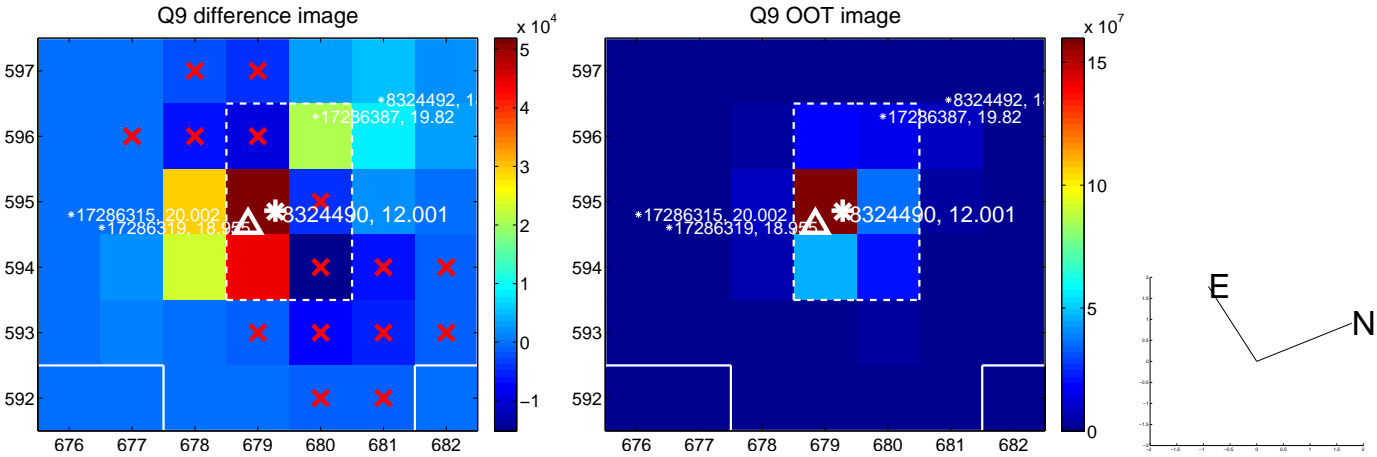
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



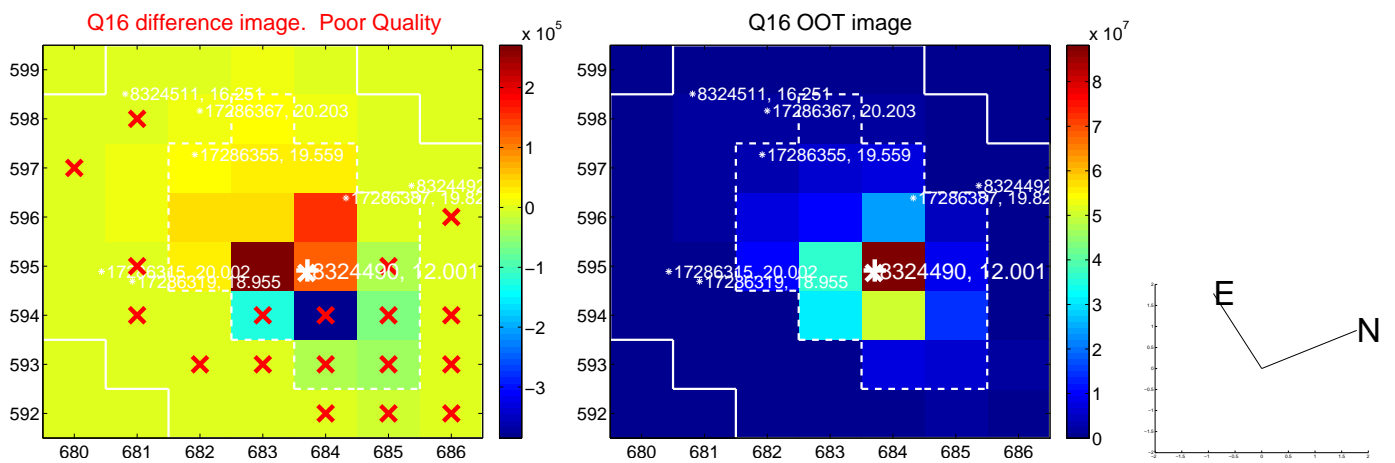
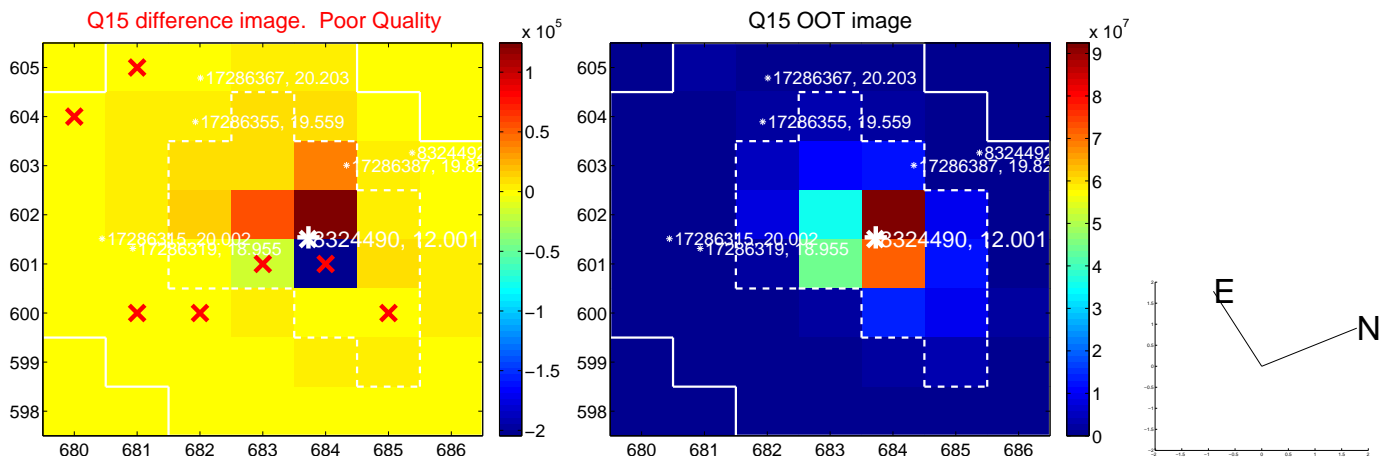
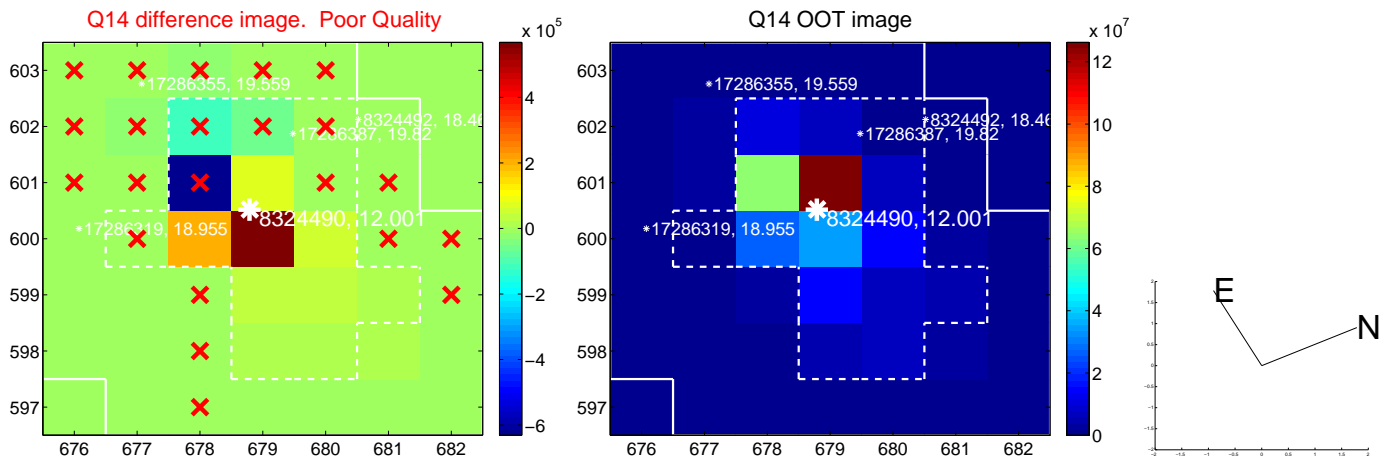
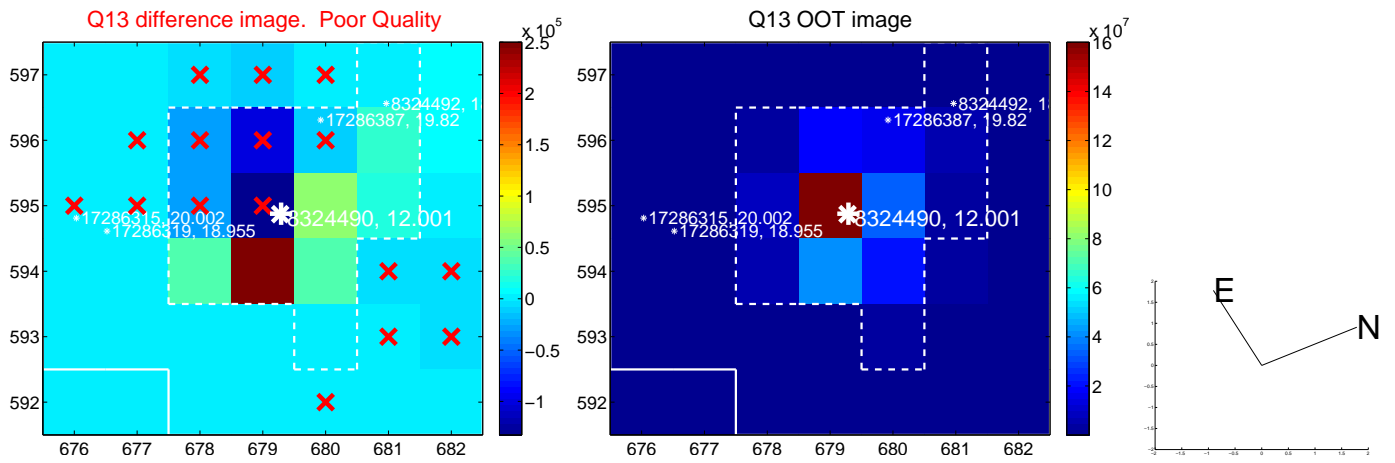
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



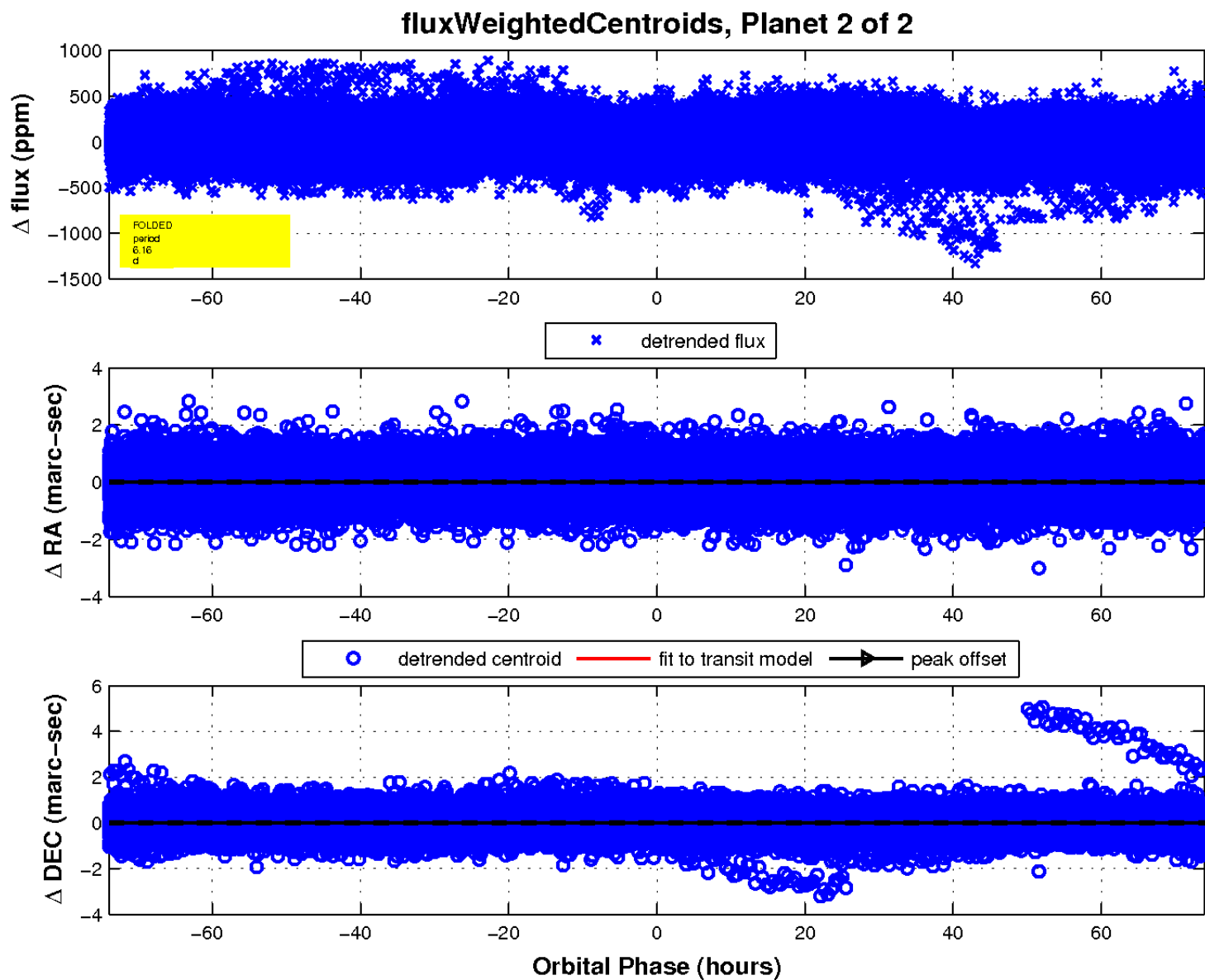
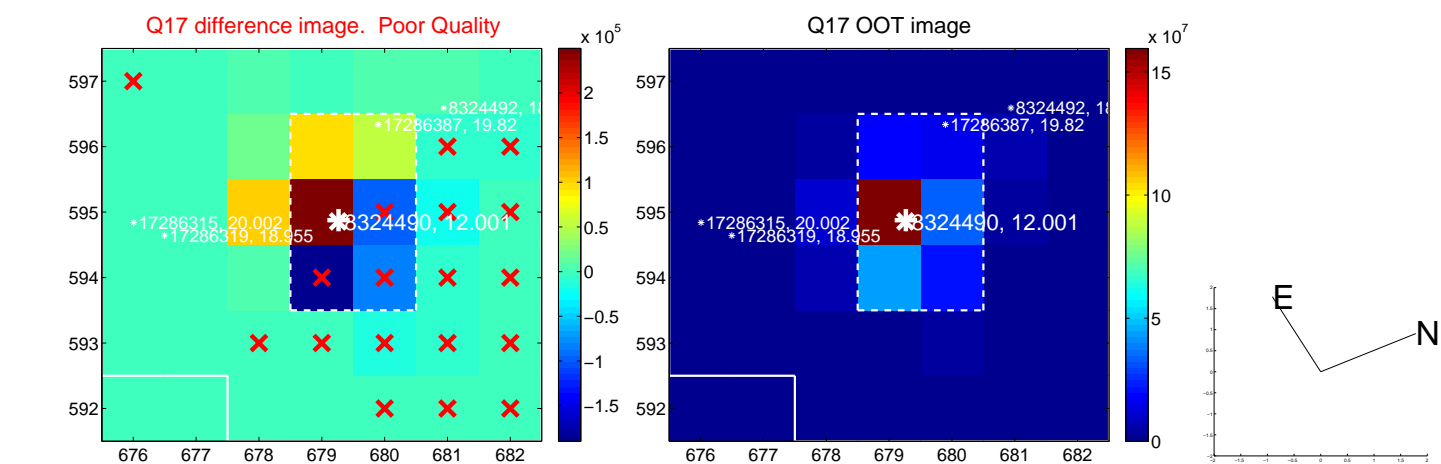
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

